Jamie Peeler, PhD

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EDUCATION

Ph.D. Penn State University, University Park, PA. 2021. Geography.
Dissertation: The role of landscape context in forests recovering from fire
Advisor: Dr. Erica Smithwick
Certification: Penn State Graduate School Teaching Certificate

M.S. Penn State University, University Park, PA. 2017. Geography.
Master's paper: Exploring invasibility with species distribution modeling: how does fire promote cheatgrass (*Bromus tectorum*) invasion within lower montane forests?
Advisor: Dr. Erica Smithwick

B.S. Duke University, Durham, NC. 2012. Biology.
Honors thesis: Trait plasticity of tree species in response to changing disturbance regimes in Kruger National Park, South Africa
Advisor: Dr. Justin Wright

PROFESSIONAL APPOINTMENTS

2025 – Present **ORISE Vegetation, Carbon, & Fire Risk Fellow**, USDA Forest Service Rocky Mountain Research Station, Missoula, MT
Supervisor: Dr. Karin Riley

2023 – Present **Research Scientist**, University of Montana and USDA Forest Service Rocky Mountain Research Station, Missoula, MT
Supervisors: Dr. Philip Higuera, Dr. Christopher O'Connor

2021 – 2023 **TNC NatureNet Science Fellow**, University of Montana and The Nature Conservancy, Missoula, MT
Supervisors: Dr. Philip Higuera, Dr. Ryan Huago, Dr. Kerry Metlen, Marcos Robles, Travis Woolley

EXTERNAL GRANTS

2021 The Nature Conservancy NatureNet Science Fellowship ($118,000)
Project: Implementing natural climate solution strategies in western United States forests

2019 Joint Fire Science Program Graduate Research Innovation Award ($25,000)
Project: Scale-dependent effects of landscape context on post-fire forest regeneration in the Northern Rockies

NSF Doctoral Dissertation Research Improvement Award ($18,000)
Project: Doctoral dissertation research: spatial resilience in forests recovering from fires

NASA Pennsylvania Space Grant Consortium Graduate Research Fellowship ($5,000)

2018 National Geographic Support for Women and Dependent Care Opportunity ($3,585)

2017 National Geographic Early Career Grant ($5,370)
Project: Quadruple whammy: exploring indicators of forest resilience to multiple disturbances in the Greater Yellowstone Ecosystem

NASA Pennsylvania Space Grant Consortium Graduate Research Fellowship ($5,000)

2016 NASA Pennsylvania Space Grant Consortium Graduate Research Fellowship ($5,000)

PUBLICATIONS

Peer-Reviewed Publications for Science Audience

2024 Davis KT, **Peeler JL**, Fargione JE, Haugo RD, Metlen KL, Robles MD, and Woolley T. Tamm Review: A meta-analysis of thinning, prescribed fire, and wildfire effects on subsequent wildfire severity. *Forest Ecology and Management*, 561, 121885. doi.org/10.1016/j.foreco.2024.121885

2023 **Peeler JL**, McCauley L, Metlen KL, Woolley T, Davis KT, Robles MD, Haugo RD, Riley KL, Higuera PE, Fargione JE, Addington RN, Bassett S, Blankenship K, Case MJ, Chapman TB, Smith E, Swaty R, and Welch N. Identifying opportunity hot spots for reducing the risk of wildfire-caused carbon loss in western US conifer forests. *Environmental Research Letters*, 18. doi.org/10.1088/1748-9326/acf05a

Davis KT, Robles MD, Kemp KB, Higuera PE, Chapman T, Metlen KL, **Peeler JL**, Rodman KC, Woolley T, Addington RN, Buma BJ, Cansler CA, Case MJ, Collins BM, Coop JD, Dobrowski SZ, Gill NS, Haffey C, Harris LB, Harvey BJ, Huago RD, Hurteau MD, Kulakowski D, Littlefield CE, McCauley L, Povak N, Shive KL, Smith E, Stevens JT, Stevens-Rumann CS, Taylor AH, Tepley AJ, Young DJN, Andrus RA, Battaglia MA, Berkey JK, Busby SU, Carlson A, Chambers M, Dodson EK, Donato DC, Downing WM, Fornwalt PJ, Halofsky JS, Hoffman A, Holz A, Iniguez JM, Krawchuk MA, Kreider MR, Larson AJ, Meigs GW, Roccaforte JP, Rother MT, Safford H, Schaedel M, Sibold J, Singleton MP, Turner MG, Urzu AK, Wolf KD, Yocom L, Fontaine JB and Campbell J. Reduced fire severity offers near-term buffer to climate-driven declines in conifer resilience across the western United States. *Proceedings of the National Academy of Science*s, 120, e2208120120. doi.org/10.1073/pnas.2208120120

