

ELIZABETH MARY PHILLIPS

NOAA Fisheries Northwest Fisheries Science Center
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EDUCATION

Ph.D.	University of Washington School of Aquatic and Fishery Sciences Advisor: Dr. John K. Horne Dissertation: The influence of the Columbia River plume on predator-prey interactions	2018
M.Sc.	San Francisco State University - Moss Landing Marine Laboratories Marine Science, Vertebrate Ecology Advisor: Dr. James T. Harvey	2005
B.Sc.	Western Washington University Biology, Honors Program; <i>cum laude</i> James Cook University, Australia; study abroad	1999 1997

PROFESSIONAL EXPERIENCE

Research Fish Biologist	NOAA Fisheries Northwest Fisheries Science Center, Fishery Resource Analysis and Monitoring Division	2020-present
NRC Postdoctoral Research Associate	National Academies of Science, NOAA Fisheries Northwest Fisheries Science Center	2018-2020
Science Communications Fellow	Washington Sea Grant, University of Washington	2018
Pre-doctoral Research Associate	University of Washington, School of Aquatic and Fishery Sciences	2011-2018
Faculty Research Assistant	Oregon State University, Cooperative Institute for Marine Resources Studies	2008-2011
Research Associate	California Department of Fish and Game, and San Jose State University	2005-2010
Graduate Research Assistant	California State Universities, Moss Landing, California	2001-2005
Assistant Director	Island Institute, Vashon Island, Washington	2001

HONORS & AWARDS

Faculty Merit Award, University of Washington, School of Aquatic and Fishery Sciences	2018
Fisheries Interdisciplinary Network Travel Award, University of Washington	2018
Clairmont L. and Evelyn S. Egtvedt Fellowship, University of Washington	2017
Fisheries Interdisciplinary Network Travel Award, University of Washington	2017
Selected for Science Magazine's NextGen InGenuity section, 25 November issue	2016
Fisheries Interdisciplinary Network Travel Award, University of Washington	2015
College of the Environment Student Travel Award, University of Washington	2015
World Seabird Conference Travel Award, World Seabird Union	2015
Selected for Science Magazine's NextGen VOICES, 4 April issue	2014
College of the Environment Scholarship, University of Washington	2014
Selected for Science Magazine's NextGen VOICES, 5 October issue	2012
Packard Foundation Student Travel Award, Moss Landing Marine Labs	2004
Meyers Oceanographic and Marine Biology Trust, Moss Landing Marine Labs	2003
Community Service Learning Scholarship, San Francisco State University	2002
Biology Department Undergraduate Research Accomplishment Award	1999
Holzman Biology Scholarship Award, Western Washington University	1999

RESEARCH GRANTS

2020-2021	SL Parker-Stetter, EM Phillips (co-I), A Billings, MA Hunsicker, I Kaplan, S Gauthier <i>Sorting through stomachs: Using two decades of Hake diets to update ecosystem models and test hypotheses on predator consumption in the California Current</i> \$104,700 NOAA Fisheries Internal Grants Program
2008-2010	JT Harvey and EM Phillips (co-I) <i>Quantifying health parameters of Northern Fulmars (<i>Fulmarus glacialis</i>) to improve procellariid rehabilitation.</i> \$22,500 University of California, Davis - Oiled Wildlife Care Network, 2008-2010

PUBLICATIONS

In prep

- Phillips, E.M.**, Parker-Stetter, S.L., Shelton, A.O., Tolimieri, N. et al. Quantifying spatiotemporal distribution and biomass of euphausiids from acoustic backscatter.
- Phillips, E.M.**, Malick, M.J., Parker-Stetter, S.L., Haltuch, M.A., and Hunsicker, M.E. Identifying physical drivers of predator-prey hotspots in the California Current Ecosystem.
- Gauthier, S., Stanley, C., **Phillips, E.M.**, and Parker-Stetter, S.P. Classification of euphausiids from multi-frequency acoustic data.

Phillips, E.M., Laidre, K.L., Fenty, I.G., and Simon, M.J. Characterizing seabird and prey distributions at three glacier fronts in Melville Bay, NW Greenland. *Target Journal: Polar Biology*.

