

EDUCATION

- Ph.D. Candidate, Landscape Ecology, University of Washington, Seattle, WA, **Projected Completion 2015** (C. Torgersen and J. Lawler, co-advisers)
- M.S., Aquatic Ecology, University of Notre Dame, Notre Dame, IN, 1998 (G.A. Lamberti)
- B.S., Biology, Ohio State University, Columbus, OH, 1994 (J.E. Garvey, R.A. Stein)

PROFESSIONAL EXPERIENCE

- *Fisheries Research Biologist*. July 2002 to present. Northwest Fisheries Science Center, NOAA Fisheries, Seattle, WA.
- *Aquatic Biologist*. June 1998 to May 2002. Nongame and Endangered Wildlife Program, North Carolina Wildlife Resources Commission, Raleigh, NC.
- *Research Assistant*. June 1994 to July 1995. Aquatic Ecology Laboratory, Ohio State University, Columbus, OH.

RESEARCH INTERESTS: Spatial structure of aquatic populations, especially those living in stream networks; relationship between spatio-temporal scale and ecological patterns and processes; climate change impacts to aquatic systems; influence of nonindigenous species on native aquatic fauna; and ways that science can contribute to improved decision-making.

Current projects focus on the spatial structure of threatened and endangered Pacific salmon populations, landscape predictors of heterogeneity in stream temperature, effects of altered thermal regimes on salmon, and how the presentation of uncertainty influences conservation decisions. Recent projects included habitat analyses to support policy decisions for tule Chinook salmon, development of a watershed restoration planning decision support system, evaluation of the uncertainty of the models in this tool, and application to forecast expected changes in freshwater habitat and fish populations under several future scenarios including dam passage and to evaluate placement of restoration projects. Older projects evaluated riparian conditions in the interior Columbia River basin and the change in life history diversity of salmon in Puget Sound.

Prior work involved aquatic nongame and endangered wildlife issues in North Carolina, especially conservation of native crayfishes. Thesis research at Notre Dame focused on interactions between a nonindigenous fish and the Great Lakes ecosystem. Undergraduate research at Ohio State investigated factors controlling growth and overwinter survival of juvenile largemouth bass.

PEER-REVIEWED PUBLICATIONS

(PDFs available via my webpage – link at top of page)

Steel, E.A., A. Tillotson, D.A. Larsen, **A.H. Fullerton**, K.P. Denton, and B.R. Beckman. 2012.

Beyond the mean: The role of variability in predicting ecological effects of stream temperature on salmon. *Ecosphere* 3(11):104.

Fullerton, A.H., S.T. Lindley, G.R. Pess, B.E. Feist, E.A. Steel, and P. McElhany. 2011. Human influence on the spatial structure of threatened Pacific salmon metapopulations. *Conservation Biology* 25:932-944.

