

Rebecca Selden

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EDUCATION

- 2015 Ph.D. University of California Santa Barbara. Ecology, Evolution, Marine Biology *Committee: S. Gaines, R. Warner, S. Hamilton, C. Costello*
- 2006 A.B. Bowdoin College, *summa cum laude* in Biology

PROFESSIONAL EXPERIENCE

- Fall 2019- **Assistant Professor**, Wellesley College, Biology
- 2017-present **Nereus Program Senior Postdoctoral Fellow Predicting Future Oceans**, Rutgers University, Ecology, Evolution and Natural Resources. *Collaborators: M. Pinsky, W. Cheung (UBC)*
- 2017-present **NOAA FATE Co-Principal Investigator**, Rutgers University, Ecology, Evolution and Natural Resources. *Collaborators: E. Hazen (NOAA)*
- 2015-2017 **NSF OCE Postdoctoral Research Fellow**, Rutgers University, Ecology, Evolution and Natural Resources. *Advisor: M. Pinsky*
- 2015-2017 **NSF Coastal SEES Postdoctoral Research Fellow**, Rutgers University, Ecology, Evolution and Natural Resources. *Advisor: M. Pinsky*
- 2006-2007 **Principal Investigator**, Thomas J. Watson Fellowship

GRANTS AND FELLOWSHIPS

- 2018 NJ Sea Grant "Developing indices of vulnerability to climate change for groundfishing communities in the Northeast" St. Martin, K., M. Pinsky, R. Selden, P. Clay, L. Colburn, S. Lucey \$174,500. 2019-2021.
- 2017 NOAA Fisheries and the Environment (FATE) "Creating and evaluating indices of climate-induced changes in spatial distributions and predator-prey overlap for North Pacific fishery resources." Hazen, E., R. Selden, S. Bograd, K. Holsman, M. Pinsky, J. Samhuri, M. Haltuch \$191,943 (\$50,722 to Selden)
- 2015 National Science Foundation Ocean Sciences Postdoctoral Research Fellowship. "The influence of predator-prey interactions on climate-induced range shifts in marine communities" (OCE # 1521565) Selden, R.L. \$174,000
- 2015 Sea Grant Knauss Marine Policy Fellowship \$61,500 *offered but declined*
- 2013 UCSB Associated Students Coastal Fund, Selden, R.L. \$7,360
- 2012 Worster Award for joint research with UCSB undergraduate. Selden, R. L. \$2,850
- 2010-2015 National Science Foundation Graduate Research Fellow. Selden, R.L. \$96,000
- 2010-2013 National Defense Science & Engineering Graduate Fellow. Selden, RL \$91,500
- 2009-2012 Luce Environmental Science to Solutions Fellowship. Selden, RL. \$6000
- 2006-2007 Thomas J. Watson Fellowship "Sea Turtle Conservation: Impacting Human and Turtle Populations" Selden, R.L. \$25,000

