

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

- 2020 – present 📖 **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*

- 1 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>
- 2 **Chapman, M.**, Boettiger, C., & Brashares, J. S. (2022). The potential contribution of private lands to us 30x30 conservation. *EcoEvoRxiv*. 🔗 doi:<https://doi.org/10.32942/osf.io/pb2s8>
- 3 **Chapman, M.**, Scoville, C., Lapeyrolerie, M., & Boettiger, C. (2022). Power and accountability in reinforcement learning applications to environmental policy. In *The thirty-sixth annual conference on neural information processing systems (neurips 2022)*. 🔗 doi:<http://arxiv.org/abs/2205.10911>
- 4 **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>
- 5 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>
- 6 **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>
- 7 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>

- 8 Lapeyrolerie, M., **Chapman, M.**, Norman, K. E., & Boettiger, C. (2021). *Deep reinforcement learning for conservation decisions*.
 doi:<https://doi.org/10.48550/arXiv.2106.08272>
- 9 Nagy, R. C., Balch, J. K., Bissell, E. K., Cattau, M. E., Glenn, N. F., Halpern, B. S., ... Marconi, S. 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>
- 10 Ordway, E. M., Elmore, A. J., Kolstoe, S., Quinn, J. E., Swanwick, R., Cattau, M., ... Atkins, J. W. 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>
- 11 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>
- 12 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>
- 13 **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>
- 14 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>
- 15 Kurz, D., Middleton, A. D., **Chapman, M.**, Van Houtan, K. S., Wilkinson, C., Withey, L., & Brashares, J. (2020). 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>
- 16 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>
- 17 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>
- 18 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/10.1212/FWNL.0000000000000404>
- 19 Galvin, B. D., Li, Z., Villemaine, E., Poole, C. B., Chapman, M. S., 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>

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 available upon request]
 - **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]
 - **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]

Fellowships and Grants

- 2022
- **International Institute of Applied Systems Analysis (IIASA) Summer Fellowship**, Funded through the National Academy of Science (\$6500)
 - **Artificial Intelligence, Ethics, and Society (AIES-22) Conference Student grant**, 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. \$35000)
- 2020
- **Berkeley Center For Technology, Society, and Policy Fellowship** (project link) (\$4000)
- 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)

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 (2022)

Teaching and Mentoring (continued)

	Trinity College; U.S. Environmental Policy, Partisanship, and the Global Climate Crisis (2022)
	Middlebury School of the Environment; 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)








Working Groups

2022	Ethics and Practices of Algorithmic Conservation Reading Group (link) <i>Co-founder/organizer</i>
	Environmental Data Science Summit (NCEAS) (delayed to 2023 due to COVID)
2019-2021	Ecological Forecasting Initiative <i>Student Working Group Co-chair and Co-founder</i>
2021	UC Berkeley Data and Environment Working Group <i>Co-founder</i>
	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: <i>Volunteer</i>
2018-2021	Bay Area Scientists in Schools (BASIS): <i>Instructor</i>

Selected Presentations

- 2021  **Chapman, MS**, Scoville, C., Lapeyrolerie, M., Boettiger, C. Power and Accountability in RL-driven Environmental Policy. *35th Conference on Neural Information Processing Systems (NeurIPS 2021)* **[Poster]**
-  **Chapman, M.**, Schell, C., Brashares, J. "30x30: The New Conservation". Breakthroughs 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

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| Languages |  Native English, Basic Spanish and Kiswahili |
| Coding |  R, Python, SQL, L ^A T _E X, Google Earth Engine, ArcGIS |
| Statistics |  Spatial statistics, Hierarchical Bayesian modeling, Decision processes |
| Misc. |  Academic research, teaching, training, consultation, graphic design |

References

Available on Request