Carly S. Lovas

ocean, climate, and society

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Education

Columbia University in the City of New York - Columbia Climate School *2021-2022*
Master of Arts in Climate & Society

College of Charleston - School of Science and Mathematics *2015-2019*
Bachelor of Science in Marine Biology

Relevant Experience

Quantitative Research Associate *2022-2026*
Gulf of Maine Research Institute; Portland, Maine

- Supported a number of collaborative, interdisciplinary and cross-organizational projects at the Gulf of Maine Research Institute.
- Provided quantitative analyses of marine species spatio-temporal distributions, climate models, and regional climate impacts using R.
- Created and maintain accessible and reproducible workflows in GitHub.
- Integrated quantitative fisheries science with coastal resilience and adaptation pathways, strategic science communication, and social science.
- Designed climate-fisheries materials within the context of the Gulf of Maine and North Atlantic fisheries to bolster resilience and adaptation within coastal communities. Contributed written and visual content to project proposals and publications.

Climate Communications Specialist (Project-based) *2022*
Waterfront Alliance & Columbia University; New York, New York

- Co-led a team of Columbia University graduate students in a collaborative project with the Waterfront Alliance.
- Designed, developed, and published a handbook on climate resilience strategies in the New York/New Jersey metro region to promote climate literacy and resilient waterfront infrastructure.

Skills & Competencies

Programming

- 5+ years of programming experience in R.
- Strong background in RStudio, quarto, GitHub, GitHub Pages, Rpackage development, pkgdown, and Shiny dashboards.
- Experienced in data visualization, time series analyses and descriptive statistics, generalized linear and mixed effects models, species distribution models, econometrics and social network graph analysis.
- Built R package to pull, clean, and analyze fisheries independent and dependent data.

Fisheries & Climate Data

- Worked extensively with federal fisheries dependent and independent datasets, including:
  - NOAA Northeast Fisheries Science Center spring and fall bottom trawl surveys
  - Greater Atlantic Regional Fisheries Office dealer landings data, fisheries observer data, vessel trip reports
  - Marine Recreational Information Program (MRIP) trip, catch, and effort data
  - State commercial landings data

- Experience working with empirical and projected sea surface temperature data, including:
  - CMIP6-SSP
  - OISST

Strategic Science Communication

- 6 years of experience creating written and visual science communication content.
- Co-founder of youth-led sustainability zine *Talk Dharti to Me*.
- Former South Carolina Aquarium exhibit guide and Cape Pogue Wildlife Refuge ranger.
- Developed web tools and communication materials to provide fishing communities with species change information relevant to commercial fisheries adaptation.
- Provided general assistance and data visuals for the development of grade school climate change curriculum at the Gulf of Maine Research Institute.

Organization & Leadership

- Led the Gulf of Maine Research Institute research department monthly seminar series, organizing in-person and virtual seminars with external researchers.
- Organized staff-wide events at the Gulf of Maine Research Institute, including the research department's data visualization art walk and annual Science Advisory Committee meetings.
- Ran logistics for three-day FishSCORE 2030 workshop at the Gulf of Maine Research Insitute with 30+ international participants.
- Designed multi-stakeholder workshops regarding permits and federal fisheries access.
- Founded and lead the Maine Migraine and Headache Peer Support Group with support from the Maine chapter of the Brain Injury Associate of America.

General Competencies

- Microsoft Suite, Google Suite
- R, RStudio, Git, GitHub
- Asana, Zenodo, Zotero
- Canva, Adobe

Additional Experience

Founder and Facilitator *2024-present*
Maine Migraine & Headache Peer Support Network

Graduate Research Assistant *2021-2022*
Lamont-Doherty Earth Observatory; New York, New York

Co-Founder and Executive Editor *2020-2022*
Talk Dharti To Me; Mumbai, Maharashtra

Store Associate *2019-2021*
Eastern Mountain Sports; Peterborough, New Hampshire

Research Technician (Intern) *2019*
National Park Service; Glen Jean, West Virginia

Undergraduate Research Assistant *2016-2018*
Grice Marine Laboratory; Charleston, South Carolina

Seasonal Engagement Ranger *2016-2018*
The Trustees Cape Pogue Wildlife Refuge; Edgartown, Massachusetts

Publications

Mills KE, Kemberling A, Kerr LA, Lucey SM, McBride RS, Nye JA, Pershing AJ, Barajas M, **Lovas CS.** (2024) "Multispecies population-scale emergence of climate change signals in an ocean warming hotspot." *ICES Journal of Marine Science,* 2024;, fsad208, https://doi.org/10.1093/icesjms/fsad208.

Allyn AJ, DiFiore B, **Lovas CS**, Mills KE, Hermann NT, Furey NB. Intra-annual variation in species distributions within a rapidly warming marine ecosystem. (in review)

Eurich, J, et al (2026). *Applied approaches and collaborative action advance climate resilience in marine fishery systems* (in review).

Lovas CS, Tokunaga K, Burnham-Knight T, Stoll J, Mills KE. *Diversification and Cross-fishery Spillovers in Coastal Fisheries: Evidence from Climate Change-induced Northern Shrimp Fishery Collapse.* (in prep).

Hermann NT, Allyn AJ, **Lovas CS**, Wuenschel MJ, Smith BE, Mills KE, Furey NB*. A Retrospective Analyses of Fish Diets in the Northeast US Continental Shelf.* (in prep).

Lovas C (2026). species.shifts: Northeast US Marine Species Distribution Change. R package version 0.1.0, https://github.com/carlylovas/species.shifts.

Presentations & Workshops

Co-Designing Learning Across Contexts. NEOSEC Ocean Literacy Summit. October, 2025. [Presentation].

FishSCORE 2030: Approaches to Climate Resilient Marine Fisheries. Gulf of Maine Research Institute. May, 2025. [Workshop].

Ensuring and enabling access to emergent fisheries in the Northeast U.S. International Council for the Exploration of the Sea: Annual Science Conference. September 2025. [Presentation].

Diverged in a warming sea: Intra-annual variation in marine species distributions in a rapidly warming marine ecosystem. International Council for the Exploration of the Sea: Annual Science Conference. September 2025. [Poster].

Nutritional Ecology of Climate Change: Understanding how climate change impacts species distributions, interactions, and trophic dynamics. Curriculum Workshop: A Warming Gulf of Maine - Investigating Impacts on Predators and Prey. April 2025. [Workshop].

Climate, Ocean, Society: Climate Careers in the Marine Sector. Columbia University, Down to Earth Alumni Talks. December 2024. [Presentation].

Assessing accessibility and adaptive capacity in Maine's coastal fisheries. International Council for the Exploration of the Sea: Annual Science Conference. September 2024. [Poster].

Climate Adaptation Resource Hub for Fishing Communities. Gulf of Maine Research Institute. June, July 2024. [Presentation].

Women in Climate and Fisheries. University of Bergen: SDG Bergen 2023 Day Zero conference. February 2023. [Workshop].