MARK D. SCHEUERELL

Curriculum vitae

CONTACT

Northwest Fisheries Science Center
National Marine Fisheries Service
National Oceanic & Atmospheric Administration
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EDUCATION

Ph.D., Zoology, University of Washington, 2002 (advisor: DE Schindler)
M.S., Fishery and Aquatic Science, Cornell University, 1995 (advisors: LG Rudstam & EL Mills)
B.S., Zoology, University of Wisconsin, 1991 (advisors: SR Carpenter & JF Kitchell)

PROFESSIONAL APPOINTMENTS

Research Fisheries Biologist — *2003 - present*
Northwest Fisheries Science Center, NOAA Fisheries — Seattle, WA

Affiliate Associate Professor — *2016 - present*
School of Aquatic and Fishery Sciences, University of Washington — Seattle, WA

Affiliate Assistant Professor — *2007 - 2016*
School of Aquatic and Fishery Sciences, University of Washington — Seattle, WA

Post-doctoral fellow — *2002 - 2003*
National Research Council & NOAA Fisheries — Seattle, WA

FELLOWSHIPS

National Research Council Postdoctoral Research Associateship (2003) *Estimating the relative roles of the environment and density-dependence in controlling Pacific salmon populations.*

Ford Foundation Fellowship in Environmental Science (2002) *The impact of lake shoreline development on spatial processes in lake food webs.*

NSF Graduate Research Training Grant in Mathematical Biology (1999) *Integrating spatial dynamics and foraging models: the effect of scale on the functional response of fish.*

Electric Power Research Institute Fellowship in Fish Population Biology (1994) *Spatial dynamics of fish populations: implications for predator-prey interactions.*

AWARDS & HONORS

Presidential Early Career Award for Scientists and Engineers, White House Office of Science and Technology Policy, Washington, District of Columbia (2006)

Selection to the American Society of Limnology and Oceanography DIALOG V Symposium, Bermuda Biological Station for Research, The Bermuda Islands (2003)

Best Student Presentation, American Fisheries Society, Alaska Chapter Annual Meeting, Girdwood, Alaska (2002)

Best Student Presentation, Ecological Society of America Annual Meeting, Aquatic Section, Madison, Wisconsin (2001)

Ingrith Deyrup-Olsen Award for Distinguished Teaching Assistant, Department of Zoology, University of Washington, Seattle, Washington (2000)

Richard C. Snyder Award for Vertebrate Zoology Research, Department of Zoology, University of Washington, Seattle, Washington (1999)

PEER-REVIEWED PUBLICATIONS*

[*In review*]

Scheuerell MD, Ruff CP, Anderson JH, Beamer EM. Estimating density-dependent population dynamics in a variable environment with imperfect data.

Smits, AP, Ruffing CM, Royer TV, Appling AP, Griffiths NA, Bellmore R, **Scheuerell MD**, Harms TK, Jones J. Detecting signals of large-scale climate phenomena on river flows and nitrogen, phosphorus, and silica loads in the Mississippi-Atchafalaya River basin. *Geophysical Research Letters*

[*In press or published*]