2021 **Peeler JL** and Smithwick EAH. Interactions between landscape and local factors inform spatial action planning in post-fire forest environments. *Landscape Ecology*, 36, 3523-3537. doi.org/10.1007/s10980-021-01325-4

Robinson AC, **Peeler JL**, Prestby T, Goslee SC, Anton K, and Grozinger C. Beescape: characterizing user needs for environmental decision support in beekeeping. *Ecological Informatics*, 64, 101366. doi.org/10.1016/j.ecoinf.2021.101366

2020 **Peeler JL** and Smithwick EAH. Seed source pattern and terrain have scale-dependent effects on post-fire tree recovery. *Landscape Ecology*, 35, 1945-1959. doi.org/10.1007/s10980-020-01071-z

2018 **Peeler JL** and Smithwick EAH. Exploring invasibility with species distribution modeling: how does fire promote cheatgrass (*Bromus tectorum*) invasion within lower montane forests? *Diversity and Distributions,* 24, 1308-1320. doi.org/10.1111/ddi.12765

Peeler JL and Menges ES. Effects of fire history, tree age, and canopy seed bank size on serotiny of sand pine (*Pinus clausa*) in Florida scrub. *Florida Scientist*, 81, 3-11.

Non-Peer-Reviewed Publications for General Audience

2023 **Peeler JL**. US is spending billions to reduce forest wildfire risks – we mapped the hot spots where treatment offers the biggest payoff for homes and climate. *The Conversation.* tinyurl.com/PeelerTheConversation

Davis KT, **Peeler JL**, and Higuera PE. The West's iconic forests are increasingly struggling to recover from wildfires – altering how forests burn could boost their chance. *The Conversation.* tinyurl.com/PeelerTheConversation

2021 **Peeler JL**. Effects of seed source pattern on post-fire tree recovery. *Northern Rockies Fire Science Network Research Brief.* tinyurl.com/PeelerResearchBrief

Peeler JL. Storytelling is the antidote to Americans' mistrust of science. *Massive Science*. tinyurl.com/PeelerMassiveScience

POLICY

2025 **Working Group Member**, Montana Prescribed Fire Council
Working with Montana Department of Natural Resources and Conservation, NGOs, and private landowners to draft a bill for the Montana State Legislature that defines a liability standard and creates a certified burner program for prescribed fire practitioners.

2024 **Contributing Author**, Chapter 7: Biodiversity and Climate Change in an International Context, USGS Biodiversity and Climate Change Assessment
Evaluating relationships between biodiversity and climate in North America to identify policy options to conserve biodiversity in the face of climate change.

Invited Participant, Wildland Fire Policy Accelerator, COMPASS and Federation of American Scientists
Visited congressional offices of representatives from Montana and Washington to advocate for prescribed fire use and worked with journalists from Washington Post, Politico, and Climate Central to craft messages for media.

AWARDS AND HONORS

External

2017 Honorable Mention, NSF Graduate Research Fellowship Program

2014 Honorable Mention, NSF Graduate Research Fellowship Program

Penn State University

2020 Outstanding Research Assistant Award, Department of Geography

Best Ph.D. Paper, E. Willard Miller Award, Department of Geography

2019 Best Ph.D. Proposal, E. Willard Miller Award, Department of Geography

2018 Best M.S. Paper, E. Willard Miller Award, Department of Geography

2017 Best M.S. Proposal, E. Willard Miller Award, Department of Geography

2015 Environmental Scholar, Earth and Environmental Systems Institute

Duke University

2012 Graduation with Distinction, Department of Biology

Excellence in Plant Science, Department of Biology

2010 Rachel Carson Research Scholar, Duke University Marine Lab

PRESENTATIONS

[†]Organizer of Special Session
[‡]Undergraduate Mentee
** Invited Talk*

2024 Peeler JL* and O'Connor CD. Using strategic pre-fire planning to avoid wildfire-caused loss of irrecoverable carbon. Southwest Fire Ecology Conference. Santa Fe, NM. Talk.

