

**Date and Time:** Monday 9 September 2024 16:50:00 CEST

**Job Number:** 233028354

**Documents (100)**

1. [*CDC advisers recommend restarting use of Johnson & Johnson coronavirus vaccine in US - live*](https://advance.lexis.com/api/document?id=urn:contentItem:62H7-F611-DY4H-K2VX-00000-00&idtype=PID&context=1516831)

**Client/Matter:** -None-

**Search Terms:** removals and target or removals and emissions or removals and land or removals and forest or target and emissions or target and land or target and forest or emissions and land or emissions and forest or land and forest

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| News | Tijdlijn: jul 14, 2020 tot jul 14, 2021; Locatie: International; Plaats van publicatie: Europe; Taal: English |

2. [*Federal Register: Endangered and Threatened Wildlife and Plants; Removing the Water Howellia From the List of Endangered and Threatened Plants Pages 31955 - 31972 [FR DOC #2021-12522]*](https://advance.lexis.com/api/document?id=urn:contentItem:62XS-MRY1-JDG9-Y55G-00000-00&idtype=PID&context=1516831)

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3. [*A "moral obligation" ... and "future-proofing" the company Nestle 's mission on emissions*](https://advance.lexis.com/api/document?id=urn:contentItem:61HG-8V71-JDNW-43BJ-00000-00&idtype=PID&context=1516831)

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4. [*'Not all biomass is carbon neutral', industry admits*](https://advance.lexis.com/api/document?id=urn:contentItem:60BV-WT71-JCF9-40MF-00000-00&idtype=PID&context=1516831)

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5. [*Royal Institution Christmas Lectures: 2020: Planet Earth - A User's Guide - 8:40 PM GMT*](https://advance.lexis.com/api/document?id=urn:contentItem:61MY-WP31-DY08-350W-00000-00&idtype=PID&context=1516831)

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6. [*Brazil : minister's exit draws attention to 'disastrous' gov't environment policy*](https://advance.lexis.com/api/document?id=urn:contentItem:630G-CTP1-JC8S-C28Y-00000-00&idtype=PID&context=1516831)

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7. [*What They're Saying About the Growing Climate Solutions Act*](https://advance.lexis.com/api/document?id=urn:contentItem:62H8-FSN1-JDG9-Y26T-00000-00&idtype=PID&context=1516831)

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8. [*Land-use change and the livestock revolution increase the risk of zoonotic coronavirus transmission from rhinolophid bats*](https://advance.lexis.com/api/document?id=urn:contentItem:693W-H841-F129-P4PJ-00000-00&idtype=PID&context=1516831)

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9. [*Massive soybean expansion in South America since 2000 and implications for conservation*](https://advance.lexis.com/api/document?id=urn:contentItem:671W-P2M1-JCWX-C2G8-00000-00&idtype=PID&context=1516831)

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10. [*Ecosystem services benefits from the restoration of non-producing US oil and gas lands*](https://advance.lexis.com/api/document?id=urn:contentItem:671W-P2M1-JCWX-C2DV-00000-00&idtype=PID&context=1516831)

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11. [*‘Not all biomass is carbon neutral’, industry admits*](https://advance.lexis.com/api/document?id=urn:contentItem:60F6-BSS1-F0YC-N1GP-00000-00&idtype=PID&context=1516831)

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12. [*Think the Greens are the fluffy party? Think again. They are dangerous eco-Marxists*](https://advance.lexis.com/api/document?id=urn:contentItem:62H0-9BX1-JD7N-K2NJ-00000-00&idtype=PID&context=1516831)

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13. [*Midwest Row Crop Collaborative Receives $1.6 Million HSBC Bank USA Grant*](https://advance.lexis.com/api/document?id=urn:contentItem:5P51-RRX1-JDG9-Y1C5-00000-00&idtype=PID&context=1516831)

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14. [*STATEMENTS ON INTRODUCED BILLS AND JOINT RESOLUTION; Congressional Record Vol. 167, No. 67 (Senate - April 19, 2021)*](https://advance.lexis.com/api/document?id=urn:contentItem:62GS-FRX1-F0YC-N1T2-00000-00&idtype=PID&context=1516831)

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15. [*Woodland decline could scupper climate targets*](https://advance.lexis.com/api/document?id=urn:contentItem:62F8-0XH1-F072-42B0-00000-00&idtype=PID&context=1516831)

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16. [*Struan Stevenson: Think the Greens are fluffy? Think again. They are dangerous eco-Marxists*](https://advance.lexis.com/api/document?id=urn:contentItem:62H0-4GJ1-F0JC-M2FJ-00000-00&idtype=PID&context=1516831)

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17. [*Federal Register: Removal of Emerald Ash Borer Domestic Quarantine Regulations Pages 81085 - 81095 [FR DOC #2020-26734]*](https://advance.lexis.com/api/document?id=urn:contentItem:61JJ-YCN1-F0YC-N3CT-00000-00&idtype=PID&context=1516831)

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18. [*Innovative nature projects awarded funding to drive private investment*](https://advance.lexis.com/api/document?id=urn:contentItem:634P-7111-JD3Y-Y4GD-00000-00&idtype=PID&context=1516831)

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19. [*Innovative nature projects awarded funding to drive private investment*](https://advance.lexis.com/api/document?id=urn:contentItem:634M-XJ71-JC7J-N2J4-00000-00&idtype=PID&context=1516831)

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20. [*Innovative nature projects awarded funding to drive private investment*](https://advance.lexis.com/api/document?id=urn:contentItem:634P-CG41-F12F-F001-00000-00&idtype=PID&context=1516831)

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21. [*Proposed $2.9bn Urannah dam in Queensland could return as little as 26c per dollar*](https://advance.lexis.com/api/document?id=urn:contentItem:619X-V3X1-DY4H-K066-00000-00&idtype=PID&context=1516831)

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22. [*Innovative nature projects awarded funding to drive private investment*](https://advance.lexis.com/api/document?id=urn:contentItem:634P-7111-JD3Y-Y4MS-00000-00&idtype=PID&context=1516831)

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23. [*Innovative nature projects awarded funding to drive private investment*](https://advance.lexis.com/api/document?id=urn:contentItem:634X-WX21-F0YC-N27Y-00000-00&idtype=PID&context=1516831)

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24. [*It's not too late: 5 ways to improve the government's plan for threatened wildlife*](https://advance.lexis.com/api/document?id=urn:contentItem:61V1-5311-F0YC-N1C1-00000-00&idtype=PID&context=1516831)

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25. [*Federal Register: Revision of Delegations of Authority Pages 65500 - 65524 [FR DOC #2020-20092]*](https://advance.lexis.com/api/document?id=urn:contentItem:612X-13T1-F0YC-N334-00000-00&idtype=PID&context=1516831)

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26. [*What's Really Behind Corporate Promises on Climate Change?*](https://advance.lexis.com/api/document?id=urn:contentItem:622P-8R01-DYR7-C3P5-00000-00&idtype=PID&context=1516831)

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27. [*Plucked from thin air Elon Musk is offering $100m for the best carbon capture technology, but the truth is there are already many ways to take carbon out of the atmosphere, writes Andy Martin*](https://advance.lexis.com/api/document?id=urn:contentItem:62FF-YXK1-F072-43VR-00000-00&idtype=PID&context=1516831)

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28. [*Spinning emissions: Australia's climate projections are not what they seem*](https://advance.lexis.com/api/document?id=urn:contentItem:61GX-99F1-DY4H-K20B-00000-00&idtype=PID&context=1516831)

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29. [*Spinning emissions: Australia's climate projections are not what they seem*](https://advance.lexis.com/api/document?id=urn:contentItem:61H1-T2T1-DY4H-K0XJ-00000-00&idtype=PID&context=1516831)

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30. [*Forbidden fruits*](https://advance.lexis.com/api/document?id=urn:contentItem:61J5-R4G1-JBPJ-719B-00000-00&idtype=PID&context=1516831)

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31. [*COLORADO WILDERNESS ACT OF 2021; Congressional Record Vol. 167, No. 36 (House of Representatives - February 25, 2021)*](https://advance.lexis.com/api/document?id=urn:contentItem:623F-X0C1-F0YC-N3KN-00000-00&idtype=PID&context=1516831)

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32. [*Kenya : Nairobi is losing green spaces, leaving it vulnerable to disease*](https://advance.lexis.com/api/document?id=urn:contentItem:62P9-WCR1-JCH9-G2JK-00000-00&idtype=PID&context=1516831)

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33. [*Africa: Restoring 1 billion hectares would mitigate climate change*](https://advance.lexis.com/api/document?id=urn:contentItem:61NB-0R21-F00C-628F-00000-00&idtype=PID&context=1516831)

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34. [*Vegetation fires in the Anthropocene*](https://advance.lexis.com/api/document?id=urn:contentItem:693W-H851-F129-P0GS-00000-00&idtype=PID&context=1516831)

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35. [*Open Call for Proposals for Woodland Support Projects for 2021/2022 - Specification and Application Form*](https://advance.lexis.com/api/document?id=urn:contentItem:62J4-3N11-F0YC-N3MB-00000-00&idtype=PID&context=1516831)

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36. [*Food production in China requires intensified measures to be consistent with national and provincial environmental boundaries*](https://advance.lexis.com/api/document?id=urn:contentItem:693W-H841-F129-P4DY-00000-00&idtype=PID&context=1516831)

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37. [*Biden officials acknowledge role of carbon capture*](https://advance.lexis.com/api/document?id=urn:contentItem:624R-JTT1-JCN4-H538-00000-00&idtype=PID&context=1516831)

**Client/Matter:** -None-

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| News | Tijdlijn: jul 14, 2020 tot jul 14, 2021; Locatie: International; Plaats van publicatie: Europe; Taal: English |

38. [*Carbon loss from forest degradation exceeds that from deforestation in the Brazilian Amazon*](https://advance.lexis.com/api/document?id=urn:contentItem:671W-P2B1-JCWX-C2R6-00000-00&idtype=PID&context=1516831)

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39. [*Public Notices*](https://advance.lexis.com/api/document?id=urn:contentItem:6232-4G81-JCBW-N0DV-00000-00&idtype=PID&context=1516831)

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40. [*Northern Greece media highlights 15-21 May 21*](https://advance.lexis.com/api/document?id=urn:contentItem:62R6-JMW1-JC8S-C15D-00000-00&idtype=PID&context=1516831)

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41. [*The Carpathian Convention: a push to implementation*](https://advance.lexis.com/api/document?id=urn:contentItem:61CW-Y561-JDG9-Y529-00000-00&idtype=PID&context=1516831)

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42. [*Federal Energy Regulatory Commission Issues Environmental Assessment Report for National Fuel Gas Supply Corporation 's Section 157.216- Abandonment of Facilities under CP20-457*](https://advance.lexis.com/api/document?id=urn:contentItem:60FX-2F11-F0YC-N4PW-00000-00&idtype=PID&context=1516831)

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43. [*Macron's big idea: ask the voters to set France 's climate targets*](https://advance.lexis.com/api/document?id=urn:contentItem:62GV-0T01-JBNF-W0KS-00000-00&idtype=PID&context=1516831)

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44. [*Macron's big idea: ask the voters to set France 's climate targets*](https://advance.lexis.com/api/document?id=urn:contentItem:62H0-MM91-DY4H-K33G-00000-00&idtype=PID&context=1516831)

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45. [*Why the future for farming is looking up 'Vertical' growing will lead hi-tech revolution to free up land for tree planting and rewilding*](https://advance.lexis.com/api/document?id=urn:contentItem:61DP-8WR1-DYTY-C3BC-00000-00&idtype=PID&context=1516831)

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46. [*Plant-based diets crucial to saving global wildlife, says report*](https://advance.lexis.com/api/document?id=urn:contentItem:61XC-X6G1-JBNF-W0VK-00000-00&idtype=PID&context=1516831)

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47. [*Fostering a climate-smart intensification for oil palm*](https://advance.lexis.com/api/document?id=urn:contentItem:671W-P2M1-JCWX-C2F7-00000-00&idtype=PID&context=1516831)

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48. [*Bennet Introduces Legislation to Invest in Forest, Watershed Restoration Across the West*](https://advance.lexis.com/api/document?id=urn:contentItem:62GV-W171-JDG9-Y1GD-00000-00&idtype=PID&context=1516831)

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49. [*Federal Register: Agricultural Conservation Easement Program Pages 8113 - 8131 [FR DOC #2021-02268]*](https://advance.lexis.com/api/document?id=urn:contentItem:61XS-76Y1-F0YC-N4Y4-00000-00&idtype=PID&context=1516831)

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50. [*Divergent forest sensitivity to repeated extreme droughts*](https://advance.lexis.com/api/document?id=urn:contentItem:671W-P2B1-JCWX-C2KW-00000-00&idtype=PID&context=1516831)

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51. [*Agricultural Conservation Easement Program*](https://advance.lexis.com/api/document?id=urn:contentItem:61XV-NV31-JDG9-Y2WW-00000-00&idtype=PID&context=1516831)

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52. [*From farm to fork, producing meat can be an ethical pursuit*](https://advance.lexis.com/api/document?id=urn:contentItem:622M-59M1-JD7N-K2KS-00000-00&idtype=PID&context=1516831)

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53. [*Federal Register: Agricultural Conservation Easement Program Pages 8113 - 8131 [FR DOC #2021-02268]*](https://advance.lexis.com/api/document?id=urn:contentItem:61XS-76Y1-F0YC-N4YJ-00000-00&idtype=PID&context=1516831)

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54. [*Agricultural Conservation Easement Program (Updated on 04-02-2021)*](https://advance.lexis.com/api/document?id=urn:contentItem:61XV-NV31-JDG9-Y2XK-00000-00&idtype=PID&context=1516831)

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55. [*The world has missed key biodiversity goals – but these 8 changes could make all the difference*](https://advance.lexis.com/api/document?id=urn:contentItem:60XG-GB61-F0YC-N1N4-00000-00&idtype=PID&context=1516831)

**Client/Matter:** -None-

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56. [*Kashmir domicile law raises fears of losing land, culture*](https://advance.lexis.com/api/document?id=urn:contentItem:60FW-3G81-JBM6-H360-00000-00&idtype=PID&context=1516831)

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57. [*A global review of ecological fiscal transfers*](https://advance.lexis.com/api/document?id=urn:contentItem:671W-P2M1-JCWX-C2G7-00000-00&idtype=PID&context=1516831)

**Client/Matter:** -None-

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58. [*Removal of Emerald Ash Borer Domestic Quarantine Regulations*](https://advance.lexis.com/api/document?id=urn:contentItem:61JB-4TY1-F0YC-N09Y-00000-00&idtype=PID&context=1516831)

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59. [*Unrooted responses: Addressing violence against environmental and land defenders*](https://advance.lexis.com/api/document?id=urn:contentItem:6BGY-HK51-JBMY-H429-00000-00&idtype=PID&context=1516831)

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| News | Tijdlijn: jul 14, 2020 tot jul 14, 2021; Locatie: International; Plaats van publicatie: Europe; Taal: English |

60. [*Food systems are responsible for a third of global anthropogenic GHG emissions*](https://advance.lexis.com/api/document?id=urn:contentItem:693W-H841-F129-P4MF-00000-00&idtype=PID&context=1516831)

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61. [*Vision for countryside sees high-tech farming create space to rewild*](https://advance.lexis.com/api/document?id=urn:contentItem:61DJ-4FS1-DY4H-K1JH-00000-00&idtype=PID&context=1516831)

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62. [*USDA Invests $28 Million in New Projects to Help Restore Lost Wetland Functions, Benefits on Agricultural Landscapes*](https://advance.lexis.com/api/document?id=urn:contentItem:6275-FCK1-F0YC-N2XR-00000-00&idtype=PID&context=1516831)

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63. [*Northern Greece media highlights 15-21 May 21*](https://advance.lexis.com/api/document?id=urn:contentItem:62R6-JMW1-JC8S-C13V-00000-00&idtype=PID&context=1516831)

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64. [*UK-Australia trade deal: Why environmentalists are worried about bee-killing pesticides and carbon emissions*](https://advance.lexis.com/api/document?id=urn:contentItem:62XK-CR91-DY4H-K24K-00000-00&idtype=PID&context=1516831)

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65. [*Warming Oceans Are Making the Climate Crisis Significantly Worse*](https://advance.lexis.com/api/document?id=urn:contentItem:62GT-5CB1-JDG9-Y26M-00000-00&idtype=PID&context=1516831)

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66. [*USDA Grant Funding Available for Urban Agriculture and Innovative Production*](https://advance.lexis.com/api/document?id=urn:contentItem:62VM-J8M1-JDG9-Y4DM-00000-00&idtype=PID&context=1516831)

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67. [*Gabon Monthly Briefing July 2021*](https://advance.lexis.com/api/document?id=urn:contentItem:63BN-KYG1-JC8V-42TP-00000-00&idtype=PID&context=1516831)

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68. [*Speech of Baroness Boycott (CB) [V] On (01 October 2020)*](https://advance.lexis.com/api/document?id=urn:contentItem:60YX-5C01-JDG9-Y18B-00000-00&idtype=PID&context=1516831)

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69. [*Federal Energy Regulatory Commission Issues Letter requesting Florida Gas Transmission Company, LLC to file a response to data request within 10 days to assist in FERC's analysis of the certificate application for the Galveston County Project under CP20-505*](https://advance.lexis.com/api/document?id=urn:contentItem:60P8-2BF1-F0YC-N3J2-00000-00&idtype=PID&context=1516831)

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70. [*Jair Bolsonaro attacks 'international greed' over Amazon - as it happened*](https://advance.lexis.com/api/document?id=urn:contentItem:60YH-S571-JBNF-W2NS-00000-00&idtype=PID&context=1516831)

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71. [*Bundestag to make agroforestry funding a reality*](https://advance.lexis.com/api/document?id=urn:contentItem:61RX-X8D1-JCF9-42XG-00000-00&idtype=PID&context=1516831)

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72. [*Reorienting emissions research to catalyse African agricultural development*](https://advance.lexis.com/api/document?id=urn:contentItem:671W-P2B1-JCWX-C2S7-00000-00&idtype=PID&context=1516831)

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73. [*SSRP researchers define UN actions to bend the curve on biodiversity loss*](https://advance.lexis.com/api/document?id=urn:contentItem:62B3-3XV1-F0YC-N3TX-00000-00&idtype=PID&context=1516831)

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74. [*Claire Taylor: From farm to fork, meat production can be more sustainable and ethical than veganism*](https://advance.lexis.com/api/document?id=urn:contentItem:622M-0D51-F0JC-M4BW-00000-00&idtype=PID&context=1516831)

**Client/Matter:** -None-

**Search Terms:** removals and target or removals and emissions or removals and land or removals and forest or target and emissions or target and land or target and forest or emissions and land or emissions and forest or land and forest

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75. [*Federal Register: Endangered and Threatened Wildlife and Plants; Reclassifying Furbish's Lousewort (Pedicularis furbishiae) From Endangered to Threatened Status With a Section 4(d) Rule Pages 3976 - 3986 [FR DOC #2020-28978]*](https://advance.lexis.com/api/document?id=urn:contentItem:61SY-21B1-JDG9-Y104-00000-00&idtype=PID&context=1516831)

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76. [*EU urged to strengthen ETS to reach 2030 climate goals*](https://advance.lexis.com/api/document?id=urn:contentItem:618W-GSX1-JCF9-40GR-00000-00&idtype=PID&context=1516831)

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77. [*Federal Register: California Department of Water Resources and Los Angeles Department of Water and Power ; Notice of Application Accepted for Filing, Soliciting Motions To Intervene and Protests, Ready for Environmental Analysis, and Soliciting Comments, Recommendations, Preliminary Terms and Conditions, and Preliminary Fishway Prescriptions Pages 79008 - 79010 [FR DOC #2020-26929]*](https://advance.lexis.com/api/document?id=urn:contentItem:61GD-M931-JDG9-Y02N-00000-00&idtype=PID&context=1516831)

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78. [*Application: California Department of Water Resources and Los Angeles Department of Water and Power*](https://advance.lexis.com/api/document?id=urn:contentItem:61GV-7HF1-F0YC-N25C-00000-00&idtype=PID&context=1516831)

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79. [*Royal Institution Christmas Lectures: 2020: Planet Earth - A User's Guide - 03:05 AM GMT*](https://advance.lexis.com/api/document?id=urn:contentItem:61N9-1X01-JBH6-C3XD-00000-00&idtype=PID&context=1516831)

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80. [*USDA Encourages Ag Producers, Residents to Prepare for Hurricane Zeta*](https://advance.lexis.com/api/document?id=urn:contentItem:615N-JS51-F0YC-N3FN-00000-00&idtype=PID&context=1516831)

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81. [*5 ways NASA tech has been used to help life on Earth*](https://advance.lexis.com/api/document?id=urn:contentItem:6314-6G11-JDG9-Y23C-00000-00&idtype=PID&context=1516831)

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82. [*Largest US cottonised hemp facility targets high-end apparel*](https://advance.lexis.com/api/document?id=urn:contentItem:60SJ-XD71-F14X-V00D-00000-00&idtype=PID&context=1516831)

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83. [*USDA Encourages Ag Producers, Residents to Prepare for Tropical Storms Marco and Laura*](https://advance.lexis.com/api/document?id=urn:contentItem:60P8-2BF1-F0YC-N2MD-00000-00&idtype=PID&context=1516831)

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84. [*USDA Encourages Ag Producers, Residents to Prepare for Hurricane Sally*](https://advance.lexis.com/api/document?id=urn:contentItem:60V9-M061-JDG9-Y2HS-00000-00&idtype=PID&context=1516831)

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85. [*New report shows why fighting climate change and nature loss must be interlinked*](https://advance.lexis.com/api/document?id=urn:contentItem:6314-6G11-JDG9-Y23R-00000-00&idtype=PID&context=1516831)

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86. [*Federal Energy Regulatory Commission Issues Environmental Assessment Report for Enable Gas Transmission, LLC 's Sections 157.205, 157.208, 157.210, and 157.216 - Prior Notice Filing under CP20-482*](https://advance.lexis.com/api/document?id=urn:contentItem:60R9-2V51-JDG9-Y3F0-00000-00&idtype=PID&context=1516831)

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87. [*The Green Brief: Building back better?*](https://advance.lexis.com/api/document?id=urn:contentItem:6306-VXV1-JCF9-431V-00000-00&idtype=PID&context=1516831)

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88. [*Vow ASA : Breakthrough for new solution in the climate fight*](https://advance.lexis.com/api/document?id=urn:contentItem:61GV-0M51-F0YC-N3T6-00000-00&idtype=PID&context=1516831)

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89. [*-USDA Announces Grants for Urban Agriculture and Innovative Production*](https://advance.lexis.com/api/document?id=urn:contentItem:62TB-9TG1-F0K1-N01W-00000-00&idtype=PID&context=1516831)

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90. [*World heritage status for Scottish peat bogs could help UK hit net zero goals*](https://advance.lexis.com/api/document?id=urn:contentItem:618W-TB71-DY4H-K43P-00000-00&idtype=PID&context=1516831)

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91. [*Federal Register: Draft National Pollutant Discharge Elimination System (NPDES) Pesticide General Permit for Point Source Discharges From the Application of Pesticides; Reissuance Pages 4070 - 4074 [FR DOC #2021-00834]*](https://advance.lexis.com/api/document?id=urn:contentItem:61SY-21B1-JDG9-Y0XH-00000-00&idtype=PID&context=1516831)

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92. [*New Zealand Trail-Blazing Ag Emissions Regulations, Which Markets To Follow?*](https://advance.lexis.com/api/document?id=urn:contentItem:6244-KTN1-JD33-J002-00000-00&idtype=PID&context=1516831)

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93. [*Draft Permit: Draft National Pollutant Discharge Elimination System Pesticide General Permit for Point Source Discharges from the Application of Pesticides; Reissuance*](https://advance.lexis.com/api/document?id=urn:contentItem:61SY-39Y1-F0YC-N227-00000-00&idtype=PID&context=1516831)

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94. [*Timmermans: EU countries need to face the consequences of higher climate goals*](https://advance.lexis.com/api/document?id=urn:contentItem:62RT-RDR1-JCF9-428S-00000-00&idtype=PID&context=1516831)

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95. [*The Green Brief: Europe's green finance taxonomy wars, part 3*](https://advance.lexis.com/api/document?id=urn:contentItem:62GT-WMK1-DYXB-V1XP-00000-00&idtype=PID&context=1516831)

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96. [*Corporate-led $1bn forests scheme is ‘just the beginning’*](https://advance.lexis.com/api/document?id=urn:contentItem:62T4-RNJ1-JB77-K08B-00000-00&idtype=PID&context=1516831)

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97. [*Council of the European Union: COMMISSION STAFF WORKING DOCUMENT EXECUTIVE SUMMARY OF THE IMPACT ASSESSMENT REPORT Accompanying the document COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS Stepping up Europe’s 2030 climate ambition Investing in a climate-neutral future for the benefit of our people PDF document ST 10865 2020 ADD 317-09-2020*](https://advance.lexis.com/api/document?id=urn:contentItem:60YG-W0J1-JDG9-Y224-00000-00&idtype=PID&context=1516831)

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98. [*Pandemic has made people reassess the importance of environment, says Ryan Cycle lanes, improved rail transport, accessible cities, forests, bogs and wind farms are all passions for a Minister keen for change*](https://advance.lexis.com/api/document?id=urn:contentItem:61JH-DND1-JC8Y-84FR-00000-00&idtype=PID&context=1516831)

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99. [*Farmers to be paid to pave paradise: £20m annual fund could create more parking spaces under plan to give walkers better access to the country*](https://advance.lexis.com/api/document?id=urn:contentItem:630F-0261-DY4H-K40B-00000-00&idtype=PID&context=1516831)

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100. [*Half the trees in two new English woodlands planted by jays, study finds*](https://advance.lexis.com/api/document?id=urn:contentItem:62XS-PRB1-JBNF-W50P-00000-00&idtype=PID&context=1516831)

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# [***CDC advisers recommend restarting use of Johnson & Johnson coronavirus vaccine in US - live***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:62H7-F611-DY4H-K2VX-00000-00&context=1516831)

The Guardian (London)

April 23, 2021 Friday 2:08 PM GMT

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**Section:** US NEWS; Version:21

**Length:** 11072 words

**Byline:** Sam Levin in Los Angeles and Joanna Walters in New York

**Highlight:** CDC will likely agree to lift pause in administration of vaccineJoe Biden urges world leaders to invest in green energyCaitlyn Jenner announces run for California governor

**Body**

block-time published-time 12.23am BST

Alabama enacts ban on trans youth athletes

Alabama's governor has signed into law a bill banning transgender youth from playing on the sports teams that match their gender, making it the fourth state this year to pass an anti-trans law ***targeting*** school athletics.

Republican governor Kay Ivey signed the Alabama bill today, which restricts trans students from participating in K-12 sports. GOP governors in Mississippi, Tennessee and Arkansas have signed similar measures this year, and Idaho passed the first anti-trans sports ban last year, but the law has been challenged in court.

Other states have also passed laws outlawing trans youth healthcare, part of a [*wave of anti-trans bills*](https://www.theguardian.com/us-news/2021/mar/23/anti-trans-bills-us-transgender-youth-sports) that experts say are rooted in misinformation and will have devastating consequences for vulnerable children.

Some Republican governors have rejected anti-trans sports bans, including North Dakota's governor Doug Burgum this week. The Democratic governor of Kansas vetoed a similar bill on Thursday, saying, "This legislation sends a devastating message that Kansas is not welcoming to all children and their families, including those who are transgender - who are already at a higher risk of bullying, discrimination, and suicide."

Our earlier coverage:

Related: [*How trans children became 'a political football' for the Republican party*](https://www.theguardian.com/us-news/2021/mar/23/anti-trans-bills-us-transgender-youth-sports)

Related: [*Trans kids on the Republican bills* ***targeting*** *them: 'I'm not a problem to society'*](https://www.theguardian.com/us-news/2021/mar/30/trans-kids-rights-republican-state-bills-healthcare-sports)

block-time published-time 11.29pm BST

My colleague Jessica Glenza has more details on the Centers for Disease Control and Prevention (CDC) advisors' recommendation that Johnson & Johnson's Covid-19 vaccine should be distributed with a warning label affixed:

The change comes after distribution of the Johnson & Johnson vaccine was temporarily halted while scientists investigated rare but dangerous blood clots with low platelet counts linked to the shot.

"This pause was essential to our ability to inform the public, inform physicians and the acquire more data for presentation and for analysis," said Dr Jose Romero, chair of the CDC's committee on immunization practices, which advises on how to best use vaccines. The committee vote was 10 to four in favor of recommending the vaccine for adults older than 18. There was one abstention.

Health authorities at the CDC and the Food and Drug Administration (FDA) put Johnson & Johnson's vaccine distribution on "pause" on 13 April while six cases of very rare blood clots in women aged 18-49 were investigated.

enltr4. About 4M of the J&J doses used so far were given to women. The risk seemed highest among women in their 30s. (It's early days. A few additional cases in another age group could change this picture quickly.) [*pic.twitter.com/uXamw0EmEw*](https://t.co/uXamw0EmEw)

- Helen Branswell (@HelenBranswell) [*April 23, 2021*](https://twitter.com/HelenBranswell/status/1385631607151808518?ref_src=twsrc%5Etfw)

Since the pause, scientists have found nine more cases of the clots. That means among the more than 7.98m doses of Johnson & Johnson distributed, vaccine safety monitoring systems found 15 total cases. Doctors on the panel said the fact researchers were able to identify the very rare associated disorder shows the strength of US vaccine safety monitoring.

All confirmed cases were among women, most were middle-aged. Two were cases in women older than 50. The Johnson & Johnson clinical trial also found one case in a male and cases among men are under investigation.

Read more:

Related: [*Johnson & Johnson vaccine can be distributed with warning, advisers to CDC say*](https://www.theguardian.com/us-news/2021/apr/23/johnson-and-johnson-covid-vaccine-cdc-warning-label)

block-time updated-timeUpdated at 11.38pm BST

block-time published-time 11.12pm BST

In the San Francisco Bay Area, an officer who fatally shot two people in separate incidents is facing criminal charges.

Officer Andrew Hall, a deputy with the Contra Costa county sheriff's office, who was assigned to the Danville police department, was charged on Wednesday with manslaughter and assault in the fatal shooting of an unarmed civilian in November 2018. Hall shot Laudemer Arboleda, a 33-year-old Filipino man, nine times during a slow-moving car chase.

Body-camera footage was also released this week showing an incident from last month where Hall shot and killed a Black man in the middle of a busy intersection about a minute after trying to stop him on suspicion of throwing rocks at cars.

The video released this week shows Hall shooting Tyrell Wilson, 33, within seconds of asking him to drop a knife on 11 March in Danville.

More details here:

Related: [*California officer charged in previous shooting kills Black man at intersection, video shows*](https://www.theguardian.com/us-news/2021/apr/23/tyrell-wilson-police-shooting-san-francisco-bay-area)

block-time updated-timeUpdated at 11.23pm BST

block-time published-time 10.39pm BST

An unprecedented GOP effort to audit the vote in Maricopa county, Arizona got off to a rocky start today.

A state judge has ordered the effort halted over concerns the auditors were not complying with state law. The audit ultimately wasn't stopped, however, because the state Democratic party, which brought the lawsuit, declined to put up a $1m bond ordered by the judge to incur any lost funds during the pause, [*according to the Arizona Mirror*](https://www.azmirror.com/2021/04/23/dems-wont-post-1m-bond-so-election-audit-wont-be-paused/).

A reporter for the Arizona Republic tweeted on Monday that those counting the ballots had pens with blue ink - a huge no-no among election officials because voters usually use black or blue ink to mark election officials. The reporter, who was only allowed into the audit because she signed up to work as an election worker, was later banned from tweeting updates.

enltrDoug is running this audit. He told me that his understanding was that blue ink was fine - that the ballots only read black ink. Then he came back and said actually it seems I am correct. But he still seemed unsure. He said that they would work on this.

- Jen Fifield (@JenAFifield) [*April 23, 2021*](https://twitter.com/JenAFifield/status/1385646569052020737?ref_src=twsrc%5Etfw)

enltrI've been banned from further updates until my shift is over.

- Jen Fifield (@JenAFifield) [*April 23, 2021*](https://twitter.com/JenAFifield/status/1385657495528505344?ref_src=twsrc%5Etfw)

Republicans are counting all 2.1m ballots cast in Maricopa county, the largest in Arizona, even though two county audits have certified the validity of election results there. Election experts have said the audit is unnecessary and appears to be a [*thinly-veiled*](https://www.theguardian.com/us-news/2021/apr/22/arizona-republicans-begin-audit-2020-election-ballots) effort to stoke fears about election results.

During a press call on Friday, experts in election administration said they were deeply concerned about how little transparency the audit team was disclosing into their processes, including the exact processes and standards counters would use to adjudicate ballots and if and how the equipment being used had been tested. There are also lingering questions about who is funding the effort - the final cost is much higher than the $150,000 the Arizona senate allocated - and transparency, as reporters are not currently being allowed to monitor the event.

"It just feels so reckless to me," said Jennifer Morrell, a former Colorado election official who specializes in election audits. "We're setting a new precedent...we're completely circumventing all the guardrails that are already in place, all the guardrails that are already there."

block-time published-time 10.26pm BST

California moves to ban fracking by 2024

Hi all - Sam Levin in Los Angeles here, continuing our live coverage for the rest of the day.

In California, the governor has moved today to ban new fracking permits by 2024 and halt all oil extraction by 2045. Gavin Newsom issued an executive order that paves the way for the state to halt new fracking permits within the next few years, directing the state's department of conservation to draft a mandate by 2024. His order also directs the state's air resources board to consider how to enact a ban on all extraction over the next 25 years.

California is America's largest state and produces [*the third largest amount of oil*](https://www.theguardian.com/us-news/2021/mar/12/kern-oil-field) in the country. It would be the first state to end all extraction. My colleague [*Maanvi Singh*](https://www.theguardian.com/profile/maanvi-singh) has the details here:

Related: [*California takes steps to ban fracking by 2024 and will halt oil extraction by 2045*](https://www.theguardian.com/us-news/2021/apr/23/california-fracking-ban-oil-extraction)

block-time published-time 10.19pm BST

Interim summary

After that important news from the CDC advisory panel, the US east coast team will now hand the blog over to the west coast team, where Sam Levin will take readers through the next few hours.

Lots more to come as the news of the J&J vaccine develops further, so do stay tuned.

Main news today so far includes:

* CDC advisory panelrecommends re-starting administration of Johnson & Johnson coronavirus vaccine after a lengthy pause to assess risks of exceptionally rare blood clotting in a very small number of women.

1. A US Capitol Police officer testified today against a New York man accused of threatening to kill members of Congress.
2. When Joe Biden visits the UK in June in the first overseas trip of his presidency, he will not only attend the G7 meeting in Cornwall, the county in the south-west of England, but he will have a bilateral encounter with British prime minister Boris Johnson.
3. Biden to address a joint session of Congress next Wednesday and travel to Georgia on Thursday, his 100th day in office.
4. Jennifer Granholm, US energy secretary, said at the virtual climate summit this morning that clean technology was "our generation's moonshot".
5. Caitlyn Jenner, the former Olympic decathlete, reality TV star and transgender activist, has filed her initial paperwork to run for governor of California.
6. Joe Biden opened the second and last day of the virtual global summit on the climate crisis by addressing the task of ***removing*** carbon dioxide from the atmosphere to help curb heating (in addition to cutting greenhouse gas ***emissions***), saying that the US " looks forward to working with Russia and other countries in that endeavor. It has great promise."

block-time published-time 10.04pm BST

Members of the CDC's Advisory Committee for Immunization Practices agreed the benefits of the Johnson & Johnson vaccine outweigh the risks from extremely rare instances of blood clots linked with the vaccine.

The one-shot vaccine, manufactured by J&J subsidiary Janssen, can resume in the US after a second week of being paused out of what the government called "an abundance of caution".

The language of the vote by the advisory panel said: "The Janssen Covid-19 vaccine is recommended for persons 18 years of age and older in the U.S. population under the FDA's emergency use authorization", CNN [*reported*](https://www.cnn.com/world/live-news/coronavirus-pandemic-vaccine-updates-04-23-21/index.html).

"The vote is 10 in favor, four opposed and one abstention. The motion carries," Dr. Jose Romero, Arkansas secretary of health and chair of ACIP, said, the cable news channel added.

Earlier, the US's top infectious diseases official, Anthony Fauci, had said the risks of Covids-19 "far outweighs the risk of this very, very rare occurrence [of blood clots]"

CDC director Rochelle Walensky said earlier that there are "plenty of people who are interested" in receiving the J&J vaccine.

block-time published-time 9.56pm BST

CDC advisers recommend re-starting administration of Johnson & Johnson coronavirus vaccine

This means it's likely that the Centers for Disease Control and Prevention (CDC) will agree that the pause in administration of the J&J vaccine can be lifted for people in the US over the age of 18.

We'll wait for more details coming out of the CDC HQ in Atlanta and bring you that shortly.

block-time published-time 9.52pm BST

Georgia's state attorney general has resigned as chairman of the national Republican Attorneys General Association.

Georgia's top prosecutor has resigned as chairman of the national Republican Attorneys General Association, saying he has had a "fundamental difference of opinion" with some of the other 24 members since the group encouraged the crowd that [*breached the US Capitol*](https://www.theguardian.com/us-news/2021/jan/09/us-capitol-insurrection-white-supremacist-terror) on January 6.

Chris Carr, Georgia's GOP attorney general and a potential US Senate candidate, wrote in a letter last week that he was quitting as the leader of the association because of an [*irreconcilable rift*](https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwi7g83vlJDwAhVwmuAKHSouDQYQFjAAegQIAxAD&url=https%3A%2F%2Fwww.ajc.com%2Fpolitics%2Fgroup-chaired-by-chris-carr-called-trump-supporters-to-urge-them-to-march-to-us-capitol%2FWYK2VIQG7RG7RKWDKLHWWKCJhl%2F&usg=AOvVaw2-UwE_T1vUwW3ckxmXcHP9) over the organization's direction, the Atlanta Journal Constitution [*reports*](https://www.ajc.com/politics/politics-blog/carr-steps-down-from-republican-ags-group-under-fire-for-robocall/OIZLANHRWFDUDLK7AYOGZHCShl/).

His letter cited the departure of the group's executive director, Adam Piper, who [*resigned shortly*](https://www.ajc.com/news/nation-world/republican-ags-group-leader-quits-over-call-pushing-protest/ICVZ5FEYTBC2DLMUFW7ND4C34I/) after it was revealed that RAGA's policy arm paid for robocalls urging supporters of then-President Donald Trump to march on the Capitol to press for overturning the outcome the election the day of the riot.

"The fundamental difference of opinion began with vastly opposite views of the significance of the events of January 6 and the resistance by some to accepting the resignation of the executive director," Carr wrote [*in the April 16 letter*](https://www.documentcloud.org/documents/20685685-raga-chair-resignation-letter-41621) obtained by The Atlanta Journal-Constitution.

"The differences have continued as we have tried to restore RAGA's reputation internally and externally and were reflected once again during the process of choosing the next executive director."

Carr's spokeswoman has repeatedly said he had no knowledge or involvement in the robocalls, which were promoted by the Rule of Law Defense Fund. He's also condemned the violence and joined other AGs who declared that "such actions will not be allowed to go unchecked."

It's not immediately clear what led to his resignation, as Carr previously indicated he would stay in his leadership post and work to overhaul the organization from within. But the decision to distance himself from RAGA comes as Carr weighs a challenge to U.S. Sen. Raphael Warnock, a newly elected Democrat who is up for reelection in November 2022.

You can read the [*full report here*](https://www.ajc.com/politics/politics-blog/carr-steps-down-from-republican-ags-group-under-fire-for-robocall/OIZLANHRWFDUDLK7AYOGZHCShl/).

block-time published-time 9.32pm BST

Ted Cruz "maintains ties to right-wing group" despite its extremist messaging - report.

Now here comes a Washington Post investigation about the polarizing Texas right-wing Senator (so illuminatingly played on Saturday Night Live by Aidy Bryant these days).

The real thing: Ted Cruz (left) on Capitol Hill this week, with Senator Lindsey Graham. Photograph: Chip Somodevilla/Getty Images

The newspaper brings us this intriguing story:

On Aug. 4, 2019, the day after a gunman who had posted a hateful diatribe against Hispanics fatally shot 23 people at an El Paso Walmart, a leader of a tea party group in Texas said on Facebook: "You're not going to demographically replace a once proud, strong people without getting blow-back."

His wife, the founder of the group, in the Fort Worth suburbs of Tarrant County, added in a comment: "I don't condone the actions, but I certainly understand where they came from."

Ten days later, amid a brewing backlash over the comments by Fred and Julie McCarty, the Northeast Tarrant Tea Party posted an undated testimonial from Sen. Ted Cruz (R-Tex.) wishing the group a happy 10th anniversary as it rebranded itself as True Texas Project.

"Thank you for the incredible work you do," Cruz said, in the only on-camera endorsement from an elected official posted on the group's [*Facebook*](https://www.facebook.com/TrueTexasProject/videos/2488046858081334/?t=7) and [*YouTube*](https://www.youtube.com/watch?v=TGkeQAhTKnU) pages to mark the occasion. "Julie, Fred, thank you for your passion."

A Washington Post review of True Texas Project's activities and social media shows that Cruz has continued to embrace the group, even as its nativist rhetoric and divisive tactics have alienated some other conservative elected officials. Cruz's father, a frequent campaign surrogate for his son, spoke at a meeting of the group shortly after the Jan. 6 Capitol riot, at a time when the group's leadership was defending the pro-Trump mob on social media.

A spokeswoman did not respond to a request for an interview with the senator or to specific questions about TTP. "The Senator is not aware of every tweet, post, or comment of activists in the state of Texas," the spokeswoman, Erin Perrine, said in a statement.

"If you want to know what he thinks on any issue - feel free to look at his decades-long record. Sen. Cruz is unequivocal in his denunciation of any form of racism, hatred, or bigotry."

In 2019, Cruz condemned the El Paso shooting as "a heinous act of terrorism and white supremacy." The gunman's manifesto had railed against a " [*Hispanic invasion of Texas*](https://www.washingtonpost.com/history/2019/08/05/hispanic-invasion-white-nationalist-version-texas-that-never-existed/?itid=lk_inline_manual_12) ," and many of those killed or wounded were Hispanic.

Cruz's ongoing ties to TTP contrast with the group's fraught relationship with much of the Republican establishment in Texas.

There is a lot more to this report and you can [*read the full story here*](https://www.washingtonpost.com/investigations/ted-cruz-maintains-ties-to-right-wing-group-despite-its-extremist-messaging/2021/04/23/64387376-8e58-11eb-aff6-4f720ca2d479_story.html).

Saturday Night Live's Alex Moffat as Tucker Carlson, Kate McKinnon as Lindsey Graham, and Aidy Bryant as Ted Cruz during the "Second Impeachment Trial" Cold Open on Saturday, February 13, 2021. Photograph: NBC/NBCU Photo Bank/Getty Images

It will be two years since the mass shooting in El Paso in August.

Related: [*'It was fueled by hate and bigotry': one year on from the El Paso shooting*](https://www.theguardian.com/us-news/2020/aug/03/el-paso-shooting-texas-one-year-anniversary)

block-time published-time 9.21pm BST

Lawmakers urge Biden to back 'moral' patent waiver to speed vaccine access.

Bernie Sanders, center, talks to members of the press earlier this month on Capitol Hill. Photograph: Michael Reynolds/EPA

Reuters reports:

US lawmakers and nonprofit groups today heaped pressure on the Biden administration to back a temporary patent waiver for Covid-19 vaccines to help poor countries contain the pandemic.

The groups delivered a petition signed by two million people, adding to separate letters already sent to the US president, Joe Biden, by a group of senators, House of Representatives Speaker Nancy Pelosi, nearly 100 members of the House and 60 former heads of state and 100 Nobel Prize winners.

Senator Bernie Sanders said it was also in the United States' own interest to ensure as many people were vaccinated as quickly as possible, to limit the chance of virus mutations that could prompt further U.S. lockdowns.

But he also appealed to Biden's desire to rebuild U.S. credibility in the world.

"On this enormously important health issue, this moral issue, the United States has got to do the right thing," he told a news conference.

The United States and a handful of other big countries have blocked negotiations at the World Trade Organization (WTO) involving a proposal spearheaded by India and South Africa that now has the support of 100 WTO members.

The proposal would temporarily waive the intellectual property (IP) rights of pharmaceutical companies to allow developing countries to produce vaccines. Proponents are pushing Washington to change course ahead of the next formal WTO meeting on the issue on May 5.

One source briefed on the issue told Reuters U.S. trade officials realized "that something needs to be done, whether it's the TRIPS waiver or some other solution," a reference to the WTO's Trade-Related Aspects of Intellectual Property agreement.

Vaccinating an elderly woman against coronavirus in Mexico City. Photograph: Alfredo Estrella/AFP/Getty Images

block-time published-time 9.00pm BST

Decision awaited on Johnson & Johnson Covid-19 vaccine

Vaccine advisers to the US Centers for Disease Control and Prevention are considering four choices for changing the agency's recommendation on Johnson & Johnson's coronavirus vaccine, including label changes or a complete end to its use.

The CDC's Advisory Committee on Immunization Practices is [*holding an emergency meeting*](https://www.cnn.com/2021/04/13/health/johnson-vaccine-pause-cdc-fda/index.html) and is expected to vote later today on recommendations, [*CNN reports*](https://www.cnn.com/world/live-news/coronavirus-pandemic-vaccine-updates-04-23-21/index.html).

The cable news channel continues, on its website:

At issue: The vaccine has been linked to 15 cases of a rare blood clotting condition called thrombosis with thrombocytopenia syndrome, or TTS, all among women. Three have died.

It's a tricky question because all but two cases have been in women under the age of 50, and no cases have been reported among men since the vaccine has been in general use, although the CDC says it's unlikely the risk is zero among men.

CDC staff laid out several possible scenarios, all of which show that while resuming vaccination would result in more cases of blood clots, adding the J&J shot to the mix of available vaccines would save lives and keep people out of the hospital.

The committee's four possible choices are:

* Recommend against use for all persons

1. Reaffirm recommendation for all age and sex - US Food and Drug Administration to include warning statement with emergency use authorization
2. Recommend vaccination only for adults aged 50 or older
3. Reaffirm recommendations for use; women aged under 50 should be aware of the increased risk of TTS, and may choose another Covid-19 vaccine (ie mRNA vaccines)

Earlier, Johnson & Johnson officials said they had agreed with the FDA on new wording to add to the label saying the risk of blood clots is plausible and warning of the risks.

Eugenio Brito, Vice President of Bodegas of America receives a Pfizer vaccination shot at an event to announce five new walk-in pop-up vaccination sites for New York City Bodega, grocery store and supermarket workers amid the coronavirus disease (Covid-19) pandemic, in the Harlem section of Manhattan in New York City, earlier today. Photograph: Mike Segar/AFP/Getty Images

block-time published-time 8.49pm BST

New York man in court over threats to kill members of Congress

A US Capitol Police officer testified Friday against a New York man accused of threatening to kill members of Congress.

Nancy Pelosi and Chuck Schumer taking part in a ceremony to honor US Capitol Police officer William Evans, killed in at attack in Washington, DC, earlier this month. Photograph: Reuters

He recounted how police struggled to quell the "surreal" [*January 6 insurrection*](https://www.theguardian.com/us-news/2021/jan/09/us-capitol-insurrection-white-supremacist-terror) in Washington, DC.

The Associated Press further reports that:

The defendant in the case, Brendan Hunt, was not part of the siege on January 6. But prosecutors in federal court in Brooklyn sought to use the testimony of Special Agent Christopher Desrosiers to frame the episode as a further catalyst for Hunt's alleged call to massacre members of Congress.

Desrosiers, believed to be the first member of the Capitol force to testify at a criminal trial related to the insurrection, described for the jury how he was assigned to track the mob violence from nearby command center and was shocked to hear radio chatter of his colleagues "yelling for help."

Asked what he was thinking at time, he said: "For myself, 'surreal' comes to mind."

He testified that his team scrambled to figure out how to evacuate Vice President Mike Pence and lawmakers. But the evacuation was called off when "a sea of backup came and we were able to re-secure the building," he said.

Hunt, 37, an analyst for the New York court system, has pleaded not guilty to charges alleging, in part, that he called for the killings of lawmakers, including House Speaker and California Democrat Nancy Pelosi, New York Democratic congresswoman Alexandria Ocasio-Cortez and New York Democratic Senator and majority leader Chuck= Schumer.

Prosecutors say it was part of a monthlong online campaign to urge violence against members of Congress that culminated on January 8 in an 88-second video titled: "Kill your senators. Slaughter them all."

Prosecutors allege Hunt was trying to inspire violence against members of Congress on Inauguration Day (Jan 21) as a follow up to the Jan. 6 attack.

Defense attorneys have called the charges overblown and argued that there's no proof that Hunt was a legitimate threat.

One of his lawyers, Jan Rostal, told jurors they could label her client "an idiot or clown," but the First Amendment blocked his conviction on a criminal charge which could carry a decade in prison.

AOC speaks during a press conference to re-introduce the Green New Deal for environmentally-friendly economic development and action to tackle the climate crisis, earlier this week. Photograph: Mandel Ngan/AFP/Getty Images

block-time published-time 8.35pm BST

The US Justice Department [*has charged a Capitol rioter*](http://cdn.cnn.com/cnn/2021/images/04/23/chapman.bumble.pdf) who was turned in by someone he matched with on the dating app Bumble, after he bragged about his exploits on [*January 6*](https://www.theguardian.com/us-news/us-capitol-breach).

Trump supporters gather outside the Capitol in Washington on January 6, before the mobs invaded while both chambers of Congress were in session, working to certify Joe Biden's victory in the 2020 election. Photograph: John Minchillo/AP

According to court documents, one week after the attack, Robert Chapman of New York told one of his Bumble matches that "I did storm the Capitol" and said that he "made it all the way into Statuary Hall." He also claimed that he was interviewed by members of the media. [*CNN reports*](https://www.cnn.com/2021/04/23/politics/bumble-capitol-riot-robert-chapman/index.html) that the other Bumble user replied, "we are not a match."

Prosecutors said the user then quickly reached out to the FBI and provided screenshots of the conversation.

Investigators said in court filings that they corroborated Chapman's claims by comparing his Bumble profile picture to body camera footage from police officers who were inside the Capitol.

Chapman was charged with four misdemeanors, including disorderly conduct on Capitol grounds. He hasn't entered a plea and his lawyer didn't respond to a request for comment on the charges.

According to screenshots in court filings, Chapman also posted to Facebook before the January 6 insurrection that he was traveling to the "District of Criminality," referring to Washington, DC. And on the day of the attack, he allegedly posted, "I'M F---IN INSIDE THE CRAPITOL."

Incriminating [*social media posts*](http://www.cnn.com/2021/04/19/politics/qanon-russia-china-amplification/index.html) like these have become a hallmark of the Capitol riot investigation. In dozens of cases, prosecutors quoted rioters' posts from Facebook, Twitter, TikTok, Parler, Snapchat, and other sites where they bragged about their alleged crimes.More than 390 people have been charged with federal crimes in connection with the attack.

According to court records, Chapman was arrested on Thursday and released by a federal magistrate judge in the Southern District of New York. Most Capitol riot defendants who aren't charged with violent crimes -- including Chapman -- have been released from jail before trial.

block-time published-time 8.19pm BST

Joe Biden has closed out a two-day climate summit of more than 40 world leaders by warning that the planet risks reaching the [*"point of no return"*](https://viewer.gutools.co.uk/us-news/2021/apr/23/joe-biden-climate-summit-jobs-plan) if more isn't done to escalate efforts to constrain the climate crisis.

Here's a sneak preview and truncated version of Oliver Milman's latest explainer, which will be live, in full, on the website before long.

Biden, along with several other national leaders, made a number of new promises in the summit. Here's what it all means.

What has Joe Biden promised at the summit ?

As its centerpiece announcement, the Biden administration has said planet-heating ***emissions*** will be cut by [*50%-52% by 2030*](https://viewer.gutools.co.uk/us-news/2021/apr/22/us-emissions-climate-crisis-2030-biden). The ***target*** was officially submitted to the United Nations as part of an overarching global system where countries submit voluntary ***emissions*** reduction goals in order to collectively avoid dangerous global heating.

On top of this, the summit saw an American promise to double financial aid for developing countries struggling with the escalating droughts, floods, heatwaves and other impacts of the climate crisis...The White House hopes the new commitments will spur other countries to do more.

Is that enough to deal with the threat of climate change?

No. But then very little at this stage is sufficient. Despite decades of warnings from scientists, global greenhouse gas ***emissions*** have continued to soar, [*only dipping last year due to pandemic-related shutdowns*](https://viewer.gutools.co.uk/environment/2021/apr/20/carbon-emissions-to-soar-in-2021-by-second-highest-rate-in-history). The cuts required to stave off truly disastrous global heating are [*now precipitously steep*](https://www.ipcc.ch/sr15/chapter/spm/) - reduce by around half this decade and then to zero by 2050.

Some activists feel the US could be doing more, with a group of protesters dumping wheelbarrows of manure outside the White House on Thursday. The climate aid pledge has also been criticized as "very low" by ActionAid USA.

Conversely, the US goal is one of the most ambitious for a developed country. "Is it enough? No," said John Kerry, Biden's climate envoy. "But it's the best we can do today and prove we can begin to move."

How will big reductions in ***emissions*** change Americans' lives?

***Emissions*** have been gradually declining in the US for several years, largely due to the collapse of the ailing coal industry. Cutting ***emissions*** in half within a decade will require far more aggressive, and noticeable, changes - an explosion in solar and wind jobs, a rapid shift to electric cars, the refitting of energy inefficient buildings, the demise of coal country, a revamp of farming practices.

Biden has framed this unprecedented transition as a glorious economic opportunity - "when I think of climate change, I think of jobs" has become a presidential slogan.

How likely is it Biden will be able to deliver this?

There are [*record levels of alarm among the American public*](https://www.reuters.com/article/us-climatechange-usa-attitudes-trfn/alarm-over-climate-change-rising-among-americans-survey-shows-idUSKBN1ZF2XM) over the climate crisis, with majorities of both Democratic and Republican voters supporting action to bring down ***emissions***. Big business, unions and city leaders have also swung strongly behind the push for a federal response.

Imposing barriers remain in Congress, however, where Republicans have clung onto Trump-era rhetoric that acting on the climate crisis will harm the economy...At some point Biden will have to bring in 'sticks' as well as 'carrots', such as a tax on carbon ***emissions*** and a directive to utilities to phase out fossil fuels. Again, such measures face huge hurdles in Congress.

Rainforests help protect against global heating as well as being a vital habitat for critters, such as this gorgeous toucan, and ***forest***-dwelling humans. Photograph: Tami Freed/Alamy

block-time published-time 8.00pm BST

US climate commitments turns spotlight on China and Russia

It has been notable this week that Russia spoke of commitments to tackling the climate crisis yet declined to put a number on it.

Now our environment correspondent in London, [*Fiona Harvey*](https://www.theguardian.com/profile/fiona-harvey) , brings a wrap of the two day global leaders' virtual summit, turning to China, writing thus:

The US, the world's second biggest emitter of greenhouse gases, is now [*committed to halving* ***emissions*** *this decade*](https://www.theguardian.com/us-news/2021/apr/22/us-emissions-climate-crisis-2030-biden).

Joe Biden's announcement, at a White House virtual climate summit, has thrown the spotlight clearly on the world's biggest emitter: China.

China is responsible for roughly a quarter of global greenhouse gas ***emissions***, and is likely to increase its carbon output this year. Without strong action from [*China*](https://www.theguardian.com/world/china) , the world will be unable to hold back climate breakdown.

The country has a long-term ***target*** of reaching net zero ***emissions*** by 2060 but has yet to produce a [*national plan for its* ***emissions*** *this decade*](https://www.theguardian.com/environment/2021/apr/23/which-country-has-made-the-biggest-climate-commitment) , as required under the 2015 Paris climate agreement.

At the White House climate summit, China was not expected to announce any major new initiative - the country would prefer not to be seen as acting in response to the US, with whom relations have recently been strained.

But Xi Jinping, the president of China, made a [*cordial and well-received speech*](http://www.xinhuanet.com/english/2021-04/22/c_139899289_2.htm) in which he promised further action on clean energy and said China would cause its consumption of coal to peak around the middle of this decade.

He said: "China will strictly control coal-fired power generation projects, and strictly limit the increase in coal consumption over the 14th five-year plan period [2021-25], and phase it down in the 15th five-year plan period [2026-30]."

Xi's commitment was positive but did not mark a breakthrough, climate experts said, as it would still allow for the construction of hundreds of coal-fired power stations [*planned for the next five years*](https://www.theguardian.com/world/2021/mar/05/china-five-year-plan-emissions).

You can read the rest of the report [*here*](https://www.theguardian.com/environment/2021/apr/23/bidens-pledge-to-slash-us-emissions-turns-spotlight-on-china).

Related: [*Biden's pledge to slash US* ***emissions*** *turns spotlight on China*](https://www.theguardian.com/environment/2021/apr/23/bidens-pledge-to-slash-us-emissions-turns-spotlight-on-china)

The piece also notes that there could be no way to avoid climate catastrophe without weaning the world, and China in particular, off coal.

In this 2012 file photo a four-wheel-drive vehicle follows a large mining truck as it makes its way to the top of a coal mine near Gunnedah, Australia, northwest of Sydney. Photograph: Rob Griffith/AP

block-time updated-timeUpdated at 8.07pm BST

block-time published-time 7.31pm BST

Today so far

A brief summary of where things stand so far in US politics news today. Later on, we expect the federal agency the CDC's advisory panel to release their decision on whether the US should resume administering the Johnson & Johnson coronavirus vaccine.

Meanwhile:

* Joe Biden and UK prime minister Boris Johnsonwill meet in June when the US president takes his first overseas trip since winning the White House and visits Britain for the G7 summit. They'll seek to boost the US-UK "special relationship" despite the fact that Britain is a lot less useful to America since it exited the European Union.

1. It's Joe Biden 's 100th day in office next Thursday. He will travel to the the southern state of Georgia, which newly turned blue in November when voters supported him for the White House and picked two Democrats as their US Senators. The evening before he will make his maiden address as president to a joint session of Congress.
2. Clean, affordable, reliable electricity system worldwide is this generation's " moonshot ", energy secretary Jennifer Granholmtold the closing day of the global climate summit held virtually and hosted by the White House.
3. Caitlyn Jenner is running for governor of California, hoping to replace Democrat Gavin Newsom.
4. Joe Biden opened the second and last day of the climate summit by saying the US was " looking forward " to working with Russia to ***remove*** carbon dioxide from the world's atmosphere (as well as cut greenhouse gas ***emissions***).

block-time published-time 6.55pm BST

It's worth noting the context in which Joe Biden referred to British prime minister Boris Johnson as "a clone" of Donald Trump.

The remark came in mid-December 2019 (remember when we had no idea a coronavirus was about to unleash a pandemic upon the world?), after Johnson's gut-wrenching (for liberals and EU-remainers) landslide general election victory.

Our David Smith wrote at the time:

The UK Labour Party's crushing defeat in the British general election ignited instant debate among Democrats in the US, with 2020 election frontrunner [*Joe Biden*](https://www.theguardian.com/us-news/joebiden) framing it as a warning to the party against moving too far left.

While the Conservative prime minister, Boris Johnson, is often compared to Donald Trump, some also see parallels between the Labour leader, Jeremy Corbyn, a 70-year-old socialist, and leftwing senators Bernie Sanders and [*Elizabeth Warren*](https://www.theguardian.com/us-news/elizabeth-warren) , aged 78 and 70 respectively.

Speaking at a campaign fundraiser in San Francisco, Biden, the former vice-president, said: "Look what happens when the [*Labour*](https://www.theguardian.com/politics/labour) party moves so, so far to the left. It comes up with ideas that are not able to be contained within a rational basis quickly.

"You're also going to see people saying, my God, Boris Johnson, who is kind of a physical and emotional clone of the president, is able to win."

Others cautioned against over-extrapolation, noting the deep policy and structural differences between US and British politics.

Corbyn was [*wrestling*](https://www.theguardian.com/politics/2019/dec/13/five-reasons-why-labour-lost-the-election) with Brexit's defining role at the ballot and lingering allegations of antisemitism that helped lead to his party's massive defeat.

Many US commentators pointed out that even Johnson is to the left of most American politicians on issues such as healthcare and the climate crisis.

Here's that piece from Smith [*in full*](https://www.theguardian.com/politics/2019/dec/13/democrats-labour-biden-bernie-sanders-warren).

Related: [*Democrats pick over Labour loss in UK as Biden warns of moving 'so far' left*](https://www.theguardian.com/politics/2019/dec/13/democrats-labour-biden-bernie-sanders-warren)

block-time published-time 6.47pm BST

Joe Biden's first overseas trip as president will be to Britain and then Belgium this June in what the White House is calling "a commitment to restoring our alliances" and "revitalizing the transatlantic relationship", without adding "after the disruptive presidency of Donald Trump".

White House press secretary Jen Psaki did not confirm earlier today whether Biden will meet with Queen Elizabeth II, but the UK's Sunday Times said (note: [*paywalled article*](https://www.thetimes.co.uk/article/queen-to-host-joe-biden-at-buckingham-palace-this-summer-kbpf0q5cz) ) in January that that was the plan, when it pointed out that"

The Queen will lead a post-Brexit charm offensive by hosting Joe Biden and other world leaders at Buckingham Palace before the G7 summit in Cornwall in June.

She will be joined at the "soft power" reception in June by the Prince of Wales, the Duchess of Cornwall and the Duke and Duchess of Cambridge under plans being drawn up by royal and government officials to cement the "special relationship" between the UK and America.....the Queen has met every US president since the start of her reign in 1952 [not a typo], except Lyndon Johnson.

Psaki gamely said earlier that Biden's expected bilateral meeting with UK prime minister Boris Johnson "sends a message about the special relationship" between the US and the UK.

Biden will attend the Group of Seven (G7) summit near the beautiful St Ives in the county of Cornwall June 11 to 13.

Then he'll head to Brussels for the next NATO summit on June 14, and a US-European Union summit.

But don't get too excited about the US-UK special relationship, say some.

enltr [*#PresidentJoeBiden*](https://twitter.com/hashtag/PresidentJoeBiden?src=hash&ref_src=twsrc%5Etfw) is coming to [*#Cornwall*](https://twitter.com/hashtag/Cornwall?src=hash&ref_src=twsrc%5Etfw) for [*#G7*](https://twitter.com/hashtag/G7?src=hash&ref_src=twsrc%5Etfw) and will be holding bi-laterals, including with [*#BorisJohnson*](https://twitter.com/hashtag/BorisJohnson?src=hash&ref_src=twsrc%5Etfw). Then to [*#Belgium*](https://twitter.com/hashtag/Belgium?src=hash&ref_src=twsrc%5Etfw) to talk to [*#NATO*](https://twitter.com/hashtag/NATO?src=hash&ref_src=twsrc%5Etfw) / [*#EU*](https://twitter.com/hashtag/EU?src=hash&ref_src=twsrc%5Etfw). So far- he only meets PM once. Anyone implying any big deal about this is vis a vis UK is spinning. [*pic.twitter.com/N1NPBoSTqn*](https://t.co/N1NPBoSTqn)

- Bonnie Greer (@Bonn1eGreer) [*April 23, 2021*](https://twitter.com/Bonn1eGreer/status/1385628898067722244?ref_src=twsrc%5Etfw)

It will be an important moment to assess how important the UK is to the US post-Brexit, compared with the vast EU.

Probably safe to say Donald Trump has never fed a lamb, though is likely to have been fed lamb. Joe Biden previously called Johnson a "physical and emotional clone" of Donald Trump. Here's Johnson on the trail earlier today to boost Conservative chances in a local election. Photograph: Reuters

block-time updated-timeUpdated at 6.48pm BST

block-time published-time 6.14pm BST

Deb Haaland noted at a White House press conference earlier, in what is National Park Week, that " I always wanted to be a National Park ranger."

Secretary of the Interior Deb Haaland at the White House media briefing earlier today. Photograph: Alex Wong/Getty Images

Haaland had to make do with becoming interior secretary instead, a key post in the cabinet, with enormous power over the destiny of public ***lands*** in the US.

She is the first Native American cabinet secretary in US history.

Haaland is a member of the Laguna Pueblo, one of [*574 sovereign tribal nations*](https://www.ncai.org/about-tribes) located across 35 states. According to the 2010 census, 5.2 million people or about 2% of the US population identifies as American Indian or Alaskan Native - descendants of those who survived US government policies to kill, ***remove*** or assimilate indigenous peoples, as our colleague [*Nina Lakhani*](https://www.theguardian.com/profile/nina-lakhani) put it in an [*interview with Haaland*](https://www.theguardian.com/environment/2020/dec/27/deb-haaland-interview-interior-secretary-native-americans) around the time she was nominated by Joe Biden after his victory in last November's presidential election.

Haaland said at today's briefing that she will actually be swearing in some National Park junior rangers in a little bit.

Meanwhile, on some of the most important issues, Haaland said she planned to do everything she can at interior to work towards the goal of a "clean energy revolution" to tackle the climate crisis.

And she is forging ahead with a commission to identify and curtail violent crimes ***targeting*** Indigenous women.

enltrDeb Haaland Is Plowing Ahead With Tackling Violence Against Native Women | Via Huffpost [*https://t.co/5Yuhg7GXu2*](https://t.co/5Yuhg7GXu2)

- SafetyPin-Daily (@SafetyPinDaily) [*April 23, 2021*](https://twitter.com/SafetyPinDaily/status/1385633341702131714?ref_src=twsrc%5Etfw)

block-time published-time 5.58pm BST

Biden-Johnson to promote US-UK 'special relationship' during meeting in June

When Joe Biden visits the UK in June in the first overseas trip of his presidency, he will not only attend the G7 meeting in Cornwall, the county in the south-west of England, but he will have a bilateral encounter with British prime minister Boris Johnson.

Our David Smith, attending the briefing with White House press sec Jen Psaki, asked how that's likely to go, given that Biden has previously [*described Johnson*](https://www.theguardian.com/politics/2019/dec/13/democrats-labour-biden-bernie-sanders-warren) as " a physical and emotional clone of Donald Trump " and inquired whether Biden "still holds that view?"

Psaki wasn't going to chomp on that bait, of course, so she mentioned the two men revving up to talk about - wait for it - "a range of issues".

And as "fellow global leaders" their planned meeting "sends a message about the special relationship" that historically exists between the US and the UK.

Our Smith then asked if Biden will get to meet Queen Elizabeth II, who just turned 95, when he visits. That's still up in the air, at least officially.

Psaki said: "Who would not want to meet the Queen?" She promised more details about the trip near the time.

enltrAsked if Biden will meet the Queen in the UK, Psaki replies: "Who wouldn't want to meet the Queen?"

- David Smith (@SmithInAmerica) [*April 23, 2021*](https://twitter.com/SmithInAmerica/status/1385633832209113092?ref_src=twsrc%5Etfw)

Psaki was also asked about whether "the former guy", as Biden refers to Trump, whom he succeeded as the 46th President of the United States, deserved credit for bashing non-US members of the North Atlantic Treaty Organization ( [*Nato*](https://www.theguardian.com/world/nato) ) to increase their payments into the alliance, which they had been paying short.

"I know he [Trump] thought he invented that [move] but having worked in the Obama administration" Psaki such efforts have consistently been US policy.

Here the response to Smith's Q.

enltr"I know he thought he invented that, but" - some Trump shade from Jen Psaki [*pic.twitter.com/OhVKYO2WCW*](https://t.co/OhVKYO2WCW)

- Aaron Rupar (@atrupar) [*April 23, 2021*](https://twitter.com/atrupar/status/1385634871134064649?ref_src=twsrc%5Etfw)

block-time updated-timeUpdated at 6.33pm BST

block-time published-time 5.27pm BST

Biden to address Congress next Wednesday and travel to Georgia on Thursday, his 100th day in office

White House press secretary is updating the media on the forthcoming 100th day in office for Joe Biden and vice president Kamala Harris.

Biden has been invited to give his maiden speech as president to a joint session of the US Congress, next Wednesday.

Although a new US president doesn't give a State of the Union address in their first year in office, Biden's speech to Congress is designed to set out his agenda in similar fashion.

enltrPsaki: On Wednesday the president will address a joint session of Congress. "He will lay out the American Families Plan... On Thursday, the president's 100th day in office, he and the first lady will travel to Georgia."

- David Smith (@SmithInAmerica) [*April 23, 2021*](https://twitter.com/SmithInAmerica/status/1385624458883436546?ref_src=twsrc%5Etfw)

The Washington Post [*noted earlier this week*](https://www.washingtonpost.com/us-policy/2021/04/19/white-house-families-plan/) that "White House officials are closing in on a large spending plan centered on child care, paid family leave and other domestic priorities, according to two people aware of internal discussions. The package could amount to at least $1 trillion of new spending and tax credits, though details remain fluid.

The American Families Plan, the second part of the administration's Build Back Better agenda, is expected to be unveiled ahead of President Biden's address to a joint session of Congress on April 28, the people said. It follows the approximately $2 trillion [*jobs and infrastructure plan*](https://www.washingtonpost.com/us-policy/2021/03/31/what-is-in-biden-infrastructure-plan/?itid=lk_inline_manual_4) that the White House introduced this month and that is just beginning to be debated by Congress.

While details remained in flux, the White House's newest plan is expected to call for roughly $1 trillion in new spending and approximately $500 billion in new tax credits, according to the people aware of the internal discussions, who spoke on the condition of anonymity to discuss private deliberations. Aides cautioned that the final details of the plan remained unsettled and were subject to change."

Psaki just said it's not confirmed yet whether Jill Biden will attend the address by her husband at the Capitol on Wednesday - most people will be watching remotely because of restrictions to prevent the spread of coronavirus.

Then on Thursday, the Bidens head south to Georgia.

enltrPsaki: On Wednesday the president will address a joint session of Congress. "He will lay out the American Families Plan... On Thursday, the president's 100th day in office, he and the first lady will travel to Georgia."

- David Smith (@SmithInAmerica) [*April 23, 2021*](https://twitter.com/SmithInAmerica/status/1385624458883436546?ref_src=twsrc%5Etfw)

block-time published-time 5.15pm BST

White House press secretary Jen Psaki is running through some of the main themes of the day in a media briefing.

Psaki said the US-led climate summit that just wrapped shows that America is back at the table. Our colleague [*David Smith*](https://www.theguardian.com/profile/davidsmith) is at the briefing.

enltrPress secretary Jen Psaki: President Biden just concluded a historic climate summit with world leaders "to show America is back at the table". [*pic.twitter.com/66JMhTvBLi*](https://t.co/66JMhTvBLi)

- David Smith (@SmithInAmerica) [*April 23, 2021*](https://twitter.com/SmithInAmerica/status/1385623683608219654?ref_src=twsrc%5Etfw)

Biden is going to make his first overseas trip of his presidency, traveling to Britain and Belgium in June. Psaki [*can't say*](https://twitter.com/SmithInAmerica/status/1385627705727766529) if this is a green light for international travel for Americans, as the coronavirus pandemic continues.

enltrPsaki: The president will travel to the United Kingdom and Belgium in June.

- David Smith (@SmithInAmerica) [*April 23, 2021*](https://twitter.com/SmithInAmerica/status/1385624782977306628?ref_src=twsrc%5Etfw)

block-time updated-timeUpdated at 5.17pm BST

block-time published-time 5.03pm BST

US appeals court denies Dakota Access pipeline rehearing request; environmental review to continue.

Indigenous youths protest the Dakota Access Pipeline and the Line 3 pipeline, in Washington, DC, earlier this month. Photograph: Leah Millis/Reuters

The two-day virtual global climate summit led by the White House has wrapped up. But in more environmental news this morning, a federal court in Washington, DC, has made a decision that will cheer those hoping to [*get rid of the Dakota Access Pipeline*](https://www.theguardian.com/us-news/2021/feb/09/dakota-access-pipeline-biden-harris-letter-celebrities-indigenous-leaders) .

As a reminder, the oil pipeline begins in the shale oil fields of the of the Bakken rock formation in northwest North Dakota and continues through South Dakota and Iowa to an oil terminal in Illinois. Together with the [*Energy Transfer Crude Oil Pipeline*](https://en.wikipedia.org/wiki/Energy_Transfer_Crude_Oil_Pipeline) from Patoka to Texas, it forms the Bakken system.

Reuters reports:

A U.S. appeals court on Friday denied Dakota Access LLC's petition for a rehearing on a court decision to cancel a key permit for its oil pipeline, court documents show.

The decision by the United States Court of Appeals for the District of Columbia means the Dakota Access Pipeline (DAPL) technically is still trespassing on federal ***land*** because it does not have a permit to cross under South Dakota 's Lake Oahe. The environmental review of the line is continuing, and is not expected to be completed until March 2022.

The 570,000 barrel-per-day DAPL began operating in mid-2017 but drew controversy during construction as Native American tribes and activists protested its route under Oahe, a critical drinking water source for the tribes.

DAPL is the largest pipeline out of the Bakken region, which produces about 1 million barrels of crude per day in North Dakota and eastern Montana.

If the pipeline were forced to close, the state of North Dakota estimates production could fall by 400,000 bpd temporarily.

Last summer, a U.S. district court judge threw out a federal permit for the line to operate under the lake and ordered an environmental review for that section of the pipeline.

A three-judge panel at the circuit court in January upheld the lower court's decision to vacate the permit and require the review. The pipeline's operators wanted the circuit court to reconsider the panel's decision.

"This marks the complete end of the appeals court proceedings on this case," said attorney Jeffrey Rasmussen, of Patterson Earnhart Real Bird & Wilson LLP, which represents the Yankton Sioux Tribe in the case. It is possible, however, that Dakota Access could petition the U.S. Supreme Court to keep the line running.

A spokeswoman for Energy Transfer LP, DAPL's majority owner, declined to comment on current or pending legal matters.

Related: [*Celebrities call on Biden and Harris to shut down Dakota Access pipeline*](https://www.theguardian.com/us-news/2021/feb/09/dakota-access-pipeline-biden-harris-letter-celebrities-indigenous-leaders)

As our Guardian US colleague Nina Lakani also noted in January: Indigenous leaders and environmentalists are urging Joe Biden to shutdown some of America's most controversial fossil fuel pipelines, after welcoming his executive order cancelling the Keystone XL (KXL) project.

Activists praised the president's decision to stop construction of the transnational KXL oil pipeline on his first day in the White House, but they stressed that he must cancel similar polluting fossil fuel projects, including the [*Dakota Access pipeline*](https://www.theguardian.com/us-news/dakota-access-pipeline) (DAPL), to stand any chance of meeting his bold climate action goals.

Related: [*'No more broken treaties': indigenous leaders urge Biden to shut down Dakota Access pipeline*](https://www.theguardian.com/us-news/2021/jan/21/dakota-access-pipeline-joe-biden-indigenous-environment)

block-time published-time 4.52pm BST

Cornish pasty and clotted cream makers ahoy! Biden heading for Cornwall on first foreign trip as US president.

Joe Biden will travel to the United Kingdom and Belgium in June for his first overseas trip since taking office, the White House said a little earlier.

Reuters reports that:

The trip aims to highlight the US president's "commitment to restoring our alliances, revitalizing the transatlantic relationship, and working in close cooperation with our allies," White House press secretary Jen Psaki said in a statement.

The announcement was made as Biden concluded hosting a global climate summit that marked a renewed US engagement in climate efforts.

Biden will attend the G7 Summit in Cornwall, UK, from June 11-13, where he will hold bilateral meetings with G7 leaders including British Prime Minister Boris Johnson, the White House said.

From there, Biden will travel to Brussels for the NATO Summit on June 14. "President Biden will affirm the United States\* commitment to NATO, transatlantic security, and collective defense," Psaki said.

block-time published-time 4.30pm BST

Clean, affordable, reliable electricity system worldwide is 'moonshot'

Jennifer Granholm, US energy secretary, said at the virtual climate summit this morning that clean technology was "our generation's moonshot".

Energy Secretary Jennifer Granholm speaks at a press briefing at the White House earlier this month. Photograph: Andrew Harnik/AP

The Biden administration's energy secretary and Michigan's former governor, Granholm said her department would be announcing new goals for "leaps in next generation technologies", such as carbon capture, energy storage and industrial fuels.

Reuters reports:

Underscoring the role for carbon ***removal*** technologies to meet global climate goals, Granholm announced a partnership with Canada, Norway, Qatar and Saudi Arabia called the Net Zero Producers Forum.

It aimed to develop "long-term strategies to reach global net-zero ***emissions***", she said.

Granholm also announced a partnership with Denmark to partner on zeroing out ***emissions*** in the global shipping industry.

The White House has sought to assure other countries that it can meet the new U.S. ***emissions*** ***target***, even if a new administration takes over, because industry is moving toward cleaner power, electric vehicles, and more renewable energy anyway.

"No politician, no matter how demagogic or how potent and capable they are, is going to be able to change what that market is doing," said John Kerry, Biden's climate envoy.

Biden has sought to connect efforts to fight climate change with opportunities to create jobs, arguing that taking action will be good for the economy in order to counter Republican concerns that climate regulation could slow growth.

His $2.3 trillion infrastructure package is integral to achieving the new U.S. ***emissions*** ***target***, but requires approval by Congress, where Democrats hold only razor-thin majorities.

enltrUS Energy Secretary Jennifer Granholm "This is our generation's moonshot. Less than a decade after Kennedy declared our nation's choice to go to the moon we planted an American flag on that cratered surface, and today we choose to solve the climate crisis,"

- nixon apple (@nixon\_apple) [*April 23, 2021*](https://twitter.com/nixon_apple/status/1385599388634910724?ref_src=twsrc%5Etfw)

block-time updated-timeUpdated at 4.57pm BST

block-time published-time 4.16pm BST

John Kerry's climate warning: 'Even If We Get To Net Zero, We Need Carbon ***Removal***'

That's the interesting headline on the HuffPost site from yesterday, just to expand a little more on this vague but, at the simplest level, at least not discouraging US-Russia talk on cooperation over ***removing*** carbon dioxide from the atmosphere to help reverse global heating.

HuffPo's Alexander Kauffman's [*piece notes*](https://www.huffpost.com/entry/john-kerry-climate_n_6081c355e4b05c4290738500?929) that Kerry's "little-noticed remark came during a finance session of Biden's big Earth Day climate summit" yesterday.

He writes:

John Kerry, the Biden administration's [*special climate envoy*](https://www.theguardian.com/us-news/2020/nov/23/john-kerry-biden-climate-envoy-appointment) , warned Thursday that mounting global commitments to reach net-zero ***emissions*** by the middle of this century will not be enough to avert [*catastrophic warming*](https://www.huffpost.com/impact/topic/climate-change).

To preserve a safe and recognizable global climate, the world will need to start ***removing*** the carbon dioxide we've spewed into the atmosphere over the last 200 years, which has created an insulating layer around our planet, the former secretary of state said during the first day of the White House's [*two-day climate summit*](https://www.huffpost.com/entry/biden-earth-day-climate-summit_n_60805abbe4b0c1b896440cee).

"Even if we get to net zero, we still need to get carbon dioxide out of the atmosphere," Kerry said. "This is a bigger challenge than a lot of people have really grabbed on to yet."

It was an unusually candid remark on a politically sensitive subject, made ? strangely enough ? at the tail end of a conversation about climate financing with Citigroup CEO Jane Fraser.

Getting rich countries to reduce consumption of oil, gas and coal has proven difficult enough, despite mounting billion-dollar climate disasters and the proliferation of cheap, zero-carbon energy and transportation alternatives. That has made many climate activists see discussions of carbon ***removal*** as threatening efforts to cut ***emissions***.

There is also no clear pathway to carbon ***removal***; it's less straightforward than replacing coal plants with wind power or gas-fueled automobiles with electric vehicles and public transit.

enltrA blip of something unusual amid today's choreographed climate pageantry: John Kerry acknowledging the need for carbon ***removal***. "Even if we get to net zero, we still need to get carbon dioxide out of the atmosphere." Experts say this is a new tack. [*https://t.co/4VGCVjGI4M*](https://t.co/4VGCVjGI4M)

- Alexander Kaufman (@AlexCKaufman) [*April 22, 2021*](https://twitter.com/AlexCKaufman/status/1385315563686223873?ref_src=twsrc%5Etfw)

At the virtual summit HQ in Washington, where Biden has been sitting alongside his energy sec [*Jennifer Granholm*](https://www.theguardian.com/us-news/2020/dec/15/pete-buttigieg-biden-transportation-secretary) , Kerry and others, it's hard to miss the green centerpiece situation. My environment correspondent colleague, [*Oliver Milman*](https://www.theguardian.com/profile/oliver-milman) , couldn't help but remark.

enltrthe grass centerpiece to the climate summit is rather lush [*pic.twitter.com/y1b4MrgmBV*](https://t.co/y1b4MrgmBV)

- Oliver Milman (@olliemilman) [*April 23, 2021*](https://twitter.com/olliemilman/status/1385591976754614275?ref_src=twsrc%5Etfw)

block-time updated-timeUpdated at 4.57pm BST

block-time published-time 3.52pm BST

Just a reminder of what the Russian president Vladimir Putin said at the climate summit convened by Joe Biden, which began yesterday and winds up today.

Putin called for international cooperation to tackle climate change but did not cite a ***target*** for Russia to reduce greenhouse gas ***emissions***.

In his speech yesterday, Putin urged "broad and effective international cooperation in the calculation and monitoring of volumes of all types of harmful ***emissions*** into the atmosphere."

The news wires report:

Putin said: Russia is genuinely interested in galvanizing international cooperation so as to look further for effective solutions to climate change as well as to all other vital challenges."

Putin says Moscow is ready to offer a number of joint projects and consider preferences for foreign companies willing to invest in clean technologies, including those in Russia.

The Russian leader says he has tasked the government to "significantly cut the accumulated volume of net ***emissions***" by 2050 in Russia, while refraining from naming a concrete goal.

Earlier today, Joe Biden said he was heartened by Putin's call for collaborative efforts on ***removal*** of carbon dioxide from the planet's atmosphere, in order to combat climate change, and looked forward to working with Russia.

Biden said great progress had already been made, but more efforts were needed by governments and the private sector to ensure a smooth transition to a clean energy future.

"When we invest in climate resilience and infrastructure, we create opportunities for everyone," Biden said.

Here's how American University in Washington, DC, [*explains carbon* ***removal***](https://www.american.edu/sis/centers/carbon-removal/what-it-is.cfm) :

Carbon ***removal*** is the process of ***removing*** carbon dioxide from the atmosphere and locking it away for decades, centuries, or millennia. This could slow, limit, or even reverse climate change - but it is not a substitute for cutting greenhouse gas ***emissions***.

This is because carbon ***removal*** is generally slow-acting and may not be able to be deployed at scales commensurate with society's current greenhouse ***emissions***. Carbon ***removal*** is sometimes referred to as carbon dioxide ***removal*** or CDR, and technologies for implementing carbon ***removal*** are sometimes called Negative ***Emissions*** Technologies (NETs). Some prominent ideas for carbon ***removal*** include:

* planting massive new ***forests*** (afforestation/reforestation)

1. using no-till ***agriculture*** and other practices to increase the amount of carbon stored in soils (soil carbon sequestration)
2. creating charcoal and burying it or plowing it into fields (biochar)

From a distance: Russian President Vladimir Putin (R), in Moscow, attends a video conference meeting yesterday with US President Joe Biden (on screen in Washington, DC) as part of the virtual US-hosted Leaders Summit on Climate. Photograph: Anadolu Agency/Getty Images

block-time updated-timeUpdated at 3.54pm BST

block-time published-time 3.29pm BST

She wants your money. Here's the tweet. Caitlyn Jenner urges California voters to join her campaign because "California is worth fighting for".

enltrI'm in! California is worth fighting for. Visit [*https://t.co/a1SfOAMZQ3*](https://t.co/a1SfOAMZQ3) to follow or donate today. [*#RecallNewsom*](https://twitter.com/hashtag/RecallNewsom?src=hash&ref_src=twsrc%5Etfw) [*pic.twitter.com/9yCck3KK4D*](https://t.co/9yCck3KK4D)

- Caitlyn Jenner (@Caitlyn\_Jenner) [*April 23, 2021*](https://twitter.com/Caitlyn_Jenner/status/1385592674921578497?ref_src=twsrc%5Etfw)

block-time published-time 3.13pm BST

'Caitlyn for California' - Jenner to run for governor

Interrupting leaders' speeches on their efforts to save the planet to bring you breaking news out of the west coast. It's official - Caitlyn Jenner, the former Olympic decathlete, reality TV star and transgender activist, has filed her initial paperwork to run for governor of California.

In a scoopette, the Axios website [*brings us*](https://www.axios.com/caitlyn-jenner-california-governor-run-710153ef-7a89-460d-b9ec-9efed2a9399f.html) the news that:

Jenner, a longtime Republican, is seeking to replace Democratic governor Gavin Newsom in a recall election, hoping her celebrity status and name recognition can yield an upset in the nation's most populous state.

But in deep-blue California, she's decidedly not branding herself as a Trump Republican even as she's counting on some of the former president's advisers to drive her strategy.

She's assembled a team of prominent GOP operatives including Tony Fabrizio, the top pollster on Donald Trump's 2016 and 2020 campaigns, Ryan Erwin, founder of RedRock Strategies, and Tyler Deaton, president of Allegiance Strategies.

Of course you don't launch a campaign until you have some merch, especially if you are Jenner, who's connected to the wider Kardashian universe.

Jenner's [*website*](http://caitlynjenner.com/) announcing her run for governor - "I'm in !" - (there is officially a space between in and !) already has a whole section where you can buy mugs, T-shirts, caps, bumper stickers and glassware with a symbol of a shooting star over her simple slogan: "Caitlyn for California".

Boom. Newsom's had a patchy track record tackling the coronavirus pandemic in California. More background soon.

Caitlyn Jenner speaks at the 4th Women's March in Los Angeles in January. She now seeks to replace Democrat Gavin Newsom as governor of California. Photograph: Damian Dovarganes/AP

block-time updated-timeUpdated at 3.49pm BST

block-time published-time 2.56pm BST

US "looks forward" to working with Russia on carbon ***removal*** efforts - Biden

In a short addess, the point that jumped out was this from US president Joe Biden.

"I'm very heartened by President Putin's call yesterday for the world to collaborate and advance carbon dioxide ***removal***, and the United States look forward to working with Russia and other countries in that endeavor. It has great promise."

enltrBiden: "I'm very heartened by President Putin's call yesterday for the world to collaborate and advance carbon dioxide ***removal***, and the United States look forward to working with Russia and other countries in that endeavor. It has great promise."

- Kate Sullivan (@KateSullivanDC) [*April 23, 2021*](https://twitter.com/KateSullivanDC/status/1385592297077809152?ref_src=twsrc%5Etfw)

HuffPost though Potus was "rocking a great suit".

Certainly makes a change from Donald Trump's repurposed shiny curtains.

enltrBiden, rocking a great suit, just said: "I'm very heartened by President Putin's call yesterday for the world to collaborate on advanced carbon dioxide ***removal***. The United States looks forward to working with Russia and other countries in that endeavor. It has great promise." [*pic.twitter.com/hEcCxernFX*](https://t.co/hEcCxernFX)

- Alexander Kaufman (@AlexCKaufman) [*April 23, 2021*](https://twitter.com/AlexCKaufman/status/1385592870858641408?ref_src=twsrc%5Etfw)

block-time updated-timeUpdated at 2.57pm BST

block-time published-time 2.50pm BST

Here's the president.

Joe Biden says that the second and final day of the virtual global leaders climate summit is "not about the threat" of the climate emergency "it's about the opportunity that addressing climate change provides"

The US president said that the commitments made so far, such as the US yesterday pledging to [*halve greenhouse gas* ***emissions***](https://www.theguardian.com/us-news/2021/apr/22/us-emissions-climate-crisis-2030-biden) by 2030, was "the start of a road that takes us to Glasgow [COP26], in November, where we will make these commitments real."

In November, the Scottish city hosts the COP26 United Nations [*climate change conference*](https://ukcop26.org/).

Biden said today the summit will hear from leaders of Spain, Nigeria, Vietnam and Poland, as well as business leaders, such as Mike Bloomberg and Bill Gates, and the Biden administration's transportation secretary, Pete Buttiegieg.

block-time published-time 2.35pm BST

As commerce secretary Gina Raimondo provides the warm-up act to the president at the virtual world climate summit, an independent research organization says the American goal to cut greenhouse gas ***emissions*** by 50% to 52% from 2005 levels puts the United States among the four most ambitious nations in curbing climate change, the Associated Press reports this morning.

The AP brings us this news:

The Rhodium Group said that using the US-preferred 2005 baseline, America is behind the United Kingdom but right with the European Union. It's ahead of countries that include Canada, Japan, Iceland and Norway.

Joe Biden announced the US goal at the virtual climate summit on Thursday.

Different nations use different base years for their ***emission*** cuts so comparisons are difficult and can look different based on baseline years.

The Intergovernmental Panel on Climate Change says the world needs to cut greenhouse gas ***emissions*** 45% below 2010 levels to limit warming to the strictest of the Paris agreement goals. Rhodium calculates the US ***target*** translates to 49% below 2010 levels.

John Kerry, Biden's climate envoy, is speaking now, talking about the problem of a lack of governmental willpower around the world holding back progress in tackling the climate crisis.

block-time published-time 2.14pm BST

Joe Biden will take the podium in the east room at the White House very shortly.

The title of his address is: " The Economic Opportunities of Climate Action."

My environment correspondent colleague Oliver Milman [*previews the main thrust*](https://www.theguardian.com/us-news/2021/apr/23/joe-biden-climate-summit-jobs-plan) today about job creation:

The White House is bringing out the billionaires, the CEOs and the union executives Friday to help sell Joe Biden's climate-friendly transformation of the US economy at his virtual summit of world leaders.

The closing day of the two-day summit on the climate crisis is to feature Bill Gates and Mike Bloomberg, steelworker and electrical union leaders and executives for solar and other renewable energy.

Biden vows to slash US ***emissions*** by half to meet 'existential crisis of our time'.

It's all in service of an argument US officials say will make or break the president's climate agenda: pouring trillions of dollars into clean-energy technology, research and infrastructure will jet-pack a competitive US economy into the future and create jobs, while saving the planet.

The new urgency comes as scientists say that the climate crisis caused by coal plants, car engines and other fossil fuel use is worsening droughts, floods, hurricanes, wildfires and other disasters and that humans are running out of time to stave off catastrophic extremes of global warming.

The event has featured the world's major powers - and major polluters - pledging to cooperate on cutting petroleum and coal ***emissions*** that are rapidly warming the planet.

Yesterday, Biden called upon the world to confront the climate crisis and "overcome the existential crisis of our time", as he unveiled an ambitious new pledge to slash US planet-heating ***emissions*** in half by the end of the decade.

Addressing the opening of a gathering of more than 40 world leaders in an Earth Day climate summit, Biden warned that "time is short" to address dangerous global heating and urged other countries to do more.

Shortly before the start of the summit, the White House said the [*US will aim to reduce its greenhouse gas* ***emissions***](https://www.theguardian.com/us-news/2021/apr/22/us-emissions-climate-crisis-2030-biden) by between 50% and 52% by 2030, based on 2005 levels. Biden said the new US goal will set it on the path to net zero ***emissions*** by 2050 and that other countries now needed to also raise their ambition.

White House climate adviser Gina McCarthy, left, talks with EVgo Chief Executive Officer Cathy Zoi, before the start of an event near an EVgo electric car charging station at Union Station in Washington, DC, yesterday. Photograph: Susan Walsh/AP

block-time updated-timeUpdated at 2.18pm BST

block-time published-time 2.02pm BST

Biden to address climate summit on averting global catastrophe and creating green jobs

Good morning, US politics liveblog readers, there's a lot going on in Washington today and we'll bring you all the developments here, so please strap in and hold tight for a lively Friday.

* Joe Biden is due to kick off the second day of the virtual world leaders summit on the climate emergency, giving a speech at the White House at 9.15ET/1.15pm GMT. We plan to have a live stream of that here.

1. Today is all about Biden banging his favorite drum - how to tackle the climate crisis by creating jobs at the same time.
2. The US House and Senate are not in session today, but the White House is making up for that with a busy day. Vice-President Kamala Harris is going to New Hampshire to talk about jobs, jobs, jobs - and infrastructure, including better internet services.
3. The White House coronavirus team of experts will be addressing the nation mid-morning, about the same time that the Centers for Disease Control and Prevention (CDC) advisory panel is expected to decide whether to continue the pause on administering the Johnson & Johnson coronavirus vaccine.
4. Press sec Jen Psaki will take an array of questions from the media at the White House briefing room at 11.30ET.

**Load-Date:** April 24, 2021

**End of Document**



[***Federal Register: Endangered and Threatened Wildlife and Plants; Removing the Water Howellia From the List of Endangered and Threatened Plants Pages 31955 - 31972 [FR DOC #2021-12522]***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:62XS-MRY1-JDG9-Y55G-00000-00&context=1516831)

Impact News Service

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**Body**

Washington: Office of the Federal Register has issued the following notice:DEPARTMENT OF THE INTERIORFish and Wildlife Service50 CFR Part 17[Docket No. FWS-R6-ES-2018-0045; FXES11130900000-201-FF09E22000]RIN 1018-BC03Endangered and Threatened Wildlife and Plants; ***Removing*** the Water Howellia From the List of Endangered and Threatened PlantsAGENCY: Fish and Wildlife Service, Interior.ACTION: Final rule.-----------------------------------------------------------------------SUMMARY: We, the U.S Fish and Wildlife Service (Service), are ***removing*** water howellia (Howellia aquatilis) from the Federal List of Endangered and Threatened Plants. The best available scientific and commercial data indicate that threats to water howellia identified at the time of listing in 1994 are not as significant as originally determined and are being adequately managed. Therefore, the species no longer meets the definition of an endangered or a threatened species under the Endangered Species Act of 1973 (Act), as amended. This determination is based on a thorough review of all available information, which indicates that this species' populations and distribution are much greater than were known at the time of listing and that threats to this species have been sufficiently minimized.DATES: This rule is effective July 16, 2021.ADDRESSES: This final rule, the supporting documents we used in preparing this rule, and public comments we received are available on the internet at [*http://www.regulations.gov*](http://www.regulations.gov) at Docket No. FWS-R6-ES-2018-0045. Persons who use a telecommunications device for the deaf (TDD) may call the Federal Relay Service at 800-877-8339.FOR FURTHER INFORMATION CONTACT: Jodi Bush, Office Supervisor, telephone: 406-449-5225. Direct all questions or requests for additional information to: WATER HOWELLIA QUESTIONS, U.S Fish and Wildlife Service, Montana Ecological Services Field Office, 585 Shepard Way, Suite 1, Helena, MT 59601. Persons who use a TDD may call the Federal Relay Service at 800-877-8339.SUPPLEMENTARY INFORMATION:Executive Summary Why we need to publish a rule. Under the Act, if a species is determined to no longer be an endangered or threatened species, we may reclassify the species or ***remove*** it from the Federal Lists of Endangered and Threatened Wildlife and Plants due to recovery. A species is an ``endangered species'' for purposes of the Act if it is in danger of extinction throughout all or a significant portion of its range and is a ``threatened species'' if it is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. The Act does not define the term ``foreseeable future.'' However, we consider ``foreseeable future'' as that period of time within which a reasonable prediction can be relied upon in making a determination about the future conservation status of a species. Water howellia is listed as threatened. We are ***removing*** this species from the Federal List of Endangered and Threatened Plants (i.e , ``delist'' this species) because we have determined that it is not likely to become an endangered species now or[[Page 31956]]within the foreseeable future. Delisting a species can only be completed by issuing a rule. The basis for our action. Under the Act, we can determine that a species is an endangered or threatened species based on any one or more of the following five factors or the cumulative effects thereof: (A) The present or threatened destruction, modification, or curtailment of its habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) the inadequacy of existing regulatory mechanisms; or (E) other natural or manmade factors affecting its continued existence. Based on an assessment of the best available information regarding the status of and threats to water howellia, we have determined that the species no longer meets the definition of an endangered or threatened species under the Act. This final rule recognizes that based on the best available science, water howellia has reached recovery. Collaborative conservation efforts including increased surveys, ***land*** transfers, and ***land*** management plans have all aided in the discovery of additional occurrences of the species and provided for long-term protection of the species.Previous Federal Actions On October 7, 2019, we proposed to ***remove*** water howellia from the Federal List of Endangered and Threatened Plants (i.e , to ``delist'' the species) (84 FR 53380). For previous Federal actions occurring before October 7, 2019, please see the Previous Federal Actions section of the proposed rule.Species Description and Habitat Information In this final rule, we discuss only those topics directly related to delisting water howellia. For more information on the description, biology, ecology, and habitat of water howellia, please refer to the final listing rule published in the Federal Register on July 14, 1994 (59 FR 35860); the most recent 5-year review for water howellia completed in August of 2013 (USFWS 2013, entire); the draft recovery plan for water howellia, completed in September 1996 (USFWS 1996, entire); and the proposed delisting rule published in the Federal Register on October 7, 2019 (84 FR 53380). These documents are available as supporting materials on [*http://www.regulations.gov*](http://www.regulations.gov) under Docket No. FWS-R6-ES-2018-0045. We use concepts of resiliency, redundancy, and representation (Smith et al. 2018) in considering the species' viability. Resiliency is the ability of the species to maintain healthy populations that can withstand annual environmental variation and stochastic events. Redundancy is the ability of the species to maintain an adequate number and distribution of populations that can withstand catastrophic events. Representation is the ability of the species to adapt to changing environmental conditions through genetic, ecological, demographic, and behavioral diversity across its range. Water howellia was first collected in 1879, along the Columbia River in Multnomah County, Oregon (Gray 1880, entire), and is native to the northwestern United States. The taxonomy of water howellia as a full species in a monotypic genus is widely accepted as valid by the scientific community (The Plant List 2013, unpaginated; ITIS 2017). Water howellia is an annual, aquatic herb in the bellflower family (Campanulaceae). The entire plant is smooth, possessing no hairs or projections. The stems are fragile, submerged and floating, reaching up to 39 inches (in) (100 centimeters (cm)) in length. Stems branch several inches from the base, and each branch extends to the water surface. The numerous leaves are narrow and range from 1-2 in (25-50 millimeters (mm)) long. Water howellia produce two types of flowers: Cleistogamous (closed) and chasmogamous (showy, open for pollination). Small cleistogamous flowers are produced along the stem below the water surface and are self-fertilizing. Chasmogamous flowers are produced on the water surface and commonly self-pollinate (Lesica et al. 1988, p. 276; Shelly and Moseley 1988, pp. 5-6). Suitable water howellia habitat typically includes small, vernal freshwater wetlands and ponds with an annual cycle of filling with water in spring and drying up in summer or autumn (USFWS 1996, p. 14). These habitats can be glacial potholes or depressions (Shapley and Lesica 1997, p. 8; U.S Department of Defense (USDOD) 2017a, p. 1) or river oxbows (Lesica 1997, p. 366) in Montana and western Washington, riverine meander scars (Idaho NHP 2017, p. 1; Wiechmann 2014a, p. 3) in Idaho, glacial-flood remnant wetlands (Robison 2007, p. 8) in eastern Washington, or landslide depressions (Johnson 2013, pers. comm.) in California, but are all ephemeral (transitory) to some degree. Depending on annual patterns of temperature and precipitation, the drying of the ponds may be complete or partial by autumn; these sites are usually shallow and less than 3 feet (ft) (1 meter (m)) in depth. Some ponds supporting water howellia are dependent on complex ground and surface water interactions. Snow melt runoff is important in maintaining suitable conditions in the spring, while localized groundwater flow mitigates water loss from evaporation and plant transpiration later in the summer (Reeves and Woessner 2004, pp. 7-9). The drying of water howellia habitat in late summer and autumn is important because water howellia seeds only germinate when exposed to air (Lesica 1990). Upon air exposure, seeds either germinate in the fall and produce seedlings that overwinter under snowcover, or germinate the following spring, with seeds lying on top of the soil through winter. Water howellia seedlings that overwinter in soil resume growth in spring in northern climates (Mincemoyer 2005, p. 3) or begin growing after fall germination in southern climates (e.g , California) (Johnson 2013, pers. comm.). Spring growth in California and low-elevation occurrences in western Washington typically commence in early April, and in eastern Washington, Idaho, and Montana by early May. Rangewide, emergent (chasmogamous) flowers bloom soon after the stems reach the water surface and are typically present from May through July. Seed dispersal starts in June from submerged (cleistogamous) flowers and extends until late summer from emergent flowers (Shelly and Moseley 1988, p. 5). Decreased germination rates have been documented for seeds residing in the soil longer than 8 months (Lesica 1992, pp. 415-416). However, monitoring data and observations from Montana (U.S ***Forest*** Service (USFS) 2002, pp. 6-7; USFWS 1996, pp. 17-18) and Washington (Gilbert 2008, pers. comm.) show the presence of water howellia after 2 consecutive years with no plant observations, suggesting seeds may remain viable for at least 3 years. This life-history strategy likely provides a buffer against unfavorable growing conditions in consecutive years. Composition and depth of substrates in vernal wetlands are also important characteristics of suitable water howellia habitat. Substrates composed of both coarse organic and mineral sediments are correlated with presence of water howellia (Lesica 1992, p. 417). Similarly, water howellia growth in a laboratory setting was highest in coarse organic substrate (Lesica 1992, p. 416). However, mean depth of the organic sediment layer was significantly less in ponds with water howellia, relative to depth in ponds without water howellia (Lesica 1992, p. 417). These results[[Page 31957]]indicate a moderate amount of organic sediment (with some mineral soil) in wetland substrates may be optimum for water howellia presence and growth. Water howellia occupies habitats across its range that vary in the extent of canopy cover, suggesting some flexibility to potential effects of disturbance on canopy cover. Many water howellia occurrences are surrounded or nearly surrounded by ***forested*** vegetation (Mincemoyer 2005, p. 7), with numerous observations reporting water howellia occupying shaded portions of ponds and wetlands (Isle 1997, p. 32; McCarten et al. 1998, p. 4). Conversely, on the Joint Base Lewis-McChord (JBLM) military base in Washington, occupied ponds were historically surrounded by prairie vegetation and, as a result of years of fire suppression, are now surrounded by ***forest*** (Gilbert 2017, pers. comm.). Currently, water howellia is occurring in portions of ponds that receive the most light and least shade (Gilbert 2017, pers. comm.). In Montana's Swan Valley, water howellia was present in 78 percent of sites with prior disturbance (roads, fire, grazing, and/or vegetation treatments) of vegetation surrounding the ponds (Pipp 2017, p. 6), indicating some plasticity to the effects of disturbance on extent of canopy cover.Range, Distribution, Abundance, and Trends of Water Howellia The distribution of water howellia before European settlement and modern development in the Pacific Northwest is unknown. However, after European settlement, water howellia is known from the Pacific Northwest, with historical occurrences documented in California, Oregon, Washington, Idaho, and Montana (Shelly and Moseley 1988, pp. 6, 9). The species still occurs in all five States. Since listing in 1994, new occurrences of water howellia have been documented in all five States, generally in areas within these States known historically to support the species. At the time of Federal listing (1994), 107 water howellia occurrences were known across the species' range (59 FR 35860; July 14, 1994). In 2020, a minimum of 307 occurrences were documented (see Table 1, below). The majority of extant occurrences (91 percent) are within three metapopulations occupying distinct geographic areas in Montana's Swan Valley (Lake and Missoula Counties); Department of Defense property at JBLM, Pierce County in western Washington; and Turnbull National Wildlife Refuge (Turnbull Refuge), Spokane County in northeastern Washington (see the figure, below). The three metapopulations have enabled the species to remain viable across its range (Freckleton and Watkinson 2002, p. 419). Small, isolated occurrences that are not part of a metapopulation can be more vulnerable to extirpation (Lesica 1992, p. 420). Consequently, identification of these metapopulations is important for directing conservation efforts toward the regional availability of suitable habitat (Freckleton and Watkinson 2002, p. 432). Currently, 258 of the 307 (84 percent) reported water howellia occurrences are on ***lands*** administered by the Federal Government. There are 37 reported occurrences of water howellia on private property; however, little is known about them, as limited monitoring of these occurrences has taken place over the years. Two occurrences of water howellia are on State ***land*** and the remaining occurrences exist in areas with several jurisdictions (i.e , straddle public and private ***lands***). Table 1--Current Number of Water Howellia Occurrences and Percent of Total Known Occurrences by State------------------------------------------------------------------------ Percent of State Number of total known occurrences occurrences------------------------------------------------------------------------Montana................................. 220 72Idaho................................... 7 2Washington.............................. 72 23Oregon.................................. 2 <1California.............................. 7 2 ------------------------------- Total............................... 308 ..............------------------------------------------------------------------------BILLING CODE 4333-15-P[[Page 31958]][GRAPHIC] [TIFF OMITTED] TR16JN21.001BILLING CODE 4333-15-C Population trends for water howellia are difficult to determine. Substantial numbers of new occurrences have been discovered since listing in 1994, and, most recently, occurrences have been documented in Oregon, where the species was thought to be extirpated. However, this may not necessarily indicate a positive population trend. Rather, this could indicate increased efficiency at finding new occurrences. Consistent, standardized monitoring has not occurred across the range of the species, making it difficult to document trends, even when repeat monitoring has occurred at occupied sites (Fertig 2019, pp. 40-45). Additionally, an occurrence is broadly defined, and abundance of individual water howellia plants within occurrences fluctuates widely. This is due, in part, to environmental conditions of the preceding autumn, which affect seed[[Page 31959]]germination rates. Nevertheless, based on the discovery of many new occurrences and few recent extirpations of existing occurrences, distribution of the species appears to be currently stable. Genetic variation among water howellia occurrences is low. Occurrences in California and Montana are genetically similar; however, occurrences in Idaho and Washington are more distantly related (Schierenbeck and Phipps 2010, p. 5). These data suggest that gene flow is occurring between occurrences separated by large geographic distances, albeit at a relatively low rate. A correlation between migratory waterfowl routes with either genetic similarity or distance indicates that waterfowl may be transporting seed or plant material between water howellia population areas (Schierenbeck and Phipps 2010, pp. 6-7). A more robust sampling and genetic analysis of water howellia occurrences across the species' range would be necessary to support or refute this hypothesis.Conservation Efforts A recovery plan for water howellia was drafted in 1996, but never finalized (USFWS 1996, entire). Despite having not been finalized, the draft recovery plan constitutes the best available information on what objective, measurable criteria should be met in order to delist the species. Here, we provide a summary of progress made on the draft recovery criteria for water howellia. More detailed information related to conservation efforts can be found below under Summary of Factors Affecting the Species. 1. Recovery criterion: Management practices, in accordance with habitat management plans, have reduced and/or controlled anthropogenic threats, thereby maintaining the species and its habitat integrity throughout the currently known range on public ***lands*** in five geographic areas for 10 years after the effective date of the final recovery plan (when finalized). Monitoring will demonstrate the effectiveness of management plans. Management plans will be in place for, at a minimum, the occurrences listed in the following table: Table 2--Formalized Management Plans per Geographic Area---------------------------------------------------------------------------------------------------------------- Current number Minimum number of occurrences of occurrences covered by Geographic area identified in management plans Years management draft recovery (percent of plans in place plan total occurrences)----------------------------------------------------------------------------------------------------------------Montana................................................... 67 191 (62) 22Spokane County, Washington................................ 33 37 (12) 12Pierce County, Washington................................. 5 19 (6) 16Clark County, Washington.................................. 4 4 (1) 9Mendocino County, California.............................. 5 7 (2) 24 ----------------------------------------------------- Totals................................................ 114 258 (84)---------------------------------------------------------------------------------------------------------------- Progress: Despite the recovery plan not being finalized, management plans are in place on Federal ***lands*** for the minimum number of occurrences identified in Table 2, above. Monitoring indicates management plans have been effective at maintaining the minimum number of occurrences by reducing or eliminating anthropogenic threats associated with ***land*** management activities (e.g , timber harvest, road construction, and maintenance) and other threats (e.g , invasive species). Prior to formalized management plans, some conservation efforts were occurring on Federal, State, and some private ***land***. In addition, survey efforts have documented substantially more occurrences of water howellia rangewide than were known at the time of listing (Mincemoyer 2005, pp. 4-5; Frymire 2017, pers. comm.; Gilbert 2017, pers. comm.; Johnson 2017, pers. comm.; Lichthardt and Pekas 2017, p. 1; ORBIC 2017, unpaginated; Rule 2017, pers. comm.). 2. Recovery criterion: Foster or promote the conservation of occurrences on ***lands*** not addressed by agency management plans. Specifically, this recovery criterion recommends long-term conservation measures for the occurrence in Latah County, Idaho. Progress: Long-term conservation measures for water howellia have been established through ***land*** transfers, conservation easements, and management plans on some private ***lands***. In Montana's Swan Valley, large-scale ***land*** transfers (67,000 acres (ac) (27,000 hectares (ha)) for the benefit of many species have occurred, and ***land*** supporting known water howellia occurrences has been transferred from private to Federal ownership. These occurrences are now protected under Federal agency management plans and conservation strategies. One occurrence located on private ***land*** in Latah County, Idaho, is protected under a conservation agreement, held in perpetuity by the Palouse ***Land*** Trust. In the 5-year review (USFWS 2013, p. 6), it was noted that, in addition to the conservation agreement, a management plan for this occurrence was being developed (Trujillo 2017, pers. comm.). However, recent communications with Palouse ***Land*** Trust indicate that a management plan still needs to be developed for this occurrence (Englund 2020, pers. comm.). Two other occurrences of water howellia on the Coeur d'Alene Reservation in Idaho are being actively managed under the direction of a tribal water howellia management plan (Green 2018, pp. 3-9). The Coeur d'Alene tribe is planning to use active stream/wetland and floodplain restoration, riparian buffering, and outplanting to conserve existing water howellia occurrences and expand the distribution of the species into nearby potentially suitable habitat (Green 2018, entire). The Service is unaware of any information regarding additional efforts to protect water howellia occurrences on private ***land*** in other parts of the species' range. 3. Recovery criterion: A post-delisting strategy for monitoring the species' population dynamics is in place. Progress: We have developed a post-delisting monitoring plan in cooperation with State, Federal, Tribal, and nongovernmental conservation partners. The final post-delisting monitoring plan is available for public review on [*http://www.regulations.gov*](http://www.regulations.gov) under Docket No. FWS-R6-ES-2018-0045.[[Page 31960]] Additionally, the 5-year review recommended development of a memorandum of understanding (MOU) with the USFS and U.S Department of Defense (USDOD) to ensure the continuation of existing conservation measures currently benefitting water howellia. Although a formal MOU has not been developed, both agencies have specific conservation strategies in place for the conservation of water howellia (for specific conservation strategies, see discussion of ***land*** management effects under A. The Present or Threatened Destruction, Modification, or Curtailment of Its Habitat or Range, below).Summary of Changes From the Proposed Rule Based on public comments on our October 7, 2019, proposed rule (84 FR 53380) and information provided to us by peer reviewers, we made updates or provided additional clarity on information concerning population monitoring vs. surveying, predicted effects of invasive species, regulatory mechanisms, climate change, wetland/pond hydrology, genetic diversity, cumulative effects, post-delisting monitoring, and metapopulation structure. We also made other minor editorial clarifications and corrections in this final rule.Summary of Factors Affecting the Species Section 4 of the Act (16 U.S.C 1533) and its implementing regulations (50 CFR part 424) set forth the procedures for listing species, reclassifying species, or ***removing*** species from listed status. ``Species'' is defined by the Act as including any species or subspecies of fish or wildlife or plants, and any distinct vertebrate population segment of fish or wildlife that interbreeds when mature (16 U.S.C 1532(16)). The Act defines an ``endangered species'' as a species that is ``in danger of extinction throughout all or a significant portion of its range,'' and a ``threatened species'' as a species that is ``likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.'' The Act requires that we determine whether any species is an ``endangered species'' or a ``threatened species'' because of any of the following factors: (A) The present or threatened destruction, modification, or curtailment of its habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) the inadequacy of existing regulatory mechanisms; or (E) other natural or manmade factors affecting its continued existence. We must consider these same five factors in delisting a species. For species that are already listed as endangered or threatened species, this analysis of threats is an evaluation of both the threats currently facing the species and the threats that are reasonably likely to affect the species in the foreseeable future following the ***removal*** of the Act's protections. According to 50 CFR 424.11(e), we may delist a species if our status review of the best available scientific and commercial data indicates that the species is neither endangered nor threatened for the following reasons: (1) The species is extinct; (2) the species does not meet the definition of an endangered species or a threatened species (e.g , due to recovery); or (3) the listed entity does not meet the statutory definition of a species. Water howellia is currently listed as threatened. Section 3(20) of the Act defines a ``threatened species'' as any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. The Act does not define the term ``foreseeable future.'' Our implementing regulations at 50 CFR 424.11(d) set forth a framework for evaluating the foreseeable future on a case-by-case basis. The term ``foreseeable future'' extends only so far into the future as we can reasonably determine that both the future threats and the species' responses to those threats are likely. In other words, the foreseeable future is the period of time in which we can make reliable predictions. ``Reliable'' does not mean ``certain''; it means sufficient to provide a reasonable degree of confidence in the prediction. Thus, a prediction is reliable if it is reasonable to depend on it when making decisions. It is not always possible or necessary to define foreseeable future as a particular number of years. Analysis of the foreseeable future uses the best scientific and commercial data available and should consider the timeframes applicable to the relevant threats and to the species' likely responses to those threats in view of its life-history characteristics. Data that are typically relevant to assessing the species' biological response include species-specific factors such as lifespan, reproductive rates or productivity, certain behaviors, and other demographic factors. For water howellia, we consider 30 years to be a reasonable period of time within which reliable predictions can be made for the species. This time period includes multiple generations of water howellia. Additionally, various global climate models and ***emission*** scenarios provide consistent predictions within that timeframe (IPCC 2014, p. 11). We consider 30 years a relatively conservative timeframe in view of the long-term protections in place for 84 percent of the species' occupied habitat occurring on Federal ***land***. A recovered species has had threats removed or reduced to the point that it no longer meets the Act's definition of an ``endangered species'' or a ``threatened species.'' A species is an ``endangered species'' for purposes of the Act if it is in danger of extinction throughout all or a significant portion of its range and is a ``threatened species'' if it is likely to become endangered within the foreseeable future throughout all or a significant portion of its range. For the purposes of this analysis, we will evaluate whether or not the currently listed species, water howellia, should continue to be listed as threatened, based on the best scientific and commercial information available. We use the term ``threat'' to refer in general to actions or conditions that are known to or are reasonably likely to negatively affect individuals of a species. The term ``threat'' includes actions or conditions that have a direct impact on individuals (direct impacts), as well as those that affect individuals through alteration of their habitat or required resources (stressors). The term ``threat'' may encompass--either together or separately--the source of the action or condition or the action or condition itself. However, the mere identification of any threat(s) does not necessarily mean that the species meets the statutory definition of an ``endangered species'' or a ``threatened species'' or that it should remain listed as such. In determining whether a species meets either definition, we must evaluate all identified threats by considering the species' expected response and the effects of the threats--in light of those actions and conditions that will ameliorate the threats--on an individual, population, and species level. We evaluate each threat and its expected effects on the species, then analyze the cumulative effect of all of the threats on the species as a whole. We also consider the cumulative effect of the threats in light of those actions and conditions that will have positive effects on the species--such as any existing regulatory mechanisms or conservation efforts. The Secretary determines whether the species meets the definition of an ``endangered[[Page 31961]]species'' or a ``threatened species'' only after conducting this cumulative analysis and describing the expected effect on the species now and in the foreseeable future. The following analysis examines the factors currently affecting water howellia or that are likely to affect it within the foreseeable future.Habitat-Based Threats At the time of listing (59 FR 35860; July 14, 1994), the following potential habitat-based threats were identified for this species: (1) Invasive species, (2) ***land*** management (primarily timber harvest and road building), (3) trampling by domestic livestock, (4) direct habitat loss from urbanization or dam construction, and (5) the narrow ecological requirements of the species. In the analysis that follows, we also considered climate change in the context of the species' narrow ecological requirements.Invasive Species In the final listing rule (59 FR 35860; July 14, 1994), invasive plant species were identified as a threat to water howellia in habitats where they overlap. Invasive species, such as reed canarygrass (Phalaris arundinacea), sweet flag (Acorus calamus), and yellow flag iris (Iris pseudacorus), were identified to have the capacity to outcompete water howellia, presumably for nutrients and space (Lesica 1997, p. 367; Clegg et al. 2000, p. 13; Lichthardt and Pekas 2017, entire). These invasive species may have the potential to extirpate water howellia occurrences (59 FR 35860; July 14, 1994), and as a result, we focus our analysis on these species. The best available information does not indicate any potentially significant negative impacts to water howellia from any other invasive species. Reed canarygrass is present in water howellia habitat in all States, except California (Johnson 2017, pers. comm.), but the extent of invasion varies by site (Gilbert 2017, pers. comm.; Rule 2017, pers. comm.; Shelly 2017, pers. comm.; Lesica 1997, pp. 367-368). Abundance of reed canarygrass in ponds occupied by water howellia on the Turnbull National Wildlife Refuge (NWR) has fluctuated through time, with no definitive long-term trend (Rule 2017, pers. comm.; Rule 2020, in progress). Abundance of reed canarygrass in ponds occupied by water howellia on the JBLM has also fluctuated through time, with no definitive long-term trend (Gilbert 2017, pers. comm.; Gilbert 2020, pers. comm.). In Montana, reed canarygrass is present in many ponds occupied by water howellia, but increased distribution has not been detected recently (Shelly et al. 2016, entire; Shelly 2017, pers. comm.). However, reed canarygrass invaded Swan River Oxbow Preserve in the Swan Valley in Montana, and water howellia was subsequently extirpated at that site (Lesica 1997, pp. 367-368; Lesica 2001, p. 2). In Idaho, monitoring efforts have not detected any decreases in pond size, which may act as a surrogate for reed canarygrass colonization; however, detailed monitoring of the species has not been conducted (Lichthardt and Pekas 2017, p. 6). Little is known about the extent of reed canarygrass invasion with regard to water howellia occurrences in Oregon. The mechanisms driving the invasive potential of reed canarygrass within water howellia habitats are unclear. The invasive potential may be due to some sites being occupied by a native genotype of reed canarygrass and other sites being occupied by a highly invasive variety (Casler et al. 2009, entire; Lichthardt and Pekas 2017, p. 8; Wiechmann 2014a, p. 31; Jakubowski et al. 2013, entire; Merigliano and Lesica 1998, entire). Density of reed canarygrass is a better determinant of impact to water howellia occurrences than presence alone (Wiechmann 2014a, pp. 31, 34, 38). Additionally, in some ponds, reed canarygrass was found to be dominant at shallower water depths and water howellia dominant at deeper depths (Wiechmann 2014a, p. 32). Success of mechanical and chemical treatment efforts to decrease the abundance and distribution of reed canarygrass have varied across the range of water howellia. In California, mechanical treatment has limited the spread of reed canarygrass in ponds and wetlands adjacent to water howellia occurrences, and chemical treatment is further reducing the size of reed canarygrass patches (Johnson 2011, 2017, pers. comm.). Similarly, consistent suppression of reed canarygrass at JBLM (military base) in Washington has reduced patch sizes of the plant in the past (TNC 2006, p. 65; Engler 2008, pers. comm.; Gilbert 2008, pers. comm.). Currently, no suppression efforts are underway at JBLM, due to little change in reed canarygrass distribution and the risk of harming water howellia plants in the process (Gilbert 2017, pers. comm.). In Idaho, the success of suppression efforts to limit abundance and distribution of reed canarygrass were mixed (Lichthardt and Gray 2010, p. 9). However, once suppression efforts were stopped, distribution and abundance of reed canarygrass appeared to vary more with fluctuating environmental conditions than with the presence of suppression effort (Lichthardt and Gray 2010, p. 9). No suppression efforts to control or eradicate reed canarygrass on the Turnbull NWR in Washington are currently underway; the species is present, but trends indicate variability in abundance with fluctuating environmental conditions (Rule 2009, 2013a, 2017, pers. comm.). In Montana, suppression efforts of reed canarygrass have been somewhat successful in some areas (Annen 2010, entire; Healy 2015 and references therein, entire) and not successful in other areas (Lesica and Martin 2004, entire; Lesica 2001, entire). Sweet flag was identified by the State of Idaho as an invasive species that may be displacing water howellia at one location (Idaho Department of Fish and Game (IDFG) 2016, p. 3). Monitoring at this location has been ongoing since 1999, and water howellia has not been observed since 2001 (Lichthardt and Pekas 2017, p. 2). However, we are unaware of any other water howellia occurrences being affected by sweet flag. As a result, sweet flag is unlikely to become a threat to water howellia. Yellow flag iris is an invasive plant that has been identified in ponds occupied by water howellia on JBLM in Washington. While it appears yellow flag iris may have the ability to displace or outcompete water howellia in some environments, the infestations on JBLM occur in relatively small areas, and their spread has been controlled by herbicides or mechanical ***removal*** (Clegg et al. 2000, p. 13; Gilbert 2019, pers. comm.). Invasive plants can be aggressive and quickly displace native plants in some situations. While there are some small sites that may have been completely or partially overtaken by invasive plants, water howellia metapopulations appear to maintain viability in the face of invasive species. This conclusion is reinforced by reed canarygrass coexisting with extant water howellia occurrences; large-scale displacement of water howellia by reed canarygrass is not occurring in any of the metapopulations (Swan Valley, Montana; Turnbull NWR and JBLM, Washington), even in the absence of suppression efforts. Given the absence of displacement of water howellia by reed canarygrass within the three metapopulations of water howellia, and the success of existing suppression efforts where they have been applied, we do not consider reed canarygrass to be a significant threat to water howellia. The best available information does not indicate that any other invasive species likely pose a threat to water howellia.[[Page 31962]]***Land*** Management Activities ***Land*** management activities that cause disturbance to vegetation surrounding water howellia occurrences were identified as a threat to the species in the final listing rule (59 FR 35860; July 14, 1994). Previous modeling efforts suggested that these activities, singularly or in combination, could result in a loss of vegetation at the pond fringe, disrupting the hydrological cycle and negatively impacting the phenology of water howellia (Reeves and Woessner 2004, pp. 10, 15). However, more recent evidence indicates that effects from ***land*** management activities are no longer a threat to the species. Most ***land*** management activities that could disturb vegetation surrounding water howellia occurrences on USFS ***land*** are now prohibited or designed to minimize impacts to water howellia. For example, ***land*** management activities on the Flathead National ***Forest*** in Montana must create a favorable physical environment that protects against hydrological changes that may adversely impact water howellia (USDA 2018, pp. 45-46). These desired conditions and guidelines were incorporated as part of the revised Flathead National ***Forest*** Plan in 2018. On the Mendocino National ***Forest*** in California, activities that could disturb vegetation within 300 ft (91 m) of water howellia occurrences are typically not allowed because of standards and guidelines to protect the plant (USFS 1995, p. IV-32; Johnson 2013, pers. comm.). Limited activities (including prescribed fire) may be allowed within the 300-ft (91-m) buffer, but only if needed to maintain the integrity of the buffer (USDA 2018, pp. 18-23, 44-46; Johnson 2013, pers. comm.). The 2018 revised Flathead National ***Forest*** Plan in Montana has also incorporated the conservation strategy for water howellia, which was finalized in 1997 (USFS 1997, entire; for a more in-depth discussion of ***land*** management plans, see Existing Regulatory Mechanisms, below). As a result of these actions, abundance and distribution of water howellia have remained stable in Montana's Swan Valley from 1978 to 2014 (Pipp 2017, p. 14). On State ***land*** in Montana, clear-cutting of timber and prescribed fire are prohibited within defined buffers surrounding waterbodies (Montana Code Annotated 2019, title 77, chapter 5, part 3, at 77-5-303). In Washington, buffer zones are established in wetlands containing water howellia on Turnbull NWR when mechanical thinning and prescribed fire are used to treat conifer encroachment (Rule 2009, pers. comm.). Timber harvest and prescribed fire were not identified as potential threats to other water howellia occurrences in Washington (USDOD 2006, entire; USDOD 2012, entire; USDOD 2017a, entire; Anderson 2013, pers. comm.; Gilbert 2013, 2017, pers. comm.), or occurrences in Oregon or Idaho (Currin 2013, pers. comm.; USFWS 2009, entire; IDFG 2016, entire). Some disturbance of vegetation surrounding water howellia occurrences from ***land*** management activities occurred historically, prior to existing guidelines and standards in Federal ***land*** management plans. For example, in Montana's Swan Valley, historical disturbances caused from ***land*** management activities (e.g , timber harvest, timber thinning, prescribed fire, road building, grazing) have occurred in vegetated buffers surrounding many of the existing water howellia occurrences (Pipp 2017, p. 6). However, 79 percent of existing water howellia occurrences in the Swan Valley have experienced at least one historical disturbance event in the surrounding vegetation and are still viable, indicating some tolerance of water howellia to buffer disturbance. In addition, abundance or distribution of water howellia in the Swan Valley has remained stable, despite these historical disturbances from ***land*** management activities (Pipp 2017, p. 14). Furthermore, despite experiencing a stand-replacing fire in 2003, water howellia occurrences in the affected area of the Swan Valley are stable; buffer vegetation appears to have recovered, and hydrology is adequately functioning (Pipp 2017, pp. 14-15). The effects of historical road building within vegetated buffers surrounding water howellia occurrences have largely been mitigated on Federal and State ***lands***. Guidance established in the revised Flathead National ***Forest*** Plan indicates that maintenance on roads within 300 ft (92 m) of ponds providing habitat for water howellia should maintain or improve hydrological integrity to protect habitat conditions (USDA 2018, pp. 45-46). No effects of historical roads occurring within vegetated buffers on water howellia in the Swan Valley were found in a recent analysis (Pipp 2017, p. 16). Similarly, in California, small spur roads are being closed and hydrologically stabilized in areas occupied by water howellia on the Mendocino National ***Forest*** to minimize anthropogenic contribution to landscape instability per direction in the Mendocino National ***Forest*** Plan (USFS 1995, p. III-26; Johnson 2008, pers. comm.). These conservation measures appear to be working in California, as six of the seven known occurrences of water howellia are still viable. In Idaho, the Idaho Transportation Department (ITD) avoids adverse effects to wetlands during project implementation, and a Best Management Practices Manual identifies measures to minimize any potential effects during project implementation (ITD 2014, entire; ITD 2017, p. 1). The State of Idaho identified two water howellia occurrences within 98 ft (30 m) of an established highway and expressed concern about indirect effects of road work resulting in sedimentation and, of less concern, potential ***removal*** of shade (IDFG 2016, p. 4). However, the best available information does not indicate any potential effects that road work may pose to this population. Roads were not cited as a threat to water howellia occurrences in Washington or Oregon (USDOD 2006, entire; USDOD 2012, entire; USDOD 2017a, entire; USFWS 2007, entire; USFWS 2010; entire; Anderson 2013, pers. comm.; Currin 2013, pers. comm.). ***Land*** management activities (e.g , timber harvest, timber thinning, road building, grazing, and prescribed fire) that disturb vegetation surrounding water howellia occurrences were once considered a threat to the species. However, most ***land*** management activities that have the potential to disturb surrounding vegetation are prohibited by ***land*** management plans or other Federal or State policy. Some of these prohibitions were put in place as a result of the species being listed, but will remain in effect for the duration of the ***land*** management plan or other policy, even when the species is delisted. Where disturbance of vegetation from ***land*** management activities has occurred, water howellia has shown some tolerance for disturbance and no downward trend in presence or distribution. Given that all three metapopulations currently have conservation measures in place to avoid vegetative buffer disturbance from ***land*** management activities and that water howellia has shown some tolerance to disturbance when it occurs, we no longer consider ***land*** management activities to be a significant threat to water howellia.Trampling by Domestic Livestock Trampling of water howellia by domestic livestock was cited as a threat in the final listing rule for the species (59 FR 35860; July 14, 1994). Direct effects of plant crushing, seed bank disturbance, and alterations to substrate are likely to occur when livestock enter and exit ponds and wetlands. In addition, increased nutrient loading may be an indirect effect of livestock[[Page 31963]]occupancy in and near water howellia habitat. Some water howellia occurrences are within habitats actively used by livestock. However, the level of livestock-caused disturbance that water howellia can withstand is not known and likely varies with site-specific conditions, as well as timing, severity, and duration of livestock use of occupied water howellia habitat. The effects of trampling on water howellia occurrences on Federal and State ***land*** have largely been mitigated by fencing, cattle barricades, elimination of grazing in some areas occupied by water howellia, or limitations on the duration of time livestock have access to sensitive pond and wetland habitats (USFS 2002, p. 6; Mincemoyer 2005, p. 11; Johnson 2008, 2013, pers. comm.; Frymire 2017, pers. comm.). In Montana, analyses of monitoring data spanning nearly 30 years have concluded that despite some grazing in occupied habitat, the presence of water howellia has not been affected (Pipp 2017, p. 17). Although no causal link was made between grazing levels and the probability of water howellia presence in the Pipp (2017) analysis, it appears that management actions such as fencing, cattle guards, and exclusion implemented concurrently with grazing have provided protections to water howellia habitat and allowed the species to be conserved in Montana's Swan Valley (Pipp 2017, p. 17). In California, specific grazing regimes near five occupied ponds within an active grazing allotment on National ***Forest*** ***land*** appear to be effective; monitoring indicates no effects to water howellia occurrences from livestock trampling (Johnson 2013, pers. comm.). Two other water howellia occurrences in California are within inactive grazing allotments, where livestock are not currently present and not expected to be present in the future (Johnson 2013, 2017, pers. comm.). Trampling is not reported as a threat in Washington, Idaho, or Oregon (USDOD 2006, entire; USDOD 2017a, entire; USFWS 2007, entire; USFWS 2010, entire; Currin 2013, pers. comm.; IDFG 2016, entire). It is unknown where grazing may occur on the 37 occurrences (12 percent of total known occurrences) on private property. Therefore, the extent of trampling and other livestock-related alterations to water howellia habitat on these private ***lands*** is unknown. However, potential trampling effects from livestock on Federal and State ***land*** have been largely mitigated. Trampling of water howellia by domestic livestock is not a threat to the species on Federal or State ***land*** at current grazing levels because of mitigation measures being implemented, including riparian fencing, cattle guards, and timely ***removal*** or relocation of livestock from sensitive pond and wetland habitats. The best available information does not indicate that levels of livestock use (and thus potential trampling) will increase beyond current levels in the future. The severity and frequency of trampling of water howellia occurrences on private ***land*** are unknown, but as significantly fewer water howellia occurrences are known from private ***lands***, any impacts are likely not significant at the species level and have not affected recovery, which has been achieved based on species viability on State and Federal ***lands***. We conclude, based on the available information, that trampling by domestic livestock is not a significant threat to water howellia.Habitat Loss From Urbanization and Dam Construction Habitat loss from urbanization and dam construction occurred historically, particularly in Oregon, and was considered a threat to water howellia at the time of listing in 1994. However, additional habitat loss from urbanization and dam construction is no longer a threat to the species because conservation strategies implemented following listing and increased Federal ownership now provide additional protections (see Conservation Efforts, above). Direct habitat loss from urbanization and dam construction occurred along the Columbia River in Oregon, and water howellia was thought to be extirpated from that area prior to 2015 (USFWS 2017, entire; Norman 2010, pers. comm.). However, since then, two occurrences of water howellia have been located in the Portland, Oregon, metro area (ORBIC 2017, unpaginated). Most of the water howellia occurrences on corporate or private ***lands*** in Montana were previously owned by Plum Creek Timber. In 2007, approximately 67,000 ac (27,000 ha) of Plum Creek ***land*** in the Swan Valley were sold to The Nature Conservancy (TNC) and Trust for Public ***Land***; ownership was then transferred to either the USFS or the State of Montana (Swan Valley Connections 2017, entire). The 47 water howellia occurrences and potential habitat that were formerly on Plum Creek ***land*** are now protected from urbanization through either the Flathead National ***Forest*** Plan (USFS 1997, entire) or State agency direction for managing timberlands (DNRC 1996, p. 1). The Flathead National ***Forest*** Plan mandates avoidance of disturbance, including urbanization, in ***forested*** buffers of a minimum of 300 ft (91 m) from water howellia occurrences. The State of Montana manages its timberlands for long-term revenue and biodiversity (DNRC 1996, p. 2) and not for short-term revenue from selling timbered State ***lands*** and the potential urbanization that may follow. It is unknown if historical habitat loss occurred in California; however, most known occurrences of water howellia are within USFS ***lands***, including some within designated wilderness areas (Johnson 2013, pers. comm.). Therefore, no current or future threat of habitat loss from urbanization is expected because any disturbance of vegetated buffers surrounding water howellia ponds is prohibited under the Mendocino National ***Forest*** Plan unless it is necessary to promote natural ecological and hydrological function (USFS 1995, pp. IV-19, 35). It is unknown how urbanization has affected the 37 water howellia occurrences on private ***land***, but because there are significantly fewer occurrences known from private ***lands*** (12 percent of total known occurrences), these impacts are likely not significant at the species' level. In sum, habitat loss from urbanization and dam construction occurred historically, particularly in Oregon, but is no longer considered a significant threat. In Oregon, recent new discoveries of water howellia indicate that the species has been able to remain extant on the landscape where it was once considered extirpated. In areas surrounding the extant, larger metapopulations, habitat loss from urbanization and dam construction is not considered a threat to the species because of conservation strategies and ***land*** transfers implemented in Montana (USFS) and Washington (USDOD and the Service). Furthermore, known habitat in California is largely within USFS ***lands***, including designated wilderness; thus, there is no significant threat of habitat loss from urbanization or dam construction in California.Summary of Habitat-Based Threats Based on the final listing rule (59 FR 35860; July 14, 1994), the following stressors warranted consideration as possible current or future threats to water howellia: Invasive species, ***land*** management activities, trampling by domestic livestock, and direct habitat loss from urbanization or dam construction. However, as described below, these stressors have not occurred to the extent determined or anticipated at the time of listing in 1994, or the stressors are being adequately managed,[[Page 31964]]or the species is more tolerant of the stressor than was previously thought. ***Land*** management plans and conservation management strategies have been adopted by Federal and State agencies to mitigate the effects of ***land*** management activities on water howellia and are in place for all three metapopulations. These plans vary in duration, but are longer term (15+ years) and are expected to continue to provide protections to water howellia habitat into the future because the plans (and all future revisions to the plans) are mandated by Federal laws to conserve fish, wildlife, and plant species. For a more in-depth discussion of ***land*** management plans and relevant Federal laws, see Existing Regulatory Mechanisms, below. Suppression efforts directed at reed canarygrass have resulted in some success. Furthermore, water howellia occurrences are not currently being displaced by reed canarygrass, and the best available data do not indicate that they are being displaced by other invasive species. The installation of riparian fencing and cattle barricades and the implementation of specific grazing routines have effectively mitigated the effects of trampling on water howellia. The extant metapopulations, as well as most occurrences in California, are largely managed by Federal agencies that have conservation strategies in place. Therefore, neither urbanization nor dam construction is a threat to water howellia. Limited information is available regarding the 37 occurrences (12 percent of known occurrences) that occur on private property. Due to the low number of occurrences on private ***land*** relative to Federal and State ***land***, impacts to water howellia on private ***lands*** are likely not significant at the species level. Therefore, based on the available information, we do not consider there to be any significant habitat-based threats for water howellia.Overutilization of the Species Overutilization, for any purpose, was not considered a threat in the final rule to list water howellia (59 FR 35860; July 14, 1994). The best available information does not indicate any current use of water howellia for commercial, recreational, scientific, or educational purposes. Regarding future utilization, interest has been expressed by the Valencia Wetland Mitigation Bank in Priest River, Idaho, to collect seed via soil plugs from vigorous water howellia occurrences for use in establishing new occurrences where appropriate habitat exists (Wiechmann 2014b, entire). Initially, a harvest of 5 to 7 soil plugs from other Idaho occurrences has been proposed. The proposed project would be beneficial if it created another occurrence of water howellia in northern Idaho or had educational value. Recent communications with Valencia Wetland Mitigation Bank indicate that they are still interested in pursuing this project (Collier 2020, pers. comm.). We are not aware of any other current or future plans for use of the species. Therefore, based on the available information, we find that there are no significant threats to water howellia related to overutilization for commercial, recreational, scientific, or educational purposes.Disease or Predation Predation (herbivory) on water howellia by domestic livestock was considered a threat in the final rule to list the species (59 FR 35860; July 14, 1994). As described in more detail above, grazing is limited within the species' habitat, and the occurrence of water howellia in ponds accessible to livestock in the Swan Valley metapopulation has not been affected (Pipp 2017, p. 17). As a result, we conclude that predation does not affect the species throughout its range at the population or species level. The best available information does not indicate that levels of livestock grazing will increase within known occurrences of water howellia in the future. The best available information also does not indicate any issues or potential stressors regarding disease or insect predation. Therefore, based on the available information, we do not consider there to be any significant threats to water howellia from disease or predation.Other Factors Affecting the Species In this section, we discuss: (1) The narrow ecological requirements of the species in the context of climate change, (2) small population size/low genetic diversity, and (3) the potential for cumulative effects of stressors.Narrow Ecological Requirements/Climate Change Here, we consider the narrow ecological requirements of water howellia in the context of observed or projected changes in climate. The July 14, 1994, listing rule (59 FR 35860) did not discuss the potential impacts of climate change on water howellia. The terms ``climate'' and ``climate change'' are defined by the Intergovernmental Panel on Climate Change (IPCC). The term ``climate'' refers to the mean and variability of relevant quantities (i.e , temperature, precipitation, wind) over time (IPCC 2014, pp. 119-120). The term ``climate change'' thus refers to a change in the mean or variability of one or more measures of climate (e.g , temperature or precipitation) that persists for an extended period, typically decades or longer, whether the change is due to internal processes or anthropogenic changes (IPCC 2014, p. 120). Global climate projections are informative, and in some cases, the only or the best scientific information available for us to use. However, projected changes in climate and related impacts can vary substantially across and within different regions of the world (e.g , IPCC 2013c, 2014, entire) and within the United States (Melillo et al. 2014, entire). Therefore, we use ``downscaled'' projections when they are available and have been developed through appropriate scientific procedures, because such projections provide higher resolution information that is more relevant to spatial scales used for analyses of a given species (see Glick et al. 2011, pp. 58-61, for a discussion of downscaling). Climate change trends predicted for the Pacific Northwest (Oregon, Washington, Idaho, and Montana) broadly consist of an increase in annual average temperature; an increase in extreme precipitation events; and, with less certainty, variability in annual precipitation (Dalton et al. 2013, pp. 31-38, Figure 1.1; Snover et al. 2013, pp. 5-1-5-4). Lee et al. (2015) describe potential hydrological changes in response to predicted climate change on montane wetlands in the Pacific Northwest. These observations appear to vary with local conditions and include earlier drawdown, more rapid drying out in the summer, and reduced minimum water levels. Yearly weather patterns influence abundance of water howellia. Abundance of water howellia is typically lower if the preceding season had higher precipitation and/or cooler summer temperatures (Shelly et al. 2016, entire). This decrease is likely due to limited pond drying, which negatively affects seed germination rates due to their need for air exposure to germinate. Conversely, abundance of water howellia is typically higher if the preceding season had lower precipitation and/or hotter summer temperatures (Shelly et al. 2016, entire), due to more pond drying and increased rates of seed germination. There is uncertainty regarding how the predicted trends in precipitation and air temperature due to climate[[Page 31965]]change in the Pacific Northwest will influence water howellia. In western Montana, where all the known statewide occurrences of water howellia occur, regional climate data predict (1) increasing average annual air temperatures and (2) precipitation increasing in winter, spring, and fall and decreasing in summer (Montana 2017, pp. 40-63). These predicted conditions are similar to those observed to increase water howellia abundance (e.g , increased pond drying with annual recharge in the winter, spring) in Montana historically. Thus, future climate conditions may be favorable, on average, for water howellia. In Washington, predicted increases in air temperature and more rapid drying of montane wetlands could be favorable to water howellia, assuming adequate recharge in the winter and spring (Shelly et al. 2016, entire). The effects of predicted increased variability in precipitation on water howellia remains unclear. A potential increase in precipitation as a result of climate change may affect the species in several ways. First, increases in precipitation may increase the surface area of existing ponds and wetlands, or create new ones. These new habitats would be available for colonization by water howellia and could increase the range and resiliency of the species. However, new habitats would also be available to invasive species such as reed canarygrass and may also promote their expansion on the landscape. An important factor in increased habitat would likely be the site-specific conditions within each habitat; new habitat with deeper water and longer periods of inundation would likely preclude the establishment of reed canarygrass and be beneficial to water howellia. Conversely, the creation of shallower habitat may favor reed canarygrass. Another possible effect of increased precipitation may be the alteration of the hydrologic cycle of water howellia habitats. Specifically, these habitats may fill earlier (with heavier spring rainfall) and dry later in the season than they did historically, thereby reducing the timing window for air exposure needed for seed germination of water howellia in late summer and autumn. Alternatively, a potential decrease in precipitation as a result of climate change also may affect water howellia in several ways. Decreases in precipitation may result in water levels that are too low to support the submergent flower production. Additionally, earlier drawdowns and the faster receding of water in these wetlands as a result of decreased precipitation may ultimately limit the continued persistence of ephemeral ponds. This could provide an opportunity for expansion of reed canarygrass and other invasive species. On the other hand, amplified drying may allow for increased germination and expansion of water howellia. Another scenario with decreased precipitation is that the hydrological cycles could be altered in a way that would favor water howellia. Ponds that were previously perennial could potentially become ephemeral in nature, providing the wetting and drying cycle necessary for water howellia reproduction and, consequently, additional habitat for the species to occupy. Again, the site-specific conditions for each habitat would be an important factor. Changes in precipitation from snow to rain may also affect water howellia, particularly in the southernmost occurrences (e.g , California) (California DWR 2013, p. 22). More precipitation falling as rain rather than snow would likely alter the hydrologic cycle within these habitats. These alterations could include faster drying of wetlands than was observed historically, due to a lack of spring run-off from snow fields and increased annual air temperature. More frequent extreme precipitation events are predicted for California (California DWR 2013, p. 23). The effect of more extreme precipitation events on water howellia habitat in California is unclear, especially given the potential for interactions among precipitation and other environmental variables predicted to change (e.g , reduced snowpack, increased annual air temperature). The ability of water howellia to self-fertilize and produce seeds at both the early season submergent and later season emergent forms may be an advantage to surviving lengthened, shortened, or generally more inconsistent growing seasons than occurred historically. Seed production from both flower forms in one growing season may increase the opportunity for surviving subsequent inclement years. It is uncertain how increases in water temperature and increased evaporation due to increased ambient temperatures would affect growth and reproduction of water howellia; however, climate conditions that restrict the dual seed production and seed banking could reduce the ability of water howellia to sustain populations over time. Associated wetland vegetation that positively contributes to suitable microclimates for water howellia could be altered by predicted variance in temperatures and precipitation; the effects of which are uncertain. Occurrences of water howellia in Montana and eastern Washington could be more resilient to these processes than other occurrences because of their distribution over a larger landscape with many separate occurrences. Increasing temperatures combined with increased demand for ground and surface water for human development may compound negative impacts to water howellia in eastern Washington and northern Idaho. Climate-induced effects on water howellia may appear first in California, as these occurrences are at the southern edge of the known range. However, these effects may be buffered by the higher elevation (approximately 3,800 ft (1,158 m)) at which the California occurrences are found compared to elsewhere in the range (western Washington: approximately 15 ft (5 m)). Predicted environmental changes resulting from climate change may have both positive and negative effects on water howellia, depending on the extent and type of impact and depending on site-specific conditions within each habitat type (Lee et al. 2015, p. 14). The primary predicted negative effect is the alteration of hydrologic regimes (Lee et al. 2015, p. 14) potentially resulting in inconsistent growing seasons. This effect will likely be buffered by the ability of water howellia to produce seeds during both early and late seasons. Predicted environmental effects that may be positive for water howellia include increased habitat, seed dispersal, and species distribution in some areas, including within the three metapopulations due to predicted increases in precipitation across the northern range of the species (IPCC 2014, p. 61). The intact nature and current spatial arrangement (geographically diverse and at varying elevations) of the three large metapopulations will likely provide more resilience to climate change than the smaller, isolated occurrences. Effects of potential composition shifts in vegetation surrounding water howellia occurrences as a result of climate change are unknown. In summary, climate change is affecting and will continue to affect temperature and precipitation events. The extent, duration, and impact of those changes are unknown, but could potentially increase or decrease precipitation in some areas. Water howellia may experience climate change-related effects in the future, most likely at the individual or local population level. Regional occurrences may experience some shifts. However, it is anticipated that the metapopulations important to the viability of the species would continue to be viable because of resiliency due to geographic and[[Page 31966]]elevational diversity rangewide and because some of the future predicted air temperature and precipitation conditions are similar to the yearly weather conditions that promote larger abundances of water howellia (lower precipitation and/or hotter summer temperatures). Available information indicates that increased variability in future climate conditions is likely, but that water howellia has some plasticity to environmental change as evidenced by the species' viability despite a changing climate and its life-history strategy of dual seed production and longer-term seed viability to buffer against several consecutive years of unfavorable environmental conditions. Therefore, based upon the best available information, we conclude that climate change is not a significant threat to water howellia.Small Population Size and Low Genetic Diversity The final rule to list water howellia (59 FR 35860; July 14, 1994) cited small population size (i.e , limited extent of occupied habitat) as a contributor to its vulnerability. Species that occupy limited amounts of habitat often have reduced viability because they may lack resiliency to recover from stochastic events. Water howellia currently occupies about 400 acres of habitat rangewide, comprised of 307 occurrences with most occurrences occupying less than 1 acre. While most of the occurrences of water howellia are small in areal extent, the arrangement of occupied habitat across 5 States is advantageous to water howellia because increased redundancy and representation increase the capacity of water howellia to survive a catastrophic event. Stochastic events still may affect individual occurrences, but the widespread arrangement of the occurrences increases redundancy and representation. Further, long-term monitoring has shown that water howellia are more tolerant of natural stochasticity or manmade disturbance in buffer areas surrounding occupied ponds than previously thought (Pipp 2017, p. 6). In addition, the documentation of 200 additional occurrences of water howellia since 1994 has increased the redundancy and representation of habitats for water howellia rangewide. This increased redundancy and representation of habitats increases the viability of water howellia, relative to 1994, because of an increased buffer against stochastic and catastrophic events. The final rule to list water howellia (59 FR 35860; July 14, 1994) cited lack of genetic variation within and among occurrences as a contributor to its vulnerability. Low genetic diversity could limit a species' or population's ability to respond to novel changes in its environment, necessitating redundancy of occurrences across larger areas to increase the probability of survival. At the time of listing in 1994, the only genetic investigation of the species showed very low genetic diversity within and among occurrences in Washington and Montana (Lesica et al. 1988, p. 278). More current genetic results indicate greater genetic diversity within and among occurrences than previously thought; however, diversity is still relatively low (Brunsfeld and Baldwin 1998, p. 2; Schierenbeck and Phipps 2010, p. 5). Another genetic investigation documented that all occurrences are distantly related and that gene flow is likely occurring between the States (Schierenbeck and Phipps 2010, p. 6). However, it is also possible that these results indicate that infrequent, long-distance dispersal events (likely facilitated by waterfowl) do occur, but actual gene flow is not occurring or rarely occurring. The effects of low genetic diversity of water howellia on adaptability to future climate conditions are unknown. Water howellia is a self-pollinating species; thus, genetic diversity is expected to be lower, in general, than that for cross-pollinating species (Hamrick and Godt 1996, entire). Water howellia populations have remained stable despite rapidly changing air temperatures since the late 1990s (Snover et al. 2013, p. ES-3); however, it is unknown whether future air temperature trajectories will remain similar to those observed from the late 1990s to present. Another consideration is the time scale on which genetic diversity operates. For example, there has been considerable debate about what effective population size is adequate to conserve genetic diversity and long-term adaptive potential (see Jamieson and Allendorf 2012 for review, p. 579). However, loss of genetic diversity is typically not an immediate threat even in isolated populations (Palstra and Ruzzante 2008, p. 3441), but rather is a symptom of deterministic processes acting on the population (Jamieson and Allendorf 2012, p. 580). In other words, loss of genetic diversity typically does not drive species to extinction (Jamieson and Allendorf 2012, entire); other processes, such as habitat degradation, have a more immediate and greater impact on species viability (Jamieson and Allendorf 2012). We acknowledge the documented low genetic diversity of water howellia; however, the best available information indicates that the potential effects from low genetic diversity on water howellia's viability would not occur within the foreseeable future. In addition, the redundancy of smaller occurrences across the species' range may help mitigate for reduced genetic plasticity within individual occurrences because unfavorable environmental conditions affecting one or several occurrences may not affect other occurrences in different parts of the range. The current spatial arrangement of multiple occurrences spread across 5 States is favorable to the species' long-term viability because these occurrences are at different elevations and within varying climatic regimes rangewide (see discussion under ``Narrow Ecological Requirements/Climate Change,'' above). Thus, we do not consider small population size or low genetic diversity to be a significant threat to water howellia.Cumulative Effects of All Stressors Many of the stressors faced by water howellia are interrelated and could work in concert with each other, resulting in a cumulative adverse effect on the species. For example, stressors discussed under Factor A that individually do not rise to the level of a threat could together result in habitat loss. Similarly, small population size in combination with stressors discussed under Factor A could present a potential concern. Climate change is occurring across the range of the species, coinciding with all other identified stressors. As described previously, variations in climatic conditions may favor or preclude invasive species, depending on site-specific habitat factors. Also described previously, climate change may alter hydrological cycles. However, despite changing climate conditions, water howellia has sustained populations across its range. Analysis of long-term datasets and observations indicate the species has maintained viability even with climate change interacting with other potential stressors (Gilbert 2017, pers. comm.; Rule 2017, pers. comm.; Pipp 2017, entire; Rule 2020, in progress). This indicates that water howellia has some capacity to survive and reproduce, despite potential cumulative effects of climate change and other stressors to date. Nevertheless, we recognize that there are uncertainties associated with future climate change predictions and potential cumulative effects. Ongoing management and monitoring of water howellia (via the post-delisting[[Page 31967]]monitoring plan) is designed to detect potential future changes in the species' distribution and abundance. There may be locations of water howellia occurrences where invasive species are present, and cattle have access to occupied ponds. Grazing may limit the expansion of invasive species in these instances. Otherwise, we are not aware of particular locations within water howellia occurrences where multiple stressors occur. Also, we do not anticipate stressors to increase on federally managed ***lands***, which afford protection to the species in most of the occupied habitat. Furthermore, the documented new occurrences and greater distribution of the species since it was listed in 1994 provide additional resiliency, redundancy, and representation across the range of the species, which is expected to increase the viability of the species in the face of cumulative threats. Therefore, we conclude, based on the available information, that cumulative effects are not a significant threat to water howellia.Summary of Other Factors Affecting the Species Given the lack of threats within water howellia occurrences and increases in the species' known distribution since listing in 1994, we conclude that climate change, small population size and low genetic diversity, and cumulative effects are not significant threats to water howellia.Existing Regulatory Mechanisms We examined the stressors identified within the other factors as ameliorated or exacerbated by any existing regulatory mechanisms or conservation efforts for water howellia. Section 4(b)(1)(A) of the Act requires the Service to take into account those efforts, if any, being made by any State or foreign nation, or any political subdivision of a State or foreign nation, to protect endangered or threatened species. We consider relevant Federal, State, and Tribal laws, regulations, and other such binding legal mechanisms that may ameliorate or exacerbate any of the threats we describe in the threats analysis or otherwise enhance the conservation of the species. We give the strongest weight to statutes and their implementing regulations and to management direction that stems from those laws and regulations; an example is State governmental actions enforced under a State statute or constitution or Federal action under the statute. For currently listed species, we consider the adequacy of existing regulatory mechanisms to address threats to the species absent the protections of the Act. Therefore, we examine whether other regulatory mechanisms would remain in place if the species were delisted, and the extent to which those mechanisms will continue to help ensure that future threats will be reduced or eliminated. In our previous discussion of threats, we evaluate the significance of threats as mitigated by any conservation efforts and existing regulatory mechanisms. Where threats exist, we analyze the extent to which conservation measures and existing regulatory mechanisms address the specific threats to the species. Regulatory mechanisms, if they exist, may reduce or eliminate the impacts from one or more identified threats. Although inadequacy of existing regulatory mechanisms was not specifically identified as a threat to water howellia at the time of listing in 1994, we did mention the very limited number of protections that existed for the species (59 FR 35860, July 14, 1994, see p. 59 FR 35862). Specifically, we discussed the designation of water howellia as a sensitive species by the USFS and referred to wetland protection measures provided under section 404 of the Federal Clean Water Act (33 U.S.C 1251 et seq.), title XII of the Food Security Act of 1985 (16 U.S.C 3801 et seq.), and some State laws.Federal Clean Water Act: The Clean Water Act (CWA) was designed, in part, to protect surface waters of the United States from unregulated pollution from point sources. The CWA provides some benefit to water howellia through the regulation of discharge into surface waters through a permitting process; however, the historical threats to water howellia habitat have not typically been associated with point sources of pollution, and current information does not point to these as threats for occurrences today. Under section 404 of the CWA, the U.S Army Corps of Engineers (USACE) regulates the discharge of fill material into waters of the United States, including wetlands. In general, the term ``wetland'' refers to areas meeting the USACE's criteria of hydric soils, hydrology (either sufficient annual flooding or water on the soil surface), and hydrophytic vegetation (plants specifically adapted for growing in wetlands). Some habitat occupied by water howellia is considered isolated waters under the CWA. As a result of various Supreme Court decisions, the CWA's jurisdiction over isolated waters has been uncertain and generally determined case-by-case. Further, Federal agencies are currently considering ***removing*** isolated waters from CWA jurisdiction (82 FR 34899; July 27, 2017). Thus, the extent of water howellia receiving the protections of the CWA now and in the future is uncertain. However, the protections of the CWA to water howellia habitat that is under CWA jurisdiction are expected to remain when the species is delisted and the protections of the Act removed. Food Security Act: The Food Security Act was designed, in part, to protect wetlands by ***removing*** incentives for farmers to convert wetlands into crop fields. The Food Security Act likely provides some indirect protection of potential water howellia habitats on private ***land***, but not those on Federal or State ***land***. Although there are no data directly linking the Food Security Act and water howellia, historically, it has been demonstrated that the Food Security Act has had positive impacts on wetland function (Gleason et al. 2011, p. S65). Although the future of the Food Security Act in its current form is uncertain, any protections afforded to wetlands would confer benefit to water howellia should the species be present. National Environmental Policy Act: Environmental review of potential effects of Federal actions is mandated under the National Environmental Policy Act (NEPA; 42 U.S.C 4321 et seq.). When NEPA analysis reveals significant environmental effects, the Federal agencies must disclose those effects to the public and consider mitigation that could offset the effects. These mitigations usually provide some protections for listed species. However, the NEPA does not require that adverse impacts be mitigated, only disclosed. Therefore, because NEPA is procedural, it does not independently provide protection for the species. National ***Forest*** Management Act: Federal activities on USFS ***lands*** are subject to the National ***Forest*** Management Act of 1976 (NFMA; 16 U.S.C 1600 et seq.). The NFMA requires the development and implementation of resource management plans that guide the maintenance of ecological conditions that support natural distributions and abundance of species and not contribute to their extirpation. In 2018, the Flathead National ***Forest*** in Montana revised its resource management plan (often called a ***forest*** plan), and the Mendocino National ***Forest*** in California anticipates revising their ***forest*** plan in the near future. The revised Flathead National ***Forest*** plan includes measures for conservation of the known water howellia occurrences on USFS ***land*** in Montana by[[Page 31968]]incorporating the existing USFS conservation strategy for water howellia into the revised ***forest*** plan (USFS 2018, pp. 20, 45-46, 52, 99-100, 143-144; Shelly 2019, pers. comm.; USFS 1997, pp. 17-18). The inclusion of the conservation strategy into the revised ***forest*** plan is important, because in addition to providing conservation measures for known water howellia occurrences, it also provides for conservation of ponds that are suitable habitat but are currently unoccupied. Guidance provided in the Mendocino National ***Forest*** plan has resulted in the use of buffer strips to protect riparian species and function surrounding ponds occupied by water howellia in California. Both the Flathead National ***Forest*** plan and Mendocino National ***Forest*** plan are expected to continue to be implemented when water howellia is delisted, based on discussions with the USFS (see Conservation Efforts and Habitat-based Threats, above) and the fact that these plans are longer term (15+ years; NFMA, 16 U.S.C 1600 et seq.) ***forest*** planning documents. Further, NFMA requires ***forest*** plans to provide protection for streams, stream banks, shorelines, lakes, wetlands, and other bodies of water from detrimental changes in water temperatures, blockages of water courses, and deposits of sediment, where tree harvests are likely to seriously and adversely affect water conditions or fish habitat. Thus, any future revisions to the Flathead National ***Forest*** or Mendocino National ***Forest*** plans would still provide some protections to water howellia and its habitat. Water howellia is given consideration as a Federal species at risk by Federal agencies under the 2012 National ***Forest*** System ***land*** management planning rule (77 FR 21162; April 9, 2012). When delisted, water howellia will be evaluated for designation as a species of special concern and designated as such if there is substantial concern for its viability in the plan area. The USFS anticipates that water howellia will be given the status of ``species of conservation concern'' in both plans when the species is delisted (Shelly 2016, pers. comm.; Johnson 2017, pers. comm.). If water howellia is not given the status of ``species of conservation concern'' upon delisting, the 2012 planning rule still requires any ***forest*** plan to provide for the diversity of plant and animal communities and the long-term persistence of native species in the plan area. Further, the planning rule also requires a ***forest*** plan to provide ecological conditions to keep common native species common, contribute to the recovery of endangered and threatened species, conserve candidate species and species proposed for listing, and maintain viable populations of species of conservation concern within the plan area. Thus, any future revisions to the Flathead National ***Forest*** or Mendocino National ***Forest*** plans will provide some protections to water howellia and its habitat. Federal ***Land*** Policy and Management Act: Similar to NFMA, the Federal ***Land*** Policy and Management Act of 1976 (43 U.S.C 1701 et seq.) applies to the Bureau of ***Land*** Management (BLM) with regard to the conservation and use of public ***lands*** under their management. Water howellia is given consideration as a federally listed species by Federal agencies, and when delisted, will likely be included on the sensitive species list for the BLM as it was at the time of listing (59 FR 35860; July 14, 1994). Special status species policies (BLM manual, section 6840, p. 37) detail the need to conserve these species and the ecosystems on which they depend using all methods and procedures which are necessary to improve the condition of special status species and their habitats to a point where their special status recognition is no longer warranted. The one occurrence of water howellia in Washington on BLM ***land*** is vulnerable to localized actions. However, application of best management practices (BMPs) consistent with resource management plan (RMP) direction appears to have maintained this occurrence since 1993 (Frymire 2017, pers. comm.). The implementation of BMPs is expected to continue in the absence of protections under the Act. Sikes Act: Water howellia occurrences and habitats on Federal military installations (JBLM in Pierce County, Washington) are managed under an integrated natural resources management plan (INRMP) (USDOD 2006, pp. 4-6) authorized by the Sikes Act (16 U.S.C 670a et seq.). Protections for water howellia habitat in the INRMP include restrictions on motorized equipment and military training activities in wetlands occupied by water howellia. In concert with the INRMP, JBLM has developed an Endangered Species Management Plan for water howellia that establishes conservation goals, management prescriptions, and monitoring efforts (USDOD 2012, entire). These protections are expected to continue when the species is delisted because the Sikes Act mandates USDOD to conserve and rehabilitate wildlife, fish, and game on military reservations. National Wildlife Refuge System Improvement Act: As directed by the National Wildlife Refuge System Improvement Act (Pub. L. 105-57, 16 U.S.C 668dd), Refuge managers have the authority and responsibility to protect native ecosystems, fulfill the purposes for which an individual refuge was founded, and implement strategies to achieve the goals and objectives stated in management plans. For example, Turnbull NWR (Spokane County, Washington) includes extensive habitat for water howellia, including 35 known occupied sites. The NWR's comprehensive conservation plan (CCP) is a ***land*** management plan with a 15-year term that directs protection of these habitats and identifies specific objectives relative to research and monitoring, invasive species management, and education regarding water howellia (USFWS 2007, p. 2-22). Given the 15-year timeframe of CCPs, unless the CCPs are modified earlier, these protections will remain in place until at least 2022 regardless of water howellia's Federal listing status. After 2022, the Turnbull NWR can revise the CCP, if needed. However, the likelihood of future CCP revisions including conservation of water howellia are high, because the National Wildlife Refuge System Improvement Act mandates conservation of fish, wildlife, and plants, and their habitats within the Refuge System. In addition, the overarching goal of the National Wildlife Refuge System is to manage their ***lands*** and waters for the conservation of fish, wildlife, and plant resources and their habitats, further underscoring the high likelihood of future protections for water howellia and its habitat. In 2010, Ridgefield NWR in western Washington finalized a CCP that includes several conservation strategies for water howellia. These strategies include allowing natural flooding cycles and various methods (e.g , mechanical, biological, chemical) for invasive species control (USFWS 2010, pp. 2-37, 2-54). Given the 15-year timeframe of CCPs, protections outlined in the Ridgefield NWR CCP for water howellia are expected to remain in place until at least 2025, regardless of water howellia's Federal listing status. After 2025, the Ridgefield NWR can revise the CCP, if needed. However, the likelihood of future CCP revisions including conservation of water howellia are high, because the National Wildlife Refuge System Improvement Act mandates conservation of fish, wildlife, and plants, and their habitats within the Refuge System. In addition, the overarching goal of the National Wildlife Refuge System is to manage[[Page 31969]]their ***lands*** and waters for the conservation of fish, wildlife, and plant resources and their habitats, further underscoring the high likelihood of future protections for water howellia and its habitat.State Montana Streamside Management Zone Act: The Montana Streamside Management Zone Act (SMZ), in part, designates vegetated buffer strips around surface waters, including wetlands adjacent to streams (and thus potential water howellia habitat), within the boundaries of timber harvest units in Montana. The SMZ law covers Federal, State, and private commercial timber practices (Montana Code Annotated 2019, title 77, chapter 5, part 3). The SMZ law specifically prohibits slash fill of wetlands, off-road vehicle use, and clear cutting within 50 ft (15 m) of water bodies (Montana Code Annotated 2019, title 77, chapter 5, part 3, at 77-5-303). There are no buffer strips designated for isolated wetlands (those not adjacent to a stream/river) under the SMZ and only voluntary restrictions on equipment travel through isolated wetlands. Although unclear, some water howellia occurrences in Montana's Swan Valley may occur in isolated wetlands. Thus, the direct loss of habitat or plants for a small number of occurrences from timber harvest activities is a possibility if water howellia plants occupy isolated wetlands within a timber harvest unit. However, audits of timber sale practices conducted by interdisciplinary review teams have consistently documented few violations of the SMZ law and generally high (greater than 90 percent) compliance with voluntary regulations in the recent past (Montana DNRC 2016, entire). Thus, while there is potential for water howellia habitat to be lost for occurrences in isolated wetlands, the magnitude of the stressor appears small. As State law, the protections of the SMZ are expected to continue when we delist water howellia. Washington Natural Heritage Plan: Washington State's Natural Heritage Plan identifies priorities for preserving natural diversity, including wetlands, in Washington State (Washington Department of Natural Resources (DNR) 2007, 2011, entire). The plan aids Washington DNR in conserving key habitats that are currently imperiled or expected to be in the future. The prioritization of conservation efforts provided by this plan is expected to remain in place when we delist water howellia. Washington ***Forest*** Practices Act: Washington State's ***Forest*** Practices Act, and associated regulations and rules (Revised Code of Washington, title 76, chapter 76.09; Washington Administrative Code, title 222, chapter 222-08), provides protection of wetlands from the fill and cutting that could result from commercial timber harvest operations. Minimum buffers of 25 ft (8 m) are designated around ponds and wetlands inside timber sale boundaries, effectively prohibiting most harvest and all heavy equipment used in these areas. These buffers protect water howellia habitat from disturbance and minimize impacts to water quality. As State law, these protections are expected to remain in place when we delist water howellia. Oregon Revised Statutes (ORS), Chapter 564: ORS 564 requires non-Federal public agencies to protect State-listed plant species found on their ***lands***. Any ***land*** action on Oregon non-Federal public ***lands*** which results, or might result, in the taking of an endangered or threatened species requires consultation with the Oregon Department of ***Agriculture*** (ODA) staff. ***Removal*** of Federal protections for water howellia will ***remove*** State protection of the species under this statute because water howellia was never formally listed by ODA. However, protections are expected to remain in place due to other rare, sensitive plant species in the area inhabited by water howellia and the commitment of the Metro (Portland-area regional government) to protect the only known occurrences of water howellia in Oregon (Currin 2013, pers. comm.).Summary of Existing Regulatory Mechanisms As discussed above and under the other factors, conservation measures and existing regulatory mechanisms (such as Federal and State ***land*** management plans and conservation strategies) have ameliorated, or are continuing to minimize, the previously identified threats of invasive species, ***land*** management activities (primarily timber harvest and road building), trampling by domestic livestock, and direct habitat loss from urbanization or dam construction to all three water howellia metapopulations. As indicated above, the majority of these mechanisms will remain in place regardless of the species' Federal listing status. In Montana, the existing conservation strategy for water howellia is now part of the Flathead National ***Forest*** Plan; thus, the Montana metapopulation will continue to receive protections regardless of its status under the Act. In Washington on National Wildlife Refuges, there is a high likelihood that any future CCP revisions will include protections for water howellia because the mission of the National Wildlife Refuge System is to manage their ***lands*** specifically for conservation of fish, wildlife, and plant resources and their habitats; thus, water howellia and its habitat on Refuge ***land*** are expected to be conserved into the future. In Washington on JBLM, an Endangered Species Management Plan specifically speaks to the management of wetlands to benefit water howellia, and the Sikes Act mandates wetland protection, enhancement, and restoration, where necessary for the support of fish, wildlife, or plants, regardless of the species' status under the Act. Thus, all three metapopulations are protected by regulatory mechanisms that have been shown to be effective and are expected to continue to be effective regardless of the species' status under the Act. Consequently, we find that conservation measures, along with existing regulatory mechanisms, are adequate to address these specific stressors.Summary of Comments and Recommendations In the proposed rule published in the Federal Register on October 7, 2019 (84 FR 53380), we requested that all interested parties submit written comments on our proposal to delist water howellia by December 6, 2019. We also contacted appropriate Federal and State agencies, scientific experts and organizations, and other interested parties and invited them to comment on the proposal. Newspaper notices inviting general public comment were published in California (Times Standard in Eureka and Mendocino Beacon in Fort Bragg), Montana (Missoulian in Missoula and Interlake in Kalispell), Oregon (Oregonian in Portland), and Washington (News Tribune in Tacoma and Spokesman Review in Spokane). We did not receive any requests for a public hearing. All substantive information provided during the comment period was either incorporated directly into this final rule or is addressed below.Peer Reviewer Comments In accordance with our joint policy on peer review policy published on July 1, 1994 (59 FR 34270), and our August 22, 2016, memorandum updating and clarifying the role of peer review of listing actions under the Act (USFWS 2016, entire), we solicited expert opinion from nine knowledgeable individuals with scientific expertise and familiarity with water howellia, its habitat, its taxonomy, its biological needs and potential threats, or[[Page 31970]]principles of conservation biology. We received responses from three peer reviewers. We reviewed and addressed all comments we received from the peer reviewers for substantive issues and new information regarding the proposed delisting of water howellia. The peer reviewers provided additional information, clarifications, and suggestions to improve the final rule. All changes suggested by peer reviewers are incorporated into the text of this final rule. Such changes include additional details and/or clarity concerning population monitoring vs. surveying, predicted effects of invasive species, regulatory mechanisms, climate change, wetland/pond hydrology, genetic diversity, cumulative effects, post-delisting monitoring, and metapopulation structure. We also made other minor editorial clarifications and corrections in this final rule based on peer reviewer comments.Public Comments We received six letters from the public that provided comments on the proposed rule. Most of these commenters either generally supported or generally opposed the delisting of the species without providing further information. One commenter opposed our use of 2013 data to support our proposed delisting action; this commenter argues that these data are outdated. We have incorporated updated sources of information (118 instances of using data more recent than 2013), where applicable, in this rule and have not relied solely on data from 2013 (32 instances of using data from 2013, where appropriate). In accordance with section 4(b)(1)(a) of the Act, we use the ``best scientific and commercial information available,'' regardless of its date, to inform our determinations under section 4(a)(1) of the Act. Another commenter provided substantive comments, mainly related to the occurrences of water howellia in California. We incorporated the updated information provided by this public commenter into this final rule.Determination of Water Howellia's Status Section 4 of the Act (16 U.S.C 1533) and its implementing regulations (50 CFR part 424) set forth the procedures for determining whether a species meets the definition of ``endangered species'' or ``threatened species.'' The Act defines an ``endangered species'' as a species that is ``in danger of extinction throughout all or a significant portion of its range,'' and a ``threatened species'' as a species that is ``likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.'' The Act requires that we determine whether a species meets the definition of ``endangered species'' or ``threatened species'' because of any of the following factors: (A) The present or threatened destruction, modification, or curtailment of its habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) the inadequacy of existing regulatory mechanisms; or (E) other natural or manmade factors affecting its continued existence.Status Throughout All of Its Range We have carefully assessed the best scientific and commercial information available regarding the past, present, and future threats to water howellia, including invasive species (Factor A), ***land*** management activities (Factor A), trampling by domestic livestock (Factor A), direct habitat loss from urbanization or dam construction (Factor A), predation (herbivory) by domestic livestock (Factor C), narrow ecological requirements of the species in the context of climate change (Factor E), small population size/low genetic variation (Factor E), and cumulative effects of stressors (Factor E). Based on the best available information, and as described in our threats analysis, above, the identified stressors fall into one or more of the following categories: Stressors that have not occurred to the extent anticipated at the time of listing and existing information indicates that this will not change in the future (trampling by domestic livestock, predation (herbivory), direct habitat loss from urbanization or dam construction). Stressors that are adequately managed and existing information indicates that this will not change in the future (invasive species, ***land*** management activities). Stressors for which the species is tolerant and existing information indicates that this will not change in the future (narrow ecological requirements of the species in the context of climate change, small population size/low genetic variation, cumulative effects). Thus, our analysis of this information indicates that these stressors are not of sufficient imminence, intensity, or magnitude to indicate that water howellia is in danger of extinction or likely to become so within the foreseeable future throughout all of its range. Therefore, after assessing the best available information, we determine that water howellia is not in danger of extinction throughout all of its range nor is it likely to become so in the foreseeable future throughout all of its range.Status Throughout a Significant Portion of Its Range Under the Act and our implementing regulations, a species may warrant listing if it is in danger of extinction or likely to become so in the foreseeable future throughout all or a significant portion of its range. Having determined that water howellia is not in danger of extinction or likely to become so in the foreseeable future throughout all of its range, we now consider whether it may be in danger of extinction or likely to become so in the foreseeable future in a significant portion of its range--that is, whether there is any portion of the species' range for which it is true that both (1) the portion is significant; and (2) the species is in danger of extinction now or likely to become so in the foreseeable future in that portion. Depending on the case, it might be more efficient for us to address the ``significance'' question or the ``status'' question first. We can choose to address either question first. Regardless of which question we address first, if we reach a negative answer with respect to the first question that we address, we do not need to evaluate the other question for that portion of the species' range. In undertaking this analysis for water howellia, we choose to address the status question first--we consider information pertaining to the geographic distribution of both the species and the threats that the species faces to identify any portions of the range where the species may be endangered or threatened. For water howellia, we considered whether the threats are geographically concentrated in any portion of the species' range at a biologically meaningful scale. We examined the following threats: Invasive species--Invasive species, particularly reed canarygrass, are widely scattered throughout the species' range, with no concentration in any particular area. Furthermore, water howellia metapopulations appear to be able to coexist with invasive species even in the absence of suppression efforts. ***Land*** management activities--On Federal ***lands*** (where 84 percent of water howellia occurrences are), most ***land*** management activities that could disturb vegetation surrounding water howellia are now either prohibited or designed to minimize impacts. On State ***lands***, clear-cutting of timber and broadcast burning are either prohibited within defined buffers or not identified[[Page 31971]]as threats. Therefore, adverse practices on Federal and State ***lands*** are very infrequent and are not concentrated in any particular area of the species' range. Trampling by domestic livestock--Effects of trampling on water howellia occurrences on Federal and State ***land*** have largely been mitigated with fencing, cattle barricades, elimination of grazing in some areas occupied by water howellia, or limitations on the duration of time livestock have access to sensitive pond and wetland habitats. Therefore, effects from trampling on Federal and State ***lands*** are very infrequent and are not concentrated in any particular area of the species' range. Direct habitat loss from urbanization or dam construction--Further habitat loss from urbanization and dam construction is no longer a threat to the species because conservation strategies and increased Federal ownership now provide additional protections. Consequently, direct habitat loss from these activities is minimal and is not concentrated in any particular area of the species' range. Predation (herbivory) by domestic livestock--Similar to trampling, the effects from grazing are limited within water howellia habitat, and the species has maintained viability in ponds accessible to livestock. Therefore, its effects on Federal and State ***lands*** and are not concentrated in any particular area of the species' range. Narrow ecological requirements of the species in the context of climate change--Metapopulations important to the viability of the species are expected to sustain occurrences because of resiliency due to geographic and elevational diversity rangewide. Some of the future predicted air temperature and precipitation conditions are similar to the yearly weather conditions that promote larger abundances of water howellia (lower precipitation and/or hotter summer temperatures). Available information indicates that increased variability in future climate conditions is likely, but water howellia has some plasticity to environmental change as evidenced by its viability despite a changing climate and its life-history strategy of dual seed production and longer-term seed viability to buffer against several consecutive years of unfavorable environmental conditions. Therefore, despite occurring throughout the species' range, the potential effects are minimal and are not concentrated in any particular area of the species' range. Small population size/low genetic variation--Most occurrences of water howellia are small in areal extent; however, the arrangement of occupied habitat across five States increases redundancy, representation, and the capacity to survive a catastrophic event. In addition, the documentation of 200 additional occurrences of water howellia since 1994 has increased the redundancy and representation of habitats for water howellia rangewide. Small populations are not concentrated in any particular area of the species' range. Cumulative effects--Analysis of long-term datasets indicates the species has maintained viability and has the capacity to survive and reproduce, despite potential cumulative effects of climate change and other stressors. Potential cumulative effects are not concentrated in any particular area of the species' range. We found no concentration of threats in any portion of the water howellia's range at a biologically meaningful scale. Therefore, no portion of the species' range can provide a basis for determining that the species is in danger of extinction now or likely to become so in the foreseeable future in a significant portion of its range, and we find that the species is not in danger of extinction now or likely to become so in the foreseeable future throughout all of its range. This is consistent with the court's holding in Desert Survivors v. Department of the Interior, No. 16-cv-01165-JCS, 2018 WL 4053447 (N.D Cal. Aug. 24, 2018) and Center for Biological Diversity v. Jewell, 248 F. Supp. 3d, 946, 959 (D. Ariz. 2017).Determination of Status Our review of the best available scientific and commercial information indicates that water howellia does not meet the definition of an endangered species or a threatened species in accordance with sections 3(6) and 3(20) of the Act. Therefore, we are ***removing*** water howellia from the List of Endangered and Threatened Plants.Effects of This Rule This rule revises 50 CFR 17.12(h) to ***remove*** water howellia from the Federal List of Endangered and Threatened Plants. Because no critical habitat was ever designated for this species, this rule does not affect 50 CFR 17.96 The prohibitions and conservation measures provided by the Act, particularly through sections 7 and 9, will no longer apply to this species. Federal agencies will no longer be required to consult with the Service under section 7 of the Act in the event that activities they authorize, fund, or carry out may affect water howellia.Post-Delisting Monitoring Section 4(g)(1) of the Act requires us, in cooperation with the States, to implement a monitoring program for not less than 5 years for all species that have been delisted due to recovery. The purpose of this requirement is to develop a program that detects the failure of any delisted species to sustain itself without the protective measures provided by the Act. If at any time during the monitoring period, data indicate that protective status under the Act should be reinstated, we can initiate listing procedures, including, if appropriate, emergency listing. We are delisting water howellia based on new information we have received as well as conservation actions taken. Since delisting is, in part, due to conservation taken by stakeholders, we have prepared a post-delisting monitoring (PDM) plan for water howellia. The PDM plan was drafted collaboratively with stakeholders and was reviewed by both peer and public reviewers during the comment period for the proposed delisting rule (84 FR 53380; October 7, 2019). The PDM plan discusses the current status of the taxon and describes the methods for monitoring the taxon. The PDM plan: (1) Summarizes the status of water howellia at the time of delisting; (2) describes frequency and duration of monitoring; (3) discusses monitoring methods and sampling regimes; (4) defines what potential triggers will be evaluated to address the need for additional monitoring; (5) outlines reporting requirements and procedures; (6) outlines a schedule for implementing the PDM plan; and (7) defines responsibilities. It is our intent to work with our partners towards maintaining the recovered status of water howellia. The PDM plan is available on the internet at [*http://www.regulations.gov*](http://www.regulations.gov) at Docket No. FWS-R6-ES-2018-0045.Required DeterminationsNational Environmental Policy Act We have determined that environmental assessments and environmental impact statements, as defined under the authority of the National Environmental Policy Act of 1969 (42 U.S.C 4321 et seq.), need not be prepared in connection with regulations pursuant to section 4(a) of the Act. We published a notice outlining our reasons for this determination in the Federal Register on October 25, 1983 (48 FR 49244).[[Page 31972]]Government-to-Government Relationship With Tribes In accordance with the President's memorandum of April 29, 1994, Government-to-Government Relations with Native American Tribal Governments (59 FR 22951), E.O 13175, and the Department of the Interior's manual at 512 DM 2, we readily acknowledge our responsibility to communicate meaningfully with recognized Federal Tribes on a government-to-government basis. In accordance with Secretarial Order 3206 of June 5, 1997 (American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act), we readily acknowledge our responsibilities to work directly with Tribes in developing programs for healthy ecosystems, to acknowledge that Tribal ***lands*** are not subject to the same controls as Federal public ***lands***, to remain sensitive to Indian culture, and to make information available to Tribes. We are aware of two water howellia occurrences that occur on Tribal ***lands***; we have notified the Tribes that may be affected by this rule and offered government-to-government consultation.References Cited A complete list of all references cited in this rule is available on the internet at [*http://www.regulations.gov*](http://www.regulations.gov) at Docket No. FWS-R6-ES-2018-0045, or upon request from the Montana Ecological Services Field Office (see FOR FURTHER INFORMATION CONTACT).Authors The authors of this final rule are staff members of the Montana Ecological Services Field Office and field and regional offices in California, Colorado, Idaho, Oregon, and Washington.List of Subjects in 50 CFR Part 17 Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, Transportation.Regulation Promulgation Accordingly, we amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as set forth below:PART 17--ENDANGERED AND THREATENED WILDLIFE AND PLANTS01. The authority citation for part 17 continues to read as follows: Authority: 16 U.S.C 1361-1407; 1531-1544; and 4201-4245, unless otherwise noted.Sec. 17.12 [Amended]02. Amend Sec. 17.12(h) by ***removing*** the entry for ``Howellia aquatilis'' under FLOWERING PLANTS from the List of Endangered and Threatened Plants.Martha Williams,Principal Deputy Director, Exercising the Delegated Authority of the Director, U.S Fish and Wildlife Service.[FR Doc. 2021-12522 Filed 6-15-21; 8:45 am]BILLING CODE 4333-15-P

**Load-Date:** June 16, 2021

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[***A "moral obligation" ... and "future-proofing" the company Nestle's mission on emissions***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:61HG-8V71-JDNW-43BJ-00000-00&context=1516831)

just-food global news

December 9, 2020 Wednesday 7:26 PM GMT

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**Length:** 2314 words

**Byline:** Dean Best

**Body**

The world's largest food maker has caught the eye with the announcement of what amounts to be among the largest financial commitments if not the largest to go "net zero" by a major FMCG group so far. Dean Best canvasses reaction from campaign and investor circles.

"It's important that we take a leadership role, and we position Nestlé right in it."

A year after announcing a commitment to getting to a position of "zero net greenhouse gas ***emissions***" by 2050, the world's largest food maker has set out what it's described as a "detailed, time-bound plan" to get there.

And CEO Mark Schneider has insisted the moves would be good for the planet and good for the Swiss giant.

"It's about future proofing the company, it's about a moral obligation, a moral commitment here to make good on preserving the planet we all live on and, at the same time, it's about staying relevant to the consumer," Schneider told reporters last Thursday as the KitKat and Maggi owner laid out its plans.

Campaigners and equity analysts have, in the main, welcomed the publication of Nestlé's plans and, broadly, have indicated some support for the company's initiatives.

"Nestlé has created a roadmap towards achieving net-zero ***emissions***, rather than just a goal this speaks to the type of holistic evaluation of business operations that is needed to address the climate crisis," Dr Julie Nash, director of food and ***forests*** at US-based sustainability non-profit Ceres, says. "More industry leaders will need to join Nestle to create the sector-wide changes needed to fully decarbonise the food sector."

Jon Cox, an equity analyst at France-based broker Kepler Cheuvreux who covers Nestlé, adds: "What they're doing makes sense. If you're a company that doesn't do this and your brands aren't associated with this, then you'll probably find you'll lose market share in the next couple of years because I think these issues are only going to become more important in a post-Covid world."

Over the next five years, Nestlé plans to spend CHF3.2bn (US$3.59bn) on a series of measures, including efforts to "advance" regenerative ***agriculture*** among its suppliers and a move to 100% renewable electricity by 2025.

Schneider said Nestlé had taken its "ambition" and broken it down "into concrete actionable steps", with the company set to provide "full transparency on milestones".

He said: "We're proud to be one of the first ones now, among major companies, to have such a roadmap on how to get there."

Magdi Batato, executive vice president and head of operations at Nestlé, sitting alongside Schneider, was also keen to emphasise how the company had already been working on reducing its greenhouse gas ***emissions***. "Since 2014, the reduction of greenhouse gases across our value chain is equivalent to taking 1.2 million cars off the road and, over the past ten years, we have cut by more than one third our greenhouse gas ***emissions*** for every kilo of Nestlé products produced in our sites," he said.

Nestlé's bid to get to net zero covers three main areas regenerative ***agriculture***, the company's own operations and its product portfolio.

By 2030, the Lean Cuisine ready meals owner wants to source some 14m tons of its ingredients through regenerative ***agriculture***. Within Nestlé's operations, the company is aiming for its 800 sites to move to only using renewable electricity within the next five years. Other moves include switching to lower-***emission*** vehicles and cutting business travel. The company's work product portfolio will see it continue to grow its range of plant-based products (with China today becoming the latest market for Nestlé's plant-based meat business), as well as more of its brands achieving "carbon neutrality".

Batato said: "We will plan our work in three main phases. Firstly, starting now until 2025, we will accelerate and expand what we already have undertaken. Our aim is to achieve 20% absolute reduction in ***emissions*** from our baseline of 2018. Secondly, from 2025, we will transform our operations by investing in technology and making fundamental changes to our portfolio and businesses. This work should be complete by 2030 and deliver 50% absolute reduction of ***emissions***. And lastly, between 2030 and 2050, we will continue to eliminate ***emissions*** through high-quality and nature-based solutions. These solutions will benefit communities and ecosystems at large. Finally, we will offset any remaining ***emissions*** that were impossible to eliminate."

As with many if not all programmes of a similar size, it will be Nestlé's Scope 3 ***emissions*** that are likely to prove the most challenging. The company was responsible for 92 million tons of greenhouse gas ***emissions*** in 2018, which will serve as the baseline for measuring progress. As is to be expected, the majority of Nestlé's ***emissions*** are so-called 'Scope 3' ***emissions***.

Under the internationally-recognised Greenhouse Gas Protocol, an organisation's ***emissions*** are split into three 'scopes'. Scope 1 covers direct ***emissions*** from owned or controlled sources. A second, Scope 2, covers indirect ***emissions*** from the generation of the electricity, steam, heating and cooling bought and consumed by a reporting organisation. Scope 3 includes all other indirect ***emissions*** that occur in a company's value chain.

Nestlé has had its ***emissions*** reduction ***targets*** approved by the Science Based ***Targets*** initiative (SBTi), consistent, the company said, "with levels required to meet the goals of the Paris Agreement". The Swiss giant revealed its Scope 3 ***emissions*** "make up 95% of our footprint" and the Maggi noodles maker is "addressing more than 80% of these".

Regenerative ***agriculture*** will "be a key component in our road to net zero", Batato asserted, and he said Nestlé is prepared to pay a "premium" for those commodities to try to build a market, Batato said, similar to what the company is doing in the area of food-grade recycled packaging. "Of course, it comes with a premium at the beginning, but technologies are evolving with our size and scale, plus more to come, other partners to come to the party, of course we expect those things to go down with time the price to go down. It's demand and supply."

Scope 3 ***emissions*** do, of course, take in ***emissions*** from deforestation and, across a number of ingredients, this is an area where the packaged-food sector and the wider FMCG industry has struggled and attracted criticism.

On Thursday, Nestlé insisted it will be "scaling up its reforestation programme", with plans to plant 20m trees every year for the next decade in the areas where the company sources ingredients. Nestlé said its "primary supply chains of key commodities, like palm oil and soy" will be deforestation-free by 2022.

"By the end of this year, we will scale up our existing reforestation programme. This will also boost carbon ***removal*** from the atmosphere, improve ***agricultural*** yields biodiversity and soil health at farm level," Batato said.

Gemma Tillack, ***forest*** policy director at environmental campaign group Rainforest Action Network (RAN), welcomes the publication of Nestlé's net-zero plan but she calls on the company to be "more ambitious" on deforestation and raises the issue of indigenous peoples.

"Nestlé's publication of its roadmap to zero net ***emissions*** is commendable as it discloses its greenhouse gas ***emissions*** and sets science-based ***targets*** to reduce ***emissions*** over the coming decade but falls short as it fails to set milestones to ensure respect for rights of indigenous peoples and local communities on the front-lines of ***agricultural*** expansion," Tillack says.

"***Emissions*** from deforestation and poor ***agricultural*** practices must be halted immediately, not by 2022. Nestlé must adopt more ambitious deadlines for ending deforestation across all ***forest***-risk supply chains, establish robust systems to deliver respect for the rights of indigenous peoples and communities to say no to ***agricultural*** development on their ***lands***, and ensure communities play a central role in the conservation and restoration or their ***forests*** and ***lands***."

"No excuse" for earnings misses

Another group of stakeholders will be scrutinising Nestlé's plans closely. A growing number of investors are pressuring companies to work on the wider impacts they have on society but listed groups still face pressure to perform on shorter-term metrics, such as growth and cash generation.

Schneider conceded the CHF3.2bn of spending over the next five years was "the initial investment to get things going" and build momentum on the various programmes. "Afterwards, it is going to be harder to estimate exactly what the annual spend is going to be. There will be annual to scale things up and to deliver the rest of the plan but, again, we also expect technology and new solutions to make this more affordable and cheaper."

However, the Nestlé chief insisted the company "intends to make this [plan] completely earnings-neutral", adding: "We wanted to be sure that this is not seen as a transfer out of our investors pockets. We believe that we have sufficient operational and structural cost-savings initiatives underway that provide the oxygen and provide the room for those investments."

That said, when asked what impact there will be on Nestlé's profits next year, Schneider said: "We believe for '21, we have it covered. In the future, of course, we will have to give you specific guidance because, while we fully intend to make this completely earnings-neutral, the degree to which this is possible may vary from year to year."

Speaking to just-food, the Nestlé boss insisted the Maggi maker can manage the shorter- and longer-term expectations on the company from the investment community.

"I think we have done a lot of homework when it comes to our operational efficiency. Investors appreciate that. Hence, there's also confidence here that when we point to further savings to invest in these activities that those savings will materialise," Schneider said. "Many investors we have have owned the stock for a large number of years. Around 50% of our shareholders own the shares for four years or more. It's not only about the next quarter."

However, he added: "All of this should never be an excuse for a short-term miss. Hence, it's important to lay out the plans and investments, ahead of time. Obviously, no-one would have patience for having sustainability spend be the explanation for why last quarter or last year didn't meet expectations. So good communications and forward-looking communications is part of keeping that investor confidence."

At Kepler Cheuvreux, Cox concurs investment in these areas must not be used to justify companies under-performing. "You can't use these issues as an excuse to miss expectations. I was concerned a few years ago that this is what companies may start using as an excuse and you'd stop seeing any improvement in profitability. More or less, we haven't really seen that," he says.

Cox says the cost of the plan means investors shouldn't expect Nestlé to be able to grow annual margins at the rate seen in recent years but he adds that, broadly, there is a growing acceptance in the investment community of the longer-term benefits of such programmes.

"In some cases, Nestlé will pass [the cost] onto the consumer and, probably in the developed world, consumers are quite willing to pay for it. Maybe in other parts of the world, they're not willing to pay for that and are more sensitive to price and so companies need to find the savings from somewhere," Cox says. "As a result, if you're expecting cracker-jack margins over the next couple of years from FMCGs really involved in trying to cut down greenhouse gas ***emissions*** and a variety of other environmental and social issues then that won't be the case."

However, he adds: "You have a big pool of investors that want to see companies carry out these initiatives. If you're a good company and you deliver on your ***targets*** anyway then you will be rewarded with a better multiple. Investors would be willing to pay for these sorts of companies because they are seen somewhat de-risked because you don't have the risk there will be some sort of legal implications down the road."

And there are consumers. Also addressing the media last Thursday was Aude Gandon, Nestlé's global chief marketing officer, who said consumer interest in environmental issues was being seen across the board. "We see it absolutely across every single aspect of society, as well as across the world," she told just-food. "It is very clear that everybody around the world is becoming more and more aware of the importance of the conception and choosing the right brands and the right product to actually secure on the future of the planet. So this is definitely a driver for brand choice."

Schneider underlined how Nestlé believes there will be opportunities to increase prices on certain products in certain markets but he also emphasised the company knows not all consumers will be able to pay higher prices. "We do see premiumisation and price-increase opportunities at the premium end of the pricing scale but what was affordable will stay affordable," he said. "Extremely affordable products is one of our key work-streams that we have been patiently pursuing over many years now. This will not change."

And the Nestlé boss was just as adamant the company would not offload brands simply because of carbon ***emissions***. "Obviously, over a period of time the portfolio will adjust but simply trading down on the high carbon emitters and trading up on the low carbon emitters will be avoiding the true gist of the problem," he said.

"Simply selling down on brands or categories that have a high carbon footprint is not solving anything. It may do the right window dressing for us but if those products and get continued to be produced somewhere else and if those new owners do not continue on their path towards zero, then frankly, nothing is gained for the planet."

**Load-Date:** February 3, 2021

**End of Document**



[***'Not all biomass is carbon neutral', industry admits***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:60BV-WT71-JCF9-40MF-00000-00&context=1516831)

EurActiv.com

July 14, 2020 Tuesday

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**Length:** 1372 words

**Byline:** Frédéric Simon

**Highlight:** Leading industry figures acknowledge that not all biomass brings benefits to the climate, insisting that only low-value wood and ***forest*** residues should make the cut under EU law.

**Body**

"Not all biomass is good biomass," says Jennifer Jenkins, chief sustainability officer at Enviva, a US-based company which is the world's largest producer of industrial wood pellets used for electricity and heat production.

"We agree that not all biomass should automatically be categorised as carbon neutral," Jenkins told an [*online debate*](https://www.envivabiomass.com/future-prospects-of-sustainable-biomass-in-the-context-of-the-eu-green-deal/) organised on 29 June during EU sustainable energy week.

To bring climate benefits, biomass needs to come from low-value wood residues or smaller trees coming from timber harvests - not from high-value trees that could be used in products like furniture or construction material, Jenkins said.

The question now facing policymakers in Brussels is how to ensure EU energy policies do not encourage the wrong sort of biomass, even inadvertently.

Biomass currently represents [*almost 60%*](https://ec.europa.eu/jrc/en/publication/brief-biomass-energy-european-union) of the EU's renewable energy, more than solar and wind power combined, according to the EU's statistical office, Eurostat.

And even though wind and solar are growing fast, countries such as Austria, Denmark, Finland, Latvia and Sweden would be unable to achieve their 2020 renewable energy ***targets*** without biomass, experts say.

"Bioenergy is basically the backbone for these countries'" renewable energy policies, said Martin Junginger, a professor of energy and resources at Utrecht University who spoke at the online event.

**EU bioenergy review**

The future of bioenergy in Europe is looking uncertain, however.

Earlier this year, the European Commission announced it would perform a comprehensive assessment of biomass supply and demand in Europe and globally with a view to "ensure that EU biomass-related policies are sustainable".

"The overall objective is to ensure that EU regulatory framework on bioenergy is in line with the increased ambition set out in the European Green Deal," the Commission said in its [*biodiversity strategy*](https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1590574123338&uri=CELEX:52020DC0380), published on 20 May.

Among other things, the biodiversity plan aims to protect primary and old-growth ***forests***, which "keep ***removing*** carbon from the atmosphere, while storing significant carbon stocks," the EU paper said.

"The use of whole trees and food and feed crops for energy production - whether produced in the EU or imported - should be minimised," the policy paper added.

[***EU plans sweeping bioenergy review by end 2020***](https://www.euractiv.com/section/biomass/news/eu-plans-sweeping-bioenergy-review-by-end-2020/)

The European Commission intends to push a "transformative approach" to all forms of bioenergy - including biofuels and woody biomass - as part of a biodiversity strategy due to be unveiled on Wednesday (20 May).

But sorting out "good" from "bad" biomass is notoriously tricky.

Last year, a group of climate activists filed a lawsuit against the European Union to challenge the notion that ***forest*** biomass is carbon neutral, a principle which is currently enshrined in the bloc's renewable energy directive.

"The treatment of biomass as carbon neutral runs counter to scientific findings" showing that burning wood for energy typically emits 1.5 times more CO2 than coal and 3 times more than natural gas, the plaintiffs claimed.

The European Court of Justice dismissed the case in May this year, saying the activists had failed to demonstrate how the directive was of "individual concern" to them.

Still, the Commission appeared to give credit to the plaintiffs, saying its bioenergy review will include new "operational guidance" on the sustainability criteria for ***forest*** biomass currently laid down in the EU's renewable energy directive.

**Timeframe**

So how could policymakers distinguish "good" from "bad" biomass? According to some experts, one way could be to contrast the impact of biomass on global carbon stocks in the short and long term.

"If you burn biomass, then of course there is CO2 being emitted," said Junginger, adding that from that point of view, biomass "critics have a point" and that climate scientists are concerned about the immediate CO2 ***emissions***, which can be "up to twice more than natural gas".

However, what critics fail to acknowledge is the long-term positive effects of biomass on the climate, Junginger added, saying bioenergy from sustainably managed ***forests*** is carbon neutral in the long run because trees re-absorb carbon dioxide as they grow.

"Ultimately within two or three decades, even the lesser sustainable kinds of biomass will have repaid their carbon debt and perform better than fossil fuels," he argued.

For him, the choice to rely on biomass therefore depends more on the timeframe in which policymakers place themselves.

"If within ten years, we have to decarbonise everything, then yes, biomass is not a very attractive option" because of the "carbon debt" that biomass creates for the coming decades, Junginger said.

But if policymakers consider that climate change is "a matter of decades and centuries" then biomass has a role to play in mitigating climate change, he claimed.

The timeframe criteria does not necessarily speak in favour of biomass. In November last year, the European Parliament [*declared a "climate emergency"*](https://www.europarl.europa.eu/doceo/document/TA-9-2019-0078_EN.pdf), calling on the Commission and member states "to urgently take the concrete action needed in order to fight and contain this threat before it is too late".

[*According to UN scientists*](https://www.euractiv.com/section/climate-environment/news/most-important-years-in-history-major-un-report-sounds-last-minute-climate-alarm/), the coming 10 years will be critical to ensure the world stays on track with the Paris Agreement, which seeks to limit global warming to well below 2C, and aim for 1.5C.

To hold warming to this limit, carbon pollution must fall to 'net zero' by 2050, according to scientists at the Intergovernmental Panel on Climate Change (IPCC).

[***European Parliament declares climate emergency***](https://www.euractiv.com/section/climate-environment/news/european-parliament-declares-climate-emergency/)

The European Parliament voted by a large majority on Thursday  (28 November) in favour of a resolution declaring climate emergency in Europe, piling pressure on the EU's new  Commission to deliver an ambitious European Green Deal after it takes office next month.

The idea that biomass could be discriminated based on timeframe is making the bioenergy sector cringe, though. According to Enviva's Jennifer Jenkins, biomass brings immediate benefits as long as it comes from "working ***forests***", whose tree stocks are "stable or increasing".

"I would argue the benefits are immediate, we don't need to worry about the short versus long term time frame," Jenkins argued.

To her, ***land*** use change is a more relevant criteria to measure sustainability. In order to bring climate benefits, biomass "needs to come from a working ***forest*** that is returned to ***forests*** after harvest - not from ***forests*** that are converted to ***agriculture***" or other uses after trees are felled, she said.

**'Transitions' in biomass use**

Another potential way to manage the climate impact of biomass is to prioritise the sectors in which it should be used in priority.

"Sustainable biomass is scarce," said Martin Junginger. "So we have to think cleverly where we want to deploy it," he added, citing hard-to-abate sectors of industry and transport as areas where scarce biomass resources could be put to best use.

"At the moment we use biomass mainly for low-temperature heating - so, for heating houses," Junginger pointed out, saying this was "not very clever" because other solutions like insulation or heat pumps are more efficient.

Instead, he said biomass should be used in priority "for industrial purposes which are harder to decarbonise," as well as heavy-duty road transport, shipping and aviation where biofuels can provide an alternative to hydrocarbon-based fossil fuels.

Another transition is the way biomass is used for electricity. "With intermittent wind and solar," biomass is well positioned to provide peak load instead of base load, Junginger said.

Biomass played "a substantial role" in the coal-free run that the UK electricity sector enjoyed in May and June this year, said Rebecca Heaton, head of climate change at Drax, a British power station running on biomass and coal.

"Obviously the grid will be predominantly solar and wind" in the future, but biomass can help "when the wind doesn't blow and the sun doesn't shine," Heaton said.

[***Finnish MEP: 'Political fight begins' over Europe's old-growth forests***](https://www.euractiv.com/section/biomass/interview/finnish-mep-political-fight-begins-over-europes-old-growth-forests/)

The ***forests*** in Europe that can be considered "old growth" - and therefore declared protected areas - depends on the definition, says Petri Sarvamaa. "And that's where the political fight begins," he told EURACTIV in an interview.

*[Edited by Sam Morgan]*

**Load-Date:** July 14, 2020

**End of Document**



[***Royal Institution Christmas Lectures: 2020: Planet Earth - A User's Guide - 8:40 PM GMT***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:61MY-WP31-DY08-350W-00000-00&context=1516831)

TVEyes - BBC 4

December 30, 2020 Wednesday

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**Section:** U.K. NATIONAL

**Length:** 783 words

**Highlight:** Dr Tara Shine takes a deep breath and marvels at something we all take for granted: oxygen. She demonstrates how Earth produces a never-ending supply of this gas - the raw material for all complex life - and investigates what else is in the air that we breathe. One critical component is carbon dioxide, a greenhouse gas that's causing a dangerous rise in atmospheric warming. Tara looks at the carbon footprint of a loaf of bread and how hydrogen might be the answer for heating and transport. From developing exciting new technologies to protecting wetlands and ***forests***, the solutions are everywhere. Our ideas and ingenuity can create a better, cleaner and more sustainable future.

**Body**

**Speech to text transcript:**[[1]](#footnote-2)1

in order to make the particles very small. From that point onwards, the food waste is always in a pipe, or in a pump or in a tank. The first tank that it goes into is a little bit like your food cupboard at home, where you would store your food before it's being fed to the digester. And this is where the magic really happens.

These are what we call digesters, and in these tanks are hundreds of different types of bacteria who all work together to break down the food waste into biogas. So the gas leaves the gas holder and goes through a series of these pipes, which then feeds into our engine. And in the engine, the methane part of the biogas is converted into heat, in the form of hot water and electricity. So, of the electricity that we produce, about 10% of it is used to run this site and the remaining 90% is fed into the National Grid. The digestate, which is the other end product, is really valuable, what we call a bio fertiliser. The fertiliser is picked up by local farmers who apply it to their ***land***. And in doing that, they don't have to use bought-in fertiliser. Please welcome Becky Greaves to tell us more about anaerobic digestion. Becky, lovely to see you. APPLAUSE So, Becky, we've learned quite a lot about methane as a greenhouse gas in the Christmas lectures this year, and how potent it is when it gets up into our atmosphere. Can you tell us how you prevent methane from getting up into the atmosphere? So, we really carefully control the feed to our digesters to make sure that we produce the methane at the same rate that we can use it through our engines. And the tanks and the pipes that you saw in that video are all sealed so there's no way that that methane can get up into the atmosphere. What do you do with it then? You produce energy, electricity with it? How much electricity can you produce? So, on the video, you saw a large lorry reversing into our reception hall. Typically, a lorry of that size would hold about 25 tonnes of food waste. And once that's digested through our process, it will produce enough electricity to fuel an average household for over two years. Wow, that's really impressive. And, Becky, we saw at the end of the clip the bio fertiliser that you're making. How can that help us to reduce the greenhouse gas ***emissions*** from ***agriculture***? So, the farmer would have to apply some sort of fertiliser to the wheat in order to grow it. If we go back to your example of the growing the wheat for bread that you used earlier, and so by applying bio fertiliser, we're giving that wheat those exact same nutrients, but actually, we're not using those mineral or those synthetic fertilisers, which, as you say, produce greenhouse gases for their production. And to put it into context, that lorry that you saw, the digester or the digestate that was produced from that food waste would be enough to fertilise the wheat to produce 5,000 loaves of bread. What's really good about this process is that it's a closed loop. So, actually, if you throw away a mouldy loaf of bread, we can turn it into bio fertiliser and grow wheat to produce more bread. But more importantly, we also produce the electricity to bake that bread and for you to use it at home and turn it into toast. Becky, that is amazing. It's just a whole lot of win-wins in this solution that you've told us about. Thank you so much for joining us. Thank you for having me. APPLAUSE So, we know what to do to reduce the ***emissions*** going into our atmosphere. We just need to stop burning fossil fuels and keep them in the ground, and we need to reduce the ***emissions*** from ***agriculture*** and food production. We just need to do more of it. But reducing ***emissions*** on their own isn't going to be enough. I'm going to take a look again at our atmosphere. So, what we've managed to do now by reducing ***emissions*** is to slow the flow of carbon dioxide into our atmosphere. But as you can see, it's still building up. We're still making the problem worse. So what we also need to do is ***remove*** carbon dioxide from the atmosphere. And our best ally in doing that is nature. As you remember with Chris and Helen, we learned about the natural ability of our oceans and the ***land*** to store carbon. And so, if we protect nature, we protect ecosystems and restore them, we can ***remove*** CO2 from the atmosphere and that is what we need to do to be able to achieve 1.5 degrees of warming. So nature is our best ally in this process. You probably know that trees have a great potential to store carbon and keep us safe. But have you ever thought about our soil? So, soil holds

**Load-Date:** December 30, 2020

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[***Brazil: minister's exit draws attention to 'disastrous' gov't environment policy***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:630G-CTP1-JC8S-C28Y-00000-00&context=1516831)

BBC Monitoring Latin America - Political

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**Length:** 855 words

**Body**

By BBC Monitoring

Brazilian media outlets, environmental activists and social media users expressed relief at, and even celebrated, the news of Environment Minister Ricardo Salles' 23 June departure from the right-wing government of President Jair Bolsonaro.

The ***target*** of two Federal Police (PF) investigations related to his alleged role in an illegal timber exports scheme, Salles' administration of the Environment Ministry in the Bolsonaro government had been marked by record-breaking levels of deforestation and raging ***forest*** fires in environmentally-vulnerable biomes such as the Amazon rainforest and the Pantanal wetlands.

Salles had also been accused of allegedly interfering in and hindering the outcomes of environmental inspections carried out by Brazilian authorities. He had denied any wrongdoing.

Various publications, political figures, social media influencers and non-government organisations (NGOs), among others, had repeatedly called for Salles' ***removal*** in recent months.

However, several observers commented that despite the "successive scandals" tied to Salles, President Bolsonaro had permitted him to remain in his post simply because he followed orders. They suggested that Salles' administration of the Environment Ministry was nothing more than a reflection of Bolsonaro's disregard for environmental protection initiatives.

"Salles stayed because he fulfilled Bolsonaro's demands," Jussara Soares, a reporter for Brazilian newspaper O Globo said.

Former Brazilian Environment Minister Marina Silva, who won a number of awards from international organisations in recognition of her environmental activism, also condemned Bolsonaro's influence on what she described as the "anti-environmental policy" applied by Salles.

"[Salles' resignation] came late! It is a victory for society, but it is still a partial victory, We know that he was the operator of the nefarious and anti-environmental policy of Bolsonaro," Silva posted on her Twitter account.

Op-ed sees 'disastrous' environmental policy continuing

In an op-ed headlined: "Salles out", Brazilian daily Folha de Sao Paulo warned that even though Bolsonaro had "finally" removed Salles, "nothing indicated that he [the president] would change his environmental policy".

"Salles and his boss chose the side of predatory agribusiness, of illegal miners and loggers, of ***land*** grabbers who usurp [federal] conservation units and indigenous areas and ***lands*** of the Union. In the ecocide mission, Bolsonaro and Salles always had the support of the ruralist congressional caucus. Neither Bolsonaro nor Parliament has changed. The minister leaves, the disastrous [environmental] policy continues," the daily underscored.

Salles' successor expected to prioritise economy over environment

Several media outlets made comparisons between Salles and his successor, Joaquim Alvaro Pereira Leite, who was described as a keen supporter of expanding Brazil's agribusiness sector and developing the economic potential of the Amazon rainforest.

Some commentators said that, given Leite's links to the rural agribusiness sector, ***agricultural*** production would again be prioritised over environmental conservation.

Brazilian newspaper O Globo reported on 24 June that the new environment minister was "not expected to make changes in the environmental policy of the Bolsonaro government and was expected to keep the team of his predecessor, Ricardo Salles".

However, on a more positive note, a 24 June analysis by Folha de Sao Paulo said that while Pereira Leite had "no support from environmentalists", he was not expected to involve Brazil in any more environmental "controversies" and could reduce the "international damage" caused by Salles' command of the Environment Ministry.

Analysts suggest Salles' exit used to divert attention from corruption allegations

Reacting to Salles' resignation with a certain degree of caution, a separate column by Folha de Sao Paulo said that while the end of Salles' administration was "widely celebrated", there were "those who believe that [...] the case is a smokescreen to divert attention away from the [government's] alleged favouring of the [Indian] Covaxin [Covid-19] vaccine over the detriment of others already approved by [Brazilian health regulator] Anvisa at a lower cost".

In an O Globo column entitled: "A smell of burning", analyst Merval Pereira opined that it was no coincidence that Salles' resignation had taken place "on the same day that investigations into the nebulous purchase of the Indian Covaxin vaccine began to take on a dangerous political dimension for the government".

"President Bolsonaro, who the day before had publicly praised Salles, had to give him up so as not to be overwhelmed by allegations of corruption in his government," Pereira wrote.

The Bolsonaro government's handling of the Covid-19 pandemic was currently being investigated by a Senate-led Parliamentary Inquiry Commission (CPI). It was recently revealed that the Bolsonaro administration had paid 1000 per cent more per Covaxin vaccine dose than the Indian manufacturer had originally advertised.

Source: BBC Monitoring in Portuguese 1612 gmt 24 Jun 21

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[***What They're Saying About the Growing Climate Solutions Act***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:62H8-FSN1-JDG9-Y26T-00000-00&context=1516831)

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**Length:** 5626 words

**Body**

Washington: Office of the Senator Mike Braun has issued the following news release:

This week, U.S Senator Mike Braun (R-IN), Senator Debbie Stabenow (D-MI), Senator Lindsey Graham (R-SC), and Senator Sheldon Whitehouse (D-RI) reintroduced the bipartisan Growing Climate Solutions Act, which will break down barriers for farmers and foresters interested in participating in carbon markets so they can be rewarded for climate-smart practices. The bill has broad, bipartisan support from 42 Senators and over 70 ***agricultural*** and environmental organizations. Today, the U.S Senate Committee on ***Agriculture***, Nutrition, and Forestry will consider advancing the legislation at a business meeting.

QUOTES IN SUPPORT OF THE GROWING CLIMATE SOLUTIONS ACT:

“Iowa’s hardworking farmers continue to lead the way on conservation, and they’ve already made tremendous strides in practicing responsible stewardship of their ***land*** and farm while promoting a clean environment,” said Senator Ernst, ranking member of the Senate ***Agriculture*** Subcommittee on Rural Development and Energy. “Carbon credit markets provide our ag community with an avenue to capitalize on their ongoing commitment to sustainable farming, and it’s critical that we dissolve any obstacles standing in the way of this untapped potential. That’s why I’m proud to support this bipartisan effort to reduce barriers for Iowa farmers looking to enter carbon credit markets and adopt climate-smart conservation practices. ”

“Climate change is among our most pressing global challenges, and our farmers and foresters can play a critical role in our response,” said Senator Chris Coons, co-chair of the Senate Climate Solutions Caucus. “The Growing Climate Solutions Act is an example of how we can bring everyone to the table to find common ground on solutions that will protect our environment and combat climate change. I look forward to working with Senators Braun, Stabenow, and my colleagues to advance it into law. ”

“I am proud to join my colleagues in introducing this common-sense bipartisan proposal, which will inform farmers, ranchers, and foresters how to navigate around the barriers-to-entry that have historically prevented them from accessing voluntary environmental mitigation credit markets,” Senator Marco Rubio said. “This common-sense proposal will assist ***agriculture*** stakeholders in identifying alternative sources of income, while at the same time empowering them to pursue efforts to restore ecosystems including wetlands and ***forests***, mitigate environmental impacts, and improve water quality. As a member of the Climate Solutions Caucus, I look forward to working with caucus co-chair, Senator Braun, to advance this legislation. ”

“Time and again I hear from farmers across Colorado concerned that climate change is going to make it more difficult for them to pass down their operations to the next generation,” said Senator Michael Bennet. “We must tackle the climate challenge, in part by ensuring that farmers, ranchers, and foresters have the opportunity to be a part of the solution. The Growing Climate Solutions Act is an important step toward that goal and I look forward with working with my colleagues on both sides of the aisle to get this across the finish line. ”

“Foresters, farmers, and ranchers are good stewards of our farm and timberlands, already possessing the skills and characteristics to help the environment on which their livelihoods depend. This legislation represents a solid plan to give them access to carbon credit markets and benefit economically from their good work,” Senator Cindy Hyde-Smith said. “We have very strong voluntary participation in existing federal conservation programs in Mississippi. Our strong ***agriculture*** sector and ***forests*** make improving access to the carbon credit markets a smart move. ”

“The ***agricultural*** community has a vital role to play in addressing climate change. By increasing access to the voluntary carbon credit market, our legislation will help reduce confusion and improve information for farmers and ranchers looking to implement practices that capture carbon, reduce ***emissions***, improve soil health, and empower them in their stewardship of the ***land***. I’m proud to join my colleagues in this effort and look forward to our continued work on the Bipartisan Climate Solutions Caucus,' said Senator Mitt Romney.

“The Growing Climate Solutions Act will help Hoosier farmers navigate the emerging activity in carbon markets. This bill prioritizes the needs of ***agriculture*** in climate efforts, and I’m glad to partner with my colleague from Indiana in supporting both our rural communities and the environment,” said Senator Todd Young.

“The Growing Climate Solutions Act is a meaningful step toward accomplishing the often-contentious goal of preserving and maintaining our natural environment without relying on heavy-handed federal mandates. Idaho is a national leader in the use of clean, renewable power, and this legislation allows Idaho’s farmers and ***forest*** ***land*** owners to more easily access private, voluntary carbon markets and be rewarded for climate-smart practices. I continue to support policies like this that protect ecological health, facilitate sustainable and multiple use of our public ***lands***, and incentivize the proper stewardship of private property,' said Senator Mike Crapo.

“We believe that farmers, ranchers, and producers are the mainstay of the ***agriculture*** industry and play an essential role in reducing global greenhouse gas ***emissions***,” said John R. Tyson, Chief Sustainability Officer at Tyson Foods. “The Growing Climate Solutions Act of 2021 is a great move in the right direction, and we commend the bipartisan work to address climate change”.

'Expanding the natural carbon sequestration potential of America's ***agricultural*** sector represents one of the best opportunities for real climate action. The Growing Climate Solutions Act will empower America's farmers and ranchers to build on their legacy of environmental stewardship by leading the fight against climate change. The American Conservation Coalition thanks Senator Braun and Senator Stabenow for their leadership and strong commitment to bipartisan climate solutions,” said American Conservation Coalition Vice President of Government Affairs Quill Robinson

“The entire ***agriculture*** community, including the seed industry, has a critical role to play in driving breakthrough solutions to address climate change and other pressing challenges facing the future of our planet. We applaud the bipartisan efforts led by Chairwoman Debbie Stabenow (D-Mich.) and Sen. Mike Braun (R-Ind.), as well as Ranking Member John Boozman (R-Ark.) who worked to ensure farmers have a prominent seat at the table when it comes to climate policies,” said Andy LaVigne, President and CEO of the American Seed Trade Association

“America’s sheep producers have long supported healthy ranges and good stewardship of our nation’s vast natural resources. Sheep grazing and wool production sequester carbon, manage vegetation, improve wildlife habitat and enhance rangeland systems. The Growing Climate Solutions Act provides a framework to recognize our producers’ efforts, while reducing barriers for them to participate in new and innovative markets. We greatly apprecaite the bipartisan approach and the broad support that Senators Stabenow and Braun have been able to get behind this initiative,” said Susan Shultz, President of the American Sheep Industry Association

“America’s sugar farmers are dedicated to advancing climate-smart policies and support efforts to dismantle technical barriers that impede the ability for farmers to voluntarily participate in carbon markets. The bipartisan Growing Climate Solutions Act is an important step forward and the American Sugar Alliance applauds its reintroduction. We appreciate Senate ***Agriculture*** Committee Chairwoman Debbie Stabenow (D-Mich.) and Sen. Mike Braun (R-Ind.) for their work with Sen. John Boozman (R-Ark.) to improve this legislation and ensure it helps rural America further achieve its climate goals. A number of farmer-friendly changes have been added to the Growing Climate Solutions Act to achieve funding needs without reopening the Farm Bill or otherwise affecting the existing funding of farm and conservation programs. Importantly, this legislation has already garnered support from a bipartisan group of senators who represent a broad cross-section of American ***agriculture***,” said the American Sugar Alliance

“This legislation is at the heart of everything we fight for at BIO and proves that climate action and economic growth can go hand in hand. By helping our ***agricultural*** producers solve the technical entry barriers to carbon markets, this bill will encourage farmers and ranchers to use biotechnology breakthroughs to reduce ***emissions*** and deploy their ***land*** in the fight against climate change. It will bring greater value to the biobased economy by allowing the manufacturers of biobased chemicals, plastics, food, animal feed, and everyday materials, to reliably demonstrate their true environmental benefit, from farm to consumer. Because of the significant positive impact the legislation will have for American farmers, rural economies, and our planet, BIO supports and applauds Senators Mike Braun (R-IN) and Debbie Stabenow (D-MI) for their leadership in introducing the bipartisan Growing Climate Solutions Act,” said Dr. Michelle McMurry-Heath, President and CEO of the Biotechnology Innovation Organization

“BPC Action commends Sen. Mike Braun (R-IN), Sen. Debbie Stabenow (D-MI) and the multiple co-sponsors on both sides of the aisle for the introduction of the Growing Climate Solutions Act of 2021. BPC Action looks forward to working with Congress to pass this bipartisan bill that takes an important step forward in unlocking the potential within U.S ***agriculture*** and forestry to serve as a critical climate solution,” said Michele Stockwell, Executive Director of Bipartisan Policy Center Action

“Boehringer Ingelheim Animal Health is pleased to support the Growing Climate Solutions Act. We have long been committed to the well-being of people and animals and are dedicated to contributing to a more sustainable future for all. We believe this legislation takes an important step to support sustainability and to increase profitability for producers,' said Randolph Legg, President and Head of Commercial Business, Boehringer Ingelheim Animal Health USA Inc.

“I am grateful to see the bipartisan work of the Climate Solutions Caucus on creative climate solutions for our nation. The Growing Climate Solutions Act is an area of great potential, carbon sequestration of ***land*** through farming and other ***land*** management practices. The Act provides greater opportunities for farmers and foresters to participate in carbon markets. Like many other faith communities, my own Amish and Mennonite community has long connected our relationship with the ***land*** with our relationship with God, for God placed humans in the garden to 'till and keep it.' (Genesis 2:15) Another translation of the Hebrew could be 'serve and protect.' This act can move us towards restorative and proactive practices that more fully engage and heal our ***land***, divine, and human relationships,” said Rev. Douglas Kaufman, Director of Pastoral Ecology at the Center for Sustainable Climate Solutions

'We are pleased Chairwoman Stabenow and Senator Braun have reintroduced the Growing Climate Solutions Act, and we appreciate the Senate ***Agriculture*** Committee's leadership on this issue. America's farmers and ranchers bear an outsize burden of the impacts of climate change, but they can also play an important role in addressing America's greenhouse gas ***emissions***. This bill is an important step to giving farmers, ranchers and foresters new tools to address climate. Citizens' Climate Lobby applauds quick action on this legislation,' said Ben Pendergrass, Senior Director of Government Affairs at the Citizens Climate Lobby

“When our farmers, ranchers, and foresters go the extra mile to help reduce America’s carbon footprint, they should be rewarded, not penalized. The Growing Climate Solutions Act is exciting because it would allow valuable carbon credits to be harvested along with any crops farmed using climate-friendly practices. By normalizing how those credits can be sold on voluntary carbon credit markets, the GCSA also makes it easy for farms of all shapes and sizes to connect with and sell these credits to the scores of American companies and utilities that have committed to going carbon neutral but can’t do it alone. CRES commends Senators Braun, Stabenow, Graham and Whitehouse for their continued leadership on this legislation and for prioritizing commonsense clean energy and climate policy. The support for this legislation by a large, bipartisan group of senators—especially those hailing from the Midwest and across the Heartland—is a testament to the positive impact this bill will have on the men and women who give so much to feed, fuel and clothe us all,” said Heather Reams, Executive Director of Citizens for Responsible Energy Solutions

“This legislation is the latest example of the growing bipartisan collaboration in Congress on climate. The surest way to make lasting progress on climate change is for both parties to come together and develop solutions that work for the American people. The GCSA offers a promising approach to partner with farmers and ranchers to reduce ***agricultural*** ***emissions***,” said Greg Bertelsen, CEO of the Climate Leadership Council

“The Growing Climate Solutions Act is an important step in encouraging farmer and ***forest*** landowner participation in carbon markets. Having USDA enhance the legitimacy and transparency of carbon credits will improve and expand market participation, thereby providing a strong economic incentive for ***land*** use practices that contribute to efforts to address climate change. ConservAmerica applauds lead sponsors Senators Mike Braun, Debbie Stabenow, Lindsey Graham, and Sheldon Whitehouse and their staffs for their hard work on this legislation, and we urge its swift passage,' said Jeff Kupfer, President of ConservAmerica

'Responsible stewardship of the ***land*** is a tradition that has been handed down through generations of American farmers. This important bill creates a system to further incentivize that tradition, helping farmers and ***forest*** landowners deliver on their promise for their children and grandchildren,' said John Bode, President and CEO of Corn Refiners Association

“Corteva Agriscience supports the Growing Climate Solutions Act, and we look forward to working with the Senate ***Agriculture*** Committee to advance this bill and similar proposals that are designed to support farmers, ranchers, and ***forest*** landowners in voluntary efforts to expand – and derive income from – climate smart practices,” said Anne Alonzo, Senior Vice President of External Affairs and Chief Sustainability Officer at Corteva Agriscience

“The Growing Climate Solutions Act gives farmers and landowners the tools to improve their ***land*** and profitability, while benefiting habitat for waterfowl and other wildlife. We thank Sen. Stabenow, Sen. Boozman and Sen. Braun for their leadership in spearheading this bipartisan legislation, and we look forward to additional scientific, voluntary and incentive-based proposals to guide our federal climate policy,” said Ducks Unlimited CEO Adam Putnam.

“The Ecosystem Services Market Consortium (ESMC) applauds the reintroduction of the Growing Climate Solutions Act. If passed, it will help farmers and ranchers better access voluntary ecosystem services markets that incentivize beneficial environmental outcomes for society and provide additional revenue streams for ***agricultural*** producers. Ecosystem services markets are an important tool in the fight against climate change and we hope the Growing Climate Solutions Act will help scale their use in ***agriculture*** to help the U.S meet its global climate commitments. ESMC thanks Sens. Stabenow, Braun, and Boozman, as well as their staffs, for their tireless efforts to craft this legislation, which is an important, bipartisan step in the right direction,” said Debbie Reed, Executive Director of the Ecosystem Services Market Consortium (ESMC)

“Since the earliest biblical record (Genesis 2:15), Christians have been called to tend and care for God’s creation. Many of our nation’s farmers are practicing Christians who believe in this biblical calling but have found it difficult with falling incomes and low crop prices. The Growing Climate Solutions Act provides a way for the ***agriculture*** community–especially family farms–to increase income, enrich soil, sequester carbon, and empower American farmers as part of the climate solution. The Growing Climate Solutions Act establishes a Verifier Certification Program providing a uniform carbon measuring method that ensures farmers a fair price and an accountable carbon markets,” said Rev. Mitch Hescox, President of the Evangelical Environmental Network

“Climate change directly impacts the farmers, ranchers and ***forest*** owners who rely on a healthy environment to produce food and ***forest*** products. The Growing Climate Solutions Act would ensure ***agricultural*** producers and ***forest*** owners of all sizes looking to enter the carbon market for the first time have access to reliable information, qualified technical service providers and third-party verifiers. In addition, the bill establishes a robust USDA advisory council composed of farmers, scientists and other climate stakeholders. FACA would like to recognize Chairwoman Stabenow and Ranking Member Boozman for their work together to ensure producer representation on the advisory council,” said the Food and ***Agriculture*** Climate Alliance

“Today, on Earth Day, we applaud Senators Stabenow, Braun, Graham, and Whitehouse and the broad and bipartisan list of co-sponsors for their leadership on the Growing Climate Solutions Act. Our ag communities are already eager to play a large role in reducing ***emissions*** nationwide and soil carbon sequestration expands this participation in our nation’s climate change strategy. The Growing Climate Solutions Act rightly rewards farmers for climate-smart practices and provides important guidelines for success,” said Growth Energy CEO Emily Skor

'We applaud Ag Committee leaders Senators Stabenow, Braun and Boozman on the release of the Growing Climate Solutions Act, an important step in helping farmers participate in maturing ***agricultural*** carbon markets. The GCSA can strengthen the existing voluntary carbon market by providing a USDA stamp of approval on high quality greenhouse gas (GHG) credit programs that provide incentives to farmers to participate in these markets. We look forward to advancing solutions alongside Congress for climate-smart ***agriculture*** to deliver on its potential and value for farmers, buyers, and the planet,” said Chris Harbourt, Global Head of Indigo Carbon.

“When governments invest in farmers, our communities and environment thrive. State department of ***agriculture*** leaders understand the central role ***agriculture*** serves in building climate resiliency and preserving our shared natural resources. NASDA is proud to support the Growing Climate Solutions Act, as it acknowledges and invests producers’ contribution to environmental sustainability and unites the industry around climate goals,” said Dr. Barb Glenn, CEO of the National Association of State Departments of ***Agriculture***

“Climate change is an all-hands-on-deck crisis, and our working ***lands*** are critical to warding off the worst effects of a warming planet. This bill will help provide a better future for both people and wildlife by opening up opportunities for farmers, foresters, and ranchers to reduce ***emissions*** and increase revenues, while also improving the places that birds need to survive. While the fight against climate change will require the broad participation of all sectors, ***agricultural*** stewards are a critical part of the solution. The people who know the ***land*** best are the people that work it every day, and this bill presents sensible and bipartisan solutions to ensure a cleaner environment for us all,” said Sarah Greenberger, Senior Vice President for Conservation Policy of the National Audubon Society

“Corn farmers have been leaders in adopting conservation practices to improve the quality of soil, water, and air around our farms. We are pleased to endorse the Growing Climate Solutions Act which would lay the groundwork for private ***agriculture*** carbon markets by authorizing USDA to certify credit verification services. This bipartisan effort recognizes ***agriculture***’s role in combating climate change. NCGA thanks the Senators for their leadership and looks forward to working together to implement policy that benefits both the environment and farmers’ bottom line,” said John Linder, President of the National Corn Growers Association.

“The U.S cotton industry fully supports this legislation which will direct USDA to provide producers with reliable information and ***remove*** technical barriers to participating in private carbon credit markets,” said Kent Fountain, Chairman of the National Cotton Council Chairman

“The Growing Climate Solutions Act is a critical step to breaking down barriers and providing certainty to farmer co-op members and other producers who want to participate in carbon markets. I would like to thank Senate ***Agriculture*** Committee Chairwoman Debbie Stabenow (D-Mich.) and Sen. Mike Braun (R-Ind.) for their leadership in reintroducing the bill with broad bipartisan support. If farmers are to be part of solving climate challenges they need to rely on proven science, accurate data and standardization to help us get there—this bill is an important step in that direction,” said Chuck Conner, President and CEO of the National Council of Farmer Cooperatives

“Recognizing the potential of climate-smart ***agriculture***, a patchwork of carbon markets has sprung up to incentivize and reward such practices. However, there is currently no formal oversight of these markets or uniformity among them for criteria, payment rates, or measurement, which can make selecting the right one a confusing and overwhelming process. By creating a certification program, the Growing Climate Solutions Act would bring much-needed clarity and certainty to this burgeoning sector, thus making it easier for farmers to obtain the financial resources they need to invest in climate solutions. We welcome and support this important initiative and will continue working with the committee to leverage ***agriculture*** in our fight against the climate crisis,” said Rob Larew, President of the National Farmers Union

“Climate and New Ag is one of the most important issues that this Congress is addressing. Growing Climate Solution Act is a major step towards providing farmers, and those who are considering growing hemp as America’s new natural resource and commodity crop, more reason to do so”, said Geoff Whaling, Chair of the National Hemp Association

“We commend Chairwoman Stabenow and Senator Braun for continuing their bipartisan leadership on the Growing Climate Solutions Act, which would encourage greater farmer participation in environmental markets. This legislation will enhance the proactive, sustainable initiatives dairy farmers are expanding as our sector strives to achieve carbon neutrality,” said Jim Mulhern, President and CEO of the National Milk Producers Federation

“As stewards of the ***land***, U.S potato growers are committed to advancing environmentally sustainable solutions that reduce the industry’s carbon footprint. We appreciate this bipartisan effort to recognize and support America’s farmers by developing voluntary, cost-effective, and economically sustainable practices through incentives that drive climate solutions,” said Dominic LaJoie, President of the National Potato Council

'Farmers are on the front lines mitigating and responding to the impacts of climate change while adapting and innovating to keep the ***lands*** they steward productive now and for future generations. We applaud members from both sides of the aisle who have come together to advance a bipartisan bill that will move the sustainability discussion forward in a meaningful way while ensuring farmers have a seat at the table as climate policy is crafted,' said Kody Carson, Chairman of the National Sorghum Producers.

“America’s farmers have a crucial role to play in addressing our changing climate and adopting climate-friendly practices that naturally sequester carbon. This bipartisan bill will help ***agricultural*** producers participate in voluntary carbon markets. Thank you to Senators Braun and Stabenow for their leadership in finding solutions that not only act on climate, but also work for farmers, ranchers, and ***forest*** owners alike,” said Aviva Glaser, Director of ***Agriculture*** Policy at the National Wildlife Federation

“We are proud to support the Growing Climate Solutions Act. As the world’s leading ***agricultural*** retailer and provider of crop inputs and services, we appreciate the role that the ag sector plays in finding solutions to address climate change. This bill ultimately would help facilitate farmers’ participation in carbon markets, rewarding them for good environmental stewardship while protecting our natural resources. We stand ready to work with Members of Congress and our farmer customers as this bill progresses,” said Brent Smith, Vice President of Marketing and Products at Nutrien

“S2G Ventures applauds Chairwoman Stabenow, Ranking Member Boozman, Senators Braun, Graham and Whitehouse and the other Senate co-sponsors for their leadership on the bipartisan Growing Climate Solutions Act of 2021. As one of the most active investors in innovative and sustainable food and ***agriculture*** start-ups, we see this legislation as a critical step in unlocking the potential of carbon markets by creating opportunities for innovators to bring cutting edge ag tech tools to farmers and ranchers so they can better measure and maximize revenue from their positive impact. On behalf of our companies and in support of the thousands of small farms, ranch and ***agricultural*** businesses across the country, we urge the quick passage of the Growing Climate Solutions Act of 2021,” said Sanjeev Krishnan, Chief Investment Officer and Managing Director of S2G Ventures

“The Sustainable Food Policy Alliance commends Chairwoman Stabenow, Ranking Member Boozman, Senators Braun, Graham and Whitehouse and the other Senate co-sponsors of the Growing Climate Solutions Act of 2021 for their leadership in advancing bipartisan legislation that uses incentives, common metrics, and quantification tools to reduce ***emissions*** and transition to low-carbon alternatives while also providing an opportunity to create value for farmers, ranchers, and others who are implementing leading edge practices to cut greenhouse gas ***emissions***. We look forward to working with the Senators and others who are working on the creation of these types of programs that can pave the way for the ***agricultural*** supply chain to continue reduction in greenhouse gas ***emissions*** and capacity and embrace ambitious and innovative solutions to address the climate crisis,” said the Sustainable Food Policy Alliance, made up of Danone North America, Mars, Incorporated, Nestlé USA, and Unilever United States

“The U.S Chamber of Commerce applauds Senators Stabenow, Braun, Boozman, and the other bipartisan cosponsors of the Growing Climate Solutions Act. Through its innovative framework that rewards farmers and other ***land*** managers for taking voluntary actions to reduce ***emissions***, this legislation would facilitate a new, cost-effective option for addressing climate change. Promoting responsible resource management through financial incentives for conservation and sustainable ***land***-use practices is a win-win policy that will benefit American ***agriculture***, their supply chain, and the broader business community as well as the environment. It is also consistent with the business community’s priorities for flexible, market-based solutions, and we look forward to working with Congress to help it become law,” said Marty Durbin, Senior Vice President for Policy at the U.S Chamber of Commerce

“AFBF welcomes the introduction of the Growing Climate Solutions Act, which builds on the strong foundation of environmental stewardship in American ***agriculture*** by providing more clarity and guidance for farmers and ranchers as they explore or expand participation in carbon markets. This bill is evidence lawmakers can come together in a bipartisan manner to find solutions to environmental challenges while respecting the role of farmers and ranchers as they feed families around the globe. I commend Sens. Stabenow (D-Mich.) and Braun (R-Ind.) for working with Ranking Member Boozman (R-Ark.) to introduce an improved Growing Climate Solutions Act,” said Zippy Duvall, President of the American Farm Bureau Federation.

“The Growing Climate Solutions Act is the first major piece of bipartisan legislation to help ensure farmers, ranchers and foresters benefit from reducing their greenhouse gas ***emissions*** and building climate resilience. ***Agriculture*** has a great opportunity to measurably contribute to climate solutions, from cutting ***emissions*** of nitrous oxide, methane and carbon dioxide, to storing carbon. EDF commends the bill’s co-sponsors for seeing this potential and paving the way for farmers to be part of the solution,” said Elizabeth Gore, Senior Vice President of Political Affairs at Environmental Defense Fund.

“Passage of the Growing Climate Solutions Act would be a big win for ***agriculture***, conservation and the climate. Farmers, ranchers and ***forest*** landowners are critical to helping combat climate change, but they need a straightforward way to tap revenue streams for implementing climate-friendly practices. This bill would help ensure producers are recognized and rewarded for the role they play. We are grateful to the sponsors for working across the aisle to support natural climate solutions and address the climate challenge,” said Lynn Scarlett, Chief External Affairs Officer, The Nature Conservancy.

“Farmers, at their core, are businessmen, but they are also conservationists and they are also environmentalists. Farmers want to do the right thing for their farms, their ranches, so that they can sustain those operations, not just over their lifetime, but over generations. This Act gives us the opportunity to do those things and have some guidance and direction in what practices are good for the environment and there is an economic benefit for doing those particular things,” said Brent Bible, Indiana corn and soybean farmer

“McDonald’s is committed to working collaboratively with our suppliers and ***agricultural*** producers to achieve our science-based climate commitments. The Growing Climate Solutions Act takes important steps toward supporting voluntary carbon credit markets that enhance assistance for farmers and ranchers that use climate smart ***agricultural*** practices. We advocate for incentives, recognition and rewards for ***agriculture*** operations that quantifiably deliver positive environmental impacts and foster agricultures unique ability to act as a climate solution. McDonald’s appreciates Senators Braun and Stabenow’s leadership to introduce common sense climate policy that benefits both ***agriculture*** producers and the environment,” said Marion Gross, McDonald’s Chief Supply Chain Officer, North America.

“Families and individuals, who make up 36% of US ***forests***, are already making an essential contribution toward mitigating climate change, but with appropriate incentives—could double the amount of carbon sequestered. We are extremely grateful to Senators Stabenow and Braun for advancing bipartisan legislation that helps ***remove*** the technical barriers for market entry to perform sustainable management practices that provide additional climate benefits,” said Tom Martin, President and CEO of the American ***Forest*** Foundation.

'The reintroduction of the Growing Climate Solutions Act continues bipartisan leadership and momentum to support voluntary approaches to help producers participate in new marketplace opportunities. This legislation is an important step toward developing the building blocks for supporting ecosystem markets and establishing stewardship as a viable revenue stream for producers, and we look forward to continuing to support the Committee as the bill moves forward,” said Jason Weller, President of President of Truterra, LLC, the sustainability business and subsidiary of ***Land*** O'Lakes, Inc.

“The bipartisan Growing Climate Solutions Act recognizes farmers, agribusinesses and rural communities as key allies in the fight against climate change. Our ***agriculture*** sector brings the cutting-edge technology and entrepreneurial spirit needed to help tackle this historic challenge. We appreciate Senator Debbie Stabenow and Senator Mike Braun for leading a bipartisan proposal to reward ***agricultural*** innovation, amplify climate solutions that start on America’s farms, and spark new market opportunities for ***agriculture***,” said Chuck Lippstreu, President of the Michigan Agri-Business Association.

“The Growing Climate Solutions Act will help private ***forest*** owners of all sizes to deliver carbon mitigation benefits at scale. This climate-smart legislation will empower the USDA to act as a catalyst for maximizing the carbon benefits of private working ***forests***. The bill creates the opportunity for USDA to reduce barriers to participation, leverage technology to reduce costs, and improve efficiency while maintaining rigor for carbon sequestration outcomes,' said Dave Tenny, President & CEO of the National Alliance of ***Forest*** Owners.

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[***Land-use change and the livestock revolution increase the risk of zoonotic coronavirus transmission from rhinolophid bats***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:693W-H841-F129-P4PJ-00000-00&context=1516831)

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**Body**

Main

Emerging infectious diseases frequently originate from pathogen spillovers from wildlife to humans; contributing factors include ***forest*** fragmentation, habitat destruction, ***agricultural*** expansion, concentrated livestock production and human penetration into wildlife habitats–. However, a quantitative analysis of the nexus between ongoing ***land***-use changes and the emergence of new zoonotic diseases is still missing,.

Genomic sequencing of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has shown that the virus is closely related (~96%) to a strain present in horseshoe bats, but it is still unclear whether the spillover of SARS-CoV-2 occurred directly from bats to humans or through an intermediate species. For example, a strain of coronavirus very similar to SARS-CoV-2 was detected in Malayan pangolin (Manis javanica), a wild mammal that is frequently illegally smuggled from Southeast Asia into China and sold in markets. Regardless of the specific pathway, the pathogen flow of emerging zoonotic diseases to humans is the result of human interactions with wildlife. We argue that the increasing incidence of emerging disease outbreaks is the result of a similar set of drivers able to change the distance and contact rates between wildlife and humans (as well as human–human interaction). Population growth, urbanization, increasing affluence in middle-income countries and the associated dietary shifts–, including increased demand for animal products, are driving ***agriculture*** expansion and changes in animal husbandry—often at the expense of natural ecosystems,. Intensive livestock production keeps a large number of animals—often immunosuppressed, with low genetic diversity and in poor conditions—in close proximity to one another, making them vulnerable to the emergence and spread of epidemics,,.

Human encroachment into wildlife habitat favours the interaction between humans and wildlife species, either directly through activities such as hunting or indirectly through other species, particularly livestock that are in closer contact with humans–. The establishment of pastures, plantations or intensive livestock farms close to ***forest*** margins may increase pathogen flow from wildlife to humans,–. Deforestation and ***forest*** fragmentation reshape the dynamics of wildlife communities, possibly leading to the extinction of habitat-specialist species while allowing generalists to thrive. Wildlife species that are hosts of pathogens have been found to be relatively more abundant in managed landscapes (for example, agro-ecosystems and urban areas) than in adjacent undisturbed sites—particularly in the case of bats and other mammal species. Among the four coronavirus genera, two (α and β coronaviruses) are found in bats, including the SARS-related CoVs (SARSr-CoV)–. For example, SARS and swine acute diarrhoea syndrome coronavirus (SADS-CoV) emerged in southeast China and were later detected in horseshoe bats, mainly Rhinolophus sinicus and Rhinolophus affinis,. SARSr-CoVs in China are most similar to the highly pathogenic human SARS-CoVs,.

Links between ***land***-use change and the emergence of the COVID-19 pandemic have been hypothesized but have yet to be supported by a comprehensive high-resolution analysis of ***land***-use patterns that combines ***forest*** fragmentation with ***agricultural*** expansion, livestock production and human encroachment into wildlife habitats. Here we analyse environmental and ***land***-use changes to identify locations at risk for SARS-related coronavirus outbreaks, and relate such outbreak risks to ongoing ***agricultural*** production trends and dietary shifts. We analyse a set of factors that make a location suitable for the spillover to humans to occur. To that end, while we do not specifically link environmental change or bats as the immediate hosts of the SARS-CoV-2 ancestor,, we use horseshoe bats in the genus Rhinolophus (family Rhinolophidae) as a model system to understand the risk of future coronavirus outbreaks because China and Southeast Asia are reported to be regions with both highly diverse horseshoe bats and bat SARS-like CoV.

Results

Unfortunately, the location of the first infection events of SARS-like CoV in humans is not known. Therefore, we performed our local analyses at horseshoe bat locations in China (Fig. and Supplementary Table ) and within horseshoe bat distributions in both the larger region including South, East and Southeast Asia (and additionally in Western Europe and North Africa) and then in China. Within these distributions we generated 10,000 random sampling points (Fig. ). Within 30 km from every random sampling point we calculate livestock density (number per km2), ***forest*** cover and fragmentation, cropland cover, population density, and the fractional cover of human settlements (Supplementary Figs. –). Hotspots were calculated (Fig. ) using the Getis–Ord algorithm to show where the areas with high or low values of ***land***-use attributes cluster (Fig. ).

Univariate spatial analysis of coronavirus outbreak drivers.

a, Sampling points randomly generated within and outside China and bat location points, weighted by the horseshoe bat species distributions present in East, South and Southeast Asia. b, Hotspots (red) and coldspots (blue) of livestock density. c, Hotspots of ***forest*** fragmentation. d, Hotspots of human settlement. Hotspots are based on the Getis–Ord statistic and classified according to their two-tailed significance levels, corresponding to those of a standard normal distribution. Basemap adapted from IUCN Red List database ([*https://www.iucnredlist.org/search*](https://www.iucnredlist.org/search)). Map projection EPSG:3395 WGS84/World Mercator.

Distribution comparison for coronavirus outbreak drivers.

a–c, Average distributions of livestock (a), ***land*** cover and use (b) and human population (c) in areas that are likely to be suitable for horseshoe bat occurrence in China and in the rest of their distribution. Error bars correspond to the 20% and 80% sample percentiles. Different capital letters indicate statistically different samples according to Mann–Whitney tests with significance α = 0.05.

Within the large region analysed, China exhibits a relatively high concentration of livestock production in horseshoe bat distributions (Fig. and Supplementary Table ). Indeed, China is a hotspot of livestock density within this region (Fig. ), with statistically significant higher concentrations of chickens, ducks, pigs, goats and cattle than exist outside China (Fig. ). Within a 30 km radius from observed bat locations the density of chicken, ducks, pigs, goats and cattle was again significantly greater than randomly selected locations outside China. Conversely the sheep density is lower in China, although sheep density was low overall, as it was for other ruminants. The density of chickens, pigs, goats and cattle surrounding (<30 km) the points where these bats were recorded and at the randomly selected locations in China within the suitability region were not significantly different, indicating that these random locations have livestock densities that are representative of the areas in which the actual presence of horseshoe bats has been documented.

***Forest*** cover and fragmentation have been related to virus outbreaks from wildlife (including bats) for other zoonotic diseases such as Ebola virus disease. China exhibits on average lower ***forest*** cover and cropland density and greater ***forest*** fragmentation than the other regions analysed (Fig. ). The average ***forest*** cover and ***forest*** fragmentation in the surroundings (within 30 km distance) of random points selected in China and the other regions (Figs. and ) show that these differences are statistically significant. Likewise, statistically significant differences (that is, lower average cover and higher average fragmentation) are found between the points of actual observations of horseshoe bats and randomly selected locations in the regions outside China within the distributions of these bats (Fig. ).

China also exhibits higher levels of human presence in horseshoe bat distributions, as evidenced by population density and the fraction of the landscape covered by villages, towns and other human settlements (Fig. ). Indeed, the region of China suitable for horseshoe bats coincides with hotspots of human settlements (Fig. ). Collectively, these results demonstrate that China exhibits stronger signs of human encroachment, livestock density and ***forest*** disturbance of SARSr-CoV-hosting horseshoe bat distributions than other regions. In China, regions close to ***forest*** fragments are more densely used for livestock production and human settlements—and consequently exhibit lower ***forest*** and cropland cover (Fig. )—thereby favouring the contact between wildlife and humans either directly or through intermediate animals such as livestock. The fact that China is a global hotspot in the concurrence of these three factors (fragmentation, livestock density and human settlement) is highlighted by the multivariate hotspot analysis (Fig. ). These three attributes account for bat habitat (fragmentation), livestock and human presence, which are major factors contributing to the spillover of zoonotic infectious diseases. Interestingly, we find that China is the global hotspot of simultaneously high ***forest*** fragmentation, livestock density and human settlement. The other major global hotspots outside China are found in Java, Bhutan, east Nepal, northern Bangladesh, the state of Kerala (India) and northeast India, of which the Bangladeshi and northeast India regions are known for past outbreaks of Nipah virus, another bat-related zoonotic disease.

Multivariate spatial analysis of coronavirus outbreak drivers.

The hotspot analysis is based on the average z score values for fragmentation, livestock (cattle, goats, pigs, sheep) density, and human settlements. Hotspots are classified based on their two-tailed significance levels, corresponding to those of a standard normal distribution. Basemap adapted from the IUCN Red List database ([*https://www.iucnredlist.org/search*](https://www.iucnredlist.org/search)).

We then use the multivariate hotspot framework to identify regions at high potential risk of SARSr-CoVs spillovers to humans as a result of ***land***-use change. To that end the results of the multivariate hotspot analysis were clustered into 30 groups, based on geographic contiguity and similarity in the above three attributes (Fig. and Supplementary Table ). We then perturbed one attribute at a time in each group to evaluate that group’s susceptibility to transitioning from non-significant conditions (Fig. ) to a hotspot state (Fig. ). This sensitivity analysis (Fig. ) shows areas at risk of transitioning to hotspots as a result of a future increase in at least one of the analysed attributes (that is, ***forest*** fragmentation, livestock density or human settlement). Interestingly the Chinese region south of Shanghai is at high risk of potentially turning into a hotspot as a result of fragmentation increase. Other regions susceptible to hotspot transition as a result of ***forest*** fragmentation include Japan and north Philippines. Likewise, the transition region between China’s hotspot and Indochina’s coldspot and the region surrounding the hotspot of Thailand could turn into hotspots for SARSr-CoV spillover as a result of increasing presence of livestock or humans, respectively (Fig. ). These results point both to regions of the world currently suitable for SARSr-CoV spillover from wildlife to humans as well as those at risk of becoming prone to spillover as a result of trajectories of ***land***-use change and human penetration (Fig. and Supplementary Fig. )

Multivariate grouping analysis based on fragmentation, livestock (cattle, goats, pigs, sheep) and settlement attributes.

Group naming is indicative and the colour code has purely graphic purposes. To see the complete characterization of all 30 groups, please refer to Supplementary Table and Supplementary Fig. . Basemap adapted from the IUCN Red List database ([*https://www.iucnredlist.org/search*](https://www.iucnredlist.org/search)).

Areas at risk of becoming hotspots as a result of changes in ***forest*** fragmentation (green), increase in livestock (cattle, goats, pigs, sheep) density (pink) and human settlement (purple).

Light blue and red dots represent, respectively, multivariate coldspots and hotspots, whereas grey dots are neutral and not sensitive to perturbation in the attributes. Hotspots/coldspots are classified according to the two-tailed 95% significance levels of the z score, corresponding to those of a standard normal distribution. Basemap adapted from the IUCN Red List database ([*https://www.iucnredlist.org/search*](https://www.iucnredlist.org/search)).

Possible trajectories of hotspot transition for three grouping analysis output clusters.

These three groups represent areas not yet classified as hotspots (not significant by Getis–Ord analysis), but which may change trajectory. The solid triangle represents the safe space of variation for the three indicators (using multivariate Getis–Ord analysis).

Discussion

Food systems are often related to human health via the impact of unhealthy diets on the emergence of chronic diseases. However, they can also affect human health more indirectly, through ***land***-use changes induced by the increasing demand for food commodities such as meat or other animal products, a phenomenon known as the ‘livestock revolution’. In many regions of the world livestock production growth has often led to ***agricultural*** expansion, ***forest*** destruction and the encroachment of cropland and intensive livestock farms into disturbed wildlife habitat. This study connected the dots between the risk of SARSr-CoV epidemics and ***land***-use changes resulting from the increase in human population and intensive farming and from ***agricultural*** expansion. Our approach uses horseshoe bats as a model family because of their key role as hosts of Sarbecovirus coronaviruses, which have caused SARS and COVID-19, and SADS,,,. Other strains of related viruses have been found in other bat genera, but these relationships are less clear. The widespread sampling of other bats may find species-specific relationships, although horseshoe bats appear to be the reservoirs where most SARSr-CoVs have their evolutionary ancestors and so we assume they are the most appropriate models. The risk to humans from other coronaviruses, therefore, will be different, because their host distributions are different, and two CoV genera (γ and δ coronaviruses) are mostly bird viruses. Similarly, the potential intermediate or amplifying host, such as other wildlife (for example, pangolin) or livestock species might differ for different coronaviruses. Here we present the results for all livestock (except poultry), because, for example, while pigs are not reportedly susceptible to SARS-CoV and SARS-CoV-2, SARS-CoV and SARS-CoV-2 have sporadically naturally infected numerous different animals and been shown experimentally to be able to infect others (for example, ref. and references therein) and SADS-CoV has infected pigs multiple times,. SADS-CoV is a coronavirus related to Rhinolophus bat coronavirus HKU2, so we include pigs in our analyses. We do not include birds (poultry) in our main analyses (Figs. – and Supplementary Figs. ), because there is no evidence of these coronaviruses in birds, but include poultry for comparison in the (Supplementary Figs. –). Moreover, poultry and pigs have been associated with the spread of, for example, influenza viruses, and therefore it is also interesting to consider all livestock types.

The bat location data and species distribution data also suffer from different, but related, issues to the virus data. The bat location data are presence-only data. True absence data are difficult to obtain, and therefore we randomly sampled within different locations to generate pseudo-absence data. Choosing from where to sample from also presents difficulties, and therefore we chose horseshoe bat distribution data for species that existed within China and East, South and Southeast Asia. This presents further issues because the distribution of one species, the greater horseshoe bat (Rhinolophus ferrumequinum), encompasses Western Europe, North Africa, and Central and East Asia. We therefore weighted our sampling based on the number of overlapping species distributions to account for this. However, these species distributions are large polygons and the realized niches used within them by the species probably differ; therefore, better niche models using presence and, ideally, presence–absence data are required to develop better predictions of species presence. However, our results for random locations in China and outside China and reported bat observations were comparable, suggesting the results were insensitive to these changes. ***Land***-use change and climate change may change their distributions in the future. Here we limit our analyses to data reported since 2000, but future analyses may be needed to better capture location and distribution changes.

More generally, although we used relatively specific bat and virus relationships, we took a high-level approach to understand the more distal or ultimate (rather than proximal) causes of infectious disease emergence, linking environmental change and human drivers such as ***agricultural*** intensification. Different infectious diseases have different transmission mechanisms and life cycles, and not all will respond to such changes in the same way. For example, directly transmitted, acute infections with short incubation and infectious periods, such as SARSr-CoVs, will probably be dependent on hosts having greater densities, as in China, for them to emerge. The epidemic potential is also increased through local and global movement and trade, either of people, wildlife or livestock,,. Along with the biological properties of the virus and hosts, the true risk of both the initial cross-species transmission and epidemic potential is either increased or limited by more proximal mechanisms, such as biosecurity, health and safety measures that can reduce risk, even if the ultimate factors are present and increasing through the processes of habitat fragmentation and human encroachment,.

Spillover of infectious disease such as SARS, COVID-19 and SADS from wildlife to humans probably requires the coexistence of horseshoe bats and humans in the same environment and is favoured by the presence of intermediate animal species, particularly livestock because this is in closer contact with humans. The fragmentation and disturbance of ***forest*** ecosystems probably favours habitat-generalist bat species. This study demonstrates that in China these important factors responsible for reducing the distance between wildlife and humans co-occur both in horseshoe bat distributions and in the surroundings of actual documented bat occurrence. These results are consistent with the notion that population growth and increasing meat consumption associated with urbanization and economic growth have expanded the footprint of ***agriculture***, leading to human encroachment in wildlife habitats and increased livestock density in areas adjacent to fragmented ***forest*** patches. China has dramatically increased animal consumption, probably as the result of increasing affluence. In China, meat supply is largely reliant on domestic production using imported feed (for example, soy from the Americas), which explains the high livestock density in many rural areas, including those at the ***forest*** margins. Indeed, about 94% of meat consumption is contributed by domestic production (96% for pig meat, 92% for poultry, 94% for mutton and goat, 80% for bovine meat). Likewise, economic growth and the shift to diets richer in animal products explains the increasing demand for wild animal meat delicacies, increasing human–wildlife interactions through multiple pathways and the disturbance of ***forest*** habitat in more remote locations—frequently abroad—through trade-related connections. China is also undergoing major urbanization trends, with a ~24.6 × 103 km2 increase in built-up ***land*** between 2010 and 2015 at the expense of cropland, woodland and grassland. At the same time, China accounts for about 25% of recent global greening trends, largely from tree plantations and ***forests***. Despite these greening trends, between 2000 and 2018, the increase in ***forest*** cover was only a fraction of the ***forest*** loss (Supplementary Table ). Moreover, tree cover increase does not necessarily go hand in hand with a reversal of fragmentation trends. For reforestation to reduce ***forest*** fragmentation it would need to take place within ***forest*** fragments and lead to a more continuous tree cover. Planting trees in discontinuous ***land*** patches has the effect of increasing ***forest*** fragmentation. In fact, when the ***forest*** gain that occurred between 2000 and 2018 was accounted for, we detected an even higher degree of ***forest*** fragmentation than without considering the effect of ***forest*** gain (Supplementary Table and Fig. ). Moreover, it has been reported that in China tree planting often occurs with monocultures growing within ***forest*** fragments, thereby contributing to the persistence of fragmented habitats.

The multivariate hotspot analysis highlights how China is the largest hotspot for the concurrence of high ***forest*** fragmentation, livestock density and human presence in our analysis (Fig. ). The analysis does not prove any causal relationship between these ***land***-use attributes and virus transmission to humans but highlights the existence of a remarkable co-dependence pattern among different risk factors in areas where horseshoe bats occur. While the distribution of horseshoe bats can be reshaped by climate change, the patterns identified by this study can be used to investigate the nexus between coronavirus emergence and ***land***-use change. The sensitivity analyses identifying the possible transition to new hotspots in response to an increase in one of these attributes (Fig. ) highlights areas that could become suitable for spillover and the type of ***land***-use change that could induce hotspot activation. Therefore, this analysis highlights region-specific ***targeted*** interventions that are urgently needed to increase resilience to SARSr-CoV spillovers. For instance, the green dots in Fig. could be turned into hotspots as a result of ***forest*** fragmentation. In these regions resilience can be built through restoration efforts. Indeed, ***land***-use change evaluations should consider the risk of activating new hotspots suitable for wildlife-to-human spillover of pathogens such as SARSr-CoV, an aspect that has seldom been included in the impact analysis of ***land***-use change. Likewise, other regions such as the China–Indochina transition zone or central Thailand are prone to hotspot transitioning as a result of increased livestock density or urbanization, respectively. Here, mitigation of SARSr-CoV emergence can be enhanced by reducing livestock or human density, respectively, thereby reversing ongoing dietary and urbanization trends. Thus, environmental health is tightly connected to both animal and human health, as recently stressed by planetary and ‘one health’ discourses, which advocate for more holistic views of global health, encompassing environment, animals and people, and the interactions among these factors.

Methods

Bat location data

Most SARS-related CoVs are detected in horseshoe bats, although some strains have also been detected in other genera–. SARSr-CoVs in China are most similar to the highly pathogenic human SARS-CoVs,.

We restricted our local analyses of disturbance at bat locations to rhinolophid bats in China. We performed a Web of Science search on 10 April 2020 using the following Boolean operators: Rhinoloph\* AND China AND Monitor\* OR Survey OR Niche OR Distribution. We found 129 unique references. We removed all those published before 2000, reporting data outside China, review articles and non-English-language publications (specifically 23 Chinese-language publications), those with no rhinolophid data and those reporting only fossil records. We retained infection studies. This left 48 publications. We then further manually reviewed the publications for those reporting location data but more specifically those with latitude and longitude, leaving 17 publications and 264 observations (Fig. and Supplementary Table ).

Bat distribution data

We restricted our analyses of disturbance in bat distributions to rhinolophid bats in both the larger South, East and Southeast Asia region (but see the main text and ‘’ section) and then China. We searched the IUCN Red List database ([*https://www.iucnredlist.org/search*](https://www.iucnredlist.org/search)) using Taxonomy: Rhinolophidae and Region: East Asia and South & South East Asia (hereinafter ‘regional’) followed by Taxonomy: Rhinolophidae and Region: East Asia: China, Hong Kong & Taiwan (hereinafter ‘Chinese’) classifications and downloaded the shapefiles for the 55 regional and 22 Chinese Rhinolophus species present in the region. We consider these areas as regions of suitable habitat for Rhinolophidae. The extent of this study area exceeds 28.5 million km2.

Within these putative species distributions, we generated 10,000 random sampling points with a local sampling density that is proportional to the number of species whose distributions were reported at the point. Horseshoe bats are largely sedentary, foraging within a few kilometres (typically 1–5 km and nearly always <10 km) of their roosts; their roosts are ~13–90 km apart and they only travel 20–60 km between winter and summer roosts (maximum recorded, 320 km),. Therefore, for every random sampling point we consider a circular area of 30 km radius within which we calculate livestock density, ***forest*** cover and fragmentation, cropland cover, population density and the fractional cover of human settlements as explained below. The average values of these statistics are then calculated for China and the other regions of the world with habitat suitable for Rhinolophidae and compared and the difference is tested for significance using the Mann–Whitney non-parametric test in Mathematica.

Livestock, ***forest*** cover and population data

We took livestock data from the GeoWiki database that provides georeferenced livestock counts (in number of animals per km2) at 1 km resolution for chickens, ducks, pigs, goats, sheep and cattle ([*https://livestock.geo-wiki.org/home-2/*](https://livestock.geo-wiki.org/home-2/)). We quantified human presence both in terms of population density at 1 km resolution and as a fraction of the landscape taken by villages, towns or other settlements from the WorldPop database at 1 km resolution. We used cropland data (at 30 × 30 m2 resolution) from ref. . ***Forest*** cover data are available at 30 m resolution annually between 2000 and 2018. ***Forest*** cover is associated with the presence of trees taller than 5 m. ***Forest*** loss or gain was determined as the difference in ***forest*** cover between these two years.

Data uncertainties and consistency

The Global Livestock of the World (GLW) maps at 1 km resolution were validated by Robinson et al. with overall satisfactory results for our study area, with observed–simulated correlations ranging between a minimum of 0.54 for ducks in Australia to a maximum of 0.81 for ducks and pigs in Asia.

Gilbert at al. presented a new version of the GLW at a lower resolution (~10 km at the equator instead of 1 km) to avoid misinterpretations in local analyses. We checked the robustness of our analysis with respect to the different spatial resolution of GLW maps by computing the linear correlation between hotspot and coldspot results obtained with the two inputs (Supplementary Fig. ). We obtained values higher than 0.95 for all species except poultry and higher than 0.80 for poultry, and chose to employ the high-resolution maps because they are better suited for the type of analysis performed in this study.

The authors of the other datasets used for our analysis reported an accuracy greater than 95% for ***forest*** data and 91.7% for cropland data, ranging, for the tiles including the study area, from 88.6% in Southeast Asia to 94% in China. The framework used by WorldPop to compute the built settlement maps is explained in Nieves et al.. Validation results show a proportion of correctly predicted transition pixels ranging from 0.79 in Vietnam to 0.997 in Switzerland.

We checked for the consistency of cropland and settlement data against the tree cover data. ***Forest*** covers 25.2% of the study area; settlements and croplands cover 7.4% and 34.2% of the study area, respectively. Overall, 95.8% of the area classified as settlements and 96.2% of the area classified as cropland fall within areas not classified as ***forest***. The overall consistency, calculated as the unambiguously classified share of the study area, is 98.7% between the maps of tree cover and croplands and 99.7% between tree cover and settlements. More detailed results of the consistency analyses are found in Supplementary Table .

***Forest*** fragmentation analyses

We performed a ***forest*** fragmentation analyses based on Vogt et al. using the 30 m ***forest*** cover data. This method distinguishes ***forest*** cores from ***forest*** margins and patches. Every 30 m pixel is classified as wooded or non-wooded, based on whether its tree cover was greater or smaller than 50% in the year 2018. ***Forest*** cores are wooded pixels that are not adjacent to non-wooded pixels. Conversely, ***forest*** patches are made of wooded pixels that are not adjacent to ***forest*** core pixels. Wooded pixels that are neither core nor patch pixels occur at the margins of ***forest*** cores. ***Forest*** fragmentation was then quantified in terms of a composite fragmentation index, defined as the ratio between the sum of number of pixels classified as ‘margins’, ‘patches’ or smaller core areas (that is, <200 ha), and the total number of pixels (wooded + non-wooded) in the 30 km circles used to characterize ***land*** cover and ***land*** use in the surroundings of the points of actual bat observations or the randomly generated points. This index ranges between 0 and 1.

Hotspot analyses and multivariate clustering

We then used two different methods to generate a multivariate distribution for the three indicators (livestock density, ***forest*** fragmentation and human settlements). First, we averaged their . Since the is a z score, that is, it has a standard normal distribution, a linear combination of the three indicators, such as their average, is a standard normal distribution and can still be represented with the same significance levels (Fig. ). Second, we performed a spatially constrained multivariate clustering analysis. A minimum spanning tree from the connectivity graph of the features was built, and then the SKATER (Spatial ‘K’luster Analysis by Tree Edge ***Removal***) clustering method was used. SKATER iteratively cuts branches in the minimum spanning tree, based on data variability among and within groups and on a spatial constraint, until it reaches the user-defined number of groups. The spatial constraint defined here is a ‘k nearest neighbours’ type with eight neighbours, meaning each feature in a group must have at least one of its eight nearest neighbours in the same group. We chose 30 as the number of groups, calculated a set of summary statistics and boxplots for the groups and compared them to their global values (Supplementary Table ). For each indicator, we calculated the R2 value as the reduction in variance of the indicator obtained by grouping, divided by the original variance of the indicator (Supplementary Table ). While the modularity analysis based on pseudo F-statistics shows that the optimal number of groups (the maximum differences between groups while maximizing within-group similarity) is 12, here we studied 30 groups to analyse distinct regional patterns. Having a greater number of groups allows us to identify groups that are susceptible to transitioning to a hotspot because they are not ‘too different’ from hotspots.

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**Notes**

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[***Massive soybean expansion in South America since 2000 and implications for conservation***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:671W-P2M1-JCWX-C2G8-00000-00&context=1516831)

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**Body**

Main

To feed a growing population, global food production needs to increase by 70–100% by 2050. The rising demand for food has caused massive deforestation across the tropics, leading to greenhouse gas ***emissions***, loss of terrestrial biodiversity and deterioration of ecosystem services–. ***Land*** used to produce soybean is rapidly expanding in the ***agricultural*** frontiers of South America, replacing natural vegetation, pastures and other cropland,. Soybean, a major oil crop that originated from China, is the world’s largest source of protein for animal feed and the second largest source of vegetable oil after palm. Global production of soybean has more than doubled since 2000 and more than quadrupled since 1980. About 70% of the production increase was from the expansion of harvested area and 30% from yield gain. More than half of the world’s soybean production currently resides in South America, where soybean harvested area has increased since 2000 by 160% in Brazil and by 57% in Argentina, with relatively smaller yield growth (<30%) in both countries. Over the same period, China’s soybean import from Brazil has surged by 2,000% (ref. ), mostly for providing animal feed to meet the increasing meat consumption in China.

The escalating trade tensions between the United States and China are expected to motivate China to seek more imports from South America, incentivizing deforestation, especially at the frontiers. To fill the US shortfall, as much as 13 million hectares of additional soybean ***land*** are needed.

Meanwhile, many regional and international initiatives are being developed to ***remove*** deforestation from commodity supply chains. A successful example is the Amazon Soy Moratorium, a voluntary agreement signed by traders who committed not to buy soybeans sowed on deforested ***lands*** in the Brazilian Amazon after 2008. A number of studies have investigated the role of soybean in driving deforestation in Brazil, as well as the effectiveness of ***forest***-protection policies–. For example, Gibbs et al. analysed satellite data from before and after the Amazon Soy Moratorium and demonstrated that it was effective in reducing deforestation. Soterroni et al. applied a ***land***-use model and evaluated the potential deforestation-reduction effect of extending the soy moratorium to the Cerrado biome. The soy moratorium for the Amazon was renewed indefinitely in 2016, but the Cerrado biome was only recently covered by a voluntary manifesto signed by civil society organizations in 2017 without legal enforcement. Protection policies for other biomes lag even further behind the Amazon and Cerrado. These previous studies have generated valuable scientific insights into the regional dynamics of commodity-driven deforestation. However, a long-term, continental perspective does not exist, primarily due to the lack of spatially explicit data on commodity expansion. Mapping postdeforestation ***land*** uses for commodity production is critical for designing and implementing commodity-specific conservation policies. Ideally, such data should be derived at a high spatial resolution to match the scale of ***land*** use, over a long temporal span to establish a baseline, and over a large geographical extent to allow for the assessment of the potential issue of ***land***-use displacement.

In our study, we mapped annual soybean extent at 30 m spatial resolution over the Southern Hemisphere of South America from 2000 to 2019. Our study area encompasses all major biomes where soybeans are cultivated: Amazonia, Atlantic ***Forest***, Cerrado, Chaco, Chiquitania, Pampas, and more recently, the Pantanal and Caatinga biomes. Our maps were produced using wall-to-wall Landsat and Moderate Resolution Imaging Spectroradiometer (MODIS) satellite data, a stratified random sample of Sentinel 2 satellite data and three years of continent-wide field observations. We assessed the accuracy of the maps using data collected from field visits obtained at sample pixels selected by a stratified two-stage cluster sampling design. The soybean classification map was then tailored so that the area of mapped soybean was constrained to match the field-based sample area estimates over South America. Our analysis revealed the extent and expansion of soybeans over the past two decades in South America with unprecedented precision. The high-resolution, annual soybean maps we generated provide valuable spatial information, which is absent in government statistics, for monitoring commodity crop growth. More importantly, complementary to the operational annual ***forest*** change mapping,, these soybean maps provide key historical baseline information for tracking commodity-driven deforestation.

To better understand the shifting dynamics of ***land***-use change in South America in the twenty-first century, we quantified the area of primary ***forests***, non-primary ***forests***, non-***forest*** natural vegetation, pre-existing croplands and pastures that were replaced by soybean. We also integrated the annual soybean maps with annual ***forest***-loss maps, and quantified deforestation caused by soybean as a direct and latent driver, highlighting emerging hotspots of soybean expansion as a direct driver of deforestation. For simplicity in reporting subsequent results, we refer to a cropping year by the harvest year. For example, year 2001 indicates the 2000/2001 cropping year.

Continental and regional patterns of soybean expansion

On the basis of satellite observations, we found that soybean area in South America increased from 26.4 Mha in 2001 to 55.1 Mha in 2019 (Fig. ). This doubling of soybean cultivated area was mainly contributed by the two largest producing countries, Brazil and Argentina. Soybean area in Brazil increased by a factor of 2.6, from 13.4 Mha in 2001 to 34.2 Mha in 2019 (average growth rate, 1.2 Mha yr−1). Soybean area in Argentina increased by a factor of 1.7, from 11.4 Mha in 2001 to 19.9 Mha in 2015 (average growth rate, 0.6 Mha yr−1), which then gradually declined to 16.3 Mha in 2019.

Soybean expansion across South America in the twenty-first century.

Annual soybean classification maps were generated at 30 m spatial resolution from 2001 to 2019. Data from the beginning and ending years are used in this visualization to show soybean expansion. To reduce the effect of annual crop rotation on data visualization, for this map we applied a 3-yr majority filter for the beginning and ending years to derive soybean layers ca. 2002 and 2018. The inset at the lower bottom corner shows annual soybean area statistics over South America, Brazil and Argentina, derived from the annual maps without filtering. Black boxes and labels on the map indicate the spatial extents of regional examples shown in Fig. .

The spatial extent of soybeans has been expanding from traditional cultivation regions in all directions across the continent (Fig. ). In southern Brazil (the states of Paraná, Santa Catarina and Rio Grande do Sul), soybeans have been expanding into surrounding regions, most notably onto higher slopes. In the traditional breadbasket of Argentina (the provinces of Buenos Aires, Córdoba, Santa Fe and Entre Ríos), new soybean fields have been spreading to the south. However, in the ***agricultural*** frontiers in Brazil’s centre-west and northeastern states, the principal direction of soybean development is towards the Equator (Fig. ). In northwestern Argentina, soybeans have been encroaching into Chaco ecosystems from both the western and eastern sides (Fig. ). In eastern Paraguay, an established ***agricultural*** landscape, the area of ***land*** under soybean cultivation continues to grow, threatening to replace remnant Atlantic ***Forests*** (Fig. ), whereas in the western Paraguayan Chaco, soybean fields have just started to emerge. In central Bolivia, soybeans are rapidly replacing the Chiquitania ***forests***, and in southwestern Uruguay, vast areas of Campos pasture/grassland are being transformed for soybean production.

Selected regional examples of soybean expansion in South America.

a, Eastern side of the Xingu River Basin in Mato Grosso, Brazil. b, Southern part of Maranhão and Piauí, Brazil. c, Northeastern part of Santiago del Estero, Argentina. d, Caaguazú and Alto Paraná, Paraguay. In each panel, the left map shows ***land*** cover and soybean distribution ca. 2002, and the right map shows ***land*** cover and soybean distribution ca. 2018. The extents of these examples are marked as black boxes on Fig. .

***Land*** source attribution of new soybean fields

To attribute and quantify the original ***land*** source of new soybean fields, we first constructed a 30 m resolution, circa-2001 ***land***-cover map, consisting of primary humid ***forests***, non-primary ***forests***, cropland and other ***land*** (mostly pasture/grassland). We then overlaid 2002–2019 annual soybean maps on the 2001 ***land***-cover map, identified the 2001 ***land*** source of soybean pixels for each subsequent year and summarized results for every biome. We found that the rates of conversion of ***forests***, pasture/grassland and pre-existing cropland to soybean varied substantially among biomes (Fig. ). The conversion of primary humid ***forests*** to soybean was apparent in the Brazilian Amazon and Chiquitania. Soybean area in the Brazilian Amazon increased more than tenfold from 0.4 Mha in 2001 to 4.6 Mha in 2019, with 32% of the 4.2 Mha added soybean sourced from year 2001 primary ***forests***, 17% from non-primary ***forests*** and 51% from previously cleared pastures (Fig. ). Soybean expansion in the Chiquitania in Bolivia followed similar trends as those in the Brazilian Amazon with 25% of new soybean fields in 2019 sourced from year 2001 primary humid tropical ***forests***, 37% from other ***forests*** and 38% from pasture/grassland.

Year 2001 ***land*** source of annual soybean between 2002 and 2019 in major biomes in South America.

The map in the centre shows the distribution of eight biomes where soybeans are cultivated: Brazilian Amazon, Chiquitania, Chaco, Cerrado, Atlantic ***Forest***, Pampas, Pantanal and Caatinga. For each biome, annual soybean layers 2002–2019 were overlaid on the 2001 ***land***-cover map (Fig. ) to calculate the 2001 ***land*** source of new soybean fields.

Soybean cultivated areas in the Pampas, Cerrado and Atlantic ***Forest***, the three biomes with the largest soybean cultivation, all nearly doubled over the past two decades (Fig. ). While 18% (1.7 Mha) of new soybean fields in the Cerrado and 20% (1.0 Mha) of new soybean fields in the Atlantic ***Forest*** were sourced from dry ***forests*** and non-primary humid ***forests***, respectively, almost all new soybean fields in the Pampas were converted from non-***forest*** ***lands***. ***Forest*** cover and ***forest*** loss in the Pampas were relatively low compared with the Cerrado and the Atlantic ***Forest*** (Supplementary Table and Supplementary Fig. ). Our results for the Cerrado are consistent with previous studies–. Soybean cultivation has been rapidly developing in the Caatinga and the Pantanal since 2013, albeit at smaller magnitudes than in other biomes (Fig. ). The main ***land*** source (87%, 16 kha) for new soybean fields in the Caatinga was semi-arid woodlands, whereas the main ***land*** source (76%, 11 kha) for new soybean fields in the Pantanal was pasture/grassland.

Our map-based attribution analysis indicated that substantial areas of both ***forest*** and non-***forest*** vegetation were converted to soybean. To further distinguish conversion of native vegetation from conversion of pastures within non-***forest*** vegetation, we conducted a sample-based attribution analysis using a time series of satellite data and high-resolution images in Google Earth (see details in Methods). Of soybean area established on non-***forest*** vegetation, 6% was converted from native vegetation and 94% replaced ***land*** uses such as pasturelands. Much of the converted pasturelands resulted from clearing of ***forest*** and non-***forest*** natural vegetation that predated the study period.

Soybean expansion as a direct versus latent driver of deforestation

To characterize the role of soybean expansion in driving deforestation, we combined our annual soybean data layers and the annual ***forest***-loss dataset from 2001 to 2019, focusing on distinguishing direct versus latent drivers. We defined new soybean as any pixel that was mapped as soybean for two consecutive years for the first time after 2001. The time difference between ***forest*** loss and the first soybean appearance is a key metric indicating soybean as a direct or latent driver of deforestation. For soybean as a direct driver, the interval from clearing of ***forests*** to mechanized soybean cultivation is three years or less, depending on the market price, road accessibility, ***land*** clearing status and soil preparation (Supplementary Fig. ),. For soybean as a latent driver, defined as new soybean that appeared more than three years following ***forest*** loss, cattle ranching before soybean is the most common ***land***-use pathway. For each 30 m pixel, we calculated the time lag between ***forest*** loss and the new appearance of soybean, and then computed the 25th percentile (Q1), the median and the 75th percentile (Q3) by biome. In the Cerrado, the median time lag was estimated to be three years (Q1 = 2 yr, Q3 = 5 yr), considerably shorter than the median of five years in the Brazilian Amazon (Q1 = 3 yr, Q3 = 9 yr) and the median of four years in the Chaco (Q1 = 2 yr, Q3 = 6 yr). The shorter time lag in the Cerrado suggests that soybean cultivation was a direct driver of clearing ***forests*** in this biome more often than it was in the Brazilian Amazon.

Direct soybean-driven deforestation reached a total of 3.4 Mha between 2001 and 2016. This dynamic accounted for 5% of the 71.9 Mha of total ***forest*** loss during this period. Of the 3.4 Mha directly converted from ***forest*** to soybean, 1.5 Mha (44%) was located in the Cerrado, 0.7 Mha in the Brazilian Amazon and 0.5 Mha in the Chaco (Table ). The area of deforested ***land*** that experienced latent soybean cultivation (>3 yr after clearing) amounted to 2.9 Mha between 2001 and 2016, accounting for 4% of total ***forest*** loss. This relatively low total reinforces the fact of soybean largely replacing long-established pasture ***land*** uses. Of the latent-driven deforestation, 1.0 Mha (34%) was located in the Brazilian Amazon, 0.9 Mha in the Cerrado and 0.5 Mha in the Chaco (Table ). In addition, from 2001 to 2016, new soybean fields directly converted from ***forests*** accounted for 13% of the total soybean gain over the continent, and soybean indirectly converted from ***forests*** accounted for 11% of total soybean gain. Relative to the total soybean gain within a biome, the majority of soybean gain in the Chiquitania (62%) and Caatinga (57%), and about half of soybean gain in Chaco (48%), was from direct deforestation (Table ).

***Forest*** loss, soybean gain and deforestation driven by soybean cultivation from 2001 to 2016

| **Biome** | **Total *forest* loss (kha) (a)** | **Total soybean gain (kha)** | **Soybean gain as a direct driver of deforestation (kha) (time lag ?3 yr) (b)** | **Soybean gain as a latent driver of deforestation (kha) (time lag >3 yr) (c)** | **Percentage of *forest* loss converted to soybean (%) ((b + c)/a)** |
| --- | --- | --- | --- | --- | --- |
| Brazilian Amazona | 27,766 | 3,294 | 692 | 982 | 6.0 |
| Atlantic ***Forest*** | 6,935 | 4,689 | 291 | 250 | 7.8 |
| Caatinga | 2,759 | 7 | 4 | 1 | 0.2 |
| Cerrado | 14,316 | 7,536 | 1,493 | 885 | 16.6 |
| Chaco | 9,837 | 1,061 | 505 | 529 | 10.5 |
| Chiquitania | 1,724 | 354 | 220 | 104 | 18.8 |
| Pampas | 1,243 | 8,669 | 69 | 83 | 12.2 |
| Pantanal | 626 | 6 | 1 | 0 | 0.2 |

aBrazilian Amazon covers the Southern Hemisphere portion of the Amazon in this study.

Temporally, direct soybean-driven deforestation in the Brazilian Amazon increased from 2001 to 2003, declined in 2004 and 2005, totalling 356 kha during 2001–2005, and remained relatively low thereafter, totalling 336 kha during 2006–2016 (Fig. ). In the Cerrado, soybean-driven deforestation also increased before 2004 and declined in 2005, totalling 637 kha during 2001–2005, but stayed relatively high thereafter, totalling 856 kha during 2006–2016. A declining trend after an initial increase was also found in the Chaco, but annual soybean-driven deforestation stayed relatively flat in the Atlantic ***Forest*** and Chiquitania, albeit at smaller magnitudes.

Annual area of soybean-driven deforestation per biome 2001–2016.

Soybean-driven deforestation is defined as conversion of ***forest*** to soybean cultivation within three years after ***forest*** clearing. The figure shows soybean-driven deforestation for six biomes from 2001 to 2016.

These temporal trends were also apparent at the municipal scale. Between 2001 and 2016, 14 municipalities had more than 50 kha deforestation directly driven by soybean expansion, with Tapurah (137 kha) of Mato Grosso, Brazil leading the list (Supplementary Fig. ). Of the top 14 municipalities, five were in Mato Grosso, Brazil, five in the Cerrado and Amazon transition states—Maranhão, Tocantins, Piauí and Bahia (collectively known as ‘MATOPIBA’), two in Santa Cruz, Bolivia, one in Salta, Argentina and one in Santiago del Estero, Argentina. These municipalities represent the active frontiers of ***agricultural*** expansion in the twenty-first century. As the deforestation wave moved towards the Amazon interior, and with the onset of enforcement of the Amazon Soy Moratorium in 2008, soybean-driven deforestation in most municipalities in central Mato Grosso has been decreasing or stagnating (Supplementary Fig. ). We also observed decreasing soybean-driven deforestation in the Argentine Chaco. Soybean planted area in Argentina has stagnated after 2015 as farmers have switched from soybean to corn in response to a larger reduction in export taxes on grains. However, soybean-driven deforestation has been increasing in municipalities in MATOPIBA and eastern Pará. The largest increase occurred in Paragominas in the Brazilian state of Pará, from an average of 1,000 ha yr−1 between 2006 and 2008 to an average of 3,300 ha yr−1 between 2014 and 2016. Nevertheless, regardless of soybean as a direct or latent driver of deforestation, our results show that soybeans have been progressively encroaching onto previously ***forested*** ***lands*** at the active frontiers over the past two decades (Supplementary Fig. ).

Implications for conservation policy

Quantification of soybean expansion as a direct driver of deforestation can facilitate commodity-specific conservation policy design, implementation and monitoring. The decline of soybean-driven deforestation in the Brazilian Amazon has been widely attributed to the implementation of the Amazon Soy Moratorium–,. To augment the voluntary moratorium, the Ministry of Environment and the Central Bank of Brazil eliminated ***agricultural*** credits to farmers and ranchers within counties with the highest deforestation rates. These measures, along with the Action Plan for the Prevention and Control of Deforestation in the Legal Amazon, played a key role in the success of reduced deforestation in the Brazilian Amazon,. Our results confirmed these trends in central Mato Grosso. However, our results also revealed increasing trends in some municipalities in the Amazon (for example, eastern Pará), indicating that these policies have met with varying success between regions (Supplementary Fig. ).

Single commodity policies aimed at mitigating deforestation face the challenge of ***land***-use displacement, which can occur over a broad scale as well as on the property level, creating leakages of deforestation,,. Risk of leakage of these emerging zero-deforestation commitments requires great traceability and transparency along commodity supply chains. Our high-resolution, long-term annual soybean maps provide data to improve our understanding of the pathways of commodity expansion and thus help to address the issue of leakage. Supply-chain monitoring in practice will depend on several factors beyond the technical features of our current dataset, including the availability and acceptance of official deforestation and soybean extent data, rules defined and enforced through specific policies, and political considerations that may compromise maintenance of monitoring and enforcement activities. Efforts to limit future deforestation will need to take into consideration other direct drivers of ***forest*** clearing to account for the latent conversion to commodity crops,. Since pasture extensification is the leading direct driver of deforestation in South America,, achieving a deforestation-free soybean commodity chain requires consideration of how expanding its production area may indirectly drive deforestation by increasing ***land*** demand for pasture or other ***land*** uses,,.

The most important finding of our study concerns the attribution of soybean as the proximate cause of ***forest*** clearing in the context of overall ***forest*** loss across South America. Between 2000 and 2019, total ***forest*** loss amounted to 84 Mha within the study area, with less than 10% of these deforested ***lands*** converted to soybean, including both direct and latent drivers. Although the proportion is relatively small, these ***lands*** are highly concentrated in the active deforestation frontiers. More commonly, soybean replaces pasture ***land*** uses,,, and this dynamic may be expected to continue. Future soybean production is projected to increase by 50% by 2050, requiring an additional 20 Mha of soybean cultivation, and much of the growth is expected to occur in South America. In the Brazilian legal Amazon, 22 Mha of ***forest*** were cleared from 1988 to 2000, providing potential areas for further soybean expansion or reforestation,. Recent research has also shown that by 2015, 23 Mha of cleared ***land*** in the Cerrado are considered highly suitable for potential soybean expansion. Our analysis further suggests that the frontier regions such as Mato Grosso, Pará and Rondônia in Brazil, Santa Cruz in Bolivia, Boquerón and Alto Paraguay in Paraguay, and Salta and Santiago del Estero in Argentina possess vast potential for continued soybean expansion to fulfil the projected need without incurring new deforestation (Fig. ).

Potential of future soybean expansion onto ***lands*** with recent ***forest*** loss.

Soybeans in year 2019 are shown in orange, with soybeans converted from ***forest*** loss between 2000 and 2019 shown in green. ***Forest*** loss between 2000 and 2019 that is not converted to soybean cultivation is shown in blue and represents areas where there may be future soybean expansion. The area of soybean directly converted from ***forest*** accounts for less than 5% the area of total ***forest*** loss. a, Overview of the continent. b–g, Regional zooms showing details at active frontiers; northeastern part of Pará, Brazil (b); southeastern part of Pará, Brazil (c); southern part of Rondônia, Brazil (d); central part of Santa Cruz, Bolivia (e); Boquerón, Paraguay (f); central part of Salta, Argentina (g).

Our results quantified the large areas of pasture that have and continue to be converted to soybean cultivation. While deforestation has well-documented environmental impacts, the conversion of pasture to intensive row cropping also deleteriously impacts the environment. The increased use of machinery, agrochemicals and fertilizer can substantially alter the physical and chemical properties of terrestrial and aquatic systems, leading to soil erosion and water pollution with implications for long-term ***agricultural*** productivity and human health. Converting pasture to cropland can also modify seasonal water balance, elevate the water table level and increase the risk of regional flooding in flat plains. Although current policy discussion overwhelmingly focuses on protecting ***forests***, protecting non-***forest*** ecosystems, such as downstream aquatic systems, is essential for the maintenance of critical ecosystem services. Our results show that soybean cultivation is rapidly developing in the Pantanal (Fig. ), which may change the regional hydrological cycle and water quality, and cause biodiversity loss in the world’s largest freshwater wetland. Moreover, soybean expansion can cause severe environmental and social impacts beyond the direct conversion area, as the massive infrastructure development required for soybean transportation paves the way for other ***land***-use activities,. Comprehensive ***land***-use monitoring, including tracking of all commodities and the extent and loss of natural ***land*** cover, is required. The ***targeting*** of single commodities and single geographies for monitoring omits leakage effects, intercommodity transitions and ***land*** banking, all of which may result in concurrent increased ***forest*** loss and increased soybean cultivated area.

More broadly, ***agricultural*** production and environmental conservation are two distinctive objectives with inherent trade-offs as both involve the use of ***land*** resources. Our results showed how such trade-offs were clearly unfolding in South America. While the expansion of soybean area in South America has boosted global food production, raised living standards and improved social well-being for the producing countries,, it also depleted natural ecosystems and caused environmental damage from local to global scales. Balancing society’s short-term need with long-term sustainability requires innovation from both the conservation and ***agricultural*** sectors. Sustainable intensification, a process where crop yields are increased without adverse environmental impact and without the conversion of non-***agricultural*** ***land***, is being advocated as a viable solution to address these trade-offs. In the Brazilian state of Mato Grosso, the traditional single-cropping system is being intensified to double-cropping systems, partially driven by conservation restrictions, and has, in turn, reduced local deforestation in the short term. Enhanced dialogue and coordination between conservation and ***agricultural*** sectors is necessary to devise and implement comprehensive policies that will achieve sustainable use of limited ***land*** resources.

Methods

Field-data-based soybean area estimation, satellite-based annual soybean mapping, ***land*** source attribution and deforestation driver analysis are described as follows.

Field data collection and soybean area estimation

We implemented a stratified random sampling design for field data collection during the growing years of 2017, 2018 and 2019, following methodology implemented by Song et al.. The ***land*** area of the Southern Hemisphere of South America was divided into 20 × 20 km2 equal-area blocks. For each year of field sampling, we mapped soybean coverage for South America using Landsat and MODIS observations of the year previous to the field visit. Each block was assigned to a high, medium or low stratum on the basis of the mapped area of soybean in the block. We randomly selected 25 blocks from each stratum as the primary sampling units (PSUs). Within each PSU, we randomly selected twenty 30 × 30 m2 pixels as the secondary sampling units (SSUs). Therefore, the sample set in each year consisted of 75 PSUs and 1,500 SSUs. This sampling design was implemented independently for each of the three field visit years. In total, we sampled 225 PSUs and 4,500 SSUs (Supplementary Fig. ). For each sample pixel in each year, we conducted field visits and collected crop type information. On the basis of the field sample data, we applied a survey sampling regression estimator to estimate soybean area for 2017, 2018 and 2019. These area estimates were used to constrain the total soybean area when generating the soybean classification maps (next section). The field data from this continentally distributed probability sample were also used to assess the accuracy of the annual soybean maps for 2017, 2018 and 2019. While collecting data over the probability sample in the field, we also recorded a large number of data points via a windshield survey, independent of the validation sample, as training data for soybean classification.

Satellite data processing and soybean mapping

The annual 30 m resolution soybean maps were derived using all Landsat and MODIS observations acquired between 1 November and 30 April in each growing year. The MODIS surface reflectance (SR) data were obtained from the 16-day MOD44C product. We applied an automated Landsat processing system to convert Landsat Thematic Mapper, Enhanced Thematic Mapper Plus, Operational ***Land*** Imager and Thermal Infrared Sensor observations from top-of-atmosphere reflectance to normalized surface reflectance (NSR). The system consists of a series of steps, including: at-sensor radiance calculation; cloud, shadow and haze masking; reflectance normalization and anisotropy correction using MODIS SR as the normalization ***target***. The Landsat NSR was then processed to 16 day composites similar to the MODIS product. Both Landsat NSR and MODIS SR 16-day time series were used to create annual phenological metrics for ***land***-cover and ***land***-use mapping. For a complete description of the methodology, readers are referred to Potapov et al. and Potapov et al..

An effective strategy for mapping crop type across a continent must be capable of dealing with local crop diversity, varying crop phenology and changing environmental conditions (for example, latitudinal gradient). Capturing such variability requires accurate training data with sufficient spatial and temporal coverage. We applied a multiscale, multitemporal approach for mapping soybean over South America. First, we classified each of the 225 sampled PSUs using field training data and all Landsat and Sentinel 2 images. Each PSU was mapped into binary soybean and non-soybean classes using a decision tree classifier trained with locally collected in-season field data and additional training data based on visual interpretation of satellite imagery. Although the method was labour intensive, highly accurate results could be achieved and were ensured by experienced image analysts through an iterative fine-tuning procedure (PSU-level average accuracy 96%). We then pooled all 225 classified PSUs together and randomly selected 5% of the pixels as training for the continental classification (Supplementary Fig. ). Since the training data were located in sampled PSUs, their random nature ensured that the training set contained representative signatures of soybeans over the continent. Moreover, as the training data were accumulated over three consecutive years, they captured the various spectral responses of soybean fields under different management practices as affected by local weather variation that occurred during those three years. The spatial and temporal coverage of the training data, therefore, enhanced the temporal generalization capability of the trained machine-learning model.

We trained a decision tree ensemble model using phenological metrics derived from both Landsat and MODIS, in addition to Shuttle Radar Topography Mission (SRTM)-based topographic features including elevation, slope and aspect. We applied this decision tree model to each growing year from 2001 to 2019 and generated 19 annual soybean probability maps at 30 m spatial resolution. Following the method reported in Song et al., we identified the empirical probability thresholds (instead of the default threshold of 0.5) that produced a match between the map-derived soybean area and the sample-based area estimates. These probability thresholds were determined for the years 2017, 2018 and 2019, for which we have sample-based area estimates. We applied the average threshold values of the three years to all years previous to 2017 to create binary soybean/non-soybean classifications. The classification maps were used to derive annual soybean area statistics (Supplementary Fig. ). We also applied the lower and upper thresholds of the three years to the entire time series to derive the uncertainty range of annual area estimates (error bars in Supplementary Fig. ).

For the most recent years 2017, 2018 and 2019, we validated the maps using field sample data as a reference. The overall accuracies were 96%, 94% and 96%, respectively, with high and balanced producer’s and user’s accuracies (Supplementary Table ). For the years previous to 2017, we do not have field sample data for validation. Consequently, we compared our map-based annual soybean area estimates to annual harvest area statistics reported by the US Department of ***Agriculture*** Foreign ***Agricultural*** Service (Supplementary Fig. ). The mean absolute deviations of the two time series were 5.3 Mha, 3.0 Mha and 1.2 Mha for South America, Brazil and Argentina, respectively. The root-mean-square deviations were 6.1 Mha, 3.3 Mha and 1.9 Mha, and the r2 values were 0.90, 0.95 and 0.66, for South America, Brazil and Argentina, respectively. As our maps were based on satellite observations and field surveys, they provided objective and consistent area estimates independent of government reports.

***Land*** source attribution

As a type of ***agricultural*** ***land*** use, soybeans can be planted on existing cropland or on ***land*** converted from non-cropland. To attribute the original ***land*** source at the beginning of the study period, we constructed a 30-m-resolution ***land***-cover map circa year 2001, consisting of primary humid ***forest***, non-primary ***forest***, cropland and other ***land*** (mostly pasture/grassland). The primary humid ***forest*** class was derived from Turubanova et al.. Non-primary ***forest*** was derived on the basis of a percentage tree canopy cover layer. We applied a 10% threshold to convert tree canopy cover to a binary ***forest***/non-***forest*** map. This 10% threshold was chosen to match the official definition of ***forest*** by the United Nations Food and ***Agriculture*** Organization and Brazil’s submission of ***forest*** ***emission*** reference level to the United Nations Framework Convention on Climate Change. The cropland class was derived from Zalles et al.. We overlaid the 2002–2019 annual soybean maps on the 2001 ***land***-cover map to compute the area of soybean sourced from primary humid ***forest***, non-primary ***forest***, cropland and pasture/grassland at the biome scale. Biome boundaries were produced by combining Brazil’s biome polygon file (available at [*http://data.globalforestwatch.org/*](http://data.globalforestwatch.org/)) for those biomes inside Brazil and the terrestrial ecoregions of the world (available at [*https://www.worldwildlife.org/publications/terrestrial-ecoregions-of-the-world*](https://www.worldwildlife.org/publications/terrestrial-ecoregions-of-the-world)) for those outside of Brazil.

We designed a sample-based attribution analysis to supplement map-based attribution analysis, focusing on distinguishing new soybeans converted from non-***forest*** native vegetation versus soybeans converted from managed vegetation. We created a 30 m spatial layer of soybeans developed on non-***forest*** ***lands*** and randomly selected 50 pixels. We created annual, monthly and biweekly Landsat composites from 2000 to 2019 over each sample pixel, and extracted 16-day time series of red, near-infrared and shortwave infrared reflectance, as well as normalized difference vegetation index (NDVI) and normalized difference water index (NDWI) from MODIS over 2000 to 2019. We also employed high-resolution images in Google Earth and visually interpreted the ***land***-cover type of the pixel before it was converted to soybean. On the basis of these sample data, we estimated the percentage of soybeans converted from non-***forest*** native vegetation.

Deforestation driver analysis

Beef and soybean are the two major commodities driving deforestation in South America. However, the pathways of ***land***-use change have been changing. Direct conversion from ***forests*** to cropland was common in Mato Grosso during 2001–2004, peaking at 23% of 2003 deforestation. From 2006 to 2010, cropland expansion in Mato Grosso increasingly occurred on previously cleared pastures, accounting for only 2% of deforestation during this period. A recent sample-based national analysis reported that 20% of new cropland in Brazil between 2000 and 2014 had been converted from natural vegetation, while the majority, 80%, had been converted from pastures.

Since multiple ***land***-use change pathways could lead to eventual conversion of ***forest*** to soybean,,, we quantified both direct and indirect conversions of ***forest*** to soybean. We defined ‘new soybean’ as any pixel that was mapped as soybean for two consecutive years for the first time after 2001. We defined ‘soybean-driven deforestation,’ with soybean as a direct driver, as a pixel that was classified as new soybean that appeared within three years following ***forest*** loss (Supplementary Fig. ). New soybean that appeared after three years of ***forest*** loss was labelled as a latent driver. Information on the year of ***forest*** loss was obtained from the global ***forest*** change data. We produced two annual deforestation layers, with soybean as the direct and latent driver, respectively, by integrating the annual soybean layers and annual ***forest***-loss layers.

We conducted a sample analysis to evaluate the uncertainty of these two change layers, focusing on the timing component. We randomly selected 50 pixels from each of the two change layers and created annual, monthly and biweekly Landsat composites from 2000 to 2019 over each sample pixel. We then extracted 16-day time series of red, near-infrared and shortwave infrared reflectance, as well as the NDVI and NDWI from MODIS from 2000 to 2019. We also employed high-resolution images in Google Earth to aid visual interpretation. From these various datasets, we recorded the year of ***forest*** loss and the year when the pixel was converted to crop cultivation, and computed the time lag from ***forest*** loss to crop cultivation (Supplementary Fig. ). The ***forest***-loss data are based on Version 1.7 of the global ***forest*** change dataset (earthenginepartners.appspot.com/science-2013-global-***forest***), which has known issues with temporal consistency. Identifying the years of ***forest*** loss and crop cultivation and computing the time lag allowed us to address the uncertainties in both the ***forest***-loss map and the soybean map. For a random location without in situ data, only crop versus non-crop can be reliably identified on the basis of satellite data, and discrimination of soybean versus non-soybean on the basis of satellite data alone is tenuous. Therefore, although our uncertainty analysis addressed the critical timing component of change, it did not encompass the full range of uncertainty due to a lack of in situ data for the random sample locations. Based on the sample, the mean time lag of direct soybean-driven deforestation was 2.6 yr, and the mean time lag of deforestation with soybean as a latent driver was 4.7 yr, consistent with the two definitions of the change maps.

We summarized the area of deforestation that was converted to soybean cultivation at the biome and municipal/county scales. Municipal boundaries were derived from the Global Administrative Areas (GADM) database (v3.6, [*https://gadm.org*](https://gadm.org)). For each biome and each municipality, we computed the annual areas of deforestation that were eventually converted to soybean from 2001 to 2019. We computed the annual areas of soybean-driven deforestation, with soybean as a direct driver, from 2001 to 2016. At the municipal scale, we also computed changes in soybean-driven deforestation from 2008 to 2016, with 2008 chosen as the starting year because of its critical importance from a policy perspective. The Amazon Soy Moratorium was initially designed with a cut-off date in 2006, which was subsequently revised to 2008. We calculated average annual soybean-driven deforestation between 2006 and 2008 as the beginning deforestation rate of the study period. In the case of the Amazon Soy Moratorium, this represents the premoratorium deforestation rate. We calculated average annual soybean-driven deforestation between 2014 and 2016 as the ending deforestation rate. The difference between mean 2006–2008 deforestation and mean 2014–2016 deforestation was calculated as the annual change in soybean-driven deforestation area from 2008 to 2016 (Supplementary Fig. ).

Reporting Summary

Further information on research design is available in the linked to this article.

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**Notes**

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**Body**

Main

Energy infrastructure is presently the greatest driver of ***land***-use change in the United States–. Although emerging energy resources, such as wind and solar, are growing rapidly, fossil fuel production continues and is predicted to expand into the foreseeable future,. With the stagnation of conventional fossil fuel production, unconventional techniques (for example, horizontal drilling combined with hydraulic fracturing, commonly known as fracking) have enabled production to increase in the United States. The nature of onshore fossil fuel development involves conversion, modification and fragmentation of landscapes,. ***Lands*** are completely converted when fossil fuel infrastructure (such as well pads) ***removes*** all biological material and the associated ecosystem services (ES),. Modification includes the conversion of habitat from the location-specific naturally occurring biological community to a degraded state (for example, pipeline rights-of-way through ***forest***). Fragmentation is the reduction in size of contiguous natural habitat and isolation of remaining habitat blocks and may have a greater impact than the infrastructure footprint alone (Fig. ). These changes have numerous environmental and socioeconomic impacts,, representing important negative externalities that current markets typically fail to address.

The effects of oil and gas development on landscapes across the United States.

a, Temperate grasslands and cropland before development; 2010, North Dakota. b, Temperate grasslands and cropland after development, with well pads and associated infrastructure visible; 2016, North Dakota. c, Temperate ***forest*** before development; 2010, Pennsylvania. d, Temperate ***forest*** after development, with well pads and associated infrastructure visible; 2018, Pennsylvania. e, Oil and gas associated infrastructure eligible for restoration in the Chihuahuan Desert, 2020, Texas. f, Ranch ***land*** developed; 2009, Arkansas. g, Ranch ***land*** undergoing restoration; 2014, Arkansas. PA, plugged and abandoned well site; In, inactive well site; Ac, active (producing) well site; Pe, permitted well site (that is, undergoing drilling operations).

Oil and gas well production is sensitive to diminishing marginal productivity, eventually reaching zero, which causes the economic benefits to be temporary, whereas the environmental costs continue beyond the lifetime of wells. Non-producing fossil fuel infrastructure has long-lasting impacts on society, including pollution and the associated negative health impacts, negative ES effects,, decreases in property value and ***agriculture*** losses,. The foregone economic and environmental opportunities that this ***land*** could provide are also of importance; one might see this problem as a rural example of the widely studied ‘urban brownfield’ phenomenon (Fig. ). The restoration of ***lands*** with non-producing well infrastructure can therefore provide long-term economic and environmental benefits to society. Here we use the term restoration to mean “the process of assisting the recovery of an ecosystem that has been damaged, degraded or destroyed” as it is defined by the Society for Ecological Restoration.

Many federal and state agencies have best-practice guidelines or requirements for the restoration of non-producing well infrastructure ***lands***. However, rules, enforcement and/or funding are often inadequate to encourage restoration, such that many well sites remain after their productive lives. These ‘legacy’ wells can create a variety of hazards beyond their landscape effects, such as gas migration and fugitive ***emissions***,–. The costs of restoration, limits of its effectiveness and funding sources are also poorly understood. There are few peer-reviewed published reports on the ***land*** restoration costs for oil and gas well ***lands*** but, by many accounts, the fees collected from fossil fuel producers are inadequate to meet all restoration needs, especially when expensive well-plugging requirements are met first,.

Quantifying restoration potential

There is little information on how many non-producing but restorable well sites exist in the United States and their associated landscape impacts. Allred et al. showed that there is a high level of ***agricultural*** and greenhouse gas impacts from landscape changes caused by the fossil fuel industry. However, assuming that a large number of non-producing wells exists across the landscape, there are potential benefits to recovering some of these losses in the form of renewed ES. Combined with estimated investment costs of restoration, a benefit–cost analysis would illustrate the economic incentives of large-scale restoration. With the predicted rise in unconventional well sites over the next several decades and continued retirement of old conventional wells, the value of this process would provide society with vital information regarding the re-establishment of lost values described in previous literature,.

Here we estimated the ***land*** area occupied by restoration-eligible non-producing well sites in each Level II ecoregion within the conterminous United States. We estimated the present restoration costs along with ES benefits of carbon sequestration and ***agricultural*** sales, discounted over 50 years. In our case, restoration includes the active ***removal*** of oil and gas infrastructure, site preparation and initial ecoregion-specific vegetation planting followed by natural regeneration of the site over time to match the surrounding landscape. We also provided a sensitivity analysis of uncertainty for our estimates and a coarser estimate of total ES to be potentially recovered. Our goal was to determine the benefit–cost ratio and total benefits of well restoration on the basis of these two key ES and to identify the geographical areas of the conterminous United States that, if re-established, would generate the greatest economic and environmental benefit relative to cost. This analysis could facilitate interest in a large-scale ***land*** restoration process across the country and be a global model for oil and gas ***land*** restoration.

***Land*** and ES impacts

We found more than 400,000 restoration-eligible wells, corresponding to a total area of over 800,000 ha (Table ). Temperate deciduous ***forest***, grassland and pasture, as well as row crops made up the vast majority of the landscapes available for restoration. Many of these eligible ***lands*** have been non-producing for long periods of time. For conventional wells, the median year of abandonment was 1993, whereas the median year of abandonment for unconventional wells was 2011 (Supplementary Fig. ). The later date for unconventional wells is indicative of more-recent increases in unconventional drilling activity.

Summary of the area and number of wells available for restoration for different types of habitat

| **Variable** | **Deciduous *forest*** | **Coniferous *forest*** | **Grasslands/pasture** | **Arid/semi-arid *lands*** | **Crops** | **Mediterranean** | **Total** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Restorable area (ha) | 250,570 | 6,462 | 360,642 | 94,815 | 138,583 | 32,058 | 852,635 |
| Restorable wells | 128,681 | 3,231 | 183,887 | 47,782 | 70,739 | 19,857 | 434,320 |

The total present value of carbon sequestration and ***agricultural*** benefits from the restoration of eligible oil and gas well infrastructure ***lands*** over 50 years is estimated to be US$21.3 billion (2018), while the cost of restoration is estimated to be about US$6.9 billion (2018), yielding a benefit–cost ratio above 3:1 (Table ). Using a Chapman–Richards function to model ecosystem recovery after restoration, we found that the break-even point occurs during year five (Fig. ). ***Agriculture*** makes up about two-thirds of the value, whereas climate regulation related to carbon storage comprises the balance. Estimated methane production by increasing cattle numbers on new ***agricultural*** ***lands*** causes a reduction in benefits by about 5%.

The benefits and costs of carbon and ***agriculture*** (US$, 2018) over a fifty-year period on oil and gas infrastructure ***lands*** eligible for restoration

| **Variable** | **Value** |
| --- | --- |
| Total carbon sequestration (tonnes, 2018?2068) | 144,104,677 |
| Total carbon sequestration value (US$, 2018?2068) | 7,307,516,675 |
| Total ***agricultural*** value (US$, 2018?2068) | 14,862,093,036 |
| Methane production cost (US$, 2018?2068) | 846,574,570 |
| Total restored value (US$, 2018) | 21,323,035,141 |
| Cost of restoration (US$, 2018) | 6,917,839,227 |
| Payback value (benefit/cost) | 3.08 |

The benefits and costs of oil and gas ***lands*** eligible for restoration over a fifty-year time period.

The solid and dashed horizontal red lines show the mean estimated restoration costs ± 1 s.d., respectively. Total benefits = carbon + ***agriculture*** − methane. The breakeven time occurs during year 5 ± 3 years.

The net benefits varied by ecoregion, with a few regions showing negative net benefit (that is, higher costs compared with the benefits) while most areas showed benefits substantially higher than the costs (Fig. and Supplementary Table ). The overall benefits, which were sensitive to both the relative value of ***land*** and the total number of restorable well sites, also varied widely between ecoregions (Fig. and Supplementary Table ). In general, grasslands and deciduous ***forest*** regions had large benefits, both relative to costs and in total magnitude, whereas arid/semi-arid regions had low values for both. The Mediterranean climate of California had the largest benefit–cost ratio and a high total value owing to the high-economic-value farmland in the region.

Map of restoration values in EPA Level II ecoregions.

a,b, Map of EPA Level II ecoregion values for the benefit–cost ratio (a) and the total benefits (US$, 2018) (b) of restoring ***lands*** that are associated with restoration-eligible well sites.

Uncertainty effects

To further explore our benefit–cost results, we modelled variation in several of our input variables. This sensitivity analysis indicated that our results were responsive to some variables that are highly uncertain, but robust to other variables (Supplementary Fig. ). Mean national ***agricultural*** production had low variation from 2008–2016, and the 2017 county-level estimates that we used deviated by only 2% from the ten-year mean, so we suggest that our ***agricultural*** estimates have high certainty (Supplementary Fig. ). Although year-to-year county-level variation may be high, it seems that gains and losses at the local level are balanced at the national level. Restoration costs were uncertain due to the paucity of research and available information on this process, but within 1 s.d. of our estimate; the break-even point and total benefits were qualitatively similar, varying by about ±2 years (Fig. and Supplementary Fig. ). The societal value of carbon sequestration is particularly uncertain and depends on the choice of discount rate. This uncertainty is reflected in the substantial variation in our estimated benefits of US$2–21 billion. Note that, even at the lower bound of estimated benefits (***agriculture*** and carbon combined) and highest estimated costs of restoration, there was a positive benefit–cost ratio (about 1.6:1; Supplementary Fig. ). Analysis of the present value of net benefits per well confirmed that, even at the individual level, social costs of carbon are responsible for the largest uncertainty in our estimated values (Supplementary Table ). If biome-specific comprehensive ES (that is, including estimates of all ES) were used, total benefits would rise to almost US$50 billion (2018), about a 7:1 benefit–cost ratio (Supplementary Fig. ). Including comprehensive ES would incorporate many other positive restoration variables, such as soil retention, water filtration and aesthetic value, benefits that are beyond our two select services. However, it should be noted that these coarse variable measurements fail to address local variation in ES. Measuring the sensitivity of these ES benefits using coefficients of sensitivity that are conventional in the literature was not possible in this circumstance because they are dependent on percentage growth in ES, which is unattainable when working from an initial condition with zero ES value. Regional economic multiplier effects of additional ***agricultural*** production increased total economic benefits to a similar degree (Supplementary Fig. ). Considering that ***agricultural*** sales seem to have less uncertainty and are the larger contributor to ES benefits, we argue that the overall net benefits nationally are plausibly positive under all of the scenarios described.

Positive economic and environmental returns

Our results show that restoring non-producing oil and gas associated ***lands*** has a positive economic impact for most ecoregions over a relatively short period of time. The ***agricultural*** potential of sites is responsible for about two-thirds of the value. This ***agricultural*** economic impact could also contribute to economic multiplier effects, improving economic activity in many rural communities. ***Land*** development from oil and gas activity is pervasive but scattered over a large area,, making it potentially less obvious to the casual observer. Most individual farms are probably not impacted to a great degree but, in aggregate, the total impact on the ***agricultural*** economy is large. The oil and gas industry typically follows a boom-and-bust cycle so, although the benefits of the economic industry can be short-lived, the lasting negative impacts on ***land*** use and ecosystem function in ***agricultural*** systems (for example, soil erosion, invasive species spread) can remain.

The beneficial effects of increased carbon storage comprised one-third of the total value, but represented only 2.4% of one year’s worth of US carbon equivalent ***emissions***, showing that restoration at this scale will have little effect on long-term ***emission*** trends. However, restoration efforts of this size combined with efforts at improved ***agricultural*** practices on these ***lands*** could have further benefits. If some of the ***lands*** available for restoration that are now classified as ***agricultural*** ***lands*** were instead converted to ***forest*** (where the natural vegetative cover is ***forest***), the carbon impacts would be higher. Planting trees is estimated to have a major impact on climate change if carried out across parts of the world conducive to ***forest*** growth.

Discussion

The estimates that we provided can be used to produce recommendations for societal action. Since the turn of the 21st century, technological advances in unconventional oil and gas production, along with increased efficiency and decreased costs for wind and solar energy, have led to a surge in US energy sector development. The increases in energy production now threaten many landscapes, some of which had seen little industrial activity and were relatively intact and unfragmented,. ***Land*** development and modification is a major source of environmental degradation across the United States, and energy-related development is predicted to be the largest driver of short-term changes in ***land*** use. One way to mitigate this predicted change is to restore ***lands*** that were previously used for energy production that are now non-producing. It is striking to consider that greater than 8,000 km2 of US ***land*** is presently occupied by non-producing oil and gas infrastructure and therefore has negative economic, environmental or aesthetic value. These ***lands*** are probably exerting costs on society beyond what we have calculated, including lost adjacent property values and negative health and welfare impacts–. As some of these ***lands*** have been in this non-producing but unrestored state for decades (Supplementary Fig. ), the cumulative ES costs have been extensive.

The negative effects of non-producing infrastructure on the economy and the environment are negative externalities that one could argue are best remedied by fees on the fossil fuel industry. Indeed, state or federal governments impose fees on oil and gas development, typically as well bonds. However, these fees, which vary by state and ownership (public versus private ***lands***), almost never meet the full costs, including plugging the well, ***removing*** infrastructure and restoring the landscape back to its original condition,. Thus, raising well bonds to a level that adequately supports full restoration is strongly warranted. Public spending (either state or federal) could also be used and, as the benefits are both local (for example, ***agricultural*** sales) and national and/or global (for example, carbon storage), public financing of restoration could be defensible. Regardless of funding sources, our study shows that the restoration of ***lands*** containing non-producing oil and gas infrastructure is economically efficient. Furthermore, opportunities for this investment will increase as older wells become exhausted and new wells that are destined for future abandonment are drilled.

***Land*** development, modification and degradation are important environmental and economic factors across the world. There are many examples, including urban brownfields, overgrazing, poor farming practices, unsustainable resource extraction and—in this study—non-producing oil and gas infrastructure. The restoration of these types of ***land*** provides numerous benefits. Most notably, oil and gas ***lands*** that are no longer productive offer no economic benefits, yet their negative environmental and social effects continue indefinitely unless restored. Investment in restoration could help to partly mitigate this negative socioeconomic impact locally while also providing benefits that extend to the world,.

Methods

We first divided the conterminous United States into EPA Level II ecoregions to analyse as separate well-impact units. Each ecoregion has distinctive climate and vegetation characteristics, so we assumed ES valuations would be relatively similar within each ecoregion, accounting for the spatial distribution of wells.

Estimating restoration-eligible wells and landcover type

For each ecoregion, we imported the respective shapefiles into the Enverus browser database, which contains information on all of the US oil and gas wells. Within each ecoregion, we searched for all of the wells that were classified as ‘plugged and abandoned’, ‘abandoned’, ‘inactive’, or ‘temporarily abandoned’, and determined them to be ‘non-producing.’ We assumed that all of these non-producing well categories would not have future production. Wells classified as ‘temporarily abandoned’ often remain non-producing for many years and sometimes this status is used to avoid restoration obligations. We cross-checked each selected well with oil and/or gas production records to confirm that oil and/or gas production had ceased. Although errors in record keeping may misclassify or provide poor location records on some wells, the Enverus database is the most complete one available. The term ‘orphaned’ is used by the oil and gas industry to refer to wells in some form of abandonment, but Enverus only occasionally classifies wells as orphaned, so we ignored this category.

For each Level II ecoregion, we randomly selected 100 conventional and unconventional wells for detailed analysis (or all wells of each category if less than 100 were present for that category). Although it would be desirable to sample every well, the large number of non-producing wells (n = 1.4 million) made population measurements impractical. Machine learning could be used to analyse all of the wells, but intraecoregion topographic variation, seasonality of satellite images, well infrastructure variation and the complex decisions that determine well status make this process difficult without a case-by-case visual inspection (Fig. ). For each randomly selected well, we recorded its location, status and date of last production from Enverus. We next examined the satellite image on Google Earth Pro at the well’s location to determine the ***land*** status. It was categorized as already restored if there were no visible landscape modifications indicative of well infrastructure (for example, a well pad and roads; Fig. ). If the well site had not been restored, there was obvious evidence of well infrastructure (see fig. 3 of ref. for satellite imagery interpretation). To be classified as restoration-eligible, the well had to be non-producing and located on well infrastructure that did not contain other producing wells. Many modern (that is, unconventional) well pads contain multiple wells, so the presence of an abandoned well did not automatically make the ***land*** restoration-eligible. Our assumption for this definition was that no future wells would be drilled on infrastructure that was supporting only non-producing wells, although we have no practical way to test this assumption. However, it should be noted that oil and gas fields follow a typical pattern of increased drilling, peak production and decline whereby, during the latter phase, drilling new wells becomes less common and the rate of abandonment increases. The fact that this pattern leads to permanent non-producing status has been seen in many oil and gas fields. From the total number of ecoregion-specific non-producing wells, the proportion of those restoration-eligible from our random samples, and the average footprint of oil and gas wells, we were able to estimate the amount of ***land*** within each ecoregion that was restoration-eligible. Although some have suggested that unconventional wells have decreasing ***land*** impacts as more wells are drilled, published research indicates that the relationship between well counts and ***land***-use impacts is linear,. Multiple unconventional wells can be drilled on single well pads, perhaps leading to reduced ***land*** impacts per well as more wells are drilled, but we suggest the linear relationship measured in published studies is due to increasing needs for supporting infrastructure (for example, pumping stations) as oil and gas production increases.

To determine pre-well ***land*** cover, we examined the immediate ***land*** cover surrounding each well and assumed that this cover was the previous condition of the landscape before drilling. If well infrastructure was on a boundary between two different types of ***land*** cover (for example, located on a row crop/grassland margin), we assigned the ***land*** cover that composed the majority of the linear edge of the ***land*** area impacted. All areas were classified as either ‘temperate coniferous ***forest***’, ‘temperate deciduous ***forest***’, ‘arid/semi-arid ***lands***’, ‘temperate grassland’, ‘Mediterranean’ or ‘tropical wet ***forest***’ (that is, south Florida) similar to EPA Level I ecoregion designations. Three ecoregion types that are dominated by conifers were classified together as ‘temperate coniferous ***forest***’ and two southwestern arid environments (southeastern semi-arid highlands, temperate sierras) were classified together with other arid and semi-arid ***lands***. The lumping of Level II ecoregions into Level I designations (equivalent to biomes) was not ideal, but was necessary for estimating parameters for ecosystem recovery (see the next section). As the arid and semi-arid ***lands*** are grouped together but we have ES parameters from only true deserts, we are probably presenting a conservative estimate for carbon storage for these habitats. For ***agricultural*** ***land*** that was in row crops, we created a separate category (that is, crops) while grazing ***lands*** (both natural and human-maintained pastures) were classified as temperate grasslands. The senior author (M.D.M.) cross-checked the first 200 of each researcher’s well classifications to confirm that the methods were being followed correctly between individual researchers.

ES valuation

We chose to estimate two major ES in our analysis—***agricultural*** value and carbon sequestration values. We chose these two because they have biome- or location-specific values that are well documented, and are relatively easy to quantify compared with some other ES (for example, cultural valuations). Most ecoregions have few, if any, published comprehensive ES valuations. However, we also used coarser biome-level comprehensive ES values to estimate the total potential value (see the ‘Sensitivity analysis’ section below).

Our ES estimate (ESV) in a given time period (t) was given by the sum of the individual ES values. The value of each service was found by the product of the contemporaneous biomass (L(t)) and the ES unit value. For the value of carbon sequestration, we use the social cost of carbon (SCC) while the ***agricultural*** value is reflected in the market prices (PAg). Each of these parameters is discussed in detail below.

Biomass recovery

Biomass recovery was used as a proxy for ***land*** cover recovery over time and was modelled using the Chapman–Richards growth equation,. Biomass, and the carbon stored in that biomass, is a valid measure of restoration, as biomass should be maximized when the community reaches the dominant prevailing state. We therefore assumed that biomass stored in an ecosystem is indicative of maturity, as this value typically follows logarithmic growth during succession.

The contemporaneous biomass is a function of the maximum possible level, Lmax, and k and r represent empirical growth parameters that scale absolute growth and shape the growth function, respectively. These parameters were identified for each biome from the available literature,. We modelled our recovery time at 50 years, a value that is within the range typically seen for ***land*** to return to its predevelopment state, but we used different k and r values, representing different rates of recovery estimated for different ecoregions in the literature (Supplementary Table ). Regardless of the recovery time, we modelled all of the habitats and ES values over a fifty-year period. While the final value for L after 50 years is constrained by Lmax, the rate of growth is controlled by k and r. As our final annual ES values reach an asymptote, we have less uncertainty of the final annual values compared with the rate at which the habitat recovers to the dominant prevailing state. Our model did not take into account changes in carbon storage due to natural disturbances (for example, fire).

Social cost of carbon

The per-unit value of carbon stored within the ecosystem was represented as the social cost of carbon, the discounted sum of all future damages associated with a one-unit increase in CO2 ***emission***. The degree to which future value should be discounted is uncertain and can have large impacts on the estimated SCC. Auffhammer offered a thorough examination of the determinants of SCC values, and identified the Interagency Working Group established by the US federal government in 2009 to establish an official SCC value for use in regulatory actions. These values are produced by conducting 50,000 simulations in three different integrated assessment models (for a total of 150,000 simulations) across a variety of modelling assumptions. The working group provided updates for these values through 2017 that we adopted for our analysis. Recent official estimates (since 2017) for SCC are substantially lower due to limiting analysis to domestic impacts of climate change and uniformly higher discount rates, which have received broad criticism.

The central estimate from the 2017 update is SCC = $50.87 (US$, 2018; 3.0% discount rate). We used this value for our calculations of the restored value of carbon from the Chapman–Richards model, but also provided a sensitivity analysis to model variation in the estimated carbon costs (see below). As unconventional and conventional infrastructure have different sizes of area typically developed, we calculated the total restored area value for an ecoregion separately for each well type.

***Agricultural*** value

We estimated the potential ***agricultural*** benefits from the restoration of wells for each Level II ecoregion designation using the number of reclaimable wells per county, amount of reclaimable ***agricultural*** ***land*** per well and county-level data on total ***agricultural*** sales per hectare. The ***agricultural*** sales in the National ***Agricultural*** Statistics Survey (NASS) database include all products, plant and animal, and we assumed that restored wells would return crop and livestock benefits in the same proportion as they exist presently (at the county level). We assumed random well infrastructure placement and that oil and gas companies did not attempt to avoid highly productive ***agricultural*** areas. Well placement is presumably based on geology, but if there is some consideration of ***land*** impacts, our estimates could be an overestimate of sales losses. However, there is little information in the literature about industry decisions on well placement. We assumed all ***agricultural*** effects of non-producing energy infrastructure were negative due to lost ***land*** productivity, a result that is well documented in the literature,,,. Some farmers and ranchers report benefits from abandoned oil and gas infrastructure, (for example, enhanced access to ***land***), but loss of productivity and failure to reclaim ***lands*** is a top concern among many farmers and ranchers and probably creates monetary losses.

The number of restorable wells per county (RWi), where i indicates county, was estimated using the number of wells per county within each ecoregion (NWi) and the proportion of reclaimable wells per county (PrWi), calculated by the random selection of wells (n = 100 for both conventional and unconventional, if present) in each ecoregion (see above).

To determine the area of reclaimable ***land*** per county (RLi), we used the summed proportion of ***land***-use types (livestock production from grassland/pasture or arid/semi-arid rangeland, and crop production) that can be used in ***agriculture*** (PA) premultiplied by the area developed per well (AW), as estimated by Trainor et al..

Finally, we used the National ***Agricultural*** Statistics Survey to find county-level ***agricultural*** sales (VAi). We focussed on ***agricultural*** sales rather than net revenues or profit because our analysis focused on assessing the benefits of the ES themselves. Even in the presence of additional costs to ***agricultural*** production, there is still value from the provisioning service alone. We drew on the fact that markets reveal the preferences of economic agents that inform their willingness to pay for goods and services. These market prices are affected by input costs, but still represent an effective per-unit value that the ***agricultural*** production provides to society. Summing across all relevant counties, we calculated the total value of ***agricultural*** production for each ecoregion.

As in the carbon estimates, we calculated conventional and unconventional well sites separately and then summed these values to get a total potential annual value for ***agricultural*** ***lands*** for each ecoregion.

As we expect that restored grassland/pasture could support new ruminant animals, we adjusted these carbon estimates to account for the additional methane that could be produced by cattle (NC) added to the landscape after restoration. While other ruminants also produce methane in the United States, cattle make up 91.9% of individuals. Using per-individual production levels of methane, to calculate methane production by these types of livestock, cattle make up the vast majority (98.9%) of all US livestock methane ***emissions***. For each ecoregion, we calculated the number of cattle per hectare by taking the number of cattle produced per county (Ci) and dividing it by the number of hectares devoted to ***agricultural*** area (Ai). This value was multiplied by RLi (see above) to get the number of cattle per county that could be added after restoration. These values were summed to estimate the total number of new cattle per ecoregion that could be added after restoration.

We estimated the annual cost of methane production from new cattle in CO2 using the measured methane production (55 kg per individual) and the CO2 equivalent of methane (21×). This value was then modelled using the Chapman–Richards equation (but as a negative benefit) as in other carbon value calculations described above. Note that properly grazed ruminants may increase ecosystem carbon storage, so our calculations may overestimate their carbon ***emissions***.

We recognize that aspects of ***agriculture*** other than ruminant production (for example, type of forage available, run-off impacts on anaerobic bacteria methane production) can influence greenhouse gas ***emissions*** that could partially offset carbon storage. Owing to the great variety in carbon ***emissions*** between different crops and farming practices, we were not able to include this model variable. As the United States moves toward more renewable energy production, and hopefully more sustainable farming practices, there is an opportunity to get the full value of carbon stored in ***agricultural*** ***lands***.

Economic discounting in environmental economics

People tend to assign less value to future events compared with the exact same events in the present moment. Economists address this issue with ‘discounting,’ which translates a value that will be realized in the future (FV) into one that can be compared with values in the present (PV). The simplest expression of discounting is given by the following:

The defining characteristic of this model is the discount rate r. The carbon pricing models used by Auffhammer already have these discount rates incorporated and we applied the 3.0% discount rate to our ***agricultural*** calculations.

Restoration costs

Well restoration is accomplished through a private contract, and the costs are often proprietary. As a consequence, there is a lack of public information on its component processes. Reviewing the literature and public records produced a limited number of studies,– that act as the foundation of our average estimated restoration cost of US$8,128 ± 3,131 (mean ± s.d.; US$, 2018) per well. A more nuanced exploration of these costs is an area for future work.

Sensitivity analyses

We examined how uncertainty affected our benefit–cost ratios for restoration costs, ***agricultural*** production, comprehensive ES valuations, social costs of carbon and economic multiplier factors (Fig. and Supplementary Fig. ). The limited cost estimates (n = 4),– correspond to a relatively high degree of variation. We used ±1 s.d. of mean restoration costs as the low and high estimate of this value for the sensitivity analysis. These values are presented on all of the sensitivity analysis figures so as to show how variation in other variables intersect.

***Agricultural*** sales vary annually due to local economic conditions, world ***agricultural*** demand and weather. We calculated the mean national sales from the 2008–2018 estimate. The 2017 value used for our county-level estimate (most recent detailed NASS survey) deviated by only 2% from the ten-year mean. To visualize how variation in sales could affect future benefits, we plotted the mean 2008–2018 value ± 1 s.d. over our fifty-year time period.

There are additional ES that can be estimated, but location-specific valuations are generally lacking for much of the United States. We used mean values from Moran et al. (for most biomes) and the single peer-reviewed arid/semi-arid estimation to predict the total ES benefits realized over our fifty-year time frame. Although this method gave a more complete valuation for ES, the use of broad biome-level values creates a high level of uncertainty and does not account for unusually high value localities (for example, the ***agricultural*** value of California; Supplementary Table ).

The social cost of carbon is uncertain and subject to debate over appropriate measurement. We used the mean estimated cost per tonne from Auffhammer, which assumes a 3.0% discount rate. To measure the effect of the uncertainty in this calculation, we also estimated carbon recovery benefits on the basis of a 2.5% and 5.0% discount and the upper 95% confidence interval from the Auffhammer estimates.

***Agricultural*** markets are one component of the broader macroeconomy, suggesting that growth within this category will have added impact on related markets (that is, economic multipliers). Input–output models estimate the magnitude of these multiplier effects by simulating the impact of economic shocks in one sector through the rest of the economy. The most general standard multiplier relates changes in the total economic output to a change in the output of an individual industry. In ***agriculture***, the output multiplier would take the following form:

There is consensus of substantial positive effects to the surrounding economy from ***agriculture***. To estimate an ***agricultural*** output multiplier, we reviewed the economic literature of state-level impact analyses for the ***agricultural*** industry. Reviewing 18 studies across the United States–, we found an average multiplier effect of 1.67 (; Supplementary Fig. ). Our approach to modelling uncertainty in ES values is consistent with those seen in the ecological economics literature.

**Acknowledgements**

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**Notes**

Supplementary informationThe online version contains supplementary material available at [*https://doi.org/10.1038/s41893-021-00689-4.Peer*](https://doi.org/10.1038/s41893-021-00689-4.Peer) review informationNature Sustainability thanks Julia Haggerty, Urs Kreuter, Mark Paschke and Srikanta Sannigrahi for their contribution to the peer review of this work.Publisher’s note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

**Load-Date:** May 3, 2023

**End of Document**



[***‘Not all biomass is carbon neutral’, industry admits***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:60F6-BSS1-F0YC-N1GP-00000-00&context=1516831)

Impact News Service

July 23, 2020 Thursday

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**Length:** 1438 words

**Body**

London: IEA Clean Coal Centre has issued the following press release:

Biomass played “a substantial role” in the coal-free run that the UK electricity sector enjoyed in May and June this year, said Rebecca Heaton, head of climate change at Drax, a British power station running on biomass and coal.

Leading industry figures acknowledge that not all biomass brings benefits to the climate, insisting that only low-value wood and ***forest*** residues should make the cut under EU law. “Not all biomass is good biomass,” says Jennifer Jenkins, chief sustainability officer at Enviva, a US-based company which is the world’s largest producer of industrial wood pellets used for electricity and heat production. “We agree that not all biomass should automatically be categorised as carbon neutral,” Jenkins told an online debate organised on 29 June during EU sustainable energy week.

To bring climate benefits, biomass needs to come from low-value wood residues or smaller trees coming from timber harvests – not from high-value trees that could be used in products like furniture or construction material, Jenkins said. The question now facing policymakers in Brussels is how to ensure EU energy policies do not encourage the wrong sort of biomass, even inadvertently.Biomass currently represents almost 60% of the EU’s renewable energy, more than solar and wind power combined, according to the EU’s statistical office, Eurostat. And even though wind and solar are growing fast, countries such as Austria, Denmark, Finland, Latvia and Sweden would be unable to achieve their 2020 renewable energy ***targets*** without biomass, experts say.

“Bioenergy is basically the backbone for these countries’” renewable energy policies, said Martin Junginger, a professor of energy and resources at Utrecht University who spoke at the online event.

EU bioenergy reviewThe future of bioenergy in Europe is looking uncertain, however. Earlier this year, the European Commission announced it would perform a comprehensive assessment of biomass supply and demand in Europe and globally with a view to “ensure that EU biomass-related policies are sustainable”. “The overall objective is to ensure that EU regulatory framework on bioenergy is in line with the increased ambition set out in the European Green Deal,” the Commission said in its biodiversity strategy, published on 20 May.

Among other things, the biodiversity plan aims to protect primary and old-growth ***forests***, which “keep ***removing*** carbon from the atmosphere, while storing significant carbon stocks,” the EU paper said. “The use of whole trees and food and feed crops for energy production – whether produced in the EU or imported – should be minimised,” the policy paper added.

EU plans sweeping bioenergy review by end 2020The European Commission intends to push a “transformative approach” to all forms of bioenergy – including biofuels and woody biomass – as part of a biodiversity strategy due to be unveiled on Wednesday (20 May). But sorting out “good” from “bad” biomass is notoriously tricky. Last year, a group of climate activists filed a lawsuit against the European Union to challenge the notion that ***forest*** biomass is carbon neutral, a principle which is currently enshrined in the bloc’s renewable energy directive.

“The treatment of biomass as carbon neutral runs counter to scientific findings” showing that burning wood for energy typically emits 1.5 times more CO2 than coal and 3 times more than natural gas, the plaintiffs claimed. The European Court of Justice dismissed the case in May this year, saying the activists had failed to demonstrate how the directive was of “individual concern” to them.Still, the Commission appeared to give credit to the plaintiffs, saying its bioenergy review will include new “operational guidance” on the sustainability criteria for ***forest*** biomass currently laid down in the EU’s renewable energy directive.

TimeframeSo how could policymakers distinguish “good” from “bad” biomass? According to some experts, one way could be to contrast the impact of biomass on global carbon stocks in the short and long term.“If you burn biomass, then of course there is CO2 being emitted,” said Junginger, adding that from that point of view, biomass “critics have a point” and that climate scientists are concerned about the immediate CO2 ***emissions***, which can be “up to twice more than natural gas”.

However, what critics fail to acknowledge is the long-term positive effects of biomass on the climate, Junginger added, saying bioenergy from sustainably managed ***forests*** is carbon neutral in the long run because trees re-absorb carbon dioxide as they grow. “Ultimately within two or three decades, even the lesser sustainable kinds of biomass will have repaid their carbon debt and perform better than fossil fuels,” he argued. For him, the choice to rely on biomass therefore depends more on the timeframe in which policymakers place themselves.

“If within ten years, we have to decarbonise everything, then yes, biomass is not a very attractive option” because of the “carbon debt” that biomass creates for the coming decades, Junginger said.But if policymakers consider that climate change is “a matter of decades and centuries” then biomass has a role to play in mitigating climate change, he claimed.

The timeframe criteria does not necessarily speak in favour of biomass. In November last year, the European Parliament declared a “climate emergency”, calling on the Commission and member states “to urgently take the concrete action needed in order to fight and contain this threat before it is too late”. According to UN scientists, the coming 10 years will be critical to ensure the world stays on track with the Paris Agreement, which seeks to limit global warming to well below 2C, and aim for 1.5C

To hold warming to this limit, carbon pollution must fall to ‘net zero’ by 2050, according to scientists at the Intergovernmental Panel on Climate Change (IPCC).

European Parliament declares climate emergencyThe European Parliament voted by a large majority on Thursday (28 November) in favour of a resolution declaring climate emergency in Europe, piling pressure on the EU’s new Commission to deliver an ambitious European Green Deal after it takes office next month. The idea that biomass could be discriminated based on timeframe is making the bioenergy sector cringe, though. According to Enviva’s Jennifer Jenkins, biomass brings immediate benefits as long as it comes from “working ***forests***”, whose tree stocks are “stable or increasing”. “I would argue the benefits are immediate, we don’t need to worry about the short versus long term time frame,” Jenkins argued.

To her, ***land*** use change is a more relevant criteria to measure sustainability. In order to bring climate benefits, biomass “needs to come from a working ***forest*** that is returned to ***forests*** after harvest – not from ***forests*** that are converted to ***agriculture***” or other uses after trees are felled, she said.

‘Transitions’ in biomass useAnother potential way to manage the climate impact of biomass is to prioritise the sectors in which it should be used in priority. “Sustainable biomass is scarce,” said Martin Junginger. “So we have to think cleverly where we want to deploy it,” he added, citing hard-to-abate sectors of industry and transport as areas where scarce biomass resources could be put to best use. “At the moment we use biomass mainly for low-temperature heating – so, for heating houses,” Junginger pointed out, saying this was “not very clever” because other solutions like insulation or heat pumps are more efficient.

Instead, he said biomass should be used in priority “for industrial purposes which are harder to decarbonise,” as well as heavy-duty road transport, shipping and aviation where biofuels can provide an alternative to hydrocarbon-based fossil fuels.

Another transition is the way biomass is used for electricity. “With intermittent wind and solar,” biomass is well positioned to provide peak load instead of base load, Junginger said.

Biomass played “a substantial role” in the coal-free run that the UK electricity sector enjoyed in May and June this year, said Rebecca Heaton, head of climate change at Drax, a British power station running on biomass and coal. “Obviously the grid will be predominantly solar and wind” in the future, but biomass can help “when the wind doesn’t blow and the sun doesn’t shine,” Heaton said.

The ***forests*** in Europe that can be considered “old growth” – and therefore declared protected areas – depends on the definition, says Petri Sarvamaa. “And that’s where the political fight begins,” he told EURACTIV in an interview.

**Load-Date:** July 25, 2020

**End of Document**



[***Think the Greens are the fluffy party? Think again. They are dangerous eco-Marxists***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:62H0-9BX1-JD7N-K2NJ-00000-00&context=1516831)

The Herald (Glasgow)

April 22, 2021 Thursday

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**Section:** Pg. 15

**Length:** 1062 words

**Byline:** Garry Scott

**Body**

ANYONE swithering about voting Green at the Holyrood elections should read on. In their TV party political broadcasts, they promote the idea that they are "working for Scotland" and "winning real change." They claim to be making a "positive impact on people's lives" as they strive for a "greener fairer economy." It's all super-cuddly, fluffy bunny stuff, until you scrape the surface and discover what lies beneath. The Scottish Green Party's sneering and derisory statement on the death of the Duke of Edinburgh should serve as a warning.

The Scottish Green Party's manifesto promises to ban the sale of all petrol and diesel vehicles by 2026. All gas and kerosene boilers would have to be ripped out and replaced by expensive heat pumps, with a ***target*** for installing 500,000 by 2030.

There would be no return to cheap foreign holidays, with severe curbs on flights and rigorous taxes on frequent flyers.

They would shut down the North Sea oil and gas industry with the loss of 100,000 jobs. Zero carbon ***emissions*** from industry would close down vast parts of the economy, as the Greens seek to ***remove*** fossil fuels entirely from carbon-intensive sectors like the manufacturing, automotive and aerospace industries, with massive job losses.

They offset this by promising a universal basic income, guaranteed to all adults, regardless of their wealth.

The mind-blowing cost of this to an economy facing its biggest recession in history has not been calculated. They also intend to stop building new roads, nationalise buses and ban exams.

In ***agriculture***, the Greens aim to review ***land*** inheritance laws to prevent automatic succession. They will encourage more community ***land*** buyouts, ensuring communities are not forced to pay market values for ***land*** to "wealthy landowners." Green Party proposals include heavy taxes on meat and dairy products to cut consumption and reduce methane ***emissions*** from flatulent cows and sheep. Their policies on ***land*** reform would ruin farmers and wreck Scottish ***agriculture***.

The Green's radical ecological Marxism might seem like fantasy for a party that only has five MSPs at the moment. But those five MSPs, led by co-conveners Patrick Harvie and Lorna Slater, have propped up the SNP's minority government for the past five years and they promise to do so again. They are enthusiastic separatists, keen to help their nationalist chums break up the UK.

The vicious civil war that has erupted within senior SNP ranks in recent weeks has seen SNP support at the polls fluctuating. But Patrick Harvie has been quick to assure Nicola Sturgeon that he would be more than happy to join the SNP in a Nationalist/Green coalition, where his party would be given ministerial office. So, the nightmare of an eco-Marxist as a minister in the next government could be a real prospect.

I had to work with the Greens for 15 years in the European Parliament. We called them the 'watermelons', because they are green on the outside and red in the middle!

The SNP members of the European Parliament sat with the leftist Green Group in the Strasbourg chamber, whose 'Green vision for Europe' sought "to replace the unsustainable economics of free trade and unrestricted growth with the ecological alternative of local self-reliance and resource conservation." In other words, they were nakedly anti-capitalist.

Far from making Scotland into the comfortable, fairer society they like to proclaim, their Luddite and Marxist policies would derail any chance of economic recovery and send us scuttling back to the dark ages. They loathe the one thing that could transform the lives of ordinary Scots and provide everyone with some respite - economic growth.

They promise that their policies will deliver 200,000 jobs in sustainable industries. But their obsession with wind power has seen Scotland's landscape festooned with a ***forest*** of giant, industrial turbines, mostly sourced from and constructed by foreign companies.

The majority of wind farms have been erected on Scotland's globally priceless peatlands. Digging up peat bogs to build wind turbines releases millions of tons of stored CO2 into the atmosphere.

It is entirely counter-productive. The green jobs revolution has turned out to be a myth and the ruination of our renowned hills and glens has sent tremors through the tourist sector.

Meanwhile the Green Party's total reliance on expensive and intermittent renewable energy has driven millions of Scots into fuel poverty, while enriching the foreign-owned energy companies.

But the Scottish Greens like to brand themselves as the only party promoting measures that will save our planet. The truth is they don't have a monopoly on environmental sustainability.

The UK Government is now half-way towards meetings its net-zero carbon ***emissions*** ***target*** by 2050.UK ***emissions*** are down 51% since 1990. Britain is reducing ***emissions*** faster than any of the major world economies, a record which will stand Prime Minister Boris Johnson in good stead when he opens the COP26 climate summit in Glasgow in November.

The Scottish Green Party's determined efforts to prop up the failing SNP Government appears to transcend all their environmental concerns. Patrick Harvie and his MSPs have repeatedly closed ranks with their SNP pals in overturning votes of no-confidence on John Swinney and Nicola Sturgeon. They have repeatedly thrown their support behind fresh demands for a second independence referendum, prioritising that selfish obsession beyond our need for post-pandemic economic recovery.

Patrick Harvie sees himself as 'queenmaker' in ensuring Nicola Sturgeon's survival. He will be quietly satisfied that some polls now point to the SNP falling short of a majority at the Holyrood elections in May, sniffing the chance to seize ministerial office for the Greens and bolstering his case for the catastrophic break up of Britain.

The Greens are urging Scots to 'vote like our future depends on it' at the Holyrood elections. At the 2016 elections only 150,426 people voted for the Greens on the regional lists, but nevertheless they managed to secure 6 seats in the Scottish Parliament.

It is a sad indictment of our political system that our future and indeed the future of our country, the United Kingdom, can be decided ultimately by this tiny band of eco-Marxists. A frightening prospect.

Our future really will depend on the way we vote on 6th May.

**Load-Date:** April 22, 2021

**End of Document**



[***Midwest Row Crop Collaborative Receives $1.6 Million HSBC Bank USA Grant***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:5P51-RRX1-JDG9-Y1C5-00000-00&context=1516831)

Impact Financial News

May 22, 2021 Saturday

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**Length:** 782 words

**Body**

NEW YORK: HSBC Bank USA, N.A , (HSBC) and the Midwest Row Crop Collaborative (MRCC) announced that HSBC has made a $1.6 million grant to MRCC to accelerate conservation and the adoption of regenerative practices such as cover crops, nutrient management, reduced tillage, and prairie strips on large-scale farms in MRCC’s collaborative projects.

Nature-based Solutions for Catalyzing a More Resilient U.S Food System is the only U.S -based project included as part of the Climate Solutions Partnership, which HSBC announced today. The Partnership aims to address barriers to scaling sustainable projects and to bring climate solutions to commercial viability, while also delivering for people and nature. Together with partners World Resources Institute (WRI) and World Wildlife Fund (WWF), the global initiative is backed by $100 million of philanthropic funding from HSBC over five years.

The U.S -based work, driven by MRCC members Kellogg Company, PepsiCo, and The Nature Conservancy partnering with members Unilever and Cargill, is made possible through direct relationships with row crop farmers, in a region where row crops account for 75 percent of ***agricultural*** ***land***. As farmers depend on healthy soil and water resources, which are being depleted rapidly, the benefits of regenerative practice adoption can offer a lifeline for individual farms over the long term. These practices protect against the flooding and erosion impacts of increasingly extreme weather, improve crop yields, and reduce production costs.

The Climate Solutions Partnership is part of HSBC’s ambitious climate strategy. HSBC aims to align its provision of financing to net-zero by 2050 or sooner, in line with the Paris Agreement goals, and to work across the financial sector and beyond to accelerate solutions that increase the pace of change.

The Partnership seeks to ***remove*** barriers and create incentives in three areas: energy transition, business innovation, and nature-based solutions. MRCC is part of the focus on nature-based solutions and will be one of 20 projects globally to protect and revitalize wetlands, mangroves, and ***forests***, and to promote sustainable ***agriculture***. Working with a network of local partners, these projects will contribute to net-zero goals by capturing CO2 while increasing social and environmental resilience.

Focused on Illinois, Iowa, Michigan, and Nebraska, the projects will expand practices that are transferrable to other growing regions in the Midwest, the U.S , and around the globe. The benefits of the work will be measured in multiple ways: reduced carbon ***emissions***, improved water quality, and biodiversity enhanced food security by reducing soil loss, and improved farm profitability.

In Iowa and Nebraska, this grant will build on existing projects being implemented by Practical Farmers of Iowa to support expanding cover crops and introducing small grains to provide continuous living cover that protects and enhances soil health. In Illinois, the Precision Conservation Management program implemented by the Illinois Corn Growers Association will be replicated in an entirely new region, expanding its impact to 100 additional farms over four years. A pay-for-performance model to provide growers conservation practice adoption incentives by utilizing the STAR initiative will also be implemented in Illinois.

