

# Seleni Cruz

PhD Candidate, University of Delaware

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## EDUCATION

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- 2025      **Ph.D.**, Environmental Economics, University of Delaware (expected Spring 2025)  
Advisors: Anna M. Birkenbach, Kimberly Oremus
- 2022      **M.Sc.**, Economics and Applied Econometrics, University of Delaware
- 2019      **M. Environmental Science and Management**, University of California, Santa Barbara  
Specialization: Coastal Marine Resource Management, Corporate Environmental Management  
Thesis: *Economic quantification of delaying management in the Midriff Islands, Mexico*  
Advisor: Hunter Lenihan
- 2013      **B.Sc.**, Natural Resource Management, University of Belize  
Thesis: *Assessment of the aboveground carbon stock at the Big Falls Farm, Belize: A Pilot Project*  
Advisor: Elma Kay

## FELLOWSHIPS AND AWARDS

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- 2024-2025    Doctoral Fellowship for Excellence, University of Delaware
- 2024-2025    Education for Nature Fellow, World Wildlife Fund
- 2024          Asian Fisheries Society Small Award, International Institute of Fisheries Economics and Trade
- 2023          Best student presentation award, North American Association of Fisheries Economists Forum
- 2021          UC Berkeley-Soan Summer School in Environmental and Energy Economics Diversity Fellowship
- 2017-2019    Latin American Fisheries Fellowship, Walton Family Foundation
- 2015          Caribbean Coral Reef Resiliency Fellowship, The Nature Conservancy

## PUBLICATIONS

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- Oremus, K. L., Frank, E. G., Adelman, J. J., **Cruz, S.**, Herndon, J., Sewell, B., & Suatoni, L. (2023). Under-fished or unwanted? Much blame cast upon fisheries policy may be misguided. *Science*, 380(6645), 585-588. <https://doi.org/10.1126/science.adf5595>.
- Green, A., Chollett, I., Suárez, A., Dahlgren, C., **Cruz, S.**, Zepeda, C., Andino, J., Robinson, J., Mcfield, M., Fulton, S., Giro, A., Reyes, H., & Bezaury-Creel, J. (2017). *Biophysical Principles for Designing a Network of Replenishment Zones for the Mesoamerican Reef System. Technical report*. Available in English and Spanish. <https://doi.org/10.13140/RG.2.2.18562.79044>.
- Cruz, S.**, Robinson, J., & Tingey, R. (2016). Integrating participatory planning in the design of Belize's marine replenishment zones. *GIS/Spatial Analyses in Fishery and Aquatic Sciences*, 6(135-152), International Fishery GIS Society. <https://rb.gy/0cjp0>.
- Robinson, J. & **Cruz, S.** (2015). Sustainable Seaweed: Could be the next big thing? *68th Conference Proceedings*. Gulf and Caribbean Fisheries Institute Conference. <https://proceedings.gcfi.org/proceedings/sustainable-seaweed>.

## IN PREPARATION

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- Cruz, S.** Climate variation, diversification and labor reallocation in Mexican small-scale fisheries (JMP)
- Cruz, S.**, Hoffman, T., Birkenbach, A. M., Cohen, J., & Oremus, K. L. Selective harvesting under a changing climate: Delaware Bay blue crabs

## TEACHING EXPERIENCE AND MENTORSHIP

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- 2024          Teaching assistant. ECON 675 Economics of Natural Resources

- 2024 Panelist. Research design workshop for Climate Scholars, a student organization for undergraduates. University of Delaware
- 2024 Panelist. Graduate school advice workshop for Climate Scholars. ‘What I wish I knew and what to expect?’
- 2023 Guest lecture. Marine Environmental Studies, undergraduate class. Selective harvesting under a changing climate: Delaware Bay blue crabs. University of Delaware
- 2023 Guest lecture. Research Experiences for Undergraduates (REU) Cohort. Integration of laboratory results for research and management: Blue crabs. University of Delaware