60. Hampton SE, **Scheuerell MD**, Church MJ, Melack JM. *In press*. Long-term perspectives in aquatic research. *Limnology and Oceanography*
59. Thorson JT, **Scheuerell MD**, Olden JD, Schindler DE. 2018. Spatial heterogeneity contributes more to portfolio effects than species differences in bottom-associated marine fishes. *Proceedings of the Royal Society B* 285: 20180915
58. Ward EJ, Oken K, Rose KA, Sable S, Watkins K, Holmes EE, **Scheuerell MD**. 2018. Applying spatiotemporal models to monitoring data to quantify fish responses to the Deepwater Horizon oil spill in the Gulf of Mexico. *Environmental Monitoring and Assessment* 190: 530
57. Bal G, **Scheuerell MD**, Ward EJ. 2018. Characterizing the strength of density dependence in at-risk species through Bayesian model averaging. *Ecological Modelling* 381:1-9
56. Freshwater C, Burke BJ, **Scheuerell MD**, Grant SCH, Trudel M, Juanes F. 2018. Coherent population dynamics associated with sockeye salmon juvenile life history strategies. *Canadian Journal of Fisheries and Aquatic Sciences* 75:1346–1356
55. Ardón M, Helton AM, **Scheuerell MD**, Bernhardt ES. 2017. Fertilizer legacies meet saltwater incursion: challenges and constraints for coastal plain wetland restoration. *Elementa*: *Science of the Anthropocene* 5:41.
54. Honea JM, McClure MM, Jorgensen JC, **Scheuerell MD**. 2016. Assessing the vulnerability of freshwater life stages of Chinook salmon to climate change. *Climate Research* 71:127-137
53. Goertler PAL, **Scheuerell MD**, Simenstad CA, Bottom DL. 2016. Estimating common growth patterns in juvenile Chinook salmon (*Oncorhynchus tshawytscha*) from diverse genetic stocks and a large spatial extent. *PLoS ONE* 11:e0162121
52. Thorson JT, Ianelli JN, Larsen EA, Ries L **Scheuerell MD**, Szuwalski CS, Zipkin EF. 2016. Joint dynamic species distribution models: a tool for community ordination and spatiotemporal monitoring. *Global Ecology and Biogeography* 25:1144–1158
51. Ohlberger J, **Scheuerell MD**, Schindler DE. 2016. Population coherence and environmental impacts across spatial scales: a case study of Chinook salmon. *Ecosphere* 7:e01333
50. Jorgensen JC, Ward EJ, **Scheuerell MD**, Zabel RW. 2016. Assessing spatial covariance among time series of abundance. *Ecology and Evolution* 6:2472–2485
49. **Scheuerell MD**. 2016. An explicit solution for calculating optimum spawning stock size from Ricker's stock recruitment model. *PeerJ* 4:e1623
48. Thorson JT, **Scheuerell MD**, Shelton AO, See K, Skaug H, Kristensen K. 2015. Spatial factor analysis: a new tool for estimating joint species distributions and correlations in species range. *Methods in Ecology and Evolution* 6:627-637

* Underlined authors were students or post-docs at the time the research was completed.