In Michigan, MRCC will develop a sustainably grown grain pilot program that can be incorporated into supply partners’ buying frameworks, with the potential to link conservation incentives to the point of sale. Carrie Vollmer-Sanders, farmer, ***Agriculture*** Engagement Strategy Director at The Nature Conservancy, and MRCC co-chair offers that “on-farm practices benefitting the environment and society without a visible financial payoff for 3-5 years are difficult practices to embrace. This grant will allow us to prove out the financial benefit and break down some of the barriers to adopting regenerative practices. ”

A unique aspect of the Climate Solutions Partnership will be the creation of a Nature-based Solutions Accelerator, facilitated by global partners WRI and WWF, which will highlight meaningful innovations, including MRCC’s work in Illinois, Iowa, Michigan, and Nebraska. Another unique aspect is that, during the four-year grant term, participating projects may draw upon additional expertise from other MRCC members, including Bayer, Environmental Defense Fund, Walmart, and WWF. MRCC members represent distinct roles in the food and ***agriculture*** value chain, which creates an opportunity to drive collective action and ***remove*** barriers for systemic change to improve food system health, environmental outcomes, and the well-being of farmers.

**Load-Date:** May 25, 2021

**End of Document**



[***STATEMENTS ON INTRODUCED BILLS AND JOINT RESOLUTION; Congressional Record Vol. 167, No. 67 (Senate - April 19, 2021)***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:62GS-FRX1-F0YC-N1T2-00000-00&context=1516831)

Impact News Service

April 20, 2021 Tuesday

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**Length:** 40868 words

**Body**

Washington: The Library of Congress, The Government of USA has issued the following house proceeding:

By Mr. MENENDEZ (for himself, Ms. Hirono, Mr. Cardin, Mrs. Shaheen, Mr. Merkley, Mr. Schatz, Mr. Murphy, Mr. Kaine, Mr. Markey, Mr. Booker, and Mr. Van Hollen): S. 1201. A bill to restore the United States' international leadership on climate change and clean energy, and for other purposes; to the Committee on Foreign Relations. Mr. MENENDEZ. Mr. President, I rise today to speak on the United States Climate Leadership on International Mitigation, Adaptation, and Technology Enhancement Act of 2021--the U.S CLIMATE Act. Mr. President, climate change represents a clear and present threat to the stability, security and prosperity of nations around the world, including the United States. The cost of climate-induced disasters becomes more indisputable and devastating with every passing year. Barring swift and ambitious action, the situation will only worsen. We've all seen the devastating impacts of climate change. For years, unprecedented tropical storms have destroyed communities in Mozambique, Central America, and the United States, including communities in my home state of New Jersey. This past February, incredibly abnormal and brutal winter weather, exacerbated by climatic disruption to the Arctic's polar vortex, killed eleven people and left thousands in Texas without power and water. Less than a year prior, deadly wildfires, exacerbated by climate change engulfed California, killing 31 people, and Australia, killing 34 people, and forced thousands to flee their homes and lose their livelihoods. And yet, while hurricanes and storm surges are horrific, climate change is also increasing the intensity, length and geographic expanse of droughts around the world contributing to food insecurity, natural resource scarcity and desertification. Likewise, intensifying effects of climate change pose an existential threat to hundreds of millions of people and exacerbate global forced migration. Nations like Bangladesh, India, and Indonesia are incredibly vulnerable to mass displacement due to rising sea levels. Island nations like Tuvalu, Seychelles, the Republic of the Marshall Islands and Kiribati are already managing internal migration due to climate change induced sea-level rise. Without ambitious action to both keep global leverage temperatures well below an increase of two degrees Celsius above preindustrial levels it is forecasted that the entirety of certain nations may become uninhabitable within my grandchildren's lifetime. It is a moral imperative for the Senators in this body, and humanity, to act to ensure that is not the world we leave for the generations that will come after us. Today's generations are the first people to personally and regularly experience the effects of climate change on the natural world and its impact on humanity . . . and we are also the last generations that can, and must, act to prevent the worst forecasts from becoming reality. Changing climate and weather patterns intensification of global food insecurity and resource scarcity especially threaten the lives and security of the world's most vulnerable populations. For months, heavy rainfall and warmer temperatures have triggered a locust plague in East Africa that has lasted more than an entire year. This historic locust plague--triggered by conditions exacerbated by climate change--has threatened ***agricultural*** and pastoral livelihoods and worsened already acute food insecurity in the region. At the same time, similar extreme weather patterns are expected to expand and shift the ranges of life- threatening diseases like malaria, West Nile Virus, cholera, and others. Beyond the palpable destruction and devastation of climate- induced crises, climate change is a ``threat multiplier,'' a term coined by the CNA Corporation's Military Advisory Board in 2007 to express the way in which climate change exacerbates instability; conflict and subsequent displacement; terrorism; and other vital security matters. Clearly, climate change does not begin nor end at any nation's borders. No one is immune to the effects of climate change--which is why we must not only work with the rest of the [[Page S2014]] world to combat this crisis, but lead the charge. It is simply not enough to enact robust domestic policies--this is a global problem that requires internationally collaborative solutions. What's more, our leadership and renewed international engagement can generate opportunities for Americans. By committing to international agreements and adhering to emerging international production norms, we are opening the global markets for the innovation, ingenuity, and leadership of the American private sector. I commend the Biden administration's commitment to returning the United States to the global stage, thereby granting us the capacity to reengage and lead the international community in tackling the greatest threat of our time. President Biden's Executive Order on Tackling the Climate Crisis at Home and Abroad has designated climate action as a core tenant of U.S diplomacy and national security planning. He has appointed former Secretary of State John Kerry as Special Presidential Envoy for Climate, ensuring that climate considerations have a strong advocate where important decisions are being made. And, under the leadership of President Biden, the United States has officially rejoined the Paris Agreement. The time for debate and discussion on why and how we must tackle this crisis is over. The science is clear: we must achieve net zero ***emissions*** by 2050 in order to ensure a safe and prosperous future for ourselves and our posterity. Now is the time for action and implementation of crucial efforts to save our planet. Congress can and must do more to support the restoration of the United States' climate diplomacy and leadership. That is why I am introducing the United States Climate Leadership in International Mitigation, Adaptation, and Technological Enhancement Act, or the U.S CLIMATE Act, of 2021, a comprehensive piece of legislation to bolster President Biden's bold commitment to U.S climate leadership by providing resources, programs and policy to support and expedite the realization of United States action that will be essential to regaining the international community's trust and partnership with the U.S in the global climate fight. It represents a bold course of action that Congress should take to support forward-looking leadership in the White House in their commitment to preventing the worst-case scenarios of climate change from becoming reality. Title I of the bill establishes climate change as a cross-cutting imperative at the State Department. It also calls for the integration of climate models and forecasting into national security planning across all federal agencies and features directives on protecting our security and environmental interests in the Arctic. Title II declares support for U.S cooperation and engagement in international agreements. This includes directives on re-entry into the Paris Agreements; ratification of the Kigali Amendment to the Montreal Protocols; compliance with environmental initiatives of the International Civil Aviation Organization; and the establishment of new international efforts to mitigate transportation sector and greenhouse gas ***emissions***. Title III integrates climate change mitigation and adaptation efforts into a range of tools and initiatives at USAID, the Department of the Treasury, the Department of State, the DFC, and the United Nations. Title IV incorporates a clean energy mandate into the United States' diplomatic and development efforts, thereby protecting our own energy security interests and promoting responsible global energy production. Title V of the bill addresses the United States' bilateral and multilateral engagement on climate change, encouraging U.S cooperation with China, India, the European Union and other key partners. Title VI of the U.S CLIMATE Act integrates our colleague from Hawai'i, Senator Hirono's Women and Climate Change Act, which acknowledges and addresses the disproportionate effects of climate change on women and girls around the world. The science is clear: we are running out of time to stave off the most devastating effects of climate change that will directly impact our children and our children's children. After four years of being absent from the conversation, it is time for the United States to not only return to the table, but lead the charge to protect our shared home. We cannot solve this crisis alone--this is not an American problem, this is a global crisis that can only be combatted with coordinated, international action. The U.S CLIMATE Act of 2021 provides the essential resources, programs, and support for the United States to lead the world forward in the existential fight to save our planet. Mr. President I ask unanimous consent that the full text of the legislation be printed in the Record following my remarks, I yield the floor and note the absence of a quorum. So ordered. S. 1201 Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, SECTION 1. SHORT TITLE; TABLE OF CONTENTS. (a) Short Title.--This Act may be cited as the ``United States Climate Leadership in International Mitigation, Adaptation, and Technology Enhancement Act of 2021''. (b) Table of Contents.--The table of contents for this Act is as follows: Sec. 1. Short title; table of contents. Sec. 2. Findings; sense of Congress. Sec. 3. Purpose. Sec. 4. Definitions. TITLE I--CLIMATE AND NATIONAL SECURITY Sec. 101. Climate diplomacy. Sec. 102. Enhancing United States security considerations for global climate disruptions. Sec. 103. Arctic diplomacy. TITLE II--INTERNATIONAL AGREEMENTS AND CONVENTIONS Sec. 201. Sense of Congress in support of the United States returning to the Paris Agreement. Sec. 202. Enhanced United States commitment to the Paris Agreement. Sec. 203. Sense of Congress regarding ratification of the Kigali Amendment to the Montreal Protocol. Sec. 204. Compliance with the carbon offset and reduction scheme for international aviation. Sec. 205. Short-lived climate pollutants. Sec. 206. International cooperation regarding clean transportation and sustainable ***land*** use and community development. Sec. 207. Sense of Congress on United States reengagement with the Group of Seven and the Group of Twenty on climate action. TITLE III--CLIMATE CHANGE DEVELOPMENT FINANCE AND SUPPORT Sec. 301. International Climate Change Adaptation, Mitigation, and Security Program. Sec. 302. United States contributions to the Green Climate Fund. Sec. 303. Sense of Congress on United States engagements at the World Economic Forum. Sec. 304. Clean energy and the United States International Development Finance Corporation. Sec. 305. Consistency in United States policy on development finance and climate change. TITLE IV--CLEAN ENERGY DIPLOMACY AND INTERNATIONAL DEVELOPMENT Sec. 401. Energy diplomacy and security within the Department of State. Sec. 402. Department of State primacy for energy diplomacy. Sec. 403. Reports on United States participation in Mission Innovation and the Clean Energy Ministerial. Sec. 404. Reduced deforestation. TITLE V--BILATERAL AND REGIONAL MULTILATERAL CLIMATE DIPLOMACY AND COOPERATION Sec. 501. North American Strategy. Sec. 502. Accountability and cooperation with China. Sec. 503. United States and European Union cooperation on climate finance for developing countries. Sec. 504. Sense of Congress on clean energy cooperation with India. Sec. 505. Power Africa. Sec. 506. Caribbean Energy Initiative. Sec. 507. Sense of Congress on conservation of the Amazon River basin. Sec. 508. Sense of Congress regarding renewable energy in Indonesia. TITLE VI--WOMEN AND CLIMATE CHANGE ACT Sec. 601. Short title. Sec. 602. Findings. Sec. 603. Definitions. Sec. 604. Statement of policy. Sec. 605. Federal Interagency Working Group on Women and Climate Change. Sec. 606. Development and implementation of strategy and policies to prevent and respond to the effects of climate change on women globally. Sec. 607. Climate Change within the Office of Global Women's Issues. SEC. 2. FINDINGS; SENSE OF CONGRESS. (a) Findings.--Congress finds the following: [[Page S2015]] (1) The Special Report: Global Warming of 1.5 C, published by the Intergovernmental Panel on Climate Change on October 8, 2018, and the Fourth National Climate Assessment, first published by the United States Global Change Research Program in 2018, concluded that-- (A) the release of greenhouse gas ***emissions***, most notably the combustion of fossil fuels and the degradation of natural resources that absorb atmospheric carbon from human activity, are the dominant causes of climate change during the past century; (B) changes in the Earth's climate are-- (i) causing sea levels to rise; (ii) increasing the global average temperature of the Earth; (iii) increasing the incidence and severity of wildfires; and (iv) intensifying the severity of extreme weather, including hurricanes, cyclones, typhoons, flooding, droughts, and other disasters that threaten human life, healthy communities, and critical infrastructure. (2) An increase in the global average temperature of 2 degrees Celsius compared to pre-industrialized levels would cause-- (A)(i) the displacement, and the forced internal migration, of an estimated 143,000,000 people in Latin America, South Asia, and Sub-Saharan Africa by 2050 if insufficient action is taken (according to the World Bank); and (ii) the displacement of an average of 17,800,000 people worldwide by floods every year (according to the Internal Displacement Monitoring Centre) because of the exacerbating effects of climate change; (B)(i) more than $500,000,000,000 in lost annual economic output in the United States (a 10 percent contraction from 2018 levels) by 2100 (according to the Fourth National Climate Assessment); and (ii) an additional 100,000,000 people worldwide to be driven into poverty by 2030 (according to the World Bank); (C)(i) greater food insecurity and decreased ***agricultural*** production due to climate change's effects on the increased frequency and intensity of extreme weather events; and (ii) the proliferation of ***agricultural*** pests and crop diseases, loss of biodiversity, degrading ecosystems, and water scarcity (according to the United Nations Food and ***Agriculture*** Organization); and (D) more than 350,000,000 additional people worldwide to be exposed to deadly heat stress by 2050. (3) According to the International Monetary Fund, a persistent annual increase in average global temperature of .04 degrees Celsius would reduce global real gross domestic product per capita by 7.22 percent by 2100. (4) According to the United Nations Environment Programme, climate change is exacerbating unusual regional weather conditions, which is driving the current and prolonged desert locust outbreak that is threatening food security across East Africa and Southeast Asia. (5) According to the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services-- (A) an increase in the global average temperature of between 1.5 and 2 degrees Celsius will result in a significant reduction in the worldwide number of ***land*** species; (B) an increase in the global average temperature of 2 degrees Celsius-- (i) will place 5 percent of world's species at risk of extinction; and (ii) will result in the destruction of more than 99 percent of all coral reefs worldwide; and (C) an increase in the global average temperature of 4.3 degrees Celsius will place 16 percent of world's terrestrial species at risk of extinction. (6) According to the International Energy Agency, the United States, China, India, and the European Union (including the United Kingdom) account for more than 58 percent of global greenhouse gas ***emissions***. (7) China, which is the world's top greenhouse gases emitter and has an outsized impact on the United States' core interest in climate stability-- (A) is likely to achieve its carbon ***emissions*** mitigation pledge to the Paris Agreement, contained in its 2015 nationally determined contribution, to ``peak'' ***emissions*** around 2030 ahead of schedule; (B) announced, on September 22, 2020, a pledge to achieve carbon neutrality by 2060; and (C) has yet to announce an updated nationally determined contribution. (8) On October 26, 2020, Japan, the world's third largest economy and fifth greatest carbon emitter, announced a pledge to achieve carbon neutrality by 2050. Despite apprehension about growing nuclear energy sources, Japan aims to increase its share of renewable and nuclear energy following new ***targets*** unveiled next year. (9) India has met its growing energy demands by becoming a global leader in renewable energy generation. Despite significant investments in renewable energy, and the implementation of strong national greenhouse gas mitigation policies, India continues to operate some of the world's dirtiest fossil fuel power plants and has high ***emissions*** generated from its transportation sector. India is a critical market for foreign investment and will be a major competitor in international clean energy development futures. (10) India's leadership within the Clean Energy Ministerial, the Mission Innovation initiative, and the International Solar Alliance has put India at the forefront of renewable energy development and helped India achieve a top 5 global rank among clean energy producers. Installed electricity capacity from renewables in India grew by 144 percent between 2014 and 2020. Approximately $42,000,000,000 was invested into India's renewable energy sector between 2014 and 2019. (11) The European Union demonstrated its strong commitment to climate action by making the ambitious pledge to reduce the collective greenhouse gas ***emissions*** of its 27 member nations by at least 55 percent by 2030 (compared to 1990 levels) and to achieve carbon neutrality by 2050. The European Parliament went even further, voting to reduce its collective economy wide greenhouse gas ***emissions*** by 60 percent by 2030 (compared to 1990 levels). These commitments represent substantial improvements from the previous goal of a 40 percent reduction in greenhouse gas ***emissions*** by 2030. (12) The European Union's member nations have also provided the equivalent of approximately $120,000,000,000 between 2014 and 2020 in support and financing to build climate change resilience and develop low carbon energy capacity throughout the developing world. (13) The European Union has traditionally been a steadfast partner with United States in the United Nation's Framework Convention on Climate Change by pushing for improved accountability, transparency, and shared responsibility among parties in mitigating global greenhouse gas ***emissions***. As the United State Government's executive branch has pulled away from climate action commitments, the European Union has increased its cooperation with coalitions of States through partnerships such as the United States Climate Alliance. (14) Among the world's top greenhouse gas emitters, the United States is the only country that-- (A) has rescinded national policies to reduce greenhouse gas ***emissions***; (B) has advanced policies aimed at bolstering fossil fuel consumption and extraction, including through the ***removal*** of Federal protections of public ***lands*** that are critical wilderness areas vital to maintaining healthy natural ecosystems; and (C) has abstained or withdrawn itself from several global cooperative efforts acknowledging and addressing the climate crisis. (15) United States leadership during deliberations over the Paris Agreement-- (A) was exemplified by-- (i) its commitment to reduce national ***emissions*** by 26 to 28 percent below 2005 levels; (ii) its leadership in the ``Umbrella Group'' and its role as cofounder of the ``High Ambition Coalition''; (iii) its co-facilitation of the UNFCCC; (iv) its work with the Ad Hoc Working Group on the Paris Agreement on agenda item 5: Modalities, procedures and guidelines for the transparency framework for action; and (v) its support for the enhanced transparency framework for action and support referred to in Article 13 of the Paris Agreement; (vi) its pledge of $3,000,000,000 to the Green Climate Fund (of which the United States still owed $2,000,000,000) in support of developing countries' efforts to adapt to climate change and to mitigate greenhouse gas ***emissions***; and (vii) the development of critical bilateral climate action cooperation initiatives with China and India; and (B) established the United States as essential to uniting the world in climate action cooperation. (16) The United States' reversal on nearly all climate action policies since 2017, including repealing the Clean Power Plan (announced by President Obama in August 2015), cancelling contributions to the United Nation's Green Climate Fund, abstaining from all G7 and G20 climate action communiques, and withdrawing the United States from the Paris Agreement-- (A) undermines the viability of the Paris Agreement; (B) harms American diplomacy; (C) disadvantages the ability of the United State private sector to compete in a clean energy global economy, for which the International Finance Corporation estimates that investments spurred by the Paris Agreement will creates up to $23,000,000,000,000 in new investment opportunities; (D) erodes the United States' leadership, standing, and trust within the international community; and (E) concedes leadership and economic opportunity to foreign governments keen on taking advantage of the United States' absence from international climate action initiatives. (17) The Paris Agreement's central aim is-- (A) to strengthen the global response to the threat of climate change by maintaining the global temperature rise well below 2 degrees Celsius above pre-industrial levels; and (B) to pursue efforts to further limit the temperature increase to 1.5 degrees Celsius. (18) The Paris Agreement-- (A) specifies the need for a strong global response to climate change; (B) acknowledges that all ``[p]arties should, when taking action to address climate change, respect, promote and consider their respective obligations on human rights, the right to health, the rights of indigenous [[Page S2016]] peoples, local communities, migrants, children, persons with disabilities and people in vulnerable situations and the right to development, as well as gender equality, empowerment of women and intergenerational equity''; (C) notes the importance of ``climate justice'' when mitigating and adapting to climate change; (D) recognizes ``the need for an effective and progressive response to the urgent threat of climate change''; (E) requires all parties to put forward their best efforts through nationally determined contributions and to strengthen these efforts in the future; (F) requires each party to update its nationally determined contribution every 5 years, with each successive nationally determined contribution representing a progression beyond the previous nationally determined contribution, and reflecting the party's highest possible ambition; (G) recognizes that marine ecosystems covering more than 70 percent of the Earth's surface have an integral role in climate balance; and (H) was developed under the UNFCCC, an international environmental treaty which the United States ratified, with the advice and consent of the Senate on October 15, 1992. (19) Seventy percent of the Paris Agreement signatories' nationally determined contributions in support of the goals of the Paris Agreement are ocean-inclusive, and 39 Paris Agreement signatories are focused on the inclusion of ocean action in nationally determined contributions through the Because the Ocean initiative. (20) The United States communicated its nationally determined contribution-- (A) to achieve, by 2025, an economy-wide ***target*** of reducing its greenhouse gas ***emissions*** by 26 to 28 percent below its 2005 level; and (B) to make best efforts to reduce its ***emissions*** by 28 percent. (21) A thriving clean energy industry in the United States, which employs more than 500,000 Americans, is essential in achieving these ***targets***. (22) A number of existing laws and regulations in the United States also are relevant to achieving this ***target***, including-- (A) the Clean Air Act (42 U.S.C 7401 et seq.); (B) the Energy Policy Act of 1992 (Public Law 102-486); and (C) the Energy Independence and Security Act of 2007 (Public Law 110-140). (23) On November 4, 2020, the United States withdrawal from the Paris Agreement became effective, which at the time resulted in the United States being the only state party (out of 197 parties) to the UNFCCC that is not a party to the Paris Agreement. (24) On January 20, 2021, President Biden initiated the process for reentering the United States into the Paris Agreement. On February 19, 2021, the United States officially rejoined the Paris Agreement. (25) Article 8 of the Paris Agreement states, ``Parties recognize the importance of averting, minimizing and addressing loss and damage associated with the adverse effects of climate change, including extreme weather events and slow onset events, and the role of sustainable development in reducing the risk of loss and damage.'' Such adverse effects include strong winds from hurricanes and tropical storms, and flooding from storm surges and heavy rain, that inflict losses on various sectors of the United States economy. (26) The Paris Agreement requires that parties ``should strengthen their cooperation on enhancing action on adaptation, taking into account the Cancun Adaptation Framework'', which includes measures to enhance understanding, coordination and cooperation with regard to climate change induced displacement, migration and planned relocation, where appropriate, at the national, regional and international levels. (27) The Paris Agreement is an example of the multilateral, international cooperation needed to overcome climate change- related challenges facing the global community, such as reducing ***emissions***, promoting economic growth, and deploying clean energy technologies. (28) The Paris Agreement recognizes ``the fundamental priority of safeguarding food security and ending hunger, and the particular vulnerabilities of food production systems to the adverse impacts of climate change.''. (29) The Paris Agreement recognizes that-- (A) adaptation is a global challenge facing all countries, with local, subnational, national, regional, and international dimensions; and (B) adapting to the effects of climate change is a key component of the long-term global response to climate change to protect people, livelihoods, and ecosystems. (30) American leadership during the Paris Agreement negotiations encouraged widespread international participation in the Paris Agreement. (31) American States, cities, and businesses are stepping up and pledging to meet the Paris Agreement goals in the wake of absent and uncertain leadership by the President. (32) The Paris Agreement-- (A) has driven innovation in developing cleaner, more reliable, and more affordable forms of energy; (B) has demonstrated that addressing climate change and providing affordable energy to American consumers are not mutually exclusive; and (C) has encouraged the United States to develop the Mid- Century Strategy for Deep Decarbonization, which-- (i) was released on November 16, 2016; and (ii) states, ``Energy efficiency improvements enable the energy system to provide the services we need with fewer resources and ***emissions***. Over the past several years, the United States has demonstrated that programs and standards to improve the energy efficiency of buildings, appliances and vehicles can cost-effectively cut carbon pollution and lower energy bills, while maintaining significant support from U.S industry and consumers.''. (33) Global temperatures must be kept below 1.5 degrees Celsius above pre-industrialized levels to avoid the most severe impacts of a changing climate, which will require-- (A) global reductions in greenhouse gas ***emissions*** from human sources of 40 to 60 percent from 2010 levels by 2030; and (B) net-zero global ***emissions*** by 2050; (b) Sense of Congress.--It is the sense of Congress that-- (1) when the United States proffers a strong commitment and focused leadership on climate action, the rest of the world will likely follow its example; (2) when the United States abdicates leadership on such matters, other countries are likely to waiver on their commitments to action and retract to insular posturing on matters that require cooperation; and (3) in order to avert the worst impacts of climate change, which is in the core national interest of the United States, the United States should-- (A) prioritize climate change in its foreign policy, and ensure that climate change is taken into account in all foreign policy decision making; (B) set the standard for ambition on climate action; (C) use its diplomatic leverage to create incentives for other countries to take strong action on climate change; (D) broker, with other world powers, bilateral commitments on ***emissions*** reductions and climate finance and support for developing countries, which are critical for-- (i) building trust and consensus around global cooperation on climate action; and (ii) sending important investment signals to private finance and private industry on investment and development trends; (E) be transparent in how the United States is delivering on its commitments; (F) ensure it is adopting and implementing consistent policies and practices with respect to climate change across bilateral and multilateral development finance institutions; (G) hold other world powers accountable for making and meeting strong commitments; (H) call for reciprocal standards of transparency; and (I) support developing countries, in an inclusive manner-- (i) to expand deployment and access to clean energy; (ii) to plan and invest in climate change adaptation solutions; (iii) to improve climate change resilience capacities; and (iv) to promote-- (I) sustainable ***agriculture*** practices; (II) food security; and (III) natural resource conservation. SEC. 3. PURPOSE. The purpose of this Act is to provide authorities, resources, policies, and recommended administrative actions-- (1) to restore United States global leadership on addressing the climate crisis and make United States climate action and climate diplomacy a more central tenet of United States foreign policy; (2) to improve the United States' commitment to taking more ambitious action to help mitigate global greenhouse gas ***emission*** and improve developing countries' resilience and adaptation capacities to the effects of climate change; (3) to reclaim, accept, and fully engage diplomacy within a variety of current and outstanding multilateral institutions that the United States has withdrawn, withheld support, or diminished meaningful engagement from in recent years; (4) to encourage the pursuit of new bilateral cooperation agreements with other world powers on initiatives to advance global clean energy innovation and deployment and other measures to mitigate global greenhouse gas ***emissions*** and improve climate change adaptation capacities; (5) to ensure that the United States' national security apparatus integrates critically important data on the compounding effects that climate change is having on global security risks by enhancing our understanding of how, where, and when such effects are destabilizing countries and regions in ways that may motivate conflict, displacement, and other drivers of insecurity; and (6) to authorize funding and programs to support a reaffirmation of the United States' commitments to international cooperation and support for developing and vulnerable countries to take climate action. SEC. 4. DEFINITIONS. In this Act: (1) Appropriate congressional committees.--The term ``appropriate congressional committees'' means-- (A) the Committee on Foreign Relations of the Senate; [[Page S2017]] (B) the Committee on Appropriations of the Senate; (C) the Committee on Foreign Affairs of the House of Representatives; and (D) the Committee on Appropriations of the House of Representatives. (2) Clean energy.--The term ``clean energy'' means-- (A) renewable energy and energy from systems; (B) energy production processes that emit zero greenhouse gas ***emissions***, including nuclear power; (C) systems and processes that capture and permanently store greenhouse gas ***emissions*** from fossil fuel production and electricity generation units; (D) products, processes, facilities, or systems designed to retrofit and improve the energy efficiency and electricity generated from electrical generation units, while using less fuel, less or fewer power production resources, or less feedstocks; and (E) zero ***emission*** vehicles. (3) Climate action.--The term ``climate action'' means enhanced efforts to reduce greenhouse gas ***emissions*** and strengthen resilience and adaptive capacity to climate- induced impacts, including-- (A) climate-related hazards in all countries; (B) integrating climate change measures into national policies, strategies and planning; and (C) improving education, awareness-raising, and human and institutional capacity with respect to climate change mitigation, adaptation, impact reduction, and early warning. (4) Climate crisis.--The term ``climate crisis'' means the social, economic, health, safety, and security impacts on people, and the threats to biodiversity and natural ecosystem health, which are attributable to the wide-variety of effects on global environmental and atmospheric conditions as a result of disruptions to the Earth's climate from anthropogenic activities that generate greenhouse gas ***emissions*** or reduce natural resource capacities to absorb and regulate atmospheric carbon. (5) Climate diplomacy.--The term ``climate diplomacy'' means methods of influencing the decisions and behavior of foreign governments and peoples through dialogue, negotiation, cooperation and other measures short of war or violence around issues related to addressing global climate change, including-- (A) the mitigation of global greenhouse gas ***emissions***; (B) discussion, analysis, and sharing of scientific data and information on the cause and effects of climate change; (C) the security, social, economic, and political instability risks associated with the effects of climate change; (D) economic cooperation efforts and trade matters that are related to or associated with climate change and greenhouse gas mitigation from the global economy; (E) building resilience capacities and adapting to the effects of change; (F) sustainable ***land*** use and natural resource conservation; (G) accounting for loss and damage attributed to the effects of climate change; (H) just transition of carbon intense economies to low or zero carbon economies and accounting for laborers within affected economies; and (I) technological innovations that reduce or eliminate carbon ***emissions***. (6) Climate security.--The term ``climate security'' means the effects of climate change on-- (A) United States national security concerns and subnational, national, and regional political stability; and (B) overseas security and conflict situations that are potentially exacerbated by dynamic environmental factors and events, including-- (i) the intensification and frequency of droughts, floods, wildfires, tropical storms, and other extreme weather events; (ii) changes in historical severe weather, drought, and wildfire patterns; (iii) the expansion of geographical ranges of droughts, floods, and wildfires into regions that had not regularly experienced such phenomena; (iv) global sea level rise patterns and the expansion of geographical ranges affected by drought; and (v) changes in marine environments that effect critical geostrategic waterways, such as the Arctic Ocean, the South China Sea, the South Pacific Ocean, the Barents Sea, and the Beaufort Sea. (7) Nationally determined contribution.--The term ``nationally determined contribution'' means a country's pledged efforts to reduce national greenhouse gas ***emissions*** and adapt to the effects of climate change, which may include a financial pledge of support or financing to assist developing countries achieve their climate action goals, in accordance with paragraph 2 of Article 4 of the Paris Agreement, which requires each Party-- (A) to ``prepare, communicate and maintain successive nationally determined contributions that it intends to achieve''; and (B) to ``pursue domestic mitigation measures, with the aim of achieving the objectives of such contributions''. (8) Natural climate solutions.--The term ``natural climate solutions'' mean actions to protect, sustainably manage, and restore natural or modified ecosystems that-- (A) address climate change effectively and adaptively; and (B) simultaneously provide human well-being and environmental benefits. (9) Natural resources.--The term ``natural resources'' means the terrestrial, freshwater, estuarine, and marine fish, wildlife, plants, ***land***, air, water, habitats, and ecosystems. (10) Net zero greenhouse gas ***emissions***.--The term ``net zero greenhouse gas ***emissions***'' means that any anthropogenic greenhouse gas ***emissions*** are balanced or offset by deliberate activities that absorb or capture and permanently store equivalent amounts of greenhouse gases from the atmosphere. (11) Paris agreement.--The term ``Paris Agreement'' means the international agreement adopted by parties to the United Nations Framework Convention on Climate Change's 21st Conference of Parties in Paris, France on December 12, 2015. (12) Renewable energy.--The term ``renewable energy'' means all forms of energy produced from sources that naturally occur or are replenished in nature in a sustainable manner, including bioenergy, geothermal energy, hydropower, ocean energy, solar energy, and wind energy. (13) Resilience.--The term ``resilience'' means the ability of human made and natural systems (including their component parts) to anticipate, absorb, cope, accommodate, or recover from the effects of a hazardous event in a timely and efficient manner, including through ensuring the preservation, restoration, or improvement of its essential basic structures and functions. (14) UNFCCC.--The term ``UNFCCC'' means the United Nations Framework Convention on Climate Change, done at New York May 9, 1992, and entered into force March 21, 1994. (15) United states-mexico-canada agreement; usmca.--The terms ``United States-Mexico-Canada Agreement'' and ``USMCA'' mean the Agreement between the United States of America, the United Mexican States, and Canada, done at Buenos Aires November 30, 2018. TITLE I--CLIMATE AND NATIONAL SECURITY SEC. 101. CLIMATE DIPLOMACY. (a) In General.--The President and the Secretary of State shall prioritize climate action and climate diplomacy in United States foreign policy by-- (1) ensuring diplomacy, support, and interagency coordination for bilateral and multilateral actions to address the climate crisis; and (2) improving coordination and integration of climate action across all bureaus and United States missions abroad. (b) Climate Action Integration.--The Secretary of State, through the Under Secretary of State for Economic Growth, Energy, and the Environment and any other designees, shall-- (1) prioritize climate action and clean energy within the bureaus and offices under the leadership of the Under Secretary for Economic Growth, Energy, and the Environment; (2) ensure that such bureaus and offices are coordinating with other bureaus of the Department of State regarding the integration of climate action and climate diplomacy as a cross-cutting imperative across the Department of State; (3) encourage all Under Secretaries of State-- (A) to assess how issues related to climate change and United States climate action are integrated into their operations and programs; (B) to coordinate crosscutting actions and diplomatic efforts that relate to climate action; and (C) to make available the technical assistance and resources of the bureaus and offices with relevant expertise to provide technical assistance and expert support to other bureaus within the Department of State regarding climate action, clean energy development, and climate diplomacy; (4) manage the integration of scientific data on the current and anticipated effects of climate change into applied strategies and diplomatic engagements across programmatic and regional bureaus of the Department of State and into the Department of State's decision making processes; (5) ensure that the relevant bureaus and offices provide appropriate technical support and resources-- (A) to the President, the Secretary of State, and their respective designees charged with addressing climate change and associated issues; (B) to United States diplomats advancing United States foreign policy related to climate action; and (C) for the appropriate engagement and integration of relevant domestic agencies in international climate change affairs, including United States participation in multilateral fora; and (6) carry out other activities, as directed by the Secretary of State, that advance United States climate- related foreign policy objectives, including global greenhouse gas mitigation, climate change adaptation activities, and global climate security. (c) Responsibilities of the Under Secretary of State for Political Affairs.--The Under Secretary of State for Political Affairs shall ensure that all foreign missions are-- (1) advancing United States bilateral climate diplomacy; [[Page S2018]] (2) engaging strategically on opportunities for bilateral climate action cooperation with foreign governments; and (3) utilizing the technical resources and coordinating adequately with the bureaus reporting to the Under Secretary of State for Economic Growth, Energy and the Environment. (d) Report.--Not later than 200 days after the date of the enactment of this Act, the Under Secretary of State for Economic Growth, Energy, and the Environment, in cooperation with the Under Secretary of State for Political Affairs, shall submit a report to the appropriate congressional committees that-- (1) assesses how climate action and United States climate diplomacy is integrated across the Bureaus of the Department of State; and (2) includes recommendations on strategies to improve cross bureau coordination and understanding of United States climate action and climate diplomacy. (e) Effect of Elimination of Positions.--If the positions of Under Secretary of State for Economic Growth, Energy, and the Environment and the Under Secretary of State for Political Affairs are eliminated or undergo name changes, the responsibilities of such Under Secretaries under this section shall be reassigned to other Under Secretaries of State, as appropriate. (f) Climate Change Experts in Key Embassies.--Not later than 180 days after the date of the enactment of this Act, the Secretary of State shall submit a report to the Committee on Foreign Relations of the Senate and the Committee on Foreign Affairs of the House of Representatives that-- (1) identifies the number of personnel of the Department of State and the United States Agency for International Development who-- (A) dedicate a significant portion of their work to climate change mitigation, climate change adaptation, food security, or clean energy matters; and (B) are stationed at United States missions in countries that are highly vulnerable to the effects or major greenhouse gas emitters; (2) analyzes the need for Federal climate change policy specialist personnel in United States embassies, United States Agency for International Development missions, and other United States diplomatic and international development missions; and (3) includes-- (A) recommendations for increasing climate change expertise within United States missions abroad among foreign service officers; and (B) options for assigning to such missions climate change attaches from the Environmental Protection Agency, the Department of Energy, the National Oceanic and Atmospheric Administration, the National Aeronautics and Space Administration, the Department of ***Agriculture***, the Department of Interior, or other relevant Federal agencies. (g) Climate Change Advisors.--The Secretary of State, or the Secretary's designee, shall have primary responsibility for the management and execution of United States climate diplomacy and related foreign policy and shall make appropriate arrangements with the Administrator of the United States Agency for International Development, the Administrator of the Environmental Protection Agency, the Secretary of Energy, the Secretary of ***Agriculture***, the Administrator of the National Oceanic and Atmospheric Administration, the Administrator of the National Aeronautics and Space Administration, and other relevant Federal agencies and departments to assign personnel from such agencies and departments to serve as dedicated advisors on climate change matters in embassies of the United States or in other United States diplomatic or international development missions. (h) Climate Change Support and Financing.--The Secretary of State shall facilitate the coordination among the Department of State and other relevant departments and agencies, including the United States Agency for International Development, the Department of the Treasury, the United States Trade and Development Agency, and the United States International Development Finance Corporation, of contributing development finance or foreign assistance relevant to United States international climate action and in support of United States climate diplomacy. (i) Authorization of Appropriations.--There are authorized to be appropriated such sums as may be necessary to carry out this section. SEC. 102. ENHANCING UNITED STATES SECURITY CONSIDERATIONS FOR GLOBAL CLIMATE DISRUPTIONS. (a) In General.--The Secretary of State, in consultation with other relevant agencies, shall conduct biennial comprehensive evaluations of present and ongoing disruptions to the global climate system, including-- (1) the intensity, frequency, and range of natural disasters; (2) the scarcity of global natural resources, including fresh water; (3) global food, health, and energy insecurities; (4) conditions that contribute to-- (A) intrastate and interstate conflicts; (B) foreign political and economic instability; (C) international migration of vulnerable and underserved populations; (D) the failure of national governments; and (E) gender-based violence; and (5) United States and allied military readiness, operations, and strategy. (b) Purposes.--The purposes of the evaluations conducted under subsection (a) are-- (1) to support the practical application of scientific data and research on climate change's dynamic effects around the world to improve resilience, adaptability, security, and stability despite growing global environmental risks and changes; (2) to ensure that the strategic planning and mission execution of United States international development and diplomatic missions adequately account for heightened and dynamic risks and challenges associated with the effects of climate change; (3) to improve coordination between United States science agencies conducting research and forecasts on the causes and effects of climate change and United States national security agencies; (4) to better understand the disproportionate effects of global climate disruptions on women, girls, indigenous communities, and other historically marginalized populations; and (5) to inform the development of the climate security strategy described in subsection (d). (c) Scope.--The evaluations conducted under subsection (a) shall-- (1) examine developing countries' vulnerabilities and risks associated with global, regional, and localized effects of climate change; and (2) assess and make recommendations on necessary measures to mitigate risks and reduce vulnerabilities associated with effects, including-- (A) sea level rise; (B) freshwater resource scarcity; (C) wildfires; and (D) increased intensity and frequency of extreme weather conditions and events, such as flooding, drought, and extreme storm events, including tropical cyclones. (d) Climate Security Strategy.--The Secretary shall use the evaluations required under subsection (a)-- (1) to inform the development and implementation of a climate security strategy for the Bureau of Conflict and Stabilization Operations, the Bureau of Political-Military Affairs, embassies, consulates, regional bureaus, and other offices and programs operating chief of mission authority, including those with roles in conflict avoidance, prevention and security assistance, or humanitarian disaster response, prevention, and assistance; and (2) in furtherance of such strategy, to assess, develop, budget for, and (upon approval) implement plans, policies, and actions-- (A) to account for the impacts of climate change to global human health, safety, governance, oceans, food production, fresh water and other critical natural resources, settlements, infrastructure, marginalized groups, and economic activity; (B) to evaluate the climate change vulnerability, security, susceptibility, and resiliency of United States interests and non-defense assets abroad.; (C) to coordinate the integration of climate change risk and vulnerability assessments into all foreign policy and security decision-making processes, including awarding foreign assistance; (D) to evaluate specific risks to certain regions and countries that are-- (i) vulnerable to the effects of climate change; and (ii) strategically significant to the United States; (E) to enhance the resilience capacities of foreign countries to the effects of climate change as a means of reducing the risks of conflict and instability; (F) to advance principles of good governance by encouraging foreign governments, particularly nations that are least capable of coping with the effects of climate change-- (i) to conduct climate security evaluations; and (ii) to facilitate the development of climate security action plans to ensure stability and public safety in disaster situations in a humane and responsible fashion; (G) to evaluate the vulnerability, security, susceptibility, and resiliency of United States interests and nondefense assets abroad; (H) to build international institutional capacity to address climate security implications and to advance United States interests, regional stability, and global security; and (I) other activities that advance - (i) the utilization and integration of climate science in national security planning; and (ii) the clear understanding of how the effects of climate change can exacerbate security risks and threats. SEC. 103. ARCTIC DIPLOMACY. (a) Sense of Congress.--It is the sense of Congress that-- (1) the rapidly changing Arctic environment-- (A) creates new national and regional security challenges due to increased military activity in the Arctic; (B) heightens the risks of potential conflicts spilling over into the Arctic region from interventions and theaters of tension in other regions of the world; (C) threatens maritime safety due to inadequate regional resource capacity to patrol the increase in vessel traffic this remote region is experiencing from the growing expanses of open Arctic water from diminished annual levels of sea ice; [[Page S2019]] (D) impacts public safety due to increased human activity in the Arctic region where search and rescue capacity remains very limited; and (E) threatens the health of the Arctic's fragile and historically pristine environment and the unique and highly sensitive species found in the Arctic's marine and terrestrial ecosystems; and (2) the United States should reduce the consequences outlined in paragraph (1) by-- (A) carefully evaluating the wide variety and extremely dynamic set of security and safety risks unfolding in the Arctic; (B) developing policies and making preparations for mitigating and responding to threats and risks in the Arctic; (C) adequately funding the National Earth System Prediction Capability to substantively improve weather, ocean, and ice predictions on time scales necessary for ensuring regional security and trans-Arctic shipping; (D) investing in resources, including a significantly expanded icebreaker fleet, to ensure that the United States has adequate capacity to prevent and respond to security threats in the Arctic region; and (E) pursuing diplomatic engagements with all nations in the Arctic region to reach an agreement for-- (i) maintaining peace and stability in the Arctic region; and (ii) fostering cooperation on stewardship and safety initiatives in the Arctic region. (b) Definitions.--In this section: (1) Arctic nations.--The term ``Arctic Nations'' means the 8 nations with territory or exclusive economic zones that extend north of the 66.56083 parallel latitude north of the equator, namely Russia, Canada, the United States, Norway, Denmark (including Greenland), Finland, Sweden, and Iceland. (2) Arctic region.--The term ``Arctic Region'' means the geographic region north of the 66.56083 parallel latitude north of the equator. (c) Designation.--The Assistant Secretary of State for Oceans and International Environmental and Scientific Affairs shall designate a deputy assistant secretary serving within the Bureau of Oceans and International Environmental and Scientific Affairs as ``Deputy Assistant Secretary for Arctic Affairs'', who shall be responsible for affairs in the Arctic Region. (d) Duties.-- The Deputy Assistant Secretary for Arctic Affairs shall-- (1) facilitate the development and coordination of United States foreign policy in the Arctic Region relating to-- (A) meeting national security needs; (B) protecting the Arctic environment and conserving its biological resources; (C) promoting environmentally sustainable natural resource management and economic development; (D) strengthening institutions for cooperation among the Arctic Nations; (E) involving Arctic indigenous people in decisions that affect them; and (F) enhancing scientific monitoring and research on local, regional, and global environmental issues; (2) coordinate the diplomatic objectives, and, as appropriate, represent the United States within multilateral fora that address international cooperation and foreign policy matters in the Arctic Region; (3) help inform transnational commerce and commercial maritime transit in the Arctic Region; (4) coordinate the integration of scientific data on the current and projected effects of climate change on the Arctic Region and ensure that such data is applied to the development of security strategies for the Arctic Region; (5) make available the methods and approaches on the integration of climate science to other regional security planning programs in the Department of State to better ensure that broader decision making processes may more adequately account for the effects of climate change; (6) serve as a key point of contact for other Federal agencies, including the Department of Defense, the Department of the Interior, the Department of Homeland Security, and the Intelligence Community, on Arctic Region security issues; (7) develop and facilitate the implementation of an Arctic Region Security Policy in accordance with subsection (f); (8) use the voice, vote, and influence of the United States to encourage other countries and international multilateral organizations to support the principles of the Arctic Region Security Policy implemented pursuant to subsection (f); and (9) perform such other duties and exercise such powers as the Assistant Secretary of State for Oceans and International Environmental and Scientific Affairs and the Secretary of State shall prescribe. (e) Rank and Status.--The Secretary of State may change the title of the Deputy Assistant Secretary for Arctic Affairs designated under subsection (c) to Special Representative or Special Envoy with the rank of Ambassador if-- (1) the President nominates the person so designated to that rank and status; and (2) the Senate confirms such person to such rank and status. (f) Arctic Region Security Policy.--The Arctic Region Security Policy shall include requirements for the Bureau of Conflict and Stabilization Operations, the Bureau of Political-Military Affairs, embassies, regional bureaus, and other offices with a role in conflict avoidance, prevention and security assistance, or humanitarian disaster response, prevention, and assistance to assess, develop, budget for, and implement plans, policies, and actions-- (1) to enhance the resilience capacities of Arctic Nations to the effects of climate change and increased civilian and military activity from Arctic Nations and other nations that may result from increased accessibility of the Arctic Region due to decreased sea ice, warmer ambient air temperatures and other effects of climate change, as a means of reducing the risk of conflict and instability; (2) to assess specific added risks to the Arctic Region and Arctic Nations that-- (A) are vulnerable to the effects of climate change; and (B) are strategically significant to the United States; (3) to account for the impacts on human health, safety, stresses, reliability, food production, fresh water and other critical natural resources, and economic activity; (4) to coordinate the integration of climate change risk and vulnerability assessments into the decision making process on foreign assistance awards to Arctic Nations; (5) to advance principles of good governance by encouraging and cooperating with Arctic Nations on collaborative approaches-- (A) to sustainably manage natural resources in the Arctic Region; (B) to share the burden of ensuring maritime safety in the Arctic Region; (C) to prevent the escalation of security tensions by mitigating against the militarization of the Arctic Region; (D) to develop mutually agreed upon multilateral policies among Arctic Nations on the management of maritime transit routes through the Arctic Region and work cooperatively on the transit policies for access to and transit in the Arctic Region by non-Arctic Nations; and (E) to facilitate the development of Arctic Region Security Action Plans to ensure stability and public safety in disaster situations in a humane and responsible fashion; and (6) to evaluate the vulnerability, security, susceptibility, and resiliency of United States interests and nondefense assets in the Arctic Region. TITLE II--INTERNATIONAL AGREEMENTS AND CONVENTIONS SEC. 201. SENSE OF CONGRESS IN SUPPORT OF THE UNITED STATES RETURNING TO THE PARIS AGREEMENT. It is the sense of Congress that-- (1) President Trump's decision to withdraw the United States from the Paris Agreement was a mistake that harmed the leadership, economic, national security, and diplomatic interests of the United States; and (2) the United States' expeditious return to the Paris Agreement is a critical first step to restoring United States leadership among, and in cooperation with, the international community; (3) resuming United States' global leadership in the Paris Agreement's implementation process is critical to ensuring that the rules and procedures for implementing the Paris Agreement achieve maximum benefits for the United States; (4) prioritizing the immediate preparation and communication of an updated United States' nationally determined contribution in support of the Paris Agreement will demonstrate a renewed and increasingly ambitious United States' commitment to climate action, which should incorporate-- (A) strategies for achieving domestic greenhouse gas ***emissions*** reductions that achieve the United States' 2015 national determined contribution to the Paris Agreement; (B) an ambitious 2030 mitigation ***target*** representing a mid- term goal that signifies the ***emission*** reductions trajectory the United States needs to be on to achieve net-zero greenhouse gas ***emissions*** by 2050; (C) commitments to engage constructively with parties to the Paris Agreement regarding the development of strategies to secure ambitious commitments from all parties and to ensure adequate progress on mitigating greenhouses sufficiently to prevent 1.5 degree Celsius increase of warming; (D) announced intentions of the United States' to accept and fulfill United States obligations to other international agreements to reduce global greenhouse gas ***emissions***, including the International Civil Aviation Organization's Carbon Offset and Reduction Scheme for International Aviation and the Kigali Amendment to the Montreal Protocol; (E) an intention to resume the United States' cooperation and support for cooperative climate action detailed and announced in various climate change communiques produced by the G7, the G20, the Arctic Council, the United Nations, and others for which the United States has recently abstained; (F) a platform and policy incentives for the United States private sector, and State and local governments to accurately account for their contributions to reduce greenhouse gas ***emissions***; (G) a new, increased contribution pledge to the Green Climate Fund, and contributions to other complementary multilateral funds; (H) a commitment to resume a leadership role within the Green Climate Fund to achieve accountability, transparency, and management reforms; and [[Page S2020]] (I) other activities that advance United States climate- related foreign policy objectives, including global greenhouse gas mitigation, climate change adaptation activities, and global climate security; (5) United States collaboration with other nations, especially developing countries most impacted by the need to transition carbon intensive industrial sectors, and the workforces of these affected industries, on the global transition to environmentally sustainable economies and societies to ensure workers benefit from opportunities that arise in a transition to economies powered by clean energy, including engagements on-- (A) realizing the potential to create significant net gains in employment opportunities through increases in the number of decent jobs through investments in environmentally sustainable production and consumption and management of natural resources; (B) improving the quality of jobs and increased incomes on a large scale from more productive processes, and environmentally sustainable products and services in sectors such as ***agriculture***, renewable energy, transport, construction, recycling, and tourism; (C) social inclusion through improved access to affordable, environmentally sustainable energy and payments for environmental services, which are of particular relevance to women and residents in rural areas who face more economic challenges; (D) protections from the effects of economic restructuring that would otherwise result in the displacement of workers and possible job losses; (E) training and access to new job opportunities attributable to new environmentally sustainable and clean energy powered enterprises and workplaces; (F) attracting new environmentally sustainable and clean energy powered enterprises and workplaces to communities transitioning to low carbon economies and assist with adapting to climate change to avoid loss of assets and livelihoods and involuntary migration; and (G) avoiding adverse effects on the incomes of poor households from higher energy and commodity prices; and (6) the United States should communicate its intention to achieve net zero greenhouse gas ***emissions*** by 2050. SEC. 202. ENHANCED UNITED STATES COMMITMENT TO THE PARIS AGREEMENT. (a) Sense of Congress Regarding Need for Updated United States Nationally Determined Contribution.--It is the sense of Congress that-- (1) all parties determine their voluntary contributions to the Paris Agreement, in accordance with Article 4.2 of the Paris Agreement; (2) the development and submission of a new United States' nationally determined contribution should be prioritized, in accordance with Article 4.9 of the Paris Agreement; (3) the new United States' nationally determined contribution should-- (A) represent an ambitious 2030 ***target***, in accordance with Articles 4.2 and 4.3 of the Paris Agreement; and (B) put the United States on an appropriate trajectory towards achieving net zero greenhouse gas ***emissions*** by 2050; and (4) the plan required under subsection (b) should-- (A) be developed in accordance with Article 4.13 of the Paris Agreement; (B) inform United States' obligations under Article 13.7 of the Paris Agreement; and (C) clearly demonstrate how the United States will achieve the ***target*** referred to in paragraph (3). (b) Plan for Developing the United States' Nationally Determined Contribution.--At least 20 days before the United States submits a new or provisional nationally determined contribution, the President shall consult with, and provide embargoed drafts of the nationally determined contribution to, the appropriate congressional committees. (c) Public Transparency.--The President shall make available to the public a plan for the United States to meet its nationally determined contribution, which shall include-- (1) ambitious, economy-wide, short-term greenhouse gas ***emissions*** reductions ***targets*** for 2025 and 2030, with relevant addenda to the plan following its initial submission; (2) considerations made for populations, regions, industries, and constituencies that could be affected by actions to meet the ***targets*** described in paragraph (1) and the failure to meet such ***targets***, including the effect of such actions on-- (A) United States' jobs, wages, and pay; (B) the cost of energy (such as electricity and gasoline) for consumers; and (C) the ability to develop and deploy new, innovative, domestically produced technologies; (3) a description of how the United States may use-- (A) multilateral and bilateral diplomatic tools, in addition to the expert committee established under Article 15 of the Paris Agreement, to encourage and assist other parties to the Paris Agreement to fulfill their announced contributions; and (B) the mechanisms under Articles 12 and 13 of the Paris Agreement to urge enhanced actions from other parties to achieve the overall objectives of the Paris Agreement; (4) a description of how the Paris Agreement's loss and damage provisions would affect infrastructure resiliency in the United States; (5) a coherent and stable policy framework for sustainable enterprise development and decent work opportunities for all United States residents that-- (A) is developed through engagement in social dialogue, particularly in-- (i) communities that have historically experienced environmental injustice; and (ii) communities with economies that are heavily dependent on fossil fuel production or consumption; and (B) maintains such social dialogue, in line with international labor standards-- (i) at all stages, from policy design to implementation and evaluation; and (ii) at all levels, from the national level to the enterprise; and (6) an accounting of other relevant activities that advance United States foreign policy objectives of-- (A) advancing global greenhouse gas mitigation; (B) supporting climate change adaptation activities; and (C) improving global climate security. (d) Education and Public Awareness.-- (1) In general.--The plan developed under subsection (c) shall be consistent with Article 12 of the Paris Agreement, which states ``Parties shall cooperate in taking measures, as appropriate, to enhance climate change education, training, public awareness, public participation and public access to information, recognizing the importance of these steps with respect to enhancing actions under this Agreement.''. (2) Rule of construction.--Nothing in this Act may be construed to require or prohibit the President from including in the plan developed under subsection (b), consistent with the prohibition described in section 438 of the General Education Provisions Act (20 U.S.C 1232a), recommendations to support State and local educational agencies, in integrating instruction on human-caused climate change and the societal, environmental, and economic effects of such climate change into curricula taught in elementary and secondary schools under the control of such State and local educational agencies, in order to meet the goals and ambitions of the Paris Agreement to ensure climate education and awareness in schools. (e) Sense of Congress Regarding the Accountability of Parties to the Paris Agreement.--It is the sense of Congress that the United States shall use its diplomatic leverage and the mechanisms of the Paris Agreement that promote transparency, reporting, and accountability among parties to seek to play critical leadership roles on the Paris Agreement's critical working groups, subsidiary bodies, and constituted bodies-- (1) to maximize the United States' ability to hold other parties accountable for meeting the commitments to the Paris Agreement; and (2) to ensure that all parties commit to and meet ambitious greenhouse gas ***emissions*** reductions ***targets***. SEC. 203. SENSE OF CONGRESS REGARDING RATIFICATION OF THE KIGALI AMENDMENT TO THE MONTREAL PROTOCOL. (a) Findings.--Congress finds the following: (1) The chemical refrigerant alternative, hydrofluorocarbon (HFC), and its chemical derivatives identified in Annex F of the Montreal Protocol on Substances that Deplete the Ozone Layer, done at Montreal September 16, 1987, which replaced hydrochlorofluorocarbon (HCFC) and chlorofluorocarbon (CFC), are short-lived and highly potent greenhouse gases. (2) Some HFCs are 4,000 times more potent greenhouse gases than carbon dioxide. The expansion of mass production and worldwide use of HFCs have significantly contributed to the recent worsening of the global climate crisis. (3) In October 15, 2016, the parties at the 28th Meeting of Parties to the Montreal Protocol, with the support of the United States, adopted an amendment (referred to in the Act as the ``Kigali Amendment'') to the Montreal Protocol to globally phase down the production and application of hydrofluorocarbons, most commonly used as refrigerants in air conditioners and for cold storage. (4) The Kigali Amendment calls for parties to cut the production and consumption of HFCs by more than 80 percent during a 30-year period-- (A) to eliminate an estimated 80,000,000,000 metric tons of carbon dioxide equivalent ***emissions*** by 2050; and (B) to avoid up to 0.5 degree Celsius warming by the end of the century, while continuing to protect the ozone layer. (5) United States' ratification of the Kigali Amendment will require the advice and consent of the Senate. There is broad bipartisan support for the Kigali Amendment in the Senate, as evidenced by a letter sent by 13 Republican senators to the President on June 4, 2018, urging the President to submit the Kigali Amendment to the Senate for advice and consent. (6) The Environmental Protection Agency received sufficient domestic legal authority to comply with the international obligations of the Kigali Amendment under title II of the Department of the Interior, Environment, and Related Agencies Appropriations Act, 2021 (division G of Public Law 116-260), which was enacted on December 27, 2020. (7) As of the date of the introduction of the Act, the President has not submitted the Kigali Amendment to the Senate for advice [[Page S2021]] and consent and the United States Government has neither ratified nor implemented policies to comply with the Kigali Amendment. (8) The Kigali Amendment, which has been ratified by 100 parties, entered into force on January 1, 2019. (9) Adoption of the Kigali Amendment and United States' ratification of and compliance with the Kigali Amendment is supported broadly by affected industry stakeholders and environmental public interest organizations. (10) Industries in the United States that use and produce fluorocarbons-- (A) contribute more than $158,000,000,000 annually in goods and services to the economy of the United States; and (B) employ more than 700,000 individuals, with an annual industry-wide payroll of more than $32,000,000,000. (11) Foreign competitors to United States chemical refrigerant and refrigeration equipment based and operating in countries that have ratified the Kigali Amendment and are implementing policies in compliance with the Kigali Amendment are gaining an advantage on United States based industries in the manufacturing and used of next-generation chemicals and equipment. (12) The United States' ratification of the Kigali Amendment-- (A) would support and promote the technological leadership of the United States' industries to lead global production and marketing of replacement refrigerants and equipment in compliance with the Kigali Amendment; and (B) according to industry analysis, would potentially create approximately 33,000 new manufacturing jobs in the United States and add approximately $12,500,000,000 per year to the economy of the United States. (b) Sense of Congress.--It is the sense of Congress that-- (1) the President should immediately submit the Kigali Amendment to the Senate for advice and consent; and (2) the Senate should promptly provide its advice and consent on the Kigali Amendment. SEC. 204. COMPLIANCE WITH THE CARBON OFFSET AND REDUCTION SCHEME FOR INTERNATIONAL AVIATION. The Administrator of the Federal Aviation Administration shall promulgate regulations establishing uniform policies and take other necessary actions to implement the terms of the Carbon Offset and Reduction Scheme for International Aviation (commonly known as ``CORSIA''), which was adopted by International Civil Aviation Organization in October 2016 as Assembly Resolution A39-3, and any amendments to such Resolution with which the United States concurs, as means to secure a single global carbon ***emissions*** market-based mechanism to facilitate the participation of operators of civil aircraft of the United States in international aviation. SEC. 205. SHORT-LIVED CLIMATE POLLUTANTS. (a) Definitions.--In this section: (1) High-GWP hfc.--The term ``high-GWP HFC'' means newly manufactured hydrofluorocarbons with a global warming potential calculated over a 100-year period of greater than 150, as described in the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. (2) Short-lived climate pollutants.--The term ``short-lived climate pollutants'' means-- (A) black carbon; (B) methane; and (C) high-GWP HFC. (b) In General.--The President shall direct the United States representatives to appropriate international bodies and conferences (including the United Nations Environment Programme, the UNFCCC, the Montreal Protocol, the Arctic Council, the Group of 7, the Group of 20, the Organization for Economic Co-Operation and Development (OECD), the Association of Southeast Asian Nations, the Asia Pacific Economic Cooperation, the Arctic Council, the Climate and Clean Air Coalition on Short-Lived Climate Pollutants, and the Global Alliance for Climate-Smart ***Agriculture***) to use the voice, vote, and influence of the United States, consistent with the broad foreign policy goals of the United States, to advocate that each such body or conference-- (1) commit to significantly increasing efforts to reduce short-lived climate pollutants; (2) invest in and develop alternative energy sources, industrial and ***agricultural*** processes, appliances, and products to replace sources of short-lived climate pollutants; (3) enhance coordination with the private sector-- (A) to increase production and distribution of clean energy alternatives, industrial processes, and products that will replace sources of short-lived climate pollutants; (B) to develop action plans to mitigate short-lived climate pollutants from various private sector operations; (C) to encourage best technology, methods, and management practices for reducing short-lived climate pollutants; (D) to craft specific financing mechanisms for the incremental costs associated with mitigating short-live climate pollutants; and (E) to grow economic opportunities and develop markets, as appropriate, for short-lived climate pollutants trading, capture, and other efforts that support economic growth using low and zero carbon energy sources; (4) provide technical assistance to foreign regulatory authorities and governments to ***remove*** unnecessary barriers to investment in short-lived climate mitigation solutions, including-- (A) the use of safe and affordable clean energy; (B) the implementation of policies requiring industrial and ***agricultural*** best practices for capturing or mitigating the release of methane from extractive, ***agricultural***, and industrial processes; and (C) climate assessment, scientific research, monitoring, and technological development activities; (5) develop and implement clear, accountable, and metric- based ***targets*** to measure the effectiveness of projects described in paragraph (4); and (6) engage international partners in an existing multilateral forum (or, if necessary, establish through an international agreement a new multilateral forum) to improve global cooperation for-- (A) creating tangible metrics for evaluating efforts to reduce short-lived climate pollutants; (B) developing and implementing best practices for phasing out sources of short-lived climate pollutants, including expanding capacity for innovative instruments to mitigate short-lived climate pollutants at the national and subnational levels of foreign countries, particularly countries with little capacity to reduce greenhouse gas ***emissions*** and deploy clean energy facilities, and countries that lack sufficient policies to advance such development; (C) encouraging the development of standards and practices, and increasing transparency and accountability efforts for the reduction of short-lived climate pollutants; (D) integrating tracking and monitoring systems into industrial processes; (E) fostering research to improve scientific understanding of-- (i) how high concentrations of short-lived climate pollutants affect human health, safety, and our climate; (ii) changes in the amount and regional concentrations of black carbon and methane ***emissions***, based on scientific modeling and forecasting; (iii) effective means to sequester short-lived climate pollutants; and (iv) other related areas of research the United States representatives deem necessary; (F) encouraging the World Bank, the International Monetary Fund, and other international finance organizations-- (i) to prioritize efforts to combat short-lived climate pollutants; and (ii) to enhance transparency by providing sufficient and adequate information to facilitate independent verification of their climate finance reporting; (G) encouraging observers of the Arctic Council (including India and China) to adopt mitigation plans consistent with the findings and recommendations of the Arctic Council's Framework for Action on Black Carbon and Methane; (H) collaborating on technological advances in short-lived climate pollutant mitigation, sequestration and reduction technologies; and (I) advising foreign countries, at both the national and subnational levels, regarding the development and execution of regulatory policies, services, and laws pertaining to reducing the creation and the collection and safe management of short-lived climate pollutants. (c) Enhancing International Outreach and Partnership of United States Agencies Involved in Greenhouse Gas Reductions.-- (1) Finding.--Congress recognizes the success of the United States Climate Alliance and the greenhouse gas reduction programs and strategies established by the Environmental Protection Agency's Center for Corporate Climate Leadership. (2) Authorization of efforts to build foreign partnerships.--The Secretary of State shall work with the Administrator of the Environmental Protection Agency to build partnerships, as appropriate, with the governments of foreign countries and to support international efforts to reduce short-lived climate pollutants and combat climate change. (d) Negotiation of New International Agreements and Reassertion of ***Targets*** in Existing Agreements.--Not later than 1 year after the date of the enactment of this Act, the Secretary of State shall submit a report to Congress that-- (1) assesses the potential for negotiating new international agreements, new ***targets*** within existing international agreements or cooperative bodies, and the creation of a new international forum to mitigate globally short-lived climate pollutants to support the efforts described in subsection (b); (2) describes the provisions that could be included in such agreements; (3) assesses potential parties to such agreements; (4) describes a process for reengaging with Canada and Mexico regarding the methane ***targets*** agreed to at the 2016 North American Leaders' Summit; and (5) describes a process for reengaging with the countries of the Arctic Council regarding the methane and black carbon ***targets*** that were negotiated in 2015 through the Framework for Action. (e) Consideration of Short-lived Climate Pollutants in Negotiating International Agreements.--In negotiating any relevant [[Page S2022]] international agreement with any country or countries after the date of the enactment of this Act, the President shall-- (1) consider the impact short-lived climate pollutants are having on the increase in global average temperatures and the resulting global climate change; (2) consider the effects that climate change is having on the environment; and (3) ensure that the agreement strengthens efforts to eliminate short-lived climate pollutants from such country or countries. SEC. 206. INTERNATIONAL COOPERATION REGARDING CLEAN TRANSPORTATION AND SUSTAINABLE ***LAND*** USE AND COMMUNITY DEVELOPMENT. (a) Findings.--Congress finds the following: (1) ***Agriculture***, forestry, and other ***land*** use accounted for 24 percent of global greenhouse gas ***emissions*** during 2010, which-- (A) is caused primarily from ***agriculture*** (cultivation of crops and livestock) and deforestation; and (B) does not take into account the carbon dioxide that ecosystems ***remove*** from the atmosphere by sequestering carbon in biomass, dead organic matter, and soils, which offset approximately 20 percent of ***emissions*** from this sector. (2) The transportation sector accounts for 14 percent of global gas ***emissions*** and 28 percent of the United States' greenhouse gas ***emissions***. (3) According to the National Center for Biotechnology Information's report, ``National Mitigation Potential from Natural Climate Solutions in the Tropics''-- (A) better ***land*** stewardship is needed to achieve the Paris Agreement's temperature goal of holding the increase of global average temperatures well below 2 degrees Celsius, particularly in the tropics; (B) as countries enhance their nationally determined contributions, confusion persists about the potential contribution of better ***land*** stewardship to meeting such goal; (C) in 50 percent of the tropical countries, cost-effective natural climate solutions could mitigate more than 50 percent of national ***emissions***; (D) in more than 25 percent of the tropical countries, cost effective natural climate solutions potential is greater than national ***emissions***; and (E) natural climate solutions can transform national economies and contribute to sustainable development goals. (4) According to the International Energy Agency-- (A) global transport ***emissions*** increased by less than 0.5 percent in 2019 (compared with an average annual increase of 1.9 percent since 2000), owing to efficiency improvements, electrification, and greater use of biofuels; (B) transportation is responsible for 24 percent of direct carbon dioxide ***emissions*** from fossil fuel combustion; (C) electric car deployment has grown rapidly since 2010, with the global stock of electric passenger cars passing 5,000,000 in 2018 (an increase of 63 percent from the previous year); (D) in 2018-- (i) approximately 45 percent of all electric cars on the road were in China; (ii) approximately 24 percent of such cars were in Europe; and (iii) approximately 22 percent of such cars were in the United States; (E) existing measures to increase efficiency and reduce energy demand must be deepened and extended for compliance with the Sustainable Development Scenario of the International Energy Agency's World Energy Model; (F) prior to the COVID-19 pandemic, ***emissions*** from aviation and shipping were increasing faster than all other transportation modes; and (G) energy demand and ***emissions*** have continued to rise in all modes of road transport (cars, trucks, buses, and 2- and 3-wheelers), particularly in heavy-duty road freight transport, which account for 75 percent of global transportation sector ***emissions***. (5) The worldwide market share of sport utility vehicles rose 15 percentage points between 2014 and 2019, and now comprises 40 percent of the global light-duty vehicle market. (6) China is the world's largest automobile market, with more than 23,700,000 light vehicles sold in China in 2018. As China's road network rapidly continues to expand, the number of vehicle miles traveled per capita will most likely lead to growth in China's transportation sector carbon dioxide ***emissions***. (7) Even with India's advancement of policies to promote electric vehicles and biofuels-- (A) India relies heavily on oil, and comprises 29 percent of India's total energy consumption; (B) prior to the COVID-19 pandemic, India was the world's fastest growing aviation market, with passenger numbers for domestic and international flights doubling since 2010; (C) India is planning to build 100 new airports between 2020 and 2035, and industry analysts have projected up to 520,000,000 Indian air travelers annually by 2037; and (D) the World Health Organization reports that 15 of the cities worldwide with the worst air pollution are in India, largely due to urban vehicle ***emissions***. (8) In 2013, Mexico became the first vehicle market in Latin America to establish fuel economy or carbon dioxide ***emissions*** standards. (9) The Department of State, the National Highway Traffic Safety Administration, and the Environmental Protection Agency do not have a program in place to encourage other countries to adopt standards that are compatible with United States fuel economy and ***emissions*** standards. (10) Many countries adopt European ***emissions*** standards rather than United States standards, in part because of European diplomatic engagement, disadvantaging United States automakers in international markets. (b) Statement of Policy.--It is the policy of the United States to partner, consult, and coordinate with foreign governments, civil society, international financial institutions, subnational communities, agribusiness and automobile industry leaders, and the private sector in a concerted effort-- (1) to raise awareness of-- (A) the greenhouse gas ***emission*** contributions from ***agriculture***, forestry, other ***land*** uses, and the transportation sector to the annual total of anthropogenic greenhouse gas ***emissions*** globally; and (B) the importance of working cooperatively on the development of multi-faceted and country specific policies and strategies-- (i) to effectively reduce greenhouse gas ***emissions*** from ***agriculture***, forestry, other ***land*** uses, and the transportation sector; and (ii) to promote economic growth, opportunities, sustainable ***land*** management, and equitable access to mobility, transportation services, and resources among all populations; (2) to mitigate ***land*** use sector ***emissions*** through enhanced ***land*** use planning, sustainable ***agriculture*** practices, sustainable ***forest*** management, and community-led conservation and development and other natural climate solutions; (3) to use the voice and vote of the United States in multilateral institutions to advance international efforts to advance sustainable ***land***-use planning, climate-smart ***agriculture***, sustainable ***forest*** management, and community-led conservation and development; (4) to improve the reliability and sustainability of transportation systems, particularly in developing countries, through a focus on mitigating carbon ***emissions***, improving health and safety outcomes through improved ***land*** use and community design, and improved mobility for all populations; (5) to promote collaboration regarding international research and development in-- (A) zero-***emission*** vehicles; (B) sustainable urban development and smart growth; and (C) advanced low carbon biofuels for transportation; (6) to facilitate and support the ability of parties to the Paris Agreement to more accurately monitor, record, and report transportation sector ***emissions***; (7) to develop greater cooperation among parties for strengthening the rules and ambition of the Paris Agreement's mitigation ***targets*** for transportation sector ***emissions***; (8) to improve the structural integrity of critical transportation infrastructure to withstand current and forecasted effects of climate change and support community resilience, improved access to jobs, and adaptability to the effects of climate change; and (9) to explore new opportunities or seek enhanced initiatives within existing multilateral and bilateral agreements to develop mechanisms and policies for reducing transportation sector greenhouse gas ***emissions***. (c) International Cooperation.--In implementing the policy described in subsection (b), the President should direct the United States representatives to appropriate international bodies to use the influence of the United States, consistent with the broad foreign policy goals of the United States, to advocate that each such body-- (1) promote transportation sector investment in-- (A) electric vehicles and other low and zero carbon transportation technologies; and (B) sustainable ***land*** use development that incorporates-- (i) multi-modal transportation designs aimed at reducing-- (I) traffic congestion; (II) carbon ***emissions*** from motor vehicles; (III) travel times between high volume destinations within a community; (IV) vehicle crashes and other threats to motorist and pedestrian safety; and (V) stormwater runoff from impervious road surfaces, vehicle conflicts with wildlife, habitat destruction, and other forms of environmental degradation commonly associated with roads and motor vehicles; (ii) multi-use community designs and dense development that accounts for locating residential development near essential goods, services, and job opportunities (to reduce individual reliance of motorized personal transportation); (iii) transportation systems designed-- (I) to maximize the safety of all users; and (II) to reduce the probability of motorized vehicle crashes, including motorized vehicle crashes that injure or kill pedestrians and bicyclists; (2) strive to improve mobility by advancing equitable access to transportation services among all populations, particularly historically underserved or marginalized populations and communities; (3) improve environmental quality and community health outcomes through-- [[Page S2023]] (A) safer and more efficient multi-modal transportation systems that reduce vehicle pollution and congestion; (B) reductions in the amount of impervious surfaces; and (C) integration of safe pedestrian and bicycling infrastructure; (4) addresses unique transportation and economic needs of countries' diverse populations and communities in ways that also support a country's achievement of ambitious greenhouse gas mitigation commitments; (5) enhance coordination and engagement with private sector stakeholders; (6) provide technical assistance to foreign regulatory authorities and governments to ***remove*** barriers to investment in transportation systems, infrastructure and electric vehicles and low and zero carbon fuels; and (7) use clear, accountable, and metric-based ***targets*** to measure the effectiveness of such projects. (d) Vehicle Fuel Economy and CO2 ***Emissions*** Diplomacy Initiative.-- (1) Development.--The Secretary of State, in consultation with the Secretary of Commerce, the Secretary of Transportation, the Secretary of the Treasury, and the Administrator of the Environmental Protection Agency, shall develop a Vehicle Fuel Economy and CO2 ***Emissions*** Diplomacy Initiative to promote the worldwide adoption of vehicle fuel economy and vehicle carbon dioxide ***emissions*** standards that are compatible with United States standards. (2) Responsibilities and duties.-- (A) Diplomatic efforts.--The Secretary of State shall lead diplomatic efforts to encourage foreign governments to adopt vehicle fuel economy standards and vehicle carbon dioxide ***emissions*** standards. (B) Technical assistance.--The Administrator of the National Highway Traffic Safety Administration and the Administrator of the Environmental Protection Agency shall provide technical assistance to other countries to help such countries to develop new standards, testing regimes, and compliance strategies. (3) Program scope.--The Vehicle Fuel Economy and CO2 ***Emissions*** Diplomacy Initiative should-- (A) have the goal of reducing oil consumption by at least 2,000,000 barrels per day by 2030, in addition to the reduction anticipated by the implementation of standards in existence as of the date of the enactment of this Act; (B) include input in developing the program from leaders in United States industry; and (C) focus special attention on Latin America. SEC. 207. SENSE OF CONGRESS ON UNITED STATES REENGAGEMENT WITH THE GROUP OF SEVEN AND THE GROUP OF TWENTY ON CLIMATE ACTION. (a) Findings.--Congress finds the following: (1) President Trump has abstained from several heads of state meetings on climate action and cooperation with the heads of state from countries comprising the Group of Seven (referred to in this section as the ``G7'') and the Group of Twenty (referred to in this section as the ``G20''). (2) The G7 summit held in Charlevoix, Quebec in June 2018 produced a climate action communique that was signed by the heads of state from Canada, France, Germany, Italy, Japan, and the United Kingdom, but was not signed by the United States. (3) The G7 climate action communique states, ``Canada, France, Germany, Italy, Japan, the United Kingdom, and the European Union reaffirm their strong commitment to implement the Paris Agreement, through ambitious climate action, in particular through reducing ***emissions*** while stimulating innovation, enhancing adaptive capacity, strengthening and financing resilience and reducing vulnerability; as well as ensuring a just transition, including increasing efforts to mobilize climate finance from a wide variety of sources.''. (4) In 2019, the United States blocked the G7 from making any new or additional commitments on climate change, to the expressed disappointment and frustration of the other six heads of state. (5) The G7, without the active participation of the United States, continues to work together to fulfill clean energy commitments on initiatives such as the 2014 Rome Initiative for Energy Security, the 2015 Hamburg Initiative for Sustainable Energy Security, the 2016 Kitakyushu Initiative on Energy Security for Global Growth, and the Africa Renewable Energy Initiative. However, United States objections to global cooperative climate action have prevented the G7 from undertaking new clean energy and climate action initiatives in recent years. (6) The 2018 Buenos Aires Leaders Declaration by the G20-- (A) recognizes the risks that climate change poses to global security, global health, and economic development; and (B) affirms the significance of the Paris Agreement. (7) The United States insisted on the inclusion of a statement in the G20 Buenos Aires Leaders Declaration, for which the United States was the only subscriber, expressing dissenting opinions on international climate action cooperation and equivocation on ``utilizing all energy sources and technologies, while protecting the environment''. (8) In 2019, the G20 narrowly avoided concluding without a leaders' declaration, when the President unsuccessfully tried to pressure the other 19 heads of state to weaken commitments on combating climate change in the 2019 G20 Osaka Leaders Declaration, leaving the United States to provide a dissenting provision articulating its outlier position on climate action in the Declaration. (b) In General.--Not later than 60 days after the date of the enactment of this Act, the President, acting through the Secretary of State, shall initiate a China-focused agenda at the G7, with respect to-- (1) trade and investment issues and enforcement; (2) establishing and promulgating international infrastructure standards; (3) the erosion of democracy in Hong Kong; (4) human rights concerns in Xinjiang, Tibet, and other areas in the People's Republic of China; (5) the security of 5G telecommunications; (6) anti-competitive behavior; (7) coercive and indentured international finance and conditional provision of foreign assistance; (8) international influence campaigns; (9) climate change; (10) China's domestic and international investments in new coal power plants; (11) environmental standards; and (12) coordination with like-minded regional partners, including the Republic of Korea and Australia. (c) Briefing on Progress of Negotiations.--Not later than 1 year after the date of the enactment of this Act, the President shall provide a briefing to the Committee on Foreign Relations of the Senate and the Committee on Foreign Affairs of the House of Representatives regarding the progress of any negotiations described in subsection (b). (d) Sense of Congress.--It is the sense of Congress that the United States should-- (1) in the next G7 communique and G20 Leaders' Declaration-- (A) renounce the United States contrarian positions on climate change expressed in the 2018 and 2019 official documents of the G7 and G20 summits; (B) renew its commitment to climate cooperation and support for fulfilling the goals of the Paris Agreement in the context of the G7 and the G20; (C) lead efforts to formalize new mechanisms and commitments to climate action cooperation between the heads of state of the G7 and of the G20, which are aimed at-- (i) increasing ambition on greenhouse gas mitigation; and (ii) strengthening support for climate finance in developing countries, particularly countries that are most vulnerable to the effects of climate change; and (D) challenge the heads of state of the G7 and the G20 to leverage private financing and increase grants and official development assistance in clean energy and sustainable development projects in their own countries and in developing countries, especially countries that are most vulnerable to the effects of climate change; and (2) initiate the China-focused agenda described in subsection (b) at the G7. TITLE III--CLIMATE CHANGE DEVELOPMENT FINANCE AND SUPPORT SEC. 301. INTERNATIONAL CLIMATE CHANGE ADAPTATION, MITIGATION, AND SECURITY PROGRAM. (a) Definitions.--In this section: (1) Convention.--The term ``Convention'' means the United Nations Framework Convention on Climate Change, done at New York May 9, 1992, and entered into force March 21, 1994. (2) Most vulnerable communities and populations.--The term ``most vulnerable communities and populations'' means communities and populations that are at risk of substantial adverse effects of climate change and have limited capacity to respond to such effects, including women, impoverished communities, children, indigenous peoples, and formal and informal workers. (3) Most vulnerable developing countries.--The term ``most vulnerable developing countries'' means, as determined by the Administrator of the United States Agency for International Development, developing countries that are at risk of substantial adverse effects of climate change and have limited capacity to respond to such effects, considering the approaches included in any international treaties and agreements. (4) Program.--The term ``Program'' means the International Climate Change Adaptation, Mitigation, and Security Program established pursuant to subsection (c). (b) Purpose.--The purpose of this section is to provide authorities for additional, new, current, and ongoing bilateral and regional international development assistance, and, as appropriate, to leverage private resources, in support of host country driven projects, planning, policies, and initiatives designed to improve the ability of host countries-- (1) to primarily produce reliable renewable energy and reduce or mitigate carbon ***emissions*** from the power sector while facilitating the transition in key global markets from electricity generated from fossil fuel power to low-cost clean energy sources, in a manner that is equitable for workers and communities; (2) to adapt and become more resilient to current and forecasted effects of climate change; and (3) to employ-- (A) sustainable ***land*** use practices that mitigate desertification and reduce greenhouse gas ***emissions*** from deforestation and ***forest*** degradation; and [[Page S2024]] (B) ***agricultural*** production practices that reduce poverty while improving soil health, protecting water quality, and increasing food security and nutrition. (c) Establishment of Program.--The Secretary of State, in coordination with the Secretary of the Treasury and the Administrator of the United States Agency for International Development, shall establish a program, to be known as the ``International Climate Change Adaptation, Mitigation, and Security Program'', to provide bilateral and regional assistance to developing countries for programs, projects, and activities described in subsection (e). (d) Supplement Not Supplant.--Assistance provided under this section shall be used to supplement, and not to supplant, any other Federal, State, or local resources available to carry out activities that fit the characteristics of the Program. (e) Policy.--It shall be the policy of the United States to ensure that the Program provides resources to developing countries, particularly the most vulnerable communities and populations in such countries, to support the development and implementation of programs, projects, and activities that-- (1) reduce greenhouse gas ***emissions*** through the integration and deployment of clean energy, which may include transmission, distribution, and interconnections to renewable energy, while facilitating the transition in key global markets from electricity generated from fossil fuel power to low-cost renewable energy sources, in a manner that is equitable for workers and communities; (2) advance the use of clean energy technologies facing financial or other barriers to widespread deployment that could be addressed through support under the Program to reduce, sequester, or avoid greenhouse gas ***emissions***; (3) improve the availability, viability, and accessibility of zero ***emission*** vehicles, including support for design and development of transportation networks and ***land*** use practices that mitigate carbon ***emissions*** in the transportation sector; (4) support building capacities that may include-- (A) developing and implementing methodologies and programs for measuring and quantifying greenhouse gas ***emissions*** and verifying ***emissions*** mitigation, including building capacities to conduct ***emissions*** inventories and meet reporting requirements under the Paris Agreement; (B) assessing, developing, and implementing technology and policy options for greenhouse gas ***emissions*** mitigation and avoidance of future ***emissions***, including sector-based and cross-sector mitigation strategies; (C) enhancing the technical capacity of regulatory authorities, planning agencies, and related institutions in developing countries to improve the deployment of clean energy technologies and practices, including through increased transparency; (D) training and instruction regarding the installation and maintenance of renewable energy technologies; and (E) activities that support the development and implementation of frameworks for intellectual property rights in developing countries; (5) improve resilience, sustainable economic growth, and adaptation capacities in response to and in spite of the effects of climate change; (6) promote appropriate job training and access to new job opportunities in new economic sectors and industries that emerge due to the transition from fossil fuel energy to clean energy, with full labor protections in accordance with international labor standards; (7) reduce the vulnerability and increase the resilience capacities of communities to the effects of climate change, including effects on-- (A) water availability; (B) ***agricultural*** productivity and food security; (C) flood risk; (D) coastal resources; (E) biodiversity; (F) economic livelihoods; (G) health and diseases; (H) housing and shelter; and (I) human migration; (8) help countries and communities adapt to changes in the environment through enhanced community planning, preparedness, and growth strategies that take into account current and forecasted regional and localized effects of climate change; (9) conserve and restore natural resources, ecosystems, and biodiversity threatened by the effects of climate change to ensure such resources, ecosystems, and biodiversity are healthy and continue to provide natural protections from the effects of climate change such as extreme weather; (10) provide resources, information, scientific data and modeling, innovative best practices, and technical assistance to support vulnerable developing countries and communities adapt their economies, communities, and security planning efforts to the effects of climate change; (11) promote sustainable and climate-resilient societies, including through improvements to make critical infrastructure less vulnerable to the effects of climate change; (12) encourage the adoption of policies and measures, including sector-based and cross-sector policies and measures, that substantially reduce, sequester, or avoid greenhouse gas ***emissions*** from the domestic energy and transportation sectors of developing countries; (13) reduce deforestation and ***land*** degradation to reduce greenhouse gas ***emissions*** and implement sustainable forestry practices; (14) promote sustainable ***land*** use activities, including supporting development planning, design, and construction with respect to transportation systems and ***land*** use that incorporates-- (A) multi-modal transportation designs aimed at reducing-- (i) traffic congestion; (ii) carbon ***emissions*** from motor vehicles; (iii) travel times between high volume destinations within a community; (iv) motor vehicle crashes and other threats to motorist and pedestrian safety; and (v) stormwater runoff from impervious road surfaces, motor vehicle conflicts with wildlife, habitat destruction, and other forms of environmental degradation commonly associated with roads and motor vehicles; (B) multi-use community designs and dense development that account for locating residential development near essential goods, services, and job opportunities to reduce individual reliance on motorized personal transportation; (C) transportation systems designed to-- (i) maximize the safety of all users; (ii) improve mobility by advancing equitable access to transportation services among all populations, particularly historically underserved or marginalized populations and communities; and (iii) reduce the probability of vehicle crashes and pedestrian and bicyclist injuries and mortalities; (15) promote sustainable ***agricultural*** practices that mitigate carbon ***emissions***, conserve soil, and improve food and water security of communities; (16) foster partnerships with private sector entities and nongovernmental international development organizations to assist with developing solutions and economic opportunities that support projects, planning, policies, and initiatives described in subsection (b); (17) provide technical assistance and strengthen capacities of developing countries to meet the goals of the conditional nationally determined contributions of those countries; (18) establish investment channels designed to leverage private sector financing in-- (A) clean energy; (B) sustainable ***agriculture*** and natural resource management; and (C) the transportation sector as described in paragraph (3); and (19) provide technical assistance and support for non- extractive activities that provide alternative economic growth opportunities while preserving critical habitats and natural carbon sinks. (f) Provision of Assistance.-- (1) In general.--The Administrator of the United States Agency for International Development, under the direction of the Secretary of State, and in consultation with the Secretary of the Treasury and, as appropriate, the Administrator of the Environmental Protection Agency, the Secretary of Energy, and the Secretary of ***Agriculture***, shall provide assistance under the Program-- (A) in the form of bilateral assistance pursuant to the requirements under subsection (g); (B) to multilateral funds or international institutions with programs for climate mitigation or adaptation in developing countries consistent with the policy described in subsection (e); or (C) through a combination of the mechanisms specified in subparagraphs (A) and (B). (2) Limitation.-- (A) Conditional distribution to multilateral funds or international institutions.--In any fiscal year, the Administrator of the United States Agency for International Development, under the direction of the Secretary of State, may provide up to 40 percent of the assistance available to carry out the Program to 1 or more multilateral funds or international institutions that meet the requirements of subparagraph (B). (B) Multilateral fund or international institution eligibility.--A multilateral fund or international institution is eligible to receive assistance under subparagraph (A)-- (i) if-- (I) such fund or institution is established pursuant to-- (aa) the Convention; or (bb) an agreement negotiated under the Convention; or (II) the assistance is directed to 1 or more multilateral funds or international development institutions, pursuant to an agreement negotiated under the Convention; and (ii) if such fund or institution-- (I) specifies the terms and conditions under which the United States is to provide assistance to the fund or institution, and under which the fund or institution is to provide assistance to recipient countries; (II) ensures that assistance from the United States to the fund or institution and the principal and income of the fund or institution are disbursed only-- (aa) to support projects, planning, policies, and initiatives described in subsection (b); (bb) consistent with the policy described in subsection (e); and [[Page S2025]] (cc) in regular consultation with relevant governing bodies of the fund or institution that-- (AA) include representation from countries among the most vulnerable developing countries; and (BB) provide public access. (C) Congressional notification.--The Secretary of State, the Administrator of the United States Agency for International Development, or the Secretary of the Treasury shall notify the appropriate congressional committees not later than 15 days before providing assistance to a multilateral fund or international institution under this subsection. (3) Local consultations.--Programs, projects, and activities supported by assistance provided under this subsection shall require consultations with local communities, particularly the most vulnerable communities and populations in such communities, and indigenous peoples in areas in which any programs, projects, or activities are planned to engage such communities and peoples through adequate disclosure of information, public participation, consultation, and the free prior and informed consent of such peoples, including full consideration of the interdependence of vulnerable communities and ecosystems to promote the resilience of local communities. (g) Bilateral Assistance.-- (1) In general.--Except to the extent inconsistent with this subsection, the administrative authorities under the Foreign Assistance Act of 1961 (22 U.S.C 2151 et seq.) shall apply to the implementation of this subsection to the same extent and in the same manner as such authorities apply to the implementation of such Act in order to provide the Administrator of the United States Agency for International Development with the authority to provide assistance to countries, including the most vulnerable developing countries, for programs, projects, and activities consistent with the purposes described in subsection (b) and the policy described in subsection (e). (2) Considerations.--In carrying out this subsection, the Administrator shall ensure that-- (A) the environmental impact of proposed programs, projects, and activities is assessed through adequate consultation, public participation, and disclosure of information; and (B) programs, projects, and activities under this subsection-- (i) avoid environmental degradation, to the maximum extent practicable; and (ii) are aligned, to the maximum extent practicable, with broader development, poverty alleviation, or natural resource management objectives and initiatives in the recipient country. (3) Community engagement.--The Administrator shall seek to ensure that-- (A) local communities, particularly the most vulnerable communities and populations in areas in which any programs, projects, or activities are carried out under this subsection, are engaged in the design, implementation, monitoring, and evaluation of such programs, projects, and activities through disclosure of information, public participation, and consultation; and (B) the needs and interests of the most vulnerable communities and populations are addressed in national or regional climate change adaptation plans. (4) Consultation and disclosure.--For each country receiving assistance under this subsection, the Administrator shall establish a process for consultation with, and disclosure of information to, local, national, and international stakeholders regarding any programs, projects, or activities carried out under this subsection. (h) Authorization of Appropriations.--There is authorized to be appropriated to carry out this section $2,000,000,000 for fiscal year 2022 and each fiscal year thereafter. SEC. 302. UNITED STATES CONTRIBUTIONS TO THE GREEN CLIMATE FUND. (a) United States Contributions.--On behalf of the United States, the Secretary of the Treasury and the Secretary of State-- (1) shall jointly coordinate contributions to the Green Climate Fund; and (2) may contribute to the Green Climate Fund, in addition to the amounts authorized under subsection (d), additional amounts from other relevant foreign assistance accounts. (b) Limits on Country Access.--The Secretary of the Treasury shall use the voice, vote, and influence of the United States to ensure that-- (1) the Fund does not provide more than approximately 15 percent of the resources of the Fund to any one country; (2) each country that receives amounts from the Fund submits to the governing body of the Fund an investment plan that describes how-- (A) energy efficiency or production projects will achieve significant and lasting reductions in national-level greenhouse gas ***emissions***; and (B) adaptation projects will-- (i) provide long-term enhancements to national and food security; (ii) protect lives and livelihoods; (iii) ensure lasting access to freshwater resources; or (iv) advance public health outcomes; and (3) in the case of a country that is not classified by the World Bank as having a low-income economy, provides for not less than 15 percent of the total cost of the plan to be contributed from the public funds of the country. (c) Project and Program Requirements.--The Secretary of the Treasury, in consultation with the Secretary of State, shall use the voice, vote, and influence of the United States to ensure that support from the Fund is used exclusively to support the deployment by developing countries of clean energy technologies and the development of projects that improve the resilience capacities and ability of countries to adapt to the effects of climate change, including, as appropriate, through the provision of technical support or support for policy or institutional reforms. (d) Authorization of Appropriations.--In addition to the amounts authorized to be appropriated under section 301(h), there are authorized to be appropriated for contributions to the Green Climate Fund-- (1) $4,000,000,000 for fiscal year 2022; (2) $4,000,000,000 for fiscal year 2023; (3) $2,000,000,000 for fiscal year 2024; and (4) $2,000,000,000 for fiscal year 2025. (e) Report to Congress.--Not later than 240 days after the date of the enactment of this Act, and annually thereafter, the Secretary of the Treasury shall submit to the appropriate congressional committees a report describing-- (1) the purpose of and progress on each project supported by the Fund; and (2) how each such project furthers the investment plan described in subsection (b)(2) of each country in which the project is implemented. SEC. 303. SENSE OF CONGRESS ON UNITED STATES ENGAGEMENTS AT THE WORLD ECONOMIC FORUM. (a) Findings.--Congress finds the following: (1) In 2020, the World Economic Forum (referred to in this section as the ``WEF'') in Davos, Switzerland, put addressing the climate crisis at the top of its agenda. World and business leaders reinforced the need for urgent action to avoid human destruction from the clear and present climate crisis. (2) At the 2020 annual meeting of the WEF, the President, accompanied by the Secretary of the Treasury, delivered a contrarian message, claiming, ``To embrace the possibilities of tomorrow, we must reject the perennial prophets of doom and their predictions of the apocalypse.''. (3) Nevertheless, the WEF, without support from the United States, announced climate initiatives on sustainable markets, reaching carbon neutrality on insurance investment portfolios, decarbonizing the automotive sector through circular economies, and transitioning to healthier, more sustainable food systems. (4) The one initiative the United States did agree to join is the Trillion Tree Campaign, which aims to grow, restore, and conserve 1 trillion trees by 2030. (5) The President's dismissal of the threat climate change poses to economic growth and global security has isolated the United States from the 117 represented countries at the WEF that support its climate agenda and are accelerating their national commitments in other international fora to address climate change. (b) Sense of Congress.--It is the sense of Congress that at the 2021 WEF, or at an appropriate time and venue as early as possible in 2021-- (1) the Secretary of State should commit to restoring diplomatic engagement and cooperation on mobilizing investment and support for growing the global economy while achieving net zero global greenhouse gas ***emissions*** by 2050; (2) the Secretary of the Treasury should announce-- (A) the intention of the United States Government to divest from future investment and support for fossil fuel energy and extraction projects in developing countries; and (B) the establishment of an international clean energy private finance fund to support the development of large- scale renewable energy projects in middle income countries; (3) the Chief Executive Officer of the United States International Development Finance Corporation should commit to-- (A) divesting the United States International Development Finance Corporation from future fossil fuel energy development and extraction projects; and (B) investing a significant portion of the annual portfolio of the United States International Development Finance Corporation in clean energy development projects; and (4) the Administrator of the United States Agency for International Development should commit to prioritizing building resilience and adaption capacities in the most climate-vulnerable countries. SEC. 304. CLEAN ENERGY AND THE UNITED STATES INTERNATIONAL DEVELOPMENT FINANCE CORPORATION. (a) In General.--Section 1451 of the Better Utilization of Investments Leading to Development Act of 2018 (22 U.S.C 9671) is amended by adding at the end the following: ``(j) Clean Energy.-- ``(1) Report required.--Not later than 180 days after the date of the enactment of this subsection, the Chief Executive Officer of the Corporation shall submit to the appropriate congressional committees a report-- ``(A) highlighting the substantial commitment of the Corporation to invest in renewable and other clean energy technologies; ``(B) setting forth-- ``(i) a plan to significantly reduce greenhouse gas ***emissions*** associated with projects [[Page S2026]] and subprojects within the Corporation's portfolio, as required by paragraph (2); and ``(ii) a plan for facilitating the transition in key global markets from electricity generated from fossil fuel power to clean, low-cost renewable energy sources, in a manner that is equitable for workers and communities, as required by paragraph (3); and ``(C) detailing the efforts of the Corporation to reduce all greenhouse gas ***emissions*** associated with projects and subprojects within the Corporation's portfolio, including a full accounting of the reductions, achieved in accordance with the plan described in paragraph (2). ``(2) Plan to reduce greenhouse gas ***emissions***.-- ``(A) In general.--Not later than one year after the date of the enactment of this subsection, the Corporation shall submit to the appropriate congressional committees a climate change mitigation plan to reduce greenhouse gas ***emissions*** associated with projects and subprojects within the Corporation's portfolio by, relative to October 1, 2020-- ``(i) not less than 60 percent by 2025; and ``(ii) 100 percent by 2028. ``(B) Implementation.--The Corporation shall begin implementation of the plan required by subparagraph (A) not later than 20 days after submitting the plan to the appropriate congressional committees. ``(C) Report required.--Not later than one year after the date on which the Corporation begins implementation under subparagraph (B) of the plan required by subparagraph (A), and every 2 years thereafter until the Corporation achieves the goal of reducing greenhouse gas ***emissions*** associated with projects and subprojects within the Corporation's portfolio by 100 percent, the Corporation shall submit a report to the appropriate congressional committees on the Corporation's progress and efforts to achieve the greenhouse gas ***emissions*** reductions goals of the plan. ``(3) Clean electricity transition.--The Corporation shall seek, in providing support for projects under title II, to facilitate the transition in key global markets from electricity generated from fossil fuel power to clean, low- cost renewable energy sources, in a manner that is equitable for workers and communities, by-- ``(A) enabling the phase-out of uneconomic coal-fired power plants that are shielded from competition from renewable energy sources by noncompetitive market structures such as long-term contracts and regulated tariffs; ``(B) using low-cost capital-- ``(i) to refinance existing debt on uneconomic coal-fired power plants; ``(ii) to reinvest in renewable energy sources to replace such plants; ``(iii) to support a just transition to renewable energy for affected workers and communities by generating decent jobs that adhere to international labor standards all along the renewable energy supply chain; and ``(iv) to support the upgrading of jobs and skills as well as job creation and improved productivity in more labor- intensive industries that offer employment opportunities on a wide scale; and ``(C) considering-- ``(i) competitive approaches, like reverse auctions, to ensure the best value in investing in renewable energy sources; and ``(ii) partnering, as appropriate, with-- ``(I) the United States Agency for International Development; and ``(II) the Department of the Treasury with respect to efforts by multilateral development banks (as defined in section 1701(c) of the International Financial Institutions Act (22 U.S.C 262r(c))).''. (b) Conforming Repeal.--Section 7079(b) of the Consolidated Appropriations Act, 2010 (Public Law 111-117; 123 Stat. 3396) is amended by striking ``comment:'' and all that follows and inserting ``comment.''. SEC. 305. CONSISTENCY IN UNITED STATES POLICY ON DEVELOPMENT FINANCE AND CLIMATE CHANGE. (a) Sense of Congress.--It is the sense of Congress that the strength and credibility of United States climate policy is undermined when there is a lack of consistency between the policies and practices implemented at the United States International Development Finance Corporation and the policies and practices the Corporation promotes at the international financial institutions. (b) Enhancing Transparency at Multilateral Development Banks.--The Secretary of the Treasury shall instruct the United States executive director of each international financial institution to use the voice and vote of the United States to advocate for enhancing transparency by providing sufficient and adequate information to facilitate independent verification of the climate finance reporting of the institution. (c) Policy Alignment.--The Secretary of the Treasury shall instruct the United States executive director of each international financial institution to use the voice and vote of the United States-- (1) to challenge policy-based loans or lending through financial intermediaries that directly or indirectly supports fossil fuels; and (2) to seek to ensure that all loans, grants, policies, and strategies of the institution are aligned with the objectives of the Paris Agreement. (d) Prohibition.--Section 1451 of the Better Utilization of Investments Leading to Development Act of 2018 (22 U.S.C 9671), as amended by section 304, is further amended by adding at the end the following: ``(k) Consistency in Environmental and Social Policies.-- The Corporation may not adopt any environmental or social policy that provides less protection for communities and the environment than the level of protection required under title XIII of the International Financial Institutions Act (22 U.S.C 262m et seq.).''. (e) International Financial Institution Defined.--In this section, the term ``international financial institution'' has the meaning given that term in section 1701(c) of the International Financial Institutions Act (22 U.S.C 262r(c)). TITLE IV--CLEAN ENERGY DIPLOMACY AND INTERNATIONAL DEVELOPMENT SEC. 401. ENERGY DIPLOMACY AND SECURITY WITHIN THE DEPARTMENT OF STATE. (a) Assistant Secretary of State for Energy Resources.-- Section 1(c) of the State Department Basic Authorities Act of 1956 (22 U.S.C 2651a(c)) is amended-- (1) by redesignating paragraph (4) as paragraph (5); and (2) by inserting after paragraph (3) the following: ``(4) Assistant secretary of state for energy resources.-- ``(A) Authorization for assistant secretary.--Subject to the numerical limitation specified in paragraph (1), there is authorized to be established in the Department of State an Assistant Secretary of State for Energy Resources. ``(B) Personnel.--The Secretary of State, in collaboration with the Assistant Secretary of State for Energy Resources, and in accordance with the authorization under subparagraph (A), shall ensure that sufficient personnel are dedicated to energy matters within the Bureau of Energy Resources in order-- ``(i) to formulate and implement international policies, in coordination with the Secretary of Energy, as appropriate, aimed at protecting and advancing United States energy security interests and international energy development and access to electricity, in accordance with the United Nation's sustainable development goals in ways that ensure responsible development of global energy resources by effectively managing United States bilateral and multilateral relations; ``(ii) to ensure that analyses of public health and national security implications of global energy and environmental developments are reflected in the decision- making process within the Department of State; ``(iii) to incorporate energy security and clean energy development priorities into the activities of the Department related to matters involving global energy development, accounting for the effects global energy development has on-- ``(I) United States national security; ``(II) quality of life and public health of people, households, and communities, particularly vulnerable and underserved populations affected by, or proximate to, energy development, transmission, and distribution projects; ``(III) United States economic interests; ``(IV) ***emissions*** of greenhouse gases that contribute to global climate change; and ``(V) local and regional ***land*** use, air and water quality, and risks to public health of communities described in subclause (II); ``(iv) to coordinate energy activities within the Department of State and with relevant Federal departments and agencies; ``(v) to work internationally-- ``(I) to support socially and environmentally responsible development of energy resources that mitigate carbon ***emissions***, and the distribution of such resources for the benefit of the United States and United States allies and trading partners for their energy security, climate security, and economic development needs; ``(II) to promote-- ``(aa) the availability of clean energy technologies, including carbon capture and storage; ``(bb) energy sector innovation; ``(cc) well-functioning global markets for clean energy resources and technologies; ``(dd) expertise for the benefit of the United States and United States allies and trading partners; ``(III) to resolve international disputes regarding the exploration, development, production, or distribution of energy resources; ``(IV) to support the economic, security, and commercial interests of United States persons operating in the energy markets of foreign countries; and ``(V) to support and coordinate international efforts-- ``(aa) to alleviate energy poverty; ``(bb) to protect vulnerable, exploited, and underserved populations that are affected or displaced by energy development projects; ``(cc) to account for and mitigate greenhouse gas ***emissions*** from energy development projects; ``(dd) to promote fair labor practices, labor protections for workers, and training for and access to good-paying jobs within the clean energy sector; and ``(ee) to increase access to clean energy for vulnerable and underserved communities; ``(vi) to lead the United States commitment to the Extractive Industries Transparency Initiative; and ``(vii) to coordinate energy security and climate security and other relevant functions within the Department of State undertaken as of the date of the enactment of this paragraph by-- [[Page S2027]] ``(I) the Bureau of Economic and Business Affairs; ``(II) the Bureau of Oceans and International Environmental and Scientific Affairs; and ``(III) other offices within the Department of State.''. (b) Elimination of Authority for Coordinator for International Energy Affairs.--Section 931 of the Energy Independence and Security Act of 2007 (42 U.S.C 17371) is amended-- (1) by striking subsections (a) and (b); and (2) by redesignating subsections (c) and (d) as subsections (a) and (b), respectively. SEC. 402. DEPARTMENT OF STATE PRIMACY FOR ENERGY DIPLOMACY. (a) In General.--The Department of State shall have primacy for all United States diplomatic engagements with regard to international energy affairs. (b) Interagency Coordination.--The Secretary of State, as appropriate, shall coordinate with and use the technical expertise and resources of the Department of Energy, the Environmental Protection Agency, the Department of the Interior, and other relevant Federal agencies and departments in the planning and execution of United States foreign policy goals and objectives related to international energy affairs. SEC. 403. REPORTS ON UNITED STATES PARTICIPATION IN MISSION INNOVATION AND THE CLEAN ENERGY MINISTERIAL. (a) Mission Innovation.--Not later than 90 days after the date of the enactment of this Act, the President shall submit to the appropriate committees of Congress a report that details the scope and nature of United States participation in Mission Innovation, including-- (1) who in the United States Government serves as the lead for Mission Innovation; (2) what objectives the United States has used Mission Innovation to advance; (3) what partnerships the United States has established through Mission Innovation and the date on which any partnerships the United States brokered were announced; (4) how the United States has leveraged Mission Innovation to engage in technology transfer arrangements with foreign governments; (5) how the United States has attracted private sector entities to contribute to and participate in Mission Innovation; (6) the total amount of funding provided by the United States Government to Mission Innovation each year since the establishment of Mission Innovation; and (7) the outline of a strategic engagement plan and objectives for delivering new energy technology innovation outcomes through Mission Innovation. (b) Clean Energy Ministerial.--Not later than 90 days after the date of the enactment of this Act, the Secretary of Energy shall submit to the appropriate committees of Congress a report that details the scope and nature of United States participation in the Clean Energy Ministerial, including-- (1) the number of Clean Energy Ministerial meetings that the Secretary of Energy has participated in; (2) the diplomatic objectives, including with respect to energy technologies and private sector entities, that the United States has aimed to promote within the Clean Energy Ministerial; (3) the consensus initiatives, if any, among the chiefs of party to the Clean Energy Ministerial that the United States objected to, refused to join, or refrained from contributing to the development of; and (4) a plan for restoring United States leadership in using the Clean Energy Ministerial to promote the development and deployment of renewable energy and carbon mitigation technologies from the energy and transportation sectors. (c) Appropriate Committees of Congress.--In this section, the term ``appropriate committees of Congress'' means-- (1) the Committee on Foreign Relations of the Senate; (2) the Committee on Energy and Natural Resources of the Senate; (3) the Committee on Foreign Affairs of the House of Representatives; and (4) the Committee on Energy and Commerce of the House of Representatives. SEC. 404. REDUCED DEFORESTATION. (a) Definitions.--In this section: (1) Administrator.--Except as otherwise expressly provided, the term ``Administrator'' means the Administrator of the United States Agency for International Development. (2) Deforestation.--The term ``deforestation'' means a change in ***land*** use from a ***forest*** (including peatlands) to any other ***land*** use. (3) Developing country.--The term ``developing country'' means a country eligible to receive official development assistance according to the income guidelines of the Development Assistance Committee of the Organisation for Economic Co-operation and Development. (4) ***Emissions*** reductions.--The term ``***emissions*** reductions'' means greenhouse gas ***emissions*** reductions achieved from reduced or avoided deforestation under this section. (5) ***Forest***.-- (A) In general.--The term ``***forest***'' means a terrestrial ecosystem, including wetland ***forests***, comprised of native tree species generated and maintained primarily through natural ecological and evolutionary processes. (B) Exclusion.--The term ``***forest***'' does not include plantations, such as crops of trees planted by humans primarily for the purposes of harvesting. (6) ***Forest*** degradation.--The term ``***forest*** degradation'' is any reduction in the carbon stock of a ***forest*** due to the effects of human ***land***-use activities, including such ***land***-use activities on peatlands. (7) Human rights defender.--The term ``human rights defender'' means an individual, group, or association that peacefully contributes to the effective elimination of all violations of human rights and fundamental freedoms of peoples and individuals, including in relation to mass, flagrant, or systematic such violations, such as those resulting from apartheid, all forms of racial discrimination, colonialism, foreign domination or occupation, aggression or threats to national sovereignty, national unity, or territorial integrity, and the refusal to recognize the right of peoples to self-determination and the right of every people to exercise full sovereignty over its wealth and natural resources. (8) Intact ***forest***.--The term ``intact ***forest***'' means an unbroken expanse of natural ecosystems within the global extent of ***forest*** cover that-- (A) covers an area of at least 500 square kilometers and is at least 10 kilometers in each direction; and (B) contains ***forest*** and non-***forest*** ecosystems minimally influenced by human economic activity and large enough that all native biodiversity, including viable populations of wide-ranging species, could be maintained. (9) Leakage.--The term ``leakage'' means the unexpected loss of anticipated carbon benefits due to the displacement of activities in a project area to areas outside the project, resulting in carbon ***emissions***. (10) Leakage prevention activities.--The term ``leakage prevention activities'' means activities in developing countries that are directed at preserving existing ***forest*** carbon stocks, including ***forested*** wetlands and peatlands that might, absent such activities, be lost through leakage. (11) National deforestation reduction activities.--The term ``national deforestation reduction activities'' means activities in developing countries that reduce a quantity of greenhouse gas ***emissions*** from deforestation that is calculated by measuring actual ***emissions*** against a national deforestation baseline established pursuant to subparagraphs (B) and (C) of subsection (d)(4). (12) Subnational deforestation and ***forest*** degradation reduction activities.--The term ``subnational deforestation and ***forest*** degradation reduction activities'' means activities in developing countries that reduce a quantity of greenhouse gas ***emissions*** from deforestation and ***forest*** degradation that is calculated by measuring actual ***emissions*** using an appropriate baseline, or an alternative determined under subsection (d)(4)(B)(ii), established by the Administrator at the State or provincial level. (b) Purposes.--The purposes of this section are to provide United States assistance to developing countries to develop, implement, and improve actions that reduce deforestation and ***forest*** degradation or conserve or restore ***forest*** ecosystems-- (1) to protect the value of ***forest*** ecosystems with respect to permanent carbon capture and sequestration in a manner in which such value is measurable, reportable, and verifiable; and (2) in a manner that-- (A) is consistent with and enhances the implementation of complementary United States policies that support the good governance of ***forests***, biodiversity conservation, and environmentally sustainable development; (B) takes into consideration the views and participation of local communities and most vulnerable communities and populations (as defined in section 301(a)), particularly ***forest***-dependent communities; and (C) incorporates the right to free prior and informed consent of indigenous peoples. (c) ***Emissions*** Reductions Through Reduced Deforestation.-- (1) Establishment of program.--Not later than 1 year after the date of the enactment of this Act, the Administrator, in consultation with the Administrator of the Environmental Protection Agency, the Secretary of ***Agriculture***, and the head of any other appropriate agency, shall establish a program to provide assistance to reduce greenhouse gas ***emissions*** from deforestation in developing countries, in accordance with this section. (2) Objectives.--The objectives of the program established under paragraph (1) shall be-- (A) to achieve-- (i) ***emissions*** reductions of at least 7,000,000,000 tons of carbon dioxide equivalent in 2025; (ii) cumulative ***emissions*** reductions of at least 11,000,000,000 tons of carbon dioxide equivalent by December 31, 2030; and (iii) additional ***emissions*** reductions in subsequent years; (B) to build capacity to reduce deforestation at a national level in developing countries experiencing deforestation, which may include-- (i) preparing developing countries to participate in international markets for international offset credits for reduced ***emissions*** from deforestation; and [[Page S2028]] (ii) supporting the development of domestic policy frameworks to ensure effective, efficient, and equitable benefit-sharing of the proceeds of such credits issued by national and subnational governments; (C) to preserve ***forest*** carbon stocks in countries where such ***forest*** carbon may be vulnerable to leakage, particularly in developing countries with largely intact native ***forests***; (D) to build the scientific knowledge and institutional capacity to help developing countries-- (i) monitor the effects of climate change on their ***forests***; (ii) develop and implement strategies to conserve their ***forests***; and (iii) support ***forest***-dependent communities adapt to climate change; and (E) to the extent practicable, to reduce deforestation in ways that reduce the vulnerability and increase the resilience to climate effects for ***forests*** and ***forest***- dependent communities. (d) Requirements for International Deforestation Reduction Program.-- (1) Eligible countries.-- (A) In general.--Except as provided in subparagraph (B), the Administrator may provide assistance under this section only with respect to a developing country that-- (i) the Administrator, in consultation with the Administrator of the Environmental Protection Agency and the Secretary of ***Agriculture***, determines-- (I) is experiencing deforestation or ***forest*** degradation; or (II) has standing ***forest*** carbon stocks that may be at risk of deforestation or degradation; (ii) has the legal regimes, standards, and safeguards to ensure that the rights and interests of indigenous peoples and ***forest***-dependent communities are protected in accordance with the standards established under paragraph (4); and (iii) has entered into a bilateral or multilateral agreement or arrangement with the United States, or is part of an international program supported by the United States to prevent deforestation, that establishes the conditions of participation by the country in the program established under this section, which shall include an agreement to meet the standards established under paragraph (4) for the activities to which such standards apply. (B) Exception.--A developing country that does not meet the requirement described in paragraph (1)(A)(ii) may receive assistance under this section for the purpose of building capacity to meet such requirement. (2) Authorized activities.--Subject to the requirements of this section, in providing assistance under this section, the Administrator may support activities to achieve the objectives described in subsection (c)(2), including activities such as-- (A) national deforestation reduction activities; (B) subnational deforestation and ***forest*** degradation reduction activities, including pilot activities, policies, and measures that reduce greenhouse gas ***emissions*** and are subject to significant uncertainty; (C) activities to measure, monitor, and verify deforestation, avoided deforestation, and rates of deforestation, including, if applicable, spatially explicit ***land*** use plans that identify intact and primary ***forest*** areas and managed ***forest*** areas; (D) leakage prevention activities; (E) the development and implementation of measurement, monitoring, reporting, and verification capacities and governance structures, including legal regimes, standards, processes, and safeguards, as established under paragraph (4), to enable a country to quantify ***emissions*** reductions for purposes of purchasing or trading subnational ***emissions*** reduction credits in carbon markets; (F) the identification of, and actions to address, the drivers of ***land*** use ***emissions***; (G) programs that would exclude from the United States illegally harvested timber or products made from illegally harvested timber, in accordance with and consistent with the objectives of the Lacey Act Amendments of 1981 (16 U.S.C 3371 et seq.); (H) the development and strengthening of governance capacities to reduce deforestation and other ***land*** use ***emissions*** and to combat illegal logging and associated trade, including the development of systems for independent monitoring of the efficacy of ***forest*** law enforcement and increased enforcement cooperation, including joint efforts with Federal agencies, to enforce the Lacey Act Amendments of 1981 (16 U.S.C 3371 et seq.); (I) the provision of incentives for policy reforms to achieve the objectives described in subsection (c)(2); (J) the development of pilot projects-- (i) to examine where mitigation and adaptation activities in ***forest*** ecosystems coincide; and (ii) to explore means for enhancing the resilience of ***forest*** ecosystems and ***forest***-dependent communities; (K) the promotion of mechanisms to deliver resources for local action and to address the needs, rights, interests, and participation of local and indigenous communities; and (L) monitoring and evaluation of the results of the activities conducted under this section. (3) Mechanisms.--The Administrator shall apply the administrative authorities under the Foreign Assistance Act of 1961 (22 U.S.C 2151 et seq.), except to the extent inconsistent with the provisions of this section, to the same extent and in the same manner as such authorities apply to the implementation of such Act in order to support activities to achieve the objectives described in subsection (c)(2) by-- (A) developing and implementing programs and project-level activities that achieve such objectives; (B) to the extent practicable, giving priority in any review process to activities under paragraph (2)(A); and (C) as appropriate, considering multi-year funding arrangements in carrying out the purposes of this section. (4) Standards.--The Administrator, in consultation with the Administrator of the Environmental Protection Agency and the Secretary of ***Agriculture***, shall establish program standards that-- (A) ensure that ***emissions*** reductions achieved through supported activities-- (i) are additional, measurable, verifiable, and monitored; (ii) account for leakage, uncertainty, and permanence; and (iii) at a minimum, meet the standards established under the ***emissions*** unit criteria of the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) developed by the International Civil Aviation Organization (ICAO); (B) require-- (i) the establishment of a national deforestation baseline for each country with national deforestation reduction activities that is used to account for reductions achieved from such activities; or (ii) if a developing country has established policies and taken measures to reduce ***emissions*** from disturbed peatlands, deforestation, or ***forest*** degradation, but has not established a national baseline, the provision of a credible, transparent, accurate, and conservative alternative for quantifying ***emissions***; (C) provide that each national deforestation baseline established under subparagraph (B)(i)-- (i) is national, or subnational on an interim basis, in scope; and (ii) is consistent with nationally appropriate mitigation commitments or actions with respect to deforestation, taking into consideration-- (I) the average annual historical deforestation rates of the country during a period of at least 5 years; and (II) the applicable drivers of deforestation and other factors to ensure additionality; (iii) establishes a trajectory that would result in zero net deforestation by not later than 20 years after the date on which the baseline is established; (iv) is adjusted over time to account for changing national circumstances; and (v) is designed to account for all significant sources of greenhouse gas ***emissions*** from deforestation in the country; (D) with respect to assistance provided for activities described in subparagraph (A) or (B) of paragraph (2), require ***emissions*** reductions to be achieved and verified before the provision of any assistance under this section; (E) with respect to accounting for subnational deforestation and ***forest*** degradation reduction activities that lack the standardized or precise measurement and monitoring techniques needed for a full accounting of changes in ***emissions*** or baselines, or are subject to other sources of uncertainty, apply a conservative discount factor to reflect the uncertainty regarding the levels of reductions achieved; (F) ensure that activities under this section are designed, carried out, and managed-- (i) using ***forest*** management practices that, in an open and transparent process-- (I) improve the livelihoods of ***forest*** communities in a manner that promotes the maintenance of intact ***forests***, protects associated biodiversity, and restores native ***forest*** species and ecosystems while avoiding the introduction of invasive nonnative species; (II) maintain natural biodiversity, resilience, and carbon storage capacity of ***forests***; (III) to the extent practicable, do not adversely affect the permanence of ***forest*** carbon stocks or ***emissions*** reductions; (IV) include broad stakeholder participation and the free prior and informed consent of affected indigenous peoples; and (V) take into account the needs and interests of local communities, ***forest***-dependent communities, indigenous peoples, and vulnerable social groups; (ii) in consultation with, and with the full and effective participation of, local communities, indigenous peoples, and ***forest***-dependent communities in affected areas, as partners and primary stakeholders, before and during the design, planning, implementation, monitoring, and evaluation of activities; and (iii) with equitable sharing of profits and benefits derived from the activities with local communities, indigenous peoples, and ***forest***-dependent communities; and (G) with respect to assistance for all activities under this section, seek to ensure the establishment and enforcement of legal regimes, standards, processes, and safeguards by the country in which the activities are conducted, as a condition of such assistance or as a proposed activity for which such assistance may be provided, which-- [[Page S2029]] (i) protect the rights and interests of local communities, indigenous peoples, ***forest***-dependent communities, human rights defenders, and vulnerable social groups; and (ii) promote consultations with local communities, indigenous peoples, and ***forest***-dependent communities in affected areas, as partners and primary stakeholders, before and during the design, planning, implementation, monitoring, and evaluation of activities under this section; and (iii) ensure equitable sharing of profits and benefits from incentives for ***emissions*** reductions or leakage prevention with local communities, indigenous peoples, and ***forest***- dependent communities. (5) Scope.-- (A) Reduced ***emissions***.--The Administrator shall include reduced ***emissions*** from ***forest*** degradation and disturbance of peatlands within the scope of activities under this section. (B) Expansion of authorized activities.--If the Administrator determines, in consultation with the Administrator of the Environmental Protection Agency and the Secretary of ***Agriculture***, that sufficient methodologies and technical capacities exist to measure, monitor, and account for the ***emissions*** referred to in subparagraph (A), the Administrator may expand the authorized activities under this section, as appropriate, to include reduced soil carbon- derived ***emissions*** associated with deforestation and degradation of ***forested*** wetlands and peatlands, consistent with a comprehensive approach to maintaining and enhancing ***forests***, increasing climate resiliency, reducing ***emissions***, and increasing ***removals*** of greenhouse gases. (6) Accounting.--The Administrator shall use a publicly accessible registry to account for and register the ***emissions*** reductions achieved through assistance provided under this section each year, after appropriately discounting for uncertainty and other relevant factors as required by the standards established under paragraph (4). (7) International deforestation reduction program insurance account for noncompletion or reversal.--In furtherance of the objectives described in subsection (c)(2), the Administrator shall develop and implement a program that-- (A) addresses noncompletion or reversal with respect to any greenhouse gas ***emissions*** that were not, or are no longer, sequestered; and (B) may include a mechanism to hold in reserve a portion of the amount allocated for projects to support the program. (8) Extension of assistance.-- (A) In general.--The Administrator may extend, for an additional 5 years, the period during which assistance is authorized for activities supported by assistance under this section, if the Administrator determines that-- (i) the country in which the activities are conducted is making substantial progress toward adopting and implementing a program to achieve reductions in deforestation measured against a national baseline; (ii) the greenhouse gas ***emissions*** reductions achieved as a result of the activities are not resulting in significant leakage; (iii) such greenhouse gas ***emissions*** reductions are being appropriately discounted to account for any leakage that is occurring; and (iv) such extension would further advance or ensure achievement of the objectives of the activities. (B) Assistance for subnational deforestation and ***forest*** degradation reduction activities.-- (i) In general.--If the Administrator extends the period during which assistance is authorized for activities under subparagraph (A), the Administrator shall determine, based on the criteria specified that subparagraph, whether such assistance should include assistance for subnational deforestation and ***forest*** degradation reduction activities. (ii) Continued assistance.--The Administrator may extend the period during which assistance is authorized for subnational deforestation and ***forest*** degradation reduction activities beyond the 5-year period described in subparagraph (A) in order to further the objectives described in subparagraph (B) or (C) of subsection (c)(2). (9) Coordination with foreign assistance.--Subject to the direction of the President, the Administrator shall, to the extent practicable and consistent with the objectives described in subsection (c)(2), seek to align activities under this section with broader development, poverty alleviation, or natural resource management objectives and initiatives in countries receiving assistance under this section. (10) Assistance as supplement.--The provision of assistance for activities under this section shall be used to supplement, and not to supplant, any other Federal, State, or local support available to carry out activities under this section. (11) Funding limitation.--Of the funds made available to carry out this section in any fiscal year, not more than 7 percent may be used for the administrative expenses of the United States Agency for International Development in support of activities described in paragraph (2). Such amount shall be in addition to other amounts otherwise available for such purposes. (12) Indonesia.--Not less than 10 percent of the funds made available in any fiscal year to carry out this section shall be used for activities described in paragraph (2) in Indonesia. (e) Legal Effect.-- (1) In general.--Nothing in this section may be construed to supersede, limit, or otherwise affect any restriction imposed by Federal law (including regulations) on any interaction between an entity located in the United States and an entity located in a foreign country. (2) Role of the secretary of state.--Nothing in this section may be construed to affect the role of the Secretary of State or the responsibilities of the Secretary under section 622(c) of the Foreign Assistance Act of 1961 (22 U.S.C 2382(c)). (f) International Financial Institutions.--The President shall direct the United States representatives to the World Bank, the International Monetary Fund, and other international financial institutions (as defined in section 1701(c) of the International Financial Institutions Act (22 U.S.C 262r(c)) to prioritize efforts to combat deforestation. TITLE V--BILATERAL AND REGIONAL MULTILATERAL CLIMATE DIPLOMACY AND COOPERATION SEC. 501. NORTH AMERICAN STRATEGY. (a) In General.--The President shall develop a strategy to seek opportunities for trilateral cooperation between the United States, Mexico, and Canada-- (1) to support increased ambition on reducing greenhouse gas ***emissions*** among these countries; and (2) to advance collaboration on the development and promotion of shared climate action goals and interests within multilateral bodies and conferences, including aligning, to the extent possible, the voices, votes, and influence, consistent with the broad foreign policy goals of the United States, to address issues related to climate change and clean energy development. (b) Elements and Priorities.--The strategy described in subsection (a) shall include efforts-- (1) to ensure that potential projects and investments pursued under the United States-Mexico-Canada Agreement-- (A) are compatible with long-term climate goals and the collective ***targets*** established under the Paris Agreement; and (B) meet all environmental and social responsibility standards required under the USMCA; (2) to explore shared and common interests and cooperative actions to promote clean energy development, climate security, and climate change mitigation strategies within institutions (such as the UNFCCC, the Montreal Protocol, the Green Climate Fund, the Group of Twenty and the United Nations) with programs, initiatives and actions to address the climate crisis that may include-- (A) providing support in developing mid-century low-carbon strategies; (B) extending coal finance restrictions to coal mining operations; and (C) strengthening and expanding carbon pricing by-- (i) considering the cost of carbon in long-term decision making; (ii) supporting the development of national or subnational systems; (iii) sharing technical expertise; and (iv) making efforts to align pricing instruments where feasible; (3) to commit to a methane reduction goal and cooperate to reduce black carbon and to recommit to the formal agreement reached at the June 2016 North American Leaders Summit in Ottawa to reduce methane ***emissions*** from the oil and gas sector by 40 to 45 percent by 2025, and to work to develop a new, more ambitious ***target*** for 2030; (4) develop and implement a North American strategy for sustainable transportation-- (A) to encourage State and provincial leaders to negotiate interstate and interprovincial sustainable transportation agreements between Mexican, American, and Canadian jurisdictions; (B) to expand the West Coast Electric Highway between Canada, the United States, and Mexico; and (C) to work with automakers to standardize charging infrastructure; (5) develop and implement coordinated ***forest*** and ***land*** use strategies to further contribute to ***emissions*** mitigation through the adoption of practices and policies that increase carbon sequestration in new and existing ***forests*** and reduce ***emissions*** from ***forest*** conversion to other ***land*** uses; (6) strengthen resilience and equity among low-income and indigenous communities; and (7) engage international partners in an existing multilateral forum or, if necessary, establish a new multilateral forum to improve global cooperation by-- (A) encouraging the adoption of an ***emissions*** reduction ***target*** by the International Maritime Organization; and (B) collaborating with the International Civil Aviation Organization to establish a market-based measure to reduce aviation ***emissions***. SEC. 502. ACCOUNTABILITY AND COOPERATION WITH CHINA. It is the sense of Congress that-- (1) successful mitigation of global greenhouse gas ***emissions*** to sufficiently avoid the worst forecasted effects of climate change requires global cooperation and coordination of efforts; (2) all other countries look towards the United States and China, as the world's largest emitters and largest economies, for leadership by example to effectively mitigate [[Page S2030]] greenhouse gas ***emissions***, develop and deploy energy generation technologies, and integrate sustainable adaptation solutions to the inevitable effects of climate change; (3) given the volume of China's greenhouse gas ***emissions*** and the scientific imperative to swiftly reduce global greenhouse gas ***emissions*** to net-zero ***emissions*** around 2050, China should-- (A) revise its long-term pledge; (B) seek to immediately peak its ***emissions***; (C) begin reducing its greenhouse gas ***emissions*** significantly to meet a more ambitious long-term 2050 reductions ***target***; and (D) update its nationally determined contribution along a trajectory that aligns with achieving a more ambitious net- zero by 2050 ***emissions*** ***target***; (4) it is in the United States' national interest to prioritize climate change in its bilateral engagement with China, as global climate risks cannot be mitigated without a significant reduction in Chinese domestic and overseas ***emissions***; (5) the United States and China, to the extent practicable, should coordinate on making and delivering ambitious pledges to reduce greenhouse gas ***emissions***, with aspirations towards achieving net zero greenhouse gas ***emissions*** by 2050; (6) the United States and its allies should work together, using diplomatic and economic tools, to hold China accountable for any failure by China-- (A) to increase ambition in its 2030 nationally determined contribution, in line with net zero greenhouse gas ***emissions*** by 2050 before the 26th Conference of the Parties to the UNFCCC scheduled for November 2021 and meeting a more ambitious nationally determined contribution; (B) to work faithfully to uphold the principles, goals, and rules of the Paris Agreement; (C) to avoid and prohibit efforts to undermine or devolve the Paris Agreement's rule or underlying framework, particularly within areas of accountability transparency, and shared responsibility among all parties; (D) to eliminate greenhouse gas intensive projects from China's Belt and Road Initiative and other overseas investments, including-- (i) working with allies and partners of the United States to eliminate support for coal power production projects in China's Belt and Road Initiative; (ii) providing financing and project support for cleaner and less risky alternatives; and (iii) undertaking ``parallel initiatives'' to enhance capacity building programs and overseas sustainable investment criteria, including in areas such as integrated energy planning, power sector reform, just transition, distributed generation, procurement, transparency, and standards to support low-***emissions*** growth in developing countries; and (E) to phase out existing coal power plants and reduce net coal power production; (7) the United States should pursue confidence-building opportunities for the United States and China to undertake ``parallel initiatives'' on clean energy research, development, finance, and deployment, including through economic and stimulus measures with clear, mutually agreed upon rules and policies to protect intellectual property, ensure equitable, nonpunitive provision of support, and verify implementation, which would provide catalytic progress towards delivering a global clean energy transformation that benefits all people; and (8) the United States should pursue cooperative initiatives to shift toward the import and consummation of ***forest*** and ***agricultural*** commodities that are produced in a manner that does not contribute to deforestation. SEC. 503. UNITED STATES AND EUROPEAN UNION COOPERATION ON CLIMATE FINANCE FOR DEVELOPING COUNTRIES. (a) Purpose.--The purpose of this section is-- (1) to restore the historic alliance between the United States and countries of the European Union on climate action; and (2) to renew the United States' commitment to advancing global cooperation on addressing climate change and achieving the goals of the Paris Agreement. (b) Sense of Congress Regarding the United States-European Union Security and Development Dialogue.--It is the sense of Congress that the United States should restart the United States-European Union Security and Development Dialogue to focus specifically on climate action, climate security, and clean energy cooperation, including-- (1) partnering and formulating strategies to counter efforts to weaken or change critical elements of the implementation of the Paris Agreement that would disadvantage the United States or the European Union; (2) building coalitions of like-minded parties committed to achieving large reductions in greenhouse gas ***emissions*** under the Paris Agreement and putting pressure on all parties to do the same; (3) coordination on joint strategies to promote climate action by the People's Republic of China, and deter Chinese domestic and international investment in high carbon infrastructure; (4) finding opportunities to engage and facilitate private sector collaboration regarding clean energy and innovations on greenhouse gas ***emissions*** reductions; (5) exploring the creation of United States-European Union clean energy and climate adaptation, development, and finance mechanisms to support and leverage private sector investment in projects and activities to improve developing countries' resilience capacities, ability to adapt and thrive in the face of the effects of climate change and clean energy development; (6) scientific research, modeling, forecasting, and data collaboration to improve global understanding and preparation for the compounding effects of climate change; and (7) intelligence sharing. (c) Development Finance Cooperation.-- (1) In general.--The President should seek opportunities to partner with European Development Finance Institutions to develop financing tools based on shared development finance criteria and mechanisms to support investments in developing countries that support low carbon economic development and promote climate change resiliency and adaptation (2) Partnership fund.--The Chief Executive Officer of the United States International Development Finance Corporation should partner with the European Bank for Reconstruction and Development to create a fund or multilateral financing mechanism to support clean energy development and climate change adaptation and resilience activities in developing countries. (3) Response to the people's republic of china's belt and road initiative.--The President shall work with European counterparts to establish a formal United States-European Commission Working Group to develop a comprehensive strategy to respond to the Belt and Road Initiative established by the Government of the People's Republic of China. United States participants in this proposed working group shall seek to integrate existing efforts into the strategy, including-- (A) the European Union Strategy on Connecting Europe and Asia; (B) the Three Seas Initiative; (C) the Blue Dot Network among the United States, Japan, and Australia; (D) a European Union-Japan initiative that has leveraged $65,000,000,000 for infrastructure projects and emphasizes transparency standards; and (E) efforts to address the Government of the People's Republic of China's use of the United Nations to advance the Belt and Road Initiative, including the proliferation of memoranda of understanding between the People's Republic of China and United Nations funds and programs on the implementation of the Belt and Road Initiative. (4) Co-financing of infrastructure projects.-- (A) Authorization of appropriations.--Subject to subparagraph (B), there are authorized to be appropriated such sums as may be necessary to co-finance infrastructure projects that could otherwise be included within China's Belt and Road Initiative. (B) Conditions.--Amounts appropriated pursuant to subparagraph (A) may not be expended unless-- (i) the United States can leverage existing and future projects that have entered into contracts with the Belt and Road Initiative to further promote transparency and debt sustainability; and (ii) the projects to be financed-- (I) promote the public good; (II) will not promote the use of fossil fuels; and (III) will have substantially lower greenhouse gas intensity than the proposed Belt and Road Initiative alternative. (d) Support for Eastern European Democracy Act.--Section 2 of the Support for Eastern European Democracy Act (22 U.S.C 5401) is amended-- (1) in subsection (b)(2)-- (A) in subparagraph (H), by striking ``and'' at the end; (B) in subparagraph (I), by adding ``and'' at the end; and (C) by adding at the end the following: ``(J) helping workers and communities in countries most dependent on fossil fuel energy that may be vulnerable to socioeconomic changes due to the European Union's transition to net zero greenhouse gas ***emissions***.''; and (2) in subsection (c), by adding at the end the following: ``(26) Just transition assistance.--Assistance to support workers and communities in countries most dependent on fossil fuel energy and most vulnerable to socioeconomic changes due to the European Union's transition to net zero greenhouse gas ***emissions***.''. SEC. 504. SENSE OF CONGRESS ON CLEAN ENERGY COOPERATION WITH INDIA. It is the sense of Congress that-- (1) the United States should support efforts to strengthen India's resilience capacities that ensure people, households, communities, institutions, and systems can assess, anticipate, prevent, adapt to, cope with, and recover from shocks and stresses associated with the effects of climate change; (2) the United States, through the Bureau of Energy Resources of the Department of State, the United States Agency for International Development, the United States International Development Finance Corporation, the Department of Energy, the Export-Import Bank of the United States, and the International Trade Administration, should encourage private sector investment in, and financing for, the development and deployment of clean energy and climate mitigation technologies in India; [[Page S2031]] (3) robust cooperation between the United States and India to develop and deploy clean energy technologies, including private sector cooperation, should be a top bilateral energy diplomacy priority and the top priority in the countries' energy diplomacy and should include-- (A) clean energy; (B) electric vehicles and expansive charging station networks; (C) next-generation refrigeration equipment and refrigerants; and (D) other technologies and chemicals that are in the interest of United States industry leaders in the refrigeration and chemical coolant industries that are compliant with the Kigali Amendment to the Montreal Protocol; (4) the collaboration between the United States and India on the development and deployment of clean energy technologies has resulted in innovative new technologies that have helped significantly lower the carbon ***emissions*** of the power sector in India; and (5) since demand for energy in India will increase with the expansion of the economy and middle class of India, it is in the interest of United States national security and global security for the United States to support India in growing the energy sector of India in environmentally and socially responsible ways that mitigate greenhouse gas ***emissions*** and improve the climate security of India. SEC. 505. POWER AFRICA. The Electrify Africa Act of 2015 (Public Law 114-121; 22 U.S.C 2293 note) is amended-- (1) in section 3-- (A) in paragraph (2), by inserting ``mitigate and lower carbon ***emissions*** from energy production,'' after ``development,''; (B) in paragraph (7), by adding ``and'' at the end; (C) by striking paragraph (8); and (D) by redesignating paragraph (9) as paragraph (8); (2) in section 4-- (A) in subsection (a)-- (i) in paragraph (1), by striking ``an appropriate mix of power solutions to provide access to sufficient reliable, affordable, and sustainable power in order to reduce poverty'' and inserting ``power solutions to provide access to sufficient, reliable, affordable, and sustainable power in order to reduce poverty and energy sector carbon ***emissions***''; and (ii) in paragraph (2), by striking ``and technological'' and inserting ``, advances a country's mitigation commitments (or conditional mitigation commitments) in accordance with a country's nationally determined contribution, and supports technological''; (B) in subsection (b)-- (i) in paragraph (2)-- (I) in subparagraph (F), by striking ``and'' at the end; (II) in subparagraph (G), by striking the period at the end and inserting ``; and''; and (III) by adding at the end the following: ``(H) reduce carbon ***emissions*** from the energy sector.''; (ii) in paragraph (4), by striking ``the use of a broad power mix, including fossil fuel and''; (3) in section 5-- (A) in subsection (a)-- (i) in paragraph (6), by striking ``and'' at the end; (ii) by redesignating paragraph (7) as paragraph (8); and (iii) by inserting after paragraph (6) the following: ``(7) deploying renewable energy; and''; and (B) by amending subsection (d) to read as follows: ``(d) Authorization of Appropriations.--There is authorized to be appropriated $750,000,000 for each of the fiscal years 2021, 2022, 2023, 2024, and 2025 to provide assistance in accordance with subsection (a) and section 3.''; (4) in section 7(a)-- (A) in the matter preceding paragraph (1), by inserting ``and every 2 years thereafter,'' after ``Act,''; and (B) in paragraph (1), by striking ``power generation'' each place such term appears and inserting ``renewable energy generation''; and (5) by adding at the end the following: ``SEC. 8. COORDINATOR FOR POWER AFRICA. ``(a) In General.--Not later than 120 days after the date of the enactment of the United States Climate Leadership in International Mitigation, Adaptation, and Technology Enhancement Act of 2021, the Administrator for the United States Agency for International Development, under the direction of the Secretary of State, shall appoint a Coordinator for Power Africa, who shall serve in the Bureau Economic Growth, Education, and the Environment of the United States Agency for International Development. ``(b) Duties.--The Coordinator for Power Africa shall-- ``(1) be primarily located at a mission in sub-Saharan Africa; ``(2) lead-- ``(A) the execution of the Power Africa Initiative in accordance with the purpose and policies set forth in sections 2 and 3; and ``(B) the development and execution of the strategy established under section 4; ``(3) coordinate the Interagency Working Group established under section 4(c); ``(4) manage the funding appropriated for the Power Africa Initiative by Congress; and ``(5) execute the directives described in sections 5 and 6.''. SEC. 506. CARIBBEAN ENERGY INITIATIVE. (a) Findings.--Congress makes the following findings: (1) The countries of the Caribbean are heavily reliant upon imported oil to provide for approximately 90 percent of their energy production. (2) The level of dependence is even higher including-- (A) Jamaica, which relies on oil for 95.9 percent of its electricity; (B) Barbados, which relies on oil for 96 percent of its electricity; (C) The Virgin Islands, which relies on oil for nearly 100 percent of its electricity; and (D) St. Lucia, which relies on oil for 100 percent of its electricity. (3) Overreliance on imported fossil fuels has had a detrimental effect on economic development, growth, and competitiveness in the Caribbean. (4) Since 1970, more than 80 percent of Caribbean coral reefs have been lost due to coastal development and pollution. Soot particulates and climate change caused by burning fossil fuels have seriously damaged coral reefs, which are a significant source of tourism dollars, fishing, biodiversity, and natural beauty. (5) Air pollution caused by burning oil for electricity-- (A) has serious health impacts in the form of higher rates of asthma and other lung ailments; and (B) can also exacerbate climate change. (6) The Caribbean region is particularly vulnerable to sea level rise and stronger storms (7) Between 2005 and 2018, the dependence of the countries of the Caribbean on oil was perpetuated by the Venezuelan-led Petrocaribe oil alliance, which-- (A) offered preferential terms for oil sales; and (B) supplies some countries with up to 40 percent of their energy production needs. (8) The ongoing domestic economic crisis and political turmoil in Venezuela has forced the Government of Venezuela to retract its commitments to the Petrocaribe oil alliance and step away as a regional power. Only Cuba still receives preferential Petrocaribe pricing on fuel exports from Venezuela, while other Petrocaribe member countries are experiencing a destabilized flow of oil. (9) China has spent more than $244,000,000,000 on energy projects worldwide since 2000, 25 percent of which was spent in Latin America and the Caribbean. Although the majority of this spending was for oil, gas, and coal, China has also been the largest investor in clean energy globally for almost a decade. (10) The World Bank estimates that the Caribbean will need $12,000,000,000 in power investments through 2035. (11) Renewable energy technology costs have decreased dramatically in recent years, offering a more viable economic alternative for energy production. Solar energy prices have fallen by 80 percent since 2008, causing significant market growth, and according to data released by the International Renewable Energy Agency, 1/3 of global power capacity is based in renewable energy. (12) In 2016, the International Monetary Fund estimated that transportation accounted for 36 percent of the total primary energy consumed in the Caribbean subregion. (13) According to the United Nations Environment Programme, Latin America and the Caribbean could achieve annual savings of $621,000,000,000 and a reduction of 1,100,000,000 tons of CO2 by 2050 if the region's energy and transport sectors reach net zero ***emissions***. (14) The Caribbean has an abundance of onshore and offshore resources needed for renewable energy, including sun, wind, geothermal, and some hydropower production capacity. (15) The United States Government is deeply engaged in providing technical and policy assistance to countries of the Caribbean on energy issues through-- (A) the Energy and Climate Partnership of the Americas; (B) Connecting the Americas 2022; and (C) bilateral assistance programs. (16) On February 19, 2014, at the North American Leaders' Summit, President Barack Obama, Prime Minister Stephen Harper of Canada, and President Enrique Pena Nieto of Mexico reaffirmed their commitment to bring affordable, reliable, and increasingly renewable power to the Caribbean, while opening wider markets for clean energy and green technology. (17) On June 19, 2015, President Barack Obama announced the Caribbean Energy Security Initiative, which would partner with individual countries-- (A) to transform its energy sector; (B) to work to increase access to finance, good governance, and diversification; and (C) to maximize the impact of existing donor effects. (18) On May 4, 2016, at the United States-Caribbean-Central American Energy Summit, the energy security task force formally launched the Caribbean Sustainable Energy Roadmap and Strategy (C-SERMS) as a mechanism to manage regional coordination and action on energy security and agreed to expand the regional market and transmission system. (19) The United States has an important opportunity-- (A) to deepen this engagement; (B) to work as a partner with Caribbean countries on a more regional and coordinated basis; (C) to help ease the region's dependence on imported oil; and [[Page S2032]] (D) to promote affordable alternative sources of energy. (b) Definitions.--In this section: (1) Caribbean countries.--The term ``Caribbean countries'' means countries in the Caribbean region, but does not including Cuba or Venezuela. (2) Caribbean governments.--The term ``Caribbean governments'' means the national governments of the Caribbean countries. (c) Policy.--It is the policy of the United States to help Caribbean countries-- (1) achieve greater energy security and improve domestic energy resource mobilization; (2) lower their dependence on imported fuels; (3) eliminate the use of diesel, heavy fuel oil, other petroleum products, and coal for the generation of electricity; (4) increase production of renewable energy; and (5) meet the greenhouse gas mitigation goals of their national determined contributions to the Paris Agreement. (d) Strategy.-- (1) Submission.--Not later than 120 days after the date of the enactment of this Act, the Secretary of State shall submit a multi-year strategy to the Committee on Foreign Relations of the Senate and the Committee on Foreign Affairs of the House of Representatives that describes how the Department of State will promote regional cooperation with Caribbean countries-- (A) to lower dependence on imported fuels, grow domestic clean energy production in the region, strengthen regional energy security, and lower energy sector greenhouse gas ***emissions***; (B) to decrease dependence on oil in the transportation sector; (C) to increase energy efficiency, energy conservation, and investment in alternatives to imported fuels; (D) to improve grid reliability and modernize electricity transmission networks; (E) to advance deployment of innovative solutions to expand community and individuals' access to electricity; (F) to help reform energy markets to encourage good regulatory governance and to promote a climate of private sector investment; and (G) to mitigate greenhouse gas ***emissions*** from the energy and transportation sector. (2) Elements.--The strategy required under subsection (a) shall include-- (A) a thorough review and inventory of United States Government activities that are being carried out bilaterally, regionally, and in coordination with multilateral institutions-- (i) to promote energy and climate security in the Caribbean region; and (ii) to reduce the region's reliance on oil for electricity generation; (B) opportunities for marshaling regional cooperation-- (i) to overcome market barriers resulting from the small size of Caribbean energy markets; (ii) to address the high transportation and infrastructure costs faced by Caribbean countries; (iii) to ensure greater donor coordination between governments, multilateral institutions, multilateral banks, and private investors; and (iv) to expand regional financing opportunities to allow for lower cost energy entrepreneurship; (C) measures to ensure that each Caribbean government has-- (i) an independent utility regulator or equivalent; (ii) affordable access by third party investors to its electrical grid with minimal regulatory interference; (iii) effective energy efficiency and energy conservation; (iv) programs to address technical and nontechnical issues; (v) a plan to eliminate major market distortions; (vi) cost-reflective tariffs; and (vii) no tariffs or other taxes on clean energy solutions; and (D) recommendations for how United States policy, technical, and economic assistance can be used in the Caribbean region-- (i) to advance renewable energy development and the incorporation of renewable technologies into existing energy grids and the development and deployment of micro-grids where appropriate and feasible to boost energy security and reliability, particularly to underserved communities; (ii) to increase the generation of clean energy sufficiently to replace and allow for the retirement of obsolete fossil fuel energy generation units in Caribbean countries; (iii) to create regional financing opportunities to allow for lower cost energy entrepreneurship; (iv) to deploy transaction advisors in the region to help attract private investment and break down any market or regulatory barriers; and (v) to establish a mechanism for each host government to have access to independent legal advice-- (I) to speed the development of energy-related contracts; and (II) to better protect the interests of Caribbean governments and citizens. (3) Consultation.--In devising the strategy under this subsection, the Secretary of State shall work with the Secretary of Energy and shall consult with-- (A) the Secretary of the Interior; (B) the Secretary of Commerce; (C) the Secretary of the Treasury; (D) the Board of Directors of the Export-Import Bank of the United States; (E) the Board of Directors of the Development Finance Corporation; (F) the Administrator of the United States Agency for International Development; (G) the Caribbean governments; (H) the Inter-American Development Bank; (I) the World Bank Group; and (J) the Caribbean Electric Utility Services Corporation. SEC. 507. SENSE OF CONGRESS ON CONSERVATION OF THE AMAZON RIVER BASIN. (a) Findings.--Congress makes the following findings: (1) The Amazon River basin and the Amazon rainforest, often referred to as Amazonia-- (A) covers more than 2,670,000 square miles in Bolivia, Brazil, Colombia, Ecuador, French Guiana, Guyana, Peru, Suriname, and Venezuela; and (B) is home to more species of plants and animals than any other terrestrial ecosystem on the planet, housing nearly 30 percent of the world's species, which apart from their intrinsic value as living organisms, have potential value in the form of medicine, research, textiles, food, and other products for the region's population. (2) Tens of millions of people depend on services afforded by the Amazon ***forest***, including-- (A) the use of rivers for transportation; (B) reliance on logging and collection of non-timber ***forest*** products as major industries for employment; and (C) the cultivation of nutrients in floodplain areas for ***agriculture*** and areas for which the Amazon Basin is a watershed. (3) The Amazon River has long been recognized as an important repository of biodiversity and natural resources, not only for local peoples and indigenous communities, but also for the rest of the world due to-- (A) its fresh water, which provides countless services for humans in the form of water ***agriculture***, transportation, and food and serves as an important habitat for countless species, including over 2,500 species of fish and river dolphins; (B) its medicinal plants, which are continually used by local peoples to treat traditional diseases, including malaria (one of the most lethal diseases in the tropics), and which constitute 70 percent of the plant species in the world found to have anti-cancer properties; (C) its important role as an oxygen source, producing 20 percent of the Earth's oxygen and earning the Amazon ***forest*** the nickname ``lungs of our Earth'' for its role in taking in enormous amounts of the carbon dioxide emitted by human activity and the burning of fossil fuels and replacing it with the oxygen we breathe through the process of photosynthesis; (D) its food supply, which is associated with rainforests, including coffee, rice, chocolate, tomatoes, potatoes, bananas, black pepper, pineapples, and corn; (E) its role in climate control caused by its exchange of enormous quantities of water and energy with the surrounding atmosphere, which is estimated as being responsible for creating 75 percent of its own rainfall, which feeds the nearby rivers through evapotranspiration before flowing directly into the ocean and influencing the currents that impact the climate; and (F) ecotourism, which produces annual profits of more than $11,600,000, which benefits the local economy, enhances the quality of living through securing more jobs, and educates global citizens regarding the importance of maintaining the world's natural spaces. (4) Public opinion research, conducted by the Brazilian polling firm Datafolha in 2020, found that-- (A) 87 percent of the respondents felt strongly that conservation of the Amazon is very important; (B) 73 percent of the respondents are concerned with the rate of increased deforestation in the Amazon basin; (C) 77 percent of the respondents believed strongly that the conduct and policies of the ministries responsible for management and conservation of the Amazon have contributed to deforestation in the Amazon; (D) 92.5 percent of the respondents believe Brazil should prioritize the pursuit of economic activities in the Amazon basin that do not contribute to deforestation; and (E) only 5.6 percent of the respondents think that ***forests*** need to be cut down to promote economic growth in the region. (5) The recent 8,850 square kilometer reduction of the Amazon ***forest***, exacerbated by climate change, has resulted in a significant decrease in the ample benefits described in paragraph (3), in addition to the displacement of many indigenous peoples due to the lessened economic opportunity. (6) Clear cutting has disrupted the habitat for plants and animals in the region, fracturing the fragile ***forest*** ecology by causing species to migrate and sometimes disappear. (7) As of September 2020, Brazil's National Institute for Space Research reported that 45,067 fires have burned in the Amazon River basin and more than 63,000 fires have burned in all of Brazil in 2020. (8) The ***removal*** of trees from the Amazon River basin has decreased water and nutrient uptake, while increasing runoff with greater [[Page S2033]] loads of both nitrogen and phosphorus concentrations, deteriorating the quality of fresh water, and putting the environment at greater risk for disasters like flooding and landslides. (9) The Government of Brazil has historically recognized the negative repercussions of deforestation via processes like clear cutting, which had facilitated Brazil's establishment and maintenance of numerous successful conservation policies and payments for environmental service programs, such as-- (A) Reducing ***Emissions*** from Deforestation and ***Forest*** Degradation projects, such as the Juma project in Amazonas and the Surui project in Acre and subnational-scale program in Acre and Mato Grosso, which seek to reduce global warming by stopping ***emissions*** related to deforestation; (B) jurisdictional programs involving the collaboration of several groups, including farmers, government officials, businesses, and nongovernmental organizations, to achieve consensus on sustainability milestones; (C) the Amazon Fund, which is primarily funded by the Government of Norway to implement payments for ***forest*** conservation activities; and (D) the Bolsa Floresta program in the Brazilian state of Amazonas, which pays landowners and communities to help protect ***forest*** areas. (10) United States and multilateral cooperation efforts to protect and restore the Amazon have yielded significant beneficial impacts, such as-- (A) the reduction of deforestation by more than 80 percent; and (B) the World Bank's establishment of more than 25 percent of the areas protected from correspondence. (11) The UNESCO World Heritage site verifies the importance of the Amazon River basin being one of the richest areas in the planet in terms of biodiversity, ecological and biological processes. Deforestation and potential new policies could harmfully limit its natural resources if their benefits are not taken into serious consideration. (b) Sense of Congress.--It is the sense of Congress that-- (1) the President should-- (A) engage with the Government of Brazil, through bilateral and multilateral efforts, on its Amazon development and deforestation policies, in support of the Brazilian people's and the private sector's interest in conserving the Amazon rainforest; (B) promote stewardship and conservation policies that support sustainable economic growth activities in the Amazon River basin; (C) consider the Government of Brazil's management and ***land*** use conversion of the Amazon River basin policies when assessing, negotiating, or developing new bilateral agreements with Brazil, including trade agreements, or engaging in relevant international forums; (D) in the spirit of Brazil's leadership hosting the 1992 Rio Summit, which led to the establishment of the UNFCCC, urge the Government of Brazil to enhance the ambition of Brazil's efforts to mitigate greenhouse gas ***emissions***; and (E) encourage the Government of Brazil, through bilateral and multilateral efforts, to immediately work proactively to address climate change and to promote low carbon and sustainable economic development; (2) the United States Ambassador to Brazil should immediately engage with the Government of Brazil to support improvements to stewardship efforts of the Amazon rainforest and to assist with urgent efforts to combat fires burning across the Amazon River basin by-- (A) amplifying the Brazilian people's concerns-- (i) about climate change and seeking opportunities for cooperative climate action through the United States-Brazil bilateral relationship; and (ii) with Brazil's management and ***land*** use conversion policies affecting the Amazon River basin; (B) reinforcing United States' support for the important role civil society is playing to keep the public informed about the importance of Amazon conservation, particularly as it relates to regulating carbon in the Earth's atmosphere; and (C) offering support for efforts to combat fires in the Amazon River basin that are exacerbating Brazil's environmental crisis; and (3) the Secretary of the Treasury should provide financial and technical assistance to combat wildfires burning across the Brazil, including in the Amazon River basin. (c) Policy Statement.--The Secretary of State shall elevate bilateral engagements around cooperation and peer-to-peer accountability on Brazil's climate action commitments by-- (1) supporting the efforts of the Government of Brazil to increase sustainable development of the Amazon region, including by strengthening environmental enforcement and ending illegal deforestation; (2) encouraging the Government of Brazil to enforce its conservation laws, which include-- (A) restoring the responsibility of managing indigenous reserves and the demarcation of ***lands*** back to indigenous peoples; (B) deescalating violence against indigenous peoples, prosecuting individuals and entities that threaten or harm indigenous peoples or communities, and maintain the National Indian Foundation; (C) addressing activities that increase deforestation rates in the Amazon basin, which include-- (i) curtailing indigenous people's ***land*** rights; and (ii) unsustainable cattle ranching, soy bean farming, mining, hydropower dam construction, and highway construction activities; (D) threatening to degrade Brazil's carbon ***emissions*** reductions commitments that are heavily based upon the conservation of Brazil's rainforests; and (E) addressing challenges for civil society to operate, oversee, and advocate for the continued conservation and restoration of the Amazon River basin; (3) encouraging, to the maximum extent practicable, the Government of Brazil to develop and deliver ambitious pledges to reduce greenhouse gas ***emissions*** under the Paris Agreement, while holding Brazil accountable for delivering on its commitments; (4) supporting the voice of Brazilian civil society and the role civil society plays in advancing civil society's efforts to protect Brazil's natural resources and helping ensure civil society's abilities to operate, oversee, and advocate for the continued conservation and restoration of the Amazon River basin; (5) advancing the rights and protections of indigenous peoples whose communities, well-being, and opportunities for economic growth are frequently put at risk by deforestation, extractive industries, commercial scale ***agriculture***, and hydropower dam construction; (6) listening to and engaging with the people of Brazil on their country's commitments to advancing conservation efforts in the Amazon River basin that allow for sustainable economic growth, while protecting the Amazon rainforest and Amazon River basin's important and unique resources despite the proposed changes; (7) renewing support for programs that support Amazonian nations, civil society, and local leaders, including indigenous communities, in maintaining critically important conservation efforts to protect and restore the Amazon River basin ecosystem; and (8) supporting efforts by subnational governments and the private sector to advance sustainable development and reduce deforestation in the Amazon region. SEC. 508. SENSE OF CONGRESS REGARDING RENEWABLE ENERGY IN INDONESIA. It is the sense of Congress that-- (1) cooperation on the development and deployment of renewable energy technologies should be a priority in relations between the United States and Indonesia and the top priority in the countries' energy diplomacy; (2) it is in the interest of United States to support the growth of Indonesia's renewable energy sector in environmentally and socially responsible ways that-- (A) reduce reliance on fossil fuels in ways that do not increase pressure on the ***land*** sector or increase ***land***-based ***emissions***; (B) mitigate greenhouse gas ***emissions***; (C) provide economic opportunities; and (D) improve the climate security of Indonesia; (3) the United States, through the Bureau of Energy Resources of the Department of State, the United States International Development Finance Corporation, the Department of Energy, the Export-Import Bank of the United States, the International Trade Administration, and the United States Agency for International Development, should encourage private sector investment in and financing for the development and deployment of renewable power sources in Indonesia; (4) the United States should-- (A) support and encourage Indonesia to pursue ambitious growth from solar and wind sources of energy generation; and (B) provide technical assistance to the Government of Indonesia and subnational authorities on regulatory reforms and addressing other barriers to deployment of renewable energy; and (5) it is in the interest of United States refrigeration and refrigerant production industries to help serve Indonesia's increased demand for refrigeration and air conditioning, and the adoption of the Kigali Amendment to the Montreal Protocol, is driving innovation and investments in next-generation refrigeration equipment and refrigerants in Indonesia. TITLE VI--WOMEN AND CLIMATE CHANGE ACT SEC. 601. SHORT TITLE. This title may be cited as the ``Women and Climate Change Act''. SEC. 602. FINDINGS. Congress makes the following findings: (1) Women in the United States and around the world are-- (A) the linchpin of families and communities; and (B) often the first to feel the immediate and adverse effects of social, environmental, and economic stresses on their families and communities. (2) The United Nations has recognized, as a central organizing principle for its work, that ``no enduring solution to society's most threatening social, economic and political problems can be found without the full participation, and the full empowerment, of the world's women.''. (3) The United Nations Development Programme's Human Development Report 2013 predicted that the number of people living in extreme poverty could increase by up to [[Page S2034]] 3,000,000,000 by 2050 unless environmental disasters are averted by coordinated global action. (4) Climate change is already forcing the most vulnerable communities and populations in developing countries to face unprecedented climate stress, including-- (A) slow onset effects of climate change, such as sea level rise, increasing temperatures, water scarcity, and drought; and (B) severe weather events and floods, which can lead to reduced ***agricultural*** productivity, food insecurity, and increased disease. (5) Climate change-- (A) exacerbates issues of resource scarcity and lack of accessibility to primary natural resources, ***forest*** resources, and arable ***land*** for food production; (B) contributes to increased tension and instability, particularly in countries and regions with poor or weak governance systems; and (C) increases the workload and stresses on women farmers, who are estimated to produce nearly 50 percent of the food consumed in most developing countries, which exacerbates food insecurity. (6) Women will disproportionately face harmful impacts from climate change, particularly in poor and developing countries in which women regularly assume increased responsibility for-- (A) growing the family's food; (B) collecting water, fuel, and other resources; (C) earning money; and (D) sending remittances. (7) Epidemics, such as malaria and Zika, are expected to worsen and spread due to variations in climate, putting women and girls (especially those who are pregnant, who are lactating, or who hope to become pregnant) and children without access to prevention and medical services at risk. (8) The direct and indirect effects of climate change have a disproportionate impact on marginalized women, including refugees, displaced persons, migrants, religious, racial, or ethnic minorities, adolescent girls, lesbian and trans women, women living in poverty, and women and girls with disabilities and those infected with HIV. (9) Conflict has a disproportionate impact on the most vulnerable communities and populations, including women, and can be exacerbated in regions of the world with changing or harsher climates, leading to migration, forced displacement, and conflicts over scarce natural resources, including ***land*** and water. (10) Internally displaced, refugee, and stateless women and girls face extreme violence and threats, including-- (A) being forced to exchange sex for food and humanitarian supplies; (B) being at increased risk of gender-based violence, sexual exploitation, and abuse; (C) reduced access to services and care; and (D) increased risk for contracting HIV or sexually- transmitted infections, having an unplanned pregnancy, and experiencing poor reproductive health (11) Climate change is predicted to lead to increasing frequency and intensity of extreme weather conditions, precipitating the occurrence of natural disasters around the globe. (12) The relocation and death of women as a result of climate change-related disasters often has devastating impacts on social support networks, family ties, and the coping capacity of families and communities. (13) The ability of women to adapt to climate change is constrained by underlying gender inequality, including a lack of-- (A) economic freedoms; (B) property, ***land*** tenure, and inheritance rights; (C) access to financial resources, education, family planning, and reproductive healthcare services; and (D) quality tools, equipment, and technology that support economic opportunity and independence. (14) Despite having unique capabilities and knowledge to promote, plan, and execute activities to enhance communities' climate change adaption and resilience capacities, women often have insufficient resources, are not empowered to take such actions, and are often excluded from leadership and decision-making processes. (15) Women have a multiplier effect because women use their income and resources, when given the necessary tools, to increase the well-being of their children and families, playing a critical role in reducing food insecurity, poverty, and socioeconomic effects of climate change. (16) Women are often underrepresented in the development and formulation of policy regarding mitigation and adaptation to climate change, even though women are often in the best position to provide and consult on adaptive strategies. SEC. 603. DEFINITIONS. In this title: (1) Ambassador-at-large.--The term ``Ambassador-at-Large'' means the Ambassador-at-Large for the Office of Global Women's Issues of the Department of State. (2) Climate-displaced person.--The term ``climate-displaced person'' means any person who, for reasons of sudden or progressive change in the environment that adversely affects his or her life or living conditions-- (A) is obliged to leave his or her habitual home, either within his or her country of nationality or in another country; (B) is in need of a durable resettlement solution; and (C) whose government cannot or will not provide such durable resettlement solution. (3) Disparate impact.--The term ``disparate impact'' refers to the historical and ongoing impacts of the pattern and practice of discrimination in employment, education, housing, banking, health, and nearly every other aspect of life in the economy, society, or culture that have an adverse impact on minorities, women, or other protected groups, regardless of whether such practices were motivated by discriminatory intent. (4) Environmental disasters.--The term ``environmental disasters'' means specific events caused by human activity that result in seriously negative effects on the environment. (5) Special coordinator.--The term ``Special Coordinator'' means the senior coordinator appointed pursuant to section 607(c). (6) Working group.--The term ``Working Group'' means the Federal Interagency Working Group on Women and Climate Change established under section 605. SEC. 604. STATEMENT OF POLICY. (a) In General.--It is the policy of the United States, in partnership with affected countries, donor country governments, international financial institutions, international nongovernmental organizations, multilateral organizations, and civil society groups, especially those led by women-- (1) to combat the leading causes of climate change; (2) to mitigate the effects of climate change on women and girls; and (3) to elevate the participation of women in policy, program, and community decision-making processes with respect to climate change. (b) Implementation.--The policy described in subsection (a) shall be carried out by-- (1) establishing the Federal Interagency Working Group on Women and Climate Change to prevent and respond to the effects of climate change on women globally; and (2) implementing a coordinated, integrated, evidence-based, and comprehensive strategy on women and climate change through United States policies. SEC. 605. FEDERAL INTERAGENCY WORKING GROUP ON WOMEN AND CLIMATE CHANGE. (a) Establishment.--There is established in the Department of State the Federal Interagency Working Group on Women and Climate Change. (b) Chairperson.--The Ambassador-at-Large, or the Special Coordinator, shall serve as the chairperson of the Working Group. (c) Membership.-- (1) In general.--The Working Group shall be composed of a senior-level representative from each of the Federal agencies and bureaus and offices of the Department of State described in paragraph (2), as selected by the head of the respective agency or subagency. (2) Federal agencies.--The Federal agencies and bureaus and offices of the Department of State described in this paragraph are-- (A) the Department of State, including-- (i) the Office of Global Women's Issues; (ii) the Office of Civil Rights; (iii) the Bureau of Oceans and International Environmental and Scientific Affairs; (iv) the Bureau of Population, Refugees, and Migration; (v) the Bureau of Democracy, Human Rights, and Labor; and (vi) the Bureau of International Organization Affairs; (B) the United States Agency for International Development; (C) the Centers for Disease Control and Prevention; (D) the Environmental Protection Agency; (E) the National Oceanic and Atmospheric Administration; (F) the National Institutes of Health; (G) the National Science Foundation; (H) the Council on Environmental Quality; and (I) the Millennium Challenge Corporation. (3) Representatives of additional agencies.--The Ambassador-at-Large, or the Special Coordinator, may request the participation of representatives of other relevant agencies or departments on a limited-time basis. (d) Functions.--The Working Group shall-- (1) coordinate and integrate the development of all policies and activities of the Federal Government relating to-- (A) combating the effects of climate change on women in the national and international sphere; and (B) improving the response and strategy of the Federal Government to fight climate change for the security of the United States and the international community; (2) allow each member of the Working Group to act as a representative for the Working Group within the Federal department or agency of such member to facilitate implementation of the Working Group policies within such department or agency; (3) ensure that all relevant Federal departments and agencies comply with appropriate guidelines, policies, and directives from the Working Group pertaining to issues and responsibilities related to climate change and women; (4) ensure that Federal departments or agencies, State governments, and relevant congressional committees, in consultation with nongovernmental organizations and policy experts in the field and State and local government officials who administer or [[Page S2035]] direct policy for programs relating to climate change and women-- (A) have access to, receive, and appropriately disseminate best practices in the administration of such programs; (B) have adequate resources to maximize the public awareness of such programs; (C) increase the reach of such programs; (D) collect and share relevant data, including sex and age disaggregated data; and (E) issue relevant guidance; and (5) identify and disseminate best practices to each relevant Federal department and agency regarding how to improve the collection of data relevant to the disparate impact of climate change on women (especially marginalized women), including-- (A) unpaid and paid care work; (B) access to decent work opportunities; (C) community advocacy, activism, and representation; (D) access to education for women and girls; (E) access to comprehensive health care, including reproductive health and rights; (F) participation in professional trades, including ***agriculture***; (G) rights and access to resources, such as ***land***, financial services and credit, training, and tools and equipment; (H) abilities to achieve durable solutions to displacement, including integration, return, or resettlement; (I) food insecurity and desertification; (J) community infrastructure, multilevel government adaptability, and climate resilience; (K) climate and weather-related crisis response, including safety from gender-based violence; and (L) women's involvement and leadership in the development of frameworks and policies for climate resilience. (e) Consultation.--The Working Group may consult and obtain recommendations from such independent nongovernmental policy experts, State and local government officials, independent groups and organizations, or other groups or organizations as the Ambassador-at-Large, or the Special Coordinator, determines will assist in carrying out the mission of the Working Group. (f) Frequency of Meetings.--The Working Group shall meet not less frequently than quarterly to discuss and develop policies, projects, and programs referred to in subsection (d). SEC. 606. DEVELOPMENT AND IMPLEMENTATION OF STRATEGY AND POLICIES TO PREVENT AND RESPOND TO THE EFFECTS OF CLIMATE CHANGE ON WOMEN GLOBALLY. (a) Initial Strategy Required.--Not later than 180 days after the date of the enactment of this Act, the Ambassador- at-Large, or the Special Coordinator, in consultation with the Working Group, shall develop and submit to the appropriate congressional committees a United States National and International Strategy to prevent and respond to the effects of climate change on women. (b) Contents.--The strategy submitted under subsection (a) shall include-- (1) recognizing the disparate impacts of climate change on women and the efforts of women globally to address climate change; (2) taking effective action-- (A) to prevent and respond to climate change and mitigate the effects of climate change on women around the world; and (B) to promote gender equality, economic growth, public health, racial justice, principled humanitarian access, and human rights; (3) implementing the United Nations Sustainable Development Goals listed in subsection (f) through and beyond 2030 to prevent and respond to the effects of climate change on women globally; (4) implementing balanced gender participation to avoid reinforcing binary roles, especially among individuals from the communities most impacted, in climate change adaptation and mitigation efforts, including in governance and diplomatic positions within the United States Government; (5) working at the local, national, and international levels, including with individuals, families, and communities, to prevent and respond to the effects of climate change on women; (6) systematically integrating and coordinating efforts to prevent and respond to the effects of climate change on women internationally into United States foreign policy and foreign assistance programs; (7) investing in research on climate change through appropriate Federal departments or agencies and funding of university and independent research groups on the various causes and effects of climate change; (8) developing and implementing gender-sensitive frameworks in policies to address climate change that account for the specific impacts of climate change on women; (9) developing policies to support women who are particularly vulnerable to the impacts of climate change to prepare for, build their resilience to, and adapt to such impacts, including a commitment to increase education and training opportunities for women to develop local resilience plans to address the effects of climate change; (10) developing and investing in programs, in coordination with the diplomatic missions of other countries, that-- (A) educate and empower women and girls in the United States and around the world; (B) gather information on how climate change is affecting their lives; and (C) provide guidance on the needs of their families and communities in the face of climate change; (11) consulting with representatives of civil society, including nongovernmental organizations, community and faith- based organizations, multilateral organizations, local and international civil society groups, and local climate change organizations and their beneficiaries, that have demonstrated experience in preventing and responding to the effects of climate change on women; (12) supporting and building local capacity in developing countries, including in governments at all levels and in nongovernmental organizations (especially women-led organizations), to prevent and respond to the effects of climate change on women; (13) developing programs to empower women in communities to meaningfully engage in the planning, design, implementation, and evaluation of strategies to address climate change while taking into account their roles and resources; (14) including women in economic development planning, policies, and practices that directly improve conditions that result from climate change; (15) integrating gender analysis in all policies and programs in the United States that are globally related to climate change; and (16) ensuring that such policies and programs support women globally to prepare for, build resilience for, and adapt to, climate change. (c) Updates.--The Ambassador-at-Large, or the Special Coordinator, shall-- (1) consult with the Working Group to collect information and feedback; and (2) update the strategy and programs to prevent and respond to the effects of climate change on women globally, as the Ambassador-at-Large, or the Special Coordinator, considers appropriate. (d) Implementation Plan and Budget Required.--Not later than 60 days after the submission of the strategy under subsection (a), the Senior Coordinator shall submit an implementation plan and budget for the strategy to the appropriate congressional committees. (e) Assistance and Consultation.--The Senior Coordinator shall assist and provide consultation to the Secretary of State in preventing and responding to the effects of climate change on women globally. (f) United Nations Sustainable Development Goals Through and Beyond 2030.--The United Nations Sustainable Development Goals listed in this subsection are-- (1) ending poverty in all its forms everywhere; (2) ending hunger, achieving food security and improved nutrition, and promoting sustainable ***agriculture***; (3) ensuring healthy lives and promoting well-being for all and at all ages; (4) ensuring inclusive, equitable, and quality education and promoting lifelong learning opportunities for all; (5) achieving gender equality and empowering all women and girls; (6) ensuring the availability and sustainable management of water and sanitation for all; (7) ensuring access to affordable, reliable, sustainable, and modern energy for all; (8) promoting sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all; (9) building resilient infrastructure, promoting inclusive and sustainable industrialization, and fostering innovation; (10) reducing inequality within and among countries; (11) making cities and human settlements inclusive, safe, resilient, and sustainable; (12) ensuring sustainable consumption and production patterns; (13) taking urgent action to combat climate change and its impacts; (14) conserving and sustainably using the oceans, seas, and marine resources for sustainable development; (15) protecting, restoring, and promoting sustainable use of terrestrial ecosystems, sustainably managing ***forests***, combating desertification, and halting and reversing ***land*** degradation and biodiversity loss; (16) promoting peaceful and inclusive societies for sustainable development, providing access to justice for all, and building effective, accountable and inclusive institutions at all levels; and (17) strengthening the means of policy implementation and revitalizing the global partnership for sustainable development. SEC. 607. CLIMATE CHANGE WITHIN THE OFFICE OF GLOBAL WOMEN'S ISSUES. (a) Establishment.--The Ambassador-at-Large for the Office of Global Women's Issues of the Department of State shall chair the Federal Interagency Working Group on Women and Climate Change. (b) Functions.--The Ambassador-at-Large shall-- (1) direct the activities, policies, programs, and funding of the Department of State relating to the effects of climate change on women, including with respect to efforts to prevent and respond to those effects; (2) coordinate closely with the Climate Security Coordinator appointed pursuant to section 1(g) of the State Department Basic Authorities Act of 1956, as added by section 102, regarding matters related to climate change's effects on women and related security and diplomatic matters and engagements; (3) advise the Secretary of State, the relevant heads of other Federal departments and independent agencies, and other entities within the Executive Office of the President, regarding the establishment of-- [[Page S2036]] (A) policies, goals, objectives, and priorities for addressing and combating the effects of climate change on women; and (B) mechanisms to improve the effectiveness, coordination, impact, and outcomes of programs relating to addressing and combating the effects of climate change on women, in coordination with experts in the field, nongovernmental organizations, and foreign governments; and (4) identify and assist in the resolution of any disputes that arise between Federal agencies relating to policies and programs to address and combat the effects of climate change on women or other matters within the responsibility of the Office of Global Women's Issues. (c) Special Coordinator.--The Ambassador-at-Large may appoint a senior coordinator as the designee responsible for carrying out the functions described in subsection (b). (d) Briefing and Report.--Not later than 180 days after the date of the enactment of this Act, and annually thereafter, the Ambassador-at-Large shall-- (1) brief the appropriate congressional committees regarding-- (A) the effects of climate change on women; and (B) the prevention and response strategies, programming, and associated outcomes with respect to climate change; and (2) submit an assessment of the human and financial resources necessary to carry out this title to the appropriate congressional committees. \_\_\_\_\_\_ By Mr. CARPER (for himself, Mr. Van Hollen, Mr. Cardin, Mrs. Gillibrand, Mr. Padilla, Mr. Warnock, Mr. Markey, Mr. Schumer, and Mr. Coons): S. 1202. A bill to establish a program to improve community connectivity by identifying and ***removing*** or mitigating infrastructural barriers that create obstacles to mobility or economic development or expose the community to pollution and other health and safety risks, and for other purposes; to the Committee on Environment and Public Works. Mr. CARPER. Mr. President, I want to share with my colleagues some information regarding the Reconnecting Communities Act, a bill that I have introduced today along with my colleagues Mr. Van Hollen, Mr. Cardin, Mrs. Gillibrand, Mr. Padilla, Mr. Warnock, Mr. Schumer and Mr. Coons. This legislation would address the legacy of highway construction built through communities, especially through low-income communities and communities of color, which divided neighborhoods and erected barriers to mobility and opportunity. This legislation implements a central piece of President Biden's American Jobs Plan, which calls for new Federal funding to address the need to ***remove*** infrastructure barriers in communities that have been historically disadvantaged and disconnected. The construction of our interstate highway system throughout the 20th Century had many positive aspects. It facilitated commerce and travel from coast to coast and connected our urban, suburban and rural areas. However, the construction of highways through established neighborhoods and cities also had a detrimental impact on the people who called those places home. Blocks of homes were torn down and vibrant commercial streets razed to make way for new highway construction, often without any input from the people who actually lived, worked, and owned businesses there. Many of these neighborhoods never fully recovered, and the highways divided cities, making it difficult to get from one side to the other. This stifled economic development and opportunity for those who were left behind. In the 1950s and 60s, the construction of I-95 through Wilmington, Delaware resulted in the demolition of homes, churches, and businesses, and cut off neighbors from each other. The ability to easily walk to the store or to church, or to have a sense of community that living in a vibrant city brings, was destroyed for many people who lived near that path of the interstate. And this is not unique to Wilmington. From Baltimore to New Orleans, cities across the country are grappling with what to do with aging interstates blighting their neighborhoods. The Reconnecting Communities Act is designed to address this legacy of our highway system by funding projects that would ***remove*** or reimagine infrastructure barriers, including elevated highway overpasses and highways that were built below grade. The bill would authorize $15 billion over the next five years to establish a new federal grant program at the Department of Transportation to help States and local entities with planning, construction and local capacity building. Specifically, it would do the following: First, the bill would provide grants to local and Tribal governments, Metropolitan Planning Organizations and non-profits, to help foster a greater capacity for local communities to participate in the planning and decision-making process for transportation and economic development projects. This would help to ensure that new projects meet local needs. Second, it would provide grants for planning and feasibility studies, including studies to look at the effect of a project on traffic and congestion, accessibility and equity. Third, it would provide grants to carry out construction projects that would either ***remove*** a highway infrastructure barrier, or re- envision or retrofit the existing structure to improve mobility across it. This includes capping a highway like I-95 in Wilmington. or transforming a highway into an at-grade roadway as has been envisioned in other States. As communities across the Nation are beginning to reimagine their downtowns to provide more sustainable and equitable access, this bill will support local efforts to reconnect and revitalize areas that were harmed by the construction of the Interstate Highway System. I would like to thank my colleagues who have joined me by cosponsoring the Reconnecting Communities Act. In particular, I am appreciative of the leadership of the junior senator from Maryland, Mr. Van Hollen, who helped to bring this issue to the attention of the Environment and Public Works Committee last Congress. I hope that all of my colleagues will join us to advance this important legislation, which I will be working to include in our comprehensive surface transportation reauthorization bill this year. \_\_\_\_\_\_ By Mr. THUNE (for himself, Mr. Crapo, and Mr. Cornyn): S. 1206. A bill to limit the authority of the Secretary of Labor to modify the pandemic unemployment assistance program, and for other purposes; to the Committee on Finance. Mr. THUNE. Mr. President, I ask unanimous consent that the text of the bill be printed in the Record. There being no objection, the text of the bill was ordered to be printed in the Record, as follows: S. 1206 Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, SECTION 1. SHORT TITLE. This Act may be cited as the ``PUA Eligibility Clarification Act of 2021''. SEC. 2. PANDEMIC UNEMPLOYMENT ASSISTANCE. (a) Amendments.--Section 2102(a)(3) of the CARES Act (15 U.S.C 9021(a)(3)) is amended-- (1) in subparagraph (A)(ii)(I)-- (A) in item (ii), by adding ``or'' at the end; and (B) by striking item (kk); and (2) in subparagraph (B)(ii), by striking ``through (kk)'' and inserting ``through (jj)''. (b) Repeal of Guidance.-- (1) In general.--The Secretary of Labor shall rescind the guidance entitled, Expanded Eligibility Provisions for the Pandemic Unemployment Assistance (PUA) Program, issued on February 25, 2021. (2) Repayment not required.-- (A) In general.--Except as provided in subparagraph (B), in the case of an individual who received pandemic unemployment assistance amounts pursuant to the guidance described in paragraph (1) before the date of enactment of this Act, the individual shall not be required to repay the amounts. (B) Exception.--Subparagraph (A) shall not apply to any individual who, as of the date of enactment of this Act, was approved to receive compensation amounts pursuant to the guidance described in paragraph (1)(A) but had not yet received the amounts. \_\_\_\_\_\_ By Mr. DURBIN (for himself and Ms. Duckworth): S. 1211. A bill to establish the Cahokia Mounds Mississippian Culture National Historic Park in Collinsville, Illinois, Monroe, Madison, and St. Clair Counties, Illinois, and St. Louis City County, Missouri, and for other purposes; to the Committee on Energy and Natural Resources. Mr. DURBIN. Mr. President, I ask unanimous consent that the text of the bill be printed in the Record. [[Page S2037]] There being no objection, the text of the bill was ordered to be printed in the Record, as follows: S. 1211 Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, SECTION 1. SHORT TITLE. This Act may be cited as the ``Cahokia Mounds Mississippian Culture National Historical Park Act''. SEC. 2. DEFINITIONS. In this Act: (1) Historical park.--The term ``historical park'' means the Cahokia Mounds Mississippian Culture National Historical Park established by section 3(a). (2) Map.--The term ``map'' means the map entitled ``Cahokia Mounds Mississippian Culture National Historical Park, Boundary'', numbered CMMC-NHP-107, and dated 05-31-2019. (3) Secretary.--The term ``Secretary'' means the Secretary of the Interior. (4) States.--The term ``States'' means the States of Illinois and Missouri. SEC. 3. CAHOKIA MOUNDS MISSISSIPPIAN CULTURE NATIONAL HISTORICAL PARK, ILLINOIS AND MISSOURI. (a) Establishment.-- (1) In general.--Subject to paragraph (2), in order to preserve and interpret for the benefit of present and future generations the historical, cultural, and natural resources associated with the life of the Mississippian Culture and to preserve access for Native American spiritual practices and expressions, there is established, as a unit of the National Park System, the Cahokia Mounds Mississippian Culture National Historical Park in-- (A) Collinsville, Illinois; (B) Monroe, Madison, and St. Clair Counties, Illinois; and (C) St. Louis City County, Missouri. (2) Determination by secretary.--The historical park shall not be established until the date on which the Secretary determines that a sufficient quantity of ***land***, or interests in ***land***, has been acquired in accordance with subsection (c) to constitute a manageable unit. (3) Notice.--Not later than 30 days after the date on which the Secretary acquires sufficient ***land*** under subsection (c) to achieve compliance with paragraph (2), the Secretary shall publish in the Federal Register a notice of the establishment of the historical park. (4) Availability of map.--The map shall be on file and available for public inspection in the appropriate offices of the National Park Service. (b) Boundary.--The boundary of the historical park shall be the boundary as depicted on the map. (c) ***Land*** Acquisition.-- (1) In general.--Subject to paragraph (2), the Secretary may acquire ***land*** and interests in ***land*** within the boundary of the historical park by-- (A) donation; (B) purchase from a willing seller with donated or appropriated funds; or (C) exchange. (2) Limitation.--Any ***land*** owned by the States or a political subdivision of 1 of the States may be acquired only by donation. (d) Administration.-- (1) In general.--The Secretary shall administer the historical park in accordance with-- (A) this section; and (B) the laws generally applicable to units of the National Park System, including-- (i) sections 100101(a), 100751(a), 100752, 100753, and 102101 of title 54, United States Code; and (ii) chapters 1003 and 3201 of title 54, United States Code. (2) Cooperative agreements.-- (A) In general.--The Secretary may enter into cooperative agreements with the States and political subdivisions of the States, institutions of higher education, nonprofit organizations, Indian Tribes, and individuals-- (i) to identify, interpret, and restore nationally significant historical or cultural and natural resources relating to the life of the Mississippian Culture within the boundaries of the historical park, subject to the condition that such an agreement shall provide for reasonable public access; and (ii) to conduct research relating to the Mississippian Culture. (B) Cost-sharing.-- (i) Federal share.--The Federal share of the total cost of any activity carried out under this paragraph shall be not more than 50 percent. (ii) Form of non-federal share.--The non-Federal share of the cost of carrying out an activity under this paragraph may be in the form of-- (I) in-kind contributions; or (II) goods or services fairly valued. (e) General Management Plan.-- (1) In general.--Not later than 3 years after the date on which funds are made available to carry out this section, the Secretary shall prepare a general management plan for the historical park in accordance with section 100502 of title 54, United States Code. (2) Consultation.--In preparing the general management plan under paragraph (1), the Secretary shall consult with-- (A) the States and political subdivisions of the States; (B) institutions of higher education; (C) nonprofit organizations; (D) Indian Tribes; and (E) other affected individuals and entities, including-- (i) the Illinois Department of Natural Resources; (ii) the Osage Tribe; and (iii) the HeartLands Conservancy. \_\_\_\_\_\_ By Mr. DURBIN (for himself, Mr. Warnock, and Ms. Cortez Masto): S. 1212. A bill to address the needs of workers in industries likely to be impacted by rapidly evolving technologies; to the Committee on Health, Education, Labor, and Pensions. Mr. DURBIN. Mr. President, I ask unanimous consent that the text of the bill be printed in the Record. There being no objection, the text of the bill was ordered to be printed in the Record, as follows: S. 1212 Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, SECTION 1. SHORT TITLE. This Act may be cited as the ``Investing in Tomorrow's Workforce Act of 2021''. SEC. 2. FINDINGS. Congress makes the following findings: (1) In 2014, the United States spent just 0.1 percent of the Nation's Gross Domestic Product on labor market policies, less than half of what the United States spent on labor market policies 30 years ago. (2) The number of workers receiving federally supported training has declined in the past 3 decades as advances in technology have simultaneously shifted labor market demand over time. (3) Job losses from automation are more likely to impact women, people of color, and workers making less than $40,000 annually. (4) The COVID-19 pandemic has accelerated trends in automation, with 43 percent of businesses in the World Economic Forum's Future of Jobs survey indicating they plan to reduce their workforce as a result of technology integration. (5) Strong Federal investment in expanding training services for workers whose jobs may be lost due to automation could prepare the United States workforce to better adapt to changes in the labor market and enter into skilled positions in technologically oriented occupations and industries. (6) A focus on preparing the workforce of the United States for jobs that utilize advanced technologies could grow wages, increase economic productivity, and boost the competitiveness of the United States. SEC. 3. DEFINITIONS. In this Act: (1) Automation.--The term ``automation'' means a device, process, or system that functions without continuous input from an operator, including-- (A) advanced technologies, such as-- (i) data collection, classification processing, and analytics; and (ii) 3-D printing, digital design and simulation, and digital manufacturing; (B) robotics, including collaborative robotics, and worker augmentation technology; (C) autonomous vehicle technology; or (D) autonomous machinery technology. (2) Dislocated worker.--The term ``dislocated worker'' has the meaning given the term in section 3 of the Workforce Innovation and Opportunity Act (29 U.S.C 3102). (3) In-demand industry sector or occupation.--The term ``in-demand industry sector or occupation'' has the meaning given the term in section 3 of that Act. (4) Integrated education and training.--The term ``integrated education and training'' has the meaning given the term in section 203 of that Act (29 U.S.C 3272). (5) Eligible partnership.--The term ``eligible partnership'' means an industry or sector partnership, as defined in section 3 of that Act, except that-- (A) for purposes of applying paragraph (26)(A)(iii) of that section, the term ``institution of higher education'' has the meaning given the term in section 101 of the Higher Education Act of 1965 (20 U.S.C 1001); and (B) the partnership shall include, in addition to the representatives described in clauses (i) through (iii) of paragraph (26)(A) of that section, representatives of-- (i) a State workforce development board or a local workforce development board; and (ii) an economic development organization. (6) GAO study on automation.--The term ``GAO study on automation'' means the study on automation conducted by the Comptroller General of the United States, as directed in House Report 116-450 (incorporated in the explanatory statement regarding the Consolidated Appropriations Act, 2021 (Public Law 116-260) in accordance with section 4 of such Act). (7) Local and state workforce development boards.--The terms ``local workforce development board'' and ``State workforce development board'' have the meanings given the terms ``local board'' and ``State board'', respectively, in section 3 of the Workforce Innovation and Opportunity Act (29 U.S.C 3102). (8) Secretary.--The term ``Secretary'' means the Secretary of Labor. (9) Training services.--The term ``training services'' means training services described in section 134(c)(3)(D) of that Act (29 U.S.C 3174(c)(3)(D)). SEC. 4. GRANTS TO IMPROVE TRAINING FOR WORKERS IMPACTED BY AUTOMATION. (a) Grants Authorized.-- [[Page S2038]] (1) In general.--From the amounts appropriated under subsection (g) and beginning after the earlier of the date of submission of the GAO study on automation or October 1, 2022, the Secretary of Labor shall award grants, on a competitive basis, to eligible partnerships to support demonstration and pilot projects relating to the training needs of workers who are, or are likely to become, dislocated workers as a result of automation. (2) Duration.--A grant awarded under this section shall be for a period not to exceed 4 years. (3) Use of report.--The Secretary shall use the GAO study on automation to inform the grant program carried out under this section. (b) Applications.-- (1) In general.--To be eligible to receive a grant under this section, an eligible partnership shall submit an application to the Secretary at such time, in such manner, and containing such information as the Secretary shall reasonably require. (2) Contents.--Each application submitted under paragraph (1) shall include a description of the demonstration or pilot project to be completed with the grant funds, which description shall include-- (A) a description of the members of the eligible partnership who will be involved in the demonstration or pilot program and the services each member will provide; (B) a description of the training services that will be available to individuals participating in the demonstration or pilot project, which may include-- (i) a plan to train dislocated workers from industries likely to be impacted by automation and transition the workers into regionally in-demand industry sectors or occupations; and (ii) a plan to partner with local businesses to retrain, upskill, and re-deploy workers within an industry as an alternative to layoffs; (C) a plan to provide workers with technology-based skills training, which may include training to provide skills related to coding, systems engineering, or information technology security, in addition to other skills; and (D) a description of the goals that the eligible partnership intends to achieve to upskill workers and prepare them for in-demand industry sectors or occupations. (c) Priorities.--In awarding grants under this section, the Secretary shall give priority to-- (1) eligible partnerships that are located in an area with a high concentration of-- (A) industries with a higher likelihood of being impacted by automation; or (B) industries included in in-demand industry sectors, as determined under subparagraphs (A)(i) and (B) of section 3(23) of the Workforce Innovation and Opportunity Act (29 U.S.C 3102(23)); (2) eligible partnerships-- (A) with a plan to provide incumbent worker training-- (i) to assist workers in obtaining the skills necessary to retain employment or avert layoffs; or (ii) that allows a worker working for an employer to acquire new skills that allow the worker to obtain a higher- skilled or higher-paid position with such employer; and (B) that partner with local employers that intend to backfill the pre-training positions of the incumbent workers by hiring new workers to fill those positions; (3) eligible partnerships that will provide workers with a transportation stipend, paid sick leave, paid family and medical leave, access to child care services, or other employment benefits; or (4) eligible partnerships with a plan to develop a shared training curriculum that can be used across local and regional networks of employers and training providers. (d) Use of Funds.--An eligible partnership that receives a grant under this section shall use the grant funds for 1 or more of the following: (1) Providing training services under the demonstration or pilot project, which may include training services that prepare workers for in-demand industry sectors or occupations. (2) Providing assistance for employers in developing a staff position for an individual who will be responsible for supporting training services provided under the grant. (3) Purchasing equipment or technology necessary for training services provided under paragraph (1). (4) Providing job search and other transitional assistance to workers in industries with high rates of job loss. (5) Providing a training stipend to workers for training services. (6) Providing integrated education and training. (e) Report.--Not later than 1 year after an eligible partnership's completion of a demonstration or pilot project supported under this section, the eligible partnership shall prepare and submit to the Secretary a report regarding-- (1) the number of workers who received training services through the demonstration or pilot project, disaggregated by type of training service and the age, gender, and race of the workers; (2) the number of such workers who successfully transitioned into a new position following completion of the training services; (3) the number of individuals who successfully transitioned into an in-demand industry sector or occupation following completion of the training services; (4) annual earnings data for individuals who have completed training services through the demonstration or pilot project; (5) the percentage of individuals described in paragraph (4) who are in education or training activities, or in employment, during the second quarter after exit from the training services; (6) the percentage of individuals described in paragraph (4) who are in education or training activities, or in employment, during the fourth quarter after exit from the training services; and (7) any practices used by the partnership that should be considered best practices with respect to training workers in industries that have, or are expected to have, high rates of job loss as a result of automation. (f) General Requirements.--An eligible partnership that receives a grant under this section shall use the grant funds in a manner that is consistent with the labor standards and protections described in section 181 of the Workforce Innovation and Opportunity Act (29 U.S.C 3241) and nondiscrimination provisions described in section 188 of such Act (29 U.S.C 3248). (g) Authorization of Appropriations.--There are authorized to be appropriated to carry out this section such sums as may be necessary for the first 5 full fiscal years beginning after the earlier of the date of submission of the GAO study on automation or October 1, 2022. SEC. 5. EXPANSION OF WORKER TRAINING SERVICES. (a) Adult and Dislocated Worker Employment and Training.-- Section 134(d)(1)(A) of the Workforce Innovation and Opportunity Act (29 U.S.C 3174(d)(1)(A)) is amended-- (1) in clause (xi), by striking ``and'' at the end; (2) in clause (xii), by striking the period and inserting ``; and''; and (3) by adding at the end the following: ``(xiii) training programs for individuals who are, or are likely to become, dislocated workers as a result of automation, including activities that prepare the individuals for occupations in the technology sector.''. (b) National Dislocated Worker Grants.--Section 170 of the Workforce Innovation and Opportunity Act (29 U.S.C 3225) is amended-- (1) in subsection (b)(1)(A), by inserting ``advances in automation technology,'' before ``plant closures,''; and (2) by adding at the end the following: ``(e) Authorization of Appropriations.--In addition to any funds reserved under section 132(a)(2)(A) to carry out this section, there are authorized to be appropriated to carry out this section $40,000,000 for each of fiscal years 2022 through 2026.''.

**Load-Date:** April 21, 2021

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[***Woodland decline could scupper climate targets***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:62F8-0XH1-F072-42B0-00000-00&context=1516831)

i-news

April 14, 2021

First Edition

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**Section:** NEWS; Pg. 15

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**Byline:** Madeleine Cuff

**Body**

The UK's native woodlands are in crisis, according to the Woodland Trust, facing a "barrage" of threats that risk pushing climate ***targets*** out of reach and ecosystems to the point collapse.

Although tree cover is increasing across the country, most of the new saplings are non-native trees, while native woodlands with trees such as oak, beech, ash and elm are in decline. Just 7 per cent of the UK's native woodland is in good condition, according to the first-of-its-kind study.

Native trees are under attack from pests, diseases, climate change and air pollution, according to the report, while new developments such as HS2 are shrinking and fragmenting the remaining habitat.

This is not just damaging trees. Woodland birds such as the willow tit and lesser spotted woodpecker, and flowering plants like Lily of the Valley, are declining fast, the Trust said.

Urgent action is needed to reverse the decline, particularly if the UK is to rely on tree cover to support its net zero climate goal, said Abi Bunker, director of conservation and external affairs for the Woodland Trust.

"If we don't tackle the threats facing our woods and trees, we will severely damage the UK's ability to address the climate and nature crises. Our wildlife havens are suffering and we are storing up problems for future generations."

The Government has promised to plant millions more trees to boost the UK's stock of carbon sinks. But "not nearly enough" is being done to protect and expand native woodlands or reverse declines in their condition, the Woodland Trust said.

This is despite evidence to suggest they store more carbon than new plantations. Native woodlands cover about 13 per cent of the UK's ***land*** surface, storing around 213 million tons of carbon in their living trees.

Ancient and long-established woodlands store more than a third of this carbon, even though they make up just a quarter of all woodland.

Upsetting the ecosystem Pollution ***Agriculture*** - in particular cattle, pigs and poultry - is one of the major sources of nitrogen and ammonia pollution afflicting UK woodlands. Lichen and moss are primary victims. Overgrazing Much of Scotland used to be covered in boreal ***forest***, but most of it was cleared to make way for farmland and grazing ***land*** for large shooting estates. Large deer populations have prevented new trees from establishing. Invasive pests The oak processionary moth first appeared in the UK in 2006, stripping the leaves from oak trees.

Climate change Spring is arriving in the UK, on average, eight days earlier than it did in 1891. That is causing leaves to bud earlier, coaxing caterpillars out before blue tit chicks have hatched - with the entire ecosystem destabilised. Development At least 1,225 ancient woodlands are currently under threat from destruction by new-built development, according to the Woodland Trust. Housing, roads, ***agriculture***, utilities and railways pose the biggest threat.

Ancient woodlands under threat

Atlantic woodland Scotland's temperate rainforest is made up of the native oak, ash, birch, pine and hazel woodlands. But overgrazing and invasive rhododendron pose major threats to its survival.

HS2 The route of the HS2 puts 108 ancient woodlands at risk of loss or damage, according to the Woodland Trust. That includes Broadwells Wood in Staffordshire and Jones' Hill Wood in Buckinghamshire. HS2 says only a tiny fraction of UK ancient woodland is at risk, and has promised to plant millions of new trees in their place.

Wye Valley Invasive species such as Himalayan balsam and Japanese knotweed risk smothering the flora and fauna, while non-native conifers encroach on ***land*** that was once native woodland.

Loch Arkaig Pine ***Forest*** More than 1,000 hectares of ancient Caledonian pinewood is threatened by the invasion of non-native Japanese larchwood and Sitka spruce, and plans are under way to ***remove*** these non-native species over the coming years.

HS2

SOURCE: THE WOODLAND TRUST

Eastern Claylands An ***agricultural*** landscape that was once defined by hedgerows dotted with lone trees and small copses. But as fields have expanded and hedgerows destroyed, tree cover has also fallen. In 1850 there were 1.2 million native trees in this landscape, but only around half have survived to the present day.

The Woodland Trust said the current rate of tree planting must quadruple, but must include a higher proportion of native tree and shrub species, to maximise their carbon storing potential and ability to support woodland wildlife.

**Load-Date:** April 13, 2021

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[***Struan Stevenson: Think the Greens are fluffy? Think again. They are dangerous eco-Marxists***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:62H0-4GJ1-F0JC-M2FJ-00000-00&context=1516831)

Herald Scotland

April 22, 2021 Thursday

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**Length:** 1123 words

**Byline:** [*Struan Stevenson*](http://Struan Stevenson)

**Body**

ANYONE swithering about voting Green at the Holyrood elections should read on.

In their TV party political broadcasts, they promote the idea that they are "working for Scotland" and "winning real change." They claim to be making a "positive impact on people's lives" as they strive for a "greener fairer economy." It's all super-cuddly, fluffy bunny stuff, until you scrape the surface and discover what lies beneath. The Scottish Green Party's sneering and derisory statement on the death of the Duke of Edinburgh should serve as a warning.

The Scottish Green Party's manifesto promises to ban the sale of all petrol and diesel vehicles by 2026. All gas and kerosene boilers would have to be ripped out and replaced by massively expensive heat pumps, with a ***target*** for installing 500,000 by 2030.

There would be no return to cheap foreign holidays in a post-pandemic Green Britain, with severe curbs on flights and rigorous taxes on frequent flyers.

They would shut down the North Sea oil and gas industry with the loss of 100,000 jobs. Zero carbon ***emissions*** from industry would close down vast parts of the economy, as the Greens seek to ***remove*** fossil fuels entirely from existing carbon-intensive sectors like the manufacturing, automotive and aerospace industries, with massive job losses.

They offset this by promising a universal basic income, guaranteed to all adults, regardless of their wealth. The mind-blowing cost of this to an economy facing its biggest recession in history has not been calculated. They also intend to stop building new roads, nationalise buses and ban exams.

In ***agriculture***, the Greens aim to review ***land*** inheritance laws to prevent automatic succession. They will encourage more community ***land*** buyouts, ensuring communities are not forced to pay market values for ***land*** to "already wealthy landowners." Green Party proposals include heavy taxes on meat and dairy products to cut consumption and reduce methane ***emissions*** from flatulent cows and sheep. Their policies on ***land*** reform would ruin farmers and wreck Scottish ***agriculture***.

The Green's radical ecological Marxism might seem like fantasy for a party that only has five MSPs at the moment. But those five MSPs, led by co-conveners Patrick Harvie and Lorna Slater, have propped up the SNP's minority government for the past five years and they promise to do so again.

They are enthusiastic separatists, keen to help their nationalist chums break up the UK. The vicious civil war that has erupted within senior SNP ranks in recent weeks has seen SNP support at the polls fluctuating. But Patrick Harvie has been quick to assure Nicola Sturgeon that he would be more than happy to join the SNP in a Nationalist/Green coalition, where his party would be given ministerial office. So, the nightmare of an eco-Marxist as a minister in the next Scottish government could be a real prospect.

READ MORE STRUAN: Sturgeon should say thanks to UK government

I had to work with the Greens for 15 years in the European Parliament. We called them the 'watermelons', because they are green on the outside and red in the middle! The SNP members of the European Parliament sat with the leftist Green Group in the Strasbourg chamber, whose 'Green vision for Europe' sought "to replace the unsustainable economics of free trade and unrestricted growth with the ecological alternative of local self-reliance and resource conservation." In other words, they were nakedly anti-capitalist.

Far from making Scotland into the comfortable, fairer society they like to proclaim, their Luddite and Marxist policies would derail any chance of economic recovery and send us scuttling back to the dark ages. They loathe the one thing that could transform the lives of ordinary Scots and provide everyone with some respite - economic growth.

They promise that their policies will deliver 200,000 jobs in sustainable industries. But their obsession with wind power has seen Scotland's landscape festooned with a ***forest*** of giant, industrial turbines, mostly sourced from and constructed by foreign companies.

READ MORE STRUAN: Struan Stevenson: Sturgeon swimming against the tide

The majority of wind farms have been erected on Scotland's globally priceless peatlands. Digging up peat bogs to build wind turbines releases millions of tons of stored CO2 into the atmosphere. It is entirely counter-productive.

The green jobs revolution has turned out to be a myth and the ruination of our renowned hills and glens has sent tremors through the tourist sector. Meanwhile the Green Party's total reliance on expensive and intermittent renewable energy has driven millions of Scots into fuel poverty, while enriching the powerful, foreign-owned, energy companies.

But the Scottish Greens like to brand themselves as the only party promoting measures that will save our planet. The truth is they don't have a monopoly on environmental sustainability. The UK Government is now half-way towards meetings its net-zero carbon ***emissions*** ***target*** by 2050. UK ***emissions*** are down 51% since 1990. Britain is reducing ***emissions*** faster than any of the major world economies, a record which will stand Prime Minister Boris Johnson in good stead when he opens the COP26 climate summit in Glasgow in November.

READ MORE STRUAN: The Greens and Patrick Harvie

The Scottish Green Party's determined efforts to prop up the failing SNP Government appears to transcend all their environmental concerns. Patrick Harvie and his MSPs have repeatedly closed ranks with their SNP pals in overturning votes of no-confidence on John Swinney and Nicola Sturgeon. They have repeatedly thrown their support behind fresh demands for a second independence referendum, prioritising that selfish obsession beyond our need for post-pandemic economic recovery.

Patrick Harvie sees himself as 'queenmaker' in ensuring Nicola Sturgeon's survival. He will be quietly satisfied that some polls now point to the SNP falling short of a majority at the Holyrood elections in May, sniffing the chance to seize ministerial office for the Greens and bolstering his case for the catastrophic break up of Britain.

The Greens are urging Scots to 'vote like our future depends on it' at the Holyrood elections. At the 2016 elections only 150,426 people voted for the Greens on the regional lists, but nevertheless they managed to secure 6 seats in the Scottish Parliament. It is a sad indictment of our political system that our future and indeed the future of our country, the United Kingdom, can be decided ultimately by this tiny band of eco-Marxists. A frightening prospect. Our future really will depend on the way we vote on 6th May.

Our columns are a platform for writers to express their opinions. They do not necessarily represent the views of The Herald.

**Load-Date:** April 22, 2021

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[***Federal Register: Removal of Emerald Ash Borer Domestic Quarantine Regulations Pages 81085 - 81095 [FR DOC #2020-26734]***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:61JJ-YCN1-F0YC-N3CT-00000-00&context=1516831)

Impact News Service

December 15, 2020 Tuesday

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**Length:** 13591 words

**Body**

Washington: Office of the Federal Register has issued the following notice:DEPARTMENT OF AGRICULTUREAnimal and Plant Health Inspection Service7 CFR Part 301[Docket No. APHIS-2017-0056]RIN 0579-AE42Removal of Emerald Ash Borer Domestic Quarantine RegulationsAGENCY: Animal and Plant Health Inspection Service, USDA.ACTION: Final rule.-----------------------------------------------------------------------SUMMARY: We are ***removing*** the domestic quarantine regulations for the plant pest emerald ash borer. This action will discontinue the domestic regulatory component of the emerald ash borer program as a means to more effectively direct available resources toward management and containment of the pest. Funding previously allocated to the implementation and enforcement of these domestic quarantine regulations will instead be directed to nonregulatory options to mitigate and control the pest.DATES: Effective January 14, 2021.FOR FURTHER INFORMATION CONTACT: Mr. Herbert Bolton, National Policy Manager, PPQ, APHIS, 4700 River Road, Unit 26, Riverdale, MD 20737-1231; (301) 851-3594; [*Herbert.Bolton@usda.gov.SUPPLEMENTARY*](mailto:Herbert.Bolton@usda.gov.SUPPLEMENTARY) INFORMATION:Background Emerald ash borer (EAB, Agrilus planipennis) is a destructive wood-boring pest of ash (Fraxinus spp.) native to China and other areas of East Asia. First discovered in the United States in southeast Michigan in 2002, EAB is well-suited for climatic conditions in the continental United States and is able to attack and kill healthy trees in both natural and urban environments. As a result, EAB infestations have been detected in 35 States and the District of Columbia, with additional infestations that have not yet been detected likely.\1\ The Animal and Plant Health Inspection Service (APHIS), through notice and comment rulemaking, instituted a domestic quarantine program for EAB that has been in place since 2003 (see 68 FR 59082-59091, Docket No. 02-125-1).--------------------------------------------------------------------------- \1\ The list of quarantined areas is available at [*https://www.aphis.usda.gov/plant\_health/plant\_pest\_info/emerald\_ash\_b/downloads/eab-areas-quarantined.pdf.---------------------------------------------------------------------------*](https://www.aphis.usda.gov/plant_health/plant_pest_info/emerald_ash_b/downloads/eab-areas-quarantined.pdf.---------------------------------------------------------------------------) The regulations in ``Subpart J--Emerald Ash Borer'' (7 CFR 301.53-1 through 301.53-9, referred to below as the regulations) list quarantined areas that contain or are suspected to contain EAB. The regulations also identify, among other things, regulated articles and the conditions governing the interstate movement of such regulated articles from quarantined areas in order to prevent the spread of EAB more broadly within the United States. Since the implementation of the domestic quarantine program, several factors had adversely affected its overall effectiveness in managing the spread of EAB. First, during the Midwestern housing boom that began in the 1990s, ash trees often were planted in new housing developments because of their hardiness and general resistance to drought conditions. Developers frequently sourced these trees from nurseries that were later determined to be heavily infested with EAB and that were subsequently put under quarantine.\2\ It was several years after the issuance of domestic quarantine regulations before a revised survey apparatus, using a lure-based trap, was developed in 2007. This revised survey apparatus identified many long-standing infestations of EAB in residential areas, leading to a substantial increase in the number of counties under quarantine.\3\--------------------------------------------------------------------------- \2\ That Michigan nurseries shipped infested nursery stock prior to development of the EAB regulations, see Haack, R.A et al. Emerald Ash Borer Biology and Invasion History, pp. 1-14 Chapter 1 in: Van Driesche, R.G and Reardon, R., Ed. Biology and Control of Emerald Ash Borer. USDA, ***Forest*** Service, ***Forest*** Health Technology Enterprise Team, Morgantown, WV, FHTET-2014-09, March 2015. Referred to below as Haack et al. [*https://www.fs.fed.us/foresthealth/technology/pdfs/FHTET-2014-09\_Biology\_Control\_EAB.pdf*](https://www.fs.fed.us/foresthealth/technology/pdfs/FHTET-2014-09_Biology_Control_EAB.pdf). \3\ See Abell, K., et. al., Trapping Techniques for Emerald Ash Borer and Its Introduced Parasitoids, Chapter 7 in: Van Driesche, R.G and Reardon, R., Ed. Biology and Control of Emerald Ash Borer. USDA, ***Forest*** Service, ***Forest*** Health Technology Enterprise Team, Morgantown, WV, FHTET-2014-09, March 2015.--------------------------------------------------------------------------- Second, the regulations did not prevent the spread of EAB throughout its geographical range, which has expanded over time. In fiscal year (FY) 2016 alone, APHIS issued 16 Federal Orders designating additional quarantined areas for EAB, and many of these Federal Orders designated multiple quarantined areas \4\. For example, one of the Federal Orders designated an additional 44 counties as quarantined areas for EAB. From an initial quarantined area of 13 counties in Michigan, now more than one quarter of the geographical area of the conterminous United States is under quarantine for EAB.--------------------------------------------------------------------------- \4\ To view these Federal Orders, go to [*https://www.aphis.usda.gov/aphis/ourfocus/planthealth/plant-pest-and-disease-programs/pests-and-diseases/emerald-ash-borer/ct\_quarantine.---------------------------------------------------------------------------*](https://www.aphis.usda.gov/aphis/ourfocus/planthealth/plant-pest-and-disease-programs/pests-and-diseases/emerald-ash-borer/ct_quarantine.---------------------------------------------------------------------------) In light of these difficulties, on September 19, 2018, we published in the Federal Register a proposed rule (83 FR 47310-47312, Docket No. APHIS-2017-0056) to ***remove*** the domestic quarantine regulations for EAB in order to direct available resources towards management and containment of the pest.\5\ We solicited comments concerning our proposal for 60 days ending November 19, 2018.--------------------------------------------------------------------------- \5\ To view the proposed rule, its supporting documents, and the comments that we received, go to [*https://www.regulations.gov/docket?D=APHIS-2017-0056.---------------------------------------------------------------------------*](https://www.regulations.gov/docket?D=APHIS-2017-0056.---------------------------------------------------------------------------) We received 146 comments by the close of the comment period. They were from another Federal agency, State departments of ***agriculture***, State departments of forestry and/or natural resources, Tribal nations, a group representing the wooden pallet industry within the United States, conservation groups, arborists, foresters, and private citizens. Of the commenters, 25 suggested that we finalize the proposed rule as written. The remaining commenters raised concerns or questions regarding the rule and its supporting documents. We discuss these comments below, by topic.Basis for the Proposed Rule Several commenters interpreted the proposed rule to be based on a determination that EAB is not a significant plant pest. Similarly, several commenters interpreted the proposed rule to be based on a desire to provide relief to regulated entities within areas currently quarantined for EAB, or a desire to reduce Federal regulation. One[[Page 81086]]commenter stated that the basis for the rule was a February 2017 Executive Order 13771, which directs Federal agencies to identify two regulations for repeal for each new regulation promulgated.\6\ Another commenter stated that the rule was an effort by Northern and Middle-Atlantic States to deliberately adversely impact Southern and Western States. The commenters cited multiple examples of EAB's destructiveness, and urged us to retain the regulations.--------------------------------------------------------------------------- \6\ See [*https://www.federalregister.gov/documents/2017/02/03/2017-02451/reducing-regulation-and-controlling-regulatory-costs.---------------------------------------------------------------------------*](https://www.federalregister.gov/documents/2017/02/03/2017-02451/reducing-regulation-and-controlling-regulatory-costs.---------------------------------------------------------------------------) The proposed rule was not based on a determination that EAB is an insignificant plant pest, nor was it based on a desire to reduce or repeal Federal regulations or provide regulatory relief to currently regulated entities, regardless of the efficacy of the regulations, or a desire by Northern and Middle-Atlantic States to deliberately adversely impact other States. Rather, it was based on a determination that the domestic quarantine regulations have been unable to prevent the spread of EAB. This is reflected in the size of the quarantined area for EAB at the time the 2018 proposed rule was issued. At that time, more than 1,100 counties in the United States were under quarantine, comprising an area of almost 880,000 square miles, or more than one quarter of the geographical area of the conterminous United States. Since the proposed rule was issued, three additional States, nine counties, and portions of an additional county were added to the quarantined area for EAB. As we mentioned earlier in this document, this represents an exponential increase from the initial quarantined area, which was comprised of 13 counties in Michigan. We discuss some of the factors that led to the spread of EAB later in this document, under the section titled ``Need to Retain Existing Quarantine Regulations.''Efficacy of Existing Quarantine Regulations A number of commenters interpreted the rule to be based on our determination that the domestic quarantine regulations have proven ineffective at preventing the spread of EAB, but disagreed with the validity of this determination. The commenters often cited personal experience or anecdotal examples of the efficacy of the current regulations or pointed to the efficacy of other Federal domestic quarantine programs administered by APHIS, such as that for Asian longhorned beetle (ALB). We acknowledge the possible validity of the experiences and examples provided by the commenters, but do not consider them to be indicative of the overall efficacy of the domestic quarantine program for EAB. On the whole, the program has been unable to prevent the spread of EAB, as evidenced by the current size of the quarantined area relative to the 13 counties in Michigan that comprised the initial quarantined area. In that regard, the success of one Federal domestic quarantine program is not indicative of the success of another. For example, as one commenter pointed out, APHIS and State departments of ***agriculture*** have been able to eradicate several localized populations of ALB and release areas from quarantine. This has not occurred within the EAB program; not a single area has ever been released from quarantine. One commenter stated that there was no means for APHIS to ascertain the full effects of the current program at precluding the spread of EAB. We agree that ascertaining each and every effect of the current program is not possible, but do not consider such an evaluation necessary in order to determine whether the program on the whole has been able to prevent the spread of EAB. The size of the quarantined area for EAB at the time the proposed rule was issued, relative to the size of the initial quarantined area of 13 counties in Michigan, is a reliable indicator that the program was unable to prevent the spread of EAB.Need To Retain Existing Quarantine Regulations Many commenters stated that it was necessary to retain the regulations to prevent the further spread of EAB, and that ***removal*** of the regulations would place them at a heightened risk of EAB introduction and establishment. Some commenters lived within currently quarantined areas but stated that EAB was not present in their area or was not widely prevalent based on survey results. Other commenters lived in areas that were immediately outside the quarantined areas and were concerned that ***removing*** restrictions on the movement of host material could hasten the introduction of EAB into their area. Finally, some of the commenters lived in Western States (States west of the Rocky Mountains) and stated that, because of geographical boundaries between the currently quarantined areas and their State, natural spread was unlikely, at least for the foreseeable future. Those commenters stated that the only way EAB was likely to be introduced to their State was through human-assisted movement, and that ***removing*** the quarantine would increase the likelihood that infested material was moved into their State. A number of these commenters stated that native ash in their State was in riparian or ***forest*** environments, and that deforestation as a result of EAB could have significant adverse impacts, such as increased likelihood of flooding. With regard to those commenters within the currently quarantined areas, we disagree that ***removing*** the Federal quarantine regulations places the commenters at a heightened risk of EAB spread or has environmental or economic impacts. This is for two reasons. The first reason is that, in 2012, APHIS issued a Federal Order \7\ allowing unrestricted interstate movement of host articles within a contiguous quarantined area. This Federal Order is still in effect; thus, finalizing the proposed rule will have no net impact on interstate movement of articles within this area.--------------------------------------------------------------------------- \7\ The Federal Order is available at [*https://nationalplantboard.org/wp-content/uploads/docs/spro/spro\_eab\_2012\_05\_31.pdf.---------------------------------------------------------------------------*](https://nationalplantboard.org/wp-content/uploads/docs/spro/spro_eab_2012_05_31.pdf.---------------------------------------------------------------------------) The second reason is that, consistent with our statutory limitations under the Plant Protection Act (PPA, 7 U.S.C 7711 et seq.,) the Federal quarantine regulations for EAB pertained only to interstate movement of regulated articles in commerce. This did not address noncommercial movement of regulated articles, intrastate movement, or natural spread. With respect to natural spread, research suggests a mated female EAB can fly up to 12.5 miles a day.\8\ Moreover, a female that mates can live up to 6 weeks.\9\ This does not preclude the possibility that some mated female EAB may fly more than 100 miles before mortality.--------------------------------------------------------------------------- \8\ Taylor, R.A.J , et al. Flight Performance of Agrilus planipennis (Coleoptera: Buprestidae) on a Flight Mill and in Free Flight. 2010. Journal of Insect Behavior. 23: 128-148. \9\ Cappaert, David, et al. 2005. Emerald Ash Borer in North America: A research and regulatory challenge. American Entomologist. 51: 152-165.--------------------------------------------------------------------------- With regard to those commenters currently immediately outside the quarantined area, we also disagree that ***removing*** the Federal quarantine regulations places the commenters at a heightened risk of EAB spread or has environmental or economic impacts. This is also for two reasons. The first is the ability of EAB to naturally and rapidly spread without human assistance. The second is the lack of effective detection methods for EAB. EAB is a cryptic pest and there is not an effective pheromone lure for EAB;[[Page 81087]]thus, trap catches are often a lagging indicator of a long-standing and sizable established population for EAB.\10\ In general, when EAB is initially detected via survey, we have found that an established population has typically been present in the area a minimum of 3 to 5 years undetected.\11\--------------------------------------------------------------------------- \10\ See Ryall, K., Detection and Sampling of Emerald Ash Borer (Coleoptera: Buprestidae) Infestations, 2015. Can. Entomol. 147:290-299. Found at [*https://www.cambridge.org/core/journals/canadian-entomologist/article/detection-and-sampling-of-emerald-ash-borer-coleoptera-buprestidae-infestations/671D5F7160E19CDA09A4159D4B903A1B*](https://www.cambridge.org/core/journals/canadian-entomologist/article/detection-and-sampling-of-emerald-ash-borer-coleoptera-buprestidae-infestations/671D5F7160E19CDA09A4159D4B903A1B). See also Marshall, J.M , A.J Storer, I. Fraser, and V.C Mastro. 2010. Efficacy of trap and lure types for detection of Agrilus planipennis (Col., Buprestidae) at low density. Journal of Applied Entomology, Vol. 134, 4, pp. 296-302. Found at: [*https://onlinelibrary.wiley.com/doi/full/10.1111/j.1439-0418.2009.01455.x*](https://onlinelibrary.wiley.com/doi/full/10.1111/j.1439-0418.2009.01455.x). \11\ See Haack et al.--------------------------------------------------------------------------- Visual detection of EAB also has significant limitations. Visual detection is almost always based on finding signs or symptoms of EAB infestation in declining ash trees, rather than visual detection of the pest itself. There is thus a lag period between initial establishment and detection, and correspondingly, between initial pest establishment and designation of the area as a quarantined area for EAB. This is also why we do not consider areas of low pest prevalence to exist for EAB--a handful of detections are indicative of a much larger established population.\12\--------------------------------------------------------------------------- \12\ See [*https://www.aphis.usda.gov/plant\_health/plant\_pest\_info/emerald\_ash\_b/downloads/EAB-FieldRelease-Guidelines.pdf.---------------------------------------------------------------------------*](https://www.aphis.usda.gov/plant_health/plant_pest_info/emerald_ash_b/downloads/EAB-FieldRelease-Guidelines.pdf.---------------------------------------------------------------------------) With regard to commenters in Western States, we disagree that the only way EAB could enter the State is through human-assisted movement. We acknowledge that the presence of geographical barriers, such as the Rocky Mountain range, and the absence of host material along the Great Plains, could significantly impede the rate of natural spread of EAB. We also acknowledge that EAB's feeding patterns in the absence of ash and deciduous hardwood are still being researched and evaluated, and it is, accordingly, possible that EAB does not adapt quickly to the absence of preferred host material. However, it is the Agency's experience that widely prevalent plant pests tend, over time, to spread throughout the geographical range of their hosts, and we have no reason to consider EAB to be biologically unique in this manner. Nonetheless, we agree that, in the absence of Federal regulations, there could be a higher likelihood that EAB will be introduced into a Western State sooner through the movement of infested host material than would occur through natural spread. However, the degree to which this likelihood is increased is difficult to quantify. In the absence of Federal regulations, States are free to establish their own regulations governing the movement of EAB host material into their State, and at least one such Western State signaled their intent to do so in their comments on the rule. Additionally, there will still be awareness and outreach efforts, which we discuss later in this document, to dissuade the public from non-commercial movement of EAB host material into Western States. To the extent that we can, we will support communities in these efforts, and, we have delayed publication of this final rule to afford States time to develop regulations regarding the movement of EAB host material. Several commenters stated that the economic analysis that accompanied the proposed rule was flawed insofar as it was based on the same assumption that ***removing*** the regulations would not contribute to the spread of EAB. A number of the commenters also stated that the rule should have been accompanied by an environmental assessment or environmental impact statement assessing the likelihood of cumulative impacts of human-assisted spread of EAB that would not otherwise occur if the regulations remained in place. We agree that there is an economic cost if EAB is introduced into a Western State sooner through the movement of infested host material than would occur through natural spread. For that reason, to the extent that we can, in the economic analysis for this final rule, we list activities that have historically been associated with the new introduction of EAB into a previously unaffected area, along with a range of costs for each activity. However, we also acknowledge a high degree of uncertainty regarding the number of entities that will incur those costs, for the reasons mentioned above. Finally, we considered the proposed rule to be categorically exempt from preparation of an environmental assessment or environmental impact statement. We did this because the National Environmental Policy Act (NEPA, 42 U.S.C 4231 et seq.,) and subsequent agency implementing regulations instruct Agencies to evaluate the environmental impacts of proposed Federal actions. We determined that this action is a class of actions previously determined to meet categorically excludable criteria as established in 7 CFR 372.5 A record of categorical exclusion analysis was prepared to assess and confirm that there would be no adverse environmental impacts as a result of this rulemaking. We acknowledge that commenters suggested that we consider the impact of human-assisted spread of EAB that would not otherwise occur. However, our experience with EAB has shown that human-assisted spread continued regardless of the regulations, which are limited, and that the natural spread of EAB is rapid, significant, and extremely difficult to control. For the reasons discussed above, this remains our determination. Two commenters asked if any studies exist that examine the possible ecological and societal impacts of EAB establishment in the Western United States. One of the commenters stated that, if no such studies exist, APHIS should conduct such a study prior to issuing a final rule. We are not aware of any such studies. For reasons discussed in the section below, we do not consider delays in issuing or making effective this final rule to be in the best long-term interests of the Federal EAB program.Request for Delay of Final Rule A number of commenters stated that Federal deregulation of EAB is probably inevitable given the scope of the area under quarantine, but asked for a delay in the publication or effective date of the final rule to allow the commenter's State or community to plan for deregulation. Several of these commenters stated that they were unaware of APHIS' intent to deregulate EAB until the proposed rule was issued and stated that APHIS had done an inadequate job communicating this intent. All commenters urged us to continue regulatory and enforcement activities until the rule became effective. The proposed rule is a result of several years of public discussions with an increasing number of stakeholders. APHIS began expressing concerns regarding the efficacy of the EAB program in public forums as early as 2012, when the FY 2013 budget submitted to Congress indicated that we had not discovered effective tools to prevent the spread of EAB, and that, as a result, we had not discovered a means to efficiently use resources to prevent the spread of EAB.\13\ In the same budget,[[Page 81088]]we also indicated that biocontrol activities could be a more viable long-term strategy than regulatory and enforcement activities.--------------------------------------------------------------------------- \13\ ``APHIS continues to face challenges in addressing tree and wood pests such as EAB, and seeks to efficiently use resources to address pests where success is achievable, such as eradicating the ALB. The EAB is an exotic ***forest*** pest that has killed millions of ash trees in the United States. First found in Michigan in 2002, it has spread to 14 additional States (Illinois, Indiana, Iowa, Kentucky, Maryland, Minnesota, Missouri, New York, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia, and Wisconsin) and continues to spread. Due to the lack of tools available, the Agency changed focus from an eradication strategy to preventing the human- assisted spread and minimizing the impacts of natural spread of the pest through early detection and quarantine regulations. With the requested decrease, the Agency would further reduce its role in addressing the EAB and scale back activities to manage an outreach program, provide national coordination and oversight, and continue developing biological control agents. Biological control is the most promising option for managing EAB populations over the long term. In 2013, APHIS proposes to release biological control agents in all States that request releases.'' Found at: [*https://www.usda.gov/obpa/congressional-justifications/fy2013-explanatory-notes.---------------------------------------------------------------------------*](https://www.usda.gov/obpa/congressional-justifications/fy2013-explanatory-notes.---------------------------------------------------------------------------) In 2015, we discussed the possibility of deregulation of EAB to the Continental Dialogue on Non-Native ***Forest*** Insects and Diseases, an audience of State and local governments, forestry groups, non-governmental organizations, and other Federal agencies.\14\ In 2016, we discussed possibly deregulating EAB, and shifting program resources to biocontrol activities, with the National Association of State Foresters and the National Plant Board, which represents the plant protection division of State departments of ***agriculture***; these discussions continued into 2017.\15\ Additionally, throughout the development of the proposed rule, APHIS talked with numerous State, local, and Tribal communities on a regular basis to discuss concerns that the communities had with possible deregulation. This included the ongoing discussion with the National Association of State Foresters and the National Plant Board mentioned above, a Tribal meeting in which nine Tribes who had expressed concerns about the rule were invited to further elaborate on those concerns and discuss possible remediations, several webinars with State departments of ***agriculture***, and discussions with the New York Partnership for Invasive Species Management and The Nature Conservancy.--------------------------------------------------------------------------- \14\ For further information regarding the Continental Dialogue on Non-Native ***Forest*** Insects and Diseases, go to [*https://continentalforestdialogue.org/*](https://continentalforestdialogue.org/). \15\ For further information regarding the National Association of State Foresters, go to [*https://www.stateforesters.org/*](https://www.stateforesters.org/). For further information regarding the National Plant Board, go to [*https://nationalplantboard.org/.---------------------------------------------------------------------------*](https://nationalplantboard.org/.---------------------------------------------------------------------------) The proposed rule itself provided notification pursuant to the Administrative Procedure Act (APA, 5 U.S.C 505 et seq.) of APHIS' intent to ***remove*** the domestic quarantine regulations for EAB, and APHIS provided notification of the publication of the rule through the APHIS Stakeholder Registry in accordance with standard Agency practices. We recognize the damage and impact that EAB can inflict on a community and appreciate the desire of commenters to be afforded additional time to prepare for possible deregulation within their particular State or community. As we mentioned previously, to the extent that we can, we will support communities in these efforts, and we have delayed publication of this final rule to afford States time to develop regulations regarding the movement of EAB host material. However, we do not believe an additional delay in the effective date of the rule to be in the best interests of the Federal EAB program. As mentioned above, regardless of funding or tactics employed, the EAB domestic quarantine regulations have been, on the whole, ineffective at preventing the spread of EAB, especially given the natural dispersion capabilities of the pest. Continuing to devote program resources to regulatory and enforcement activities that have proven thus far to be ineffective over an ever-expanding quarantined area is an inefficient use of those resources. Additionally, continuing to devote resources to these activities limits APHIS from reallocating the resources to activities that could be of greater long-term benefit to slowing the spread of EAB or helping affected communities recover from EAB infestation. These include further development and deployment of EAB biological control organisms; further research into integrated pest management of EAB that can be used at the local level to help safeguard an ash population of significant importance to a community; and further research, in tandem with the U.S Department of ***Agriculture*** (USDA) ***Forest*** Service and other Federal agencies, into the phenomenon of ``lingering ash,'' or ash trees that are still alive and present in the landscape in areas of otherwise heavy infestation, and integration of the findings of that research into the EAB program. Several commenters asked for APHIS to provide guidance or best practices in management of EAB to State and local communities prior to issuing this final rule. To the extent that resources allow, we have provided and intend to continue to provide such assistance. For example, we have an agreement with the North Carolina State University, North Carolina Department of ***Agriculture*** and Consumer Services, and the City of Raleigh, NC at their waste-water management location to assist these organizations in investigating EAB phenology within a watershed environment.Biological Control for EAB Several commenters construed the proposed rule to suggest that APHIS has identified biological control (biocontrol) organisms that are effective at preventing the spread of EAB. The commenters asked for the scientific evidence in support of those claims. Other commenters stated that it was their understanding that several of the organisms had limited geographical ranges and could not be used in every area of the United States that is currently infested with EAB. Several commenters stated that the ``real world'' efficacy of biocontrol within the EAB program had not been proven and all usage to date has been experimental and study based. Commenters also asked for more information regarding the biocontrol agents and asked whether APHIS has evaluated the agents for their interactions with non-***target*** organisms and other effects on the environment prior to authorizing their use within the EAB program. While we did state in the proposed rule that biocontrol has been a ``promising approach'' towards mitigating and controlling for EAB, we also clarified that the biocontrol efforts that demonstrated such promising results had been in protecting ash regrowth in areas that had been previously infested with EAB.\16\ We did not state that we had discovered a biocontrol organism that would be effective at preventing EAB from spreading into currently unaffected areas. The biocontrol organisms currently used within the EAB program are tiny stingless parasitic wasps that reproduce within EAB. Because of their dependency on an EAB host, these parasitoids cannot be used in an area until it is already infested with EAB.--------------------------------------------------------------------------- \16\ See 87 FR 47310.--------------------------------------------------------------------------- Four biocontrol organisms are currently used by the EAB program within areas that are infested with EAB. The four organisms currently used are Spathius agrilli, Spathius galinae, Tetrastichus planipennisi, and Oobius agrilli. Commenters are correct that the organisms differ in terms of biology and ecological range. Information regarding the biology of the organisms, as well as current parameters for their release within the domestic quarantine program, are found here: [*https://www.aphis.usda.gov/plant\_health/plant\_pest\_info/emerald\_ash\_b/downloads/EAB-FieldRelease-Guidelines.pdf*](https://www.aphis.usda.gov/plant_health/plant_pest_info/emerald_ash_b/downloads/EAB-FieldRelease-Guidelines.pdf). There are no current plans to revise those parameters as a[[Page 81089]]result of this final rule; however, we consistently review emerging research and recovery records to refine our approach. Pursuant to APHIS' NEPA implementing regulations in 7 CFR part 372, APHIS prepares environmental assessments before the initial release into the environment of any biocontrol organism. Among other things, these assessments evaluate known and possible non-***target*** effects. Several commenters asked APHIS to provide a specific budgetary allocation or percentage of total program funding that we would commit to allocating to biocontrol research and deployment following ***removal*** of the domestic quarantine regulations. We cannot project a specific budgetary allocation or percentage of total funding to biocontrol efforts following deregulation. As we discuss below, we have already begun to obligate program funds on biocontrol in the coming years, and it is APHIS' current intent to devote a substantial portion of funding for EAB each fiscal year to biocontrol. However, APHIS regularly monitors all EAB program activities for efficacy, including the use of biocontrol. If research into integrated pest management or ``lingering ash'' suggests that these are more efficient uses of program resources than biocontrol, we will reallocate funds to these activities accordingly. Additionally, we note that funding directed towards any tactic or technique in the EAB program is contingent on the level of Federal appropriations for the program as a whole, which can differ from fiscal year to fiscal year. Several commenters expressed concern that the rule did not propose a regulatory framework that would specify parameters for APHIS' release of biocontrol organisms. The commenters stated that, in the absence of such a framework, APHIS could divert funds to other tactics within the EAB program or to another domestic quarantine program entirely following ***removal*** of the domestic quarantine regulations for EAB. We do not consider a regulatory framework for the release of biological control to be necessary. As we mentioned above, guidelines regarding the release of biocontrol organisms have already been developed and are publicly available, and APHIS has adhered to them in the absence of a regulatory framework for the release of biological control within the EAB program. Additionally, as we have to date, we will update these guidelines on an ongoing basis to incorporate additional findings or the approval of additional biocontrol organisms. We will notify the public via the APHIS Stakeholder Registry of any substantive change to the guidelines. A sign-up for the Registry is found here: [*https://public.govdelivery.com/accounts/USDAAPHIS/subscriber/new*](https://public.govdelivery.com/accounts/USDAAPHIS/subscriber/new). Because of the time required to rear, evaluate, and release parasitoid populations, budgeting for EAB biocontrol requires allocating funds in one fiscal year for the development of biocontrol organisms that will be released into the environment in another fiscal year. Accordingly, we do not need to put a regulatory framework in place in order to ensure that funds are obligated for release efforts in the coming years; these funds have already been obligated. There is a possibility that, in subsequent years, APHIS could divert funding from biocontrol to other tactics and techniques within the EAB program. However, we consider this flexibility to be in the best interest of the EAB program. As we mentioned above, we regularly monitor all EAB program activities for efficacy. If a program activity proves to be a more effective use of Agency funds than biocontrol, it is appropriate for us to reallocate funding accordingly. Similarly, Federal funding for the EAB program is part of a larger line item Congressional appropriation for Tree and Wood Pests, which also is used to fund our gypsy moth and ALB programs, among others. Each fiscal year, APHIS evaluates how best to allocate the funding among the programs based on program needs and efficacy of the program to date. Finally, several commenters urged us to increase funding for biocontrol within the EAB program while also maintaining the current level of funding for regulatory and enforcement activities. This is not possible given current funding levels and existing Agency obligations for the pest programs within the Tree and Wood Pest line item. That being said, regardless of the level of funds available at APHIS' disposal for EAB, we no longer consider regulatory and enforcement activities to be an effective use of program funds.Alternatives to the Proposed Rule Several commenters agreed that the EAB quarantine regulations had been unable to prevent the spread of EAB but suggested alternate tactics that they believed could slow the further spread of EAB. Suggested tactics were: Mechanical ***removal*** of all ash trees in the United States; mechanical ***removal*** of ash in urban environments outside of the quarantine and replanting with trees that are not a host for EAB; prophylactically treating ash trees to preclude EAB infestation (either as a stand-alone mitigation or in conjunction with restrictions on the movement of host material); safeguarding culturally or environmentally important ash populations, such as those in riparian areas or along watersheds, through integrated pest management; ***removing*** the Federal quarantine on contiguously quarantined areas while maintaining it in areas that are adjacent to currently unaffected areas; requiring all EAB host material to be heat treated or debarked prior to movement; providing economic incentives to mills and lumberyards to treat all hardwood lumber prior to interstate movement; requiring all container ships to be fumigated for EAB upon arrival into the United States; devoting all Federal resources to increased surveillance in currently unaffected areas; increasing EAB funding by drawing from other existing Agency funds or establishing an interagency working group to pool funds; or lobbying Congress and encouraging others to lobby Congress for increased appropriations. We discuss these suggestions below in the order in which they are presented in this paragraph. ***Removal*** of all ash trees in the United States, or in areas of the United States in which EAB is not currently known to occur, is impracticable, as is prophylactic treatment of all ash. Safeguarding culturally or environmentally important local populations of ash through integrated pest management may be possible in some instances, and APHIS has supported and will continue to evaluate requests by Tribal, local, or regional communities for such management; as noted above, we are currently engaged in one such effort with the City of Raleigh, NC. However, integrated pest management for EAB is both cost- and labor-intensive and cannot be done on a national level. As we mentioned above, in 2012, we issued a Federal Order which relieved restrictions on the interstate movement of host material for EAB within contiguously quarantined areas. This was coupled with reallocating resources to outlying areas within the quarantine. Accordingly, this solution has already been implemented and has not proven effective at preventing the spread of EAB to unaffected areas. While debarking and heat treatment are effective at addressing those two pathways, as we mentioned previously in this document, there are numerous other pathways that have contributed to[[Page 81090]]the overall spread of EAB within the United States, many of which are outside the scope of APHIS' statutory authority. Because of the lack of efficacy of the traps and lures for EAB, as discussed above, we do not consider allocating all funding to increased surveying with traps to be an effective use of Federal resources. APHIS does not have the legal authority to provide financial incentives for phytosanitary treatments. Revising import requirements relative to EAB host material is outside the scope of this rulemaking. However, because EAB is established and widespread in the United States, we do not consider mandatory fumigation at ports of entry to be warranted or an effective deterrent to the further spread of EAB within the United States. As we mentioned previously in this document, APHIS' EAB funding is drawn from a larger line item that addresses Tree and Wood Pests within APHIS' appropriation from Congress. APHIS has some flexibility within the Tree and Wood Pests line item itself to move money between domestic quarantine programs within the line item, which includes funding for ALB, gypsy moth, and other pests, in addition to EAB, but we must consider the best use of the funds to meet our overall goals of using the funds as effectively as possible in order to safeguard American ***agriculture***. Because of the sheer size of the current quarantined area for EAB, the historic ineffectiveness of quarantine and enforcement measures, and the lack of optimal detection methods, we do not have a sufficient basis for allocating or seeking additional resources through the appropriations process for the EAB program. For these same reasons, while we have partnered and continue to explore partnerships with other Federal agencies on EAB research and methods development, such as USDA's ***Agricultural*** Research Service and ***Forest*** Service, we do not believe that requesting additional budgetary resources from other Federal agencies to allocate to existing regulatory and enforcement strategies will prevent the spread of EAB or be an effective use of those funds. Finally, APHIS is prohibited from using appropriated funds to lobby Congress, directly or indirectly, for Federal funding without explicit Congressional authorization to do so (see 18 U.S.C 1913). For the reasons discussed in the previous paragraph, we do not consider seeking Congressional authorization to do so to be warranted.Status of Surveys for EAB Several commenters asked whether Federal surveys for EAB will continue if EAB is deregulated. A number of these commenters asked, if our intent was to continue surveys, what parameters we would use following deregulation. A few commenters stated that they had heard that ``citizen surveys'' would be employed following deregulation and asked for further information regarding the meaning of that term. Federally contracted trapping survey for EAB ceased as of 2019. APHIS will provide traps and lures to State and Tribal cooperators without cost, as requested, out of our existing supply until it is depleted. However, States and Tribes should be aware of some of the limitations of these traps and lures discussed earlier in this document. (For further discussion of these limitations, see the section heading ``Need to Retain Existing Quarantine Regulations''). ``Citizen surveys'' refer to reporting done by the general public of EAB or signs and symptoms of EAB infestation. In recent years, citizen detections have accounted for the vast majority of all new identifications of EAB infestations. Citizens who detect signs or symptoms of EAB have been encouraged to contact their State Plant Regulatory Official, or SPRO. A list of all SPROs is found here: [*https://nationalplantboard.org/membership/.Status*](https://nationalplantboard.org/membership/.Status) of Outreach Many commenters stated that the proposed rule undercut communications and outreach efforts in their State or community to warn the public about the severity of EAB. A number of these commenters stated that the rule was in tension with communication efforts to warn the public about the plant pest risk associated with the movement of firewood, in particular. Several commenters requested outreach resources from APHIS following ***removal*** of the quarantine regulations or inquired regarding what outreach APHIS had planned. On a related manner, several commenters asked what efforts APHIS would take, following deregulation, to continue outreach and education related to the movement of firewood. As we discussed previously in this document, the proposed rule was not based on a determination that EAB is an insignificant plant pest, nor did we claim it to be. However, we do acknowledge that local and regional campaigns may have often emphasized the importance of compliance with Federal EAB regulations, and the proposed rule could have created difficulties with regard to those communication strategies. To that end, we will work with States, through associations such as the National Plant Board, to promote awareness of the dangers of EAB following ***removal*** of the domestic quarantine regulations. APHIS outreach related to the movement of firewood will remain substantially similar or increase following ***removal*** of the domestic quarantine regulations for EAB. We will continue to encourage the public to buy firewood where they burn it and to refrain from moving firewood to areas of the United States that are not under Federal quarantine for other pests of firewood. In that regard, we disagree with commenters that the deregulation of EAB undermines national communications efforts regarding the movement of firewood. The primary national communications tool to warn the public about the plant pest risk associated with the movement of firewood is the Don't Move Firewood campaign, which is administered by The Nature Conservancy with support from APHIS and other Federal agencies.\17\ This campaign has consistently stressed that firewood is a high-risk pathway for many pests of national or regional concern, and not just EAB. To the extent that the communication mentioned EAB, it was as an illustrative example of one such pest. We have, however, allocated funds to The Nature Conservancy so that the Don't Move Firewood campaign continues to promote awareness of EAB as a pest of firewood in currently unaffected or recently affected States.--------------------------------------------------------------------------- \17\ See [*https://www.dontmovefirewood.org/.---------------------------------------------------------------------------State*](https://www.dontmovefirewood.org/.---------------------------------------------------------------------------State) Regulation of Firewood and Other EAB Host Material Several commenters stated that, in the absence of Federal regulation of EAB, States would be free to establish their own regulations regarding the movement of EAB host material. A number of these commenters stated that this could result in State regulations that differed significantly from State to State, and that differing State regulations could be difficult for producers and shippers to comply with. We agree with the commenters that one of the upshots of the rule is the possibility of States developing their own interstate movement requirements for EAB host articles, and, as we noted previously in this document, one State department of ***agriculture*** signaled their intent to issue such regulations during the comment period for the proposed[[Page 81091]]rule. While States will be free to set requirements as they see fit, we have taken efforts, in coordination with State departments of ***agriculture***, to develop a template for State regulations regarding the movement of certain EAB host materials. We discuss these efforts below. Several commenters pointed out that, under the current domestic quarantine regulations for EAB, firewood is a regulated article, and must either be debarked or heat treated prior to interstate movement. The commenters stated that firewood is a pathway for many other plant pests, and that the EAB domestic quarantine regulations serve to preempt what otherwise is a significant number of differing State requirements regarding the movement of firewood. Some commenters urged us to retain firewood as a regulated article for EAB; others urged us to propose a distinct Federal regulation for the interstate movement of firewood; others asked us to coordinate with State departments of ***agriculture*** to establish a coordinated framework for State regulations of firewood. One commenter stated that we should monitor and oversee the implementation of such State regulations. Maintaining the domestic quarantine regulations for EAB but limiting the scope of regulation to firewood would require us to continue to devote program resources to regulatory and enforcement activities. As we mentioned above, this would preclude the resources from being used on other non-regulatory activities and initiatives that we consider to be in the best long-term interest of the Federal EAB program. In 2010, we prepared a risk assessment regarding the plant pest risks associated with the movement of firewood.\18\ While the assessment identified many significant plant pests associated with firewood, the assessment also found that many of these pests were only economically significant if they established in a certain region of the country, and thus did not always warrant official control. Concurrent to the development of the assessment, a National Firewood Task Force was convened by the National Plant Board, composed of Federal, State, and nongovernmental organization representatives.--------------------------------------------------------------------------- \18\ See [*https://www.aphis.usda.gov/import\_export/plants/plant\_imports/firewood/firewood\_pathway\_assessment.pdf.---------------------------------------------------------------------------*](https://www.aphis.usda.gov/import_export/plants/plant_imports/firewood/firewood_pathway_assessment.pdf.---------------------------------------------------------------------------) While both the risk assessment and the Task Force suggested a coordinated national approach to mitigate the risk associated with the movement of firewood, APHIS encountered several factors that suggested that Federal regulation of firewood itself, independent of any particular domestic quarantine program, would not be operationally feasible. Regulating at the national level for regionally significant pests could result in regulations that were overly restrictive for some States and not commensurate with risk; requiring firewood to be heat treated prior to movement (which was recommended by the Task Force) would not be operationally feasible in the winter for producers in Northern States, and thus a de facto prohibition on interstate commerce; and Federal regulation would not address significant non-commercial pathways, such as campers moving it to campgrounds and national parks. For all these reasons, APHIS and the National Plant Board ultimately decided that the best national strategy was (1) the development of a standardized template that States may choose to use for their regulation of firewood, in conjunction with (2) a national outreach campaign to alert the public to the plant pest risks associated with the non-commercial movement of firewood. With regard to the first component of that strategy, the National Plant Board has recently developed this template, with APHIS support, and distributed it to State departments of ***agriculture*** to aid in development of State regulations. If a State requests our oversight of the implementation of their State regulations, we will assist to the degree we can; however, such oversight is voluntary, and APHIS cannot compel States to do so. The National Plant Board has also supplemented this template by developing best management practices regarding the interstate movement of firewood for the purposes of heating a home.\19\--------------------------------------------------------------------------- \19\ Both the template and the recommendations are found in this document: [*https://nationalplantboard.org/wp-content/uploads/docs/docs\_policies/firewood\_2020\_2.pdf.---------------------------------------------------------------------------*](https://nationalplantboard.org/wp-content/uploads/docs/docs_policies/firewood_2020_2.pdf.---------------------------------------------------------------------------) With regard to the second, as we mentioned previously in this document, APHIS will continue to warn the public about the dangers of moving firewood following deregulation of EAB through the Don't Move Firewood campaign. One commenter asked how the plant pest risks associated with the interstate movement of ash nursery stock will be addressed following deregulation of EAB. As is the case with all EAB host materials, States will be free to regulate the movement of the nursery stock into their State as they see fit.Tribal Concerns A number of Tribal nations commented in opposition to the proposed rule. Many of these Tribes stated that ash was of economic and cultural importance to their Tribe. Several Tribes indicated that ash was also of religious significance to their Tribe, insofar as the Tribe's creation heritage stressed its importance, and two Tribes indicated that their Tribe relied on ash for ecological purposes. Several of the Tribes mentioned that they had raised this concern to APHIS during Tribal consultation and stated that the rule was therefore in violation of Executive Order 13175, ``Consultation and Coordination with Indian Tribal Governments.'' One of the commenters also suggested the rule was issued in violation of the National Historic Preservation Act (54 U.S.C 300101 et seq.). APHIS is committed to full compliance with Executive Order 13175 and the National Historic Preservation Act. To that end, we engaged in Tribal consultation prior to the issuance of the proposed rule in accordance with Departmental regulations and guidelines regarding the order and the Act. We acknowledge that several Tribes raised the concerns stated by the commenters during Tribal consultation, and have dialogued with those Tribes throughout the development of this final rule to identify means to remediate these concerns. For example, APHIS partnered with the U.S ***Forest*** Service and University of Vermont to conduct a workshop in May 2019 for nine Tribes that provided training to survey for EAB, identify high value trees to preserve, and develop a best management program including the release of biocontrol organisms.\20\ APHIS will continue to host similar workshops to help Tribes preserve ash populations of cultural significance to the Tribes.--------------------------------------------------------------------------- \20\ See [*https://www.uvm.edu/rsenr/towards-preservation-cultural-keystone-species-assessing-future-black-ash-following-emerald.---------------------------------------------------------------------------*](https://www.uvm.edu/rsenr/towards-preservation-cultural-keystone-species-assessing-future-black-ash-following-emerald.---------------------------------------------------------------------------) However, for the reasons discussed above, we have decided that the only viable long-term use of Federal resources within the EAB program entails ***removing*** the domestic quarantine for EAB and reallocation of resources currently devoted to regulatory and enforcement activities to other purposes. In this regard, we disagree with the commenters that the issuance of the proposed rule violated Executive Order 13175 or the National Historic Preservation Act. Neither the order nor the Act precludes a Federal agency from[[Page 81092]]acting if Tribes raise concerns regarding the action contemplated; rather, the order and the Act dictate sustained and meaningful consultation with Tribes to resolve concerns that are raised. APHIS has engaged and continues to engage in such consultation. Further information regarding Tribal outreach efforts is contained in the Tribal impact statement that accompanies this final rule.Comments Regarding International Trade in EAB Host Articles One commenter asked if we were also ***removing*** our regulations regarding the importation of EAB host material from Canada. We did not propose to do so because the regulations have prohibited the importation of several EAB host articles, most notably ash wood chips and bark chips, and have required phytosanitary treatments for other articles that are effective not only for EAB, but also for other wood-boring pests. As a result, we were uncertain of the plant pest risk associated with the importation of EAB host material from Canada, in the absence of EAB-specific prohibitions and restrictions and considered it prudent to conduct a risk assessment before proposing any revisions to those prohibitions and restrictions. That risk assessment is ongoing. Another commenter asked if we would still take action at ports of entry if EAB is discovered on an imported host commodity. They pointed out that the family to which EAB belongs is ``actionable'' in its entirety. If a pest is found on an imported EAB host commodity and can only be identified taxonomically to family, we would continue to take action on it; if we were able to identify it as EAB, we would not. However, States could petition us using APHIS' Federally Recognized State Managed Phytosanitary Program, or FRSMP, to prohibit the movement of material found to be infested into their State.\21\--------------------------------------------------------------------------- \21\ Information regarding the petition process within FRSMP is found here: [*https://www.aphis.usda.gov/plant\_health/plant\_pest\_info/frsmp/downloads/petition\_guidelines.pdf.---------------------------------------------------------------------------*](https://www.aphis.usda.gov/plant_health/plant_pest_info/frsmp/downloads/petition_guidelines.pdf.---------------------------------------------------------------------------) A number of commenters stated that the rule could adversely impact U.S exports to Canada and Norway; some of the commenters asserted that APHIS had failed to consider these potential impacts in the proposed rule and its supporting documents. These are potential impacts associated with deregulation of EAB and were evaluated in the economic analysis associated with the proposed rule. Several commenters asked us if Canada or Mexico had expressed concerns regarding deregulation of EAB within the United States, particularly as it pertains to a heightened likelihood of possible natural spread of EAB into their countries. Neither Mexico nor Canada has expressed concerns regarding deregulation of EAB. Canada has indicated that, in accordance with standard policy, they will consider the United States to be generally infested with EAB following deregulation. Possible implications of such a designation are discussed in the final economic analysis.Coordination With Other Federal Agencies A commenter suggested we coordinate with the ***Forest*** Service to establish a program to sustain and replace native ash trees. APHIS has long partnered with the U.S ***Forest*** Service to address the spread of EAB within the United States and identify means of protecting native ash trees. As we mentioned previously in this document, these efforts include co-funding research into the phenomenon of ``lingering ash,'' and co-hosting a May 2019 workshop for Tribal nations to help them identify high value trees to preserve and develop a best management program, including the release of biocontrol. We intend to continue these efforts following deregulation, as resources allow. However, as we also mentioned previously in this document, a nationwide initiative to protect and/or replace native ash populations is cost-prohibitive. A commenter asked if APHIS had engaged the National Park Service (NPS) about Federal deregulation of EAB and inquired whether NPS could issue regulations prohibiting the movement of firewood into national parks. APHIS did not engage NPS prior to issuance of the proposed rule, but we do see merit in increased collaboration between our agency and theirs and will share the commenter's suggestion with NPS. This collaboration is distinct from the issuance of this final rule, and does not impact the conclusions of this rule.Compliance With Executive Orders, Statutes, and International Standards Several commenters stated that APHIS should not have designated the rule not significant under Executive Order 12866 and suggested that the Office of Management and Budget (OMB) should have reviewed the rule. OMB, rather than APHIS, designated the rule not significant, and thus not subject to their review under Executive Order 12866. One commenter suggested that the proposed rule should have been reviewed for legal sufficiency and compliance with statutory requirements by USDA's Office of General Counsel (OGC). OGC reviewed the proposed rule. One commenter pointed out that the section of the proposed rule beneath the heading, ``Paperwork Reduction Act,'' indicated that there were no reporting, recordkeeping, or third-party disclosure requirements associated with the proposed rule. The commenter asserted that APHIS had therefore failed to evaluate whether there were such Paperwork Reduction Act implications. Several other commenters stated that the proposed rule should have been evaluated for Paperwork Reduction Act implications. The statement beneath the heading ``Paperwork Reduction Act'' in the proposed rule did not mean that APHIS excluded the rule from evaluation under the Paperwork Reduction Act, but rather that we did evaluate the rule under the Paperwork Reduction Act and determined it not to have reporting, recordkeeping, or third-party disclosure requirements. One commenter stated that the proposed rule was not reviewed for compliance with Executive Order 13777. The proposed rule was evaluated by the Regulatory Reform Officer for USDA in accordance with Executive Order 13777. Several commenters expressed concerns regarding the economic analysis that accompanied the proposed rule. We discuss these comments in the economic analysis that accompanies this final rule. Several commenters stated that APHIS had not complied with NEPA, and an environmental assessment or environmental impact statement should have accompanied the proposed rule. For reasons discussed earlier in this document, we considered the proposed rule to be a category of actions exempt under APHIS' NEPA implementing regulations from preparation of an environmental assessment or environmental impact statement. One commenter stated that we had violated international standards issued by the International Plant Protection Convention (IPPC), to which the United States is a signatory. The commenter stated that the IPPC definition of a quarantine pest requires pests that are established within a country to be under official control in order to continue to be considered of quarantine significance. The commenter pointed[[Page 81093]]out that the proposed rule had not explicitly indicated that one of the practical implications of ***removing*** the domestic quarantine regulations for EAB would be that EAB would no longer be a quarantine pest. The commenter asserted that this omission violated IPPC standards. We agree with the commenter's interpretation of the IPPC definition of quarantine pest, as well as the assertion that ***removing*** Federal domestic quarantine regulations for EAB would ***remove*** its designation as a quarantine pest under IPPC standards. However, we do not agree that failing to mention this in the proposed rule violates those standards. Insofar as the IPPC definition of quarantine pest requires pests already established in a country to be under official control in order to continue to be considered quarantine pests, and the proposed rule proposed to rescind APHIS' official control program for EAB, we consider the implication of that rescission to be sufficiently clear without an explicit statement that EAB will no longer meet the IPPC definition of a quarantine pest as a result of this rule.Miscellaneous One commenter stated that ash helps reduce the impact of carbon ***emissions*** into the atmosphere. This is true but is not germane to this rulemaking. One commenter asked if velvet ash was a host of EAB, and, if so, whether it was a preferred host. Because the geographic range of velvet ash within the United States lies outside of the area of the United States where EAB is known to occur, it is currently unknown how EAB and velvet ash will interact within the environment of the United States. However, velvet ash was a preferred host for EAB in China, and we have no reason to believe it will not be a similar host within the United States.\22\--------------------------------------------------------------------------- \22\ See Wang et al. The biology and ecology of the emerald ash borer, Agrilus planipennis, in China. Journal of Insect Science, Volume 10, Issue 1, 2010, 128.--------------------------------------------------------------------------- A commenter asked if neonicotinoids were used as treatments within the EAB program, and, if so, whether there were any plans to reduce or eliminate their usage. Neonicotinoids, particularly imidacloprid, were historically used within the EAB program to treat ash trees. However, such treatments have been almost entirely discontinued within the program, and, on the rare occasion when they still occur, a different insecticide, emamectin benzoate, which is not a neonicotinoid, is currently used. We have no plans to use neonicotinoids within the context of integrated pest management following deregulation of EAB. A commenter suggested we prepare a ``Lessons Learned'' document to evaluate the successes and failures of the domestic EAB program and to determine what factors contributed to the ultimate ineffectiveness of the program. While we tend to reserve such evaluations for particular procedures or policies in order to limit their scope and thus have greater assurances about the accuracy of their conclusions, we will take the commenter's suggestion into consideration. Therefore, for the reasons given in the proposed rule and this document, we are adopting the proposed rule as a final rule, without change.Executive Orders 12866 and 13771 and Regulatory Flexibility Act This rule has been determined to be not significant for the purposes of Executive Order 12866 and, therefore, has not been reviewed by the Office of Management and Budget. This rule is an Executive Order 13771 deregulatory action. Details on the estimated cost savings of this final rule can be found in the rule's economic analysis. In accordance with 5 U.S.C 603, we have performed a final regulatory flexibility analysis, which is summarized below, regarding the economic effects of this final rule on small entities. Copies of the full analysis are available by contacting the person listed under FOR FURTHER INFORMATION CONTACT or on the Regulations.gov website (see ADDRESSES above for instructions for accessing Regulations.gov). APHIS is ***removing*** the domestic quarantine regulations for the plant pest emerald ash borer (EAB, Agrilus planipennis, Fairmare). This action discontinues the domestic regulatory component of the EAB program. Funding allocated to the implementation and enforcement of these quarantine regulations will instead be directed to a non-regulatory option of assessment of and deployment of biological control agents for EAB. Biological control will be the primary tool used to control the pest and mitigate losses. There are currently more than 800 active EAB compliance agreements, covering establishments that include sawmills, logging/lumber producers, firewood producers, and pallet manufacturers. The purpose of the compliance agreements is to ensure observance of the applicable requirements for handling regulated articles. Establishments involved in processing, wholesaling, retailing, shipping, carrying, or other similar actions on regulated articles require a compliance agreement to move regulated articles out of a Federal quarantine area. Under this rule, establishments operating under EAB compliance agreements will no longer incur costs of complying with Federal EAB quarantine regulations, although States could still impose restrictions. Businesses will forgo the paperwork and recordkeeping costs of managing Federal compliance agreements. However, some businesses may still bear treatment costs, if treatment is for purposes besides prevention of EAB dissemination. Costs avoided under the rule depend on the type of treatment and whether treatment still occurs for purposes other than those related to the Federal EAB regulatory restrictions on interstate movement. Articles currently regulated for EAB include hardwood firewood, chips, mulch, ash nursery stock, green lumber, logs, and wood packaging material (WPM) containing ash. Articles can be treated by bark ***removal***, kiln sterilization, heat treatment, chipping, composting, or fumigation, depending on the product. For affected industries, we can estimate the cost savings if treatment were to cease entirely (see table A). Currently, there are 166 active EAB compliance agreements where sawmills and logging/lumber establishments have identified kiln sterilization as a method of treatment. If all of these producers were to stop heat treating ash lumber or logs as a result of this rule, the total cost savings for producers could be between about $896,600 and $1.5 million annually. There are 103 active EAB compliance agreements where heat treatment of firewood is identified as a treatment. If all of these firewood producers were to stop heat treating firewood as a result of this rule, the total cost savings for producers could be between about $93,400 and $700,000 annually. There are 70 active EAB compliance agreements where heat treatment is identified as the pallet treatment. If all of these producers are producing ash pallets and were to stop heat treating as a result of this rule, the total cost savings for producers could be between about $8.8 million and $13.3 million annually. If all 349 establishments with compliance agreements where debarking is identified as a treatment were to stop secondary sorting and[[Page 81094]]additional bark ***removal*** in the absence of EAB regulations, the total annual labor cost savings for producers could be about $1.7 million annually. If all 397 establishments with compliance agreements where chipping or grinding is identified as a treatment were to stop re-grinding regulated materials in the absence of EAB regulations, the total annual cost savings for producers could be about $10.6 million annually. The annual cost savings for these various entities could total between about $9.8 million and $27.8 million annually. (It should be noted that this range of cost savings does not include compliance costs for any State regulations that may be developed in the absence of Federal regulation of EAB; this is because such costs are conjectural and outside of Federal control.) Table A--Potential Cost Savings if Treatment Were to Cease With ***Removal*** of EAB Regulation---------------------------------------------------------------------------------------------------------------- Treatment costs Product Treatment Compliance ------------------------------- agreements Low High---------------------------------------------------------------------------------------------------------------- Value ($ millions)----------------------------------------------------------------------------------------------------------------Logs/Lumber........................... Kiln Sterilization...... 166 0.9 1.5 Debarking............... 349 .............. 1.7Firewood.............................. Heat Treatment.......... 103 0.09 0.7Pallets............................... Heat Treatment.......... 70 8.8 13.3Chips, branches, waste, mulch, etc.... Chipping/Grinding....... 397 .............. 10.6 ------------------------------------------------------------------------- Total............................. ........................ \1\ N/A 9.8 27.8----------------------------------------------------------------------------------------------------------------\1\ Cannot be summed. Some compliance agreements cover multiple products and treatment methods. Since no effective quarantine treatments are available for ash nursery stock, there are no compliance agreements issued for interstate movement of that regulated article. According to the latest Census of Horticultural Specialties, there were 316 establishments selling ash trees, 232 with wholesale sales, operating in States that were at least partially quarantined for EAB in 2014. Sales volumes for at least some of these operations could increase if their sales are currently constrained because of the Federal quarantine. Internationally, deregulation of EAB may affect exports of ash to Norway and Canada, the two countries that have import restrictions with respect to EAB host material. Norway uses pest-free areas in import determinations. With ***removal*** of the domestic quarantine regulations, it is unlikely that Norway will recognize any area in the United States as EAB free. All exports of ash logs and lumber to Norway will likely be subject to debarking and additional material ***removal*** requirements. From 2014 through 2018, exports to Norway represented less than one-tenth of one percent of U.S ash exports. We estimate that labor costs for overseeing the debarking on these exports total less than $500. The United States also exports to Canada products such as hardwood firewood, ash chips and mulch, ash nursery stock, ash lumber and logs, and WPM with an ash component from areas not now quarantined. Canada has indicated that they will consider the United States generally infested for EAB following Federal deregulation, therefore, ash products from areas outside the current U.S quarantine area will be subject to restrictions in order to enter Canada. New Canadian restrictions will likely depend on the product and its destination within Canada. In 2017 and 2018, Canada received about 3 percent of U.S ash lumber exports, and about 4 percent of U.S ash log exports. Additionally, of about 98,000 phytosanitary certificates (PCs) issued from January 2012 through June 2019 for propagative materials exported to Canada, a little more than 1 percent was specifically for ash products. Based on available data, we estimate that additional heat treatment costs and labor costs for overseeing debarking of ash lumber and logs exported to Canada could range from about $55,000 to $94,400. Because of the absence of a phytosanitary treatment for ash nursery stock for EAB, we anticipate that exports of ash nursery stock to Canada will be prohibited by Canada. From January 2012 through June 2019, ash products comprised a little more than one percent of shipments of propagative material to Canada. Taking into consideration the expected cost savings shown in table A and these estimated costs of exporting ash to Norway and Canada following deregulation, and in accordance with guidance on complying with Executive Order 13771, the single primary estimate of the annual cost savings of this rule is $18.8 million in 2016 dollars, the mid-point estimate annualized in perpetuity using a 7 percent discount rate. EAB has now been found in 35 States and the District of Columbia and it is likely that there are infestations that have not yet been detected. Newly identified infestations are estimated to be 4 to 5 years or more in age. Known infestations cover more than 27 percent of the native ash range within the conterminous United States. EAB infestations impose costs on communities typically associated with the treatment or ***removal*** and replacement of affected trees. In addition, infestation can result in loss of ecosystem services. Regulatory activities may slow the spread of EAB and delay associated losses by inhibiting human-assisted dispersal of infestations. However, consistent with APHIS' statutory authority, the activities only mitigated one pathway for EAB spread, movement of host material in interstate commerce. They did not address intrastate movement, non-commercial movement, or natural spread, each of which is a known pathway for the spread of EAB. As a result, regardless of funding or tactics employed, the EAB domestic quarantine regulations have been, on the whole, unable to prevent the spread of EAB. Any delay in EAB spread attributable to the quarantine regulations and associated delay in economic and environmental losses will end with this rule. The domestic quarantine regulations for EAB have not substantially reduced the likelihood of introduction and establishment of the pest in quarantine-adjacent areas. Interstate movement of EAB host articles is unrestricted within areas of contiguous quarantine, and irrespective of human-assisted spread, a mated EAB is capable of flying up to 100 miles in her lifetime, resulting in a high potential for natural spread.[[Page 81095]] EAB's spread through the United States to date suggests it will become established throughout its entire geographical range irrespective of Federal regulation, as EAB can overcome significant natural barriers during a flight season and, as mentioned above, Federal regulations do not address non-commercial movement of EAB host material. The possibility that the pest could reach EAB-free States more quickly in the absence of Federal regulation of host material is difficult to quantify. For the difference in rates of spread to be significant, quarantine activities must be able to mitigate all or at least most pathways for that spread. As noted above, resources available for quarantine activities have declined while the area under quarantine continues to expand. Human-assisted introduction may be mitigated by State regulations, and at least one State has indicated it will establish its own quarantine program following Federal deregulation. Continuing to devote resources to regulatory activities would constrain APHIS' allocation of resources to activities that could be of greater long-term benefit in slowing the spread of EAB and helping affected communities recover from EAB infestation. These activities include further development and deployment of EAB biological control organisms; further investigation of integrated pest management of EAB that can be used at the local level to help safeguard an ash population of significant importance to a community; and further research, in tandem with other Federal Agencies, into the phenomenon of ``lingering ash,'' or ash trees that are still alive and present in the landscape in areas of otherwise heavy infestation, and integration of the findings of that research into the EAB program. Public outreach activities outside the EAB regulatory program will remain substantially similar or increase following ***removal*** of the domestic quarantine regulations for EAB. We will continue to work with our State counterparts to encourage the public to buy firewood where they burn it and to refrain from moving firewood to areas of the United States that are not under Federal quarantine for pests of firewood. The primary national communications tool to warn the public about the plant pest risk associated with the movement of firewood is the Don't Move Firewood campaign, which is administered by The Nature Conservancy with support from APHIS and other Federal agencies. In sum, this rule's elimination of compliance requirements will yield cost savings for affected entities within EAB quarantined areas. Moreover, sales volumes for at least some of these operations could increase if their sales have been constrained because of the Federal quarantine. Costs avoided will depend on the type of treatment and whether treatment still occurs for non-quarantine purposes. Costs ultimately borne also will depend on whether States decide to establish and enforce their own EAB quarantine programs. We anticipate States will continue to impose movement restrictions on firewood, with the regulatory requirements varying from State to State. The National Plant Board developed a template for State regulation of firewood, as well as best management practices regarding the commercial movement of firewood for the purposes of heating a home or building. Internationally, this rule may affect exports of ash products to Norway and Canada. Longer term, the impact of the rule on ash populations in natural and urban environments within and outside currently quarantined areas--and on businesses that grow, use, or process ash--will depend on how much sooner EAB is introduced into un-infested areas within the continental United States than would have occurred under the existing, decreasingly effective quarantine regulations.Executive Order 12372 This program/activity is listed in the Catalog of Federal Domestic Assistance under No. 10.025 and is subject to Executive Order 12372, which requires intergovernmental consultation with State and local officials. (See 2 CFR chapter IV.)Executive Order 12988 This rule has been reviewed under Executive Order 12988, Civil Justice Reform. This rule: (1) Does not preempt State and local laws and regulations; (2) has no retroactive effect; and (3) does not require administrative proceedings before parties may file suit in court challenging this rule.Executive Order 13175 This rule has been reviewed in accordance with the requirements of Executive Order 13175, ``Consultation and Coordination with Indian Tribal Governments.'' Executive Order 13175 requires Federal agencies to consult and coordinate with Tribes on a government-to-government basis on policies that have Tribal implications, including regulations, legislative comments or proposed legislation, and other policy statements or actions that have substantial direct effects on one or more Indian Tribes, on the relationship between the Federal Government and Indian Tribes or on the distribution of power and responsibilities between the Federal Government and Indian Tribes. APHIS has assessed the impact of this rule on Native American Tribes and determined that this rule does have Tribal implications that require Tribal consultation under Executive Order 13175. APHIS has engaged in Tribal consultation with Tribes regarding this rule; these consultations are summarized in the Tribal impact statement that accompanies this rule.Paperwork Reduction Act This rule contains no reporting, recordkeeping, or third-party disclosure requirements under the Paperwork Reduction Act of 1995 (44 U.S.C 3501 et seq.).Congressional Review Act Pursuant to the Congressional Review Act (5 U.S.C 801 et seq.), the Office of Information and Regulatory Affairs designated this action as not a major rule, as defined by 5 U.S.C 804(2).List of Subjects in 7 CFR Part 301 ***Agricultural*** commodities, Plant diseases and pests, Quarantine, Reporting and recordkeeping requirements, Transportation. Accordingly, we are amending 7 CFR part 301 as follows:PART 301--DOMESTIC QUARANTINE NOTICES01. The authority citation for part 301 continues to read as follows: Authority: 7 U.S.C 7701-7772 and 7781-7786; 7 CFR 2.22, 2.80, and 371.3 Section 301.75-15 issued under Sec. 204, Title II, Public Law 106-113, 113 Stat. 1501A-293; sections 301.75-15 and 301.75-16 issued under Sec. 203, Title II, Public Law 106-224, 114 Stat. 400 (7 U.S.C 1421 note).Subpart J--[Removed and Reserved]02. Subpart J, consisting of Sec. Sec. 301.53-1 through 301.53-9, is removed and reserved. Done in Washington, DC, this 1st day of December 2020.Michael Watson,Acting Administrator, Animal and Plant Health Inspection Service.[FR Doc. 2020-26734 Filed 12-14-20; 8:45 am]BILLING CODE 3410-34-P

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[***Innovative nature projects awarded funding to drive private investment***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:634P-7111-JD3Y-Y4GD-00000-00&context=1516831)

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Projects to restore kelp ***forests***, create new woodland, deliver natural flood risk management, and improve water quality are among an initial 27 schemes to benefit from a pioneering new fund to drive private investment in nature and tackle climate change, Defra, the Environment Agency Natural England have announced today (14 July 2021).

Organisations across England have been awarded up to £100,000 each, as part of the ground-breaking £10 million Natural Environment Investment Readiness Fund.

The funding will be used to develop the projects to the point they can provide a return on investment by capturing the value of carbon, water quality, biodiversity and other benefits provided by natural assets such as woodlands, peatlands, catchments and landscapes.

Funding has been awarded to environmental groups, businesses and local authorities to develop projects that protect and enhance nature while also demonstrating innovative approaches to generating revenues from the wide range of benefits that nature provides.

Revenues will be generated through the sale of carbon and biodiversity units, natural flood management benefits and through reduced water treatment costs. In developing these revenue streams, the Fund will help create a pipeline of projects for the private sector to invest in, and develop new funding models that can be scaled and replicated elsewhere.

Projects receiving funding focus on tackling climate change and restoring nature through schemes such as woodland and habitat creation, peatland restoration, sustainable drainage and river catchment management.

Examples include developing a carbon credit model for saltmarshes across England; kelp ***forest*** restoration off the Sussex coast; woodland creation in North Yorkshire; and peatland restoration in Greater Manchester.

Environment Minister Rebecca Pow said:

To tackle the environmental challenges we face from climate change and biodiversity loss, it is crucial that domestic natural environment projects are able to attract private investment alongside support from the public sector.

Unleashing innovation and growing new sources of finance, such as through the Natural Environment Investment Readiness Fund, are fundamental for delivering nature recovery and developing nature-based solutions to achieve net zero carbon ***emissions*** by 2050.

Chair of the Environment Agency, Emma Howard Boyd said:

With the right structure, nature-based projects can be scaled up by private finance, helping to reduce ***emissions***, prepare for climate shocks and create jobs.

From a new business model for multi-functional forestry in Yorkshire, to an investment fund to transform farmland in Norfolk, these projects will provide evidence of funding models to make industries fit for the future, reach net zero by 2050, and create a nature positive future.

With COP26 coming to the UK this year, this demonstrates how to create investable propositions for nature based solutions to the climate emergency.

Tony Juniper, Chair of Natural England, said:

Restoring Nature is essential for tackling climate change and supporting a strong, sustainable economy. Mobilising private finance can make a huge contribution to this and NEIRF is among the steps needed right now to help unlock that investment.

I am very pleased that Natural England is providing technical input into the fund, helping to identify projects that will enable the public, private and charitable sectors to collaborate in genuine partnership to deliver nature recovery and action on climate change.

Working on behalf of Defra and HMT, delivery partners the Environment Agency, Natural England and the Access Foundation for Social Investment will support the projects and make the knowledge generated available to the public to encourage similar approaches to access private sector finance for nature projects in the future.

The Green Finance Institute (GFI) has supported DEFRA and the Environment Agency throughout the Fund's launch including leading a series of educational workshops for interested applicants, and acting as third party assessor and advisor over the application and awards process.

Chief Executive of the GFI, Dr Rhian-Mari Thomas said:

The recent Dasgupta Review made clear the value of nature to our economy and society and the need for investment in nature-positive projects. The Fund will accelerate private investment in nature, as will the learnings derived from the successful applicants and their projects. We look forward to continuing our support for this transformative initiative.

Subject to confirmation, the Environment Agency and Defra are planning to launch a further application round later this year.

Since the Prime Minister's 10 Point Plan publication we have enshrined the UK's sixth carbon budget in law, proposing a ***target*** which would reduce greenhouse gas ***emissions*** by 78% by 2035 compared to 1990 levels.

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Applicant: New ***Forest*** National Park Authority

Funding: £99,229

Details: Mapping the restoration of arable and neutral grasslands to woodland and fens across three public and privately owned sites within the NPA in an area of high development pressure. The project will scope work needed to restore woodlands and wetlands, resulting in carbon sequestration, habitat creation and improvements in water quality. Revenues from these ecosystem services will then be modelled in the form of carbon, nutrient and biodiversity credits to demonstrate a case for private investors. Project: UK Soil Farm Carbon Code-Piloting and developing carbon investment readiness

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[***Innovative nature projects awarded funding to drive private investment***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:634M-XJ71-JC7J-N2J4-00000-00&context=1516831)

Gov.uk

July 14, 2021 Wednesday 1:00 AM GMT

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**Length:** 3062 words

**Highlight:** A pioneering new fund to drive private investment in nature and tackle climate change has been awarded to 27 projects

**Body**

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Organisations across England have been awarded up to £100,000 each, as part of the ground-breaking £10 million [*Natural Environment Investment Readiness Fund*](https://www.gov.uk/government/news/new-10-million-fund-to-drive-private-sector-investment-in-nature--2) .

The funding will be used to develop the projects to the point they can provide a return on investment by capturing the value of carbon, water quality, biodiversity and other benefits provided by natural assets such as woodlands, peatlands, catchments and landscapes.

Funding has been awarded to environmental groups, businesses and local authorities to develop projects that protect and enhance nature while also demonstrating innovative approaches to generating revenues from the wide range of benefits that nature provides.

Revenues will be generated through the sale of carbon and biodiversity units, natural flood management benefits and through reduced water treatment costs. In developing these revenue streams, the Fund will help create a pipeline of projects for the private sector to invest in, and develop new funding models that can be scaled and replicated elsewhere.

Projects receiving funding focus on tackling climate change and restoring nature through schemes such as woodland and habitat creation, peatland restoration, sustainable drainage and river catchment management.

Examples include developing a carbon credit model for saltmarshes across England; kelp ***forest*** restoration off the Sussex coast; woodland creation in North Yorkshire; and peatland restoration in Greater Manchester.

Environment Minister Rebecca Pow said:

To tackle the environmental challenges we face from climate change and biodiversity loss, it is crucial that domestic natural environment projects are able to attract private investment alongside support from the public sector.

Unleashing innovation and growing new sources of finance, such as through the Natural Environment Investment Readiness Fund, are fundamental for delivering nature recovery and developing nature-based solutions to achieve net zero carbon ***emissions*** by 2050.

Chair of the Environment Agency, Emma Howard Boyd said:

With the right structure, nature-based projects can be scaled up by private finance, helping to reduce ***emissions***, prepare for climate shocks and create jobs.

From a new business model for multi-functional forestry in Yorkshire, to an investment fund to transform farmland in Norfolk, these projects will provide evidence of funding models to make industries fit for the future, reach net zero by 2050, and create a nature positive future.

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Working on behalf of Defra and HMT, delivery partners the Environment Agency, Natural England and the Access Foundation for Social Investment will support the projects and make the knowledge generated available to the public to encourage similar approaches to access private sector finance for nature projects in the future.

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Chief Executive of the GFI, Dr Rhian-Mari Thomas said:

The recent Dasgupta Review made clear the value of nature to our economy and society and the need for investment in nature-positive projects. The Fund will accelerate private investment in nature, as will the learnings derived from the successful applicants and their projects. We look forward to continuing our support for this transformative initiative.

Subject to confirmation, the Environment Agency and Defra are planning to launch a further application round later this year.

Since the Prime Minister’s 10 Point Plan publication we have enshrined the UK’s sixth carbon budget in law, proposing a ***target*** which would reduce greenhouse gas ***emissions*** by 78% by 2035 compared to 1990 levels.

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[***Innovative nature projects awarded funding to drive private investment***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:634P-CG41-F12F-F001-00000-00&context=1516831)

UK Government News

July 14, 2021 Wednesday 11:19 AM EST

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**Body**

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The recent Dasgupta Review made clear the value of nature to our economy and society and the need for investment in nature-positive projects. The Fund will accelerate private investment in nature, as will the learnings derived from the successful applicants and their projects. We look forward to continuing our support for this transformative initiative.

Subject to confirmation, the Environment Agency and Defra are planning to launch a further application round later this year.

Since the Prime Minister's 10 Point Plan publication we have enshrined the UK's sixth carbon budget in law, proposing a ***target*** which would reduce greenhouse gas ***emissions*** by 78% by 2035 compared to 1990 levels.

We are also encouraging countries to join the UK's call to protect at least 30% of the global ocean within Marine Protected Areas (MPAs) by 2030, as announced by the UK at the UN General Assembly in September 2018. We were also the first major economy to set a legally binding net zero greenhouse gas ***emissions*** ***target*** by 2050.

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Further information

A selection of the successful projects benefiting from the Natural Environment Investment Readiness Fund are below:

Project: New ***Forest*** Net Zero: Investment Models for Nature Restoration

Applicant: New ***Forest*** National Park Authority

Funding: &#163;99,229

Details: Mapping the restoration of arable and neutral grasslands to woodland and fens across three public and privately owned sites within the NPA in an area of high development pressure. The project will scope work needed to restore woodlands and wetlands, resulting in carbon sequestration, habitat creation and improvements in water quality. Revenues from these ecosystem services will then be modelled in the form of carbon, nutrient and biodiversity credits to demonstrate a case for private investors.

Project: UK Soil & Farm Carbon Code-Piloting and developing carbon investment readiness

Applicant: Farming and Wildlife Advisory Group South West (FWAG)

Funding: &#163;98,000

Details: Building on a three year partnership investigating regenerative ***agriculture*** and carbon, aiming to propose a UK Farm and Soil Code in 2022. Through this project carbon on farms will be monetised, particularly through regenerative ***agricultural*** practices enhancing carbon sequestration in soils.

Project: Crystal Clear Clyst Bond

Applicant: East Devon District Council

Funding: &#163;100,000

Details: Seeking to convert farmland to woodland in an area experiencing a growth in development, via an Environmental Impact Bond. This is a council driven project and will lead to the conversion of ***agricultural*** ***land*** to woodland. It will monetise revenue generation from voluntary carbon credits, biodiversity credits from new habitat recreation and the Community Infrastructure Levy.

Project: The Wildlife Trusts' Habitat Banking Investment Model

Applicant: Berkshire, Buckinghamshire, Oxfordshire Wildlife Trust

Funding: &#163;100,000

Details: Developing a new habitat banking investment model to deliver biodiversity net gain at scale. The project is a consortium of Wildlife Trusts and will define habitat restoration and creation of grassland, wetland and woodland at three sites for carbon storage, improved flood resilience and visitor well-being. The project will monetise potential for revenue generation through biodiversity credits.

Project: Sussex Bay kelp: a carbon model for kelp ***forest*** restoration

Applicant: Adur District & Worthing Borough Councils

Funding: &#163;79,000

Details: Restoring the kelp beds that have been lost to trawling and create a blue carbon bank to support and sustain the restoration of a large kelp ***forest*** in the new Trawler Exclusion Zone between Selsey Bill and Shoreham. The project will explore the voluntary market in blue carbon sales and proposes to monetise revenue streams from kelp restoration in the form of aquaculture, tourism, coastal erosion and flood risk and water quality.

Project: Wilder Carbon Standard

Applicant: Kent Wildlife Trust

Funding: &#163;100,000

Details: Creating a finance facility to facilitate the restoration of nature at scale funded by carbon finance. The project will test and develop the ability to generate new revenue streams across multiple habitats. In particular, this project will develop a carbon standard which can be linked to wild habitats and generate revenues from biodiversity credits.

Project: Developing a new business model for multi-functional forestry on Swinton Estate

Applicant: Swinton Estate (The Trustees of Swinton Heirs Trust)

Funding: &#163;85,551

Details: Creating and managing woodlands to optimise the balance of environmental and commercial outcomes whilst reducing the intensity of farming on the estate. The project will generate revenue from forestry, including timber, and will monetise wider benefits from carbon sequestration, biodiversity credits, recreation, and water quality.

Project: Greater Manchester Environment Fund: Scaling Up Natural Capital Investment

Applicant: Lancashire Wildlife Trust

Funding: &#163;100,000

Details: Raising investment to restore peatland through the Greater Manchester Environment Fund by modelling revenues from the sale of carbon and biodiversity credits through woodland creation and increasing biodiversity.

Project: Financing Wetlands for the Stiffkey using Environmental Impact Bonds

Applicant: Norfolk Rivers Trust

Funding: &#163;70,000

Details: Developing an Environmental Impact Bond to reduce phosphates and other pollutants entering the River Stiffkey, reducing the harm to biodiversity. The project will model revenues from this intervention in the form of phosphate credits and it will explore other ecosystem services for additional revenue sources.

Project: Wendling Beck Exemplar Project (WBEP)

Applicant: Norfolk Wildlife Trust

Funding: &#163;99,718

Details: Creating an investment fund to deliver a landscape scale catchment project to transform farmland through river restoration, grassland and wetland creation. The project will model revenue generated from sales of biodiversity, carbon and nutrient credits.

Project: An investment model for catchment-scale nature restoration in the Esk Valley

Applicant: North York Moors National Park Authority

Funding: &#163;99,261

Details: Developing catchment scale river restoration, which will be funded through the monetisation of carbon, biodiversity and water management. The National Park will work with the Esk Valley Farmers Group (EVFG) and pilot an approach that will be a blueprint for catchment-scale nature restoration applicable across all National Parks.

Project: Warwickshire Carbon and Environmental Markets

Applicant: Warwickshire County Council

Funding: &#163;72,000

Details: Building and broadening the scope of the Warwickshire biodiversity net gain market, to bring in wider ecosystem benefits including carbon and catchment services. The primary focus of the project is to expand the biodiversity net gain market to woodland carbon and blend public funding for tree planting with carbon credits.

Project: A Natural Capital Investment Company for Accelerating Delivery of Habitat Banks

Applicant: Surrey Wildlife Trust

Funding: &#163;100,000

Details: Establishing a natural capital investment company to model biodiversity net gain at scale in support of development growth in the southern England. The project will also explore and quantify income from natural flood risk management and carbon sequestration sources.

Project: Making the Case for Investment in the Tamar Valley's Nature-Based Services

Applicant: The National Association for Areas of Outstanding Natural Beauty

Funding: &#163;99,163

Details: Developing a local ecosystem service market through testing trading mechanisms which will market benefits from environmental enhancement of five sites in the Tamar Valley. The project will identify and monetise a range of benefits in the form of carbon, biodiversity credits, natural flood risk management, and water quantity improvement.

Project: A case for a UK Saltmarsh Carbon Code: Evidence, Intervention, and Investment

Applicant: UK Centre for Ecology & Hydrology (UKCEH)

Funding: &#163;99,931

Details: Developing a saltmarsh code to support habitat restoration activities. The project will involve four sites - Skeffling, East Yorkshire (North Humber); Essex (Old Hall Marshes); Dorset (Arne Moors); Somerset (Steart Marshes) - with the potential to build a wide umbrella Blue Carbon Code applicable in wider marine habitats. The project seeks to develop a rigorous and scientifically based voluntary certification standard for those that want to market the climate benefits of saltmarsh restoration, with assurances to voluntary carbon market buyers that the climate benefits are quantifiable, additional and permanent.

Project: RSPB Natural Capital Investment Aggregation Vehicle

Applicant: RSPB

Funding: &#163;59,638

Details: Developing a method to aggregate equity funding, which would finance habitat creation in a pipeline of projects. It will seek to model revenues through biodiversity and carbon credits at significant scale, and it will model this approach in up to six pioneer sites.

Project: Landscapes for Water in the Calder and Colne Catchment

Applicant: National Trust

Funding: &#163;98,000

Details: Improving woodland cover and leading to wider natural flood management in the Upper Calder and Colne catchment. This will lead to landscape change and monetise a suite of ecosystem service benefits, including from natural flood risk outcome payments, carbon, and biodiversity credits.

Project: Developing a Worcestershire Natural Capital Investment Partnership

Applicant: Worcestershire County Council

Funding: &#163;91,118

Details: Establishing a county-wide natural capital investment framework for selling biodiversity credits via a habitat 'bank'. The framework will offer scalability so that all Worcestershire local authorities can opt in. The project will explore and model investment from a reduction of costs associated with flood risk; sequestration of carbon; provision of pollination services; providing physical and mental health benefits to the public through access to nature.

Project: Doubling Nature Investment Readiness Project (Merseyside)

Applicant: Mersey ***Forest***

Funding: &#163;96,000

Details: Establishing a place based investment vehicle to improve the Bollin catchment through increased tree cover and improvements to heathland, bog and wet grassland. The project will model investment through a bond repayable through biodiversity, carbon credits and catchment services such as natural flood risk management.

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Project: Creation of a Hedgerow Carbon Code

Applicant: Allerton Research & Educational Trust

Funding: &#163;81,561

Details: Developing a hedgerow carbon code to support habitat enhancement activities and measurement of carbon sequestration. The project will include field trials leading to the development of a verification code, and determine the potential for enabling farmers to increase the amount of carbon stored in their hedgerows and trade carbon credits.

Project: Buscot and Coleshill - Piloting Place-based Innovation for the National Trust

Applicant: National Trust

Funding: &#163;96,500

Details: Testing place-based natural capital investment approaches centred on woodland and habitat creation, which will lead to wider socio-economic and water management interventions. The project will map and audit the potential monetisation of a range of ecosystem services from biodiversity and woodland creation, flood risk management, improved water quality and ecotourism.

Project: Protected Landscape Investment Bank

Applicant: Cornwall Area of Outstanding Natural Beauty Trust

Funding: &#163;99,500

Details: Developing landscape recovery funding and investment strategy which will detail a diverse set of income streams across catchment services, biodiversity and carbon off setting, tourism and health. As part of the project, the AONB will map and audit the potential revenues from environmental enhancement activities resulting in water quality improvements, carbon sequestration, habitat creation, flood risk mitigation and wider services such as tourism, and health.

Project: Green Investment in Greater Lincolnshire (GIGL)

Applicant: Lincolnshire Wildlife Trust

Funding: &#163;100,000

Details: Establishing market mechanisms to trade biodiversity, carbon and water credits generated through improvements to ***agricultural*** ***land*** at a landscape scale. The project will quantify demand from buyers of biodiversity, carbon and water credits in Greater Lincolnshire and work with landowners to identify nature-based solutions, establishing a registry of pipeline of shovel ready projects.

Project: Environmental Impact Bond for phosphorus ***removal*** from the Irwell catchment

Applicant: United Utilities Water Ltd

Funding: &#163;66,500

Details: Establishing an environmental impact bond model and an investment case to deliver up to ten sustainable drainage systems to industrial estates and other nature based solutions. The project will result in an investment case supported by potential buyers, the transaction details, and how the interventions will be delivered. The project is expected to have relevance across the water sector.

Project: Cornwall Habitat Bank

Applicant: Cornwall Council

Funding: &#163;99,404

Details: Developing a countywide habitat bank aiming to be a one-stop shop with a brokerage service to deliver natural capital enhancements, biodiversity net gain and trial a blue carbon market. The project will identify how to blend biodiversity and carbon credits with tourism and wider funding sources.

Project: The Carbon Bank

Applicant: Ecotricity New Ventures

Funding: &#163;89,675

Details: Identifying and model woodland creation in a number of company sites, which will result in the creation and selling of woodland carbon a new and bespoke web platform to over 200,000 customers. For any query with respect to this article or any other content requirement, please contact Editor at [*contentservices@htlive.com*](mailto:contentservices@htlive.com)

**Load-Date:** July 14, 2021

**End of Document**



[***Proposed $2.9bn Urannah dam in Queensland could return as little as 26c per dollar***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:619X-V3X1-DY4H-K066-00000-00&context=1516831)

The Guardian (London)

November 18, 2020 Wednesday 3:15 AM GMT

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**Section:** AUSTRALIA NEWS; Version:1

**Length:** 778 words

**Byline:** Ben Smee

**Highlight:** The dam’s benefits have been overstated and the business case does not take environmental costs into account, economist says

**Body**

A 1.5 trillion-litre north Queensland dam proposal backed by both the federal and state governments could return as little as 26c for every dollar invested, an economic analysis has found.

The $2.9bn Urannah dam near Mackay has been awarded [*coordinated project status*](https://www.dsdmip.qld.gov.au/coordinator-general/assessments-and-approvals/urannah-project.html) by the Queensland government. Studies and preliminary planning work have been financed with about $15m in federal grants since 2016.

A Guardian Australia investigation in September found $12m in federal funding announced in the past two years [*ultimately flowed to a firm run by prominent Queensland Liberal National party figures*](https://www.dsdmip.qld.gov.au/coordinator-general/assessments-and-approvals/urannah-project.html) and donors.

A preliminary business case for Urannah, submitted to the state government in 2019, claimed the project would return a benefit of $1.70 for every dollar invested.

But a [*review of that business case*](https://www.dsdmip.qld.gov.au/coordinator-general/assessments-and-approvals/urannah-project.html) by the economist Andrew Buckwell of Altus Impact found the benefits were significantly overstated, based on “flawed assumptions” and did not take into account environmental costs, including additional carbon ***emissions*** created by the inundation of 6,099ha of ***forest***. The economic assessment was commissioned by the Mackay Conservation Group.

In each of five scenarios modelled by Buckwell, the project was measured as having a net social cost to the community. In the worst-case scenario, the total benefit of Urannah was equivalent to about a quarter of the cost.

“From an economic perspective, the construction of the Urannah Dam should not be supported,” the report concludes. “It will come at a net social cost to the community.

“From a policy perspective, the construction of the Urannah Dam should not be supported. It will not achieve the stated goals of cost recovery from water users.”

The preliminary business case for Urannah claimed as a benefit the $700m “avoided cost” of not building a different project – an additional pipeline to take water from Burdekin Falls Dam to Moranbah. Such a proposal has no formal approval or funding.

The Queensland Department of Natural Resources, Mines and Energy [*previously warned*](https://www.dsdmip.qld.gov.au/coordinator-general/assessments-and-approvals/urannah-project.html) the proponents that this “fundamental assumption” could lead to “overstating the viability of Urannah Dam”.

Buckwell’s report says simply ***removing*** the “problematic” assumptions about the alternative pipeline from the business case – in line with the department’s formal advice – reduces the total benefit of Urannah to about 54c for every dollar invested.

While much of the public discussion about Urannah has focused on how the project might boost local ***agriculture***, the bulk of any water transported to Moranbah would be used for coalmining.

Documents submitted by the dam’s proponent, Bowen River Utilities, to the federal government for environmental assessment show they have consulted major coalmine operators in the Bowen Basin about buying water from Urannah.

“Community and stakeholder consultation has been ***targeted*** and conducted at a regional level as part of the feasibility studies for the project,” the referral document says.

“The focus of stakeholder engagement, to date, has been on water infrastructure and potential customers of a large-scale water solution. Consultation with the following stakeholders has been undertaken … Rio Tinto, Glencore, QCoal, New Hope, BMA, Peabody, Anglo American, Stanmore, Fitzroy Resources.”

Peter McCallum, from the Mackay Conservation Group, said the proponents of Urannah assumed there would be significant demand for water in the Bowen Basin in future.

“There is no certainty about that,” he said.

“Eungella Dam has water available, but mining companies have so far seen no need for it. If there was significant demand then that water would have already been snapped up.

“There is also uncertainty about the long-term future of coalmining. Big companies like Rio Tinto and BHP are reducing their coal interests in Queensland.”

He said the preliminary business case for Urannah did not examine the cost of purchasing biodiversity offsets, the cost of runoff to the Great Barrier Reef and ***emissions*** of greenhouse gases from flooding ***forests***.

“Those costs can be quantified using accepted valuations. The proponent should have included them in the business case so that people know the real value of this project.

“We are also concerned about the lack of clear information about long-term markets for water from the dam. If the dam fails to make a profit, the private owners may walk away and leave Queensland taxpayers paying the maintenance cost for a dam that nobody wants.

“This dam will destroy some of the most ecologically valuable and beautiful river landscape in central Queensland for a project that makes no economic sense.”

The proponent, Bowen River Utilities, was contacted for comment.

**Load-Date:** November 18, 2020

**End of Document**



[***Innovative nature projects awarded funding to drive private investment***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:634P-7111-JD3Y-Y4MS-00000-00&context=1516831)

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July 14, 2021 Wednesday

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**Length:** 3059 words

**Body**

July 14, 2021

[*https://www.gov.uk*](https://www.gov.uk)

Projects to restore kelp ***forests***, create new woodland, deliver natural flood risk management, and improve water quality are among an initial 27 schemes to benefit from a pioneering new fund to drive private investment in nature and tackle climate change, Defra, the Environment Agency Natural England have announced today (14 July 2021).

Organisations across England have been awarded up to £100,000 each, as part of the ground-breaking £10 million Natural Environment Investment Readiness Fund.

The funding will be used to develop the projects to the point they can provide a return on investment by capturing the value of carbon, water quality, biodiversity and other benefits provided by natural assets such as woodlands, peatlands, catchments and landscapes.

Funding has been awarded to environmental groups, businesses and local authorities to develop projects that protect and enhance nature while also demonstrating innovative approaches to generating revenues from the wide range of benefits that nature provides.

Revenues will be generated through the sale of carbon and biodiversity units, natural flood management benefits and through reduced water treatment costs. In developing these revenue streams, the Fund will help create a pipeline of projects for the private sector to invest in, and develop new funding models that can be scaled and replicated elsewhere.

Projects receiving funding focus on tackling climate change and restoring nature through schemes such as woodland and habitat creation, peatland restoration, sustainable drainage and river catchment management.

Examples include developing a carbon credit model for saltmarshes across England; kelp ***forest*** restoration off the Sussex coast; woodland creation in North Yorkshire; and peatland restoration in Greater Manchester.

Environment Minister Rebecca Pow said:

To tackle the environmental challenges we face from climate change and biodiversity loss, it is crucial that domestic natural environment projects are able to attract private investment alongside support from the public sector.

Unleashing innovation and growing new sources of finance, such as through the Natural Environment Investment Readiness Fund, are fundamental for delivering nature recovery and developing nature-based solutions to achieve net zero carbon ***emissions*** by 2050.

Chair of the Environment Agency, Emma Howard Boyd said:

With the right structure, nature-based projects can be scaled up by private finance, helping to reduce ***emissions***, prepare for climate shocks and create jobs.

From a new business model for multi-functional forestry in Yorkshire, to an investment fund to transform farmland in Norfolk, these projects will provide evidence of funding models to make industries fit for the future, reach net zero by 2050, and create a nature positive future.

With COP26 coming to the UK this year, this demonstrates how to create investable propositions for nature based solutions to the climate emergency.

Tony Juniper, Chair of Natural England, said:

Restoring Nature is essential for tackling climate change and supporting a strong, sustainable economy. Mobilising private finance can make a huge contribution to this and NEIRF is among the steps needed right now to help unlock that investment.

I am very pleased that Natural England is providing technical input into the fund, helping to identify projects that will enable the public, private and charitable sectors to collaborate in genuine partnership to deliver nature recovery and action on climate change.

Working on behalf of Defra and HMT, delivery partners the Environment Agency, Natural England and the Access Foundation for Social Investment will support the projects and make the knowledge generated available to the public to encourage similar approaches to access private sector finance for nature projects in the future.

The Green Finance Institute (GFI) has supported DEFRA and the Environment Agency throughout the Fund's launch including leading a series of educational workshops for interested applicants, and acting as third party assessor and advisor over the application and awards process.

Chief Executive of the GFI, Dr Rhian-Mari Thomas said:

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Applicant: Lincolnshire Wildlife Trust

Funding: £100,000

Details: Establishing market mechanisms to trade biodiversity, carbon and water credits generated through improvements to ***agricultural*** ***land*** at a landscape scale. The project will quantify demand from buyers of biodiversity, carbon and water credits in Greater Lincolnshire and work with landowners to identify nature-based solutions, establishing a registry of pipeline of shovel ready projects. Project: Environmental Impact Bond for phosphorus ***removal*** from the Irwell catchment

Applicant: United Utilities Water Ltd

Funding: £66,500

Details: Establishing an environmental impact bond model and an investment case to deliver up to ten sustainable drainage systems to industrial estates and other nature based solutions. The project will result in an investment case supported by potential buyers, the transaction details, and how the interventions will be delivered. The project is expected to have relevance across the water sector. Project: Cornwall Habitat Bank

Applicant: Cornwall Council

Funding: £99,404

Details: Developing a countywide habitat bank aiming to be a one-stop shop with a brokerage service to deliver natural capital enhancements, biodiversity net gain and trial a blue carbon market. The project will identify how to blend biodiversity and carbon credits with tourism and wider funding sources. Project: The Carbon Bank

Applicant: Ecotricity New Ventures

Funding: £89,675

Details: Identifying and model woodland creation in a number of company sites, which will result in the creation and selling of woodland carbon a new and bespoke web platform to over 200,000 customers.

**Load-Date:** July 14, 2021

**End of Document**



[***Innovative nature projects awarded funding to drive private investment***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:634X-WX21-F0YC-N27Y-00000-00&context=1516831)

Impact News Service

July 14, 2021 Wednesday

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**Length:** 3059 words

**Body**

London: UK Government has issued the following news release:

Projects to restore kelp ***forests***, create new woodland, deliver natural flood risk management, and improve water quality are among an initial 27 schemes to benefit from a pioneering new fund to drive private investment in nature and tackle climate change, Defra, the Environment Agency & Natural England have announced today (14 July 2021).

Organisations across England have been awarded up to £100,000 each, as part of the ground-breaking £10 million Natural Environment Investment Readiness Fund.

The funding will be used to develop the projects to the point they can provide a return on investment by capturing the value of carbon, water quality, biodiversity and other benefits provided by natural assets such as woodlands, peatlands, catchments and landscapes.

Funding has been awarded to environmental groups, businesses and local authorities to develop projects that protect and enhance nature while also demonstrating innovative approaches to generating revenues from the wide range of benefits that nature provides.

Revenues will be generated through the sale of carbon and biodiversity units, natural flood management benefits and through reduced water treatment costs. In developing these revenue streams, the Fund will help create a pipeline of projects for the private sector to invest in, and develop new funding models that can be scaled and replicated elsewhere.

Projects receiving funding focus on tackling climate change and restoring nature through schemes such as woodland and habitat creation, peatland restoration, sustainable drainage and river catchment management.

Examples include developing a carbon credit model for saltmarshes across England; kelp ***forest*** restoration off the Sussex coast; woodland creation in North Yorkshire; and peatland restoration in Greater Manchester.

Environment Minister Rebecca Pow said:

To tackle the environmental challenges we face from climate change and biodiversity loss, it is crucial that domestic natural environment projects are able to attract private investment alongside support from the public sector.

Unleashing innovation and growing new sources of finance, such as through the Natural Environment Investment Readiness Fund, are fundamental for delivering nature recovery and developing nature-based solutions to achieve net zero carbon ***emissions*** by 2050.

Chair of the Environment Agency, Emma Howard Boyd said:

With the right structure, nature-based projects can be scaled up by private finance, helping to reduce ***emissions***, prepare for climate shocks and create jobs.

From a new business model for multi-functional forestry in Yorkshire, to an investment fund to transform farmland in Norfolk, these projects will provide evidence of funding models to make industries fit for the future, reach net zero by 2050, and create a nature positive future.

With COP26 coming to the UK this year, this demonstrates how to create investable propositions for nature based solutions to the climate emergency.

Tony Juniper, Chair of Natural England, said:

Restoring Nature is essential for tackling climate change and supporting a strong, sustainable economy. Mobilising private finance can make a huge contribution to this and NEIRF is among the steps needed right now to help unlock that investment.

I am very pleased that Natural England is providing technical input into the fund, helping to identify projects that will enable the public, private and charitable sectors to collaborate in genuine partnership to deliver nature recovery and action on climate change.

Working on behalf of Defra and HMT, delivery partners the Environment Agency, Natural England and the Access Foundation for Social Investment will support the projects and make the knowledge generated available to the public to encourage similar approaches to access private sector finance for nature projects in the future.

The Green Finance Institute (GFI) has supported DEFRA and the Environment Agency throughout the Fund’s launch including leading a series of educational workshops for interested applicants, and acting as third party assessor and advisor over the application and awards process.

Chief Executive of the GFI, Dr Rhian-Mari Thomas said:

The recent Dasgupta Review made clear the value of nature to our economy and society and the need for investment in nature-positive projects. The Fund will accelerate private investment in nature, as will the learnings derived from the successful applicants and their projects. We look forward to continuing our support for this transformative initiative.

Subject to confirmation, the Environment Agency and Defra are planning to launch a further application round later this year.

Since the Prime Minister’s 10 Point Plan publication we have enshrined the UK’s sixth carbon budget in law, proposing a ***target*** which would reduce greenhouse gas ***emissions*** by 78% by 2035 compared to 1990 levels.

We are also encouraging countries to join the UK’s call to protect at least 30% of the global ocean within Marine Protected Areas (MPAs) by 2030, as announced by the UK at the UN General Assembly in September 2018. We were also the first major economy to set a legally binding net zero greenhouse gas ***emissions*** ***target*** by 2050.

For more information contact [*george.hinton@environment-agency.gov.uk*](mailto:george.hinton@environment-agency.gov.uk)

Further information

A selection of the successful projects benefiting from the Natural Environment Investment Readiness Fund are below:

Project: New ***Forest*** Net Zero: Investment Models for Nature Restoration

Applicant: New ***Forest*** National Park Authority

Funding: £99,229

Details: Mapping the restoration of arable and neutral grasslands to woodland and fens across three public and privately owned sites within the NPA in an area of high development pressure. The project will scope work needed to restore woodlands and wetlands, resulting in carbon sequestration, habitat creation and improvements in water quality. Revenues from these ecosystem services will then be modelled in the form of carbon, nutrient and biodiversity credits to demonstrate a case for private investors.

Project: UK Soil & Farm Carbon Code-Piloting and developing carbon investment readiness

Applicant: Farming and Wildlife Advisory Group South West (FWAG)

Funding: £98,000

Details: Building on a three year partnership investigating regenerative ***agriculture*** and carbon, aiming to propose a UK Farm and Soil Code in 2022. Through this project carbon on farms will be monetised, particularly through regenerative ***agricultural*** practices enhancing carbon sequestration in soils.

Project: Crystal Clear Clyst Bond

Applicant: East Devon District Council

Funding: £100,000

Details: Seeking to convert farmland to woodland in an area experiencing a growth in development, via an Environmental Impact Bond. This is a council driven project and will lead to the conversion of ***agricultural*** ***land*** to woodland. It will monetise revenue generation from voluntary carbon credits, biodiversity credits from new habitat recreation and the Community Infrastructure Levy.

Project: The Wildlife Trusts’ Habitat Banking Investment Model

Applicant: Berkshire, Buckinghamshire, Oxfordshire Wildlife Trust

Funding: £100,000

Details: Developing a new habitat banking investment model to deliver biodiversity net gain at scale. The project is a consortium of Wildlife Trusts and will define habitat restoration and creation of grassland, wetland and woodland at three sites for carbon storage, improved flood resilience and visitor well-being. The project will monetise potential for revenue generation through biodiversity credits.

Project: Sussex Bay kelp: a carbon model for kelp ***forest*** restoration

Applicant: Adur District & Worthing Borough Councils

Funding: £79,000

Details: Restoring the kelp beds that have been lost to trawling and create a blue carbon bank to support and sustain the restoration of a large kelp ***forest*** in the new Trawler Exclusion Zone between Selsey Bill and Shoreham. The project will explore the voluntary market in blue carbon sales and proposes to monetise revenue streams from kelp restoration in the form of aquaculture, tourism, coastal erosion and flood risk and water quality.

Project: Wilder Carbon Standard

Applicant: Kent Wildlife Trust

Funding: £100,000

Details: Creating a finance facility to facilitate the restoration of nature at scale funded by carbon finance. The project will test and develop the ability to generate new revenue streams across multiple habitats. In particular, this project will develop a carbon standard which can be linked to wild habitats and generate revenues from biodiversity credits.

Project: Developing a new business model for multi-functional forestry on Swinton Estate

Applicant: Swinton Estate (The Trustees of Swinton Heirs Trust)

Funding: £85,551

Details: Creating and managing woodlands to optimise the balance of environmental and commercial outcomes whilst reducing the intensity of farming on the estate. The project will generate revenue from forestry, including timber, and will monetise wider benefits from carbon sequestration, biodiversity credits, recreation, and water quality.

Project: Greater Manchester Environment Fund: Scaling Up Natural Capital Investment

Applicant: Lancashire Wildlife Trust

Funding: £100,000

Details: Raising investment to restore peatland through the Greater Manchester Environment Fund by modelling revenues from the sale of carbon and biodiversity credits through woodland creation and increasing biodiversity.

Project: Financing Wetlands for the Stiffkey using Environmental Impact Bonds

Applicant: Norfolk Rivers Trust

Funding: £70,000

Details: Developing an Environmental Impact Bond to reduce phosphates and other pollutants entering the River Stiffkey, reducing the harm to biodiversity. The project will model revenues from this intervention in the form of phosphate credits and it will explore other ecosystem services for additional revenue sources.

Project: Wendling Beck Exemplar Project (WBEP)

Applicant: Norfolk Wildlife Trust

Funding: £99,718

Details: Creating an investment fund to deliver a landscape scale catchment project to transform farmland through river restoration, grassland and wetland creation. The project will model revenue generated from sales of biodiversity, carbon and nutrient credits.

Project: An investment model for catchment-scale nature restoration in the Esk Valley

Applicant: North York Moors National Park Authority

Funding: £99,261

Details: Developing catchment scale river restoration, which will be funded through the monetisation of carbon, biodiversity and water management. The National Park will work with the Esk Valley Farmers Group (EVFG) and pilot an approach that will be a blueprint for catchment-scale nature restoration applicable across all National Parks.

Project: Warwickshire Carbon and Environmental Markets

Applicant: Warwickshire County Council

Funding: £72,000

Details: Building and broadening the scope of the Warwickshire biodiversity net gain market, to bring in wider ecosystem benefits including carbon and catchment services. The primary focus of the project is to expand the biodiversity net gain market to woodland carbon and blend public funding for tree planting with carbon credits.

Project: A Natural Capital Investment Company for Accelerating Delivery of Habitat Banks

Applicant: Surrey Wildlife Trust

Funding: £100,000

Details: Establishing a natural capital investment company to model biodiversity net gain at scale in support of development growth in the southern England. The project will also explore and quantify income from natural flood risk management and carbon sequestration sources.

Project: Making the Case for Investment in the Tamar Valley’s Nature-Based Services

Applicant: The National Association for Areas of Outstanding Natural Beauty

Funding: £99,163

Details: Developing a local ecosystem service market through testing trading mechanisms which will market benefits from environmental enhancement of five sites in the Tamar Valley. The project will identify and monetise a range of benefits in the form of carbon, biodiversity credits, natural flood risk management, and water quantity improvement.

Project: A case for a UK Saltmarsh Carbon Code: Evidence, Intervention, and Investment

Applicant: UK Centre for Ecology & Hydrology (UKCEH)

Funding: £99,931

Details: Developing a saltmarsh code to support habitat restoration activities. The project will involve four sites – Skeffling, East Yorkshire (North Humber); Essex (Old Hall Marshes); Dorset (Arne Moors); Somerset (Steart Marshes) - with the potential to build a wide umbrella Blue Carbon Code applicable in wider marine habitats. The project seeks to develop a rigorous and scientifically based voluntary certification standard for those that want to market the climate benefits of saltmarsh restoration, with assurances to voluntary carbon market buyers that the climate benefits are quantifiable, additional and permanent.

Project: RSPB Natural Capital Investment Aggregation Vehicle

Applicant: RSPB

Funding: £59,638

Details: Developing a method to aggregate equity funding, which would finance habitat creation in a pipeline of projects. It will seek to model revenues through biodiversity and carbon credits at significant scale, and it will model this approach in up to six pioneer sites.

Project: Landscapes for Water in the Calder and Colne Catchment

Applicant: National Trust

Funding: £98,000

Details: Improving woodland cover and leading to wider natural flood management in the Upper Calder and Colne catchment. This will lead to landscape change and monetise a suite of ecosystem service benefits, including from natural flood risk outcome payments, carbon, and biodiversity credits.

Project: Developing a Worcestershire Natural Capital Investment Partnership

Applicant: Worcestershire County Council

Funding: £91,118

Details: Establishing a county-wide natural capital investment framework for selling biodiversity credits via a habitat ‘bank’. The framework will offer scalability so that all Worcestershire local authorities can opt in. The project will explore and model investment from a reduction of costs associated with flood risk; sequestration of carbon; provision of pollination services; providing physical and mental health benefits to the public through access to nature.

Project: Doubling Nature Investment Readiness Project (Merseyside)

Applicant: Mersey ***Forest***

Funding: £96,000

Details: Establishing a place based investment vehicle to improve the Bollin catchment through increased tree cover and improvements to heathland, bog and wet grassland. The project will model investment through a bond repayable through biodiversity, carbon credits and catchment services such as natural flood risk management.

Project: Hadrian Bond

Applicant: Regenerate Outcomes Company

Funding: £100,000

Details: Establishing an Environmental Impact Bond to stimulate regenerative ***agricultural*** practices across a suite of farms. The project will seek to fund the Environmental Impact Bond through modelled revenue from regenerative ***agriculture***, carbon, biodiversity credits and potentially wider catchment services such as improved water quality.

Project: Creation of a Hedgerow Carbon Code

Applicant: Allerton Research & Educational Trust

Funding: £81,561

Details: Developing a hedgerow carbon code to support habitat enhancement activities and measurement of carbon sequestration. The project will include field trials leading to the development of a verification code, and determine the potential for enabling farmers to increase the amount of carbon stored in their hedgerows and trade carbon credits.

Project: Buscot and Coleshill - Piloting Place-based Innovation for the National Trust

Applicant: National Trust

Funding: £96,500

Details: Testing place-based natural capital investment approaches centred on woodland and habitat creation, which will lead to wider socio-economic and water management interventions. The project will map and audit the potential monetisation of a range of ecosystem services from biodiversity and woodland creation, flood risk management, improved water quality and ecotourism.

Project: Protected Landscape Investment Bank

Applicant: Cornwall Area of Outstanding Natural Beauty Trust

Funding: £99,500

Details: Developing landscape recovery funding and investment strategy which will detail a diverse set of income streams across catchment services, biodiversity and carbon off setting, tourism and health. As part of the project, the AONB will map and audit the potential revenues from environmental enhancement activities resulting in water quality improvements, carbon sequestration, habitat creation, flood risk mitigation and wider services such as tourism, and health.

Project: Green Investment in Greater Lincolnshire (GIGL)

Applicant: Lincolnshire Wildlife Trust

Funding: £100,000

Details: Establishing market mechanisms to trade biodiversity, carbon and water credits generated through improvements to ***agricultural*** ***land*** at a landscape scale. The project will quantify demand from buyers of biodiversity, carbon and water credits in Greater Lincolnshire and work with landowners to identify nature-based solutions, establishing a registry of pipeline of shovel ready projects.

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Applicant: Ecotricity New Ventures

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Details: Identifying and model woodland creation in a number of company sites, which will result in the creation and selling of woodland carbon a new and bespoke web platform to over 200,000 customers.

**Load-Date:** July 15, 2021

**End of Document**



[***It's not too late: 5 ways to improve the government's plan for threatened wildlife***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:61V1-5311-F0YC-N1C1-00000-00&context=1516831)

Impact News Service

January 22, 2021 Friday

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**Length:** 1135 words

**Body**

Sydney: University of New South Wales, Australia has issued the following news release:

Australia’s Threatened Species Strategy — a five-year plan for protecting our imperilled species and ecosystems — fizzled to an end last year. A new 10-year plan is being developed to take its place, likely from March.

It comes as Australia’s list of threatened species continues to grow. Relatively recent extinctions, such as the Christmas Island ***forest*** skink, Bramble Cay melomys and smooth handfish, add to an already heavy toll.

Red handfish (Thymichthys politus), cousin of the recently extinct smooth handfish, are critically endangered. They’re small, bottom-dwelling fish that tend to ‘walk’ on their pectoral and pelvic fins rather than swim. Photo: CSIRO Science Image, CC BY-SA

Now, more than ever, Australia’s remarkable species and environments need strong and effective policies to strengthen their protection and boost their recovery.

So as we settle into the new year, let’s reflect on what’s worked and what must urgently be improved upon, to turn around Australia’s extinction crisis.

The Threatened Species Strategy is a key guiding document for biodiversity conservation at the national level. It identifies 70 priority species for conservation, made up of 20 birds, 20 mammals and 30 plants, such as the plains-wanderer, malleefowl, eastern quoll, greater bilby, black grevillea and Kakadu hibiscus.

These were considered among the most urgent in need of assistance of the more than 1,800 threatened species in Australia.

The strategy also identifies ***targets*** such as numbers of feral cats to be culled, and partnerships across industry, academia and government key to making the strategy successful.

The original strategy (2015-20) was eagerly welcomed for putting the national spotlight on threatened species conservation. It has certainly helped raise awareness of its priority species.

However, there’s little evidence the strategy has had a significant impact on threatened species conservation to date.

The midterm report in 2019 found only 35% of the priority species (14 in total) had improving trajectories compared to before the strategy (pre-2015). This number included six species — such as the brush-tailed rabbit-rat and western ringtail possum — that were still declining, but just at a slower rate.

Threatened Species Index trends for mammals (left) and birds (right) from 2000 to 2017. The index and y axes show the average change in populations (not actual population numbers) through time. Graphic: The Theatened Species Recovery Hub, Author provided

On average, the trends of threatened mammal and bird populations across Australia are not increasing.

Other ***targets***, such as killing 2 million feral cats by 2020, were not explicitly linked to measurable conservation outcomes, such as an increase in populations of threatened native animals. Because of this, it’s difficult to judge their success.

***Targets*** from the first Threatened Species Strategy. Graphic: Department of ***Agriculture***, Water and the Environment

For instance, ***land*** clearing has contributed to a similar number of extinctions in Australia (62 species) as introduced animals such as feral cats (64).

In fact, 2018 research found ***agricultural*** activities affect at least 73% of invertebrates, 82% of birds, 69% of amphibians and 73% of mammals listed as threatened in Australia. Urban development and climate change threaten up to 33% and 56% of threatened species, respectively.

Other important threats to native Australian species include pollution, feral herbivores (such as horses and goats), very frequent or hot bushfires and weeds. Buffel grass was recently identified as a major emerging threat to Australia’s biodiversity, with the risk being as high as the threat posed by cats and foxes.Five vital improvements

We made a submission to the Morrison government when the Threatened Species Strategy was under review. Below, we detail our key recommendations.

2. Formal prioritisation of focal species, threats and actions

The previous strategy focused heavily on a small subset of the more than 1,800 threatened species and ecosystems in Australia. It mostly disregarded frog, reptile, fish and invertebrate species also threatened with extinction.

To reduce bias towards primarily “charismatic” species, the federal government should use an evidence-based prioritisation approach, known as “decision science”, like they do in New South Wales, New Zealand and Canada. This would ensure funds are spent on the most feasible and beneficial recovery efforts.3. ***Targets*** linked to clear and measurable conservation outcomes

Some ***targets*** in the first Threatened Species Strategy were difficult to measure, not explicitly linked to conservation outcomes, or weak. ***Targets*** need to be more specific.

For example, a ***target*** to “improve the trajectory” of threatened species could be achieved if extinction is occurring at a slightly slower rate. Alternatively, a ***target*** to “improve the conservation status” of a species is achieved if new assessments rate it as “vulnerable” rather than “endangered”.

The ant plant (Myrmecodia beccarii) is one of the 30 plants on the federal government’s list of priority species. It is an ‘epiphyte’ (grows on other plants), and is threatened by habitat loss, invasive weeds, and ***removal*** by plant and butterfly collectors. Photo: Dave Kimble/Wikimedia, CC BY-SA4. Significant financial investment from government

Investing in conservation reduces biodiversity loss. A 2019 study found Australia’s listed threatened species could be recovered for about A$1.7 billion per year. This money could be raised by ***removing*** harmful subsidies that directly threaten biodiversity, such as those to industries emitting large volumes of greenhouse gases.

The first strategy featured a call for co-investment from industry. But this failed to attract much private sector interest, meaning many important projects aimed at conserving species did not proceed.5. Government leadership, coordination and policy alignment

The Threatened Species Strategy should be aligned with Australia’s international obligations such as the United Nation’s Sustainable Development Goals and the federal Environment Protection and Biodiversity Conservation Act 1999 (which is also currently being reviewed). This will help foster a more coherent and efficient national approach to threatened species conservation.

There are also incredible opportunities to better align threatened species conservation with policies and investment in climate change mitigation and sustainable ***agriculture***.

The benefits of investing heavily in wildlife reach beyond preventing extinctions. It would generate many jobs, including in regional and Indigenous communities.

Protecting our natural heritage is an investment, not a cost. Now is the time to seize this opportunity.

