

## Cooper Kimball-Rhines

*Data Science, Genomics, Conservation*  
*PhD Candidate, Environmental Biology*

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I study why plants go extinct and how scientists can work with managers to save at-risk species. My research uses genomic and causal statistics approaches to review existing and inform future plant biodiversity policy.

### Education

Ph.D., Environmental Biology, Sept. 2021-present

University of Massachusetts Boston

NSF Graduate Research Fellow

Dissertation: The Seeds of Restoration: genomics-informed recommendations for pine barren and salt marsh restorations

Advisor: Brook Moyers, [brook.moyers@umb.edu](mailto:brook.moyers@umb.edu)

Committee: Mayra C. Vidal, Georgia Mavrommati, Alex Harkess

B.Sc., Microbiology and Immunology, 2021

McGill University, School of Biomedical Sciences

Dean's Multidisciplinary Research List

Thesis: The PFAS package in *enviPath*: a resource for the prediction of AFFF biotransformation; Advisor: Jinxia Liu

### Work Experience

Pathways Intern, United States Environmental Protection Agency, Oct. 2021-Aug. 2024

EPA Student Intern of the Year 2023

Region 1 Superfund and Emergency Management Division

Assisted on-scene coordinators in assessing contamination at emergency removals

Manager: Stacy Greendlinger, [stacy.greendlinger@epa.gov](mailto:stacy.greendlinger@epa.gov),

Roadside Pollinator Assistant, New Hampshire Fish and Game, May-Sept. 2019-2021

Performed monarch butterfly surveys to inform NH DOT policy on habitat management

Supported Karner Blue Butterfly, Frosted Elfin, and White Mountain Fritillary projects

Manager: Heidi Holman, [heidi.l.holman@wildlife.nh.gov](mailto:heidi.l.holman@wildlife.nh.gov)

### Educational Experience

Curriculum Maintainer, The Carpentries, Intro to R Geospatial Data, May 2025-present

Instructor, iTCGA Computation for Cancer Genomics Workshop, June 2-20, 2025

Instructor, The Command Line for Genomics Workshop, July 15-17, 2024

Instructor, GIS in R for Casco Bay, Jan. 10-12, 2024

Certified Instructor, The Carpentries, Dec. 2023-present

Teaching Assistant, UMass Boston, Biostatistics and Experimental Design, Sept-Dec. 2023

## Research Grants and Fellowships

2023-2028	NSF Graduate Research Fellowship	\$159,000
2023-2025	Nantucket Biodiversity Initiative Climate Change and Island Resilience	\$5,506
2023-2025	DOE Joint Genome Institute Community Science Program	RNA-seq Services
2023	UMB Transdisciplinary Dissertation Proposal Development Program	\$3,000
2023	UMB Nancy Goranson Endowment Fund	\$735
2022	New England Botanical Society Graduate Student Research Award	\$1,500

## Invited Workshops

NCEAS	Environmental Data Science Summit: AI and Conservation Management, Feb. 4-6, 2025, Santa Barbara, CA
AIBS	Policy Communication Bootcamp and Congressional Visits Day, April 28-30, 2025, Washington, DC

## Publications

5. Keller, AG., **Kimball-Rhines, C.**, Leng, D., McIntosh, T., Nelson, K., Reconciling the potential and pitfalls of deep learning paradigms in social-ecological systems research. In prep, *Ecology and Society*
4. **Kimball-Rhines, C.**, Moyers, B., A population methylomic approach to plant diversity and divergence using Nanopore sequencing. In review, *Molecular Ecology Resources*.
3. Comerford, M., Nash, K., St. Germaine, A., Andrews, C., Barr, T., Dain, J., Gonçalves, A., Jones, A., **Kimball-Rhines, C.**, Maguire, B., Richards, A., Schneider, E., Wilkes, L., Vidal, M. C. Quantitative synthesis of the effects of drought on community composition and species interactions in terrestrial ecosystems. In review, *Oikos*.
2. **Kimball-Rhines, C.**, Taveras-Guzman, S., Kaisla, A., Mello, E., Rojas Ramirez, K., Harkess, A., Moyers, B. The annotated, chromosome-scale *Salicornia depressa* (American pickleweed) genome. Accepted, *Journal of Heredity*.
1. **Kimball-Rhines, C.**, Moyers, B. Missing the forest for the trees: A review and case study of state conservation law. In review, *Oryx*.

## Presentations

10. Poster: **Kimball-Rhines C.**, Taveras Guzman, S., Moyers B. "Gene Pool or Puddle: When 'Local is Best' Meets Restoration Reality." Ecological Society of America 2025; August, 2025, Baltimore, MD
9. Poster: **Kimball-Rhines C.**, Moyers B. "Divergence and Diversity Decoupled: A Population Methylomic Approach." Harvard Plant Biology Initiative Meeting; May, 2025, Boston, MA.
8. Poster: **Kimball-Rhines C.** "Drowning to Diverse: A causal analysis of salt marsh sediment placement." Northeast Estuarine Research Society Meeting; April, 2025, Provincetown, MA.
7. Oral Presentation: **Kimball-Rhines C.**, Palmer A., Harkess A., Guzman-Taveras S., Mello E., Rojas V., Moyers B. "Six Hot Tips learned from assembling a tetraploid halophyte genome." Third Joint Congress on Evolutionary Biology; July, 2024, Montreal, QC, CA.
6. Oral Presentation: **Kimball-Rhines C.**, Palmer A., Moyers B. "Genetics for Marsh Conservation." Nantucket Biodiversity Initiative Meeting; November, 2023, Nantucket, MA.

5. Seminar: **Kimball-Rhines C.**, Palmer A., Moyers B. "Live Demonstration of DNA Sequencing for Marsh Conservation." Nantucket Field Station; August 15, 2023, Nantucket, MA.
4. Poster: **Kimball-Rhines C.**, Moyers B. "One Fish, Two Fish, Sea Fish, Bee Fish: Assessing State-Level Biodiversity Policy." Evolution in Small Population Meeting; July, 2023, Princeton, NJ.
3. Poster: **Kimball-Rhines C.**, Moyers B. "One Fish, Two Fish, Sea Fish, Bee Fish: Assessing State-Level Biodiversity Policy." Society for the Study of Evolution; June, 2023, Albuquerque, NM.
2. Poster: **Kimball-Rhines C.**, Palmer A., Moyers B. "Genome Profiling of *Salicornia depressa*." Ecological Society of America Meeting; August, 2023; Montreal, QC, CA.
1. Lightning Talk: **Kimball-Rhines C.**, "Genome Profiling of *Salicornia depressa*" UMass Boston Earth Day Symposium; March 2022; Boston, MA.

## References

Dr. Brook Moyers, Assistant Professor, University of Massachusetts Boston  
Ph.D. Advisor, [brook.moyers@umb.edu](mailto:brook.moyers@umb.edu)

Stacy Greendlinger, Enforcement Coordinator, U.S. Environmental Protection Agency  
Former Supervisor, [stacy.greendlinger@epa.gov](mailto:stacy.greendlinger@epa.gov)

Heidi Holman, Wildlife Biologist, New Hampshire Fish and Game  
Collaborator and Former Supervisor, [heidi.l.holman@wildlife.nh.gov](mailto:heidi.l.holman@wildlife.nh.gov)