

Michael H. Meeuwig

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ACADEMIC BACKGROUND

- 09/04 – 12/08 Doctor of Philosophy in Biological Sciences, Montana State University, Bozeman
- 08/97 – 05/00 Master of Science in Biology, University of Nevada, Reno
- 08/92 – 05/97 Bachelor of Science, University of Nevada, Reno
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EMPLOYMENT AND WORK EXPERIENCE

- 03/16 – Date: Program Lead, Native Fish Investigations Program, Corvallis Research Lab, Oregon Department of Fish and Wildlife
- 01/12 – 03/16: Project Lead, Native Fish Investigations Program, Corvallis Research Lab, Oregon Department of Fish and Wildlife
- 07/11 – 12/11: Research Scientist, Montana Cooperative Fishery Research Unit, Department of Ecology, Montana State University
- 12/08 – 04/11: Postdoctoral Scholar, Biology Department, College of Science, University of Nevada, Reno
- 04/04 – 12/08: Graduate Research Assistant, Montana Cooperative Fishery Research Unit, Department of Ecology, Montana State University
- 11/00 – 04/04: Fishery Biologist, Columbia River Research Laboratory, Western Fisheries Research Center, US Geological Survey
- 07/97 – 10/00: Graduate Research Assistant, Biology Department, College of Science, University of Nevada, Reno
- 05/96 – 06/97: Biological Science Technician, Reno Field Station, Western Fisheries Research Center, US Geological Survey
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PEER-REVIEWED PUBLICATIONS

- Schultz, L.B., B.E. Chasco, S.L. Whitlock, M.H. Meeuwig, and C.B. Schreck. *In press*. Growth and annual survival estimates to examine the ecology of larval lamprey and the implications of ageing error in fitting models. *Journal of Fish Biology*.
- Tennant, L.B., R.E. Gresswell, C.S. Guy, and M.H. Meeuwig. 2016. Spawning and rearing behavior of bull trout in a headwater lake ecosystem. *Environmental Biology of Fishes* 99:117-131. DOI: 10.1007/s10641-015-0461-x
- Meeuwig, M.H., C.S. Guy, and W.A. Fredenberg. 2011. Trophic relationships between a native and a nonnative predator in a system of natural lakes. *Ecology of Freshwater Fish* 20:315-325. DOI: 10.1111/j.1600-0633.2011.00498.x

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- Meeuwig, M.H., C.S. Guy, and W.A. Fredenberg. 2011. Use of cover habitat by bull trout, *Salvelinus confluentus*, and lake trout, *Salvelinus namaycush*, in a laboratory environment. *Environmental Biology of Fishes* 90:367-378. DOI: 10.1007/s10641-010-9747-1
- Meeuwig, M.H., C.S. Guy, S.T. Kalinowski, and W.A. Fredenberg. 2010. Landscape influences on genetic differentiation among bull trout populations in a stream-lake network. *Molecular Ecology* 19:3620-3633. DOI: 10.1111/j.1365-294X.2010.04655.x
- Kalinowski, S.T., M.H. Meeuwig, S.R. Narum, and M.L. Taper. 2008. Stream trees: a statistical method for mapping genetic differences between populations of freshwater organisms to the sections of streams that connect them. *Canadian Journal of Fisheries and Aquatic Sciences* 65:2752-2760. DOI: 10.1139/F08-171
- Meeuwig, M.H., C.S. Guy, and W.A. Fredenberg. 2008. Influence of landscape characteristics on fish species richness among lakes of Glacier National Park, Montana. *Intermountain Journal of Sciences* 14:1-16.
- Meeuwig, M.H., A.L. Puls, and J.M. Bayer. 2007. Survival and tag retention of Pacific lamprey larvae and macrophthalmia marked with coded wire tags. *North American Journal of Fisheries Management* 27:96-102. DOI: 10.1577/M06-074.1
- Meeuwig, M.H., J.M. Bayer, and R.A. Reiche. 2006. Morphometric discrimination of early life stage *Lampetra tridentata* and *L. richardsoni* (Petromyzonidae) from the Columbia River Basin. *Journal of Morphology* 267:623-633. DOI: 10.1002/jmor.10427
- Meeuwig, M.H., and J.M. Bayer. 2005. Morphology and aging precision of statoliths from larvae of Columbia River Basin lampreys. *North American Journal of Fisheries Management* 25:38-48. DOI: 10.1577/M03-184.1
- Meeuwig, M.H., J.M. Bayer, and J.G. Seelye. 2005. Effects of temperature on survival and development of early life stage Pacific and western brook lampreys. *Transactions of the American Fisheries Society* 134:19-27. DOI: 10.1577/FT03-206.1
- Meeuwig, M.H., J.B. Dunham, J.P. Hayes, and G.L. Vinyard. 2004. Effects of constant and cyclical thermal regimes on growth and feeding performance of cutthroat trout of variable sizes. *Ecology of Freshwater Fish* 13:208-216. DOI: 10.1111/j.1600-0633.2004.00052.x
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MANUSCRIPTS IN REVIEW