Peer reviewed

13. **Phillips, E.M.,** Horne, J.K., and J.E. Zamon. *in revision*. Characterizing juvenile salmon predation risk during early marine residence. *PLOS One*
12. Zamon, J.E., Burke, B.J., Hunsicker, M., **Phillips, E.M.** and Teel, D.J. *in review*. Spatial overlap between seabirds and juvenile Chinook salmon provides evidence for potential predation risk at ocean entry. *Marine and Coastal Fisheries*.
11. Beck, J., Michael, P.E., Hester, M., Nevins, H.M., Donnelly-Greenan, E., Gible, C., **Phillips, E.M.,** Young, C., Fitzgerald, S. 2020. Seasonal variation of Pacific Northern Fulmar bycatch: Implications for age and sex-specific mortality. *Fisheries Oceanography* doi.org/10.1111/fog.12518.
10. **Phillips, E.M.,** Horne, J.K., Zamon, J.E., J.J. Felis and Adams, J. 2019. Does perspective matter? A case study comparing Eulerian and Lagrangian estimates of common murre (*Uria aalge*) distributions. *Ecology and Evolution* 9: 4805–4819.
9. **Phillips, E.M.,** Horne, J.K., Adams, J., and Zamon, J.E. 2018. Selective occupancy of a persistent yet variable coastal river plume by foraging seabirds. *Marine Ecology Progress Series* 594: 245-261.
8. Sydeman, W.J., Thompson, S.A., Anker-Nilssen, T., Arimitsu, M., Bennison, A., Boersch-Supan, P., Bransome, N., Boyd, C., Crawford, R.J., Daunt, F., Furness, R., Gianuca, D., Gladics, A., Koehn, L., Lang, J., Logerwell, E., Morris, T., **Phillips, E.M.,** Provencher, J., Punt, A., Saraux, C., Shannon, L., Sherley, R., Simeone, A., Wanless, R., Wanless, S., and Zador. S. 2017. Best practices for assessing forage fish fisheries – seabird resource competition. *Fisheries Research* 194: 209-221.
7. **Phillips, E.M.,** Horne, J.K., and Zamon, J.E. 2017. Predator-prey interactions influenced by a dynamic river plume. *Canadian Journal of Fisheries and Aquatic Sciences* 74: 1375–1390.
6. Kuriyama, P.T, Siple, M.C., Hodgson, E.E., **Phillips, E.M.,** Burden, M., Fluharty, D., Punt, A.E., Essington, T.E., Henderschedt, J., and Armstrong, D.A. 2015. Issues at the fore in the land of Magnuson and Stevens: A summary of the 14th Bevan Series on Sustainable Fisheries. *Marine Policy* 54: 118-121.
5. Zamon, J.E., **Phillips, E.M.,** and Guy, T.J. 2014. Marine bird aggregation at tidally-driven plume fronts of the Columbia River. *Deep Sea Research II* 107: 85-95.
4. Humple, D.L., Nevins, H.M., **Phillips, E.M.,** Gible, C., Henkel, L.A., Boylan, K., and Girman, D.J. 2011. Demographics of *Aechmophorus* grebes killed in three mortality events in California. *Marine Ornithology* 39: 235-242.
3. **Phillips, E.M.,** Zamon, J.E., Nevins, H.M., Gible, C., Deurr, R., and Kerr, L. 2011. Summary of birds killed by a harmful algal bloom along south Washington and north Oregon coast during October 2009. *Northwestern Naturalist* 92: 120–126.
2. **Phillips, E.M.,** Nevins, H.M., Hatch, S.A., Ramey, A.M., Miller, M.A., and Harvey, J.T. 2010. Seabird bycatch in Alaska demersal longline fishery trials: A demographic summary. *Marine Ornithology* 38(2): 111-117.
1. **Phillips, E.M.** and Harvey, J.T. 2009. A captive feeding study with the Pacific harbor seal (*Phoca vitulina richardii*): Implications for scat analysis. *Marine Mammal Science* 25(2): 373-391.