PUBLICATIONS

- Pinsky, ML, **RL Selden**, ZJ Kitchel (submitted) Climate-driven shifts in marine species ranges: scaling from organisms to communities. *Annual Review of Marine Science*
- Selden, RL**, ML Pinsky (in press). Climate change adaptation and spatial fisheries management. In *Predicting Future Oceans* (Y Ota and WWL Cheung editors). Elsevier/Academic Press, Philadelphia, PA
- Fey, SB, DA Vasseur, K Alujevic, KJ Kroeker, ML Logan, JP DeLong, MI O'Connor, S Peacor, VHW Rudolf, **RL Selden**, A Sih, S Clusella-Trullas (accepted). Opportunities for behavioral rescue under rapid environmental change. *Global Change Biology*
- Carroll, GC, KK Holsman, S Brodie, JT Thorson, EL Hazen, SJ Bograd, MA Haltuch, S Kotwicki, J Samhuri, P Spencer, E Willis-Norton, **RL Selden** (in review) A review of methods for quantifying spatial predator-prey overlap. *Global Ecology and Biogeography*
- Selden, RL**, RR Warner, SD Gaines (2018) Ontogenetic shifts in predator diet drive tradeoffs between fisheries yield and ecosystem impacts. *Fisheries Research* **205**: 11-20
- Morley, JW, **RL Selden**, RJ Latour, T Frölicher, R Seagraves, ML Pinsky (2018). Projecting shifts in thermal habitat for 658 species on the North American continental shelf. *PLoS ONE* **13**(5), e0196127.
- Selden, RL**, RD Batt, VS Saba, ML Pinsky. (2018). Diversity in thermal affinity among key piscivores buffers impacts of ocean warming on predator-prey interactions. *Global Change Biology* **24**: 117-131
- Batt, RD, JW Morley, **RL Selden**, MW Tingley, ML Pinsky (2017) Gradual changes in range size accompany long-term trends in species richness. *Ecology Letters* **20**: 1148-1157
- Nippon Foundation-Nereus Program (2017). Oceans and the Sustainable Development Goals: Co-Benefits, Climate Change, and Social Equity. Vancouver, p.28 www.nereusprogram.org
- Pinsky, ML and **RL Selden**. (2017) Climate variability, climate change, and conservation in a dynamic ocean. In *Conservation for the Anthropocene Ocean: Interdisciplinary science in support of nature and people* (P. S. Levin and M. R. Poe, editors), Elsevier/Academic Press, Philadelphia, PA
- Selden, RL**, SL Hamilton, RR Warner, SD Gaines. (2017). Protection of large predators in a marine reserve alters size-dependent prey mortality. *Proceedings of the Royal Society B*. **284**: 20161936
- Selden, RL**, SR Valencia, AE Larsen, J Cornejo-Donoso, A Wasserman. (2016) Evaluating seafood eco-labeling as a mechanism to reduce collateral impacts of fisheries in an ecosystem-based fisheries management context. *Marine Policy* **64**:102-115.
- Boada, J, N Sanmartí, **RL Selden**, A Lucas, M Pérez, T Alcoverro, J Romero. (2015) Evaluating potential artifacts of tethering techniques to estimate predation on sea urchins. *Journal of Experimental Marine Biology and Ecology* **471**:17-22.

Eurich, JG*, **RL Selden**, RR Warner (2014) California spiny lobster preference for urchins from kelp forests: implications for urchin barren persistence. *MEPS* 498: 217-225. *undergraduate

Gutiérrez, NL, SR Valencia, TA Branch, DJ Agnew, JK Baum, PL Bianchi, J Cornejo-Donoso, C Costello, O Defeo, TE Essington, R Hilborn, DD Hoggarth, AE Larsen, C Ninnes, K Sainsbury, **RL Selden**, S Sistla, ADM Smith, A Stern-Pirlot, SJ Teck, JT Thorson, NE Williams. (2012) Eco-label conveys reliable information on fisheries health to seafood consumers. *PLoS ONE*: 7(8): e43765.

Madin, E., S Gaines, J Madin, A Link, P Lubchenco, **R Selden**, R Warner. (2012). Do behavioral foraging responses of prey to predation risk function similarly in restored and pristine foodwebs? *PLoS ONE*: 7(3): e32390.

Selden, R., A Johnson, O Ellers. (2009). Waterborne cues from crabs induce thicker skeletons, smaller gonads and size-specific growth in sea urchins. *Marine Biology* 156: 1057-1071.

Work in Progress

Selden, RL, JT Thorson, JF Samhouri, S Brodie, G Carroll, S Bograd, E Hazen, M Haltuch, K Holsman, M Pinsky, N Tolimieri, E Willis-Norton. Coupled changes in biomass and distribution drive trends in availability of fish stocks to US West Coast ports. *in prep for ICES Journal of Marine Science*.

Papaioannou, EA, **RL Selden**, K St. Martin, J Olson, J Schenkel, B McCay, and M Pinsky. Not all those who wander are lost--Response strategies of fishers' communities to shifts in the distribution and abundance of fish. *in prep for Frontiers in Marine Science*

TALKS AND SEMINARS

Invited

- 2019 "Adapting to change: fishing communities respond to climate-driven species range shifts." Ocean Visions 2019, Atlanta GA
- 2019 "Not all those who wander are lost--fishers community responses to shifts in the distribution and abundance of fish resources" Webinar for EBM Tools presented jointly with Eva Papaioannou on January 31, 2019.
<https://www.openchannels.org/webinars/2019/not-all-those-who-wander-are-lost-fishers-communities-responses-shifts-distribution>
- 2019 "Climate fishing and aquatic food webs: predator-prey interactions in a changing world" Villanova Biology Departmental Seminar, Villanova, PA
- 2018 "Climate, fishing, and marine food webs: predator-prey interactions in a changing world." Hopkins Marine Laboratory Departmental Seminar, Monterey, CA
- 2017 "Differential shifts in species distributions alter marine species interactions." American Fisheries Society Annual Meeting, Tampa, FL
- 2017 "The role of warming in present and future piscivore dominance in a large marine ecosystem." Rutgers Marine and Coastal Sciences Departmental Seminar
- 2016 "Climate, fishing, and marine food webs: predator-prey interactions in a changing ocean." Bowdoin College Departmental Seminar