47. **Scheuerell MD**, Buhle ER, Semmens BX, Ford MJ, Cooney T, Carmichael RW. 2015. Analyzing large-scale conservation interventions with Bayesian hierarchical models: A case study of supplementing threatened Pacific salmon. *Ecology and Evolution* 5:2115–2125
46. Lisi PJ, Schindler DE, Cline TJ, **Scheuerell MD**, Walsh PB. 2015. Topography and snowmelt control stream thermal sensitivity to air temperature. *Geophysical Research Letters* 42:3380-3388
45. Thorson JT, **Scheuerell MD**, Semmens BX, Pattengill-Semmens C. 2014. Demographic modeling of citizen science data informs habitat preferences and population dynamics of recovering fishes. *Ecology* 95:3251-3258
44. Francis TB, Wolkovich EM, **Scheuerell MD**, Katz SL, Holmes EE, Hampton SE. 2014. Shifting regimes and changing interactions in the Lake Washington, U.S.A., plankton community from 1962–1994. *PLoS ONE* 9(10):e110363
43. Griffiths JR, Schindler DE, Armstrong JB, **Scheuerell MD**, Whited DC, Clarke RA, Hilborn R, Holt CA, Lindley ST, Stanford JA, Volk EC. 2014. Performance of salmon fishery portfolios across western North America. *Journal of Applied Ecology* 51:1554–1563
42. Williams JG, Smith SG, Fryer J, **Scheuerell MD**, Muir WD, Flagg TA, Zabel RW, Ferguson JW, Casillas E. 2014. Influence of ocean and freshwater conditions on Columbia River sockeye salmon adult return rates. *Fisheries Oceanography* 23:210–224
41. Stachura MM, Mantua NJ, **Scheuerell MD**. 2014. Oceanographic influences on spatio-temporal patterns in North Pacific salmon abundance. *Canadian Journal of Fisheries and Aquatic Sciences* 71:226-235
40. Thorson JT, **Scheuerell MD**, Buhle ER, Copeland T. 2014. Spatial diversity buffers temporal variability in early juvenile survival for an endangered Pacific salmon. *Journal of Animal Ecology* 83:157–167
39. Hampton SE, Holmes EE, Scheef LP, **Scheuerell MD**, Katz SL, Pendleton DE, Ward EJ. 2013. Quantifying effects of abiotic and biotic drivers on community dynamics with multivariate autoregressive (MAR) models. *Ecology* 94:2663–2669
38. Holsman KK, **Scheuerell MD**, Buhle ER, Emmett R. 2012. Interacting effects of translocation, artificial propagation, and environmental conditions on the marine survival of Chinook salmon from the Columbia River, Washington, U.S.A. *Conservation Biology* 26:912-922
37. Francis TB, **Scheuerell MD**, Brodeur R, Levin PS, Ruzicka JJ, Tolimieri N, Peterson WT. 2012. Climate shifts the interaction web of a marine plankton community. *Global Change Biology* 18:2498–2508
36. Scheef LP, Pendleton DE, Hampton SE, Katz SL, Holmes EE, **Scheuerell MD**, Johns DG. 2012. Assessing marine plankton community structure from long-term monitoring data with multivariate autoregressive (MAR) models: a comparison of fixed station versus spatially distributed sampling data. *Limnology and Oceanography: Methods* 10:54-64
35. Crozier LG, **Scheuerell MD**, Zabel RW. 2011. Using time series analysis to characterize evolutionary and plastic responses to environmental change: a case study of a shift toward earlier migration date in sockeye salmon. *The American Naturalist* 178:755-773
34. Francis TB, Schindler DE, Holtgrieve G, Larson E, **Scheuerell MD**, Semmens BX, Ward EJ. 2011. Habitat structure and energetic support for zooplankton in temperate lakes. *Ecology Letters* 14:364-372
33. **Scheuerell MD**, Zabel RW, Sandford BP. 2009. Relating juvenile migration timing and survival to adulthood in two species of threatened Pacific salmon (*Oncorhynchus* spp.). *Journal of Applied Ecology* 46:983–990
32. Buhle ER, Holsman KK, **Scheuerell MD**, Albaugh A. 2009. Using an unplanned experiment to evaluate the effects of hatcheries and environmental variation on threatened populations of wild salmon. *Biological Conservation* 142:2449–2455
31. Rich HB, Quinn TP, **Scheuerell MD**, Schindler DE. 2009. Climate and intra-specific competition control the growth and life history of juvenile sockeye salmon (*Oncorhynchus nerka*) in Iliamna Lake, Alaska. *Canadian Journal of Fisheries and Aquatic Sciences* 66:238-246

