

Melissa Chapman

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Education

- 2018 – present 📖 **Ph.D., UC Berkeley** Environmental Science, Policy, and Management.
Dissertation: *From individual decisions to international agreements: Multi-scalar approaches to meet post-2020 biodiversity targets*
- 2010 – 2014 📖 **B.Sc. Yale University** Ecology and evolutionary biology.
Thesis: *Assessing patterns of malaria risk: Environmental and social determinants of endemicity across Burkina Faso and Kenya.*

Employment History












- 2022 📖 **International Institute of Applied Systems Analysis (IIASA)** Visiting Science Fellow
- 2020 – 2022 📖 **Resources Legacy Fund** Scientific writer for California's Pathways to 30x30 Initiative
- 2015 – 2018 📖 **Woodwell Climate Research Center** Research Assistant II

Academic publications

[Google Scholar] | [ORCID]

Peer-reviewed articles

- 1 Chapman, M., Boettiger, C., & Brashares, J. S. (2023). The potential contribution of private lands to united states 30x30 conservation. *Conservation Science and Practice* (Accepted). 🌐 doi:<https://doi.org/10.32942/osf.io/pb2s8>
- 2 Chapman, M., Xu, L., Lapeyrolerie, M., & Boettiger, C. (2023). Bridging adaptive management and reinforcement learning for more robust decisions. *Philosophical Transactions of the Royal Society B* (Accepted).
- 3 Estein, C., Chapman, M., Schell, C., Lowy, N., & Gerson, J. (2022). Demystifying the graduate school application process. *Bulletin of the Ecological Society of America*. 🌐 doi:[10.32942/osf.io/e5umr](https://doi.org/10.32942/osf.io/e5umr)
- 4 Calhoun, K. L., Chapman, M., Tubbesing, C., McInturff, A., Gaynor, K. M., Van Scoyoc, A., ... Brashares, J. (2022). Spatial overlap of wildfire and biodiversity in california highlights gap in non-conifer fire research and management. *Diversity and Distributions*, 28(3), 529–541. 🌐 doi:<https://doi.org/10.1111/ddi.13394>
- 5 Chapman, M., Wiltshire, S., Baur, P., Bowles, T., Carlisle, L., Castillo, F., ... Karp, D. et al. (2022). Social-ecological feedbacks drive tipping points in farming system diversification. *One Earth*, 5(3), 283–292. 🌐 doi:<https://doi.org/10.1016/j.oneear.2022.02.007>
- 6 Dowd, S., Chapman, M., Koehn, L. E., & Hoagland, P. (2022). The economic tradeoffs and ecological impacts associated with a potential mesopelagic fishery in the california current. *Ecological Applications*, e2578. 🌐 doi:<https://doi.org/10.1002/eap.2578>