Peeler JL*. Identifying opportunity hot spots for prescribed burning. Rocky Mountain Wildfire Smoke Symposium. Missoula, MT. Talk.

Peeler JL. Reducing the risk of wildfire-caused carbon loss at multiple scales. Ecological Society of America. Long Beach, CA. Talk.

Peeler JL*. Reducing the risk of wildfire-caused carbon loss at multiple scales. Missoula Fire Lab Seminar Series. Missoula, MT. Talk.

Peeler JL*. Reducing the risk of wildfire-caused carbon loss at multiple scales. Rocky Mountain Research Station Human Dimensions Wildfire Risk Management Science Seminar. Missoula, MT. Talk.

2023 Christianson AC, Lake FK, Martinez D, Peeler JL, Wynecoop M, Christopherson C, Copes-Gerbitz K, Essen M, Hoagland S, Middleton Manning BR, and Riley K. 2023. "An Indian seldom does anything except by necessity": Acknowledging a history of Indigenous erasure and racism in fire ecology and looking toward a more inclusive future. International Fire Ecology and Management Congress. Monterey, CA. Talk.

Peeler JL[†], McCauley L, Metlen KL, Woolley T, Davis KT, Robles MD, Haugo RD, Riley KL, Higuera PE, Fargione JE, Addington RN, Bassett S, Blankenship K, Case MJ, Chapman TB, Smith E, Swaty R, and Welch N. 2023. Identifying opportunity hot spots for reducing the risk of wildfire-caused carbon loss in western US conifer forests. International Fire Ecology and Management Congress. Monterey, CA. Talk.

Peeler JL*, McCauley L, Metlen KL, Woolley T, Davis KT, Robles MD, Haugo RD, Riley KL, Higuera PE, Fargione JE, Addington RN, Bassett S, Blankenship K, Case MJ, Chapman TB, Smith E, Swaty R, and Welch N. Identifying opportunity hot spots for reducing the risk of wildfire-caused carbon loss in western US conifer forests. Missoula Fire Lab Seminar Series. Missoula, MT. Talk.

2022 Peeler JL*. Spatial Resilience in Forests Recovering from Fire. Systems Ecology Seminar, W.A. Franke College of Forestry & Conservation. Missoula, MT. Talk.

2021 Peeler JL*. Spatial Resilience in Forests Recovering from Fire. Rough Cut Science Seminar, Montana Institute on Ecosystems. Bozeman, MT. Talk.

Peeler JL, Nassry M, and Bright KD. Connecting hearts to water resources with digital storytelling. American Association for the Advancement of Science. Phoenix, AZ (Remote). Poster.

2020 Peeler JL and Smithwick EAH. Live seed source and terrain have scale-dependent effects on post-fire tree recovery. Ecological Society of America. Salt Lake City, UT (Remote). Poster.

2019 Peeler JL and Smithwick EAH. Scale-dependent effects of landscape context on post-fire forest regeneration in the Northern Rockies. American Geophysical Union. San Francisco, CA. Poster.

Peeler JL and Smithwick EAH. Convergence research on landscape and seascape resilience in the Anthropocene. International Association for Landscape Ecology World Congress. Milan, Italy. Talk.

2018 Cabeza CA‡, Peeler JL, and Smithwick EAH. Climate and topographic effect on wildfire burn severity in the Greater Yellowstone Ecosystem. American Geophysical Union. Washington, DC. Poster.

Peeler JL and Smithwick EAH. Network theory and post-fire landscapes: linking connectivity to forest reorganization in the Greater Yellowstone Ecosystem. North American Regional Association of the International Association for Landscape Ecology. Chicago, IL. Poster.

2017 Peeler JL and Smithwick EAH. Exploring invasibility with species distribution modeling: how does fire promote cheatgrass invasion within lower montane forests? Ecological Society of America. Portland, OR. Talk.

Peeler JL and Smithwick EAH. How does fire promote cheatgrass invasion within lower montane forests? American Association of Geographers. Boston, MA. Talk.

2014 Peeler JL and Menges ES. Effects of fire history and tree age on serotiny of sand pine (*Pinus clausa*) in Florida scrub. Research Intern Seminar, Archbold Biological Station. Venus, FL. Talk.