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## SELECTED TALKS AND CONFERENCE PRESENTATIONS

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- 2024 Risky business. Exploring the effects of climate variation on Mexican small-scale fisheries. The International Institute of Fisheries Economics and Trade Conference
- 2024 Risky business. Exploring the effects of climate variation on Mexican small-scale fisheries. Northeastern Agricultural and Resource Economics Association Summer Conference
- 2024 Presenter and discussant. Climate variation, diversification and labor reallocation in small-scale fisheries. Interdisciplinary PhD Workshop in Sustainable Development at Columbia University
- 2023 Selective harvesting under a changing climate: Delaware Bay blue crabs. Mid-Atlantic Chapter - American Fisheries Society Annual Meeting
- 2023 Selective harvesting under a changing climate: Delaware Bay blue crabs. North American Association of Fisheries Economists Forum
- 2023 Selective harvesting under a changing climate: Delaware Bay blue crabs. Northeastern Agricultural and Resource Economics Association Summer Conference
- 2018 Youth, Women, and Oceans Round table held by Fisheries and Oceans Canada, the Small Islands Developing States Youth Hub, and the Youth Climate Lab. Recommendations for the G7 Oceans commitments
- 2017 Finding the one? How to pick a traceability provider... or providers. Panel talk: Seaweb Seafood Summit
- 2015 Sustainable Seaweed: Could be the next big thing? 68th Conference. Gulf and Caribbean Fisheries Institute
- 2014 Using spatial decision support tools to promote participatory planning. International symposium on GIS/Spatial Analyses in Fishery and Aquatic Sciences

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## WORKSHOPS

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- 2024 Integrating Gender into Fisheries and Aquaculture Economics and Trade Research. Pre-conference workshop. The International Institute of Fisheries Economics and Trade Conference
- 2023 Bureau for Research and Economic Analysis of Development- International Growth Centre (BREAD-IGC) Virtual PhD Course on Environmental Economics
- 2021 UC Berkeley-Soan Summer School in Environmental and Energy Economics
- 2015 Incorporating coral reef resiliency in spatial management by Petra MacGowan and Alison Green. Caribbean Coral Reef Resiliency Training. The Nature Conservancy
- 2014 Going places with Spatial Analysis, ESRI Massive Open Online Course (MOOC)
- 2013 Climate Change, Reduced Emissions from Deforestation and Forest Degradation and Conserving and Enhancing Forest Carbon Stocks (REDD+) and REDD+ Policy. Conservation Training. The Nature Conservancy

## RESEARCH EXPERIENCE

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2022–2023 Research assistant, University of Delaware (supervisor Anna Birkenbach & Kimberly Oremus)

- Leading the development of a novel bioeconomic model which includes a temperature dependent population model, recruitment, natural mortality, and dynamic fishing mortality.
- Collaborating with an interdisciplinary group, including state government, to use the developed model to evaluate policy scenarios for the blue crab fishery in the Delaware Bay.

2021–2022 Research assistant, University of Delaware (supervisor Kimberly Oremus)

- Conducted interviews with fishery managers across the country on utilization rates of fish stocks.
- Synthesized data collected through interviews, policy and fishery management documents for 90 US fish stock. Summaries were used for classification which was the focus of a publication in Science.
- Contributed to the editing of manuscript for publication.

2020–2021 Research assistant, University of Delaware (supervisor Anna Birkenbach)

- Created an algorithm to automate collection of data on catch shares in New England ground-fish fisheries.
- Analyzed foreign trade data and contributed to discrete choice model development.

2019 Fisheries Consultant, Catena Foundation.

- Supported the development of a sustainable fisheries program in Mexico, Colombia, and Belize.
- Identified potential unique points of entry that aligned with developed strategy and considered risks and opportunities associated with each.

2018 Data Manager, Comunidad y Biodiversidad (COBI)

- Developed of a bioeconomic model to evaluate the cost of delaying the implementation of marine reserves on small-scale fishing communities in the Gulf of California, Mexico.
- Created policy white paper and poster to communicate findings to policy makers and communities.

2018 Global Fisheries Research Intern, Future of Fish

- Co-designed a return on investment model for community-based seaweed aquaculture.
- Completed an internal database of 51 fisheries profiles and score card. Profiles include investment landscape, market and value potential, and status of the fishery providing rapid recommendation on strategic engagement.

2013–2017 Conservation Coordinator, The Nature Conservancy - Belize

- Led the sustainable seaweed aquaculture program and spatial analysis of marine reserve expansion (passed into legislation in 2018).
- Advanced sustainable fisheries projects including traceability with National Fishermen Cooperative in Belize and served on the science team of 15 to develop an adaptive management framework for lobster and conch.
- Managed and maintained regional spatial databases for Mexico, Belize, Guatemala and Honduras.
- Planned and facilitated REDD+ Readiness Preparation Proposal (RPP) 10 workshops. Completed final consultation report included in the RPP, which received four million in funding from the World Bank.

## SERVICE AND MEMBERSHIPS

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2024–2026 International Institute of Fisheries Economics and Trade

2023–2026 Northeastern Agricultural and Resource Economics Association

2023–2025 North American Association of Fisheries Economists

2022–2024 American Fisheries Society - Mid-Atlantic chapter

2022–2023 Board member, American Fisheries Society - Mid-Atlantic Chapter  
Organized the chapter's annual meeting in 2022