30. Anguilletta MJ, Steel EA, Bartz KK, Kingsolver JG, **Scheuerell MD**, Beckman BR, Crozier LG. 2008. Big dams and salmon evolution: changes in thermal regimes and their potential evolutionary consequences. *Evolutionary Applications* 1:286-299
29. Waples RS, Zabel RW, **Scheuerell MD**, Sanderson BL. 2008. Evolutionary responses by native species to major anthropogenic changes to their ecosystems: Pacific salmon in the Columbia River hydropower system. *Molecular Ecology* 17:84-96
28. **Scheuerell MD**, Moore JW, Schindler DE, Harvey CJ. 2007. Varying effects of anadromous sockeye salmon on the trophic ecology of two species of resident salmonids in southwest Alaska. *Freshwater Biology* 52:1944-1956
27. Hampton SE, **Scheuerell MD**, Schindler DE. 2006. Coalescence in the Lake Washington story: interaction strengths in a planktonic food web. *Limnology and Oceanography* 51:2042-2051
26. **Scheuerell MD**, Hilborn R, Ruckelshaus MH, Bartz KK, Lagueux KM, Hass AD, Rawson K. 2006. The Shiraz model: a tool for incorporating anthropogenic effects and fish-habitat relationships in conservation planning. *Canadian Journal of Fisheries and Aquatic Sciences* 63:1596-1607
25. Bartz KK, Lagueux KM, **Scheuerell MD**, Beechie TJ, Ruckelshaus MH. 2006. Translating restoration scenarios into habitat conditions: an initial step in evaluating recovery strategies for Chinook salmon (*Oncorhynchus tshawytscha*). *Canadian Journal of Fisheries and Aquatic Sciences* 63:1578-1595
24. Zabel RW, **Scheuerell MD**, McClure MM, Williams JG. 2006. The interplay between climate variability and density dependence in the population viability of Chinook salmon. *Conservation Biology* 20:190-200
23. Scheuerell JM, Schindler DE, **Scheuerell MD**, Fresh KL, Litt AH, Shepherd JA, Sibley T. 2005. Temporal dynamics in foraging behavior of a pelagic predator. *Canadian Journal of Fisheries and Aquatic Sciences* 62:2494-2501
22. **Scheuerell MD**, Williams JG. 2005. Forecasting climate-induced changes in the survival of Snake River spring/summer Chinook salmon. *Fisheries Oceanography* 14:448-457
21. **Scheuerell MD**. 2005. The influence of juvenile size on the age at maturity of individually-marked wild Chinook salmon. *Transactions of the American Fisheries Society* 134:999-1004
20. Romare P, Schindler DE, **Scheuerell MD**, Scheuerell JM, Litt AH, Shepherd JH. 2005. Variation in spatial and temporal gradients in zooplankton spring development: the effect of climatic factors. *Freshwater Biology* 50:1007-1021
19. **Scheuerell MD**, Levin PS, Zabel RW, Williams JG, Sanderson BL. 2005. A new perspective on the importance of marine-derived nutrients to threatened stocks of Pacific salmon (*Oncorhynchus* sp.). *Canadian Journal of Fisheries and Aquatic Sciences* 62:961-964
18. Schindler DE, Rogers DE, **Scheuerell MD**, Abrey CA. 2005. Effects of changing climate on zooplankton and juvenile sockeye salmon growth in southwestern Alaska. *Ecology* 86:198-209
17. **Scheuerell MD**. 2004. Quantifying aggregation and association in three dimensional landscapes. *Ecology* 85:2332-2340
16. Beauchamp DA, Sergeant CJ, Mazur MM, Scheuerell JM, Schindler DE, **Scheuerell MD**, Fresh KL, Seiler DE, Quinn TP. 2004. Spatial-temporal dynamics of early feeding demand and food supply by sockeye salmon fry in Lake Washington. *Transactions of the American Fisheries Society* 133:1014-1032
15. **Scheuerell MD,** Schindler DE. 2004. Changes in the spatial distribution of fishes in lakes along a residential development gradient. *Ecosystems* 7:98-106
14. Moore JW, Schindler DE, **Scheuerell MD**. 2004. Disturbance of freshwater habitats by anadromous salmon in Alaska. *Oecologia* 139:298-308
13[†]. Hilborn R, Branch TA, Ernst B, Magnusson A, Minte-Vera CV, **Scheuerell MD**, Valero JL. 2003. State of the world's fisheries. *Annual Review of Environment and Resources* 23:359-399

[†] All junior authors listed in alphabetical order.

