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Kelly Kearney

Research interests: marine ecosystem and biogeochemical dynamics at global and regional scales

Education

2012 **Ph.D., Geosciences**, *Princeton University*, Princeton, NJ.
- Advisor: Jorge Sarmiento
- Disseration title: An analysis of marine ecosystem dynamics through development of a coupled physical-biogeochemical-fisheries food web model

2008 **M.A., Geosciences**, *Princeton University*, Princeton, NJ.

2002 **B.S., Marine science and biology**, *University of Miami*, Coral Gables, FL.
- *Summa cum laude*, Departmental Honors in Marine Science
- Minors: physics, mathematics, chemistry

Fellowships and Awards

Nippon Foundation Nereus Fellowship: 2011–2012

NOAA Dr. Nancy Foster Scholarship: 2008–2012

Research Experience for Undergraduates (REU) Fellowship: 2002

Research and Professional Experience

2015–present **Research scientist**, *University of Washington*, Seattle, WA.
Joint Institute for the Study of the Atmosphere and Ocean
NOAA Alaska Fisheries Science Center

2013–2015 **Postdoctoral associate**, *University of Miami*, Miami,FL.
Division of Marine Biology and Fisheries/Cooperative Institute for Marine and Atmospheric Studies; Rosenstiel School of Marine and Atmospheric Science
NOAA Atlantic Oceanographic and Meteorological Laboratory

2003–2006 **Physical scientist**, *Naval Oceanographic Office*, Stennis Space Center, MS.
Geophysics and Acoustics branch, Mine Warfare Emerging Technologies group
- Developed high-frequency acoustic models to simulate sonar performance under varying environmental conditions
- Collected and analyzed sidescan sonar, multibeam bathymetry, and hydrographic data aboard the Naval Oceanographic Office's TAGS-60 class vessels— 9 months sea time total.

2003 **Independent undergraduate research**, *University of Miami*, Miami, FL.
Rosenstiel School of Marine and Atmospheric Science

2002 **Research Experience for Undergraduates fellow**, *University of Maryland Center for Environmental Science*, Cambridge, MD.
Horn Point Laboratory

Teaching Experience

2009 **Assistant in Instruction**, *Princeton University*, Princeton, NJ.
"Ocean, Atmosphere, and Climate" (for upper level undergraduates)

2003 **Test preparation instructor**, *Kaplan, Inc.*, Miami, FL.
GRE test preparation courses, math and verbal sections
approx. 20 students per class

Technical Skills

Computer programming languages: expert with Matlab; proficient in python, Fortran; also familiar with javascript (D3), Perl, R, DOS batch files, awk, sed, unix shell scripting; limited use of Visual .NET

Scientific applicatons: Regional Ocean Modeling System (ROMS), git, LaTeX, LyX, NCAR Command Language (NCL), Generic Mapping Tools (GMT)

Other applications: Microsoft Office; Adobe Illustrator 5

Operating systems: Mac OS X, UNIX, Linux, Windows

Publications

Journal Articles

K. A. Kearney. ecopath_matlab: A Matlab-based implementation of the Ecopath food web algorithm. *J. Open Source Softw.*, 2(9), 2017.

J. Steenbeek, J. Buszowski, V. Christensen, E. Akoglu, K. Aydin, N. Ellis, D. Felinto, J. Guitton, S. Lucey, K. Kearney, S. Mackinson, M. Pan, M. Platts, and C. Walters. Ecopath with Ecosim as a model-building toolbox: Source code capabilities, extensions, and variations. *Ecol. Modell.*, 319:178–189, 2015.

K. A. Kearney, D. Tommasi, and C. Stock. Simulated ecosystem response to volcanic iron fertilization in the subarctic Pacific ocean. *Fish. Oceanogr.*, 24(5):395–413, 2015.

V. Guesnet, G. Lassalle, A. Chaalali, K. Kearney, B. Saint-Béat, B. Karimi, B. Grami, S. Tecchio, N. Niquil, and J. Lobry. Incorporating food-web parameter uncertainty into Ecopath-derived ecological network indicators. *Ecol. Modell.*, 313:29–40, 2015.

K. A. Kearney, M. Butler, R. Glazer, C. Kelble, J. E. Serafy, and E. Stabenau. Quantifying Florida Bay habitat suitability for fishes and invertebrates under climate change scenarios. *Environ. Manage.*, 55(4):836–856, 2014.

K. A. Kearney, C. Stock, and J. L. Sarmiento. Amplification and attenuation of increased primary production in a marine food web. *Mar. Ecol. Prog. Ser.*, 491:1–14, 2013.

K. A. Kearney, C. Stock, K. Aydin, and J. L. Sarmiento. Coupling planktonic ecosystem and fisheries food web models for a pelagic ecosystem: Description and validation for the subarctic Pacific. *Ecol. Modell.*, 237-238:43–62, jul 2012.

H. Song, R. Ji, C. Stock, K. Kearney, and Z. Wang. Interannual variability in phytoplankton blooms and plankton productivity over the Nova Scotian Shelf and in the Gulf of Maine. *Mar. Ecol. Prog. Ser.*, 426:105–118, 2011.