**Load-Date:** January 23, 2021

**End of Document**



[***Federal Register: Revision of Delegations of Authority Pages 65500 - 65524 [FR DOC #2020-20092]***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:612X-13T1-F0YC-N334-00000-00&context=1516831)

Impact News Service

October 15, 2020 Thursday

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**Length:** 22931 words

**Body**

Washington: Office of the Federal Register has issued the following notice:Department of ***Agriculture***-----------------------------------------------------------------------7 CFR Part 2Revision of Delegations of Authority; Final RuleFederal Register / Vol. 85 , No. 200 / Thursday, October 15, 2020 / Rules and Regulations[[Page 65500]]-----------------------------------------------------------------------DEPARTMENT OF AGRICULTUREOffice of the Secretary7 CFR Part 2RIN 0503-AA66Revision of Delegations of AuthorityAGENCY: Office of the Secretary, USDA.ACTION: Final rule.-----------------------------------------------------------------------SUMMARY: This document revises the delegations of authority from the Secretary of ***Agriculture*** and general officers of the Department of ***Agriculture*** (USDA) to reflect changes and additions to the delegations required by the ***Agriculture*** Improvement Act of 2018 and for other purposes, as summarized below.DATES: Effective October 15, 2020.FOR FURTHER INFORMATION CONTACT: Melissa McClellan, Office of the General Counsel, (202) 720-5565, [*melissa.mcclellan@usda.gov.SUPPLEMENTARY*](mailto:melissa.mcclellan@usda.gov.SUPPLEMENTARY) INFORMATION: This rule makes several changes to the United States Department of ***Agriculture***'s (USDA) delegations of authority in 7 CFR part 2 by adding new delegations and modifying existing delegations.Overview of ChangesA. Under Secretary for Rural Development and Principal Deputy Chief Financial Officer Section 12407 of the ***Agriculture*** Improvement Act of 2018 (Pub. L. 115-334) amended Section 231 of the Department of ***Agriculture*** Reorganization Act of 1994 (7 U.S.C 6941) to direct the Secretary to establish the position of Under Secretary for Rural Development (RD) as a permanent Presidentially appointed, Senate-confirmed position. The Secretary implemented this provision on August 12, 2019 by establishing the position of Under Secretary for RD and transferring the delegations of authority at 7 CFR 2.17, previously delegated to the Assistant to the Secretary for Rural Development, to the Under Secretary for RD, and realigning the agencies and entities of the RD mission area to report to the Under Secretary for RD. See SM 1076-031 available at [*https://www.ocio.usda.gov/document/secretarys-memorandum-1076-031*](https://www.ocio.usda.gov/document/secretarys-memorandum-1076-031). The Secretary also reestablished the position of Deputy Under Secretary for RD and delegated to this position the authority to perform all the duties delegated to the Under Secretary for RD during the absence or unavailability of the Under Secretary. This rule accordingly updates the references to the former position of Assistant to the Secretary for Rural Development throughout part 2 to read ``Under Secretary for Rural Development,'' and adds a new section of delegations by the Under Secretary for RD to the Deputy Under Secretary for RD at 2.45 In the same Secretary's Memorandum, the Secretary established a new position, Principal Deputy Chief Financial Officer. This rule revises the delegations of authority at 2.500 to reflect that the authorities previously delegated to the Deputy Chief Financial Officer have been transferred to the Principal Deputy Chief Financial Officer.B. ***Agriculture*** Improvement Act of 2018 The Secretary previously delegated authorities under the ***Agriculture*** Improvement Act of 2018 (``the Act'') in Secretary's Memorandum 1076-030 (July 1, 2019), available at [*https://www.ocio.usda.gov/document/secretarys-memorandum-1076-030*](https://www.ocio.usda.gov/document/secretarys-memorandum-1076-030). This rule codifies those delegations and makes other changes to existing delegations required by the Act, as follows. Note that delegations of authority made by SM 1076-030 to conduct or prepare a one-time study, report, economic analysis, or similar activity remain in effect until such study, report, economic analysis, or similar activity is completed and are not reflected in this rulemaking. Section 1203 of Title I of the Act amends section 1207(c) of the ***Agricultural*** Act of 2014 (7 U.S.C 9037) to rename the Economic Adjustment Assistance to Users of Upland Cotton as ``Economic Adjustment Assistance for Textile Mills,'' and revises Section 1207(c) of the Food, Conservation, and Energy Act of 2008 (7 U.S.C 8737) to ***remove*** a redundant authority. This Rule revises the delegations of authority for the Under Secretary for Marketing and Regulatory Programs (MRP) at 2.22 and the Administrator for the ***Agricultural*** Marketing Service (AMS) at 2.79 to reflect that the Secretary transferred responsibility for administering this program from the Farm Service Agency (FSA) Deputy Administrator, Commodity Operations to the AMS Warehouse and Commodity Management Division as part of a Departmental reorganization in November 2017. Section 1204 of the Act extends the authority for the Special Competitive Provisions for Extra Long Staple Cotton program at Section 1208 of the ***Agricultural*** Act of 2014 (7 U.S.C 9038) through 2024 and revises the loan rate triggering payment. This rule revises the delegations of authority for the Under Secretary MRP and the Administrator for AMS to reflect that the Secretary transferred responsibility for administering payments under subsections (c) and (d) of this authority from FSA to the AMS Warehouse and Commodity Management Division as part of a Departmental reorganization in November 2017. FSA continues to perform responsibilities under 7 U.S.C 9038 under its general delegation of authority to administer programs of the Commodity Credit Corporation at 2.42(a)(45), through the Under Secretary for Farm Production and Conservation (FPAC) at 2.16(a)(1)(xxv). Section 1601 amends section 196 of the Federal ***Agriculture*** Improvement and Reform Act of 1996 (7 U.S.C 7333) concerning the noninsured crop assistance program (NAP). FSA continues to administer NAP under its general delegation of authority to administer programs of the Commodity Credit Corporation. This rule revises the delegations of authority to the Administrator of the Risk Management Agency (RMA) at 2.44, through the Under Secretary of FPAC, to include the authority to coordinate with the Administrator of FSA on the type and format of data collected under NAP to ensure that the data is available and useful in developing policies and plans offered under the Federal Crop Insurance Act. Section 2301 of Title II of the Act made a number of amendments to chapter 4 of subtitle D of title XII of the Food Security Act of 1985 which resulted in changes to the existing statutory citations for conservation authorities delegated to the Chief of the Natural Resources Conservation Service (NRCS) at 2.43, through the Under Secretary for FPAC. This rule revises the delegations of authority for NRCS and FPAC to reflect the updated citations. In addition, this rule adds new delegations of authority for FPAC and NRCS for the feral swine eradication and control program authorized under section 2408 of the Act. This rule revises the delegations of authority to the Under Secretary for Trade and Foreign ***Agricultural*** Affairs (TFAA) at 2.26 and the Administrator of the Foreign ***Agricultural*** Service (FAS) at 2.601 to include delegations for the following new authorities under Title III of the Act: Section 3307 (International ***Agricultural*** Education and Fellowship Program); section 3308 (International Food Security Technical Assistance); and section 3312 (Foreign Trade Missions). The rule also revises the delegations of authority to the Director of the Office[[Page 65501]]of Tribal Relations (OTR) at 2.701, through the Director of the Office of Office of Partnerships and Public Engagement (OPPE) at 2.38, to include the authority to consult with the Under Secretary for TFAA on the implementation of section 3312 of the Act to support greater inclusion of Tribal ***agricultural*** food products in Federal trade activities. The Director of OTR continues to advise the Secretary on matters of policy related to Indian tribes and to serve as the primary point of contact in accessing Department-wide information regarding tribal issues. Title IV of the Act provides three new authorities that require delegations. Section 4021 amends the Food and Nutrition Act of 2008 to authorize pilot projects to encourage the use of public-private partnerships committed to addressing food insecurity. This rule adds a new delegation of authority for the Director of the National Institute of Food and ***Agriculture*** (NIFA) at 2.66, through the Under Secretary for Research, Education, and Economics (REE) at 2.21, to administer this program in consultation with the Under Secretary for Food, Nutrition, and Consumer Services (FNCS) and Administrator of the Food and Nutrition Service (FNS). Section 4206 authorizes a micro-grant program to increase food security, which is delegated to the Under Secretary for MRP and the Administrator of AMS. This rule also revises the delegations of the Under Secretary for FNCS at 2.19 and the Administrator of FNS at 2.57 to include a new authority under section 4208 of the Act for health fluid milk incentive projects. Sections 4018 and 4104 of the Act makes several changes to the Emergency Food Assistance Act of 1983 (EFAA). The authority to administer the EFAA is covered by existing delegations to the Under Secretary for FNCS and the Administrator of FNS; this rule revises those delegations to reflect that the EFAA has been amended and to update the U.S Code citation for the EFAA, which is now located at 7 U.S.C 7501 et seq. Title V of the Act, at section 5413, includes a new authority requiring the Secretary to submit to Congress on an annual basis a report describing certain characteristics of producers receiving farm loans and aspects of the loans for each State and county of the United States, and to submit to Congress every five years a comprehensive review of all annual reports. This authority has been delegated to the Under Secretary of FPAC and redelegated to the Administrator of FSA. Title VI of the Act, at section 6212, includes a new authority requiring the Secretary of ***Agriculture*** to consult with the Assistant Secretary of Commerce for Communications and Information to assist in the verification of eligibility of the broadband loan and grant programs of the Department of ***Agriculture*** (7 U.S.C 950bb-6). This rule revises the delegations of authority for the Under Secretary for Rural Development (formerly the Assistant to the Secretary for Rural Development) at 2.17 and the delegations of authority for the Administrator of the Rural Utilities Service (RUS) at 2.47 to include this authority. Section 6302 of the Act is a new provision directing the Secretary, in coordination with the Office of Tribal Relations, to provide technical assistance to improve access by Tribal entities to rural development programs funded by the Department of ***Agriculture*** through available cooperative agreement authorities (7 U.S.C 2671). This rule delegates this authority to the Under Secretary for RD at 2.17 and redelegates the authority to the Administrators of RUS, the Rural Business Cooperative Service (RBS), and the Rural Housing Service (RHS) at 2.47, 2.48, and 2.49, respectively. It also revises the delegations of authority to the Director of OTR to reflect this new authority. Section 6504 of the Act makes changes to the Rural Economic Development Loan and Grant program at sections 313 and 313B of the Rural Electrification Act of 1936. The authority to administer the grant programs had previously been delegated by the Under Secretary for RD to the Administrator of RBS at 2.48, and the general delegation of authority from the Under Secretary for RD to the RUS Administrator to administer the Rural Electrification Act of 1936 at 2.47 had expressly excluded the authority to administer the rural economic development loan and grant program. This rule revises the general delegation of authority to the RUS Administrator at 2.47(a)(1) to ***remove*** the exception for the administration of the rural economic development loan and grant program to reflect the Secretary's intent that the RUS Administrator have delegated authority for the program under the Rural Electrification Act. Subtitle A of Title VII of the Act adds several sections to the National ***Agricultural*** Research, Extension, and Teaching Policy Act of 1977 that require new delegations of authority. Section 7110 of the Act (7 U.S.C 3158) authorizes a next generation ***agriculture*** technology challenge competition to incentivize mobile technology that ***removes*** marketplace entry barriers for beginning farmers and ranchers. Section 7116 of the Act (7 U.S.C 2207d) directs the Secretary to prepare an annual report for Congress on disbursements of funds for ***agricultural*** research and extension at 1890 and 1862 Institutions under specific program authorities. Section 7117 (7 U.S.C 3222a) authorizes grants to 1890 Institutions for purposes of awarding scholarships to individuals pursuing careers in the food and ***agricultural*** sciences, and section 7120 (7 U.S.C 3222e) authorizes competitive grants to ***land***-grant colleges and universities to provide support for Tribal students. Section 7126 (7 U.S.C 3310a) authorizes competitive grants for the acquisition of special purpose scientific research equipment for use in the food and ***agricultural*** sciences programs of eligible institutions. This rule revises the delegations to reflect that all these authorities are delegated to the Under Secretary for REE and redelegated to the Director of NIFA. Section 7123 of the Act (7 U.S.C 3292) authorizes the Secretary to carry out several activities to promote cooperation and coordination between ***land*** grant institutions and international partner institutions in developing countries. This rule delegates the authority to carry out this section to the Administrator of the ***Agricultural*** Research Service (ARS) at 2.65 and the Director of NIFA, through the Under Secretary for REE, in coordination with the Administrator of FAS through the Under Secretary for TFAA, on the placement of interns from covered institutions in developing countries. Section 7132 of the Act (7 U.S.C 3319k) establishes a new pilot program, the ***Agriculture*** Advanced Research and Development Authority (``AGARDA''), which includes the authority to award grants and enter into contracts, cooperative agreements, and other transactions. The authority to administer the AGARDA program is delegated to the Under Secretary for REE. Section 7212 of the Act (7 U.S.C 5925g) authorizes the Secretary to make competitive grants to support development of urban, indoor, and other emerging ***agricultural*** production activities. This authority is delegated to the NIFA Director through the Under Secretary for REE. Section 7501 of the Act amends two sections of the Critical ***Agricultural*** Materials Act; this rule updates the language accompanying the existing delegations to the Under Secretary for REE and NIFA Director for these authorities codified at 7 U.S.C 178-178n.[[Page 65502]] Section 7505 of the Act amends the Research Facilities Act to authorize a new competitive grant program to assist in the construction, alteration, acquisition, modernization, renovation, or remodeling of ***agricultural*** research facilities (7 U.S.C 390b). This authority is delegated to the Director of NIFA through the Under Secretary for REE. Section 7608 of the Act reauthorizes the ***Agriculture*** Innovation Center Demonstration Program under section 6402 of the Farm Security and Rural Investment Act of 2002. This rule revises the existing delegations of authority to the Under Secretary for RD at 2.17 and the Administrator, Rural Business-Cooperative Service (RBS) at 2.48 to reflect that this authority has been editorially reclassified from 7 U.S.C 1621 note to 7 U.S.C 1632b. Section 7611 of the Act renames the ***Agriculture*** Conservation Experienced Services (ACES) program authorized under section 1252 of the Food Security Act of 1985 (16 U.S.C 3851) the ``Experienced Services Program'' and expands the authority to cover technical, professional, and administrative services to support the Research, Education, and Economics mission area of the Department. This rule adds new delegations of authority for the expanded program authority to the Under Secretary for REE and NIFA. Title VIII of the Act adds or amends several authorities requiring new delegations of authority. Section 8102 amends the Cooperative Forestry Assistance Act of 1978 to establish a competitive grant program to encourage science-based restoration of priority ***forest*** landscapes (16 U.S.C 2109a). This authority is covered by the existing general delegations of authority to the Under Secretary for Natural Resources and Environment (NRE) and the Chief of the ***Forest*** Service at 2.20 and 2.60, respectively, to administer programs of cooperative forestry assistance. This rule revises the delegations of authority for the Under Secretary for FPAC and the Chief of NRCS to add an authority for the program at 16 U.S.C 2109a. Section 8623 authorizes the Secretary to lease administrative sites under the Secretary's jurisdiction. This rule revises the general delegations of authority to the Under Secretary for NRE and the Chief of the FS to acquire and dispose of ***Forest*** Service ***lands*** to add leasing authority. This rule also revises the delegations to the Under Secretary for FPAC and the Chief of NRCS to include the authority at Section 8628 of the Act related to the purchase of NRCS property in Riverside County, California by the Riverside Corona Resource Conservation District. The rule also delegates the new authority under Section 8643 of the Act to administer a wood innovation grant program (7 U.S.C 7655d) to the Under Secretary for NRE and the Chief of the ***Forest*** Service. Section 8702 of the Act amends the Secure Rural Schools and Community Self-Determination Act of 2000 (16 U.S.C 7125) to extend the Resource Advisory Committee functions and modify the membership requirements. This rule revises the delegations of authority to the Under Secretary for NRE and the Chief of the ***Forest*** Service to include the authority to administer the Secure Rural Schools payments to states program (16 U.S.C 500; 16 U.S.C 7101-7153); and to establish, maintain, and appoint members to Resource Advisory Committees (16 U.S.C 7125). The Secretary previously delegated the authority to the Under Secretary for NRE to appoint members to the Secure Rural Schools Resource Advisory Committees in a Secretary's Memorandum issued on November 28, 2019. Title IX of the Act at section 2009 amended the biobased market program authority at section 9002 of the Farm Security and Rural Investment Act of 2002 (7 U.S.C 8102) to direct the Secretary to administer the program through the Rural Development mission area, with the exception of the authority at subsection (g) related to the ***Forest*** Products Laboratory. This rule adds new delegations to the Under Secretary for RD and the Administrator of RBS to carry out this program and revokes the delegations of authority for this program for the Assistant Secretary for Administration and the Director, Office of Property and Fleet Management at 2.24 and 2.90 The delegated authority to the Under Secretary for RD and the Administrator of RBS to implement the biobased market program includes the authority to administer and amend the regulations related to this program currently located at 7 CFR parts 3201 and 3202. Section 9011 of the Act establishes a carbon utilization and biogas education program. This rule adds a delegation of authority for Administrator of NIFA, through the Under Secretary for REE, to administer this new competitive grant program (7 U.S.C 8115). Section 10102 of the Act establishes a new Local ***Agriculture*** Market Program authority that combines the Farmers' Market and Local Food Promotion Program formerly located at 7 U.S.C 3005 and the value-added ***agricultural*** product market development grants formerly located at 7 U.S.C 1632a(b). The delegations of authority are revised to reflect that the Local ***Agriculture*** Market Program at 7 U.S.C 1627c will be administered on a coordinated basis by the Under Secretary for RD, Administrator, RBS, Under Secretary for MRP, and Administrator, AMS. The delegations of authority of the Chief Economist (2.29) and the Director of the Office of Pest Management Policy (OPMP) (2.75) are revised to include the new authority at Section 10103 of the Act to conduct a multiple crop and pesticide use survey. Section 12105 of the Act amended the authority for the National Aquatic Health Plan under section 11013 of the Food, Conservation, and Energy Act of 2008 (7 U.S.C 8322). This rule amends the delegations of the Under Secretary of MRP and the Administrator of the Animal and Plant Health Inspection Service (APHIS) (2.80) to include this cooperative agreement authority. Title XII provides two new authorities that are delegated to the Under Secretary for MRP and the Administrator of AMS: Section 12108 (Regional Cattle and Carcass Grading Correlation and Training Centers) and section 12513 (Dairy Business Innovation Initiatives). Sections 12201 and 12202 of the Act move the authority for the Office of Homeland Security (OHS) from section 14111 of the Food, Conservation, and Energy Act of 2008 (7 U.S.C 8911) to subtitle A of the Department of ***Agriculture*** Reorganization Act of 1994 (7 U.S.C 6922) and update the statutory authorities of OHS, including adding an ***agriculture*** and food threat awareness partnership program. OHS remains organizationally located in Departmental Administration, and this rule revises the delegations of the Assistant Secretary for Administration (ASA) at 2.24 and the Director, OHS at 2.95 to reflect the updated authorities in section 12202 of the Act. Section 12203 of the Act (7 U.S.C 8914) provides authority for responding to plant and animal diseases or pests of concern. This rule delegates authority under 12203(b) to the Under Secretary for MRP and the APHIS Administrator; delegates authority under 12203(c) to the Under Secretary for REE and the NIFA Administrator; and delegates authority under 12203(d) to the Under Secretary for REE and the ARS Administrator. Section 12301 of the Act moves the authority for the beginning farmer and rancher development program established under section 7405 of the Farm Security and Rural Investment Act of 2002 (7 U.S.C 3319f) to section 2501 of the Food, ***Agriculture***, Conservation, and Trade Act of 1990 (7 U.S.C 2279)[[Page 65503]]under the newly established ``Farmer Opportunities Training and Outreach'' subheading. This rule revises the delegations of the Under Secretary for REE and the NIFA Administrator to update the citation for the beginning farmer and rancher development program, which continues to be administered by NIFA. This rule also revises the delegations of authority for the Director of OPPE and the Director of the Office of Advocacy and Outreach (OAO) to include updated citations for the 2501 programs (7 U.S.C 2279). Section 12302 of the Act amends the Department of ***Agriculture*** Reorganization Act of 1994 to include an Office of Urban ***Agriculture*** and Innovative Production (7 U.S.C 6923). The Secretary established this office in the FPAC mission area, under the Chief of NRCS, in Secretary's Memorandum 1076-030. This rule revises the delegations of the Under Secretary for FPAC and the Chief, NRCS to include the authority to carry out the duties of this office. This rule revises the delegations of authority for the Director of OTR to include the authority to oversee the Tribal Advisory Committee established under Section 12303 of the Act as an amendment to section 309 of the Department of ***Agriculture*** Reorganization Act of 1994. Title XII of the Act authorized the Secretary to create five new coordinator positions in the Department, which the Secretary established in SM 1076-030. This rule revises the delegations of authority to include the authority to carry out the duties of these positions as follows: The Under Secretary for FPAC and the Administrator, FSA (Section 12304, Beginning Farmer and Rancher Coordinator); the Director, OPPE (Section 12305, ***Agricultural*** Youth Coordinator); the Under Secretary for RD (Section 12409, Rural Health Liaison); the Chief Economist (Section 12504, Food Loss and Waste Reduction Liaison); and the Under Secretary for FNCS and the Administrator, FNS (Section 12614, Food Access Liaison). Section 12403(a) of the Act requires the Secretary to conduct civil rights impact analyses in accordance with Departmental Regulation 4300-004 issued on October 17, 2016, with respect to the Department's employment, federally conducted programs and activities, and federally assisted programs and activities. This authority is delegated to the Assistant Secretary for Civil Rights at 2.25 Section 12411 of the Act amends section 251 of the Department of ***Agriculture*** Reorganization Act of 1994 to update the name of the Research, Education, and Extension Office to the Office of the Chief Scientist, along with other amendments and corrections. This rule revises the delegations of authority to the Director, Office of the Chief Scientist at 2.69 to reflect the updated title. This rule revises the delegations of authority for the Under Secretary of RD at 2.17 and the Administrator of the Rural Housing Service (RHS) at 2.49 to include the new authority of the Secretary at Section 12502 of the Act, in consultation with the Department of Justice, Secretary of Housing and Urban Development, and Secretary of Health and Human Services, to administer the emergency and transitional pet shelter and housing assistance grant program (34 U.S.C 20127). Section 12508 of the Act establishes a program for recognizing ``century farms,'' defined as farms that have been in continuous operation and owned by the same family for at least 100 years. This authority is delegated to the Under Secretary of FPAC and, at 2.41, to the Chief Operating Officer of the FPAC Business Center. Section 12510 of the Act codifies the Tribal Promise Zones program. This authority is delegated to the Director of OPPE at 2.38 Section 12511 of the Act establishes a Task Force for Reviewing the Connectivity and Technology Needs of Precision ***Agriculture*** in the United States. The Secretary's authority under this section is delegated to the Under Secretary for RD and the Administrator of RUS. This rule revises the delegations of authority to the Chief Economist at 2.29 and the Chairman of the World ***Agricultural*** Outlook Board at 2.72 to include the Secretary's authority under Section 12512 of the Act related to improving the accuracy of the U.S Drought Monitor. This rule also revises the delegations of authority to the Under Secretary of MRP and the Administrator, AMS to include the Secretary's authority under Section 12513 of the Act to carry out dairy business innovation initiatives. This rule revises the existing delegations of the Under Secretary for NRE and the Chief of the ***Forest*** Service to administer the Public ***Lands*** Corps program to include the new direct hire authority of the Secretary under Section 12518 of the Act (16 U.S.C 1726b). Section 12519 of the Act authorizes the Secretary to noncompetitively convert to an appointment in the competitive service a recent graduate or student who is a United States citizen and has been awarded and successfully completed a scholarship program granted to the individual by the Department through the 1890 National Scholars Program or the 1994 Tribal Scholars Program. This authority is delegated to the ASA at 2.24 Section 12520 of the Act authorizes the Department to employ law enforcement officers or special agents to carry out protection operations for the Secretary, Deputy Secretary, and other specified individuals, and authorizes the law enforcement officers or special agents to carry firearms and make arrests without a warrant for any offense against the United States committed in the presence of the law enforcement officer or special agent, among other duties. The Secretary delegates the authority to administer these protective detail activities to the Chief Security Director of the newly established Office of Safety, Security and Protection (OSSP) at 2.94 through the ASA. The rule revises the delegations of authority of the Under Secretary for MRP and the APHIS Administrator to include the authority at Section 12601 of the Act relating to baiting of migratory game birds. Section 12605 of the Act establishes a Citrus Trust Fund, funded by transfers from the Commodity Credit Corporation, to carry out the Emergency Citrus Disease Research and Extension Program under section 412(j) of the ***Agricultural*** Research, Extension, and Education Reform Act of 1998 (7 U.S.C 7632(j). The authority to administer the Citrus Trust Fund comes within the scope of the existing delegation to the Under Secretary of REE and the Administrator of NIFA to administer the Specialty Crop Research Initiative, so no revisions to the published delegations are needed. Section 12607(b) of the Act authorizes the Secretary to collect and report data and analysis on farmland ownership, tenure, transition, and entry of beginning farmers and ranchers and socially disadvantaged farmers and ranchers. This authority is delegated to the Administrator of the National ***Agricultural*** Statistics Service (NASS) through the Under Secretary for REE. Finally, Section 12612 of the Act authorizes the Secretary to carry out a national ***agriculture*** imagery program, and Section 12615 authorizes the Secretary to provide farm loan numbers for farm operators on ``heirs property,'' as defined by the Uniform Partition of Heirs Property Act. This rule revises the delegations to reflect that these authorities have been delegated to the Under Secretary for FPAC and the FSA Administrator.[[Page 65504]]C. Office of Safety, Security, and Protection On September 13, 2019, the Secretary established a new Office of Safety, Security, and Protection (OSSP) within Departmental Administration. See SM 1076-032 available at [*https://www.ocio.usda.gov/document/sm1076-032-office-safety-security-and-protection-091319*](https://www.ocio.usda.gov/document/sm1076-032-office-safety-security-and-protection-091319). OSSP is headed by a Chief Security Director who reports to the ASA. This rule adds a new section of delegations by the ASA to the Chief Security Director, OSSP at 2.94 In addition to the delegation for the protective services detail authorized by Section 12520 of the Act, described above, this rule also reflects that the following delegations of authority have been transferred to the Chief Security Director, OSSP: The delegations of the ASA previously delegated to the Director of OHS at 2.95 concerning the protection of physical facilities, and the delegations of the ASA previously delegated to the Director of the Office of Operations at 2.96 concerning maintenance of the physical security program at USDA facilities in the National Capital Region.D. Realignment of the Office of the Chief Information Officer and the Departmental Freedom of Information Act (FOIA) Office In September 2019, the Secretary realigned the Office of the Chief Information Officer (OCIO) from its previous organizational location in the Departmental Administration mission area, under the supervision of the ASA, to report directly to the Office of the Secretary. See SM 1076-034 available at [*https://www.ocio.usda.gov/document/secretarys-memorandum-1076-034*](https://www.ocio.usda.gov/document/secretarys-memorandum-1076-034). The Secretary also transferred the Departmental Freedom of Information Act (FOIA) Office from OCIO to the Office of the General Counsel (OGC) and designated the General Counsel as the Chief FOIA Officer. See SM 1076-033 available at [*https://www.ocio.usda.gov/document/secretarys-memorandum-1076-033*](https://www.ocio.usda.gov/document/secretarys-memorandum-1076-033). This rule accordingly reassigns the delegations of authority related to FOIA previously delegated to the ASA in 2.24 to the General Counsel in 2.31 The delegations of authority to the ASA related to information technology and information resources are removed. The delegations of authority to the Chief Information Officer, previously located at 2.89 under Subpart P--Delegations of Authority by the Assistant Secretary for Administration, are now located at 2.32 under Subpart D--Delegations of Authority to Other General Officers and Agency Heads.E. Office of Customer Experience In February 2018, the Secretary established an Office of Customer Experience in the Departmental Administration mission area to provide coordination for efforts to improve customer service across the Department. See SM 1076-022 available at [*https://www.ocio.usda.gov/document/secretarys-memorandum-1076-022*](https://www.ocio.usda.gov/document/secretarys-memorandum-1076-022). This authority was extended in Secretary's Memorandum 1076-030 on July 1, 2019. This rule adds a new delegation for the ASA to coordinate efforts to improve customer service to reflect that the Office of Customer Experience is under the purview of Departmental Administration.F. Miscellaneous Revisions In 2017, the Office of the Law Revision Council editorially reclassified several sections of the U.S Code formerly located at 7 U.S.C 450a et seq. to other locations in Title 7 of the U.S Code. This rule revises citations throughout Part 2 to reflect the current U.S Code citations for these sections, to correct other outdated or mistaken citations, and to delete obsolete authorities. Due to the number of updates to the statutory citations for authorities delegated to the ***Forest*** Service and the need to renumber paragraphs, this rule revises the full text of the delegations of the Under Secretary for NRE at 2.20(a)(2) and the Chief of the ***Forest*** Service at 2.60(a) rather than providing individual amendments.Classification This rule relates to internal agency management. Accordingly, pursuant to 5 U.S.C 553, notice of proposed rulemaking and opportunity for comment are not required, and this rule may be made effective less than 30 days after publication in the Federal Register. This rule also is exempt from the provisions of Executive Orders 12866 and 13771. This action is not a rule as defined by the Regulatory Flexibility Act, as amended by the Small Business Regulatory Enforcement Fairness Act of 1996, 5 U.S.C 601 et seq., or the Congressional Review Act, 5 U.S.C 801 et seq., and thus is exempt from the provisions of those acts. This rule contains no information collection or recordkeeping requirements under the Paperwork Reduction Act of 1995 (44 U.S.C 3501 et seq.).List of Subjects in 7 CFR Part 2 Authority delegations (Government agencies). Accordingly, as discussed in the preamble, 7 CFR part 2 is amended as follows:PART 2--DELEGATIONS OF AUTHORITY BY THE SECRETARY OF ***AGRICULTURE*** AND GENERAL OFFICERS OF THE DEPARTMENT01. The authority citation for part 2 continues to read as follows: Authority: 7 U.S.C 6912(a)(1); 5 U.S.C 301; Reorganization Plan No. 2 of 1953, 3 CFR 1949-1953 Comp., p. 1024.02. In part 2, revise all references to ``Assistant to the Secretary for Rural Development'' to read ``Under Secretary for Rural Development''.Subpart A--General03. Section 2.4 is revised to read as follows:Sec. 2.4 General officers. The work of the Department is under the supervision and control of the Secretary who is assisted by the following general officers: The Deputy Secretary, the Under Secretary for Farm Production and Conservation; the Under Secretary for Food, Nutrition, and Consumer Services, the Under Secretary for Food Safety; the Under Secretary for Marketing and Regulatory Programs; the Under Secretary for Natural Resources and Environment; the Under Secretary for Research, Education, and Economics; the Under Secretary for Rural Development; the Under Secretary for Trade and Foreign ***Agricultural*** Affairs; the Assistant Secretary for Administration; the Assistant Secretary for Civil Rights; the Assistant Secretary for Congressional Relations; the Chief Economist; the Chief Financial Officer; the Chief Information Officer; the General Counsel; the Inspector General; the Judicial Officer; the Director, National Appeals Division; the Director, Office of Budget and Program Analysis; the Director, Office of Communications; the Director, Office of Partnerships and Public Engagement; the Director, Office of Tribal Relations; and the Director, Office of Small and Disadvantaged Business Utilization.Subpart C--Delegations of Authority to the Deputy Secretary, Under Secretaries, and Assistant Secretaries04. Amend Sec. 2.16 by:0a. In paragraph (a)(1)(ix), ***removing*** the term ``7 U.S.C 450j et seq.'' and adding, in its place, the term ``7 U.S.C 4551 et[[Page 65505]]seq.'', and in paragraph (a)(1)(xviii), ***removing*** the term ``16 U.S.C 1231 et seq.'' and adding, in its place, the term ``16 U.S.C 3831 et seq.'';0b. Revising paragraph (a)(1)(xxxvi) introductory text;0c. Adding paragraph (a)(1)(xxxix);0d. Revising paragraph (a)(3)(iii) introductory text;0e. Revising paragraphs (a)(3)(iv)(A) and (a)(3)(v) and (xiii);0f. Adding paragraphs (a)(3)(xviii), (xxvi), and (xxvii) and (a)(4)(x);0g. Revising paragraph (a)(7)(xiv); and0h. Adding paragraph (a)(11). The revisions and additions to read as follows:Sec. 2.16 Under Secretary for Farm Production and Conservation. (a) \* \* \* (1) \* \* \* (xxxvi) Administer the following provisions of the ***Agricultural*** Act of 2014, Public Law 113-79, as amended:\* \* \* \* \* (xxxix) Administer the following provisions of the ***Agriculture*** Improvement Act of 2018, Public Law 116-334: (A) Section 5413 relating to reporting on farm loans (7 U.S.C 2008x). (B) Section 12304 relating to the National Beginning Farmer and Rancher Coordinator (7 U.S.C 6934a). (C) Section 12612 relating to a national ***agriculture*** imagery program (7 U.S.C 2204j). (D) Section 12615 relating to the eligibility for farm operators on heirs' property to obtain a farm loan number (7 U.S.C 2266b).\* \* \* \* \* (3) \* \* \* (iii) Administer the basic program of soil and water conservation under Public Law 74-46, and related laws (16 U.S.C 590a-f, q, q-1; 42 U.S.C 3271-3274; 7 U.S.C 2201), including:\* \* \* \* \* (iv) \* \* \* (A) The eleven authorized watershed projects authorized under the Flood Control Act of 1944 (Pub. L. 78-534);\* \* \* \* \* (v) Administer the Abandoned Mine Reclamation Program for Rural ***Lands*** and other responsibilities assigned under the Surface Mining Control and Reclamation Act of 1977 (30 U.S.C 1201 et seq.), except those responsibilities assigned to the Under Secretary for Natural Resources and Environment.\* \* \* \* \* (xiii) Except as otherwise delegated, administer natural resources conservation authorities, including authorities related to programs of the Commodity Credit Corporation that provide assistance with respect to natural resources conservation, under Title XII of the Food Security Act of 1985 (the Act), as amended (16 U.S.C 3801 et seq.), including the following: (A) Technical assistance related to the conservation of highly erodible ***lands*** and wetlands pursuant to sections 1211-1224 of the Act (16 U.S.C 3811-3824). (B) Technical assistance related to the Conservation Reserve Program authorized by sections 1231-1235 of the Act (16 U.S.C 3831-3835). (C) The Wetlands Reserve Program and the Emergency Wetlands Reserve Program authorized by sections 1237-1237F of the Act (16 U.S.C 3837-3837f) prior to February 7, 2014, the transition authority under section 2703 of the ***Agricultural*** Act of 2014, and the Emergency Supplemental Appropriations for Relief from the Major, Widespread Flooding in the Midwest Act (Pub. L. 103-75). (D) The Conservation Security Program authorized by sections 1238-1238C of the Act (16 U.S.C 3838-3838c) and the Conservation Stewardship Program authorized by sections 1240I-1240L-1 (16 U.S.C 3839aa-21--3839aa-25). (E) The Farmland Protection Program authorized by sections 1238H-1238I of the Act (16 U.S.C 3838h-3838i) prior to February 7, 2014, and the transition authority under section 2704 of the ***Agricultural*** Act of 2014. (F) The Farm Viability Program authorized by section 1238J of the Act (16 U.S.C 3838j) prior to February 7, 2014, and the transition authority under section 2704 of the ***Agricultural*** Act of 2014. (G) The Environmental Quality Incentives Program authorized by sections 1240-1240H of the Act (16 U.S.C 3839aa-3839aa-8), the ***Agricultural*** Water Enhancement Program authorized by section 1240H of the Act (16 U.S.C 3839aa-9) prior to February 7, 2014, and section 2706 of the ***Agricultural*** Act of 2014. (H) The conservation of private grazing ***lands*** authorized by section 1240M of the Act (16 U.S.C 3839bb). (I) The Wildlife Habitat Incentives Program authorized by section 1240N of the Act (16 U.S.C 3839bb-1) prior to February 7, 2014 and Section 2707 of the ***Agricultural*** Act of 2014. (J) The program for soil erosion and sedimentation control in the Great Lakes basin authorized by section 1240P of the Act (16 U.S.C 3839bb-3) prior to February 7, 2014, and section 2708 of the ***Agricultural*** Act of 2014. (K) The Chesapeake Bay Watershed Program authorized by section 1240Q of the Act (16 U.S.C 3839bb-4) prior to February 7, 2014, and section 2709 of the ***Agricultural*** Act of 2014. (L) The delivery of technical assistance under section 1242 of the Act (16 U.S.C 3842), including the approval of persons or entities outside of USDA to provide technical services. (M) The authority for partnerships and cooperation provided by section 1243 of the Act (16 U.S.C 3843) prior to February 7, 2014, and section 2710 of the ***Agricultural*** Act of 2014. (N) The incentives for certain farmers and ranchers and Indian tribes and the protection of certain proprietary information related to natural resources conservation programs as provided by section 1244 of the Act (16 U.S.C 3844). (O) The ***Agriculture*** Conservation Experienced Services Program authorized by section 1252 of the Act (16 U.S.C 3851). (P) The authority under sections 1261-1262 of the Act (16 U.S.C 3861-3862) to establish and utilize State Technical Committees. (Q) The Grassland Reserve Program under sections 1238N-1238Q of the Act (16 U.S.C 3838n-3838q) prior to February 7, 2014, and section 2705 of the ***Agricultural*** Act of 2014. (R) The authority in section 1241 of the Act (16 U.S.C 3841) to accept and use voluntary contributions of non-Federal funds in support of natural resources conservation programs under subtitle D of title XII of the Act with respect to authorities delegated to the Under Secretary for Farm Production and Conservation. (S) The ***Agricultural*** Conservation Easement Program authorized by sections 1265-1265D of the Act (16 U.S.C 3865-3865d). (T) The Regional Conservation Partnership Program authorized by sections 1271-1271F of the Act (16 U.S.C 3871-3871f). (U) The Voluntary Public Access and Habitat Incentive Program authorized by section 1240R of the Act (16 U.S.C 3839bb-5). (V) A wetlands mitigation banking program authorized by section 1222(k) of the Act (16 U.S.C 3822(k)).\* \* \* \* \* (xviii) Enter into cooperative agreements, which may provide for the acquisition of goods or services, including personal services, as authorized by Public Law 106-387 (7 U.S.C 6962a).\* \* \* \* \* (xxvi) Administer the state and private ***forest*** landscape-scale restoration program (16 U.S.C 2109a).[[Page 65506]] (xxvii) Administer the following provisions of the ***Agriculture*** Improvement Act of 2018 (Pub. L. 116-334): (A) Section 1704 (7 U.S.C 1308-3a), authorizing waivers of the adjusted gross income limitation. (B) In consultation with the Director of the U.S Fish and Wildlife Service, Section 2707 (16 U.S.C 1531 note), relating to wildlife management. (C) In coordination with the Under Secretary for Marketing and Regulatory Programs, Section 2408 (7 U.S.C 8351 note), relating to the Feral Swine Eradication and Control Pilot Program. (D) Section 8628, relating to the purchase of Natural Resources Conservation Service property in Riverside County, California. (E) Section 12302, relating to the Office of Urban ***Agriculture*** and Innovative Production.\* \* \* \* \* (4) \* \* \* (x) Coordinate between agencies of the Department on the type and format of data received under the noninsured crop disaster assistance program as authorized by Sec. 196 of the Federal ***Agriculture*** Improvement and Reform Act of 1996, (Pub. L. 104-127, as amended) (7 U.S.C 7333).\* \* \* \* \* (7) \* \* \* (xiv) Section 122 of the Act (42 U.S.C 9622), with respect to settlements, but excluding section 122(b)(1) of the Act.\* \* \* \* \* (11) Administer a Century Farms Program as authorized by section 12508 of the ***Agriculture*** Improvement Act of 2018 (7 U.S.C 2266a).\* \* \* \* \*05. Amend Sec. 2.17 by:0a. Adding paragraphs (a)(20)(x) and (xv);0b. Revising paragraphs (a)(21)(xxi) and (xxii); and0c. Adding paragraph (a)(21)(xxviii) and (xxix), (a)(22)(iii), (a)(28), and (a)(32). The revisions and additions read as follows:Sec. 2.17 Under Secretary for Rural Development. (a) \* \* \* (20) \* \* \* (x) Consult with the Assistant Secretary of Commerce for Communications and Information to assist in the verification of eligibility of the broadband loan and grant programs of the Department of ***Agriculture*** (7 U.S.C 950bb-6).\* \* \* \* \* (xv) In coordination with the Federal Communications Commission, administer Section 12511 of the ***Agriculture*** Improvement Act of 2018 (Pub. L. 115-334) relating to the precision ***agriculture*** connectivity task force. (21) \* \* \* (xxi) In coordination with the Under Secretary of Marketing and Regulatory Programs, administer the value-added producer grants program and farmers' markets and local food promotion program (7 U.S.C 1627c(d)(5)-(6)). (xxii) Administer the ***Agriculture*** Innovation Center Demonstration program (7 U.S.C 1632b).\* \* \* \* \* (xxviii) Implementation of a program for the Federal procurement of biobased products and of a voluntary ``USDA Certified Biobased product'' labeling program (7 U.S.C 8102). (xxix) Entering into cooperative agreements to further research programs in the food and ***agricultural*** sciences, related to establishing and implementing Federal biobased procurement and voluntary biobased labeling programs (7 U.S.C 3318). (22) \* \* \* (iii) In consultation with the Department of Justice, Secretary of Housing and Urban Development, and Secretary of Health and Human Services, administer the emergency and transitional pet shelter and housing assistance grant program (34 U.S.C 20127).\* \* \* \* \* (28) In coordination with the Office of Tribal Relations, provide technical assistance to improve access by Tribal entities to rural development programs funded by the Department of ***Agriculture*** through available cooperative agreement authorities (7 U.S.C 2671).\* \* \* \* \* (32) Oversee the Rural Health Liaison (7 U.S.C 6946).\* \* \* \* \*06. Amend Sec. 2.19 by revising paragraph (a)(1)(i)(A), adding paragraphs (a)(1)(i)(M) and (N), and revising paragraph (a)(1)(ii)(L) to read as follows:Sec. 2.19 Under Secretary for Food, Nutrition, and Consumer Services. (a) \* \* \* (1) \* \* \* (i) \* \* \* (A) The Food and Nutrition Act of 2008, as amended (7 U.S.C 2011 et seq.), except for section 25, regarding assistance for community food projects.\* \* \* \* \* (M) Section 4208 of the ***Agriculture*** Improvement Act of 2018 (7 U.S.C 2026a). (N) Section 12614 of the ***Agriculture*** Improvement Act of 2018 (7 U.S.C 6925). (ii) \* \* \* (L) Emergency Food Assistance Act of 1983, as amended (7 U.S.C 7501 et seq.);\* \* \* \* \*07. Amend Sec. 2.20 by revising paragraph (a)(2) to read as follows:Sec. 2.20 Under Secretary for Natural Resources and Environment. (a) \* \* \* (2) Related to forestry. (i) Provide national leadership in forestry. (As used here and elsewhere in this section, the term ``forestry'' encompasses renewable and nonrenewable resources of ***forests***, including ***lands*** governed by the Alaska National Interest ***Lands*** Conservation Act, ***forest***-related rangeland, grassland, brushland, woodland, and alpine areas including but not limited to recreation, range, timber, minerals, watershed, wildlife and fish; natural scenic, scientific, cultural, and historic values of ***forests*** and related ***lands***; and derivative values such as economic strength and social well-being). (ii) Protect, manage, and administer the national ***forests***, national ***forest*** purchase units, national grasslands, and other ***lands*** and interests in ***lands*** administered by the ***Forest*** Service, which collectively are designated as the National ***Forest*** System. (iii) Acquire, dispose of, and lease ***lands*** and interests in ***lands*** as may be authorized for the protection, management, and administration of the National ***Forest*** System, including the authority to approve acquisition of ***land*** under the Weeks Act of March 1, 1911, as amended (16 U.S.C 521), and special ***forest*** receipts acts, as follows: (Pub. L. 337, 74th Cong., 49 Stat. 866, as amended by Pub. L. 310, 78th Cong., 58 Stat. 227; Pub. L. 505, 75th Cong., 52 Stat. 347, as amended by Pub. L. 310, 78th Cong., 58 Stat. 227; Pub. L. 634, 75th Cong., 52 Stat. 699, as amended by Pub. L. 310, 78th Cong., 58 Stat. 227; Pub. L. 748, 75th Cong., 52 Stat. 1205, as amended by Pub. L. 310, 78th Cong., 58 Stat. 227; Pub. L. 427, 76th Cong., 54 Stat. 46; Pub. L. 589, 76th Cong., 54 Stat. 297; Pub. L. 591, 76th Cong., 54 Stat. 299; Pub. L. 637, 76th Cong., 54 Stat. 402; Pub. L. 781, 84th Cong., 70 Stat. 632). (iv) As necessary for administrative purposes, divide into and designate as national ***forests*** any ***lands*** of 3,000 acres or more which are acquired under or subject to the Weeks Act of March 1, 1911, as amended, and which are contiguous to existing national ***forest***[[Page 65507]]boundaries established under the authority of the Weeks Act. (v) Plan and administer wildlife and fish conservation rehabilitation and habitat management programs on National ***Forest*** System ***lands***, pursuant to 16 U.S.C 670g, 670h, and 670o. (vi) For the purposes of the National ***Forest*** System Drug Control Act of 1986 (16 U.S.C 559b-559g), specifically designate certain specially trained officers and employees of the ***Forest*** Service, not exceeding 500, to have authority in the performance of their duties within the boundaries of the National ***Forest*** System: (A) To carry firearms; (B) To enforce and conduct investigations of violations of section 401 of the Controlled Substance Act (21 U.S.C 841) and other criminal violations relating to marijuana and other controlled substances that are manufactured, distributed, or dispensed on National ***Forest*** System ***lands***; (C) To make arrests with a warrant or process for misdemeanor violations, or without a warrant for violations of such misdemeanors that any such officer or employee has probable cause to believe are being committed in that employee's presence or view, or for a felony with a warrant or without a warrant if that employee has probable cause to believe that the person being arrested has committed or is committing such a felony; (D) To serve warrants and other process issued by a court or officer of competent jurisdiction; (E) To search, with or without a warrant or process, any person, place, or conveyance according to Federal law or rule of law; and (F) To seize, with or without warrant or process, any evidentiary item according to Federal law or rule of law. (vii) Authorize the ***Forest*** Service to cooperate with the law enforcement officials of any Federal agency, State, or political subdivision, in the investigation of violations of, and enforcement of, section 401 of the Controlled Substances Act (21 U.S.C 841), other laws and regulations relating to marijuana and other controlled substances, and State drug control laws or ordinances, within the boundaries of the National ***Forest*** System. (viii) Administer programs under section 23 of the Federal Highway Act (23 U.S.C 101(a), 120(f), 125(a)-(c), 138, 202(a)-(b), 203, 204(a)-(c), 205(a)-(d), 211, 317, 402(a)). (ix) Exercise the administrative appeal review functions of the Secretary of ***Agriculture*** for decisions of the Chief of the ***Forest*** Service pursuant to 36 CFR parts 214, 218, and 219. (x) Conduct, support, and cooperate in investigations, experiments, tests, and other activities deemed necessary to obtain, analyze, develop, demonstrate, and disseminate scientific information about protecting, managing, and utilizing ***forest*** and rangeland renewable resources in rural, suburban, and urban areas in the United States and foreign countries. The activities conducted, supported, or cooperated in shall include, but not be limited to: Renewable resource management research, renewable resource environmental research; renewable resource protection research; renewable resource utilization research, and renewable resource assessment research (16 U.S.C 1641-1647). (xi) Use authorities and means available to disseminate the knowledge and technology developed from forestry research (16 U.S.C 1645). (xii) Coordinate activities with other agencies in USDA, other Federal and State agencies, forestry schools, and private entities and individuals (16 U.S.C 1643). (xiii) Enter into contracts, grants, and cooperative agreements for the support of scientific research in forestry activities (7 U.S.C 3105, 1624; 16 U.S.C 582a-8, 1643-1645, 1649). (xiv) Enter into cooperative research and development agreements with industry, universities, and others; institute a cash award program to reward scientific, engineering, and technical personnel; award royalties to inventors; and retain and use royalty income (15 U.S.C 3710a-3710c). (xv) Enter into contracts, grants, or cooperative agreements to further research, extension, or teaching programs in the food and ***agricultural*** sciences (7 U.S.C 3152, 3318). (xvi) Enter into cost-reimbursable agreements relating to ***agricultural*** research, extension, or teaching activities (7 U.S.C 3319a). (xvii) Administer programs of cooperative forestry assistance in the protection, conservation, and multiple resource management of ***forests*** and related resources in both rural and urban areas and ***forest*** ***lands*** in foreign countries (16 U.S.C 2101-2114). (xviii) Provide assistance to States and other units of government in ***forest*** resources planning and forestry rural revitalization (7 U.S.C 6601, 6611-6617; 16 U.S.C 2107). (xix) Conduct a program of technology implementation for State forestry personnel, private ***forest*** landowners and managers, vendors, ***forest*** operators, public agencies, and individuals (16 U.S.C 2107). (xx) Administer Rural Fire Protection and Control Programs (16 U.S.C 2106c). (xxi) Provide technical assistance on forestry technology or the implementation of the Conservation Reserve and Softwood Timber Programs authorized in sections 1231-1244 and 1254 of the Food Security Act of 1985 (16 U.S.C 3831-3844; 7 U.S.C 1981 note). (xxii) Administer ***forest*** insect, disease, and other pest management programs (16 U.S.C 2104). (xxiii) Exercise the custodial functions of the Secretary for ***lands*** and interests in ***lands*** under lease or contract of sale to States and local agencies pursuant to title III of the Bankhead-Jones Farm Tenant Act and administer reserved and reversionary interests in ***lands*** conveyed under that Act (7 U.S.C 1010-1013a). (xxiv) Under such general program criteria and procedures as may be established by the Natural Resources Conservation Service: (A) Administer the forestry aspects of the programs listed in paragraphs (a)(2)(xxiii)(A)(1) through (3) of this section on the National ***Forest*** System, rangelands with national ***forest*** boundaries, adjacent rangelands which are administered under formal agreement, and other ***forest*** ***lands***; (1) The cooperative river basin surveys and investigations program (16 U.S.C 1006); (2) The Eleven Authorized Watershed Improvement Programs and Emergency Flood Prevention Measures Program under the Flood Control Act of 1944 (Pub. L. 78-534); and (3) The Small Watershed Protection Program under the Pilot Watershed Protection and Watershed Protection and Flood Prevention Acts (7 U.S.C 701a-h; 16 U.S.C 1001-1009); and (B) Exercise responsibility in connection with the forestry aspects of the Resource Conservation and Development Program authorized by title III of the Bankhead-Jones Farm Tenant Act (7 U.S.C 1011(e)). (xxv) Provide assistance to the Farm Service Agency in connection with the ***Agricultural*** Conservation Program, the Naval Stores Conservation Program, and the Cropland Conversion Program (16 U.S.C 590g-q). (xxvi) Provide assistance to the Rural Housing Service in connection with grants and loans under authority of section 303 of the Consolidated Farm and Rural Development Act, 7 U.S.C 1923. (xxvii) Coordinate mapping work of USDA including: (A) Clearing mapping projects to prevent duplication;[[Page 65508]] (B) Keeping a record of mapping done by USDA agencies; (C) Preparing and submitting required USDA reports; (D) Serving as liaison on mapping with the Office of Management and Budget, Department of Interior, and other departments and establishments; (E) Promoting interchange of technical mapping information, including techniques which may reduce costs or improve quality; and (F) Maintaining the mapping records formerly maintained by the Office of Operations. (xxviii) Administer the radio frequency licensing work of USDA, including: (A) Representing USDA on the Interdepartmental Radio Advisory Committee and its Frequency Assignment Subcommittee of the National Telecommunications and Information Administration, Department of Commerce; (B) Establishing policies, standards, and procedures for allotting and assigning frequencies within USDA and for obtaining effective utilization of them; (C) Providing licensing action necessary to assign radio frequencies for use by the agencies of USDA and maintenance of the records necessary in connection therewith; (D) Providing inspection of USDA's radio operations to ensure compliance with national and international regulations and policies for radio frequency use; and (xxix) Represent USDA in all matters relating to responsibilities and authorities under the Federal Power Act (16 U.S.C 791a-823). (xxx) Administer the Youth Conservation Corps Act (16 U.S.C 1701-1706) for USDA. (xxxi) Establish and operate the Job Corps Civilian Conservation Centers on National ***Forest*** System ***lands*** as authorized by title I, sections 106 and 107 of the Economic Opportunity Act of 1964 (42 U.S.C 2716), in accordance with the terms of an agreement dated May 11, 1967, between the Secretary of ***Agriculture*** and the Secretary of Labor; and administration of other cooperative manpower training and work experience programs where the ***Forest*** Service serves as host or prime sponsor with other Departments of Federal, State, or local governments. (xxxii) Administer the Volunteers in the National ***Forests*** Act of 1972 (16 U.S.C 558a-558d, 558a note). (xxxiii) Exercise the functions of the Secretary of ***Agriculture*** authorized in the Alaska National Interest ***Lands*** Conservation Act (16 U.S.C 3101-3215). (xxxiv) Exercise the functions of the Secretary as authorized in the Wild and Scenic Rivers Act (16 U.S.C 1271-1287). (xxxv) Jointly administer gypsy moth eradication activities with the Assistant Secretary for Marketing and Regulatory Programs, under the authority of section 102 of the Organic Act of 1944, as amended; and the Act of April 6, 1937, as amended (7 U.S.C 7759, 148, 148a-148e); and the Talmadge Aiken Act (7 U.S.C 1633), by assuming primary responsibility for treating isolated gypsy moth infestations on Federal ***lands***, and on State and private ***lands*** contiguous to infested Federal ***lands***, and any other infestations over 640 acres on State and private ***lands***. (xxxvi) Exercise the functions of the Secretary authorized in the Federal Onshore Oil and Gas Leasing Reform Act of 1987 (30 U.S.C 226 et seq.). (xxxvii) Administer the Public ***Lands*** Corps program (16 U.S.C 1721 et seq.; 16 U.S.C 1726b) for USDA consistent with the Department's overall national service program. (xxxviii) Focusing on countries that could have a substantial impact on global warming, provide assistance that promotes sustainable development and global environmental stability; share technical, managerial, extension, and administrative skills; provide education and training opportunities; engage in scientific exchange; and cooperate with domestic and international organizations that further international programs for the management and protection of ***forests***, rangelands, wildlife, fisheries and related natural resources (16 U.S.C 4501-4505). (xxxix) Establish programs with any bureau of the U.S Department of the Interior (DOI), or with other agencies within USDA, in support of the Service First initiative for the purpose of promoting customer service and efficiency including delegating to employees of DOI and other USDA agencies the authorities of the ***Forest*** Service necessary to carry out projects on behalf of USDA (43 U.S.C 1703). (xl) At the request of the Director, Homeland Security Staff (Director), designate law enforcement personnel of the ***Forest*** Service to assist the Director in providing for the personal security for the Secretary and the Deputy Secretary in the National ***Forest*** System. (xli) Implement the information disclosure authorities of section 1619(b)(3)(A) of the Food, Conservation, and Energy Act of 2008 (7 U.S.C 8791(b)(3)(A)). (xlii) Administer a program for providing loans to eligible units of local government to finance the purchase of equipment to monitor, ***remove***, dispose of, and replace infested trees located under their jurisdiction and within the borders of quarantined areas (16 U.S.C 2104a). (xliii) [Reserved] (xliv) Administer the community wood energy program providing grants to develop community wood energy plans, acquire or upgrade community wood energy systems, and establish or expand biomass consumer cooperatives (7 U.S.C 8113). (xlv) Conduct activities that assist the Chief Economist in developing guidelines regarding the development of environmental services markets. (xlvi) Administer the programs authorized by the Healthy ***Forests*** Restoration Act of 2003 (16 U.S.C 6501 et seq.), except for the Healthy ***Forests*** Reserve Program authorized in title V of such act (16 U.S.C 6571-6578). (xlvii) Administer Good Neighbor contracts and cooperative agreements with a State to carry out ***forest***, rangeland, and watershed restoration services on National ***Forest*** System ***lands*** (16 U.S.C 2113a). (xlviii) Utilize the ***Agriculture*** Conservation Experienced Services (ACES) Program (16 U.S.C 3851) to provide technical services for conservation-related programs and authorities carried out on National ***Forest*** System ***lands*** (16 U.S.C 3851a). (xlix) Enter into reciprocal fire agreements or contracts with domestic entities. Administer reimbursements received for fire suppression (42 U.S.C 1856-1856e). (l) Administer the large airtanker and aerial asset lease program (16 U.S.C 551c). (li) Provide technical and other assistance with respect to eligibility of ***forest*** products for the ``USDA Certified Biobased Products'' labeling program (7 U.S.C 8102(g)). (lii) Cooperate with public or private entities or individuals to perform work on state, county, municipal, or private ***lands*** within or near the boundary of National ***Forest*** System ***lands*** for administration, protection, improvement, reforestation, and other kinds of work the ***Forest*** Service is authorized to do on National ***Forest*** System ***lands***, and cooperate with public or private entities or individuals to perform the same kinds of work in connection with the use or occupancy of National ***Forest*** System ***lands*** (16 U.S.C 572).[[Page 65509]] (liii) Enter into reciprocal fire agreements with foreign fire organizations. (42 U.S.C 1856m-1856o). (liv) Administer the payments to states program (16 U.S.C 500; 16 U.S.C 7101-7153); establish, maintain, and appoint members to Resource Advisory Committees (16 U.S.C 7125). (lv) Administer the Wood Innovation Grant program (7 U.S.C 7655d).\* \* \* \* \*08. Amend Sec. 2.21 by:0a. Adding paragraph (a)(1)(iii);0b. Revising paragraph (a)(1)(iv);0c. Adding paragraph (a)(1)(xvii);0d. In paragraph (a)(1)(xviii), ***removing*** the term ``7 U.S.C 450a'' and adding in its place the term ``7 U.S.C 3318a''; in paragraph (a)(1)(xix), ***removing*** the term ``7 U.S.C 450i(e)'' and adding in its place the term ``7 U.S.C 3157(e)''; and in paragraph (a)(1)(xx), ***removing*** the term ``7 U.S.C 450i(b), (c)'' and adding in its place the term ``7 U.S.C 3157(b), (c)'';0e. Adding paragraphs (a)(1)(xxxi), (xlii), (xlv), (lv), (lxiii), (lxvii), (lxxii), (lxxiii), (lxxviii), (lxxxiii), (cxi), and (cxlii);0f. In paragraph (a)(1)(clxxiii), ***removing*** the term ``7 U.S.C 3319f'' and adding in its place the term ``7 U.S.C 2279(d)'';0g. Adding paragraph (a)(1)(cc); and0h. Revising paragraph (a)(8)(xi). The revisions to read as follows:Sec. 2.21 Under Secretary for Research, Education, and Economics. (a) \* \* \* (1) \* \* \* (iii) Exercise the authorities of the Secretary in administering the ***Agriculture*** Advanced Research and Development Authority, including awarding grants and entering into contracts, cooperative agreements, and other transactions (7 U.S.C 3319k). (iv) Carry out research, technology development, technology transfer, and demonstration projects related to the economic feasibility of the manufacture and commercialization of natural rubber from plants containing hydrocarbons and other critical ***agricultural*** materials from native ***agricultural*** crops having strategic and industrial importance (7 U.S.C 178-178n).\* \* \* \* \* (xvii) Administer a program to make competitive grants to assist in the construction, alteration, acquisition, modernization, renovation, or remodeling of ***agricultural*** research facilities (7 U.S.C 390b).\* \* \* \* \* (xxxi) Prepare an annual report to Congress on disbursements of funds for ***agricultural*** research and extension at 1890 and 1862 Institutions for programs under the following authorities: 7 U.S.C 3221; 7 U.S.C 3222; 7 U.S.C 343(b) and (c); and 7 U.S.C 361a et seq. (7 U.S.C 2207d).\* \* \* \* \* (xlii) Promote cooperation and coordination between 1862, 1890, 1994, and NLGCA Institutions, HSACUs, and cooperating forestry schools and international partner institutions in developing countries by exercising the Secretary's authority in 7 U.S.C 3292, including coordinating with the Under Secretary for Trade and Foreign Affairs to place interns from covered institutions in, or in service to benefit, developing countries.\* \* \* \* \* (xlv) Administer a next generation ***agriculture*** technology challenge competition to incentivize mobile technology that ***removes*** marketplace entry barriers for beginning farmers and ranchers (7 U.S.C 3158).\* \* \* \* \* (lv) Administer grants to 1890 Institutions, including Tuskegee University, for purposes of awarding scholarships to individuals pursuing careers in the food and ***agricultural*** sciences (7 U.S.C 3222a).\* \* \* \* \* (lxiii) Make competitive grants to ***land***-grant colleges and universities, including 1994 Institutions, to provide identifiable support specifically ***targeted*** for Tribal students (7 U.S.C 3222e).\* \* \* \* \* (lxvii) Administer competitive grants for the acquisition of special purpose scientific research equipment for use in the food and ***agricultural*** sciences programs of eligible institutions (7 U.S.C 3310a).\* \* \* \* \* (lxxii) Establish a National Plant Diagnostic Network to monitor and surveil through diagnostics threats to plant health from diseases or pests of concern in the United States, and establish cooperative agreements with ***land***-grant colleges and universities (7 U.S.C 8914(c)). (lxxiii) Establish a National Plant Disease Recovery System to engage in strategic long-range planning to recover from high-consequence plant transboundary diseases (7 U.S.C 8914(d)).\* \* \* \* \* (lxxviii) In consultation with the Secretary of Energy, administer competitive grants to provide education about carbon utilization and biogas (7 U.S.C 8115).\* \* \* \* \* (lxxxiii) In consultation with the Urban ***Agriculture*** and Innovative Production Advisory Committee, administer competitive grants to support research, education, and extension activities for the purposes of facilitating the development of urban, indoor, and other emerging ***agricultural*** production, harvesting, transportation, aggregation, packaging, distribution, and markets (7 U.S.C 5925g).\* \* \* \* \* (cxi) Administer an experienced services program to obtain technical, professional, and administrative services to support the research, education, and economics mission area of the Department (16 U.S.C 3851).\* \* \* \* \* (cxlii) In consultation with the Under Secretary for Food, Nutrition, and Consumer Services, administer pilot projects to encourage the use of public-private partnerships committed to addressing food insecurity (7 U.S.C 2036d).\* \* \* \* \* (cc) Administer a competitive grant program to support the development and expansion of advanced training programs in ***agricultural*** biosecurity planning and response for food science professionals and veterinarians (7 U.S.C 8913). (8) \* \* \* (xi) Collect and, not less frequently than once every 3 years report, data and analysis on farmland ownership, tenure, transition, and entry of beginning farmers and ranchers and socially disadvantaged farmers and ranchers (7 U.S.C 2204i).\* \* \* \* \*09. Amend Sec. 2.22 by:0a. Revising paragraph (a)(1)(viii)(CCC);0b. Adding paragraphs (a)(1)(viii)(MMM), (PPP), and (TTT) and (a)(1)(xvi) and (xvii);0c. Revising paragraphs (a)(2)(ii), (xiv), (xviii), (xxiii), and (xxiv); and0d. Adding paragraphs (a)(2)(xliii) through (xlvi). The revisions and additions read as follows:Sec. 2.22 Under Secretary for Marketing and Regulatory Programs. (a) \* \* \* (1) \* \* \* (viii) \* \* \* (CCC) Local ***Agriculture*** Market Program (7 U.S.C 1627c), in coordination with the Under Secretary for Rural Development.\* \* \* \* \*[[Page 65510]] (MMM) Section 12108 of the ***Agriculture*** Improvement Act of 2018 (7 U.S.C 1622 note).\* \* \* \* \* (PPP) Section 4206 of the ***Agriculture*** Improvement Act of 2018 (7 U.S.C 7518).\* \* \* \* \* (TTT) Section 12513 of the ***Agriculture*** Improvement Act of 2018 (7 U.S.C 1632d).\* \* \* \* \* (xvi) Administer the Economic Adjustment Assistance for Textile Mills program (7 U.S.C 9037(c)) (xvii) In coordination with the Under Secretary for Farm Production and Conservation, administer payments under the Special Competitive Provisions for Extra Long Staple Cotton (7 U.S.C 9038). (2) \* \* \* (ii) The Terminal Inspection Act, as amended (7 U.S.C 7760);\* \* \* \* \* (xiv) Talmadge Aiken Act (7 U.S.C 1633) with respect to cooperation with States in control and eradication of plant and animal diseases and pests;\* \* \* \* \* (xviii) Section 101(d), Organic Act of 1944 (7 U.S.C 398);\* \* \* \* \* (xxiii) The Act of March 2, 1931 (7 U.S.C 8351-8352); (xxiv) The Act of December 22, 1987 (7 U.S.C 8353);\* \* \* \* \* (xliii) Section 11013 of the Food, Conservation, and Energy Act of 2008 (7 U.S.C 8322). (xliv) In coordination with the Under Secretary for Farm Production and Conservation, Section 2408 relating to the Feral Swine Eradication and Control Pilot Program (7 U.S.C 8351 note), (xlv) Section 12203(b) of the ***Agriculture*** Improvement Act of 2018 relating to diseases and pests of concern (7 U.S.C 8914(b)). (xlvi) Section 12601 of the ***Agriculture*** Improvement Act of 2018 relating to baiting of migratory game birds (16 U.S.C 704 note).\* \* \* \* \*010. Amend Sec. 2.24 by:0a. ***Removing*** and reserving paragraph (a)(2);0b. Adding paragraph (a)(4)(xxii);0c. ***Removing*** and reserving paragraphs (a)(6)(ii)(J) and (K); and0d. Revising paragraph (a)(8); and0e. Adding paragraph (a)(13)(ii). The addition and revisions read as follows:Sec. 2.24 Assistant Secretary for Administration. (a) \* \* \* (4) \* \* \* (xxii) Exercise the authority to noncompetitively convert to an appointment in the competitive service a recent graduate or student who is a United States citizen and has been awarded and successfully completed a scholarship program granted to the individual by the Department through the 1890 National Scholars Program or the 1994 Tribal Scholars Program, provided the individual meets the requirements for such conversion and meets Office of Personnel Management qualification standards, as determined by the Assistant Secretary for Administration (7 U.S.C 2279j).\* \* \* \* \* (8) Related to homeland security, personnel and document security, and emergency coordination. (i) Serve as the principal advisor to the Secretary on homeland security, including emergency management and ***agriculture*** and food defense; (ii) Coordinate activities of the Department, including policies, processes, budget needs, and oversight relating to homeland security, including emergency management and ***agriculture*** and food defense; (iii) Act as the primary liaison on behalf of the Department with other Federal departments and agencies in activities relating to homeland security, including emergency management and ***agriculture*** and food defense, and provide for interagency coordination and data sharing; (iv) Coordinate in the Department the gathering of information relevant to early warning and awareness of threats and risks to the food and ***agriculture*** critical infrastructure sector; and share that information with, and provide assistance with interpretation and risk characterization of that information to, the intelligence community (as defined in 5 U.S.C 3003), law enforcement agencies, the Secretary of Defense, the Secretary of Homeland Security, the Secretary of Health and Human Services, and State fusion centers (as defined in section 210A(j) of the Homeland Security Act of 2002 (6 U.S.C 124h(j)); (v) Liaise with the Director of National Intelligence to assist in the development of periodic assessments and intelligence estimates, or other intelligence products, that support the defense of the food and ***agriculture*** critical infrastructure sector; (vi) Coordinate the conduct, evaluation, and improvement of exercises to identify and eliminate gaps in preparedness and response; (vii) Produce a Department-wide centralized strategic coordination plan to provide a high-level perspective of the operations of the Department relating to homeland security, including emergency management and ***agriculture*** and food defense; and (viii) Establish and carry out an interagency ***Agriculture*** and Food Threat Awareness Partnership Program, including by entering into cooperative agreements or contracts with Federal, State, or local authorities (7 U.S.C 6922). (ix) Provide administrative supervision to the unit that grants, denies, or revokes security clearances for USDA employees and contractors. (x) Administer the Department Emergency Preparedness Program. This includes: (A) Coordinate the delegations and assignments made to the Department under the Defense Production Act of 1950, 50 U.S.C App. 2061, et seq.; the Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U.S.C 5121, et seq.; and by Executive Orders 12148, ``Federal Emergency Management'' (3 CFR, 1979 Comp., p. 412), 12656, ``Assignment of Emergency Preparedness Responsibilities'' (3 CFR, 1988 Comp., p. 585), and 13603, ``National Defense Resources Preparedness'' (3 CFR, 2012 Comp., p. 225), or any successor to these Executive Orders, to ensure that the Department has sufficient capabilities to respond to any occurrence, including natural disaster, military attack, technological emergency, or any all hazards incident. (B) Manage the Department Emergency Operations Center at Headquarters and the Secretary's alternative facilities; provide senior staff with international, national, and regional situational awareness reports; and provide and maintain current information systems technology and National Security Systems to support USDA executive crisis management capability. (C) Provide facilities and equipment to facilitate inter-agency coordination during emergencies. (D) Activate the USDA incident management system in accordance with the National Response Framework and the National Incident Management System in the event of a major incident; and provide oversight and coordination of the Department's Emergency Support Functions as outlined in the National Response Framework. (E) Develop and promulgate policies for the Department regarding emergency preparedness and national security, including matters relating to anti-terrorism and ***agriculture***-related emergency preparedness planning both[[Page 65511]]national and international, and guidance to USDA State and County Emergency Boards. (F) [Reserved] (G) Provide representation and liaison for the Department in contacts with other Federal entities and organizations, including the National Security Council, Homeland Security Council, Office of Management and Budget, Department of Homeland Security, Federal Emergency Management Agency, Office of The Director of National Intelligence, and Department of Defense concerning matters of a national security, natural disaster, other emergencies, and ***agriculture***/food-related international civil emergency planning and related activities. (H) Act as the primary USDA representative for anti-terrorism activities. (I) [Reserved] (J) Provide guidance and direction regarding radiological emergency preparedness programs and the implementation of the National Response Framework's Nuclear/Radiological Incident Annex to Departmental staff offices, mission areas, and agencies. (K) Provide program leadership and coordination for USDA's radiological emergency preparedness requirements with respect to Emergency Management and Assistance (44 CFR parts 350-352). (L) Represent USDA on the Federal Radiological Preparedness Coordinating Committee (FRPCC) and Regional Assistance Committees (RACs) and assist them in carrying out their functions. (M) Support USDA in its management of the Department's emergency response program with respect to radiological emergency response activities. (iii) Administer the Classified Network, Controlled Unclassified Information, and Insider Threat programs of the Department (E.O 13587; E.O 13556 and 32 CFR part 2002). (iv) Serve as the primary point of contact for Government Accountability Office (GAO) and Office of the Inspector General (OIG) audits of USDA homeland security activities. (v) Coordinate interaction between Department agencies and private sector businesses and industries in emergency planning and public education under Department authorities delegated or assigned under the National Response Framework, National Infrastructure Protection Plan, Defense Production Act of 1950, 50 U.S.C App. 2061, et seq., and Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U.S.C 5121, et seq. (vi) Oversee the Department's ability to collect and disseminate information and prepare for an ***agricultural*** disease emergency, agroterrorist act, or other threat to ***agricultural*** biosecurity, and coordinate such activities among agencies and offices within the Department (7 U.S.C 8912). (vii) Carry out protection operations for the Secretary, Deputy Secretary, and other individuals as specified in Section 12520 of the ***Agriculture*** Improvement Act of 2018, including by authorizing law enforcement officers or special agents to carry firearms; conduct criminal investigations into potential threats to the security of individuals protected under Section 12520; make arrests without a warrant for any offense against the United States committed in the presence of the law enforcement officer or special agent; perform protective intelligence work, including identifying and mitigating potential threats and conducting advance work to review security matters relating to sites and events; and coordinate with local law enforcement authorities (7 U.S.C 2279k). (viii) Promulgate Departmental policies, standards, techniques, and procedures; and represent the Department in maintaining the security of physical facilities and providing security guidance to the Food and ***Agricultural*** Sector nationwide. (A) Lead and coordinate the development and maintenance of a mission critical facility inventory with agency involvement to ensure proper security countermeasures are implemented in the Department's most critical infrastructure. (B) Provide guidance to USDA agencies in matters of physical security through use of physical security assessments and development of mitigation strategies. (C) Provide guidance to USDA agencies and the Food and ***Agricultural*** Sector in matters of security through use of assessments and development of mitigation strategies. (D) Represent and act as liaison for the Department in contacts with other Federal security entities and organizations, including the Interagency Security Committee and the Department of Homeland Security. (E) Provide guidance and direction to ensure physical security and ***agriculture***/food security are fully integrated in USDA's security preparations, which are reported to and coordinated with the White House. (F) Provide assistance to the USDA agencies in preparation for and during a disaster to identify critical assets and possible alternate storage locations. (G) Conduct physical security investigations and compliance reviews Department-wide. (H) Review and provide coordinated technical physical security assessments for all new construction of laboratories, data centers, germplasm repositories, and other mission critical infrastructure during the design phase, and all leased facilities prior to contract award. (I) Oversee and manage physical security aspects of the Common Identification Card (LincPass) Program to ensure National Institute of Standards and Technology (NIST) and General Services Administration (GSA) compliancy within the National Capital Region and the physical access to USDA facilities. (J) Provide enterprise connectivity to agency physical access control systems that provide cost leveraging and provisioning/de-provisioning nationwide. (ix) Provide oversight and coordination of the development and administration of the Department Continuity Program. This includes: (A) Provide guidance and direction regarding continuity of operations to the Office of the Secretary, Departmental staff offices, mission areas, and agencies. (B) Represent and act as liaison for the Department in contacts with other Federal entities and organizations concerning matters of assigned continuity program responsibilities. (C) Oversee Department continuity of operations and emergency relocation facility planning, development, equipping, and preparedness to ensure that resources are in a constant state of readiness. (x) Provide for the development and administration of a Public Trust program for the safeguarding of national security information: (A) Direct and administer USDA's public trust program established pursuant to 5 CFR part 731 and Executive Order 13488, ``Granting Reciprocity on Excepted Service and Federal Contractor Employee Fitness and Reinvestigating Individuals in Positions of Public Trust'' (74 FR 4111, 3 CFR, 2010 Comp., p. 189). (B) Direct and administer USDA's program under which information is safeguarded pursuant to Executive Order 13526, ``Classified National Security Information'' (75 FR 707, 3 CFR, Comp. 2010, p. 298), or subsequent orders. (C) Establish and maintain Information Security policies and procedures for classifying, declassifying, safeguarding, and disposing of classified[[Page 65512]]national security information and materials. (D) Investigate or delegate authority to investigate any potential compromises of classified national security information and take corrective action for violations or infractions under section 5.5(b) of Executive Order 13526 or any subsequent order. (E) Develop and maintain oversight of all facilities throughout USDA where classified national security information is or will be safeguarded, discussed, or processed including sole authority to liaison with the Central Intelligence Agency concerning guidance, approval, requirements, and oversight of USDA secure facilities. (F) Act as the USDA focal point to identify, receive, disseminate and safeguard USDA related intelligence information as required; convey information to USDA policy officials; and liaise with the intelligence community, as appropriate. (xi) Control within USDA the acquisition, use, and disposal of material and equipment that can be a source of ionizing radiation. (A) Promulgate policies and procedures for ensuring the safety of USDA employees, the public, and the environment resulting from USDA's use of ionizing radiation sources. (B) Maintain and ensure compliance with the Nuclear Regulatory Commission regulations (Title 10, Code of Federal Regulations) and license(s) issued to USDA for the acquisition, use, and disposal of radioactive materials.\* \* \* \* \* (13) \* \* \* (ii) Provide Departmentwide coordination for efforts to improve customer service.\* \* \* \* \*011. Amend Sec. 2.25 by adding paragraph (a)(26) to read as follows:Sec. 2.25 Assistant Secretary for Civil Rights (a) \* \* \* (26) As directed by section 12403(a) of the ***Agriculture*** Improvement Act of 2018, conduct civil rights impact analyses in accordance with Departmental Regulation 4300-004 issued on October 17, 2016, with respect to the Department's employment, federally conducted programs and activities, and federally assisted programs and activities.\* \* \* \* \*012. Amend Sec. 2.26 by adding paragraphs (a)(1)(xxx), (xlv), and (xlviii) and (a)(1)(l) to read as follows: Sec. 2.26 Under Secretary for Trade and Foreign ***Agricultural*** Affairs. (a) \* \* \* (1) \* \* \* (xxx) Promote cooperation and coordination between 1862, 1890, 1994, and NLGCA Institutions, HSACUs, and cooperating forestry schools and international partner institutions in developing countries by exercising the Secretary's authority in 7 U.S.C 3292, including coordinating with the Under Secretary for Research, Education, and Economics to place interns from covered institutions in, or in service to benefit, developing countries.\* \* \* \* \* (xlv) Administer the International ***Agricultural*** Education Fellowship Program (7 U.S.C 3295).\* \* \* \* \* (xlviii) Compile and make available information relating to the improvement of international food security, and provide technical assistance for the improvement of international food security to Federal, State, or local agencies; agencies or instrumentalities of the government of foreign country; domestic or international organizations; or intergovernmental organizations (7 U.S.C 1736dd).\* \* \* \* \* (l) In consultation with the Tribal Advisory Committee and the Director of the Office of Tribal Relations, and in coordination with the Secretaries of Commerce, State, Interior, and the heads of any other relevant Federal agencies, implement section 3312 of the ***Agriculture*** Improvement Act of 2018 (7 U.S.C 5608) to support greater inclusion of Tribal ***agricultural*** food products in Federal trade activities.\* \* \* \* \*Subpart D--Delegations of Authority to Other General Officers and Agency Heads013. Amend Sec. 2.29 by adding paragraphs (a)(4)(v) and (a)(14)(iv) and revising paragraph (a)(16) to read as follows:Sec. 2.29 Chief Economist. (a) \* \* \* (4) \* \* \* (v) Coordinate with the Director of the National Drought Mitigation Center and the Administrator of the National Oceanic and Atmospheric Administration to enhance the collection of data to improve the accuracy of the United States Drought Monitor (7 U.S.C 5856).\* \* \* \* \* (14) \* \* \* (iv) Carry out the duties of the Food Loss and Waste Reduction Liaison, including entering into contracts or cooperative agreements with the research centers of the Research, Education, and Economics mission area, institutions of higher education, or non-profit organizations (7 U.S.C 6924).\* \* \* \* \* (16) Related to Pest Management and Policy. (i) Coordinate USDA policy relative to the Federal Insecticide, Fungicide, and Rodenticide Act, as amended (7 U.S.C 136 et seq.) and coordinate the Department's Integrated Pest Management Programs and the Pesticide Assessment Program (7 U.S.C 136-136y) (7 U.S.C 7653). (ii) Conduct a multiple crop and pesticide use survey as authorized by section 10109 of the ***Agricultural*** Improvement Act of 2018.\* \* \* \* \*014. Amend Sec. 2.31 by adding paragraph (c) to read as follows:Sec. 2.31 General Counsel.\* \* \* \* \* (c) Related to the Freedom of Information Act. (1) Serve as the Chief Freedom of Information Act Officer for the Department; oversee general officers and agency heads in efficient and appropriate compliance with the provisions of the Freedom of Information Act (5 U.S.C 552); monitor implementation of 5 U.S.C 552 throughout the agency and keep the Secretary and the Attorney General informed regarding agency performance in its implementation; recommend to the Secretary necessary adjustments to agency practices, policies, personnel, and funding to improve implementation of 5 U.S.C 552; review and report to the Attorney General, through the Secretary, as the Attorney General may direct; and, facilitate public understanding of the purposes of the statutory exemptions contained in 5 U.S.C 552. (2) Manage the Freedom of Information Act operations for the Research, Education, and Economics mission area, the Trade and Foreign ***Agricultural*** Affairs mission area, and all staff offices of the Department.015. Add Sec. 2.32 to read as follows:Sec. 2.32 Chief Information Officer. (a) Delegations. The Chief Information Officer is responsible for executing the duties enumerated in Public Law 104-106 for agency Chief Information Officers, and additional specified duties, as follows: (1) Report directly to the Secretary of ***Agriculture*** regarding information technology matters. (2) Oversee all information technology and information resource management activities relating to the programs and[[Page 65513]]operations of the Department and component agencies. This oversight includes approving information technology investments, monitoring and evaluating the performance of those investments and information resource management activities, approval of all architectures and components thereto and determining whether to continue, modify, or terminate an information technology program or project. (3) Provide advice and other assistance to the Secretary and other senior management personnel to ensure that information technology acquired and managed for the Department consistent with chapter 35 of title 44, United States Code (Coordination of Federal Information Policy). (4) Develop, implement, and maintain a sound and integrated Departmentwide information technology architecture. (5) Promote the effective and efficient design and operation of all major information resources management processes for the Department, including improvements to work processes of the Department. (6) Approve the acquisition or procurement of information technology resources by, or on behalf of, any Department agency or office. (7) Collaborate with Department procurement personnel with respect to information technology acquisition strategy and policy. (8) Function as the Major Information Technology Systems Executive in USDA to integrate and unify the management process for the Department's major information technology system acquisitions and to monitor implementation of the policies and practices set forth in Office of Management and Budget (OMB) Circular No. A-109, Major Systems Acquisitions, for information technology. This includes the authority to: (i) Ensure that OMB Circular No. A-109 is effectively implemented for information technology systems in the Department and that the management objectives of the Circular are realized. (ii) Review the program management of each major information technology system acquisition. (iii) Approve the appointment of the program manager for each major information technology systems acquisition. (iv) Designate any Departmental information technology acquisition as a major system acquisition under OMB Circular No. A-109. (9) On an annual basis: (i) Assess Departmentwide personnel requirements regarding knowledge and skill in information resources management, and the adequacy of such requirements, to achieve the performance goals established for information resources management. (ii) Develop strategies and specific plans for hiring, training, and professional development at the executive and management level to meet personnel information technology personnel requirements. (iii) Report to the Assistant Secretary for Administration on progress made in improving information resources management capability. (10) Function as the senior official to carry out the responsibilities of the Department under chapter 35 of title 44, United States Code (Coordination of Federal Information Policy), including: (i) Ensure that the information policies, principles, standards, guidelines, rules and regulations prescribed by OMB are appropriately implemented within the Department. (ii) Review proposed Department reporting and record keeping requirements, including those contained in rules and regulations, to ensure that they impose the minimum burden upon the public and have practical utility for the Department. (iii) Develop and implement procedures for assessing the burden to the public and costs to the Department of information requirements contained in proposed legislation affecting Department programs. (iv) Assist OMB in the performance of its functions assigned under the E-Government Act of 2002 (Pub. L. 107-347), including review of Department and Agency activities for compliance. (v) Assist OMB in the performance of its functions assigned under the Paperwork Reduction Act of 1995 (44 U.S.C 3501-3520), including review of Department and Agency activities for compliance. (11) The Chief Information Officer is also responsible for the following: (i) Provide Departmentwide guidance and direction in planning, developing, documenting, and managing applications software projects in accordance with Federal and Department information processing standards, procedures, and guidelines. (ii) Provide Departmentwide guidance and direction in all aspects of information technology, including: Feasibility studies; economic analyses; systems design; acquisition of equipment, software, services, and timesharing arrangements; systems installation; systems performance and capacity evaluation; information technology investment governance; cybersecurity; and privacy. Monitor these activities for agencies' major systems development efforts to assure effective and economic use of resources and compatibility among systems of various agencies when required. (iii) Manage the Enterprise Data Centers, with the exception of the National Finance Center; and oversee the delivery of Enterprise Data Center goods and services, with authority to take actions required by law or regulation to perform such services as a Working Capital Fund activity. (iv) Manage a comprehensive set of end user office automation services and oversee the delivery of goods and services associated with end user office automation services, including desktop computers, enterprise networking support, handheld devices, and voice telecommunications, with authority to take actions required by law or regulation to perform such services as a Working Capital Fund activity. (v) Manage the ***Agricultural*** Security Operations Center to enable the Department to effectively monitor, detect, analyze, protect, report, and respond against known cyber vulnerabilities, attacks, and exploitations. (vi) Manage the Department's Certification and Accreditation process to ensure the Department and agencies have successfully conducted periodic risk assessments of its systems; grant the authority to operate for systems that have successfully completed the Certification and Accreditation process; and rescind or suspend the authority to operate for systems subject to repeated and/or significant security issues. (vii) Ensure that OMB Circular No. A-16, Coordination of Geographic Information and Related Spatial Data Activities, is effectively implemented in the Department and that the management objectives of the Circular are realized; and providing Departmentwide guidance and direction in governing, developing, implementing, and maintaining a sound and integrated geospatial architecture. (viii) Provide technical assistance, coordination, and guidance to Department agencies in planning, developing, and carrying out satellite remote sensing activities to ensure full consideration and evaluation of advanced technology; designate the Executive Secretary for the Remote Sensing Coordination Committee; and coordinate administrative, management, and budget information relating to the Department's remote sensing activities including: (A) Inter- and intra-agency meetings, correspondence, and records; (B) Budget and management tracking systems; and[[Page 65514]] (C) Inter-agency contacts and technology transfer. (ix) Review and evaluate information technology activities related to delegated functions to assure that they conform to all applicable Federal and Department information technology management policies, plans, standards, procedures, and guidelines. (x) Design, develop, implement, and revise systems, processes, work methods, and techniques to improve the management and operational effectiveness of information resources. (xi) Manage all aspects of the USDA Telecommunications Program including planning, development, acquisition, and use of equipment and systems for voice, data, and communications, excluding the actual procurement of data transmission equipment, software, maintenance, and related supplies. (xii) Manage Departmental telecommunications contracts. (xiii) Provide technical advice throughout the Department. (xiv) Implement a program for applying information resources management technology to improve productivity in the Department. (xv) Plan, develop, install, and operate computer-based systems for message exchange, scheduling, computer conferencing, televideo technologies, and other applications of office automation technology which can be commonly used by multiple Department agencies and offices. (xvi) Represent the Department in contacts with the Government Accountability Office, the General Services Administration, OMB, the National Institute of Standards and Technology, and other organizations or agencies on matters related to delegated responsibilities. (12) Implement policies established pursuant to paragraphs (a)(1) through (a)(11) of this section by: (i) Disposing of information technology that is acquired by a Department agency in violation of procedures or standards for the Department Information Systems Technology Architecture. (ii) Establishing information technology and information resources management performance standards for mission area Chief Information Officers, information resources managers, and project managers to be used in the performance appraisal process. (iii) Approving the selection of mission area Chief Information Officers and mission area major information technology system project managers in accordance with OMB policies. (iv) Providing recommendations to mission area heads for the ***removal*** or replacement of information technology project managers, when, in the opinion of the Chief Information Officer, applicable laws and policies are being violated, or, when the cost, schedule, or performance of an information technology project would indicate management deficiencies. (v) Withdrawing agencies' authority to obligate funds on Information Technology programs or projects if the agency violates the Chief Information Officer policies, standards, or Department Information Systems Technology Architecture. (vi) Requiring mission areas to validate and verify major information technology systems through the use of an existing contract for such purpose designated by the Chief Information Officer. (vii) Requiring approval by the Chief Information Officer of any proposed acquisition of information technology (whether through the award or modification of a procurement contract, a cooperative or other agreement with a non-Federal party, or an interagency agreement) to ensure technical conformance to the Department technical architecture. (viii) Providing guidance to USDA regarding implementation of Section 508 of the Rehabilitation Act, as well as on-going consultative assistance regarding information technology accessibility, and reviewing progress made toward achieving information technology accessibility for USDA employees and individuals with disabilities. (13) Related to the Privacy Act. Appoint a Department Privacy Act Officer; oversee general officers and agency heads in the development and implementation of policies issued pursuant to the provisions of the Privacy Act, 5 U.S.C 552a; and provide consultation and guidance regarding those policies. (b) [Reserved]016. Amend Sec. 2.38 by revising paragraph (a)(1)(iv) and adding paragraphs (a)(2)(vi) through (viii) and (a)(7) and (8) to read as follows:Sec. 2.38 Director, Office of Partnerships and Public Engagement. (a) \* \* \* (1) \* \* \* (iv) Administer section 2501 of the Food, ***Agriculture***, Conservation, and Trade Act of 1990 (7 U.S.C 2279), as amended, except for the beginning farmer and rancher development program in subsection (d) and authorities related to the Census of ***Agriculture*** and economic studies in subsection (j) of that section.\* \* \* \* \* (2) \* \* \* (vi) Consult with the Under Secretary for Trade and Foreign ***Agricultural*** Affairs on the implementation of section 3312 of the ***Agriculture*** Improvement Act of 2018 (7 U.S.C 5608) to support greater inclusion of Tribal ***agricultural*** food products in Federal trade activities. (vii) In coordination with the Under Secretary for Rural Development, provide technical assistance to improve access by Tribal entities to rural development programs funded by the Department of ***Agriculture*** through available cooperative agreement authorities (7 U.S.C 2671). (viii) Oversee the Tribal Advisory Committee (7 U.S.C 6921).\* \* \* \* \* (7) Oversee the ***Agricultural*** Youth Organization Coordinator (7 U.S.C 6934b). (8) Exercise the authority of the Secretary related to Tribal Promise Zones under section 12510 of the ***Agriculture*** Improvement Act of 2018 (25 U.S.C 4301 note).\* \* \* \* \*Subpart F--Delegations of Authority by the Under Secretary for Farm Production and Conservation017. Amend Sec. 2.41 by adding paragraph (a)(6) to read as follows:Sec. 2.41 Chief Operating Officer, Farm Production and Conservation Business Center. (a) \* \* \* (6) Administer a Century Farms Program as authorized by section 12508 of the ***Agriculture*** Improvement Act of 2018 (7 U.S.C 2266a).\* \* \* \* \*018. Amend Sec. 2.42 by:0a. In paragraph (a)(10), ***removing*** the term ``7 U.S.C 450j et seq.'' and adding in its place the term ``7 U.S.C 4551 et seq.''; and0b. Revising paragraph (a)(58) introductory text; and0c. Adding paragraph (a)(63). The revision and additions read as follows:Sec. 2.42 Administrator, Farm Service Agency. (a) \* \* \* (58) Administer the following provisions of the ***Agricultural*** Act of 2014, Public Law 113-79, as amended:\* \* \* \* \* (63) Administer the following provisions of the ***Agriculture*** Improvement Act of 2018, Public Law 116-334:[[Page 65515]] (i) Section 5413 relating to reporting on farm loans (7 U.S.C 2008x). (ii) Section 12304 relating to the National Beginning Farmer and Rancher Coordinator (7 U.S.C 6934a). (iii) Section 12612 relating to a national ***agriculture*** imagery program (7 U.S.C 2204j). (iv) Section 12615 relating to the eligibility for farm operators on heirs' property to obtain a farm loan number (7 U.S.C 2266b).\* \* \* \* \*019. Amend Sec. 2.43 by:0a. Revising paragraphs (a)(3) introductory text and (a)(4)(i);0b. ***Removing*** and reserving paragraph (a)(5);0c. Revising paragraph (a)(13);0d. Adding paragraph (a)(16);0e. Revising paragraph (a)(23)(xiv); and0f. Adding paragraphs (a)(31) and (32). The revisions and additions to read as follows:Sec. 2.43 Chief, Natural Resources and Conservation Service. (a) \* \* \* (3) Administer the basic program of soil and water conservation under Public Law 74-46, as amended, and related laws (16 U.S.C 590a-f, q, q-1; 42 U.S.C 3271-3274; 7 U.S.C 2201), including:\* \* \* \* \* (4) \* \* \* (i) The eleven authorized watershed projects authorized under the Flood Control Act of 1944 (Pub. L. 78-534), except for responsibilities assigned to the ***Forest*** Service;\* \* \* \* \* (13) Administer natural resources conservation authorities, including authorities related to programs of the Commodity Credit Corporation that provide assistance with respect to natural resources conservation, under Title XII of the Food Security Act of 1985 (the Act), as amended (16 U.S.C 3801 et seq.), including the following: (i) Technical assistance related to the conservation of highly erodible ***lands*** and wetlands pursuant to sections 1211-1224 of the Act (16 U.S.C 3811-3824); (ii) Technical assistance related to the Conservation Reserve Program authorized by sections 1231-1235 of the Act (16 U.S.C 3831-3835); (iii) The Wetlands Reserve Program and the Emergency Wetlands Reserve Program authorized by sections 1237-1237F of the Act (16 U.S.C 3837-3837f) prior to February 7, 2014, the transition authority under section 2703 of the ***Agricultural*** Act of 2014, and the Emergency Supplemental Appropriations for Relief from the Major, Widespread Flooding in the Midwest Act, Public Law 103-75; (iv) The Conservation Security Program authorized by sections 1238-1238C of the Act (16 U.S.C 3838-3838c) and the Conservation Stewardship Program authorized by sections 1240I-1240L-1 (16 U.S.C 3839aa-21--3839aa-25). (v) The Farmland Protection Program authorized by sections 1238H-1238I of the Act (16 U.S.C 3838h-3838i) prior to February 7, 2014, and the transition authority under section 2704 of the ***Agricultural*** Act of 2014; (vi) The Farm Viability Program authorized by section 1238J of the Act (16 U.S.C 3838j) prior to February 7, 2014, and the transition authority under section 2704 of the ***Agricultural*** Act of 2014; (vii) The Environmental Quality Incentives Program authorized by sections 1240-1240H of the Act (16 U.S.C 3839aa-3839aa-8), the ***Agricultural*** Water Enhancement Program authorized by section 1240H of the Act (16 U.S.C 3839aa-9) prior to February 7, 2014, and section 2706 of the ***Agricultural*** Act of 2014; (viii) The conservation of private grazing ***lands*** authorized by section 1240M of the Act (16 U.S.C 3839bb); (ix) The Wildlife Habitat Incentives Program authorized by section 1240N of the Act (16 U.S.C 3839bb-1) prior to February 7, 2014 and Section 2707 of the ***Agricultural*** Act of 2014; (x) The program for soil erosion and sedimentation control in the Great Lakes basin authorized by section 1240P of the Act (16 U.S.C 3839bb-3) prior to February 7, 2014, and section 2708 of the ***Agricultural*** Act of 2014; (xi) The Chesapeake Bay Watershed Program authorized by section 1240Q of the Act (16 U.S.C 3839bb-4) prior to February 7, 2014, and section 2709 of the ***Agricultural*** Act of 2014; (xii) The delivery of technical assistance under section 1242 of the Act (16 U.S.C 3842), including the approval of persons or entities outside of USDA to provide technical services; (xiii) The authority for partnerships and cooperation provided by section 1243 of the Act (16 U.S.C 3843) prior to February 7, 2014, and section 2710 of the ***Agricultural*** Act of 2014; and (xiv) The incentives for certain farmers and ranchers and Indian tribes and the protection of certain proprietary information related to natural resources conservation programs as provided by section 1244 of the Act (16 U.S.C 3844), except for responsibilities assigned to the Administrator, Farm Service Agency. (xv) The ***Agriculture*** Conservation Experienced Services Program authorized by section 1252 of the Act (16 U.S.C 3851). (xvi) The authority under sections 1261-1262 of the Act (16 U.S.C 3861-3862) to establish and utilize State Technical Committees. (xvii) Those portions of the Grassland Reserve Program under sections 1238N-1238Q of the Act (16 U.S.C 3838n-3838q) prior to February 7, 2014, and section 2705 of the ***Agricultural*** Act of 2014 that are or become the responsibility of the Under Secretary for Farm Production and Conservation. (xiii) The authority in section 1241 of the Act (16 U.S.C 3841) to accept and use voluntary contributions of non-Federal funds in support of natural resources conservation programs under subtitle D of title XII of the Act with respect to authorities delegated to the Chief, Natural Resources Conservation Service. (xix) The ***Agricultural*** Conservation Easement Program authorized by sections 1265-1265D of the Act (16 U.S.C 3865-3865d). (xx) The Regional Conservation Partnership Program authorized by sections 1271-1271F of the Act (16 U.S.C 3871-3871f). (xxi) The Voluntary Public Access and Habitat Incentive Program authorized by section 1240R of the Act (16 U.S.C 3839bb-5). (xxii) A wetlands mitigation banking program authorized by section 1222(k) of the Act (16 U.S.C 3822(k)).\* \* \* \* \* (16) Administer the state and private ***forest*** landscape-scale restoration program (16 U.S.C 2109a).\* \* \* \* \* (23) \* \* \* (xiv) Section 122 of the Act (42 U.S.C 9622), with respect to settlement, but excluding section 122(b)(1) of the Act.\* \* \* \* \* (31) Enter into cooperative agreements, which may provide for the acquisition of goods or services, including personal services, as authorized by Public Law 106-387 (7 U.S.C 6962a). (32) Administer the following provisions of the ***Agriculture*** Improvement Act of 2018 (Pub. L. 116-334): (i) Section 1704 (7 U.S.C 1308-3a), authorizing waivers of the adjusted gross income limitation. (ii) In consultation with the Administrator, Farm Service Agency, and the Director of the U.S Fish and Wildlife Service, Section 2707 (16 U.S.C 1531 note), relating to wildlife management.[[Page 65516]] (iii) In coordination with the Under Secretary for Marketing and Regulatory Programs, Section 2408 (7 U.S.C 8351 note), relating to the Feral Swine Eradication and Control Pilot Program. (iv) Section 8628, relating to the purchase of Natural Resources Conservation Service property in Riverside County, California. (v) Section 12302, relating to the Office of Urban ***Agriculture*** and Innovative Production.\* \* \* \* \*020. Amend Sec. 2.44 by adding paragraph (a)(9) to read as follows:Sec. 2.44 Administrator, Risk Management Agency and Manager, Federal Crop Insurance Corporation. (a) \* \* \* (9) Coordinate with the Administrator, Farm Service Agency, on the type and format of data received under the noninsured crop assistance program authorized by Sec. 196 of the Federal ***Agriculture*** Improvement and Reform Act of 1996 (Pub. L 104-127, as amended) (7 U.S.C 7333).\* \* \* \* \*Subpart G--Delegations of Authority by the Under Secretary for Rural Development021. Correctly designate Sec. Sec. 2.45 through 2.49 as subpart G under the heading set forth above.022. Add Sec. 2.45 to read as follows:Sec. 2.45 Deputy Under Secretary for Rural Development. Pursuant to Sec. 2.17(a), subject to reservations in Sec. 2.17(b), and subject to policy guidance and direction by the Under Secretary for Rural Development, the following delegation of authority is made to the Deputy Under Secretary for Rural Development, to be exercised only during the absence or unavailability of the Under Secretary: Perform all the duties and exercise all the powers which are now or which may hereafter be delegated to the Under Secretary for Rural Development.023. Amend Sec. 2.47 by revising (a)(1) and adding paragraphs (a)(9), (11), and (15) to read as follows:Sec. 2.47 Administrator, Rural Utilities Service. (a) \* \* \* (1) Administer the Rural Electrification Act of 1936, as amended (7 U.S.C 901, et seq.): Provided, however, that the Administrator may utilize consultants and attorneys for the provision of legal services pursuant to 7 U.S.C 918, with the concurrence of the General Counsel.\* \* \* \* \* (9) Consult with the Assistant Secretary of Commerce for Communications and Information to assist in the verification of eligibility of the broadband loan and grant programs of the Department of ***Agriculture*** (7 U.S.C 950bb-6).\* \* \* \* \* (11) In coordination with the Federal Communications Commission, administer Section 12511 of the ***Agriculture*** Improvement Act of 2018 (Pub. L. 115-334) relating to the precision ***agriculture*** connectivity task force.\* \* \* \* \* (15) In coordination with the Office of Tribal Relations, provide technical assistance to improve access by Tribal entities to rural development programs funded by the Department of ***Agriculture*** through available cooperative agreement authorities (7 U.S.C 2671).\* \* \* \* \*024. Amend Sec. 2.48 by adding paragraph (a)(15), revising paragraphs (a)(28) and (29), and adding paragraphs (a)(35) and (36) to read as follows:Sec. 2.48 Administrator, Rural Business-Cooperative Service. (a) \* \* \* (15) In coordination with the Office of Tribal Relations, provide technical assistance to improve access by Tribal entities to rural development programs funded by the Department of ***Agriculture*** through available cooperative agreement authorities (7 U.S.C 2671).\* \* \* \* \* (28) In coordination with the Administrator of the ***Agricultural*** Marketing Service, administer the value-added producer grants program and farmers' markets and local food promotion program (7 U.S.C 1627c(d)(5)-(6)). (29) Administer the ***Agriculture*** Innovation Center Demonstration program (7 U.S.C 1632b).\* \* \* \* \* (35) Implementation of a program for the Federal procurement of biobased products and of a voluntary ``USDA Certified Biobased product'' labeling program (7 U.S.C 8102). (36) Entering into cooperative agreements to further research programs in the food and ***agricultural*** sciences, related to establishing and implementing Federal biobased procurement and voluntary biobased labeling programs (7 U.S.C 3318).\* \* \* \* \*025. Amend Sec. 2.49 by adding paragraphs (a)(7) and (9) to read as follows:Sec. 2.49 Administrator, Rural Housing Service. (a) \* \* \* (7) In coordination with the Office of Tribal Relations, provide technical assistance to improve access by Tribal entities to rural development programs funded by the Department of ***Agriculture*** through available cooperative agreement authorities (7 U.S.C 2671).\* \* \* \* \* (9) In consultation with the Department of Justice, Secretary of Housing and Urban Development, and Secretary of Health and Human Services, administer the emergency and transitional pet shelter and housing assistance grant program (34 U.S.C 20127).\* \* \* \* \*Subpart I--Delegations of Authority by the Under Secretary for Food, Nutrition, and Consumer Services026. Amend Sec. 2.57 by adding paragraphs (a)(1)(xiii) and (xiv) and revising paragraph (a)(2)(xii) to read as follows:Sec. 2.57 Administrator, Food and Nutrition Service (a) \* \* \* (1) \* \* \* (xiii) Section 4208 of the ***Agriculture*** Improvement Act of 2018 (7 U.S.C 2026a). (xiv) Section 12614 of the ***Agriculture*** Improvement Act of 2018 (7 U.S.C 6925). (2) \* \* \* (xii) Emergency Food Assistance Act of 1983, as amended (7 U.S.C 7501 et seq.);\* \* \* \* \*Subpart J--Delegations of Authority by the Under Secretary for Natural Resources and Environment027. Amend Sec. 2.60 by revising paragraph (a) to read as follows:Sec. 2.60 Chief, ***Forest*** Service. (a) Delegations. Pursuant to Sec. 2.20(a)(1), (2), and (6), (a)(7)(ii), and (a)(8), the following delegations of authority are made by the Under Secretary for Natural Resources and Environment to the Chief of the ***Forest*** Service:[[Page 65517]] (1) Provide national leadership in forestry. (As used here and elsewhere in this section, the term ``forestry'' encompasses renewable and nonrenewable resources of ***forests***, including ***lands*** governed by the Alaska National Interest ***Lands*** Conservation Act, ***forest***-related rangeland, grassland, brushland, woodland, and alpine areas including but not limited to recreation, range, timber, minerals, watershed, wildlife and fish; natural scenic, scientific, cultural, and historic values of ***forests*** and related ***lands***; and derivative values such as economic strength and social well-being). (2) Protect, manage, and administer the national ***forests***, national ***forest*** purchase units, national grasslands, and other ***lands*** and interests in ***lands*** administered by the ***Forest*** Service, which collectively are designated as the National ***Forest*** System. (3) Acquire, dispose, and lease ***lands*** and interest in ***lands*** as may be authorized for the protection, management, and administration of the National ***Forest*** System, except that the authority to approve acquisition of ***land*** under the Weeks Act of March 1, 1911, as amended, and special ***forest*** receipts acts (Pub. L. No. 337, 74th Cong., 49 Stat. 866, as amended by Pub. L. 310, 78th Cong., 58 Stat. 227; Pub. L. 505, 75th Cong., 52 Stat. 347, as amended by Pub. L. 310, 78th Cong., 58 Stat. 227; Pub. L. 634, 75th Cong., 52 Stat. 699, as amended by Pub. L. 310, 78th Cong., 58 Stat. 227; Pub. L. No. 748, 75th Cong., 52 Stat. 1205, as amended by Pub. L. 310, 78th Cong., 58 Stat. 227; Pub. L. 427, 76th Cong., 54 Stat. 46; Pub. L. 589, 76th Cong., 54 Stat. 297; Pub. L. 591, 76th Cong., 54 Stat. 299; Pub. L. 637, 76th Cong., 54 Stat. 402; Pub. L. 781, 84th Cong., 70 Stat. 632) is limited to acquisitions of less than $250,000 in value. (4) As necessary for administrative purposes, divide into and designate as national ***forests*** any ***lands*** of 3,000 acres or less which are acquired under or subject to the Weeks Act of March 1, 1911, as amended, and which are contiguous to existing national ***forest*** boundaries established under the authority of the Weeks Act. (5) Plan and administer wildlife and fish conservation rehabilitation and habitat management programs on National ***Forest*** System ***lands***, pursuant to 16 U.S.C 670g, 670h, and 670. (6) For the purposes of the National ***Forests*** System Drug Control Act of 1986 (16 U.S.C 559b 559g), specifically designate certain specially trained officers and employees of the ***Forest*** Service, not exceeding 500, to have authority in the performance of their duties within the boundaries of the National ***Forest*** System: (i) To carry firearms; (ii) To enforce and conduct investigations of violations of section 401 of the Controlled Substance Act (21 U.S.C 841) and other criminal violations relating to marijuana and other controlled substances that are manufactured, distributed, or dispensed on National ***Forest*** System ***lands***; (iii) To make arrests with a warrant or process for misdemeanor violations, or without a warrant for violations of such misdemeanors that any such officer or employee has probable cause to believe are being committed in that employee's presence or view, or for a felony with a warrant or without a warrant if that employee has probable cause to believe that the person being arrested has committed or is committing such a felony; (iv) To serve warrants and other process issued by a court or officer of competent jurisdiction; (v) To search, with or without a warrant or process, any person, place, or conveyance according to Federal law or rule of law; and (vi) To seize, with or without warrant or process, any evidentiary item according to Federal law or rule of law. (7) Cooperate with the law enforcement officials of any Federal agency, State, or political subdivision, in the investigation of violations of, and enforcement of, section 401 of the Controlled Substances Act (21 U.S.C 841), other laws and regulations relating to marijuana and other controlled substances, and State drug control laws or ordinances, within the boundaries of the National ***Forest*** System. (8) Administer programs under section 23 of the Federal Highway Act (23 U.S.C 101(a), 120(f), 125(a)-(c), 138, 202(a)-(b), 203, 204(a)-(c), 205(a)-(d), 211, 317, 401). (9) Administer provisions of the Surface Mining Control and Reclamation Act of 1977 (30 U.S.C 1272, 1305) as they relate to management of the National ***Forest*** System. (10) Conduct, support, and cooperate in investigations, experiments, tests, and other activities deemed necessary to obtain, analyze, develop, demonstrate, and disseminate scientific information about protecting, managing, and utilizing ***forest*** and rangeland renewable resources in rural, suburban, and urban areas in the United States and foreign countries. The activities conducted, supported, or cooperated in shall include, but not be limited to: Renewable resource management research; renewable resource environmental research; renewable resource protection research, renewable resource utilization research, and renewable resource assessment research (16 U.S.C 1641-1647). (11) Use authorities and means available to disseminate the knowledge and technology developed from forestry research (16 U.S.C 1645). (12) Coordinate activities with other agencies in USDA, other Federal and State agencies, forestry schools, and private entities and individuals (16 U.S.C 1643). (13) Enter into contracts, grants, and cooperative agreements for the support of scientific research in forestry activities (7 U.S.C 3105, 1624; 16 U.S.C 582a-8, 1643-1645, 1649). (14) Enter into cooperative research and development agreements with industry, universities, and others; institute a cash award program to reward scientific, engineering, and technical personnel; award royalties to inventors; and retain and use royalty income (15 U.S.C 3710a-3710c). (15) Enter into contracts, grants, or cooperative agreements to further research, extension, or teaching programs in the food and ***agricultural*** sciences (7 U.S.C 3152, 3318). (16) Enter into cost-reimbursable agreements relating to ***agricultural*** research, extension, or teaching activities (7 U.S.C 3319a). (17) Administer programs of cooperative forestry assistance in the protection, conservation, and multiple resource management of ***forests*** and related resources in both rural and urban areas and ***forest*** ***lands*** in foreign countries (16 U.S.C 2101-2114). (18) Provide assistance to States and other units of government in ***forest*** resources planning and forestry rural revitalization (7 U.S.C 6601, 6611-6617; 16 U.S.C 2107). (19) Conduct a program of technology implementation for State forestry personnel, private ***forest*** landowners and managers, vendors, ***forest*** operators, public agencies, and individuals (16 U.S.C 2107). (20) Administer rural fire protection and control program (16 U.S.C 2106c). (21) Provide technical assistance on forestry technology or the implementation of the conservation reserve and softwood timber programs authorized in sections 1231-1244 and 1254 of the Food Security Act of 1985 (16 U.S.C 3831-3844; 7 U.S.C 1981 note). (22) Administer ***forest*** insect, disease, and other pest management programs (16 U.S.C 2104). (23) Exercise the custodial functions of the Secretary for ***lands*** and interests[[Page 65518]]in ***lands*** under lease or contract of sale to States and local agencies pursuant to title III of the Bankhead-Jones Farm Tenant Act and administer reserved and reversionary interests in ***lands*** conveyed under that Act (7 U.S.C 1010-1013a). (24) Under such general program criteria and procedures as may be established by the Natural Resources Conservation Service: (i) Administer the forestry aspects of the programs listed in paragraphs (a)(24)(i)(A) through (C) of this section on the National ***Forest*** System, rangelands with national ***forest*** boundaries, adjacent rangelands which are administered under formal agreement, and other ***forest*** ***lands***: (A) The cooperative river basin surveys and investigations program (16 U.S.C 1006); (B) The eleven authorized watershed improvement programs and emergency flood prevention measures program under the Flood Control Act of 1944 (Pub. L. 78-534); (C) The small watershed protection program under the Pilot Watershed Protection and Watershed Protection and Flood Prevention Acts (7 U.S.C 701a-h; 16 U.S.C 1001-1009). (ii) Exercise responsibility in connection with the forestry aspects of the resource conservation and development program authorized by title III of the Bankhead-Jones Farm Tenant Act (7 U.S.C 1011(e)). (25) Provide assistance to the Farm Service Agency in connection with the ***agricultural*** conservation program, the naval stores conservation program, and the cropland conversion program (16 U.S.C 590g-q). (26) Provide assistance to the Rural Housing Service in connection with grants and loans under authority of section 303 of the Consolidated Farm and Rural Development Act, 7 U.S.C 1923; (27) Coordinate mapping work of USDA including: (i) Clearing mapping projects to prevent duplication; (ii) Keeping a record of mapping done by USDA agencies; (iii) Preparing and submitting required USDA reports; (iv) Serving as liaison on mapping with the Office of Management and Budget, Department of the Interior, and other departments and establishments; (v) Promoting interchange of technical mapping information, including techniques which may reduce costs or improve quality; and (vi) Maintaining the mapping records formerly maintained by the Office of Operations. (28) Administer the radio frequency licensing work of USDA, including: (i) Representing USDA on the Interdepartmental Radio Advisory Committee and its Frequency Assignment Subcommittee of the National Telecommunications and Information Administration, Department of Commerce; (ii) Establishing policies, standards, and procedures for allotting and assigning frequencies within USDA and for obtaining effective utilization of them; (iii) Providing licensing action necessary to assign radio frequencies for use by the agencies of USDA and maintenance of the records necessary in connection therewith; and (iv) Providing inspection of USDA's radio operations to ensure compliance with national and international regulations and policies for radio frequency use. (29) Represent USDA in all matters relating to responsibilities and authorities under the Federal Power Act (16 U.S.C 791a-823). (30) Administer the Youth Conservation Corps Act (16 U.S.C 1701-1706)) for USDA. (31) Establish and operate the Job Corps Civilian Conservation Centers on National ***Forest*** System ***lands*** as authorized by title I, sections 106 and 107 of the Economic Opportunity Act of 1964 (42 U.S.C 2716), in accordance with the terms of an agreement dated May 11, 1967, between the Secretary of ***Agriculture*** and the Secretary of Labor; and administration of other cooperative manpower training and work experience programs where the ***Forest*** Service serves as host or prime sponsor with other Departments of Federal, State, or local governments. (32) Administer the Volunteers in the National ***Forests*** Act of 1972 (16 U.S.C 558a-558d, 558a note). (33) Exercise the functions of the Secretary of ***Agriculture*** authorized in the Alaska National Interest ***Lands*** Conservation Act (16 U.S.C 3101-3215). (34) Administer responsibilities and functions assigned under the Defense Production Act of 1950, as amended (50 U.S.C 4501 et seq.), and title VI of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C 5121 et seq.), relating to ***forests*** and ***forest*** products, rural fire defense, and forestry research. (35) Represent USDA on Regional Response Teams on hazardous spills and oil spills pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act, as amended (42 U.S.C 9601 et seq.), the Clean Water Act, as amended (33 U.S.C 1251 et seq.), the Oil Pollution Act (OPA), as amended (33 U.S.C 2701 et seq.), Executive Order 12580, 3 CFR, 1987 Comp., p. 193, Executive Order 12777, 3 CFR, 1991 Comp., p. 351, and the National Contingency Plan, 40 CFR part 300. (36) Exercise the functions of the Secretary as authorized in the Wild and Scenic Rivers Act (16 U.S.C 1271-1287, except for making recommendations to the President regarding additions to the National Wild and Scenic Rivers System. (37) Issue proposed rules relating to the authorities delegated in this section, issue final rules and regulations as provided in 36 CFR 261.70, issue technical amendments and corrections to final rules issued by the Secretary or Under Secretary for Natural Resources and Environment, and issue proposed and final rules necessary and appropriate to carry out title VIII of the Alaska National Interest ***Lands*** Conservation Act (16 U.S.C 3101-3215) with regard to National ***Forest*** System ***Lands***. (38) Jointly administer gypsy moth eradication activities with the Animal and Plant Health Inspection Service, under the authority of section 102 of the Organic Act of 1944, as amended; and the Act of April 6, 1937, as amended (7 U.S.C 7759, 148, 148a-148e); and the Talmadge Aiken Act (7 U.S.C 1633), by assuming primary responsibility for treating isolated gypsy moth infestations on Federal ***lands***, and on State and private ***lands*** contiguous to infested Federal ***lands***, and any other infestations over 640 acres on State and private ***lands***. (39) With respect to ***land*** and facilities under his or her authority, to exercise the functions delegated to the Secretary by Executive Order 12580, 3 CFR, 1987 Comp., p. 193, under the following provisions of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (``the Act''), as amended: (i) Sections 104(a), (b), and (c)(4) of the Act (42 U.S.C 9604 (a), (b), and (c)(4)), with respect to ***removal*** and remedial actions in the event of release or threatened release of a hazardous substance, pollutant, or contaminant into the environment; (ii) Sections 104 (e)-(h) of the Act (42 U.S.C 9604 (e)-(h)), with respect to information gathering and access requests and orders; compliance with Federal health and safety standards and wage and labor standards applicable to covered work; and emergency procurement powers; (iii) Section 104(i)(11) of the Act (42 U.S.C 9604(i)(11)), with respect to the[[Page 65519]]reduction of exposure to significant risk to human health; (iv) Section 104(j) of the Act (42 U.S.C 9604(j)), with respect to the acquisition of real property and interests in real property required to conduct a remedial action; (v) The first two sentences of section 105(d) of the Act (42 U.S.C 9605(d)), with respect to petitions for preliminary assessment of a release or threatened release; (vi) Section 105(f) of the Act (42 U.S.C 9605(f)), with respect to consideration of the availability of qualified minority firms in awarding contracts, but excluding that portion of section 105(f) of the Act pertaining to the annual report to Congress; (vii) Section 109 of the Act (42 U.S.C 9609), with respect to the assessment of civil penalties for violations of section 122 of the Act (42 U.S.C 9622), and the granting of awards to individuals providing information; (viii) Section 111(f) of the Act (42 U.S.C 9611(f)), with respect to the designation of officials who may obligate money in the Hazardous Substances Superfund; (ix) Section 113(g) of the Act (42 U.S.C 9613(g)), with respect to receiving notification of a natural resource trustee's intent to file suit; (x) Section 113(k) of the Act (42 U.S.C 9613(k)), with respect to establishing an administrative record upon which to base the selection of a response action and identifying and notifying potentially responsible parties; (xi) Section 116(a) of the Act (42 U.S.C 9616(a)), with respect to preliminary assessment and site inspection of facilities; (xii) Section 117(a) and (c) of the Act (42 U.S.C 9617(a) and (c)), with respect to public participation in the preparation of any plan for remedial action and explanation of variances from the final remedial action plan for any remedial action or enforcement action, including any settlement or consent decree entered into; (xiii) Section 119 of the Act (42 U.S.C 9619), with respect to indemnifying response action contractors; (xiv) Section 121 of the Act (42 U.S.C 9621), with respect to cleanup standards; and (xv) Section 122 of the Act (42 U.S.C 9622), with respect to settlements, but excluding section 122(b)(1) of the Act (42 U.S.C 9622(b)(1)), related to mixed funding agreements. (40) Exercise the functions of the Secretary authorized in the Federal Onshore Oil and Gas Leasing Reform Act of 1987 (30 U.S.C 226 et seq.). (41) With respect to facilities and activities under his or her authority, to exercise the authority of the Secretary of ***Agriculture*** pursuant to section 1-102 related to compliance with applicable pollution control standards and section 1-601 of Executive Order 12088, 3 CFR, 1978 Comp., p. 243, to enter into an inter-agency agreement with the United States Environmental Protection Agency, or an administrative consent order or a consent judgment in an appropriate United States District Court with an appropriate State, interstate, or local agency, containing a plan and schedule to achieve and maintain compliance with applicable pollution control standards established pursuant to the following: (i) Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act, the Hazardous and Solid Waste Amendment, and the Federal Facility Compliance Act (42 U.S.C 6901 et seq.); (ii) Federal Water Pollution Prevention and Control Act, as amended (33 U.S.C 1251 et seq.); (iii) Safe Drinking Water Act, as amended (42 U.S.C 300f et seq.); (iv) Clean Air Act, as amended (42 U.S.C 7401 et seq.); (v) Noise Control Act of 1972, as amended (42 U.S.C 4901 et seq.); (vi) Toxic Substances Control Act, as amended, (15 U.S.C 2601 et seq.); (vii) Federal Insecticide, Fungicide, and Rodenticide Act, as amended (7 U.S.C 136 et seq.); and (viii) Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended by the Superfund Amendments and Reauthorization Act of 1986 (42 U.S.C 9601 et seq.). (42) With respect to ***land*** and facilities under his or her authority, exercise the functions delegated to the Secretary by Executive Order 12580, 3 CFR, 1987 Comp., p. 193, and Executive Order 12777, 3 CFR, 1991 Comp., p. 351, to act as Federal trustee for natural resources in accordance with section 107(f) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C 9607(f)), section 311(f)(5) of the Federal Water Pollution Control Act (33 U.S.C 1321(f)(5)), and section 1006(b)(2) of the Oil Pollution Act of 1990 (33 U.S.C 2706(b)(2)). (43) With respect to ***land*** and facilities under his or her authority, to exercise the authority vested in the Secretary of ***Agriculture*** to act as the ``Federal ***Land*** Manager'' pursuant to the Clean Air Act, as amended, 42 U.S.C 7401 et seq. (44) Administer the Public ***Lands*** Corps program (16 U.S.C 1721 et seq.) for USDA consistent with the Department's overall national service program. (45) [Reserved] (46) Focusing on countries that could have a substantial impact on global warming, provide assistance that promotes sustainable development and global environmental stability; share technical, managerial, extension, and administrative skills; provide education and training opportunities; engage in scientific exchange; and cooperate with domestic and international organizations that further international programs for the management and protection of ***forests***, rangelands, wildlife, fisheries and related natural resources (16 U.S.C 4501-4505). (47) Exercise the functions of the Secretary of ***Agriculture*** authorized in Title V of the Department of the Interior and Related Agencies Appropriations Act of 1998, Public Law 105-83, relating to the acquisition so the New World Mines and other priority ***land*** acquisitions, ***land*** exchanges, and other activities. (48) Establish programs with any bureau of the U.S Department of the Interior (DOI), or with other agencies within USDA, in support of the Service First initiative for the purpose of promoting customer service and efficiency, including delegating to employees of DOI and other USDA agencies the authorities of the ***Forest*** Service necessary to carry out projects on behalf of USDA (43 U.S.C 1703). (49) At the request of the Director, Homeland Security Staff (Director), designate law enforcement personnel of the ***Forest*** Service to assist the Director in providing for the personal security for the Secretary and the Deputy Secretary in the National ***Forest*** System. (50) Implement the information disclosure authorities of section 1619(b)(3)(A) of the Food, Conservation, and Energy Act of 2008 (7 U.S.C 8791(b)(3)(A)). (51) Administer a program, through the Deputy Chief of State and Private Forestry, for providing loans to eligible units of local government to finance the purchase of equipment to monitor, ***remove***, dispose of, and replace infested trees located under their jurisdiction and within the borders of quarantined areas (16 U.S.C 2104a). (52) [Reserved] (53) Administer the community wood energy program providing grants to develop community wood energy plans, acquire or upgrade community wood energy systems, and establish or expand biomass consumer cooperatives (7 U.S.C 8113). (54) Conduct activities that assist the Director, Office of Environmental[[Page 65520]]Markets, in developing guidelines regarding the development of environmental services markets. (55) Administer the programs authorized by the Healthy ***Forests*** Restoration Act of 2003 (16 U.S.C 6501 et seq.), except for the Healthy ***Forests*** Reserve Program authorized in title V of such act (16 U.S.C 6571-6578). (56) Administer Good Neighbor contracts and cooperative agreements with a State to carry out ***forest***, rangeland, and watershed restoration services on National ***Forest*** System ***lands*** (16 U.S.C 2113a). (57) Utilize the ***Agriculture*** Conservation Experienced Services (ACES) Program (16 U.S.C 3851) to provide technical services for conservation-related programs and authorities carried out on National ***Forest*** System ***lands*** (16 U.S.C 3851a). (58) Enter into reciprocal fire agreements or contracts with domestic entities. Administer reimbursements received for fire suppression (16 U.S.C 1856-1856e).

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**Body**

**ABSTRACT**

Many big businesses have not set ***targets*** for reducing greenhouse gas ***emissions***. Others have weak goals.

**FULL TEXT**

For the past several years, BlackRock, the giant investment firm, has cast itself as a champion of the transition to clean energy.

Last month, Laurence D. Fink, BlackRock's chief executive, wrote that the coronavirus pandemic had "driven us to confront the global threat of climate change more forcefully," and the company said it wants businesses it invests in to ***remove*** as much carbon dioxide from the environment as they emit by 2050 at the latest.

But crucial details were missing from that widely read pledge, including what proportion of the companies BlackRock invests in will be zero-***emission*** businesses in 2050. Setting such a goal and earlier ***targets*** would demonstrate the seriousness of the company's commitment and could force all sorts of industries to step up their efforts. On Saturday, in response to questions from The New York Times, a BlackRock spokesman said for the first time that the company's "ambition" was to have "net zero ***emissions*** across our entire assets under management by 2050."

As the biggest companies strive to trumpet their environmental activism, the need to match words with deeds is becoming increasingly important.

Household names like Costco and Netflix have not provided ***emissions*** reduction ***targets*** despite saying they want to reduce their impact on climate change. Others, like the ***agricultural*** giant Cargill and the clothing company Levi Strauss, have made commitments but have struggled to cut ***emissions***. Technology companies like Google and Microsoft, which run power-hungry data centers, have slashed ***emissions***, but even they are finding that the technology often doesn't yet exist to carry out their "moonshot" objectives.

"You can look at a company's website and see their sustainability report and it will look great," said Alberto Carrillo Pineda, a founder of Science Based ***Targets***, a global initiative to assess corporate plans to reduce ***emissions***. "But then when you look at what is behind it, you'll see there is not a lot of substance behind those commitments or the commitments are not comprehensive enough."

President Biden is also placing a big emphasis on climate change and has rejoined the Paris agreement. But determining how hard companies are really trying can be very difficult when there are no regulatory standards that require uniform disclosures of important information like ***emissions***.

Institutional Shareholder Services, a firm that advises investors on how to vote on board elections and other corporate matters, uses company data and its own analysis to assess what corporations are doing to reduce ***emissions***. Just over a third of the 500 companies in the S&P 500 stock index have set ambitious ***targets***, it found, while 215 had no ***target*** at all. The rest had weak ***targets***.

"To realize the necessary ***emission*** reductions, more ambitious ***targets*** urgently need to be set," said Viola Lutz, deputy head of ISS ESG Climate Solutions, an arm of Institutional Shareholder Services. "Otherwise, we project ***emissions*** for S&P 500 companies will end up being triple of what they should be in 2050."

There has been some progress by companies that have rigorous ***targets***. In a report last month, Science Based ***Targets***, which was started by the environmental groups and hundreds of businesses brought together by the United Nations, said the 338 large companies around the world for which it had sufficient ***emissions*** data collectively reduced their ***emissions*** by 25 percent between 2015 and 2019.

Often large companies in the same industry have very different records.

For example, Walmart discloses its ***targets*** for ***emissions*** reductions and the progress it has made to the Carbon Disclosure Project, including a goal for ***emissions*** from its suppliers, and its plan has been vetted by Science Based ***Targets***. But Costco doesn't expect to have commitments to reduce ***emissions*** until the end of next year. Costco executives declined to comment.

Netflix is often compared to technology giants like Google and Microsoft. But Netflix has yet to set a ***target*** for reducing the ***emissions*** caused by its offices, production activities and the computer servers it uses. "Climate action is important, and we'll announce our plans in the spring, which will include ***targets*** based on climate science," the company said in a statement.

Slashing ***emissions*** is difficult. Businesses must reliably measure how much carbon dioxide and other greenhouse gases they are responsible for. Then companies have to find cleaner energy sources without hurting their operations. Where they can't find cleaner substitutes, businesses often pay others to reduce ***emissions*** or ***remove*** carbon from the atmosphere.

The task gets even harder when companies begin the process of reducing so-called Scope 3 ***emissions*** - pollution caused by suppliers and customers. At oil companies, for example, Scope 3 would include ***emissions*** from cars that use gasoline.

BlackRock, with $8.7 trillion of assets under management, including stakes in many companies, clearly faces a daunting task. The company doesn't directly own most of the shares or bonds it buys - it manages them for pension funds, other corporations and individual investors - limiting how much climate activism it can pursue. In addition, most of its investment products track indexes like the S&P 500, so it inevitably ends up managing stocks of fossil fuel companies.

Many Wall Street firms have made pledges to get to net zero ***emissions*** from their lending and other financial activities but have not made clear whether that goal applies to the stocks and bonds they manage for customers. BlackRock's decision to include all the assets it manages could pressure other financial giants to make similar commitments, but it could rankle fossil fuel industries and their political supporters in Congress.

Later this year, BlackRock is going to announce an interim ***target*** for how many of its investments will have achieved, or be on their way to, zero ***emissions*** in 2030.

Still, BlackRock is careful about the language it uses when describing what it will do to push businesses in its portfolios to reduce ***emissions*** - for which it has been criticized by people who want the firm to take a more activist stand. In a recent letter, the company said it was intent on "increasing the role of votes on shareholder proposals in our stewardship efforts around sustainability."

"This could mean a lot of things and - as always - the proof is in the pudding," Ms. Lutz of ISS said.

Ed Sweeney, a company spokesman, said BlackRock had recently voted for a significantly higher number of shareholder proposals aimed at making companies greener compared with previous years. And in a client memo sent Wednesday, the firm said it might vote against directors and management at companies that it determines do not have clear climate disclosures and credible environmental plans.

"While we recognize that the transition to net zero is at different stages based on industry and region, through a combination of engagement with management teams and boards of directors and holding companies accountable for insufficient progress through our voting on director elections and shareholder proposals, BlackRock will continue to focus on this important issue," Mr. Sweeney said in an email.

Other companies that have pledged to cut ***emissions*** face different challenges, including coordinating with suppliers and partners.

Consider the apparel industry. Much of its contribution to climate change comes from its supply chain. The clothes that Levi Strauss and others put their labels on are often made in factories in places like China, Pakistan and India that remain reliant on coal-fired power plants. The clothes are transported on ships and planes that burn diesel and jet fuel.

Even so, when Levi Strauss rolled out its 2025 climate action strategy three years ago, its chief executive, Chip Bergh, said, "We believe it's time for businesses to start playing a larger role in fighting the world's most pressing problems, like climate change."

The company set a Scope 3 ***emissions*** ***target***. But Science Based ***Targets*** said in January that ***emissions*** from Levi's supply chainwere not falling and had grown by 13 percent between 2016 and 2019.

Jeffrey Hogue, Levi Strauss's chief sustainability officer, said that calculation was incomplete because the company could not yet take credit for many interventions and investments it has made with suppliers. He said that would happen once the apparel industry decides on a method for calculating the advances suppliers have made in cutting ***emissions***, particularly for factories that sell to multiple companies.

"We believe we are way better than 13 percent," Mr. Hogue said. But he said he could not confidently give his own estimate, adding, "We are working with the industry to create more accuracy and precision in the number."

Gary Cook, the global climate campaigns director of Stand.earth, an environmental group, was skeptical. "They set an aggressive ***target*** and they are struggling with that," he said.

Cargill, one of the largest privately owned American companies and a major middleman that works with farmers and food companies around the world, has attempted to become a strong voice on climate change but has struggled to meet its goals.

The company is a big purchaser of Brazilian soybeans, which are often grown on ***land*** that was previously ***forested***. In 2010, Cargill promised to meet a "net zero" deforestation goal by 2020, but the company did not succeed and has extended its ***target*** to 2030. "Our commitment on deforestation has not wavered," said Jill Kolling, Cargill's vice president for global sustainability.

The company's plans show how ***emissions*** could go up over all even when a business has set a goal to cut them. Cargill wants to reduce its ***emissions*** in its global supply chains by 30 percent per ton of production by 2030, a ***target*** it made no progress on at the time of measurement in 2019, according to Science Based ***Targets***. But overall ***emissions*** in its supply chains may not fall by that amount because of increases in production. "It depends on how our business grows, and that's hard to predict," Ms. Kolling said.

By contrast, deep-pocketed tech firms have probably made the most progress. Now they are setting even more ambitious ***targets***.

Google wants all its operations to be consistently powered by renewable energy by 2030, but that could be difficult to achieve because the output of wind and solar farms is still small in some countries. Microsoft wants to be "carbon negative" by 2030 even including Scope 3 ***emissions***. That goal will almost certainly require extracting carbon dioxide from the atmosphere. Those technologies are nascent and could be very expensive.

And for all these ambitious ***targets***, even some executives argue that the current voluntary approach won't ensure the required reduction in ***emissions***.

"If we are going to achieve a net-zero carbon economy for real, we will need everyone to act," said Lucas Joppa, Microsoft's chief environmental officer. "And that means action can't be voluntary. We need requirements and standards that everyone is expected to meet."

**Load-Date:** February 23, 2021

**End of Document**



[***Plucked from thin air; Elon Musk is offering $100m for the best carbon capture technology, but the truth is there are already many ways to take carbon out of the atmosphere, writes Andy Martin***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:62FF-YXK1-F072-43VR-00000-00&context=1516831)

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**Section:** SECTION 2; Pg. 35

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**Byline:** ANDY MARTIN

**Body**

If you could go back in time and reverse the history of the 20th century, where would you start - and where would you stop? Bump off Hitler perhaps (and/or Stalin/Pol Pot, etc). Maybe save JFK. Call a halt to the Holocaust. Or, bearing in the mind the climate change catastrophe that is now upon us, what about trying to stop the juggernaut of the oil industry in its tracks, neutralise Exxon, Esso and BP, and thereby cool global warming?

The good news is that this science fiction fantasy - a kind of palindromic history - is starting to happen: at least the last bit. It is now possible to rewind the movie and put fossil fuels right back where they came from and were safely stored for millions of years, in the interior of the Earth, not flowing and floating around the exterior. The nascent carbon capture industry is plucking CO2 right out of the air and diverting it down other much safer avenues (in the business, "***removal***" refers to extracting molecules already in the atmosphere, whereas "capture" operates on the source of ***emissions***; I use "carbon capture" to include both).

Obviously we have been talking about it - from Hollywood to Holyrood. But the point about carbon capture is that it is moving out of the realm of pure talk and into the more important realm of people who are actually doing it.

I recently spoke to a finance specialist about carbon capture and he said that it was great, and it would happen, but there was as yet no way to make it commercial - "costs are prohibitive". But it turns out he's wrong - it's already happening and it's now possible to make it work economically too.

In 2007 Richard Branson launched his Virgin Earth Challenge, offering a prize of $25m for the best carbon capture technology company. Ten thousand wannabes stepped forward. In 2019, Branson shut the scheme down, having handed out no prizes. But in January this year, Elon Musk launched a new climate beauty contest, offering a full $100m to serious carbon capturers, able to pull at least a ton a day out of the air or the ocean. This time somebody has to win, I reckon. And there is no shortage of contenders. Momentum behind new kinds of carbon-munching tech has been building in 2020.

In the pre-industrial revolution era, atmospheric CO2 stood at around 280 parts per million. When we started measuring it in 1958 14,000 feet up at the beautiful Mauna Loa mountaintop observatory in Hawaii, it was 316 ppm; now it's well over 400; in another 50 years we will hit 500 (if we follow the "Keeling Curve"). Bill Gates estimates 51 billion tons (US) of greenhouse gases per annum going up in smoke. Temperatures will keep soaring, ***forests*** will keep burning, islands will go under, glaciers will melt, corals will die and jellyfish will take over the oceans. Unless we can do something about it.

Very few companies actually want to emit greenhouse gases - and least of all to be known as dirty. Everyone (eg Patagonia, Unilever, Ikea) is running around trying to reduce their carbon footprint, minimising the amount of ***emissions*** and offsetting like mad. But the fundamental reality is we will never reduce it quite enough in this century. Look at all those industries (like steel and cement) who basically can't eradicate their dependence on fossil fuels. So we have no option but to claw back the CO2 out of the atmosphere where it ends up if we want to keep increased warming down to 1.5 degrees (the maximum proposed by the Intergovernmental Panel on Climate Change). The simple but inescapable equation is that "if we want to get to net-zero we have to subtract as much CO2 as we are adding", says Albert Howard, head of sustainability at Sourceful.

No one has yet captured the Elon Musk prize, but three outstanding carbon capturers from around the world have recently been spotlighted by Sourceful Climate. "We're pointing the way," says Howard. Sourceful do good things to the supply chain, helping other companies to clean up their act and source the right stuff to make their products more sustainable. They are already shrinking carbon footprints. Now they have backed their three carbon ***removal*** companies, nominated by an independent panel of academics, with an offer of 1:1 funding to match other contributions.

One of them, Greensand, based in the Netherlands, has already been around for a few years. It began back in 2008 when Eddy Wijnker went to the Beijing Olympics. Wijnker had started off as lead guitar in a Dutch rock band but morphed into a sound engineer. He was supposed to be in Beijing to keep an ear on the sound systems, but he got sidetracked by a green stone that nearly hit him on the head in the middle of an earthquake. That stone turned out to be olivine.

Olivine is a naturally occurring mineral - it makes up some 25 per cent of the Earth's crust - but Wijnker discovered that it has the wonderful property (like trees) of being able to absorb CO2. For the last 12 years Wijnker has been trying to persuade the world to replace the use of sand and stone with olivine. And it looks as if he is succeeding. Rotterdam has bought 16,000 tons for its railroad and bus paths. Every ton of olivine will ***remove*** a ton of CO2.

But everyone can chip in, no matter how humble. You can buy a two kilo bag of olivine for your back garden for around Euro 5 - thereby capturing two kilos of CO2. You can have a rock garden or a gravel path made out of greensand. Wijnker has a vision of the beaches of the future that have - literally and metaphorically - gone green. It's not quite a world in a grain of greensand, but it's close.

The process of carbon capturing already happens in nature but it's slow. "For three billion years the planet has been doing that. We just need to do it more." Wijnker has sped it up by grinding olivine down to fragments or sand - greensand. The smaller the stone the faster the sequestration. All that is needed is rain to persuade the carbon dioxide to bond with the stone. And it's good for your plants too since it releases magnesium and silicate. "If everyone sprinkles a bit of it we solve the problem," says Wijnker. Or as Professor Olaf Schuiling (Wijnker calls him his "spiritual father") puts it in his book, Olivine, the Philosopher's Stone, "Let the Earth help save the Earth."

You don't have to be a rocket scientist to work on carbon capture, but it probably helps. Fortunately, Shaun Meehan is a rocket scientist, or was until recently. Meehan started off as a teenager working in a laser lab for fun. And he spent a couple of years at the South Pole, before joining Planet Inc and launching satellites and designing his own rocket. Now, as chief scientist heading up R&D at Charm Industrial, his focus is more terrestrial. Where Greensand was simple and low tech, Charm is more complex and definitely higher tech and, not surprisingly, based in San Francisco. "I love tech," says Meehan. "I'm constantly working on this stuff." He and his girlfriend, Kelly Hering (a mechanical engineer and CTO at Charm), like to discuss hardware and software over lunch and restore old robots in their spare time. Behind them they have a team of 12 "kind engineers" who are highly "mission-motivated".

Think of all those old movies (or even The Beverly Hillbillies) in which oil is gushing up out of the ground. Now rewind the film. Shove the black stuff back in again. That's what Charm are doing with their "bio-oil sequestration". We need to remember that a lot of carbon is already captured in soil and plants. So-called "biomass" is grass or wood or ***agricultural*** waste from farms and backyards. "People have tried to make it work as a fuel," says Meehan. "Our discovery was that it doesn't have a high energy content but it does have a high carbon content." Their technique consists of taking biomass and converting it into oil and then re-injecting that back into the Earth's crust whence it came.

All those old oil wells can be re-utilised - but in reverse, in what is known as "negative ***emission***". Ironically, there is a symmetry between Charm and the system they are trying to replace. "We have the same architecture," says Meehan. "In the US there's a ton of jobs dependent on oil and gas. We can help re-tool those industries. The oil trucks don't go away. As they fade out we ramp up and use those very same people to do similar jobs, but it's like the opposite. Fuel tankers - and tanker drivers - will still be needed to transport oil around on its way back."

That is the dream. They have already delivered 4,000 tons of negative ***emissions***. Their first customer was Stripe, the online payment company. But there are technical challenges every step of the way. They had their best brains working on the problem of how to get grass to flow through a hopper (ultimately coming up with a motorised system involving a lot of good vibrations). They can produce hydrogen too, but it has to be compressed - and that requires energy (and expense). It's also not pure but it might work for industrial facilities. Bio-oil by contrast is dense and sludgy and easy to transport.

At present one ton of CO2 costs $600 to ***remove***. The vision is to build a reactor or reactors around the country that are capable of working on the gigaton scale, which will bring the cost right down - to $100, perhaps to as low as $50 a ton. "We anticipate tech developments that will enable us to bridge that gap," says Meehan. "The way I look at it, there's a weird disconnect in the way society looks at the cost of carbon. We're extracting carbon from the atmosphere at the current price point. It should go hand in hand with what it costs to put it there in the first place."

The third company backed by Sourceful is Heirloom, also based in San Francisco. They favour a system of "direct air capture with carbon mineralisation". The founder of Heirloom is Shashank Samala, who was born in Hyderabad, studied at an Ivy League university, and set up Tempo Automation - building robots to build circuit boards. Then he read the Intergovernmental Panel on Climate Change report in 2018 and decided he had to do something about it. His head of commercialisation, Max Scholten, sums up the technology they zeroed in on: "We pull carbon dioxide from the air and turn it into stone." Heirloom uses low cost minerals and processes them into a form that reacts with CO2. They have a system that takes the process down from years to days. Then they heat up the stones to extract the carbon and pump it underground. "It will remain there for thousands of years."

Heirloom is something of a synthesis of Greensand and Charm. It's a more charming Greensand. Scholten says that planting trees is "incredibly important for biodiversity, but trees are only a temporary solution to storage". Trees die or burn in fires and then release their stores of carbon. What Heirloom calls "high quality carbon ***removal***" has to be durable and scalable. One advantage of their approach is that they have to extract the minerals in the first place, but since it can be recycled they don't have to keep on extracting. So they minimise the mining.

After spending millions on R&D, Greensand turned a profit for the first time in 2020. Carbon capture companies have three main commercial avenues. First, the "voluntary buyers", tech companies like Shopify, Amazon and Microsoft that want to decarbonise and are willing and able to invest in carbon ***removal*** and offsetting. It's not all about goodwill or enhancing the brand. As Scholten says: "For businesses to exist in 100 years we have to solve climate change." Secondly, it's easier in California where the "low carbon fuel standard" not only regulates fuels but also incorporates a protocol offering tax credits in exchange for carbon capture. But similar carbon compliance regulations are springing up around the world, from Canada to China. The third way is "carbon utilisation". Charm and heirloom produce liquefied CO2 gas that can be used in making cement, carbon fibre and industrial diamonds.

One British company that could be using some of their excess carbon is Econic, based in Macclesfield. They don't do carbon capture but carbon storage, putting it into useful things like mattresses and insulation and running shoes and skateboard wheels. "We make good products better," says Keith Wiggins, their new CEO. They re-use existing carbon molecules rather than digging up new ones. Wiggins is a chemist by training, so he would say this, wouldn't he, but he is surely right to say, "You can do things with chemistry". The trouble with carbon dioxide, he points out, is that it is "a very stable molecule". It can stick around in the atmosphere for thousands of years. Now they have found a way of stitching it on the back of polymers, he reckons that "one year's production of one average size plant is the equivalent of planting 1.2 million trees". Econic can also retrofit existing producers and Wiggins reckons there are hundreds of plants around the world that can easily be adapted to use Econic tech. "Eventually the oil wells are going to fill up - so you have to do something with it [the spare CO2]."

So we have a way of storing or utilising carbon, but do we in the UK have a shot at capturing CO2 right from the off? The good news is that the UK has its own answer to San Francisco in the shape of Leeds, and specifically the chemistry department of Leeds University, which is where C-Capture was born. C-Capture uses a solvent - cheap and readily available - that absorbs CO2; they can then siphon it off and bury it or sell it to Econic. The distinctive feature of their system is that it can hitch up to power plants and other forms of heavy industry and capture the carbon before it can get out and start wreaking havoc (but they can also do ***removal***). Most of the people working there are graduates of the Leeds chemisty department, notably their head of chemistry, Dr Douglas Barnes, who is a graduate student of Professor Chris Rayner, who started the whole thing back in 2009. Barnes came up with the novel chemistry that underpins their methodology. "I was at a presentation and I was mainly staring out of the window, thinking about the carbon capture problem. But there was a slide or a piece of information that set the cogs in my brain whirring. I came into work the next day and we set up an experiment and got a positive result."

The Barnes "flight of fancy" (in his words) was back in 2013. Now C-Capture is garlanded with green energy prizes, backed by a multimillion grant from the Department of Business, Energy, and Industrial Strategy, and is even now soaking up CO2 from the Drax power stations. They have a short-term ***target*** of 10,000 tons per day. But their longer-term vision is of CCUS (carbon capture utilisation and storage) "clusters" scattered around the four corners of the UK and bestriding assorted industries, connected by pipelines. C-Capture reckons that it can shove around 200 years worth of ***emissions*** a couple of kilometres down beneath the seabed, making use of empty gas and oil fields. The C-Capture technology is to be featured in an exhibition at the Science Museum (whenever it opens) on "Our Future Planet". This is tomorrow's world, but to some extent the future is already here.

The race is on. I wonder if the bookies have odds on who is most likely to cross the Elon Musk $100m line first. Maybe all the inspiring up-and-coming companies I've mentioned above could be winners. But in any case it is clear that there is no one solution to the problem of reducing CO2 in the atmosphere. The fact is everything is still evolving in the field. Anything could happen. Private enterprise and the public sector are converging. The tech is getting better all the time and the economics of it is making more and more sense. As Helen Atkinson, another of the Leeds graduates at C-Capture, said to me, "It's expensive, but if you compare it to the cost of doing nothing, it's a bargain."

This is not a Pangloss story - I am not arguing that this is the best of all possible worlds. We are already severely messed up. If my figures are right, at present we only have an annual 50 billion or so tons of CO2 and other assorted noxious gases left to worry about. So there is a way to go to achieve net-zero. We are not talking about utopia. But neither are we looking at apocalypse now.

As Douglas Barnes puts it: "***Emissions*** are embedded in everything we do, from the moment we get up to the time we go to bed. We need to rethink everything." But he describes himself as "a climate optimist" and expects to see a decline in our ***emissions*** over the next decade or two. In theory we can capture 95 per cent of the carbon dioxide we emit. We have the resources and the ingenuity to fix things. Our climate crisis is not yet terminal. We can still rewind.

**Load-Date:** April 14, 2021

**End of Document**



[***Spinning emissions: Australia's climate projections are not what they seem***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:61GX-99F1-DY4H-K20B-00000-00&context=1516831)

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**Section:** ENVIRONMENT; Version:1

**Length:** 1681 words

**Byline:** Adam Morton Environment editor

**Highlight:** Official modelling could give you the impression the Morrison government has achieved something meaningful. But you would be wrong

**Body**

Great news! The government says Australia is on track to meet the greenhouse gas ***emissions*** reduction ***target*** for 2030 it set as part of the global Paris climate agreement. Cue the page one headlines, the fireworks, the “mission accomplished” banner on the deck of USS Abraham Lincoln.

Or something like that. You could certainly be left with the impression the Morrison government had achieved something meaningful following the release of the [*annual official* ***emissions*** *projections data*](https://www.theguardian.com/australia-news/2020/dec/10/projections-suggest-australia-could-meet-2030-emissions-target-without-using-kyoto-credits) on Thursday.

As usual, the government’s media management was highly skilled, and some political reporters were captured by it. It got its message out. But the reality of what [*the document*](https://www.theguardian.com/australia-news/2020/dec/10/projections-suggest-australia-could-meet-2030-emissions-target-without-using-kyoto-credits) says is more complicated.

The first thing to stress here is in the title – these are only projections. The report tells us what we might expect to happen under current policy settings. It is frankly weird the primacy projections have been given in public debate, given what matters is actual cuts. And things will definitely change in the years ahead.

In terms of the actual numbers, the bottom line is that – at a time when other countries are announcing increasingly ambitious ***targets*** – the government expects national ***emissions*** to fall by only 6.8% this decade.

That projected drop is almost entirely due to a surge in electricity production from wind and solar that the Morrison government has tried to slow, not accelerate. In most other areas of the economy the projections suggest there will be no change in ***emissions*** over the next decade, or they will go up.

The level of chutzpah here is too often ignored

The report breaks down the numbers in several ways, but the key point it makes is that the country is more likely to be on track to hit its 2030 ***target*** (a 26%-28% cut compared with 2005 levels) than it was a year ago.

Back then, the projection was that ***emissions*** would be [*just 16% below 2005 levels by 2030*](https://www.theguardian.com/australia-news/2020/dec/10/projections-suggest-australia-could-meet-2030-emissions-target-without-using-kyoto-credits) – more or less where they are now, and well short of the 2030 goal.

The update says we are now likely to be at 22% below 2005 levels at the end of the decade – better in relative terms, though still not at the ***target*** and far short of what [*every*](https://www.theguardian.com/australia-news/2020/dec/10/projections-suggest-australia-could-meet-2030-emissions-target-without-using-kyoto-credits) [*scientific*](https://www.theguardian.com/australia-news/2020/dec/10/projections-suggest-australia-could-meet-2030-emissions-target-without-using-kyoto-credits) and [*diplomatic*](https://www.theguardian.com/australia-news/2020/dec/10/projections-suggest-australia-could-meet-2030-emissions-target-without-using-kyoto-credits) assessment says we should be doing.

Despite the shortfall, the government issued [*a press release*](https://www.theguardian.com/australia-news/2020/dec/10/projections-suggest-australia-could-meet-2030-emissions-target-without-using-kyoto-credits) spinning the projections as confirmation Australia is “on track to meet and beat” its 2030 ***target***. It makes this case in two ways. Both require leaps of logic.

The first relates to the much-discussed [*“carryover credits”*](https://www.theguardian.com/australia-news/2020/dec/10/projections-suggest-australia-could-meet-2030-emissions-target-without-using-kyoto-credits) from the Kyoto protocol, which Scott Morrison has repeatedly suggested the government could use, [*but now probably won’t*](https://www.theguardian.com/australia-news/2020/dec/10/projections-suggest-australia-could-meet-2030-emissions-target-without-using-kyoto-credits) , to meet its 2030 ***target***. Despite the rhetoric, the projections report assumes they will be available and could kick the country over the line.

The level of chutzpah here is too often ignored. The government claims to have “over-achieved” on the unambitious ***emissions*** ***targets*** Australia set for itself under the Kyoto protocol, the initial international climate pact that expires this year, and should be able to claim credit for that against its Paris agreement ***target***, an entirely different deal.

Many of these credits come from the first period of Kyoto protocol, which covered the years 1990 to 2012, when the Howard government set itself a ***target*** that allowed Australia to actually raise its ***emissions*** by 8%.

Morrison and his ***emissions*** reduction minister, Angus Taylor, are arguing that Australia deserves a reward in 2030 for beating a goal that allowed it to increase carbon pollution two decades ago.

Not surprisingly, much of the international community [*sees this as a bad joke*](https://www.theguardian.com/australia-news/2020/dec/10/projections-suggest-australia-could-meet-2030-emissions-target-without-using-kyoto-credits) , and told the government it wasn’t going to fly at a summit in Madrid last year. [*No other country*](https://www.theguardian.com/australia-news/2020/dec/10/projections-suggest-australia-could-meet-2030-emissions-target-without-using-kyoto-credits) is trying to use this type of Kyoto credits, and the commitment under the [*Paris deal*](https://www.theguardian.com/australia-news/2020/dec/10/projections-suggest-australia-could-meet-2030-emissions-target-without-using-kyoto-credits) was to ratchet up ***emissions*** cuts, not find ways to avoid them.

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The independent analysts at RepuTex were among those to say they could see no justification for the government claiming the roadmap would deliver any ***emissions*** cuts in the short-term.

Creating the impression of action where little exists

Beyond the claims about ***targets***, it is worth examining more closely why the ***emissions*** outlook has improved since last year, when so little action is expected in the years ahead.

The short answer is that government officials [*have routinely overestimated what national* ***emissions*** *will be*](https://www.theguardian.com/australia-news/2020/dec/10/projections-suggest-australia-could-meet-2030-emissions-target-without-using-kyoto-credits) , particularly from electricity, as they have failed to appreciate how quickly wind and solar would be taken up.

It means that almost every year projections of future ***emissions*** come down, making it appear easier to meet ***targets*** – not necessarily because governments have done anything, but because the modelling is catching up with reality.

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Its resistance to the rise of clean energy goes further than just vacating the field. Before the last election, Taylor accused federal Labor of planning to put [*“a wrecking ball through the economy”*](https://www.theguardian.com/australia-news/2020/dec/10/projections-suggest-australia-could-meet-2030-emissions-target-without-using-kyoto-credits) with climate policies that included what now appears a modest goal of reaching 50% renewable energy by 2030, and the government [*continues to raise concerns*](https://www.theguardian.com/australia-news/2020/dec/10/projections-suggest-australia-could-meet-2030-emissions-target-without-using-kyoto-credits) about the ambitious Victorian and NSW renewable schemes.

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If you ***remove*** electricity from the equation, Australia’s scorecard is ugly

Projections of ***emissions*** from electricity are likely to come down even further next year, when [*NSW’s massive 12 gigawatt clean energy underwriting program*](https://www.theguardian.com/australia-news/2020/dec/10/projections-suggest-australia-could-meet-2030-emissions-target-without-using-kyoto-credits) , which passed the state parliament last month, is properly factored in.

At the moment, for reasons that are unclear, the projections assume the growth in renewables will skyrocket over the next five years and then slow after 2025. If the NSW plan is delivered as promised it should effectively build the equivalent of Australia’s current renewable fleet in 10 years – more than enough to put the Morrison government’s 2030 climate ***target*** genuinely within reach.

It will be interesting to see if federal Coalition MPs are still criticising the state scheme when that happens.

While renewable energy is projected to continue to grow, the reason the Morrison government isn’t on track to meet its 2030 ***target*** yet is, well, everything else.

***Emissions*** from transport, stationary energy (basically, fossil fuels in industry other than electricity and transport), fugitives released during coal and gas extraction and ***agriculture*** are all projected to flatline or increase over the next decade.

This isn’t surprising – the Morrison government is yet to enact significant policies to deal with any of them.

While transport ***emissions*** have [*fallen during the Covid-19 pandemic*](https://www.theguardian.com/australia-news/2020/dec/10/projections-suggest-australia-could-meet-2030-emissions-target-without-using-kyoto-credits) , they are expected to increase to historic highs in the years ahead, largely because the government has [*no plan to supported the uptake of clean cars*](https://www.theguardian.com/australia-news/2020/dec/10/projections-suggest-australia-could-meet-2030-emissions-target-without-using-kyoto-credits) in the way comparable countries have.

Transport is only part of the issue. If you ***remove*** the electricity sector from the equation, Australia’s scorecard is ugly. Climate Analytics calculated that the combined ***emissions*** output from the rest of the economy is projected to be 13% higher in 2030 than 2005.

Given electricity is only about a third of national ***emissions***, this is a major problem. It leaves the country miles away from the government’s claimed goal of one day reaching net zero ***emissions***, and with no path to get there.

This is what the rest of the world sees. It’s why Morrison [*was denied a speaking slot*](https://www.theguardian.com/australia-news/2020/dec/10/projections-suggest-australia-could-meet-2030-emissions-target-without-using-kyoto-credits) at a global climate ambition summit this weekend after boasting in parliament he would use it to challenge his critics.

The projections report suggests it is quite possible the Morrison government could soon be able to claim it is on track to meet its 2030 ***target*** based on cuts in electricity and a drop in ***forest*** clearing since 2005.

But to claim this as good news misses the point. The obvious question raised by the projections – and increasingly the international community – is this: since it is so easy to get to that unambitious goal, and given the urgency of the problem, why is Australia not prepared to do more?

**Load-Date:** December 11, 2020

**End of Document**



[***Spinning emissions: Australia's climate projections are not what they seem***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:61H1-T2T1-DY4H-K0XJ-00000-00&context=1516831)

The Guardian (London)

December 11, 2020 Friday 7:00 PM GMT

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**Section:** ENVIRONMENT; Version:1

**Length:** 1680 words

**Byline:** Adam Morton Environment editor

**Highlight:** Official modelling could give you the impression the Morrison government has achieved something meaningful. But you would be wrong

**Body**

Great news! The government says Australia is on track to meet the greenhouse gas ***emissions*** reduction ***target*** for 2030 it set as part of the global Paris climate agreement. Cue the page one headlines, the fireworks, the “mission accomplished” banner on the deck of USS Abraham Lincoln.

Or something like that. You could certainly be left with the impression the Morrison government had achieved something meaningful following the release of the [*annual official* ***emissions*** *projections data*](https://www.theguardian.com/australia-news/2020/dec/10/projections-suggest-australia-could-meet-2030-emissions-target-without-using-kyoto-credits) on Thursday.

As usual, the government’s media management was highly skilled, and some political reporters were captured by it. It got its message out. But the reality of what [*the document*](https://www.theguardian.com/australia-news/2020/dec/10/projections-suggest-australia-could-meet-2030-emissions-target-without-using-kyoto-credits) says is more complicated.

The first thing to stress here is in the title – these are only projections. The report tells us what we might expect to happen under current policy settings. It is frankly weird the primacy projections have been given in public debate, given what matters is actual cuts. And things will definitely change in the years ahead.

In terms of the actual numbers, the bottom line is that – at a time when other countries are announcing increasingly ambitious ***targets*** – the government expects national ***emissions*** to fall by only 6.8% this decade.

That projected drop is almost entirely due to a surge in electricity production from wind and solar that the Morrison government has tried to slow, not accelerate. In most other areas of the economy the projections suggest there will be no change in ***emissions*** over the next decade, or they will go up.

The level of chutzpah here is too often ignored

The report breaks down the numbers in several ways, but the key point it makes is that the country is more likely to be on track to hit its 2030 ***target*** (a 26%-28% cut compared with 2005 levels) than it was a year ago.

Back then, the projection was that ***emissions*** would be [*just 16% below 2005 levels by 2030*](https://www.theguardian.com/australia-news/2020/dec/10/projections-suggest-australia-could-meet-2030-emissions-target-without-using-kyoto-credits) – more or less where they are now, and well short of the 2030 goal.

The update says we are now likely to be at 22% below 2005 levels at the end of the decade – better in relative terms, though still not at the ***target*** and far short of what [*every*](https://www.theguardian.com/australia-news/2020/dec/10/projections-suggest-australia-could-meet-2030-emissions-target-without-using-kyoto-credits) [*scientific*](https://www.theguardian.com/australia-news/2020/dec/10/projections-suggest-australia-could-meet-2030-emissions-target-without-using-kyoto-credits) and [*diplomatic*](https://www.theguardian.com/australia-news/2020/dec/10/projections-suggest-australia-could-meet-2030-emissions-target-without-using-kyoto-credits) assessment says we should be doing.

Despite the shortfall, the government issued [*a press release*](https://www.theguardian.com/australia-news/2020/dec/10/projections-suggest-australia-could-meet-2030-emissions-target-without-using-kyoto-credits) spinning the projections as confirmation Australia is “on track to meet and beat” its 2030 ***target***. It makes this case in two ways. Both require leaps of logic.

The first relates to the much-discussed [*“carryover credits”*](https://www.theguardian.com/australia-news/2020/dec/10/projections-suggest-australia-could-meet-2030-emissions-target-without-using-kyoto-credits) from the Kyoto protocol, which Scott Morrison has repeatedly suggested the government could use, [*but now probably won’t*](https://www.theguardian.com/australia-news/2020/dec/10/projections-suggest-australia-could-meet-2030-emissions-target-without-using-kyoto-credits) , to meet its 2030 ***target***. Despite the rhetoric, the projections report assumes they will be available and could kick the country over the line.

The level of chutzpah here is too often ignored. The government claims to have “over-achieved” on the unambitious ***emissions*** ***targets*** Australia set for itself under the Kyoto protocol, the initial international climate pact that expires this year, and should be able to claim credit for that against its Paris agreement ***target***, an entirely different deal.

Many of these credits come from the first period of Kyoto protocol, which covered the years 1990 to 2012, when the Howard government set itself a ***target*** that allowed Australia to actually raise its ***emissions*** by 8%.

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**Load-Date:** December 12, 2020

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[***Forbidden fruits***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:61J5-R4G1-JBPJ-719B-00000-00&context=1516831)

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**Length:** 1633 words

**Byline:** Aparna Vidyasagar

**Aparna Vidyasagar** is feeling cordial. She tweets @AparnaVid

**Body**

IN JUNE 1894, *Harper's Bazaar* ran a page of recipes featuring currants and gooseberries. It proudly noted that "more than forty of the sixty known varieties of the currant are of American origin" including the blackcurrant, "with its medicated taste", the white, "less acid than its ruby sister" and the red, "whose decided flavour renders it pre-eminently valuable as a sauce for meats and game".

Back in the 19th-century, US newspapers and magazines often carried recipes that made use of currants, yet now they have all but disappeared. Meanwhile these delicate fruits remain current in other parts of the world, not least in the UK, where they find use in jams, cordials and various sweet treats such as berry-laden summer puddings and gooseberry fools. And not just that. Even with confectionery brands such as Skittles and Starburst, the purple ones are different flavours on either side of the pond, blackcurrant in the UK and grape in the US. Why?

The answers lie in a ruthless and now largely forgotten war launched by the US government on the currant. While a ceasefire has long since been declared, these unfortunate berries never fully recovered – and so it is likely that the majority of people in the US today have never tasted one.

True currants, in case you are wondering, aren't the same as raisins and sultanas. The popular Zante currants, or raisin currants, that originated in Greece's Ionian islands are actually dried grapes, as are raisins and sultanas. True currants are a berry borne by bushes belonging to the *Ribes* genus, which contains more than 150 species and includes gooseberries. The dainty fruits come in various colours – typically black, red or white – and tend to be tart, with whispers of sweetness.

Currants have grown wild in North America for centuries. Many Indigenous communities used native species for culinary and medicinal purposes, and early colonists introduced more variety. As early as 1629, for example, the Massachusetts Bay colony imported European varieties of blackcurrants and redcurrants for cultivation.

Through the 1800s, these were often used to make jams, jellies, cordials, wine and sweet items like tarts, pies and spiced currants and even festive cocktails (see "Currants past", opposite). Blackcurrants were used in home remedies. By the turn of the 20th century, [*the US was commercially producing European currants on nearly 50 square kilometres*](https://ag.umass.edu/sites/ag.umass.edu/files/fact-sheets/pdf/currants.pdf) of ***land***, much of it concentrated in the state of New York.

But New York also happened to be home to the eastern white pine (*Pinus strobus*), then the US's primary source of timber. The relatively soft wood of the pine was [*extremely versatile*](https://www.fpl.fs.fed.us/documnts/usda/amwood/ewhpine.pdf), used to make everything from matches to furniture, as well as exterior cladding and interior panelling for homes. Demand was high – so high that, by 1900, eastern white pine stocks were severely depleted. It wasn't long before nurseries had to import seedlings from Europe.

Unfortunately, they received a stowaway too, a [*parasitic fungus*](https://www.newscientist.com/article-topic/fungi/) named *Cronartium ribicola* that causes a devastating disease known as white pine blister rust.

The spores of this fungus enter through pine needles and spread steadily to the branches and trunk, infecting tissues and creating bulging, spore-filled cankers. Infected branches can be pruned to save a tree, says [*Melodie Putnam*](https://bpp.oregonstate.edu/users/melodie-putnam), a plant pathologist at Oregon State University. But once the spores reach the main trunk, the whole tree can be lost. If there is a wound on the tree in which spores can ***land***, "it's like a free lunch", she says. "There's already an opening there for them to cause an infection."

The first credible report of the disease's presence in the US came from New York state in 1909, by which point millions of eastern white pine seedlings had already been imported. At first, officials from the US Department of ***Agriculture*** tried to destroy all the diseased planting stock. Then, in 1912, they banned the import of white pines from Europe and Russia. Neither did the job. In just a few years, white pine blister rust had spread across the north-east. By 1921, the disease had overcome the white pine species of the western US. The country was facing an epidemic that threatened to destroy one of its most important industries.

What does any of this have to do with currants, you might ask. Well, it comes down to the fungus's double life.

The US launched a ruthless and now largely forgotten war on currants

*Cronartium ribicola* needs two alternating hosts to complete its life cycle. Its primary host is one of several species of five-needle pine trees. But the fungal spores that burst out of the cankers on white pines can't directly infect other pines. They must first be carried, sometimes thousands of kilometres, on strong winds to seek out their secondary host: any susceptible species of *Ribes*. More specifically, they ***target*** the leaves of the plants. Currant plants act "like a spore-making machine", says Isabel Munck, a plant pathologist with the US ***Forest*** Service. "Spores that are made on the *Ribes* are the only ones that can affect white pines."

It follows that if you can get rid of the currant plants, which host *Cronartium ribicola*'s spores, the fungus effectively becomes powerless. And so it was decreed by the US government, with a federal *Ribes* eradication programme that began in earnest in 1916.

The authorities wanted to be swift and aggressive, having been stung by a previous catastrophe. At the end of the 19th century, in a space of just a few decades, the US lost almost all of its population of mature [*American chestnut trees*](https://www.newscientist.com/article/dn25644-american-chestnut-set-for-genetically-modified-revival/) to another fungal disease, chestnut blight. The country couldn't afford to lose white pines too.

What followed was carnage. Vast swathes of currant shrubs were destroyed in ***forests***, nurseries and home gardens. In 1919 alone, more than 100,000 hectares of currants were cleared in the north-east. During the Great Depression of the 1930s, the Civilian Conservation Corps employed thousands of people to pull up any wild or cultivated currant bushes in the vicinity of white pines, primarily by hand. Eradication efforts ultimately encompassed both east and west coasts as well as the Great Lakes and Rocky mountain regions, and ran through both world wars.

The campaign was indiscriminate. Not all *Ribes* species are equally susceptible to the fungus. The European currants, particularly the blackcurrant, were most vulnerable to blister rust and therefore most dangerous to pines. Yet the eradication programme spared nothing, neither native nor cultivated.

In Wisconsin, to take one example, the heavy-handed federal approach on the ***lands*** of the Menominee Tribe was initially met with some resistance "because those [native] plant species are medicinally a part of our culture", says Jeff Grignon, a former ***forester*** for the Menominee Reservation. "They were opposed to ***removal*** of those species en masse." But [*the community ultimately complied and Menominee women undertook the bulk of the work. On Menominee* ***lands*** *alone*](https://www.menominee-nsn.gov/Default.aspx), more than 12 million *Ribes* plants were destroyed between 1921 and 1950, often by scouring the same plots of ***land*** three times over.

In the long run, the arduous eradication programme, which sometimes took place on difficult terrain, proved to be unsustainable. The federal programme was dismantled by the late 1960s, but white pine blister rust was never fully stamped out. It is still prevalent in the eastern US, according to Munck, and its range is expanding to new areas in the west of the country. Even while implementing alternative approaches, such as selectively breeding disease-resistant pines, several states retained strict restrictions on currant cultivation, if not barring it entirely.

By the mid-20th century, you see virtually no recipes with currants

But the campaign to eradicate currants had a distinct impact on the country's culinary preferences. "Currants went from something that was generally familiar to Americans to something unfamiliar," says food historian Stephen Schmidt. By the mid-20th century, he says, "you certainly see a lot fewer recipes for them. In fact, you see virtually none."

So there you have it. The curious absence of these delicate fruits from the US culinary landscape, and the reason purple Skittles taste different on either side of the pond, can be traced back to the federal government's decades-long campaign to squash the currant.

Currants past

Two festive recipes from the days before the US declared war on currants**CURRANT SHRUB COCKTAIL***Adapted from "Currants and Gooseberries", Harper's Bazaar, June 1894***Ingredients**:1 quart (1 litre) red currant juice¾lb (340g) white sugar1 quart (1 litre) of "best" brandy or "good" Jamaican rum**Method:**If you are making your own juice, cook the red currants until "the juice runs freely", then squeeze the fruit and strain to ***remove*** skins. To the warm juice, add the sugar and stir until dissolved.Once cool, add in the liquor. Strain, if using fresh currants. Bottle and seal. Simply add water and ice to serve.**MEATY MINCE PIES***Adapted from "Virginia mincemeat", Scientific American, December 1889***Ingredients:**2 lbs (907 grams) beef6 lbs (2.7 kilogram) raisins, sultanas and Zante currants2 lbs (907 g) beef suet1 ½ lbs (680 g) candied lemon peel4 lbs (1.8 kg) apples2 lbs (907 g) sugar2 grated nutmegs¼ oz (7 g) cloves and mace1/2 oz (14 g) cinnamon1 quart (1 litre) currant wine or sherry1 quart (1 litre) brandy1 tsp salt2 lemons and 2 oranges. Juice and rind**Method:**Gently simmer the beef until tender. Let it cool and chop it finely. Chop the apples and beef suet. Mix all the dry ingredients together. Then add the juice and rinds of the oranges and lemons. Place the mixture in a stone jar and pour in the currant wine and brandy. Cover and store in a cool place. Thin out the mixture with currant wine or cider before filling your pies.

**Load-Date:** December 17, 2020

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[***COLORADO WILDERNESS ACT OF 2021; Congressional Record Vol. 167, No. 36 (House of Representatives - February 25, 2021)***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:623F-X0C1-F0YC-N3KN-00000-00&context=1516831)

Impact News Service

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**Length:** 69360 words

**Body**

Washington: The Library of Congress, The Government of USA has issued the following house proceeding:

Mr. NEGUSE. Madam Speaker, pursuant to House Resolution 147, I call up the bill (H.R 803) to designate certain ***lands*** in the State of Colorado as components of the National Wilderness Preservation System, and for other purposes, and ask for its immediate consideration in the House. The Clerk read the title of the bill. The SPEAKER pro tempore. Pursuant to House Resolution 147, an amendment in the nature of a substitute consisting of the text of Rules Committee Print 117-2, modified by the amendment printed in part A of House Report 117-6, is adopted and the bill, as amended, is considered read. The text of the bill, as amended, is as follows: H.R 803 Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, SECTION 1. SHORT TITLE; TABLE OF CONTENTS. (a) Short Title.--This Act may be cited as the ``Protecting America's Wilderness and Public ***Lands*** Act''. (b) Table of Contents.--The table of contents for this Act is as follows: Sec. 1. Short title; table of contents. TITLE I--COLORADO WILDERNESS Sec. 101. Short title; definition. Sec. 102. Additions to National Wilderness Preservation System in the State of Colorado. Sec. 103. Administrative provisions. Sec. 104. Water. Sec. 105. Sense of Congress. Sec. 106. Department of defense study on impacts that the expansion of wilderness designations in the western united states would have on the readiness of the armed forces of the united states with respect to aviation training. TITLE II--NORTHWEST CALIFORNIA WILDERNESS, RECREATION, AND WORKING ***FORESTS*** Sec. 201. Short title. Sec. 202. Definitions. Subtitle A--Restoration and Economic Development Sec. 211. South Fork Trinity-Mad River Restoration Area. Sec. 212. Redwood National and State Parks restoration. Sec. 213. California Public ***Lands*** Remediation Partnership. Sec. 214. Trinity Lake visitor center. Sec. 215. Del Norte County visitor center. Sec. 216. Management plans. Sec. 217. Study; partnerships related to overnight accommodations. Subtitle B--Recreation Sec. 221. Horse Mountain Special Management Area. Sec. 222. Bigfoot National Recreation Trail. Sec. 223. Elk Camp Ridge Recreation Trail. Sec. 224. Trinity Lake Trail. Sec. 225. Trails study. Sec. 226. Construction of mountain bicycling routes. Sec. 227. Partnerships. Subtitle C--Conservation Sec. 231. Designation of wilderness. Sec. 232. Administration of wilderness. Sec. 233. Designation of potential wilderness. Sec. 234. Designation of wild and scenic rivers. Sec. 235. Sanhedrin Special Conservation Management Area. [[Page H662]] Subtitle D--Miscellaneous Sec. 241. Maps and legal descriptions. Sec. 242. Updates to ***land*** and resource management plans. Sec. 243. Pacific Gas and Electric Company Utility facilities and rights-of-way. TITLE III--WILD OLYMPICS WILDERNESS AND WILD AND SCENIC RIVERS Sec. 301. Short title. Sec. 302. Designation of olympic national ***forest*** wilderness areas. Sec. 303. Wild and scenic river designations. Sec. 304. Existing rights and withdrawal. Sec. 305. Treaty rights. TITLE IV--CENTRAL COAST HERITAGE PROTECTION Sec. 401. Short title. Sec. 402. Definitions. Sec. 403. Designation of wilderness. Sec. 404. Designation of the Machesna Mountain Potential Wilderness. Sec. 405. Administration of wilderness. Sec. 406. Designation of Wild and Scenic Rivers. Sec. 407. Designation of the Fox Mountain Potential Wilderness. Sec. 408. Designation of scenic areas. Sec. 409. Condor National Scenic Trail. Sec. 410. ***Forest*** service study. Sec. 411. Nonmotorized recreation opportunities. Sec. 412. Use by members of Tribes. TITLE V--SAN GABRIEL MOUNTAINS FOOTHILLS AND RIVERS PROTECTION Sec. 501. Short title. Sec. 502. Definition of State. Subtitle A--San Gabriel National Recreation Area Sec. 511. Purposes. Sec. 512. Definitions. Sec. 513. San Gabriel National Recreation Area. Sec. 514. Management. Sec. 515. Acquisition of non-Federal ***land*** within Recreation Area. Sec. 516. Water rights; water resource facilities; public roads; utility facilities. Sec. 517. San Gabriel National Recreation Area Public Advisory Council. Sec. 518. San Gabriel National Recreation Area Partnership. Sec. 519. Visitor services and facilities. Subtitle B--San Gabriel Mountains Sec. 521. Definitions. Sec. 522. National Monument Boundary Modification. Sec. 523. Designation of Wilderness Areas and Additions. Sec. 524. Administration of Wilderness Areas and Additions. Sec. 525. Designation of Wild and Scenic Rivers. Sec. 526. Water rights. TITLE VI--RIM OF THE VALLEY CORRIDOR PRESERVATION Sec. 601. Short title. Sec. 602. Boundary adjustment; ***land*** acquisition; administration. TITLE VII--COLORADO OUTDOOR RECREATION AND ECONOMY Sec. 701. Short title. Sec. 702. Definition of State. Subtitle A--Continental Divide Sec. 711. Definitions. Sec. 712. Colorado Wilderness additions. Sec. 713. Williams Fork Mountains Wilderness. Sec. 714. Tenmile Recreation Management Area. Sec. 715. Porcupine Gulch Wildlife Conservation Area. Sec. 716. Williams Fork Mountains Wildlife Conservation Area. Sec. 717. Camp Hale National Historic Landscape. Sec. 718. White River National ***Forest*** boundary modification. Sec. 719. Rocky Mountain National Park Potential Wilderness boundary adjustment. Sec. 720. Administrative provisions. Subtitle B--San Juan Mountains Sec. 731. Definitions. Sec. 732. Additions to National Wilderness Preservation System. Sec. 733. Special management areas. Sec. 734. Release of wilderness study areas. Sec. 735. Administrative provisions. Subtitle C--Thompson Divide Sec. 741. Purposes. Sec. 742. Definitions. Sec. 743. Thompson Divide Withdrawal and Protection Area. Sec. 744. Thompson Divide lease exchange. Sec. 745. Greater Thompson Divide Fugitive Coal Mine Methane Use Pilot Program. Sec. 746. Effect. Subtitle D--Curecanti National Recreation Area Sec. 751. Definitions. Sec. 752. Curecanti National Recreation Area. Sec. 753. Acquisition of ***land***; boundary management. Sec. 754. General management plan. Sec. 755. Boundary survey. TITLE VIII--GRAND CANYON PROTECTION Sec. 801. Short title. Sec. 802. Withdrawal of Certain Federal ***land*** in the State of Arizona. TITLE I--COLORADO WILDERNESS SEC. 101. SHORT TITLE; DEFINITION. (a) Short Title.--This title may be cited as the ``Colorado Wilderness Act of 2021''. (b) Secretary Defined.--As used in this title, the term ``Secretary'' means the Secretary of the Interior or the Secretary of ***Agriculture***, as appropriate. SEC. 102. ADDITIONS TO NATIONAL WILDERNESS PRESERVATION SYSTEM IN THE STATE OF COLORADO. (a) Additions.--Section 2(a) of the Colorado Wilderness Act of 1993 (Public Law 103-77; 107 Stat. 756; 16 U.S.C 1132 note) is amended by adding at the end the following paragraphs: ``(23) Certain ***lands*** managed by the Colorado River Valley Field Office of the Bureau of ***Land*** Management, which comprise approximately 316 acres, as generally depicted on a map titled `Maroon Bells Addition Proposed Wilderness', dated July 20, 2018, which is hereby incorporated in and shall be deemed to be a part of the Maroon Bells-Snowmass Wilderness Area designated by Public Law 88-577. ``(24) Certain ***lands*** managed by the Gunnison Field Office of the Bureau of ***Land*** Management, which comprise approximately 38,217 acres, as generally depicted on a map titled `Redcloud & Handies Peak Proposed Wilderness', dated October 9, 2019, which shall be known as the Redcloud Peak Wilderness. ``(25) Certain ***lands*** managed by the Gunnison Field Office of the Bureau of ***Land*** Management or located in the Grand Mesa, Uncompahgre, and Gunnison National ***Forests***, which comprise approximately 26,734 acres, as generally depicted on a map titled `Redcloud & Handies Peak Proposed Wilderness', dated October 9, 2019, which shall be known as the Handies Peak Wilderness. ``(26) Certain ***lands*** managed by the Royal Gorge Field Office of the Bureau of ***Land*** Management, which comprise approximately 16,481 acres, as generally depicted on a map titled `Table Mountain & McIntyre Hills Proposed Wilderness', dated November 7, 2019, which shall be known as the McIntyre Hills Wilderness. ``(27) Certain ***lands*** managed by the Colorado River Valley Field Office of the Bureau of ***Land*** Management, which comprise approximately 10,282 acres, as generally depicted on a map titled `Grand Hogback Proposed Wilderness', dated October 16, 2019, which shall be known as the Grand Hogback Wilderness. ``(28) Certain ***lands*** managed by the Grand Junction Field Office of the Bureau of ***Land*** Management, which comprise approximately 25,624 acres, as generally depicted on a map titled `Demaree Canyon Proposed Wilderness', dated October 9, 2019, which shall be known as the Demaree Canyon Wilderness. ``(29) Certain ***lands*** managed by the Grand Junction Field Office of the Bureau of ***Land*** Management, which comprise approximately 28,279 acres, as generally depicted on a map titled `Little Books Cliff Proposed Wilderness', dated October 9, 2019, which shall be known as the Little Bookcliffs Wilderness. ``(30) Certain ***lands*** managed by the Colorado River Valley Field Office of the Bureau of ***Land*** Management, which comprise approximately 14,886 acres, as generally depicted on a map titled `Bull Gulch & Castle Peak Proposed Wilderness', dated January 29, 2020, which shall be known as the Bull Gulch Wilderness. ``(31) Certain ***lands*** managed by the Colorado River Valley Field Office of the Bureau of ***Land*** Management, which comprise approximately 12,016 acres, as generally depicted on a map titled `Bull Gulch & Castle Peak Proposed Wilderness Areas', dated January 29, 2020, which shall be known as the Castle Peak Wilderness.''. (b) Further Additions.--The following ***lands*** in the State of Colorado administered by the Bureau of ***Land*** Management or the United States ***Forest*** Service are hereby designated as wilderness and, therefore, as components of the National Wilderness Preservation System: (1) Certain ***lands*** managed by the Colorado River Valley Field Office of the Bureau of ***Land*** Management or located in the White River National ***Forest***, which comprise approximately 19,240 acres, as generally depicted on a map titled ``Assignation Ridge Proposed Wilderness'', dated November 12, 2019, which shall be known as the Assignation Ridge Wilderness. (2) Certain ***lands*** managed by the Royal Gorge Field Office of the Bureau of ***Land*** Management or located in the Pike and San Isabel National ***Forests***, which comprise approximately 23,116 acres, as generally depicted on a map titled ``Badger Creek Proposed Wilderness'', dated November 7, 2019, which shall be known as the Badger Creek Wilderness. (3) Certain ***lands*** managed by the Royal Gorge Field Office of the Bureau of ***Land*** Management or located in the Pike and San Isabel National ***Forests***, which comprise approximately 35,251 acres, as generally depicted on a map titled ``Beaver Creek Proposed Wilderness'', dated November 7, 2019, which shall be known as the Beaver Creek Wilderness. (4) Certain ***lands*** managed by the Royal Gorge Field Office of the Bureau of ***Land*** Management or the Bureau of Reclamation or located in the Pike and San Isabel National ***Forests***, which comprise approximately 32,884 acres, as generally depicted on a map titled ``Grape Creek Proposed Wilderness'', dated November 7, 2019, which shall be known as the Grape Creek Wilderness. (5) Certain ***lands*** managed by the Grand Junction Field Office of the Bureau of ***Land*** Management, which comprise approximately 13,351 acres, as generally depicted on a map titled ``North & South Bangs Canyon Proposed Wilderness'', dated October 9, 2019, which shall be known as the North Bangs Canyon Wilderness. (6) Certain ***lands*** managed by the Grand Junction Field Office of the Bureau of ***Land*** Management, which comprise approximately 5,144 acres, as generally depicted on a map titled ``North & South Bangs Canyon Proposed Wilderness'', dated October 9, 2019, which shall be known as the South Bangs Canyon Wilderness. (7) Certain ***lands*** managed by the Grand Junction Field Office of the Bureau of ***Land*** Management, which comprise approximately 26,624 acres, as generally depicted on a map titled ``Unaweep & Palisade Proposed Wilderness'', dated October 9, 2019, which shall be known as The Palisade Wilderness. [[Page H663]] (8) Certain ***lands*** managed by the Grand Junction Field Office of the Bureau of ***Land*** Management or located in the Grand Mesa, Uncompaghre, and Gunnison National ***Forests***, which comprise approximately 19,776 acres, as generally depicted on a map titled ``Unaweep & Palisade Proposed Wilderness'', dated October 9, 2019, which shall be known as the Unaweep Wilderness. (9) Certain ***lands*** managed by the Grand Junction Field Office of the Bureau of ***Land*** Management and Uncompaghre Field Office of the Bureau of ***Land*** Management and in the Manti- LaSal National ***Forest***, which comprise approximately 37,637 acres, as generally depicted on a map titled ``Sewemup Mesa Proposed Wilderness'', dated November 7, 2019, which shall be known as the Sewemup Mesa Wilderness. (10) Certain ***lands*** managed by the Kremmling Field Office of the Bureau of ***Land*** Management, which comprise approximately 31 acres, as generally depicted on a map titled ``Platte River Addition Proposed Wilderness'', dated July 20, 2018, and which are hereby incorporated in and shall be deemed to be part of the Platte River Wilderness designated by Public Law 98-550. (11) Certain ***lands*** managed by the Uncompahgre Field Office of the Bureau of ***Land*** Management, which comprise approximately 17,587 acres, as generally depicted on a map titled ``Roubideau Proposed Wilderness'', dated October 9, 2019, which shall be known as the Roubideau Wilderness. (12) Certain ***lands*** managed by the Uncompahgre Field Office of the Bureau of ***Land*** Management or located in the Grand Mesa, Uncompaghre, and Gunnison National ***Forests***, which comprise approximately 12,102 acres, as generally depicted on a map titled ``Norwood Canyon Proposed Wilderness'', dated November 7, 2019, which shall be known as the Norwood Canyon Wilderness. (13) Certain ***lands*** managed by the Tres Rios Field Office of the Bureau of ***Land*** Management, which comprise approximately 24,475 acres, as generally depicted on a map titled ``Papoose & Cross Canyon Proposed Wilderness'', and dated January 29, 2020, which shall be known as the Cross Canyon Wilderness. (14) Certain ***lands*** managed by the Tres Rios Field Office of the Bureau of ***Land*** Management, which comprise approximately 21,220 acres, as generally depicted on a map titled ``McKenna Peak Proposed Wilderness'', dated October 16, 2019, which shall be known as the McKenna Peak Wilderness. (15) Certain ***lands*** managed by the Tres Rios Field Office of the Bureau of ***Land*** Management, which comprise approximately 14,270 acres, as generally depicted on a map titled ``Weber- Menefee Mountain Proposed Wilderness'', dated October 9, 2019, which shall be known as the Weber-Menefee Mountain Wilderness. (16) Certain ***lands*** managed by the Uncompahgre and Tres Rios Field Offices of the Bureau of ***Land*** Management or the Bureau of Reclamation, which comprise approximately 33,351 acres, as generally depicted on a map titled ``Dolores River Canyon Proposed Wilderness'', dated November 7, 2019, which shall be known as the Dolores River Canyon Wilderness. (17) Certain ***lands*** managed by the Royal Gorge Field Office of the Bureau of ***Land*** Management or located in the Pike and San Isabel National ***Forests***, which comprise approximately 17,922 acres, as generally depicted on a map titled ``Browns Canyon Proposed Wilderness'', dated October 9, 2019, which shall be known as the Browns Canyon Wilderness. (18) Certain ***lands*** managed by the San Luis Field Office of the Bureau of ***Land*** Management, which comprise approximately 10,527 acres, as generally depicted on a map titled ``San Luis Hills Proposed Wilderness'', dated October 9, 2019 which shall be known as the San Luis Hills Wilderness. (19) Certain ***lands*** managed by the Royal Gorge Field Office of the Bureau of ***Land*** Management, which comprise approximately 23,559 acres, as generally depicted on a map titled ``Table Mountain & McIntyre Hills Proposed Wilderness'', dated November 7, 2019, which shall be known as the Table Mountain Wilderness. (20) Certain ***lands*** managed by the Tres Rios Field Office of the Bureau of ***Land*** Management or located in the San Juan National ***Forest***, which comprise approximately 10,844 acres, as generally depicted on a map titled ``North & South Ponderosa Gorge Proposed Wilderness'', and dated January 31, 2020, which shall be known as the North Ponderosa Gorge Wilderness. (21) Certain ***lands*** managed by the Tres Rios Field Office of the Bureau of ***Land*** Management or located in the San Juan National ***Forest***, which comprise approximately 12,393 acres, as generally depicted on a map titled ``North & South Ponderosa Gorge Proposed Wilderness'', and dated January 31, 2020 which shall be known as the South Ponderosa Gorge Wilderness. (22) Certain ***lands*** managed by the Little Snake Field Office of the Bureau of ***Land*** Management which comprise approximately 33,168 acres, as generally depicted on a map titled ``Diamond Breaks Proposed Wilderness'', and dated February 4, 2020 which shall be known as the Diamond Breaks Wilderness. (23) Certain ***lands*** managed by the Tres Rios Field Office of the Bureau of ***Land*** Management which comprises approximately 4,782 acres, as generally depicted on the map titled ``Papoose & Cross Canyon Proposed Wilderness' ''', and dated January 29, 2020 which shall be known as the Papoose Canyon Wilderness. (c) West Elk Addition.--Certain ***lands*** in the State of Colorado administered by the Gunnison Field Office of the Bureau of ***Land*** Management, the United States National Park Service, and the Bureau of Reclamation, which comprise approximately 6,695 acres, as generally depicted on a map titled ``West Elk Addition Proposed Wilderness'', dated October 9, 2019, are hereby designated as wilderness and, therefore, as components of the National Wilderness Preservation System and are hereby incorporated in and shall be deemed to be a part of the West Elk Wilderness designated by Public Law 88-577. The boundary adjacent to Blue Mesa Reservoir shall be 50 feet landward from the water's edge, and shall change according to the water level. (d) Maps and Descriptions.--As soon as practicable after the date of enactment of the Act, the Secretary shall file a map and a boundary description of each area designated as wilderness by this section with the Committee on Natural Resources of the House of Representatives and the Committee on Energy and Natural Resources of the Senate. Each map and boundary description shall have the same force and effect as if included in this Act, except that the Secretary may correct clerical and typographical errors in the map or boundary description. The maps and boundary descriptions shall be on file and available for public inspection in the Office of the Director of the Bureau of ***Land*** Management, Department of the Interior, and in the Office of the Chief of the ***Forest*** Service, Department of ***Agriculture***, as appropriate. (e) State and Private ***Lands***.--***Lands*** within the exterior boundaries of any wilderness area designated under this section that are owned by a private entity or by the State of Colorado, including ***lands*** administered by the Colorado State ***Land*** Board, shall be included within such wilderness area if such ***lands*** are acquired by the United States. Such ***lands*** may be acquired by the United States only as provided in the Wilderness Act (16 U.S.C 1131 et seq.). SEC. 103. ADMINISTRATIVE PROVISIONS. (a) In General.--Subject to valid existing rights, ***lands*** designated as wilderness by this title shall be managed by the Secretary in accordance with the Wilderness Act (16 U.S.C 1131 et seq.) and this title, except that, with respect to any wilderness areas designated by this title, any reference in the Wilderness Act to the effective date of the Wilderness Act shall be deemed to be a reference to the date of enactment of this Act. (b) Grazing.--Grazing of livestock in wilderness areas designated by this title shall be administered in accordance with the provisions of section 4(d)(4) of the Wilderness Act (16 U.S.C 1133(d)(4)), as further interpreted by section 108 of Public Law 96-560, and the guidelines set forth in appendix A of House Report 101-405 of the 101st Congress. (c) State Jurisdiction.--As provided in section 4(d)(7) of the Wilderness Act (16 U.S.C 1133(d)(7)), nothing in this title shall be construed as affecting the jurisdiction or responsibilities of the State of Colorado with respect to wildlife and fish in Colorado. (d) Buffer Zones.-- (1) In general.--Nothing in this title creates a protective perimeter or buffer zone around any area designated as wilderness by this title. (2) Activities outside wilderness.--The fact that an activity or use on ***land*** outside the areas designated as wilderness by this title can be seen or heard within the wilderness shall not preclude the activity or use outside the boundary of the wilderness. (e) Military Helicopter Overflights and Operations.-- (1) In general.--Nothing in this title restricts or precludes-- (A) low-level overflights of military helicopters over the areas designated as wilderness by this title, including military overflights that can be seen or heard within any wilderness area; (B) military flight testing and evaluation; (C) the designation or creation of new units of special use airspace, or the establishment of military flight training routes over any wilderness area; or (D) helicopter operations at designated ***landing*** zones within the potential wilderness areas established by subsection (i)(1). (2) Aerial navigation training exercises.--The Colorado Army National Guard, through the High-Altitude Army National Guard Aviation Training Site, may conduct aerial navigation training maneuver exercises over, and associated operations within, the potential wilderness areas designated by this Act-- (A) in a manner and degree consistent with the memorandum of understanding dated August 4, 1987, entered into among the Colorado Army National Guard, the Bureau of ***Land*** Management, and the ***Forest*** Service; or (B) in a manner consistent with any subsequent memorandum of understanding entered into among the Colorado Army National Guard, the Bureau of ***Land*** Management, and the ***Forest*** Service. (f) Running Events.--The Secretary may continue to authorize competitive running events currently permitted in the Redcloud Peak Wilderness Area and Handies Peak Wilderness Area in a manner compatible with the preservation of such areas as wilderness. (g) ***Land*** Trades.--If the Secretary trades privately owned ***land*** within the perimeter of the Redcloud Peak Wilderness Area or the Handies Peak Wilderness Area in exchange for Federal ***land***, then such Federal ***land*** shall be located in Hinsdale County, Colorado. (h) Recreational Climbing.--Nothing in this title prohibits recreational rock climbing activities in the wilderness areas, such as the placement, use, and maintenance of fixed anchors, including any fixed anchor established before the date of the enactment of this Act-- (1) in accordance with the Wilderness Act (16 U.S.C 1131 et seq.); and (2) subject to any terms and conditions determined to be necessary by the Secretary. (i) Potential Wilderness Designations.-- (1) In general.--The following ***lands*** are designated as potential wilderness areas: [[Page H664]] (A) Certain ***lands*** managed by the Colorado River Valley Field Office of the Bureau of ***Land*** Management, which comprise approximately 7,376 acres, as generally depicted on a map titled ``Pisgah East & West Proposed Wilderness'' and dated October 16, 2019, which, upon designation as wilderness under paragraph (2), shall be known as the Pisgah East Wilderness. (B) Certain ***lands*** managed by the Colorado River Valley Field Office of the Bureau of ***Land*** Management, which comprise approximately 6,828 acres, as generally depicted on a map titled ``Pisgah East & West Proposed Wilderness'' and dated October 16, 2019, which, upon designation as wilderness under paragraph (2), shall be known as the Pisgah West Wilderness. (C) Certain ***lands*** managed by the Colorado River Valley Field Office of the Bureau of ***Land*** Management or located in the White River National ***Forest***, which comprise approximately 16,101 acres, as generally depicted on a map titled ``Flat Tops Proposed Wilderness Addition'', dated October 9, 2019, and which, upon designation as wilderness under paragraph (2), shall be incorporated in and shall be deemed to be a part of the Flat Tops Wilderness designated by Public Law 94- 146. (2) Designation as wilderness.--***Lands*** designated as a potential wilderness area by subparagraphs (A) through (C) of paragraph (1) shall be designated as wilderness on the date on which the Secretary publishes in the Federal Register a notice that all nonconforming uses of those ***lands*** authorized by subsection (e) in the potential wilderness area that would be in violation of the Wilderness Act (16 U.S.C 1131 et seq.) have ceased. Such publication in the Federal Register and designation as wilderness shall occur for the potential wilderness area as the nonconforming uses cease in that potential wilderness area and designation as wilderness is not dependent on cessation of nonconforming uses in the other potential wilderness area. (3) Management.--Except for activities provided for under subsection (e), ***lands*** designated as a potential wilderness area by paragraph (1) shall be managed by the Secretary in accordance with the Wilderness Act as wilderness pending the designation of such ***lands*** as wilderness under this subsection. SEC. 104. WATER. (a) Effect on Water Rights.--Nothing in this title-- (1) affects the use or allocation, in existence on the date of enactment of this Act, of any water, water right, or interest in water; (2) affects any vested absolute or decreed conditional water right in existence on the date of enactment of this Act, including any water right held by the United States; (3) affects any interstate water compact in existence on the date of enactment of this Act; (4) authorizes or imposes any new reserved Federal water rights; and (5) shall be considered to be a relinquishment or reduction of any water rights reserved or appropriated by the United States in the State of Colorado on or before the date of the enactment of this Act. (b) Midstream Areas.-- (1) Purpose.--The purpose of this subsection is to protect for the benefit and enjoyment of present and future generations-- (A) the unique and nationally important values of areas designated as wilderness by section 102(b) (including the geological, cultural, archaeological, paleontological, natural, scientific, recreational, environmental, biological, wilderness, wildlife, riparian, historical, educational, and scenic resources of the public ***land***); and (B) the water resources of area streams, based on seasonally available flows, that are necessary to support aquatic, riparian, and terrestrial species and communities. (2) Wilderness water rights.-- (A) In general.--The Secretary shall ensure that any water rights within the wilderness designated by section 102(b) required to fulfill the purposes of such wilderness are secured in accordance with subparagraphs (B) through (G). (B) State law.-- (i) Procedural requirements.--Any water rights for which the Secretary pursues adjudication shall be appropriated, adjudicated, changed, and administered in accordance with the procedural requirements and priority system of State law. (ii) Establishment of water rights.-- (I) In general.--Except as provided in subclause (II), the purposes and other substantive characteristics of the water rights pursued under this paragraph shall be established in accordance with State law. (II) Exception.--Notwithstanding subclause (I) and in accordance with this title, the Secretary may appropriate and seek adjudication of water rights to maintain surface water levels and stream flows on and across the wilderness designated by section 102(b) to fulfill the purposes of such wilderness. (C) Deadline.--The Secretary shall promptly appropriate the water rights required to fulfill the purposes of the wilderness designated by section 102(b). (D) Required determination.--The Secretary shall not pursue adjudication for any instream flow water rights unless the Secretary makes a determination pursuant to subparagraph (E)(ii) or (F). (E) Cooperative enforcement.-- (i) In general.--The Secretary shall not pursue adjudication of any Federal instream flow water rights established under this paragraph if-- (I) the Secretary determines, upon adjudication of the water rights by the Colorado Water Conservation Board, that the Board holds water rights sufficient in priority, amount, and timing to fulfill the purposes of this subsection; and (II) the Secretary has entered into a perpetual agreement with the Colorado Water Conservation Board to ensure full exercise, protection, and enforcement of the State water rights within the wilderness to reliably fulfill the purposes of this subsection. (ii) Adjudication.--If the Secretary determines that the provisions of clause (i) have not been met, the Secretary shall adjudicate and exercise any Federal water rights required to fulfill the purposes of the wilderness in accordance with this paragraph. (F) Insufficient water rights.--If the Colorado Water Conservation Board modifies the instream flow water rights obtained under subparagraph (E) to such a degree that the Secretary determines that water rights held by the State are insufficient to fulfill the purposes of this title, the Secretary shall adjudicate and exercise Federal water rights required to fulfill the purposes of this title in accordance with subparagraph (B). (G) Failure to comply.--The Secretary shall promptly act to exercise and enforce the water rights described in subparagraph (E) if the Secretary determines that-- (i) the State is not exercising its water rights consistent with subparagraph (E)(i)(I); or (ii) the agreement described in subparagraph (E)(i)(II) is not fulfilled or complied with sufficiently to fulfill the purposes of this title. (3) Water resource facility.--Notwithstanding any other provision of law, beginning on the date of enactment of this Act, neither the President nor any other officer, employee, or agent of the United States shall fund, assist, authorize, or issue a license or permit for development of any new irrigation and pumping facility, reservoir, water conservation work, aqueduct, canal, ditch, pipeline, well, hydropower project, transmission, other ancillary facility, or other water, diversion, storage, or carriage structure in the wilderness designated by section 102(b). (c) Access and Operation.-- (1) Definition.--As used in this subsection, the term ``water resource facility'' means irrigation and pumping facilities, reservoirs, water conservation works, aqueducts, canals, ditches, pipelines, wells, hydropower projects, transmission and other ancillary facilities, and other water diversion, storage, and carriage structures. (2) Access to water resource facilities.--Subject to the provisions of this subsection, the Secretary shall allow reasonable access to water resource facilities in existence on the date of enactment of this Act within the areas described in sections 102(b) and 102(c), including motorized access where necessary and customarily employed on routes existing as of the date of enactment of this Act. (3) Access routes.--Existing access routes within such areas customarily employed as of the date of enactment of this Act may be used, maintained, repaired, and replaced to the extent necessary to maintain their present function, design, and serviceable operation, so long as such activities have no increased adverse impacts on the resources and values of the areas described in sections 102(b) and 102(c) than existed as of the date of enactment of this Act. (4) Use of water resource facilities.--Subject to the provisions of this subsection and subsection (a)(4), the Secretary shall allow water resource facilities existing on the date of enactment of this Act within areas described in sections 102(b) and 102(c) to be used, operated, maintained, repaired, and replaced to the extent necessary for the continued exercise, in accordance with Colorado State law, of vested water rights adjudicated for use in connection with such facilities by a court of competent jurisdiction prior to the date of enactment of this Act. The impact of an existing facility on the water resources and values of the area shall not be increased as a result of changes in the adjudicated type of use of such facility as of the date of enactment of this Act. (5) Repair and maintenance.--Water resource facilities, and access routes serving such facilities, existing within the areas described in sections 102(b) and 102(c) on the date of enactment of this Act shall be maintained and repaired when and to the extent necessary to prevent increased adverse impacts on the resources and values of the areas described in sections 102(b) and 102(c). SEC. 105. SENSE OF CONGRESS. It is the sense of Congress that military aviation training on Federal public ***lands*** in Colorado, including the training conducted at the High-Altitude Army National Guard Aviation Training Site, is critical to the national security of the United States and the readiness of the Armed Forces. SEC. 106. DEPARTMENT OF DEFENSE STUDY ON IMPACTS THAT THE EXPANSION OF WILDERNESS DESIGNATIONS IN THE WESTERN UNITED STATES WOULD HAVE ON THE READINESS OF THE ARMED FORCES OF THE UNITED STATES WITH RESPECT TO AVIATION TRAINING. (a) Study Required.--The Secretary of Defense shall conduct a study on the impacts that the expansion of wilderness designations in the Western United States would have on the readiness of the Armed Forces of the United States with respect to aviation training. (b) Report.--Not later than 180 days after the date of the enactment of this Act, the Secretary shall submit to the Committees on Armed Services of the Senate and House of Representatives a report on the study required under subsection (a). TITLE II--NORTHWEST CALIFORNIA WILDERNESS, RECREATION, AND WORKING ***FORESTS*** SEC. 201. SHORT TITLE. This title may be cited as the ``Northwest California Wilderness, Recreation, and Working ***Forests*** Act''. SEC. 202. DEFINITIONS. In this title: [[Page H665]] (1) Secretary.--The term ``Secretary'' means-- (A) with respect to ***land*** under the jurisdiction of the Secretary of ***Agriculture***, the Secretary of ***Agriculture***; and (B) with respect to ***land*** under the jurisdiction of the Secretary of the Interior, the Secretary of the Interior. (2) State.--The term ``State'' means the State of California. Subtitle A--Restoration and Economic Development SEC. 211. SOUTH FORK TRINITY-MAD RIVER RESTORATION AREA. (a) Definitions.--In this section: (1) Collaboratively developed.--The term ``collaboratively developed'' means projects that are developed and implemented through a collaborative process that-- (A) includes-- (i) appropriate Federal, State, and local agencies; and (ii) multiple interested persons representing diverse interests; and (B) is transparent and nonexclusive. (2) Plantation.--The term ``plantation'' means a ***forested*** area that has been artificially established by planting or seeding. (3) Restoration.--The term ``restoration'' means the process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed by establishing the composition, structure, pattern, and ecological processes necessary to facilitate terrestrial and aquatic ecosystem sustainability, resilience, and health under current and future conditions. (4) Restoration area.--The term ``restoration area'' means the South Fork Trinity-Mad River Restoration Area, established by subsection (b). (5) Shaded fuel break.--The term ``shaded fuel break'' means a vegetation treatment that effectively addresses all project-generated slash and that retains: adequate canopy cover to suppress plant regrowth in the ***forest*** understory following treatment; the longest lived trees that provide the most shade over the longest period of time; the healthiest and most vigorous trees with the greatest potential for crown-growth in plantations and in natural stands adjacent to plantations; and all mature hardwoods, when practicable. (6) Stewardship contract.--The term ``stewardship contract'' means an agreement or contract entered into under section 604 of the Healthy ***Forests*** Restoration Act of 2003 (16 U.S.C 6591c). (7) Wildland-urban interface.--The term ``wildland-urban interface'' has the meaning given the term by section 101 of the Healthy ***Forests*** Restoration Act of 2003 (16 U.S.C 6511). (b) Establishment.--Subject to valid existing rights, there is established the South Fork Trinity-Mad River Restoration Area, comprising approximately 871,414 acres of Federal ***land*** administered by the ***Forest*** Service and Bureau of ***Land*** Management, as generally depicted on the map entitled ``South Fork Trinity-Mad River Restoration Area'' and dated May 15, 2020, to be known as the South Fork Trinity-Mad River Restoration Area. (c) Purposes.--The purposes of the restoration area are to-- (1) establish, restore, and maintain fire-resilient ***forest*** structures containing late successional ***forest*** structure characterized by large trees and multistoried canopies, as ecologically appropriate; (2) protect late successional reserves; (3) enhance the restoration of Federal ***lands*** within the restoration area; (4) reduce the threat posed by wildfires to communities within the restoration area; (5) protect and restore aquatic habitat and anadromous fisheries; (6) protect the quality of water within the restoration area; and (7) allow visitors to enjoy the scenic, recreational, natural, cultural, and wildlife values of the restoration area. (d) Management.-- (1) In general.--The Secretary shall manage the restoration area-- (A) in a manner consistent with the purposes described in subsection (c); (B) in a manner that-- (i) in the case of the ***Forest*** Service, prioritizes restoration of the restoration area over other nonemergency vegetation management projects on the portions of the Six Rivers and Shasta-Trinity National ***Forests*** in Humboldt and Trinity Counties; and (ii) in the case of the United States Fish and Wildlife Service, establishes with the ***Forest*** Service an agreement for cooperation to ensure timely completion of consultation required by section 7 of the Endangered Species Act (15 U.S.C 1536) on restoration projects within the restoration area and agreement to maintain and exchange information on planning schedules and priorities on a regular basis; (C) in accordance with-- (i) the laws (including regulations) and rules applicable to the National ***Forest*** System for ***land*** managed by the ***Forest*** Service; (ii) the Federal ***Land*** Policy and Management Act of 1976 (43 U.S.C 1701 et seq.) for ***land*** managed by the Bureau of ***Land*** Management; (iii) this title; and (iv) any other applicable law (including regulations); and (D) in a manner consistent with congressional intent that consultation for restoration projects within the restoration area is completed in a timely and efficient manner. (2) Conflict of laws.-- (A) In general.--The establishment of the restoration area shall not change the management status of any ***land*** or water that is designated wilderness or as a wild and scenic river, including ***lands*** and waters designated by this title. (B) Resolution of conflict.--If there is a conflict between the laws applicable to the areas described in subparagraph (A) and this section, the more restrictive provision shall control. (3) Uses.-- (A) In general.--The Secretary shall only allow uses of the restoration area that the Secretary determines would further the purposes described in subsection (c). (B) Priority.--The Secretary shall prioritize restoration activities within the restoration area. (C) Limitation.--Nothing in this section shall limit the Secretary's ability to plan, approve, or prioritize activities outside of the restoration area. (4) Wildland fire.-- (A) In general.--Nothing in this section prohibits the Secretary, in cooperation with other Federal, State, and local agencies, as appropriate, from conducting wildland fire operations in the restoration area, consistent with the purposes of this section. (B) Priority.--The Secretary may use prescribed burning and managed wildland fire to the fullest extent practicable to achieve the purposes of this section. (5) Road decommissioning.-- (A) In general.--To the extent practicable, the Secretary shall decommission unneeded National ***Forest*** System roads identified for decommissioning and unauthorized roads identified for decommissioning within the restoration area-- (i) subject to appropriations; (ii) consistent with the analysis required by subparts A and B of part 212 of title 36, Code of Federal Regulations; and (iii) in accordance with existing law. (B) Additional requirement.--In making determinations regarding road decommissioning under subparagraph (A), the Secretary shall consult with-- (i) appropriate State, Tribal, and local governmental entities; and (ii) members of the public. (C) Definition.--As used in subparagraph (A), the term ``decommission'' means-- (i) to reestablish vegetation on a road; and (ii) to restore any natural drainage, watershed function, or other ecological processes that are disrupted or adversely impacted by the road by ***removing*** or hydrologically disconnecting the road prism. (6) Vegetation management.-- (A) In general.--Subject to subparagraphs (B), (C), and (D), the Secretary may conduct vegetation management projects in the restoration area only where necessary to-- (i) maintain or restore the characteristics of ecosystem composition and structure; (ii) reduce wildfire risk to communities by promoting ***forests*** that are fire resilient; (iii) improve the habitat of threatened, endangered, or sensitive species; (iv) protect or improve water quality; or (v) enhance the restoration of ***lands*** within the restoration area. (B) Additional requirements.-- (i) Shaded fuel breaks.--In carrying out subparagraph (A), the Secretary shall prioritize, as practicable, the establishment of a network of shaded fuel breaks within-- (I) the portions of the wildland-urban interface that are within 150 feet from private property contiguous to Federal ***land***; (II) 150 feet from any road that is open to motorized vehicles as of the date of enactment of this Act-- (aa) except that, where topography or other conditions require, the Secretary may establish shaded fuel breaks up to 275 feet from a road so long as the combined total width of the shaded fuel breaks for both sides of the road does not exceed 300 feet; and (bb) provided that the Secretary shall include vegetation treatments within a minimum of 25 feet of the road where practicable, feasible, and appropriate as part of any shaded fuel break; or (III) 150 feet of any plantation. (ii) Plantations; riparian reserves.--The Secretary may undertake vegetation management projects-- (I) in areas within the restoration area in which fish and wildlife habitat is significantly compromised as a result of past management practices (including plantations); and (II) within designated riparian reserves only where necessary to maintain the integrity of fuel breaks and to enhance fire resilience. (C) Compliance.--The Secretary shall carry out vegetation management projects within the restoration area-- (i) in accordance with-- (I) this section; and (II) existing law (including regulations); (ii) after providing an opportunity for public comment; and (iii) subject to appropriations. (D) Best available science.--The Secretary shall use the best available science in planning and implementing vegetation management projects within the restoration area. (7) Grazing.-- (A) Existing grazing.--The grazing of livestock in the restoration area, where established before the date of enactment of this Act, shall be permitted to continue-- (i) subject to-- (I) such reasonable regulations, policies, and practices as the Secretary considers necessary; and (II) applicable law (including regulations); and (ii) in a manner consistent with the purposes described in subsection (c). (B) ***Targeted*** new grazing.--The Secretary may issue annual ***targeted*** grazing permits for the grazing of livestock in the restoration area, where not established before the date of the enactment of this Act, to control noxious weeds, [[Page H666]] aid in the control of wildfire within the wildland-urban interface, or to provide other ecological benefits subject to-- (i) such reasonable regulations, policies, and practices as the Secretary considers necessary; and (ii) a manner consistent with the purposes described in subsection (c). (C) Best available science.--The Secretary shall use the best available science when determining whether to issue ***targeted*** grazing permits within the restoration area. (e) Withdrawal.--Subject to valid existing rights, the restoration area is withdrawn from-- (1) all forms of entry, appropriation, and disposal under the public ***land*** laws; (2) location, entry, and patent under the mining laws; and (3) disposition under all laws relating to mineral and geothermal leasing or mineral materials. (f) Use of Stewardship Contracts.--To the maximum extent practicable, the Secretary shall-- (1) use stewardship contracts to implement this section; and (2) use revenue derived from such stewardship contracts for restoration and other activities within the restoration area which shall include staff and administrative costs to support timely consultation activities for restoration projects. (g) Collaboration.--In developing and implementing restoration projects in the restoration area, the Secretary shall consult with collaborative groups with an interest in the restoration area. (h) Environmental Review.--A collaboratively developed restoration project within the restoration area may be carried out in accordance with the provisions for hazardous fuel reduction projects set forth in sections 104, 105, and 106 of the Healthy ***Forests*** Restoration Act of 2003 (16 U.S.C 6514-6516), as applicable. (i) Multiparty Monitoring.--The Secretary of ***Agriculture*** shall-- (1) in collaboration with the Secretary of the Interior and interested persons, use a multiparty monitoring, evaluation, and accountability process to assess the positive or negative ecological, social, and economic effects of restoration projects within the restoration area; and (2) incorporate the monitoring results into the management of the restoration area. (j) Funding.--The Secretary shall use all existing authorities to secure as much funding as necessary to fulfill the purposes of the restoration area. (k) ***Forest*** Residues Utilization.-- (1) In general.--In accordance with applicable law, including regulations, and this section, the Secretary may utilize ***forest*** residues from restoration projects, including shaded fuel breaks, in the restoration area for research and development of biobased products that result in net carbon sequestration. (2) Partnerships.--In carrying out paragraph (1), the Secretary may enter into partnerships with universities, nongovernmental organizations, industry, Tribes, and Federal, State, and local governmental agencies. SEC. 212. REDWOOD NATIONAL AND STATE PARKS RESTORATION. (a) Partnership Agreements.--The Secretary of the Interior is authorized to undertake initiatives to restore degraded redwood ***forest*** ecosystems in Redwood National and State Parks in partnership with the State of California, local agencies, and nongovernmental organizations. (b) Compliance.--In carrying out any initiative authorized by subsection (a), the Secretary of the Interior shall comply with all applicable law. SEC. 213. CALIFORNIA PUBLIC ***LANDS*** REMEDIATION PARTNERSHIP. (a) Definitions.--In this section: (1) Partnership.--The term ``partnership'' means the California Public ***Lands*** Remediation Partnership, established by subsection (b). (2) Priority ***lands***.--The term ``priority ***lands***'' means Federal ***land*** within the State that is determined by the partnership to be a high priority for remediation. (3) Remediation.--The term ``remediation'' means to facilitate the recovery of ***lands*** and waters that have been degraded, damaged, or destroyed by illegal marijuana cultivation or another illegal activity. Remediation includes but is not limited to ***removal*** of trash, debris, and other material, and establishing the composition, structure, pattern, and ecological processes necessary to facilitate terrestrial and aquatic ecosystem sustainability, resilience, and health under current and future conditions. (b) Establishment.--There is hereby established a California Public ***Lands*** Remediation Partnership. (c) Purposes.--The purposes of the partnership are to-- (1) coordinate the activities of Federal, State, Tribal, and local authorities, and the private sector, in the remediation of priority ***lands*** in the State affected by illegal marijuana cultivation or other illegal activities; and (2) use the resources and expertise of each agency, authority, or entity in implementing remediation activities on priority ***lands*** in the State. (d) Membership.--The members of the partnership shall include the following: (1) The Secretary of ***Agriculture***, or a designee of the Secretary of ***Agriculture*** to represent the ***Forest*** Service. (2) The Secretary of the Interior, or a designee of the Secretary of the Interior, to represent the United States Fish and Wildlife Service, Bureau of ***Land*** Management, and National Park Service. (3) The Director of the Office of National Drug Control Policy, or a designee of the Director. (4) The Secretary of the State Natural Resources Agency, or a designee of the Secretary, to represent the California Department of Fish and Wildlife. (5) A designee of the California State Water Resources Control Board. (6) A designee of the California State Sheriffs' Association. (7) One member to represent federally recognized Indian Tribes, to be appointed by the Secretary of ***Agriculture***. (8) One member to represent nongovernmental organizations with an interest in Federal ***land*** remediation, to be appointed by the Secretary of ***Agriculture***. (9) One member to represent local governmental interests, to be appointed by the Secretary of ***Agriculture***. (10) A law enforcement official from each of the following: (A) The Department of the Interior. (B) The Department of ***Agriculture***. (11) A scientist to provide expertise and advise on methods needed for remediation efforts, to be appointed by the Secretary of ***Agriculture***. (12) A designee of the National Guard Counter Drug Program. (e) Duties.--To further the purposes of this section, the partnership shall-- (1) identify priority ***lands*** for remediation in the State; (2) secure resources from Federal and non-Federal sources to apply to remediation of priority ***lands*** in the State; (3) support efforts by Federal, State, Tribal, and local agencies, and nongovernmental organizations in carrying out remediation of priority ***lands*** in the State; (4) support research and education on the impacts of, and solutions to, illegal marijuana cultivation and other illegal activities on priority ***lands*** in the State; (5) involve other Federal, State, Tribal, and local agencies, nongovernmental organizations, and the public in remediation efforts, to the extent practicable; and (6) take any other administrative or advisory actions as necessary to address remediation of priority ***lands*** in the State. (f) Authorities.--To implement this section, the partnership may, subject to the prior approval of the Secretary of ***Agriculture***-- (1) make grants to the State, political subdivisions of the State, nonprofit organizations, and other persons; (2) enter into cooperative agreements with, or provide grants or technical assistance to, the State, political subdivisions of the State, nonprofit organizations, Federal agencies, and other interested parties; (3) hire and compensate staff; (4) obtain funds or services from any source, including Federal and non-Federal funds, and funds and services provided under any other Federal law or program; (5) contract for goods or services; and (6) support activities of partners and any other activities that further the purposes of this section. (g) Procedures.--The partnership shall establish such rules and procedures as it deems necessary or desirable. (h) Local Hiring.--The partnership shall, to the maximum extent practicable and in accordance with existing law, give preference to local entities and persons when carrying out this section. (i) Service Without Compensation.--Members of the partnership shall serve without pay. (j) Duties and Authorities of the Secretary of ***Agriculture***.-- (1) In general.--The Secretary of ***Agriculture*** shall convene the partnership on a regular basis to carry out this section. (2) Technical and financial assistance.--The Secretary of ***Agriculture*** and Secretary of the Interior may provide technical and financial assistance, on a reimbursable or nonreimbursable basis, as determined by the appropriate Secretary, to the partnership or any members of the partnership to carry out this title. (3) Cooperative agreements.--The Secretary of ***Agriculture*** and Secretary of the Interior may enter into cooperative agreements with the partnership, any members of the partnership, or other public or private entities to provide technical, financial, or other assistance to carry out this title. SEC. 214. TRINITY LAKE VISITOR CENTER. (a) In General.--The Secretary of ***Agriculture***, acting through the Chief of the ***Forest*** Service, may establish, in cooperation with any other public or private entities that the Secretary may determine to be appropriate, a visitor center in Weaverville, California-- (1) to serve visitors; and (2) to assist in fulfilling the purposes of the Whiskeytown-Shasta-Trinity National Recreation Area. (b) Requirements.--The Secretary shall ensure that the visitor center authorized under subsection (a) is designed to interpret the scenic, biological, natural, historical, scientific, paleontological, recreational, ecological, wilderness, and cultural resources of the Whiskeytown-Shasta- Trinity National Recreation Area and other nearby Federal ***lands***. (c) Cooperative Agreements.--The Secretary of ***Agriculture*** may, in a manner consistent with this title, enter into cooperative agreements with the State and any other appropriate institutions and organizations to carry out the purposes of this section. SEC. 215. DEL NORTE COUNTY VISITOR CENTER. (a) In General.--The Secretary of ***Agriculture*** and Secretary of the Interior, acting jointly or separately, may establish, in cooperation with any other public or private entities that the Secretaries determine to be appropriate, a visitor center in Del Norte County, California-- (1) to serve visitors; and (2) to assist in fulfilling the purposes of Redwood National and State Parks, the Smith River [[Page H667]] National Recreation Area, and other nearby Federal ***lands***. (b) Requirements.--The Secretaries shall ensure that the visitor center authorized under subsection (a) is designed to interpret the scenic, biological, natural, historical, scientific, paleontological, recreational, ecological, wilderness, and cultural resources of Redwood National and State Parks, the Smith River National Recreation Area, and other nearby Federal ***lands***. SEC. 216. MANAGEMENT PLANS. (a) In General.--In revising the ***land*** and resource management plan for the Shasta-Trinity, Six Rivers, Klamath, and Mendocino National ***Forests***, the Secretary shall-- (1) consider the purposes of the South Fork Trinity-Mad River Restoration Area established by section 211; and (2) include or update the fire management plan for the wilderness areas and wilderness additions established by this title. (b) Requirement.--In carrying out the revisions required by subsection (a), the Secretary shall-- (1) develop spatial fire management plans in accordance with-- (A) the Guidance for Implementation of Federal Wildland Fire Management Policy dated February 13, 2009, including any amendments to that guidance; and (B) other appropriate policies; (2) ensure that a fire management plan-- (A) considers how prescribed or managed fire can be used to achieve ecological management objectives of wilderness and other natural or primitive areas; and (B) in the case of a wilderness area expanded by section 231, provides consistent direction regarding fire management to the entire wilderness area, including the addition; (3) consult with-- (A) appropriate State, Tribal, and local governmental entities; and (B) members of the public; and (4) comply with applicable laws (including regulations). SEC. 217. STUDY; PARTNERSHIPS RELATED TO OVERNIGHT ACCOMMODATIONS. (a) Study.--The Secretary of the Interior, in consultation with interested Federal, State, Tribal, and local entities, and private and nonprofit organizations, shall conduct a study to evaluate the feasibility and suitability of establishing overnight accommodations near Redwood National and State Parks on-- (1) Federal ***land*** at the northern boundary or on ***land*** within 20 miles of the northern boundary; and (2) Federal ***land*** at the southern boundary or on ***land*** within 20 miles of the southern boundary. (b) Partnerships.-- (1) Agreements authorized.--If the study conducted under subsection (a) determines that establishing the described accommodations is suitable and feasible, the Secretary may enter into agreements with qualified private and nonprofit organizations for the development, operation, and maintenance of overnight accommodations. (2) Contents.--Any agreements entered into under paragraph (1) shall clearly define the role and responsibility of the Secretary and the private or nonprofit organization. (3) Compliance.--The Secretary shall enter agreements under paragraph (1) in accordance with existing law. (4) Effect.--Nothing in this subsection-- (A) reduces or diminishes the authority of the Secretary to manage ***land*** and resources under the jurisdiction of the Secretary; or (B) amends or modifies the application of any existing law (including regulations) applicable to ***land*** under the jurisdiction of the Secretary. Subtitle B--Recreation SEC. 221. HORSE MOUNTAIN SPECIAL MANAGEMENT AREA. (a) Establishment.--Subject to valid existing rights, there is established the Horse Mountain Special Management Area (referred to in this section as the ``special management area'') comprising approximately 7,482 acres of Federal ***land*** administered by the ***Forest*** Service in Humboldt County, California, as generally depicted on the map entitled ``Horse Mountain Special Management Area'' and dated May 15, 2020. (b) Purposes.--The purpose of the special management area is to enhance the recreational and scenic values of the special management area while conserving the plants, wildlife, and other natural resource values of the area. (c) Management Plan.-- (1) In general.--Not later than 3 years after the date of enactment of this Act and in accordance with paragraph (2), the Secretary shall develop a comprehensive plan for the long-term management of the special management area. (2) Consultation.--In developing the management plan required under paragraph (1), the Secretary shall consult with-- (A) appropriate State, Tribal, and local governmental entities; and (B) members of the public. (3) Additional requirement.--The management plan required under paragraph (1) shall ensure that recreational use within the special management area does not cause significant adverse impacts on the plants and wildlife of the special management area. (d) Management.-- (1) In general.--The Secretary shall manage the special management area-- (A) in furtherance of the purposes described in subsection (b); and (B) in accordance with-- (i) the laws (including regulations) generally applicable to the National ***Forest*** System; (ii) this section; and (iii) any other applicable law (including regulations). (2) Recreation.--The Secretary shall continue to authorize, maintain, and enhance the recreational use of the special management area, including hunting, fishing, camping, hiking, hang gliding, sightseeing, nature study, horseback riding, rafting, mountain biking, and motorized recreation on authorized routes, and other recreational activities, so long as such recreational use is consistent with the purposes of the special management area, this section, other applicable law (including regulations), and applicable management plans. (3) Motorized vehicles.-- (A) In general.--Except as provided in subparagraph (B), the use of motorized vehicles in the special management area shall be permitted only on roads and trails designated for the use of motorized vehicles. (B) Use of snowmobiles.--The winter use of snowmobiles shall be allowed in the special management area-- (i) during periods of adequate snow coverage during the winter season; and (ii) subject to any terms and conditions determined to be necessary by the Secretary. (4) New trails.-- (A) In general.--The Secretary may construct new trails for motorized or nonmotorized recreation within the special management area in accordance with-- (i) the laws (including regulations) generally applicable to the National ***Forest*** System; (ii) this section; and (iii) any other applicable law (including regulations). (B) Priority.--In establishing new trails within the special management area, the Secretary shall-- (i) prioritize the establishment of loops that provide high-quality, diverse recreational experiences; and (ii) consult with members of the public. (e) Withdrawal.--Subject to valid existing rights, the special management area is withdrawn from-- (1) all forms of appropriation or disposal under the public ***land*** laws; (2) location, entry, and patent under the mining laws; and (3) disposition under laws relating to mineral and geothermal leasing. SEC. 222. BIGFOOT NATIONAL RECREATION TRAIL. (a) Feasibility Study.-- (1) In general.--Not later than 3 years after the date of the enactment of this Act, the Secretary of ***Agriculture***, in cooperation with the Secretary of the Interior, shall submit to the Committee on Natural Resources of the House of Representatives and Committee on Energy and Natural Resources of the Senate a study that describes the feasibility of establishing a nonmotorized Bigfoot National Recreation Trail that follows the route described in paragraph (2). (2) Route.--The trail described in paragraph (1) shall extend from the Ides Cove Trailhead in the Mendocino National ***Forest*** to Crescent City, California, by roughly following the route as generally depicted on the map entitled ``Bigfoot National Recreation Trail--Proposed'' and dated July 25, 2018. (3) Additional requirement.--In completing the study required by subsection (a), the Secretary of ***Agriculture*** shall consult with-- (A) appropriate Federal, State, Tribal, regional, and local agencies; (B) private landowners; (C) nongovernmental organizations; and (D) members of the public. (b) Designation.-- (1) In general.--Upon a determination that the Bigfoot National Recreation Trail is feasible and meets the requirements for a National Recreation Trail in section 1243 of title 16, United States Code, the Secretary of ***Agriculture*** shall designate the Bigfoot National Recreation Trail in accordance with-- (A) the National Trails System Act (Public Law 90-543); (B) this title; and (C) other applicable law (including regulations). (2) Administration.--Upon designation by the Secretary of ***Agriculture***, the Bigfoot National Recreation Trail (referred to in this section as the ``trail'') shall be administered by the Secretary of ***Agriculture***, in consultation with-- (A) other Federal, State, Tribal, regional, and local agencies; (B) private landowners; and (C) other interested organizations. (3) Private property rights.-- (A) In general.--No portions of the trail may be located on non-Federal ***land*** without the written consent of the landowner. (B) Prohibition.--The Secretary of ***Agriculture*** shall not acquire for the trail any ***land*** or interest in ***land*** outside the exterior boundary of any federally managed area without the consent of the owner of the ***land*** or interest in the ***land***. (C) Effect.--Nothing in this section-- (i) requires any private property owner to allow public access (including Federal, State, or local government access) to private property; or (ii) modifies any provision of Federal, State, or local law with respect to public access to or use of private ***land***. (c) Cooperative Agreements.--In carrying out this section, the Secretary of ***Agriculture*** may enter into cooperative agreements with State, Tribal, and local government entities and private entities to complete needed trail construction, reconstruction, realignment, maintenance, or education projects related to the Bigfoot National Recreation Trail. (d) Map.-- (1) Map required.--Upon designation of the Bigfoot National Recreation Trail, the Secretary of ***Agriculture*** shall prepare a map of the trail. (2) Public availability.--The map referred to in paragraph (1) shall be on file and available for public inspection in the appropriate offices of the ***Forest*** Service. [[Page H668]] SEC. 223. ELK CAMP RIDGE RECREATION TRAIL. (a) Designation.-- (1) In general.--In accordance with paragraph (2), the Secretary of ***Agriculture*** after an opportunity for public comment, shall designate a trail (which may include a system of trails)-- (A) for use by off-highway vehicles or mountain bicycles, or both; and (B) to be known as the Elk Camp Ridge Recreation Trail. (2) Requirements.--In designating the Elk Camp Ridge Recreation Trail (referred to in this section as the ``trail''), the Secretary shall only include trails that are-- (A) as of the date of enactment of this Act, authorized for use by off-highway vehicles or mountain bikes, or both; and (B) located on ***land*** that is managed by the ***Forest*** Service in Del Norte County. (3) Map.--A map that depicts the trail shall be on file and available for public inspection in the appropriate offices of the ***Forest*** Service. (b) Management.-- (1) In general.--The Secretary shall manage the trail-- (A) in accordance with applicable laws (including regulations); (B) to ensure the safety of citizens who use the trail; and (C) in a manner by which to minimize any damage to sensitive habitat or cultural resources. (2) Monitoring; evaluation.--To minimize the impacts of the use of the trail on environmental and cultural resources, the Secretary shall annually assess the effects of the use of off-highway vehicles and mountain bicycles on-- (A) the trail; (B) ***land*** located in proximity to the trail; and (C) plants, wildlife, and wildlife habitat. (3) Closure.--The Secretary, in consultation with the State and Del Norte County, and subject to paragraph (4), may temporarily close or permanently reroute a portion of the trail if the Secretary determines that-- (A) the trail is having an adverse impact on-- (i) wildlife habitats; (ii) natural resources; (iii) cultural resources; or (iv) traditional uses; (B) the trail threatens public safety; or (C) closure of the trail is necessary-- (i) to repair damage to the trail; or (ii) to repair resource damage. (4) Rerouting.--Any portion of the trail that is temporarily closed by the Secretary under paragraph (3) may be permanently rerouted along any road or trail-- (A) that is-- (i) in existence as of the date of the closure of the portion of the trail; (ii) located on public ***land***; and (iii) open to motorized or mechanized use; and (B) if the Secretary determines that rerouting the portion of the trail would not significantly increase or decrease the length of the trail. (5) Notice of available routes.--The Secretary shall ensure that visitors to the trail have access to adequate notice relating to the availability of trail routes through-- (A) the placement of appropriate signage along the trail; and (B) the distribution of maps, safety education materials, and other information that the Secretary concerned determines to be appropriate. (c) Effect.--Nothing in this section affects the ownership, management, or other rights relating to any non-Federal ***land*** (including any interest in any non-Federal ***land***). SEC. 224. TRINITY LAKE TRAIL. (a) Trail Construction.-- (1) Feasibility study.--Not later than 18 months after the date of enactment of this Act, the Secretary shall study the feasibility and public interest of constructing a recreational trail for nonmotorized uses around Trinity Lake. (2) Construction.-- (A) Construction authorized.--Subject to appropriations, and in accordance with paragraph (3), if the Secretary determines under paragraph (1) that the construction of the trail described in such paragraph is feasible and in the public interest, the Secretary may provide for the construction of the trail. (B) Use of volunteer services and contributions.--The trail may be constructed under this section through the acceptance of volunteer services and contributions from non-Federal sources to reduce or eliminate the need for Federal expenditures to construct the trail. (3) Compliance.--In carrying out this section, the Secretary shall comply with-- (A) the laws (including regulations) generally applicable to the National ***Forest*** System; and (B) this title. (b) Effect.--Nothing in this section affects the ownership, management, or other rights relating to any non-Federal ***land*** (including any interest in any non-Federal ***land***). SEC. 225. TRAILS STUDY. (a) In General.--Not later than 2 years after the date of enactment of this Act, the Secretary of ***Agriculture***, in accordance with subsection (b) and in consultation with interested parties, shall conduct a study to improve motorized and nonmotorized recreation trail opportunities (including mountain bicycling) on ***land*** not designated as wilderness within the portions of the Six Rivers, Shasta- Trinity, and Mendocino National ***Forests*** located in Del Norte, Humboldt, Trinity, and Mendocino Counties. (b) Consultation.--In carrying out the study required by subsection (a), the Secretary of ***Agriculture*** shall consult with the Secretary of the Interior regarding opportunities to improve, through increased coordination, recreation trail opportunities on ***land*** under the jurisdiction of the Secretary of the Interior that shares a boundary with the national ***forest*** ***land*** described in subsection (a). SEC. 226. CONSTRUCTION OF MOUNTAIN BICYCLING ROUTES. (a) Trail Construction.-- (1) Feasibility study.--Not later than 18 months after the date of enactment of this Act, the Secretary of ***Agriculture*** shall study the feasibility and public interest of constructing recreational trails for mountain bicycling and other nonmotorized uses on the routes as generally depicted in the report entitled ``Trail Study for Smith River National Recreation Area Six Rivers National ***Forest***'' and dated 2016. (2) Construction.-- (A) Construction authorized.--Subject to appropriations, and in accordance with paragraph (3), if the Secretary determines under paragraph (1) that the construction of one or more routes described in such paragraph is feasible and in the public interest, the Secretary may provide for the construction of the routes. (B) Modifications.--The Secretary may modify the routes as necessary in the opinion of the Secretary. (C) Use of volunteer services and contributions.--Routes may be constructed under this section through the acceptance of volunteer services and contributions from non-Federal sources to reduce or eliminate the need for Federal expenditures to construct the route. (3) Compliance.--In carrying out this section, the Secretary shall comply with-- (A) the laws (including regulations) generally applicable to the National ***Forest*** System; and (B) this title. (b) Effect.--Nothing in this section affects the ownership, management, or other rights relating to any non-Federal ***land*** (including any interest in any non-Federal ***land***). SEC. 227. PARTNERSHIPS. (a) Agreements Authorized.--The Secretary is authorized to enter into agreements with qualified private and nonprofit organizations to undertake the following activities on Federal ***lands*** in Mendocino, Humboldt, Trinity, and Del Norte Counties-- (1) trail and campground maintenance; (2) public education, visitor contacts, and outreach; and (3) visitor center staffing. (b) Contents.--Any agreements entered into under subsection (a) shall clearly define the role and responsibility of the Secretary and the private or nonprofit organization. (c) Compliance.--The Secretary shall enter into agreements under subsection (a) in accordance with existing law. (d) Effect.--Nothing in this section-- (1) reduces or diminishes the authority of the Secretary to manage ***land*** and resources under the jurisdiction of the Secretary; or (2) amends or modifies the application of any existing law (including regulations) applicable to ***land*** under the jurisdiction of the Secretary. Subtitle C--Conservation SEC. 231. DESIGNATION OF WILDERNESS. (a) In General.--In accordance with the Wilderness Act (16 U.S.C 1131 et seq.), the following areas in the State are designated as wilderness areas and as components of the National Wilderness Preservation System: (1) Black butte river wilderness.--Certain Federal ***land*** managed by the ***Forest*** Service in the State, comprising approximately 11,155 acres, as generally depicted on the map entitled ``Black Butte Wilderness--Proposed'' and dated May 15, 2020, which shall be known as the Black Butte River Wilderness. (2) Chanchelulla wilderness additions.--Certain Federal ***land*** managed by the ***Forest*** Service in the State, comprising approximately 6,382 acres, as generally depicted on the map entitled ``Chanchelulla Wilderness Additions--Proposed'' and dated May 15, 2020, which is incorporated in, and considered to be a part of, the Chanchelulla Wilderness, as designated by section 101(a)(4) of the California Wilderness Act of 1984 (16 U.S.C 1132 note; 98 Stat. 1619). (3) Chinquapin wilderness.--Certain Federal ***land*** managed by the ***Forest*** Service in the State, comprising approximately 27,164 acres, as generally depicted on the map entitled ``Chinquapin Wilderness--Proposed'' and dated May 15, 2020, which shall be known as the Chinquapin Wilderness. (4) Elkhorn ridge wilderness addition.--Certain Federal ***land*** managed by the Bureau of ***Land*** Management in the State, comprising approximately 37 acres, as generally depicted on the map entitled ``Proposed Elkhorn Ridge Wilderness Additions'' and dated October 24, 2019, which is incorporated in, and considered to be a part of, the Elkhorn Ridge Wilderness, as designated by section 6(d) of Public Law 109- 362 (16 U.S.C 1132 note; 120 Stat. 2070). (5) English ridge wilderness.--Certain Federal ***land*** managed by the Bureau of ***Land*** Management in the State, comprising approximately 6,204 acres, as generally depicted on the map entitled ``English Ridge Wilderness--Proposed'' and dated March 29, 2019, which shall be known as the English Ridge Wilderness. (6) Headwaters ***forest*** wilderness.--Certain Federal ***land*** managed by the Bureau of ***Land*** Management in the State, comprising approximately 4,360 acres, as generally depicted on the map entitled ``Headwaters ***Forest*** Wilderness-- Proposed'' and dated October 15, 2019, which shall be known as the Headwaters ***Forest*** Wilderness. (7) Mad river buttes wilderness.--Certain Federal ***land*** managed by the ***Forest*** Service in the State, comprising approximately 6,097 acres, as generally depicted on the map entitled ``Mad River Buttes Wilderness--Proposed'' and dated May 15, 2020, which shall be known as the Mad River Buttes Wilderness. (8) Mount lassic wilderness addition.--Certain Federal ***land*** managed by the ***Forest*** Service in the State, comprising approximately [[Page H669]] 1,288 acres, as generally depicted on the map entitled ``Mt. Lassic Wilderness Additions--Proposed'' and dated May 15, 2020, which is incorporated in, and considered to be a part of, the Mount Lassic Wilderness, as designated by section 3(6) of Public Law 109-362 (16 U.S.C 1132 note; 120 Stat. 2065). (9) North fork eel wilderness addition.--Certain Federal ***land*** managed by the ***Forest*** Service and the Bureau of ***Land*** Management in the State, comprising approximately 16,342 acres, as generally depicted on the map entitled ``North Fork Eel Wilderness Additions'' and dated May 15, 2020, which is incorporated in, and considered to be a part of, the North Fork Eel Wilderness, as designated by section 101(a)(19) of the California Wilderness Act of 1984 (16 U.S.C 1132 note; 98 Stat. 1621). (10) Pattison wilderness.--Certain Federal ***land*** managed by the ***Forest*** Service in the State, comprising approximately 29,451 acres, as generally depicted on the map entitled ``Pattison Wilderness--Proposed'' and dated May 15, 2020, which shall be known as the Pattison Wilderness. (11) Sanhedrin wilderness addition.--Certain Federal ***land*** managed by the ***Forest*** Service in the State, comprising approximately 112 acres, as generally depicted on the map entitled ``Sanhedrin Wilderness Addition--Proposed'' and dated March 29, 2019, which is incorporated in, and considered to be a part of, the Sanhedrin Wilderness, as designated by section 3(2) of Public Law 109-362 (16 U.S.C 1132 note; 120 Stat. 2065). (12) Siskiyou wilderness addition.--Certain Federal ***land*** managed by the ***Forest*** Service in the State, comprising approximately 23,913 acres, as generally depicted on the maps entitled ``Siskiyou Wilderness Additions--Proposed (North)'' and ``Siskiyou Wilderness Additions--Proposed (South)'' and dated May 15, 2020, which is incorporated in, and considered to be a part of, the Siskiyou Wilderness, as designated by section 101(a)(30) of the California Wilderness Act of 1984 (16 U.S.C 1132 note; 98 Stat. 1623) (as amended by section 3(5) of Public Law 109-362 (16 U.S.C 1132 note; 120 Stat. 2065)). (13) South fork eel river wilderness addition.--Certain Federal ***land*** managed by the Bureau of ***Land*** Management in the State, comprising approximately 603 acres, as generally depicted on the map entitled ``South Fork Eel River Wilderness Additions--Proposed'' and dated October 24, 2019, which is incorporated in, and considered to be a part of, the South Fork Eel River Wilderness, as designated by section 3(10) of Public Law 109-362 (16 U.S.C 1132 note; 120 Stat. 2066). (14) South fork trinity river wilderness.--Certain Federal ***land*** managed by the ***Forest*** Service in the State, comprising approximately 26,115 acres, as generally depicted on the map entitled ``South Fork Trinity River Wilderness Additions-- Proposed'' and dated May 15, 2020, which shall be known as the South Fork Trinity River Wilderness. (15) Trinity alps wilderness addition.--Certain Federal ***land*** managed by the ***Forest*** Service in the State, comprising approximately 61,187 acres, as generally depicted on the maps entitled ``Trinity Alps Proposed Wilderness Additions EAST'' and ``Trinity Alps Wilderness Additions West--Proposed'' and dated May 15, 2020, which is incorporated in, and considered to be a part of, the Trinity Alps Wilderness, as designated by section 101(a)(34) of the California Wilderness Act of 1984 (16 U.S.C 1132 note; 98 Stat. 1623) (as amended by section 3(7) of Public Law 109-362 (16 U.S.C 1132 note; 120 Stat. 2065)). (16) Underwood wilderness.--Certain Federal ***land*** managed by the ***Forest*** Service in the State, comprising approximately 15,068 acres, as generally depicted on the map entitled ``Underwood Wilderness--Proposed'' and dated May 15, 2020, which shall be known as the Underwood Wilderness. (17) Yolla bolly-middle eel wilderness additions.--Certain Federal ***land*** managed by the ***Forest*** Service and the Bureau of ***Land*** Management in the State, comprising approximately 11,243 acres, as generally depicted on the maps entitled ``Yolla Bolly Wilderness Proposed--NORTH'', ``Yolla Bolly Wilderness Proposed--SOUTH'', and ``Yolla Bolly Wilderness Proposed-- WEST'' and dated May 15, 2020, which is incorporated in, and considered to be a part of, the Yolla Bolly-Middle Eel Wilderness, as designated by section 3 of the Wilderness Act (16 U.S.C 1132) (as amended by section 3(4) of Public Law 109-362 (16 U.S.C 1132 note; 120 Stat. 2065)). (18) Yuki wilderness addition.--Certain Federal ***land*** managed by the ***Forest*** Service and the Bureau of ***Land*** Management in the State, comprising approximately 11,076 acres, as generally depicted on the map entitled ``Yuki Wilderness Additions--Proposed'' and dated May 15, 2020, which is incorporated in, and considered to be a part of, the Yuki Wilderness, as designated by section 3(3) of Public Law 109-362 (16 U.S.C 1132 note; 120 Stat. 2065). (b) Redesignation of North Fork Wilderness as North Fork Eel River Wilderness.--Section 101(a)(19) of Public Law 98- 425 (16 U.S.C 1132 note; 98 Stat. 1621) is amended by striking ``North Fork Wilderness'' and inserting ``North Fork Eel River Wilderness''. Any reference in a law, map, regulation, document, paper, or other record of the United States to the North Fork Wilderness shall be deemed to be a reference to the North Fork Eel River Wilderness. (c) Elkhorn Ridge Wilderness Adjustments.--The boundary of the Elkhorn Ridge Wilderness established by section 6(d) of Public Law 109-362 (16 U.S.C 1132 note) is adjusted by deleting approximately 30 acres of Federal ***land*** as generally depicted on the map entitled ``Proposed Elkhorn Ridge Wilderness Additions'' and dated October 24, 2019. SEC. 232. ADMINISTRATION OF WILDERNESS. (a) In General.--Subject to valid existing rights, the wilderness areas and wilderness additions established by section 231 shall be administered by the Secretary in accordance with this title and the Wilderness Act (16 U.S.C 1131 et seq.), except that-- (1) any reference in the Wilderness Act to the effective date of that Act shall be considered to be a reference to the date of enactment of this Act; and (2) any reference in that Act to the Secretary of ***Agriculture*** shall be considered to be a reference to the Secretary. (b) Fire Management and Related Activities.-- (1) In general.--The Secretary may take such measures in a wilderness area or wilderness addition designated by section 231 as are necessary for the control of fire, insects, and diseases in accordance with section 4(d)(1) of the Wilderness Act (16 U.S.C 1133(d)(1)) and House Report 98-40 of the 98th Congress. (2) Funding priorities.--Nothing in this title limits funding for fire and fuels management in the wilderness areas or wilderness additions designated by this title. (3) Administration.--Consistent with paragraph (1) and other applicable Federal law, to ensure a timely and efficient response to fire emergencies in the wilderness additions designated by this title, the Secretary of ***Agriculture*** shall-- (A) not later than 1 year after the date of enactment of this Act, establish agency approval procedures (including appropriate delegations of authority to the ***Forest*** Supervisor, District Manager, or other agency officials) for responding to fire emergencies; and (B) enter into agreements with appropriate State or local firefighting agencies. (c) Grazing.--The grazing of livestock in the wilderness areas and wilderness additions designated by this title, if established before the date of enactment of this Act, shall be administered in accordance with-- (1) section 4(d)(4) of the Wilderness Act (16 U.S.C 1133(d)(4)); and (2)(A) for ***lands*** under the jurisdiction of the Secretary of ***Agriculture***, the guidelines set forth in the report of the Committee on Interior and Insular Affairs of the House of Representatives accompanying H.R 5487 of the 96th Congress (H. Rept. 96-617); or (B) for ***lands*** under the jurisdiction of the Secretary of the Interior, the guidelines set forth in Appendix A of the report of the Committee on Interior and Insular Affairs of the House of Representatives accompanying H.R 2570 of the 101st Congress (H. Rept. 101-405). (d) Fish and Wildlife.-- (1) In general.--In accordance with section 4(d)(7) of the Wilderness Act (16 U.S.C 1133(d)(7)), nothing in this title affects the jurisdiction or responsibilities of the State with respect to fish and wildlife on public ***land*** in the State. (2) Management activities.--In furtherance of the purposes and principles of the Wilderness Act (16 U.S.C 1131 et seq.), the Secretary may conduct any management activities that are necessary to maintain or restore fish, wildlife, and plant populations and habitats in the wilderness areas or wilderness additions designated by section 231, if the management activities are-- (A) consistent with relevant wilderness management plans; and (B) conducted in accordance with-- (i) the Wilderness Act (16 U.S.C 1131 et seq.); and (ii) appropriate policies, such as the policies established in Appendix B of House Report 101-405. (e) Buffer Zones.-- (1) In general.--Congress does not intend for designation of wilderness or wilderness additions by this title to lead to the creation of protective perimeters or buffer zones around each wilderness area or wilderness addition. (2) Activities or uses up to boundaries.--The fact that nonwilderness activities or uses can be seen or heard from within a wilderness area shall not, of itself, preclude the activities or uses up to the boundary of the wilderness area. (f) Military Activities.--Nothing in this title precludes-- (1) low-level overflights of military aircraft over the wilderness areas or wilderness additions designated by section 231; (2) the designation of new units of special airspace over the wilderness areas or wilderness additions designated by section 231; or (3) the use or establishment of military flight training routes over the wilderness areas or wilderness additions designated by section 231. (g) Horses.--Nothing in this title precludes horseback riding in, or the entry of recreational or commercial saddle or pack stock into, an area designated as a wilderness area or wilderness addition by section 231-- (1) in accordance with section 4(d)(5) of the Wilderness Act (16 U.S.C 1133(d)(5)); and (2) subject to any terms and conditions determined to be necessary by the Secretary. (h) Withdrawal.--Subject to valid existing rights, the wilderness areas and wilderness additions designated by section 231 are withdrawn from-- (1) all forms of entry, appropriation, and disposal under the public ***land*** laws; (2) location, entry, and patent under the mining laws; and (3) operation of the mineral materials and geothermal leasing laws. (i) Use by Members of Indian Tribes.-- (1) Access.--In recognition of the past use of wilderness areas and wilderness additions designated by this title by members of Indian Tribes for traditional cultural and religious purposes, [[Page H670]] the Secretary shall ensure that Indian Tribes have access to the wilderness areas and wilderness additions designated by section 231 for traditional cultural and religious purposes. (2) Temporary closures.-- (A) In general.--In carrying out this section, the Secretary, on request of an Indian Tribe, may temporarily close to the general public one or more specific portions of a wilderness area or wilderness addition to protect the privacy of the members of the Indian Tribe in the conduct of the traditional cultural and religious activities in the wilderness area or wilderness addition. (B) Requirement.--Any closure under subparagraph (A) shall be made in such a manner as to affect the smallest practicable area for the minimum period of time necessary for the activity to be carried out. (3) Applicable law.--Access to the wilderness areas and wilderness additions under this subsection shall be in accordance with-- (A) Public Law 95-341 (commonly known as the American Indian Religious Freedom Act) (42 U.S.C 1996 et seq.); and (B) the Wilderness Act (16 U.S.C 1131 et seq.). (j) Incorporation of Acquired ***Land*** and Interests.--Any ***land*** within the boundary of a wilderness area or wilderness addition designated by section 231 that is acquired by the United States shall-- (1) become part of the wilderness area in which the ***land*** is located; (2) be withdrawn in accordance with subsection (h); and (3) be managed in accordance with this section, the Wilderness Act (16 U.S.C 1131 et seq.), and any other applicable law. (k) Climatological Data Collection.--In accordance with the Wilderness Act (16 U.S.C 1131 et seq.) and subject to such terms and conditions as the Secretary may prescribe, the Secretary may authorize the installation and maintenance of hydrologic, meteorologic, or climatological collection devices in the wilderness areas and wilderness additions designated by section 231 if the Secretary determines that the facilities and access to the facilities are essential to flood warning, flood control, or water reservoir operation activities. (l) Authorized Events.--The Secretary may continue to authorize the competitive equestrian event permitted since 2012 in the Chinquapin Wilderness established by section 231 in a manner compatible with the preservation of the area as wilderness. (m) Recreational Climbing.--Nothing in this title prohibits recreational rock climbing activities in the wilderness areas, such as the placement, use, and maintenance of fixed anchors, including any fixed anchor established before the date of the enactment of this Act-- (1) in accordance with the Wilderness Act (16 U.S.C 1131 et seq.); and (2) subject to any terms and conditions determined to be necessary by the Secretary. SEC. 233. DESIGNATION OF POTENTIAL WILDERNESS. (a) Designation.--In furtherance of the purposes of the Wilderness Act (16 U.S.C 1131 et seq.), the following areas in the State are designated as potential wilderness areas: (1) Certain Federal ***land*** managed by the ***Forest*** Service, comprising approximately 4,005 acres, as generally depicted on the map entitled ``Chinquapin Proposed Potential Wilderness'' and dated May 15, 2020. (2) Certain Federal ***land*** administered by the National Park Service, compromising approximately 31,000 acres, as generally depicted on the map entitled ``Redwood National Park--Potential Wilderness'' and dated October 9, 2019. (3) Certain Federal ***land*** managed by the ***Forest*** Service, comprising approximately 5,681 acres, as generally depicted on the map entitled ``Siskiyou Proposed Potential Wildernesses'' and dated May 15, 2020. (4) Certain Federal ***land*** managed by the ***Forest*** Service, comprising approximately 446 acres, as generally depicted on the map entitled ``South Fork Trinity River Proposed Potential Wilderness'' and dated May 15, 2020. (5) Certain Federal ***land*** managed by the ***Forest*** Service, comprising approximately 1,256 acres, as generally depicted on the map entitled ``Trinity Alps Proposed Potential Wilderness'' and dated May 15, 2020. (6) Certain Federal ***land*** managed by the ***Forest*** Service, comprising approximately 4,386 acres, as generally depicted on the map entitled ``Yolla Bolly Middle-Eel Proposed Potential Wilderness'' and dated May 15, 2020. (7) Certain Federal ***land*** managed by the ***Forest*** Service, comprising approximately 2,918 acres, as generally depicted on the map entitled ``Yuki Proposed Potential Wilderness'' and dated May 15, 2020. (b) Management.--Except as provided in subsection (c) and subject to valid existing rights, the Secretary shall manage the potential wilderness areas designated by subsection (a) (referred to in this section as ``potential wilderness areas'') as wilderness until the potential wilderness areas are designated as wilderness under subsection (d). (c) Ecological Restoration.-- (1) In general.--For purposes of ecological restoration (including the elimination of nonnative species, ***removal*** of illegal, unused, or decommissioned roads, repair of skid tracks, and any other activities necessary to restore the natural ecosystems in a potential wilderness area and consistent with paragraph (2)), the Secretary may use motorized equipment and mechanized transport in a potential wilderness area until the potential wilderness area is designated as wilderness under subsection (d). (2) Limitation.--To the maximum extent practicable, the Secretary shall use the minimum tool or administrative practice necessary to accomplish ecological restoration with the least amount of adverse impact on wilderness character and resources. (d) Eventual Wilderness Designation.--The potential wilderness areas shall be designated as wilderness and as a component of the National Wilderness Preservation System on the earlier of-- (1) the date on which the Secretary publishes in the Federal Register notice that the conditions in a potential wilderness area that are incompatible with the Wilderness Act (16 U.S.C 1131 et seq.) have been removed; or (2) the date that is 10 years after the date of enactment of this Act for potential wilderness areas located on ***lands*** managed by the ***Forest*** Service. (e) Administration as Wilderness.-- (1) In general.--On its designation as wilderness under subsection (d), a potential wilderness area shall be administered in accordance with section 232 and the Wilderness Act (16 U.S.C 1131 et seq.). (2) Designation.--On its designation as wilderness under subsection (d)-- (A) the ***land*** described in subsection (a)(1) shall be incorporated in, and considered to be a part of, the Chinquapin Wilderness established by section 231(a)(3); (B) the ***land*** described in subsection (a)(3) shall be incorporated in, and considered to be a part of, the Siskiyou Wilderness as designated by section 101(a)(30) of the California Wilderness Act of 1984 (16 U.S.C 1132 note; 98 Stat. 1623) (as amended by section 3(5) of Public Law 109-362 (16 U.S.C 1132 note; 120 Stat. 2065) and expanded by section 231(a)(12)); (C) the ***land*** described in subsection (a)(4) shall be incorporated in, and considered to be a part of, the South Fork Trinity River Wilderness established by section 231(a)(14); (D) the ***land*** described in subsection (a)(5) shall be incorporated in, and considered to be a part of, the Trinity Alps Wilderness as designated by section 101(a)(34) of the California Wilderness Act of 1984 (16 U.S.C 1132 note; 98 Stat. 1623) (as amended by section 3(7) of Public Law 109-362 (16 U.S.C 1132 note; 120 Stat. 2065) and expanded by section 231(a)(15)); (E) the ***land*** described in subsection (a)(6) shall be incorporated in, and considered to be a part of, the Yolla Bolly-Middle Eel Wilderness as designated by section 3 of the Wilderness Act (16 U.S.C 1132) (as amended by section 3(4) of Public Law 109-362 (16 U.S.C 1132 note; 120 Stat. 2065) and expanded by section 231(a)(17)); and (F) the ***land*** described in subsection (a)(7) shall be incorporated in, and considered to be a part of, the Yuki Wilderness as designated by section 3(3) of Public Law 109- 362 (16 U.S.C 1132 note; 120 Stat. 2065) and expanded by section 231(a)(18). (f) Report.--Within 3 years after the date of enactment of this Act, and every 3 years thereafter until the date upon which the potential wilderness is designated wilderness under subsection (d), the Secretary shall submit a report to the Committee on Natural Resources of the House of Representatives and the Committee on Energy and Natural Resources of the Senate on the status of ecological restoration within the potential wilderness area and the progress toward the potential wilderness area's eventual wilderness designation under subsection (d). SEC. 234. DESIGNATION OF WILD AND SCENIC RIVERS. Section 3(a) of the National Wild and Scenic Rivers Act (16 U.S.C 1274(a)) is amended by adding at the end the following: ``(231) South fork trinity river.--The following segments from the source tributaries in the Yolla Bolly-Middle Eel Wilderness, to be administered by the Secretary of ***Agriculture***: ``(A) The 18.3-mile segment from its multiple source springs in the Cedar Basin of the Yolla Bolly-Middle Eel Wilderness in section 15, T. 27 N., R. 10 W. to .25 miles upstream of the Wild Mad Road, as a wild river. ``(B) The .65-mile segment from .25 miles upstream of Wild Mad Road to the confluence with the unnamed tributary approximately .4 miles downstream of the Wild Mad Road in section 29, T. 28 N., R. 11 W., as a scenic river. ``(C) The 9.8-mile segment from .75 miles downstream of Wild Mad Road to Silver Creek, as a wild river. ``(D) The 5.4-mile segment from Silver Creek confluence to Farley Creek, as a scenic river. ``(E) The 3.6-mile segment from Farley Creek to Cave Creek, as a recreational river. ``(F) The 5.6-mile segment from Cave Creek to the confluence of the unnamed creek upstream of Hidden Valley Ranch in section 5, T. 15, R. 7 E., as a wild river. ``(G) The 2.5-mile segment from unnamed creek confluence upstream of Hidden Valley Ranch to the confluence with the unnamed creek flowing west from Bear Wallow Mountain in section 29, T. 1 N., R. 7 E., as a scenic river. ``(H) The 3.8-mile segment from the unnamed creek confluence in section 29, T. 1 N., R. 7 E. to Plummer Creek, as a wild river. ``(I) The 1.8-mile segment from Plummer Creek to the confluence with the unnamed tributary north of McClellan Place in section 6, T. 1 N., R. 7 E., as a scenic river. ``(J) The 5.4-mile segment from the unnamed tributary confluence in section 6, T. 1 N., R. 7 E. to Hitchcock Creek, as a wild river. ``(K) The 7-mile segment from Eltapom Creek to the Grouse Creek, as a scenic river. ``(L) The 5-mile segment from Grouse Creek to Coon Creek, as a wild river. ``(232) East fork south fork trinity river.--The following segments to be administered by the Secretary of ***Agriculture***: ``(A) The 8.4-mile segment from its source in the Pettijohn Basin in the Yolla Bolly-Middle Eel Wilderness in section 10, T. 3 S., R. 10 W. to .25 miles upstream of the Wild Mad Road, as a wild river. ``(B) The 3.4-mile segment from .25 miles upstream of the Wild Mad Road to the South Fork Trinity River, as a recreational river. [[Page H671]] ``(233) Rattlesnake creek.--The 5.9-mile segment from the confluence with the unnamed tributary in the southeast corner of section 5, T. 1 S., R. 12 W. to the South Fork Trinity River, to be administered by the Secretary of ***Agriculture*** as a recreational river. ``(234) Butter creek.--The 7-mile segment from .25 miles downstream of the Road 3N08 crossing to the South Fork Trinity River, to be administered by the Secretary of ***Agriculture*** as a scenic river. ``(235) Hayfork creek.--The following segments to be administered by the Secretary of ***Agriculture***: ``(A) The 3.2-mile segment from Little Creek to Bear Creek, as a recreational river. ``(B) The 13.2-mile segment from Bear Creek to the northern boundary of section 19, T. 3 N., R. 7 E., as a scenic river. ``(236) Olsen creek.--The 2.8-mile segment from the confluence of its source tributaries in section 5, T. 3 N., R. 7 E. to the northern boundary of section 24, T. 3 N., R. 6 E., to be administered by the Secretary of the Interior as a scenic river. ``(237) Rusch creek.--The 3.2-mile segment from .25 miles downstream of the 32N11 Road crossing to Hayfork Creek, to be administered by the Secretary of ***Agriculture*** as a recreational river. ``(238) Eltapom creek.--The 3.4-mile segment from Buckhorn Creek to the South Fork Trinity River, to be administered by the Secretary of ***Agriculture*** as a wild river. ``(239) Grouse creek.--The following segments to be administered by the Secretary of ***Agriculture***: ``(A) The 3.9-mile segment from Carson Creek to Cow Creek, as a scenic river. ``(B) The 7.4-mile segment from Cow Creek to the South Fork Trinity River, as a recreational river. ``(240) Madden creek.--The following segments to be administered by the Secretary of ***Agriculture***: ``(A) The 6.8-mile segment from the confluence of Madden Creek and its unnamed tributary in section 18, T. 5 N., R. 5 E. to Fourmile Creek, as a wild river. ``(B) The 1.6-mile segment from Fourmile Creek to the South Fork Trinity River, as a recreational river. ``(241) Canyon creek.--The following segments to be administered by the Secretary of ***Agriculture*** and the Secretary of the Interior: ``(A) The 6.6-mile segment from the outlet of lower Canyon Creek Lake to Bear Creek upstream of Ripstein, as a wild river. ``(B) The 11.2-mile segment from Bear Creek upstream of Ripstein to the southern boundary of section 25, T. 34 N., R. 11 W., as a recreational river. ``(242) North fork trinity river.--The following segments to be administered by the Secretary of ***Agriculture***: ``(A) The 12-mile segment from the confluence of source tributaries in section 24, T. 8 N., R. 12 W. to the Trinity Alps Wilderness boundary upstream of Hobo Gulch, as a wild river. ``(B) The .5-mile segment from where the river leaves the Trinity Alps Wilderness to where it fully reenters the Trinity Alps Wilderness downstream of Hobo Gulch, as a scenic river. ``(C) The 13.9-mile segment from where the river fully reenters the Trinity Alps Wilderness downstream of Hobo Gulch to the Trinity Alps Wilderness boundary upstream of the County Road 421 crossing, as a wild river. ``(D) The 1.3-mile segment from the Trinity Alps Wilderness boundary upstream of the County Road 421 crossing to the Trinity River, as a recreational river. ``(243) East fork north fork trinity river.--The following segments to be administered by the Secretary of ***Agriculture***: ``(A) The 9.5-mile segment from the river's source north of Mt. Hilton in section 19, T. 36 N., R. 10 W. to the end of Road 35N20 approximately .5 miles downstream of the confluence with the East Branch East Fork North Fork Trinity River, as a wild river. ``(B) The 3.25-mile segment from the end of Road 35N20 to .25 miles upstream of Coleridge, as a scenic river. ``(C) The 4.6-mile segment from .25 miles upstream of Coleridge to the confluence of Fox Gulch, as a recreational river. ``(244) New river.--The following segments to be administered by the Secretary of ***Agriculture***: ``(A) The 12.7-mile segment of Virgin Creek from its source spring in section 22, T. 9 N., R. 7 E. to Slide Creek, as a wild river. ``(B) The 2.3-mile segment of the New River where it begins at the confluence of Virgin and Slide Creeks to Barron Creek, as a wild river. ``(245) Middle eel river.--The following segment, to be administered by the Secretary of ***Agriculture***: ``(A) The 37.7-mile segment from its source in Frying Pan Meadow to Rose Creek, as a wild river. ``(B) The 1.5-mile segment from Rose Creek to the Black Butte River, as a recreational river. ``(C) The 10.5-mile segment of Balm of Gilead Creek from its source in Hopkins Hollow to the Middle Eel River, as a wild river. ``(D) The 13-mile segment of the North Fork Middle Fork Eel River from the source on Dead Puppy Ridge in section 11, T. 26 N., R. 11 W. to the confluence of the Middle Eel River, as a wild river. ``(246) North fork eel river, ca.--The 14.3-mile segment from the confluence with Gilman Creek to the Six Rivers National ***Forest*** boundary, to be administered by the Secretary of ***Agriculture*** as a wild river. ``(247) Red mountain creek, ca.--The following segments to be administered by the Secretary of ***Agriculture***: ``(A) The 5.25-mile segment from its source west of Mike's Rock in section 23, T. 26 N., R. 12 E. to the confluence with Littlefield Creek, as a wild river. ``(B) The 1.6-mile segment from the confluence with Littlefield Creek to the confluence with the unnamed tributary in section 32, T. 26 N., R. 8 E., as a scenic river. ``(C) The 1.25-mile segment from the confluence with the unnamed tributary in section 32, T. 4 S., R. 8 E. to the confluence with the North Fork Eel River, as a wild river. ``(248) Redwood creek.--The following segments to be administered by the Secretary of the Interior: ``(A) The 6.2-mile segment from the confluence with Lacks Creek to the confluence with Coyote Creek as a scenic river on publication by the Secretary of a notice in the Federal Register that sufficient inholdings within the boundaries of the segments have been acquired in fee title to establish a manageable addition to the system. ``(B) The 19.1-mile segment from the confluence with Coyote Creek in section 2, T. 8 N., R. 2 E. to the Redwood National Park boundary upstream of Orick in section 34, T. 11 N., R. 1 E. as a scenic river. ``(C) The 2.3-mile segment of Emerald Creek (also known as Harry Weir Creek) from its source in section 29, T. 10 N., R. 2 E. to the confluence with Redwood Creek as a scenic river. ``(249) Lacks creek.--The following segments to be administered by the Secretary of the Interior: ``(A) The 5.1-mile segment from the confluence with two unnamed tributaries in section 14, T. 7 N., R. 3 E. to Kings Crossing in section 27, T. 8 N., R. 3 E. as a wild river. ``(B) The 2.7-mile segment from Kings Crossing to the confluence with Redwood Creek as a scenic river upon publication by the Secretary of a notice in the Federal Register that sufficient inholdings within the segment have been acquired in fee title or as scenic easements to establish a manageable addition to the system. ``(250) Lost man creek.--The following segments to be administered by the Secretary of the Interior: ``(A) The 6.4-mile segment of Lost Man Creek from its source in section 5, T. 10 N., R. 2 E. to .25 miles upstream of the Prairie Creek confluence, as a recreational river. ``(B) The 2.3-mile segment of Larry Damm Creek from its source in section 8, T. 11 N., R. 2 E. to the confluence with Lost Man Creek, as a recreational river. ``(251) Little lost man creek.--The 3.6-mile segment of Little Lost Man Creek from its source in section 6, T. 10 N., R. 2 E. to .25 miles upstream of the Lost Man Creek road crossing, to be administered by the Secretary of the Interior as a wild river. ``(252) South fork elk river.--The following segments to be administered by the Secretary of the Interior through a cooperative management agreement with the State of California: ``(A) The 3.6-mile segment of the Little South Fork Elk River from the source in section 21, T. 3 N., R. 1 E. to the confluence with the South Fork Elk River, as a wild river. ``(B) The 2.2-mile segment of the unnamed tributary of the Little South Fork Elk River from its source in section 15, T. 3 N., R. 1 E. to the confluence with the Little South Fork Elk River, as a wild river. ``(C) The 3.6-mile segment of the South Fork Elk River from the confluence of the Little South Fork Elk River to the confluence with Tom Gulch, as a recreational river. ``(253) Salmon creek.--The 4.6-mile segment from its source in section 27, T. 3 N., R. 1 E. to the Headwaters ***Forest*** Reserve boundary in section 18, T. 3 N., R. 1 E. to be administered by the Secretary of the Interior as a wild river through a cooperative management agreement with the State of California. ``(254) South fork eel river.--The following segments to be administered by the Secretary of the Interior: ``(A) The 6.2-mile segment from the confluence with Jack of Hearts Creek to the southern boundary of the South Fork Eel Wilderness in section 8, T. 22 N., R. 16 W., as a recreational river to be administered by the Secretary through a cooperative management agreement with the State of California. ``(B) The 6.1-mile segment from the southern boundary of the South Fork Eel Wilderness to the northern boundary of the South Fork Eel Wilderness in section 29, T. 23 N., R. 16 W., as a wild river. ``(255) Elder creek.--The following segments to be administered by the Secretary of the Interior through a cooperative management agreement with the State of California: ``(A) The 3.6-mile segment from its source north of Signal Peak in section 6, T. 21 N., R. 15 W. to the confluence with the unnamed tributary near the center of section 28, T. 22 N., R. 16 W., as a wild river. ``(B) The 1.3-mile segment from the confluence with the unnamed tributary near the center of section 28, T. 22 N., R. 15 W. to the confluence with the South Fork Eel River, as a recreational river. ``(C) The 2.1-mile segment of Paralyze Canyon from its source south of Signal Peak in section 7, T. 21 N., R. 15 W. to the confluence with Elder Creek, as a wild river. ``(256) Cedar creek.--The following segments to be administered as a wild river by the Secretary of the Interior: ``(A) The 7.7-mile segment from its source in section 22, T. 24 N., R. 16 W. to the southern boundary of the Red Mountain unit of the South Fork Eel Wilderness. ``(B) The 1.9-mile segment of North Fork Cedar Creek from its source in section 28, T. 24 N., R. 16 E. to the confluence with Cedar Creek. ``(257) East branch south fork eel river.--The following segments to be administered by the Secretary of the Interior as a scenic river on publication by the Secretary of a notice in the Federal Register that sufficient inholdings within the boundaries of the segments have been acquired in fee title or as scenic easements to establish a manageable addition to the system: [[Page H672]] ``(A) The 2.3-mile segment of Cruso Cabin Creek from the confluence of two unnamed tributaries in section 18, T. 24 N., R. 15 W. to the confluence with Elkhorn Creek. ``(B) The 1.8-mile segment of Elkhorn Creek from the confluence of two unnamed tributaries in section 22, T. 24 N., R. 16 W. to the confluence with Cruso Cabin Creek. ``(C) The 14.2-mile segment of the East Branch South Fork Eel River from the confluence of Cruso Cabin and Elkhorn Creeks to the confluence with Rays Creek. ``(D) The 1.7-mile segment of the unnamed tributary from its source on the north flank of Red Mountain's north ridge in section 2, T. 24 N., R. 17 W. to the confluence with the East Branch South Fork Eel River. ``(E) The 1.3-mile segment of the unnamed tributary from its source on the north flank of Red Mountain's north ridge in section 1, T. 24 N., R. 17 W. to the confluence with the East Branch South Fork Eel River. ``(F) The 1.8-mile segment of Tom Long Creek from the confluence with the unnamed tributary in section 12, T. 5 S., R. 4 E. to the confluence with the East Branch South Fork Eel River. ``(258) Mattole river estuary.--The 1.5-mile segment from the confluence of Stansberry Creek to the Pacific Ocean, to be administered as a recreational river by the Secretary of the Interior. ``(259) Honeydew creek.--The following segments to be administered as a wild river by the Secretary of the Interior: ``(A) The 5.1-mile segment of Honeydew Creek from its source in the southwest corner of section 25, T. 3 S., R. 1 W. to the eastern boundary of the King Range National Conservation Area in section 18, T. 3 S., R. 1 E. ``(B) The 2.8-mile segment of West Fork Honeydew Creek from its source west of North Slide Peak to the confluence with Honeydew Creek. ``(C) The 2.7-mile segment of Upper East Fork Honeydew Creek from its source in section 23, T. 3 S., R. 1 W. to the confluence with Honeydew Creek. ``(260) Bear creek.--The following segments to be administered by the Secretary of the Interior: ``(A) The 1.9-mile segment of North Fork Bear Creek from the confluence with the unnamed tributary immediately downstream of the Horse Mountain Road crossing to the confluence with the South Fork, as a scenic river. ``(B) The 6.1-mile segment of South Fork Bear Creek from the confluence in section 2, T. 5 S., R. 1 W. with the unnamed tributary flowing from the southwest flank of Queen Peak to the confluence with the North Fork, as a scenic river. ``(C) The 3-mile segment of Bear Creek from the confluence of the North and South Forks to the southern boundary of section 11, T. 4 S., R. 1 E., as a wild river. ``(261) Gitchell creek.--The 3-mile segment of Gitchell Creek from its source near Saddle Mountain to the Pacific Ocean to be administered by the Secretary of the Interior as a wild river. ``(262) Big flat creek.--The following segments to be administered by the Secretary of the Interior as a wild river: ``(A) The 4-mile segment of Big Flat Creek from its source near King Peak in section 36, T. 3 S., R. 1 W. to the Pacific Ocean. ``(B) The .8-mile segment of the unnamed tributary from its source in section 35, T. 3 S., R. 1 W. to the confluence with Big Flat Creek. ``(C) The 2.7-mile segment of North Fork Big Flat Creek from the source in section 34, T. 3 S., R. 1 W. to the confluence with Big Flat Creek. ``(263) Big creek.--The following segments to be administered by the Secretary of the Interior as wild rivers: ``(A) The 2.7-mile segment of Big Creek from its source in section 26, T. 3 S., R. 1 W. to the Pacific Ocean. ``(B) The 1.9-mile unnamed southern tributary from its source in section 25, T. 3 S., R. 1 W. to the confluence with Big Creek. ``(264) Elk creek.--The 11.4-mile segment from its confluence with Lookout Creek to its confluence with Deep Hole Creek, to be jointly administered by the Secretaries of ***Agriculture*** and the Interior, as a wild river. ``(265) Eden creek.--The 2.7-mile segment from the private property boundary in the northwest quarter of section 27, T. 21 N., R. 12 W. to the eastern boundary of section 23, T. 21 N., R. 12 W., to be administered by the Secretary of the Interior as a wild river. ``(266) Deep hole creek.--The 4.3-mile segment from the private property boundary in the southwest quarter of section 13, T. 20 N., R. 12 W. to the confluence with Elk Creek, to be administered by the Secretary of the Interior as a wild river. ``(267) Indian creek.--The 3.3-mile segment from 300 feet downstream of the jeep trail in section 13, T. 20 N., R. 13 W. to the confluence with the Eel River, to be administered by the Secretary of the Interior as a wild river. ``(268) Fish creek.--The 4.2-mile segment from the source at Buckhorn Spring to the confluence with the Eel River, to be administered by the Secretary of the Interior as a wild river.''. SEC. 235. SANHEDRIN SPECIAL CONSERVATION MANAGEMENT AREA. (a) Establishment.--Subject to valid existing rights, there is established the Sanhedrin Special Conservation Management Area (referred to in this section as the ``conservation management area''), comprising approximately 12,254 acres of Federal ***land*** administered by the ***Forest*** Service in Mendocino County, California, as generally depicted on the map entitled ``Sanhedrin Conservation Management Area'' and dated May 15, 2020. (b) Purposes.--The purposes of the conservation management area are to-- (1) conserve, protect, and enhance for the benefit and enjoyment of present and future generations the ecological, scenic, wildlife, recreational, roadless, cultural, historical, natural, educational, and scientific resources of the conservation management area; (2) protect and restore late-successional ***forest*** structure, oak woodlands and grasslands, aquatic habitat, and anadromous fisheries within the conservation management area; (3) protect and restore the wilderness character of the conservation management area; and (4) allow visitors to enjoy the scenic, natural, cultural, and wildlife values of the conservation management area. (c) Management.-- (1) In general.--The Secretary shall manage the conservation management area-- (A) in a manner consistent with the purposes described in subsection (b); and (B) in accordance with-- (i) the laws (including regulations) generally applicable to the National ***Forest*** System; (ii) this section; and (iii) any other applicable law (including regulations). (2) Uses.--The Secretary shall only allow uses of the conservation management area that the Secretary determines would further the purposes described in subsection (b). (d) Motorized Vehicles.-- (1) In general.--Except as provided in paragraph (3), the use of motorized vehicles in the conservation management area shall be permitted only on existing roads, trails, and areas designated for use by such vehicles as of the date of enactment of this Act. (2) New or temporary roads.--Except as provided in paragraph (3), no new or temporary roads shall be constructed within the conservation management area. (3) Exception.--Nothing in paragraph (1) or (2) prevents the Secretary from-- (A) rerouting or closing an existing road or trail to protect natural resources from degradation, or to protect public safety, as determined to be appropriate by the Secretary; (B) designating routes of travel on ***lands*** acquired by the Secretary and incorporated into the conservation management area if the designations are-- (i) consistent with the purposes described in subsection (b); and (ii) completed, to the maximum extent practicable, within 3 years of the date of acquisition; (C) constructing a temporary road on which motorized vehicles are permitted as part of a vegetation management project carried out in accordance with subsection (e); (D) authorizing the use of motorized vehicles for administrative purposes; or (E) responding to an emergency. (4) Decommissioning of temporary roads.-- (A) Requirement.--The Secretary shall decommission any temporary road constructed under paragraph (3)(C) not later than 3 years after the date on which the applicable vegetation management project is completed. (B) Definition.--As used in subparagraph (A), the term ``decommission'' means-- (i) to reestablish vegetation on a road; and (ii) to restore any natural drainage, watershed function, or other ecological processes that are disrupted or adversely impacted by the road by ***removing*** or hydrologically disconnecting the road prism. (e) Timber Harvest.-- (1) In general.--Except as provided in paragraph (2), no harvesting of timber shall be allowed within the conservation management area. (2) Exceptions.--The Secretary may authorize harvesting of timber in the conservation management area-- (A) if the Secretary determines that the harvesting is necessary to further the purposes of the conservation management area; (B) in a manner consistent with the purposes described in subsection (b); and (C) subject to-- (i) such reasonable regulations, policies, and practices as the Secretary determines appropriate; and (ii) all applicable laws (including regulations). (f) Grazing.--The grazing of livestock in the conservation management area, where established before the date of enactment of this Act, shall be permitted to continue-- (1) subject to-- (A) such reasonable regulations, policies, and practices as the Secretary considers necessary; and (B) applicable law (including regulations); and (2) in a manner consistent with the purposes described in subsection (b). (g) Wildfire, Insect, and Disease Management.--Consistent with this section, the Secretary may take any measures within the conservation management area that the Secretary determines to be necessary to control fire, insects, and diseases, including the coordination of those activities with a State or local agency. (h) Acquisition and Incorporation of ***Land*** and Interests in ***Land***.-- (1) Acquisition authority.--In accordance with applicable laws (including regulations), the Secretary may acquire any ***land*** or interest in ***land*** within or adjacent to the boundaries of the conservation management area by purchase from willing sellers, donation, or exchange. (2) Incorporation.--Any ***land*** or interest in ***land*** acquired by the Secretary under paragraph (1) shall be-- (A) incorporated into, and administered as part of, the conservation management area; and (B) withdrawn in accordance with subsection (i). (i) Withdrawal.--Subject to valid existing rights, all Federal ***land*** located in the conservation management area is withdrawn from-- (1) all forms of entry, appropriation, and disposal under the public ***land*** laws; (2) location, entry, and patenting under the mining laws; and (3) operation of the mineral leasing, mineral materials, and geothermal leasing laws. [[Page H673]] Subtitle D--Miscellaneous SEC. 241. MAPS AND LEGAL DESCRIPTIONS. (a) In General.--As soon as practicable after the date of enactment of this Act, the Secretary shall prepare maps and legal descriptions of the-- (1) wilderness areas and wilderness additions designated by section 231; (2) potential wilderness areas designated by section 233; (3) South Fork Trinity-Mad River Restoration Area; (4) Horse Mountain Special Management Area; and (5) Sanhedrin Special Conservation Management Area. (b) Submission of Maps and Legal Descriptions.--The Secretary shall file the maps and legal descriptions prepared under subsection (a) with-- (1) the Committee on Natural Resources of the House of Representatives; and (2) the Committee on Energy and Natural Resources of the Senate. (c) Force of Law.--The maps and legal descriptions prepared under subsection (a) shall have the same force and effect as if included in this title, except that the Secretary may correct any clerical and typographical errors in the maps and legal descriptions. (d) Public Availability.--The maps and legal descriptions prepared under subsection (a) shall be on file and available for public inspection in the appropriate offices of the ***Forest*** Service, Bureau of ***Land*** Management, and National Park Service. SEC. 242. UPDATES TO ***LAND*** AND RESOURCE MANAGEMENT PLANS. As soon as practicable, in accordance with applicable laws (including regulations), the Secretary shall incorporate the designations and studies required by this title into updated management plans for units covered by this title. SEC. 243. PACIFIC GAS AND ELECTRIC COMPANY UTILITY FACILITIES AND RIGHTS-OF-WAY. (a) Effect of Title.--Nothing in this title-- (1) affects any validly issued right-of-way for the customary operation, maintenance, upgrade, repair, relocation within an existing right-of-way, replacement, or other authorized activity (including the use of any mechanized vehicle, helicopter, and other aerial device) in a right-of- way acquired by or issued, granted, or permitted to Pacific Gas and Electric Company (including any predecessor or successor in interest or assign) that is located on ***land*** included in the South Fork Trinity--Mad River Restoration Area, Bigfoot National Recreation Trail, Sanhedrin Special Conservation Management Area, and Horse Mountain Special Management Area; or (2) prohibits the upgrading or replacement of any-- (A) utility facilities of the Pacific Gas and Electric Company, including those utility facilities known on the date of enactment of this Act within the-- (i) South Fork Trinity--Mad River Restoration Area known as-- (I) Gas Transmission Line 177A or rights-of-way; (II) Gas Transmission Line DFM 1312-02 or rights-of-way; (III) Electric Transmission Line Bridgeville--Cottonwood 115 kV or rights-of-way; (IV) Electric Transmission Line Humboldt--Trinity 60 kV or rights-of-way; (V) Electric Transmission Line Humboldt--Trinity 115 kV or rights-of-way; (VI) Electric Transmission Line Maple Creek--Hoopa 60 kV or rights-of-way; (VII) Electric Distribution Line--Willow Creek 1101 12 kV or rights-of-way; (VIII) Electric Distribution Line--Willow Creek 1103 12 kV or rights-of-way; (IX) Electric Distribution Line--Low Gap 1101 12 kV or rights-of-way; (X) Electric Distribution Line--Fort Seward 1121 12 kV or rights-of-way; (XI) ***Forest*** Glen Border District Regulator Station or rights-of-way; (XII) Durret District Gas Regulator Station or rights-of- way; (XIII) Gas Distribution Line 4269C or rights-of-way; (XIV) Gas Distribution Line 43991 or rights-of-way; (XV) Gas Distribution Line 4993D or rights-of-way; (XVI) Sportsmans Club District Gas Regulator Station or rights-of-way; (XVII) Highway 36 and Zenia District Gas Regulator Station or rights-of-way; (XVIII) Dinsmore Lodge 2nd Stage Gas Regulator Station or rights-of-way; (XIX) Electric Distribution Line--Wildwood 1101 12kV or rights-of-way; (XX) Low Gap Substation; (XXI) Hyampom Switching Station; or (XXII) Wildwood Substation; (ii) Bigfoot National Recreation Trail known as-- (I) Gas Transmission Line 177A or rights-of-way; (II) Electric Transmission Line Humboldt--Trinity 115 kV or rights-of-way; (III) Electric Transmission Line Bridgeville--Cottonwood 115 kV or rights-of-way; or (IV) Electric Transmission Line Humboldt--Trinity 60 kV or rights-of-way; (iii) Sanhedrin Special Conservation Management Area known as, Electric Distribution Line--Willits 1103 12 kV or rights- of-way; or (iv) Horse Mountain Special Management Area known as, Electric Distribution Line Willow Creek 1101 12 kV or rights- of-way; or (B) utility facilities of the Pacific Gas and Electric Company in rights-of-way issued, granted, or permitted by the Secretary adjacent to a utility facility referred to in paragraph (1). (b) Plans for Access.--Not later than 1 year after the date of enactment of this Act or the issuance of a new utility facility right-of-way within the South Fork Trinity--Mad River Restoration Area, Bigfoot National Recreation Trail, Sanhedrin Special Conservation Management Area, and Horse Mountain Special Management Area, whichever is later, the Secretary, in consultation with the Pacific Gas and Electric Company, shall publish plans for regular and emergency access by the Pacific Gas and Electric Company to the rights-of-way of the Pacific Gas and Electric Company. TITLE III--WILD OLYMPICS WILDERNESS AND WILD AND SCENIC RIVERS SEC. 301. SHORT TITLE. This title may be cited as the ``Wild Olympics Wilderness and Wild and Scenic Rivers Act''. SEC. 302. DESIGNATION OF OLYMPIC NATIONAL ***FOREST*** WILDERNESS AREAS. (a) In General.--In furtherance of the Wilderness Act (16 U.S.C 1131 et seq.), the following Federal ***land*** in the Olympic National ***Forest*** in the State of Washington comprising approximately 126,554 acres, as generally depicted on the map entitled ``Proposed Wild Olympics Wilderness and Wild and Scenic Rivers Act'' and dated April 8, 2019 (referred to in this section as the ``map''), is designated as wilderness and as components of the National Wilderness Preservation System: (1) Lost creek wilderness.--Certain Federal ***land*** managed by the ***Forest*** Service, comprising approximately 7,159 acres, as generally depicted on the map, which shall be known as the ``Lost Creek Wilderness''. (2) Rugged ridge wilderness.--Certain Federal ***land*** managed by the ***Forest*** Service, comprising approximately 5,956 acres, as generally depicted on the map, which shall be known as the ``Rugged Ridge Wilderness''. (3) Alckee creek wilderness.--Certain Federal ***land*** managed by the ***Forest*** Service, comprising approximately 1,787 acres, as generally depicted on the map, which shall be known as the ``Alckee Creek Wilderness''. (4) Gates of the elwha wilderness.--Certain Federal ***land*** managed by the ***Forest*** Service, comprising approximately 5,669 acres, as generally depicted on the map, which shall be known as the ``Gates of the Elwha Wilderness''. (5) Buckhorn wilderness additions.--Certain Federal ***land*** managed by the ***Forest*** Service, comprising approximately 21,965 acres, as generally depicted on the map, is incorporated in, and shall be managed as part of, the ``Buckhorn Wilderness'', as designated by section 3 of the Washington State Wilderness Act of 1984 (16 U.S.C 1132 note; Public Law 98-339). (6) Green mountain wilderness.--Certain Federal ***land*** managed by the ***Forest*** Service, comprising approximately 4,790 acres, as generally depicted on the map, which shall be known as the ``Green Mountain Wilderness''. (7) The brothers wilderness additions.--Certain ***land*** managed by the ***Forest*** Service, comprising approximately 8,625 acres, as generally depicted on the map, is incorporated in, and shall be managed as part of, the ``The Brothers Wilderness'', as designated by section 3 of the Washington State Wilderness Act of 1984 (16 U.S.C 1132 note; Public Law 98-339). (8) Mount skokomish wilderness additions.--Certain ***land*** managed by the ***Forest*** Service, comprising approximately 8,933 acres, as generally depicted on the map, is incorporated in, and shall be managed as part of, the ``Mount Skokomish Wilderness'', as designated by section 3 of the Washington State Wilderness Act of 1984 (16 U.S.C 1132 note; Public Law 98-339). (9) Wonder mountain wilderness additions.--Certain ***land*** managed by the ***Forest*** Service, comprising approximately 26,517 acres, as generally depicted on the map, is incorporated in, and shall be managed as part of, the ``Wonder Mountain Wilderness'', as designated by section 3 of the Washington State Wilderness Act of 1984 (16 U.S.C 1132 note; Public Law 98-339). (10) Moonlight dome wilderness.--Certain Federal ***land*** managed by the ***Forest*** Service, comprising approximately 9,117 acres, as generally depicted on the map, which shall be known as the ``Moonlight Dome Wilderness''. (11) South quinault ridge wilderness.--Certain Federal ***land*** managed by the ***Forest*** Service, comprising approximately 10,887 acres, as generally depicted on the map, which shall be known as the ``South Quinault Ridge Wilderness''. (12) Colonel bob wilderness additions.--Certain Federal ***land*** managed by the ***Forest*** Service, comprising approximately 353 acres, as generally depicted on the map, is incorporated in, and shall be managed as part of, the ``Colonel Bob Wilderness'', as designated by section 3 of the Washington State Wilderness Act of 1984 (16 U.S.C 1132 note; Public Law 98-339). (13) Sam's river wilderness.--Certain Federal ***land*** managed by the ***Forest*** Service, comprising approximately 13,418 acres, as generally depicted on the map, which shall be known as the ``Sam's River Wilderness''. (14) Canoe creek wilderness.--Certain Federal ***land*** managed by the ***Forest*** Service, comprising approximately 1,378 acres, as generally depicted on the map, which shall be known as the ``Canoe Creek Wilderness''. (b) Administration.-- (1) Management.--Subject to valid existing rights, the ***land*** designated as wilderness by subsection (a) shall be administered by the Secretary of ***Agriculture*** (referred to in this section as the ``Secretary''), in accordance with the Wilderness Act (16 U.S.C 1131 et seq.), except that any reference in that Act to the effective date of that Act shall be considered to be a reference to the date of enactment of this Act. (2) Map and description.-- (A) In general.--As soon as practicable after the date of enactment of this Act, the Secretary [[Page H674]] shall file a map and a legal description of the ***land*** designated as wilderness by subsection (a) with-- (i) the Committee on Natural Resources of the House of Representatives; and (ii) the Committee on Energy and Natural Resources of the Senate. (B) Effect.--Each map and legal description filed under subparagraph (A) shall have the same force and effect as if included in this title, except that the Secretary may correct minor errors in the map and legal description. (C) Public availability.--Each map and legal description filed under subparagraph (A) shall be filed and made available for public inspection in the appropriate office of the ***Forest*** Service. (c) Potential Wilderness.-- (1) In general.--In furtherance of the purposes of the Wilderness Act (16 U.S.C 1131 et seq.), certain Federal ***land*** managed by the ***Forest*** Service, comprising approximately 5,346 acres as identified as ``Potential Wilderness'' on the map, is designated as potential wilderness. (2) Designation as wilderness.--On the date on which the Secretary publishes in the Federal Register notice that any nonconforming uses in the potential wilderness designated by paragraph (1) have terminated, the potential wilderness shall be-- (A) designated as wilderness and as a component of the National Wilderness Preservation System; and (B) incorporated into the adjacent wilderness area. (d) Adjacent Management.-- (1) No protective perimeters or buffer zones.--The designations in this section shall not create a protective perimeter or buffer zone around any wilderness area. (2) Nonconforming uses permitted outside of boundaries of wilderness areas.--Any activity or use outside of the boundary of any wilderness area designated under this section shall be permitted even if the activity or use would be seen or heard within the boundary of the wilderness area. (e) Fire, Insects, and Diseases.--The Secretary may take such measures as are necessary to control fire, insects, and diseases, in the wilderness areas designated by this section, in accordance with section 4(d)(1) of the Wilderness Act (16 U.S.C 1133(d)(1)) and subject to such terms and conditions as the Secretary determines to be appropriate. SEC. 303. WILD AND SCENIC RIVER DESIGNATIONS. (a) In General.--Section 3(a) of the National Wild and Scenic Rivers Act (16 U.S.C 1274(a)) is amended by adding at the end the following: ``(231) Elwha river, washington.--The approximately 29.0- mile segment of the Elwha River and tributaries from the source to Cat Creek, to be administered by the Secretary of the Interior as a wild river. ``(232) Dungeness river, washington.--The segment of the Dungeness River from the headwaters to the State of Washington Department of Natural Resources ***land*** in T. 29 N., R. 4 W., sec. 12, to be administered by the Secretary of ***Agriculture***, except that portions of the river within the boundaries of Olympic National Park shall be administered by the Secretary of the Interior, including the following segments of the mainstem and major tributary the Gray Wolf River, in the following classes: ``(A) The approximately 5.8-mile segment of the Dungeness River from the headwaters to the 2870 Bridge, as a wild river. ``(B) The approximately 2.1-mile segment of the Dungeness River from the 2870 Bridge to Silver Creek, as a scenic river. ``(C) The approximately 2.7-mile segment of the Dungeness River from Silver Creek to Sleepy Hollow Creek, as a wild river. ``(D) The approximately 6.3-mile segment of the Dungeness River from Sleepy Hollow Creek to the Olympic National ***Forest*** boundary, as a scenic river. ``(E) The approximately 1.9-mile segment of the Dungeness River from the National ***Forest*** boundary to the State of Washington Department of Natural Resources ***land*** in T. 29 N., R. 4 W., sec. 12, to be administered as a recreational river through a cooperative management agreement between the State of Washington and the Secretary of ***Agriculture*** as provided in section 10(e) of the Wild and Scenic Rivers Act (16 U.S.C 1281(e)). ``(F) The approximately 16.1-mile segment of the Gray Wolf River from the headwaters to the 2870 Bridge, as a wild river. ``(G) The approximately 1.1-mile segment of the Gray Wolf River from the 2870 Bridge to the confluence with the Dungeness River, as a scenic river. ``(233) Big quilcene river, washington.--The segment of the Big Quilcene River from the headwaters to the City of Port Townsend water intake facility, to be administered by the Secretary of ***Agriculture***, in the following classes: ``(A) The approximately 4.4-mile segment from the headwaters to the Buckhorn Wilderness boundary, as a wild river. ``(B) The approximately 5.3-mile segment from the Buckhorn Wilderness boundary to the City of Port Townsend water intake facility, as a scenic river. ``(C) Section 7(a), with respect to the licensing of dams, water conduits, reservoirs, powerhouses, transmission lines, or other project works, shall apply to the approximately 5- mile segment from the City of Port Townsend water intake facility to the Olympic National ***Forest*** boundary. ``(234) Dosewallips river, washington.--The segment of the Dosewallips River from the headwaters to the private ***land*** in T. 26 N., R. 3 W., sec. 15, to be administered by the Secretary of ***Agriculture***, except that portions of the river within the boundaries of Olympic National Park shall be administered by the Secretary of the Interior, in the following classes: ``(A) The approximately 12.9-mile segment from the headwaters to Station Creek, as a wild river. ``(B) The approximately 6.8-mile segment from Station Creek to the private ***land*** in T. 26 N., R. 3 W., sec. 15, as a scenic river. ``(235) Duckabush river, washington.--The segment of the Duckabush River from the headwaters to the private ***land*** in T. 25 N., R. 3 W., sec. 1, to be administered by the Secretary of ***Agriculture***, except that portions of the river within the boundaries of Olympic National Park shall be administered by the Secretary of the Interior, in the following classes: ``(A) The approximately 19.0-mile segment from the headwaters to the Brothers Wilderness boundary, as a wild river. ``(B) The approximately 1.9-mile segment from the Brothers Wilderness boundary to the private ***land*** in T. 25 N., R. 3 W., sec. 1, as a scenic river. ``(236) Hamma hamma river, washington.--The segment of the Hamma Hamma River from the headwaters to the eastern edge of the NW1/4 sec. 21, T. 24 N., R. 3 W., to be administered by the Secretary of ***Agriculture***, in the following classes: ``(A) The approximately 3.1-mile segment from the headwaters to the Mt. Skokomish Wilderness boundary, as a wild river. ``(B) The approximately 5.8-mile segment from the Mt. Skokomish Wilderness boundary to Lena Creek, as a scenic river. ``(C) The approximately 6.8-mile segment from Lena Creek to the eastern edge of the NW1/4 sec. 21, T. 24 N., R. 3 W., to be administered as a recreational river through a cooperative management agreement between the State of Washington and the Secretary of ***Agriculture*** as provided in section 10(e) of the Wild and Scenic Rivers Act (16 U.S.C 1281(e)). ``(237) South fork skokomish river, washington.--The segment of the South Fork Skokomish River from the headwaters to the Olympic National ***Forest*** boundary to be administered by the Secretary of ***Agriculture***, in the following classes: ``(A) The approximately 6.7-mile segment from the headwaters to Church Creek, as a wild river. ``(B) The approximately 8.3-mile segment from Church Creek to LeBar Creek, as a scenic river. ``(C) The approximately 4.0-mile segment from LeBar Creek to upper end of gorge in the NW1/4 sec. 22, T. 22 N., R. 5 W., as a recreational river. ``(D) The approximately 6.0-mile segment from the upper end of the gorge to the Olympic National ***Forest*** boundary, as a scenic river. ``(238) Middle fork satsop river, washington.--The approximately 7.9-mile segment of the Middle Fork Satsop River from the headwaters to the Olympic National ***Forest*** boundary, to be administered by the Secretary of ***Agriculture***, as a scenic river. ``(239) West fork satsop river, washington.--The approximately 8.2-mile segment of the West Fork Satsop River from the headwaters to the Olympic National ***Forest*** boundary, to be administered by the Secretary of ***Agriculture***, as a scenic river. ``(240) Wynoochee river, washington.--The segment of the Wynoochee River from the headwaters to the head of Wynoochee Reservoir to be administered by the Secretary of ***Agriculture***, except that portions of the river within the boundaries of Olympic National Park shall be administered by the Secretary of the Interior, in the following classes: ``(A) The approximately 2.5-mile segment from the headwaters to the boundary of the Wonder Mountain Wilderness, as a wild river. ``(B) The approximately 7.4-mile segment from the boundary of the Wonder Mountain Wilderness to the head of Wynoochee Reservoir, as a recreational river. ``(241) East fork humptulips river, washington.--The segment of the East Fork Humptulips River from the headwaters to the Olympic National ***Forest*** boundary to be administered by the Secretary of ***Agriculture***, in the following classes: ``(A) The approximately 7.4-mile segment from the headwaters to the Moonlight Dome Wilderness boundary, as a wild river. ``(B) The approximately 10.3-mile segment from the Moonlight Dome Wilderness boundary to the Olympic National ***Forest*** boundary, as a scenic river. ``(242) West fork humptulips river, washington.--The approximately 21.4-mile segment of the West Fork Humptulips River from the headwaters to the Olympic National ***Forest*** Boundary, to be administered by the Secretary of ***Agriculture***, as a scenic river. ``(243) Quinault river, washington.--The segment of the Quinault River from the headwaters to private ***land*** in T. 24 N., R. 8 W., sec. 33, to be administered by the Secretary of the Interior, in the following classes: ``(A) The approximately 16.5-mile segment from the headwaters to Graves Creek, as a wild river. ``(B) The approximately 6.7-mile segment from Graves Creek to Cannings Creek, as a scenic river. ``(C) The approximately 1.0-mile segment from Cannings Creek to private ***land*** in T. 24 N., R. 8 W., sec. 33, as a recreational river. ``(244) Queets river, washington.--The segment of the Queets River from the headwaters to the Olympic National Park boundary to be administered by the Secretary of the Interior, except that portions of the river outside the boundaries of Olympic National Park shall be administered by the Secretary of ***Agriculture***, including the following segments of the mainstem and certain tributaries in the following classes: ``(A) The approximately 28.6-mile segment of the Queets River from the headwaters to the confluence with Sams River, as a wild river. ``(B) The approximately 16.0-mile segment of the Queets River from the confluence with Sams [[Page H675]] River to the Olympic National Park boundary, as a scenic river. ``(C) The approximately 15.7-mile segment of the Sams River from the headwaters to the confluence with the Queets River, as a scenic river. ``(D) The approximately 17.7-mile segment of Matheny Creek from the headwaters to the confluence with the Queets River, to be administered as a scenic river through a cooperative management agreement between the State of Washington and the Secretary of ***Agriculture*** as provided in section 10(e) of the Wild and Scenic Rivers Act (16 U.S.C 1281(e)). ``(245) Hoh river, washington.--The segment of the Hoh River and the major tributary South Fork Hoh from the headwaters to Olympic National Park boundary, to be administered by the Secretary of the Interior, in the following classes: ``(A) The approximately 20.7-mile segment of the Hoh River from the headwaters to Jackson Creek, as a wild river. ``(B) The approximately 6.0-mile segment of the Hoh River from Jackson Creek to the Olympic National Park boundary, as a scenic river. ``(C) The approximately 13.8-mile segment of the South Fork Hoh River from the headwaters to the Olympic National Park boundary, as a wild river. ``(D) The approximately 4.6-mile segment of the South Fork Hoh River from the Olympic National Park boundary to the Washington State Department of Natural Resources boundary in T. 27 N., R. 10 W., sec. 29, to be administered as a recreational river through a cooperative management agreement between the State of Washington and the Secretary of ***Agriculture*** as provided in section 10(e) of the Wild and Scenic Rivers Act (16 U.S.C 1281(e)). ``(246) Bogachiel river, washington.--The approximately 25.6-mile segment of the Bogachiel River from the source to the Olympic National Park boundary, to be administered by the Secretary of the Interior, as a wild river. ``(247) South fork calawah river, washington.--The segment of the South Fork Calawah River and the major tributary Sitkum River from the headwaters to Hyas Creek to be administered by the Secretary of ***Agriculture***, except those portions of the river within the boundaries of Olympic National Park shall be administered by the Secretary of the Interior, including the following segments in the following classes: ``(A) The approximately 15.7-mile segment of the South Fork Calawah River from the headwaters to the Sitkum River, as a wild river. ``(B) The approximately 0.9-mile segment of the South Fork Calawah River from the Sitkum River to Hyas Creek, as a scenic river. ``(C) The approximately 1.6-mile segment of the Sitkum River from the headwaters to the Rugged Ridge Wilderness boundary, as a wild river. ``(D) The approximately 11.9-mile segment of the Sitkum River from the Rugged Ridge Wilderness boundary to the confluence with the South Fork Calawah, as a scenic river. ``(248) Sol duc river, washington.--The segment of the Sol Duc River from the headwaters to the Olympic National Park boundary to be administered by the Secretary of the Interior, including the following segments of the mainstem and certain tributaries in the following classes: ``(A) The approximately 7.0-mile segment of the Sol Duc River from the headwaters to the end of Sol Duc Hot Springs Road, as a wild river. ``(B) The approximately 10.8-mile segment of the Sol Duc River from the end of Sol Duc Hot Springs Road to the Olympic National Park boundary, as a scenic river. ``(C) The approximately 14.2-mile segment of the North Fork Sol Duc River from the headwaters to the Olympic Hot Springs Road bridge, as a wild river. ``(D) The approximately 0.2-mile segment of the North Fork Sol Duc River from the Olympic Hot Springs Road bridge to the confluence with the Sol Duc River, as a scenic river. ``(E) The approximately 8.0-mile segment of the South Fork Sol Duc River from the headwaters to the confluence with the Sol Duc River, as a scenic river. ``(249) Lyre river, washington.--The approximately 0.2-mile segment of the Lyre River from Lake Crescent to the Olympic National Park boundary, to be administered by the Secretary of the Interior as a scenic river.''. (b) Effect.--The amendment made by subsection (a) does not affect valid existing water rights. (c) Updates to ***Land*** and Resource Management Plans.-- (1) In general.--Except as provided in paragraph (2), not later than 3 years after the date of the enactment of this Act, the Secretary of ***Agriculture*** shall, with respect to the designations made under subsection (a) on ***lands*** under the jurisdiction of the Secretary, incorporate such designations into updated management plans for units of the National ***Forest*** System in accordance with applicable laws (including regulations). (2) Exception.--The date specified in paragraph (1) shall be 5 years after the date of the enactment of this Act if the Secretary of ***Agriculture***-- (A) is unable to meet the requirement under such paragraph by the date specified in such paragraph; and (B) not later than 3 years after the date of the enactment of this Act, includes in the Department of ***Agriculture*** annual budget submission to Congress a request for additional sums as may be necessary to meet the requirement of such paragraph. (3) Comprehensive management plan requirements.--Updated management plans under paragraph (1) or (2) satisfy the requirements under section 3(d) of the Wild and Scenic Rivers Act (16 U.S.C 1274(d)). SEC. 304. EXISTING RIGHTS AND WITHDRAWAL. (a) In General.--In accordance with section 12(b) of the National Wild and Scenic Rivers Act (16 U.S.C 1283(b)), nothing in this title or the amendment made by section 303(a) affects or abrogates existing rights, privileges, or contracts held by private parties, nor does this title in any way modify or direct the management, acquisition, or disposition of ***lands*** managed by the Washington Department of Natural Resources on behalf of the State of Washington. (b) Withdrawal.--Subject to valid existing rights, the Federal ***land*** within the boundaries of the river segments designated by this title and the amendment made by section 303(a) is withdrawn from all forms of-- (1) entry, appropriation, or disposal under the public ***land*** laws; (2) location, entry, and patent under the mining laws; and (3) disposition under all laws relating to mineral and geothermal leasing or mineral materials. SEC. 305. TREATY RIGHTS. Nothing in this title alters, modifies, diminishes, or extinguishes the reserved treaty rights of any Indian tribe with hunting, fishing, gathering, and cultural or religious rights as protected by a treaty. TITLE IV--CENTRAL COAST HERITAGE PROTECTION SEC. 401. SHORT TITLE. This title may be cited as the ``Central Coast Heritage Protection Act''. SEC. 402. DEFINITIONS. In this title: (1) Scenic areas.--The term ``scenic area'' means a scenic area designated by section 408(a). (2) Secretary.--The term ``Secretary'' means-- (A) with respect to ***land*** managed by the Bureau of ***Land*** Management, the Secretary of the Interior; and (B) with respect to ***land*** managed by the ***Forest*** Service, the Secretary of ***Agriculture***. (3) State.--The term ``State'' means the State of California. (4) Wilderness area.--The term ``wilderness area'' means a wilderness area or wilderness addition designated by section 403(a). SEC. 403. DESIGNATION OF WILDERNESS. (a) In General.--In accordance with the Wilderness Act (16 U.S.C 1131 et seq.), the following areas in the State are designated as wilderness areas and as components of the National Wilderness Preservation System: (1) Certain ***land*** in the Bakersfield Field Office of the Bureau of ***Land*** Management comprising approximately 35,116 acres, as generally depicted on the map entitled ``Proposed Caliente Mountain Wilderness'' and dated November 13, 2019, which shall be known as the ``Caliente Mountain Wilderness''. (2) Certain ***land*** in the Bakersfield Field Office of the Bureau of ***Land*** Management comprising approximately 13,332 acres, as generally depicted on the map entitled ``Proposed Soda Lake Wilderness'' and dated June 25, 2019, which shall be known as the ``Soda Lake Wilderness''. (3) Certain ***land*** in the Bakersfield Field Office of the Bureau of ***Land*** Management comprising approximately 12,585 acres, as generally depicted on the map entitled ``Proposed Temblor Range Wilderness'' and dated June 25, 2019, which shall be known as the ``Temblor Range Wilderness''. (4) Certain ***land*** in the Los Padres National ***Forest*** comprising approximately 23,670 acres, as generally depicted on the map entitled ``Chumash Wilderness Area Additions-- Proposed'' and dated March 29, 2019, which shall be incorporated into and managed as part of the Chumash Wilderness as designated by the Los Padres Condor Range and River Protection Act (Public Law 102-301; 106 Stat. 242). (5) Certain ***land*** in the Los Padres National ***Forest*** comprising approximately 54,036 acres, as generally depicted on the maps entitled ``Dick Smith Wilderness Area Additions-- Proposed Map 1 of 2 (Bear Canyon and Cuyama Peak Units)'' and ``Dick Smith Wilderness Area Additions--Proposed Map 2 of 2 (Buckhorn and Mono Units)'' and dated November 14, 2019, which shall be incorporated into and managed as part of the Dick Smith Wilderness as designated by the California Wilderness Act of 1984 (Public Law 98-425; 16 U.S.C 1132 note). (6) Certain ***land*** in the Los Padres National ***Forest*** and the Bakersfield Field Office of the Bureau of ***Land*** Management comprising approximately 7,289 acres, as generally depicted on the map entitled ``Garcia Wilderness Area Additions-- Proposed'' and dated March 29, 2019, which shall be incorporated into and managed as part of the Garcia Wilderness as designated by the Los Padres Condor Range and River Protection Act (Public Law 102-301; 106 Stat. 242). (7) Certain ***land*** in the Los Padres National ***Forest*** and the Bakersfield Field Office of the Bureau of ***Land*** Management comprising approximately 8,774 acres, as generally depicted on the map entitled ``Machesna Mountain Wilderness--Proposed Additions'' and dated October 30, 2019, which shall be incorporated into and managed as part of the Machesna Mountain Wilderness as designated by the California Wilderness Act of 1984 (Public Law 98-425; 16 U.S.C 1132 note). (8) Certain ***land*** in the Los Padres National ***Forest*** comprising approximately 30,184 acres, as generally depicted on the map entitled ``Matilija Wilderness Area Additions-- Proposed'' and dated March 29, 2019, which shall be incorporated into and managed as part of the Matilija Wilderness as designated by the Los Padres Condor Range and River Protection Act (Public Law 102-301; 106 Stat. 242). (9) Certain ***land*** in the Los Padres National ***Forest*** comprising approximately 23,969 acres, as [[Page H676]] generally depicted on the map entitled ``San Rafael Wilderness Area Additions--Proposed'' and dated February 2, 2021, which shall be incorporated into and managed as part of the San Rafael Wilderness as designated by Public Law 90-271 (82 Stat. 51), the California Wilderness Act of 1984 (Public Law 98-425; 16 U.S.C 1132 note), and the Los Padres Condor Range and River Protection Act (Public Law 102-301; 106 Stat. 242). (10) Certain ***land*** in the Los Padres National ***Forest*** comprising approximately 2,921 acres, as generally depicted on the map entitled ``Santa Lucia Wilderness Area Additions-- Proposed'' and dated March 29, 2019, which shall be incorporated into and managed as part of the Santa Lucia Wilderness as designated by the Endangered American Wilderness Act of 1978 (Public Law 95-237; 16 U.S.C 1132 note). (11) Certain ***land*** in the Los Padres National ***Forest*** comprising approximately 14,313 acres, as generally depicted on the map entitled ``Sespe Wilderness Area Additions-- Proposed'' and dated March 29, 2019, which shall be incorporated into and managed as part of the Sespe Wilderness as designated by the Los Padres Condor Range and River Protection Act (Public Law 102-301; 106 Stat. 242). (12) Certain ***land*** in the Los Padres National ***Forest*** comprising approximately 17,870 acres, as generally depicted on the map entitled ``Diablo Caliente Wilderness Area-- Proposed'' and dated March 29, 2019, which shall be known as the ``Diablo Caliente Wilderness''. (b) Maps and Legal Descriptions.-- (1) In general.--As soon as practicable after the date of enactment of this Act, the Secretary shall file maps and legal descriptions of the wilderness areas with-- (A) the Committee on Energy and Natural Resources of the Senate; and (B) the Committee on Natural Resources of the House of Representatives. (2) Force of law.--The maps and legal descriptions filed under paragraph (1) shall have the same force and effect as if included in this title, except that the Secretary may correct any clerical and typographical errors in the maps and legal descriptions. (3) Public availability.--The maps and legal descriptions filed under paragraph (1) shall be on file and available for public inspection in the appropriate offices of the ***Forest*** Service and Bureau of ***Land*** Management. SEC. 404. DESIGNATION OF THE MACHESNA MOUNTAIN POTENTIAL WILDERNESS. (a) Designation.--In furtherance of the purposes of the Wilderness Act (16 U.S.C 1131 et seq.), certain ***land*** in the Los Padres National ***Forest*** comprising approximately 2,359 acres, as generally depicted on the map entitled ``Machesna Mountain Potential Wilderness'' and dated March 29, 2019, is designated as the Machesna Mountain Potential Wilderness Area. (b) Map and Legal Description.-- (1) In general.--As soon as practicable after the date of enactment of this Act, the Secretary shall file a map and legal description of the Machesna Mountain Potential Wilderness Area (referred to in this section as the ``potential wilderness area'') with-- (A) the Committee on Energy and Natural Resources of the Senate; and (B) the Committee on Natural Resources of the House of Representatives. (2) Force of law.--The map and legal description filed under paragraph (1) shall have the same force and effect as if included in this title, except that the Secretary may correct any clerical and typographical errors in the map and legal description. (3) Public availability.--The map and legal description filed under paragraph (1) shall be on file and available for public inspection in the appropriate offices of the ***Forest*** Service. (c) Management.--Except as provided in subsection (d) and subject to valid existing rights, the Secretary shall manage the potential wilderness area in accordance with the Wilderness Act (16 U.S.C 1131 et seq.). (d) Trail Use, Construction, Reconstruction, and Realignment.-- (1) In general.--In accordance with paragraph (2), the Secretary may reconstruct, realign, or reroute the Pine Mountain Trail. (2) Requirement.--In carrying out the reconstruction, realignment, or rerouting under paragraph (1), the Secretary shall-- (A) comply with all existing laws (including regulations); and (B) to the maximum extent practicable, use the minimum tool or administrative practice necessary to accomplish the reconstruction, realignment, or rerouting with the least amount of adverse impact on wilderness character and resources. (3) Motorized vehicles and machinery.--In accordance with paragraph (2), the Secretary may use motorized vehicles and machinery to carry out the trail reconstruction, realignment, or rerouting authorized by this subsection. (4) Motorized and mechanized vehicles.--The Secretary may permit the use of motorized and mechanized vehicles on the existing Pine Mountain Trail in accordance with existing law (including regulations) and this subsection until such date as the potential wilderness area is designated as wilderness in accordance with subsection (h). (e) Withdrawal.--Subject to valid existing rights, the Federal ***land*** in the potential wilderness area is withdrawn from all forms of-- (1) entry, appropriation, or disposal under the public ***land*** laws; (2) location, entry, and patent under the mining laws; and (3) disposition under all laws pertaining to mineral and geothermal leasing or mineral materials. (f) Cooperative Agreements.--In carrying out this section, the Secretary may enter into cooperative agreements with State, Tribal, and local governmental entities and private entities to complete the trail reconstruction, realignment, or rerouting authorized by subsection (d). (g) Boundaries.--The Secretary shall modify the boundary of the potential wilderness area to exclude any area within 150 feet of the centerline of the new location of any trail that has been reconstructed, realigned, or rerouted under subsection (d). (h) Wilderness Designation.-- (1) In general.--The potential wilderness area, as modified under subsection (g), shall be designated as wilderness and as a component of the National Wilderness Preservation System on the earlier of-- (A) the date on which the Secretary publishes in the Federal Register notice that the trail reconstruction, realignment, or rerouting authorized by subsection (d) has been completed; or (B) the date that is 20 years after the date of enactment of this Act. (2) Administration of wilderness.--On designation as wilderness under this section, the potential wilderness area shall be-- (A) incorporated into the Machesna Mountain Wilderness Area, as designated by the California Wilderness Act of 1984 (Public Law 98-425; 16 U.S.C 1132 note) and expanded by section 403; and (B) administered in accordance with section 405 and the Wilderness Act (16 U.S.C 1131 et seq.). SEC. 405. ADMINISTRATION OF WILDERNESS. (a) In General.--Subject to valid existing rights, the wilderness areas shall be administered by the Secretary in accordance with this title and the Wilderness Act (16 U.S.C 1131 et seq.), except that-- (1) any reference in the Wilderness Act (16 U.S.C 1131 et seq.) to the effective date of that Act shall be considered to be a reference to the date of enactment of this Act; and (2) any reference in the Wilderness Act (16 U.S.C 1131 et seq.) to the Secretary of ***Agriculture*** shall be considered to be a reference to the Secretary that has jurisdiction over the wilderness area. (b) Fire Management and Related Activities.-- (1) In general.--The Secretary may take any measures in a wilderness area as are necessary for the control of fire, insects, and diseases in accordance with section 4(d)(1) of the Wilderness Act (16 U.S.C 1133(d)(1)) and House Report 98-40 of the 98th Congress. (2) Funding priorities.--Nothing in this title limits funding for fire and fuels management in the wilderness areas. (3) Revision and development of local fire management plans.--As soon as practicable after the date of enactment of this Act, the Secretary shall amend the local information in the Fire Management Reference System or individual operational plans that apply to the ***land*** designated as a wilderness area. (4) Administration.--Consistent with paragraph (1) and other applicable Federal law, to ensure a timely and efficient response to fire emergencies in the wilderness areas, the Secretary shall enter into agreements with appropriate State or local firefighting agencies. (c) Grazing.--The grazing of livestock in the wilderness areas, if established before the date of enactment of this Act, shall be permitted to continue, subject to any reasonable regulations as the Secretary considers necessary in accordance with-- (1) section 4(d)(4) of the Wilderness Act (16 U.S.C 1133(d)(4)); (2) the guidelines set forth in Appendix A of House Report 101-405, accompanying H.R 2570 of the 101st Congress for ***land*** under the jurisdiction of the Secretary of the Interior; (3) the guidelines set forth in House Report 96-617, accompanying H.R 5487 of the 96th Congress for ***land*** under the jurisdiction of the Secretary of ***Agriculture***; and (4) all other laws governing livestock grazing on Federal public ***land***. (d) Fish and Wildlife.-- (1) In general.--In accordance with section 4(d)(7) of the Wilderness Act (16 U.S.C 1133(d)(7)), nothing in this title affects the jurisdiction or responsibilities of the State with respect to fish and wildlife on public ***land*** in the State. (2) Management activities.--In furtherance of the purposes and principles of the Wilderness Act (16 U.S.C 1131 et seq.), the Secretary may conduct any management activities that are necessary to maintain or restore fish and wildlife populations and habitats in the wilderness areas, if the management activities are-- (A) consistent with relevant wilderness management plans; (B) conducted in accordance with appropriate policies, such as the policies established in Appendix B of House Report 101-405; and (C) in accordance with memoranda of understanding between the Federal agencies and the State Department of Fish and Wildlife. (e) Buffer Zones.-- (1) In general.--Congress does not intend for the designation of wilderness areas by this title to lead to the creation of protective perimeters or buffer zones around each wilderness area. (2) Activities or uses up to boundaries.--The fact that nonwilderness activities or uses can be seen or heard from within a wilderness area shall not, of itself, preclude the activities or uses up to the boundary of the wilderness area. (f) Military Activities.--Nothing in this title precludes-- (1) low-level overflights of military aircraft over the wilderness areas; (2) the designation of new units of special airspace over the wilderness areas; or (3) the use or establishment of military flight training routes over wilderness areas. [[Page H677]] (g) Horses.--Nothing in this title precludes horseback riding in, or the entry of recreational saddle or pack stock into, a wilderness area-- (1) in accordance with section 4(d)(5) of the Wilderness Act (16 U.S.C 1133(d)(5)); and (2) subject to any terms and conditions determined to be necessary by the Secretary. (h) Withdrawal.--Subject to valid existing rights, the wilderness areas are withdrawn from-- (1) all forms of entry, appropriation, and disposal under the public ***land*** laws; (2) location, entry, and patent under the mining laws; and (3) disposition under all laws pertaining to mineral and geothermal leasing or mineral materials. (i) Incorporation of Acquired ***Land*** and Interests.--Any ***land*** within the boundary of a wilderness area that is acquired by the United States shall-- (1) become part of the wilderness area in which the ***land*** is located; and (2) be managed in accordance with-- (A) this section; (B) the Wilderness Act (16 U.S.C 1131 et seq.); and (C) any other applicable law. (j) Treatment of Existing Water Diversions in the San Rafael Wilderness Additions.-- (1) Authorization for continued use.--The Secretary of ***Agriculture*** may issue a special use authorization to the owners of the 2 existing water transport or diversion facilities, including administrative access roads (in this subsection referred to as a ``facility''), located on National ***Forest*** System ***land*** in the San Rafael Wilderness Additions in the Moon Canyon unit (T. 11 N., R. 30 W., secs. 13 and 14) and the Peak Mountain unit (T. 10 N., R. 28 W., secs. 23 and 26) for the continued operation, maintenance, and reconstruction of the facility if the Secretary determines that-- (A) the facility was in existence on the date on which the ***land*** on which the facility is located was designated as part of the National Wilderness Preservation System (in this subsection referred to as ``the date of designation''); (B) the facility has been in substantially continuous use to deliver water for the beneficial use on the non-Federal ***land*** of the owner since the date of designation; (C) the owner of the facility holds a valid water right for use of the water on the non-Federal ***land*** of the owner under State law, with a priority date that predates the date of designation; and (D) it is not practicable or feasible to relocate the facility to ***land*** outside of the wilderness and continue the beneficial use of water on the non-Federal ***land*** recognized under State law. (2) Terms and conditions.-- (A) Required terms and conditions.--In a special use authorization issued under paragraph (1), the Secretary may-- (i) allow use of motorized equipment and mechanized transport for operation, maintenance, or reconstruction of a facility, if the Secretary determines that-- (I) the use is the minimum necessary to allow the facility to continue delivery of water to the non-Federal ***land*** for the beneficial uses recognized by the water right held under State law; and (II) the use of nonmotorized equipment and nonmechanized transport is impracticable or infeasible; and (ii) preclude use of the facility for the diversion or transport of water in excess of the water right recognized by the State on the date of designation. (B) Discretionary terms and conditions.--In a special use authorization issued under paragraph (1), the Secretary may require or allow modification or relocation of the facility in the wilderness, as the Secretary determines necessary, to reduce impacts to wilderness values set forth in section 2 of the Wilderness Act (16 U.S.C 1131) if the beneficial use of water on the non-Federal ***land*** is not diminished. (k) Treatment of Existing Electrical Distribution Line in the San Rafael Wilderness Additions.-- (1) Authorization for continued use.--The Secretary of ***Agriculture*** may issue a special use authorization to the owners of the existing electrical distribution line to the Plowshare Peak communication site (in this subsection referred to as a ``facility'') located on National ***Forest*** System ***land*** in the San Rafael Wilderness Additions in the Moon Canyon unit (T. 11 N., R. 30 W., secs. 2, 3 and 4) for the continued operation, maintenance, and reconstruction of the facility if the Secretary determines that-- (A) the facility was in existence on the date on which the ***land*** on which the facility is located was designated as part of the National Wilderness Preservation System (in this subsection referred to as ``the date of designation''); (B) the facility has been in substantially continuous use to deliver electricity to the communication site; and (C) it is not practicable or feasible to relocate the distribution line to ***land*** outside of the wilderness. (2) Terms and conditions.-- (A) Required terms and conditions.--In a special use authorization issued under paragraph (1), the Secretary may allow use of motorized equipment and mechanized transport for operation, maintenance, or reconstruction of the electrical distribution line, if the Secretary determines that the use of nonmotorized equipment and nonmechanized transport is impracticable or infeasible. (B) Discretionary terms and conditions.--In a special use authorization issued under paragraph (1), the Secretary may require or allow modification or relocation of the facility in the wilderness, as the Secretary determines necessary, to reduce impacts to wilderness values set forth in section 2 of the Wilderness Act (16 U.S.C 1131). (l) Climatological Data Collection.--In accordance with the Wilderness Act (16 U.S.C 1131 et seq.) and subject to terms and conditions as the Secretary may prescribe, the Secretary may authorize the installation and maintenance of hydrologic, meteorologic, or climatological collection devices in the wilderness areas if the Secretary determines that the facilities and access to the facilities are essential to flood warning, flood control, or water reservoir operation activities. SEC. 406. DESIGNATION OF WILD AND SCENIC RIVERS. (a) Indian Creek, Mono Creek, and Matilija Creek, California.--Section 3(a) of the Wild and Scenic Rivers Act (16 U.S.C 1274(a)) is amended by adding at the end the following: ``(231) Indian creek, california.--The following segments of Indian Creek in the State of California, to be administered by the Secretary of ***Agriculture***: ``(A) The 9.5-mile segment of Indian Creek from its source in sec. 19, T. 7 N., R. 26 W., to the Dick Smith Wilderness boundary, as a wild river. ``(B) The 1-mile segment of Indian Creek from the Dick Smith Wilderness boundary to 0.25 miles downstream of Road 6N24, as a scenic river. ``(C) The 3.9-mile segment of Indian Creek from 0.25 miles downstream of Road 6N24 to the southern boundary of sec. 32, T. 6 N., R. 26 W., as a wild river. ``(232) Mono creek, california.--The following segments of Mono Creek in the State of California, to be administered by the Secretary of ***Agriculture***: ``(A) The 4.2-mile segment of Mono Creek from its source in sec. 1, T. 7 N., R. 26 W., to 0.25 miles upstream of Don Victor Fire Road in sec. 28, T. 7 N., R. 25 W., as a wild river. ``(B) The 2.1-mile segment of Mono Creek from 0.25 miles upstream of the Don Victor Fire Road in sec. 28, T. 7 N., R. 25 W., to 0.25 miles downstream of Don Victor Fire Road in sec. 34, T. 7 N., R. 25 W., as a recreational river. ``(C) The 14.7-mile segment of Mono Creek from 0.25 miles downstream of Don Victor Fire Road in sec. 34, T. 7 N., R. 25 W., to the Ogilvy Ranch private property boundary in sec. 22, T. 6 N., R. 26 W., as a wild river. ``(D) The 3.5-mile segment of Mono Creek from the Ogilvy Ranch private property boundary to the southern boundary of sec. 33, T. 6 N., R. 26 W., as a recreational river. ``(233) Matilija creek, california.--The following segments of Matilija Creek in the State of California, to be administered by the Secretary of ***Agriculture***: ``(A) The 7.2-mile segment of the Matilija Creek from its source in sec. 25, T. 6 N., R. 25 W., to the private property boundary in sec. 9, T. 5 N., R. 24 W., as a wild river. ``(B) The 7.25-mile segment of the Upper North Fork Matilija Creek from its source in sec. 36, T. 6 N., R. 24 W., to the Matilija Wilderness boundary, as a wild river.''. (b) Sespe Creek, California.--Section 3(a) of the Wild and Scenic Rivers Act (16 U.S.C 1274(a)) is amended by striking paragraph (142) and inserting the following: ``(142) Sespe creek, california.--The following segments of Sespe Creek in the State of California, to be administered by the Secretary of ***Agriculture***: ``(A) The 2.7-mile segment of Sespe Creek from the private property boundary in sec. 10, T. 6 N., R. 24 W., to the Hartman Ranch private property boundary in sec. 14, T. 6 N., R. 24 W., as a wild river. ``(B) The 15-mile segment of Sespe Creek from the Hartman Ranch private property boundary in sec. 14, T. 6 N., R. 24 W., to the western boundary of sec. 6, T. 5 N., R. 22 W., as a recreational river. ``(C) The 6.1-mile segment of Sespe Creek from the western boundary of sec. 6, T. 5 N., R. 22 W., to the confluence with Trout Creek, as a scenic river. ``(D) The 28.6-mile segment of Sespe Creek from the confluence with Trout Creek to the southern boundary of sec. 35, T. 5 N., R. 20 W., as a wild river.''. (c) Sisquoc River, California.--Section 3(a) of the Wild and Scenic Rivers Act (16 U.S.C 1274(a)) is amended by striking paragraph (143) and inserting the following: ``(143) Sisquoc river, california.--The following segments of the Sisquoc River and its tributaries in the State of California, to be administered by the Secretary of ***Agriculture***: ``(A) The 33-mile segment of the main stem of the Sisquoc River extending from its origin downstream to the Los Padres ***Forest*** boundary, as a wild river. ``(B) The 4.2-mile segment of the South Fork Sisquoc River from its source northeast of San Rafael Mountain in sec. 2, T. 7 N., R. 28 W., to its confluence with the Sisquoc River, as a wild river. ``(C) The 10.4-mile segment of Manzana Creek from its source west of San Rafael Peak in sec. 4, T. 7 N., R. 28 W., to the San Rafael Wilderness boundary upstream of Nira Campground, as a wild river. ``(D) The 0.6-mile segment of Manzana Creek from the San Rafael Wilderness boundary upstream of the Nira Campground to the San Rafael Wilderness boundary downstream of the confluence of Davy Brown Creek, as a recreational river. ``(E) The 5.8-mile segment of Manzana Creek from the San Rafael Wilderness boundary downstream of the confluence of Davy Brown Creek to the private property boundary in sec. 1, T. 8 N., R. 30 W., as a wild river. ``(F) The 3.8-mile segment of Manzana Creek from the private property boundary in sec. 1, T. 8 N., R. 30 W., to the confluence of the Sisquoc River, as a recreational river. [[Page H678]] ``(G) The 3.4-mile segment of Davy Brown Creek from its source west of Ranger Peak in sec. 32, T. 8 N., R. 29 W., to 300 feet upstream of its confluence with Munch Canyon, as a wild river. ``(H) The 1.4-mile segment of Davy Brown Creek from 300 feet upstream of its confluence with Munch Canyon to its confluence with Manzana Creek, as a recreational river. ``(I) The 2-mile segment of Munch Canyon from its source north of Ranger Peak in sec. 33, T. 8 N., R. 29 W., to 300 feet upstream of its confluence with Sunset Valley Creek, as a wild river. ``(J) The 0.5-mile segment of Munch Canyon from 300 feet upstream of its confluence with Sunset Valley Creek to its confluence with Davy Brown Creek, as a recreational river. ``(K) The 2.6-mile segment of Fish Creek from 500 feet downstream of Sunset Valley Road to its confluence with Manzana Creek, as a wild river. ``(L) The 1.5-mile segment of East Fork Fish Creek from its source in sec. 26, T. 8 N., R. 29 W., to its confluence with Fish Creek, as a wild river.''. (d) Piru Creek, California.--Section 3(a) of the Wild and Scenic Rivers Act (16 U.S.C 1274(a)) is amended by striking paragraph (199) and inserting the following: ``(199) Piru creek, california.--The following segments of Piru Creek in the State of California, to be administered by the Secretary of ***Agriculture***: ``(A) The 9.1-mile segment of Piru Creek from its source in sec. 3, T. 6 N., R. 22 W., to the private property boundary in sec. 4, T. 6 N., R. 21 W., as a wild river. ``(B) The 17.2-mile segment of Piru Creek from the private property boundary in sec. 4, T. 6 N., R. 21 W., to 0.25 miles downstream of the Gold Hill Road, as a scenic river. ``(C) The 4.1-mile segment of Piru Creek from 0.25 miles downstream of Gold Hill Road to the confluence with Trail Canyon, as a wild river. ``(D) The 7.25-mile segment of Piru Creek from the confluence with Trail Canyon to the confluence with Buck Creek, as a scenic river. ``(E) The 3-mile segment of Piru Creek from 0.5 miles downstream of Pyramid Dam at the first bridge crossing to the boundary of the Sespe Wilderness, as a recreational river. ``(F) The 13-mile segment of Piru Creek from the boundary of the Sespe Wilderness to the boundary of the Sespe Wilderness, as a wild river. ``(G) The 2.2-mile segment of Piru Creek from the boundary of the Sespe Wilderness to the upper limit of Piru Reservoir, as a recreational river.''. (e) Effect.--The designation of additional miles of Piru Creek under subsection (d) shall not affect valid water rights in existence on the date of enactment of this Act. (f) Motorized Use of Trails.--Nothing in this section (including the amendments made by this section) affects the motorized use of trails designated by the ***Forest*** Service for motorized use that are located adjacent to and crossing upper Piru Creek, if the use is consistent with the protection and enhancement of river values under the Wild and Scenic Rivers Act (16 U.S.C 1271 et seq.). SEC. 407. DESIGNATION OF THE FOX MOUNTAIN POTENTIAL WILDERNESS. (a) Designation.--In furtherance of the purposes of the Wilderness Act (16 U.S.C 1131 et seq.), certain ***land*** in the Los Padres National ***Forest*** comprising approximately 41,082 acres, as generally depicted on the map entitled ``Fox Mountain Potential Wilderness Area'' and dated November 14, 2019, is designated as the Fox Mountain Potential Wilderness Area. (b) Map and Legal Description.-- (1) In general.--As soon as practicable after the date of enactment of this Act, the Secretary of ***Agriculture*** shall file a map and a legal description of the Fox Mountain Potential Wilderness Area (referred to in this section as the ``potential wilderness area'') with-- (A) the Committee on Energy and Natural Resources of the Senate; and (B) the Committee on Natural Resources of the House of Representatives. (2) Force of law.--The map and legal description filed under paragraph (1) shall have the same force and effect as if included in this title, except that the Secretary of ***Agriculture*** may correct any clerical and typographical errors in the map and legal description. (3) Public availability.--The map and legal description filed under paragraph (1) shall be on file and available for public inspection in the appropriate offices of the ***Forest*** Service. (c) Management.--Except as provided in subsection (d) and subject to valid existing rights, the Secretary shall manage the potential wilderness area in accordance with the Wilderness Act (16 U.S.C 1131 et seq.). (d) Trail Use Construction, Reconstruction, and Realignment.-- (1) In general.--In accordance with paragraph (2), the Secretary of ***Agriculture*** may-- (A) construct a new trail for use by hikers, equestrians, and mechanized vehicles that connects the Aliso Park Campground to the Bull Ridge Trail; and (B) reconstruct or realign-- (i) the Bull Ridge Trail; and (ii) the Rocky Ridge Trail. (2) Requirement.--In carrying out the construction, reconstruction, or alignment under paragraph (1), the Secretary shall-- (A) comply with all existing laws (including regulations); and (B) to the maximum extent practicable, use the minimum tool or administrative practice necessary to accomplish the construction, reconstruction, or alignment with the least amount of adverse impact on wilderness character and resources. (3) Motorized vehicles and machinery.--In accordance with paragraph (2), the Secretary may use motorized vehicles and machinery to carry out the trail construction, reconstruction, or realignment authorized by this subsection. (4) Mechanized vehicles.--The Secretary may permit the use of mechanized vehicles on the existing Bull Ridge Trail and Rocky Ridge Trail in accordance with existing law (including regulations) and this subsection until such date as the potential wilderness area is designated as wilderness in accordance with subsection (h). (e) Withdrawal.--Subject to valid existing rights, the Federal ***land*** in the potential wilderness area is withdrawn from all forms of-- (1) entry, appropriation, or disposal under the public ***land*** laws; (2) location, entry, and patent under the mining laws; and (3) disposition under all laws pertaining to mineral and geothermal leasing or mineral materials. (f) Cooperative Agreements.--In carrying out this section, the Secretary may enter into cooperative agreements with State, Tribal, and local governmental entities and private entities to complete the trail construction, reconstruction, and realignment authorized by subsection (d). (g) Boundaries.--The Secretary shall modify the boundary of the potential wilderness area to exclude any area within 50 feet of the centerline of the new location of any trail that has been constructed, reconstructed, or realigned under subsection (d). (h) Wilderness Designation.-- (1) In general.--The potential wilderness area, as modified under subsection (g), shall be designated as wilderness and as a component of the National Wilderness Preservation System on the earlier of-- (A) the date on which the Secretary publishes in the Federal Register notice that the trail construction, reconstruction, or alignment authorized by subsection (d) has been completed; or (B) the date that is 20 years after the date of enactment of this Act. (2) Administration of wilderness.--On designation as wilderness under this section, the potential wilderness area shall be-- (A) incorporated into the San Rafael Wilderness, as designated by Public Law 90-271 (82 Stat. 51), the California Wilderness Act of 1984 (Public Law 98-425; 16 U.S.C 1132 note), and the Los Padres Condor Range and River Protection Act (Public Law 102-301; 106 Stat. 242), and section 403; and (B) administered in accordance with section 405 and the Wilderness Act (16 U.S.C 1131 et seq.). SEC. 408. DESIGNATION OF SCENIC AREAS. (a) In General.--Subject to valid existing rights, there are established the following scenic areas: (1) Condor ridge scenic area.--Certain ***land*** in the Los Padres National ***Forest*** comprising approximately 18,666 acres, as generally depicted on the map entitled ``Condor Ridge Scenic Area--Proposed'' and dated March 29, 2019, which shall be known as the ``Condor Ridge Scenic Area''. (2) Black mountain scenic area.--Certain ***land*** in the Los Padres National ***Forest*** and the Bakersfield Field Office of the Bureau of ***Land*** Management comprising approximately 16,216 acres, as generally depicted on the map entitled ``Black Mountain Scenic Area--Proposed'' and dated March 29, 2019, which shall be known as the ``Black Mountain Scenic Area''. (b) Maps and Legal Descriptions.-- (1) In general.--As soon as practicable after the date of enactment of this Act, the Secretary of ***Agriculture*** shall file a map and legal description of the Condor Ridge Scenic Area and Black Mountain Scenic Area with-- (A) the Committee on Energy and Natural Resources of the Senate; and (B) the Committee on Natural Resources of the House of Representatives. (2) Force of law.--The maps and legal descriptions filed under paragraph (1) shall have the same force and effect as if included in this title, except that the Secretary of ***Agriculture*** may correct any clerical and typographical errors in the maps and legal descriptions. (3) Public availability.--The maps and legal descriptions filed under paragraph (1) shall be on file and available for public inspection in the appropriate offices of the ***Forest*** Service and Bureau of ***Land*** Management. (c) Purpose.--The purpose of the scenic areas is to conserve, protect, and enhance for the benefit and enjoyment of present and future generations the ecological, scenic, wildlife, recreational, cultural, historical, natural, educational, and scientific resources of the scenic areas. (d) Management.-- (1) In general.--The Secretary shall administer the scenic areas-- (A) in a manner that conserves, protects, and enhances the resources of the scenic areas, and in particular the scenic character attributes of the scenic areas; and (B) in accordance with-- (i) this section; (ii) the Federal ***Land*** Policy and Management Act (43 U.S.C 1701 et seq.) for ***land*** under the jurisdiction of the Secretary of the Interior; (iii) any laws (including regulations) relating to the National ***Forest*** System, for ***land*** under the jurisdiction of the Secretary of ***Agriculture***; and (iv) any other applicable law (including regulations). (2) Uses.--The Secretary shall only allow those uses of the scenic areas that the Secretary determines would further the purposes described in subsection (c). (e) Withdrawal.--Subject to valid existing rights, the Federal ***land*** in the scenic areas is withdrawn from all forms of-- [[Page H679]] (1) entry, appropriation, or disposal under the public ***land*** laws; (2) location, entry, and patent under the mining laws; and (3) disposition under all laws pertaining to mineral and geothermal leasing or mineral materials. (f) Prohibited Uses.--The following shall be prohibited on the Federal ***land*** within the scenic areas: (1) Permanent roads. (2) Permanent structures. (3) Timber harvesting except when necessary for the purposes described in subsection (g). (4) Transmission lines. (5) Except as necessary to meet the minimum requirements for the administration of the scenic areas and to protect public health and safety-- (A) the use of motorized vehicles; or (B) the establishment of temporary roads. (6) Commercial enterprises, except as necessary for realizing the purposes of the scenic areas. (g) Wildfire, Insect, and Disease Management.--Consistent with this section, the Secretary may take any measures in the scenic areas that the Secretary determines to be necessary to control fire, insects, and diseases, including, as the Secretary determines to be appropriate, the coordination of those activities with the State or a local agency. (h) Adjacent Management.--The fact that an otherwise authorized activity or use can be seen or heard within a scenic area shall not preclude the activity or use outside the boundary of the scenic area. SEC. 409. CONDOR NATIONAL SCENIC TRAIL. (a) In General.--The contiguous trail established pursuant to this section shall be known as the ``Condor National Scenic Trail'' named after the California condor, a critically endangered bird species that lives along the extent of the trail corridor. (b) Purpose.--The purposes of the Condor National Scenic Trail are to-- (1) provide a continual extended hiking corridor that connects the southern and northern portions of the Los Padres National ***Forest***, spanning the entire length of the ***forest*** along the coastal mountains of southern and central California; and (2) provide for the public enjoyment of the nationally significant scenic, historic, natural, and cultural qualities of the Los Padres National ***Forest***. (c) Amendment.--Section 5(a) of the National Trails System Act (16 U.S.C 1244(a)) is amended by adding at the end the following: ``(31) Condor national scenic trail.-- ``(A) In general.--The Condor National Scenic Trail, a trail extending approximately 400 miles from Lake Piru in the southern portion of the Los Padres National ***Forest*** to the Bottchers Gap Campground in northern portion of the Los Padres National ***Forest***. ``(B) Administration.--The trail shall be administered by the Secretary of ***Agriculture***, in consultation with-- ``(i) other Federal, State, Tribal, regional, and local agencies; ``(ii) private landowners; and ``(iii) other interested organizations. ``(C) Recreational uses.--Notwithstanding section 7(c), the use of motorized vehicles on roads or trails included in the Condor National Scenic Trail on which motorized vehicles are permitted as of the date of enactment of this paragraph may be permitted. ``(D) Private property rights.-- ``(i) Prohibition.--The Secretary shall not acquire for the trail any ***land*** or interest in ***land*** outside the exterior boundary of any federally managed area without the consent of the owner of ***land*** or interest in ***land***. ``(ii) Effect.--Nothing in this paragraph-- ``(I) requires any private property owner to allow public access (including Federal, State, or local government access) to private property; or ``(II) modifies any provision of Federal, State, or local law with respect to public access to or use of private ***land***. ``(E) Realignment.--The Secretary of ***Agriculture*** may realign segments of the Condor National Scenic Trail as necessary to fulfill the purposes of the trail. ``(F) Map.--The map referred to in subparagraph (A) shall be on file and available for public inspection in the appropriate offices of the ***Forest*** Service.''. (d) Study.-- (1) Study required.--Not later than 3 years after the date of enactment of this Act, in accordance with this section, the Secretary of ***Agriculture*** shall conduct a study that-- (A) addresses the feasibility of, and alternatives for, connecting the northern and southern portions of the Los Padres National ***Forest*** by establishing a trail across the applicable portions of the northern and southern Santa Lucia Mountains of the southern California Coastal Range; and (B) considers realignment of the trail or construction of new trail segments to avoid existing trail segments that currently allow motorized vehicles. (2) Contents.--In carrying out the study required by paragraph (1), the Secretary of ***Agriculture*** shall-- (A) conform to the requirements for national scenic trail studies described in section 5(b) of the National Trails System Act (16 U.S.C 1244(b)); (B) provide for a continual hiking route through and connecting the southern and northern sections of the Los Padres National ***Forest***; (C) promote recreational, scenic, wilderness and cultural values; (D) enhance connectivity with the overall National ***Forest*** trail system; (E) consider new connectors and realignment of existing trails; (F) emphasize safe and continuous public access, dispersal from high-use areas, and suitable water sources; and (G) to the extent practicable, provide all-year use. (3) Additional requirement.--In completing the study required by paragraph (1), the Secretary of ***Agriculture*** shall consult with-- (A) appropriate Federal, State, Tribal, regional, and local agencies; (B) private landowners; (C) nongovernmental organizations; and (D) members of the public. (4) Submission.--The Secretary of ***Agriculture*** shall submit the study required by paragraph (1) to-- (A) the Committee on Natural Resources of the House of Representatives; and (B) the Committee on Energy and Natural Resources of the Senate. (5) Additions and alterations to the condor national scenic trail.-- (A) In general.--Upon completion of the study required by paragraph (1), if the Secretary of ***Agriculture*** determines that additional or alternative trail segments are feasible for inclusion in the Condor National Scenic Trail, the Secretary of ***Agriculture*** shall include those segments in the Condor National Scenic Trail. (B) Effective date.--Additions or alternations to the Condor National Scenic Trail shall be effective on the date the Secretary of ***Agriculture*** publishes in the Federal Register notice that the additional or alternative segments are included in the Condor National Scenic Trail. (e) Cooperative Agreements.--In carrying out this section (including the amendments made by this section), the Secretary of ***Agriculture*** may enter into cooperative agreements with State, Tribal, and local government entities and private entities to complete needed trail construction, reconstruction, and realignment projects authorized by this section (including the amendments made by this section). SEC. 410. ***FOREST*** SERVICE STUDY. Not later than 6 years after the date of enactment of this Act, the Secretary of ***Agriculture*** (acting through the Chief of the ***Forest*** Service) shall study the feasibility of opening a new trail, for vehicles measuring 50 inches or less, connecting ***Forest*** Service Highway 95 to the existing off- highway vehicle trail system in the Ballinger Canyon off- highway vehicle area. SEC. 411. NONMOTORIZED RECREATION OPPORTUNITIES. Not later than 6 years after the date of enactment of this Act, the Secretary of ***Agriculture***, in consultation with interested parties, shall conduct a study to improve nonmotorized recreation trail opportunities (including mountain bicycling) on ***land*** not designated as wilderness within the Santa Barbara, Ojai, and Mt. Pinos ranger districts. SEC. 412. USE BY MEMBERS OF TRIBES. (a) Access.--The Secretary shall ensure that Tribes have access, in accordance with the Wilderness Act (16 U.S.C 1131 et seq.), to the wilderness areas, scenic areas, and potential wilderness areas designated by this title for traditional cultural and religious purposes. (b) Temporary Closures.-- (1) In general.--In carrying out this section, the Secretary, on request of a Tribe, may temporarily close to the general public one or more specific portions of a wilderness area, scenic area, or potential wilderness area designated by this title to protect the privacy of the members of the Tribe in the conduct of traditional cultural and religious activities. (2) Requirement.--Any closure under paragraph (1) shall be-- (A) made in such a manner as to affect the smallest practicable area for the minimum period of time necessary for the activity to be carried out; and (B) be consistent with the purpose and intent of Public Law 95-341 (commonly known as the American Indian Religious Freedom Act) (42 U.S.C 1996) and the Wilderness Act (16 U.S.C 1131 et seq.). TITLE V--SAN GABRIEL MOUNTAINS FOOTHILLS AND RIVERS PROTECTION SEC. 501. SHORT TITLE. This title may be cited as the ``San Gabriel Mountains Foothills and Rivers Protection Act''. SEC. 502. DEFINITION OF STATE. In this title, the term ``State'' means the State of California. Subtitle A--San Gabriel National Recreation Area SEC. 511. PURPOSES. The purposes of this subtitle are-- (1) to conserve, protect, and enhance for the benefit and enjoyment of present and future generations the ecological, scenic, wildlife, recreational, cultural, historical, natural, educational, and scientific resources of the Recreation Area; (2) to provide environmentally responsible, well-managed recreational opportunities within the Recreation Area; (3) to improve access to and from the Recreation Area; (4) to provide expanded educational and interpretive services to increase public understanding of, and appreciation for, the natural and cultural resources of the Recreation Area; (5) to facilitate the cooperative management of the ***land*** and resources within the Recreation Area, in collaboration with the State and political subdivisions of the State, historical, business, cultural, civic, recreational, tourism and other nongovernmental organizations, and the public; and (6) to allow the continued use of the Recreation Area by all individuals, entities, and local government agencies in activities relating to integrated water management, flood protection, water conservation, water quality, water rights, [[Page H680]] water supply, groundwater recharge and monitoring, wastewater treatment, public roads and bridges, and utilities within or adjacent to the Recreation Area. SEC. 512. DEFINITIONS. In this subtitle: (1) Adjudication.--The term ``adjudication'' means any final judgment, order, ruling, or decree entered in any judicial proceeding adjudicating or affecting water rights, surface water management, or groundwater management. (2) Advisory council.--The term ``Advisory Council'' means the San Gabriel National Recreation Area Public Advisory Council established under section 517(a). (3) Federal ***lands***.--The term ``Federal ***lands***'' means-- (A) public ***lands*** under the jurisdiction of the Secretary of the Interior; and (B) ***lands*** under the jurisdiction of the Secretary of Defense, acting through the Chief of Engineers. (4) Management plan.--The term ``management plan'' means the management plan for the Recreation Area required under section 514(d). (5) Partnership.--The term ``Partnership'' means the San Gabriel National Recreation Area Partnership established by section 518(a). (6) Public water system.--The term ``public water system'' has the meaning given the term in 42 U.S.C 300(f)(4) or in section 116275 of the California Health and Safety Code. (6) Recreation area.--The term ``Recreation Area'' means the San Gabriel National Recreation Area established by section 513(a). (7) Secretary.--The term ``Secretary'' means the Secretary of the Interior. (8) Utility facility.--The term ``utility facility'' means-- (A) any electric substations, communication facilities, towers, poles, and lines, ground wires, communication circuits, and other structures, and related infrastructure; and (B) any such facilities associated with a public water system. (9) Water resource facility.--The term ``water resource facility'' means irrigation and pumping facilities, dams and reservoirs, flood control facilities, water conservation works, including debris protection facilities, sediment placement sites, rain gauges and stream gauges, water quality facilities, recycled water facilities, water pumping, conveyance and distribution systems, water storage tanks and reservoirs, and water treatment facilities, aqueducts, canals, ditches, pipelines, wells, hydropower projects, and transmission and other ancillary facilities, groundwater recharge facilities, water conservation, water filtration plants, and other water diversion, conservation, groundwater recharge, storage, and carriage structures. SEC. 513. SAN GABRIEL NATIONAL RECREATION AREA. (a) Establishment; Boundaries.--Subject to valid existing rights, there is established as a unit of the National Park System in the State the San Gabriel National Recreation Area depicted as the ``Proposed San Gabriel National Recreation Area'' on the map entitled ``San Gabriel National Recreation Area Proposed Boundary,'' numbered 503/152,737, and dated July 2019. (b) Map and Legal Description.-- (1) In general.--As soon as practicable after the date of the enactment of this Act, the Secretary shall file a map and a legal description of the Recreation Area with-- (A) the Committee on Energy and Natural Resources of the Senate; and (B) the Committee on Natural Resources of the House of Representatives. (2) Force of law.--The map and legal description filed under paragraph (1) shall have the same force and effect as if included in this title, except that the Secretary may correct any clerical or typographical error in the map or legal description. (3) Public availability.--The map and legal description filed under paragraph (1) shall be on file and available for public inspection in the appropriate offices of the National Park Service. (c) Administration and Jurisdiction.-- (1) Public ***lands***.--The public ***lands*** included in the Recreation Area shall be administered by the Secretary, acting through the Director of the National Park Service. (2) Department of defense ***land***.--Although certain Federal ***lands*** under the jurisdiction of the Secretary of Defense are included in the recreation area, nothing in this subtitle transfers administration jurisdiction of such Federal ***lands*** from the Secretary of Defense or otherwise affects Federal ***lands*** under the jurisdiction of the Secretary of Defense. (3) State and local jurisdiction.--Nothing in this subtitle alters, modifies, or diminishes any right, responsibility, power, authority, jurisdiction, or entitlement of the State, a political subdivision of the State, including, but not limited to courts of competent jurisdiction, regulatory commissions, boards, and departments, or any State or local agency under any applicable Federal, State, or local law (including regulations). SEC. 514. MANAGEMENT. (a) National Park System.--Subject to valid existing rights, the Secretary shall manage the public ***lands*** included in the Recreation Area in a manner that protects and enhances the natural resources and values of the public ***lands***, in accordance with-- (1) this subtitle; (2) section 100101(a), chapter 1003, and sections 100751(a), 100752, 100753 and 102101 of title 54, United States Code (formerly known as the ``National Park Service Organic Act''); (3) the laws generally applicable to units of the National Park System; and (4) other applicable law, regulations, adjudications, and orders. (b) Cooperation With Secretary of Defense.--The Secretary shall cooperate with the Secretary of Defense to develop opportunities for the management of the Federal ***land*** under the jurisdiction of the Secretary of Defense included in the Recreation Area in accordance with the purposes described in section 511, to the maximum extent practicable. (c) Treatment of Non-federal ***Land***.-- (1) In general.--Nothing in this subtitle-- (A) authorizes the Secretary to take any action that would affect the use of any ***land*** not owned by the United States within the Recreation Area; (B) affects the use of, or access to, any non-Federal ***land*** within the Recreation Area; (C) modifies any provision of Federal, State, or local law with respect to public access to, or use of, non-Federal ***land***; (D) requires any owner of non-Federal ***land*** to allow public access (including Federal, State, or local government access) to private property or any other non-Federal ***land***; (E) alters any duly adopted ***land*** use regulation, approved ***land*** use plan, or any other regulatory authority of any State or local agency or unit of Tribal government; (F) creates any liability, or affects any liability under any other law, of any private property owner or other owner of non-Federal ***land*** with respect to any person injured on the private property or other non-Federal ***land***; (G) conveys to the Partnership any ***land*** use or other regulatory authority; (H) shall be construed to cause any Federal, State, or local regulation or permit requirement intended to apply to units of the National Park System to affect the federal ***lands*** under the jurisdiction of the Secretary of Defense or non- Federal ***lands*** within the boundaries of the recreation area; or (I) requires any local government to participate in any program administered by the Secretary. (2) Cooperation.--The Secretary is encouraged to work with owners of non-Federal ***land*** who have agreed to cooperate with the Secretary to advance the purposes of this subtitle. (3) Buffer zones.-- (A) In general.--Nothing in this subtitle establishes any protective perimeter or buffer zone around the Recreation Area. (B) Activities or uses up to boundaries.--The fact that an activity or use of ***land*** can be seen or heard from within the Recreation Area shall not preclude the activity or ***land*** use up to the boundary of the Recreation Area. (4) Facilities.--Nothing in this subtitle affects the operation, maintenance, modification, construction, destruction, ***removal***, relocation, improvement or expansion of any water resource facility or public water system, or any solid waste, sanitary sewer, water or waste-water treatment, groundwater recharge or conservation, hydroelectric, conveyance distribution system, recycled water facility, or utility facility located within or adjacent to the Recreation Area. (5) Exemption.--Section 100903 of title 54, United States Code, shall not apply to the Puente Hills landfill, materials recovery facility, or intermodal facility. (d) Management Plan.-- (1) Deadline.--Not later than 3 years after the date of the enactment of this Act, the Secretary and the Advisory Council shall establish a comprehensive management plan for the Recreation Area that supports the purposes described in section 511. (2) Use of existing plans.--In developing the management plan, to the extent consistent with this section, the Secretary may incorporate any provision of a ***land*** use or other plan applicable to the public ***lands*** included in the Recreation Area. (3) Incorporation of visitor services plan.--To the maximum extent practicable, the Secretary shall incorporate into the management plan the visitor services plan under section 519(a)(2). (4) Partnership.--In developing the management plan, the Secretary shall consider recommendations of the Partnership. To the maximum extent practicable, the Secretary shall incorporate recommendations of the Partnership into the management plan if the Secretary determines that the recommendations are feasible and consistent with the purposes in section 511, this subtitle, and applicable laws (including regulations). (e) Fish and Wildlife.--Nothing in this subtitle affects the jurisdiction of the State with respect to fish or wildlife located on public ***lands*** in the State. SEC. 515. ACQUISITION OF NON-FEDERAL ***LAND*** WITHIN RECREATION AREA. (a) Limited Acquisition Authority.-- (1) In general.--Subject to paragraph (2), the Secretary may acquire non-Federal ***land*** within the boundaries of the Recreation Area only through exchange, donation, or purchase from a willing seller. (2) Additional requirement.--As a further condition on the acquisition of ***land***, the Secretary shall make a determination that the ***land*** contains important biological, cultural, historic, or recreational values. (b) Prohibition on Use of Eminent Domain.--Nothing in this subtitle authorizes the use of eminent domain to acquire ***land*** or an interest in ***land***. (c) Treatment of Acquired ***Land***.--Any ***land*** or interest in ***land*** acquired by the United States within the boundaries of the Recreation Area shall be-- (1) included in the Recreation Area; and (2) administered by the Secretary in accordance with-- (A) this subtitle; and (B) other applicable laws (including regulations). SEC. 516. WATER RIGHTS; WATER RESOURCE FACILITIES; PUBLIC ROADS; UTILITY FACILITIES. (a) No Effect on Water Rights.--Nothing in this subtitle or section 522-- [[Page H681]] (1) shall affect the use or allocation, as in existence on the date of the enactment of this Act, of any water, water right, or interest in water (including potable, recycled, reclaimed, waste, imported, exported, banked, or stored water, surface water, groundwater, and public trust interest); (2) shall affect any public or private contract in existence on the date of the enactment of this Act for the sale, lease, loan, or transfer of any water (including potable, recycled, reclaimed, waste, imported, exported, banked, or stored water, surface water, and groundwater); (3) shall be considered to be a relinquishment or reduction of any water rights reserved or appropriated by the United States in the State on or before the date of the enactment of this Act; (4) authorizes or imposes any new reserved Federal water right or expands water usage pursuant to any existing Federal reserved, riparian or appropriative right; (5) shall be considered a relinquishment or reduction of any water rights (including potable, recycled, reclaimed, waste, imported, exported, banked, or stored water, surface water, and groundwater) held, reserved, or appropriated by any public entity or other persons or entities, on or before the date of the enactment of this Act; (6) shall be construed to, or shall interfere or conflict with the exercise of the powers or duties of any watermaster, public agency, public water system, court of competent jurisdiction, or other body or entity responsible for groundwater or surface water management or groundwater replenishment as designated or established pursuant to any adjudication or Federal or State law, including the management of the San Gabriel River watershed and basin, to provide water supply or other environmental benefits; (7) shall be construed to impede or adversely impact any previously adopted Los Angeles County Drainage Area project, as described in the report of the Chief of Engineers dated June 30, 1992, including any supplement or addendum to that report, or any maintenance agreement to operate that project; (8) shall interfere or conflict with any action by a watermaster, water agency, public water system, court of competent jurisdiction, or public agency pursuant to any Federal or State law, water right, or adjudication, including any action relating to water conservation, water quality, surface water diversion or impoundment, groundwater recharge, water treatment, conservation or storage of water, pollution, waste discharge, the pumping of groundwater; the spreading, injection, pumping, storage, or the use of water from local sources, storm water flows, and runoff, or from imported or recycled water, that is undertaken in connection with the management or regulation of the San Gabriel River; (9) shall interfere with, obstruct, hinder, or delay the exercise of, or access to, any water right by the owner of a public water system or any other individual or entity, including the construction, operation, maintenance, replacement, ***removal***, repair, location, or relocation of any well; pipeline; or water pumping, treatment, diversion, impoundment, or storage facility; or other facility or property necessary or useful to access any water right or operate an public water system; (10) shall require the initiation or reinitiation of consultation with the United States Fish and Wildlife Service under, or the application of any provision of, the Endangered Species Act of 1973 (16 U.S.C 1531 et seq.) relating to any action affecting any water, water right, or water management or water resource facility in the San Gabriel River watershed and basin; or (11) authorizes any agency or employee of the United States, or any other person, to take any action inconsistent with any of paragraphs (1) through (10). (b) Water Resource Facilities.-- (1) No effect on existing water resource facilities.-- Nothing in this subtitle or section 522 shall affect-- (A) the use, operation, maintenance, repair, construction, destruction, ***removal***, reconfiguration, expansion, improvement or replacement of a water resource facility or public water system within or adjacent to the Recreation Area or San Gabriel Mountains National Monument; or (B) access to a water resource facility within or adjacent to the Recreation Area or San Gabriel Mountains National Monument. (2) No effect on new water resource facilities.--Nothing in this subtitle or section 522 shall preclude the establishment of a new water resource facility (including instream sites, routes, and areas) within the Recreation Area or San Gabriel Mountains National Monument if the water resource facility or public water system is necessary to preserve or enhance the health, safety, reliability, quality or accessibility of water supply, or utility services to residents of Los Angeles County. (3) Flood control.--Nothing in this subtitle or section 522 shall be construed to-- (A) impose any new restriction or requirement on flood protection, water conservation, water supply, groundwater recharge, water transfers, or water quality operations and maintenance; or (B) increase the liability of an agency or public water system carrying out flood protection, water conservation, water supply, groundwater recharge, water transfers, or water quality operations. (4) Diversion or use of water.--Nothing in this subtitle or section 522 shall authorize or require the use of water or water rights in, or the diversion of water to, the Recreation Area or San Gabriel Mountains National Monument. (c) Utility Facilities and Rights of Way.--Nothing in this subtitle or section 522 shall-- (1) affect the use, operation, maintenance, repair, construction, destruction, reconfiguration, expansion, inspection, renewal, reconstruction, alteration, addition, relocation, improvement, ***removal***, or replacement of a utility facility or appurtenant right-of-way within or adjacent to the Recreation Area or San Gabriel Mountains National Monument; (2) affect access to a utility facility or right-of-way within or adjacent to the Recreation Area or San Gabriel Mountains National Monument; or (3) preclude the establishment of a new utility facility or right-of-way (including instream sites, routes, and areas) within the Recreation Area or San Gabriel Mountains National Monument if such a facility or right-of-way is necessary for public health and safety, electricity supply, or other utility services. (d) Roads; Public Transit.-- (1) Definitions.--In this subsection: (A) Public road.--The term ``public road'' means any paved road or bridge (including any appurtenant structure and right-of-way) that is-- (i) operated or maintained by a non-Federal entity; and (ii)(I) open to vehicular use by the public; or (II) used by a public agency or utility for the operation, maintenance, improvement, repair, ***removal***, relocation, construction, destruction or rehabilitation of infrastructure, a utility facility, or a right-of-way. (B) Public transit.--The term ``public transit'' means any transit service (including operations and rights-of-way) that is-- (i) operated or maintained by a non-Federal entity; and (ii)(I) open to the public; or (II) used by a public agency or contractor for the operation, maintenance, repair, construction, or rehabilitation of infrastructure, a utility facility, or a right-of-way. (2) No effect on public roads or public transit.--Nothing in this subtitle or section 522-- (A) authorizes the Secretary to take any action that would affect the operation, maintenance, repair, or rehabilitation of public roads or public transit (including activities necessary to comply with Federal or State safety or public transit standards); or (B) creates any new liability, or increases any existing liability, of an owner or operator of a public road. SEC. 517. SAN GABRIEL NATIONAL RECREATION AREA PUBLIC ADVISORY COUNCIL. (a) Establishment.--Not later than 180 days after the date of the enactment of this Act, the Secretary shall establish an advisory council, to be known as the ``San Gabriel National Recreation Area Public Advisory Council''. (b) Duties.--The Advisory Council shall advise the Secretary regarding the development and implementation of the management plan and the visitor services plan. (c) Applicable Law.--The Advisory Council shall be subject to-- (1) the Federal Advisory Committee Act (5 U.S.C App.); and (2) all other applicable laws (including regulations). (d) Membership.--The Advisory Council shall consist of 22 members, to be appointed by the Secretary after taking into consideration recommendations of the Partnership, of whom-- (1) 2 shall represent local, regional, or national environmental organizations; (2) 2 shall represent the interests of outdoor recreation, including off-highway vehicle recreation, within the Recreation Area; (3) 2 shall represent the interests of community-based organizations, the missions of which include expanding access to the outdoors; (4) 2 shall represent business interests; (5) 1 shall represent Indian Tribes within or adjacent to the Recreation Area; (6) 1 shall represent the interests of homeowners' associations within the Recreation Area; (7) 3 shall represent the interests of holders of adjudicated water rights, public water systems, water agencies, wastewater and sewer agencies, recycled water facilities, and water management and replenishment entities; (8) 1 shall represent energy and mineral development interests; (9) 1 shall represent owners of Federal grazing permits or other ***land*** use permits within the Recreation Area; (10) 1 shall represent archaeological and historical interests; (11) 1 shall represent the interests of environmental educators; (12) 1 shall represent cultural history interests; (13) 1 shall represent environmental justice interests; (14) 1 shall represent electrical utility interests; and (15) 2 shall represent the affected public at large. (e) Terms.-- (1) Staggered terms.--A member of the Advisory Council shall be appointed for a term of 3 years, except that, of the members first appointed, 7 of the members shall be appointed for a term of 1 year and 7 of the members shall be appointed for a term of 2 years. (2) Reappointment.--A member may be reappointed to serve on the Advisory Council on the expiration of the term of service of the member. (3) Vacancy.--A vacancy on the Advisory Council shall be filled in the same manner in which the original appointment was made. (f) Quorum.--A quorum shall be ten members of the advisory council. The operations of the advisory council shall not be impaired by the fact that a member has not yet been appointed as long as a quorum has been attained. (g) Chairperson; Procedures.--The Advisory Council shall elect a chairperson and establish such rules and procedures as the advisory council considers necessary or desirable. (h) Service Without Compensation.--Members of the Advisory Council shall serve without pay. [[Page H682]] (i) Termination.--The Advisory Council shall cease to exist-- (1) on the date that is 5 years after the date on which the management plan is adopted by the Secretary; or (2) on such later date as the Secretary considers to be appropriate. SEC. 518. SAN GABRIEL NATIONAL RECREATION AREA PARTNERSHIP. (a) Establishment.--There is established a Partnership, to be known as the ``San Gabriel National Recreation Area Partnership''. (b) Purposes.--The purposes of the Partnership are to-- (1) coordinate the activities of Federal, State, Tribal, and local authorities and the private sector in advancing the purposes of this subtitle; and (2) use the resources and expertise of each agency in improving management and recreational opportunities within the Recreation Area. (c) Membership.--The Partnership shall include the following: (1) The Secretary (or a designee) to represent the National Park Service. (2) The Secretary of Defense (or a designee) to represent the Corps of Engineers. (3) The Secretary of ***Agriculture*** (or a designee) to represent the ***Forest*** Service. (4) The Secretary of the Natural Resources Agency of the State (or a designee) to represent-- (A) the California Department of Parks and Recreation; and (B) the Rivers and Mountains Conservancy. (5) 1 designee of the Los Angeles County Board of Supervisors. (6) 1 designee of the Puente Hills Habitat Preservation Authority. (7) 4 designees of the San Gabriel Council of Governments, of whom 1 shall be selected from a local ***land*** conservancy. (8) 1 designee of the San Gabriel Valley Economic Partnership. (9) 1 designee of the Los Angeles County Flood Control District. (10) 1 designee of the San Gabriel Valley Water Association. (11) 1 designee of the Central Basin Water Association. (12) 1 designee of the Main San Gabriel Basin Watermaster. (13) 1 designee of a public utility company, to be appointed by the Secretary. (14) 1 designee of the Watershed Conservation Authority. (15) 1 designee of the Advisory Council for the period during which the Advisory Council remains in effect. (16) 1 designee of San Gabriel Mountains National Monument Community Collaborative. (d) Duties.--To advance the purposes described in section 511, the Partnership shall-- (1) make recommendations to the Secretary regarding the development and implementation of the management plan; (2) review and comment on the visitor services plan under section 519(a)(2), and facilitate the implementation of that plan; (3) assist units of local government, regional planning organizations, and nonprofit organizations in advancing the purposes of the Recreation Area by-- (A) carrying out programs and projects that recognize, protect, and enhance important resource values within the Recreation Area; (B) establishing and maintaining interpretive exhibits and programs within the Recreation Area; (C) developing recreational and educational opportunities in the Recreation Area in accordance with the purposes of this subtitle; (D) increasing public awareness of, and appreciation for, natural, historic, scenic, and cultural resources of the Recreation Area; (E) ensuring that signs identifying points of public access and sites of interest are posted throughout the Recreation Area; (F) promoting a wide range of partnerships among governments, organizations, and individuals to advance the purposes of the Recreation Area; and (G) ensuring that management of the Recreation Area takes into consideration-- (i) local ordinances and ***land***-use plans; and (ii) adjacent residents and property owners; (4) make recommendations to the Secretary regarding the appointment of members to the Advisory Council; and (5) carry out any other actions necessary to achieve the purposes of this subtitle. (e) Authorities.--Subject to approval by the Secretary, for the purposes of preparing and implementing the management plan, the Partnership may use Federal funds made available under this section-- (1) to make grants to the State, political subdivisions of the State, nonprofit organizations, and other persons; (2) to enter into cooperative agreements with, or provide grants or technical assistance to, the State, political subdivisions of the State, nonprofit organizations, Federal agencies, and other interested parties; (3) to hire and compensate staff; (4) to obtain funds or services from any source, including funds and services provided under any other Federal law or program; (5) to contract for goods or services; and (6) to support activities of partners and any other activities that-- (A) advance the purposes of the Recreation Area; and (B) are in accordance with the management plan. (f) Terms of Office; Reappointment; Vacancies.-- (1) Terms.--A member of the Partnership shall be appointed for a term of 3 years. (2) Reappointment.--A member may be reappointed to serve on the Partnership on the expiration of the term of service of the member. (3) Vacancy.--A vacancy on the Partnership shall be filled in the same manner in which the original appointment was made. (g) Quorum.--A quorum shall be eleven members of the Partnership. The operations of the Partnership shall not be impaired by the fact that a member has not yet been appointed as long as a quorum has been attained. (h) Chairperson; Procedures.--The Partnership shall elect a chairperson and establish such rules and procedures as it deems necessary or desirable. (i) Service Without Compensation.--A member of the Partnership shall serve without compensation. (j) Duties and Authorities of Secretary.-- (1) In general.--The Secretary shall convene the Partnership on a regular basis to carry out this subtitle. (2) Technical and financial assistance.--The Secretary may provide to the Partnership or any member of the Partnership, on a reimbursable or nonreimbursable basis, such technical and financial assistance as the Secretary determines to be appropriate to carry out this subtitle. (3) Cooperative agreements.--The Secretary may enter into a cooperative agreement with the Partnership, a member of the Partnership, or any other public or private entity to provide technical, financial, or other assistance to carry out this subtitle. (4) Construction of facilities on non-federal ***land***.-- (A) In general.--In order to facilitate the administration of the Recreation Area, the Secretary is authorized, subject to valid existing rights, to construct administrative or visitor use facilities on ***land*** owned by a non-profit organization, local agency, or other public entity in accordance with this title and applicable law (including regulations). (B) Additional requirements.--A facility under this paragraph may only be developed-- (i) with the consent of the owner of the non-Federal ***land***; and (ii) in accordance with applicable Federal, State, and local laws (including regulations) and plans. (5) Priority.--The Secretary shall give priority to actions that-- (A) conserve the significant natural, historic, cultural, and scenic resources of the Recreation Area; and (B) provide educational, interpretive, and recreational opportunities consistent with the purposes of the Recreation Area. (k) Committees.--The Partnership shall establish-- (1) a Water Technical Advisory Committee to advise the Secretary regarding water-related issues relating to the Recreation Area; and (2) a Public Safety Advisory Committee to advise the Secretary regarding public safety issues relating to the Recreation Area. SEC. 519. VISITOR SERVICES AND FACILITIES. (a) Visitor Services.-- (1) Purpose.--The purpose of this subsection is to facilitate the development of an integrated visitor services plan to improve visitor experiences in the Recreation Area through expanded recreational opportunities and increased interpretation, education, resource protection, and enforcement. (2) Visitor services plan.-- (A) In general.--Not later than 3 years after the date of the enactment of this Act, the Secretary shall develop and carry out an integrated visitor services plan for the Recreation Area in accordance with this paragraph. (B) Contents.--The visitor services plan shall-- (i) assess current and anticipated future visitation to the Recreation Area, including recreation destinations; (ii) consider the demand for various types of recreation (including hiking, picnicking, horseback riding, and the use of motorized and mechanized vehicles), as permissible and appropriate; (iii) evaluate the impacts of recreation on natural and cultural resources, water rights and water resource facilities, public roads, adjacent residents and property owners, and utilities within the Recreation Area, as well as the effectiveness of current enforcement and efforts; (iv) assess the current level of interpretive and educational services and facilities; (v) include recommendations to-- (I) expand opportunities for high-demand recreational activities, in accordance with the purposes described in section 511; (II) better manage Recreation Area resources and improve the experience of Recreation Area visitors through expanded interpretive and educational services and facilities, and improved enforcement; and (III) better manage Recreation Area resources to reduce negative impacts on the environment, ecology, and integrated water management activities in the Recreation Area; (vi) in coordination and consultation with affected owners of non-Federal ***land***, assess options to incorporate recreational opportunities on non-Federal ***land*** into the Recreation Area-- (I) in manner consistent with the purposes and uses of the non-Federal ***land***; and (II) with the consent of the non-Federal landowner; (vii) assess opportunities to provide recreational opportunities that connect with adjacent National ***Forest*** System ***land***; and (viii) be developed and carried out in accordance with applicable Federal, State, and local laws and ordinances. (C) Consultation.--In developing the visitor services plan, the Secretary shall-- (i) consult with-- (I) the Partnership; (II) the Advisory Council; (III) appropriate State and local agencies; and [[Page H683]] (IV) interested nongovernmental organizations; and (ii) involve members of the public. (b) Visitor Use Facilities.-- (1) In general.--The Secretary may construct visitor use facilities in the Recreation Area. (2) Requirements.--Each facility under paragraph (1) shall be developed in accordance with applicable Federal, State, and local-- (A) laws (including regulations); and (B) plans. (c) Donations.-- (1) In general.--The Secretary may accept and use donated funds, property, in-kind contributions, and services to carry out this subtitle. (2) Prohibition.--The Secretary may not use the authority provided by paragraph (1) to accept non-Federal ***land*** that has been acquired after the date of the enactment of this Act through the use of eminent domain. (d) Cooperative Agreements.--In carrying out this subtitle, the Secretary may make grants to, or enter into cooperative agreements with, units of State, Tribal, and local governments and private entities to conduct research, develop scientific analyses, and carry out any other initiative relating to the management of, and visitation to, the Recreation Area. Subtitle B--San Gabriel Mountains SEC. 521. DEFINITIONS. In this subtitle: (1) Secretary.--The term ``Secretary'' means the Secretary of ***Agriculture***. (2) Wilderness area or addition.--The term ``wilderness area or addition'' means any wilderness area or wilderness addition designated by section 523(a). SEC. 522. NATIONAL MONUMENT BOUNDARY MODIFICATION. (a) In General.--The San Gabriel Mountains National Monument established by Presidential Proclamation 9194 (54 U.S.C 320301 note) (referred to in this section as the ``Monument'') is modified to include the approximately 109,167 acres of additional National ***Forest*** System ***land*** depicted as the ``Proposed San Gabriel Mountains National Monument Expansion'' on the map entitled ``Proposed San Gabriel Mountains National Monument Expansion'' and dated June 26, 2019. (b) Administration.--The Secretary shall administer the San Gabriel Mountains National Monument, including the ***lands*** added by subsection (a), in accordance with-- (1) Presidential Proclamation 9194, as issued on October 10, 2014 (54 U.S.C 320301 note); (2) the laws generally applicable to the Monument; and (3) this subtitle. (c) Management Plan.--Within 3 years after the date of enactment of this Act, the Secretary shall consult with State and local governments and the interested public to update the existing San Gabriel Mountains National Monument Plan to provide management direction and protection for the ***lands*** added to the Monument by subsection (a). SEC. 523. DESIGNATION OF WILDERNESS AREAS AND ADDITIONS. (a) Designation.--In accordance with the Wilderness Act (16 U.S.C 1131 et seq.), the following parcels of National ***Forest*** System ***land*** in the State are designated as wilderness and as components of the National Wilderness Preservation System: (1) Condor peak wilderness.--Certain Federal ***land*** in the Angeles National ***Forest***, comprising approximately 8,207 acres, as generally depicted on the map entitled ``Condor Peak Wilderness--Proposed'' and dated June 6, 2019, which shall be known as the ``Condor Peak Wilderness''. (2) San gabriel wilderness additions.--Certain Federal ***land*** in the Angeles National ***Forest***, comprising approximately 2,032 acres, as generally depicted on the map entitled ``San Gabriel Wilderness Additions'' and dated June 6, 2019, which is incorporated in, and considered to be a part of, the San Gabriel Wilderness designated by Public Law 90-318 (16 U.S.C 1132 note; 82 Stat. 131). (3) Sheep mountain wilderness additions.--Certain Federal ***land*** in the Angeles National ***Forest***, comprising approximately 13,726 acres, as generally depicted on the map entitled ``Sheep Mountain Wilderness Additions'' and dated June 6, 2019, which is incorporated in, and considered to be a part of, the Sheep Mountain Wilderness designated by section 101(a)(29) of the California Wilderness Act of 1984 (16 U.S.C 1132 note; 98 Stat. 1623; Public Law 98-425). (4) Yerba buena wilderness.--Certain Federal ***land*** in the Angeles National ***Forest***, comprising approximately 6,694 acres, as generally depicted on the map entitled ``Yerba Buena Wilderness--Proposed'' and dated June 6, 2019, which shall be known as the ``Yerba Buena Wilderness''. (b) Map and Legal Description.-- (1) In general.--As soon as practicable after the date of the enactment of this Act, the Secretary shall file a map and a legal description of the wilderness areas and additions with-- (A) the Committee on Energy and Natural Resources of the Senate; and (B) the Committee on Natural Resources of the House of Representatives. (2) Force of law.--The map and legal description filed under paragraph (1) shall have the same force and effect as if included in this subtitle, except that the Secretary may correct any clerical or typographical error in the map or legal description. (3) Public availability.--The map and legal description filed under paragraph (1) shall be on file and available for public inspection in the appropriate offices of the ***Forest*** Service. SEC. 524. ADMINISTRATION OF WILDERNESS AREAS AND ADDITIONS. (a) In General.--Subject to valid existing rights, the wilderness areas and additions shall be administered by the Secretary in accordance with this section and the Wilderness Act (16 U.S.C 1131 et seq.), except that any reference in that Act to the effective date of that Act shall be considered to be a reference to the date of the enactment of this Act. (b) Fire Management and Related Activities.-- (1) In general.--The Secretary may take such measures in a wilderness area or addition designated in section 523 as are necessary for the control of fire, insects, or diseases in accordance with-- (A) section 4(d)(1) of the Wilderness Act (16 U.S.C 1133(d)(1)); and (B) House Report 98-40 of the 98th Congress. (2) Funding priorities.--Nothing in this subtitle limits funding for fire or fuels management in a wilderness area or addition. (3) Revision and development of local fire management plans.--As soon as practicable after the date of the enactment of this Act, the Secretary shall amend, as applicable, any local fire management plan that applies to a wilderness area or addition designated in section 523. (4) Administration.--In accordance with paragraph (1) and any other applicable Federal law, to ensure a timely and efficient response to a fire emergency in a wilderness area or addition, the Secretary shall-- (A) not later than 1 year after the date of the enactment of this Act, establish agency approval procedures (including appropriate delegations of authority to the ***Forest*** Supervisor, District Manager, or other agency officials) for responding to fire emergencies; and (B) enter into agreements with appropriate State or local firefighting agencies. (c) Grazing.--The grazing of livestock in a wilderness area or addition, if established before the date of the enactment of this Act, shall be administered in accordance with-- (1) section 4(d)(4) of the Wilderness Act (16 U.S.C 1133(d)(4)); and (2) the guidelines contained in Appendix A of the report of the Committee on Interior and Insular Affairs of the House of Representatives accompanying H.R 2570 of the 101st Congress (H. Rept. 101-405). (d) Fish and Wildlife.-- (1) In general.--In accordance with section 4(d)(7) of the Wilderness Act (16 U.S.C 1133(d)(7)), nothing in this subtitle affects the jurisdiction or responsibility of the State with respect to fish or wildlife on public ***land*** in the State. (2) Management activities.-- (A) In general.--In furtherance of the purposes and principles of the Wilderness Act (16 U.S.C 1131 et seq.), the Secretary may conduct any management activity that are necessary to maintain or restore fish or wildlife populations or habitats in the wilderness areas and wilderness additions designated in section 523, if the management activities are-- (i) consistent with relevant wilderness management plans; and (ii) conducted in accordance with appropriate policies, such as the policies established in Appendix B of the report of the Committee on Interior and Insular Affairs of the House of Representatives accompanying H.R 2570 of the 101st Congress (H. Rept. 101-405). (B) Inclusions.--A management activity under subparagraph (A) may include the occasional and temporary use of motorized vehicles, if the use, as determined by the Secretary, would promote healthy, viable, and more naturally distributed wildlife populations that would enhance wilderness values while causing the minimum impact necessary to accomplish those tasks. (C) Existing activities.--In accordance with section 4(d)(1) of the Wilderness Act (16 U.S.C 1133(d)(1)) and appropriate policies (such as the policies established in Appendix B of House Report 101-405, the State may use aircraft (including helicopters) in a wilderness area or addition to survey, capture, transplant, monitor, or provide water for a wildlife population, including bighorn sheep. (e) Buffer Zones.-- (1) In general.--Congress does not intend for the designation of wilderness areas or wilderness additions by section 523 to lead to the creation of protective perimeters or buffer zones around each wilderness area or wilderness addition. (2) Activities or uses up to boundaries.--The fact that a nonwilderness activities or uses can be seen or heard from within a wilderness area or wilderness addition designated by section 523 shall not, of itself, preclude the activities or uses up to the boundary of the wilderness area or addition. (f) Military Activities.--Nothing in this title precludes-- (1) low-level overflights of military aircraft over the wilderness areas or wilderness additions designated by section 523; (2) the designation of new units of special airspace over the wilderness areas or wilderness additions designated by section 523; or (3) the use or establishment of military flight training routes over wilderness areas or wilderness additions designated by section 523. (g) Horses.--Nothing in this subtitle precludes horseback riding in, or the entry of recreational or commercial saddle or pack stock into, an area designated as a wilderness area or wilderness addition by section 523-- (1) in accordance with section 4(d)(5) of the Wilderness Act (16 U.S.C 1133(d)(5)); and (2) subject to such terms and conditions as the Secretary determines to be necessary. (h) Law Enforcement.--Nothing in this subtitle precludes any law enforcement or drug interdiction effort within the wilderness areas or wilderness additions designated by section 523 in accordance with the Wilderness Act (16 U.S.C 1131 et seq.). [[Page H684]] (i) Withdrawal.--Subject to valid existing rights, the wilderness areas and additions designated by section 523 are withdrawn from-- (1) all forms of entry, appropriation, and disposal under the public ***land*** laws; (2) location, entry, and patent under the mining laws; and (3) operation of the mineral materials and geothermal leasing laws. (j) Incorporation of Acquired ***Land*** and Interests.--Any ***land*** within the boundary of a wilderness area or addition that is acquired by the United States shall-- (1) become part of the wilderness area or addition in which the ***land*** is located; and (2) be managed in accordance with this section, the Wilderness Act (16 U.S.C 1131 et seq.), and any other applicable laws (including regulations). (k) Climatological Data Collection.--In accordance with the Wilderness Act (16 U.S.C 1131 et seq.) and subject to such terms and conditions as the Secretary may prescribe, the Secretary may authorize the installation and maintenance of hydrologic, meteorologic, or climatological collection devices in a wilderness area or addition if the Secretary determines that the facilities and access to the facilities is essential to a flood warning, flood control, or water reservoir operation activity. (l) Authorized Events.--The Secretary of ***Agriculture*** may authorize the Angeles Crest 100 competitive running event to continue in substantially the same manner and degree in which this event was operated and permitted in 2015 within additions to the Sheep Mountain Wilderness in section 523 of this title and the Pleasant View Ridge Wilderness Area designated by section 1802 of the Omnibus Public ***Land*** Management Act of 2009, provided that the event is authorized and conducted in a manner compatible with the preservation of the areas as wilderness. SEC. 525. DESIGNATION OF WILD AND SCENIC RIVERS. (a) Designation.--Section 3(a) of the Wild and Scenic Rivers Act (16 U.S.C 1274(a)) is amended by adding at the end the following: ``(\_\_) East fork san gabriel river, california.--The following segments of the East Fork San Gabriel River, to be administered by the Secretary of ***Agriculture*** in the following classes: ``(A) The 10-mile segment from the confluence of the Prairie Fork and Vincent Gulch to 100 yards upstream of the Heaton Flats trailhead and day use area, as a wild river. ``(B) The 2.7-mile segment from 100 yards upstream of the Heaton Flats trailhead and day use area to 100 yards upstream of the confluence with Williams Canyon, as a recreational river. ``(\_\_) North fork san gabriel river, california.--The 4.3- mile segment of the North Fork San Gabriel River from the confluence with Cloudburst Canyon to 0.25 miles upstream of the confluence with the West Fork San Gabriel River, to be administered by the Secretary of ***Agriculture*** as a recreational river. ``(\_\_) West fork san gabriel river, california.--The following segments of the West Fork San Gabriel River, to be administered by the Secretary of ***Agriculture*** in the following classes: ``(A) The 6.7-mile segment from 0.25 miles downstream of its source near Red Box Gap in sec. 14, T. 2 N., R. 12 W., to the confluence with the unnamed tributary 0.25 miles downstream of the power lines in sec. 22, T. 2 N., R. 11 W., as a recreational river. ``(B) The 1.6-mile segment of the West Fork from 0.25 miles downstream of the powerlines in sec. 22, T. 2 N., R. 11 W., to the confluence with Bobcat Canyon, as a wild river. ``(\_\_) Little rock creek, california.--The following segments of Little Rock Creek and tributaries, to be administered by the Secretary of ***Agriculture*** in the following classes: ``(A) The 10.3-mile segment from its source on Mt. Williamson in sec. 6, T. 3 N., R. 9 W., to 100 yards upstream of the confluence with the South Fork Little Rock Creek, as a wild river. ``(B) The 6.6-mile segment from 100 yards upstream of the confluence with the South Fork Little Rock Creek to the confluence with Santiago Canyon, as a recreational river. ``(C) The 1-mile segment of Cooper Canyon Creek from 0.25 miles downstream of Highway 2 to 100 yards downstream of Cooper Canyon Campground, as a scenic river. ``(D) The 1.3-mile segment of Cooper Canyon Creek from 100 yards downstream of Cooper Canyon Campground to the confluence with Little Rock Creek, as a wild river. ``(E) The 1-mile segment of Buckhorn Creek from 100 yards downstream of the Buckhorn Campground to its confluence with Cooper Canyon Creek, as a wild river.''. (b) Water Resource Facilities; and Water Use.-- (1) Water resource facilities.-- (A) Definition.--In this section, the term ``water resource facility'' means irrigation and pumping facilities, dams and reservoirs, flood control facilities, water conservation works and facilities, including debris protection facilities, sediment placement sites, rain gauges and stream gauges, water quality facilities, recycled water facilities and water pumping, conveyance distribution systems, water storage tanks and reservoirs, and water treatment facilities, aqueducts, canals, ditches, pipelines, wells, hydropower projects, and transmission and other ancillary facilities, groundwater recharge facilities, water conservation, water filtration plants, and other water diversion, conservation, groundwater recharge, storage, and carriage structures. (B) No effect on existing water resource facilities.-- Nothing in this section shall alter, modify, or affect-- (i) the use, operation, maintenance, repair, construction, destruction, reconfiguration, expansion, relocation or replacement of a water resource facility downstream of a wild and scenic river segment designated by this section, provided that the physical structures of such facilities or reservoirs shall not be located within the river areas designated in this section; or (ii) access to a water resource facility downstream of a wild and scenic river segment designated by this section. (C) No effect on new water resource facilities.--Nothing in this section shall preclude the establishment of a new water resource facilities (including instream sites, routes, and areas) downstream of a wild and scenic river segment. (2) Limitation.--Any new reservation of water or new use of water pursuant to existing water rights held by the United States to advance the purposes of the National Wild and Scenic Rivers Act (16 U.S.C 1271 et seq.) shall be for nonconsumptive instream use only within the segments designated by this section. (3) Existing law.--Nothing in this section affects the implementation of the Endangered Species Act of 1973 (16 U.S.C 1531 et seq.). SEC. 526. WATER RIGHTS. (a) Statutory Construction.--Nothing in this title, and no action to implement this title-- (1) shall constitute an express or implied reservation of any water or water right, or authorizing an expansion of water use pursuant to existing water rights held by the United States, with respect to the San Gabriel Mountains National Monument, the ***land*** designated as a wilderness area or wilderness addition by section 523 or ***land*** adjacent to the wild and scenic river segments designated by the amendment made by section 525; (2) shall affect, alter, modify, or condition any water rights in the State in existence on the date of the enactment of this Act, including any water rights held by the United States; (3) shall be construed as establishing a precedent with regard to any future wilderness or wild and scenic river designations; (4) shall affect, alter, or modify the interpretation of, or any designation, decision, adjudication or action made pursuant to, any other Act; or (5) shall be construed as limiting, altering, modifying, or amending any of the interstate compacts or equitable apportionment decrees that apportions water among or between the State and any other State. (b) State Water Law.--The Secretary shall comply with applicable procedural and substantive requirements of the law of the State in order to obtain and hold any water rights not in existence on the date of the enactment of this Act with respect to the San Gabriel Mountains National Monument, wilderness areas and wilderness additions designated by section 523, and the wild and scenic rivers designated by amendment made by section 525. TITLE VI--RIM OF THE VALLEY CORRIDOR PRESERVATION SEC. 601. SHORT TITLE. This title may be cited as the ``Rim of the Valley Corridor Preservation Act''. SEC. 602. BOUNDARY ADJUSTMENT; ***LAND*** ACQUISITION; ADMINISTRATION. (a) Boundary Adjustment.--Section 507(c)(1) of the National Parks and Recreation Act of 1978 (16 U.S.C 460kk(c)(1)) is amended in the first sentence by striking ``, which shall'' and inserting `` and generally depicted as `Rim of the Valley Unit Proposed Addition' on the map entitled `Rim of the Valley Unit--Santa Monica Mountains National Recreation Area', numbered 638/147,723, and dated September 2018. Both maps shall''. (b) Rim of the Valley Unit.--Section 507 of the National Parks and Recreation Act of 1978 (16 U.S.C 460kk) is amended by adding at the end the following: ``(u) Rim of the Valley Unit.--(1) Not later than 3 years after the date of the enactment of this subsection, the Secretary shall update the general management plan for the recreation area to reflect the boundaries designated on the map referred to in subsection (c)(1) as the `Rim of the Valley Unit' (hereafter in the subsection referred to as the `Rim of the Valley Unit'). Subject to valid existing rights, the Secretary shall administer the Rim of the Valley Unit, and any ***land*** or interest in ***land*** acquired by the United States and located within the boundaries of the Rim of the Valley Unit, as part of the recreation area in accordance with the provisions of this section and applicable laws and regulations. ``(2) The Secretary may acquire non-Federal ***land*** within the boundaries of the Rim of the Valley Unit only through exchange, donation, or purchase from a willing seller. Nothing in this subsection authorizes the use of eminent domain to acquire ***land*** or interests in ***land***. ``(3) Nothing in this subsection or the application of the management plan for the Rim of the Valley Unit shall be construed to-- ``(A) modify any provision of Federal, State, or local law with respect to public access to or use of non-Federal ***land***; ``(B) create any liability, or affect any liability under any other law, of any private property owner or other owner of non-Federal ***land*** with respect to any person injured on private property or other non-Federal ***land***; ``(C) affect the ownership, management, or other rights relating to any non-Federal ***land*** (including any interest in any non-Federal ***land***); ``(D) require any local government to participate in any program administered by the Secretary; ``(E) alter, modify, or diminish any right, responsibility, power, authority, jurisdiction, or entitlement of the State, any political subdivision of the State, or any State or local agency under existing Federal, State, and local law (including regulations); ``(F) require the creation of protective perimeters or buffer zones, and the fact that certain [[Page H685]] activities or ***land*** can be seen or heard from within the Rim of the Valley Unit shall not, of itself, preclude the activities or ***land*** uses up to the boundary of the Rim of the Valley Unit; ``(G) require or promote use of, or encourage trespass on, ***lands***, facilities, and rights-of-way owned by non-Federal entities, including water resource facilities and public utilities, without the written consent of the owner; ``(H) affect the operation, maintenance, modification, construction, or expansion of any water resource facility or utility facility located within or adjacent to the Rim of the Valley Unit; ``(I) terminate the fee title to ***lands*** or customary operation, maintenance, repair, and replacement activities on or under such ***lands*** granted to public agencies that are authorized pursuant to Federal or State statute; ``(J) interfere with, obstruct, hinder, or delay the exercise of any right to, or access to any water resource facility or other facility or property necessary or useful to access any water right to operate any public water or utility system; ``(K) require initiation or reinitiation of consultation with the United States Fish and Wildlife Service under, or the application of provisions of, the Endangered Species Act of 1973 (16 U.S.C 1531 et seq.), the National Environmental Policy Act of 1969 (42 U.S.C 4321 et seq.), or division A of subtitle III of title 54, United States Code, concerning any action or activity affecting water, water rights or water management or water resource facilities within the Rim of the Valley Unit; or ``(L) limit the Secretary's ability to update applicable fire management plans, which may consider fuels management strategies including managed natural fire, prescribed fires, non-fire mechanical hazardous fuel reduction activities, or post-fire remediation of damage to natural and cultural resources. ``(4) The activities of a utility facility or water resource facility shall take into consideration ways to reasonably avoid or reduce the impact on the resources of the Rim of the Valley Unit. ``(5) For the purpose of paragraph (4)-- ``(A) the term `utility facility' means electric substations, communication facilities, towers, poles, and lines, ground wires, communications circuits, and other structures, and related infrastructure; and ``(B) the term `water resource facility' means irrigation and pumping facilities; dams and reservoirs; flood control facilities; water conservation works, including debris protection facilities, sediment placement sites, rain gauges, and stream gauges; water quality, recycled water, and pumping facilities; conveyance distribution systems; water treatment facilities; aqueducts; canals; ditches; pipelines; wells; hydropower projects; transmission facilities; and other ancillary facilities, groundwater recharge facilities, water conservation, water filtration plants, and other water diversion, conservation, groundwater recharge, storage, and carriage structures.''. TITLE VII--COLORADO OUTDOOR RECREATION AND ECONOMY SEC. 701. SHORT TITLE. This title may be cited as the ``Colorado Outdoor Recreation and Economy Act''. SEC. 702. DEFINITION OF STATE. In this title, the term ``State'' means the State of Colorado. Subtitle A--Continental Divide SEC. 711. DEFINITIONS. In this subtitle: (1) Covered area.--The term ``covered area'' means any area designated as wilderness by the amendments to section 2(a) of the Colorado Wilderness Act of 1993 (16 U.S.C 1132 note; Public Law 103-77) made by section 712(a). (2) Historic landscape.--The term ``Historic Landscape'' means the Camp Hale National Historic Landscape designated by section 717(a). (3) Recreation management area.--The term ``Recreation Management Area'' means the Tenmile Recreation Management Area designated by section 714(a). (4) Secretary.--The term ``Secretary'' means the Secretary of ***Agriculture***. (5) Wildlife conservation area.--The term ``Wildlife Conservation Area'' means, as applicable-- (A) the Porcupine Gulch Wildlife Conservation Area designated by section 715(a); and (B) the Williams Fork Mountains Wildlife Conservation Area designated by section 716(a). SEC. 712. COLORADO WILDERNESS ADDITIONS. (a) Designation.--Section 2(a) of the Colorado Wilderness Act of 1993 (16 U.S.C 1132 note; Public Law 103-77) is amended-- (1) in paragraph (18), by striking ``1993,'' and inserting ``1993, and certain Federal ***land*** within the White River National ***Forest*** that comprises approximately 6,896 acres, as generally depicted as `Proposed Ptarmigan Peak Wilderness Additions' on the map entitled `Proposed Ptarmigan Peak Wilderness Additions' and dated June 24, 2019,''; and (2) by adding at the end the following: ``(23) Holy cross wilderness addition.--Certain Federal ***land*** within the White River National ***Forest*** that comprises approximately 3,866 acres, as generally depicted as `Proposed Megan Dickie Wilderness Addition' on the map entitled `Holy Cross Wilderness Addition Proposal' and dated June 24, 2019, which shall be incorporated into, and managed as part of, the Holy Cross Wilderness designated by section 102(a)(5) of Public Law 96-560 (94 Stat. 3266). ``(24) Hoosier ridge wilderness.--Certain Federal ***land*** within the White River National ***Forest*** that comprises approximately 5,235 acres, as generally depicted as `Proposed Hoosier Ridge Wilderness' on the map entitled `Tenmile Proposal' and dated June 24, 2019, which shall be known as the `Hoosier Ridge Wilderness'. ``(25) Tenmile wilderness.--Certain Federal ***land*** within the White River National ***Forest*** that comprises approximately 7,624 acres, as generally depicted as `Proposed Tenmile Wilderness' on the map entitled `Tenmile Proposal' and dated June 24, 2019, which shall be known as the `Tenmile Wilderness'. ``(26) Eagles nest wilderness additions.--Certain Federal ***land*** within the White River National ***Forest*** that comprises approximately 9,670 acres, as generally depicted as `Proposed Freeman Creek Wilderness Addition' and `Proposed Spraddle Creek Wilderness Addition' on the map entitled `Eagles Nest Wilderness Additions Proposal' and dated June 24, 2019, which shall be incorporated into, and managed as part of, the Eagles Nest Wilderness designated by Public Law 94-352 (90 Stat. 870).''. (b) Applicable Law.--Any reference in the Wilderness Act (16 U.S.C 1131 et seq.) to the effective date of that Act shall be considered to be a reference to the date of enactment of this Act for purposes of administering a covered area. (c) Fire, Insects, and Diseases.--In accordance with section 4(d)(1) of the Wilderness Act (16 U.S.C 1133(d)(1)), the Secretary may carry out any activity in a covered area that the Secretary determines to be necessary for the control of fire, insects, and diseases, subject to such terms and conditions as the Secretary determines to be appropriate. (d) Grazing.--The grazing of livestock on a covered area, if established before the date of enactment of this Act, shall be permitted to continue subject to such reasonable regulations as are considered to be necessary by the Secretary, in accordance with-- (1) section 4(d)(4) of the Wilderness Act (16 U.S.C 1133(d)(4)); and (2) the guidelines set forth in Appendix A of the report of the Committee on Interior and Insular Affairs of the House of Representatives accompanying H.R 2570 of the 101st Congress (H. Rept. 101-405). (e) Coordination.--For purposes of administering the Federal ***land*** designated as wilderness by paragraph (26) of section 2(a) of the Colorado Wilderness Act of 1993 (16 U.S.C 1132 note; Public Law 103-77) (as added by subsection (a)(2)), the Secretary shall, as determined to be appropriate for the protection of watersheds, coordinate the activities of the Secretary in response to fires and flooding events with interested State and local agencies, including operations using aircraft or mechanized equipment. SEC. 713. WILLIAMS FORK MOUNTAINS WILDERNESS. (a) Designation.--In furtherance of the purposes of the Wilderness Act (16 U.S.C 1131 et seq.), certain Federal ***land*** in the White River National ***Forest*** in the State, comprising approximately 8,036 acres, as generally depicted as ``Proposed Williams Fork Mountains Wilderness'' on the map entitled ``Williams Fork Mountains Proposal'' and dated June 24, 2019, is designated as a potential wilderness area. (b) Management.--Subject to valid existing rights and except as provided in subsection (d), the potential wilderness area designated by subsection (a) shall be managed in accordance with-- (1) the Wilderness Act (16 U.S.C 1131 et seq.); and (2) this section. (c) Livestock Use of Vacant Allotments.-- (1) In general.--Not later than 3 years after the date of enactment of this Act, in accordance with applicable laws (including regulations), the Secretary shall publish a determination regarding whether to authorize livestock grazing or other use by livestock on the vacant allotments known as-- (A) the ``Big Hole Allotment''; and (B) the ``Blue Ridge Allotment''. (2) Modification of allotments.--In publishing a determination pursuant to paragraph (1), the Secretary may modify or combine the vacant allotments referred to in that paragraph. (3) Permit or other authorization.--Not later than 1 year after the date on which a determination of the Secretary to authorize livestock grazing or other use by livestock is published under paragraph (1), if applicable, the Secretary shall grant a permit or other authorization for that livestock grazing or other use in accordance with applicable laws (including regulations). (d) Range Improvements.-- (1) In general.--If the Secretary permits livestock grazing or other use by livestock on the potential wilderness area under subsection (c), the Secretary, or a third party authorized by the Secretary, may use any motorized or mechanized transport or equipment for purposes of constructing or rehabilitating such range improvements as are necessary to obtain appropriate livestock management objectives (including habitat and watershed restoration). (2) Termination of authority.--The authority provided by this subsection terminates on the date that is 2 years after the date on which the Secretary publishes a positive determination under subsection (c)(3). (e) Designation as Wilderness.-- (1) Designation.--The potential wilderness area designated by subsection (a) shall be designated as wilderness, to be known as the ``Williams Fork Mountains Wilderness''-- (A) effective not earlier than the date that is 180 days after the date of enactment this Act; and (B) on the earliest of-- (i) the date on which the Secretary publishes in the Federal Register a notice that the construction or rehabilitation of range improvements under subsection (d) is complete; (ii) the date described in subsection (d)(2); and (iii) the effective date of a determination of the Secretary not to authorize livestock grazing or other use by livestock under subsection (c)(1). (2) Administration.--Subject to valid existing rights, the Secretary shall manage the Williams [[Page H686]] Fork Mountains Wilderness in accordance with-- (A) the Colorado Wilderness Act of 1993 (16 U.S.C 1132 note; Public Law 103-77); and (B) this subtitle. SEC. 714. TENMILE RECREATION MANAGEMENT AREA. (a) Designation.--Subject to valid existing rights, the approximately 17,122 acres of Federal ***land*** in the White River National ***Forest*** in the State, as generally depicted as ``Proposed Tenmile Recreation Management Area'' on the map entitled ``Tenmile Proposal'' and dated June 24, 2019, are designated as the ``Tenmile Recreation Management Area''. (b) Purposes.--The purposes of the Recreation Management Area are to conserve, protect, and enhance for the benefit and enjoyment of present and future generations the recreational, scenic, watershed, habitat, and ecological resources of the Recreation Management Area. (c) Management.-- (1) In general.--The Secretary shall manage the Recreation Management Area-- (A) in a manner that conserves, protects, and enhances-- (i) the purposes of the Recreation Management Area described in subsection (b); and (ii) recreation opportunities, including mountain biking, hiking, fishing, horseback riding, snowshoeing, climbing, skiing, camping, and hunting; and (B) in accordance with-- (i) the ***Forest*** and Rangeland Renewable Resources Planning Act of 1974 (16 U.S.C 1600 et seq.); (ii) any other applicable laws (including regulations); and (iii) this section. (2) Uses.-- (A) In general.--The Secretary shall only allow such uses of the Recreation Management Area as the Secretary determines would further the purposes described in subsection (b). (B) Vehicles.-- (i) In general.--Except as provided in clause (iii), the use of motorized vehicles in the Recreation Management Area shall be limited to the roads, vehicle classes, and periods authorized for motorized vehicle use on the date of enactment of this Act. (ii) New or temporary roads.--Except as provided in clause (iii), no new or temporary road shall be constructed in the Recreation Management Area. (iii) Exceptions.--Nothing in clause (i) or (ii) prevents the Secretary from-- (I) rerouting or closing an existing road or trail to protect natural resources from degradation, as the Secretary determines to be appropriate; (II) authorizing the use of motorized vehicles for administrative purposes or roadside camping; (III) constructing temporary roads or permitting the use of motorized vehicles to carry out pre- or post-fire watershed protection projects; (IV) authorizing the use of motorized vehicles to carry out any activity described in subsection (d), (e)(1), or (f); or (V) responding to an emergency. (C) Commercial timber.-- (i) In general.--Subject to clause (ii), no project shall be carried out in the Recreation Management Area for the purpose of harvesting commercial timber. (ii) Limitation.--Nothing in clause (i) prevents the Secretary from harvesting or selling a merchantable product that is a byproduct of an activity authorized under this section. (d) Fire, Insects, and Diseases.--The Secretary may carry out any activity, in accordance with applicable laws (including regulations), that the Secretary determines to be necessary to prevent, control, or mitigate fire, insects, or disease in the Recreation Management Area, subject to such terms and conditions as the Secretary determines to be appropriate. (e) Water.-- (1) Effect on water management infrastructure.--Nothing in this section affects the construction, repair, reconstruction, replacement, operation, maintenance, or renovation within the Recreation Management Area of-- (A) water management infrastructure in existence on the date of enactment of this Act; or (B) any future infrastructure necessary for the development or exercise of water rights decreed before the date of enactment of this Act. (2) Applicable law.--Section 3(e) of the James Peak Wilderness and Protection Area Act (Public Law 107-216; 116 Stat. 1058) shall apply to the Recreation Management Area. (f) Regional Transportation Projects.--Nothing in this section precludes the Secretary from authorizing, in accordance with applicable laws (including regulations), the use or leasing of Federal ***land*** within the Recreation Management Area for-- (1) a regional transportation project, including-- (A) highway widening or realignment; and (B) construction of multimodal transportation systems; or (2) any infrastructure, activity, or safety measure associated with the implementation or use of a facility constructed under paragraph (1). (g) Applicable Law.--Nothing in this section affects the designation of the Federal ***land*** within the Recreation Management Area for purposes of-- (1) section 138 of title 23, United States Code; or (2) section 303 of title 49, United States Code. (h) Permits.--Nothing in this section alters or limits-- (1) any permit held by a ski area or other entity; or (2) the acceptance, review, or implementation of associated activities or facilities proposed or authorized by law or permit outside the boundaries of the Recreation Management Area. SEC. 715. PORCUPINE GULCH WILDLIFE CONSERVATION AREA. (a) Designation.--Subject to valid existing rights, the approximately 8,287 acres of Federal ***land*** located in the White River National ***Forest***, as generally depicted as ``Proposed Porcupine Gulch Wildlife Conservation Area'' on the map entitled ``Porcupine Gulch Wildlife Conservation Area Proposal'' and dated June 24, 2019, are designated as the ``Porcupine Gulch Wildlife Conservation Area'' (referred to in this section as the ``Wildlife Conservation Area''). (b) Purposes.--The purposes of the Wildlife Conservation Area are-- (1) to conserve and protect a wildlife migration corridor over Interstate 70; and (2) to conserve, protect, and enhance for the benefit and enjoyment of present and future generations the wildlife, scenic, roadless, watershed, and ecological resources of the Wildlife Conservation Area. (c) Management.-- (1) In general.--The Secretary shall manage the Wildlife Conservation Area-- (A) in a manner that conserves, protects, and enhances the purposes described in subsection (b); and (B) in accordance with-- (i) the ***Forest*** and Rangeland Renewable Resources Planning Act of 1974 (16 U.S.C 1600 et seq.); (ii) any other applicable laws (including regulations); and (iii) this section. (2) Uses.-- (A) In general.--The Secretary shall only allow such uses of the Wildlife Conservation Area as the Secretary determines would further the purposes described in subsection (b). (B) Recreation.--The Secretary may permit such recreational activities in the Wildlife Conservation Area that the Secretary determines are consistent with the purposes described in subsection (b). (C) Motorized vehicles and mechanized transport; new or temporary roads.-- (i) Motorized vehicles and mechanized transport.--Except as provided in clause (iii), the use of motorized vehicles and mechanized transport in the Wildlife Conservation Area shall be prohibited. (ii) New or temporary roads.--Except as provided in clause (iii) and subsection (e), no new or temporary road shall be constructed within the Wildlife Conservation Area. (iii) Exceptions.--Nothing in clause (i) or (ii) prevents the Secretary from-- (I) authorizing the use of motorized vehicles or mechanized transport for administrative purposes; (II) constructing temporary roads or permitting the use of motorized vehicles or mechanized transport to carry out pre- or post-fire watershed protection projects; (III) authorizing the use of motorized vehicles or mechanized transport to carry out activities described in subsection (d) or (e); or (IV) responding to an emergency. (D) Commercial timber.-- (i) In general.--Subject to clause (ii), no project shall be carried out in the Wildlife Conservation Area for the purpose of harvesting commercial timber. (ii) Limitation.--Nothing in clause (i) prevents the Secretary from harvesting or selling a merchantable product that is a byproduct of an activity authorized under this section. (d) Fire, Insects, and Diseases.--The Secretary may carry out any activity, in accordance with applicable laws (including regulations), that the Secretary determines to be necessary to prevent, control, or mitigate fire, insects, or disease in the Wildlife Conservation Area, subject to such terms and conditions as the Secretary determines to be appropriate. (e) Regional Transportation Projects.--Nothing in this section or section 720(f) precludes the Secretary from authorizing, in accordance with applicable laws (including regulations), the use or leasing of Federal ***land*** within the Wildlife Conservation Area for-- (1) a regional transportation project, including-- (A) highway widening or realignment; and (B) construction of multimodal transportation systems; or (2) any infrastructure, activity, or safety measure associated with the implementation or use of a facility constructed under paragraph (1). (f) Applicable Law.--Nothing in this section affects the designation of the Federal ***land*** within the Wildlife Conservation Area for purposes of-- (1) section 138 of title 23, United States Code; or (2) section 303 of title 49, United States Code. (g) Water.--Section 3(e) of the James Peak Wilderness and Protection Area Act (Public Law 107-216; 116 Stat. 1058) shall apply to the Wildlife Conservation Area. SEC. 716. WILLIAMS FORK MOUNTAINS WILDLIFE CONSERVATION AREA. (a) Designation.--Subject to valid existing rights, the approximately 3,528 acres of Federal ***land*** in the White River National ***Forest*** in the State, as generally depicted as ``Proposed Williams Fork Mountains Wildlife Conservation Area'' on the map entitled ``Williams Fork Mountains Proposal'' and dated June 24, 2019, are designated as the ``Williams Fork Mountains Wildlife Conservation Area'' (referred to in this section as the ``Wildlife Conservation Area''). (b) Purposes.--The purposes of the Wildlife Conservation Area are to conserve, protect, and enhance for the benefit and enjoyment of present and future generations the wildlife, scenic, roadless, watershed, recreational, and ecological resources of the Wildlife Conservation Area. (c) Management.-- [[Page H687]] (1) In general.--The Secretary shall manage the Wildlife Conservation Area-- (A) in a manner that conserves, protects, and enhances the purposes described in subsection (b); and (B) in accordance with-- (i) the ***Forest*** and Rangeland Renewable Resources Planning Act of 1974 (16 U.S.C 1600 et seq.); (ii) any other applicable laws (including regulations); and (iii) this section. (2) Uses.-- (A) In general.--The Secretary shall only allow such uses of the Wildlife Conservation Area as the Secretary determines would further the purposes described in subsection (b). (B) Motorized vehicles.-- (i) In general.--Except as provided in clause (iii), the use of motorized vehicles in the Wildlife Conservation Area shall be limited to designated roads and trails. (ii) New or temporary roads.--Except as provided in clause (iii), no new or temporary road shall be constructed in the Wildlife Conservation Area. (iii) Exceptions.--Nothing in clause (i) or (ii) prevents the Secretary from-- (I) authorizing the use of motorized vehicles for administrative purposes; (II) authorizing the use of motorized vehicles to carry out activities described in subsection (d); or (III) responding to an emergency. (C) Bicycles.--The use of bicycles in the Wildlife Conservation Area shall be limited to designated roads and trails. (D) Commercial timber.-- (i) In general.--Subject to clause (ii), no project shall be carried out in the Wildlife Conservation Area for the purpose of harvesting commercial timber. (ii) Limitation.--Nothing in clause (i) prevents the Secretary from harvesting or selling a merchantable product that is a byproduct of an activity authorized under this section. (E) Grazing.--The laws (including regulations) and policies followed by the Secretary in issuing and administering grazing permits or leases on ***land*** under the jurisdiction of the Secretary shall continue to apply with regard to the ***land*** in the Wildlife Conservation Area, consistent with the purposes described in subsection (b). (d) Fire, Insects, and Diseases.--The Secretary may carry out any activity, in accordance with applicable laws (including regulations), that the Secretary determines to be necessary to prevent, control, or mitigate fire, insects, or disease in the Wildlife Conservation Area, subject to such terms and conditions as the Secretary determines to be appropriate. (e) Regional Transportation Projects.--Nothing in this section or section 720(f) precludes the Secretary from authorizing, in accordance with applicable laws (including regulations), the use or leasing of Federal ***land*** within the Wildlife Conservation Area for-- (1) a regional transportation project, including-- (A) highway widening or realignment; and (B) construction of multimodal transportation systems; or (2) any infrastructure, activity, or safety measure associated with the implementation or use of a facility constructed under paragraph (1). (f) Water.--Section 3(e) of the James Peak Wilderness and Protection Area Act (Public Law 107-216; 116 Stat. 1058) shall apply to the Wildlife Conservation Area. SEC. 717. CAMP HALE NATIONAL HISTORIC LANDSCAPE. (a) Designation.--Subject to valid existing rights, the approximately 28,676 acres of Federal ***land*** in the White River National ***Forest*** in the State, as generally depicted as ``Proposed Camp Hale National Historic Landscape'' on the map entitled ``Camp Hale National Historic Landscape Proposal'' and dated June 24, 2019, are designated the ``Camp Hale National Historic Landscape''. (b) Purposes.--The purposes of the Historic Landscape are-- (1) to provide for-- (A) the interpretation of historic events, activities, structures, and artifacts of the Historic Landscape, including with respect to the role of the Historic Landscape in local, national, and world history; (B) the historic preservation of the Historic Landscape, consistent with-- (i) the designation of the Historic Landscape as a national historic site; and (ii) the other purposes of the Historic Landscape; (C) recreational opportunities, with an emphasis on the activities related to the historic use of the Historic Landscape, including skiing, snowshoeing, snowmobiling, hiking, horseback riding, climbing, other road- and trail- based activities, and other outdoor activities; and (D) the continued environmental remediation and ***removal*** of unexploded ordnance at the Camp Hale Formerly Used Defense Site and the Camp Hale historic cantonment area; and (2) to conserve, protect, restore, and enhance for the benefit and enjoyment of present and future generations the scenic, watershed, and ecological resources of the Historic Landscape. (c) Management.-- (1) In general.--The Secretary shall manage the Historic Landscape in accordance with-- (A) the purposes of the Historic Landscape described in subsection (b); and (B) any other applicable laws (including regulations). (2) Management plan.-- (A) In general.--Not later than 5 years after the date of enactment of this Act, the Secretary shall prepare a management plan for the Historic Landscape. (B) Contents.--The management plan prepared under subparagraph (A) shall include plans for-- (i) improving the interpretation of historic events, activities, structures, and artifacts of the Historic Landscape, including with respect to the role of the Historic Landscape in local, national, and world history; (ii) conducting historic preservation and veteran outreach and engagement activities; (iii) managing recreational opportunities, including the use and stewardship of-- (I) the road and trail systems; and (II) dispersed recreation resources; (iv) the conservation, protection, restoration, or enhancement of the scenic, watershed, and ecological resources of the Historic Landscape, including-- (I) conducting the restoration and enhancement project under subsection (d); (II) ***forest*** fuels, wildfire, and mitigation management; and (III) watershed health and protection; (v) environmental remediation and, consistent with subsection (e)(2), the ***removal*** of unexploded ordnance; and (vi) managing the Historic Landscape in accordance with subsection (g). (3) Explosive hazards.--The Secretary shall provide to the Secretary of the Army a notification of any unexploded ordnance (as defined in section 101(e) of title 10, United States Code) that is discovered in the Historic Landscape. (d) Camp Hale Restoration and Enhancement Project.-- (1) In general.--The Secretary shall conduct a restoration and enhancement project in the Historic Landscape-- (A) to improve aquatic, riparian, and wetland conditions in and along the Eagle River and tributaries of the Eagle River; (B) to maintain or improve recreation and interpretive opportunities and facilities; and (C) to conserve historic values in the Camp Hale area. (2) Coordination.--In carrying out the project described in paragraph (1), the Secretary shall coordinate with, and provide the opportunity to collaborate on the project to-- (A) the Corps of Engineers; (B) the Camp Hale-Eagle River Headwaters Collaborative Group; (C) the National ***Forest*** Foundation; (D) the Colorado Department of Public Health and Environment; (E) the Colorado State Historic Preservation Office; (F) the Colorado Department of Natural Resources; (G) units of local government; and (H) other interested organizations and members of the public. (e) Environmental Remediation.-- (1) In general.--The Secretary of the Army shall continue to carry out the projects and activities of the Department of the Army in existence on the date of enactment of this Act relating to cleanup of-- (A) the Camp Hale Formerly Used Defense Site; or (B) the Camp Hale historic cantonment area. (2) ***Removal*** of unexploded ordnance.-- (A) In general.--The Secretary of the Army may ***remove*** unexploded ordnance (as defined in section 101(e) of title 10, United States Code) from the Historic Landscape, as the Secretary of the Army determines to be appropriate in accordance with applicable law (including regulations). (B) Action on receipt of notice.--On receipt from the Secretary of a notification of unexploded ordnance under subsection (c)(3), the Secretary of the Army may ***remove*** the unexploded ordnance in accordance with-- (i) the program for environmental restoration of formerly used defense sites under section 2701 of title 10, United States Code; (ii) the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C 9601 et seq.); and (iii) any other applicable provision of law (including regulations). (3) Effect of subsection.--Nothing in this subsection modifies any obligation in existence on the date of enactment of this Act relating to environmental remediation or ***removal*** of any unexploded ordnance located in or around the Camp Hale historic cantonment area, the Camp Hale Formerly Used Defense Site, or the Historic Landscape, including such an obligation under-- (A) the program for environmental restoration of formerly used defense sites under section 2701 of title 10, United States Code; (B) the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C 9601 et seq.); or (C) any other applicable provision of law (including regulations). (f) Interagency Agreement.--The Secretary and the Secretary of the Army shall enter into an agreement-- (1) to specify-- (A) the activities of the Secretary relating to the management of the Historic Landscape; and (B) the activities of the Secretary of the Army relating to environmental remediation and the ***removal*** of unexploded ordnance in accordance with subsection (e) and other applicable laws (including regulations); and (2) to require the Secretary to provide to the Secretary of the Army, by not later than 1 year after the date of enactment of this Act and periodically thereafter, as appropriate, a management plan for the Historic Landscape for purposes of the ***removal*** activities described in subsection (e). (g) Effect.--Nothing in this section-- (1) affects the jurisdiction of the State over any water law, water right, or adjudication or administration relating to any water resource; (2) affects any water right in existence on the date of enactment of this Act, or the exercise of such a water right, including-- [[Page H688]] (A) a water right subject to an interstate water compact (including full development of any apportionment made in accordance with such a compact); (B) a water right decreed within, above, below, or through the Historic Landscape; (C) a change, exchange, plan for augmentation, or other water decree with respect to a water right, including a conditional water right, in existence on the date of enactment of this Act-- (i) that is consistent with the purposes described in subsection (b); and (ii) that does not result in diversion of a greater flow rate or volume of water for such a water right in existence on the date of enactment of this Act; (D) a water right held by the United States; (E) the management or operation of any reservoir, including the storage, management, release, or transportation of water; and (F) the construction or operation of such infrastructure as is determined to be necessary by an individual or entity holding water rights to develop and place to beneficial use those rights, subject to applicable Federal, State, and local law (including regulations); (3) constitutes an express or implied reservation by the United States of any reserved or appropriative water right; (4) alters or limits-- (A) a permit held by a ski area; (B) the implementation of activities governed by a ski area permit; or (C) the authority of the Secretary to modify or expand an existing ski area permit; (5) prevents the Secretary from closing portions of the Historic Landscape for public safety, environmental remediation, or other use in accordance with applicable laws; or (6) affects-- (A) any special use permit in effect on the date of enactment of this Act; or (B) the renewal of a permit described in subparagraph (A). (h) Funding.-- (1) In general.--There is established in the general fund of the Treasury a special account, to be known as the ``Camp Hale Historic Preservation and Restoration Fund''. (2) Authorization of appropriations.--There is authorized to be appropriated to the Camp Hale Historic Preservation and Restoration Fund $10,000,000, to be available to the Secretary until expended, for activities relating to historic interpretation, preservation, and restoration carried out in and around the Historic Landscape. (i) Designation of Overlook.--The interpretive site located beside United States Route 24 in the State, at 39.431N 106.323W, is designated as the ``Sandy Treat Overlook''. SEC. 718. WHITE RIVER NATIONAL ***FOREST*** BOUNDARY MODIFICATION. (a) In General.--The boundary of the White River National ***Forest*** is modified to include the approximately 120 acres comprised of the SW\1/4\, the SE\1/4\, and the NE\1/4\ of the SE\1/4\ of sec. 1, T. 2 S., R. 80 W., 6th Principal Meridian, in Summit County in the State. (b) ***Land*** and Water Conservation Fund.--For purposes of section 200306 of title 54, United States Code, the boundaries of the White River National ***Forest***, as modified by subsection (a), shall be considered to be the boundaries of the White River National ***Forest*** as in existence on January 1, 1965. SEC. 719. ROCKY MOUNTAIN NATIONAL PARK POTENTIAL WILDERNESS BOUNDARY ADJUSTMENT. (a) Purpose.--The purpose of this section is to provide for the ongoing maintenance and use of portions of the Trail River Ranch and the associated property located within Rocky Mountain National Park in Grand County in the State. (b) Boundary Adjustment.--Section 1952(b) of the Omnibus Public ***Land*** Management Act of 2009 (Public Law 111-11; 123 Stat. 1070) is amended by adding at the end the following: ``(3) Boundary adjustment.--The boundary of the Potential Wilderness is modified to exclude the area comprising approximately 15.5 acres of ***land*** identified as `Potential Wilderness to Non-wilderness' on the map entitled `Rocky Mountain National Park Proposed Wilderness Area Amendment' and dated January 16, 2018.''. SEC. 720. ADMINISTRATIVE PROVISIONS. (a) Fish and Wildlife.--Nothing in this subtitle affects the jurisdiction or responsibility of the State with respect to fish and wildlife in the State. (b) No Buffer Zones.-- (1) In general.--Nothing in this subtitle or an amendment made by this subtitle establishes a protective perimeter or buffer zone around-- (A) a covered area; (B) a wilderness area or potential wilderness area designated by section 713; (C) the Recreation Management Area; (D) a Wildlife Conservation Area; or (E) the Historic Landscape. (2) Outside activities.--The fact that a nonwilderness activity or use on ***land*** outside of an area described in paragraph (1) can be seen or heard from within the applicable area described in paragraph (1) shall not preclude the activity or use outside the boundary of the applicable area described in paragraph (1). (c) Tribal Rights and Uses.-- (1) Treaty rights.--Nothing in this subtitle affects the treaty rights of an Indian Tribe. (2) Traditional tribal uses.--Subject to any terms and conditions that the Secretary determines to be necessary and in accordance with applicable law, the Secretary shall allow for the continued use of the areas described in subsection (b)(1) by members of Indian Tribes-- (A) for traditional ceremonies; and (B) as a source of traditional plants and other materials. (d) Maps and Legal Descriptions.-- (1) In general.--As soon as practicable after the date of enactment of this Act, the Secretary shall file maps and legal descriptions of each area described in subsection (b)(1) with-- (A) the Committee on Natural Resources of the House of Representatives; and (B) the Committee on Energy and Natural Resources of the Senate. (2) Force of law.--Each map and legal description filed under paragraph (1) shall have the same force and effect as if included in this subtitle, except that the Secretary may correct any typographical errors in the maps and legal descriptions. (3) Public availability.--Each map and legal description filed under paragraph (1) shall be on file and available for public inspection in the appropriate offices of the ***Forest*** Service. (e) Acquisition of ***Land***.-- (1) In general.--The Secretary may acquire any ***land*** or interest in ***land*** within the boundaries of an area described in subsection (b)(1) only through exchange, donation, or purchase from a willing seller. (2) Management.--Any ***land*** or interest in ***land*** acquired under paragraph (1) shall be incorporated into, and administered as a part of, the wilderness area, Recreation Management Area, Wildlife Conservation Area, or Historic Landscape, as applicable, in which the ***land*** or interest in ***land*** is located. (f) Withdrawal.--Subject to valid rights in existence on the date of enactment of this Act, the areas described in subsection (b)(1) are withdrawn from-- (1) entry, appropriation, and disposal under the public ***land*** laws; (2) location, entry, and patent under mining laws; and (3) operation of the mineral leasing, mineral materials, and geothermal leasing laws. (g) Military Overflights.--Nothing in this subtitle or an amendment made by this subtitle restricts or precludes-- (1) any low-level overflight of military aircraft over any area subject to this subtitle or an amendment made by this subtitle, including military overflights that can be seen, heard, or detected within such an area; (2) flight testing or evaluation over an area described in paragraph (1); or (3) the use or establishment of-- (A) any new unit of special use airspace over an area described in paragraph (1); or (B) any military flight training or transportation over such an area. (h) Sense of Congress.--It is the sense of Congress that military aviation training on Federal public ***land*** in the State, including the training conducted at the High-Altitude Army National Guard Aviation Training Site, is critical to the national security of the United States and the readiness of the Armed Forces. Subtitle B--San Juan Mountains SEC. 731. DEFINITIONS. In this subtitle: (1) Covered ***land***.--The term ``covered ***land***'' means-- (A) ***land*** designated as wilderness under paragraphs (27) through (29) of section 2(a) of the Colorado Wilderness Act of 1993 (16 U.S.C 1132 note; Public Law 103-77) (as added by section 732); and (B) a Special Management Area. (2) Secretary.--The term ``Secretary'' means the Secretary of ***Agriculture***. (3) Special management area.--The term ``Special Management Area'' means each of-- (A) the Sheep Mountain Special Management Area designated by section 723(a)(1); and (B) the Liberty Bell East Special Management Area designated by section 723(a)(2). SEC. 732. ADDITIONS TO NATIONAL WILDERNESS PRESERVATION SYSTEM. Section 2(a) of the Colorado Wilderness Act of 1993 (16 U.S.C 1132 note; Public Law 103-77) (as amended by section 722(a)(2)) is amended by adding at the end the following: ``(27) Lizard head wilderness addition.--Certain Federal ***land*** in the Grand Mesa, Uncompahgre, and Gunnison National ***Forests*** comprising approximately 3,141 acres, as generally depicted on the map entitled `Proposed Wilson, Sunshine, Black Face and San Bernardo Additions to the Lizard Head Wilderness' and dated September 6, 2018, which is incorporated in, and shall be administered as part of, the Lizard Head Wilderness. ``(28) Mount sneffels wilderness additions.-- ``(A) Liberty bell and last dollar additions.--Certain Federal ***land*** in the Grand Mesa, Uncompahgre, and Gunnison National ***Forests*** comprising approximately 7,235 acres, as generally depicted on the map entitled `Proposed Liberty Bell and Last Dollar Additions to the Mt. Sneffels Wilderness, Liberty Bell East Special Management Area' and dated September 6, 2018, which is incorporated in, and shall be administered as part of, the Mount Sneffels Wilderness. ``(B) Whitehouse additions.--Certain Federal ***land*** in the Grand Mesa, Uncompahgre, and Gunnison National ***Forests*** comprising approximately 12,465 acres, as generally depicted on the map entitled `Proposed Whitehouse Additions to the Mt. Sneffels Wilderness' and dated September 6, 2018, which is incorporated in, and shall be administered as part of, the Mount Sneffels Wilderness. ``(29) Mckenna peak wilderness.--Certain Federal ***land*** in the State of Colorado comprising approximately 8,884 acres of Bureau of ***Land*** Management ***land***, as generally depicted on the map entitled `Proposed McKenna Peak Wilderness Area' and dated September 18, 2018, to be known as the `McKenna Peak Wilderness'.''. SEC. 733. SPECIAL MANAGEMENT AREAS. (a) Designation.-- (1) Sheep mountain special management area.--The Federal ***land*** in the Grand Mesa, [[Page H689]] Uncompahgre, and Gunnison and San Juan National ***Forests*** in the State comprising approximately 21,663 acres, as generally depicted on the map entitled ``Proposed Sheep Mountain Special Management Area'' and dated September 19, 2018, is designated as the ``Sheep Mountain Special Management Area''. (2) Liberty bell east special management area.--The Federal ***land*** in the Grand Mesa, Uncompahgre, and Gunnison National ***Forests*** in the State comprising approximately 792 acres, as generally depicted on the map entitled ``Proposed Liberty Bell and Last Dollar Additions to the Mt. Sneffels Wilderness, Liberty Bell East Special Management Area'' and dated September 6, 2018, is designated as the ``Liberty Bell East Special Management Area''. (b) Purpose.--The purpose of the Special Management Areas is to conserve and protect for the benefit and enjoyment of present and future generations the geological, cultural, archaeological, paleontological, natural, scientific, recreational, wilderness, wildlife, riparian, historical, educational, and scenic resources of the Special Management Areas. (c) Management.-- (1) In general.--The Secretary shall manage the Special Management Areas in a manner that-- (A) conserves, protects, and enhances the resources and values of the Special Management Areas described in subsection (b); (B) subject to paragraph (3), maintains or improves the wilderness character of the Special Management Areas and the suitability of the Special Management Areas for potential inclusion in the National Wilderness Preservation System; and (C) is in accordance with-- (i) the National ***Forest*** Management Act of 1976 (16 U.S.C 1600 et seq.); (ii) this subtitle; and (iii) any other applicable laws. (2) Prohibitions.--The following shall be prohibited in the Special Management Areas: (A) Permanent roads. (B) Except as necessary to meet the minimum requirements for the administration of the Federal ***land***, to provide access for abandoned mine cleanup, and to protect public health and safety-- (i) the use of motor vehicles, motorized equipment, or mechanical transport (other than as provided in paragraph (3)); and (ii) the establishment of temporary roads. (3) Authorized activities.-- (A) In general.--The Secretary may allow any activities (including helicopter access for recreation and maintenance and the competitive running event permitted since 1992) that have been authorized by permit or license as of the date of enactment of this Act to continue within the Special Management Areas, subject to such terms and conditions as the Secretary may require. (B) Permitting.--The designation of the Special Management Areas by subsection (a) shall not affect the issuance of permits relating to the activities covered under subparagraph (A) after the date of enactment of this Act. (C) Bicycles.--The Secretary may permit the use of bicycles in-- (i) the portion of the Sheep Mountain Special Management Area identified as ``Ophir Valley Area'' on the map entitled ``Proposed Sheep Mountain Special Management Area'' and dated September 19, 2018; and (ii) the portion of the Liberty Bell East Special Management Area identified as ``Liberty Bell Corridor'' on the map entitled ``Proposed Liberty Bell and Last Dollar Additions to the Mt. Sneffels Wilderness, Liberty Bell East Special Management Area'' and dated September 6, 2018. (d) Applicable Law.--Water and water rights in the Special Management Areas shall be administered in accordance with section 8 of the Colorado Wilderness Act of 1993 (Public Law 103-77; 107 Stat. 762), except that, for purposes of this subtitle-- (1) any reference contained in that section to ``the ***lands*** designated as wilderness by this Act'', ``the Piedra, Roubideau, and Tabeguache areas identified in section 9 of this Act, or the Bowen Gulch Protection Area or the Fossil Ridge Recreation Management Area identified in sections 5 and 6 of this Act'', or ``the areas described in sections 2, 5, 6, and 9 of this Act'' shall be considered to be a reference to ``the Special Management Areas''; and (2) any reference contained in that section to ``this Act'' shall be considered to be a reference to ``the Colorado Outdoor Recreation and Economy Act''. SEC. 734. RELEASE OF WILDERNESS STUDY AREAS. (a) Dominguez Canyon Wilderness Study Area.--Subtitle E of title II of Public Law 111-11 is amended-- (1) by redesignating section 2408 (16 U.S.C 460zzz-7) as section 2409; and (2) by inserting after section 2407 (16 U.S.C 460zzz-6) the following: ``SEC. 2408. RELEASE. ``(a) In General.--Congress finds that, for the purposes of section 603(c) of the Federal ***Land*** Policy and Management Act of 1976 (43 U.S.C 1782(c)), the portions of the Dominguez Canyon Wilderness Study Area not designated as wilderness by this subtitle have been adequately studied for wilderness designation. ``(b) Release.--Any public ***land*** referred to in subsection (a) that is not designated as wilderness by this subtitle-- ``(1) is no longer subject to section 603(c) of the Federal ***Land*** Policy and Management Act of 1976 (43 U.S.C 1782(c)); and ``(2) shall be managed in accordance with this subtitle and any other applicable laws.''. (b) McKenna Peak Wilderness Study Area.-- (1) In general.--Congress finds that, for the purposes of section 603(c) of the Federal ***Land*** Policy and Management Act of 1976 (43 U.S.C 1782(c)), the portions of the McKenna Peak Wilderness Study Area in San Miguel County in the State not designated as wilderness by paragraph (29) of section 2(a) of the Colorado Wilderness Act of 1993 (16 U.S.C 1132 note; Public Law 103-77) (as added by section 732) have been adequately studied for wilderness designation. (2) Release.--Any public ***land*** referred to in paragraph (1) that is not designated as wilderness by paragraph (29) of section 2(a) of the Colorado Wilderness Act of 1993 (16 U.S.C 1132 note; Public Law 103-77) (as added by section 732)-- (A) is no longer subject to section 603(c) of the Federal ***Land*** Policy and Management Act of 1976 (43 U.S.C 1782(c)); and (B) shall be managed in accordance with applicable laws. SEC. 735. ADMINISTRATIVE PROVISIONS. (a) Fish and Wildlife.--Nothing in this subtitle affects the jurisdiction or responsibility of the State with respect to fish and wildlife in the State. (b) No Buffer Zones.-- (1) In general.--Nothing in this subtitle establishes a protective perimeter or buffer zone around covered ***land***. (2) Activities outside wilderness.--The fact that a nonwilderness activity or use on ***land*** outside of the covered ***land*** can be seen or heard from within covered ***land*** shall not preclude the activity or use outside the boundary of the covered ***land***. (c) Tribal Rights and Uses.-- (1) Treaty rights.--Nothing in this subtitle affects the treaty rights of any Indian Tribe, including rights under the Agreement of September 13, 1873, ratified by the Act of April 29, 1874 (18 Stat. 36, chapter 136). (2) Traditional tribal uses.--Subject to any terms and conditions as the Secretary determines to be necessary and in accordance with applicable law, the Secretary shall allow for the continued use of the covered ***land*** by members of Indian Tribes-- (A) for traditional ceremonies; and (B) as a source of traditional plants and other materials. (d) Maps and Legal Descriptions.-- (1) In general.--As soon as practicable after the date of enactment of this Act, the Secretary or the Secretary of the Interior, as appropriate, shall file a map and a legal description of each wilderness area designated by paragraphs (27) through (29) of section 2(a) of the Colorado Wilderness Act of 1993 (16 U.S.C 1132 note; Public Law 103-77) (as added by section 732) and the Special Management Areas with-- (A) the Committee on Natural Resources of the House of Representatives; and (B) the Committee on Energy and Natural Resources of the Senate. (2) Force of law.--Each map and legal description filed under paragraph (1) shall have the same force and effect as if included in this subtitle, except that the Secretary or the Secretary of the Interior, as appropriate, may correct any typographical errors in the maps and legal descriptions. (3) Public availability.--Each map and legal description filed under paragraph (1) shall be on file and available for public inspection in the appropriate offices of the Bureau of ***Land*** Management and the ***Forest*** Service. (e) Acquisition of ***Land***.-- (1) In general.--The Secretary or the Secretary of the Interior, as appropriate, may acquire any ***land*** or interest in ***land*** within the boundaries of a Special Management Area or the wilderness designated under paragraphs (27) through (29) of section 2(a) of the Colorado Wilderness Act of 1993 (16 U.S.C 1132 note; Public Law 103-77) (as added by section 732) only through exchange, donation, or purchase from a willing seller. (2) Management.--Any ***land*** or interest in ***land*** acquired under paragraph (1) shall be incorporated into, and administered as a part of, the wilderness or Special Management Area in which the ***land*** or interest in ***land*** is located. (f) Grazing.--The grazing of livestock on covered ***land***, if established before the date of enactment of this Act, shall be permitted to continue subject to such reasonable regulations as are considered to be necessary by the Secretary with jurisdiction over the covered ***land***, in accordance with-- (1) section 4(d)(4) of the Wilderness Act (16 U.S.C 1133(d)(4)); and (2) the applicable guidelines set forth in Appendix A of the report of the Committee on Interior and Insular Affairs of the House of Representatives accompanying H.R 2570 of the 101st Congress (H. Rept. 101-405) or H.R 5487 of the 96th Congress (H. Rept. 96-617). (g) Fire, Insects, and Diseases.--In accordance with section 4(d)(1) of the Wilderness Act (16 U.S.C 1133(d)(1)), the Secretary with jurisdiction over a wilderness area designated by paragraphs (27) through (29) of section 2(a) of the Colorado Wilderness Act of 1993 (16 U.S.C 1132 note; Public Law 103-77) (as added by section 732) may carry out any activity in the wilderness area that the Secretary determines to be necessary for the control of fire, insects, and diseases, subject to such terms and conditions as the Secretary determines to be appropriate. (h) Withdrawal.--Subject to valid rights in existence on the date of enactment of this Act, the covered ***land*** and the approximately 6,590 acres generally depicted on the map entitled ``Proposed Naturita Canyon Mineral Withdrawal Area'' and dated September 6, 2018, is withdrawn from-- (1) entry, appropriation, and disposal under the public ***land*** laws; (2) location, entry, and patent under mining laws; and (3) operation of the mineral leasing, mineral materials, and geothermal leasing laws. [[Page H690]] Subtitle C--Thompson Divide SEC. 741. PURPOSES. The purposes of this subtitle are-- (1) subject to valid existing rights, to withdraw certain Federal ***land*** in the Thompson Divide area from mineral and other disposal laws in order to protect the ***agricultural***, ranching, wildlife, air quality, recreation, ecological, and scenic values of the area; and (2) to promote the capture of fugitive methane ***emissions*** that would otherwise be emitted into the atmosphere-- (A) to reduce methane gas ***emissions***; and (B) to provide-- (i) new renewable electricity supplies and other beneficial uses of fugitive methane ***emissions***; and (ii) increased royalties for taxpayers. SEC. 742. DEFINITIONS. In this subtitle: (1) Fugitive methane ***emissions***.--The term ``fugitive methane ***emissions***'' means methane gas from the Federal ***land*** in Garfield, Gunnison, Delta, or Pitkin County in the State, as generally depicted on the pilot program map as ``Fugitive Coal Mine Methane Use Pilot Program Area'', that would leak or be vented into the atmosphere from an active, inactive, or abandoned underground coal mine. (2) Pilot program.--The term ``pilot program'' means the Greater Thompson Divide Fugitive Coal Mine Methane Use Pilot Program established by section 745(a)(1). (3) Pilot program map.--The term ``pilot program map'' means the map entitled ``Greater Thompson Divide Fugitive Coal Mine Methane Use Pilot Program Area'' and dated June 17, 2019. (4) Secretary.--The term ``Secretary'' means the Secretary of the Interior. (5) Thompson divide lease.-- (A) In general.--The term ``Thompson Divide lease'' means any oil or gas lease in effect on the date of enactment of this Act within the Thompson Divide Withdrawal and Protection Area. (B) Exclusions.--The term ``Thompson Divide lease'' does not include any oil or gas lease that-- (i) is associated with a Wolf Creek Storage Field development right; or (ii) before the date of enactment of this Act, has expired, been cancelled, or otherwise terminated. (6) Thompson divide map.--The term ``Thompson Divide map'' means the map entitled ``Greater Thompson Divide Area Map'' and dated June 13, 2019. (7) Thompson divide withdrawal and protection area.--The term ``Thompson Divide Withdrawal and Protection Area'' means the Federal ***land*** and minerals generally depicted on the Thompson Divide map as the ``Thompson Divide Withdrawal and Protection Area''. (8) Wolf creek storage field development right.-- (A) In general.--The term ``Wolf Creek Storage Field development right'' means a development right for any of the Federal mineral leases numbered COC 007496, COC 007497, COC 007498, COC 007499, COC 007500, COC 007538, COC 008128, COC 015373, COC 0128018, COC 051645, and COC 051646, as generally depicted on the Thompson Divide map as ``Wolf Creek Storage Agreement''. (B) Exclusions.--The term ``Wolf Creek Storage Field development right'' does not include any storage right or related activity within the area described in subparagraph (A). SEC. 743. THOMPSON DIVIDE WITHDRAWAL AND PROTECTION AREA. (a) Withdrawal.--Subject to valid rights in existence on the date of enactment of this Act, the Thompson Divide Withdrawal and Protection Area is withdrawn from-- (1) entry, appropriation, and disposal under the public ***land*** laws; (2) location, entry, and patent under the mining laws; and (3) operation of the mineral leasing, mineral materials, and geothermal leasing laws. (b) Surveys.--The exact acreage and legal description of the Thompson Divide Withdrawal and Protection Area shall be determined by surveys approved by the Secretary, in consultation with the Secretary of ***Agriculture***. (c) Grazing.--Nothing in this title affects the administration of grazing in the Thompson Divide Withdrawal and Protection Area. SEC. 744. THOMPSON DIVIDE LEASE EXCHANGE. (a) In General.--In exchange for the relinquishment by a leaseholder of all Thompson Divide leases of the leaseholder, the Secretary may issue to the leaseholder credits for any bid, royalty, or rental payment due under any Federal oil or gas lease on Federal ***land*** in the State, in accordance with subsection (b). (b) Amount of Credits.-- (1) In general.--Subject to paragraph (2), the amount of the credits issued to a leaseholder of a Thompson Divide lease relinquished under subsection (a) shall-- (A) be equal to the sum of-- (i) the amount of the bonus bids paid for the applicable Thompson Divide leases; (ii) the amount of any rental paid for the applicable Thompson Divide leases as of the date on which the leaseholder submits to the Secretary a notice of the decision to relinquish the applicable Thompson Divide leases; and (iii) the amount of any expenses incurred by the leaseholder of the applicable Thompson Divide leases in the preparation of any drilling permit, sundry notice, or other related submission in support of the development of the applicable Thompson Divide leases as of January 28, 2019, including any expenses relating to the preparation of any analysis under the National Environmental Policy Act of 1969 (42 U.S.C 4321 et seq.); and (B) require the approval of the Secretary. (2) Exclusion.--The amount of a credit issued under subsection (a) shall not include any expenses paid by the leaseholder of a Thompson Divide lease for legal fees or related expenses for legal work with respect to a Thompson Divide lease. (c) Cancellation.--Effective on relinquishment under this section, and without any additional action by the Secretary, a Thompson Divide lease-- (1) shall be permanently cancelled; and (2) shall not be reissued. (d) Conditions.-- (1) Applicable law.--Except as otherwise provided in this section, each exchange under this section shall be conducted in accordance with-- (A) this title; and (B) other applicable laws (including regulations). (2) Acceptance of credits.--The Secretary shall accept credits issued under subsection (a) in the same manner as cash for the payments described in that subsection. (3) Applicability.--The use of a credit issued under subsection (a) shall be subject to the laws (including regulations) applicable to the payments described in that subsection, to the extent that the laws are consistent with this section. (4) Treatment of credits.--All amounts in the form of credits issued under subsection (a) accepted by the Secretary shall be considered to be amounts received for the purposes of-- (A) section 35 of the Mineral Leasing Act (30 U.S.C 191); and (B) section 20 of the Geothermal Steam Act of 1970 (30 U.S.C 1019). (e) Wolf Creek Storage Field Development Rights.-- (1) Conveyance to secretary.--As a condition precedent to the relinquishment of a Thompson Divide lease, any leaseholder with a Wolf Creek Storage Field development right shall permanently relinquish, transfer, and otherwise convey to the Secretary, in a form acceptable to the Secretary, all Wolf Creek Storage Field development rights of the leaseholder. (2) Limitation of transfer.--An interest acquired by the Secretary under paragraph (1)-- (A) shall be held in perpetuity; and (B) shall not be-- (i) transferred; (ii) reissued; or (iii) otherwise used for mineral extraction. SEC. 745. GREATER THOMPSON DIVIDE FUGITIVE COAL MINE METHANE USE PILOT PROGRAM. (a) Fugitive Coal Mine Methane Use Pilot Program.-- (1) Establishment.--There is established in the Bureau of ***Land*** Management a pilot program, to be known as the ``Greater Thompson Divide Fugitive Coal Mine Methane Use Pilot Program''. (2) Purpose.--The purpose of the pilot program is to promote the capture, beneficial use, mitigation, and sequestration of fugitive methane ***emissions***-- (A) to reduce methane ***emissions***; (B) to promote economic development; (C) to produce bid and royalty revenues; (D) to improve air quality; and (E) to improve public safety. (3) Plan.-- (A) In general.--Not later than 180 days after the date of enactment of this Act, the Secretary shall develop a plan-- (i) to complete an inventory of fugitive methane ***emissions*** in accordance with subsection (b); (ii) to provide for the leasing of fugitive methane ***emissions*** in accordance with subsection (c); and (iii) to provide for the capping or destruction of fugitive methane ***emissions*** in accordance with subsection (d). (B) Coordination.--In developing the plan under this paragraph, the Secretary shall coordinate with-- (i) the State; (ii) Garfield, Gunnison, Delta, and Pitkin Counties in the State; (iii) lessees of Federal coal within the counties referred to in clause (ii); (iv) interested institutions of higher education in the State; and (v) interested members of the public. (b) Fugitive Methane ***Emission*** Inventory.-- (1) In general.--Not later than 1 year after the date of enactment of this Act, the Secretary shall complete an inventory of fugitive methane ***emissions***. (2) Conduct.--The Secretary may conduct the inventory under paragraph (1) through, or in collaboration with-- (A) the Bureau of ***Land*** Management; (B) the United States Geological Survey; (C) the Environmental Protection Agency; (D) the United States ***Forest*** Service; (E) State departments or agencies; (F) Garfield, Gunnison, Delta, or Pitkin County in the State; (G) the Garfield County Federal Mineral Lease District; (H) institutions of higher education in the State; (I) lessees of Federal coal within a county referred to in subparagraph (F); (J) the National Oceanic and Atmospheric Administration; (K) the National Center for Atmospheric Research; or (L) other interested entities, including members of the public. (3) Contents.--The inventory under paragraph (1) shall include-- (A) the general location and geographic coordinates of each vent, seep, or other source producing significant fugitive methane ***emissions***; (B) an estimate of the volume and concentration of fugitive methane ***emissions*** from each [[Page H691]] source of significant fugitive methane ***emissions***, including details of measurements taken and the basis for that ***emissions*** estimate; (C) an estimate of the total volume of fugitive methane ***emissions*** each year; (D) relevant data and other information available from-- (i) the Environmental Protection Agency; (ii) the Mine Safety and Health Administration; (iii) the Colorado Department of Natural Resources; (iv) the Colorado Public Utility Commission; (v) the Colorado Department of Health and Environment; and (vi) the Office of Surface Mining Reclamation and Enforcement; and (E) such other information as may be useful in advancing the purposes of the pilot program. (4) Public participation; disclosure.-- (A) Public participation.--The Secretary shall provide opportunities for public participation in the inventory under this subsection. (B) Availability.--The Secretary shall make the inventory under this subsection publicly available. (C) Disclosure.--Nothing in this subsection requires the Secretary to publicly release information that-- (i) poses a threat to public safety; (ii) is confidential business information; or (iii) is otherwise protected from public disclosure. (5) Use.--The Secretary shall use the inventory in carrying out-- (A) the leasing program under subsection (c); and (B) the capping or destruction of fugitive methane ***emissions*** under subsection (d). (c) Fugitive Methane ***Emission*** Leasing Program.-- (1) In general.--Subject to valid existing rights and in accordance with this section, not later than 1 year after the date of completion of the inventory required under subsection (b), the Secretary shall carry out a program to encourage the use and destruction of fugitive methane ***emissions***. (2) Fugitive methane ***emissions*** from coal mines subject to lease.-- (A) In general.--The Secretary shall authorize the holder of a valid existing Federal coal lease for a mine that is producing fugitive methane ***emissions*** to capture for use, or destroy by flaring, the fugitive methane ***emissions***. (B) Conditions.--The authority under subparagraph (A) shall be subject to-- (i) valid existing rights; and (ii) such terms and conditions as the Secretary may require. (C) Limitations.--The program carried out under paragraph (1) shall only include fugitive methane ***emissions*** that can be captured for use, or destroyed by flaring, in a manner that does not-- (i) endanger the safety of any coal mine worker; or (ii) unreasonably interfere with any ongoing operation at a coal mine. (D) Cooperation.-- (i) In general.--The Secretary shall work cooperatively with the holders of valid existing Federal coal leases for mines that produce fugitive methane ***emissions*** to encourage-- (I) the capture of fugitive methane ***emissions*** for beneficial use, such as generating electrical power, producing usable heat, transporting the methane to market, or transforming the fugitive methane ***emissions*** into a different marketable material; or (II) if the beneficial use of the fugitive methane ***emissions*** is not feasible, the destruction of the fugitive methane ***emissions*** by flaring. (ii) Guidance.--In furtherance of the purposes of this paragraph, not later than 1 year after the date of enactment of this Act, the Secretary shall issue guidance for the implementation of Federal authorities and programs to encourage the capture for use, or destruction by flaring, of fugitive methane ***emissions***, while minimizing impacts on natural resources or other public interest values. (E) Royalties.--The Secretary shall determine whether any fugitive methane ***emissions*** used or destroyed pursuant to this paragraph are subject to the payment of a royalty under applicable law. (3) Fugitive methane ***emissions*** from abandoned coal mines.-- (A) In general.--Except as otherwise provided in this section, notwithstanding section 743, subject to valid existing rights, and in accordance with section 21 of the Mineral Leasing Act (30 U.S.C 241) and any other applicable law, the Secretary shall-- (i) authorize the capture for use, or destruction by flaring, of fugitive methane ***emissions*** from abandoned coal mines on Federal ***land***; and (ii) make available for leasing such fugitive methane ***emissions*** from abandoned coal mines on Federal ***land*** as the Secretary considers to be in the public interest. (B) Source.--To the maximum extent practicable, the Secretary shall offer for lease each significant vent, seep, or other source of fugitive methane ***emissions*** from abandoned coal mines. (C) Bid qualifications.--A bid to lease fugitive methane ***emissions*** under this paragraph shall specify whether the prospective lessee intends-- (i) to capture the fugitive methane ***emissions*** for beneficial use, such as generating electrical power, producing usable heat, transporting the methane to market, or transforming the fugitive methane ***emissions*** into a different marketable material; (ii) to destroy the fugitive methane ***emissions*** by flaring; or (iii) to employ a specific combination of-- (I) capturing the fugitive methane ***emissions*** for beneficial use; and (II) destroying the fugitive methane ***emission*** by flaring. (D) Priority.-- (i) In general.--If there is more than 1 qualified bid for a lease under this paragraph, the Secretary shall select the bid that the Secretary determines is likely to most significantly advance the public interest. (ii) Considerations.--In determining the public interest under clause (i), the Secretary shall take into consideration-- (I) the size of the overall decrease in the time-integrated radiative forcing of the fugitive methane ***emissions***; (II) the impacts to other natural resource values, including wildlife, water, and air; and (III) other public interest values, including scenic, economic, recreation, and cultural values. (E) Lease form.-- (i) In general.--The Secretary shall develop and provide to prospective bidders a lease form for leases issued under this paragraph. (ii) Due diligence.--The lease form developed under clause (i) shall include terms and conditions requiring the leased fugitive methane ***emissions*** to be put to beneficial use or flared by not later than 1 year after the date of issuance of the lease. (F) Royalty rate.--The Secretary shall develop a minimum bid and royalty rate for leases under this paragraph to advance the purposes of this section, to the maximum extent practicable. (d) Sequestration.--If, by not later than 4 years after the date of enactment of this Act, any significant fugitive methane ***emissions*** from abandoned coal mines on Federal ***land*** are not leased under subsection (c)(3), the Secretary shall, in accordance with applicable law, take all reasonable measures-- (1) to cap those fugitive methane ***emissions*** at the source in any case in which the cap will result in the long-term sequestration of all or a significant portion of the fugitive methane ***emissions***; or (2) if sequestration under paragraph (1) is not feasible, destroy the fugitive methane ***emissions*** by flaring. (e) Report to Congress.--Not later than 4 years after the date of enactment of this Act the Secretary shall submit to the Committee on Energy and Natural Resources of the Senate and the Committee on Natural Resources of the House of Representatives a report detailing-- (1) the economic and environmental impacts of the pilot program, including information on increased royalties and estimates of avoided greenhouse gas ***emissions***; and (2) any recommendations of the Secretary on whether the pilot program could be expanded geographically to include other significant sources of fugitive methane ***emissions*** from coal mines. SEC. 746. EFFECT. Except as expressly provided in this subtitle, nothing in this subtitle-- (1) expands, diminishes, or impairs any valid existing mineral leases, mineral interest, or other property rights wholly or partially within the Thompson Divide Withdrawal and Protection Area, including access to the leases, interests, rights, or ***land*** in accordance with applicable Federal, State, and local laws (including regulations); (2) prevents the capture of methane from any active, inactive, or abandoned coal mine covered by this subtitle, in accordance with applicable laws; or (3) prevents access to, or the development of, any new or existing coal mine or lease in Delta or Gunnison County in the State. Subtitle D--Curecanti National Recreation Area SEC. 751. DEFINITIONS. In this subtitle: (1) Map.--The term ``map'' means the map entitled ``Curecanti National Recreation Area, Proposed Boundary'', numbered 616/100,485C, and dated August 11, 2016. (2) National recreation area.--The term ``National Recreation Area'' means the Curecanti National Recreation Area established by section 752(a). (3) Secretary.--The term ``Secretary'' means the Secretary of the Interior. SEC. 752. CURECANTI NATIONAL RECREATION AREA. (a) Establishment.--Effective beginning on the earlier of the date on which the Secretary approves a request under subsection (c)(2)(B)(i)(I) and the date that is 1 year after the date of enactment of this Act, there shall be established as a unit of the National Park System the Curecanti National Recreation Area, in accordance with this title, consisting of approximately 50,667 acres of ***land*** in the State, as generally depicted on the map as ``Curecanti National Recreation Area Proposed Boundary''. (b) Availability of Map.--The map shall be on file and available for public inspection in the appropriate offices of the National Park Service. (c) Administration.-- (1) In general.--The Secretary shall administer the National Recreation Area in accordance with-- (A) this subtitle; and (B) the laws (including regulations) generally applicable to units of the National Park System, including section 100101(a), chapter 1003, and sections 100751(a), 100752, 100753, and 102101 of title 54, United States Code. (2) Dam, power plant, and reservoir management and operations.-- (A) In general.--Nothing in this subtitle affects or interferes with the authority of the Secretary-- (i) to operate the Uncompahgre Valley Reclamation Project under the reclamation laws; (ii) to operate the Wayne N. Aspinall Unit of the Colorado River Storage Project under the [[Page H692]] Act of April 11, 1956 (commonly known as the ``Colorado River Storage Project Act'') (43 U.S.C 620 et seq.); or (iii) under the Federal Water Project Recreation Act (16 U.S.C 460l-12 et seq.). (B) Reclamation ***land***.-- (i) Submission of request to retain administrative jurisdiction.--If, before the date that is 1 year after the date of enactment of this Act, the Commissioner of Reclamation submits to the Secretary a request for the Commissioner of Reclamation to retain administrative jurisdiction over the minimum quantity of ***land*** within the ***land*** identified on the map as ``***Lands*** withdrawn or acquired for Bureau of Reclamation projects'' that the Commissioner of Reclamation identifies as necessary for the effective operation of Bureau of Reclamation water facilities, the Secretary may-- (I) approve, approve with modifications, or disapprove the request; and (II) if the request is approved under subclause (I), make any modifications to the map that are necessary to reflect that the Commissioner of Reclamation retains management authority over the minimum quantity of ***land*** required to fulfill the reclamation mission. (ii) Transfer of ***land***.-- (I) In general.--Administrative jurisdiction over the ***land*** identified on the map as ``***Lands*** withdrawn or acquired for Bureau of Reclamation projects'', as modified pursuant to clause (i)(II), if applicable, shall be transferred from the Commissioner of Reclamation to the Director of the National Park Service by not later than the date that is 1 year after the date of enactment of this Act. (II) Access to transferred ***land***.-- (aa) In general.--Subject to item (bb), the Commissioner of Reclamation shall retain access to the ***land*** transferred to the Director of the National Park Service under subclause (I) for reclamation purposes, including for the operation, maintenance, and expansion or replacement of facilities. (bb) Memorandum of understanding.--The terms of the access authorized under item (aa) shall be determined by a memorandum of understanding entered into between the Commissioner of Reclamation and the Director of the National Park Service not later than 1 year after the date of enactment of this Act. (3) Management agreements.-- (A) In general.--The Secretary may enter into management agreements, or modify management agreements in existence on the date of enactment of this Act, relating to the authority of the Director of the National Park Service, the Commissioner of Reclamation, the Director of the Bureau of ***Land*** Management, or the Chief of the ***Forest*** Service to manage Federal ***land*** within or adjacent to the boundary of the National Recreation Area. (B) State ***land***.--The Secretary may enter into cooperative management agreements for any ***land*** administered by the State that is within or adjacent to the National Recreation Area, in accordance with the cooperative management authority under section 101703 of title 54, United States Code. (4) Recreational activities.-- (A) Authorization.--Except as provided in subparagraph (B), the Secretary shall allow boating, boating-related activities, hunting, and fishing in the National Recreation Area in accordance with applicable Federal and State laws. (B) Closures; designated zones.-- (i) In general.--The Secretary, acting through the Superintendent of the National Recreation Area, may designate zones in which, and establish periods during which, no boating, hunting, or fishing shall be permitted in the National Recreation Area under subparagraph (A) for reasons of public safety, administration, or compliance with applicable laws. (ii) Consultation required.--Except in the case of an emergency, any closure proposed by the Secretary under clause (i) shall not take effect until after the date on which the Superintendent of the National Recreation Area consults with-- (I) the appropriate State agency responsible for hunting and fishing activities; and (II) the Board of County Commissioners in each county in which the zone is proposed to be designated. (5) Landowner assistance.--On the written request of an individual that owns private ***land*** located not more than 3 miles from the boundary of the National Recreation Area, the Secretary may work in partnership with the individual to enhance the long-term conservation of natural, cultural, recreational, and scenic resources in and around the National Recreation Area-- (A) by acquiring all or a portion of the private ***land*** or interests in private ***land*** located not more than 3 miles from the boundary of the National Recreation Area by purchase, exchange, or donation, in accordance with section 753; (B) by providing technical assistance to the individual, including cooperative assistance; (C) through available grant programs; and (D) by supporting conservation easement opportunities. (6) Withdrawal.--Subject to valid rights in existence on the date of enactment of this Act, all Federal ***land*** within the National Recreation Area is withdrawn from-- (A) entry, appropriation, and disposal under the public ***land*** laws; (B) location, entry, and patent under the mining laws; and (C) operation of the mineral leasing, mineral materials, and geothermal leasing laws. (7) Grazing.-- (A) State ***land*** subject to a state grazing lease.-- (i) In general.--If State ***land*** acquired under this subtitle is subject to a State grazing lease in effect on the date of acquisition, the Secretary shall allow the grazing to continue for the remainder of the term of the lease, subject to the related terms and conditions of user agreements, including permitted stocking rates, grazing fee levels, access rights, and ownership and use of range improvements. (ii) Access.--A lessee of State ***land*** may continue to use established routes within the National Recreation Area to access State ***land*** for purposes of administering the lease if the use was permitted before the date of enactment of this Act, subject to such terms and conditions as the Secretary may require. (B) State and private ***land***.--The Secretary may, in accordance with applicable laws, authorize grazing on ***land*** acquired from the State or private landowners under section 753, if grazing was established before the date of acquisition. (C) Private ***land***.--On private ***land*** acquired under section 753 for the National Recreation Area on which authorized grazing is occurring before the date of enactment of this Act, the Secretary, in consultation with the lessee, may allow the continuation and renewal of grazing on the ***land*** based on the terms of acquisition or by agreement between the Secretary and the lessee, subject to applicable law (including regulations). (D) Federal ***land***.--The Secretary shall-- (i) allow, consistent with the grazing leases, uses, and practices in effect as of the date of enactment of this Act, the continuation and renewal of grazing on Federal ***land*** located within the boundary of the National Recreation Area on which grazing is allowed before the date of enactment of this Act, unless the Secretary determines that grazing on the Federal ***land*** would present unacceptable impacts (as defined in section 1.4.7.1 of the National Park Service document entitled ``Management Policies 2006: The Guide to Managing the National Park System'') to the natural, cultural, recreational, and scenic resource values and the character of the ***land*** within the National Recreation Area; and (ii) retain all authorities to manage grazing in the National Recreation Area. (E) Termination of leases.--Within the National Recreation Area, the Secretary may-- (i) accept the voluntary termination of a lease or permit for grazing; or (ii) in the case of a lease or permit vacated for a period of 3 or more years, terminate the lease or permit. (8) Water rights.--Nothing in this subtitle-- (A) affects any use or allocation in existence on the date of enactment of this Act of any water, water right, or interest in water; (B) affects any vested absolute or decreed conditional water right in existence on the date of enactment of this Act, including any water right held by the United States; (C) affects any interstate water compact in existence on the date of enactment of this Act; (D) shall be considered to be a relinquishment or reduction of any water right reserved or appropriated by the United States in the State on or before the date of enactment of this Act; or (E) constitutes an express or implied Federal reservation of any water or water rights with respect to the National Recreation Area. (9) Fishing easements.-- (A) In general.--Nothing in this subtitle diminishes or alters the fish and wildlife program for the Aspinall Unit developed under section 8 of the Act of April 11, 1956 (commonly known as the ``Colorado River Storage Project Act'') (70 Stat. 110, chapter 203; 43 U.S.C 620g), by the United States Fish and Wildlife Service, the Bureau of Reclamation, and the Colorado Division of Wildlife (including any successor in interest to that division) that provides for the acquisition of public access fishing easements as mitigation for the Aspinall Unit (referred to in this paragraph as the ``program''). (B) Acquisition of fishing easements.--The Secretary shall continue to fulfill the obligation of the Secretary under the program to acquire 26 miles of class 1 public fishing easements to provide to sportsmen access for fishing within the Upper Gunnison Basin upstream of the Aspinall Unit, subject to the condition that no existing fishing access downstream of the Aspinall Unit shall be counted toward the minimum mileage requirement under the program. (C) Plan.--Not later than 1 year after the date of enactment of this Act, the Secretary shall develop a plan for fulfilling the obligation of the Secretary described in subparagraph (B) by the date that is 10 years after the date of enactment of this Act. (D) Reports.--Not later than each of 2 years, 5 years, and 8 years after the date of enactment of this Act, the Secretary shall submit to Congress a report that describes the progress made in fulfilling the obligation of the Secretary described in subparagraph (B). (d) Tribal Rights and Uses.-- (1) Treaty rights.--Nothing in this subtitle affects the treaty rights of any Indian Tribe. (2) Traditional tribal uses.--Subject to any terms and conditions as the Secretary determines to be necessary and in accordance with applicable law, the Secretary shall allow for the continued use of the National Recreation Area by members of Indian Tribes-- (A) for traditional ceremonies; and (B) as a source of traditional plants and other materials. SEC. 753. ACQUISITION OF ***LAND***; BOUNDARY MANAGEMENT. (a) Acquisition.-- (1) In general.--The Secretary may acquire any ***land*** or interest in ***land*** within the boundary of the National Recreation Area. (2) Manner of acquisition.-- (A) In general.--Subject to subparagraph (B), ***land*** described in paragraph (1) may be acquired under this subsection by-- (i) donation; (ii) purchase from willing sellers with donated or appropriated funds; (iii) transfer from another Federal agency; or [[Page H693]] (iv) exchange. (B) State ***land***.--***Land*** or interests in ***land*** owned by the State or a political subdivision of the State may only be acquired by purchase, donation, or exchange. (b) Transfer of Administrative Jurisdiction.-- (1) ***Forest*** service ***land***.-- (A) In general.--Administrative jurisdiction over the approximately 2,560 acres of ***land*** identified on the map as ``U.S ***Forest*** Service proposed transfer to the National Park Service'' is transferred to the Secretary, to be administered by the Director of the National Park Service as part of the National Recreation Area. (B) Boundary adjustment.--The boundary of the Gunnison National ***Forest*** shall be adjusted to exclude the ***land*** transferred to the Secretary under subparagraph (A). (2) Bureau of ***land*** management ***land***.--Administrative jurisdiction over the approximately 5,040 acres of ***land*** identified on the map as ``Bureau of ***Land*** Management proposed transfer to National Park Service'' is transferred from the Director of the Bureau of ***Land*** Management to the Director of the National Park Service, to be administered as part of the National Recreation Area. (3) Withdrawal.--Administrative jurisdiction over the ***land*** identified on the map as ``Proposed for transfer to the Bureau of ***Land*** Management, subject to the revocation of Bureau of Reclamation withdrawal'' shall be transferred to the Director of the Bureau of ***Land*** Management on relinquishment of the ***land*** by the Bureau of Reclamation and revocation by the Bureau of ***Land*** Management of any withdrawal as may be necessary. (c) Potential ***Land*** Exchange.-- (1) In general.--The withdrawal for reclamation purposes of the ***land*** identified on the map as ``Potential exchange ***lands***'' shall be relinquished by the Commissioner of Reclamation and revoked by the Director of the Bureau of ***Land*** Management and the ***land*** shall be transferred to the National Park Service. (2) Exchange; inclusion in national recreation area.--On transfer of the ***land*** described in paragraph (1), the transferred ***land***-- (A) may be exchanged by the Secretary for private ***land*** described in section 752(c)(5)-- (i) subject to a conservation easement remaining on the transferred ***land***, to protect the scenic resources of the transferred ***land***; and (ii) in accordance with the laws (including regulations) and policies governing National Park Service ***land*** exchanges; and (B) if not exchanged under subparagraph (A), shall be added to, and managed as a part of, the National Recreation Area. (d) Addition to National Recreation Area.--Any ***land*** within the boundary of the National Recreation Area that is acquired by the United States shall be added to, and managed as a part of, the National Recreation Area. SEC. 754. GENERAL MANAGEMENT PLAN. Not later than 3 years after the date on which funds are made available to carry out this subtitle, the Director of the National Park Service, in consultation with the Commissioner of Reclamation, shall prepare a general management plan for the National Recreation Area in accordance with section 100502 of title 54, United States Code. SEC. 755. BOUNDARY SURVEY. The Secretary (acting through the Director of the National Park Service) shall prepare a boundary survey and legal description of the National Recreation Area. TITLE VIII--GRAND CANYON PROTECTION SEC. 801. SHORT TITLE. This title may be cited as the ``Grand Canyon Protection Act''. SEC. 802. WITHDRAWAL OF CERTAIN FEDERAL ***LAND*** IN THE STATE OF ARIZONA. (a) Definition Of Map.--In this title, the term ``Map'' means the map prepared by the Bureau of ***Land*** Management entitled ``Grand Canyon Protection Act'' and dated January 22, 2021. (b) Withdrawal.--Subject to valid existing rights, the approximately 1,006,545 acres of Federal ***land*** in the State of Arizona, generally depicted on the Map as ``Federal Mineral Estate to be Withdrawn'', including any ***land*** or interest in ***land*** that is acquired by the United States after the date of the enactment of this Act, are hereby withdrawn from-- (1) all forms of entry, appropriation, and disposal under the public ***land*** laws; (2) location, entry, and patent under the mining laws; and (3) operation of the mineral leasing, mineral materials, and geothermal leasing laws. (c) Availability Of Map.--The Map shall be kept on file and made available for public inspection in the appropriate offices of the ***Forest*** Service and the Bureau of ***Land*** Management. The SPEAKER pro tempore. The bill, as amended, shall be debatable for 1 hour equally divided and controlled by the chair and ranking minority member of the Committee on Natural Resources. The gentleman from Colorado (Mr. Neguse) and the gentleman from Arkansas (Mr. Westerman) each will control 30 minutes. The Chair recognizes the gentleman from Colorado. General Leave Mr. NEGUSE. Madam Speaker, I ask unanimous consent that all Members may have 5 legislative days in which to revise and extend their remarks and to insert extraneous material on H.R 803. The SPEAKER pro tempore. Is there objection to the request of the gentleman from Colorado? There was no objection. Mr. NEGUSE. Madam Speaker, I yield myself 5 minutes. Madam Speaker, I rise in strong support of H.R 803, the Protecting America's Wilderness and Public ***Lands*** Act. I first want to thank Chairman Grijalva for his incredible leadership of the House Natural Resources Committee, and for bringing his Grand Canyon Protection Act to the floor today as part of the bill that we will be considering. I have been honored to work alongside Chair Grijalva on the Natural Resources Committee and I am looking forward to continuing that work as the chair of the National Parks, ***Forests***, and Public ***Lands*** Subcommittee this Congress. The bill that we are considering today unifies eight standalone proposals as H.R 803, the Protecting America's Wilderness and Public ***Lands*** Act. Representative DeGette, who is the primary sponsor, Representative Huffman, Representative Chu, Representative Carbajal, Representative Schiff, and Representative Kilmer, have all worked tirelessly to advocate for the places in this bill, and I am looking forward to hearing more from them during today's debate. Now, before I get carried away with the beauty of Colorado, I would like to acknowledge the product of our combined efforts: 1.5 million acres of wilderness; 1,200 miles of protected wild and scenic rivers; permanent mineral withdrawals for the Grand Canyon and Colorado's Thompson Divide. Each title of this bill considers how best to protect public ***lands*** and provide for local considerations. Together, they will improve access to clean water, clean air, outdoor recreation and, yes, they will even support jobs and our economy. Protecting public ***lands*** is a key part of the climate solution, and I am proud to say that we continue those protections here today with the formal support of the Biden administration. My contribution to this bill is the Colorado Outdoor Recreation and Economy Act, or the CORE Act. Through collaboration, consultation, negotiation, local elected officials, community members, businesses, outdoor recreation and conservation groups, ranchers, sportsmen, they have all come together to protect the outdoor areas in Colorado that we love. In many cases, Coloradans have been asking Congress to protect these areas for a decade or longer. In total, the CORE Act would conserve more than 400,000 acres of public ***land***, and each the CORE Act's four sections were separately crafted by Coloradans. Camp Hale is one of the special places protected by the CORE Act. High on Colorado's Continental Divide, surrounded by the White River National ***Forest***, the CORE Act would designate the first-ever National Historic Landscape at Camp Hale to honor the storied legacy of the Army's 10th Mountain Division. The soldiers that trained at Camp Hale led our Nation to victory in World War II, then went on to create the modern outdoor industry, which today contributes billions to Colorado's growing outdoor recreation economy. To similar ends, the CORE Act formally establishes numerous boundaries, also a handful of National Park Service units without a formal designation by Congress, which would be in this bill. This long overdue designation will provide new fishing access, for example, for sportsmen in the Gunnison River basin. And in yet another win for Colorado sportsmen, the CORE Act protects Colorado's only migration corridor over Interstate 70 for elk, mule deer, and other wildlife. These areas are just a small sampling, Mr. Speaker, of the many non- wilderness and locally supported protections included in this bill today. Additionally, the CORE Act makes a contribution of 73,000 acres to our National Wilderness Preservation System. The CORE Act wilderness protects some of Colorado's most iconic peaks, including two fourteeners: Wilson Peak and Mount Sneffels. And of the 400,000 acres of public ***lands*** covered by the CORE Act, about half is for the withdrawal and protection of the Thompson Divide. The Thompson Divide, through ranching and outdoor recreation, contributes $30 million a year to Colorado's statewide economy. It is one of [[Page H694]] our most treasured landscapes and an area that is simply too valuable to drill for oil and gas. The thoughtful input and collaboration put into the CORE Act is apparent in each title of the Protecting America's Wilderness and Public ***Lands*** Act. Now, my colleagues may have ideological differences when it comes to protecting our public ***lands***, but what we can all agree on is that the United States is blessed with some of the most beautiful landscapes in the world. And it is thanks to the careful consideration of the legislators that came before us and the legislators that are gathered here today on the floor that we are able to enjoy them today, and that our children will be able to enjoy them tomorrow. So I urge my colleagues to consider the decades of work that have gone into the bill that is before us and to recognize the chance that we all have to vote to protect these places. Mr. Speaker, I urge a ``yes'' vote, and I reserve the balance of my time. Mr. WESTERMAN. Mr. Speaker, I yield myself such time as I may consume. I rise today in opposition to H.R 803, the Protecting America's Wilderness and Public ***Lands*** Act. Contrary to the name, this bill will damage our environment, while simultaneously killing jobs in rural America. The proponents of this bill will say it is broadly supported. Listen to the Members who represent the districts most affected by this bill. They don't want it. Listen to the groups opposed: American Farm Bureau, American ***Forest*** Resource Council, or the Grand Junction, Colorado, Chamber of Commerce. They don't want this bill. This bill creates nearly 1.5 million of acres of new wilderness, withdraws 1.2 million acres from mineral production, and designates over 1,200 miles of wild scenic and recreational rivers. For perspective, the wilderness designated in this bill is the same size as President Biden's home State of Delaware. This Chamber has bypassed the committee process and circumvented the will of Members who represent districts directly impacted by this legislation. It was scheduled for the floor before the Committee was ever organized. {time} 1730 The consequences of this bill on the four Western States it impacts will be far-reaching. For example, if you live in Colorado and you enjoy recreating on mountain biking and ATV trails like the people pictured here on the Tabeguache Trail, this bill will shut down your ability to recreate on those ***lands***. The same goes for snowmobilers, OHV users, and parents with strollers. It is very concerning that these wilderness areas will now be off- limits to active ***forest*** management. 2020 was sadly another record- breaking fire season. We have a problem on our national ***forests*** that is not going to be solved with handsaws and shovels. Now is not the time to rely on century-old management techniques stipulated by wilderness designations when over 80 million acres of U.S ***Forest*** Service ***land*** is in desperate need of treatment. If that wasn't enough, this bill also designates ***lands*** as wilderness in the wildland-urban interface. This is a matter of life and death. Mr. Speaker, I want to clear up some misconceptions about the last title of this bill, the Grand Canyon Protection Act. Nobody is mining in the Grand Canyon; nobody wants to mine in the Grand Canyon; and nobody will mine in the Grand Canyon--ever. Proponents of the bill would have you believe that this is happening right near the Colorado River. In fact, there are already buffer zones in place. It is called the Grand Canyon National Park. The only saving this bill will do is saving Chinese and Russian uranium mining jobs. In 2019, we only produced 0.5 percent of the domestic uranium needed for commercial reactors. This bill goes far beyond the park's boundaries and the boundaries of the sponsor's home district to simply kill jobs to the direct benefit of our adversaries. This bill will make us more dependent on hostile nations like Russia, Kazakhstan, and Uzbekistan, and Chinese-owned mines in Namibia. In conclusion, I strongly urge my colleagues to oppose this terrible, horrible, no-good, very bad bill. Mr. Speaker, I reserve the balance of my time. Mr. NEGUSE. Mr. Speaker, before I yield, I would be remiss if I didn't say with respect to Colorado in particular, and with much respect to the ranking member, the Outdoor Alliance sent a letter to Chairman Grijalva just a few days ago in support of this bill. It was signed by the CEO of the International Mountain Bicycling Association, so I think they would have much to disagree with, with respect to some of the statements that were made. Finally, I will also say, every bill that is a component of this measure was marked up in the last Congress, heard in the last Congress, and passed the last Congress twice. Mr. Speaker, I yield 5 minutes to the distinguished gentlewoman from Colorado (Ms. DeGette). Ms. DeGETTE. Mr. Speaker, I am so proud to rise in support of H.R 803, and I am so proud to be the primary sponsor of this beautiful legislation, Protecting America's Wilderness and Public ***Lands*** Act. The bill seeks to protect some of our Nation's most treasured public ***lands***. Not only will it help protect the air we breathe and the water we drink but also the wildlife that call these untouched areas home and the world-class recreation opportunities they provide. In all, this legislation preserves almost 3 million acres of public ***land*** across Colorado, California, Arizona, and Washington State. It designates 1.49 million acres of public ***land*** as wilderness, giving these areas the permanent protection that they deserve. It also protects an additional 1.2 million vulnerable acres from the threat of future uranium mining claims in Arizona, and it adds a thousand miles of river to the National Wild and Scenic River System. Preserving our Nation's public ***lands*** is about more than just protecting our environment. It is about protecting our economy and our way of life as well. In my home State of Colorado alone, our public ***lands*** support a $12 billion--that is a b--a $12 billion outdoor recreation economy and hundreds of thousands of jobs across the whole State. Perhaps most importantly, what this bill will do is to jump-start our commitment to protecting 30 percent of our Nation's ***lands*** by 2030 to help combat the climate crisis. This package includes eight separate public ***lands*** bills, as you heard from Mr. Neguse. All of those bills were heard in committee, marked up, and passed by this Chamber two times last year. I know that each of the individual bill sponsors plans to say a few words, so I would like to talk about title I of the legislation, which contains my bill, the Colorado Wilderness Act. This is legislation I have been working on for more than two decades to permanently protect about 660,000 acres of wilderness in 36 unique areas in Colorado. Most of these areas are low-lying canyon country, BLM areas that have been managed as wilderness study areas for almost 40 years now. As a fourth-generation Coloradan, I know how important these ***lands*** are to the people of my State, from the dramatic ridgeline of Grand Hogback to the sprawling plateaus of Little Book Cliffs, from the stunning red cliffs of the Dolores River Canyon to the winding riverways of Browns Canyon, the areas in this bill are some of the most beautiful and irreplaceable landscapes that our State has to offer. It is why the bill has received such unbelievable support from residents, businesses, and groups across the State. You heard from Mr. Neguse about the support. More than 14,000 people have written letters of support, and over 350 businesses. Now, I personally have visited most of the areas in the bill. I have gone on foot, and I have gone on horseback. I even went on raft to see them for myself. I met with landowners and ranchers and business owners to get their feedback. And when necessary, I adjusted the boundaries to address their concerns. As I said, the Colorado Wilderness Act is just one of eight bills in this legislation included in the package, and I want to thank each of my colleagues who are here today--Representatives Huffman, Carbajal, Chu, Schiff, Kilmer, Neguse, and also, of course, Chairman Grijalva-- for their unwavering support and for all the work that [[Page H695]] they have done to get this package to the floor. I want to thank all the staff from the Natural Resources Committee and our personal staffs, too. I just want to say that we have worked tirelessly on this legislation. It is so important not just for us but for the future generations who will come to these very special places, who will see the petroglyphs that I saw the last time I went out, who will see the Book Cliffs and the beautiful canyons. I think that protecting our untouched wilderness is so important. It is my number one priority in this Congress, and I know all my cosponsors feel the same way. I urge my colleagues on both sides of the aisle to vote ``yes'' on this important legislation. Mr. WESTERMAN. Mr. Speaker, I include for the Record the following letters from multiple organizations in opposition to H.R 803. Independent Petroleum Association of America, Washington, DC, February 23, 2021. Hon. Nancy Pelosi, Speaker, House of Representatives, Washington, DC. Madam Speaker: The Independent Petroleum Association of America (IPAA) is opposed to H.R 803, the ``Protecting America's Wilderness and Public ***Lands*** Act.'' This bill creates nearly 1.5 million acres of new wilderness and permanently withdraws 1.2 million acres from mineral production. It is in direct opposition to the multiple use mandate given to the Department of the Interior to manage the federal estate. Many of the local communities impacted by this measure, including Garfield County in Colorado which has existing mineral leases and planned for further development, have raised significant concerns due to the elimination of multiple use of the ***land*** and the overall threat to local economies and rural jobs. Further, many of the ***lands*** under consideration in H.R 803 do not meet the basic characteristics for consideration as wilderness. Instead, the legislation arbitrarily designates areas as wilderness and wild and scenic rivers despite official testimony provided by the relevant ***land*** management agencies to previous Congresses that many of these designations are inappropriate and not recommended. To declare areas that do not possess these characteristics undermines the integrity of the Wilderness Act and the Wild and Scenic Rivers Act. The process by which H.R 803 is coming to the House floor is also concerning. The bill did not go through regular order, receiving no hearings or mark-ups in the 117th Congress. In fact, the bill was scheduled for floor consideration before the Natural Resources Committee had even organized. Local input, especially with regards to managing active mineral leases which affect jobs, should have been solicited in an effort to allow the House to better understand the broad impacts of the bill. For these reasons, IPAA is strongly opposed to H.R 803. Sincerely, Dan Naatz, Senior Vice President of Government Relations and Political Affairs, Independent Producers Association of America. \_\_\_\_ February 23, 2021. Hon. Raul Grijalva, Chairman, House Natural Resources Committee, Washington, DC. Hon. Bruce Westerman, Ranking Member, House Natural Resources Committee, Washington, DC. Dear Chairman Grijalva and Ranking Member Westerman: The signatories to this letter urge you to vote in opposition to the ``Grand Canyon Protection Act'' (H.R 1052), as stand- alone legislation or as part of the Protecting America's Wilderness and Public ***Lands*** Act under consideration in the U.S House of Representatives this week. H.R 1052 perpetuates false claims of mining in one of our nation's most beautiful national parks. It also fails to acknowledge our nation's alarming reliance on foreign sources of minerals and would further weaken the already vulnerable supply chains for key U.S industry sectors, including manufacturing, infrastructure, energy, and defense. Federal ***lands***--predominantly in the western U.S --are the source of much of our nation's mineral endowment. Of these federal ***lands***, half are either off limits or under restrictions to mineral development. While mining is certainly not appropriate on all federal ***lands***, maintaining responsible access to the very resources that drive innovation, feed economic growth and improve our nation's quality of life is essential. Given the vast amount of federal ***lands*** already closed to mining operations, caution should be exercised when determining whether additional ***lands*** should be placed off limits. H.R 1052 ***targets*** more than a million acres of mineral rich ***lands***, including world-class uranium ore deposits that are located well outside the boundaries of the Grand Canyon National Park. The park, as created, already includes a built-in buffer zone to protect park resources from activities taking place outside the park boundaries and an additional million-acre buffer zone is not justified. H.R 1052 deliberately disregards our dangerous dependence on countries like Russia, Kazakhstan, and Uzbekistan to meet our nation's need for uranium to fuel our nuclear Navy and supply 20 percent of our nation's electricity. Furthermore, H.R 1052 ignores not only the comprehensive framework of federal, state, and local environmental regulations that govern every aspect of mining, but the findings of the Department of the Interior that the park was not at risk from mining given these existing protections. In fact, the U.S Geological Survey recently concluded that the nine uranium mines that have operated in northern Arizona since the 1970s (since modern environmental laws took effect) have caused no adverse impact to environmental or health. This unwise and unwarranted mineral withdrawal is bad public policy that ignores the vast sectors of our economy that depend upon a reliable and secure supply chain of responsibly sourced minerals and metals. It also puts President Biden's renewable goals at a risk, forcing domestic manufacturers of clean energy technologies to rely on increased imports of these materials. Access to our nation's vast and diverse resources and fair regulatory policies that promote certainty in the mine permitting process are the elements of sound public policy that should be considered when addressing resource development on federal ***lands***. We urge you to vote against this misguided bill and support policies that promote responsible resource development. Sincerely, American Exploration & Mining Association, Arizona Chamber of Commerce & Industry, Arizona Mining Association, National Mining Association, Women's Mining Coalition, Wyoming Mining Association. \_\_\_\_ NSSGA, National Stone, Sand & Gravel Association, February 19, 2020. Hon. Raul Grijalva, Chairman, House Committee on Natural Resources, Washington, DC. Hon. Bruce Westerman, Ranking Member, House Committee on Natural Resources, Washington, DC. Dear Chairman Grijalva and Ranking Member Westerman: On behalf of the 400 members of the National Stone, Sand & Gravel Association (NSSGA), I am writing to express our concern with certain provisions included in H.R 803, the ``Protecting America's Wilderness and Public ***Lands*** Act''. Our members take extraordinary strides to responsibly produce construction materials and we oppose legislation that arbitrarily and permanently prohibit the development of aggregates operations on millions of acres of federal ***lands***. NSSGA represents aggregates producers and those who manufacture equipment and services that support the construction industry. Our members are essential to the work of this country, and we represent more than 90 percent of the crushed stone and 70 percent of the sand and gravel consumed annually in the United States. Our members employ more than 100,000 hard-working men and women and are responsible for the essential raw materials found in every home, building, road, bridge and public works project. NSSGA is most concerned with Section 802 that would permanently ban aggregate production on millions of acres of ***land*** in Arizona. Such a ban would severely diminish the ability for communities to access key resources that are necessary for building roads, bridges, schools, hospitals, homes and businesses. Allowing this ban to proceed would have a significant impact on the cost of public works projects due to the necessity for stone, sand and gravel required to develop and repair infrastructure and buildings to be imported into the area. These products are expensive to transport and would further strain the budgets of local communities and federal entities that are seeking to make infrastructure investments in Arizona including improvements to National Parks like the Grand Canyon. Further, permanently banning aggregate operations on these federal ***lands*** would greatly impact the region and our nation's energy development. Industrial sand is a key component in energy production. Under the proposal access to these essential materials would be limited, driving up production costs that would likely be passed along to customers--families and businesses that are facing uncertainty during the pandemic. While this legislation will clearly create a competitive disadvantage that has negative economic impacts for the families in the impacted communities, it will also have significant environmental impacts. Delaying and increasing the cost of improvements to congested roads or eliminating access to a material that is needed to develop a new clean water project and cleaner energy sources will have real environmental impacts on establishing cleaner air and water and access to public ***lands***. Instead of taking broad, unilateral actions to withdraw access to these ***lands***, NSSGA urges Congress to consult with local stakeholders and communities to find more tailored approaches to preserve treasured ***lands***. [[Page H696]] NSSGA members strongly promote conservation in both their business practices and personal lives. Our member companies have advanced award-winning environmental stewardship projects to build critical habitats, promote biodiversity and drive greatest access to recreational activities. Further, as most NSSGA member quarries and plants have literally served as the bedrock of their communities of decades, they take great pride in engagement and are actively involved to giving back to their local communities. Rather than rushing through the legislative process to advance H.R 803 on the floor of the House of Representatives, NSSGA urges the Committee to move this large public ***lands*** package through regular order in order to allow more input, dialoged and discussion of these important issues from all involved stakeholders. We appreciate your consideration of our views and please do not hesitate to reach out if NSSGA may be of any assistance. Sincerely, Michael W. Johnson, President and CEO, National Stone, Sand & Gravel Association. \_\_\_\_ February 25, 2021. House of Representatives, Washington, DC. Dear Representative: On behalf of the nearly six million Farm Bureau member families across the United States, we write in strong opposition to H.R 803, the Protecting America's Wilderness and Public ***Lands*** Act. Collectively this package of bills impacts ***lands*** in California, Colorado, Arizona and Washington by creating nearly 1.5 million acres of new wilderness, the most restrictive federal ***land*** use classification. Additionally, it would designate 1,200 miles of wild and scenic rivers and create 110,000 acres of National Monument expansion. Further, many of the wilderness and wild and scenic river designations contained in this bill are not suitable for these restrictive designations. To declare areas that do not possess these characteristics undermines the integrity of the Wilderness Act and the Wild and Scenic Rivers Act as well as the ***lands*** that possess those features. Farmers and ranchers rely on federal ***forests*** and rangelands for economic and recreational opportunities. Livestock grazing on federal ***lands*** forms an integral part of ranching operations across the United States, especially in the West. But farmers also use national ***forests*** and rangelands throughout the United States in a variety of other ways. Federal ***lands*** throughout the country are important components of our nation's watersheds that provide water to a large number of Americans. Active ***land*** management practices such as timber production and livestock grazing are critical to protect against wildland fires which devastate range resources, damage watersheds, threaten wildlife and put rural communities at great risk. American farmers and ranchers have a genuine interest in healthy and productive federal ***forest*** and rangelands. At the same time, we have a genuine interest in seeing ***lands*** managed in an environmentally sound manner. Farmers and ranchers understand and appreciate that active management of our federal ***lands*** is critical to the long-term viability of the ecosystem, the resource, and the communities they support. Designations included in H.R 803 threaten multiple use areas by prohibiting the employment of motorized tools and mechanized vehicles in watershed management, trail maintenance, soil treatment, noxious weed control, waste management and fire protection. Our nation's federal ***forests*** are facing serious threats from fires, insects and disease due to a lack of active ***forest*** management. The poor health of our federal ***forests*** also threatens wildlife populations and neighboring non- federal ***lands***, as well as the vitality of rural, ***forested*** communities across the country. A vibrant livestock and ***forest*** products industry helps diversify rural economies in ways that compliment ranching and ***agricultural*** operations. Wilderness and National Monument designations eliminate federal ***land*** management agencies ability to effectively protect against the threat of catastrophic wildland fire. Farmers, landowners, and grazing permitees should be fully involved as affected partners in any process to execute federal ***land*** use designations which restrict public use and access. Federal ***land*** use designations that lack local stakeholder input from ***agricultural*** and resource management professionals often generates significant controversy and economic hardship at the local level. The detrimental effects of a federal ***land*** use designation frequently causes residents, elected state and county officials, and local stakeholders significant reductions in economic activity and the loss of jobs in rural communities. Past designations have also affected water rights, public ***lands*** grazing and access to State and private ***lands***. Farm Bureau supports the multiple-use concept of federal ***lands***, recognizing that definable ***land*** areas have dominant- use capability, which should be recognized with the concept of multiple uses without the total exclusion of other uses. The Protecting America's Wilderness and Public ***Lands*** Act stands in clear violation of AFBF policy. Additionally, the California, Colorado, Arizona and Washington Farm Bureau's oppose passage of this legislation. Farm Bureau urges you to oppose passage of H.R 803, the Protecting America's Wilderness and Public ***Lands*** Act. Sincerely, American Farm Bureau Federation, Arizona Farm Bureau, California Farm Bureau, Colorado Farm Bureau, Washington Farm Bureau. \_\_\_\_ Raul Grijalva, Chairman, House Natural Resources Committee, Washington, DC. Bruce Westerman, Ranking Member, House Natural Resources Committee, Washington, DC. Chairman Grijalva and Ranking Member Westerman: The National Cattlemen's Beef Association, the American Sheep Industry Association and the Public ***Lands*** Council are deeply concerned about the potential immediate and long-term impacts of H.R 803, the Colorado Wilderness Act. NCBA is the nation's largest and oldest trade association representing America's cattle producers, with other 250,000 producers represented directly and through its 46 state affiliate associations. Since 1865, ASI has been the national trade organization representing the interests of more than 100,000 sheep producers located throughout the country who produce America's lamb and wool. The Public ***Lands*** is the only national organization dedicated solely to representing the roughly 22,000 ranchers who hold federal grazing permits and operate on federal ***lands***. H.R 803 's passage would be detrimental to public ***lands*** ranchers who utilize federal grazing permits. While this bill obviously seeks to appeal to the desire to protect a landscape's natural state, the impact of designating ***lands*** as wilderness, especially such vast swaths, significantly compromises long-term ecological health. Currently, federal ***lands*** managed for multiple use provide valuable opportunity for livestock grazing, which is a tool to manage fuels that contribute to the risk of catastrophic wildfire. Further, grazing helps to cultivate landscapes that are more suitable and healthier wildlife habitat. The objectives the sponsors profess that they seek to achieve are immediately undermined by designating these millions of acres of wilderness. Designations limit management options, making it more difficult for ***land*** managers and stewards to protect these landscapes and their valuable attributes. Like ``wilderness,'' ``preservation'' is often a term used to convey the prioritization of maintaining an area's natural state, regardless of impact. While preservation may seem optimal, federal ***lands*** provide significantly greater benefit to all who utilize it when the conservation of resources is prioritized. While preservation seeks protection of nature from any use or change, conservation seeks the proper use of nature, providing opportunity for ecological enhancement. Grazing, for example, is a vital conservation tool to curb invasive species growth, promote improved soil and forage health, and reduce wildfire fuel load. Beyond general concerns about promoting wilderness designations as a ***land*** management tool, H.R 803 fails to follow established criteria for ``wilderness,'' instead arbitrarily designating areas as ``wilderness'' and ``wild and scenic rivers'' despite official testimony from relevant ***land*** management agencies. At a minimum, wilderness determinations must be grounded in science and fact. As Congress continues to develop natural resources and federal ***lands*** policy, it must prioritize legislation that recognizes that conservation, not preservation, is the key to effective ***land*** management and continued enjoyment for future generations. We urge you to oppose H.R 803, the Colorado Wilderness Act, and seek more engaged, thoughtful management of our precious natural resources. Sincerely, American Sheep Industry Association, National Cattlemen's Beef Association, Public ***Lands*** Council. Mr. WESTERMAN. Mr. Speaker, I yield 1 minute to the gentleman from Texas (Mr. Gohmert). Mr. GOHMERT. Mr. Speaker, this package is a massive ***land***-***removal*** bill. It basically takes 2.7 million acres away from meaningful production. The one good thing I can say is, it is consistent with this majority and this administration's actions that make us more reliant on China and will enrich China. That is the one good thing; it is at least consistent. Now, the majority feels that people in this town know better than the people who are losing this ***land*** for the different uses for which they could have it. I know we are hearing today on the floor: Oh, we have all these people who want this bill passed. It should have gone through committee so we could do the motions, we could have witnesses, and we could find out for ourselves. After 3 years of the Russia hoax, we really need to hear from the sources. Mr. NEGUSE. Mr. Speaker, I yield 2\1/2\ minutes to the gentleman from California (Mr. Huffman), the distinguished chairman of the Water, Oceans, and Wildlife Subcommittee. Mr. HUFFMAN. Mr. Speaker, I am excited to be one of the sponsors of this great legislation, and I am grateful that it includes, as title II, my bill, the [[Page H697]] Northwest California Wilderness, Recreation, and Working ***Forests*** Act. This bill addresses some ***lands*** in my district that are some of the most biodiverse ecosystems and exciting outdoor recreation opportunities you will find anywhere in California. These areas are home to old-growth trees critical for carbon sequestration, rivers that provide fish habitat and unparalleled recreation, and mountain trails that offer hiking, biking, and other unique experiences. Being active in the outdoors and experiencing wild places is a way of life in my district. Over the past year, with lockdowns and isolation, we have seen how important getting outside has been for our well-being. We all depend on the ecological, economic, and mental health benefits that our public ***lands*** provide, and that is why my legislation takes a multifaceted approach to public ***land*** management. First, it includes an ambitious restoration plan to improve ***forest*** health, promote fire resilience, and protect communities. Second, it recognizes the importance of the outdoor recreation economy by increasing recreational opportunities and tourism. Investing in our public ***lands*** means we are also investing in communities near our public ***lands***, and that is why there is so much broad support in my district for this bill. Then, finally, this legislation protects important wild places. These areas include critical habitat and ecosystems as well as some of the best fishing, hiking, and white water runs in the State. It takes conservation seriously because it is urgently needed for the future of our planet. I would also like to explain the process. I believe good process leads to good policy, and we have worked very hard on this bill, starting when I first got to Congress. We have asked stakeholders about policy issues that should be addressed in public ***lands*** legislation. The legislation was further refined over more than 5 years of work. I have repeatedly sat down with constituents at public meetings and otherwise. We have discussed all the concerns that were addressed by local officials. I believe that this comprehensive, carefully developed bill reflects that good process in the fact that we have such broad support, including conservation organizations, outdoor recreation groups, dozens of businesses, community leaders, adjacent landowners, and former and current elected officials from all the affected counties. It also drew bipartisan support in the Natural Resources Committee, which is a rare thing for a wilderness-related bill. This bill is focused on a future for northwest California, where public ***lands*** are resilient and our outdoor recreation economy grows while we preserve environmental values for future generations. Mr. WESTERMAN. Mr. Speaker, I yield 2 minutes to the gentleman from Colorado (Mr. Lamborn). Mr. LAMBORN. Mr. Speaker, I oppose this highly partisan and divisive legislation. In Colorado alone, this bill puts 700,000 acres into the most restrictive ***land*** use category of all--wilderness. I know the intent of the sponsors is to protect the ***land***, but in practice, the use of ***land*** under wilderness designation is so restrictive, hardly anyone can use it. Do you dream of taking your kids or grandkids for a bike ride on wilderness ***land*** someday? Forget about it. Bicycles are prohibited by BLM in wilderness ***land*** as well as motorized vehicles, roads, wheelbarrows, and carts. The ***land*** is locked away from future generations. I prefer public ***lands*** with many uses, and that is where this bill fails our children. You can't even take a baby onto wilderness ***land*** in a stroller. Do you care about the health of our ***forests***? Then don't vote for this bill. The most basic types of preventive maintenance are illegal under wilderness designation. You can't take a chain saw and cut away fire traps, and you can't trim branches or overgrown timber stands and underbrush. Colorado has had too many ***forest*** fires, and with beetle kill, parts of Colorado are a tinderbox. Should this become law, with its restrictions on fire prevention, we are going to see bigger and hotter fires in Colorado than ever before. I don't want to see Colorado burn up. That is why I am voting ``no'' on this bill. Many county commissioners, individual citizens, and even the U.S Representative for western Colorado oppose this bill. Like me, they don't want to see the public lose access to wilderness areas, and they don't want to see our ***forests*** go up in flames. Vote ``no'' on this bill. {time} 1745 Mr. NEGUSE. Mr. Speaker, I yield 3 minutes to the distinguished gentleman from Washington (Mr. Kilmer). Mr. KILMER. Mr. Speaker, I thank the gentleman for yielding. Mr. Speaker, I was born and raised on the Olympic Peninsula of Washington State, and I know firsthand how special our region is and how our public ***lands*** contribute to the fabric of who we are. In our region, we understand that protecting our public ***lands*** isn't just about saving these unforgettable places for future generations. It also means protecting high-quality jobs for the next generation as well. That is important to me, as someone who grew up on the peninsula and as someone who worked in economic development professionally for over a decade. I have seen how our natural resources contribute to our economic vitality. Each year, millions of people and families travel to our State and contribute roughly $22 billion in economic impact and support 200,000 jobs in Washington's outdoor economy. Our national treasures have helped create opportunities for local entrepreneurs who started restaurants, guided tour companies, hotels, and B&Bs, and other small businesses. That is why it makes sense to protect these special places, and that is why I am proud that the House is considering this comprehensive package, including a bill I introduced called the Wild Olympics Wilderness and Wild and Scenic Rivers Act. That bill protects some of our most environmentally sensitive areas by establishing a new wilderness area to protect the last remaining old-growth stands on the peninsula and designating 19 rivers and tributaries as wild and scenic rivers to protect critical salmon spawning habitats. This proposal has evolved through extensive public engagement with Tribes, conservation groups, timber communities, business leaders, shellfish growers, and everybody in-between, to create a bill that works for our local communities. It is because of that outreach that this bill is now formally supported by more than 800 community leaders, Republicans and Democrats, businessowners, sportsmen, mayors, county commissioners, and Tribal leaders, all of whom agree this proposal moves our region in the right direction. In addition to protecting recreational access and supporting our outdoor economy, the bill bolsters our region's efforts to protect sources of clean drinking water, supporting critical salmon and steelhead habitats, and protecting key waterways that are vital to our shellfish industry. But just as important are all the things this bill will not do. This proposal will not close, decommission, or otherwise restrict access to any ***Forest*** Service roads or trailheads. It will not impact any harvestable timber base in the Olympic National ***Forest***. I am doing a whole bunch of other work to increase the harvest through other avenues. This bill will not affect any private property rights. It will not impact how the Washington Department of Natural Resources manages State-owned ***lands***, which is why it has gained support of the Washington commissioner of public ***lands***. We know that our region's future depends on building a strong and diversified economy, and after years of collaboration, I think this bill we are considering today represents a clear win-win for the communities I represent. Mr. Speaker, I want to thank the senior Senator from Washington, Senator Murray, for her partnership in this effort. I want to thank the lead sponsor and the Natural Resources Committee. I encourage my colleagues to vote in favor of this legislation. Mr. WESTERMAN. Mr. Speaker, I yield 3 minutes to the gentleman from California (Mr. McClintock). Mr. McCLINTOCK. Mr. Speaker, everything we touch in our daily lives, [[Page H698]] everything that makes our existence possible, everything that makes us more comfortable and more prosperous, everything we see in this Chamber comes to us in only two ways. It is either grown or it is mined. That is a universal truth. Everything we enjoy on this planet is either grown or mined. Fortunately, nature has given us a super abundance of resources and left it to us to responsibly reap and to manage this bounty. But it is precisely these resources that the left has waged war against for an entire generation. The very things that make us prosperous and comfortable are the things the left attempts to place off limits. Is it any wonder that the more they extend their domain, the worse the human conditions that they produce? This bill declares another 1.5 million acres of public ***lands***, mostly ***forests***, an area about the size of Delaware, a wilderness area, off limits to ***forest*** management, timber harvesting, and even many forms of public recreation. An untended ***forest*** is like an untended garden. It will grow until it chokes itself to death and succumbs to disease, pestilence, and, ultimately, catastrophic wildfire. These restrictions have abandoned our ***forests*** to neglect and produced the paradox of a severe national lumber shortage while the government sits on vast timber reserves. This bill places 1,200 more miles of rivers under similar restrictions that create water shortages in some of the most water- abundant regions of our country. It prevents mineral extraction and energy production from another 1.2 million acres, killing jobs, crushing the economy, and empowering our international adversaries. At a time when the Federal Government's bad management practices have created a $12 billion maintenance backlog, this bill takes another half million acres of ***land*** into Federal mismanagement. Understand what that means to local communities. This is ***land*** that is producing no taxes and little commerce. Much is being seized over local objections in States where the Federal Government already controls more than half of their entire ***land*** area. Mr. Speaker, this is a direct attack on working Americans who depend on the resources of our Nation to put food on their tables and a roof over their heads. It is an attack on the prosperity and security of our people, and it is what we have come to expect from the greens gone wild on the other side of the aisle. The result will be more dead ***forests***, more water shortages, increasing costs for energy and consumer goods, lower wages, and fewer jobs. These policies always produce want from plenty, and I am afraid they will continue until the American people finally demand that we restore the nation of abundance that we once took for granted. Mr. NEGUSE. Mr. Speaker, I yield 2\1/2\ minutes to the distinguished gentleman from California (Mr. Carbajal). Mr. CARBAJAL. Mr. Speaker, I thank the chairman for yielding. Mr. Speaker, I am humbled to represent the central coast of California, one of the most beautiful districts in the Nation, if not the most beautiful. Places like Los Padres National ***Forest*** and the Carrizo Plain National Monument contain some of the most stunning and diverse ecosystems found anywhere in North America. Today, I am pleased to support H.R 803, the Protecting America's Wilderness and Public ***Lands*** Act. This bill would preserve the natural beauty and recreational activities available to communities in my district and beyond. This measure includes my legislation, H.R 973, the Central Coast Heritage Protection Act. I am proud to have worked with Chairman Grijalva, Representative Brownley, Representative Panetta, and local stakeholders to ensure that California's central coast was included in this bill. In particular, I want to thank the Carrizo Plain Conservancy, Los Padres ***Forest*** Watch, Condor Trail Association, CalWild, Pew Charitable Trusts, and the Sierra Club for their support and advocacy on behalf of our public ***lands***. Title IV of this environmental package would designate nearly 250,000 acres of public ***land*** within the Los Padres National ***Forest*** and the Carrizo Plain National Monument as wilderness areas, the highest form of Federal protection available. It also creates a 400-mile Condor National Scenic Trail stretching from Los Angeles to Monterey County. This bill is the culmination of years of collaboration with local stakeholders and community members. It has garnered support from nearly 500 central coast landowners, businesses, farmers, and local officials; a testament that protecting our environment and growing our economy are not mutually exclusive. In fact, they go hand in hand. In California alone, the outdoor recreation economy is worth $92 billion and employs over 650,000 people. Jobs in manufacturing, retail, and tourism rely on access to the great outdoors. Climate change poses a serious threat to this sector of our economy and communities like mine will bear the brunt of this crisis. Nearly 25 percent of greenhouse gas ***emissions*** come from oil drilling. That is one reason I am glad the Biden administration has set an ambitious goal to protect 30 percent of our public ***lands*** by 2030. This bill will help us get there. Our public ***lands*** are an essential asset to our environment and tourism economy. Passing this bill means we can protect both for generations to come. Mr. Speaker, I urge my colleagues to support this legislation. Mr. WESTERMAN. Mr. Speaker, I yield 2 minutes to the gentleman from Louisiana (Mr. Graves). Mr. GRAVES of Louisiana. Mr. Speaker, I want to thank the gentleman from Arkansas for yielding. Mr. Speaker, we have listened to our friends on the other side of the aisle talk about their desire for protecting wilderness areas and our natural resources, and I want to commend them for that. I agree with them, we need to do a better job doing that. As we have had an opportunity to talk in the past, Mr. Speaker, in a previous life I taught mountaineering courses, I led climbing trips, I led mountain biking trips, kayaking, and was a river guide. I spent more time out in these very areas that they are talking about than every single one of them sitting there combined. It is what I did. It is how I lived for years. And, Mr. Speaker, listening to this talk, I see an extraordinary disconnect, and let me be very clear. I have heard people saying that this is going to promote economic development and promote recreational opportunity. Mr. Speaker, that is not true. It is not fact. As a matter of fact, what happens under this legislation in these designations is that those very recreational opportunities that create economic activity are actually eliminated. They are prohibited under this act. You cannot do things like mountain biking. I will say, they finally came back and made some adjustments on wilderness areas where you can leave descending devices--thank you--but you can't do these things. So how in the world are you going to make more money and have more economic activity? Are they going to offer unicorn rides? You can't do that. This doesn't work. It doesn't make sense. We are not following the regular process you do to evaluate wilderness areas. What happened last Congress--we have a new Member of Congress who represents three-quarters of this area and she wasn't given an opportunity to be consulted. Amendments to allow local governments and maybe the citizens were rejected. Let them make a decision here. Mr. Speaker, why were those ideas rejected? I had an amendment that simply said that we should allow best practices in wildfire management. That was prohibited. We have had seven million acres of this very area burned and we are prohibiting the best practices in wildfire management. Mr. Speaker, I want to know what they are going to tell their constituents and other people's constituents when these areas burn because of their irresponsible activities. Mr. Speaker, I urge rejection of this legislation. Mr. NEGUSE. Mr. Speaker, with much respect to my colleague from [[Page H699]] Louisiana--and I enjoy working with him--I just want to assure him, because he spent a great deal of time in Colorado, that he is still going to be able to enjoy the wonderful outdoor recreation that our State has under this bill. If anything, his ability to do so will only increase. And that is why the American Whitewater Association, the American Canoe Association, the International Mountain Bicycling Association, The American Alpine Club, and Backcountry Hunters & Anglers all support this bill. Mr. Speaker, I yield 2\1/2\ minutes to the distinguished gentlewoman from California (Ms. Chu). Ms. CHU. Mr. Speaker, I rise in strong support of H.R 803, the Protecting America's Wilderness and Public ***Lands*** Act. This legislation includes the text of my bill, H.R 693, the San Gabriel Mountains Foothills and Rivers Protection Act, which is the result of decades of grassroots advocacy and community engagement to improve protections and access for these treasured ***lands*** of southern California. The San Gabriel Mountains provide 30 percent of the Los Angeles area water, comprise 70 percent of the county's open space, and are home to historic habitats of species like the California condor and Nelson's bighorn sheep. This immense natural beauty exists right in the backyard of one of the densest urban areas of our country, offering recreation opportunities like hiking, fishing, and camping to the more than 15 million Americans that live nearby. That is so important because the Los Angeles region is among the most park-poor areas in the country, which means that too many communities are deprived of the well- documented public and mental health benefits that result from access to outdoor recreation opportunities in their own neighborhood. After President Obama granted my request to designate the San Gabriel Mountains a national monument in 2014, we immediately began to see cleaner rivers; improved facilities, like picnic areas; safer hiking trails; and more rangers to interact with visitors. Most importantly, it brought the entire community together to develop a management plan for the monument with over 40 Members representing a variety of stakeholders, such as water agencies, local governments, the business community, and environmental advocates. {time} 1800 That is why this same level of protection is needed throughout the mountains and in the communities that serve as their gateway. This legislation would make that a reality by expanding the Monument's boundaries to include the western Angeles National ***Forest***, establishing new and expanded wilderness areas, and protecting more than 45 miles of wild and scenic rivers. It would also establish the new San Gabriel Mountains National Recreation area to bolster the connection between urban and wild spaces. Mr. Speaker, for nearly two decades, so many stakeholders have worked together with a common vision of a community seamlessly connected to the beautiful wild ***lands*** in its backyard. Today, we have an opportunity to realize that vision. Mr. Speaker, I urge support for this legislation. Mr. WESTERMAN. Mr. Speaker, I yield 2\1/2\ minutes to the gentleman from Washington (Mr. Newhouse), the chair of the Western Caucus. Mr. NEWHOUSE. Mr. Speaker, I thank the gentleman from Arkansas (Mr. Westerman). Mr. Speaker, this morning, I joined my Congressional Western Caucus colleagues, Representatives Chris Stewart and Yvette Herrell, to hear from community leaders in their States about the severe funding shortfalls they are now facing due to President Biden's moratorium on oil and gas leases on Federal ***lands***. We heard from county commissioners and education officials, including one who shared--in tears--the heartbreaking stories of students experiencing mental health challenges, who have attempted suicide due to the challenges facing our Nation's students. The last thing these communities need is to face budgetary deficiencies that threaten the support systems within our public schools. Yet, this legislation before us will contribute to those very budget shortfalls. By further preventing responsible energy and resource production on Federal ***lands***, we are harming our Nation's energy industry, but we are also harming our workers by destroying their jobs. We are harming our students by cutting their public school funding. We are harming our communities by slashing their State and local budget. Mr. Speaker, you see, we are siloing off the effects of the pandemic from the actions and consequences of the Federal government regulatory mandates. The combinations of COVID-19, the Biden ban on Federal leasing, and now this massive ***land***-grab legislation is simply going to devastate rural communities in the West. Mr. Speaker, these consequences don't take place in a silo. They take a toll. I can list many other concerning consequences--from harming our energy independence, restricting public access to our public ***lands***, to increasing the poor health of our Nation's ***forest***. But more than anything, I hope my colleagues will pause to think of the human impacts these actions will have on our neighbors, our fellow Americans, and the toll it will take after one of the most challenging years in our lifetimes. Mr. Speaker, I urge a ``no'' vote on this legislation. Mr. NEGUSE. Mr. Speaker, I yield 3 minutes to the distinguished gentleman from California (Mr. Schiff), the chairman. Mr. SCHIFF. Mr. Speaker, I rise in strong support of the Protecting America's Wilderness and Public ***Lands*** Act. Those unfamiliar with Los Angeles may think it is a series of communities interconnected only by freeways. But in fact, the opposite is true. It is connected by the wildlife and open spaces that bridge our communities and bring us together. Mr. Speaker, for nearly 20 years, I have worked with my constituents to expand, preserve, and protect the space that surrounds the L.A Basin, known as the Rim of the Valley. My legislation, which is included in H.R 803, is the Rim of the Valley Corridor Preservation Act, and it would expand the Santa Monica Mountains National Recreation area to include these pristine ***lands***. The legislation will protect almost 200,000 acres of open space for generations to come. Los Angeles is one of the most park-poor regions in the country. And during the pandemic, while many of us are stuck in our homes, it has caused us to reevaluate our priorities and consider what matters most. For me and many Angelenos, it has been spending time with family and getting outdoors--hikes through Griffith Park, runs through the Verdugos, or walks in the Arroyo. Trails are full on weekends, and that won't change after the pandemic ends. By expanding the national recreation area, the National Park Service will have the authority to make capital improvements, like repairing hiking trails and maintaining facilities for public enjoyment, studying wildlife and its habitats, and participating in cooperative conservation with local landowners. It will help ensure that wildlife corridors that allow Los Angelenos to witness mountain lions, like P-22 and P-96, black bears we have come to know, like Meatball, and other precious wildlife are still present in our own backyards. This package of bills will also support the Biden administration's commitment to conserving public ***lands*** and waters, as well as protecting communities from the effects of climate change. Like the last Congress, it is my hope that the House can pass this bill with bipartisan support, and we will finally see this legislation through to the finish line. Mr. Speaker, I am pleased that we have a willing partner with President Biden, who strongly supports H.R 803. I thank Chairman Grijalva, Representative DeGette, and my other colleagues who have bills in this package, for all the work they did on this legislation. Mr. Speaker, I urge my colleagues to support H.R 803. Mr. WESTERMAN. Mr. Speaker, I yield 1 minute to the gentleman from [[Page H700]] Minnesota (Mr. Stauber), the ranking member on the Subcommittee on Energy and Mineral Resources. Mr. STAUBER. Mr. Speaker, I rise today in strong opposition to H.R 803, a package of Democrat ***land***-grab bills that were not marked up in the Committee on Natural Resources and are opposed by several members and the constituents they serve. H.R 803 is a 330-page partisan package containing 8 different bills. Not one bill or one page was marked up or heard in committee this Congress. Unfortunately, Democrats on the Committee on Natural Resources have waived responsibility. There have been zero markups or committee hearings this Congress. Mr. Speaker, we have 8 new Republican members on our committee, and 3 on the Subcommittee on Energy and Mineral Resources alone, a committee which I lead. Our membership deserves to debate these bills and mark them up. Let's have our new members hear from the stakeholders and make decisions based on the evidence presented. We need to end this practice of just giving away committee jurisdiction and jamming through legislation. H.R 803 dovetails with the Biden/Harris agenda and puts America last by outsourcing our supply of critical minerals and endangering our national security. Our submarines and aircraft carriers are powered with clean nuclear energy. The SPEAKER pro tempore (Mr. Carson). The time of the gentleman has expired. Mr. WESTERMAN. Mr. Speaker, I yield an additional 30 seconds to the gentleman. Mr. STAUBER. Mr. Speaker, nuclear power is a huge contributor to our electric grid. By withdrawing areas from uranium and other mineral development, it furthers our reliance on Kazakhstan, Uzbekistan, and Russia--who I assure you, do not have the labor or environmental standards that we demand in our country and who do not have our best interests at heart. Mr. Speaker, I oppose this legislation. Mr. NEGUSE. Mr. Speaker, may I inquire how much time each side has remaining? The SPEAKER pro tempore. The gentleman from Colorado has 6 minutes remaining. The gentleman from Arkansas has 15 minutes remaining. Mr. NEGUSE. Mr. Speaker, I reserve the balance of my time. Mr. WESTERMAN. Mr. Speaker, I yield 1 minute to the gentleman from California (Mr. LaMalfa). Mr. LaMALFA. Mr. Speaker, I thank my colleague from Arkansas. I appreciate the time. Mr. Speaker, I rise in strong opposition to H.R 803. In my Northern California district, we are devastated year after year after year, as we are all over the West by wildfire and unmanaged ***forests***. Adding 1.5 million more acres of untouchable ***lands*** because of wilderness designation does not help. It will merely make the problem worse. What is the purpose of a new wilderness designation? What does it achieve? It isn't needed to prevent a new highway or a new mine, oil and gas operations, or a new dam. Those are already difficult things to get permitted, taking years and years. So why do we have to have this designation? We are already so far behind on ***forest*** management that I don't know when we will ever get out of it, because every year--every year--we have devastating fires affecting our public ***lands***, the access to those ***lands***, the private ***lands*** that are near them, and the towns of the people that live nearby them as well. The economy has already been devastated in those areas because of regulatory ideas that come out of Washington, D.C , and California to stop the type of work that needs to be done for those logging communities. Mr. Speaker, this is wrongheaded legislation and is unnecessary. Mr. NEGUSE. Mr. Speaker, I yield 4 minutes to the distinguished gentleman from Arizona (Mr. O'Halleran). Mr. O'HALLERAN. Mr. Speaker, I thank the gentleman from Colorado for yielding me the time. Mr. Speaker, I rise today to speak in favor of H.R 803, an important package of public interest ***land*** protections. Within this comprehensive legislation is the Grand Canyon Protection Act. Tomorrow, the Grand Canyon celebrates 102 years as a National Park, making a century of welcoming visitors from all over the country and the world, to this First District and to America. It is recognized as one of the world's greatest natural wonders. There is no doubt that this is a special, sacred place that must be protected. That is why my colleagues and I introduced the Grand Canyon Protection Act, commonsense legislation, that would permanently ban uranium mining around the Grand Canyon. It was stated no one is mining near the Grand Canyon. There is a mine six miles right outside the South Gate. Somebody stated that there is nothing nearby that would impact the Grand Canyon. There are 500-plus abandoned uranium mines just outside the Navajo Nation, and just outside the East Gate of the Grand Canyon, and numerous streams and creeks and washes run from the east ***land*** into the Grand Canyon. The Grand Canyon is the base of a $1 billion-a-year tourism industry for the Northern Arizona region. Rural and Tribal communities throughout Northern Arizona are still grappling with the toxic waste that has been there for over almost--I should say, 80 years--80 years it has been there and caused health problems. Too many Tribal families in our district continue to fight the cancers and the disease caused by radiation exposures over those decades. Expanding uranium mining in the area would not only aggravate these serious health conditions and risks, but also make the Colorado rivers susceptible to uranium mining pollution. Currently, the river and nearby aquifers are the main water source for over 12 million people in the Colorado River Basin. Above all else, the Grand Canyon is a place of deep spiritual significance to many Native communities in the southwest, a home to the Havasupai Tribe. We must protect these ***lands*** for those who know them as sacred. Also, in today's package, are measures I have championed, including the Casa Grande Ruins National Monument Boundary Modification and the Sunset Crater Volcano National Monument Boundary Adjustment. In a typical year, the Casa Grande Ruins attracts tens of thousands of visitors; but more importantly, it also is a sacred place and the past home of the Hohokam irrigation projects throughout the southern part of Arizona. This boundary modification will also ensure that the San Carlos Irrigation Project has access to critical irrigation infrastructure. President Franklin Delano Roosevelt once said, ``There is nothing so American as our national parks. The fundamental idea behind the parks is that the country belongs to the people, that it is in the process of making for the enrichment of the lives of all of us.'' I don't understand how we could stand here and say that we should not protect one of the greatest national wonders of the world. Over the course of this pandemic, we have seen just how vital our treasured public ***lands*** and outdoor spaces have become for families across this country. An opportunity to get outside and celebrate what it is to be an American. Mr. WESTERMAN. Mr. Speaker, I yield 1 minute to the gentleman from Utah (Mr. Moore). Mr. MOORE of Utah. Mr. Speaker, I rise today to express my concern with this ***lands*** package. I was elected just this past November, with many of my freshmen colleagues, and I am sincere in my commitment to work with my Democratic colleagues on the Committee on Natural Resources. However, the majority is pushing legislation with significant environmental and economic costs for the American people without a markup or hearing. The work that was done in the 116th Congress or before is great. We are in the 117th Congress now, and I sincerely would like to have had that opportunity. I was excited to be able to put forth some amendments to this. This package disregards input from local and State officials, puts our ***lands*** at greater risk for wildfires, and threatens livelihoods for those who work in extractive industries at a time when our country is financially hurting from the pandemic. [[Page H701]] Mr. Speaker, this style of policymaking is unsustainable, and it has major ramifications for Utahns. The policies that result from H.R 803 will impact jobs and recreation and restrict local input over our ***lands***. Mr. Speaker, for these reasons, I oppose H.R 803. But I stand here hopeful that we can come together and find common ground. Mr. NEGUSE. Mr. Speaker, I reserve the balance of my time. Mr. WESTERMAN. Mr. Speaker, I yield 1 minute to the gentlewoman from New Mexico (Ms. Herrell). Ms. HERRELL. Mr. Speaker, I rise in strong opposition to this partisan wilderness package before us today. This bill is yet another example of the majority taking steps to prevent the creation of high-wage jobs and access to our public ***lands*** all while ceding our energy independence to foreign adversaries. This bill also contains provisions affecting Members' districts without the support of those Members. These include the permanent ban on mineral development on over 1 million acres of public ***lands*** in Mr. Gosar's district in Northern Arizona, something he strongly opposes. Also included, are countless new ***land*** designations in Mrs. Boebert's and Mr. Lamborn's districts in Colorado--again, without their support. The delays in permitting, coupled with the mismanagement of our Natural Resources, our ***forests***, and handing this all over to the Federal Government for management, is a mistake. We need more cooperation with the management of public ***lands*** with the States and those that live on, in, or around or make their living from these ***lands***, Mr. Speaker. {time} 1815 Mr. WESTERMAN. Mr. Speaker, I yield 1 minute to the gentleman from Idaho (Mr. Fulcher), the ranking member on the Public ***Lands*** Subcommittee. Mr. FULCHER. Mr. Speaker, I thank Congressman Westerman for yielding me the time. Mr. Speaker, as has been mentioned, this bill would add 1.5 million new acres of wilderness area, monument expansion, and scenic rivers. That sounds pretty good. Now, here is the rest of the story, and it is coming from someone whose home State is two-thirds federally owned. This bill also comes with a critical mineral ban on things like uranium. China and Russia will thank us for that. This bill also comes with a ban on any active ***land*** management, which is a welcome mat for wildfires. It is simple. If we don't manage, a lightning strike will. Now, that is too bad for wildlife, the environment, and productive use, but at least we get the privilege of spending taxpayer dollars for fire suppression. Mr. Speaker, we can't rationalize the contents in this bill to the objective American taxpayer, but that is what happens when legislation gets rammed through without one markup or adequate bipartisan review. Mr. NEGUSE. Mr. Speaker, I reserve the balance of my time. Mr. WESTERMAN. Mr. Speaker, I yield 1 minute to the gentleman from Wisconsin (Mr. Tiffany). Mr. TIFFANY. Mr. Speaker, I rise to oppose H.R 803, the western wildfire bill. Make no mistake, while some seek preservation, what we need is management. It always seems like those who seek to preserve, they go to the places that are most well managed. These places now will suffer as a result of that. But I want to emphasize three things that all Americans are going to lose with this bill. Job security: We have already seen 11,000 jobs jeopardized by the abrogation of a contract by President Biden in regard to the Keystone XL pipeline. Economic security: Lumber prices continue to rise. Taking timber off the marketplace is not going to make the cost of building a home any cheaper. You want to get kids out of their parents' basement? You are not going to do it this way, by raising the price of being able to build a home. National security: We have become an energy-independent country here over the last 10 years, and it has gotten us out of the forever wars in the Middle East. This jeopardizes those achievements. Job security, economic security, national security are all at stake here with this bill. Mr. NEGUSE. Mr. Speaker, I reserve the balance of my time. Mr. WESTERMAN. Mr. Speaker, I yield 3 minutes to the gentlewoman from Colorado (Mrs. Boebert), whose district is more affected by this bill than anyone else. Mrs. BOEBERT. Mr. Speaker, I thank the ranking member for yielding. I rise today to oppose the latest Democrat ***land*** grab, in the form of H.R 803. This bill, which is actually eight bills piled into one, adds nearly 1.5 million acres of new wilderness and permanently withdraws 1.2 million acres from mineral production. Seriously? This is the approach we are taking? Democrats want to stop mineral production, lock up our ***lands***, and depend on our enemies in Russia, Saudi Arabia, and China for our energy, all while pretending to be green. It is unacceptable to outsource our energy development to countries that often use child and slave labor. We literally have children mining in Congo with their bare hands to appease these not-in-my-backyard extremists. Speaking of backyards, Mr. Speaker, the sponsor of title I in this bill doesn't have a single acre designated as new wilderness in her district, yet title I alone locks up 510,000 acres in my district. The Grand Junction Chamber sent me a letter opposing this, stating: These are ***lands*** that are literally in our backyard in Mesa County, yet Congresswoman DeGette continues to ignore us, does not meet with us, and does not even consider the consequences of her bill on the hardworking families of our district. Could anyone here imagine me legislating away any part of Denver or Boulder? The Member who authored title I's attack on my district simply responds to doubts and concerns by inviting D.C swampers to my district on horseback to look at the pretty views, and then they call it a day. Dolores County is mentioned several times in this massive ***land*** grab. The locals, elected officials, and experts have expressed their disdain for this bill repeatedly over the years, with no regard from the bill's sponsors. After the past year of statewide lockdowns, the last thing communities in my district need is further restrictions imposed by the Federal Government on what they can do on public ***lands***. Mr. Speaker, the majority is silencing the people of my district in order to ram through a 3 million-acre ***land*** grab. Have supporters of this legislation considered the disastrous wildfires that will result from the new wilderness designation and other ***land*** grabs in this bill? Wilderness is the most restrictive ***land*** use designation possible. It prevents active management of our ***forests***, which is critical for mitigation against catastrophic wildfires. If we don't manage our ***forests***, Mother Nature will continue to manage them for us. Mr. NEGUSE. Mr. Speaker, there is quite a lot to respond to. I will just respond to a couple of quick points. Virtually all the BLM wilderness ***land*** that was referenced with respect to title I has been managed as wilderness essentially for the better part of the last 40 years. With respect to wildfires, I would encourage my colleague to read the Wilderness Act because section 4(d) of the Wilderness Act says: ``Such measures may be taken as may be necessary in the control of fire, insects, and diseases.'' That is the law. Finally, I have to say, with respect to the reference to constituent support, with respect to the CORE Act, the bill that we introduced as part of this component bill, Gunnison County, Pitkin County, San Juan County, Ouray County, San Miguel County, Eagle County, they all support the bill. Mr. Speaker, I would encourage my colleagues again to follow the lead of the folks and the voices at the local level who are imploring us to pass this bill. I reserve the balance of my time. Mr. WESTERMAN. Mr. Speaker, may I inquire how much time is left on both sides. The SPEAKER pro tempore. The gentleman from Arkansas has 7 minutes remaining. The gentleman from Colorado has 1 minute remaining. Mr. WESTERMAN. Mr. Speaker, I yield 1 minute to the gentleman from Montana (Mr. Rosendale). [[Page H702]] Mr. ROSENDALE. Mr. Speaker, I thank the gentleman for yielding. I rise in opposition to this bill and the precedent it will set for public ***lands***, especially in the great State of Montana, where we do treasure them. In our State, we take a balanced use approach, where conservation and public access go hand in hand. It is a good approach, and it is used in other States as well. This bill would replace that conversation with a mandate coming out of Washington that will unilaterally lock up an area nearly the size of Cascade County, Montana. This bill would completely eliminate recreation, resource development, and responsible ***forest*** management on 1.5 million acres for an indefinite period of time. A bottom-up, balanced approach almost always works better than a top-down, command- and-control method that the majority is trying to impose on us here. Mr. Speaker, I urge my colleagues to oppose this bill. Mr. NEGUSE. I reserve the balance of my time. Mr. WESTERMAN. Mr. Speaker, I yield 1 minute to the gentleman from California (Mr. Obernolte). Mr. OBERNOLTE. Mr. Speaker, I rise in opposition to H.R 803. This bill, while well intentioned, will unfortunately result in over a million acres being subjected to less efficient forestry management services and less fuel reduction. I represent the State of California, which, last year, experienced the worst fire season in recorded State history. Over 4 million acres of State ***land*** was burned last year. The year before that, we had the destructive and catastrophic Camp Fire that totally destroyed the town of Paradise, almost 100 lives lost, almost 20,000 structures destroyed. I had the unfortunate experience of walking through that town and witnessing that devastation, and it was catastrophic. To my colleagues on the other side of the aisle, I have read the ``Wilderness Management Manual,'' and I direct their attention to the BLM manual for the management of wilderness areas that says that ``fuels reduction is only allowed in very rare circumstances.'' This will result in more fire damage throughout the Western United States. Mr. Speaker, I urge a ``no'' vote. Mr. NEGUSE. Mr. Speaker, I reserve the balance of my time. Mr. WESTERMAN. Mr. Speaker, I yield myself such time as I might consume. Mr. Speaker, if we adopt the motion to recommit, we will instruct the Committee on Natural Resources to consider our cancel the Biden ban amendment to H.R 803. Mr. Speaker, I ask unanimous consent to insert the text of the amendment in the Record immediately prior to the vote on the motion to recommit. The SPEAKER pro tempore. Is there objection to the request of the gentleman from Arkansas? There was no objection. Mr. WESTERMAN. The amendment is simple. It will nullify Executive Order No. 14008 and Secretarial Order No. 3395 issued during the President's first weeks in office. The Biden administration wasted no time in imposing their extremist environmental agenda. On day one, political appointees created a nightmare for our energy operators and a never-ending bottleneck for approvals necessary to keep our energy economy running. Just a few days later, President Biden halted all new energy production on our Federal ***lands*** and waters, jeopardizing the livelihoods of thousands of Americans in the middle of a pandemic and economic crisis. The administration has tried to downplay the impact of these actions, but we are already feeling the consequences of what I like to call the Biden ban. The economic impact of the decisions will be far-reaching, impacting thousands of companies, many of which are small businesses. Recent studies have concluded that a long-term ban on onshore leasing would cost 72,000 jobs annually, and a long-term ban on offshore drilling would cost 145,000 jobs. Federal energy development represents a sizable portion of State budgets. Can we afford to cut off this crucial source of revenue as our communities are struggling to recover from the pandemic? Our schools need funding to buy PPE that they need to reopen. Yet, the Biden ban would disrupt a critical source of revenue that our K-12 schools rely on. In addition, these actions will bankrupt programs like the ***Land*** and Water Conservation Fund. The ramifications of these actions by the Biden administration will be devastating to our rural communities. Americans who work hard every day to keep the lights on and our gas prices low deserve better than a pink slip from out-of-touch political appointees. Mr. Speaker, I ask my colleagues to support this amendment, recommit H.R 803 to the Natural Resources Committee, and put Americans back to work. Mr. Speaker, I reserve the balance of my time. {time} 1830 Mr. WESTERMAN. Mr. Speaker, I yield myself the balance of my time. Mr. Speaker, today we heard concerns from our Members, including Members most affected by this legislation. Tomorrow, we will debate amendments that include 15 new unrelated matters to make the total amount of bills in this one bill 23. This will make this bill three times worse after we consider amendments. I believe we have the responsibility to leave our environment better than we found it. We talk about the economy so often that many people think that we forget about the environment. That couldn't be further from the truth, we all breathe the air and drink the water. H.R 803 would attempt to preserve our resources, locking them up and throwing away the key. Congress' focus should be on conservation and conserving these resources instead, using them in sustainable, responsible ways that every American can enjoy. Since we weren't given any opportunity to debate this bill in committee, I would like to remind my colleagues that this bill will harm the environment; it will kill jobs; it will limit access to outdoor recreation; it will hurt State water rights; it will imperil our national security and American energy independence; it will impede necessary ***forest*** management; and make us more reliant on hostile foreign nations. Mr. Speaker, I strongly urge my colleagues to oppose this legislation, and I yield back the balance of my time. Mr. NEGUSE. Mr. Speaker, I yield myself the balance of my time. Mr. Speaker, I want to say thank you again to Chairman Grijalva, and to each of my colleagues, Representative DeGette, Representative Schiff, Representative Huffman, and all of my fellow Members who we heard from today who worked so hard on this important legislation. Mr. Speaker, I have to repeat this because it is important. Every title of this bill was heard in the 116th Congress, I was at those hearings. Every title was marked up. I attended those mark-ups with the ranking member. Every single title of this bill passed in committee, passed on the floor twice, many of them in bipartisan fashion. I agree with the ranking member. At the end of the day we have an obligation to leave our environment better than when we found it. That is what this bill is all about. Protecting the most iconic and beautiful places in the United States of America so that my children, your children, Mr. Speaker, and the ranking member's children can continue to enjoy these incredible places in our country. Mr. Speaker, I hope that my colleagues will vote ``yes'' on this important legislation and join us in this effort. Mr. Speaker, I yield back the balance of my time. The SPEAKER pro tempore (Mr. Mrvan). All time for debate has expired. Pursuant to clause 1(c) of rule XIX, further consideration of H.R 803 is postponed.