12. **Scheuerell MD**, Schindler DE. 2003. Diel vertical migration by juvenile sockeye salmon: empirical evidence for the antipredation window. *Ecology* 84:1713-1720
11. Schindler DE, **Scheuerell MD**, Moore JW, Gende SM, Francis TB, Palen WJ. 2003. Pacific salmon and the ecology of coastal ecosystems. *Frontiers in Ecology and the Environment* 1:31-37
10. Moore JW, Schindler DE, **Scheuerell MD**, Smith D, Frodge J. 2003. Lake eutrophication at the urban fringe. *Ambio* 32:13-18
9. **Scheuerell MD**, Schindler DE, Litt AH, Edmondson WT. 2002. Environmental and algal forcing of *Daphnia* production dynamics. *Limnology and Oceanography* 47:1477-1485
8. Schindler DE, **Scheuerell MD**. 2002. Habitat coupling in lake ecosystems. *Oikos* 98:177-189
7. Rudstam LG, Van de Valk A, **Scheuerell MD**. 2002. Comparison of acoustic and standard estimates of larval fish abundance in Oneida Lake, New York. *Fisheries Research* 57:145-154
6. Delany MF, Lockley TC, Pranty B, **Scheuerell MD**. 2000. Stomach contents of two nestling Florida Grasshopper Sparrows. *Florida Field Naturalist* 28:75-77
5. Perkins DW, Vickery PD, Dean TF, **Scheuerell MD**. 1998. Nesting records and reproductive success of Florida Grasshopper Sparrows (*Ammodramus savannarum floridanus*). *Florida Field Naturalist* 26:7-17.
4. Pranty B, **Scheuerell MD**. 1997. First summer record of the Henslow's Sparrow in Florida. *Florida Field Naturalist* 25:64-66
3. Mills EL, **Scheuerell MD**, Carlton JT, Strayer DL. 1997. Biological invasions in the Hudson River: an inventory and historical analysis. *Bulletin of the New York State Museum* 57:1-51
2. Mills EL, Strayer DL, **Scheuerell MD**, Carlton JT. 1996. Exotic species in the Hudson River basin: a history of invasions and introductions. *Estuaries* 19:814-823
1[‡]. He X, **Scheurell MD**, Soranno PA, Wright RA. 1994. Recurrent response patterns of a zooplankton community to whole-lake fish manipulation. *Freshwater Biology* 32:61-72

BOOK CHAPTERS

Scheuerell MD, Hilborn R. 2009. Estimating the freshwater component of essential fish habitat for Pacific salmon (*Oncorhynchus* spp.) with the Shiraz model. Pages 187-202 *in* Knudsen EE, Michael H (Eds.). *Pacific Salmon Environmental and Life History Models: Advancing Science for Sustainable Salmon in the Future*. American Fisheries Society Symposium 71. Bethesda, Maryland.

Fresh KL, Graeber W, Bartz KK, Davies JR, **Scheuerell MD**, Haas A, Ruckelshaus MH, Sanderson BL. 2009. Incorporating spatial structure and diversity into recovery planning for anadromous Pacific salmonids. Pages 403-428 *in* Knudsen EE, Michael H (Eds.). *Pacific Salmon Environmental and Life History Models: Advancing Science for Sustainable Salmon*. American Fisheries Society Symposium 71. Bethesda, Maryland.

Dini ML, Soranno PA, **Scheuerell MD**, Carpenter SR. 1993. Effects of predators and food supply on diel vertical migration of *Daphnia*. Pages 153-171 *in* Carpenter SR, Kitchell JF (Eds.) *The Trophic Cascade in Lakes*. Cambridge University Press, Cambridge, England.

OTHER PUBLICATIONS

Buhle ER, **Scheuerell MD**, Cooney TD, Ford MJ, Zabel RW, Thorson JT. 2018. Using Integrated Population Models to Evaluate Fishery and Environmental Impacts on Pacific Salmon Viability. U.S. Department of Commerce, NOAA Technical Memorandum NMFS-NWFSC-140. https://doi.org/10.7289/V5/TM-NWFSC-140

Holmes EE, Ward EJ, **Scheuerell MD**. 2018. Analysis of multivariate time-series using the MARSS package, Version 3.10.8 DOC-NOAA-NMFS-NWC, Seattle, WA. Available online at http://cran.r-project.org/web/packages/MARSS/vignettes/UserGuide.pdf

[‡] Scheuerell misspelled on final printing.

