

# Ruby Krasnow

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## EDUCATION

**University of Maine** School of Marine Sciences, Orono, ME Jan. 2025 – present  
Ph.D. in Marine Biology

**Clark University**, Worcester, MA Dec. 2024  
B.A. in Biology, Minor in Mathematics  
*summa cum laude* (GPA: 4.0)

**Marine Biological Laboratory** (University of Chicago), Woods Hole, MA Fall 2023  
Semester in Environmental Science (SES)

## RESEARCH EXPERIENCE

**NMFS-Sea Grant Graduate Research Fellow** (PI: Dr. Damian Brady) Jan. 2025 – present

- Conducting systematic reviews and meta-analyses related to crustacean size at maturity
  - Establishing first global database of spiny lobster (genus *Panulirus*) size at maturity estimates and identifying spatial, temporal, and taxonomic patterns
- Expanding on Hollings Internship simulation testing to develop an evidence-based guide for selecting the optimal size at maturity modeling approach for a given dataset
- Developing an open-source R package to implement size at maturity models, directly facilitating improved management of valuable lobster and crab fisheries
- Providing support with statistical analysis and modeling to other undergraduate and graduate students and post-doctoral researchers in the Brady lab

**NOAA Ernest F. Hollings Internship** (PI: Dr. Burton Shank) Apr. 2024 – Dec. 2024  
Northeast Fisheries Science Center, Woods Hole, MA

- Initiated systematic review of methods used to model crustacean size at maturity
- Evaluated the performance of both clustering- and piecewise regression-based size at maturity modeling approaches
  - Performed simulation testing using artificial datasets with known parameters
- Quantified and visualized spatial variation in Jonah crab size at maturity using a novel methodology based on Gaussian mixture model clustering and spatial logistic regression

**Independent Research Project** June – Aug. 2023

Marine Biological Laboratory & Woods Hole Oceanographic Institution, Woods Hole, MA

- Cultivated and imaged juvenile sugar kelp sporophytes for growth analysis
- Improved on published Dynamic Energy Budget (DEB) model for sugar kelp
- Developed and coded novel approach of reparameterizing nonlinear temperature response curves in DEB model to account for intraspecific variation in thermal tolerance
  - Enables single model to be applied to many geographic regions
  - The updated model predicted kelp blade length within 1 cm of observed mean
- Rewrote existing R code using 'tidyverse' functions and implemented parallel processing, reducing runtime by orders of magnitude

**Quantitative Marine Ecology Research - NSF BRITE REU**

June – Aug. 2023

NSF-funded Research Experience for Undergraduates (REU)

Bioinformatics Program and Department of Biology, Boston University, Boston, MA

- Analyzed trawl survey data on Jonah crab and other benthic species in the Gulf of Maine
- Developed R code for novel spatial extension of Empirical Dynamic Modeling, a nonparametric method of representing and forecasting nonlinear dynamical systems
- Employed a variety of spatiotemporal data science techniques, including OLS/GLS, linear mixed-effects models, GAM(M)s, and autoregressive/ARIMA time series models

**Aquaculture Research Intern**

May – Aug. 2022

University of Maine/Darling Marine Center, Walpole, ME

- Designed and conducted project investigating effects of cultivation method and environmental conditions on oyster mortality, growth, appearance, and biofouling
- Deployed 6 treatment groups of oysters, led multiple sampling and measurement days
- Collected and analyzed environmental data: temperature, salinity, chlorophyll (standard fluorescence protocol with acetone extraction), turbidity, particulate organic matter
- Served as acting manager at commercial oyster farm
  - Ensured survival of over \$1 million in oysters

**Energy Democracy & Sustainability Intern**

Oct. 2020 – Apr. 2022

Energy Alabama, Huntsville, AL

- Researched rural electric cooperatives (RECs) to create a scorecard comparing Alabama's 22 RECs on criteria such as democratic governance and clean energy
  - Collected data from REC websites, tax documents, bylaws, court cases, state/federal legislation, media coverage, and direct outreach to each REC
- Designed more efficient spreadsheet templates for recording and analyzing REC data, accelerating development of similar scorecards in five other states
- Authored 72-page report on findings and significance of the Alabama REC scorecard

**GRANTS, FELLOWSHIPS, & AWARDS**

|                                                                                |               |
|--------------------------------------------------------------------------------|---------------|
| NMFS-Sea Grant Joint Fellowship in Population & Ecosystem Dynamics (\$167,311) | Sep. 2025     |
| Queen's University Mathematical Ecology Workshop Travel Scholarship (\$949)    | Apr. 2025     |
| Open Bioinformatics Foundation Event Fellowship (\$1,060)                      | Apr. 2025     |
| posit::conf(2025) Opportunity Scholarship (\$2,097)                            | Apr. 2025     |
| Phi Beta Kappa Society                                                         | Mar. 2025     |
| Clark University Howard Bonar Jefferson Award                                  | Apr. 2024     |
| NOAA Ernest F. Hollings Scholarship (\$14,250)                                 | Apr. 2023     |
| Clark University Dean's List - First Honors                                    | All semesters |
| Clark University Richard P. Traina Scholarship (\$80,000)                      | Aug. 2021     |
| Valedictorian – New Century Technology High School                             | Aug. 2021     |
| National Merit Scholarship (\$2,500)                                           | Mar. 2021     |