**Load-Date:** February 27, 2021

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[***Kenya: Nairobi is losing green spaces, leaving it vulnerable to disease***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:62P9-WCR1-JCH9-G2JK-00000-00&context=1516831)

The Africa Report

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**Body**

There's been widespread concern in Kenya over the shrinking of green spaces in Nairobi, the capital city. Most recently, there was uproar over the construction of a raised highway.

This resulted in the felling of hundreds of trees, though protests managed to save the life of one 100-year-old fig tree. It was also proposed that part of the highway run through Uhuru park - one of the city's few recreational parks. Protests successfully diverted the highway to the park's outskirts, but development still threatens the city's few undeveloped spaces.

To give an idea of how much green space has already been lost, between 1976 and 2000, Nairobi's ***forest*** cover went from 14% to 3%. Bushland cover, over the same period, was also reduced from 22% to 13%.

This will have an impact on the city's wildlife and livestock. Nairobi, like other urban environments in the tropics, has an ecosystem that includes wildlife - such as birds, rodents, primates - and livestock such as cattle, goats, sheep and pigs. As green spaces are lost, native wildlife and bird species can dwindle and non-native species proliferate.

But very few studies explore how development affects wildlife and livestock in tropical cities. Recognising this gap, we explored the impact of a growing and changing urban environment on the wildlife and livestock that live with people in Nairobi from 2013 to 2018. We found that, as ***land*** use in Nairobi transformed, there have been significant changes.

Competition between invasive and endemic species has grown, to the detriment of native biodiversity. Species - many of which play important roles in ecosystems such as fruit bats, primates and pollinators - are lost. And as the ecological landscape becomes less diverse, wildlife species that co-exist with humans - such as rats, scavenging and seed-eating birds (collectively known as synanthropes) - thrive, particularly in the poorer, most densely populated areas of Nairobi.

This is troubling because evidence suggests that synanthropes host more germs and could pass diseases on to people and make them sick. These are called 'zoonotic diseases' and range from minor short-term illness to major life-changing illness and even death.

We could not assess the risk posed by zoonoses in Nairobi in our study. What we do know is that the city (and likely most other biodiverse, tropical cities) harbours all the ingredients for zoonotic spillover to occur between animals and people, particularly in the most densely populated areas.

Urban development policymakers must recognise that by shrinking green spaces, they increase the likelihood that people will catch zoonotic diseases. This is because species such as rodents proliferate.

Which species dominate, and where

We studied 99 household compounds - people's houses and private ***land*** - across the city. These were selected to represent the different ways in which people interact with livestock and wildlife across the city. Households were stratified by people's wealth, the types of livestock they kept and the ecological habitats in which they live.

Our data show that synanthropic species - like rats and insectivorous bats - dominate lower-income, densely populated areas of the city. Here the synanthropes live in close quarters with poultry, pigs and small ruminants, such as goats and sheep.

We found that the decline in biodiversity - and subsequent colonisation by synanthropes - was driven by urban development. Trees and other forms of vegetation were replaced by man-made structures, ***removing*** the natural resources that most wildlife require to survive. Meanwhile, the resources (such as waste) on which synanthropes thrive increased.

As we argue in our paper, this kind of restructuring has important implications for the emergence of novel diseases at urban interfaces, which is why we used our research results to generate a set of testable hypotheses that explore the influence of urban change on microbial communities.

By testing the hypotheses we provide insights into how rapid urbanisation can generate interfaces for pathogen emergence, which should be ***targeted*** for surveillance.

Research done elsewhere shows that synanthropes - which thrive in disturbed environments with lower biodiversity - host more pathogens. And synanthropes seek resources provided by humans and their livestock, such as waste, which brings them into closer contact and increases opportunities for pathogens to cross between them.

For instance, our work in Nairobi shows that, as densities of humans and livestock increase, there is more sharing of antimicrobial resistance with wild birds.

Policy recommendations

Our findings have important implications for the public health and the sustainable planning and management of cities, particularly rapidly developing, biodiverse cities.

The high levels of competent disease carriers near humans is a huge risk to public health. The current response to Covid-19 has shown that the ability to limit the spread of a disease depends upon good public health infrastructure. Developing this infrastructure, while more studies are conducted to assess the risk of zoonotic disease transmission, is crucial.

READ MORE In a time of Covid, we must not forget other tropical diseases

Mitigating steps can be taken. One would be to maintain areas of ***forests***, grasslands and clean waterways throughout the city. This would preserve and increase the wildlife biodiversity that competes with synanthropes, while also improving biosecurity within households, which could help moderate the presence of synanthropic species in urban centres.

It is, however, worth noting that some synanthropes, like insectivorous bats, help to control mosquito populations and ***agricultural*** pests in heavily urbanised environments. Eradicating them would not be advisable. Managing people's interactions with synanthropes through smart urban planning - for example by ***removing*** resources on which synanthropes rely such as manure and rubbish from households - is best.

Our findings also raise important concerns about the social equality of urban development. The benefits of urban biodiversity and risks posed by human exposure to animal-borne diseases are not equally distributed. Currently, equitable access to green spaces is restricted in many cities due to socioeconomic barriers, such as ***land*** ownership, proximity or lack of transportation. Reconfiguring the distribution of green space from the peri-urban fringe of the city to densely populated areas would build a more equitable society, allowing more city dwellers to have access to recreational space.

David Aronson, Senior Communications Advisor with ILRI, and Timothy Offei-Addo, a Princeton-in-Africa fellow with ILRI, contributed to the writing of this article.The Conversation

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[***Africa: Restoring 1 billion hectares would mitigate climate change***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:61NB-0R21-F00C-628F-00000-00&context=1516831)

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**Body**

The Climate Ambition Summit this month marks the 5th anniversary of the Paris Agreement. World leaders meeting online are being asked to deliver stronger, more ambitious commitments that will spark action to halt the unfolding climate crisis.

Restoring degraded ***land*** part of plan to meet objective

***Land*** is the basis of our food, feed, and fibre systems. It is home to the biodiversity that supports these systems. It is a provider of ecosystem services such as clean water and climate regulation. Its degradation releases gigatonnes of warming gases in the atmosphere and has negatively impacted 3.2 billion people globally.

Actions to restore some of the degraded 2 billion hectares of ***land*** could yield and spread benefits, from food security to livelihoods to peace and security among rural and urban populations, across developed and developing countries.

What's possible when everyone works together

Amid a global pandemic that still has months to run, societies have shown what they can achieve if they work together, if they listen to science, if they adjust their actions. The post-pandemic era is about a resilient future for resilient societies.

This can only be done through a recovery that contributes to climate action, reverses the loss of nature and biodiversity, minimises the risk of future pandemics and spreads the benefits from recovery more equally. This is where the role of ***land*** restoration lies.

A recent report from the PBL Netherlands Environmental Assessment Agency shows that huge commitments have been made to reverse this problem. More than 100 countries have made commitments that equal the restoration of almost one billion hectares of ***land*** - an area almost the size of China.

Restoring ***land*** is not just about food

Degraded ***land*** becomes unproductive and creates the need to clear new ***lands***. This vicious downward spiral comes at the expense of ecosystems that sequester carbon and the biodiversity that lives there. More cleared ***land*** means more greenhouse gas ***emissions*** and fewer wild spaces that create a buffer against diseases that cross from animals to humans, such as COVID-19.

Of the one billion hectares covered by commitments, 250 million can be restored to produce more food. This would reduce the need for new productive ***land***. But it isn't just about ***land*** for food.

Restoring ***forests***, dry and wet ***lands***, and other ecosystems will mitigate climate change and restore nature's defences against weather extremes, such as heavy rainfall and coastal surges.

The restoration of 350 million hectares of degraded ecosystems between now and 2030 could return $9trn in ecosystem services and ***remove*** up to 26 gigatonnes of greenhouse gases from the atmosphere. This is almost half of what the world emitted in 2019. These figures, bear in mind, cover only around one third of the agreed restoration commitments.

Some commitments are gathering pace

The Great Green Wall Initiative aims to restore 100 million hectares across the Sahel in an 8,000 km-long strip. That alone is expected to decrease 250 million tonnes of carbon. This will not only help to reduce climate change but also create ten million rural jobs along the way, help communities to be more resilient and reduce forced migration.

We have a major opportunity to move on restoration commitments.

Countries can accelerate action during the United Nations Decade on Ecosystem Restoration, which starts next year. They can invest in ***land*** restoration in their pandemic recovery packages. They can increase the ***land***-based mitigation commitments under the Paris Agreement, which is estimated at about 220 million hectares.

The PBL report shows that such actions would be particularly relevant for North America, Europe, Russia, Central Asia, the Middle East and North Africa. Over half of the restoration commitments so far are in Sub-Saharan Africa. Much of the rest are in Central and South America, China and South Asia.

Bottom line

Restoring ***land*** is one of a few investments that produces immediate effects: slows climate change, protects against pandemics and boosts food security.

Nature-based solutions could provide up to one third of the climate solution by 2030, protect and restore biodiversity, increase ***agricultural*** productivity, provide jobs, boost livelihoods and reduce poverty.

This is too good an opportunity to miss.

**Load-Date:** January 2, 2021

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[***Vegetation fires in the Anthropocene***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:693W-H851-F129-P0GS-00000-00&context=1516831)

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**Body**

Introduction

Vegetation fires — also referred to as wildland fires, wildfires, landscape fires, bushfires, burning, ***forest*** fires, scrub fires, crop fires and grass fires — are unique Earth-system disturbances that affect the coupled biosphere, hydrosphere, geosphere, cryosphere and atmosphere, (Fig. ). For example, during burning, large quantities of water vapour, CO2, CH4, N2O and aerosols are released, modifying the radiative balance of the Earth; aerosols reduce transmission of solar energy to the ***land*** surface, while greenhouse gases trap solar radiation. Extremely intense fires can also can trigger the development of storms, injecting aerosols into the stratosphere, where they can be transported globally, impacting radiation budgets. Pyrocumulonimbus storms further facilitate extreme fire behaviour by encouraging lightning ground strikes, which ignite new fires, presenting a positive feedback. The high concentration of black carbon (soot) in smoke similarly acts to influence the Earth system and future fire activity, whereby the prevention of precipitation coalescence inhibits rain cloud formation. The atmospheric transport and subsequent fallout of soot in the cryosphere additionally reduces albedo and increases snow and ice melt,.

Vegetation fire in the Earth system.

Landscape perspective of the multiple factors that influence, interact with and are impacted by vegetation fire. Fires have numerous direct and indirect affects that impact the biosphere (including vegetation cover), geosphere (including soil erosion), hydrosphere (including fluvial sediment and nutrient transport), cryosphere (including soot fallout and changed albedo) and atmosphere (including smoke pollution). PyroCb, pyrocumulonimbus.

Fire has been a natural feature of the Earth system for the last 420 million years. Strong self-reinforcing interactions between climate, vegetation and fire occurrence have led to distinct ‘’, defined by the temporal frequency, spatial extent and pattern, characteristic behaviour and environmental effects of vegetation fires. Organisms have evolved specialized strategies to resist, promote or recover from fire disturbance. Some plant species have life histories tied to specific fire regimes, such as fire-stimulated flowering, post-fire seed release from aerial seed-banks and smoke-triggered seed germination. This specialization means that any departure from the prevailing fire regime, such as fire exclusion or increasing frequency and intensity, can result in population declines or local extinction. For example, woody plant species that exclusively from seed (obligate seeders) experience regeneration failure if fires become too frequent for seedling growth and maturation.

The evolution of fire-wielding hominins around one million years ago introduced much more complexity into the timing, location, extent and behaviour of vegetation fires. For example, hunter-gatherers managed natural resources with fire, attracting herbivores to freshly burned areas–. Pre-industrial agriculturalists further used fire to clear ***land*** and burn crop debris. Furthermore, contemporary humans shape fire regimes by suppressing natural , as well as modifying landscapes and fuel loads through controlled burns (prescribed fires), ***land*** clearing, urbanization, cultivation of non-native plants and animal husbandry. Humans also accidently or maliciously set fires that become uncontrollable (thus, becoming wildfires) and sometimes economically destructive and fatal (fire disasters). Globally, very few vegetated environments are unaffected by human fire use.

Past climate change is known to have influenced the extent, frequency and intensity of vegetation fires by affecting vegetation patterns, fuel abundance, and seasonal and interannual drought. Currently, anthropogenic climate change is altering precipitation patterns and increasing temperatures, resulting in more frequent –. In recent years, for example, there have been increasing media reports of major fire disasters: the wildfires in Chile in 2017, Portugal in 2018, California in 2018 and Australia in 2019–2020 are prominent examples. Such fires have major economic impacts, affecting life, property and human health–, thus, it is important to consider contemporary and future trends in fire activity to inform adaptation and mitigation policies. For instance, the 2019–2020 Australian Black Summer is likely the nation’s most costly natural disaster, costing over AUD $100 billion, whilst California in the USA saw an estimated USD $40 billion(NatCatSERVICE) in structure losses alone in a dozen major wildfires in 2017–2018. Importantly, these fire disasters are not simply due to climate factors but also the modification of landscapes during the ,.

In this Review, we describe how human–environmental interaction shapes fire activity from the viewpoint of . The characteristics of global vegetation fires are outlined, followed by a synthesis of current trends and future projections in fire activity. The effects of changing fire regimes and pathways for adaptation are subsequently discussed, ending with the consideration of adaptation measures and future research priorities.

Contemporary fire regimes

Vegetation fires burn an annual global average of 400–500 million hectares (Mha),, with fire patterns driven by the interplay between climate, weather, vegetation type, ignition and anthropogenic fire management– (Fig. ). Broadly, fire activity has a unimodal relationship with primary productivity–. Regions with intermediate levels of primary productivity, such as tropical savannah, burn at a very high frequency (approximately 1–5 years), owing to abundant fuel (vegetation), reliable dry seasons and ample natural and anthropogenic ignitions. In contrast, in rainforest environments that have high primary productivity, fire is naturally rare (on the timescale of millennia), limited to climatic periods when fuel is dry enough to burn, although anthropogenic deforestation fires are an annual occurrence (Fig. ). In high-biomass boreal and temperate ***forests***, the return time of fires varies between decade and century scales, and is largely controlled by extreme fire weather, ignitions and vegetation cycles. Notably, arid regions are climatically conducive to fires but have a limited capacity to burn due to low primary productivity. However, fire activity in these regions can increase when fuel becomes available, for instance, following interannual wet periods or non-native grass invasions.

Global patterns of fire and vegetation.

a | Mean annual burned fraction from 2001 to 2018, based on MODIS burned area. b | 95th percentile of the Fire Weather Index (FWI) from the Canadian ***Forest*** Fire Danger Rating System derived from ERA5 (ref.), where the 95th percentile is calculated from data pooled over the entire calendar year. Higher values represent an increased potential for fire. c | Tree cover from MODIS. d | Broad spatial pattern of five types of fire regime: little (or no) fire; surface low frequency; surface medium frequency; surface high frequency; and crown medium frequency. Fire activity and regimes are controlled by the interaction of biomass and climate, as well as human and natural ignitions.

Vegetation fires are an important source of greenhouse gases, particularly CO2 (ref.). Global mean carbon ***emissions*** due to fire were approximately 2.2 Pg per year from 1997 to 2016, about 22% of contemporary global annual carbon ***emissions*** from fossil fuel combustion. Of fire-related ***emissions***, about 65% are due to savannah and grassland fires, reflecting the high frequency of burning in these environments, and 10% from temperate and boreal ***forest*** fires. Approximately 20% are associated with clearing tropical rainforest for pasture, plantations and ***agriculture***, with the remainder associated with ***agricultural*** waste burning. Although ***emissions*** from flammable vegetation can be balanced by sequestration during post-fire vegetative recovery, ***emissions*** from fires associated with permanent deforestation or combustion of organic deposits such as peatlands, are net sources of carbon to the atmosphere. Similarly, rapid climate change and increased ***forest*** fires could make carbon sinks (***forest*** vegetation and soil) become carbon sources.

Global trends in fire activity

Despite increased reporting of fire disasters, such as the Australian 2019–2020 bushfire crisis, it is unclear if these disasters are evidence of increasing global fire activity related to climate change. The uncertainty is partially because historical records of fire activity, even for simple metrics like area burned, are short and available for only a few nations. Prehistorical fire records, which are essential to understanding the fire history of infrequently burned vegetation, rely on palaeoecological proxies such as and analysis of sedimentary charcoal,–. These proxies, unfortunately, do not directly scale to key components of fire regimes, such as frequency or geographic extent of fires, and there are few regions, such as the western USA, with a large number of high-resolution records that extend into the prehistorical period,.

Satellite imagery is currently used routinely to monitor fire activity but only became available in the 1970s. This period is much shorter than the natural fire-return interval of many ***forested*** biomes and could fail to capture infrequent cyclical events, such as the intense droughts and floods that control fuel availability. Moreover, early satellite observations are spatially coarse and have imperfect coverage, with reliable coverage only available since the turn of this century. More uncertainty in global trends arises because of the substantial variation in fire activity amongst biomes, which demands regional rather than global analyses. As fire disasters are often associated with much smaller burned areas than fires in remote areas, metrics other than burned area need to be incorporated into analyses,. Particularly important are estimates of , which provides a measure of the energy released from the fires, and , which is an estimate of the environmental impacts of the fires, such as degree of canopy damage. Despite these observational limitations, there is an emerging picture of changes in global fire activity, which emphasizes the importance of regional-scale variation, climate change and anthropogenic drivers.

From 1979 to 2013, an average increase of 18.7% in fire-weather-season length has been documented across global burnable ***lands***, with a doubling by long fire-weather seasons across most of the Earth’s flammable biomes (Fig. ). Extreme fire-weather conditions, alongside drought and fuel dryness, are associated with extreme fire events. However, the MODIS burned area record indicates that, between 1998 and 2015, the area burned by vegetation fires globally declined by around 25%, from over 500 Mha to less than 400 Mha annually. The largest decreases in area burned occurred in African and South American tropical savannahs and Asian semi-arid grasslands (Fig. ,), and were caused by ongoing ***land***-cover conversion, leading to a more fragmented and less flammable landscape. A decline greater than the global average of area burned was also detected in western Australian desert, a change known to be associated with interannual drought cycles and the absence of Aboriginal fire management,. These contrasting trends highlight why a sole focus on area burned does not adequately capture trends in the changing risk of highly economically and economically destructive fire events.

Trends in vegetation-fire activity.

a | Linear trends in the number of days per year where the Fire Weather Index (FWI) from ERA5 (ref.) exceeded the local 95th percentile over the period 1979–2019. b | Annual fire ***emissions*** over Africa (1997–2019). c | Burned area in contiguous Western USA, 103 °W to the Pacific (1916–2018) and non-inflation-adjusted US federal fire-suppression costs (blue line). Burned area based on historical reconstruction from 1916 to 1984 (ref.), Monitoring Trends in Burn Severity (MTBS) data for 1984–2017 (ref.) and MODIS for 2018 (ref.). Data were bias corrected using periods of overlap to the reference MTBS record (1984–2003 for reconstruction and MTBS, and 2001–2017 for MODIS). d | Burned area in Canada (1959–2018). e | Burned area in New South Wales, Australia (1979–1980 through 2019–2020 fire seasons) and number of pyrocumulonimbus (PyroCb) in Australia (blue line). f | Burned area in Tasmania, Australia (1979–1980 through 2018–2019 fire seasons) resulting from all ignitions (unknown and lightning). Blue line represents burned area from fires with lightning ignitions. g | Burned area in central Chile (1984–1985 through 2016–2017 fire seasons). h | Burned area in Portugal (1980–2018) (2018 estimated using MODIS data). i | Fire ***emissions*** in Indonesia (1960–2019). j | Fire ***emissions*** from Brazilian Amazonia (1960–2019).

Regional trends in fire activity

Regional analyses are essential to reconstruct contemporary fire-activity trends. The most well-studied regions are the western USA (Fig. ) and boreal Canada (Fig. ), owing to their comparatively high density of researchers, abundant natural archives (lake sediments and fire scars) that record past fires and reliable official fire records since the early twentieth century. Sedimentary charcoal records in the western USA show that, over the last 3,000 years, fire activity was primarily controlled by temperature and drought. During the nineteenth century, however, fire regime became increasingly anthropogenically driven as human population in the region increased and indigenous fire practices waned, and fire activity peaked subsequently mid to late century. Active fire suppression decoupled the fire activity–climate relationships and created a historic landscape ‘fire deficit’ in the twentieth century. Since ~1980, though, warmer, drier summers and earlier spring snowmelt, have increased the area burned from vegetation fires, despite sustained investment in industrialized firefighting (Fig. ). For example, between 1972 and 2018, there has been a 405% increase in total burned area in California, and decadal burned area from 2003 to 2012 increased by 1,200% in ***forests*** of the western USA, compared with 1973–1982 (ref.).

In the Canadian boreal ***forest***, fire frequency and extent has generally increased in response to higher regional temperatures,, longer fire seasons and drier fuels (Fig. ). Annual average burned-area in Canada has almost tripled since 1959 from 1 million ha to 2.8 million ha. Drier and hotter fire seasons also increase the probability of lightning ignitions, causing a rise in the number of large fires in western Canada,. Lightning-caused fires are responsible for 90% of the burned area in Canada, and the number of lightning-caused fires has increased significantly especially over western Canada, resulting in increasing burned area, as burned area by human-caused fires has been decreasing. The combination of drought and vegetation fire has also led to a net increase in greenhouse gas ***emissions***, both directly through the combustion of ***forest*** biomass and soil carbon stocks (such as in peatlands) mainly in the form of CO2 (refs,) and indirectly by causing permafrost thaw and changing thermokarst hydrology, where the relative ***emissions*** of CH4 could increase,.

In Australia, it is difficult to disaggregate the influences of climate change from the effects of the cessation of >45,000 years of Aboriginal hunter-gatherer fire management following European colonization in the early nineteenth century,. However, the effect of climate change is becoming apparent in the increasing numbers of extreme fire events,,. For instance, analysis of historical satellite imagery has demonstrated an increasing trend in pyrocumulonimbus occurrence,, with 35 storms in the 2019–2020 fire season, thereby, doubling the known Australian records of these extreme fires (Fig. ). In the western Tasmanian wilderness, the number of lightning-ignited fires and the area burned as a result has also sharply increased since 1980–1985, from burning an average of around 100 ha annually to over 200,000 ha in 2019 (Fig. ), including rarely burned and fire-sensitive Gondwanan rainforests. Most recently, a globally anomalous 2019–2020 fire season in Australia burned over 5 million ha of Eucalyptus ***forests*** and has been linked with anthropogenic climate change,.

Similar to the 2019–2020 fires in Australia, the 2017 Chilean fires were the largest fires on record for that nation, burning over 5,000 km2 (Fig. ), and were associated with anomalous fire-weather conditions related to drought and high temperatures. However, large expanses of highly flammable, densely stocked monocultures of Pinus and Eucalyptus plantations contributed to the scale and intensities of the Chilean fires, a situation that also occurred in the 2018 Portugal fires (Fig. ). These cases highlight the importance of factors other than (or in addition to) climate change, such as vegetation changes related to ***agriculture*** or invasive species, in fire regime change. For instance, the spread of Bromus tectorum (cheatgrass) across the semi-arid, intermountain western USA has facilitated the replacement of a low-frequency, mixed-severity shrubland fire regime with a high-frequency, high-severity grassland fire regime. The introduction of Andropogon gayanus (gamba grass) to tropical eucalypt savannah surrounding Darwin in northern Australia has similarly led to the replacement of near-annual high-frequency, low-intensity fires with high-intensity fires, driving the savannah on a trajectory towards a treeless state. Moreover, tropical deforestation fires have remained relatively constant over the last 30 years after increasing during the 1980s in line with increased deforestation,, despite climate change. Instead, an important feature of tropical deforestation fires is the strong interannual variation in step with drought cycles, such as those caused by the El Niño–Southern Oscillation, (Fig. ,).

In many regions, it is apparent that fire seasons are lengthening and becoming more extreme, and lightning ignitions are increasing, contributing to economically destructive fire events. Yet, simple attribution of these increases to climate change is challenging because there are specific factors, including anthropogenic ones, that shape regional fire activity. These factors can increase the risk of extreme events in some cases, and, in other cases, cause a decline in area burned, highlighting the need to consider and to record more indices than simply area burned.

Future fire regimes

Fire-activity prediction is a rapidly changing field informed by improved resolution of climate-change projections, increased capacity of numerical models and deeper understanding of the climate drivers of fire activity. Over the last 40 years, a variety of modelling approaches have been applied both globally and regionally to discern likely changes in fire activity owing to anthropogenic climate change. Table  summarizes the rapid-response review on projected changes in fire activity by geographical region based on papers published since the Fifth Assessment Report of the Intergovernmental Panel on Climate Change, augmented with additional key papers discussed here. Overall, there is general agreement amongst the studies that the frequency or severity of fire weather, fire-season length, burned area and fire occurrence are increasing with future climate change. Although some regions are suggested to have no change or decreases in fire activity, particularly in regions with substantial human influence, none of the papers support a widespread decrease in fire risk (Table ). However, it should be noted that there is a limited number of studies for Africa and Asia.

Summary of selected global, biome and regional studies on future changes in fire indicators

| **Geographic domain** | **Projected change in Fire Weather Index days >95th percentile (%)** | **Fire activity indicator** | **Projected change of fire activity indicator** | **Ref.** |
| --- | --- | --- | --- | --- |
| **Global studies** |  |  |  |  |
| Global | ? | Fire weather | Increase |  |
| Globala | ? | Fire weather | Increase |  |
| Global | ? | Fire weather | Increase |  |
| Global | ? | Fire weather | No change |  |
| Globala | ? | Fire weather | Increase |  |
| Globala | ? | Burned area | Mixed |  |
| Global | ? | Burned area | Mixed |  |
| Global | ? | Fire activity | Increase |  |
| Globala | ? | Fire activity | Mixed |  |
| **Biome studies** |  |  |  |  |
| Mediterranean biomea ? Europe/S. America/N. America/Australia/Africa | ? | Fire activity | Mixed |  |
| Boreal biome ? Central Russia/W. Canada | ? | Fire weather | Increase |  |
| **Regional studies** |  |  |  |  |
| Europe ? Mediterranean | +23.5 (129%) | Burned area | Increase |  |
| Europe ? Mediterranean | Fire activity | Mixed |  |  |
| Europe ? France | Fire weather | Increase |  |  |
| South America ? Amazon | +15.5 (84.9%) | Fire activity | Increase |  |
| South America ? Amazon | Burned area | Increase |  |  |
| Australia ? Southeast Australia | +9 (49.3%) | Fire weather | Increase |  |
| Australia ? Southeast Australia | Fire weather | Increase |  |  |
| Australiaa ? Southeast Australia | Fire weather | Increase |  |  |
| Australia ? Tasmania | Fire weather | Increase |  |  |
| North Americaa ? Western USA | +10.2 (55.9%) | Burned area | Mixed |  |
| North Americaa ? Western USA | Burned area | Increase |  |  |
| North Americaa ? Western USA | Fire activity | Increase |  |  |
| North America ? California | Fire impacts | Increase |  |  |
| North America ? California | Fire Weather | Increase |  |  |
| North Americaa ? Central Rocky Mountains | Burned area | Increase |  |  |
| North America ? Canada/boreal ***forest*** | +9.2 (50.4%) | Fire weather | Increase |  |
| North America ? Canada/boreal ***forest*** | Fire weather | Increase |  |  |
| North America ? Canada/boreal ***forest*** | Fire weather | Increase |  |  |
| North America ? Canada/boreal ***forest*** | Burned area | Increase |  |  |
| North Americaa ? Canada/boreal ***forest*** | Burned area | Increase |  |  |
| North America ? Alaska/Western Canada | Burned Area | Increase |  |  |
| North Americaa ? Alaska | +7.1 (38.9%) | Burned area | Increase |  |

Studies include those from Jones et al. and other studies discussed in the text (marked witha). Regional studies are summarized by continent and sub-geographic region or country. The primary fire indicator as either fire activity (such as fire occurrence), burned area, fire weather (such as fire danger) or fire impacts, as well as the primary direction of change, is highlighted for each study. For some macroscale regions, also reported are the projected changes in the number of days per year the Fire Weather Index from the Canadian ***Forest*** Fire Danger Rating System exceeds the 95th percentile corresponding with global mean temperatures 2 °C above pre-industrial levels versus 1981–2010 (ref.). We summarize the median change calculated from 17 climate models, with the percent change from the 1981–2010 baseline in parentheses.

The strong association between anomalous fire weather and extreme fire behaviour suggests that anthropogenic climate change will impact future fire regimes,, including in those regions already vulnerable to fire disasters, such as the western USA, Mediterranean and southern Australia. A global analysis using 17 global climate models, and highlighted regionally in Table , suggests there will be a large increase in the occurrence of extreme fire weather for much of the globe, with some of the largest increases the Mediterranean and the Amazon. For instance, the number of days exceeding the 95th percentile of the Fire Weather Index is projected to increase almost 130% for the Mediterranean to just under 40% for Alaska when global mean temperatures reach 2 °C above pre-industrial levels relative to contemporary conditions. There is also evidence that increasing atmospheric temperatures will lead to more lightning activity,, further adding to fire activity in ignition-limited landscapes. Such changes in environmental factors will be confounded by changes in anthropogenic factors, including human-settlement patterns and ***land*** use (such as cropland and pasture), in many areas of the globe that tend to reduce fire activity,.

Approaches have been used to model future changes in global fire activity ranging from the use of process-based coupled Earth System Models to statistical approaches. For example, Kloster and Lasslop examined future changes in global burned area across a set of Earth System Models with integrated fire–vegetation dynamics that were forced with future changes in climate and ***land*** use. The models generally showed increases in global burned area, albeit with substantial uncertainty, with some models showing a 58% increase by the end of the twenty-first century under stronger warming scenarios. Statistical-modelling efforts include Moritz et al., who used environmental-niche modelling to project changes in global fire activity. They found heterogeneous changes in fire activity with general increases in mid-to-high latitudes and declines in the subtropics.

Regional-scale studies of future fire regimes, largely focused on North America and Mediterranean Europe, have examined changes in metrics such as fire-season length, extreme fire weather and burned area. The boreal zone of Canada, for instance, is expected to experience a doubling of burned area by the end of the century, increasing to 5 Mha year−1 (ref.). Similarly, more extreme fire weather is projected to favour more very large fires for the western USA and, in concert with reduced spring snowpack and drier fuels during the summer, will lead to a substantial increase in burned area for montane ***forests***. Process-based ***land***-surface models also show substantial continued increases in burned area over the twenty-first century across ***forested*** portions of the western USA. Projected changes in burned area that incorporate direct flammability controls on fire activity and the indirect effects of fuel productivity, however, show more mixed changes across western USA due to heterogeneity in climate, vegetation and ***land*** use. For example, semi-arid shrub and grasslands that warm further and undergo will see reduced fire due to biomass limitations.

In Mediterranean Europe, projections suggest a 40–100% increase in burned area with a 1.5 °C to 3 °C warming, despite recent investment and expansion of fire-suppression efforts that have led to a reduction in fire-activity since the 1980s. In some Mediterranean ecosystems in Europe, though, burned area could decline if climate-change-associated aridification increases fuel limitation. However, such changes in fire regimes modelled using space-for-time substitutions are predicated on vegetation equilibrium with climate; trailing-edge disequilibrium of vegetation under transient climatic changes could delay realization of reduced fire activity in some landscapes.

Projection uncertainty

Although the projections reviewed here support that there will be increased fire activity in the future, these projections carry large uncertainties due to the feedbacks between different aspects of the Earth system and the difficulty in representing human behaviour in models. For example, one approach to predicting future changes in fire regimes is to explore the statistical association between current and projected climate variables and area burned,. However, the relationship between vegetation fire and vegetation is likely to change in the future due to dynamic feedbacks, which is not accounted for using statistical associations,,. Another approach, process-based mechanistic modelling, incorporates the complex interplay of climate, CO2, vegetation and fire, and, sometimes, impacts of ***land***-use change and change in ignitions. These factors could amplify, dampen or negate one another (Fig. ). Some global modelling results suggest that the effects of climate change will substantially overwrite human influences on fire regimes, for instance, by limiting the effectiveness of fire suppression,. This conclusion, though, hinges on realistic representations of anthropogenic factors, which are particularly difficult to capture when modelling future fire activity, as it relies on plausible scenarios of economic development and numerical relationships between human population density and ignitions, fire suppression and fuel availability,,,. Thus, regional-scale models are likely to have higher veracity than global models because biophysical and socio-ecological controls of fire activity have distinct geographic patterns,. Regardless, comparative analyses of different model outputs and observed patterns in area burned show that one of the greatest barriers to modelling future fire regimes concerns anthropogenic factors.

Relationships and feedbacks between climate, fire and vegetation.

Linkages and feedbacks between the global climate system, wildfire and vegetation could drive future fire activity in the Anthropocene. The effects of post-colonial anthropogenic changes to global climate, vegetation and wildfire are shown on the red lines.The consequences of these effects on global climate, vegetation and wildfire are shown on the black lines. These interrelationships highlight the complexity of fire in the Earth system and the sensitivity to climate change, underscoring the challenge in predicting future fire regimes. GHG, greenhouse gas; WUI, wildland–urban interface.

There is also uncertainty in fire-regime predictions due to the complexity of climate–fire–vegetation interactions and feedbacks. For example, in some regions, climate change could increase the abundance of plants with low flammability, such as through the replacement of coniferous ***forests*** by deciduous broadleaf ***forests*** in boreal landscapes. Feedbacks between logging, deforestation, fire, drought and climate change could lead to the replacement of Amazon rainforests with flammable grasslands. Elevated atmospheric CO2 concentrations increase carbon assimilation and improve plant water-use efficiency, potentially altering the balance of grass and woody plants in tropical savannahs. In this case, shrub and tree invasion reduces the amount of grass that fuels vegetation fires, thus, decreasing flammability,. However, climate-change-enhanced drought could negate any effects of carbon fertilization and enhanced water-use efficiency, maintaining or increasing flammability. Most modelling results suggest that negative fire-vegetation feedbacks would limit the extent of projected increases in burned area, based on fire weather alone,, although possible positive fire–vegetation feedbacks, such as invasive annual grass cycles and increased productivity with climate change, could counteract the negative feedbacks.

In theory, interactions between climate change, vegetation and fire could drive a runaway feedback process in which entire landscapes are transformed as fire frequency increases with worsening fire weather, and dry, hot conditions, limit vegetation regeneration (Fig. ). Ecosystems currently located on the fringe of a bioclimatic niche (such as lower tree line ***forests***) and vegetation persisting in or are particularly vulnerable to transformative fire regimes,,. Landscape-wide conversions from slow-growing, infrequently burned ***forests*** to frequently burned grassland and shrublands are possible (Fig. ), which depletes soil carbon stores, as in regrowth ***forests*** in the conifer ***forests*** in the western USA and in Indonesia. This feedback process is most likely self-correcting because fire regimes will shift from being flammability-limited to fuel-limited with increasing reduced productivity,,. According to this scenario, burned area will eventually decrease and, consequently, more complex vegetation structure will develop, as has been observed in grasslands of the US Great Plains, where the intentional exclusion of fire has facilitated woody tree and shrub expansion.

Conversion of infrequently burned ***forest*** to a frequently burned, treeless state.

Conversion is associated with declines in carbon storage (sequestered C, top panel) and annual global fire-induced ***emissions*** (***emission*** rate, middle panel), assuming that both above-ground and below-ground carbon are altered. In most ***forested*** systems, particularly in temperate and boreal ecosystems, much of the sequestered carbon is in litter and soil organic layers and the roots, which can become substantial sources of carbon ***emissions*** when burned, especially by repeated fires,,.

Another key area of uncertainty in future fire-regime predictions is the range of variability and frequency of extreme fire events, and there is a lack of research projecting these events and linking them to cascading consequences, such as post-fire floods, large-scale erosion and debris flows that alter hydrology and topography, and development of pyrocumulonimbus. The paucity of projections is partially due to the substantial challenges and uncertainties inherent in coupling interdisciplinary models, as well as the increased level of uncertainty and error at the extremes,,. Fire, and its interactions, remains poorly represented Earth-system models, and their performance struggles with non-analogue, rapidly changing future climates. Thus, predicting ‘black swan’ extreme fire events — which, by definition, have no historical precedent, such as the protracted, enormous and severe Australian 2019–2020 fires — seriously challenge the capacity of Earth-system-model projections. The Australian fires represented a unique constellation of historically anomalous prolonged drought, the unusual conjunction of interannual climate modes (an intense positive-phase Indian Ocean Dipole and negative-phase Southern Annular Mode) that resulted in a prolonged fire weather, localized lightning storms and human ignitions than ignited the fires, combined with intentionally set fires and direct firefighting designed to stop the fires. Clearly, capturing such specific combinations of climate events and human agency to predict such an extreme event is beyond the capacities of current predictive models of future fire activity.

Adapting to fire in the Anthropocene

Fire regimes in the Anthropocene require adaptation and effective management to promote environmental sustainability and reduce greenhouse gas ***emissions***,. Adaptation and management approaches must be tailored to specific environmental and socio-ecological settings (Fig. ), which we consider in flammable landscapes and the (WUI).

Adaptation to Anthropocene fire regimes on fire-prone landscape.

a | Adaptation and management strategies from densely ***forested*** areas to the wildland–urban interface, and at the building scale (inset). The intensity of fire management changes proportionally with human population and economic assets, with strategies ranging from allowing fires to burn in wilderness areas to intensive management on the wildland–urban interface. Each type of management solution will be strongly framed by local conditions and social and cultural factors. b | Distance of exposure to conductive heat and direct flames, radiant heat, convective heat, embers and brands, and smoke, particulates and aerosols.

Flammable landscapes and the WUI

It is neither possible nor desirable to exclude fire from fire-adapted landscapes. Rather, sustainable fire management demands careful fuel management to conserve biodiversity, sustain ecosystem services (such as the provision of water and clean air) and reduce the risk of wildfire disasters. Fuel management can involve broad-scale prescribed burning, as it is a cost-effective method to reduce fuel loads and, hence, reduce the risk of uncontrollable fires in frequently burned vegetation, such as savannah and dry Pinus and Eucalyptus ***forests***. To be effective, however, this approach requires frequent burning because fuels rapidly reaccumulate. Furthermore, large areas must be treated to ensure that enough of the area that is likely to be encountered by a wildfire has been burned. Dense, mesic and naturally infrequently burned vegetation are unsuitable for this fuel treatment unless it is combined with mechanical thinning. This latter approach has the potential to increase resilience in US coniferous ***forests*** where fire has been excluded for up to a century, with the possible benefit of reduced carbon ***emissions*** from subsequent wildfires–.

However, prescribed burning has significant constraints, particularly owing to the potential for shrinking safe weather windows due to climate change, and the effectiveness of prescribed burning in altering wildfire behaviour sharply declines under extreme fire weather. Prescribed burning also causes pollution. Smoke from large-scale prescribed burning programmes can cause death and hospitalization, which could potentially exceed the human-health impact of the wildfires that these managed fires are intended to mitigate. Air-quality regulation by governments has demonstrable public and environmental benefits and has driven technological innovation, so, in principle, government regulation of the smoke pollution from both wildfire and prescribed fires could drive innovation in fuels management and achievement of more economical, sustainable and safer strategies.

Fire management should also draw on indigenous and local knowledge about fire regimes,,, because these practices have been refined over millennia and have demonstrably sustained biodiversity,. Yet, it must be recognized that wide-scale ‘restoration’ of indigenous fire regimes is no longer possible in many environments, as there have been profound socio-ecological changes to indigenous fire practices and environmental conditions have moved outside of the historical range of variability,. Nevertheless, fire-management approaches that combine traditional ecological and local fire knowledge with mainstream fire-management approaches and technologies must be developed to adapt to changing environmental conditions. Such management is particularly important in the flammable WUI, where the most economically destructive vegetation fires on Earth occur.

The WUI is rapidly expanding as a result of growing urban populations,,,, particularly in southern Europe, western North America and southern Australia, which have the highest concentration of wildfire fatalities and structural losses,. There is rapidly increasing firefighting expenditure to protect the WUI — the US fire season in 2018 exceeded USD $3 billion in suppression costs, largely owing to the reliance on fleets of specialized aircraft,, (Fig. ). Moreover, fires in the wildlands near urban areas can cause extreme air pollution in populated areas. For example, smoke from the 2019–2020 Australian bushfires is thought to have caused 417 deaths (much greater than the 33 recorded direct fatalities) and several thousand hospitalizations for cardiovascular and respiratory problems.

The vulnerability of housing on the WUI reflects a constellation of socio-ecological factors that amplifies fire risk, property damage and loss of life,–. These factors include the large numbers of ignitions from human sources, ineffective fuel treatments, poor planning, design and regulation of the built environment (particularly the careless intermixing of housing and infrastructure in flammable vegetation) and limited preparation for fire disasters, such as design standards for housing to survive fire, development of evacuation plans and construction of safe places, effective public-education communication, dissemination of advice and emergency warnings. Fundamentally, fire-management challenges in the WUI reflect urban planning and policy failures, which demand reform and the need to enact and enforce national and local laws that control urban development, design and construction,.

More effective protection of urban and WUI areas from wildfires should be achieved by managing fuels through prescribed burning, mowing, grazing and browsing ground-cover vegetation, planting strips of fire-resistant trees to create ‘green fire breaks’ (ref.) and creating corridors of thinned ***forest*** to create ‘shaded fuel breaks’ (refs,,). China is a world leader in this approach, establishing 364,000 km of green fire breaks to manage landscape fire. Communities and individuals must manage fire risk,,,, by fire-hardening homes and transforming private property in a partnership model, shifting the responsibility from fire-management agencies, which are typically centralized,. Dissemination of geographically and temporally accurate information on wildfires and smoke hazards though advanced technology, such as geolocation and smartphone apps, can enable individuals to make informed choices about managing wildfire risks and their own exposure to high levels of smoke pollution, and planning for prospective evacuations in rapidly changing conditions,. For instance, the US Environmental Protection Agency has developed a real-time smoke-information smartphone app, Smoke Sense, that combines citizen science and instrumental monitoring of air quality to improve public health. Likewise, the AirRater app in Australia was developed by the University of Tasmania, and includes notifications of the health risk posed by biomass smoke to users. Additional smartphone apps are being developed by Australian, US, Canadian and South African fire-management agencies to disseminate advice and warning of fire danger. A strength of these approaches is that they provide real-time and location-specific information, although they can potentially fail during emergencies if there is a surge of users, communication networks or devices become inoperative and if fires escalate faster than warnings can be updated. Warnings of fire danger and smoke hazards need to be combined with a number of other ***targeted*** interventions to protect health and wellbeing, such as provision of fireproof and clean air refuges, and community-level support for medically vulnerable individuals (Fig. ).

Preventing fire-related ***emissions***

Fire regimes are not only impacted by climate change but could lead to net carbon ***emissions*** from terrestrial carbon stores. Tropical savannahs are the most fire-prone biomes on Earth and emit the greatest volume of greenhouse gases annually. ***Emissions*** can potentially be reduced through concentrating burning in the early dry season, when fire intensity is lower compared with the late dry season. This approach is being attempted by an Australian programme, with claims it has successfully mitigated the ***emission*** of non-CO2 greenhouse gases, particularly methane (CH4) and nitrous oxide (N2O). For instance, application of this approach to 28,000 km2 of Eucalyptus savannah in Arnhem ***Land*** has been estimated to have reduced accountable non-CO2 ***emissions*** by 37.7% relative to ***emissions*** in the decade prior to the intervention. Careful monitoring and evaluation are required, though, to ensure that managed fire regimes do not have unwanted socio-ecological side effects such as harming biodiversity, promoting a grass-fire cycle with declines in above-ground carbon storage due to increased tree mortality or disempowering indigenous communities.

Fires associated with tropical deforestation emit carbon stored in vegetation and soil from areas that otherwise rarely burn. To reduce the impacts of deforestation fires on carbon storage in the tropics, deforestation must be reduced through policy, economic incentives and education. Although some progress has been made, these gains can be quickly lost, as evidenced by the 2019 increase in deforestation fires in the Amazon following the abrupt reversal of the Brazilian government’s commitments to control deforestation (Fig. ).

The increasing occurrence of fires in huge, circumpolar expanses of coniferous boreal ***forests*** also needs careful management, as these fires emit greenhouse gases and create smoke that cross international boundaries. These boreal ***forests*** and their deep organic soils are one of the largest terrestrial carbon stores, containing somewhere between 367.3 Pg and 1,715.8 Pg of carbon. Around 0.2 Pg of carbon is emitted from the boreal zone annually, and ***emissions*** are likely to escalate in response to global warming, and past fire and logging disturbances, stresses that have been shown to strongly interact,. Reducing boreal ***forest*** fire requires a multipronged and international approach, which involves reducing accidental human ignitions through education and enforcement. It will also involve skilful management of natural and anthropogenic fires to create a landscape mosaic of burned and recovering areas, reducing the capacity for extensive fires to develop.

Large-scale tree planting and natural-***forest*** restoration has recently been suggested as pivotal to drawing down atmospheric CO2 (refs–), but there are substantial caveats to this idea–. Critically, any large-scale reforestation programme to store carbon must have effective and sustainable fire management, as large expanses of young trees are particularly vulnerable to high-severity fires,. This vulnerability was exemplified by the widespread destruction of Pinus and Eucalyptus plantations by fires in Chile, Portugal and Australia during recent fire disasters. Creating fire-resilient timber plantations of flammable but productive timber remains a research challenge, owing to the difficulty and danger of using prescribed burning to reduce fire hazard, and mostly likely will require mechanical ***removal*** of fuel. Restoration plantings designed to restore habitat or sequester carbon should focus on either restoring fire-resistant ecosystems or ***target*** non-flammable species. Regardless, investment in fire suppression will be mandatory in all cases.

Summary and future perspectives

The flammability of many landscapes is increasing because of the combined effects of changing climate and ***land***-use patterns. The increased risk of economically and ecologically destructive fires can be reduced using planning and urban-design principles, combined with fuel management and fire management. Development of these fire-management interventions requires transdisciplinary research that combines insights from natural and social sciences, engineering and technology, and humanities,,. Such research is also prerequisite for improving global and regional fire models of future fire activity,, which are needed to explore the fire–vegetation–atmosphere feedbacks on terrestrial carbon dynamics (Fig. ). However, achieving better fire management requires addressing a number of key research challenges.

A basic research need is the description of regional fire regimes that quantify the seasonality, frequency, spatial extent and severity of fires, and then the determination of how these patterns are shaped by climate, terrain and vegetation. Identifying the cause of fires, at the most basic level differentiating natural and anthropogenic ignitions, is also essential. Achieving this basic goal demands nationally and internationally coordinated research that can yield insights through comparative analysis of the development of general ecological principles and evidence-based analysis of the effectiveness of fire-management and adaptation approaches. Within the regional scale, research must address how fire behaviour, particularly uncontrollable extreme fire events, is affected by the interactions between climate, weather, terrain, and the load and type of fuel. Indeed, there are increasing reports from frontline firefighters that the behaviour of many wildfires lies well outside their experience and exhibit unusual characteristics, such as , so it is essential that extreme fire phenomena are systematically documented.

Better understanding of global and regional trends in fire regimes and vegetation-fire ***emissions*** demands improved data acquisition and database assembly. Existing satellite records only allow for coarse-scale mapping, based around a few easily acquired fire-regime metrics, such as seasonality, intensity and area burned. These data, combined with more accurate vegetation mapping, biomass-structure modelling and ***emissions*** factors, are essential for accurate estimates of greenhouse ***emissions*** and, hence, global carbon budgets. However, the next generation of satellite imagery will enable more complete parameterization of fire regimes, including the progression and behaviour of individual fires and fine-grain mapping of fire mosaics. Of prime importance is moving from simplistic counts of fire detection or area-burned mapping to understanding the severity of fires and the associated impacts on vegetation defoliation, plant death, habitat quality and carbon stocks. The recently established Global Fire Atlas will provide a central repository on remote sensing of individual fires and their location, duration, pattern of growth and spatial behaviour. Furthermore, case studies can be undertaken to understand the effects of ***land*** and fuel management and firefighting approaches on wildfire behaviour and document extreme fire behaviour,.

Improved understanding and modelling of interactions between fire and the hydrosphere, geosphere, cryosphere and atmosphere is necessary. Fire and fuel cannot be managed without impacts to these other Earth systems, and integrating dynamic feedback processes across systems will be critical to predicting both consequences and beneficial outcomes of future anthropogenic fire regimes. For example, municipal and ***agricultural*** water supplies are often dependent on the delivery of water of a consistent quality and quantity from fire-impacted vegetated watersheds, so fire management of that vegetation must also consider potential outcomes on projected water storage and delivery.

As anthropogenic fire regimes are influenced by human activity, there is a considerable need for data collection to improve quantification and modelling of fire activity and human populations, including their socio-economic status and historical and cultural-political legacies. Anthropological research into ‘fire cultures’ can improve our understanding of human relationships with fire use and illuminate why some societies have effectively coexisted with flammable landscapes for millennia. Social science is critical in both understanding how contemporary societies relate to fire, smoke and fire-management strategies and identifying policy barriers, in order to establish pathways for transforming landscapes and achieving management objectives. Risk and disaster sciences are similarly important, particularly in exploring linkages between fire and post-fire geophysical disasters, as well as modifying existing established risk frameworks to include fire. Economic models are essential to informing investment in sustainable fire management and understanding the full costs of fire disasters, including human health impacts. A global database (similar in form to the Global Fire Atlas) on the economic costs of wildfire management and economics losses from fire disasters is required, as, presently, these data are only available for a few regions (such as the USA and Canada),, and methods, terminology and data sources are inconsistently applied. Such economic modelling and policy development are also required to design fire-management programmes to reduce, and, ideally, reverse, greenhouse gas ***emissions*** from wildfires and tropical deforestation.

Transdisciplinary pyrogeographic research remains difficult to implement because of numerous intellectual and institutional barriers, such as the limited interaction between the humanities and physical sciences. A critical challenge for wildfire adaptation is the capacity to undertake transdisciplinary, applied research that is on the landscape scale and co-designed and funded by affected communities, multiple government and non-government agencies and landowners. Studies of the impacts and effectiveness of firefighting and emergency management responses to major unprecedented fire events, such as the recent California fires and the 2019–2020 Australian bushfire season, are, by definition, difficult to conduct because they cannot be prospectively planned, funded nor approved by regulators. Furthermore, the capacity of the global fire-science community is being increasingly stretched by the surge of anomalous fire events. Ongoing local, regional, national and international investment in training, institutional capacity building and fostering diversity amongst researchers and practitioners and their approaches is urgently required. This needs to be strategically combined with research and development and evaluation of wildfire mitigation and adaptation strategies. Without such investment, wildfire management and adaptation cannot be evidence-based or cost-effective.

Achieving sustainable stewardship of fire regimes requires acknowledging that fire is an inherent feature of the Earth system that has long been modified by humans. Climate change and numerous other anthropogenic effects on fire regimes present a new, urgent challenge for effective human adaptation to vegetation fire. Coordinated transdisciplinary research can lead to the development of fire-management strategies and avoid adverse economic and environmental impacts of fire disasters.

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**Notes**

Peer review informationNature Reviews Earth & Environment thanks the anonymous reviewer(s) for their contribution to the peer review of this work.Publisher’s noteSpringer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.Related linksCanadian National Fire Database:[*https://cwfis.cfs.nrcan.gc.ca/ha/nfdbGlobal*](https://cwfis.cfs.nrcan.gc.ca/ha/nfdbGlobal) Fire Atlas:[*https://www.globalfiredata.org/fireatlas.htmlGlobal*](https://www.globalfiredata.org/fireatlas.htmlGlobal) Fire ***Emissions*** Database:[*https://www.globalfiredata.orgMODIS*](https://www.globalfiredata.orgMODIS) Burned Area Product:[*https://modis.gsfc.nasa.gov/data/dataprod/mod45.phpNatCatSERVICE:https://www.munichre.com/en/solutions/for-industry-clients/natcatservice.htmlNational*](https://modis.gsfc.nasa.gov/data/dataprod/mod45.phpNatCatSERVICE:https://www.munichre.com/en/solutions/for-industry-clients/natcatservice.htmlNational) Interagency Fire Center:[*https://www.nifc.gov/index.html*](https://www.nifc.gov/index.html)

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[***Open Call for Proposals for Woodland Support Projects for 2021/2022 - Specification and Application Form***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:62J4-3N11-F0YC-N3MB-00000-00&context=1516831)

Impact News Service

April 27, 2021 Tuesday

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**Length:** 4563 words

**Body**

Dublin: Department of ***Agriculture***, Food and the Marine has issued the following news release:

Woodlands and Forestry haves many benefits for society including economic, social and environmental ones. They are a source of timber products, recreational spaces and habitat for biodiversity while also providing an important source of income for rural communities.

The Forestry Programme 2014 – 2020 (extended to end 2022) provides funding to the forestry sector in Ireland and consists of a number of measures aimed at the following:

increasing the level of ***forest*** cover, increasing the supply of ***forest***-based biomass, supporting private ***forest*** holders in actively managing their ***forests***, and enhancing the environmental and social benefits of new and existing ***forests***.

Table 1: Forestry in Ireland (Dates of most recent data included)Forestry ***land*** Area (2017) 11% (770,020 ha)Roundwood harvest (2018) 3.69 million m3Land Owners with forestry (2020) 23,256Forestry Jobs (Coford 2012) 12,000Exports (2018) €450mBroadleaf species (National ***Forest*** Inventory 2017) 28.7% of total ***forest*** areaContribution to Irish Economy (2012 ) €2.3 billionObjective of Forestry Policy and Support

The needs identified as part of the development of the Forestry Programme 2014-2020 were:

To increase the level of ***forest*** cover To increase the supply of ***forest***-based biomass To support private ***forest*** holders in actively managing their ***forest*** To enhance the environmental and social benefits of new and existing ***forests***

It is now clear that, while all needs identified have been addressed to some extent during the programme period, the anticipated progress, particularly in the level of afforestation, has not been realised. This can be seen from the following table which shows actual levels of afforestation compared to the ***target*** under the Forestry Programme:

Total Planting in hectaresType/Year 2015 2016 2017 2018 2019 2020Conifer 5030 5230 4375 2932 2657 1616Broadleaves 1263 1270 1161 1066 893 819Total (ha) 6293 6500 5536 3998 3550 2434FP ***Target*** 6000 6660 7140 7205 8115 8290

The policy framework in which we are now operating includes the following:

A recognition of, and emphasis on the fact that this programme is being rolled out in the context of Project Woodland, i.e in a period of transition to a new model of forestry. The prolongation of the existing Forestry Programme while the CAP reform process is being finalised. State aid rules have been extended to cover the CAP transitional period, which will be up to the end of 2022. The EU Green Deal, which includes measures to tackle soil and water pollution, and a new EU ***forest*** strategy. The development of a new Forestry Programme which will seek to position forestry as a complimentary farm enterprise, aligned with other ***agricultural*** schemes and activities and with the principle of sustainable ***forest*** management at its core. The Climate Action Plan 2019 and the Climate Bill currently going through the Oireachtas. The Programme for Government commitments on forestry, including the development of a new strategy to expand afforestation and the undertaking of a ***land***-use review.

The main priority is to increase afforestation in a sustainable manner, as it is only through this that the many benefits of ***forests*** can be achieved, but it is also clear that reaching the 8000ha per year ***target*** set out in the Government’s Climate Action Plan is going to be a major challenge. Farmers have disengaged from the forestry programme schemes for a variety of reasons e.g bad publicity on forestry, good prices for leasing ***land***, ***land*** tied up in GLAS. The challenge now is to get farmers interested and get their participation levels up again, which have slipped from 96% in 2014 to 30% currently.

There is already widespread awareness among society at large of the many goods and services that ***forests*** provide. In addition to providing timber products they act as a carbon sink, prevent soil erosion and flooding and provide recreational spaces. However, in recent years, forestry as a ***land***-use in this country has become increasingly divisive, with arguments sometimes fuelled by misinformation or misunderstandings. It is therefore crucial to ensure that forestry policy is informed by facts and science, communicated effectively through co-ordinated and ***targeted*** campaigns.Outline of Call for Proposals

In order to encourage farmers and other ***land*** owners to plant and to raise the profile of forestry as a public good and a commercially viable enterprise, the Department of ***Agriculture***, Food and the Marine (‘DAFM’) is inviting applications for funding for projects which support and highlight forestry under the four following themes:

1) Support and highlight the environmental benefits of woodlands.

2) Support and highlight the benefits of woodlands, focussing on farmers, and/or community engagement and/or general wellness

3) Support and highlight productive forestry and timber products, in the context of climate action and the bioeconomy.

4) Support and highlight sustainable ***forest*** management among ***forest*** owners (***targeted*** at organisations already active in this area with established programmes in operation).

This competitive process is open to all. Please note however that applications under theme 4 are confined to groups or organisations already active in the area, with an established track record.

Terms and Conditions of the Call for Proposals competitive process

3.1 All applications will be evaluated with reference to the marking scheme outlined in the application form.

3.2 Applications will also be assessed in relation to the degree of collaboration with other organisations and we would encourage groups to work together in the design and delivery of their proposals.

3.3 As the budget is necessarily limited, applicants are advised to keep expenditure to a minimum. Where possible, large projects should be split into two or more smaller projects, as part of a project may qualify for funding while the full project may not, due to budget limitations or duplication/overlap with other projects. Part-funding may also be considered.

3.4 Delivery of the proposed actions and materials should fall within the period June 2021 – December 2022.

3.5 Aspects of projects that have a “life” after the proposed event and will still be useful at a later stage should be highlighted e.g educational tools and other media or material assets.

3.6 Assets funded under this call for proposals will be owned by the Department and may be made available to other entities within the Sector.

3.7 Proposals must not replace actions that are currently taking place without State funding or can be considered part of normal business practice e.g advertising, attendance at ***agricultural*** shows or other marketing actions. Actions must have the potential to benefit the sector as a whole and must be additional to what is already being undertaken. Any project results must be made available to the public.

3.8 Proposals will only be supported where these actions would only have been undertaken with funding from the Department (the incentive effect). Other State aid rules may apply in the case of large companies.

3.9 All grant funding will be subject to the conditions set out in Circular 13/2014 (Appendix 2) issued by the Department of Public Expenditure and Reform (DPER) in relation to the provision of grant funding to all bodies. This means that all grants or grant installments will be paid on the basis of vouched expenditure only. No advance payment of grants or installments will be possible and applicants must take this into account in proposing projects for funding.

3.10 The extent to which proposals will be funded will depend on the budget available at a given time. Not all proposals that have been submitted, evaluated or have exceeded the minimum threshold of 60 marks will be funded. Confirmation of funding will be formally notified in writing.

3.11 More than one proposal per applicant can be submitted but the same proposal can only be submitted under one theme.

3.12 Proposals should remain valid throughout the extended period of the 2014-2020 Forestry Programme, i.e 2021 and 2022. Proposals for funding may cover either 2021 or 2022 or both. Funding may be allocated for either year, depending on budget availability.

3.13 An Evaluation Plan is to be submitted with each project at application stage, clearly setting out the intended inputs, activities, outputs, outcomes and impacts of the project. An updated evaluation of the outputs of the successful projects, with performance indicators where possible, will be required with each request to draw down payment, together with an assessment of the likely projected outcomes and impacts arising from the project in the long term. However, the project evaluations will not affect the provision of funding and are for information purposes only, to inform future campaigns and strategy development.Themes for Proposals

Theme 1 - Support and highlight the environmental benefits of woodlands.

This theme has been included to encourage individuals or groups with a specific interest in the environmental role of forestry, to submit proposals which raise awareness of the value of woodlands and the many ways in which trees and ***forests*** contribute to achieving our environmental goals.

Proposals submitted should convey a strong message that Ireland’s trees and woodlands provide a wide range of environmental resources and services which benefit society as a whole. Proposals should focus on the role played by the ***forest*** resource in climate change mitigation, biodiversity and water quality. Within this theme, the Department recognises that there are many different opinions about forestry among the various interest groups and we would particularly welcome proposals which seek to inform and unite opinion in relation to how forestry can contribute to enhanced environmental benefits. The ***target*** audience for successful projects under this theme should therefore be all sectors of society as the environmental benefits of woodlands are shared and valued equally by all.

Theme 2 - Support and highlight the benefits of woodlands, focussing on farmers, and/or community engagement and/or general wellness

The ***target*** audience under this heading includes the general public, schools, community groups, ***land***-owners and farmers and is particularly aimed at encouraging tree planting. Proposals under this theme should highlight the extent of consultation and engagement with these groups and could include the development and distribution of promotional material, photographs and videos, social media campaigns, information packs, surveys, quizzes, competitions, art/illustration/animation, on-line publications and activities such as webinars and the promotion of forestry as a career opportunity.

Proposals should focus on the cultural heritage of Ireland’s ***forest*** resource, the contribution that trees make to our landscape as well as the recreational and health benefits that woodlands provide.

Theme 3 - Support and highlight productive forestry and timber products, in the context of climate action and the bioeconomy.

This theme ***targets*** landowners, both farmers and non farmers, users of wood and harvested wood products, architects and builder’s providers. It seeks to encourage greater use of wood, participation in sustainable ***forest*** management of existing ***forests***, and increased afforestation, particularly among those who have not yet planted. Projects marketing the climate benefits of using wood can be aimed at a wider audience also, to highlight the importance of sustainable ***forest*** management for the whole of society, as a source of timber and timber products and as part of the national effort to tackle climate change through increased carbon sequestration and carbon storage.

Proposals submitted under this heading could include measures that focus on the economic benefit of forestry for farmers, the role played in diversifying farm income, the associated tax benefits and the fact that forestry can work alongside the existing farm enterprise. Other possible topics could include the benefits of forestry for rural communities through the economic activity of associated businesses such as contractors, saw mills and manufacturers of timber products. In this Call we are particularly looking for projects which promote the role of timber in the bioeconomy and in displacing other materials, such as concrete and steel in construction, to help lower our carbon footprint. Trees sequester and ***remove*** CO2 from the atmosphere, both the trees and the soil act as an important carbon store while the use of timber in buildings also locks up carbon. Using sustainably produced biomass instead of non-renewable fossil fuels leads to significant carbon savings on ***emissions***. Actions that promote the establishment and conservation of native woodlands and the promotion of agro forestry could also come in under this theme.

Theme 4 - Support and highlight sustainable ***forest*** management among ***forest*** owners (***targeted*** at organisations already active in this area with established programmes in operation).

Groups and representative organisations who operate in the area of sustainable ***forest*** management, ***forest*** certification or who are engaged in raising awareness of best practice in afforestation and felling processes may apply for funding under this theme.

Actions can include information transfer projects such as publications, award schemes, newsletters, field trips, site visits, seminars, website development and other educational actions that benefit existing ***forest*** owners and timber end users. Projects ***targeting*** the use of wood energy and biomass can be submitted under this heading also.Project Assessment and Selection Process

The marking scheme to be used to evaluate and rank the submissions will be as follows:Criteria Totals marks availableQuality and experience of individuals who will deliver proposals; A wide range of skill-sets to deliver on actions will receive additional marks. For theme 4 applications only , the track record of the organisation in delivering similar activities in the previous three years will form part of the assessment. 25The extent to which the applicants seek to co-ordinate actions with other groups and other initiatives to create a wider impact including networking, formal engagement with other groups and creation of synergies and partnerships. 25Quality and relevance of actions and projects proposed in terms of addressing the requirements for the theme. 25Value for money in terms of achieving the objectives for the theme. 25

5.1 Following the evaluation process, proposals will be ranked, with each proposal being given a “ranking number” (1 being the first ranked proposal). Where proposals have received the same marks, the cost of each proposal will be used to decide the final placing, with the lower costing proposal being place ahead of the proposal with a higher cost. Thereafter proposals will be allocated to one of four tables, each table representing one of the four themes; within these tables, proposals will be listed according to their “ranking number”.

5.2 Proposals must achieve a minimum of 60 marks before being considered for funding but all proposals will be ranked. Depending on the available budget not all proposals achieving the minimum number of marks (60 marks) will be funded.

5.3 The formal approval process will begin with approving the top ranked proposal under each theme. At this stage where the budget does not provide for all four proposals, only those projects that can be funded will be selected (according to cost, with lower cost proposals being selected ahead of those with a higher cost, exclusive of VAT). Thereafter, approval will issue according to the ranking number, regardless of the theme. Individual approvals will issue up to the available budget amount. Where the available budget does not allow for the next approved project in the ranking the funding may be offered to the next ranking where the available budget is sufficient.

5.4 The Department may also decide to offer funding which is less than the amount sought or turn down one action in the proposal but fund another.

5.5 The approval process for 2021 and 2022 will be done in May/June 2021. A letter of offer will be made to successful applicants by the Department; a letter of acceptance from the applicant will constitute agreement of the terms and conditions of this call for proposals.

5.6 Results will be made public.Format of Proposals and Application Form

6.1 An application form including a Detailed Funding Proposal Table, together with the Evaluation Plan, must be completed for each proposal submitted.

6.2 In presenting your project please provide information on your organisation, who you represent and your record of involvement in forestry promotion.

6.3 Consideration should be given to what will be delivered that is not already being delivered by other groups or organisations, the added value it will bring and how it will benefit the public, ***forest*** owners and/or the forestry sector.

6.4 Use of innovative platforms in projects is encouraged including social media, educational tools, photography, and interactive material that can be used at events. Given the impact of Covid-19, suggestions for overcoming the restrictions are also welcome.

6.5 A short video or Powerpoint presentation, accompanying the application, pitching the main concept of the project, would also be welcome.

6.6 Submission of a proposal means that you agree to having details of the proposal made public, if successful, i.e name, organization, location, short and long descriptions, funding allocated.

6.7 Where proposals have a multi-annual funding dimension the proposal should outline the funding being sought for each year and the actions that will be delivered for each of these years.

6.8 Where actions complement existing promotional activities or the roll-out of actions proposed are coordinated with other groups, this must be clearly stated in the proposal. The uniqueness of actions should also be highlighted where appropriate or where actions from previous years are being repeated, a brief description should be given regarding the outcome of those previous actions.

6.9 The applicant as “Data Controller” in respect of any personal data provided by it in its proposal, is required to confirm that all personal data (CV’s for example) relating to “Data Subjects” (where “Data Controller” and “Data Subject” has the meaning given under the Data Protection Laws) as provided to them (the Applicant) in the course of preparing the proposal has the consent of those “Data Subjects” to the processing of such personal data by the Applicant and DAFM for the purposes of participating in this Call for Proposals or that the applicant otherwise has a legal basis for providing such personal data to DAFM for the purposes of its participation in this Call for Proposals.

6.10 “Data Protection Law” means all applicable national and EU data protection laws, regulations and guidelines including but not limited to Regulation (EU) 2016/679 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (the “General Data Protection Regulation”), and any guidelines and codes of practice issued by the Office of the Data Protection Commissioner or other supervisory authority for data protection in Ireland from time to time. See also Appendix 3.Apply

Please return completed application form by email to: [*ForestrySupportFunding@****agriculture****.gov.ie*](mailto:ForestrySupportFunding@agriculture.gov.ie) or by post to Christine Smith, Forestry Division, Department of ***Agriculture***, Food and the Marine, Johnstown Castle Estate, Co Wexford by 5pm Monday 24 May 2021Image: None

Application Form and Evaluation PlanDownloadDPER Guidance Note on Circular 13/2014

Funding under this project is governed by DPER circular 13/2014 - Management of and Accountability for Grants from Exchequer Funds Guidance Note and Reporting RequirementsContactWoodland Support ProjectAddress:Forestry Division, Department of ***Agriculture***, Food and the Marine, Johnstown Castle Estate, Co [*WexfordEmail:ForestrySupportFunding@****agriculture****.gov.ieData*](mailto:WexfordEmail:ForestrySupportFunding@agriculture.gov.ieData) Protection - Data Protection Notice:

Part A: Information applicable to all the DAFM’s customers:

The Department of ***Agriculture***, Food and the Marine (‘DAFM’) is fully committed to keeping all personal data, submitted by our customers, fully safe and secure during our administrative processes. All necessary technical measures have been put in place to ensure the safety and security of our systems which hold this data. The staff of DAFM are also considered customers of DAFM from a Data Protection perspective and may exercise their rights in the same way.

Transparency and openness in the use of personal data held is important to DAFM and therefore we aim to fully inform all our customers about the purpose(s) that their data will be used for and why, where it may be shared elsewhere and why and how long their data may be held for by DAFM. Information on the rights of the customers will also be provided.

The current legislation for Data Protection in Ireland is the Data Protection Act 1998 as amended by the 2003 Data Protection Act. The General Data Protection Regulations (EU 2016/679) came into effect on 25 May 2018.

The Data Controller for the collection of all personal data in the Department of ***Agriculture***, Food and the Marine is the Minister for DAFM, as the legal entity.

The Data Protection Officer can be contacted as follows:Data Protection OfficerAddress:Data Protection Unit, Department of ***Agriculture***, Food and the Marine, Pavilion A, Grattan Business Park, Dublin Road, Portlaoise, Co Laois , R32 [*K857Email:dataprotectionofficer@****agriculture****.gov.iePhone*](mailto:K857Email:dataprotectionofficer@agriculture.gov.iePhone) number:+353 (0) 57 86 94301

Personal data processed by DAFM will only be used for the specific purpose (s) as outlined when the data is collected and will only be used in accordance with the Data Protection legislation in force.

Rights of the Individual in relation to personal data held by DAFM:

When you, as a customer, provide personal data to DAFM you have certain rights available to you in relation to that data. These rights are as listed below and can be exercised by contacting the Data Protection Officer, as detailed above:

Currently the customer has the following rights:

- The individual has the right to access to their data.

- The individual has the right to rectification of their data

- The individual has the right to erasure of their data

- The individual has the right to lodge a complaint with the Supervisory Authority

- The individual has the right to restriction of processing

- The right to data portability

- The individual has the right to object to processing

- The individual has the right to withdraw consent if they previously gave it

Part B – Information specific to the personal data being collected

The following data is specific information in relation to the personal data processed for this call for proposals

Specified purpose:

The purpose for collection and use of data shall not extend beyond this Call for Proposals.

The organisers\administrators and facilitators undertake to treat all information, particularly personal data as confidential and to comply with all directions of DAFM with regard to the use and application of all and any confidential information.

Legal basis:

The decision to participate in this call for proposals and consequently send your contact details to the Department of ***Agriculture***, Food and the Marine is entirely your decision; there is no legal basis compelling you to send DAFM your contact details or to participate in this call for proposals.

Recipients:

All information held on this call for proposals may be made available to the DAFM or to any other Department or Agency where required, for evaluation of this call for proposals and statistical purposes, the results of which may be made public. No individual will be identified.

In accordance with the European Union Guidelines for State aid in the ***agriculture*** and forestry sector and in rural areas 2014 – 2020, data of beneficiaries of exchequer funding under the Forestry Programme 2014 – 2020 will be published and may be processed by auditing and investigating bodies of the European Union. This information will be published on DAFM’s website and will include the full text of the notified aid scheme and it’s implementing provisions, the granting authority (DAFM), the names of the individual beneficiaries (landowners), the scheme type and amount of aid granted to each beneficiary (exchequer funding only), the region at Nomenclature of Territorial Units for Statistics level II in which the beneficiary is located and the principal economic sector in which the beneficiary has its activities, at NACE group level (Statistical classification of economic activities in the European Community). This will only apply to beneficiaries where the cumulative aid amount (exchequer funding only) granted at financial approval is greater than €60,000 for beneficiaries active in the primary ***agriculture*** production and €500,000 for others for the amount of aid granted at the time of financial approval discounted at the rate at the time. Such information will be published after the granting decision has been taken and will be kept for at least 10 years and shall be available for the general public without restrictions. These records must be maintained for 10 years from the date of award of the aid and must be provided to the Commission upon request.

Information supplied to DAFM may be disclosed under the Freedom of Information Acts 1997 and 2003. All personal data will be processed in accordance with the Data Protection Acts 1988 and 2003.

Transferred outside the EU:

Data will not be transferred outside the EU.

Retention Period:

Data collected for this purpose will be held by DAFM only as long as there is a business need to do so in line with the purpose(s) for which it was collected. After this time it will be marked for destruction and will be destroyed in line with internal guidelines or guidelines for destruction received from the National Archives Office or associated permissions received from them

Data Provision being statutory or contractual obligation:

The letter of acceptance following a formal offer by DAFM constitutes formal agreement of the terms and conditions of this call for proposals.

Automated Decision Making:

Certain personal data provided in support of this call for proposals will be processed automatically for the purpose of cross checking personal details on DAFM’s Customer Care and Account systems to enable the processing of payments.

Information from Third Party:

Data supplied by Third Parties will be treated in the same manner as data supplied directly from customers.

Contain technical information re Cookies Policy and collection and use of technical information (similar to that already on website)

The Department of ***Agriculture***, Food and the Marine is fully committed to keeping all personal data submitted by its customers, fully safe and secure during administrative processes. All necessary technical measures have been put in place to ensure the safety and security of the systems which hold this data. Department staff are also considered as customers of DAFM from a Data Protection perspective and may exercise their data protection rights in the same way.

**Load-Date:** April 27, 2021

**End of Document**



[***Food production in China requires intensified measures to be consistent with national and provincial environmental boundaries***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:693W-H841-F129-P4DY-00000-00&context=1516831)

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**Body**

Main

Food demand has been increasing as a result of urbanization, population growth and increasing incomes—and meeting it sustainably remains a major global challenge. Planetary boundaries demarcate safe operating spaces and represent environmental limits for ensuring the stability of earth systems. Food systems, especially at the food production stage, pose a major threat to planetary boundaries because of their effects on climate change, freshwater use, nitrogen and phosphorus pollution, ***land***-use changes and biodiversity loss. The boundary for biogeochemical flow has already been exceeded, and those for climate change, freshwater use, ***land***-system change and ocean acidification could be reached shortly,. ***Agriculture***’s global annual greenhouse gas (GHG) ***emissions*** (6.2 GtCO2e) from 2007 to 2016 have already exceeded the sector’s estimated boundary for that period by approximately 32%,.

There is a critical need for effective environmental mitigation solutions for food producers and consumers. This need has been addressed at both the global and national scales–. Key strategies for sustainably meeting increasing food requirements include avoiding excessive ***agricultural*** inputs, improving productivity, reducing food loss and waste (FLW) and changing dietary patterns,,. Previous studies have examined different environmental impacts,,–, tested the effectiveness of individual mitigation strategies on the food system and proposed methods for downscaling planetary boundaries to national levels,. However, little attention has been paid to analysing the environmental impacts of, and mitigation strategies for, food systems at subnational and provincial scales,. Data scarcity, limited parameters and limited model capability to represent and/or simulate the subnational and provincial levels have hindered the exploration of effective mitigation strategies and pathways for the maintenance of safe regional operating spaces.

To address this knowledge gap, the present study explores integrated strategies that can keep the environmental impact of national and subnational food systems within local environmental boundaries (or limits) by combining local and inter-regional interventions along the food supply chain. National and subnational analyses of food systems can help identify region-specific strategies and reduce nationwide inequalities in environmental stress and may also inform global sustainability. These practical benefits are especially applicable to developing countries with large territories and heterogeneous environmental and socio-economic conditions. The present study focuses on mainland China (referred to hereafter as China) and its provinces, given their major impacts on global sustainability. The provincial scale was selected to facilitate the integration of different environmental boundaries, simplify decision-making and secure higher quality data unavailable at finer scales.

We set up a food systems model that quantifies five domains of environmental impact for food production stages related to planetary boundaries. The model was applied to 31 Chinese provinces and 139 countries or regions worldwide for 2011 and 2030 and assumes a peak in China’s population of 1,450 million as projected by the State Council of China (Supplementary Table ). The boundary control variables and boundary processes considered in the model were phosphorus and nitrogen ***emissions*** (biogeochemical flows), GHG (climate change), bluewater footprint (freshwater use) and cropland use (***land***-system change). The current and future environmental impacts and mitigation strategies were quantified by analysing the food production, supply and consumption processes. The national and provincial boundaries for phosphorus, nitrogen and freshwater were downscaled according to regional freshwater availability in proportion to global totals. The national and provincial GHG and cropland boundaries were downscaled according to regional populations and farmland areas, respectively (). The ranges between the upper and lower boundaries of national and provincial boundaries were based on scientific principles and the various properties (local or global effects) of different planetary boundaries,,.

Our investigation of an integrated mitigation pathway comprised three steps. First, we examined basic mitigation strategies,, at the national scale and compared the reduced environmental impacts with the national boundaries. The basic strategies included optimizing fertilizer application, improving supply-side efficiency of food, applying demand-side strategies for reducing FLW and shifting dietary patterns (). Second, we asserted that if the reduced environmental impacts still exceeded their respective national boundaries, then augmentation (that is, intensification) of the basic strategies to address these impacts would be required. Third, we investigated pathways for keeping food systems within provincial boundaries through the redistribution of food production.

Results

Environmental impacts and boundaries

The total environmental impact of China’s food system is projected to have increased by 20–45% by 2030 compared with 2011 in the absence of dedicated mitigation strategies. With the exception of GHG ***emissions***, these impacts need to be reduced by 54–95% to remain below the national boundary means (Fig. and Supplementary Table ). The GHG ***emissions*** in 2011 are below the lower boundary, while the ***emissions*** in 2030 are below the upper GHG boundary. The GHG boundaries were downscaled according to population levels and have relatively larger values than the other boundaries.

Required environmental mitigation rates at national and provincial scales.

a, Environmental impacts in 2011 and 2030 as a percentage of national environmental boundaries. The error bars indicate the coefficient of variation of environmental impacts. b, Average environmental impact reduction (%) required to keep all five types of environmental impacts below the provincial upper boundaries.

The environmental impacts of provincial food production are projected to increase in some regions and decrease in others between 2011 and 2030: for example, they are projected to increase by up to 126% for cropland use in Guizhou but to decrease by 2–65% in Beijing, Shanghai and Zhejiang. To remain within the provincial boundaries requires a reduction of environmental impacts by up to 99%. Specifically, the impacts of phosphorus and nitrogen in all of the provinces require substantial reductions (approximately 47–99%), whereas GHG ***emissions***, bluewater footprint and cropland use in many provinces (for example, in Guangdong and Tibet) are below the upper bounds of the provincial boundaries (Fig. and Supplementary Table ).

We conducted Monte Carlo simulations to verify the robustness of the model results through the uncertainty range of the five environmental impacts studied. Uncertainties could have been caused by parameter estimation, data unavailability and data inconsistency. The model was run 5,000 times using randomly selected values from the continuously (normally) distributed model input, with consideration of data quality. The environmental impacts had mostly the same sign in all trials for the seven food categories tested (namely cereals; soy, oil and potato (S&O&P); sugar; vegetables and fruit (Vege&Fru); livestock; poultry and freshwater aquaculture). The coefficient of variation of the five environmental impacts ranged from 1.8 to 6.2% at the national level and from 0.8 to 22.4% at the provincial level (Supplementary Table ). Regions with smaller environmental impacts, such as Tibet, exhibited much larger uncertainties. The sensitivity of the environmental impacts to the changes in the parameters and activity data is shown in Supplementary Table . We found that a 1% change in any single parameter caused less than a 0.3% change in environmental impacts.

National mitigation strategies

We used three scenarios to explore the mitigation effects of environmental impacts, namely basic strategies, intensified basic strategies and reallocation of food production. Our evaluation of high-ambition scenarios, which assume the implementation of 75% of the maximum potential of change across the food system (), indicated that basic strategies can contribute substantially to mitigating the environmental impacts of food production. There was considerable potential for optimizing fertilizer application by reducing the application of chemical fertilizers and by substituting straw and manure. Our evaluation also revealed that advanced fertilizer optimization could reduce phosphorus ***emissions*** by 25%, nitrogen ***emissions*** by 23% and GHG ***emissions*** by 2%. Fertilizer optimization would not, however, lead to direct reductions of bluewater consumption and cropland use (Fig. ). Strategies related to livestock, out of the seven food categories, contributed to more than half of the total phosphorus mitigation (that is, 13% out of 25%) and more than one-third of the total nitrogen mitigation (8% out of 23%) through reductions in manure discharge. Cereals had a greater potential for reducing nitrogen fertilizer use than phosphorus fertilizer use and reduced nitrogen ***emissions*** (6% out of 23%) more than phosphorus ***emissions*** (3% out of 25%).

Accumulated national environmental mitigation effects in 2030.

a, Effects of basic mitigation strategies (abbreviated as ‘Fertilizer’, ‘Efficiency’, ‘FLW’ and ‘Diet’). ‘Baseline’ depicts baseline environmental impacts in 2030, while ‘Scenario’ depicts final mitigation effects. These final effects can be compared with national boundaries, which are represented by horizontal bars, to check whether the effects have been kept within the boundaries (the light-red bars show the upper bounds, the light-yellow bars show the means and the light-blue bars show the lower bounds). Dietary shifts both increase environmental impacts (‘Diet+’) and have mitigating effects (‘Diet−’). The increased impacts are attributed to greater consumption of vegetables and fruit and aquaculture products (freshwater only), while mitigated impacts result from the reduced consumption of other foods. The error bars indicate the coefficient of variation of environmental impacts. b, Reduced nitrogen impacts of augmented strategies. These mitigation effects were the result of an additional 10% improvement in efficiency and an additional 10% reduction from FLW and diet deviation (in kt N).

Improved efficiency could be achieved primarily through the adoption of more productive soil–crop and feed management technologies based on institutional knowledge (). The environmental impacts of food production could be reduced by 46–53% through improved efficiency. The contributions of different food categories varied substantially across the five environmental impacts. Specifically, livestock accounted for the largest share of phosphorus (19% out of 49%) and GHG (27% out of 53%) mitigation. Vegetables and fruit contributed most to mitigating nitrogen ***emissions*** (16% out of 51%) and the water footprint (22% out of 52%). Soy, oil and potato production accounted for about half of total reduced cropland use (22% out of 46%). Improved efficiency in cereal production contributed substantially to the mitigation of GHG ***emissions***, bluewater consumption and cropland use. These results revealed the specific contributions of different food categories to the overall reductions in all five environmental impacts.

The impact mitigation effects of demand-side strategies were evaluated taking into account the reduced environmental intensities resulting from supply-side mitigations to ensure that the cumulative effects of all of the strategies were valid. The mitigation of environmental impacts from changes in food consumption was linked back to food production through supply-chain modelling in an input–output analysis (). Our results showed that a reduction of 75% in FLW across all of China’s provinces would lead to an overall reduction of 9–11% in the five environmental impacts of food production. The reductions in nitrogen and GHG ***emissions***, bluewater footprint and cropland use were largely achieved by the reduced demand for cereals, while the greatest reduction in phosphorus ***emissions*** stemmed from reduced demands for livestock products.

A shift towards a more balanced diet could contribute to a reduction of 7–12% in the five environmental impacts. The dietary shifts were determined by eliminating differences (or deviations) between current dietary patterns and the nationally recommended diet,. These shifts would prompt increases in the national demand for freshwater aquatic products, vegetables and fruit, while demand for other foods would decrease. The increased demands (for freshwater aquatic products and so on) would have negative mitigation effects (increases of 1–2%). Reduced demands for other foods could lead to a reduction in environmental impacts by 8–13%, mostly as a result of reductions in livestock and cereal consumption. The mitigation effects associated with demand-side strategies point to the possibility of a promising inter-regional collaboration scheme: reducing local-level impacts in one region by changing consumption patterns in the region it exports to. This possibility arises because approximately 31–86% of food produced in one region is transported to other regions. If these two demand-side strategies (that is, reducing FLW and shifting diets) were applied in China, they could reduce food production and the associated environmental impacts from international imports by approximately 29–34%.

Combined, the four basic mitigation strategies reduced the national-level environmental impacts in 2030 by 63–90% relative to the 2030 baseline (Fig. ). Of all strategies, improving production efficiency was the most effective. At the national scale, GHG ***emission*** and cropland use were well below the lower bounds and remained within the safe zone. Phosphorus ***emissions*** were kept below the mean value, while the bluewater footprint was well below the upper boundary and stayed in the uncertain zone. The environmental impacts within the uncertain zone would not immediately cause undesirable outcomes, but uncertainty and the risk of destabilizing system processes and resilience would increase, rendering the monitoring of these factors needed. Nitrogen ***emissions***, by contrast, remained around 102% (or 770 kt N) greater than the upper bound and thus remained within the danger zone.

Augmentation of the aforementioned strategies would be needed to specifically reduce nitrogen ***emissions*** from China’s food system. We identified provincial food systems with nitrogen ***emissions*** exceeding the 90th percentile and applied additional efficiency improvements by assuming a further 10% decrease in ***emission*** intensities compared with the 2030 baseline (Fig. and Supplementary Tables and ). Advanced food production practices in other countries suggest that further improvements in production efficiency in China are possible. For example, the average nitrogen ***emission*** intensity in China is 12.1 g N per kg food, but it is 8.6 g N per kg food in the rest of the world (Supplementary Table ). We prioritized improving food production efficiency over other strategies because its superiority had been demonstrated (Fig. ). When applied to all of the identified food systems collectively, improved food production efficiency resulted in a reduction of excess nitrogen ***emissions*** by 93% (or 717 kt N). Livestock production had the greatest potential for further mitigation of nitrogen ***emissions*** (a reduction of 306 kt N), followed by vegetable and fruit production (a reduction of 138 kt N) and aquaculture (a reduction of 127 kt N). Inner Mongolia had the largest potential for achieving a further reduction of nitrogen ***emissions*** (138 kt N), while reductions of 69 and 58 kt N could be achieved in Shandong and Qinghai, respectively. However, even with mitigation from additional improvements in production efficiency, nitrogen ***emissions*** were still 7% (or 53 kt N) greater than the upper bounds of the national boundary.

We further reduced FLW and dietary deviations by 10% in five provinces (namely Hebei, Shanxi, Jiangsu, Shandong and Henan). These provinces had the highest rates of provincial boundary transgression for nitrogen (Fig. and Supplementary Table ). The total reduction in nitrogen ***emissions*** amounted to 12% (or 91 kt N) of the excess ***emissions***. This was primarily achieved by reduced demands for livestock and cereals. Compared to the basic strategies, the augmentation with demand-side strategies in these five regions would have a broad effect, resulting in a 2–8% reduction in the other four environmental impacts. A combination of augmented strategies involving efficiency, FLW and dietary changes would lead to national nitrogen ***emissions*** being reduced to 710 kt N, which is 5% lower than the upper bound of the national boundary for nitrogen (749 kt N).

The combined mitigation effects of the basic and augmented strategies were reductions of 63–93% for the five types of environmental impacts. Consequently, the impacts were 5–73% lower than the national upper bounds. Henan, Shandong and Heilongjiang were crucial provinces, each contributing more than 5% to the total impact mitigation at the national level, primarily through strategies for livestock, vegetables, fruit and cereals (Supplementary Tables and ). Addressing food production systems in just six to nine provinces (each contributing >5% of total mitigation) accounted for about 42–62% of the total mitigation effects and should be prioritized for the five aspects of environmental mitigation analysed here.

Safeguarding provincial boundaries

Our analyses revealed that a combination of basic and augmented strategies reduced all five environmental impacts to levels below the upper bounds of national environmental boundaries. However, the impacts of phosphorus, nitrogen and bluewater in provinces of northern China (for example, Hebei, Shandong and Henan), eastern China (for example, Anhui and Jiangsu) and north-western China (for example, Gansu and Ningxia) still greatly exceeded the provincial boundaries (represented in Fig. by the bars larger than 100%). Notably, these impacts in Hebei, Shanxi, Henan and Ningxia were more than five times greater than their corresponding boundaries and could cause water eutrophication and excessive groundwater withdrawals. Of the five environmental types of environmental impacts, the bluewater footprint was the most problematic, transgressing the boundaries in 18 out of 31 provinces. Cropland use exceeded provincial boundaries in 13 provinces (particularly in northern China). GHG ***emissions*** from the food system caused very little stress across China, with ***emissions*** well below the upper bound in all provinces.

Total mitigation effects of basic and augmented strategies for five environmental impacts.

a, GHG ***emission***. b, Cropland use. c, Nitrogen ***emission***. d, Phosphorus ***emission***. e, Bluewater footprint. In all panels, the values of the blue bars are shown on the left axis and indicate the ratio of environmental impacts after mitigation to provincial environmental boundaries (horizontal red lines indicate 100% on the left axis). The values of the orange dots are shown on the right axis and indicate the reduction of environmental impacts in 2030 compared to the 2030 baselines. The error bars indicate the coefficient of variation of environmental impacts.

Our analyses also illuminated the absolute gap between environmental impacts and environmental boundaries at the provincial level. In summary, ten provinces should reduce phosphorus ***emission*** by a total of 107 kt P; 12 provinces should reduce nitrogen ***emission*** by a total of 283 kt N; 18 provinces should reduce bluewater consumption by a total of 43 km3 and 15 provinces should reduce cropland use by 0.17 million km2 to remain within provincial environmental boundaries (Supplementary Table ). Seven provinces accounted for 68–80% of the total required reduction of environmental impacts (Fig. ). Of these provinces, Shandong, Henan, Inner Mongolia and Hebei were the most stressed regions, each accounting for 6–23% of the total required reductions. The remaining 13–21 provinces (varying across different types of environmental impacts) were well within the upper boundaries and had ample space to endure additional environmental impacts (Fig. ), and all provinces could accommodate additional GHG ***emissions***.

Redistribution of environmental impacts and food production for safeguarding provincial environmental boundaries.

a, Regional shares of the required decreases (negative values) and space available for increase (positive values) of environmental impacts; no decrease is required for GHG ***emissions***. b, Regional shares of food production decreased (negative values) and increased (positive values) with redistribution. c, Average percentages of the required decrease in environmental impact (negative values) and the increase that would reach the boundary (positive values), that is, the available space for increasing environmental impacts (compared with the levels in Fig. ). d, Average percentages of decreased (negative values) and increased (positive values) food production resulting from redistribution (compared to the levels in Fig. ).

Previous studies have shown that redistributing food production between regions is a potentially effective strategy for bringing about positive environmental benefits,. This strategy entails moving parts of the food production (mainly livestock and vegetables) from northern provinces (with bars above 100% in Fig. ) to specific southern provinces (with bars below 100% in Fig. ) that can accommodate more environmental impacts within their boundaries. For the provinces that had exceeded the environmental boundaries, we first applied linear programming () to ***remove*** the smallest amount of food production necessary to keep the environmental impacts for each province within the environmental boundaries (Fig. ). We prioritized the ***removal*** of animal-based food over plant-based food and the ***removal*** of vegetables and maize over other plant-based food types. Vegetables and maize are less restricted by climatic conditions and landforms. Many vegetables are cultivated in greenhouses and are therefore well adapted for redistribution across different agroclimatic zones. Maize is widely cultivated across China and is more suited to redistribution than other cereals such as rice. In 2030, food production in 16 provinces had to be reduced by 11% of the national total food production (values for the seven food categories ranged from 1–14%) to keep the environmental impacts within their upper bound of provincial boundaries (Supplementary Table ). The percentages of food removed were the highest in Ningxia, Shanxi and Henan (each account for more than 30% of their provincial food production) (Fig. ). Henan and Shandong contributed more than 20% of the total national reduction in vegetable, fruit, livestock and poultry production, while more than 55% of the reduction in cereal production was realized in Henan, Jiangsu and Hebei (Fig. ). The reduced food production could substantially alleviate environmental pressures such as groundwater depletion and water pollution in the provinces of northern China.

Next, we redistributed the total amount of reduced food production to the remaining provinces proportionately to their available environmental space (that is, the surplus to the boundary). Food production was mainly reallocated to Guangxi, Sichuan, Guangdong and Jiangxi, with each receiving more than 12% of the total removed quantities of each food type (Fig. and Supplementary Table ). Compared to the 2030 baseline values, food production in Zhejiang, Fujian and Jiangxi increased by more than 60% (Fig. ), mostly due to increases in livestock, poultry, vegetable, fruit and cereal production. As a result of food redistribution, the five environmental impacts in all provinces were kept within the upper bounds of their boundaries (Supplementary Table ). Nationally, phosphorus, nitrogen and water impacts were reduced by 16, 15 and 18%, respectively, and GHG ***emissions*** and cropland use increased by 12 and 1%, respectively, compared to the levels obtained from the combination of basic and augmented strategies. To minimize the potential undesirable impacts of increasing plant-based food production in Guangxi and other southern provinces, innovative technologies such as soilless cultures could be introduced.

Limitations of the study

Unlike previous studies (for example, that by Springmann et al.), we used different control variables for the boundaries of biogeochemical flows and freshwater use () to relate these boundaries more directly to regional environmental pressures (Supplementary Table ). Our approach might generate uncertainty when adjusting boundary values from one control variable to another, although using different variables (for example, nitrogen application versus nitrogen surplus) had little impact on the evaluation. Moreover, we focused on strategies that ensured staying within the upper bound of provincial boundaries, as our aim was to minimize the need for change along the supply chain. Staying within the uncertainty zone has occasionally been an objective in previous research, but future research could adopt a strict precautionary approach while maintaining an acceptable level of food self-sufficiency.

Our scenarios also entail some limitations. Our estimation of the 2030 baseline did not consider the influences of future climate change and international trade on food productivity and food supply. In addition, the strategy for improving the efficiency of cereal production in field experiments also includes the effects of fertilizer application rates. Therefore, we had to estimate the efficiency gains solely due to management techniques by excluding the effects of changed fertilizer application rates. Furthermore, we did not consider innovations such as soilless cultivation or ‘cultured’ meat by in vitro cultivation as mitigation strategies in this study.

More detailed analyses of food system transitions are needed. Specifically, future assessments of the reallocation of food production between provinces should include potential trade-offs with economic costs, labour migration and the influence of climate change and increasing natural disasters. Assessments of the environmental impacts of the entire supply chain could inform broader mitigation strategies. Mid-stage strategies, such as process optimization and trade pattern changes, are also important, especially for highly processed foods. In-depth examination of factors such as human health, biodiversity and infectious diseases are also important for a more systematic understanding of the sustainability of regional food systems.

Discussion

Our findings point to the need for radical changes if food production is to be consistent with both national and provincial environmental boundaries in China in 2030. These changes involve the integration and augmentation of basic strategies (that is, optimizing fertilizer application, improving production efficiency, reducing FLW and dietary shifts) as well as the partial reallocation of food production from northern to southern China. The resultant environmental mitigation would largely alleviate the intense competition between cropland and ***land*** for urban expansion in China without sacrificing future food production and food diversity. These strategies could also contribute to the mitigation of, and adaptation to, global climate change, and are complementary to the results of previous studies,.

Inter-regional collaboration can operate in two ways. First, changes in the food requirements of one province can prompt transboundary changes in national and international food production and supplies. Second, food production in all provinces can largely be kept within environmental boundaries by moving parts of the food production from the northern provinces to the southern provinces. If all these strategies are integrated, cropland use, phosphorus and GHG ***emissions*** from food systems will be lower than the mean of the national boundary, while nitrogen ***emissions*** and bluewater footprint will be slightly higher than the mean value (Supplementary Table ).

Future food security and climate change risks are affected by the choice of ‘shared socio-economic pathways’. It is essential that radical societal changes be promoted, and that initiatives that have proven successful at maintaining safe operating spaces be efficiently disseminated—which would also benefit future Chinese food production. At the global level, international commitment needs to be fostered to guide concerted actions towards a more sustainable global food system. At the national and provincial levels, the implementation of integrated mitigation strategies requires collaborative and streamlined actions in the spheres of scientific research and decision-making, as well as broad engagement of stakeholders (including researchers, extension agents, policymakers, farmers, consumers, industries and markets). For example, researchers, policymakers and farmers can work together on planning ***agricultural*** production, while taking into consideration multilevel environmental boundaries. Major levers to facilitate the implementation of a given sustainability strategy are incentives for improvements, technology extension and continuous research. Major barriers to strategy implementation include non-mainstreamed technology, lack of political will and communication gaps between researchers and policymakers. Better connection between farmers and markets could be built if farmers were provided with more training to develop their entrepreneurial skills and if market mechanisms such as contract farming with high-margin products were improved. Stronger connections have the potential to reduce FLW and alleviate poverty in rural regions. Moreover, the rapid development of smart farming practices using big data and the Internet of Things has considerable potential for improving resource efficiency and enabling the adoption of advanced ***agricultural*** technologies by farmers and industries.

More coordination and in-depth analysis of the redistribution of food production from northern to southern China is required. Redistribution should focus on the suitability of ***agricultural*** production, the practicality of specific measures, economic costs and benefits, possibility for regional re-employment, industrial transitions and capital investments. The provincial environmental impacts and boundaries quantified in the present research could contribute to guidelines for ***agricultural*** regionalization in China and be used to optimize ***agricultural*** distribution and ***land*** use. In the last two decades, there has been a substantial loss of high-quality arable ***land*** in south-eastern China. Coordinated development of the ***agricultural***, manufacturing and service sectors in rural regions can abate or reverse this trend. This can be facilitated by incentive and regulation schemes that facilitate the establishment of new ***agricultural*** enterprises and increased financial rewards.

This research bridges the gap between strategic analysis and the application of mitigation ***targets*** using new datasets and a food systems model that considers multiple food-related environmental impacts on subnational regions. Our data and model can be easily applied in analyses of sustainable food systems in other nations or regions, especially in those facing increasing food demand, severe deforestation and ***agriculture*** expansion. The analysis of food systems at subnational level or at watershed or sector scale is an important research avenue that can aid the identification of new and more effective levers of food system transitions.

Methods

Configuration of the food systems model

We constructed a food systems model with four major modules (Supplementary Figure ) depicting food supplies and environmental impacts for 170 countries, aggregated regions and Chinese provinces. This model was used to evaluate the environmental impacts of, and mitigation strategies for, food production and consumption processes. The environmental impacts of food production were modelled using a process-based life cycle assessment (Module 1). The impacts of food consumption were assessed using a global multiregional input–output analysis. Specifically, we tracked production, processing, transportation, distribution, consumption and numerous minor direct and indirect processes along the entire global supply chain (Module 2). We modelled the mitigation effects of both supply- and demand-side strategies in Chinese provinces by applying data from the literature obtained from on-farm experiments, field surveys and reviews. To determine whether the impacts of food production were adequately mitigated at sustainable levels, we compared the mitigated impacts with downscaled planetary boundaries that defined regional environmental limits (Module 3). This model also contained parameters representing optional strategies for further mitigation, including the introduction of better practices in food production from abroad and the reallocation of food production between provinces to alleviate environmental pressure in severely stressed regions (Module 4).

Environmental impacts of food production

We evaluated five aspects of the environmental impacts of ***agricultural*** processes relating to food production for 32 food categories in a total of 170 regions (31 Chinese provinces and 139 world regions) using a process-based life cycle assessment (Supplementary Figure ). These impacts were GHG ***emissions***, bluewater footprint, reactive nitrogen and phosphorus ***emissions***, and cropland use. We included all of the sources of environmental impacts in ***agricultural*** production: in crop production, these are seeds, energy, chemical fertilizers, reused manure and straw, rice paddies and atmospheric deposition; in pasture management and animal husbandry, they are feed, energy, enteric fermentation and manure and for fisheries and cultivation they consist of energy and feed. The impact F for food type f of environmental domain i in region r was calculated by multiplying activity data D by ***emission*** factors R in all the production processes p:Data on reactive nitrogen and phosphorus run-off to surface water and leaching into groundwater were evaluated from collected data and a substance flow analysis depicting the food production processes for each food type. The China Statistical Yearbook provided activity data for, inter alia, regional crop production, livestock breeding and grazing, aquaculture and fisheries, fertilizer application, irrigation and energy inputs, while the National Cost-Benefit Compilation of ***Agricultural*** Products provided ***agricultural*** inputs (for example, fertilizer and feed) for each food category per province. ***Emissions*** in 139 regions worldwide were quantified using data sourced from the Food and ***Agriculture*** Organization ([*http://www.fao.org/faostat/en/*](http://www.fao.org/faostat/en/)) and the International Fertilizer Industry Association ([*https://www.fertilizer.org/*](https://www.fertilizer.org/)). The parameter settings are listed in previous studies,, and the equations used for quantification are listed in Supplementary Table .

Data on GHG ***emissions*** for 31 Chinese provinces were assessed by referring to the guidelines of the Intergovernmental Panel on Climate Change and findings from previous studies (Supplementary Table ). GHG ***emissions*** from other industrial and service sectors were quantified using data sourced from the China Energy Statistical Yearbook. We quantified GHG ***emissions*** from all food and non-food sectors across 139 regions worldwide. Data on CO2 ***emissions*** were sourced from the Global Trade Analysis Project (GTAP v9, [*https://www.gtap.agecon.purdue.edu/*](https://www.gtap.agecon.purdue.edu/)) database, and non-CO2 ***emissions*** were quantified by applying the same method used for phosphorus and nitrogen ***emissions***. The CO2 sources and sinks caused by ***land***-use changes, especially human-induced deforestation and carbon sequestration, should be included in future research that evaluates food system impacts on climate change.

The consumptive surface and groundwater use (bluewater footprint) associated with plant- and livestock-based food products in all 170 regions were calculated by multiplying the food production amount by the relevant parameters (bluewater footprint per ton of food) derived from Hoekstra and Mekonnen. Consumptive water use of aquatic products includes reductions in streamflow caused by increased evaporation and seepage from aquaculture facilities (for example, aeration facilities), freshwater from wells and water removed through biomass harvesting. The bluewater footprint of aquatic products was calculated from evaporation rates obtained in field experiments. We calculated the bluewater footprints of China’s industrial sectors as their water withdrawals minus discharged wastewater. The total quantities of water withdrawal by industrial sectors in China’s provinces were calculated using data from the China Economic Census Yearbook 2008 (Energy), while data on quantities of wastewater discharged by industrial sectors were sourced from the China Environmental Statistics Yearbook. We assumed that the service sectors consume approximately 10% of the withdrawn water. The bluewater footprints of the industrial and service sectors in the regions analysed outside of China were sourced from the World Input–Output Dababase ([*http://www.wiod.org/home*](http://www.wiod.org/home)).

Data on the areas of crop sowing, grazing ***land*** and aquaculture were extracted from the China Statistical Yearbook, the China ***Agriculture*** Yearbook and Food and ***Agriculture*** Organization. Actual ***land*** use through crop sowing is less than the sum of crop sowing areas because of widespread interplanting and rotation in ***agricultural*** practices globally. We estimated regional cropland use by rescaling cultivated crop areas to match regional cropland areas.

Regional boundaries of environmental impacts

The appropriate selection of control variables (for example, nitrogen application or reactive nitrogen run-off) and methods of downscaling (for example, by population or value added) are subject to debate,,. A top-down approach (‘equal per capita principle’) was used to allocate climate change risks, while the other four spatially heterogeneous boundaries were allocated using a multiscale approach (incorporating regional resource endowments). Specifically, the national or provincial boundary (Br) was calculated from the proxies aswhere PB is the value of the planetary boundary, R is the global proxy and r is the regional proxy. The proxy for the GHG boundary was population; for the nitrogen, phosphorus and bluewater boundary, it was water resource availability; and for the cropland boundary, it was farmland area. The detailed downscaling method is shown below.

The boundary for regional GHG ***emissions*** was downscaled according to the proportion of the regional population to the total global population, because humanity everywhere faces similar threats and because the impacts of humanity on the Earth are direct and equal. The GHG ***emissions*** budget was based on the goal of there being a 66% probability of limiting warming to a 2 °C rise above pre-industrial levels by 2100 (Representative Concentration Pathway 2.6). We obtained a global budget value of 4.7 GtCO2e yr−1 (range of 4.3–5.3 GtCO2e yr−1) for non-CO2 ***emissions*** by comparing three integrated assessment models and following further normalization and interpretation. CO2 ***emissions*** from direct energy use, however, comprised 11–15% of the total ***emissions***. Therefore, the total global budget for ***agricultural*** GHG ***emissions*** (non-CO2 and CO2) was 5.4 GtCO2e yr−1 (range of 4.9–6.1 GtCO2e yr−1) after adding up these two components. Based on the proportion of the Chinese population to the global population, China’s national budget was 0.97 GtCO2e yr−1 (range of 0.88–1.1 GtCO2e yr−1). Future studies should include the carbon sources and sinks associated with ***agricultural*** ***land*** and should consider their impacts in the accounting of planetary boundaries and environmental impacts.

In our simulations, we allocate global consumptive freshwater use according to regional water resources. This approach accounts for regional water scarcity and possible excessive water withdrawals that could affect environmental flow requirements. Some studies have not addressed the issue of heterogeneous water resources, while many others have applied a similar downscaling method to the one we used,. We adopted a rigorous value for bluewater planetary boundaries derived from a detailed stand-alone analysis (2,800 km3 yr−1, range of 1,100–4,500 km3 yr−1) and also included other proposed values and an uncertainty range. We scaled the total consumptive bluewater use to ***agriculture*** use from values proposed in previous studies, resulting in a planetary boundary of 1,980 km3 yr−1 (range of 780–3,190 km3 yr−1). The water resource impacts of different food categories can be more easily quantified using the concept of ‘bluewater footprint’, which differs from indicators used in planetary boundary estimations. We scaled the consumptive bluewater value to a bluewater footprint by applying the current ratio of these two variables (the current global consumptive bluewater use is 2,550 km3 yr−1 and the current global total bluewater footprint, including ***agricultural***, industrial and domestic use, is 1,025 km3 yr−1). The resulting planetary boundary was 792 km3 yr−1 (range of 312–1,276 km3 yr−1) when using the bluewater footprint as the control variable. From the availability of regional freshwater resources, China’s national bluewater footprint limit is 53 km3 yr−1 (range of 21–86 km3 yr−1).

The assessment of planetary boundaries for biogeochemical flows encompasses human food security associated with nitrogen and phosphorus applications, as well as risk indicators for environmental impacts. To determine regional environmental stress, we adopted nitrogen and phosphorus discharge to regional water bodies as control variables associated with local water quality (rather than nitrogen and phosphorus fertilizer application or other control variables adopted in previous studies). The current global nitrogen loss to surface water is 5.4 Tg N yr−1 based on a nitrogen fixation value of 62 Tg N yr−1 (ref. ). This figure is comparable to the nitrogen application rate identified in a previous study. The global nitrogen loss to groundwater was estimated from the ratio of leach to run-off, amounting to a leach volume of 3.2 Tg N yr−1. The total planetary boundary for nitrogen discharge to water bodies is 8.6 Tg N yr−1 (range of 7.2–11.1 Tg N yr−1).

We determined planetary phosphorus discharge limits based on a scenario analysis of global phosphorus flows, and we adopted a riverine water quality criterion of 160 mg m−3 and a phosphorus flow rate to the ocean of 22 Tg P yr−1, which were the most plausible estimates. The resulting planetary boundary for phosphorus loss to surface freshwater from terrestrial ecosystems was 8.58 Tg P yr−1. We estimated the planetary boundary of ***agricultural*** systems to be 4.1 Tg P yr−1 after subtracting the flow caused by natural and human-induced weathering. Phosphorus flows (0.6 Tg P yr−1) also leach to groundwater; thus, the total planetary boundary for phosphorus loss to water bodies was 4.7 Tg P yr−1 (range of 2.4–5.0 Tg P yr−1). We allocated the global nitrogen and phosphorus discharge limits to national and subnational regions according to regional proportions of available water resources. The resulting national boundaries were 580 kt N yr−1 (range of 486–749 kt N yr−1) for nitrogen and 317 kt P yr−1 (range of 162–337 kt P yr−1) for phosphorus.

Several control variables have been proposed for measuring the planetary boundary of ***land***-system change. These variables include ***forest*** biomes, cropland conversion and biocapacity. Biocapacity is a more complete and aggregated indicator than ***forest*** biomes and cropland conversion, measures critical thresholds of biologically productive ***land*** use and represents national ***land*** boundaries required to attain self-sufficiency. However, current biocapacity accounting cannot readily reveal ***forest*** and cropland resources at subnational scales and is only available at national or per capita scales. Because our model tracks ***agricultural*** ***land*** use and incorporates details on regions and food types, we adopted a cropland use value of 12.6 million km2 (range of 10.6–14.6 million km2) adapted from the ***forest*** biomes ***target*** obtained from the results of other studies. Based on this, the total cropland limit in China was 0.80 million km2 (range of 0.68–0.93 million km2). Supplementary Table shows the data sources and primary estimations.

Scenario analysis

Food production in 2030

The quantity of national food production in the business-as-usual scenario in 2030 was estimated by multiplying the amount of required food by the projected food self-sufficiency (the rate of the total quantity of required food met through local production). The national food requirement is closely correlated with the national mean per capita gross domestic product (GDP) and could therefore be estimated using projections of the national population and GDP. We used a hybrid copula theory and Markov chain Monte Carlo simulation method to analyse the relationship between food requirements and economic benefits, and projected per capita food requirements for the seven food categories. Copulas are mathematical functions used for ‘coupling’ a set of variables that change with time or region and are used for revealing the underlying dependence structure. The Markov chain Monte Carlo simulation was applied in a further analysis of the associated parameters of the copula function. The general approach when using this function is to determine the joint density function (fX,Y (x,y)) of two or more random variable (for example, two variables x and y, or in this study, food requirement and per capita GDP):where FX(x) and FY(y) are cumulative distribution functions of X and Y and fX(x) and fY(y) are the probability density functions of x and y. is the unique copula function of joint probability for the two variables.

To evaluate the territorial environmental impacts, national food production was then estimated by multiplying the copula-based national food requirement by the self-sufficiency rate. Provincial food production in 2030 was estimated by extending the historical (logarithmic) trend of provincial food production, and then the provincial food production was adjusted according to the estimated national total and the sum of the provincial totals. The data sources used for this projection are listed in Supplementary Table . We assumed a 5% reduction in the environmental intensity of food production in 2030 in the absence of dedicated technological improvements and mitigation strategies.

Supply-side strategies

Optimizing fertilizer application is a supply-side strategy designed to enhance straw and manure reuse and to reduce avoidable chemical fertilizer application. The nitrogen and phosphorus included in this reuse substitutes for chemical fertilizers and reduces the direct manure discharge from livestock and poultry cultivation. We adopted a medium-high (that is, three-quarters of the largest potential) increase in the reuse of straw and manure as a replacement for chemical fertilizers and assumed a medium-high reduction in excessive fertilizer application (that is, application that has little benefit to yield). Around 15–60% of crop straw is currently used as fertilizer. We assumed that an additional 10% of straw would be reused in cropland, apart from the other diverse uses of straw, such as producing feed, paper and biogas. We adopted a 20–30% increase in manure reuse based on the current rate. The nutrients contained in this reused straw and manure replaced about 10% of chemical fertilizer use. Studies have shown that reductions of 20–70% of nitrogen, and 10–30% of phosphorus, fertilizer use do not decrease cereal yields, and thus that the amounts currently in use are unnecessarily high. Every 1% reduction in fertilizer use results in a 0.8% reduction, on average, in nutrient loss.

Improving food production efficiency through crop–soil and feed management is another supply-side strategy for linking changes in bottom-up techniques to subsequent reductions in environmental and resource intensities. The production efficiency of cereals (rice, wheat and maize) can be improved through the delivery and acquisition of institutional knowledge and through insights and feedback gained from farming practices. On-site farming experiments have been conducted across China to determine the factors influencing cereal yield gaps and resource use efficiency. The results indicate that many factors, including crop seed varieties, planting density and sowing time, have substantial impacts on crop yields and resource use efficiency. A set of recommended practices led to improvements in nitrogen use efficiency (the amount of food produced per unit of resource input) of 62–86% in winter wheat and summer maize and to a subsequent reduction in nitrogen ***emission*** intensities of 38–46% (ref. ). The findings of this experiment also revealed a potential improvement of 52–60% in water use efficiency, resulting in a 34–38% reduction in water use intensity. Given the lack of evidence for other plant-based food categories, we defined improved efficiency in terms of best practices and the lowest intensities of food production within China. We anticipated a 40% improvement in the efficiencies of livestock and poultry meat production through grazing and precision feeding management. Moreover, the nutrient loss from livestock production can be reduced by around 50% by incorporating manure management practices such as prohibiting manure discharge.

Demand-side strategies

Reducing FLW is a demand-side strategy designed to reduce food requirements and thus food production. Reducing FLW is inspired by the United Nations’ Sustainable Development Goals (SDGs 12.3) and is assumed to reach close to the maximum theoretical potentials. According to previous survey findings and estimates,, current rates of post-harvest loss for grain, meat and vegetables are 23.2, 17.2 and 32.3%, respectively. Based on the maximum theoretical values proposed in previous studies,, we assumed a medium-high reduction in FLW for the consumption (post-harvest) stage. We also assumed that changes in the environmental impacts of food production across all regions in the supply chain would be commensurate with changes in food requirements in a given region. We did not consider potential FLW reductions for international trade partners that import food from China.

Dietary shift is another demand-side strategy and was based on the national dietary guidelines that advocate a more balanced and healthy diet compared with current dietary patterns. To evaluate current dietary patterns in each of China’s provinces, we compiled food consumption data extracted from the China Statistical Yearbook and from the China Health and Nutrition Survey (CHNS, [*https://www.cpc.unc.edu/projects/china*](https://www.cpc.unc.edu/projects/china)), which contains over 30,000 samples in 15 provinces. We estimated food consumption in all Chinese provinces using supplementary data obtained from provincial statistical yearbooks, which also report on food consumption (but in much less detail). We proposed a balanced and healthy dietary pattern that bridges 75% of the gap between the current and recommended diets. The detailed parameter settings for the four basic strategies described above are listed in Supplementary Table .

To evaluate changes in the environmental impacts of food production resulting from strategies that influence food requirements, we developed global multiregional input–output (MRIO) data for the year 2011. This was done by linking a disaggregated Chinese MRIO table, which we compiled based on an algorithm from the Chinese Industrial Ecology Laboratory (IELab), with a global MRIO table extracted from the GTAP database. The Chinese MRIO table contains 12 food production sectors and 41 other sectors (Supplementary Tables –) and applies a hierarchically nested system from Chinese IELab. The same method was applied in a previous study and was used to extract the global MRIO table from the GTAP v9 database (Supplementary Tables and ). This global MRIO model covers a total of 9,566 sectors in 170 regions, including 12 food sectors in each region. Supplementary Table shows the sectoral coordination between the Chinese and global MRIO table when nesting these two tables. The changes in environmental impact due to consumption activities in one region r can be linked back to the production side based on the supply chain from production Pr to consumption Cr (ref. ):The changes in production-based impacts in region r (ΔPr) are caused by the changes in the final consumption in all the regions importing products from region r (ΔCr1, ΔCr2 and ΔCrn). These changes are known as the ‘spillover effect’. In the above equations, the F vector denotes the environmental intensity of production and X denotes total output, the L matrix denotes the Leontief inverse, and Δyr denotes changes of final consumption. A detailed explanation of the feedback from consumption to production is shown in Supplementary Table , and the global food supply is shown in Supplementary Table .

In the nested MRIO model, we paid particular attention to two feedback effects that ensure a more reasonable estimation of the strategies. First, changing requirements for animal-based food in one region will correspond to changes in grain feed requirements in all regions. We quantified changes in grain feed requirements with reference to cereal supply chains and feed conversion factors for different animal-based food products. Second, the evaluation of demand-side strategies entails the reductions in environmental impacts per unit food products (for example, 1 kgCO2e per kg rice) from the two supply-side strategies.

Redistributing food production

To ***remove*** environmental impacts in regions where boundaries had been exceeded and to accommodate these impacts in other more ‘affluent’ areas, linear programming was applied to redistribute food production among the Chinese provinces. The objective was to minimize the redistributed food production within the constraints of keeping provincial environmental impacts within their boundaries (Supplementary Table ). We first minimized the ***removal*** of provincial food productions from the ‘exceeded’ provinces to mitigate their environmental impacts to a level below their boundaries, and then allocated these removed productions to the remaining provinces in proportion to the amount of ‘affluent’ space. Smaller changes are more likely to be practical and economically feasible than large changes. Therefore, we prioritized the redistribution of food categories associated with higher environmental intensities (for example, livestock) over those with lower intensities (for example, cereals). ***Removal*** of cereal production in the breadbasket areas was restricted to below 20%, while ***removal*** of other food types was restricted to below 60%. This approach facilitates the implementation of redistribution, because animal production is easier to relocate and less dependent on climatic conditions and landforms than cereals. We restricted the increase of food production in Tibet and Qinghai given their limited food productivity and their critical importance to the conservation of biodiversity and ecosystem services.

Uncertainty and sensitivity analysis

The Monte Carlo approach was applied to evaluate the uncertainty of environmental impacts associated with Chinese food production resulting from model structure, activity data and parameter values. The input variables for nitrogen, phosphorus and GHG ***emissions*** are listed in Supplementary Tables and . Based on different data quality, activity data obtained from the statistics were assumed to have a coefficient of variation (CV) of 5% and at-scale and estimated parameters were assumed to have CVs of 10% and 20%, respectively. Bluewater footprints per unit of food production data were obtained from Hoekstra and Mekonnen, and vary within ±9.5% of the mean. Data for cropland use were taken solely from our statistics and varied by ±5%. The model was run 100 times using randomly selected values from the input mean, CV and distributions to quantify the range of the model results. The CV for the environmental impacts of provincial food production is shown in Supplementary Table .

We used the one-at-a-time method (sensitivity curve) to investigate the sensitivity of environmental impacts to changes in the input variables. The one-at-a-time method is intuitive and is widely used in investigating the response of output results to variations in input values. The sensitivity of the output variables was evaluated by introducing marginal changes in the ***target*** input variable and keeping the other inputs constant. The output variables in the present research are the five environmental impacts of Chinese food production, while the input variables are listed in Supplementary Tables and and described above. We obtained the corresponding output results when input variables varied from −20% to +20% from the mean. The results are summarized in Supplementary Table .

Reporting Summary

Further information on research design is available in the linked to this article.

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**Notes**

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[***Biden officials acknowledge role of carbon capture***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:624R-JTT1-JCN4-H538-00000-00&context=1516831)

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**Body**

HOUSTON (ICIS)--Officials in the administration of President Joe Biden acknowledged the role that carbon capture and storage will need to play if the US intends to meet its goals to reduce ***emissions*** of carbon dioxide (CO2).

Gina McCarthy, Biden's climate-change advisor, talked about using ***agriculture*** and soil as a way to ***remove*** CO2 from the atmosphere on Thursday during the CERAWeek by IHS Markit conference.

Jennifer Granholm, secretary of the Department of Energy, discussed capturing carbon ***emissions*** on Wednesday at CERAWeek.

Carbon capture and storage could allow companies to continue producing oil and natural gas while the world restricts carbon ***emissions***. The petrochemical industry relies on both for feedstock, be it naphtha or natural gas liquids (NGLs) such as ethane and propane.

Similarly, chemical companies can use carbon capture and storage to sequester the CO2 produced from their operations. Since they rely on fossil fuels to produce heat and steam, it could be more difficult for chemical plants to switch to renewable power.

Carbon capture [1]is a centrepiece of ExxonMobil's ***emissions*** strategy.

Other US oil companies investing in carbon capture include [2]Occidental Petroleum and [3]Chevron.

MCCARTHY NAMES CARBON CAPTURE AMONG SEVERAL POLICIES Carbon capture through the environment was one among several policies that the federal government could promote to lower ***emissions***, said McCarthy.

The US should invest more to use ***agriculture***, ***forests*** and soil as a way to capture carbon, she said. "We can do so much with our ***land***, with our natural resources to make them a vital opportunity to reduce carbon to complement our mitigation efforts."

As Biden's national climate advisor, McCarthy said her job is to create a plan that would allow the US to meet its commitments under the Paris Climate Agreement. Biden issued an order [4]to rejoin the agreement on his first day in office.

Among those are to reduce net CO2 ***emissions*** to zero by 2050 and to produce carbon-free power by 2035.

The US will achieve its goals through government incentives and private-industry action, according to McCarthy.

Clean energy is cheaper, she said. That in itself should provide plenty of incentives for companies to build ***emission***-free power. "Clean energy is winning in the marketplace today," she said.

More could come from Biden's economic and infrastructure programmes, called [5]Build Back Better, she said. "That package is going to recognise that we have a big challenge in our economy and that investments in infrastructure are going to be important."

Those shortcomings include not just roads and bridges, but also charging stations for electric vehicles, McCarthy said. The president wants to build 500,000 of those charging stations.

The US Department of Energy can invest in new technology that could support manufacturing, battery storage, transmission and electric vehicles. McCarthy said the federal government should be part of a larger strategy to encourage more investment in the nation's manufacturing sector.

"This is going to be about the job benefits and the economic stability we can garner if we can invest with those companies and with those utilities," she said.

McCarthy mentioned federal procurement, which Biden also highlighted [6]in his campaign platform.

McCarthy also highlighted government programmes that would develop lower carbon technologies and encourage the adoption of recent breakthroughs. She pointed to aid packages to help cities that could lose jobs tied to fossil fuels.

ENERGY SECRETARY HIGHLIGHTS CARBON CAPTURE The new secretary of energy, Jennifer Granholm, also acknowledged a role for carbon capture and storage.

"The Intergovernmental Panel on Climate Change has said that we are not going to get to net zero without carbon capture and sequestration," she said. Granholm acknowledged the need for more investment in the field.

Other ***targets*** include advanced vehicles and advanced reactors, she said.

"We want to lead an energy transformation that creates opportunities for diverse union jobs in every sector of this clean-energy economy, including the building of a new clean-energy infrastructure," Granholm said, "That piece of infrastructure that includes transmission grids, CO2 pipelines. We want to create supply chains to strengthen America's manufacturing sector in hard-hit communities across the Rust Belt."

Granholm stressed the large role of clean energy.

"We've got to add hundreds and hundreds of gigawattts to the grid of clean energy over the next four years," she said. "It's a huge amount and there is very little time."

Granholm highlighted the role of the 17 national research labs in the US. Applied research programmes will help convert new discoveries into practical technology. The Advanced Research Projects Agency - Energy (ARPA-E) will develop new technology.

The Department of Energy's [7]Loan Program Office can provide more than $40m available to fund large-scale energy infrastructure projects, she said.

Focus article by Al Greenwood

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[***Carbon loss from forest degradation exceeds that from deforestation in the Brazilian Amazon***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:671W-P2B1-JCWX-C2R6-00000-00&context=1516831)

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**Body**

Main

Tropical ***forests*** in the Amazon account for approximately 50% of the rainforests in the world and are important for global biodiversity, hydrology, climate and the carbon cycle–. Accurate and timely data on vegetation aboveground biomass (AGB) and ***forest*** area in the region at various spatial and temporal scales are needed to understand the carbon balance, which is affected by ***land*** use, logging and degradation, secondary ***forest*** regrowth, and climate,. In addition to in situ AGB measurements in intact ***forests***–, several studies combined in situ AGB data with images from optical, microwave and laser sensors to generate static AGB maps over merged periods (for example, circa 2000 (ref. ), circa 2007–2008 (ref. ) and 2003–2014 (ref. )). Combined with ***forest*** area change datasets from the Amazon Deforestation Monitoring Project (PRODES) and the Global ***Forest*** Watch (GFW), these static AGB maps are used to estimate AGB dynamics from deforestation and ***forest*** degradation,, but ***forest*** losses from PRODES were substantially smaller than those from GFW–. These differences and uncertainties result from different ***forest*** definitions and the use of Landsat images, which are severely impacted by frequent clouds and aerosols from fire, leaving very few good-quality images per year. This issue could be solved by the use of Moderate Resolution Imaging Spectroradiometer (MODIS) data.

The spatial resolution of these data cannot identify small patches of ***forest*** losses or gains, but the daily images ensure more good-quality observations per year.

Substantial progress has been made in analysing L-band vegetation optical depth (L-VOD) from the Soil Moisture and Ocean Salinity (SMOS) passive microwave images, which provide annual maps of AGB since 2010 at 0.25° spatial resolution ()–. Moreover, images from the Phased Array type L-band Synthetic Aperture Radar (PALSAR) and MODIS were used to derive annual maps of evergreen ***forest*** areas at 500-m resolution for the Brazilian Amazon during 2000–2017 (refs. ,). Combining L-VOD AGB and PALSAR/MODIS ***forest*** area during 2010–2019 offers a unique window to assess the spatial–temporal dynamics of AGB and ***forest*** area in the Brazilian Amazon and how these dynamics are impacted by climate and ***land*** use. This period is of special interest, because the impacts on ***forest*** area and biomass from extreme climate events and the changed policies of the new Brazilian government (in office since January 2019), favouring the expansion of pasture, at the expense of ***forest*** conservation, have not yet been fully quantified.

Here we used the annual L-VOD AGB and annual ***forest*** area datasets described above to investigate the spatial–temporal dynamics of ***forest*** carbon in the Brazilian Amazon during 2010–2019. We investigated (1) the role of climate anomalies in the changes in ***forest*** area and AGB (for example, the Atlantic Multi-decadal Oscillation (2010), El Niño (2009–2010 and 2015–2016) and La Niña (2010–2011 and 2017)) (Extended Data Fig. ); (2) whether recent changes in policies and human activities in 2019 have a detectable effect on ***forest*** area and AGB; and (3) the relative contributions of deforestation and ***forest*** degradation (***forest*** fragmentation, edge effects, logging, ***forest*** fire and drought) to interannual variation in AGB loss in the study period.

Consistency between AGB and ***forest*** area

The AGB and ***forest*** area data were organized into 5,656 grid cells at 0.25° spatial resolution (~25 km × 25 km) (). We studied the relationships between annual AGB and ***forest*** area fraction (FAF) for individual grid cells. The spatial distribution of AGB agrees well with that of FAF in 2019 (Fig. ). AGB and FAF are linearly (spatially) correlated with each other in 2019 and other years (Fig. and Extended Data Fig. , R2 ≥ 0.81). We also investigated the temporal consistency between AGB and FAF for all grid cells over the ten years. As an example, we showed two contrasting grid cells that exhibited either a large loss (Fig. ) or a large gain (Fig. ) in FAF. The temporal correlation between AGB and FAF (AGB = f(FAF)) was found to be strong in the ‘loss’ grid cell (R2 = 0.82, P < 0.01) and lower but significant in the ‘gain’ grid cell (R2 = 0.30, P < 0.1). The spatial distributions of the temporal relationships between AGB and FAF during 2010–2019 are shown in Fig. . We found that 23% of the total area (112 × 106 ha) had a statistically significant (P < 0.05) and positive linear relationship between AGB and FAF, especially in the southern and eastern Brazilian Amazon. This loss of AGB following ***forest*** area losses is expected, but the slope of the relationship differs depending on the mechanisms that lead to ***forest*** area loss and exposed AGB densities. Conversely, intact ***forest*** with no ***forest*** area loss can have changes in AGB due to climate anomalies or ***forest*** degradation. At 25-km spatial resolution, we observed only the bulk of AGB changes, and further work is needed to attribute the roles of ***forest*** area loss, ***forest*** area gain and ***forest*** degradation on top of climate-induced variability. In the following sections, we take a closer look at yearly anomalies to gain insights on those drivers.

Spatial distributions of AGB and FAF and their linear regression relationship within 0.25° (~25 km × 25 km) grid cells.

a, Spatial distribution of averaged AGB (Mg C ha−1) in 2019. b, Spatial distribution of FAF (%) in 2019. c, Linear regression analysis between AGB and FAF in 2019 (number of pixels: 5,656).

Interannual variation of FAF and AGB during 2010–2019.

a–f, Two ~25-km × 25-km grid cells with ***forest*** area loss (a and b; central latitude, 6.7° S; longitude, 55.2° W) and ***forest*** gain (d and e; central latitude, 17.4° S; longitude, 53.4° W). In a and b, USGS/NASA Landsat images acquired on 3 July 2010 and 9 August 2019 (ref. ) are shown, and c shows the annual anomaly values (Z-score) of ***forest*** area and AGB in the ***forest*** area loss grid cell (a and b). In d and e, Landsat images acquired on 27 August 2010 and 5 September 2019 (ref. ) are shown, and f shows the annual anomaly values (Z-score) of ***forest*** area and AGB in the ***forest*** area gain grid cell (d and e). g, Map of the linear regression slope between annual FAF and AGB during 2010–2019. The grey grid cells have temporal R2 less than 0.3. h, Map of temporal R2 between annual FAF and AGB during 2010–2019.

Interannual changes in AGB and ***forest*** area

The interannual changes in ***forest*** area, active fire area, burned area and AGB are displayed in Fig. . We decomposed the annual net AGB change into the sum of gross AGB loss (grid cells with negative changes) and gross gain (grid cells with positive changes). The gross ***forest*** area loss in 2019 (3.9 × 106 ha), which was a drought year, was larger than that during the extreme El Niño drought year of 2015 (3.0 × 106 ha) (Fig. ). This suggests that the combined impacts of policy changes by the Brazilian government, and drought (that is, drought-induced tree mortality and enhanced ***forest*** fires) caused a larger ***forest*** area loss in 2019. In contrast, the net AGB change in 2019 (−0.05 Pg C) was only one-fifth of the net AGB change in 2015 (−0.25 Pg C) (Fig. ), which is confirmed by the large gross AGB loss (−0.55 Pg C) in 2015 (Fig. and Extended Data Fig. ). The strong El Niño in 2015 thus resulted in a more extensive loss of AGB over both intact and secondary ***forests***, from drought and drought-induced fires coordinated with human ignitions. Comparing losses of AGB and ***forest*** area changes in 2014–2015 and 2018–2019 revealed that the extreme El Niño in 2015 and the combined impact of policy changes and drought in 2019 had differential impacts on AGB and ***forest*** area. As 2019 was the first year of Brazilian president Jair Bolsonaro’s administration, the impacts of those policy changes on AGB and ***forest*** area remain to be investigated beyond 2020.

Interannual variations of annual AGB and ***forest*** area in the Brazilian Amazon during 2010–2019.

a, Annual AGB estimated from L-VOD data and ***forest*** area estimated from MODIS data for each year. b, Annual active fire area estimated by MOD14A2 and annual burned area estimated by MCD64A1. c, Annual gross ***forest*** area loss and gain. d, Interannual AGB changes (gross gain, gross loss and net change). e, Accumulated gross loss and gain of AGB and ***forest*** area. f, Monthly atmospheric XCO2 from OCO-2 observations in the Brazilian Amazon, Atlantic Ocean and Pacific Ocean. To make the figure clear, we did not show the standard deviation values.

Over the ten-year period, linear regression analysis showed a strong correlation between annual AGB and ***forest*** area (Fig. , R2 = 0.78). Annual AGB decreased from 44.86 Pg C in 2010 to 44.19 Pg C in 2019, a net loss of 0.67 Pg C (0.07 Pg C yr−1), while annual ***forest*** area decreased from 370.21 × 106 ha in 2010 to 361.29 × 106 ha in 2019, a net loss of 8.91 × 106 ha (0.99 × 106 ha yr−1) (Fig. ). These total numbers mask the highly dynamic and regional nature of interannual changes in gross gains and gross losses of AGB and ***forest*** area, which partly compensate for each other. We thus calculated interannual changes in AGB (Fig. ) and ***forest*** area (Fig. ) between two consecutive years for individual grid cells and identified gross gains and gross losses as the sums of AGB changes in all the grid cells showing either gains or losses (Fig. ). On average, gross AGB loss and gain (Fig. ) were about five times larger than net changes between two years (Fig. ). The cumulated gross loss and gross gain of AGB in the Brazilian Amazon over 2010–2019 were 4.45 Pg C and 3.78 Pg C, respectively.

The cumulated gross ***forest*** area loss over the ten years was about 19.75 × 106 ha (Fig. ). The GFW reported loss (19.14 × 106 ha during 2010–2018) is very close to our estimate. PRODES reported only 6.72 × 106 ha in ***forest*** area loss during 2010–2019 (ref. ); this is because it was designed to monitor only deforestation of old-growth primary ***forests*** as per 1988, not considering losses from secondary ***forests***, which have a high turnover and can get deforested several times within our study period. The GFW and our MODIS ***forest*** area datasets include losses of primary and secondary ***forests*** since 2000 and 2001, respectively. From 1988 to 2000, some pixels classified as intact ***forest*** in 1988 by PRODES may have already been deforested and regenerated when their dynamics are monitored by MODIS and GFW products.

We calculated the temporal dynamics of AGB and FAF for six classes of FAF () and found that AGB varied temporally in tandem with FAF (Extended Data Fig. ), suggesting that interannual changes in ***forest*** area are one of the major factors contributing to interannual changes in AGB. The interannual variations of active fire and burned areas (Fig. ) corresponded well with those of annual AGB and ***forest*** area losses during 2010–2019, except in 2017 and 2019 (Fig. ), indicating that fire was strongly associated with the losses of AGB and ***forest*** area.

AGB and ***forest*** area losses in El Niño years

The impacts of El Niño climate events on vegetation have been debated intensively over the past few decades,,,,. Seasonally moist Amazonian ***forests*** have deep root systems that could use water in deep soils, and they have a relatively high resilience to drought,. We calculated interannual changes in AGB and ***forest*** area between the 2015 extreme El Niño year and the previous year (Extended Data Fig. ). The net AGB change was negative and larger in 2015 (−0.25 Pg C), with a gross AGB loss of 0.55 Pg C that surpassed a modest gross AGB gain of 0.29 Pg C (Fig. ). The net ***forest*** area change (−5.79 × 106 ha) was also large in 2015. We detected a much larger loss of ***forest*** area in 2015 than in 2016, but the GFW and PRODES datasets showed smaller losses of ***forest*** area in 2015 than in 2016 (Extended Data Fig. ). This discrepancy can be attributed to different definitions of ***forest***, mapping algorithms (PRODES excludes secondary ***forest*** loss), calendar year (PRODES uses August of the current year to July of the subsequent year) and the limited number of Landsat images used by the GFW and PRODES projects. The larger loss of AGB (Fig. ), larger active fire area and burned area (Fig. ), and larger annual growth rate of atmospheric CO2 concentration (Fig. and Extended Data Fig. ) in 2015 support our finding of a larger loss of ***forest*** area in 2015 than in 2016.

To identify hotspots of AGB and ***forest*** area change in 2015, we calculated the changes in average AGB and ***forest*** area during 2010–2013 and during 2015–2018 (Fig. ). The spatial distribution of AGB change (Fig. ) matched well with that of ***forest*** area change in the ‘Arc of Deforestation’ (Fig. ). Between these two periods, AGB gain occurred in 29.40% of the area (141.71 × 106 ha) and AGB loss in 70.60% (340.26 × 106 ha) (Fig. ). ***Forest*** area gain occurred in 15.43% of the area (74.39 × 106 ha) and ***forest*** area loss in 51.63% (248.82 × 106 ha) (Fig. ). In this time, 44.78% of the Brazilian Amazon had both AGB and ***forest*** area loss (Fig. ). The relationship between AGB and ***forest*** area changes between these two periods was statistically significant (P < 0.01) but weakly correlated (Fig. ). This partial decoupling between AGB and ***forest*** area happens because few grid cells have large losses of AGB and ***forest*** area, while many others have a small loss of ***forest*** area and a moderate loss of AGB (Fig. ). These results show that in 2015, the contribution of deforestation to the AGB loss was moderate (R2 = 0.19), suggesting that climate-induced tree mortality and degradation contributed to the AGB loss.

The changes in average AGB and ***forest*** area within 0.25° (~25 km × 25 km) grid cells before and after the 2015 extreme El Niño in 2010–2013 and 2015–2018.

a, Spatial distribution of the AGB change as the difference between the second and first periods. b, Spatial distribution of ***forest*** area change. c, Scatter plot and regression between ***forest*** area and AGB changes across grid cells. d, Grid cell numbers (grey bars) for different bins of ***forest*** area change and average values and standard deviations of AGB change. e, AGB, ***forest*** area, precipitation and photosynthetically active radiation (PAR) changes only for grid cells with no ***forest*** area change grouped into different bins of mean annual precipitation (500-mm intervals). f, Same as e but for grid cells with a ***forest*** area loss of up to 10 × 103 ha between the two periods.

We further analysed the interannual changes in AGB in those grid cells with stable ***forest*** area in relation to changes in mean annual precipitation and mean maximum cumulative water deficit (MCWD) () in 2010–2013 and 2015–2018 (Fig. , Supplementary Figs. and , and Extended Data Fig. ). Approximately 37% of this area (58.37 × 106 ha) had AGB gains (0.06 Pg C; 0.49 Mg C ha−1 yr−1), most of which were distributed in the northwest (Fig. ), where the mean annual precipitation was higher than 2,000 mm yr−1 (Supplementary Fig. ). The remaining areas with no ***forest*** area change (63%; 99.53 × 106 ha) had AGB losses (0.14 Pg C; 0.70 Mg C ha−1 yr−1), suggesting that extensive ***forest*** degradation occurred. AGB loss increased as annual precipitation decreased, indicating that drought was a driver of ***forest*** degradation, and grid cells with an annual precipitation of <2,000 mm yr−1 had the largest sensitivity to drought (Fig. ). Approximately 85% of fires consistently occurred in the region with an annual precipitation of <2,000 mm yr−1, and there was a 70% increase of fires in the region with an annual precipitation of ≥2,000 mm yr−1, which can also explain AGB loss patterns in El Niño years. In addition, for grid cells with ***forest*** area losses between the pre- and post-2015 El Niño periods, AGB losses between these periods were impacted by climate, deforestation and human-induced ***forest*** degradation, which tended to be higher in areas with precipitation in the range of 1,500–2,500 mm yr−1 (Fig. ). Similar results are obtained with MCWD instead of mean annual rainfall (Extended Data Fig. ). Further analyses of new ***land*** cover and degradation datasets, are needed to attribute these bulk reductions of AGB to the different drivers and their interactions affecting ***forests*** in different regions of the Brazilian Amazon.

The 2015–2016 El Niño caused widespread AGB losses in 63% of the Brazilian Amazon. We calculated the recovery strength in the following three years and found that AGB fully recovered only in 25% of the area (Extended Data Fig. ). The moist ***forest*** in the northwest and the Cerrado area in the southeast recovered quickly. In contrast, the ‘Arc of Deforestation’ region, where fires also peaked during the El Niño, did not show a recovery of AGB. In this region, deforested areas from intact or secondary ***forests*** are primarily used for crops and pasture. Recent data show that secondary ***forests*** did regrow but were frequently deforested again.

Increased AGB in La Niña years

Several local studies investigated the speed of vegetation recovery in the Amazon after El Niños,,. Our data with full coverage of the region show that ***forest*** area changed little between 2010 and 2012, but annual AGB in the strong La Niña of 2011 was higher (by 0.47 Pg C) than in the drought year of 2010 (Fig. ). Field data from long-term ***forest*** plots reported slightly higher ***forest*** growth in 2011 than in 2010 (ref. ). Results from atmospheric inversion suggested that in 2011 the Amazon basin was a net CO2 sink of 0.25 ± 0.14 Pg C yr−1, higher than in 2010 (ref. ). Similarly, annual AGB during the 2017 La Niña was also slightly higher (by 0.05 Pg C) than in the previous year, but this signal is mixed with the legacy effects of the 2015 El Niño (Fig. ). We also analysed atmospheric CO2 concentration data over the Amazon and adjacent areas of the Atlantic and Pacific Oceans (from 10° N to 10° S) during 2015–2018 using column-averaged atmospheric CO2 concentration (XCO2) data from NASA’s Orbital Carbon Observatory (OCO-2) (Fig. ). The annual growth rates of XCO2 over the Brazilian Amazon in 2016 (0.87 ppm), 2017 (1.80 ppm) and 2018 (1.79 ppm) were substantially lower than that in 2015 (3.51 ppm) (Fig. and Extended Data Figs. and ). This suggested that the XCO2 gradient between the Amazon and surrounding oceans was more negative and was consistent with enhanced CO2 uptake after the 2015 El Niño.

AGB losses from both deforestation and degradation

The loss of AGB observed in a 0.25° grid cell can be a mix of deforestation, the reduction of biomass density from a suite of other processes, and a contribution from non-***forest*** biomes, the latter having a smaller contribution to grid-cell AGB because of the low AGB of short vegetation. AGB decreases in the Brazilian Amazon have been attributed to direct human-induced deforestation, selective logging, ***forest*** fragmentation and associated edge effects, ***forest*** fires, and mortality from climatic disturbances such as storms and drought,. Here we define ***forest*** degradation to include all these mechanisms that do not result in deforestation.

The contributions of deforestation and ***forest*** degradation to AGB losses cannot be explicitly separated within each 0.25° grid cell, but we performed a simple calculation based on a method reported by Harris et al. ( and Fig. ). Out of the cumulative gross AGB losses (4.45 Pg C) over the study period, we estimated that ~27% (1.18 Pg C) result from deforestation and ~73% (3.27 Pg C) from ***forest*** degradation, the latter being composed of 2.88 Pg C in grid cells with deforestation and 0.39 Pg C in the grid cells with no deforestation. Previous studies, from local inventories and bookkeeping models estimated that ***forest*** degradation contributed about 29% (ref. ) or 18–40% (ref. ) to the gross AGB losses in the Brazilian Amazon (Supplementary Table ), which was less than our top-down estimate of 0.25° L-VOD AGB loss. This can be explained by the full spatial coverage of the entire Brazilian Amazon, and because we included ‘degradation’ from climatic disturbances. Our result is in agreement with two previous studies, (Supplementary Table ). Aragão et al. presented a bottom-up carbon balance for the Brazilian Amazon decomposing each flux and separating the drought effect, which showed that ***forest*** degradation contributed 65% to the AGB losses in the 2000s. Baccini et al. used Landsat-based ***forest*** cover data during 2003–2014 and estimated that ***forest*** degradation contributes 69% to the AGB losses in tropical ***forests***. Long-term ***forest*** degradation areas (337,427 km2) surpassed deforestation (308,311 km2) in the Brazilian Amazon during 1992–2014 (ref. ). According to our estimate, AGB losses from ***forest*** degradation are substantial and need to be explicitly included in the global carbon budget assessments. Reducing ***forest*** degradation must be a policy priority in the Brazilian Amazon to reach the requirement of Reducing ***Emissions*** from Deforestation and ***Forest*** Degradation (REDD+) and the carbon ***emission*** reduction commitment of the 2015 Paris Agreement.

Total gross AGB loss from deforestation and ***forest*** degradation in those grid cells with ***forest*** area loss (n = 4,830) during 2010–2019 in the Brazilian Amazon.

a, Linear relationship between gross AGB loss from deforestation and total gross AGB loss. b, Linear relationship between gross AGB loss from degradation and total gross AGB loss. We define ***forest*** degradation to include all the mechanisms (such as selective logging, ***forest*** fires and mortality from climatic disturbances such as storms and drought) that do not result in full deforestation.

In areas of intact ***forests*** (defined as having a >99% persistent ***forest*** cover), AGB losses during 2010–2019 amounted to 0.10 Mg C ha−1 yr−1 and were found to be substantially associated with fire and water deficit (Extended Data Fig. ). The AGB density change over intact ***forests*** was close to the average (0.06 Mg C ha−1 yr−1) estimated by the ***forest*** plots networks during 2000–2011 (ref. ). During 2010–2015, intact ***forest*** AGB changes were highly temporally associated with water deficit (R2 = 0.81, P < 0.01). During 2015–2019, although the water deficit was reduced, ***forest*** AGB continued to decrease due to the legacy effects of drought and a doubling of ***forest*** fires compared with 2010–2014, which is supported by field measurements–.

***Forest*** conservation is a challenging task under severe droughts and governmental policies that threaten Amazon ***forests***. Here, we used two new satellite data products to quantify spatial–temporal changes in AGB and ***forest*** area in the Brazilian Amazon. The strong spatial–temporal consistency between annual AGB and FAF within individual grid cells during 2010–2019 enables us to determine the relative contributions of deforestation and ***forest*** degradation to the losses in AGB, (potential carbon ***emissions*** to the atmosphere) over a long period–. Large AGB losses in 2015–2016 and large AGB gains in 2011 and 2017 show that the ***forests*** are geographically divergent in their sensitivity and resilience to changes in climate, ***land*** use and disturbance. Continued ***land*** use change,, increased climate extremes in the coming decades, and new Brazilian governmental policies may reduce the capacity of the ***forests*** to sequester carbon, and make it more challenging to achieve the objectives of the REDD+ programme. To effectively manage, conserve and monitor tropical ***forests***, it is essential to fully integrate in situ, citizen-science, aerial and space-borne data. Recently launched and future space-borne platforms that measure characteristics of vegetation canopy and structure (Global Ecosystem Dynamics Investigation) and atmospheric CO2 concentration and chlorophyll fluorescence (OCO-2/3 (ref. ), TROPOspheric Monitoring Instrument and Geostationary Carbon Cycle Observatory (GeoCarb)) are expected to help us better address these challenges.

Methods

Annual AGB dataset during 2010–2019

In situ measurements of ***forest*** AGB dynamics in the Amazon are limited to local ***forest*** inventory plots and seasonal direct biometric measurement plots–. Several studies have combined datasets from both ***forest*** inventory plots and remote sensing to generate spatial maps of ***forest*** AGB estimates at multiyear time frames,,, on the basis of canopy height estimates from the Geoscience Laser Altimeter System lidar sampling strips and vegetation indices from optical images (MODIS). The recently developed L-VOD AGB dataset is one of the major satellite-based data sources for monitoring interannual changes in AGB in the tropical regions,,,.

The L-VOD AGB data product was derived from the SMOS passive microwave satellite images L-VOD ascending product (version 1.6) developed by the French National Institute for ***Agricultural*** Research and the Center for the Study of the Biosphere from Space,,. Our previous work by Fan et al. used both ascending observations (acquired at 6:00) and descending observations (acquired at 18:00) over the pan-tropic zone. L-VOD has diurnal dynamics because of leaf water content changes in each day. Here, we used the ascending observations, because at 6:00 the water-refilling process through plant xylem restores the leaf water potential to values close to the root-zone soil water potential, and an equilibrium is reached in the soil–plant–atmosphere continuum. As a result, the ascending observations at 6:00 are less sensitive to plant water stress than the descending observations at 18:00 and are more pertinent to monitoring AGB. The use of only ascending observations was possible in this study, as many subdaily observations were available over the Brazilian Amazon, which is an area that is very little impacted by noisy microwave interferences at the L-band. L-VOD also has seasonal dynamics, as vegetation canopy changes over seasons. Several steps of data filtering were applied to retrieve relatively robust and stable annual estimates (mean and median), and all calculations are detailed in Fan et al..

Here, we used the maximum L-VOD (L-VODmax, defined as the 95% percentile in each year), which occurs mostly in the wet season. During the wet season, the L-VODmax data are relatively independent of annual changes in the dielectric properties of vegetation, which may be assumed to be relatively constant from year to year. Note that we computed L-VOD changes for individual grid cells over years, and it is not our primary task to investigate spatial variations in these dielectric properties. In the long term, these properties may not be constant, as there are changes in vegetation types. But over ten years, we can assume that in a given grid cell, the average vegetation moisture content and dielectric properties during the wet period are about constant. We know that this is not a perfect assumption. However, this assumption was found to be quite well supported by the signatures of the intact ***forests*** (FAF > 99% each year), which have stable temporal L-VOD and L-VODmax at the selected sites (Supplementary Fig. ) and over the whole Brazilian Amazon (Supplementary Fig. ). There are seasonal changes in L-VOD, but it recovers to the same value each year during the wet period, which suggests that changes in L-VODmax are due only to biomass changes and not to changes in the dielectric properties.

As in Fan et al., the SMOS L-VOD was converted to carbon density using previously published biomass maps,, as references via regressions between the annual median of L-VOD (2011) and AGB maps: annual median L-VOD values were converted into the unit of carbon density (Mg C ha−1) and then averaged. Here, we calculated two sets of L-VOD AGB products for each year using the equations (equation () and Supplementary Table ) generated on the basis of L-VOD in 2011 and two biomass maps generated by Saatchi et al. and Baccini et al. of the tropical Americas, and we then averaged them to get annual AGB maps during 2010–2019. As for the L-VOD product, the L-VOD AGB dataset has a spatial resolution of ~25 km. Fan et al. have done extensive spatial uncertainty analyses of AGB and AGB changes, including internal uncertainties associated with the L-VOD-derived AGB estimates and external uncertainties associated with different reference biomass maps and biomass stocks at continental scales. Combining the internal and external errors, the relative spatial uncertainties associated with AGB and the AGB changes are on the order of 20–30% over the tropics and continents.where a, b, c and d are four best-fit parameters and VOD is the yearly L-VOD data. The yearly L-VOD data calculated for 2011 were used in equation (), as described by Rodriguez-Fernandez et al., because 2011 was the first complete year after the SMOS commissioning phase.

The remote sensing datasets that we used in our study provide temporally continuous changes in AGB and ***forest*** area, but all optical, active and passive microwave images used to estimate AGB encounter various degrees of saturation where ***forest*** biomass is very high. However, the L-VOD AGB dataset saturates only at ~200 Mg C ha−1 (ref. ), which, according to Saatchi et al. and Baccini et al., happens only at 2.47% and 0.01%, respectively, of total pixels. Compared with previous studies that used high-frequency VOD (LPRM, LPDR applied to AMSR-E/2),, the L-VOD AGB dataset (version 2.0) shows a strong relationship between changes in AGB and changes in FAF (Fig. ).

Annual ***forest*** maps during 2010–2019

We generated annual maps of ***forests*** in South America during 2007–2010 at 50-m spatial resolution, using the images from the Advanced ***Land*** Observing Satellite (ALOS) PALSAR and time series data from the MOD13Q1 Terra Vegetation Indices data product at 16-day temporal resolution and 250-m spatial resolution. We use the Food and ***Agriculture*** Organization’s ***forest*** definition in our ***forest*** mapping studies—that is, ***forest*** is a ***land*** parcel (0.5 ha or larger) with 10% or more tree cover and with tree height >5 metres at their maturity. The resultant annual PALSAR/MODIS ***forest*** map in 2010 has high accuracy (>90%) using images with very high spatial resolution and 2-m ***land*** cover maps,. Here, we used the canopy height and canopy cover percentage datasets retrieved from the direct measurements of the three-dimensional canopy structure from the Geoscience Laser Altimeter System observations on board NASA’s ICESat-1 (ref. ) to assess the 50-m PALSAR/MODIS ***forest*** map in the Brazilian Amazon in 2010 in terms of the Food and ***Agriculture*** Organization’s ***forest*** definition. The derived ICESat-1 canopy cover percentage showed almost no bias when compared with airborne lidar estimates and was sensitive to signal dynamics over dense ***forests***, even when canopy cover exceeded 80%. The ICESat-based canopy height and canopy cover percentage estimates were able to better characterize footprint-level canopy conditions than the existing products derived from conventional optical remote sensing. There are 1.1 million ICESat-1 site observations in the Brazilian Amazon. We found that 98.5% of the PALSAR/MODIS ***forest*** pixels had canopy height >5 metres and 94.4% of the PALSAR/MODIS ***forest*** pixels had canopy cover percentage >10% (Supplementary Fig. ). Overall, 93.8% of the PALSAR/MODIS ***forest*** pixels had canopy height >5 metres and canopy cover percentage >10% (Supplementary Figs. and ).

We developed a pixel- and phenology-based algorithm to identify and map evergreen ***forests*** in individual years,. The algorithm was based on the canopy phenology from analyses of the time-series enhanced vegetation index (EVI) and ***Land*** Surface Water Index (LSWI) from the eight-day 500-m MOD09A1 data product,. A unique physical feature of evergreen ***forests*** is that they have green leaves throughout the year, which is well captured by the time-series EVI and LSWI data in a year. We applied the algorithm to time-series MOD09A1 data over individual pixels in a year and generated annual maps of evergreen ***forests*** in the Brazilian Amazon from 2000 to 2019 in the cloud computing platform Google Earth Engine. Limited by the data availability, the ***forest*** map for 2019 was generated on the basis of MOD09A1 imagery from 1 January to 3 December 2019. We carried out a temporal consistency check procedure that uses a three-year moving window filter to ***remove*** the noise in individual pixels and increase temporal consistency of evergreen ***forest*** maps. We further calculated the annual gross loss and gain of ***forest*** area on the basis of the ***forest*** map in 2001 after excluding all the pixels without cloud-free observations.where ρblue, ρred, ρNIR and ρSWIR represent ***land*** surface reflectance values from MOD09A1 blue, red, near-infrared and short-wave infrared bands, respectively.

The evergreen ***forest*** maps had relatively high overall accuracy (~97%) in the Brazilian Amazon in 2000 and 2010 on the basis of the extensive high-spatial-resolution ground reference maps. The evergreen ***forest*** loss and gain also have relatively high accuracy on the basis of 2,000 stratified random sample pixels. The overall accuracy of the evergreen ***forest*** loss and gain are 97.79% (±0.64%) and 99.18% (±0.27%), respectively. We aggregated the 50-m PALSAR/MODIS ***forest*** map into the 500-m FAF map and compared the areas and spatial consistency between the evergreen ***forest*** maps and the PALSAR/MODIS ***forest*** maps in the Brazilian Amazon during 2007–2010. The evergreen ***forests*** and the PALSAR/MODIS ***forests*** reached over 98% consistency in the ***forest*** area and ***forest*** spatial distribution. Annual maps of evergreen ***forests*** in the Brazilian Amazon during 2000–2017 were reported in a recent study, and we extended the dataset to 2019 in this study, using the same method. We also compared the 25-m PALSAR-based ***forest*** areas developed by the Japan Aerospace Exploration Agency (JAXA) and the 50-m PALSAR/MODIS ***forest*** areas with the MOD100 ***forest*** areas in the Brazilian Amazon during 2007–2010 and 2015–2017 (2017 is the newest ***forest*** data map). The JAXA ***forest*** areas and MOD100 ***forest*** areas have good consistency (Supplementary Fig. ). PALSAR/MODIS ***forest*** maps and MOD100 ***forest*** maps can therefore be used to analyse the ***forest*** area changes in the Brazilian Amazon. A comparison among the PALSAR/MODIS ***forest*** maps, the PRODES ***forest*** map and the GFW ***forest*** maps was already reported.

GFW ***forest*** area dataset during 2010–2019

Tree cover is defined as vegetation higher than 5 metres. The GFW (version 1.7) product includes a tree cover map in 2000, annual tree cover gross loss in 2001–2019 and total tree cover gross gain in binary for 2001–2012 at a spatial resolution of 30 metres. The GFW products were generated from decision tree algorithms through the analysis of time-series Landsat images acquired during the growing season. The GFW products of 2000–2012 were generated on the basis of Landsat 7 thematic mapper plus (ETM+) images. The GFW products of 2011–2019 were generated on the basis of Landsat 5 thematic mapper, Landsat 7 ETM+ and Landsat 8 Operational ***Land*** Imager images and updated methodology. Due to variation in the mapping algorithms and the date of content, tree cover and tree cover gross loss and gain cannot be compared accurately against each other. Comparisons between the original 2001–2010 data and the 2011–2019 update should be performed with caution. The GFW product was evaluated with an overall commission error of 13% and an overall omission error of 12%, though the accuracy varies by biome and thus may be higher or lower in any particular location. The data producers are 75% confident that the loss occurred within the stated year and 97% confident that it occurred within a year before or after ([*https://www.globalforestwatch.org/map?map=eyJjZW50ZXIiOnsibGF0IjoyNywibG5nIjoxMn0sImJlYXJpbmciOjAsInBpdGNoIjowLCJ6b29tIjoyfQ%3D%3D&modalMeta=tree\_cover\_loss*](https://www.globalforestwatch.org/map?map=eyJjZW50ZXIiOnsibGF0IjoyNywibG5nIjoxMn0sImJlYXJpbmciOjAsInBpdGNoIjowLCJ6b29tIjoyfQ%3D%3D&modalMeta=tree_cover_loss)).

PRODES ***forest*** area dataset (2010–2019)

The PRODES ***forest*** product was generated by the Brazilian National Institute for Space Research to identify annual deforestation and ***forest*** area in the Brazilian Amazon. One or two Landsat images as cloud-free as possible are used each year per location. The images are then masked to exclude non-***forest*** and previous deforestation, using the previous year’s analysis results. Finally, interpreters delineate deforested polygons (in shapefile format) in the intact primary ***forests*** of the previous year. In this study, we used the annual deforestation area statistics in the Brazilian Amazon during 2010–2019 as reported by the National Institute for Space Research.

Atmospheric CO2 concentration dataset during 2015–2018

We obtained daily XCO2 data from the NASA OCO-2 (ref. ). OCO-2 was launched into orbit on 2 July 2014 and flies in a near-polar orbit as part of the Afternoon Train (A-train) constellation of satellites, with a local overpass time of approximately 13:30. It has been recording spectra in the 0.76 μm, 1.61 μm and 2.05 μm spectral regions on a near-continuous basis for five years. The OCO-2 version 9 XCO2 dataset during 2015–2018 is publicly available. Only observations with quality flag 0 (that is, ‘good’) were considered in the Amazon, Atlantic Ocean (latitude 10° S–10° N and longitude 60° W–20° W) and Pacific Ocean (latitude 10° S–10° N and longitude 110° W–85° W) at the same latitude (Supplementary Fig. ), which avoids soundings with errors due to unscreened clouds and aerosols as well as low signal-to-noise ratio. Individual soundings were aggregated to 1° by 1° along the track to account for correlated errors between soundings that are close to one another in space and time, in line with the conclusions of Worden et al..

Active fire and burned area datasets during 2010–2019

The annual active fire and burned area data in the Brazilian Amazon were calculated using the eight-day 1-km MOD14A2 (version 006) and the monthly 500-m MCD64A1 (version 006), respectively. Limited by the data availability, we used MOD14A2 and MCD64A1 acquired between 1 January and 3 December and between January and October 2019. We first selected active fire observations with nominal and high confidence levels and burned area observations with sufficiently valid data in the reflectance time series. We then generated annual active fire and burned area binary maps if active fire and burned area occurred in a year during 2010–2019.

Annual precipitation dataset and evapotranspiration during 2010–2019

We calculated annual precipitation during 2010–2019 using observations from the Tropical Rainfall Measuring Mission (TRMM), a joint mission between NASA and the JAXA. We used the precipitation from the TRMM 34B2 product with a three-hour temporal resolution and a 0.25° × 0.25° (latitude and longitude) spatial resolution. We calculated the annual evapotranspiration as the sum of the eight-day global terrestrial evapotranspiration from the MOD16A2 V105 product at 1-km pixel resolution. Evapotranspiration is the sum of evaporation and plant transpiration from the Earth’s surface to the atmosphere. We then calculated the annual water deficit as the difference between annual total precipitation and evapotranspiration for each year.

MCWD and numbers of dry months

The moist tropical canopy transpires about 100 mm per month, according to the ground measurements in different locations and seasons in the Amazon. ***Forest*** is in a water deficit when precipitation is less than 100 mm per month. The annual MCWD is the maximum value of the monthly accumulated water deficit per year, which is a useful indicator of meteorologically induced water stress. We calculated the annual MCWD during 2010–2018 using the monthly precipitation of TRMM 3B43 at 0.25° spatial resolution. We also calculated the number of dry months with a water deficit during 2010–2018 in the Brazilian Amazon.where WD, E and P are water deficit, evapotranspiration and precipitation, respectively. E is equal to 100 mm per month. i and j are the coordinates (column and row) for the grid cells. n is the number of months each year.

PAR dataset during 2010–2019

We calculated the annual mean values in each year during 2010–2019 using the monthly PAR dataset from the National Centers for Environmental Prediction–Department of Energy (NCEP/DOE) Reanalysis-2, which has a spatial resolution of 1.875° × 1.905° (longitude and latitude). We then resampled the annual mean PAR values into ~25-km × 25-km grid cells using the near resampling approach.

Contributions of deforestation and ***forest*** degradation to bulk AGB loss

***Forest*** degradation and deforestation are not two independent processes. Deforestation leads to ***forest*** degradation by creating edges and increasing the perimeter of ***forests*** exposed to sources of fire ignition, and degraded areas are more likely to be deforested. The gross AGB loss in a grid cell is controlled by gross ***forest*** area loss, ***forest*** degradation and other mechanisms such as non-***forest*** biomass density changes. For grid cells (~25 km × 25 km) with decreased tree cover fraction, if the tree cover fraction is still larger than 10%, we attributed the AGB loss entirely to degradation. If the tree cover fraction is smaller than or equal to 10%, we attributed the AGB loss to deforestation. From these two end members, we attempted a simple estimate of deforestation versus degradation within each grid cell using the method proposed by ref. . First, we calculate the gross bulk AGB loss in each 0.25° grid cell. Second, we multiply the gross ***forest*** area loss during 2011–2019 by the AGB density in 2010 to approximately estimate AGB loss from deforestation. Finally, we calculate the difference between gross AGB loss and this deforestation contribution, and we consider this difference to be from degradation.

Statistical analysis and spatial–temporal analysis

The 500-m annual ***forest*** maps (500-m spatial resolution) were aggregated into ~25-km × 25-km grid cells in ArcGIS ([*https://desktop.arcgis.com/en/*](https://desktop.arcgis.com/en/)) version 10.1 to match the spatial resolution of the L-VOD AGB dataset. The total ***forest*** area (ha) and the FAF (%) were then calculated within each individual grid cell. To analyse the covariations between annual AGB and FAF changes (Extended Data Fig. ), six category layers were created on the basis of the FAF map in 2010: 0%, >0% and ≤20%, >20% and ≤40%, >40% and ≤60%, >60% and ≤80%, and >80 and ≤100%. Then, the anomaly values (Z-scores) for the total ***forest*** area and the total AGB were calculated in each category during 2010–2019.

The linear relationship model analyses (two-tailed) and the relevant slope, R2 and P values were calculated between annual AGB and FAF within each grid cell in the Brazilian Amazon during 2010–2019 in MATLAB ([*https://www.mathworks.com/products/matlab.html*](https://www.mathworks.com/products/matlab.html)) version R2017a. The linear regression slope and spatial R2 values were calculated between annual FAF and AGB during 2010–2019 using the raster and maptools packages in R ([*https://www.r-project.org/*](https://www.r-project.org/)) version 3.4.2.

Reporting Summary

Further information on research design is available in the linked to this article.

Online content

Any methods, additional references, Nature Research reporting summaries, source data, extended data, supplementary information, acknowledgements, peer review information; details of author contributions and competing interests; and statements of data and code availability are available at [*https://doi.org/10.1038/s41558-021-01026-5*](https://doi.org/10.1038/s41558-021-01026-5).

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**Notes**

Extended datais available for this paper at [*https://doi.org/10.1038/s41558-021-01026-5.Supplementary*](https://doi.org/10.1038/s41558-021-01026-5.Supplementary) informationThe online version contains supplementary material available at [*https://doi.org/10.1038/s41558-021-01026-5.Peer*](https://doi.org/10.1038/s41558-021-01026-5.Peer) review informationNature Climate Change thanks Luiz Aragão, Paulo Brando and Fernando Espírito-Santo for their contribution to the peer review of this work.Publisher’s note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

**Load-Date:** May 3, 2023

**End of Document**



[***Public Notices***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:6232-4G81-JCBW-N0DV-00000-00&context=1516831)

Bath Chronicle

February 25, 2021 Thursday

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**Section:** FEATURES; Pg. 28,29

**Length:** 4424 words

**Body**

BATH & NORTH EAST SOMERSET COUNCIL

(OFF STREET PARKING PLACES) (BATH) (VARIATION NO. 5) ORDER 2021 NOTICE IS GIVEN that Bath and North East Somerset Council proposes to make an order under provisions contained in the Road Traffic Regulations Act 1984, the effect of which will vary The Bath and North East Somerset Council (Off street Parking Places) (Bath) Order 2013 as varied by The Bath and North East Somerset Council (Off street Parking Places) (Bath) (Variation No.1) Order 2015 as varied by The Bath and North East Somerset Council (Off street Parking Places) (Bath) (Variation No.2) Order 2015 as varied by The Bath and North East Somerset Council (Off street Parking Places) (Bath) (Variation No.4) Order 2018 is further varied and has effect as though: i) Schedule 4 of that Order is removed. ii) The following item is added to Schedule 1 to that Order: Item No.

Column 3 Period of parking

Column 1 Location of Parking place

Column 2 Days and hours of operation

Column 4 Charge per parking place 12. Green Park Road Car Park

Everyday inc bank holidays 8am - 8pm [*www.inclusive.No*](http://www.inclusive.No) return within 1 hour

2hrs 3hrs 4hrs

£3.20 £4.80 £6.40

£2

Everyday inc bank holidays 8pm - 8am inclusive

Overnight if not parked during the day. Overnight if parked during the day.

Included in daytime charge.

Full details of the proposals, together with a map and a Statement of the Council's Reasons for proposing to make the order, may be requested, free of charge, by contacting by email [*council\_connect@bathnes.gov.uk*](mailto:council_connect@bathnes.gov.uk) The proposal may also be viewed on the Council's website by typing in 20-012 in the search box on the home page: [*www.bathnes.gov.uk/permanent-traffic-order-notices*](http://www.bathnes.gov.uk/permanent-traffic-order-notices) Objections and representations with respect to the proposal, together with the grounds on which they are made must be sent by 18th March 2021, or by email to [*transportation@bathnes.gov.uk*](mailto:transportation@bathnes.gov.uk) Please quote the title of the scheme; (Off Street Parking Places) (Bath) (Variation No.5) Order 2021 and the reference 20-012 for any queries concerning this proposal please telephone 01225 394314. Please note that all representations received may be considered in public by the Council and that the substance of any representation, together with the name and address of the person making it, could become available for public inspection.

Dated: 25th February 2021. Chris Major, Assistant Director, Highways and Traffic, Traffic Management Team, Lewis House, Manvers Street, Bath BA1 1JG [*www.bathnes.gov.uk*](http://www.bathnes.gov.uk)

Section 14(1) of the Road Traffic Regulation Act 1984 Notice is hereby given that Wiltshire Council has made an Order to close temporarily to all traffic: Quarry Hill (Part), Box; from its junction with White Ennox Lane for a distance of approximately 310 metres in a westerly direction to enable Wessex Water to carry out installation of water mains plus three main connections. Alternative route: via Quarry Hill (unaffected length) - Box Hill - Barnetts Hill - Beech Road - Hedgesparrow Lane - A4 - Leafy Lane - Boxfields and vice versa. The closure and diversion route will be clearly indicated by traffic signs. This Order will come into operation on 01 March 2021 and the closure will be required until 09 April 2021. It is anticipated that the works will take the stated duration to complete depending upon weather conditions. Access will be maintained for residents and businesses where possible, although delays are likely due to the nature of the works. The Order will have a maximum duration of 18 months.

For further information please contact Dave Tennant at Wessex Water on 0345 6004600.

TOWN AND COUNTRY PLANNING ACT 1990 TOWN AND COUNTRY PLANNING (DEVELOPMENT MANAGEMENT PROCEDURE) ORDER 2015 PLANNING (LISTED BUILDINGS AND CONSERVATION AREAS) ACT 1990 The full planning register can be inspected at [*https://www.bathnes.gov.uk/webforms/planning/*](https://www.bathnes.gov.uk/webforms/planning/) and at One Stop Shops, Manvers St, Bath, Keynsham Civic Centre, Market Walk and The Hollies, Midsomer Norton during opening hours. Representations can be made online or in writing to Planning Services, Lewis House, Manvers St, Bath, BA1 1JG within 21 days from the date of publication of this notice. Under the provisions of the Local Government (Access to Information) Act 1985 representations will be published on line. Please read our corporate privacy notice: [*www.bathnes.gov.uk/council-privacy-notice*](http://www.bathnes.gov.uk/council-privacy-notice).

Upton House Bathwick Hill Bathwick - Installation of outdoor swimming pool, spa, gazebo, plant room, garden store and associated landscaping. - 21/00524/FUL Lime Grove Cottage Lime Grove Bathwick - Erection of ground mounted solar panels on frame beside stone boundary wall of car parking area. - 21/00759/FUL 6 Princes Street City Centre Bath - Conversion and change of use of the ground and lower ground floor office (Use Class B1) into a 1 bedroom maisonette (Use Class C3). - 21/00478/FUL 6 Princes Street City Centre Bath - Conversion and change of use of the ground and lower ground floor office (Use Class B1) into a 1 bedroom maisonette (Use Class C3). - 21/00479/LBA Rectory Farm House Rectory Farm Lane Englishcombe - Internal and external alterations for the replacement of existing softwood timber windows with slimline steel framed windows to all dormers and the openable casements on the front elevation of the farmhouse. - 21/00508/LBA Rectory Farm House Rectory Farm Lane Englishcombe - Replacement of existing softwood timber windows with slimline steel framed windows to all dormers and the openable casements on the front elevation of the farmhouse. - 21/00507/FUL 53 Wellsway Bath Bath And North East Somerset - Erection of a replacement single storey rear extension. - 21/00541/FUL Resourceful Earth Ltd Charlton Field Lane Queen Charlton - Development of an Anaerobic Digester Facility (including retention of the existing Feedstock Reception Building, Digester Tank (x5), Storage Tank, CHP Engine (x4), Transformer, GRP Substation, GRP Technical Room (x5) and Gas Equipment) to produce both gas and electricity for injection into the local grid networks, alongside the restoration of the former Queen Charlton Quarry Site with ecological and landscape enhancements - 21/00419/EFUL Steam Mill Cottage Railway Lane Wellow - Discharge of conditions 3,4,5 and 6 of application 20/02099/LBA (Internal and external alterations to include repositioning bathroom to first floor, reinstatement of external kitchen door and reroofing lean-to roof in clay tiles to replace existing concrete tiles.) - 21/00572/CONDLB 1 Sion Hill Place Lansdown Bath - ***Removal*** of condition 5 (sound insulation) of application 19/04567/ FUL (Change of use from non-residential school (Use Class D1), formerly, and extraneous, part of Kingswood School, to 5 No. Residential apartments (Use Class C3) to include associated renovation, extension and conversion works.) - 21/00576/VAR 270 High Street Batheaston Bath - Change of use from ancillary residential accommodation to an independent dwelling, and erection of single storey extension (part retrospective) - 21/00557/FUL 28 Grosvenor Place Lambridge Bath - External works to roof comprising the ***removal***, replacement and restoration of dilapidated non-original (C20/C21) and original materials and finishes - 21/00545/FUL 28 Grosvenor Place Lambridge Bath - External works to roof comprising the ***removal***, replacement and restoration of dilapidated non-original (C20/C21) and original materials and finishes - 21/00546/LBA Mendip View The Street Ubley - Internal and external alterations to include erection of a rear extension. - 21/00639/LBA Mendip View The Street Ubley - Internal and external alterations to include erection of a rear extension. - 21/00638/FUL 2 Victoria Place Combe Down Bath - Erection of garage following demolition of existing garage. - 21/00651/FUL Lower Tunley Farm Stoneage Lane Tunley - Erection of a farm building (Resubmission). - 21/00652/FUL Erin Cottage Tyning Road Combe Down - External alterations for the ***removal*** of four rows of fibre slates each side roof ridge and replace with reclaimed natural Welsh slate to match rest of main roof. - 21/00663/LBA 55 High Street Twerton Bath - Erection of a two storey rear extension and single storey side extension. Change of use from 3 bedroom residential dwelling (Use Class C3) to a 6 bedroom House in Multiple Occupation (HMO) (Use Class C4) - 21/00528/FUL Jews' Burial Ground Greendown Place Combe Down - External alterations for the erection of a garden store. - 21/00538/LBA Bosco Pizzeria 1 Milsom Place City Centre - Installation of new awning. - 21/00522/FUL Bosco Pizzeria 1 Milsom Place City Centre - External alterations for the installation of new awning. - 21/00523/LBA Budbrook Bungalow St Saviour's Road Larkhall - Variation of condition 6 (Plan List) of application 18/03075/FUL (Erection of single storey extensions following demolition of existing extensions and timber garage) - 21/00566/VAR 146 Wellsway Bath Bath And North East Somerset - Erection of roof extension - 21/00613/FUL Avon Studios Midland Road Westmoreland - Variation of condition 13 (ambient noise) of application 17/00186/FUL (Erection of 94 No. bed spaces of purpose built student accommodation (sui generis), 14 No. residential studios (Class C3); and associated communal and ancillary facilities) - 21/00626/VAR 44 Longfellow Avenue Bear Flat Bath - Erection of single storey rear extension and demolition of garden store. - 21/00401/FUL 30 Kipling Avenue Bear Flat Bath - Erection of a replacement rear extension and construction of a rear facing dormer. - 21/00672/FUL 227 Wellsway Bath Bath And North East Somerset - Erection of single storey extension, garden terrace and replacement garage. - 21/00659/FUL Walton House 45 High Street Chew Magna - Repairs to roof of shed on west side of drive as well as redecoration of render walls, windows and external woodwork. - 21/00055/FUL 4 Oriel Gardens Lower Swainswick Bath - Erection of first floor extension over existing garage, extending garage and erection of rear conservatory. Erection of front entrance porch extension. - 21/00664/FUL Rosary Cottage Claverton Down Road Claverton Down - Installation of new stairlift to the ground floor staircase - 21/00684/LBA 1 Chew Cottages Dapps Hill Keynsham - Installation of an extra loft window - 21/00682/FUL 1 Chew Cottages Dapps Hill Keynsham - Internal and external alterations for Installation of an extra loft window - 21/00683/LBA

Bath School Of Art And Design Locksbrook Road Newbridge - Installation of new fencing along the riverside boundary to the former Herman Miller building and the installation of a new fencing enclosure. - 20/04379/FUL 8 Widcombe Crescent Widcombe Bath - External alterations to include stripping of roof, replacement of concrete tiles and fibre cement slates with Spanish slates, and replacement lead valley and parapet gutters. - 20/04928/FUL Flat 1 22 The Circus City Centre - Internal alteration to include ***removal*** of modern stud-partition to rear ground floor room to form a single kitchen/dining room and refitting of kitchen. - 21/00476/LBA Flat 1 29 Grosvenor Place Lambridge - Internal and external works for the reconstruction of modern hardboard wall including new and relocated openings, relocation of kitchen, new joinery and general refurbishment - 21/00465/LBA 12A Powlett Road Bathwick Bath - Insertion of new external doors on rear elevation and high level windows on side return elevation. - 21/00574/FUL Newark Works Unoccupied Premises 1-4 Riverside Business Park Westmoreland - Discharge of condition 7 of application 19/05070/LBA (Internal and external alterations to Newark Works to provide Creative Employment Workspace (Total 4,974m2 GIA), including A3 use for not more than 10% of the total new floor area.) - 21/00589/CONDLB Bath School Of Art And Design Locksbrook Road Newbridge - External alterations for the installation of new fencing along the riverside boundary to the former Herman Miller building and the installation of a new fencing enclosure. - 20/04380/LBA ***Land*** Adjacent To River Chew Hunstrete Lane Woollard - Change of use to dual use (***agricultural***/commercial) and site Shepherd's hut used ancillary to Bell Farm Alpacas and as cafe (Retrospective). - 21/00606/FUL 4-5 Railway Place City Centre Bath - Replacement of the existing glazing systems (tinted glass) with a new system with clear glass. Replacement of metal balustrading to third floor terraces with glazed balustrade. - 21/00629/FUL The Lodge Bathford Hill Bathford - Erection of single storey side and rear extension. - 21/00625/LBA The Lodge Bathford Hill Bathford - Erection of single storey side and rear extension. - 21/00624/FUL 24 Queen Square City Centre Bath - Discharge of conditions 3 and 4 of application 20/02689/LBA (Internal and external alterations to include stone repair and replacement on the external facade, paint ***removal*** on the external elevations, ***removal*** of tanking system, ***removal*** of internal modern partitions and repair and replacement of iron railings.) - 21/00631/CONDLB 34 Lyncombe Hill Lyncombe Bath - ***Removal*** of existing non-original roof finishes and substrate, restoration of chimney stack, replacement and widening of west facing (rear) dormer window, structural repair to roof and re-tile with natural slate, lead parapet gutters and associated works. New second floor bathroom and other minor works. - 21/00593/LBA 34 Lyncombe Hill Lyncombe Bath - ***Removal*** of existing non-original roof finishes and substrate, restoration of chimney stack, replacement and widening of west facing (rear) dormer window, structural repair to roof and re-tile with natural slate, lead parapet gutters and associated works. New second floor bathroom and other minor works. - 21/00592/FUL Cleveland Bridge Cleveland Bridge Bathwick - Discharge of conditions 2,4,7,8,10 and 11 of application 20/01893/LBA (The refurbishment, repair and strengthening of a Grade II\* listed structure.) - 21/00598/CONDLB Eveleigh House Grove Street Bathwick - Proposed changes to the fenestration and access to the building. - 21/00636/FUL Tregonhawke Packhorse Lane South Stoke - External improvements to the fenestration, replacement of existing external stair and installation of log burning flue to side elevation. - 21/00762/FUL 7 Bailbrook Lane Lower Swainswick Bath - ***Removal*** of dividing walls to create 1no. dwelling (Certificate of Lawful Existing Use) - 21/00452/CLEU Abbey Hotel 1 North Parade City Centre - External works to include raising the party wall by 600mm, installation of acoustic screen and attenuation pods to the existing condenser units. (Regularisation of matters relating to noise ***emissions*** from the recently installed condenser units pursuant to planning permission 19/04669/FUL and listed building consent 19/04670/LBA) - 21/00502/LBA Abbey Hotel 1 North Parade City Centre - External works to include raising the party wall by 600mm, installation of acoustic screen and attenuation pods to the existing condenser units. (Regularisation of matters relating to noise ***emissions*** from the recently installed condenser units pursuant to planning permission 19/04669/FUL and listed building consent 19/04670/LBA) - 21/00501/FUL Flat 5 28 Upper East Hayes Walcot - External works to replace and repair timber sash windows, and increase of lead gutter upstand - 21/00515/LBA 33 Bathford Hill Bathford Bath - Erection of outbuilding for home office following demolition of existing shed. - 21/00519/FUL 33 Bathford Hill Bathford Bath - External alterations to include erection of outbuilding for home office following demolition of existing shed. - 21/00520/LBA St Clements Court Crown Hill Upper Weston - Erection of lower ground floor single story extension to Flat 1 to provide a study. Erection of lower ground floor single storey extension to provide sleeping accommodation to Flat 6. - 21/00556/FUL 31 Calton Gardens Lyncombe Bath - Replacement of first floor glazed conservatory, involving the

54 Sydney Buildings Bathwick Bath - Internal alterations for replacement of kitchen units, provision of mechanical ventilation, plaster repairs, easing of shutters and redecoration. - 21/00562/LBA 10 Fountain Buildings City Centre Bath - Internal alterations for the ***removal*** of failed gypsum plaster and application of lime plaster at lower ground floor. - 21/00737/LBA 2 Avondale Buildings Larkhall Bath - ***Removal*** of redundant garden shed and replacement with timber framed building to provide a home office and storage. - 21/00709/FUL 5 Windsor Place Upper Bristol Road Lower Weston - Erection of a single storey rear extension. - 21/00716/FUL 19 Tyning End Widcombe Bath - Infill of garage door opening and conversion of garage to form study. - 21/00728/FUL 44 Charlton Road Keynsham Bath And North East Somerset - Erection of single storey rear extension and side and rear dormers to allow for loft conversion. - 20/04869/FUL Publication Date: 25-Feb-21

***removal*** of portion of external wall to maximise the area of glazing and raising the roof for increased headroom - 21/00203/FUL Tasburgh House Hotel Warminster Road Bathampton - Erection of a single dwelling house. - 21/00244/FUL 25 Royal Crescent City Centre Bath - ***Remove*** modern en-suite bathroom and stud partition to return second floor layout to traditional main rooms. - 21/00336/LBA Old Royal Oak St Ann's Place Kingsmead - Change of use to 3-bed HMO with landlord's store. - 21/00056/FUL Pope's House 2 Lyncombe Hill Lyncombe - Alterations to existing workshop/studio to form ancillary living accommodation. - 21/00530/FUL Pope's House 2 Lyncombe Hill Lyncombe - Internal and external alterations to existing workshop/ studio to form ancillary living accommodation. - 21/00531/LBA 101 Sydney Place Bathwick Bath - Creation of self-contained dwelling within lower ground/ground floor maisonette. Internal alterations including installation of new staircase. - 21/00403/FUL 101 Sydney Place Bathwick Bath - Creation of self-contained dwelling within lower ground/ground floor maisonette. Internal alterations including installation of new staircase. - 21/00404/LBA The Old Vicarage 110 Church Road Combe Down - Discharge of conditions 7 and 8 of application 20/02669/LBA (Internal and external alterations to include replacement of the existing conservatory with an orangery on the main house along with conversion of the existing garage to a utility room and minor internal works. Works to the existing outbuilding (Stables) to form an office and studio ancillary to the house. Refurbishment works to the existing outbuilding (Coach House). Wrought iron boundary railings (to part of boundary) and drive gates (electrically operated).) - 21/00587/CONDLB 56 Lyncombe Hill Lyncombe Bath - Conversion of lower ground-floor garage into new entrance hall and utility. Conversion of upper ground-floor balcony into additional space for a bedroom and a new internal stair to upper level. Roof extension of northern most portion of roof to accommodate new bedrooms in roof space. - 21/00597/FUL 4 Combe Road Combe Down Bath - Erection of a free standing oak framed carport on existing tarmac drive. - 21/00599/FUL 4A St Ann's Place Kingsmead Bath - Internal alterations to accommodate replacement boiler, associated flue and pipework, new mechanical extract vent - 21/00482/LBA 4A St Ann's Place Kingsmead Bath - Internal alterations to accommodate replacement boiler, associated flue and pipework, new mechanical extract vent - 21/00481/FUL 34 Rivers Street City Centre Bath - Internal alterations to restore sub-divided room to original three-bay form - 21/00661/LBA 10 Church Street Widcombe Bath - Internal and external alterations to include insulation and fenestration upgrade and repairs to existing property (replace lower ground floor existing French doors and side panels with double-glazed slim profile bi-folding doors). - 21/00694/LBA Upton House Bathwick Hill Bathwick - Erection of garden store associated with proposed new swimming pool. - 21/00771/LBA

TOWN AND COUNTRY PLANNING ACT 1990 TOWN AND COUNTRY PLANNING (DEVELOPMENT MANAGEMENT PROCEDURE) (ENGLAND) ORDER 2015 NOTICE UNDER ARTICLE 15 OF THE ABOVE ORDER AND ARTICLE 19 OF THE TOWN AND COUNTRY PLANNING (ENVIRONMENTAL IMPACT ASSESSMENT) REGULATIONS 2017 OF AN APPLICATION FOR PLANNING PERMISSION Proposed development at: Resourceful Earth Ltd Charlton Field Lane Queen Charlton Bristol Bath And North East Somerset I give notice that Resourceful Energy Anaerobic Limited is applying to B&NES Council for planning permission for Development of an Anaerobic Digester Facility (including retention of the existing Feedstock Reception Building, Digester Tank (x5), Storage Tank, CHP Engine (x4), Transformer, GRP Substation, GRP Technical Room (x5) and Gas Equipment) to produce both gas and electricity for injection into the local grid networks, alongside the restoration of the former Queen Charlton Quarry Site with ecological and landscape enhancements Representations about this application can be made online or in writing to Planning Services, Lewis House, Manvers Street, Bath, BA1 1JG quoting the application number 21/00419/EFUL by the 27-Mar-21. Under provisions of the Local Government (Access to Information) Act 1985, representations will be published online. Please consider the information you provide. Please read our corporate privacy notice: [*www.bathnes.gov.uk/council-privacy-notice*](http://www.bathnes.gov.uk/council-privacy-notice).

