

KAI L. KOPECKY

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PROFESSIONAL APPOINTMENTS

Postdoctoral Associate 2024
Environmental Data Science Innovation & Inclusion Lab ([ESILL](#)) Boulder, Colorado
University of Colorado, Boulder

EDUCATION

Ph.D. Ecology, Evolution, and Marine Biology 2024
University of California, Santa Barbara Santa Barbara, California
Committee: Prof. Russ Schmitt (chair), Prof. Adrian Stier (co-chair),
Prof. Holly Moeller, Prof. Deron Burkepile

M.A. Ecology, Evolution, and Marine Biology 2023
University of California, Santa Barbara Santa Barbara, California

B.S. Ecology and Evolutionary Biology (Honors) 2015
University of California, Santa Cruz Santa Cruz, California

PUBLICATIONS

PUBLISHED (*indicates student author)

1. **Kopecky, K. L.**, Holbrook, S. J., *Partlow, E., *Cunningham, M., & Schmitt, R. J. (2024). Changing disturbance regimes, material legacies, and stabilizing feedbacks: Dead coral skeletons impair key recovery processes following coral bleaching. *Global Change Biology*, 30(9), e17504. <https://doi.org/10.1111/gcb.17504>.
2. **Kopecky, K. L.**, Pavoni, G., Nocerino, E.; Brooks, A. J., Corsini, M., Menna, F., Gallagher, J. P., Capra, A., Castagnetti, C., Rossi, P., et al. (2023). Quantifying the loss of coral from a bleaching event using underwater photogrammetry and AI-assisted image segmentation. *Remote Sensing*, 5, 4077. <https://doi.org/10.3390/rs15164077>.
3. **Kopecky, K. L.**, Stier, A. C., Schmitt, R. J., Holbrook, S. J., & Moeller, H. V. (2023). Contrasting impacts of different disturbance types on coral reefs: Wave disturbance vs. coral bleaching. *The Bulletin of the Ecological Society of America*, 104(2), e02061. <https://doi.org/10.1002/bes2.2061>
4. **Kopecky, K. L.**, Stier, A. C., Schmitt, R. J., Holbrook, S. J., & Moeller, H. V. (2023). Material legacies can degrade resilience: Structure-retaining disturbances promote regime shifts on coral reefs. *Ecology*, e4006. <https://doi.org/10.1002/ecy.4006>.
5. Ingeman, K. E., Zhao, L. Z., Wolf, C., Williams, D. R., Ritger, A. L., Ripple, W. J., **Kopecky, K. L.**, Dillon, E. M., DiFiore, B. P., Curtis, J. S., Csik, S. R., Bui, A., & Stier, A. C. (2022). Glimmers of hope in global apex predator recoveries. *Scientific Reports*, 12(1), 10005. <https://doi.org/10.1038/s41598-022-13671-7>.
6. **Kopecky, K. L.**, Cook, D. T., Schmitt, R. J., & Stier, A. C. (2021). Effects of corallivory and coral colony density on coral growth and survival. *Coral Reefs*, 40, 283-288. <https://doi.org/10.1007/s00338-021-02076-z>.

IN REVIEW

1. **Kopecky, K. L.**, Pavoni, G., Corsini, M., DiFiore, B. P., Brooks, A. B., Nocerino, E., & Menna, F. Clearing a path to resilience: removal of dead coral skeletons mitigates impacts of coral bleaching. *Conservation Biology*. Preprint: <https://doi.org/10.22541/au.172542290.03787750/v1>.

IN PREPARATION (*indicates equal first authorship)

1. *Schmitt, R. J., ***Kopecky, K. L.**, Brooks, A. B., Gallagher, J. P., & Holbrook, S. J. From resilience to regime shift: Marine heat waves catalyze macroalgal stability domains on coral reefs. **Planned submission date and journal:** November 2024, *Proceedings of the National Academy of Sciences*.
2. DiFiore, B. P., Reed, D. C., Miller, R. J., Castorani, M. C. N., Kui, L., Detmer, R., Beckley, B., Bui, A., **Kopecky, K. L.**, Moeller, H. V., Samhuri, J., & Stier, A. C. Historical variability in a marine foundation species mediates benthic competition to determine current community structure. **Planned submission date and journal:** November 2024, *Oecologia*.