- Meeuwig, M.H., and M.M. Peacock. *In review*. Food web characteristics in Fallen Leaf Lake, California: challenges to reintroduction of Lahontan cutthroat trout. *Journal of Fish and Wildlife Management*.
- Brown, P.J., C.S. Guy, and M.H. Meeuwig. *In review*. A comparison of two mobile electrode arrays for increasing mortality of lake trout *Salvelinus namaycush* embryos. *North American Journal of Fisheries Management*.

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DISSERTATION AND THESIS

- Meeuwig, M.H. 2008. Ecology of lacustrine-adfluvial bull trout populations in an interconnected system of natural lakes. PhD Dissertation. Montana State University, Bozeman.
- Meeuwig, M.H. 2000. Effects of constant and cyclical thermal regimes on growth, feeding, and swimming performance of cutthroat trout of variable sizes. MS Thesis. University of Nevada, Reno.
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SELECTED TECHNICAL REPORTS AND DOCUMENTS

- Meeuwig, M.H., and S.P. Clements. 2015. Temporal variability in the distribution and abundance of a desert trout: implications for monitoring design and population persistence in dynamic stream environments. Oregon Department of Fish and Wildlife – Progress Reports.
- Meeuwig, M., B. Ramirez, and S. Clements. 2015. Life-history characteristics of migratory redband trout on the Malheur National Wildlife Refuge in relation to construction of a Caspian tern nesting island on Malheur Lake. Report of Oregon Department of Fish and Wildlife – Native Fish Investigations Program to US Army Corps of Engineers.
- Meeuwig, M.H., S.J. Starcevich, E.J. Bailey, S.P. Clements, and J.L. McCormick. 2015. Bull trout conservation and recovery in the Odell Lake core area: distribution, behavior, ecology, and fisheries evaluations (2013 – 2014). Oregon Department of Fish and Wildlife – Information Reports.
- DeHaan, P., J. Von Bargen, M. Meeuwig, and S. Clements. 2015. Great Basin redband trout genetic status assessment. Final Report of US Fish and Wildlife Service.
- Brown, P.J., C.S. Guy, and M.H. Meeuwig. 2014. Use of mobile electrofishing to induce mortality in lake trout embryos. Final Report of MT Cooperative Fishery Research Unit to Montana Fish, Wildlife & Parks.
- Meeuwig, M., and S. Clements. 2014. Use of depletion electrofishing and a generalized random-tessellation stratified design to estimate density and abundance of redband trout in the northern Great Basin. Oregon Department of Fish and Wildlife – Information Reports 2014-01.
- Meeuwig, M., S. Clements, and S. Starcevich. 2012. Native trout decision support model: summary report. Report of Oregon Department of Fish and Wildlife – Native Fish Investigations Program.
- Meeuwig, M.H., and M.M. Peacock. 2012. Fishery research activities for Fallen Leaf Lake, California, 2009-2010: suggested fish assemblage monitoring protocol, and contemporary food web characteristics. Report of University of Nevada, Reno, to US Fish and Wildlife Service. (*and one interim scientific report*)
- Fredenberg, W., M. Meeuwig, and C. Guy. 2007. Action plan to conserve bull trout in Glacier National Park. Report of US Fish and Wildlife Service and US Geological Survey to US National Park Service. (*and three interim investigator's annual reports*)

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Meeuwig, M.H., and C.S. Guy. 2007. Evaluation and action plan for protection of 15 threatened adfluvial populations of bull trout in Glacier National Park, Montana. Final scientific report of MT Cooperative Fishery Research Unit to US Fish and Wildlife Service. (*and three interim scientific reports*)