Peeler JL and Menges ES. Effects of fire regime on serotiny of sand pine (*Pinus clausa*) in Florida scrub. Florida Native Plant Society. Fort Myers, FL. Talk.

2012 Peeler JL, Vickers K, and Wright JP. Trait plasticity of tree species in response to changing disturbance regimes in the Kruger National Park. Distinction in Biology Poster Symposium, Duke University. Durham, NC. Poster.

2011 Peeler JL. Trait plasticity of tree species in response to changing disturbance regimes in the Kruger National Park. REU Student Research Seminar, South Africa National Parks. Skukuza, South Africa. Talk.

SYNERGISTIC ACTIVITIES

Climate Adaptation with USGS North Central Climate Adaptation Science Center

2023 – 2025 **Fellow**, Consortium Partners and Actionable Science Working Group
Working with USGS, NGO, and academic partners to translate science and help resource managers in the North Central region adapt to climate change.

Synthesis Science with the National Center for Ecological Analysis and Synthesis

2023 – 2025 **Invited Participant**, Prescribed Fire Working Group
Collaborating with USDA Forest Service, USGS, Colorado Department of Natural Resources, and academic partners to investigate how prescribed fire affects carbon storage, water quantity, and recreation.

Collaborative Conservation with the Center for Natural Resources and Environmental Policy, University of Montana

2022 **Participant**, Natural Resources Conflict Resolution Program
Developed a working knowledge of the theory and practice of collaboration and conflict resolution in natural resources challenges.

Leadership with W.A. Franke College of Forestry & Conservation, University of Montana

2021 – 2022 **Post-doctoral representative**, Diversity, Equity, and Inclusion Committee
Collaborated with faculty, staff, graduate students, and undergraduate students to recommend diversity, equity, and inclusion initiatives.

Science Communication with College of Earth and Mineral Sciences, Penn State University

2017 – 2021 **Science communication specialist**, University Writing Center
Provide one-on-one coaching for undergraduates to improve their science communication skills.

Organizer, Science Communication and Professional Development Workshops
Organized workshops to help undergraduates improve science communication skills, navigate career options, and secure job opportunities.

2020 – 2021 **Organizer**, CUE (Celebration of Undergraduate Engagement) Wednesdays
Developed a weekly workshop series that coached undergraduates on communicating science through posters, three-minute lightning talks, and digital stories.
ems.psu.edu/CUE

2020 **Developer**, Digital Stories in Science
Designed an online guide to coach undergraduates and faculty on digital storytelling.
tinyurl.com/DigitalStoriesScience

2018 **Organizer**, Undergraduate Research Poster Exhibition
Provided feedback to undergraduate poster presenters and organized 30 faculty judges.

Developer, Science Communication in Earth and Mineral Sciences
Worked collaboratively to develop content for a website on scientific writing styles.
tinyurl.com/SciCommEMS

Leadership with Department of Geography, Penn State University

2019 – 2020 **Vice President**, Graduate Students in the Department of Geography
Elected to represent graduate students and advocate for their interests during faculty meetings.

2018 – 2019 **Graduate representative**, Coffee Hour Speakers Committee
Organized a weekly seminar series on topics related to geography.

2016 – 2017 **Vice President**, Penn State Chapter of Supporting Women in Geography
Elected to coordinate K-12 outreach events that engage young women with geography.

RESEARCH

2019 **Research assistant**, GeoVISTA and Center for Pollinator Research, Penn State University
Supervisor: Dr. Anthony Robinson
Secured Institutional Review Board approval and implemented a survey of beekeepers to improve a decision-support tool.

TEACHING

Guest Lecturer, University of Montana

2021 – 2024 Fire Ecology (FORS 333)
Created original lesson plans on Indigenous fire stewardship for 25 undergraduate students.

2023 – 2024 Elements of Ecological Restoration (NRSM 265)
Created an original lesson plan on the role of restoration in wildfire risk management for 35 undergraduate students.

Instructor of Record, Penn State University

2019 Science Communication and Water Resources (EMSC 100)
Designed lesson plans for 14 undergraduates on water resources and digital storytelling.

2018 Geography of Water Resources (GEOG 431 Web)
Facilitated online lessons on water resources for 15 undergraduates and adult learners.