## PEER-REVIEWED PUBLICATIONS

Rzeszowski, E., Krasnow, R., & Brady, D. (2026). Divergent environmental niches and climate vulnerabilities of Jonah crab (*Cancer borealis*) and Atlantic rock crab (*Cancer irroratus*).

*Fisheries Oceanography*. <https://doi.org/10.1111/fog.70078>

Cleaver, C., Bayer, S., McMahan, M., Kiffney, T., Krasnow, R., Jekielek, P., Moritz, B., Batchelder, J., Arnold, S.N., Guenther, G., Miller, D., Miller, T., Wahle, R., Wotton, J., & Young, T.H. (2026). The effects of small-scale closed areas on the Atlantic sea scallop (*Placopecten magellanicus*) in Maine. *Marine and Coastal Fisheries*, 18(1), vtaf041.

<https://doi.org/10.1093/mcfafs/vtaf041>

Cooper, N., Allen, B.J., ..., Krasnow, R., ..., Windecker, S.M. (2026). Data- and code-archiving in the British Ecological Society journals: present status and recommendations for future improvements. *Methods in Ecology and Evolution*. 17(7).

<https://doi.org/10.1111/2041-210x.70338>

Pick, J. L., Allen, B., Bachelot, B., Bairos-Novak, K. R., Brand, J. A., Class, B. A., Dallas, T., D'Amelio, P. B., Fenollosa, E., Fernández-Juricic, E., Gomes, D. G. E., Grainger, M., Guillemaud, T., John, C., Krasnow, R., Lagisz, M., Lequime, S., ..., & Ivimey-Cook, E. R. (2026). The SORTEE guidelines for data and code quality control in ecology and evolutionary biology.

*Peer Community Journal*, 6, e20. <https://doi.org/10.24072/pcjournal.687>

Krasnow, R., Kiffney, T., Coleman, S., Cuddy, R., & Brady, D. (2025). Quantifying oyster aquaculture lease acceptance: a case study on repurposed Maine lobster pounds. *Aquaculture Reports*, 44, 103067. <https://doi.org/10.1016/j.aqrep.2025.103067>

Krasnow, R., Kaufman, L., & Deyle, E. (2025). Making the most of available data: a case study of converging analyses to model an emerging fishery for Jonah crab (*Cancer borealis*). *Fish & Fisheries*. 26(6), 991-1003. <https://doi.org/10.1111/faf.70011>

Krasnow, R., Kiffney, T., Cuddy, R., & Brady, D. (2025). Interacting effects of environment and cultivation method on biofouling of farmed oysters (*Crassostrea virginica*). *Journal of the World Aquaculture Society*, 56(3), e70012. <https://doi.org/10.1111/jwas.70012>

Krasnow, R. (2025). Making partial differential equations accessible to ecologists. *Nature Reviews Biodiversity*, 1, 87–87. <https://doi.org/10.1038/s44358-025-00017-0> (full text link)

Krasnow, R., Gonzalez, S., & Lindell, S. (2024). Improving growth models of cultivated sugar kelp (*Saccharina latissima*) by accounting for intraspecific variation in thermal tolerance. *Journal of the World Aquaculture Society*. <https://doi.org/10.1111/jwas.13085>

Chammout, H., Adkins, D. L., Al-Olimat, A. K., ..., Krasnow, R., ... & Kagey, J. D. (2024). G.3.2 is a novel allele of the gene *connector enhancer of ksr* (*cnk*) in *Drosophila melanogaster*. *microPublication Biology*. <https://doi.org/10.17912/micropub.biology.001290>

## PREPRINTS

Lagisz, M., Gownaris, N.J., ..., Krasnow, R., ..., Nakagawa, S. (2026). *Who leads diversity efforts in science? Evidence of minority tax in DEI committees of international learned societies in Ecology and Evolutionary Biology*. EcoEvoRxiv. <https://doi.org/10.32942/X29M10>

## OTHER ARTICLES

Peters, J., Lewis, A., Wilson, A., Kowalski, C., Brookson, C. B., Koren, G., Moustahfid, H., O'Grady, H., McLachlan, J., Zobitz, J., Lofton, M., Krasnow, R., & Sabet, S. S. (2025). Resources for Reviewing Code. *Ecological Forecasting Initiative*. <https://ecoforecast.org/resources-for-reviewing-code>

Krasnow, R. (2025). A Tasty Enigma. *The Marine Biologist*, 33, 12–16. <https://www.yumpu.com/en/document/read/69919198/the-marine-biologist-issue-33>

Gruson, H., Butland, S., & Krasnow, R. (2025). The Dynamic Relationship of Forks with Their Upstream Repository. *rOpenSci*. <https://doi.org/10.59350/5n1pv-3sg04>.