Contributed (selected)

- 2018 4th International Symposium on the Effects of Climate Change on the World's Oceans, Washington DC
- 2017 3rd ICES/PICES Early Career Scientist Conference, Busan, South Korea
- 2016 Ocean Sciences Meeting, New Orleans, LA
- 2016 Gordon Research Conference on Predator-Prey Interactions, Ventura, CA
- 2015 Ecological Society of America, Baltimore, MD
- 2014 International Council for Exploration of the Sea (ICES) Annual Science Conference, La Coruña, Galicia, Spain
- 2014 Ecological Society of America, Sacramento, CA
- 2014 Gordon Research Conference on Predator-Prey Interactions, Ventura, CA
- 2012 American Fisheries Society, St. Paul, MN
- 2011 8th William R. and Lenore Mote International Symposium on Fisheries Ecology, Sarasota, FL

TEACHING EXPERIENCE

Instructor of Record

- 2014 Introduction to Ecology, UCSB

Lecturer

- 2017 "Climate Impacts on Fish and Fisheries" Byrne Seminar, Rutgers
- 2016 "Ecology, Evolution, and Climate Change" Graduate Seminar, Rutgers
- 2016 "Fisheries and Conservation", Stony Brook Millstone Watershed Association adult education course
- 2013 "Marine Protected Areas" Environmental Processes in Oceans and Lakes, UCSB
- 2012 "Fisheries and Conservation" Biology of Fishes, UCSB
- 2012 "Population Ecology of Fishes" Biology of Fishes, UCSB

Teaching Assistant

- 2012 Biology of Fishes, UCSB
- 2009 Biology of Fishes, UCSB

Curriculum Development

- 2017-present **CoastalSEES "What's the Catch" Undergraduate Education Case Study**
Adapted research on shifting species distributions and impacts on fishing communities for case study module for undergraduate curricula
- 2017-present **National Public Radio Science Friday** Education Module
Developed online resource for teachers and informal educators to use our interactive game to simulate shifting species distributions in ocean ecosystems.
<https://www.sciencefriday.com/educational-resources/interpreting-the-impacts-of-rising-ocean-temperatures-on-ecosystems/>
- 2017-present **Dataspire Data Literacy Series**, Rutgers University
Utilized data and results from my research on climate impacts on marine food webs to develop foundational hands-on, data-based activities for the 6-part series for math, science, and social studies teachers in grades 5-12.

2017 **Marine Science Internship**, New Brunswick High School, NJ
Spearheaded hands-on marine science internship for New Brunswick high school serving principally minority students.

2015-2017 **Rutgers 4-H STEM Ambassador Program**
Developed a day-long intensive science experience to introduce high school students from backgrounds underserved and underrepresented in STEM fields.

PROFESSIONAL TRAINING

2014 **Summer Teaching Institute for Associates (STIA)**, University of California Santa Barbara

MENTORING

Undergraduate

2017-present Hailey Conrad (Ecology, Evolution and Natural Resources, Rutgers)

Senior Theses

2016-2017 Jared Schenkel (Geography, Rutgers)

2013-2015 Alana Osaki (Ecology, Evolution and Marine Biology, UCSB)

2010-2012 Jacob Eurich (Ecology, Evolution and Marine Biology, UCSB)

Doctoral Student

2017-present Ellen Willis-Norton (Ecology and Evolutionary Biology, UC Santa Cruz)

Postdoctoral Associate

2017-present Stephanie Brodie (NOAA, Southwest Fisheries Science Center)

PROFESSIONAL SERVICE

2018 **Peer Review**, Pacific Herring Fisheries Management Plan, Ocean Science Trust

2017 **Co-organizer**, "Marine Species on the Move: Understanding and Responding to Shifting Distributions of US Fish Stocks," American Fisheries Society Annual Meeting, Tampa, FL

2012-2014 **Graduate student representative** UCSB Diving Safety Control Board
Committee, Small Boating Operations Committee

2010-2011 **Coordinator**, EEMB Graduate Student Symposium

2009-2011 **Chair**, EEMB Graduate Student Advisory Committee

Peer Reviewer

Proceedings of the Royal Society B, Global Change Biology, ICES Journal of Marine Science, Ecological Applications, Marine Ecology Progress Series, Marine and Coastal Fisheries, Reviews in Fish Biology and Fisheries, National Science Foundation