Simon de Beer Head of Planning B&NES Council Date: 25-Feb-21

BATH & NORTH EAST SOMERSET COUNCIL

(THTTC2441 WALCOT STREET STEPS, BATH) (TEMPORARY PROHIBITION OF USE BY PEDESTRIANS) ORDER 2021 NOTICE IS GIVEN that Bath and North East Somerset Council in exercise of its powers under section 14 of the Road Traffic Regulation Act 1984 has made an order the effect of which will be to close temporarily to pedestrians in the entire length at Walcot Street Steps, Bath from Walcot Street leading to the Paragon. This order is required because works are being or are proposed to be executed on or near the footpath for replacement of lighting and associated cables by Bath & North East Somerset Council operative from 1st March 2021, for a maximum period of 3 weeks. The footpath will only be restricted as and when traffic signs are in position and may not be effected for the whole of the period but only for so long as is necessary to execute the works. This is anticipated to be for a period of ONE WEEK.

ALTERNATIVE ROUTE: The Paragon - Broad Street - Broad Street Place - Walcot Street - vice versa.

Applicant details: Stephen Burrell BANES Telephone: Volker Highways 07384 902870 Email: [*Stephen\_burrell@bathnes.gov.uk*](mailto:Stephen_burrell@bathnes.gov.uk) (THTTC2401 NORTHEND, BATHEASTON, BATH) (TEMPORARY PROHIBITION OF USE BY VEHICLES) ORDER 2021 NOTICE IS GIVEN that Bath and North East Somerset Council in exercise of its powers under section 14 of the Road Traffic Regulation Act 1984 has made an order to the effect of which will be to temporarily introduce a road closure in that length of Northend, Batheaston from its junction with Hollies Lane to its junction with St Catherine's Lane.

This order is required because works are being or are proposed to be executed on or near the road, working on behalf of BT Openreach, upgrading customer connections by ***Forest*** Support Services on the Monday 1st March 2021 for a maximum period of 4 days. The road will only be restricted as and when traffic signs are in position and may not be effected for the whole of the period but only for so long as is necessary to execute the works. This is anticipated to be for THREE DAYS.

ALTERNATIVE ROUTE: St Catherine's Lane - Leigh Lane - Gloucester

Road (A46) - London Road West - High Street - vice versa. Applicant details: Steve Forrest Telephone: 014953 21348 Email: [*sforrest@forestsupportservices.co.uk*](mailto:sforrest@forestsupportservices.co.uk) (THTTC2435 MILLBROOK PLACE, BATH) (TEMPORARY PROHIBITION OF USE BY VEHICLES) ORDER 2021 NOTICE IS GIVEN that Bath and North East Somerset Council in exercise of its powers under section 14 of the Road Traffic Regulation Act 1984 has made an order to the effect of which will be to temporarily introduce a road closure in that length of Millbrook Place, Bath. From its Junction of Claverton Street to just past property number 5 Millbrook Place.

This order is required because works are being or are proposed to be executed on or near the road to Excavate and clear blockages, Cable, span and splice by Complete Telecom Solutions on behalf of Truespeed Communications on the Monday 1st March for a maximum period of 2 days. The road will only be restricted as and when traffic signs are in position and may not be affected for the whole of the period but only for so long as is necessary. ALTERNATIVE ROUTE: Prior Park Road - Claveton Street/Widecombe Parade - vice versa.

Applicant details: B. Shorney Telephone: 07932 700410 Email: [*streetworks@complete-telecom.co.uk*](mailto:streetworks@complete-telecom.co.uk) Dated: 25th February 2021.

Chris Major, Assistant Director, Highways and Traffic. Traffic Management Team, Lewis House, Manvers Street, Bath BA1 1JG [*www.bathnes.gov.uk*](http://www.bathnes.gov.uk)

ALAN GARDINER (Deceased) Pursuant to the Trustee Act 1925 any persons having a claim against or an interest in the Estate of the above named, late of Cedar Park, 27-28 Oldfield Road, Bath BA2 3NG formerly of 3 Falconer Road, Bath BA1 4NH, who died on 20/08/2020, are required to send written particulars thereof to the undersigned on or before 26/04/2021, after which date the Estate will be distributed having regard only to the claims and interests of which they have had notice.

Stone King LLP 13 Queen Square, Bath BA1 2HJ.

HANNAH JOAN DALE-STAPLES (Deceased) Pursuant to the Trustee Act 1925 any persons having a claim against or an interest in the Estate of the above named, late of Thornton, 136 Midford Road, Bath, BA2 5SB formerly of 16 St Pauls Road, Clifton, Bristol, BS8 1LR, who died on 20/07/2020, are required to send written particulars thereof to the undersigned on or before 26/04/2021, after which date the Estate will be distributed having regard only to the claims and

interests of which they have had notice. Royds Withy King 5/6 Northumberland Buildings Queen Square Bath BA1 2JE.

GEOFFREY CHARLES FREDERICK RUDYARD HERBERT (Deceased) Pursuant to the Trustee Act 1925 any persons having a claim against or an interest in the Estate of the above named, late of 16 Seven Acres Lane, Northend, Batheaston, Bath, BA1 7 HH, who died on 26/11/2020, are required to send written particulars thereof to the undersigned on or before 26/04/2021, after which date the Estate will be distributed having regard only to the claims and interests of which they have had notice.

GOUGHS SOLICITORS, 23 Pickwick Road Corsham Wiltshire SN13 9BH.

**Load-Date:** February 25, 2021

**End of Document**



[***Northern Greece media highlights 15-21 May 21***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:62R6-JMW1-JC8S-C15D-00000-00&context=1516831)

BBC Monitoring Europe - Political

Supplied by BBC Worldwide Monitoring

May 21, 2021 Friday

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**Length:** 1515 words

**Body**

Weekly media highlights from northern Greece on 15-21 May

Society

The next "episode" of the case related to the ***removal*** of the Macedonian linguistic movement Krste Misirkov from the database of the Culture Ministry is currently unfolding. The legal representative of the association, reverent Nikodim Tsarknias sent an open letter to Prime Minister Kyriakos Mitsotakis and all elected MPs, protesting about this decision. "It is clearly an act that ***targets*** me as a minority rights activist as well as the Macedonian language and its speakers in Northern Greece. Worse, it is illegal and ignores the recent call of European Commission President Ursula Von der Leyen and Vice President Vera Jourova to respect the rights of people belonging to minorities and the cultural and linguistic diversity in Europe," highlights Tsarknias. He recalls that Greece has yet to ratify Council of Europe's Framework Convention for the Protection of National Minorities, recognises no minorities and accuses the country of implementing an apartheid policy in the field. "I am urging you to end these disgraceful practices and promote the cultural wealth different languages and cultures constitute for our country." The association seems however determined to continue with its work and has already announced its latest project, registering all Macedonian dialects in Northern Greece, promoting all related material (video, books, dances etc.) and creating an extensive research database. (Krste Misirkov official Facebook page, Aridea, Central Macedonia region, 0649 gmt, 17 May 21)

The Greece-Bulgaria border crossing at Nymfea (Makaza) remains closed despite the official opening of the tourist season in Greece, officially since it cannot accommodate a pandemic control facility that would enable a Health Ministry unit to perform random rapid Covid-19 tests. The issue created an uproar in Eastern Macedonia and Thraki, with people accusing the central government for deliberately diverting tourists to destinations in Central Macedonia (Halkidiki and Pieria). A specially modified container, put in place back in September 2020 to accommodate the health personnel, never worked and as a result, the president of the National Health Organization (EODY) Panayiotis Arkoumaneas visited Nymfea in an effort to find a solution. He was escorted by almost all MPs and mayors of the region, a clear signal of the importance this border crossing has for the local economy. "I think the border crossing infrastructure will be ready to welcome our people really soon and it can be opened for our visitors then," he stressed. Asked why this had not happened earlier since the container was already in place, Arkoumaneas blamed the pandemic. "We did not really know how, and which border crossings will open. As you know, not all ***land*** entry points will work this summer. Now we know, however, and we are confident that we can fully open Nymfea soon." (Hronos daily newspaper, Komotini, Thraki region, 0800 gmt, 19 May 21)

Kristallopigi (Smrdesh) is going to be one of the ***land*** border crossings that will conditionally open to facilitate professionals and visitors to travel from Western Macedonia to Albania and vice versa. The border will be primarily open for seasonal workers from the neighbouring country who work every summer in various locations throughout the region. It is foreseen that the crossing will be open not more than 10 hours daily (most likely 9am to 7pm) for no more than 400 workers daily. A permanent team from the Health Ministry (2 persons) and the Region (up to 3 persons) will also be there to perform random rapid tests. According to the regional authorities, the government seemed to have accepted the recommendation not to impose a 7-day quarantine and a PCR test not older than 72 hours or a completed vaccination certificate would be adequate. However, all those who will test positive at the border, will be obliged to return to Albania. (E-Ptolemeos news portal, Ptolemaida, Western Macedonia region, 1337 gmt, 19 May 21)

Environment

The Skydra (Vrtekop) municipality is plagued by the uncontrolled illegal landfills that threaten both the public health but also crops and underground waters. The inability of the local and regional authorities to find a solution led to a parliamentary question, tabled by the local MP and leader of ultra-conservative Elliniki Lysi party Kyriakos Velopoulos. "The municipality is plagued by the issue and its citizens call the area a huge garbage bin," said Velopoulos. He added that 22 different locations with small or bigger illegal landfills were still to be found. These include, among others, the banks of the Moglenitsa river, the upper city bridge, the public slaughterhouse but also the water springs at Sevastiana (Vigeni) and Loutrohori (Banja). Velopoulos demands answers from the Environment and Health ministers as the problem grows bigger by the day and with summer and its high temperatures approaching, it can become a major health hazard as well. "We are all top blame for this unacceptable situation. MPs, local authorities as well as the citizens who behave in a completely irresponsible manner," he concluded. (Pella News portal, Skydra/Giannitsa, Central Macedonia region, 1703 gmt, 17 May 21)

The swift and decisive mobilisation of citizens and environmental activists has temporarily stopped the plans of creating a windmill park and a new ***forest*** road leading to it in the peak above Nimfeo (Neveska) village in Western Macedonia. Three heavy lorries carrying digging machines and bulldozers and escorted by the police tried to start construction works but were stopped by an impressive amount of people who gathered on the mountain after urgent calls on social networks. Subsequently, the lorries had to pull back, giving a small but decisive victory to the defenders of the mountain, at least for now. The planned installation is very close to the village, one of the most beautiful settlements in Northern Greece that attracts thousands of visitors every year and practically lives from tourism. More significantly though, environmentalists fear that such a gigantic installation would cause irreparable damage to the unique ecosystem of the Vitsi (Vico) mountain, which is currently host to brown bears, wolves, wild boars and the very rare Balkan lynx. (Florina Civic Network - Free Mountains, Florina, Western Macedonia region, 1030 gmt, 19 May 21)

The Evros (Maritsa-Meric) river delta, a national park and one of the most significant wetlands in Greece and home to 324 wild bird species (out of the overall 456 recorded in Greece), is also amongst the most polluted ones in the country. A new research conducted within the framework of the EU's BIOLEARN product, has shown that both plastic and heavy metals pollution are in extremely high levels and directly threaten wildlife in this very fragile ecosystem. More specifically, 11% of the overall garbage volume found was plastic bags followed by plastic bottles (9,13%) and plastic ropes (8,15%). The river has suffered a lot from the recent humanitarian crisis and the increased number of refugees trying to cross it as remnants of plastic boats, life jackets, clothes and single use plastic containers were also found in abundance. Being a river shared between three countries, Evros is also prone to industrial and ***agricultural*** waste with lead and zinc concentrations exceeding the highest EU-allowed levels multiple times. The metals also end up in the food chain, with fish caught around the river delta found to contain these two metals in quantities that made them unfit for human consumption. According to the research, Greek farmers, Bulgarian battery and leather factories as well as Turkish urban wastewater are the main cause for this kind of pollution. (Gnomi daily newspaper, Alexandroupoli, Thraki region, 0000 gmt, 20 May 21)

Politics

The hopes most Thessalonians had until the last moment, that the government might reconsider the decision to ***remove*** the antiquities found during the excavations for the Venizelou metro station, were permanently dashed last week. But for everyone who had a bit deeper knowledge about the issue, it was clear that the prime minister could never revoke the initial decision. The political cost of admitting a mistake in a topic placed very high in the governmental agenda, would be too high. So, they decided to move forward with a move that was the worst possible. Firstly, it creates a strong impression internationally that the modern Greeks are currently destroying a cultural heritage dating 18 centuries back. Then, it makes the lives of Thessalonians more difficult since the ***removal*** of the artefacts delays the overall progress of the metro. If they would stay where they were found instead, the trains would have been working already. Now we need to wait at least until May 2023. And finally, it costs much more, an additional 30m euros of public money that will cover compensations, new studies and additional construction works. (Parallaxi online magazine, Thessaloniki, 20 May 21)

Source: BBC Monitoring 15-21 May 21

**Load-Date:** May 21, 2021

**End of Document**



[***The Carpathian Convention: a push to implementation***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:61CW-Y561-JDG9-Y529-00000-00&context=1516831)

Impact News Service

November 26, 2020 Thursday

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**Length:** 1381 words

**Body**

Nairobi, Kenya: United Nations Environment Programme has issued the following press release:

Thank you for inviting me to deliver opening remarks at the sixth Conference of the Parties as you set out to take some important decisions to maintain the glory of one of Europe’s largest, and most beautiful, mountain ranges. In particular, allow me to thank Hungary, represented here today by Deputy ***Agriculture*** Minister Sándor Farkas, for three years of leadership, and to wish Poland, and Deputy Minister, Mr. Adam Guibourge – Czetwertyński, all the best as they take over the Presidency.

Colleagues,

The Carpathians are a mountain range of global importance. They contain Europe’s largest remaining old-growth ***forest*** ecosystems outside of Russia. One-third of all European vascular plant species. Over 40 per cent of Europe’s brown bears and 30 per cent of its grey wolves.

The Carpathian Convention is vital to protect these precious ecosystems. It supports the implementation of global and European policies and is the only existing instrument to address crises in the subregion in a holistic manner. It is a key tool to support wider global processes – such as the post-2020 biodiversity framework, which we must agree upon in Kunming next year and all throw our weight behind.

UNEP is proud to host the Secretariat of the Convention and to have worked closely with Parties for almost two decades. I am particularly pleased to see a new decision on the agenda of this COP, which will strengthen cooperation with UNEP and the Convention’s engagement in the UN Environment Assembly.

This heightened cooperation will be essential as we seek to address growing threats to the Carpathians.

Make no mistake: the Carpathian region is in real and immediate danger.

A 2017 report from UNEP, WWF and Eurac Research was unequivocal about the threats, particularly from illegal deforestation. The old-growth ***forests*** of the Carpathians and their unique biodiversity are disappearing at alarming rates as timber is being illegally cut and transported across and beyond the borders of mountain range States. This has many consequences.

Ukraine has seen several devastating floods over the last years. Villages and roads submerged. Bridges brought down. People killed. These are, in part, linked to climate change. But illegal logging – taking place under the cover of the difficulties Ukraine has suffered – has removed large chunks of ***forests*** that soak up excess water and provide a buffer against flooding. Meanwhile, over the past 20 years, illegal logging has cost Romania over five billion euros. The report I mentioned, found that, in 2016 alone, around 187,000 cubic meters of timber were illegally cut in Romania.

Deforestation and climate change are not the only concern. The illegal fishing of sturgeon for the caviar trade, the poaching of large carnivores and the killing of wild birds are depriving governments of the money they need to promote jobs, education and health services – issues that are particularly critical in this time of COVID-19 slowdowns.

We need to step up to first stop, then reverse, the damage being done to these essential ecosystems. Please allow me to outline what we at UNEP see as five important actions that can strengthen the impact of the Convention’s work.

One, accelerate implementation of your plans on conservation and sustainable use.

Conservation, and the sustainable use natural resources, works. We have seen this in many places. It keeps ecosystems intact, mitigates climate change, and provides long-term livelihoods for local communities.

The Convention has placed a strong focus on conservation and the sustainable use or resources. At COP3, you adopted the Protocol on Sustainable ***Forest*** Management and, subsequently, a Strategic Action Plan for its implementation. You have passed other decisions on sustainable transport and ***agriculture*** to avoid damaging and fragmenting ecosystems.

This year, you will review and hopefully pass decisions on maintaining ecological connectivity, conserving large carnivores, protecting wetlands, developing an inventory of old growth ***forests***, and enhancing the management efficiency of protected areas by strengthening the Carpathian Network of Protected Areas.

With all of the right decisions in place, it is now critical to gather all your forces and resources to implement them at pace. We at UNEP are here to assist you in any way necessary.

Two, strengthen rule of law, enforcement and protection.

A large portion of the threat to the Carpathians comes from illegal, and sometimes organized ciminal activity. Criminal groups have no compunction in resorting to violence – intimidating and sometimes murdering the ***forest*** rangers and activists trying to stop them.

UNEP’s 2017 report identified inadequate implementation and enforcement of national legislation as the main factor for logging and wildlife crime in the Carpathian region, while decision COP5/8 called for “urgent and forceful” measures to address illegal logging. I echo this call, and urge Parties to protect those on the frontline, stop gangs from operating and hold big companies involved in purchasing illegal timber to account. It can be done. Romanian security forces in 2018 broke up an illegal logging ring. We need to see a lot more of such action.

Three, increase transboundary collaboration.

The ecosystems of the Carpathians are intertwined – as we see in the East Carpathians Biosphere Reserve, an area spanning Poland, Slovakia and Ukraine, that UNESCO defines as one of global importance. Species migrate across and between countries. River basins, such as the Danube, are shared between the countries of the region. Criminal groups transport their ill-gotten gains through routes that respect no national interest.

The existence of the Convention automatically ensures collaboration. But we can do a lot more. Joint training of authorities and institutions. Platforms for mutual assistance, both in terms of legislation, prosecution and enforcement. Integrated wildlife management strategies.

What happens in one country affects another. Increased transboundary cooperation is in everybody’s interest.

Four, proactively combat climate change.

Climate change is upon us. Ukraine is only but one country in the Carpathian region to feel the pain in terms of the floods I mentioned earlier. The impacts will only intensify, damaging not just ecosystems, but societies and economies. Member states must get ahead of the game before it gets worse, both in terms of cutting their own greenhouse gas ***emissions*** and finding ways to adapt to the changing climate – such as ensuring healthy and abundant ***forests*** that absorb carbon and protect against flooding and landslides.

Article 12 bis of the Convention requires states to pursue policies on climate change mitigation and adaptation in all sectors. I congratulate Hungary and Poland for ratifying this article. I call on all other states to follow suit so it can enter into force and then quickly began to act.

Five, take a lead in the UN Decade on Ecosystem Restoration.

This decade of action gets underway in 2021. If everybody gets behind the UN Decade, we can make a huge positive difference to climate change, biodiversity and food security. At the global level, the restoration of 350 million hectares of degraded terrestrial and aquatic ecosystems could generate USD 9 trillion in ecosystem services and ***remove*** up to 26 gigatonnes of greenhouse gases from the atmosphere. The UN Decade provides an opportunity for the Carpathian region to claw back some of what it has lost by restoring deforested and degraded areas. I urge states to make strong commitments in support of the Decade.

Ministers, Distinguished Delegates, Friends,

The Carpathians are facing many and varied threats. But acting fast and decisively to implement all of the Convention’s protocols, provisions and articles can reduce these threats. We must stop the illegal loggers. Sustainably manage existing resources. Make a concerted effort on climate change and bring degraded ***lands*** and ***forests*** back to life.

Doing so will improve the region’s natural capital, economic resilience and human well-being. It will contribute to the achievement of the Sustainable Development Goals, the Paris Agreement and the post-2020 biodiversity framework.

**Load-Date:** November 27, 2020

**End of Document**



[***Federal Energy Regulatory Commission Issues Environmental Assessment Report for National Fuel Gas Supply Corporation's Section 157.216- Abandonment of Facilities under CP20-457***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:60FX-2F11-F0YC-N4PW-00000-00&context=1516831)

Impact News Service

July 27, 2020 Monday

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**Length:** 2263 words

**Body**

Washington: Federal Energy Regulatory Commission Issues the followingEnvironmental Assessment (EA) and Environmental Impact Statement (EIS) toENERGY PROJECTS, OFFICE OF

Federal Energy Regulatory CommissionOffice of Energy Projects, Division of Gas-Environment & EngineeringENVIRONMENTAL ASSESSMENT REPORTName of Applicant: National Fuel Gas Supply CorporationApplication Received: 5/19/2020 Docket No: CP20-457-000Prior NoticeType: Section 157.216 – Abandonment of Facilities Cost: $100,000Facilities:National Fuel Gas Supply Corporation (National Fuel) proposes to plug and abandon two natural gasstorage wells (wells I-2062 and I-2054) and abandon in place two associated 4-inch-diameter well lines(Lines RW2062 and RW2054, which are approximately 2,000 feet in combined length) within theSheridan Storage Field in Chautauqua County, New York. National Fuel states that the Sheridan StorageWells I-2062 and I-2054 Plug and Abandonment Project is necessary due to corrosion within the wellsthat makes continued use or reworking of the wells cost prohibitive. According to National Fuel, therewould be no abandonment or decrease in service to customers as a result of the Project.National Fuel anticipates that Project abandonment activities would begin in summer 2020 and lastapproximately six weeks. Restoration would be completed by late summer or fall 2020.Environmental Impact -- Conclusions:Categorical ExclusionEnvironment Not InvolvedX Environment CompleteEnvironmental Considerations or Comments:Environmental comments are attached.Prepared by: Date:7/27/2020Approved by Branch Chief: Date:7/27/202020200727-3000 FERC PDF (Unofficial) 07/27/2020AttachmentNational Fuel Gas Supply Corporation (National Fuel)Sheridan Storage Wells I-2062 and I-2054 Plug and Abandonment Project (Project)Docket No. CP20-457-000ENVIRONMENTAL COMMENTSProposed ActionNational Fuel Gas Supply Corporation (National Fuel) proposes to plug andabandon two natural gas storage wells (wells I-2054 and I-2062) and abandon in placetwo associated 4-inch-diameter well lines (Lines RW2054 and RW2062, which areapproximately 2,000 feet total in combined length), within the Sheridan Storage Field inChautauqua County, New York. National Fuel states that this Sheridan Storage Wells I-2062 and I-2054 Plug and Abandonment Project is necessary due to corrosion within thewells that makes continued use or reworking of the wells cost prohibitive. According toNational Fuel, there would be no abandonment or decrease in service to customers as aresult of the Project.***Land*** RequirementsThe Project would require a total of approximately 0.43 acre of temporaryworkspace to accomplish the plugging of the wells and disconnection of well lines, aswell as 1.76 acres for the use of existing and temporary access roads.Abandonment ProceduresNational Fuel would perform all Project abandonment and restoration inaccordance with its Erosion and Sedimentation Control and ***Agricultural*** Mitigation Plan(ESCAMP), which incorporates the 2013 version of the Commission’s Upland ErosionControl, Revegetation and Maintenance Plan (FERC Plan)1, as well as recommendationsfrom the New York State Department of Environmental Conservation. National Fuelwould assign one Environmental Inspector to oversee and implement all requirements inaccordance with the FERC Plan during Project abandonment and restoration activities.A map illustrating the general location of the Project is provided in figure 1.1 The FERC Plan is a set of baseline construction and mitigation measures developed to minimize the potentialenvironmental impacts of construction on upland areas. It can be viewed on the FERC Internet website at[*https://www.ferc.gov/sites/default/files/2020-04/upland-erosion-control-revegetation-maintenance-plan.pdf*](https://www.ferc.gov/sites/default/files/2020-04/upland-erosion-control-revegetation-maintenance-plan.pdf) 20200727-3000 FERC PDF (Unofficial) 07/27/20202Figure 1: Project Overview Map20200727-3000 FERC PDF (Unofficial) 07/27/20203Environmental AnalysisOur review indicates that Project abandonment and restoration activities wouldneither affect nor have conflict with:• public ***lands*** administered by federal, state, county, or local agencies;• special use ***lands*** such as quarries, mines, or landfills;• federally designated ***lands*** such as federal or state parks, designated Wild andScenic Rivers, wildlife refuges, ***forests***, wildlife management areas, wildernessareas, registered natural landmarks, owned conservation ***lands***, designated scenicareas, nature preserves, or coastal zones;• socioeconomics, as the Project does not include any new major abovegroundfacilities, and no other socioeconomic issues are indicated;• sole-source aquifers, public water supply service areas or state-designated surfacewater protection areas (none crossed or affected);• public or private groundwater wells (none in the vicinity);• fisheries, wetlands, or floodplains (none are present within or adjacent to theProject workspaces);• mineral or paleontological resources (no active quarries or mines would be crossedby the Project and no oil or gas production is in the vicinity); or• geologic hazards (no known areas of landslides, earthquakes, or karst featureswould be crossed).SoilsThe majority of the Project activity would take place within the established(previously disturbed) well pad and would use existing access roads. All grounddisturbances would be temporary and would not permanently alter any of the soilcompositions in the area. In order to minimize impacts on soil resources, National Fuelwould implement its ESCAMP, which includes measures such as placing silt fencebetween areas of exposed soil and down-slope areas and minimizing compaction andrutting impacts.Project activity may result in the temporary loss of vegetation, requiring that thewell pads and temporary access roads be re-seeded to restore vegetation growth.Following completion of the Project, National Fuel would ***remove*** all construction debrisfrom the Project work areas and restore original contours and drainage patterns.Temporary erosion controls would remain in place until the disturbed areas have beenrestored and adequate vegetation cover is established.No known sources of contaminated soils were identified during a review offederal, state, and local environmental databases. National Fuel would implement its20200727-3000 FERC PDF (Unofficial) 07/27/20204Spill Prevention and Response Plan in the event of an inadvertent spill of vehicle fluid orother hazardous material used during construction. Given the impact minimization andmitigation measures described above, we conclude that Project activities would result intemporary and minor impacts on soils.Surface WaterOne waterbody was identified about 45 feet west of the existing gravel access roadto Well I-2602. No earth disturbance is proposed along any existing well access roadsand therefore, no impacts are anticipated on this waterbody. National Fuel would adhereto its ESCAMP to minimize erosion, run-off, and spills of hazardous materials.Therefore, we conclude that the Project would not impact surface water resources.Vegetation and WildlifeThe Project area is generally previously disturbed and surrounded by agriculturalvineyards (grapes). Grasses and other low growth herbaceous vegetation dominate bothwell sites. Project abandonment would involve approximately 0.4 acre or less of earthdisturbance for preparation of the well pads and adjacent temporary workspace areas,involving some grapevine ***removal***. Wildlife could potentially pass through or utilize theProject area; however, mobile wildlife are expected to avoid the Project area during therelatively short duration of abandonment activities (about 6 weeks). Further, followingabandonment activities, the well sites would be restored and revegetated to landownerspecifications. For these reasons, we conclude that impacts on vegetation and wildlifewould be temporary and minor.Threatened and Endangered SpeciesActing as our non-federal representative, National Fuel reviewed the U.S Fish andWildlife Service’s (FWS) Information for Planning and Consultation database. The onlyfederally listed species that may occur within the Project area is the federally threatenednorthern long-eared bat. We have determined that no impacts on this species areexpected given that the Project is within a previously disturbed well site surrounded byagricultural vineyards, no tree clearing is required, no hibernacula are within 0.25 mile,and no known roost trees are within 150 feet of the Project.National Fuel received a Verification Letter from the FWS on January 23, 2020,stating that the Project is consistent with activities analyzed in the FWS’ January 5, 2016Programmatic Biological Opinion for the Northern Long-eared bat and any take that mayoccur as a result of the Project is not prohibited under the Endangered Species Actsection 4(d) rule. According to the 4(d) rule protocols, consultation is complete.20200727-3000 FERC PDF (Unofficial) 07/27/20205National Fuel’s review of the Project using the New York Department ofEnvironmental Conservation’s “Nature Explorer” on June 15, 2020, indicated that theProject does not fall within an area with known records of rare plants or animals,therefore no impacts on state-listed species are anticipated.***Land*** UseThe Project would affect a total of 2.19 acres, of which 0.43 acre is the existingwell pad sites and 1.76 acres is for access to Project sites. The well pad sites are withinactive ***agricultural*** ***land*** (vineyards) and would be used for the temporary workspace.Upon completion of the Project, the existing well pad sites and tap location would begraded to conform to the surrounding areas, scarified with discs or other suitableequipment, treated with lime and fertilizer, seeded with appropriate seed mixtures, andreturned to the landowner for their use. The existing access roads would remain in place.The temporary access for the disconnection of well RW2054 (0.07 acre) and the 0.43 acreof temporary workspaces on ***agricultural*** ***land*** would also be restored in accordance withNational Fuel’s ESCAMP. National Fuel is consulting with the landowner related totemporary impacts on grapevine production in the temporary workspace area. Oncerestoration of the area is completed, ***land*** use at the well pad and tap location wouldchange from industrial use to ***agricultural*** use. These changes in ***land*** use from theProject would be minor, but beneficial to the landowner.No residences are within 50 feet of any workspace, thus no residential ***land*** wouldbe affected by the Project. ***Removal*** of the aboveground appurtenances would result in apositive impact on visual resources.Cultural ResourcesNational Fuel notified the New York State Historic Preservation Office (SHPO)that the Project would involve ground disturbances limited to previously disturbed andmaintained areas surrounding the wells. On January 30, 2020, the SHPO agreed withNational Fuel that no historic properties would be affected by the Project, but that due tothe proximity of a previously identified Native American burial ground that theUnanticipated Discoveries Plan be followed in case of an inadvertent discovery of bones.We agree with the SHPO and have determined that the Project would have no effect onhistoric properties, and we find that National Fuel’s Unanticipated Discoveries Planfulfills the SHPO’s requirements.Air QualityDuring abandonment and restoration, a temporary reduction in ambient air qualitymay result from criteria pollutant, volatile organic compound, and hazardous air pollutantcombustion ***emissions***, as well as fugitive dust generated by operation of and vehicles20200727-3000 FERC PDF (Unofficial) 07/27/20206within Project workspaces and on access roads. Due to both the limited area and natureof abandonment and restoration activities and minimal (if any) sub-surface earthdisturbingactivities associated with the Project, we conclude that fugitive dust-relatedand other air quality impacts from Project abandonment would be minimal.Chautauqua County is classified as being in marginal nonattainment for 8-hourozone (2008 standard) and attainment or unclassifiable for all remaining criteriapollutants. The General Conformity Rule codified in Title 40 of the Code of FederalRegulations Part 51 Subpart W, and Part 93 Subpart B does not apply as ***emissions*** fromProject abandonment activities, including ozone precursors nitrogen oxides and volatileorganic compounds, would fall well under any applicable General Conformity threshold.We conclude that the Project’s activities during its expected 6-week duration (3weeks at each well site) would minimally impact local and regional air quality.NoiseAdjacent noise-sensitive areas, primarily those within a radius of 0.25 mile fromProject abandonment activities, would be subject to temporary and intermittent noiseduring daytime hours Monday through Friday during the Project’s expected 6-weekduration (3 weeks at each well site). Due to the limited nature of Project activities, weconclude that noise impacts from Project abandonment and restoration activities on anynearby noise-sensitive areas would be minimal.Staff’s ConclusionBased on the above environmental analysis, we have determined that NationalFuel would conduct the Project activities in compliance with the requirements undersections 157.206(b) and 157.216 of the Commission’s regulations. We conclude thatNational Fuel’s proposed action would result in minimal environmental impact.20200727-3000 FERC PDF (Unofficial) 07/27/2020Document Content(s)cp20-457 PN env comments\_signed.PDF ..................................1-720200727-3000 FERC PDF (Unofficial) 07/27/2020

**Load-Date:** July 28, 2020

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[***Macron's big idea: ask the voters to set France's climate targets***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:62GV-0T01-JBNF-W0KS-00000-00&context=1516831)

thetimes.co.uk

April 21, 2021 Wednesday 5:00 PM GMT

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**Length:** 1076 words

**Byline:** Adam Sage, Paris

**Body**

Global warming is already forcing change upon French vineyard owners. They have seen harvest time brought forward by three weeks over the past 30 years and the alcohol content of their wines steadily increase in recent decades.

In Bordeaux there is concern that many traditional grapes will not be able to withstand the rising temperatures, prompting researchers to begin an experiment to discover whether the touriga nacional, a Portuguese variety accustomed to hot weather, could be planted in southwest France.

Bordeaux's loss could be Brittany's gain.

With scientists predicting that the traditionally wet and windy northwestern region could soon have a suitably sunny climate for grapes, there are plans to create at least 90 Breton vineyards - the first time it would have meaningful wine production since the 19th century.

Elsewhere in France, officials are preparing for the

[*long-term consequences*](https://www.thetimes.co.uk/article/champagne-will-fizzle-out-with-2c-rise-sc6hlhlj)

of climate change. A report by the European Environment Agency said, for example, that the Channel coast town of Dieppe was likely to be flooded between two and five times a year by the end of the century, while southern France could expect a 20 to 30 per cent rise in ***forest*** fires.

With concern mounting, President Macron has sought to cast himself as the West's green champion and the

[*upholder of the Paris agreement*](https://www.thetimes.co.uk/article/france-failing-to-meet-paris-climate-pledge-bz5fdchkx)

, the 2016 treaty that is the cornerstone of the fight against climate change . "Make our planet great again," he tweeted in the summer of 2017 in a shot at Donald Trump after he threatened to pull the US out of the climate pact.

The ambition was lofty, but implementation is proving difficult. In order for France to meet its ***target*** of reducing greenhouse gas ***emissions*** by 40 per cent by 2030, compared with 1990, it needs to cut them by an average of 1.5 per cent a year between 2018 and 2023, and by an average of 3.2 per cent between 2024 and 2028. Yet in 2019, the last year for which full figures are available, they fell by just 0.9 per cent.

"To reach at least 40 per cent, we need to start a structural transformation of energy, transport and ***agriculture***," said Dr Sébastien Treyer, executive director of the Institute for Sustainable Development and International Relations in Paris. "But at the moment we are doing incremental steps and not structural change."

Treyer said that France was in a position that was both enviable and more politically risky than most other developed nations. With nuclear power producing three quarters of French electricity, the country's greenhouse gas ***emissions*** are relatively low: 1.2 per cent of the global total, although its economy represents 4.2 per cent of the world's wealth.

The downside is that whereas other nations can reduce ***emissions*** by weaning themselves off fossil fuels, France can only do so by "working to change people's lifestyles", Treyer said. "We have to address issues directly when they are a second step for other countries and that is why we are pioneers on transport, housing and ***agriculture***."

It is not easy being on the front line, as Macron discovered in 2018 when he sought to raise fuel taxes in an attempt to reduce the 136 million tonnes of CO

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[*riots in central Paris*](https://www.thetimes.co.uk/article/now-paris-feels-heat-of-angry-flames-w2nf0hjhp)

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The bill containing the convention's proposals went before the National Assembly in March, but it was a watered-down version of the report, drawing accusations that Macron had reneged upon his promise to implement it in full. "The government, which is a liberal government, chose to ***remove*** a lot of the constraints and to opt for voluntary schemes," Treyer said.

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The legislation will determine whether France meets its greenhouse gas ***emissions*** ***target***, Treyer said.

He is sceptical about whether it goes far enough, and his doubts are shared by the High Council for the Climate, a body set up by Macron to oversee French attempts to tackle global warming. In a report in February, the council said that France was likely to miss its greenhouse gas ***target*** and added that Macron's flagship bill would not "enable [the country] to make up for lost time".

Treyer said failure would have wide-reaching implications even though France only accounts for a small proportion of global greenhouse gas ***emissions***.

"France may only be a drop in the ocean but each drop counts," he said. "And if France misses its objective, Europe will miss too, and that would be a big problem."

He said Macron's political reputation was also on the line. "Given that the president has put the environment at the heart of his idea of renovated globalisation . . . there is an enormous amount of French credibility at stake."

**Load-Date:** April 21, 2021

**End of Document**



[***Macron's big idea: ask the voters to set France's climate targets***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:62H0-MM91-DY4H-K33G-00000-00&context=1516831)

thetimes.co.uk

April 21, 2021 Wednesday 5:00 PM GMT

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**Length:** 1076 words

**Byline:** Adam Sage, Paris

**Body**

Global warming is already forcing change upon French vineyard owners. They have seen harvest time brought forward by three weeks over the past 30 years and the alcohol content of their wines steadily increase in recent decades.

In Bordeaux there is concern that many traditional grapes will not be able to withstand the rising temperatures, prompting researchers to begin an experiment to discover whether the touriga nacional, a Portuguese variety accustomed to hot weather, could be planted in southwest France.

Bordeaux's loss could be Brittany's gain.

With scientists predicting that the traditionally wet and windy northwestern region could soon have a suitably sunny climate for grapes, there are plans to create at least 90 Breton vineyards - the first time it would have meaningful wine production since the 19th century.

Elsewhere in France, officials are preparing for the

[*long-term consequences*](https://www.thetimes.co.uk/article/champagne-will-fizzle-out-with-2c-rise-sc6hlhlj)

of climate change. A report by the European Environment Agency said, for example, that the Channel coast town of Dieppe was likely to be flooded between two and five times a year by the end of the century, while southern France could expect a 20 to 30 per cent rise in ***forest*** fires.

With concern mounting, President Macron has sought to cast himself as the West's green champion and the

[*upholder of the Paris agreement*](https://www.thetimes.co.uk/article/france-failing-to-meet-paris-climate-pledge-bz5fdchkx)

, the 2016 treaty that is the cornerstone of the fight against climate change . "Make our planet great again," he tweeted in the summer of 2017 in a shot at Donald Trump after he threatened to pull the US out of the climate pact.

The ambition was lofty, but implementation is proving difficult. In order for France to meet its ***target*** of reducing greenhouse gas ***emissions*** by 40 per cent by 2030, compared with 1990, it needs to cut them by an average of 1.5 per cent a year between 2018 and 2023, and by an average of 3.2 per cent between 2024 and 2028. Yet in 2019, the last year for which full figures are available, they fell by just 0.9 per cent.

"To reach at least 40 per cent, we need to start a structural transformation of energy, transport and ***agriculture***," said Dr Sébastien Treyer, executive director of the Institute for Sustainable Development and International Relations in Paris. "But at the moment we are doing incremental steps and not structural change."

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**Load-Date:** April 22, 2021

**End of Document**



[***Why the future for farming is looking up; 'Vertical' growing will lead hi-tech revolution to free up land for tree planting and rewilding***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:61DP-8WR1-DYTY-C3BC-00000-00&context=1516831)

The Daily Telegraph (London)

December 1, 2020 Tuesday

Edition 1, National Edition

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**Section:** NEWS; Pg. 3

**Length:** 590 words

**Byline:** Emma Gatten

**Body**

THINK of English farming and you may imagine rolling hills and fields stretching as far as the eye can see.

But farms of the future could be much smaller, freeing up ***land*** to plant new ***forests*** and rewild, according to a vision of the post-Brexit shake-up outlined by the Environment Secretary.

George Eustice said the future of ***agriculture*** would see the intensification of farming, using environmentally friendly technologies.

Among them would be "vertical farming", where fruit and vegetables are grown indoors, stacked in layers, in controlled environments without soil and pesticides, using a fraction of the space and water. "That enables you to actually release the ***land*** to do some of that woodland creation and replanting, which is going to be important if we're to hit our carbon ***targets***," he told the Oxford Farming Conference.

The Government will phase out £1.8billion of annual direct subsidies paid to farmers in England over the next seven years, in the biggest overhaul of farming in more than 50 years. Some farms rely almost entirely on subsidies to make any profit.

The subsidies will be replaced by a system that pays for "public goods", including animal welfare, biodiversity and clean air. The aim is to reverse environmental damage associated with intensive ***agriculture*** that has led to the decline of farmland birds by 90 per cent since 1970 while also making the sector more self-reliant. The Government wants the countryside to help achieve the goal of being carbon neutral by 2050 and help protect nature.

The most "unproductive" areas of farmland will be used to plant 30,000 hectares of trees annually by 2025, and to rewild the equivalent of 30,000 football pitches of countryside (about 83 square miles).

Meanwhile, farmers will be given grants for new technologies to boost productivity while also improving soil health and water quality, and reducing pesticide use.

Vertical farms, which can be housed in shipping containers or abandoned buildings, are beginning to take off in the UK, but need high initial investment.

Mr Eustice also said "a new generation of glass-house production", popular in the Netherlands, could save costs by creating precise growing conditions.

Existing tractor GPS technologies, combined with satellite mapping and soil analysis, would let farmers make ***targeted*** interventions on the ***land***.

Farmers might one day replace pesticide use with robots that identify which weeds can be removed and which can be left to contribute to biodiversity. And he said farmers who wish to leave agricul- ture would be offered an exit scheme with a lump sum, clearing the way for those who may bring a fresh perspective.

Martin Lines, who chairs the Nature Friendly Farming Network, said the vision was the right one to restore balance to the countryside. But he warned against unintended consequences. "We don't want to see super-intensive farming in one part of the countryside and wildlife in another," he said.

The new subsidy regime will not be fully implemented until 2024, after a period of trials, but existing subsidies will be cut from next year.

While welcoming the vision, farming and environmental groups said that without more detail, many farmers could struggle to make the transition.

There were also fears that ***removing*** direct subsidies and enforcing higher standards would render British farmers uncompetitive amid uncertainty over post-Brexit trade deals. Mark Bridge man, of the Country ***Land*** and Business Association, said: "This lack of detail risks casting a shadow over Govern ment's laudable aims."

**Load-Date:** December 1, 2020

**End of Document**



[***Plant-based diets crucial to saving global wildlife, says report***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:61XC-X6G1-JBNF-W0VK-00000-00&context=1516831)

The Guardian (London)

February 3, 2021 Wednesday 2:30 PM GMT

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**Section:** ENVIRONMENT; Version:1

**Length:** 827 words

**Byline:** Damian Carrington Environment editor

**Highlight:** Vicious circle of cheap but damaging food is biggest destroyer of nature, says UN-backed report

**Body**

The global food system is the biggest driver of destruction of the natural world, and a shift to predominantly plant-based diets is crucial in halting the damage, according to a report.

***Agriculture*** is the main threat to 86% of the 28,000 species known to be at risk of extinction, the [*report by the Chatham House*](https://www.chathamhouse.org/2021/02/food-system-impacts-biodiversity-loss) thinktank said. Without change, the loss of biodiversity will continue to accelerate and threaten the world's ability to sustain humanity, it said.

The root cause is a vicious circle of cheap food, the report said, where low costs drive bigger demand for food and more waste, with more competition then driving costs even lower through more clearing of natural ***land*** and use of polluting fertilisers and pesticides.

The report, supported by the UN environment programme (Unep), focused on three solutions. First is a shift to plant-based diets because cattle, sheep and other [*livestock have the biggest impact on the environment*](https://www.theguardian.com/environment/2018/may/31/avoiding-meat-and-dairy-is-single-biggest-way-to-reduce-your-impact-on-earth).

More than [*80% of global farmland is used to raise animals*](https://www.theguardian.com/environment/2018/may/31/avoiding-meat-and-dairy-is-single-biggest-way-to-reduce-your-impact-on-earth) , which provide only 18% of calories eaten. Reversing the rising trend of meat consumption ***removes*** the pressure to clear new ***land*** and further damage wildlife. It also frees up existing ***land*** for the second solution, restoring native ecosystems to increase biodiversity.

The availability of ***land*** also underpins the third solution, the report said, which is farming in a less intensive and damaging way but accepting lower yields. Organic yields are on average about 75% of those of conventional intensive farming, it said.

Fixing the global food system would also [*tackle the climate crisis*](https://www.theguardian.com/environment/2018/oct/10/huge-reduction-in-meat-eating-essential-to-avoid-climate-breakdown) , the report said. The food system causes about 30% of all greenhouse gas ***emissions***, with more than half coming from animals. Changes to food production could also [*tackle the ill health*](https://www.theguardian.com/environment/2018/nov/06/taxing-red-meat-would-save-many-lives-research-shows) suffered by 3 billion people, who either have too little to eat or are overweight or obese, and which costs trillions of dollars a year in healthcare.

"Politicians are still saying 'my job is to make food cheaper for you', no matter how toxic it is from a planetary or human health perspective," said Prof Tim Benton, at Chatham House. "We must stop arguing that we have to subsidise the food system in the name of the poor and instead deal with the poor by bringing them out of poverty."

Benton said the impact of the food system on climate and health was becoming widely accepted but that biodiversity was too often seen as a "nice to have".

Susan Gardner, director of Unep's ecosystems division, said the current food system was a "double-edged sword" providing cheap food but failing to take into account the hidden costs to our health and to the natural world. "Reforming the way we produce and consume food is an urgent priority," she said.

Jane Goodall, the renowned conservationist, said the intensive farming of billions of animals seriously damaged the environment and inhumane crowded conditions risked new pandemic diseases crossing into people: "It should be phased out as soon as possible."

On Tuesday, a landmark review by Prof Sir Partha Dasgupta concluded the world was being put at extreme risk by the [*failure of economics to take account of the rapid depletion of biodiversity*](https://www.theguardian.com/environment/2021/feb/02/economics-failure-over-destruction-of-nature-presents-extreme-risks).

The Chatham House report said the world had lost half its natural ecosystems and that the average population size of [*wild animals had fallen by 68%*](https://www.theguardian.com/environment/2020/sep/10/humans-exploiting-and-destroying-nature-on-unprecedented-scale-report-aoe) since 1970. In contrast, farmed animals, mainly cows and pigs, now [*account for 60% of all mammals*](https://www.theguardian.com/environment/2018/may/21/human-race-just-001-of-all-life-but-has-destroyed-over-80-of-wild-mammals-study) by weight, with humans making up 36% and animals just 4%.

In reforming the global food system, "the convergence of global food consumption around predominantly plant-based diets is the most crucial element", the report said. For example, it said, a switch from beef to beans by the US population would free up fields equivalent to 42% of US cropland for other uses such as rewilding or more nature-friendly farming.

In another example, the report said if the permanent pasture around the world that was once ***forest*** was returned to its native state, it would [*store 72bn tonnes of carbon*](https://www.nature.com/articles/s41893-020-00603-4) - roughly equivalent to seven years of global ***emissions*** from fossil fuels. Benton said the report was not advocating that all people should become vegan, but should follow [*healthy diets*](https://www.theguardian.com/environment/2019/jan/16/new-plant-focused-diet-would-transform-planets-future-say-scientists) that are as a result [*much lower in meat*](https://www.theguardian.com/environment/2019/oct/28/healthy-diet-means-a-healthy-planet-study-shows).

The year ahead offers a potentially unique opportunity to redesign the global food system, the Benton said, with major UN summits on [*biodiversity*](https://www.cbd.int/meetings/COP-15) and [*climate*](https://ukcop26.org/) , as well as the world's first [*UN Food Systems Summit*](https://www.un.org/en/food-systems-summit) and an international [*Nutrition for Growth summit*](https://nutritionforgrowth.org/). The large sums being spent by governments as nations recover from the Covid-19 pandemic also provide opportunities for "policymaking that affords equal priority to public and planetary health", the report said.

Philip Lymbery, at Compassion in World Farming, said: "The future of farming must be nature-friendly and regenerative, and our diets must become more plant-based, healthy and sustainable. Without ending factory farming, we are in danger of having no future at all."

**Load-Date:** February 3, 2021

**End of Document**



[***Fostering a climate-smart intensification for oil palm***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:671W-P2M1-JCWX-C2F7-00000-00&context=1516831)

Nature Sustainability

March 2021

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**Section:** Pg. 595-601; Vol. 4; No. 7; ISSN: 2398-9629

**Length:** 6382 words

**Byline:** [*pgrassini2@unl.edu*](mailto:pgrassini2@unl.edu)

**Body**

Main

Indonesia hosts large tracts of pristine rainforests and tropical peatlands. Of great concern is the conversion of these ecosystems for oil palm cultivation, which has contributed significantly to climate change and biodiversity loss–. Indeed, the sixfold palm oil production increase from 2000 to 2018 has been driven by a sharp expansion in plantation area (+10.2 Mha), with one-third of the converted ***land*** located in ***forests*** and peatlands. By contrast, the average actual yield has remained unchanged during the same period,,. While previous studies have highlighted the environmental impact associated with oil palm expansion–, there is a dearth of knowledge on how intensification, that is increasing average actual yield on existing planted area–, can help eliminate the expansion pattern of the past two decades of oil palm cultivation.

Oil palm is a perennial crop grown in tropical environments and it is the world’s largest source of vegetable oil. The oil extracted from the palm’s fresh fruit bunches (FFB), typically referred to as crude palm oil (CPO), is used for cooking, and in processed food, cosmetics, cleaning products and biodiesel. Indonesia is the main palm oil producing country in the world (around 60% of global production) and the crop is a key driver of its economy,. Oil palm has contributed to rural development, with 42% of the oil palm area managed by smallholders and the remaining area managed by large plantations. The oil palm sector, including government, research institutes, private companies and farmer associations, has projected that demand for Indonesian palm oil will reach 60 Mt of CPO by year 2035. Meeting that future demand would require a 46% increase in CPO production relative to the current level (41 Mt of CPO by 2018), which is consistent with the predicted CPO demand increase reported by other studies,. Indonesia has a critical decision to make about the most effective approach to follow in order to meet that production goal without further encroachment on fragile ecosystems.

Assessment of extra production potential for oil palm requires robust estimates of yield potential, that is, the maximum biological yield as determined by local weather, soil properties, and current planting material (Extended Data Fig. ). Here we followed a data-rich spatial approach, consisting of crop modelling coupled with the best available sources of weather, soil, and production data, to determine the available room for increasing oil palm production on existing cultivated area located in mineral soils in Indonesia (Extended Data Figs. ). We estimated potential environmental benefits, in terms of ***land*** savings and climate change mitigation (Extended Data Fig. ), and discussed the required interventions and policies to promote intensification.

Available room for intensification on existing oil palm area

Reaching yield potential requires copious amounts of inputs and labour, together with a high degree of sophistication in crop management, in order to completely eliminate harvest losses, nutrient deficiencies and yield reduction due to pests and diseases. Hence, reaching 70% of the yield potential is considered a reasonable yield goal for mature oil palm plantations where owners seek to maximize profit and return on input investments; this yield level is typically referred to as ‘attainable yield’ (Extended Data Fig. ). Here we expressed attainable yields on an annual basis, based on long-term weather data and dominant soil types, and relative to the average plantation age for each farm type (Extended Data Fig. ). We estimated an attainable FFB yield of 30.6 t ha−1 for Indonesia (Fig. , Supplementary Table ). Data from high-yielding blocks provided to us by a number of large plantations corroborated our estimate of attainable yield derived from simulations (Extended Data Fig. ). The attainable yield was slightly lower for smallholders compared with large plantations (29.1 versus 31.6 t ha−1) primarily because smallholders replant later than large plantations due to financial constraints (Extended Data Fig. ),.

Yield gaps for oil palm in Indonesia.

a,b, Pie charts showing average farmer yield (yellow) and exploitable yield gap (red) expressed as a percentage of the attainable yield for large plantations (a) and smallholders (b) across 22 sites, representative of the oil palm producing area. Insets show national averages. Yatt, attainable yield; Ya, average actual farmer yield; and Yg, exploitable yield gap, expressed in tonnes of fresh fruit bunches per hectare per year. Means and temporal variability for each site are shown in Supplementary Table .

The exploitable yield gap was estimated as the difference between the attainable yield and average actual yield (Extended Data Figs. and ). The exploitable yield gap represents the available room for increasing productivity for an existing plantation via cost-effective agronomic management. We found a large exploitable yield gap for oil palm production in Indonesia, in both smallholder and large plantations (Fig. ). At the national level, the exploitable yield gap represented 38% and 47% of the attainable yield in large and smallholder plantations, respectively (Fig. , Supplementary Table ). The exploitable yield gap was larger in relatively new areas under cultivation, as it is in the case of Kalimantan, compared with traditional oil palm producing areas in Sumatra (Fig. ). The large yield gap in these regions may be explained by the difficulties of adapting management practices and farm operations to these relatively new oil palm production areas and, in the case of smallholders, difficulties in acquiring healthy and certified seedlings, fertilizers and agrochemicals.

Intensification and ***land*** use change scenarios and related global warming potential (GWP)

We then evaluated three scenarios that explored different levels of intensification and plantation area expansion as potential pathways to meet Indonesian CPO demand of 60 Mt by 2035 (Methods). In the ‘business-as-usual’ scenario (BAU) the projection of historical trends (2000–2018 period) in average actual yield and plantation area over the following 17 years results in 9.2 million hectares of new ***land*** brought into oil palm production without changes in average actual yield (Figs. and ). In the BAU scenario, 29% of ***land*** conversion occurs in peatlands and primary and secondary ***forests***, with a tremendous loss in the biodiversity associated with these areas with high-conservation value (Fig. and Extended Data Fig. ). Despite carbon (C) gain due to oil palm expansion in ***land*** with low-C stocks, such as scrubland and grassland, the ***emissions*** from peat decomposition together with those derived from cultivation result into a net 767 MtCO2e released to the atmosphere (Fig. and Extended Data Fig. ).

Projected trends in mature oil palm area, average actual yield, and production in Indonesia.

a–c, Projected trends in mature oil palm area (a), yield (b) and production (c) during the study period (2018–2035) for three scenarios: (i) business as usual (BAU), with historical trends in area and yield remaining unchanged in the future; (ii) intensification (INT), with complete closure of the exploitable yield gap in current plantation area in mineral soils and without physical expansion of oil palm area; and (iii) intensification plus ***target*** expansion (INT-TE), with partial closure of exploitable yield gap and oil palm area expansion into low-C ***land***. Historical trends (2000–2018) are shown with triangles. Projected demand by 2035 (equivalent to 60 MtCPO) is shown as a yellow circle in c. Sources of uncertainty are discussed in Supplementary Section .

Cumulative ***land*** conversion and GWP associated with different scenarios of intensification and ***land*** use change.

a,b, Accumulated ***land*** conversion in high- and low-carbon stock areas (a) and associated GWP during the study period (2018–2035) for the three scenarios (b). The GWP is disaggregated by source: changes in carbon stock from aboveground biomass when ***land*** is converted to oil palm, peat decomposition and oil palm cultivation. Negative values indicate carbon gain, while positive values indicate net greenhouse gas ***emissions*** released to the atmosphere. ***Emissions*** derived from peatland converted into oil palm production prior to the baseline year were not included. Other sources of uncertainty are discussed in Supplementary Section and Extended Data Fig. .

Our yield-gap analysis shows ample room to increase average actual yield on existing plantation area located in mineral soils (Fig. ). Hence, we explored an ‘intensification’ scenario (INT), which assumes a large investment in ***agricultural*** research and development (AR&D) so that the exploitable yield gap for oil palm plantations located in mineral soils is closed (Fig. ). Closure of the exploitable yield gap increases FFB production by 68% relative to current levels, allowing Indonesia to meet the CPO demand by year 2035, without any further increase in plantation area (Figs. and ). The accumulated GWP during the 2018–2035 period is 60% lower than the BAU scenario, mostly because there is no expansion in peatlands (Fig. , Supplementary Tables and ). However, the INT scenario assumes that an increase in average actual yield from 18 to 30.6 t ha−1 for the entire oil palm area located in mineral soils in Indonesia is feasible in only 17 years. That magnitude of yield increase would require an annual yield gain of 0.7 t ha−1, equivalent to a 3% annual compound rate (p.a.). While achieving that rate of yield gain may be possible for individual plantations, it would be difficult to scale that out to the entire country considering the timeline needed for diagnosing the causes of yield gaps, identification of technologies to overcome them, and farmer’s adoption rates,. We note that global rates of annual yield gain for major food crops are well below 3% p.a. (refs. ,).

The last scenario (INT-TE) explores a combination of moderate yield gap closure in mineral soil and a limited and ***targeted*** area expansion into low-C ***land***, without encroaching on peatlands, ***forests*** or areas cultivated with food crops (Figs. and ). The INT-TE scenario assumes a more realistic annual yield gain of 0.27 t ha−1 (or 1.25% p.a.), which is similar to average actual yield gains reported for major food crops, and for oil palm in other producing countries such as Colombia,. In the INT-TE scenario, average actual yield increases from 18 currently to 22.5 t ha−1 by 2035, equivalent to a closure of the exploitable yield gap by one-third (Fig. ). In comparison with the BAU scenario, the INT-TE pathway allows Indonesia to meet palm oil demand by 2035, avoiding conversion of 2.6 million hectares with high-C stocks and conservation value, and reducing GWP by 732 MtCO2e (Fig. and Extended Data Fig. ). The ***target*** expansion alone would not be sufficient by itself to meet future CPO demand unless it is complemented with a moderate yield gap closure and vice versa.

Discussion

Our study provides estimates of yield gaps for the most important areas cultivated with oil palm across the Indonesian archipelago using a process-based model that accounts for the effect of water limitation on yield and based on long-term measured weather data in combination with detailed information on management, soil type and plantation age. None of the previous studies looking into the magnitude and/or causes for yield gaps in oil palm,,– have aimed to generate spatially explicit estimates of yield gaps and to upscale them to national level to estimate extra production potential for the whole country. Instead, those previous studies have focused on single or few locations, sometimes relying on models that do not capture well the effect of water limitation on yield, and, in most cases, using coarse gridded weather and soil databases which, as documented in previous studies, can introduce substantial biases into the estimation of yield potential. There is also a relatively large number of studies quantifying the environmental impact associated with oil palm expansion into fragile ecosystems,– but, again, none of those studies have aimed to determine the potential role of crop intensification in helping reconcile production and economic goals. Hence, our study makes an important contribution by using best available crop models and data sources, and a robust spatial framework to show that substantial room exists to increase palm oil production via crop intensification on existing plantation area in Indonesia, which, in turn, could potentially lead to ***land*** savings and a reduction in GWP compared to following historical trends in yield and ***land***-use change.

From a global perspective, the case of oil palm in Indonesia serves to illustrate the intense pressure that exists to convert fragile natural ecosystems to ***agricultural*** production in many regions of the world, including hotspots for biodiversity such as the Amazon and Congo basins,. Our assessment for Indonesia revealed that different scenarios of ***land*** use change and crop intensification would allow the country to meet, and even exceed, the expected CPO demand by 2035 (Fig. ). However, the ‘how’ matters, especially in relation to the environmental outcomes and implications to prioritize AR&D investments and inform policy. Indonesia hosts the globe’s largest portion of tropical peatlands as well as vast tracts of pristine rainforest, which, if converted into ***agriculture***, would exacerbate climate change and cause a tremendous loss in biodiversity,,,. Despite the inherent uncertainties of the analysis (Supplementary Section ), our assessment indicates that it will be difficult to avoid these negative environmental outcomes without an explicit aim to intensify oil palm productivity on the existing plantation area. The potential climate change mitigation achievable via oil palm intensification, as estimated in our analysis (Fig. ), is relevant, considering that ***agriculture*** and ***land*** use change accounts for half of the country’s GHG ***emissions***,. Furthermore, the Indonesian government has committed via the Paris Climate Agreement to reduce by around one-third of the projected GHG ***emissions*** by year 2030. Although our analysis focused on Indonesia, which has accounted for 75% of the global oil palm area expansion during the past 10 years, our study also gives an important lesson about the role of intensification at bridging the gap between environmental and production goals to other tropical regions of the world, such as those in South America and sub-Saharan Africa, where pressure exists to produce more palm oil and other ***agricultural*** products,,,.

Starting with the ‘Green Revolution’ in the mid-1960s, Indonesia was successful at increasing rice production without massive ***land*** conversion. At that time, convincing smallholders in Asia to use newly developed rice varieties and associated fertilizer and pesticides inputs was easy because the results, in terms of yield increase, were large, fast and consistent across environments. As a result, annual rice production more than tripled between 1965 and 1990, with 70% of the production increase attributable to yield gain. Identifying the means and methods to tailor a ‘Green Revolution’ for oil palm, with an explicit goal to close the exploitable yield gap in a sustainable way is a vital issue. From an agronomic perspective, there is a large body of research reporting on practices proven effective at increasing oil palm yield and profit, in both smallholder and large plantations, including proper harvest methods, nutrient management, pruning, field upkeep, and pest and disease control,. Among these practices, improving plant nutrition should be considered as a key element to support intensification efforts as current nutrient inputs are insufficient and imbalanced in relation to plant requirements, especially in the case of smallholder plantations. Likewise, use of certified planting material with higher oil concentration, in concert with better agronomic management, plays an important role, but we note that the timeline for impact is longer given the typical replanting cycle of 25 years,.

What can explain the relatively large yield gap and the lack of yield gain for oil palm in Indonesia over the past 20 years? In contrast to rice, yield response to improved agronomic practices in oil palm has a time lag (from months to several years), which limits adoption, especially if the associated financial cost is high (for example, fertilizer use, certified planting material),. Additionally, oil palm cultivation takes place in less densely populated areas where labour shortage may not allow fine-tuning plantation management to the level that is required to reach the attainable yield. In some cases, expansion of oil palm area was considered as a long-term ***land*** investment, without an explicit goal to maximize yield and economic return in the short term. In the case of smallholders, lack of access to inputs, markets and extension education, and lack of experience in growing oil palm limits adoption of improved management,. Additionally, some of the current support mechanisms for smallholders (for example, fertilizer subsidies) may not be effective to ***remove*** yield-limiting factors in oil palm plantations,. In terms of AR&D prioritization, our study can help pinpoint specific geographic regions, far from high-conservation value areas, where yield gaps of existing plantations are large, which could serve as a starting point to orient intensification programmes.

A solutions agenda that explicitly tackles how to narrow the existing yield gap in oil palm should provide productivity incentives and facilitate access to technological and knowledge inputs where these are not available. In the case of smallholders, it seems a priority to develop vigorous extension programmes and re-align current supporting mechanisms to overcome limiting factors and reduce financial risk. In contrast to other ***agricultural*** systems, where either smallholders or large plantations predominate, smallholders and large plantations co-exist across the entire area cultivated with oil palm in Indonesia. Given the interplay between those two farm typologies (for example, smallholders selling FFB to the mills managed by large plantations and, in some cases, large plantation providing inputs and agronomic advice to farmers), other models to facilitate diagnosis of yield-limiting factors, knowledge sharing, and technology adoption can be explored,–.

While our study focused on crop intensification and ***land***-use planning to reconcile environmental and production goals for oil palm in Indonesia, we acknowledge that other approaches exist to reduce the negative aspects associated with oil palm production. These approaches include bans or limits on oil palm imports, and promotion of certification programmes. Considering that the global demand for vegetable oil will increase by 27% over the course of the next decade, proposals to ban palm oil imports fall short in efforts to protect the environment as they may lead to indirect ***land*** use change in other countries connected to global trade. In addition, full or limited bans on palm oil imports would produce negative impacts on the livelihoods and welfare of millions of smallholders who cultivate the crop as well as on the economy of the world’s fourth most populous nation. In the case of certification programmes, these efforts have the potential to improve specific aspects associated with oil palm cultivation (for example, workers safety, preservation of high-conservation value ***land*** within current plantations) but they do not have crop intensification as an explicit goal. While we acknowledge that intensification is only one piece of the challenge and must be complemented with policies and institutions to ensure ***land*** saving for nature,,,, our study shows that it has huge potential at helping preserve fragile ecosystems. Recent steps taken by the Indonesian government to prevent further expansion of oil palm production into primary ***forests*** and peatlands via ***land***-use planning and moratoriums, coupled with foreign incentives to reduce conversion of C-rich natural ecosystems (for example, REDD+ programme), are promising,. These efforts would benefit from an explicit recognition of the need for intensification, in the strict sense of increasing average actual yields, and an associated blueprint for action, including re-setting priorities on AR&D in both public and private sectors. Such an approach would give Indonesia, as well as other developing countries with competing economic and environmental goals, a pathway to protect some of the last bastions of ***forests*** and biodiversity on the planet.

Methods

Conceptual framework

Yield potential is the maximum biological yield as determined by local weather and crop traits influencing interception and conversion of solar radiation into harvestable yield. In the case of rainfed crops, water supply and soil properties influencing the crop water balance imposes another upper limit to yield potential, hereafter referred to as ‘water-limited yield potential’ (Yw). Finally, yield potential also varies with palm age. Most plantations’ palms start to produce two to three years after planting (from that point onwards they are considered ‘mature plantations’), following a typical pattern in which there is a sharp yield increase during the first years until reaching a peak, which is followed by a gradual decline in productivity over time. Commercial plantations are usually replanted 25 years after establishment although replanting tends to occur later on smallholder farms as a result of capital restrictions,.

Average plantation yield (Ya) is always below Yw. This ‘yield gap’ reflects the incidence of yield-limiting factors such as nutrient deficiencies and reducing factors such as the incidence of weeds, pathogens and insect pests. Published data from cropping systems in the US Corn Belt, western Europe and Asia indicate that reaching around 70% of Yw is a realistic goal for farmers who have adequate access to inputs, markets and technical information. Given the previous evidence from other crops, and consistent with previous studies on oil palm, here we estimated the attainable yield (Yatt) as 70% of Yw (Extended Data Fig. ). The exploitable yield gap was calculated as the difference between Yatt and Ya (Extended Data Figs. and ). The Yg provides an objective measure of the available room to increase production on existing cropland via improved agronomic management.

Description of the protocol used to estimate water-limited yield potential for oil palm in Indonesia

Given environmental concerns on conversion of peatland ecosystems for oil palm production and recent measures taken by the Indonesian government to prevent it, we focused our analysis on assessing available room for intensification in existing plantations located in mineral soils across major producing areas in the archipelago (that is, Sumatra, Kalimantan and west Sulawesi). Similarly, the analysis excluded ‘frontier areas’ with high conservation value (and little oil palm cultivation) such as those in North Kalimantan and Papua.

Here, we used results on Yw and yield gaps for Indonesia generated by the authors through the Global Yield Gap Atlas project following best available science and data sources,. Complete databases on weather, soil and detailed management information and productivity data from smallholder and large plantations were collected across 22 sites, located primarily in Sumatra and Kalimantan. An updated version of the oil palm crop model PALMSIM was used to estimate Yw (ref. ,). The model was calibrated using long-term yield data collected from well-managed, high-yielding plantations. PALMSIM was subsequently used to simulate Yw and estimate Yatt across the 22 sites based on local weather and soil, and average palm age. Resulting Yatt and average actual yield were used to calculate the yield gap for each of the 22 sites, separately for smallholder and large plantations. A scheme illustrating the steps followed to estimate yield gaps is shown in Extended Data Fig. . A detailed description of each step, associated data sources and uncertainty is provided in the Supplementary Section .

Assessment of future scenarios of yield, production and ***land*** use change

We explored three future scenarios with different oil palm yield and area trajectories and assessed the production outcome and ***land*** use change associated with each of them. We used 2018 as the baseline year and we evaluated the degree to which each scenario would meet the CPO production ***target*** of 60 MtCPO (equivalent to 302 MtFFB) by 2035 set by the Indonesian oil palm sector, including government, research institutes, private companies and farmer associations–. Total oil palm area by the baseline year (2018) was 14.3 Mha, with 78% of total oil palm area corresponding to mature productive plantations and 18 t ha−1 of annual average actual yield. For all scenarios, we considered mineral soils to account for 80% of oil palm area in the baseline year,.

Business-as-usual scenario

In this scenario, historical trends in oil palm yield and area over the 2000–2018 period remain unchanged over the next 17 years, that is, between the baseline year (2018) and 2035. In the BAU scenario, average actual yield remains stagnant and the total oil palm area increases at a constant rate of 0.54 Mha year−1; these values were derived from official statistics for the 2000–2018 period,. In this scenario, future oil palm area expansion follows the same pattern as during the 2000–2018 period in terms of the type of ***land*** cover that is converted for oil palm production, which roughly includes 1% and 7% of primary and secondary ***forests*** in mineral soils, respectively, and 21% of peatlands. Predicted annual oil palm area expansion by ***land*** cover type is shown in Extended Data Fig. and Supplementary Table .

Intensification scenario

To highlight here the available room for increasing production on existing plantation area located in mineral soils, we assumed a full closure of the exploitable yield gap so that average actual yield in mineral soils reaches the Yatt, that is, 70% of Yw. Average actual yield of oil palm in peatlands is assumed to remain unchanged over time and to be the same as in the baseline year. The intensification scenarios assumed stabilization of oil palm area (that is, a mature-to-total area ratio of 0.85) three years after the baseline year (2018) so that, while there is still a slight increase in mature area, physical expansion of oil palm area does not occur (Fig. ).

Intensification plus ***target*** area expansion scenario

The level of yield gap closure that is required to achieve 70% of water-limited yield potential by year 2035, as investigated in the intensification scenario, would imply an annual yield gain in mineral soils of 3% compound rate per annum (p.a.) (equivalent to around 0.7 t ha−1 y−1). Such a high rate of yield gain is difficult to achieve at the national level and there is no evidence from the literature that rates of yield gain of this magnitude are possible for oil palm and other food crops over long periods of time,. We therefore propose a more reasonable 1.25% p.a. compound rate of yield gain for oil palm grown in mineral soils. This rate of yield gain is comparable to that for rice in Indonesia for the 2000–2018 period and to those observed in other oil-palm-producing countries such as Colombia. An increase of 1.25% p.a. of average oil palm yield in mineral soils will close the current exploitable yield gap by 36% in 17 years. That degree of yield gap closure is, however, not sufficient by itself to meet CPO production goal by 2035 (53 versus 60 MtCPO). Hence, the INT-TE scenario considers further expansion of oil palm area into low-carbon ***land***, that is, in areas where carbon stocks are lower than in oil palm plantations (Supplementary Table ), following the same pattern as during the 2000–2018 period in terms of the type of ***land*** cover that is converted for oil palm production, avoiding primary and secondary ***forests*** as well as peatlands,. Similarly, the oil palm area is not allowed to expand into areas sown with annual food crops (for example, rice, maize) in order to avoid indirect ***land*** use change. Overall, total oil palm area increases at a rate of 0.21 Mha year−1 in the INT-TE scenario, resulting into an increase in the total area by 3.6 Mha between years 2018 and 2035. Annual oil palm area expansion by ***land*** cover type is shown in Supplementary Table . That magnitude of oil palm area expansion into low-C ***land*** (that is, scrubland, grasslands, bare ***land***) is realistic as it can be inferred from data reported by Austin et al., who estimated 30.4 Mha of low-C ***land*** suitable for oil palm production in Indonesia (excluding Papua). Similar to the INT scenario, our INT-TE scenario assumes no yield increase in peatlands, with associated average actual yield remaining at the same level as in the baseline year.

Estimation of global warming potential

We estimated the greenhouse gas ***emissions***, including carbon dioxide (CO2), nitrous oxides (N2O) and methane (CH4) associated with ***land*** conversion (GHGluc) and with oil palm cultivation (GHGcul) for the three scenarios (BAU, INT, INT-TE) between the baseline year (2018) and 2035. The overall 100-y global warming potential (GWP) was estimated as the sum of GHGluc and GHGcul, both expressed as CO2 equivalents (CO2e) to account for the higher warming potential of CH4 and N2O, which are 25 and 298 times the intensity of CO2 on per mass basis, respectively.

GHGluc includes ***emissions*** associated with changes in carbon stocks from aboveground biomass when ***land*** is converted for oil palm production (GHGcon) and, in the case of peatlands, also for GHG ***emissions*** derived from peat decomposition that occurred following conversion of peatlands for oil palm production (GHGpeat).

For each ***land*** use type, the GHGcon was estimated for every year of the study period based on the change in carbon stocks between the ***land*** use type that was converted for oil palm production and the carbon stocks of a typical oil palm plantation (40 tC ha−1), and the amount of each ***land*** use type converted (Supplementary Tables and ).where i is the ***land*** cover type, ADM is the aboveground dry matter (tC ha−1) in ***land*** cover type i and in oil palm (op) plantations, and Ai is the annual area converted from ***land*** use type i (Supplementary Tables and ). We assumed that GHGcon occurred during the first year after ***land*** conversion. GHGcon was expressed as CO2 equivalents by multiplying changes in carbon stocks by 3.67. Following, the additional ***emissions*** from peat decomposition for every year after conversion were calculated as follows:where i is the ***land*** cover type, EF is the ***emission*** factor in ***land*** cover type i and in oil palm (op) plantations, Ai is the annual area converted from ***land*** use type i (Supplementary Tables and ), and t is the time (in years) after conversion. GHGpeat was expressed as CO2 equivalents by multiplying changes in carbon stocks by 3.67. We note that ***emissions*** from peatland only consider the peatland area converted into oil palm cultivation after the baseline year (2018).

In the case of mineral soils, the net change in soil carbon stock due to ***land*** conversion for oil palm production was assumed to be zero, as it has been reported in the literature based on field measurements. In relation to the assumption of SOC neutrality in mineral soils, a recent study shows that SOC can decline up to 40% in the topsoil of mineral soils when ***forest*** is converted for oil palm cultivation. Inclusion of this extra source of carbon would have increased our estimated GWP by 33 Mt (+4%) in the BAU scenario due to conversion of ***forests*** in mineral soils (Extended Data Fig. ). For this calculation, we assumed that ***forests*** have, on average, SOC of 30 MgC ha−1 in the upper 0.1 m of the soil profile and, out of that, 40% is lost after conversion for oil palm cultivation.

GHGluc was calculated as the sum of GHGcon and GHGpeat and expressed as CO2 equivalents. When the original ***land*** use type had higher carbon stocks compared with oil palm plantation (for example, ***forests*** and peatlands), there was a net loss in carbon stocks, and GHGluc ***emissions*** had a positive sign (that is, source of GHG ***emissions***). When the original ***land*** use change had lower carbon stocks compared with oil palm plantation (for example, annual crops, shrubland, and bare ***land*** located in mineral soils), there was a net carbon gain, and GHGluc had a negative sign (that is, carbon sink). In the BAU scenario, oil palm area expanded at the same rate and on the same type of ***land*** use as over the 2000–2018 period, including carbon-rich ecosystems such as peatlands and ***forests***, leading to net GHG ***emissions*** due to ***land*** use change (Extended Data Fig. ). In the INT scenario, there was no ***land*** conversion; hence GHGluc was assumed to be nil. In the INT-TE scenario, the increase in oil palm area occurred in areas that had, on average, 21 tC ha−1 in the ADM in comparison with 40 t ha−1 for an oil palm plantation (Supplementary Table ), leading to some carbon sequestration as a result of ***land*** use change (Fig. and Extended Data Fig. ). Similar results have been reported in the literature based on experimental data and modelling,.

Annual GHG ***emissions*** derived from oil palm cultivation (GHGcul) were calculated for each scenario and included those derived from manufacturing, packaging and transportation of ***agricultural*** inputs, fossil fuel use for field operations, and soil N2O ***emissions*** derived from application of nitrogen (N) fertilizer. In oil palm cultivation, N, phosphorus (P) and potassium (K) fertilizer accounts for 80% of GHG ***emissions***,. Hence, we focused here on calculating the GHG ***emissions*** associated with NPK fertilizers and then we simply added an extra 25% to our calculation to account for other inputs (for example, pesticides, other nutrient fertilizer) and fossil fuel use for farm operations (for example, harvesting). In calculating GHG ***emissions*** associated with manufacturing, packaging and transportation of N, P and K fertilizers, we used specific updated ***emissions*** factors for Southeast Asia, selecting those fertilizer sources that are most commonly used for oil palm production. For the BAU scenario, annual GHG from N, P and K fertilizer was calculated based on the current nutrient fertilizer rates used in Indonesia as derived from the management data for each farmer type across the 22 sites. In the case of large plantations, average fertilizer N, P and K application (expressed as elemental nutrients) averaged 170, 40 and 212 kg ha−1 y−1, respectively. Fertilizer applications were lower in the case of smallholder farmers, averaging 62, 17 and 51 kg N, P and K ha−1 y−1, respectively. Considering that projected yield level is higher in the INT and INT-TE scenarios compared with BAU, with a concomitant increase in nutrient requirements, we followed a balance approach to estimate appropriate fertilizer rates that could support the yield levels projected for the INT and INT-TE scenarios. That approach is typically followed in well-managed plantations to determine the amount of nutrient fertilizer that is needed to attain a given yield level,. Following this approach, we assumed that the amount of N, P and K fertilizer to be applied should basically replace the amount of nutrient that is removed from the field with the harvested FFB, after accounting for the nutrients that are stored in the trunk,. Soil N2O ***emissions*** were calculated assuming an N2O ***emission*** factor of 1.6% of the total N fertilizer applied based on the recommended ***emission*** factor for mineral soils in tropical regions, which is consistent with soil N2O ***emissions*** measured in large and smallholders' oil palm plantations in Indonesia–. For each scenario, GHGcul was estimated at national level by multiplying the ***emissions*** per unit of area (hectare) by the amount of mature oil palm area in each year. We note that our calculation of GHGcul does not include ***emissions*** derived from FFB transportation, milling and processing as these would have been identical among the three scenarios given the similarity in national FFB production by year 2035.

The nutrient balance approach used for estimating nutrient fertilizer requirements in the INT and INT-TE scenarios, together with their lower ***land*** requirement, lead to an overall reduction in GHGcul compared with the BAU scenario (Fig. ). Current nutrient fertilizer input is imbalanced leading to an excess of some nutrients (especially those contained in subsidized fertilizer). As a result, GHGcul derived from oil palm production in the BAU scenario are proportionally higher than those in the INT and INT-TE scenarios, despite the similarity in the national CPO output (Figs. to and Extended Data Fig. ). This result shows the importance of coupling crop intensification with an explicit effort to reduce associated environmental footprint, for instance, by improving the synchrony between nutrient fertilizer inputs and crop nutrient requirements as shown here for the INT and INT-TE scenarios.

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**Notes**

Extended datais available for this paper at [*https://doi.org/10.1038/s41893-021-00700-y.Supplementary*](https://doi.org/10.1038/s41893-021-00700-y.Supplementary) informationThe online version contains supplementary material available at [*https://doi.org/10.1038/s41893-021-00700-y.Peer*](https://doi.org/10.1038/s41893-021-00700-y.Peer) review informationNature Sustainability thanks Wan Yee Lam, Ana Meijide and the other, anonymous, reviewer(s) for their contribution to the peer review of this work.Publisher’s note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

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[***Bennet Introduces Legislation to Invest in Forest, Watershed Restoration Across the West***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:62GV-W171-JDG9-Y1GD-00000-00&context=1516831)

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**Body**

Washington: Office of the Senator Michael Bennet has issued the following news release:

Today, Colorado U.S Senator Michael Bennet introduced the Outdoor Restoration Partnership Act to create or sustain over two million jobs in the outdoors by investing in ***forest*** and watershed restoration. This legislation will provide direct support to local, collaborative efforts to restore habitat, expand outdoor access, and mitigate wildfire. It will also spur federal investment in areas at high-risk of wildfire, with high priority wildlife habitat, or in the wildland-urban interface – where homes and businesses meet wildland vegetation -- to build climate resilience in the West.

Bennet, who chairs the U.S Senate Committee on ***Agriculture***, Nutrition, and Forestry’s Subcommittee on Conservation, Climate, Forestry, and Natural Resources, first introduced this proposal in December. President Joe Biden included a commitment to invest in restoration and resilience in his American Jobs Plan, highlighting Bennet’s legislation as a model. U.S Representatives Jason Crow (D-Colo.) and Mike Simpson (R-Idaho) will introduce companion legislation in the U.S House of Representatives. U.S Senator Ron Wyden (D-Ore.) is also co-sponsor of the bill.

“***Forests***, rangeland, and watersheds are essential infrastructure that sustain our economy in Colorado. For too long, Congress has failed to meaningfully invest in our western ***lands***, undermining our economy and way of life,” said Bennet. “The Outdoor Restoration Partnership Act changes that -- investing in the West by creating good-paying jobs to improve ***forest*** health, restore watersheds, enhance wildlife habitat, and expand access to the outdoors. I’m pleased President Biden recognized the importance of restoring America’s ***forests*** by including this proposal in his American Jobs Plan. This legislation was written with - and inspired by - Coloradans, and I look forward to working with my colleagues in Congress to make it a reality. ”

“As we confront climate change, we have an unprecedented chance to create good-paying jobs and generate economic growth while taking meaningful climate action. President Biden understands this imperative and I’m grateful that our plan to do just that was included in the President’s American Jobs Plan,” said Crow. “The Outdoor Restoration Partnership Act would make critical investments in our ***forests*** and watersheds to prevent wildfires and other natural disasters. As we continue to recover from the economic crisis caused by COVID-19, this bipartisan legislation would create two million jobs and support the outdoor industry that plays a massive role in our economy. It also recognizes the importance of strong partnerships between the federal government and our state, local, and tribal partners in outdoor restoration efforts. ”

“This bipartisan and bicameral legislation is a unique opportunity to invest in our nation’s greatest resources, our public ***lands*** and water. In Idaho, we know the value of public ***land***, we also know the price of maintaining them, this bill provides local communities in rural Idaho the tools necessary to manage them, including increasing mitigation efforts to help minimize catastrophic wildfires,” said Simpson.

'The climate crisis is not some distant threat. It’s here, and families out West feel its impacts year after year as catastrophic wildfires and extreme weather events devastate their communities,” said Wyden. “Climate action and climate resilience efforts go hand in hand. The West desperately needs a federal investment to restore our public ***lands*** and mitigate wildfire risks—investments that will make our communities safer, protect our special places for generations to come, and create good paying jobs, especially in hard hit rural America. ”

The Outdoor Restoration Partnership Act would:

Establish an Outdoor Restoration Fund to increase support for local collaborative efforts to restore ***forests*** and watersheds, reduce wildfire risk, clean up public ***lands***, enhance wildlife habitat, ***remove*** invasive species, and expand outdoor access. The bill establishes an advisory council of local, industry, conservation, and national experts to advise on funding priorities, coordinate with existing regional efforts, and provide oversight.

Empower local leaders by making $20 billion directly available to state and local governments, tribes, special districts, and non-profits to support restoration, resilience, and mitigation projects across public, private, and tribal ***lands***. Empowering local leaders that have an ability to bring diverse voices to the table is the path for progress in the West.

Partner with states and tribes to invest $40 billion in ***targeted*** projects to restore wildlife habitat and reduce wildfire risk across the country. This investment allows federal agencies to partner with local stakeholders to improve ***forest*** and watershed health and build climate and community resilience. Tackling the backlog of restoration and resilience projects across public, private, and tribal ***land*** will sustain our economy and way of life.

Create or sustain over two million good-paying jobs, primarily in rural areas, to support existing industries like ***agriculture*** and outdoor recreation, while providing an opportunity for communities to address long-standing restoration needs and draw in new business.

Save landowners and local governments money by investing in wildfire prevention and natural hazard mitigation, which is three to six times more cost effective than recovering from natural disasters like wildfires or post-fire floods.

Generate over $156 billion in economic output, with a return of up to $15 for every dollar spent on restoration, while upgrading our natural infrastructure for the millions of Americans whose livelihood, health, and wellbeing rely on them.

A leader on forestry and conservation issues for over a decade in the U.S Senate, Bennet has worked to end fire borrowing and provide the U.S ***Forest*** Service with the necessary tools to improve ***forest*** and watershed health. In the 2014 Farm Bill, Bennet ensured Congress improved the conservation and forestry title for Colorado’s farmers, ranchers, and conservation community, expanded Good Neighbor Authority nationwide, following a successful pilot program in Colorado, and expedited treatment of ***forests*** affected by insects or disease. In September 2017, Bennet introduced the Wildfire Disaster Funding Act (WDFA), which provided the framework for the fire funding fix that Bennet secured in the 2018 Omnibus. In the 2018 Farm Bill, Bennet led the effort to maintain full conservation funding, place a greater emphasis on climate and drought, and secure new resources for our national ***forests***.

Bennet’s work on forestry and conservation is informed and inspired by Coloradans’ experiences and ideas. After Colorado suffered the three worst wildfires in state history last year, Bennet convened the Western Climate Resilience Roundtable to develop a collaborative, consensus-driven set of priorities for western climate resilience. One of the groups three priorities was “Supporting healthy soils, ***forests***, rangeland, rivers, and watersheds will make our communities more resilient and help maximize the climate mitigation potential of western landscapes. ”

Similarly, in 2014, Bennet convened a Fire and Forestry Summit in Colorado to bring together experts to provide recommendations on how the federal government can better support Colorado's wildfire mitigation and post-fire recovery efforts. From those conversations, Bennet drafted the PREPARE Act, a portion of which became the Wildfire Mitigation Assistance Act, to push for policy changes. Much of the PREPARE Act, including the entire Wildfire Mitigation Assistance Act, was signed into law in 2018.

The bill text is available HERE. A one-pager on the bill and a list of supporting organizations is available HERE. A section-by-section summary of the bill is available HERE.

The Outdoor Restoration Partnership Act is supported by National Wildlife Federation, National Association of State Foresters, The Nature Conservancy, National Wild Turkey Federation, American ***Forests***, National Audubon Society, Family Farm Alliance, Theodore Roosevelt Conservation Partnership, Western Landowners Alliance, Western Resource Advocates, Trout Unlimited, and Conservation Legacy.

'The Outdoor Restoration Partnership Act is a trailblazing investment in Colorado’s natural resources and Colorado is proud to support its introduction in the US Senate. In a time where we are experiencing major drought and the three largest wildfires in state history, there’s no better time to invest in Colorado’s ***forests***, watersheds, and landscapes that drive economic activity across the west, employ thousands of Americans, and provide environmental and ecological benefits to our communities and wildlife,' said Dan Gibbs, Executive Director at the Colorado State Department of Natural Resources.

“The Colorado River District’s highest priority is to protect the water security of Western Colorado. Water security starts with our ***forests***. Our largest source of water is the snowpack that develops in our ***forests*** above 9,000 feet in elevation, mostly on federal ***lands***. Sen. Michael Bennet’s $60 billion Outdoor Restoration Partnership Act proposal is a direct water security initiative through the funding of proactive watershed protection actions. These actions would help prevent catastrophic fires and start restoration work where warming temperatures and fires have already done harm. It’s noteworthy that $20 billion will be available to fund projects generated at the state and local levels. We applaud Senator Bennet for advocating for important western priorities in the Senate,” said Andy Mueller, General Manager, Colorado River District.

“The Outdoor Restoration Partnership Act represents an opportunity for the type of proactive coordination at the local, state and federal levels that will be needed to combat the increasingly destructive effects of climate change on ***forests*** and watersheds. As the environmental impacts of climate change accelerate, new and innovative approaches will be necessary to meet the challenge. This legislation recognizes the vital role that leaders at the local and state level have to play in responding to that challenge. It empowers these on-the-ground experts to work collaboratively across boundaries to rehabilitate and enhance our natural infrastructure, while also providing funding to ensure those efforts are successful. A problem as complex as climate change requires similarly multifaceted and forward-thinking solutions, and this is the approach embraced by this legislation. Denver Water supports this legislation as it provides critical, strategic investments in ***forests*** and watersheds that will ensure the viability and quality of our drinking water supply for years to come,” said James S. Lochead, CEO and Manager, Denver Water.

“This is a great first step in recognizing and acknowledging the problem that was created over 30 years ago. The lack of proactive management and the ‘hands-off’ approach is now clearly having devastating effects on our communities, ***forest*** heath and sustainable watersheds. This bill addresses this problem, provides much needed funding, and hopefully is the beginning of a new era in resource management,” said Merrit Linke, Grand County Commissioner and Club 20 Chair.

“Rangelands and watersheds are the backbone of our western communities, supporting our wildlife, culture, and economies. And yet their health has been ignored far too long, as we’ve seen with the devastating drought, wildfires and dramatic spread of invasive annual grasses. This bill is exactly what our nation needs right now – creation of meaningful jobs that result in lasting benefits for both small towns and urban centers. Like the Civilian Conservation Corps, which employed millions of Americans during the Great Depression, this bill presents real solutions to today’s challenges by helping us restore the West,” said Alison Holloran, Executive Director and Vice President, Audubon Rockies.

'The 2020 wildfires in Colorado clearly demonstrated that our communities, ***forests***, and watersheds need stronger investment to restore and sustain their health and resiliency,” said Jennifer Kovecses, Executive Director of the Coalition for the Poudre River Watershed. “The Outdoor Restoration Partnership Act offers an innovative decision-making framework that empowers local leaders and provides critical, durable funding solutions to the highest priority problems they face. This legislation is what our watersheds and ***forests*** need so they can continue to support healthy ecosystems and thriving communities.'

“Last fall’s Calwood Fire, Boulder County’s largest ever, put a large, smoke plume exclamation mark on the need to pick up the pace and scale of ***forest*** health mitigation and restoration,” said Boulder County Commissioner Matt Jones. “The Outdoor Restoration Partnership Act is vitally important to meet this challenge which is being made even worse by climate change. This legislation will put the emphasis where it needs to be: on cost-effective wildfire prevention and creating a workforce to get that work done. ”

“San Luis Valley Great Outdoors (SLV GO!) supports Senator Bennet's Outdoor Restoration Partnership Act,” said Mick Daniel, Executive Director of San Luis Valley Great Outdoors. “We believe that this would bring new jobs to the San Luis Valley that would benefit our water and ***forest*** health and thus benefit the entire region. SLV GO! works in conjunctions with federal and NGO partners through the San Luis Valley of Colorado to help provide outdoor recreation and stewardship opportunities for our residents. Bennet’s bill could potentially provide SLV GO! with opportunities to work more closely with our federal ***land*** managers and help restore our national ***forests*** from beetle and fire damage. ”

“The National Association of State Foresters congratulates Senator Bennet for proposing this bold legislation. Without an increase in coordinated ***forest*** management, wildfires will continue to put our nation’s ***forests*** and communities at great risk. Constant and increased collaboration between federal and state agencies, non-government organizations, local communities, and private landowners – bolstered by a sustained and unprecedented federal investment – will make all the difference for our most treasured landscapes,” said Joe Fox, President of the National Association of State Foresters.

'Catastrophic fires, invasive species, and other factors have degraded our ***forests***, rangelands, and watersheds. The Outdoor Restoration Partnership Act will empower local and Tribal leaders to advance restoration and resilience projects that will create jobs and strengthen local economies. Restoring these landscapes and watersheds will help ensure vibrant wildlife habitat, clean air and water, and a thriving outdoor recreation economy for generations to come,” said David Willms, senior director of western wildlife and conservation at the National Wildlife Federation.

“The Outdoor Restoration Partnership Act would provide critical funding to expand ***forest*** restoration projects in Colorado and across the West. Through our leadership in the Rocky Mountain Restoration Initiative, the need for both increasing the scale of ***forest*** restoration and creating critical workforce capacity have become apparent, and this bill addresses both. This bill will help the partner organizations of the Rocky Mountain Restoration Initiative address the four core values of: water, healthy wildlife and ***forests***, robust recreation opportunities and resilient communities. Senator Bennet’s bill provides a path to addressing these important natural resource concerns while also creating jobs and bolstering rural economies. The National Wild Turkey Federation is proud to support this timely piece of legislation, and we look forward to working alongside the Senator to see it enacted into law,” said Becky Humphries, CEO, National Wild Turkey Federation.

'The United States has been blessed with abundant ***land*** and natural resources, but in our rise to prosperity and global leadership we have also spent heavily from this natural capital. The Outdoor Restoration Partnership Act of 2021 represents a long overdue re-investment in the critical natural infrastructure that sustains us,' said Lesli Allison, Executive Director of Western Landowners Alliance.

'The future of the rural West will be defined by the inter-relationship between local communities, farmers, ranchers, foresters and constructive conservation groups working together to balance production and conservation. Senator Bennet's bill tangibly moves us forward towards implementing this vision,” said Patrick O'Toole, President, Family Farm Alliance.

“Unplanned wildfire is not a problem that is going to just go away. Catastrophic wildfire costs are significant, to people’s lives, public health, ***forest*** carbon, water quality, wildlife habitat, outdoor recreation and tourism, ***forest*** products, ***agricultural*** ***lands***, and jobs. Current efforts to reduce the risk of uncharacteristically severe wildfire are not commensurate with the scale and complexity of the problem,” said American ***Forests*** Senior Vice President for Policy Leslie Jones. “Senator Bennet’s bill is exactly the bold new investment and new approaches that are urgently needed. Progress made over the past two decades in wildfire policies, research, technology and funding has built a foundation that will allow us to now take significant steps forward to protect our natural infrastructure and strengthen our communities. ”

“As the largest regional park system in the nation and established with the assistance of Civil Conservation Corps, the Outdoor Restoration Force Act would provide significant funding to address the continued wildfire threat in urban areas, restore wetlands, and nature-based infrastructure. During the pandemic, parks and nature have been an essential outlet and now is the time to reinvest in local communities and create new jobs,” said Sabrina Landreth, General Manager, East Bay Regional Park District (California).

“The Outdoor Restoration Partnership Act is a necessary investment in the ecosystems so critically important in Southwest Colorado and the rest of the country. Federal assistance with local efforts to support ***forest*** health, restore watersheds, protect wildlife habitats, and enhance resiliency in the face of climate change will benefit communities for years to come. The Southwest Colorado Council of Governments applauds the efforts to wholly invest in our region and natural resources and wishes to thank you for your leadership on these critical issues,” said David Black, Chair, Southwest Colorado Council of Governments.

“As Western communities continue to fight dueling threats of the COVID-19 pandemic and the impacts of the climate crisis, now is the time to pursue initiatives that will help us rebuild better. The Outdoor Restoration Partnership Act will provide badly needed resources to help Western states mitigate wildfires, restore ***forests***, improve air and water quality, and advance equity, all while pumping billions of dollars into local economies and supporting millions of good-paying jobs; it’s a true win-win. We applaud Senator Bennet for his leadership and look forward to supporting this legislation to build a more resilient West,” said Jon Goldin-Dubois, President of Western Resource Advocates.

“While the City of Glenwood Springs was fortunate enough to be saved from the flames of the Grizzly Creek Fire, Glenwood Canyon and our watersheds were deeply impacted. Even before the fire was significantly contained by the Incident Management Team, we knew our City would struggle with providing clean water to our residents for years to come. Being able to access the assistance available in the Outdoor Restoration Partnership Act to reduce fire risk and funding to increase restoration and resiliency would be lifesaving for my city and throughout the West,” said Jonathan Godes, Mayor of Glenwood Springs.

“One of the greatest threats to our Tribal ***lands*** are the devastating wildfires caused by the extreme drought conditions in the western United States. Sen. Bennet’s Outdoor Restoration Partnership Act of 2021 will provide much needed investment in conservation, restoration and wildfire mitigation. A key component of this legislation is Sen. Bennet’s recognition of the importance that Tribes have in ***land*** use and regulation, assuring that funds will be made available directly to Tribes for maintenance of our ***forests***, watersheds and rangeland. Moreover, he assures that Tribes will have a seat at the table in determining the distribution of funds, ensuring that there will be a tribal representative working alongside our state and federal partners on the Restoration Fund Advisory Council. We thank Sen. Bennet for introduction of this important legislation and look forward to its swift passage in Congress,” said the Southern Ute Indian Tribe.

“The Outdoor Restoration Partnership Act respects the importance of empowering local citizens and leaders that have an ability to bring diverse voices to the table. Planning and implementing projects from the ground up, while engaging the people with the most at stake, is how we make progress and build resilience in the West. Our communities need a reliable partner for the urgent effort of recovering and restoring the health and stability of the place where we live and work. I am reassured and grateful for this critical step forward,” said Russell George, lifetime citizen of Western Colorado, former Speaker Colorado House of Representatives, former Director Colorado Department of Natural Resources and Colorado Department of Transportation.

“Colorado communities derive extraordinary economic and social benefits from the ongoing health and beauty of our natural environment. Respecting this heritage, the Outdoor Restoration Partnership Act aims to strengthen our economy in diverse, collaborative, and sustainable ways that fit the particular context of our communities. We thank Senator Bennet for his leadership in supporting this legislation that supports the natural environment as well as the economy of local communities,” said Chris Romer, ACE, President & CEO, Vail Valley Partnership.

“The Outdoor Restoration Partnership Act would make investments in ***forests*** and watersheds that align with the mission of conservation corps to employ and create career pathways for young men and women with outdoor jobs protecting waterways, communities and our outdoor economies from wildfire, drought and other natural disasters,” said Rob Spath, CEO, Conservation Legacy.

'As a Colorado River headwaters-based organization working to protect local streams, Eagle River Watershed Council sees firsthand the impacts of climate change and drought on our streams and surrounding ***lands***. These streams provide the water we drink, support the diverse wildlife we value and fuel the recreation we all love as well as the economy that is based upon them. The funds provided through the Outdoor Restoration Partnership Act, if passed, would broaden the capacity of local nonprofits and government, as well as their partners in federal agencies, to find real solutions to complex problems that are only getting bigger. The Act, which also creates new jobs at a time when unemployment is at an all-time high, could help to strengthen our local, natural resource-based economy,” said Holly Loff, Executive Director, Eagle River Watershed Council.

“As an organization working to expand the outdoor recreation industry and improve the quality of life in the Grand Valley, the Outdoor Recreation Coalition is deeply invested in conserving our public ***lands*** for economic and social benefits. The Outdoor Restoration Partnerships Act will not only create jobs in our community, but will also invest in the infrastructure and management of the ***lands*** necessary for our ever-growing outdoor recreations and tourism industries,” said Sarah Shrader, President, Outdoor Recreation Coalition of the Grand Valley.

“Rural communities across the West depend on natural spaces for our outdoor recreation economy and our way of life. With the impacts of climate change posing an extreme threat, bold, collaborative action needs to be taken to protect this heritage and allow these communities to build resiliency. The Outdoor Restoration Partnerships Act will strengthen rural economies by supporting millions of local jobs, restoring ***forests*** and watersheds, and improving infrastructure,” said Thaddeus Shrader, CEO, Bonsai Design.

“The San Juan Headwaters ***Forest*** Health Partnership commends Senator Bennet and his team for visiting local communities, talking with stakeholders, and getting boots on the ground while developing the Outdoor Restoration Partnership Act. The bill highlights a cross-boundary, watershed approach to ***land*** management and includes local voices and collaborative efforts. It advances applications of science to ***land*** management planning and activities and strives to promote the social, ecological, and economic wellbeing of communities. ” said Dana Hayward, Partnership Coordinator for San Juan Headwaters ***Forest*** Health Partnership.

“We applaud Senators Bennet and Wyden, Representatives Crow and Simpson for the Outdoor Restoration Partnership Act,” said Cecilia Clavet, Senior Policy Advisor, The Nature Conservancy. “Now more than ever, we need a commitment to address the increasing impacts of wildfire and other threats by restoring our ***forests***, watersheds, rangelands and infrastructure of the West in a way that creates jobs and stimulates rural economies. We welcome this approach that empowers local leaders to support projects across public, private and tribal ***lands*** that improve the condition and climate resilience of our treasured landscapes. ”“Colorado’s ***forests*** are a critical component of water supply security, important habitat for fish and wildlife, places for us to recreate and connect with nature, and the health of our communities. The San Luis Valley Water Conservancy District enthusiastically supports Senator Bennett’s ***forest*** health bill as it will provide much needed improvements to watershed house across the nation,” said Heather Dutton, Manager, San Luis Valley Water Conservancy District.

**Load-Date:** April 21, 2021

**End of Document**



[***Federal Register: Agricultural Conservation Easement Program Pages 8113 - 8131 [FR DOC #2021-02268]***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:61XS-76Y1-F0YC-N4Y4-00000-00&context=1516831)

Impact News Service

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**Body**

Washington: Office of the Federal Register has issued the following notice:DEPARTMENT OF AGRICULTURECommodity Credit Corporation7 CFR Part 1468[Docket ID NRCS-2019-0006]RIN 0578-AA66Agricultural Conservation Easement ProgramAGENCY: Natural Resources Conservation Service (NRCS) and the Commodity Credit Corporation (CCC), United States Department of ***Agriculture***.ACTION: Final rule.-----------------------------------------------------------------------SUMMARY: This final rule adopts, with minor changes, an interim rule published in the Federal Register on January 6, 2020. The interim rule implemented changes to ACEP that were necessitated by enactment of the ***Agriculture*** Improvement Act of 2018 (the 2018 Farm Bill) and changes for administrative streamlining improvements and clarifications. This final rule makes permanent many of the changes made in the interim rule, responds to comments received, and makes further adjustments in response to some of the comments received.DATES: Effective: February 4, 2021.FOR FURTHER INFORMATION CONTACT: Carrie Lindig, (202) 720-1882, or [*carrie.lindig@usda.gov*](mailto:carrie.lindig@usda.gov) Persons with disabilities who require alternative means for communication should contact the USDA ***Target*** Center at (202) 720-2600 (voice).SUPPLEMENTARY INFORMATION:Background The 2018 Farm Bill reauthorized and amended ACEP. The 2018 Farm Bill authorized the use of the existing regulations that had been implemented under the ***Agricultural*** Act of 2014 for the remainder of FY 2019 to the extent that those regulations were consistent with the 2018 Farm Bill changes. On January 6, 2020, CCC published an interim rule with request for comments in the Federal Register (85 FR 558-590) that implemented mandatory changes made by the 2018 Farm Bill or that were required to implement administrative improvements and clarifications. This final rule adopts, with minor changes, the interim rule.Discussion of ACEP (7 CFR part 1466) ACEP helps farmers and ranchers preserve their ***agricultural*** ***land*** and restore, protect, and enhance wetlands on eligible ***lands***. The program has two components: (1) ***Agricultural*** ***land*** easements (ACEP-ALE); and (2) Wetland reserve easements (ACEP-WRE). The Secretary of ***Agriculture*** delegated authority to the Chief, NRCS, to administer ACEP. Through ACEP-ALE, NRCS provides matching funds to eligible entities that are State, Tribal, and local governments, and nongovernmental organizations with farm and ranch ***land*** protection programs, to purchase ***agricultural*** ***land*** easements. ***Agricultural*** ***land*** easements are permanent or for the maximum duration authorized by State law. Through ACEP-WRE, NRCS protects wetlands on eligible ***lands*** by purchasing an easement directly from eligible landowners or entering into 30-year contracts on acreage owned by Indian Tribes, in each case providing for the restoration, enhancement, and protection of wetlands and associated ***lands***. Wetland reserve easements may be permanent, 30-years for acreage owned by Indian Tribes, or the maximum duration authorized by State law. Participation in either ACEP-ALE or ACEP-WRE is voluntary. The interim rule: Incorporated changes to the ACEP purposes to limit nonagricultural uses that negatively affect ***agricultural*** uses and conservation values; Added language to specify general monitoring responsibilities under ACEP-ALE and ACEP-WRE; Removed references to the Regional Conservation Partnership Program (RCPP) as the 2018 Farm Bill revised RCPP as a stand-alone program, which is now in 7 CFR part 1464; Added definitions to reflect 2018 Farm Bill changes: Buy-protect-sell (BPS) transaction, monitoring report, wetland restoration, easement administration action, grazing management plan, and nonindustrial private ***forest*** ***land***; Removed definitions for: Active ***agricultural*** production, ***forest*** ***land***, ***forest*** ***land*** of statewide importance, and projects of special significance; Made changes to easement administration actions, including specifying the criteria that apply to each type of easement administrative actions; Made revisions to the environmental markets section in response to the 2018 Farm Bill; Removed the requirement that an eligible entity provide evidence at the time of application that they have funds available to meet the minimum cash contribution requirement; Eliminated the requirement that ***land*** with a certain amount of ***forest*** ***land*** have a ***forest*** management plan; Replaced the term ``proposed'' with ``permitted'' in text about the types of rights-of-way, infrastructure development, or other adjacent ***land*** uses whose impacts may cause ***land*** to be considered ineligible; Specified that under a BPS transaction, the eligible entity for meeting payment eligibility requirements (highly erodible ***land*** and wetland conservation, and Adjusted Gross Income (AGI)) is the landowner unless the eligible entity sells the fee title to a qualified farmer or rancher prior to, or at the time of, the easement closing, in which case the farmer or rancher purchaser must meet payment eligibility requirements; To address BPS transactions, specified that eligible ***lands*** owned by the eligible entity may be eligible for enrollment if the ***land*** is owned, on a transitional basis, to protect the ***land*** through securing an ***agricultural*** ***land*** easement on the ***land*** and to transfer fee title ownership to a farmer or rancher; Specified eligibility requirements related to BPS transactions; Specified that NRCS will consider eligible entity cash contribution toward the easement purchase price and measures to increase ***agricultural*** viability as ranking criteria; Specified that appropriate terms and conditions must be included in the easement deed to address items agreed to by the eligible entity as a matter of ranking and basis for selection for funding;[[Page 8114]] Removed the requirement for the eligible entity to contribute its own cash resources in an amount equal to 50 percent of the amount of the Federal share; Specified the incurred costs by the eligible entity associated with securing a deed to the easement that may be included in the calculation of the non-Federal share, and that the source and limit of other costs that may be included in the calculation of the non-Federal share; Removed reference to the availability of waivers for grasslands of special environmental significance since the specific eligible entity cash contribution requirement was removed; Added specificity to the right of enforcement conveyed to NRCS under the terms of an ***agricultural*** ***land*** easement; Removed the requirement that the ***agricultural*** ***land*** easement be subject to an ACEP-ALE plan; Specified the terms and conditions required by statute that must be addressed if the eligible entity chooses to allow subsurface mineral development on the ***land*** subject to the ***agricultural*** ***land*** easement; Revised the requirement for a conservation plan on highly erodible cropland; Provided that an eligible entity may include terms and conditions in the ACEP-ALE deed that are intended to keep the ***land*** subject to the easement under farmer or rancher ownership; Removed the stand-alone section regarding ACEP-ALE plans and captured in other sections the provisions related to development of required conservation plans or development of ACEP-ALE plans as agreed-to by the eligible entity; Incorporated two new categories under which an eligible entity may demonstrate that they meet the ACEP-ALE certification requirements and revised the criteria to require a minimum of 10 ***agricultural*** ***land*** easements under ACEP-ALE, or predecessor NRCS easement programs, for all eligible entities seeking certification; Specified the circumstances under which NRCS may exercise its right of enforcement under ACEP-ALE, including its right of inspection; Increased the percent of acres of total cropland in a county that may be subject to an ACEP-WRE easement to 15 percent; Removed the requirement for NRCS to seek input from the Secretary of the Interior at the local level in the determination of eligible ***land***; Included water quality as an additional priority along with the priority placed on acquiring wetland reserve easements based on the value of the easement for protecting and enhancing habitat for migratory birds and other wildlife; Specified that grazing under reserve grazing rights wetland reserve easement or 30-year contract must comply with a wetlands reserve plan of operations (WRPO) developed by NRCS, which may include a grazing management plan component, and identified that the plan may be reviewed and modified as necessary, at least every 5 years; and Included new provisions related to the evaluation and authorization of compatible uses on wetland reserve easements, including that in evaluating and considering compatible uses NRCS will consider whether the use will facilitate the practical administration and management of the easement or contract area and ensure that the use furthers the functions and values for which the ***land*** was enrolled.Summary of ACEP Comments The interim rule 60-day comment period ended March 6, 2020, and was extended to March 20, 2020, to provide the public an opportunity to consider the January 24, 2020, correction. Seventy commenters, including individuals, organizations, and agencies, submitted comments to regulations.gov. NRCS reviewed the input from these 70 commenters in response to the rule and identified 576 comments contained within these 70 entries. NRCS reviewed these 576 comments and categorized and summarized them according to the topics identified below. The topics that generated the greatest response were on ALE ranking, ALE BPS transactions, and definitions. Overall, the comments expressed general support for the changes made in the interim rule. Six comments were not relevant to the ACEP interim rule. Ten comments expressed general support for the regulation and three comments criticized the regulation in general. These comments did not include any recommendations for change. NRCS appreciates all comments submitted and thanks each person and organization who expressed an opinion related to ACEP or the interim rule. NRCS will continue the endeavor to improve its customer service and the equitable dispensation of benefits under ACEP. In this rule, the comments have been organized alphabetically by topic. The topics include: ALE Buy-Protect-Sell Transactions; ALE Contribution Requirements; ALE Deed Requirements and Terms; ALE Entity Certification; ALE ***Land*** Eligibility Issues; ALE Planning; ALE Program Requirements; ALE Ranking; Definitions; Easement Administration Actions; Environmental Markets; Fund Allocations; Landowner Eligibility--AGI Limitation Waiver; Program Administration; and WRE Issues. This final rule responds to the comments received by the public comment deadline and makes minor clarifying and related changes.ALE Buy-Protect-Sell Transactions BPS transactions are arrangements under ALE, first authorized under the 2018 Farm Bill, between NRCS and an eligible entity where the entity owns or will own the ***land*** prior to the acquisition of the ***agricultural*** ***land*** easement on the property, and the eligible entity either: (1) Sells fee title to the ***land*** to a farmer or rancher prior to or at easement closing; or (2) Holds fee title at the time the ***agricultural*** ***land*** easement is conveyed on that ***land***, and transfers ownership of the ***land*** subject to the easement to a farmer or rancher not later than 3 years after the date of acquisition of the ***agricultural*** ***land*** easement. NRCS received comments related to BPS transactions, several of which expressed support for allowing BPS transactions. Remaining comments were as follows: Comment: NRCS received comment related to the requirement to sell at ***agricultural*** value except that eligible entities could charge qualified farmers or ranchers certain holding and transactions costs. These comments requested a change to the amount an eligible entity may charge the qualified farmer or rancher as part of the sale of the property, recommending either that the 10-percent limitation be removed or increased to 10 percent of the total fair market value (FMV) of the property rather than 10 percent of the ***agricultural*** value. Other comments recommended that the sale be based on appraised ***agricultural*** value (rather than lesser of appraised ***agricultural*** value or original purchase price) to avoid a potential windfall to the purchaser that might raise private benefit or other issues under federal tax law if the eligible entity is a nongovernmental organization. Response: The 10-percent limit was identified because NRCS may have to[[Page 8115]]recover costs if the conveyance includes more than ``reasonable holding and transaction costs.'' It is consistent with industry standards and the use of a published upper limit ***removes*** the potential for arbitrary decision making and expensive challenges in cost recovery cases. Additionally, this transaction type aims to help farmers and ranchers gain access to affordable farmland, and a limit on the holding and transaction costs that may be charged to the farmer or rancher ensures that there is no circumvention of that intent. A discussion of the federal income tax regulatory requirement that an organization described in section 501(c)(3) of the Internal Revenue Code (IRC) operate for the benefit of public rather than private interests is outside the scope of both the jurisdiction of the United States Department of ***Agriculture*** and this rule. For more information about the requirements applicable to tax-exempt organizations, including those described in section 501(c)(3) of IRC, visit the IRS's Charities and Nonprofits page at [*www.irs.gov/charities-and-nonprofits*](http://www.irs.gov/charities-and-nonprofits). The ACEP statute requires the sale to be at ``***agricultural*** value'' plus any reasonable holding costs. A sale at FMV assumes that the impact of the placement of the easement on the ***land*** will result in the highest and best use of the ***land*** being ***agriculture***, and thus ***agricultural*** value. The alternative value, the purchase price at which the entity purchased the ***land***, would have been at most, theoretically, FMV of the ***land*** without being encumbered by the easement. If the original purchase price of the property was less than FMV of the ***land*** encumbered with the easement, then ACEP assistance through a BPS arrangement is not necessary for the entity to have a viable transaction that would result in the same outcome and could occur without an investment of taxpayer funds. This requirement ensures that eligible entities do not profit from the BPS transaction at the cost of the qualified farmer or rancher. The provision requiring the eligible entity to sell the property at the original purchase price, if lower than the appraised ***agricultural*** value, was similarly included to help farmers and ranchers gain access to affordable farmland. NRCS has clarified in the regulation that appraised ***agricultural*** value means ***agricultural*** value of the ***land***. An eligible entity should seek tax or legal advice if a particular transaction, due to the entity's unique circumstances, could jeopardize its tax-exempt status. In those instances, the entity can move forward independently without ACEP assistance, especially if the entity would make a profit from the subsequent ***land*** transfer, which would negate the need for Federal funds. No change is made to the regulation in response to this issue. Comment: NRCS received comment requesting that the pre-closing transfer of BPS easements should allow for advance payments in addition to reimbursements. Response: NRCS selected the reimbursement-only approach for pre-closing BPS transactions as it reduces the risk for cost-recovery by allowing NRCS and the entity to ensure the transaction meets all requirements prior to NRCS providing cost-share assistance. To ensure this risk is minimized across all BPS transactions, NRCS has clarified that payment of the Federal share will occur on a reimbursable basis for all BPS transaction types. Even under standard (non-BPS) ALE transactions, an advance payment may only be issued 30 days prior to closing. Therefore, the amount of time the eligible entity could be in receipt of easement funds in advance of the easement closing under the requested approach is minimal, whereas the reimbursement-only approach for BPS transactions significantly reduces risk and increases administrative savings for both the eligible entity and the Government. The regulation has been updated to make the Federal share payment provision more consistent across the BPS transaction types. Comment: NRCS received comment related to adjusted gross income (AGI) waivers; two comments suggested adding AGI waivers for entities involved in BPS transactions who play an intermediary role as landowner. Another comment suggested automatically waiving AGI for BPS transactions because entities only act as pass-through organizations for the purpose of the contract. Response: The requesting and granting of AGI waivers for landowners that the Farm Service Agency (FSA) has determined do not meet the AGI limitations must ultimately be addressed prior to providing ACEP funds. Determinations to waive AGI for landowners that do not meet the AGI limitations, as set forth in 7 CFR part 1400, must be based on a case-by-case basis. NRCS policy addresses when NRCS makes its eligibility determinations, including AGI, based on the BPS transaction type and provides maximum flexibility with respect to the timing of conducting AGI determinations. No change is made to the regulation in response to this issue. Comment: NRCS received comment regarding the length of ACEP-ALE agreements for BPS transactions, including request for an extension beyond the 3-year ACEP-ALE agreement length (and 12-month extension) for post-closing transfers to a qualified buyer or an extension to a 5-year agreement length. Response: NRCS provides a period of 3 years, plus a potential additional 12 months, to find a qualified buyer, in addition to the initial 2-year period provided to close on the easement, for a total of 6 years for an individual transaction. NRCS selected the 12-month extension for several reasons, largely based on the administrative burden associated with extending transactions further. Additionally, NRCS recognizes that post-closing BPS transactions compete for the same ACEP funds that otherwise would be available to protect ***land*** that is already owned by a private or Tribal landowner or qualified farmer or rancher. Under a post-closing BPS transaction, until transfer to a qualified farmer or rancher takes place, the intended purposes of ACEP for which the Federal funds have been invested, are not fully realized. If the property is not ultimately transferred, then those Federal funds have been rendered unavailable for 5 to 6 years during which time they could have been used to protect another property that may have met ACEP purposes from the outset. Twelve months was chosen to ensure appropriate stewardship of Federal funds. No change is made to the regulation in response to this issue. Comment: NRCS received comment requesting addition of an option to purchase at ***agricultural*** value (OPAV) for BPS agreements to maintain maximum flexibility. Response: Encumbered ***land*** under a BPS transaction must be sold at ***agricultural*** value to a qualified farmer or rancher. The ACEP statute at 16 U.S.C 3865b(b)(4)(D)(i) specifically allows the inclusion of additional deed terms to keep the ***land*** subject to the ALE under the ownership of a farmer or rancher, which includes easement deeds that are part of a BPS transaction. However, NRCS must provide oversight to ensure that the use of an OPAV term in BPS transactions does not create an incentive for strawman sales to a qualified farmer or rancher just to meet statutory BPS requirements and then have the qualified farmer or rancher sell the ***land*** immediately back to the entity at ***agricultural*** value under the OPAV term. No change is made to the regulation in response to this issue.[[Page 8116]] Comment: NRCS received comment recommending modification of the penalty for failure to complete BPS transactions to a sliding scale of restitution rather than full repayment. Response: The ACEP statute requires that the ``Secretary shall be reimbursed for the entirety of the Federal share of the cost of the ***agricultural*** ***land*** easement by the eligible entity if the eligible entity fails to transfer ownership.'' NRCS does not have any flexibility with respect to the level of restitution and therefore no change is made to the regulation in response to this issue. Comment: NRCS received comment requesting that eligibility for BPS transactions be expanded to include ***land*** owned by State and local governments. Response: The statute identifies ``eligible ***land***'' as ``private or tribal ***land***,'' which ***land*** owned by a State or local government is not. However, this limitation does not preclude the involvement of a State or local government in a BPS transaction. A state or local government can serve as the interim easement holder while a non-governmental-eligible entity serves as the landowner until the ***land*** can be transferred to a qualified farmer or rancher. No change is made to the regulation in response to this issue. Comment: NRCS received comment requesting that, in the development of its policy for BPS transactions, the entity not be required to identify the landowner or sale price during the application and agreement phase. Response: NRCS does not require the identification of the landowner or sale price during the application phase. The timing of the identification of the landowner and the sale price is specified in the ALE-agreement terms and based on the specific BPS transaction type as either a pre-closing or post-closing transfer. No change is made to the regulation in response to this issue. Comment: NRCS received comment requesting that ***land*** eligibility provisions be changed for BPS transactions, including ***removal*** of the ``imminent threat'' test example or addition of ``advancing program goals'' as a basis for eligibility. Response: To align with the ``Conference Report to Accompany H.R 2--***Agriculture*** Improvement Act of 2018'' (Managers' Report), the ACEP-ALE ``eligible ***land***'' definition for BPS transactions was modified to ``allow for ***agricultural*** ***land*** to be owned by an eligible entity on a transitional basis to qualify for program participation, provided that the ***land*** subject to the ***agricultural*** ***land*** easement be transitioned to farmer or rancher ownership within 3 years.'' Due to the transitional nature of this ownership, there are risks that the Federal investment in ACEP-ALE benefits will not be fully realized, risks that do not exist with standard ALE transactions. However, in some circumstances, such as an imminent threat of development, this risk is outweighed by the benefit of placing an easement on ***land*** not owned by an otherwise eligible private or Tribal landowner at the time the Federal funds are invested in the easement. NRCS therefore states in the ACEP regulation that, to be eligible for a BPS transaction, the ***land*** must be subject to conditions that necessitate the ownership of the parcel by the eligible entity on a transitional basis prior to the creation of an ***agricultural*** ***land*** easement, and that these conditions may include ***land*** subject to an ``imminent threat of development, including, but not limited to, planned or approved conversion of grasslands to more intensive ***agricultural*** uses.'' Other conditions may also satisfy that requirement. NRCS made a slight editorial clarification in the regulation with respect to the requirement that the eligible entity must, within 12-months of the BPS agreement, have completed the initial purchase of the ***land*** or have demonstrated that completion of the purchase of the ***land*** is imminent. No other change is made to the regulation in response to this issue. Comment: NRCS received comment on the issue of merger of title in BPS transactions, including comment recommending deed term stating merger does not apply. Another comment encouraged NRCS and Office of the General Counsel to rely on an opinion of counsel eligible to practice in the State in which the ALE project is located to the effect that no merger would result through the transaction if the eligible entity: (1) Developed strong anti-merger language to allow it to grant an ***agricultural*** ***land*** easement to itself while still holding the fee title to the property, and then (2) reaffirmed the ***agricultural*** ***land*** easement at the time the eased parcel is sold to a farmer or rancher. Response: ACEP-ALE is a nationwide program and State law varies on the effectiveness of an anti-merger clause; however, in general, entities may include a no merger clause in ALE deeds. However, NRCS does not believe that the combination of an anti-merger clause with the suggested attorney's opinion sufficiently allows an eligible entity to temporarily hold the easement and the underlying fee at the same time. NRCS contemplated this proposed BPS transaction structure in response to previous public comments. The comment received does not introduce new information resulting in a different determination with respect to the legal issues of easement creation, as an easement, by definition, are the rights held by someone in the ***land*** owned by another and is created at the time of the transfer to the other person. The article supplied by the respondent reaffirmed this concept by identifying cases where courts determined that the doctrine of merger was not applicable due to the transfer of an easement to a third party. Merger of title addresses the extinguishment of an easement right due to a subsequent acquisition of fee title, while the BPS transactions present issues of easement creation. In addition to these issues, the conflict of interest inherent in this type of ownership scenario, which would impact enforcement, monitoring, and management of the easement and property, would not be mitigated by including an anti-merger provision. No change is made to the regulation in response to this issue. Comment: NRCS received comment that parcel substitutions for BPS transactions should be allowed. Response: Due to the unique and complex nature of BPS transactions, the ALE agreement includes terms that are specific to the individual transaction and ultimately constitute the `legal arrangement' being entered into `relating to ***land*** owned . . . by an eligible entity' for the purchase of an ***agricultural*** ***land*** easement on that particular piece of ***land***. In contrast, the terms of the standard ALE agreement and contract appendix are applied universally to every parcel funded. No change is made to the regulation in response to this issue. Comment: NRCS received comment recommending that changes to transaction type (pre-closing versus post-closing transfer) be allowed after entering into agreement. Response: NRCS identified two types of BPS transactions in the interim rule: pre-closing and post-closing transfers, which are differentiated based on the timing of the sale of the fee title interest in the ***land*** to a qualified farmer or rancher relative to the timing of securing the ***agricultural*** ***land*** easement. The regulation specifies the requirements and ALE-agreement terms that apply to both types. NRCS will address in the terms of the ALE agreement how an eligible entity may request a modification to an ALE-agreement to change between these two types of BPS transactions. No change is[[Page 8117]]made to the regulation in response to this issue. Comment: NRCS received comment requesting clarification in the preamble as to whether a qualified farmer or rancher includes those who do not file a Schedule F, such as a farmer in an S corporation. Response: IRS Form 1040 or 1040-SR, Schedule F, ``Profit or Loss from Farming,'' is the preferred documentation and is consistent with other NRCS and USDA programs. However, NRCS will also consider circumstances in which other forms of IRS documentation identifying the landowners' engagement in an ***agricultural*** operation may be appropriate.ALE Contribution Requirements Under both the 2014 and 2018 Farm Bills, NRCS may provide a Federal share that does not exceed 50 percent of the FMV of the ***agricultural*** ***land*** easement and requires the eligible entity to provide a share at least equivalent to that provided by NRCS, except in the case of grasslands of special environmental significance. For grasslands of special environmental significance, NRCS may provide a Federal share that does not exceed 75 percent of the easement FMV and the non-Federal share requirement is adjusted accordingly. The 2018 Farm Bill removed the 50-percent cash contribution requirement on the part of the eligible entity and identified permissible sources of the non-Federal share. NRCS received the following comments. Comment: NRCS received comment in support of ***removing*** the requirement for the eligible entity to provide a minimum cash contribution toward the purchase of the ***agricultural*** ***land*** easement and allowing donations of ***land*** by the landowner and eligible entity expenses for procured items to satisfy the non-Federal share requirements. Other comments did not support eligible entities no longer being required to provide a minimum cash contribution. Response: The regulatory changes follow requirements of the 2018 Farm Bill. No change is made to the regulation in response to this issue. Comment: NRCS received comment suggesting changes to how NRCS structured the non-Federal share in the regulation. They asked that the ``and'' at the end of the list be replaced with an ``or.'' Response: NRCS is clarifying that the sources comprising the non-Federal share are listed in order, and proceeding through the list, once the minimum non-Federal share amount is met, additional sources and amounts do not need to be identified. Additionally, given that an eligible entity's contribution may be related to cash resources expended for the purchase of the ***land*** prior to the easement transaction, NRCS has clarified in the regulation that for BPS transactions, part of the non-Federal share provided by an eligible entity may include that portion of the fair market value of the ***agricultural*** ***land*** easement that is not provided as the Federal share. Comment: NRCS received comment requesting clarification about the timing and the type of documentation that would be required for procured costs incurred by the eligible entity if relied upon to meet the non-Federal share requirement. Response: The regulation states that documentation requirements for procured costs are included in the ALE agreement. NRCS recognizes that, at the time of agreement, costs for procured items are estimated amounts and have not yet been incurred. Such estimates are needed in order to calculate the amount of the Federal share that may be obligated. No change is made to the regulation in response to this issue. Comment: NRCS received comment requesting that baseline reports and mineral assessments be added to the list of procured costs that may be included in the non-Federal share. Response: NRCS added baseline reports and mineral assessments to the list of items that may be included in the non-Federal share if these items are procured by the eligible entity from third parties. Comment: NRCS received comment asking that a Federal share of up to 75 percent of easement costs be provided in communities that do not have eligible entities present. Response: The statute limits NRCS's authority to provide a Federal share of up to 75 percent of the easement value to grasslands of special environmental significance only. No other types of transactions are authorized to receive up to 75 percent of the easement value, including transactions that occur in communities that do not have an eligible entity present. No change is made to the regulation in response to this issue. Comment: NRCS received comment requesting a change to clarify that the non-Federal share provided by the eligible entity for ACEP-ALE grasslands of special environmental significance must comprise the difference between the Federal share and the remainder of the FMV. The comment requested ***removal*** of the provision that, in the event the non-Federal share provided by the eligible entity is less than such amount, NRCS will provide a Federal share equivalent to the non-Federal share being provided. Response: The interim rule mirrors the statute. Additionally, the language allows for the possibility that, in the event that the non-Federal share provided by the eligible entity does not comprise the difference between the Federal share and the remainder of the FMV of the easement, NRCS could still provide a lesser amount that is equivalent to the non-Federal share. Although this is unlikely, ***removing*** the language from the regulation would eliminate this possibility. No change is made to the regulation in response to this issue.ALE Deed Requirements and Terms NRCS received comment related to the topic of ALE deed requirements and deed terms as follows: Comment: NRCS received comment related to the ALE deed template review, recommending that the deed template review be limited to ensuring that the minimum deed terms are incorporated and that other terms are not contrary to the purpose of ACEP. Response: The NRCS review of ALE deed templates focuses on ensuring that minimum deed terms (MDT) are incorporated and ensuring other terms are not contrary to the purpose of the program. Review of other items may be necessary to ensure that the document will work effectively as a template for the acquisition of ***agricultural*** ***land*** easements on multiple parcels. No change is made to the regulation in response to this issue. Comment: NRCS received comment about deed provisions related to ***agricultural*** use, including a request to strike the phrase ``consistent with ***agricultural*** use'' and replace it with the phrase ``does not negatively affect ***agricultural*** use'' as to commercial uses. Another comment recommended that NRCS limit its ability to impose greater deed restrictions in instances where the State definition of ***agricultural*** uses may result in the degradation of the soils, ***agricultural*** nature of the ***land***, or related natural resources. Response: This phrase `consistent with ***agricultural*** use' is unchanged from the previous ACEP regulation and is expansive enough to apply to farmland and grassland enrollments and is sufficient to prevent commercial uses that may negatively affect ***agricultural*** uses. NRCS may impose deed restrictions needed to ensure ACEP-ALE purposes will be met in exchange for the Federal investment. No change is[[Page 8118]]made to the regulation in response to this issue. Comment: NRCS received comment expressing general support for various elements of the deed requirements set forth in the interim rule, including commending NRCS for the revised mineral development language; language regarding an entity's use of their own deed terms and conditions; and supporting the U.S right of enforcement and right of inspection language in the interim rule. Response: NRCS thanks respondents for their input. No change is made to the regulation in response to these issues. Comment: NRCS received comment related to amendment clauses that must be included in each ***agricultural*** ***land*** easement deed, recommending splitting the amendment provision in the regulation to avoid confusion between ``amendments'' and the various types of easement administration actions (subordination, modification, exchange, and termination actions). Response: NRCS appreciates the request for clarification regarding the requirement that each ***agriculture*** ***land*** easement deed include clauses that address amendments or changes that may occur after recordation of the easement. To clarify, NRCS uses the term ``amendment'' in the regulatory deed requirement in Sec. 1468.25(d)(4) broadly to include each type of easement administration action: Subordination, modification, exchange, and termination. In practice, NRCS provides two separate clauses in the minimum deed terms to address this regulatory deed requirement and fully encompass the various types of easement administration actions. NRCS revised the text in the final rule to clarify and ***remove*** ambiguity regarding the various types of changes to the easement deed or easement area that must be approved in advance by NRCS. Comment: NRCS received comment regarding the interim rule's impervious surface limitations that must be specified in ACEP-ALE easement deeds, including comments recommending that NRCS authorize a blanket impervious surface waiver to ACEP-ALE easement deed language and cap the waiver authority at 5 percent of the easement area. Response: The impervious surface limitation and the current cap are well-established. NRCS explained in prior rulemakings the basis for its use of a 2-percent limitation and the flexibility of having a waiver that allows up to 10 percent based upon site-specific factors. In particular, this limitation provides a reasoned balance between ensuring the future capacity of ***agricultural*** ***land*** use with flexibility to allow for changes to the ***agricultural*** operation. NRCS requires a parcel-by-parcel determination because impervious surface limitations are site-specific. NRCS will not approve a blanket waiver or grant eligible entities a right to create blanket waivers for a greater impervious surface limit. However, there is an existing waiver option available that may have been underutilized. Specifically, when an eligible entity has a waiver process consistent with NRCS limitations and it is based on parcel-by-parcel determinations made by the entity, the entity may request authority from NRCS to use its own process. In this case, separate individual parcel waivers from NRCS would not be necessary. No change is made to the regulation in response to this issue. Comment: NRCS received comment regarding the subsurface mineral deed provisions. The comments requested: A requirement that native plants be used to remediate subsurface mining impacts; A requirement that involves State technical committees when determining impact of mineral development; That NRCS seek guidance on timing and responsibility for the development of the subsurface development plan; and That NRCS provide flexibility in the identification of de minimis gravel extraction sites. Response: NRCS recognizes the preference for the use of native plants for remediating sites in general, but the determination of the appropriate vegetation for any particular easement must be based upon site-specific factors. While the State technical committee can provide input on the impact of mineral development to particular ***land*** uses or locations in the State, such input would be inappropriate on an individual easement basis. The eligible entity is responsible for providing the subsurface mineral development plan to NRCS, which must be approved by NRCS prior to initiation of the mineral development activity, as set forth in Sec. 1468.25(d)(7)(v). The de minimis gravel extraction matter is not a regulatory issue but the comment responds to text that exists in the current minimum deed terms. NRCS would like to clarify that de minimis gravel extraction is through surface methods and therefore not encompassed by the subsurface mineral deed. Additionally, the current minimum deed terms authorize such de minimis gravel extraction for on-farm purposes. No change is made to the regulation in response to these issues. Comment: NRCS received comment recommending that certified entities need not be required to seek NRCS approval for subdivision and other activities that currently require NRCS approval under regulatory deed requirements and allow only notice to NRCS of these actions as sufficient. Response: The interim rule language did not change from prior rules. Certified entities have broad discretion already but still must meet regulatory deed requirements. NRCS, as a fiduciary, must approve those actions that can so fundamentally affect program purposes. Comment: NRCS received comment with respect to the requirement of the United States right of enforcement in the ***agricultural*** ***land*** easement deed, including request that a reference to Sec. 1468.28 be added to the right of enforcement definition, recommendation that the word ``contingent'' should be inserted before the term ``United States right of enforcement'', and a statement that the right of enforcement does not include the ability of the NRCS enforce the terms of an ALE plan if such a plan exists. Response: NRCS removed the term ``contingent'' many years ago to ***remove*** confusion that such right is a currently vested right. The term ``contingent'' indicates that NRCS's exercise of its right of enforcement is conditioned on particular events. It does not mean that the right itself is contingent, such that it would only be vested upon some future event. NRCS has not included any cross references to the various sections which relate to the United States right of enforcement in the definition itself since such cross-referencing is unnecessary. ***Agricultural*** ***land*** easements acquired under the 2018 Farm Bill are not required to have or be subject to an ALE plan. NRCS enforces highly erodible ***land*** conservation plans on highly erodible cropland as required by the ACEP-ALE statute; however, NRCS does not otherwise identify in the regulation the enforcement of an ALE plan. No change is made to the regulation in response to this issue. Comment: NRCS received comment stating that the statutory requirement of providing notice and right to participate when exercising the right of inspection should be added to the rule and deed terms. Response: The circumstances under which NRCS may enter upon and inspect an easement pursuant to the United States right of enforcement is[[Page 8119]]included in the full right of enforcement clause provided to all eligible entities and must be used in all ACEP-funded ***agricultural*** ***land*** easement deeds. The ACEP regulation clarifies that NRCS will provide the ***agricultural*** ***land*** easement holder and the landowner a reasonable opportunity to participate if NRCS exercises its right of inspection. Comment: NRCS received comment recommending that deed terms should allow site potential tree height (SPTH) ***forested*** riparian buffers as a permissible provision in western Washington. Response: The ACEP regulation includes a ``catch-all'' provision that allows States to have additional minimum deed terms. NRCS recommends that the commenters and any stakeholders with similar concerns should work with their applicable State Conservationist. No change is made to the regulation in response to this issue. Comment: NRCS received comment related to how the ALE-agreement references the deed requirements. Response: The ALE agreement must specify the deed requirements as set forth in the regulation so that they are enforceable.ALE Entity Certification NRCS received comment related to ALE entity certification as follows: Comment: NRCS received comment on the term of agreements with certified eligible entities recommending that NRCS allow for a minimum 5-year term. Response: NRCS is changing the regulatory language in response to this comment to specify that agreements with certified entities will be for a minimum of 5 fiscal years following the fiscal year the agreement is originally executed, but may not exceed 7 fiscal years following the fiscal year the agreement is originally executed. NRCS has found that an upper limit is necessary to limit the administrative burden associated with implementing agreements that cross different farm bills. Comment: NRCS received comment urging NRCS to expand eligibility for certification for State agencies, recommending a broadening of language for which types of prior conservation easements would be counted, and requesting that NRCS drop the number of required prior conservation easement transactions from 10 to 5. Response: The terms for certification of State agencies are set forth in statute, including the type of easements that can be counted and the number of prior transactions required, and NRCS does not have discretion to waive or amend those provisions. No change is made to the regulation in response to this issue. Comment: NRCS received comment requesting additional guidance on the entity certification process, including evaluation criteria, how NRCS will address partnerships between certified and non-certified eligible entities, what technical assistance NRCS may provide to certified entities (with regards to things like title review and appraisal), the benefits of certification, and the definition of a plan for administering easements. The comment detailed recommendations about the kind of transparency NRCS should have for its process and the timeline. Another comment requested a streamlined process for certifying eligible entities, including State agencies and ***land*** trusts. Response: The internal certification review process is found at 440 Conservation Programs Manual (CPM) Part 528 and may be accessed at [*https://directives.sc.egov.usda.gov/*](https://directives.sc.egov.usda.gov/). NRCS will continue its ongoing efforts to streamline processes through new business tools to be as efficient and effective in program delivery as possible while operating within legal authorities. NRCS will continue to make publicly available any new policy or guidance. No change is made to the regulation in response to this issue. Comment: NRCS received comment expressing support for changes made in the interim rule to the entity certification process. Response: NRCS appreciates this support.ALE ***Land*** Eligibility Issues NRCS received comment related to ALE ***land*** eligibility as follows: Comment: NRCS received comment about ***forest*** ***land*** eligibility issues. Many supported maintaining the two-thirds limitation on non-industrial private ***forest*** ***land*** (NIPF) eligibility under ACEP-ALE and offered that programs like the Regional Conservation Partnership Program (RCPP), Healthy ***Forests*** Reserve Program (HFRP), and ***Forest*** Legacy Program can all be used currently to protect ***forest*** ***lands***. Another comment requested the two-third limitation on NIPF in ACEP-ALE be struck. Response: To minimize duplication, overlap, and conflict with other USDA ***forest*** easement programs, the interim rule and this regulation maintain the existing eligibility provision that ***land*** enrolled in ACEP-ALE cannot include NIPF greater than two-thirds of the ACEP-ALE easement area unless waived by NRCS with respect to ***forest*** ***lands*** dedicated to sugar bush that contribute to the economic viability of the parcel. NRCS specifically requested public comment in the interim rule on whether RCPP or HFRP could protect ***lands*** on which NIPF is the predominant use at levels beyond the scope of ACEP-ALE. Regarding the two-third limitation, NRCS cannot authorize parcels that are 100 percent NIPF because statutory eligibility criteria is phrased as NIPF contributing to the economic viability of an offered parcel or serving as a buffer to protect ***land*** from development. Thus, the eligibility of NIPF is in relationship to other eligible ***land***. This has long been NRCS's interpretation of this eligibility criterion under ACEP-ALE and its predecessor Farm and Ranch ***Lands*** Protection Program. Congress specifically rejected language that would have expanded eligibility in the 2018 Farm Bill. NRCS concurs that the availability of other USDA easement programs that specifically protect ***forested*** ***lands*** warrants the continued focus of ACEP-ALE more broadly on other ***agricultural*** ***lands***. No change is made to the regulation in response to this issue. Comment: NRCS received comment about the definition of grasslands of special environmental significance (GSES) under ACEP-ALE, including support for the definition of GSES and the prioritization and management of native vegetation and habitats in relationship to GSES. A comment also encouraged the return of ***land*** to heritage marshes and vernal pools wherever possible on GSES enrollments. Another comment supported allowing only native vegetation to be categorized as GSES. Response: NRCS believes that the current GSES definition supports the recommendation about prioritization of native vegetation and habitat. In particular, the GSES definition identifies sensitive or declining native prairie or grassland types or grasslands buffering wetlands. However, there are grasslands that, while not native vegetation, provide critical habitat for at-risk species that warrant the increased Federal investment to protect. Thus, NRCS will not limit GSES to native vegetation only. No change is made to the regulation in response to this issue. Comment: NRCS received comment related to ALE ***land*** eligibility, including: A request that confined animal feeding operations (CAFOs) not be eligible for an ALE-funded easement; A comment addressing the ineligibility criteria related to on-site and off-site conditions; A comment commending NRCS for including criteria related to permitted[[Page 8120]]rights-of-way and requesting that NRCS clarify how off-site conditions are deemed suitable for the purpose of making ALE ***land*** eligibility determinations; A comment requesting that NRCS broaden the definition of access and the eligibility requirements so that air access can qualify; and A comment requesting additional clarification as to whether a farmer or rancher can participate in both ALE and Conservation Reserve Program (CRP). Response: For any proposed easement containing a CAFO, the confined area is a heavy use area that must be evaluated by NRCS to determine if the on-site or off-site conditions render the site ineligible and make a determination as to whether the ***land*** meets the required ***land*** eligibility criteria. This is a case-specific determination and broad categorization of ***land*** eligibility simply based on type of operation is not appropriate. NRCS has set forth in national policy, which is publicly available, the procedures and forms NRCS uses to make ***land*** eligibility determinations for ACEP-ALE, including assessing the potential of onsite and offsite conditions to undermine the purposes of ACEP. Ultimately, ***land*** eligibility determinations are site-specific and rely upon programmatic and technical assessments based on criteria set forth broadly in national policy and more specifically at the State level. For more information, see: 440 CPM part 528 at [*https://directives.sc.egov.usda.gov/*](https://directives.sc.egov.usda.gov/). Legal access to ***agricultural*** ***land*** easements is critical to the ability of the eligible entity, and NRCS, under its right of enforcement, to monitor and enforce the terms of the easement and ensure that program purposes are achieved. Effective monitoring and enforcement ultimately require ground inspection and verification. Access to an easement that can only be achieved by aircraft would require both the eligible entity and NRCS to maintain, in perpetuity, aircraft that can provide personnel access to monitor and ***land*** on the easement property and would require the landowner to maintain, in perpetuity, a ***landing*** strip or helipad on the property. NRCS does not maintain its own aircraft for easement monitoring purposes and cannot evaluate the safety and suitability of aircraft owned by the eligible entity or the landowner's ***landing*** strip or helipad. All ***lands*** that do not have sufficient legal, physical access are ineligible to receive Federal funds under ACEP, including those that are only accessible by air. The 2018 Farm Bill specifies that a farmer or rancher who owns eligible ***land*** subject to an ***agricultural*** ***land*** easement may enter into a CRP contract. Determinations of ***land*** eligibility for enrollment in CRP are under the purview of FSA and we have therefore shared the comment with FSA. No change is made to the regulation in response to these issues.ALE Planning NRCS received comment related to ALE planning and ALE plans as follows: Comment: NRCS received comment related to ALE planning generally and some of them urging NRCS to require a grassland management plan for grasslands of special environmental significance given the higher environmental value of these easements. Another comment recommended that NRCS continue to encourage planning on ALE easements, while a comment did not support how NRCS encouraged planning. Response: The 2018 Farm Bill removed language requiring that ACEP-ALE easements enrolled under the 2018 Farm Bill be subject to an ALE plan, including grasslands of special environmental significance. However, in the Managers' Report, the Managers ``encourage USDA and eligible entities to work with landowners entering into an ALE easement to undertake conservation planning activities on their ***land*** in order to maximize the environmental value of the protected ***land***.'' Therefore, NRCS will continue to encourage planning on ACEP-ALE enrollment, including grasslands of special environmental significance. No change is made to the regulation in response to this issue. Comment: NRCS received comment strongly supporting the recognition ALE plan as a measure that maintains or increases the ***agricultural*** viability of the ***land*** in the ranking criteria, and identified that the ranking criterion should strongly weight ALE plans for grasslands of special environmental significance and that a plan should be required for any application that is prioritized based on carbon sequestration or climate change resiliency goals. Another comment expressed that an ALE plan should not be recognized in the ranking criteria because it is no longer required by statute. Response: As described in the preamble of the interim rule, NRCS identified that the development and maintenance by the eligible entity of an ACEP-ALE plan could be a ranking consideration at the State level to prioritize applications from eligible entities. NRCS believes that conservation planning is the base upon which sound conservation stewardship originates. To eliminate support for planning would undermine the quality of stewardship that would be encouraged on ***lands*** in which the public provides a sizable financial investment. Additionally, as a ranking criterion this consideration does not prohibit eligible entities from being able to access program funding but instead acknowledges that eligible entities committed to long-term conservation planning are helping to ensure an ***agricultural*** ***land*** easement yields the greatest benefits for the landowner, conservation, and the public funds invested in that easement. No change is made to the regulation in response to this issue. Comment: NRCS received comment related to the definition of the ALE plan, with some advocating for the ***removal*** of the ALE plan definition entirely because plans are no longer mandated by statute. Another comment supported the definition of ALE plans and commended NRCS for clearly defining that the plan is developed by the eligible entity and not as a component of the deed. Comment also expressed support for limiting conservation plans to only highly erodible croplands. Response: NRCS supports conservation planning as the cornerstone of ***land*** stewardship efforts. NRCS retained the definition of the ALE plan in the ACEP regulation. No change is made to the regulation in response to this issue.ALE Program Requirements NRCS received comment related to ALE program requirements as follows: Comment: NRCS received comment requesting clarification as to how NRCS will determine if a landowner entity is compliant with AGI. Response: NRCS uses the AGI eligibility determinations made by the FSA. NRCS accesses such determinations through the agencies' shared database services. No change is made to the regulation in response to this issue. Comment: NRCS received comment related to the requirement that eligible entities must provide evidence of their financial capacity for transactions in which the non-Federal share does not include at least a 10-percent cash contribution from the eligible entity for payment of easement compensation to the landowner. Other comment requested ***removal*** of the requirement that the entity provide specific evidence of funds available for stewardship of the easement and suggested that entity eligibility requirements that apply to all ACEP-ALE transactions regardless of[[Page 8121]]entity cash contribution amounts are sufficient. Other comment commended NRCS on including the requirement but requested clarification as to what would constitute specific evidence of funds available for stewardship. Response: All entities must demonstrate capability and capacity as an eligibility requirement. Under the 2014 Farm Bill, NRCS could use an entity's ability to provide at least the required cash contribution amount for all ACEP-ALE transactions as an indication that the entity is able to meet capability and capacity requirements. Where an entity is unable to provide at least a minimum cash contribution, questions arise as to the entity's financial capacity to assume responsibility for the easement acquisition. NRCS has, therefore, specified in the regulation the conditions under which additional capability and capacity evidence will always be required. However, it is always the entity's responsibility to establish that it meets basic ACEP-ALE eligibility requirements and as identified in the rule, the entity must provide to NRCS sufficient information to establish that the applicable entity eligibility criteria have been met. Comment: NRCS received comment recommending that the definition of a farm or ranch succession plan be expanded to include transfers of ***land*** and deeds to non-relatives and other long-term protections for ***agricultural*** productivity. Also, comment recommended specifying that successions plans may include options to purchase at ***agricultural*** value or preemptive purchase rights. Response: The key part of a succession plan is that the landowner makes arrangements for the future management of the ***land*** as a farm or ranch once the landowner retires or dies. NRCS does not limit those types of arrangements. The definition of the succession plan in the regulation used intra-family succession agreements or business asset transfer strategies as examples. NRCS has added language to clarify that the examples included in the definition are not all-inclusive. Comment: NRCS received comment related to the easement valuation methods available under ACEP-ALE, encouraging NRCS to provide guidance on information required for easement valuation methods used other than the Uniform Standards of Professional Appraisal Practice (USPAP) appraisals, including areawide market analysis or other industry-approved methods. Comment also expressed support for the current availability of ACEP-ALE valuation options beyond USPAP appraisals. Response: NRCS provides guidance in policy with respect to what is required if an eligible entity elects to use an alternative easement valuation methodology, including a ``Specification and Scope of Work for Areawide Market Analysis for ACEP-ALE.'' These items are published and publicly available in NRCS directive Title 440, Conservation Programs Manual (440-CPM), Part 528, Section 528.53, and in 440-CPM, Part 527, Subpart E, which can be accessed on the NRCS Electronic Directives system at [*https://directives.sc.egov.usda.gov/*](https://directives.sc.egov.usda.gov/). No change is made to the regulation in response to this issue. Comment: NRCS received comment recommending that NRCS be required to consult with the State technical committee on ACEP-ALE prioritization for ranking, special eligibility, and all other State-decided criteria. Response: Statutory authority states that State technical committees assist in implementation and technical aspects of conservation programs under Title XII of the Food Security Act, such as ACEP. Sections 1468.2 and 1468.22 of the ACEP interim rule incorporate this role, including that State technical committees provide input on the development of ranking criteria and other matters. No change is made to the regulation in response to this issue. Comment: NRCS received comment related to the ACEP-ALE application process and the new option for ALE-program agreements, requesting that NRCS make the application form and new option for ALE-program agreements form more usable and that the process be streamlined. Other comments wished to have greater guidance about how producers could participate and supported the new ALE program agreement option and requested additional clarification regarding its availability. Response: NRCS appreciates the complexity of easement transactions, including the extent of information that must be collected from applicants and participants on various program forms. NRCS has made several efforts to streamline the ACEP-ALE enrollment process. In FY 2020, NRCS released various new or updated forms used to administer ACEP-ALE. Additionally, NRCS piloted in fiscal year 2019 and is implementing more widely in fiscal year 2020 the use of ALE program agreements, making available several automated eligibility and payment processes previously only available to NRCS financial assistance programs. Also, the use of a program agreement framework under ACEP-ALE allows NRCS and eligible entities to more easily address enrollment changes, such as parcel substitution or acreage modifications. Since NRCS does not receive landowner applications directly for ACEP-ALE enrollment, NRCS will provide outreach to States to help landowners interested in ACEP-ALE identify eligible entities in their geographic area. No change is made to the regulation in response to this issue. Comment: NRCS received comment recommending that NRCS allow water supply entities to participate in ACEP-ALE as eligible entities. Response: An eligible entity must meet the definition of an eligible entity established by statute and incorporated into the ACEP regulation. NRCS does not have authority to expand the basic eligible entity definition. No change is made to the regulation in response to this issue.ALE Ranking NRCS received comment related to ALE ranking as follows: Comment: NRCS received comment related to ***removing*** the factor associated with national ranking criterion that takes into consideration whether the cash contribution is being provided by the eligible entity toward the payment of easement compensation to the landowner. Other comments: Recommended consideration of State and local tax incentives be added to this factor; Recommended NRCS prioritization of landowner donation in the ranking; and Agreed with including the eligible entity's cash contribution in the ranking. Response: The Managers report introduced flexibilities to provide better access to ACEP in States where conservation easement funding is limited. The Managers stated that they did not intend for NRCS to reject cash matches entirely but broadened the options available to eligible entities. NRCS recognizes that any time the eligible entity's cash contribution is reduced, the landowner receives less compensation for the sale of an easement on their ***land***, which may result in ACEP funds being the only funds paid to the landowner for the easement. Additionally, the increased donation by the landowner will frequently satisfy the minimum non-Federal share requirement under ACEP-ALE. By considering the cash contribution as a positive attribute in ranking, NRCS is encouraging enrollment while ensuring that ACEP is implemented equitably. Each State has[[Page 8122]]the ability to calibrate the relative importance of cash contributions in the prioritization of applications for enrollment in that State. No change is made to the regulation in response to these issues. Comment: NRCS received comment related to ranking priority for actions related to the future, ***agricultural***, and long-term viability of enrolled ***land***. Comment supported adding information to the succession plan portion of the ranking, such as specifically identifying OPAV, Purchase of Development Rights (PDR), and other succession planning options that maintain ***agricultural*** viability or awarding points for innovative succession requirements. Comment also: Recommended expanding the ranking criteria to prioritize applications that increase opportunities for historically underserved farmers; Supported the maintenance of ***agricultural*** viability as a ranking criterion; including supporting its inclusion as both a national and State ranking factor; Suggested that such inclusion is duplicative; Recommended that ***agricultural*** viability be included in the national ranking criteria; and Recommended that succession planning be removed from the ranking criteria. Response: Based on national and State ranking criteria in the ACEP regulation, NRCS at the State level develops ranking factors and associated weights. Broadly identifying State ranking criteria in the regulation provides the needed flexibility for States to develop the specific ranking criteria that best address State and local priorities. Regarding long-term maintenance of ***agricultural*** viability, the national ranking criteria ensures, consistent with the statute, that this criterion is considered in every ACEP-ALE application by assessing whether a succession plan exists. The existence of State ranking criteria enables States to develop nuanced approaches to address long-term ***agricultural*** viability, which may include more specific identification or prioritization of certain types of succession plans or succession planning strategies. NRCS does not wish to limit ***agricultural*** landowners' choices or restrict who could be involved in succession planning. Such specificity is not necessary in the regulation itself. NRCS includes in the regulatory definition of a farm or ranch succession plan strategies that create opportunities for historically underserved landowners. NRCS also includes a State ranking criterion related to the multifunctional benefits of farm and ranch ***land*** protection, of which social and economic considerations may be included. No change is made to the regulation in response to these issues. Comment: NRCS received comment about eliminating the potential for prioritization of applications for which eligible entities agree to use the ACEP-ALE minimum deed terms. Response: In the interim rule, NRCS indicated that it may prioritize transactions where an eligible entity uses NRCS's standard set of minimum deed terms. This potential prioritization also existed for enrollment during the 2014 Farm Bill and its inclusion as a factor in the State's ranking criteria is at the State's discretion. An eligible entity's use of the standard set of minimum deed terms streamlines the easement approval process and eliminates the need for NRCS review of the conservation easement deed for individual transactions. The efficiency by which easement transactions are completed, including the use of available administrative streamlining options, is an appropriate consideration in ranking, and no change was made in this final rule. No change is made to the regulation in response to this issue. Comment: NRCS received comment related to the State ranking criteria for multifunctional benefits for the protection of a particular farm or ranch, recommending that NRCS at the State level have the option to specify `other related conservation benefits' under this multifunctional benefits criterion. Comment also recommended adding `species of economic significance' to the consideration for at-risk species protection under this ranking criterion. Another comment recommended the criteria be `other related benefits,' striking `conservation' from the consideration, and other comments recommended that NRCS add ranking criteria about related conservation values. Response: NRCS agrees that evaluating the multifunctional benefits that may result from parcel protection is an important prioritization criterion. NRCS has enumerated in the regulation some potential benefits that may be considered and has included `other related conservation benefits' to provide States with the flexibility to identify such conservation benefits and establish the associated ranking factors and priorities. NRCS believes the State ranking criterion is sufficiently expansive for NRCS to tailor ranking factors at the State and local level. No change is made to the regulation in response to this issue. Comment: NRCS received comment and appreciation related to various State ranking criteria, including requesting that NRCS provide specific references to geographic differences for States to use in ranking. Other comment stated that prioritizing ***land*** in areas zoned for ***agricultural*** use may inadvertently exclude ***agricultural*** ***lands***. Comment also recommended that protection of native prairie and other native habitats, including protection or improvement of habitat for pollinators, be added to the State ranking criteria related to the diversity of natural resources to be protected or improved, and requested that riparian buffers be ranked as the highest ACEP-ALE priority. Response: NRCS believes that the regulation provides a sufficient framework under which the various items brought forth in these comments can all be addressed at the State level with input from the State technical committee. No change is made to the regulation in response to these issues. Comment: NRCS received comment related to various national ranking criteria. One comment indicated that it is contradictory to limit ***forest*** ***land*** enrollment to two-thirds of an easement area while also having the extent of forestland as part of a ranking criterion. Another comment encouraged NRCS to clarify in the regulation that it will use the `median' county average farm size and requested higher priority be given to parcels adjacent to existing easements or protected areas. Response: Comment related to ***forest*** ***lands*** refers to the national ranking criteria for the percent of cropland, rangeland, grassland, historic grassland, pastureland, or nonindustrial private ***forest*** ***land*** permitted in a protected parcel. Each State is able to tailor the specific ranking factor to prioritize enrollment of ***land*** that contains the amounts and types of ***land*** and ***agricultural*** uses that are most at risk in their State. For example, a western State may establish the ranking factor to prioritize parcels with a larger percentage of historic grassland since those ***lands*** may be at the greatest risk of conversion. In contrast, a midwestern State may prioritize the percentage of cropland in a parcel since those ***lands*** may be at the greatest risk of conversion. Comment regarding median county average farm size refers to the national ranking criteria that considers the ratio of the size of the parcel compared to the average farm size in the county. As identified in the regulation, the USDA Census of ***Agriculture*** is the data source for this national ranking criterion; the[[Page 8123]]term `average size of farm' is contained in the Census. Based on ALE application and enrollment data, use of this nationally available data item continues to be appropriate. NRCS affirms that proximity to other protected ***lands*** continues to be one of the national ranking criteria set forth in the regulation. No change is made to the regulation in response to these issues. Comment: NRCS received comment recommending that NRCS allow ACEP-ALE eligible entities to participate in State technical committee recommendations for ACEP-ALE ranking determinations. Response: Eligible entities may participate in the State technical committee; however, they may not participate in developing ranking factors for programs in which they participate. If potential participants had input into ranking factors, NRCS selection decisions would be suspect. NRCS will provide training to State offices describing the roles of eligible entities. No change is made to the regulation in response to this issue. Comment: NRCS received comment supporting various aspects of the ACEP-ALE ranking provisions, including: Commending NRCS for not using cost as a ranking criterion; commending NRCS's consideration of proximity to other protected ***land*** as a ranking criteria; and commending the straightforward implementation of ranking that allows States to prioritize parcels through ranking criteria. Response: NRCS appreciates the comments. Comment: NRCS received comment recommending landowners who have protected their ***land*** through ACEP-ALE receive priority for funding under NRCS' financial assistance programs, such as the Environmental Quality Incentives Program (EQIP). Response: NRCS receives input on program priorities, including priorities for enrollment in its financial assistance programs, from the State technical committees. There is no need to identify priorities for other programs' enrollment in the ACEP regulation. No change is made to the regulation in response to this issue.Definitions NRCS received comment related to the definitions in the ACEP interim rule as follows: Comment: NRCS received comment related to the terms ``future,'' ``***agricultural***,'' and ``long-term'' with respect to the term ``viability.'' Comment recommended that greater consistency be applied throughout the final rule for the three terms with respect to the term ``viability;'' the definition of ``***agricultural*** viability,'' as referenced in the Managers' Report language, be clarified; and various items be added to, or deleted from, the definition of ``future viability.'' Response: Since the creation of ACEP in the 2014 Farm Bill, the statute uses the phrase ``***agricultural*** use and future viability'' in the program purposes statement. In response to comments on the February 2015 ACEP interim rule, NRCS included a definition of ``future viability'' to identify that ACEP-ALE purposes include the legal, physical, and financial conditions under which the ***land*** itself will remain capable and available for continued sustained productive ***agricultural*** or grassland uses. The 2018 Farm Bill maintained the reference to ``***agricultural*** uses and future viability'' in the context of the program purposes and introduced the term ``***agricultural*** viability'' in the context of potential application prioritization. NRCS believes that the existing definition of ``future viability,'' which is sufficiently expansive without being overly prescriptive, includes such concepts as accessibility to beginning farmers or ranchers and continued affordability. To address the request for clarity, NRCS has included a reference to the adoption of a farm or ranch succession plan as another example of a condition that supports the future viability of the protected ***land***. Comment: NRCS received comment related to the definition of historically underserved landowner, recommending that socially disadvantaged farmers be specifically identified, be included in the definition of historically underserved landowners, and be added to the definition of ``socially disadvantaged farmer or rancher.'' This comment refers to the provision in the interim rule associated with farm or ranch succession planning that identifies new or beginning farmers or ranchers, veteran farmers or ranchers, or ``other historically underserved landowners.'' Response: The definition of historically underserved landowner includes beginning, limited resource, socially disadvantaged, and veteran farmer or ranchers. As a result, the definition of farm or ranch succession plan has been modified in this final rule to refer simply to ``historically underserved landowner'' since this term is all-encompassing. The definition of socially disadvantaged farmer or rancher has been in the definitions section since the ACEP regulation was first promulgated in 2015. Comment: NRCS received comment that suggested replacing the concept of watersheds with ``watershares.'' Response: NRCS has long been involved in watershed and watershed planning, and the term ``watershares'' is not a universal term. No change is made to the regulation in response to this issue. Comment: NRCS received comment requesting that the definition of ``riparian areas'' be modified to eliminate the ``movement for wildlife'' as an element. Response: The definition of riparian areas has long included reference to the movement of wildlife as it is one of the critical functions of riparian areas. No change is made to the regulation in response to this issue. Comment: NRCS received comment requesting ***removal*** of reference to species that are ``likely to undergo'' population decline from the definition of ``at-risk species.'' The commenter objected to an unnamed agency imposing restrictions through an unknown process. Response: The interim rule identified the determination of ``likely to undergo population decline'' is made by the NRCS State Conservationist, with advice from the State technical committee or Tribal Conservation Advisory Council. The definition is shared across NRCS conservation programs, all of which are voluntary. No change is made to the regulation in response to this issue. Comment: NRCS received comment requesting a change to the definition of ``***agricultural*** commodity'' so that the intent to harvest annually rather than tillage is used as the determining mechanism. Response: The definition of ***agricultural*** commodity is contained in statute. No change is made to the regulation in response to this issue.Easement Administration Actions NRCS received comment related to easement administration actions as follows: Comment: NRCS received comment related to the identification of the sequencing procedures under the National Environmental Policy Act (NEPA) with respect to easement administration actions, recommending that easement administration actions related to sequencing considerations be classified as categorical exclusions for NEPA analysis. Other comment suggested that the provision be amended to eliminate NEPA sequencing review if the easement administrative actions either enhance purposes of the ACEP-ALE program or do not materially threaten the ALE's protection[[Page 8124]]of ***agricultural*** viability or other conservation values, and requested ***removal*** of reference to NEPA entirely. Comment also requested clarification about how NEPA sequencing considerations may affect NRCS approval of easement administration actions. Response: The decision to modify or terminate a Federal interest has long been subject to NEPA review, and NRCS must comply with NEPA statutory, regulatory, and policy requirements during its review of a requested easement administration action. These requirements include reviewing whether adverse impacts associated with an easement administration action can be avoided, minimized, or mitigated. Since the impacts and outcomes of an easement administration action cannot be categorized generally, a specific review is necessary. As NRCS evaluates the NEPA analyses developed for the individual easement administrative actions, it is gathering evidence that may be used to propose categorical exclusions for certain easement administrative actions in the future. NRCS may identify new categorical exclusions, through issuing new NEPA procedures (including by amending NRC's current regulations implementing NEPA at 7 CFR part 650), consistent with the Council on Environmental Quality's regulations for implementing the procedural provisions of NEPA, published at 40 CFR parts 1500 through 1508. No change is made to the regulation in response to this issue. Comment: NRCS received comment related to adding references or additional requirements to the easement administration action criteria, including a reference to the easement administration criteria indicating that any easement modification or termination conform to State law requirements, and including a reference that easement administration actions must conform to section 170(h) of IRC and associated U.S Department of the Treasury (Treasury) regulations. Comment also requested that easement administration actions align more closely with ***Land*** Trust Alliance (LTA) industry standards. Response: Easement administration actions are documented in ***land*** records in accordance with State law. NRCS's authority to approve easement administration actions is not subject to requirements in section 170(h) of the Treasury or associated regulations related to charitable donations. However, entities are not prevented from incorporating language that addresses their own compliance with section 170(h) in their part of the conservation easement deed terms. NRCS must implement easement administration actions in accordance with Federal law and responsibilities; private ***land*** trusts are not subject to these requirements when conducting actions without Federal involvement. It would not be appropriate for NRCS to adopt ``industry standards'' that do not account for these Federal standards. No change is made to the regulation in response to this issue. Comment: NRCS received comment related to the various easement administration action requirements, including: Recommending that NRCS ***remove*** the 10-percent limitation on easement administration actions so that an easement modification or exchange action would just need to meet one of the two thresholds: (1) The action provide equal or greater conservation functions and values and (2) equal or greater economic values; Recommending ***removal*** of the standard of no net loss of easement acres required for easement subordination, modification, or exchange actions; and Recommending a change to the definition of easement termination to acknowledge compensation that may be owed to other interest holders in a conservation easement. Response: NRCS uses the 10-percent limitation requirement to minimize the effects of administration actions. NRCS selected the 10-percent level based upon review of the scope of prior requests for easement administration actions and for consistency with other NRCS conservation programs. It is a statutory requirement that an easement modification or exchange action must meet both thresholds (equal or greater conservation value and equal or greater economic value). As to the threshold for an easement subordination, modification, or exchange to result in no net loss of easement acres, NRCS believes, based on long-standing experience, that the existing standard ensures that the public investment in conservation easements endures for the life of the easement and that NRCS is able to make credible determinations of equal or greater conservation and economic value as required by statute. The definition of easement termination addresses only the United States' rights or interests in an easement, including that the United States must be fully compensated for the termination of such rights and interests that are held by the United States. The easement termination language does not address or affect compensation that may be owed to other interest holders. No change is made to the regulation in response to these issues. Comment: NRCS received comment that requested NRCS modify language regarding easement termination to clarify that it also applies to the partial termination of an easement. Response: NRCS has clarified that partial termination of an easement is subject to the easement termination requirements to the same extent as the full termination of an easement. All easement termination actions are subject to review at both the NRCS State office and National Headquarters levels. Comment: NRCS received comment that supported allowing the use of updated deed provisions when making easement amendments, cautioned that flexibility be granted to do simple amendments, and advised NRCS not to require updates to new language that may be contained in updated deed provisions of those provisions are unnecessary or unacceptable to the landowner. Response: NRCS appreciates the support received for deed amendment process requirements. Deed amendments to ACEP-ALE easement deeds must be approved by NRCS, as discussed above. No change is made to the regulation in response to this issue.Environmental Markets Comment: NRCS received comment expressing support for updates to the section on environmental markets. Response: NRCS appreciates the comments.Fund Allocations NRCS received comment related to ACEP fund allocations as follows: Comment: NRCS received comment supporting the historic division of fund allocations across ACEP, that is based on demand for funding. Approximately 70 percent of ACEP funding is dedicated to wetland conservation through ACEP-WRE and 30 percent is for ***agricultural*** ***land*** preservation through ACEP-ALE. Another comment urged greater flexibility with respect to fund allocations. Response: NRCS has not specified in the regulation an allocation of program funds between the two components of the program. NRCS maintains program flexibility year-to-year to respond to program demand. No change is made to the regulation in response to this issue. Comment: NRCS received comment recommending continued use of ACEP-WRE authorities to enter into agreements and contracts with non-governmental organizations, State[[Page 8125]]agencies, and other partners to continue to leverage resources and expertise. Response: NRCS relies on its partners to assist NRCS in its delivery of ACEP-WRE and will continue to utilize its authorities to coordinate with these valuable partners. No change is made to the regulation in response to this issue. Comment: NRCS received comment supporting the continued allocation of a portion of ACEP funds for monitoring and management of existing easements and recommending that State Conservationists have discretion to determine the appropriate portion of the individual State allocation to be used for monitoring and management of existing easements. Response: NRCS National Headquarters provides on-going coordination, guidance, and support to State Conservationists to ensure that sufficient funds are dedicated and used to appropriately monitor, manage, and enforce stewardship ***lands***. No change is made to the regulation in response to this issue.Landowner Eligibility--Adjusted Gross Income (AGI) Limitation Waiver NRCS received comment related to the AGI limitation waiver as it affects landowner eligibility to enroll in ACEP as follows: Comment: NRCS received comment related to the definition and criteria for environmentally sensitive ***lands*** of special significance, including encouraging NRCS in its AGI waiver determinations to give the most consideration to ***lands*** with the highest conservation value, particularly ***lands*** of special significance that can demonstrate significant linkages with the conservation objectives of migratory bird, wetlands conservation, and water quality programs, plans, or initiatives. Comment also requested that environmentally sensitive ***land*** of special significance be explicitly defined. Response: NRCS will consider the factors noted in the comment in granting AGI waivers. Terms associated with the AGI waiver are set forth in the regulations governing payment limitation and payment eligibility requirements, including AGI provisions, at 7 CFR part 1400. No change is made to the regulation in response to this issue. Comment: NRCS received comment suggesting that NRCS expand eligibility for AGI waivers, including allowing the waiver for all ACEP-ALE enrollment, automatically waiving AGI for BPS transactions, and interpreting AGI waiver factors broadly. Response: NRCS may only grant waivers on a case-by-case basis where the waiver criteria are met. Broadening the waiver authority to eliminating AGI applicability to all ALE enrollment types is outside statutory authority. No change is made to the regulation in response to this issue. Comment: NRCS received comment seeking increased streamlining and guidance regarding AGI waivers. Response: NRCS will continue its ongoing efforts to streamline processes through the use of new tools. NRCS will continue to develop and release specific guidance as needed. No change is made to the regulation in response to this issue. Comment: NRCS received comments expressing support for the use of AGI waiver authority in ACEP. Response: NRCS appreciates support for its AGI waiver process.Program Administration NRCS received comment on the topic of program administration as follows: Comment: NRCS received one detailed comment emphasizing the importance of protecting endangered and at-risk species through ACEP. This comment specifically referred to salmonid species. Response: NRCS appreciates the importance of protecting threatened and endangered species and its responsibility to comply with the Endangered Species Act (ESA), including ESA section 7(a)(1). As part of its conservation planning framework and site-specific NEPA process, NRCS also considers impacts to at-risk species as required by its NEPA implementing regulations (7 CFR part 650). No change is made to the regulation in response to this issue. Comment: NRCS received comment related to outreach activities, including recommending that: NRCS retain its outreach focus on historically underserved farmers and ranchers; funds expended for historically underserved purposes be identified and made public; and NRCS ensure that the process is streamlined to ensure access to disadvantaged and underserved populations. Comment also reminded NRCS regarding sovereign-to-sovereign consultation for Farm Bill easement programs having Tribal implications. Response: NRCS will continue to evaluate options to enhance opportunities for historically underserved producers and focus resources on ensuring parity in program enrollment. NRCS conducted several Tribal meetings in FY 2019 and FY 2020 and State Conservationists obtained input on program implementation from the Tribal Conservation Advisory Committees. No change is made to the regulation in response to this issue. Comment: NRCS received comment expressing specific support for various aspects of program administration, including supporting NRCS discretion to waive certain program administration provisions and commending NRCS for continuing to obtain input from State technical committees, other Federal and State agencies, conservation districts, and other organizations. Response: NRCS appreciates the support it has received for ACEP administration. Comment: NRCS received comment urging continued or increased consultation with partners and stakeholders, including State technical committees, non-governmental organizations, and the U.S Fish and Wildlife Service. Response: NRCS will continue to seek stakeholder input on how to improve program administration, especially input that NRCS receive on State and local resource issues. No change is made to the regulation in response to this issue. Comment: NRCS received comment asking that technical assistance provided by NRCS regarding compliance with easement terms be clarified and recommending creation of ACEP-specific forms. Comment also recommended guidance on conflicts of interest and information on the implementation of Voluntary Public Access and Habitat Incentives Program (VPA-HIP). Response: NRCS will continue its ongoing efforts to streamline processes, including modifying its required forms, through the use of new tools. Additionally, NRCS will continue to develop and release guidance on specific topics as needed. NRCS regulation and policy regarding VPA-HIP is provided separately and can be found in 7 CFR part 1455, and associated agency policy is available on the NRCS website. No change is made to the regulation in response to this issue. Comment: NRCS received comment recommending that NRCS include text regarding ACEP ranking that prioritizes ***lands*** enrolled in the Transition Incentives Program under the Conservation Reserve Program (CRP-TIP). Section 1235(f)(1)(E) of the CRP statute requires that priority enrollment be given to ***land*** subject to a CRP-TIP contract into EQIP, Conservation Stewardship Program (CSP), and ACEP. Response: Section 1468.22(b)(11) of the ACEP interim rule identifies as a national priority for ALE enrollment[[Page 8126]]grasslands currently enrolled in CRP in a contract that is set to expire within 1 year. Section 1468.32(c) of the ACEP interim rule identifies as a potential State priority for WRE enrollment whether ***land*** is farmed wetland and adjacent ***land*** that is currently enrolled in CRP in a contract that is set to expire within 1 year. However, neither ALE nor WRE identify a specific priority ranking for CRP-TIP ***land***. Therefore, NRCS is adding a specific priority in the ACEP regulation for CRP-TIP. Comment: NRCS received comment related to the practices and activities administered through ACEP, including: Encouraging NRCS to adopt the ``Active River Area Concept'' to its management scheme; Proposing that all easements go through a plant and plant community survey by a botanist prior to enrollment; Seeking confirmation that NRCS would not enter into agreements with entities who would preclude ***forested*** riparian buffers; Recommending that NRCS recognize specifically intensive rotational grazing as one of the best management tools; and Recommending that diverse native plant mixes be prioritized in ACEP wetland and grassland restoration and management plans. Response: NRCS addresses how best to administer its practices and activities through technical and program policy implemented at the State level through the discretion given NRCS State Conservationists. In general, NRCS supports the development and implementation of plans and restoration activities that consider the value of management and restoration activities that provide for a diverse assemblage of native plants, including pollinator-friendly species. However, NRCS believes that specific resource management issues are best addressed at the State level. No change is made to the regulation in response to this issue. Comment: NRCS received comment related to program administration that did not fit neatly into any single subtopic: Require landowners to assume responsibility for operation and maintenance of easements; Provide sufficient staffing to meet customer service needs; Concern over the authorization of permanent easements; Make publicly available information related to easement enrollments such as acres enrolled, soil classification of ***land***, and before and after ***land*** use; Condition ACEP so that all funded efforts achieve consistency with State water quality standards and salmon recovery plan habitat objectives; and Review easement deed terms at least every 100 years to ensure consistency with existing conditions. Response: The operation and maintenance that may occur on ACEP easements and who may perform such activities is addressed in the terms of the easement deeds. NRCS staffing is not a part of this rulemaking, but the agency will continue providing the highest quality customer service and program implementation with its resources. Permanent easements are authorized and prioritized by statute. As NRCS collects data, the agency generates multiple reports on a variety of impacts, which are typically made available to the public upon request. NRCS will consider the recommendation regarding consistency with water quality standards and recovery plan habitat objectives as it continues to evaluate and refine ranking and eligibility criteria. Review of easement deed terms at least every 100 years is beyond the scope of current regulation and policy. No change is made to the regulation in response to these issues. Comment: NRCS received comment related to source water protection issues including: Recommending that NRCS acknowledge source water protection as a goal of ACEP; Adding discussion about how source water protection priorities will be included in the implementation of ACEP and other NRCS conservation programs; Addressing how ACEP will be included in accounting for overall source water expenditures by publishing a plan for comment; Adding source water protection in the ACEP ranking criteria; Ensuring adequate attention given to source water protection at State technical committees; and Recommending that NRCS address how spatial data related to source water areas will intersect with ACEP. Response: Source water protection is a statutory priority and NRCS Headquarters provides guidance to ensure that all its programs are contributing to the protection of source water protection areas. The ACEP regulation includes water quality as a consideration in the list of ranking criteria for both ALE and WRE and the State Conservationist, in consultation with the State technical committee, may develop and include specific considerations for source water protection as part of their State's ranking factors. NRCS uses geographic information system tools to help identify source water protection areas and easement enrollment. No change is made to the regulation in response to this issue.WRE Issues NRCS received comment related to ACEP-WRE topics as follows: Comment: NRCS received comment supporting revisions to the definition of wetland restoration in the interim rule regarding ACEP-WRE. Comment highlighted that the expanded flexibility would benefit wetland functions and habitat values. Comment also encouraged NRCS to engage robustly with State technical committees when devising the State-specific NRCS criteria and guidelines for wetland restoration. Response: NRCS appreciates support for the revised definition of wetland restoration. Comment: NRCS received comment related to compatible use authorizations under ACEP-WRE, expressing support for the inclusion of water management and supporting the use of such management activities to maintain, enhance, and diversify wetland habitats on ACEP-WRE easements. Comment also recommended ***removing*** ``hunting and fishing'' from the list of activities that can be authorized as a compatible use in Sec. 1468.37(a)(2)(ii) because undeveloped recreational uses, including hunting and fishing, are listed as one of the five rights reserved by the landowner in the ACEP-WRE warranty easement deed. Comment also identified that NRCS should seek input from the State technical committee on technical matters related to compatible use designations and guidelines. Response: NRCS appreciates support for the inclusion of water management and recognizes the potential utility of this activity to wetland functions and values when properly prescribed and implemented on ACEP-WRE easements through the compatible use authorization process. Hunting and fishing are specifically identified in the ACEP statute as a `compatible use' that is subject to NRCS determination of compatibility. NRCS has implemented this provision by identifying in all ACEP-WRE easement deeds that undeveloped hunting and fishing, subject to the terms of the easements, is a reserved right. However, any hunting and fishing activities that extend beyond that reserved right are prohibited unless determined compatible by NRCS through the compatible use authorization process. In the ACEP interim rule, NRCS included compatible use criteria and related[[Page 8127]]matters in the expanded list of examples provided in Sec. 1468.2(b) regarding subjects on which the State technical committee may provide advice to the State Conservationist. Comment: NRCS received comment regarding wetland restoration and management activities, encouraging that the technical requirements for grazing management plans and exhibits for ACEP-WRE grazing reserved rights enrollments be developed in consultation with State technical committees and that the individual grazing management plans be dynamic to accommodate wildlife and habitat conservation along with producer needs. Comment also recommended that NRCS prioritize activities supporting migratory waterfowl and other wetland-dependent wildlife through science-based management and recommended levee setbacks and ***forested*** riparian buffers be allowed on all easements in Washington State. Response: NRCS appreciates comment related to grazing management plans and ACEP-WRE reservation of grazing rights enrollments. The ACEP interim rule provided clarifying changes consistent with these recommendations, including addition of a grazing management plan definition that is specific to ACEP-WRE and provisions related to the review and modification of such plans for reserved grazing rights enrollments. NRCS conducts and supports monitoring and research on its wetland easements to obtain data and information that informs technical decisions related to prioritization and selection of new easements and restoration and management of existing easements. NRCS will continue to collaborate with partners and institutions to obtain the information needed to make science-based decisions to maximize wildlife benefits and wetland functions and values on every ACEP-WRE easement. The concern related to restoration activities in the State of Washington do not rise to a nationwide level and are not addressed in the regulation. The ACEP regulation and other NRCS planning procedures provide the States the needed flexibilities to make technical decisions related to enrollment, restoration, and management of ACEP-WRE ***lands***. NRCS recommends that stakeholders with concerns should work with their applicable State Conservationist. Comment: NRCS received comment related to WRE ***land*** eligibility: Recommending that NRCS allow cropping on the WRE easement area; supporting the increase in the percentage of easements that can be enrolled on cropland in a county from 10 percent to 15 percent; and requesting flexibility with respect to the 2-year ownership requirement for ***land*** that the farmer has managed for numerous years prior to purchase. Response: NRCS prohibits cropping on ACEP-WRE enrolled ***lands*** because the purpose of the program is to restore the wetland functions and values and crop production is inconsistent with such purposes. NRCS appreciates the comments related to the county cropland limitation. The 2-year ownership provision in the ACEP regulation is a specific statutory requirement, but flexibility exists through the waiver process. When deciding whether to waive the 2-year ownership requirement, NRCS considers whether the ***land*** has been managed by the landowner as part of their operation prior to acquiring ownership of the ***land***. No change is made to the regulation in response to these issues. Comment: NRCS received comment relating to factors used to prioritize enrollments in ACEP-WRE, including support for prioritizing permanent easements over non-permanent easements and including water quality as a conservation benefit. Response: NRCS appreciates support for the ACEP-WRE prioritization factors. Comment: NRCS received comment recommending NRCS consider funds from other Federal sources as contributions for ranking purposes. Response: Section 1265C(b)(3) of the ACEP statute authorizes as a ranking factor whether the landowner or other person offers to contribute to the cost of the easement and thereby leverage Federal funds. The statutory priority is that Federal funds, not just ACEP-WRE funds, be leveraged by other sources, and NRCS has incorporated this factor into the regulation. NRCS State Conservationists, with input from State technical committees, may consider other priorities that further program goals, including other sources of contribution. However, other Federal sources of contribution may have restrictions on the use of their funds and NRCS must ensure that there is no augmentation in contravention of appropriations law. No change is made to the regulation in response to this issue. Comment: NRCS received comment supporting and encouraging NRCS to continue to seek advice and input on implementation of ACEP-WRE from the U.S Fish and Wildlife Service, State fish and wildlife agencies, and State technical committees. Response: Both ACEP regulation and policy require the NRCS to seek continued engagement from these partners. No change is made to the regulation in response to this issue. Comment: NRCS received comment related to the Wetland Restoration Enhancement Partnership (WREP), recommending that NRCS restore the 5 percent match requirement for the WREP partner contributions and maintain historic levels of partner contributions at 25 percent. Another comment recommended that NRCS provide an annual allocation for WREP of between $35-50 million per year. Response: NRCS appreciates the support for WREP. NRCS has not established any regulatory level of match that is required for WREP and bases such determination upon the focus of each year's WREP effort. No change is made to the regulation in response to this issue.Notice and Comment, Paperwork Reduction Act, and Effective Date In general, the Administrative Procedure Act (APA) (5 U.S.C 553) requires that a notice of proposed rulemaking be published in the Federal Register and interested persons be given an opportunity to participate in the rulemaking through submission of written data, views, or arguments with or without opportunity for oral presentation, except when the rule involves a matter relating to public property, loans, grants, benefits, or contracts. This rule involves matters relating to benefits and therefore is exempt from the APA requirements. Further, the regulations to implement the programs of chapter 58 of title 16 of the U.S Code, as specified in 16 U.S.C 3846, and the administration of those programs, are: To be made as an interim rule effective on publication, with an opportunity for notice and comment; Exempt from the Paperwork Reduction Act (44 U.S.C ch. 35); and To use the authority under 5 U.S.C 808 related to congressional review. Consistent with the use of the authority under 5 U.S.C 808 related to Congressional review for the immediate effect date of the interim rule, this rule is also effective on the date of publication in the Federal Register.Executive Orders 12866 and 13563 Executive Order 12866, ``Regulatory Planning and Review,'' and Executive Order 13563, ``Improving Regulation and Regulatory Review,'' direct agencies to assess all costs and benefits of available regulatory alternatives and, if regulation is necessary, to select[[Page 8128]]regulatory approaches that maximize net benefits (including potential economic, environmental, public health and safety effects, distributive impacts, and equity). Executive Order 13563 emphasizes the importance of quantifying both costs and benefits, of reducing costs, of harmonizing rules, and of promoting flexibility. The Office of Management and Budget (OMB) designated this rule as significant under Executive Order 12866 and therefore, OMB has reviewed this rule. The costs and benefits of this rule are summarized below. The full regulatory impact analysis is available on [*https://www.regulations.gov/.Clarity*](https://www.regulations.gov/.Clarity) of the Regulation Executive Order 12866, as supplemented by Executive Order 13563, requires each agency to write all rules in plain language. In addition to the substantive comments NRCS received on the interim rule, NRCS invited public comments on how to make the rule easier to understand. NRCS has incorporated these recommendations for improvement where appropriate. NRCS responses to public comment are described in more detail above.Cost-Benefit Analysis One of the most significant ACEP changes in the 2018 Farm Bill is to the existing contribution requirements for the non-Federal share under ACEP-ALE. Previously, there were only two sources of non-Federal contribution--the entity's cash resources towards the purchase and the donation by the entity--with cash resources towards the purchase required for half of the non-Federal contribution. The 2018 Farm Bill eliminated the requirement for cash resources towards the purchase and allows the entity to consider other costs, previously not included, toward the non-Federal match. This change adds flexibility for eligible entities to meet the non-Federal share requirement by no longer specifying a minimum cash contribution amount to be provided by the eligible entity and allowing the total of the non-Federal share to be comprised of a charitable donation or qualified conservation contribution from the private landowner. It also includes provisions for costs related to securing the easement to be included in the calculation of the non-Federal share. While ***removing*** a potential hurdle to entity participation, the additional flexibility is not intended to supersede the conservation benefits possible under ACEP. There are six states and one territory (Alabama, Arkansas, Hawaii, Louisiana, Missouri, North Dakota, and Puerto Rico) that currently have no enrollment in ACEP-ALE. This may have been due to a lack of available financial resources for an eligible entity to meet the minimum cash contribution requirement or may be due to a lack of entities that meet the eligibility requirements to participate in ACEP-ALE. The changes to the non-Federal share requirements may result in increased ACEP-ALE enrollments in areas where enrollment has been limited due to a lack of financial resources available for entities that meet the ACEP-ALE eligibility requirements. To address these statutory changes, in this final, we eliminated a specified minimum cash contribution amount and incorporated provisions for considering costs related to securing the easement. These changes are applicable to all eligible entities in all States and as a result, it is anticipated that the amount of the Federal contribution toward ACEP-ALE easements will increase by 8 to 10 percentage points. Another change under the 2018 Farm Bill provides NRCS with authority to enter into legal arrangements with eligible entities to conduct BPS transactions under ACEP-ALE. Under a BPS transaction, NRCS may provide ACEP-ALE cost-share assistance to an eligible entity for the purchase of an ***agricultural*** ***land*** easement on private or Tribal ***agricultural*** ***land*** owned on a transitional basis by an eligible entity when the ownership of that ***land*** will be timely transferred to a qualified farmer or rancher. BPS transactions are intended to help farmers and ranchers acquire ***agricultural*** ***land*** they could not otherwise afford and to protect ***agricultural*** ***land*** that may have otherwise been developed or removed from ***agricultural*** production. NRCS continues to have the discretion to rank and prioritize projects and to select individual applications based on their ability to achieve program purposes and to assess and determine the appropriate allocation of funds for the acquisition of ***agricultural*** ***land*** and wetland easements. The 2018 Farm Bill does not limit NRCS's discretion to determine the allocation of funds between ACEP-WRE and ACEP-ALE. The relative emphasis NRCS places on these two program components depends on State and national priorities, environmental impacts, and local demand. It is anticipated that enrollment in ACEP will be consistent with historic enrollment trends. ***Land*** enrolled in ACEP-WRE easements produces onsite and offsite environmental benefits. Those include: Restoring and protecting high value wetlands; controlling sheet and rill erosion as ***lands*** are restored from cropland to wetlands and associated habitats; restoring, enhancing, and protecting habitat for fish and wildlife, including threatened and endangered species and migratory birds; improving water quality by filtering sediment and chemicals; reducing flooding and flood-related damage; recharging groundwater; protecting biological diversity; controlling invasive species with planting of native vegetation; and providing opportunities for educational, scientific, and recreational activities. Soil health and air quality are improved by reduced wind erosion, reduced soil disturbance, increased organic matter accumulation, and an increase in carbon sequestration. For ***land*** enrolled in ACEP-ALE, the suite of conservation effects on protected grasslands are different than those on protected farmland; the impacts are not valued here as one being more beneficial than another. For example, ACEP-ALE easements on grasslands limit ***agricultural*** activities to predominantly haying and grazing, whereas easements on farmland allow crop cultivation and pasture-based ***agriculture***. As such, farmland protection effects are derived from onsite and ecological services, as well as preserving highly productive ***agricultural*** areas from development or fragmentation. Impacts on grasslands are derived from onsite and ecological impacts as well as preventing conversion to nongrassland uses. The net conservation effects through time from farmland protection include direct access benefits (pick-your-own, agri-tourism, and nature based activities like hunting), indirect access benefits (open spaces and scenic views), and nonuse benefits (wildlife habitat and existence values). Grassland protection conservation effects include direct, indirect, and nonuse benefits, and also on-farm production gains and carbon sequestration. The authorized level of funding for ACEP for the period of FY 2019 through 2023 is $2.25 billion (assuming future funding is set at authorized amounts). This represents an increase in ACEP average annual funding over the 2014 Farm Bill of 11 percent--from $405 million per year to $450 million per year in nominal dollars. The regulatory impacts of ACEP funding consist of payments for the purchase of easements or real property interests; the costs incurred related to the acquisition, such as title companies, appraisers, licensed ***land*** surveyors; and the costs of restoring wetlands.[[Page 8129]]Although these transfers create incentives that likely cause changes in the way society uses its resources, NRCS lacks data with which to identify where these resources would otherwise be used. NRCS also recognizes that applicants and participants incur costs in terms of time used to gain access to ACEP. We estimate the imputed value of applicant and participant time spent in accessing the program from FY 2019 through 2023 at $1.1 million for the 5 years. Our estimates of costs, benefits and transfers of ACEP on an annual basis are reported in Table 1. Given a 3 percent discount rate, the projected annualized real cost to producers of accessing the program is $229,000 and the projected annualized real transfers are $433 million. Conservation benefits from the easement are difficult to quantify at a national scale but have been described by studies at an individual project or watershed or local scale. Table 1--Annualized Real Estimated Costs, Benefits, and Transfers \a\------------------------------------------------------------------------ Category Annual estimate------------------------------------------------------------------------Cost \b\.................................. $229,000Benefits.................................. QualitativeTransfers................................. $433,000,000------------------------------------------------------------------------\a\ All estimates are discounted at 3 percent to 2019. Note that this table focuses on the costs, benefits, and transfers of the entire program, not the marginal change in a comparison of the 2014 and 2018 Farm Bills.\b\ Imputed cost of applicant time to gain access to the program.Regulatory Flexibility Act The Regulatory Flexibility Act (5 U.S.C 601-612), as amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA), generally requires an agency to prepare a regulatory analysis of any rule whenever an agency is required by APA or any other law to publish a proposed rule, unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. This rule is not subject to the Regulatory Flexibility Act because this rule is exempt from notice and comment rulemaking requirements of the APA and no other law requires that a proposed rule be published for this rulemaking initiative.Environmental Review The environmental impacts of this rule have been considered in a manner consistent with the provisions of NEPA (42 U.S.C 4321-4347), the regulations of the Council on Environmental Quality (40 CFR parts 1500-1508), and the NRCS regulations for compliance with NEPA (7 CFR part 650). NRCS conducted an analysis of the ACEP interim rule and NRCS's analysis determined there would not be a significant impact to the human environment and as a result, an environmental impact statement (EIS) is not required to be prepared (40 CFR 1501.5 and 1501.6). The Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) were available for review for 30 days from the date of publication of the interim rule in the Federal Register. NRCS considered comments received during the 30-day period and determined minor changes to the ACEP EA and FONSI were sufficient, and that no information warranting preparation of an EIS was received. The final ACEP EA and FONSI have been posted to the NRCS homepage at [*https://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/programs/farmbill/?cid=stelprdb1263599.Executive*](https://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/programs/farmbill/?cid=stelprdb1263599.Executive) Order 12372 Executive Order 12372, ``Intergovernmental Review of Federal Programs,'' requires consultation with State and local officials that would be directly affected by proposed Federal financial assistance. The objectives of the Executive order are to foster an intergovernmental partnership and a strengthened federalism, by relying on State and local processes for State and local government coordination and review of proposed Federal financial assistance and direct Federal development. For reasons specified in the final rule-related notice regarding 7 CFR part 3015, subpart V (48 FR 29115, June 24, 1983), the programs and activities in this rule are excluded from the scope of Executive Order 12372.Executive Order 12988 This rule has been reviewed under Executive Order 12988, ``Civil Justice Reform.'' This rule will not preempt State or local laws, regulations, or policies unless they represent an irreconcilable conflict with this rule. Before any judicial actions may be brought regarding the provisions of this rule, the administrative appeal provisions of 7 CFR part 11 are to be exhausted, consistent with 7 U.S.C 6912(e).Executive Order 13132 This rule has been reviewed under Executive Order 13132, ``Federalism.'' The policies contained in this rule do not have any substantial direct effect on States, on the relationship between the Federal Government and the States, or on the distribution of power and responsibilities among the various levels of government, except as required by law. Nor does this rule impose substantial direct compliance costs on State and local governments. Therefore, consultation with the States is not required.Executive Order 13175 This rule has been reviewed in accordance with the requirements of Executive Order 13175, ``Consultation and Coordination with Indian Tribal Governments.'' Executive Order 13175 requires federal agencies to consult and coordinate with Tribes on a Government-to-Government basis on policies that have Tribal implications, including regulations, legislative comments or proposed legislation, and other policy statements or actions that have substantial direct effects on one or more Indian Tribes, on the relationship between the Federal Government and Indian Tribes or on the distribution of power and responsibilities between the Federal Government and Indian Tribes. The USDA's Office of Tribal Relations (OTR) has assessed the impact of this rule on Indian Tribes and determined that this rule does not have significant Tribal implications that require Tribal consultations at this time for ACEP, which is a beneficial voluntary program. Notwithstanding this conclusion, OTR believes that continued focused outreach to Tribes could increase engagement in ACEP and provide assistance with water quality issues for Tribes. OTR states that NRCS has adhered to the spirit and intent of Executive Order 13175. If a Tribe requests consultation, NRCS and CCC will work with OTR to ensure meaningful consultation is provided where changes, additions, and modifications identified in this rule are not expressly mandated by the 2018 Farm Bill. Tribal consultation for this rule was included in the 2018 Farm Bill Tribal consultation held on May 1, 2019, at the National Museum of the American Indian, in Washington, DC. The portion of the Tribal consultation relative to this rule was conducted by Bill Northey, USDA Under Secretary for the Farm Production and Conservation mission area, as part of the Title I session. There were no specific comments from Tribes on ACEP during this Tribal consultation. Additionally, NRCS held sessions with Indian Tribes and Tribal entities across the country in the spring of FY 2019 to describe the 2018 Farm Bill changes to NRCS conservation programs, obtain input about how to improve Tribal and Tribal member[[Page 8130]]access to NRCS conservation assistance, and make any appropriate adjustments to the regulations that will foster such improved access. NRCS invited State leaders for FSA and Rural Development (RD), as well as Regional Directors for the Risk Management Agency (RMA) to discuss their programs also. As a result, approximately 50 percent of the comments received as a result of these sessions were directed to FSA, RMA, RD, and other USDA agencies, with many comments specific to hemp production and the surrounding regulations. Over 40 percent of the feedback pertained to NRCS programs. Comments listed challenges specific to Tribes that impact eligibility and inhibit access to USDA programs. None of the feedback received necessitated a change to the regulation. NRCS will continue to work with our Tribal stakeholders to address the issues raised in order to facilitate greater technical assistance and program delivery to Indian country. Separate from Tribal consultation and the sessions discussed above, communication and outreach efforts are in place to assure that all producers, including Tribes (or their members), are provided information about the regulation changes. Specifically, NRCS obtains input through Tribal Conservation Advisory Councils. A Tribal Conservation Advisory Council may be an existing Tribal committee or department and may also constitute an association of member Tribes organized to provide direct consultation to NRCS at the State, regional, and national levels to provide input on NRCS rules, policies, programs, and impacts on Tribes. Tribal Conservation Advisory Councils provide a venue for agency leaders to gather input on Tribal interests.Unfunded Mandates Title II of the Unfunded Mandates Reform Act of 1995 (UMRA) (Pub. L. 104-4), requires Federal agencies to assess the effects of their regulatory actions on State, local, and Tribal Governments or the private sector. Agencies generally must prepare a written statement, including cost-benefits analysis, for proposed and final rules with Federal mandates that may result in expenditures of $100 million or more in any 1 year for State, local or Tribal Governments, in the aggregate, or to the private sector. UMRA generally requires agencies to consider alternatives and adopt the more cost-effective or least burdensome alternative that achieves the objectives of the rule. This rule contains no Federal mandates, as defined under Title II of UMRA, for State, local, and Tribal Governments or the private sector. Therefore, this rule is not subject to the requirements of UMRA.Federal Assistance Programs The title and number of the Federal Domestic Assistance Programs in the Catalog of Federal Domestic Assistance to which this rule applies is: 10.931--***Agricultural*** Conservation Easement Program.E-Government Act Compliance NRCS and CCC are committed to complying with the E-Government Act, to promote the use of the internet and other information technologies to provide increased opportunities for citizen access to Government information and services, and for other purposes.List of Subjects in 7 CFR Part 1466 ***Agricultural***, Flood Plains, Grazing ***lands***, Natural resources, Soil conservation, and Wildlife. Accordingly, the interim rule published January 6, 2020, at 85 FR 558, is adopted as final with the following changes:PART 1468--***AGRICULTURAL*** CONSERVATION EASEMENT PROGRAM01. The authority citation for part 1468 continues to read as follows: Authority: 15 U.S.C 714b and 714c; 16 U.S.C 3865-3865d.Subpart A--General ProvisionsSec. 1468.3 [Amended]02. Amend Sec. 1468.3 as follows:0a. In the definition of ``Beginning farmer or rancher'':0i. In paragraph (1), ***remove*** the words ``farm or ranch or'' and add in their place the words ``farm, ranch, or'' each time they appear;0ii. In paragraphs (2) and (3), ***remove*** the words ``farm or ranch'' and add the words ``farm, ranch, or NIPF'' in their place each time they appear;0b. In the definition of ``Eligible ***land***'', add the word ``***land***'' immediately after the word ``private'';0c. In the definition of ``Farm or ranch succession plan'', ***remove*** the words ``include specific'' and add the words ``include, but is not limited to, specific'' in their place and ***remove*** the words ``new or beginning farmers or ranchers, veteran farmers, or other'';0d. In the definition of ``Future viability'', add the words ``or adoption of a farm or ranch succession plan'' immediately after the word ``plan''; and0e. In the second sentence in the definition of ``Maintenance'', add the word ``performed'' immediately after the word ``work''.Sec. 1468.6 [Amended]03. Amend Sec. 1468.6 in paragraph (a)(3)(iii) by ***removing*** the cross reference ``paragraph (a)(4)'' and add in its place add the cross reference ``paragraph (a)(5)''.Subpart B--***Agricultural*** ***Land*** EasementsSec. 1468.20 [Amended]04. Amend Sec. 1468.20 in paragraph (b)(1)(ii) by adding the word ``demonstrated'' immediately before the word ``capability''.05. Amend Sec. 1468.22 as follows.0a. Revise paragraph (b)(11); and0b. In paragraph (c)(2), add the word ``annually'' immediately after the words ``monitored'' and ``reported''. The revision reads as follows:Sec. 1468.22 Establishing priorities, ranking considerations, and project selection.\* \* \* \* \* (b) \* \* \* (11) Whether the ***land*** is currently enrolled in CRP in a contract that is set to expire within 1 year and is grassland that would benefit from protection under a long-term easement or is ***land*** under a CRP contract that is in transition to a covered farmer or rancher pursuant to 16 U.S.C 3835(f);\* \* \* \* \*Sec. 1468.23 [Amended]06. Amend Sec. 1468.23 as follows:0a. In paragraph (b)(1), ***remove*** the words ``Up to'' and add ``A minimum of'' in their place and add the words ``and not to exceed 7 fiscal years'' immediately after the words ``5 fiscal years''; and0b. In paragraph (b)(2), ***remove*** the words ``Up to'' and add ``At least'' in their place.07. In Sec. 1468.24 revise paragraphs (b)(2)(i), (iii), and (iv) to read as follows:Sec. 1468.24 Compensation and funding for ***agricultural*** ***land*** easements.\* \* \* \* \* (b) \* \* \* (2) \* \* \* (i) The eligible entity's own cash resources for payment of easement compensation to the landowner or for a buy-protect-sell transaction, the amount of the fair market value of the ***agricultural*** ***land*** easement, less the amount of the Federal share, that is provided through the conveyance of the[[Page 8131]]***agricultural*** ***land*** easement by the eligible entity;\* \* \* \* \* (iii) Where the amounts as identified in paragraphs (b)(2)(i) and (ii) of this section are not sufficient to meet the non-Federal share amount, the eligible entity may also include the procured costs paid by the eligible entity to a third-party for an appraisal, boundary survey, phase-I environmental site assessment, title commitment or report, title insurance, baseline reports, mineral assessments, or closing cost; and (iv) Where the amounts as identified in paragraphs (b)(2)(i) through (iii) of this section are not sufficient to meet the non-Federal share amount, the eligible entity may also include up to 2 percent of the fair market value of the ***agricultural*** ***land*** easement for easement stewardship and monitoring costs provided by the eligible entity.\* \* \* \* \*08. In Sec. 1468.25 revise paragraphs (c) and (d)(4) to read as follows:Sec. 1468.25 ***Agricultural*** ***land*** easement deeds.\* \* \* \* \* (c) The eligible entity may use its own terms and conditions in the ***agricultural*** ***land*** easement deed, but the ***agricultural*** ***land*** easement deed must provide for the effective administration, management, and enforcement of the ***agricultural*** ***land*** easement by the eligible entity or its successors and assigns and must address the deed requirements as specified by this part and by NRCS in the ALE-agreement. (d) \* \* \* (4) Include clauses requiring that any changes to the easement deed or easement area made after easement recordation, including any amendment to the easement deed, any subordination of the terms of the easement, or any modifications, exchanges, or terminations of some or all of the easement area, must be consistent with the purposes of the ***agricultural*** ***land*** easement and this part and must be approved by NRCS and the easement holder in accordance with Sec. 1468.6 prior to recordation or else the action is null and void.\* \* \* \* \*Sec. 1468.26 [Amended]09. Amend Sec. 1468.26 in paragraph (b)(1) by ***removing*** the words ``up to'' and adding ``a minimum of'' in their place and adding ``and not to exceed 7 fiscal years'' after the words ``5 fiscal years''.010. Amend Sec. 1468.27 as follows:0a. In paragraph (c)(1), add the words ``the purchase of the ***land***'' after the word ``completed'';0b. In paragraphs (c)(3)(ii) and (c)(4), add the words ``of the ***land***'' after the word ``value'';0b. Redesignate paragraphs (e)(4)(iii) and (iv) as paragraphs (e)(4)(iv) and (v);0c. Add a new paragraph (e)(4)(iii). The addition reads as follows:Sec. 1468.27 Buy-Protect-Sell transactions.\* \* \* \* \* (e) \* \* \* (4) \* \* \* (iii) The Federal share for the ***agricultural*** ***land*** easement will be provided on a reimbursable basis only, after the ***agricultural*** ***land*** easement has closed and the required documents have been provided to and reviewed by NRCS.\* \* \* \* \*011. Amend Sec. 1468.28 as follows:0a. Revise paragraph (c); and0b. In paragraph (f), add the words ``in whole or in in part,'' immediately after the word ``terminated''. The revision reads as follows:Sec. 1468.28 Violations and remedies.\* \* \* \* \* (c) Notwithstanding paragraph (a) of this section, NRCS reserves the right to enter upon and inspect the easement area if the annual monitoring report provided by the ***agricultural*** ***land*** easement holder documenting compliance with the ***agricultural*** ***land*** easement is insufficient or is not provided annually, the United States has a reasonable and articulable belief that the terms and conditions of the easement have been violated, or to remedy deficiencies or easement violations as it relates to the conservation plan in accordance with 7 CFR part 12. Prior to its inspection, NRCS will notify the ***agricultural*** ***land*** easement holder and the landowner and provide a reasonable opportunity for the ***agricultural*** ***land*** easement holder and the landowner to participate in the inspection.\* \* \* \* \*Subpart C--Wetland Reserve EasementsSec. 1468.32 [Amended]012. Amend Sec. 1468.32 in paragraph (c)(2) by adding the words ``or ***land*** under a CRP contract that is in transition to a covered farmer or rancher pursuant to 16 U.S.C 3835(f), and such ***land***'' immediately after the word ``application''.Terry Cosby,Acting Chief, Natural Resources Conservation Service.Robert Stephenson,Executive Vice President, Commodity Credit Corporation.[FR Doc. 2021-02268 Filed 2-3-21; 8:45 am]BILLING CODE 3410-16-P

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[***Divergent forest sensitivity to repeated extreme droughts***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:671W-P2B1-JCWX-C2KW-00000-00&context=1516831)

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**Body**

Main

Climate extremes have major impacts on the terrestrial carbon cycle–. Climate models project increases in the frequency and severity of prominent climate extremes such as drought,,. Thus, the response of ecosystems to climate extremes represents an important uncertainty in carbon-cycle feedbacks and may have the potential to alter terrestrial ecosystems from a net sink to a carbon source over the twenty-first century,,,. Severe droughts are one of the most consequential types of climate extremes when considering carbon-cycle impacts and can have reverberating societal impacts. The effects of single extreme droughts have been widely studied, such as for severe droughts in Europe, North America and the Amazon. By contrast, the ecosystem impacts of repeated extremes remain poorly understood. We remain unable to predict whether, after a severe drought, an ecosystem emerges more or less vulnerable to the next drought–. Thus, understanding ecosystem response to multiple, repeated droughts is crucial for predicting long-term climate change impacts on ecosystems and the subsequent carbon-cycle feedbacks.

Ecosystem resilience to extreme droughts is an integrated combination of (1) the capacity of the ecosystem to persist and maintain its state and function during the disturbance, often called ‘sensitivity’ or ‘resistance’, and (2) the recovery trajectory following the disturbance–. Multiple resilience-increasing and resilience-decreasing mechanisms exist at both organism (for example, tree) and ecosystem scales. The net impact of repeated droughts on Earth’s ***forests*** will depend on their balance. At a tree scale, adjustments in functional traits such as wood density or leaf turgor-loss thresholds or in allometric patterns such as increased root or sapwood areas and decreased leaf area can improve tree resilience to future stress,. By contrast, lingering drought-driven physiological damage such as embolism of the xylem, decreased reserves or defences, or pest/pathogen attacks and infections, among other mechanisms, may decrease tree resilience to subsequent droughts,. At an ecosystem scale, ***forest*** density changes that lead to lower community-level water loss or changes in species composition that result in a more-drought-tolerant community may increase resilience,–. By contrast, microclimate feedbacks that drive hotter and drier canopy microenvironments, or landscape-scale pest or pathogen population dynamics triggered by an initial drought that lead to higher pest pressures on communities, could decrease resilience–. Determining which of these mechanisms dominate under which circumstances and in which ***forest*** systems will be fundamental to predicting the future of Earth’s ***forests*** and their carbon-cycle feedbacks.

Here, we examine the drought sensitivity (that is, inverse of resistance) of ***forests*** to repeated droughts on the basis of growth increment at the tree level, mortality at the ***forest*** level and water content at the ecosystem level. When multiple droughts strike a ***forest***, we predict that a system that exhibited increased sensitivity would experience larger growth declines, higher mortality rates and larger declines in canopy water content during a subsequent drought due to accumulated physiological damage from the initial drought. We leverage a cross-biome tree-ring dataset, long-term ***forest*** monitoring plots, satellite measurements of canopy water content and global drought datasets to quantify the effects of repeated droughts across scales. We quantify drought severity here from a climate perspective of the statistical distribution of drought metrics. We ask: (1) Are tree growth and mortality more, less or similarly sensitive to a subsequent drought compared with an initial drought? (2) Do changes in tree-level drought sensitivity differ by clade, biome or region? (3) Does drought sensitivity scale from the tree to ecosystem level, and how does this vary by biome and region? We analyse all ecological datasets at multiple levels of drought severity and use a number of approaches to control for potential confounding factors such as differences in drought severity ().

We first examined tree growth patterns using a dataset of 1,208 stand growth chronologies spanning 1900–2015 from the International Tree-Ring Data Bank (ITRDB). On the basis of the Standardized Precipitation Evapotranspiration Index (SPEI), tree growth decline was larger in a subsequent drought at severe drought values (PSPEI<−2 < 0.001) and then converged to initial drought levels at more moderate drought values (PSPEI(−1.5,−1.2] = 0.33) (Fig. and Extended Data Fig. ). This suggests a critical role of drought severity whereby an initial severe drought was associated with higher vulnerability to a subsequent severe drought, perhaps due to residual physiological damage. We next examined tree mortality patterns using the extensive US ***Forest*** Inventory and Analysis (FIA) dataset spanning >100,000 ***forested*** plots from 2000 to 2018. In contrast to the growth findings, we found that mortality was relatively similar between initial and subsequent droughts with no significant differences (for example, PSPEI<−2 = 0.13) (Fig. ). Drought severity between the initial and subsequent droughts was not significantly different and thus did not drive these patterns (Extended Data Fig. ). Tree-level drought sensitivity patterns held when accounting for differences in tree-ring analysis methods (Extended Data Fig. ), multiple drought metrics (Extended Data Fig. ) and spatial autocorrelation (Extended Data Fig. ).

Impacts of a subsequent drought are more deleterious than an initial drought for trees.

a, Growth declines (Δring-width index from 1,208 sites in the ITRDB) due to an initial drought (Initial, light red) and subsequent drought (Subseq, dark red), categorized by drought severity of both droughts via the SPEI (left to right, Nchronologies = 516, 214, 347, 291). b, Tree mortality rates (m2 ha−1 yr−1) across the US FIA plots due to initial and subsequent droughts (left to right, Nplots = 6,414, 1,638, 2,781, 958; Ngrid-cells = 140, 62, 112, 59). Error bars indicate ±1 standard error. Asterisks indicate statistically significant differences (\*\*P < 0.01).

We then examined what factors mediated growth and mortality responses to multiple droughts. Clade (angiosperm–gymnosperm) and family were important predictors of tree-ring-based growth sensitivity differences to severe droughts (Pclade = 0.0009, ANOVA: Pfamily = 0.01) with gymnosperms and pine species (Pinaceae) exhibiting the highest sensitivity to subsequent droughts (Fig. and Extended Data Fig. ). By contrast, angiosperms and oak species (Fagaceae) showed an ‘acclimation-type’ response where growth was less sensitive to subsequent drought than to the initial drought (P = 0.03) (Fig. ). Increased time between the initial and subsequent droughts was associated with smaller growth decline differences, although this effect was modest (R2 = 0.01, P = 0.02). When examining mortality from ***forest*** inventory data in response to repeated droughts, angiosperm and gymnosperm sensitivities diverged at moderate drought severities (P(−2,−1.8] = 0.03, P(−1.8,−1.5] = 0.01). Gymnosperms appeared to show slightly elevated mortality in the initial drought at severe drought levels (for example, P<−2 = 0.02), whereas angiosperms exhibited higher mortality rates to subsequent droughts at more moderate drought levels (P(−1.8,−1.5] = 0.004) (Fig. ). These contrasting clade patterns may explain the relatively muted mortality signal on the full dataset (Fig. ). We hypothesize that higher gymnosperm mortality during initial droughts may be due a ‘culling of the weak’ effect where death of the most vulnerable trees in a population results in less-vulnerable trees on average during subsequent droughts, potentially associated with differences in biotic-agent attack differences between droughts (for example, higher beetle attack prevalence in initial droughts).

Impacts of multiple droughts on tree growth and mortality are mediated by clade.

a,b, Growth decline differences from the ITRDB by family (a) and clade (b), where negative numbers indicate a more deleterious effect of the subsequent drought (left to right, Nchronologies = 100, 332, 36, 106, 410). c, Tree mortality differences across the US FIA plots between angiosperm-dominated (Ang, green) and gymnosperm-dominated (Gym, red) ***forests***, with negative numbers indicating a more deleterious effect of the subsequent drought, categorized by drought severity of both droughts via the SPEI (left to right, Nplots = 2,740, 3,674, 1,011, 627, 1,980, 801, 868, 90). Error bars indicate ±1 standard error. Asterisks indicate statistically significant differences (\*P < 0.05; \*\*\*P < 0.001). Note that the order of subtraction is different among a, b and c to maintain the convention that negative values indicate a more deleterious impact of the subsequent drought across all panels.

Both decreases in growth and increases in mortality are likely to negatively impact ecosystem resilience and carbon sequestration over the long term. Tree-bole growth provides a key ecosystem function of carbon storage in a pool with a long residence time (decades to centuries), although extrapolation of tree rings to whole-***forest*** carbon is often challenging, and low growth can be a warning signal preceding large-scale mortality,. Elevated mortality due to drought will have manifold ecological and carbon-cycle consequences, including changes in community composition and carbon sequestration. The higher mortality rate in subsequent droughts for angiosperms during moderate droughts (Fig. ) could be due to accumulated physiological damage or because of ‘structural overshoot’ whereby these species might allocate too much carbon to leaf area during non-drought conditions, leading them to experience elevated mortality when drought strikes. We note, however, that the coarse temporal nature of inventory data adds uncertainty and is a caveat in our mortality rate analyses ().

We further examined ecosystem-scale responses to multiple droughts via remotely sensed vegetation optical depth (VOD), which captures dynamics of canopy water content and ecosystem drought stress,. Ecosystem-scale responses showed generally greater magnitudes and similar patterns to tree-level responses, with larger VOD declines in the subsequent drought that were most prominent at severe drought levels (PSPEI<−2 < 0.0001; PSPEI(−1.5,−1.2] < 0.001) (Fig. ). In this dataset alone, we detected slight differences in drought severity between initial and subsequent droughts at severe drought levels (SPEI < −2; Extended Data Fig. ) and thus implemented multiple models to account for these differences (). All of our patterns were robust when accounting for drought severity differences and drought legacy effects (Extended Data Figs. and ). At biome scales, temperate conifer ***forests*** and wet tropical ***forests*** showed the largest drought-severity-normalized increase in sensitivity in the second drought (P < 0.001 for both) (Figs. and ). The decrease in drought sensitivity in boreal ***forests*** and Mediterranean-type woodlands is intriguing and may be due to community turnover favouring more-drought-tolerant species. The Amazonian rainforest stands out as a region of increased sensitivity, which is highly relevant because the Amazon experienced two very severe droughts in 2005 and 2010, which had widely documented effects on growth, mortality and carbon cycling in the region,. Given the importance of the Amazon in the global carbon cycle, and that climate projections indicate increased vapour pressure deficit (atmospheric dryness) and in some cases rainfall reductions in this region, increased sensitivity to repeated droughts is of critical concern (Fig. ).

Ecosystem impacts of a subsequent drought are more deleterious than an initial drought.

a, VOD anomaly in response to an initial drought (Initial, light red) and subsequent drought (Subseq, dark red), categorized by drought severity of both droughts via the SPEI thresholds (left to right, Ngrid-cells = 745, 425, 1,491, 2,398). b, Differences in VOD anomalies during a drought of SPEI < −2 across different ***forest*** biomes between initial and subsequent droughts, with negative numbers indicating a more deleterious effect of the subsequent drought. TropMB, tropical moist broadleaf; TropDB, tropical dry broadleaf; TemB, temperate broadleaf; TemC, temperate conifer; Bor, boreal; Med/Sh, Mediterranean-type/shrubland (left to right, Ngrid-cells = 248, 50, 89, 46, 291, 21). Error bars indicate ±1 standard error. Asterisks indicate statistically significant differences (\*P < 0.05; \*\*\*P < 0.001).

Ecosystem impacts of a subsequent drought compared with an initial drought diverge across global ***forests***.

a,b, VOD anomalies in response to a subsequent drought (Subseq) minus an initial drought (Initial), with red colours indicating a more deleterious effect of the second drought, categorized by drought severity of both droughts via the SPEI thresholds of a moderate drought (SPEI (−1.8,−1.2]) (a) or severe drought (SPEI < −1.8) (b). Grey areas indicate regions not dominated by ***forests***; white areas in b indicate that two droughts exceeding that SPEI severity did not occur in the record.

While ***forests*** on average showed increasing sensitivity to a subsequent drought, ***forests*** diverged enormously and with several broad patterns that were revealed across diverse datasets spanning a wide range of spatial and temporal scales. Angiosperm trees and angiosperm-dominated ***forests*** tended to show more acclimation (decreased sensitivity) responses. By contrast, gymnosperms tended to exhibit more stress accumulation (increased sensitivity) responses, except for mortality. These patterns are consistent with anatomical and physiological differences between these two clades. Angiosperms have much higher anatomical flexibility than gymnosperms, for example, in terms of xylem anatomy, parenchyma fractions and whole-plant allocation patterns, that allows angiosperms far more plastic responses when faced with drought,. Our results are broadly consistent with a recent study that found differences in gymnosperms’ and angiosperms’ growth responses to drought were linked to subsequent mortality risk, although our analyses examine a greater number of sites and diversity of biomes and include ecosystem-level assessments of multiple drought impacts as well. Changes in competition, light environment and pest/pathogen dynamics—for example, co-occurring drought and beetle outbreaks have been widely observed in western US gymnosperm species and could drive high mortality levels in initial droughts when stand densities are higher—are other potential mechanisms that might give rise to these responses. One notable exception to the broad clade patterns, however, was the strong increases in sensitivity observed in canopy water content in the Amazon between two severe and closely timed droughts, which might indicate that drought severity and timing overwhelmed the acclimation responses. Further detailed and long-term studies on tree physiology and ***forest*** demography are greatly needed to elucidate and test the various mechanisms that might underlie these patterns.

Current vegetation and Earth system models largely do not contain the major potential mechanisms, such as accumulated physiological damage or pest/pathogen infections, that might generate the patterns observed here. However, representations of physiological processes of drought stress, such as plant hydraulics and ***forest*** demography, are major priorities in Earth system model development,,. These advances hold substantial promise for improving Earth system model simulation of the response of ***forests*** to single severe droughts,. Our results highlight that we must also consider including mechanisms that might mediate changes in ***forest*** responses to repeated droughts. For example, trait plasticity and allocation changes based on mechanistic understanding are currently possible to include in large-scale models, and may enable capturing the responses documented here. We hypothesize that both trait plasticity and clade-specific limits to plasticity have potential to capture the differential responses documented here. Our results further indicate that broad functional-type categories may be useful in setting the limits and directions of changes in acclimation and plasticity.

We have shown both at an individual tree scale and at an ecosystem scale that the response to repeated droughts can diverge from that of a single drought. While there are a few cases of similar or decreasing sensitivity to a subsequent drought, we generally see increased vulnerability to a subsequent drought. These responses were strongly mediated by the clade and family, with gymnosperms broadly showing much higher vulnerability to subsequent droughts. Given projected increases in drought frequency in the twenty-first century in many regions, our findings point towards decreasing ecosystem resilience, in the near term at least, that may portend ill news for the ***land*** carbon sink and Earth’s ***forests*** in future climates.

Methods

Drought datasets

We used the SPEI as our primary drought metric in this study for several reasons. First, as an ***agricultural*** drought index, SPEI integrates both water supply through precipitation and water demand through potential evapotranspiration (PET), which makes it a simple and physiologically relevant drought index based on a water budget that is more relevant to ecosystem water stress than are meteorological drought indices based only on precipitation and temperature–. SPEI has been widely used to assess ecosystem response to drought at multiple spatial and temporal scales,. Second, unlike other ***agricultural*** drought metrics such as the Palmer Drought Severity Index, SPEI is standardized within each grid cell to a mean of zero and standard deviation of one with a Gaussian distribution. Thus, drought severity can be quantitatively compared across regions and ecosystems, normalized by each grid cell’s climatology. Finally, current publicly available datasets of SPEI contain global coverage of drought data over the full historical record (1900–2019), enabling us to maximize the sample size of ecological data collected over 1900–2018.

We downloaded the full SPEI Global Drought Monitor dataset on 1 March 2019, which provides global SPEI data at 1° resolution from 1900 to 2019,. This dataset uses the precipitation data from the Global Precipitation Climatology Centre and calculates PET using a Thornthwaite algorithm, with temperature based on the National Oceanic and Atmospheric Administration National Center for Environmental Prediction’s Global Historical Climatology Network dataset. Because the Thornthwaite PET calculation is a simplification, we also performed analyses with SPEI calculated via the more robust Penman-Monteith PET algorithm in the Global SPEI Database. We observed very similar patterns, and because the SPEI Global Drought Monitor Database covers 1900–2019 (as opposed to 1900–2015 for the SPEI Global Database), we used it for our primary analysis. SPEI can be calculated with respect to different ‘integration windows’ over which drought severity is calculated and normalized to the climatological period. We chose a 12-month integration window because an annual time step is consistent with both the tree-ring and ***forest*** inventory plot datasets. We calculated 12-month SPEI values for both calendar year and water year (October–September) in the Northern Hemisphere and observed very similar results in the tree-ring analysis; we thus present calendar-year results in all figures.

For all analyses, we examined four levels of drought severity that span a range from moderate to severe drought. We chose SPEI drought-severity bins of [−1.2,−1.5), [−1.5,−1.8), [−1.8,−2) and < −2.0 for these drought-severity levels. Because SPEI values are based on z scores, an SPEI value of −2.0 indicates a 2 s.d. drought. This range of values allowed us to assess whether ecosystem response to moderate drought differed from that of severe droughts.

Tree-ring analysis

To quantify tree growth responses to multiple droughts, we used tree-ring chronologies from the extensive ITRDB. The ITRDB is a publicly available dataset that contains tree-ring chronologies for >2,000 sites around the world. Following a recent global analysis that examined drought recovery periods in ITRDB tree-ring chronologies, we analysed 1,208 chronologies that had standard formatting and included at least 25 years in the observational record (1900–2018) (Extended Data Fig. ). These chronologies span >40 species and a wide array of temperate and boreal ***forest*** types, although they are concentrated in the Northern Hemisphere, primarily in North America and Europe. For each chronology, we analysed the detrended ring-width index where detrending had been performed by the individual data contributor of that chronology, following previous studies,.

On the basis of the latitude and longitude coordinates of each chronology, we calculated the ring-width reduction during the first two droughts that exceeded the given drought threshold in each chronology. We imposed a criterion that the two droughts had to be temporally separated by more than 2 years with SPEI values above the drought threshold to avoid counting multi-year single droughts as two different droughts. This minimum gap between droughts is based on previous research on these tree-ring chronologies that indicated that drought legacy effects typically lasted 1–2 years (ref. ), and thus our analysis avoids these effects. For a given drought event, if multiple years in a row exceeded the drought threshold, we used the ring width of the final year of the drought. For example, for a drought threshold of SPEI < −2, if a given chronology experienced an SPEI time series of 0, −2.2, −2.1, 0, −2.1 and no other droughts, it would not be used due to insufficient time between two droughts. If the SPEI time series were 0, −2.2, −2.1, 0, 0, −2.1, then year 3 would be calculated as ‘drought 1’ and year 6 as ‘drought 2’. These criteria allowed us to assess the impact of multiple droughts while avoiding a potential confounding effect of analysing 2 years in essentially the same individual drought. We did a sensitivity analysis on both the drought-severity recovery threshold (for example, recovery threshold of SPEI > −1.2, SPEI > 0 and so on) and 1–4 years of recovery period, and neither had a major effect on our results. We did not include an upper limit to the time between two droughts because several of the hypothesized ecological and physiological mechanisms that might mediate changes in tree sensitivity to drought, such as changes in canopy architecture, allocation or species composition, certainly operate on multi-decadal timescales. Individual chronologies could occur in multiple drought-severity bins if they experienced four droughts or more. We note that we did not explicitly include drought duration in these analyses, but we do not think it would likely influence our results given that we observed similar patterns across a wide suite of sensitivity analyses.

We detected no systematic differences in drought severity between initial and subsequent droughts in the ITRDB dataset (Extended Data Fig. ). It is also highly unlikely that trends in ring width due to ontogeny/stand development, given that tree-ring chronologies are detrended to explicitly ***remove*** such patterns, or trends in drought metrics might confound our results. Nevertheless, we conducted a sensitivity analysis to ensure that detrending and/or ***removal*** of an autoregressive model (‘prewhitening’) did not influence our results. In this analysis, we compared the ‘standardized’ chronology (.crn file) in ITRDB used in Fig. with application of a single, consistent detrending spline method or a single, consistent detrending and prewhitening method (methods ‘spline’ and ‘ar’, respectively, in the detrend.series function standard settings in dplR), and our results were robust (Extended Data Fig. ). In addition, because only a subset of species in a given region or community yield easily readable tree-ring series, this may amplify the phylogenetic drought response observed here. Finally, we note that the chronologies in the ITRDB dataset are not randomly distributed and tend to overestimate climate sensitivity due to site selection compared with randomly distributed inventory plots, but this should not greatly influence our results. This is because spatial or population biases in ITRDB (higher climate sensitivities) would give, on average, a greater decline in growth during any given drought but should not, a priori, affect the temporal changes in growth responses between multiple droughts within the same chronology. This site selection bias would make scaling ITRDB tree-ring chronologies to whole-***forest*** carbon pools challenging, however, and thus we use only VOD for whole-ecosystem assessments here.

***Forest*** inventory analysis

To quantify tree mortality responses to multiple droughts, we used the US ***Forest*** Service FIA long-term permanent plot network. The FIA network contains >250,000 permanent plots on all ***lands*** with at least 10% tree cover in the contiguous United States–. Since the plot protocols were standardized nationwide in 2000, FIA plots are set up on a stratified random sampling design, and tree status (living/dead) is measured on a plot return interval that varies by state, typically every 5 years (that is, 20% of plots censused each year) in the eastern United Stated and every 10 years (that is, 10% of plots censused each year) in the western United States–. This means that as of 2018, many eastern states have three to four censuses and many western states have one to two censuses. States in the Intermountain West FIA region (Colorado, Arizona, New Mexico, Utah, Idaho, Montana) also estimated a mortality in the past 5 years during the initial census of plots, which allows these states’ inventory plots with two censuses to be used in this study because the plots contain two mortality rates (that is, mortality rate 0–5 years before census 1 and a mortality rate between census 1 and census 2). Thus, while FIA data in both the western United States and eastern United States can be used for this analysis, we note that limitations associated with relatively sparse temporal sampling of FIA remains an uncertainty and caveat.

We calculated total basal area mortality for ***forested*** plots with FIA plot condition classes that occupied >30% of a given plot area. Plots with fire damage, human damage, and treatments (for example, timber harvesting) were excluded. For all states with 3+ censuses, we calculated mortality rates using the basal area mortality documented in the return census and measured plot return interval. For Intermountain West states with only two censuses, we calculated the initial mortality rate using the ‘estimated’ 5-year mortality rate in the first census and then the documented mortality between the first and second censuses. This estimated mortality is determined by the FIA field crew during the first census as all trees that have died in the past 5 years on the basis of crown decay conditions and has been validated,, but we note that our results were robust to excluding plots with estimated mortality (Extended Data Fig. ). We then implemented a similar algorithm to detect plots where two droughts of a given severity level had occurred. Specifically, we analysed plots that had at least two mortality rate estimates and where each drought that exceeded the selected threshold had occurred in the 5 years before the census. When more than two droughts occurred at a plot, we analysed the first and second droughts similarly to the tree-ring analysis, provided the droughts were in different census intervals.

While there are many potential drivers of mortality rates in US ***forests***, our analysis aimed to screen out major alternative confounding drivers, and drought has been identified in a wide body of literature of having a major impact on tree mortality in both eastern and western US ***forests*** since 2000,–, which can be widely observed in FIA plot mortality rates,,. We further analysed mortality responses to multiple droughts by ***forest*** type, using the FIA ‘Field type code’ variable, to categorize plots as angiosperm-dominated or gymnosperm-dominated ***forests***. In addition, we detected no significant differences in drought severity between initial and subsequent at all drought-severity levels in FIA data (Extended Data Fig. ), indicating that differences in drought severity were unlikely to drive our results.

Satellite VOD analysis

VOD is a measure of the degree to which greybody ***emission*** from the surface of the Earth attenuates as it passes through both the woody and leafy components of the vegetation canopy. It is sensitive to canopy water content and thus varies with both biomass, and water stress,. The constant of proportionality between VOD and canopy water content is poorly understood. However, it appears to vary primarily with canopy type and electromagnetic frequency, suggesting it is relatively constant for a given ***land*** cover type. At the annual and longer timescales considered here, variations in VOD can be interpreted as due to variations in biomass growth and mortality. Here, we use VOD from the ***Land*** Parameter Data Record, which is retrieved from brightness temperatures measured by the Advanced Microwave Scanning Radiometer–Enhanced (AMSR-E)) and Advanced Microwave Scanning Radiometer 2 (AMSR-2). For full details on the retrieval methods, see refs. –. We used data from January 2003 to December 2018.

We aggregated annual VOD values to the same resolution (1°) as the SPEI drought dataset and subtracted the grid-cell mean VOD to generate a time series of VOD anomalies in each grid cell. Similar to the tree-ring analysis, we searched the SPEI time series for each grid cell that contained two or more drought years that fell within the same SPEI drought-severity bins. We further constrained this such that the grid cell had to have at least one non-drought year between the two drought years to avoid counting the same multi-year drought as two individual drought events. We performed a sensitivity analysis of detrending individual VOD grid cells to ensure that directional trends, potentially due to other drivers such as ***land***-use change, were not driving our results and our findings were robust (Extended Data Fig. ). We used the biome map of Olson et al. to analyse VOD responses over ***forest*** and woodland biomes only (Fig. ) and to analyse impacts by individual biomes (Fig. ). While the VOD record is relatively short, it is similar in length to the FIA plot network, and there are multiple regions in the world where two moderate or severe droughts occurred (Fig. ), including two 1-in-100-year droughts in the Amazon rainforest,. Thus, it provides an integrated assessment of ecosystem-level drought impacts for many ***forest*** biomes across the globe,,.

We detected significant differences in drought severity between the initial and subsequent droughts in VOD grid cells that experienced two droughts for severe drought levels (see Analyses and statistics) (Extended Data Fig. ), which must be accounted for to estimate ecosystem changes in sensitivity to drought between multiple droughts. We took two separate approaches to accounting for these drought-severity differences. First, we performed an analysis where we considered only VOD grid cells where the SPEI values were nearly identical (that is, within 0.1 of each other) for both droughts. Second, we built a model that accounted for drought severity in each grid cell. For each grid cell, we constructed an ordinary least squares regression between annual values of VOD anomaly and SPEI using a linear or quadratic relationship. We then calculated the relative drought impact of the first and second droughts in that grid cell as the residual of the drought years’ VOD values from the regression, which subtracts out the effect of drought severity. Both approaches—and both functional forms in the second approach—revealed the similar findings that the impact of a second drought on ecosystem VOD was more severe than that of the first drought (Extended Data Fig. ), indicating that the result is robust even when accounting for drought-severity differences.

To ensure that our results were not influenced by substantial drought legacy effects in VOD, we calculated the VOD anomaly for each grid cell in the 1–7 years following droughts of severity SPEI (−2, −1.2] or SPEI < −2. We observed minor legacy effects lasting 1 year for SPEI (−2,−1.2] droughts and moderate legacy effects lasting 3 years for SPEI < −2 droughts. We conducted a sensitivity analysis where initial and subsequent droughts had to be separated by 3 years or more and observed that our findings were robust (Extended Data Fig. ), indicating that our results are robust to drought legacy effects in VOD.

Analyses and statistics

For each of the three datasets (tree rings, ***forest*** inventory plots, VOD), we analysed the impacts of the initial drought versus the subsequent drought using either paired t tests (tree ring, VOD) or Wilcoxon signed rank tests (FIA) when data could not be transformed to meet assumptions of normality. Tree-ring and VOD data were often transformed using an arctangent transformation. We note that we do not test for differences in tree or ecosystem sensitivity across drought-severity categories (that is, we test only for sensitivity differences between an initial and subsequent drought at the same drought-severity level), and we used a Sidak correction for multiple hypothesis testing within each dataset’s analyses where necessary. We ensured that assumptions of normality and homogeneity of variances were met with Q–Q plots via the qqPlot diagnostic in the ‘car’ R package,.

To ensure that tree or ecosystem sensitivity to multiple droughts was not driven by systematic drought-severity differences, we tested for differences in drought severity using Wilcoxon signed rank tests. Statistically significant differences were detected only in the VOD dataset at SPEI < −2 drought severities (P = 0.005) and were addressed as described in the preceding.

We tested for spatial autocorrelation in the differences between the initial and subsequent drought impacts using Moran’s I and found significant positive spatial autocorrelation in all three datasets (P < 0.01). In the tree-ring and VOD datasets, autocorrelation was addressed by using spatial autoregressive models that model the correlation structure of the data, using the gls function in the ‘nlme’ R package. Per standard practice, we included the latitude and longitude coordinates of each grid cell in the regression and tested the following spatial correlation structures—linear, quadratic ratio, exponential, spherical and Gaussian—selecting the most likely and parsimonious model using the difference in Akaike information criterion of <−2 or more. The quadratic or exponential correlation structure was typically selected as most parsimonious. For FIA data, no transformations could achieve reasonable Q–Q plots for any family of generalized linear model, and thus we first averaged individual plot values at a 1° grid to account for spatial autocorrelation and then subsequently modelled the correlation structure. All results were robust to accounting for spatial autocorrelation (Extended Data Fig. ). All analyses were conducted in the R statistical software.

Online content

Any methods, additional references, Nature Research reporting summaries, source data, extended data, supplementary information, acknowledgements, peer review information; details of author contributions and competing interests; and statements of data and code availability are available at [*https://doi.org/10.1038/s41558-020-00919-1*](https://doi.org/10.1038/s41558-020-00919-1).

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**Notes**

Extended datais available for this paper at [*https://doi.org/10.1038/s41558-020-00919-1.Peer*](https://doi.org/10.1038/s41558-020-00919-1.Peer) review informationNature Climate Change thanks Adriaan J. Teuling, Alistair Jump and Tao Zhang for their contribution to the peer review of this work.Publisher’s note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

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**Body**

Washington, DC: This Rule document was issued by the Natural Resources Conservation Service (NRCS)

Action

Final rule.Summary

This final rule adopts, with minor changes, an interim rule published in the Federal Register on January 6, 2020. The interim rule implemented changes to ACEP that were necessitated by enactment of the ***Agriculture*** Improvement Act of 2018 (the 2018 Farm Bill) and changes for administrative streamlining improvements and clarifications. This final rule makes permanent many of the changes made in the interim rule, responds to comments received, and makes further adjustments in response to some of the comments received.Dates

Effective: February 4, 2021.For Further Information Contact

Carrie Lindig, (202) 720-1882, or [*carrie.lindig@usda.gov*](mailto:carrie.lindig@usda.gov) Persons with disabilities who require alternative means for communication should contact the USDA ***Target*** Center at (202) 720-2600 (voice).Supplementary InformationBackground

The 2018 Farm Bill reauthorized and amended ACEP. The 2018 Farm Bill authorized the use of the existing regulations that had been implemented under the ***Agricultural*** Act of 2014 for the remainder of FY 2019 to the extent that those regulations were consistent with the 2018 Farm Bill changes.

On January 6, 2020, CCC published an interim rule with request for comments in the Federal Register (85 FR 558-590) that implemented mandatory changes made by the 2018 Farm Bill or that were required to implement administrative improvements and clarifications. This final rule adopts, with minor changes, the interim rule.Discussion of ACEP (7 CFR part 1466)

ACEP helps farmers and ranchers preserve their ***agricultural*** ***land*** and restore, protect, and enhance wetlands on eligible ***lands***. The program has two components:

(1) ***Agricultural*** ***land*** easements (ACEP-ALE); and

(2) Wetland reserve easements (ACEP-WRE).

The Secretary of ***Agriculture*** delegated authority to the Chief, NRCS, to administer ACEP.

Through ACEP-ALE, NRCS provides matching funds to eligible entities that are State, Tribal, and local governments, and nongovernmental organizations with farm and ranch ***land*** protection programs, to purchase ***agricultural*** ***land*** easements. ***Agricultural*** ***land*** easements are permanent or for the maximum duration authorized by State law.

Through ACEP-WRE, NRCS protects wetlands on eligible ***lands*** by purchasing an easement directly from eligible landowners or entering into 30-year contracts on acreage owned by Indian Tribes, in each case providing for the restoration, enhancement, and protection of wetlands and associated ***lands***. Wetland reserve easements may be permanent, 30-years for acreage owned by Indian Tribes, or the maximum duration authorized by State law.

Participation in either ACEP-ALE or ACEP-WRE is voluntary.

The interim rule:

Incorporated changes to the ACEP purposes to limit nonagricultural uses that negatively affect ***agricultural*** uses and conservation values; Added language to specify general monitoring responsibilities under ACEP-ALE and ACEP-WRE; Removed references to the Regional Conservation Partnership Program (RCPP) as the 2018 Farm Bill revised RCPP as a stand-alone program, which is now in 7 CFR part 1464; Added definitions to reflect 2018 Farm Bill changes: Buy-protect-sell (BPS) transaction, monitoring report, wetland restoration, easement administration action, grazing management plan, and nonindustrial private ***forest*** ***land***; Removed definitions for: Active ***agricultural*** production, ***forest*** ***land***, ***forest*** ***land*** of statewide importance, and projects of special significance; Made changes to easement administration actions, including specifying the criteria that apply to each type of easement administrative actions; Made revisions to the environmental markets section in response to the 2018 Farm Bill; Removed the requirement that an eligible entity provide evidence at the time of application that they have funds available to meet the minimum cash contribution requirement; Eliminated the requirement that ***land*** with a certain amount of ***forest*** ***land*** have a ***forest*** management plan; Replaced the term “proposed” with “permitted” in text about the types of rights-of-way, infrastructure development, or other adjacent ***land*** uses whose impacts may cause ***land*** to be considered ineligible; Specified that under a BPS transaction, the eligible entity for meeting payment eligibility requirements (highly erodible ***land*** and wetland conservation, and Adjusted Gross Income (AGI)) is the landowner unless the eligible entity sells the fee title to a qualified farmer or rancher prior to, or at the time of, the easement closing, in which case the farmer or rancher purchaser must meet payment eligibility requirements; To address BPS transactions, specified that eligible ***lands*** owned by the eligible entity may be eligible for enrollment if the ***land*** is owned, on a transitional basis, to protect the ***land*** through securing an ***agricultural*** ***land*** easement on the ***land*** and to transfer fee title ownership to a farmer or rancher; Specified eligibility requirements related to BPS transactions; Specified that NRCS will consider eligible entity cash contribution toward the easement purchase price and measures to increase ***agricultural*** viability as ranking criteria; Specified that appropriate terms and conditions must be included in the easement deed to address items agreed to by the eligible entity as a matter of ranking and basis for selection for funding; Removed the requirement for the eligible entity to contribute its own cash resources in an amount equal to 50 percent of the amount of the Federal share; Specified the incurred costs by the eligible entity associated with securing a deed to the easement that may be included in the calculation of the non-Federal share, and that the source and limit of other costs that may be included in the calculation of the non-Federal share; Removed reference to the availability of waivers for grasslands of special environmental significance since the specific eligible entity cash contribution requirement was removed; Added specificity to the right of enforcement conveyed to NRCS under the terms of an ***agricultural*** ***land*** easement; Removed the requirement that the ***agricultural*** ***land*** easement be subject to an ACEP-ALE plan; Specified the terms and conditions required by statute that must be addressed if the eligible entity chooses to allow subsurface mineral development on the ***land*** subject to the ***agricultural*** ***land*** easement; Revised the requirement for a conservation plan on highly erodible cropland; Provided that an eligible entity may include terms and conditions in the ACEP-ALE deed that are intended to keep the ***land*** subject to the easement under farmer or rancher ownership; Removed the stand-alone section regarding ACEP-ALE plans and captured in other sections the provisions related to development of required conservation plans or development of ACEP-ALE plans as agreed-to by the eligible entity; Incorporated two new categories under which an eligible entity may demonstrate that they meet the ACEP-ALE certification requirements and revised the criteria to require a minimum of 10 ***agricultural*** ***land*** easements under ACEP-ALE, or predecessor NRCS easement programs, for all eligible entities seeking certification; Specified the circumstances under which NRCS may exercise its right of enforcement under ACEP-ALE, including its right of inspection; Increased the percent of acres of total cropland in a county that may be subject to an ACEP-WRE easement to 15 percent; Removed the requirement for NRCS to seek input from the Secretary of the Interior at the local level in the determination of eligible ***land***; Included water quality as an additional priority along with the priority placed on acquiring wetland reserve easements based on the value of the easement for protecting and enhancing habitat for migratory birds and other wildlife; Specified that grazing under reserve grazing rights wetland reserve easement or 30-year contract must comply with a wetlands reserve plan of operations (WRPO) developed by NRCS, which may include a grazing management plan component, and identified that the plan may be reviewed and modified as necessary, at least every 5 years; and Included new provisions related to the evaluation and authorization of compatible uses on wetland reserve easements, including that in evaluating and considering compatible uses NRCS will consider whether the use will facilitate the practical administration and management of the easement or contract area and ensure that the use furthers the functions and values for which the ***land*** was enrolled.

Summary of ACEP Comments

The interim rule 60-day comment period ended March 6, 2020, and was extended to March 20, 2020, to provide the public an opportunity to consider the January 24, 2020, correction. Seventy commenters, including individuals, organizations, and agencies, submitted comments to regulations.gov NRCS reviewed the input from these 70 commenters in response to the rule and identified 576 comments contained within these 70 entries. NRCS reviewed these 576 comments and categorized and summarized them according to the topics identified below. The topics that generated the greatest response were on ALE ranking, ALE BPS transactions, and definitions.

Overall, the comments expressed general support for the changes made in the interim rule. Six comments were not relevant to the ACEP interim rule. Ten comments expressed general support for the regulation and three comments criticized the regulation in general. These comments did not include any recommendations for change.

NRCS appreciates all comments submitted and thanks each person and organization who expressed an opinion related to ACEP or the interim rule. NRCS will continue the endeavor to improve its customer service and the equitable dispensation of benefits under ACEP.

In this rule, the comments have been organized alphabetically by topic. The topics include:

ALE Buy-Protect-Sell Transactions; ALE Contribution Requirements; ALE Deed Requirements and Terms; ALE Entity Certification; ALE ***Land*** Eligibility Issues; ALE Planning; ALE Program Requirements; ALE Ranking; Definitions; Easement Administration Actions; Environmental Markets; Fund Allocations; Landowner Eligibility—AGI Limitation Waiver; Program Administration; and WRE Issues.

This final rule responds to the comments received by the public comment deadline and makes minor clarifying and related changes.ALE Buy-Protect-Sell Transactions

BPS transactions are arrangements under ALE, first authorized under the 2018 Farm Bill, between NRCS and an eligible entity where the entity owns or will own the ***land*** prior to the acquisition of the ***agricultural*** ***land*** easement on the property, and the eligible entity either:

(1) Sells fee title to the ***land*** to a farmer or rancher prior to or at easement closing; or

(2) Holds fee title at the time the ***agricultural*** ***land*** easement is conveyed on that ***land***, and transfers ownership of the ***land*** subject to the easement to a farmer or rancher not later than 3 years after the date of acquisition of the ***agricultural*** ***land*** easement.

NRCS received comments related to BPS transactions, several of which expressed support for allowing BPS transactions. Remaining comments were as follows:

Comment: NRCS received comment related to the requirement to sell at ***agricultural*** value except that eligible entities could charge qualified farmers or ranchers certain holding and transactions costs. These comments requested a change to the amount an eligible entity may charge the qualified farmer or rancher as part of the sale of the property, recommending either that the 10-percent limitation be removed or increased to 10 percent of the total fair market value (FMV) of the property rather than 10 percent of the ***agricultural*** value. Other comments recommended that the sale be based on appraised ***agricultural*** value (rather than lesser of appraised ***agricultural*** value or original purchase price) to avoid a potential windfall to the purchaser that might raise private benefit or other issues under federal tax law if the eligible entity is a nongovernmental organization.

Response: The 10-percent limit was identified because NRCS may have to recover costs if the conveyance includes more than “reasonable holding and transaction costs. ” It is consistent with industry standards and the use of a published upper limit ***removes*** the potential for arbitrary decision making and expensive challenges in cost recovery cases. Additionally, this transaction type aims to help farmers and ranchers gain access to affordable farmland, and a limit on the holding and transaction costs that may be charged to the farmer or rancher ensures that there is no circumvention of that intent.

A discussion of the federal income tax regulatory requirement that an organization described in section 501(c)(3) of the Internal Revenue Code (IRC) operate for the benefit of public rather than private interests is outside the scope of both the jurisdiction of the United States Department of ***Agriculture*** and this rule. For more information about the requirements applicable to tax-exempt organizations, including those described in section 501(c)(3) of IRC, visit the IRS's Charities and Nonprofits page at [*www.irs.gov/charities-and-nonprofits*](http://www.irs.gov/charities-and-nonprofits).

The ACEP statute requires the sale to be at “***agricultural*** value” plus any reasonable holding costs. A sale at FMV assumes that the impact of the placement of the easement on the ***land*** will result in the highest and best use of the ***land*** being ***agriculture***, and thus ***agricultural*** value. The alternative value, the purchase price at which the entity purchased the ***land***, would have been at most, theoretically, FMV of the ***land*** without being encumbered by the easement. If the original purchase price of the property was less than FMV of the ***land*** encumbered with the easement, then ACEP assistance through a BPS arrangement is not necessary for the entity to have a viable transaction that would result in the same outcome and could occur without an investment of taxpayer funds.

This requirement ensures that eligible entities do not profit from the BPS transaction at the cost of the qualified farmer or rancher. The provision requiring the eligible entity to sell the property at the original purchase price, if lower than the appraised ***agricultural*** value, was similarly included to help farmers and ranchers gain access to affordable farmland. NRCS has clarified in the regulation that appraised ***agricultural*** value means ***agricultural*** value of the ***land***. An eligible entity should seek tax or legal advice if a particular transaction, due to the entity's unique circumstances, could jeopardize its tax-exempt status. In those instances, the entity can move forward independently without ACEP assistance, especially if the entity would make a profit from the subsequent ***land*** transfer, which would negate the need for Federal funds.

No change is made to the regulation in response to this issue.

Comment: NRCS received comment requesting that the pre-closing transfer of BPS easements should allow for advance payments in addition to reimbursements.

Response: NRCS selected the reimbursement-only approach for pre-closing BPS transactions as it reduces the risk for cost-recovery by allowing NRCS and the entity to ensure the transaction meets all requirements prior to NRCS providing cost-share assistance. To ensure this risk is minimized across all BPS transactions, NRCS has clarified that payment of the Federal share will occur on a reimbursable basis for all BPS transaction types. Even under standard (non-BPS) ALE transactions, an advance payment may only be issued 30 days prior to closing. Therefore, the amount of time the eligible entity could be in receipt of easement funds in advance of the easement closing under the requested approach is minimal, whereas the reimbursement-only approach for BPS transactions significantly reduces risk and increases administrative savings for both the eligible entity and the Government. The regulation has been updated to make the Federal share payment provision more consistent across the BPS transaction types.

Comment: NRCS received comment related to adjusted gross income (AGI) waivers; two comments suggested adding AGI waivers for entities involved in BPS transactions who play an intermediary role as landowner. Another comment suggested automatically waiving AGI for BPS transactions because entities only act as pass-through organizations for the purpose of the contract.

Response: The requesting and granting of AGI waivers for landowners that the Farm Service Agency (FSA) has determined do not meet the AGI limitations must ultimately be addressed prior to providing ACEP funds. Determinations to waive AGI for landowners that do not meet the AGI limitations, as set forth in 7 CFR part 1400, must be based on a case-by-case basis. NRCS policy addresses when NRCS makes its eligibility determinations, including AGI, based on the BPS transaction type and provides maximum flexibility with respect to the timing of conducting AGI determinations. No change is made to the regulation in response to this issue.

Comment: NRCS received comment regarding the length of ACEP-ALE agreements for BPS transactions, including request for an extension beyond the 3-year ACEP-ALE agreement length (and 12-month extension) for post-closing transfers to a qualified buyer or an extension to a 5-year agreement length.

Response: NRCS provides a period of 3 years, plus a potential additional 12 months, to find a qualified buyer, in addition to the initial 2-year period provided to close on the easement, for a total of 6 years for an individual transaction. NRCS selected the 12-month extension for several reasons, largely based on the administrative burden associated with extending transactions further.

Additionally, NRCS recognizes that post-closing BPS transactions compete for the same ACEP funds that otherwise would be available to protect ***land*** that is already owned by a private or Tribal landowner or qualified farmer or rancher. Under a post-closing BPS transaction, until transfer to a qualified farmer or rancher takes place, the intended purposes of ACEP for which the Federal funds have been invested, are not fully realized. If the property is not ultimately transferred, then those Federal funds have been rendered unavailable for 5 to 6 years during which time they could have been used to protect another property that may have met ACEP purposes from the outset. Twelve months was chosen to ensure appropriate stewardship of Federal funds. No change is made to the regulation in response to this issue.

Comment: NRCS received comment requesting addition of an option to purchase at ***agricultural*** value (OPAV) for BPS agreements to maintain maximum flexibility.

Response: Encumbered ***land*** under a BPS transaction must be sold at ***agricultural*** value to a qualified farmer or rancher. The ACEP statute at 16 U.S.C 3865b(b)(4)(D)(i) specifically allows the inclusion of additional deed terms to keep the ***land*** subject to the ALE under the ownership of a farmer or rancher, which includes easement deeds that are part of a BPS transaction. However, NRCS must provide oversight to ensure that the use of an OPAV term in BPS transactions does not create an incentive for strawman sales to a qualified farmer or rancher just to meet statutory BPS requirements and then have the qualified farmer or rancher sell the ***land*** immediately back to the entity at ***agricultural*** value under the OPAV term. No change is made to the regulation in response to this issue.

Comment: NRCS received comment recommending modification of the penalty for failure to complete BPS transactions to a sliding scale of restitution rather than full repayment.

Response: The ACEP statute requires that the “Secretary shall be reimbursed for the entirety of the Federal share of the cost of the ***agricultural*** ***land*** easement by the eligible entity if the eligible entity fails to transfer ownership. ” NRCS does not have any flexibility with respect to the level of restitution and therefore no change is made to the regulation in response to this issue.

Comment: NRCS received comment requesting that eligibility for BPS transactions be expanded to include ***land*** owned by State and local governments.

Response: The statute identifies “eligible ***land***” as “private or tribal ***land***,” which ***land*** owned by a State or local government is not. However, this limitation does not preclude the involvement of a State or local government in a BPS transaction. A state or local government can serve as the interim easement holder while a non-governmental-eligible entity serves as the landowner until the ***land*** can be transferred to a qualified farmer or rancher. No change is made to the regulation in response to this issue.

Comment: NRCS received comment requesting that, in the development of its policy for BPS transactions, the entity not be required to identify the landowner or sale price during the application and agreement phase.

Response: NRCS does not require the identification of the landowner or sale price during the application phase. The timing of the identification of the landowner and the sale price is specified in the ALE-agreement terms and based on the specific BPS transaction type as either a pre-closing or post-closing transfer. No change is made to the regulation in response to this issue.

Comment: NRCS received comment requesting that ***land*** eligibility provisions be changed for BPS transactions, including ***removal*** of the “imminent threat” test example or addition of “advancing program goals” as a basis for eligibility.

Response: To align with the “Conference Report to Accompany H.R 2—***Agriculture*** Improvement Act of 2018” (Managers' Report), the ACEP-ALE “eligible ***land***” definition for BPS transactions was modified to “allow for ***agricultural*** ***land*** to be owned by an eligible entity on a transitional basis to qualify for program participation, provided that the ***land*** subject to the ***agricultural*** ***land*** easement be transitioned to farmer or rancher ownership within 3 years. ” Due to the transitional nature of this ownership, there are risks that the Federal investment in ACEP-ALE benefits will not be fully realized, risks that do not exist with standard ALE transactions. However, in some circumstances, such as an imminent threat of development, this risk is outweighed by the benefit of placing an easement on ***land*** not owned by an otherwise eligible private or Tribal landowner at the time the Federal funds are invested in the easement.

NRCS therefore states in the ACEP regulation that, to be eligible for a BPS transaction, the ***land*** must be subject to conditions that necessitate the ownership of the parcel by the eligible entity on a transitional basis prior to the creation of an ***agricultural*** ***land*** easement, and that these conditions may include ***land*** subject to an “imminent threat of development, including, but not limited to, planned or approved conversion of grasslands to more intensive ***agricultural*** uses. ” Other conditions may also satisfy that requirement. NRCS made a slight editorial clarification in the regulation with respect to the requirement that the eligible entity must, within 12-months of the BPS agreement, have completed the initial purchase of the ***land*** or have demonstrated that completion of the purchase of the ***land*** is imminent.

No other change is made to the regulation in response to this issue.

Comment: NRCS received comment on the issue of merger of title in BPS transactions, including comment recommending deed term stating merger does not apply. Another comment encouraged NRCS and Office of the General Counsel to rely on an opinion of counsel eligible to practice in the State in which the ALE project is located to the effect that no merger would result through the transaction if the eligible entity: (1) Developed strong anti-merger language to allow it to grant an ***agricultural*** ***land*** easement to itself while still holding the fee title to the property, and then (2) reaffirmed the ***agricultural*** ***land*** easement at the time the eased parcel is sold to a farmer or rancher.

Response: ACEP-ALE is a nationwide program and State law varies on the effectiveness of an anti-merger clause; however, in general, entities may include a no merger clause in ALE deeds. However, NRCS does not believe that the combination of an anti-merger clause with the suggested attorney's opinion sufficiently allows an eligible entity to temporarily hold the easement and the underlying fee at the same time. NRCS contemplated this proposed BPS transaction structure in response to previous public comments. The comment received does not introduce new information resulting in a different determination with respect to the legal issues of easement creation, as an easement, by definition, are the rights held by someone in the ***land*** owned by another and is created at the time of the transfer to the other person.

The article supplied by the respondent reaffirmed this concept by identifying cases where courts determined that the doctrine of merger was not applicable due to the transfer of an easement to a third party. Merger of title addresses the extinguishment of an easement right due to a subsequent acquisition of fee title, while the BPS transactions present issues of easement creation. In addition to these issues, the conflict of interest inherent in this type of ownership scenario, which would impact enforcement, monitoring, and management of the easement and property, would not be mitigated by including an anti-merger provision. No change is made to the regulation in response to this issue.

Comment: NRCS received comment that parcel substitutions for BPS transactions should be allowed.

Response: Due to the unique and complex nature of BPS transactions, the ALE agreement includes terms that are specific to the individual transaction and ultimately constitute the `legal arrangement' being entered into `relating to ***land*** owned . . . by an eligible entity' for the purchase of an ***agricultural*** ***land*** easement on that particular piece of ***land***. In contrast, the terms of the standard ALE agreement and contract appendix are applied universally to every parcel funded. No change is made to the regulation in response to this issue.

Comment: NRCS received comment recommending that changes to transaction type (pre-closing versus post-closing transfer) be allowed after entering into agreement.

Response: NRCS identified two types of BPS transactions in the interim rule: pre-closing and post-closing transfers, which are differentiated based on the timing of the sale of the fee title interest in the ***land*** to a qualified farmer or rancher relative to the timing of securing the ***agricultural*** ***land*** easement. The regulation specifies the requirements and ALE-agreement terms that apply to both types. NRCS will address in the terms of the ALE agreement how an eligible entity may request a modification to an ALE-agreement to change between these two types of BPS transactions. No change is made to the regulation in response to this issue.

Comment: NRCS received comment requesting clarification in the preamble as to whether a qualified farmer or rancher includes those who do not file a Schedule F, such as a farmer in an S corporation.

Response: IRS Form 1040 or 1040-SR, Schedule F, “Profit or Loss from Farming,” is the preferred documentation and is consistent with other NRCS and USDA programs. However, NRCS will also consider circumstances in which other forms of IRS documentation identifying the landowners' engagement in an ***agricultural*** operation may be appropriate.ALE Contribution Requirements

Under both the 2014 and 2018 Farm Bills, NRCS may provide a Federal share that does not exceed 50 percent of the FMV of the ***agricultural*** ***land*** easement and requires the eligible entity to provide a share at least equivalent to that provided by NRCS, except in the case of grasslands of special environmental significance. For grasslands of special environmental significance, NRCS may provide a Federal share that does not exceed 75 percent of the easement FMV and the non-Federal share requirement is adjusted accordingly. The 2018 Farm Bill removed the 50-percent cash contribution requirement on the part of the eligible entity and identified permissible sources of the non-Federal share. NRCS received the following comments.

Comment: NRCS received comment in support of ***removing*** the requirement for the eligible entity to provide a minimum cash contribution toward the purchase of the ***agricultural*** ***land*** easement and allowing donations of ***land*** by the landowner and eligible entity expenses for procured items to satisfy the non-Federal share requirements. Other comments did not support eligible entities no longer being required to provide a minimum cash contribution.

Response: The regulatory changes follow requirements of the 2018 Farm Bill. No change is made to the regulation in response to this issue.

Comment: NRCS received comment suggesting changes to how NRCS structured the non-Federal share in the regulation. They asked that the “and” at the end of the list be replaced with an “or. ”

Response: NRCS is clarifying that the sources comprising the non-Federal share are listed in order, and proceeding through the list, once the minimum non-Federal share amount is met, additional sources and amounts do not need to be identified.

Additionally, given that an eligible entity's contribution may be related to cash resources expended for the purchase of the ***land*** prior to the easement transaction, NRCS has clarified in the regulation that for BPS transactions, part of the non-Federal share provided by an eligible entity may include that portion of the fair market value of the ***agricultural*** ***land*** easement that is not provided as the Federal share.

Comment: NRCS received comment requesting clarification about the timing and the type of documentation that would be required for procured costs incurred by the eligible entity if relied upon to meet the non-Federal share requirement.

Response: The regulation states that documentation requirements for procured costs are included in the ALE agreement. NRCS recognizes that, at the time of agreement, costs for procured items are estimated amounts and have not yet been incurred. Such estimates are needed in order to calculate the amount of the Federal share that may be obligated. No change is made to the regulation in response to this issue.

Comment: NRCS received comment requesting that baseline reports and mineral assessments be added to the list of procured costs that may be included in the non-Federal share.

Response: NRCS added baseline reports and mineral assessments to the list of items that may be included in the non-Federal share if these items are procured by the eligible entity from third parties.

Comment: NRCS received comment asking that a Federal share of up to 75 percent of easement costs be provided in communities that do not have eligible entities present.

Response: The statute limits NRCS's authority to provide a Federal share of up to 75 percent of the easement value to grasslands of special environmental significance only. No other types of transactions are authorized to receive up to 75 percent of the easement value, including transactions that occur in communities that do not have an eligible entity present. No change is made to the regulation in response to this issue.

Comment: NRCS received comment requesting a change to clarify that the non-Federal share provided by the eligible entity for ACEP-ALE grasslands of special environmental significance must comprise the difference between the Federal share and the remainder of the FMV. The comment requested ***removal*** of the provision that, in the event the non-Federal share provided by the eligible entity is less than such amount, NRCS will provide a Federal share equivalent to the non-Federal share being provided.

Response: The interim rule mirrors the statute. Additionally, the language allows for the possibility that, in the event that the non-Federal share provided by the eligible entity does not comprise the difference between the Federal share and the remainder of the FMV of the easement, NRCS could still provide a lesser amount that is equivalent to the non-Federal share. Although this is unlikely, ***removing*** the language from the regulation would eliminate this possibility. No change is made to the regulation in response to this issue.ALE Deed Requirements and Terms

NRCS received comment related to the topic of ALE deed requirements and deed terms as follows:

Comment: NRCS received comment related to the ALE deed template review, recommending that the deed template review be limited to ensuring that the minimum deed terms are incorporated and that other terms are not contrary to the purpose of ACEP.

Response: The NRCS review of ALE deed templates focuses on ensuring that minimum deed terms (MDT) are incorporated and ensuring other terms are not contrary to the purpose of the program. Review of other items may be necessary to ensure that the document will work effectively as a template for the acquisition of ***agricultural*** ***land*** easements on multiple parcels. No change is made to the regulation in response to this issue.

Comment: NRCS received comment about deed provisions related to ***agricultural*** use, including a request to strike the phrase “consistent with ***agricultural*** use” and replace it with the phrase “does not negatively affect ***agricultural*** use” as to commercial uses. Another comment recommended that NRCS limit its ability to impose greater deed restrictions in instances where the State definition of ***agricultural*** uses may result in the degradation of the soils, ***agricultural*** nature of the ***land***, or related natural resources.

Response: This phrase `consistent with ***agricultural*** use' is unchanged from the previous ACEP regulation and is expansive enough to apply to farmland and grassland enrollments and is sufficient to prevent commercial uses that may negatively affect ***agricultural*** uses. NRCS may impose deed restrictions needed to ensure ACEP-ALE purposes will be met in exchange for the Federal investment. No change is made to the regulation in response to this issue.

Comment: NRCS received comment expressing general support for various elements of the deed requirements set forth in the interim rule, including commending NRCS for the revised mineral development language; language regarding an entity's use of their own deed terms and conditions; and supporting the U.S right of enforcement and right of inspection language in the interim rule.

Response: NRCS thanks respondents for their input. No change is made to the regulation in response to these issues.

Comment: NRCS received comment related to amendment clauses that must be included in each ***agricultural*** ***land*** easement deed, recommending splitting the amendment provision in the regulation to avoid confusion between “amendments” and the various types of easement administration actions (subordination, modification, exchange, and termination actions).

Response: NRCS appreciates the request for clarification regarding the requirement that each ***agriculture*** ***land*** easement deed include clauses that address amendments or changes that may occur after recordation of the easement. To clarify, NRCS uses the term “amendment” in the regulatory deed requirement in § 1468.25(d)(4) broadly to include each type of easement administration action: Subordination, modification, exchange, and termination. In practice, NRCS provides two separate clauses in the minimum deed terms to address this regulatory deed requirement and fully encompass the various types of easement administration actions. NRCS revised the text in the final rule to clarify and ***remove*** ambiguity regarding the various types of changes to the easement deed or easement area that must be approved in advance by NRCS.

Comment: NRCS received comment regarding the interim rule's impervious surface limitations that must be specified in ACEP-ALE easement deeds, including comments recommending that NRCS authorize a blanket impervious surface waiver to ACEP-ALE easement deed language and cap the waiver authority at 5 percent of the easement area.

Response: The impervious surface limitation and the current cap are well-established. NRCS explained in prior rulemakings the basis for its use of a 2-percent limitation and the flexibility of having a waiver that allows up to 10 percent based upon site-specific factors. In particular, this limitation provides a reasoned balance between ensuring the future capacity of ***agricultural*** ***land*** use with flexibility to allow for changes to the ***agricultural*** operation.

NRCS requires a parcel-by-parcel determination because impervious surface limitations are site-specific. NRCS will not approve a blanket waiver or grant eligible entities a right to create blanket waivers for a greater impervious surface limit.

However, there is an existing waiver option available that may have been underutilized. Specifically, when an eligible entity has a waiver process consistent with NRCS limitations and it is based on parcel-by-parcel determinations made by the entity, the entity may request authority from NRCS to use its own process. In this case, separate individual parcel waivers from NRCS would not be necessary.

No change is made to the regulation in response to this issue.

Comment: NRCS received comment regarding the subsurface mineral deed provisions. The comments requested:

A requirement that native plants be used to remediate subsurface mining impacts; A requirement that involves State technical committees when determining impact of mineral development; That NRCS seek guidance on timing and responsibility for the development of the subsurface development plan; and That NRCS provide flexibility in the identification of de minimis gravel extraction sites.

Response: NRCS recognizes the preference for the use of native plants for remediating sites in general, but the determination of the appropriate vegetation for any particular easement must be based upon site-specific factors.

While the State technical committee can provide input on the impact of mineral development to particular ***land*** uses or locations in the State, such input would be inappropriate on an individual easement basis.

The eligible entity is responsible for providing the subsurface mineral development plan to NRCS, which must be approved by NRCS prior to initiation of the mineral development activity, as set forth in § 1468.25(d)(7)(v).

The de minimis gravel extraction matter is not a regulatory issue but the comment responds to text that exists in the current minimum deed terms.

NRCS would like to clarify that de minimis gravel extraction is through surface methods and therefore not encompassed by the subsurface mineral deed. Additionally, the current minimum deed terms authorize such de minimis gravel extraction for on-farm purposes. No change is made to the regulation in response to these issues.

Comment: NRCS received comment recommending that certified entities need not be required to seek NRCS approval for subdivision and other activities that currently require NRCS approval under regulatory deed requirements and allow only notice to NRCS of these actions as sufficient.

Response: The interim rule language did not change from prior rules. Certified entities have broad discretion already but still must meet regulatory deed requirements. NRCS, as a fiduciary, must approve those actions that can so fundamentally affect program purposes.

Comment: NRCS received comment with respect to the requirement of the United States right of enforcement in the ***agricultural*** ***land*** easement deed, including request that a reference to § 1468.28 be added to the right of enforcement definition, recommendation that the word “contingent” should be inserted before the term “United States right of enforcement”, and a statement that the right of enforcement does not include the ability of the NRCS enforce the terms of an ALE plan if such a plan exists.

Response: NRCS removed the term “contingent” many years ago to ***remove*** confusion that such right is a currently vested right. The term “contingent” indicates that NRCS's exercise of its right of enforcement is conditioned on particular events. It does not mean that the right itself is contingent, such that it would only be vested upon some future event.

NRCS has not included any cross references to the various sections which relate to the United States right of enforcement in the definition itself since such cross-referencing is unnecessary.

***Agricultural*** ***land*** easements acquired under the 2018 Farm Bill are not required to have or be subject to an ALE plan. NRCS enforces highly erodible ***land*** conservation plans on highly erodible cropland as required by the ACEP-ALE statute; however, NRCS does not otherwise identify in the regulation the enforcement of an ALE plan.

No change is made to the regulation in response to this issue.

Comment: NRCS received comment stating that the statutory requirement of providing notice and right to participate when exercising the right of inspection should be added to the rule and deed terms.

Response: The circumstances under which NRCS may enter upon and inspect an easement pursuant to the United States right of enforcement is included in the full right of enforcement clause provided to all eligible entities and must be used in all ACEP-funded ***agricultural*** ***land*** easement deeds. The ACEP regulation clarifies that NRCS will provide the ***agricultural*** ***land*** easement holder and the landowner a reasonable opportunity to participate if NRCS exercises its right of inspection.

Comment: NRCS received comment recommending that deed terms should allow site potential tree height (SPTH) ***forested*** riparian buffers as a permissible provision in western Washington.

Response: The ACEP regulation includes a “catch-all” provision that allows States to have additional minimum deed terms. NRCS recommends that the commenters and any stakeholders with similar concerns should work with their applicable State Conservationist. No change is made to the regulation in response to this issue.

Comment: NRCS received comment related to how the ALE-agreement references the deed requirements.

Response: The ALE agreement must specify the deed requirements as set forth in the regulation so that they are enforceable.ALE Entity Certification

NRCS received comment related to ALE entity certification as follows:

Comment: NRCS received comment on the term of agreements with certified eligible entities recommending that NRCS allow for a minimum 5-year term.

Response: NRCS is changing the regulatory language in response to this comment to specify that agreements with certified entities will be for a minimum of 5 fiscal years following the fiscal year the agreement is originally executed, but may not exceed 7 fiscal years following the fiscal year the agreement is originally executed. NRCS has found that an upper limit is necessary to limit the administrative burden associated with implementing agreements that cross different farm bills.

Comment: NRCS received comment urging NRCS to expand eligibility for certification for State agencies, recommending a broadening of language for which types of prior conservation easements would be counted, and requesting that NRCS drop the number of required prior conservation easement transactions from 10 to 5.

Response: The terms for certification of State agencies are set forth in statute, including the type of easements that can be counted and the number of prior transactions required, and NRCS does not have discretion to waive or amend those provisions. No change is made to the regulation in response to this issue.

Comment: NRCS received comment requesting additional guidance on the entity certification process, including evaluation criteria, how NRCS will address partnerships between certified and non-certified eligible entities, what technical assistance NRCS may provide to certified entities (with regards to things like title review and appraisal), the benefits of certification, and the definition of a plan for administering easements. The comment detailed recommendations about the kind of transparency NRCS should have for its process and the timeline. Another comment requested a streamlined process for certifying eligible entities, including State agencies and ***land*** trusts.

Response: The internal certification review process is found at 440 Conservation Programs Manual (CPM) Part 528 and may be accessed at [*https://directives.sc.egov.usda.gov/*](https://directives.sc.egov.usda.gov/). NRCS will continue its ongoing efforts to streamline processes through new business tools to be as efficient and effective in program delivery as possible while operating within legal authorities. NRCS will continue to make publicly available any new policy or guidance. No change is made to the regulation in response to this issue.

Comment: NRCS received comment expressing support for changes made in the interim rule to the entity certification process.

Response: NRCS appreciates this support.ALE ***Land*** Eligibility Issues

NRCS received comment related to ALE ***land*** eligibility as follows:

Comment: NRCS received comment about ***forest*** ***land*** eligibility issues. Many supported maintaining the two-thirds limitation on non-industrial private ***forest*** ***land*** (NIPF) eligibility under ACEP-ALE and offered that programs like the Regional Conservation Partnership Program (RCPP), Healthy ***Forests*** Reserve Program (HFRP), and ***Forest*** Legacy Program can all be used currently to protect ***forest*** ***lands***. Another comment requested the two-third limitation on NIPF in ACEP-ALE be struck.

Response: To minimize duplication, overlap, and conflict with other USDA ***forest*** easement programs, the interim rule and this regulation maintain the existing eligibility provision that ***land*** enrolled in ACEP-ALE cannot include NIPF greater than two-thirds of the ACEP-ALE easement area unless waived by NRCS with respect to ***forest*** ***lands*** dedicated to sugar bush that contribute to the economic viability of the parcel.

NRCS specifically requested public comment in the interim rule on whether RCPP or HFRP could protect ***lands*** on which NIPF is the predominant use at levels beyond the scope of ACEP-ALE. Regarding the two-third limitation, NRCS cannot authorize parcels that are 100 percent NIPF because statutory eligibility criteria is phrased as NIPF contributing to the economic viability of an offered parcel or serving as a buffer to protect ***land*** from development. Thus, the eligibility of NIPF is in relationship to other eligible ***land***. This has long been NRCS's interpretation of this eligibility criterion under ACEP-ALE and its predecessor Farm and Ranch ***Lands*** Protection Program. Congress specifically rejected language that would have expanded eligibility in the 2018 Farm Bill. NRCS concurs that the availability of other USDA easement programs that specifically protect ***forested*** ***lands*** warrants the continued focus of ACEP-ALE more broadly on other ***agricultural*** ***lands***. No change is made to the regulation in response to this issue.

Comment: NRCS received comment about the definition of grasslands of special environmental significance (GSES) under ACEP-ALE, including support for the definition of GSES and the prioritization and management of native vegetation and habitats in relationship to GSES. A comment also encouraged the return of ***land*** to heritage marshes and vernal pools wherever possible on GSES enrollments. Another comment supported allowing only native vegetation to be categorized as GSES.

Response: NRCS believes that the current GSES definition supports the recommendation about prioritization of native vegetation and habitat. In particular, the GSES definition identifies sensitive or declining native prairie or grassland types or grasslands buffering wetlands. However, there are grasslands that, while not native vegetation, provide critical habitat for at-risk species that warrant the increased Federal investment to protect. Thus, NRCS will not limit GSES to native vegetation only. No change is made to the regulation in response to this issue.

Comment: NRCS received comment related to ALE ***land*** eligibility, including:

A request that confined animal feeding operations (CAFOs) not be eligible for an ALE-funded easement; A comment addressing the ineligibility criteria related to on-site and off-site conditions; A comment commending NRCS for including criteria related to permitted rights-of-way and requesting that NRCS clarify how off-site conditions are deemed suitable for the purpose of making ALE ***land*** eligibility determinations; A comment requesting that NRCS broaden the definition of access and the eligibility requirements so that air access can qualify; and A comment requesting additional clarification as to whether a farmer or rancher can participate in both ALE and Conservation Reserve Program (CRP).

Response: For any proposed easement containing a CAFO, the confined area is a heavy use area that must be evaluated by NRCS to determine if the on-site or off-site conditions render the site ineligible and make a determination as to whether the ***land*** meets the required ***land*** eligibility criteria. This is a case-specific determination and broad categorization of ***land*** eligibility simply based on type of operation is not appropriate. NRCS has set forth in national policy, which is publicly available, the procedures and forms NRCS uses to make ***land*** eligibility determinations for ACEP-ALE, including assessing the potential of onsite and offsite conditions to undermine the purposes of ACEP. Ultimately, ***land*** eligibility determinations are site-specific and rely upon programmatic and technical assessments based on criteria set forth broadly in national policy and more specifically at the State level. For more information, see: 440 CPM part 528 at [*https://directives.sc.egov.usda.gov/*](https://directives.sc.egov.usda.gov/).

Legal access to ***agricultural*** ***land*** easements is critical to the ability of the eligible entity, and NRCS, under its right of enforcement, to monitor and enforce the terms of the easement and ensure that program purposes are achieved. Effective monitoring and enforcement ultimately require ground inspection and verification. Access to an easement that can only be achieved by aircraft would require both the eligible entity and NRCS to maintain, in perpetuity, aircraft that can provide personnel access to monitor and ***land*** on the easement property and would require the landowner to maintain, in perpetuity, a ***landing*** strip or helipad on the property. NRCS does not maintain its own aircraft for easement monitoring purposes and cannot evaluate the safety and suitability of aircraft owned by the eligible entity or the landowner's ***landing*** strip or helipad. All ***lands*** that do not have sufficient legal, physical access are ineligible to receive Federal funds under ACEP, including those that are only accessible by air.

The 2018 Farm Bill specifies that a farmer or rancher who owns eligible ***land*** subject to an ***agricultural*** ***land*** easement may enter into a CRP contract. Determinations of ***land*** eligibility for enrollment in CRP are under the purview of FSA and we have therefore shared the comment with FSA. No change is made to the regulation in response to these issues.ALE Planning

NRCS received comment related to ALE planning and ALE plans as follows:

Comment: NRCS received comment related to ALE planning generally and some of them urging NRCS to require a grassland management plan for grasslands of special environmental significance given the higher environmental value of these easements. Another comment recommended that NRCS continue to encourage planning on ALE easements, while a comment did not support how NRCS encouraged planning.

Response: The 2018 Farm Bill removed language requiring that ACEP-ALE easements enrolled under the 2018 Farm Bill be subject to an ALE plan, including grasslands of special environmental significance. However, in the Managers' Report, the Managers “encourage USDA and eligible entities to work with landowners entering into an ALE easement to undertake conservation planning activities on their ***land*** in order to maximize the environmental value of the protected ***land***. ” Therefore, NRCS will continue to encourage planning on ACEP-ALE enrollment, including grasslands of special environmental significance. No change is made to the regulation in response to this issue.

Comment: NRCS received comment strongly supporting the recognition ALE plan as a measure that maintains or increases the ***agricultural*** viability of the ***land*** in the ranking criteria, and identified that the ranking criterion should strongly weight ALE plans for grasslands of special environmental significance and that a plan should be required for any application that is prioritized based on carbon sequestration or climate change resiliency goals. Another comment expressed that an ALE plan should not be recognized in the ranking criteria because it is no longer required by statute.

Response: As described in the preamble of the interim rule, NRCS identified that the development and maintenance by the eligible entity of an ACEP-ALE plan could be a ranking consideration at the State level to prioritize applications from eligible entities. NRCS believes that conservation planning is the base upon which sound conservation stewardship originates. To eliminate support for planning would undermine the quality of stewardship that would be encouraged on ***lands*** in which the public provides a sizable financial investment. Additionally, as a ranking criterion this consideration does not prohibit eligible entities from being able to access program funding but instead acknowledges that eligible entities committed to long-term conservation planning are helping to ensure an ***agricultural*** ***land*** easement yields the greatest benefits for the landowner, conservation, and the public funds invested in that easement. No change is made to the regulation in response to this issue.

Comment: NRCS received comment related to the definition of the ALE plan, with some advocating for the ***removal*** of the ALE plan definition entirely because plans are no longer mandated by statute. Another comment supported the definition of ALE plans and commended NRCS for clearly defining that the plan is developed by the eligible entity and not as a component of the deed. Comment also expressed support for limiting conservation plans to only highly erodible croplands.

Response: NRCS supports conservation planning as the cornerstone of ***land*** stewardship efforts. NRCS retained the definition of the ALE plan in the ACEP regulation. No change is made to the regulation in response to this issue.ALE Program Requirements

NRCS received comment related to ALE program requirements as follows:

Comment: NRCS received comment requesting clarification as to how NRCS will determine if a landowner entity is compliant with AGI.

Response: NRCS uses the AGI eligibility determinations made by the FSA. NRCS accesses such determinations through the agencies' shared database services. No change is made to the regulation in response to this issue.

Comment: NRCS received comment related to the requirement that eligible entities must provide evidence of their financial capacity for transactions in which the non-Federal share does not include at least a 10-percent cash contribution from the eligible entity for payment of easement compensation to the landowner. Other comment requested ***removal*** of the requirement that the entity provide specific evidence of funds available for stewardship of the easement and suggested that entity eligibility requirements that apply to all ACEP-ALE transactions regardless of entity cash contribution amounts are sufficient. Other comment commended NRCS on including the requirement but requested clarification as to what would constitute specific evidence of funds available for stewardship.

Response: All entities must demonstrate capability and capacity as an eligibility requirement. Under the 2014 Farm Bill, NRCS could use an entity's ability to provide at least the required cash contribution amount for all ACEP-ALE transactions as an indication that the entity is able to meet capability and capacity requirements. Where an entity is unable to provide at least a minimum cash contribution, questions arise as to the entity's financial capacity to assume responsibility for the easement acquisition. NRCS has, therefore, specified in the regulation the conditions under which additional capability and capacity evidence will always be required. However, it is always the entity's responsibility to establish that it meets basic ACEP-ALE eligibility requirements and as identified in the rule, the entity must provide to NRCS sufficient information to establish that the applicable entity eligibility criteria have been met.

Comment: NRCS received comment recommending that the definition of a farm or ranch succession plan be expanded to include transfers of ***land*** and deeds to non-relatives and other long-term protections for ***agricultural*** productivity. Also, comment recommended specifying that successions plans may include options to purchase at ***agricultural*** value or preemptive purchase rights.

Response: The key part of a succession plan is that the landowner makes arrangements for the future management of the ***land*** as a farm or ranch once the landowner retires or dies. NRCS does not limit those types of arrangements. The definition of the succession plan in the regulation used intra-family succession agreements or business asset transfer strategies as examples. NRCS has added language to clarify that the examples included in the definition are not all-inclusive.

Comment: NRCS received comment related to the easement valuation methods available under ACEP-ALE, encouraging NRCS to provide guidance on information required for easement valuation methods used other than the Uniform Standards of Professional Appraisal Practice (USPAP) appraisals, including areawide market analysis or other industry-approved methods. Comment also expressed support for the current availability of ACEP-ALE valuation options beyond USPAP appraisals.

Response: NRCS provides guidance in policy with respect to what is required if an eligible entity elects to use an alternative easement valuation methodology, including a “Specification and Scope of Work for Areawide Market Analysis for ACEP-ALE. ” These items are published and publicly available in NRCS directive Title 440, Conservation Programs Manual (440-CPM), Part 528, Section 528.53, and in 440-CPM, Part 527, Subpart E, which can be accessed on the NRCS Electronic Directives system at [*https://directives.sc.egov.usda.gov/*](https://directives.sc.egov.usda.gov/). No change is made to the regulation in response to this issue.

Comment: NRCS received comment recommending that NRCS be required to consult with the State technical committee on ACEP-ALE prioritization for ranking, special eligibility, and all other State-decided criteria.

Response: Statutory authority states that State technical committees assist in implementation and technical aspects of conservation programs under Title XII of the Food Security Act, such as ACEP. Sections 1468.2 and 1468.22 of the ACEP interim rule incorporate this role, including that State technical committees provide input on the development of ranking criteria and other matters. No change is made to the regulation in response to this issue.

Comment: NRCS received comment related to the ACEP-ALE application process and the new option for ALE-program agreements, requesting that NRCS make the application form and new option for ALE-program agreements form more usable and that the process be streamlined. Other comments wished to have greater guidance about how producers could participate and supported the new ALE program agreement option and requested additional clarification regarding its availability.

Response: NRCS appreciates the complexity of easement transactions, including the extent of information that must be collected from applicants and participants on various program forms. NRCS has made several efforts to streamline the ACEP-ALE enrollment process. In FY 2020, NRCS released various new or updated forms used to administer ACEP-ALE. Additionally, NRCS piloted in fiscal year 2019 and is implementing more widely in fiscal year 2020 the use of ALE program agreements, making available several automated eligibility and payment processes previously only available to NRCS financial assistance programs. Also, the use of a program agreement framework under ACEP-ALE allows NRCS and eligible entities to more easily address enrollment changes, such as parcel substitution or acreage modifications. Since NRCS does not receive landowner applications directly for ACEP-ALE enrollment, NRCS will provide outreach to States to help landowners interested in ACEP-ALE identify eligible entities in their geographic area. No change is made to the regulation in response to this issue.

Comment: NRCS received comment recommending that NRCS allow water supply entities to participate in ACEP-ALE as eligible entities.

Response: An eligible entity must meet the definition of an eligible entity established by statute and incorporated into the ACEP regulation. NRCS does not have authority to expand the basic eligible entity definition. No change is made to the regulation in response to this issue.ALE Ranking

NRCS received comment related to ALE ranking as follows:

Comment: NRCS received comment related to ***removing*** the factor associated with national ranking criterion that takes into consideration whether the cash contribution is being provided by the eligible entity toward the payment of easement compensation to the landowner. Other comments:

Recommended consideration of State and local tax incentives be added to this factor; Recommended NRCS prioritization of landowner donation in the ranking; and Agreed with including the eligible entity's cash contribution in the ranking.

Response: The Managers report introduced flexibilities to provide better access to ACEP in States where conservation easement funding is limited. The Managers stated that they did not intend for NRCS to reject cash matches entirely but broadened the options available to eligible entities. NRCS recognizes that any time the eligible entity's cash contribution is reduced, the landowner receives less compensation for the sale of an easement on their ***land***, which may result in ACEP funds being the only funds paid to the landowner for the easement. Additionally, the increased donation by the landowner will frequently satisfy the minimum non-Federal share requirement under ACEP-ALE. By considering the cash contribution as a positive attribute in ranking, NRCS is encouraging enrollment while ensuring that ACEP is implemented equitably. Each State has the ability to calibrate the relative importance of cash contributions in the prioritization of applications for enrollment in that State. No change is made to the regulation in response to these issues.

Comment: NRCS received comment related to ranking priority for actions related to the future, ***agricultural***, and long-term viability of enrolled ***land***. Comment supported adding information to the succession plan portion of the ranking, such as specifically identifying OPAV, Purchase of Development Rights (PDR), and other succession planning options that maintain ***agricultural*** viability or awarding points for innovative succession requirements. Comment also:

Recommended expanding the ranking criteria to prioritize applications that increase opportunities for historically underserved farmers; Supported the maintenance of ***agricultural*** viability as a ranking criterion; including supporting its inclusion as both a national and State ranking factor; Suggested that such inclusion is duplicative; Recommended that ***agricultural*** viability be included in the national ranking criteria; and Recommended that succession planning be removed from the ranking criteria.

Response: Based on national and State ranking criteria in the ACEP regulation, NRCS at the State level develops ranking factors and associated weights. Broadly identifying State ranking criteria in the regulation provides the needed flexibility for States to develop the specific ranking criteria that best address State and local priorities. Regarding long-term maintenance of ***agricultural*** viability, the national ranking criteria ensures, consistent with the statute, that this criterion is considered in every ACEP-ALE application by assessing whether a succession plan exists.

The existence of State ranking criteria enables States to develop nuanced approaches to address long-term ***agricultural*** viability, which may include more specific identification or prioritization of certain types of succession plans or succession planning strategies. NRCS does not wish to limit ***agricultural*** landowners' choices or restrict who could be involved in succession planning. Such specificity is not necessary in the regulation itself.

NRCS includes in the regulatory definition of a farm or ranch succession plan strategies that create opportunities for historically underserved landowners. NRCS also includes a State ranking criterion related to the multifunctional benefits of farm and ranch ***land*** protection, of which social and economic considerations may be included.

No change is made to the regulation in response to these issues.

Comment: NRCS received comment about eliminating the potential for prioritization of applications for which eligible entities agree to use the ACEP-ALE minimum deed terms.

Response: In the interim rule, NRCS indicated that it may prioritize transactions where an eligible entity uses NRCS's standard set of minimum deed terms. This potential prioritization also existed for enrollment during the 2014 Farm Bill and its inclusion as a factor in the State's ranking criteria is at the State's discretion. An eligible entity's use of the standard set of minimum deed terms streamlines the easement approval process and eliminates the need for NRCS review of the conservation easement deed for individual transactions. The efficiency by which easement transactions are completed, including the use of available administrative streamlining options, is an appropriate consideration in ranking, and no change was made in this final rule. No change is made to the regulation in response to this issue.

Comment: NRCS received comment related to the State ranking criteria for multifunctional benefits for the protection of a particular farm or ranch, recommending that NRCS at the State level have the option to specify `other related conservation benefits' under this multifunctional benefits criterion. Comment also recommended adding `species of economic significance' to the consideration for at-risk species protection under this ranking criterion. Another comment recommended the criteria be `other related benefits,' striking `conservation' from the consideration, and other comments recommended that NRCS add ranking criteria about related conservation values.

Response: NRCS agrees that evaluating the multifunctional benefits that may result from parcel protection is an important prioritization criterion. NRCS has enumerated in the regulation some potential benefits that may be considered and has included `other related conservation benefits' to provide States with the flexibility to identify such conservation benefits and establish the associated ranking factors and priorities. NRCS believes the State ranking criterion is sufficiently expansive for NRCS to tailor ranking factors at the State and local level. No change is made to the regulation in response to this issue.

Comment: NRCS received comment and appreciation related to various State ranking criteria, including requesting that NRCS provide specific references to geographic differences for States to use in ranking. Other comment stated that prioritizing ***land*** in areas zoned for ***agricultural*** use may inadvertently exclude ***agricultural*** ***lands***. Comment also recommended that protection of native prairie and other native habitats, including protection or improvement of habitat for pollinators, be added to the State ranking criteria related to the diversity of natural resources to be protected or improved, and requested that riparian buffers be ranked as the highest ACEP-ALE priority.

Response: NRCS believes that the regulation provides a sufficient framework under which the various items brought forth in these comments can all be addressed at the State level with input from the State technical committee. No change is made to the regulation in response to these issues.

Comment: NRCS received comment related to various national ranking criteria. One comment indicated that it is contradictory to limit ***forest*** ***land*** enrollment to two-thirds of an easement area while also having the extent of forestland as part of a ranking criterion. Another comment encouraged NRCS to clarify in the regulation that it will use the `median' county average farm size and requested higher priority be given to parcels adjacent to existing easements or protected areas.

Response: Comment related to ***forest*** ***lands*** refers to the national ranking criteria for the percent of cropland, rangeland, grassland, historic grassland, pastureland, or nonindustrial private ***forest*** ***land*** permitted in a protected parcel. Each State is able to tailor the specific ranking factor to prioritize enrollment of ***land*** that contains the amounts and types of ***land*** and ***agricultural*** uses that are most at risk in their State. For example, a western State may establish the ranking factor to prioritize parcels with a larger percentage of historic grassland since those ***lands*** may be at the greatest risk of conversion. In contrast, a midwestern State may prioritize the percentage of cropland in a parcel since those ***lands*** may be at the greatest risk of conversion.

Comment regarding median county average farm size refers to the national ranking criteria that considers the ratio of the size of the parcel compared to the average farm size in the county. As identified in the regulation, the USDA Census of ***Agriculture*** is the data source for this national ranking criterion; the term `average size of farm' is contained in the Census. Based on ALE application and enrollment data, use of this nationally available data item continues to be appropriate. NRCS affirms that proximity to other protected ***lands*** continues to be one of the national ranking criteria set forth in the regulation.

No change is made to the regulation in response to these issues.

Comment: NRCS received comment recommending that NRCS allow ACEP-ALE eligible entities to participate in State technical committee recommendations for ACEP-ALE ranking determinations.

Response: Eligible entities may participate in the State technical committee; however, they may not participate in developing ranking factors for programs in which they participate. If potential participants had input into ranking factors, NRCS selection decisions would be suspect. NRCS will provide training to State offices describing the roles of eligible entities. No change is made to the regulation in response to this issue.

Comment: NRCS received comment supporting various aspects of the ACEP-ALE ranking provisions, including: Commending NRCS for not using cost as a ranking criterion; commending NRCS's consideration of proximity to other protected ***land*** as a ranking criteria; and commending the straightforward implementation of ranking that allows States to prioritize parcels through ranking criteria.

Response: NRCS appreciates the comments.

Comment: NRCS received comment recommending landowners who have protected their ***land*** through ACEP-ALE receive priority for funding under NRCS' financial assistance programs, such as the Environmental Quality Incentives Program (EQIP).

Response: NRCS receives input on program priorities, including priorities for enrollment in its financial assistance programs, from the State technical committees. There is no need to identify priorities for other programs' enrollment in the ACEP regulation. No change is made to the regulation in response to this issue.Definitions

NRCS received comment related to the definitions in the ACEP interim rule as follows:

Comment: NRCS received comment related to the terms “future,” “***agricultural***,” and “long-term” with respect to the term “viability. ” Comment recommended that greater consistency be applied throughout the final rule for the three terms with respect to the term “viability;” the definition of “***agricultural*** viability,” as referenced in the Managers' Report language, be clarified; and various items be added to, or deleted from, the definition of “future viability. ”

Response: Since the creation of ACEP in the 2014 Farm Bill, the statute uses the phrase “***agricultural*** use and future viability” in the program purposes statement. In response to comments on the February 2015 ACEP interim rule, NRCS included a definition of “future viability” to identify that ACEP-ALE purposes include the legal, physical, and financial conditions under which the ***land*** itself will remain capable and available for continued sustained productive ***agricultural*** or grassland uses. The 2018 Farm Bill maintained the reference to “***agricultural*** uses and future viability” in the context of the program purposes and introduced the term “***agricultural*** viability” in the context of potential application prioritization. NRCS believes that the existing definition of “future viability,” which is sufficiently expansive without being overly prescriptive, includes such concepts as accessibility to beginning farmers or ranchers and continued affordability. To address the request for clarity, NRCS has included a reference to the adoption of a farm or ranch succession plan as another example of a condition that supports the future viability of the protected ***land***.

Comment: NRCS received comment related to the definition of historically underserved landowner, recommending that socially disadvantaged farmers be specifically identified, be included in the definition of historically underserved landowners, and be added to the definition of “socially disadvantaged farmer or rancher. ” This comment refers to the provision in the interim rule associated with farm or ranch succession planning that identifies new or beginning farmers or ranchers, veteran farmers or ranchers, or “other historically underserved landowners. ”

Response: The definition of historically underserved landowner includes beginning, limited resource, socially disadvantaged, and veteran farmer or ranchers. As a result, the definition of farm or ranch succession plan has been modified in this final rule to refer simply to “historically underserved landowner” since this term is all-encompassing. The definition of socially disadvantaged farmer or rancher has been in the definitions section since the ACEP regulation was first promulgated in 2015.

Comment: NRCS received comment that suggested replacing the concept of watersheds with “watershares. ”

Response: NRCS has long been involved in watershed and watershed planning, and the term “watershares” is not a universal term. No change is made to the regulation in response to this issue.

Comment: NRCS received comment requesting that the definition of “riparian areas” be modified to eliminate the “movement for wildlife” as an element.

Response: The definition of riparian areas has long included reference to the movement of wildlife as it is one of the critical functions of riparian areas. No change is made to the regulation in response to this issue.

Comment: NRCS received comment requesting ***removal*** of reference to species that are “likely to undergo” population decline from the definition of “at-risk species. ” The commenter objected to an unnamed agency imposing restrictions through an unknown process.

Response: The interim rule identified the determination of “likely to undergo population decline” is made by the NRCS State Conservationist, with advice from the State technical committee or Tribal Conservation Advisory Council. The definition is shared across NRCS conservation programs, all of which are voluntary. No change is made to the regulation in response to this issue.

Comment: NRCS received comment requesting a change to the definition of “***agricultural*** commodity” so that the intent to harvest annually rather than tillage is used as the determining mechanism.

Response: The definition of ***agricultural*** commodity is contained in statute. No change is made to the regulation in response to this issue.Easement Administration Actions

NRCS received comment related to easement administration actions as follows:

Comment: NRCS received comment related to the identification of the sequencing procedures under the National Environmental Policy Act (NEPA) with respect to easement administration actions, recommending that easement administration actions related to sequencing considerations be classified as categorical exclusions for NEPA analysis. Other comment suggested that the provision be amended to eliminate NEPA sequencing review if the easement administrative actions either enhance purposes of the ACEP-ALE program or do not materially threaten the ALE's protection of ***agricultural*** viability or other conservation values, and requested ***removal*** of reference to NEPA entirely. Comment also requested clarification about how NEPA sequencing considerations may affect NRCS approval of easement administration actions.

Response: The decision to modify or terminate a Federal interest has long been subject to NEPA review, and NRCS must comply with NEPA statutory, regulatory, and policy requirements during its review of a requested easement administration action. These requirements include reviewing whether adverse impacts associated with an easement administration action can be avoided, minimized, or mitigated. Since the impacts and outcomes of an easement administration action cannot be categorized generally, a specific review is necessary. As NRCS evaluates the NEPA analyses developed for the individual easement administrative actions, it is gathering evidence that may be used to propose categorical exclusions for certain easement administrative actions in the future. NRCS may identify new categorical exclusions, through issuing new NEPA procedures (including by amending NRC's current regulations implementing NEPA at 7 CFR part 650), consistent with the Council on Environmental Quality's regulations for implementing the procedural provisions of NEPA, published at 40 CFR parts 1500 through 1508. No change is made to the regulation in response to this issue.

Comment: NRCS received comment related to adding references or additional requirements to the easement administration action criteria, including a reference to the easement administration criteria indicating that any easement modification or termination conform to State law requirements, and including a reference that easement administration actions must conform to section 170(h) of IRC and associated U.S Department of the Treasury (Treasury) regulations. Comment also requested that easement administration actions align more closely with ***Land*** Trust Alliance (LTA) industry standards.

Response: Easement administration actions are documented in ***land*** records in accordance with State law. NRCS's authority to approve easement administration actions is not subject to requirements in section 170(h) of the Treasury or associated regulations related to charitable donations. However, entities are not prevented from incorporating language that addresses their own compliance with section 170(h) in their part of the conservation easement deed terms. NRCS must implement easement administration actions in accordance with Federal law and responsibilities; private ***land*** trusts are not subject to these requirements when conducting actions without Federal involvement. It would not be appropriate for NRCS to adopt “industry standards” that do not account for these Federal standards. No change is made to the regulation in response to this issue.

Comment: NRCS received comment related to the various easement administration action requirements, including:

Recommending that NRCS ***remove*** the 10-percent limitation on easement administration actions so that an easement modification or exchange action would just need to meet one of the two thresholds: (1) The action provide equal or greater conservation functions and values and (2) equal or greater economic values; Recommending ***removal*** of the standard of no net loss of easement acres required for easement subordination, modification, or exchange actions; and Recommending a change to the definition of easement termination to acknowledge compensation that may be owed to other interest holders in a conservation easement.

Response: NRCS uses the 10-percent limitation requirement to minimize the effects of administration actions. NRCS selected the 10-percent level based upon review of the scope of prior requests for easement administration actions and for consistency with other NRCS conservation programs.

It is a statutory requirement that an easement modification or exchange action must meet both thresholds (equal or greater conservation value and equal or greater economic value).

As to the threshold for an easement subordination, modification, or exchange to result in no net loss of easement acres, NRCS believes, based on long-standing experience, that the existing standard ensures that the public investment in conservation easements endures for the life of the easement and that NRCS is able to make credible determinations of equal or greater conservation and economic value as required by statute. The definition of easement termination addresses only the United States' rights or interests in an easement, including that the United States must be fully compensated for the termination of such rights and interests that are held by the United States. The easement termination language does not address or affect compensation that may be owed to other interest holders.

No change is made to the regulation in response to these issues.

Comment: NRCS received comment that requested NRCS modify language regarding easement termination to clarify that it also applies to the partial termination of an easement.

Response: NRCS has clarified that partial termination of an easement is subject to the easement termination requirements to the same extent as the full termination of an easement. All easement termination actions are subject to review at both the NRCS State office and National Headquarters levels.

Comment: NRCS received comment that supported allowing the use of updated deed provisions when making easement amendments, cautioned that flexibility be granted to do simple amendments, and advised NRCS not to require updates to new language that may be contained in updated deed provisions of those provisions are unnecessary or unacceptable to the landowner.

Response: NRCS appreciates the support received for deed amendment process requirements. Deed amendments to ACEP-ALE easement deeds must be approved by NRCS, as discussed above. No change is made to the regulation in response to this issue.Environmental Markets

Comment: NRCS received comment expressing support for updates to the section on environmental markets.

Response: NRCS appreciates the comments.Fund Allocations

NRCS received comment related to ACEP fund allocations as follows:

Comment: NRCS received comment supporting the historic division of fund allocations across ACEP, that is based on demand for funding. Approximately 70 percent of ACEP funding is dedicated to wetland conservation through ACEP-WRE and 30 percent is for ***agricultural*** ***land*** preservation through ACEP-ALE. Another comment urged greater flexibility with respect to fund allocations.

Response: NRCS has not specified in the regulation an allocation of program funds between the two components of the program. NRCS maintains program flexibility year-to-year to respond to program demand. No change is made to the regulation in response to this issue.

Comment: NRCS received comment recommending continued use of ACEP-WRE authorities to enter into agreements and contracts with non-governmental organizations, State agencies, and other partners to continue to leverage resources and expertise.

Response: NRCS relies on its partners to assist NRCS in its delivery of ACEP-WRE and will continue to utilize its authorities to coordinate with these valuable partners. No change is made to the regulation in response to this issue.

Comment: NRCS received comment supporting the continued allocation of a portion of ACEP funds for monitoring and management of existing easements and recommending that State Conservationists have discretion to determine the appropriate portion of the individual State allocation to be used for monitoring and management of existing easements.

Response: NRCS National Headquarters provides on-going coordination, guidance, and support to State Conservationists to ensure that sufficient funds are dedicated and used to appropriately monitor, manage, and enforce stewardship ***lands***. No change is made to the regulation in response to this issue.Landowner Eligibility—Adjusted Gross Income (AGI) Limitation Waiver

NRCS received comment related to the AGI limitation waiver as it affects landowner eligibility to enroll in ACEP as follows:

Comment: NRCS received comment related to the definition and criteria for environmentally sensitive ***lands*** of special significance, including encouraging NRCS in its AGI waiver determinations to give the most consideration to ***lands*** with the highest conservation value, particularly ***lands*** of special significance that can demonstrate significant linkages with the conservation objectives of migratory bird, wetlands conservation, and water quality programs, plans, or initiatives. Comment also requested that environmentally sensitive ***land*** of special significance be explicitly defined.

Response: NRCS will consider the factors noted in the comment in granting AGI waivers. Terms associated with the AGI waiver are set forth in the regulations governing payment limitation and payment eligibility requirements, including AGI provisions, at 7 CFR part 1400. No change is made to the regulation in response to this issue.

Comment: NRCS received comment suggesting that NRCS expand eligibility for AGI waivers, including allowing the waiver for all ACEP-ALE enrollment, automatically waiving AGI for BPS transactions, and interpreting AGI waiver factors broadly.

Response: NRCS may only grant waivers on a case-by-case basis where the waiver criteria are met. Broadening the waiver authority to eliminating AGI applicability to all ALE enrollment types is outside statutory authority. No change is made to the regulation in response to this issue.

Comment: NRCS received comment seeking increased streamlining and guidance regarding AGI waivers.

Response: NRCS will continue its ongoing efforts to streamline processes through the use of new tools. NRCS will continue to develop and release specific guidance as needed. No change is made to the regulation in response to this issue.

Comment: NRCS received comments expressing support for the use of AGI waiver authority in ACEP.

Response: NRCS appreciates support for its AGI waiver process.Program Administration

NRCS received comment on the topic of program administration as follows:

Comment: NRCS received one detailed comment emphasizing the importance of protecting endangered and at-risk species through ACEP. This comment specifically referred to salmonid species.

Response: NRCS appreciates the importance of protecting threatened and endangered species and its responsibility to comply with the Endangered Species Act (ESA), including ESA section 7(a)(1). As part of its conservation planning framework and site-specific NEPA process, NRCS also considers impacts to at-risk species as required by its NEPA implementing regulations (7 CFR part 650). No change is made to the regulation in response to this issue.

Comment: NRCS received comment related to outreach activities, including recommending that: NRCS retain its outreach focus on historically underserved farmers and ranchers; funds expended for historically underserved purposes be identified and made public; and NRCS ensure that the process is streamlined to ensure access to disadvantaged and underserved populations. Comment also reminded NRCS regarding sovereign-to-sovereign consultation for Farm Bill easement programs having Tribal implications.

Response: NRCS will continue to evaluate options to enhance opportunities for historically underserved producers and focus resources on ensuring parity in program enrollment. NRCS conducted several Tribal meetings in FY 2019 and FY 2020 and State Conservationists obtained input on program implementation from the Tribal Conservation Advisory Committees. No change is made to the regulation in response to this issue.

Comment: NRCS received comment expressing specific support for various aspects of program administration, including supporting NRCS discretion to waive certain program administration provisions and commending NRCS for continuing to obtain input from State technical committees, other Federal and State agencies, conservation districts, and other organizations.

Response: NRCS appreciates the support it has received for ACEP administration.

Comment: NRCS received comment urging continued or increased consultation with partners and stakeholders, including State technical committees, non-governmental organizations, and the U.S Fish and Wildlife Service.

Response: NRCS will continue to seek stakeholder input on how to improve program administration, especially input that NRCS receive on State and local resource issues. No change is made to the regulation in response to this issue.

Comment: NRCS received comment asking that technical assistance provided by NRCS regarding compliance with easement terms be clarified and recommending creation of ACEP-specific forms. Comment also recommended guidance on conflicts of interest and information on the implementation of Voluntary Public Access and Habitat Incentives Program (VPA-HIP).

Response: NRCS will continue its ongoing efforts to streamline processes, including modifying its required forms, through the use of new tools. Additionally, NRCS will continue to develop and release guidance on specific topics as needed. NRCS regulation and policy regarding VPA-HIP is provided separately and can be found in 7 CFR part 1455, and associated agency policy is available on the NRCS website. No change is made to the regulation in response to this issue.

Comment: NRCS received comment recommending that NRCS include text regarding ACEP ranking that prioritizes ***lands*** enrolled in the Transition Incentives Program under the Conservation Reserve Program (CRP-TIP). Section 1235(f)(1)(E) of the CRP statute requires that priority enrollment be given to ***land*** subject to a CRP-TIP contract into EQIP, Conservation Stewardship Program (CSP), and ACEP.

Response: Section 1468.22(b)(11) of the ACEP interim rule identifies as a national priority for ALE enrollment grasslands currently enrolled in CRP in a contract that is set to expire within 1 year. Section 1468.32(c) of the ACEP interim rule identifies as a potential State priority for WRE enrollment whether ***land*** is farmed wetland and adjacent ***land*** that is currently enrolled in CRP in a contract that is set to expire within 1 year. However, neither ALE nor WRE identify a specific priority ranking for CRP-TIP ***land***. Therefore, NRCS is adding a specific priority in the ACEP regulation for CRP-TIP.

Comment: NRCS received comment related to the practices and activities administered through ACEP, including:

Encouraging NRCS to adopt the “Active River Area Concept” to its management scheme; Proposing that all easements go through a plant and plant community survey by a botanist prior to enrollment; Seeking confirmation that NRCS would not enter into agreements with entities who would preclude ***forested*** riparian buffers; Recommending that NRCS recognize specifically intensive rotational grazing as one of the best management tools; and Recommending that diverse native plant mixes be prioritized in ACEP wetland and grassland restoration and management plans.

Response: NRCS addresses how best to administer its practices and activities through technical and program policy implemented at the State level through the discretion given NRCS State Conservationists. In general, NRCS supports the development and implementation of plans and restoration activities that consider the value of management and restoration activities that provide for a diverse assemblage of native plants, including pollinator-friendly species. However, NRCS believes that specific resource management issues are best addressed at the State level. No change is made to the regulation in response to this issue.

Comment: NRCS received comment related to program administration that did not fit neatly into any single subtopic:

Require landowners to assume responsibility for operation and maintenance of easements; Provide sufficient staffing to meet customer service needs; Concern over the authorization of permanent easements; Make publicly available information related to easement enrollments such as acres enrolled, soil classification of ***land***, and before and after ***land*** use; Condition ACEP so that all funded efforts achieve consistency with State water quality standards and salmon recovery plan habitat objectives; and Review easement deed terms at least every 100 years to ensure consistency with existing conditions.

Response: The operation and maintenance that may occur on ACEP easements and who may perform such activities is addressed in the terms of the easement deeds.

NRCS staffing is not a part of this rulemaking, but the agency will continue providing the highest quality customer service and program implementation with its resources.

Permanent easements are authorized and prioritized by statute.

As NRCS collects data, the agency generates multiple reports on a variety of impacts, which are typically made available to the public upon request.

NRCS will consider the recommendation regarding consistency with water quality standards and recovery plan habitat objectives as it continues to evaluate and refine ranking and eligibility criteria.

Review of easement deed terms at least every 100 years is beyond the scope of current regulation and policy.

No change is made to the regulation in response to these issues.

Comment: NRCS received comment related to source water protection issues including:

Recommending that NRCS acknowledge source water protection as a goal of ACEP; Adding discussion about how source water protection priorities will be included in the implementation of ACEP and other NRCS conservation programs; Addressing how ACEP will be included in accounting for overall source water expenditures by publishing a plan for comment; Adding source water protection in the ACEP ranking criteria; Ensuring adequate attention given to source water protection at State technical committees; and Recommending that NRCS address how spatial data related to source water areas will intersect with ACEP.

Response: Source water protection is a statutory priority and NRCS Headquarters provides guidance to ensure that all its programs are contributing to the protection of source water protection areas. The ACEP regulation includes water quality as a consideration in the list of ranking criteria for both ALE and WRE and the State Conservationist, in consultation with the State technical committee, may develop and include specific considerations for source water protection as part of their State's ranking factors. NRCS uses geographic information system tools to help identify source water protection areas and easement enrollment. No change is made to the regulation in response to this issue.WRE Issues

NRCS received comment related to ACEP-WRE topics as follows:

Comment: NRCS received comment supporting revisions to the definition of wetland restoration in the interim rule regarding ACEP-WRE. Comment highlighted that the expanded flexibility would benefit wetland functions and habitat values. Comment also encouraged NRCS to engage robustly with State technical committees when devising the State-specific NRCS criteria and guidelines for wetland restoration.

Response: NRCS appreciates support for the revised definition of wetland restoration.

Comment: NRCS received comment related to compatible use authorizations under ACEP-WRE, expressing support for the inclusion of water management and supporting the use of such management activities to maintain, enhance, and diversify wetland habitats on ACEP-WRE easements. Comment also recommended ***removing*** “hunting and fishing” from the list of activities that can be authorized as a compatible use in § 1468.37(a)(2)(ii) because undeveloped recreational uses, including hunting and fishing, are listed as one of the five rights reserved by the landowner in the ACEP-WRE warranty easement deed. Comment also identified that NRCS should seek input from the State technical committee on technical matters related to compatible use designations and guidelines.

Response: NRCS appreciates support for the inclusion of water management and recognizes the potential utility of this activity to wetland functions and values when properly prescribed and implemented on ACEP-WRE easements through the compatible use authorization process. Hunting and fishing are specifically identified in the ACEP statute as a `compatible use' that is subject to NRCS determination of compatibility. NRCS has implemented this provision by identifying in all ACEP-WRE easement deeds that undeveloped hunting and fishing, subject to the terms of the easements, is a reserved right. However, any hunting and fishing activities that extend beyond that reserved right are prohibited unless determined compatible by NRCS through the compatible use authorization process. In the ACEP interim rule, NRCS included compatible use criteria and related matters in the expanded list of examples provided in § 1468.2(b) regarding subjects on which the State technical committee may provide advice to the State Conservationist.

Comment: NRCS received comment regarding wetland restoration and management activities, encouraging that the technical requirements for grazing management plans and exhibits for ACEP-WRE grazing reserved rights enrollments be developed in consultation with State technical committees and that the individual grazing management plans be dynamic to accommodate wildlife and habitat conservation along with producer needs. Comment also recommended that NRCS prioritize activities supporting migratory waterfowl and other wetland-dependent wildlife through science-based management and recommended levee setbacks and ***forested*** riparian buffers be allowed on all easements in Washington State.

Response: NRCS appreciates comment related to grazing management plans and ACEP-WRE reservation of grazing rights enrollments. The ACEP interim rule provided clarifying changes consistent with these recommendations, including addition of a grazing management plan definition that is specific to ACEP-WRE and provisions related to the review and modification of such plans for reserved grazing rights enrollments. NRCS conducts and supports monitoring and research on its wetland easements to obtain data and information that informs technical decisions related to prioritization and selection of new easements and restoration and management of existing easements. NRCS will continue to collaborate with partners and institutions to obtain the information needed to make science-based decisions to maximize wildlife benefits and wetland functions and values on every ACEP-WRE easement. The concern related to restoration activities in the State of Washington do not rise to a nationwide level and are not addressed in the regulation. The ACEP regulation and other NRCS planning procedures provide the States the needed flexibilities to make technical decisions related to enrollment, restoration, and management of ACEP-WRE ***lands***. NRCS recommends that stakeholders with concerns should work with their applicable State Conservationist.

Comment: NRCS received comment related to WRE ***land*** eligibility: Recommending that NRCS allow cropping on the WRE easement area; supporting the increase in the percentage of easements that can be enrolled on cropland in a county from 10 percent to 15 percent; and requesting flexibility with respect to the 2-year ownership requirement for ***land*** that the farmer has managed for numerous years prior to purchase.

Response: NRCS prohibits cropping on ACEP-WRE enrolled ***lands*** because the purpose of the program is to restore the wetland functions and values and crop production is inconsistent with such purposes. NRCS appreciates the comments related to the county cropland limitation. The 2-year ownership provision in the ACEP regulation is a specific statutory requirement, but flexibility exists through the waiver process. When deciding whether to waive the 2-year ownership requirement, NRCS considers whether the ***land*** has been managed by the landowner as part of their operation prior to acquiring ownership of the ***land***. No change is made to the regulation in response to these issues.

Comment: NRCS received comment relating to factors used to prioritize enrollments in ACEP-WRE, including support for prioritizing permanent easements over non-permanent easements and including water quality as a conservation benefit.

Response: NRCS appreciates support for the ACEP-WRE prioritization factors.

Comment: NRCS received comment recommending NRCS consider funds from other Federal sources as contributions for ranking purposes.

Response: Section 1265C(b)(3) of the ACEP statute authorizes as a ranking factor whether the landowner or other person offers to contribute to the cost of the easement and thereby leverage Federal funds. The statutory priority is that Federal funds, not just ACEP-WRE funds, be leveraged by other sources, and NRCS has incorporated this factor into the regulation. NRCS State Conservationists, with input from State technical committees, may consider other priorities that further program goals, including other sources of contribution. However, other Federal sources of contribution may have restrictions on the use of their funds and NRCS must ensure that there is no augmentation in contravention of appropriations law. No change is made to the regulation in response to this issue.

Comment: NRCS received comment supporting and encouraging NRCS to continue to seek advice and input on implementation of ACEP-WRE from the U.S Fish and Wildlife Service, State fish and wildlife agencies, and State technical committees.

Response: Both ACEP regulation and policy require the NRCS to seek continued engagement from these partners. No change is made to the regulation in response to this issue.

Comment: NRCS received comment related to the Wetland Restoration Enhancement Partnership (WREP), recommending that NRCS restore the 5 percent match requirement for the WREP partner contributions and maintain historic levels of partner contributions at 25 percent. Another comment recommended that NRCS provide an annual allocation for WREP of between $35-50 million per year.

Response: NRCS appreciates the support for WREP. NRCS has not established any regulatory level of match that is required for WREP and bases such determination upon the focus of each year's WREP effort. No change is made to the regulation in response to this issue.Notice and Comment, Paperwork Reduction Act, and Effective Date

In general, the Administrative Procedure Act (APA) (5 U.S.C 553) requires that a notice of proposed rulemaking be published in the Federal Register and interested persons be given an opportunity to participate in the rulemaking through submission of written data, views, or arguments with or without opportunity for oral presentation, except when the rule involves a matter relating to public property, loans, grants, benefits, or contracts. This rule involves matters relating to benefits and therefore is exempt from the APA requirements. Further, the regulations to implement the programs of chapter 58 of title 16 of the U.S Code, as specified in 16 U.S.C 3846, and the administration of those programs, are:

To be made as an interim rule effective on publication, with an opportunity for notice and comment; Exempt from the Paperwork Reduction Act (44 U.S.C ch. 35); and To use the authority under 5 U.S.C 808 related to congressional review.

Consistent with the use of the authority under 5 U.S.C 808 related to Congressional review for the immediate effect date of the interim rule, this rule is also effective on the date of publication in the Federal Register.Executive Orders 12866 and 13563

Executive Order 12866, “Regulatory Planning and Review,” and Executive Order 13563, “Improving Regulation and Regulatory Review,” direct agencies to assess all costs and benefits of available regulatory alternatives and, if regulation is necessary, to select regulatory approaches that maximize net benefits (including potential economic, environmental, public health and safety effects, distributive impacts, and equity). Executive Order 13563 emphasizes the importance of quantifying both costs and benefits, of reducing costs, of harmonizing rules, and of promoting flexibility.

The Office of Management and Budget (OMB) designated this rule as significant under Executive Order 12866 and therefore, OMB has reviewed this rule. The costs and benefits of this rule are summarized below. The full regulatory impact analysis is available on [*https://www.regulations.gov/.Clarity*](https://www.regulations.gov/.Clarity) of the Regulation

Executive Order 12866, as supplemented by Executive Order 13563, requires each agency to write all rules in plain language. In addition to the substantive comments NRCS received on the interim rule, NRCS invited public comments on how to make the rule easier to understand. NRCS has incorporated these recommendations for improvement where appropriate. NRCS responses to public comment are described in more detail above.Cost-Benefit Analysis

One of the most significant ACEP changes in the 2018 Farm Bill is to the existing contribution requirements for the non-Federal share under ACEP-ALE. Previously, there were only two sources of non-Federal contribution—the entity's cash resources towards the purchase and the donation by the entity—with cash resources towards the purchase required for half of the non-Federal contribution. The 2018 Farm Bill eliminated the requirement for cash resources towards the purchase and allows the entity to consider other costs, previously not included, toward the non-Federal match. This change adds flexibility for eligible entities to meet the non-Federal share requirement by no longer specifying a minimum cash contribution amount to be provided by the eligible entity and allowing the total of the non-Federal share to be comprised of a charitable donation or qualified conservation contribution from the private landowner. It also includes provisions for costs related to securing the easement to be included in the calculation of the non-Federal share. While ***removing*** a potential hurdle to entity participation, the additional flexibility is not intended to supersede the conservation benefits possible under ACEP.

There are six states and one territory (Alabama, Arkansas, Hawaii, Louisiana, Missouri, North Dakota, and Puerto Rico) that currently have no enrollment in ACEP-ALE. This may have been due to a lack of available financial resources for an eligible entity to meet the minimum cash contribution requirement or may be due to a lack of entities that meet the eligibility requirements to participate in ACEP-ALE. The changes to the non-Federal share requirements may result in increased ACEP-ALE enrollments in areas where enrollment has been limited due to a lack of financial resources available for entities that meet the ACEP-ALE eligibility requirements. To address these statutory changes, in this final, we eliminated a specified minimum cash contribution amount and incorporated provisions for considering costs related to securing the easement. These changes are applicable to all eligible entities in all States and as a result, it is anticipated that the amount of the Federal contribution toward ACEP-ALE easements will increase by 8 to 10 percentage points.

Another change under the 2018 Farm Bill provides NRCS with authority to enter into legal arrangements with eligible entities to conduct BPS transactions under ACEP-ALE. Under a BPS transaction, NRCS may provide ACEP-ALE cost-share assistance to an eligible entity for the purchase of an ***agricultural*** ***land*** easement on private or Tribal ***agricultural*** ***land*** owned on a transitional basis by an eligible entity when the ownership of that ***land*** will be timely transferred to a qualified farmer or rancher. BPS transactions are intended to help farmers and ranchers acquire ***agricultural*** ***land*** they could not otherwise afford and to protect ***agricultural*** ***land*** that may have otherwise been developed or removed from ***agricultural*** production.

NRCS continues to have the discretion to rank and prioritize projects and to select individual applications based on their ability to achieve program purposes and to assess and determine the appropriate allocation of funds for the acquisition of ***agricultural*** ***land*** and wetland easements. The 2018 Farm Bill does not limit NRCS's discretion to determine the allocation of funds between ACEP-WRE and ACEP-ALE. The relative emphasis NRCS places on these two program components depends on State and national priorities, environmental impacts, and local demand. It is anticipated that enrollment in ACEP will be consistent with historic enrollment trends.

***Land*** enrolled in ACEP-WRE easements produces onsite and offsite environmental benefits. Those include: Restoring and protecting high value wetlands; controlling sheet and rill erosion as ***lands*** are restored from cropland to wetlands and associated habitats; restoring, enhancing, and protecting habitat for fish and wildlife, including threatened and endangered species and migratory birds; improving water quality by filtering sediment and chemicals; reducing flooding and flood-related damage; recharging groundwater; protecting biological diversity; controlling invasive species with planting of native vegetation; and providing opportunities for educational, scientific, and recreational activities. Soil health and air quality are improved by reduced wind erosion, reduced soil disturbance, increased organic matter accumulation, and an increase in carbon sequestration.

For ***land*** enrolled in ACEP-ALE, the suite of conservation effects on protected grasslands are different than those on protected farmland; the impacts are not valued here as one being more beneficial than another. For example, ACEP-ALE easements on grasslands limit ***agricultural*** activities to predominantly haying and grazing, whereas easements on farmland allow crop cultivation and pasture-based ***agriculture***. As such, farmland protection effects are derived from onsite and ecological services, as well as preserving highly productive ***agricultural*** areas from development or fragmentation. Impacts on grasslands are derived from onsite and ecological impacts as well as preventing conversion to nongrassland uses. The net conservation effects through time from farmland protection include direct access benefits (pick-your-own, agri-tourism, and nature based activities like hunting), indirect access benefits (open spaces and scenic views), and nonuse benefits (wildlife habitat and existence values). Grassland protection conservation effects include direct, indirect, and nonuse benefits, and also on-farm production gains and carbon sequestration.

The authorized level of funding for ACEP for the period of FY 2019 through 2023 is $2.25 billion (assuming future funding is set at authorized amounts). This represents an increase in ACEP average annual funding over the 2014 Farm Bill of 11 percent—from $405 million per year to $450 million per year in nominal dollars.

The regulatory impacts of ACEP funding consist of payments for the purchase of easements or real property interests; the costs incurred related to the acquisition, such as title companies, appraisers, licensed ***land*** surveyors; and the costs of restoring wetlands. Although these transfers create incentives that likely cause changes in the way society uses its resources, NRCS lacks data with which to identify where these resources would otherwise be used.

NRCS also recognizes that applicants and participants incur costs in terms of time used to gain access to ACEP. We estimate the imputed value of applicant and participant time spent in accessing the program from FY 2019 through 2023 at $1.1 million for the 5 years.

Our estimates of costs, benefits and transfers of ACEP on an annual basis are reported in Table 1. Given a 3 percent discount rate, the projected annualized real cost to producers of accessing the program is $229,000 and the projected annualized real transfers are $433 million. Conservation benefits from the easement are difficult to quantify at a national scale but have been described by studies at an individual project or watershed or local scale.Table 1—Annualized Real Estimated Costs, Benefits, and Transfers a Category Annual estimateCost b $229,000Benefits QualitativeTransfers $433,000,000Regulatory Flexibility Act

The Regulatory Flexibility Act (5 U.S.C 601-612), as amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA), generally requires an agency to prepare a regulatory analysis of any rule whenever an agency is required by APA or any other law to publish a proposed rule, unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. This rule is not subject to the Regulatory Flexibility Act because this rule is exempt from notice and comment rulemaking requirements of the APA and no other law requires that a proposed rule be published for this rulemaking initiative.Environmental Review

The environmental impacts of this rule have been considered in a manner consistent with the provisions of NEPA (42 U.S.C 4321-4347), the regulations of the Council on Environmental Quality (40 CFR parts 1500-1508), and the NRCS regulations for compliance with NEPA (7 CFR part 650). NRCS conducted an analysis of the ACEP interim rule and NRCS's analysis determined there would not be a significant impact to the human environment and as a result, an environmental impact statement (EIS) is not required to be prepared (40 CFR 1501.5 and 1501.6). The Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) were available for review for 30 days from the date of publication of the interim rule in the Federal Register. NRCS considered comments received during the 30-day period and determined minor changes to the ACEP EA and FONSI were sufficient, and that no information warranting preparation of an EIS was received. The final ACEP EA and FONSI have been posted to the NRCS homepage at [*https://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/programs/farmbill/?cid=stelprdb1263599.Executive*](https://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/programs/farmbill/?cid=stelprdb1263599.Executive) Order 12372

Executive Order 12372, “Intergovernmental Review of Federal Programs,” requires consultation with State and local officials that would be directly affected by proposed Federal financial assistance. The objectives of the Executive order are to foster an intergovernmental partnership and a strengthened federalism, by relying on State and local processes for State and local government coordination and review of proposed Federal financial assistance and direct Federal development. For reasons specified in the final rule-related notice regarding 7 CFR part 3015, subpart V (48 FR 29115, June 24, 1983), the programs and activities in this rule are excluded from the scope of Executive Order 12372.Executive Order 12988

This rule has been reviewed under Executive Order 12988, “Civil Justice Reform. ” This rule will not preempt State or local laws, regulations, or policies unless they represent an irreconcilable conflict with this rule. Before any judicial actions may be brought regarding the provisions of this rule, the administrative appeal provisions of 7 CFR part 11 are to be exhausted, consistent with 7 U.S.C 6912(e).Executive Order 13132

This rule has been reviewed under Executive Order 13132, “Federalism. ” The policies contained in this rule do not have any substantial direct effect on States, on the relationship between the Federal Government and the States, or on the distribution of power and responsibilities among the various levels of government, except as required by law. Nor does this rule impose substantial direct compliance costs on State and local governments. Therefore, consultation with the States is not required.Executive Order 13175

This rule has been reviewed in accordance with the requirements of Executive Order 13175, “Consultation and Coordination with Indian Tribal Governments. ” Executive Order 13175 requires federal agencies to consult and coordinate with Tribes on a Government-to-Government basis on policies that have Tribal implications, including regulations, legislative comments or proposed legislation, and other policy statements or actions that have substantial direct effects on one or more Indian Tribes, on the relationship between the Federal Government and Indian Tribes or on the distribution of power and responsibilities between the Federal Government and Indian Tribes.

The USDA's Office of Tribal Relations (OTR) has assessed the impact of this rule on Indian Tribes and determined that this rule does not have significant Tribal implications that require Tribal consultations at this time for ACEP, which is a beneficial voluntary program. Notwithstanding this conclusion, OTR believes that continued focused outreach to Tribes could increase engagement in ACEP and provide assistance with water quality issues for Tribes. OTR states that NRCS has adhered to the spirit and intent of Executive Order 13175. If a Tribe requests consultation, NRCS and CCC will work with OTR to ensure meaningful consultation is provided where changes, additions, and modifications identified in this rule are not expressly mandated by the 2018 Farm Bill. Tribal consultation for this rule was included in the 2018 Farm Bill Tribal consultation held on May 1, 2019, at the National Museum of the American Indian, in Washington, DC. The portion of the Tribal consultation relative to this rule was conducted by Bill Northey, USDA Under Secretary for the Farm Production and Conservation mission area, as part of the Title I session. There were no specific comments from Tribes on ACEP during this Tribal consultation.

Additionally, NRCS held sessions with Indian Tribes and Tribal entities across the country in the spring of FY 2019 to describe the 2018 Farm Bill changes to NRCS conservation programs, obtain input about how to improve Tribal and Tribal member access to NRCS conservation assistance, and make any appropriate adjustments to the regulations that will foster such improved access. NRCS invited State leaders for FSA and Rural Development (RD), as well as Regional Directors for the Risk Management Agency (RMA) to discuss their programs also.

As a result, approximately 50 percent of the comments received as a result of these sessions were directed to FSA, RMA, RD, and other USDA agencies, with many comments specific to hemp production and the surrounding regulations. Over 40 percent of the feedback pertained to NRCS programs. Comments listed challenges specific to Tribes that impact eligibility and inhibit access to USDA programs. None of the feedback received necessitated a change to the regulation.

NRCS will continue to work with our Tribal stakeholders to address the issues raised in order to facilitate greater technical assistance and program delivery to Indian country.

Separate from Tribal consultation and the sessions discussed above, communication and outreach efforts are in place to assure that all producers, including Tribes (or their members), are provided information about the regulation changes. Specifically, NRCS obtains input through Tribal Conservation Advisory Councils. A Tribal Conservation Advisory Council may be an existing Tribal committee or department and may also constitute an association of member Tribes organized to provide direct consultation to NRCS at the State, regional, and national levels to provide input on NRCS rules, policies, programs, and impacts on Tribes. Tribal Conservation Advisory Councils provide a venue for agency leaders to gather input on Tribal interests.Unfunded Mandates

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA) (Pub. L. 104-4), requires Federal agencies to assess the effects of their regulatory actions on State, local, and Tribal Governments or the private sector. Agencies generally must prepare a written statement, including cost-benefits analysis, for proposed and final rules with Federal mandates that may result in expenditures of $100 million or more in any 1 year for State, local or Tribal Governments, in the aggregate, or to the private sector. UMRA generally requires agencies to consider alternatives and adopt the more cost-effective or least burdensome alternative that achieves the objectives of the rule. This rule contains no Federal mandates, as defined under Title II of UMRA, for State, local, and Tribal Governments or the private sector. Therefore, this rule is not subject to the requirements of UMRA.Federal Assistance Programs

The title and number of the Federal Domestic Assistance Programs in the Catalog of Federal Domestic Assistance to which this rule applies is: 10.931—***Agricultural*** Conservation Easement Program.E-Government Act Compliance

NRCS and CCC are committed to complying with the E-Government Act, to promote the use of the internet and other information technologies to provide increased opportunities for citizen access to Government information and services, and for other purposes.List of Subjects in 7 CFR Part 1466

***Agricultural***, Flood Plains, Grazing ***lands***, Natural resources, Soil conservation, and Wildlife.

Accordingly, the interim rule published January 6, 2020, at 85 FR 558, is adopted as final with the following changes:Part 1468 ***Agricultural*** Conservation Easement ProgramRegulatory Text

1. The authority citation for part 1468 continues to read as follows:Authority:

15 U.S.C 714b and 714c; 16 U.S.C 3865-3865d.Subpart a General Provisions§ 1468.3[Amended]Regulatory Text

2. Amend § 1468.3 as follows:

a. In the definition of “Beginning farmer or rancher”:

i. In paragraph (1), ***remove*** the words “farm or ranch or” and add in their place the words “farm, ranch, or” each time they appear;

ii. In paragraphs (2) and (3), ***remove*** the words “farm or ranch” and add the words “farm, ranch, or NIPF” in their place each time they appear;

b. In the definition of “Eligible ***land***”, add the word “***land***” immediately after the word “private”;

c. In the definition of “Farm or ranch succession plan”, ***remove*** the words “include specific” and add the words “include, but is not limited to, specific” in their place and ***remove*** the words “new or beginning farmers or ranchers, veteran farmers, or other”;

d. In the definition of “Future viability”, add the words “or adoption of a farm or ranch succession plan” immediately after the word “plan”; and

e. In the second sentence in the definition of “Maintenance”, add the word “performed” immediately after the word “work”.§ 1468.6[Amended]Regulatory Text

3. Amend § 1468.6 in paragraph (a)(3)(iii) by ***removing*** the cross reference “paragraph (a)(4)” and add in its place add the cross reference “paragraph (a)(5)”.Subpart B ***Agricultural*** ***Land*** Easements§ 1468.20[Amended]Regulatory Text

4. Amend § 1468.20 in paragraph (b)(1)(ii) by adding the word “demonstrated” immediately before the word “capability”.

5. Amend § 1468.22 as follows.

a. Revise paragraph (b)(11); and

b. In paragraph (c)(2), add the word “annually” immediately after the words “monitored” and “reported”.

The revision reads as follows:§ 1468.22 Establishing priorities, ranking considerations, and project selection.

\* \* \* \* \*

(b) \* \* \*

(11) Whether the ***land*** is currently enrolled in CRP in a contract that is set to expire within 1 year and is grassland that would benefit from protection under a long-term easement or is ***land*** under a CRP contract that is in transition to a covered farmer or rancher pursuant to 16 U.S.C 3835(f);

\* \* \* \* \*§ 1468.23[Amended]Regulatory Text

6. Amend § 1468.23 as follows:

a. In paragraph (b)(1), ***remove*** the words “Up to” and add “A minimum of” in their place and add the words “and not to exceed 7 fiscal years” immediately after the words “5 fiscal years”; and

b. In paragraph (b)(2), ***remove*** the words “Up to” and add “At least” in their place.

7. In § 1468.24 revise paragraphs (b)(2)(i), (iii), and (iv) to read as follows:§ 1468.24 Compensation and funding for ***agricultural*** ***land*** easements.

\* \* \* \* \*

(b) \* \* \*

(2) \* \* \*

(i) The eligible entity's own cash resources for payment of easement compensation to the landowner or for a buy-protect-sell transaction, the amount of the fair market value of the ***agricultural*** ***land*** easement, less the amount of the Federal share, that is provided through the conveyance of the ***agricultural*** ***land*** easement by the eligible entity;

\* \* \* \* \*

(iii) Where the amounts as identified in paragraphs (b)(2)(i) and (ii) of this section are not sufficient to meet the non-Federal share amount, the eligible entity may also include the procured costs paid by the eligible entity to a third-party for an appraisal, boundary survey, phase-I environmental site assessment, title commitment or report, title insurance, baseline reports, mineral assessments, or closing cost; and

(iv) Where the amounts as identified in paragraphs (b)(2)(i) through (iii) of this section are not sufficient to meet the non-Federal share amount, the eligible entity may also include up to 2 percent of the fair market value of the ***agricultural*** ***land*** easement for easement stewardship and monitoring costs provided by the eligible entity.

\* \* \* \* \*Regulatory Text

8. In § 1468.25 revise paragraphs (c) and (d)(4) to read as follows:§ 1468.25 ***Agricultural*** ***land*** easement deeds.

\* \* \* \* \*

(c) The eligible entity may use its own terms and conditions in the ***agricultural*** ***land*** easement deed, but the ***agricultural*** ***land*** easement deed must provide for the effective administration, management, and enforcement of the ***agricultural*** ***land*** easement by the eligible entity or its successors and assigns and must address the deed requirements as specified by this part and by NRCS in the ALE-agreement.

(d) \* \* \*

(4) Include clauses requiring that any changes to the easement deed or easement area made after easement recordation, including any amendment to the easement deed, any subordination of the terms of the easement , or any modifications, exchanges, or terminations of some or all of the easement area, must be consistent with the purposes of the ***agricultural*** ***land*** easement and this part and must be approved by NRCS and the easement holder in accordance with § 1468.6 prior to recordation or else the action is null and void.

\* \* \* \* \*§ 1468.26[Amended]Regulatory Text

9. Amend § 1468.26 in paragraph (b)(1) by ***removing*** the words “up to” and adding “a minimum of” in their place and adding “and not to exceed 7 fiscal years” after the words “5 fiscal years”.

10. Amend § 1468.27 as follows:

a. In paragraph (c)(1), add the words “the purchase of the ***land***” after the word “completed”;

b. In paragraphs (c)(3)(ii) and (c)(4), add the words “of the ***land***” after the word “value”;

b. Redesignate paragraphs (e)(4)(iii) and (iv) as paragraphs (e)(4)(iv) and (v);

c. Add a new paragraph (e)(4)(iii).

The addition reads as follows:§ 1468.27 Buy-Protect-Sell transactions.

\* \* \* \* \*

(e) \* \* \*

(4) \* \* \*

(iii) The Federal share for the ***agricultural*** ***land*** easement will be provided on a reimbursable basis only, after the ***agricultural*** ***land*** easement has closed and the required documents have been provided to and reviewed by NRCS.

\* \* \* \* \*

11. Amend § 1468.28 as follows:

a. Revise paragraph (c); and

b. In paragraph (f), add the words “in whole or in in part,” immediately after the word “terminated”.

The revision reads as follows:§ 1468.28 Violations and remedies.

\* \* \* \* \*

(c) Notwithstanding paragraph (a) of this section, NRCS reserves the right to enter upon and inspect the easement area if the annual monitoring report provided by the ***agricultural*** ***land*** easement holder documenting compliance with the ***agricultural*** ***land*** easement is insufficient or is not provided annually, the United States has a reasonable and articulable belief that the terms and conditions of the easement have been violated, or to remedy deficiencies or easement violations as it relates to the conservation plan in accordance with 7 CFR part 12. Prior to its inspection, NRCS will notify the ***agricultural*** ***land*** easement holder and the landowner and provide a reasonable opportunity for the ***agricultural*** ***land*** easement holder and the landowner to participate in the inspection.

\* \* \* \* \*Subpart C Wetland Reserve Easements§ 1468.32[Amended]Regulatory Text

12. Amend § 1468.32 in paragraph (c)(2) by adding the words “or ***land*** under a CRP contract that is in transition to a covered farmer or rancher pursuant to 16 U.S.C 3835(f), and such ***land***” immediately after the word “application”.Terry Cosby,Acting Chief, Natural Resources Conservation Service.Robert Stephenson,Executive Vice President, Commodity Credit Corporation.[FR Doc. 2021-02268 Filed 2-3-21; 8:45 am]BILLING CODE 3410-16-P

**Load-Date:** February 5, 2021

**End of Document**



[***From farm to fork, producing meat can be an ethical pursuit***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:622M-59M1-JD7N-K2KS-00000-00&context=1516831)

The Herald (Glasgow)

February 23, 2021 Tuesday

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**Section:** Pg. 15

**Length:** 938 words

**Byline:** Mark Eadie

**Body**

OFFSHORING our carbon footprint in the midst of a climate emergency is the last thing Scotland wants to be doing, so it is time to start thinking more wisely about our food choices.

This past weekend I took part in a debate organised by Edinburgh University's Conscious Change Society, arguing for the motion "A diet including Scottish livestock products can be more sustainable and ethical than veganism". The argument made that Scotland's farmers should stop raising livestock for meat production and instead turn all our grazing ***land*** over to arable production, wildflower meadows and ***forests*** is utter nonsense.

There are a number of fundamental flaws in this argument. One being that 98 per cent of British households consume meat and even if livestock production were to stop, demand for meat would not. This demand would have to be met by importing meat from abroad which wouldn't sit well with our ambitious climate change ***targets***, nor with the fact that we would have no say over the animal welfare standards in which these animals are reared and slaughtered.

Secondly, over 80% of Scottish farmland is not suitable for growing cereals and vegetables - due to the topography and nature of our terrain - but is perfectly suited to grazing livestock, which can turn rough grassland into delicious, nutrient-dense protein. A much higher demand for a vegan diet could not be met by local Scottish farming systems and would lead to higher dependency on imports.

Thirdly, the suggestion of ***removing*** livestock from our ***lands*** fails to recognise the role grazing ruminants play in sequestering carbon in the soil - preventing it from escaping into the atmosphere. Grazing livestock is also critical for building back organic matter into our soils, restoring wildlife habitats, and boosting biodiversity.

Fourthly, Scottish livestock farmers play an invaluable role in looking after our iconic landscapes, which all of us have been enjoying more than ever over the last year. With international flights grounded, Scotland's hills and upland areas have been "re-found" by many... and enjoyed. What they have been enjoying is some of the most beautiful vistas in the world - but they are not wild landscapes. They are preserved and managed by countryside custodians grazing their livestock.

Lastly, livestock farming plays a crucial role in supporting rural areas - keeping the flow of money in these parts of Scotland and providing vital job opportunities. Farming and crofting are integral to the social fabric of rural Scotland and has been a part of our culture for thousands of years.

It is no secret that livestock production contributes to Green House Gas ***emissions***, contributing to 5% of total UK ***emissions***. But in recent years, other major GHG contributors, like food waste, fast fashion, energy and transport seem to have gotten off the hook. It seems it is easier to put a pitchfork into the farming industry, than it is to stab a needle into haute couture!

Mainstream media has a lot to answer for by sensationalising debates around meat consumption and its role in climate change. Highlighting ***agriculture*** as a carbon sink just isn't sexy, it doesn't sell newspapers, despite being the factual and take-home message which many members of the public should and need to hear.

Too often we blindly read reports in the media or posts by the anti-farming movement which fail to account for the global differences in livestock production. Intensive-style feedlots which fatten their livestock with grain - quickened by means of a hormone injection - couldn't be a further cry from farming in Scotland. Livestock here are mostly reared extensively, on grass-fed diets - weather permitting - and farmers have to follow very strict animal welfare regulations.

Scotland's farmers are constantly looking at ways to improve their carbon footprint through improving livestock nutrition, restoring soil health, exploring agroforestry opportunities, reducing fertiliser use, planting hedgerows to support local wildlife populations, the list goes on.

From 1990-2017, Scottish ***agriculture*** decreased its Greenhouse Gas ***emissions*** by 29% and is continuing to work hard to pioneer new technologies which will potentially decrease methane ***emissions*** and increase carbon capture in the extensive grass areas of Scotland. The industry is also improving animal welfare regulations in regard to how animals are reared and slaughtered, as well as being more transparent with its consumers.

The goal is to always be accountable to consumers and be more transparent. There is nothing to be gained from shying away from telling the public the true story of livestock production - from farm to fork - which includes slaughter. The fact of the matter is, demand for meat isn't going to disappear, so it is important that we are constantly scrutinising and improving animal welfare regulations and that livestock farmers are held accountable for their actions.

During the pandemic, there has been a huge drive towards reconnecting with where our food comes from as a result of the buy-local revolution. Long term, it is important more farmers throw open their doors to the public and continue these vital conversations with their customers. We can't look at meat production without recognising the whole host of benefits it brings to wider society. Through eating a balanced diet, which includes locally sourced, high quality, high welfare meat, you can be confident that you are making not only an ethical and sustainable choice but one that delivers huge benefits to the wider Scottish society.

Claire Taylor is The Scottish Farmer's Political Affairs Editor.

