

MARK D. SCHEUERELL

Curriculum vitae

CONTACT

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EDUCATION

Ph.D. 2002 Zoology, University of Washington, Seattle, Washington
M.S. 1996 Fisheries and Aquatic Science, Cornell University, Ithaca, New York
B.S. 1991 Zoology, University of Wisconsin, Madison, Wisconsin

PROFESSIONAL EXPERIENCE

2007 - present Affiliate Assistant Professor, School of Aquatic and Fishery Sciences, University of Washington, Seattle, Washington
2003 - present Research Fisheries Biologist, NOAA Fisheries Service, Northwest Fisheries Science Center, Seattle, Washington
2002 - 2003 Post-doctoral Fellow, National Research Council & NOAA Fisheries Service, Northwest Fisheries Science Center
1997 - 2002 Graduate Research Assistant, Department of Zoology, University of Washington, Seattle, Washington
1996 - 1997 Research Coordinator, University of Massachusetts and Massachusetts Audubon Society, Amherst, Massachusetts
1993 - 1995 Graduate Research Assistant, Department of Natural Resources, Cornell University, Ithaca, New York
1992 - 1993 Research Technician, Cornell University Biological Field Station, Bridgeport, New York
1991 - 1992 Associate Research Specialist, Center for Limnology, University of Wisconsin, Madison, Wisconsin

AWARDS & HONORS

Presidential Early Career Award for Scientists and Engineers, White House Office of Science and Technology Policy, Washington, District of Columbia (2006)
National Research Council Postdoctoral Research Associateship: *Estimating the relative roles of the environment and density-dependence in controlling Pacific salmon populations.* (2003)
Selection to the American Society of Limnology and Oceanography DIALOG V Symposium, Bermuda Biological Station for Research, The Bermuda Islands (2003)
Ford Foundation Fellowship in Environmental Science: *The impact of lake shoreline development on spatial processes in lake food webs.* (2002)
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, University of Washington, Department of Zoology, Seattle, Washington (2000)
NSF Graduate Research Training Grant in Mathematical Biology: *Integrating spatial dynamics and foraging models: the effect of scale on the functional response of fish.* (1999)
Richard C. Snyder Award for Vertebrate Zoology Research, University of Washington, Department of Zoology, Seattle, Washington (1999)

Electric Power Research Institute Fellowship in Fish Population Biology: *Spatial dynamics of fish populations: implications for predator-prey interactions*. (1994-1995)

PROFESSIONAL ACTIVITIES

Society membership

American Fisheries Society

Chair, Committee for the Mercer Patriarche North American Journal of Fisheries Management
Best Paper Award (2006)

American Society for Limnology and Oceanography

Ecological Society of America

Secretary of Aquatic Ecology Section (2008-2010)

Society for Conservation Biology

Conservation Science Institute (Fellow)

Editorial responsibilities

Assistant editor

Ecological Research

Book reviewer

Trends in Ecology and Evolution

Manuscript reviewer

Ecological Applications

Ecological Modelling

Ecology

Ecology and Society

Ecology Letters

Ecosystems

Oecologia

Frontiers in Ecology and the Environment

Proceedings of the National Academy of Sciences

Limnology & Oceanography

Canadian Journal of Fisheries and Aquatic Sciences

Canadian Journal of Zoology

North American Journal of Fisheries Management

Transactions of the American Fisheries Society

PEER-REVIEWED PUBLICATIONS

Scheuerell MD, Zabel RW, Sandford BP. *In press*. Relating juvenile migration timing and survival to adulthood in two species of threatened Pacific salmon (*Oncorhynchus* spp.). *Journal of Applied Ecology*

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* doi:10.1016/j.biocon.2009.05.013