SELECTED PRESENTATIONS

- Meeuwig, M.H., and S.P. Clements. 2016. Temporal variability in the distribution and abundance of a desert trout associated with stream drying. Oregon Chapter of the American Fisheries Society 2016 Annual Meeting, Seaside, OR (03/16). ORAL PRESENTATION
- Meeuwig, M.H., E.J. Bailey, and S.P. Clements. 2016. Is there evidence for competition between bull trout and lake trout in Odell Lake, Oregon? Oregon Chapter of the American Fisheries Society 2016 Annual Meeting, Seaside, OR (03/16). POSTER PRESENTATION
- Bailey, E.J., M.H. Meeuwig, and S.P. Clements. 2016. Evaluation of gastric lavage for quantifying stomach contents of lake trout from Odell Lake, Oregon. Oregon Chapter of the American Fisheries Society 2016 Annual Meeting, Seaside, OR (03/16). POSTER PRESENTATION
- Brown, P., M. Meeuwig, and C. Guy. 2013. Efficacy of mobile electrofishing equipment for inducing lake trout embryo mortality. Western Division of the American Fisheries Society 2013 Annual Meeting, Boise, ID (04/13). ORAL PRESENTATION.
- Meeuwig, M., S. Clements, S. Gunckel, M. Heck, S. Jacobs, and S. Miller. 2013. Estimating abundance of redband trout in the Great Basin. Western Division of the American Fisheries Society 2013 Annual Meeting, Boise, ID (04/13). ORAL PRESENTATION, INVITED SPEAKER
- Smith, J., M. Meeuwig, and M. Peacock. 2013. Microsatellite study clarifies non-native threat to Lahontan cutthroat trout reintroduction in Fallen Leaf Lake, California. Western Division of the American Fisheries Society 2013 Annual Meeting, Boise, ID (04/13). ORAL PRESENTATION
- Meeuwig, M.H., S. Clements, and J.T. Peterson. 2012. Malheur's native fishes. Aquatic Health Workshop, Burns, OR (03/12). ORAL PRESENTATION
- Meeuwig, M.H., and M.M. Peacock. 2011. Food web characteristics of an alpine lake in relation to cutthroat trout reintroduction. American Fisheries Society 2011 Annual Meeting, Seattle, WA (09/11). ORAL PRESENTATION
- Meeuwig, M.H., C.S. Guy, and W.A. Fredenberg. 2009. Trophic relationships among bull trout, lake trout, and other fishes in a lake trout invaded system. American Fisheries Society 2009 Annual Meeting, Nashville, TN (08/09). ORAL PRESENTATION, INVITED SPEAKER

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- Meeuwig, M.H., C.S. Guy, and W.A. Fredenberg. 2008. Interactions between bull trout and lake trout for simulated cover habitat. Montana Chapter of the American Fisheries Society 2008 Annual Meeting, Billings, MT (02/08). ORAL PRESENTATION
- Fredenberg, W.A., M.H. Meeuwig, and C.S. Guy. 2008. Action plan to conserve bull trout in Glacier National Park. Crown of the Continent Research Learning Center Brown Bag Seminar Series (01/08). ORAL PRESENTATION
- Meeuwig, M.H., C.S. Guy, and S.T. Kalinowski. 2007. Influence of landscape structure on genetic structure of bull trout in Glacier National Park, Montana. American Fisheries Society 2007 Annual Meeting, San Francisco, CA (09/07). ORAL PRESENTATION, INVITED SPEAKER
- Meeuwig, M.H., C.S. Guy, and W.A. Fredenberg. 2007. Lake trout in the lakes of Glacier National Park, Montana. Montana Chapter of the American Fisheries Society 2007 Annual Meeting, Missoula, MT (02/07). ORAL PRESENTATION, INVITED SPEAKER, PANELIST
- Meeuwig, M.H., C.S. Guy, W.A. Fredenberg, and W. Michels. 2006. Distribution and abundance of bull trout in Glacier National Park: a function of barriers, lake trout, or both? Waterton-Glacier Science and History Day (07/06). ORAL PRESENTATION, INVITED SPEAKER
- Meeuwig, M.H., C.S. Guy, A.M. Dux, W.A. Fredenberg, and W. Michels. 2005. Glacier National Park bull trout: knocking on heaven's door. *Salvelinus confluentus* Curiosity Society 2005 (09/05). ORAL PRESENTATION, INVITED SPEAKER
- Guy, C.S., A.M. Dux, M.H. Meeuwig, W.A. Fredenberg, and W. Michels. 2005. Bull trout and lake trout in Glacier National Park: a tragic combination. Waterton-Glacier Science and History Day (08/05). ORAL PRESENTATION, INVITED SPEAKER
- Meeuwig, M.H., J.M. Bayer, and J.G. Seelye. 2002. Thermal requirements of early life history stages of Pacific lampreys and western brook lampreys. International Congress on the Biology of Fish, University of British Columbia, Vancouver, Canada (07/02). Abstract Published. ORAL PRESENTATION
- Meeuwig, M.H., J.M. Bayer, and J.G. Seelye. 2001. Thermal requirements of early life history stages of Pacific lampreys and western brook lampreys. Native American Fish and Wildlife Society, Pendleton, OR (10/01). ORAL PRESENTATION
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PROFESSIONAL SOCIETIES