- Fullerton, A.H.**, K.M. Burnett, E.A. Steel, R.L. Flitcroft, G.R. Pess, B.E. Feist, C.E. Torgerson, D.J. Miller, and B.L. Sanderson. 2010. Hydrological connectivity for riverine fishes: measurement challenges and research opportunities. *Freshwater Biology* 55:2215-2237.
- Steel, A., R. Hughes, **A. Fullerton**, S. Schmutz, J. Young, M. Fukushima, S. Muhar, M. Poppe, B. Feist, C. Trautwein, H. Shimazaki, and B. Sanderson. 2010. Are we meeting the challenges of landscape scale riverine research? A review. *Living Reviews in Landscape Ecology*. <http://landscaperesearch.livingreviews.org/Articles/lrlr-2010-1/>.
- Fullerton, A.H.**, A. Steel, Y. Caras, and I. Lange. 2010. Effects of spatial pattern and economic uncertainties on freshwater habitat restoration planning: a simulation exercise. *Restoration Ecology* 18(S2):354-369.
- Fullerton, A.H.**, D. Jensen, A. Steel, D. Miller, and P. McElhany. 2010. How certain are salmon recovery forecasts? A watershed-scale sensitivity analysis. *Environmental Modeling & Assessment* 15:13-26.
- Fullerton, A.H.**, A. Steel, Y. Caras, M. Sheer, P. Olson, and J. Kaje. 2009. Putting watershed restoration in context: Alternative future scenarios influence management outcomes. *Ecological Applications* 19(1):218-235.
- Jensen, D., A. Steel, **A. Fullerton**, and G. Pess. 2009. Impact of fine sediment on egg-to-fry survival of Pacific salmon: A meta-analysis of published studies. *Reviews in Fisheries Science* 17(3):348-359.
- Steel, E.A., T.J. Beechie, M. Ruckelshaus, **A.H. Fullerton**, P. McElhany, and P. Roni. 2009. Mind the gap: Uncertainty and model communication between managers and scientists. H. Michael, C. Steward, and E. Knudsen, eds. *American Fisheries Society Symposium* 71:357-372.
- Steel, A., **A. Fullerton**, Y. Caras, M. Sheer, P. Olson, D. Jensen, J. Burke, M. Maher, and P. McElhany. 2008. A spatially explicit decision support system for managing wide ranging species. *Ecology and Society* 13(2):50. <http://www.ecologyandsociety.org/vol13/iss2/art50/>.
- Fullerton, A.H.**, T.J. Beechie, S.E. Baker, J.E. Hall, and K.A. Barnas. 2006. Regional patterns of riparian characteristics in the interior Columbia River Basin, Northwestern USA: applications for restoration planning. *Landscape Ecology* 21:1347-1360.
- Beechie, T., E. Buhle, M. Ruckelshaus, **A. Fullerton**, and L. Holsinger. 2006. Hydrologic regime and the conservation of salmon life history diversity. *Biological Conservation* 130:560-572.
- Fullerton, A.H.** and G.A. Lamberti. 2006. A comparison of habitat use and habitat-specific feeding efficiency by Eurasian ruffe (*Gymnocephalus cernuus*) and yellow perch (*Perca flavescens*). *Ecology of Freshwater Fish* 15(1):1-9.
- Kolar, C.S., **A.H. Fullerton**, K.M. Martin, and G.A. Lamberti. 2002. Interactions among zebra mussel shells, invertebrate prey, and Eurasian ruffe or yellow perch. *Journal of Great Lakes Research* 28(4): 664-673.
- Fullerton, A.H.**, and B.T. Watson. 2001. New distributional records for two nonindigenous and one native crayfish in North Carolina. *The Journal of the Elisha Mitchell Scientific Society* 117: 66-70.
- Fullerton, A.H.**, G.A. Lamberti, D.M. Lodge, and F.W. Goetz. 2000. Potential for resource competition between Eurasian ruffe (*Gymnocephalus cernuus*) and yellow perch (*Perca flavescens*): growth and RNA responses in laboratory experiments. *Transactions of the American Fisheries Society* 129:1387-1395.

- Fullerton, A.H.**, J.E. Garvey, R.A. Wright, and R.A. Stein. 2000. Overwinter growth and survival of largemouth bass: interactions among size, food, origin, and winter severity. *Transactions of the American Fisheries Society* 129:1-12.
- Wright, R.A., J.E. Garvey, **A.H. Fullerton**, and R.A. Stein. 1999. Predicting how winter affects energetics of age-0 largemouth bass: how do current models fare? *Transactions of the American Fisheries Society* 128:603-612.
- Fullerton, A.H.**, G.A. Lamberti, D.M. Lodge, and M.B. Berg. 1998. Prey preferences of Eurasian ruffe and yellow perch: comparison of laboratory results with composition of Great Lakes benthos. *Journal of Great Lakes Research* 24:319-328.

