

Renee O. Setter
rsetter@hawaii.edu
<https://rsetter.github.io/>

EDUCATION

University of Hawai'i at Mānoa Honolulu, Hawai'i, USA
Ph.D. - Geography and Environment 2020 - present
M.A. - Geography and Environment 2018 - 2019

Cornell University, College of Agriculture and Life Sciences Ithaca, New York, USA
B.S. - Interdisciplinary Studies 2009 - 2013

RESEARCH EXPERIENCE

University of Hawai'i at Mānoa Honolulu, Hawai'i, USA
Ph.D. Dissertation January 2020 - current

Committee: Camilo Mora, Erik C. Franklin, Qi Chen, Brian Szuster, Michael Kantar

- Dissertation: *The Underestimation of Projected Effects of Climate Change on Coral Reefs*
Research on the projected effects of co-occurring anthropogenic stressors on global reefs, opposing directions of suitable climates and implications for coral reefs.
- Coursework in biogeography, climatology, geospatial tech, remote sensing, Python, machine learning.

University of Hawai'i at Mānoa - Institute for Sustainability and Resilience Honolulu, Hawai'i, USA
Graduate Research Assistant August 2022 - current

- Research costs of managed retreat strategies and beach loss under projected sea level rise in Hawai'i.
- Led a case study for retreat strategies as applied to a neighborhood on the north shore of O'ahu.
Continued work expanding methodology to entire islands of O'ahu and Kaua'i.

University of Hawai'i at Mānoa Honolulu, Hawai'i, USA
Master's Thesis August 2018 - December 2019

Committee: Camilo Mora, Erik C. Franklin, Yi Qiang

- Thesis: *Coral Restoration Under Projected Climate Change and Other Human Impacts*
Utilized R and geospatial software ArcGIS with data from CMIP5 global climate projections, human population projections, and land use projections to assess impact on future coral reefs.
- Coursework in statistics, geospatial technology, and coding in R.

University of Hawai'i at Mānoa Honolulu, Hawai'i, USA
Senior Research Assistant June - August 2019

- Led data collection and survey of visitors and beach users at Kailua Beach.
- Mentored a junior research assistant who assisted with administering the survey.

PUBLICATIONS

5. **RO Setter**, ... M Coffman. Managing retreat for sandy beach areas under sea level rise. *Scientific Reports* **13**, 11920 (2023).
4. KM Carlson, C Mora, J Xu, **RO Setter**, et al. Global rainbow distribution under current and future climates. *Global Environmental Change* **77**, 102604 (2022).
3. **RO Setter**, EC Franklin, C Mora. Co-occurring anthropogenic stressors reduce the timeframe of environmental viability for the world's coral reefs. *PLOS Biology*. **20**, e3001821 (2022).
2. C Mora, ... **RO Setter**, et al. Over half of known human pathogenic diseases can be aggravated by climate change. *Nature Climate Change* **12**, 869–875 (2022).

1. H von Hammerstein, **RO Setter**, et al. High-Resolution Projections of Global Sea Surface Temperatures Reveal Critical Warming in Humpback Whale Breeding Grounds. *Frontiers in Marine Science* **9**, 837772 (2022).

Under consideration:

P Pearce-Kelly, ... **RO Setter**, et al. Assessment of warm-water coral reef tipping point thresholds. *Earth System Dynamics*. **In review**, (2024).

In preparation:

RO Setter, KM Webster, D Liu, DW Beilman. Climate trajectory of tropical freshwater peatland: carbon hotspots. *Geophysical Research Letters*.

DW Beilman, C Massa, D Liu, **RO Setter**, KM Webster. Carbon hotspots in montane wetlands in the Hawaiian Islands. *Ecosystems*.

KD Tavares, **RO Setter**, et al. Exploring managed retreat approaches for the protection of sandy beach habitats under sea level rise on Kaua'i. *Climate Risk Management*.

RO Setter, EC Franklin, C Mora. Opposing directions in the movement of suitable climates.

RO Setter, EC Franklin, C Mora. Opposing directions in the movement of suitable climates for coral reefs. *Global Change Biology*.

