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
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
Enforcement intern, GS4
Region 1 Superfund and Emergency Management Division
Assisted on-scene coordinators in assessing contamination at emergency removals
Manager: Stacy Greendlinger, 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
Planned and performed over 700 annual environmental program surveys
Contributed to ongoing projects supporting three endangered insect species
Manager: Heidi Holman, 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 In Review

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. In review, *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

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
Stacy Greendlinger, Enforcement Coordinator, U.S. Environmental Protection Agency
Former Supervisor, stacy.greendlinger@epa.gov
Heidi Holman, Wildlife Biologist, New Hampshire Fish and Game
Collaborator and Former Supervisor, heidi.l.holman@wildlife.nh.gov