Krasnow, R. (2022). Reviving lobster pounds as oyster farms. *The Working Waterfront*. <https://www.islandinstitute.org/working-waterfront/reviving-lobster-pounds-as-oyster-farms/>

## PROFESSIONAL ENGAGEMENT & SERVICE

**Code & Data Editor** for Peer Community In 2025 – present

- PCI Ecology (4) and PCI Evolutionary Biology (1)
- Ensure code, data, and metadata are properly archived and adhere to FAIR principles
- Check computational reproducibility of results described in the manuscript

**SORTEE Fundraising Committee Chair** Jan. 2025 – present

- Volunteer head of the SORTEE (Society for Open, Reliable, & Transparent Ecology & Evolutionary Biology) Fundraising Committee
- Write and edit grant proposals
- Identify potential sources of financial support for SORTEE's open science initiatives
- Coordinate and lead meetings with nine committee members across six time zones

**Graduate Student Advisory Board** 2025 – present

Lobster Institute - University of Maine

- Student Ambassador for the 2025 North American Lobster Science Symposium

**Peer Reviewer** 2021 – present

- PeerJ (1), Journal of Open-Source Software (2), Clark University Scholarly Undergraduate Research Journal (2)

**AFS Climate Ambassador Program** Nov. 2022 – Sep. 2024  
American Fisheries Society (AFS), remote

- Only undergraduate accepted into the AFS Climate Ambassador Program, a 2-year climate-focused leadership and communication skills program for aquatic scientists
- Application prompted AFS Policy Director to develop personalized intern position
- Inform target audiences about climate change and associated impacts on fish and fisheries, including development of outreach materials and presentations

### Student Representative

Sep. 2022 – May 2023

Clark University Board of Trustees: Academic Affairs Committee

- Only undergraduate student selected to serve on the committee
- The Academic Affairs committee considers all aspects of academic policy and makes recommendations to the full Board. Items considered include current curricula, program quality, resources, outcomes assessment, starting new programs, discontinuing or modifying existing programs, and the recruitment and retention of university faculty

### Aquaculture Consultant

Dec. 2020 – Sep. 2022

Alabama Sustainable Agriculture Network

- Food & Farm Forum Planning Committee (2021, 2022)
- Served as aquaculture specialist for ASAN staff; encourage outreach efforts to local aquaculture companies

### Society Memberships & Working Group Participation

|                                                                                                                                                     |            |
|-----------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| Environmental Data Science Innovation & Impact Lab (ESIIL)                                                                                          | since 2025 |
| <ul style="list-style-type: none"> <li>• 2025 ESIIL Innovation Summit participant (Boulder, CO)</li> <li>• Thermo Tolerate Working Group</li> </ul> |            |
| Ecological Forecasting Initiative                                                                                                                   | since 2024 |
| <ul style="list-style-type: none"> <li>• Theory Working Group; Coastal &amp; Marine Working Group</li> </ul>                                        |            |
| Ecological Society of America                                                                                                                       | since 2024 |
| SORTEE                                                                                                                                              | since 2024 |
| American Fisheries Society                                                                                                                          | since 2022 |
| Society for Women in Marine Science                                                                                                                 | since 2022 |

## PRESENTATIONS

Krasnow, R. & Brady, D.C. (Aug. 2026). Size at maturity in spiny lobsters (*Panulirus* spp.). Poster presentation. *American Fisheries Society Annual Meeting*, Columbus, OH.

Krasnow, R. (May 2026). Size at maturity in spiny lobsters (*Panulirus* spp.). Oral presentation. *UMaine School of Marine Sciences Graduate Symposium*, Walpole, ME.

Krasnow, R. (May 2025). *morphmat*: An R package to estimate crustacean size at maturity. Oral presentation. *UMaine School of Marine Sciences Graduate Symposium*, Walpole, ME.