OTHER PUBLICATIONS

- Fullerton, A.**, J. Jorgensen, E. Ward, M. Scheuerell, R. Zabel, E. Buhle, P. Westley, and G. Bal. 2013. Quantifying spatial structure of Interior Columbia Basin salmon populations. Chapter 8 in R. Zabel et al. Life-Cycle Models of Salmonid Populations in the Interior Columbia River Basin. Technical Report for the Columbia River Adaptive Management Implementation Plan, Draft January 18, 2013.
- Fullerton A.**, D. Miller, T. Cooney, M. Sheer, D. Rawding, J. Rodgers, and D. Price. 2010. Habitat Analyses to Support Tule Chinook Life Cycle Modeling. In T. Cooney et al. Lower Columbia River Chinook Life Cycle Modeling. Final Report to NOAA Fisheries Regional Office, for use in the Multiyear Harvest Planning Biological Opinion for tule Chinook salmon in the Lower Columbia River, February 11, 2010.
- Steel, E. A., **A. Fullerton**, Y. Caras, M. B. Sheer, P. Olson, D. Jensen, J. Burke, M. Maher and P. McElhany. 2007. The Lewis River Case Study: Final Report. Northwest Fisheries Science Center, Seattle, WA. Available at: <http://www.nwfsc.noaa.gov/research/divisions/fed/wpg/documents/lrcs/LewisRiverCaseStudyFinalReport.pdf>
- Fullerton, A.H.** 2002. The Crayfishes of North Carolina – a web atlas. http://216.27.39.101/wildlife_species_con/ncrayfishes/nc_crayfishes.html.
- Fullerton, A.H.** 2002. Status of significantly rare crayfishes in the Savannah, French Broad, Lumber, and Waccamaw River Basins, North Carolina: results from 2001 surveys. Year 1 Final Report, Nongame & Endangered Wildlife Program, North Carolina Wildlife Resources Commission, 73 pp.
- Fullerton, A.H.**, B.T. Watson, and J.A. Johnson. 1998-2002. **Nineteen** Technical Aquatic Inventory Reports from surveys conducted throughout North Carolina. Nongame & Endangered Wildlife Program, North Carolina Wildlife Resources Commission.

FUNDING PROCURED

- Fullerton, A.H.** 2009. Using measures of freshwater habitat connectivity for conservation planning. NWFSC Internal Grants Program; \$27,900.
- Steel, A., B. Beckman, **A. Fullerton**, K. Bartz, B. Letcher, and M. Angilletta. 2009. From experiments to landscapes: physiological, behavioral, and ecological consequences of anthropogenically altered thermal regimes during Chinook salmon incubation. NWFSC Internal Grants Program; \$44,716.
- Fullerton, A.H.** 2005. Testing tools for science-based recovery planning: sensitivity analyses of a decision support system and application to restoration of watersheds containing ESA-listed Pacific salmonids. NWFSC Internal Grants Program; \$20,600.
- Steel, A., **A. Fullerton**, and P. McElhany. 2006. Lewis River Decision Support System. Federal Columbia River Power System BiOp Remand funding to NWFSC; \$77,000.

- Fullerton, A.H.** 2001-2003. Inventory of status of significantly rare crayfishes throughout North Carolina. North Carolina Natural Heritage Program; \$21,000.
- Alderman, J.A., J.A. Johnson, **A.H. Fullerton**, and B.T. Watson. 1999-2001. Aquatic inventories of Montgomery, Johnston, Cumberland, and Richmond counties, North Carolina. North Carolina Natural Heritage Program; \$28,000.
- Alderman, J.A., B.T. Watson, and **A.H. Fullerton**. 1998-2000. Aquatic inventory of state-owned game lands. North Carolina Natural Heritage Program; \$88,000.

CONFERENCE PRESENTATIONS (showing only first author, most recent 5 years)