2017 Geography of Water Resources (GEOG 431 Web)
Facilitated online lessons on water resources for 15 undergraduates and adult learners.

Teaching Assistant, Penn State University

2020 Geographic Info in a Changing World: Intro to GIScience (GEOG 260)
Assisted 60 undergraduates with labs on ArcPro, ArcGIS Online, and ArcGIS StoryMaps.

2019 Environment and Society in a Changing World (GEOG 30)
Designed recitations on human-environment systems for 90 undergraduates.

2018 Introduction to Physical Geography (GEOG 10)
Designed 2 field trips and assisted 60 undergraduates with labs on physical

geography.

Global Parks and Sustainability (GEOG 1)
Graded assignments for 120 undergraduates that culminated with groups creating a digital story.

2017 Environment and Society in a Changing World (GEOG 30)
Designed recitations on human-environment systems for 90 undergraduates.
Global Parks and Sustainability (GEOG 1)
Graded assignments for 65 undergraduates that culminated with groups creating a digital story.

2016 Geography of Water Resources (GEOG 431 Web)
Graded assignments on water resources for 50 undergraduates and adult learners.

Introduction to Physical Geography (GEOG 10)
Led 2 field trips and assisted 50 undergraduates with labs on physical geography.

2015 Introduction to Physical Geography (GEOG 10)
Led 3 field trips and assisted 50 undergraduates with labs on physical geography.

MENTORING

2020 **Mentor**, Undergraduate Research Opportunities Connection, Penn State University
Student and Project: Melody Sipe (Penn State University), Mapping post-fire tree cover using object-based image analysis

2019 **Mentor**, Undergraduate Research Opportunities Connection, Penn State University
Student and Project: Shelby Duncan (Penn State University), Mapping post-fire tree cover using object-based image analysis

2018 **Mentor**, NSF Research Experience for Undergraduates in Climate Science, Penn State University
Student and Project: Caroline Cabeza (Seattle University), Environmental heterogeneity in post-wildlife landscapes of the Greater Yellowstone Ecosystem

PROFESSIONAL SKILLS

Data Processing and Visualization

Software: RStudio, ArcGIS Pro, ENVI, Adobe Illustrator, ArcGIS StoryMaps

Languages: R (Advanced)

Wilderness

2014 – 2022 Certified Wilderness First Responder (80 hours of training), SOLO Wilderness Medicine

2009 – 2012 Backpacking leader, Project WILD (Wilderness Initiatives Learning at Duke), Duke University

Diversity, Equity, and Inclusion

2020 Safer People Safer Places: LGBTQ+ Foundations Workshop, Penn State University

2019 Stand for State: Bystander Intervention Training, Penn State University

FIELDWORK

2019, 2016 **Field leader**, Penn State University
Planned logistical operations and supervised 4 undergraduate field assistants while investigating forest-fire dynamics in Wyoming.

2015 **Field technician**, Western Forest Initiative
Supervisors: Dr. Arjan Meddens and Dr. Jim Lutz
Completed Composite Burn Index surveys to characterize fire refugia in the Pacific Northwest.

2014 **Fire ecology intern**, Tall Timbers Research Station and Land Conservancy
Supervisor: Dr. Kevin Robertson
Managed a biennial census that examined wind and fire effects on forests in Florida.

Research intern, Plant Ecology Lab, Archbold Biological Station
Supervisor: Dr. Eric Menges
Designed an independent project that investigated effects of fire history, tree age, and canopy seed bank size on serotiny in Florida.

2013 **Field technician**, Desert Research Institute
Supervisor: Dr. Adam Watts
Completed Composite Burn Index surveys to evaluate post-fire mortality trends in Florida**.**

2012 **Field technician**, Bioko Biodiversity Protection Program
Supervisor: Dr. Shaya Honarvar
PIT-tagged and recorded reproductive output data on leatherback sea turtles in Equatorial Guinea.

Field technician, Silviculture and Applied Forest Ecology Lab, University of Minnesota
Supervisor: Mitch Slater
Conducted vegetation surveys to evaluate the impacts of emerald ash borer on forests in Minnesota.

2011 **NSF Research Experience for Undergraduates Participant**, Organization for Tropical Studies
Supervisors: Karen Vickers and Dr. Laurence Kruger
Designed an independent project that investigated functional responses of tree species to fire and herbivory in South Africa.