V. Christensen, C. J. Walters, R. Ahrens, J. Alder, J. Buszowski, L. B. Christensen, W. W. L. Cheung, J. Dunne, R. Froese, V. Karpouzi, K. Kaschner, K. Kearney, S. Lai, V. Lam, M. L. D. Palomares, A. Peters-Mason, C. Piroddi, J. L. Sarmiento, J. Steenbeek, R. Sumaila, R. Watson, D. Zeller, and D. Pauly. Database-driven models of the world's Large Marine Ecosystems. In K. Sherman and S. Adams, editors, *Sustainable Development of the World's Large Marine Ecosystems during Climate Change: A commemorative volume to advance sustainable development on the occasion of the presentation of the 2010 Göteborg Award*, chapter 6, pages 74–103. IUCN, Gland, Switzerland., 2010.

W. W. L. Cheung, V. W. Y. Lam, J. L. Sarmiento, K. Kearney, R. Watson, D. Zeller, and D. Pauly. Large-scale redistribution of maximum fisheries catch potential in the global ocean under climate change. *Glob. Chang. Biol.*, 16(1):24–35, jan 2010.

G. C. Johnson and K. A. Kearney. Ocean climate change fingerprints attenuated by salt fingering? *Geophys. Res. Lett.*, 36(21):L21603, 2009.

V. Christensen, C. J. Walters, R. Ahrensa, J. Alder, J. Buszowski, L. B. Christensen, W. W. L. Cheung, J. Dunne, R. Froese, V. Karpouzi, K. Kaschner, K. Kearney, S. Lai, V. Lam, M. L. D. Palomares, A. Peters-Mason, C. Piroddi, J. L. Sarmiento, J. Steenbeek, R. Sumaila, R. Watson, D. Zeller, and D. Pauly. Database-driven models of the world's Large Marine Ecosystems. *Ecol. Modell.*, 220(17):1984–1996, 2009.

W. W. L. Cheung, V. W. Y. Lam, J. L. Sarmiento, K. Kearney, R. Watson, and D. Pauly. Projecting global marine biodiversity impacts under climate change scenarios. *Fish Fish.*, 10(3):235–251, 2009.

Conference Presentations

K. A. Kearney, A. Hermann, I. Ortiz, and K. Aydin. A comparison of Bering Sea energy pathways in warm versus cold years. oral presentation, PICES 2016, San Diego, CA, 2016.

K. A. Kearney and K. Aydin. Visualizing ecosystem energy flow in complex food web networks. poster presentation, Ocean Sciences Meeting 2016, New Orleans, LA, 2016.

K. A. Kearney. Life *in silico*- How are we doing at modeling changing ecosystems? oral presentation, Modeling a Living Planet Symposium, Princeton, NJ, 2016.

K. A. Kearney and C. Kelble. Modeling the combined effects of climate change and Everglades restoration on the Florida Bay ecosystem. poster presentation, Ocean Sciences Meeting, Honolulu, HI, 2014.

K. Kearney, C. Stock, D. Tommasi, and J. Sarmiento. Can volcanic-induced primary production explain high salmon returns? oral presentation, IMBER Open Science Conference, Bergen, Norway, 2014.

K. A. Kearney, C. Stock, and J. L. Sarmiento. Predicting ecosystem response to decadal-scale climate variability using an end-to-end ecosystem model. poster presentation, ICES Annual Science Conference, Gdansk, Poland, 2011.

K. Kearney, C. Stock, and J. Sarmiento. Investigating decadal variability in the Eastern Subarctic Pacific using an end-to-end ecosystem model. oral presentation, ASLO Aquatic Sciences Meeting, San Juan, Puerto Rico, 2011.

K. Kearney, C. Stock, and J. Sarmiento. An end-to-end ecosystem model for the Pacific Eastern Subarctic Gyre. poster presentation, Advances in Marine Ecosystem Modeling Research (AMEMR) Meeting, Plymouth, UK, 2011.

K. Kearney, C. Stock, K. Aydin, and J. Sarmiento. Modeling the effects of decadal-scale variability across trophic levels. oral presentation, Eastern Pacific Ocean Conference, South Lake Tahoe, CA, 2011.

K. Kearney, C. Stock, and J. Sarmiento. Investigating decadal variability in the Northeast Pacific using an end-to-end ecosystem model. poster presentation, CAMEO End-to-end Modeling Workshop, Woods Hole, MA, 2010.

K. Kearney, C. Stock, and J. Sarmiento. Investigating decadal variability in the Northeast Pacific using an end-to-end ecosystem model. poster presentation, Ocean Sciences Meeting, Portland, OR, 2010.

K. A. Kearney, C. Stock, and J. Sarmiento. Modeling an end-to-end oceanic food web with physical forcing. poster presentation, ASLO Aquatic Sciences Meeting, Nice, France, 2009.

K. Kearney, J. Sarmiento, V. Christensen, A. Gnanadesikan, and C. Stock. Linking a lower trophic level biogeochemical model with an upper trophic level ecosystem model. poster presentation, Ocean Sciences Meeting, Orlando, FL, 2008.

K. Kearney, J. Sarmiento, V. Christensen, A. Gnanadesikan, C. Stock, and S. Guenette. Linking a lower trophic level biogeochemical model with an upper trophic level ecosystem model. oral presentation, European Conference for Ecological Modelling, Trieste, Italy, 2007.

K. A. Kearney and W. Boicourt. Analysis of salinity data for an advection-diffusion model. Invited REU poster presentation, ASLO Aquatic Sciences Meeting, Salt Lake City, 2003.