- 7 Lapeyrolerie, M., **Chapman, M.**, Norman, K. E., & Boettiger, C. (2022). Deep reinforcement learning for conservation decisions. *Methods in Ecology and Evolution*.
 doi:<https://doi.org/10.48550/arXiv.2106.08272>
- 8 Moravek, J., Andrews, L. R., Serota, M. W., Dorcy, J. A., **Chapman, M.**, Wilkinson, C. E., ... Brashares, J. S. (2022). Centering 30x30 conservation initiatives on freshwater ecosystems. *Frontiers in Ecology and the Environment (In press)*.
- 9 **Chapman, M.**, Oestreich, W. K., Frawley, T. H., Boettiger, C., Diver, S., Santos, B. S., ... Chand, K. et al. (2021). Promoting equity in the use of algorithms for high-seas conservation. *One Earth*, 4(6), 790–794.  doi:<https://doi.org/10.1016/j.oneear.2021.05.011>
- 10 **Chapman, M.**, Scoville, C., Lapeyrolerie, M., & Boettiger, C. (2021). Power and accountability in reinforcement learning applications to environmental policy. *The Thirty-Sixth Annual Conference on Neural Information Processing Systems (NeurIPS 2021)*.
 doi:[10.48550/arXiv.2205.10911](https://doi.org/10.48550/arXiv.2205.10911)
- 11 Kitzes, J., Blake, R., Bombaci, S., **Chapman, M.**, Duran, S. M., Huang, T., ... Oestreich, W. K. et al. (2021). Expanding neon biodiversity surveys with new instrumentation and machine learning approaches. *Ecosphere*, 12(11), e03795.
 doi:<https://doi.org/10.1002/ecs2.3795>
- 12 Nagy, R. C., Balch, J. K., Bissell, E. K., Cattau, M. E., Glenn, N. F., Halpern, B. S., ... **Chapman, M.** et al. (2021). Harnessing the neon data revolution to advance open environmental science with a diverse and data-capable community. *Ecosphere*, 12(12), e03833.  doi:<https://doi.org/10.1002/ecs2.3833>
- 13 Ordway, E. M., Elmore, A. J., Kolstoe, S., Quinn, J. E., Swanwick, R., Cattau, M., ... **Chapman, M.** et al. (2021). Leveraging the neon airborne observation platform for socio-environmental systems research. *Ecosphere*, 12(6), e03640.
 doi:<https://doi.org/10.1002/ecs2.3640>
- 14 Roe, S., Streck, C., Beach, R., Busch, J., **Chapman, M.**, Daioglou, V., ... Engelmann, J. et al. (2021). Land-based measures to mitigate climate change: Potential and feasibility by country. *Global Change Biology*, 27(23), 6025–6058.  doi:<https://doi.org/10.1111/gcb.15873>
- 15 Scoville, C., **Chapman, M.**, Amironesei, R., & Boettiger, C. (2021). Algorithmic conservation in a changing climate. *Current Opinion in Environmental Sustainability*, 51, 30–35.  doi:<https://doi.org/10.1016/j.cosust.2021.01.009>
- 16 **Chapman, M.**, Walker, W. S., Cook-Patton, S. C., Ellis, P. W., Farina, M., Griscom, B. W., & Baccini, A. (2020). Large climate mitigation potential from adding trees to agricultural lands. *Global change biology*, 26(8), 4357–4365.  doi:<https://doi.org/10.1111/gcb.15121>
- 17 Griscom, B. W., Busch, J., Cook-Patton, S. C., Ellis, P. W., Funk, J., Leavitt, S. M., ... **Chapman, M.** et al. (2020). National mitigation potential from natural climate solutions in the tropics. *Philosophical Transactions of the Royal Society B*, 375(1794), 20190126.
 doi:<https://doi.org/10.1098/rstb.2019.0126>
- 18 Oestreich, W. K., **Chapman, M.**, & Crowder, L. B. (2020). A comparative analysis of dynamic management in marine and terrestrial systems. *Frontiers in Ecology and the Environment*, 18(9), 496–504.  doi:<https://doi.org/10.1002/fee.2243>
- 19 Samndong, R. A., Bush, G., Vatn, A., & **Chapman, M.** (2018). Institutional analysis of causes of deforestation in redd+ pilot sites in the equateur province: Implication for redd+ in the democratic republic of congo. *Land Use Policy*, 76, 664–674.
 doi:<https://doi.org/10.1016/j.landusepol.2018.02.048>
- 20 Cunningham, C., Chen, W. C., Shorten, A., McClurkin, M., Choezom, T., Schmidt, C. P., ... **Chapman, M.** et al. (2014). Impaired consciousness in partial seizures is bimodally

distributed. *Neurology*, 82(19), 1736–1744.
doi:https://doi.org/10.12122FWNL.000000000000404

- 21 Galvin, B. D., Li, Z., Villemaine, E., Poole, C. B., **Chapman, M.**, Pollastri, M. P., ... Carlow, C. K. (2014). A target repurposing approach identifies n-myristoyltransferase as a new candidate drug target in filarial nematodes. *PLoS neglected tropical diseases*, 8(9), e3145. doi:https://doi.org/10.1371/journal.pntd.0003145

Preprints

- 1 Ellis-Soto, D., **Chapman, M.**, & Locke, D. (2022). *Uneven biodiversity sampling across redlined urban areas in the united states*. doi:10.32942/osf.io/ex6w2
- 2 Kurz, D., Middleton, A. D., **Chapman, M.**, Van Houtan, K. S., Wilkinson, C., Withey, L., & Brashares, J. (2021). *Building bridges in the post-trump era: Can conservation scientists help recover bipartisan support for us environmental protection?*
doi:https://doi.org/10.32942/osf.io/entgj