AWARDS AND HONORS

- 2023-2025 National Science Foundation: STEM STRIDE Fellowship. \$9000
 2023 University of Hawai'i: Geography Research and Travel Award. \$1000
 2022-2023 University of Hawai'i: Geography Department Merit Scholarship Award. \$1300
 2022 United States Geospatial Intelligence Foundation (USGIF): Doctoral Scholarship. \$3000
 2019-2024 National Science Foundation: Graduate Research Fellowship (NSF GRF) #1842402. \$138,000
 2022 University of Hawai'i: College of Social Sciences Travel Funds. \$2000
 2022 University of Hawai'i: Geography Outstanding Publication by Graduate Student Award. \$250
 2022 University of Hawai'i: Geography Research and Travel Award. \$1000
 2021 University of Hawai'i: Geography Department Merit Scholarship Award. \$1500
 2020 University of Hawai'i: Geography Research and Travel Award. \$800
 2019 Women Divers Hall of Fame: Graduate Marine Conservation Scholarship. \$2000
 2019 University of Hawai'i: Geography Research and Travel Award. \$1000
 2019 University of Hawai'i: Orchestra Merit Scholarship Award. \$300

TEACHING EXPERIENCE

University of Hawai'i at Mānoa Honolulu, Hawai'i, USA
Graduate Teaching Assistant - Field Problems in Marine Biology Summer 2020 - 2024

- Oversaw geospatial portion of field summer course with labs in ArcGIS Pro.
- Guided students through remote sensing analysis using satellite imagery.
- Mentored students in utilizing geospatial analysis to enhance robustness of their final projects.

University of Hawai'i at Mānoa Honolulu, Hawai'i, USA
Graduate Teaching Assistant - The Natural Environment August 2018 - May 2019

- Led and facilitated review sessions to clarify course content prior to each exam.
- Lectured and presented course material for one chapter of course content.

PROFESSIONAL EXPERIENCE

Graduate Women in Science - Hawai'i Honolulu, Hawai'i, USA
Secretary August 2023 - current

- Assemble monthly newsletters, take minutes at meetings, maintain membership records.

University of Hawai'i at Mānoa Honolulu, Hawai'i, USA

Student-Faculty Liaison

December 2018 - August 2022

- Represented graduate student body at departmental faculty meetings and faculty hiring candidates.
- Wrote a handbook to assist new students in adapting to the graduate program.

Bay Islands Reef Restoration

Roatán, Honduras

Science Coordinator

January - June 2018

- Analyzed coral growth rates of *Acropora cervicornis* and *Acropora palmata* in the nursery.
- Organized coral outplanting events and created a map for future monitoring purposes.

Sea Save Foundation

Malibu, California, USA [remote from Buenos Aires, Argentina]

Director of Communications

April 2017 - April 2018

- Managed all 6 platforms of communication from social media to web presence of a small nonprofit.

PRESENTATIONS

- RO Setter, KM Webster, D Liu, DW Beilman. Climate trajectory of tropical freshwater peatland: carbon hotspots. *American Association of Geographers Annual Meeting*. April 2024, Honolulu, Hawai'i. Poster.
- RO Setter. Projected effects of climate change on global coral reefs. *BIOL 404: Advanced Topics in Marine Biology*. August 2023, Honolulu, Hawai'i. Oral presentation.
- RO Setter. Projected effects of climate change on marine environments. *BIOL 403: Field Problems in Marine Science*. July 2023, Honolulu, Hawai'i. Oral presentation.
- D Liu, RO Setter, KM Webster, DW Beilman. Hawai'i Island Montane Wetland Vegetation NDVI Response to El Niño and La Niña Conditions. *Tester Symposium*. April 2023, Honolulu, Hawai'i. Poster.
- M Coffman, R Han, RO Setter. Costs and Tradeoffs of Coastal Retreat in Response to Sea Level Rise: A Case Study of the North Shore of O'ahu, Hawai'i. *Ecological Dissertations in Aquatic Sciences Symposium*. March 2023, Honolulu, Hawai'i. Oral presentation.
- RO Setter, EC Franklin, C Mora. Spatial complementarity of multiple human disturbances shortens the timeline of environmental viability for the world's coral reefs. *International Coral Reef Symposium*. July 2022, Bremen, Germany. Poster.
- RO Setter. Analysis Using Big Climate Data. *University of Hawai'i GIS Day*. November 2020, Honolulu, Hawai'i. Oral presentation.
- RO Setter, C Mora, EC Franklin. Impacts of Climate Change and Local Human Impact on Site Selection for Coral Restoration. *American Geophysical Union - Ocean Science Meeting*. February 2020, San Diego, California. Poster.

SKILLS AND INTERESTS

Computer skills: R, Python, geospatial and remote sensing analysis (ArcGIS Pro, ENVI), HPC supercomputer, Agisoft Metashape, climate projections (CMIP6)

Memberships: Graduate Women in Science Hawai'i, International Coral Reef Society, AGU, AAG

Volunteer work: tree planting, coral restoration, beach clean-up, SCUBA underwater clean-ups

Certifications: Scientific Diver Certification - AAUS #933721, PADI Divemaster Certification - #414361

REFEREES

Camilo Mora, PhD (primary PhD and MA advisor). cmora@hawaii.edu

Makena Coffman, PhD (supervisor for research position at ISR). makenaka@hawaii.edu

Erik Franklin, PhD (2nd PhD and MA advisor). erikcf@hawaii.edu