Schindler D, Krueger C, Bisson P, Bradford M, Clark B, Conitz J, Howard K, Jones M, Murphy J, Myers K, **Scheuerell M**, Volk E, Winton J. 2013. Arctic-Yukon-Kuskokwim Chinook Salmon Research Action Plan: Evidence of Decline of Chinook Salmon Populations and Recommendations for Future Research. Prepared for the AYK Sustainable Salmon Initiative (Anchorage, AK). v + 70 p.

Stout HA, Lawson PW, Bottom DL, Cooney TD, Ford MJ, Jordan CE, Kope RG, Kruzic LM, Pess GR, Reeves GH, **Scheuerell MD**, Wainwright TC, Waples RS, Ward E, Weitkamp LA, Williams JG, Williams TH. 2012. Scientific conclusions of the status review for Oregon coast coho salmon (*Oncorhynchus kisutch*). U.S. Dept. Commer., NOAA Tech. Memo. NMFS-NWFSC-118, 242 p.

Peterman RM, Marmorek D, Beckman B, Bradford M, Mantua N, Riddell BE, **Scheuerell M**, Staley M, Wieckowski K, Winton JR, Wood CC. 2010. Synthesis of evidence from a workshop on the decline of Fraser River sockeye. June 15-17, 2010. Report to the Pacific Salmon Commission, Vancouver, B.C. 158 p.

Scheuerell MD. 2005. Mapping the status of Pacific salmon [book review]. *Trends in Ecology & Evolution* 20:290-291

Williams JG, Smith SG, Zabel RW, Muir WD, **Scheuerell MD**, Sandford BP, Marsh DM, McNatt R, Achord S. 2005. Effects of the Federal Columbia River Power System on salmonid populations. U.S. Dept. of Commer. NOAA Tech. Memo. NMFS-NWFSC-63. 177 p.

TECHNICAL PRODUCTS

R packages

Holmes EE, Ward EJ, **Scheuerell MD**, Willis K. 2018. MARSS: Multivariate Autoregressive State-Space Modeling. R Package Version 3.10.8

<https://cran.r-project.org/web/packages/MARSS/index.html>

Ward EJ, **Scheuerell MD**, Holmes EE. 2018. atsar: Applied Time Series Analysis in R: an introduction to time series analysis for ecological and fisheries data with Stan. R Package Version 1.0.1

< https://doi.org/10.5281/zenodo.1158021>

Scheuerell MD. 2017. muti - An R package for computing mutual information. R Package Version 1.0.0

< https://doi.org/10.5281/zenodo.439391>

INVITED PRESENTATIONS

Improved understanding of fisheries and ecosystems from noisy and disparate data. University of Alaska Fairbanks, College of Fisheries and Ocean Sciences, September 26, 2018, Fairbanks, Alaska

The development and application of new tools in quantitative ecology. Western Society of Naturalists Meeting, November 17, 2017, Pasadena, California

Estimating density-dependent population dynamics in a variable environment with imperfect data. Department of Fisheries and Wildlife, Oregon State University, May 1, 2017, Corvallis, Oregon

Analyzing large-scale conservation interventions with Bayesian hierarchical models: A case study of supplementing threatened Pacific salmon. American Fisheries Society Meeting, August 19, 2015, Portland, Oregon

Analyzing temporal dynamics of Pacific salmon and their ecosystems. Simon Fraser University, October 27, 2011, Burnaby, British Columbia

Great minds do not think alike: a diversity of collaborators aids in analyses of marine communities. Salish Sea Ecosystem Conference, October 25, 2011, Vancouver, British Columbia