- Fullerton, A.**, C. Torgersen, J. Lawler, R. Faux, A. Steel, T. Beechie, N. Mantua and J. Ebersole. Landscape drivers of spatial patterns in stream temperature. International Association of Landscape Ecology, Austin, TX, April 14-18, 2013.
- Fullerton, A.H.**, and R. Zabel. Conserving metapopulation structure for Pacific salmon may counteract forces acting to increase synchrony. Society for Conservation Biology, Oakland CA. July 16, 2012.
- Fullerton, A.**, G.Pess, S. Lindley, and R. Zabel. September 6, 2011. Prioritizing which salmon populations to re-establish: we opened it, now how long will it take? American Fisheries Society annual meeting, Seattle, WA. (Invited oral presentation).
- Fullerton, A.**, C. Torgersen, J. Lawler, and A. Steel. September 7, 2011. Can spatial heterogeneity mediate altered thermal regimes for juvenile salmon? American Fisheries Society annual meeting, Seattle, WA. (Invited poster presentation).
- Fullerton A.**, S. Lindley, G. Pess, B. Feist, A. Steel and P. McElhany. April 4, 2011. Human influence on the spatial structure of threatened Pacific salmon metapopulations. International Association of Landscape Ecology, Portland, OR (Oral presentation).
- Fullerton, A.H.**, S.T. Lindley, G.R. Pess, B.E. Feist, E.A. Steel and P. McElhany. September 15, 2010. Investigating connectivity among Pacific salmonid populations under alternative scenarios: a graph-theoretic approach. American Fisheries Society Annual Meeting, Pittsburgh, PA. (Oral presentation).
- Fullerton, A.H.** August 24, 2010. Conservation of Pacific salmon and their riverine habitats. Swedish University of Agricultural Sciences, Dept. of Fish and Wildlife, Umea, Sweden. (Invited seminar).
- Fullerton, A.H.**, S.T. Lindley, G.R. Pess, B.E. Feist and P. McElhany. May 5, 2010. Do Hatcheries Influence the Spatial Structure of Salmon Populations? State of the Salmon Conference, Portland OR. (Poster presentation).
- Fullerton, A.H.**, K.M. Burnett, B.E. Feist, R.L. Flitcroft, P. McElhany, D.J. Miller, G. Pess, B.L. Sanderson, E.A. Steel, and C.E. Torgersen. February 25, 2009. Connectivity in freshwater ecosystems: a literature synthesis and an example conservation application. Oregon Chapter American Fisheries Society meeting, Bend, OR. (Oral presentation).
- Fullerton, A.H.**, A. Steel, Y. Caras, M. Sheer, P. Olson, and J. Kaje. May 7, 2008. Estimating habitat conditions and salmonid population responses in the Lewis River watershed. Western Division American Fisheries Society meeting, Portland, OR. (Invited oral presentation).
- Fullerton, A.H.**, R. Flitcroft, G. Pess, A. Steel, B. Feist, B. Sanderson, D. Miller, and C. Torgersen. March 5, 2008. Interpreting aquatic connectivity: a challenge and an opportunity. Poster presentation. North Pacific International Chapter American Fisheries Society annual meeting, Bellingham, WA. (Poster presentation).
- Many additional internal, local, and regional workshop or seminar presentations

PROFESSIONAL SOCIETIES

- Society for Freshwater Science, 1995 to present
- American Fisheries Society, 1995 to present
- International Association of Landscape Ecologists, US Chapter, 2004 to present
- Society for Conservation Biology, 2010 to present
- AAAS, 2011 to present
- Toastmasters International (certified)

AWARDS & HONORS

- Western Division AFS, Eugene Maughan Graduate Student Scholarship, 2013
- NOAA Advanced Studies Program Fellowship, 2010-2011
- Best PhD proposal, School of Environ. & Forestry Sciences, U. Washington, 2010
- Spot awards from NOAA for work related to salmon recovery planning, 2002-2011
- “Above and Beyond” service award, Northwest Fisheries Science Center, 2004
- NSF Graduate Research Traineeship, University of Notre Dame, 1995-1998
- NSF Research Experience for Undergraduates, Ohio State University, 1994-1995

RECENT SERVICE

- Review of manuscripts for scientific journals (*Biological Invasions; Canadian Journal of Fisheries and Aquatic Sciences; Conservation Biology; Conservation Letters; Ecology; Ecology of Freshwater Fish; Endangered Species Research; Environmental Management; Environmental Society and Policy; Fisheries, Freshwater Biology; Geomorphology; Hydrobiologia; Journal of Applied Ecology; Journal of Environmental Management; Landscape Ecology; North American Journal of Fisheries Management; Northwest Science; River Research and Applications; Science Signalling; Transactions of the American Fisheries Society*)
- Guest lectures to regional universities on landscape ecology and salmon recovery
- Organized special sessions on the influence of humans on aquatic connectivity for the 2011 annual meetings of (1) the US Chapter of the International Association for Landscape Ecology (Portland), and (2) the American Fisheries Society (Seattle)
- Co-chair for the seminar series at the Northwest Fisheries Science Center, spring 2011
- American Fisheries Society Service: (1) member of annual planning committee for Seattle 2011; (2) WA-BC ad-hoc committee, (3) session moderator at annual conferences
- Hosted two visiting scientists from Austria, 2011
- Mentored interns via the NOAA Hollings Scholar program, University of Washington, and Western Washington University
- Outreach activities to promote science education in the general public (especially kids)