3. **Kopecky, K. L.**, Pavoni, G., Corsini, M., Holbrook, S. J., & Schmitt, R. J. Tracking individual coral colony fates at ecologically relevant scales using AI-assisted image analysis. **Planned submission date and journal:** December 2024, *Methods in Ecology and Evolution*.

DISSERTATION

Kopecky, K. L. (2024). *The Remains of Change: How the Legacies of Shifting Disturbance Regimes Impact the Resilience of Contemporary Coral Reefs*. <https://www.proquest.com/dissertations-theses/remains-change-how-legacies-shifting-disturbance/docview/3099561094/se-2?accountid=14503>

FELLOWSHIPS, GRANTS, AND AWARDS

Postdoctoral Research Fellowship <i>Environmental Data Science Innovation & Inclusion Lab</i>	2024
Graduate Division Dissertation Fellowship <i>University of California, Santa Barbara</i>	2023
Storke Graduate Fellowship <i>University of California, Santa Barbara</i>	2023
Worster Research Award <i>Worster Foundation</i>	2022
Graduate Student Accelerator Award <i>Schmidt Family Foundation</i>	2021
Departmental Fellowship <i>University of California, Santa Barbara</i>	2019, 2020

RESEARCH EXPERIENCE

Postdoctoral Researcher <i>Environmental Data Science Innovation & Inclusion Lab</i>	2024 Boulder, CO
Invited Researcher <i>Tetiaroa Society</i>	2023 Tetiaroa, French Polynesia
Graduate Student Researcher <i>NSF Moorea Coral Reef Long Term Ecological Research project</i>	2018-2024 Moorea, French Polynesia
Coral Restoration Technician <i>The Nature Conservancy</i>	2017 US Virgin Islands
Research Assistant <i>Brown University</i>	2015 Loreto, Mexico
NSF Research Experience for Undergraduates <i>University of California, Santa Cruz</i>	2014 Santa Cruz, CA

TEACHING EXPERIENCE

INSTRUCTOR OF RECORD

Biology and Ecology of Coral Reefs (EEMB 147) <i>Department of Ecology, Evolution, and Marine Biology</i>	2023 UC Santa Barbara
Marine Conservation Ecology (EEMB 142C) <i>Department of Ecology, Evolution, and Marine Biology</i>	2022 UC Santa Barbara
Aquatic Community Ecology (EEMB 142A) <i>Department of Ecology, Evolution, and Marine Biology</i>	2021 UC Santa Barbara

LEAD TEACHING ASSISTANT

Methods in Aquatic Community Ecology (EEMB 142AL) **2019-2023**
Department of Ecology, Evolution, and Marine Biology UC Santa Barbara

Applied Marine Ecology (EEMB/ES 152) **2019-2023**
Department of Ecology, Evolution, and Marine Biology; UC Santa Barbara
Department of Environmental Science

TEACHING ASSISTANT

Introduction to Ecology and Evolution (EEMB 2) **2020**
Department of Ecology, Evolution, and Marine Biology UC Santa Barbara

Aquatic Community Ecology (EEMB 142A) **2018**
Department of Ecology, Evolution, and Marine Biology UC Santa Barbara

MENTORSHIP

QUANTITATIVE SKILLS

ESIIL Stars Program **2025**
Environmental Data Science Innovation & Inclusion Lab

PROFESSIONAL ADVISING

Madeline Cunningham **2023-present**
Emalia Partlow **2022-present**
Yadi Galindo-Salazar **2020-present**
Lauren Enright **2019-present**

FIELD MENTORSHIP (*Indicates primary field mentee)

Madeline Cunningham*, Anneke Padmos, Jaden Harding, Joaquin Sandoval, Marina Stoilova, Jada Alexander, Lexi Stittenfeld-Parkhurst **2023**

Emalia Partlow*, Anneke Padmos, Elizabeth McEligot, Madigan Boborci, Katie Riley, Adam Goodman **2022**

Lauren Enright*, Kai Oda, Kera Heimlich, Maya Gorgas, Journ Galvan, Haley Glasmann **2019**

LAB TRAINING

Madeline Cunningham **2021-2024**
Hayden Vega, Jada Alexander, Lexi Stittenfeld-Parkhurst **2022-2024**
Emalia Partlow **2021-2023**
Jaden Harding, Emma Harris, Andrew Gonzales, Stella Malva, Zara Furtado-Quesenberry **2022-2023**
Jake Denton, Madigan Boborci **2022**
Elizabeth McEligot, Molly Banks **2021**
Karen Thornton **2020**