Analyzing large-scale ecosystem experiments with Bayesian state-space models: a case study of hatcheries and Pacific salmon. American Society of Limnology and Oceanography Meeting, June 10, 2010, Santa Fe, New Mexico

An integrated approach to assessing vulnerability of Pacific salmon stocks to climate change. American Fisheries Society Annual Meeting, September 13, 2010, Pittsburgh, Pennsylvania

Evaluating large-scale effects of hatchery supplementation on threatened spring/summer Chinook salmon from the Snake River basin, USA. State of the Salmon 2010 Conference on Ecological Interactions between Wild and Hatchery Salmon, May 5, 2010, Portland, Oregon.

Using stable isotopes to inform river restoration science. Western Division of the American Fisheries Society Annual Meeting, May 7, 2008, Portland, Oregon.

Forecasting climate-induced shifts in the marine survival of salmon. P/ICES Conference on New Frontiers in Marine Science, June 28, 2007, Baltimore, Maryland.

A sea change in the conservation of Pacific salmon: addressing climate variation and human impacts in an uncertain future. School of Aquatic and Fisheries Sciences, University of Washington, November 30, 2006, Seattle, Washington.

Potential impacts of agriculture and habitat modification on Pacific Salmon. Environmental Studies Planning Unit, The Evergreen State College, November 17, 2005, Olympia, Washington.

Interactive effects of climate change and human activities on the population dynamics of Pacific salmon. Department of Fisheries and Wildlife, University of Idaho, October 11, 2005, Moscow, Idaho.

Estimating essential fish habitat for Pacific salmon with the Shiraz model. American Fisheries Society Annual Meeting, September 14, 2005, Anchorage, Alaska.

Anthropogenic causes of a state shift in a large river ecosystem: Chinook salmon and the Snake River basin Department of Watershed Sciences, Utah State University, February 2, 2005, Logan, Utah.

Tipping the scales: balancing natural and human impacts on lakes. American Society of Limnology and Oceanography DIALOG V Symposium, October 20, 2003, Bermuda Biological Station for Research.

A model framework for relating life-history, freshwater habitat, and the ocean environment to Pacific salmon production and capacity. American Fisheries Society Alaska Chapter Annual Meeting, October 22, 2002, Girdwood, Alaska.

Impacts of lakeshore residential development on the spatial distribution and energy sources of fishes. American Society of Limnology and Oceanography Aquatic Sciences Meeting, June 13, 2002, Victoria, British Columbia.

EXTERNAL SUPPORT

North Pacific Research Board ($82k) 2017-2018. *Retrospective analysis of long-term census data to identify factors affecting survival and life history strategies of coho salmon* (Collaborator with Tallmon, Vulstek)

NOAA Fisheries And The Environment (FATE) Program ($147k) 2015-2016. *Improving salmon population forecasts by combining environmental drivers, variable age composition, and spatial structure into hierarchical models* (PI with Thorson)

Arctic-Yukon-Kuskokwim Sustainable Salmon Initiative ($340k) 2013-2014. *Multivariate analysis of factors affecting AYK Chinook salmon* (co-PI with Hilborn, Schindler, Mantua)

NSF-NOAA Comparative Analysis of Marine Ecosytem Organization (CAMEO) Program ($347k) 2009-2010. *New statistical tools for analyzing community dynamics with applications to marine zooplankton* (co-PI with Hampton, Holmes, Ward, Katz)

BPA FCRPS Biological Implementation Program ($299k) 2007-2009. *Evaluating density-dependent effects of hatchery production on wild salmon* (sole PI)

BPA FCRPS Biological Implementation Program ($297k) 2007-2009. *Evaluating the effects of estuarine and ocean arrival timing on salmon survival from an ecosystem perspective* (sole PI)

NOAA Fisheries And The Environment (FATE) Program ($118k) 2006-2007. *Developing quantitative tools to forecast the effects of climate variability on the population dynamics of Pacific salmon* (PI with Zabel, Mantua)

