

## Rebecca Ann Howard

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### EDUCATION

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- Ph.D. Ocean Ecology and Biogeochemistry, Oregon State University, Corvallis, OR, 2025 Expected  
Minor in Statistics  
Dissertation: “Projecting the distributions of marine organisms in the North Pacific”
- M.S. Marine Resource Management, Oregon State University, Corvallis, OR, September 2020  
Thesis: “Change in Oregon’s nearshore groundfish trawl fishery: Perspectives from science and industry data”
- B.S. Aquatic Biology, University of California, Santa Barbara, CA, June 2015  
Minor in Earth Science

### RESEARCH EXPERIENCE

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- 2022 – Present **Cooperative Institute for Climate, Ocean, and Ecosystem Studies Graduate Research Assistant**  
Oregon State University, College of Earth, Ocean, and Atmospheric Sciences  
Developing updated species distribution models for snow crab (*Chionoecetes opilio*) in order to provide short term forecasts. Using machine learning methods to predict distributions of different sexes and sizes.
- 2021 – Present **National Science Foundation Graduate Research Assistant**  
Oregon State University, College of Earth, Ocean, and Atmospheric Sciences  
Evaluating the trade-offs in using size-structured and size-aggregated species distribution models for projecting distributions of California Current System fish species under different climate scenarios.
- 2020 - 2021 **North Pacific Research Board Graduate Research Assistant**  
Oregon State University, College of Earth, Ocean, and Atmospheric Sciences  
Hindcasting and forecasting eastern Bering Sea groundfish spawning distributions under future oceanographic conditions using the Bering 10K ROMS-NPZ. Used statistical modeling to hindcast distributions that then informed models used to forecast distributions during different emissions scenarios.
- 2018 – 2020 **Oregon Sea Grant Graduate Research Assistant**  
Oregon State University, College of Earth, Ocean, and Atmospheric Sciences  
Used statistical models to investigate the effects of oceanography and climate on groundfish long-term distribution and abundance in the northern California Current. Studied the overlap of fishery-independent (NOAA survey) and -dependent (logbook and landings) data sources on the Oregon continental shelf and their potential utility for assessment of nearshore flatfishes.
- 2014 – 2015 **Undergraduate Research Assistant**  
Marine Science Institute, University of California Santa Barbara (Page/Dugan Lab)  
Tested the swimming duration of *Watersipora subtorquata* to determine potential to spread as invasive species in the Santa Barbara Channel. Participated in SCUBA settlement plate surveys for presence of recently settled *W. subtorquata*. Conducted SCUBA surveys for eelgrass presence.
- 2014 **Undergraduate Research Assistant**  
Earth Research Institute, University of California Santa Barbara (CEIN)

- Development of settlement plate frames and antifouling paint treatments to test effectiveness of zinc and copper on invertebrate fouling communities.
- 2013 – 2014 **Undergraduate Research Assistant**  
EEMB Dept., University of California Santa Barbara (Dr. Peter Collins' Lab)  
Documented the embryonic development of cabezon (*Scorpaenichthys marmoratus*) using photomicroscopy. Assisted in larval rockfish laboratory hypoxia studies.

## **EMPLOYMENT**

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- 2016 – 2017 **AmeriCorps Member**  
Watershed Stewards Program, place at the NMFS SWFSC  
Collected data for population assessment of endangered Central California Coho salmon and threatened steelhead trout by stream surveys, juvenile trapping, and tagging. Created maps using ArcGIS for conference poster and future publications. Archived historical biological samples. Taught watershed curriculum to 3<sup>rd</sup> grade students and put on restoration event at a state park.
- 2015 – 2017 **North Pacific Groundfish Observer**  
Alaskan Observers, Inc., contracted for the NMFS AFSC  
Collected biological, safety, and effort data aboard commercial bottom trawlers in the Bering Sea. Biological data included maturity scans, otoliths, and salmon genetic samples. Worked with observers, NMFS scientists, fishermen, and processing plants.
- 2012 – 2015 **Aquarist** (2015), **Intern** (2013 – 2015), **Volunteer** (2012 – 2013)  
Research Experience and Education Facility (REEF), UCSB

## **PUBLICATIONS**

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- RA Howard**, L Ciannelli, WW Wakefield, MA Haltuch. (2023). Comparing fishery-independent and fishery-dependent data for analyzing the distributions of Oregon shelf groundfishes. *Fisheries Research*, 258, 106553. <https://doi.org/10.1016/j.fishres.2022.106553>
- RA Howard**, L Ciannelli, WW Wakefield, and MR Fewings. (2021). The effects of climate, oceanography, and habitat on the distribution and abundance of northern California Current continental shelf groundfishes. *Fisheries Oceanography*, 30(6), 707–725. <https://doi.org/10.1111/fog.12553>