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

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

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

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

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

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

- 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
- 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
- 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
- Scheuerell MD** and Williams JG. 2005. Forecasting climate-induced changes in the survival of Snake River spring/summer Chinook salmon. *Fisheries Oceanography* 14: 448-457
- 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
- 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
- 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
- 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
- Scheuerell MD**. 2004. Quantifying aggregation and association in three dimensional landscapes. *Ecology* 85: 2332-2340
- 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
- Scheuerell MD** and Schindler DE. 2004. Changes in the spatial distribution of fishes in lakes along a residential development gradient. *Ecosystems* 7: 98-106
- Moore JW, Schindler DE, **Scheuerell MD**. 2004. Disturbance of freshwater habitats by anadromous salmon in Alaska. *Oecologia* 139: 298-308
- ¹Hilborn 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
- Scheuerell MD**, Schindler DE. 2003. Diel vertical migration by juvenile sockeye salmon: empirical evidence for the antipredation window. *Ecology* 84: 1713-1720
- 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
- Moore JW, Schindler DE, **Scheuerell MD**, Smith D, Frodge J. 2003. Lake eutrophication at the urban fringe. *Ambio* 32: 13-18
- Scheuerell MD**, Schindler DE, Litt AH, Edmondson WT. 2002. Environmental and algal forcing of *Daphnia* production dynamics. *Limnology & Oceanography* 47: 1477-1485
- Schindler DE and **Scheuerell MD**. 2002. Habitat coupling in lake ecosystems. *Oikos* 98: 177-189
- 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
- Delany MF, Lockley TC, Pranty B, **Scheuerell MD**. 2000. Stomach contents of two nestling Florida Grasshopper Sparrows. *Florida Field Naturalist* 28: 75-77
- 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.
- Pranty B and **Scheuerell MD**. 1997. First summer record of the Henslow's Sparrow in Florida. *Florida Field Naturalist* 25: 64-66

¹All junior authors listed in alphabetical order.

- 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
- 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
- ²He X, **Scheuerell 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** and Hilborn R. 2009. Estimating the freshwater component of essential fish habitat for Pacific salmon (*Oncorhynchus* spp.) with the Shiraz model. In: Knudsen EE, Michael H (Eds.). *Pacific Salmon Environment 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. In: Knudsen EE, Michael H (Eds.). *Pacific Salmon Environment and Life History Models: Advancing Science for Sustainable Salmon*. American Fisheries Society Symposium. Bethesda, Maryland.
- Dini ML, Soranno PA, **Scheuerell MD**, Carpenter SR. 1993. Effects of predators and food supply on diel vertical migration of *Daphnia*. Pp. 153-171 In: Carpenter SR and Kitchell JF (Eds.) *The Trophic Cascade in Lakes*. Cambridge University Press, Cambridge, England.

OTHER PUBLICATIONS

- 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. Department of Commerce NOAA Technical Memorandum NMFS-NWFSC-63. 177 p.

INVITED PRESENTATIONS

- Scheuerell MD**, Hilborn R, Ruckelshaus MH, Bartz KK, Battin J, Lagueux KM, Hass AD, Rawson K. *The Shiraz model: a tool for incorporating anthropogenic effects and fish-habitat relationships in conservation planning*. River Restoration Northwest 2009 Stream Restoration Symposium, February 2-5, 2009, Skamania, Washington.
- Scheuerell MD**. *Using stable isotopes to inform river restoration science*. Western Division of the American Fisheries Society Annual Meeting, May 5-7, 2008, Portland, Oregon.
- Scheuerell MD**. *Forecasting climate-induced shifts in the marine survival of salmon*. P/ICES Conference on New Frontiers in Marine Science, June 28, 2007, Baltimore, Maryland.
- Scheuerell MD**. *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.
- Scheuerell MD**. *Potential impacts of agriculture and habitat modification on Pacific Salmon*. Environmental Studies Planning Unit, The Evergreen State College, November 17, 2005, Olympia, Washington.
- Scheuerell MD**. *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.
- Scheuerell MD** and Hilborn R. *Estimating essential fish habitat for Pacific salmon with the Shiraz model*. American Fisheries Society Annual Meeting, September 14, 2005, Anchorage, Alaska.

²“Scheuerell” misspelled on final printing.

- Scheuerell MD.** *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.
- Scheuerell MD.** *The role of climate variability in structuring the population dynamics of Snake River spring/summer Chinook salmon.* Climate Impacts on Salmon Management and Recovery in the Pacific Northwest: The Columbia River Basin, September 21, 2004, Portland, Oregon.
- Scheuerell MD.** *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.
- Scheuerell MD** and Hilborn R. *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.
- Scheuerell MD** and Schindler DE. *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.

TEACHING EXPERIENCE

- 2005 - present Visiting Instructor, University of Washington, Seattle, Washington: *Theory and Application of Stable Isotopes in Ecology*
- 1997 - present Guest Lecturer, University of Washington, Seattle, Washington: *Limnology, Mathematical Biology, Conservation and Management of Aquatic Resources, Fisheries Stock Assessment*
- 1997 - 2000 Teaching Assistant, *Biology Program*, University of Washington, Seattle, Washington: *Limnology, Vertebrate Zoology, Comparative Vertebrate Anatomy*

TRAINEES

Post-doctoral

- Eric Buhle (current)
- Kirstin Holsman (current)

Ph.D. students

- Tessa Francis (committee member, former)

M.S. students

- Jessica Beetz (committee member, current)

Undergraduate students

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