**Load-Date:** February 23, 2021

**End of Document**



[***Federal Register: Agricultural Conservation Easement Program Pages 8113 - 8131 [FR DOC #2021-02268]***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:61XS-76Y1-F0YC-N4YJ-00000-00&context=1516831)

Impact News Service

February 4, 2021 Thursday

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**Length:** 21919 words

**Body**

Washington: Office of the Federal Register has issued the following notice:DEPARTMENT OF AGRICULTURECommodity Credit Corporation7 CFR Part 1468[Docket ID NRCS-2019-0006]RIN 0578-AA66Agricultural Conservation Easement ProgramAGENCY: Natural Resources Conservation Service (NRCS) and the Commodity Credit Corporation (CCC), United States Department of ***Agriculture***.ACTION: Final rule.-----------------------------------------------------------------------SUMMARY: This final rule adopts, with minor changes, an interim rule published in the Federal Register on January 6, 2020. The interim rule implemented changes to ACEP that were necessitated by enactment of the ***Agriculture*** Improvement Act of 2018 (the 2018 Farm Bill) and changes for administrative streamlining improvements and clarifications. This final rule makes permanent many of the changes made in the interim rule, responds to comments received, and makes further adjustments in response to some of the comments received.DATES: Effective: February 4, 2021.FOR FURTHER INFORMATION CONTACT: Carrie Lindig, (202) 720-1882, or [*carrie.lindig@usda.gov*](mailto:carrie.lindig@usda.gov) Persons with disabilities who require alternative means for communication should contact the USDA ***Target*** Center at (202) 720-2600 (voice).SUPPLEMENTARY INFORMATION:Background The 2018 Farm Bill reauthorized and amended ACEP. The 2018 Farm Bill authorized the use of the existing regulations that had been implemented under the ***Agricultural*** Act of 2014 for the remainder of FY 2019 to the extent that those regulations were consistent with the 2018 Farm Bill changes. On January 6, 2020, CCC published an interim rule with request for comments in the Federal Register (85 FR 558-590) that implemented mandatory changes made by the 2018 Farm Bill or that were required to implement administrative improvements and clarifications. This final rule adopts, with minor changes, the interim rule.Discussion of ACEP (7 CFR part 1466) ACEP helps farmers and ranchers preserve their ***agricultural*** ***land*** and restore, protect, and enhance wetlands on eligible ***lands***. The program has two components: (1) ***Agricultural*** ***land*** easements (ACEP-ALE); and (2) Wetland reserve easements (ACEP-WRE). The Secretary of ***Agriculture*** delegated authority to the Chief, NRCS, to administer ACEP. Through ACEP-ALE, NRCS provides matching funds to eligible entities that are State, Tribal, and local governments, and nongovernmental organizations with farm and ranch ***land*** protection programs, to purchase ***agricultural*** ***land*** easements. ***Agricultural*** ***land*** easements are permanent or for the maximum duration authorized by State law. Through ACEP-WRE, NRCS protects wetlands on eligible ***lands*** by purchasing an easement directly from eligible landowners or entering into 30-year contracts on acreage owned by Indian Tribes, in each case providing for the restoration, enhancement, and protection of wetlands and associated ***lands***. Wetland reserve easements may be permanent, 30-years for acreage owned by Indian Tribes, or the maximum duration authorized by State law. Participation in either ACEP-ALE or ACEP-WRE is voluntary. The interim rule: Incorporated changes to the ACEP purposes to limit nonagricultural uses that negatively affect ***agricultural*** uses and conservation values; Added language to specify general monitoring responsibilities under ACEP-ALE and ACEP-WRE; Removed references to the Regional Conservation Partnership Program (RCPP) as the 2018 Farm Bill revised RCPP as a stand-alone program, which is now in 7 CFR part 1464; Added definitions to reflect 2018 Farm Bill changes: Buy-protect-sell (BPS) transaction, monitoring report, wetland restoration, easement administration action, grazing management plan, and nonindustrial private ***forest*** ***land***; Removed definitions for: Active ***agricultural*** production, ***forest*** ***land***, ***forest*** ***land*** of statewide importance, and projects of special significance; Made changes to easement administration actions, including specifying the criteria that apply to each type of easement administrative actions; Made revisions to the environmental markets section in response to the 2018 Farm Bill; Removed the requirement that an eligible entity provide evidence at the time of application that they have funds available to meet the minimum cash contribution requirement; Eliminated the requirement that ***land*** with a certain amount of ***forest*** ***land*** have a ***forest*** management plan; Replaced the term ``proposed'' with ``permitted'' in text about the types of rights-of-way, infrastructure development, or other adjacent ***land*** uses whose impacts may cause ***land*** to be considered ineligible; Specified that under a BPS transaction, the eligible entity for meeting payment eligibility requirements (highly erodible ***land*** and wetland conservation, and Adjusted Gross Income (AGI)) is the landowner unless the eligible entity sells the fee title to a qualified farmer or rancher prior to, or at the time of, the easement closing, in which case the farmer or rancher purchaser must meet payment eligibility requirements; To address BPS transactions, specified that eligible ***lands*** owned by the eligible entity may be eligible for enrollment if the ***land*** is owned, on a transitional basis, to protect the ***land*** through securing an ***agricultural*** ***land*** easement on the ***land*** and to transfer fee title ownership to a farmer or rancher; Specified eligibility requirements related to BPS transactions; Specified that NRCS will consider eligible entity cash contribution toward the easement purchase price and measures to increase ***agricultural*** viability as ranking criteria; Specified that appropriate terms and conditions must be included in the easement deed to address items agreed to by the eligible entity as a matter of ranking and basis for selection for funding;[[Page 8114]] Removed the requirement for the eligible entity to contribute its own cash resources in an amount equal to 50 percent of the amount of the Federal share; Specified the incurred costs by the eligible entity associated with securing a deed to the easement that may be included in the calculation of the non-Federal share, and that the source and limit of other costs that may be included in the calculation of the non-Federal share; Removed reference to the availability of waivers for grasslands of special environmental significance since the specific eligible entity cash contribution requirement was removed; Added specificity to the right of enforcement conveyed to NRCS under the terms of an ***agricultural*** ***land*** easement; Removed the requirement that the ***agricultural*** ***land*** easement be subject to an ACEP-ALE plan; Specified the terms and conditions required by statute that must be addressed if the eligible entity chooses to allow subsurface mineral development on the ***land*** subject to the ***agricultural*** ***land*** easement; Revised the requirement for a conservation plan on highly erodible cropland; Provided that an eligible entity may include terms and conditions in the ACEP-ALE deed that are intended to keep the ***land*** subject to the easement under farmer or rancher ownership; Removed the stand-alone section regarding ACEP-ALE plans and captured in other sections the provisions related to development of required conservation plans or development of ACEP-ALE plans as agreed-to by the eligible entity; Incorporated two new categories under which an eligible entity may demonstrate that they meet the ACEP-ALE certification requirements and revised the criteria to require a minimum of 10 ***agricultural*** ***land*** easements under ACEP-ALE, or predecessor NRCS easement programs, for all eligible entities seeking certification; Specified the circumstances under which NRCS may exercise its right of enforcement under ACEP-ALE, including its right of inspection; Increased the percent of acres of total cropland in a county that may be subject to an ACEP-WRE easement to 15 percent; Removed the requirement for NRCS to seek input from the Secretary of the Interior at the local level in the determination of eligible ***land***; Included water quality as an additional priority along with the priority placed on acquiring wetland reserve easements based on the value of the easement for protecting and enhancing habitat for migratory birds and other wildlife; Specified that grazing under reserve grazing rights wetland reserve easement or 30-year contract must comply with a wetlands reserve plan of operations (WRPO) developed by NRCS, which may include a grazing management plan component, and identified that the plan may be reviewed and modified as necessary, at least every 5 years; and Included new provisions related to the evaluation and authorization of compatible uses on wetland reserve easements, including that in evaluating and considering compatible uses NRCS will consider whether the use will facilitate the practical administration and management of the easement or contract area and ensure that the use furthers the functions and values for which the ***land*** was enrolled.Summary of ACEP Comments The interim rule 60-day comment period ended March 6, 2020, and was extended to March 20, 2020, to provide the public an opportunity to consider the January 24, 2020, correction. Seventy commenters, including individuals, organizations, and agencies, submitted comments to regulations.gov. NRCS reviewed the input from these 70 commenters in response to the rule and identified 576 comments contained within these 70 entries. NRCS reviewed these 576 comments and categorized and summarized them according to the topics identified below. The topics that generated the greatest response were on ALE ranking, ALE BPS transactions, and definitions. Overall, the comments expressed general support for the changes made in the interim rule. Six comments were not relevant to the ACEP interim rule. Ten comments expressed general support for the regulation and three comments criticized the regulation in general. These comments did not include any recommendations for change. NRCS appreciates all comments submitted and thanks each person and organization who expressed an opinion related to ACEP or the interim rule. NRCS will continue the endeavor to improve its customer service and the equitable dispensation of benefits under ACEP. In this rule, the comments have been organized alphabetically by topic. The topics include: ALE Buy-Protect-Sell Transactions; ALE Contribution Requirements; ALE Deed Requirements and Terms; ALE Entity Certification; ALE ***Land*** Eligibility Issues; ALE Planning; ALE Program Requirements; ALE Ranking; Definitions; Easement Administration Actions; Environmental Markets; Fund Allocations; Landowner Eligibility--AGI Limitation Waiver; Program Administration; and WRE Issues. This final rule responds to the comments received by the public comment deadline and makes minor clarifying and related changes.ALE Buy-Protect-Sell Transactions BPS transactions are arrangements under ALE, first authorized under the 2018 Farm Bill, between NRCS and an eligible entity where the entity owns or will own the ***land*** prior to the acquisition of the ***agricultural*** ***land*** easement on the property, and the eligible entity either: (1) Sells fee title to the ***land*** to a farmer or rancher prior to or at easement closing; or (2) Holds fee title at the time the ***agricultural*** ***land*** easement is conveyed on that ***land***, and transfers ownership of the ***land*** subject to the easement to a farmer or rancher not later than 3 years after the date of acquisition of the ***agricultural*** ***land*** easement. NRCS received comments related to BPS transactions, several of which expressed support for allowing BPS transactions. Remaining comments were as follows: Comment: NRCS received comment related to the requirement to sell at ***agricultural*** value except that eligible entities could charge qualified farmers or ranchers certain holding and transactions costs. These comments requested a change to the amount an eligible entity may charge the qualified farmer or rancher as part of the sale of the property, recommending either that the 10-percent limitation be removed or increased to 10 percent of the total fair market value (FMV) of the property rather than 10 percent of the ***agricultural*** value. Other comments recommended that the sale be based on appraised ***agricultural*** value (rather than lesser of appraised ***agricultural*** value or original purchase price) to avoid a potential windfall to the purchaser that might raise private benefit or other issues under federal tax law if the eligible entity is a nongovernmental organization. Response: The 10-percent limit was identified because NRCS may have to[[Page 8115]]recover costs if the conveyance includes more than ``reasonable holding and transaction costs.'' It is consistent with industry standards and the use of a published upper limit ***removes*** the potential for arbitrary decision making and expensive challenges in cost recovery cases. Additionally, this transaction type aims to help farmers and ranchers gain access to affordable farmland, and a limit on the holding and transaction costs that may be charged to the farmer or rancher ensures that there is no circumvention of that intent. A discussion of the federal income tax regulatory requirement that an organization described in section 501(c)(3) of the Internal Revenue Code (IRC) operate for the benefit of public rather than private interests is outside the scope of both the jurisdiction of the United States Department of ***Agriculture*** and this rule. For more information about the requirements applicable to tax-exempt organizations, including those described in section 501(c)(3) of IRC, visit the IRS's Charities and Nonprofits page at [*www.irs.gov/charities-and-nonprofits*](http://www.irs.gov/charities-and-nonprofits). The ACEP statute requires the sale to be at ``***agricultural*** value'' plus any reasonable holding costs. A sale at FMV assumes that the impact of the placement of the easement on the ***land*** will result in the highest and best use of the ***land*** being ***agriculture***, and thus ***agricultural*** value. The alternative value, the purchase price at which the entity purchased the ***land***, would have been at most, theoretically, FMV of the ***land*** without being encumbered by the easement. If the original purchase price of the property was less than FMV of the ***land*** encumbered with the easement, then ACEP assistance through a BPS arrangement is not necessary for the entity to have a viable transaction that would result in the same outcome and could occur without an investment of taxpayer funds. This requirement ensures that eligible entities do not profit from the BPS transaction at the cost of the qualified farmer or rancher. The provision requiring the eligible entity to sell the property at the original purchase price, if lower than the appraised ***agricultural*** value, was similarly included to help farmers and ranchers gain access to affordable farmland. NRCS has clarified in the regulation that appraised ***agricultural*** value means ***agricultural*** value of the ***land***. An eligible entity should seek tax or legal advice if a particular transaction, due to the entity's unique circumstances, could jeopardize its tax-exempt status. In those instances, the entity can move forward independently without ACEP assistance, especially if the entity would make a profit from the subsequent ***land*** transfer, which would negate the need for Federal funds. No change is made to the regulation in response to this issue. Comment: NRCS received comment requesting that the pre-closing transfer of BPS easements should allow for advance payments in addition to reimbursements. Response: NRCS selected the reimbursement-only approach for pre-closing BPS transactions as it reduces the risk for cost-recovery by allowing NRCS and the entity to ensure the transaction meets all requirements prior to NRCS providing cost-share assistance. To ensure this risk is minimized across all BPS transactions, NRCS has clarified that payment of the Federal share will occur on a reimbursable basis for all BPS transaction types. Even under standard (non-BPS) ALE transactions, an advance payment may only be issued 30 days prior to closing. Therefore, the amount of time the eligible entity could be in receipt of easement funds in advance of the easement closing under the requested approach is minimal, whereas the reimbursement-only approach for BPS transactions significantly reduces risk and increases administrative savings for both the eligible entity and the Government. The regulation has been updated to make the Federal share payment provision more consistent across the BPS transaction types. Comment: NRCS received comment related to adjusted gross income (AGI) waivers; two comments suggested adding AGI waivers for entities involved in BPS transactions who play an intermediary role as landowner. Another comment suggested automatically waiving AGI for BPS transactions because entities only act as pass-through organizations for the purpose of the contract. Response: The requesting and granting of AGI waivers for landowners that the Farm Service Agency (FSA) has determined do not meet the AGI limitations must ultimately be addressed prior to providing ACEP funds. Determinations to waive AGI for landowners that do not meet the AGI limitations, as set forth in 7 CFR part 1400, must be based on a case-by-case basis. NRCS policy addresses when NRCS makes its eligibility determinations, including AGI, based on the BPS transaction type and provides maximum flexibility with respect to the timing of conducting AGI determinations. No change is made to the regulation in response to this issue. Comment: NRCS received comment regarding the length of ACEP-ALE agreements for BPS transactions, including request for an extension beyond the 3-year ACEP-ALE agreement length (and 12-month extension) for post-closing transfers to a qualified buyer or an extension to a 5-year agreement length. Response: NRCS provides a period of 3 years, plus a potential additional 12 months, to find a qualified buyer, in addition to the initial 2-year period provided to close on the easement, for a total of 6 years for an individual transaction. NRCS selected the 12-month extension for several reasons, largely based on the administrative burden associated with extending transactions further. Additionally, NRCS recognizes that post-closing BPS transactions compete for the same ACEP funds that otherwise would be available to protect ***land*** that is already owned by a private or Tribal landowner or qualified farmer or rancher. Under a post-closing BPS transaction, until transfer to a qualified farmer or rancher takes place, the intended purposes of ACEP for which the Federal funds have been invested, are not fully realized. If the property is not ultimately transferred, then those Federal funds have been rendered unavailable for 5 to 6 years during which time they could have been used to protect another property that may have met ACEP purposes from the outset. Twelve months was chosen to ensure appropriate stewardship of Federal funds. No change is made to the regulation in response to this issue. Comment: NRCS received comment requesting addition of an option to purchase at ***agricultural*** value (OPAV) for BPS agreements to maintain maximum flexibility. Response: Encumbered ***land*** under a BPS transaction must be sold at ***agricultural*** value to a qualified farmer or rancher. The ACEP statute at 16 U.S.C 3865b(b)(4)(D)(i) specifically allows the inclusion of additional deed terms to keep the ***land*** subject to the ALE under the ownership of a farmer or rancher, which includes easement deeds that are part of a BPS transaction. However, NRCS must provide oversight to ensure that the use of an OPAV term in BPS transactions does not create an incentive for strawman sales to a qualified farmer or rancher just to meet statutory BPS requirements and then have the qualified farmer or rancher sell the ***land*** immediately back to the entity at ***agricultural*** value under the OPAV term. No change is made to the regulation in response to this issue.[[Page 8116]] Comment: NRCS received comment recommending modification of the penalty for failure to complete BPS transactions to a sliding scale of restitution rather than full repayment. Response: The ACEP statute requires that the ``Secretary shall be reimbursed for the entirety of the Federal share of the cost of the ***agricultural*** ***land*** easement by the eligible entity if the eligible entity fails to transfer ownership.'' NRCS does not have any flexibility with respect to the level of restitution and therefore no change is made to the regulation in response to this issue. Comment: NRCS received comment requesting that eligibility for BPS transactions be expanded to include ***land*** owned by State and local governments. Response: The statute identifies ``eligible ***land***'' as ``private or tribal ***land***,'' which ***land*** owned by a State or local government is not. However, this limitation does not preclude the involvement of a State or local government in a BPS transaction. A state or local government can serve as the interim easement holder while a non-governmental-eligible entity serves as the landowner until the ***land*** can be transferred to a qualified farmer or rancher. No change is made to the regulation in response to this issue. Comment: NRCS received comment requesting that, in the development of its policy for BPS transactions, the entity not be required to identify the landowner or sale price during the application and agreement phase. Response: NRCS does not require the identification of the landowner or sale price during the application phase. The timing of the identification of the landowner and the sale price is specified in the ALE-agreement terms and based on the specific BPS transaction type as either a pre-closing or post-closing transfer. No change is made to the regulation in response to this issue. Comment: NRCS received comment requesting that ***land*** eligibility provisions be changed for BPS transactions, including ***removal*** of the ``imminent threat'' test example or addition of ``advancing program goals'' as a basis for eligibility. Response: To align with the ``Conference Report to Accompany H.R 2--***Agriculture*** Improvement Act of 2018'' (Managers' Report), the ACEP-ALE ``eligible ***land***'' definition for BPS transactions was modified to ``allow for ***agricultural*** ***land*** to be owned by an eligible entity on a transitional basis to qualify for program participation, provided that the ***land*** subject to the ***agricultural*** ***land*** easement be transitioned to farmer or rancher ownership within 3 years.'' Due to the transitional nature of this ownership, there are risks that the Federal investment in ACEP-ALE benefits will not be fully realized, risks that do not exist with standard ALE transactions. However, in some circumstances, such as an imminent threat of development, this risk is outweighed by the benefit of placing an easement on ***land*** not owned by an otherwise eligible private or Tribal landowner at the time the Federal funds are invested in the easement. NRCS therefore states in the ACEP regulation that, to be eligible for a BPS transaction, the ***land*** must be subject to conditions that necessitate the ownership of the parcel by the eligible entity on a transitional basis prior to the creation of an ***agricultural*** ***land*** easement, and that these conditions may include ***land*** subject to an ``imminent threat of development, including, but not limited to, planned or approved conversion of grasslands to more intensive ***agricultural*** uses.'' Other conditions may also satisfy that requirement. NRCS made a slight editorial clarification in the regulation with respect to the requirement that the eligible entity must, within 12-months of the BPS agreement, have completed the initial purchase of the ***land*** or have demonstrated that completion of the purchase of the ***land*** is imminent. No other change is made to the regulation in response to this issue. Comment: NRCS received comment on the issue of merger of title in BPS transactions, including comment recommending deed term stating merger does not apply. Another comment encouraged NRCS and Office of the General Counsel to rely on an opinion of counsel eligible to practice in the State in which the ALE project is located to the effect that no merger would result through the transaction if the eligible entity: (1) Developed strong anti-merger language to allow it to grant an ***agricultural*** ***land*** easement to itself while still holding the fee title to the property, and then (2) reaffirmed the ***agricultural*** ***land*** easement at the time the eased parcel is sold to a farmer or rancher. Response: ACEP-ALE is a nationwide program and State law varies on the effectiveness of an anti-merger clause; however, in general, entities may include a no merger clause in ALE deeds. However, NRCS does not believe that the combination of an anti-merger clause with the suggested attorney's opinion sufficiently allows an eligible entity to temporarily hold the easement and the underlying fee at the same time. NRCS contemplated this proposed BPS transaction structure in response to previous public comments. The comment received does not introduce new information resulting in a different determination with respect to the legal issues of easement creation, as an easement, by definition, are the rights held by someone in the ***land*** owned by another and is created at the time of the transfer to the other person. The article supplied by the respondent reaffirmed this concept by identifying cases where courts determined that the doctrine of merger was not applicable due to the transfer of an easement to a third party. Merger of title addresses the extinguishment of an easement right due to a subsequent acquisition of fee title, while the BPS transactions present issues of easement creation. In addition to these issues, the conflict of interest inherent in this type of ownership scenario, which would impact enforcement, monitoring, and management of the easement and property, would not be mitigated by including an anti-merger provision. No change is made to the regulation in response to this issue. Comment: NRCS received comment that parcel substitutions for BPS transactions should be allowed. Response: Due to the unique and complex nature of BPS transactions, the ALE agreement includes terms that are specific to the individual transaction and ultimately constitute the `legal arrangement' being entered into `relating to ***land*** owned . . . by an eligible entity' for the purchase of an ***agricultural*** ***land*** easement on that particular piece of ***land***. In contrast, the terms of the standard ALE agreement and contract appendix are applied universally to every parcel funded. No change is made to the regulation in response to this issue. Comment: NRCS received comment recommending that changes to transaction type (pre-closing versus post-closing transfer) be allowed after entering into agreement. Response: NRCS identified two types of BPS transactions in the interim rule: pre-closing and post-closing transfers, which are differentiated based on the timing of the sale of the fee title interest in the ***land*** to a qualified farmer or rancher relative to the timing of securing the ***agricultural*** ***land*** easement. The regulation specifies the requirements and ALE-agreement terms that apply to both types. NRCS will address in the terms of the ALE agreement how an eligible entity may request a modification to an ALE-agreement to change between these two types of BPS transactions. No change is[[Page 8117]]made to the regulation in response to this issue. Comment: NRCS received comment requesting clarification in the preamble as to whether a qualified farmer or rancher includes those who do not file a Schedule F, such as a farmer in an S corporation. Response: IRS Form 1040 or 1040-SR, Schedule F, ``Profit or Loss from Farming,'' is the preferred documentation and is consistent with other NRCS and USDA programs. However, NRCS will also consider circumstances in which other forms of IRS documentation identifying the landowners' engagement in an ***agricultural*** operation may be appropriate.ALE Contribution Requirements Under both the 2014 and 2018 Farm Bills, NRCS may provide a Federal share that does not exceed 50 percent of the FMV of the ***agricultural*** ***land*** easement and requires the eligible entity to provide a share at least equivalent to that provided by NRCS, except in the case of grasslands of special environmental significance. For grasslands of special environmental significance, NRCS may provide a Federal share that does not exceed 75 percent of the easement FMV and the non-Federal share requirement is adjusted accordingly. The 2018 Farm Bill removed the 50-percent cash contribution requirement on the part of the eligible entity and identified permissible sources of the non-Federal share. NRCS received the following comments. Comment: NRCS received comment in support of ***removing*** the requirement for the eligible entity to provide a minimum cash contribution toward the purchase of the ***agricultural*** ***land*** easement and allowing donations of ***land*** by the landowner and eligible entity expenses for procured items to satisfy the non-Federal share requirements. Other comments did not support eligible entities no longer being required to provide a minimum cash contribution. Response: The regulatory changes follow requirements of the 2018 Farm Bill. No change is made to the regulation in response to this issue. Comment: NRCS received comment suggesting changes to how NRCS structured the non-Federal share in the regulation. They asked that the ``and'' at the end of the list be replaced with an ``or.'' Response: NRCS is clarifying that the sources comprising the non-Federal share are listed in order, and proceeding through the list, once the minimum non-Federal share amount is met, additional sources and amounts do not need to be identified. Additionally, given that an eligible entity's contribution may be related to cash resources expended for the purchase of the ***land*** prior to the easement transaction, NRCS has clarified in the regulation that for BPS transactions, part of the non-Federal share provided by an eligible entity may include that portion of the fair market value of the ***agricultural*** ***land*** easement that is not provided as the Federal share. Comment: NRCS received comment requesting clarification about the timing and the type of documentation that would be required for procured costs incurred by the eligible entity if relied upon to meet the non-Federal share requirement. Response: The regulation states that documentation requirements for procured costs are included in the ALE agreement. NRCS recognizes that, at the time of agreement, costs for procured items are estimated amounts and have not yet been incurred. Such estimates are needed in order to calculate the amount of the Federal share that may be obligated. No change is made to the regulation in response to this issue. Comment: NRCS received comment requesting that baseline reports and mineral assessments be added to the list of procured costs that may be included in the non-Federal share. Response: NRCS added baseline reports and mineral assessments to the list of items that may be included in the non-Federal share if these items are procured by the eligible entity from third parties. Comment: NRCS received comment asking that a Federal share of up to 75 percent of easement costs be provided in communities that do not have eligible entities present. Response: The statute limits NRCS's authority to provide a Federal share of up to 75 percent of the easement value to grasslands of special environmental significance only. No other types of transactions are authorized to receive up to 75 percent of the easement value, including transactions that occur in communities that do not have an eligible entity present. No change is made to the regulation in response to this issue. Comment: NRCS received comment requesting a change to clarify that the non-Federal share provided by the eligible entity for ACEP-ALE grasslands of special environmental significance must comprise the difference between the Federal share and the remainder of the FMV. The comment requested ***removal*** of the provision that, in the event the non-Federal share provided by the eligible entity is less than such amount, NRCS will provide a Federal share equivalent to the non-Federal share being provided. Response: The interim rule mirrors the statute. Additionally, the language allows for the possibility that, in the event that the non-Federal share provided by the eligible entity does not comprise the difference between the Federal share and the remainder of the FMV of the easement, NRCS could still provide a lesser amount that is equivalent to the non-Federal share. Although this is unlikely, ***removing*** the language from the regulation would eliminate this possibility. No change is made to the regulation in response to this issue.ALE Deed Requirements and Terms NRCS received comment related to the topic of ALE deed requirements and deed terms as follows: Comment: NRCS received comment related to the ALE deed template review, recommending that the deed template review be limited to ensuring that the minimum deed terms are incorporated and that other terms are not contrary to the purpose of ACEP. Response: The NRCS review of ALE deed templates focuses on ensuring that minimum deed terms (MDT) are incorporated and ensuring other terms are not contrary to the purpose of the program. Review of other items may be necessary to ensure that the document will work effectively as a template for the acquisition of ***agricultural*** ***land*** easements on multiple parcels. No change is made to the regulation in response to this issue. Comment: NRCS received comment about deed provisions related to ***agricultural*** use, including a request to strike the phrase ``consistent with ***agricultural*** use'' and replace it with the phrase ``does not negatively affect ***agricultural*** use'' as to commercial uses. Another comment recommended that NRCS limit its ability to impose greater deed restrictions in instances where the State definition of ***agricultural*** uses may result in the degradation of the soils, ***agricultural*** nature of the ***land***, or related natural resources. Response: This phrase `consistent with ***agricultural*** use' is unchanged from the previous ACEP regulation and is expansive enough to apply to farmland and grassland enrollments and is sufficient to prevent commercial uses that may negatively affect ***agricultural*** uses. NRCS may impose deed restrictions needed to ensure ACEP-ALE purposes will be met in exchange for the Federal investment. No change is[[Page 8118]]made to the regulation in response to this issue. Comment: NRCS received comment expressing general support for various elements of the deed requirements set forth in the interim rule, including commending NRCS for the revised mineral development language; language regarding an entity's use of their own deed terms and conditions; and supporting the U.S right of enforcement and right of inspection language in the interim rule. Response: NRCS thanks respondents for their input. No change is made to the regulation in response to these issues. Comment: NRCS received comment related to amendment clauses that must be included in each ***agricultural*** ***land*** easement deed, recommending splitting the amendment provision in the regulation to avoid confusion between ``amendments'' and the various types of easement administration actions (subordination, modification, exchange, and termination actions). Response: NRCS appreciates the request for clarification regarding the requirement that each ***agriculture*** ***land*** easement deed include clauses that address amendments or changes that may occur after recordation of the easement. To clarify, NRCS uses the term ``amendment'' in the regulatory deed requirement in Sec. 1468.25(d)(4) broadly to include each type of easement administration action: Subordination, modification, exchange, and termination. In practice, NRCS provides two separate clauses in the minimum deed terms to address this regulatory deed requirement and fully encompass the various types of easement administration actions. NRCS revised the text in the final rule to clarify and ***remove*** ambiguity regarding the various types of changes to the easement deed or easement area that must be approved in advance by NRCS. Comment: NRCS received comment regarding the interim rule's impervious surface limitations that must be specified in ACEP-ALE easement deeds, including comments recommending that NRCS authorize a blanket impervious surface waiver to ACEP-ALE easement deed language and cap the waiver authority at 5 percent of the easement area. Response: The impervious surface limitation and the current cap are well-established. NRCS explained in prior rulemakings the basis for its use of a 2-percent limitation and the flexibility of having a waiver that allows up to 10 percent based upon site-specific factors. In particular, this limitation provides a reasoned balance between ensuring the future capacity of ***agricultural*** ***land*** use with flexibility to allow for changes to the ***agricultural*** operation. NRCS requires a parcel-by-parcel determination because impervious surface limitations are site-specific. NRCS will not approve a blanket waiver or grant eligible entities a right to create blanket waivers for a greater impervious surface limit. However, there is an existing waiver option available that may have been underutilized. Specifically, when an eligible entity has a waiver process consistent with NRCS limitations and it is based on parcel-by-parcel determinations made by the entity, the entity may request authority from NRCS to use its own process. In this case, separate individual parcel waivers from NRCS would not be necessary. No change is made to the regulation in response to this issue. Comment: NRCS received comment regarding the subsurface mineral deed provisions. The comments requested: A requirement that native plants be used to remediate subsurface mining impacts; A requirement that involves State technical committees when determining impact of mineral development; That NRCS seek guidance on timing and responsibility for the development of the subsurface development plan; and That NRCS provide flexibility in the identification of de minimis gravel extraction sites. Response: NRCS recognizes the preference for the use of native plants for remediating sites in general, but the determination of the appropriate vegetation for any particular easement must be based upon site-specific factors. While the State technical committee can provide input on the impact of mineral development to particular ***land*** uses or locations in the State, such input would be inappropriate on an individual easement basis. The eligible entity is responsible for providing the subsurface mineral development plan to NRCS, which must be approved by NRCS prior to initiation of the mineral development activity, as set forth in Sec. 1468.25(d)(7)(v). The de minimis gravel extraction matter is not a regulatory issue but the comment responds to text that exists in the current minimum deed terms. NRCS would like to clarify that de minimis gravel extraction is through surface methods and therefore not encompassed by the subsurface mineral deed. Additionally, the current minimum deed terms authorize such de minimis gravel extraction for on-farm purposes. No change is made to the regulation in response to these issues. Comment: NRCS received comment recommending that certified entities need not be required to seek NRCS approval for subdivision and other activities that currently require NRCS approval under regulatory deed requirements and allow only notice to NRCS of these actions as sufficient. Response: The interim rule language did not change from prior rules. Certified entities have broad discretion already but still must meet regulatory deed requirements. NRCS, as a fiduciary, must approve those actions that can so fundamentally affect program purposes. Comment: NRCS received comment with respect to the requirement of the United States right of enforcement in the ***agricultural*** ***land*** easement deed, including request that a reference to Sec. 1468.28 be added to the right of enforcement definition, recommendation that the word ``contingent'' should be inserted before the term ``United States right of enforcement'', and a statement that the right of enforcement does not include the ability of the NRCS enforce the terms of an ALE plan if such a plan exists. Response: NRCS removed the term ``contingent'' many years ago to ***remove*** confusion that such right is a currently vested right. The term ``contingent'' indicates that NRCS's exercise of its right of enforcement is conditioned on particular events. It does not mean that the right itself is contingent, such that it would only be vested upon some future event. NRCS has not included any cross references to the various sections which relate to the United States right of enforcement in the definition itself since such cross-referencing is unnecessary. ***Agricultural*** ***land*** easements acquired under the 2018 Farm Bill are not required to have or be subject to an ALE plan. NRCS enforces highly erodible ***land*** conservation plans on highly erodible cropland as required by the ACEP-ALE statute; however, NRCS does not otherwise identify in the regulation the enforcement of an ALE plan. No change is made to the regulation in response to this issue. Comment: NRCS received comment stating that the statutory requirement of providing notice and right to participate when exercising the right of inspection should be added to the rule and deed terms. Response: The circumstances under which NRCS may enter upon and inspect an easement pursuant to the United States right of enforcement is[[Page 8119]]included in the full right of enforcement clause provided to all eligible entities and must be used in all ACEP-funded ***agricultural*** ***land*** easement deeds. The ACEP regulation clarifies that NRCS will provide the ***agricultural*** ***land*** easement holder and the landowner a reasonable opportunity to participate if NRCS exercises its right of inspection. Comment: NRCS received comment recommending that deed terms should allow site potential tree height (SPTH) ***forested*** riparian buffers as a permissible provision in western Washington. Response: The ACEP regulation includes a ``catch-all'' provision that allows States to have additional minimum deed terms. NRCS recommends that the commenters and any stakeholders with similar concerns should work with their applicable State Conservationist. No change is made to the regulation in response to this issue. Comment: NRCS received comment related to how the ALE-agreement references the deed requirements. Response: The ALE agreement must specify the deed requirements as set forth in the regulation so that they are enforceable.ALE Entity Certification NRCS received comment related to ALE entity certification as follows: Comment: NRCS received comment on the term of agreements with certified eligible entities recommending that NRCS allow for a minimum 5-year term. Response: NRCS is changing the regulatory language in response to this comment to specify that agreements with certified entities will be for a minimum of 5 fiscal years following the fiscal year the agreement is originally executed, but may not exceed 7 fiscal years following the fiscal year the agreement is originally executed. NRCS has found that an upper limit is necessary to limit the administrative burden associated with implementing agreements that cross different farm bills. Comment: NRCS received comment urging NRCS to expand eligibility for certification for State agencies, recommending a broadening of language for which types of prior conservation easements would be counted, and requesting that NRCS drop the number of required prior conservation easement transactions from 10 to 5. Response: The terms for certification of State agencies are set forth in statute, including the type of easements that can be counted and the number of prior transactions required, and NRCS does not have discretion to waive or amend those provisions. No change is made to the regulation in response to this issue. Comment: NRCS received comment requesting additional guidance on the entity certification process, including evaluation criteria, how NRCS will address partnerships between certified and non-certified eligible entities, what technical assistance NRCS may provide to certified entities (with regards to things like title review and appraisal), the benefits of certification, and the definition of a plan for administering easements. The comment detailed recommendations about the kind of transparency NRCS should have for its process and the timeline. Another comment requested a streamlined process for certifying eligible entities, including State agencies and ***land*** trusts. Response: The internal certification review process is found at 440 Conservation Programs Manual (CPM) Part 528 and may be accessed at [*https://directives.sc.egov.usda.gov/*](https://directives.sc.egov.usda.gov/). NRCS will continue its ongoing efforts to streamline processes through new business tools to be as efficient and effective in program delivery as possible while operating within legal authorities. NRCS will continue to make publicly available any new policy or guidance. No change is made to the regulation in response to this issue. Comment: NRCS received comment expressing support for changes made in the interim rule to the entity certification process. Response: NRCS appreciates this support.ALE ***Land*** Eligibility Issues NRCS received comment related to ALE ***land*** eligibility as follows: Comment: NRCS received comment about ***forest*** ***land*** eligibility issues. Many supported maintaining the two-thirds limitation on non-industrial private ***forest*** ***land*** (NIPF) eligibility under ACEP-ALE and offered that programs like the Regional Conservation Partnership Program (RCPP), Healthy ***Forests*** Reserve Program (HFRP), and ***Forest*** Legacy Program can all be used currently to protect ***forest*** ***lands***. Another comment requested the two-third limitation on NIPF in ACEP-ALE be struck. Response: To minimize duplication, overlap, and conflict with other USDA ***forest*** easement programs, the interim rule and this regulation maintain the existing eligibility provision that ***land*** enrolled in ACEP-ALE cannot include NIPF greater than two-thirds of the ACEP-ALE easement area unless waived by NRCS with respect to ***forest*** ***lands*** dedicated to sugar bush that contribute to the economic viability of the parcel. NRCS specifically requested public comment in the interim rule on whether RCPP or HFRP could protect ***lands*** on which NIPF is the predominant use at levels beyond the scope of ACEP-ALE. Regarding the two-third limitation, NRCS cannot authorize parcels that are 100 percent NIPF because statutory eligibility criteria is phrased as NIPF contributing to the economic viability of an offered parcel or serving as a buffer to protect ***land*** from development. Thus, the eligibility of NIPF is in relationship to other eligible ***land***. This has long been NRCS's interpretation of this eligibility criterion under ACEP-ALE and its predecessor Farm and Ranch ***Lands*** Protection Program. Congress specifically rejected language that would have expanded eligibility in the 2018 Farm Bill. NRCS concurs that the availability of other USDA easement programs that specifically protect ***forested*** ***lands*** warrants the continued focus of ACEP-ALE more broadly on other ***agricultural*** ***lands***. No change is made to the regulation in response to this issue. Comment: NRCS received comment about the definition of grasslands of special environmental significance (GSES) under ACEP-ALE, including support for the definition of GSES and the prioritization and management of native vegetation and habitats in relationship to GSES. A comment also encouraged the return of ***land*** to heritage marshes and vernal pools wherever possible on GSES enrollments. Another comment supported allowing only native vegetation to be categorized as GSES. Response: NRCS believes that the current GSES definition supports the recommendation about prioritization of native vegetation and habitat. In particular, the GSES definition identifies sensitive or declining native prairie or grassland types or grasslands buffering wetlands. However, there are grasslands that, while not native vegetation, provide critical habitat for at-risk species that warrant the increased Federal investment to protect. Thus, NRCS will not limit GSES to native vegetation only. No change is made to the regulation in response to this issue. Comment: NRCS received comment related to ALE ***land*** eligibility, including: A request that confined animal feeding operations (CAFOs) not be eligible for an ALE-funded easement; A comment addressing the ineligibility criteria related to on-site and off-site conditions; A comment commending NRCS for including criteria related to permitted[[Page 8120]]rights-of-way and requesting that NRCS clarify how off-site conditions are deemed suitable for the purpose of making ALE ***land*** eligibility determinations; A comment requesting that NRCS broaden the definition of access and the eligibility requirements so that air access can qualify; and A comment requesting additional clarification as to whether a farmer or rancher can participate in both ALE and Conservation Reserve Program (CRP). Response: For any proposed easement containing a CAFO, the confined area is a heavy use area that must be evaluated by NRCS to determine if the on-site or off-site conditions render the site ineligible and make a determination as to whether the ***land*** meets the required ***land*** eligibility criteria. This is a case-specific determination and broad categorization of ***land*** eligibility simply based on type of operation is not appropriate. NRCS has set forth in national policy, which is publicly available, the procedures and forms NRCS uses to make ***land*** eligibility determinations for ACEP-ALE, including assessing the potential of onsite and offsite conditions to undermine the purposes of ACEP. Ultimately, ***land*** eligibility determinations are site-specific and rely upon programmatic and technical assessments based on criteria set forth broadly in national policy and more specifically at the State level. For more information, see: 440 CPM part 528 at [*https://directives.sc.egov.usda.gov/*](https://directives.sc.egov.usda.gov/). Legal access to ***agricultural*** ***land*** easements is critical to the ability of the eligible entity, and NRCS, under its right of enforcement, to monitor and enforce the terms of the easement and ensure that program purposes are achieved. Effective monitoring and enforcement ultimately require ground inspection and verification. Access to an easement that can only be achieved by aircraft would require both the eligible entity and NRCS to maintain, in perpetuity, aircraft that can provide personnel access to monitor and ***land*** on the easement property and would require the landowner to maintain, in perpetuity, a ***landing*** strip or helipad on the property. NRCS does not maintain its own aircraft for easement monitoring purposes and cannot evaluate the safety and suitability of aircraft owned by the eligible entity or the landowner's ***landing*** strip or helipad. All ***lands*** that do not have sufficient legal, physical access are ineligible to receive Federal funds under ACEP, including those that are only accessible by air. The 2018 Farm Bill specifies that a farmer or rancher who owns eligible ***land*** subject to an ***agricultural*** ***land*** easement may enter into a CRP contract. Determinations of ***land*** eligibility for enrollment in CRP are under the purview of FSA and we have therefore shared the comment with FSA. No change is made to the regulation in response to these issues.ALE Planning NRCS received comment related to ALE planning and ALE plans as follows: Comment: NRCS received comment related to ALE planning generally and some of them urging NRCS to require a grassland management plan for grasslands of special environmental significance given the higher environmental value of these easements. Another comment recommended that NRCS continue to encourage planning on ALE easements, while a comment did not support how NRCS encouraged planning. Response: The 2018 Farm Bill removed language requiring that ACEP-ALE easements enrolled under the 2018 Farm Bill be subject to an ALE plan, including grasslands of special environmental significance. However, in the Managers' Report, the Managers ``encourage USDA and eligible entities to work with landowners entering into an ALE easement to undertake conservation planning activities on their ***land*** in order to maximize the environmental value of the protected ***land***.'' Therefore, NRCS will continue to encourage planning on ACEP-ALE enrollment, including grasslands of special environmental significance. No change is made to the regulation in response to this issue. Comment: NRCS received comment strongly supporting the recognition ALE plan as a measure that maintains or increases the ***agricultural*** viability of the ***land*** in the ranking criteria, and identified that the ranking criterion should strongly weight ALE plans for grasslands of special environmental significance and that a plan should be required for any application that is prioritized based on carbon sequestration or climate change resiliency goals. Another comment expressed that an ALE plan should not be recognized in the ranking criteria because it is no longer required by statute. Response: As described in the preamble of the interim rule, NRCS identified that the development and maintenance by the eligible entity of an ACEP-ALE plan could be a ranking consideration at the State level to prioritize applications from eligible entities. NRCS believes that conservation planning is the base upon which sound conservation stewardship originates. To eliminate support for planning would undermine the quality of stewardship that would be encouraged on ***lands*** in which the public provides a sizable financial investment. Additionally, as a ranking criterion this consideration does not prohibit eligible entities from being able to access program funding but instead acknowledges that eligible entities committed to long-term conservation planning are helping to ensure an ***agricultural*** ***land*** easement yields the greatest benefits for the landowner, conservation, and the public funds invested in that easement. No change is made to the regulation in response to this issue. Comment: NRCS received comment related to the definition of the ALE plan, with some advocating for the ***removal*** of the ALE plan definition entirely because plans are no longer mandated by statute. Another comment supported the definition of ALE plans and commended NRCS for clearly defining that the plan is developed by the eligible entity and not as a component of the deed. Comment also expressed support for limiting conservation plans to only highly erodible croplands. Response: NRCS supports conservation planning as the cornerstone of ***land*** stewardship efforts. NRCS retained the definition of the ALE plan in the ACEP regulation. No change is made to the regulation in response to this issue.ALE Program Requirements NRCS received comment related to ALE program requirements as follows: Comment: NRCS received comment requesting clarification as to how NRCS will determine if a landowner entity is compliant with AGI. Response: NRCS uses the AGI eligibility determinations made by the FSA. NRCS accesses such determinations through the agencies' shared database services. No change is made to the regulation in response to this issue. Comment: NRCS received comment related to the requirement that eligible entities must provide evidence of their financial capacity for transactions in which the non-Federal share does not include at least a 10-percent cash contribution from the eligible entity for payment of easement compensation to the landowner. Other comment requested ***removal*** of the requirement that the entity provide specific evidence of funds available for stewardship of the easement and suggested that entity eligibility requirements that apply to all ACEP-ALE transactions regardless of[[Page 8121]]entity cash contribution amounts are sufficient. Other comment commended NRCS on including the requirement but requested clarification as to what would constitute specific evidence of funds available for stewardship. Response: All entities must demonstrate capability and capacity as an eligibility requirement. Under the 2014 Farm Bill, NRCS could use an entity's ability to provide at least the required cash contribution amount for all ACEP-ALE transactions as an indication that the entity is able to meet capability and capacity requirements. Where an entity is unable to provide at least a minimum cash contribution, questions arise as to the entity's financial capacity to assume responsibility for the easement acquisition. NRCS has, therefore, specified in the regulation the conditions under which additional capability and capacity evidence will always be required. However, it is always the entity's responsibility to establish that it meets basic ACEP-ALE eligibility requirements and as identified in the rule, the entity must provide to NRCS sufficient information to establish that the applicable entity eligibility criteria have been met. Comment: NRCS received comment recommending that the definition of a farm or ranch succession plan be expanded to include transfers of ***land*** and deeds to non-relatives and other long-term protections for ***agricultural*** productivity. Also, comment recommended specifying that successions plans may include options to purchase at ***agricultural*** value or preemptive purchase rights. Response: The key part of a succession plan is that the landowner makes arrangements for the future management of the ***land*** as a farm or ranch once the landowner retires or dies. NRCS does not limit those types of arrangements. The definition of the succession plan in the regulation used intra-family succession agreements or business asset transfer strategies as examples. NRCS has added language to clarify that the examples included in the definition are not all-inclusive. Comment: NRCS received comment related to the easement valuation methods available under ACEP-ALE, encouraging NRCS to provide guidance on information required for easement valuation methods used other than the Uniform Standards of Professional Appraisal Practice (USPAP) appraisals, including areawide market analysis or other industry-approved methods. Comment also expressed support for the current availability of ACEP-ALE valuation options beyond USPAP appraisals. Response: NRCS provides guidance in policy with respect to what is required if an eligible entity elects to use an alternative easement valuation methodology, including a ``Specification and Scope of Work for Areawide Market Analysis for ACEP-ALE.'' These items are published and publicly available in NRCS directive Title 440, Conservation Programs Manual (440-CPM), Part 528, Section 528.53, and in 440-CPM, Part 527, Subpart E, which can be accessed on the NRCS Electronic Directives system at [*https://directives.sc.egov.usda.gov/*](https://directives.sc.egov.usda.gov/). No change is made to the regulation in response to this issue. Comment: NRCS received comment recommending that NRCS be required to consult with the State technical committee on ACEP-ALE prioritization for ranking, special eligibility, and all other State-decided criteria. Response: Statutory authority states that State technical committees assist in implementation and technical aspects of conservation programs under Title XII of the Food Security Act, such as ACEP. Sections 1468.2 and 1468.22 of the ACEP interim rule incorporate this role, including that State technical committees provide input on the development of ranking criteria and other matters. No change is made to the regulation in response to this issue. Comment: NRCS received comment related to the ACEP-ALE application process and the new option for ALE-program agreements, requesting that NRCS make the application form and new option for ALE-program agreements form more usable and that the process be streamlined. Other comments wished to have greater guidance about how producers could participate and supported the new ALE program agreement option and requested additional clarification regarding its availability. Response: NRCS appreciates the complexity of easement transactions, including the extent of information that must be collected from applicants and participants on various program forms. NRCS has made several efforts to streamline the ACEP-ALE enrollment process. In FY 2020, NRCS released various new or updated forms used to administer ACEP-ALE. Additionally, NRCS piloted in fiscal year 2019 and is implementing more widely in fiscal year 2020 the use of ALE program agreements, making available several automated eligibility and payment processes previously only available to NRCS financial assistance programs. Also, the use of a program agreement framework under ACEP-ALE allows NRCS and eligible entities to more easily address enrollment changes, such as parcel substitution or acreage modifications. Since NRCS does not receive landowner applications directly for ACEP-ALE enrollment, NRCS will provide outreach to States to help landowners interested in ACEP-ALE identify eligible entities in their geographic area. No change is made to the regulation in response to this issue. Comment: NRCS received comment recommending that NRCS allow water supply entities to participate in ACEP-ALE as eligible entities. Response: An eligible entity must meet the definition of an eligible entity established by statute and incorporated into the ACEP regulation. NRCS does not have authority to expand the basic eligible entity definition. No change is made to the regulation in response to this issue.ALE Ranking NRCS received comment related to ALE ranking as follows: Comment: NRCS received comment related to ***removing*** the factor associated with national ranking criterion that takes into consideration whether the cash contribution is being provided by the eligible entity toward the payment of easement compensation to the landowner. Other comments: Recommended consideration of State and local tax incentives be added to this factor; Recommended NRCS prioritization of landowner donation in the ranking; and Agreed with including the eligible entity's cash contribution in the ranking. Response: The Managers report introduced flexibilities to provide better access to ACEP in States where conservation easement funding is limited. The Managers stated that they did not intend for NRCS to reject cash matches entirely but broadened the options available to eligible entities. NRCS recognizes that any time the eligible entity's cash contribution is reduced, the landowner receives less compensation for the sale of an easement on their ***land***, which may result in ACEP funds being the only funds paid to the landowner for the easement. Additionally, the increased donation by the landowner will frequently satisfy the minimum non-Federal share requirement under ACEP-ALE. By considering the cash contribution as a positive attribute in ranking, NRCS is encouraging enrollment while ensuring that ACEP is implemented equitably. Each State has[[Page 8122]]the ability to calibrate the relative importance of cash contributions in the prioritization of applications for enrollment in that State. No change is made to the regulation in response to these issues. Comment: NRCS received comment related to ranking priority for actions related to the future, ***agricultural***, and long-term viability of enrolled ***land***. Comment supported adding information to the succession plan portion of the ranking, such as specifically identifying OPAV, Purchase of Development Rights (PDR), and other succession planning options that maintain ***agricultural*** viability or awarding points for innovative succession requirements. Comment also: Recommended expanding the ranking criteria to prioritize applications that increase opportunities for historically underserved farmers; Supported the maintenance of ***agricultural*** viability as a ranking criterion; including supporting its inclusion as both a national and State ranking factor; Suggested that such inclusion is duplicative; Recommended that ***agricultural*** viability be included in the national ranking criteria; and Recommended that succession planning be removed from the ranking criteria. Response: Based on national and State ranking criteria in the ACEP regulation, NRCS at the State level develops ranking factors and associated weights. Broadly identifying State ranking criteria in the regulation provides the needed flexibility for States to develop the specific ranking criteria that best address State and local priorities. Regarding long-term maintenance of ***agricultural*** viability, the national ranking criteria ensures, consistent with the statute, that this criterion is considered in every ACEP-ALE application by assessing whether a succession plan exists. The existence of State ranking criteria enables States to develop nuanced approaches to address long-term ***agricultural*** viability, which may include more specific identification or prioritization of certain types of succession plans or succession planning strategies. NRCS does not wish to limit ***agricultural*** landowners' choices or restrict who could be involved in succession planning. Such specificity is not necessary in the regulation itself. NRCS includes in the regulatory definition of a farm or ranch succession plan strategies that create opportunities for historically underserved landowners. NRCS also includes a State ranking criterion related to the multifunctional benefits of farm and ranch ***land*** protection, of which social and economic considerations may be included. No change is made to the regulation in response to these issues. Comment: NRCS received comment about eliminating the potential for prioritization of applications for which eligible entities agree to use the ACEP-ALE minimum deed terms. Response: In the interim rule, NRCS indicated that it may prioritize transactions where an eligible entity uses NRCS's standard set of minimum deed terms. This potential prioritization also existed for enrollment during the 2014 Farm Bill and its inclusion as a factor in the State's ranking criteria is at the State's discretion. An eligible entity's use of the standard set of minimum deed terms streamlines the easement approval process and eliminates the need for NRCS review of the conservation easement deed for individual transactions. The efficiency by which easement transactions are completed, including the use of available administrative streamlining options, is an appropriate consideration in ranking, and no change was made in this final rule. No change is made to the regulation in response to this issue. Comment: NRCS received comment related to the State ranking criteria for multifunctional benefits for the protection of a particular farm or ranch, recommending that NRCS at the State level have the option to specify `other related conservation benefits' under this multifunctional benefits criterion. Comment also recommended adding `species of economic significance' to the consideration for at-risk species protection under this ranking criterion. Another comment recommended the criteria be `other related benefits,' striking `conservation' from the consideration, and other comments recommended that NRCS add ranking criteria about related conservation values. Response: NRCS agrees that evaluating the multifunctional benefits that may result from parcel protection is an important prioritization criterion. NRCS has enumerated in the regulation some potential benefits that may be considered and has included `other related conservation benefits' to provide States with the flexibility to identify such conservation benefits and establish the associated ranking factors and priorities. NRCS believes the State ranking criterion is sufficiently expansive for NRCS to tailor ranking factors at the State and local level. No change is made to the regulation in response to this issue. Comment: NRCS received comment and appreciation related to various State ranking criteria, including requesting that NRCS provide specific references to geographic differences for States to use in ranking. Other comment stated that prioritizing ***land*** in areas zoned for ***agricultural*** use may inadvertently exclude ***agricultural*** ***lands***. Comment also recommended that protection of native prairie and other native habitats, including protection or improvement of habitat for pollinators, be added to the State ranking criteria related to the diversity of natural resources to be protected or improved, and requested that riparian buffers be ranked as the highest ACEP-ALE priority. Response: NRCS believes that the regulation provides a sufficient framework under which the various items brought forth in these comments can all be addressed at the State level with input from the State technical committee. No change is made to the regulation in response to these issues. Comment: NRCS received comment related to various national ranking criteria. One comment indicated that it is contradictory to limit ***forest*** ***land*** enrollment to two-thirds of an easement area while also having the extent of forestland as part of a ranking criterion. Another comment encouraged NRCS to clarify in the regulation that it will use the `median' county average farm size and requested higher priority be given to parcels adjacent to existing easements or protected areas. Response: Comment related to ***forest*** ***lands*** refers to the national ranking criteria for the percent of cropland, rangeland, grassland, historic grassland, pastureland, or nonindustrial private ***forest*** ***land*** permitted in a protected parcel. Each State is able to tailor the specific ranking factor to prioritize enrollment of ***land*** that contains the amounts and types of ***land*** and ***agricultural*** uses that are most at risk in their State. For example, a western State may establish the ranking factor to prioritize parcels with a larger percentage of historic grassland since those ***lands*** may be at the greatest risk of conversion. In contrast, a midwestern State may prioritize the percentage of cropland in a parcel since those ***lands*** may be at the greatest risk of conversion. Comment regarding median county average farm size refers to the national ranking criteria that considers the ratio of the size of the parcel compared to the average farm size in the county. As identified in the regulation, the USDA Census of ***Agriculture*** is the data source for this national ranking criterion; the[[Page 8123]]term `average size of farm' is contained in the Census. Based on ALE application and enrollment data, use of this nationally available data item continues to be appropriate. NRCS affirms that proximity to other protected ***lands*** continues to be one of the national ranking criteria set forth in the regulation. No change is made to the regulation in response to these issues. Comment: NRCS received comment recommending that NRCS allow ACEP-ALE eligible entities to participate in State technical committee recommendations for ACEP-ALE ranking determinations. Response: Eligible entities may participate in the State technical committee; however, they may not participate in developing ranking factors for programs in which they participate. If potential participants had input into ranking factors, NRCS selection decisions would be suspect. NRCS will provide training to State offices describing the roles of eligible entities. No change is made to the regulation in response to this issue. Comment: NRCS received comment supporting various aspects of the ACEP-ALE ranking provisions, including: Commending NRCS for not using cost as a ranking criterion; commending NRCS's consideration of proximity to other protected ***land*** as a ranking criteria; and commending the straightforward implementation of ranking that allows States to prioritize parcels through ranking criteria. Response: NRCS appreciates the comments. Comment: NRCS received comment recommending landowners who have protected their ***land*** through ACEP-ALE receive priority for funding under NRCS' financial assistance programs, such as the Environmental Quality Incentives Program (EQIP). Response: NRCS receives input on program priorities, including priorities for enrollment in its financial assistance programs, from the State technical committees. There is no need to identify priorities for other programs' enrollment in the ACEP regulation. No change is made to the regulation in response to this issue.Definitions NRCS received comment related to the definitions in the ACEP interim rule as follows: Comment: NRCS received comment related to the terms ``future,'' ``***agricultural***,'' and ``long-term'' with respect to the term ``viability.'' Comment recommended that greater consistency be applied throughout the final rule for the three terms with respect to the term ``viability;'' the definition of ``***agricultural*** viability,'' as referenced in the Managers' Report language, be clarified; and various items be added to, or deleted from, the definition of ``future viability.'' Response: Since the creation of ACEP in the 2014 Farm Bill, the statute uses the phrase ``***agricultural*** use and future viability'' in the program purposes statement. In response to comments on the February 2015 ACEP interim rule, NRCS included a definition of ``future viability'' to identify that ACEP-ALE purposes include the legal, physical, and financial conditions under which the ***land*** itself will remain capable and available for continued sustained productive ***agricultural*** or grassland uses. The 2018 Farm Bill maintained the reference to ``***agricultural*** uses and future viability'' in the context of the program purposes and introduced the term ``***agricultural*** viability'' in the context of potential application prioritization. NRCS believes that the existing definition of ``future viability,'' which is sufficiently expansive without being overly prescriptive, includes such concepts as accessibility to beginning farmers or ranchers and continued affordability. To address the request for clarity, NRCS has included a reference to the adoption of a farm or ranch succession plan as another example of a condition that supports the future viability of the protected ***land***. Comment: NRCS received comment related to the definition of historically underserved landowner, recommending that socially disadvantaged farmers be specifically identified, be included in the definition of historically underserved landowners, and be added to the definition of ``socially disadvantaged farmer or rancher.'' This comment refers to the provision in the interim rule associated with farm or ranch succession planning that identifies new or beginning farmers or ranchers, veteran farmers or ranchers, or ``other historically underserved landowners.'' Response: The definition of historically underserved landowner includes beginning, limited resource, socially disadvantaged, and veteran farmer or ranchers. As a result, the definition of farm or ranch succession plan has been modified in this final rule to refer simply to ``historically underserved landowner'' since this term is all-encompassing. The definition of socially disadvantaged farmer or rancher has been in the definitions section since the ACEP regulation was first promulgated in 2015. Comment: NRCS received comment that suggested replacing the concept of watersheds with ``watershares.'' Response: NRCS has long been involved in watershed and watershed planning, and the term ``watershares'' is not a universal term. No change is made to the regulation in response to this issue. Comment: NRCS received comment requesting that the definition of ``riparian areas'' be modified to eliminate the ``movement for wildlife'' as an element. Response: The definition of riparian areas has long included reference to the movement of wildlife as it is one of the critical functions of riparian areas. No change is made to the regulation in response to this issue. Comment: NRCS received comment requesting ***removal*** of reference to species that are ``likely to undergo'' population decline from the definition of ``at-risk species.'' The commenter objected to an unnamed agency imposing restrictions through an unknown process. Response: The interim rule identified the determination of ``likely to undergo population decline'' is made by the NRCS State Conservationist, with advice from the State technical committee or Tribal Conservation Advisory Council. The definition is shared across NRCS conservation programs, all of which are voluntary. No change is made to the regulation in response to this issue. Comment: NRCS received comment requesting a change to the definition of ``***agricultural*** commodity'' so that the intent to harvest annually rather than tillage is used as the determining mechanism. Response: The definition of ***agricultural*** commodity is contained in statute. No change is made to the regulation in response to this issue.Easement Administration Actions NRCS received comment related to easement administration actions as follows: Comment: NRCS received comment related to the identification of the sequencing procedures under the National Environmental Policy Act (NEPA) with respect to easement administration actions, recommending that easement administration actions related to sequencing considerations be classified as categorical exclusions for NEPA analysis. Other comment suggested that the provision be amended to eliminate NEPA sequencing review if the easement administrative actions either enhance purposes of the ACEP-ALE program or do not materially threaten the ALE's protection[[Page 8124]]of ***agricultural*** viability or other conservation values, and requested ***removal*** of reference to NEPA entirely. Comment also requested clarification about how NEPA sequencing considerations may affect NRCS approval of easement administration actions. Response: The decision to modify or terminate a Federal interest has long been subject to NEPA review, and NRCS must comply with NEPA statutory, regulatory, and policy requirements during its review of a requested easement administration action. These requirements include reviewing whether adverse impacts associated with an easement administration action can be avoided, minimized, or mitigated. Since the impacts and outcomes of an easement administration action cannot be categorized generally, a specific review is necessary. As NRCS evaluates the NEPA analyses developed for the individual easement administrative actions, it is gathering evidence that may be used to propose categorical exclusions for certain easement administrative actions in the future. NRCS may identify new categorical exclusions, through issuing new NEPA procedures (including by amending NRC's current regulations implementing NEPA at 7 CFR part 650), consistent with the Council on Environmental Quality's regulations for implementing the procedural provisions of NEPA, published at 40 CFR parts 1500 through 1508. No change is made to the regulation in response to this issue. Comment: NRCS received comment related to adding references or additional requirements to the easement administration action criteria, including a reference to the easement administration criteria indicating that any easement modification or termination conform to State law requirements, and including a reference that easement administration actions must conform to section 170(h) of IRC and associated U.S Department of the Treasury (Treasury) regulations. Comment also requested that easement administration actions align more closely with ***Land*** Trust Alliance (LTA) industry standards. Response: Easement administration actions are documented in ***land*** records in accordance with State law. NRCS's authority to approve easement administration actions is not subject to requirements in section 170(h) of the Treasury or associated regulations related to charitable donations. However, entities are not prevented from incorporating language that addresses their own compliance with section 170(h) in their part of the conservation easement deed terms. NRCS must implement easement administration actions in accordance with Federal law and responsibilities; private ***land*** trusts are not subject to these requirements when conducting actions without Federal involvement. It would not be appropriate for NRCS to adopt ``industry standards'' that do not account for these Federal standards. No change is made to the regulation in response to this issue. Comment: NRCS received comment related to the various easement administration action requirements, including: Recommending that NRCS ***remove*** the 10-percent limitation on easement administration actions so that an easement modification or exchange action would just need to meet one of the two thresholds: (1) The action provide equal or greater conservation functions and values and (2) equal or greater economic values; Recommending ***removal*** of the standard of no net loss of easement acres required for easement subordination, modification, or exchange actions; and Recommending a change to the definition of easement termination to acknowledge compensation that may be owed to other interest holders in a conservation easement. Response: NRCS uses the 10-percent limitation requirement to minimize the effects of administration actions. NRCS selected the 10-percent level based upon review of the scope of prior requests for easement administration actions and for consistency with other NRCS conservation programs. It is a statutory requirement that an easement modification or exchange action must meet both thresholds (equal or greater conservation value and equal or greater economic value). As to the threshold for an easement subordination, modification, or exchange to result in no net loss of easement acres, NRCS believes, based on long-standing experience, that the existing standard ensures that the public investment in conservation easements endures for the life of the easement and that NRCS is able to make credible determinations of equal or greater conservation and economic value as required by statute. The definition of easement termination addresses only the United States' rights or interests in an easement, including that the United States must be fully compensated for the termination of such rights and interests that are held by the United States. The easement termination language does not address or affect compensation that may be owed to other interest holders. No change is made to the regulation in response to these issues. Comment: NRCS received comment that requested NRCS modify language regarding easement termination to clarify that it also applies to the partial termination of an easement. Response: NRCS has clarified that partial termination of an easement is subject to the easement termination requirements to the same extent as the full termination of an easement. All easement termination actions are subject to review at both the NRCS State office and National Headquarters levels. Comment: NRCS received comment that supported allowing the use of updated deed provisions when making easement amendments, cautioned that flexibility be granted to do simple amendments, and advised NRCS not to require updates to new language that may be contained in updated deed provisions of those provisions are unnecessary or unacceptable to the landowner. Response: NRCS appreciates the support received for deed amendment process requirements. Deed amendments to ACEP-ALE easement deeds must be approved by NRCS, as discussed above. No change is made to the regulation in response to this issue.Environmental Markets Comment: NRCS received comment expressing support for updates to the section on environmental markets. Response: NRCS appreciates the comments.Fund Allocations NRCS received comment related to ACEP fund allocations as follows: Comment: NRCS received comment supporting the historic division of fund allocations across ACEP, that is based on demand for funding. Approximately 70 percent of ACEP funding is dedicated to wetland conservation through ACEP-WRE and 30 percent is for ***agricultural*** ***land*** preservation through ACEP-ALE. Another comment urged greater flexibility with respect to fund allocations. Response: NRCS has not specified in the regulation an allocation of program funds between the two components of the program. NRCS maintains program flexibility year-to-year to respond to program demand. No change is made to the regulation in response to this issue. Comment: NRCS received comment recommending continued use of ACEP-WRE authorities to enter into agreements and contracts with non-governmental organizations, State[[Page 8125]]agencies, and other partners to continue to leverage resources and expertise. Response: NRCS relies on its partners to assist NRCS in its delivery of ACEP-WRE and will continue to utilize its authorities to coordinate with these valuable partners. No change is made to the regulation in response to this issue. Comment: NRCS received comment supporting the continued allocation of a portion of ACEP funds for monitoring and management of existing easements and recommending that State Conservationists have discretion to determine the appropriate portion of the individual State allocation to be used for monitoring and management of existing easements. Response: NRCS National Headquarters provides on-going coordination, guidance, and support to State Conservationists to ensure that sufficient funds are dedicated and used to appropriately monitor, manage, and enforce stewardship ***lands***. No change is made to the regulation in response to this issue.Landowner Eligibility--Adjusted Gross Income (AGI) Limitation Waiver NRCS received comment related to the AGI limitation waiver as it affects landowner eligibility to enroll in ACEP as follows: Comment: NRCS received comment related to the definition and criteria for environmentally sensitive ***lands*** of special significance, including encouraging NRCS in its AGI waiver determinations to give the most consideration to ***lands*** with the highest conservation value, particularly ***lands*** of special significance that can demonstrate significant linkages with the conservation objectives of migratory bird, wetlands conservation, and water quality programs, plans, or initiatives. Comment also requested that environmentally sensitive ***land*** of special significance be explicitly defined. Response: NRCS will consider the factors noted in the comment in granting AGI waivers. Terms associated with the AGI waiver are set forth in the regulations governing payment limitation and payment eligibility requirements, including AGI provisions, at 7 CFR part 1400. No change is made to the regulation in response to this issue. Comment: NRCS received comment suggesting that NRCS expand eligibility for AGI waivers, including allowing the waiver for all ACEP-ALE enrollment, automatically waiving AGI for BPS transactions, and interpreting AGI waiver factors broadly. Response: NRCS may only grant waivers on a case-by-case basis where the waiver criteria are met. Broadening the waiver authority to eliminating AGI applicability to all ALE enrollment types is outside statutory authority. No change is made to the regulation in response to this issue. Comment: NRCS received comment seeking increased streamlining and guidance regarding AGI waivers. Response: NRCS will continue its ongoing efforts to streamline processes through the use of new tools. NRCS will continue to develop and release specific guidance as needed. No change is made to the regulation in response to this issue. Comment: NRCS received comments expressing support for the use of AGI waiver authority in ACEP. Response: NRCS appreciates support for its AGI waiver process.Program Administration NRCS received comment on the topic of program administration as follows: Comment: NRCS received one detailed comment emphasizing the importance of protecting endangered and at-risk species through ACEP. This comment specifically referred to salmonid species. Response: NRCS appreciates the importance of protecting threatened and endangered species and its responsibility to comply with the Endangered Species Act (ESA), including ESA section 7(a)(1). As part of its conservation planning framework and site-specific NEPA process, NRCS also considers impacts to at-risk species as required by its NEPA implementing regulations (7 CFR part 650). No change is made to the regulation in response to this issue. Comment: NRCS received comment related to outreach activities, including recommending that: NRCS retain its outreach focus on historically underserved farmers and ranchers; funds expended for historically underserved purposes be identified and made public; and NRCS ensure that the process is streamlined to ensure access to disadvantaged and underserved populations. Comment also reminded NRCS regarding sovereign-to-sovereign consultation for Farm Bill easement programs having Tribal implications. Response: NRCS will continue to evaluate options to enhance opportunities for historically underserved producers and focus resources on ensuring parity in program enrollment. NRCS conducted several Tribal meetings in FY 2019 and FY 2020 and State Conservationists obtained input on program implementation from the Tribal Conservation Advisory Committees. No change is made to the regulation in response to this issue. Comment: NRCS received comment expressing specific support for various aspects of program administration, including supporting NRCS discretion to waive certain program administration provisions and commending NRCS for continuing to obtain input from State technical committees, other Federal and State agencies, conservation districts, and other organizations. Response: NRCS appreciates the support it has received for ACEP administration. Comment: NRCS received comment urging continued or increased consultation with partners and stakeholders, including State technical committees, non-governmental organizations, and the U.S Fish and Wildlife Service. Response: NRCS will continue to seek stakeholder input on how to improve program administration, especially input that NRCS receive on State and local resource issues. No change is made to the regulation in response to this issue. Comment: NRCS received comment asking that technical assistance provided by NRCS regarding compliance with easement terms be clarified and recommending creation of ACEP-specific forms. Comment also recommended guidance on conflicts of interest and information on the implementation of Voluntary Public Access and Habitat Incentives Program (VPA-HIP). Response: NRCS will continue its ongoing efforts to streamline processes, including modifying its required forms, through the use of new tools. Additionally, NRCS will continue to develop and release guidance on specific topics as needed. NRCS regulation and policy regarding VPA-HIP is provided separately and can be found in 7 CFR part 1455, and associated agency policy is available on the NRCS website. No change is made to the regulation in response to this issue. Comment: NRCS received comment recommending that NRCS include text regarding ACEP ranking that prioritizes ***lands*** enrolled in the Transition Incentives Program under the Conservation Reserve Program (CRP-TIP). Section 1235(f)(1)(E) of the CRP statute requires that priority enrollment be given to ***land*** subject to a CRP-TIP contract into EQIP, Conservation Stewardship Program (CSP), and ACEP. Response: Section 1468.22(b)(11) of the ACEP interim rule identifies as a national priority for ALE enrollment[[Page 8126]]grasslands currently enrolled in CRP in a contract that is set to expire within 1 year. Section 1468.32(c) of the ACEP interim rule identifies as a potential State priority for WRE enrollment whether ***land*** is farmed wetland and adjacent ***land*** that is currently enrolled in CRP in a contract that is set to expire within 1 year. However, neither ALE nor WRE identify a specific priority ranking for CRP-TIP ***land***. Therefore, NRCS is adding a specific priority in the ACEP regulation for CRP-TIP. Comment: NRCS received comment related to the practices and activities administered through ACEP, including: Encouraging NRCS to adopt the ``Active River Area Concept'' to its management scheme; Proposing that all easements go through a plant and plant community survey by a botanist prior to enrollment; Seeking confirmation that NRCS would not enter into agreements with entities who would preclude ***forested*** riparian buffers; Recommending that NRCS recognize specifically intensive rotational grazing as one of the best management tools; and Recommending that diverse native plant mixes be prioritized in ACEP wetland and grassland restoration and management plans. Response: NRCS addresses how best to administer its practices and activities through technical and program policy implemented at the State level through the discretion given NRCS State Conservationists. In general, NRCS supports the development and implementation of plans and restoration activities that consider the value of management and restoration activities that provide for a diverse assemblage of native plants, including pollinator-friendly species. However, NRCS believes that specific resource management issues are best addressed at the State level. No change is made to the regulation in response to this issue. Comment: NRCS received comment related to program administration that did not fit neatly into any single subtopic: Require landowners to assume responsibility for operation and maintenance of easements; Provide sufficient staffing to meet customer service needs; Concern over the authorization of permanent easements; Make publicly available information related to easement enrollments such as acres enrolled, soil classification of ***land***, and before and after ***land*** use; Condition ACEP so that all funded efforts achieve consistency with State water quality standards and salmon recovery plan habitat objectives; and Review easement deed terms at least every 100 years to ensure consistency with existing conditions. Response: The operation and maintenance that may occur on ACEP easements and who may perform such activities is addressed in the terms of the easement deeds. NRCS staffing is not a part of this rulemaking, but the agency will continue providing the highest quality customer service and program implementation with its resources. Permanent easements are authorized and prioritized by statute. As NRCS collects data, the agency generates multiple reports on a variety of impacts, which are typically made available to the public upon request. NRCS will consider the recommendation regarding consistency with water quality standards and recovery plan habitat objectives as it continues to evaluate and refine ranking and eligibility criteria. Review of easement deed terms at least every 100 years is beyond the scope of current regulation and policy. No change is made to the regulation in response to these issues. Comment: NRCS received comment related to source water protection issues including: Recommending that NRCS acknowledge source water protection as a goal of ACEP; Adding discussion about how source water protection priorities will be included in the implementation of ACEP and other NRCS conservation programs; Addressing how ACEP will be included in accounting for overall source water expenditures by publishing a plan for comment; Adding source water protection in the ACEP ranking criteria; Ensuring adequate attention given to source water protection at State technical committees; and Recommending that NRCS address how spatial data related to source water areas will intersect with ACEP. Response: Source water protection is a statutory priority and NRCS Headquarters provides guidance to ensure that all its programs are contributing to the protection of source water protection areas. The ACEP regulation includes water quality as a consideration in the list of ranking criteria for both ALE and WRE and the State Conservationist, in consultation with the State technical committee, may develop and include specific considerations for source water protection as part of their State's ranking factors. NRCS uses geographic information system tools to help identify source water protection areas and easement enrollment. No change is made to the regulation in response to this issue.WRE Issues NRCS received comment related to ACEP-WRE topics as follows: Comment: NRCS received comment supporting revisions to the definition of wetland restoration in the interim rule regarding ACEP-WRE. Comment highlighted that the expanded flexibility would benefit wetland functions and habitat values. Comment also encouraged NRCS to engage robustly with State technical committees when devising the State-specific NRCS criteria and guidelines for wetland restoration. Response: NRCS appreciates support for the revised definition of wetland restoration. Comment: NRCS received comment related to compatible use authorizations under ACEP-WRE, expressing support for the inclusion of water management and supporting the use of such management activities to maintain, enhance, and diversify wetland habitats on ACEP-WRE easements. Comment also recommended ***removing*** ``hunting and fishing'' from the list of activities that can be authorized as a compatible use in Sec. 1468.37(a)(2)(ii) because undeveloped recreational uses, including hunting and fishing, are listed as one of the five rights reserved by the landowner in the ACEP-WRE warranty easement deed. Comment also identified that NRCS should seek input from the State technical committee on technical matters related to compatible use designations and guidelines. Response: NRCS appreciates support for the inclusion of water management and recognizes the potential utility of this activity to wetland functions and values when properly prescribed and implemented on ACEP-WRE easements through the compatible use authorization process. Hunting and fishing are specifically identified in the ACEP statute as a `compatible use' that is subject to NRCS determination of compatibility. NRCS has implemented this provision by identifying in all ACEP-WRE easement deeds that undeveloped hunting and fishing, subject to the terms of the easements, is a reserved right. However, any hunting and fishing activities that extend beyond that reserved right are prohibited unless determined compatible by NRCS through the compatible use authorization process. In the ACEP interim rule, NRCS included compatible use criteria and related[[Page 8127]]matters in the expanded list of examples provided in Sec. 1468.2(b) regarding subjects on which the State technical committee may provide advice to the State Conservationist. Comment: NRCS received comment regarding wetland restoration and management activities, encouraging that the technical requirements for grazing management plans and exhibits for ACEP-WRE grazing reserved rights enrollments be developed in consultation with State technical committees and that the individual grazing management plans be dynamic to accommodate wildlife and habitat conservation along with producer needs. Comment also recommended that NRCS prioritize activities supporting migratory waterfowl and other wetland-dependent wildlife through science-based management and recommended levee setbacks and ***forested*** riparian buffers be allowed on all easements in Washington State. Response: NRCS appreciates comment related to grazing management plans and ACEP-WRE reservation of grazing rights enrollments. The ACEP interim rule provided clarifying changes consistent with these recommendations, including addition of a grazing management plan definition that is specific to ACEP-WRE and provisions related to the review and modification of such plans for reserved grazing rights enrollments. NRCS conducts and supports monitoring and research on its wetland easements to obtain data and information that informs technical decisions related to prioritization and selection of new easements and restoration and management of existing easements. NRCS will continue to collaborate with partners and institutions to obtain the information needed to make science-based decisions to maximize wildlife benefits and wetland functions and values on every ACEP-WRE easement. The concern related to restoration activities in the State of Washington do not rise to a nationwide level and are not addressed in the regulation. The ACEP regulation and other NRCS planning procedures provide the States the needed flexibilities to make technical decisions related to enrollment, restoration, and management of ACEP-WRE ***lands***. NRCS recommends that stakeholders with concerns should work with their applicable State Conservationist. Comment: NRCS received comment related to WRE ***land*** eligibility: Recommending that NRCS allow cropping on the WRE easement area; supporting the increase in the percentage of easements that can be enrolled on cropland in a county from 10 percent to 15 percent; and requesting flexibility with respect to the 2-year ownership requirement for ***land*** that the farmer has managed for numerous years prior to purchase. Response: NRCS prohibits cropping on ACEP-WRE enrolled ***lands*** because the purpose of the program is to restore the wetland functions and values and crop production is inconsistent with such purposes. NRCS appreciates the comments related to the county cropland limitation. The 2-year ownership provision in the ACEP regulation is a specific statutory requirement, but flexibility exists through the waiver process. When deciding whether to waive the 2-year ownership requirement, NRCS considers whether the ***land*** has been managed by the landowner as part of their operation prior to acquiring ownership of the ***land***. No change is made to the regulation in response to these issues. Comment: NRCS received comment relating to factors used to prioritize enrollments in ACEP-WRE, including support for prioritizing permanent easements over non-permanent easements and including water quality as a conservation benefit. Response: NRCS appreciates support for the ACEP-WRE prioritization factors. Comment: NRCS received comment recommending NRCS consider funds from other Federal sources as contributions for ranking purposes. Response: Section 1265C(b)(3) of the ACEP statute authorizes as a ranking factor whether the landowner or other person offers to contribute to the cost of the easement and thereby leverage Federal funds. The statutory priority is that Federal funds, not just ACEP-WRE funds, be leveraged by other sources, and NRCS has incorporated this factor into the regulation. NRCS State Conservationists, with input from State technical committees, may consider other priorities that further program goals, including other sources of contribution. However, other Federal sources of contribution may have restrictions on the use of their funds and NRCS must ensure that there is no augmentation in contravention of appropriations law. No change is made to the regulation in response to this issue. Comment: NRCS received comment supporting and encouraging NRCS to continue to seek advice and input on implementation of ACEP-WRE from the U.S Fish and Wildlife Service, State fish and wildlife agencies, and State technical committees. Response: Both ACEP regulation and policy require the NRCS to seek continued engagement from these partners. No change is made to the regulation in response to this issue. Comment: NRCS received comment related to the Wetland Restoration Enhancement Partnership (WREP), recommending that NRCS restore the 5 percent match requirement for the WREP partner contributions and maintain historic levels of partner contributions at 25 percent. Another comment recommended that NRCS provide an annual allocation for WREP of between $35-50 million per year. Response: NRCS appreciates the support for WREP. NRCS has not established any regulatory level of match that is required for WREP and bases such determination upon the focus of each year's WREP effort. No change is made to the regulation in response to this issue.Notice and Comment, Paperwork Reduction Act, and Effective Date In general, the Administrative Procedure Act (APA) (5 U.S.C 553) requires that a notice of proposed rulemaking be published in the Federal Register and interested persons be given an opportunity to participate in the rulemaking through submission of written data, views, or arguments with or without opportunity for oral presentation, except when the rule involves a matter relating to public property, loans, grants, benefits, or contracts. This rule involves matters relating to benefits and therefore is exempt from the APA requirements. Further, the regulations to implement the programs of chapter 58 of title 16 of the U.S Code, as specified in 16 U.S.C 3846, and the administration of those programs, are: To be made as an interim rule effective on publication, with an opportunity for notice and comment; Exempt from the Paperwork Reduction Act (44 U.S.C ch. 35); and To use the authority under 5 U.S.C 808 related to congressional review. Consistent with the use of the authority under 5 U.S.C 808 related to Congressional review for the immediate effect date of the interim rule, this rule is also effective on the date of publication in the Federal Register.Executive Orders 12866 and 13563 Executive Order 12866, ``Regulatory Planning and Review,'' and Executive Order 13563, ``Improving Regulation and Regulatory Review,'' direct agencies to assess all costs and benefits of available regulatory alternatives and, if regulation is necessary, to select[[Page 8128]]regulatory approaches that maximize net benefits (including potential economic, environmental, public health and safety effects, distributive impacts, and equity). Executive Order 13563 emphasizes the importance of quantifying both costs and benefits, of reducing costs, of harmonizing rules, and of promoting flexibility. The Office of Management and Budget (OMB) designated this rule as significant under Executive Order 12866 and therefore, OMB has reviewed this rule. The costs and benefits of this rule are summarized below. The full regulatory impact analysis is available on [*https://www.regulations.gov/.Clarity*](https://www.regulations.gov/.Clarity) of the Regulation Executive Order 12866, as supplemented by Executive Order 13563, requires each agency to write all rules in plain language. In addition to the substantive comments NRCS received on the interim rule, NRCS invited public comments on how to make the rule easier to understand. NRCS has incorporated these recommendations for improvement where appropriate. NRCS responses to public comment are described in more detail above.Cost-Benefit Analysis One of the most significant ACEP changes in the 2018 Farm Bill is to the existing contribution requirements for the non-Federal share under ACEP-ALE. Previously, there were only two sources of non-Federal contribution--the entity's cash resources towards the purchase and the donation by the entity--with cash resources towards the purchase required for half of the non-Federal contribution. The 2018 Farm Bill eliminated the requirement for cash resources towards the purchase and allows the entity to consider other costs, previously not included, toward the non-Federal match. This change adds flexibility for eligible entities to meet the non-Federal share requirement by no longer specifying a minimum cash contribution amount to be provided by the eligible entity and allowing the total of the non-Federal share to be comprised of a charitable donation or qualified conservation contribution from the private landowner. It also includes provisions for costs related to securing the easement to be included in the calculation of the non-Federal share. While ***removing*** a potential hurdle to entity participation, the additional flexibility is not intended to supersede the conservation benefits possible under ACEP. There are six states and one territory (Alabama, Arkansas, Hawaii, Louisiana, Missouri, North Dakota, and Puerto Rico) that currently have no enrollment in ACEP-ALE. This may have been due to a lack of available financial resources for an eligible entity to meet the minimum cash contribution requirement or may be due to a lack of entities that meet the eligibility requirements to participate in ACEP-ALE. The changes to the non-Federal share requirements may result in increased ACEP-ALE enrollments in areas where enrollment has been limited due to a lack of financial resources available for entities that meet the ACEP-ALE eligibility requirements. To address these statutory changes, in this final, we eliminated a specified minimum cash contribution amount and incorporated provisions for considering costs related to securing the easement. These changes are applicable to all eligible entities in all States and as a result, it is anticipated that the amount of the Federal contribution toward ACEP-ALE easements will increase by 8 to 10 percentage points. Another change under the 2018 Farm Bill provides NRCS with authority to enter into legal arrangements with eligible entities to conduct BPS transactions under ACEP-ALE. Under a BPS transaction, NRCS may provide ACEP-ALE cost-share assistance to an eligible entity for the purchase of an ***agricultural*** ***land*** easement on private or Tribal ***agricultural*** ***land*** owned on a transitional basis by an eligible entity when the ownership of that ***land*** will be timely transferred to a qualified farmer or rancher. BPS transactions are intended to help farmers and ranchers acquire ***agricultural*** ***land*** they could not otherwise afford and to protect ***agricultural*** ***land*** that may have otherwise been developed or removed from ***agricultural*** production. NRCS continues to have the discretion to rank and prioritize projects and to select individual applications based on their ability to achieve program purposes and to assess and determine the appropriate allocation of funds for the acquisition of ***agricultural*** ***land*** and wetland easements. The 2018 Farm Bill does not limit NRCS's discretion to determine the allocation of funds between ACEP-WRE and ACEP-ALE. The relative emphasis NRCS places on these two program components depends on State and national priorities, environmental impacts, and local demand. It is anticipated that enrollment in ACEP will be consistent with historic enrollment trends. ***Land*** enrolled in ACEP-WRE easements produces onsite and offsite environmental benefits. Those include: Restoring and protecting high value wetlands; controlling sheet and rill erosion as ***lands*** are restored from cropland to wetlands and associated habitats; restoring, enhancing, and protecting habitat for fish and wildlife, including threatened and endangered species and migratory birds; improving water quality by filtering sediment and chemicals; reducing flooding and flood-related damage; recharging groundwater; protecting biological diversity; controlling invasive species with planting of native vegetation; and providing opportunities for educational, scientific, and recreational activities. Soil health and air quality are improved by reduced wind erosion, reduced soil disturbance, increased organic matter accumulation, and an increase in carbon sequestration. For ***land*** enrolled in ACEP-ALE, the suite of conservation effects on protected grasslands are different than those on protected farmland; the impacts are not valued here as one being more beneficial than another. For example, ACEP-ALE easements on grasslands limit ***agricultural*** activities to predominantly haying and grazing, whereas easements on farmland allow crop cultivation and pasture-based ***agriculture***. As such, farmland protection effects are derived from onsite and ecological services, as well as preserving highly productive ***agricultural*** areas from development or fragmentation. Impacts on grasslands are derived from onsite and ecological impacts as well as preventing conversion to nongrassland uses. The net conservation effects through time from farmland protection include direct access benefits (pick-your-own, agri-tourism, and nature based activities like hunting), indirect access benefits (open spaces and scenic views), and nonuse benefits (wildlife habitat and existence values). Grassland protection conservation effects include direct, indirect, and nonuse benefits, and also on-farm production gains and carbon sequestration. The authorized level of funding for ACEP for the period of FY 2019 through 2023 is $2.25 billion (assuming future funding is set at authorized amounts). This represents an increase in ACEP average annual funding over the 2014 Farm Bill of 11 percent--from $405 million per year to $450 million per year in nominal dollars. The regulatory impacts of ACEP funding consist of payments for the purchase of easements or real property interests; the costs incurred related to the acquisition, such as title companies, appraisers, licensed ***land*** surveyors; and the costs of restoring wetlands.[[Page 8129]]Although these transfers create incentives that likely cause changes in the way society uses its resources, NRCS lacks data with which to identify where these resources would otherwise be used. NRCS also recognizes that applicants and participants incur costs in terms of time used to gain access to ACEP. We estimate the imputed value of applicant and participant time spent in accessing the program from FY 2019 through 2023 at $1.1 million for the 5 years. Our estimates of costs, benefits and transfers of ACEP on an annual basis are reported in Table 1. Given a 3 percent discount rate, the projected annualized real cost to producers of accessing the program is $229,000 and the projected annualized real transfers are $433 million. Conservation benefits from the easement are difficult to quantify at a national scale but have been described by studies at an individual project or watershed or local scale. Table 1--Annualized Real Estimated Costs, Benefits, and Transfers \a\------------------------------------------------------------------------ Category Annual estimate------------------------------------------------------------------------Cost \b\.................................. $229,000Benefits.................................. QualitativeTransfers................................. $433,000,000------------------------------------------------------------------------\a\ All estimates are discounted at 3 percent to 2019. Note that this table focuses on the costs, benefits, and transfers of the entire program, not the marginal change in a comparison of the 2014 and 2018 Farm Bills.\b\ Imputed cost of applicant time to gain access to the program.Regulatory Flexibility Act The Regulatory Flexibility Act (5 U.S.C 601-612), as amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA), generally requires an agency to prepare a regulatory analysis of any rule whenever an agency is required by APA or any other law to publish a proposed rule, unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. This rule is not subject to the Regulatory Flexibility Act because this rule is exempt from notice and comment rulemaking requirements of the APA and no other law requires that a proposed rule be published for this rulemaking initiative.Environmental Review The environmental impacts of this rule have been considered in a manner consistent with the provisions of NEPA (42 U.S.C 4321-4347), the regulations of the Council on Environmental Quality (40 CFR parts 1500-1508), and the NRCS regulations for compliance with NEPA (7 CFR part 650). NRCS conducted an analysis of the ACEP interim rule and NRCS's analysis determined there would not be a significant impact to the human environment and as a result, an environmental impact statement (EIS) is not required to be prepared (40 CFR 1501.5 and 1501.6). The Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) were available for review for 30 days from the date of publication of the interim rule in the Federal Register. NRCS considered comments received during the 30-day period and determined minor changes to the ACEP EA and FONSI were sufficient, and that no information warranting preparation of an EIS was received. The final ACEP EA and FONSI have been posted to the NRCS homepage at [*https://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/programs/farmbill/?cid=stelprdb1263599.Executive*](https://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/programs/farmbill/?cid=stelprdb1263599.Executive) Order 12372 Executive Order 12372, ``Intergovernmental Review of Federal Programs,'' requires consultation with State and local officials that would be directly affected by proposed Federal financial assistance. The objectives of the Executive order are to foster an intergovernmental partnership and a strengthened federalism, by relying on State and local processes for State and local government coordination and review of proposed Federal financial assistance and direct Federal development. For reasons specified in the final rule-related notice regarding 7 CFR part 3015, subpart V (48 FR 29115, June 24, 1983), the programs and activities in this rule are excluded from the scope of Executive Order 12372.Executive Order 12988 This rule has been reviewed under Executive Order 12988, ``Civil Justice Reform.'' This rule will not preempt State or local laws, regulations, or policies unless they represent an irreconcilable conflict with this rule. Before any judicial actions may be brought regarding the provisions of this rule, the administrative appeal provisions of 7 CFR part 11 are to be exhausted, consistent with 7 U.S.C 6912(e).Executive Order 13132 This rule has been reviewed under Executive Order 13132, ``Federalism.'' The policies contained in this rule do not have any substantial direct effect on States, on the relationship between the Federal Government and the States, or on the distribution of power and responsibilities among the various levels of government, except as required by law. Nor does this rule impose substantial direct compliance costs on State and local governments. Therefore, consultation with the States is not required.Executive Order 13175 This rule has been reviewed in accordance with the requirements of Executive Order 13175, ``Consultation and Coordination with Indian Tribal Governments.'' Executive Order 13175 requires federal agencies to consult and coordinate with Tribes on a Government-to-Government basis on policies that have Tribal implications, including regulations, legislative comments or proposed legislation, and other policy statements or actions that have substantial direct effects on one or more Indian Tribes, on the relationship between the Federal Government and Indian Tribes or on the distribution of power and responsibilities between the Federal Government and Indian Tribes. The USDA's Office of Tribal Relations (OTR) has assessed the impact of this rule on Indian Tribes and determined that this rule does not have significant Tribal implications that require Tribal consultations at this time for ACEP, which is a beneficial voluntary program. Notwithstanding this conclusion, OTR believes that continued focused outreach to Tribes could increase engagement in ACEP and provide assistance with water quality issues for Tribes. OTR states that NRCS has adhered to the spirit and intent of Executive Order 13175. If a Tribe requests consultation, NRCS and CCC will work with OTR to ensure meaningful consultation is provided where changes, additions, and modifications identified in this rule are not expressly mandated by the 2018 Farm Bill. Tribal consultation for this rule was included in the 2018 Farm Bill Tribal consultation held on May 1, 2019, at the National Museum of the American Indian, in Washington, DC. The portion of the Tribal consultation relative to this rule was conducted by Bill Northey, USDA Under Secretary for the Farm Production and Conservation mission area, as part of the Title I session. There were no specific comments from Tribes on ACEP during this Tribal consultation. Additionally, NRCS held sessions with Indian Tribes and Tribal entities across the country in the spring of FY 2019 to describe the 2018 Farm Bill changes to NRCS conservation programs, obtain input about how to improve Tribal and Tribal member[[Page 8130]]access to NRCS conservation assistance, and make any appropriate adjustments to the regulations that will foster such improved access. NRCS invited State leaders for FSA and Rural Development (RD), as well as Regional Directors for the Risk Management Agency (RMA) to discuss their programs also. As a result, approximately 50 percent of the comments received as a result of these sessions were directed to FSA, RMA, RD, and other USDA agencies, with many comments specific to hemp production and the surrounding regulations. Over 40 percent of the feedback pertained to NRCS programs. Comments listed challenges specific to Tribes that impact eligibility and inhibit access to USDA programs. None of the feedback received necessitated a change to the regulation. NRCS will continue to work with our Tribal stakeholders to address the issues raised in order to facilitate greater technical assistance and program delivery to Indian country. Separate from Tribal consultation and the sessions discussed above, communication and outreach efforts are in place to assure that all producers, including Tribes (or their members), are provided information about the regulation changes. Specifically, NRCS obtains input through Tribal Conservation Advisory Councils. A Tribal Conservation Advisory Council may be an existing Tribal committee or department and may also constitute an association of member Tribes organized to provide direct consultation to NRCS at the State, regional, and national levels to provide input on NRCS rules, policies, programs, and impacts on Tribes. Tribal Conservation Advisory Councils provide a venue for agency leaders to gather input on Tribal interests.Unfunded Mandates Title II of the Unfunded Mandates Reform Act of 1995 (UMRA) (Pub. L. 104-4), requires Federal agencies to assess the effects of their regulatory actions on State, local, and Tribal Governments or the private sector. Agencies generally must prepare a written statement, including cost-benefits analysis, for proposed and final rules with Federal mandates that may result in expenditures of $100 million or more in any 1 year for State, local or Tribal Governments, in the aggregate, or to the private sector. UMRA generally requires agencies to consider alternatives and adopt the more cost-effective or least burdensome alternative that achieves the objectives of the rule. This rule contains no Federal mandates, as defined under Title II of UMRA, for State, local, and Tribal Governments or the private sector. Therefore, this rule is not subject to the requirements of UMRA.Federal Assistance Programs The title and number of the Federal Domestic Assistance Programs in the Catalog of Federal Domestic Assistance to which this rule applies is: 10.931--***Agricultural*** Conservation Easement Program.E-Government Act Compliance NRCS and CCC are committed to complying with the E-Government Act, to promote the use of the internet and other information technologies to provide increased opportunities for citizen access to Government information and services, and for other purposes.List of Subjects in 7 CFR Part 1466 ***Agricultural***, Flood Plains, Grazing ***lands***, Natural resources, Soil conservation, and Wildlife. Accordingly, the interim rule published January 6, 2020, at 85 FR 558, is adopted as final with the following changes:PART 1468--***AGRICULTURAL*** CONSERVATION EASEMENT PROGRAM01. The authority citation for part 1468 continues to read as follows: Authority: 15 U.S.C 714b and 714c; 16 U.S.C 3865-3865d.Subpart A--General ProvisionsSec. 1468.3 [Amended]02. Amend Sec. 1468.3 as follows:0a. In the definition of ``Beginning farmer or rancher'':0i. In paragraph (1), ***remove*** the words ``farm or ranch or'' and add in their place the words ``farm, ranch, or'' each time they appear;0ii. In paragraphs (2) and (3), ***remove*** the words ``farm or ranch'' and add the words ``farm, ranch, or NIPF'' in their place each time they appear;0b. In the definition of ``Eligible ***land***'', add the word ``***land***'' immediately after the word ``private'';0c. In the definition of ``Farm or ranch succession plan'', ***remove*** the words ``include specific'' and add the words ``include, but is not limited to, specific'' in their place and ***remove*** the words ``new or beginning farmers or ranchers, veteran farmers, or other'';0d. In the definition of ``Future viability'', add the words ``or adoption of a farm or ranch succession plan'' immediately after the word ``plan''; and0e. In the second sentence in the definition of ``Maintenance'', add the word ``performed'' immediately after the word ``work''.Sec. 1468.6 [Amended]03. Amend Sec. 1468.6 in paragraph (a)(3)(iii) by ***removing*** the cross reference ``paragraph (a)(4)'' and add in its place add the cross reference ``paragraph (a)(5)''.Subpart B--***Agricultural*** ***Land*** EasementsSec. 1468.20 [Amended]04. Amend Sec. 1468.20 in paragraph (b)(1)(ii) by adding the word ``demonstrated'' immediately before the word ``capability''.05. Amend Sec. 1468.22 as follows.0a. Revise paragraph (b)(11); and0b. In paragraph (c)(2), add the word ``annually'' immediately after the words ``monitored'' and ``reported''. The revision reads as follows:Sec. 1468.22 Establishing priorities, ranking considerations, and project selection.\* \* \* \* \* (b) \* \* \* (11) Whether the ***land*** is currently enrolled in CRP in a contract that is set to expire within 1 year and is grassland that would benefit from protection under a long-term easement or is ***land*** under a CRP contract that is in transition to a covered farmer or rancher pursuant to 16 U.S.C 3835(f);\* \* \* \* \*Sec. 1468.23 [Amended]06. Amend Sec. 1468.23 as follows:0a. In paragraph (b)(1), ***remove*** the words ``Up to'' and add ``A minimum of'' in their place and add the words ``and not to exceed 7 fiscal years'' immediately after the words ``5 fiscal years''; and0b. In paragraph (b)(2), ***remove*** the words ``Up to'' and add ``At least'' in their place.07. In Sec. 1468.24 revise paragraphs (b)(2)(i), (iii), and (iv) to read as follows:Sec. 1468.24 Compensation and funding for ***agricultural*** ***land*** easements.\* \* \* \* \* (b) \* \* \* (2) \* \* \* (i) The eligible entity's own cash resources for payment of easement compensation to the landowner or for a buy-protect-sell transaction, the amount of the fair market value of the ***agricultural*** ***land*** easement, less the amount of the Federal share, that is provided through the conveyance of the[[Page 8131]]***agricultural*** ***land*** easement by the eligible entity;\* \* \* \* \* (iii) Where the amounts as identified in paragraphs (b)(2)(i) and (ii) of this section are not sufficient to meet the non-Federal share amount, the eligible entity may also include the procured costs paid by the eligible entity to a third-party for an appraisal, boundary survey, phase-I environmental site assessment, title commitment or report, title insurance, baseline reports, mineral assessments, or closing cost; and (iv) Where the amounts as identified in paragraphs (b)(2)(i) through (iii) of this section are not sufficient to meet the non-Federal share amount, the eligible entity may also include up to 2 percent of the fair market value of the ***agricultural*** ***land*** easement for easement stewardship and monitoring costs provided by the eligible entity.\* \* \* \* \*08. In Sec. 1468.25 revise paragraphs (c) and (d)(4) to read as follows:Sec. 1468.25 ***Agricultural*** ***land*** easement deeds.\* \* \* \* \* (c) The eligible entity may use its own terms and conditions in the ***agricultural*** ***land*** easement deed, but the ***agricultural*** ***land*** easement deed must provide for the effective administration, management, and enforcement of the ***agricultural*** ***land*** easement by the eligible entity or its successors and assigns and must address the deed requirements as specified by this part and by NRCS in the ALE-agreement. (d) \* \* \* (4) Include clauses requiring that any changes to the easement deed or easement area made after easement recordation, including any amendment to the easement deed, any subordination of the terms of the easement, or any modifications, exchanges, or terminations of some or all of the easement area, must be consistent with the purposes of the ***agricultural*** ***land*** easement and this part and must be approved by NRCS and the easement holder in accordance with Sec. 1468.6 prior to recordation or else the action is null and void.\* \* \* \* \*Sec. 1468.26 [Amended]09. Amend Sec. 1468.26 in paragraph (b)(1) by ***removing*** the words ``up to'' and adding ``a minimum of'' in their place and adding ``and not to exceed 7 fiscal years'' after the words ``5 fiscal years''.010. Amend Sec. 1468.27 as follows:0a. In paragraph (c)(1), add the words ``the purchase of the ***land***'' after the word ``completed'';0b. In paragraphs (c)(3)(ii) and (c)(4), add the words ``of the ***land***'' after the word ``value'';0b. Redesignate paragraphs (e)(4)(iii) and (iv) as paragraphs (e)(4)(iv) and (v);0c. Add a new paragraph (e)(4)(iii). The addition reads as follows:Sec. 1468.27 Buy-Protect-Sell transactions.\* \* \* \* \* (e) \* \* \* (4) \* \* \* (iii) The Federal share for the ***agricultural*** ***land*** easement will be provided on a reimbursable basis only, after the ***agricultural*** ***land*** easement has closed and the required documents have been provided to and reviewed by NRCS.\* \* \* \* \*011. Amend Sec. 1468.28 as follows:0a. Revise paragraph (c); and0b. In paragraph (f), add the words ``in whole or in in part,'' immediately after the word ``terminated''. The revision reads as follows:Sec. 1468.28 Violations and remedies.\* \* \* \* \* (c) Notwithstanding paragraph (a) of this section, NRCS reserves the right to enter upon and inspect the easement area if the annual monitoring report provided by the ***agricultural*** ***land*** easement holder documenting compliance with the ***agricultural*** ***land*** easement is insufficient or is not provided annually, the United States has a reasonable and articulable belief that the terms and conditions of the easement have been violated, or to remedy deficiencies or easement violations as it relates to the conservation plan in accordance with 7 CFR part 12. Prior to its inspection, NRCS will notify the ***agricultural*** ***land*** easement holder and the landowner and provide a reasonable opportunity for the ***agricultural*** ***land*** easement holder and the landowner to participate in the inspection.\* \* \* \* \*Subpart C--Wetland Reserve EasementsSec. 1468.32 [Amended]012. Amend Sec. 1468.32 in paragraph (c)(2) by adding the words ``or ***land*** under a CRP contract that is in transition to a covered farmer or rancher pursuant to 16 U.S.C 3835(f), and such ***land***'' immediately after the word ``application''.Terry Cosby,Acting Chief, Natural Resources Conservation Service.Robert Stephenson,Executive Vice President, Commodity Credit Corporation.[FR Doc. 2021-02268 Filed 2-3-21; 8:45 am]BILLING CODE 3410-16-P

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[***Agricultural Conservation Easement Program (Updated on 04-02-2021)***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:61XV-NV31-JDG9-Y2XK-00000-00&context=1516831)

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**Body**

Washington, DC: This Rule document was issued by the Commodity Credit Corporation (CCC)

Action

Final rule.Summary

This final rule adopts, with minor changes, an interim rule published in the Federal Register on January 6, 2020. The interim rule implemented changes to ACEP that were necessitated by enactment of the ***Agriculture*** Improvement Act of 2018 (the 2018 Farm Bill) and changes for administrative streamlining improvements and clarifications. This final rule makes permanent many of the changes made in the interim rule, responds to comments received, and makes further adjustments in response to some of the comments received.Dates

Effective: February 4, 2021.For Further Information Contact

Carrie Lindig, (202) 720-1882, or [*carrie.lindig@usda.gov*](mailto:carrie.lindig@usda.gov) Persons with disabilities who require alternative means for communication should contact the USDA ***Target*** Center at (202) 720-2600 (voice).Supplementary InformationBackground

The 2018 Farm Bill reauthorized and amended ACEP. The 2018 Farm Bill authorized the use of the existing regulations that had been implemented under the ***Agricultural*** Act of 2014 for the remainder of FY 2019 to the extent that those regulations were consistent with the 2018 Farm Bill changes.

On January 6, 2020, CCC published an interim rule with request for comments in the Federal Register (85 FR 558-590) that implemented mandatory changes made by the 2018 Farm Bill or that were required to implement administrative improvements and clarifications. This final rule adopts, with minor changes, the interim rule.Discussion of ACEP (7 CFR part 1466)

ACEP helps farmers and ranchers preserve their ***agricultural*** ***land*** and restore, protect, and enhance wetlands on eligible ***lands***. The program has two components:

(1) ***Agricultural*** ***land*** easements (ACEP-ALE); and

(2) Wetland reserve easements (ACEP-WRE).

The Secretary of ***Agriculture*** delegated authority to the Chief, NRCS, to administer ACEP.

Through ACEP-ALE, NRCS provides matching funds to eligible entities that are State, Tribal, and local governments, and nongovernmental organizations with farm and ranch ***land*** protection programs, to purchase ***agricultural*** ***land*** easements. ***Agricultural*** ***land*** easements are permanent or for the maximum duration authorized by State law.

Through ACEP-WRE, NRCS protects wetlands on eligible ***lands*** by purchasing an easement directly from eligible landowners or entering into 30-year contracts on acreage owned by Indian Tribes, in each case providing for the restoration, enhancement, and protection of wetlands and associated ***lands***. Wetland reserve easements may be permanent, 30-years for acreage owned by Indian Tribes, or the maximum duration authorized by State law.

Participation in either ACEP-ALE or ACEP-WRE is voluntary.

The interim rule:

Incorporated changes to the ACEP purposes to limit nonagricultural uses that negatively affect ***agricultural*** uses and conservation values; Added language to specify general monitoring responsibilities under ACEP-ALE and ACEP-WRE; Removed references to the Regional Conservation Partnership Program (RCPP) as the 2018 Farm Bill revised RCPP as a stand-alone program, which is now in 7 CFR part 1464; Added definitions to reflect 2018 Farm Bill changes: Buy-protect-sell (BPS) transaction, monitoring report, wetland restoration, easement administration action, grazing management plan, and nonindustrial private ***forest*** ***land***; Removed definitions for: Active ***agricultural*** production, ***forest*** ***land***, ***forest*** ***land*** of statewide importance, and projects of special significance; Made changes to easement administration actions, including specifying the criteria that apply to each type of easement administrative actions; Made revisions to the environmental markets section in response to the 2018 Farm Bill; Removed the requirement that an eligible entity provide evidence at the time of application that they have funds available to meet the minimum cash contribution requirement; Eliminated the requirement that ***land*** with a certain amount of ***forest*** ***land*** have a ***forest*** management plan; Replaced the term “proposed” with “permitted” in text about the types of rights-of-way, infrastructure development, or other adjacent ***land*** uses whose impacts may cause ***land*** to be considered ineligible; Specified that under a BPS transaction, the eligible entity for meeting payment eligibility requirements (highly erodible ***land*** and wetland conservation, and Adjusted Gross Income (AGI)) is the landowner unless the eligible entity sells the fee title to a qualified farmer or rancher prior to, or at the time of, the easement closing, in which case the farmer or rancher purchaser must meet payment eligibility requirements; To address BPS transactions, specified that eligible ***lands*** owned by the eligible entity may be eligible for enrollment if the ***land*** is owned, on a transitional basis, to protect the ***land*** through securing an ***agricultural*** ***land*** easement on the ***land*** and to transfer fee title ownership to a farmer or rancher; Specified eligibility requirements related to BPS transactions; Specified that NRCS will consider eligible entity cash contribution toward the easement purchase price and measures to increase ***agricultural*** viability as ranking criteria; Specified that appropriate terms and conditions must be included in the easement deed to address items agreed to by the eligible entity as a matter of ranking and basis for selection for funding; Removed the requirement for the eligible entity to contribute its own cash resources in an amount equal to 50 percent of the amount of the Federal share; Specified the incurred costs by the eligible entity associated with securing a deed to the easement that may be included in the calculation of the non-Federal share, and that the source and limit of other costs that may be included in the calculation of the non-Federal share; Removed reference to the availability of waivers for grasslands of special environmental significance since the specific eligible entity cash contribution requirement was removed; Added specificity to the right of enforcement conveyed to NRCS under the terms of an ***agricultural*** ***land*** easement; Removed the requirement that the ***agricultural*** ***land*** easement be subject to an ACEP-ALE plan; Specified the terms and conditions required by statute that must be addressed if the eligible entity chooses to allow subsurface mineral development on the ***land*** subject to the ***agricultural*** ***land*** easement; Revised the requirement for a conservation plan on highly erodible cropland; Provided that an eligible entity may include terms and conditions in the ACEP-ALE deed that are intended to keep the ***land*** subject to the easement under farmer or rancher ownership; Removed the stand-alone section regarding ACEP-ALE plans and captured in other sections the provisions related to development of required conservation plans or development of ACEP-ALE plans as agreed-to by the eligible entity; Incorporated two new categories under which an eligible entity may demonstrate that they meet the ACEP-ALE certification requirements and revised the criteria to require a minimum of 10 ***agricultural*** ***land*** easements under ACEP-ALE, or predecessor NRCS easement programs, for all eligible entities seeking certification; Specified the circumstances under which NRCS may exercise its right of enforcement under ACEP-ALE, including its right of inspection; Increased the percent of acres of total cropland in a county that may be subject to an ACEP-WRE easement to 15 percent; Removed the requirement for NRCS to seek input from the Secretary of the Interior at the local level in the determination of eligible ***land***; Included water quality as an additional priority along with the priority placed on acquiring wetland reserve easements based on the value of the easement for protecting and enhancing habitat for migratory birds and other wildlife; Specified that grazing under reserve grazing rights wetland reserve easement or 30-year contract must comply with a wetlands reserve plan of operations (WRPO) developed by NRCS, which may include a grazing management plan component, and identified that the plan may be reviewed and modified as necessary, at least every 5 years; and Included new provisions related to the evaluation and authorization of compatible uses on wetland reserve easements, including that in evaluating and considering compatible uses NRCS will consider whether the use will facilitate the practical administration and management of the easement or contract area and ensure that the use furthers the functions and values for which the ***land*** was enrolled.

Summary of ACEP Comments

The interim rule 60-day comment period ended March 6, 2020, and was extended to March 20, 2020, to provide the public an opportunity to consider the January 24, 2020, correction. Seventy commenters, including individuals, organizations, and agencies, submitted comments to regulations.gov NRCS reviewed the input from these 70 commenters in response to the rule and identified 576 comments contained within these 70 entries. NRCS reviewed these 576 comments and categorized and summarized them according to the topics identified below. The topics that generated the greatest response were on ALE ranking, ALE BPS transactions, and definitions.

Overall, the comments expressed general support for the changes made in the interim rule. Six comments were not relevant to the ACEP interim rule. Ten comments expressed general support for the regulation and three comments criticized the regulation in general. These comments did not include any recommendations for change.

NRCS appreciates all comments submitted and thanks each person and organization who expressed an opinion related to ACEP or the interim rule. NRCS will continue the endeavor to improve its customer service and the equitable dispensation of benefits under ACEP.

In this rule, the comments have been organized alphabetically by topic. The topics include:

ALE Buy-Protect-Sell Transactions; ALE Contribution Requirements; ALE Deed Requirements and Terms; ALE Entity Certification; ALE ***Land*** Eligibility Issues; ALE Planning; ALE Program Requirements; ALE Ranking; Definitions; Easement Administration Actions; Environmental Markets; Fund Allocations; Landowner Eligibility—AGI Limitation Waiver; Program Administration; and WRE Issues.

This final rule responds to the comments received by the public comment deadline and makes minor clarifying and related changes.ALE Buy-Protect-Sell Transactions

BPS transactions are arrangements under ALE, first authorized under the 2018 Farm Bill, between NRCS and an eligible entity where the entity owns or will own the ***land*** prior to the acquisition of the ***agricultural*** ***land*** easement on the property, and the eligible entity either:

(1) Sells fee title to the ***land*** to a farmer or rancher prior to or at easement closing; or

(2) Holds fee title at the time the ***agricultural*** ***land*** easement is conveyed on that ***land***, and transfers ownership of the ***land*** subject to the easement to a farmer or rancher not later than 3 years after the date of acquisition of the ***agricultural*** ***land*** easement.

NRCS received comments related to BPS transactions, several of which expressed support for allowing BPS transactions. Remaining comments were as follows:

Comment: NRCS received comment related to the requirement to sell at ***agricultural*** value except that eligible entities could charge qualified farmers or ranchers certain holding and transactions costs. These comments requested a change to the amount an eligible entity may charge the qualified farmer or rancher as part of the sale of the property, recommending either that the 10-percent limitation be removed or increased to 10 percent of the total fair market value (FMV) of the property rather than 10 percent of the ***agricultural*** value. Other comments recommended that the sale be based on appraised ***agricultural*** value (rather than lesser of appraised ***agricultural*** value or original purchase price) to avoid a potential windfall to the purchaser that might raise private benefit or other issues under federal tax law if the eligible entity is a nongovernmental organization.

Response: The 10-percent limit was identified because NRCS may have to recover costs if the conveyance includes more than “reasonable holding and transaction costs. ” It is consistent with industry standards and the use of a published upper limit ***removes*** the potential for arbitrary decision making and expensive challenges in cost recovery cases. Additionally, this transaction type aims to help farmers and ranchers gain access to affordable farmland, and a limit on the holding and transaction costs that may be charged to the farmer or rancher ensures that there is no circumvention of that intent.

A discussion of the federal income tax regulatory requirement that an organization described in section 501(c)(3) of the Internal Revenue Code (IRC) operate for the benefit of public rather than private interests is outside the scope of both the jurisdiction of the United States Department of ***Agriculture*** and this rule. For more information about the requirements applicable to tax-exempt organizations, including those described in section 501(c)(3) of IRC, visit the IRS's Charities and Nonprofits page at [*www.irs.gov/charities-and-nonprofits*](http://www.irs.gov/charities-and-nonprofits).

The ACEP statute requires the sale to be at “***agricultural*** value” plus any reasonable holding costs. A sale at FMV assumes that the impact of the placement of the easement on the ***land*** will result in the highest and best use of the ***land*** being ***agriculture***, and thus ***agricultural*** value. The alternative value, the purchase price at which the entity purchased the ***land***, would have been at most, theoretically, FMV of the ***land*** without being encumbered by the easement. If the original purchase price of the property was less than FMV of the ***land*** encumbered with the easement, then ACEP assistance through a BPS arrangement is not necessary for the entity to have a viable transaction that would result in the same outcome and could occur without an investment of taxpayer funds.

This requirement ensures that eligible entities do not profit from the BPS transaction at the cost of the qualified farmer or rancher. The provision requiring the eligible entity to sell the property at the original purchase price, if lower than the appraised ***agricultural*** value, was similarly included to help farmers and ranchers gain access to affordable farmland. NRCS has clarified in the regulation that appraised ***agricultural*** value means ***agricultural*** value of the ***land***. An eligible entity should seek tax or legal advice if a particular transaction, due to the entity's unique circumstances, could jeopardize its tax-exempt status. In those instances, the entity can move forward independently without ACEP assistance, especially if the entity would make a profit from the subsequent ***land*** transfer, which would negate the need for Federal funds.

No change is made to the regulation in response to this issue.

Comment: NRCS received comment requesting that the pre-closing transfer of BPS easements should allow for advance payments in addition to reimbursements.

Response: NRCS selected the reimbursement-only approach for pre-closing BPS transactions as it reduces the risk for cost-recovery by allowing NRCS and the entity to ensure the transaction meets all requirements prior to NRCS providing cost-share assistance. To ensure this risk is minimized across all BPS transactions, NRCS has clarified that payment of the Federal share will occur on a reimbursable basis for all BPS transaction types. Even under standard (non-BPS) ALE transactions, an advance payment may only be issued 30 days prior to closing. Therefore, the amount of time the eligible entity could be in receipt of easement funds in advance of the easement closing under the requested approach is minimal, whereas the reimbursement-only approach for BPS transactions significantly reduces risk and increases administrative savings for both the eligible entity and the Government. The regulation has been updated to make the Federal share payment provision more consistent across the BPS transaction types.

Comment: NRCS received comment related to adjusted gross income (AGI) waivers; two comments suggested adding AGI waivers for entities involved in BPS transactions who play an intermediary role as landowner. Another comment suggested automatically waiving AGI for BPS transactions because entities only act as pass-through organizations for the purpose of the contract.

Response: The requesting and granting of AGI waivers for landowners that the Farm Service Agency (FSA) has determined do not meet the AGI limitations must ultimately be addressed prior to providing ACEP funds. Determinations to waive AGI for landowners that do not meet the AGI limitations, as set forth in 7 CFR part 1400, must be based on a case-by-case basis. NRCS policy addresses when NRCS makes its eligibility determinations, including AGI, based on the BPS transaction type and provides maximum flexibility with respect to the timing of conducting AGI determinations. No change is made to the regulation in response to this issue.

Comment: NRCS received comment regarding the length of ACEP-ALE agreements for BPS transactions, including request for an extension beyond the 3-year ACEP-ALE agreement length (and 12-month extension) for post-closing transfers to a qualified buyer or an extension to a 5-year agreement length.

Response: NRCS provides a period of 3 years, plus a potential additional 12 months, to find a qualified buyer, in addition to the initial 2-year period provided to close on the easement, for a total of 6 years for an individual transaction. NRCS selected the 12-month extension for several reasons, largely based on the administrative burden associated with extending transactions further.

Additionally, NRCS recognizes that post-closing BPS transactions compete for the same ACEP funds that otherwise would be available to protect ***land*** that is already owned by a private or Tribal landowner or qualified farmer or rancher. Under a post-closing BPS transaction, until transfer to a qualified farmer or rancher takes place, the intended purposes of ACEP for which the Federal funds have been invested, are not fully realized. If the property is not ultimately transferred, then those Federal funds have been rendered unavailable for 5 to 6 years during which time they could have been used to protect another property that may have met ACEP purposes from the outset. Twelve months was chosen to ensure appropriate stewardship of Federal funds. No change is made to the regulation in response to this issue.

Comment: NRCS received comment requesting addition of an option to purchase at ***agricultural*** value (OPAV) for BPS agreements to maintain maximum flexibility.

Response: Encumbered ***land*** under a BPS transaction must be sold at ***agricultural*** value to a qualified farmer or rancher. The ACEP statute at 16 U.S.C 3865b(b)(4)(D)(i) specifically allows the inclusion of additional deed terms to keep the ***land*** subject to the ALE under the ownership of a farmer or rancher, which includes easement deeds that are part of a BPS transaction. However, NRCS must provide oversight to ensure that the use of an OPAV term in BPS transactions does not create an incentive for strawman sales to a qualified farmer or rancher just to meet statutory BPS requirements and then have the qualified farmer or rancher sell the ***land*** immediately back to the entity at ***agricultural*** value under the OPAV term. No change is made to the regulation in response to this issue.

Comment: NRCS received comment recommending modification of the penalty for failure to complete BPS transactions to a sliding scale of restitution rather than full repayment.

Response: The ACEP statute requires that the “Secretary shall be reimbursed for the entirety of the Federal share of the cost of the ***agricultural*** ***land*** easement by the eligible entity if the eligible entity fails to transfer ownership. ” NRCS does not have any flexibility with respect to the level of restitution and therefore no change is made to the regulation in response to this issue.

Comment: NRCS received comment requesting that eligibility for BPS transactions be expanded to include ***land*** owned by State and local governments.

Response: The statute identifies “eligible ***land***” as “private or tribal ***land***,” which ***land*** owned by a State or local government is not. However, this limitation does not preclude the involvement of a State or local government in a BPS transaction. A state or local government can serve as the interim easement holder while a non-governmental-eligible entity serves as the landowner until the ***land*** can be transferred to a qualified farmer or rancher. No change is made to the regulation in response to this issue.

Comment: NRCS received comment requesting that, in the development of its policy for BPS transactions, the entity not be required to identify the landowner or sale price during the application and agreement phase.

Response: NRCS does not require the identification of the landowner or sale price during the application phase. The timing of the identification of the landowner and the sale price is specified in the ALE-agreement terms and based on the specific BPS transaction type as either a pre-closing or post-closing transfer. No change is made to the regulation in response to this issue.

Comment: NRCS received comment requesting that ***land*** eligibility provisions be changed for BPS transactions, including ***removal*** of the “imminent threat” test example or addition of “advancing program goals” as a basis for eligibility.

Response: To align with the “Conference Report to Accompany H.R 2—***Agriculture*** Improvement Act of 2018” (Managers' Report), the ACEP-ALE “eligible ***land***” definition for BPS transactions was modified to “allow for ***agricultural*** ***land*** to be owned by an eligible entity on a transitional basis to qualify for program participation, provided that the ***land*** subject to the ***agricultural*** ***land*** easement be transitioned to farmer or rancher ownership within 3 years. ” Due to the transitional nature of this ownership, there are risks that the Federal investment in ACEP-ALE benefits will not be fully realized, risks that do not exist with standard ALE transactions. However, in some circumstances, such as an imminent threat of development, this risk is outweighed by the benefit of placing an easement on ***land*** not owned by an otherwise eligible private or Tribal landowner at the time the Federal funds are invested in the easement.

NRCS therefore states in the ACEP regulation that, to be eligible for a BPS transaction, the ***land*** must be subject to conditions that necessitate the ownership of the parcel by the eligible entity on a transitional basis prior to the creation of an ***agricultural*** ***land*** easement, and that these conditions may include ***land*** subject to an “imminent threat of development, including, but not limited to, planned or approved conversion of grasslands to more intensive ***agricultural*** uses. ” Other conditions may also satisfy that requirement. NRCS made a slight editorial clarification in the regulation with respect to the requirement that the eligible entity must, within 12-months of the BPS agreement, have completed the initial purchase of the ***land*** or have demonstrated that completion of the purchase of the ***land*** is imminent.

No other change is made to the regulation in response to this issue.

Comment: NRCS received comment on the issue of merger of title in BPS transactions, including comment recommending deed term stating merger does not apply. Another comment encouraged NRCS and Office of the General Counsel to rely on an opinion of counsel eligible to practice in the State in which the ALE project is located to the effect that no merger would result through the transaction if the eligible entity: (1) Developed strong anti-merger language to allow it to grant an ***agricultural*** ***land*** easement to itself while still holding the fee title to the property, and then (2) reaffirmed the ***agricultural*** ***land*** easement at the time the eased parcel is sold to a farmer or rancher.

Response: ACEP-ALE is a nationwide program and State law varies on the effectiveness of an anti-merger clause; however, in general, entities may include a no merger clause in ALE deeds. However, NRCS does not believe that the combination of an anti-merger clause with the suggested attorney's opinion sufficiently allows an eligible entity to temporarily hold the easement and the underlying fee at the same time. NRCS contemplated this proposed BPS transaction structure in response to previous public comments. The comment received does not introduce new information resulting in a different determination with respect to the legal issues of easement creation, as an easement, by definition, are the rights held by someone in the ***land*** owned by another and is created at the time of the transfer to the other person.

The article supplied by the respondent reaffirmed this concept by identifying cases where courts determined that the doctrine of merger was not applicable due to the transfer of an easement to a third party. Merger of title addresses the extinguishment of an easement right due to a subsequent acquisition of fee title, while the BPS transactions present issues of easement creation. In addition to these issues, the conflict of interest inherent in this type of ownership scenario, which would impact enforcement, monitoring, and management of the easement and property, would not be mitigated by including an anti-merger provision. No change is made to the regulation in response to this issue.

Comment: NRCS received comment that parcel substitutions for BPS transactions should be allowed.

Response: Due to the unique and complex nature of BPS transactions, the ALE agreement includes terms that are specific to the individual transaction and ultimately constitute the `legal arrangement' being entered into `relating to ***land*** owned . . . by an eligible entity' for the purchase of an ***agricultural*** ***land*** easement on that particular piece of ***land***. In contrast, the terms of the standard ALE agreement and contract appendix are applied universally to every parcel funded. No change is made to the regulation in response to this issue.

Comment: NRCS received comment recommending that changes to transaction type (pre-closing versus post-closing transfer) be allowed after entering into agreement.

Response: NRCS identified two types of BPS transactions in the interim rule: pre-closing and post-closing transfers, which are differentiated based on the timing of the sale of the fee title interest in the ***land*** to a qualified farmer or rancher relative to the timing of securing the ***agricultural*** ***land*** easement. The regulation specifies the requirements and ALE-agreement terms that apply to both types. NRCS will address in the terms of the ALE agreement how an eligible entity may request a modification to an ALE-agreement to change between these two types of BPS transactions. No change is made to the regulation in response to this issue.

Comment: NRCS received comment requesting clarification in the preamble as to whether a qualified farmer or rancher includes those who do not file a Schedule F, such as a farmer in an S corporation.

Response: IRS Form 1040 or 1040-SR, Schedule F, “Profit or Loss from Farming,” is the preferred documentation and is consistent with other NRCS and USDA programs. However, NRCS will also consider circumstances in which other forms of IRS documentation identifying the landowners' engagement in an ***agricultural*** operation may be appropriate.ALE Contribution Requirements

Under both the 2014 and 2018 Farm Bills, NRCS may provide a Federal share that does not exceed 50 percent of the FMV of the ***agricultural*** ***land*** easement and requires the eligible entity to provide a share at least equivalent to that provided by NRCS, except in the case of grasslands of special environmental significance. For grasslands of special environmental significance, NRCS may provide a Federal share that does not exceed 75 percent of the easement FMV and the non-Federal share requirement is adjusted accordingly. The 2018 Farm Bill removed the 50-percent cash contribution requirement on the part of the eligible entity and identified permissible sources of the non-Federal share. NRCS received the following comments.

Comment: NRCS received comment in support of ***removing*** the requirement for the eligible entity to provide a minimum cash contribution toward the purchase of the ***agricultural*** ***land*** easement and allowing donations of ***land*** by the landowner and eligible entity expenses for procured items to satisfy the non-Federal share requirements. Other comments did not support eligible entities no longer being required to provide a minimum cash contribution.

Response: The regulatory changes follow requirements of the 2018 Farm Bill. No change is made to the regulation in response to this issue.

Comment: NRCS received comment suggesting changes to how NRCS structured the non-Federal share in the regulation. They asked that the “and” at the end of the list be replaced with an “or. ”

Response: NRCS is clarifying that the sources comprising the non-Federal share are listed in order, and proceeding through the list, once the minimum non-Federal share amount is met, additional sources and amounts do not need to be identified.

Additionally, given that an eligible entity's contribution may be related to cash resources expended for the purchase of the ***land*** prior to the easement transaction, NRCS has clarified in the regulation that for BPS transactions, part of the non-Federal share provided by an eligible entity may include that portion of the fair market value of the ***agricultural*** ***land*** easement that is not provided as the Federal share.

Comment: NRCS received comment requesting clarification about the timing and the type of documentation that would be required for procured costs incurred by the eligible entity if relied upon to meet the non-Federal share requirement.

Response: The regulation states that documentation requirements for procured costs are included in the ALE agreement. NRCS recognizes that, at the time of agreement, costs for procured items are estimated amounts and have not yet been incurred. Such estimates are needed in order to calculate the amount of the Federal share that may be obligated. No change is made to the regulation in response to this issue.

Comment: NRCS received comment requesting that baseline reports and mineral assessments be added to the list of procured costs that may be included in the non-Federal share.

Response: NRCS added baseline reports and mineral assessments to the list of items that may be included in the non-Federal share if these items are procured by the eligible entity from third parties.

Comment: NRCS received comment asking that a Federal share of up to 75 percent of easement costs be provided in communities that do not have eligible entities present.

Response: The statute limits NRCS's authority to provide a Federal share of up to 75 percent of the easement value to grasslands of special environmental significance only. No other types of transactions are authorized to receive up to 75 percent of the easement value, including transactions that occur in communities that do not have an eligible entity present. No change is made to the regulation in response to this issue.

Comment: NRCS received comment requesting a change to clarify that the non-Federal share provided by the eligible entity for ACEP-ALE grasslands of special environmental significance must comprise the difference between the Federal share and the remainder of the FMV. The comment requested ***removal*** of the provision that, in the event the non-Federal share provided by the eligible entity is less than such amount, NRCS will provide a Federal share equivalent to the non-Federal share being provided.

Response: The interim rule mirrors the statute. Additionally, the language allows for the possibility that, in the event that the non-Federal share provided by the eligible entity does not comprise the difference between the Federal share and the remainder of the FMV of the easement, NRCS could still provide a lesser amount that is equivalent to the non-Federal share. Although this is unlikely, ***removing*** the language from the regulation would eliminate this possibility. No change is made to the regulation in response to this issue.ALE Deed Requirements and Terms

NRCS received comment related to the topic of ALE deed requirements and deed terms as follows:

Comment: NRCS received comment related to the ALE deed template review, recommending that the deed template review be limited to ensuring that the minimum deed terms are incorporated and that other terms are not contrary to the purpose of ACEP.

Response: The NRCS review of ALE deed templates focuses on ensuring that minimum deed terms (MDT) are incorporated and ensuring other terms are not contrary to the purpose of the program. Review of other items may be necessary to ensure that the document will work effectively as a template for the acquisition of ***agricultural*** ***land*** easements on multiple parcels. No change is made to the regulation in response to this issue.

Comment: NRCS received comment about deed provisions related to ***agricultural*** use, including a request to strike the phrase “consistent with ***agricultural*** use” and replace it with the phrase “does not negatively affect ***agricultural*** use” as to commercial uses. Another comment recommended that NRCS limit its ability to impose greater deed restrictions in instances where the State definition of ***agricultural*** uses may result in the degradation of the soils, ***agricultural*** nature of the ***land***, or related natural resources.

Response: This phrase `consistent with ***agricultural*** use' is unchanged from the previous ACEP regulation and is expansive enough to apply to farmland and grassland enrollments and is sufficient to prevent commercial uses that may negatively affect ***agricultural*** uses. NRCS may impose deed restrictions needed to ensure ACEP-ALE purposes will be met in exchange for the Federal investment. No change is made to the regulation in response to this issue.

Comment: NRCS received comment expressing general support for various elements of the deed requirements set forth in the interim rule, including commending NRCS for the revised mineral development language; language regarding an entity's use of their own deed terms and conditions; and supporting the U.S right of enforcement and right of inspection language in the interim rule.

Response: NRCS thanks respondents for their input. No change is made to the regulation in response to these issues.

Comment: NRCS received comment related to amendment clauses that must be included in each ***agricultural*** ***land*** easement deed, recommending splitting the amendment provision in the regulation to avoid confusion between “amendments” and the various types of easement administration actions (subordination, modification, exchange, and termination actions).

Response: NRCS appreciates the request for clarification regarding the requirement that each ***agriculture*** ***land*** easement deed include clauses that address amendments or changes that may occur after recordation of the easement. To clarify, NRCS uses the term “amendment” in the regulatory deed requirement in § 1468.25(d)(4) broadly to include each type of easement administration action: Subordination, modification, exchange, and termination. In practice, NRCS provides two separate clauses in the minimum deed terms to address this regulatory deed requirement and fully encompass the various types of easement administration actions. NRCS revised the text in the final rule to clarify and ***remove*** ambiguity regarding the various types of changes to the easement deed or easement area that must be approved in advance by NRCS.

Comment: NRCS received comment regarding the interim rule's impervious surface limitations that must be specified in ACEP-ALE easement deeds, including comments recommending that NRCS authorize a blanket impervious surface waiver to ACEP-ALE easement deed language and cap the waiver authority at 5 percent of the easement area.

Response: The impervious surface limitation and the current cap are well-established. NRCS explained in prior rulemakings the basis for its use of a 2-percent limitation and the flexibility of having a waiver that allows up to 10 percent based upon site-specific factors. In particular, this limitation provides a reasoned balance between ensuring the future capacity of ***agricultural*** ***land*** use with flexibility to allow for changes to the ***agricultural*** operation.

NRCS requires a parcel-by-parcel determination because impervious surface limitations are site-specific. NRCS will not approve a blanket waiver or grant eligible entities a right to create blanket waivers for a greater impervious surface limit.

However, there is an existing waiver option available that may have been underutilized. Specifically, when an eligible entity has a waiver process consistent with NRCS limitations and it is based on parcel-by-parcel determinations made by the entity, the entity may request authority from NRCS to use its own process. In this case, separate individual parcel waivers from NRCS would not be necessary.

No change is made to the regulation in response to this issue.

Comment: NRCS received comment regarding the subsurface mineral deed provisions. The comments requested:

A requirement that native plants be used to remediate subsurface mining impacts; A requirement that involves State technical committees when determining impact of mineral development; That NRCS seek guidance on timing and responsibility for the development of the subsurface development plan; and That NRCS provide flexibility in the identification of de minimis gravel extraction sites.

Response: NRCS recognizes the preference for the use of native plants for remediating sites in general, but the determination of the appropriate vegetation for any particular easement must be based upon site-specific factors.

While the State technical committee can provide input on the impact of mineral development to particular ***land*** uses or locations in the State, such input would be inappropriate on an individual easement basis.

The eligible entity is responsible for providing the subsurface mineral development plan to NRCS, which must be approved by NRCS prior to initiation of the mineral development activity, as set forth in § 1468.25(d)(7)(v).

The de minimis gravel extraction matter is not a regulatory issue but the comment responds to text that exists in the current minimum deed terms.

NRCS would like to clarify that de minimis gravel extraction is through surface methods and therefore not encompassed by the subsurface mineral deed. Additionally, the current minimum deed terms authorize such de minimis gravel extraction for on-farm purposes. No change is made to the regulation in response to these issues.

Comment: NRCS received comment recommending that certified entities need not be required to seek NRCS approval for subdivision and other activities that currently require NRCS approval under regulatory deed requirements and allow only notice to NRCS of these actions as sufficient.

Response: The interim rule language did not change from prior rules. Certified entities have broad discretion already but still must meet regulatory deed requirements. NRCS, as a fiduciary, must approve those actions that can so fundamentally affect program purposes.

Comment: NRCS received comment with respect to the requirement of the United States right of enforcement in the ***agricultural*** ***land*** easement deed, including request that a reference to § 1468.28 be added to the right of enforcement definition, recommendation that the word “contingent” should be inserted before the term “United States right of enforcement”, and a statement that the right of enforcement does not include the ability of the NRCS enforce the terms of an ALE plan if such a plan exists.

Response: NRCS removed the term “contingent” many years ago to ***remove*** confusion that such right is a currently vested right. The term “contingent” indicates that NRCS's exercise of its right of enforcement is conditioned on particular events. It does not mean that the right itself is contingent, such that it would only be vested upon some future event.

NRCS has not included any cross references to the various sections which relate to the United States right of enforcement in the definition itself since such cross-referencing is unnecessary.

***Agricultural*** ***land*** easements acquired under the 2018 Farm Bill are not required to have or be subject to an ALE plan. NRCS enforces highly erodible ***land*** conservation plans on highly erodible cropland as required by the ACEP-ALE statute; however, NRCS does not otherwise identify in the regulation the enforcement of an ALE plan.

No change is made to the regulation in response to this issue.

Comment: NRCS received comment stating that the statutory requirement of providing notice and right to participate when exercising the right of inspection should be added to the rule and deed terms.

Response: The circumstances under which NRCS may enter upon and inspect an easement pursuant to the United States right of enforcement is included in the full right of enforcement clause provided to all eligible entities and must be used in all ACEP-funded ***agricultural*** ***land*** easement deeds. The ACEP regulation clarifies that NRCS will provide the ***agricultural*** ***land*** easement holder and the landowner a reasonable opportunity to participate if NRCS exercises its right of inspection.

Comment: NRCS received comment recommending that deed terms should allow site potential tree height (SPTH) ***forested*** riparian buffers as a permissible provision in western Washington.

Response: The ACEP regulation includes a “catch-all” provision that allows States to have additional minimum deed terms. NRCS recommends that the commenters and any stakeholders with similar concerns should work with their applicable State Conservationist. No change is made to the regulation in response to this issue.

Comment: NRCS received comment related to how the ALE-agreement references the deed requirements.

Response: The ALE agreement must specify the deed requirements as set forth in the regulation so that they are enforceable.ALE Entity Certification

NRCS received comment related to ALE entity certification as follows:

Comment: NRCS received comment on the term of agreements with certified eligible entities recommending that NRCS allow for a minimum 5-year term.

Response: NRCS is changing the regulatory language in response to this comment to specify that agreements with certified entities will be for a minimum of 5 fiscal years following the fiscal year the agreement is originally executed, but may not exceed 7 fiscal years following the fiscal year the agreement is originally executed. NRCS has found that an upper limit is necessary to limit the administrative burden associated with implementing agreements that cross different farm bills.

Comment: NRCS received comment urging NRCS to expand eligibility for certification for State agencies, recommending a broadening of language for which types of prior conservation easements would be counted, and requesting that NRCS drop the number of required prior conservation easement transactions from 10 to 5.

Response: The terms for certification of State agencies are set forth in statute, including the type of easements that can be counted and the number of prior transactions required, and NRCS does not have discretion to waive or amend those provisions. No change is made to the regulation in response to this issue.

Comment: NRCS received comment requesting additional guidance on the entity certification process, including evaluation criteria, how NRCS will address partnerships between certified and non-certified eligible entities, what technical assistance NRCS may provide to certified entities (with regards to things like title review and appraisal), the benefits of certification, and the definition of a plan for administering easements. The comment detailed recommendations about the kind of transparency NRCS should have for its process and the timeline. Another comment requested a streamlined process for certifying eligible entities, including State agencies and ***land*** trusts.

Response: The internal certification review process is found at 440 Conservation Programs Manual (CPM) Part 528 and may be accessed at [*https://directives.sc.egov.usda.gov/*](https://directives.sc.egov.usda.gov/). NRCS will continue its ongoing efforts to streamline processes through new business tools to be as efficient and effective in program delivery as possible while operating within legal authorities. NRCS will continue to make publicly available any new policy or guidance. No change is made to the regulation in response to this issue.

Comment: NRCS received comment expressing support for changes made in the interim rule to the entity certification process.

Response: NRCS appreciates this support.ALE ***Land*** Eligibility Issues

NRCS received comment related to ALE ***land*** eligibility as follows:

Comment: NRCS received comment about ***forest*** ***land*** eligibility issues. Many supported maintaining the two-thirds limitation on non-industrial private ***forest*** ***land*** (NIPF) eligibility under ACEP-ALE and offered that programs like the Regional Conservation Partnership Program (RCPP), Healthy ***Forests*** Reserve Program (HFRP), and ***Forest*** Legacy Program can all be used currently to protect ***forest*** ***lands***. Another comment requested the two-third limitation on NIPF in ACEP-ALE be struck.

Response: To minimize duplication, overlap, and conflict with other USDA ***forest*** easement programs, the interim rule and this regulation maintain the existing eligibility provision that ***land*** enrolled in ACEP-ALE cannot include NIPF greater than two-thirds of the ACEP-ALE easement area unless waived by NRCS with respect to ***forest*** ***lands*** dedicated to sugar bush that contribute to the economic viability of the parcel.

NRCS specifically requested public comment in the interim rule on whether RCPP or HFRP could protect ***lands*** on which NIPF is the predominant use at levels beyond the scope of ACEP-ALE. Regarding the two-third limitation, NRCS cannot authorize parcels that are 100 percent NIPF because statutory eligibility criteria is phrased as NIPF contributing to the economic viability of an offered parcel or serving as a buffer to protect ***land*** from development. Thus, the eligibility of NIPF is in relationship to other eligible ***land***. This has long been NRCS's interpretation of this eligibility criterion under ACEP-ALE and its predecessor Farm and Ranch ***Lands*** Protection Program. Congress specifically rejected language that would have expanded eligibility in the 2018 Farm Bill. NRCS concurs that the availability of other USDA easement programs that specifically protect ***forested*** ***lands*** warrants the continued focus of ACEP-ALE more broadly on other ***agricultural*** ***lands***. No change is made to the regulation in response to this issue.

Comment: NRCS received comment about the definition of grasslands of special environmental significance (GSES) under ACEP-ALE, including support for the definition of GSES and the prioritization and management of native vegetation and habitats in relationship to GSES. A comment also encouraged the return of ***land*** to heritage marshes and vernal pools wherever possible on GSES enrollments. Another comment supported allowing only native vegetation to be categorized as GSES.

Response: NRCS believes that the current GSES definition supports the recommendation about prioritization of native vegetation and habitat. In particular, the GSES definition identifies sensitive or declining native prairie or grassland types or grasslands buffering wetlands. However, there are grasslands that, while not native vegetation, provide critical habitat for at-risk species that warrant the increased Federal investment to protect. Thus, NRCS will not limit GSES to native vegetation only. No change is made to the regulation in response to this issue.

Comment: NRCS received comment related to ALE ***land*** eligibility, including:

A request that confined animal feeding operations (CAFOs) not be eligible for an ALE-funded easement; A comment addressing the ineligibility criteria related to on-site and off-site conditions; A comment commending NRCS for including criteria related to permitted rights-of-way and requesting that NRCS clarify how off-site conditions are deemed suitable for the purpose of making ALE ***land*** eligibility determinations; A comment requesting that NRCS broaden the definition of access and the eligibility requirements so that air access can qualify; and A comment requesting additional clarification as to whether a farmer or rancher can participate in both ALE and Conservation Reserve Program (CRP).

Response: For any proposed easement containing a CAFO, the confined area is a heavy use area that must be evaluated by NRCS to determine if the on-site or off-site conditions render the site ineligible and make a determination as to whether the ***land*** meets the required ***land*** eligibility criteria. This is a case-specific determination and broad categorization of ***land*** eligibility simply based on type of operation is not appropriate. NRCS has set forth in national policy, which is publicly available, the procedures and forms NRCS uses to make ***land*** eligibility determinations for ACEP-ALE, including assessing the potential of onsite and offsite conditions to undermine the purposes of ACEP. Ultimately, ***land*** eligibility determinations are site-specific and rely upon programmatic and technical assessments based on criteria set forth broadly in national policy and more specifically at the State level. For more information, see: 440 CPM part 528 at [*https://directives.sc.egov.usda.gov/*](https://directives.sc.egov.usda.gov/).

Legal access to ***agricultural*** ***land*** easements is critical to the ability of the eligible entity, and NRCS, under its right of enforcement, to monitor and enforce the terms of the easement and ensure that program purposes are achieved. Effective monitoring and enforcement ultimately require ground inspection and verification. Access to an easement that can only be achieved by aircraft would require both the eligible entity and NRCS to maintain, in perpetuity, aircraft that can provide personnel access to monitor and ***land*** on the easement property and would require the landowner to maintain, in perpetuity, a ***landing*** strip or helipad on the property. NRCS does not maintain its own aircraft for easement monitoring purposes and cannot evaluate the safety and suitability of aircraft owned by the eligible entity or the landowner's ***landing*** strip or helipad. All ***lands*** that do not have sufficient legal, physical access are ineligible to receive Federal funds under ACEP, including those that are only accessible by air.

The 2018 Farm Bill specifies that a farmer or rancher who owns eligible ***land*** subject to an ***agricultural*** ***land*** easement may enter into a CRP contract. Determinations of ***land*** eligibility for enrollment in CRP are under the purview of FSA and we have therefore shared the comment with FSA. No change is made to the regulation in response to these issues.ALE Planning

NRCS received comment related to ALE planning and ALE plans as follows:

Comment: NRCS received comment related to ALE planning generally and some of them urging NRCS to require a grassland management plan for grasslands of special environmental significance given the higher environmental value of these easements. Another comment recommended that NRCS continue to encourage planning on ALE easements, while a comment did not support how NRCS encouraged planning.

Response: The 2018 Farm Bill removed language requiring that ACEP-ALE easements enrolled under the 2018 Farm Bill be subject to an ALE plan, including grasslands of special environmental significance. However, in the Managers' Report, the Managers “encourage USDA and eligible entities to work with landowners entering into an ALE easement to undertake conservation planning activities on their ***land*** in order to maximize the environmental value of the protected ***land***. ” Therefore, NRCS will continue to encourage planning on ACEP-ALE enrollment, including grasslands of special environmental significance. No change is made to the regulation in response to this issue.

Comment: NRCS received comment strongly supporting the recognition ALE plan as a measure that maintains or increases the ***agricultural*** viability of the ***land*** in the ranking criteria, and identified that the ranking criterion should strongly weight ALE plans for grasslands of special environmental significance and that a plan should be required for any application that is prioritized based on carbon sequestration or climate change resiliency goals. Another comment expressed that an ALE plan should not be recognized in the ranking criteria because it is no longer required by statute.

Response: As described in the preamble of the interim rule, NRCS identified that the development and maintenance by the eligible entity of an ACEP-ALE plan could be a ranking consideration at the State level to prioritize applications from eligible entities. NRCS believes that conservation planning is the base upon which sound conservation stewardship originates. To eliminate support for planning would undermine the quality of stewardship that would be encouraged on ***lands*** in which the public provides a sizable financial investment. Additionally, as a ranking criterion this consideration does not prohibit eligible entities from being able to access program funding but instead acknowledges that eligible entities committed to long-term conservation planning are helping to ensure an ***agricultural*** ***land*** easement yields the greatest benefits for the landowner, conservation, and the public funds invested in that easement. No change is made to the regulation in response to this issue.

Comment: NRCS received comment related to the definition of the ALE plan, with some advocating for the ***removal*** of the ALE plan definition entirely because plans are no longer mandated by statute. Another comment supported the definition of ALE plans and commended NRCS for clearly defining that the plan is developed by the eligible entity and not as a component of the deed. Comment also expressed support for limiting conservation plans to only highly erodible croplands.

Response: NRCS supports conservation planning as the cornerstone of ***land*** stewardship efforts. NRCS retained the definition of the ALE plan in the ACEP regulation. No change is made to the regulation in response to this issue.ALE Program Requirements

NRCS received comment related to ALE program requirements as follows:

Comment: NRCS received comment requesting clarification as to how NRCS will determine if a landowner entity is compliant with AGI.

Response: NRCS uses the AGI eligibility determinations made by the FSA. NRCS accesses such determinations through the agencies' shared database services. No change is made to the regulation in response to this issue.

Comment: NRCS received comment related to the requirement that eligible entities must provide evidence of their financial capacity for transactions in which the non-Federal share does not include at least a 10-percent cash contribution from the eligible entity for payment of easement compensation to the landowner. Other comment requested ***removal*** of the requirement that the entity provide specific evidence of funds available for stewardship of the easement and suggested that entity eligibility requirements that apply to all ACEP-ALE transactions regardless of entity cash contribution amounts are sufficient. Other comment commended NRCS on including the requirement but requested clarification as to what would constitute specific evidence of funds available for stewardship.

Response: All entities must demonstrate capability and capacity as an eligibility requirement. Under the 2014 Farm Bill, NRCS could use an entity's ability to provide at least the required cash contribution amount for all ACEP-ALE transactions as an indication that the entity is able to meet capability and capacity requirements. Where an entity is unable to provide at least a minimum cash contribution, questions arise as to the entity's financial capacity to assume responsibility for the easement acquisition. NRCS has, therefore, specified in the regulation the conditions under which additional capability and capacity evidence will always be required. However, it is always the entity's responsibility to establish that it meets basic ACEP-ALE eligibility requirements and as identified in the rule, the entity must provide to NRCS sufficient information to establish that the applicable entity eligibility criteria have been met.

Comment: NRCS received comment recommending that the definition of a farm or ranch succession plan be expanded to include transfers of ***land*** and deeds to non-relatives and other long-term protections for ***agricultural*** productivity. Also, comment recommended specifying that successions plans may include options to purchase at ***agricultural*** value or preemptive purchase rights.

Response: The key part of a succession plan is that the landowner makes arrangements for the future management of the ***land*** as a farm or ranch once the landowner retires or dies. NRCS does not limit those types of arrangements. The definition of the succession plan in the regulation used intra-family succession agreements or business asset transfer strategies as examples. NRCS has added language to clarify that the examples included in the definition are not all-inclusive.

Comment: NRCS received comment related to the easement valuation methods available under ACEP-ALE, encouraging NRCS to provide guidance on information required for easement valuation methods used other than the Uniform Standards of Professional Appraisal Practice (USPAP) appraisals, including areawide market analysis or other industry-approved methods. Comment also expressed support for the current availability of ACEP-ALE valuation options beyond USPAP appraisals.

Response: NRCS provides guidance in policy with respect to what is required if an eligible entity elects to use an alternative easement valuation methodology, including a “Specification and Scope of Work for Areawide Market Analysis for ACEP-ALE. ” These items are published and publicly available in NRCS directive Title 440, Conservation Programs Manual (440-CPM), Part 528, Section 528.53, and in 440-CPM, Part 527, Subpart E, which can be accessed on the NRCS Electronic Directives system at [*https://directives.sc.egov.usda.gov/*](https://directives.sc.egov.usda.gov/). No change is made to the regulation in response to this issue.

Comment: NRCS received comment recommending that NRCS be required to consult with the State technical committee on ACEP-ALE prioritization for ranking, special eligibility, and all other State-decided criteria.

Response: Statutory authority states that State technical committees assist in implementation and technical aspects of conservation programs under Title XII of the Food Security Act, such as ACEP. Sections 1468.2 and 1468.22 of the ACEP interim rule incorporate this role, including that State technical committees provide input on the development of ranking criteria and other matters. No change is made to the regulation in response to this issue.

Comment: NRCS received comment related to the ACEP-ALE application process and the new option for ALE-program agreements, requesting that NRCS make the application form and new option for ALE-program agreements form more usable and that the process be streamlined. Other comments wished to have greater guidance about how producers could participate and supported the new ALE program agreement option and requested additional clarification regarding its availability.

Response: NRCS appreciates the complexity of easement transactions, including the extent of information that must be collected from applicants and participants on various program forms. NRCS has made several efforts to streamline the ACEP-ALE enrollment process. In FY 2020, NRCS released various new or updated forms used to administer ACEP-ALE. Additionally, NRCS piloted in fiscal year 2019 and is implementing more widely in fiscal year 2020 the use of ALE program agreements, making available several automated eligibility and payment processes previously only available to NRCS financial assistance programs. Also, the use of a program agreement framework under ACEP-ALE allows NRCS and eligible entities to more easily address enrollment changes, such as parcel substitution or acreage modifications. Since NRCS does not receive landowner applications directly for ACEP-ALE enrollment, NRCS will provide outreach to States to help landowners interested in ACEP-ALE identify eligible entities in their geographic area. No change is made to the regulation in response to this issue.

Comment: NRCS received comment recommending that NRCS allow water supply entities to participate in ACEP-ALE as eligible entities.

Response: An eligible entity must meet the definition of an eligible entity established by statute and incorporated into the ACEP regulation. NRCS does not have authority to expand the basic eligible entity definition. No change is made to the regulation in response to this issue.ALE Ranking

NRCS received comment related to ALE ranking as follows:

Comment: NRCS received comment related to ***removing*** the factor associated with national ranking criterion that takes into consideration whether the cash contribution is being provided by the eligible entity toward the payment of easement compensation to the landowner. Other comments:

Recommended consideration of State and local tax incentives be added to this factor; Recommended NRCS prioritization of landowner donation in the ranking; and Agreed with including the eligible entity's cash contribution in the ranking.

Response: The Managers report introduced flexibilities to provide better access to ACEP in States where conservation easement funding is limited. The Managers stated that they did not intend for NRCS to reject cash matches entirely but broadened the options available to eligible entities. NRCS recognizes that any time the eligible entity's cash contribution is reduced, the landowner receives less compensation for the sale of an easement on their ***land***, which may result in ACEP funds being the only funds paid to the landowner for the easement. Additionally, the increased donation by the landowner will frequently satisfy the minimum non-Federal share requirement under ACEP-ALE. By considering the cash contribution as a positive attribute in ranking, NRCS is encouraging enrollment while ensuring that ACEP is implemented equitably. Each State has the ability to calibrate the relative importance of cash contributions in the prioritization of applications for enrollment in that State. No change is made to the regulation in response to these issues.

Comment: NRCS received comment related to ranking priority for actions related to the future, ***agricultural***, and long-term viability of enrolled ***land***. Comment supported adding information to the succession plan portion of the ranking, such as specifically identifying OPAV, Purchase of Development Rights (PDR), and other succession planning options that maintain ***agricultural*** viability or awarding points for innovative succession requirements. Comment also:

Recommended expanding the ranking criteria to prioritize applications that increase opportunities for historically underserved farmers; Supported the maintenance of ***agricultural*** viability as a ranking criterion; including supporting its inclusion as both a national and State ranking factor; Suggested that such inclusion is duplicative; Recommended that ***agricultural*** viability be included in the national ranking criteria; and Recommended that succession planning be removed from the ranking criteria.

Response: Based on national and State ranking criteria in the ACEP regulation, NRCS at the State level develops ranking factors and associated weights. Broadly identifying State ranking criteria in the regulation provides the needed flexibility for States to develop the specific ranking criteria that best address State and local priorities. Regarding long-term maintenance of ***agricultural*** viability, the national ranking criteria ensures, consistent with the statute, that this criterion is considered in every ACEP-ALE application by assessing whether a succession plan exists.

The existence of State ranking criteria enables States to develop nuanced approaches to address long-term ***agricultural*** viability, which may include more specific identification or prioritization of certain types of succession plans or succession planning strategies. NRCS does not wish to limit ***agricultural*** landowners' choices or restrict who could be involved in succession planning. Such specificity is not necessary in the regulation itself.

NRCS includes in the regulatory definition of a farm or ranch succession plan strategies that create opportunities for historically underserved landowners. NRCS also includes a State ranking criterion related to the multifunctional benefits of farm and ranch ***land*** protection, of which social and economic considerations may be included.

No change is made to the regulation in response to these issues.

Comment: NRCS received comment about eliminating the potential for prioritization of applications for which eligible entities agree to use the ACEP-ALE minimum deed terms.

Response: In the interim rule, NRCS indicated that it may prioritize transactions where an eligible entity uses NRCS's standard set of minimum deed terms. This potential prioritization also existed for enrollment during the 2014 Farm Bill and its inclusion as a factor in the State's ranking criteria is at the State's discretion. An eligible entity's use of the standard set of minimum deed terms streamlines the easement approval process and eliminates the need for NRCS review of the conservation easement deed for individual transactions. The efficiency by which easement transactions are completed, including the use of available administrative streamlining options, is an appropriate consideration in ranking, and no change was made in this final rule. No change is made to the regulation in response to this issue.

Comment: NRCS received comment related to the State ranking criteria for multifunctional benefits for the protection of a particular farm or ranch, recommending that NRCS at the State level have the option to specify `other related conservation benefits' under this multifunctional benefits criterion. Comment also recommended adding `species of economic significance' to the consideration for at-risk species protection under this ranking criterion. Another comment recommended the criteria be `other related benefits,' striking `conservation' from the consideration, and other comments recommended that NRCS add ranking criteria about related conservation values.

Response: NRCS agrees that evaluating the multifunctional benefits that may result from parcel protection is an important prioritization criterion. NRCS has enumerated in the regulation some potential benefits that may be considered and has included `other related conservation benefits' to provide States with the flexibility to identify such conservation benefits and establish the associated ranking factors and priorities. NRCS believes the State ranking criterion is sufficiently expansive for NRCS to tailor ranking factors at the State and local level. No change is made to the regulation in response to this issue.

Comment: NRCS received comment and appreciation related to various State ranking criteria, including requesting that NRCS provide specific references to geographic differences for States to use in ranking. Other comment stated that prioritizing ***land*** in areas zoned for ***agricultural*** use may inadvertently exclude ***agricultural*** ***lands***. Comment also recommended that protection of native prairie and other native habitats, including protection or improvement of habitat for pollinators, be added to the State ranking criteria related to the diversity of natural resources to be protected or improved, and requested that riparian buffers be ranked as the highest ACEP-ALE priority.

Response: NRCS believes that the regulation provides a sufficient framework under which the various items brought forth in these comments can all be addressed at the State level with input from the State technical committee. No change is made to the regulation in response to these issues.

Comment: NRCS received comment related to various national ranking criteria. One comment indicated that it is contradictory to limit ***forest*** ***land*** enrollment to two-thirds of an easement area while also having the extent of forestland as part of a ranking criterion. Another comment encouraged NRCS to clarify in the regulation that it will use the `median' county average farm size and requested higher priority be given to parcels adjacent to existing easements or protected areas.

Response: Comment related to ***forest*** ***lands*** refers to the national ranking criteria for the percent of cropland, rangeland, grassland, historic grassland, pastureland, or nonindustrial private ***forest*** ***land*** permitted in a protected parcel. Each State is able to tailor the specific ranking factor to prioritize enrollment of ***land*** that contains the amounts and types of ***land*** and ***agricultural*** uses that are most at risk in their State. For example, a western State may establish the ranking factor to prioritize parcels with a larger percentage of historic grassland since those ***lands*** may be at the greatest risk of conversion. In contrast, a midwestern State may prioritize the percentage of cropland in a parcel since those ***lands*** may be at the greatest risk of conversion.

Comment regarding median county average farm size refers to the national ranking criteria that considers the ratio of the size of the parcel compared to the average farm size in the county. As identified in the regulation, the USDA Census of ***Agriculture*** is the data source for this national ranking criterion; the term `average size of farm' is contained in the Census. Based on ALE application and enrollment data, use of this nationally available data item continues to be appropriate. NRCS affirms that proximity to other protected ***lands*** continues to be one of the national ranking criteria set forth in the regulation.

No change is made to the regulation in response to these issues.

Comment: NRCS received comment recommending that NRCS allow ACEP-ALE eligible entities to participate in State technical committee recommendations for ACEP-ALE ranking determinations.

Response: Eligible entities may participate in the State technical committee; however, they may not participate in developing ranking factors for programs in which they participate. If potential participants had input into ranking factors, NRCS selection decisions would be suspect. NRCS will provide training to State offices describing the roles of eligible entities. No change is made to the regulation in response to this issue.

Comment: NRCS received comment supporting various aspects of the ACEP-ALE ranking provisions, including: Commending NRCS for not using cost as a ranking criterion; commending NRCS's consideration of proximity to other protected ***land*** as a ranking criteria; and commending the straightforward implementation of ranking that allows States to prioritize parcels through ranking criteria.

Response: NRCS appreciates the comments.

Comment: NRCS received comment recommending landowners who have protected their ***land*** through ACEP-ALE receive priority for funding under NRCS' financial assistance programs, such as the Environmental Quality Incentives Program (EQIP).

Response: NRCS receives input on program priorities, including priorities for enrollment in its financial assistance programs, from the State technical committees. There is no need to identify priorities for other programs' enrollment in the ACEP regulation. No change is made to the regulation in response to this issue.Definitions

NRCS received comment related to the definitions in the ACEP interim rule as follows:

Comment: NRCS received comment related to the terms “future,” “***agricultural***,” and “long-term” with respect to the term “viability. ” Comment recommended that greater consistency be applied throughout the final rule for the three terms with respect to the term “viability;” the definition of “***agricultural*** viability,” as referenced in the Managers' Report language, be clarified; and various items be added to, or deleted from, the definition of “future viability. ”

Response: Since the creation of ACEP in the 2014 Farm Bill, the statute uses the phrase “***agricultural*** use and future viability” in the program purposes statement. In response to comments on the February 2015 ACEP interim rule, NRCS included a definition of “future viability” to identify that ACEP-ALE purposes include the legal, physical, and financial conditions under which the ***land*** itself will remain capable and available for continued sustained productive ***agricultural*** or grassland uses. The 2018 Farm Bill maintained the reference to “***agricultural*** uses and future viability” in the context of the program purposes and introduced the term “***agricultural*** viability” in the context of potential application prioritization. NRCS believes that the existing definition of “future viability,” which is sufficiently expansive without being overly prescriptive, includes such concepts as accessibility to beginning farmers or ranchers and continued affordability. To address the request for clarity, NRCS has included a reference to the adoption of a farm or ranch succession plan as another example of a condition that supports the future viability of the protected ***land***.

Comment: NRCS received comment related to the definition of historically underserved landowner, recommending that socially disadvantaged farmers be specifically identified, be included in the definition of historically underserved landowners, and be added to the definition of “socially disadvantaged farmer or rancher. ” This comment refers to the provision in the interim rule associated with farm or ranch succession planning that identifies new or beginning farmers or ranchers, veteran farmers or ranchers, or “other historically underserved landowners. ”

Response: The definition of historically underserved landowner includes beginning, limited resource, socially disadvantaged, and veteran farmer or ranchers. As a result, the definition of farm or ranch succession plan has been modified in this final rule to refer simply to “historically underserved landowner” since this term is all-encompassing. The definition of socially disadvantaged farmer or rancher has been in the definitions section since the ACEP regulation was first promulgated in 2015.

Comment: NRCS received comment that suggested replacing the concept of watersheds with “watershares. ”

Response: NRCS has long been involved in watershed and watershed planning, and the term “watershares” is not a universal term. No change is made to the regulation in response to this issue.

Comment: NRCS received comment requesting that the definition of “riparian areas” be modified to eliminate the “movement for wildlife” as an element.

Response: The definition of riparian areas has long included reference to the movement of wildlife as it is one of the critical functions of riparian areas. No change is made to the regulation in response to this issue.

Comment: NRCS received comment requesting ***removal*** of reference to species that are “likely to undergo” population decline from the definition of “at-risk species. ” The commenter objected to an unnamed agency imposing restrictions through an unknown process.

Response: The interim rule identified the determination of “likely to undergo population decline” is made by the NRCS State Conservationist, with advice from the State technical committee or Tribal Conservation Advisory Council. The definition is shared across NRCS conservation programs, all of which are voluntary. No change is made to the regulation in response to this issue.

Comment: NRCS received comment requesting a change to the definition of “***agricultural*** commodity” so that the intent to harvest annually rather than tillage is used as the determining mechanism.

Response: The definition of ***agricultural*** commodity is contained in statute. No change is made to the regulation in response to this issue.Easement Administration Actions

NRCS received comment related to easement administration actions as follows:

Comment: NRCS received comment related to the identification of the sequencing procedures under the National Environmental Policy Act (NEPA) with respect to easement administration actions, recommending that easement administration actions related to sequencing considerations be classified as categorical exclusions for NEPA analysis. Other comment suggested that the provision be amended to eliminate NEPA sequencing review if the easement administrative actions either enhance purposes of the ACEP-ALE program or do not materially threaten the ALE's protection of ***agricultural*** viability or other conservation values, and requested ***removal*** of reference to NEPA entirely. Comment also requested clarification about how NEPA sequencing considerations may affect NRCS approval of easement administration actions.

Response: The decision to modify or terminate a Federal interest has long been subject to NEPA review, and NRCS must comply with NEPA statutory, regulatory, and policy requirements during its review of a requested easement administration action. These requirements include reviewing whether adverse impacts associated with an easement administration action can be avoided, minimized, or mitigated. Since the impacts and outcomes of an easement administration action cannot be categorized generally, a specific review is necessary. As NRCS evaluates the NEPA analyses developed for the individual easement administrative actions, it is gathering evidence that may be used to propose categorical exclusions for certain easement administrative actions in the future. NRCS may identify new categorical exclusions, through issuing new NEPA procedures (including by amending NRC's current regulations implementing NEPA at 7 CFR part 650), consistent with the Council on Environmental Quality's regulations for implementing the procedural provisions of NEPA, published at 40 CFR parts 1500 through 1508. No change is made to the regulation in response to this issue.

Comment: NRCS received comment related to adding references or additional requirements to the easement administration action criteria, including a reference to the easement administration criteria indicating that any easement modification or termination conform to State law requirements, and including a reference that easement administration actions must conform to section 170(h) of IRC and associated U.S Department of the Treasury (Treasury) regulations. Comment also requested that easement administration actions align more closely with ***Land*** Trust Alliance (LTA) industry standards.

Response: Easement administration actions are documented in ***land*** records in accordance with State law. NRCS's authority to approve easement administration actions is not subject to requirements in section 170(h) of the Treasury or associated regulations related to charitable donations. However, entities are not prevented from incorporating language that addresses their own compliance with section 170(h) in their part of the conservation easement deed terms. NRCS must implement easement administration actions in accordance with Federal law and responsibilities; private ***land*** trusts are not subject to these requirements when conducting actions without Federal involvement. It would not be appropriate for NRCS to adopt “industry standards” that do not account for these Federal standards. No change is made to the regulation in response to this issue.

Comment: NRCS received comment related to the various easement administration action requirements, including:

Recommending that NRCS ***remove*** the 10-percent limitation on easement administration actions so that an easement modification or exchange action would just need to meet one of the two thresholds: (1) The action provide equal or greater conservation functions and values and (2) equal or greater economic values; Recommending ***removal*** of the standard of no net loss of easement acres required for easement subordination, modification, or exchange actions; and Recommending a change to the definition of easement termination to acknowledge compensation that may be owed to other interest holders in a conservation easement.

Response: NRCS uses the 10-percent limitation requirement to minimize the effects of administration actions. NRCS selected the 10-percent level based upon review of the scope of prior requests for easement administration actions and for consistency with other NRCS conservation programs.

It is a statutory requirement that an easement modification or exchange action must meet both thresholds (equal or greater conservation value and equal or greater economic value).

As to the threshold for an easement subordination, modification, or exchange to result in no net loss of easement acres, NRCS believes, based on long-standing experience, that the existing standard ensures that the public investment in conservation easements endures for the life of the easement and that NRCS is able to make credible determinations of equal or greater conservation and economic value as required by statute. The definition of easement termination addresses only the United States' rights or interests in an easement, including that the United States must be fully compensated for the termination of such rights and interests that are held by the United States. The easement termination language does not address or affect compensation that may be owed to other interest holders.

No change is made to the regulation in response to these issues.

Comment: NRCS received comment that requested NRCS modify language regarding easement termination to clarify that it also applies to the partial termination of an easement.

Response: NRCS has clarified that partial termination of an easement is subject to the easement termination requirements to the same extent as the full termination of an easement. All easement termination actions are subject to review at both the NRCS State office and National Headquarters levels.

Comment: NRCS received comment that supported allowing the use of updated deed provisions when making easement amendments, cautioned that flexibility be granted to do simple amendments, and advised NRCS not to require updates to new language that may be contained in updated deed provisions of those provisions are unnecessary or unacceptable to the landowner.

Response: NRCS appreciates the support received for deed amendment process requirements. Deed amendments to ACEP-ALE easement deeds must be approved by NRCS, as discussed above. No change is made to the regulation in response to this issue.Environmental Markets

Comment: NRCS received comment expressing support for updates to the section on environmental markets.

Response: NRCS appreciates the comments.Fund Allocations

NRCS received comment related to ACEP fund allocations as follows:

Comment: NRCS received comment supporting the historic division of fund allocations across ACEP, that is based on demand for funding. Approximately 70 percent of ACEP funding is dedicated to wetland conservation through ACEP-WRE and 30 percent is for ***agricultural*** ***land*** preservation through ACEP-ALE. Another comment urged greater flexibility with respect to fund allocations.

Response: NRCS has not specified in the regulation an allocation of program funds between the two components of the program. NRCS maintains program flexibility year-to-year to respond to program demand. No change is made to the regulation in response to this issue.

Comment: NRCS received comment recommending continued use of ACEP-WRE authorities to enter into agreements and contracts with non-governmental organizations, State agencies, and other partners to continue to leverage resources and expertise.

Response: NRCS relies on its partners to assist NRCS in its delivery of ACEP-WRE and will continue to utilize its authorities to coordinate with these valuable partners. No change is made to the regulation in response to this issue.

Comment: NRCS received comment supporting the continued allocation of a portion of ACEP funds for monitoring and management of existing easements and recommending that State Conservationists have discretion to determine the appropriate portion of the individual State allocation to be used for monitoring and management of existing easements.

Response: NRCS National Headquarters provides on-going coordination, guidance, and support to State Conservationists to ensure that sufficient funds are dedicated and used to appropriately monitor, manage, and enforce stewardship ***lands***. No change is made to the regulation in response to this issue.Landowner Eligibility—Adjusted Gross Income (AGI) Limitation Waiver

NRCS received comment related to the AGI limitation waiver as it affects landowner eligibility to enroll in ACEP as follows:

Comment: NRCS received comment related to the definition and criteria for environmentally sensitive ***lands*** of special significance, including encouraging NRCS in its AGI waiver determinations to give the most consideration to ***lands*** with the highest conservation value, particularly ***lands*** of special significance that can demonstrate significant linkages with the conservation objectives of migratory bird, wetlands conservation, and water quality programs, plans, or initiatives. Comment also requested that environmentally sensitive ***land*** of special significance be explicitly defined.

Response: NRCS will consider the factors noted in the comment in granting AGI waivers. Terms associated with the AGI waiver are set forth in the regulations governing payment limitation and payment eligibility requirements, including AGI provisions, at 7 CFR part 1400. No change is made to the regulation in response to this issue.

Comment: NRCS received comment suggesting that NRCS expand eligibility for AGI waivers, including allowing the waiver for all ACEP-ALE enrollment, automatically waiving AGI for BPS transactions, and interpreting AGI waiver factors broadly.

Response: NRCS may only grant waivers on a case-by-case basis where the waiver criteria are met. Broadening the waiver authority to eliminating AGI applicability to all ALE enrollment types is outside statutory authority. No change is made to the regulation in response to this issue.

Comment: NRCS received comment seeking increased streamlining and guidance regarding AGI waivers.

Response: NRCS will continue its ongoing efforts to streamline processes through the use of new tools. NRCS will continue to develop and release specific guidance as needed. No change is made to the regulation in response to this issue.

Comment: NRCS received comments expressing support for the use of AGI waiver authority in ACEP.

Response: NRCS appreciates support for its AGI waiver process.Program Administration

NRCS received comment on the topic of program administration as follows:

Comment: NRCS received one detailed comment emphasizing the importance of protecting endangered and at-risk species through ACEP. This comment specifically referred to salmonid species.

Response: NRCS appreciates the importance of protecting threatened and endangered species and its responsibility to comply with the Endangered Species Act (ESA), including ESA section 7(a)(1). As part of its conservation planning framework and site-specific NEPA process, NRCS also considers impacts to at-risk species as required by its NEPA implementing regulations (7 CFR part 650). No change is made to the regulation in response to this issue.

Comment: NRCS received comment related to outreach activities, including recommending that: NRCS retain its outreach focus on historically underserved farmers and ranchers; funds expended for historically underserved purposes be identified and made public; and NRCS ensure that the process is streamlined to ensure access to disadvantaged and underserved populations. Comment also reminded NRCS regarding sovereign-to-sovereign consultation for Farm Bill easement programs having Tribal implications.

Response: NRCS will continue to evaluate options to enhance opportunities for historically underserved producers and focus resources on ensuring parity in program enrollment. NRCS conducted several Tribal meetings in FY 2019 and FY 2020 and State Conservationists obtained input on program implementation from the Tribal Conservation Advisory Committees. No change is made to the regulation in response to this issue.

Comment: NRCS received comment expressing specific support for various aspects of program administration, including supporting NRCS discretion to waive certain program administration provisions and commending NRCS for continuing to obtain input from State technical committees, other Federal and State agencies, conservation districts, and other organizations.

Response: NRCS appreciates the support it has received for ACEP administration.

Comment: NRCS received comment urging continued or increased consultation with partners and stakeholders, including State technical committees, non-governmental organizations, and the U.S Fish and Wildlife Service.

Response: NRCS will continue to seek stakeholder input on how to improve program administration, especially input that NRCS receive on State and local resource issues. No change is made to the regulation in response to this issue.

Comment: NRCS received comment asking that technical assistance provided by NRCS regarding compliance with easement terms be clarified and recommending creation of ACEP-specific forms. Comment also recommended guidance on conflicts of interest and information on the implementation of Voluntary Public Access and Habitat Incentives Program (VPA-HIP).

Response: NRCS will continue its ongoing efforts to streamline processes, including modifying its required forms, through the use of new tools. Additionally, NRCS will continue to develop and release guidance on specific topics as needed. NRCS regulation and policy regarding VPA-HIP is provided separately and can be found in 7 CFR part 1455, and associated agency policy is available on the NRCS website. No change is made to the regulation in response to this issue.

Comment: NRCS received comment recommending that NRCS include text regarding ACEP ranking that prioritizes ***lands*** enrolled in the Transition Incentives Program under the Conservation Reserve Program (CRP-TIP). Section 1235(f)(1)(E) of the CRP statute requires that priority enrollment be given to ***land*** subject to a CRP-TIP contract into EQIP, Conservation Stewardship Program (CSP), and ACEP.

Response: Section 1468.22(b)(11) of the ACEP interim rule identifies as a national priority for ALE enrollment grasslands currently enrolled in CRP in a contract that is set to expire within 1 year. Section 1468.32(c) of the ACEP interim rule identifies as a potential State priority for WRE enrollment whether ***land*** is farmed wetland and adjacent ***land*** that is currently enrolled in CRP in a contract that is set to expire within 1 year. However, neither ALE nor WRE identify a specific priority ranking for CRP-TIP ***land***. Therefore, NRCS is adding a specific priority in the ACEP regulation for CRP-TIP.

Comment: NRCS received comment related to the practices and activities administered through ACEP, including:

Encouraging NRCS to adopt the “Active River Area Concept” to its management scheme; Proposing that all easements go through a plant and plant community survey by a botanist prior to enrollment; Seeking confirmation that NRCS would not enter into agreements with entities who would preclude ***forested*** riparian buffers; Recommending that NRCS recognize specifically intensive rotational grazing as one of the best management tools; and Recommending that diverse native plant mixes be prioritized in ACEP wetland and grassland restoration and management plans.

Response: NRCS addresses how best to administer its practices and activities through technical and program policy implemented at the State level through the discretion given NRCS State Conservationists. In general, NRCS supports the development and implementation of plans and restoration activities that consider the value of management and restoration activities that provide for a diverse assemblage of native plants, including pollinator-friendly species. However, NRCS believes that specific resource management issues are best addressed at the State level. No change is made to the regulation in response to this issue.

Comment: NRCS received comment related to program administration that did not fit neatly into any single subtopic:

Require landowners to assume responsibility for operation and maintenance of easements; Provide sufficient staffing to meet customer service needs; Concern over the authorization of permanent easements; Make publicly available information related to easement enrollments such as acres enrolled, soil classification of ***land***, and before and after ***land*** use; Condition ACEP so that all funded efforts achieve consistency with State water quality standards and salmon recovery plan habitat objectives; and Review easement deed terms at least every 100 years to ensure consistency with existing conditions.

Response: The operation and maintenance that may occur on ACEP easements and who may perform such activities is addressed in the terms of the easement deeds.

NRCS staffing is not a part of this rulemaking, but the agency will continue providing the highest quality customer service and program implementation with its resources.

Permanent easements are authorized and prioritized by statute.

As NRCS collects data, the agency generates multiple reports on a variety of impacts, which are typically made available to the public upon request.

NRCS will consider the recommendation regarding consistency with water quality standards and recovery plan habitat objectives as it continues to evaluate and refine ranking and eligibility criteria.

Review of easement deed terms at least every 100 years is beyond the scope of current regulation and policy.

No change is made to the regulation in response to these issues.

Comment: NRCS received comment related to source water protection issues including:

Recommending that NRCS acknowledge source water protection as a goal of ACEP; Adding discussion about how source water protection priorities will be included in the implementation of ACEP and other NRCS conservation programs; Addressing how ACEP will be included in accounting for overall source water expenditures by publishing a plan for comment; Adding source water protection in the ACEP ranking criteria; Ensuring adequate attention given to source water protection at State technical committees; and Recommending that NRCS address how spatial data related to source water areas will intersect with ACEP.

Response: Source water protection is a statutory priority and NRCS Headquarters provides guidance to ensure that all its programs are contributing to the protection of source water protection areas. The ACEP regulation includes water quality as a consideration in the list of ranking criteria for both ALE and WRE and the State Conservationist, in consultation with the State technical committee, may develop and include specific considerations for source water protection as part of their State's ranking factors. NRCS uses geographic information system tools to help identify source water protection areas and easement enrollment. No change is made to the regulation in response to this issue.WRE Issues

NRCS received comment related to ACEP-WRE topics as follows:

Comment: NRCS received comment supporting revisions to the definition of wetland restoration in the interim rule regarding ACEP-WRE. Comment highlighted that the expanded flexibility would benefit wetland functions and habitat values. Comment also encouraged NRCS to engage robustly with State technical committees when devising the State-specific NRCS criteria and guidelines for wetland restoration.

Response: NRCS appreciates support for the revised definition of wetland restoration.

Comment: NRCS received comment related to compatible use authorizations under ACEP-WRE, expressing support for the inclusion of water management and supporting the use of such management activities to maintain, enhance, and diversify wetland habitats on ACEP-WRE easements. Comment also recommended ***removing*** “hunting and fishing” from the list of activities that can be authorized as a compatible use in § 1468.37(a)(2)(ii) because undeveloped recreational uses, including hunting and fishing, are listed as one of the five rights reserved by the landowner in the ACEP-WRE warranty easement deed. Comment also identified that NRCS should seek input from the State technical committee on technical matters related to compatible use designations and guidelines.

Response: NRCS appreciates support for the inclusion of water management and recognizes the potential utility of this activity to wetland functions and values when properly prescribed and implemented on ACEP-WRE easements through the compatible use authorization process. Hunting and fishing are specifically identified in the ACEP statute as a `compatible use' that is subject to NRCS determination of compatibility. NRCS has implemented this provision by identifying in all ACEP-WRE easement deeds that undeveloped hunting and fishing, subject to the terms of the easements, is a reserved right. However, any hunting and fishing activities that extend beyond that reserved right are prohibited unless determined compatible by NRCS through the compatible use authorization process. In the ACEP interim rule, NRCS included compatible use criteria and related matters in the expanded list of examples provided in § 1468.2(b) regarding subjects on which the State technical committee may provide advice to the State Conservationist.

Comment: NRCS received comment regarding wetland restoration and management activities, encouraging that the technical requirements for grazing management plans and exhibits for ACEP-WRE grazing reserved rights enrollments be developed in consultation with State technical committees and that the individual grazing management plans be dynamic to accommodate wildlife and habitat conservation along with producer needs. Comment also recommended that NRCS prioritize activities supporting migratory waterfowl and other wetland-dependent wildlife through science-based management and recommended levee setbacks and ***forested*** riparian buffers be allowed on all easements in Washington State.

Response: NRCS appreciates comment related to grazing management plans and ACEP-WRE reservation of grazing rights enrollments. The ACEP interim rule provided clarifying changes consistent with these recommendations, including addition of a grazing management plan definition that is specific to ACEP-WRE and provisions related to the review and modification of such plans for reserved grazing rights enrollments. NRCS conducts and supports monitoring and research on its wetland easements to obtain data and information that informs technical decisions related to prioritization and selection of new easements and restoration and management of existing easements. NRCS will continue to collaborate with partners and institutions to obtain the information needed to make science-based decisions to maximize wildlife benefits and wetland functions and values on every ACEP-WRE easement. The concern related to restoration activities in the State of Washington do not rise to a nationwide level and are not addressed in the regulation. The ACEP regulation and other NRCS planning procedures provide the States the needed flexibilities to make technical decisions related to enrollment, restoration, and management of ACEP-WRE ***lands***. NRCS recommends that stakeholders with concerns should work with their applicable State Conservationist.

Comment: NRCS received comment related to WRE ***land*** eligibility: Recommending that NRCS allow cropping on the WRE easement area; supporting the increase in the percentage of easements that can be enrolled on cropland in a county from 10 percent to 15 percent; and requesting flexibility with respect to the 2-year ownership requirement for ***land*** that the farmer has managed for numerous years prior to purchase.

Response: NRCS prohibits cropping on ACEP-WRE enrolled ***lands*** because the purpose of the program is to restore the wetland functions and values and crop production is inconsistent with such purposes. NRCS appreciates the comments related to the county cropland limitation. The 2-year ownership provision in the ACEP regulation is a specific statutory requirement, but flexibility exists through the waiver process. When deciding whether to waive the 2-year ownership requirement, NRCS considers whether the ***land*** has been managed by the landowner as part of their operation prior to acquiring ownership of the ***land***. No change is made to the regulation in response to these issues.

Comment: NRCS received comment relating to factors used to prioritize enrollments in ACEP-WRE, including support for prioritizing permanent easements over non-permanent easements and including water quality as a conservation benefit.

Response: NRCS appreciates support for the ACEP-WRE prioritization factors.

Comment: NRCS received comment recommending NRCS consider funds from other Federal sources as contributions for ranking purposes.

Response: Section 1265C(b)(3) of the ACEP statute authorizes as a ranking factor whether the landowner or other person offers to contribute to the cost of the easement and thereby leverage Federal funds. The statutory priority is that Federal funds, not just ACEP-WRE funds, be leveraged by other sources, and NRCS has incorporated this factor into the regulation. NRCS State Conservationists, with input from State technical committees, may consider other priorities that further program goals, including other sources of contribution. However, other Federal sources of contribution may have restrictions on the use of their funds and NRCS must ensure that there is no augmentation in contravention of appropriations law. No change is made to the regulation in response to this issue.

Comment: NRCS received comment supporting and encouraging NRCS to continue to seek advice and input on implementation of ACEP-WRE from the U.S Fish and Wildlife Service, State fish and wildlife agencies, and State technical committees.

Response: Both ACEP regulation and policy require the NRCS to seek continued engagement from these partners. No change is made to the regulation in response to this issue.

Comment: NRCS received comment related to the Wetland Restoration Enhancement Partnership (WREP), recommending that NRCS restore the 5 percent match requirement for the WREP partner contributions and maintain historic levels of partner contributions at 25 percent. Another comment recommended that NRCS provide an annual allocation for WREP of between $35-50 million per year.

Response: NRCS appreciates the support for WREP. NRCS has not established any regulatory level of match that is required for WREP and bases such determination upon the focus of each year's WREP effort. No change is made to the regulation in response to this issue.Notice and Comment, Paperwork Reduction Act, and Effective Date

In general, the Administrative Procedure Act (APA) (5 U.S.C 553) requires that a notice of proposed rulemaking be published in the Federal Register and interested persons be given an opportunity to participate in the rulemaking through submission of written data, views, or arguments with or without opportunity for oral presentation, except when the rule involves a matter relating to public property, loans, grants, benefits, or contracts. This rule involves matters relating to benefits and therefore is exempt from the APA requirements. Further, the regulations to implement the programs of chapter 58 of title 16 of the U.S Code, as specified in 16 U.S.C 3846, and the administration of those programs, are:

To be made as an interim rule effective on publication, with an opportunity for notice and comment; Exempt from the Paperwork Reduction Act (44 U.S.C ch. 35); and To use the authority under 5 U.S.C 808 related to congressional review.

Consistent with the use of the authority under 5 U.S.C 808 related to Congressional review for the immediate effect date of the interim rule, this rule is also effective on the date of publication in the Federal Register.Executive Orders 12866 and 13563

Executive Order 12866, “Regulatory Planning and Review,” and Executive Order 13563, “Improving Regulation and Regulatory Review,” direct agencies to assess all costs and benefits of available regulatory alternatives and, if regulation is necessary, to select regulatory approaches that maximize net benefits (including potential economic, environmental, public health and safety effects, distributive impacts, and equity). Executive Order 13563 emphasizes the importance of quantifying both costs and benefits, of reducing costs, of harmonizing rules, and of promoting flexibility.

The Office of Management and Budget (OMB) designated this rule as significant under Executive Order 12866 and therefore, OMB has reviewed this rule. The costs and benefits of this rule are summarized below. The full regulatory impact analysis is available on [*https://www.regulations.gov/.Clarity*](https://www.regulations.gov/.Clarity) of the Regulation

Executive Order 12866, as supplemented by Executive Order 13563, requires each agency to write all rules in plain language. In addition to the substantive comments NRCS received on the interim rule, NRCS invited public comments on how to make the rule easier to understand. NRCS has incorporated these recommendations for improvement where appropriate. NRCS responses to public comment are described in more detail above.Cost-Benefit Analysis

One of the most significant ACEP changes in the 2018 Farm Bill is to the existing contribution requirements for the non-Federal share under ACEP-ALE. Previously, there were only two sources of non-Federal contribution—the entity's cash resources towards the purchase and the donation by the entity—with cash resources towards the purchase required for half of the non-Federal contribution. The 2018 Farm Bill eliminated the requirement for cash resources towards the purchase and allows the entity to consider other costs, previously not included, toward the non-Federal match. This change adds flexibility for eligible entities to meet the non-Federal share requirement by no longer specifying a minimum cash contribution amount to be provided by the eligible entity and allowing the total of the non-Federal share to be comprised of a charitable donation or qualified conservation contribution from the private landowner. It also includes provisions for costs related to securing the easement to be included in the calculation of the non-Federal share. While ***removing*** a potential hurdle to entity participation, the additional flexibility is not intended to supersede the conservation benefits possible under ACEP.

There are six states and one territory (Alabama, Arkansas, Hawaii, Louisiana, Missouri, North Dakota, and Puerto Rico) that currently have no enrollment in ACEP-ALE. This may have been due to a lack of available financial resources for an eligible entity to meet the minimum cash contribution requirement or may be due to a lack of entities that meet the eligibility requirements to participate in ACEP-ALE. The changes to the non-Federal share requirements may result in increased ACEP-ALE enrollments in areas where enrollment has been limited due to a lack of financial resources available for entities that meet the ACEP-ALE eligibility requirements. To address these statutory changes, in this final, we eliminated a specified minimum cash contribution amount and incorporated provisions for considering costs related to securing the easement. These changes are applicable to all eligible entities in all States and as a result, it is anticipated that the amount of the Federal contribution toward ACEP-ALE easements will increase by 8 to 10 percentage points.

Another change under the 2018 Farm Bill provides NRCS with authority to enter into legal arrangements with eligible entities to conduct BPS transactions under ACEP-ALE. Under a BPS transaction, NRCS may provide ACEP-ALE cost-share assistance to an eligible entity for the purchase of an ***agricultural*** ***land*** easement on private or Tribal ***agricultural*** ***land*** owned on a transitional basis by an eligible entity when the ownership of that ***land*** will be timely transferred to a qualified farmer or rancher. BPS transactions are intended to help farmers and ranchers acquire ***agricultural*** ***land*** they could not otherwise afford and to protect ***agricultural*** ***land*** that may have otherwise been developed or removed from ***agricultural*** production.

NRCS continues to have the discretion to rank and prioritize projects and to select individual applications based on their ability to achieve program purposes and to assess and determine the appropriate allocation of funds for the acquisition of ***agricultural*** ***land*** and wetland easements. The 2018 Farm Bill does not limit NRCS's discretion to determine the allocation of funds between ACEP-WRE and ACEP-ALE. The relative emphasis NRCS places on these two program components depends on State and national priorities, environmental impacts, and local demand. It is anticipated that enrollment in ACEP will be consistent with historic enrollment trends.

***Land*** enrolled in ACEP-WRE easements produces onsite and offsite environmental benefits. Those include: Restoring and protecting high value wetlands; controlling sheet and rill erosion as ***lands*** are restored from cropland to wetlands and associated habitats; restoring, enhancing, and protecting habitat for fish and wildlife, including threatened and endangered species and migratory birds; improving water quality by filtering sediment and chemicals; reducing flooding and flood-related damage; recharging groundwater; protecting biological diversity; controlling invasive species with planting of native vegetation; and providing opportunities for educational, scientific, and recreational activities. Soil health and air quality are improved by reduced wind erosion, reduced soil disturbance, increased organic matter accumulation, and an increase in carbon sequestration.

For ***land*** enrolled in ACEP-ALE, the suite of conservation effects on protected grasslands are different than those on protected farmland; the impacts are not valued here as one being more beneficial than another. For example, ACEP-ALE easements on grasslands limit ***agricultural*** activities to predominantly haying and grazing, whereas easements on farmland allow crop cultivation and pasture-based ***agriculture***. As such, farmland protection effects are derived from onsite and ecological services, as well as preserving highly productive ***agricultural*** areas from development or fragmentation. Impacts on grasslands are derived from onsite and ecological impacts as well as preventing conversion to nongrassland uses. The net conservation effects through time from farmland protection include direct access benefits (pick-your-own, agri-tourism, and nature based activities like hunting), indirect access benefits (open spaces and scenic views), and nonuse benefits (wildlife habitat and existence values). Grassland protection conservation effects include direct, indirect, and nonuse benefits, and also on-farm production gains and carbon sequestration.

The authorized level of funding for ACEP for the period of FY 2019 through 2023 is $2.25 billion (assuming future funding is set at authorized amounts). This represents an increase in ACEP average annual funding over the 2014 Farm Bill of 11 percent—from $405 million per year to $450 million per year in nominal dollars.

The regulatory impacts of ACEP funding consist of payments for the purchase of easements or real property interests; the costs incurred related to the acquisition, such as title companies, appraisers, licensed ***land*** surveyors; and the costs of restoring wetlands. Although these transfers create incentives that likely cause changes in the way society uses its resources, NRCS lacks data with which to identify where these resources would otherwise be used.

NRCS also recognizes that applicants and participants incur costs in terms of time used to gain access to ACEP. We estimate the imputed value of applicant and participant time spent in accessing the program from FY 2019 through 2023 at $1.1 million for the 5 years.

Our estimates of costs, benefits and transfers of ACEP on an annual basis are reported in Table 1. Given a 3 percent discount rate, the projected annualized real cost to producers of accessing the program is $229,000 and the projected annualized real transfers are $433 million. Conservation benefits from the easement are difficult to quantify at a national scale but have been described by studies at an individual project or watershed or local scale.Table 1—Annualized Real Estimated Costs, Benefits, and Transfers a Category Annual estimateCost b $229,000Benefits QualitativeTransfers $433,000,000Regulatory Flexibility Act

The Regulatory Flexibility Act (5 U.S.C 601-612), as amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA), generally requires an agency to prepare a regulatory analysis of any rule whenever an agency is required by APA or any other law to publish a proposed rule, unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. This rule is not subject to the Regulatory Flexibility Act because this rule is exempt from notice and comment rulemaking requirements of the APA and no other law requires that a proposed rule be published for this rulemaking initiative.Environmental Review

The environmental impacts of this rule have been considered in a manner consistent with the provisions of NEPA (42 U.S.C 4321-4347), the regulations of the Council on Environmental Quality (40 CFR parts 1500-1508), and the NRCS regulations for compliance with NEPA (7 CFR part 650). NRCS conducted an analysis of the ACEP interim rule and NRCS's analysis determined there would not be a significant impact to the human environment and as a result, an environmental impact statement (EIS) is not required to be prepared (40 CFR 1501.5 and 1501.6). The Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) were available for review for 30 days from the date of publication of the interim rule in the Federal Register. NRCS considered comments received during the 30-day period and determined minor changes to the ACEP EA and FONSI were sufficient, and that no information warranting preparation of an EIS was received. The final ACEP EA and FONSI have been posted to the NRCS homepage at [*https://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/programs/farmbill/?cid=stelprdb1263599.Executive*](https://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/programs/farmbill/?cid=stelprdb1263599.Executive) Order 12372

Executive Order 12372, “Intergovernmental Review of Federal Programs,” requires consultation with State and local officials that would be directly affected by proposed Federal financial assistance. The objectives of the Executive order are to foster an intergovernmental partnership and a strengthened federalism, by relying on State and local processes for State and local government coordination and review of proposed Federal financial assistance and direct Federal development. For reasons specified in the final rule-related notice regarding 7 CFR part 3015, subpart V (48 FR 29115, June 24, 1983), the programs and activities in this rule are excluded from the scope of Executive Order 12372.Executive Order 12988

This rule has been reviewed under Executive Order 12988, “Civil Justice Reform. ” This rule will not preempt State or local laws, regulations, or policies unless they represent an irreconcilable conflict with this rule. Before any judicial actions may be brought regarding the provisions of this rule, the administrative appeal provisions of 7 CFR part 11 are to be exhausted, consistent with 7 U.S.C 6912(e).Executive Order 13132

This rule has been reviewed under Executive Order 13132, “Federalism. ” The policies contained in this rule do not have any substantial direct effect on States, on the relationship between the Federal Government and the States, or on the distribution of power and responsibilities among the various levels of government, except as required by law. Nor does this rule impose substantial direct compliance costs on State and local governments. Therefore, consultation with the States is not required.Executive Order 13175

This rule has been reviewed in accordance with the requirements of Executive Order 13175, “Consultation and Coordination with Indian Tribal Governments. ” Executive Order 13175 requires federal agencies to consult and coordinate with Tribes on a Government-to-Government basis on policies that have Tribal implications, including regulations, legislative comments or proposed legislation, and other policy statements or actions that have substantial direct effects on one or more Indian Tribes, on the relationship between the Federal Government and Indian Tribes or on the distribution of power and responsibilities between the Federal Government and Indian Tribes.

The USDA's Office of Tribal Relations (OTR) has assessed the impact of this rule on Indian Tribes and determined that this rule does not have significant Tribal implications that require Tribal consultations at this time for ACEP, which is a beneficial voluntary program. Notwithstanding this conclusion, OTR believes that continued focused outreach to Tribes could increase engagement in ACEP and provide assistance with water quality issues for Tribes. OTR states that NRCS has adhered to the spirit and intent of Executive Order 13175. If a Tribe requests consultation, NRCS and CCC will work with OTR to ensure meaningful consultation is provided where changes, additions, and modifications identified in this rule are not expressly mandated by the 2018 Farm Bill. Tribal consultation for this rule was included in the 2018 Farm Bill Tribal consultation held on May 1, 2019, at the National Museum of the American Indian, in Washington, DC. The portion of the Tribal consultation relative to this rule was conducted by Bill Northey, USDA Under Secretary for the Farm Production and Conservation mission area, as part of the Title I session. There were no specific comments from Tribes on ACEP during this Tribal consultation.

Additionally, NRCS held sessions with Indian Tribes and Tribal entities across the country in the spring of FY 2019 to describe the 2018 Farm Bill changes to NRCS conservation programs, obtain input about how to improve Tribal and Tribal member access to NRCS conservation assistance, and make any appropriate adjustments to the regulations that will foster such improved access. NRCS invited State leaders for FSA and Rural Development (RD), as well as Regional Directors for the Risk Management Agency (RMA) to discuss their programs also.

As a result, approximately 50 percent of the comments received as a result of these sessions were directed to FSA, RMA, RD, and other USDA agencies, with many comments specific to hemp production and the surrounding regulations. Over 40 percent of the feedback pertained to NRCS programs. Comments listed challenges specific to Tribes that impact eligibility and inhibit access to USDA programs. None of the feedback received necessitated a change to the regulation.

NRCS will continue to work with our Tribal stakeholders to address the issues raised in order to facilitate greater technical assistance and program delivery to Indian country.

Separate from Tribal consultation and the sessions discussed above, communication and outreach efforts are in place to assure that all producers, including Tribes (or their members), are provided information about the regulation changes. Specifically, NRCS obtains input through Tribal Conservation Advisory Councils. A Tribal Conservation Advisory Council may be an existing Tribal committee or department and may also constitute an association of member Tribes organized to provide direct consultation to NRCS at the State, regional, and national levels to provide input on NRCS rules, policies, programs, and impacts on Tribes. Tribal Conservation Advisory Councils provide a venue for agency leaders to gather input on Tribal interests.Unfunded Mandates

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA) (Pub. L. 104-4), requires Federal agencies to assess the effects of their regulatory actions on State, local, and Tribal Governments or the private sector. Agencies generally must prepare a written statement, including cost-benefits analysis, for proposed and final rules with Federal mandates that may result in expenditures of $100 million or more in any 1 year for State, local or Tribal Governments, in the aggregate, or to the private sector. UMRA generally requires agencies to consider alternatives and adopt the more cost-effective or least burdensome alternative that achieves the objectives of the rule. This rule contains no Federal mandates, as defined under Title II of UMRA, for State, local, and Tribal Governments or the private sector. Therefore, this rule is not subject to the requirements of UMRA.Federal Assistance Programs

The title and number of the Federal Domestic Assistance Programs in the Catalog of Federal Domestic Assistance to which this rule applies is: 10.931—***Agricultural*** Conservation Easement Program.E-Government Act Compliance

NRCS and CCC are committed to complying with the E-Government Act, to promote the use of the internet and other information technologies to provide increased opportunities for citizen access to Government information and services, and for other purposes.List of Subjects in 7 CFR Part 1466

***Agricultural***, Flood Plains, Grazing ***lands***, Natural resources, Soil conservation, and Wildlife.

Accordingly, the interim rule published January 6, 2020, at 85 FR 558, is adopted as final with the following changes:Part 1468 ***Agricultural*** Conservation Easement ProgramRegulatory Text

1. The authority citation for part 1468 continues to read as follows:Authority:

15 U.S.C 714b and 714c; 16 U.S.C 3865-3865d.Subpart a General Provisions§ 1468.3[Amended]Regulatory Text

2. Amend § 1468.3 as follows:

a. In the definition of “Beginning farmer or rancher”:

i. In paragraph (1), ***remove*** the words “farm or ranch or” and add in their place the words “farm, ranch, or” each time they appear;

ii. In paragraphs (2) and (3), ***remove*** the words “farm or ranch” and add the words “farm, ranch, or NIPF” in their place each time they appear;

b. In the definition of “Eligible ***land***”, add the word “***land***” immediately after the word “private”;

c. In the definition of “Farm or ranch succession plan”, ***remove*** the words “include specific” and add the words “include, but is not limited to, specific” in their place and ***remove*** the words “new or beginning farmers or ranchers, veteran farmers, or other”;

d. In the definition of “Future viability”, add the words “or adoption of a farm or ranch succession plan” immediately after the word “plan”; and

e. In the second sentence in the definition of “Maintenance”, add the word “performed” immediately after the word “work”.§ 1468.6[Amended]Regulatory Text

3. Amend § 1468.6 in paragraph (a)(3)(iii) by ***removing*** the cross reference “paragraph (a)(4)” and add in its place add the cross reference “paragraph (a)(5)”.Subpart B ***Agricultural*** ***Land*** Easements§ 1468.20[Amended]Regulatory Text

4. Amend § 1468.20 in paragraph (b)(1)(ii) by adding the word “demonstrated” immediately before the word “capability”.

5. Amend § 1468.22 as follows.

a. Revise paragraph (b)(11); and

b. In paragraph (c)(2), add the word “annually” immediately after the words “monitored” and “reported”.

The revision reads as follows:§ 1468.22 Establishing priorities, ranking considerations, and project selection.

\* \* \* \* \*

(b) \* \* \*

(11) Whether the ***land*** is currently enrolled in CRP in a contract that is set to expire within 1 year and is grassland that would benefit from protection under a long-term easement or is ***land*** under a CRP contract that is in transition to a covered farmer or rancher pursuant to 16 U.S.C 3835(f);

\* \* \* \* \*§ 1468.23[Amended]Regulatory Text

6. Amend § 1468.23 as follows:

a. In paragraph (b)(1), ***remove*** the words “Up to” and add “A minimum of” in their place and add the words “and not to exceed 7 fiscal years” immediately after the words “5 fiscal years”; and

b. In paragraph (b)(2), ***remove*** the words “Up to” and add “At least” in their place.

7. In § 1468.24 revise paragraphs (b)(2)(i), (iii), and (iv) to read as follows:§ 1468.24 Compensation and funding for ***agricultural*** ***land*** easements.

\* \* \* \* \*

(b) \* \* \*

(2) \* \* \*

(i) The eligible entity's own cash resources for payment of easement compensation to the landowner or for a buy-protect-sell transaction, the amount of the fair market value of the ***agricultural*** ***land*** easement, less the amount of the Federal share, that is provided through the conveyance of the ***agricultural*** ***land*** easement by the eligible entity;

\* \* \* \* \*

(iii) Where the amounts as identified in paragraphs (b)(2)(i) and (ii) of this section are not sufficient to meet the non-Federal share amount, the eligible entity may also include the procured costs paid by the eligible entity to a third-party for an appraisal, boundary survey, phase-I environmental site assessment, title commitment or report, title insurance, baseline reports, mineral assessments, or closing cost; and

(iv) Where the amounts as identified in paragraphs (b)(2)(i) through (iii) of this section are not sufficient to meet the non-Federal share amount, the eligible entity may also include up to 2 percent of the fair market value of the ***agricultural*** ***land*** easement for easement stewardship and monitoring costs provided by the eligible entity.

\* \* \* \* \*Regulatory Text

8. In § 1468.25 revise paragraphs (c) and (d)(4) to read as follows:§ 1468.25 ***Agricultural*** ***land*** easement deeds.

\* \* \* \* \*

(c) The eligible entity may use its own terms and conditions in the ***agricultural*** ***land*** easement deed, but the ***agricultural*** ***land*** easement deed must provide for the effective administration, management, and enforcement of the ***agricultural*** ***land*** easement by the eligible entity or its successors and assigns and must address the deed requirements as specified by this part and by NRCS in the ALE-agreement.

(d) \* \* \*

(4) Include clauses requiring that any changes to the easement deed or easement area made after easement recordation, including any amendment to the easement deed, any subordination of the terms of the easement , or any modifications, exchanges, or terminations of some or all of the easement area, must be consistent with the purposes of the ***agricultural*** ***land*** easement and this part and must be approved by NRCS and the easement holder in accordance with § 1468.6 prior to recordation or else the action is null and void.

\* \* \* \* \*§ 1468.26[Amended]Regulatory Text

9. Amend § 1468.26 in paragraph (b)(1) by ***removing*** the words “up to” and adding “a minimum of” in their place and adding “and not to exceed 7 fiscal years” after the words “5 fiscal years”.

10. Amend § 1468.27 as follows:

a. In paragraph (c)(1), add the words “the purchase of the ***land***” after the word “completed”;

b. In paragraphs (c)(3)(ii) and (c)(4), add the words “of the ***land***” after the word “value”;

b. Redesignate paragraphs (e)(4)(iii) and (iv) as paragraphs (e)(4)(iv) and (v);

c. Add a new paragraph (e)(4)(iii).

The addition reads as follows:§ 1468.27 Buy-Protect-Sell transactions.

\* \* \* \* \*

(e) \* \* \*

(4) \* \* \*

(iii) The Federal share for the ***agricultural*** ***land*** easement will be provided on a reimbursable basis only, after the ***agricultural*** ***land*** easement has closed and the required documents have been provided to and reviewed by NRCS.

\* \* \* \* \*

11. Amend § 1468.28 as follows:

a. Revise paragraph (c); and

b. In paragraph (f), add the words “in whole or in in part,” immediately after the word “terminated”.

The revision reads as follows:§ 1468.28 Violations and remedies.

\* \* \* \* \*

(c) Notwithstanding paragraph (a) of this section, NRCS reserves the right to enter upon and inspect the easement area if the annual monitoring report provided by the ***agricultural*** ***land*** easement holder documenting compliance with the ***agricultural*** ***land*** easement is insufficient or is not provided annually, the United States has a reasonable and articulable belief that the terms and conditions of the easement have been violated, or to remedy deficiencies or easement violations as it relates to the conservation plan in accordance with 7 CFR part 12. Prior to its inspection, NRCS will notify the ***agricultural*** ***land*** easement holder and the landowner and provide a reasonable opportunity for the ***agricultural*** ***land*** easement holder and the landowner to participate in the inspection.

\* \* \* \* \*Subpart C Wetland Reserve Easements§ 1468.32[Amended]Regulatory Text

12. Amend § 1468.32 in paragraph (c)(2) by adding the words “or ***land*** under a CRP contract that is in transition to a covered farmer or rancher pursuant to 16 U.S.C 3835(f), and such ***land***” immediately after the word “application”.Terry Cosby,Acting Chief, Natural Resources Conservation Service.Robert Stephenson,Executive Vice President, Commodity Credit Corporation.[FR Doc. 2021-02268 Filed 2-3-21; 8:45 am]BILLING CODE 3410-16-P

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[***The world has missed key biodiversity goals – but these 8 changes could make all the difference***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:60XG-GB61-F0YC-N1N4-00000-00&context=1516831)

Impact News Service

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**Length:** 1270 words

**Body**

Cologny: World Economic Forum has issued the following press release:

A major UN report says decade-long ***targets*** to improve global diversity are being missed. While investment in conservation has doubled since 2010, more funding is needed. Schemes like protecting marine areas are praised, but programmes need to demonstrate wider benefits. The Global Biodiversity Outlook 5 report recommends eight ‘transitions’ to help shift to a more sustainable path.

In 2010, the UN’s Convention on Biological Diversity (CBD) set 20 ***targets*** to try and slow, then halt the loss of biodiversity. They were agreed in Aichi, Japan. A decade on, its verdict is in – and “business as usual” needs to stop.

The Global Biodiversity Outlook 5 report concludes that six of the original 20 goals have been “partially achieved”. There have been successes in areas including managing invasive alien species and protecting ***lands*** and oceans.

However, ***targets*** have been missed on combating biodiversity loss in farming, controlling pollution, protecting reefs – and a diverse range of other threatened ecosystems.Have you read?

Biodiversity loss puts our food supplies and medical care at risk. It must be stopped This island’s dazzling flora makes it the most plant-diverse on the planet How biodiversity loss is hurting our ability to combat pandemics

But the report is not a counsel of despair. Instead it says we are at a “crossroads” – with choices to make. Eight “transitions” can stem decline, it says, from promoting sustainable food systems to making cities greener. They are themes the World Economic Forum’s Sustainable Development Impact Summit seeks to address.A range of actions could help reduce biodiversity loss.A range of actions could help reduce biodiversity loss.Image: CBD

‘Partially achieved’

The CBD’s analysis of the six biodiversity ***targets*** where progress has been “partially achieved” reveals some significant achievements. Landscape restoration programmes, including tree planting, have made inroads. The Forum’s 1t.org platform for the mass tree-planting movement seeks to bring some of them together.

But the report also flags where successes have been patchy and don’t translate into wider change.

1. Invasive alien species

The CBD recognizes that “good progress” has been made on identifying, prioritizing and looking at the feasibility of managing invasive species, with a number of successful programmes. The Forum has highlighted some – including robotic fish to scare away one of the world’s most invasive species, the mosquitofish. The distinction, however, is between important wins and a general trend. “There is no evidence of a slowing down in the number of new introductions of alien species,” the report concludes.How does the World Economic Forum encourage biological diversity?How does the World Economic Forum encourage biological diversity?

In the last 100 years, more than 90 percent of crop varieties have disappeared from farmers’ fields, and all of the world’s 17 main fishing grounds are now being fished at or above their sustainable limits.

These trends have reduced diversity in our diets, which is directly linked to diseases or health risk factors, such as diabetes, obesity and malnutrition.

One initiative which is bringing a renewed focus on biological diversity is the Tropical ***Forest*** Alliance.

This global public-private partnership is working on ***removing*** deforestation from four global commodity supply chains – palm oil, beef, soy, and pulp and paper.

The Alliance includes businesses, governments, civil society, indigenous people and communities, and international organizations.

Enquire to become a member or partner of the Forum and help stop deforestation linked to supply chains.

2. Protected areas

In 2010 a ***target*** was set to protect, by 2020, at least 17% of terrestrial and inland waters and 10% of coastal and marine areas. The UN’s Protected Planet team now estimate that more than 27,000,000km2 of seas are now protected. And at first sight the CBD’s verdict is positive: protected areas are “likely to reach the ***targets*** for 2020 and may be exceeded”. However, concerns remain whether there is enough protection of the most important habitats, and if protected areas benefit the wider, unprotected environment.

3. Access to Genetic Resources

The Aichi ***targets*** set out to make sure that the genetic resources – like plants, animals, seeds and spores – were fairly shared, with benefits distributed among producing and consuming countries. There is now a partial legal underpinning of these rights: by July 2020, 126 parties to the CBD had ratified the measure and 87 had put in place measures that support its principles.

4. National biodiversity strategy

As of July this year, 85% of parties to the Aichi ***targets*** have created and have started to implement an “effective, participatory and updated national biodiversity strategy and action plan”. But 15% have still to act.

5. Biodiversity knowledge

This is an area where technology is helping the planet. In 2010, a ***target*** was set to better share knowledge about biodiversity – the science and technology behind it, and the impacts of its loss. Since then, the CBD recognizes “big-data aggregation, advances in modelling and artificial intelligence opening up new opportunities for improved understanding of the biosphere”. But a key problem remains: who has access to that data? Information asymmetries remain.

6. Financial resources

Biodiversity needs investment. Conservation funding has roughly doubled since 2010, but is still not enough. The annual amount needed to adequately resource nature conservation is estimated to be between $300-400 billion every year, but currently around $52 billion is available. The CBD says there’s another problem too: “these resources are swamped by support for activities harmful to biodiversity”.

What we can do now

The report makes clear that this predominantly “business as usual” approach isn’t good enough, and nations and organizations around the world need to step up. The Forum’s plan for a Great Reset shares this ambition. The CBD outlines eight transitions that could help biodiversity going forward.

Top of the list is a ***land*** and ***forests*** transition: conserving intact ecosystems and reversing degradation. It’s a movement gaining support globally, with notable successes.

The CBD also advises nations to transition to more sustainable ***agriculture*** by redesigning it to include more “agroecological” approaches to enhance productivity. Unless things change, the agri-food sector is on track to produce half of all greenhouse gas ***emissions*** by 2050.The report recommends eight ‘transitions’ that can restore ecosystems.The report recommends eight ‘transitions’ that can restore ecosystems.Image: CBD

Our use of food systems – including fisheries and oceans – must also become more sustainable, argues the International Monetary Fund, making it easier to live healthily – and to be fed. Obesity is high, but 820 million people are also hungry, according to the UN. The CBD says eating less meat and producing much less waste will help.

At the heart of these policies will be a sustainable climate action transition, through measures such as accelerating the transition to renewables and a rapid phase-out of fossil fuels. Closely aligned is a One Health transition, linking healthy ecosystems to healthy people.

“Transformative changes are possible when they must be made,” says CBD Executive Secretary, Elizabeth Maruma Mrema of the radical action forced on the world by COVID-19. “The decisions and level of action we take now will have profound consequences – for good or ill – for all species, including ours.”

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[***Kashmir domicile law raises fears of losing land, culture***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:60FW-3G81-JBM6-H360-00000-00&context=1516831)

Garavi Gujarat (USA)

July 28, 2020 Tuesday

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**Length:** 969 words

**Byline:** Kiran Paul

**Body**

At 75 years old, Zareef Ahmad Zareef has been witness to several major events that have shaped Kashmir - for the worse, he says - since it became part ofin 1947.

Now, the historian and poet worries for the future of Kashmir's culture and its people, afterpassed a new law in May that allows non-locals to become permanent residents of the Muslim-majority territory.

"Our Kashmir is a garden. The new laws have thrown the doors open for plunderers to ruin it," said Zareef in a phone interview from Srinagar, Kashmir's main city.

"The days are not far when we will be left with no job opportunities or economic resources, including ***land*** and ***forests***," he added. "Kashmiris will become second-class citizens in their own homeland."

The law makes it possible for people from outside Kashmir to become permanent residents, sparking fears among locals that non-locals will get priority when it comes to housing, jobs and education.

It follows's ***removal*** of special status for the state of Jammu and Kashmir in August 2019, which opened the door for non-Kashmiris to buy ***land*** and property, get government jobs and attend institutes of higher education.

Those receiving domicile certificates include war refugees from Pakistan, Gurkha soldiers from Nepal who had served in then army and marginalised groups such as sanitation workers from the state of Punjab, noted Haroon Reshi, a freelance journalist based in Srinagar.

"Our distinct social and cultural identity, whether it's our languages or traditions - everything is in danger," Reshi told the Thomson Reuters Foundation.

The office of Kashmir Divisional Commissioner Pandurang K. Pole did not respond to several requests for comment.

Speaking to reporters this month, Girish Chander Murmu, lieutenant governor for Jammu and Kashmir, said the aim of the law is to encourage investment in the region.

"Our one-point agenda is the development and creating (job) opportunities for the youth. Our ***target*** is a prosperous Jammu and Kashmir," he said.

In another move officials said would generate jobs and boost development, then administration on July 24 approved setting aside 488 hectares (1,205 acres) of state ***land*** to build industrial estates in about 35 locations across the region.

Raja Muzaffar Bhat, chairman of the J&K RTI Movement, an anti-corruption charity, described the decision as "disastrous" in a statement on Monday, saying the government should instead focus on establishing more ***agricultural*** ***land*** and creating green jobs.

Kashmir is claimed in full byand Pakistan and both rule parts of it.'s portion has been plagued by separatist violence since the late 1980s.

The new domicile rule states that anyn national who has lived in Jammu and Kashmir for at least 15 years or has studied for seven years and taken certain exams can become a permanent resident.

's government has said applications must be issued or rejected within 15 days and has introduced a fine of 50,000 rupees ($670) to be deducted from the salary of any official in the territory who delays the process.

Zareef, the historian, said one fear among many Kashmiris is that rich non-locals will use their new residency status to buy up ***land*** and property from financially struggling Kashmiris, taking away the only permanent asset that most locals have.

Some civil society groups in Kashmir have been forming committees to warn people not to sell their ***land*** to non-locals, he added.

Some Kashmiris look to's coastal state of Goa as a sign of things to come.

In 2008,placed strict restrictions on non-Goans owning ***land*** in the state, a popular tourist destination.

At the time, Goans complained that those rules were routinely flouted and blamed illegal homeowners for an erosion in local culture and rising crime.

Real estate experts have said that, for now, fears that the same could happen in Kashmir are unfounded.

Showkat Ahmad Anim, managing director of Arco InfraCon, a commercial construction company based in Srinagar, said his company has not received a single query from non-locals since the revocation of Jammu and Kashmir's special status.

"No one wants to own ***land*** or property here due to the turmoil. Everyone would prefer to go to America, Dubai or Sharjah," he said.

Even with the real estate sector at a standstill, the Jammu and Kashmir State Industrial Development Corporation has been creating a bank of state-owned ***land*** to sell to outside investors, according to officials who requested anonymity because they were not authorised to talk to the press.

Along with possibly losing ***land*** and property, Kashmiris say they fear that giving non-locals the rights of residents will make it harder for locals to get access to jobs, spaces at schools and universities, and public housing.

Khurram Pervez, a prominent human rights activist based in Srinagar, noted that currently residents living in slum areas in Jammu and Kashmir are entitled to affordable housing.

The new law could make "tens of thousands" of migrant labourers from othern states eligible for public housing, too, he warned.

Sheikh Ashiq Ahmad, president of the Kashmir Chamber of Commerce and Industry, noted that the territory's economy is struggling.

Tourism, exports and other sectors have been hit hard by frequent lockdowns and internet blackouts since August last year - whichsaid were necessary to maintain security in the region - and then the ongoing coronavirus pandemic.

Since the August lockdown, he said, Kashmir's economy has suffered a loss of more than $5.3 billion.

"I have been associated with the Chamber for the last 10 years and this is the worst time that I have ever witnessed," he said.

Ashiq worries that an influx of non-locals will prolong and complicate Kashmir's recovery efforts.

"Adding more people to the union territory will only aggravate the economic crisis and increase the burden of unemployment," he said.

**Load-Date:** July 28, 2020

**End of Document**



[***A global review of ecological fiscal transfers***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:671W-P2M1-JCWX-C2G7-00000-00&context=1516831)

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**Byline:** [*jbusch@conservation.org*](mailto:jbusch@conservation.org)

**Body**

Main

The environmental benefits of conserving ecosystems accrue at all scales from local to global, while many economic costs of conserving ecosystems are borne locally. As a result, local public resources to address large-scale environmental challenges such as climate change and biodiversity loss are often underfinanced. One mechanism for overcoming the scale mismatch between the environmental benefits and the economic costs of ecosystem conservation is ecological fiscal transfers (EFT).

EFT transfer public revenue between governments within a country based on ecological indicators (Fig. ). Here, ‘ecological’ refers to ecological public functions of governments, which encompass both nature conservation and abatement of environmental pollution. EFT may transfer revenue ‘vertically’ from higher-level to lower-level governments or ‘horizontally’ between governments at the same level. EFT may be ‘general-purpose’ transfers to subnational government budgets that can be spent on any priority of recipient jurisdictions, whether ecological or non-ecological. Or they may be ‘specific-purpose’ transfers earmarked for a particular ecological use, for example, reforestation or water treatment.

Alternative scales of EFT in intergovernmental fiscal relations.

Arrows indicate directions of fiscal transfers. Vertical transfers are possible between levels of government; horizontal transfers are possible within levels of government.

EFT can compensate subnational governments for the management costs of conserving ecosystems and the opportunity costs of forgone tax receipts from revenue-generating activities. In principle, EFT can also incentivize subnational governments to provide greater ecological conservation, thereby contributing to global efforts to increase conservation and restoration, fight climate change,, stem biodiversity loss, enhance nature’s cultural services and achieve sustainable development goals. EFT have been recognized as an innovative approach to financing conservation–.

EFT can be established by modifying existing intergovernmental fiscal relations, that is, institutional channels of regular financial flows between different levels of government. This can make EFT institutionally easier to implement than programmes that require approving new, additional, annual budget outlays. Relative to such programmes, EFT can also have lower start-up costs, lower transaction costs across heterogeneous regions and greater long-term stability. EFT have been established in five countries and eighteen Brazilian states (Table ), and are emerging or have been proposed in at least ten more countries (Fig. ).

Characteristics of EFT

| **Country (state)** | **Year enacted** | **Levels** | **Indicator(s)** | **Percentage of IGFT that is ecological** | **Source of funds** |
| --- | --- | --- | --- | --- | --- |
| Portugal | 2007 | 1?3 | PA | 2.5?2.7 | National general budget |
| France | 2007 | 1?3 | Strictly protected terrestrial area; marine park | 0.02 | National general budget |
| China | 2010 | 1?3 | Multi-element formula to local governments with NKEFA | 0.95 | National general budget |
| China | 2012 | 2?2 | Water quality | 100 | Provincial budgets; national general budget |
| India | 2015 | 1?2 | Area of high or moderately dense ***forest*** | 2015?2020: 7.52020?2021: 10 | National tax revenue |
| Brazil (Paraná) | 1991 | 2?3 | PA; IT; water protection | 5 | State VAT |
| Brazil (São Paulo) | 1993 | 2?3 | PA; water protection | 1 | State VAT |
| Brazil (Mato Grosso do Sul) | 1994 | 2?3 | PA; IT; waste treatment | 5 | State VAT |
| Brazil (Minas Gerais) | 1995 | 2?3 | PA; IT; waste treatment; ***forest*** area; water resources | 1.35 | State VAT |
| Brazil (Rondônia) | 1996 | 2?3 | PA; IT | 5 | State VAT |
| Brazil (Rio Grande do Sul) | 1997 | 2?3 | PA; IT; environmental quality index; waste treatment | 7 | State VAT |
| Brazil (Amapá) | 1998 | 2?3 | PA; IT | 1.4 | State VAT |
| Brazil (Mato Grosso) | 2000 | 2?3 | PA; IT; sanitation | 7 | State VAT |
| Brazil (Pernambuco) | 2000 | 2?3 | PA; waste treatment | 3 | State VAT |
| Brazil (Tocantins) | 2002 | 2?3 | PA; IT; water conservation; ***forest*** fire control; soil conservation; environmental policy | 13 | State VAT |
| Brazil (Acre) | 2004 | 2?3 | PA | 20 | State VAT |
| Brazil (Rio de Janeiro) | 2007 | 2?3 | PA; water quality; waste treatment | 2.5 | State VAT |
| Brazil (Goiás) | 2007 | 2?3 | PA; watershed protection | 5 | State VAT |
| Brazil (Ceará) | 2007 | 2?3 | Waste treatment | 2 | State VAT |
| Brazil (Piauí) | 2008 | 2?3 | Environmental seal (an award based on nine indicators) | 5 | State VAT |
| Brazil (Paraíba) | 2011 | 2?3 | PA | 5 | State VAT |
| Brazil (Pará) | 2012 | 2?3 | PA; IT; deforestation reduction; cadastral registration | 8 | State VAT |
| Brazil (Alagoas) | 2020 | 2?3 | Biodiversity conservation; related criteria | 3 | State VAT |

Data from refs. ,,–,,,,. Level 1 is the national, level 2 the state/provincial level and level 3 the county/municipal level. PA, protected area; IT, indigenous territories; VAT, value-added tax. Year enacted in Brazil refers to year of initial legislation.

World map of EFT.

An EFT at the global level has also been proposed by Droste et al.. Proposed European Union-wide and Brazil-wide EFT are outlined to show a distinction from EFT in European countries and Brazilian states.

EFT are a subset of intergovernmental fiscal transfers (IGFT). More than US$4.9 trillion yr−1 is transferred from national governments to lower-level governments through grants and subsidies. Most countries have some form of IGFT. IGFT make up about two-thirds of subnational government financing in developing countries and about one-fifth in OECD countries. The US$23 billion per year transferred through EFT globally in 2020 (Fig. ) represents less than 0.5% of overall transfers through IGFT.

Annual global volume of EFT.

Authors’ calculations. Data for Brazil for 2018–2020 are extrapolated from 2017, the most recent year for which data are available for all states. Data for France data are extrapolated from 2011. Nominal values are not adjusted for inflation.

EFT are an instrument for financing ecological conservation, alongside complementary mechanisms such as payments for ecosystem services,, reducing ***emissions*** from deforestation and ***forest*** degradation (REDD+), and finance for protected areas. While payments for ecosystem services generally transfer funds to private or communal landholders, and REDD+ transfers funds internationally, EFT are distinguished in that they transfer funds within a country to subnational governments.

The academic literature on the practice and theory of EFT is still relatively small relative to these other instruments. Previous reviews of EFT have focused on Brazilian states’ EFT and existing and proposed EFT in Europe. There is a need for a comprehensive, global, synthetic review of EFT experiences and literature, which we provide here.

In this global review, we have sought to include every established, emerging and proposed EFT worldwide. We provide the first documentation in an English-language peer-reviewed publication for emerging EFT in Indonesia, Mongolia, and Uganda as well as proposed EFT in Ukraine.

We discuss common themes of EFT and the literature that has studied them, related to emergence, design and effects. We have sought to include every paper on EFT published in an English-language academic journal, as well as selected other publications. We compiled studies on the basis of the collective knowledge of 23 researchers from 15 countries who participated in an expert workshop in September 2020, supplemented by a Google Scholar keyword search for ‘ecological fiscal transfer.’

We also discuss the scope of opportunity for expanding EFT to other countries by greening a fraction of the US$4.9 trillion yr−1 in IGFT. This is especially timely in light of the updated climate pledges national governments are making to the United Nations Framework Convention on Climate Change (UNFCCC), the Convention on Biological Diversity (CBD) post-2020 framework and the United Nations Decade on Ecosystem Restoration.

Established EFT

Brazil

Brazil’s federal constitution has authorized Brazilian states to levy a value-added tax since 1922, with its current formulation as a Tax on Commerce and Services (Imposto sobre Circulação de Mercadorias e Serviços, ICMS) dating to the 1988 constitution. Constitutionally, 75% of revenue raised by the ICMS is retained by the state government, while the remaining 25% must be devolved to municipal governments. Each state may determine the formula by which 25% of this latter municipal quarter of revenue (6.25% of the total ICMS revenue) is distributed,,.

Following the creation of national water and biodiversity protection areas in the state of Paraná in the 1980s, municipal leaders felt disadvantaged, and organized themselves to obtain technical and political support from the state legislature and government agencies. These agencies supported the right of municipalities to be compensated for the revenue lost due to protected areas that they would otherwise have received from taxes on economic activity. In 1991, as a mechanism for compensating municipalities, Paraná added protected areas for biodiversity conservation and watershed protection to its ICMS formula, each accounting for 2.5% of municipal revenue, alongside indicators related to ***agricultural*** production, population, rural properties and municipal area,. This marked the first time an ecological indicator had been included in a state’s ICMS allocation formula, making it an ICMS Ecológico (ICMS-E).

Over the next three decades, the ICMS-E concept spread throughout Brazil. As of 2020, ecological indicators had been included in the ICMS of 18 of Brazil’s 27 states,. In some states the ICMS-E is termed the ICMS Verde or ICMS Socioambiental, or has no specific name. ***Land*** area under protection is an indicator in 15 states, indigenous ***land*** is included in 11 states and basic sanitation (including waste management, wastewater and water treatment) is an indicator in at least 7 states. Other ecological indicators include ***forest*** area in Minas Gerais, deforestation reduction in Pará, fire control in Tocantins and areas flooded by dams in Rio Grande do Sul. The share of municipal ICMS revenue based on these ecological indicators varies from 1% in São Paulo state to 20% in Acre. Wilson Loureiro, an agronomist at the Paraná State Environmental Agency, was instrumental in drafting the original ICMS-E legislation and helping it expand to other states, while non-governmental organizations The Nature Conservancy and SOS Mata Atlântica maintained an influential website until 2019 showing how much money municipalities received from the ICMS-E. Over time, the rationale for the fiscal transfer evolved to include incentivizing greater provision of protected areas and waste treatment by municipal governments,,.

Brazil’s federal system allows different state legislatures to experiment with different revenue allocations across municipalities. For example, the states of Minas Gerais, Paraná, Piauí and Rio de Janeiro introduced qualitative indicators of protected area management. A further level of variation occurs at the level of municipal governments, which allocate ICMS revenues in accordance with their budget priorities. States also varied in the degree to which their EFT experienced delays between enactment by a legislature and implementation by a state agency.

Between 1992 and 2017, the ICMS-E devolved more than 21 billion reais (around US$8.8 billion) to municipal governments (authors’ estimates based on Institute for Applied Economic Research data). There is evidence from panel regressions across Brazilian states that EFT led to a tripling in municipal protected areas and a shorter average time to protected area designation. However, there are questions about whether some of these new protected areas are unmanaged ‘paper parks’—an extreme example is an entire municipality in Minas Gerais that was made into an environmental protection area to benefit from the ICMS-E. Proposals for a Brazil-wide national-to-state EFT have been introduced to the Brazilian Parliament since 1999, but none have yet passed into law.

Portugal

Portugal’s Local Finances Law (Lei das Finanças Locais, LFL) defines the conditions and rules for the transfer of funds from the general national budget to the budgets of more than 300 local municipalities on the basis of indicators including population and area,. In 2007, inspired by the Brazilian case, Portugal implemented a national-to-local EFT by adding an indicator related to the area and percentage of ***land*** under nature protection, including the European Union’s Natura 2000 network. The main purpose was to compensate municipalities for lost revenue resulting from protected areas. The introduction of EFT was part of a larger reform of fiscal transfers in 2007, which also included deep changes in the Local Finances Law and many simultaneous changes to the fiscal transfer criteria.

The 2007 introduction of EFT was an initiative of Portugal’s central government, approved by Parliament. Municipalities were not generally involved in its discussion or design. This became a problem as EFT were not perceived by many mayors. Only later, in 2014, was the Association of Portuguese Municipalities (ANMP) formally consulted as part of the work of the Commission for the Reform of Green Taxation, supporting Commission proposals to reinforce the mechanism, isolate and make visible the EFT values received by each municipality in the annual fiscal transfers, and explore the potential for a partial earmarking of received transfers.

The Portuguese EFT transferred between €789–852 million (around US$988–1,067 million) to municipalities between its first year of payment in 2008 and 2020. It represented 2.5–2.7% of total fiscal transfers (authors’ calculations based on data from Direção-Geral das Autarquias Locais and Annexes of Lei do Orçamento do Estado), although this funded more than 30% of some municipal budgets in some years. Most protected areas in Portugal were created at the national level and EFT were not relevant to incentivizing additional efforts at this level. Nevertheless, a synthetic control econometric analysis found that EFT may have been responsible for an increase in the number of regional and local-level protected areas.

France

The French dotation globale de fonctionnement (DGF) is an instrument that has been in place since 1979 for redistributing funds from the unitary central government to local public authorities including departments and municipalities. The DGF is divided, with 85% allocated as a lump sum on the basis of population, area and other criteria, while the remaining 15% is an ‘equalization allocation’ that compensates for differences between rural and urban areas and compensates municipalities whose fiscal capacity is lower than the average national fiscal capacity.

In 2007, two ecological criteria were added to the lump-sum portion of the DGF: municipalities with an area within the core of a national park, or with some area within a marine park. The purpose was to compensate municipalities with a portion of their territories under strict protection and therefore subject to restrictions regarding ***land*** use. However, on the basis of these limited criteria, only 150 municipalities out of nearly 35,000 were eligible to receive funding. The ‘ecological allocation’ amounted to around €3 million (around US$4 million), or just 0.02% of the €13.6 billion (around US$18.9 billion) that was distributed to French municipalities via the DGF in 2011. Although the funding is allocated on the basis of ecological indicators, it is not earmarked and need not be used for conservation actions.

The 2019 Finance Law (article 256) changed EFT to include a third type of protected areas—Natura 2000 sites. Natura 2000 sites are much more widespread in France than national parks and marine parks, covering around 13% of French territory. With this change, the number of eligible municipalities increased from 150 to 1,120. The EFT are apportioned such that 40% is distributed to municipalities with territory in core national park areas, 5% to municipalities with marine natural parks and 55% to municipalities with 75% of their territories within a Natura 2000 area. In all cases, municipalities must have fewer than 10,000 inhabitants to receive this ecological allocation.

China

China combines administrative centralization, in which upper-level government pushes mandatory administrative orders to lower-level governments, with fiscal decentralization, in which lower-level governments have autonomy in raising revenues and providing public goods and services,. The Chinese system of intergovernmental fiscal transfers includes three types of EFT,.

The most important EFT are the general-purpose fiscal transfer payments for National Key Ecological Function Areas (NKEFA), established nationwide in 2010 to compensate county-level governments for their expenditures and to stimulate them to promote nature conservation in areas with vulnerable biodiversity. China’s Major Function Oriented Zoning scheme of 2010 categorizes ***land*** into four ***land***-use types: prioritized development; optimized development; restricted development; and prohibited development. The EFT distributes around 0.95% of the general transfer from the central government to local governments to those counties that have NKEFA on the basis of an allocation formula that includes multiple elements related to ecosystem quality (for example, biological richness, vegetation coverage, water network density, ***land*** stress, pollution load and environmental restrictions). The transfer scheme also includes bonus payments for local governments that perform well, and fines for local governments that perform poorly, based in part on an ecological index,. The central government transferred approximately 79 billion yuan (around US$11.4 billion) via the NKEFA scheme in 2020,.

Second, the central government allocates more than 80 billion yuan annually in specific-purpose transfer payments to subnational governments for seven programmes with nature conservation ***targets***. These programmes include the Natural ***Forest*** Protection Project, Conversion of Cropland to ***Forest*** and Grassland Program (CCFGP), Returning Pastureland to Grassland Project, Beijing–Tianjin Sandstorm Source Control Program, ***Forest*** Ecological Benefit Compensation Fund, Subsidy and Rewards for Ecological Protection of Grasslands (National Grassland Eco-Compensation Program) and the Marine Ecological Protection and Restoration Funds.

The third EFT is a horizontal, bidirectional agreement between neighbouring provinces for governing the environmental externality of water quality. Pioneered by the provinces of Anhui and Zhejiang, the downstream Zhejiang pays upstream Anhui for improvements in the water quality of the Xin’an River above a benchmark. If water quality deteriorates below the benchmark, Anhui must pay Zhejiang. The central government monitors, enforces and contributes 300 million yuan (around US$43 million) per year to the 700 million yuan (around US$100 million) horizontal EFT. Without the involvement of the central government, lower-level governments face prohibitive transaction costs to setting up their own horizontal transfers. This type of horizontal EFT has expanded to other provinces in the past decade. Horizontal EFT have also been proposed for farmland preservation.

Several studies have found China’s NKEFA payments to have had a positive effect on some aspects of environmental quality. Quasi-experimental studies using propensity score matching found that transfer payments reduced pollution-intensive activity in the Yangtze River Basin and improved environmental quality in Guangdong Province. Panel regressions across Chinese provinces found that transfer payments reduced pollution but did not increase natural ecological ***land*** cover, and that payments improved water quality, with this improvement mediated by local government spending on environmental protection.

India

India’s Finance Commission—an independent, apolitical body whose recommendations are generally accepted without revision—decides every five years how much tax revenue is distributed from the Union to state governments (‘vertical devolution’), and the formula for how this revenue is distributed between states (‘horizontal devolution’). The horizontal devolution formula included population since its inception in 1952, later joined by income and ***land*** area, and in some years infrastructure and fiscal discipline.

India’s EFT began in 2015 when the 14th Finance Commission included the areas of high- or moderate-density ***forest*** as 7.5% of the distribution formula, as proposed by ref. . The rationale was to compensate states for ‘fiscal disability’ of forgone tax revenue due to ***forest*** cover, and also to recognize ***forests***’ ‘huge’ ecological benefits.

Previously, the 12th and 13th Finance Commissions had provided states with specific-purpose grants for forestry of 10 billion rupees (around US$40 million) and 50 billion rupees (around US$200 million) respectively, comprising less than 0.05% of national-to-state transfers. When the 14th Finance Commission replaced these grants with lump-sum general-purpose EFT in the allocation formula for sharing the divisible pool of tax revenue, the funding increased by several orders of magnitude. In the first five years of the EFT, more than 34 trillion rupees (approximately US$37 billion) were transferred to states on the basis of ***forest*** cover. The introduction of EFT was concurrent with a substantial increase in transfers to states as vertical devolution was increased from 32% to 42% of tax revenue.

India’s Nationally Determined Contribution on climate references the EFT as supporting achieving India’s ***forest*** cover goal of 33% (ref. ). Evidence from simple correlations does not yet show an association between larger contributions of EFT to state revenue and increased ***forest*** cover or state forestry budgets, perhaps because state policymakers were uncertain whether the EFT would continue, because of time lags before new trees become visible to satellite monitors or because the transfers were not granted directly to the forestry sector. The 15th Finance Commission strengthened the EFT in its 2020 interim recommendations, by increasing the share of revenue states receive from ***forests*** from 7.5% to 10%, changing the name of the criterion from ‘***forest*** cover’ to ‘***forest*** and ecology’ and updating the measurement year for ***forest*** cover, giving confidence to state governments that increases in ***forest*** cover would be rewarded with increases in funding.

Emerging EFT

EFT are emerging—that is, have recently been enabled through government legislation, decrees or planning documents, but do not yet have a record of financial transfers—in several countries.

Indonesia

A former specific-purpose EFT, Indonesia’s Reforestation Fund, distributed national funds to provinces and districts on the basis of ecological indicators from 1976–2004 before being amended–.

More recently, numerous proposals for EFT in Indonesia have been put forward. EFT from the central government to subnational governments in the form of general-purpose transfers through the General Allocation Fund (Dana Alokasi Umum, DAU) have been proposed both by scholars, and provincial and district governments. Revenue-sharing arrangements for REDD+,, non-state budget grants funnelled through transfers, and EFT to villages, have also been proposed.

The first general-purpose EFT to be implemented in Indonesia was the Ecological Provincial Budget Transfer (Transfer Anggaran Provinsi berbasis Ekologi, TAPE), which involves budget transfers from provincial to district governments on the basis of ecological indicators to be decided by each province. Motivations for the EFT include increasing provincial influence over environmental management in a country where since 2001 considerable authority has been devolved to districts, reducing inequality among districts and providing positive incentives from the general provincial budget directly to districts and villages to improve environmental performance.

The first province to implement this EFT was North Kalimantan. In 2019, the governor issued a regulation, followed by implementation in 2020 with a size of around 5 billion rupiah (US$340,000), and monitoring and evaluation related to impact assessment. The five ecological indicators set by North Kalimantan are reduction in ***forest*** fires, water quality, air quality, waste management and an open space index.

Mongolia

Mongolia decentralized nature conservation functions to subnational governments in 2012. These local conservation functions are financed in part by locally collected natural resource use fees, a minimum portion of which is earmarked for this purpose,. The residual deficit between the above fees and estimates of local governments’ recurring conservation expenditures remainder is financed by support transfers from the central government. These estimates on which transfers are based now include ecological factors such as the presence of protected areas, natural formations of the territory and ***land*** restoration needs.

Uganda

Uganda plans to pilot an EFT focused on ***forest*** cover as a reward system for the sustainable management of natural resources. The rationale is to raise funds for biodiversity in a country where protected area-based tourism is an important economic driver. Natural resource fees collected by local governments would be transferred to the national government, then returned to local governments based on an index of ecological indicators that could include areas of protection, the reintroduction of species or the ***removal*** of invasive species.

Proposed EFT

In Germany, many specific-purpose state-to-local environmental fiscal transfers already exist,. EFT considering nature conservation through the addition of protected area-related indicators to the financial equalization systems at the national-to-state level, and state-to-local level, have been proposed.

In Switzerland, Köllner et al. proposed including indicators for biodiversity conservation based on cantonal benchmarking in Switzerland’s fiscal transfer system. Although Switzerland’s amended fiscal transfer system as of 2005 did not consider biodiversity-related indicators, it introduced a specific-purpose result-oriented programming approach for the environment, which since 2008 has included multi-annual national-to-cantonal programme agreements in areas such as landscape and nature conservation, wildlife protected areas, noise and sound protection, protective buildings and hazards, ***forests*** and revitalizations.

In Poland, the Association of Rural Municipalities proposed a Polish EFT scheme in 2012, following the implementation of the EU’s Natura 2000 network. The so-called Ecological Subsidies Act would have allocated about €200 million annually in lump-sum transfers to municipalities hosting Natura 2000 sites.

In Ukraine, Kotenko and Ilyashenko proposed implementing ecological conditional transfers by including indicators related to environmental services, anthropogenic pressure, environmental deterioration and implementation of environmental programmes within the system of vertical alignment.

In Australia, Hajkowicz proposed that an index of 29 environmental, cultural and economic indicators be added to the formula determining how a AUD$146.6 million fund for combating water salinity, which has since expired, should be transferred from the government of Queensland to 14 regional governments.

Europe-wide, Droste et al. proposed compensating national governments for conservation efforts through a European Union scheme in which the Programme for Environment and Climate Action (LIFE) or European Fund for Regional Development (ERDF) would be broadened to include area and management quality of Natura 2000 network sites.

Globally, Droste et al. proposed an intergovernmental transfer scheme to support the achievement of Aichi Biodiversity ***Target*** 11 on protected areas, in which protected area coverage, human development and population density would be considered.

Common themes

Emergence

Multiple rationales have been put forward for the introduction of EFT. EFT may be introduced to compensate local governments for their costs in providing ecological public goods and services, or for the lost tax revenue they might otherwise have received from ***land*** uses that produce greater revenue streams and thus a larger tax base. Compensation to local governments for top-down impositions on ***land*** use is part of the rationale in all five countries with existing EFT. In addition, EFT can be justified as paying for the benefits of ecological public goods and services that spill over beyond the boundaries of decentralized jurisdictions; such goods will otherwise be underprovided. Incentivizing greater provision of environmental public goods is part of the rationale for EFT in Brazil, China and India. Furthermore, EFT sit within larger IGFT systems, which in some countries have the rationale of redistribution, or equalization, of public revenue to raise the public budgets of poorer states or municipalities. In all five countries with EFT, equalization is a rationale and criterion of the overall IGFT, although not the EFT.

Several factors seem to make the emergence of EFT more likely. Certainly, one factor is an established mechanism for redistributing public funds between different levels of government; that is, an IGFT. ***Land*** area as an element of IGFT has commonly been a precursor to EFT. The emergence of EFT has often been preceded by ***land***-use restrictions followed by political processes recognizing a need to compensate affected municipalities. Evidence from Brazilian states finds that EFT emergence is more likely in non-election years. EFT that have an incentivizing rationale are probably more likely to emerge in countries where recipient governments have greater decentralized authority to make ***land***-use decisions, as in Brazil, China and India. Emergence may be more likely in a more decentralized or federal system such as Brazil’s, where states such as Paraná can be policy innovators, and where states may be less likely than the national government to value environmental public goods over private development benefits in the absence of incentives. Meanwhile, the expansion of EFT may be easier in a more centralized or unitary system.

Design

Indicators for an EFT may relate to either nature conservation or abatement of environmental pollution. They may be based on natural endowment (for example, ***forest*** cover in India), changes in the status of the endowment (for example, avoided deforestation in Pará) or actions or instruments to conserve that endowment (for example, firefighting in Tocantins; and protected areas in Portugal, France and many Brazilian states). Indicators may be either quantitative or qualitative (for example, protected area quality in some Brazilian states).

Indicators should be easy to monitor. They should be based on reliable, authoritative, standardized data that is collected consistently across all recipient jurisdictions, rather than data that is reported independently by each recipient or is subjective. An indicator should also have a reasonably predictable value so that recipient revenues do not fluctuate erratically. There is a trade-off between a simple indicator, which may have lower transaction costs, be easier to explain to the public and which policymakers tend to prefer, or a weighted index of indicators which might better capture more complex systems. For example, India’s EFT might have considered altitude, biodiversity, pristineness, or connectivity of ***forests***; instead they chose an indicator based on area of dense ***forest*** only. A simple indicator might also reduce manipulation of fiscal transfers for partisan politics.

If EFT are intended to have an incentive effect, the outcome measured by the indicator should be within the authority of the recipient jurisdiction to control,. The indicator should be performance-based and closely tied to the desired outcome to avoid recipient jurisdictions increasing the indicator without improving the outcome.

The ideal size of an EFT, in terms of the amount of funding or percentage of IGFT, depends on its rationale. If the primary rationale is allocating sufficient financial resources for the provision of ecological public goods and services, then estimates of required resources for the relevant ecological public functions (considering current underfinancing) are a starting point. If the primary goal is incentivizing conservation, then the size of the transfer would need to be comparable to or greater than opportunity costs. For example, EFT in India were sized proportionally to estimates of forgone state tax revenues. Alternatively, the EFT could be based on ecosystem services valuation. If the rationale is related to ecological benefits that spill over beyond jurisdictional boundaries, then the EFT might cover only the spillover benefits, with internal benefits covered by the jurisdiction through matching funds. Or, more commonly and pragmatically, the size of an EFT could start with a politically reasonable number, with the amount evolving over time with experience.

Specific-purpose EFT have the putative benefit of increasing specific budgets for environmental goals. However, general-purpose EFT give recipient governments more spending autonomy,, and will typically be larger, as in India, potentially resulting in more systemic transformation. Specific-purpose transfers may be legally restricted in some countries, as in Brazil. General-purpose and specific-purpose transfers can be combined, as in China’s eco-compensation programme, which includes general-purpose transfers for NKEFA and specific-purpose transfers for six other programmes. At least in China, the general-purpose transfers are supported by a dedicated institutional funding channel (the general transfer from central government to local budgets), so they have greater long-term stability than the specific-purpose transfers, which depend on projects having appropriations from the central government budget.

Effects

The effect of EFT on the revenues of jurisdictional recipients will vary by the origin or type of funds to be allocated, as well as on the allocation formula. There is a trade-off between the amount of IGFT revenue that can be allocated on the basis of ecological indicators and the amount allocated on the basis of other indicators such as population or ***land*** area. Some recipient jurisdictions gain revenue from the introduction of EFT, while others lose revenue (as in Portugal, for example).

There is evidence cited above that EFT have already incentivized subnational governments to increase protected area coverage in Brazil and Portugal and improve environmental quality in China. As noted earlier, EFT intended to incentivize the greater provision of ecological public goods should be within the authority of the recipient jurisdiction to control, performance-based and closely tied to the desired outcome. Understanding the design features and contexts that make subnational governments more responsive to the financial incentives remains an important topic for future research, with relevance not only to EFT but to other payment-for-performance instruments such as REDD+ as well.

There may be synergies between EFT and other goals of IGFT, particularly equalization. Regions that ‘win’ by receiving greater EFT due to their greater share of ***land*** protection or ***forest*** cover may also be more remote, with greater fiscal need and lower fiscal capacity (for example, as in Germany). Meanwhile, regions that ‘lose’ by receiving less EFT may be more urban and well off, with IGFT comprising a much smaller share of their budget, and higher government revenues from other sources, such as business and ***land*** taxes. Thus there can be a double dividend of revenue equalization and the promotion of ecological outcomes. However, redistributing public revenue on the basis of ecological indicators could run counter to the goal of equalization if more protected or more ***forested*** regions are very thinly populated or receive high income from other sources.

The visibility and transparency of EFT funds to recipients also varies. In Paraná, the ecological portion of the ICMS is transferred separately into municipal accounts, and even appears on constituents’ electric bills in some municipalities, creating high visibility and debate on fund allocation. Conversely, in Portugal, where the EFT lacks a named designation and the size of transfers is not communicated, recipients may be less inclined to be supportive.

EFT can have other effects beyond environmental and revenue outcomes. Such effects can be intended or unintended. Within recipient jurisdictions, EFT can influence power dynamics and local governance as well as social equity and perceptions of conservation. What outcomes are achieved are determined in part by the capacity of recipient governments and the engagement of local environmental organizations. EFT may also introduce competition for the ecological funds among municipalities. The onward allocation of EFT funding within municipalities can have its own effects, for example, to support ***forest*** restoration goals. EFT can have a decentralizing effect on environmental decision-making. For example, when Portugal devolved responsibility for protected area designation, municipalities may have designated protected areas that conserved locally important ecosystems, rather than nationally important areas.

Last, but not least, EFT are just one instrument in the wider conservation policy mix. They cannot be expected to accomplish all policy goals. Motivating decision makers other than subnational governments is best addressed directly by other instruments.

Opportunities for expansion

EFT have compensated subnational governments in five countries for the costs of top-down ***land***-use restrictions. They have incentivized the formation of new protected areas in Brazil and Portugal, improved environmental quality in China and supported international climate commitments in India.

EFT are emerging in Indonesia, Mongolia and Uganda, and there is scope for other countries to enact EFT as well. Governments may find EFT an attractive way to distribute finance for environmental outcomes, since in many countries this would not require legislatures to appropriate new, additional annual funding from constrained public budgets. Instead, existing and regular financial flows to states or municipalities could be redistributed among the same public recipients in a way that incentivizes greater provision of environmental services. Incentivizing greater environmental service provision without appropriating new funding may be especially attractive to governments in post-Covid recovery.

Only a miniscule share of IGFT—about US$23 billion yr−1—is based on ecological indicators at present; that is, are EFT. More than 99.5% of the US$4.9 trillion yr−1 in IGFT funding is based on other indicators. For the vast bulk of IGFT, this is appropriate. IGFT mainly have other goals that supersede environmental objectives, for example, to provide stable and predictable funding to subnational governments to provide public goods and services for their inhabitants, and to equitably rebalance budgets across jurisdictions of varying income levels. In addition, some IGFT are dedicated to supporting goals in other sectors, such as education, health or infrastructure.

However, greening even a small fraction of IGFT could go a long way towards addressing environmental challenges related to climate change, deforestation, biodiversity loss, water quality, nature’s cultural services and so forth. Even if only 2% of IGFT was ‘greened,’ the volume of funding mobilized would be equal in magnitude to developed countries’ Copenhagen pledge of US$100 billion yr−1 for climate mitigation and adaptation. National governments are formulating pledges of heightened environmental ambition to the UNFCCC, CBD and the UN Decade of Restoration. Given their potential, EFT could comprise an important element of these pledges.

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**End of Document**



[***Removal of Emerald Ash Borer Domestic Quarantine Regulations***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:61JB-4TY1-F0YC-N09Y-00000-00&context=1516831)

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**Body**

Washington, DC: This Rule document was issued by the Animal and Plant Health Inspection Service (APHIS)

Action

Final rule.Summary

We are ***removing*** the domestic quarantine regulations for the plant pest emerald ash borer. This action will discontinue the domestic regulatory component of the emerald ash borer program as a means to more effectively direct available resources toward management and containment of the pest. Funding previously allocated to the implementation and enforcement of these domestic quarantine regulations will instead be directed to nonregulatory options to mitigate and control the pest.Dates

Effective January 14, 2021.For Further Information Contact

Mr. Herbert Bolton, National Policy Manager, PPQ, APHIS, 4700 River Road, Unit 26, Riverdale, MD 20737-1231; (301) 851-3594; [*Herbert.Bolton@usda.gov*](mailto:Herbert.Bolton@usda.gov) Supplementary InformationBackground

Emerald ash borer (EAB, Agrilus planipennis) is a destructive wood-boring pest of ash (Fraxinus spp.) native to China and other areas of East Asia. First discovered in the United States in southeast Michigan in 2002, EAB is well-suited for climatic conditions in the continental United States and is able to attack and kill healthy trees in both natural and urban environments. As a result, EAB infestations have been detected in 35 States and the District of Columbia, with additional infestations that have not yet been detected likely. (1) The Animal and Plant Health Inspection Service (APHIS), through notice and comment rulemaking, instituted a domestic quarantine program for EAB that has been in place since 2003 (see 68 FR 59082-59091, Docket No. 02-125-1).

The regulations in “Subpart J—Emerald Ash Borer” (7 CFR 301.53-1 through 301.53-9, referred to below as the regulations) list quarantined areas that contain or are suspected to contain EAB. The regulations also identify, among other things, regulated articles and the conditions governing the interstate movement of such regulated articles from quarantined areas in order to prevent the spread of EAB more broadly within the United States.

Since the implementation of the domestic quarantine program, several factors had adversely affected its overall effectiveness in managing the spread of EAB. First, during the Midwestern housing boom that began in the 1990s, ash trees often were planted in new housing developments because of their hardiness and general resistance to drought conditions. Developers frequently sourced these trees from nurseries that were later determined to be heavily infested with EAB and that were subsequently put under quarantine. (2) It was several years after the issuance of domestic quarantine regulations before a revised survey apparatus, using a lure-based trap, was developed in 2007. This revised survey apparatus identified many long-standing infestations of EAB in residential areas, leading to a substantial increase in the number of counties under quarantine. (3)

Second, the regulations did not prevent the spread of EAB throughout its geographical range, which has expanded over time. In fiscal year (FY) 2016 alone, APHIS issued 16 Federal Orders designating additional quarantined areas for EAB, and many of these Federal Orders designated multiple quarantined areas (4) . For example, one of the Federal Orders designated an additional 44 counties as quarantined areas for EAB. From an initial quarantined area of 13 counties in Michigan, now more than one quarter of the geographical area of the conterminous United States is under quarantine for EAB.

In light of these difficulties, on September 19, 2018, we published in the Federal Register a proposed rule (83 FR 47310-47312, Docket No. APHIS-2017-0056) to ***remove*** the domestic quarantine regulations for EAB in order to direct available resources towards management and containment of the pest. (5) We solicited comments concerning our proposal for 60 days ending November 19, 2018.

We received 146 comments by the close of the comment period. They were from another Federal agency, State departments of ***agriculture***, State departments of forestry and/or natural resources, Tribal nations, a group representing the wooden pallet industry within the United States, conservation groups, arborists, foresters, and private citizens.

Of the commenters, 25 suggested that we finalize the proposed rule as written. The remaining commenters raised concerns or questions regarding the rule and its supporting documents. We discuss these comments below, by topic.Basis for the Proposed Rule

Several commenters interpreted the proposed rule to be based on a determination that EAB is not a significant plant pest. Similarly, several commenters interpreted the proposed rule to be based on a desire to provide relief to regulated entities within areas currently quarantined for EAB, or a desire to reduce Federal regulation. One commenter stated that the basis for the rule was a February 2017 Executive Order 13771, which directs Federal agencies to identify two regulations for repeal for each new regulation promulgated. (6) Another commenter stated that the rule was an effort by Northern and Middle-Atlantic States to deliberately adversely impact Southern and Western States. The commenters cited multiple examples of EAB's destructiveness, and urged us to retain the regulations.

The proposed rule was not based on a determination that EAB is an insignificant plant pest, nor was it based on a desire to reduce or repeal Federal regulations or provide regulatory relief to currently regulated entities, regardless of the efficacy of the regulations, or a desire by Northern and Middle-Atlantic States to deliberately adversely impact other States. Rather, it was based on a determination that the domestic quarantine regulations have been unable to prevent the spread of EAB. This is reflected in the size of the quarantined area for EAB at the time the 2018 proposed rule was issued. At that time, more than 1,100 counties in the United States were under quarantine, comprising an area of almost 880,000 square miles, or more than one quarter of the geographical area of the conterminous United States. Since the proposed rule was issued, three additional States, nine counties, and portions of an additional county were added to the quarantined area for EAB. As we mentioned earlier in this document, this represents an exponential increase from the initial quarantined area, which was comprised of 13 counties in Michigan.

We discuss some of the factors that led to the spread of EAB later in this document, under the section titled “Need to Retain Existing Quarantine Regulations. ”Efficacy of Existing Quarantine Regulations

A number of commenters interpreted the rule to be based on our determination that the domestic quarantine regulations have proven ineffective at preventing the spread of EAB, but disagreed with the validity of this determination. The commenters often cited personal experience or anecdotal examples of the efficacy of the current regulations or pointed to the efficacy of other Federal domestic quarantine programs administered by APHIS, such as that for Asian longhorned beetle (ALB).

We acknowledge the possible validity of the experiences and examples provided by the commenters, but do not consider them to be indicative of the overall efficacy of the domestic quarantine program for EAB. On the whole, the program has been unable to prevent the spread of EAB, as evidenced by the current size of the quarantined area relative to the 13 counties in Michigan that comprised the initial quarantined area.

In that regard, the success of one Federal domestic quarantine program is not indicative of the success of another. For example, as one commenter pointed out, APHIS and State departments of ***agriculture*** have been able to eradicate several localized populations of ALB and release areas from quarantine. This has not occurred within the EAB program; not a single area has ever been released from quarantine.

One commenter stated that there was no means for APHIS to ascertain the full effects of the current program at precluding the spread of EAB.

We agree that ascertaining each and every effect of the current program is not possible, but do not consider such an evaluation necessary in order to determine whether the program on the whole has been able to prevent the spread of EAB. The size of the quarantined area for EAB at the time the proposed rule was issued, relative to the size of the initial quarantined area of 13 counties in Michigan, is a reliable indicator that the program was unable to prevent the spread of EAB.Need To Retain Existing Quarantine Regulations

Many commenters stated that it was necessary to retain the regulations to prevent the further spread of EAB, and that ***removal*** of the regulations would place them at a heightened risk of EAB introduction and establishment. Some commenters lived within currently quarantined areas but stated that EAB was not present in their area or was not widely prevalent based on survey results. Other commenters lived in areas that were immediately outside the quarantined areas and were concerned that ***removing*** restrictions on the movement of host material could hasten the introduction of EAB into their area. Finally, some of the commenters lived in Western States (States west of the Rocky Mountains) and stated that, because of geographical boundaries between the currently quarantined areas and their State, natural spread was unlikely, at least for the foreseeable future. Those commenters stated that the only way EAB was likely to be introduced to their State was through human-assisted movement, and that ***removing*** the quarantine would increase the likelihood that infested material was moved into their State. A number of these commenters stated that native ash in their State was in riparian or ***forest*** environments, and that deforestation as a result of EAB could have significant adverse impacts, such as increased likelihood of flooding.

With regard to those commenters within the currently quarantined areas, we disagree that ***removing*** the Federal quarantine regulations places the commenters at a heightened risk of EAB spread or has environmental or economic impacts. This is for two reasons.

The first reason is that, in 2012, APHIS issued a Federal Order (7) allowing unrestricted interstate movement of host articles within a contiguous quarantined area. This Federal Order is still in effect; thus, finalizing the proposed rule will have no net impact on interstate movement of articles within this area.

The second reason is that, consistent with our statutory limitations under the Plant Protection Act (PPA, 7 U.S.C 7711 et seq.,) the Federal quarantine regulations for EAB pertained only to interstate movement of regulated articles in commerce. This did not address noncommercial movement of regulated articles, intrastate movement, or natural spread. With respect to natural spread, research suggests a mated female EAB can fly up to 12.5 miles a day. (8) Moreover, a female that mates can live up to 6 weeks. (9) This does not preclude the possibility that some mated female EAB may fly more than 100 miles before mortality.

With regard to those commenters currently immediately outside the quarantined area, we also disagree that ***removing*** the Federal quarantine regulations places the commenters at a heightened risk of EAB spread or has environmental or economic impacts. This is also for two reasons. The first is the ability of EAB to naturally and rapidly spread without human assistance. The second is the lack of effective detection methods for EAB. EAB is a cryptic pest and there is not an effective pheromone lure for EAB; thus, trap catches are often a lagging indicator of a long-standing and sizable established population for EAB. (10) In general, when EAB is initially detected via survey, we have found that an established population has typically been present in the area a minimum of 3 to 5 years undetected. (11)

Visual detection of EAB also has significant limitations. Visual detection is almost always based on finding signs or symptoms of EAB infestation in declining ash trees, rather than visual detection of the pest itself. There is thus a lag period between initial establishment and detection, and correspondingly, between initial pest establishment and designation of the area as a quarantined area for EAB. This is also why we do not consider areas of low pest prevalence to exist for EAB—a handful of detections are indicative of a much larger established population. (12)

With regard to commenters in Western States, we disagree that the only way EAB could enter the State is through human-assisted movement. We acknowledge that the presence of geographical barriers, such as the Rocky Mountain range, and the absence of host material along the Great Plains, could significantly impede the rate of natural spread of EAB. We also acknowledge that EAB's feeding patterns in the absence of ash and deciduous hardwood are still being researched and evaluated, and it is, accordingly, possible that EAB does not adapt quickly to the absence of preferred host material. However, it is the Agency's experience that widely prevalent plant pests tend, over time, to spread throughout the geographical range of their hosts, and we have no reason to consider EAB to be biologically unique in this manner.

Nonetheless, we agree that, in the absence of Federal regulations, there could be a higher likelihood that EAB will be introduced into a Western State sooner through the movement of infested host material than would occur through natural spread. However, the degree to which this likelihood is increased is difficult to quantify. In the absence of Federal regulations, States are free to establish their own regulations governing the movement of EAB host material into their State, and at least one such Western State signaled their intent to do so in their comments on the rule. Additionally, there will still be awareness and outreach efforts, which we discuss later in this document, to dissuade the public from non-commercial movement of EAB host material into Western States. To the extent that we can, we will support communities in these efforts, and, we have delayed publication of this final rule to afford States time to develop regulations regarding the movement of EAB host material.

Several commenters stated that the economic analysis that accompanied the proposed rule was flawed insofar as it was based on the same assumption that ***removing*** the regulations would not contribute to the spread of EAB. A number of the commenters also stated that the rule should have been accompanied by an environmental assessment or environmental impact statement assessing the likelihood of cumulative impacts of human-assisted spread of EAB that would not otherwise occur if the regulations remained in place.

We agree that there is an economic cost if EAB is introduced into a Western State sooner through the movement of infested host material than would occur through natural spread. For that reason, to the extent that we can, in the economic analysis for this final rule, we list activities that have historically been associated with the new introduction of EAB into a previously unaffected area, along with a range of costs for each activity. However, we also acknowledge a high degree of uncertainty regarding the number of entities that will incur those costs, for the reasons mentioned above.

Finally, we considered the proposed rule to be categorically exempt from preparation of an environmental assessment or environmental impact statement. We did this because the National Environmental Policy Act (NEPA, 42 U.S.C 4231 et seq.,) and subsequent agency implementing regulations instruct Agencies to evaluate the environmental impacts of proposed Federal actions. We determined that this action is a class of actions previously determined to meet categorically excludable criteria as established in 7 CFR 372.5 A record of categorical exclusion analysis was prepared to assess and confirm that there would be no adverse environmental impacts as a result of this rulemaking.

We acknowledge that commenters suggested that we consider the impact of human-assisted spread of EAB that would not otherwise occur. However, our experience with EAB has shown that human-assisted spread continued regardless of the regulations, which are limited, and that the natural spread of EAB is rapid, significant, and extremely difficult to control. For the reasons discussed above, this remains our determination.

Two commenters asked if any studies exist that examine the possible ecological and societal impacts of EAB establishment in the Western United States. One of the commenters stated that, if no such studies exist, APHIS should conduct such a study prior to issuing a final rule.

We are not aware of any such studies. For reasons discussed in the section below, we do not consider delays in issuing or making effective this final rule to be in the best long-term interests of the Federal EAB program.Request for Delay of Final Rule

A number of commenters stated that Federal deregulation of EAB is probably inevitable given the scope of the area under quarantine, but asked for a delay in the publication or effective date of the final rule to allow the commenter's State or community to plan for deregulation. Several of these commenters stated that they were unaware of APHIS' intent to deregulate EAB until the proposed rule was issued and stated that APHIS had done an inadequate job communicating this intent. All commenters urged us to continue regulatory and enforcement activities until the rule became effective.

The proposed rule is a result of several years of public discussions with an increasing number of stakeholders. APHIS began expressing concerns regarding the efficacy of the EAB program in public forums as early as 2012, when the FY 2013 budget submitted to Congress indicated that we had not discovered effective tools to prevent the spread of EAB, and that, as a result, we had not discovered a means to efficiently use resources to prevent the spread of EAB. (13) In the same budget, we also indicated that biocontrol activities could be a more viable long-term strategy than regulatory and enforcement activities.

In 2015, we discussed the possibility of deregulation of EAB to the Continental Dialogue on Non-Native ***Forest*** Insects and Diseases, an audience of State and local governments, forestry groups, non-governmental organizations, and other Federal agencies. (14) In 2016, we discussed possibly deregulating EAB, and shifting program resources to biocontrol activities, with the National Association of State Foresters and the National Plant Board, which represents the plant protection division of State departments of ***agriculture***; these discussions continued into 2017. (15) Additionally, throughout the development of the proposed rule, APHIS talked with numerous State, local, and Tribal communities on a regular basis to discuss concerns that the communities had with possible deregulation. This included the ongoing discussion with the National Association of State Foresters and the National Plant Board mentioned above, a Tribal meeting in which nine Tribes who had expressed concerns about the rule were invited to further elaborate on those concerns and discuss possible remediations, several webinars with State departments of ***agriculture***, and discussions with the New York Partnership for Invasive Species Management and The Nature Conservancy.

The proposed rule itself provided notification pursuant to the Administrative Procedure Act (APA, 5 U.S.C 505 et seq.) of APHIS' intent to ***remove*** the domestic quarantine regulations for EAB, and APHIS provided notification of the publication of the rule through the APHIS Stakeholder Registry in accordance with standard Agency practices.

We recognize the damage and impact that EAB can inflict on a community and appreciate the desire of commenters to be afforded additional time to prepare for possible deregulation within their particular State or community. As we mentioned previously, to the extent that we can, we will support communities in these efforts, and we have delayed publication of this final rule to afford States time to develop regulations regarding the movement of EAB host material. However, we do not believe an additional delay in the effective date of the rule to be in the best interests of the Federal EAB program.

As mentioned above, regardless of funding or tactics employed, the EAB domestic quarantine regulations have been, on the whole, ineffective at preventing the spread of EAB, especially given the natural dispersion capabilities of the pest. Continuing to devote program resources to regulatory and enforcement activities that have proven thus far to be ineffective over an ever-expanding quarantined area is an inefficient use of those resources.

Additionally, continuing to devote resources to these activities limits APHIS from reallocating the resources to activities that could be of greater long-term benefit to slowing the spread of EAB or helping affected communities recover from EAB infestation. These include further development and deployment of EAB biological control organisms; further research into integrated pest management of EAB that can be used at the local level to help safeguard an ash population of significant importance to a community; and further research, in tandem with the U.S Department of ***Agriculture*** (USDA) ***Forest*** Service and other Federal agencies, into the phenomenon of “lingering ash,” or ash trees that are still alive and present in the landscape in areas of otherwise heavy infestation, and integration of the findings of that research into the EAB program.

Several commenters asked for APHIS to provide guidance or best practices in management of EAB to State and local communities prior to issuing this final rule.

To the extent that resources allow, we have provided and intend to continue to provide such assistance. For example, we have an agreement with the North Carolina State University, North Carolina Department of ***Agriculture*** and Consumer Services, and the City of Raleigh, NC at their waste-water management location to assist these organizations in investigating EAB phenology within a watershed environment.Biological Control for EAB

Several commenters construed the proposed rule to suggest that APHIS has identified biological control (biocontrol) organisms that are effective at preventing the spread of EAB. The commenters asked for the scientific evidence in support of those claims. Other commenters stated that it was their understanding that several of the organisms had limited geographical ranges and could not be used in every area of the United States that is currently infested with EAB. Several commenters stated that the “real world” efficacy of biocontrol within the EAB program had not been proven and all usage to date has been experimental and study based. Commenters also asked for more information regarding the biocontrol agents and asked whether APHIS has evaluated the agents for their interactions with non-***target*** organisms and other effects on the environment prior to authorizing their use within the EAB program.

While we did state in the proposed rule that biocontrol has been a “promising approach” towards mitigating and controlling for EAB, we also clarified that the biocontrol efforts that demonstrated such promising results had been in protecting ash regrowth in areas that had been previously infested with EAB. (16) We did not state that we had discovered a biocontrol organism that would be effective at preventing EAB from spreading into currently unaffected areas. The biocontrol organisms currently used within the EAB program are tiny stingless parasitic wasps that reproduce within EAB. Because of their dependency on an EAB host, these parasitoids cannot be used in an area until it is already infested with EAB.

Four biocontrol organisms are currently used by the EAB program within areas that are infested with EAB. The four organisms currently used are Spathius agrilli, Spathius galinae, Tetrastichus planipennisi, and Oobius agrilli. Commenters are correct that the organisms differ in terms of biology and ecological range. Information regarding the biology of the organisms, as well as current parameters for their release within the domestic quarantine program, are found here: [*https://www.aphis.usda.gov/plant\_health/plant\_pest\_info/emerald\_ash\_b/downloads/EAB-FieldRelease-Guidelines.pdf*](https://www.aphis.usda.gov/plant_health/plant_pest_info/emerald_ash_b/downloads/EAB-FieldRelease-Guidelines.pdf) There are no current plans to revise those parameters as a result of this final rule; however, we consistently review emerging research and recovery records to refine our approach.

Pursuant to APHIS' NEPA implementing regulations in 7 CFR part 372, APHIS prepares environmental assessments before the initial release into the environment of any biocontrol organism. Among other things, these assessments evaluate known and possible non-***target*** effects.

Several commenters asked APHIS to provide a specific budgetary allocation or percentage of total program funding that we would commit to allocating to biocontrol research and deployment following ***removal*** of the domestic quarantine regulations.

We cannot project a specific budgetary allocation or percentage of total funding to biocontrol efforts following deregulation. As we discuss below, we have already begun to obligate program funds on biocontrol in the coming years, and it is APHIS' current intent to devote a substantial portion of funding for EAB each fiscal year to biocontrol. However, APHIS regularly monitors all EAB program activities for efficacy, including the use of biocontrol. If research into integrated pest management or “lingering ash” suggests that these are more efficient uses of program resources than biocontrol, we will reallocate funds to these activities accordingly. Additionally, we note that funding directed towards any tactic or technique in the EAB program is contingent on the level of Federal appropriations for the program as a whole, which can differ from fiscal year to fiscal year.

Several commenters expressed concern that the rule did not propose a regulatory framework that would specify parameters for APHIS' release of biocontrol organisms. The commenters stated that, in the absence of such a framework, APHIS could divert funds to other tactics within the EAB program or to another domestic quarantine program entirely following ***removal*** of the domestic quarantine regulations for EAB.

We do not consider a regulatory framework for the release of biological control to be necessary. As we mentioned above, guidelines regarding the release of biocontrol organisms have already been developed and are publicly available, and APHIS has adhered to them in the absence of a regulatory framework for the release of biological control within the EAB program. Additionally, as we have to date, we will update these guidelines on an ongoing basis to incorporate additional findings or the approval of additional biocontrol organisms. We will notify the public via the APHIS Stakeholder Registry of any substantive change to the guidelines. A sign-up for the Registry is found here: [*https://public.govdelivery.com/accounts/USDAAPHIS/subscriber/new*](https://public.govdelivery.com/accounts/USDAAPHIS/subscriber/new).

Because of the time required to rear, evaluate, and release parasitoid populations, budgeting for EAB biocontrol requires allocating funds in one fiscal year for the development of biocontrol organisms that will be released into the environment in another fiscal year. Accordingly, we do not need to put a regulatory framework in place in order to ensure that funds are obligated for release efforts in the coming years; these funds have already been obligated.

There is a possibility that, in subsequent years, APHIS could divert funding from biocontrol to other tactics and techniques within the EAB program. However, we consider this flexibility to be in the best interest of the EAB program. As we mentioned above, we regularly monitor all EAB program activities for efficacy. If a program activity proves to be a more effective use of Agency funds than biocontrol, it is appropriate for us to reallocate funding accordingly.

Similarly, Federal funding for the EAB program is part of a larger line item Congressional appropriation for Tree and Wood Pests, which also is used to fund our gypsy moth and ALB programs, among others. Each fiscal year, APHIS evaluates how best to allocate the funding among the programs based on program needs and efficacy of the program to date.

Finally, several commenters urged us to increase funding for biocontrol within the EAB program while also maintaining the current level of funding for regulatory and enforcement activities.

This is not possible given current funding levels and existing Agency obligations for the pest programs within the Tree and Wood Pest line item. That being said, regardless of the level of funds available at APHIS' disposal for EAB, we no longer consider regulatory and enforcement activities to be an effective use of program funds.Alternatives to the Proposed Rule

Several commenters agreed that the EAB quarantine regulations had been unable to prevent the spread of EAB but suggested alternate tactics that they believed could slow the further spread of EAB. Suggested tactics were: Mechanical ***removal*** of all ash trees in the United States; mechanical ***removal*** of ash in urban environments outside of the quarantine and replanting with trees that are not a host for EAB; prophylactically treating ash trees to preclude EAB infestation (either as a stand-alone mitigation or in conjunction with restrictions on the movement of host material); safeguarding culturally or environmentally important ash populations, such as those in riparian areas or along watersheds, through integrated pest management; ***removing*** the Federal quarantine on contiguously quarantined areas while maintaining it in areas that are adjacent to currently unaffected areas; requiring all EAB host material to be heat treated or debarked prior to movement; providing economic incentives to mills and lumberyards to treat all hardwood lumber prior to interstate movement; requiring all container ships to be fumigated for EAB upon arrival into the United States; devoting all Federal resources to increased surveillance in currently unaffected areas; increasing EAB funding by drawing from other existing Agency funds or establishing an interagency working group to pool funds; or lobbying Congress and encouraging others to lobby Congress for increased appropriations. We discuss these suggestions below in the order in which they are presented in this paragraph.

***Removal*** of all ash trees in the United States, or in areas of the United States in which EAB is not currently known to occur, is impracticable, as is prophylactic treatment of all ash.

Safeguarding culturally or environmentally important local populations of ash through integrated pest management may be possible in some instances, and APHIS has supported and will continue to evaluate requests by Tribal, local, or regional communities for such management; as noted above, we are currently engaged in one such effort with the City of Raleigh, NC. However, integrated pest management for EAB is both cost- and labor-intensive and cannot be done on a national level.

As we mentioned above, in 2012, we issued a Federal Order which relieved restrictions on the interstate movement of host material for EAB within contiguously quarantined areas. This was coupled with reallocating resources to outlying areas within the quarantine. Accordingly, this solution has already been implemented and has not proven effective at preventing the spread of EAB to unaffected areas.

While debarking and heat treatment are effective at addressing those two pathways, as we mentioned previously in this document, there are numerous other pathways that have contributed to the overall spread of EAB within the United States, many of which are outside the scope of APHIS' statutory authority.

Because of the lack of efficacy of the traps and lures for EAB, as discussed above, we do not consider allocating all funding to increased surveying with traps to be an effective use of Federal resources.

APHIS does not have the legal authority to provide financial incentives for phytosanitary treatments.

Revising import requirements relative to EAB host material is outside the scope of this rulemaking. However, because EAB is established and widespread in the United States, we do not consider mandatory fumigation at ports of entry to be warranted or an effective deterrent to the further spread of EAB within the United States.

As we mentioned previously in this document, APHIS' EAB funding is drawn from a larger line item that addresses Tree and Wood Pests within APHIS' appropriation from Congress. APHIS has some flexibility within the Tree and Wood Pests line item itself to move money between domestic quarantine programs within the line item, which includes funding for ALB, gypsy moth, and other pests, in addition to EAB, but we must consider the best use of the funds to meet our overall goals of using the funds as effectively as possible in order to safeguard American ***agriculture***.

Because of the sheer size of the current quarantined area for EAB, the historic ineffectiveness of quarantine and enforcement measures, and the lack of optimal detection methods, we do not have a sufficient basis for allocating or seeking additional resources through the appropriations process for the EAB program. For these same reasons, while we have partnered and continue to explore partnerships with other Federal agencies on EAB research and methods development, such as USDA's ***Agricultural*** Research Service and ***Forest*** Service, we do not believe that requesting additional budgetary resources from other Federal agencies to allocate to existing regulatory and enforcement strategies will prevent the spread of EAB or be an effective use of those funds.

Finally, APHIS is prohibited from using appropriated funds to lobby Congress, directly or indirectly, for Federal funding without explicit Congressional authorization to do so (see 18 U.S.C 1913). For the reasons discussed in the previous paragraph, we do not consider seeking Congressional authorization to do so to be warranted.Status of Surveys for EAB

Several commenters asked whether Federal surveys for EAB will continue if EAB is deregulated. A number of these commenters asked, if our intent was to continue surveys, what parameters we would use following deregulation. A few commenters stated that they had heard that “citizen surveys” would be employed following deregulation and asked for further information regarding the meaning of that term.

Federally contracted trapping survey for EAB ceased as of 2019. APHIS will provide traps and lures to State and Tribal cooperators without cost, as requested, out of our existing supply until it is depleted. However, States and Tribes should be aware of some of the limitations of these traps and lures discussed earlier in this document. (For further discussion of these limitations, see the section heading “Need to Retain Existing Quarantine Regulations”).

“Citizen surveys” refer to reporting done by the general public of EAB or signs and symptoms of EAB infestation. In recent years, citizen detections have accounted for the vast majority of all new identifications of EAB infestations. Citizens who detect signs or symptoms of EAB have been encouraged to contact their State Plant Regulatory Official, or SPRO. A list of all SPROs is found here: [*https://nationalplantboard.org/membership/.Status*](https://nationalplantboard.org/membership/.Status) of Outreach

Many commenters stated that the proposed rule undercut communications and outreach efforts in their State or community to warn the public about the severity of EAB. A number of these commenters stated that the rule was in tension with communication efforts to warn the public about the plant pest risk associated with the movement of firewood, in particular. Several commenters requested outreach resources from APHIS following ***removal*** of the quarantine regulations or inquired regarding what outreach APHIS had planned. On a related manner, several commenters asked what efforts APHIS would take, following deregulation, to continue outreach and education related to the movement of firewood.

As we discussed previously in this document, the proposed rule was not based on a determination that EAB is an insignificant plant pest, nor did we claim it to be. However, we do acknowledge that local and regional campaigns may have often emphasized the importance of compliance with Federal EAB regulations, and the proposed rule could have created difficulties with regard to those communication strategies. To that end, we will work with States, through associations such as the National Plant Board, to promote awareness of the dangers of EAB following ***removal*** of the domestic quarantine regulations.

APHIS outreach related to the movement of firewood will remain substantially similar or increase following ***removal*** of the domestic quarantine regulations for EAB. We will continue to encourage the public to buy firewood where they burn it and to refrain from moving firewood to areas of the United States that are not under Federal quarantine for other pests of firewood.

In that regard, we disagree with commenters that the deregulation of EAB undermines national communications efforts regarding the movement of firewood. The primary national communications tool to warn the public about the plant pest risk associated with the movement of firewood is the Don't Move Firewood campaign, which is administered by The Nature Conservancy with support from APHIS and other Federal agencies. (17) This campaign has consistently stressed that firewood is a high-risk pathway for many pests of national or regional concern, and not just EAB. To the extent that the communication mentioned EAB, it was as an illustrative example of one such pest. We have, however, allocated funds to The Nature Conservancy so that the Don't Move Firewood campaign continues to promote awareness of EAB as a pest of firewood in currently unaffected or recently affected States.State Regulation of Firewood and Other EAB Host Material

Several commenters stated that, in the absence of Federal regulation of EAB, States would be free to establish their own regulations regarding the movement of EAB host material. A number of these commenters stated that this could result in State regulations that differed significantly from State to State, and that differing State regulations could be difficult for producers and shippers to comply with.

We agree with the commenters that one of the upshots of the rule is the possibility of States developing their own interstate movement requirements for EAB host articles, and, as we noted previously in this document, one State department of ***agriculture*** signaled their intent to issue such regulations during the comment period for the proposed rule. While States will be free to set requirements as they see fit, we have taken efforts, in coordination with State departments of ***agriculture***, to develop a template for State regulations regarding the movement of certain EAB host materials. We discuss these efforts below.

Several commenters pointed out that, under the current domestic quarantine regulations for EAB, firewood is a regulated article, and must either be debarked or heat treated prior to interstate movement. The commenters stated that firewood is a pathway for many other plant pests, and that the EAB domestic quarantine regulations serve to preempt what otherwise is a significant number of differing State requirements regarding the movement of firewood. Some commenters urged us to retain firewood as a regulated article for EAB; others urged us to propose a distinct Federal regulation for the interstate movement of firewood; others asked us to coordinate with State departments of ***agriculture*** to establish a coordinated framework for State regulations of firewood. One commenter stated that we should monitor and oversee the implementation of such State regulations.

Maintaining the domestic quarantine regulations for EAB but limiting the scope of regulation to firewood would require us to continue to devote program resources to regulatory and enforcement activities. As we mentioned above, this would preclude the resources from being used on other non-regulatory activities and initiatives that we consider to be in the best long-term interest of the Federal EAB program.

In 2010, we prepared a risk assessment regarding the plant pest risks associated with the movement of firewood. (18) While the assessment identified many significant plant pests associated with firewood, the assessment also found that many of these pests were only economically significant if they established in a certain region of the country, and thus did not always warrant official control. Concurrent to the development of the assessment, a National Firewood Task Force was convened by the National Plant Board, composed of Federal, State, and nongovernmental organization representatives.

While both the risk assessment and the Task Force suggested a coordinated national approach to mitigate the risk associated with the movement of firewood, APHIS encountered several factors that suggested that Federal regulation of firewood itself, independent of any particular domestic quarantine program, would not be operationally feasible. Regulating at the national level for regionally significant pests could result in regulations that were overly restrictive for some States and not commensurate with risk; requiring firewood to be heat treated prior to movement (which was recommended by the Task Force) would not be operationally feasible in the winter for producers in Northern States, and thus a de facto prohibition on interstate commerce; and Federal regulation would not address significant non-commercial pathways, such as campers moving it to campgrounds and national parks.

For all these reasons, APHIS and the National Plant Board ultimately decided that the best national strategy was (1) the development of a standardized template that States may choose to use for their regulation of firewood, in conjunction with (2) a national outreach campaign to alert the public to the plant pest risks associated with the non-commercial movement of firewood.

With regard to the first component of that strategy, the National Plant Board has recently developed this template, with APHIS support, and distributed it to State departments of ***agriculture*** to aid in development of State regulations. If a State requests our oversight of the implementation of their State regulations, we will assist to the degree we can; however, such oversight is voluntary, and APHIS cannot compel States to do so. The National Plant Board has also supplemented this template by developing best management practices regarding the interstate movement of firewood for the purposes of heating a home. (19)

With regard to the second, as we mentioned previously in this document, APHIS will continue to warn the public about the dangers of moving firewood following deregulation of EAB through the Don't Move Firewood campaign.

One commenter asked how the plant pest risks associated with the interstate movement of ash nursery stock will be addressed following deregulation of EAB. As is the case with all EAB host materials, States will be free to regulate the movement of the nursery stock into their State as they see fit.Tribal Concerns

A number of Tribal nations commented in opposition to the proposed rule. Many of these Tribes stated that ash was of economic and cultural importance to their Tribe. Several Tribes indicated that ash was also of religious significance to their Tribe, insofar as the Tribe's creation heritage stressed its importance, and two Tribes indicated that their Tribe relied on ash for ecological purposes. Several of the Tribes mentioned that they had raised this concern to APHIS during Tribal consultation and stated that the rule was therefore in violation of Executive Order 13175, “Consultation and Coordination with Indian Tribal Governments. ” One of the commenters also suggested the rule was issued in violation of the National Historic Preservation Act (54 U.S.C 300101 et seq.).

APHIS is committed to full compliance with Executive Order 13175 and the National Historic Preservation Act. To that end, we engaged in Tribal consultation prior to the issuance of the proposed rule in accordance with Departmental regulations and guidelines regarding the order and the Act.

We acknowledge that several Tribes raised the concerns stated by the commenters during Tribal consultation, and have dialogued with those Tribes throughout the development of this final rule to identify means to remediate these concerns. For example, APHIS partnered with the U.S ***Forest*** Service and University of Vermont to conduct a workshop in May 2019 for nine Tribes that provided training to survey for EAB, identify high value trees to preserve, and develop a best management program including the release of biocontrol organisms. (20) APHIS will continue to host similar workshops to help Tribes preserve ash populations of cultural significance to the Tribes.

However, for the reasons discussed above, we have decided that the only viable long-term use of Federal resources within the EAB program entails ***removing*** the domestic quarantine for EAB and reallocation of resources currently devoted to regulatory and enforcement activities to other purposes.

In this regard, we disagree with the commenters that the issuance of the proposed rule violated Executive Order 13175 or the National Historic Preservation Act. Neither the order nor the Act precludes a Federal agency from acting if Tribes raise concerns regarding the action contemplated; rather, the order and the Act dictate sustained and meaningful consultation with Tribes to resolve concerns that are raised. APHIS has engaged and continues to engage in such consultation.

Further information regarding Tribal outreach efforts is contained in the Tribal impact statement that accompanies this final rule.Comments Regarding International Trade in EAB Host Articles

One commenter asked if we were also ***removing*** our regulations regarding the importation of EAB host material from Canada.

We did not propose to do so because the regulations have prohibited the importation of several EAB host articles, most notably ash wood chips and bark chips, and have required phytosanitary treatments for other articles that are effective not only for EAB, but also for other wood-boring pests. As a result, we were uncertain of the plant pest risk associated with the importation of EAB host material from Canada, in the absence of EAB-specific prohibitions and restrictions and considered it prudent to conduct a risk assessment before proposing any revisions to those prohibitions and restrictions. That risk assessment is ongoing.

Another commenter asked if we would still take action at ports of entry if EAB is discovered on an imported host commodity. They pointed out that the family to which EAB belongs is “actionable” in its entirety.

If a pest is found on an imported EAB host commodity and can only be identified taxonomically to family, we would continue to take action on it; if we were able to identify it as EAB, we would not. However, States could petition us using APHIS' Federally Recognized State Managed Phytosanitary Program, or FRSMP, to prohibit the movement of material found to be infested into their State. (21)

A number of commenters stated that the rule could adversely impact U.S exports to Canada and Norway; some of the commenters asserted that APHIS had failed to consider these potential impacts in the proposed rule and its supporting documents.

These are potential impacts associated with deregulation of EAB and were evaluated in the economic analysis associated with the proposed rule.

Several commenters asked us if Canada or Mexico had expressed concerns regarding deregulation of EAB within the United States, particularly as it pertains to a heightened likelihood of possible natural spread of EAB into their countries.

Neither Mexico nor Canada has expressed concerns regarding deregulation of EAB. Canada has indicated that, in accordance with standard policy, they will consider the United States to be generally infested with EAB following deregulation. Possible implications of such a designation are discussed in the final economic analysis.Coordination With Other Federal Agencies

A commenter suggested we coordinate with the ***Forest*** Service to establish a program to sustain and replace native ash trees.

APHIS has long partnered with the U.S ***Forest*** Service to address the spread of EAB within the United States and identify means of protecting native ash trees. As we mentioned previously in this document, these efforts include co-funding research into the phenomenon of “lingering ash,” and co-hosting a May 2019 workshop for Tribal nations to help them identify high value trees to preserve and develop a best management program, including the release of biocontrol.

We intend to continue these efforts following deregulation, as resources allow. However, as we also mentioned previously in this document, a nationwide initiative to protect and/or replace native ash populations is cost-prohibitive.

A commenter asked if APHIS had engaged the National Park Service (NPS) about Federal deregulation of EAB and inquired whether NPS could issue regulations prohibiting the movement of firewood into national parks.

APHIS did not engage NPS prior to issuance of the proposed rule, but we do see merit in increased collaboration between our agency and theirs and will share the commenter's suggestion with NPS. This collaboration is distinct from the issuance of this final rule, and does not impact the conclusions of this rule.Compliance With Executive Orders, Statutes, and International Standards

Several commenters stated that APHIS should not have designated the rule not significant under Executive Order 12866 and suggested that the Office of Management and Budget (OMB) should have reviewed the rule.

OMB, rather than APHIS, designated the rule not significant, and thus not subject to their review under Executive Order 12866.

One commenter suggested that the proposed rule should have been reviewed for legal sufficiency and compliance with statutory requirements by USDA's Office of General Counsel (OGC).

OGC reviewed the proposed rule.

One commenter pointed out that the section of the proposed rule beneath the heading, “Paperwork Reduction Act,” indicated that there were no reporting, recordkeeping, or third-party disclosure requirements associated with the proposed rule. The commenter asserted that APHIS had therefore failed to evaluate whether there were such Paperwork Reduction Act implications. Several other commenters stated that the proposed rule should have been evaluated for Paperwork Reduction Act implications.

The statement beneath the heading “Paperwork Reduction Act” in the proposed rule did not mean that APHIS excluded the rule from evaluation under the Paperwork Reduction Act, but rather that we did evaluate the rule under the Paperwork Reduction Act and determined it not to have reporting, recordkeeping, or third-party disclosure requirements.

One commenter stated that the proposed rule was not reviewed for compliance with Executive Order 13777.

The proposed rule was evaluated by the Regulatory Reform Officer for USDA in accordance with Executive Order 13777.

Several commenters expressed concerns regarding the economic analysis that accompanied the proposed rule.

We discuss these comments in the economic analysis that accompanies this final rule.

Several commenters stated that APHIS had not complied with NEPA, and an environmental assessment or environmental impact statement should have accompanied the proposed rule.

For reasons discussed earlier in this document, we considered the proposed rule to be a category of actions exempt under APHIS' NEPA implementing regulations from preparation of an environmental assessment or environmental impact statement.

One commenter stated that we had violated international standards issued by the International Plant Protection Convention (IPPC), to which the United States is a signatory. The commenter stated that the IPPC definition of a quarantine pest requires pests that are established within a country to be under official control in order to continue to be considered of quarantine significance. The commenter pointed out that the proposed rule had not explicitly indicated that one of the practical implications of ***removing*** the domestic quarantine regulations for EAB would be that EAB would no longer be a quarantine pest. The commenter asserted that this omission violated IPPC standards.

We agree with the commenter's interpretation of the IPPC definition of quarantine pest, as well as the assertion that ***removing*** Federal domestic quarantine regulations for EAB would ***remove*** its designation as a quarantine pest under IPPC standards.

However, we do not agree that failing to mention this in the proposed rule violates those standards. Insofar as the IPPC definition of quarantine pest requires pests already established in a country to be under official control in order to continue to be considered quarantine pests, and the proposed rule proposed to rescind APHIS' official control program for EAB, we consider the implication of that rescission to be sufficiently clear without an explicit statement that EAB will no longer meet the IPPC definition of a quarantine pest as a result of this rule.Miscellaneous

One commenter stated that ash helps reduce the impact of carbon ***emissions*** into the atmosphere.

This is true but is not germane to this rulemaking.

One commenter asked if velvet ash was a host of EAB, and, if so, whether it was a preferred host.

Because the geographic range of velvet ash within the United States lies outside of the area of the United States where EAB is known to occur, it is currently unknown how EAB and velvet ash will interact within the environment of the United States. However, velvet ash was a preferred host for EAB in China, and we have no reason to believe it will not be a similar host within the United States. (22)

A commenter asked if neonicotinoids were used as treatments within the EAB program, and, if so, whether there were any plans to reduce or eliminate their usage.

Neonicotinoids, particularly imidacloprid, were historically used within the EAB program to treat ash trees. However, such treatments have been almost entirely discontinued within the program, and, on the rare occasion when they still occur, a different insecticide, emamectin benzoate, which is not a neonicotinoid, is currently used. We have no plans to use neonicotinoids within the context of integrated pest management following deregulation of EAB.

A commenter suggested we prepare a “Lessons Learned” document to evaluate the successes and failures of the domestic EAB program and to determine what factors contributed to the ultimate ineffectiveness of the program.

While we tend to reserve such evaluations for particular procedures or policies in order to limit their scope and thus have greater assurances about the accuracy of their conclusions, we will take the commenter's suggestion into consideration.

Therefore, for the reasons given in the proposed rule and this document, we are adopting the proposed rule as a final rule, without change.Executive Orders 12866 and 13771 and Regulatory Flexibility Act

This rule has been determined to be not significant for the purposes of Executive Order 12866 and, therefore, has not been reviewed by the Office of Management and Budget. This rule is an Executive Order 13771 deregulatory action. Details on the estimated cost savings of this final rule can be found in the rule's economic analysis.

In accordance with 5 U.S.C 603, we have performed a final regulatory flexibility analysis, which is summarized below, regarding the economic effects of this final rule on small entities. Copies of the full analysis are available by contacting the person listed under FOR FURTHER INFORMATION CONTACT or on the Regulations.gov website (see ADDRESSES above for instructions for accessing Regulations.gov).

APHIS is ***removing*** the domestic quarantine regulations for the plant pest emerald ash borer (EAB, Agrilus planipennis, Fairmare). This action discontinues the domestic regulatory component of the EAB program. Funding allocated to the implementation and enforcement of these quarantine regulations will instead be directed to a non-regulatory option of assessment of and deployment of biological control agents for EAB. Biological control will be the primary tool used to control the pest and mitigate losses.

There are currently more than 800 active EAB compliance agreements, covering establishments that include sawmills, logging/lumber producers, firewood producers, and pallet manufacturers. The purpose of the compliance agreements is to ensure observance of the applicable requirements for handling regulated articles. Establishments involved in processing, wholesaling, retailing, shipping, carrying, or other similar actions on regulated articles require a compliance agreement to move regulated articles out of a Federal quarantine area.

Under this rule, establishments operating under EAB compliance agreements will no longer incur costs of complying with Federal EAB quarantine regulations, although States could still impose restrictions. Businesses will forgo the paperwork and recordkeeping costs of managing Federal compliance agreements. However, some businesses may still bear treatment costs, if treatment is for purposes besides prevention of EAB dissemination. Costs avoided under the rule depend on the type of treatment and whether treatment still occurs for purposes other than those related to the Federal EAB regulatory restrictions on interstate movement.

Articles currently regulated for EAB include hardwood firewood, chips, mulch, ash nursery stock, green lumber, logs, and wood packaging material (WPM) containing ash. Articles can be treated by bark ***removal***, kiln sterilization, heat treatment, chipping, composting, or fumigation, depending on the product.

For affected industries, we can estimate the cost savings if treatment were to cease entirely (see table A). Currently, there are 166 active EAB compliance agreements where sawmills and logging/lumber establishments have identified kiln sterilization as a method of treatment. If all of these producers were to stop heat treating ash lumber or logs as a result of this rule, the total cost savings for producers could be between about $896,600 and $1.5 million annually.

There are 103 active EAB compliance agreements where heat treatment of firewood is identified as a treatment. If all of these firewood producers were to stop heat treating firewood as a result of this rule, the total cost savings for producers could be between about $93,400 and $700,000 annually.

There are 70 active EAB compliance agreements where heat treatment is identified as the pallet treatment. If all of these producers are producing ash pallets and were to stop heat treating as a result of this rule, the total cost savings for producers could be between about $8.8 million and $13.3 million annually. If all 349 establishments with compliance agreements where debarking is identified as a treatment were to stop secondary sorting and additional bark ***removal*** in the absence of EAB regulations, the total annual labor cost savings for producers could be about $1.7 million annually. If all 397 establishments with compliance agreements where chipping or grinding is identified as a treatment were to stop re-grinding regulated materials in the absence of EAB regulations, the total annual cost savings for producers could be about $10.6 million annually. The annual cost savings for these various entities could total between about $9.8 million and $27.8 million annually. (It should be noted that this range of cost savings does not include compliance costs for any State regulations that may be developed in the absence of Federal regulation of EAB; this is because such costs are conjectural and outside of Federal control.)Table A—Potential Cost Savings if Treatment Were to Cease With ***Removal*** of EAB Regulation Product Treatment Compliance agreements Treatment costs Low High Value ($ millions) Logs/Lumber Kiln Sterilization 166 0.9 1.5 Debarking 349 1.7Firewood Heat Treatment 103 0.09 0.7Pallets Heat Treatment 70 8.8 13.3Chips, branches, waste, mulch, etc. Chipping/Grinding 397 10.6Total 1 N/A 9.8 27.8

Since no effective quarantine treatments are available for ash nursery stock, there are no compliance agreements issued for interstate movement of that regulated article. According to the latest Census of Horticultural Specialties, there were 316 establishments selling ash trees, 232 with wholesale sales, operating in States that were at least partially quarantined for EAB in 2014. Sales volumes for at least some of these operations could increase if their sales are currently constrained because of the Federal quarantine.

Internationally, deregulation of EAB may affect exports of ash to Norway and Canada, the two countries that have import restrictions with respect to EAB host material. Norway uses pest-free areas in import determinations. With ***removal*** of the domestic quarantine regulations, it is unlikely that Norway will recognize any area in the United States as EAB free. All exports of ash logs and lumber to Norway will likely be subject to debarking and additional material ***removal*** requirements. From 2014 through 2018, exports to Norway represented less than one-tenth of one percent of U.S ash exports. We estimate that labor costs for overseeing the debarking on these exports total less than $500.

The United States also exports to Canada products such as hardwood firewood, ash chips and mulch, ash nursery stock, ash lumber and logs, and WPM with an ash component from areas not now quarantined. Canada has indicated that they will consider the United States generally infested for EAB following Federal deregulation, therefore, ash products from areas outside the current U.S quarantine area will be subject to restrictions in order to enter Canada. New Canadian restrictions will likely depend on the product and its destination within Canada. In 2017 and 2018, Canada received about 3 percent of U.S ash lumber exports, and about 4 percent of U.S ash log exports. Additionally, of about 98,000 phytosanitary certificates (PCs) issued from January 2012 through June 2019 for propagative materials exported to Canada, a little more than 1 percent was specifically for ash products. Based on available data, we estimate that additional heat treatment costs and labor costs for overseeing debarking of ash lumber and logs exported to Canada could range from about $55,000 to $94,400. Because of the absence of a phytosanitary treatment for ash nursery stock for EAB, we anticipate that exports of ash nursery stock to Canada will be prohibited by Canada. From January 2012 through June 2019, ash products comprised a little more than one percent of shipments of propagative material to Canada.

Taking into consideration the expected cost savings shown in table A and these estimated costs of exporting ash to Norway and Canada following deregulation, and in accordance with guidance on complying with Executive Order 13771, the single primary estimate of the annual cost savings of this rule is $18.8 million in 2016 dollars, the mid-point estimate annualized in perpetuity using a 7 percent discount rate.

EAB has now been found in 35 States and the District of Columbia and it is likely that there are infestations that have not yet been detected. Newly identified infestations are estimated to be 4 to 5 years or more in age. Known infestations cover more than 27 percent of the native ash range within the conterminous United States.

EAB infestations impose costs on communities typically associated with the treatment or ***removal*** and replacement of affected trees. In addition, infestation can result in loss of ecosystem services. Regulatory activities may slow the spread of EAB and delay associated losses by inhibiting human-assisted dispersal of infestations. However, consistent with APHIS' statutory authority, the activities only mitigated one pathway for EAB spread, movement of host material in interstate commerce. They did not address intrastate movement, non-commercial movement, or natural spread, each of which is a known pathway for the spread of EAB. As a result, regardless of funding or tactics employed, the EAB domestic quarantine regulations have been, on the whole, unable to prevent the spread of EAB.

Any delay in EAB spread attributable to the quarantine regulations and associated delay in economic and environmental losses will end with this rule. The domestic quarantine regulations for EAB have not substantially reduced the likelihood of introduction and establishment of the pest in quarantine-adjacent areas. Interstate movement of EAB host articles is unrestricted within areas of contiguous quarantine, and irrespective of human-assisted spread, a mated EAB is capable of flying up to 100 miles in her lifetime, resulting in a high potential for natural spread.

EAB's spread through the United States to date suggests it will become established throughout its entire geographical range irrespective of Federal regulation, as EAB can overcome significant natural barriers during a flight season and, as mentioned above, Federal regulations do not address non-commercial movement of EAB host material. The possibility that the pest could reach EAB-free States more quickly in the absence of Federal regulation of host material is difficult to quantify. For the difference in rates of spread to be significant, quarantine activities must be able to mitigate all or at least most pathways for that spread. As noted above, resources available for quarantine activities have declined while the area under quarantine continues to expand. Human-assisted introduction may be mitigated by State regulations, and at least one State has indicated it will establish its own quarantine program following Federal deregulation.

Continuing to devote resources to regulatory activities would constrain APHIS' allocation of resources to activities that could be of greater long-term benefit in slowing the spread of EAB and helping affected communities recover from EAB infestation. These activities include further development and deployment of EAB biological control organisms; further investigation of integrated pest management of EAB that can be used at the local level to help safeguard an ash population of significant importance to a community; and further research, in tandem with other Federal Agencies, into the phenomenon of “lingering ash,” or ash trees that are still alive and present in the landscape in areas of otherwise heavy infestation, and integration of the findings of that research into the EAB program.

Public outreach activities outside the EAB regulatory program will remain substantially similar or increase following ***removal*** of the domestic quarantine regulations for EAB. We will continue to work with our State counterparts to encourage the public to buy firewood where they burn it and to refrain from moving firewood to areas of the United States that are not under Federal quarantine for pests of firewood. The primary national communications tool to warn the public about the plant pest risk associated with the movement of firewood is the Don't Move Firewood campaign, which is administered by The Nature Conservancy with support from APHIS and other Federal agencies.

In sum, this rule's elimination of compliance requirements will yield cost savings for affected entities within EAB quarantined areas. Moreover, sales volumes for at least some of these operations could increase if their sales have been constrained because of the Federal quarantine. Costs avoided will depend on the type of treatment and whether treatment still occurs for non-quarantine purposes. Costs ultimately borne also will depend on whether States decide to establish and enforce their own EAB quarantine programs. We anticipate States will continue to impose movement restrictions on firewood, with the regulatory requirements varying from State to State. The National Plant Board developed a template for State regulation of firewood, as well as best management practices regarding the commercial movement of firewood for the purposes of heating a home or building. Internationally, this rule may affect exports of ash products to Norway and Canada. Longer term, the impact of the rule on ash populations in natural and urban environments within and outside currently quarantined areas—and on businesses that grow, use, or process ash—will depend on how much sooner EAB is introduced into un-infested areas within the continental United States than would have occurred under the existing, decreasingly effective quarantine regulations.Executive Order 12372

This program/activity is listed in the Catalog of Federal Domestic Assistance under No. 10.025 and is subject to Executive Order 12372, which requires intergovernmental consultation with State and local officials. (See 2 CFR chapter IV.)Executive Order 12988

This rule has been reviewed under Executive Order 12988, Civil Justice Reform. This rule: (1) Does not preempt State and local laws and regulations; (2) has no retroactive effect; and (3) does not require administrative proceedings before parties may file suit in court challenging this rule.Executive Order 13175

This rule has been reviewed in accordance with the requirements of Executive Order 13175, “Consultation and Coordination with Indian Tribal Governments. ” Executive Order 13175 requires Federal agencies to consult and coordinate with Tribes on a government-to-government basis on policies that have Tribal implications, including regulations, legislative comments or proposed legislation, and other policy statements or actions that have substantial direct effects on one or more Indian Tribes, on the relationship between the Federal Government and Indian Tribes or on the distribution of power and responsibilities between the Federal Government and Indian Tribes.

APHIS has assessed the impact of this rule on Native American Tribes and determined that this rule does have Tribal implications that require Tribal consultation under Executive Order 13175. APHIS has engaged in Tribal consultation with Tribes regarding this rule; these consultations are summarized in the Tribal impact statement that accompanies this rule.Paperwork Reduction Act

This rule contains no reporting, recordkeeping, or third-party disclosure requirements under the Paperwork Reduction Act of 1995 (44 U.S.C 3501 et seq.).Congressional Review Act

Pursuant to the Congressional Review Act (5 U.S.C 801 et seq.), the Office of Information and Regulatory Affairs designated this action as not a major rule, as defined by 5 U.S.C 804(2).List of Subjects in 7 CFR Part 301

***Agricultural*** commodities, Plant diseases and pests, Quarantine, Reporting and recordkeeping requirements, Transportation.

Accordingly, we are amending 7 CFR part 301 as follows:Part 301 Domestic Quarantine NoticesRegulatory Text

1. The authority citation for part 301 continues to read as follows:Authority:

7 U.S.C 7701-7772 and 7781-7786; 7 CFR 2.22, 2.80, and 371.3

Section 301.75-15 issued under Sec. 204, Title II, Public Law 106-113, 113 Stat. 1501A-293; sections 301.75-15 and 301.75-16 issued under Sec. 203, Title II, Public Law 106-224, 114 Stat. 400 (7 U.S.C 1421 note).Subpart J Removed and ReservedRegulatory Text

2. Subpart J, consisting of §§ 301.53-1 through 301.53-9, is removed and reserved.Done in Washington, DC, this 1st day of December 2020.Michael Watson,Acting Administrator, Animal and Plant Health Inspection Service.[FR Doc. 2020-26734 Filed 12-14-20; 8:45 am]BILLING CODE 3410-34-P

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**End of Document**



[***Unrooted responses: Addressing violence against environmental and land defenders***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:6BGY-HK51-JBMY-H429-00000-00&context=1516831)

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**ABSTRACT**

This study considers how participants in community forestry and development organizations respond to ***forest***-related violence. The literature suggests that responses should seek to address the underlying causes of violence, enforce the rule of law, and promote human rights and political empowerment. Yet, these responses are often obstructed and neutralized by power relations and governance challenges, including pervasive corruption and patrimonialism. In Cambodia, the combination of distrust towards corrupt and abusive authorities, rigid legal-rational hierarchies and social conventions, as well as the belief that patrimonialism serves wealthy individuals and lack of awareness of rights makes it difficult to seek, and even less obtain justice for ***forest***-related violence. Few communities, supporting NGOs and foreign donors appear willing and capable of addressing the roots of ***forest*** violence, leading to compromises undermining conservation objectives, systemic injustice, and continued exposure to violence for environmental and ***land*** defenders. The study points at four areas for further research to reduce the risks of physical harm for defenders, sustain community conservation objectives, and strengthen accountability for ***forest*** violence.

**FULL TEXT**

**Introduction**

At least 1,734 people were killed globally between 2002 and 2018 whilst seeking to protect their ***land*** and the environment, many of them rural community members defending their commons from logging, mining, dam building and ***agricultural*** conversion (Global Witness, 2019; Middeldorp and Le Billon, 2019). For every environmental and ***land*** defender killed, many others faced violence in the form of harassment, criminalization, or physical assault (United Nations Environment, 2018a), with much of the everyday violence experienced by defenders being largely invisible as often only spectacular violence is deemed newsworthy.1 International human rights and environmental organizations, including United Nations agencies and non-governmental organizations (NGOs), have made three main types of recommendations to prevent or reduce such violence (Forst, 2016a; Khanna and Le Billon, 2019).2 The first is to address the root causes of ***land*** and environmental conflicts, thus reducing the need for people to defend their ***land*** and the environment. The second is to improve the rule of law and accountability mechanisms against corporations and authorities responsible for this violence, thus ensuring, for example, that projects receive the Free, Prior and Informed Consent (FPIC) of affected communities before proceeding (Middeldorp and Le Billon, 2020), that their lives are not at risk, and that just redress is provided when abuses occur. Third is to support the human rights and political empowerment of rural communities so that their voices are heard, their rights respected, and that national level policies reflect their interests and aspirations.

Yet, there is so far relatively few assessments of the feasibility and effectiveness of these recommendations (Forst, 2016b; Bruch et al., 2019).

Here, we aim to better understand the recommendations and practices by NGOs involved with protecting rural communities from violence associated with logging, agribusinesses, and ‘***land*** squatting’ in the context of community-based ***forest*** management (CBFM) activities in Cambodia (Milne and Mahanty, 2015; Persson and Prowse, 2017). ***Forest***-related violence manifests in ways such as threats, beatings, kidnappings, arsons, and shootings directed at Community ***Forest*** (CF) patrollers, mostly committed by illegal loggers and ***land*** seekers – including state/local authorities like the military – but sometimes also members of their own communities involved in prohibited activities (Grant and Le Billon, 2019). Threats of violence are common, if not constant for many CF members. As expressed by one interviewee: “Every step, every minute of breathing, we are scared. We expect that someone will kill us and maybe our families too”. Examples of ***forest*** violence have included about 60 local villagers armed with axes and machetes ambushing a CF patrol group that had been trying to prevent illegal logging and hunting; the house of a CF leader from the same village was burnt to the ground, likely in retribution of confiscating homemade guns and chainsaws from other villagers; as well as military and police officers (clients of logging tycoons) following and intimidating CF members and threatening them with violence if they do not cease patrols.

There is a strong rationale for CFBM organizations and sponsors to address such violence: it not only hinders CBFM activities and undermines their social and environmental benefits, but also endangers the lives, personal safety, and emotional and psychological well-being of CBFM participants (Baynes et al., 2016; Schoenberger and Beban, 2018). So far, the recommendations put forward by NGOs such as Global Witness (2017) are articulated around the need to address the ‘root causes’ of violence, support and protect defenders; and reduce the impunity of perpetrators. Yet, several questions arise out of this relation.

First, given that Cambodia is known to experience a high degree of corruption and patrimonialism (Un, 2019; Vuković and Babović, 2018), how does this context relate to the recommendations and practices taking place? Second, given that NGOs arguably put communities ‘in charge’ of protecting their ***forests***, often without effective backing from local authorities or foreign project sponsors (Grant and Le Billon, 2019; Hennings, 2019),3 what responsibilities do organizations promoting community ***forest*** projects bear for ***forest*** violence? Third, given that the factors contributing to ***forest***-related violence are so complex and deeply rooted in the Cambodian socio-political structure, how can and should CBFM participants and the NGOs that have assumed the responsibility of supporting them respond to ***forest***-related violence (Global Witness, 2017)?

The study is based on data collected in Cambodia by the lead author over the course of eight months between April 2015 and February 2016. Cambodia was selected for the prominence of (international) community forestry initiatives, campaigns to stop deforestation, and efforts to protect ‘environmental and ***land*** defenders’; with our focus here on local villagers patrolling their Community ***Forest*** to detect, deter and if possible stop activities such as illegal logging and ***agricultural*** clearings (Pasgaard and Chea, 2013; Yeang, 2012). Methods included a national-level survey of 18 NGOs involved in CBFM, semi-structured or in-depth interviews with 150 informants including CF participants and NGO staff in 32 CBFM sites in three provinces (Oddar Meanchey, Preah Vihear and Kampong Thom) out of a national total of 339 projects, as well as participant observation in ***forest*** patrols and CBFM training sessions.4 In order to protect informants, we maintain their anonymity and have purposefully withheld detailed accounts of experiences of violence. Quotations and descriptions of specific incidents are shared with explicit consent from key interviewees.5

Our findings suggest that entrenched neo-patrimonialism and partial judicial system in Cambodia limit rule of law based recommendations and projects; that rights-based protection programs of NGOs risk constituting bureaucratic exercises failing to challenge injustices and power inequalities; and that these processes can unintendedly push some communities, or community members, to buy into neopatrimonal arrangements, thereby reproducing systemic inequalities. Following this introduction, the first section outlines the main responses to violence against defenders, the second examines specific responses in CBFM projects within Cambodia, and the third discusses factors limiting the range of responses by CBFM organizations, especially in terms of addressing the ‘root causes’ of violence. The conclusion points to four areas for positive change.

**Responding to violence against defenders**

Environmental and human rights organizations seeking to address violence against defenders put forward three main recommendations: addressing the ‘root causes’ of violence; supporting and protecting defenders; and reducing the impunity of perpetrators (see Table 1; Forst, 2016a; Khanna and Le Billon, 2019; United Nations Environment, 2018b). These objectives often translate locally into programs seeking to selectively address some of the causes of violence, to improve the rule of law, and to promote human rights according to international standards; approaches that have less *directly* threatened specific political and economic (local) elites and thereby been better tolerated (Beban et al., 2017).

**Table 1.**

Recommendations for the protection of defenders.

| **Approaches** | **Objectives** | **Specific actions** |
| --- | --- | --- |
| Tackle root causes | Address legal gaps increasing risks for defenders, including weak environmental standards and lack of protection for communities | Environmental laws |
| ***Land*** rights, esp. indigenous |  |  |
| Anti-corruption |  |  |
| Free and Prior Informed Consent |  |  |
| Reduce the risk of investments and foreign aid resulting in violations against defenders | Transparency on resource projects |  |
| Rigorous human rights impact assessments |  |  |
| Public participation throughout project life |  |  |
| Grievance mechanisms |  |  |
| Support and protect defenders | Recognize the role and rights of defenders and prevent abuses, including by companies and security subcontractors | Legal protection for defenders organizations and activities |
| Public statements in support of defenders |  |  |
| Dialogues between governments, companies and defenders |  |  |
| Protect defenders | Implement protective measures for defenders |  |
| Suspend projects when risks are not addressed |  |  |
| Ensure accountability for abuses | Scrutinize and denounce violations against defenders | Systematically monitor and report abuses |
| ‘Name and shame' perpetrators of abuses |  |  |
| Ensure investigations and accountability of direct perpetrators and those who commissioned or contributed to violations, at home and abroad | Prompt and impartial judicial investigation |  |
| Trial and implementation of court decision |  |  |
| Corporate accountability for lack of due diligence |  |  |

Source: Global Witness (2017).

Addressing the ‘root causes’ of ***forest***-related violence means identifying why conflicts occur and resolving them before they “escalate” into violence (de Koning et al., 2008: 17). The task is immense and challenging given the diverse contexts and the complex assemblages of socio-political, economic, institutional, and environmental factors involved (Peluso and Watts, 2001). Consequently, diagnoses of ‘root causes’ tend to be drastically oversimplified and “rendered technical” (Li, 2011: 57) – that is, they are subject to a set of practices concerned with representing “the domain to be governed as an intelligible field with specifiable limits and particular characteristics … defining boundaries, rendering that within them visible, assembling information about that which is included and devising techniques to mobilize the forces and entities thus revealed” (Rose, 1999: 33). When the ‘root cause’ of violence has been attributed to poverty as a driver of illicit resource use, such as illegal logging or poaching (McElwee, 2004), recommendations often focus on developing alternative income-generating options and securing livelihoods (Sunderlin et al., 2005). When these roots have been attributed to the ‘informal’ ***land*** tenure, recommendations have frequently focused on a ‘formalization fix’ including on supposedly systematic – but often highly biased and counterproductive for many peasants – ***land*** titling processes (Dwyer, 2015). Such approaches are intended to support economic, cultural and ***land*** rights, thereby reducing conflict and preventing violence and contributing to other aspects of rights-based development.

In many cases, addressing root causes and supporting human rights may necessitate improvements in the rule of law and related institutions. Recommendations include improving ***land*** titling (Yasmi et al., 2010), consultation processes (Carter, 2015), just forms of resettlement and compensation (Franco et al., 2017), anti-corruption schemes (MacInnes, 2015; Le Billon, 2014), accountability mechanisms against patrimonial networks and corporate abuses (Borras and Ross, 2007; Global Witness, 2017), judiciary reforms to acknowledge and protect the rights of vulnerable groups and prevent their criminalization (Amnesty International, 2017), and more effective legal enforcement and citizen empowerment, including through greater access to pro-bono lawyers and judicial processes (Sotheary, 2019). Recommended legal reforms specifically include recognition of the right to maintain customary resource usage practices, especially for indigenous people (Munang, 2015).6 Beyond their legal implications, policy instruments also provide advocates with both a ‘language’ and references that are difficult for governments to dismiss (Subedi, 2015: 33), with greater public reporting on violence adding pressure on states to protect human rights and empowering citizens to demand rights protection and greater accountability.

As discussed below, rule of law objectives dominate recommendations within the Cambodian context,7 with specific recommendations including improving communities’ and authorities’ capacities to mediate conflicts by referring to legal guidelines (Yasmi et al., 2010, 2013), and eliminating corruption by improving the “capacity and willingness of government and investors to take a community’s interest into account” (Dhiaulhaq et al., 2014: 214). While well-meaning and identifying necessary long-term changes, these recommendations face several potential impediments.

Reforms of laws, policies, and institutions, and recognizing and prioritizing the protection of human rights require significant political will or even a change of political culture (de Schutter, 2011; Fitzpatrick, 2015). These are gradual processes even when not complicated by governmental rent-seeking and by companies (and consumers) prioritizing profits over citizens’ rights (Acemoglu and Robinson, 2005), and by the counterproductive effects of interventions by development organizations (Cock, 2017; Hall et al., 2012). Furthermore, proposed reforms must appropriately reflect local perceptions of ecological and social justice (Martinez-Alier, 2002), what counts as corruption and (im)moral behaviour (Robbins, 2000; Williams and Le Billon, 2017), and development aspirations (Sen, 1999). Moreover, the reductive identification of the ‘root causes’ of violence, such as ‘poverty,’ ‘corruption,’ or ‘lack of secure tenure,’ can dangerously overlook or mask other processes, discourses, and social, cultural, and political relations driving violence.

As political ecologists have repeatedly demonstrated, natural resource management (NRM) policies, legal and illegal resource usage patterns and conflicts, and normative expectations of rights are shaped by historically-rooted ideologies and cultural values, complex political and economic arrangements often involving domestic and foreign actors, and ‘best practices’ often rooted in flawed Western scientific discourse excluding local knowledge and priorities, among other factors (Leach and Fairhead, 2000). These processes are deeply involved in “green grabbing – the appropriation of ***land*** and resources for environmental ends” through the reshaping values, property rights, and community practices (Fairhead et al., 2012: 237). Beyond long-established militarized forms of state control turning ***forested*** landscapes into “political ***forests***” as means of territorialising power (Peluso and Vandergeest, 2011: 587), a multiplicity of actors are “(re)making political ***forests*** at a moment when ***forests***’ virtues as carbon sinks and biodiversity hotspots draw massive flows of capital and justify remaking socio‐ecological relations” (Devine and Baca, 2020: 1). Among these, many NGOs have followed a “green neoliberalism” path promoting carbon market schemes creating “new sites and expressions of territorialisation, governance, knowledge production, and subject formation” around environmental services (Ibid: 1); including through the neoliberal “conceptualizations and enactments of ‘community’ … making community forestry … supplementary, rather than oppositional, to neoliberal restructurings” (McCarthy, 2005: 995).

As discussed here, we suggest that ***forest*** violence in part results from the tensions and complicities between green neoliberalism and coercive forms of neopatrimonialism, pointing to the limitations, if not contradictions, of attempts to empower communities to protect their ***forests***. Ignoring this, we suggest, means that ‘solutions’ to existing conflicts risk leading to more violence, displace them in time or space, or draw different actors into them (Le Billon and Duffy, 2018), while ultimately ‘entrapping’ communities in neopatrimonialism (see Vuković and Babović, 2018). Understandings of violence, its ‘root causes’ and potential solutions can also reflect utopian ideals of justice that do not account for unequal power relations as historically constructed injustices, normalized through symbolic violence (Baynes et al., 2016; Bourdieu, 1979). Consequently, they may overlook more pragmatic, incremental improvements to justice outcomes that could be obtained through existing, albeit flawed, structures and institutions (Sen, 2009).

Enforcing the rule of law is difficult when patrimonial networks pervade the justice system and encourage corruption. The rest of this paper thus specifically focuses on lived experiences of implementing ‘rule of law’ approaches, since these are recommended as a course of action. We take an actor-oriented approach to understand responses to ***forest***-related violence in an effort to depict the ways in which people “manage the dilemmas of their everyday lives” and counter the structural and institutionalist nature of mainstream recommendations (Long, 2001: 10). We also use data from surveys and semi-structured interviews with eighteen NGOs and three donors regarding their knowledge and understanding of ***forest***-related violence in the projects they support and their responses to this issue.

**Responses to *forest*-related violence in CBFM projects in Cambodia**

NGOs and communities in Cambodia have generally first responded to ***forest***-related violence through efforts to see the ‘rule of law’ being implemented – an approach that aligns with the institutionalist ideology of CBFM. Yet, when directly pursued, such efforts to see legislation, such as Community Forestry Law, being respected have generally been ineffective against those illicit ***forest*** users who are most likely to use violence. This has led communities and NGOs to follow alternative *ad hoc* strategies primarily aimed at findings ways to get the political and judicial system to work in their interests and to reduce the incidence of ***forest***-related violence, even if it is at the cost of reduced ***forest*** protection and reinforced neopatrimonialism.

**Addressing violence through reducing *forest* conflicts**

NGOs’ primary response to ***forest***-related violence is to attempt to reduce the number of conflicts over ***forest*** resources, regardless of whether the NGO’s mission is oriented towards improving human rights, rural livelihoods, or environmental outcomes. When conflicts involve the military or Economic ***Land*** Concessions (ELCs), NGOs have supported communities and community leaders in negotiations, although this has infrequently resolved the conflict (c.f. Yasmi et al., 2013). When conflicts involve local loggers, all eighteen NGOs surveyed encourage and financially support CBFM groups to hold community education meetings to educate local loggers on the importance of sustainable ***forest*** management through which they hope to reduce local logging. However, loggers are often familiar with this rhetoric and claim they need the income from timber more than they need the ***forest*** in the future. Loggers find this approach patronizing since they are well aware of the role of the ***forest*** in local livelihoods or were even involved in establishing CBFM sites, but it also fails to address their motivations for engaging in illicit ***forest*** use.8 If they do agree to stop logging locally, they often continue elsewhere, displacing problems to other communities.9

**Non-violent conflict resolution workshops**

Addressing violence more specifically, six surveyed NGOs deliver training courses to communities on non-violent conflict resolution.10 Four of these NGOs promote human rights more broadly in Cambodia and the workshops draw on tools used to in other contexts, such as peaceful protests of ***land*** concessions, prisons, and political rallies. The other two NGOs coordinate with human rights-focused NGOs to deliver the workshops. An NGO employee explained the rationale for this training – “sometimes patrol members get very angry when they see someone cutting the ***forest*** because they have worked hard to protect it. We teach them not to lose their tempers and take some time to think before confronting loggers.”11 Participants are also taught how to “educate” offenders rather than try to physically stop illicit activities, to de-escalate conflicts, and to walk away and call the Forestry Administration (FA) and/or police for assistance. Such approach, however, is inadequate as illicit ***forest*** users are knowingly in violation of bylaws and have more to gain by using violence to enforce their will than by entering into negotiations. Furthermore, CBFM participants do not need encouragement to avoid violence, as interviews and patrol observations suggest that they fear physical harm and are already prepared to back away from conflicts likely to turn violent. As one interviewee noted, “If I am hurt, I cannot provide for my family” (see also Schoenberger and Beban, 2018).

**Using the justice system to implement the rule of law**

In an attempt to implement the rule of law, CBFM participants and NGOs report incidents of ***forest***-related violence as well as illicit ***forest*** use to law enforcement authorities, specifically, the police and the FA. The hope is that those authorities will in turn report to the courts, who would punish violent behaviour. NGOs are well positioned to assist in this regard as staff have the literacy skills and confidence to navigate the bureaucratic procedures of law enforcement. Yet, while all eighteen NGOs surveyed have *reported illegal logging or deforestation* to law enforcement authorities, only seven NGOs have supported communities in *reporting violence*. NGOs explained that this was because they only make reports if the victim suffered physical harm requiring medical attention and if the victim wishes to make a formal report. This support also appears to be inconsistent as at least three interviewed CBFM participants declared having experienced violence and needed medical attention but were not offered NGO help to report the incidents. Threats of violence are rarely reported unless an imminent danger to life is suspected.

Community-based participants are often unwilling to make reports directly to the police, instead asking Village Chiefs to do so on their behalf due to a belief they are more literate and able to navigate bureaucratic procedures and are responsible for looking after village members. They also expect that the police are less likely to try to bribe Village Chiefs than other villagers, and in some cases believe that the Village Chief has direct influence over those using violence, especially if that person belongs to the local community. In contrast, police are widely believed to be corrupt, engaging in bribery and colluding with loggers. However, there are several reasons why some CBFM participants would not make reports to the Village Chief either, often out of suspicion of his involvement in illicit activities. In one CF, participants accused the Village Chief of having bought ***land*** from the military who had established a base in the CF and later sold it on to villagers, who saw the opportunity to extend their own farms, and to migrants seeking to move to the area.

Attempts to enforce existing laws in order to punish and deter ***forest***-related violence appear to be wholly unsuccessful. No cases were found in which those responsible for ***forest***-related violence against CBFM participants or NGO employees had been arrested, let alone convicted, even in cases where the identity of the perpetrator was known. This mirrors the national trend as even cases that have been prominent in Cambodian and international media have not been fully investigated or have been closed prematurely (Amnesty International, 2017; Cox and Ok, 2012; Lambrick and de Smet, 2015). Interview data are dishearteningly common and repetitive: “we reported them to the police but they did not investigate”; “I reported him to the Village Chief but he did not report to the police or give any punishment”; “the police and the Village Chief came to see the remains [of an arson attack on a house] but up to now, they have not made any arrests.” Explanations for this from interviewees repeatedly point to the authority figure to which the report was made being engaged in illegal logging networks and associated violence or being the political client of those who are – although other causes could not be ruled out given the information available to us. The precise details of these networks remain murky, but a consistent picture emerges that law enforcement authorities do not pursue reports of ***forest***-related violence because of influence from political and institutional patrons. In turn, the attitude of law enforcement authorities makes many CBFM participants less likely to ask law enforcement authorities to uphold their rights and contributes to an attitude of resignation to systemic injustice. Past experience has taught them that law enforcement authorities are, at best, uncommunicative, uncooperative, and under-resourced to investigate and at worst, dismissive, abusive, and predatory – seeking to obtain bribes from villagers in exchange for making reports while also taking benefits from and protecting patrons. In this respect, CBFM participants and NGOs say they are unwilling to pay because they believe it leaves them vulnerable to further bribery in the future, even if they did have the money to pay.

The rigidity of legal-rational hierarchies further compounds the effects of patrimonialism, especially when it occurs at lower levels of the justice system. It is almost impossible for CBFM participants or NGOs to circumvent the hierarchical system in asking authorities to investigate a case. Interviewees repeatedly complained that the four central law enforcement authorities refuse to investigate reports of ***forest***-related violence unless local level officials have already assessed it. This means that although some CBMF participants and NGO staff mentioned corruption among judges and court staff, none had managed to elevate reports of violence to the courts yet as reports of violence will not proceed past local police and administration levels if they are involved or connected to illicit ***forest*** use(rs).12

The detrimental effects of this administrative rule are reinforced by the cultural norm of deference to social hierarchies, especially when ***forest***-related violence involves people from the same community. CBFM participants do not feel able to report community problems directly to police or other outside authorities, including NGOs (even though this would not contravene legal-rational hierarchies discussed above), because social convention dictates that such matters ‘should’ be first reported to the Village Chief, whose responsibility it is to maintain order within their village. They fear that breaking this social convention would likely lead to their ostracism from the community and, as one CBMF committee member expressed, they “would not feel welcome at events like weddings, funerals, and Water Festival boat races”. Lamenting how this situation robs community ***forest*** (CF) participants of their dignity, agency, and political rights one CBFM interviewee asked, “To live as a human being, what should we do? The powerful people treat us like animals.”13

Furthermore, CBFM participants are also hesitant to report violent crimes because they fear retributive violence if the law enforcement officer has a “string” to a patron involved in illegal logging. This fear is not only generated by their understanding of the pervasive patrimonial system but is reaffirmed by witnessing its effects when police participate in violence and the judiciary cooperates in false charges against citizens (e.g. in Oddar Meanchey, two villagers were being held in jail awaiting trial for ‘disrupting the peace’ because they asked the police to investigate logging in their CF by soldiers who were guarding a local ELC). Moreover, CF participants who experience violence do not always recognize their right to report such crimes, nor their right to responsive law enforcement and an effective criminal justice system. When asked if they had reported violent incidents to anyone, several interviewees showed confusion or said they had reported illicit ***forest*** *use* to the Forestry Administration (FA) or Village Chief, and even when more specifically asked about reporting precise acts of violence and their perpetrators, none of the interviewees responded that they had reported any, to anyone. Recognizing that CBFM participants are not always aware of their rights or laws criminalizing direct violence, five of the eighteen surveyed NGOs have addressed the issue of violence in training on human rights and laws, with interviews suggesting that such training on human rights can influence how CBFM participants think about violence and their rights.14 However, although some CBFM participants confirmed that they were more aware of their rights after this training, they had still not reported violence to law enforcement authorities due to lack of trust in their willingness and/or ability to act, as discussed above.

**Using accompaniment to implement the rule of law**

Impunity has led some communities and NGOs turn to deterrence through military or government official accompaniment during community ***forest*** patrols. Among the 32 CF groups visited, nine CF groups and one Community Protected Area (CPA) group attempt to reduce violence by paying soldiers, FA officers, or ***Forest*** Rangers to join patrols using money from NGO-supported project budgets, sale of seized timber, and voluntary donations by patrol members or family members.15 Soldiers and armed ***Forest*** Rangers are primarily recruited in response to military loggers and migrants, both of whom commonly carry guns. The accompanying soldiers may have family ties to the community or may be outsiders who have shown an interest in ***forest*** protection. CBFM groups using such escort report that accompanying soldiers deter the use of violence by creating a threat of retaliation – physical violence is a greater threat to illicit ***forest*** users than the justice system. Military accompaniment is seen as preferable to having patrol members carry guns themselves because CF committee members do not want to encourage the proliferation of guns in their villages (c.f. Roe, 2015) and, they argue, loggers would kill a civilian but are unlikely to shoot a soldier since they would be punished to the full extent of the law, pointing to how the justice system and the ruling elites controlling it do not protect or value all lives equally.

FA Officers are also occasionally paid per diems to accompany patrols to ***remove*** migrants or local loggers from CF sites. Although FA Officers are not armed, patrol members believe they increase the appearance of authority over ***forests***. CF groups also suggested that their presence can reduce the occurrence of ***forest***-related violence because they act as witnesses of violence to whom police are more likely to respond than reports made, as a CBFM participant put it, by “a normal person” due to their “good connections”. In this case, CBFM groups still entertain the idea of using the justice system, but they have to try alternative ways to get it to work in their interests. However, the extent to which this tactic deters or successfully punishes violence is questionable. Violence does still occur when FA Officers join patrols, and perpetrators are rarely prosecuted (but see, Sasson, 2018). In Oddar Meanchey, armed soldiers stormed the FA compound to retake timber and a truck the FA had confiscated (Peter and Aun, 2016) demonstrating that not only are soldiers willing to use violence but also that they are confident they outrank a government department in terms of political power. It displaces ***forest***-related violence in time or space rather than eliminating it. For example, during participant observation of an overnight patrol accompanied by an FA Officer, illegal loggers reluctantly but peaceably ceased logging after being instructed to do so by the FA Officer. However, when the patrol encountered the same loggers the following day, no longer accompanied by the Officer, the loggers aggressively pushed and threatened patrol members and did not leave until the FA was called back. Interviewees recounted multiple similar incidents with the military in which, once the accompanying soldiers had left patrol groups back in the village after seizing illegally cut timber, military loggers ambushed the patrol groups and reclaimed logs at gunpoint: “They followed us and trapped us like animals” recalled one patrol member.

NGOs supporting CBFM also sporadically work with journalists to publicize incidents of ‘spectacular’ ***forest***-related violence occurring in CBFM sites. However, this practice is not widespread as the regime has closed many independent media outlets, notably as part of a broader deepening of authoritarian violence that occurred prior to the last election (see Schoenberger et al., 2018). It also requires good relationships with journalists willing to cover such controversial and politically-sensitive issues, and incidents of ***forest***-related violence are rarely sufficiently ‘spectacular’ to make the news. Furthermore, the present model of only covering the most severe examples of direct violence portrays each as a discrete, spontaneous, and unusual event, thereby failing to expose the on-going violence and everyday intimidation that CBFM participants experience and the underlying processes. Several Cambodian human rights NGOs have issued their own press briefings and reports on ***forest*** violence, but these are generally focused on violence perpetrated by ELC companies (ADHOC, 2013; Asian Human Rights Defenders, 2015; LICADHO, 2009), and usually omits reports of violence by other actors such as illegal logging groups. An interviewee at a human rights organization lamented that such violence falls beyond the scope of their donor-funded programmes on ***land*** politics so they cannot dedicate sufficient time or resources to investigating the issue, a response that reveals the way discourses around natural resource problems are framed and constructed.

**Other ad hoc responses**

Some CBFM groups have improvised alternative responses to reduce the likelihood of ***forest***-related violence, most notably by announcing their patrols ahead of time so as to reduce the likelihood of encounters and violence with local loggers who are part of their communities – even if patrols thereby do little to reduce ***forest*** degradation as logging is only postponed or displaced to another ***forest***. Local loggers who do not use violence against CBFM groups also appear to cooperate with this strategy as it enables them to benefit from illicit activities without increasing direct conflict with neighbours. Several CBFM groups have taken the decision not to confront some illicit ***forest*** users in the future, especially organized logging groups and military loggers. Although this means some tree species are lost from their ***forest***, some of these species have little direct value for local livelihoods and many interviewees believe that it is not worth risking their lives in order to protect individual trees. This pragmatic decision does not negate the significant emotional and spiritual value these trees hold for CBFM members, including beliefs that ancestral spirits inhabiting the fallen trees will be angered and bring illness and misfortune to the village (see, Beban and Work, 2014). CF activities have completely ceased in areas where military bases have been established, even where ***forest*** remains, because it is considered too dangerous to oppose the military. Yet, members of those villages continue to work for ***forest*** protection by joining CF activities in other parts of the province. CBFM interviewees argue that this is necessary because, first, conservation efforts should not be motivated only by personal gain from the ***forest*** but by the greater conservation need, and second, they want to oppose political and economic elites’ domination of Cambodia’s ***forests***.

**Responding to the consequences of violence**

There are very limited direct responses to the physical and material consequences of violence as professional medical attention is often unaffordable for patrol members, so first aid is administered by friends and family unless injuries are serious. In one instance, an international donor provided $5,000 to cover emergency medical treatment when the Head of the Provincial CF Network in Oddar Meanchey was shot in the neck and shoulder by a soldier while on a ***forest*** patrol. Such support is not routine and the recipient questions whether it would have been offered if he were not such a prominent figure in Cambodia’s CF movement, remarking “I am famous with NGOs in Cambodia. They could not let me die”. No other instances were found within our sample in which development organizations offered financial or medical support to those who experienced ***forest***-related violence. When ***forest***-related violence causes damage to possessions, such as motorbikes, tractors and trailers, or, in three arson cases, houses, minimal financial support is available. The house owners sought support from the local pagoda and were given timber that had been seized by illegal loggers in the CF but this was insufficient to replace the houses. There is a clear lack of support in this area as NGOs promoting CBFM projects literally pushed defenders to put their bodies on the line, yet have not sufficiently recognized the embodied nature of ***forest*** patrols, the bodily risks entailed, the invisibility of ‘violented’ bodies resulting from banalization and media crackdown, and the consequence of their own lack of concern for affected defenders and their families.

**Discussion**

This study examines the challenges of achieving conservation and development objectives through community-based ***forest*** management in a context of pervasive patrimonialism, corruption, and violence. At present, no CBFM group or supporting NGO appears to address the roots of ***forest***-related violence in Cambodia. Rather, responses are reactive, inconsistently implemented, and *ad hoc*; they are ‘unrooted’ from legal-rational systems, such as the FA, judiciary, or village leaders, while lacking the strategy, as well as political and financial support, to effectively reduce ***forest***-related violence. At the community level, this appears to reflect a feeling of powerlessness to change the underlying socio-political structures that distort legal-rational systems and sustain direct violence, and secondly, a perception that they need to maintain the support of development organizations (see also Grant and Le Billon, 2019). Among supporting NGOs, this ‘unrootedness’ appears to reflect the pervasive influence of the authoritarian patrimonial political system and an unwillingness to push the boundaries of their activities into more overtly political issues of patronage and corruption as a means to tackle some of the ‘root causes’ of ***forest***-related violence. In part, NGOs attribute this attitude to restrictions placed on them by donors (c.f. Brockington and Duffy, 2011; Coventry, 2016; Frewer, 2013). Consequently, proposed activities must directly and clearly contribute to that theme so, for example, some donors do not consider training on human rights or non-violent conflict resolution relevant activities within conservation projects limiting the ability of some environmental or livelihood focused NGOs to address these issues. Relatedly, there is then little scope to redirect funds to pay for medical care for a participant who is injured during CBFM activities, much less pay for material losses such as damage to property or recovery after an arson attack. Despite the complementarities between environmental and political activities, NGOs are also often reluctant to talk to donors about the problems of ***forest***-related violence and related needs of CBFM participants. As one NGO employee observed, “we cannot tell the donors all the problems that happen in the project because they will think we are failing and will not want to support our next proposal.”16 Yet, by failing the communities they intend to help and thus the ***forest*** conservation goals they have set, NGOs ultimately risk losing future funding. These restrictions in topics and channels of communication around REDD+ projects in Cambodia also have other consequences, such as inequitable benefits distribution and representation within ***forest*** management committees (Pasgaard, 2015; see also Sanders et al., 2017 for cases in Indonesia and Saito-Jensen and Pasgaard, 2014 on blocked learning from reporting only successes and not failures).

NGOs’ unrooted responses to violence also reflects the influence of local political allies – such as cooperative District and Provincial Governors and FA staff – asking them to stay away from political issues such as human rights or political reform and therefore do not propose budgets to donors that include political activities. NGOs fear that disrupting the political status quo will make it harder to get approval for future project activities. NGOs are also subject to pressure from the government at the national level, which can use legal-rational mechanisms to constrain NGOs’ actions and protect the interests of the ruling elite. The Law on Associations and NGOs (LANGO), which came into effect in August 2015 during this research project, has already been used to revoke the registration of NGOs that engage in political action or support citizens to do so (Amnesty International, 2017; Mech and Ananth, 2017).17 According to NGO interviewees, LANGO is likely to deter NGOs from responding to violence connected to ruling elites and thus makes it easier for those elites to use direct and structural violence with impunity. At the personal level, some NGO employees also expressed fear for personal safety, exacerbated by low incomes, poor medical insurance, lack of financial savings, and sometimes low job security, and are therefore reluctant to directly engage political issues. Ultimately, the patrimonial system shapes NGOs’ agendas, constrains their behaviour, and limits the possibility for effective responses through existing legal mechanisms.

Overall, two main factors seem to limit NGOs to responses that are unrooted in local power structures and lacking the strategy and support to be effective. First, NGOs are often constrained by patrimonial systems as they are unable to oppose political elites whose cooperation they need for bureaucratic or other purposes. Second, NGOs are dependent on maintaining an appearance of success in order to secure future funding from donors, who are also somewhat beholden to maintaining a good relationship with political elites. Consequently, NGOs are disincentivized from recognizing or responding to ***forest***-related violence since it is easier to ignore ***forest***-related violence, make it invisible, or portray it as inevitable rather than trying to respond and fail or to have only negligible, intangible success. Thus, misrecognition of ***forest***-related violence is not simply an oversight or effect of living in a society where violence of many kinds is pervasive, but it is also functional. While we do not suggest that supporting NGOs and international donors can eliminate ***forest***-related violence – the ‘root causes’ run far too deep and are far too complex to suggest that – organizations supporting CBFM projects must also recognize how these interventions can expose those same local people to harm, denounce them when they occur, and plan to mitigate those risks accordingly.

**Conclusion**

This study shows that interventions by NGOs to address ***forest*** violence have predominantly focused on improving the rule of law because systemic political corruption and patronage are seen as both the root cause of ***forest***-related conflicts and factors that undermine sustainable ***forest*** management. Yet we find that patrimonialism and corruption among law enforcement institutions, but also their internalization by many CBFM participants and organizations, obstruct and neutralize ‘rule of law’ attempts to deter or punish ***forest***-related violence. Alternative strategies to respond to ***forest***-related violence are generally focused on preventing CBFM participants from encounters with illicit ***forest*** users, thus allowing ***forest*** degradation to go unchallenged and negating the conservation objectives of CBFM.

To sum-up, this study contributes to the literature in three main ways. First, it adds to previous studies recognizing that entrenched neo-patrimonialism and partial judicial system in Cambodia limit rule of law based recommendations and projects (Milne, 2015; Schoenberger, 2017). Rather than an overt and systematic application of law, responses by CBFM participants to ***forest*** violence (and associated ‘***land*** grabs’) are often based on personal networks and “informal power” (Beban et al., 2017), and while generally “desperate, sporadic and atomistic”, resistance strategies by peasants have taken both ‘everyday’ forms of resistance and more overt and organized ones (Lilja et al., 2017; Touch and Neef, 2015: 9).

Second, the study suggests that the protection of defenders is at risk of turning into a bureaucratic exercise that fulfills the assertion of some rights while failing to challenge or address the prevailing socio-political conditions that limit meaningful expression of these rights. As such, the study echoes findings pointing at the violence of bureaucratic performance (see Baynes et al., 2016; Milne and Mahanty, 2019), in effect disciplining communities through an effective “protection culture” that remains largely apolitical and unrooted in the realities of injustices and power inequalities.

Third, the study points to a devolvement of responsibility by NGOs upon local communities through rights awareness and demands for justice against ***forest*** violence. Yet, while such devolution constitutes a form of empowerment for communities, our study joins others seeing it as placing the burden of responsibility upon communities and putting them at risk of additional harm, especially given the uneven power relations at play and virtual impunity of (local) elites in many countries (Cronkleton et al., 2012; Daudelin et al., 1996; Grant and Le Billon, 2019; Peluso and Lund, 2011; Ystanes, 2016). We suggest that such processes risk pushing some communities, or community members, to buy into neopatrimonal arrangements.

Several areas require further research. The first is that of ***forest*** violence ‘*lisibility’*: making violence more graspable through better documenting it, including at community level. How to record and report details about violence to implementing NGOs, donors, civil society organizations and various Cambodian authorities so as to potentially reduce impunity? Importantly, neither NGOs nor donors should construe this information as a sign of ‘failure’ but rather as qualitative information on the socio-political situation in which their project is implemented and a risk that should be addressed. The second area is that of ***forest*** violence *visibility*: raising the prominence of violence and its impacts in public discourse. What are the means of getting more consistent coverage of the forms and processes of violence in ***forests***? Can long-term trends drawn from data collected by communities and highlighting ‘hot spots’ pointing at violent offenders and neopatrimonial networks help with deterrence and redress, without further demonstrating that violence is normal, inevitable, or acceptable? The third area is that of *embodiment*: supporting the bodily health of defenders and that of their families. Who should respond, and how, to psychological distress, injuries, and material losses of defenders and their families? Can donors and NGOs mobilize financial resources and personnel? The fourth area is that of *authority*: reversing the pattern of impunity through legal means while politically reversing neopatrimonial perceptions. How can NGOs establish a jurisprudence of cases against perpetrators and mandators of ***forest*** violence? Can strategic lawsuits using the best available evidence and lawyers be effective? Should NGOs seek to maneuver politically to erode patterns of impunity, and how can they do so without reinforcing perceptions of omnipotent patrimonial interventions?

The difficulty of eliminating ***forest***-related violence should not prevent development organizations from taking steps to better recognize it and support those who experience it even if those steps only make incremental improvements. Rather, those planning and managing CBFM projects should take as a starting point the reality of violence in all its forms as historically constructed injustices that are reproduced in the present day and seek a pragmatic approach to upholding human rights by identifying where failings occurred and what actions can be taken to remedy or mitigate the harms caused by specific expressions of violence. As such, CBFM projects should not only seek improved rights (e.g. environmental and economic rights) as an outcome of conservation and development projects, but should also seek to ensure that the implementation process of those projects – in itself – also upholds and promotes participants’ rights.

**Notes**

Declaration of conflicting interestsThe author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.; FundingThe author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: Funding for this research was provided by the Social Sciences and Humanities Research Council and by the National Geographic Foundation (grant number GEFNE156-15).; ORCID iDPhilippe Le Billon [*https://orcid.org/0000-0002-4635-2998*](https://orcid.org/0000-0002-4635-2998); 1Environmental and ***land*** defenders are defined as “people who take peaceful action to protect environmental or ***land*** rights, whether in their own personal capacity or professionally” (Global Witness, 2014: 23), while the UN describes Environmental Human Rights Defenders (EHRD), as individuals or groups who “strive to protect and promote human rights relating to the environment (Forst, 2016a: para 7), and environmental defenders as “anyone who is defending environmental rights, including constitutional rights to a clean and healthy environment, when the exercise of those rights is being threatened” (United Nations Environment, 2018a). Here, these terms are used interchangeably. Although most of this study focuses on the use or threat of physical forms of violence, we understand violence as a broader process involving multiple forms as well as spatial and temporal dimensions, including as a result of landscape degradation or fear of repression (see Springer and Le Billon, 2016).; 2These recommendations were identified through a review of 34 reports or studies by 27 international organizations specifically published on environmental and ***land*** defenders between 2004 and 2019, see (Khanna and Le Billon, 2019).; 3As Hennings (2019: 103) observed, “Reasoning that women use non-violent means of contestation and are less prone to violence from security personnel, non-governmental organizations (NGOs) push women affected by ***land*** grabs and eviction to the frontline of protests.. and encourage..[them] to publicly display emotions”.; 4These three adjoining rural provinces stretch from the center of the country to its northern border with Thailand. With the exception of the traditionally more intensely cultivated southwestern part of Kampong Thom, these provinces have relatively low population density, are mostly covered by a mix of deciduous and semi-evergreen ***forests***, were partly controlled by the Khmer Rouge until the mid-1990s, and have seen a rise in rubber and sugar plantations over the past decade. Oddar Meanchey was selected because its thirteen CFs are, on paper, some of the most well-established in Cambodia (including Cambodia’s first REDD+ project), Kampong Thom province for the prominence of the Prey Lang Community Network (founded in part by Chut Wutty whose murder triggered Global Witness’s campaign on environmental and ***land*** defenders), and Preah Vihear for its Cambodian army presence along the Thai border, akin to Oddar Meanchey, and for being a neighbour province of the other two provinces. No map of CFs surveyed is provided due to confidentiality and safety issues. For a general map of Community ***Forests*** around 2014, see [*https://opendevelopmentcambodia.net/profiles/community-forestry/*](https://opendevelopmentcambodia.net/profiles/community-forestry/)*.* While the first author conducted the fieldwork on which this article is based, while the second had conducted extensive fieldwork on Cambodia’s ***forest*** sector between 1991 and 2001. Security concerns constrained the range of interviewees conducted the range of interviews conducted by the first author, with limited contacts with government officials. Interviews were conducted following ethics guidelines and preserved the anonymity of the informants. On the influence of fear on research on such topics in Cambodia, see Schoenberger and Beban (2018). Of the 32 CBFM groups included in this study, 26 are supported by local NGOs, which rely on funding from international donors. NGO support was withdrawn from the other six sites after the FA and supporting NGOs were unable to reach an agreement over REDD+ funding. At time of research, the CBFM groups were searching for alternative support.; 5The fieldwork reported was covered by UBC Ethics Certificate number H15-00578.; 6The United Nations Declaration on the rights of Indigenous Peoples is an important but non-binding international normative foundation for the legal framework on the recognition and registration of indigenous people and their right to collective ***land*** title although it is non-binding (Subedi, 2015).; 7Given the scarcity of academic studies focusing specifically on ***forest***-related violence in Cambodia, there are few recommended responses (for an early discussion of ***forest*** conflict and violence during the 1990s transition see Le Billon 2000). Most reports of violence merely report what happened and do not consider appropriate responses, while some provide recommendations to reduce antagonistic relations between parties or to bring legal clarity and formalization (Backstrom et al., 2006; Ratner and Parnell, 2011).; 8Initial interviews with local loggers suggest that motivations include financial desperation and debt, opportunistic financial gain, frustration at outsiders logging, lack of belief in the future success of CBFM, and loss of ***land*** to ELCs. Further research is needed to explore these motivations.; 9This dynamic is referred to as ‘leakage’ or ‘displacement’ (Atmadja and Verchot, 2012) in literature on REDD+ but is less commonly discussed with regards to CF and CPAs.; 10Training on this topic was observed by lead author in Oddar Meanchey, 17th June 2015. It was combined with training on human rights.; 11In the training observed, the NGO promoted the role of women in de-escalating conflicts proposing that women are less likely to use violence first and are less likely to be physically attacked by illicit ***forest*** users. This view was shared by a number of participants interviewed during the workshop breaks, but more research is necessary to determine the effectiveness of this approach in practice.; 12See Schoenberger (2017) for an example of how engaging with a change of national policy enabled on community to move their complaints past the District level and attract the attention of the PM only to have blame and responsibility passed back down the hierarchy again.; 13Remark made during training by NGO for CF groups on non-violent conflict resolution, Oddar Meanchey, 17th June 2015, which resonated with Schoenberger’s (2017) point about biopolitics in Cambodia’s socio-environmental and ***land*** struggles.; 14The other thirteen NGOs all conduct training on human rights but focus on environmental rights and laws regarding CBFM establishment and do not explicitly cover rights to personal safety or freedom from violence or relevant laws – an important distinction to make.; 15FA officers join CF patrols since the Forestry Administration has jurisdiction over CF sites while ***Forest*** Rangers join CPA patrols since the Ministry of Environment has jurisdiction over CPA sites. No CLT groups are known to pay state officials to support them since they do not often engage in formal ***forest*** patrols.; 16The extent to which this is true was not ascertained in this research but this interviewee indicates that violence is a sensitive subject and not readily discussed among development organizations.; 17The Interior Ministry used the Law on Associations and NGOs to dissolve the Cambodian environmental activist NGO ‘Mother Nature’ in August 2017.

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[***Food systems are responsible for a third of global anthropogenic GHG emissions***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:693W-H841-F129-P4MF-00000-00&context=1516831)

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**Body**

Main

Food needs to be farmed, harvested or caught, transported, processed, packaged, distributed and cooked, and the residuals disposed of. Each of these steps causes ***emissions*** of anthropogenic greenhouse gases (GHGs) and requires energy. Inputs such as fertilizers or energy need to be produced and made available at the right time and location– with additional associated GHG ***emissions***.