Selected non-peer reviewed contributions

- Suryan, R.M., **Phillips, E.M.**, So, K., Zamon, J.E., Lowe, R.W., Stephensen, S.W. 2012. Marine bird colony and at-sea distributions along the Oregon coast: Implications for marine spatial planning and information gap analysis. Report to Northwest National Marine Renewable Energy Center. 25 pp.
- Nevins, H.M, Benson, S.R., **Phillips, E.M.**, de Marignac, J., DeVogelaere, A.P., Ames, J.A., and Harvey, J.T. 2011. Coastal Ocean Mammal and Bird Education and Research Surveys (BeachCOMBERS), 1997-2007: ten years of monitoring beached marine birds and mammals in the Monterey Bay National Marine Sanctuary. Marine Sanctuaries Conservation Series ONMS11-02. U.S. Dep. Comm., NOAA, Office of National Marine Sanctuaries, Silver Spring, MD. 63 pp.
- Phillips, E.M.**, Harvey, J.T., Nevins, H.M., Adams, J. and Jessup, D.A. 2010. Quantifying health parameters of Northern Fulmars (*Fulmarus glacialis*) to improve procellariid rehabilitation. Final Report to Oiled Wildlife Care Network, UC Davis. 35 pp.
- Morgan, C.M., Beckman, B.R., **Phillips, E.M.**, Zamon, J.E. and Bucher, C.A. 2009. June 2009 Cruise 09-02 Report, NWFSC-NOAA Fisheries. 46 pp.
- Hanson, M.B., D.P. Noren, T.F. Norris, C.A. Emmons, M.M. Holt, **E. Phillips**, J. Zamon, and J. Menkel. 2010. Pacific Orca Distribution Survey (PODS) conducted aboard the NOAA ship McArthur II in March-April 2009. (STATE DEPT. CRUISE NO: 2009-002) Unpubl. Rept, NWFSC, Seattle, WA.
- Phillips, E.M.**, Nevins, H.M., and Jessup, D. 2007. Spring 2007 domoic acid mortality in seabirds in Monterey Bay, California. Report to California Department of Fish and Game, Sacramento, CA. 5 pp.
- Phillips, E.M.**, H. Nevins, C. Gible, J. Harvey and D. Jessup. 2007. Puffin Invasion 2007: Summary of Horned Puffin (*Fratercula corniculata*) mortality event based on gross examination. Report to California Department of Fish and Game, Sacramento, CA. 3 pp.
- Phillips, E.M.** and Harvey, J.T. 2006. Final report of biological monitoring for Golden State Bridge, Inc. construction activity at Sandholdt Bridge, Moss Landing, CA. Report to NOAA, Long Beach, CA. 36 pp.
- Phillips, E.M.** 2005. Results of a captive feeding study with Pacific harbor seals (*Phoca vitulina richardii*): Implications for scat analysis. M.S. Thesis, Moss Landing Marine Laboratories, San Francisco State University, San Francisco, CA. 89 pp.
- Phillips, E.M.** and J.T. Harvey, 2004. Final Report of Biological Monitoring for All Star Services Corporation Activity at Timber Pier, Monterey, California. Report submitted to NOAA-Fisheries, Long Beach, California. 11 pp.
- Harvey, J.T. and **Phillips, E.M.** 2004. Potential impacts to marine birds and turtles during cable-laying activities for the MARS Project (MBARI) off Monterey Bay, California. Report to Monterey Bay Aquarium Research Institute. 16 pp.
- Phillips, E.M.** 1999. The southern resident population of *Orcinus orca* in Puget Sound: Hypotheses on population ratios and the effects of the capture era on behavior of the whales. Undergraduate Honors thesis, Western Washington University, Bellingham, WA. 95 pp.

Popular Science Writing

- Buxton, R., Wang, S., **Phillips, E.**, Jones, H. Major, H., Provencher, J. 2019. Tipping the scales: how work-family justice can bring balance to scientist moms. Scientific American.
- Phillips, E.M.** 2018. Looking to the Past to Understand Future Tsunami Threats. Washington Sea Grant Autumn Sea Star Newsletter.
- Phillips, E.M.** 2018. Preventing Spills in the San Juans. Washington Sea Grant Autumn Sea Star Newsletter.