Krasnow, R. & Shank, B. (Sep. 2024). Modeling spatial variation in Jonah crab (*Cancer borealis*) size at maturity. Poster. *American Fisheries Society Annual Meeting*, Honolulu, HI

Krasnow, R. & Shank, B. (Aug. 2024). Modeling spatial variation in Jonah crab (*Cancer borealis*) size at maturity. Poster. *Ecological Society of America Annual Meeting*, Long Beach, CA

Krasnow, R. & Shank, B. (Aug. 2024). Modeling spatial variation in Jonah crab (*Cancer borealis*) size at maturity. Poster. *NOAA Science & Education Symposium*, Silver Spring, MD

Krasnow, R., Kiffney, T., Coleman, S., Cuddy, R., & Brady, D. (Jan. 2024). Quantifying oyster aquaculture lease acceptance: a case study on repurposed Maine lobster pounds. Oral presentation. *Northeast Aquaculture Conference & Exposition*, Providence, RI

Krasnow, R., Gonzales, S., & Lindell, S. (Dec. 2023). Improving Models of Kelp (*Saccharina latissima*) Aquaculture by Accounting for Regional Variation in Thermal Tolerance. Oral presentation. *Semester in Environmental Science Research Symposium*, Marine Biological Laboratory, Woods Hole, MA

Krasnow, R. (Nov. 2023). Nonlinear Population Dynamics of Jonah Crab (*Cancer borealis*) in the Gulf of Maine. Poster. *Annual Biomedical Research Conference for Minoritized Scientists (ABRCMS)*, Phoenix, AZ

Krasnow, R. (Aug. 2023). Nonlinear Dynamics of Jonah Crab in the Gulf of Maine: An Ecosystem Approach to Modeling an Emerging Fishery. Oral presentation. *BRITE REU Symposium*, Boston University, Boston, MA

Krasnow, R. (Apr. 2023). Modeling Macroalgae: Applications of Mathematics in Kelp Aquaculture. Poster. *Spring ClarkFEST*, Clark University, Worcester, MA

Krasnow, R. (Feb. 2023). Modeling Macroalgae: Applications of Mathematics in Kelp Aquaculture. Poster. *Math for All - Boston Satellite Conference*, Boston College, Boston, MA

Krasnow, R., Cuddy, R., Kiffney, T., Marsh, J., & Brady, D. (Sep. 2022). Effects of environment and cultivation method on growth, appearance, and biofouling in oyster aquaculture. Poster. *Fall ClarkFEST*, Clark University, Worcester, MA

Krasnow, R., Cuddy, R., Kiffney, T., Marsh, J., & Brady, D. (Aug. 2022). Effects of gear selection on oyster (*Crassostrea virginica*) mortality, growth, shape, and biofouling within a repurposed lobster pound. Poster. *SEA Fellows Symposium*, Downeast Institute, Beals, ME.

Krasnow, R. (2021). High School Participation in the Alabama Environmental Movement. Oral presentation. *Water is Life: Youth + Climate*, Alabama Rivers Alliance webinar series

## ATHLETIC ACHIEVEMENTS

### University of Maine Cross Country and Track and Field

Jan. 2025 – May 2026

NCAA DI, America East Conference

- Balancing graduate student academic and research responsibilities with 20+ hours of training/athletic commitments per week
- Selected to serve as team representative at public speaking events, including ribbon-cutting ceremony for new track facility
- UMaine all-time list: School record outdoor 5K, #2 outdoor 10K, #2 indoor 5K, #3 indoor 3K
- 2026 outdoor track season achievements
  - Ran 15:59 5K to break 14-year-old school record

- Silver medal in women's 10K at Penn Relays, the largest track meet in the U.S.
  - Silver medal in women's 5K at America East Championships
  - 2026 Elite 18 Award for the highest GPA of any Outdoor All-Conference finisher
- 2026 indoor track season achievements
  - 2026 Elite 18 Award for the highest GPA of any Indoor All-Conference finisher
  - Gold medal in women's 3K at America East Championships, silver in women's 5K
  - Gold medal in women's 5K at 2026 IC4A/ECAC Championships
- 2025 XC season achievements
  - Placed 7th at 2025 America East Championships to help team secure first conference title in program history
  - 2025 Elite 18 Award for the highest GPA of any All-Conference finisher
  - All-New England XC team
  - America East All-Academic XC Team
  - 3rd at Maine State Championship

**Team Captain, Clark University Varsity Cross Country**

Aug. 2021 – Dec. 2024

NCAA DIII, New England Women's & Men's Athletic Conference (NEWMAC)

*\* denotes first in Clark cross country program history*

- 2025 John and Kay Bassett Senior Scholar Athlete Award
  - Presented annually to the senior athlete with the highest GPA
- Clark University 2024-2025 and 2022-2023 Female Athlete of the Year
- Competitor in 2024 & 2022 NCAA DIII Cross Country National Championships\*
- School record holder in women's 5K and 10K (outdoor track) and 6K (XC)
- 2x NCAA DIII Women's Cross Country All-Regional Team\* and All-Academic Athlete\*
- 2x New England Coaches' Association All-New England Team\*
- 3x Team MVP
- 2x NEWMAC All-Conference & Academic All-Conference
- 2022 Fall NEWMAC All-Sportsmanship Team
- 3x NEWMAC Runner of the Week (9/1/24, 9/8/24, 10/14/24)