SOCIETY MEMBERSHIP

Ecological Society of America
Secretary of Aquatic Ecology Section (2008-2009)
Association for the Sciences of Limnology and Oceanography
American Fisheries Society
Chair, Committee for the Mercer Patriarche North American Journal of Fisheries Management Best Paper Award (2006)

EDITORIAL RESPONSIBILITIES

Associate Editor, *Limnology and Oceanography Letters* (2016-present)
Guest Editor, *Ecological Applications* (2009-present)
Special Issue Editor, *Limnology and Oceanography* (2017-2018)
Associate Editor, *Ecological Research* (2007-2017)
Outstanding Reviewer, *Canadian Journal of Fisheries and Aquatic Sciences* (2017)
Manuscript & book reviewer for
Behavioural Ecology · Canadian Journal of Fisheries and Aquatic Sciences · Canadian Journal of Zoology · Conservation Biology · Ecography · Ecological Applications · Ecological Modelling · Ecology · Ecology and Society · Ecology Letters · Ecosphere · Ecosystems · Environmental Biology of Fishes · Fisheries Oceanography · Freshwater Biology · Frontiers in Ecology and the Environment · Global Change Biology · Journal of Animal Ecology · Journal of Applied Ecology · Journal of Bioeconomics · Limnology & Oceanography · North American Journal of Fisheries Management · Oecologia · Oikos · PLoS Biology · PLoS ONE · Proceedings of the National Academy of Sciences · Transactions of the American Fisheries Society · Trends in Ecology and Evolution

NATIONAL AND INTERNATIONAL SERVICE

Mentor, EcologyPlus Program from NSF INCLUDES (Inclusion across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science) (2018-present)
Mentor, Ecological Society of America Early Career Ecologist Mentorship Program (2017)
Mentor, Stream Resilience Research Coordination Network Working Group 2 - Time Series Analysis (2015-2016)
Analyst, U.S. Departments of Commerce and Justice, Deepwater Horizon National Resource Damage Assessment (2014-2015)
Member, Chinook Salmon Expert Panel, Artic-Yukon-Kuskokwim Sustainable Salmon Initiative (2011-2012)
Member, Expert Advisory Panel, Pacific Salmon Commission Bilateral Scientific Workshop to Examine the Decline in Fraser River Sockeye (2010)
Member, Biological Review Team, National Marine Fisheries Service Risk Assessment of Oregon Coast Coho Salmon (2009-2010)

TEACHING EXPERIENCE

2013 - present Visiting Instructor, University of Washington: *Applied Time Series Analysis in Fisheries and Environmental Sciences*
1997 - present Guest Lecturer, University of Washington: *Limnology*; *Mathematical Biology*; *Conservation & Management of Aquatic Resources*; *Fisheries Stock Assessment*; *Water & Society*
2014 Visiting Instructor, Stockholm University: *Applied Time Series Analyses for Ecologists*
2005 - 2007 Visiting Instructor, University of Washington: *Theory and Application of Stable Isotopes in Ecology*

1997 - 2000 Teaching Assistant, *Biology Program*, University of Washington: *Limnology*, *Vertebrate Zoology*, *Comparative Vertebrate Anatomy*

TRAINEES

Post-doctoral

Guillaume Bal (*co-advised with EJ Ward*)
Eric Buhle
Kirstin Holsman
Daniel Pendleton (*co-advised with EE Holmes*)
Jim Thorson (*co-advised with EE Holmes & EJ Ward*)

Ph.D. students

Tessa Francis (*committee member*)

M.S. students

Jessica Beetz (*committee member*)
Pascale Goertler (ad hoc *committee member*)
Casey Ralston (*committee member*)
Harry Rich (ad-hoc *committee member*)
Megan Stachura (ad-hoc *committee member*)

Undergraduate students

Christina Murphy (*NOAA Ernest F. Hollings Undergraduate Scholarship Program*)