In review/In prep (drafts available upon request)

- 1 Barker, K., **Chapman, M.**, & et al. (2023). *The changing role of ecologists in the united nations response to climate change (in prep)*.
- 2 **Chapman, M.**, Goldstein, B., Schell, C., Boettiger, C., & et al. (2023). *Social and political dimensions of biodiversity monitoring (in prep)*.
- 3 **Chapman, M.**, Jung, M., Boettiger, C., Brashares, J., & Visconti, P. (2023). *Spatial prioritization of conservation and restoration measures to meet 2030 biodiversity targets in the eu (in prep)*.
- 4 Hasting, Z., **Chapman, M.**, Ocloo, X., Stenger, K., & Hunt, L. (2023). *Trends in agroforestry research over four decades (in review) *co-first author*.
- 5 Montealegre-Mora, F., Laperolerie, M., **Chapman, M.**, & Boettiger, C. (2023). *Pretty darn good control: When are approximate solutions better than approximate models? (in review)*.
- 6 Scoville, C., Faxon, H., **Chapman, M.**, & et al. (2023). *Environment, society and machine learning (in review)*.

Fellowships and Grants

2023	■ Peccei Award , International Institute of Applied Systems Analysis (IIASA) (approx. \$8,000)
	■ Departmental Research Fellowship , University of California Berkeley (\$17,000)
2022	■ International Institute of Applied Systems Analysis (IIASA) Summer Fellowship , Funded through the National Academy of Science (\$8,000)
	■ Data Science Teaching Fellowship , Funded through the UC Berkeley Social Science Data-Lab (\$2,500)
	■ Artificial Intelligence, Ethics, and Society (AIES-22) Conference Student Award , Funded through the National Science Foundation (\$1500)
	■ Environmental Data Science Summit travel grant (\$800), NCEAS (delayed to 2023 due to COVID)
2021	■ SESYNC Graduate Student Pursuit: Co- PI (project link) (approx. \$35,000)






Fellowships and Grants (continued)

- 2020  **Berkeley Center For Technology, Society, and Policy Fellowship** (project link) (\$4,000)
- 2018  **NSF National Research Traineeship** Environment and Society: Data sciences for the 21st Century (\$32,000)
-  **NSF Graduate Research Fellowship Program** Honorable Mention.
- 2014  **Foreign Language Area Studies (FLAS) Fellowship: Kiswahili** (\$35,000 over two awards)

Teaching and Mentoring

- Graduate Student Instructor  UC Berkeley; ESPM 157: Data Science for Global Change Ecology (2020)
- Graduate Student Mentor  UC Berkeley; Fung Fellowship Conservation and Technology Course (2022)
- Guest Lectures  Stanford University; Introduction to conservation planning and practice (2023)
-  Stanford University; Introduction to conservation planning and practice (2022)
-  Trinity College; U.S. Environmental Policy, Partisanship, and the Global Climate Crisis (2022)
-  Middlebury Institute of International Studies; International Marine Science and Policy (2022)
-  Middlebury Institute of International Studies; Ecological Analysis (2022)
- Research Mentor  Undergraduate Research Apprentice Program (URAP) (2020-2022)
-  Undergraduate Honors Thesis Program (2019-2022)
- Technical Mentor  IPAM; Public Policy Course (2017)
- Undergraduate Instructor  Yale University; Physics I (2014)
-  Yale University; Organic Chemistry II (2013)

Policy Documents and Briefs

- 2022  **Pathways to 30x30 California: Accelerating Conservation of California's Nature**, Scientific/Technical Writer [PDF]
-  **Conserving California: Advancing Science in Support of 30x30**, Scientific Writer and Facilitator [PDF]
-  **California's Pathways to 30x30: Conserving Freshwater Ecosystems**, Legislative Summary; Lead Scientific Writer [PDF]
-  **California's Pathways to 30x30: Expanding Access to Nature**, Legislative Summary; Contributing Scientific Writer [PDF available upon request]
-  **California's Pathways to 30x30: Working Lands and Other Effective Conservation Measures (OECMs)**, Legislative Summary; Contributing Scientific Writer [PDF available upon request]

Policy Documents and Briefs (continued)