SCIENTIFIC PRESENTATIONS

ORAL PRESENTATIONS

Invited

- 2018 Phillips, E.M. Moving forward in a sea of studies on salmon ocean ecology. Keynote at 19th Salmon Ocean Ecology Meeting, Newport, OR.
- 2012 Phillips, E.M., Zamon, J.E., and Horne, J.K. Seabird and forage fish distribution patterns in a proposed ocean energy development region. 37th Annual Meeting of Pacific Seabird Group, Oahu, Hawaii.
- 2011 Phillips, E.M. Impacts of marine debris on wildlife. University of Washington School of Forest Resources, Wildlife Science Group Seminar Series, Seattle, WA.
- 2010 Phillips, E.M., Campbell, S., Doucette, C.B., Wells, A., Donnelly, E., Nevins, H.M., Miller, M., and Jessup, D.A. Modifications to rehabilitation protocols for Northern Fulmars: Possible implications for other Procellariids. 37th Annual Meeting of the Pacific Seabird Group, Long Beach, CA.

Contributed

- 2020 Phillips, E.M., Malick, M.J., Parker-Stetter, S.L., Haltuch, M.A., and Hunsicker, M.E. Identifying physical drivers of predator-prey hotspots in the California Current Ecosystem. Ocean Sciences, San Diego, California.
- 2018 Phillips, E.M., Horne, J.K., and Zamon, J.E. Estimating predation risk of juvenile salmon near the Columbia River plume. NOAA Northwest Fisheries Science Center 6th Science Symposium, Seattle, Washington.
- 2017 Phillips, E.M., Adams, J., Zamon, J.E., and Horne, J.K. Differences in shearwater and murre distributions near the Columbia River plume during spring and summer. Pacific Seabird Group 42nd Annual Meeting, Tacoma, Washington.
- 2015 Phillips, E.M. Comparing seabird use of the Columbia River plume from concurrent Eulerian and Lagrangian perspectives. UW-SAFS Graduate Student Symposium.
- 2015 Phillips, E.M., Zamon, J.E., and Horne, J.K. Comparing seabird marine habitat use from concurrent Eulerian and Lagrangian perspectives. 2nd World Seabird Conference, Capetown, South Africa.
- 2015 Phillips, E.M., Zamon, J.E., and Horne, J.K. Quantifying environmental and biological factors contributing to juvenile salmon predation risk during early marine residence. Salmon Ocean Ecology Meeting, Victoria, BC.
- 2013 Phillips, E.M., Zamon, J.E., and Horne, J.K. The influence of the Columbia River Plume on density distributions of forage fish and seabird predators. Predators and the California Current Preyscape Workshop, Point Blue Conservation Science, Petaluma, CA.
- 2012 Phillips, E.M., Zamon, J.E., and Horne, J.K. Spatial and temporal variation in density distributions of seabirds and prey in the Columbia River plume. UW-SAFS Graduate Student Symposium.
- 2012 Zamon, J.E. and Phillips, E.M. Impacts of renewable ocean energy development on seabirds in the California Current Ecosystem. 39th Annual Meeting of Pacific Seabird Group, Oahu, Hawaii.
- 2010 Phillips, E.M., Zamon, J.E., Adams, J., Hyrenbach, D., and Hodum, P. Anomalous Pink-footed Shearwater abundances in Oregon and Washington coastal waters: an ecosystem indicator in the northern California Current. 1st World Seabird Congress, Victoria, B.C.