OUTREACH AND SCIENCE COMMUNICATION

Invited Speaker **2025**
CIRES Science Pathways Program TBD

Invited Speaker and Activity Leader <i>Sea the Future</i>	2024 Goleta Valley Junior High School, CA
Science Demonstrator <i>Career Night</i>	2024 Goleta Valley Junior High School, CA
STEM Professional Pen Pal <i>Letters to Pre-scientists</i>	2023-2024 Fort Madison Middle School, IA
Science Communicator <i>Earth Day Festival</i>	2022-2024 Santa Barbara, CA
Invited Remote Sensing Specialist <i>Tetiaroa Society</i>	2023 Tetiaroa, French Polynesia
Invited Speaker <i>Tetiaroa Society, students with disabilities immersion</i>	2023 Tetiaroa, French Polynesia
Activity Organizer <i>Piafau Primary School, school visit</i>	2023 Moorea, French Polynesia
Graduate Student Speaker <i>Science as a Career Outreach Project Experiment (SCOPE)</i>	2019-2023 Ventura High School, CA
Workshop Organizer <i>Demystifying Graduate School</i>	2019-2023 UC Santa Barbara, CA
Panel Organizer <i>Graduate School Lifestyles</i>	2019-2023 UC Santa Barbara, CA
Panel Organizer <i>Alternative Careers in Science</i>	2019-2023 UC Santa Barbara, CA
Science Communicator <i>Science by the Pint</i>	2022 Santa Barbara, CA
Invited Speaker <i>Science Acceleration Program</i>	2022 Dana Point High School, CA
School-visit Activity Leader <i>Puna Reo Cultural Center</i>	2019 Moorea, French Polynesia
Science Communicator <i>Te Pu Atitia, school principal visit</i>	2019 Moorea, French Polynesia
Invited Speaker <i>Washington Accelerated Program</i>	2019 UC Santa Barbara, CA
<u>MEDIA</u>	
Title and link TBD	2024 <i>NSF The Discovery files</i>
Dead coral skeletons hinder reef regeneration by sheltering seaweed	2024

<https://news.ucsb.edu/2024/021616/dead-coral-skeletons-hinder-reef-regeneration-sheltering-seaweed> UCSB Current

Stripped to the Bone: Research in Moorea shows the presence of coral skeletons influences reef recovery after bleaching 2023
UCSB Current
<https://news.ucsb.edu/2023/020884/stripped-bone>

Crunching on coral 2021
UCSB Current
<https://news.ucsb.edu/2021/020231/crunching-coral>

Research in paradise 2019
UCSB Current
<https://news.ucsb.edu/featured/moorea-series/moorea-coral-reef-research-paradise>

RELEVANT TRAININGS

Cultural and Tribal Sensitivity in Research 2024
Environmental Data Science Innovation & Inclusion Lab CU Boulder, CO

Inclusive Language 2025
Cooperative Institute for Research in Environmental Sciences CU Boulder, CO

Diversity, Equity, Inclusion, and Belonging in Data Science 2024
Environmental Data Science Innovation & Inclusion Lab CU Boulder, CO

Team Science 2024
Environmental Data Science Innovation & Inclusion Lab CU Boulder, CO

Foundational Open Science Skills 2024
CyVerse University of Arizona, AZ

Cyberinfrastructure 2024
Environmental Data Science Innovation & Inclusion Lab CU Boulder, CO

RESEARCH COMMUNICATIONS

INVITED SEMINARS AND LECTURES

Coral reef conservation 2024
Coral Reef Ecology (EBIO 4090) | Ecology and Evolutionary Biology Dept. CU Boulder, CO

Impacts of material legacies on the resilience of foundation species 2024
Ecology and Evolutionary Biology Colloquium CU Boulder, CO

Impacts of material legacies on the resilience of foundation species 2024
Environmental Data Science Seminar Series CU Boulder, CO

The role of material legacies in conservation and restoration 2024
Institute for Conservation Research and Education Expert Talk Series Orange County, CA

The roles of dead coral skeletons under changing disturbance regimes 2023
Applied Marine Ecology (ESM 260) | Bren School of the Environment UC Santa Barbara, CA

Material legacies, disturbance, and resilience 2022
University of Sassari Sassari, Italy