- California's Pathways to 30x30: Partnering with California Native American Tribes, Legislative Summary; Contributing Scientific Writer [PDF available upon request]
- 2021 ■ Advancing 30x30 and Protecting Biodiversity, Lead Scientific Writer [PDF]
- 2018 ■ Prioritizing Areas for Reforestation of Private Lands in the Brazilian Amazon. Policy Brief. [PDF]
- 2016 ■ Analysis of National Circumstances in the Context of REDD+ and Identification of REDD+ Abatement Levers in Papua New Guinea Report produced by the Wildlife Conservation Society. [PDF]











Working Groups

- 2022 ■ Ethics and Practices of Algorithmic Conservation Reading Group ([link](#)) *Co-founder/organizer*
- Environmental Data Science Summit (NCEAS) (delayed to 2023 due to COVID)
- 2019-2021 ■ Ecological Forecasting Initiative *Student Working Group Co-chair and Co-founder*
- 2021 ■ UC Berkeley Data and Environment Working Group *Co-founder*
- Bioinformatics and Community Science Round Table steering committee, California Biodiversity Network
- Culturally Relevant Education in Environmental Data Science (CREEDS) Workshop
- 2020 ■ SESYNC Cyberinfrastructure Summer Institute
- NIMBioS Adaptive Management Tutorial
- People, Land, and Ecosystems: Leveraging NEON for Socio-Environmental Synthesis
- 2019 ■ National Ecological Observation Network (NEON) Science Summit
- Advancing Integrated Process-Based Modeling of Socio-Environmental Systems (SESYNC)
- Graduate Student Workshop on Socio-Environmental Synthesis (SESYNC)
- Ecological Forecasting Initiative Summer Course
- 2017 ■ Mathematical Ecology Working Group: Woods Hole, MA




Professional Service and Outreach

- 2022 ■ Graduate Programs Committee student representative (ESPM, UC Berkeley)
- 2021-2022 ■ Graduate Admission Committee student representative (ESPM, UC Berkeley)
- 2018-2021 ■ UC Berkeley Graduate Student Association (GSA)
- 2019-2021 ■ Letters to a Pre-scientist: *Volunteer*
- 2018-2021 ■ Bay Area Scientists in Schools (BASIS): *Instructor*

Selected Presentations

- 2022  **Chapman, M.**, Jung, M., and Visconti, P.. Multiscale prioritization of conservation and restoration measures to meet 2030 biodiversity targets in the EU. *IIASA Summer Symposium* [Slides]
-  **Chapman, MS**, Boettiger, C, and Brashares, J. Potential contributions of private lands to U.S. 2030 biodiversity targets. *ESA 2022* [Slides]
-  **Chapman, MS**. Climate mitigation and biodiversity contributions of land conservation and management (as part of a panel on "Ecologists Perspectives on COP26") *ESA 2022*. [Slides]
-  **Chapman, MS**. Governing AI Applications To Monitoring and Managing Our Global Environmental Commons. *AAAI/ACM conference on Artificial Intelligence, Ethics, and Society (AIES 2022)*. [Slides]
- 2021  **Chapman, M.**, Schell, C., Brashares, J. "30x30: The New Conservation". Break-throughs Magazine Virtual Series. [Recording]
-  **Chapman, M.**. Pathways to 30x30: Accelerating Conservation of California's Nature. California Biodiversity Network Bioinformatics and Conservation Planning round table.
-  **Chapman, M.**, Boettiger, C. From data to decisions: Algorithms, power, and effective ocean management. UN FAO global forum on AI for a digital blue Planet. [Recording]
- 2020  **Chapman, M.**. Large climate mitigation from adding trees to agricultural lands. Woodwell Climate Research Center Friday Seminar Series (Invited Talk).
-  **Chapman, M.**, et al. Tipping points in diversified farming systems. Ecological Society of America 2020 Meeting. Contributed Talk. [Recording]
- 2018  **Chapman, M.**, and Walker, W. (2018). A Global Analysis of Woody Aboveground Carbon Storage in Crop and Pasture lands. AGU Fall Meeting. (Presentation)

Skills

- Languages  Native English, Basic Spanish and Kiswahili
- Coding  R, Python, SQL, L^AT_EX, Google Earth Engine, ArcGIS
- Statistics  Spatial statistics, Hierarchical Bayesian modeling, Decision processes