- 2009 Phillips, E.M. and Zamon, J.E. The Columbia River plume and seabird communities in the northern California Current ecosystem. Coastal and Estuarine Research Federation, Portland, OR.
- 2009 Phillips, E.M., Nevins, H.M., Hatch, S., Balogh, G., and Harvey, J. Composition of seabird bycatch in the 2005 Alaska demersal longline fishery. 36th Annual Meeting of Pacific Seabird Group, Hakodate, Hokkaido, Japan.
- 2008 Phillips, E.M., S. Campbell, A. Wells, D. Jessup, M. Miller. Northern fulmar care during 2007 Moss Landing mystery spill. 1st Annual Oilpalooza Conference, Davis, CA.
- 2007 Nevins, H., E.M. Phillips, T. Zabka, D. Jessup, and J. Harvey. Central coast marine bird health study: Year 3. SSEP Symposium, Sacramento, CA.
- 2006 Nevins, H., E.M. Phillips, D. Jessup, J. Harvey. Beach COMBERS: Coastal Ocean Mammal and Bird Education and Research Surveys in central California 1997 to 2004. The Wildlife Society Meeting, Sacramento, CA.
- 2005 Phillips, E.M. and J.T. Harvey. Quantifying biases associated with harbor seal scat analysis. 16th Biennial Society for Marine Mammalogy conference, San Diego, CA.
- 2001 Calambokidis, J., J. Erickson, and E. Phillips. Sizes of whales determined from fluke photographs taken at known distances. 14th Biennial Society for Marine Mammalogy conference, Vancouver, Canada.

POSTER PRESENTATIONS

- 2016 Phillips, E.M., Zamon, J.E., and Horne, J.K. Bio-physical coupling of seabirds and prey with a dynamic river plume. Ocean Sciences, New Orleans, LA.
- 2015 Phillips, E.M., Zamon, J.E., and Horne, J.K. Quantifying environmental and biological factors contributing to juvenile salmon predation risk during early marine residence. American Fisheries Society, Portland, OR.
- 2012 Phillips, E.M., Zamon, J.E., and Horne, J.K. The ecological role of forage fish in mediating predation pressure on emigrating juvenile salmon. 14th Annual Salmon Ocean Ecology Meeting, Newport, OR.
- 2010 Phillips, E.M., Nevins, H.R., and Humple, D.L. A comparison of methods for age estimation of seabirds. 1st World Seabird Congress, Victoria, B.C.
- 2010 Reinalda, L., Zamon, J.E., and Phillips, E.M. The use of digital imagery to improve training, accuracy, and efficiency in seabird diet analysis. 1st World Seabird Congress, Victoria, B.C.
- 2010 Zamon, J.E., Phillips, E.M., and Reinalda, L. Spatial and temporal structure of marine predator-prey interactions in the Columbia River plume. Ocean Sciences 2010, Portland, OR.
- 2008 Phillips, E.M. and Nevins, H.M. Modeling chronic oiling impacts on Common Murres (*Uria aalge*) in central California. 35th Annual Meeting of Pacific Seabird Group, Blaine, WA.
- 2006 Nevins, H.M., Phillips, E.M., Jessup, D., and Harvey, J. BeachCOMBERS: Using surveys of beached marine birds to monitor natural and human-related mortality in the Monterey Bay National Marine Sanctuary. Monterey Bay National Marine Sanctuary Symposium, Monterey, CA.
- 2004 Phillips, E.M. and Harvey, J.T. Improvements to scat analysis: Results of a captive feeding study with Pacific harbor seals (*Phoca vitulina*). American Society of Mammalogy, Arcata, CA.

CERTIFICATIONS & TRAINING

Field Sampling: Small boat operations, aerial line transect surveys, offshore and cold weather survival, physical and biological oceanographic sampling (hydrography, plankton), trawl, purse and beach seine fishing, electrofishing, marine mammal and seabird capture and handling, bird banding, radio and satellite telemetry deployment and tracking, oiled wildlife care and processing, hydroacoustic calibration and data collection

Laboratory Skills: Marine vertebrate dietary analyses, blood collection and processing, necropsy sampling protocols for seabirds, sea turtles, marine mammals, and fish

Data Analysis and Software: ArcGIS, Echoview, MatLab, MS Access (database design and management), Geospatial Modeling Environment, NOAA Satellite Data Access and Analysis (ERRDAP), Python, R, SeeBird, Sea-Bird, SigmaPlot, Systat

