

KATE A. BECKER

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EDUCATION

Master of Environmental Data Science (June 2024)

Bren School of Environmental Science & Management – University of California, Santa Barbara (UCSB)

Highlighted Coursework: Machine Learning, Data Visualization, Geospatial Analysis and Remote Sensing, Scientific Programming, Analytical Workflows, and Scientific Reproducibility, Statistical Modelling, Sentiment Analysis, Environmental Policy Evaluation

Bachelor of Science in Environmental Studies (June 2023)

University of California, Santa Barbara (UCSB)

Concentrations: Environmental Policy, Sustainability, Climate Change, and Conservation

International Academic Field Studies Program: Wildlands Studies Hawaii, Big Island, Hawaii (3/21–5/21); Focus on marine and terrestrial field research as well as indigenous marine management and food systems

MASTER'S CAPSTONE PROJECT

Improving Access to Consumption Advisories and Maintaining Confidence in California's Seafood Products (1/24–6/24)

Role: Product Leader | **Clients**: Scripps Institute of Oceanography, California Cooperative Oceanic Fisheries Investigations (CalCOFI) | **Deliverables**: Interactive Web Application, Shiny Dashboard Github Repository, User Manual, and Technical Guide | [Repository](#) | [Blog](#)

- Executed the development and deployment of [SaferSeafood](#), an interactive, data-driven, public-facing web application that estimates DDT levels in seafood catches and provides consumption advisories based on species and location of capture
- Developed a spatiotemporal statistical model to predict DDT concentrations in fishes across Southern California
- Invited to attend the Southern California Oceanic Observing Systems Conference (SCOOS) in San Diego

RESEARCH EXPERIENCE

Senior Research Assistant

Centre for Biodiversity and Conservation Science, University of Queensland, Brisbane, Australia (1/25–Present)

- Analyzing global fisheries bycatch using advanced statistical modeling, machine learning, data cleaning, version control, geospatial mapping, and data visualization tools
- Leading development of a global endangered species database using R, SQL, web scraping, and policy evaluation for academic and applied conservation use
- Collaborating with industry partners to translate findings into fishery-specific, environmentally sustainable fishing strategies
- Co-authoring peer-reviewed publications and solving computational challenges in a multidisciplinary research environment
- Delivered a research presentation at the International Congress for Conservation Biology on current project findings and future applications
- Secured funding and organized a cross-sector stakeholder workshop to enhance database accessibility, usability, and data validation

Undergraduate Researcher

Eliason Lab – UCSB, Santa Barbara, CA (3/22–6/23)

- Investigated thermal tolerance of fishes under fluctuating temperatures and varying diet quality using cardiovascular performance as a metric
- Performed fish husbandry for approximately 130 *Fundulus parvipinnis* and *Girella nigricans* in a wet lab over six months
- Aided in data collection for copper toxicity tolerance research in *Mytilus galloprovincialis*

Summer Intern

Eliason Lab - UCSB, Santa Barbara, CA (5/22–8/22)

- Designed the investigation of parasite load, *Euhaplorchis californiensis*, in the brain regions of California killifish, *Fundulus parvipinnis*, as it pertains to thermal tolerance
- Awarded UCSB Coastal Fund (\$5,000)

ADDITIONAL EXPERIENCE

Fine Dining Waitress, The Kitchen American Bistro, Boulder, CO (7/24–11/24)

- Upheld the restaurant's mission, established by Kimbal Musk, to provide an exceptional and personalized dining experience
- Served elevated international dishes and cocktails with knowledge of menu items, flavor profiles, pairing options, and allergens
- Provided attentive service across brunch, lunch, and dinner shifts while taking on additional responsibilities such as food running, restocking, bussing, hostessing, and ensuring sanitation standards

Fine Dining Waitress, The Ritz-Carlton Bacara, Santa Barbara, CA (6/21–1/22)

- Served food and beverages to a variety of high-profile guests for an average of 40 hours a week while receiving bachelor's degree
- Memorized hotel guest profiles, daily specials, seasonal cocktail list, and regular menu, including possible allergens
- Performed extra work as needed such as food running, barista, restocking, cleaning, and private event staff

Boutique Sales Associate, Stella E Luna Boutique, Point Pleasant, NJ (5/19–10/19)

Strengthened upscale boutique by managing and processing sales, social media marketing, and customer satisfaction

Food Service, Shore Fresh Seafood Restaurant & Market, Point Pleasant, NJ (6/18–10/18)

Provided food and beverage service to an average of seven tables at once while coordinating seafood market

SKILLS, CERTIFICATIONS, & ADDITIONAL EDUCATION

Technical: Spatial Mapping in ArcGIS, Advanced Statistical Analysis, Data Visualization, UX Design, Machine Learning, Google Workspace, Scientific Writing, R, Python, SQL, Git, (Basic) Command Line, Microsoft Office (Word, Excel, PowerPoint), Java, HTML, and CSS

Research Qualifications: IACUC Training (Fish), CITI Wildlife Research, CITI Working with Fish in Research Settings

Certification: PADI Open Water Diver

Additional Education: University of Queensland, Australia UCEAP Study Abroad Program (Winter 2021 and Spring 2021); Accepted twice into competitive academic program but canceled due to COVID-19; Marine Biology and Terrestrial Ecology courses while working in conjunction with the Heron Island Research Station

Writing, Research, and Presentation: Report writing, literature review, policy memos, and public presentations

PROJECTS

Phenology Investigation

Employed Landsat satellite imagery to analyze vegetation indices
Created a custom NDVI (Normalized Difference Vegetation Index) function
Manipulated raster data to ensure spatial alignment and consistency

Link to repository: https://github.com/katebeckerr/Phenology_Investigation.git

Remote Sensing Land Cover

Converted Landsat values to reflectance values
Utilized the terra package in R for spatial data processing and wrangling
Implemented true color imagery
Developed and applied a decision tree classifier

Link to repository: https://github.com/katebeckerr/RemoteSensing_Landcover.git

Redlining Injustices

Employed EJSCREEN data to assess environmental justice indicators
Mapped and visualized spatial data using geospatial tools
Wrangled geometries and integrated EPA data with Landsat 8 satellite imagery

Link to repository: https://github.com/katebeckerr/Redlining_Injustices.git

Santa Barbara Thomas Fire

Processed raster datasets for analysis and classification
Utilized NumPy in Python for data manipulation and numerical operations
Constructed true and false color imagery

Link to repository: https://github.com/katebeckerr/ThomasFire_Analysis