Major datasets of GHG inventories—including those with country coverage (National Inventory Reporting under the United Nations Framework Convention on Climate Change (UNFCCC)), regional or global coverage (for example, the ***Emissions*** Database of Global Atmospheric Research (EDGAR, [*https://edgar.jrc.ec.europa.eu/*](https://edgar.jrc.ec.europa.eu/)), GAINS ([*https://iiasa.ac.at/web/home/research/researchPrograms/air/GAINS.html*](https://iiasa.ac.at/web/home/research/researchPrograms/air/GAINS.html)) and FAOSTAT ([*http://www.fao.org/faostat/en/#data/))—provide*](http://www.fao.org/faostat/en/#data/))—provide) detailed temporal and sectorial evolution of total GHG ***emissions***. Yet, ***emissions*** from the food systems are scattered across many different source categories (Supplementary Fig. ). Global estimates of the share of ***emissions*** associated with ***agriculture***, which includes farm gate production and associated ***land*** use, have been produced, and more recently ***emission*** estimates from the various stages of the life cycles of food products have also been made available–. Another recent estimate of global food-system ***emissions*** has been provided by the Intergovernmental Panel on Climate Change (IPCC) Special Report on Climate Change and ***Land***, attributing between 10.8 and 19.1 Gt CO2-equivalent (CO2e) ***emissions*** per year to the food system globally, corresponding to 21% to 37% of overall anthropogenic ***emissions***,. Other studies report good agreement between ‘top down’ and ‘bottom up’ methods, for Europe. The review of available resources for ***emissions*** from food systems shows how, overall, available data are based on detailed product-specific life cycle assessment studies,, or are using aggregated global data,. So far, however, studies encompassing global coverage of the whole food-system at country level are missing and, consequently, the total ***emissions*** and the total share of those ***emissions*** associated with food systems are largely unknown.

The global database of GHG ***emissions*** (CO2, methane (CH4), N2O, fluorinated gases (F-gases)) from food systems (EDGAR-FOOD) developed in this Article aims to fill this gap by using a consistent methodological framework. EDGAR-FOOD has been developed to aid the understanding of the activities underlying energy demand and use, as well as ***agriculture*** and ***land***-use change, and ***emissions*** associated with the production, distribution, consumption and disposal of food through the various stages and sectors of the composite global food system. These data were complemented with data from the FAOSTAT database on GHG ***emissions*** from ***land*** use related to ***agriculture***. EDGAR-FOOD represents the first database consistently covering each stage of the food chain for all countries with yearly frequency for the period 1990–2015.

***Emissions*** from the food system

A third of global GHG ***emissions*** comes from the food system. Our estimate of the contribution of food systems to total anthropogenic GHG ***emissions*** was 34% (range 25% to 42%) for the year 2015. Global GHG ***emissions*** from the food system were 18 Gt CO2e yr−1 (95% confidence interval (CI) 14–22 Gt CO2e yr−1) in 2015, with 27% (or 4.9 (95% CI 3.7 to 6.4) Gt CO2e yr−1) emitted by industrialized countries (country definitions are regional groupings and are provided in Supplementary Table ), and the remaining 73% (or 13 (95% CI 10 to 16) Gt CO2e yr−1) emitted by developing countries (including China) (Fig. ). In 2015, 71% of global GHG ***emissions*** from the food system was associated with the ***land***-based sector, defined herein as ***agriculture*** and associated ***land*** use and ***land***-use change activities (the latter will be referred to as LULUC). In industrialized countries, the contribution of the downstream energy-related sectors (53%), which includes industry and waste, was larger than the ***land***-based sector, while in developing countries ***agriculture*** and LULUC were the dominant fraction (73%) (Fig. ).

GHG ***emissions*** from the food system in different sectors in 2015.

Total GHG ***emissions*** (including CO2, CH4, N2O and F-gases) are expressed as CO2e calculated using the GWP100 values used in the IPCC AR5, with a value of 28 for CH4 and 265 for N2O.

In 2015, six top emitting economies (the term ‘economies’ is used to allow the European Union to be considered as a single entity) with individual contributions larger than 6% to the global total GHG ***emissions*** from the food system were responsible for 51% of our estimated global food-system total. They were: China with 2.4 Gt CO2e (13.5% of the global total), Indonesia with 1.6 Gt CO2e (8.8%), the United States with 1.5 Gt CO2e (8.2%), Brazil with 1.3 Gt CO2e (7.4%), the European Union with 1.2 Gt CO2e (6.7%) and India with 1.1 Gt CO2e (6.3%). Supplementary Table reports country-specific contributions to global GHG food-system ***emissions*** in 2015.

While food-system GHG ***emissions*** increased from 16 (12 to 20) in 1990 to 18 (95% CI 14 to 22) Gt CO2e yr−1 in 2015 (an increase of 12.5%), the share of total GHG ***emissions*** decreased over time; that is, it was 10% higher in 1990 (44%) than in 2015 (34%) (Fig. , solid lines). At the same time, global food production, taking cereals as proxy, increased by over 40%, indicating an overall decrease in the ***emission*** intensity of food during the same period. The temporal evolution of the share of food-system ***emissions*** differed significantly between groups of countries. The share was stable (around 24%) and relatively low for industrialized countries. On the contrary, in developing countries the share of food-system ***emissions*** significantly decreased, from 68% in 1990 to 39% in 2015 (Fig. ). This food ***emission*** trend was nevertheless different when we focused on specific countries: it grew by 41% in China and only by 14% in the rest of the developing countries. The global share of food systems to total ***emissions*** slowly decreased to approximately 25%, though a striking decreasing pattern was found for developing countries, where food-system ***emissions*** decreased from almost 70% of total ***emissions*** to ~40% (Fig. ). This sharp decrease, which is in line with previous analyses,, was due to the very high increases in non-food ***emissions*** over the period coupled to a significant reduction in ***land***-based ***emissions***, which was largely due to a reduction in deforestation (Fig. ).

Total GHG ***emissions*** and food-system data globally, and in developing and industrialized countries.

a,b Fraction of food to total GHG ***emissions*** (a) and total GHG ***emissions*** from the food system (b) globally, in developing and industrialized countries. Non-CO2 GHG ***emissions*** (CH4, N2O and F-gases) are expressed as CO2 equivalent (CO2e) calculated using the GWP100 values used in the IPCC AR5, with a value of 28 for CH4 and 265 for N2O.

***Emissions*** from LULUC

Almost one-third of food-system ***emissions*** comes from LULUC. According to FAOSTAT, ***emissions*** from LULUC associated with ***agricultural*** production (IPCC sector 3a) accounted for 5.7 Gt CO2e yr−1 in 2015, or about 32% of total food-system ***emissions***. These ***emissions*** are mainly composed of carbon losses from deforestation and from degradation of organic soils, including peatlands. Most of the LULUC ***emissions*** (5.0 Gt CO2e yr−1) occurred in developing countries, thereby substantially affecting the food-system ***emission*** share in this country group (Fig. , dashed lines). Furthermore, estimates based on input–output models showed that much of these ***emissions*** was associated with food consumption in industrialized countries,.

Energy use in the food system

The global food system is becoming more energy intensive, with almost a third of food-system ***emissions*** coming from energy-related activities. While our data confirmed that all life-cycle stages contributed substantially to GHG ***emissions***, the production stages that bring foodstuffs to the ‘farm gate’ (including fishing, aquaculture and ***agriculture***, plus ***emissions*** from the production of inputs such as fertilizers, but excluding LULUC) had the largest share of ***emissions***, contributing 39% (or 7.1 Gt CO2e yr−1) to total food-system GHG ***emissions*** in 2015, followed by LULUC (32% or 5.7 (95% CI 2.8 to 8.5) Gt CO2e yr−1). Distribution (including transport, packaging and retail), processing, consumption and end-of-life disposal summed to 29% (or 5.2 (95% CI 3.2 to 7) Gt CO2e yr−1), a share that was higher in 2015 than in 1990 for both the developed and industrialized country groups.

CH4 ***emissions*** accounted for 35% of food-system GHG ***emissions*** (expressed in CO2e) (Fig. ) consistently across developed and developing countries (32–37%) mainly due to livestock production, farming and waste treatment. (Non-CO2 GHG ***emissions*** (CH4, N2O and F-gases) are expressed as CO2e calculated using the 100 year global warming potential values (GWP100) used in the IPCC Fifth Assessment report (AR5), with a value of 28 for CH4 and 265 for N2O.) In most developing countries and globally, rice is one of the leading food crops and a principal source of CH4 ***emissions***. Asian countries dominate global rice production, and the share of rice production to total food-system ***emission*** is 39% in Thailand and 40% in Bangladesh. To put things in perspective, China, India and Indonesia are the top rice-producing countries, followed by Bangladesh, Vietnam and Thailand.

Sankey diagram for GHG ***emissions*** from the food system in 2015.

a, Global. b, Industrialized. c, Developing countries (including China). Total GHG ***emissions*** of the food system were 18 Gt CO2e yr−1 in 2015. The qualitative information of the activities contributing to the food system provided by the Sankey diagram is complemented with the quantitative contribution of individual GHG and sector shares to the total GHG food-system ***emissions***. Arrows and percentages indicate the change in gas, sector, stage and category contributions between 1990 and 2015. Numbers are rounded and therefore do not necessary sum up to 100%.

While food-system ***emissions*** of N2O were comparable across both groups of countries (9 to 14%), ***emissions*** from F-gases (2% of global food-system ***emissions***), mostly linked to refrigeration in the retail stage, were predominantly from industrialized countries (8% of their overall GHG ***emissions***).

Interlinkages between the components of the food-system GHG ***emissions***, including the contribution of different gases to ***emission*** sectors and categories and their relation to food supply chain stages, are shown in Fig. , which also shows the respective shares to total food-system ***emissions*** and ***emission*** trends. Globally, the share of CH4 slightly increased (an increase of 3% compared with the share in 1990) and total ***land***-based ***emissions*** decreased (66% of the total for 2015, which is a decrease of 13% compared with 1990). The share of CO2 ***emissions*** from the energy sector increased (21% of the total in 2015, which is an increase of 31% compared with 1990). This was particularly true for the food processing and distribution stages, which include retail, packaging, transport and processing. All of these stages increased their shares by between 33% and 300% globally compared with the share in 1990. Also, the use of F-gases in industry has increased substantially—by more than 100% since 1990—due to their use in refrigeration. The increased importance of food supply chain ***emissions*** was more pronounced in developing countries (Fig. ) than in industrialized countries (Fig. ), where a particularly steep rise of F-gases for retail (quadrupling the 1990’s share) occurred. In developing countries, the share of ***emissions*** from ***agricultural*** production and LULUC within total food-system ***emissions*** dropped significantly (***land***-based sector shares decreased by 13%, LULUC by 26%), while the share of CO2 for energy increased by 78%. The share of GHG ***emissions*** from waste management, while decreasing in industrialized countries, increased in developing countries (an increase of 50%). Much of the increases in food-system GHG ***emissions*** from developing countries occurred in China; without China, ***emissions*** from energy were only 10% of total ***emissions***, LULUC increased by 10% and packaging increased by 50%.

Energy use at the farm gate

The overall energy use inside the farm gate, albeit small in its contribution to total food systems ***emissions***, has increased substantially in the past 25 years, but has followed different paths across countries. Globally, our data show an increase of 15% in ***emissions*** from the use of energy (electricity, heat and fuels) in the ***agricultural*** sector compared with 1990, with the highest increase happening in developing regions (an increase of 50%) such as Africa, Latin America and Asia. In these economies, which generally remain strongly ***agricultural***, ***emissions*** have increased because ***agricultural*** production has become more mechanized, and this includes increased use of fertilizers and pesticides. In addition, ***agriculture*** in some developing countries has expanded both to provide food to a steeply growing domestic population and also for export. Conversely, the introduction of agronomic progress and environmental restrictions in ***agriculture*** has led to more efficient use of fertilizers and increased efficiencies in livestock production, and nowadays lower ***emissions*** from energy used in ***agriculture*** (which has decreased 28% compared with 1990) are found in industrialized countries–. At the same time, ***emissions*** associated with use of solvents, which are also used to produce pesticides, increased to 15 times the global level, while solvents used for the production of fertilizers increased by 24%. Significant portions of the increased production were for use in developing countries.

***Emissions*** from food distribution

GHG ***emissions*** from food distribution are on the rise but ‘food miles’ are less important than packaging. Our data show a global food system characterized by an increase in convenience and processed food, and an increasing globalization of the food supply chains everywhere, while at the same time huge differences exist in the distribution and availability of food,. To function, the food system requires materials and energy for processing, packaging, transporting and storage. Of these, packaging had the highest ***emissions***. In 2015, packaging contributed about 5.4% (or 0.97 Gt CO2e yr−1) of total food systems ***emissions*** (Fig. ). Our estimate is higher than previous global estimates, and might reflect either that our data is more recent or that upstream ***emissions***—including ***emissions*** from input and energy production—are included.

GHG ***emissions*** trends of the food system by sector.

a, Total GHG ***emissions*** in CO2e. b–d, ***Emissions*** of individual GHGs are represented (CO2 in b, CH4 in c and N2O in d). Non-CO2 GHG ***emissions*** (CH4, N2O and F-gases) are expressed as CO2e calculated using the GWP100 used in the IPCC AR5, with a value of 28 for CH4 and 265 for N2O.

However, not all food products and packaging materials are equal. We estimated major contributions from the pulp and paper industry (59.9 (52.7 to 70.7) Mt CO2e yr−1), aluminium production (29.9 (26.3 to 35.2) Mt CO2e yr−1), the metal industry (10.6 (9.3 to12.5) Mt CO2e yr−1) and use of glass (4.8 (2.2 to 7.7) Mt CO2e yr−1). This is consistent with the findings reported by Poore and Nemecek, who show a significant share of packaging-related ***emissions*** for beverages (wine and beer, > 40%) and some fruit and vegetables (10–22%).

In view of the public and academic debate on ‘food miles’–, we estimate that transportation contributes 4.8% (or 0.86 (95% CI 0.30 to 1.5) Gt CO2e yr−1) to food-system GHG ***emissions***, approximately the same as retail (4.0% or 0.72 (95% CI 0.21 to 1.44 Gt CO2e yr−1)). Our estimates indicate that due to the huge variations in energy needed per transported ‘food mile’ (from marine shipping at 10–20 MJ t−1 km−1, road transport at 70–80 MJ t−1 km−1 and aviation at 100–200 MJ t−1 km−1 (ref. )), the majority of ***emissions*** arise from local to regional transport via road (81%) or rail (15%), rather than navigation (3.6%) or aviation (0.4%). Urban policy and food logistic policies could thus play a significant role in improving the energy efficiency of food systems. Transport-related GHG ***emissions*** are higher for heavy or easily perishable products, and some food products have a particularly high share of transport GHG ***emissions*** (>40% for bananas and beet sugar, according to Poore and Nemecek). However, for road transport, detailed data were available only for Europe and the United States, and an average value based on these data was used for all other countries, and therefore these data are associated with large uncertainties. For shipping, aviation and railways, global average values, which may not adequately reflect the situation for individual countries, were used.

Globally, refrigeration has been estimated to be responsible for 43% of energy consumption by the retail/supermarket sector. Our data suggest that GHG ***emissions*** from the retail sector increased by 4.2 and 3.6 times in Europe and the United States, respectively, between 1990 and 2015. An increase in the market share of supermarkets in the food distribution sector has been observed in all continents, including Africa, Asia and South America–. Supermarket refrigeration is not only energy intensive, but also generates leakage ***emissions*** of substitutes for ozone-depleting substances, although their contribution to food-system GHG ***emissions*** is estimated to be minor. This ‘cold chain’, including both industrial and domestic refrigeration, accounts for 5% of global GHG food-system ***emissions***, but given that the number of refrigerators per capita in developing countries is about one order of magnitude lower than the number in developed countries, the importance of refrigeration to total GHG ***emissions*** is likely to increase.

Share of food-system GHG ***emissions***

The share of food systems as a percentage of total anthropogenic GHG ***emissions*** varied significantly across countries and regions (Fig. ), and varied between 14% and 92%. A high share of food-system GHG ***emissions*** can be a sign of a strong agri-food sector or of a weak economy. Large shares of food-related ***emissions*** found for selected countries in 2015 can be the consequence of different factors: (1) low-income countries where local industry and other economic sectors other than ***agriculture*** are relatively small (mostly in Africa and south-eastern Asia), (2) an important food exporting industry such as in Brazil, Argentina and other South American countries, or (3) high food-system ***emissions*** from LULUC, as found in Brazil, Indonesia and African countries. For example, in west Africa, to satisfy nutrition needs associated with a fast-growing population, the trend for the share of food-system ***emissions*** showed an increase from 69 to 79% (from 1990 to 2015, respectively). Conversely, in China the share fell from 51% in 1990 to 19% in 2015 due to the industrialization of the country and large trade flows of ***agricultural*** commodities, which reflected a shift between ***land***-based and energy-associated GHG ***emissions*** in the food system. Our results are consistent with the rapid transformation of food systems in developing regions. Overall, the most energy intensive economies (for example the United States, Canada, Europe, China and Japan) showed the lowest contributions of food-system ***emissions*** to total GHG ***emissions***.

GHG ***emissions*** from the food system.

a,b, Pie charts show the contribution of the different food-system sectors (***land***-based, energy, industry and waste) to GHG ***emissions*** from food in 1990 (a) and 2015 (b). The colours on the map show the share of GHG ***emissions*** from food systems as a fraction of total GHG ***emissions*** (detailed GHG food-system shares by country are reported in Supplementary Table ). Total GHG ***emissions*** (including CO2, CH4, N2O and F-gases) are expressed as CO2 equivalent (CO2e) calculated using the GWP100 values used in the IPCC AR5, with a value of 28 for CH4 and 265 for N2O. OECD, Organisation for Economic Co-operation and Development.

In Brazil, GHG ***emissions*** from the food production sector decreased by about 30% from 1990 to 2015, primarily due to substantial decreases in deforestation rates. This decrease occurred despite continuous increases in ***emissions*** due to livestock production activities and an increase in the exports of beef and soybean by 720% and 530%, respectively.

In sub-Saharan African countries, food production is still to a large degree realized by smallholder farms, and eastern and western Africa show shares of ***land***-based food-system GHG ***emissions*** of 88% and 69% in 2015, respectively (Fig. ). Ricciardi et al. estimated that, globally, farms smaller than 2 ha produce 30–34% of the food supply on 24% of the gross ***agricultural*** area. To feed a population that doubled in size between 1990 to 2015, Nigeria increased rice production resulting in four times higher GHG ***emissions*** from this sector, and in 2015 Nigeria emitted more than a third of food-system GHG ***emissions*** of the whole western African region. Livestock production ***emissions*** increased by 2.8 times compared with 1990 mainly due to the introduction of goats in addition to cattle. As a result of population growth, domestic waste water ***emissions*** increased by 3.4 times as well. In Ethiopia, the population doubled between 1990 and 2015, making the country the largest emitter of GHGs from the food system in eastern Africa. The Ethiopian food system contributes to 78% of anthropogenic GHG ***emissions***, with high ***emissions*** from cattle which increased by 2.5 times over the same period.

Per capita ***emissions*** from the food system

Our data support the estimation of global food-system GHG ***emissions*** with broad coverage of ***emission*** sources, as well as with regional and temporal detail. On average, each person’s food-related ***emissions*** in 2015 were 2.4 (2.1–2.9) t CO2e. This represented a decrease relative to 1990 levels, when per capita food-related ***emissions*** were 3.0 (2.3–3.8) t CO2e. Table reports the evolution of food-system ***emissions*** as a percentage of the national total GHGs and global food-system ***emissions*** from 1990 to 2015 by continent and region. Table also shows the development of per capita food-system GHG ***emissions***. These numbers are not to be mistaken for consumer GHG footprints, which are determined by the actual diet in a specific country and assign ***emissions*** occurring throughout the food supply chain to that country. Our data reflect the structure of the countries’ food system and economy. They are consistent with how GHG inventories are reported to the UNFCCC and can be used to benchmark national mitigation efforts to reduce GHG ***emissions*** from food systems. Effective policies to transform food systems towards sustainability need to be comprehensive and provide answers and adequate information to both the economy and its consumers. Policies also should address both food production and food consumption–.

Share of GHG ***emissions*** from the food system versus total GHGs (including LULUC) for world regions

|  | **Total GHG *emissions* (from food systems), Gt CO2e, 1990** | **Total GHG *emissions* (from food systems), Gt CO2e, 2015** | **GHG shares from food system (%), 1990** | **GHG shares from food system (%), 2015** | **Share to global *emissions* (%), 1990** | **Share to global *emissions* (%), 2015** | **Per capita GHG *emissions* from food system (t CO2e cap?1 yr?1), 1990** | **Per capita GHG *emissions* from food system (t CO2e cap?1 yr?1), 2015** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| World | 36.5 (16.1) | 52 (18) | 43 | 34 | 100 | 100 | 3.0 | 2.4 |
| By continent |  |  |  |  |  |  |  |  |
| Africa | 3.8 (2.7) | 4.7 (3.1) | 69 | 67 | 16 | 17 | 4.6 | 2.8 |
| Asia | 9.8 (5.7) | 24.0 (7.1) | 58 | 29 | 35 | 39 | 1.9 | 1.8 |
| Europe | 5.6 (1.4) | 4.2 (1.3) | 26 | 30 | 8.8 | 7.1 | 2.8 | 2.4 |
| Latin Americaa | 3.8 (3.2) | 4.5 (3.0) | 84 | 66 | 20 | 17 | 7.1 | 4.7 |
| North America | 6.5 (1.5) | 7.3 (1.9) | 23 | 25 | 9.1 | 10 | 5.3 | 5.2 |
| Oceania | 0.5 (0.2) | 0.7 (0.3) | 47 | 38 | 1.5 | 1.4 | 11 | 8.2 |
| Russiab | 6.5 (1.4) | 6.6 (1.3) | 22 | 20 | 8.9 | 7.4 | 3.1 | 2.2 |

The share of each region to global GHG food ***emissions*** is reported in brackets. Supplementary Tables and report country-specific food-system ***emissions*** and their share as a percentage of total GHG ***emissions***. Total GHG ***emissions*** (including CO2, CH4, N2O and F-gases) are expressed as CO2e calculated using the GWP100 values used in the IPCC AR5, with a value of 28 for CH4 and 265 for N2O.

aIncluding Central and South America.

bIncluding Russia, Ukraine, Central Asia, the Middle East and Turkey.

Conclusions

EDGAR-FOOD provides a picture of how an evolving world food system has responded to the evolution of world population in the last 25 years, which has coincided with changes in dietary habits and food-related technology. At the global level, the decoupling of population growth and food-related ***emissions*** is visible with ***emissions*** growing at a lower rate compared with population growth. The regional view is more diverse, with some areas rapidly increasing ***emissions*** due to domestic demand for either food or export.

Unlike overall GHG ***emissions***, the food production sector is not overwhelmingly dominated by CO2 ***emissions*** from fossil fuels; ***land***-based ***emissions*** are particularly relevant. Nevertheless, in line with the ongoing socio-economic development trends, food ***emissions*** are being increasingly determined by energy use, industrial activities and waste management. On the one hand, from the point of view of mitigation, such a trend suggests that the food sector will need specific sectorial energy efficiency and decarbonization policies. (For instance, the food industry generally requires lower heating temperatures than other types of industrial production, and those lower temperatures are more easily reached by non-fossil-based technologies.) On the other hand, the continuing predominant role of ***land***-based ***emissions***, within and outside the farm gate, shows that food production itself will continue to be a major source of ***emissions*** that will require dedicated mitigation policies.

The global food ***emissions*** database EDGAR-FOOD provides a broad level of geographical, temporal and thematic detail of national GHG ***emissions*** from the global food system and represents a milestone in our understanding of how the global food system has developed. With its detailed and consistent dataset of the ***emissions*** related to the various stages of the food system, it is possible to estimate the changes in food-system GHG ***emissions*** driven, for example, by consumer behavioural changes or technological evolution. Moreover, it is crucial to the anticipation of future changes in the overall food system and to the design of efficient mitigation strategies that avoid creating additional ***emissions*** in non-***targeted*** sectors. Owing to its completeness and flexibility, our dataset is intended as a tool for the scientific community to allow researchers to focus on specific sectors or groups of sectors, freely aggregating and splitting data to design their investigations.

The completeness of the EDGAR-FOOD database is an important asset for effectively monitoring global food-system GHG ***emissions***. This database is in line with the strategies that work with an integrated view of the food system, such as the new European Commission’s Farm to Fork Strategy.

Methods

We developed the new food ***emissions*** database (EDGAR-FOOD) using the EDGAR covering the IPCC sectors ‘Energy’, ‘Industry’, ‘***Agriculture***’ and ‘Waste’ (see Supplementary Fig. ). We complemented the EDGAR-FOOD data with the FAOSTAT database for ***emissions*** and sinks in the LULUC sector. EDGAR-FOOD provides detailed, highly disaggregated and harmonized ***emission*** estimates covering all sectors and geographical areas using a rigorous and transparent process of data integration and verification. The EDGAR and FAOSTAT data are widely used for climate research and as a basis for global climate policies, and they are also used in the IPCC Fifth and Sixth Assessment Reports.

For EDGAR-FOOD, we complemented the EDGAR database with estimates of the food-system ***emission*** shares for each of the source categories. One of the challenges of compiling EDGAR-FOOD is to calculate the food-related portion of industrial and energy processes that impinge on other sectors (for example, the glass industry, energy production and waste, among others) for each country, while preserving global consistency. Details on the share of food-system ***emissions*** for each source category (value, method and uncertainty level) are given in Supplementary Table . Assumptions made and uncertainties are discussed below. Supplementary Table 1 also indicates the life-cycle stage and the food-system sector to which the source categories are assigned.

We distinguish six life-cycle stages in food systems: (1) LULUC: ***land*** use, ***land***-use change; (2) production: primary production of food commodities; (3) processing: food processing; (4) distribution: food distribution including packaging, transport and retail; (5) consumption: food consumption including domestic activities of food preparation; and (6) end of life: end of life of food, including food residues management and management of non-food residues used in previous food-system stages.

EDGAR-FOOD allocates the extraction of raw materials and the production of inputs required for primary food production, and the provision of primary energy is assigned to each individual stage.

We distinguish the following food-system sectors: ***land***-based sector (including crop and livestock products and LULUC), energy, industry and waste.

Food-system ***emissions*** calculation at the global scale

The quantification of food-system GHG ***emissions*** is done using the EDGARv5.0 ([*https://edgar.jrc.ec.europa.eu/overview.php?v=50\_GHG*](https://edgar.jrc.ec.europa.eu/overview.php?v=50_GHG)) as the underlying source of global GHG and air pollutants at country scale. ***Emissions*** are calculated using a bottom-up methodology complying with IPCC guidelines, with high sectorial disaggregation, ([*https://edgar.jrc.ec.europa.eu/index.php*](https://edgar.jrc.ec.europa.eu/index.php)). GHG ***emissions*** are computed in EDGARv5.0 mostly following the IPCC Tier 1 approach, while a Tier 2 method is applied to estimate ***emissions*** from cattle enteric fermentation, rice cultivation, waste treatment and cement production. The 2019 IPCC refinement guidelines are not included in EDGARv5.0, and therefore they are not part of this work.

The EDGAR inventory has been coupled with shares describing the contribution of the food system to each ***emissions*** sector (Supplementary Table ). Food-system GHG ***emissions*** are calculated by multiplying these sectorial food-system shares (SFSs) with the total ***emissions*** of each sector (equation ()). Specifically, SFS equals 1 if the whole sector is part of the food system, such as food and beverage sector, while SFSs for sectors only partly representing the food system (for example, transportation) take a value from 0 to less than 1:where i represents each greenhouse gas (fossil CO2, CH4, N2O and F-gases), c is each world country, t is each individual year (from 1990 to 2015), s are all emitting sectors in EDGAR, E is the ***emission*** of a certain sector, and SFS is the sectorial food-system share. SFS is defined per sector or subsector and can vary between countries and years, depending on the availability of data. In those cases when detailed information was not available, a global average share was adopted, though this does not reflect country-to-country variations, but still represents the best available knowledge to complete the global picture. Dependency of the shares on time, country and fuel type is indicated in Supplementary Table .

Attribution of primary energy ***emissions*** to the food system

Energy consumption in the food system causes GHG ***emissions*** at different stages: (1) ***emissions*** caused by combustion in large and small scale industries, households, transport or other food-system actors; (2) ***emissions*** caused by centralized heat and electricity production that is consumed by food-system actors; (3) ***emissions*** caused by the ‘fuel chain’, including fuel extraction, transport and leakage; and (4) indirect GHG ***emissions*** caused by any of the above sources.

***Emissions*** from 1–4 are available by fuel-type and sector.We developed an estimate for SFS for each sector with ***emission*** estimates available in EDGAR. We then calculated food-system ***emissions*** from centralized heat and electricity production, fuel chain ***emissions*** and indirect GHG ***emissions*** from energy consumption according to points 2 and 3.

Fuel combustion

Within the food-related power generation ***emission*** sectors, we considered the food production industry, fishing and food-related ***agriculture***, packaging production, household and retail/services activities as those consuming electricity and heat for food-related purposes. We assumed that the total heat and electricity from fishing, food-related ***agriculture*** and food production contribute to food-system ***emissions***. Shares reflecting the use of energy in the food system (for example cooking, refrigeration and so on) are calculated and applied to the packaging industry (for example, share of packaging used for food), household (for example, cooking, refrigeration and so on) and retail/services sectors (for example, food retail and grocery, restaurants and so on), as discussed below.

Heat and electricity production

Shares of energy used in the food system are based on International Energy Agency (IEA) electricity and heat consumption data, detailed by country and subsector. The electricity shares by subsector are then applied to the EDGAR-FOOD ***emissions*** from power generation, in particular from public electricity and cogeneration plants as well as from auto producers of electricity and cogeneration. The shares of heat are applied to the ***emissions*** from auto produced heat plants and district heating plants. SFSs,c,t varies (minimum–maximum) between 4.4×10-5 and 0.13 depending on the year, country and subsector.

Fuel chain

***Emissions*** from the fuel production sector have been calculated by allocating the ***emissions*** from fuel production, transformation and refineries, and determining the shares of each fuel that are used in the food system. This share is calculated as CO2 ***emissions*** from combustion of a specific fuel for each food-system category over the total CO2 ***emissions*** from combustion of the fuel in the country on an annual basis. These ***emissions*** represent the contribution of the fuel chain to the food system and allow quantification of the ***emission*** reduction through the full chain when reducing certain activities. SFSs,c,t varies (minimum–maximum) between 0.0003 and 0.87 depending on the year, country and fuel.

Indirect ***emissions***

Indirect N2O ***emissions*** from ammonia (NH3) and nitrogen oxide gases (NOx) emitted by IPCC categories 1A (‘energy’), 2 (‘industrial processes and product use’) and 3 (‘***agriculture***, forestry and other ***land*** use’) related to the food system only are included. Indirect N2O ***emissions*** from leaching and runoff of nitrate are estimated from nitrogen input to ***agricultural*** soils. Indirect N2O ***emissions*** from atmospheric deposition of NOx and NH3 ***emissions*** from ***agricultural*** (crop residues, synthetic fertilizer, animals in pasture and manure input to soils) and non-***agricultural*** sources (mainly fuel combustion and industrial processes) are estimated using nitrogen in NOx and NH3 from these sources as activity data. More details can be found in Janssens-Maenhout et al..

Details of food-system ***emissions*** by life-cycle stage

LULUC

***Agricultural*** ***land***-use ***emissions*** involved in food production are those associated with carbon losses due to relevant LULUC. These include ***emissions*** from deforestation and from the degradation of organic soils (drainage and fires), which are derived by applying the relevant IPCC guidelines and are available in the FAOSTAT ***Emissions***-***Land*** Use domain. They exclude ***forest*** ***removals*** in remaining ***forest*** ***land***, as these are not typically related to crop and livestock production. While these associations to food systems are those employed in recent literature (for example, Tubiello et al., IPCC Special Report on Climate Change and ***Land***, and Rosenzweig et al.), the main limitations to this approach arise from the assumption, in the absence of more detailed information, that all deforestation is associated with a conversion to ***agricultural*** ***land***. However, we know that, globally, about 80% of deforestation is associated with ***agricultural*** expansion (IPCC, AR5 WGIII Ch 11). Furthermore, it should be noted that the FAOSTAT deforestation estimates are based on information about ***forest*** ***land*** area and carbon biomass, which countries report to FAO every ten years (on average) via the ***Forest*** Resources Assessment (FRA). For this reason, annual deforestation estimates are averages for the periods 1990–1999, 2000–2009 and 2010–2015, and may exhibit discontinuities across successive FRA reporting periods. We have not attempted to smooth out such changes because similar jumps can be observed in country reporting to the UNFCCC.

***Land***-use ***emissions*** associated with the drainage and burning of organic soils, including peatlands–, are also included. While these data are well validated for Southeast Asia, there is significant uncertainty in national data outside of this region,. This is especially true in tropical central African countries, despite the fact that the ***agricultural*** expansion on organic soils is well documented in tropical peatlands around the world. Furthermore, non-CO2 ***emissions*** from the burning of biomass in humid tropical ***forests*** are included as an additional contribution to deforestation ***emissions***. Burning of biomass in tropical rainforests and tropical moist ***forests***, as well as ***emissions*** from peat fires, are assumed to be associated with deforestation events for ***agricultural*** purposes.

Finally, we are not considering in our estimates carbon ***removals*** on ***agricultural*** ***land*** that may arise from important, specific soil management techniques, for instance, reduced tillage or no tillage. While these actions have important mitigation consequences in relation to food systems (see IPCC Special Report on Climate Change and ***Land***), neither FAOSTAT nor any other available global dataset currently provides this information at the level needed for this assessment. Considering that the majority of ***emissions*** included in this study are from large-scale deforestation in some developing countries, and that most of the existing soil carbon sequestration techniques are currently in place in a small portion of the total cropland area of some developed and emerging economies, we estimate that the impact of including such soil carbon sequestration data—if it existed—would nonetheless be small compared with the results discussed herein.

Uncertainty in ***land***-use ***emissions*** data is typically high. Uncertainty of the FAOSTAT ***emissions*** estimates was estimated at about 50% for deforestation data and over 100% for peatland degradation data.

Production

***Agriculture***

***Agricultural*** ***emissions*** contributing to the food system include cultivation of food and non-food crops and livestock production. Here we considered the following ***emissions*** from ***agricultural*** soils to entirely contribute to the food system (SFS = 1): animal waste as fertilizer, animals in pasture, cultivation of food crops, drainage of organic soils for crop cultivation, CO2 from urea fertilization, limestone and dolomite use, nitrogen-fixing crops, ***agricultural*** waste burning, manure management and enteric fermentation. We quantified the use of fertilizers for non-food crops based on the FAO report on the use of fertilizers for different world regions as well as the US Department of ***Agriculture*** (USDA) data for the United States ([*https://www.ers.usda.gov/data-products/fertilizer-use-and-price/*](https://www.ers.usda.gov/data-products/fertilizer-use-and-price/)). We validated the reported values on the basis of our own calculations of GHG ***emissions*** using FAOSTAT commodity balances ([*http://www.fao.org/faostat/en/#data/BC*](http://www.fao.org/faostat/en/#data/BC)) and nitrogen content data from Lassaletta et al. and Leip et al.. Fibres are by far the most important non-food crops, with the export of nitrogen in cottonseed more than three times as important as tobacco, the second relevant non-food crop. Therefore, we focused our analysis on fibre crops. FAO quantified that, globally, 4.4% of fertilizers are used for fibre cultivation. They provided more detailed regional values, reporting the highest use of fertilizers for fibre cultivation in India, Pakistan, Bangladesh and Sri Lanka. In the European Union, the use of fertilizers for non-food–related crops is also rather negligible. For the United States, we apply a share of non-food use of fertilizers of 3%, based on USDA statistics ([*https://www.ers.usda.gov/data-products/fertilizer-use-and-price/*](https://www.ers.usda.gov/data-products/fertilizer-use-and-price/)). Overall, SFSs,c varies (minimum–maximum) between 0.922 and 1 depending on the country and region.

Indirect N2O ***emissions*** from NH3 and NOx emitted by all ***agricultural*** activities are also included. ***Emissions*** from combustion in food-related ***agricultural*** and fishing activities are entirely included in the food-system GHG ***emission*** calculations, while no ***emissions*** are allocated to non-food co-products such as straw, fish-oil drugs or pet food.

Chemicals

***Emissions*** from chemical production are available for chemicals related to plastic production (acrylonitrile, ethane/ethylene, methanol, vinyl chloride, adipic acid, caprolactam, glyoxal, calcium carbide) and to fertilizers– (ammonia, SFS = 0.8; urea, SFS = 0.9; nitric acid, SFS = 0.7). For chemicals used for plastics, the same shares of plastic packaging described in the following are used.

Solvents

***Emissions*** from solvent production and use in pesticides and vegetative oil extraction are entirely attributed to food production (SFS = 1). No other solvents are relevant to the food-system ***emissions***.

Processing

The contribution from combustion in the food and tobacco industry (including beverages) is entirely accounted to food-system ***emissions*** (SFS = 1), and it is based on IEA data.

Distribution

The distribution stage includes ***emissions*** from food packaging, transport and retail.

Packaging

We estimate ***emissions*** from food packaging for iron and steel, paper, aluminium, plastic, and glass containers and bottles.

Iron and steel

***Emissions*** from iron and steel production are associated with the production of tin and are calculated using country-specific statistics on the amount of iron and steel used for tin mill products, available from the World Steel Association,, for the whole time series. An average global share of tin mill products used for food packaging is available from the World Steel Association (SFSs,c,t minimum–maximum range: 0.0014–0.079).

Glass

The fraction of glass used for food packaging is estimated based on European (with country-specific information) and global statistics (SFSs,c,t minimum–maximum range: 0.45–0.62). In addition, ***emissions*** from the use of soda-ash for glass production for food containers and bottles are included (SFSs,c minimum–maximum range: 0.225–0.31).

Plastic

To calculate how much plastic is used for food packaging, we first evaluated how much plastic is refined and transformed from oil and gas fuels produced as a global average,. Then the fraction of plastic used for packaging for world countries or regions was taken from UNEP. In the lack of more specific data, we applied a global average fraction of plastic packaging used in the food system (SFSs minimum–maximum range: 0.000018–0.00132).

Paper

FAOSTAT reports data on total paper production and paper production for writing purposes. We assume that the remaining fraction is used for packaging. A global average share of paper used for food is applied only to ‘kraft paper’ and ‘other paper and paperboard’ components which are present in the EDGAR database and not strictly used for writing purposes (SFSs,c,t minimum–maximum range: 0.089–0.439).

Aluminium

The Global Aluminium Flow model provides an historic time series (1971–2018) of aluminium production used for packaging (cans and foil) for some countries/regions (the United States, Canada, Europe, Russia, China, Japan, South Africa, Brazil, India and Australia) as well as for the rest of the world. We assume that the aluminium was entirely dedicated to food packaging (SFSs,c,t min-max range: 0.059–0.338). The same shares are also used to estimate food packaging GHG ***emissions*** from SF6 use in aluminium foundries.

***Emissions*** from combustion in manufacturing industries related with the food system are computed based on IEA data. An SFSs,c,t value that is less than unity, corresponding to the share of the food packaging production as a fraction of the total production, is assumed for industries that produce paper (SFSs,c,t minimum–maximum range: 0.089–0.439), plastic (SFSs minimum–maximum range: 0.000018–0.00132), non-metallic minerals (glass production, SFSs,c,t minimum–maximum range: 0.225–0.62) and non-ferrous metals (aluminium, SFSs,c,t minimum–maximum range: 0.059–0.338; iron and steel, SFSs,c,t minimum–maximum range: 0.0014–0.079) since these industrial processes are also important emitters of GHGs. The shares associated with the food packaging industries are applied both to the ***emissions*** from processes and combustion.

Transportation

EDGAR includes detailed ***emissions*** from international shipping based on the work of Dalsøren et al.. ***Emissions*** from reefers (in port and at sea) and fishing vessels (in port) have an SFS = 1. For general cargo vessels (carrying packaged items like chemicals, foods, furniture, machinery, motor and military vehicles, footwear, garments and so on) and for dry bulk carriers (carrying coal, grain, ore and other similar products in loose form), shares representing the contribution to the food system are applied (SFS minimum–maximum range: 0.022–0.029).

A fraction of road transport ***emissions*** associated with heavy duty, light duty and passenger cars is attributed to the food system based on data for Europe from Eurostat and from FAO for the rest of the world (SFS minimum–maximum range: 0.11–0.15).

A world average share of ***emissions*** related to the food system from international and domestic aviation (SFS = 0.005) as well as from inland waterways (SFS = 0.07) and railways (SFS = 0.155) is estimated from FAO data.

Retail

The share of electricity used in retail activities (for example, refrigeration, a quota of space heating, air conditioning and lighting for food-related activities) in Europe in the household sector as a fraction of the total consumption in that sector is computed using Eurostat data as summarized by Thomas.

The electricity used for cooking and refrigeration for different types of retail activities (food sales and food services, retail (other than mall), enclosed and strip malls, warehouse and storage) is retrieved for the United States from EIA data. For the rest of the world, the electricity consumption for cooking is calculated for China, India and Africa and as a world average based on region specific data,. These shares are applied to the electricity used in the retail sector and then applied to the energy ***emissions***.

We also evaluated the amount of different fuels (for example gas, oil, solid) burnt in the retail sector for food-related activities (for example cooking, space and water heating) and calculated the corresponding share to be applied to retail combustion ***emissions***. Eurostat and EIA data were used for Europe and the United States. For the rest of the world countries, the shares of the food system associated with retail are assumed to be the same as for the household sector based on the Eastern Research Group report. Overall, SFSs,c,t for the retail sector varies (minimum–maximum) between 0.003 and 0.265.

In accord with the IPCC guidelines, the main F-gases used for refrigeration are HFC-134a (in EDGAR we already have the fraction used for refrigeration), HFC-32, HFC-143 (entirely used for refrigeration, although a smaller share could be attributed to non-food refrigeration such as of pharmaceutical products) and HFC-125 (which is mainly used for refrigeration and partly for fire protection). Therefore, the SFS for this sector is 1.

Consumption

The share of electricity used for food-related activities (for example, cooking, food refrigeration, microwave ovens, coffee makers, toaster and so on) in Europe in the household sector over the total consumption in that sector is computed using the corresponding Eurostat data. The same information (electricity used for refrigerators, freezers, cooking, microwave ovens and dishwashers) is retrieved for the United States from EIA data. For the rest of the world, the electricity consumption for cooking is calculated for China, India, world average (Eastern Research Group report) and Africa (Africa Energy Outlook from IEA), using region specific data.

We also evaluated the amount of different fuels (for example, gas, oil, solid) burnt in the household sector for cooking relates purposes and calculated the corresponding share to be applied to the residential combustion ***emissions***. Eurostat and EIA data were used for Europe and the United States, while for the rest of the world countries, individual country shares (for example, for China, India, Bangladesh and Uganda) as well as a world average share are computed to estimate the fraction of household ***emissions*** associated with the food system based on the Eastern Research Group report. Overall, SFSs,c,t for the household sector ranges (minimum–maximum) between 0.003 and 0.265.

End of life

The end-of-life stage includes ***emissions*** from solid waste disposal and waste water treatment, as discussed in detail below.

Solid waste disposal

***Emissions*** from solid waste disposal from the food system are related to the incineration (without energy recovery) of biogenic waste, incineration of industrial solid, municipal solid waste, non-specified waste and of sewage sludge, waste disposal on landfills and composting (SFS = 1). The organic fraction of the municipal waste for each world country/region has been extracted from the World Bank What a Waste report. We assumed that the organic biomass fraction in solid waste is predominantly associated with food systems, while the non-organic fraction is not predominantly associated with food systems. We used the low heating value (LHV) of the different components in solid waste as a proxy for the allocation of GHG ***emissions*** from waste incineration of the different waste fractions (for example, plastic, paper, organic, glass, other),. Due to the lack of detailed data, we could not separate the fraction of food-related waste from the fraction of biogenic waste coming from non-food sources such as gardening and landscape maintenance. This assumption represents an overestimation of this component for industrialized countries in particular, while it can be considered rather reliable for developing regions where the garden and landscape maintenance collection of waste is less common. We considered the impact of our assumption in the uncertainty evaluation of this category, which varies from moderate to high (Supplementary Fig. ). The shares for solid waste incineration are in the range (SFSs,c minimum–maximum) of 0.026–0.85, while SFSs,c for landfills varies between 0.26 and 0.88.

Waste water

Domestic and industrial waste water almost entirely contribute to food-system ***emissions***. ***Emissions*** from domestic waste water are computed separately for rural areas, urban-high-income and urban-low-income countries. The basic activity data, which is the total organically degradable carbon in waste water (TOW), was calculated for rural, urban-high, and urban-low-income populations. The share of rural population within the total population was estimated from the United Nations Department of Economic and Social Affairs (Population Division) data. For urban populations, we used the information provided by the IPCC Supplementary Table and data about population in slums from UNHABITAT, and World Bank, to distinguish between urban-low-income and urban-high-income. Industrial waste water ***emissions*** include the contribution from nitrogen-containing effluents (and sludge), alcohol refining, meat and poultry processing and raw sugar refining (SFS = 1). Industrial waste water ***emissions*** associated with pulp production are based on the paper used for food packaging with an SFSs,c,t minimum–maximum range of 0.089–0.439.

Uncertainty analysis

As part of the yearly releases of the updated EDGAR database, comparison with national reporting for main emitters (Europe, the United States and China) is carried out in the context of an internal quality assurance protocol (for CO2 ***emissions*** in particular). More recently, EDGAR ***emission*** data for ***agriculture*** have been toughly assessed and compared against national reporting ***emissions*** during a verification exercise and for all sectors for CO2 (ref. ) and for the complete GHGs. To our knowledge, the calculation of food-system shares has never been done at the level of detail in this Article, so in-depth comparison with independent data was not possible. All shares used, however, were subject of scrutiny and sensitivity analysis (sense making) and were given an added uncertainty due to ***emissions***, as detailed below.

Activity data (AD) and ***emission*** factor (EF) uncertainties for anthropogenic activities have been derived from IPCC guidelines, while LULUC uncertainty is fixed at 50%. A summary is provided in Supplementary Table . Total uncertainty is calculated by the sum of squares for the uncertainty of AD and EF for a given source. The uncertainty of the aggregation levels is calculated by assuming full correlation for fuel type (CO2) and for sector (CH4 and N2O), reflecting the more detailed information provided by IPCC on fuel type uncertainty for CO2 (assumptions taken, for example, in Bond et al., Bergamaschi et al., Petrescu et al., Choulga et al., and Solazzo et al.). Moreover, developing countries are given higher uncertainties to account for underrepresentation in the data underlying our estimates. A further source of uncertainty is the share factors adopted to account for the portion of GHG ***emissions*** stemming from the food system only. As described above, the food-related share of ***emissions*** from energy, transport, waste and some chemical and industrial processes is not readily available and assumptions have been made, either per country or for the whole world. Supplementary Table reports these shares by sector and the associated uncertainty.

Supplementary Table presents an overview of the sectors contributing to the food system considered in this work, as well as two sectorial aggregations representing the food chain and food-system structure. A confidence level for the assumed shares representing the food-system contribution to each sector is also provided. High confidence (H) means that the shares applied (for example, SFSs,c,t= 1) do not add further uncertainty to the original ***emissions*** for that sector. Medium (M) and medium–high (M–H) confidence mean that a rather small (10 to 20%) additional uncertainty is due to the application of the food shares. Low confidence (L) means that the GHG ***emission*** uncertainty will be enhanced by up to 100% due to the application of the food shares.

The share of the ***emissions*** from the packaging and chemical industries that are devoted to food is highly uncertain because accurate data were not available for this sector. A conservative estimate of 0% (assuming all ***emissions*** not related to food) to 100% (all ***emissions*** related to food) has been applied. Transportation (road, maritime, air) is also uncertain, because detailed country coverage is not available. Because regional shares were applied worldwide, spatial heterogeneity is not fully captured and an uncertainty of 35% to 75% is applied to account for the lack of representativeness of the share. Solid waste shares are also subject to an additional uncertainty of 5% to 10% due to the methodological assumptions and the LHV proxy discussed above. Supplementary Fig. shows food-system GHG ***emissions*** by gas and by sector with the uncertainty estimates from Supplementary Table . Supplementary Table reports minimum and maximum uncertainty values for food ***emission*** estimates by country and sector.

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**Notes**

Supplementary informationThe online version contains supplementary material available at [*https://doi.org/10.1038/s43016-021-00225-9.Peer*](https://doi.org/10.1038/s43016-021-00225-9.Peer) review informationNature Food thanks Tasso Azevedo, Luke Spadavecchia and Berien Elbersen for their contribution to the peer review of this work.Publisher’s note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

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**End of Document**



[***Vision for countryside sees high-tech farming create space to rewild***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:61DJ-4FS1-DY4H-K1JH-00000-00&context=1516831)

telegraph.co.uk

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**Section:** ENVIRONMENT; Version:1

**Length:** 661 words

**Byline:** By Emma Gatten, environment editor

**Highlight:** Environment secretary outlines the future of farming in the wake of post-Brexit shakeup

**Body**

Think of English farming and you may imagine rolling hills stretched out as far as the eye can see.

But farms of the future could take up as little space as possible, freeing up ***land*** to plant new ***forests*** and rewild, according to a [*vision of the post-Brexit shakeup outlined by the environment secretary*](https://www.telegraph.co.uk/politics/2020/11/29/free-range-farmers-paid-post-brexit-reforms-agriculture-subsidies/).

George Eustice said “the future of ***agriculture***” would see the intensification of farming in some areas using environmentally friendly technologies.

Among them would be vertical farming, in which fruit and vegetables are grown indoors stacked in layers, in precisely controlled environments without soil and pesticides, using a fraction of the space and water

“That enables you to actually release the ***land*** to do some of that woodland creation and replanting, which is going to be important if we're to hit our carbon ***targets***,” Mr Eustice told the Oxford Farming Conference.

The Government will phase out £1.8bn of annual direct subsidies paid to farmers in England over the next seven years in the biggest overhaul of farming in more than 50 years.

They will be replaced by a system which pays for public goods, including better animal welfare, biodiversity and clean air.

The hope is to reverse the environmental damage associated with intensive ***agriculture*** that has seen some farmland birds, including corn buntings and grey partridges, decline by more than 90 per cent since 1970, while also making the sector more self-reliant. Some farms rely almost entirely on subsidies to make any profit.

The Government wants the countryside to help in achieving its goals of becoming carbon neutral by 2050 and protecting nature across 30 per cent of the UK.

The most ‘unproductive’ areas of farmland will be ***targeted*** to reach pledges to plant 30,000 hectares of trees annually by 2025, and rewild 30,000 football pitches' worth of countryside.

Meanwhile farmers will be given grants to invest in new technologies to boost their productivity while improving soil health and water quality, and reducing pesticide use.

Vertical farms, which can be housed in shipping containers or abandoned buildings, are beginning to take off in the UK, but require high initial investment.

Mr Eustice also mentioned “a new generation of glass house production”, popular in the Netherlands, which could save costs by creating precise growing conditions.

Existing tractor GPS technologies combined with satellite mapping and soil analysis enable farmers to make ***targeted*** interventions on the ***land***.

Further into the future, farmers might replace widespread pesticide use with robots that identify which individual weeds need to be removed, and which can be left to contribute to biodiversity.

Farmers who wish to leave ***agriculture*** will be encouraged by an exit scheme that pays out a lump sum, in order to clear the path for those who may bring a fresh perspective.

Martin Lines, chair of the Nature Friendly Farming Network, said the vision was the right one to restore balance to the British countryside.

“Using data and technology we can get more from the ***land*** without harming it,” he said. But he warned against unintended consequences. “We don’t want to see super intensive farming in one part of the countryside, and wildlife in another part,” he said.

The new subsidy regime will not be fully implemented until 2024, after a period of trial schemes, but existing subsidies will be cut from next year.

Farming and environmental groups have welcomed the Government’s vision but say that without more detail on what will replace it, many farmers could struggle to make the transition.

There are also fears that ***removing*** direct subsidies and enforcing higher standards will leave British farmers uncompetitive on the global stage, amid uncertainty over post-Brexit trade deals.

Mark Bridgeman, President of the Country ***Land*** and Business Association, said the UK had the opportunity to be “genuinely world-leading”. But, he said: “This lack of detail risks casting a shadow over Government’s laudable aims.”

**Load-Date:** November 30, 2020

**End of Document**



[***USDA Invests $28 Million in New Projects to Help Restore Lost Wetland Functions, Benefits on Agricultural Landscapes***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:6275-FCK1-F0YC-N2XR-00000-00&context=1516831)

Impact News Service

March 15, 2021 Monday

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**Length:** 1274 words

**Body**

Washington: US Department of ***Agriculture*** has issued the following news release:

The U.S Department of ***Agriculture*** (USDA) is investing $28 million in six new Wetland Reserve Enhancement Partnership (WREP) projects and four ongoing ones, which enable conservation partners and producers to work together to return critical wetland functions to ***agricultural*** landscapes. Partners will contribute $2.82 million, bringing the total investments to $30.82 million.

“Wetlands have tremendous benefits ranging from cleaner water, to flood prevention, to enhancing wildlife habitat to sequestering carbon,” said Terry Cosby, acting Chief for USDA’s Natural Resources Conservation Service (NRCS). “The Wetland Reserve Enhancement Partnership helps partners cover more ground with producers in expanding the footprint of healthy wetlands across our country. ”

Since 2014, WREP projects across 11 states have resulted in 136 closed wetland easements and wetland easements pending closure, protecting more than 27,425 acres. In total, NRCS has supported landowners in protecting more than 2.85 million acres through wetland easement programs nationwide.

New projects include:

* Tri State: The Nature Conservancy

This existing project seeks to enroll an additional 2,000 acres per state, totaling 6,000 acres, in ***Agricultural*** Conservation Easement Program (ACEP) Wetland Reserve Easements (WRE). The project focuses on restoring ***forested*** wetlands within priority portions of the Mississippi Alluvial Valley in Arkansas, Louisiana and Mississippi, including specifically ***targeting*** priority watersheds of the Mississippi River Basin Healthy Watersheds Initiative area. The proposed project is Phase III of a continuing effort that began in 2017. Existing efforts have resulted in more than 3,800 acres of easements that have been acquired or are pending in the project area to date. NRCS will invest $8.35 million for the first year.

* Iowa Skunk River: Iowa Dept. of Natural Resources

This existing project, which initially ***targeted*** 1,800 acres for habitat restoration and permanent protection, now seeks to enroll and restore 700 to 1,000 additional acres of riverine wetland and grassland habitats. Now in its second phase, the project aims to restore important monarch habitats through floodplain wetland and grassland restoration, restore off-channel and wet meadow wetlands, and provide reduced sediment and nutrient delivery to the Skunk River system. First-year activities are fully funded by partner contributions.

* Bayou du Chien: The Nature Conservancy

This project seeks to enroll 2500 acres over the next three years to improve wildlife habitat through the development of large, contiguous blocks of protected ***land*** to benefit priority species. It also aims to improve water quality in both local watersheds and the greater Mississippi River basin by directly reducing excess nutrients and sediments through floodplain reconnection and restoration. NRCS will invest $3.15 million for the first year.

* Lower Mississippi River Batture Phase VI: Mississippi River Trust

This existing project seeks to build on sustainability efforts and water management in the active floodplain of the Lower Mississippi River, or the Batture, thus providing significant ecological, economic and societal benefits. Partners propose to facilitate the enrollment of an additional 9,000 acres of privately owned, predominately cleared, flood prone ***land*** in wetland easements along the Batture area. The project also helps ***agricultural*** producers by ***removing*** frequently flooded ***land*** from production and eliminating the expenses and subsidies associated with farming that ***land***. The proposed project is phase six of a continuing effort that began in 2012. Current efforts under phases one through five have resulted in acquired easements or easements pending for more than 22,000 acres of ***land*** in the project area. First-year activities are fully funded by partner contributions.

* Texas Mid-Coast Initiative: Ducks Unlimited, Inc

This project seeks to enroll nearly 700 acres of wetlands to conserve priority wetland habitats for migratory birds and other state and federally listed species through restoration and enhancement efforts. The project also aims to improve habitat conditions for fish and wildlife and to improve the overall health and freshwater flows of streams and riparian areas into the coastal bays and estuaries. ***Land*** protection through wetland conservation easements and subsequent restoration activities will ensure that habitat needs are met for critical wildlife species and that these systems will function as intended to improve water quality and quantity over the landscape and eventually into the coastal bays and estuaries. NRCS will invest more than $970,000 for the first year.

* Nebraska Playa Wetlands: Nebraska Community Foundation

This project seeks to enroll 450 acres of playa wetlands to protect, restore, and manage wetland ecosystems and associated uplands. Restoration of these wetlands and associated upland buffers will help provide habitat for a variety of plants and animals that depend on thriving wetlands, wetland ***forests*** and grasslands, and creating a win-win situation for producers, migratory birds, resident wildlife and the citizens of rural communities. Wetland restorations are expected to address multiple resource concerns, including wildlife habitat, water quality and water quantity. NRCS will invest more than $860,000 for the first year.

The balance of the $28 million initial NRCS investment after the above projects are funded is $14.7 million which provides funding for four projects now in their second year.

Under the Biden-Harris Administration, USDA is engaged in a whole-of-government effort to combat the climate crisis and conserve and protect our nation’s ***lands***, biodiversity, and natural resources including our soil, air and water. Through conservation practices and partnerships, USDA aims to enhance economic growth and create new streams of income for farmers, ranchers, producers and private foresters. Successfully meeting these challenges will require USDA and our agencies to pursue a coordinated approach alongside USDA stakeholders, including State, local, and Tribal governments.

About WREP

WREP is a component of ACEP-WRE through which NRCS enters into agreements with eligible partners to ***target*** and leverage resources to address high priority wetland protection, restoration, and enhancement activities and improve wildlife habitat on eligible ***lands***. WREP enables NRCS to collaborate with partners on high-priority wetland restoration projects to return critical wetland functions and improve wildlife habitat.

Through selected WREP projects, partners voluntarily work with ***agricultural*** producers to execute ***targeted*** wetland protection, restoration and enhancement activities on eligible ***agriculture*** ***lands***. WREP enables effective integration of wetland restoration on working ***agricultural*** landscapes, providing meaningful benefits to farmers and ranchers who enroll in the program and to the communities where the wetlands exist.

Restoring wetland ecosystems helps filter sediments and chemicals to improve water quality downstream, enhance wildlife and aquatic habitat, reduce impacts from flooding, recharge groundwater and offers recreational benefits.

How to Get Involved

Are you looking to help restore the quality and abundance of our nation’s wetlands? Check with your localUSDA Service Centerfor wetland restoration project opportunities. NRCS will determine if the acres you offer are eligible for the program. ***Agricultural*** producers with high priority acres, based on competitive selection, may receive an offer.

**Load-Date:** March 16, 2021

**End of Document**



[***Northern Greece media highlights 15-21 May 21***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:62R6-JMW1-JC8S-C13V-00000-00&context=1516831)

BBC Monitoring Europe - Political

Supplied by BBC Worldwide Monitoring

May 21, 2021 Friday

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**Length:** 1502 words

**Body**

Weekly media highlights from northern Greece 15-21 May 2021

Politics

The hopes most Thessalonians had until the last moment, that the government might reconsider the decision to ***remove*** the antiquities found during the excavations for the Venizelou metro station, were permanently dashed last week. But for everyone who had a bit deeper knowledge about the issue, it was clear that the prime minister could never revoke the initial decision. The political cost of admitting a mistake in an issue placed very high on the government's agenda, would be too high. So, they decided to move forward with a move that was the worst possible. First, it creates a strong impression internationally that modern Greeks are currently destroying the cultural heritage dating 18 centuries back. Then it makes the lives of Thessalonians more difficult since the ***removal*** of the artefacts delays the overall progress of metro construction. If they would stay where they were found instead, the trains would have been working already. Now we need to wait at least until May 2023. And finally, it costs much more, an additional 30m euros of public money that will cover compensations, new studies and additional construction works. (Parallaxi online magazine, Thessaloniki, 0000 gmt, 20 May 21)

Macedonian language

The Macedonian linguistic movement Krste Misirkov has protested against the government's decision to ***remove*** it from the database of the Culture ministry. The legal representative of the association, Nikodim Tsarknias, sent an open letter to prime minister Kyriakos Mitsotakis and all MPs, protesting against the decision. "It is clearly an act that ***targets*** me as a minority rights activist as well as the Macedonian language and its speakers in Northern Greece. Worse, it is illegal and ignores the recent call of the EC President Ursula Von der Leyen and Vide-President Vera Jourova to respect the rights of people belonging to minorities and the cultural and linguistic diversity in Europe," Tsarknias said. He recalled that Greece has yet to ratify the Council of Europe's Framework Convention for the Protection of National Minorities, recognises no minorities and accuses the country of implementing an apartheid policy in the field. "I am urging you to end these disgraceful practices and promote the cultural wealth different languages and cultures constitute for our country," he said. The association seems determined to continue its work and has already announced its latest project, registering all Macedonian dialects in Northern Greece, promoting all related material (video, books, dances etc.) and creating an extensive research database. (Krste Misirkov official Facebook page, Aridea, Central Macedonia region, 0649 gmt, 17 May 21)

Border

The Greece-Bulgaria border crossing at Nymfea (Makaza) remains closed despite the official opening of the tourist season in Greece, officially since it cannot accommodate a pandemic control facility that would enable a Health Ministry unit to perform random rapid Covid-19 tests. The issue created an uproar in Eastern Macedonia and Thraki with people even accusing the central government of deliberately diverting tourists to destinations in Central Macedonia (Halkidiki and Pieria). A specially modified container, put in place already since September 2020 to accommodate the health personnel, never worked and as a result, the president of the National Health Organization (EODY) Panayiotis Arkoumaneas visited Nymfea in an effort to find a solution. He was escorted by almost all MPs and mayors of the region, a clear signal of the importance this border crossing has for the local economy. "I think the border crossing infrastructure will be ready to welcome our people really soon and it can be opened for our visitors then," he said. Asked why this had not happened earlier, Arkoumaneas blamed the pandemic. "We did not really know how, and which border crossings will open. As you know, not all ***land*** entry points will work this summer. Now we know, however, and we are confident that we can fully open Nymfea soon." (Hronos daily newspaper, Komotini, Thraki region, 0800 gmt, 19 May 21)

Kristallopigi (Smrdesh) is going to be one of the ***land*** border crossings that will conditionally open to facilitate professionals and visitors to travel from Western Macedonia to Albania and vice versa. The border will be primarily open for seasonal workers from the neighbouring country who work every summer in various locations throughout the region. It is foreseen that the crossing will be open not more than ten hours daily (most likely 0900 to 1900) for no more than 400 workers daily. A permanent team from the Health ministry (2 persons) and the Region (up to 3 persons) will also be there to perform random rapid tests. According to the regional authorities, the government seemed to have accepted the recommendation not to impose a 7-day quarantine and a PCR test not older than 72 hours or a completed vaccination certificate would be adequate. However, all those who will be tested positive at the border, will have to return to Albania. (E-Ptolemeos news portal, Ptolemaida, Western Macedonia region, 1337 gmt, 19 May 21)

Environment

The Skydra (Vrtekop) municipality is plagued by the uncontrolled illegal landfills that threaten not only public health but also crops and underground waters. The inability of the local and regional authorities to find a solution led to a parliamentary question, tabled by the local MP and leader of ultra-conservative Elliniki Lysi party Kyriakos Velopoulos. "The municipality is plagued by the issue and its citizens call the area a huge garbage bin," said Velopoulos, who also added 22 different locations where small or bigger illegal landfills are still to be found. These include, among others, the banks of the Moglenitsa river, the upper city bridge, the public slaughterhouse but also the water springs at Sevastiana (Vigeni) and Loutrohori (Banja). Velopoulos demands answers from the Environment and Health ministers as the problem grows bigger by the day and with summer and its high temperatures approaching, it can become a major health hazard as well. "We are all top blame for this unacceptable situation. MPs, local authorities and the citizens who behave in a completely irresponsible manner," he concluded. (Pella News portal, Skydra/Giannitsa, Central Macedonia region, 1703 gmt, 17 May 21)

The swift and decisive actions by citizens and environmental activists have temporarily stopped the plans of creating a windmill park and a new ***forest*** road leading to it on the peak above Nimfeo (Neveska) village in Western Macedonia. Three heavy lorries carrying digging machines and bulldozers, escorted by the police, tried to start construction works but were stopped by the large number of people who gathered on the mountain after urgent calls on social networks. Subsequently, the lorries had to pull back. The planned installation is very close to a village, one of the most beautiful settlements in Northern Greece that attracts thousands of visitors every year and practically lives off tourism. More significantly though, environmentalists fear that such a gigantic installation would cause irreparable damage to the unique ecosystem of the Vitsi (Vico) mountain, which is currently the habitat of brown bears, wolves, wild boars, and rare Balkan lynx. (Florina Civic Network - Free Mountains, Florina, Western Macedonia region, 1030 gmt, 19 May 21)

The Evros (Maritsa-Meric) river delta, a national park and one of the most significant wetlands in Greece and home to 324 wild bird species (out of the overall 456 recorded in Greece), is also amongst the most polluted ones in the country. A new research conducted within the framework of EU's BIOLEARN product and included 46 lakes and 22 rivers, has shown that both plastic and heavy metals pollution are in extremely high levels and directly threaten wildlife in this very fragile ecosystem. More specifically, 11% of the overall garbage volume found was plastic bags followed by plastic bottles (9,13%) and plastic ropes (8,15%). The river has suffered a lot from the recent humanitarian crisis and the increased number of refugees trying to cross it as remnants of plastic boats, life jackets, clothes and single use plastic containers were also found in abundance. Being a river shared between three countries, Evros is also prone to industrial and ***agricultural*** waste with lead and zinc concentrations exceeding the highest EU-allowed levels multiple times. The metals also end up in the food chain, with fish caught around the river delta was found to contain these two metals in quantities that made them unfit for human consumption. According to the research, Greek farmers, Bulgarian battery and leather factories as well as Turkish urban wastewater are the main cause for this kind of pollution. (Gnomi daily newspaper, Alexandroupoli, Thraki region, 0000 gmt, 20 May 21)

Source: Weekly media highlights from northern Greece in Greek 1000 gmt 21 May 21

**Load-Date:** May 21, 2021

**End of Document**



[***UK-Australia trade deal: Why environmentalists are worried about bee-killing pesticides and carbon emissions***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:62XK-CR91-DY4H-K24K-00000-00&context=1516831)

The Independent (United Kingdom)

June 15, 2021 Tuesday 4:02 PM GMT

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**Section:** CLIMATE,NEWS; Version:9

**Length:** 1218 words

**Byline:** Tom Batchelor

**Highlight:** Campaigners warn new pact opens door to 'destructive mega farms' and 'biodiversity chaos'

**Body**

The UK and Australia have announced the broad outlines of a [*free trade deal*](https://www.independent.co.uk/business/uk-and-australia-agree-postbrexit-free-trade-deal-b1866077.html) which would eliminate tariffs on a wide range of goods.

British-made cars, Scotch whisky, biscuits and ceramics will be cheaper to sell under the pact, while Australian producers are set to benefit from boosted exports of lamb and wine, the government said.

The agreement is the first negotiated from scratch since Brexit, as earlier deals with countries including Japan and Canada were built on existing agreements struck by the EU.

However the deal has sparked controversy, both among British farmers who fear they could be undercut by cheap imports, and by environmental campaigners who warn that it opens the door to "destructive mega farms" and "biodiversity chaos".

This week [*it also emerged*](https://www.independent.co.uk/climate-change/news/uk-australia-climate-trade-deal-truss-b1916260.html) that the British government dropped key environment protections to get the deal "over the line".

A binding section that referenced the "Paris Agreement temperature goals" was scrubbed from the accord after pressure from theAustralian government - which has a notoriously weak record on climate action.

Why are activists so concerned?

Climate campaigners have warned that the deal would not only give tacit approval to controversial farming practices in Australia, but would also "lower the bar" for future trade deals the UK is seeking to strike.

Among their list of concerns is that Australian farmers are permitted to use pesticides, which are banned in the UK, including neonicotinoids, which harm pollinators including bees.

They also point to the use of antibiotics to treat infections, particularly for animals which are intensively farmed, and the approved practice of "mulesing" - a painful procedure that involves cutting flaps of skin from around a lamb's tail to produce stretched scar tissue which holds less moisture and faeces and attracts fewer flies. Australian farmers may also use growth hormones in cattle.

In addition, activists are worried about the impact on deforestation and animal loss in Australia. A [*report*](https://www.wilderness.org.au/images/resources/Beef-Deforestation-Scorecard-Report.pdf) from the Wilderness Society - a US-based conservation group - warned in 2019 that beef production was the leading cause of deforestation and ***land*** clearing in Australia, with analysis suggesting that 73 per cent of all deforestation and ***land*** clearing in the state Queensland was linked to the practice.

"Due to high ***land*** clearing rates in the state of Queensland, Australia is now a designated global deforestation hotspot. This is driving significant biodiversity loss, greenhouse gas ***emissions*** and contributing to poor water quality running into the Great Barrier Reef," the research said.

The Wilderness Society also stated that in the last five years more than 1 million hectares of ***forest*** clearance has been attributed to cattle farming, and Australia now has the unenviable title as world leader for mammal extinctions.

Greenpeace said most of the deforestation was due to weak legislation and rollback of protection in Australia making the practice technically 'legal'. The organisation claimed this also meant the UK's current proposed new due diligence law that only tackles 'illegal' deforestation would not stop beef from these farms entering the UK.

Commenting on the announcement, Doug Parr, Greenpeace UK's chief scientist, said: "Despite green rhetoric at the G7 Boris Johnson has just given a massive vote of confidence to exactly the kind of intensive, destructive mega farms that the UK should be trying to move away from.

"He is aligning Britain with a country that's way behind on climate action, and one that completely ignores its beef industry driving further climate and biodiversity chaos through the mass clearance of ***forests*** ,and its routine use of hormones and pesticides.

"It has lowered the bar significantly for other countries looking for trade deals - Brazil being of most concern with its similarly destructive farming methods driving mass deforestation at the expense of people, wildlife and the climate. Britain will be expected to accept the same laissez-faire approach to food and environment standards that this deal allows."

Greenpeace also warned that the loss of key environmental protections would "start a race to the bottom".

John Sauven, executive director of Greenpeace UK, said: "The UK government pledged to embed the environment at the very heart of trade, including supporting the Paris Agreement on climate and zero deforestation in supply chains."

Tanya Steele, CEO of WWF UK, [*said*](https://www.independent.co.uk/climate-change/opinion/australia-trade-deal-animal-welfare-liz-truss-b1865335.html) the agreement would "drive a coach and horses through efforts to put UK farming on a sustainable footing".

"If the UK government is serious about global environmental leadership, then it must get serious about sustainable farming - not just here in the UK, but across every country we import food from," she wrote in a comment piece for The Independent.

"Unfettered access to UK markets should reward those who meet our standards on climate, nature and animal welfare - and should not prioritise outdated farming systems, like Australia's, which are fuelling the climate and nature crisis."

She said the trade deal with Australia "sets a dangerous precedent" which could mean "opening the UK market to ***agricultural*** imports that have contributed to widespread deforestation in the Amazon", adding: "There is no economic benefit to be gained from trading our planet away."

What has the UK government said?

Boris Johnson has called the proposed trade deal an example of "global Britain at its best" and said the agreement "opens fantastic opportunities for British businesses and consumers".

The details are yet to be unveiled however there was no mention of environmental or animal rights safeguards and only a single reference to climate change in the government announcement.

"The leaders reaffirmed the enduring partnership between the UK and Australia during their discussion and agreed to work closely together on defence, technology collaboration and tackling climate change - including through a future Clean Tech Partnership," the statement said.

Michael Gove, the Cabinet Office minister, claimed that how Australian farmers operated had been "mischaracterised" during the discussion around the trade deal.

"Australia is a friend and ally," he told Sky News on Tuesday. "I think that there have been one or two points that have been made about Australia during the course of this debate that mischaracterise how Australian farmers operate and the opportunities also for UK farmers."

Trade secretary Liz Truss said previously that no new trade deal would permit the import of hormone-treated beef.

A spokesperson at the Department for International Trade told The Independent the government was "not compromising our high animal welfare and food safety standards".

The spokesperson added: "It is a fundamentally liberalising agreement that ***removes*** tariffs on all British goods, opens new opportunities for our services providers and tech firms, and makes it easier for our people to travel and work together.

"A final agreement in principle will be published in the coming days with the full detail."

Read More

[*'It's overwhelming': London reels from September heat*](https://www.independent.co.uk/climate-change/news/heatwave-london-extreme-weather-b1916458.html)

[*New eel pass in Yorkshire will help critically endangered species complete migration*](https://www.independent.co.uk/climate-change/news/eel-pass-yorkshire-endangered-migration-b1916535.html)

[*Church urges people to tackle climate crisis, ahead of Cop26*](https://www.independent.co.uk/climate-change/news/pope-archbishop-church-cop26-capitalism-b1916475.html)

**Load-Date:** September 8, 2021

**End of Document**



[***Warming Oceans Are Making the Climate Crisis Significantly Worse***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:62GT-5CB1-JDG9-Y26M-00000-00&context=1516831)

Impact News Service

April 20, 2021 Tuesday

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**Length:** 1284 words

**Body**

Washington, D.C: American Geophysical Union has issued the following press release:

Covering Climate Now logoThis story is a part of Covering Climate Now’s week of coverage focused on “Living Through the Climate Emergency. ” Covering Climate Now is a global journalism collaboration committed to strengthening coverage of the climate story.

The climate emergency is bigger than many experts, elected officials, and activists realize. Humanity’s greenhouse gas ***emissions*** have overheated the Earth’s atmosphere, unleashing punishing heat waves, hurricanes, and other extreme weather—that much is widely understood. The larger problem is that the overheated atmosphere has in turn overheated the oceans, assuring a catastrophic amount of future sea level rise.

As oceans heat up the water rises in part because warm water expands but also because the warmer waters have initiated major melt of polar ice sheets. As a result, average sea levels around the world are now all but certain to rise by at least 20 to 30 feet. That’s enough to put large parts of many coastal cities, home to hundreds of millions of people, under water.

The key questions are how soon this sea level rise will happen and whether humans can cool the atmosphere and oceans quickly enough to prevent part of this.

If seas rise 20 feet over the next 2,000 years, our children and their descendants may find ways to adapt. But if seas rise 20 feet or more over the next 100 to 200 years—which is our current trajectory—the outlook is grim. In that scenario, there could be two feet of sea level rise by 2040, three feet by 2050, and much more to come.

Two to three feet of sea level rise may not sound like much, but it will transform human societies.Two to three feet of sea level rise may not sound like much, but it will transform human societies the world over. In South Florida, where I live, residents will lose access to fresh water. Sewage treatment plants will fail, large areas will persistently flood, and Miami Beach and other barrier islands will be largely abandoned. In China, India, Egypt, and other countries with major river deltas, two to three feet of sea level rise will force the evacuation of tens of millions of people and the loss of vast ***agricultural*** ***lands***.

Attempting to limit sea level rise therefore must become an urgent priority, including for the world leaders US president Joe Biden is inviting to a climate summit on Earth Day, April 22. We must reframe how the climate emergency is understood and what it means to combat it. Certainly, it is essential to meet the Paris Agreement goal of limiting temperature rise to 1.5 to 2 degrees Celsius—but that will not be sufficient.

The solution to rapidly rising sea levels is two-fold: Humans must stop putting more heat trapping gases into the atmosphere, and we must extract much of what we’ve already put up there. Since the Industrial Revolution 250 years ago, the amount of CO2 in the atmosphere has soared due to human activities, principally the burning of carbon-based fossil fuels. To minimize future sea level rise, we need to lower that amount from today’s 417 parts per million towards the 280 ppm that prevailed before industrialization.

Halting heat-trapping ***emissions*** requires rapidly moving the economy off fossil fuels to renewable energy as well as ending deforestation, shifting to climate-friendly ***agriculture***, planting soil-building ***forests***, and more. But even if we succeed on this front—and so far, we are falling well short—only the atmosphere would stop getting hotter.

Cooling the oceans will be harder. This requires pulling massive amounts of CO2 from both the atmosphere and the oceans and storing it where it cannot leak.

There are prototypes of such “carbon negative” technologies. Methods like incorporating pulverized basaltic lava into fertilizers can lead to CO2 ***removal*** and other approaches must be aggressively developed. It is crucial that both strategies—halting further ***emissions*** of CO2 and extracting CO2 that’s already been emitted—be pursued. Doing one cannot be an excuse for not doing the other or we will fail.

Our dilemma is rooted in basic physics. Once CO2 is emitted, it remains in the atmosphere for millennia, trapping heat and warming the planet like a blanket warms a human body. What’s insufficiently appreciated is that most of this warming—over 93 percent—has transferred to the oceans and significantly warmed the upper 2,000 feet. This is accelerating polar ice melt and global sea level rise and will continue to do so for centuries.

And sea level rise is accelerating at a dangerous pace. In 1900, global sea levels were rising 0.6 millimeters a year. After 1930, as ocean warming and water expansion kicked in, the rate of sea level rise doubled and doubled again, reaching 3.1 mm a year by 1990. Since then, as ever-warmer oceans have driven polar ice melt, the rate of sea level rise has quickened further. Today, oceans are rising six mm a year (over two inches a decade), and this pace will continue to dramatically accelerate.

Two inches a decade may seem a trifle but remember: We are just at the beginning of this acceleration. The US National Oceanic and Atmospheric Administration projected in 2017 that global mean sea level could rise five to 8.2 feet by 2100. Four years later, it’s clear that eight feet is in fact a moderate projection. And regional influences—subsidence, changing ocean currents, and redistribution of Earth’s mass as ice melts—will cause some local sea level rise to be 20 to 70 percent higher than global.

Sea level rise of eight feet would be catastrophic….It would put much of New York and Washington, D.C , Shanghai and Bangkok, Lagos, Alexandria, and countless other coastal cities underwater.Sea level rise of eight feet would be catastrophic. Absent extensive and very expensive adaptation measures, it would put much of New York and Washington, D.C , Shanghai and Bangkok, Lagos, Alexandria, and countless other coastal cities underwater. It would submerge South Florida. And building sea walls won’t help in South Florida: The ***land*** rests on porous limestone, so rising seas will simply seep under. Even the levee-protected Netherlands and New Orleans will be in deep trouble.

Worse, on current trends, we will be lucky for seas to rise “only” eight feet by 2100. The reason is that the computer models used by NOAA and others do not reflect what we know about how seas have risen in the past. These models assume that sea level rise unfolds gradually, but the geological record shows that in fact it can occur in rapid pulses. Warmer temperatures following the previous ice age caused disintegration of one polar ice sector after another, causing seas to rise in pulses of three to 30 feet per century. Today, accelerating ice melt in Greenland and Antarctica are almost certainly the beginning of a new pulse of rapid sea level rise.

It is urgent that humanity transition to renewable energy, stop burning fossil fuels, and develop and deploy technologies to extract CO2 from the skies and seas. We must also get realistic about adapting to the sea level rise that can no longer be prevented. Rather than building more in low-lying regions and spending public money on coastal defenses that are bound to fail, we should prepare to assist the eventual relocation of people and infrastructure from the most threatened areas (and clean the ***land*** before inundation).

Without such measures, there will come a point, sooner than many people realize, when civilization as we know it will greatly weaken or outright collapse. We can only prevent this scenario with serious planning, funding, and effort. Our children, and their children, deserve much better than we are doing now.

**Load-Date:** April 21, 2021

**End of Document**



[***USDA Grant Funding Available for Urban Agriculture and Innovative Production***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:62VM-J8M1-JDG9-Y4DM-00000-00&context=1516831)

Impact News Service

June 3, 2021 Thursday

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**Length:** 772 words

**Body**

Washington: US Department of ***Agriculture*** has issued the following news release:

The U.S Department of ***Agriculture*** (USDA) announces the availability of up to $4 million for grants to support the development of urban ***agriculture*** and innovative production projects. USDA’s Office of Urban ***Agriculture*** and Innovation Production is accepting proposals for planning and innovation projects, and these grants are part of USDA’s broader efforts to support urban ***agriculture***.USDA will accept applications onGrants.govuntil 11:59 p.m Eastern Time on July 30, 2021.

Planning Projects

Planning projects initiate or expand efforts of farmers, gardeners, citizens, government officials, schools and other stakeholders in urban areas and suburbs. Projects may ***target*** areas of food access, education, business and start-up costs for new farmers, urban agroforestry or food ***forests***, and development of policies related to zoning and other needs of urban production.

This is the second year USDA offered this grant opportunity. Examples of previous planning projects include:

* The City of New Haven, Connecticutis developing the first New Haven Urban ***Agriculture*** Master Plan. The plan will be used to access ***land*** and opportunities to increase the production and sale of locally grown foods, build community, improve public health and well-being and provide economic opportunity, particularly in areas with vacant ***land*** and limited food access.

1. California’s Center for ***Land***-Based Learningis producing a comprehensive urban ***agriculture*** assessment of West Sacramento, mapping and documenting current activities, identifying opportunities for growth, and making recommendations to bolster the layers of positive impact urban ***agriculture*** has on communities.

Implementation Projects

Implementation projects that accelerate existing and emerging models of urban, indoor and other ***agricultural*** practices that serve multiple farmers. Projects will improve local food access and collaborate with partner organizations and may support infrastructure needs, emerging technologies, educational endeavors and urban farming policy implementation.Examples of previous implementation projects include:

* Arkansas Interfaith Power and Lightis improving access to local food by helping a network of urban gardeners and farmers build infrastructure and become self-sustainable. The organization is educating the community on the environmental benefits of local food and the nutritional value of plant-rich diets, mentoring youth in urban ***agricultural*** occupations and engaging more people in local, organic food production.

1. Atlanta’s The Greenleaf Foundationis using the Greenleaf Community Farm as a hub for connecting and supporting entrepreneurial food projects and closing the food system gap in Council District 5. The project includes a community farm, a payflex farm stand and a community gathering space to connect and educate residents. It will also expand the Edible Neighborhoods program to provide equitable access to fresh produce, educate residents on edible landscaping and serve as an entry point into the food system.

Webinar

A pre-recorded webinar will provide an overview of the grants’ purpose, project types, eligibility and basic requirements for submitting an application. The webinar will be posted atfarmers.gov/urban.

More Information

The Office of Urban ***Agriculture*** and Innovative Production was established through the 2018 Farm Bill, and, through these grant opportunities, it offers opportunities for engagements as well as cooperative agreements. It includes representatives from many USDA agencies, including the Farm Service Agency and the ***Agricultural*** Marketing Service, and is led by the Natural Resources Conservation Service. More information is available atfarmers.gov/urban.

Additional resources that may be of interest to urban ***agriculture*** entities include,NIFAgrants,AMSgrantsto improve domestic and international opportunities for U.S growers and producers andFSAloans.

USDA touches the lives of all Americans each day in so many positive ways. In the Biden-Harris Administration, USDA is transforming America’s food system with a greater focus on more resilient local and regional food production, fairer markets for all producers, ensuring access to healthy and nutritious food in all communities, building new markets and streams of income for farmers and producers using climate smart food and forestry practices, making historic investments in infrastructure and clean energy capabilities in rural America, and committing to equity across the Department by ***removing*** systemic barriers and building a workforce more representative of America.

**Load-Date:** June 6, 2021

**End of Document**



[***Gabon Monthly Briefing July 2021***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:63BN-KYG1-JC8V-42TP-00000-00&context=1516831)

ARC Briefing Gabon

July 2021

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**Length:** 3995 words

**Body**

**ABSTRACT**

***The Direction Générale de la Dette (DGD) reports that Gabon's public debt stock rose to 6,426.4 billion FCFA ($11.5 billion) during the first three months of 2021, a 14.6% year-on-year increase from 5,607 billion FCFA ($10 billion) in March 2020. Economy and recovery minister Nicole Janine Roboty Mbou downplays the rise in debt but pledges to reduce the debt-to-GDP ratio from 68% to around 50% over the next three years. State-owned Gabon Power Company (GBC), a subsidiary of the Fonds Gabonais d'Investissements Stratégiques (FGIS) (Gabonese strategic investment fund), and France-based private equity investment fund Meridiam have signed a financial closing agreement to finance construction of the ?179m ($211.2m) Kinguéle Aval hydroelectric power station. Energy minister Alain-Claude Bilie-By-Nze signs a memorandum of understanding (MOU) for the construction of a 50 MW photovoltaic (solar) plant in Greater Libreville, with Total Eren, subsidiary of France-based renewable energy firm Groupe Eren. The Central African Forest Initiative (CAFI) has made a first payment of $17m to Gabon for reducing deforestation and will pay $150m in total over the next 10 years for Gabon's environmental protection efforts. The government authorises the African Conservation Development Group (ACDG) to sustainably develop 700,000 hectares of land in a project that will see an investment of 137.2 billion FCFA ($246.8m) over the next five years. Gabon sees a significant reduction in Covid- 19 cases, with the presidency suggesting possible removal of all Covid-19 restrictions***.

**FULL TEXT**

**Public debt on the rise ...**

The **Direction Générale de la Dette** (**DGD**) reports **Gabon**'s public debt stock rose significantly during the first three months of 2021, to 6,426.4 billion FCFA ($11.5 billion),[[2]](#footnote-3)1 a 14.6% year-on-year increase from 5,607 billion FCFA ($10 billion) in March 2020.[[3]](#footnote-4)2 Gabon's rising public debt has been a subject of concern over the past two years, and has been aggravated by an economic recession stemming from the drop in global oil prices and the **Covid-19** pandemic.[[4]](#footnote-5)3 Public debt had increased by 17.2% year-on-year to 6,294.6 billion FCFA ($11.3 billion) at 31 December.[[5]](#footnote-6)4

At present, 64.3% of Gabon's public debt is owed to external lenders and the remaining 35.7% to domestic creditors.[[6]](#footnote-7)5 Debt owed to external parties increased by 25.7%, mainly due to the strengthening of commitments from multilateral donors, while domestic debt rose by 45% from March 2020 to March 2021.[[7]](#footnote-8)6 Domestic debt stood at 1,470.9 billion FCFA ($2.6 billion) at the end of the 2019 financial year, rising to 1,575.4 billion FCFA ($2.8 billion) by March 2020, before ballooning to 2,295 billion FCFA ($2.3 billion) at the end of March 2021.[[8]](#footnote-9)7

The significant increase in domestic debt obligations has been attributed to bank moratoria debt, which rose from 220.9 billion FCFA ($397.5m) in March 2020 to 544.2 billion FCFA ($979.3m) in March 2021, a 150% increase.[[9]](#footnote-10)8 In addition, the outstanding balance on the regional financial market spiked 52.9% from 566.5 billion FCFA ($1 billion) in March 2020 to 865.9 billion FCFA ($1.5 billion) in March 2021.[[10]](#footnote-11)9 The DGD acknowledged that borrowing significantly reduced during the January to March 2021 timeframe, with Gabon contracting 164.9 billion FCFA ($296.7m) in loans, in contrast to the 652.7 billion FCFA ($1.1 billion) borrowed during the same period in 2020.[[11]](#footnote-12)10 This was due to a drop in drawdowns on external financing, despite an increase in disbursements on domestic financing.[[12]](#footnote-13)11 However, following the 175 billion FCFA ($323.3m) **EOG 6% Net 2021-2026** public offering concluded in June (see *ARC Briefing Gabon June 2021)*, domestic debt is expected to increase further.[[13]](#footnote-14)12[[14]](#footnote-15)13

Despite the gloomy debt picture, the government has attempted to provide assurance regarding its ability to sustainably manage Gabon's public debt situation. In a press release issued on 22 June, the economy and recovery ministry announced it had fully repaid a 98 billion FCFA ($176.3m) bond contracted in 2016:

"*The finalisation of the repayment of the amount mobilised as part of the 2016 bond loan operation is part of the strategy of active management of public debt. Its implementation brings convincing results which attest to the credibility of Gabon's signature*."[[15]](#footnote-16)14

Economy and recovery minister **Nicole Janine Roboty Mbou** declared during an 8 July interview that "*state debt is under control*".[[16]](#footnote-17)15 Roboty Mbou said one of the four pillars of the government's short-term national economic agenda, the **Plan d'Accélération de la Transformation** (**PAT**), is consolidation of public finances and strengthening the country's external position.[[17]](#footnote-18)16 The PAT was adopted in March and will run from 2021-2023. Roboty Mbou said the government is working to ensure that public debt remains below the 70% debt-to-gross domestic product (GDP) ceiling set for **Communauté Economique et Monetaire de l'Afrique Centrale** (**CEMAC**) (Central African Economic and Monetary Community) member states. Gabon's current debt-to-GDP ratio stands at 68%, which the government aims to reduce to around 50% over the next three years. Roboty Mbou outlined plans to work alongside national treasury and the **Banque des États de l'Afrique Centrale** (Bank of Central African States) to achieve this goal. Roboty Mbou noted Gabon's active debt management strategy has been part of the finance law since 2012 and that state authorities will monitor the interest rates on loans and the currency in which the country is indebted.

Roboty Mbou also announced the imminent disbursement of 90 billion FCFA ($161.9m) to settle debts owed to local private sector actors.[[18]](#footnote-19)17 The funds will emanate from the 450 billion FCFA ($809.6m) in unverified debt, which was uncovered by the presidential task force on domestic debt established in June 2020. Roboty Mbou said 4 billion FCFA ($7.1m) had already been paid to local service providers who were owed amounts below 70m FCFA ($125,928), and promised 450 billion FCFA ($809.6m) in domestic debt would be paid over the next three years.[[19]](#footnote-20)18 Despite its optimism, the government had only repaid 61.7 billion FCFA ($111m) by the end of March 2021, compared to 648 billion FCFA (41.1 billion) paid at the end of March 2020.[[20]](#footnote-21)19 Of this, only 25.8 billion FCFA ($46.4m) was allocated to domestic debt payments.

**Renewable energy gets a boost**

The government has demonstrated its commitment to renewable energy generation and desire to undertake public-private partnerships (PPP) in the energy sector in recent developments in hydroelectric and solar power projects. State-owned **Gabon Power Company** (**GBC**), a subsidiary of the **Fonds Gabonais d'Investissements Stratégiques** (**FGIS**) (Gabonese strategic investment fund) and **France**-based private equity investment fund **Meridiam**, have signed a financial closing agreement to finance construction of the **Kinguéle Aval** hydroelectric power station.[[21]](#footnote-22)20 The agreement was signed on 2 July, three years after FGIS and Meridiam were awarded the contract to develop the project.[[22]](#footnote-23)21 The Kinguéle Aval power station will cost ?179m ($211.2m) with funding secured from multilateral financial institutions and private sector investors.[[23]](#footnote-24)22 These include the **African Development Bank** (**AfDB**), **Development Bank of Southern Africa** (**DBSA**), **South Africa**-based **Emerging Africa Infrastructure Fund** (**EAIF**) and the **International Finance Corporation** (**IFC**).[[24]](#footnote-25)23

Kinguéle Aval will have power generation capacity of 35 megawatts (MW) and aims to address the electricity deficit in **Greater Libreville**, the **Estuaire** province where it is located, and surrounding rural areas such as **Andock Foula**.[[25]](#footnote-26)24[[26]](#footnote-27)25 Upon completion, the power station will provide annual supply of 205 GWh and generate 13% of Gabon's national electricity output.[[27]](#footnote-28)26

The Kinguéle Aval project has been the subject of in-depth studies to reduce its environmental and social impact. It is expected to save 150,000 tonnes of CO2 ***emissions*** annually and ensure the phasing out of thermal plants currently in use.[[28]](#footnote-29)27 Energy minister **Alain-Claude Bilie-By-Nze** suggests that Kinguéle Aval will enable the state to attain its objective of reaching 80% installed electricity capacity.[[29]](#footnote-30)28 Bilie-By-Nze said the project will contribute towards reducing the cost of electricity and support Gabon's economic development efforts outlined in the PAT.[[30]](#footnote-31)29

GPC director general **Marcellin Massila Akendengue** says the project is a significant step towards enabling state-owned utilities firm **Société d'Energie et d'Eau du Gabon** (**SEEG**) to cover its energy needs for the Estuaire province and will create jobs.[[31]](#footnote-32)30[[32]](#footnote-33)31 FGIS director general **Akim Daouda** noted the role that GPC, established in 2015, played in ensuring the project was able to reach this stage.[[33]](#footnote-34)32**Meridiam Africa** COO **Mathieu Deller** described the power plant as "*both emblematic and strategic for the country*" and part of the company's ambition to support Gabon's economic development as well as its contribution to Gabon's ecological transition.[[34]](#footnote-35)33 Deller praised the active and fruitful collaboration the firm experienced with FGIS and GPC, a sentiment shared by Bilie-By-Nze.[[35]](#footnote-36)34[[36]](#footnote-37)35 Meridiam specialises in the development, financing and management of infrastructure projects and is involved in the **Owendo** mineral port and **Transgabonaise** railway projects.[[37]](#footnote-38)36

In addition to concluding the financial terms of Kinguéle Aval, the government signed five other agreements in relation to the project. These include the direct agreement, an amendment to the electricity purchasing contract, a partnership amendment for independent electricity production as well as an amendment to the contract relating to construction of the power plant.[[38]](#footnote-39)37 The hydroelectric plant will be operated by **Asonha Energie**, a joint venture which is 40% owned by FGIS, with the remaining share held by Meridiam, while the **Chinese** duo of **Sinohydro** and **Chongqing** will undertake construction.[[39]](#footnote-40)38 The plant is set to be commissioned by 2024.[[40]](#footnote-41)39

Energy minister Alain-Claude Bilie-By-Nze signed a memorandum of understanding (MOU) on 9 July for the construction of a 50 MW photovoltaic (solar) plant in Greater Libreville, with **Total Eren**, a subsidiary of **France**-based renewable energy firm **Groupe Eren**.[[41]](#footnote-42)40 Development of the plant is a partnership between, Total Eren, SEEG and the Gabonese government.[[42]](#footnote-43)41 Bilie-By-Nze said the solar plant, to be built in the locality of **Nkok**, will facilitate the diversification of energy production by favouring the use of clean and renewable energy to meet the demand of industries and households for energy.[[43]](#footnote-44)42 Total Eren will operate as an independent power producer (IPP) and the project will be complemented by the deployment of eight hybrid solar plants with power generation capacity of 2 MW, which are being constructed by France-based **Engie**.[[44]](#footnote-45)43[[45]](#footnote-46)44 According to a 2019 **World Bank** report, 90.7% of Gabonese have access to electricity.[[46]](#footnote-47)45

**Reward for conservation efforts**

In addition to promoting sustainable energy creation, Gabon is focusing its attention on other environmental initiatives and receiving recognition for its efforts. The **Central African *Forest* Initiative** (**CAFI**) has made a first payment of $17m to Gabon for reducing deforestation and will pay $150m in total over the next 10 years for Gabon's environmental protection efforts.[[47]](#footnote-48)46 CAFI is a multidonor fund created in 2019 and managed by the **United Nations**.[[48]](#footnote-49)47 Gabon received the funding by demonstrating that it had managed to reduce deforestation and lower carbon ***emissions*** in 2016 and 2017, in stark contrast to the scenario in 2006-2015.[[49]](#footnote-50)48 The **Norwegian** government made the $17m CAFI payment, with Norwegian environment minister **Sveinung Rotevatn** lauding Gabon's "*vision, dedication and strong dynamism"* in reducing ***emissions*** in the **Congo Basin**.[[50]](#footnote-51)49

Forestry, water and environment minister **Lee White** said the Gabonese government will work with development partners to ensure resources are used to stabilise ***forests*** and reverse deforestation and ***forest*** degradation.[[51]](#footnote-52)50 An estimated 90% of Gabon's ***land*** surface is covered by ***forest***, which captures more carbon than it emits.[[52]](#footnote-53)51 White, a trained botanist, suggested,

"*Rather than pay us for reducing* ***emissions****, pay us for absorbing* ***emissions***."[[53]](#footnote-54)52

In a further attempt to derive monetary gain through the promotion of environmental conservation schemes, the Gabonese government has authorised the **African Conservation Development Group** (**ACDG**) to sustainably develop 700,000 hectares of ***land*** in a project that will see an investment of 137.2 billion FCFA ($246.8m) over the next five years.[[54]](#footnote-55)53 The ACDG project will carry out animal husbandry, conservation, eco-tourism and logging activities over 25 years.[[55]](#footnote-56)54 The project will see 100,000 hectares dedicated to cattle ranching, ecotourism and wildlife conservation, while 23,000 hectares will be reserved for the establishment of a sugar plantation and export port.[[56]](#footnote-57)55 Livestock and forestry programmes are already underway, while tourism activities and the installation of wood exploitation and processing units are expected to begin in 2022.[[57]](#footnote-58)56 ACDG intends to raise funds for the project through the issue of "*green bonds*" and has pitched the initiative as a "*green investment*".[[58]](#footnote-59)57

Gabon is the second most ***forested*** country in **Africa** and hopes to use its comparative advantage to promote ecotourism and sustainable logging.[[59]](#footnote-60)58 ACDG is building a lodge near the **Parc National de Loango**, which is being developed in partnership with the **Agence Nationale des Parcs Nationaux du Gabon** (**ANPN**) (national parks agency).[[60]](#footnote-61)59 Environmental initiatives are also a positive step towards diversifying Gabon's economic activities. If successful, Gabon will set a benchmark for neighbouring countries in the Congo Basin such as **Cameroon, Congo-Brazzaville** and **Equatorial Guinea**.[[61]](#footnote-62)60

Despite the CAFI financing and planned ACDG investment, there are concerns that these engagements may create a willingness to turn a blind eye to environmental issues rather than report them. **Global *Forest* Watch**, an open-source web application that monitors global ***forests*** in real time, identified in 2017 that Gabon was subject to a high level of deforestation.[[62]](#footnote-63)61 This may be a result of increased timber industry activities, evidenced by the declaration of **Gabon Special Economic Zone** (**GSEZ**) CEO **Kumar Mohan** in June that Gabon increased revenue generated in the timber industry from 165.3 billion FCFA ($297.4m) in 2010 to 771.4 billion FCFA ($1.3 billion) in 2020.[[63]](#footnote-64)62 GSEZ is a subsidiary of **Singapore**-based agro-industrial giant **Olam**, which has been accused of carrying out ***agricultural*** activities in protected ***forest*** areas.[[64]](#footnote-65)63 Economy and recovery minister Nicole Janine Roboty Mbou declared on 9 July that ***agricultural*** and forestry sector activities would be two of Gabon's pillars for economic growth over the next three years.[[65]](#footnote-66)64 The desire to promote these economic activities in a bid to reduce Gabon's dependence on hydrocarbon activities[[66]](#footnote-67)65 may compromise projects that aim to generate revenue through implementation of environmentally friendly initiatives.

**Covid-19 cases drop significantly**

Gabon has seen a significant drop in Covid-19 cases since the country's peak rate in April. The government's steps to procure additional vaccine doses have also resulted in an increase in vaccination against Covid-19. As of 14 July, Gabon had recorded 24,245 Covid-19 cases in its population of 2.28 million, with 24,964 recoveries and 162 Covid-19-related deaths since confirming its first case in March 2020.[[67]](#footnote-68)66 There were 119 active cases on 14 July,[[68]](#footnote-69)67 with only 34 cases identified during the period from 10-12 July, including zero cases confirmed in the **Haut-Ogooué** province.[[69]](#footnote-70)68

Gabon's vaccine rollout has seen 48,639 people receive at least one dose of the Covid-19 vaccine as of 12 July.[[70]](#footnote-71)69 This is equivalent to 4.85% of population and indicates a significant increase in the numbers vaccinated since 16 June, when 29,400 persons had been vaccinated.[[71]](#footnote-72)70 Vaccine uptake has been significantly higher in men than women, with men comprising 80% of those vaccinated (38,894) to date.[[72]](#footnote-73)71

Health minister **Guy Patrick Ndong** announced on 14 July that Gabon had procured 165,000 doses of the **United States**-manufactured **Johnson & Johnson** vaccine through the **World Health Organisation**-coordinated **Covax** initiative.[[73]](#footnote-74)72 According to Ndong, the Johnson & Johnson vaccine requires only one dose and will complement the 100,000 doses of the China-manufactured **Sinopharm** vaccine and 10,000 doses of the **Russia**-manufactured **Sputnik V** vaccine that Gabon has received.[[74]](#footnote-75)73 The presidency declared on 5 July that the reducing case total (which oscillated around 3,000 in April) and the adherence to the vaccination campaign will ensure a return to normality *"earlier than expected"*.[[75]](#footnote-76)74 Regardless, Ndong advised Gabonese to continue to follow the nonpharmaceutical Covid-19 preventive measures such as social distancing and wearing a mask in public places.[[76]](#footnote-77)75

**Planner**

Oct 2021 **Montpellier (France)** France-Afrique summit

2023 **(Gabon)** Local and national assembly elections

**Chronology**

18 Jul 2021 **Libreville (Gabon)***Sika Finance*. **Abderrahim Koumaa**, director general of **Moov Africa Gabon Telecom**, a subsidiary of **Morocco**-based **Maroc Telecom**, announces the firm will invest 10 billion FCFA ($17.9m) in the roll out of 3G and 4G technology during the 2021-2022 timeframe;

15 Jul 2021 **Libreville (Gabon)***Gabon Review*. **Cameroon** and Gabon have operationalised the **Central African Backbone** (**CAB**), an interconnected optic fibre network between the two countries;

14 Jul 2021 **Libreville (Gabon)***Gabon Review*. **Christine Mba N'Dutume** is elected mayor of the capital, Libreville;

13 Jul 2021 **Libreville (Gabon)***Direct Infos Gabon*. Health minister **Dr. Guy Patrick Obiang Ndong** reports, Gabon will receive 165,600 doses of the **United States**-manufactured **Johnson & Johnson Covid-19** vaccine;

12 Jul 2021 **Libreville (Gabon)***Gabon Review*. Energy minister **Alain-Claude Bilie By Nze** signs an agreement with **France**-based **Groupe Eren** to build a 50 MW solar plant that will provide electricity for **Greater Libreville**;

12 Jul 2021 **Libreville (Gabon)***Gabon Review*. Economy and recovery minister **Nicole Jeanine Lydie Roboty Mbou** says Gabon's 2021-2023 economic development agenda, the **Plan d'Accélération de la Transformation** (**PAT**), will require the mobilisation of 3,000 billion FCFA ($5.4 billion) for its implementation;

12 Jul 2021 **Libreville (Gabon)***Direct Infos Gabon*. The **Direction Générale de la Compatibilité Publique et du Trésor** (DGCPT) (General Directorate of Public Compatibility and the Treasury) states, Gabon generated 113.6 billion FCFA ($204m) in oil revenue, during the first three months of 2021, significantly below the projected figure of 475.8 billion FCFA ($854.7m);

2 Jul 2021 **Libreville (Gabon)***Gabon Media Time*. The **Direction Générale de l'Economie** (general directorate for the economy) reports Gabon's public debt stood at 6,426,4 billion FCFA ($11.6 billion) at the end of December 2020, a 17.2% year-on-year increase from the 2019 figure of 6,264,9 billion FCFA ($11.3 billion), the highest debt stock in the country's history;

2 Jul 2021 **Libreville (Gabon)***Gabon Review*. State-owned **Gabon Power Co**. and **France**based **Meridiam SAS** sign a $179m agreement to finance the 35 MW **Kinguele Aval** hydropower plant near capital **Libreville**

1 Jul 2021 **Libreville (Gabon)***Direct Infos Gabon*. The **Cour Spéciale Militaire** (special military court) sentences Lt. **Kelly Ondo Obiang** and three co-accused to 15 years' imprisonment and a 31m FCFA ($55,900) fine for their role in a failed military coup in January 2019;

1 Jul 2021 **Libreville (Gabon)***Gabon Review*. **France**-based metallurgical firm **Eramet** reports its operations through its Gabon subsidiaries, manganese producer **Comilog** and logistics firm **Setrag**, contributed 396 billion FCFA ($715.2m) to the local economy in 2020;

30 Jun 2021 **Libreville (Gabon)***Gabon Review*. The economy and recovery ministry reports that Gabon produced 2.49m metric tonnes of crude oil in the first quarter (Q1) of 2021, a 10.6% year-onyear decrease from the 2020 Q1 figure of 2.78m metric tonnes due to the ongoing oil production quota imposed by the **Organisation of Petroleum Exporting Countries** (**OPEC**);

28 Jun 2021 **Libreville (Gabon)***Direct Infos Gabon*. Gabon's national production of manganese ores and agglomerates experienced a 4.8% year-on-year increase during the first quarter of 2021 to 2.188 million tonnes;

27 Jun 2021 **Libreville (Gabon)***Direct Infos Gabon*. The **Direction Générale de la Dette** (general debt directorate) reports a 14.6% year-on-year increase in Gabon's public debt stock during the first three months of 2021, bringing it to 6,426.4 billion FCFA ($11.6 billion);

25 Jun 2021 **Libreville (Gabon)***Gabon* Review. **Société d'Exploitation du Transgabonais** (**Setrag**), subsidiary of **France**-based metallurgical firm **Eramet**, has signed an agreement with Gabon's economy and recovery ministry for the government to invest 103 billion FCFA ($187.1m), in the rehabilitation of 140 km of the 650 km **Transgabonaise** railway that Setrag operates;

23 Jun 2021 **Libreville (Gabon)***Bloomberg*. The government has authorised **African Conservation Development Group** (**ACDG**) to use 700,000 hectares of ***forest*** to develop a project combining conservation, logging, tourism and animal husbandry, which will involve a 137.2 billion FCFA ($249.3m) investment by ACDG;

22 Jun 2021 **Libreville (Gabon)***BBC*. The **United Nations**-based **Central African *Forest* Initiative** (**CAFI**) has made a first payment of $17m to Gabon for reducing deforestation and will pay Gabon $150m in total over the next 10 years for its environmental protection efforts;

22 Jun 2021 **Libreville (Gabon)***Gabon* Review. **Gabon Special Economic Zone** (**GSEZ**) CEO **Kumar Mohan** says Gabon's timber industry generated 771.4 billion FCFA ($1.4 billion) in revenue in 2020, compared to 165.3 billion FCFA ($300.3m) in 2010;

18 Jun 2021 **Libreville (Gabon)***Gabon* Review. Petroleum minister **Vincent de Paul Massassa** will lead a delegation on 23 and 28 June in **Houston (United States)** and in either **Paris (France)** or **Geneva (Switzerland)** as part of the last two stages of the roadshow to promote the sale of 35 oil blocks in Gabon's 12th call for tenders;

**FOOTNOTES**

**Load-Date:** August 11, 2021

**End of Document**



[***Speech of Baroness Boycott (CB) [V] On (01 October 2020)***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:60YX-5C01-JDG9-Y18B-00000-00&context=1516831)

Impact News Service

October 1, 2020 Thursday

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**Length:** 959 words

**Body**

London: UK Parliament has issued the following House of Commons Hansard:

My Lords, it is a great pleasure to follow the noble Baroness, Lady McIntosh. She always speaks a lot of sense and I thoroughly agree with her. I am delighted to support Amendment 40 in the name of the noble Lords, Lord Oates, Lord Duncan of Springbank and Lord Browne of Ladyton. I also add my support to Amendment 14 in the name of the noble Lord, Lord Grantchester.

As other noble Lords have said, we are at a crossroads for the environment, climate change and biodiversity. Last week, I listened to Christiana Figueres spelling out the real and present danger that we are in. She says that we have just 10 years to cut our ***emissions*** by 50% if we are to get to the net zero ***target*** by 2050. This is not a dress rehearsal; it is real life. Amendments that bind into law trade standards that protect our planet, curb ***emissions***, encourage biodiversity and, at the same time, promote human health are quite simple on one level. They are also totally necessary. If the Government want us to believe that they are serious about what they say is their desire to meet the Paris ***targets***, why on earth are these amendments not at the heart of the Bill, rather than being peripheral or just according to what someone says?

Trade is one of the most powerful levers that we have in the world. Business is already ahead of the Government. For instance, Coller Capital has been running a risk register for several years now and will not invest in countries or companies that depend on businesses which damage the environment or products which, in some way or another, will cause or be affected by climate change. In her excellent speech, the noble Baroness, Lady Hayman, said that the Aldersgate Group has set ambitious ***targets***. It knows that if we are to be competitive in future, we have to raise our game. The CBI has also recommended that the UK’s export strategy must be augmented by a green trade focus ahead of COP 26. It even suggests that we should introduce accelerated tariff reductions in the FTAs for multilateral agreement partner countries which meet, or, indeed surpass, their Paris Agreement ***targets***. The Government’s own proposal for its net zero review says that business is calling out for a “clear roadmap”.

We could also start to lower tariffs on low-carbon goods and services like New Zealand does. Its Agreement on Climate Change, Trade and Sustainability—which was signed into law by New Zealand, Costa Rica, Fiji, Iceland and Norway—aims to ***remove*** tariffs on goods and services that protect the planet, eliminate harmful fossil fuel subsidies and develop clear eco-labelling. It says:

“Globally, countries are subsidising fossil fuel production… to the tune of over $500 billion US dollars a year.”

I ask the Minister whether he knows why and what we are doing about that. I also ask the Government whether we are considering seeking membership of that particular agreement or, indeed, trying to do something similar ourselves.

SIAs are not complicated; there is a growing demand for ***forest*** and ***agricultural*** commodities that drives greenhouse gas ***emissions*** and has negative effects on biodiversity overseas, and our current legislation does not require this to be monitored. Does not the Minister agree that this is an absurd situation? We cannot export our ***emissions*** overseas any more than we can export cruelty by allowing the import of animal products that have been reared in conditions that we would not agree with. At the moment, we do not know what damage we are doing to nature and the environment through trade because, as the WWF said in a recent report, we are importing from nations that are high risk. If we are in the dark, how is the consumer going to know what they are buying?

Finally, I think noble Lords would be surprised if I did not turn to the question of public health. What is the UK to do if we do not include amendments such as this? We are about to enter uncharted territory; we are leaving a very big bloc and rapidly trying to secure new trade deals with every other country. Of course there will be changes; there might be some opportunities in terms of good standards; but there are also risks.

Since the dawn of time, we have known that what we eat is the backbone of our health, and here are just three ways—there are many more—in which free trade deals without standards could increase ill health and obesity. For instance, I cite the increase in the availability of products that are high in fats, sugars and salts and backed by huge advertising spends. The other day, I spoke about Tim Tams. I said that they were American; they are in fact an Australian version of our Penguins. Some 91% of households in Britain already buy Penguins, but Tim Tams are going to be cheaper and heavily marketed and, sadly, the Prime Minister himself was spotted waving a packet around when he recently made the case for a free trade deal with Australia. We do not need more chocolate bars.

Secondly, if our farmers and producers are undercut by cheaper imports from overseas because overseas farmers have lower standards, our farming will erode over time. We will import more and more and it will become more processed, because that is what happens when food has to travel over long distances and last for a long time.

Finally, as we all know, the USA is very aggressive in its trade negotiations, demanding that there be no labelling or HFSS advertising restrictions. If we give in there, then, quite honestly, all the progress we have made around public health and, indeed, our environmental efforts will be for naught. The good thing is that if we protect the environment, we also protect the health of all of us. I urge noble Lords to support these amendments.

**Load-Date:** October 2, 2020

**End of Document**



[***Federal Energy Regulatory Commission Issues Letter requesting Florida Gas Transmission Company, LLC to file a response to data request within 10 days to assist in FERC's analysis of the certificate application for the Galveston County Project under CP20-505***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:60P8-2BF1-F0YC-N3J2-00000-00&context=1516831)

Impact News Service

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**Length:** 2812 words

**Body**

Washington: Federal Energy Regulatory Commission Issues the followingRequest for Additional InformationGeneral Correspondence toENERGY PROJECTS, OFFICE OF

FEDERAL ENERGY REGULATORY COMMISSIONWASHINGTON, D.C 20426OFFICE OF ENERGY PROJECTS In Reply Refer To:OEP/DG2E/Gas 2Florida Gas TransmissionCompany, LLCGalveston County ProjectDocket No. CP20-505-000August 25, 2020Blair LichtenwalterSr. Director, CertificatesFlorida Gas Transmission Company, LLC1300 Main St.P.O Box 4967Houston, Texas 77210-4967Re: Galveston County Project Data RequestDear Mr. Lichtenwalter;Please provide the information described in the enclosure to assist in our analysisof the above prior notice certificate application.File your response in accordance with the provisions of the Commission’s Rulesof Practice and Procedure. In particular, 18 CFR 385.2010 (Rule 2010) requires that youserve a copy of the response to each person whose name appears on the official servicelist for this proceeding.Please file a complete response within 10 days of the date of this letter. Theresponse must be filed with the Secretary of the Commission at:20200825-3040 FERC PDF (Unofficial) 08/25/2020Kimberly D. Bose, SecretaryFederal Energy Regulatory Commission888 First Street, NE, Room 1AWashington, DC 20426If certain information cannot be provided within this time frame, please indicatewhich items would be delayed, and their projected filing dates. You should be awarethat the information described in the enclosure is necessary for us to continuepreparation of the environmental review.When filing documents and maps, be sure to prepare separate volumes, asoutlined on the Commission’s website at [*http://www.ferc.gov/resources/guides/filingguide/file-*](http://www.ferc.gov/resources/guides/filingguide/file-) ceii.asp and [*https://www.ferc.gov/docs-filing/labeling-guidance.pdf*](https://www.ferc.gov/docs-filing/labeling-guidance.pdf) forlabeling controlled unclassified information (CUI). Critical Energy InfrastructureInformation (CEII) (e.g , plot plans showing equipment or piping details) andprivileged information (PRIV) (e.g , cultural resources material containing location,character, or ownership information) are considered CUI. This information should befiled as non-public and labeled as: “CUI//CEII– DO NOT RELEASE” (18 CFR388.113), “CUI//PRIV –DO NOT RELEASE” (18 CFR 388.112), and as otherwiseappropriate with other statutes for labeling CUI (e.g , “CUI//CEII/SSI – DO NOTRELEASE”). All CUI should be filed separately from the remaining information,which should be marked “Public.”File all responses under oath (18 CFR 385.2005) by an authorized representativeof Florida Gas Transmission Company, LLC and include the name, position, andtelephone number of the respondent to each item.Thank you for your cooperation. If you have any questions, please call me at 202-502-6696.Sincerely,Brad D. WazaneyEnvironmental Project ManagerOffice of Energy Projects20200825-3040 FERC PDF (Unofficial) 08/25/2020EnclosureEnvironmental Information RequestFlorida Gas Transmission Company, LLC (FGT)Galveston County ProjectDocket No. CP20-505-000General1. File public versions of FGT’s HDD Design Reports.2. File a plan for unanticipated discoveries of contaminated environmental media(e.g , soil, groundwater) which describes the procedures that FGT would follow toidentify, handle, temporarily store, and properly dispose of contaminated media;any additional on-site characterization procedures; and precautions for minimizingthe spread of existing contamination and exposure of the public.3. Update table 1-5 (Permits and Consultations for the Galveston County Project) toprovide the status of any permit applications filed or received since thesupplemental filing submitted on August 19, 2020.Resource Report 14. Table 1-1 indicates that permanent and temporary impacts would be equal (0.33acre) as a result of access roads, which seems to indicate that all impacts fromaccess roads would be permanent. However, section 1.1 indicates that 4 accessroads would be temporary and 3 would be permanent, and table 8-1 indicates anadditional 0.07 acre (for a total of 0.4 acre) of temporary impacts would occurfrom access roads. Clarify these discrepancies, and describe restorationprocedures for any temporary access roads.5. Under section 1.3.2 Wetlands and Waterbodies of the environmental report, FGTstates that the storage of hazardous materials, transfer of liquids, and refueling ofconstruction equipment in upland areas would occur more than 100 feet fromwaterbodies “where possible and unless approved by the Project constructioninspector or EI,” which does not comply with our Procedures. Section IV.A.1.e ofour Procedures requires that project sponsors must ensure that “hazardousmaterials, including chemicals, fuels, and lubricating oils, are not stored within20200825-3040 FERC PDF (Unofficial) 08/25/2020100 feet of a wetland, waterbody, or designated municipal watershed area, unlessthe location is designated for such use by an appropriate governmental authority.”Provide the relevant approval; or, provide detailed justification why compliancewith this measure is not feasible, with a discussion of protective measures thatwould be implemented and how they would provide equal or greater protection ofresources.6. Section 1.2.5 states “no construction yards are required…FGT will use its existingfacilities and the Project construction workspace for equipment storage andstaging.” Clarify any existing facilities that would be used for equipment storageand staging. Provide any additional associated acreage and impacts, including atCompressor Station 4 (CS 4).7. Section 1.3.2 references “areas where topsoil has been segregated” and FGT’stypical drawings (appendix B) depict topsoil segregation. ***Agricultural*** ***land***,residential ***land***, and wetlands would not be crossed or would be crossed bytrenchless construction methods; therefore, clarify if FGT intends to implementtopsoil segregation during construction as well as where this would occur.8. FGT states that limited hand clearing of vegetation would be completed betweenHDD entry and exit points to lay the HDD guide wire. Clarify the maximumwidth of workspace that would need to be cleared between HDD entry and exitpoints.Resource Report 29. Describe the feasibility of modifying the Galveston Lateral horizontal directionaldrill (HDD) entry point at milepost (MP) 0.00 so that it is further away fromwetlands. Also, provide more detailed justification than provided in table 2-5 forthe use of ATWS-1 and ATWS-2 within 50 feet of wetlands W2009 and W1022given space appears available adjacent to Skyline/Beach Road.10. Provide a more detailed justification for ATWS-3 being within 50 feet of awetlands given space appears available to the south.11. Section 2.2.3 states “FGT will minimize the potential for contamination or impactsto waterbodies crossed by the Project by adhering to applicable [Clean Water Act]permit conditions.” However, table 1-5 states that no jurisdictional features arepresent, and table 2-2 further indicates that no waterbodies would be impacted dueto being crossed via existing culverts or conventional bore methods, and therefore20200825-3040 FERC PDF (Unofficial) 08/25/2020no 404 permit nor 401 Certification is required. Clarify and identify if any CleanWater Act permits are required for the Project.12. Provide construction details and impacts regarding the culvert that would crossone waterbody via culvert at the Attwater – Topaz M&R Station. Although FGTstates that no in-water impacts would occur, section 2.2.1 states that “the culvertwill be aligned to prevent bank erosion and scour and to maintain flow,” whichseems to indicate a culvert is being proposed.13. Provide the anticipated maximum volume of water required for fugitive dustcontrol.Resource Report 314. Quantify the amounts and types of vegetation that would be removed for eachportion of the project, including for the HDD guidewire. Appendix F is referencedin section 3.3.1 and 3.3.2 as containing additional vegetation information butappendix F is the additives for HDDs.15. Black rail, eskimo curlew, reddish egret, red knot, swallow-tailed kite, white-facedibis, white-tailed hawk, wood stork, and alligator snapping turtle, all sensitivespecies, could occur in the wetland habitat that would be hand-cleared for HDDguidewire. TPWD has recommended coordinating with TPWD to determineavoidance, minimization, and mitigation strategies given disturbance to thesespecies’ habitats. Furthermore, TPWD recommended in its July 22, 2020 letterthat FGT avoid clearing vegetation between March 15th and September 15th toavoid impacts to nesting birds. Finally, TPWD recommended reviewing TexasPark and Wildlife Code Section 64 as it relates to migratory birds. Indicate anyminimization measures FGT would implement to reduce impacts on sensitivespecies and nesting birds and provide all additional consultation with TPWD.16. Suitable habitat for Texas scarlet snake, a state-listed threatened species, occurs inthe Project area, therefore a finding of “no adverse effect,” with only a statementthat they would avoid the area, is not justified. Provide additional discussion andconsultation regarding this species and revise the conclusion accordingly.17. Table 3-1 states that NWI data does not indicate the presence of ponds, marshes,or grain fields in the Project area. However, FGT performed a wetland20200825-3040 FERC PDF (Unofficial) 08/25/2020delineation. Indicate whether these habitats were observed during these fieldstudies.18. Identify whether FGT would follow the recommendation of the Texas Parks andWildlife Department (TPWD) to “…review the TPWD county list for GalvestonCounty, as rare species could be present depending upon habitat availability,” asindicated in their July 22, 2020 letter included in the abbreviated environmentalreport. Identify any additional minimization measures that would be implementedfor any rare species.19. Identify whether FGT would report protected and rare species to the Texas NaturalDiversity Database per the TPWD letter dated July 22, 2020.20. Indicate whether FGT would follow the recommendation from the TPWD thatstates: “To reduce the potential of a frac-out affecting the streambed, TPWDrecommends the entrance and exit points for drilling be located at least 500 feetfrom the streambeds. Should an inadvertent release occur, an assessment of theimpacts and required mitigation should be conducted in consultation with TPWD.”Resource Report 621. Identify subsurface salt domes within 0.25 mile of the Project areas and specifythe exploitation status of each. Discuss the potential for subsidence hazards fromsubsurface salt domes to impact the Project.22. FGT states that federal emergency response notification systems (ERNS) incidentswere identified within 0.25 mile of the Project area. For the 19 referencedincidents involving discharges of materials into a pond, into a ditch, and to theground, clarify the distance from each to the Project (at nearest point), the materialreleased, and the quantity of materials released, as available.23. Revise the HDD Contingency Plan to address the following:a) Revise section 5.4 to describe how and when the FERC would be notifiedof planned initiation of HDD activities.b) FGT’s HDD Contingency Plan at section 7.5 states “drilling mud disposalwill be done at an approved waste facility or in an approved, uplandlocation.” Specify FGT’s intent to conduct laboratory analysis of drillingmud for environmental contaminants prior to disposal of drilling mud in20200825-3040 FERC PDF (Unofficial) 08/25/2020upland areas and confirm that disposal of drilling mud in upland areaswould only occur following receipt of landowner approval.c) Describe the content and timing of notification to FERC in the event of aninadvertent return of drilling fluid to the ground surface (IR), regardless oflocation or volume of release.d) Update table 6-1 to clarify the responsible party for document retention.Position titles of personnel responsible for maintaining documentationshould be identified or, if not yet known, identify the responsible entity(i.e , FGT or the drilling contractor)e) Revise section 9.1 to address the following:▪ Confirm that FGT would temporarily suspend drilling operations ifan IR occurs in any location (e.g , uplands, outside of theconstruction workspace, wetlands, waterbodies), or otherwise clarifyhow FGT would minimize the volume of any IR and associatedimpacts prior to implementation of containment measures.▪ FGT states that in the event that an IR reaches a wetland it “wouldfollow the same procedures as…for a return in an upland area.”Confirm that if an IR originating in an upland area reaches awetland, FGT would also implement its measures for a release to awetland (e.g , suspend drilling operations; contain the release withsandbags, turbidity curtains, or other temporary barriers; contactappropriate permitting agencies to report the release and coordinateappropriate remediation).▪ Clarify the timing of agency notifications following identification ofan IR, and update table 12-1 to identify agencies in addition to theFERC and the RRC that could reasonably be anticipated to requirenotification. For example, the Army Corps of Engineers, the Fishand Wildlife Service, and/or agencies referenced in section 9.1 ofFGT’s HDD Contingency Plan (the Water Management District,county/municipal agencies, state and local health departments).▪ Provide measures to address an IR that occurs within or that enters awaterbody.24. FGT’s HDD Design Report for the Galveston Lateral HDD indicates that for thelast 1,070 feet of the crossing, there is an elevated risk of IR. Clarify any20200825-3040 FERC PDF (Unofficial) 08/25/2020measures FGT would take to address this increased risk (e.g , re-design of drillpath, increased visual and pedestrian monitoring, reducing drilling rate).25. Discuss potential impacts from storm surge associated with hurricanes and otherhigh energy storms, and identify measures that FGT would employ to protect thepipeline and aboveground facilities from these effects. Additionally, assess theproposed design in the context of anticipated sea level rise and coastal ***land*** loss.Resource Report 926. Provide quantified ***emissions*** of criteria pollutants (NOx, VOC, CO, SO2, PM10, PM2.5),total hazardous air pollutants (HAP) and greenhouse gases (GHG) in tons per year fromall above ground facility and pipeline construction activities including site grading,excavation, trenching, pile-driving, HDD activities, filling, demolition, pipe ***removal***,drilling activities, delivery vehicles, fugitive dust, clean/pigging activities, open burning,and tailpipe ***emissions*** from all construction equipment. Provide a break down of theemissions by calendar year demonstrating when the construction ***emissions*** would likelyoccur. Include supporting calculations, ***emission*** factors, fuel consumption rates, vehiclepower ratings, utilization rates, and hours of operation.27. Indicate if there would be any dehydrator(s), line heater(s) or other ***emission*** generatingequipment at meter facilities. Identify the anticipated criteria pollutants, total hazardousair pollutants and greenhouse gas (as carbon dioxide equivalents) ***emissions*** in tons peryear, and operating characteristics for each (e.g ***emission*** factors, fuel consumption rates,operating hours per year, etc.). ***Emission*** Factors should be based on one of the followingmethodologies: EPA-certified ***emission*** standards, manufacturer data; current EPA AP-42emission factors; or peer reviewed studies for the equipment.28. What action would FGT take regarding the ***removal***, disposal, or storage of facilitiespotentially contaminated with polychlorinated biphenyls (PCBs) that might be disturbedduring the construction of facilities? Does FGT agree to handle PCB-contaminatedfacilities in a manner consistent with the U.S Environmental Protection Agencyregulations under the Toxic Substances Control Act?29. Forestry mulching is a common and accepted alternative for the handling of ***forest*** slashand woody debris generated during pipeline right of way, meter station and constructionstaging area clearing. It utilizes equipment to clear, cut and grind vegetation as large aswhole trees. In some instances, and with landowner permission, the mulch generated isleft in place or distributed in the immediate vicinity of the activity (in accordance of the20200825-3040 FERC PDF (Unofficial) 08/25/2020FERC Plan’s disposal planning provision, section III.E), thus not requiring burning ortrucking of the material to a landfill. Discuss the feasibility of using forestry mulching asan alternative to open burning and disposal methods. Include calculations for air impactsas a result of burning.20200825-3040 FERC PDF (Unofficial) 08/25/2020Document Content(s)Data Request Florida Gas\_CP20-505.PDF ................................1-920200825-3040 FERC PDF (Unofficial) 08/25/2020

**Load-Date:** August 27, 2020

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[***Jair Bolsonaro attacks 'international greed' over Amazon - as it happened***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:60YH-S571-JBNF-W2NS-00000-00&context=1516831)

The Guardian (London)

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**Length:** 7948 words

**Byline:** Patrick Greenfield and Phoebe Weston

**Highlight:** Brazilian leader vows to continue to exploit country's natural resources in combative comments at UN biodiversity summitAll eyes on China: what to look out for at the UN biodiversity summit

**Body**

block-time published-time 10.46pm BST

Summary

We are going to close the live blog now. Statements from world leaders have ended, according to our schedule. Thank you for following along. Here is the summary of today's proceedings in New York at the first-of-its-kind UN summit on biodiversity.

* Brazilian president Jair Bolsonaro attacked "international greed" over the Amazon rainforest in a combative address to the assembly, insisting that countries have the right to use their natural resources. "That's precisely what we intend to do with the huge wealth of resources in the Brazilian territory," he said.

The Brazilian president, Jair Bolsonaro, dismissed 'unfair' international rules. Photograph: Andre Borges/Getty Images

* Contrary to what some had expected before the talks, Chinese president Xi Jinping did not make a second major announcement on the environment at the summit's opening. Last week, he surprised observers with a pledge to reach carbon neutrality by 2060 and to ensure China's greenhouse gas ***emissions*** peak by 2030.

1. More than 70 world leaders and heads of state have now signed the Leaders' Pledge for Nature, backed by Emmanuel Macron, Angela Merkel, Justin Trudeau, Jacinda Ardern and Boris Johnson. Signatories encouraged others to agree to the 10-point pledge to clamp down on pollution, embrace sustainable economic systems and eliminate the dumping of plastic waste in oceans by the middle of the century as part of "meaningful action".
2. In a thinly veiled message to China, Ecuador's president Lenín Moreno called on countries to self-regulate their fishing activities in the waters around the Galápagos islands after they were ***targeted*** by a vast armada of fishing ships in recent weeks.
3. Despite statements from world leaders about the importance of protecting biodiversity, many campaigners were not convinced. Greta Thunberg dismissed "the laughable, cynical empty promises and "pledges" still taking place". Li Shuo, a Greenpeace climate and energy officer, said statements from world leaders lacked substance.

enltr"Every few years, governments gather to make solemn promises about the action they will take to defend the living world, then break them before the ink is dry." Must read to understand the laughable, cynical empty promises and "pledges" still taking place. [*https://t.co/fY40fNmKCZ*](https://t.co/fY40fNmKCZ)

- Greta Thunberg (@GretaThunberg) September 30, 2020

* Indigenous leaders have warned that plans to protect 30% of the planet by the end of the decade could threaten their people. Youth activist Archana Soreng said it could be the "biggest ***land*** grab in history", while Tuntiak Katan, a prominent Amazon leader, said only through "traditional knowledge can we guarantee the conservation of biodiversity and the reduction in deforestation needed to address climate change".

Good evening and good night from Patrick Greenfield and Phoebe Weston.

The Leaders' Pledge for Nature addresses the biodiversity crises on ***land*** and in the oceans. Photograph: Georgette Douwma/Getty Images

block-time published-time 10.41pm BST

"We are the parasites," Spain's prime minister, Pedro Sanchez, said when describing humanity's relationship with the planet. "We can go back to a relationship of symbiosis," he added, saying the delay of the Kunming meeting is an opportunity to scale up ambitions.

Sanchez is focusing on three areas:

* Ensuring 30% of ***land*** and sea is protected by 2030

1. Restoring 15% of degraded ***land***
2. Defending the 'one health principle' that recognises the close link between people, plants, animals and their environment

Pedro Sanchez addressing the 75th UN General Assembly last week. Photograph: Borja Puig De La Bellacasa/La Moncloa handout/EPA

block-time updated-timeUpdated at 10.45pm BST

block-time published-time 10.31pm BST

The Irish Taoiseach Micheál Martin tells the summit that the biodiversity crisis is "one of the defining issues of our generation". A biodiverse planet is essential for humanity, he continues. The global response to restoring nature has to go hand and hand with climate crisis policies, according to the Taoiseach. He says his government will explore an expansion of Ireland's marine protected areas, adding that his country will use its seat on the UN security council to link human conflict with the environment.

Nepalese prime minister KP Sharma Oli says biodiversity is a "lifeline for us", helping to sustain human health and prosperity. Living in harmony with nature is part of Nepali culture, he continues. The Himalayan nation has doubled its number of tigers, he tells the summit, adding that his country's mountain ecosystems help sustain life beyond its borders.

Mount Everest, the world's highest peak, and other peaks of the Himalayan range are seen through an aircraft window during a flight from Kathmandu, Nepal, in January. Photograph: Monika Deupala/Reuters

block-time updated-timeUpdated at 9.24am BST

block-time published-time 10.25pm BST

Ibrahim Mohamed Solih, president of the Maldives, pledged to designate one island, one reef and one mango grove in each atoll as a protected area. The country is also phasing out single-use plastic by 2023. In reference to the coronavirus pandemic he said humanity is "living with the consequences of our constant disrespect to nature". He added: "If we continue to disrespect the boundaries of the natural world we will continue to face similar or worse catastrophes."

The Luxembourg prime minister Xavier Bettel said his country was focusing on three areas of action:

* Strengthening the link between science and policy

1. Improving multilateral action to better look after rivers and birds and tackle viruses
2. Promoting financial systems that encourage investment in the green economy

He said: "I remain convinced that the strength of men and women has always been their ingenuity ... let's draw on this inexhaustible resource."

Pictured is Kunfunadhoo Island in the Maldives. The president has pledged to designate one island, one reef and one mango grove in each atoll as a protected area Photograph: Alamy Stock Photo

block-time updated-timeUpdated at 10.29pm BST

block-time published-time 10.07pm BST

'Self-regulate fishing around the Galápagos islands' - Ecuadorian president

Ecuador's president Lenín Moreno is calling for more financial resources and technological transfers to protect biodiversity as part of the next UN ***targets***. He says his country is one of the most biologically diverse countries on the planet and the protector of the Galápagos islands, "a treasure of Ecuador and the whole world". In a thinly veiled message to China, Moreno called on countries to self-regulate their fishing activities in the waters around the islands. "We cannot turn our back on nature," he concludes.

The waters around the Galápagos islands have been ***targeted*** by Chinese fishing vessels in recent weeks.

Related: 'It's terrifying': can anyone stop China's vast armada of fishing boats?

block-time updated-timeUpdated at 10.15pm BST

block-time published-time 9.52pm BST

Indigenous people say their right to ***land*** is being violated:

Levi Sucre, leader of the AMPB (Alianza Mesoamericana de Pueblos y Bosques - Mesoamerican Alliance of Peoples and ***Forests***) said the economic impacts of the coronavirus means reactive policies have promoted further extraction of natural resources and destruction of ***forests***, leading to the violation of indigenous rights. He said:

We, as indigenous peoples and local communities around the world, have been concerned about the taking of ***forests***, incorrectly called development.... the rights of indigenous peoples and local communities protecting ***forests*** is crucial to protect this planet from climate change.We call on the international community to cooperate and turn your eyes to the indigenous peoples. This is not just a matter of our life, it is a matter of your life too, and that of the Planet.

Militza Flaco, youth leader of the AMPB said governments are excluding community leaders from public policy and decision-making. She said:

We, the indigenous peoples, in our silent and sustained struggle for centuries and millennia, continue to live in harmony with nature. We are the example of a living ecological culture.Indigenous peoples fight to protect ***forests*** every day. We protect water sources as a resource to survive. We were, are and will be, the guardians of the ***forest***.

The Kichwa, indigenous people of the Amazon, fight police harassment when protesting oil spills outside the Council of the Judiciary in Quito earlier this month. Photograph: José Jácome/EPA

block-time updated-timeUpdated at 9.25am BST

block-time published-time 9.24pm BST

"Let me put it plain and simple: without biodiversity there would be no food," says Qu Dongyu, director general of the UN's Food and ***Agriculture*** Organisation (FAO). The loss of biodiversity undermines efforts to tackle poverty, and to halt biodiversity loss "we need to radically change our economies", he says.

Biodiversity is the variety of life on Earth, in all its forms and all its interactions. "Without biodiversity, there is no future for humanity," says Prof David Macdonald, at Oxford University. It is comprised of several levels, starting with genes, then individual species, then communities of creatures and finally entire ecosystems, such as ***forests*** or coral reefs, where life interplays with the physical environment.

Without plants there would be no oxygen and without bees to pollinate there would be no fruit or nuts. The services provided by ecosystems are estimated to be worth trillions of dollars - double the world's GDP. Biodiversity loss in Europe alone is estimated to cost the continent about 3% of its GDP, or (EURO)450m (£400m) a year.

The extinction rate of species is now thought to be about  1,000 times higher  than before humans dominated the planet, which may be even faster than the  losses after a giant meteorite wiped out the dinosaurs  65m years ago. The  sixth mass extinction in geological history has already begun, according to some scientists, with billions of individual populations being lost. Researchers call the massive loss of wildlife a "biological annihilation".

Changes to the climate are reversible, even if that takes centuries or millennia, and conservation efforts can work. But once species become extinct, there is no going back.

block-time updated-timeUpdated at 9.28pm BST

block-time published-time 9.13pm BST

Canadian prime minister Justin Trudeau said his country was striving to be a leader in protecting the environment, surpassing its ***target*** of protecting 10% of marine areas by 2020. He is pledging to protect 25% of ***land*** and oceans by 2025 (an announcement he made in 2019) with 30% protected by 2030.

block-time published-time 8.47pm BST

The Tuvaluan prime minister Kausea Natano wins the prize for the best video background of the evening.

enltr @TuvaluPM Hon. Kausea Natano addresses the #UN#BiodiversitySummit on behalf of the #PacificIslandsForum, committed stewards of the #BluePacificContinent#PIF@ForumSEC ?????????? pic.twitter.com/zTuoZOBeww

- Tuvalu Mission UN (@Tuvalu\_UN) September 30, 2020

Although, if the world does not act on the climate and biodiversity crises, it won't be there much longer.

Related: 'One day we'll disappear': Tuvalu's sinking islands | Eleanor Ainge Roy

block-time updated-timeUpdated at 8.57pm BST

block-time published-time 8.46pm BST

'We must recognise we are not the most important species' - Costa Rican president

Costa Rican president Carlos Quesada is the antidote to Jair Bolsonaro. He tells the summit that humanity must focus on three areas to improve our relationship with nature.

First, we must take responsibility and be self-critical by thinking about how our behaviour affects ecosystems. He advocates for economic development models that are based on human wellbeing, not just growth. Second, humility. Quesada says humans must recognise that we are not the most important beings on Earth and be humble enough to learn from nature. Finally, the Costa Rican president says we must focus on equality by protecting ecosystems and decarbonising economies for the good of everyone.

View of the Arenal volcano, north of San Jose, Costa Rica. Photograph: Jeffrey Arguedas/EPA

block-time updated-timeUpdated at 8.50pm BST

block-time published-time 8.29pm BST

Here is the UN secretary general's speech from the summit opening.

enltrHumanity is waging war on nature. We need to rebuild our relationship with the natural world - to avert the worst impacts of the climate crisis and recharge biodiversity for the benefit of people and the planet. #ForNature[*https://t.co/nO573PQy9Kpic.twitter.com/hv1DJXkN8F*](https://t.co/nO573PQy9Kpic.twitter.com/hv1DJXkN8F)

- António Guterres (@antonioguterres) September 30, 2020

block-time published-time 8.25pm BST

Presidents and prime ministers from Kyrgyzstan, Mozambique, Zambia, Costa Rica, Georgia, Estonia and Botswana are up next.

We'll bring you the highlights of what they say. Costa Rica is a small but mighty country when it comes to UN environment negotiations. President Carlos Quesada has been active behind the scenes generating more financial resources for protecting ecosystems and biodiversity.

block-time updated-timeUpdated at 8.27pm BST

block-time published-time 8.13pm BST

The leaders dialogue on addressing biodiversity loss and mainstreaming biodiversity for sustainable development is underway. Statements from Angela Merkel and Imran Khan got us started.

The German chancellor said extinctions are accelerating at a pace never before seen in the history of humanity. She said the world must turn the tide on biodiversity loss by expanding the protection of areas, restoring ecosystems and directing financial resources to protecting plants and animals.

Imran Khan, the prime minister of Pakistan, detailed his country's 12 climatic zones from the peak of K2, the world's second highest mountain, to the tropics on the Pakistani coast. He said his government is dedicated to their protection.

The Baltoro glacier in the Karakoram mountain range in Pakistan's northern Gilgit region. Photograph: Amelie Herenstein/AFP/Getty Images

block-time updated-timeUpdated at 8.24pm BST

block-time published-time 7.15pm BST

We are going to take a short break now before the next leaders' dialogue. It will be chaired by Angela Merkel and Imran Khan on addressing biodiversity loss and mainstreaming biodiversity for sustainable development.

That will begin at 3pm in New York and 8pm UK time.

block-time updated-timeUpdated at 7.53pm BST

block-time published-time 7.12pm BST

Biodiversity in the UK

Prime minister Boris Johnson's pledge to protect 30% of ***land*** in the UK by 2030 has been cautiously welcomed by conservationists. But they warn that ***targets*** need to be legally binding to avoid the creation of "paper parks" that fail to safeguard nature in practice.

Johnson announced at a virtual UN event on Monday that an additional 400,000 hectares of ***land*** in England would be protected for nature, with the promise of "ambitious goals and binding ***targets***".

Johnson joined 64 leaders from around the world to make pledges to tackle catastrophic nature lost ahead of today's summit. The announcement was very welcome but the government overestimates how much ***land*** is effectively protected, said Craig Bennett, chief executive of the Wildlife Trusts. Many of the country's designated wildlife areas are in poor condition and do not support the wildlife they are meant to provide refuge for.

A public footpath in the Yorkshire Dales National Park. Photograph: Christopher Thomond/The Guardian

Bennett said:

Our National Parks and areas of outstanding natural beauty (AONBs) are landscape not wildlife designations, and many of these places are severely depleted of wildlife because of overgrazing, poor management or intensive ***agricultural*** practices. Our Sites of Special Scientific Interest (SSSIs) are supposed to be protected for nature but even around half of these are in a poor state and suffering wildlife declines.

In England, 26% of ***land*** is protected, but an estimated 5% is being well managed for nature. This existing ***land*** needs to be much better protected for the prime minster to deliver on this pledge. "Instead of creating more pointless 'paper parks,' the prime minister needs to lay out concrete plans and binding legal ***targets*** to halt and begin to reverse the decline of nature on ***land*** and at sea by 2030," said John Sauven, executive director of Greenpeace.

The announcement comes after analysis by RSPB found the UK failed to reach 17 out of 20 UN biodiversity ***targets***, because pledges were not matched by action on the ground, resulting in a "lost decade for nature".

Hares are now threatened in the UK. Pictured are two brown hares (Lepus europaeus) boxing near Holt, Norfolk, England. Photograph: David Tipling/NPL/Alamy Stock Photo

We risk another decade of failure unless biodiversity pledges are put into domestic law like Paris climate agreements, said Martin Harper, director of global conservation at the RSPB. "If then properly backed by a reformed systems of farm payments and new dedicated resources for habitat restoration, which would allow places like our national parks to become an engine for nature's recovery, we'll then have a fighting chance to revive our world," he said.

A 2019 State of Nature report found one in ten UK species is threatened with extinction, with 41% of species in decline. Caroline Lucas, MP for the Green Party, said it was not enough to "talk about protecting nature on the one hand then undermine that action on the other".

block-time updated-timeUpdated at 7.20pm BST

block-time published-time 7.08pm BST

President Jair Bolsonaro has also been hitting back at Democratic candidate Joe Biden about the comments he made about the Amazon in last night's debate.

enltrBrazil President Jair Bolsonaro's response to John [sic] Biden's threats last night to sanction and otherwise punish Brazil if it continues to burn the Amazon (posted to Twitter in Portuguese and this, the English version): pic.twitter.com/oVdiuaKMEa

- Glenn Greenwald (@ggreenwald) September 30, 2020

block-time published-time 7.00pm BST

Boris Johnson has been addressing the summit.

From the tiniest of plants to the mightiest, most majestic megafauna, the natural life that so enriches our planet today is declining at a pace that is truly terrifying.

Almost 70 per cent of the world's wildlife has been lost in the past half century - a lifetime to many of us but the blink of an eye in the grand sweep of planetary evolution.

As many as one million species of plants and animals are threatened with extinction.

We are on the brink of a world in which the orangutan and the black rhino can be found not in the jungles of Borneo or the savannahs of Africa, but confined to the pages of history books.

And consider the pangolin- that scaly mammalian miracle of evolution boasting a prehensile tongue that is somehow attached to its pelvis.

I don't believe any of us would choose to bequeath a planet on which such a wonderfully bizarre little creature is as unfamiliar to future generations as dinosaurs and dodos are to us today.

block-time updated-timeUpdated at 7.01pm BST

block-time published-time 6.50pm BST

Combative Bolsonaro pledges to exploit Brazil's 'huge wealth of resources'

The platitudes are over. Brazilian president Jair Bolsonaro delivered a robust message to the summit: We will continue to take advantage of our environmental wealth. Taking aim at NGOs and foreign governments "interfering" with Brazil's sovereignty, he rejected "international greed" towards the Amazon rainforest.

Dismissing "unfair" international rules, Bolsonaro said states have "rights to use their natural resources."

"That's precisely what we intend to do with the huge wealth of resources in the Brazilian territory," he said.

The Brazilian leader finished by reminding the summit of the three pillars of the UN Convention on Biological Diversity: conservation, the sustainable use of resources and benefit sharing.

This photo taken in August shows a deforested area close to Sinop, Mato Grosso State, Brazil. Photograph: Florian Plaucheur/AFP/Getty Images

block-time updated-timeUpdated at 7.01pm BST

block-time published-time 6.28pm BST

Dr Alexander Lees a senior lecturer in conservation biology at Manchester Metropolitan University has reacted to the statement from the Polish president:

It was good to hear the Polish president Andrzej Duda 's commitment to preserve its ***forests***, among the most extensive and most important left in Europe. However, let us not forget that the European Commission had to order an emergency ban on logging in Poland's flagship UNESCO-protected Bialowieza ***Forest***, the finest old growth ***forest*** left in Europe. Logging activity between July 2015 and June 2018 impacted 4073 hectares of ***forest*** and led to a 26% increase in habitat fragmentation. The statement from the president that these ***forest*** habitats have been "preserved and multiplied" therefore rings a little hollow. We cannot expect countries in the global south to look after their primeval ***forest*** habitats if countries in the global north neglect theirs.

Pictured is Poland's flagship UNESCO-protected Bialowieza ***Forest*** at sunrise. Photograph: Aleksander/Getty Images/iStockphoto

block-time published-time 6.26pm BST

Bolivian president Jeanine Áñez tells the summit that current economic development models have led to unprecedented changes to the planet, including the climate crisis and biodiversity loss. She says Bolivia is among the most biodiverse countries in the world, listing the amphibians, mammals and flora that are endemic to the South American country. Áñez finishes by reconfirming her country's commitment to multilateralism to combatting biodiversity loss.

enltr???? " #Bolivia reaffirms its commitment to preserving biodiversity for the good of humankind. We are calling on the international community to ensure that we are all working together." @JeanineAnez at UN #BiodiversitySummit[*https://t.co/dhdu9rUpav#ForNature#Biodiversity2020pic.twitter.com/RLEkfRyRMg*](https://t.co/dhdu9rUpav#ForNature#Biodiversity2020pic.twitter.com/RLEkfRyRMg)

- UN Biodiversity (@UNBiodiversity) September 30, 2020

Please refresh the blog from time to time. We are updating and tweaking posts as we go.

block-time updated-timeUpdated at 6.31pm BST

block-time published-time 6.11pm BST

The meeting has technically adjourned for two hours but due to the quantity of world leaders that want to make a statement, the pre-recorded videos have continued.

We will bring you the most important news lines from speakers and analysis on what has been said so far.

block-time updated-timeUpdated at 6.12pm BST

block-time published-time 6.06pm BST

The summit makes it clear conserving biodiversity improves human well-being. While this may be true on a macro scale, conservation can have real local costs and the tradeoffs are far from simple, says Prof Julia P G Jones, a conservation scientist from Bangor University in Wales. She says:

These challenges occur everywhere. Small-holder farmers clearing ***forest*** for ***agricultural*** are often made poorer by ***forest*** conservation (even if that ***forest*** conservation makes sense at the national and international scale)... a major dam might provide much-needed energy, but block rivers, change ecosystems and harm biodiversity.

Those involved in the talks are aware of the challenges faced by countries trying to reconcile conservation and development. Jones argues that these challenges should be more explicitly acknowledged. "This would help the global conservation community move forward more positively post-2020," she adds.

Pictured is a lemur on a tree branch in eastern Madagascar, a country where ***forest*** conservation can result in local costs, says scientist Julia P G Jones. Photograph: RIJASOLO/AFP/Getty Images

block-time updated-timeUpdated at 6.18pm BST

block-time published-time 5.58pm BST

enltr"Every few years, governments gather to make solemn promises about the action they will take to defend the living world, then break them before the ink is dry." Must read to understand the laughable, cynical empty promises and "pledges" still taking place. [*https://t.co/fY40fNmKCZ*](https://t.co/fY40fNmKCZ)

- Greta Thunberg (@GretaThunberg) September 30, 2020

block-time published-time 5.58pm BST

The pre-recorded statements from world leaders on nature to the summit have continued.

South African president Cyril Ramaphosa says the consumption of wild species and habitat loss are driving pandemics and biodiversity loss. He highlights the "complete interdependence between economic activity and human development. He calls for a change in consumption patterns and ***land*** management strategies, implementing sustainable and climate-friendly practises.

Kenyan president Uhuru Kenyatta says 2020 has given humanity a chance to get back on track with its relationship with nature. Kenya is one of a small number of mega-biodiverse countries, he says, and must make sure it is protected.

Nigerian president Muhammadu Buhari refelects on the flora and fauna that are facing extinction in his country.

block-time published-time 5.33pm BST

Brazilian foreign minister Ernesto Araújo - who has previously dismissed the climate crisis as a Marxist plot - had been listed to represent his country in the place of president Jair Bolsonaro but the South American leader will now speak. Governments will listen to what the Brazilian leader has to say with great interest as his stance on the environment could have a major sway over the final Kunming agreement.

Brazil has traditionally been a major player in UN environmental circles through its impressive diplomatic machine. But under Bolsonaro, the Amazon rainforest continues to burn and many fear Brazil's leader is steering his country towards environmental ruin.

Last week the president hit back at the UN general assembly for a second year in a row about how the Amazon has been treated under his leadership, claiming Brazil was the ***target*** of a "brutal disinformation campaign".

Jair Bolsonaro, president of Brazil, looks on during the launch ceremony of the Mineracao e Desenvolvimento Program on 28 September in Brasilia, Brazil. Photograph: Getty Images

block-time updated-timeUpdated at 6.16pm BST

block-time published-time 5.23pm BST

Greenpeace has created ice sculptures of presidents Donald Trump and Jair Bolsonaro to expose the urgency of the nature crisis and the failure of both administrations to address the issue. Activists placed the sculptures on the pier facing the UN building where the meeting would have taken place.

The message reads; "Faces of Extinction: Fuelling a planet in crisis".

"Trump and Bolsonaro administrations are the faces of extinction as they are pushing radical agendas that are destroying nature, driving biodiversity collapse and exacerbating the climate emergency," said Arlo Hemphill, oceans campaigner at Greenpeace US.

Jair Bolsonaro will address the summit shortly.

Activists from Greenpeace USA placed life-size sculptures of Donald Trump and Jair Bolsonaro on a pier facing the UN building, where the meeting was originally meant to take place. Photograph: Tracie Williams/Greenpeace

block-time updated-timeUpdated at 6.06pm BST

block-time published-time 5.20pm BST

The presidents of Colombia and Peru have just given statements to the summit. Both are major players in UN biodiversity circles and signatories to the Leaders' Pledge on Nature, which over 70 governments and heads of state backed before today's talks.

Colombian leader Iván Duque urges other countries to protect 30% of ***land*** and sea by 2030, embrace nature based solutions and make changes in the industries that have the biggest economic impact.

"That is the challenge of our age," he concludes.

Peruvian president Martín Vizcarra Cornejo echos calls from other leaders for multilateralism and cites several local examples of how Peru has taken action to protect its biodiversity.

block-time published-time 5.11pm BST

Turkish president Recep Tayyip Erdogan makes a pointed remark about being at the forefront of fighting climate change, despite his country bearing "negligible responsibility for historical ***emissions***". He also says Turkey is working on a biodiversity roadmap to to 2050 without giving concrete promises about what landmarks will be involved.

Polish president Andrzej Duda boasts about the country's "centuries-old heritage of nature conservation", saying the wealth of the country's ***forests*** - which cover 40% of its landmass - have been "preserved and multiplied". He says protection of biodiversity is "one of the biggest challenges for civilisation" and talks passionately about the size of the country's bison population.

block-time updated-timeUpdated at 6.15pm BST

block-time published-time 4.58pm BST

Guardian columnist George Monbiot has written about the UN summit and the biodiversity pledges by world leaders.

It's the hope I can't stand. Every few years, governments gather to make solemn promises about the action they will take to defend the living world, then break them before the ink is dry. Today, at the virtual UN summit on biodiversity, they will move themselves to tears with the thought of the grand things they will do, then turn off their computers and sign another mining lease.

Ten years ago, at the last summit, world leaders made a similar set of "inspirational" promises. Analysis published a fortnight ago showed that, of the 20 pledges agreed at Nagoya in Japan in 2010, not one has been met. The collapse of wildlife populations and our life-support systems has continued unabated: the world has now lost 68% of its wild vertebrates since 1970. It sounds brutal to say that these meetings are a total waste of time. But this is a generous assessment. By creating a false impression of progress, by assuaging fear and fobbing us off, these summits are a means not of accelerating action but thwarting it.

No one will be surprised to hear that the promises Boris Johnson has made at this week's summit are worthless. But you might be surprised by how cynical they are. One of his pledges is that 30% of the UK's ***land*** will be protected for "the recovery of nature" by 2030. This sounds astonishing, in one of the most depleted nations on Earth, until you discover he considers that 26% of our ***land*** is already used for this purpose.

Read the full piece here.

Related: Johnson's pledges on the environment are worthless. Worse is how cynical they are | George Monbiot

block-time published-time 4.51pm BST

French president Emmanuel Macron has given the pick of the early statements. He says that environmental agreements must be coherent. He cites the example of the European Union not signing a trade deal with Argentina, Brazil, Paraguay and Uruguay - the bloc known as Mercosur - over fears it would cause more deforestation in the Amazon. He says that 2021 must be "a year of action".

Before that, Malawian president Lazarus McCarthy Chakwera spoke on behalf of the Least Developed Countries group. He expressed his dissatisfaction at the world's failure to meet any of the previous decade's biodiversity ***targets*** and called for more financial resources and technological support for conservation efforts.

The president of the European Commission, Ursula von der Leyen, reaffirmed her commitment to the Kunming process.

Turkish leader Recep Tayyip Erdogan is up next.

enltr #HappeningNow"Our aim is a new global biodiversity framework in Kunming next year. Rules that protect species, our resilience. You can count on my commitment" -- @vonderleyen@EU\_Commission ???? at UN #BiodiversitySummit?? [*https://t.co/dhdu9rUpav#ForNature#Biodiversity2020pic.twitter.com/wm4of1Z2k0*](https://t.co/dhdu9rUpav#ForNature#Biodiversity2020pic.twitter.com/wm4of1Z2k0)

- UN Biodiversity (@UNBiodiversity) September 30, 2020

block-time updated-timeUpdated at 6.09pm BST

block-time published-time 4.46pm BST

For all the talk about the importance of this summit, the secretary general António Guterres has left because of prior engagements.

block-time updated-timeUpdated at 6.10pm BST

block-time published-time 4.36pm BST

More than 130 organisations including Friends of the Earth International, Survival International and Indigenous Environmental Network have signed a letter criticising the biodiversity summit for not representing communities who are most affected by the destruction of nature and who also play an important role in preserving it.

The letter, from the CBD Alliance, says indigenous people, local communities, women, youth, indigenous farming systems and small-scale food producers are not adequately represented at the summit. It criticises the UN for providing a a prominent role to corporations and financial actors who are responsible for biodiversity destruction.

The letter states:

We remind states that they have obligations to protect biodiversity, but also they must ensure the realisation of human rights. This requires them to ensure effective participation of people and communities as rights holders and to ensure accountability of states regarding their commitments.

block-time published-time 4.23pm BST

Statements by world leaders and governments have just started with the Guyanese president Mohamed Irfaan Ali.

The president of the 75th UN general assembly, Volkan Bozkir, tells the summit that world leaders have not stuck to the time limits on pre-recorded statements about biodiversity and, as such, there won't be time to play them all.

We will bring you the highlights.

block-time updated-timeUpdated at 6.09pm BST

block-time published-time 4.19pm BST

Increasing protected areas could be 'biggest ***land*** grab in history' - indigenous activist

Protecting at least 30% of ***land*** and sea is the headline ***target*** of the draft Kunming agreement for the next decade's biodiversity ***targets***. But Indian indigenous youth activist Archana Soreng has warned that it could be the "biggest ***land*** grab in history".

***Removing*** indigenous communities from their ***land*** to protect nature is "colonial and environmentally damaging", the member of the Khadia tribe continues, warning that human rights could be abused en masse in the name of conservation if world leaders are not careful with how the implement protections.

enltrNurture indigenous practices, empower indigenous communities, respect our rights over ***land*** and ***forest***. ***Removing*** us from our ***land*** to protect biodiversity is colonial & damages biodiversity - Youth representative Archana Soreng @UNBiodiversity#Biodiversity2020#BiodiversitySummitpic.twitter.com/vaIHHC6JSP

- IISDRS (@IISDRS) September 30, 2020

Here is an infographic of a recent study about increasing protected areas.

Related: Planetary 'safety net' could halt wildlife loss and slow climate breakdown

block-time updated-timeUpdated at 4.29pm BST

block-time published-time 4.10pm BST

Prince Charles is speaking as we get towards the end of the introduction, telling the summit he was immensely flattered to be invited. The Prince's comments are focused on what he calls a "blue-green recovery", talking of an urgent need to embrace circular economics with a Marshall plan for nature. Establishing functioning carbon markets, developing carbon capture and storage, and creating a market for ecosystem services are all key, he says.

"We are at the last hour. We know what we need to do. Let's get on with it," the Prince concludes.

Check out that bookcase.

enltrImplement effective & equitable carbon pricing or polluter pays principle to accelerate decarbonisation by changing behaviour of consumers, businesses- HRH Prince Charles, listing 6 levers to protect biodiversity @[*Charles\_HRH@UNBiodiversity#Biodiversity2020#BiodiversitySummitpic.twitter.com*](mailto:Charles_HRH@UNBiodiversity#Biodiversity2020#BiodiversitySummitpic.twitter.com)/itSmQPlbIO

- IISDRS (@IISDRS) September 30, 2020

block-time updated-timeUpdated at 4.25pm BST

block-time published-time 4.04pm BST

A "fireside chat" (without a fire) is taking place between the UN biodiversity head Elizabeth Maruma Mrema, UN environment head Inger Andersen and IPBES chair Ana María Hernández Salgar.

IPBES is the biodiversity equivalent of the Intergovernmental Panel on Climate Change (IPCC), informing the political process on global negotiations. Ana María Hernández Salgar says that governments, the private sector, academia and industry must come together on responding the biodiversity crisis.

"We have to learn to embrace a different vision of what a good life is," she says.

Mrema underscores that progress has been made in some countries on biodiversity around the world and that there is lots of evidence that conservation works, preventing some extinctions.

Related: Up to 48 species saved from extinction by conservation efforts, study finds

Andersen says "there was a time we thought we could pollute our way to wealth" but that is now over.

block-time updated-timeUpdated at 6.08pm BST

block-time published-time 3.57pm BST

The Leaders' Pledge for Nature

Ahead of the summit, more than 70 world leaders announced a 10-point plan - the Leaders' Pledge for Nature - to halt the destruction of biodiversity on Earth. The commitments include a renewed effort to reduce deforestation, halt unsustainable fishing practices, eliminate environmentally harmful subsidies and begin the transition to sustainable food production systems and a circular economy over the next decade.

The Leaders' Pledge for Nature is NOT the UN biodiversity agreement that countries are negotiating for the Kunming process. While Emmanuel Macron, Angela Merkel, Justin Trudeau, Jacinda Ardern and Boris Johnson all backed the commitments, key leaders like Xi Jingping, Jair Bolsonaro, Scott Morrison and Vladimir Putin have so far kept their pens in their pockets. That said, the declaration might encourage countries to agree a more ambitious set of UN ***targets*** for next decade.

But as environmental campaigner Greta Thunberg points out, we have been here before.

enltrIt's so easy to pledge. Everyone wants to save nature and save the climate. When it comes to real action however, they fail every single time. But go ahead, surprise us! Let's see who will pull the emergency break and put nature, climate and people first. [*https://t.co/hlqHyrcT4x*](https://t.co/hlqHyrcT4x)

- Greta Thunberg (@GretaThunberg) September 29, 2020

block-time published-time 3.47pm BST

President Xi Jinping: "We need to respect nature, follow its laws and protect it"

Unlike last week, Chinese president Xi Jinping has not made another major announcement on the environment.

"Little by little, grains of soil pile up to make a mountain," he tells the summit, encouraging world leaders to strike a bold international agreement on biodiversity next year in Kunming at COP15.

The Chinese leader highlights the accelerated extinction of species around the world that poses a risk to human survival and development. He tells the summit that humanity must aim to turn the planet into a "beautiful homeland".

Xi Jinping is seen on a video screen remotely addressing the UN last week. Photograph: Mary Altaffer/AP

"We need to respect nature, follow its laws and protect it," Xi continues, balancing development while upholding multilateralism as "passengers in the same boat".

As the host country of COP15, Xi Jinping tells world leaders that China stands ready to share its experience of protecting biodiversity and says the goal of the Kunming agreement is to seek modernisation alongside harmony with nature.

The Chinese leader concludes by mentioning last week's commitments to reducing future carbon ***emissions*** and the pledge to reach carbon neutrality before 2060.

block-time updated-timeUpdated at 4.06pm BST

block-time published-time 3.33pm BST

In a pre-recorded statement, Egyptian president Mohammed Al-Sisi tells the summit "we have to stress the link between biodiversity and sustainable development". At COP14 in Egypt, governments began the process of negotiating the biodiversity ***targets*** for the 2020s. Last decade, the world failed to meet a single one of the ***targets*** agreed in Aichi in 2010. Covid-19 has strengthened our shared responsibility to the planet and future generations, he concludes.

Xi Jinping is about to speak.

Related: World fails to meet a single ***target*** to stop destruction of nature - UN report

block-time updated-timeUpdated at 3.37pm BST

block-time published-time 3.24pm BST

Munir Akram, President of the Economic and Social Council, is addressing the summit right now, calling for a re-imagination of GDP and nature's role in human wealth.

Egyptian president Mohammed Al-Sisi, who was host of the biodiversity COP14, is up next.

block-time published-time 3.20pm BST

UN head Guterres: 'Humanity is waging war on nature'

UN secretary-general António Guterres continues the sombre tone of the summit's opening, outlining the poor state of life on Earth.

"Humanity is waging war on nature", he declares, underscoring the importance of protecting biodiversity to the Paris agreement and the Sustainable Development Goals. Guterres links biodiversity to human health, livelihoods and economies.

UN secretary-general Antonio Guterres briefs reporters during the 75th session of the United Nations General Assembly. Photograph: Rick Bajornas/AP

Guterres says there are three priorities for governments to aid the recovery of the natural world. First, nature-based solutions must be in all Covid-19 economic recovery plans for governments, investing in ***forests***, wetlands and oceans. Second, nature must be included in a country's measure of its own wealth, he says. Biodiversity must be a criterium in financial decision making, helping financiers to shift from the destruction to the recovery of nature, Guterres tells world leaders. Third, the world must agree ambitious ***targets*** to protect biodiversity through the Kunming agreement that will be signed in China later next year.

Read more about those draft ***targets*** here.

Related: UN draft plan sets 2030 ***target*** to avert Earth's sixth mass extinction

block-time updated-timeUpdated at 6.06pm BST

block-time published-time 3.09pm BST

What will President Xi Jinping tell the summit?

China is leading global talks on a major UN environment agreement for the first time with negotiations on biodiversity ***targets*** for the next decade. Today's summit was meant to be the moment that world leaders gave their input before negotiators headed to Kunming to thrash out the "Paris agreement for nature". The pandemic has delayed proceedings but repeated warnings linking the pandemic with the destruction of ecosystems and species appears to have focused minds at the highest level.

Some privately suspect that president Xi Jinping will surprise world leaders with another major environmental commitment during his speech at the summit's opening, just days after he ramped up China's carbon commitments by pledging to achieve carbon neutrality by 2060. He will address world leaders in the next hour or so.

Ahead of today's summit, Sir Robert Watson, former chair of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), which informs the UN biodiversity negotiations with the latest science, told me China's role is "absolutely critical".

Read his full comments below.

Related: All eyes on China: what to look out for at the UN biodiversity summit

Chinese president Xi Jinping speaks at a China-France Economic Forum in November, 2019, in Beijing. Photograph: Pool/Getty Images

block-time published-time 3.08pm BST

Volkan Bozkir begins the summit with a grim summary of the state of nature on planet Earth, underlining the link between zoonotic diseases and biodiversity loss.

"Clearly, we must heed the lessons we have learned and respect the world in which we live," he says, calling for "urgent action" from world leaders. He tells the summit that so many presidents and prime ministers wanted to speak today that he has organised two spillover events so all the messages can be heard.

Secretary general António Guterres is up next. Then, the Chinese president Xi Jinping.

block-time published-time 3.02pm BST

Talks are just about to begin. If you would like to watch along, follow the link below. The president of the 75th UN general assembly, Volkan Bozkir, will get us started.

enltr??STARTING NOW: The 1st ever @UN#BiodiversitySummitThe @UN\_PGA is bringing together Heads of State and Government under the theme of 'Urgent action on biodiversity for sustainable development'. ??Watch LIVE ?? [*https://t.co/WTokSN1kq5#ForNature#Biodiversity2020*](https://t.co/WTokSN1kq5#ForNature#Biodiversity2020)

- UN Biodiversity (@UNBiodiversity) September 30, 2020

block-time updated-timeUpdated at 3.02pm BST

block-time published-time 1.44pm BST

World leaders to discuss biodiversity crisis

Good afternoon, I'm Patrick Greenfield, a biodiversity and environment reporter at the Guardian. Alongside my colleague Phoebe Weston, I'll be live blogging proceedings from a first-of-its-kind summit at the UN in New York, where world leaders will discuss the rampant destruction of the natural world.

The talks come as the international community negotiates a set of biodiversity ***targets*** for the next decade, which the UN's biodiversity head Elizabeth Maruma Mrema has called humanity's last chance to reset its relationship with nature. Last decade, the world failed to meet a single ***target*** set at previous talks.

Xi Jinping, Jair Bolsonaro, Boris Johnson, Angela Merkel and Jacinda Ardern are among more than a hundred prime ministers and presidents who will address the event. We'll guide you through proceedings that will begin at 10am EST (3pm BST) with an address from the president of the 75th UN general assembly, Volkan Bozkir.

As well as reporting on the discussions and speeches from world leaders, we will bring you expert reaction and analysis from scientists and campaigners. Please post questions in the comment section below or tweet us at @pgreenfielduk or @phoeb0. We'll try to get to as many of your questions as possible but we can't promise we'll answer everyone.

A photo taken on August 24 2019 showing burned areas of the Amazon rainforest in Rondonia state, Brazil. Photograph: Carlos Fabal/AFP/Getty Images

Here is the agenda:

10:00-10:50 EST (3pm BST) : UN secretary general António Guterres, Egyptian president Abdel Fattah Al Sisi, Chinese president Xi Jinping and Prince Charles are among the many dignitaries that will make statements to open the summit.

10:50-13:00EST (3:50pmBST) : World leaders including Emmanuel Macron, Muhammadu Buhari and Recep Tayyip Erdogan will make statements to the assembly.

15:00-16:15 EST (8pmBST) : Leaders dialogue chaired by Angela Merkel and Imran Khan on addressing biodiversity loss and mainstreaming biodiversity for sustainable development.

16:15-17:30EST(9:15BST) : Swedish deputy prime minister Isabella Lövin will then host a dialogue on harnessing science, technology and innovation for biodiversity with industry heads.

17:30-18:00EST (10:30pmBST) : Closing segment.

The international politics of biodiversity are complicated. If you want to know more about what to look out for in today's summit, please read my explainer.

Related: All eyes on China: what to look out for at the UN biodiversity summit

For hundreds of thousands of species threatened by extinction, the stakes of this summit could not be higher. Vast expanses of life-sustaining ecosystems that undermine the fabric of human civilisation are disappearing and this month, the drumbeat of studies and reports highlighting humanity's destruction of nature is growing louder and louder. Around a million species are at risk of extinction, driven by deforestation, pollution, ***agriculture*** and the climate crisis. On average, global populations of mammals, birds, fish, amphibians and reptiles plunged by 68% between 1970 and 2016, according to ZSL and WWF analysis.

We'll let you know what world leaders plan to do about it throughout the day.

block-time updated-timeUpdated at 2.55pm BST

**Load-Date:** October 1, 2020

**End of Document**



[***Bundestag to make agroforestry funding a reality***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:61RX-X8D1-JCF9-42XG-00000-00&context=1516831)

EurActiv.com

January 13, 2021 Wednesday

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**Length:** 1065 words

**Byline:** Lukas Scheid

**Highlight:** The German federal parliament (Bundestag) is to decide whether agroforestry will be recognised as a form of ***land*** use in the future, which would make the practice eligible for funding in the national strategic plan under the EU's Common ***Agricultural*** Policy (CAP). EURACTIV Germany reports.

**Body**

In agroforestry, ***forests*** can be combined with arable crops and ***land*** used for livestock. This means that both trees and crops can grow on the same piece of ***land*** and/or livestock pasture can be created there.

To date, this form of ***land*** use has not been recognised in the main subsidies programme. As a result, farmers can practice agroforestry voluntarily but they do not receive any CAP subsidies for it.

Consequently, it has not been lucrative for farmers and foresters to rely on this combination form of ***land*** use.

However, the CAP reform currently under discussion will allow member states a certain degree of flexibility to make full direct payments on fields containing agroforestry.

According to the proposal, member states will have the leeway to ensure ***agricultural*** area under agroforestry is fully eligible when justified based on the local specificities (e.g. density/species/size of the trees and pedo-climatic conditions).

On Wednesday (13 January), a debate and a vote on a number of motions could make the formal recognition of agroforestry a reality in the German legal system, making it eligible for EU funding in the new reformed CAP framework.

[***New terminologies in sustainable food systems***](https://www.euractiv.com/section/agriculture-food/special_report/new-terminologies-in-sustainable-food-systems/)

The recent drive for sustainability has seen the emergence of a number of new terminologies, including agroecology, agroforestry and urban farming.

The adoption of these new notions into the sustainability discourse has been rapid and has sometimes made new concepts difficult ...

**'Incidental' climate protection**

"There would be advantages to planting trees and other woods on ***agricultural*** ***land*** as well," said Christian Böhm, the chair of Soil Conservation and Recultivation at Brandenburg Technical University Cottbus-Senftenberg (BTU).

"A great deal of CO2 can be stored in the above-ground and underground wood biomass."

Accordingly, ***agricultural*** ***land*** could more than ever also function as carbon sinks, and farms would have the opportunity to compensate for their ***emissions*** independently.

A [*study*](https://agroforst-info.de/ergebnisse/) by Böhm shows this potential. If half of Germany's arable ***land*** is used for agroforestry and, in turn, 10% of this area is used for the cultivation of agroforestry woody plants, the binding potential of the wood mass achieves a one-time ***emission*** binding of ten million tonnes of CO2 including its equivalents.

This corresponds to around 14% of annual greenhouse gas ***emissions*** from ***agriculture*** (as of 2014).

However, the Böhm emphasised to EURACTIV Germany that the climate protection effects of agroforestry are almost "incidental," because it offers numerous other advantages.

In addition to increased biodiversity and better soil and water protection, planting trees could also pay off economically. "Agroforestry systems can make a very significant contribution to climate adaptation for sustainable ***agriculture***. They slow down the wind on arable ***land*** and compensate for temperature fluctuations," he said.

This leads to less evaporation, for example. The water saved would then be available to the plants again for growth and higher yields.

[***Portuguese presidency to handle agriculture 'with eyes on the future'***](https://www.euractiv.com/section/agriculture-food/interview/portuguese-presidency-to-handle-agriculture-with-eyes-on-the-future/)

The Portuguese presidency of the EU Council is committed to doing everything to conclude negotiations on the reform of the EU's massive farming subsidies programme without overlooking the transition toward a more sustainable food system, the Portuguese farm minister told EURACTIV in an exclusive interview.

**CAP subsidies for agroforestry**

In Wednesday's Bundestag debate and subsequent vote on a number of motions from various parliamentary groups, the main issue is the formal recognition of agroforestry.

The motions from the conservative CDU/CSU and social democrat SPD groups, as well as those of the Greens and the leftist Die Linke, call on the government to ensure legal certainty for farmers who want to practice agroforestry through this recognition.

Farmers still have to fear that they will not be allowed to use or ***remove*** woody plants grown for agroforestry, which is currently still prohibited by law. In addition, farmers must exclude agroforestry areas when applying for CAP funding - even though the German government's Climate Protection Programme 2030 talks about expanding support for agroforestry systems.

The ***agriculture*** ministry also cites agroforestry as a way to protect ***agricultural*** soils, increase humus buildup, and enhance climate protection and biodiversity.

Clarifying the discrepancy between the government's plans and the existing legal framework could ensure in the long term that agroforestry systems are eligible for direct payments under the first pillar of the CAP.

This step would also be in the interest of the EU, as both the [*Farm-to-Fork Strategy*](https://www.euractiv.com/section/agriculture-food/news/farm-to-fork-strategy-aims-to-slash-pesticide-use-and-risk-by-half/) and the Biodiversity Strategy mention agroforestry systems as options.

[***Agrifood Brief: Future farmers at a fork in the road***](https://www.euractiv.com/section/agriculture-food/news/agrifood-brief-future-farmers-at-a-fork-in-the-road/)

Welcome to EURACTIV's AgriFood Brief, your weekly update on all things ***Agriculture*** & Food in the EU. You can subscribe [*here*](https://www.euractiv.com/agrifood-brief/) if you haven't done so yet.

This week, we take a look at the agrifood highlights of 2020, including ...

**Government and opposition pull together**

Against this background, it is remarkable, though hardly surprising, that government parties and the opposition are of a similar opinion. Agroforestry systems are expected to have a positive impact on the climate, crop yields and the financial situation of farmers in the future.

Böhm warned, however, that a system must be created that actually supports farmers. It is no use, he says, if agroforestry systems are eligible for support on paper, but the framework conditions are so unfavourable that in practice no farm implements such measures.

Yet the demand for agroforestry systems has increased significantly as a result of the past three dry years: "Many farms have livelihood problems and are now considering what they can do to better bridge future drought years. Agroforestry is a tool to build a more stable ***land*** use system," said Böhm.

After Wednesday's vote in the Bundestag, the issue is not yet settled. This is because of the exact design of the future legal framework for agroforestry systems in Germany, but it also the result of the upcoming trilogue negotiations on the CAP in Brussels.

The motions of the [*governing coalition,*](https://dip21.bundestag.de/dip21/btd/19/243/1924389.pdf) as well as those of the [*Greens*](https://dip21.bundestag.de/dip21/btd/19/253/1925316.pdf) and [*Die Linke*](https://dip21.bundestag.de/dip21/btd/19/143/1914374.pdf), therefore urge the German government to work for better promotion of agroforestry at the EU level as well.

*[Edited by Gerardo Fortuna]*

**Load-Date:** January 13, 2021

**End of Document**



[***Reorienting emissions research to catalyse African agricultural development***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:671W-P2B1-JCWX-C2S7-00000-00&context=1516831)

Nature Climate Change

May 2021

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**Section:** Pg. 463-465; Vol. 11; No. 6; ISSN: 1758-678X,1758-6798

**Length:** 1884 words

**Byline:** [*t.rosenstock@cgiar.org*](mailto:t.rosenstock@cgiar.org)

**Body**

Beginning in 2024, the Enhanced Transparency Framework of the Paris Agreement will require all parties — including developing countries — to report greenhouse gas (GHG) inventories and progress toward nationally determined contributions (NDCs) biennially. As national budgets and international programming investments align to these pledges, the ability to accurately account for GHG ***emissions*** and deliver verifiable ***emission*** reductions will be at a premium. Corporate commitments will add further momentum by driving growth in the voluntary carbon market and carbon ‘insetting’. In such an environment, activities that cannot be counted will in many ways not count when opportunities for climate finance and programming arise.

The economic sectors most in need of capital investment for development, such as ***agriculture*** in sub-Saharan Africa (SSA), often face the greatest GHG accounting challenges. Estimates suggest that ending hunger in Africa would require an additional US$8.2 billion in public investments annually. This capital could be partially sourced from climate finance given that ***agriculture*** has an outsized impact on regional GHG ***emissions***. African ***agriculture*** emits one-quarter of the continent’s annual GHGs, and ***agricultural*** expansion contributes to one-third of ***emissions*** stemming from ***land***-use change. However, the use of climate finance to support low-***emissions*** ***agricultural*** development in Africa remains limited. Only about 8% of the Green Climate Fund’s value, for example, ***targets*** ***agriculture*** in SSA. Of course, many other factors discourage investment in SSA ***agriculture***, including political instability, transaction costs and farm size; nevertheless, data scarcity has emerged as a key bottleneck in countries’, projects’ and enterprises’ access to finance.

Data deserts

The scale of the data gap is staggering. Generally speaking, GHG accounting multiplies ‘activity data’, which describe the frequency of an ***emissions***-generating action, by an ‘***emission*** factor’, which represents the GHG flux for each unit of that activity. In 2016, fewer than 100 site-years of ***agricultural*** ***emissions*** data had been collected across the region, a majority of which fail to meet methodological standards. By comparison, there are more than 6,000 site-years of data for Chinese maize production alone,. Activity data are equally scarce, often estimated based on expert opinion, imputed from outdated surveys or extracted from international compendiums with unknown uncertainties. Increasing the quantity and quality of data available is a precondition for GHG accounting that enables monitoring and investor confidence.

***Agricultural*** donors and researchers anticipated the data gap and have been working to increase data availability for the last decade. Organizations such as the Global Research Alliance for Greenhouse Gas ***Emissions*** (GRA), the Food and ***Agriculture*** Organization (FAO) of the United Nations, the Consultative Group on International ***Agricultural*** Research (CGIAR) and the Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ), as well as the governments of Finland, Japan, Norway and Canada, among others, have more than doubled available ***emissions*** data through investments in laboratory infrastructure, training and basic research. Outputs of these efforts have included the first flux estimates from major sources, including African livestock breeds, pastureland manure and cropland soils under local climate and production conditions. This body of work has revealed that actual SSA GHG ***emissions*** are often a fraction of the default Intergovernmental Panel on Climate Change (IPCC) Tier 1 ***emission*** factors used by all 46 SSA countries and the vast majority of GHG verification standards–. This suggests that current GHG accounting may considerably overestimate many SSA ***emissions***.

Despite these crucial findings, the relative wealth of new data is still insufficient to have a meaningful impact. Inventories require tens of ***emission*** factors. The recently collected data cover a small fraction of GHG sources and describe ***emissions*** under relatively limited production conditions. Additionally, the collection methods of a significant portion of the existing data disqualify them from consideration for GHG accounting. For example, livestock categorization for ***emission*** factors research must align with national inventories, and fertilizer studies must account for background ***emissions***. Other results are excluded because they employ non-representative and non-replicated experimental designs with low scaling potential or evaluate mitigation options that are likely infeasible in the near term in SSA, such as using upwards of 12 times the average SSA nitrogen fertilizer rate. These limitations are in part due to the challenging research environment, high spatial heterogeneity and myriad GHG sources. Going forward, finite research funding can be better leveraged by closely aligning GHG data collection with national GHG accounting needs and the mitigation options identified in NDCs.

Untapped data opportunities

***Emissions*** factors cannot be translated into GHG accounting without activity data. Yet, recent efforts advanced ***emission*** factors while ignoring activity data, in spite of the absence of accurate estimates for major activities, such as manure management, fertilizer application rates, livestock population and herd structure, in the vast majority of SSA countries. In many cases, activities remain entirely undefined. For example, only 4 of 46 SSA countries quantified the uncertainty of the activity estimates that informed one of their largest ***agricultural*** GHG sources — livestock enteric methane — in their most recent GHG inventory submissions to the United Nations Framework Convention on Climate Change (UNFCCC). Where activity data are available, their uncertainty approaches that of ***emission*** factors (Fig. ). Given that alone, improving activity data represents a nearly equal statistical opportunity for progressing toward accurate GHG accounting as improving ***emissions*** factors. Furthermore, activity data are typically collected through surveys or remote sensing as opposed to the sophisticated laboratories necessary for estimating ***emissions*** factors. This implies that activity data can be improved with relative ease, thus increasing the likelihood of methodological spillover to additional countries and users.

Activity data uncertainty for major SSA ***agricultural*** GHG sources and sinks is often of similar magnitude to that of ***emission*** factors but would be relatively cost-effective to improve.

Average uncertainty summarized from available SSA estimates (Supplementary Table ). Illustrative costs based on project costs to produce a singular piece of activity data or one ***emission*** factor (Supplementary Table ).

Gathering activity data becomes even more attractive when cost is considered. The value for money of investments in activity data far exceeds that of ***emission*** factors. Based on projects conducted over the past decade in SSA, we estimate that activity data can be delivered for 10–20% of the cost of ***emission*** factors (Fig. ). Recent advances could further decrease activity data’s expense. For example, though small and heterogenous fields remain a challenge, accurately identifying ***land*** cover quickly and inexpensively has never been easier. The European Space Agency’s Sentinel 2 satellite produces data at less than 10-m resolution, and Norway’s International Climate and ***Forest*** Initiative has recently released Planet; both of these resources are freely available through open-source tools such as Collect Earth Online. Mobile phone technology and crowdsourcing offer significant promise in terms of capturing farm management data quickly and cost-efficiently,, and when best practices are followed, the data quality is high. The relatively high expense per data point of ***emissions*** factors, among other challenges, has historically limited data generation. Shifting the focus to cost-effective activity data collection and thus stimulating further innovation in this space promises to largely ***remove*** this barrier.

Simultaneously increasing accuracy, reducing monitoring costs and driving investment are perhaps the most critical principles and compelling arguments for climate change decision-makers and researchers to pursue activity data. Additionally, more so than ***emissions*** factors, activity data offer important co-benefits for governments. A significant portion of the activity data that would be collected for GHG accounting is also required for investment planning, monitoring national development policies and complying with international agreements. For example, the IPCC guidelines require data on crop residue application, fertilizers and livestock feeds, which could also inform reporting on the Comprehensive African ***Agriculture*** Development Program’s Indicator 2.5.1 and Sustainable Development Goals’ Indicator 2.4.1 that both address the proportion of ***land*** under sustainable ***agriculture***. Carbon project monitoring and national ***agricultural*** development policies’ results frameworks also require such data. Activity data would also support countless research applications, including estimating yield gaps and predicting national ***agricultural*** production, therefore enabling proactive responses to capture opportunities and overcome constraints. Indeed, the demand for activity data far outpaces its availability and the resources allocated to collecting it. An assessment of African ***agricultural*** statistical systems suggests that many countries have the necessary infrastructure to produce quality data, but funding is so severely constrained that data users’ needs remain unmet. Leveraging data synergies could, in addition to lowering costs, improving GHG accounting and catalysing investment, offer vast increases in data quantity and quality that would enable further research advancement and support coordinated institutional decision-making at multiple levels.

Elegant simplicity

Our appeal to improve activity data is not intended to dismiss further SSA ***emission*** factor research; both are crucial to robust GHG accounting and climate action. Rather, we acknowledge the dearth of ***agricultural*** activity data in SSA, and indeed in developing regions globally, as an extraordinary blind spot with severe consequences for GHG accounting, verification standards and, by extension, climate action and climate finance. Documenting farm management may seem pedestrian. In fact, it is a cost-effective solution to help countries appropriately value their contributions to international commitments, effectively implement national agendas and build the evidence base required to attract investors.

**Acknowledgements**

We thank E. Wollenberg, D. Pelster, M. Richards and A. Nowak for discussions on this topic over many years. This work was implemented as part of the CGIAR Research Program on Climate Change, ***Agriculture*** and Food Security (CCAFS). CCAFS is carried out with support from the CGIAR Trust Fund and through bilateral funding agreements. For details, please visit [*https://ccafs.cgiar.org/donors*](https://ccafs.cgiar.org/donors). T.R. also received support from the United States Department of ***Agriculture***-Foreign ***Agricultural*** Service (USDA-FAS). The views expressed in this document cannot be taken to reflect the official opinions of these organizations.

**Notes**

Supplementary informationThe online version contains supplementary material available at [*https://doi.org/10.1038/s41558-021-01055-0.Peer*](https://doi.org/10.1038/s41558-021-01055-0.Peer) review informationNature Climate Change thanks Rémi Cardinael and Martin van Ittersum for their contribution to the peer review of this work.

**Load-Date:** May 3, 2023

**End of Document**



[***SSRP researchers define UN actions to bend the curve on biodiversity loss***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:62B3-3XV1-F0YC-N3TX-00000-00&context=1516831)

Impact News Service

March 27, 2021 Saturday

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**Length:** 762 words

**Body**

London: University of Sussex has issued the following news release:

A new paper co-authored by Sussex Sustainability Research Programme (SSRP) academics identifies eight actions for sustainable food production and consumption to bend the curve on biodiversity loss.

Food systems are a major driving force behind the world’s biodiversity loss. Global demand for food is increasing yet the expansion of ***agriculture*** and unsustainable fishing practices has serious impacts for both people and nature.

Although the Sustainable Development Goals (SDGs) seek to protect life on ***land*** and below water (SDG 14 and 15) and achieve responsible production and consumption (SDG 12), the interconnections between these goals are not fully joined up.

Having missed the 2020 global biodiversity ***targets***, there is an opportunity for transformative action to better align the SDGs and the forthcoming Convention on Biological Diversity’s post-2020 global biodiversity framework. Unless there are shifts in food production and consumption practices before 2030, there is a risk global biodiversity ***targets*** could be missed once again.

Co-author Professor Joseph Alcamo, Director of the Sussex Sustainability Research Programme (SSRP) and former Chief Scientist of UNEP, said:

'This paper deals with the thorny problem of how to shore up food security without further threatening natural ecosystems and their rich and important diversity. One important step in this direction is reforming the Biodiversity Convention, and we have eight concrete recommendations on how to do this. ”

The paper, published on Friday 19 March 2021, investigates the challenges and opportunities of implementing eight actions (listed below) at global and national levels. The study used the UK and Peru as case studies due to their differing levels of biodiversity, food production and consumption patterns. This allowed researchers to consider the feasibility of these actions in different contexts.

Together, co-authors including SSRP researchers Dr Izabela Delabre, Dr Joanna Smallwood, Professor Jörn Scharlemann, Professor Joseph Alcamo, Dr Alexander Antonarakis, Dr Pedram Rowhani and Dr Anthony Alexander recommend the following actions:

* Action 1:***Removing*** incentives that make food production and consumption harmful to biodiversity.

1. Action 2:Accounting for the true value and costs of production by sector.
2. Action 3:Reducing food waste and loss across supply chains.
3. Action 4:Strengthening sustainability standards and certification.
4. Action 5:Promoting the use of product lifecycle assessments.
5. Action 6:Promoting sustainable and varied diets.
6. Action 7:Mainstreaming biodiversity considerations in food systems.
7. Action 8:Strengthening the governance of sustainable food production and consumption.

Lead author, Dr Izabela Delabre, said:

“Transforming the food system to address biodiversity loss also provides opportunities for more equitable and just development pathways. As well as addressing these actions, there is an urgent need to open up possibilities for more sustainable and equitable economic models that do not rely on the imperative of GDP growth at the expense of environmental and social values”.

Principal Investigator (PI) of this research project, Dr Anthony Alexander, said:

“Achieving a balance between biodiversity and food production requires an intersection between ecology and other disciplines. The eight actions to address biodiversity decline involve supply chain management, economics, government incentives and consumer behaviour. Each of these areas must now come together and do their part to deliver change. ”

Following on from the SSRP-funded research project ‘Sustainable supply chain development in ***forest*** communities’ undertaken in Peru, this paper was an output from the SSRP Visiting Fellowship Fund – an initiative that aimed to strengthen research partnerships in low- and middle-income countries. Visiting Fellow, Dr Lily Rodriguez from Centro de Conservación, Investigación y Manejo de Áreas Naturales (CIMA) in Peru, came to the University of Sussex for two weeks in January 2020 where she presented her work, and later co-authored this paper.

More information

Read the full paper:

Delabre, I., Rodriguez, L. O., Smallwood, J., Scharlemann, J. P. W., Alcamo, J., Antonarakis, A. S., Rowhani, P. Hazell, R. J., Aksnes, D. L., Balvanera, P., Lundquist, C. J., Charlotte Gresham, C., E. Alexander, A. E., and Stenseth, N. C. (2021) Actions on sustainable food production and consumption for the post-2020 global biodiversity framework, Science Advances, 7(12), DOI: 10.1126/sciadv.abc8259

**Load-Date:** March 30, 2021

**End of Document**



[***Claire Taylor: From farm to fork, meat production can be more sustainable and ethical than veganism***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:622M-0D51-F0JC-M4BW-00000-00&context=1516831)

Herald Scotland

February 23, 2021 Tuesday

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**Length:** 1160 words

**Byline:** [*Claire Taylor*](http://Claire Taylor)

**Body**

OFFSHORING our carbon footprint in the midst of a climate emergency is the last thing Scotland wants to be doing, so it is time to start thinking more wisely about our food choices.

This past weekend I took part in a debate organised by Edinburgh University's Conscious Change Society, arguing for the motion "A diet including Scottish livestock products can be more sustainable and ethical than veganism".

The argument made that Scotland's farmers should stop raising livestock for meat production and instead turn all our grazing ***land*** over to arable production, wildflower meadows and ***forests*** is utter nonsense.

There are a number of fundamental flaws in this argument. One being that 98 per cent of British households consume meat and even if livestock production were to stop, demand for meat would not. This demand would have to be met by importing meat from abroad which wouldn't sit well with our ambitious climate change ***targets***, nor with the fact that we would have no say over the animal welfare standards in which these animals are reared and slaughtered.

Secondly, over 80% of Scottish farmland is not suitable for growing cereals and vegetables - due to the topography and nature of our terrain - but is perfectly suited to grazing livestock, which can turn rough grassland into delicious, nutrient-dense protein. A much higher demand for a vegan diet could not be met by local Scottish farming systems and would lead to higher dependency on imports.

Read more: Don't let the 'good life' lead to a global pandemic

Thirdly, the suggestion of ***removing*** livestock from our ***lands*** fails to recognise the invaluable role grazing ruminants play in sequestering carbon in the soil - preventing it from escaping into the atmosphere. Grazing livestock is also critical for building back organic matter into our soils, restoring wildlife habitats, and boosting biodiversity. RSPB and other nature organisations have stated that grazing animals are essential for sustaining healthy wildlife populations.

Fourthly, Scottish livestock farmers play an invaluable role in looking after our iconic landscapes, which all of us have been enjoying more than ever over the last year. With international flights grounded, Scotland's hills and upland areas have been "re-found" by many... and enjoyed. What they have been enjoying is some of the most beautiful vistas in the world - but they are not wild landscapes. They are preserved and managed by countryside custodians grazing their livestock.

Lastly, livestock farming plays a crucial role in supporting rural areas and the most fragile communities - keeping the flow of money in these parts of Scotland and providing vital job opportunities. Farming and crofting are integral to the social fabric of rural Scotland and has been a part of our culture and heritage for thousands of years.

1/2 Fantastic turnout for tonight's debate - over 200 attendees so they had to close registrations.

Thank you to the huge number of people who got in contact with me to join!

Both sides agreed that more needs to be done to progress towards more sustainable ***agriculture***... [*https://t.co/UZx9WtoA7E*](https://t.co/UZx9WtoA7E)

- Claire Taylor (@cjtaylor92) February 19, 2021

It is no secret that livestock production contributes to Green House Gas ***emissions***, contributing to 5% of total UK ***emissions***. But in recent years, other major GHG contributors, like food waste, fast fashion, energy and transport seem to have gotten off the hook. It seems it is easier to put a pitchfork into the farming industry, than it is to stab a needle into haute couture!

Mainstream media has a lot to answer for by sensationalising debates around meat consumption and its role in climate change. Highlighting ***agriculture*** as a carbon sink just isn't sexy, it doesn't sell newspapers, despite being the factual and take-home message which many members of the public should and need to hear.

We, too happily, latch on to "stop eating red meat to save the planet" as we'd much rather make a dietary switch than take one less holiday abroad or cut down on our ASOS deliveries.

Read more: Archaic trading system is strangling UK exports

Too often we blindly read reports in the media or posts by the anti-farming movement which fail to account for the global differences in livestock production. Intensive-style feedlots which fatten their livestock with grain - quickened by means of a hormone injection - couldn't be a further cry from farming in Scotland. Livestock here are mostly reared extensively, on grass-fed diets - weather permitting - and farmers have to follow very strict animal welfare regulations or face severe consequences.

Scotland's farmers are constantly looking at ways to improve their carbon footprint through improving livestock nutrition, restoring soil health, exploring agroforestry opportunities, reducing fertiliser use, planting hedgerows to support local wildlife populations, the list goes on.

From 1990-2017, Scottish ***agriculture*** decreased its Greenhouse Gas ***emissions*** by 29% and is continuing to work hard to pioneer new technologies which will potentially decrease methane ***emissions*** and increase carbon capture in the extensive grass areas of Scotland.

The industry is also constantly improving animal welfare regulations in regard to how animals are reared and slaughtered, as well as being more transparent with its consumers.

New innovations around DNA technology actually allow consumers to trace the origin of all meat back to the animal and farm it was raised on. This won't just apply to supermarket purchases but in the food service sector too, which has often escaped the scrutiny of a rigorous audit which would accredit what it says on the menu!

The goal is to always be accountable to consumers and be more transparent. There is nothing to be gained from shying away from telling the public the true story of livestock production - from farm to fork - which includes slaughter. The fact of the matter is, demand for meat isn't going to disappear, so it is important that we are constantly scrutinising and improving animal welfare regulations and that livestock farmers are held accountable for their actions by the public.

During the pandemic, there has been a huge drive towards reconnecting with where our food comes from as a result of the buy-local revolution. Long term, it is important that more farmers throw open their doors to the public and continue these vital conversations with their customers.

We can't narrowly look at meat production without recognising the whole host of benefits it brings to wider society. Through eating a balanced diet, which includes locally sourced, high quality, high welfare meat, you can be confident that you are making not only an ethical and sustainable choice but one that delivers huge benefits to the wider Scottish society.

Claire Taylor is The Scottish Farmer's political affairs editor.

Our columns are a platform for writers to express their opinions. They do not necessarily represent the views of The Herald.

**Load-Date:** February 23, 2021

**End of Document**



[***Federal Register: Endangered and Threatened Wildlife and Plants; Reclassifying Furbish's Lousewort (Pedicularis furbishiae) From Endangered to Threatened Status With a Section 4(d) Rule Pages 3976 - 3986 [FR DOC #2020-28978]***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:61SY-21B1-JDG9-Y104-00000-00&context=1516831)

Impact News Service

January 15, 2021 Friday

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**Length:** 11662 words

**Body**

Washington: Office of the Federal Register has issued the following notice:DEPARTMENT OF THE INTERIORFish and Wildlife Service50 CFR Part 17[Docket No. FWS-R5-ES-2019-0056; FF09E22000 FXES11130900000 201]RIN 1018-BD65Endangered and Threatened Wildlife and Plants; Reclassifying Furbish's Lousewort (Pedicularis furbishiae) From Endangered to Threatened Status With a Section 4(d) RuleAGENCY: Fish and Wildlife Service, Interior.ACTION: Proposed rule.-----------------------------------------------------------------------SUMMARY: We, the U.S Fish and Wildlife Service (Service), propose to reclassify (downlist) Furbish's lousewort (Pedicularis furbishiae) from an endangered species to a threatened species under the Endangered Species Act of 1973, as amended (Act), and we propose a rule under section 4(d) of the Act to promote the conservation of Furbish's lousewort. This information is based on a thorough review of the best available scientific and commercial information, which indicates the threats to the species have been reduced to the point that the species no longer meets the definition of an endangered species under the Act. We request information and comments from the public on this proposal.DATES: We will accept comments received or postmarked on or before March 16, 2021. Comments submitted electronically using the Federal eRulemaking Portal (see ADDRESSES, below) must be received by 11:59 p.m Eastern Time on the closing date. We must receive requests for a public hearing, in writing, at the address shown in FOR FURTHER INFORMATION CONTACT by March 1, 2021.ADDRESSES: You may submit comments by one of the following methods: (1) Electronically: Go to the Federal eRulemaking Portal: [*http://www.regulations.gov*](http://www.regulations.gov). In the Search box, enter FWS-R5-ES-2019-0056, which is the docket number for this rulemaking. Then, click on the Search button. On the resulting page, in the Search panel on the left side of the screen, under the Document Type heading, click on the Proposed Rule box to locate this[[Page 3977]]document. You may submit a comment by clicking on ``Comment Now!'' (2) By hard copy: Submit by U.S mail: Public Comments Processing, Attn: FWS-R5-ES-2019-0056; U.S Fish and Wildlife Service, MS: PRB/3W, 5275 Leesburg Pike, Falls Church, VA 22041-3803. We request that you send comments only by the methods described above. We will post all comments on [*http://www.regulations.gov*](http://www.regulations.gov). This generally means that we will post any personal information you provide us (see Public Comments, below, for more information). Document availability: This proposed rule and supporting documents including the 5-year review, the Recovery Plan, and the species status assessment (SSA) report are available at [*http://www.regulations.gov*](http://www.regulations.gov) under Docket No. FWS-R5-ES-2019-0056, and at the Maine Ecological Services Field Office (see FOR FURTHER INFORMATION CONTACT).FOR FURTHER INFORMATION CONTACT: Project Leader, Maine Ecological Services Field Office, 306 Hatchery Road, East Orland, ME 04431; telephone 207-902-1567. Persons who use a telecommunications device for the deaf (TDD) may call the Federal Relay Service at 800-877-8339.SUPPLEMENTARY INFORMATION:Information Requested We intend that any final action resulting from this proposed rule will be based on the best scientific and commercial data available and be as accurate and as effective as possible. Therefore, we request comments or information from other concerned governmental agencies, Native American tribes, the scientific community, industry, or any other interested parties concerning this proposed rule. We particularly seek new information not already included in the species status assessment report concerning: (1) Reasons we should or should not reclassify Furbish's Lousewort (Pedicularis furbishiae) under the Act (16 U.S.C 1531 et seq.). (2) New biological or other relevant data concerning any threat (or lack thereof) to this plant and existing regulations that may be addressing these or any of the threats described in this proposed rule or the species status assessment report. (3) New information concerning the population size or trends of Furbish's lousewort. (4) New information or data on the projected and reasonably likely impacts to Furbish's lousewort or its habitat associated with climate change. (5) New information on planned development activities within the range of Furbish's lousewort that may adversely affect or benefit the plant. (6) Information on regulations that are necessary and advisable to provide for the conservation of Furbish's lousewort and that the Service can consider in developing a 4(d) rule for the species. In particular, information concerning the extent to which we should include any of the section 9 prohibitions in the 4(d) rule or whether any other forms of take should be excepted from the prohibitions in the 4(d) rule. Please include sufficient information with your submission (such as scientific journal articles or other publications) to allow us to verify any scientific or commercial information you include. Please note that submissions merely stating support for or opposition to the action under consideration without providing supporting information, although noted, will not be considered in making a determination, as section 4(b)(1)(A) of the Act directs that determinations as to whether any species is an endangered or threatened species must be made ``solely on the basis of the best scientific and commercial data available.'' You may submit your comments and materials concerning this proposed rule by one of the methods listed in ADDRESSES. We request that you send comments only by the methods described in ADDRESSES. If you submit information via [*http://www.regulations.gov*](http://www.regulations.gov), your entire submission--including any personal identifying information--will be posted on the website. If your submission is made via a hard copy that includes personal identifying information, you may request at the top of your document that we withhold this information from public review. However, we cannot guarantee that we will be able to do so. We will post all hard copy submissions at [*http://www.regulations.gov*](http://www.regulations.gov). Comments and materials we receive, as well as supporting documentation we used in preparing this proposed rule, will be available for public inspection at [*http://www.regulations.gov.Public*](http://www.regulations.gov.Public) Hearing Section 4(b)(5) of the Act provides for a public hearing on this proposal, if requested. Requests must be received by the date specified in DATES. Such requests must be sent to the address shown in FOR FURTHER INFORMATION CONTACT. We will schedule a public hearing on this proposal, if requested, and announce the date, time, and place of the hearing, as well as how to obtain reasonable accommodations, in the Federal Register at least 15 days before the hearing. For the immediate future, we will provide these public hearings using webinars that will be announced on the Service's website, in addition to the Federal Register. The use of these virtual public hearings is consistent with our regulations at 50 CFR 424.16(c)(3).Supporting Documents A species status assessment (SSA) team prepared an SSA report for Furbish's lousewort. The SSA team was composed of biologists from the Service and the State of Maine Natural Areas Program. The SSA report represents a compilation of the best scientific and commercial data available concerning the status of the species, including the impacts of past, present, and future factors (both negative and beneficial) affecting the species. In accordance with our July 1, 1994, peer review policy (59 FR 34270; July 1, 1994), our August 22, 2016, Director's Memo on the Peer Review Process, and the Office of Management and Budget's December 16, 2004, Final Information Quality Bulletin for Peer Review (revised June 2012), we solicited independent scientific reviews of the information contained in the Furbish's lousewort SSA report. We solicited independent peer review of the SSA report by four individuals with expertise in Furbish's lousewort, botany, ice scour and flooding regimes of the St. John River, and landscape ecology; we received comments from three of the four peer reviewers. In addition, we received comments from the State of Maine and Canada. The SSA report can be found at [*http://www.regulations.gov*](http://www.regulations.gov) under Docket No. FWS-R5-ES-2019-0056, and on the Maine Ecological Services Field Office website at: [*https://www.fws.gov/mainefieldoffice/Furbish\_lousewort.html*](https://www.fws.gov/mainefieldoffice/Furbish_lousewort.html). In preparing this proposed rule, we incorporated the results of these reviews, as appropriate, into the final SSA report, which is the foundation for this proposed rule. Because we will consider all comments and information we receive during the comment period, our final determinations may differ from this proposal. Based on the new information we receive (and any comments on that new information), we may conclude that the species is endangered instead of threatened, or we may conclude that the species does not warrant listing as either an endangered species or a threatened species. Such final decisions would be a logical outgrowth of this proposal, as[[Page 3978]]long as we: (1) Base the decisions on the best scientific and commercial data available after considering all of the relevant factors; (2) do not rely on factors Congress has not intended us to consider; and (3) articulate a rational connection between the facts found and the conclusions made, including why we changed our conclusion.Previous Federal Actions Furbish's lousewort was listed as an endangered species on April 26, 1978 (43 FR 17910). We completed a recovery plan in 1983 (USFWS 1983) and revised it in 1991 (USFWS 1991). The revised recovery plan presented updated life-history and population information, and updated information on the threats to the species. A second revision recovery plan was signed on September 26, 2019 and on February 21, 2019, a 5-year status review was completed (USFWS 2019b) and concluded that Furbish's lousewort should be downlisted to a threatened species under the Act.I. Proposed Reclassification DeterminationBackground A thorough review of Furbish's lousewort is presented in the SSA report (USFWS 2020), found at [*http://www.regulations.gov*](http://www.regulations.gov) under Docket FWS-R5-ES-2019-0056, which is briefly summarized here.Species Information Furbish's lousewort was first named and described in 1882 (Watson, S. 1882, entire) and is recognized as a valid taxon. A thorough review of the taxonomy, life history, and ecology of Furbish's lousewort is presented in the SSA report. Furbish's lousewort is an herbaceous perennial plant that occurs on the intermittently flooded, ice-scoured banks of the St. John River. It is endemic to Maine with a few, small subpopulations in northwestern New Brunswick, Canada. The population of Furbish's lousewort is comprised of 20 subpopulations associated with suitable habitat that occurs along portions of a 225-kilometer (140-mile) section of the St. John River. The plant is recognized early in the growing season by a basal rosette of fern-like leaves. By mid-summer, mature plants produce one or more flowering stems that grow to about 50 to 80 centimeters (20 to 30 inches) in height. The stems have alternate, widely spaced, fern-like leaves along their length and are topped by a tight cluster (inflorescence) of small, yellow, tube-like flowers that bloom only a few at a time. Furbish's lousewort has two distinct growth stages: Vegetative (immature, nonflowering) individuals that grow as a basal rosette of leaves and reproductive (flowering) plants. Furbish's lousewort does not spread clonally, and plants are established exclusively by sexual reproduction and seed (Stirrett 1980, p. 23; Menges 1990, p. 53). Flowering occurs at a minimum of 3 years once plants reach a certain size leaf area. Reproductive plants emerge in May and produce an average of 2 to 3 flowering stems; each stem has one or more inflorescences, and each inflorescence has up to 25 flowers. Flowers bloom several at a time from about mid-July to the end of August (Stirrett 1980, p. 24; Menges et al. 1986). Furbish's lousewort is pollinated by a single species of bumble bee, the half-black bumble bee (Bombus vagans) (Macior 1978, entire). About 50 percent of flowers produce egg-shaped seed capsules that ripen in late-September after which the tiny (1 millimeter) seeds are dropped (Menges et al. 1985, 1986; Gawler 1983, p. 27; Gawler et al. 1986, entire). Seeds lack mechanisms for wind or animal dispersal, and most drop near the parent plant. Each mature plant tends to form a colony around itself. During spring floods, it is conceivable that some seeds may disperse down-river (Stirrett 1980, pp. 26-27; Menges 1990, p. 53). The seeds germinate in moist, cool microhabitats having minimal herbaceous or woody plant competition or leaf litter, such as moss-covered soil or parts of the river bank that are constantly wet. Furbish's lousewort lacks seed dormancy; seedlings result only from the previous year's reproduction (Menges 1990, p. 54). Seedlings emerge in June through August and have two true leaves during their first growing season (Gawler et al. 1987, entire). Like most species of Pedicularis, seedlings of Furbish's lousewort are obligate hemiparasites and obtain part of their nutrition from root attachments with a perennial host plant. The species seems to be a host-generalist, perhaps relying on nitrogen fixing host plants in the mineral poor soil in which it grows (Macior 1980, entire). The lifespan of adult flowering plants is uncertain.Recovery Criteria Section 4(f) of the Act directs us to develop and implement recovery plans for the conservation and survival of endangered and threatened species unless we determine that such a plan will not promote the conservation of the species. Recovery plans must, to the maximum extent practicable, include ``objective, measurable criteria which, when met, would result in a determination, in accordance with the provisions [of section 4 of the Act], that the species be removed from the list.'' Recovery plans provide a roadmap for us and our partners on methods of enhancing conservation and minimizing threats to listed species, as well as measurable criteria against which to evaluate progress towards recovery and assess the species' likely future condition. However, they are not regulatory documents and do not substitute for the determinations and promulgation of regulations required under section 4(a)(1) of the Act. A decision to revise the status of a species, or to delist a species is ultimately based on an analysis of the best scientific and commercial data available to determine whether a species is no longer an endangered species or a threatened species, regardless of whether that information differs from the recovery plan. There are many paths to accomplishing recovery of a species, and recovery may be achieved without all of the criteria in a recovery plan being fully met. For example, one or more criteria may be exceeded while other criteria may not yet be accomplished. In that instance, we may determine that the threats are minimized sufficiently and that the species is robust enough that it no longer meets the definition of an endangered species or a threatened species. In other cases, we may discover new recovery opportunities after having finalized the recovery plan. Parties seeking to conserve the species may use these opportunities instead of methods identified in the recovery plan. Likewise, we may learn new information about the species after we finalize the recovery plan. The new information may change the extent to which existing criteria are appropriate for identifying recovery of the species. The recovery of a species is a dynamic process requiring adaptive management that may, or may not, follow all of the guidance provided in a recovery plan. On June 29, 1983, the Service completed the first recovery plan for Furbish's lousewort (USFWS 1983). Following completion of this recovery plan, recovery activities enhanced our understanding about the life-history of the plant and about the populations. This information and the ***removal*** of the primary threat to the species at the time of listing (the proposed Dickey-Lincoln hydropower project) led to a revised recovery plan for Furbish's lousewort, which was made final on July 2, 1991 (USFWS 1991). The revised 1991 recovery plan includes criteria for downlisting Furbish's lousewort from endangered to threatened, but it does[[Page 3979]]not provide delisting criteria due to lack of information regarding the species' long-term population dynamics and viability. The 2019 5-year review (USFWS 2019a, pp. 2-3) states that, given the revised recovery plan is more than 25 years old, the downlisting criteria are no longer considered adequate; recent population data are not incorporated into the recovery criteria, and the plan lacks recent published and unpublished scientific information on Furbish's lousewort and its habitat. In the 2019 5-year review, we conclude that a change in the species' listing status to threatened is warranted because the Dickey-Lincoln hydropower project is no longer a threat, the species' population rebounded from several severe ice-scour events, the population is widely distributed, and a single catastrophic event is unlikely to extirpate the species. In September 2019, the Service completed the Recovery Plan for the Furbish's Lousewort (Pedicularis furbishiae), Second Revision (USFWS 2019b), which was developed using the information in the SSA report for the species (USFWS 2020). In light of the recommendation to reclassify Furbish's lousewort to a threatened species, the revised recovery plan includes criteria that describe the conditions indicative of a recovered species (delisting criteria). Specifically, the revised recovery plan contains two recovery criteria for delisting based on population status over a period of at least 30 years (three generations). The first criterion states that the metapopulation is viable, comprising a 30-year median of 4,400 flowering stems or greater, and distributed with a 30-year median of 2,800 flowering stems or greater upriver in at least 6 subpopulations with at least 3 good and 3 fair subpopulations, and a 30-year median of 1,600 flowering stems or greater downriver in at least 9 subpopulations with at least 3 good and 6 fair subpopulations. Once the upriver and downriver criteria are reached, the median number of flowering stems for each respective river section will remain stable or increase over a period of at least 30 years without augmentation, reintroduction, or hand-pollinating of plants. Additionally, in New Brunswick, there is a 30-year median of 1,100 plants distributed among at least 5 subpopulations. The second criterion states there is long-term habitat protection for all subpopulations in Maine that provides for the species' needs throughout its life cycle (USFWS 2019b, pp. 8-9). Based on the latest census (2018-2019), for criterion 1, the 30-year median for upriver subpopulations is 1,817 flowering stems and 983 for downriver subpopulations. In 2018-2019 there were 6 subpopulations, 5 good and 1 fair, in the upriver region and 3 subpopulations, 1 good and 2 fair, in the downriver region. In 2018-2019, the Maine population increased by 970 flowering stems (43%). Canadian subpopulations remain at or below historic lows of about 150 plants at 5 subpopulations, but few plants are flowering. For criterion 2, in 2019, The Maine Chapter of The Nature Conservancy purchased several areas of the St. John River corridor in 3 upriver townships. Currently, there is long-term habitat protection in 4 of 15 subpopulations. A total of 9.26 miles of 22.89 miles of Furbish's lousewort habitat is protected, mostly in the upriver region.Regulatory and Analytical FrameworkRegulatory Framework Section 4 of the Act (16 U.S.C 1533) and its implementing regulations (50 CFR part 424) set forth the procedures for determining whether a species is an ``endangered species'' or a ``threatened species.'' The Act defines an endangered species as a species that is ``in danger of extinction throughout all or a significant portion of its range,'' and a threatened species as a species that is ``likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.'' The Act requires that we determine whether any species is an ``endangered species'' or a ``threatened species'' because of any of the following factors: (A) The present or threatened destruction, modification, or curtailment of its habitat or range; (B) Overutilization for commercial, recreational, scientific, or educational purposes; (C) Disease or predation; (D) The inadequacy of existing regulatory mechanisms; or (E) Other natural or manmade factors affecting its continued existence. These factors represent broad categories of natural or human-caused actions or conditions that could have an effect on a species' continued existence. In evaluating these actions and conditions, we look for those that may have a negative effect on individuals of the species, as well as other actions or conditions that may ameliorate any negative effects or may have positive effects. We use the term ``threat'' to refer in general to actions or conditions that are known to or are reasonably likely to negatively affect individuals of a species. The term ``threat'' includes actions or conditions that have a direct impact on individuals (direct impacts), as well as those that affect individuals through alteration of their habitat or required resources (stressors). The term ``threat'' may encompass--either together or separately--the source of the action or condition or the action or condition itself. However, the mere identification of any threat(s) does not necessarily mean that the species meets the statutory definition of an ``endangered species'' or a ``threatened species.'' In determining whether a species meets either definition, we must evaluate all identified threats by considering the species' expected response, and the effects of the threats--in light of those actions and conditions that will ameliorate the threats--on an individual, population, and species level. We evaluate each threat and its expected effects on the species, then analyze the cumulative effect of all of the threats on the species as a whole. We also consider the cumulative effect of the threats in light of those actions and conditions that will have positive effects on the species, such as any existing regulatory mechanisms or conservation efforts. The Secretary determines whether the species meets the definition of an ``endangered species'' or a ``threatened species'' only after conducting this cumulative analysis and describing the expected effect on the species now and in the foreseeable future. The Act does not define the term ``foreseeable future,'' which appears in the statutory definition of ``threatened species.'' Our implementing regulations at 50 CFR 424.11(d) set forth a framework for evaluating the foreseeable future on a case-by-case basis. The term ``foreseeable future'' extends only so far into the future as the Services can reasonably determine that both the future threats and the species' responses to those threats are likely. In other words, the foreseeable future is the period of time in which we can make reliable predictions. ``Reliable'' does not mean ``certain''; it means sufficient to provide a reasonable degree of confidence in the prediction. Thus, a prediction is reliable if it is reasonable to depend on it when making decisions. It is not always possible or necessary to define foreseeable future as a particular number of years. Analysis of the foreseeable future uses the best scientific and commercial data available and should consider the timeframes applicable to the relevant threats and to the species' likely responses to those[[Page 3980]]threats in view of its life-history characteristics. Data that are typically relevant to assessing the species' biological response include species-specific factors such as lifespan, reproductive rates or productivity, certain behaviors, and other demographic factors.Analytical Framework The SSA report documents the results of our comprehensive biological status review of the best scientific and commercial data regarding the status of the species, including an assessment of the potential threats to the species. The SSA report does not represent a decision by the Service on whether Furbish's lousewort should be reclassified under the Act. It does, however, provide the scientific basis that informs our regulatory decisions, which involve the further application of standards within the Act and its implementing regulations and policies. The following is a summary of the key results and conclusions from the SSA report; the full SSA report can be found online, see Supporting Documents. To assess Furbish's lousewort viability, we used the three conservation biology principles of resiliency, redundancy, and representation (Shaffer and Stein 2000, pp. 306-310). Briefly, resiliency supports the ability of the species to withstand environmental and demographic stochastic events (for example, wet or dry, warm or cold years), redundancy supports the ability of the species to withstand catastrophic events (for example, droughts, large pollution events), and representation supports the ability of the species to adapt over time to long-term changes in the environment (for example, climate changes). In general, the more resilient and redundant a species is and the more representation it has, the more likely it is to sustain populations over time, even under changing environmental conditions. Using these principles, we identified the species' ecological requirements for survival and reproduction at the individual, population, and species levels, and described the beneficial and risk factors influencing the species' viability. The SSA process can be categorized into three sequential stages. During the first stage, we evaluated the individual species' life-history needs. The next stage involved an assessment of the historical and current condition of the species' demographics and habitat characteristics, including an explanation of how the species arrived at its current condition. The final stage of the SSA involved making predictions about the species' responses to positive and negative environmental and anthropogenic influences. Throughout all of these stages, we used the best available information to characterize viability as the ability of a species to sustain populations in the wild over time. We use this information to inform our regulatory decision.Summary of Biological Status and Threats In this discussion, we review the biological condition of the species and its resources, and the threats that influence the species' current and future condition, in order to assess the species' overall viability and the risks to that viability. To assess the resiliency of Furbish's lousewort, we reviewed the abundance of flowering and nonflowering individuals and colonization of populations through seed dispersal mechanisms; the dependency of populations on periodic ice scour and flooding; and the effects of climate change, and development. To assess the redundancy of Furbish's lousewort, we evaluated how the distribution and biological status of subpopulations contribute to the species' ability to withstand catastrophic events. Specifically, we examined how climate change and current and future development are likely to affect the number, sizes, and distribution of populations (USFWS 2020, pp. 38-39; 42-48; 52-59). To assess representation, we evaluated the environmental diversity within and among subpopulations.Summary of Current Condition Furbish's lousewort functions as a metapopulation. Unlike a continuous population, a metapopulation has spatially discrete local subpopulations, in which migration between subpopulations is significantly restricted. In the SSA report, we define subpopulations as separated by a mile or more of unsuitable habitat based primarily on the limitations of the species' pollinator, the half-black bumblebee. Studies of Bombus species typically exhibit foraging distances of less than 1 kilometer (0.62 miles) from their nesting sites. Based on this criterion, we identify 15 subpopulations of Furbish's lousewort in Maine and 5 in New Brunswick, Canada, that form the basis for our analysis of the current condition of the species. For our analysis, we first qualitatively assessed the subpopulations as ``good,'' ``fair,'' or ``poor,'' including the subpopulations attributes: abundance, density, and current status as compared to the site history. We designated sites where Furbish's lousewort is currently absent (locally extirpated) as ``very poor.'' Next, we evaluated each subpopulation according to three habitat criteria: The amount of potential habitat, the condition of the ***forested*** riparian buffer, and the prevalence of shoreline erosion. We selected these habitat criteria to describe habitat quality because of their influence on the species resource needs (USFWS 2020, p.11, table 2). We assigned a score of 3 (good), 2 (fair), 1 (poor), or 0 (very poor) to each subpopulation and habitat criterion (USFWS 2020, pp. 31-32). The rankings for the 15 subpopulations in Maine are 2 good, 2 fair to good, 3 fair, and 8 poor. On average, the upriver subpopulations rank higher than the downriver subpopulations because of the high quality habitat and low pressures from development. Six of the 15 subpopulations in Maine are currently extirpated (all downriver subpopulations). In New Brunswick, all 5 subpopulations rank as poor (USFWS 2020, pp. 33-36). There is marked difference in habitat conditions and stressors upriver and downriver. Upriver habitat is more extensive and occurs in a managed industrial ***forest***. Downriver habitats (including New Brunswick) are smaller and more fragmented.Risk Factors Based on the life-history and habitat needs of Furbish's lousewort, and in consultation with species' experts, as well as experts in botany, ice scour and flooding of the St. John River, and landscape ecology, we identify the potential stressors (negative influences), the contributing sources of those stressors, and how conservation measures to address those stressors are likely to affect the species' current condition and viability (USFWS 2020, pp. 21-31). We evaluate how these stressors may be currently affecting the species and whether, and to what extent, they would affect the species in the future (USFWS 2020, pp. 40-57). The stressors most likely to affect the viability of Furbish's lousewort are: (1) Development resulting in habitat loss, erosion, and fragmentation; and (2) climate change that causes the current trends of warmer winters that affect the ice dynamics, flooding, and overall disturbance regime of the St. John River. Historical ***land*** use patterns influence Furbish's lousewort habitat today; the ***land*** use upriver of the town of Allagash is undeveloped, while the downriver landscapes in Maine and farther downriver in New Brunswick are dominated by ***agriculture*** and small villages. Changes in ***land*** use on the[[Page 3981]]banks of the St. John River in downriver areas have occurred through the clearing of vegetation, especially trees, for ***agriculture***, individual house lots, and roads. These ***land*** use changes within the St. John River valley may have negatively affected habitat of some Furbish's lousewort subpopulations through ***removal*** or reduction of ***forested*** riparian buffers and subsequent loss of shade critical to the species' growth and reproduction. Areas cleared of ***forest***, and impermeable surfaces associated with development, have led to the erosion and subsidence of the unconsolidated glacial till soils, and caused slumping and erosion of Furbish's lousewort habitat. There are modest predicted trends of future development for the St. John River Valley that are described in the SSA Report (USFWS 2020, p. 47). Future development will likely occur in the center of larger towns and expand into some areas currently in ***agricultural*** ***land*** use, this could cause slumping and erosion in Furbish's lousewort habitat. Furbish's lousewort is identified as one of Maine's plant species most vulnerable to climate change (Jacobson et al. 2009, p. 33). The species depends on periodic disturbance of the riverbank from ice scour that is not too frequent or too infrequent and not too severe. Climate change is expected to affect the ice regime of northern rivers, including the St. John, by increasing the frequency and severity of ice scour and flood events (USFWS 2020, p. 23). River ice models for the St. John River demonstrate that key variables influencing the frequency and severity of ice scour, jamming, and flooding are caused by midwinter temperatures above freezing, midwinter precipitation in the form of rain, and increasing river flows (Beltaos and Prowse 2009, pp. 134-137). Beltaos (2002, entire) developed a hydroclimatic analysis for the upper St. John River using long-term climate and flow records. He documented that a small rise in winter air temperatures over the past 80 years has resulted in a substantial increase in the number of mild winter days and the amount of winter rainfall, which were previously rare occurrences in this region. These two factors augment river flows, causing increased breakup of ice cover, increased peak flows in late winter, and a higher frequency of spring ice jams and flooding (USFWS 2020, p. 24). Increasing summer temperatures may also affect Furbish's lousewort. The climate envelope of the species has not been described, but its closest genetic relatives are all arctic plants that require cool, moist environments. We are uncertain about the maximum summer temperatures and moisture deficits that Furbish's lousewort can withstand (USFWS 2020, p. 27). Several conservation actions are in place and may reduce some of the stressors to Furbish's lousewort or provide habitat protection (see Conservation Efforts for Furbish's lousewort, for more information).Summary of Future Conditions Analysis We assess two timeframes for characterizing the condition of Furbish's lousewort in the future. We selected the years 2030 and 2060, as a period for which we can reasonably project effects of the stressors and plausible conservation efforts. Climate change information for these timeframes is based on the available information contained in climate predicting models provided through the U.S Geological Survey (USGS) Climate Change Viewer, Summary of the Upper St. John River Watershed, Aroostook County, Maine (USGS 2017a, b, entire). The timeframes of 2030 and 2060 capture approximately 1 to 2, and 4 to 5 generations of Furbish's lousewort, respectively. Development information for this timeframe is available in municipal comprehensive plans (Town of Fort Kent 2012, entire) and The University of Maine Sustainability Solutions Initiative (USFWS 2020, p. 41). For each of the two timeframes, 2030 and 2060, we developed three future scenarios: continuation, best case, and a worse case. We provide a range of reasonable, plausible effects for development and climate change. For climate change scenarios, we use data from representative concentration pathways (RCPs) of greenhouse gas (GHG) concentration trajectories adopted by the International Panel on Climate Change (IPCC). The three RCPs selected, RCP 2.6, RCP 4.5, and RCP 8.5, reflect a wide range of possible changes in future anthropogenic greenhouse gas ***emissions***. RCP 2.6 is a scenario that assumes that global greenhouse gas ***emissions*** have peaked and will decline after 2020. The continuation scenario assumes moderate increases in GHG ***emissions*** (RCP 4.5), moderate increases in development downriver, and conservation measures continuing or being reduced slightly. The best case scenario assumes low GHG ***emissions*** (RCP 2.6), conservation measures remaining in place, and no further development downriver. The worse case scenario assumes high GHG ***emissions*** and moderate increases of GHG ***emissions*** into the future (RCP 8.5), modest levels of development, and reduced conservation measures (USFWS 2020, p. 48). All future predictions are uncertain; therefore, we qualify them using relative terms of likelihood; adopted terminology specified by the IPCC (2014). Based on the future analysis, we predict that by 2030 there is a higher likelihood that, in all three scenarios, the metapopulation of the Furbish's lousewort will continue to decline due to local extirpations of downriver subpopulations. By 2060, we predict that it is likely that the overall viability of the metapopulation will be greatly reduced from current conditions, and a few subpopulations will persist upriver in Maine. We predict that there is a high likelihood that in both the continuation and worse case scenarios the metapopulation will no longer be viable; it will be extirpated throughout most of its range; and the few plants that remain would be concentrated at upriver sites. We note that, by using the SSA framework to guide our analysis of the scientific information documented in the SSA report, we have not only analyzed individual effects on the species, but we have also analyzed their potential cumulative effects. We incorporate the cumulative effects into our SSA analysis when we characterize the current and future condition of the species. Our assessment of the current and future conditions encompasses and incorporates the threats individually and cumulatively. Our current and future condition assessment is iterative because it accumulates and evaluates the effects of all the factors that may be influencing the species, including threats and conservation efforts. Because the SSA framework considers not just the presence of the factors, but to what degree they collectively influence risk to the entire species, our assessment integrates the cumulative effects of the factors and replaces a standalone cumulative effects analysis. The SSA report contains a more detailed discussion on our evaluation of the biological status of the species and the influences that may affect its continued existence. Our conclusions are based upon the best available scientific and commercial data, including the judgments of the species' experts and peer reviewers. See the SSA report for a complete list of the species' experts and peer reviewers and their affiliations.Existing Regulatory Mechanisms Section 4(b)(1)(A) of the Act requires that the Service take into account ``those efforts, if any, being made by any State or foreign nation, or any political subdivision of a State or foreign nation, to protect such species.'' In relation to[[Page 3982]]Factor D under the Act, we interpret this language to require the Service to consider relevant Federal, State, and Tribal laws, regulations, and other such binding legal mechanisms that may ameliorate or exacerbate any of the threats we describe in threat analyses under the other four factors or otherwise enhance the species' conservation. We give the strongest weight to statutes and their implementing regulations and to management direction that stems from those laws and regulations. Municipal shoreline zoning in Maine now provides partial protection of Furbish's lousewort habitat (USFWS 2020, Appendix 1). As established by State law in 2013, the shoreline zone extends to 250 feet from the high water line all along the St. John River. Zoning prohibits clear cutting within 50 feet of the river; openings located greater than 50 feet from the river (or 75 feet from the river for a few subpopulations in organized towns) are restricted to a maximum of 0.3 acres, and no more than 40 percent of the ***forest*** in the 250-foot zone can be harvested in a 10-year period (Maine Department of Environmental Protection Mandatory Shoreland Zoning Title 38, Chapter 3, Sec. Sec. 435-449). Organized towns have the option to designate lousewort habitats as resource protection subdistricts, which would provide more stringent measures. Currently, no towns have designated any resource protection subdistricts for the lousewort (USFWS 2020, p. 28). The New Brunswick Clean Water Act provides shoreline protections that convey a benefit to the Furbish's lousewort in Canada. The New Brunswick Department of Environmental and Local Government acts as the regulatory entity responsible for issuing all watercourse alteration permits. Guidelines for implementing the regulations specify that no heavy equipment may be operated within 15 meters of the bank of a watercourse, no ground disturbance may occur within 30 meters of a watercourse, and only 30 percent of the total merchantable trees may be removed from a 30-meter buffer zone every 10 years. All activities taking place within 30 meters of a watercourse that is either one hectare or larger in area or that involve the ***removal***, deposit, or disturbance of the water, soil, or vegetation require a permit (USFWS 2020, p. 29). Several parcels that support Furbish's lousewort have permanent protection. Since 2001, the New England Forestry Foundation has had a 754,673-acre conservation easement on ***lands*** along the St. John River where Furbish's lousewort occurs. The easement protects approximately 6.2 percent of the total population in Maine and restricts development rights in perpetuity. In 2019, The Maine Chapter of The Nature Conservancy purchased several areas of the St. John River corridor. The Maine Bureau of Parks and ***Lands*** (Bureau) owns a large unit in the town of Allagash that provides several hundred feet of Furbish's lousewort habitat, approximately 2 percent of the population in Maine. The Bureau's integrated resource policy requires that MBPL promote the conservation of federally listed species. One of the five subpopulations in New Brunswick is permanently protected (USFWS 2020, pp. 29-30). The Furbish's lousewort was listed on Canada's Schedule 1 of the Species at Risk Act (SARA) in June 2003 and was initially designated as endangered by the Committee on the Status for Endangered Wildlife in Canada (COSEWIC) in 1980. With this proclamation, protection and recovery measures were developed and implemented. The Furbish's lousewort is protected by New Brunswick's Endangered Species Act. Under this Act, it is prohibited to kill, harm or collect this species or disturb its habitat (Government of New Brunswick 2020). As discussed, Furbish's lousewort and its habitat receives some protection from regulatory mechanisms in both the United States and Canada. In the U.S , the State of Maine and municipal regulations provide partial protection for shorefronts, which includes protections of riparian habitats where the Lousewort could be located. These state and municipal regulations are enforced through local and state ordinances. They were not designed to protect Furbish lousewort from direct take, and as such, the species is not regulated from direct take on private ***lands*** in Maine. In Canada, where populations are at historic lows, the New Brunswick regulates heavy equipment use and buffer zones, as well as, prohibits take of Furbish's lousewort through the New Brunswick Endangered Species Act. Furbish's lousewort is further regulated as a schedule 1 species at risk under SARA. Collectively these regulations provide protections in Canada for the Furbish's lousewort and its habitat.Conservation Efforts for Furbish's lousewort Since Furbish's lousewort was listed in 1978, various recovery actions have improved the status of the species. For example: In 1986, Congress deauthorized the construction of the Dickey-Lincoln hydropower project (Pub. L. 99-662), which was the primary threat to the species at the time of listing (USFWS 2020, p. 27). St. John River Resource Protection Plan (Plan): Industrial ***forest*** landowners voluntarily signed the Plan beginning in 1982, with revisions in 1992, 2002, and 2012. The intent of the Plan is to protect the natural values and traditional recreational uses of the river. The primary value of the Plan to the conservation of Furbish's lousewort is that it does not allow commercial and residential development, subdivisions, water impoundments, and utility projects on ***land*** along the St. John River owned by signatory landowners. Since 2009, the Service's Partners for Fish and Wildlife Program has partnered with a small business owner in Aroostook County, Maine to restore riparian ***forests*** that are potential habitat for Furbish's lousewort. Through this partnership, they have collaborated with 37 landowners encompassing 40 parcels). To date, $110,000 has been invested, and trees were planted along 4.6 miles of river, creating 55.2 acres of ***forested*** riparian habitat (USFWS 2020, pp. 30-31). The Furbish's lousewort occurs only on private ***lands*** in Canada. Therefore, private landowner stewardship is vitally important. Several nonprofit organizations collaborated to create the George Stirret Nature Preserve, a protected area around one population of lousewort. The Nature Trust of New Brunswick contacted private landowners surrounding the remaining areas where Furbish's lousewort grows and developed 15 voluntary private landowner stewardship agreements to encourage and support stewardship practices (Dowding 2020). These recovery actions and other supporting data that we analyzed indicate that some of the threats identified at the time of listing have been ameliorated or reduced in areas occupied by Furbish's lousewort, and that the species' status has improved, primarily due to the Congressional deauthorization of the Dickey-Lincoln hydropower project. However, more recent threats associated with climate change may impede the plant's ability to recover.Determination of Furbish's Lousewort Status Section 4 of the Act (16 U.S.C 1533) and its implementing regulations (50 CFR part 424) set forth the procedures for determining whether a species meets[[Page 3983]]the definition of endangered species or a threatened species. The Act defines an ``endangered species'' as a species that is ``in danger of extinction throughout all or a significant portion of its range,'' and ``threatened species'' as a species that is ``likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.'' For a more detailed discussion on the factors considered when determining whether a species meets the definition of an endangered species or a threatened species and our analysis on how we determine the foreseeable future in making these decisions, please see Regulatory and Analytical Framework.Status Throughout All of Its Range After evaluating threats to the species and assessing the cumulative effect of the threats under the section 4(a)(1) factors, we determined that the Furbish's lousewort no longer meets the definition of endangered. This determination is based on the following: The ***removal*** of the primary threat at the time of listing, the Dickey-Lincoln hydropower project; the ability of the species to rebound after several severe ice scouring events; the species continues to be found at sites beyond its known distribution at the time of the original listing; and over 25 percent of the overall population is located on protected ***lands***. Additionally, long-term census data demonstrate that the Furbish's lousewort is resilient to stochastic events such as periodic ice scour and flooding. Redundancy in the downriver subpopulations has diminished, though the conditions in the upriver subpopulations has remained constant. Thus, after assessing the best available information, we conclude that the Furbish's lousewort no longer meets the Act's definition of an endangered species. Therefore, we proceed with determining whether Furbish's lousewort meets the Act's definition of a threatened species. The information indicates that, at the species level, development (Factor A), that causes habitat loss, erosion, and fragmentation, and climate change (Factor E), that causes the current trends of warmer winters that affect the ice dynamics, flooding, and the overall disturbance regime of the St. John River, are the most influential factors affecting Furbish's lousewort now and into the future. The existing state and Canadian regulations (Factor D) are not considered adequate to alleviate the identified threats. Furbish's lousewort is listed as endangered by the State of Maine; however, the lack of take prohibitions for plants under this law limits its ability to protect the species from the habitat-based threats that it faces. Canada's SARA and New Brunswick's Act have a provision to protect species designated as endangered when found on federal ***lands***; however, the Furbish's lousewort does not occur on any federal ***lands*** in Canada. In both future timeframes, 2030 and 2060, under our projected ``continuation'' and ``worse case'' scenarios, we predict the species' resiliency, redundancy, and representation to diminish significantly, indicating that the species is likely to become in danger of extinction within the next 40 years. While the downriver subpopulations are predicted to experience the most diminishment, even the current upriver stronghold is predicted to decline, indicating an increased risk of extinction of the entire metapopulation beyond the near term. Furbish's lousewort has a particular niche and appears to have very little adaptation potential. Hence, changes to the ice-scour regime, due to climate change, are highly likely to have significant impacts to the species within the foreseeable future. Under both timeframes analyzed, the downriver subpopulations are predicted to be in poor condition, thereby putting extra importance on the upriver subpopulations to maintain the species' viability. However, even under the 2030 timeframe, the upriver subpopulations are predicted to be significantly diminished. Thus, after assessing the best available information, we conclude that Furbish's lousewort is not currently in danger of extinction but is likely to become in danger of extinction within the foreseeable future, throughout all of its range.Status Throughout a Significant Portion of Its Range Under the Act and our implementing regulations, a species may warrant listing if it is in danger of extinction or likely to become so in the foreseeable future throughout all or a significant portion of its range. The court in Center for Biological Diversity v. Everson, 2020 WL 437289 (D.D.C Jan. 28, 2020) (Center for Biological Diversity), vacated the aspect of the Final Policy on Interpretation of the Phrase ``Significant Portion of Its Range'' in the Endangered Species Act's Definitions of ``Endangered Species'' and ``Threatened Species'' (79 FR 37578; July 1, 2014) that provided that the Services do not undertake an analysis of significant portions of a species' range if the species warrants listing as threatened throughout all of its range. Therefore, we proceed to evaluating whether the species is endangered in a significant portion of its range-that is, whether there is any portion of the species' range for which both (1) the portion is significant; and, (2) the species is in danger of extinction in that portion. Depending on the case, it might be more efficient for us to address the ``significance'' question or the ``status'' question first. We can choose to address either question first. Regardless of which question we address first, if we reach a negative answer with respect to the first question that we address, we do not need to evaluate the other question for that portion of the species' range. Following the court's holding in Center for Biological Diversity, we now consider whether there are any significant portions of the species' range where the species is in danger of extinction now (i.e , endangered). In undertaking this analysis for Furbish's lousewort, we choose to address the status question first-we consider information pertaining to the geographic distribution of both the species and the threats that the species faces to identify any portions of the range where the species is endangered. The statutory difference between an endangered species and a threatened species is the time horizon in which the species becomes in danger of extinction; an endangered species is in danger of extinction now while a threatened species is not in danger of extinction now but is likely to become so in the foreseeable future. Thus, we considered the time horizon for the threats that are driving the Furbish's lousewort to warrant listing as a threatened species throughout all of its range. We examined the following threats: Development and climate change, including cumulative effects. As stated in the section Status Throughout All of Its Range above, we predict the species is likely to become in danger of extinction within the next 40 years. We recognize that the downriver subpopulations are small, and habitat is less extensive and fragmented. However, the risk of extinction to the population is low, and does not currently meet the threshold of endangered. We selected 40 years for the foreseeable future as a period for which we can reasonably project effects of the stressors and potential conservation efforts. The time frame of 2060 will capture approximately four to five generations of the Furbish's lousewort. We believe this timeframe will allow observation of changes in the condition of the species without increasing uncertainty about the nature and intensity of stressors beyond a reasonable level.[[Page 3984]] The best scientific and commercial data available indicate that the time horizon on which the threats of development and climate change to Furbish's lousewort and the responses to those threats are likely to occur is the foreseeable future. In addition, the best scientific and commercial data available do not indicate that any of threats of development and climate change to Furbish's lousewort and the response to those threats are more immediate in any portions of the species' range. Therefore, we determine that the Furbish's lousewort is not in danger of extinction now in any portion of its range, but that the species is likely to become in danger of extinction within the foreseeable future throughout all of its range. This is consistent with the courts' holdings in Desert Survivors v. Department of the Interior, No. 16-cv-01165-JCS, 2018 WL 4053447 (N.D Cal. Aug. 24, 2018), and Center for Biological Diversity v. Jewell, 248 F. Supp. 3d, 946, 959 (D. Ariz. 2017).Determination of Status Our review of the best available scientific and commercial information indicates that Furbish's lousewort meets the definition of a threatened species. Therefore, we propose downlisting Furbish's lousewort as a threatened species in accordance with sections 3(20) and 4(a)(1) of the Act.II. Proposed Rule Issued Under Section 4(d) of the ActBackground Section 4(d) of the Act contains two sentences. The first sentence states that the ``Secretary shall issue such regulations as he deems necessary and advisable to provide for the conservation'' of species listed as threatened. The U.S Supreme Court has noted that statutory language like ``necessary and advisable'' demonstrates a large degree of deference to the agency (see Webster v. Doe, 486 U.S 592 (1988)). Conservation is defined in the Act to mean the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to the Act are no longer necessary. Additionally, the second sentence of section 4(d) of the Act states that the Secretary may by regulation prohibit with respect to any threatened species any act prohibited under section 9(a)(1), in the case of fish or wildlife, or section 9(a)(2), in the case of plants. Thus, the combination of the two sentences of section 4(d) provides the Secretary with wide latitude of discretion to select and promulgate appropriate regulations tailored to the specific conservation needs of the threatened species. The second sentence grants particularly broad discretion to the Service when adopting the prohibitions under section 9. The courts have recognized the extent of the Secretary's discretion under this standard to develop rules that are appropriate for the conservation of a species. For example, courts have upheld rules developed under section 4(d) as a valid exercise of agency authority where they prohibited take of threatened wildlife or include a limited taking prohibition (see Alsea Valley Alliance v. Lautenbacher, 2007 U.S Dist. Lexis 60203 (D. Or. 2007); Washington Environmental Council v. National Marine Fisheries Service, 2002 U.S Dist. Lexis 5432 (W.D Wash. 2002)). Courts have also upheld 4(d) rules that do not address all of the threats a species faces (see State of Louisiana v. Verity, 853 F.2d 322 (5th Cir. 1988)). As noted in the legislative history when the Act was initially enacted, ``once an animal is on the threatened list, the Secretary has an almost infinite number of options available to him with regard to the permitted activities for those species. He may, for example, permit taking, but not importation of such species, or he may choose to forbid both taking and importation but allow the transportation of such species'' (H.R Rep. No. 412, 93rd Cong., 1st Sess. 1973). Exercising this authority under section 4(d), the Service has developed a proposed species-specific 4(d) rule that is designed to address the threats and conservation needs of Furbish's lousewort. Although the statute does not require the Service to make a ``necessary and advisable'' finding with respect to the adoption of specific prohibitions under section 9, we find that this rule as a whole satisfies the requirement in section 4(d) of the Act to issue regulations deemed necessary and advisable to provide for the conservation of Furbish's lousewort. As discussed above in the Determination section, the Service has concluded that Furbish's lousewort is likely to become in danger of extinction within the foreseeable future primarily due to climate change and development. The provisions of this proposed 4(d) rule would promote conservation of Furbish's lousewort by deterring certain activities that would negatively impact the species in knowing violation of any law or regulation of the State of Maine, including any State trespass laws. The provisions of this proposed 4(d) rule are one of many tools that the Service would use to promote the conservation of Furbish's lousewort. This proposed 4(d) rule would apply only if and when the Service makes final the reclassification of Furbish's lousewort as a threatened species.Provisions of the Proposed 4(d) Rule This proposed 4(d) rule would provide for the conservation of Furbish's lousewort by prohibiting the following activities, except as otherwise authorized: ***Removal*** and reduction to possession from areas under Federal jurisdiction; malicious damage or destruction on any such area; or ***removal***, cutting, digging up, or damage or destruction on any other area in knowing violation of any law or regulation of any State or in the course of any violation of a State criminal trespass law. While ***removal*** and reduction to possession from areas under Federal jurisdiction is not identified as an existing threat to Furbish's lousewort, prohibiting this activity would maintain a deterrent that may become necessary in the future to support recovery of the species (e.g , should a Federal agency seek to conserve a population through ***land*** or easement acquisition). As discussed above under Summary of Biological Status and Threats, climate change and development are affecting the status of Furbish's lousewort. Indirect effects associated with development, including loss of shade critical to growth and reproduction due to reduction of the ***forested*** riparian buffer, and erosion of habitat due to clearing of ***forested*** areas and runoff from creation of impermeable surfaces, have the potential to impact Furbish's lousewort. Prohibiting certain activities, when in knowing violation of State law or regulation, would complement State efforts to conserve the species. Providing these protections would help preserve the species' remaining subpopulation; slow its rate of decline; and decrease synergistic, negative effects from other stressors. We may issue permits to carry out otherwise prohibited activities, including those described above, involving threatened plants under certain circumstances. Regulations governing permits for threatened plants are codified at 50 CFR 17.72, which states that the Director may issue a permit authorizing any activity otherwise prohibited with regard to threatened species. That regulation also states that the permit shall be governed by the provisions of Sec. 17.72 unless a special rule applicable to the plant is provided in Sec. Sec. 17.73 to 17.78 We interpret that second sentence to mean that permits for threatened species are[[Page 3985]]governed by the provisions of Sec. 17.72 unless a special rule provides otherwise. We recently promulgated revisions to Sec. 17.71 providing that Sec. 17.71 will no longer apply to plants listed as threatened in the future. We did not intend for those revisions to limit or alter the applicability of the permitting provisions in Sec. 17.72, or to require that every special rule spell out any permitting provisions that apply to that species and special rule. To the contrary, we anticipate that permitting provisions would generally be similar or identical for most species, so applying the provisions of Sec. 17.72 unless a special rule provides otherwise would likely avoid substantial duplication. Moreover, this interpretation brings Sec. 17.72 in line with the comparable provision for wildlife at 50 CFR 17.32, in which the second sentence states that such permit shall be governed by the provisions of this section unless a special rule applicable to the wildlife, appearing in Sec. Sec. 17.40 to 17.48, of this part provides otherwise. Under 50 CFR 17.12 with regard to threatened plants, a permit may be issued for the following purposes: for scientific purposes, to enhance propagation or survival, for economic hardship, for botanical or horticultural exhibition, for educational purposes, or for other purposes consistent with the purposes and policy of the Act. Additional statutory exemptions from the prohibitions are found in sections 9 and 10 of the Act. The Service recognizes the special and unique relationship with our State natural resource agency partners in contributing to conservation of listed species. State agencies often possess scientific data and valuable expertise on the status and distribution of endangered, threatened, and candidate species of wildlife and plants. State agencies, because of their authorities and close working relationships with local governments and landowners, are in a unique position to assist the Service in implementing all aspects of the Act. In this regard, section 6 of the Act provides that the Service shall cooperate to the maximum extent practicable with the States in carrying out programs authorized by the Act. Therefore, in accordance with 50 CFR 17.71(b), any person who is a qualified employee or agent of a State conservation agency that is a party to a cooperative agreement with the Service in accordance with section (6)(c) of the Act and who is designated by his or her agency for such purposes would be able to conduct activities designed to conserve Furbish's lousewort that may result in otherwise prohibited activities without additional authorization. Nothing in this proposed 4(d) rule would change in any way the recovery planning provisions of section 4(f) of the Act, the consultation requirements under section 7 of the Act, or the ability of the Service to enter into partnerships for the management and protection of Furbish's lousewort. However, interagency cooperation may be further streamlined through planned programmatic consultations for the species between Federal agencies and the Service. We ask the public, particularly the State agencies and other interested stakeholders that may be affected by the proposed 4(d) rule, to provide comments and suggestions regarding additional guidance and methods that the Service could provide or use, respectively, to streamline the implementation of this proposed 4(d) rule (see Information Requested, above).III. Required DeterminationsClarity of This Proposed Rule We are required by Executive Orders 12866 and 12988 and by the Presidential Memorandum of June 1, 1998, to write all rules in plain language. This means that each rule we publish must: (1) Be logically organized; (2) Use the active voice to address readers directly; (3) Use clear language rather than jargon; (4) Be divided into short sections and sentences; and (5) Use lists and tables wherever possible. If you feel that we have not met these requirements, send us comments by one of the methods listed in ADDRESSES. To better help us revise the rule, your comments should be a specific as possible. For example, you should tell us the numbers of the sections or paragraphs that are unclearly written, which sections or sentences are too long, the sections where you feel lists or tables would be useful, etc.National Environmental Policy Act (42 U.S.C 4321 et seq.) We have determined that environmental assessments and environmental impact statements, as defined under the authority of the National Environmental Policy Act (NEPA; 42 U.S.C 4321 et seq.), need not be prepared in connection with determining and implementing a species' listing status under the Endangered Species Act. We published a notice outlining our reasons for this determination in the Federal Register on October 25, 1983 (48 FR 49244)Government-to-Government Relationship With Tribes In accordance with the President's memorandum of April 29, 1994 (Government-to-Government Relations with Native American Tribal Governments; 59 FR 22951), Executive Order 13175 (Consultation and Coordination with Indian Tribal Governments), and the Department of the Interior's manual at 512 DM 2, we readily acknowledge our responsibility to communicate meaningfully with recognized Federal Tribes on a government-to-government basis. In accordance with Secretarial Order 3206 of June 5, 1997 (American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act), we readily acknowledge our responsibilities to work directly with Tribes in developing programs for healthy ecosystems, to acknowledge that Tribal ***lands*** are not subject to the same controls as Federal public ***lands***, to remain sensitive to Indian culture, and to make information available to Tribes. There are two federally recognized Tribes in northern Maine; however, no subpopulations of Furbish's lousewort occur on Tribal ***lands***.References Cited A complete list of references cited in this rulemaking is available on the internet at [*http://www.regulations.gov*](http://www.regulations.gov) and upon request from the Maine Ecological Services Field Office (see FOR FURTHER INFORMATION CONTACT).Authors The primary authors of this proposed rule are staff members of the Northeast Regional Office and the Maine Ecological Services Field Office.List of Subjects in 50 CFR Part 17 Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, Transportation.Proposed Regulation Promulgation Accordingly, we propose to amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as set forth below:PART 17--ENDANGERED AND THREATENED WILDLIFE AND PLANTS01. The authority citation for part 17 continues to read as follows: Authority: 16 U.S.C 1361-1407; 1531-1544; and 4201-4245, unless otherwise noted.02. Amend Sec. 17.12(h) by revising the entry for ``Pedicularis furbishiae'' under FLOWERING PLANTS in the List of[[Page 3986]]Endangered and Threatened Plants to read as follows:Sec. 17.12 Endangered and threatened plants.\* \* \* \* \* (h) \* \* \*---------------------------------------------------------------------------------------------------------------- Listing citations and Scientific name Common name Where listed Status applicable rules---------------------------------------------------------------------------------------------------------------- Flowering Plants \* \* \* \* \* \* \* \* \*Pedicularis furbishiae.......... Furbish's lousewort Wherever found..... T 43 FR 17910, 4/26/1978; [Federal Register citation of the final rule]; 50 CFR 17.73(d).\4d\ \* \* \* \* \* \* \* \* \*----------------------------------------------------------------------------------------------------------------03. Add Sec. 17.73 to read as follows:Sec. 17.73 Special rules--flowering plants. (a) [Reserved] (b) [Reserved] (c) [Reserved] (d) Pedicularis furbishiae (Furbish's lousewort)--(1) Prohibitions. Except as provided under paragraph (d)(2) of this section, you may not ***remove*** and reduce to possession the species from areas under Federal jurisdiction; maliciously damage or destroy the species on any such area; or ***remove***, cut, dig up, or damage or destroy the species on any other area in knowing violation of any law or regulation of any State or in the course of any violation of a State criminal trespass law. (2) Exceptions from prohibitions. The following exceptions from the prohibitions apply to this species: (i) You may conduct activities authorized by permit under Sec. 17.72 (ii) Qualified employees or agents of the Service or a State conservation agency may conduct activities authorized under Sec. 17.71(b).Aurelia SkipwithDirector,U.S Fish and Wildlife Service.[FR Doc. 2020-28978 Filed 1-14-21; 8:45 am]BILLING CODE 4333-15-P

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**End of Document**



[***EU urged to strengthen ETS to reach 2030 climate goals***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:618W-GSX1-JCF9-40GR-00000-00&context=1516831)

EurActiv.com

November 13, 2020 Friday

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**Length:** 1373 words

**Byline:** Kira Taylor

**Highlight:** A strengthened ***emissions*** trading scheme (ETS) will be vital to drive further CO2 reductions in the European Union as the bloc discusses an increase of its 2030 climate ***target***, policymakers say.

**Body**

European Commission President Ursula von der Leyen announced plans in September to ***target*** a 55% cut in greenhouse gas ***emissions*** by 2030 as part of a broader European Green Deal programme aimed at reaching "climate neutrality" by mid-century.

A broad review of EU climate legislation is planned for June next year to achieve this objective, which will include a revision of the ETS, the EU's flagship carbon trading scheme.

"It is of upmost importance to strengthen the current ETS by aligning the ***emissions*** ceiling with the increased ***target*** for 2030," said Sophie van Eck from the Dutch Permanent Representation to the EU, who spoke at a [*EURACTIV event*](https://events.euractiv.com/event/info/the-2030-climate-target-plan-what-will-it-take-to-reach-the-target) earlier this week.

The ETS has already meant coal is less viable than wind and solar power. But although it has driven change towards greener energy, policymakers say it needs to be updated again to further boost renewables and put Europe on track to reaching climate neutrality by 2050, the EU's stated objective.

"Many of the political and legal frameworks that govern climate policies, such as the ETS, were adopted quite recently after the Paris Agreement and were not even in the vicinity of being Paris compliant," remarked Jakop Dalunde, a Swedish MEP from the Greens/EFA political group in the European Parliament.

The proposed European Climate Law, which enshrines the EU's 2050 climate neutrality goal into legislation, is a step in the right direction but there is ground to make up, especially in the transport sector where ***emissions*** are still increasing, Dalunde added.

To reach the 2030 objective, the Commission says the share of renewable energies must double to around 38-40% of the EU's energy mix, up from around 20% currently. The EU's current ***target***, agreed in 2018 after two years of strenuous talks, is to grow renewables up to 32% by 2030, an objective which already sounded ambitious at the time.

[***'We can do it!': EU chief announces 55% emissions reduction target for 2030***](https://www.euractiv.com/section/climate-environment/news/we-can-do-it-eu-chief-announces-55-emissions-reduction-target-for-2030/)

European Commission President Ursula von der Leyen announced plans on Wednesday (16 September) to ***target*** a 55% cut in greenhouse gas ***emissions*** by 2030 as part of a broader European Green Deal programme aimed at reaching "climate neutrality" by mid-century.

But reaching the EU's updated 2030 climate goals will require efforts from across the entire economy, not just the energy sector, policymakers say.

"We need all the sectors in the economy to contribute to this very high ***target***, so we cannot talk about energy only," said Cristina Lobillo Borrero, director of energy policy at the European Commission's energy department.

"Particularly in the road transport sector, greenhouse gas ***emissions*** are increasing. And we cannot forget ***agriculture*** as well," she added, saying so-called 'carbon sinks' -  ***forests*** and oceans - will "need to do a significant effort" to increase their capacity to absorb CO2 from the atmosphere.

The European Council, the body bringing together the EU's 27 heads of states, is still debating the bloc's overall climate ***target*** for 2030. While the Commission has put forward a 55% greenhouse gas reduction goal, [*the European Parliament voted to raise the level of ambition to 60%*](https://www.euractiv.com/section/energy-environment/news/eu-parliament-votes-for-60-carbon-emissions-cut-by-2030/).

"It is clear that higher ***targets*** will need higher financial support," Borrero said. "The challenge now is to make sure that this takes place as soon as possible."

A 55% climate ***target*** is perfectly possible to achieve and needs a rapid build-up of renewable electricity generation, according to Matthias Buck from Agora Energiewende, a German think tank.

"In order for this to happen, we need governments across the continent to do their homework to put in place the regulatory frameworks and the financing conditions to have this scaling of renewable happen at the speed it needs to happen and as cheap as possible," he said.

Across Europe, wholesale electricity prices have been depressed by the advent of cheap renewables like solar and wind. To boost renewables even further, a level playing field must be restored against fossil fuels by ***removing*** taxes and levies currently slapped on electricity, some argue.

"The sooner we move, the better the ***emissions*** are reduced and the more likely it is we achieve the final objective," said Elena León Muñoz from Spanish energy utility Iberdrola, which supported the EURACTIV event.

[***Europe's new climate plan heralds energy 'transformation'***](https://www.euractiv.com/section/energy/news/europes-new-climate-plan-heralds-energy-transformation/)

Meeting the EU's proposed new climate ***targets*** for 2030 will require a "transformation" of the bloc's energy system, with a renewed focus on renewables and further efforts to cut fossil fuels in buildings, transport and industry, the European Commission has said.

**Energy efficiency**

To underpin the shift to renewables and meet the bloc's new 2030 goals, the European Commission is also looking to raise the EU's energy efficiency ***target*** to 38-39%, up from a ***target*** of 32.5% currently.

That will be a tall order. EU member states have been dragging their feet on energy savings and have [*repeatedly failed to meet energy efficiency* ***targets***](https://www.euractiv.com/section/energy/news/eu-countries-urged-to-build-on-renovation-wave-to-fix-failing-efficiency-targets/), which are currently not legally-binding.

But there are reasons to believe Europe could meet the objective this time, thanks in part to a building "renovation wave", [*which the European Commission launched in October*](https://www.euractiv.com/section/energy/news/eu-launches-renovation-wave-for-greener-more-stylish-buildings/).

Even so, Swedish MEP Dalunde warned against one-size-fits-all solutions for buildings across the EU, saying regional differences need to be taken into account. Buildings in southern Europe "are bleeding energy" and uniform regulations risk worsening energy poverty in those areas, warned Dalunde, who called instead for using EU funds to renovate entire neighbourhoods.

"Only using regulation and ***targets*** to ask for energy efficiency is not the best way to do it," Dalunde said. "It's much better to create economic incentives for stakeholders to do it themselves and use raised revenues through those economic incentives to support technology and pilot projects."

Muñoz, for her part, said EU funding in areas like southern Europe would be better invested in electrification rather than big housing renovations projects. According to EU projections, [*a  doubling of the share of electricity*](https://www.euractiv.com/section/electricity/news/europe-needs-to-double-electricity-share-to-meet-climate-goals-eu-official/) in EU energy consumption will be necessary to achieve the 2050 climate neutrality goal.

"Economically, it's better for electrification because construction is not always working," said Muñoz whose country, Spain, [*faces a second real estate crash caused by the coronavirus crisis*](https://www.bloomberg.com/news/articles/2020-06-12/spanish-real-estate-is-heading-for-its-second-crash-in-a-decade).

Building renovation "generates a lot of employment, but at the end of the day, people aren't willing to accomplish those measures at home because it's a lot of work inside their houses," she said.

**Hydrogen still on the horizon**

While the Commission sees electricity as the new "backbone" of the EU energy system in 2050, much remains to be done to decarbonise sectors which cannot be easily electrified - such as heavy industries and long-distance transport, which are currently reliant on fossil fuels.

For those sectors, hydrogen is the new buzzword.

"Electrification is not the answer in all our energy sectors, mainly in energy intensive industries in the Netherlands," van Eck said. "Also when it comes to long distance transports, especially in the maritime and aviation sectors, we see an importance in the role of hydrogen as a renewable gas."

However, hydrogen is still highly inefficient and takes a lot of energy to produce, Muñoz pointed out. Producing green hydrogen from renewables will also require an extensive build-up of electricity grids to take advantage of excess energy from renewables such as wind turbines and use this for electrolysis to produce hydrogen, she remarked.

"We all welcome green hydrogen as part of the promising solutions that will enable us to achieve decarbonisation by 2050," said Muñoz.

But she added that it should be reserved for areas like aviation and steelmaking where no other alternatives are available at the moment.

"It's a very, very expensive solution at the moment. It's not efficient," Muñoz said.

[***EU Commission charts path towards 100% renewable hydrogen***](https://www.euractiv.com/section/energy/news/eu-commission-charts-path-towards-100-renewable-hydrogen/)

The European Commission unveiled plans on Wednesday (8 July) to promote hydrogen based entirely on renewable electricity like wind and solar, but said low-carbon hydrogen derived from fossil fuels will also be supported in order to scale up production in the short term.

*(Edited by Frédéric Simon)*

**Load-Date:** November 13, 2020

**End of Document**



[***Federal Register: California Department of Water Resources and Los Angeles Department of Water and Power; Notice of Application Accepted for Filing, Soliciting Motions To Intervene and Protests, Ready for Environmental Analysis, and Soliciting Comments, Recommendations, Preliminary Terms and Conditions, and Preliminary Fishway Prescriptions Pages 79008 - 79010 [FR DOC #2020-26929]***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:61GD-M931-JDG9-Y02N-00000-00&context=1516831)

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**Body**

Washington: Office of the Federal Register has issued the following notice:DEPARTMENT OF ENERGYFederal Energy Regulatory Commission[Project No. 2426-227]California Department of Water Resources and Los Angeles Department of Water and Power; Notice of Application Accepted for Filing, Soliciting Motions To Intervene and Protests, Ready for Environmental Analysis, and Soliciting Comments, Recommendations, Preliminary Terms and Conditions, and Preliminary Fishway Prescriptions Take notice that the following hydroelectric application has been filed with the Commission and is available for public inspection. a. Type of Application: New Major License. b. Project No.: 2426-227. c. Date filed: January 30, 2020. d. Co-Applicants: California Department of Water Resources and Los Angeles Department of Water and Power. e. Name of Project: South SWP Hydropower Project f. Location: Along the West Branch of the California Aqueduct, and along Piru Creek and Castaic Creek, tributaries to the Santa Clara River, in Los Angeles County, California. The project currently occupies 2,790 acres of federal ***land*** administered by the U.S Department of ***Agriculture***, ***Forest*** Service, as part of the Angeles National ***Forest*** and the Los Padres National ***Forest***; and 17 acres of federal ***land*** administered by the U.S Department of Interior, Bureau of ***Land*** Management. g. Filed Pursuant to: Federal Power Act 16 U.S.C 791(a)-825(r). h. Applicant Contact: Gwen Knittweis, Chief, Hydropower License Planning and Compliance Office, California Department of Water Resources, P.O Box 924836, Sacramento, California 94236-0001, (916) 557-4554, or [*Gwen.Knittweis@water.ca.gov*](mailto:Gwen.Knittweis@water.ca.gov); and Simon Zewdu, Manager of Strategic Initiatives, Power Planning and Development, Los Angeles Department of Water and Power, 111 North Hope Street, Room 921, Los Angeles, CA 90012, (213) 367-0881, or [*Simon.Zewdu@ladwp.com*](mailto:Simon.Zewdu@ladwp.com) i. FERC Contact: Kyle Olcott at (202) 502-8963; or email at [*kyle.olcott@ferc.gov*](mailto:kyle.olcott@ferc.gov) j. Deadline for filing motions to intervene and protests, comments, recommendations, preliminary terms and conditions, and preliminary prescriptions: 60 days from the issuance date of this notice; reply comments are due 105 days from the issuance date of this notice. The Commission strongly encourages electronic filing. Please file using the Commission's eFiling system at [*https://ferconline.ferc.gov/FERCOnline.aspx*](https://ferconline.ferc.gov/FERCOnline.aspx). Commenters can submit brief comments up to 6,000 characters, without prior registration, using the eComment system at [*https://ferconline.ferc.gov/QuickComment.aspx*](https://ferconline.ferc.gov/QuickComment.aspx) You must include your name and contact information at the end of your comments. For assistance, please contact FERC Online Support at [*FERCOnlineSupport@ferc.gov*](mailto:FERCOnlineSupport@ferc.gov), (866) 208-3676 (toll free), or (202) 502-8659 (TTY). In lieu of electronic filing, you may submit a paper copy. Submissions sent via the U.S Postal Service must be addressed to: Kimberly D. Bose, Secretary, Federal Energy Regulatory Commission, 888 First Street NE, Room 1A, Washington, DC 20426. Submissions sent via any other carrier must be addressed to: Kimberly D. Bose, Secretary, Federal Energy Regulatory Commission, 12225 Wilkins Avenue, Rockville, Maryland 20852. The first page of any filing should include docket number P-2426-227. Intervenors--those on the Commission's service list for this proceeding--are reminded that if they file comments with the Commission, they must also serve a copy of their filing on each person whose name appears on the official service list. Note that the list is periodically updated. The official service list can be obtained on the Commission's website ([*https://www.ferc.gov*](https://www.ferc.gov))--click on Documents and Filing and click on eService--or call the Office of the Secretary, Dockets Branch at (202) 502-8715. In addition, if any party files comments or documents with the Commission relating to the merits of an issue that may affect the responsibilities of a particular resource agency, they must also serve a copy of the document on the resource agency. k. This application has been accepted for filing and is now ready for environmental analysis. The Council on Environmental Quality (CEQ) issued a final rule on July 15, 2020, revising the regulations under 40 CFR parts 1500-1518 that federal agencies use to implement NEPA (see Update to the Regulations Implementing the Procedural Provisions of the National Environmental Policy Act, 85 FR 43,304). The Final Rule became effective on and applies to any NEPA process begun after September 14, 2020. An agency may also apply the regulations to ongoing activities and environmental documents begun before September 14, 2020, which includes the[[Page 79009]]proposed Gouverneur Project. Commission staff intends to conduct its NEPA review in accordance with CEQ's new regulations. l. The project consists of two developments: Warne Development and Castaic Development. The average annual generation of the South SWP Project from 2007 to 2017 was 304 gigawatt-hours (GWh) at the Warne powerplant and 520 GWh at the Castaic powerplant.Warne Development The major features of the Warne Development include: (1) Quail Lake, (2) Lower Quail Canal, (3) Peace Valley pipeline and intake embankment, (4) Gorman bypass channel, (5) the William E. Warne powerplant (Warne powerplant), (6) switchyard, (7) the transmission line that interconnects Warne powerplant with the Southern California Edison (SCE) Pastoria-Pardee transmission line, and (8) appurtenant facilities. Quail Lake is a small regulating reservoir along the State Water Project (SWP) that was created by constructing an embankment along a sag pond formed by the San Andreas fault. Water released from Quail Lake through the Quail Lake outlet flows into the 2-mile-long Lower Quail canal which serves as a conveyance to the Peace Valley pipeline intake. SWP water flowing from Quail Lake through Lower Quail canal is routed into the Peace Valley pipeline to Warne powerplant and then to Pyramid Lake. In the event of a Peace Valley pipeline outage or scheduled SWP water releases exceeding the pipeline's capacity, the water is routed through the Gorman bypass channel directly into Pyramid Lake. The Warne powerplant, an above-ground, steel-reinforced, concrete powerhouse, is located at the northern (upstream) end of Pyramid Lake, at the terminus of the Peace Valley pipeline. The powerplant has two 37.5-MW Pelton-type generating units, each with a rated discharge of 782 cubic feet per second (cfs). The project includes a 3-mile-long, single-circuit, 220-kilovolt (kV) transmission line that connects output from the project through the Warne switchyard to SCE's Pardee-Pastoria transmission line.Castaic Development The major features of the Castaic Development include: (1) Pyramid dam, (2) Pyramid Lake, (3) the Angeles tunnel and seven penstocks, (4) the Castaic powerplant and switchyard, (5) the Elderberry forebay and dam, (6) storm bypass channel and check dams, (7) the transmission lines that interconnect Castaic switchyard with the Independent System Operator power grid, and (8) appurtenant facilities. DWR owns and operates the facilities above the surge chamber at the southeastern end of the Angeles tunnel, and LADWP owns and operates the remainder of the facilities, including the surge chamber. Pyramid dam, at the southern end of Pyramid Lake, is a 1,090-foot-long, 400-foot-high zoned earth and rock fill dam. Water is typically released from a low-level outlet to an 18-mile-long section of Piru Creek (Pyramid reach), which extends from Pyramid dam to the NMWSE of Lake Piru. Pyramid Lake serves as regulated storage for the Castaic powerplant. Pyramid Lake also serves as emergency storage for the SWP. Angeles tunnel, the principal outlet from Pyramid Lake, supplies water to the Castaic powerplant in the generating mode and returns water to the lake from Elderberry forebay when the powerplant is operating in the pumping mode. The Castaic powerplant, an aboveground/underground, steel-reinforced, concrete powerhouse, is located on the northern (upstream) end of Elderberry forebay and is a pump-generating plant with the ability to pump water back to Pyramid Lake using off-peak energy when it is economical to do so. Elderberry forebay serves as an afterbay for the Castaic powerplant while in generating mode and as a forebay while in pumping mode. Pyramid Lake serves as the upper reservoir for the powerplant. The powerplant has six Francis-type pump-turbine units each with a rated output of 355,000 horsepower (hp), and an estimated rated discharge of 3,500 cfs. It also has one Pelton-type pump starting turbine unit with a rated output of 69,000 hp and an approximate rated discharge of 752 cfs. Elderberry forebay dam is a 1,990-foot-long, 200-foot-high zoned earthfill dam. The Castaic switchyard is a fenced switchyard located adjacent to the powerhouse. An 11.4-mile-long, 230-kV transmission line delivers energy from the Castaic switchyard to the Haskell Junction substation and transmits energy to the Castaic powerplant when in the pump-back operating mode. Co-Licensees' Proposed Modifications In their Final License Application, the co-licensees propose to add the following facilities to the project license: The existing Quail Detention Embankment, segments of some existing roads necessary for project operation and maintenance, and an existing streamflow gage located on Piru Creek downstream of Pyramid Dam. Additionally, the co-licensees propose to ***remove*** the Warne Transmission Line from the project license. The co-licensees also propose to modify the project boundary to reduce the amount of ***land*** from 6,928 acres to 4,563.8 acres. The project, as proposed by the licensee, would reduce the amount of federal ***land*** from 2,790 acres to 2,007 acres of federal ***lands***: 1,336 acres administered by the U.S Department of ***Agriculture***, ***Forest*** Service, as part of the Angeles National ***Forest***; 665 acres administered by the U.S Department of ***Agriculture***, ***Forest*** Service, as part of the Los Padres National ***Forest***; and 6.5 acres administered by the U.S Department of the Interior, Bureau of ***Land*** Management. m. A copy of the application can be viewed on the Commission's website at [*https://www.ferc.gov*](https://www.ferc.gov) using the ``eLibrary'' link. Enter the docket number excluding the last three digits in the docket number field to access the document. For assistance, contact FERC Online Support. Register online at [*http://www.ferc.gov/docs-filing/esubscription.asp*](http://www.ferc.gov/docs-filing/esubscription.asp) to be notified via email of new filings and issuances related to this or other pending projects. For assistance, contact FERC Online Support. n. Anyone may submit comments, a protest, or a motion to intervene in accordance with the requirements of Rules of Practice and Procedure, 18 CFR 385.210, .211, and .214 In determining the appropriate action to take, the Commission will consider all protests or other comments filed, but only those who file a motion to intervene in accordance with the Commission's Rules may become a party to the proceeding. Any comments, protests, or motions to intervene must be received on or before the specified comment date for the particular application. All filings must (1) bear in all capital letters the title PROTEST, MOTION TO INTERVENE, COMMENTS, REPLY COMMENTS, RECOMMENDATIONS, PRELIMINARY TERMS AND CONDITIONS, or PRELIMINARY FISHWAY PRESCRIPTIONS; (2) set forth in the heading the name of the applicant and the project number of the application to which the filing responds; (3) furnish the name, address, and telephone number of the person protesting or intervening; and (4) otherwise comply with the requirements of 18 CFR 385.2001 through 385.2005 All comments, recommendations, terms and conditions or prescriptions must set[[Page 79010]]forth their evidentiary basis and otherwise comply with the requirements of 18 CFR 4.34(b). Agencies may obtain copies of the application directly from the applicant. A copy of any protest or motion to intervene must be served upon each representative of the applicant specified in the particular application. A copy of all other filings in reference to this application must be accompanied by proof of service on all persons listed in the service list prepared by the Commission in this proceeding, in accordance with 18 CFR 4.34(b) and 385.2010 o. Procedural Schedule: The application will be processed according to the following schedule. Revisions to the schedule may be made as appropriate------------------------------------------------------------------------ Milestone ***Target*** date------------------------------------------------------------------------Deadline for filing comments, February 2021. recommendations, preliminary terms and conditions, and preliminary fishway prescriptions.Deadline for Filing Reply Comments........ March 2021.------------------------------------------------------------------------ p. Final amendments to the application must be filed with the Commission no later than 30 days from the issuance date of this notice. q. A license applicant must file no later than 60 days following the date of issuance of the notice of acceptance and ready for environmental analysis provided for in Sec. 5.22: (1) A copy of the water quality certification; (2) a copy of the request for certification, including proof of the date on which the certifying agency received the request; or (3) evidence of waiver of water quality certification. Dated: December 2, 2020.Kimberly D. Bose,Secretary.[FR Doc. 2020-26929 Filed 12-7-20; 8:45 am]BILLING CODE 6717-01-P

**Load-Date:** December 9, 2020

**End of Document**



[***Application: California Department of Water Resources and Los Angeles Department of Water and Power***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:61GV-7HF1-F0YC-N25C-00000-00&context=1516831)

Impact News Service

December 10, 2020 Thursday

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**Length:** 2139 words

**Body**

Washington, DC: This Notice document was issued by the Federal Energy Regulatory Commission (FERC)

Take notice that the following hydroelectric application has been filed with the Commission and is available for public inspection.

a. Type of Application: New Major License.

b. Project No.: 2426-227.

c. Date filed: January 30, 2020.

d. Co-Applicants: California Department of Water Resources and Los Angeles Department of Water and Power.

e. Name of Project: South SWP Hydropower Project

f. Location: Along the West Branch of the California Aqueduct, and along Piru Creek and Castaic Creek, tributaries to the Santa Clara River, in Los Angeles County, California. The project currently occupies 2,790 acres of federal ***land*** administered by the U.S Department of ***Agriculture***, ***Forest*** Service, as part of the Angeles National ***Forest*** and the Los Padres National ***Forest***; and 17 acres of federal ***land*** administered by the U.S Department of Interior, Bureau of ***Land*** Management.

g. Filed Pursuant to: Federal Power Act 16 U.S.C 791(a)-825(r).

h. Applicant Contact: Gwen Knittweis, Chief, Hydropower License Planning and Compliance Office, California Department of Water Resources, P.O Box 924836, Sacramento, California 94236-0001, (916) 557-4554, or [*Gwen.Knittweis@water.ca.gov*](mailto:Gwen.Knittweis@water.ca.gov); and Simon Zewdu, Manager of Strategic Initiatives, Power Planning and Development, Los Angeles Department of Water and Power, 111 North Hope Street, Room 921, Los Angeles, CA 90012, (213) 367-0881, or [*Simon.Zewdu@ladwp.com*](mailto:Simon.Zewdu@ladwp.com)

i. FERC Contact: Kyle Olcott at (202) 502-8963; or email at [*kyle.olcott@ferc.gov*](mailto:kyle.olcott@ferc.gov)

j. Deadline for filing motions to intervene and protests, comments, recommendations, preliminary terms and conditions, and preliminary prescriptions: 60 days from the issuance date of this notice; reply comments are due 105 days from the issuance date of this notice.

The Commission strongly encourages electronic filing. Please file using the Commission's eFiling system at [*https://ferconline.ferc.gov/FERCOnline.aspx*](https://ferconline.ferc.gov/FERCOnline.aspx) Commenters can submit brief comments up to 6,000 characters, without prior registration, using the eComment system at [*https://ferconline.ferc.gov/QuickComment*](https://ferconline.ferc.gov/QuickComment). aspx. You must include your name and contact information at the end of your comments. For assistance, please contact FERC Online Support at [*FERCOnlineSupport@ferc.gov*](mailto:FERCOnlineSupport@ferc.gov), (866) 208-3676 (toll free), or (202) 502-8659 (TTY). In lieu of electronic filing, you may submit a paper copy. Submissions sent via the U.S Postal Service must be addressed to: Kimberly D. Bose, Secretary, Federal Energy Regulatory Commission, 888 First Street NE, Room 1A, Washington, DC 20426. Submissions sent via any other carrier must be addressed to: Kimberly D. Bose, Secretary, Federal Energy Regulatory Commission, 12225 Wilkins Avenue, Rockville, Maryland 20852. The first page of any filing should include docket number P-2426-227.

Intervenors—those on the Commission's service list for this proceeding—are reminded that if they file comments with the Commission, they must also serve a copy of their filing on each person whose name appears on the official service list. Note that the list is periodically updated. The official service list can be obtained on the Commission's website ([*https://www.ferc.gov*](https://www.ferc.gov))—click on Documents and Filing and click on eService—or call the Office of the Secretary, Dockets Branch at (202) 502-8715. In addition, if any party files comments or documents with the Commission relating to the merits of an issue that may affect the responsibilities of a particular resource agency, they must also serve a copy of the document on the resource agency.

k. This application has been accepted for filing and is now ready for environmental analysis.

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l. The project consists of two developments: Warne Development and Castaic Development. The average annual generation of the South SWP Project from 2007 to 2017 was 304 gigawatt-hours (GWh) at the Warne powerplant and 520 GWh at the Castaic powerplant.Warne Development

The major features of the Warne Development include: (1) Quail Lake, (2) Lower Quail Canal, (3) Peace Valley pipeline and intake embankment, (4) Gorman bypass channel, (5) the William E. Warne powerplant (Warne powerplant), (6) switchyard, (7) the transmission line that interconnects Warne powerplant with the Southern California Edison (SCE) Pastoria-Pardee transmission line, and (8) appurtenant facilities.

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Water released from Quail Lake through the Quail Lake outlet flows into the 2-mile-long Lower Quail canal which serves as a conveyance to the Peace Valley pipeline intake.

SWP water flowing from Quail Lake through Lower Quail canal is routed into the Peace Valley pipeline to Warne powerplant and then to Pyramid Lake.

In the event of a Peace Valley pipeline outage or scheduled SWP water releases exceeding the pipeline's capacity, the water is routed through the Gorman bypass channel directly into Pyramid Lake.

The Warne powerplant, an above-ground, steel-reinforced, concrete powerhouse, is located at the northern (upstream) end of Pyramid Lake, at the terminus of the Peace Valley pipeline. The powerplant has two 37.5-MW Pelton-type generating units, each with a rated discharge of 782 cubic feet per second (cfs).

The project includes a 3-mile-long, single-circuit, 220-kilovolt (kV) transmission line that connects output from the project through the Warne switchyard to SCE's Pardee-Pastoria transmission line.Castaic Development

The major features of the Castaic Development include: (1) Pyramid dam, (2) Pyramid Lake, (3) the Angeles tunnel and seven penstocks, (4) the Castaic powerplant and switchyard, (5) the Elderberry forebay and dam, (6) storm bypass channel and check dams, (7) the transmission lines that interconnect Castaic switchyard with the Independent System Operator power grid, and (8) appurtenant facilities. DWR owns and operates the facilities above the surge chamber at the southeastern end of the Angeles tunnel, and LADWP owns and operates the remainder of the facilities, including the surge chamber.

Pyramid dam, at the southern end of Pyramid Lake, is a 1,090-foot-long, 400-foot-high zoned earth and rock fill dam. Water is typically released from a low-level outlet to an 18-mile-long section of Piru Creek (Pyramid reach), which extends from Pyramid dam to the NMWSE of Lake Piru.

Pyramid Lake serves as regulated storage for the Castaic powerplant. Pyramid Lake also serves as emergency storage for the SWP.

Angeles tunnel, the principal outlet from Pyramid Lake, supplies water to the Castaic powerplant in the generating mode and returns water to the lake from Elderberry forebay when the powerplant is operating in the pumping mode.

The Castaic powerplant, an aboveground/underground, steel-reinforced, concrete powerhouse, is located on the northern (upstream) end of Elderberry forebay and is a pump-generating plant with the ability to pump water back to Pyramid Lake using off-peak energy when it is economical to do so. Elderberry forebay serves as an afterbay for the Castaic powerplant while in generating mode and as a forebay while in pumping mode. Pyramid Lake serves as the upper reservoir for the powerplant.

The powerplant has six Francis-type pump-turbine units each with a rated output of 355,000 horsepower (hp), and an estimated rated discharge of 3,500 cfs. It also has one Pelton-type pump starting turbine unit with a rated output of 69,000 hp and an approximate rated discharge of 752 cfs.

Elderberry forebay dam is a 1,990-foot-long, 200-foot-high zoned earthfill dam.

The Castaic switchyard is a fenced switchyard located adjacent to the powerhouse. An 11.4-mile-long, 230-kV transmission line delivers energy from the Castaic switchyard to the Haskell Junction substation and transmits energy to the Castaic powerplant when in the pump-back operating mode.

Co-Licensees' Proposed Modifications

In their Final License Application, the co-licensees propose to add the following facilities to the project license: The existing Quail Detention Embankment, segments of some existing roads necessary for project operation and maintenance, and an existing streamflow gage located on Piru Creek downstream of Pyramid Dam. Additionally, the co-licensees propose to ***remove*** the Warne Transmission Line from the project license.

The co-licensees also propose to modify the project boundary to reduce the amount of ***land*** from 6,928 acres to 4,563.8 acres. The project, as proposed by the licensee, would reduce the amount of federal ***land*** from 2,790 acres to 2,007 acres of federal ***lands***: 1,336 acres administered by the U.S Department of ***Agriculture***, ***Forest*** Service, as part of the Angeles National ***Forest***; 665 acres administered by the U.S Department of ***Agriculture***, ***Forest*** Service, as part of the Los Padres National ***Forest***; and 6.5 acres administered by the U.S Department of the Interior, Bureau of ***Land*** Management.

m. A copy of the application can be viewed on the Commission's website at [*https://www.ferc.gov*](https://www.ferc.gov) using the “eLibrary” link. Enter the docket number excluding the last three digits in the docket number field to access the document. For assistance, contact FERC Online Support.

Register online at [*http://www.ferc.gov/docs-filing/esubscription.asp*](http://www.ferc.gov/docs-filing/esubscription.asp) to be notified via email of new filings and issuances related to this or other pending projects. For assistance, contact FERC Online Support.

n. Anyone may submit comments, a protest, or a motion to intervene in accordance with the requirements of Rules of Practice and Procedure, 18 CFR 385.210, .211, and .214 In determining the appropriate action to take, the Commission will consider all protests or other comments filed, but only those who file a motion to intervene in accordance with the Commission's Rules may become a party to the proceeding. Any comments, protests, or motions to intervene must be received on or before the specified comment date for the particular application.

All filings must (1) bear in all capital letters the title PROTEST, MOTION TO INTERVENE, COMMENTS, REPLY COMMENTS, RECOMMENDATIONS, PRELIMINARY TERMS AND CONDITIONS, or PRELIMINARY FISHWAY PRESCRIPTIONS; (2) set forth in the heading the name of the applicant and the project number of the application to which the filing responds; (3) furnish the name, address, and telephone number of the person protesting or intervening; and (4) otherwise comply with the requirements of 18 CFR 385.2001 through 385.2005 All comments, recommendations, terms and conditions or prescriptions must set forth their evidentiary basis and otherwise comply with the requirements of 18 CFR 4.34(b). Agencies may obtain copies of the application directly from the applicant. A copy of any protest or motion to intervene must be served upon each representative of the applicant specified in the particular application. A copy of all other filings in reference to this application must be accompanied by proof of service on all persons listed in the service list prepared by the Commission in this proceeding, in accordance with 18 CFR 4.34(b) and 385.2010

o. Procedural Schedule: The application will be processed according to the following schedule. Revisions to the schedule may be made as appropriateMilestone ***Target*** dateDeadline for filing comments, recommendations, preliminary terms and conditions, and preliminary fishway prescriptions February 2021.Deadline for Filing Reply Comments March 2021.

p. Final amendments to the application must be filed with the Commission no later than 30 days from the issuance date of this notice.

q. A license applicant must file no later than 60 days following the date of issuance of the notice of acceptance and ready for environmental analysis provided for in § 5.22: (1) A copy of the water quality certification; (2) a copy of the request for certification, including proof of the date on which the certifying agency received the request; or (3) evidence of waiver of water quality certification.Dated: December 2, 2020.Kimberly D. Bose,Secretary.[FR Doc. 2020-26929 Filed 12-7-20; 8:45 am]BILLING CODE 6717-01-P

**Load-Date:** December 11, 2020

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[***Royal Institution Christmas Lectures: 2020: Planet Earth - A User's Guide - 03:05 AM GMT***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:61N9-1X01-JBH6-C3XD-00000-00&context=1516831)

TVEyes - BBC 4

January 1, 2021 Friday

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**Section:** U.K. NATIONAL

**Length:** 811 words

**Highlight:** Dr Tara Shine takes a deep breath and marvels at something we all take for granted: oxygen. She demonstrates how Earth produces a never-ending supply of this gas - the raw material for all complex life - and investigates what else is in the air that we breathe. One critical component is carbon dioxide, a greenhouse gas that's causing a dangerous rise in atmospheric warming. Tara looks at the carbon footprint of a loaf of bread and how hydrogen might be the answer for heating and transport. From developing exciting new technologies to protecting wetlands and ***forests***, the solutions are everywhere. Our ideas and ingenuity can create a better, cleaner and more sustainable future.

**Body**

**Speech to text transcript:**[[77]](#footnote-78)1

So the waste is collected from wherever it's created, that might be your home, it might be a supermarket, retail, hospitality, a pub, a restaurant, and it will be brought here and it's then put into that big hopper in the corner, and there we've got what we call a hammermill. So it's something with big hammers that will basically smash the food waste and separate the packaging from the food waste itself. So once the material has had the packaging removed, it goes through a series of shredders or macerators in order to make the particles very small. From that point onwards, the food waste is always in a pipe, or in a pump or in a tank.

The first tank that it goes into is a little bit like your food cupboard at home, where you would store your food before it's being fed to the digester. And this is where the magic really happens. These are what we call digesters, and in these tanks are hundreds of different types of bacteria who all work together to break down the food waste into biogas. So the gas leaves the gas holder and goes through a series of these pipes, which then feeds into our engine. And in the engine, the methane part of the biogas is converted into heat, in the form of hot water and electricity. So, of the electricity that we produce, about 10% of it is used to run this site and the remaining 90% is fed into the National Grid. The digestate, which is the other end product, is really valuable, what we call a bio fertiliser. The fertiliser is picked up by local farmers who apply it to their ***land***. And in doing that, they don't have to use bought-in fertiliser. Please welcome Becky Greaves to tell us more about anaerobic digestion. Becky, lovely to see you. APPLAUSE So, Becky, we've learned quite a lot about methane as a greenhouse gas in the Christmas lectures this year, and how potent it is when it gets up into our atmosphere. Can you tell us how you prevent methane from getting up into the atmosphere? So, we really carefully control the feed to our digesters to make sure that we produce the methane at the same rate that we can use it through our engines. And the tanks and the pipes that you saw in that video are all sealed so there's no way that that methane can get up into the atmosphere. What do you do with it then? You produce energy, electricity with it? How much electricity can you produce? So, on the video, you saw a large lorry reversing into our reception hall. Typically, a lorry of that size would hold about 25 tonnes of food waste. And once that's digested through our process, it will produce enough electricity to fuel an average household for over two years. Wow, that's really impressive. And, Becky, we saw at the end of the clip the bio fertiliser that you're making. How can that help us to reduce the greenhouse gas ***emissions*** from ***agriculture***? So, the farmer would have to apply some sort of fertiliser to the wheat in order to grow it. If we go back to your example of the growing the wheat for bread that you used earlier, and so by applying bio fertiliser, we're giving that wheat those exact same nutrients, but actually, we're not using those mineral or those synthetic fertilisers, which, as you say, produce greenhouse gases for their production. And to put it into context, that lorry that you saw, the digester or the digestate that was produced from that food waste would be enough to fertilise the wheat to produce 5,000 loaves of bread. What's really good about this process is that it's a closed loop. So, actually, if you throw away a mouldy loaf of bread, we can turn it into bio fertiliser and grow wheat to produce more bread. But more importantly, we also produce the electricity to bake that bread and for you to use it at home and turn it into toast. Becky, that is amazing. It's just a whole lot of win-wins in this solution that you've told us about. Thank you so much for joining us. Thank you for having me. APPLAUSE So, we know what to do to reduce the ***emissions*** going into our atmosphere. We just need to stop burning fossil fuels and keep them in the ground, and we need to reduce the ***emissions*** from ***agriculture*** and food production. We just need to do more of it. But reducing ***emissions*** on their own isn't going to be enough. I'm going to take a look again at our atmosphere. So, what we've managed to do now by reducing ***emissions*** is to slow the flow of carbon dioxide into our atmosphere. But as you can see, it's still building up. We're still making the problem worse. So what we also need to do is ***remove*** carbon dioxide from the atmosphere. And our best ally in doing that is nature. As you remember with Chris and Helen, we learned about the natural ability of our oceans and the ***land*** to store carbon. And so, if we protect nature,

**Load-Date:** December 31, 2020

**End of Document**



[***USDA Encourages Ag Producers, Residents to Prepare for Hurricane Zeta***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:615N-JS51-F0YC-N3FN-00000-00&context=1516831)

Impact News Service

October 28, 2020 Wednesday

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**Length:** 1543 words

**Body**

Washington: US Department of ***Agriculture*** has issued the following news release:

The U.S Department of ***Agriculture*** (USDA) is reminding communities, farmers, ranchers and small businesses in the path of Hurricane Zeta that USDA has programs that provide assistance in the wake of disasters. USDA staff in the regional, state and county offices stand ready and are eager to help.

“Our neighbors in the Gulf have endured a devastating Hurricane season this year and I’ve been awed by their resilience,” said U.S Secretary of ***Agriculture*** Sonny Perdue. “We ask everyone in the path of the storm to again prepare, and to rest assured that this Administration will stand by them to provide all the assistance we can, for as long as they need. ”

USDA has partnered with FEMA and other disaster-focused organizations to create theDisaster Resource Center, a searchable knowledgebase of disaster-related resources powered by subject matter experts. The Disaster Resource Center website and web tool now provide an easy access point to find USDA disaster information and assistance.

Food safety during an emergency

Power outages from severe weather could compromise the safety of stored food. USDA encourages those in the path of the storm to take the following precautions:

* Store food on shelves that will be safely out of the way of contaminated water in case of flooding.

1. Place appliance thermometers in the refrigerator and the freezer to ensure temperatures remain food safe during a power outage. Safe temperatures are 40°F or below in the refrigerator, 0°F or below in the freezer.
2. Freeze water in small plastic storage bags or containers prior to a storm. These containers are small enough to fit around the food in the refrigerator and freezer to help keep food cold.
3. Freeze refrigerated items, such as leftovers, milk and fresh meat and poultry that you may not need immediately—this helps keep them at a safe temperature longer.
4. Consider getting 50 pounds of dry or block ice if a lengthy power outage is possible. This amount of ice should keep a fully-stocked 18-cubic-feet freezer cold for two days
5. Group foods together in the freezer – this ‘igloo’ effect helps the food stay cold longer.
6. Keep a few days’ worth of ready-to-eat foods that do not require cooking or cooling.

Protecting livestock during a disaster

USDA's Animal and Plant Health Inspection Service (APHIS) is urging everyone in the potential path of the hurricane to prepare now – not just for yourselves, but also for your pets and your livestock.

* Plan for evacuation – know how you will evacuate and where you will go. If it is not feasible to evacuate your livestock, be sure to provide a strong shelter and adequate food and water that will last them until you can return.

1. If you are planning to move livestock out of state, make sure to contact the State Veterinarian’s Office in the receiving state before you move any animals. You may also contact the Animal and Plant Health Inspection Service (APHIS)Veterinary Servicesstate offices for information and assistance about protecting and moving livestock.
2. Listen to emergency officials and evacuate if asked to do so.

Helping producers weather financial impacts of disasters

Livestock owners and contract growers who experience above normal livestock deaths due to specific weather events, as well as to disease or animal attacks, may qualify for assistance under USDA’sLivestock Indemnity Program.

Livestock, honeybee and farm-raised fish producerswhose mechanically harvested or purchased livestock feed was physically damaged or destroyed; or who lost grazing acres or beehives due to an extreme weather event may qualify for assistance. Producers of non-insurable crops who suffer crop losses, lower yields or are prevented from planting ***agricultural*** commodities may be eligible for assistance under USDA'sNoninsured Crop Disaster Assistance Programif the losses were due to natural disasters.

Helping operations recover after disasters

USDA also can provide financial resources through itsEnvironmental Quality Incentives Programto help with immediate needs and long-term support to help recover from natural disasters and conserve water resources. Assistance may also be available for emergency animal mortality disposal from natural disasters and other causes.

Farmers and ranchers needing to rehabilitate farmland damaged by natural disasters can apply for assistance through USDA’sEmergency Conservation Program. USDA also has assistance available for eligible private ***forest*** landowners who need to restore forestland damaged by natural disasters through theEmergency ***Forest*** Restoration Program(PDF, 257 KB). For declared natural disasters that lead to imminent threats to life and property, the USDA Natural Resources Conservation Service (NRCS) can assist local government sponsors with the cost of implementing recovery efforts like debris ***removal*** and streambank stabilization to address natural resource concerns and hazards through theEmergency Watershed Protection Program.

Orchardists and nursery tree growers may be eligible for assistance through USDA’sTree Assistance Programto help replant or rehabilitate eligible trees, bushes and vines damaged by natural disasters.

When major disasters strike, USDA hasan emergency loan programthat provides eligible farmers low-interest loans to help them recover from production and physical losses. USDA’s emergency loan program is triggered when a natural disaster is designated by the Secretary of ***Agriculture*** or a natural disaster or emergency is declared by the President under the Stafford Act. USDA also offers additional programs tailored to the needs of specific ***agricultural*** sectors to help producers weather the financial impacts of major disasters and rebuild their operations.

USDA also developed adisaster assistance discovery toolspecifically ***targeted*** to rural and ***agricultural*** issues. The tool walks producers through five questions that generate personalized results identifying which USDA disaster assistance programs can help them recover from a natural disaster.

USDA also encourages residents and small businesses in impact zones to contactUSDA officeswhich meet their individual needs.

Owners of meat and poultry producing businesses who have questions or concerns may contact the FSISSmall Plant Help Deskonline 24 hours a day, by phone at 1-877-FSIS-HELP (1-877-374-7435) and by email [*atinfosource@fsis.usda.gov*](mailto:atinfosource@fsis.usda.gov)

Helping individuals recover after disasters

In the aftermath of a disaster, USDA’s Food and Nutrition Service (FNS) works with state, local and nongovernmental organizations to provideemergency nutrition assistance– including food packages and infant formula – to households, shelters and mass feeding sites serving people in need. Upon request from states, the agency also provides emergency flexibilities in the administration of its nutrition assistance programs. In recent weeks, the agency has allowed the purchase of hot foods with SNAP benefits in California, Louisiana and Iowa, and has provided automatic replacement of SNAP benefits due to food loss in Alabama, California, Connecticut, Florida, Louisiana, Massachusetts, North Carolina and Texas. In some circumstances, the agency also works with local authorities to provide Disaster Supplemental Nutrition Assistance Program (D-SNAP) benefits, as it has inAlabama,California,Louisiana,Iowa, andOregonfor individuals and families who do not normally receive SNAP benefits. Once the disaster recovery efforts begin, emergency nutrition assistance and flexibilities requested by states and approved by FNS will be posted to theFNS Disaster Assistance website.

USDA National Institute of Food and ***Agriculture*** provides support for disaster education through theExtension Disaster Education Network (EDEN). EDEN is a collaborative multi-state effort with ***land***-grant universities and Cooperative Extension Services across the country, using research-based education and resources to improve the delivery of services to citizens affected by disasters. EDEN's goal is to improve the nation's ability to mitigate, prepare for, prevent, respond to and recover from disasters. EDEN equips county-based Extension educators to share research-based resources in local disaster management and recovery efforts. The EDEN website offers a searchable database of Extension professionals, resources, member universities and disaster agency websites to help people deal with a wide range of hazards, and food and ***agricultural*** defense educational resources.

Producers with coverage through the Risk Management Agency (RMA) administered Federal crop insurance program should contact their crop insurance agent for issues regarding filing claims. Those who purchased crop insurance will be paid for covered losses. Producers should report crop damage within 72 hours of damage discovery and follow up in writing within 15 days. The Approved Insurance Providers (AIP), loss adjusters and agents are experienced and well trained in handling these types of events. As part of its commitment to delivering excellent customer service, RMA is working closely with AIPs that sell and service crop insurance policies to ensure enough loss adjusters will be available to process claims in the affected areas as quickly as possible.

**Load-Date:** October 29, 2020

**End of Document**



[***5 ways NASA tech has been used to help life on Earth***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:6314-6G11-JDG9-Y23C-00000-00&context=1516831)

Impact News Service

June 23, 2021 Wednesday

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**Length:** 1218 words

**Body**

Cologny: World Economic Forum has issued the following press release:

A helicopter that flies on Mars shares tech DNA with a drone helping farmers monitor their ***land***. Recycled water systems could help provide drinking water in some of the driest places on Earth. Cleaning up environmentally harmful contaminants has been made possible thanks to a NASA invention.

Space exploration can be both exciting and innovative. NASA has become a leading developer of technology as it has sought to make trips to space easier, safer and longer. And much of that technology is also being used here on Earth.

Here are five examples of technology that was initially developed as part of the space programme by NASA, now helping address some of the biggest environmental issues we face.

1. Forecasting global crop production with an algorithm

The ***agricultural*** sector is hungry for data that can help supply more accurate forecasts of crop productivity. For organizations involved in exporting farm produce, such data can be used to help drum up sales, set prices and generate international customers.

In the US, an algorithm created to detect clouds in satellite imagery is being used to provide that service commercially. It was initially designed to filter out clouds in satellite image data, as they compromise some of the calculations performed to monitor “***forest*** and crop health, ice cap and glacier coverage, surface moisture, and a host of other surface conditions,” NASA says.

The system produces real-time image data covering 16 major global crops. The data includes maps of crop coverage, ground conditions, crop health, and global production forecasts. The data can also be broken down to give national and regional information and historical figures.

2. Tracking hurricanes with laser accuracy

From June to November, the US Atlantic coast is routinely battered by hurricanes. In Asia, cyclones can occur at any time of year – although they are more common from May to October. Spotting and tracking these devastating storms can literally mean the difference between life and death.

Mounted on a polar-orbiting satellite, a device called the Cross-Track Infrared Spectrometer uses a laser to scan the atmosphere, providing accurate data on temperature and humidity. That information helps meteorologists predict storm intensity and direction, meaning they can issue timely warnings to people likely to be in the path of a powerful storm.

In September 2017, it was used to track Hurricane Irma across the Caribbean and the southeastern US, enabling residents to make vital preparations.

3. Cleaning up an environmental hazard

Paint developed to withstand the ferocious heat generated during rocket launches was applied liberally to buildings and structures at NASA’s Kennedy Space Center in Florida.

Particles called polychlorinated biphenyls (PCB) are non-flammable and can withstand very high temperatures. However, PCBs have also been found to cause physical and mental developmental harm to people and animals. The substance was banned in 1976, but it is still out there – in landfills, on buildings – affecting the environment.

PCBs are resistant to water, are very slow to break down and extremely difficult to clean up. Until NASA scientist Jackie Quinn hit upon the idea of using safe chemical reactions to pool PCBs and trap them.

The technology has been deployed in many hard-to-clean environments where PCBs have been detected, such as in marine ecosystems. Acting like a sponge, tubes fitted with the reactive agent soak up PCBs, ***removing*** them from the water without disturbing the rest of the area.

4. Giving farmers a bird’s eye view

On 19 April 2021, NASA flew a drone helicopter on Mars. Not just any drone, of course – one that had been designed to withstand a harsh and unforgiving landscape. Also, one that had been tested at very high Earth altitudes, where the air is so thin it resembles the Martian atmosphere.

Drone specialists AeroVironment had worked with NASA on drone development since the 1990s. In particular it has developed a series of drones that operate successfully at altitudes that match the density of the atmosphere on Mars. Its technology was used in the Ingenuity, the helicopter on Mars.Have you read?

From space squid to saliva: what's inside NASA's cargo missions and why NASA: Earth’s energy imbalance has doubled over last 14 years These NASA female scientists are inspiring girls all over the planet

The anatomy of a Martian helicopterThe anatomy of a Martian helicopterImage: NASA/JPL-Caltech

Back on Earth, the very same technology is used in a field-scanning drone called Quantix. The drone makes its way to very high altitudes and tracks back and forth over a ***target*** area, delivering a series of high-quality composite images of the ground below. Coupled with accurate assessments of the ***land*** being surveyed, and GPS data, any problems can be investigated. In one case, it enabled a walnut farmer in central California to increase yield by over $50,000 in a single season.

5. In space, don’t ask whose water you’re drinking

Sending water into space is a very costly exercise. It weighs considerably more than rocket fuel. So where do astronauts on the International Space Station (ISS) get their drinking water?

The short answer to that question is that they drink recycled urine, along with sweat and the moisture that enters the air from the astronauts' breath. Nothing is wasted. That might not sound too appealing, but the reality is that the drinking water on the ISS could actually be cleaner than the drinking water in most people’s homes, NASA reckons.water, health, environmentWhat is the Forum doing to address the global water challenge?

Water security – both sustainable supply and clean quality – is a critical aspect in ensuring healthy communities. Yet, our world’s water resources are being compromised.

Today, 80% of our wastewater flows untreated back into the environment, while 780 million people still do not have access to an improved water source. By 2030, we may face a 40% global gap between water supply and demand.

The World Economic Forum’s Water Possible Platform is supporting innovative ideas to address the global water challenge.

The Forum supports innovative multi-stakeholder partnerships including the 2030 Water Resources Group, which helps close the gap between global water demand and supply by 2030 and has since helped facilitate $1Billion of investments into water.

Other emerging partnerships include the 50L Home Coalition, which aims to solve the urban water crisis, tackling both water security and climate change; and the Mobilizing Hand Hygiene for All Initiative, formed in response to close the 40% gap of the global population not having access to handwashing services during COVID-19.

Want to join our mission to address the global water challenge? Read more in our impact story.

Working with a Swedish university, NASA has helped create a shower that recycles its water supply using “positively charged microscopic alumina fibers (that) can ***remove*** virtually all contaminants, including bacteria and viruses”.

NASA says the new shower enables a faster flow rate of the recycled water than other systems. Being able to safely and effectively recycle water could help ensure people all over the world have access to water, even where it is scarce.

**Load-Date:** June 27, 2021

**End of Document**



[***Largest US cottonised hemp facility targets high-end apparel***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:60SJ-XD71-F14X-V00D-00000-00&context=1516831)

just-style global news

September 6, 2020 Sunday 3:45 PM GMT

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**Length:** 735 words

**Byline:** Leonie Barrie

**Body**

The US is moving closer to having a large-scale domestic apparel textile grade hemp fibre supply chain, with the nation's first facility to both process and cottonise industrial hemp fibre in commercial quantities set to open in Texas.

Dallas-based Panda Biotech has selected Wichita Falls, Texas for what it says will be the largest and most state-of-the-art industrial hemp processing centre in the United States.

The Panda Texas Plains Hemp Gin will also be the first facility in the nation to cottonise hemp fibre on a commercial scale for the American textile and apparel industry and export customers.

And it is likely to be the only facility in the world dedicated to both the processing and cottonisation of hemp fibre in industrial quantities outside of the People's Republic of China, the company says.

The "cottonisation" process ***removes*** the lignin that binds hemp fibres together in bundles and "opens" them for further refinement. Once "cottonised," the hemp fibre can be blended with other natural or man-made fibres such as cotton, silk, wool and polyester and spun into yarns that will be knit or woven into fabric.

In trials, the fibre has been spun into yarn, knit into fabric, printed, and cut and sewn into fully finished, high-end apparel.

The company also says it is working with a number of well-known brands to develop yarn blends in multiple counts, from 8s to 40s, for sustainable and innovative textiles that will use Panda Biotech's proprietary cottonisation process.

Production giant

At full production, Panda Biotech expects its Wichita Falls facility to annually produce more than 35 million pounds of apparel-grade, cottonised hemp fiber suitable for use in a variety of yarns for knit and woven textiles.

The 500,000 square foot facility and surrounding 97-acre campus was formerly the home of General Motors' Delphi assembly plant. It will house a "super-size" line of hemp decorticating, or processing, equipment to separate the outer bast fibre from the inner woody core, or hurd.

At full production, the two 10-ton/hour decorticators are expected to process close to 300 million pounds of Texas-grown industrial hemp per year.

The fibre will be refined for textile applications, and the hurd will be processed for a variety of industrial purposes such as construction and composites. Panda estimates the two decortication lines will generate approximately $30m per year for Texas farmers.

The first processing line is currently being manufactured and is on schedule for delivery in December 2020. The Wichita Falls facility is expected to commence partial operations in the first quarter of 2021 and both lines to be fully operational a year later. Panda will fill contracts with Texas ***agricultural*** producers in the region for the 2021 growing season.

"We're very excited that this facility will not only help to supply a growing worldwide demand for industrial hemp fibre, but also help to create a new, sustainable industry," says Scott Evans, executive vice president of Panda Biotech.

Sustainable crop

Hemp is lauded as one of the most green and sustainable crops, requiring 70% less water than most major crops used in the manufacture of textiles.

In addition, hemp requires very little herbicides, fungicides or pesticides, and has significant soil remediation qualities. Industrial hemp ***agriculture*** has been scientifically proven to minimise carbon dioxide (CO2) ***emissions***, absorbing more CO2 per acre than any ***forest*** or commercial crop, Panda Biotech explains.

The US hemp industry has opened up thanks to the passage of the federal Hemp Farming Act of 2018, which was incorporated in the 2018 US Farm Bill and signed into law by President Trump in December that year.

Both chambers of the Texas state legislature subsequently passed House Bill 1325, which was signed into law in June 2019 by Texas Governor Greg Abbott. On 27 January 2020, the USDA approved Texas' hemp regulations, and the Texas Department of ***Agriculture*** began issuing licenses for the growing, handling and processing of hemp in March 2020.

The law ensures Texas farmers are able to participate in a rapidly growing industry with a new viable crop option that should be a boon to rural economies.

The global industrial hemp market is projected to grow from $4.6bn in 2019 to $26.6bn by 2025, driven largely by eco-conscious consumers who increasingly require environmentally friendly products and services.

**Load-Date:** September 7, 2020

**End of Document**



[***USDA Encourages Ag Producers, Residents to Prepare for Tropical Storms Marco and Laura***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:60P8-2BF1-F0YC-N2MD-00000-00&context=1516831)

Impact News Service

August 26, 2020 Wednesday

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**Length:** 1531 words

**Body**

Washington: US Department of ***Agriculture*** has issued the following news release:

The U.S Department of ***Agriculture*** (USDA) reminds communities, farmers and ranchers, families and small businesses in the path of Tropical Storms Marco and Laura that USDA has programs that provide assistance in the wake of disasters. USDA staff in the regional, state and county offices stand ready and are eager to help.

In a continuing effort to serve the American people, USDA partnered with FEMA and other disaster-focused organizations and created theDisaster Resource Center. This central source of information utilizes a searchable knowledge base of disaster-related resources powered by agents with subject matter expertise. The Disaster Resource Center website and web tool now provide an easy access point to find USDA disaster information and assistance.

USDA also developeda disaster assistance discovery toolspecifically ***targeted*** to rural and ***agricultural*** issues. The tool walks producers through five questions that generate personalized results identifying which USDA disaster assistance programs can help them recover from a natural disaster.

USDA also encourages residents and small businesses in impact zones to contact USDA offices which meet their individual needs.

Severe weather forecasts often present the possibility of power outages that could compromise the safety of stored food. USDA encourages those in the path of the storms to take the following precautions:

* Place appliance thermometers in both the refrigerator and the freezer to ensure temperatures remain food safe during a power outage. Safe temperatures are 40°F or below in the refrigerator, 0°F or below in the freezer.

1. Freeze water in small plastic storage bags or containers prior to a storm. These containers are small enough to fit around the food in the refrigerator and freezer to help keep food cold.
2. Freeze refrigerated items, such as leftovers, milk and fresh meat and poultry that you may not need immediately—this helps keep them at a safe temperature longer.
3. Consider getting 50 pounds of dry or block ice if a lengthy power outage is possible. This amount of ice should keep a fully-stocked 18-cubic-feet freezer cold for two days
4. Group foods together in the freezer—this ‘igloo’ effect helps the food stay cold longer.
5. Keep a few days’ worth of ready-to-eat foods that do not require cooking or cooling.

Owners of meat and poultry producing businesses who have questions or concerns may contact the FSIS Small Plant Help Desk by phone at 1-877-FSIS-HELP (1-877-374-7435), by email [*atinfosource@fsis.usda.gov*](mailto:atinfosource@fsis.usda.gov), or 24/7 online at[*www.fsis.usda.gov/wps/portal/fsis/topics/regulatory-compliance/svsp/sphelpdesk*](http://www.fsis.usda.gov/wps/portal/fsis/topics/regulatory-compliance/svsp/sphelpdesk).

USDA's Animal and Plant Health Inspection Service (APHIS) is urging everyone in the potential path of the hurricane to prepare now – not just for yourselves, but also for your pets and your livestock.

Protecting livestock during a disaster:

* Plan for evacuation – know how you will evacuate and where you will go. If it is not feasible to evacuate your livestock, be sure to provide adequate food and water that will last them until you can return, and a strong shelter.

1. If you are planning to move livestock out of state, make sure to contact the State Veterinarian’s Office in the receiving state before you move any animals. You also may contact APHIS Veterinary Services state offices for information and assistance about protecting and moving livestock.
2. Listen to emergency officials – evacuate if asked to do so.

When major disasters strike, USDA hasan emergency loan programthat provides eligible farmers low-interest loans to help them recover from production and physical losses. USDA’s emergency loan program is triggered when a natural disaster is designated by the Secretary of ***Agriculture*** or a natural disaster or emergency is declared by the President under the Stafford Act. USDA also offers additional programs tailored to the needs of specific ***agricultural*** sectors to help producers weather the financial impacts of major disasters and rebuild their operations.

Helping producers weather financial impacts of disasters:

Livestock owners and contract growers who experience above normal livestock deaths due to specific weather events, as well as to disease or animal attacks, may qualify for assistance underUSDA’s Livestock Indemnity Program.

Livestock, honeybee and farm-raised fish producerswhose mechanically harvested or purchased livestock feed was physically damaged or destroyed; or who lost grazing acres or beehives due to an extreme weather event may qualify for assistance. Producers of non-insurable crops who suffer crop losses, lower yields or are prevented from planting ***agricultural*** commodities may be eligible for assistance underUSDA's Noninsured Crop Disaster Assistance Programif the losses were due to natural disasters and if a policy is in place for the current crop year.

Helping operations recover after disasters:

USDA also can provide financial resources through itsEnvironmental Quality Incentives Programto help with immediate needs and long-term support to help recover from natural disasters and conserve water resources. Assistance may also be available for emergency animal morality disposal from natural disasters and other causes.

Farmers and ranchers needing to rehabilitate farmland damaged by natural disasters can apply for assistance through USDA’sEmergency Conservation Program. USDA also has assistance available for eligible private ***forest*** landowners who need to restore forestland damaged by natural disasters through theEmergency ***Forest*** Restoration Program(PDF, 257 KB). For declared natural disasters that lead to imminent threats to life and property, the USDA Natural Resources Conservation Service (NRCS) can assist local government sponsors with the cost of implementing recovery efforts like debris ***removal*** and streambank stabilization to address natural resource concerns and hazards through theEmergency Watershed Protection Program.

Orchardists and nursery tree growers may be eligible for assistance throughUSDA’s Tree Assistance Programto help replant or rehabilitate eligible trees, bushes and vines damaged by natural disasters.

Producers with insurance coverage administered Federal crop insurance program should contact their crop insurance agent for issues regarding filing claims. Those who purchased crop insurance will be paid for covered losses. Producers should report crop damage within 72 hours of damage discovery and follow up in writing within 15 days. TheApproved Insurance Providers (AIP), loss adjusters and agents are experienced and well trained in handling these types of events. As part of its commitment to delivering excellent customer service, RMA is working closely with AIPs that sell and service crop insurance policies to ensure enough loss adjusters will be available to process claims in the affected areas as quickly as possible.

USDA’s Farm Service Agency (FSA), Risk Management Agency (RMA) and Natural Resources Conservation Service (NRCS) remind producers to gather important crop and livestock records and keep them in a safe place as they will likely be needed when inquiring about disaster assistance program eligibility and reporting loss or damage to local USDA Service Centers. More disaster recovery information is available atfarmers.gov/recover.

Helping individuals recover after disasters:

In the aftermath of a disaster, USDA’s Food and Nutrition Service (FNS) works with state, local and nongovernmental organizations to provideemergency nutrition assistance– including food packages and infant formula – to households, shelters and mass feeding sites serving people in need. Upon request from states, the agency also provides emergency flexibilities in the administration of its nutrition assistance programs and, under certain circumstances, works with local authorities to provide Disaster Supplemental Nutrition Assistance Program (D-SNAP) benefits. Once the disaster recovery efforts begin, emergency nutrition assistance and flexibilities requested by states and approved by FNS will be posted to theFNS Disaster Assistance website.

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**Load-Date:** August 27, 2020

**End of Document**



[***USDA Encourages Ag Producers, Residents to Prepare for Hurricane Sally***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:60V9-M061-JDG9-Y2HS-00000-00&context=1516831)

Impact News Service

September 14, 2020 Monday

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**Length:** 1486 words

**Body**

Washington: US Department of ***Agriculture*** has issued the following news release:

The U.S Department of ***Agriculture*** (USDA) reminds communities, farmers and ranchers, families and small businesses in the path of Hurricane Sally that USDA has programs that provide assistance in the wake of disasters. USDA staff in the regional, state and county offices stand ready and are eager to help.

In a continuing effort to serve the American people, USDA partnered with FEMA and other disaster-focused organizations and created theDisaster Resource Center. This central source of information uses a searchable knowledgebase of disaster-related resources powered by agents with subject matter expertise. The Disaster Resource Center website and web tool now provide an easy access point to find USDA disaster information and assistance.

Steps to follow to prepare for a possible weather emergency

Severe weather forecasts often present the possibility of power outages that could compromise the safety of stored food. USDA encourages those in the path of the storm to take the following precautions:

* Store food on shelves that will be safely out of the way of contaminated water in case of flooding.

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When major disasters strike, USDA hasan emergency loan programthat provides eligible farmers low-interest loans to help them recover from production and physical losses. USDA’s emergency loan program is triggered when a natural disaster is designated by the Secretary of ***Agriculture*** or a natural disaster or emergency is declared by the President under the Stafford Act. USDA also offers additional programs tailored to the needs of specific ***agricultural*** sectors to help producers weather the financial impacts of major disasters and rebuild their operations.

Helping individuals recover after disasters

In the aftermath of a disaster, USDA’s Food and Nutrition Service (FNS) works with state, local and nongovernmental organizations to provideemergency nutrition assistance– including food packages and infant formula – to households, shelters and mass feeding sites serving people in need. Upon request from states, the agency also provides emergency flexibilities in the administration of its nutrition assistance programs. In recent weeks, the agency has allowed the purchase of hot foods with SNAP benefits in California, Louisiana, and Iowa, and has provided automatic replacement of benefits due to food loss in California, Connecticut, Louisiana, Massachusetts, North Carolina, and Texas. In some circumstances, the agency also works with local authorities to provide Disaster Supplemental Nutrition Assistance Program (D-SNAP) benefits, as it has inLouisianaandIowa, for individuals and families who do not normally receive SNAP benefits. Once the disaster recovery efforts begin, emergency nutrition assistance and flexibilities requested by states and approved by FNS will be posted to theFNS Disaster Assistance website.

USDA National Institute of Food and ***Agriculture*** provides support for disaster education through theExtension Disaster Education Network (EDEN). EDEN is a collaborative multi-state effort with ***land***-grant universities and Cooperative Extension Services across the country, using research-based education and resources to improve the delivery of services to citizens affected by disasters. EDEN's goal is to improve the nation's ability to mitigate, prepare for, prevent, respond to and recover from disasters. EDEN equips county-based Extension educators to share research-based resources in local disaster management and recovery efforts. The EDEN website offers a searchable database of Extension professionals, resources, member universities and disaster agency websites to help people deal with a wide range of hazards, and food and ***agricultural*** defense educational resources.

Producers with coverage through the Risk Management Agency (RMA) administered Federal crop insurance program should contact their crop insurance agent for issues regarding filing claims. Those who purchased crop insurance will be paid for covered losses. Producers should report crop damage within 72 hours of damage discovery and follow up in writing within 15 days. The Approved Insurance Providers (AIP), loss adjusters and agents are experienced and well trained in handling these types of events. As part of its commitment to delivering excellent customer service, RMA is working closely with AIPs that sell and service crop insurance policies to ensure enough loss adjusters will be available to process claims in the affected areas as quickly as possible.

Helping with the long-term recovery of rural communities

USDA Rural Development has more than 50 programs available to rural and tribal communities for the repair and modernization of rural infrastructure including drinking and waste water systems, solid waste management, electric infrastructure, and essential community facilities such as public safety stations, health care centers and hospitals, and educational facilities.

**Load-Date:** September 15, 2020

**End of Document**



[***New report shows why fighting climate change and nature loss must be interlinked***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:6314-6G11-JDG9-Y23R-00000-00&context=1516831)

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**Body**

Cologny: World Economic Forum has issued the following press release:

A new report shows the importance of addressing nature loss as part of the fight against climate change. The report is from the Intergovernmental Panel on Climate Change (IPCC) and the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES). 'Nature-based Solutions' offer a way forward.

The twin crises of nature loss and climate change are inextricably linked. For too long, however, biodiversity loss and climate change have been discussed and dealt with in siloes, even by independent international frameworks of the UN Convention on Biological Diversity and the UN Framework Convention on Climate Change. We may, however, be at an important turning point.

For the first time, intergovernmental scientific bodies for each global challenge, the Intergovernmental Panel on Climate Change (IPCC) and the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) have worked together on a report, which is the result of a co-sponsored workshop of 50 climate and biodiversity experts. The report finds that we can either solve both crises or solve neither.Have you read?

A blueprint for business to transition to a nature-positive future How to create a net-zero, nature-positive recovery 2021: the year the real economy must start building a net-zero, nature-positive partnership

Why does addressing nature loss matter?

Human activity such as ***agriculture*** and mining lead to direct impacts on our ***land***, air and wildlife. These impacts all contribute to climate change and biodiversity loss. As these crises worsen, they reinforce one another.

For example, changes in temperature or rainfall due to a changing climate can cause loss of habitats and deplete ecosystems of their sustenance. Related biodiversity loss can then reduce nature’s ability to store carbon, thus exacerbating climate change. Both of these are not only problems for the environment, but have grave consequences on human wellbeing and livelihoods, particularly relating to public health and food security.

If we continue to address climate change and biodiversity loss separately, we will continue to take one step forward and two steps back. For example, quick fixes for storing carbon such as planting non-native trees can promote monoculture plantations that run the risk of eradicating biodiversity and ecosystem services, which could have damaging (and expensive) repercussions on livelihoods and our health.World Economic Forum New Nature EconomyImage: World Economic Forum New Nature EconomyWhat's the solution?

The good news is that solutions that reduce such trade-offs exist. To halt climate change and biodiversity loss, we need to combine ***emission*** reduction interventions with those that allow nature to flourish, such as Nature-based Solutions (NbS). For example, when transforming ***land*** for renewable energy, an integrated approach would include grazing and cropping around solar panels, simultaneously providing benefits to pollinators and other wildlife, while producing food and clean energy.

Other win-win scenarios highlighted in the report include halting deforestation in biodiversity hotspots and carbon-rich ecosystems such as rainforests, peatlands and mangroves. According to the report, we use more than 50% of all ***land*** on Earth for food and timber production. Therefore, transitioning to net-zero, nature-positive practices in the ***agriculture*** and forestry sectors would also provide significant co-benefits for climate, nature and people.

NbS can help both reduce ***emissions*** and increase our resilience to unavoidable future shocks. NbS could provide 37% of CO2 mitigation needed by 2030 to maintain global warming within 2°C, and at a lower cost than other options. Marine and terrestrial ecosystems are the only carbon sinks we have and have the capacity to absorb the equivalent of some 60% of global man-made ***emissions***, with the potential to do even more. Equally, wetlands and ***forests*** can secure water supplies during droughts, trees can help to cool down cities during heatwaves and mangroves can protect against coastal floods.

Research shows that investing in nature could provide 395 million jobs by 2030, and the COVID-19 pandemic has provided us with an unprecedented opportunity to reset humanity’s relationship with the environment. The decisions citizens, business and governments take in the near future will shape the world for decades to come. Recovery packages should be combined with strong actions including ***removing*** harmful subsidies that do not serve the public good and supporting people with the necessary training and reskilling in green jobs. A recent study found that every $1 spent by both the public and private sectors on addressing climate change and biodiversity loss can generate up to $7 worth of return.

The World Economic Forum is committed to strengthening the link between the climate and nature agendas. Its community of Champions for Nature is promoting an integrated ***land*** and oceans management to deliver a resilient economy and equitable society. The Forum’s Nature Action Agenda also recently launched two initiatives that are promoting net-zero, nature-positive transformations in the urban and food systems, which are top drivers of GHG ***Emissions*** and Biodiversity Loss: 100 Million Farmers and BiodiverCities by 2030.NatureWhat is the World Economic Forum doing about nature?

Biodiversity loss and climate change are occurring at unprecedented rates, threatening humanity’s very survival. Nature is in crisis, but there is hope. Investing in nature can not only increase our resilience to socioeconomic and environmental shocks, but it can help societies thrive.

There is strong recognition within the Forum that the future must be net-zero and nature-positive. The Nature Action Agenda initiative, within the Platform for Accelerating Nature-based Solutions, is an inclusive, multistakeholder movement catalysing economic action to halt biodiversity loss by 2030.

Dynamic and flourishing natural ecosystems are the foundation for human wellbeing and prosperity. The Future of Nature and Business report found that nature-positive transitions in key sectors are good for the economy and could generate up to $10.1 trillion in annual business value and create 395 million jobs by 2030.

To support these transitions, the Platform for Accelerating Nature-based Solutions has convened a community of Champions for Nature promoting the sustainable management of the planet for the good of the economy and society. The Nature Action Agenda also recently launched the 100 Million Farmers initiative, which will drive the transition of the food and ***agriculture*** system towards a regenerative model, as well as the BiodiverCities by 2030 initiative to create an urban development model that is in harmony with nature.

Get in touch if you would like to collaborate on these efforts or join one of our communities.

Nature is an important ally in the fight against climate change, and addressing nature loss together with climate change offers wide benefits for businesses and jobs as we face further environmental, economic and health shocks. Net-zero, nature-positive economies would not only reduce the likelihood of future pandemics but also safeguard against future crises.

Awareness of the dangers of climate change has never been higher, and since the start of the pandemic which found people locked up indoors, people have yearned for and connected with nature like never before. Let us not forget these lessons and ensure that we urgently opt for solutions to global challenges that learn from the complex harmony of the natural world, rather than simplifying it to unsustainable outcomes. While the integration of climate change and nature in policymaking and business strategy is not where it should be, the message is clear: the longevity of our societies and economies depends on it.