Communication: Improv 101 for Scientists Workshop with Comedy Sportz Seattle; Graduate Teaching Assistant Training Conference, University of Washington

PROFESSIONAL SERVICE

Marine Bird Lunch Coordinator, University of Washington	2017-18
Local Organizing Committee member, Pacific Seabird Group meeting, Tacoma, WA	2017
Early Career Scientific Participant, Workshop on Guidelines and Best Practices to Document Seabird – Fisheries Competition (Pew Foundation)	2015-16
Student Representative, Faculty Search Committee, University of Washington	2015
College of the Environment Diversity Committee, University of Washington	2015
EcoLunch Seminar Series coordinator, University of Washington	2014
Graduate Student Invited Speaker seminar coordinator	2012-2013
Scientific participant, Workshop on Microplastic Marine Debris, UW-Tacoma	2008
Necropsy training workshops, California Department of Fish and Game	2005-2008
Local Organizing Committee member, Pacific Seabird Group meeting, Asilomar, CA	2007
Effects of Oil on Wildlife Conference Wet Lab Leader, Monterey, CA	2006
NOAA Prescott Grant Program, Technical Review Panel, Seattle, WA	2005
Monterey Bay National Marine Sanctuary, BeachCOMBERS volunteer trainings	2003-2005
Northern California Student Chapter Society for Marine Mammalogy President	2001-2003

Professional affiliations: American Fisheries Society, Association for the Sciences of Limnology and Oceanography, Pacific Seabird Group, World Seabird Union, ICES Working Group on Fisheries Acoustics, Science and Technology

TEACHING EXPERIENCE

Teaching Faculty , Freedom Education Project Puget Sound (FEPPS)	2019
Marine Biology at Washington Corrections Center for Women, Tacoma Community College	
Instructor of Record , University of Washington	2018
Topics in Sustainable Fisheries, Fisheries in a Changing Climate with Dr. Julia Parrish Editor and administrator of undergraduate WordPress blog: sites.uw.edu/bevanseries	
Teaching Assistant , University of Washington	2017
Arctic Marine Vertebrate Ecology with Dr. Kristin Laidre	
Teaching Assistant , University of Washington	2015-2017
Fisheries Ecology with Dr. Tom Quinn	
Teaching Assistant , University of Washington	2012, 2015-16
Introduction to Food and the Environment with Dr. Ray Hilborn	
Teaching Assistant , Moss Landing Marine Laboratories, California	2004-2005
Quantitative Marine Statistics with Dr. James Harvey	

Instructor , Moss Landing Marine Laboratories, California Marine Science Research Institute, Teacher Enhancement Program with Dr. Simona Bartl	2004-2005
Instructor Island Institute, Vashon Island, WA	2000-2001

VOLUNTEER EDUCATION & OUTREACH

Guest speaker, Puget Sound Estuarium Discovery Speaker Series, Olympia, WA	2018
Students Exploring Aquatic Sciences volunteer, University of Washington	2017-18
Graduate (3) and Undergraduate (2) Student Peer Mentor, University of Washington	2014-2018
Oceanography and Fisheries Sciences graduate school panel	2018
Seattle Expanding Your Horizons	2014
Guest lecturer, Washington Virtual Academy (6-8th grade)	2012-2014
Washington Sea Grant Orca Bowl	2013
American Fisheries Society, UW Chapter Graduate Student Panelist	2012
Coastal Observation and Seabird Survey Team (COASST) volunteer	2009-2011
Career Day presentations (K-12), Cannon Beach, OR and Long Beach, WA	2009-2011
Shoalwater Birders educational talk, Long Beach, WA	2009
Volunteer Coordinator, Surfrider Foundation, Santa Cruz, CA	2005-2007
Classroom educational visits (K-12): Santa Cruz and Watsonville, CA	2004-2007
Monterey Bay National Marine Sanctuary BeachCOMBERS volunteer	2002-2009
American Cetacean Society Education chair, Seattle, WA	2000

