

# Renee O. Setter

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## EDUCATION

- University of Hawai'i at Mānoa**, College of Social Sciences 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.
  - Conducted a case study on retreat strategies as applied to a neighborhood on the north shore of O'ahu; expanded methodology in application to Waikiki area and residential beaches on Kauai.
- 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

6. P Pearce-Kelly, ... **RO Setter**, et al. Considerations for determining warm-water coral reef tipping points. *Earth System Dynamics* 16, 275-292 (2025).
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). 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).

#### **In preparation:**

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 (In Development)*.

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

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

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

#### **AWARDS AND HONORS**

- 2024 Research Corporation of the University of Hawaii Graduate Fellowship Fund. \$2500
- 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 - May 2024

- Assembled monthly newsletters, took minutes at meetings, and maintained membership records.

University of Hawai'i at Mānoa - Department of Geography and Environment 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. Projected effects of climate change on marine & coastal environments. *BIOL 403: Field Problems in Marine Science*. July 2024, Honolulu, Hawai'i. Oral presentation.

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, RX 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.

**SELECT MEDIA COVERAGE**

**BBC.** *Climate change threatens half of planet's coral reefs*. 10/2022.

**NPR.** *Why climate change may be driving more infectious diseases*. 08/2022.

**National Geographic.** *Humpback whales face a major setback from climate change*. 08/2022.

**CBS News.** *Climate change could wipe out all coral reef habitat within decades, scientists warn*. 02/2020.

**NBC News.** *Earth's coral reefs could be gone by 2100, research finds*. 02/2020.

**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, PADI Divemaster Certification, AGRRA