## **POSTERS & PRESENTATIONS**

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- RA Howard**, L Ciannelli, JC Field, BK Wells, LAK Barnett, RG Asch. (2022, November 7-11). *The influence of ontogeny and size on the distribution of juvenile forage fishes*. [Poster presentation]. Small Pelagic Fish Symposium, Lisbon, Portugal.
- RA Howard**, L Ciannelli, LA Rogers, KA Kearney, L Vary. (2022, February 27-March 4). *Effects of future climate variability on Bering Sea groundfish spawning distributions*. [Oral presentation]. Ocean Sciences Meeting, Virtual.
- RA Howard**, L Ciannelli, LA Rogers, KA Kearney, L Vary. (2022, January 24-27). *Effects of future climate variability on Bering Sea groundfish spawning distributions*. [Oral presentation]. Alaska Marine Science Symposium, Virtual.
- RA Howard**, L Ciannelli, and WW Wakefield (2020, December 1-2). *Visualization and overlap of fishery-independent and fishery-dependent data for assessment of the Oregon shelf flatfish fishery*. [Poster presentation]. CalCOFI Conference, Virtual. [calcofi.org/conference/posters](https://calcofi.org/conference/posters)

- RA Howard**, L Ciannelli, WW Wakefield, and MR Fewings. (2020, March 4-5). *Four decades of change in the Oregon nearshore flatfish fishery through the eyes of science and industry*. [Poster presentation]. Meeting of the Oregon American Fisheries Society, Bend, OR.
- RA Howard**, L Ciannelli, WW Wakefield, and MR Fewings. (2019, November 8-9). *Four decades of change in the Oregon nearshore flatfish fishery through the eyes of science and industry*. [Poster presentation]. State of the Coast Conference, Gleneden Beach, OR.
- RA Howard**, and HM Page. (2015, May 19). *Larval swimming duration of Watersipora subtorquata*. [Poster presentation]. UCSB Undergraduate Research Colloquium, Santa Barbara, CA.
- RA Howard** and PM Collins. (2014, May 20). *Embryonic development of the cabezon (Scorpaenichthys marmoratus)*. [Poster presentation]. UCSB Undergraduate Research Colloquium, Santa Barbara, CA.

## **AWARDS & HONORS**

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- 2022 Ocean Ecology of Nekton Research Scholarship, Oregon State University
- 2021 Kuhnel Regional Scholarship, Mensa Education and Research Foundation
- 2020 Thesis Completion Award, Oregon State University
- 2018 Provost's Distinguished Graduate Fellowship, Oregon State University
- 2017 Segal AmeriCorps Education Award, Corporation for National and Community Service
- 2015 B.S. Aquatic Biology Distinction in Major, University of California Santa Barbara
- 2014 Bradley Paul Nuremberg Memorial Scholarship, UCSB Diving Operations

## **FIELD EXPERIENCE**

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- July 2019 **Volunteer Survey Biologist**  
West Coast Groundfish Bottom Trawl Survey (F/V Last Straw)  
NMFS NWFSC Fishery Resource Analysis and Monitoring Division
- July 2019 **Mooring and Instrument Deployment Volunteer**  
Partnership for the Interdisciplinary Studies of Coastal Oceans (R/V Elakha)  
Department of Integrative Biology, Oregon State University
- May 2017 **Volunteer Survey Biologist**  
Rockfish Recruitment and Ecosystem Assessment Survey (NOAAS Reuben Lasker)  
NMFS SWFSC Fisheries Ecology Division
- March 2017 **Rockfish Specimen Collection Volunteer**  
Cordell Bank National Marine Sanctuary rockfish collection (charter vessel)  
NMFS SWFSC Fisheries Ecology Division

## **MENTORING & OUTREACH**

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- 2019 – 2022 **National Ocean Sciences Bowls, OSU**  
Salmon Bowl event volunteer.
- 2019 – 2020 **Academic Mentoring Program (CEOAS AMP), OSU**  
Mentor for four undergraduate students in environmental sciences.
- 2014 – 2015 **Graduate Biology Mentorship Association (BIOME), UCSB**  
Mentor for undergraduate students in biology.
- 2014 – 2015 **Hollister Ranch Tidepool Conservancy, Gaviota, CA**  
Outdoor education for 3<sup>rd</sup> through 7<sup>th</sup> grade students.

**UNIVERSITY SERVICE**

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CEOAS 2022 Promotion and Tenure Student Committee, Corvallis, OR

CEOAS 2022-2023 Ocean Ecology & Biogeochemistry Graduate Representative, Corvallis, OR

CEOAS 2020 Promotion and Tenure Student Committee, Corvallis, OR