MEDIA COVERAGE OF RESEARCH

<i>Warmer Pacific Waters May Lead to Hungry Fish</i> By Shailja Gangrade, ASLO Bulletin: https://doi.org/10.1002/lob.10387	2020
<i>Study Looks At Salmon Mortality By Seabirds, Ties Size Of Columbia River Plume To Predator-Prey Interactions</i> Columbia Basin Bulletin: http://www.cbulletin.com/439539.aspx	2017
<i>Efforts growing to control the smaller fish of the seas</i> By Tom Banse, KPLU/National Public Radio, Portland, OR http://knkx.org/post/efforts-growing-control-smaller-fish-seas	2011
<i>Marine biologist works day and night to understand ocean's ecosystem</i> By Cassandra Profita, The Daily Astorian, Astoria, OR	2009
<i>Sea otter sighted at mouth of Columbia River</i> By Julie Tennis, The Daily Astorian, Astoria, OR	2009
<i>Message in a Bottle</i> [plastic pollution in the ocean] By Amanda Martinez, The Good Times, Santa Cruz, CA	2007
<i>Puffin invasion perplexes scientists</i> By Kelly Nix, Carmel Pine Cone, Carmel, CA	2006

AT-SEA EXPERIENCE (~500 days total)

- 2018-2019 Fisheries scientist, Oceans Melting Greenland (OMG) Narwhals and NASA survey of Melville Bay, NW Greenland; R/V Sanna, 7-d
- 2015-2017 Teaching Assistant, UW Fisheries Ecology field trips (midwater and otter trawl surveys), Lake Washington and Puget Sound, R/V Kittiwake, 2-d/month (May-June)
- 2012 Scientist, NOAA Northwest Fisheries Science Center offshore spring salmon surveys, Astoria, OR; F/V Miss Sue and F/V Frosti, 10-d/month
- 2011 Scientist, NOAA Northwest Fisheries Science Center offshore spring salmon surveys, Astoria, OR; F/V Frosti, 10-d/month
- 2010 Scientist, acoustic sardine survey, NOAA Northwest Fisheries Science Center, Astoria, OR; F/V Frosti, 5-d
- 2010 Scientist, NOAA Northwest Fisheries Science Center offshore spring salmon surveys, Newport, OR; F/V Chellissa, 10-d
- 2009 Scientist, Pacific Orcinus Distribution Survey (PODS), NOAA Northwest Fisheries Science Center, Washington & Oregon; R/V McArthur II, 21-d
- 2009 Scientist, NOAA Northwest Fisheries Science Center offshore spring salmon surveys, Astoria, OR; F/V Frosti, 10-d/month
- 2007 Scientist, Marianas Islands Sea Turtle and Cetacean Survey (MISTCS), US Navy and SRS Technologies, Guam; M/V Kahana, 100-d
- 2005 Scientist, Collaborative Survey of Cetacean Abundance and the Pelagic Ecosystem (CSCAPE), NOAA Southwest Fisheries Science Center, California Current; R/V David Starr Jordan, 21-d
- 2004 Scientific observer, NOAA Northeast Fisheries Science Center and Woods Hole Oceanographic Institute, Atlantic Ocean; R/V Endeavor, 26-d
- 2002-2004 Deckhand, Monterey Bay, CA; R/V John H. Martin, 2-d/month
- 2001-2006 Researcher, Wind to Whales Project, University of California, Santa Cruz and MLML, Monterey Bay, CA; R/V John H. Martin, 2-d/month
- 2001-2005 Naturalist, Monterey Bay, CA; M/V Sea Wolf II, 10-d/yr
- 2000-2002 Biologist, Cascadia Research Collective, San Diego, CA; R/V Gordon Sproul and R/V Auriga, 8 to 17-d
- 1998-2000 Deckhand and naturalist, Victoria Clipper Navigation, Seattle, WA; M/V Island Explorer, 40 hr/week
- 1997-1998 Deckhand and naturalist, Mosquito Fleet Enterprises, Everett, WA; M/V Mosquito Pass & M/V Saratoga Passage, 40 hr/week
- 1997-1998 Science educator, M/V Snow Goose, Bellingham, WA; 20 hr/week