**Load-Date:** June 27, 2021

**End of Document**



[***Federal Energy Regulatory Commission Issues Environmental Assessment Report for Enable Gas Transmission, LLC's Sections 157.205, 157.208, 157.210, and 157.216 - Prior Notice Filing under CP20-482***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:60R9-2V51-JDG9-Y3F0-00000-00&context=1516831)

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**Body**

Washington: Federal Energy Regulatory Commission Issues the followingEnvironmental Assessment (EA) and Environmental Impact Statement (EIS) toENERGY PROJECTS, OFFICE OF

the document can be viewed at: Federal Energy Regulatory CommissionOffice of Energy Projects, Division of Gas-Environment & EngineeringENVIRONMENTAL ASSESSMENT REPORTName of Applicant: Enable Gas Transmission, LLC (EGT)Date Filed: 6/17/2020 Docket No: CP20-482-000Type: Sections 157.205, 157.208, 157.210, and 157.216 –Prior Notice Filing Cost: $ 33,485,897Facilities:EGT proposes to construct approximately 1.5 miles of new 24-inch-diameter natural gas pipeline, a newmeter station, interconnects, and modifications and/or abandonment of facilities at five existingcompressor stations and one existing receiver site. The new pipeline, Line FM-63-A, would traverse fromits existing Delhi Compressor Station to a new interconnect point with EGT’s Line CP in Richland Parish,Louisiana. Modifications at the Delhi Compressor Station would include abandonment in-place of twoexisting compressor units and installation of a new gas-fired unit. The new meter station would beinstalled at the Delhi Compressor Station and would serve as the receipt point for Line FM-63-A. Pipingmodifications would occur at the existing FM-63 and FM-65 receiver site, also in Richland Parish,Louisiana. Modifications at the Byars Lake Compressor Station would include installation of a thirdcompressor unit, relocated from the White River Compressor Station, and ancillary facilities in McLainCounty, Oklahoma. Modifications at the Amber Junction Compressor Station would includemodifications to cylinders on existing compressor units in Grady County, Oklahoma. Installation of a newcooler at the Beirne Compressor Station would occur in Clark County, Arkansas. The new Line FM-63-Aand project facility modifications would increase firm capacity of EGT’s systems by 100 million cubicfeet per day of natural gas. EGT proposes to commence construction in September 2020 and be in-serviceby March 2021.Environmental Impact -- Conclusions:Categorical ExclusionEnvironment Not InvolvedX Environment CompleteEnvironmental Considerations or Comments:Environmental comments are attached.Prepared by: Date: Approved by Branch Chief: Date:8/27/2020 8/27/202020200827-3030 FERC PDF (Unofficial) 08/27/2020- 2 -AttachmentEnable Gas Transmission, LLCDocket No. CP20-482-000ENVIRONMENTAL COMMENTSA. Proposed ActionOn May 17, 2020, Enable Gas Transmission, LLC (EGT) filed an applicationpursuant to sections 157.205, 157.208, 157.210, and 157.216 of the Commission’sregulations for authorization to construct, own, operate, and maintain the Merge,Arkoma, South Central Oklahoma Oil Province, and Sooner Trend Anadarko, Canadian,and Kingfisher Expansion Project (Project). EGT filed under its Blanket Certificatesissued in FERC Docket No. CP82-384-000 and CP82-384-001. EGT proposes toconstruct approximately 1.5 miles of new 24-inch-diameter natural gas pipeline (LineFM-63-A), a new meter station, interconnects, and modifications and/or abandonment offacilities at five existing compressor stations and one existing receiver site in RichlandParish, Louisiana; McLain and Grady Counties, Oklahoma; and Clark County, Arkansas.The Project would be designed, operated, and maintained in accordance with the U.S Department of Transportation pipeline safety regulations found at Title 49 of the Code ofFederal Regulations, Part 192 and all applicable permits.The new pipeline and modifications to existing facilities would increase the firmcapacity of EGT’s system from the discharge side of the Amber Junction CompressorStation to the discharge side of the Delhi Station by approximately 100 million cubic feetper day of natural gas.Line FM-63-A and Associated FacilitiesThe new 1.5-mile-long, 24-inch diameter natural gas pipeline, Line FM-63-A,would be constructed from the existing Delhi Compressor Station at milepost (MP) 0.0 toa new interconnect point with EGT’s Line CP at approximate MP 1.5 and include a newpig receiver at the Line CP interconnect site in Richland Parish, Louisiana. Anapproximately 0.7-mile-long existing private road would be used for access to the rightof-way during construction, and an approximately 0.5-mile-long existing private roadwould be modified and used during construction and operation to access the interconnectsite. EGT would also use two existing pipe/contractor yards southeast of the DelhiCompressor Station.20200827-3030 FERC PDF (Unofficial) 08/27/2020- 3 -Existing Delhi Compressor StationWithin the Delhi Compressor Station fence line in Richland Parish, Louisiana,EGT would construct:• one 11,110 horsepower (hp) Solar Taurus T-70 natural gas-fired compressor;• fuel gas and unit valve skids;• two gas coolers;• a backup generator;• air compressors;• a motor control center; and• a pig launcher.A new meter station would also be constructed within the existing DelhiCompressor Station fence line for the new Line FM-63-A. The new meter station wouldinclude:• two 12-inch ultrasonic meter skids;• one 16-inch ultrasonic meter skid;• gas chromatograph building and ancillary facilities;• two 100-barrel atmospheric tanks with secondary containment; and• over pressure protection monitors.New buildings would be constructed to house the natural gas compressor, themotor control center, and air compressors. The backup generator, fuel gas skid, unitvalve skid, over pressure protection, and ultrasonic meters would be installed on gravelpads. The gas coolers would be supported by concrete piers. EGT would construct aretaining wall (consisting of rock-filled baskets) along a portion of the southern fence lineat the station. Construction at the Delhi Compressor Station would generally occurwithin the station fence line on previously disturbed ***land***. EGT would use additionaltemporary workspace directly adjacent to the western fence line for contractor/materialstorage and the existing fence would be temporarily removed at this location.Existing Receiver Site Piping ModificationsThe existing receiver site is approximately 7 miles east-southeast of the DelhiCompressor Station. EGT would install approximately 180 feet of 16-inch-diameterpiping and ancillary equipment (e.g , valves and flanges) on an existing measurementfacility site at the interconnect of existing Lines FM-63 and FM-65. The constructionworkspace at the receiver site would be confined entirely within the existing facilityfence line on previously disturbed ***land***.20200827-3030 FERC PDF (Unofficial) 08/27/2020- 4 -Existing Byars Lake and White River Compressor StationsThe existing Byars Lake Compressor Station is along EGT’s Line AD-Eastpipeline in McClain County, Oklahoma. The existing White River Compressor Station isalong EGT’s Line J pipeline near Jackson County, Arkansas. The proposed facilities atthe existing Byars Lake Compressor Station include:• 2,370 hp Caterpillar 3608 natural gas-powered reciprocating compressor(relocated from the White River Compressor Station);• discharge gas cooler;• fuel/start gas system;• jacket water and lube oil storage tanks; and• station control building/control building modifications.The new compressor unit would be enclosed in a new compressor building andinstalled on a concrete foundation. No other modifications than ***removal*** of thecompressor unit to the White River Compressor Station is proposed. The equipment andconstruction workspace at the Byars Lake Compressor Station would be confined entirelywithin the existing station fence line on previously disturbed ***land***.Existing Amber Junction Compressor StationThe existing Amber Junction Compressor Station is along EGT’s Line AD-Eastpipeline in Grady County, Oklahoma. Minor modifications proposed at the existingAmber Junction include:• cylinder modifications on all existing compressors; and• replacing the existing Fairbanks compressor unit lube oil systems with anenhanced lube oil system.The modifications would occur within the existing compressor buildings at the siteand no ground disturbance would be required.Existing Beirne Compressor StationThe existing Beirne Compressor Station is along EGT’s Line S-3-S pipeline,approximately 1.1 miles north-northeast in Clark County, Arkansas. EGT plans to installa new gas cooler with associated valves and yard piping. All equipment and work wouldbe within the existing fence line on previously disturbed ***land***.EGT proposes to begin Project construction in September 2020, with ananticipated in-service date of March 2021.20200827-3030 FERC PDF (Unofficial) 08/27/2020- 5 -B. ***Land*** RequirementsThe Project would impact 68.4 acres during construction, of which 30.7 acreswould be for the Line FM-63-A, construction right-of-way, additional temporaryworkspace (ATWS), pipe/contractor yards, and access roads, and 37.7 acres foraboveground facilities, including the new Line FM-63-A interconnect site andmodifications within the fence lines of existing compressor stations and EGT’s existingreceiver site. Of the total construction acreage for the pipeline facilities, approximately9.5 acres would be contained within the permanent easement (right-of-way) of the newLine FM-63-A pipeline and 2.5 acres would be used for new permanent access to theinterconnect site. The remaining 18.7 acres of temporary construction work areas wouldrevert to pre-construction condition and use following construction. Approximately 0.3acre would be fenced for operation of the new interconnect facility.The Project would use a 75-foot-wide construction right-of-way and maintain a50-foot wide right-of-way during operation. Where the horizontal directional drill(HDD) method is proposed, EGT would acquire a 50-foot-wide permanent easement;however, no ground disturbing activities are anticipated along the drill path forconstruction or operations.EGT would use two existing private gravel/dirt roads for temporary and/orpermanent access for the Project. The temporary access road, near MP 0.8, would beused to provide access during construction. This temporary access road would encumberapproximately 1.7 acres and would be returned to pre-construction condition and useafter construction. The existing road at MP 1.5 would be used as a permanent accessroad to provide access to the interconnect site during construction and operation. Use ofthis road would permanently encumber approximately 2.5 acres, of which, 1.9 acres isexisting road and an additional new 0.6 acre extension from the existing road into thenew interconnect site. Both roads would likely require some improvement which mayentail clearing, grading, and placement of additional gravel to support construction use.Proposed modification at the five existing compressor stations would occur withinthe existing fence line at each facility. The modification would entail installation of newequipment (or equipment/system upgrades) and ***removal*** or abandonment of existingequipment, all occurring on existing concrete pads or previously disturbed (graveled andpartially mowed) ***land*** within the existing fence lines. Modifications at the existingreceiver site would involve limited yard pipe installation also within the existing facilityfence line. In addition to the compressor station modifications, EGT would install onepig receiver at the proposed Line FM-63-A interconnect site, which would be fenced andmaintained within a new, 0.3-acre site. The general location of the Project is shown in20200827-3030 FERC PDF (Unofficial) 08/27/2020- 6 -figure 1 below. Site specific locations for the proposed Line FM-63-A, existingcompressor stations, and receiver site are shown in appendix A.20200827-3030 FERC PDF (Unofficial) 08/27/2020- 7 -Figure 1 Overview Map of Project facilities- 8 -C. Construction Plans and ProceduresConstruction of the proposed Line FM-63-A would follow industry-standardpractices which involve a series of discrete activities conducted in a linear sequence.Equipment and vehicles used during pipeline construction would include heavy dutyequipment including excavators, backhoes, dozers, graders, loaders, sidebooms,equipment haulers, cranes, dump trucks, fuel and water trucks, medium and light dutyvehicles. Construction of the pipeline would follow conventional open-cut constructionmethod for waterbody crossings. The Project would follow a set of sequential operations,including: surveying, staking and fencing crossing; clearing and grading; trenching; pipestringing; bending and welding; lowering-in and backfilling; hydrostatic testing; clean-upand restoration; and commissioning. EGT proposes to use the HDD method at onelocation to avoid impacts on an interstate highway and three wetlands from MP 0.2 to 0.7(discussed further in section D.3). The HDD method involves drilling a pilot hole undera feature, then enlarging that drilled hole through successive reaming until the borehole islarge enough to accommodate the pipe. In order to minimize impacts on theenvironment, EGT has adopted the Commission’s Upland Erosion Control, Revegetation,and Maintenance Plan (Plan) and Wetland and Waterbody Construction and MitigationProcedures (Procedures). Additionally, EGT has prepared a Spill Prevention, Control,and Countermeasures (SPCC) Plan; an HDD Inadvertent Returns and Contingency Plan(HDD Plan); a Fugitive Dust Control Plan; and an Unanticipated Discovery Plan. Wehave reviewed these plans and find them to be acceptable.D. Environmental AnalysisBased on our1 review of the Project, the following resources are either not presentor would not be affected by the Project’s activities:• mineral resources;• state parks, national trails, wilderness areas;• contaminated or hazardous waste areas;• recreation, scenic places; and• coastal zone management areas.These resources will not be discussed further. We conclude the followingresources would not be adversely affected by the proposed action as discussed furtherbelow.1 “We,” “us,” and “our” refer to the environmental staff of the Commission’s Office of Energy Projects.20200827-3030 FERC PDF (Unofficial) 08/27/2020- 9 -1. Geologic HazardsThere would be no ground disturbance at the Amber Junction or White RiverCompressor Stations; therefore, these areas are not discussed further in this section.Seismic Hazards and Soil LiquefactionEarthquake severity can be expressed in terms of intensity and magnitude.Intensity is based on observed effects of ground shaking, while magnitude describesseismic energy released at the earthquake source. The main risk to pipelines andaboveground facilities would be a fault that displaces laterally during an earthquake.Project facilities are not underlain by this type of feature.Additionally, seismic activity in the immediate vicinity of Project areas hashistorically been low. From January 1900 to July 2020, no earthquakes were recordedwithin 10 miles of proposed facilities in Louisiana; three earthquakes were recorded (in1988, 2019, and February 2020) within 10 miles of the Byars Lake Compressor Stationwith Richter scale magnitudes between 1.6 and 2.2; and there were five earthquakeswithin 10 miles of the Beirne Compressor Station, all in February 1974, with Richterscale magnitudes between 1.8 and 3.8 and reported Modified Mercalli scale intensities upto V. At this intensity, damage is negligible in buildings of good design and construction.Based on the magnitude and intensity of recent and historic seismic activity in thevicinity of Project areas, and the absence of active faults, we conclude that there is a lowpotential for prolonged ground shaking, ground rupture, or secondary seismic effectssuch as soil liquefaction to significantly impact Project facilities. Furthermore, EGTwould construct and operate the Project in accordance with requirements of theCommission, the Department of Transportation’s Pipeline and Hazardous MaterialsSafety Administration, and other regulatory requirements, as applicable.HDD Feasibility and Inadvertent Returns of Drilling Fluid to the Ground SurfaceProject construction would include one 2,430-foot-long HDD crossing ofInterstate 20 and adjacent wetlands. During HDD operations, bentonite-based drillingfluid is pumped under pressure through the inside of the drill pipe and flows back(circulates) to the drill entry point along annular space between the outside of the drillpipe and the drilled hole. Because the drilling fluid is pressurized, it can be lost, resultingin an inadvertent return to the ground surface (IR) if the drill path encounters porousmaterial and/or fractures or fissures in the bedrock. Chances for an IR to occur aregreatest near the drill entry and exit points where the drill path has the least amount ofground cover. It is also possible for HDD operations to fail, primarily due toencountering unexpected geologic conditions such as course materials or if the pipe wereto become lodged in the hole during pullback operations.20200827-3030 FERC PDF (Unofficial) 08/27/2020- 10 -EGT completed two geotechnical borings along the HDD alignment, one near theproposed exit and entry points, to define geologic conditions. Based on a review ofEGT’s HDD Design Report, subsurface conditions were found to consist ofunconsolidated interbedded clays, sands, and silts. These conditions are generallyfavorable for successful completion of an HDD. Further, there would be a maximumdepth of cover of approximately 75 feet between the drill alignment and the forestedwetland being crossed, and EGT’s IR assessment determined that the required borepressure to facilitate the installation process would be less than the allowable borepressure for the installation except in the vicinity of the exit location (last 250 to 275 feetof the bore).EGT has provided an HDD Plan that would be implemented as applicable, andonly non-petrochemical-based, non-hazardous additives that comply with applicablepermit requirements and environmental regulations would be utilized. EGT’s HDD Planaddresses the prevention, detection, notification, and response to IRs. We have reviewedthis plan and find it acceptable. Based on the mitigation measures in EGT’s HDD Plan,and subsurface conditions identified at the proposed crossing, we conclude that impactsfrom HDD construction would not be significant.Other geologic hazards (e.g , landslide, ***land*** subsidence potential, flood, scour)were not identified in the Project area. Therefore, we conclude that Project impacts onand from geologic resources would not be significant.2. SoilsThere would be no ground disturbance at the Amber Junction or White RiverCompressor Stations; therefore, these areas are not discussed further in this section.Soil characteristics were determined based on a review of the Natural ResourcesConservation Service (NRCS) Web Soil Survey. About 21.9 acres have a shallow depthto bedrock (bedrock within 60 inches of the ground surface). The majority of Projectareas have been previously disturbed and developed (industrial/commercial ***land*** use);however, native Project area soils are not generally considered to be highly compactionprone,highly erodible by wind or water, or associated with poor revegetation potential.The majority of Project areas are classified as prime farmland. However, the soilswithin the fencelines of the Delhi Compressor Station, receiver site, Byars LakeCompressor Station, and Beirne Compressor Station have been previously removed frompotential ***agricultural*** production. Potential impacts on ***agricultural*** soils in the proposedLine FM-63-A workspace would be minimized and mitigated in accordance with ourPlan. These include measures to conserve and segregate the upper 12 inches of topsoil,alleviate soil compaction, protect and maintain existing drainage tile and irrigation20200827-3030 FERC PDF (Unofficial) 08/27/2020- 11 -systems, prevent the introduction of weeds, and retain existing soil productivity.Implementation of these measures would help ensure post-construction revegetationsuccess and productivity. New permanent impacts on prime farmland would be limitedto soils within the footprints of new aboveground facilities (the Line FM-63 interconnectsite), and the extension of the permanent access road which collectively total less thanone acre. Therefore, we conclude Project impacts on prime farmland would not besignificant.To minimize or avoid potential impacts on soils during construction and operationof the Project, EGT would utilize controls implemented in accordance with our Plan. OurPlan specifies that temporary erosion controls are installed immediately following initialsoil disturbance and inspected on a regular basis and after each rainfall event of 0.5 inchor greater to ensure proper function. Upon the completion of construction activities, EGTwould seed disturbed areas with a mixture approved by the landowner or consistent withrecommendations of the NRCS. Temporary erosion control devices must be maintaineduntil the Project area is successfully stabilized/revegetated.Where the Project would cross areas of shallow bedrock, there is potential tointroduce subsurface stone into surface soils during construction. The FERC Planrequires that the size, density, and distribution of rock on the construction work area besimilar to adjacent areas and that excess rock be removed from at least the top 12 inchesof soil in ***agricultural*** areas or in compliance with landowner agreements. EGT does notpropose blasting for this Project. Therefore, potential we conclude impacts would beappropriately mitigated.The Project would not disturb areas of known soil contamination. Duringconstruction, contamination from accidental spills or leaks of fuels, lubricants, andcoolant from construction equipment could adversely impact soils. To minimize impacts,EGT would implement measures contained in its SPCC Plan to prevent or minimizeaccidental spills and to ensure that if a release does occur, that it would be promptlyidentified and cleaned up.Given EGT’s proposed mitigation measures and that disturbed areas would bereturned to pre-construction conditions or otherwise stabilized with gravel cover, weconclude impacts on soils would not be significant.3. Water Resources and WetlandsGroundwaterThere are no U.S Environmental Protection Agency-designated sole-sourceaquifers, or state-designated wellhead protection areas underlying Project areas. Further,based on a review of state database information, public or private water supply wells20200827-3030 FERC PDF (Unofficial) 08/27/2020- 12 -were not identified within 150 feet of Project areas. Known groundwater contaminationwas not identified within 0.25 mile of Project areas. In the event of an inadvertent releaseor spill of fuel, oils, or other hazardous materials during construction, EGT wouldimplement measures in its SPCC Plan.Groundwater withdrawal is not proposed for the Project, except as necessary fortrench dewatering. If trench dewatering is necessary, shallow groundwater resourcesimmediately adjacent to Project work areas could be affected during constructionactivities; however, this effect would be temporary and flow patterns would return to preconstructionconditions once dewatering activities cease. The addition of impervioussurfaces may also permanently affect overland flow patterns and subsurface hydrology.However, these effects would be highly localized and minor.We conclude that impacts from Project construction and operation on groundwaterresources would be mostly temporary and not significant.LeveesThe proposed Line FM-63-A pipeline, existing Delhi Compressor Station, andexisting receiver site are all within leveed areas. These areas are not listed as SpecialFlood Hazard Areas (SFHAs) due to their leveed status but remain considered asfloodplain by local agencies. Project work is not proposed within 1,500 feet of anyfederal or state-managed levee systems. On February 25, 2020, EGT communicated withthe Richland Parish floodplain administrator who indicated that all floodplain permitrequirements are handled through the building permit process.Modifications at the Delhi Compressor Station and along Line FM-63-A wouldnot require a building permit. Based on review of FEMA flood hazard maps, the ByarsLake, Amber Junction, and Beirne Compressor Stations do not cross SFHAs. The WhiteRiver Compressor Station is located entirely within an SFHA, however, no grounddisturbance would occur at the White River Compressor Station. Thus, we conclude noimpacts would occur on SFHAs or floodplains.Surface WaterEGT conducted field surveys for Line FM-63-A and the Delhi Compressor Stationmodifications in February 2020 and April 2020. One perennial waterbody (S-1), anunnamed tributary to Big Creek, was identified at MP 1.0 along the proposed Line FM-63-A pipeline route. EGT would cross S-1 using the open-cut crossing method, inaccordance with the FERC Procedures. No waterbodies would be affected byconstruction at the Delhi, Bryars Lake, Amber Junction, White River, or BeirneCompressor Stations.20200827-3030 FERC PDF (Unofficial) 08/27/2020- 13 -Pipeline construction could result in temporary impacts on water quality resultingfrom increased turbidity during construction in or near flowing surface water. As part ofEGT’s temporary erosion and sediment control measures, EGT would construct or installsediment barriers, stormwater diversions, mulch, and seed to establish adjacent groundcover, as necessary, to Project waterbodies. No permanent impacts on surfacewaterbodies are anticipated for this Project. EGT would restore slopes and contours topre-construction conditions and restore vegetation using approved seed mixes.Precipitation and/or the seepage of groundwater can necessitate the dewatering oftrenches to allow construction to proceed. During trench dewatering, water would bepumped from the trench, discharged into a well vegetated upland area and/or filteredthrough a geotextile sediment filter bag or sediment barrier. Dewatering would beconducted in a manner designed to prevent the flow of silt-laden water directly intoadjacent waterbodies and in accordance with state permitting requirements.Spill-related impacts from construction are most commonly associated withequipment refueling and maintenance. EGT would abide by our Procedures and itsSPCC to prevent, contain, and clean-up spills and address necessary precautions duringmaterial storage.Because EGT would implement best management practices and our Procedures, tominimize and mitigate impacts on surface waters; we conclude that the Project would nothave a significant impact on surface waterbodies.WetlandsEGT conducted field surveys for wetlands in May and March 2020. EGTidentified nine palustrine emergent wetlands (PEM), three combination palustrineforested/palustrine emergent wetlands (PFO/PEM), and 1 PFO wetland within thepipeline survey corridor. One of the PEM wetlands overlaps within the existing DelhiCompressor Station. No wetlands were identified within the fence line at Bryars Lake,Amber Junction, White River, and Beirne Compressor Stations, and the existing receiversite. Of the wetlands identified, five would be crossed by the proposed Project. Table 1identifies wetlands crossed and impacted by the Project.20200827-3030 FERC PDF (Unofficial) 08/27/2020- 14 -Table 1Wetlands Crossed by the ProjectWetlandType 1FeatureIDApproximateMilepostCrossing Length(feet)Crossing Width(feet)TemporaryImpact (acres)PermanentImpact (acres)PEM W-1 0.1 519 75 0.9 0.0PEM W-2 0.3 44 0 2 0.1 2 0.0PFO W-3 0.5 1,520 0 2 1.7 2 0.0PEM W-3 0.6 207 02 0.3 2 0.0PEM W-3 0.7 43 183 <0.1 0.0PEM W-4 1.0 25 75 <0.1 0.0PEM W-6 1.2 6 75 <0.1 0.0PEM W-6 1.3 9 75 <0.1 0.0Total 2,403 Variable 1.0 0.01 Source: Cowardin et. Al 1979; PFO- palustrine ***forested*** wetland; PEM- palustrine emergent wetland2 Wetlands to be avoided via the use of the HDD method. Not included in the total sum of impacts. No treeclearing is anticipated.3 Wetland would not be trenched but is partially within temporary workspace used for travel lane.4 Wetlands W-5, W-7, W-8, and W-9 would not be crossed by the Project but are adjacent to the proposed FM-63-A.Note: Sum of addends may not equal totals due to rounding.Approximately 1.0 acre of temporary impacts on wetlands would occur associatedwith the construction corridor and temporary workspaces. EGT would cross emergentwetlands along the Project pipeline route using the open-cut construction method.However, EGT would avoid direct impacts on two PEM wetlands (W-2 and W-3) andone PFO wetland (W-3) along the proposed Line FM-63-A route by using the HDDcrossing method. The Project would avoid impacts on the wetland within the fence lineof the Delhi Compressor Station. No permanent wetland impacts are anticipated by theproposed Project.Similar to the impacts and mitigation measures discussed under surfacewaterbodies, EGT would implement best management practices to prevent sedimentation,erosion, and hazardous substances from entering wetlands during construction.Temporary erosion control devices would be installed, as necessary, immediately afterinitial disturbance of wetlands or adjacent upland areas to prevent sediment flow intowetlands and would be maintained until revegetation is complete. Trench plugs would beinstalled to maintain wetland hydrology. Construction equipment operating in wetlandareas would be limited to that needed to clear the construction right-of-way, dig thetrench, fabricate and install the pipeline, backfill the trench, and restore the constructionright-of-way.EGT would return all areas of temporary impact to preconstruction contours andallow them to revegetate upon Project completion. EGT would implement measures inthe FERC Plan and Procedures and abide by its SPCC Plan to minimize potential forsedimentation impacts and the potential for spills on wetlands. ***Forested*** wetland impacts20200827-3030 FERC PDF (Unofficial) 08/27/2020- 15 -would be avoided through use of the HDD method. Although the HDD method typicallyavoids impacts on water quality by precluding disturbance of the wetland, an IR ofdrilling fluid could occur if drill fluid escapes the drill bore hole and are forced throughthe subsurface substrate to the ground surface. Implementation of EGT’s HDD Planwould minimize impacts of any IR if it were to occur on the Project.Because EGT has minimized impacts on wetlands to the greatest extent possible(crossing ***forested*** wetlands via HDD avoiding long-term impacts), implementation ofbest management practices, its SPCC Plan, HDD Plan, and our Procedures; we concludethat EGT has adequately minimized impacts on wetlands and that these impacts would betemporary and not significant.EGT submitted pre-construction notification to the Vicksburg District of the U.S Army Corps of Engineers under Section 404. EGT filed an Individual Permit applicationfor the Project on May 21, 2020. The Project would not result in loss of wetlands of theU.S and therefore there would be no conversion or loss of wetland function. For thesereasons, EGT does not propose compensatory mitigation.Water UseApproximately 797,000 gallons of water would be required for hydrostatic testingof the pipeline, HDD operations, and dust suppression. All water used for hydrostatictesting, HDD drilling fluid, and dust suppression would be withdrawn from the unnamedtributary to Big Creek (the same tributary that would be crossed by the proposed LineFM-63-A), adjacent to the existing temporary access road at MP 0.6 in accordance withour Procedures. Water would not be chemically treated. After testing, EGT woulddischarge the test water through an energy-dissipating device in compliance with itsNational Pollutant Discharge Elimination System permit and our Procedures. Therefore,we conclude that hydrostatic testing and dust suppression would not result in significantimpacts.4. Fisheries, Vegetation, Wildlife, and Threatened and Endangered SpeciesFisheriesA perennial stream (S-1), an unnamed tributary to Big Creek, was identifiedwithin the Line FM-63-A pipeline right-of-way. This waterbody is classified as awarmwater fishery. Fish species with the potential to occur in S-1 include common warmwater species such as bluegill, largemouth bass, channel catfish, warmouth, and variousminnow species. No waterbodies in the Project area are part of the National Wild andScenic Rivers System.20200827-3030 FERC PDF (Unofficial) 08/27/2020- 16 -Increased sedimentation from construction activities could impact fisheriesresources. Sedimentation could smother fish eggs and other benthic biota and alterstream bottom characteristics, such as converting sand, gravel, or rock substrate with siltor mud. These habitat alterations could reduce juvenile fish survival, spawning habitat,and benthic community diversity and health. Fish and other stream biota would bedisplaced to similar habitat upstream or downstream of the pipeline crossing, which couldlead to increased competition for habitat and food sources, which could affect fishsurvival and health. A spill of fuel or equipment-related fluids could impact waterquality if it reaches off-site waterbodies. The chemicals released during spills could haveacute fish impacts, such as altered behavior, changes in physiological processes, orchanges in food sources. Fish also could experience greater mortality if a large volume ofhazardous liquid is spilled into a waterbody.Construction of the FM-63-A pipeline is scheduled to commence in September2020 with an anticipated completion date in December 2020. This construction schedulewould avoid the spring and summer seasons, thus minimizing the potential for impacts onearly life cycle stages of warmwater fish species assemblage, which are the life stagesmost susceptible to entrainment and clogged gills. Additionally, EGT commits to screenthe water intake hose to minimize the potential for entrainment of fish, in accordancewith the FERC Procedures.To minimize impacts on aquatic resources from construction of the Project, EGTwould install and maintain erosion control devices and ensure all flow downstream ofcrossings is appropriately maintained, in accordance with the FERC Plan and Procedures.In accordance with the FERC Procedures, it would take 48 hours to cross theintermediate waterbody S-1, which would limit impacts on aquatic resources. The bedand banks of S-1 waterbody would be returned to preconstruction contours uponcompletion of the installation. Pursuant to the FERC Procedures, EGT would retain ariparian strip of at least 25 feet wide from routine vegetation mowing or clearing adjacentto waterbodies, as measured from the waterbody mean high-water mark.Because impacts on aquatic resources from construction and operation of theProject would be temporary and EGT would limit impacts on aquatic resources byimplementing its proposed construction methods and avoidance, minimization, andmitigation measures; therefore, we conclude that impacts on fisheries from the Projectwould not be significant.VegetationConstruction of the Line FM-63-A pipeline would result in up to 30.7 acres oftemporary ground disturbance. This total includes 15.7 acres of ***agricultural*** –cultivatedcrops, 15.0 acres of developed/industrial/commercial, and less than 0.1 acre of uplandforest/woodland. Based on the field survey, a small amount of the cultivated cropland20200827-3030 FERC PDF (Unofficial) 08/27/2020- 17 -currently consists as non-herbaceous upland woody vegetation (less than 0.1 acre) at theopen-cut stream crossing (S-1) MP 1.0 would be cleared for the permanent right-of-wayand temporary workspace. ***Forested*** wetlands account for 1.7 acres along the FM-63-Apipeline route. However, vegetation at this location would not be disturbed as EGTwould cross the ***forested*** wetland using the HDD method. The vegetation communities atEGT’s existing compressor stations consists largely of previously disturbed andconsistently maintained non-woody upland herbaceous grasses and forbs.Project operations would permanently ***remove*** 0.3 acre of ***agricultural*** vegetationand less than 0.1 acre of upland woody vegetation at the interconnect site. About 9.4acres of ***agricultural*** vegetation would be permanently maintained for the new right-ofway.Operational activity for Line FM-63-A would be limited primarily to maintenanceof the right-of-way and inspection, repair, and cleaning of the pipeline. Disturbedportions of the temporary workspaces, ATWS, pipe/contractor yards, and temporaryaccess roads would be restored to preconstruction ***land*** cover. Modifications toaboveground facilities and construction within pasture and cropland would not requiremaintenance during operation of the Project, and no long-term impact on vegetation isexpected. EGT would restore the Project area to pre-existing conditions afterconstruction, stabilize, and reseed disturbed areas in accordance with the FERC Plan andwith recommended seed mixtures from the NRCS.Because the majority of the Project workspaces would be within existing industrialsites, and the majority of impacts on vegetation (less than 0.1 acre conversion of uplandwoody vegetation and 9.4 acres of ***agricultural*** vegetation) would be temporary, weconclude Project impacts on vegetation would not be significant.WildlifeWork at the receiver site and compressor stations would occur within EGT’sexisting station fence lines in areas not expected to provide wildlife resources.Representative wildlife along the pipeline route, at the interconnect site, and a smallportion of the new permanent access road, would be expected to provide habitat forseveral mammalian, bird, reptilian, amphibian, and invertebrate species. Direct andindirect impacts may occur due to vegetation clearing and grading for construction andoperation. Construction activities could displace mobile wildlife species and kill smaller,less mobile wildlife species. After construction and restoration activities, wildlife specieswould re-occupy revegetated areas. Noise levels along the proposed Line FM-63-Awould return to pre-construction levels immediately following completion of constructionactivities. Noise associated with construction would be temporary; however, given themajority of construction would occur within existing facilities, some species may becomeacclimated to the noise and return to the Project area. EGT would minimize impacts onwildlife habitats and vegetation by co-locating Project features within the compressorstations and receiver site and minimizing tree clearing to the greatest extent possible (less20200827-3030 FERC PDF (Unofficial) 08/27/2020- 18 -than 0.1 acre permanent conversion). Project construction could result in short-termdisturbance of migratory bird habitat; however, such impacts would be minimal given theplanned timing of construction (September 2020 to March 2021) is outside of the nestingseason (April 15 to August 1), and the minimal nesting habitat present within the Projectworkspaces. After construction, wildlife and vegetation would be expected to returnoutside of fenced in areas, such as the pipeline right-of-way.Because impacts on suitable habitat for wildlife would be minimal, the majority ofwork would occur within existing compressor stations, tree clearing would be outside ofthe migratory bird nesting period, and there is abundance of suitable habitat adjacent tothe Project area; we conclude that EGT has minimized impacts on wildlife, migratorybirds, and habitat, and these resources would not be significantly impacted by the Project.Threatened, Endangered, and Special Status SpeciesFederally ListedOn March 23, 2020, EGT conducted a records search under the Information forPlanning and Consultation (IPaC) that may occur the Project area. The IPaC records,indicated nine federally listed species and one proposed species with the potential tooccur within the Project area as shown in table 2.Table 2Federally Listed Species Potentially Occurring within the Vicinity of the Project areaCommonNameStatusHabitatFacilityEffectsDeterminationNorthernlong-earedbatT Summer: ***forested*** areas, trees >3” dbh aspotential roosts; Winter: Caves, minesLine FM-63-A,Receiver, Delhi CS,White River CSLine FM-63-A: Mayaffect, but will notcause prohibited takeAll CS: No effectGray bat E Occupy caves year-round White River CS No effectPiping plover T Beaches adjacent to wetlands, beaches,sand bars and dredged material islands ofmajor riversByars Lake CS,Amber JunctionCS, White RiverCS, Beirne CSNo effectInterior leastternE Sandbars along rivers, sand and gravelpits, lake or reservoir shoreline, shallowwetlands, margins of lakes and pondsByars Lake CS, AmberJunction CSNo effectRed Knot T Shoreline habitat primarily along coasts.May also use large mudflat and wetlandhabitat within interior flyways duringmigration.Byars Lake CS, AmberJunction CS, White RiverCS, Beirne CSNo effectWhoopingcraneE Wetlands, including coastal marshes,inland marshes, lakes, ponds, wetmeadows, rivers, and ***agricultural*** fields.Byars Lake CS,Amber JunctionCSNo effect20200827-3030 FERC PDF (Unofficial) 08/27/2020- 19 -Table 2Federally Listed Species Potentially Occurring within the Vicinity of the Project areaCommonNameStatusHabitatFacilityEffectsDeterminationEastern blackrailP Wet sedge meadows with dense coverand shallow wetlands dominated bycattailsWhite River CS, BeirneCSNo effectRed- cockadedwoodpeckerE Mature pine stands with open canopy Beirne CS No effectAmericanburying beetleE Slight preference for grasslands and openunderstory oak hickory ***forests***.Byars Lake CS No effectPondberry E Bottomland and hardwood swamps White River CS No effectT=Threatened; E= Endangered; P=Potential listing; CS= Compressor stationNo suitable habitat was found within the compressor stations and receiver site fornine of the federally listed species and proposed listed species. Therefore, we havedetermined the Project would have no effect on these federally listed species (see table 2).There is suitable habitat for one federally listed species, the northern long-eared bat, atthe Line FM-63-A pipeline Project area.The northern long-eared bat roosts in trees during the summer and hibernates incaves and abandoned mines during the winter. Roosting habitats include living and deadtrees greater than 5 inches in diameter at breast height with cracks, crevices, and/orexfoliating bark. The Project is not within known northern-long eared bat habitat orknown hibernacula. Limited tree clearing (less than 0.1 acre) would be required forconstruction of the Line FM-63-A and interconnect site. As such, initial tree clearingwould occur between September 2020 and December 2020 which overlaps with theactive bat season (April 1 to September 30). Therefore, we conclude that the Project mayaffect but is not likely to adversely affect the northern long-eared bat.On May 8, 2020, the FWS verification letter included the determination keyresults under the January 5, 2016, Programmatic Biological Opinion (PBO) on Final 4(d)Rule for the northern long-eared bat and Activities Excepted from Take Prohibitions fromthe FWS. The results determined the Project may affect the northern long-eared bat in amanner consistent with the description of activities addressed by the FWS PBO;however, any taking that may occur incidental to this action is not prohibited under thefinal 4(d) rule. Therefore, the PBO satisfies consultation under the ESA Section 7relative to the northern long-eared bat. On May 11, 2020 e-mail correspondence, theU.S Fish and Wildlife Service concurred with our determination and confirmed nofurther consultation under section 7 of the ESA is required.State Listed20200827-3030 FERC PDF (Unofficial) 08/27/2020- 20 -Between January 7, 2020 and May 29, 2020, EGT consulted with the LouisianaDepartment of Wildlife and Fisheries (LDWF), Oklahoma Natural Heritage Inventory(ONHI), and Arkansas Natural Heritage Commission (ANHC), to determine any knownrecords of state-protected species in the vicinity of the Project. On January 12, 2020,April 29, 2020, and May 29, 2020, the LDWF, ONHI, and ANHC respectively confirmedthat there are no occurrence information for protected state-listed species, non-regulatoryrare species, or ecological systems of importance near the Project sites. Therefore, wehave determined the Project would not adversely affect state listed species.5. ***Land*** UseThe Project would require 68.4 acres of ***land*** for construction activities and 12.3acres for operation. ***Land*** use types within the Project area include ***agricultural*** ***land*** anddeveloped/industrial ***land***. ***Agricultural*** ***lands*** consist of cultivated croplands which arecurrently used as open space and pastureland. Affected developed/industrial ***lands*** wouldoccur within the fence lines of the existing compressor stations. Impacts on ***forested*** landand surface water are discussed further above. No residences occur within 50 feet of theproposed Project, and the nearest residence would be 1,035 feet from Project workspaces(FM-63 and FM-65 receiver site). ***Land*** use impacts are quantified in table 3.Table 3Land Use Impacts by Type (acres)State/FacilityAgriculturalDeveloped/ IndustrialTotalTemp Perm Temp Perm Temp PermLine FM-63-ARight-of-Way 1, 2 9.539.10.2 0.4 9.7 9.52ATWS 5.9 - 0.2 - 6.1 -Pipe/Contractor Yards - - 10.7 - 10.7 -Access Roads 0.3 0.3 3.9 2.2 4.2 2.5Pipeline FacilitiesSubtotal15.7 9.4 15.0 2.6 30.7 12.0Aboveground Facilities 2Delhi CS - - 4.9 - 4.9 -Line FM-63-AInterconnect Site0.3 0.3 - - 0.3 0.3Line FM-63 ReceiverSite Modifications- - 1.6 - 1.6 -Byars Lake CS - - 9.5 - 9.5 -Amber Junction CSWhite River CS- - 18.9 - 18.9 -- - 1.6 - 1.6 -Beirne CS - - 0.9 - 0.9 -20200827-3030 FERC PDF (Unofficial) 08/27/2020- 21 -Table 3Land Use Impacts by Type (acres)State/FacilityAgriculturalDeveloped/ IndustrialTotalTemp Perm Temp Perm Temp PermAbovegroundFacilities Subtotal0.3 0.3 37.4 - 37.7 0.3Project Totals 16.0 9.7 52.4 2.6 68.4 12.3ATWS = additional temporary workspaceCS = compressor stationTemp = TemporaryPerm = Permanent1 Construction ***land*** requirements include both temporary and permanent ***land*** that may be impacted byconstruction. Construction acreage does not include ***land*** between HDD entry and exit points because no grounddisturbance is anticipated between those two points.2 Permanent ***land*** requirements for the pipeline include the 50-foot-wide easement that would be retained forroutine maintenance of the pipeline. This includes the area between HDD entry and exit points; however, noground disturbance would occur within the permanent easement crossed by HDD. No new ***land*** is required foroperation of existing compressor station or receiver sites, as all modifications would occur within the existingfence lines.3 Based on the field survey and review of aerial imagery, a small amount of the ***agricultural*** ***land*** currently consistsas non-herbaceous upland woody vegetation (<0.01 acre) at the open-cut stream crossing at MP 1.0, which wouldbe cleared for the right-of-way.Note: Due to rounding, totals may not equal sum of addends.Pipeline construction would temporarily impact 15.0 acres of developed/industrialland, and 15.7 acres of ***agricultural*** ***land***. The operational right-of-way for the life of thepipeline would remain 50 feet in width. Approximately 9.5 acres, including 9.1 acres ofagricultural ***land*** and 0.4 acre of developed/commercial ***land***, would be within thepermanent 50-foot-wide right-of-way for the new pipeline.No new ***land*** is required for operation of the modified compressor stations.Approximately 0.3 acre of ***agricultural*** ***land*** would convert permanently todeveloped/industrial ***land*** from construction and operation of the new FM-63-Ainterconnect site. EGT would fence the interconnect site and maintain the fenced area inrock.Following construction, EGT would restore the 25-foot-wide temporaryworkspace outside the 50-foot-wide permanent right-of-way and allow it to revert topre-construction conditions and ***land*** uses. EGT would maintain the permanent right-ofwayin accordance with our Plan and Procedures. EGT would also maintain landowneraccess to ***agricultural*** fields, storage areas, structures, and other ***agricultural*** facilitiesduring construction to the extent practicable. Use of some ***agricultural*** ***lands*** would betemporarily interrupted for one growing season while pipeline facilities are installed.20200827-3030 FERC PDF (Unofficial) 08/27/2020- 22 -Landowners would be compensated for any temporary or permanent crop orgrazing losses resulting from construction and operation of the Project. Erosion andsediment control and restoration measures (e.g , soil stabilization, topsoil segregation,compaction avoidance) would be installed using the FERC Plan and applicable permitsto minimize and mitigate impacts on ***agricultural*** ***land***. Based on these measures, weconclude that impacts on ***land*** use would be minimal, and not significant.Visual ResourcesTemporary changes would occur along the pipeline route during construction,with the landscape generally characterized by areas of cleared or flattened vegetation,grading and spoil storage. Equipment vehicles would also be noticeable moving aroundthe Project area, including the transport of construction materials.The ***land*** use at the existing aboveground facilities would remaindeveloped/industrial and any visual impacts would be minimized due to the distance tonearby residences and buildings. Similarly, the new Line FM-63-A interconnect sitewould be adjacent to an existing pipeline corridor in a rural area approximately 0.7-milefrom the nearest public road. Further, there are no scenic highways or trails within viewof the Project. Therefore, we conclude that visual impacts from the Project would notbe significant.6. Cultural ResourcesEGT completed a cultural resources investigation in an effort to identify historicproperties within the area of potential effects (APE) and to account for any direct orindirect effects to those properties by the proposed Project. The APE contains all areas ofconstruction, staging, operation, and access for the Project. As part of the culturalresources investigations, EGT conducted a desktop and site files review to identify anypreviously recorded cultural resources that may be affected by the Project and anycultural resources surveys conducted within the APE. EGT also completed a culturalresources survey for the Line FM-63-A, Delhi Compressor Station, and receiver inLouisiana.Project modifications would not involve ground disturbance at the White RiverCompressor Station and Project modifications at the Beirne Compressor Station wouldoccur within the existing facility property. Based on this information and the results ofthe desktop review, no historic properties would be affected by the proposed Project.EGT provided a Project review request letter for the White River Compressor Station tothe Arkansas State Historic Preservation Officer (SHPO) for review on April 3, 2020. In20200827-3030 FERC PDF (Unofficial) 08/27/2020- 23 -a letter dated May 1, 2020, the Arkansas SHPO concurred that no historic propertieswould be affected by the Project. For the Beirne Compressor Station, EGT sent a Projectreview request letter to the Arkansas SHPO on May 8, 2020 also recommending that nohistoric properties would be affected by the proposed Project. On June 19, 2020, EGTreceived an email from the Arkansas SHPO concurring with the recommendation that nohistoric properties would be affected.Based on results from the desktop review for the Byars Lake and Amber JunctionCompressor Stations, Oklahoma, EGT determined that this portion of the Project hadbeen previously surveyed and did not require additional cultural resources investigation.In a letter dated April 8, 2020, EGT recommended to the Oklahoma SHPO that theProject would not adversely affect historic properties. The Oklahoma SHPO provided afinding of no historic properties affected by the proposed Project in a letter dated April23, 2020.For the Line FM-63-A, Delhi Compressor Station, and receiver, no culturalresources were identified within the APE from either the desktop review or culturalresources survey. Based on these findings no further cultural resources investigationswere recommended. EGT sent the results of the desktop review and survey to theLouisiana SHPO with a recommendation that no historic properties would be affected bythe Project for review and concurrence on April 3, 2020. On April 13, 2020, EGTreceived a finding of no historic properties affected from the Louisiana SHPO.The Section 106 consultation documentation with the Arkansas, Louisiana, andOklahoma SHPOs was subsequently provided to FERC. We agree with the SHPOs andfind that the Project would not affect historic properties and Section 106 consultation iscomplete.7. Air QualityProject construction and operation would impact air quality in the Project area.Air quality is protected by federal and state regulations. The Clean Air Act (CAA)designates seven pollutants as criteria pollutants, including carbon monoxide (CO),nitrous oxides (NOx), volatile organic compounds (VOC), sulfur dioxide (SO2),particulate matter of size 10 microns (PM10), particulate matter of size 2.5 microns(PM2.5), and carbon dioxide equivalents (CO2e). The Project would be within Clark andJackson Counties, Arkansas; Richland Parish, Louisiana; and Grady and McClainCounties, Oklahoma. All Project areas are in areas that are either in attainment or areunclassifiable (which is treated as attainment) for the National Ambient Air QualityStandards (NAAQS) criteria pollutants. The applicability of various federal air quality20200827-3030 FERC PDF (Unofficial) 08/27/2020- 24 -permits to Project components are detailed below. In addition, the Project would berequired to comply with applicable state air quality permits.Title VTitle V is an operating air permit program run by each state for each facility that isconsidered a “major source.” The major source threshold for an air ***emission*** source is100 tons per year (tpy) for criteria pollutants, 10 tpy for any single hazardous air pollutant(HAP), and 25 tpy for total HAPs. The Delhi Compressor Station is currently a majorsource due to NOx ***emissions***, but will become a minor source under Title V, and willtherefore be required to submit a Title V Significant Modification air permit application.EGT submitted and received its air permit application from the Louisiana Department ofEnvironmental Quality in June 2020. The Byars Lake Compressor Station will remain aminor source under Title V due to ***emissions*** that are below the applicable major sourcethresholds, and a Title V permit is not required. The Amber Junction Compressor Stationis an existing major source under Title V, but the Project would not affect ***emissions*** fromthis station.New Source Performance StandardsThe USEPA promulgates New Source Performance Standards (NSPS) for new,modified, or reconstructed stationary sources to control ***emissions*** to the level achievableby the best-demonstrated technology for stationary source types or categories as specifiedin the applicable provisions. The NSPS also establish fuel, monitoring, notification,reporting, and recordkeeping requirements.40 CFR Part 60 Subpart JJJJ – Standards of Performance for StationarySpark Ignition Internal Combustion EnginesSubpart JJJJ applies to owners and operators of stationary spark ignition (SI)internal combustion engines (ICE) that commence construction after June 12, 2006(depending on engine power and date of manufacture), and to owners and operators of allstationary SI ICE that are modified or reconstructed after June 12, 2006. The enginebeing installed at the Byars Lake Compressor Station will not be subject to Subpart JJJJbecause it was installed at White River Compressor Station prior to June 12, 2006 andrelocating the engine does not constitute construction, modification, or reconstructionunder the NSPS. The new generator that will be installed at the Delhi CompressorStation is subject to Subpart JJJJ.40 CFR Part 60 Subpart OOOOa – Standards of Performance for Crude Oiland Natural Gas facilities for which Construction, Modification, orReconstruction Commenced after September 18, 201520200827-3030 FERC PDF (Unofficial) 08/27/2020- 25 -This Subpart establishes ***emission*** standards and compliance schedules for thecontrol of VOC and SO2 ***emissions*** for affected facilities that commence construction,modification, or reconstruction after September 18, 2015. This Subpart also establishesemission standards and compliance schedules for the control of natural gas (methane)***emissions***. The Delhi and Byars Lake Compressor Stations will be subject to variouscomponents of this rule.National ***Emission*** Standards for Hazardous Air PollutantsThe National ***Emission*** Standards for Hazardous Air Pollutants (NESHAP)regulations established in 40 CFR Parts 61 and 63 regulate HAP ***emissions***. Many of theNESHAP standards apply to major sources of HAPs, though some subparts in Part 63apply to area (non-major) sources as well. NESHAP Subparts that are potentiallyapplicable to this Project are summarized below.40 CFR Part 63 Subpart ZZZZ – National ***Emission*** Standards for Hazardous AirPollutants for Stationary Reciprocating Internal Combustion EnginesStationary reciprocating internal combustion engines (RICE) at area and majorsources of HAPs that are new, existing, or reconstructed are subject to this Subpart,depending on power rating and unit type. The generator being installed at DelhiCompressor Station is subject to Subpart ZZZZ. A new RICE at an area source mustcomply with this Subpart by meeting the requirements for 40 CFR 60, SubpartJJJJ. The engine being installed at the Byars Lake Compressor Station will be subject tothe maintenance requirements of Subpart ZZZZ as an existing stationary RICE.Greenhouse Gas Reporting40 CFR 98, Subpart W requires petroleum and natural gas facilities with annualgreenhouse gas (GHG) ***emissions*** equal to or greater than 25,000 metric tons of carbondioxide equivalents (CO2e) to report GHGs from various processes within the facility.The Delhi and Byars Lake Compressor Stations have the potential to emit 25,000 metrictons CO2e more per year (27,558 short tpy). Therefore, the stations are potentially subjectto reporting GHGs based on actual operations.ConstructionProject construction would result in temporary combustion-related ***emissions*** fromconstruction equipment, HDD equipment, deliveries, and vehicles commuting to the site.Fugitive dust would also be generated during construction as a result of grading,excavation, concrete work, and vehicle traffic on paved and unpaved roads. EGTestimated criteria pollutant and CO2e ***emissions*** from the Project, summarized in table 5below.20200827-3030 FERC PDF (Unofficial) 08/27/2020- 26 -Table 5Construction ***Emissions*** of the Project (tons per construction duration)NOx CO VOC SO2 PM10 PM2.5 CO2eLouisianaDelhi Compressor Station(Richland Parish)12.7 6.2 1.0 0.6 6.2 0.8 934Line FM-63-A (Richland Parish) 8.3 2.6 0.7 0.3 12.4 1.5 521Receiver (Richland Parish) 0.1 0.3 0.1 0.0 0.4 0.1 45OklahomaByars Lake CompressorStation (McClain County)12.9 4.4 1.0 0.6 8.5 0.9 757Amber Junction CompressorStation (Grady County)0.0 0.0 0.0 0.0 5.9 0.7 1ArkansasWhite River CompressorStation (Jackson County)0.2 0.1 0.2 0.0 0.3 0.0 13Beirne Compressor Station (ClarkCounty)1.0 0.3 1.0 0.0 0.4 0.1 53Project Total 35.2 13.9 4.0 1.5 34.1 4.1 2,324Note: Construction ***emission*** calculation details include construction equipment engines, tailpipe emissionsfrom commuter/on-road vehicles, open burning, and fugitive dust from earth moving activities.Project construction would result in temporary, localized impacts on ambient airquality that would last the duration of construction activities (i.e , up to 6 months). Theseimpacts are typically minor and localized, as these ***emissions*** will occur very near to or atground level. To minimize fugitive dust, EGT would limit vehicle speed on the right-ofway,apply water or other non-hazardous dust suppressant onto unpaved roads and spoilpiles, and cover open haul trucks. Based on the limited duration and scope of Projectconstruction, we conclude that air quality impacts due to Project construction would notbe significant.OperationProject modifications would result in operational ***emissions*** and impacts on airquality at the Delhi and Byars Lake Compressor Stations. In addition, operation of theLine FM-63-A pipeline and the receiver site would result in a minor quantity of fugitiveemissions during Project operation. The Project would not result in changes to existingemissions at the Amber Junction and Beirne Compressor Stations, while ***emissions*** at theWhite River Compressor Station would be reduced as a result of the ***removal*** andrelocation of a compressor unit.20200827-3030 FERC PDF (Unofficial) 08/27/2020- 27 -The modifications at the Delhi Compressor Station would include installation of a11,110 hp Solar Taurus 70 natural gas-fired turbine, a backup generator, and associatedpiping. The modification would also include abandoning in place two compressor unitsand auxiliary equipment. At the Byars Lake Compressor Station, a 2,370 hp Caterpillar3608 natural gas-powered reciprocating compressor (relocated from the White RiverCompressor Station) would be installed. Operational air ***emissions*** from the turbine,engine, and existing equipment at the Delhi and Byars Lake Compressor Stations areestimated in tables 6 and 7 below.Table 6Delhi Compressor Station Total Operational EmissionsaEmission SourceTotal Project ***Emissions*** (tons per year)VOC HAP NOX CO SO2 PM PM10 PM2.5 CO2eSolar Taurus 70 17.69 8.38 50.54 30.83 1.43 2.78 2.78 2.78 49,318.16CaterpillarEmergency Generator0.11 0.12 0.25 0.33 0.01 0.01 0.01 0.01 46.03Condensate Storage Tank 4.53 -- -- -- -- -- -- -- 129.79Condensate Loading 0.16 -- -- -- -- -- -- -- 0.106Process Piping Fugitives 1.48 -- -- -- -- -- -- -- 312.45Totals 23.97 8.50 50.79 31.16 1.44 2.79 2.79 2.79 49,806.53a Operational ***emissions*** following completion of project and abandonment of the two existingcompressor unitsTable 7Byars Lake Compressor Station Total Operational EmissionsEmission SourceTotal Project ***Emissions*** (tons per year)VOC HAP NOX CO SO2 PM PM10 PM2.5 CO2eNew Proposed EquipmentCaterpillar 3608 11.44 2.00 22.88 17.16 0.04 0.71 0.71 0.71 8314.27Existing Station EquipmentCaterpillar3616TALE(w/OxidationCatalyst)15.50 3.87 36.16 32.29 0.10 1.73 1.73 1.73 20228.16Caterpillar3616TALE(w/OxidationCatalyst)15.50 3.87 36.16 32.29 0.10 1.73 1.73 1.73 20228.16Generac SG300 EmergencyGenerator 10.06 0.02 0.05 0.28 0.00 0.01 0.01 0.01 126.71210-bbl Condensate StorageTank5.99 -- -- -- -- -- -- -- --Condensate Truck Loading 0.01 -- -- -- -- -- -- -- --Fugitive ***Emissions*** 2.84 -- -- -- -- -- -- -- 463.7620200827-3030 FERC PDF (Unofficial) 08/27/2020- 28 -Total 51.34 9.76 95.25 82.02 0.24 4.18 4.18 4.18 49,361.06EGT completed air dispersion modeling in order to determine impacts of theproposed compressor station modifications on air quality at the Delhi and Byars LakeCompressor Stations. The model estimates the maximum predicted concentrations ofcriteria pollutants emitted from the compressor stations using conservative assumptions.Background concentrations from the nearest air monitors were then added to themaximum predicted concentrations from the model and the total was compared to theNAAQS. The model results are provided below in tables 8 and 9.Table 8Delhi Compressor Station Air Dispersion Model ResultsPollutantAveragingPeriodModeledMaximumImpactBackground MonitorConcentrationTotalNAAQSUnits% ofNAAQSCO 1-hour 296 2,290 2,586 40,000 μg/m3 6%8-hour 231 1946 2,177 10,000 μg/m3 22%NO2 1-hour 36 88 124 188 μg/m3 66%Annual 0 13 13 100 μg/m3 13%PM2.5 24-hour 0 24 24 35 μg/m3 69%Annual 0 8 8 12 μg/m3 67%PM10 24-hour 1 80 81 150 μg/m3 54%SO2 1-hour 2 16 18 196 μg/m3 9%3-hour 2 16 18 1 1,300 μg/m3 1%1 SO2 3-hour background is conservatively assumed to be equal to the 1-hour SO2 measured concentrationdue to a lack of readily available 3-hour concentration data.Table 9Byars Lake Air Dispersion Model ResultsPollutantAveragingPeriodModeledMaximum ImpactBackground MonitorConcentrationTotalNAAQSUnits% ofNAAQSCO 1-hour 2554 2,061 4,615 40,000 μg/m3 12%8-hour 462 1832 2,294 10,000 μg/m3 23%NO2 1-hour 134 51 185 188 μg/m3 98%Annual 10 9 19 100 μg/m3 19%PM2.5 24-hour 2 19 21 35 μg/m3 59%Annual 2 8 10 12 μg/m3 83%PM10 24-hour 42 58 100 150 μg/m3 67%SO2 1-hour 0.5 7 8 196 μg/m3 4%3-hour 0.4 7 7 1,300 μg/m3 1%a SO2 3-hour background is conservatively assumed to be equal to the 1-hour SO2 measured concentration dueto a lack of readily available 3-hour concentration data.20200827-3030 FERC PDF (Unofficial) 08/27/2020- 29 -The results in tables 8 and 9 indicate that the combined total of existingbackground and maximum modeled concentrations are less than the applicable NAAQSfor all pollutants. Therefore, the Project would likely not cause or significantlycontribute to a degradation of ambient air quality or an exceedance of the NAAQS.***Emissions*** at the Delhi and Byars Lake Compressor Stations would be mitigatedby limiting all equipment to using pipeline quality natural gas only and limiting the hoursof operation of emergency equipment to periods of testing and emergencies. Fugitivereleases of methane and VOCs occur at the stations during normal operation, mainly inthe form of leaks from piping components (connectors, valves, flanges) and equipmentblowdowns. In order to reduce fugitive ***emissions***, site-specific mitigation measureswould include:• maintaining compressor reciprocating engine combustion efficiencyfollowing manufacturer’s recommendations for scheduled maintenance;• Leak Detection and Repair (LDAR) monitoring; and• testing and repairing pressure safety valves regularly.Based on the results of the air quality dispersion models and EGT’s mitigationmeasures described above, we conclude operation of the Project would not result insignificant impacts on air quality8. NoiseNoise is generally defined as sound with intensity greater than the ambient orbackground sound pressure level. Construction and operation of the proposed Projectwould affect local noise levels. Two measurements used to relate the time-varyingquality of environmental noise to its known effects on people are the equivalent soundlevel (Leq) and the day-night sound level (Ldn). The Leq is an A-weighted sound levelcontaining the same sound energy as the instantaneous sound levels measured over aspecific time period. Noise levels are perceived differently, depending on length ofexposure and time of day. The Ldn takes into account the duration and time the noise isencountered. Specifically, in the calculation of the Ldn, late night to early morning (10:00pm to 7:00 am) noise exposures are penalized +10 decibels (dB), to account for people’sgreater sensitivity to sound during the nighttime hours. The A-weighted scale is usedbecause human hearing is less sensitive to low and high frequencies than mid-rangefrequencies. For an essentially steady sound source that operates continuously over a 24-hour period, the Ldn is approximately 6.4 dB above the measured Leq.In 1974, the EPA published its Information on Levels of Environmental NoiseRequisite to Protect Public Health and Welfare with an Adequate Margin of Safety. This20200827-3030 FERC PDF (Unofficial) 08/27/2020- 30 -document provides information for state and local governments to use in developing theirown ambient noise standards. The EPA has indicated that an Ldn of 55 decibels on the Aweightedscale (dBA) protects the public from indoor and outdoor activity interference.FERC staff has adopted this criterion and use it to evaluate the potential noise impactsfrom proposed Projects at noise sensitive areas (NSAs), such as residences, schools, orhospitals. In general, a person’s threshold of a change in loudness on the A-weightedsound level is about 3 dBA, whereas a 6 dBA change is clearly noticeable, and a 10 dBAchange is perceived as either twice or half as loud.Construction NoiseNoise would be generated during construction of the Project. Project constructionis anticipated to last for a few weeks at some Project components to up to 6 months at theDelhi and Byars Lake Compressor Stations. EGT would perform construction activitieswith standard heavy equipment, which would be the most prevalent sound source duringconstruction. To minimize impacts on nearby residents, EGT would restrict constructionactivities to daytime hours, unless limited nighttime construction is required based onsite-specific conditions, specialized construction techniques, and/or weather-relatedevents.The proposed Line FM-63-A would cross Interstate 20 and an adjacent forestedwetland using the HDD method. The HDD crossing would be approximately 2,400 feetlong. There is one NSA approximately 2,590 feet northeast of the HDD entry site; thereare no NSAs within 0.5 mile of the exit site. EGT commits to conduct HDD operationsduring daytime hours, and no nighttime operation is planned. However, in the event thatHDD operations extend into nighttime hours, EGT estimated the HDD noise at thenearest NSA, as shown below in table 10.Table 10Line FM-63-A HDD Construction Noise LevelsNSAEstimated ExistingBackgroundSound LevelAttributable to HDDCombinedBackground and HDDIncrease AboveExistingBackgroundLdndBALdn dBA LdndBAdB1 45.0 51.9 52.7 7.7As demonstrated in table 10, HDD construction noise is not anticipated to exceedFERC’s 55 dBA Ldn threshold, and as a result, EGT does not propose any HDD noisemitigation. Based on the temporary nature of construction activities, and EGT’scommitment to conduct construction activities during daytime hours, with limitedexceptions, we conclude construction noise would not result in significant impacts onnearby residents and NSAs.20200827-3030 FERC PDF (Unofficial) 08/27/2020- 31 -Operational NoiseProject modifications at the Delhi, Byars Lake, and Beirne Compressor Stationswould result in changes to the existing noise environment in the vicinity of thesecompressor stations. In order to estimate the impacts on existing noise levels as a resultof Project modifications, EGT completed a noise impact analysis predicting the noiselevels at the Delhi, Byars Lake, and Beirne Compressor Stations following Projectmodifications. The results of the noise impact analyses are shown in table 11 below.Modifications at the Amber Junction Compressor Station (minor modifications tocylinder and replacement of the lube oil systems) would not result in changes to theexisting station noise levels. Modifications at the White River Compressor Station(***removal*** of one existing engine and associated equipment) would result in an overalldecrease in noise from existing levels.Table 11Compressor Station Modification Operational Noise Impact AnalysisNSADistance andDirectionEstimatedExistingBackground1, 2, 3Sound LevelAttributableto StationCombined, ExistingBackground withStationIncrease AboveExistingBackgroundLdn dBA Ldn dBA Ldn dBA dBADelhi Compressor Station4NSA 1 1,533 feet E 45.0 54.4 54.8 9.8NSA 2 2,460 feet NE 45.0 48.1 49.8 4.8NSA 3 2,340 feet SE 45.0 48.8 50.3 5.3Byars Lake Compressor StationNSA 1 2,780 feet NE 44.9 49.3 50.6 5.7NSA 2 4,309 feet SW 49.9 50.4 53.2 3.3Beirne Compressor StationNSA 1 1,209 feet NE 48.8 48.0 50.2 1.41 At the Delhi Compressor Station, existing sound levels were estimated from typical sound levels in ruralareas established by the American National Standards Institute2 At the Byars Lake Compressor Station, existing sound levels were established from a post-constructionsound level survey conducted in 2018 at full load station operation3 At the Beirne Compressor Station, existing sound levels were measured during full load operation of theexisting station4 Includes noise associated with proposed new meter stationAs table 11 indicates, modifications at the Delhi, Byars Lake, and BeirneCompressor Station would increase existing noise levels near the compressor stations frombetween 1.4 to 9.8 dBA. However, the stations would remain in compliance with FERC’snoise standard of 55 dBA Ldn. To ensure compliance with FERC’s noise standard, EGTcommitted to installing noise mitigation measures recommended by their noise consultant,including acoustically-insulated building enclosures, exhaust silencers, and intakesilencers, among others. Based on the mitigation measures committed to by EGT, and20200827-3030 FERC PDF (Unofficial) 08/27/2020- 32 -their noise impact analysis, which shows compliance with our noise standard, we concludethe Project would not result in significant noise impacts on nearby residents and NSAsduring Project operation.9. Staff’s ConclusionBased on the above environmental analysis, FERC environmental staff hasdetermined that approval of the proposed Project, as described, would not have anysignificant impacts on natural resources within the defined Project areas and that thisproposed Project would not constitute a major federal action significantly affecting thequality of the human environment. The Project would be completed consistent with therequirements of sections 157.205, 157.208, 157.210, and 157.216 of the Commission’sregulations.20200827-3030 FERC PDF (Unofficial) 08/27/2020- 33 -Appendix ASite Maps20200827-3030 FERC PDF (Unofficial) 08/27/2020- 34 -appendix A20200827-3030 FERC PDF (Unofficial) 08/27/2020- 35 -20200827-3030 FERC PDF (Unofficial) 08/27/2020- 36 -20200827-3030 FERC PDF (Unofficial) 08/27/2020- 37 -20200827-3030 FERC PDF (Unofficial) 08/27/2020- 38 -20200827-3030 FERC PDF (Unofficial) 08/27/2020- 39 -20200827-3030 FERC PDF (Unofficial) 08/27/2020Document Content(s)CP20-482\_PN Env Comments\_FINAL\_1.PDF .................................1-3920200827-3030 FERC PDF (Unofficial) 08/27/2020

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[***The Green Brief: Building back better?***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:6306-VXV1-JCF9-431V-00000-00&context=1516831)

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**Length:** 2544 words

**Byline:** Frédéric Simon, Kira Taylor, Nikolaus J. Kurmayer

**Highlight:** When the European Union prepared its response to the coronavirus pandemic in May last year, it promised one thing: to "build back better". But national recovery plans show a gap between what EU countries are willing to do and what the Commission aimed for.

**Body**

When the European Union prepared its response to the coronavirus pandemic in May last year, it promised one thing: to "build back better".

The phrase, initially coined by UN Secretary-General António Guterres, has caught on across Europe and the rest of the world. At a recent summit, the leaders of the world's seven most industrialised nations promised just that - "to beat COVID-19 and build back better" after the crisis.

The European Commission - backed by France, Germany and other EU nations - has undeniably taken a leading role in pushing forward that agenda at the global level, [*putting the European Green Deal at the centre of its (EURO)750 billion recovery plan*](https://www.euractiv.com/section/energy-environment/news/green-deal-will-be-our-motor-for-the-recovery-von-der-leyen-says/).

The idea is to rebuild with a focus on a sustainable, future-proof economy. EU institutions agreed to set aside [*37% of the recovery fund for the green transition*](https://www.euractiv.com/section/energy-environment/news/eu-agrees-to-set-aside-37-of-recovery-fund-for-green-transition/) and 20% for the digital economy.

In addition, the entire EU budget and recovery fund [*will be subject to the "do no significant harm" (DNSH) principle*](https://www.euractiv.com/section/energy-environment/news/do-no-harm-eu-recovery-fund-has-green-strings-attached/) - a commitment that not even a single euro of EU money will be spent on environment-damaging investments.

These political objectives deserve praise, but how do they translate in practice? Over the last few months, academics, think tanks, and NGOs have tried to answer that question by analysing the national recovery and resilience plans that EU member states have submitted to the European Commission (read our latest update on that [*here*](https://www.euractiv.com/section/energy-environment/news/recovery-plans-fall-short-of-eu-green-spending-goals-campaigners-warn/)).

And they tell a different story to the EU's vision of green spending. [*Earlier this month*](https://www.euractiv.com/section/energy-environment/news/meps-fear-green-washing-in-eu-recovery-plans/), the Greens in the European Parliament warned that the submitted national spending plans fell short of the bloc's climate commitments.

Their [*letter to the Commission listed a raft of violations*](http://extranet.greens-efa-service.eu/public/media/file/1/7058), including spending on public transport in Poland and Slovenia being falsely tagged as 'low-***emission***'.

And investments in hybrid vehicles in Germany, France and Czechia were misidentified as green spending. In Italy, the purchase of diesel-fuelled ***agricultural*** machinery was labelled climate-friendly because it would replace older equipment.

The list goes on for almost 15 pages, with violations grouped in seven different categories. The document is available [*here*](http://extranet.greens-efa-service.eu/public/media/file/1/7058) and is worth a read as it reveals a lot about national priorities.

The Germany-based Institute for Future-Fit Economies (ZOE) published [*another analysis*](https://zoe-institut.de/en/publication/a-future-fit-recovery/) more recently. It found "weaknesses across all of the plans" when it comes to the way EU governments apply the DNSH principle, for example when it comes to biodiversity protection and addressing economic disparities.

"We are particularly worried about the fact that most plans lack explicit consideration of the regions and people that are left behind through the combined impact of digitalisation and globalisation," said Elizabeth Dirth, head of the analysis team at ZOE.

"As a result, some measures may deliver short-term effects, but they will miss the long-term objective: transforming Europe's economy and society towards climate-neutrality and fairness," she said.

As of Wednesday, the European Commission [*has approved ten EU countries' plans*](https://ec.europa.eu/info/business-economy-euro/recovery-coronavirus/recovery-and-resilience-facility/recovery-and-resilience-programs-assessments_en), which will now be subject to a vote in the EU Council of Ministers. It's not clear how strict that scrutiny will be but there are reasons to believe member states will be charitable to each other.

Later this week, EU leaders will meet António Guterres at an EU summit in Brussels, where they will exchange views on the post-pandemic recovery and the EU's promise of "building back better" after the crisis.

Those analyses are fitting reminders that, when it comes to grand political promises, the proof of the pudding is always in the eating.

*- Frédéric Simon*

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5. [*EU eyes tighter rules for 'renewable' biomass energy*](https://www.euractiv.com/section/climate-environment/news/eu-eyes-tighter-rules-for-renewable-biomass-energy/)

News from the capitals

**ROME. EU Commission chief green lights Italian recovery plan.** Italy has received a green light for its Recovery and Resilience Plan, meaning the country will soon obtain its first tranche of around (EURO)25 billion in stimulus to help it recover from the economic fall-out of the pandemic. Read [*more*](https://www.euractiv.com/section/politics/short_news/eu-commission-chief-green-lights-italian-recovery-plan).

**VIENNA. Von der Leyen gives green light to Austrian recovery plan.** European Commission President Ursula von der Leyen has declared the Commission's approval of Austria's (EURO)3.5 billion recovery plan in a press conference with Austrian Chancellor Sebastian Kurz. Austria will primarily invest the money in railways, broadband extension and ecological projects. Read [*more*](https://www.euractiv.com/section/politics/short_news/von-der-leyen-gives-green-light-to-austrian-recovery-plan/).

**WARSAW. Polish city has worst air quality in Europe.** The southern Polish city of Nowy Sacz has the worst air quality in the European Union, according to a new ranking released by the European Environmental Agency. Read [*more*](https://www.euractiv.com/section/politics/short_news/polish-city-has-worst-air-quality-in-europe).

**BRATISLAVA. Commission gives green light to Slovakia's Recovery and Resilience Plan.** The European Commission has approved Slovakia's Recovery and Resilience Plan. Visiting the country, Commission President Von der Leyen said it allocated 43% of spending to green investment, including new renewable energy capacities, energy efficiency and renovation as well as developing new infrastructure for electric vehicle charging points and public transport. Read [*more*](https://www.euractiv.com/section/politics/short_news/commission-give-green-light-to-slovakias-recovery-and-resilience-plan).

**TIRANA. Hydropower-based Albania launches first wind energy tender.** Albania launched its first tender on Monday for the construction of utility-scale onshore wind power plants, with a total capacity of 100 MW with the aim of diversifying its hydroelectric production capacity. Albania produces more than 99% of its energy from hydroelectric power, with its main plant located in the northern part of the Dorini River. The country is thus vulnerable to seasonal changes and relies on expensive and high-***emission*** imports of electricity. (Zeljko Trkanjec | EURACTIV.hr)

**GENEVA.** In the aftermath of the meeting between US President Joe Biden and his Russian counterpart Vladimir Putin, Green MEPs and political parties from countries around the Baltic Sea expressed their "firm disapproval" of and "opposition" to the Nord Stream 2 project. [*Read more.*](https://www.euractiv.com/section/politics/short_news/greens-around-the-baltic-sea-denounce-nord-stream-2/)

**PRAGUE| WARSAW. Turów negotiations take place between Czechia and Poland.** The Czech Republic and Polish governments started negotiations on Thursday to try to resolve a dispute over the controversial Polish lignite mine Turów situated near the Czech borders, which according to the Czech Republic has become an environmental issue for the country. [*Read more.*](https://www.euractiv.com/section/politics/short_news/turow-negotiations-take-place-between-czechia-and-poland/)

**SARAJEVO. DiCaprio urges BiH to stop building mini-hydroelectric plants.** Hollywood film star Leonardo DiCaprio has sent a letter to Bosnia and Herzegovina's Federation (Bosniak and Croat entity) authorities, calling on them to adopt the legislation banning the construction of many small hydroelectric power plants - demands he already made last autumn. [*Read more.*](https://www.euractiv.com/section/politics/short_news/dicaprio-urges-bih-to-stop-building-mini-hydropower-plants/)

 News in brief

**MEPs call for greater focus on carbon *removal* technologies.** A group of 15 lawmakers in the European Parliament have called on the European Commission to do more to incentivise carbon ***removal*** technologies like carbon capture and storage (CCS). The letter, which was led by Finnish MEP Henna Virkunnen (EPP), points out that organisations, including the UNFCCC and the IEA, as well as the US and China recognise that getting to net zero by 2050 is impossible without CCS/CCU. In particular, it highlights the potential of bioenergy plus CCS (BECCS) to store CO2 with a "degree of permanence that nature-based solutions can rarely offer". Read the full letter[*here*](https://www.euractiv.com/wp-content/uploads/sites/2/2021/06/MEPs-Letter-to-the-European-Commission-CCUS-Time-to-incentivise-carbon-removals-technologies.pdf).

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**COVID caused surge in single-use plastics.** Pollution from masks, gloves and other single-use plastics increased thanks to the COVID-19 pandemic, according to the [*European Environment Agency*](https://www.eea.europa.eu/highlights/covid19-in-europe-increased-pollution?utm_medium=email&utm_campaign=COVID-19%20in%20Europe%20increased%20pollution%20from%20masks%20gloves%20and%20other%20single-use%20plastics&utm_content=COVID-19%20in%20Europe%20increased%20pollution%20from%20masks%20gloves%20and%20other%20single-use%20plastics+CID_dbed582b1b1960d3ee7ebb64e110d5b5&utm_source=EEA%20Newsletter&utm_term=Find%20out%20more). It estimates that 170,000 additional tonnes of face masks - about 0.75 per person every day - were imported into the EU during the first months of the pandemic. There needs to be better preparation for future disruptions and uncertainties, including research on alternative materials and product design and strategies to reduce littering, said the agency. Read [*more*](https://www.eea.europa.eu/highlights/covid19-in-europe-increased-pollution?utm_medium=email&utm_campaign=COVID-19%20in%20Europe%20increased%20pollution%20from%20masks%20gloves%20and%20other%20single-use%20plastics&utm_content=COVID-19%20in%20Europe%20increased%20pollution%20from%20masks%20gloves%20and%20other%20single-use%20plastics+CID_dbed582b1b1960d3ee7ebb64e110d5b5&utm_source=EEA%20Newsletter&utm_term=Find%20out%20more).

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**German energy minister gives more detail on stance on gas.** Asked by EURACTIV about Germany's opposition to the blending of hydrogen and gas - [*seen in its stance during TEN-E negotiations*](https://www.euractiv.com/section/energy/news/infrastructure-dispute-reveals-deep-divisions-in-europe-over-gas/) - energy minister Peter Altmaier, said, "This is predominantly due to technological reasons. We want to accelerate the market upscaling of hydrogen and have therefore provided billions of funding. Until then, gas and coke oven gas are important bridge energy sources, both are possible. If we want to support green hydrogen, we need to know where it is used, and by whom, which is why we have opted for a different technological solution." (Nikolaus J Kurmayer | EURACTIV.de)

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**Belgium's failure to meet climate *targets* is a human rights violation.** After a six-year legal battle, a Brussels court ruled that Belgium had committed an offence under civil law and was in breach of the European Convention on Human Rights by not taking all "necessary measures" to prevent the impacts of climate change. Read more from [*EURACTIV's media partner, The Guardian.*](https://www.theguardian.com/world/2021/jun/18/belgium-climate-policy-violates-human-rights-court-rules)

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**Lawmakers call for more ambitious measures to decarbonise shipping.** International decision-makers need to increase ambition for ***emissions*** reductions in maritime shipping,[*according to the official delegation from the environment committee*](https://www.europarl.europa.eu/news/en/press-room/20210610IPR05916/new-eu-environment-programme-to-address-challenges-facing-people-and-planet) of the European Parliament to the 76th session of the International Maritime Organisation's Marine Environment Protection Committee.

"Shipping is one of the sectors that still sails under the radar when it comes to taking responsibility for their own ***emissions***. This is totally unacceptable. The outcome of this IMO session is a big disappointment when it comes to tackling global warming," said co-chair of the delegation, Jytte Guteland, MEP. Read[*more*](https://www.europarl.europa.eu/news/en/press-room/20210610IPR05916/new-eu-environment-programme-to-address-challenges-facing-people-and-planet).

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**ECB will "see to it" that banks meet climate risk expectations.** No major bank in the euro zone meets all of the European Central Bank's (ECB) expectations in assessing climate-related risk and they should expect increased pressure from their supervisor to adjust, ECB board member Frank Elderson said last week.

"The great majority of European banks are not even close to where they should be - and they know it: 90% of reported practices are deemed by the banks themselves only partially or not at all aligned with the ECB's supervisory expectations," Elderson said in a speech.

He added that over half of the banks supervised by the ECB have no approach for assessing the impact of climate risks and only around 40% of banks have assigned explicit responsibility for managing climate risks to the management body.

"The ECB will see to it that every bank is making expeditious progress in embedding climate risks into their organisations, by following up with supervisory requirements where needed," Elderson added. (EURACTIV.com with Reuters)

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**Lawmakers call for swift phase-out of fossil fuel subsidies.** During a vote on the eighth Environmental Action plan last week, MEPs in the environment committee voted to phase out all direct and indirect fossil fuel subsidies by 2025 with environmentally harmful subsidies phased out by 2027.

Green Irish rapporteur, Grace O'Sullivan, said, "As we find ourselves at the beginning of a crucial decade in tackling the ecological crisis impacting our ***lands*** and seas, this [eighth] EAP responds to fundamental challenges facing our people and planet with an ambitious framework that recognises the need for systemic change."

"Getting rid of fossil fuel subsidies - like tax exemptions on kerosene for planes or diesel for fishing vessels - is a crucial step towards a decarbonised Europe, one of the main objectives of the EU Green Deal," Flaminia Tacconi, fisheries lawyer at ClientEarth.

Environmental action plans guide environment policy. The eighth plan will be in force until 2030, covering the crucial decade of climate action. It will be voted on by all MEPs in July. Read[*more*](https://www.europarl.europa.eu/news/en/press-room/20210610IPR05916/new-eu-environment-programme-to-address-challenges-facing-people-and-planet). (Kira Taylor | EURACTIV.com)

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**European Commission registers 'Ban Fossil Fuel Advertising and Sponsorships' initiative.** Last week, the EU executive [*registered a European Citizens' Initiative*](https://ec.europa.eu/commission/presscorner/detail/en/ip_21_2991)to ban advertising and sponsorship for fossil fuels, of almost all fossil fuel vehicles and companies involved in the fossil fuel value chain. The proposed ban would apply online and offline, covering advertising and sponsorship, including in sport, education, science, public events and third-party media events. The Commission is yet to act on it and it will need to garner support from people across the EU. Read [*more.*](https://ec.europa.eu/commission/presscorner/detail/en/ip_21_2991) See how citizens initiatives work [*here*](https://europa.eu/citizens-initiative/home_en)**.**

Opinions

* [*The EU's industrial strategy needs more action on climate*](https://www.euractiv.com/section/energy-environment/opinion/the-eu-industrial-strategy-the-need-for-more-action-on-climate/)- *by Damien Carême, Henrike Hahn, Ignazio Corrao and Rosa D'Amato*

1. [*How the EU's Renewable Energy Directive risks destroying Europe's* ***forests***](https://www.euractiv.com/section/biomass/opinion/how-the-eus-renewable-energy-directive-risks-destroying-europes-forests/)- *by Dominic Scott, Jan Rosenow and Samuel Thomas | RAP*
2. [*Why a carbon tax is the most effective price signal for the building sector*](https://www.euractiv.com/section/energy/opinion/why-a-carbon-tax-is-the-most-effective-price-signal-for-the-building-sector/)- *by Oliver Rapf*
3. [*Green hydrogen: robbing 'electricity Peter' to pay 'transport Paul'?*](https://www.euractiv.com/section/energy/opinion/green-hydrogen-robbing-electricity-peter-to-pay-transport-paul/)- *by Geert De Cock | Transport & Environment*

 Upcoming events

**24 JUNE. Fit for purpose? The role of renewable fuels on the road to 2030 and beyond.** Join **Zlatko Kregar**, policy officer for sustainable and intelligent transport at DG MOVE and **Henna Virkkunen MEP** from the transport committee as well as people from the industry to discuss the upcoming revision of the renewable energy directive, which is already causing ripples as people speculate about the role of bioenergy and how Europe can meet its new climate goals. Programme and registration [*here*](https://events.euractiv.com/event/info/fit-for-purpose-the-role-of-renewable-fuels-on-the-road-to-2030-and-beyond). (Supported by ePURE)

**25 JUNE. What will be the cost of including transport and buildings in the EU ETS?** With Adam Guibourgé-Czetwertynski, Undersecretary of State in Poland, Pascal Canfin, chair of the environment committee in the European Parliament, and more, explore the impact of the European Commission's potential inclusion of buildings and transport in the ***emissions*** trading scheme. Programme and registration [*here*](https://events.euractiv.com/event/info/what-will-be-the-cost-of-including-transport-and-buildings-in-the-eu-ets). (Supported by the Polish Economic Institute)

**25 JUNE. MEDIA PARTNERSHIP: The blue economy in the green transition - European contributions to sustainable ocean management.** Join Portuguese Minister of Maritime Affairs, **Ricardo Serrão Santos**, and Norwegian State Secretary, **Jens Frølich Holte**, to discuss European policies and initiatives for a sustainable blue economy and how these initiatives contribute to the global efforts for sustainable ocean management. [*Programme and registration here.*](https://events.euractiv.com/event/info/media-partnership-the-blue-economy-in-the-green-transition-european-contributions-to-sustainable-ocean-management) (Organised by Mission of Norway to the European Union)

 On our radar

**14 JULY: Fit for 55 package**. The Commission is expected to table a huge package of green legislation in July, including a revision of the renewable energy directive, a revision of the ***emissions*** trading scheme and our first glimpse at a carbon border adjustment mechanism.

**Load-Date:** June 23, 2021

**End of Document**



[***Vow ASA: Breakthrough for new solution in the climate fight***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:61GV-0M51-F0YC-N3T6-00000-00&context=1516831)

Impact Financial News

December 10, 2020 Thursday

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**Length:** 1189 words

**Body**

Oslo:Vow ASA has issued the following news release:

Waste and sludge can be turned into valuable products such as biocarbon and energy instead of being wasted. - We have been waiting for this for 25 years, says Frederic Hauge in Bellona, ​​who is now joining forces with Vow to solve one of the major climate issues. Vow ASA's pyrolysis technology converts sludge and other biomass into biocarbon and bioenergy, but how do you get enough biomass? This is the big climate issue that Bellona and Vow ASA must solve. - Pyrolysis has a number of exciting uses for solving environmental problems and transforming waste into resources.

We have been waiting for a breakthrough in technology development for 25 years, and now Vow has industrialized it, says Bellona founder Frederic Hauge. Vow, via its subsidiary Scanship, has for decades developed solutions for purifying wastewater and treating waste on board cruise ships. In recent years, the company has also developed pyrolysis technology to convert this into energy on board. - Through years of technology development and with the acquisition of the French company ETIA last year, Vow now has solutions where we with biomass, waste and sewage sludge can help more industries in the direction of zero ***emissions***, says CEO Henrik Badin in Vow ASA. Stable carbon storage will be key if the goals of halving ***emissions*** by 2030 and negative ***emissions*** by the middle of the century are to be achieved. Utilization of resources such as sludge, including biocarbon, can contribute to large ***emission*** cuts. - The solution is there. We have it. What we need is access to, and enough quantities of, the right biomass.

With Bellona's broad knowledge and experience of industrial and political processes in the climate issue, we believe that together we can solve this critical problem, says Badin. - Biological waste is often a stray resource Access to enough biomass is one of the major unresolved problems in the UN Climate Panel's reports. Thus, good technological solutions that utilize biomass in waste streams and ***remove*** CO (2) can play a very important role. - Processes that can stabilize carbon from biological sources will be an important solution for the 2020s. With biocarbon storage, we also create opportunities for negative ***emissions***, says Hauge. We can not cut down ***forests*** or use topsoil to meet the need for biocarbon and bioenergy when millions of tonnes of resources are wasted every year, including in the form of feed residues and sludge from the aquaculture industry. In many cases, this goes straight into the ocean, and thus into play. Such sludge is resources straying, full of nutrients and energy. We can both recycle important resources such as phosphorus and extract valuable products such as biogas and biocarbon, Hauge continues. Sludge from sewage treatment plants has often been hygienized and used for ***agriculture***. More and more countries are restricting this practice due to the content of environmental toxins. The solution is often combustion that produces large CO (2) ***emissions***. It serves no one, Bellona believes. Pyrolysis and biocarbon are part of the solution Biocarbon can play a key role in the work with climate and environmental goals in the years to come, Bellona believes. When biomass, sludge and waste are burned, ash is formed as waste. If you instead pyrolyze, biocarbon is formed, and also an energy-rich synthesis gas that can be used for the production of electricity, hydrogen or other energy purposes. - The biocarbon can be plowed back into the soil and contribute to carbon storage over time. It will also be able to increase growth through nitrogen bacteria that will fertilize the soil over a long period of time. This can mean a lot for revegetation, says Hauge. Biocarbon can also be important as a replacement for fossil coke and coal in the smelter industry, something Bellona has worked with the Ferroalloy Industry Research Association for several years. - We must think new, and do something about the large waste streams that today are environmental problems. This is how we together actually create change, says Frederic Hauge in Bellona. For more information, please contact: Christian Eriksen Head of Department Bellona Mail: [*chrise@bellona.no*](mailto:chrise@bellona.no) (mailto: [*chrise@bellona.no*](mailto:chrise@bellona.no)) Mob: +47 98 48 83 98 Henrik Badin CEO Vow ASA Mail: [*henrik.badin@vowasa.com*](mailto:henrik.badin@vowasa.com) (mailto: [*henrik.badin@vowasa.com*](mailto:henrik.badin@vowasa.com)) Mob: +47 90 78 98 25 Briefly about the Bellona Environmental Foundation Bellona is an independent non-profit foundation with the goal of solving climate and environmental problems Since 1986, Bellona and founder Frederic Hauge have been involved in the most important environmental issues nationally and internationally, and are recognized for their understanding of technology and solution-oriented approach. Today, approx. 60 engineers, biologists, economists, lawyers, political scientists and journalists in Bellona, ​​in offices in Oslo, Brussels, St Petersburg, Murmansk and London. Our information on Norwegian ([*https://urldefense.proofpoint.com/v2/url?u=https-*](https://urldefense.proofpoint.com/v2/url?u=https-) 3A\_\_bellona.no\_ & d = DwMFaQ & c = euGZstcaTDllvimEN8b7jXrwqOf- v5A\_CdpgnVfiiMM & r = LX3HiBSp8x\_TgUIy0fFnGOZvO2XLrG8Uy-eTQeA- Oju & m = XUbGIT4AyuMPJK5WWlpRCMj- Y3hpAFPIG3eZyWDDcOE & s = 1twAzaCImQeYzPCWbiIrEPVXHOF5UvKE3c2K\_BF0QbA & e =), English ( https: // urldefense. proofpoint.com/v2/url?u=http- 3A\_\_[*www.bellona.org*](http://www.bellona.org) & d = DwMFaQ & c = euGZstcaTDllvimEN8b7jXrwqOf- v5A\_CdpgnVfiiMM & r = LX3HiBSp8x\_TgUIy0fFnGOZvO2XLrG8Uy-eTQeA- Oju & m = XUbGIT4AyuMPJK5WWlpRCMj- Y3hpAFPIG3eZyWDDcOE & s = LsOxEltHPIn5Mu7g1a90AytxRdr42F39nN\_Tf60-F4E & e =) and Russian (https: //urldefense.proofpoint com / v2 / url? u = http 3A\_\_[*www.bellona.ru*](http://www.bellona.ru) & d = DwMFaQ & c = euGZstcaTDllvimEN8b7jXrwqOf- v5A\_CdpgnVfiiMM & r = LX3HiBSp8x\_TgUIy0fFnGOZvO2XLrG8Uy-eTQeA- Oju & m = XUbGIT4AyuMPJK5WWlpRCMj- Y3hpAFPIG3eZyWDDcOE & s = pEqRkMi6I2fs1Uemo\_KsSt0SR8u6onOQ4OJWiiWonuY & e =). About Vow ASA At Vow and our subsidiaries Scanship and Etia, we are very concerned with preventing littering and providing waste value. We have world-leading solutions that convert biomass and waste into valuable resources and that produce clean CO2-neutral energy for a wide range of industries. Cruise ships around the world are equipped with Vow technology that treats waste and purifies wastewater. In aquaculture, similar solutions are used, and public waste disposal companies and industry use our solutions for sludge treatment, waste management and production of biogas on ***land***. But our ambitions extend beyond that. With our advanced technology and solutions, we transform waste into biofuels that help decarbonize industry, and we turn plastic into environmentally friendly fuel, clean energy and high-quality pyrocarbon. Our solutions are scalable, standardized, patented and thoroughly documented, and our ability to deliver is proven time and time again. Our solutions are the key to eliminating waste and stopping littering. The parent company Vow ASA is located in Oslo and is listed on the Oslo Stock Exchange (ticker VOW from 13 January 2020). This notification is subject of the disclosure requirements acc.

**Load-Date:** December 11, 2020

**End of Document**



[***-USDA Announces Grants for Urban Agriculture and Innovative Production***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:62TB-9TG1-F0K1-N01W-00000-00&context=1516831)

ENP Newswire

May 31, 2021 Monday

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**Length:** 923 words

**Body**

The U.S. Department of ***Agriculture*** (USDA) today announced the availability of up to $ 4 million for grants to support the development of urban ***agriculture*** and innovative production projects.

USDA's Office of Urban ***Agriculture*** and Innovative Production (Office) is accepting proposals for planning and innovation projects, and these grants are part of USDA's broader efforts to support urban ***agriculture***.

USDA will accept applications on Grants.gov until 11:59 p.m. Eastern Time on July 30, 2021.

'Urban ***agriculture*** can play an important role in food justice and equity,' Deputy Under Secretary for Farm Production and Conservation Gloria Montano Greene said. 'Such projects have the potential to educate, innovate, and unify communities to improve nutrition and food access and increase local food production in urban areas.'

'With 80 percent of the U.S. population living in or near urban centers, urban ***agriculture*** can make a significant positive impact on the health and well-being of many individuals,' said Leslie Glover II, the new program manager for the Office of Urban ***Agriculture*** and Innovative Production. 'Empowering communities to grow local, healthy food goes a long way towards solving issues of food justice and access.'

There are two categories under the Urban ***Agriculture*** and Innovative Production (UAIP) competitive grant opportunity: Planning Projects and Implementation Projects.

Planning Projects

Planning projects initiate or expand efforts of farmers, gardeners, citizens, government officials, schools, and other stakeholders in urban and suburban areas. Projects may ***target*** areas of food access, education, business and start-up costs for new farmers, urban agroforestry or food ***forests***, and development of policies related to zoning and other needs of urban production.

This is the second year USDA offered this grant opportunity. Examples of previously-selected planning projects include:

The City of New Haven, Connecticut is developing the first New Haven Urban ***Agriculture*** Master Plan. The plan will be used to access ***land*** and opportunities to increase the production and sale of locally grown foods, build community, improve public health and well-being, and provide economic opportunity, particularly in areas with vacant ***land*** and limited food access.

California's Center for ***Land***-Based Learning is producing a comprehensive urban ***agriculture*** assessment of West Sacramento, mapping and documenting current activities, identifying opportunities for growth, and making recommendations to bolster the layers of positive impact urban ***agriculture*** has on communities.

Implementation Projects

Implementation projects accelerate existing and emerging models of urban, indoor, and other ***agricultural*** practices that serve multiple farmers. Projects will improve local food access and collaborate with partner organizations, and may support infrastructure needs, emerging technologies, educational endeavors, and urban farming policy implementation.

Examples of previously-selected implementation projects include:

Arkansas Interfaith Power and Light is improving access to local food by helping a network of urban gardeners and farmers build infrastructure and become self-sustainable. The organization is educating the community on the environmental benefits of local food and the nutritional value of plant-rich diets, mentoring youth in urban ***agricultural*** occupations, and engaging more people in local, organic food production.

Atlanta's The Greenleaf Foundation is using the Greenleaf Community Farm as a hub for connecting and supporting entrepreneurial food projects and closing the food system gap in Council District 5. The project includes a community farm, a payflex farm stand, and a community gathering space to connect and educate residents. It will also expand the Edible Neighborhoods program to provide equitable access to fresh produce, educate residents on edible landscaping, and serve as an entry point into the food system.

Webinar

A pre-recorded webinar will provide an overview of the grants' purpose, project types, eligibility, and basic requirements for submitting an application. The webinar will be posted at farmers.gov/urban.

More Information

The Office was established through the 2018 Farm Bill and is designed to be a USDA-wide effort. Representatives from agencies throughout USDA play a critical role in successfully servicing urban customers. Other engagement and cooperative agreement opportunities are available in addition to the UAIP grants. More information is available at farmers.gov/urban.

Additional resources that may be of interest to urban ***agriculture*** entities include NIFA grants, FSA loans, and AMS grants to improve domestic and international opportunities for U.S. growers and producers.

USDA touches the lives of all Americans each day in so many positive ways. In the Biden-Harris Administration, USDA is transforming America's food system with a greater focus on more resilient local and regional food production, fairer markets for all producers, ensuring access to healthy and nutritious food in all communities, building new markets and streams of income for farmers and producers using climate smart food and forestry practices, making historic investments in infrastructure and clean energy capabilities in rural America, and committing to equity across the Department by ***removing*** systemic barriers, and building a workforce more representative of America. To learn more, visit [*www.usda.gov*](http://www.usda.gov).

[Editorial queries for this story should be sent to [*newswire@enpublishing.co.uk*](mailto:newswire@enpublishing.co.uk) ]

**Load-Date:** May 31, 2021

**End of Document**



[***World heritage status for Scottish peat bogs could help UK hit net zero goals***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:618W-TB71-DY4H-K43P-00000-00&context=1516831)

The Guardian (London)

November 13, 2020 Friday 10:00 AM GMT

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**Section:** ENVIRONMENT; Version:3

**Length:** 1105 words

**Byline:** Severin Carrell Scotland editor

**Highlight:** Hopes rise that the Flow Country, the world's largest carbon store, could become first peatland to win the status

**Body**

Andrew Coupar has crouched down by a small pool, its surface peppered with the small stalks of bogbean. In autumn its dark green oval leaves echo the muted browns, greens and ochres of the surrounding peatland.

In spring, however, the bogbean's pink-fringed white flowers put on a remarkable display, carpeting the cluster of pools that mirror the blue skies and light clouds above and, along the horizon to west, the mountains of Sutherland.

"To me it always looks out of place, because it looks such an exotic flower; white, pink and frilly," said Coupar, a peatlands expert with NatureScot, a government conservation agency. "If you'd never seen one before and you came walking along, you would say 'Wow, what's that doing here?'"

Surrounding those pools near Forsinard, a hamlet and train stop on the single-track line to Wick, are a host of other diminutive plants: tiny carnivorous sundew, white-tipped fronds of bog cotton, the bright pinks and purples of cross-leaved heath and common heather, yellow-flowered bog asphodel, bog myrtle and moist cushions of sphagnum moss.

Black darter dragonfly, the gold-ringed dragonfly and four-spotted chaser rest on the rocks and leaves. The pools attract rare waders such as dunlin, golden plover and the red-throated diver, while squadrons of pink-footed and greylag geese fly in to nest and breed, their cries echoing over the gently undulating landscape.

These species are the stars of the Flow Country, a vast expanse of almost uninterrupted blanket bog that stretches over about 4,000 sq km of Caithness and Sutherland - an area larger than Hampshire or Kent.

In several weeks, conservationists hope the heart of Flow Country, an area of about 1,400 sq km of the most pristine peatland, will come a significant step closer to becoming the first peatland globally to win world heritage site status.

Soon the UK government will confirm whether it will ask Unesco to add the Flow Country to an exclusive list that includes the Great Barrier Reef and the Taj Mahal, alongside other British candidates such as Chatham's historic dockyard and the south Atlantic island of St Helena.

These places are already on the UK's "tentative" list as candidate world heritage sites, but for climate scientists and UK ministers, the Flow Country's candidacy could have a profound impact on the global fight to combat climate heating.

Its supporters, senior conservation scientists, argue it would make the region a showcase for peatland management, including repairing areas damaged by human intervention worldwide, and confirm peat bogs as essential components in future efforts to arrest climate change.

Peatlands are among the greatest stores of carbon, trapping billions of tonnes in places as remote as Kamchatka and Sakhalin in Russia, the Falkland islands and Tierra del Fuego.

Ecologists estimate that while peatlands cover only 3% of the Earth's ***land*** surface, they hold 30% of the carbon stored on ***land***. They calculate the Flow Country's peatlands, which are up to 15 metres deep after more than 10,000 years of plant deposition and expansion, alone hold 400m tonnes of carbon - roughly twice the total carbon content of all the woodlands and ***forest*** in the UK.

Prof Des Thompson, NatureScot's principal science adviser and an architect of the world heritage site bid, said the Flow Country had remarkable significance. "It's the single largest peat deposit in the world and therefore it's the single largest carbon repository in the world; it's the world's largest in terms of one block, one expanse of blanket bog."

Peatlands are under sustained threat from climate change, which is warming the chilly and moist northern and southern latitudes where peatlands thrive, and also by ***agriculture***, commercial forestry and industrial expansion. They release carbon as they dry out, fragment and degrade. On contact with air, the dry particles oxidise into carbon dioxide.

"If they are intact and functioning well, they are absolute life savers. But where they are degraded and pouring out carbon, an absolute liability," Thompson said. "It's so vital to restore them, to preserve our carbon balance."

An expert assessment by the International Mire Conservation Group (IMCG) in 2016, which supported the Flow Country's case for world heritage site status, said most peatland areas in industrialised countries were heavily degraded.

In central Scotland, 60% are degraded; across the Pennines of England, 85% are damaged; on Exmoor it is 90% and in Wales 50%. Up to 85% of Ireland's substantial peatlands in Kerry, Wicklow, Donegal and Connemara, strip-mined to fuel power stations and supply garden centres, are degraded.

In the UK, aggressive action funded by previous governments to dry out peat moorland has contributed to flooding of large towns and cities. So, too, has significant ***forestation*** of peatlands, subsidised by successive governments and previously used by celebrities such as Sir Terry Wogan as tax-efficient investments.

Darrell Stevens, the reserve manager for the Royal Society for the Protection of Birds (RSPB), which owns 22,000 hectares of the Flow Country, including Forsinard, said winning world heritage site status would increase attention on peatland restoration.

That includes the politically charged issue of commercial forestry. That brings peatland conservation into collision with the Scottish and UK government's plans to dramatically increase woodland cover to help the UK meet its net zero climate ***targets***, potentially by expanding forestry across peat uplands, which are also ripe for new windfarms.

Forestry plantations, largely laid with taxpayer support, cover about 15% of northern Scotland's blanket bog, and the IMCG estimates 45% of the Flow Country is degraded, although the world heritage site bid focuses on the most pristine areas.

The RSPB has felled about 1,000 hectares of forestry from its ***land***, leaving a large area disfigured by tree stumps and smothered by thousands of tonnes of discarded branches and brash. "It was inappropriate planting: it shouldn't have happened in the first place," Stevens said.

The RSPB plans to ***remove*** all the forestry on its reserve and the miles of road cut through the peat for forestry machinery, but large areas under private and state-owned forestry remain intact.

The Scottish government, which controls forestry policy, has not yet committed to deforesting the Flow Country.

Stevens said: "It is the opportunity to show the potential for continued restoration, for continued and improved carbon sequestration. If we don't look after it, it will become a net emitter of carbon. All mixed together, this landscape is so special."

**Load-Date:** November 13, 2020

**End of Document**



[***Federal Register: Draft National Pollutant Discharge Elimination System (NPDES) Pesticide General Permit for Point Source Discharges From the Application of Pesticides; Reissuance Pages 4070 - 4074 [FR DOC #2021-00834]***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:61SY-21B1-JDG9-Y0XH-00000-00&context=1516831)

Impact News Service

January 15, 2021 Friday

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**Length:** 4308 words

**Body**

Washington: Office of the Federal Register has issued the following notice:ENVIRONMENTAL PROTECTION AGENCY[EPA-HQ-OW-2020-0005; FRL-10018-41-OW]Draft National Pollutant Discharge Elimination System (NPDES) Pesticide General Permit for Point Source Discharges From the Application of Pesticides; ReissuanceAGENCY: Environmental Protection Agency (EPA).ACTION: Notice of draft permit and request for public comment.-----------------------------------------------------------------------SUMMARY: All ten Environmental Protection Agency (EPA) Regions are proposing for public comment the draft 2021 National Pollutant Discharge Elimination System (NPDES) pesticide general permit (PGP)--the draft 2021 PGP. The draft 2021 PGP covers point source discharges from the application of pesticides to waters of the United States. Once finalized, the draft 2021 PGP will replace the existing permit, the 2016 PGP, which was issued for a five-year term in the Federal Register on October 31, 2016, and expires October 31, 2021, at midnight. The draft 2021 PGP has the same conditions and requirements as the 2016 PGP and would authorize certain point source discharges from the application of pesticides to waters of the United States in accordance with the terms and conditions described therein. EPA proposes to issue this permit for five (5) years in all areas of the country where EPA is the NPDES permitting authority. EPA solicits public comment on all aspects of the draft 2021 PGP. This Federal Register document describes the draft 2021 PGP in general and seeks comment as described in Section III.C, of this document. The Fact Sheet accompanying the permit contains supporting documentation. EPA encourages the public to read the Fact Sheet to understand the draft 2021 PGP better.DATES: Comments on the draft 2021 PGP must be received on or before March 16, 2021.ADDRESSES: Submit your comments, identified by Docket ID No. EPA-HQ-OW-2020-0005, to the Federal eRulemaking Portal: [*http://www.regulations.gov*](http://www.regulations.gov). Follow the online instructions for submitting comments. Instructions: All submissions received must include the Docket ID No. EPA-HQ-OW-2020-0005. Comments received may be posted without change to [*https://www.regulations.gov/*](https://www.regulations.gov/), including any personal information provided. For detailed instructions on sending comments and additional information, see the ``Public Participation'' heading of the SUPPLEMENTARY INFORMATION section of this document. Out of an abundance of caution for members of the public and our staff, EPA Docket Center and Reading Room are closed to the public with limited exceptions, to reduce the risk of transmitting COVID-19. Our Docket Center staff will continue to provide remote customer service via email, phone, and webform. We encourage the public to submit comments via [*https://www.regulations.gov*](https://www.regulations.gov) or email, as there may be a delay in processing mail and faxes. Hand deliveries and couriers may be received by scheduled appointment only. For further information on EPA Docket Center services and the current status, please visit us online at [*https://www.epa.gov/dockets.FOR*](https://www.epa.gov/dockets.FOR) FURTHER INFORMATION CONTACT: EPA Regional Office listed in Section I.D of this document, or you can send an email to [*pgp@epa.gov*](mailto:pgp@epa.gov) You may also contact Chelsea Durant, EPA Headquarters, Office of Water, Office of Wastewater Management at tel.: 202-564-2290 or email: [*durant.chelsea@epa.gov*](mailto:durant.chelsea@epa.gov) Electronic versions of the draft 2021 PGP and Fact Sheet are also available on[[Page 4071]]EPA's NPDES website at [*https://www.epa.gov/npdes/pesticide-permitting.SUPPLEMENTARY*](https://www.epa.gov/npdes/pesticide-permitting.SUPPLEMENTARY) INFORMATION: This section is organized as follows:Table of ContentsI. General Information A. Does this action apply to me? B. Public Participation C. Finalizing the Draft 2021 PGP D. Who are the EPA regional contacts for this draft permit?II. BackgroundIII. Scope and Applicability A. Geographic Coverage B. Categories of Pesticide Use-Patterns Covered C. Summary of the Permit and Changes From the 2016 PGPIV. Cost Impacts of the Draft 2021 PGPV. Executive Orders 12866 and 13563VI. Executive Order 13175: Consultation and Coordination With Indian Tribal GovernmentsI. General InformationA. Does this action apply to me? You may be affected by this action if you apply pesticides under the use patterns in Section III.B of this document that result in a discharge to waters of the United States in one of the geographic areas identified in Section III.A of this document. Potentially affected entities, as categorized in the North American Industry Classification System (NAICS), may include, but are not limited to: Table 1--Entities Potentially Regulated by the Draft 2021 PGP------------------------------------------------------------------------ Examples of Category NAICS potentially affected entities------------------------------------------------------------------------***Agricultural*** entities--General 111 Crop Producers of crops ***agricultural*** interests, Production. mainly for food and farmers/producers, forestry, fiber, including and irrigation. farms, orchards, groves, greenhouses, and nurseries that have irrigation ditches requiring pest control. 113110 Timber The operation of Tract Operations. timber tracts for the purpose of selling standing timber. 113210 ***Forest*** Growing trees for Nurseries reforestation and/or Gathering of gathering ***forest*** ***Forest*** Products. products, such as gums, barks, balsam needles, rhizomes, fibers, Spanish moss, ginseng, and truffles. 221310 Water Operating irrigation Supply for systems. Irrigation.Pesticide parties (includes 325320 Pesticide Formulation and pesticide manufacturers, and Other preparation of other pesticide users/ ***Agricultural*** ***agricultural*** pest interests, and consultants). Chemical control chemicals. Manufacturing..Public health parties 923120 Government (includes mosquito or other Administration establishments vector control districts and of Public Health primarily engaged in commercial applicators that Programs. the planning, service these). administration, and coordination of public health programs and services, including environmental health activities.Resource management parties 924110 Government (includes State departments Administration establishments of fish and wildlife, State of Air and Water primarily engaged in departments of pesticide Resource and the administration, regulation, State Solid Waste regulation, and environmental agencies, and Management enforcement of air universities). Programs. and water resource programs; the administration and regulation of water and air pollution control and prevention programs; the administration and regulation of flood control programs; the administration and regulation of drainage development and water resource consumption programs; and coordination of these activities at intergovernmental levels. 924120 Government Administration establishments of Conservation primarily engaged in Programs. the administration, regulation, supervision and control of ***land*** use, including recreational areas; conservation and preservation of natural resources; erosion control; geological survey program administration; weather forecasting program administration; and the administration and protection of publicly and privately owned ***forest*** ***lands***. Government establishments responsible for planning, management, regulation and conservation of game, fish, and wildlife populations, including wildlife management areas and field stations; and other administrative matters relating to the protection of fish, game, and wildlife are included in this industry.Utility parties (includes 221 Utilities.... Provide electric utilities). power, natural gas, steam supply, water supply, and sewage ***removal*** through a permanent infrastructure of lines, mains, and pipes.------------------------------------------------------------------------B. Public Participation1. Written Comments Submit your comments, identified by Docket ID No. EPA-HQ-OW-2020-0005, at [*https://www.regulations.gov*](https://www.regulations.gov). Once submitted, comments cannot be edited or removed from the docket. EPA may publish any comment received to its public docket. Do not submit to EPA's docket at [*https://www.regulations.gov*](https://www.regulations.gov) any information you consider to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Multimedia submissions (audio, video, etc.) must be accompanied by a written comment. The written comment is considered the official comment and should include discussion of all points you wish to make. EPA will generally not consider comments or comment contents located outside of the primary submission (i.e on the web, cloud, or other file sharing system). For additional submission methods, the full EPA public comment policy, information about CBI or multimedia submissions, and general guidance on making effective comments, please visit [*https://www.epa.gov/dockets/commenting-epa-dockets*](https://www.epa.gov/dockets/commenting-epa-dockets).[[Page 4072]] EPA is temporarily suspending its Docket Center and Reading Room for public visitors, with limited exceptions, to reduce the risk of transmitting COVID-19. Our Docket Center staff will continue to provide remote customer service via email, phone, and webform. We encourage the public to submit comments via [*https://www.regulations.gov*](https://www.regulations.gov) as there may be a delay in processing mail and faxes. Hand deliveries or couriers will be received by scheduled appointment only. For further information and updates on EPA Docket Center services, please visit us online at [*https://www.epa.gov/dockets*](https://www.epa.gov/dockets). EPA continues to monitor information carefully and continuously from the Centers for Disease Control and Prevention (CDC), local area health departments, and our Federal partners so that we can respond rapidly as conditions change regarding COVID-19.2. Will public hearings be held on this action? EPA has not scheduled any public hearings to receive public comment concerning the draft 2021 PGP. However, interested persons may request a public hearing concerning the draft 2021 PGP pursuant to 40 CFR 124.12 Requests for a public hearing must be sent or delivered in writing to the same email address ([*PGP@epa.gov*](mailto:pgp@epa.gov)) as provided above for public comments prior to the close of the comment period. Requests for a public hearing must state the nature of the issues proposed to be raised in the hearing. Pursuant to 40 CFR 124.12, EPA shall hold a public hearing if it finds, on the basis of requests, a significant degree of public interest in a public hearing on the draft 2021 PGP. If EPA decides to hold a public hearing, a public notice of the date, time, and place of the hearing will be made at least 30 days prior to the hearing. Any person may provide written or oral statements and data pertaining to the draft 2021 PGP at any such public hearing. To facilitate robust opportunities for public participation in the permitting process during any interruptions caused by COVID-19, EPA intends to utilize and encourages the use of electronic and telephonic means of communication to the maximum extent possible under the law. EPA will issue public notices and solicit comments on permit actions via on-line tools and/or email. If public hearings are requested, EPA will seek to conduct those hearings utilizing remote capabilities via telephone and the internet.C. Finalizing the Draft 2021 PGP EPA intends to issue a final 2021 PGP on or prior to October 31, 2021 (the expiration date of the 2016 PGP). The final 2021 PGP will be issued after all public comments received during the public comment period have been considered and any appropriate changes are made to the draft 2021 PGP. EPA will include its response to significant comments received in the docket as part of the final permit decision. Once the final 2021 PGP becomes effective, eligible Operators may seek authorization under the new PGP as outlined in the permit. To ensure uninterrupted permit coverage from the 2016 PGP to the 2021 PGP, Operators who are required to submit a Notice of Intent (NOI) must submit their NOI for coverage under the new permit prior to discharge as outlined in the permit (no later than 10 or 30 days before discharge). See Part 1.2.4 of the draft 2021 PGP.D. Who are the EPA regional contacts for this draft permit? For EPA Region 1, contact George Papadopoulos at tel.: (617) 918-1579; or email at [*papadopoulos.george@epa.gov*](mailto:papadopoulos.george@epa.gov) For EPA Region 2, contact Stephen Venezia at tel.: (212) 637-3856; or email at [*venezia.stephen@epa.gov*](mailto:venezia.stephen@epa.gov) For Puerto Rico, contact Sergio Bosques at tel.: (787) 977-5838 or [*bosques.sergio@epa.gov*](mailto:bosques.sergio@epa.gov) For EPA Region 3, contact Carissa Moncavage at tel.: (215) 814-5798; or email at [*moncavage.carissa@epa.gov*](mailto:moncavage.carissa@epa.gov) For EPA Region 4, contact Sam Sampath at tel.: (404) 562-9229; or email at [*sampath.sam@epa.gov*](mailto:sampath.sam@epa.gov) For EPA Region 5, contact John Colletti at tel.: (312) 886-6106; or email at [*colletti.john@epa.gov*](mailto:colletti.john@epa.gov) For EPA Region 6, contact William F. Cooper at tel.: (214) 665-6443 or email at [*cooper.williamf@epa.gov*](mailto:cooper.williamf@epa.gov) For EPA Region 7, contact Alex Owutaka at tel.: (913) 551-7584 or email at: [*owutaka.alex@epa.gov*](mailto:owutaka.alex@epa.gov) For EPA Region 8, contact Amy Clark at tel.: (303) 312-7014 or email at: [*clark.amy@epa.gov*](mailto:clark.amy@epa.gov) For EPA Region 9, contact Pascal Mues at tel.: (415) 972-3768 or email at: [*mues.pascal@epa.gov*](mailto:mues.pascal@epa.gov) For EPA Region 10, contact Bilin Basu at tel.: (206) 553-0029 or email at: [*basu.bilin@epa.gov.II*](mailto:basu.bilin@epa.gov.II) Background Section 301(a) of the Clean Water Act (CWA) provides that ``the discharge of any pollutant by any person shall be unlawful'' unless the discharge is in compliance with certain other Sections of the Act. 33 U.S.C 1311(a). The CWA defines ``discharge of a pollutant'' as ``(A) any addition of any pollutant to navigable waters from any point source and (B) any addition of any pollutant to the waters of the contiguous zone or the ocean from any point source other than a vessel or other floating craft.'' 33 U.S.C 1362(12). A ``point source'' is any ``discernible, confined and discrete conveyance'' but does not include ``***agricultural*** stormwater discharges and return flows from irrigated ***agriculture***.'' 33 U.S.C 1362(14). The term ``pollutant'' includes among other things ``garbage . . . chemical wastes, biological materials . . . and industrial, municipal, and ***agricultural*** waste discharged into water.'' 33 U.S.C 1362(6). A person may discharge a pollutant without violating the Section 301 prohibition by obtaining authorization to discharge (referred to herein as ``coverage'') under a Section 402 NPDES permit (33 U.S.C 1342). Under Section 402(a), EPA may ``issue a permit for the discharge of any pollutant, or combination of pollutants, notwithstanding Section 1311(a)'' upon certain conditions required by the Act. EPA issued the first Pesticide General Permit (``2011 PGP'') on October 31, 2011, in response to the United States Sixth Circuit Court of Appeals ruling vacating EPA's 2006 Final Rule on Aquatic Pesticides. National Cotton Council of America. v. EPA, 553 F.3d 927 (6th Cir. 2009). EPA developed the PGP to control point source discharges of biological pesticides and chemical pesticides that leave a residue into waters of the United States. The PGP provides coverage for certain point source discharges of pollutants to waters of the United States in areas where EPA is the NPDES permitting authority. In 2016, EPA issued the second PGP (``2016 PGP''). The 2016 PGP will expire at midnight on October 31, 2021.III. Scope and ApplicabilityA. Geographic Coverage EPA provides permit coverage for classes of point source discharges of pollutants that occur in areas where EPA is the NPDES permitting authority. The geographic coverage of the draft 2021 PGP is listed in Appendix C of the draft permit.B. Categories of Pesticide Use-Patterns Covered The draft 2021 PGP has the same requirements and conditions as EPA's 2016 PGP and regulates the same discharges of pollutants to waters of the United States from the application of (1)[[Page 4073]]biological pesticides, and (2) chemical pesticides that leave a residue. The draft 2021 PGP applies to the following same pesticide use patterns: Mosquito and Other Flying Insect Pest Control--to control public health/nuisance and other flying insect pests that develop or are present during a portion of their life cycle in or above standing or flowing water. Public health/nuisance and other flying insect pests in this use category include mosquitoes and black flies. Weed and Algae Pest Control--to control weeds, algae, and pathogens that are pests in water and at water's edge, including ditches and/or canals. Animal Pest Control--to control animal pests in water and at water's edge. Animal pests in this use category include fish, lampreys, insects, mollusks, and pathogens. ***Forest*** Canopy Pest Control--application of a pesticide to a ***forest*** canopy to control the population of a pest species (e.g , insect or pathogen) where, to ***target*** the pests effectively, a portion of the pesticide unavoidably will be applied over and deposited to water. The scope of activities encompassed by these pesticide use patterns is described in greater detail in Part III.1.1 of the Fact Sheet for the draft 2021 PGP.C. Summary of the Permit and Changes From the 2016 PGP Once issued, the final 2021 PGP will replace the 2016 PGP, which was issued for a five-year term in the Federal Register on October 31, 2016 (81 FR 75816), and expires October 31, 2021, at midnight. The draft 2021 PGP is similar to the 2016 PGP, and is structured in the same nine parts: (1) Coverage under This Permit, (2) Technology-Based Effluent Limitations, (3) Water Quality-Based Effluent Limitations, (4) Monitoring, (5) Pesticide Discharge Management Plan, (6) Corrective Action, (7) Recordkeeping and Annual Reporting, (8) EPA Contact Information and Mailing Addresses, and (9) Permit Conditions Applicable to Specific States (including Territories) and Indian Country. Additionally, as with the 2016 PGP, the draft 2021 PGP includes nine appendices with additional conditions and guidance for permittees: (A) Definitions, Abbreviations, and Acronyms, (B) Standard Permit Conditions, (C) Areas Covered, (D) Notice of Intent (NOI) form, (E) Notice of Termination (NOT) form, (F) Pesticide Discharge Evaluation Worksheet (PDEW), (G) Annual Reporting Template, (H) Adverse Incident Report Template, and (I) Endangered Species Procedures. The following is a summary of the draft 2021 PGP's proposed requirements: The PGP defines ``Operator'' (i.e , the entity required to obtain NPDES permit coverage for discharges) to include any (a) Applicator who performs the application of pesticides or has day-to-day control of the application of pesticides that results in a discharge to waters of the United States, or (b) Decision-maker who controls any decision to apply pesticides that results in a discharge to waters of the United States. There may be instances when a single entity acts as both an Applicator and a Decision-maker. All Applicators are required to minimize pesticide discharges by using only the amount of pesticide and frequency of pesticide application necessary to control the ***target*** pest, maintain pesticide application equipment in proper operating condition, control discharges as necessary to meet applicable water quality standards, and monitor for and report any adverse incidents. All Decision-makers are required, to the extent not determined by the Applicator, to minimize pesticide discharges by using only the amount of pesticide and frequency of pesticide application necessary to control the ***target*** pest. All Decision-makers are also required to control discharges as necessary to meet applicable water quality standards and monitor for and report any adverse incidents. Certain Decision-makers [i.e , any agency for which pest management for ***land*** resource stewardship is an integral part of the organization's operations, entities with a specific responsibility to control pests (e.g , mosquito and weed control districts), local governments or other entities that apply pesticides in excess of specified annual treatment area thresholds, and entities that discharge pesticides to Tier 3 waters (Outstanding National Resource Waters, 40 CFR 131.12(a)(3)) or to waters of the United States containing National Marine Fisheries Service (NMFS) Listed Resources of Concern] are required also to submit an NOI to obtain authorization to discharge and to implement pest management options to reduce the discharge of pesticides to waters of the United States. Within this group, certain large Decision-makers (any (1) public entity that serves a population greater than 10,000 or (2) private enterprise that exceeds the Small Business Administration size standard as identified in 13 CFR 121.201) must also develop a Pesticide Discharge Management Plan (PDMP), submit annual reports, and maintain detailed records. Certain small Decision-makers (any (1) public entity that serves a population of 10,000 or less or (2) private enterprise that does not exceed the Small Business Administration size standard as identified in 13 CFR 121.201) are required to complete a pesticide discharge evaluation worksheet for each pesticide application (in lieu of the more comprehensive PDMP), an annual report, and detailed recordkeeping. Deadlines for submittal of a Notice of Intent to be covered, if required, are provided in Part 1.2.3, Table 1-2, of the draft 2021 PGP. EPA encourages the public to review and comment on all aspects and provisions in the draft 2021 PGP. The draft 2021 PGP is similar to the 2016 PGP but includes minor changes which are listed below. See the Fact Sheet accompanying the draft 2021 PGP for further discussion. (1) ***Removes*** the out of date NOI provision that provided automatic coverage for all Operators until January 12, 2017. (2) Replaces the requirement to use EPA's eNOI system with EPA's NPDES eReporting Tool (NeT) when preparing and submitting NOIs, NOTs, and annual reports. (3) Updates Appendix A, Definitions, Abbreviations, and Acronyms to include the terms ``Pesticide discharges to waters of the United States from pesticide application'' and ``pesticide residue,'' as defined in 40 CFR 122.2 (4) Modifies Appendix B, Standard Permit Conditions, to ensure consistency with 40 CFR 122.41 (5) Updates Appendix C, Areas Covered, to add Indian Country within Virginia and Indian Country within Indiana, and to ***remove*** the State of Idaho.IV. Cost Impacts of the Draft 2021 PGP Based on the cost analyses performed for the 2011 PGP and 2016 PGP, EPA expects the costs that covered entities, including small businesses, will bear to comply with this permit will be minimal. Since the draft 2021 PGP is similar to the 2016 PGP, EPA projects that the draft 2021 PGP will have no incremental cost impacts on regulated entities. Copies of EPA's cost impact analyses for the 2011 PGP and 2016 PGP are available in the docket for this permit. See the Fact Sheet accompanying this draft permit for further discussion.V. Executive Orders 12866 and 13563 The draft 2021 PGP is not a significant regulatory action and was therefore not[[Page 4074]]submitted to the Office of Management and Budget (OMB) for review.VI. Executive Order 13175: Consultation and Coordination With Indian Tribal Governments This action does not have tribal implications as specified in E.O 13175. It will neither impose substantial direct compliance costs on federally recognized tribal governments, nor preempt tribal law. EPA directly implements the NPDES Program, including the 2021 PGP when it is finalized, in Indian Country; therefore, in compliance with EPA Policy on Consultation and Coordination with Indian Tribes, EPA consulted with tribal officials early in the process to permit tribes to have meaningful and timely input into the renewal of the PGP. To gain an understanding of, and where necessary, to address tribal implications of the draft 2021 PGP, EPA conducted the following activities: May 8, 2020--EPA emailed notification letters to tribal leaders initiating consultation and coordination on the renewal of the PGP. The initiation letter was also posted on EPA's Tribal Consultation Opportunities Tracking System (TCOTS) at [*https://tcots.epa.gov/*](https://tcots.epa.gov/). June 9, 2020--EPA held an informational webinar open to all tribal representatives and reserved the last part of the webinar for official consultation comments. Fourteen tribal representatives participated in the webinar. No official comments were received during the webinar. The presentation was posted on the tribal portal website at [*http://tcots.epa.gov*](http://tcots.epa.gov). EPA received no comments from tribes and tribal organizations during the formal consultation period. Records of the tribal informational webinar and a consultation summary are included in the docket for this proposed action (Docket ID No. EPA-HQ-OW-2020-0005). Authority: Clean Water Act, 33 U.S.C 1251 et seq. Dated: December 14, 2020.Dennis Deziel,Regional Administrator, EPA Region 1. Dated: December 14, 2020.Javier Laureano,Director, Water Division, EPA Region 2. Dated: December 14, 2020.Carmen R. Guerrero-P[eacute]rez,Director, Caribbean Environmental Protection Division, EPA Region 2 Caribbean Office. Dated: December 14, 2020.Catherine A. Libertz,Director, Water Division, EPA Region 3. Dated: December 14, 2020.Jeaneanne M. Gettle,Director, Water Division, EPA Region 4. Dated: December 14, 2020.Tera L. Fong,Director, Water Division, EPA Region 5. Dated: December 14, 2020.Charles W. Maguire,Director, Water Division, EPA Region 6. Dated: December 14, 2020.Jeffery Robichaud,Director, Water Division, EPA Region 7. Dated: December 14, 2020.Judy Bloom,Manager, Clean Water Branch, EPA Region 8. Dated: December 14, 2020.Tom[aacute]s Torres,Director, Water Division, EPA Region 9. Dated: December 14, 2020.Daniel D. Opalski,Director, Water Division, EPA Region 10.[FR Doc. 2021-00834 Filed 1-14-21; 8:45 am]BILLING CODE 6560-50-P

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[***New Zealand Trail-Blazing Ag Emissions Regulations, Which Markets To Follow?***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:6244-KTN1-JD33-J002-00000-00&context=1516831)

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**Highlight:** As New Zealand's ***agricultural*** sector prepares for on-farm GHG ***emissions*** to be priced from 2025, we expect other markets to follow in ramping up pressure on ***agricultural*** producers to reduce ***emissions***. We believe that the EU is highly likely to introduce similar policies by 2030, in particular bringing ***agricultural*** methane ***emissions*** into GHG regulations. This follows the identification of methane ***emissions*** as a major threat to missing the EU's 2030 climate commitments by the European Commission. For Canada, the US and Australia, the chance of more stringent regulation is medium. For now, we expect these markets to focus on incentivising innovation, although ***emissions*** pricing or limits could be introduced as the deadline for climate goals draws closer, with significant effects on the livestock industry. We hold a low expectation of Brazil and China enforcing policies on ***agricultural*** producers to reduce GHG ***emissions***, although improved policies on deforestation in Brazil within the next decade would have an effect on ***agricultural*** producers, especially for beef and soybean.

**Body**

**Key View** As New Zealand's ***agricultural*** sector prepares for on-farm GHG ***emissions*** to be priced from 2025, we expect other markets to follow in ramping up pressure on ***agricultural*** producers to reduce ***emissions***. We believe that the EU is highly likely to introduce similar policies by 2030, in particular bringing ***agricultural*** methane ***emissions*** into GHG regulations. This follows the identification of methane ***emissions*** as a major threat to missing the EU's 2030 climate commitments by the European Commission. For Canada, the US and Australia, the chance of more stringent regulation is medium. For now, we expect these markets to focus on incentivising innovation, although ***emissions*** pricing or limits could be introduced as the deadline for climate goals draws closer, with significant effects on the livestock industry. We hold a low expectation of Brazil and China enforcing policies on ***agricultural*** producers to reduce GHG ***emissions***, although improved policies on deforestation in Brazil within the next decade would have an effect on ***agricultural*** producers, especially for beef and soybean.

**Potential *Agricultural* *Emissions* Policies Comparison**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Country/Region** | ***Emissions* Goal** | **Current *Emissions* And Climate Regulation For *Agriculture*** | Potential ***Agricultural*** ***Emissions*** Regulations In Future | **Likelihood Of These *Emissions* Policies Being Introduced Before 2030** | **Agribusiness Sectors At Risk And Global Impact Of Potential Regulations, If Enforced** |
| **New Zealand** | Net-zero GHG ***emissions*** by 2050 (excluding methane). 10% reduction in total methane ***emissions*** by 2030 (from 2017 levels), and a 24-47% reduction by 2050. | 2019 Zero Carbon Act. Pricing of ***agricultural*** ***emissions*** (including methane) scheduled for 2025. | Already implemented far-reaching regulation through the Zero Carbon Act & GHG pricing from 2025. Further policies likely to focus on support for innovation and farm adaptation to meet current goals. | **Medium:** Already ambitious ***emissions*** pricing scheme. Innovation support funding available through existing programmes, although possibility for further funding to be dedicated in future. | **Livestock and dairy sectors** most impacted by methane and other GHG pricing. However, impacts on production limited by government support for farmers to adapt to regulation. Greatest impact on **dairy exports** if premium price is put on 'zero-carbon' products. Accounts for 12% of global dairy exports, with China as top market. |
| **EU** | Net-zero GHG ***emissions*** by 2050 (including methane). | EU ETS (excludes ***agricultural*** sector). European Green Deal (including Farm to Fork Strategy) - includes fertiliser and crop protection limits to be set out in the coming year. | Review of ***emissions*** regulations due in 2021, which could bring more methane-specific regulation. Also revision of Feed Additives Regulation scheduled for 2021, which could allow for more methane-reducing feed supplements to be used. | **High:** Methane reductions highlighted as a priority for meeting reduction ***targets***. | Fertiliser regulation to impact **crop producers**. Methane production regulation would impact production of **ruminant animals** (cows and sheep) Impact of potential cost increases felt within the EU (large internal ***agricultural*** market). |
| **Canada** | Reducing GHG ***emissions*** by 30% below 2005 levels by 2030. Net-zero GHG ***emissions*** by 2050. | Pan-Canadian Framework on Clean Growth and Climate Change, effective April 2019. Included Greenhouse Gas Pollution Pricing Act, benchmark carbon pricing for off-farm ***emissions*** (eg, fuel for transporting produce). | A Healthy Environment and A Healthy Economy Plan (December 2020) proposed raising carbon price annually from 2023-2030 (off-farm ***emissions*** only). | **Medium:** Proposals to be resisted by industry and Conservative Party, especially in Prairie provinces, although climate change increasingly incorporated into political agendas. | Proposed increase in carbon prices impact producers of **all *agricultural* commodities**, as off-farm transportation costs will increase. **Limited global impact.** Increased costs of off-farm GHG ***emissions*** would have a minimal impact on production and export prices. |
| **Australia** | Reduction to 26-28% below 2005 levels by 2030 (includes offsetting through ***land*** use, ***land*** use change and forestry). | ***Emissions*** Reduction Fund - ***Agricultural*** producers can gain carbon credits for activities that offset or reduce carbon ***emissions***. 'Safeguard mechanism' for emitters over 100,000 tonnes CO2 equivalent a year (excluding ***agriculture***). 'Technology not taxes' narrative for encouraging ***emissions*** reductions through innovation. | Potential to regulate or penalise ***agricultural*** GHG ***emissions*** (currently only reward for offsetting). In the case that ***agricultural*** GHG ***emissions*** were regulated, methane would be the focus due to the high proportion of ***emissions*** it accounts for. | **Medium:** Industry commitment to GHG neutrality reduces need for government regulation | Any enforced ***agricultural*** ***emissions*** regulations would have significant impact on **livestock sector**, especially **beef**. Direct livestock ***emissions*** account for about 70% of GHG ***emissions*** from the ***agricultural*** sector and 11% of national GHG ***emissions***. Limited impact if policy remains focused on innovation. Potential impact for beef export prices. Australia accounts for 15% of global exports of bovine meat. |
| **US** | Net-zero GHG ***emissions*** by 2050 (statement of intent). | Biden's intentions: Voluntary carbon market for ***agricultural*** producers. Incentivising and funding ***emissions*** reduction / capture technology; eg, methane digesters. | Bringing large concentrated feeding operations under more stringent regulation as industrial GHG emitters. | **Medium to high:** Lack of enforced ***emission*** reductions for producers so far. Biden plans for funding of climate technology development. Likely to take more stringent action in long term if innovation support alone fails to meet ***emissions*** ***targets***. | **Industrial-scale *agricultural* producers,** especially for **livestock**. **Rice production** (the US accounts for 1% of global production but 7% of total exports). Limited impact if policy remains focused on innovation. Livestock exports could be affected by regulation on industrial-sized producers, with US a top exporter. |
| **China** | Carbon neutrality by 2060 (announced at UN General Assembly, September 2020). Specific details, including if methane is included, remain uncertain. | Lack of enforced regulation. | Next-five year plan (2021-2026) could bring more ***emissions*** reduction initiatives. | **Low:** Goals to maintain a high level of domestic ***agricultural*** production to ensure food security will prevent regulations that limit production. | **Rice sector** - Rice cultivation accounted for 22% of ***agricultural*** methane ***emissions*** in 2018. Also livestock. **Limited impact globally** - Stringent regulation unlikely, and most affected products consumed domestically. |
| **Brazil** | Reduce GHG ***emissions*** by 43% from 2005 levels by 2030. Suggestion of net-zero ***emissions*** by 2060, but on condition of funding from developed nations. | Lack of enforced regulation. Some regional initiatives include ***agricultural*** sustainability; eg, Produce, Conserve, Include scheme in Mato Grosso | Greater regulation of ***land*** use, ***land***-use change, and forestry (LULUCF) sector, especially deforestation, post-Bolsonaro administration (closer to 2030). Indirect effects on ***agricultural*** producers. | **Low** (for direct ***agricultural*** ***emissions*** regulation, higher possibility for more LULUCF regulation) | Producers that depend on deforestation for farmland. Eg, **cattle farming** and **soy production.** High potential for global impact if deforestation or ***emissions*** was strictly regulated, as Brazil a top ***agricultural*** exporter. In particular soybean and beef. |

Note: Export statistics for 2019. Source: Biden-Harris campaign, Center For Strategic & International Studies, Environment and Climate Change Canada, European Commission, NZ Ministry For Primary Industries, Trade Map, USDA, Western Australia Department of Primary Industries and Regional Development, World Resources Institute, Fitch Solutions We expect New Zealand's Zero Carbon Act, announced in 2019, combined with government plans to introduce greenhouse gas (GHG) ***emission*** pricing for the ***agricultural*** sector to have a substantial impact on that country's livestock sector ( *see 'New Zealand's* ***Emissions*** *Reductions, Implications For* ***Agriculture****', January 2020 for a full discussion on environmental policies and farm* ***emission*** *reduction strategies in New Zealand*). Although not alone in committing to carbon neutrality by 2050, New Zealand's policies directly ***target*** the ***agricultural*** sector, including the reduction in total methane ***emissions*** and proposals to price on-farm GHG ***emissions***, which makes them notably more drastic that the policies of other major ***agricultural*** producers. However, as consumer and political pressure to meet climate goals increases, we expect other regulating bodies to consider stricter actions for ***agricultural*** producers in order to meet ***emission*** reduction ***targets***. The growing momentum towards ESG/Sustainability at policy, financial markets and commercial levels is one of our key themes for agribusiness in 2021.EU: Limited Regulation For ***Agriculture*** So Far, But Potential For Stricter Methane Policies Following GHG ***Target*** Review In 2021 **We believe that the likelihood of the EU implementing more stringent polices on direct *agricultural* GHG *emission* before 2030 is high, especially for methane.** As with New Zealand, the EU aims to be carbon neutral by 2050 (including methane). There have been some policy moves in recent years to regulate ***agricultural*** GHG ***emissions***, although few of these have yet been implemented and methane has received relatively little attention. For example, the **Farm to Fork Strategy** of the **European Green Deal** ***targets*** the reduction of chemical pesticide and fertiliser usage by 50%, with limits expected to be set in the coming year.In contrast, **methane is yet to be *targeted* by a strict regulatory framework.** The EU adopted a methane reduction strategy in October 2020 as part of the European Green Deal. The current priority of the strategy is to address the challenges of methane ***emissions*** measurement and reporting. ***Agriculture***-specific details of the strategy are focused on novel feeding alternatives and supplements for livestock, which are promoted through the Farm to Fork Strategy, although the current potential for these initiatives is limited by the EU's Feed Additives Regulation, which is due to be revised in 2021. These initiatives do not include mandatory action to be taken by producers. **Livestock A Significant Contributor** Global - ***Agriculture*** GHG ***Emissions*** In 2017 By Sector, % of total anthropogenic ***emissions*** CO2 equivalent *Note: ATS = Applied to soils, LOP = left on pasture, Source: FAO, Fitch Solutions***Despite current actions lacking substantial moves towards reducing *agricultural* GHG *emissions*, there are a number of developments scheduled for 2021 that have the potential to bring *agricultural* *emissions*, especially methane, under a stricter regulatory framework.** The European Commission has committed to a review of the EU's GHG reduction policy instruments by June 2021. An Impact Assessment carried out by the European Commission in 2020 on the EU's actions to reduce net GHG ***emissions*** by 55% by 2030 concluded that efforts to tackle methane ***emissions*** need to be accelerated in order to meet ***targets***. In light of this finding, we expect the 2021 policy review to consider pricing methane ***emissions*** within the next decade. The EU ***Emissions*** Trading Scheme (ETS), a cap-and-trade system established in 2005 covers around 40% of the EU's GHG ***emissions***. The ***agricultural*** sector is currently excluded from the ETS. As the EU draws closer to its ***emissions*** reduction deadlines, and with increasing attention on the role of methane, we expect the EU to take a more regulatory approach towards ***emissions*** from ***agricultural*** producers. This is especially the case as 53% of the EU's anthropogenic methane ***emissions*** come from the ***agricultural*** sector. However, in the instance that methane ***emission*** pricing is adopted, we do not believe that this would be enforced until after 2025, in order to account for the existing challenges in ***emission*** measurement. **Related Research** 'The EU Green Deal Part I: Farm To Fork', July 15 2020 'The EU Green Deal Part II: Biodiversity', July 20 2020 'The EU Green Deal Part III: CAP Reform And Implications', July 24 2020 **Global Cattle Growth Driven By Dairy Cows** Cattle Numbers - Global, By Category (LHS, '000 heads) & By Country (RHS, % Of Global) *Source: USDA, Fitch Solutions* Canada: Strong Farm Lobby And Conservative Opposition To Prevent Direct ***Agriculture*** GHG PricingFor **Canada**, we believe that ***agricultural*** GHG ***emissions*** will gain greater attention in the coming years, although **enforcing reductions through regulatory action or *emissions* pricing will be difficult due to political and industry contestation**, especially from the Prairie provinces. Unlike in New Zealand where the ***agricultural*** sector has been relatively supportive of the government's broad aim to reduce ***emissions*** (for example, industry and government cooperation through He Waka Eke Noa, a five-year framework to help farmers adapt to regulations before ***agricultural*** ***emissions*** are priced in 2025), the Canadian government's climate efforts have been contested by both industry bodies and provinces where ***agricultural*** production is most concentrated. In 2008, British Columbia included ***agricultural*** inputs in its carbon tax, but removed the sector in 2014 due to industry pressure. **Canada's current GHG *emission* pricing policy, which excludes on-farm *emissions*, has been criticised by the farming sector** for the indirect costs it creates for producers through higher fuel prices for off-farm transportation. **The Pan-Canadian Framework on Clean Growth and Climate Change (PCF)** was announced in 2016 and came into effect in April 2019. This introduced a federal carbon tax through the **Greenhouse Gas Pollution Pricing Act** for all provinces that had not already set up their own system, as well as setting benchmark carbon prices for provincial pricing. The federal scheme excludes biological ***emissions*** (methane from ruminant animals), as well as fuel used for on-farm purposes. Despite the exclusion of direct farm ***emissions***, carbon pricing under the PCF has been resisted by the farm sector. When the PCF was announced in 2016, ***Agricultural* Producers Association of Saskatchewan**, one of Canada's Prairie provinces, released a statement opposing the pricing scheme. In 2018, a legal case was filed by Saskatchewan province against the federal carbon price, although it was unsuccessful in gaining exemption.With resistance already high against the existing policy, we do not expect that a substantial expansion of ***emission*** regulation to the ***agricultural*** sector would be carried out within the next decade. In October 2019, we highlighted the political tensions surrounding Canada's climate commitments, which we expect to remain a key challenge for the tightening of GHG regulation in the coming years. In December 2020, Canada's Liberal government announced A Healthy Environment and A Healthy Economy plan. This plan proposes increasing the carbon price under the PCF by CAD15/tonne a year, starting in 2023, raising it to CAD170/tonne of carbon pollution in 2030. Methane ***emissions*** are not addressed. Criticism from the ***agricultural*** industry has come from organisations including the Grain Farms of Ontario, representing over 28,000 farmers, and the Western Canadian Wheat Growers. The Conservative Party of Canada, who performed well in Canada's prairie provinces in the October 2019 general election, responded to proposed carbon price increases by stating that they will aim to ***remove*** the tax.However, as highlighted by our Country Risk team in 2019, climate change is a growing factor in the Canadian political landscape. A poll conducted by Abacus Data and Clean Energy Canada in 2019 found that nine in 10 Canadian voters see climate change as important or urgent. Although the Conservative Party of Canada has criticised Prime Minister Justin Trudeau's plan to raise the carbon tax, current Conservative leader Erin O'Toole has shown a greater commitment to meeting the country's climate ***targets*** than his predecessor. Despite this, we would expect the policies introduced by a Conservative government, should it be elected in the coming years, to stay away from raising costs for ***agricultural*** producers in order to maintain support from the Prairie provinces.

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| Asia And Nitrous Oxide Generate A Growing Share Of ***Agricultural*** GHG ***Emissions*** |
| ***Agriculture*** - GHG ***Emissions*** By Region & By GHG (anthropogenic ***emissions*** in Gg of CO2 equivalent per annum) |
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| *Source: FAO, Fitch Solutions* |

Australia: Government's 'Technology Not Taxes' Strategy To Continue As Industry Makes Own Commitments To Climate NeutralityAlthough the Australian ***agricultural*** industry is supportive of climate policies, **we expect the government to remain focused on reducing *emissions* through funding further technological developments and voluntary actions, rather than by enforcing an *emissions* tax for the sector.** Australia currently operates a 'safeguard mechanism' scheme that requires (non-***agricultural***) emitters of over 100,000 tonnes of carbon dioxide (or equivalent) a year to keep their net ***emissions*** below a baseline limit. The ***Emissions* Reduction Fund**, enables ***agricultural*** producers to benefit from this system by allowing carbon credits to be earned by activities that store carbon.We do not expect the Australian government to impose stricter regulation on the ***agricultural*** sector, specifically its large beef industry, in the coming years. Industry commitments to GHG ***emissions*** suggest that effective actions will be taken from within the industry without the need for government enforcement. **Meat and Livestock Australia** (MLA) have committed to GHG ***emission*** neutrality by 2030. This industry commitment includes methane ***emissions***, which it aims to lower through greater access to information and investment in innovations, particularly those on methane-reducing feeds, for producers. However, as with the New Zealand livestock and dairy sector, we do not believe that Australian producers will be able to significantly reduce methane ***emissions*** by 2030 while sustaining livestock numbers due to most methane-reducing strategies remaining in the early stages of development. Despite this, the commitments made by MLA indicate an industry commitment to ***emissions*** reduction, limiting the need for more direct government intervention, for example, a mandatory ***agricultural*** ETS, for the time being.With the livestock industry already committed to reducing GHG ***emissions***, we expect the Australian government to continue promoting and funding new technologies in the coming years, rather than imposing compulsory regulation. In February 2020, the King Review was published, a government-commissioned report that investigated low-cost methods for GHG ***emission*** reductions. Central to the report was technological development and the aim of incentivising voluntary ***emissions***-reducing action in the industrial, transport and ***agricultural*** sectors, an approach referred to by the government as ' **technology not taxes**'. This strategy remained the focus of government action throughout 2020, for example, citing a AUS1.7mn investment in the **Soil Carbon Company** to reduce ***agricultural*** ***emissions*** without increasing production costs.Although Australia's current and upcoming governments are likely to be wary to implement strict environmental policies given the importance of the mining and ***agriculture*** sectors to its economy, our Country Risk team expects the climate-focused initiatives to become more prominent in the next Federal elections occurring in 2022, adding upside to odds of policy changes. For example, recent polling suggests that Australians believe in climate change and are in favour of increasing action to mitigate it. An Ipsos poll from November 2020 reported that nearly 70.0% of surveyed Australians would like for the government to pledge net-zero ***emissions*** by 2050.US: Biden To Focus On Incentivising GHG Capture, Potential For Greater Regulation Of Industrial-Scale ***Agricultural*** Emitters In Long TermAlthough we expect ***emissions*** regulation to heighten under a Biden administration, especially for the oil and gas sector, **we believe that policies directed at *agriculture* in the coming years will focus on investment in innovation and technologies to reduce net *emissions*, rather than enforcing mandatory GHG *emissions* reductions from farms.** Biden has made a statement of intent for the US to achieve net-zero GHG ***emissions*** by 2050. Prior to his inauguration on January 20 2020, Biden has outlined his actions proposed to meet this goal.Of those concerning ***agriculture***, we highlight two key objectives, both of which will incentivise net ***emissions*** reductions in order to meet the 2050 ***target*** but will not enforce such actions, or require a reduction in gross GHG ***emissions***. **First, Joe Biden intends to introduce a voluntary carbon market for *agricultural* producers.** However, unlike the New Zealand system, which will both price ***agricultural*** GHG ***emissions*** as well as rewarding sequestration, the proposed US scheme does not include a tax on ***emissions***. Instead, the voluntary initiative will reward farmers for the carbon they sequester on their ***land*** and the GHG ***emission*** reductions, including from methane, that they secure. This will incentivise producers to reduce net GHG ***emissions***, but does not penalise those who continue to pollute. **Second, we expect increased investment in *emissions*-reducing technologies and innovation for GHG capture**. One technology that has received particular attention in Biden's climate plan is the use of methane digesters to capture and generate electricity from on-farm methane ***emissions***. There are currently 263 anaerobic digester projects on livestock farms in the US, of which almost half are funded by the USDA, according to the US Environmental Protection Agency.Despite the increased attention to climate change initiatives that we expect over the coming years, the current proposals will not lead to the same level of ***agricultural*** GHG regulation expected in some countries, including New Zealand. For example, a criticism of Biden's intention to provide further backing for methane digesters is that they support the expansion of large concentrated animal feeding operations (CAFOs), a major emitter of ***agricultural*** GHGs in the US. Furthermore, with the US ***agriculture*** sector being mainly managed by the farm bill, which was renewed in 2018, there is limited scope for widespread changes to ***agriculture*** from the Biden administration in the coming years, compared with other sectors. **However, in the later years out to 2030 there is greater potential for more stringent measures to be taken to reduce GHG *emissions* from the US *agriculture* sector.** As time draws closer to the US meeting its ***emissions*** ***targets***, it is likely that greater emphasis will be placed on ***agricultural*** producers, in particular industrial-sized operations. In 2020, a bill to eliminate CAFOs by 2040, the Farm System Reform Act, was introduced by US Senator Cory Booker. Although not directly aimed at reducing ***emissions***, pressure to limit the number of industrial-scale farms could contribute to ***emissions*** reductions. Another option that has been promoted by some environmental groups is for the greater enforcement of ***emissions*** regulations from CAFOs under the Clean Air Act.

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| South America And Asia Lead In ***Agricultural*** GHG ***Emissions*** As a Proportion Of Total |
| GHG ***Emissions*** From ***Agriculture*** & ***Land*** Use Change & Forestry, 2017 (% total) |
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| *Source: Climate Watch Data, Fitch Solutions* |

China: Moving Towards Strict ***Emission*** Reductions, But Uncertainty Surrounds AgricultureChina's President Xi Jinping announced during the UN General Assembly in September 2020 that 'we aim to have CO2 ***emissions*** peak before 2030 and achieve carbon neutrality before 2060.' This is **the first time that China has committed to achieving carbon neutrality**. We note that the announcement lacks many details, including how ***agriculture*** ***emissions*** will be accounted for and if any sectors may receive exemptions. It is not clear whether the pledge includes only CO2 or all GHGs. Xi Jinping mentioned 'CO2', but the 2060 pledge includes all GHG, according to one of the top climate researchers in the country, as reported by Bloomberg. More details, tangible ***targets*** on this pledge or on the ***emission*** reduction objectives could come as part of the next Five-Year Plan (2021-2025), to be released in H121. In any case, while ***emissions*** from ***agriculture*** have received far less attention in the country in recent years - along with the rest of the world -, they could come under greater scrutiny in the near future. **Given the country's large rice and livestock sectors** - rice cultivation accounted for 22% of its ***agricultural*** methane ***emissions*** in 2018 according to the PBL Netherlands Environmental Assessment Agency, as anaerobic decomposition of organic material in flooded rice fields produces methane - ***emission* reduction in the sector will be very slow in our view.** China's goals to maintain a high level of domestic ***agricultural*** production to support its food security also means that authorities will be extremely cautious to impose strict regulations on ***agriculture***, in our view.

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| Rice Sector At Risk From ***Emissions*** Regulation |
| Selected Countries - Rice Production (% of global) |
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| *Note: Rice production is a source of GHG* ***emissions****. Anaerobic decomposition when grown in rice paddies produces methane. f = Fitch Solutions forecast. Source: FAO, USDA, National sources, Fitch Solutions* |

Brazil: Pressure To Curb Deforestation Fails To Alter ***Emissions*** Trajectory Following Environmental Policy UnravellingFor Brazil, **we do not expect major climate policies to be implemented and effectively enforced on the *agricultural* sector in the coming years under the Bolsonaro administration.** Unlike other major ***agricultural*** producers, a reduction in Brazil's GHG ***emissions*** reductions is dependent on the curbing of deforestation rates. A 2020 study by the Brazilian Climate Observatory, a coalition of environmental organisations, found that GHG ***emissions*** from the LULUC sector increased by 23% in 2019, with deforestation accounting for 44% of total GHG ***emissions*** that year. ***Emissions*** directly from ***agriculture*** also increased by 1% y-o-y. It should be noted that the relationship between the LULUC sector and the ***agricultural*** industry means that successful action taken to reduce ***emissions*** released from deforestation will impact ***agricultural*** producers. This is because cattle farming and soy production are significant drivers of ***land*** clearance in Brazil. Deforestation since Bolsonaro came into office has been largely linked to his agribusiness-friendly policies and pledges to extend farmland, with his election in early 2019 being received positively by farmers who have long opposed what they perceive to be excessive policing of the sector by the Brazilian government. **Despite high levels of international pressure on Brazil to take actions against deforestation, we do not believe that any policy changes made by Bolsonaro will be effective at reducing GHG *emissions* from the LULUC and *agricultural* sectors.** In December 2020, Brazil updated its Nationally Determined Contribution as part of the Paris Climate Agreement, maintaining its ***target*** to reduce GHG ***emissions*** by 43% by 2030 from 2005 levels. Brazil also announced that it would aim to be carbon neutral by 2060, but only if it could secure funding of USD10bn per year from developed nations. However, as with China, there has been little indication of how this goal will be achieved, signalling that the announcement is aimed at reducing international scrutiny, rather than a turn in Brazil's climate policy.We maintain our view that it will be **difficult for the international community to successfully pressure Bolsonaro to reduce GHG *emissions* from the LULUC and *agricultural* sectors.** Brazil's role as an ***agricultural*** powerhouse has grown substantially in the past few decades. This has made it difficult for foreign governments, organisations and consumers in certain markets to take successful action against Brazilian deforestation, many of which rely on Brazil for ***agricultural*** imports. Despite wild fires in the Amazon rainforest in 2019 drawing widespread international criticism of Bolsonaro's anti-environmental rhetoric, the government has since taken actions further reducing the regulation and monitoring of ***land*** use in Brazil. A study by the Brazilian Institute of Socioeconomic Studies found that funding for the monitoring of Brazil's ***forests*** was significantly reduced in the H120 compared with the year prior, as well as a budget cut of more than 40% y-o-y for Brazil's national climate change plan in 2020. The effects of such policies has been that deforestation rates in the Amazon increased for the third consecutive year in 2020, according to the National Institute for Space Research. With Bolsonaro's government continuing to fail to enforce existing policies effectively, we do not expect that any potential policy changes following the December 2020 GHG ***emissions*** commitment to have a tangible effect on agribusiness in the near future.

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| Amazon Deforestation On Upwards Trend Under Bolsonaro |
| Brazil - Deforestation In The Amazon (sq km) |
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| *Note: Data for 'legal Amazon'. Source: National Institute for Space Research, Fitch Solutions* |

**In the event that a government with more favourable climate change policies is elected in the next decade, we would expect the focus to be on renewing the enforcement and monitoring of deforestation prevention, rather than action directly on *agricultural* producers such as that announced in New Zealand.** Actions on the LULUC sector would both reduce international scrutiny of Brazil's climate policies, as well as effectively reducing GHG ***emissions***.For now, **while Bolsonaro's presidency continues, we believe that regional and local initiatives have a greater potential to reduce LULUC and *agricultural* GHG *emissions*** in the coming years, rather than the introduction and enforcement of more stringent government policies. One example of an initiative with relative success has been the **Produce, Conserve, Include (PCI)** scheme, launched by the state of Mato Grosso in 2015 during COP21. The initiative includes government agencies, the private sector and local communities in working towards a low-carbon economy. The **REDD for Early Movers Programme**, a global scheme aimed at rewarding ***forest*** conservation and climate change prevention, has helped create financial inventive within the PCI. Furthermore, the **Tropical *Forest* Alliance**, whose partners include **Cargill**, **JBS**, **Mars** and **Unilever**, is working with the PCI to promote it on a global stage. However, continued weak government policy on a national level works to undermine regional initiative such as this, and deforestation in Mato Grosso has risen again under Bolsonaro's administration.

**Load-Date:** March 26, 2021

**End of Document**



[***Draft Permit: Draft National Pollutant Discharge Elimination System Pesticide General Permit for Point Source Discharges from the Application of Pesticides; Reissuance***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:61SY-39Y1-F0YC-N227-00000-00&context=1516831)

Impact News Service

January 16, 2021 Saturday

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**Body**

Washington, DC: This Notice document was issued by the Environmental Protection Agency (EPA)

Action

Notice of draft permit and request for public comment.Summary

All ten Environmental Protection Agency (EPA) Regions are proposing for public comment the draft 2021 National Pollutant Discharge Elimination System (NPDES) pesticide general permit (PGP)—the draft 2021 PGP. The draft 2021 PGP covers point source discharges from the application of pesticides to waters of the United States. Once finalized, the draft 2021 PGP will replace the existing permit, the 2016 PGP, which was issued for a five-year term in the Federal Register on October 31, 2016, and expires October 31, 2021, at midnight. The draft 2021 PGP has the same conditions and requirements as the 2016 PGP and would authorize certain point source discharges from the application of pesticides to waters of the United States in accordance with the terms and conditions described therein. EPA proposes to issue this permit for five (5) years in all areas of the country where EPA is the NPDES permitting authority. EPA solicits public comment on all aspects of the draft 2021 PGP. This Federal Register document describes the draft 2021 PGP in general and seeks comment as described in Section III.C, of this document. The Fact Sheet accompanying the permit contains supporting documentation. EPA encourages the public to read the Fact Sheet to understand the draft 2021 PGP better.Dates

Comments on the draft 2021 PGP must be received on or before March 16, 2021.Addresses

Submit your comments, identified by Docket ID No. EPA-HQ-OW-2020-0005, to the Federal eRulemaking Portal: [*http://www.regulations.gov*](http://www.regulations.gov) Follow the online instructions for submitting comments.

Instructions: All submissions received must include the Docket ID No. EPA-HQ-OW-2020-0005. Comments received may be posted without change to [*https://www.regulations.gov/*](https://www.regulations.gov/), including any personal information provided. For detailed instructions on sending comments and additional information, see the “Public Participation” heading of the SUPPLEMENTARY INFORMATION section of this document. Out of an abundance of caution for members of the public and our staff, EPA Docket Center and Reading Room are closed to the public with limited exceptions, to reduce the risk of transmitting COVID-19. Our Docket Center staff will continue to provide remote customer service via email, phone, and webform. We encourage the public to submit comments via [*https://www.regulations.gov*](https://www.regulations.gov) or email, as there may be a delay in processing mail and faxes. Hand deliveries and couriers may be received by scheduled appointment only. For further information on EPA Docket Center services and the current status, please visit us online at [*https://www.epa.gov/dockets.For*](https://www.epa.gov/dockets.FOR) Further Information Contact

EPA Regional Office listed in Section I.D of this document, or you can send an email to [*pgp@epa.gov*](mailto:pgp@epa.gov) You may also contact Chelsea Durant, EPA Headquarters, Office of Water, Office of Wastewater Management at tel.: 202-564-2290 or email: [*durant.chelsea@epa.gov*](mailto:durant.chelsea@epa.gov) Electronic versions of the draft 2021 PGP and Fact Sheet are also available on EPA's NPDES website at [*https://www.epa.gov/npdes/pesticide-permitting.Supplementary*](https://www.epa.gov/npdes/pesticide-permitting.SUPPLEMENTARY) Information

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VI. Executive Order 13175: Consultation and Coordination With Indian Tribal GovernmentsI. General InformationA. Does this action apply to me?

You may be affected by this action if you apply pesticides under the use patterns in Section III.B of this document that result in a discharge to waters of the United States in one of the geographic areas identified in Section III.A of this document. Potentially affected entities, as categorized in the North American Industry Classification System (NAICS), may include, but are not limited to:Table 1—Entities Potentially Regulated by the Draft 2021 PGP Category NAICS Examples of potentially affected entitiesAgricultural entities—General ***agricultural*** interests, farmers/producers, forestry, and irrigation 111 Crop Production Producers of crops mainly for food and fiber, including farms, orchards, groves, greenhouses, and nurseries that have irrigation ditches requiring pest control. 113110 Timber Tract Operations The operation of timber tracts for the purpose of selling standing timber. 113210 ***Forest*** Nurseries Gathering of ***Forest*** Products Growing trees for reforestation and/or gathering ***forest*** products, such as gums, barks, balsam needles, rhizomes, fibers, Spanish moss, ginseng, and truffles. 221310 Water Supply for Irrigation Operating irrigation systems.Pesticide parties (includes pesticide manufacturers, other pesticide users/interests, and consultants) 325320 Pesticide and Other ***Agricultural*** Chemical Manufacturing. Formulation and preparation of ***agricultural*** pest control chemicals.Public health parties (includes mosquito or other vector control districts and commercial applicators that service these) 923120 Administration of Public Health Programs Government establishments primarily engaged in the planning, administration, and coordination of public health programs and services, including environmental health activities.Resource management parties (includes State departments of fish and wildlife, State departments of pesticide regulation, State environmental agencies, and universities) 924110 Administration of Air and Water Resource and Solid Waste Management Programs Government establishments primarily engaged in the administration, regulation, and enforcement of air and water resource programs; the administration and regulation of water and air pollution control and prevention programs; the administration and regulation of flood control programs; the administration and regulation of drainage development and water resource consumption programs; and coordination of these activities at intergovernmental levels. 924120 Administration of Conservation Programs Government establishments primarily engaged in the administration, regulation, supervision and control of ***land*** use, including recreational areas; conservation and preservation of natural resources; erosion control; geological survey program administration; weather forecasting program administration; and the administration and protection of publicly and privately owned ***forest*** ***lands***. Government establishments responsible for planning, management, regulation and conservation of game, fish, and wildlife populations, including wildlife management areas and field stations; and other administrative matters relating to the protection of fish, game, and wildlife are included in this industry.Utility parties (includes utilities) 221 Utilities Provide electric power, natural gas, steam supply, water supply, and sewage ***removal*** through a permanent infrastructure of lines, mains, and pipes.B. Public Participation1. Written Comments

Submit your comments, identified by Docket ID No. EPA-HQ-OW-2020-0005, at [*https://www.regulations.gov*](https://www.regulations.gov) Once submitted, comments cannot be edited or removed from the docket. EPA may publish any comment received to its public docket. Do not submit to EPA's docket at [*https://www.regulations.gov*](https://www.regulations.gov) any information you consider to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Multimedia submissions (audio, video, etc.) must be accompanied by a written comment. The written comment is considered the official comment and should include discussion of all points you wish to make. EPA will generally not consider comments or comment contents located outside of the primary submission (i.e on the web, cloud, or other file sharing system). For additional submission methods, the full EPA public comment policy, information about CBI or multimedia submissions, and general guidance on making effective comments, please visit [*https://www.epa.gov/dockets/commenting-epa-dockets*](https://www.epa.gov/dockets/commenting-epa-dockets).

EPA is temporarily suspending its Docket Center and Reading Room for public visitors, with limited exceptions, to reduce the risk of transmitting COVID-19. Our Docket Center staff will continue to provide remote customer service via email, phone, and webform. We encourage the public to submit comments via [*https://www.regulations.gov*](https://www.regulations.gov) as there may be a delay in processing mail and faxes. Hand deliveries or couriers will be received by scheduled appointment only. For further information and updates on EPA Docket Center services, please visit us online at [*https://www.epa.gov/dockets*](https://www.epa.gov/dockets).

EPA continues to monitor information carefully and continuously from the Centers for Disease Control and Prevention (CDC), local area health departments, and our Federal partners so that we can respond rapidly as conditions change regarding COVID-19.2. Will public hearings be held on this action?

EPA has not scheduled any public hearings to receive public comment concerning the draft 2021 PGP. However, interested persons may request a public hearing concerning the draft 2021 PGP pursuant to 40 CFR 124.12 Requests for a public hearing must be sent or delivered in writing to the same email address ([*PGP@epa.gov*](mailto:pgp@epa.gov)) as provided above for public comments prior to the close of the comment period. Requests for a public hearing must state the nature of the issues proposed to be raised in the hearing. Pursuant to 40 CFR 124.12, EPA shall hold a public hearing if it finds, on the basis of requests, a significant degree of public interest in a public hearing on the draft 2021 PGP. If EPA decides to hold a public hearing, a public notice of the date, time, and place of the hearing will be made at least 30 days prior to the hearing. Any person may provide written or oral statements and data pertaining to the draft 2021 PGP at any such public hearing.

To facilitate robust opportunities for public participation in the permitting process during any interruptions caused by COVID-19, EPA intends to utilize and encourages the use of electronic and telephonic means of communication to the maximum extent possible under the law. EPA will issue public notices and solicit comments on permit actions via on-line tools and/or email. If public hearings are requested, EPA will seek to conduct those hearings utilizing remote capabilities via telephone and the internet.C. Finalizing the Draft 2021 PGP

EPA intends to issue a final 2021 PGP on or prior to October 31, 2021 (the expiration date of the 2016 PGP). The final 2021 PGP will be issued after all public comments received during the public comment period have been considered and any appropriate changes are made to the draft 2021 PGP. EPA will include its response to significant comments received in the docket as part of the final permit decision. Once the final 2021 PGP becomes effective, eligible Operators may seek authorization under the new PGP as outlined in the permit. To ensure uninterrupted permit coverage from the 2016 PGP to the 2021 PGP, Operators who are required to submit a Notice of Intent (NOI) must submit their NOI for coverage under the new permit prior to discharge as outlined in the permit (no later than 10 or 30 days before discharge). See Part 1.2.4 of the draft 2021 PGP.D. Who are the EPA regional contacts for this draft permit?

For EPA Region 1, contact George Papadopoulos at tel.: (617) 918-1579; or email at [*papadopoulos.george@epa.gov*](mailto:papadopoulos.george@epa.gov)

For EPA Region 2, contact Stephen Venezia at tel.: (212) 637-3856; or email at [*venezia.stephen@epa.gov*](mailto:venezia.stephen@epa.gov)

For Puerto Rico, contact Sergio Bosques at tel.: (787) 977-5838 or [*bosques.sergio@epa.gov*](mailto:bosques.sergio@epa.gov)

For EPA Region 3, contact Carissa Moncavage at tel.: (215) 814-5798; or email at [*moncavage.carissa@epa.gov*](mailto:moncavage.carissa@epa.gov)

For EPA Region 4, contact Sam Sampath at tel.: (404) 562-9229; or email at [*sampath.sam@epa.gov*](mailto:sampath.sam@epa.gov)

For EPA Region 5, contact John Colletti at tel.: (312) 886-6106; or email at [*colletti.john@epa.gov*](mailto:colletti.john@epa.gov)

For EPA Region 6, contact William F. Cooper at tel.: (214) 665-6443 or email at [*cooper.williamf@epa.gov*](mailto:cooper.williamf@epa.gov)

For EPA Region 7, contact Alex Owutaka at tel.: (913) 551-7584 or email at: [*owutaka.alex@epa.gov*](mailto:owutaka.alex@epa.gov)

For EPA Region 8, contact Amy Clark at tel.: (303) 312-7014 or email at: [*clark.amy@epa.gov*](mailto:clark.amy@epa.gov)

For EPA Region 9, contact Pascal Mues at tel.: (415) 972-3768 or email at: [*mues.pascal@epa.gov*](mailto:mues.pascal@epa.gov)

For EPA Region 10, contact Bilin Basu at tel.: (206) 553-0029 or email at: [*basu.bilin@epa.gov*](mailto:basu.bilin@epa.gov) II. Background

Section 301(a) of the Clean Water Act (CWA) provides that “the discharge of any pollutant by any person shall be unlawful” unless the discharge is in compliance with certain other Sections of the Act. 33 U.S.C 1311(a). The CWA defines “discharge of a pollutant” as “(A) any addition of any pollutant to navigable waters from any point source and (B) any addition of any pollutant to the waters of the contiguous zone or the ocean from any point source other than a vessel or other floating craft. ” 33 U.S.C 1362(12). A “point source” is any “discernible, confined and discrete conveyance” but does not include “***agricultural*** stormwater discharges and return flows from irrigated ***agriculture***. ” 33 U.S.C 1362(14).

The term “pollutant” includes among other things “garbage . . . chemical wastes, biological materials . . . and industrial, municipal, and ***agricultural*** waste discharged into water. ” 33 U.S.C 1362(6).

A person may discharge a pollutant without violating the Section 301 prohibition by obtaining authorization to discharge (referred to herein as “coverage”) under a Section 402 NPDES permit (33 U.S.C 1342). Under Section 402(a), EPA may “issue a permit for the discharge of any pollutant, or combination of pollutants, notwithstanding Section 1311(a)” upon certain conditions required by the Act.

EPA issued the first Pesticide General Permit (“2011 PGP”) on October 31, 2011, in response to the United States Sixth Circuit Court of Appeals ruling vacating EPA's 2006 Final Rule on Aquatic Pesticides. National Cotton Council of America. v. EPA, 553 F.3d 927 (6th Cir. 2009). EPA developed the PGP to control point source discharges of biological pesticides and chemical pesticides that leave a residue into waters of the United States. The PGP provides coverage for certain point source discharges of pollutants to waters of the United States in areas where EPA is the NPDES permitting authority. In 2016, EPA issued the second PGP (“2016 PGP”). The 2016 PGP will expire at midnight on October 31, 2021.III. Scope and ApplicabilityA. Geographic Coverage

EPA provides permit coverage for classes of point source discharges of pollutants that occur in areas where EPA is the NPDES permitting authority. The geographic coverage of the draft 2021 PGP is listed in Appendix C of the draft permit.B. Categories of Pesticide Use-Patterns Covered

The draft 2021 PGP has the same requirements and conditions as EPA's 2016 PGP and regulates the same discharges of pollutants to waters of the United States from the application of (1) biological pesticides, and (2) chemical pesticides that leave a residue. The draft 2021 PGP applies to the following same pesticide use patterns:

Mosquito and Other Flying Insect Pest Control—to control public health/nuisance and other flying insect pests that develop or are present during a portion of their life cycle in or above standing or flowing water. Public health/nuisance and other flying insect pests in this use category include mosquitoes and black flies. Weed and Algae Pest Control—to control weeds, algae, and pathogens that are pests in water and at water's edge, including ditches and/or canals. Animal Pest Control—to control animal pests in water and at water's edge. Animal pests in this use category include fish, lampreys, insects, mollusks, and pathogens. ***Forest*** Canopy Pest Control—application of a pesticide to a ***forest*** canopy to control the population of a pest species (e.g , insect or pathogen) where, to ***target*** the pests effectively, a portion of the pesticide unavoidably will be applied over and deposited to water.

The scope of activities encompassed by these pesticide use patterns is described in greater detail in Part III.1.1 of the Fact Sheet for the draft 2021 PGP.C. Summary of the Permit and Changes From the 2016 PGP

Once issued, the final 2021 PGP will replace the 2016 PGP, which was issued for a five-year term in the Federal Register on October 31, 2016 (81 FR 75816), and expires October 31, 2021, at midnight. The draft 2021 PGP is similar to the 2016 PGP, and is structured in the same nine parts: (1) Coverage under This Permit, (2) Technology-Based Effluent Limitations, (3) Water Quality-Based Effluent Limitations, (4) Monitoring, (5) Pesticide Discharge Management Plan, (6) Corrective Action, (7) Recordkeeping and Annual Reporting, (8) EPA Contact Information and Mailing Addresses, and (9) Permit Conditions Applicable to Specific States (including Territories) and Indian Country. Additionally, as with the 2016 PGP, the draft 2021 PGP includes nine appendices with additional conditions and guidance for permittees: (A) Definitions, Abbreviations, and Acronyms, (B) Standard Permit Conditions, (C) Areas Covered, (D) Notice of Intent (NOI) form, (E) Notice of Termination (NOT) form, (F) Pesticide Discharge Evaluation Worksheet (PDEW), (G) Annual Reporting Template, (H) Adverse Incident Report Template, and (I) Endangered Species Procedures.

The following is a summary of the draft 2021 PGP's proposed requirements:

The PGP defines “Operator” (i.e , the entity required to obtain NPDES permit coverage for discharges) to include any (a) Applicator who performs the application of pesticides or has day-to-day control of the application of pesticides that results in a discharge to waters of the United States, or (b) Decision-maker who controls any decision to apply pesticides that results in a discharge to waters of the United States. There may be instances when a single entity acts as both an Applicator and a Decision-maker. All Applicators are required to minimize pesticide discharges by using only the amount of pesticide and frequency of pesticide application necessary to control the ***target*** pest, maintain pesticide application equipment in proper operating condition, control discharges as necessary to meet applicable water quality standards, and monitor for and report any adverse incidents. All Decision-makers are required, to the extent not determined by the Applicator, to minimize pesticide discharges by using only the amount of pesticide and frequency of pesticide application necessary to control the ***target*** pest. All Decision-makers are also required to control discharges as necessary to meet applicable water quality standards and monitor for and report any adverse incidents. Certain Decision-makers [i.e , any agency for which pest management for ***land*** resource stewardship is an integral part of the organization's operations, entities with a specific responsibility to control pests (e.g , mosquito and weed control districts), local governments or other entities that apply pesticides in excess of specified annual treatment area thresholds, and entities that discharge pesticides to Tier 3 waters (Outstanding National Resource Waters, 40 CFR 131.12(a)(3)) or to waters of the United States containing National Marine Fisheries Service (NMFS) Listed Resources of Concern] are required also to submit an NOI to obtain authorization to discharge and to implement pest management options to reduce the discharge of pesticides to waters of the United States. Within this group, certain large Decision-makers (any (1) public entity that serves a population greater than 10,000 or (2) private enterprise that exceeds the Small Business Administration size standard as identified in 13 CFR 121.201) must also develop a Pesticide Discharge Management Plan (PDMP), submit annual reports, and maintain detailed records. Certain small Decision-makers (any (1) public entity that serves a population of 10,000 or less or (2) private enterprise that does not exceed the Small Business Administration size standard as identified in 13 CFR 121.201) are required to complete a pesticide discharge evaluation worksheet for each pesticide application (in lieu of the more comprehensive PDMP), an annual report, and detailed recordkeeping. Deadlines for submittal of a Notice of Intent to be covered, if required, are provided in Part 1.2.3, Table 1-2, of the draft 2021 PGP.

EPA encourages the public to review and comment on all aspects and provisions in the draft 2021 PGP. The draft 2021 PGP is similar to the 2016 PGP but includes minor changes which are listed below. See the Fact Sheet accompanying the draft 2021 PGP for further discussion.

(1) ***Removes*** the out of date NOI provision that provided automatic coverage for all Operators until January 12, 2017.

(2) Replaces the requirement to use EPA's eNOI system with EPA's NPDES eReporting Tool (NeT) when preparing and submitting NOIs, NOTs, and annual reports.

(3) Updates Appendix A, Definitions, Abbreviations, and Acronyms to include the terms “Pesticide discharges to waters of the United States from pesticide application” and “pesticide residue,” as defined in 40 CFR 122.2

(4) Modifies Appendix B, Standard Permit Conditions, to ensure consistency with 40 CFR 122.41

(5) Updates Appendix C, Areas Covered, to add Indian Country within Virginia and Indian Country within Indiana, and to ***remove*** the State of Idaho.IV. Cost Impacts of the Draft 2021 PGP

Based on the cost analyses performed for the 2011 PGP and 2016 PGP, EPA expects the costs that covered entities, including small businesses, will bear to comply with this permit will be minimal. Since the draft 2021 PGP is similar to the 2016 PGP, EPA projects that the draft 2021 PGP will have no incremental cost impacts on regulated entities. Copies of EPA's cost impact analyses for the 2011 PGP and 2016 PGP are available in the docket for this permit. See the Fact Sheet accompanying this draft permit for further discussion.V. Executive Orders 12866 and 13563

The draft 2021 PGP is not a significant regulatory action and was therefore not submitted to the Office of Management and Budget (OMB) for review.VI. Executive Order 13175: Consultation and Coordination With Indian Tribal Governments

This action does not have tribal implications as specified in E.O 13175. It will neither impose substantial direct compliance costs on federally recognized tribal governments, nor preempt tribal law. EPA directly implements the NPDES Program, including the 2021 PGP when it is finalized, in Indian Country; therefore, in compliance with EPA Policy on Consultation and Coordination with Indian Tribes, EPA consulted with tribal officials early in the process to permit tribes to have meaningful and timely input into the renewal of the PGP. To gain an understanding of, and where necessary, to address tribal implications of the draft 2021 PGP, EPA conducted the following activities:

May 8, 2020—EPA emailed notification letters to tribal leaders initiating consultation and coordination on the renewal of the PGP. The initiation letter was also posted on EPA's Tribal Consultation Opportunities Tracking System (TCOTS) at [*https://tcots.epa.gov/*](https://tcots.epa.gov/). June 9, 2020—EPA held an informational webinar open to all tribal representatives and reserved the last part of the webinar for official consultation comments. Fourteen tribal representatives participated in the webinar. No official comments were received during the webinar. The presentation was posted on the tribal portal website at [*http://tcots.epa.gov*](http://tcots.epa.gov)

EPA received no comments from tribes and tribal organizations during the formal consultation period. Records of the tribal informational webinar and a consultation summary are included in the docket for this proposed action (Docket ID No. EPA-HQ-OW-2020-0005).Authority

Clean Water Act, 33 U.S.C 1251 et seq.Dated: December 14, 2020.Dennis Deziel,Regional Administrator, EPA Region 1.Dated: December 14, 2020.Javier Laureano,Director, Water Division, EPA Region 2.Dated: December 14, 2020.Carmen R. Guerrero-Pérez,Director, Caribbean Environmental Protection Division, EPA Region 2 Caribbean Office.Dated: December 14, 2020.Catherine A. Libertz,Director, Water Division, EPA Region 3.Dated: December 14, 2020.Jeaneanne M. Gettle,Director, Water Division, EPA Region 4.Dated: December 14, 2020.Tera L. Fong,Director, Water Division, EPA Region 5.Dated: December 14, 2020.Charles W. Maguire,Director, Water Division, EPA Region 6.Dated: December 14, 2020.Jeffery Robichaud,Director, Water Division, EPA Region 7.Dated: December 14, 2020.Judy Bloom,Manager, Clean Water Branch, EPA Region 8.Dated: December 14, 2020.Tomás Torres,Director, Water Division, EPA Region 9.Dated: December 14, 2020.Daniel D. Opalski,Director, Water Division, EPA Region 10.[FR Doc. 2021-00834 Filed 1-14-21; 8:45 am]BILLING CODE 6560-50-P

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[***Timmermans: EU countries need to face the consequences of higher climate goals***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:62RT-RDR1-JCF9-428S-00000-00&context=1516831)

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**Length:** 3443 words

**Byline:** Frédéric Simon

**Highlight:** European Union member states have agreed to reach climate neutrality by 2050 and increase their level of ambition for 2030. This means Europe needs to amend all its climate policies, including its ***Emissions*** Trading Scheme, the EU's climate chief, Frans Timmermans, told EURACTIV in an exclusive interview.

**Body**

*Frans Timmermans is the executive vice-president of the European Commission in charge of the European Green Deal. He spoke to EURACTIV's Frédéric Simon.*

**INTERVIEW HIGHLIGHTS:**

* Revision of EU ***Emissions*** Trading Scheme will be "cornerstone" of upcoming package of EU energy and climate proposals due in July

1. China and India need to commit to strong ***emissions*** cuts at this year's UN climate summit (COP26)
2. The more ambitious countries are in decarbonising, the less Europe will need to apply a carbon border adjustment mechanism (CBAM)
3. US needs time to get its climate policy organised before EU applies CBAM
4. Doubling the amount of renewables by 2030 requires faster permitting and massive investments in grids
5. The EU won't reach its renewable energy goals without biomass, but it has to be the right biomass

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**Since you arrived in office, the European Union has passed a landmark climate law aiming for climate neutrality by 2050. Now, we're entering a new phase in the policymaking process, with a package of proposals expected in July to implement the new 2030 climate goals. There are many components to this package, so what will be the overall balance of it? Can you identify the key elements and how they will fit together to make a coherent whole?**

The core issue is this: until now, we had agreed to reduce our ***emissions*** by 40% compared to 1990. With the climate law, we've now enshrined that we will reduce ***emissions*** by at least 55% by 2030. This means we have to go back to all the policies that were made for -40% and make them fit for -55%.

Why do I want to present a package of 12 proposals? Because there has to be a balance. When you make these proposals, whether it's on the ***Emissions*** Trading Scheme (ETS), on renewables, on energy efficiency, on energy taxation, or on ***emissions*** of cars and vans, there's good and bad for everyone in there. So we need to create a balance.

We'll essentially say to member states: 'You have all agreed to the -55%. That has consequences and this is how we see a balanced package in all these areas. Now it is up to you, in dialogue with co-legislators, to see whether this balance is something you can live with or whether we should tweak it here, change it there.'

There will always be something member states will like or don't like, because their starting positions are not the same. Poland for instance still depends on coal for 70% of its energy use, while Austria generates more than 75% of its electricity in a sustainable way. So we have to acknowledge the different starting positions.

**What will be the key elements of this package and how will they fit together?**

I think a cornerstone - and I'm not telling any secrets when I say that - is the ETS, because it's been so successful. It has put a price on carbon. It has influenced the energy sector and industry in the sense that they understand that, if they do better, they don't have to pay as much. So it is a huge incentivising instrument and it is clear that we need to expand it.

We need to look at potential new areas to apply it to. But also in existing areas; we need to look very carefully at free allowances, for example. And we perhaps also need to look very carefully at enlarging the ETS to shipping or aviation.

In doing all that - and perhaps expanding it to the built environment and transport - we also need to look at the effects that we will create. Internationally as well, because there is a price tag linked to that, and you immediately get into the discussion about the carbon border adjustment mechanism (CBAM), which is interlinked with the ETS.

The ETS is manifestly the clearest instrument we have to influence behaviour so that ***emissions*** are reduced.

**You mentioned the international dimension - this year will be the year of COP26. Carbon markets will be one of the big topics of discussion. What are your objectives as the European Union entering that meeting in a few months from now?**

I had a very long talk with US climate envoy John Kerry about this in Berlin last week. We sat down to define our criteria for success in Glasgow.

It is clear that we need to have all the industrialised nations on board, have all the major emitters make strong commitments. That will be one of our jobs in the months to come: to convince China, India and others to up the ante.

In Glasgow, we need to be able to conclude that staying well under a 2°C increase in global temperatures is still feasible. That's the overarching goal. You then look at how to achieve that, and how to speed up the energy transition. Carbon markets are very important for that.

We believe in our ***emissions*** trading scheme (ETS). We see that the Chinese are now also developing an ETS system. And there are forms of ETS in the United States as well.

But carbon markets are not the only way, you can also achieve ***emissions*** reductions through regulation or taxation - that's a choice countries can make. What works is putting a price on carbon, to influence the behaviour of industrial emitters. That's how ***emissions*** reductions are dealt with in the industrialised world.

Secondly, you need to get the industrialising world on board as well. They also want development and they want to mitigate the consequences of the climate crisis that they already have. They count on the richer parts of the world to put the money on the table that they have already promised.

So the second element is to make sure the finances get organised in such a way that the developing world is on board and realise they also have a stake in this. This is especially the case in Africa and the Pacific, where countries are literally threatened with disappearance because of climate change.

**You're referring to the** [*Green Climate Fund*](https://www.greenclimate.fund/)**, I guess?**

Yes. The third element is to see whether you can have an agreement on which rules we apply: are we all on the same page? Do we do carbon accounting in the same way, for example? Because that's very important to determine whether we're all moving in the right direction.

**Keeping with international cooperation, you mentioned plans to introduce a carbon border adjustment mechanism (CBAM) to protect EU industry form unfair competition. This is causing concerns among emerging countries, like China and Brazil, who have called it a protectionist measure. One of the things they've complained about is the lack of diplomatic outreach to explain how the system will work. What do you say to these countries?**

We first get our act together internally. This is a very complicated issue technically speaking if you want to get it right. It is not a protectionist measure, nor a measure to generate revenue. It's a measure to create a level playing field and to avoid carbon leakage. So you have to look very specifically at which sectors would be concerned.

Secondly, we've said very clearly that we want this to be WTO compatible. That immediately sends a message to the developing world, because the measures we take in Europe should not affect them and their trade position.

Once we have decided on the mechanism, I'll do even more outreach, all that is necessary - all our teams will do so to make clear what this would mean, well before Glasgow.

Thirdly, the rationale behind this is as follows: we've all committed to the Paris Agreement. We know what this means in terms of decarbonising the global economy. Now, we don't care how countries chose to do it, but the more ambitious they are in decarbonising, the less the need for adjustment as there is less risk of carbon leakage.

I know there is a lot of nervousness about this in the developing world, I grant you, and in the industrialised world obviously.

But in the EU we put a proposal on the table and then we start discussing it. It doesn't mean that if we put it on the table on 14 July, we apply it on 15 July. There's going to be a year and a half, maybe two years of negotiation with co-legislators about how we implement this.

Of course, not everybody has the same idea what CBAM should be, also within the European Union. For the proposal, we get one shot at getting it right and that's what we want to do on 14 July.

**Do you envisage some sort of exemption for developing countries or would that be an infringement of WTO rules, as treating countries differently would make it incompatible?**

Exemptions are not necessarily an infringement. Within WTO rules you have special conditions for developing countries.

**So you'll apply the same framework?**

Let's wait and see what we do. As a principle, preferential treatment is not incompatible with WTO rules. That's all I want to say. And let me be clear, we are drafting a proposal to prevent carbon leakage. Exemptions are not our starting point. The point is to protect the environment so we should also be careful about what incentives we set.

**What about industrialised countries like the US for example? Some states in the US may have implemented carbon trading schemes will others haven't or have implemented standards instead. How will you decide whether the US has an equivalent level of carbon pricing than the EU?**

Well, first of all, the US are late coming to the party, so we need to give them some time to get organised. Secondly, they are very ambitious and want to drastically reduce their ***emissions***. They could go about it in different ways - it doesn't all have to be ETS.

I think the US actions will be in line with maintaining the Paris Agreement goals. There could be issues in one or two sectors, but given the fact that they've so clearly committed to decarbonising at pace, I don't foresee a major problem.

Remember, over the past 30 years, we have reduced our ***emissions*** by more than 20% while our economy has grown more than 60%. The Americans peaked in 2019 - that's only a couple of years ago - so the starting positions are different. But the trajectory, even if you choose different instruments, is more or less the same.

All this would hopefully lead to an understanding that there is a level playing field, and therefore adjustment at the border would not be necessary.

**One of the topics of COP26 will be carbon markets. Now, Europe has been a leader with the ETS which has enabled a transition away from coal. The next phase is going to be a bit more tricky though, with the potential inclusion of sectors like transport and buildings. You have expressed scepticism before about the inclusion of transport in the ETS, because of the social consequences. Have you now changed your mind?**

If we enlarge the ETS to areas like transport and buildings which directly affect citizens, we have to keep an eye on the social consequences, you're absolutely right. Because the last thing we need is energy poverty.

In addition, when some people first came up with the idea to enlarge the ETS, it was seen as an alternative for ***emissions*** standards. That's the big reason for my initial scepticism because I feared it was just an excuse to not have new ***emission*** norms.

Now I believe both an ETS extension and ***emission*** norms can exist in parallel. There's no exclusion of one or the other. So that, I think, is a problem that can be solved.

And the third issue, obviously, is that we have committed to reduce our ***emissions*** by at least -55%. If we don't make enough ***emissions*** reductions in transport, we'll have to make them somewhere else. So the goal remains the same.

These are the three considerations we have now. We will see to what conclusion we arrive in July.

**You'll then leave it to the member states to deal with the social aspect?**

No, sorry, that's not what I mean. If some member states don't want an ETS extension, they would have to say where they expect those extra ***emission*** cuts to then take place. Do they prefer putting more pressure on industry? Or get those ***emission*** reductions from somewhere else? Do they want to introduce taxation? All these questions, and their social effects, would need to be considered.

Because, let me be very clear about this: in the huge transition that we're in, there will be effects whatever we do.

There is one eternal question in politics - redistribution. When you use the word redistribution, people think, 'that's a leftist issue'. No, giving tax relief to big companies is also redistribution, but very right-wing.

In a period of such fundamental transformation of our society, the Green Deal and the transition to a sustainable society are the biggest social question politics will be faced with for two generations.

Everybody should be well aware of that. If we do not face this social question at the beginning, we will derail the whole process. The transition will not happen. Even if disaster looms with a 2, 3, or 4°C temperature rise, people would still refuse the transition if they believe it is unjust.

**Another sector currently not covered by the ETS is *agriculture* and forestry. You've met recently with the leaders from the Youth for Climate movement. What are your perspectives there in view of the 'trilogue' negotiations coming next week? What changes to the Common *Agricultural* Policy do you think are necessary in order to align it with the objectives of the Green Deal?**

The CAP reform must enable us to implement the farm-to-fork strategy and the biodiversity strategy. These are two essential elements if we want to take ***agriculture*** in a greener direction. They are very important benchmarks when I go into the trilogue next week.

**Will you attend personally?**

Yes, I will. I have a very keen interest in that.

A third essential element is that we need to make clear that we can also use the first pillar, which deals with direct payments to farmers, to ***target*** spending.

The fact of the matter is that, on a European scale, 80% of the money is still going to 20% of the recipients - and I'm calling them recipients because very often they're not farmers, they're big landowners or big corporations.

If we can agree to enlarge the eco-schemes as much as possible we will be able to support the farmers and their families going in an ecological direction. I think this is very, very important.

If you can then also increase the possibility of setting aside ***land*** for nature, to do carbon farming, to reforest, re-wet peat ***lands***, take care of grasslands, not use pesticides or fertilisers, if you can get that package together it would really make a change. With the Common ***Agricultural*** Policy, you're never going to have a revolution, but you can create a shift - like a huge oil tanker changing direction. That's what I want to achieve in the next trilogues.

**To close this interview, let's talk a bit about renewables. When you presented the 2030 *target* plan a few months ago, you pointed to roughly a doubling in renewable energy, which is going to be needed by 2030 to achieve the new -55% *target*. This is massive - how are you going to achieve that?**

Yes, it's massive indeed, but it's doable. First of all, we need to acknowledge that renewables are the future. This is what the International Energy Agency did last week with its net zero report, which I found very inspiring.

Renewables are becoming cheaper as we speak - they'll be cheaper at the end of this interview than they were at the start. Especially solar, but also wind, and offshore wind in particular. It's becoming more and more attractive to invest in these technologies. The revenue is almost guaranteed and it will bring down energy prices.

Secondly, to make that a success, we need to invest massively in grids. The private sector will want to do this because it's so profitable, but the public sector will need to create the right conditions - with credits, but also with changing the way we permit. That takes much too long and there are too many conditions. We need to speed that up.

Thirdly, we have hydrogen. When we presented the green hydrogen strategy last year, people said our ambitions were crazy. At the time, we concluded that we could reach 40 gigawatts of green hydrogen by 2030. Well, commercially, they're already beyond that goal but a year ago, this was seen as overly ambitious. So hydrogen is taking off at lightning speed.

The vulnerable element here is the underlying infrastructure. Take electric vehicles, which are now really taking off. Six years from now, an electric car will be cheaper, not just to run - that's already the case - but cheaper to buy than a car with internal combustion engine.

But do we have enough charging capacity? Do we have enough renewable energy generation to feed the chargers? Those are the big challenges. So if you ask me, is that a challenge? Creating enough renewable energy generation might be the biggest energy challenge we face, even though the economic conditions are really very favourable.

**Some argue that, in order to bring all of that additional electricity, the Commission needs to look again at electricity market rules, which reformed only recently but are not supposed to be part of the July package. Are you now reconsidering this?**

I had a discussion with the German vice-chancellor about exactly this, last week. I don't see the need for a whole revision. If we run into bottlenecks that prevent member states from investing or exploiting renewables, then we will jump in and try to fix it.

**This massive increase in renewable energy, how much of it actually depends on biomass?**

Well, without biomass, we're not going to make it. We need biomass in the mix, but we need the right biomass in the mix. I hate the images of whole ***forests*** being cut down to be put in an incinerator. I think it's unsustainable and it's indefensible.

But I also believe that, in primal ***forests***, if you maintain them, there's always a lot of biomass that you can take out - you even help the ***forest*** by doing that. Or, in production ***forests***, you never use 100% of a tree. There's may be close to 20% of the tree that you can't use for construction or other industries. If you use that in biomass, nothing gets lost.

I know there is a very strong debate and campaigners have made the case to me that biomass is bad by definition. But I don't agree, there can also be good biomass. That said, you have to have rules in place, and you have to implement and police the rules. That will be our task. If we do all of that correctly, if we use the best available scientific knowledge, the newest technologies, then we can have sustainable use of biomass.

**Currently, under EU law, biomass is considered carbon neutral by definition. Does that need to be changed?**

No, biomass is not considered carbon neutral per se, but the accounting is different. You don't count the carbon when you burn it, you account for the carbon at production, when it grows. That's how the LULUCF regulation works.

**Some people argue this needs to be revised because the carbon footprint of biomass can be so different, and that biomass should not even be considered a renewable form of energy.**

I disagree. As long as you can account for the footprint elsewhere, which is at the production under LULUCF, I think you can solve the problem. Because it's different than fossil fuels - you take the biomass from vegetation that has contributed to ***removing*** CO2 from the atmosphere. So it's a different approach. But it's not carbon neutral. And we're not pretending it is - we're only accounting for it differently.

**Because of those issues, the growth potential of biomass is necessarily limited, correct?**

Yes, it is, obviously. Let's be clear: 75% of our ***forests*** are in bad shape. We have a huge biodiversity challenge. Ecocide threatens the survivability of our ***forests***. I certainly don't underestimate the challenge we face, but still, I believe biomass can play a very useful role in the energy transition.

**How much growth in biomass do you assume for 2030? Because currently, biomass is roughly 60% of our renewable energy and that's massive. Do you expect that to grow much?**

I don't think that will grow. In proportion to the other renewables, it will probably become smaller, not bigger.

**To close this interview, one key element of the upcoming package is energy taxation. But at the moment, taxation of oil and gas is lower than for electricity. Is that something you would want to change?**

It's not by chance that we will propose amending the energy taxation regulation. We need to get out of oil, gas, and coal. We need to have a fair taxation system that incentivises this. That's more or less the direction we will take. And I feel very supported in this by the IEA's recent net zero report.

**That means taxing electricity less and fossil fuels more?**

Well, let's see which form it will take. You know that, as soon as you touch the issue of taxation, member states become extremely nervous, so we need to be very precise.

**And unanimity is required as well?**

Yes, on top of all of that, unanimity is required.

[Edited by Zoran Radosavljevic]

**Load-Date:** May 24, 2021

**End of Document**



[***The Green Brief: Europe's green finance taxonomy wars, part 3***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:62GT-WMK1-DYXB-V1XP-00000-00&context=1516831)

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**Length:** 2947 words

**Byline:** Frédéric Simon, Kira Taylor

**Highlight:** After a failed attempt last year, the European Commission is finally presenting today (21 April) its first batch of implementing rules under the EU's sustainable finance taxonomy, laying down detailed technical criteria for what can be labelled a "green" investment in the EU.

**Body**

After a failed attempt last year, the European Commission is finally presenting today (21 April) its first batch of implementing rules under the EU's sustainable finance taxonomy, laying down detailed technical criteria for what can be labelled a "green" investment in the EU.

In doing so, the EU executive will also open a new chapter in what can now be branded as the European 'taxonomy wars'.

[*The first chapter was opened in December 2019*](https://www.euractiv.com/section/energy-environment/news/france-uk-block-green-finance-deal-in-setback-for-climate-goals/) when Britain and France -  backed at the time by Bulgaria, Czechia, Hungary, Poland, Romania, Slovakia, and Slovenia - blocked a deal on the EU [*taxonomy regulation*](https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32020R0852), the overarching law which sets out the key principles of sustainable finance at European level.

Their fear back then was that the taxonomy would exclude investments in nuclear and gas projects from being labelled "green" in the race to cut ***emissions*** to net-zero by 2050.

To seal a compromise, negotiators from EU member states and the European Parliament [*agreed to delay a decision on gas and nuclear*](https://www.euractiv.com/section/energy-environment/news/eu-seals-deal-on-green-finance-in-breakthrough-for-climate-goals/), leaving the European Commission's experts groups to draft a series of "technical screening criteria" that would decide under which conditions gas or nuclear could be eligible for a "green" or "transition" investment label.

There is a trick, however. Those implementing rules, according to the December compromise, were to be decided via so-called "delegated acts", a fast-track legislative procedure allowing the Commission to legislate almost on its own. The European Parliament and EU member states are denied any real say - all they can do is approve the Commission proposal or reject it as a whole. In other words, it's take it or leave it.

This sowed the seeds of the second taxonomy wars, which opened in November last year when the Commission put out its first batch of draft implementing rules for a public consultation.

The draft caused uproar among eastern and southern EU member states, who complained that natural gas had been denied "transition" fuel status. A new veto threat was wielded by a similar group of countries - Bulgaria, Croatia, Cyprus, Czechia, Greece, Hungary, Malta, Poland, Romania, and Slovakia - [*forcing the Commission back to the drawing board*](https://www.euractiv.com/section/energy-environment/news/brussels-postponed-green-finance-rules-after-10-eu-states-wielded-veto/).

A third chapter is now opening up, with the first series of "delegated acts" finally due to be published today, after the aborted November attempt.

In a repeat of the first chapter, [*the European Commission is again expected to delay a decision on gas and nuclear*](https://www.euractiv.com/section/energy-environment/news/leak-eu-to-table-climate-taxonomy-leaving-gas-and-nuclear-for-later/), leaving the Parliament and EU member states to decide separately at a later stage.

This may look like a risky bet for the climate. Critics among the Greens have already warned about an unacceptable politicisation of the taxonomy, and a departure from the science-based approach initially taken by the Commission expert groups.

But this is also the only pragmatic way forward. By tabling a separate proposal for gas and nuclear later this year, the Commission is throwing the ball back into the court of EU member states and Parliament, acting as co-legislators.

In doing so, Brussels is also putting them in front of their political responsibilities.

*- Frédéric Simon*

This week's top stories

* [*Breakthrough as EU negotiators clinch deal on European climate law*](https://www.euractiv.com/section/climate-environment/news/breakthrough-as-eu-negotiators-clinch-deal-on-european-climate-law/)

1. [*LEAK: EU taxonomy draft leaves bioenergy and forestry off the hook*](https://www.euractiv.com/section/energy-environment/news/leak-eu-taxonomy-draft-leaves-bioenergy-and-forestry-off-the-hook/)
2. [*'Relentless' climate crisis intensified in 2020, says UN report*](https://www.euractiv.com/section/climate-environment/news/relentless-climate-crisis-intensified-in-2020-says-un-report/)
3. [*Stop exporting plastic waste out of Europe, EU lawmakers say*](https://www.euractiv.com/section/circular-materials/news/stop-exporting-plastic-waste-out-of-europe-eu-lawmakers-say/)
4. [*Energy Charter Treaty strikes again as Uniper sues Netherlands over coal phase-out*](https://www.euractiv.com/section/energy/news/energy-charter-treaty-strikes-again-as-uniper-sues-netherlands-over-coal-phase-out/)
5. [*MEP Canfin: The French hard line on nuclear is a dead end*](https://www.euractiv.com/section/energy-environment/interview/mep-canfin-the-french-hard-line-on-nuclear-is-a-dead-end/)
6. [*LEAK: EU to table 'climate taxonomy', leaving gas and nuclear for later*](https://www.euractiv.com/section/energy-environment/news/leak-eu-to-table-climate-taxonomy-leaving-gas-and-nuclear-for-later/)
7. [*EU seeks 'reliable' method to measure microplastic pollution from tyres*](https://www.euractiv.com/section/circular-materials/news/eu-seeks-reliable-method-to-measure-microplastic-pollution-from-tyres/)
8. [*Promising renewal, Baerbock to run as German Greens chancellor candidate*](https://www.euractiv.com/section/elections/news/promising-renewal-baerbock-to-run-as-german-greens-chancellor-candidate/)
9. [*Paris looks to citizen power to speed up energy transition*](https://www.euractiv.com/section/energy/news/paris-looks-to-citizen-power-to-speed-up-energy-transition/)
10. [*Chinese president slams EU carbon border levy in call with Macron, Merkel*](https://www.euractiv.com/section/energy-environment/news/chinese-president-slams-eu-carbon-border-levy-in-call-with-macron-merkel/)
11. [*Gas overtakes lignite as Europe's largest source of power* ***emissions***](https://www.euractiv.com/section/emissions-trading-scheme/news/gas-overtakes-lignite-as-europes-largest-source-of-power-emissions/)

**News from the capitals**

**HELSINKI** | **STOCKHOLM. Closure of pulp, paper mills sends shock waves across Finland, Sweden.** Finnish-Swedish ***forest*** products company Stora Enso has announced the closure this coming autumn of the Veitsiluoto mill in northern Finland and that in Kvarnsveden in central Sweden, resulting the loss of 1,100 jobs. Read [*more*](https://euractiv.us15.list-manage.com/track/click?u=ec8c3035cd2e0ab2e3760549e&id=8c3c7860af&e=76e2502721).

**BRATISLAVA.Call to postpone 'climate taxonomy' proposal.** Slovakian Prime Minister Eduard Heger has joined the prime ministers of Czechia, Bulgaria, Romania, Poland, Malta, Greece and Cyprus in calling on the European Commission to **delay its green taxonomy proposal.** Read [*more*](https://www.euractiv.com/section/politics/short_news/slovakia-czechia-call-on-commission-to-postpone-climate-taxonomy-proposal/).

**WARSAW.** A possible Russian offensive against Ukraine will basically **prevent Germany frommaintaining its current position on Nord Stream 2,** Daniel Fried, former US ambassador to Poland under Clinton, told EURACTIV Poland in an interview.

"A Russian military offensive against Ukraine would make it even more difficult for Germany to maintain its current position," he said, adding that **the best short-term solution is the suspension of work - or a moratorium -** on the project by Germany and the suspension of sanctions by the US. [*More*](https://www.euractiv.com/section/politics/short_news/former-diplomat-germans-know-nord-stream-2-is-a-disgrace/).

**PRAGUE.** Czechia will exclude Russian state company **Rosatom** from the pre-qualification round for a tender to supply a new unit for the Dukovany nuclear plant, Deputy Prime Minister Karel Havlícek confirmed on Monday. This meaning **only France, South Korea and the US will be allowed to take part** in the tender's security assessment procedure. Read [*more*](https://www.euractiv.com/section/politics/short_news/russia-excluded-from-czech-nuclear-tender-after-blast-details-revealed/).

**WARSAW. Poland moves to control coal assets.** Poland's Treasury will take over hard coal and lignite-fired generation assets as well as lignite mines from power groups PGE, Tauron, and Enea to integrate these assets into a single entity called the **National Energy Security Agency (NABE)**. Climate and energy experts have said the move may hinder Poland's road towards successfully decarbonising its energy sector. Read [*more*](https://www.euractiv.com/section/politics/short_news/poland-moves-to-control-coal-assets/).

**HELSINKI.** Production of renewable energy in Finland has reached **40% of the total energy consumption** and is now **higher than the share of fossil fuels**, including peat, which fell to 37%, statistics from 2020 published by Statistics Finland show. Read [*more*](https://www.euractiv.com/section/politics/short_news/finlands-share-of-renewables-takes-over-that-of-fossil-fuels/).

**SOFIA.** Bulgarian Prime Minister Boyko Borissov - whose government's resignation was confirmed in a vote by parliament on Friday after his GERB party lost the elections on 4 April - **is refusing to present the country's recovery plan before lawmakers** in parliament although he has been called to appear before them on Wednesday.  Read [*more*](https://www.euractiv.com/section/politics/short_news/bulgarian-pm-refuses-to-present-recovery-plan-in-parliament/).

**BERLIN**. Germany's **Greens** have put forward their co-leader **Annalena Baerbock** as their **candidate for federal elections** in September in the party's first bid to win the chancellery since it was founded 40 years ago. [*More*](https://www.euractiv.com/section/elections/news/promising-renewal-baerbock-to-run-as-german-greens-chancellor-candidate/).

**HELSINKI.** Gaining approval for the EU coronavirus **recovery package** worth (EURO)750 billion in frugal Finland is proving more difficult than expected as it is now dividing parliament and widely being referred to as a "necessary evil". [*Read more*](https://www.euractiv.com/section/politics/short_news/approving-eu-recovery-package-in-finland-proves-more-difficult-than-expected/).

**PARIS.** Several thousand deaths were avoided during the COVID-19 pandemic due to reduced ***emissions*** of air pollution particles, according to the French health agency. [*Read the full story*](https://www.euractiv.com/section/air-pollution/news/first-lockdown-in-france-improved-air-quality-avoided-thousands-of-deaths/).

**BUDAPEST. NGOs criticise Hungary's recovery fund's energy plans.** Hungary is wasting a historic opportunity in failing to use its recovery plan's energy component to support the energy-efficient renovation of buildings, NGOs have said. Instead, critics say the plan envisions support for wasteful heating solutions, EURACTIV's media partner Telex reported. [*Read more*](https://www.euractiv.com/section/politics/short_news/ngos-criticise-hungarys-recovery-funds-energy-plans/).

**News in brief**

***Emissions* under ETS drop by 13.3%.** The greenhouse gas ***emissions*** of operators covered by the EU ***emissions*** trading scheme (ETS) **dropped 13.3% in 2020 compared to 2019.** ***Emissions*** from fixed installations dropped by 11.2%, aviation by 64.1% and electricity sector by 14.9%. This is due to the pandemic and the success of the ETS programme, according to the Commission, which will unveil **plans to strengthen and possibly extend the ETS in June**. The system currently covers over 10,000 power plants, industrial plants and airlines, **responsible for around 40% of the EU's *emissions*.** (Kira Taylor | Euractiv.com)

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**Common ground on soil protection.** A resolution calling on the Commission to design an EU-wide common legal framework for the protection and sustainable use of soil won 73 votes with only seven against and no abstentions in the European Parliament's environment committee on Friday (16 April). Lawmakers called on the Commission to include measures limiting the use of synthetic fertilisers and soil sealing - covering soil - aiming to **reach "no *land* degradation" by 2030 and "no net *land* take" by 2050.**

"Soil is a powerful carbon sink, it protects us from floods, filters water and is - quite literally - the very basis for our food and many other materials vital for our existence," said Manuela Ripa, the shadow rapporteur for the Greens. Unlike water and air, there is no coherent, integrated framework for Europe's soil. Despite this, soil is key to ***agriculture***, biodiversity and storing carbon**.** The resolution will go to plenary at the end of April and, in May, the Commission is due to present its Zero Pollution Action Plan on Air, Water and Soil. (Kira Taylor | Euractiv.com)

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**Back to nature.** Working with nature and boosting ecosystems can help reduce the impact of climate change, including lowering pressure on biodiversity, improving health, reducing greenhouse gas ***emissions*** and building a sustainable economy,[*found a European Environment Agency (EEA) report published on Thursday (15 April)*](https://www.eea.europa.eu/highlights/nature-based-solutions-should-play?).

[*A second report, by WWF*](https://www.wwf.eu/?uNewsID=2898441), showed the potential of ***removing*** barriers to restore Europe's rivers - the most fragmented in the world. These barriers, like dams and weirs, are a key factor in the 93% decline in EU freshwater migratory fish populations. The report analysed 30,000 barriers - less than 3% of the total - and found 7,360 had a good or high reconnection potential. ***Removing*** those barriers would allow 50,000 km of rivers free flowing again.

**Nature-based solutions** were promoted in the[*EU's climate adaptation strategy*](https://www.euractiv.com/section/climate-environment/news/eu-unveils-data-driven-climate-adaptation-strategy-without-mandatory-targets/) and strongly supported by the Council. While they are becoming increasingly prominent, the EEA says they could be mainstreamed more. [*Read the EEA's report here*](https://www.eea.europa.eu/highlights/nature-based-solutions-should-play?) and [*WWF's report here.*](https://www.wwf.eu/?uNewsID=2898441) (Kira Taylor | EURACTIV.com)

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**Blackrock's green conflict of interest.** The European Commission will consider forcing companies to disclose conflicting interests when bidding for EU-funded contracts following an inquiry into its appointment of a division of BlackRock - the world's largest asset manager - to help develop green banking rules. The European Ombudsman **Emily O'Reilly** didn't ask the Commission to cancel the contract, but said it should have better scrutinised BlackRock's motivation, pricing strategy and own measures to prevent conflicts of interest.

In a response published on Monday, the Commission said it will consider proposing amendments to EU law to require companies and organisations to disclose conflicting interests when they bid for EU-funded contracts. "The Commission is reflecting on possible clarifications relevant to the procedure to follow when a professional conflicting interest may be at stake in a procurement procedure," it said. BlackRock declined to comment. (EURACTIV.com with Reuters)

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**Wörsdörfer (re)appointed**. Mechthild Wörsdörfer, a former European Commission official who quit the EU executive in 2018 to take a director position at the International Energy Agency (IEA) in Paris is coming back to Brussels by the front door. On Wednesday (14 April), the EU executive announced that the German official will rejoin the Commission as **new deputy director-general** at the energy directorate "where she will be in charge of the coordination of the **just and clean energy transition, and international affairs**, as part of the European Green Deal". Ms Wörsdörfer is rejoining the EU executive after having worked there for 26 years. In her last position at DG ENER, she was director in charge of renewables, research, innovation, and energy efficiency. The date of effect of her appointment will be determined later, the Commission said. [*More*](https://ec.europa.eu/commission/presscorner/detail/en/mex_21_1742). (Frédéric Simon | EURACTIV.com).

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**Supermarket's climate beef.** Supermarkets are largely ignoring environmental and human rights abuses in beef, according to a [*new scorecard by campaign group Mighty Earth*](https://stories.mightyearth.org/2021-beef-deforestation-scorecard/). The environmental NGO evaluated the 15 largest supermarkets and fast-food companies on their sourcing practices and found that, **only four have taken some action to stop sourcing beef from destructive suppliers**, even though beef is a major driver of deforestation.

Most efforts in the beef industry to prevent the destruction of ecosystems are concentrated in the Brazilian Amazon and don't address other ecosystems impacted, like Paraguay, Argentina, Bolivia and Australia. "A small handful of global beef suppliers are leading the destruction of our global ***forests*** and selling meat to food companies around the world," said Lucia von Reusner, senior campaign director at Mighty Earth. (Kira Taylor | EURACTIV.com)

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**Climate control.** The climate control tech market grew 10% from 2019, despite the pandemic according to a new report. Approximately 4.4 million devices were sold in 2020, according to findings by [*Delta-EE*](https://www.delta-ee.com/), a research consultancy. **Smart thermostats retained the largest share of sales**, with consumers spending more than (EURO)400 million on these. Delta-EE predicts **an average of 23% growth annually** over the next three years for the market.

"COVID-19 had brought our attention closer to our home - quite literally - with many of us looking more closely at our household's climate. The demand for efficiency and connectivity skyrocketed and we don't expect it to slow down any time soon," said Ricardo Lopez, connected homes research manager at Delta-EE. (Kira Taylor | EURACTIV.com)

**Upcoming events**

**29 APRIL:** [*Blue economy: the potential of our oceans to contribute to a green recovery*](https://events.euractiv.com/event/info/blue-economy-the-potential-of-our-oceans-to-contribute-to-a-green-recovery)**.** According to OECD projections, by 2030, the "Blue Economy" could outperform the growth of the global economy as a whole, both in terms of value added and employment. Join our event to look at how a sector with a turnover of (EURO)750 billion that currently employs 5 million people in Europe presents important potential in terms of both its contribution to a green recovery and the European Green Deal goals. [*Register here*](https://events.euractiv.com/event/info/blue-economy-the-potential-of-our-oceans-to-contribute-to-a-green-recovery).

**4 MAY:** [*The role of gas in Europe's future energy mix and the transition to zero carbon of Europe's power sector.*](https://events.euractiv.com/event/info/the-role-of-gas-in-europes-future-energy-mix-and-the-transition-to-zero-carbon-of-europes-power-sector)The transition towards a net zero greenhouse gas economy puts the power sector in the spotlight. While the carbon intensity of power across the EU has fallen significantly, the situation in Europe is diverse and this pace must increase. Can gas - renewable or abated through CCS - be the optimal complementary energy technology to balance intermittent renewable electricity such as wind and solar in the coming decades? And how can we ensure enough funding for the different technologies for decarbonisation? Join this EURACTIV debate to discuss. [*Register here*](https://events.euractiv.com/event/info/the-role-of-gas-in-europes-future-energy-mix-and-the-transition-to-zero-carbon-of-europes-power-sector).

**7 MAY.** [*What can the US and the EU learn from each other to accelerate climate action?*](https://events.euractiv.com/event/info/what-can-the-us-and-the-eu-learn-from-each-other-to-accelerate-climate-action) President Biden has fulfilled his pledge to rejoin the Paris Agreement. Furthermore, he set a ***target*** of reaching net-zero ***emissions*** by 2050, a move that mirrors Europe's own commitments. The US and the EU, the world's second and third-largest emitters of greenhouse gases, respectively, are now committed to renewing their alliance in the effort to deal with the climate crisis. Their aim is not only to reduce their own ***emissions*** but, by cooperating with their global partners, particularly other major economies, to strengthen the world's climate ambitions. Join this EURACTIV Virtual Conference to discuss how the EU and US can cooperate, share ideas and technologies, and learn from each other to accelerate global climate action. [*Register here*](https://events.euractiv.com/event/info/what-can-the-us-and-the-eu-learn-from-each-other-to-accelerate-climate-action).

**20 MAY.** [*Cogeneration and district heating: an enabler of the green transition?*](https://events.euractiv.com/event/info/cogeneration-and-district-heating-an-enabler-of-the-green-transition) According to a [*recent study*](https://www.cogeneurope.eu/images/Artelys-Presentation-Key-Findings---Study-Commissioned-by-CE-final.pdf), cogeneration or, as it is also called, Combined Heat and Power (CHP) in district heating, is thought to be an efficient enabler for reaching carbon neutrality by 2050. With the latest Council conclusions, gas CHPs remain an important technology with a significant role in reducing ***emissions***, especially in regions transforming away from coal and dense urban areas. Switching from coal to natural gas saves over 70% of CO2 ***emission***, while providing security of heat supplies and improving air quality. Join this EURACTIV Virtual Conference to discuss how an effective integration between heat and power can meet energy efficiency and contribute to climate change ***targets*** and what this will mean for the energy industry in practical terms. [*Register here*](https://events.euractiv.com/event/info/cogeneration-and-district-heating-an-enabler-of-the-green-transition).

**On our radar**

* **21 APRIL:** Commission expected to table its updated **draft delegated act** under the green finance **taxonomy**, setting out detailed criteria for what constitutes a "sustainable" investment in the EU.

1. **22 APRIL: Leaders' Climate Summit**. On the fifth anniversary of the Paris Agreement opening for signatures, the US will host a climate conference convening the leaders of major economies. The US is also expected to announce its updated Paris commitment around this meeting.
2. **MAY (date tbc):** Commission to publish zero-pollution action plan for water, air and soil as part of the European Green Deal.
3. **21 JUNE: Environment council**. Ministers are expected to adopt conclusions on the climate adaptation strategy.
4. **JUNE (date tbc): Fit for 55 package**. The Commission is expected to table a huge package of green legislation in June, including a revision of the renewable energy directive, a revision of the ***emissions*** trading scheme and our first glimpse at a carbon border adjustment mechanism.

**Load-Date:** April 21, 2021

**End of Document**



[***Corporate-led $1bn forests scheme is ‘just the beginning’***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:62T4-RNJ1-JB77-K08B-00000-00&context=1516831)

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[*https://www.ft.com/content/2ddabb8a-170e-432a-9ca9-01c140d7bdea*](https://www.ft.com/content/2ddabb8a-170e-432a-9ca9-01c140d7bdea)  
May 30, 2021 Sunday

**Length:** 1080 words

**Body**

Amazon, Boston Consulting, McKinsey, Unilever, Salesforce, Airbnb, GSK, and Nestlé in April threw their weight behind a  $1bn scheme aimed a...

**End of Document**



[***Council of the European Union: COMMISSION STAFF WORKING DOCUMENT EXECUTIVE SUMMARY OF THE IMPACT ASSESSMENT REPORT Accompanying the document COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS Stepping up Europe’s 2030 climate ambition Investing in a climate-neutral future for the benefit of our people PDF document ST 10865 2020 ADD 317-09-2020***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:60YG-W0J1-JDG9-Y224-00000-00&context=1516831)

Impact News Service

September 26, 2020 Saturday

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**Length:** 24881 words

**Body**

Brussels: Council of the European Union has issued the following document:

10865/20 SH/mbTREE.1.A ENCouncil of theEuropean UnionBrussels, 17 September 2020(OR. en)10865/20CLIMA 189ENV 518ENER 292TRANS 400AGRI 276ECOFIN 809COMPET 408IND 137MI 335COVER NOTEFrom: Secretary-General of the European Commission, signed by Ms MartineDEPREZ, Directordate of receipt: 17 September 2020To: Mr Jeppe TRANHOLM-MIKKELSEN, Secretary-General of the Councilof the European UnionNo. Cion doc.: COM(2020) 562 finalSubject: COMMUNICATION FROM THE COMMISSION TO THE EUROPEANPARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC ANDSOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONSStepping up Europe’s 2030 climate ambitionInvesting in a climate-neutral future for the benefit of our peopleDelegations will find attached document COM(2020) 562 final.Encl.: COM(2020) 562 finalEN ENEUROPEANCOMMISSIONBrussels, 17.9.2020COM(2020) 562 finalCOMMUNICATION FROM THE COMMISSION TO THE EUROPEANPARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIALCOMMITTEE AND THE COMMITTEE OF THE REGIONSStepping up Europe’s 2030 climate ambitionInvesting in a climate-neutral future for the benefit of our people{SEC(2020) 301 final} - {SWD(2020) 176 final} - {SWD(2020) 177 final} -{SWD(2020) 178 final}1TheThe 20302030 ClimateClimate targettarget planplan1.1. AADDRESSINGDDRESSING THETHE CCLIMATELIMATE CRISISCRISIS WITHWITH INCREASEDINCREASED RESOLVERESOLVETheThe climateclimate crisiscrisis remainsremains thethe definingdefining challengechallenge ofof ourour time.time TheThe pastpast fivefive yearsyears werewere thethe warmestwarmest onon record.record GlobalGlobal averageaverage temperaturetemperature increasedincreased byby 1.1°C1.1°C aboveabove prepre--industrialindustrial levelslevels byby 2019.2019 TheThe impactsimpacts ofof globalglobal warmingwarming areare beyondbeyond dispute,dispute, withwith droughts,droughts, storms,storms, andand otherother weatheweatherr extremesextremes onon thethe rise.rise WeWe mustmust taketake urgenturgent andand sustainedsustained actionaction toto preservepreserve thethe health,health, prosperity,prosperity, andand wellwell--beingbeing ofof peoplepeople inin EuropeEurope andand allall overover thethe world.world TheThe recentrecent reportsreports ofof thethe IPCCIPCC onon climateclimate changechange 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resourceresource--efficientefficient andand cocompetitivempetitive economy.economy WeWe needneed toto protect,protect, conserveconserve andand enhanceenhance thethe EU'sEU's naturalnatural capital,capital, andand protectprotect thethe healthhealth andand wellwell--beingbeing ofof citizenscitizens fromfrom climateclimate-- andand environmentenvironment--relatedrelated risksrisks andand impactsimpacts andand ensureensure anan inclusiveinclusive transformationtransformation basedbased onon aa justjust transitiotransitionn soso asas toto leaveleave nono oneone behind.behind Today,Today, thethe CommissionCommission setssets ourour continentcontinent onon aa sustainablesustainable pathpath toto makemake thisthis aa realityreality andand achieveachieve climateclimate neutralityneutrality byby 2050.2050 TheThe worldworld isis currentlycurrently experiencingexperiencing aa healthhealth crisiscrisis withwith anan unprecedentedunprecedented sociosocio--economiceconomic impact.impact TThishis requiresrequires urgenturgent attention,attention, butbut ourour effortsefforts toto tackletackle oneone crisiscrisis mustmust notnot hastenhasten oror worsenworsen another.another PostponingPostponing climateclimate actionaction oror rollingrolling backback measuresmeasures isis notnot anan optionoption forfor thethe EuropeanEuropean Union.Union IfIf leftleft unchecked,unchecked, thethe unfoldingunfolding climateclimate crisiscrisis willwill havehave exiexistentialstential consequencesconsequences forfor ourour naturalnatural environment,environment, ourour health,health, andand ourour livelihoodslivelihoods wayway beyondbeyond thethe scalescale ofof thethe currentcurrent healthhealth crisis.crisis TheThe longlong--termterm economiceconomic disruptionsdisruptions andand adverseadverse socialsocial consequencesconsequences resultingresulting fromfrom inactioninaction wouldwould farfar outweighoutweigh thethe costscosts ofof investinginvesting inin ambitiousambitious climateclimate actionaction today.today TheThe unprecedentedunprecedented EuropeanEuropean economiceconomic responseresponse toto COVIDCOVID--1919 offersoffers aa uniqueunique opportunityopportunity toto accelerateaccelerate thethe transitiontransition toto aa climateclimate--neutralneutral economyeconomy investinginvesting inin thethe necessarynecessary transformationtransformation andand ensureensure itit takestakes placplacee inin aa justjust andand sociallysocially fairfair manner.manner NextNext GenerationGeneration EUEU andand thethe MultiannualMultiannual FinancialFinancial FrameworkFramework forfor 20212021--2027,2027, withwith theirtheir combinedcombined weightweight ofof overover 1.81.8 trilliontrillion euros,euros, provideprovide significantsignificant firepowerfirepower toto helphelp deliverdeliver thethe twintwin greengreen andand digitaldigital transitionstransitions thatthat EuropeEurope aspiresaspires to.to EffectivelyEffectively addressingaddressing thethe economiceconomic crisiscrisis whilewhile reapingreaping thethe gainsgains fromfrom acceleratingaccelerating thethe shiftshift toto aa cleanclean andand sustainablesustainable economyeconomy requiresrequires thatthat thesethese ambitionsambitions areare alsoalso fullyfully transcribedtranscribed inin MemberMember States’States’ RecoveryRecovery andand ResilienceResilience Plans.Plans InIn thethe comingcoming decade,decade, thethe EUEU willwill continuecontinue buildingbuilding onon aa strongstrong tracktrack recordrecord ofof climateclimate actionaction andand parallelparallel economiceconomic growth.growth InIn 2019,2019, EUEU ***emissions***,***emissions***, includingincluding ***removals***,***removals***, werewere downdown byby anan estimatedestimated 25%25% comparedcompared toto 1990,1990, whilewhile overover thethe samesame periodperiod thethe economyeconomy hhasas growngrown byby 62%.62%. ThisThis provesproves thatthat wewe cancan tackletackle climateclimate changechange andand ensureensure sustainedsustained economiceconomic growthgrowth andand jobjob creationcreation atat thethe samesame time.time TheThe ImpactImpact AssessmentAssessment accompanyingaccompanying thisthis CommunicationCommunication demonstratesdemonstrates thatthat anan emissionsemissions reductionreduction ofof 55%55% byby1 COM(2019) 640 final22030,2030, comparedcompared ttoo 19901990 levels,levels, isis bothboth economicallyeconomically feasiblefeasible andand beneficialbeneficial forfor Europe,Europe, withwith properproper policiespolicies inin place.place TheThe EU’sEU’s currentcurrent policypolicy frameworkframework alonealone wouldwould notnot allowallow usus toto reachreach ourour 20502050 goalsgoals andand meetmeet ourour commitmentscommitments underunder thethe ParisParis Agreement.Agreement ProjectionsProjections showshow thatthat simplysimply continuingcontinuing toto implementimplement thethe legislationlegislation currentlycurrently inin forceforce wouldwould seesee thethe EUEU achievingachieving aa 60%60% reductionreduction ofof greenhousegreenhouse gasgas emissionsemissions byby 2050.2050 TheThe EUEU needsneeds toto raiseraise itsits ambitionsambitions forfor thisthis decadedecade nownow andand avoidavoid leavingleaving aa heavierheavier workloadworkload forfor futurefuture ggenerations.enerations TheThe lessless actionaction thethe EUEU takestakes inin thethe nextnext tenten years,years, thethe steepersteeper andand moremore challengingchallenging thethe reductionreduction pathpath afterafter 2030.2030 TheThe CommissionCommission thereforetherefore proposesproposes toto changechange thethe currentcurrent emissionsemissions reductionreduction pathwaypathway toto reachreach climateclimate neutralityneutrality byby 20502050 andand refreflectlect thisthis inin thethe proposalproposal forfor thethe EuropeanEuropean ClimateClimate Law.Law InIn thethe ImpactImpact AssessmentAssessment andand aa broadbroad consultationconsultation processprocess conductedconducted overover thethe pastpast year,year, thethe CommissionCommission hashas thoroughlythoroughly examinedexamined thethe effectseffects onon ourour economy,economy, societysociety andand environmentenvironment ofof reducingreducing emissionsemissions byby 50%50% toto 55%55% byby 2030,2030, comparedcompared toto 19901990 levels.levels TheThe ImpactImpact AssessmentAssessment hashas carefullycarefully consideredconsidered thethe mixmix ofof policypolicy instrumentsinstruments availableavailable andand howhow eacheach sectorsector ofof thethe economyeconomy cancan contributecontribute toto thesethese ***targets***.***targets*** AA balanced,balanced, realistic,realistic, andand prudentprudent pathwaypathway toto climatclimatee neutralityneutrality byby 20502050 requiresrequires anan emissionsemissions reductionreduction targettarget ofof 55%55% byby 2030.2030 TheThe presentpresent CommunicationCommunication therefore:therefore:1. Presents an EU-wide, economy-wide greenhouse gas ***emissions*** reduction ***target*** by 2030 compared to 1990 of at least 55% including ***emissions*** and ***removals***.2. Previews a set of actions required across all sectors of the economy and the launch of revisions of the key legislative instruments to achieve this increased ambition.3. Prepares the ground for a public debate in autumn 2020 to increase the EU’s contribution to the Paris Agreement before the end of the year and set the stage for the Commission to make detailed legislative proposals by June 2021.TheThe EUEU cancan andand shouldshould setset itselfitself aa 55%55% targettarget basedbased onon thethe followingfollowing threethree keykey considerations.considerations First,First, larlargege emissionsemissions reductionsreductions havehave comecome fromfrom closingclosing coalcoal powerpower stationsstations andand cleaningcleaning upup ofof energyenergy--intensiveintensive industry,industry, whilewhile itit provedproved harderharder toto reducereduce emissionsemissions fromfrom transporttransport andand agricultureagriculture andand inin buildings,buildings, wherewhere particularparticular challengeschallenges exist.exist Yet,Yet, reachingreaching clclimateimate neutralityneutrality requiresrequires toto significantlysignificantly stepstep upup EUEU actionaction inin allall sectors.sectors LongLong leadlead--timestimes inin crucialcrucial sectorssectors suchsuch asas landland useuse andand transporttransport requirerequire actionaction toto bebe steppedstepped upup alreadyalready overover thethe comingcoming decade,decade, otherwiseotherwise thethe changeschanges requiredrequired afterafter 20302030 wouldwould hhaveave toto happenhappen unrealisticallyunrealistically fast.fast Secondly,Secondly, risksrisks ofof carboncarbon locklock--inin inin thethe comingcoming decadedecade areare tootoo high.high ThisThis isis duedue toto thethe currentcurrent legislativelegislative setset--upup asas wellwell asas aa naturalnatural shortshort--termismtermism inin economiceconomic decisionsdecisions inin thethe midstmidst ofof thethe COVIDCOVID--1919 crisis.crisis ClearerClearer anandd strongerstronger investmentinvestment signalssignals areare urgentlyurgently neededneeded forfor today’stoday’s investmentinvestment planningplanning andand decisionsdecisions toto bebe coherentcoherent withwith thethe transitiontransition toto climateclimate neutrality.neutrality 3Finally, science indicates that climate risks are firmly on the downside. Recent IPCC special reports found greater risks at lower temperatures of Earth system tipping points than in its 5th assessment report, such as a slowdown of the Gulf Stream or instability of the Greenland and West Antarctic ice sheets. The climate crisis is also intrinsically linked with the global loss of biodiversity and solutions must address consistently both challenges. The only responsible course of action is therefore to move now when we still have the freedom to choose how, instead of inching forward until it may be too late.WeWe havehave aa responsibilityresponsibility toto actact decisivelydecisively inin thethe interestinterest ofof futurefuture generations.generations IfIf thethe EUEU showsshows thatthat itit cancan bebe done,done, manymany governmentsgovernments andand citizenscitizens aroundaround thethe worldworld willwill seesee thatthat growinggrowing prosperityprosperity cancan bebe combinedcombined withwith aa pathwaypathway thatthat limitslimits globalglobal climclimateate changechange toto wellwell belowbelow 22 °C°C andand pursuespursues effortsefforts toto limitlimit itit toto 1.51.5 °C,°C, safeguardingsafeguarding thethe futurefuture ofof ourour planet.planet Yet,Yet, eveneven withwith globalglobal action,action, somesome ofof thethe adverseadverse effectseffects ofof climateclimate changechange willwill continue.continue ThatThat isis whywhy thethe EUEU isis alsoalso pursuingpursuing itsits effortsefforts onon clclimateimate changechange adaptation,adaptation, inin EuropeEurope andand globally.globally Finally,Finally, achievingachieving climateclimate neutralityneutrality inin EuropeEurope requiresrequires investinginvesting inin technologies,technologies, businessbusiness models,models, skills,skills, infrastructuresinfrastructures andand changeschanges inin behaviour.behaviour TheThe greengreen transitiontransition willwill modernisemodernise ourour economy,economy, makemake itit moremore innovative,innovative, circularcircular andand resilientresilient andand sustainsustain itsits globalglobal competitivenesscompetitiveness andand prosperityprosperity inin thethe yearsyears toto come.come 2.2. TTHEHE EECONOMICCONOMIC ANDAND SSOCIALOCIAL BBENEFITSENEFITS OFOF IINCREASEDNCREASED CLIMATECLIMATE AMBITIONAMBITIONOnOn thethe basisbasis ofof thethe analysisanalysis carriedcarried outout inin itsits ImpactImpact assessment,assessment, thethe CommCommissionission concludesconcludes thatthat achievingachieving 55%55% greenhousegreenhouse gasgas emissionsemissions reductionsreductions byby 20302030 wouldwould notnot onlyonly putput thethe EUEU firmlyfirmly onon tracktrack toto achieveachieve climateclimate neutrality,neutrality, butbut wouldwould alsoalso makemake EUEU businessbusiness andand industryindustry globalglobal trailblazers.trailblazers TheThe analysisanalysis alsoalso confirmsconfirms thatthat thisthis increaseincrease ofof greenhousegreenhouse gasgas emissionsemissions reductionsreductions targettarget isis possiblepossible inin aa responsibleresponsible andand sociallysocially fairfair manner.manner ItIt cancan spurspur sustainablesustainable economiceconomic growthgrowth andand accelerateaccelerate thethe cleanclean energyenergy transition,transition, whilewhile adverseadverse socialsocial consequencesconsequences needneed toto bebe addressedaddressed andand adeadequatequate policiespolicies bebe deployeddeployed bothboth atat EUEU andand MemberMember StateState level.level AchievingAchieving 55%55% greenhousegreenhouse gasgas emissionsemissions reductionsreductions byby 20302030 wouldwould alsoalso improveimprove thethe wellbeingwellbeing ofof EUEU citizenscitizens byby deliveringdelivering significantsignificant coco--benefitsbenefits inin termsterms ofof health,health, improvedimproved airair qualityquality andand reducreduceded environmentalenvironmental degradation,degradation, andand itit wouldwould stronglystrongly supportsupport thethe COVIDCOVID--1919 recoveryrecovery andand thethe longerlonger--termterm competitivenesscompetitiveness andand resilienceresilience ofof thethe EuropeanEuropean economy.economy ReachingReaching aa 55%55% emissionsemissions reductionsreductions targettarget willwill bebe aa significantsignificant investmentinvestment challengechallenge forfor EUEU indusindustry,try, services,services, transport,transport, andand energyenergy sectors.sectors However,However, thethe returnreturn onon investmentinvestment fromfrom meetingmeeting thisthis challengechallenge isis nothingnothing lessless thanthan thethe abilityability forfor EUEU businessesbusinesses toto competecompete andand ourour citizenscitizens toto prosper.prosper TheThe COVIDCOVID--1919 crisiscrisis hashas severelyseverely hithit thethe EUEU economy.economy ItIt hhasas notnot significantlysignificantly alteredaltered thethe investmentsinvestments neededneeded toto reachreach anan increasedincreased 20302030 greenhousegreenhouse gasgas emissionsemissions reductionreduction ***target***,***target***, but,but, likely,likely, worsenedworsened thethe conditionsconditions forfor suchsuch investmentsinvestments toto taketake place,place, whichwhich hashas toto bebe counteredcountered byby strongstrong policypolicy initiativesinitiatives onon EUEU andand nationalnational level.level TheThe EUEU recoveryrecovery plan,plan, withwith itsits recoveryrecovery andand resilienceresilience facility,facility, isis criticalcritical forfor thesethese investmentsinvestments underpinningunderpinning thethe greengreen transitiontransition toto happen.happen DespiteDespite netnet greenhousegreenhouse gasgas emissionsemissions inin 20202020 beingbeing estimatedestimated toto dropdrop toto 3030 toto 35%35% belowbelow 19901990 levels,levels, thethe economiceconomic reboundrebound fromfrom thethe COVIDCOVID--1919 crisiscrisis isis alsoalso estimatedestimated toto bringbring emissionsemissions backback toto previousprevious levels,levels, unlessunless additionaladditional actionaction isis taken.taken TheThe dialdial hashas notnot beenbeen resetreset onon globalglobal warming.warming ToTo achieveachieve climateclimate neutralityneutrality byby 2050,2050, overover thethe comingcoming dedecadecade wewe willwill stillstill needneed toto constructconstruct newnew windwind turbines,turbines, cleanclean ourour industriesindustries andand renovaterenovate buildingsbuildings toto makemake themthem energyenergy-- andand resourceresource--efficient.efficient ForFor thisthis purpose,purpose, wewe willwill needneed toto enableenable EUEU companiescompanies toto getget intointo thethe polepole positionposition developing,developing, deployingdeploying andand ccommercialisingommercialising lowlow--carboncarbon solutions.solutions MobilityMobility willwill stillstill havehave toto bebe mademade substantiallysubstantially cleaner,cleaner, withwith zerozero emissionsemissions vehiclesvehicles wellwell onon theirtheir wayway toto replacereplace conventionalconventional ones,ones, strongstrong developmentdevelopment ofof publicpublic transporttransport andand greatergreater useuse ofof sustainablesustainable transporttransport modmodeses4andand multimulti--modalmodal solutionssolutions throughthrough aa largelarge andand wellwell--integratedintegrated rangerange ofof cleanclean mobilitymobility options.options DigitalDigital technologiestechnologies willwill bebe keykey partpart ofof makingmaking suresure thethe EUEU reachesreaches climateclimate neutralityneutrality andand strengthensstrengthens itsits competitivenesscompetitiveness globally.globally TheThe digitaldigital andand greengreen tratransitionsnsitions mustmust bebe mademade mutuallymutually reinforcing.reinforcing TheThe EUEU multiannualmultiannual budget,budget, togethertogether withwith thethe NextNext GenerationGeneration –– EU,EU, willwill dedicatededicate atat leastleast 30%30% ofof itsits firepowerfirepower toto climateclimate--relevantrelevant spending,spending, andand allall expensesexpenses willwill bebe consistentconsistent withwith thethe ParisParis AgreementAgreement andand respectrespect thethe “do“do nono harm'harm' principleprinciple.. NationalNational recoveryrecovery andand resilienceresilience plansplans andand relatedrelated spendingspending willwill havehave toto effectivelyeffectively contributecontribute toto thethe greengreen andand thethe digitaldigital transitionstransitions oror toto addressingaddressing thethe challengeschallenges resultingresulting fromfrom them.them TargetedTargeted useuse ofof thesethese fundsfunds cacann triggertrigger significantsignificant privateprivate sectorsector investments.investments WeWe mustmust combinecombine recoveryrecovery spendingspending withwith ambitiousambitious climateclimate actionaction toto avoidavoid wastedwasted moneymoney andand strandedstranded assets,assets, leadingleading toto additionaladditional resourceresource needsneeds laterlater on.on InIn short,short, inin timestimes ofof increasinglyincreasingly scarcescarce liquidity,liquidity, wewe shouldshould notnot investinvest inin thethe oldold carboncarbon--fuelledfuelled economyeconomy byby reflex,reflex, butbut encourageencourage investmentinvestment inin innovativeinnovative andand lowlow--carboncarbon technologies,technologies, makingmaking EuropeEurope aa modernmodern andand greengreen economy.economy WeWe mustmust savesave andand createcreate newnew jobsjobs andand incomesincomes notnot onlyonly forfor monthsmonths oror yearsyears butbut fforor decades.decades TheThe recoveryrecovery asas wellwell asas thethe greeninggreening ofof ourour economyeconomy cancan alsoalso benefitbenefit fromfrom structuralstructural policiespolicies andand policypolicy reformsreforms thatthat incentiviseincentivise competitioncompetition inin productproduct markets,markets, addressaddress thethe matchingmatching ofof skillsskills andand deliverdeliver thethe necessarynecessary educationeducation andand training.training AA keykey featurefeature ofof thethe greengreen transitiontransition isis upgradingupgrading thethe EU’sEU’s capitalcapital stock,stock, requiringrequiring higherhigher upfrontupfront investments,investments, withwith associatedassociated fuelfuel savingssavings thatthat overover timetime willwill paypay backback thethe initialinitial investments.investments EnergyEnergy--relatedrelated investmentsinvestments needneed toto increase.increase AnnuallyAnnually inin thethe periodperiod 20212021--20302030 thethe EUEU willwill needneed toto investinvest €€ 350350 billionbillion moremore thanthan itit diddid inin thethe periodperiod 20112011--2020,2020, anan increaseincrease ofof aroundaround €€ 9090 billionbillion perper annumannum comparedcompared toto thethe investmentsinvestments neededneeded toto achieveachieve currentcurrent 20302030 climateclimate andand energyenergy ***targets***.***targets*** InIn additionaddition toto publicpublic ssupport,upport, thethe sustainablesustainable financefinance initiativeinitiative willwill guideguide privateprivate investmentsinvestments towardstowards greengreen recovery.recovery TheThe EUEU taxonomytaxonomy thethe EUEU GreenGreen BondBond StandardStandard andand climateclimate benchmarksbenchmarks willwill bebe essentialessential toolstools toto bringbring financefinance closercloser toto thethe needsneeds ofof thethe realreal economy.economy ConsiderinConsideringg ourour largelarge domesticdomestic market,market, acceleratingaccelerating thethe transitiontransition willwill helphelp modernisemodernise thethe wholewhole EUEU economy,economy, increasingincreasing thethe opportunitiesopportunities forfor ourour cleanclean technologiestechnologies leadershipleadership andand forfor gaininggaining competitivecompetitive advantageadvantage onon thethe worldworld markets.markets DevelopingDeveloping newnew valuevalue chainschains anandd expandingexpanding othersothers willwill alsoalso improveimprove thethe openopen strategicstrategic autonomyautonomy ofof Europe’sEurope’s industrialindustrial ecosystems.ecosystems ThisThis willwill contributecontribute toto movingmoving toto aa trulytruly circularcircular economy,economy, whichwhich togethertogether withwith digitalisation,digitalisation, willwill bebe atat thethe heartheart ofof thethe modernisationmodernisation requiredrequired toto improvimprovee thethe overalloverall efficiencyefficiency andand resilienceresilience ofof thethe EuropeanEuropean economy.economy OurOur citizenscitizens wantwant toto livelive inin aa modern,modern, sustainable,sustainable, fairfair andand resilientresilient Europe.Europe TheyThey areare crucialcrucial partnerspartners inin thethe fightfight againstagainst climateclimate change,change, andand cancan supportsupport itit throughthrough politicalpolitical mobilisationmobilisation andand consumerconsumer choices.choices TheyThey cancan greatlygreatly contributecontribute toto decarbonisationdecarbonisation byby makingmaking moremore sustainablesustainable purchasepurchase decisionsdecisions andand lifestylelifestyle choices,choices, butbut needneed toto bebe assistedassisted byby actionableactionable andand reliablereliable information.information BuildingsBuildings andand transporttransport are,are, alongsidealongside industry,industry, thethe mainmain energyenergy usersusers andand sourcesource ofof ***emissions***.***emissions*** DecarbonisingDecarbonising bothboth energyenergy supplysupply andand demanddemand isis keykey toto becomingbecoming climateclimate--neutralneutral andand cancan actuallyactually bebe achievedachieved whilewhile enhancingenhancing thethe wellwell--beingbeing ofof ourour citizenscitizens drawndrawn fromfrom transporttransport andand housinghousingIncreasingIncreasing ourour 20302030 cliclimatemate ambitionambition inin thethe buildingsbuildings sectorsector cancan andand shouldshould bebe sociallysocially justjust andand fair.fair ForFor example,example, lowlow--incomeincome householdshouseholds bearbear aa higherhigher burdenburden ofof heatingheating5expensesexpenses comparedcompared toto wealthierwealthier households.households TheThe useuse ofof highlyhighly pollutingpolluting fuelsfuels likelike coalcoal isis alsoalso moremore commoncommon amamongong lowerlower incomeincome householdshouseholds andand particularlyparticularly highhigh inin specificspecific regionsregions inin Europe.Europe TheyThey maymay thusthus bebe moremore negativelynegatively impactedimpacted byby thethe transition,transition, inin particularparticular ifif emittingemitting carboncarbon becomesbecomes moremore costlycostly andand lowlow--carboncarbon solutionssolutions areare notnot availableavailable toto them.them InIn orderorder toto avoidavoid negativenegative impactsimpacts onon vulnerablevulnerable consumers,consumers, socialsocial andand energyenergy efficiencyefficiency policiespolicies areare importantimportant toto targettarget thethe renovationrenovation ofof theirtheir houseshouses andand keepkeep thethe impactimpact onon theirtheir heatingheating andand electricityelectricity billsbills inin check.check RenovatingRenovating Europe’sEurope’s buildingsbuildings notnot onlyonly lowelowersrs energyenergy billsbills andand greenhousegreenhouse gasgas ***emissions***,***emissions***, butbut itit alsoalso improvesimproves livingliving conditionsconditions andand createscreates locallocal jobs.jobs TheThe forthcomingforthcoming RenovationRenovation WaveWave willwill addressaddress thethe twintwin challengechallenge ofof energyenergy efficiencyefficiency andand affordabilityaffordability inin thethe buildingbuilding sector.sector ItIt willwill focusfocus onon thethe worstworst performingperforming buildingsbuildings andand tackletackle thethe energyenergy povertypoverty asas wellwell asas onon publicpublic buildings,buildings, notablynotably schools,schools, hospitalshospitals andand carecare facilities.facilities WhenWhen renovating,renovating, particularparticular attentionattention willwill bebe requiredrequired asas regardsregards financingfinancing thethe upup--frontfront 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especiallyespecially inin cities.cities OurOur citizenscitizens havehave aa lotlot toto gaingain throughthrough ambitiousambitious andand decisivedecisive climateclimate action.action ReducingReducing greenhousegreenhouse gasgas emissionsemissions improvesimproves livingliving conditionsconditions andand health,health, cancan createcreate employment,employment, andand lowerslowers energyenergy bills.bills ClimateClimate changechange anandd energyenergy policiespolicies supportssupports cleanclean airair policypolicy inin improvingimproving thethe healthhealth ofof EUEU citizens.citizens ThisThis mattersmatters particularlyparticularly inin aa numbernumber ofof CentralCentral andand EasternEastern EuropeanEuropean MemberMember StatesStates sufferingsuffering fromfrom relativelyrelatively highhigh pollutionpollution levels.levels AchievingAchieving 55%55% greenhousegreenhouse gasgas emissionsemissions reductionsreductions couldcould contributecontribute toto furtherfurther 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samesame orderorder ofof magnitudemagnitude asas technicaltechnical optionsoptions availableavailable toto reducereduce emissionsemissions inin thethe sectorsector22.. InIn lineline withwith thethe FarmFarm toto ForkFork StrategyStrategy33,, consumersconsumers shouldshould bebe facilitatedfacilitated toto choosechoose sustainablesustainable andand healthealthyhy foodfood andand diets.diets ThisThis wouldwould notnot onlyonly helphelp thethe agriculturalagricultural andand foodfood sectorsector toto reducereduce ***emissions***,***emissions***, butbut alsoalso improveimprove consumers’consumers’ healthhealth andand reducereduce healthhealth--relatedrelated costscosts forfor societysociety andand foodfood waste.waste 2 A strong decrease of consumption of animal products for nutrition could potentially reduce ***emissions*** by more than 30 million tonnes by 2030.3 COM(2020) 381 final6TheThe increasedincreased climateclimate ambitionambition inin thethe aboveabove areasareas cancan havehave posipositivetive impactsimpacts onon GDPGDP andand totaltotal employmentemployment inin thethe EU.EU TheThe ImpactImpact AssessmentAssessment indicatesindicates 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capacitycapacity toto respondrespond toto thethe challengeschallenges ofof thethe transition.transition AA moremore ambitiousambitious climateclimate targettarget isis likelylikely toto bebe moremore challengingchallenging inin MemberMember StatesStates anandd regionsregions withwith aa higherhigher shareshare ofof fossilfossil fuelsfuels inin thethe energyenergy mix,mix, higherhigher greenhousegreenhouse gasgas ***emissions***,***emissions***, energyenergy intensityintensity andand lowerlower GDPGDP perper capita.capita CertainCertain carboncarbon--intensiveintensive sectorssectors andand regionsregions withwith aa significantsignificant shareshare ofof theirtheir economieseconomies dependingdepending onon thesethese willwill seseee substantialsubstantial transformations.transformations DDistributionalistributional aspectsaspects willwill needneed toto bebe addressedaddressed inin orderorder toto ensureensure thatthat nobodynobody isis leftleft behind.behind NewNew andand upgradedupgraded skillsskills willwill bebe neededneeded underliningunderlining thethe needneed toto keepkeep investinginvesting inin lifelonglifelong learninglearning usingusing allall possiblepossible instrumentsinstruments andand ensuringensuring aa diversediverse andand inclusiveinclusive workforce.workforce InIn regionsregions wherewhere carboncarbon--intensiveintensive industriesindustries areare currentlycurrently ofof greatergreater importance,importance, focusedfocused policiespolicies andand investmentsinvestments areare needed,needed, supportedsupported byby thethe JustJust TransitionTransition Mechanism.Mechanism AsAs aa resultresult ofof thesethese transitions,transitions, tthehe EU’sEU’s energyenergy systemsystem willwill bebe muchmuch moremore securesecure andand resilient.resilient FossilFossil fuels,fuels, whilewhile soso engrainedengrained inin ourour wayway ofof lifelife forfor overover 150150 years,years, areare exposedexposed toto volatilevolatile fuelfuel pricesprices andand supplysupply disruption.disruption MoreMore thanthan halfhalf ofof EUEU energyenergy needsneeds areare coveredcovered byby imports.imports RenewRenewableable energyenergy generatedgenerated inin thethe EUEU reducesreduces thisthis exposure,exposure, therebythereby increasingincreasing securitysecurity ofof supply.supply NetNet energyenergy importsimports areare projectedprojected toto decreasedecrease byby moremore thanthan aa quarterquarter inin thethe periodperiod 20152015--2030.2030 IncreasingIncreasing thethe climateclimate ambitionambition fromfrom thethe currentcurrent 20302030 targettarget toto 55%55% aandnd achievingachieving climateclimate neutralityneutrality byby 20502050 wouldwould savesave onon thethe EU’sEU’s importimport billbill EUREUR 100100 billionbillion overover thethe periodperiod 20212021--20302030 andand upup toto 33 trilliontrillion byby 2050.2050 InIn short,short, increasingincreasing thethe EU’sEU’s climateclimate ambitionambition forfor 20302030 generatesgenerates bothboth economiceconomic opportunityopportunity andand aa cleanercleaner aandnd healthierhealthier environmentenvironment forfor ourour citizenscitizens asas wewe steadilysteadily movemove towardstowards climateclimate neutralityneutrality byby 2050.2050 ItIt matchesmatches desiresdesires ofof citizenscitizens andand stakeholders,stakeholders, accordingaccording toto thethe repliesreplies toto thethe publicpublic consultationconsultation processprocess organisedorganised byby thethe CommissionCommission forfor thisthis initiativeinitiative aandnd empowersempowers regionalregional andand locallocal authoritiesauthorities toto participateparticipate andand benefitbenefit fromfrom thethe greengreen transition.transition ItIt ensuresensures durabledurable jobs,jobs, improvesimproves thethe EUsEUs energyenergy security,security, resilienceresilience andand independence,independence, stimulatesstimulates innovationinnovation andand layslays aa solidsolid foundationfoundation forfor economiceconomic prosperiprosperity.ty FigureFigure 1:1: TheThe EU’sEU’s pathwaypathway toto sustainedsustained economiceconomic prosperityprosperity andand climateclimate neutrality,neutrality, 19901990--205020507WhileWhile anyany structuralstructural changeschanges willwill posepose challenges,challenges, thethe analysisanalysis showsshows thatthat overalloverall thethe economyeconomy andand citizenscitizens willwill benefitbenefit fromfrom thesethese investments,investments, especiallyespecially consideringconsidering thethe diredire consequencesconsequences ofof nonnon--action.action ForFor instance,instance, forfor thosethose lowerlower incomeincome householdshouseholds andand fossilfossil fuelfuel dependentdependent andand energyenergy--intensiveintensive sectors,sectors, whichwhich willwill bebe particularlyparticularly challenged,challenged, targetedtargeted policiespolicies willwill needneed toto promotepromote justjust transitiontransition headhead on.on InIn thisthis way,way, EuropeEurope willwill setset aa practicalpractical exampleexample forfor allall otherother regionsregions aroundaround thethe worldworld onon howhow accomplishingaccomplishing thethe ParisParis AgreementAgreement objectivesobjectives willwill leadlead toto aa moremore prosperous,prosperous, fair,fair, resilientresilient andand healthyhealthy world.world InIn thisthis respect,respect, economiceconomic impactsimpacts willwill bebe moremore ppositiveositive ifif thethe regulatoryregulatory toolstools allowallow forfor appropriateappropriate priceprice signalssignals andand aa taxtax shift,shift, withwith carboncarbon pricingpricing revenuesrevenues beingbeing usedused toto reducereduce distortingdistorting taxestaxes oror toto investinvest inin innovationinnovation andand modernisationmodernisation towardstowards aa greengreen economy.economy 3.3. AAMBITIOUSMBITIOUS AACTIONCTION ININ ALLALL SECTORSSECTORS OFOF THETHE EUEU ECONOMYECONOMYAchievingAchieving 55%55% greenhousegreenhouse gasgas emissionsemissions reductionsreductions willwill requirerequire actionsactions inin allall sectorssectors asas illustratedillustrated inin thethe graphgraph above.above AA climateclimate--neutralneutral transitiontransition cancan onlyonly bebe accomplishedaccomplished withwith contributionscontributions fromfrom everyone.everyone COCO22 emissionsemissions fromfrom thethe burniburningng ofof fossilfossil fuelsfuels areare thethe largestlargest sourcesource ofof greenhousegreenhouse gasgas emissionsemissions inin thethe EU.EU TogetherTogether withwith fugitivefugitive nonnon--COCO22 emissionsemissions inin thethe energyenergy system,system, theythey areare responsibleresponsible forfor justjust overover 75%75% ofof EUEU greenhousegreenhouse gasgas ***emissions***.***emissions*** ThisThis underlinesunderlines thethe energyenergy system’ssystem’s centrcentralal rolerole inin thethe transitiontransition toto aa climateclimate neutralneutral economy.economy ItIt willwill needneed toto bebe fullyfully decarbonised,decarbonised, whilewhile respectingrespecting technologicaltechnological neutrality.neutrality MostMost otherother emissionsemissions areare processprocess COCO22 emissionsemissions fromfrom industryindustry andand nonnon--COCO22 emissionsemissions fromfrom agricultureagriculture andand waste.waste ReducingReducing allall emissionsemissions asas muchmuch asas possiblepossible willwill bebe crucialcrucial toto limitlimit thethe needneed toto balancebalance anyany remainingremaining emissionsemissions toto becomebecome climateclimate neutral.neutral InIn thisthis context,context, thethe EUEU landland useuse sectorsector isis ofof particularparticular importance,importance, givengiven thathatt itit presentlypresently-200204060801001201401601802002202401990199520002005201020152020202520302035204020452050GDP and Net ***Emissions*** (1990=100)Non-CO2 otherNon-CO2 AgricultureResidentialTertiaryTransportIndustryPowerCarbon ***Removal*** TechnologiesLand use and forestsNet emissionsGDPGDPGreenhouse GasEmissionsandRemovals-55%8providesprovides forfor thethe largestlargest sourcesource ofof netnet removalsremovals ofof COCO22 fromfrom thethe atmosphereatmosphere thatthat humanshumans cancan impact.impact MuchMuch moremore isis nownow alsoalso possiblepossible withwith widespreadwidespread useuse ofof digitaldigital technologies,technologies, whichwhich couldcould helphelp reducereduce overalloverall emissionsemissions considerably.considerably.44BasedBased onon thethe analysisanalysis inin thethe ImpactImpact Assessment,Assessment, thethe CommissionCommission hashas reachedreached thethe viewview thatthat thethe followingfollowing contributionscontributions byby differentdifferent sectorssectors wouldwould enableenable usus toto reachreach aa 55%55% emissionsemissions reductionreduction byby 20302030 inin aa responsibleresponsible way.way EnergyEnergy systemsystem transformationtransformation includingincluding buildibuildings,ngs, transporttransport andand industryindustryInIn orderorder toto reachreach thethe 55%55% greenhousegreenhouse gasgas emissionsemissions reductionreduction ***target***,***target***, buildingsbuildings andand powerpower generationgeneration cancan makemake thethe largestlargest andand mostmost costcost--efficientefficient emissionsemissions reductions,reductions, inin thethe orderorder ofof 60%60% andand moremore comparedcompared toto 2015.2015 RapidRapid penetratpenetrationion ofof renewablerenewable energy,energy, whichwhich isis becomingbecoming thethe mostmost costcost--effectiveeffective electricelectric powerpower source,source, thethe applicationapplication ofof thethe energyenergy efficiencyefficiency firstfirst principle,principle, electrificationelectrification andand energyenergy systemsystem integrationintegration willwill drivedrive thethe changechange inin bothboth sectors.sectors ByBy 2030,2030, thethe shareshare ofof EUEU renewablerenewable electricityelectricity productionproduction isis setset toto atat leastleast doubledouble fromfrom today’stoday’s levelslevels ofof 32%32% ofof renewablerenewable electricityelectricity toto aroundaround 65%65% oror more.more TheThe expansionexpansion inin renewablerenewable electricityelectricity productionproduction willwill provideprovide manymany opportunitiesopportunities forfor EuropeanEuropean renewablerenewable energyenergy sourcessources toto bebe fullyfully harnessed,harnessed, forfor instanceinstance offshoreoffshore windwind energy.energy RenewablesRenewables willwill leadlead toto aa highhigh degreedegree ofof decentralisationdecentralisation providingproviding opportunitiesopportunities forfor consumersconsumers toto getget engaged,engaged, forfor prosumersprosumers toto generate,generate, useuse andand shareshare energyenergy themselves,themselves, andand forfor locallocal andand notablynotably ruralrural communitiescommunities toto encourageencourage locallocal investmentsinvestments inin renewables.renewables ItIt willwill alsoalso triggertrigger newnew employmentemployment locally.locally TheThe deploymentdeployment ofof renewablerenewable electricityelectricity providesprovides aa majormajor opportunityopportunity forfor thethe decarbonisationdecarbonisation ofof otherother sectorssectors suchsuch asas heatingheating andand coolingcooling inin builbuildingsdings andand industry.industry TheThe impactimpact assessmentassessment highlightshighlights thatthat renewablesrenewables inin heatingheating andand coolingcooling wouldwould achieveachieve aroundaround 40%40% penetrationpenetration inin 2030.2030 BeyondBeyond thethe directdirect useuse ofof renewablerenewable energyenergy andand electrification,electrification, renewablerenewable hydrogenhydrogen willwill alsoalso bebe requiredrequired toto replacereplace fosfossilsil fuelsfuels inin somesome carboncarbon--intensiveintensive industrialindustrial processes,processes, forfor exampleexample asas aa feedstockfeedstock forfor certaincertain chemicalchemical processes,processes, andand toto deliverdeliver highhigh--temperaturetemperature heat.heat TheThe buildingbuilding sector,sector, currentlycurrently responsibleresponsible forfor 40%40% ofof finalfinal energyenergy andand 36%36% ofof greenhousegreenhouse gasgas emissionsemissions inin thethe EU,EU, hashas aa largelarge costcost--effectiveeffective potentialpotential toto reducereduce ***emissions***.***emissions*** Today,Today, 75%75% ofof thethe EU’sEU’s buildingbuilding stockstock isis energyenergy inefficientinefficient55.. ManyMany homeshomes areare stillstill heatedheated withwith outdatedoutdated systemssystems thatthat useuse pollutingpolluting fossilfossil fuelsfuels suchsuch asas coalcoal andand oil.oil ToTo fullyfully taptap intointo ththisis potentialpotential forfor improvementimprovement wouldwould requirerequire thethe renovationrenovation rate,rate, whichwhich isis aroundaround 1%1% today,today, toto doubledouble andand moremore inin thethe periodperiod upup toto 2030.2030 InIn particular,particular, deepdeep renovationsrenovations addressingaddressing buildingbuilding shells,shells, smartsmart digitalisationdigitalisation andand thethe integrationintegration ofof renewablerenewable energyenergy togethertogether needneed toto increaseincrease strongly.strongly TheThe transporttransport sectorsector hadhad thethe lowestlowest shareshare ofof renewablerenewable energyenergy inin 2015,2015, withwith onlyonly 6%6%66.. ByBy 2030,2030, thisthis hashas toto increaseincrease toto aroundaround 24%24% throughthrough furtherfurther developmentdevelopment andand deploymentdeployment ofof electricelectric vehicles,vehicles, advancedadvanced biofuelsbiofuels andand othotherer renewablerenewable andand lowlow carboncarbon fuelsfuels asas partpart ofof aa holisticholistic andand integratedintegrated approach.approach SecureSecure accessaccess toto batteriesbatteries willwill bebe criticalcritical toto rollingrolling outout electricelectric vehicles,vehicles, whilewhile cleanclean hydrogenhydrogen willwill bebe crucialcrucial forfor4 [*https://www.weforum.org/agenda/2019/01/why-digitalization-is-the-key-to-exponential-climate-action/5*](https://www.weforum.org/agenda/2019/01/why-digitalization-is-the-key-to-exponential-climate-action/5) New buildings today consume only half as much as typical buildings from the 1980s. About 35% of the EU's buildings are over 50 years old.6 Calculated according to the methodology as set out in Directive 2018/2001/EC.9decarbonisingdecarbonising heavyheavy--dutyduty transporttransport and,and, throughthrough itsits deriderivatives,vatives, inin thethe aviationaviation andand maritimemaritime sector.sector TheThe decarbonisationdecarbonisation ofof thethe transporttransport fuelfuel mixmix byby 20502050 willwill alsoalso bebe supportedsupported byby greatergreater useuse ofof railrail andand otherother sustainablesustainable transporttransport modesmodes suchsuch asas inlandinland waterwayswaterways andand shortshort seasea shipping,shipping, inin particularparticular forfor freigfreightht transport.transport ProjectedProjected increasesincreases inin bioenergybioenergy useuse byby 20302030 areare limitedlimited comparedcompared toto today.today ToTo ensureensure thethe landland useuse sinksink cancan continuecontinue toto strengthenstrengthen andand improve,improve, biomassbiomass forfor energyenergy useuse inin thethe EUEU shouldshould bebe producedproduced sustainably,sustainably, andand environmentalenvironmental impactsimpacts shouldshould bebe minimised.minimised ToTo limitlimit impactimpact onon biodiversity,biodiversity, thethe useuse ofof wholewhole treestrees andand foodfood andand feedfeed cropscrops forfor energyenergy productionproduction –– producedproduced inin thethe EUEU oror importedimported –– shouldshould bebe minimised.minimised AnyAny unsustainableunsustainable intensificationintensification ofof forestforest harvestingharvesting forfor bioenergybioenergy purposespurposes shouldshould bebe avoided.avoided Instead,Instead, bioenergybioenergy productionproduction shouldshould comecome fromfrom betterbetter useuse ofof biomassbiomass wasteswastes andand residuesresidues andand aa sustainablesustainable cultivationcultivation ofof energyenergy crops,crops, ratherrather replacingreplacing thethe productionproduction ofof firstfirst generationgeneration foodfood--cropcrop--basedbased biofuelsbiofuels andand bebe inin lineline withwith thethe sustaisustainabilitynability criteriacriteria ofof thethe RenewableRenewable EnergyEnergy Directive.Directive TheThe promotionpromotion ofof sustainablesustainable forestforest management,management, aa strongstrong enforcementenforcement ofof thethe existingexisting legislationlegislation andand aa quickerquicker implementationimplementation ofof thethe sustainabilitysustainability criteriacriteria inin thethe RenewableRenewable EnergyEnergy DirectiveDirective cancan playplay aa kkeyey rolerole inin thisthis regardregard alongsidealongside thethe foreseenforeseen reviewreview andand potentialpotential revisionrevision ofof thethe latterlatter Directive.Directive The Commission’s Impact Assessment indicates that final and primary energy consumption would further reduce in 2030, achieving savings of 36-37% for final energy consumption (total energy consumed by end users) and 39-41% for primary energy consumption (total energy used to meet final energy needs, e.g gas used to produce electricity). This reduction will require policies that address non-economic and local barriers. For instance, EU product efficiency standards have already reduced energy needs for the products in question by about 15% and cut total EU greenhouse gas ***emissions*** by 7% while creating hundreds of thousands additional jobs7. Actions of this kind will need to be intensified.AchievingAchieving 55%55% greenhousegreenhouse gasgas emissionsemissions reductionsreductions wouldwould resultresult inin aa newnew andand greenergreener energyenergy mix.mix ByBy 2030,2030, coalcoal consumptionconsumption wouldwould bebe reducedreduced byby moremore thanthan 70%70% comparedcompared toto 2015,2015, andand oiloil andand gasgas byby moremore thanthan 30%30% andand 25%,25%, respectivrespectively.ely RenewableRenewable energyenergy insteadinstead wouldwould seesee itsits shareshare increase.increase ByBy 2030,2030, itit wouldwould reachreach 38%38% toto 40%40% ofof grossgross finalfinal consumption.consumption Overall,Overall, thisthis wouldwould leadlead toto aa balancedbalanced pathpath towardstowards climateclimate neutralityneutrality byby 2050.2050 SomeSome sectorssectors havehave aa smaller,smaller, yetyet stillstill significant,significant, costcost--effectiveeffective emissionsemissions reductionreduction potentialpotential byby 2030.2030 Today,Today, roadroad transporttransport accountsaccounts forfor aa fifthfifth ofof thethe EU’sEU’s greenhousegreenhouse gasgas emissionsemissions andand increasedincreased itsits emissionsemissions byby overover aa quarterquarter sincesince 1990.1990 ItIt maymay seesee aa decreasedecrease inin emissionsemissions ofof onlyonly aroundaround 20%20% betweenbetween 20201515 andand 2030,2030, underliningunderlining thethe increasedincreased focusfocus thethe sectorsector willwill requirerequire toto achieveachieve increasedincreased decarbonisation.decarbonisation AllAll transporttransport sectorssectors -- road,road, rail,rail, aviationaviation andand waterbornewaterborne transporttransport -- willwill havehave toto contributecontribute toto thethe 55%55% reductionreduction effort.effort AA smartsmart combinationcombination ofof vehicle/vessels/aircraftvehicle/vessels/aircraft efficiencyefficiency improvements,improvements, fuelfuel mixmix changes,changes, greatergreater useuse ofof sustainablesustainable transporttransport modesmodes andand multimulti--modalmodal solutions,solutions, digitalisationdigitalisation forfor smartsmart traffictraffic andand mobilitymobility management,management, roadroad pricingpricing andand otherother incentivesincentives cancan reducereduce greenhousegreenhouse gasgas emissionsemissions andand atat thethe samesame timetime significantlysignificantly addressaddress noisenoise pollutionpollution andand improveimprove airair quality.quality InIn addition,addition, newnew sustainablesustainable mobilitymobility servicesservices andand increasedincreased useuse ofof thethe existingexisting urbanurban busbus andand railrail servicesservices cancan reducereduce ***emissions***,***emissions***, congestioncongestion andand pollutionpollution whilewhile improvingimproving roadroad safety,safety, especiallyespecially inin urbanurban7 Report on Ecodesign Impact Accounting, forthcoming10areas.areas. TheThe upcomingupcoming StrategyStrategy forfor aa SustainableSustainable andand SmartSmart MobilityMobility willwill setset aa pathwaypathway forfor thethe sectorsector toto mastermaster thethe twintwin greengreen andand digitaldigital transitionstransitions buildingbuilding aa resilientresilient andand sustainablesustainable transporttransport systemsystem forfor generagenerationstions toto come.come ToTo achieveachieve climateclimate neutralityneutrality andand ensureensure thatthat sectorssectors withwith emissionsemissions thatthat areare moremore difficultdifficult toto abateabate havehave accessaccess toto sufficientsufficient quantitiesquantities ofof renewablerenewable andand lowlow carboncarbon fuels,fuels, conventionalconventional carscars willwill needneed toto graduallygradually bebe displaceddisplaced byby zerozero emissemissionsions vehiclesvehicles andand greatergreater useuse shouldshould bebe mademade ofof sustainablesustainable collectivecollective transporttransport services.services TheThe ImpactImpact AssessmentAssessment projectsprojects reductionreduction levelslevels inin 20302030 correspondingcorresponding toto aa decreasedecrease ofof aroundaround 50%50% ofof thethe CO2CO2 emissionsemissions perper kilometrekilometre forfor passengerspassengers cars,cars, asas comparedcompared toto thethe 20212021 ***targets***.***targets*** TheThe productionproduction andand salessales ofof electricelectric vehiclesvehicles areare alreadyalready takingtaking off,off, andand hydrogenhydrogen promisespromises newnew waysways ofof propulsion,propulsion, particularlyparticularly forfor heavyheavy dutyduty trucks,trucks, indicatingindicating thatthat thisthis isis aa realisticrealistic scenario.scenario BothBoth thethe aviationaviation andand maritimemaritime sectsectorsors willwill needneed toto scalescale upup effortsefforts toto improveimprove thethe efficiencyefficiency ofof aircraft,aircraft, shipsships andand theirtheir operationsoperations andand toto increaseincrease thethe useuse ofof sustainablysustainably producedproduced renewablerenewable andand lowlow--carboncarbon fuels.fuels ThisThis willwill bebe assessedassessed inin greatergreater detaildetail inin thethe contextcontext ofof thethe ReFuelEUReFuelEU AviatAviationion andand FuelEUFuelEU MaritimeMaritime initiativesinitiatives thatthat aimaim toto increaseincrease thethe productionproduction andand thethe uptakeuptake ofof sustainablesustainable alternativealternative fuelsfuels forfor thesethese sectors.sectors TheThe necessarynecessary technologytechnology developmentdevelopment andand deploymentdeployment hashas toto happenhappen alreadyalready byby 20302030 toto prepareprepare forfor muchmuch moremore rapidrapid chanchangege thereafter.thereafter Similarly,Similarly, industryindustry maymay seesee emissionsemissions reductionsreductions ofof upup toto aroundaround 25%25% byby 20302030 comparedcompared toto 2015.2015 BestBest practicespractices cancan furtherfurther reducereduce greenhousegreenhouse gasgas ***emissions***,***emissions***, thusthus improvingimproving overalloverall efficiency,efficiency, byby usingusing wastewaste heatheat andand increasingincreasing electrificationelectrification throughthrough continuedcontinued incrementalincremental improvements.improvements However,However, toto allowallow industryindustry toto trulytruly decarbonisedecarbonise afterafter 2030,2030, zerozero oror veryvery lowlow carboncarbon technologiestechnologies andand businessbusiness concepts,concepts, includingincluding systemsystem integration,integration, accessaccess toto sustainablesustainable resourcesresources andand increasedincreased circularity,circularity, medmediumium andand highhigh heatheat electrification,electrification, hydrogenhydrogen andand carboncarbon capture,capture, utilisationutilisation andand storage,storage, willwill needneed toto bebe developeddeveloped andand testedtested atat scalescale inin thisthis decade.decade ToTo kickkick--startstart thisthis andand facilitatefacilitate thethe developmentdevelopment ofof appropriateappropriate supplysupply andand demanddemand basedbased supportsupport forfor zerozero oror veryvery lowlow--carboncarbon technologiestechnologies andand createcreate marketsmarkets forfor lowlow--carboncarbon products,products, EUEU certificationcertification systemssystems basedbased onon thethe greenhousegreenhouse gasgas performanceperformance forfor lowlow--carboncarbon basicbasic materialsmaterials andand forfor carboncarbon removalsremovals shouldshould bebe developeddeveloped88.. InIn addition,addition, changeschanges inin corporatecorporate governancegovernance rulesrules andand practices,practices, includingincluding onon sustainablesustainable finance,finance, willwill makemake companycompany ownersowners andand managersmanagers prioritiseprioritise sustainabilitysustainability objectivesobjectives inin theirtheir actionsactions andand strategies.strategies AppropriateAppropriate infrastructureinfrastructure toto maximisemaximise thethe benefitsbenefits ofof thethe cleanclean energyenergy transitiontransition andand toto deploydeploy alternativealternative emissionsemissions--freefree fuelfuel andand feedstockfeedstock isis criticalcritical forfor bothboth sectors.sectors HeatHeat networks,networks, hydrogenhydrogen pipelines,pipelines, electricelectric rechargingrecharging andand hydrogenhydrogen refuellingrefuelling infrastructureinfrastructure areare allall examplesexamples ofof infrastructureinfrastructure thatthat willwill needneed toto bebe developeddeveloped andand wwillill requirerequire carefulcareful planning.planning NonNon--COCO22 emissionsemissionsNonNon--COCO22 emissionsemissions ofof methane,methane, nitrousnitrous oxideoxide andand soso--calledcalled FF--gasesgases representrepresent almostalmost 20%20% ofof thethe EUEU’ss greenhousegreenhouse gasgas ***emissions***.***emissions*** ByBy 20302030,, thesethese cancan bebe reducedreduced effectivelyeffectively byby upup toto 35%35% comparedcompared toto 2015.2015 8 See also the Circular Economy Action Plan (COM (2020) 98 final).11TheThe energenergyy sectorsector showsshows thethe largestlargest potentialpotential inin lowlow--costcost additionaladditional reductionsreductions beyondbeyond existingexisting policies,policies, notablynotably byby avoidingavoiding fugitivefugitive methanemethane emissionsemissions fromfrom oil,oil, gasgas andand coalcoal productionproduction andand transport.transport TheseThese willwill bebe addressedaddressed amongamong othersothers inin thethe upcomingupcoming MethaneMethane StStrategy.rategy TheThe wastewaste sectorsector isis expectedexpected toto stronglystrongly reducereduce itsits emissionsemissions alreadyalready underunder existingexisting policies,policies, notablynotably duedue toto thethe obligationobligation toto separatelyseparately collectcollect biobio--wastewaste asas ofof 20242024 andand banban ofof biobio--wastewaste landfilling.landfilling ReductionsReductions willwill dependdepend stronglystrongly onon fullyfully enfoenforcingrcing existingexisting legislation.legislation InIn addition,addition, therethere isis aa furtherfurther costcost--effectiveeffective reductionreduction potentialpotential inin wastewaterwastewater treatment,treatment, notablynotably throughthrough aa betterbetter managementmanagement ofof sewagesewage sludge.sludge FinallyFinally turningturning wastewaste intointo aa resourceresource isis anan essentialessential partpart ofof closingclosing thethe looploop towtowardsards aa circularcircular economy,economy, reducingreducing emissionsemissions acrossacross thethe entireentire industrialindustrial valuevalue chain.chain TheThe majoritymajority ofof thesethese emissionsemissions comescomes fromfrom thethe agricultureagriculture sector.sector OverOver thethe pastpast years,years, thethe declinedecline ofof thesethese emissionsemissions hashas stagnatedstagnated andand inin somesome casescases emissionsemissions havehave eveneven increased.increased InIn aa businessbusiness asas usualusual situation,situation, theythey areare projectedprojected atat bestbest toto slowlyslowly decreasedecrease byby 2030.2030 WhileWhile thesethese emissionsemissions cancan nevernever bebe fullyfully eliminatedeliminated underunder existingexisting technologytechnology andand managementmanagement options,options, theythey cancan bebe significantlysignificantly reducedreduced whilewhile ensuringensuring foodfood securitysecurity isis maintainedmaintained inin thethe EU.EU EfficientEfficient useuse ofof fertilisers,fertilisers, adoptingadopting precisionprecision farming,farming, aa healthierhealthier herdherd andand thethe deploymentdeployment ofof anaerobicanaerobic digestiondigestion producingproducing biogasbiogas andand valorisingvalorising organicorganic wastewaste areare examplesexamples ofof existingexisting technologies.technologies AlternativeAlternative ooptionsptions acceleratingaccelerating growthgrowth ofof sustainablesustainable shellfishshellfish andand algaealgae productionproduction couldcould produceproduce proteinprotein withwith aa lowlow greenhousegreenhouse gasgas emissionsemissions footprint.footprint Furthermore,Furthermore, byby adaptingadapting itsits landland useuse managementmanagement andand cultivatingcultivating perennialsperennials onon croplandcropland inin aa sustainablesustainable mannermanner forfor useuse ofof thethe harvestedharvested biomassbiomass inin buildings,buildings, industryindustry andand energy,energy, agricultureagriculture cancan greatlygreatly contributecontribute toto decarbonisedecarbonise otherother sectors.sectors TheThe landland useuse sectorsectorNatureNature isis aa vitalvital allyally inin thethe fightfight againstagainst climateclimate changechange andand haltinghalting thethe lossloss ofof biodiversity.biodiversity ItIt regulatesregulates thethe climate,climate, andand naturenature--basedbased solutionssolutions willwill bebe essentialessential forfor emissionsemissions reductionsreductions andand adaptationadaptation toto climateclimate change.change RestoringRestoring andand growinggrowing ourour landland carboncarbon sinksink –– thethe abilityability toto absorbabsorb CO2CO2 byby ourour naturalnatural environmentenvironment suchsuch asas treestrees -- isis crucialcrucial toto ourour climateclimate goals.goals TheThe EUEU landland use,use, landland useuse changechange andand forestryforestry (LULUCF)(LULUCF) sectorsector bothboth emitsemits greenhousegreenhouse gasesgases andand absorbsabsorbs COCO22 inin itsits soilsoil andand biomass.biomass InIn total,total, itit hashas beenbeen aa significantsignificant netnet sinksink inin thethe past.past However,However, overover recentrecent yearsyears thethe EUEU’ss sinksink hashas comecome underunder prpressureessure fromfrom increasedincreased economiceconomic useuse andand thethe adverseadverse effectseffects ofof climateclimate change.change WhileWhile itit expandedexpanded inin thethe twotwo decadesdecades fromfrom 19901990 toto 20102010 fromfrom aa netnet sinksink ofof aroundaround 250250 millionmillion COCO2eq2eq toto aboveabove 300300 millionmillion tonstons COCO2eq,2eq, itit hashas seenseen significantsignificant losseslosses overover thethe lastlast fivefive years.years ThisThis resultedresulted inin aa sinksink reducedreduced toto 263263 millionmillion tonstons COCO2eq2eq inin 2018.2018 ThisThis underlinesunderlines thethe risksrisks forfor thethe magnitudemagnitude ofof thethe sink,sink, whichwhich isis ofof crucialcrucial importanceimportance toto achieveachieve netnet zerozero greenhousegreenhouse gasgas emissionemissionss byby 2050.2050 UnchangedUnchanged landland useuse practicespractices andand furtherfurther increasesincreases inin harvesting,harvesting, inin partpart drivendriven byby ageage classclass impactsimpacts ofof maturingmaturing managedmanaged ***forests***,***forests***, couldcould seesee thethe sinksink potentiallypotentially furtherfurther declinedecline toto 225225 millionmillion tonstons COCO2eq2eq byby 2030.2030 ThereThere areare significantsignificant risksrisks forfor thethe sinksink ofof risingrising negativenegative impactsimpacts fromfrom naturalnatural hazardshazards suchsuch asas firesfires andand pestspests duedue toto aa changingchanging climateclimate asas wellwell asas increasingincreasing economiceconomic demanddemand forfor forestforest biomass,biomass, whichwhich alsoalso negativelynegatively affectaffect biodiversity.biodiversity 12WeWe needneed aa growinggrowing sinksink inin orderorder forfor thethe EUEU toto acachievehieve climateclimate neutralityneutrality byby 2050.2050 ReversingReversing thethe currentcurrent trendtrend requiresrequires significantsignificant shortshort--termterm actionaction duedue toto longlong leadlead times,times, especiallyespecially inin forestry.forestry ThisThis includesincludes improvedimproved andand enforcedenforced forestforest protectionprotection andand moremore sustainablesustainable forestforest managementmanagement asas wellwell asas sussustainabletainable rere-- andand afforestationafforestation andand improvedimproved soilsoil managementmanagement includingincluding throughthrough thethe restorationrestoration ofof wetlands,wetlands, peatlandspeatlands andand degradeddegraded landland inin lineline withwith thethe BiodiversityBiodiversity StrategyStrategy99 andand contributingcontributing toto itsits aims.aims Furthermore,Furthermore, aa shiftshift towardstowards growinggrowing woodywoody biomassbiomass onon croplandcropland inin aa sustainablesustainable manner,manner, includingincluding asas aa feedstockfeedstock forfor advancedadvanced biogasbiogas andand biofuels,biofuels, couldcould alleviatealleviate thethe situation.situation TheThe ImpactImpact AssessmentAssessment estimatesestimates that,that, ifif implementedimplemented swiftlyswiftly inin thethe comingcoming years,years, thisthis couldcould alreadyalready reversereverse thethe currentcurrent trendtrend ofof aa diminishingdiminishing EUEU landland carboncarbon sinksink byby 2030,2030, increasingincreasing itit againagain toto levelslevels aboveabove 300300 millionmillion tonstons COCO2eq.2eq 4.4. UUPDATINGPDATING THETHE 20302030 CCLIMATELIMATE ANDAND EENERGYNERGY POLICYPOLICY FRAMEWORKFRAMEWORKTheThe analysisanalysis inin thethe ImpactImpact AssessmentAssessment hashas lookedlooked atat thethe broadbroad changes,changes, which,which, ifif any,any, wouldwould bebe reqrequireduired inin thethe currentcurrent policypolicy frameworkframework toto triggertrigger thethe sectoralsectoral contributionscontributions identifiedidentified above,above, andand thatthat cancan onlyonly bebe delivereddelivered throughthrough aa wholewhole ofof governmentgovernment approach.approach KeyKey elementselements areare summarisedsummarised inin thethe followingfollowing pages.pages SpecificSpecific impactimpact assessmentsassessments andand publicpublic consultationsconsultations willwill bebe carriedcarried outout inin thethe comingcoming monthsmonths toto preciselyprecisely determinedetermine thethe legislativelegislative changeschanges thethe CommissionCommission intendsintends toto proposepropose inin JuneJune 20212021 toto supportsupport thethe enhancedenhanced 20302030 climateclimate andand energyenergy frameworkframework andand theirtheir cumulativecumulative impactsimpacts onon thethe EuropeanEuropean econeconomy.omy TheseThese willwill havehave toto furtherfurther assessassess sectorsector specificspecific distributionaldistributional andand competitivenesscompetitiveness impactsimpacts byby exploringexploring feasiblefeasible targetedtargeted solutions.solutions TheThe EUEU isis implementingimplementing itsits currentcurrent 20302030 climateclimate targettarget ofof atat leastleast 40%40% greenhousegreenhouse gasgas emissionsemissions reductionsreductions throughthrough tthreehree keykey piecespieces ofof climateclimate legislation:legislation:·• thethe EmissionsEmissions TradingTrading SystemSystem DirectiveDirective1010,, whichwhich setssets upup aa capcap andand tradetrade systemsystem forfor largelarge industrialindustrial andand powerpower sectorsector installationsinstallations andand thethe aviationaviation sectorsector toto reducereduce emissionsemissions byby 43%43% byby 20302030 comparedcompared toto 2005;2005;·• thethe EfforEffortt SharingSharing RegulationRegulation (ESR)(ESR)1111,, withwith bindingbinding greenhousegreenhouse gasgas emissionsemissions pathwayspathways atat MemberMember StateState levellevel forfor thethe remainingremaining ***emissions***,***emissions***, addingadding upup toto aa reductionreduction ofof 30%30% byby 20302030 comparedcompared toto 2005;2005;·• thethe LandLand Use,Use, LandLand UseUse ChangeChange andand ForestryForestry (LULUCF)(LULUCF) RegulationRegulation1212 thatthat oobligesbliges MemberMember StatesStates toto ensureensure thatthat thethe netnet carboncarbon sinksink fromfrom landland useuse doesdoes notnot deterioratedeteriorate comparedcompared toto howhow itit wouldwould havehave evolvedevolved continuingcontinuing existingexisting landland useuse managementmanagement practices.practices EnergyEnergy legislationlegislation andand policiespolicies areare alsoalso essentialessential instrumentsinstruments contributingcontributing toto thethe achievementachievement ofof thisthis targettarget withwith thethe 20302030 EUEU bindingbinding targetstargets ofof atat leastleast 32%32% ofof renewablerenewable energyenergy sourcessources inin thethe EU’sEU’s energyenergy mixmix andand atat leastleast 32.5%32.5% energyenergy efficiency.efficiency TheThe RenewableRenewable EnergyEnergy DirectiveDirective (RED(RED II)II)1313 andand thethe EnergyEnergy EfficiencyEfficiency DirectiveDirective1414 andand ththee RegulationRegulation onon thethe GovernanceGovernance ofof thethe EnergyEnergy UnionUnion andand ClimateClimate ActionAction1515 capturecapture thesethese9 COM(2020) 380 final10 Directive (EU) 2018/410 amending Directive 2003/87/EC11 Regulation (EU) 2018/84212 Regulation (EU) 2018/84113 Directive (EU) 2018/200114 Directive (EU) 2018/84415 Regulation (EU) 2018/199913targetstargets inin legislation,legislation, supportedsupported throughthrough sectoralsectoral legislationlegislation suchsuch asas thethe EcodesignEcodesign directivedirective1616 andand thethe EnergyEnergy PerformancePerformance ofof BuildingsBuildings DirectiveDirective1717.. AA comprehensivecomprehensive setset ofof notablynotably transporttransport andand otherother sectoralsectoral policiespolicies alsoalso contributecontribute toto thethe achievementachievement ofof thethe ***target***.***target*** CurrentCurrent projectionsprojections indicateindicate that,that, ifif currentcurrent policiespolicies areare fullyfully implemented,implemented, greenhousegreenhouse gasgas emissionsemissions reductionsreductions1818 byby 20302030 wouldwould bebe aroundaround 45%45% comparedcompared toto 19901990 levelslevels whenwhen excludingexcluding landland useuse emissionsemissions andand absorptions,absorptions, andand aroundaround 47%47% whenwhen includingincluding landland use.use However,However, itit isis clearclear that,that, whilewhile currentcurrent energyenergy targetstargets shouldshould allowallow usus toto surpasssurpass ourour currentcurrent greenhousegreenhouse gasgas emissionsemissions reductionreduction ***target***,***target***, thisthis wouldwould notnot bebe ssufficientufficient toto achieveachieve aa 55%55% greenhousegreenhouse gasgas emissionsemissions reductionreduction ***target***.***target*** ToTo achieveachieve this,this, bothboth thethe climateclimate legislationlegislation asas wellwell asas thethe energyenergy policiespolicies needneed toto bebe reviewedreviewed toto deliverdeliver thisthis ambitionambition increase.increase ThisThis isis alsoalso confirmedconfirmed byby thethe assessmentassessment ofof MemberMember States’States’ finalfinal NationalNational EnergyEnergy andand ClimateClimate PlansPlans (NECPs)(NECPs) underunder thethe GovernanceGovernance RegulationRegulation1919.. TheThe GovernanceGovernance ofof thethe EnergyEnergy UnionUnion andand ClimateClimate ActionAction establishesestablishes anan iterativeiterative processprocess forfor closeclose cooperationcooperation betweenbetween thethe UnionUnion andand MemberMember States,States, relyingrelying onon draftdraft andand finalfinal NECPs.NECPs AsAs setset outout inin thethe CommunicationCommunication onon anan EUEU--widewide assessmentassessment ofof NationalNational EnergyEnergy andand ClimateClimate PlansPlans2020,, MemberMember StatesStates havehave beenbeen ambitiousambitious whenwhen developingdeveloping theirtheir nationalnational plansplans forfor thethe firstfirst time.time TheThe Commission’sCommission’s analysisanalysis indicatesindicates thatthat aggregatedaggregated finfinalal nationalnational plansplans wouldwould surpasssurpass thethe renewablerenewable energyenergy targettarget atat EUEU levellevel byby 1.71.7 percentagepercentage pointspoints whilewhile underachievingunderachieving onon thethe energyenergy efficiencyefficiency targettarget byby aroundaround 33 percentagepercentage points.points Combined,Combined, thisthis wouldwould resultresult inin aroundaround 41%41% greenhousegreenhouse gasgas emissionsemissions reductioreductionsns (excluding(excluding landland useuse emissionsemissions andand absorptions)absorptions) byby 20302030 forfor thethe EUEU2121..HigherHigher ambition,ambition, therefore,therefore, requiresrequires adjustmentsadjustments toto thethe currentcurrent policypolicy framework,framework, andand thisthis inin turnturn wouldwould offeroffer aa moremore balancedbalanced pathwaypathway towardstowards climateclimate--neutralityneutrality overover thethe nextnext 3030 yearsyears,, avoidingavoiding thethe needneed forfor sharpsharp reductionsreductions afterafter 20302030 andand reapingreaping earlierearlier thethe opportunitiesopportunities forfor sustainablesustainable growthgrowth andand investment.investment AnAn increasingincreasing rolerole forfor emissionsemissions tradingtrading andand energyenergy taxationtaxationTheThe EUEU EmissionsEmissions TradingTrading SystemSystem (ETS)(ETS) hashas provenproven toto bebe anan effecteffectiveive tooltool inin reducingreducing greenhousegreenhouse gasgas ***emissions***.***emissions*** EmissionsEmissions fromfrom stationarystationary sourcessources declineddeclined byby 33%33% betweenbetween 20052005 andand 2018.2018 WithWith carboncarbon pricesprices increasing,increasing, followingfollowing thethe introductionintroduction ofof thethe MarketMarket StabilityStability ReserveReserve andand thethe marketmarket anticipatinganticipating thethe impactimpact ofof thethe reinforcementreinforcement ofof thethe system,system, thesethese emissionsemissions sawsaw aa furtherfurther dropdrop byby almostalmost 9%9% yearyear onon yearyear inin 2019.2019 OtherOther policies,policies, mostmost notablynotably renewablerenewable energyenergy andand energyenergy efficiencyefficiency policies,policies, havehave contributedcontributed toto thethe reductionsreductions inin powerpower sectorsector ***emissions***.***emissions*** However,However, itit isis clclearear thatthat whenwhen thethe carboncarbon priceprice isis sufficientlysufficiently robust,robust, itit becomesbecomes aa strongstrong driverdriver forfor immediateimmediate changechange (e.g (e.g changechange ofof fuelfuel usedused forfor electricityelectricity generation),generation), andand aa strongstrong signalsignal forfor lowlow carboncarbon investments,investments, andand thusthus contributescontributes decisivelydecisively toto thethe deploymentdeployment ofof renewablerenewable energyenergy andand energyenergy efficiencyefficiency technologies.technologies 16 Directive (2009/125/EC)17 Directive 2010/31/EU and amendement 2018/844/EU18 Including intra EU aviation and navigation19 Regulation (EU) 2018/199920 [add reference]21 Including intra EU and extra EU aviation, not including maritime navigation14TheThe CommissionCommission hashas assessedassessed carefullycarefully thethe possibilitypossibility ofof reinforcingreinforcing andand expandingexpanding emissionsemissions tradingtrading asas aa tooltool toto achieveachieve greenhousegreenhouse gasgas emissionsemissions reductionsreductions atat thethe EUEU level.level TheThe CommissionCommission seessees impoimportantrtant benefitsbenefits inin expandingexpanding thethe useuse ofof emissionsemissions tradingtrading inin thethe EU,EU, toto deliverdeliver inin anan economicallyeconomically efficientefficient mannermanner anan increasedincreased climateclimate ambitionambition ofof 55%55% greenhousegreenhouse gasgas emissionsemissions reductions.reductions EmissionsEmissions tradingtrading cancan achieveachieve greenhousegreenhouse gasgas emissionsemissions reductionsreductions ccostost--effectively.effectively ItsIts resultingresulting carboncarbon priceprice internalisesinternalises thethe climateclimate externalitiesexternalities andand givesgives consumersconsumers incentivesincentives toto reducereduce greenhousegreenhouse gasgas ***emissions***.***emissions*** ItIt guaranteesguarantees environmentalenvironmental integrityintegrity inin thethe formform ofof thethe emissionsemissions capcap andand providesprovides aa strongstrong priceprice signalsignal thatthat influencesinfluences dailydaily operationaloperational andand strategicstrategic investmentinvestment decisionsdecisions.. AtAt thethe samesame time,time, emissionsemissions tradingtrading raisesraises revenuesrevenues thatthat cancan bebe rere--investedinvested inin thethe economyeconomy leadingleading toto betterbetter overalloverall economiceconomic outcomes.outcomes AsAs alreadyalready announcedannounced inin thethe EuropeanEuropean GreenGreen Deal,Deal, aa furtherfurther expansionexpansion ofof thethe systemsystem couldcould includeinclude emissionsemissions fromfrom roadroad transporttransport andand buildings.buildings AlreadyAlready now,now, thethe EUEU ETSETS directlydirectly oror indirectlyindirectly coverscovers aroundaround 30%30% ofof buildingsbuildings emissionsemissions fromfrom heatingheating2222.. CoveringCovering allall emissionsemissions ofof fossilfossil fuelfuel combustioncombustion andand integraintegratingting themthem inin thethe EUEU ETSETS wouldwould presentpresent importantimportant benefitsbenefits inin termsterms ofof effectivenesseffectiveness andand administrativeadministrative feasibility.feasibility TheThe CommissionCommission thereforetherefore intendsintends toto pursuepursue suchsuch anan integratedintegrated approachapproach andand willwill looklook intointo incorporatingincorporating itit inin itsits legallegal proposalproposal byby nextnext yearyear June.June NextNext toto extendingextending thethe useuse ofof emissionsemissions tradingtrading alsoalso thethe revisionrevision ofof EnergyEnergy TaxationTaxation DirectiveDirective couldcould contributecontribute toto puttingputting aa priceprice onon carboncarbon andand reducingreducing ***emissions***.***emissions*** WellWell--designeddesigned taxtax reformsreforms cancan promotepromote economiceconomic growth,growth, jobjob creationcreation andand resilienceresilience anandd fosterfoster aa justjust transition.transition AtAt present,present, aa widewide rangerange ofof sectoralsectoral taxtax exemptionsexemptions andand reductionsreductions areare dede factofacto formsforms ofof fossilfossil fuelfuel subsidies,subsidies, whichwhich areare notnot inin lineline withwith thethe objectivesobjectives ofof thethe EuropeanEuropean GreenGreen Deal.Deal TheThe CommissionCommission isis awareaware thatthat carboncarbon pricingpricing dodoeses notnot addressaddress allall barriersbarriers toto thethe deploymentdeployment ofof lowlow andand zerozero emissionsemissions solutions.solutions OtherOther complementarycomplementary policypolicy actionsactions areare neededneeded toto ensureensure thatthat thethe incentivesincentives alignalign andand toto triggertrigger furtherfurther investmentsinvestments inin cleanclean energyenergy technologiestechnologies andand infrastructureinfrastructure oror toto ovovercomeercome financingfinancing difficultiesdifficulties forfor lowlow--incomeincome households.households InIn roadroad transport,transport, emissionsemissions tradingtrading hashas thethe advantageadvantage ofof capturingcapturing fleetfleet emissionsemissions underunder thethe capcap andand simultaneouslysimultaneously incentivisingincentivising behaviouralbehavioural changechange withwith lastinglasting effectseffects onon mobilitymobility solutionssolutions througthroughh thethe priceprice signal.signal AtAt thethe samesame time,time, thethe COCO22 emissionsemissions performanceperformance standardsstandards forfor carscars areare thethe mainmain driverdriver toto ensureensure thethe supplysupply ofof modernmodern andand innovativeinnovative cleanclean vehicles,vehicles, includingincluding electricelectric cars.cars AmbitiousAmbitious COCO22 emissionsemissions standardsstandards forfor carscars andand vansvans willwill bebe neneedededed toto ensureensure aa clearclear pathwaypathway towardstowards zerozero emissionsemissions mobility.mobility Therefore,Therefore, thethe existingexisting regulatoryregulatory andand enablingenabling frameworkframework willwill bebe furtherfurther developeddeveloped inin parallel.parallel RenewableRenewable energy,energy, energyenergy efficiencyefficiency andand transporttransport policiespolicies andand standardsstandards willwill bebe revisedrevised and,and, wwherehere needed,needed, newnew policiespolicies willwill bebe introduced.introduced SectoralSectoral ambitionsambitions willwill bebe setset inin lightlight ofof thethe 55%55% economyeconomy widewide greenhousegreenhouse gasgas emissionsemissions reductionreduction ***target***.***target*** TheThe CommissionCommission willwill underpinunderpin thesethese ambitionsambitions withwith policiespolicies fosteringfostering aa justjust transition,transition, researchresearch andand dedevelopmentvelopment andand sustainablesustainable financefinance andand ensureensure anan effectiveeffective useuse ofof thethe Union’sUnion’s budgetbudget andand recoveryrecovery fundsfunds toto supportsupport thethe transition.transition NextNext stepssteps onon emissionsemissions tradingtrading22 This is related to the system’s coverage of district heating and due to electric heating.15AnAn expandedexpanded emissionsemissions tradingtrading systemsystem couldcould bebe developeddeveloped asas anan upstreamupstream tradingtrading systemsystem regulatregulatinging atat thethe pointpoint ofof fuelfuel distributorsdistributors oror taxtax warehouseswarehouses andand wouldwould needneed toto appropriatelyappropriately addressaddress anyany riskrisk ofof doubledouble counting,counting, evasionevasion oror loopholesloopholes inin relationrelation toto entitiesentities coveredcovered byby thethe existingexisting downstreamdownstream systemsystem forfor thethe aviation,aviation, powerpower andand industrialindustrial sectosectors.rs AsAs thethe existingexisting EUEU ETSETS hashas shown,shown, thethe developmentdevelopment ofof aa newnew marketmarket requiresrequires settingsetting upup functioningfunctioning monitoring,monitoring, reportingreporting andand verificationverification andand cancan benefitbenefit fromfrom transitionaltransitional arrangementsarrangements oror aa pilotpilot periodperiod beforebefore beingbeing graduallygradually integratedintegrated intointo thethe existiexistingng system.system LowLow--incomeincome householdshouseholds bearbear aa higherhigher burdenburden ofof heatingheating andand fuelsfuels expensesexpenses comparedcompared toto wealthierwealthier households.households ThisThis underlinesunderlines thatthat anyany expansionexpansion ofof emissionsemissions tradingtrading willwill needneed toto addressaddress distributionaldistributional impacts,impacts, e.g.e.g byby usingusing partpart ofof thethe correspondingcorresponding auctionauction revenues.revenues ThisThis willwill dependdepend onon thethe revenuerevenue allocationallocation betweenbetween thethe EUEU andand nationalnational levellevel andand onon itsits wellwell--targetedtargeted useuse (e.g (e.g ModernisationModernisation FundFund andand InnovationInnovation Fund).Fund).2323IncreasingIncreasing thethe EU’sEU’s 20302030 climateclimate ambitionambition willwill alsoalso requirerequire aa strengtstrengthenedhened capcap ofof thethe EUEU ETSETS toto createcreate thethe necessarynecessary longlong--termterm carboncarbon priceprice signalsignal andand drivedrive furtherfurther decarbonisation.decarbonisation ThisThis willwill requirerequire revisitingrevisiting thethe linearlinear reductionreduction factorfactor thatthat definesdefines thethe annualannual reductionreduction ofof thethe capcap beyondbeyond itsits currentcurrent levellevel ofof 2.2%2.2% toto guarguaranteeantee thatthat thethe sectorssectors coveredcovered byby thethe EUEU ETSETS deliverdeliver thethe necessarynecessary emissionsemissions reductions.reductions ConsideringConsidering thatthat thethe nominalnominal capcap isis currentlycurrently higherhigher thanthan actualactual ***emissions***,***emissions***, aa changechange inin thethe linearlinear reductionreduction factorfactor couldcould potentiallypotentially bebe combinedcombined withwith aa oneone--offoff reductreductionion ofof thethe capcap thatthat wouldwould putput itit closercloser toto thethe actualactual emissionsemissions level.level TheThe CommissionCommission willwill furtherfurther assessassess howhow toto strengthenstrengthen thethe capcap inin thethe contextcontext ofof anan extensionextension ofof thethe systemsystem andand nextnext year’syear’s reviewreview ofof thethe functioningfunctioning ofof thethe MarketMarket StabilityStability Reserve.Reserve SimiSimilarly,larly, thethe CommissionCommission willwill furtherfurther assessassess thethe combinedcombined impactimpact ofof anan expandedexpanded systemsystem andand aa strengthenedstrengthened capcap onon thethe 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addressingaddressing thatthat riskrisk asas partpart ofof anan onon--goinggoing impactimpact assessmentassessment withwith aa viewview toto tabletable aa legislativelegislative proposalproposal inin thethe fifirstrst halfhalf ofof 2021.2021 EmissionsEmissions trading:trading: maritimemaritime andand aviationaviationEUEU internationalinternational emissionsemissions fromfrom navigationnavigation andand aviationaviation havehave growngrown byby moremore thanthan 50%50% sincesince 1990.1990 ActionAction inin thesethese sectorssectors isis urgentlyurgently needed,needed, includingincluding asas theythey recoverrecover fromfrom thethe currentcurrent crisis.crisis TheThe EUEU hashas aa legislativelegislative frameworkframework inin placeplace thatthat coverscovers allall greenhousegreenhouse gasgas emissionsemissions exceptexcept fromfrom maritimemaritime transport,transport, forfor whichwhich thethe currentcurrent regulationregulation focusesfocuses solelysolely onon monitoring,monitoring, reportingreporting andand verificationverification ofof ***emissions***.***emissions*** ForFor aviation,aviation, thethe applicationapplication ofof thethe EUEU EETSTS isis currentlycurrently suspendedsuspended inin relationrelation toto flightsflights toto countriescountries outsideoutside thethe EuropeanEuropean EconomicEconomic AreaArea toto allowallow forfor thethe developmentdevelopment ofof correspondingcorresponding internationalinternational instruments.instruments 23 The European Council Conclusions, 17-21 July 2020, recognised the need to work towards reforming the own resources system and introduce new own resources for the Union. In this context, the European Council invited the Commission to put forward a proposal on a revised ***emissions*** trading system, possibly extending it to maritime and reducing the allowances allocated for free to airlines.16ForFor bothboth sectors,sectors, inin accordanceaccordance withwith itsits internationalinternational commitmentcommitment toto economyeconomy--widewide actactionion underunder thethe ParisParis Agreement,Agreement, thethe EUEU shouldshould continuecontinue toto regulateregulate atat leastleast intraintra--EUEU aviationaviation emissionsemissions inin thethe EUEU ETSETS andand includeinclude atat leastleast intraintra--EUEU maritimemaritime transporttransport inin thethe EUEU ETSETS2424.. ForFor aviation,aviation, thethe CommissionCommission willwill proposepropose toto reducereduce thethe freefree allocationallocation ofof allowances,allowances, increasingincreasing thethe effectivenesseffectiveness ofof thethe carboncarbon priceprice signalsignal inin thisthis sector,sector, whilewhile takingtaking intointo accountaccount otherother policypolicy measuresmeasures suchsuch asas energyenergy taxationtaxation andand thethe ReFuelEUReFuelEU initiatives.initiatives InternationalInternational cooperationcooperation onon maritimemaritime transporttransport andand aviationaviation isis desdesirable.irable InternationalInternational instrumentsinstruments negotiatednegotiated oror underunder negotiationnegotiation inin thethe InternationalInternational MaritimeMaritime OrganizationOrganization (IMO)(IMO) andand thethe InternationalInternational CivilCivil AviationAviation OrganizationOrganization (ICAO),(ICAO), suchsuch asas thethe CarbonCarbon OffsettingOffsetting andand ReductionReduction SchemeScheme forfor InternationalInternational AviationAviation (CORS(CORSIA),shouldIA),should promotepromote effectiveeffective actionaction inin thisthis context.context InIn thethe lightlight ofof progressprogress atat globalglobal level,level, thethe CommissionCommission willwill givegive freshfresh politicalpolitical considerationconsideration toto thethe internationalinternational aspectsaspects ofof thethe EUEU ETS,ETS, taxationtaxation andand fuelfuel policiespolicies forfor aviationaviation andand maritimemaritime toto ensureensure thethe gradualgradual decarbonisationdecarbonisation ofof allall fuelfuel useuse fromfrom transporttransport relatingrelating toto thethe EUEU withwith thethe ambitionambition toto includeinclude internationalinternational emissionsemissions fromfrom aviationaviation andand navigationnavigation intointo thethe EUEU ETS.ETS ***Agriculture***,***Agriculture***, LandLand Use,Use, LandLand UseUse ChangeChange andand ForestryForestry sectorsectorTheThe LandLand Use,Use, LandLand UseUse ChangeChange andand ForestryForestry sector’ssector’s emissionsemissions andand removalsremovals willwill bebe fullyfully integratedintegrated intointo thethe proposedproposed 20302030 EUEU greenhousegreenhouse gasgas targettarget asas reportedreported underunder thethe UNFCCCUNFCCC inventory.inventory ThisThis willwill bebe thethe startingstarting pointpoint ofof thethe pathwaypathway betweenbetween 20302030 andand 20502050 forfor achievingachieving clclimateimate neutralityneutrality andand allowallow monitoringmonitoring progressprogress towardstowards netnet zerozero greenhousegreenhouse gasgas emissionsemissions byby 20502050 inin aa fullyfully coherentcoherent manner.manner CorrespondingCorresponding targetstargets needneed toto bebe setset inin thethe EffortEffort SharingSharing RegulationRegulation andand underunder thethe EUEU ETS,ETS, toto ensureensure thatthat inin total,total, atat leastleast thethe eeconomyconomy widewide 20302030 greenhousegreenhouse gasgas emissionsemissions reductionreduction targettarget ofof 55%55% willwill bebe met.met TheThe LandLand Use,Use, LandLand UseUse ChangeChange andand ForestryForestry RegulationRegulation currentlycurrently requiresrequires EUEU MemberMember StatesStates toto maintainmaintain theirtheir naturalnatural carboncarbon sinksink accordingaccording toto existingexisting landland useuse practices.practices ItIt covecoversrs thethe activitiesactivities ofof bothboth thethe forestryforestry andand agricultureagriculture sectors.sectors OverOver time,time, thethe sectorsector shouldshould dodo more.more TheThe currentcurrent trendtrend ofof aa decreasingdecreasing landland carboncarbon sinksink needsneeds toto bebe stoppedstopped andand reversed.reversed TheThe BiodiversityBiodiversity Strategy,Strategy, thethe FarmFarm toto ForkFork Strategy,Strategy, thethe forthcominforthcomingg ForestForest Strategy,Strategy, EUEU NatureNature RestorationRestoration PlanPlan andand thethe newnew AdaptationAdaptation StrategyStrategy willwill allall putput strongstrong policiespolicies inin placeplace toto protectprotect andand enhanceenhance thethe naturalnatural sinksink andand resilienceresilience ofof thethe EU’sEU’s forestsforests toto climateclimate change,change, restorerestore degradeddegraded landland andand ecosystems,ecosystems, rewetrewet wewetlandstlands andand promotepromote thethe biobio--economy,economy, includingincluding thethe useuse ofof durabledurable harvestedharvested woodwood products,products, inin fullfull respectrespect ofof ecologicalecological principlesprinciples fosteringfostering biodiversity.biodiversity TheThe sectorsector willwill havehave toto provideprovide forfor food,food, feedfeed andand materialsmaterials forfor aa growinggrowing worldworld populationpopulation inin aa climateclimate--neutralneutral economy.economy StrongStrong synergiessynergies andand tradetrade--offsoffs withwith biodiversitybiodiversity aspectsaspects exist.exist TheThe directiondirection shouldshould bebe toto increaseincrease thethe useuse ofof sustainablysustainably producedproduced bbiomassiomass andand minimiseminimise thethe useuse ofof wholewhole treestrees andand foodfood andand feedfeed--basedbased cropscrops toto produceproduce energy.energy AddressingAddressing thisthis includesincludes reviewingreviewing andand revisiting,revisiting, asas appropriateappropriate thethe24 On average, including all extra EU navigation and aviation ***emissions***, i.e the assumed scope as reported in the greenhouse gas inventory of the United Nations Framework Convention on Climate Change as memo item, in the EU greenhouse gas ***emissions*** reduction ***target*** would require additional reductions of up to 3 percentage points by 2030 compared to 1990 in other sectors to achieve the overall EU reduction ***target***.17biomassbiomass sustainabilitysustainability criteriacriteria inin thethe RenewableRenewable EnergyEnergy Directive,Directive, whichwhich areare alsoalso usedused inin thethe EUEU ETS,ETS, followingfollowing thethe ongoingongoing Commission’sCommission’s assessmentassessment ofof thethe EUEU andand globalglobal biomassbiomass supplysupply andand demanddemand andand relatedrelated sustainability.sustainability BiomassBiomass--relatedrelated aspectsaspects willwill needneed toto bebe assessedassessed inin aa coherentcoherent mannermanner withwith otherother fuelfuel initiatives,initiatives, e.g.e.g thethe RenewableRenewable EnergyEnergy DDirective,irective, thethe FuelFuel QualityQuality DirectiveDirective andand thethe upcomingupcoming initiativesinitiatives promotingpromoting sustainablesustainable aviationaviation andand maritimemaritime fuels.fuels AA fuelfuel policypolicy coherentcoherent withwith thethe overalloverall climateclimate andand energyenergy policypolicy willwill bebe essentialessential forfor thosethose sectorssectors withwith hardhard toto abateabate ***emissions***,***emissions***, bebe itit ttoo produceproduce biogasbiogas andand biofuelsbiofuels oror hydrogenhydrogen oror ee--fuels.fuels LandLand Use,Use, LandLand UseUse ChangeChange andand ForestryForestry presentlypresently removesremoves moremore COCO22 byby storingstoring itit inin biomassbiomass oror inin soilsoil carboncarbon thanthan itit releasesreleases toto thethe atmosphere.atmosphere ThisThis sinksink needsneeds toto bebe maintainedmaintained andand eveneven enhancedenhanced toto balbalanceance anyany remainingremaining emissionsemissions inin thethe economyeconomy withwith carboncarbon dioxidedioxide removalsremovals andand toto achieveachieve netnet zerozero GHGGHG emissionsemissions byby 2050.2050 IncreasedIncreased flexibilityflexibility betweenbetween thethe LandLand Use,Use, LandLand UseUse ChangeChange andand ForestryForestry RegulationRegulation andand thethe EffortEffort SharingSharing RegulationRegulation couldcould bebe aa wayway toto strengthenstrengthen incentivesincentives forfor removalsremovals inin thethe landland useuse sectorsector itself.itself AnAn ambitionambition increaseincrease inin thethe LandLand use,use, LandLand useuse changechange andand ForestryForestry sectorsector beyondbeyond thethe currentcurrent requirementsrequirements needsneeds toto bebe assessedassessed carefullycarefully givengiven thethe diversediverse situationsituation acrossacross MemberMember States.States ThiThiss wouldwould benefitbenefit fromfrom thethe detaileddetailed analysisanalysis andand elaborationelaboration ofof policiespolicies implementingimplementing thethe biodiversitybiodiversity andand forestryforestry strategies,strategies, whichwhich inin principleprinciple willwill drivedrive somesome ofof thethe additionaladditional actionsactions reducingreducing emissionsemissions inin thethe sector.sector TheThe CommissionCommission willwill reflectreflect uponupon ththeseese optionsoptions whenwhen comingcoming forwardforward withwith aa legislativelegislative proposalproposal toto updateupdate thethe LandLand Use,Use, LandLand UseUse ChangeChange andand ForestryForestry RegulationRegulation andand thethe EffortEffort SharingSharing RegulationRegulation nextnext year.year ToTo makemake removalsremovals happenhappen inin practice,practice, individualindividual farmersfarmers oror forestforest managersmanagers needneed toto bebe ddirectlyirectly incentivisedincentivised toto storestore moremore carboncarbon onon theirtheir landland andand theirtheir ***forests***.***forests*** CurrentlyCurrently thisthis dependsdepends stronglystrongly onon MemberMember StatesStates actionaction butbut carboncarbon farmingfarming andand certificationcertification ofof carboncarbon removalsremovals shouldshould increasinglyincreasingly bebe deployeddeployed inin thethe runrun upup toto 2030.2030 AA furtherfurther stestepp toto enhanceenhance removalsremovals couldcould bebe toto integrateintegrate agricultureagriculture nonnon--COCO22 greenhousegreenhouse gasgas emissionsemissions intointo thethe landland use,use, landland useuse changechange andand forestryforestry sectorsector andand toto createcreate aa newnew regulatedregulated sectorsector coveringcovering ***agriculture***,***agriculture***, forestryforestry andand landland use.use SuchSuch aa sectorsector wouldwould havehave thethe ppotentialotential toto becomebecome rapidlyrapidly climateclimate--neutralneutral byby aroundaround 20352035 inin aa costcost--effectiveeffective manner,manner, andand subsequentlysubsequently generategenerate moremore removalsremovals thanthan greenhousegreenhouse gasgas ***emissions***.***emissions*** ThisThis wouldwould requirerequire aa novelnovel policypolicy approachapproach thatthat wouldwould (i)(i) setset nationalnational andand subsub--sectoralsectoral targetstargets andand benchmarks,benchmarks, (ii)(ii) createcreate flexibilityflexibility acrossacross thethe EUEU ensuringensuring costcost--effectiveeffective incentivesincentives andand mobilisemobilise thethe necessarynecessary financialfinancial resources,resources, asas wellwell asas (iii)(iii) developdevelop thethe certificationcertification ofof carboncarbon ***removals***.***removals*** AnAn EUEU carboncarbon farmingfarming initiativeinitiative underunder thethe ClimateClimate PactPact willwill demonstratedemonstrate andand promotepromote suchsuch newnew businessbusiness models.models OverOver time,time, thethe CommissionCommission clearlyclearly seessees meritmerit inin thethe creationcreation ofof anan ***Agriculture***,***Agriculture***, ForestryForestry andand LandLand UseUse sectorsector withwith itsits ownown specificspecific policypolicy frameworkframework coveringcovering allall emissionsemissions andand removalsremovals ofof thesethese sectorssectors andand toto becomebecome thethe firstfirst sectorsector toto deliverdeliver netnet zerozero greenhousegreenhouse gasgas ***emissions***.***emissions*** Subsequently,Subsequently, thisthis sectorsector wouldwould generategenerate carboncarbon removalsremovals toto balancebalance remainingremaining emissionsemissions inin otherother sectorssectors inducedinduced byby aa robustrobust carboncarbon removalremoval certificationcertification system.system EffortEffort SharingSharing RegulaRegulationtionIntroducingIntroducing emissionsemissions tradingtrading forfor aa significantsignificant shareshare ofof thethe existingexisting EffortEffort SharingSharing RegulationRegulation sectorssectors andand eventuallyeventually foldingfolding agriculturalagricultural nonnon--COCO22 emissionsemissions intointo thethe landland useuse sectorsector wouldwould havehave consequencesconsequences forfor thisthis Regulation.Regulation TheThe CommissionCommission willwill givgivee18considerationconsideration toto differentdifferent optionsoptions inin lightlight ofof anan expansionexpansion ofof emissionsemissions tradingtrading toto allall fossilfossil fuelfuel use.use If,If, onon oneone hand,hand, thethe scopescope ofof thethe RegulationRegulation werewere toto bebe maintainedmaintained creatingcreating overlapoverlap betweenbetween thethe sectorssectors coveredcovered byby thethe EUEU ETSETS andand thethe EffortEffort SharingSharing Regulation,Regulation, thisthis wouldwould provideprovide anan incentiveincentive forfor MemberMember StatesStates toto taketake subsidiarysubsidiary actionaction strengtheningstrengthening thethe regulatoryregulatory frameworkframework forfor sectorssectors suchsuch asas buildingsbuildings andand roadroad transport.transport If,If, onon thethe otherother hand,hand, thethe scopescope werewere toto bebe reduced,reduced, andand inin casecase ofof aa fullfull tratransitionnsition toto anan EUEU ETSETS coveringcovering allall fossilfossil fuelfuel combustioncombustion ***emissions***,***emissions***, thethe RegulationRegulation wouldwould predominantlypredominantly covercover nonnon--COCO22 ***emissions***.***emissions*** ItsIts rolerole andand purposepurpose wouldwould bebe furtherfurther reducedreduced inin casecase ofof aa movemove ofof agricultureagriculture nonnon--COCO22 emissionsemissions towardstowards anan agricultureagriculture andand landland useuse sector.sector IfIf allall otherother objectivesobjectives ofof thethe RegulationRegulation werewere sufficientlysufficiently targetedtargeted byby otherother legislativelegislative instruments,instruments, thethe RegulationRegulation couldcould eveneven bebe repealedrepealed asas aa wholewhole inin thethe future.future ConsideringConsidering thethe needneed toto maintainmaintain sstrongtrong incentivesincentives andand accountabilityaccountability forfor MemberMember StatesStates toto ensureensure actionaction atat nationalnational level,level, thethe CommissionCommission willwill useuse thethe upcomingupcoming impactimpact assessmentassessment forfor bothboth thethe reviewreview ofof thethe EmissionsEmissions TradingTrading SystemSystem andand thethe EffortEffort SharingSharing RegulationRegulation toto furtherfurther consultconsult thethe pupublicblic onon thethe rolerole ofof thethe EffortEffort SharingSharing RegulationRegulation andand thethe relatedrelated GovernanceGovernance Regulation.Regulation AtAt thethe samesame time,time, MemberMember StatesStates havehave differentdifferent capabilitiescapabilities toto reducereduce greenhousegreenhouse gasgas ***emissions***.***emissions*** TheThe EUEU budgetbudget togethertogether withwith thethe NextNext GenerationGeneration EUEU packagepackage cancan bebe aa strstrongong driverdriver forfor transformationtransformation andand leverageleverage sustainablesustainable privateprivate andand publicpublic investment,investment, ifif resourcesresources areare wellwell--deployed.deployed ItIt willwill remainremain essentialessential toto addressaddress distributionaldistributional concernsconcerns betweenbetween MemberMember StatesStates inin orderorder toto ensureensure aa fairfair transition.transition RenewableRenewable energyenergy policiespoliciesRenewableRenewable energyenergy playsplays aa fundamentalfundamental rolerole forfor deliveringdelivering thethe EuropeanEuropean GreenGreen DealDeal andand forfor achievingachieving climateclimate neutralityneutrality byby 2050.2050 BasedBased onon thethe assessmentassessment carriedcarried out,out, itit isis clearclear thatthat thethe EUEU needsneeds toto transittransit fromfrom today’stoday’s energyenergy systemsystem toto anan integratintegrateded energyenergy systemsystem largelylargely basedbased onon renewablesrenewables alreadyalready byby 2030.2030 TheThe greenhousegreenhouse gasgas emissionsemissions reductionreduction targettarget ofof 55%55% achievedachieved throughthrough thethe combinationcombination ofof intensifiedintensified policiespolicies andand thethe extensionextension ofof thethe EUEU ETSETS isis assessedassessed toto reachreach aa shareshare ofof renewablesrenewables ofof aroundaround 38.5%.38.5%.RenewablesRenewables willwill needneed toto bebe deployeddeployed atat largerlarger scalescale toto contributecontribute toto thethe higherhigher climateclimate ambitionambition andand toto promotepromote thethe Union’sUnion’s industrialindustrial leadershipleadership onon renewablerenewable technologies.technologies AnAn increasedincreased renewablesrenewables targettarget willwill provideprovide thethe necessarynecessary predictabilitypredictability anandd investmentinvestment certaintycertainty forfor furtherfurther renewablerenewable energyenergy deploymentdeployment acrossacross allall sectors.sectors TheThe transitiontransition toto climateclimate neutralityneutrality requiresrequires aa competitive,competitive, securesecure andand sustainablesustainable energyenergy systemsystem andand aa robustrobust internalinternal marketmarket framework.framework TheThe existingexisting frameworkframework andand recentrecent EEUU strategiesstrategies onon EnergyEnergy SystemSystem Integration,Integration, onon HydrogenHydrogen andand onon BatteriesBatteries setset importantimportant enablingenabling conditionsconditions forfor thethe uptakeuptake ofof renewablerenewable energyenergy carriers.carriers ToTo gogo further,further, relevantrelevant legislationlegislation willwill bebe reinforcedreinforced andand supportedsupported byby thethe forthcomingforthcoming CommissionCommission initiainitiativestives onon aa RenovationRenovation Wave,Wave, anan OffshoreOffshore EnergyEnergy strategy,strategy, alternativealternative fuelsfuels forfor aviationaviation andand maritimemaritime asas wellwell asas aa SustainableSustainable andand SmartSmart MobilityMobility Strategy.Strategy EUEU actionaction willwill focusfocus onon costcost--effectiveeffective planningplanning andand developmentdevelopment ofof renewablerenewable energyenergy technologies,technologies, eleliminatingiminating marketmarket barriersbarriers andand providingproviding sufficientsufficient incentivesincentives forfor demanddemand forfor renewablerenewable energy,energy, particularlyparticularly forfor endend--useuse sectorssectors suchsuch asas heatingheating andand coolingcooling oror transporttransport eithereither throughthrough electrificationelectrification oror viavia thethe useuse ofof renewablerenewable andand lowlow--carboncarbon fuelsfuels19suchsuch asas advancedadvanced biofuelsbiofuels oror otherother sustainablesustainable alternativealternative fuels.fuels TheThe CommissionCommission willwill looklook intointo capacitycapacity buildingbuilding schemesschemes toto implementimplement citizencitizen--drivendriven renewablerenewable energyenergy communitiescommunities financedfinanced byby thethe EUEU andand selfself--consumptionconsumption modelsmodels enablingenabling higherhigher consumerconsumer uptakeuptake andand ffasteraster developmentdevelopment ofof decentraliseddecentralised renewablerenewable energyenergy technologies.technologies ContinuousContinuous supportsupport forfor corporatecorporate sourcingsourcing ofof renewablerenewable energy,energy, andand establishingestablishing minimumminimum mandatorymandatory greengreen publicpublic procurementprocurement criteriacriteria andand targetstargets inin relationrelation toto renewablerenewable energyenergy maymay alsoalso bebe neneeded.eded SpecificallySpecifically inin thethe fossilfossil fuelfuel dominateddominated heatingheating andand coolingcooling sector,sector, thethe CommissionCommission intendsintends toto assessassess thethe naturenature andand thethe levellevel ofof thethe existing,existing, indicativeindicative heatingheating andand coolingcooling ***target***,***target***, includingincluding thethe targettarget forfor districtdistrict heatingheating andand cooling,cooling, asas wellwell asas thethe necessarynecessary measuresmeasures andand calculationcalculation frameworkframework toto mainstreammainstream furtherfurther renewablerenewable andand lowlow carboncarbon basedbased solutions,solutions, includingincluding electricity,electricity, inin buildingsbuildings andand industry.industry ForFor transport,transport, thethe ImpactImpact AssessmentAssessment demonstratesdemonstrates thatthat therethere isis aa clearclear rolerole forfor electrificaelectrificationtion asas aa keykey avenueavenue forfor decarbonisation.decarbonisation However,However, somesome transporttransport sectorssectors heavilyheavily dependdepend onon highhigh energyenergy densitydensity fuels,fuels, suchsuch asas thethe aviationaviation andand maritime.maritime AlongsideAlongside thethe sustainablesustainable alternativealternative fuelsfuels initiativesinitiatives forfor thesethese sectors,sectors, ReFuelEUReFuelEU AviationAviation andand FuelEFuelEUU MaritimeMaritime,, thethe CommissionCommission willwill proposepropose anan updatedupdated methodologymethodology toto promote,promote, inin accordanceaccordance withwith theirtheir greenhousegreenhouse gasgas performance,performance, thethe useuse ofof renewablerenewable andand lowlow--carboncarbon fuelsfuels inin thethe transporttransport sectorsector setset outout inin thethe RenewableRenewable EnergyEnergy Directive.Directive InIn addition,addition, aa comcomprehensiveprehensive terminologyterminology forfor allall renewablerenewable andand lowlow--carboncarbon fuelsfuels andand aa EuropeanEuropean systemsystem ofof certificationcertification ofof suchsuch fuels,fuels, basedbased notablynotably onon fullfull lifelife cyclecycle greenhousegreenhouse gasgas emissionsemissions savingssavings andand sustainabilitysustainability criteria,criteria, andand existingexisting provisionsprovisions forfor instanceinstance inin thethe RRenewableenewable EnergyEnergy DirectiveDirective wouldwould supportsupport thethe furtherfurther developmentdevelopment ofof renewables.renewables LargeLarge--scalescale deploymentdeployment ofof renewablesrenewables alsoalso requiresrequires thethe necessarynecessary infrastructure.infrastructure AA holisticholistic approachapproach toto largelarge--scalescale andand locallocal infrastructureinfrastructure planning,planning, protectingprotecting andand enhancingenhancing tthehe resilienceresilience ofof criticalcritical infrastructuresinfrastructures isis neededneeded andand willwill guideguide thethe forthcomingforthcoming revisionsrevisions ofof thethe TENTEN--EE andand TENTEN--TT regulations,regulations, andand ofof thethe AlternativeAlternative FuelsFuels InfrastructureInfrastructure Directive.Directive ModernModern lowlow--temperaturetemperature districtdistrict heatingheating systemssystems shouldshould bebe promoted,promoted, asas ttheyhey cancan connectconnect locallocal demanddemand withwith renewablerenewable andand wastewaste energyenergy sources,sources, asas wellwell asas thethe widerwider electricelectric andand gasgas gridgrid inin orderorder toto optimiseoptimise supplysupply andand demanddemand acrossacross energyenergy carriers.carriers EnergyEnergy EfficiencyEfficiency policiespoliciesTheThe EUEU hashas aa comprehensivecomprehensive frameworkframework forfor aa widewide rangrangee ofof energyenergy efficiencyefficiency measuresmeasures acrossacross differentdifferent sectorssectors2525.. AA rigorousrigorous enforcementenforcement ofof existingexisting legislationlegislation onon energyenergy efficiencyefficiency isis necessarynecessary butbut insufficientinsufficient toto reachreach thethe increasedincreased climateclimate ***target***.***target*** TheThe ImpactImpact AssessmentAssessment showsshows thatthat energyenergy efficiencyefficiency improvementsimprovements willwill needneed toto bebe significantlysignificantly steppedstepped upup toto aroundaround 36%36% inin termsterms ofof finalfinal energyenergy consumptionconsumption2626..Achievement of a more ambitious energy efficiency ***target*** and closure of the collective ambition gap of the national energy efficiency contributions in the NECPs will require actions on a variety of fronts, largely through the legislative policy initiatives already252012 Energy Efficiency Directive together with the Energy Performance for Buildings Directive, the Ecodesign Directive and the Energy and Tyre Labelling Regulations26 The Impact Assessment identifies a range of 35.5 % - 36.7 depending on the overall design of policy measures underpinning the new 2030 ***target***. This would correspond to a range of 39.2%- 40.6% in terms of primary energy consumption.20announced by the European Green Deal for June 2021. Therefore these initiatives will identify the precise policy options available as well as the exact level of new ***targets***.However,However, thethe analysisanalysis accompanyingaccompanying thisthis CommunicationCommunication alreadyalready indicatesindicates thatthat mostmost savingssavings wouldwould needneed toto comecome fromfrom buildings.buildings TheThe forthcomingforthcoming RenovationRenovation WaveWave willwill thereforetherefore launchlaunch aa setset ofof actionsactions toto increaseincrease thethe depthdepth andand thethe raterate ofof renovationsrenovations atat singlesingle buildingbuilding andand atat districtdistrict level,level, switchswitch fuelsfuels towardstowards renewablerenewable heatingheating solutions,solutions, diffusediffuse thethe mostmost efficientefficient productsproducts andand appliances,appliances, uptakeuptake smartsmart systemssystems andand buildingbuilding--relatedrelated infrastructureinfrastructure forfor chargingcharging ee--vehicles,vehicles, andand iimprovemprove thethe buildingbuilding envelopeenvelope (insulation(insulation andand windows).windows). ActionAction willwill bebe takentaken notnot onlyonly toto betterbetter enforceenforce thethe EnergyEnergy PerformancePerformance ofof BuildingsBuildings Directive,Directive, butbut alsoalso toto identifyidentify anyany needneed forfor targetedtargeted revisions.revisions TheThe possibilitypossibility ofof establishingestablishing mandatorymandatory requiremenrequirementsts forfor thethe worstworst performingperforming buildingsbuildings andand graduallygradually tighteningtightening thethe minimumminimum energyenergy performanceperformance requirementsrequirements willwill alsoalso consideredconsidered asas aa meansmeans toto ensureensure aa suitablesuitable minimumminimum pacepace forfor thethe improvementimprovement ofof thethe buildingbuilding stock.stock Building on the existing framework and the long-term renovation strategies, other measures will be identified to ***remove*** the main barriers to building renovation and reinforce the pull factors for faster and deeper renovations. The Renovation Wave will address the necessary elements to achieve and sustain higher renovation rates, including regulatory strengthening. It will foresee adequate financial instruments, for instance to facilitate de-risking and incentivising the measurement of actual energy savings, and other facilitating measures, such as fostering training in the required skills. Indicative milestones for 2030, 2040 and 2050 and with measurable progress indicators will be set up.Over and beyond the contribution from the building sector, other efforts will be needed to achieve a more ambitious energy efficiency ***target***.The existing energy efficiency requirements and product standards will be reviewed in the first half of 2021. In addition, the forthcoming Sustainable Product Legislative initiative announced in the Circular Economy Action27 Plan will look into widening the Ecodesign approach to other product categories.TheThe higherhigher ambitionambition levellevel willwill alsoalso requirerequire toto betterbetter promotepromote energyenergy efficiencyefficiency whereverwherever costcost--effectiveeffective inin allall areasareas ofof thethe entireentire energyenergy systemsystem asas wellwell asas inin allall relevantrelevant sesectorsctors wherewhere activityactivity affectsaffects demanddemand forfor energy,energy, suchsuch asas transporttransport andand thethe agricultureagriculture sectors.sectors InIn thisthis context,context, thethe CommissionCommission willwill presentpresent dedicateddedicated guidelinesguidelines inin thethe firstfirst quarterquarter ofof 2021.2021 ConsideringConsidering thatthat thethe InformationInformation andand CommunicationCommunication TechnologiesTechnologies ((ICT)ICT) sectorsector accountsaccounts forfor betweenbetween 55 andand 9%9% ofof globalglobal electricityelectricity consumptionconsumption andand moremore thanthan 2%2% ofof globalglobal greenhousegreenhouse gasgas ***emissions***,***emissions***, thethe EUEU DigitalDigital StrategyStrategy2828 announcedannounced aa commitmentcommitment toto makemake datadata centrescentres climateclimate--neutralneutral byby 2030,2030, withwith actionsactions toto bebe putput inin placeplace iinn 20212021 toto 2022.2022 RoadRoad transporttransport COCO22 vehiclevehicle standardsstandardsForFor roadroad transport,transport, COCO22 andand vehiclevehicle standardsstandards havehave provenproven toto bebe anan effectiveeffective policypolicy tool.tool InIn parallelparallel toto applyingapplying emissionsemissions tradingtrading toto roadroad transporttransport atat thethe levellevel ofof thethe fuelfuel suppliersupplier andand roadroad pricingpricing inin lineline withwith thethe ongoingongoing revisionrevision ofof thethe EurovignetteEurovignette DirectiveDirective ,, onlyonly stringestringentnt COCO22 emissionsemissions performanceperformance standardsstandards ensureensure thethe supplysupply ofof modernmodern andand innovativeinnovative cleanclean vehicles,vehicles, includingincluding vehiclesvehicles thatthat seesee strongstrong reductionsreductions inin fuelfuel27 COM (2020) 98 final28 COM/2020/67 final21consumptionconsumption andand drivedrive trainstrains suchsuch asas batterybattery oror fuelfuel cellcell electricelectric vehiclesvehicles withwith nono tanktank toto wheelwheel emissiemissionsons atat all.all ByBy JuneJune 2021,2021, thethe CommissionCommission willwill thereforetherefore revisitrevisit andand strengthenstrengthen thethe COCO22 standardsstandards forfor carscars andand vansvans forfor 2030.2030 ThisThis workwork hashas toto looklook beyondbeyond 2030.2030 TheThe ImpactImpact AssessmentAssessment indicatesindicates thatthat toto reachreach thethe overalloverall climateclimate neutralityneutrality targettarget inin 2050,2050, nenearlyarly allall carscars onon thethe roadsroads mustmust bebe zerozero emissionsemissions byby thatthat time.time ThisThis transitiontransition needsneeds toto bebe flankedflanked byby thethe appropriateappropriate rollroll outout ofof infrastructureinfrastructure forfor rechargingrecharging andand refuellingrefuelling ofof thosethose vehicles.vehicles TheThe upcomingupcoming revisionrevision ofof thethe AlternativeAlternative FuelsFuels InfrastructureInfrastructure DirectiveDirective isis aa keykey initiativeinitiative inin thisthis regard.regard TheThe developmentdevelopment andand testingtesting ofof newnew automotiveautomotive technologiestechnologies havehave longlong leadlead timestimes andand carscars areare onon thethe roadsroads betweenbetween 1010 andand 1515 years.years TheThe CommissionCommission willwill alsoalso assessassess inin thethe comingcoming monthsmonths whatwhat wouldwould bebe requiredrequired inin practicepractice forfor thisthis sectorsector toto contributecontribute toto achievingachieving climateclimate neutralityneutrality byby 20502050 andand atat whatwhat pointpoint inin timetime internalinternal combustioncombustion enginesengines inin carscars shouldshould stopstop comingcoming toto thethe market.market MainstreamingMainstreaming ofof climateclimate actionaction acrossacross allall policiespoliciesManyMany otherother EUEU policiespolicies havehave beenbeen putput inin place,place, oror areare beingbeing reorientedreoriented toto contributecontribute toto thethe ‘do‘do nono harm’harm’ principleprinciple andand thethe transitiontransition toto climateclimate neutrality.neutrality MainstreamingMainstreaming ofof climateclimate policypolicy objectivesobjectives intointo otherother EUEU policiespolicies isis aa keykey enablerenabler andand willwill allowallow forfor anan inclusiveinclusive transformattransformationion basedbased onon aa justjust transition.transition TheThe SustainableSustainable EuropeEurope InvestmentInvestment PlanPlan aimsaims atat boostingboosting sustainablesustainable investments.investments ItsIts JustJust TransitionTransition FundFund (the(the firstfirst pillarpillar ofof thethe JustJust TransitionTransition Mechanism)Mechanism) addressesaddresses headhead onon thethe accelerationacceleration ofof thethe transitiontransition inin coal,coal, peat,peat, oiloil shaleshale andand carboncarbon--intensiveintensive regions.regions TheThe InvestEUInvestEU programmeprogramme focusesfocuses onon attractingattracting privateprivate investments,investments, andand itit hashas beenbeen proposedproposed toto useuse atat leastleast 30%30% ofof itsits overalloverall financialfinancial envelopeenvelope toto contributecontribute directlydirectly toto achievingachieving thethe climateclimate objectives.objectives TheThe MModernisationodernisation FundFund willwill supportsupport thethe transitiontransition ofof thethe energyenergy systemsystem inin lowerlower incomeincome MemberMember States.States TheThe EuropeanEuropean RegionalRegional DevelopmentDevelopment FundFund andand thethe CohesionCohesion FundFund willwill supportsupport complementarycomplementary investmentsinvestments inin energyenergy efficiency,efficiency, renewables,renewables, innovationinnovation andand research.research TheThe EuropeanEuropean SocialSocial FundFund PlusPlus willwill provideprovide comprehensivecomprehensive supportsupport forfor upup-- andand rere--skillingskilling ofof workers.workers Moreover,Moreover, thethe CommissionCommission willwill proposepropose inin MayMay 20212021 anan ActionAction PlanPlan forfor thethe implementationimplementation ofof thethe EuropeanEuropean PillarPillar ofof SocialSocial RightsRights promotingpromoting justjust transitionstransitions,, accessaccess toto trainingtraining andand essentialessential servicesservices includingincluding energy,energy, mobilitymobility andand housinghousing forfor all.all TheThe Commission’sCommission’s LongLong--termterm VisionVision onon ruralrural areasareas toto bebe launchedlaunched nextnext yearyear willwill paypay specificspecific attentionattention toto promotingpromoting sustainabilitysustainability forfor citizenscitizens livingliving inin remote,remote, rurruralal areas.areas HorizonHorizon Europe,Europe, thethe newnew researchresearch andand innovationinnovation frameworkframework programme,programme, withwith interinter aliaalia aa dedicateddedicated Climate,Climate, EnergyEnergy andand MobilityMobility cluster,cluster, willwill seesee atat leastleast 35%35% ofof itsits fundsfunds supportingsupporting thethe achievementachievement ofof thethe climateclimate goals.goals TheThe InnovationInnovation FundFund willwill susupportpport thethe demonstrationdemonstration ofof breakthroughbreakthrough technologiestechnologies atat commercialcommercial scalescale inin thethe energyenergy andand industryindustry sectors.sectors TheThe RenewedRenewed SustainableSustainable FinanceFinance StrategyStrategy withwith itsits envisagedenvisaged legislativelegislative andand nonnon--legislativelegislative initiativesinitiatives willwill guideguide privateprivate investmentsinvestments moremore towardstowards greengreen recoveryrecovery andand sustainablesustainable economiceconomic activities.activities AmongAmong otherother initiatives,initiatives, thethe EUEU sustainablesustainable financefinance taxonomy,taxonomy, thethe EUEU GreenGreen BondBond StandardStandard andand climateclimate benchmarksbenchmarks willwill playplay aa crucialcrucial rolerole inin fosteringfostering investmentinvestment closercloser toto thethe needsneeds ofof thethe realreal economyeconomy foforr thethe benefitbenefit ofof thethe planetplanet andand society.society 22ToTo achieveachieve climateclimate neutrality,neutrality, aa 90%90% reductionreduction inin overalloverall transporttransport emissionsemissions byby 20502050 comparedcompared toto 19901990 levelslevels willwill bebe oneone mainmain objectiveobjective ofof thethe forthcomingforthcoming SustainableSustainable andand SmartSmart MobilityMobility StrategyStrategy whilewhile addressingaddressing rrecoveryecovery ofof thethe sector.sector IndustryIndustry mustmust leadlead changechange asas EuropeEurope embarksembarks onon itsits transitiontransition towardstowards climateclimate neutralityneutrality andand digitaldigital leadership,leadership, whilewhile leveragingleveraging thethe impactimpact ofof itsits singlesingle marketmarket toto setset globalglobal standards.standards BothBoth thethe EuropeanEuropean IndustrialIndustrial StrategyStrategy2929 andand thethe EUEU CircularCircular EconomyEconomy ActionAction PlanPlan pointpoint towardstowards increasedincreased resourceresource efficiencyefficiency andand thethe circularcircular economyeconomy asas indispensableindispensable pathwayspathways forfor aa modernisationmodernisation ofof EUEU industryindustry contributingcontributing toto greenhousegreenhouse gasgas emissionsemissions reductions.reductions SecureSecure supplysupply ofof batteriesbatteries inin lineline withwith thethe strategicstrategic actionaction planplan forfor batteriesbatteries underunder thethe EuropeanEuropean BatteryBattery AllianceAlliance willwill bebe indispensableindispensable forfor decarbonisingdecarbonising thethe EU’sEU’s energyenergy systemsystem byby enablingenabling integrationintegration ofof increasingincreasing amountsamounts ofof renewablerenewable energy,energy, andand ourour transporttransport sectorsector byby catalysingcatalysing thethe shiftshift ttoo electricelectric vehciles.vehciles TheThe forthcomingforthcoming ZeroZero PollutionPollution ActionAction PlanPlan forfor air,air, waterwater andand soilsoil willwill looklook atat howhow toto furtherfurther addressaddress pollutionpollution fromfrom largelarge industrialindustrial installationsinstallations fullyfully consistentconsistent withwith climate,climate, energy,energy, asas wellwell asas circularcircular economyeconomy policies.policies TheThe EU’sEU’s DigitalDigital StrategyStrategy supportssupports digitaldigital technologiestechnologies thatthat cancan helphelp achieveachieve climateclimate--neutralityneutrality acrossacross allall sectorssectors ofof thethe EUEU economy,economy, andand aimsaims atat greeninggreening thethe ICTICT sectorsector itself.itself TheThe CAPCAP strategicstrategic plansplans toto bebe developeddeveloped byby MemberMember StatesStates areare aa keykey opportunityopportunity toto dirdirectect moremore resourcesresources toto reducereduce emissionsemissions inin thethe agricultureagriculture sectorsector inin aa durabledurable manner,manner, whilewhile enhancingenhancing thethe economiceconomic andand environmentalenvironmental sustainabilitysustainability andand resilienceresilience ofof thethe sector.sector PreparingPreparing aa moremore ambitiousambitious EUEU strategystrategy onon adaptationadaptation toto climateclimate changechange willwill bebe essentialessential forfor allall sectors,sectors, asas climateclimate changechange willwill continuecontinue toto createcreate increasingincreasing stressstress onon thethe EuropeEurope economiceconomic andand socialsocial fabric,fabric, inin spitespite ofof thethe mitigationmitigation efforts.efforts BothBoth mitigationmitigation andand adaptationadaptation willwill inin turnturn benefitbenefit fromfrom thethe EUEU SpaceSpace programmesprogrammes suchsuch asas CCopernicusopernicus withwith everever improvingimproving monitoringmonitoring capabilities.capabilities Overall,Overall, higherhigher ambitionambition byby 20302030 andand thethe transitiontransition toto climateclimate neutralityneutrality andand recoveryrecovery fromfrom thethe COVIDCOVID--1919 crisiscrisis willwill bebe bothboth aa challengingchallenging tasktask andand anan opportunityopportunity toto buildbuild aa betterbetter futurefuture forfor all.all AA TTechnicalechnical SupportSupport InstrumentInstrument ensuresensures thatthat thethe MemberMember StatesStates cancan benefitbenefit fromfrom tailortailor--mademade expertiseexpertise forfor developingdeveloping sustainablesustainable andand growthgrowth enhancingenhancing reforms.reforms AlongsideAlongside governmentgovernment policiespolicies andand regulation,regulation, citizens,citizens, communitiescommunities andand organisationsorganisations havehave theirtheir partpart toto play.play Regions,Regions, citiescities andand townstowns areare keykey centrescentres ofof transformativetransformative andand sustainablesustainable solutionssolutions thatthat leadlead thethe wayway forwardforward throughthrough movementsmovements suchsuch asas thethe CovenantCovenant ofof Mayors.Mayors ToTo thisthis end,end, thethe CommissionCommission willwill launchlaunch thethe EuropeanEuropean ClimateClimate PactPact toto givegive everyoneeveryone aa voicevoice andand spacespace toto designdesign climateclimate action,action, shareshare information,information, launchlaunch grassrootsgrassroots activitiesactivities andand showcaseshowcase solutionssolutions thatthat othersothers cancan follow.follow InternationalInternational dimensiondimensionAsAs anan advancedadvanced economy,economy, withwith aa provenproven tracktrack recordrecord inin successfulsuccessful implementationimplementation ofof ambitiousambitious climateclimate policy,policy, thethe EUEU hashas thethe possibilitypossibility –– asas wellwell asas thethe moralmoral obligationobligation –– toto29 COM(2020) 102 final23influenceinfluence globalglobal greenhousegreenhouse gasgas emissionsemissions trendstrends andand increaseincrease resourceresource efficiency,efficiency, withinwithin andand beyondbeyond thethe internationalinternational climateclimate negotiations.negotiations RaisingRaising thethe EUEU ambitionambition fromfrom thethe currentcurrent levellevel toto 55%55% withinwithin thethe nextnext tenten 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**Load-Date:** September 30, 2020

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[***Pandemic has made people reassess the importance of environment, says Ryan; Cycle lanes, improved rail transport, accessible cities, forests, bogs and wind farms are all passions for a Minister keen for change***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:61JH-DND1-JC8Y-84FR-00000-00&context=1516831)

The Irish Times

December 19, 2020 Saturday

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**Byline:** Harry McGee

**Body**

With every Eamon Ryan interview you are reminded of the pronouncement of Lincoln Steffens returning from Soviet Russia in 1919: "I have seen the future and it works."

For as long as Ryan has been in public life he has been talking up the way life will be better when fossil fuels and the addiction to cars are ditched, replaced by a lifestyle that can be sustained by the Earth.

Eleven years ago, in March 2009, Ryan visited a San Francisco factory where an exciting new electric car, as yet unproven, with a range of 400km was being built. Its name was Tesla. Then he visited the headquarters of technology company Cisco to witness executives talking to colleagues back in Galway using a teleconference system called "telepresence". It was as if the people from Galway were in the same room. Its big selling point was that if the technology became a normal part of work then wasteful commuting could be cut down

It was slightly before its time. Today, we call such meetings Zoom.

Ryan, then minister for communications and energy, enthused about both, forecasting, in the face of doubters, that they would be widely embraced quickly.

Well, they have. But it has taken over a decade - and a global pandemic - for both technologies to become settled.

Now Ryan is Minister for Transport, Environment, Climate Change and Communications in a Government that must cut greenhouse gases by over 50 per cent - or 7 per cent a year - over the next decade.

That cut is enormous. There are no two ways about it. If those ***targets*** are met then it will mean drastic changes in people's lives, in their work, how they travel and where they live.

Once more, the Green Party leader sets out a vision of a radically changed Ireland. One that will be opposed. This time, though, he has a huge ministry with a multi-billion-euro budget behind him.

Speaking in his offices in the Department of Transport off Leeson Street, Ryan lays out his ideas in considerable detail - the kind of society, the kind of lifestyle that will emerge, if those ***targets*** are to be met.

First, there is the need to halve Ireland's annual ***emissions*** of 60 million tonnes of carbon dioxide down to 30 million.

The first "big chunks" will come from the end of Moneypoint's coal-powered power station and Bord na Móna's peat-fired plants. Bord na Móna will stop taking peat out for horticulture and gardens, too.

Meanwhile, half a million homes will be retrofitted to improve their energy ratings over the next decade to make them warmer and cheaper to heat - a staggering share of the national housing stock.

Ryan has EUR 250 million to spend on this next year on social housing, lower-income housing and then private homes. But it will take two or three years to get it fully up and running.

**New jobs**

The State must first invest in apprenticeships to train people up, which will create thousands of new jobs, but it must deliver too on long-term payment plans for those who are helped.

He runs through the portfolio, totting up 26 million tonnes of carbon dioxide savings quickly as he goes: four million tonnes from Moneypoint; four million tonnes from Bord na Móna closures; eight million from more efficient industry. Four million more tonnes will be required from ***agriculture***; six million from transport.

So what of ***agriculture***? Fianna Fáil Minister for ***Agriculture*** Charlie McConalogue launched a new plan last week which provided for zero reduction in the national herd. How will reductions be made in the biggest emitting sector without touching the herd?

Ryan says McConalogue's plan is an old one and it will be superseded next year by one that will result in a smaller national herd.

"We have to double the ambition. ***Agriculture*** can't be absolved and cannot be an opt-out . . . We are going to do significantly more and Charlie McConalogue knows that. The idea of pumping up the volume and massive expansion of the herd makes no sense.

"It does make sense to move to a less intensive system of farming and have a smaller herd."

In turn, farmers will get paid for the ecological services that they provide in future. This may be inevitable and required, but it will not be popular in an industry fearful of change.

"The key question is can we get a higher income? Can we get a whole generation of young people and pay them better to look after our ***land***?" he says.

"It is a very different vision, a move away from intensification to a sustainable system" where Common ***Agriculture*** Policy payments will increasingly support ecological protection and biodiversity.

Allied to that, the Minister says that 140,000 hectares of bog throughout the State will be rewetted within a decade, simply by ***removing*** drains. They will become a carbon sink.

The first Bord na Móna project to rewet 33,000 hectares starts soon.

If there are smaller, less-intensively operated farms, then there will also be far more forestry. Today, just over a 10th of the State (770,000 hectares) is planted.

Ryan wants that increased to 30 per cent by the second half of the century. That means planting 20,000 hectares of trees each year - a multiple of what happens today. Equally, that does not mean more Sitka spruce on bog or mountains: "We can't put ***forests*** where we have put them before on peatlands, as we need to restore the bogs for carbon storage.

"We can't just surround counties in deep dark coniferous woods and cut off communities," he says. Instead, a new way of doing things that ensures that ***forests*** help biodiversity not kill it is needed.

Instead, new ***forests*** will be planted on better ***land***, and include deciduous trees. There's also a plan to encourage farms to devote a hectare to tree-planting and wild flowers.

**Transport**

Meanwhile, changing transport habits, he admits, will not be easy, and will take time. Part of the solution, but only part of it, will come from electric cars and e-scooters.

Part of it will come if Covid-19 marks a permanent shift to more home-working. Part of it, too, will come from better, more plentiful public transport, and more cycling and walking.

So what's going to be different by 2030? Transport can only be tackled if the State plans better. Housing and everything else must be led by transport, not the other way round.

"It only works when you have transport-led development," he says, "a commitment to compact development, where life is in the centre of cities and towns, where you have the '15-minute city'.

"Everything is close by and I don't need a car and if I do need one I can get it from a car-sharing system. Investment will be in public and active travel, rather than roads."

On electric cars, Ryan believes the 2020s will be the decade of change: "I have been talking about this for 10 years but we are on the cusp of a real transformation.

"By the end of this decade there won't be new cars other than electric. It's game over for fossil fuel," says the Green Party leader, with a degree of relish.

Rural Ireland, often suspicious of the Greens, must get more public transport and ride-sharing. That could include, he suggests, using postal vans in places.

"What's going to come out of Covid changes is that not that many people will be commuting long-distance from rural Ireland. We will have enterprise hubs in towns and villages throughout," he says.

High-speed broadband will be a reality in every home within five years: "It's not all about heading to the big city but also about bringing life back into rural town."

Cities outside of Dublin - Cork, Limerick, Waterford and Galway - need Luas-style trams or more accurately "electric urban trains" which will radically alter where people want to live.

In Waterford, the city's station is being moved up the quays closer to the city, with a new foot, cycling and public transport bridge bringing commuters and visitors straight into the heart of the city centre.

"In Galway we will fast-track the twin tracking from Athenry to Galway. That will allow us upgrade Oranmore and Ardrahan and start building new development in Galway around [stations].

"In Cork, I am saying that we build now. We can upgrade the Midleton to Mallow and have eight stations along the line at Glounthaune, Carrigtuohill, Tivoli, Kent Station, Blarney, Monard, and Mallow.

"If you build a new station at Tivoli you can put in 10,000 people within walking distance of Patrick Street on a stunning location near the river with an electric rail train to the centre."

In Limerick, he wants to open the rail line to Foynes as a port and freight line, but include stations for commuters at Patrickswell and Adare and at Crescent shopping centre.

"You could use Ballysimon on the east side, as well as Limerick Junction and Nenagh, with an upgraded station in Castleconnell and Annacotty," he declares.

**Railway systems "On the Limerick to Ennis line, a railway station can be built at Moyross, at Six Mile Bridge and at Shannon," he says. But is the funding available? Yes, he replies.**

The State is spending EUR 2 billion to EUR 3 billion per year on transport infrastructure. "Let's put it into these railway systems and walking and cycling. In Limerick, just 3 per cent live in the historic core. If those changes are made it will revive Limerick and make it a greater city than it is."

In Dublin, he sees the changes in Dún Laoghaire, where the council took one lane from motorists and gave it to cyclists, being used all over the city.

Bus Connects, which bids to speed up bus journeys in the capital, is just as much about cycling as it is about buses: "You could easily call it the cycling project," he says

In Rathmines in Dublin, for example, Bus Connects will make it a community again, not just a road used by cars, with bicycle lanes and public transport getting priority: "That will make it safer for kids going to school," he says.

A third of the morning rush-hour is caused by "us driving our kids to school. How much better [that would be] on a bike, or walking, or on a bus".

More greenways will be created, too, on the back of successful ones in Waterford and elsewhere. The Bord Pleanála decision that cleared the way for the South Kerry Greenway will help others, such as the Galway-Clifden Greenway that have also run into planning difficulties.

"Greenways are not just for tourism, they are for local people, in my opinion," he says. "The [proposed] greenway from Moycullen into Galway [8km], on electric bikes is utterly commutable.

"The route will come in by Corrib village and through NUIG down Eglington Canal and then go down to O'Brien's Bridge. It will then go out to Salthill and right around the coast to Barna and loop right back up to Moycullen . . ."

**Offshore wind "It's not just for tourists, it's for people who live in Knocknacarra or Moycullen to get into Galway city," he says.**

Meanwhile, another big change in the landscape in 2030 will be the number of offshore wind farms. In a decade, and certainly within 20 years, there will be few places in Ireland where people will look out to sea and see no turbines. Offshore wind provides substantially more energy than turbines located on ***land***.

"My ***target*** is to produce 30 gigawatts of power [about six times the energy needs of the State] around the coast. "We have a competitive advantage in Ireland," he says. "We have a sea area 10 times our ***land*** areas and some of the best winds in the world."

That means Ireland will be able to export energy at a profit. It will start late next year with auctions for wind power companies to build on shallow banks off the coast of Dublin.

There will be later auctions for the Celtic Sea and then for the western coast. The challenge in the Atlantic waters is that the ocean is very deep. However, Ryan points out that floating turbines are already on the market and are already becoming less expensive.

How will huge quantities of such irregular and hard-to-predict wind energy be stored? Ryan says better interconnectors to the North, the UK and France will help, as will hydrogen storage.

Turbines off the west coast will need good ports with deep water and better access, so the ports of Foynes, Killybegs and Cork will need work to accommodate traffic.

His core argument is that an annual 7 per cent reduction in ***emissions*** will result in radical change in how people live their lives. "It will be transformative," says Ryan.

"This is what people are now seeing when they wake. It is strange that in these Covid times, and all the bad things with it, people are realising how important their environment is and, for the first time, are beginning to appreciate and value it."

**Load-Date:** December 18, 2020

**End of Document**



[***Farmers to be paid to pave paradise: £20m annual fund could create more parking spaces under plan to give walkers better access to the country***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:630F-0261-DY4H-K40B-00000-00&context=1516831)

MailOnline

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**Section:** NEWS; Version:5

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**Byline:** Mark DuellJack Wright For Mailonline Victoria Allen for the Daily Mail

**Body**

* Ministers will fund farmers in protected landscapes to help nature and people

1. Projects include creating ponds, improving public access or building parking
2. Yorkshire Wolds and Cheshire Sandstone Ridge will be considered for AONBs
3. Existing Surrey Hills and Chilterns AONBs could be extended under proposals

Farmers in England will be paid £20million to pave over ***agricultural*** ***land*** under plans to give walkers better access to the countryside.Radical new proposals unveiled by Environment Secretary George Eustice today will see farmers and landowners encouraged to build parking spaces, ponds and wetlands, or care for historic features. They also mean the Yorkshire Wolds and the Cheshire Sandstone Ridge will be considered for protected status as areas of outstanding natural beauty, while the existing Surrey Hills and Chilterns AONBs could be extended. The Government said the four areas being considered could deliver more than 40 per cent of the additional 1,500 square miles needed to meet the UK's commitment to protect 30 per cent of its ***land*** by 2030.But conservationists warn much of the existing protected areas are national parks and AONBs which do not necessarily deliver for nature, with many of them suffering from overgrazing, poor management or intensive ***agriculture***.They are now calling for urgent action and more resources to improve the natural world across existing protected areas.It comes as EU subsidies to farmers and landowners in England reduce over the next seven years and will be replaced by UK grants and top-ups where they will be expected to do more for smaller hand-outs. [related]Where are the 34 areas of outstanding natural beauty in England?

* Arnside & Silverdale

1. Blackdown Hills
2. Cannock Chase
3. Chichester Harbour
4. Chilterns
5. Cornwall
6. Cotswolds
7. Cranborne Chase
8. Dedham Vale
9. Dorset
10. East Devon
11. ***Forest*** of Bowland
12. High Weald
13. Howardian Hills
14. Isle of Wight
15. Isles of Scilly
16. Kent Downs
17. Lincolnshire Wolds
18. Malvern Hills
19. Mendip Hills
20. Nidderdale
21. Norfolk Coast
22. North Devon
23. North Pennines
24. North Wessex Downs
25. Northumberland Coast
26. Quantock Hills
27. Shropshire Hills
28. Solway Coast
29. South Devon
30. Suffolk Coast and Heaths
31. Surrey Hills
32. Tamar Valley
33. Wye Valley

Emma Marsh, director of RSPB England, described the announcement on the potential new areas as simply 'warm words', adding: 'Wildlife isn't even thriving in our existing protected landscapes.

'If any protected landscapes - existing or new - are to be able to deliver ***land*** 'well-managed for nature', they need to be resourced and set up to do so.'

The Yorkshire Wolds is an area of gently rolling hills, which extends south from the Yorkshire coast to the shadow of the Humber Bridge, and has long inspired artist David Hockney, whose recent works depict its changing seasons.

It is home to Fotherdale Farm in Thixendale, where two kestrels and their six hungry chicks have been watched by tens of thousands of people on a camera in their nest box.

Meanwhile Cheshire Sandstone Ridge offers expansive views, exposed reddish-pink Triassic sandstone and the remains of Iron Age hill forts.

It also contains ancient woodland and the remnants of a Royal Hunting ***Forest***.

Being designated an AONB gives landscapes greater protection, with local authorities required to make sure all decisions, from planning permission to installing telecommunications cables, take the conservation of the area into account.

Announcing plans to boost nature and public access in protected areas, Mr Eustice said: 'We have an opportunity to create a new chapter for our protected landscapes.

'The work that we are going to take forward will contribute to our commitment to protect 30 per cent of our ***land*** by 2030, and boost biodiversity, while designating more areas of the country for their natural beauty.

'Our farming in protected landscapes programme will provide additional investment to allow farmers to work in partnership with our National Park Authorities and AONB teams to improve public access.'

It comes in response to the Glover Review, commissioned by the Government, which recommended 'national landscapes' should have a new mission to enhance nature, create wilder areas and deal with climate change.

It also set out proposals to increase access to protected landscapes for people and create new designated areas. The Government has said it will respond in full to the review later in the year.

Farming was a key issue in the 2016 referendum on EU membership, as farmers and landowners received subsidies from the bloc through its Common ***Agricultural*** Policy.

Now the UK has left the EU, it has started the seven-year process of weaning itself off the EU's enormous ***agricultural*** subsidy programme.

Farmers will increasingly receive grants through the Environmental ***Land*** Management scheme. However, subsidies will come to be based around the concept of 'natural capital'.

How AONBs mean councils must ensure all planning decisions consider conservation

An area of outstanding natural beauty (AONB) is ***land*** protected by the Countryside and Rights of Way Act 2000, also known as the CROW Act.

This gives landscapes greater protection, with local authorities required to make sure all decisions, from planning permission to installing telecommunications cables, take the conservation of the area into account.

There are a total of 47 AONBs in Britain, including 34 England, five in Wales and eight in Northern Ireland. The UK total will hit 49 with the inclusion of the Yorkshire Wolds and the Cheshire Sandstone Ridge.

An area which becomes an AONB under Natural England's orders must meet the 'natural beauty criterion', of six factors - landscape quality; scenic quality; relative wildness; relative tranquillity; natural heritage features; and cultural heritage.

To designate an AONB, Natural England can issue an order under section 82 of the CROW Act to conserve and enhance the natural beauty of an area. Each AONB must have a management plan, in place within three years of a designation - and a review must take place within five years of the start of the plan.

Instead of receiving the CAP's Basic Payment scheme support for acres farmed, farmers and landowners will have to earn rewards for delivering 'public goods' suchg as creating woodland or improving water quality.

Philip Wynn, ***agricultural*** consultant and interim managing director of James Dyson's Dyson Farming company, told the FT that farmers will increasingly be required to do a lot more for less money.

'The reality is the very best you're going to receive is 50-60 per cent [of the Basic Payment scheme] but you're going to have to provide quite a lot in terms of public goods to achieve that, and for lots of people it'll be more like 30 per cent,' he said.

In response to the Government announcement, Julian Glover, who led the review, said: 'Our national landscapes are the soul of England, beautiful, much-loved, and there for all of us, but they are also under pressure.

'We need to do a lot more for nature and more for people, too.

'Our report set out a plan for a brighter, greener future and I'm delighted that words are now being followed by action.'

Dr Richard Benwell, chief executive of the coalition of conservation groups Wildlife and Countryside Link, said: 'The creation of new AONBs is excellent, but it must be accompanied by stronger duties and resources for environmental improvement to bring the landscapes to life with nature.'

He said three quarters of sites of special scientific interest, which are protected for nature, were in poor condition within designated landscapes.

More ambition was needed to fill protected landscapes with wildlife and ensure they play their part in tackling climate change, he urged.

'We need quick action now to complete the designations and to strengthen the environmental purposes and resources of AONBs.

'Only then can Government reliably include these places in its promise to protect 30 per cent of the ***land*** for nature.'

Jo Smith, chief executive of Derbyshire Wildlife Trust said the proposed designations 'will not magically help meet the ***target*** of 30 per cent of ***land*** where nature can thrive'.

'Instead, what's needed is urgent action, political will and more resources, to repair and heal the natural world across the National Parks that we already have,' she said.

'If this Government is serious about its ambition to leave the environment in a better state for the next generation, it must properly fund meaningful action to restore habitats across our protected landscapes,' she added.

Crispin Truman, chief executive of countryside charity the CPRE, said: 'We know that not all of the ***land*** within existing National Parks and AONBs is effectively managed for nature.

'Our evidence also shows that a developer-led planning system with centralised housing ***targets*** has driven up pressure on these nationally important areas, particularly in the south.

'So there is a long way to go before these areas help meet the government's ***target*** to protect 30 per cent of ***land*** for nature by 2030.'

Meanwhile the Environment Agency has announced changes to water abstraction licences held by 20 businesses in the Ant Valley on the Norfolk Broads.

These could see fish, birds and plants benefit from up to three billion litres of water being returned to the environment.

Environmental bodies including the WWF and Woodland Trust have also described a 'visionary' new project in the Yorkshire Dales called Wild Ingleborough.

This will see the restoration of peatland and the expansion of native woodland and scrub, in a bid to ***remove*** and store carbon and tackle climate change.

**Load-Date:** June 24, 2021

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[***Half the trees in two new English woodlands planted by jays, study finds***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:62XS-PRB1-JBNF-W50P-00000-00&context=1516831)

The Guardian (London)

June 16, 2021 Wednesday 7:00 PM GMT

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**Section:** ENVIRONMENT; Version:3

**Length:** 816 words

**Byline:** Patrick Barkham

**Highlight:** Former fields were naturally regenerated with oak trees growing from acorns buried by the birds

**Body**

More than half the trees in two new woodlands in lowland England have been planted not by landowners, charities or machines but by jays.

Former fields rapidly turned into native ***forest*** with no plastic tree-guards, watering or expensive management, [*according to a new study*](https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0252466) which boosts the case for using natural regeneration to meet ambitious woodland creation ***targets***.

Instead, during "passive rewilding", thrushes spread seeds of bramble, blackthorn and hawthorn, and this scrub then provided natural thorny tree "guards" for oaks that grew from acorns buried in the ground by jays.

The study, published in the journal [*Plos One*](https://journals.plos.org/plosone/) , followed the fate of two fields next to Monks Wood, a nature reserve in Cambridgeshire. One, a barley field, was abandoned in 1961. The other, former grassland, was left alone in 1996.

After just 24 years, the grassland area, known as "the new wilderness", had grown into a young wood with 132 live trees per hectare, 57% of which were oaks.

After 59 years, the barley field, called "the old wilderness", resembled a mature woodland, with 390 trees per hectare of which 52% were oaks. In both cases, jays were the likeliest source of the oak trees, typically carrying acorns to cache for the winter much further than wood mice and grey squirrels.

Dr Richard Broughton of [*the UK Centre for Ecology and Hydrology*](https://www.ceh.ac.uk/) and lead author of the study, said: "Many people don't like jays. Traditionally they have been seen as a pest. But jays and possibly grey squirrels planted more than half the trees in these sites. The jays and the thrushes basically engineered these new woodlands."

The government's [*ambitious tree-planting* ***targets***](https://www.gov.uk/government/news/tree-planting-rates-to-treble-by-end-of-this-parliament) to tackle the climate crisis with 30,000 hectares of new woodlands in Britain by 2024 is [*likely to be dominated by non-native coniferous plantations*](https://www.theguardian.com/environment/2020/feb/26/firs-fair-uk-must-embrace-conifers-in-climate-fight-says-forestry-chief) , which critics say [*can damage native wildlife and carbon-storing peatlands*](https://www.theguardian.com/environment/2021/feb/23/row-over-uk-tree-planting-drive-we-want-the-right-trees-in-the-right-place).

Proponents of natural regeneration, [*such as Isabella Tree*](https://www.theguardian.com/commentisfree/2018/nov/26/wildwoods-britain-climate-change-northern-forest) at Knepp, the [*rewilded farm in West Sussex*](https://www.theguardian.com/environment/2018/jun/15/the-magical-wilderness-farm-raising-cows-among-the-weeds-at-knepp) , argue that we must learn to value "scrub" which first emerges when ***land*** is abandoned and provides a haven for wildlife.

Broughton said the study of emerging woodland at Monks Wood, a [*former research station*](http://www.monks-wood.org.uk/) for groundbreaking ecological studies, demonstrated the value of scrub.

"We call it scrub like it should be scrubbed away but it's shrubland. It's like a wildlife fest - covered in blossom, full of warblers. It's just a really nice place to be," he said.

"The thing which really stood out is unlike with planting, natural regeneration creates this essential first stage of shrubby development - a thicket of brambles and hawthorn sown by thrushes and a natural tree-guard against the browsers such as deer."

Trees in both the naturally regenerating woodlands grew rapidly despite large numbers of wild deer in the area, including roe and invasive muntjac, and a series of droughts over the years.

Until recently, the financial support system for ***agriculture*** actively discouraged natural regeneration by ***removing*** basic payment subsidies if farmland was "scrubbed up". But the government's new [*Woodland Creation Offer*](https://www.gov.uk/guidance/england-woodland-creation-offer) - which began this month - now [*provides money for English landowners who want to reforest using natural regeneration*](https://www.theguardian.com/environment/2021/jun/09/forestry-commission-reveals-plan-to-create-new-english-woodlands) , with its benefits to biodiversity, carbon sequestration, soils and flood alleviation.

Tony Juniper, chair of Natural England, said: "In meeting our most welcome national ambition to expand woodland there is every good reason to harness the power of nature. The natural woodland regeneration at Monks Wood presents a fantastic example of what is possible - with trees planting themselves, with the assistance of the wind, birds and mammals. The feathered and furry foresters doing their work means there's no need for the usual invasive digging, plastic tubes or imported saplings.

"There is also as a result no risk of importing diseases, it's cost-free and full of wondrous wildlife, such as pollinating insects, wild plants and many birds including garden warblers, yellowhammer and reed bunting. Natural woodland recovery also catches carbon and can help reduce flood risk. It doesn't work everywhere, but it quite clearly does in so many places and I would love to see this kind of example inspiring more natural regeneration across the country."

Broughton said such rapid regeneration as recorded at Monks Wood was only likely to happen within several hundred metres of existing woodland in lowland Britain but that sites further from native woodland were likely to provide even greater biodiversity benefits because the particularly wildlife-rich shrubland stage developed more slowly.

The new naturally created woodlands were also dominated by oak. "Everyone loves their oak trees and knows how biodiverse they are," said Broughton. "If people were asked for their ideal woodland, most would say oaks would be nice and that's what we get for free with natural regeneration."

**Load-Date:** June 17, 2021

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