American Fisheries Society, Parent Society Member, 01/05 – Date

American Fisheries Society, Oregon Chapter Member, 01/12 – Date

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PROFESSIONAL SERVICES

Associate Editor, North American Journal of Fisheries Management, 11/14 – Date

Co-instructor, Genetics Theory and Application Workshop, Oregon Chapter of the American Fisheries Society, 03/17

Malheur Bull Trout Experts Workshop, 10/16

Bull Trout Expert Panel Workshop, assessing potential impacts of a proposed reintroduction of bull trout on ESA-listed salmon and steelhead in the Clackamas River, 07/08

Columbia River Basin Lamprey Technical Workgroup, 12/03 – 03/04

Webmaster, Oregon Chapter of the American Fisheries Society, 04/13 – 04/16

Website coordinator, Education Section of the American Fisheries Society, 10/05 – 09/10

Program co-chair, American Fisheries Society 2006 Western Division Annual Meeting, 09/05 – 05/06

Vice President, Montana State University Student Subunit of the American Fisheries Society, 02/07 – 02/08

Safety Committee, Corvallis Research Lab, 10/14 – 08/16

Fish and Wildlife Banquet, Montana State University, planning committee, 01/05 – 04/05

US Geological Survey Conference on Science in Oregon and Southwest Washington planning committee, 10/02 – 01/04

Peer-reviews for: Canadian Journal of Fisheries and Aquatic Sciences
Ecology of Freshwater Fish
Environmental Biology of Fishes
Fisheries Management and Ecology
Journal of Applied Ichthyology
Journal of Fish Biology
Molecular Ecology
North American Journal of Fisheries Management
Northwestern Naturalist
Oikos
Transactions of the American Fisheries Society

AWARDS AND HONORS

Best Student Paper – Honorable Mention, American Fisheries Society 2007 Annual Meeting, San Francisco, CA

Skinner Memorial Award – Honorable Mention, American Fisheries Society 2007

Wally McClure Fisheries Scholarship, Montana Chapter of the American Fisheries Society, 2007

Montana Water Center Student Research Fellowship, 2007

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Sustainable Fisheries Foundation William Trachtenberg Memorial Scholarship Fund, Western Division of the American Fisheries Society, 2006

STAR Award, US Geological Survey, 2001 and 2002

GUEST LECTURES

Characterizing fish populations (one class period), April 2006, Fish and Wildlife Topics, F&WL 401 – Montana State University, D. Willey.

Buoyancy and sensory perception (one class period), February 2006, Ichthyology, BIOL 415 – Montana State University, S. Harting.

Stable isotope analysis in fish ecology (two class periods), February 2006, Topics in Fish Ecology, BIOL 452 – Montana State University, T. McMahon.

GRANTS RECEIVED

09/16 – 12/17: Pit sculpin assessment 2016, USDA Forest Service, \$14,404

09/16 – 09/17: Challenge Cost Share Warner Valley fish investigations 2016, US Bureau of Land Management, \$40,000

08/16 – 07/17: BLM native Fish investigations statewide agreement 2016, US Bureau of Land Management, \$33,333

08/16 – 12/20: 2016 Borax Lake chub monitoring, US Fish and Wildlife Service, \$10,796

09/16 – 12/17: 2017 Foskett speckled dace monitoring, US Fish and Wildlife Service, \$10,796

09/16 – 03/19: Oregon chub post delisting monitoring grant – 2017, US Fish and Wildlife Service, \$41,060

04/16 – 03/17: FY16 monitoring the status of Oregon chub influenced by the WV project, US Army Corps of Engineers, \$189,929

07/16 – 06/21: PGE Clackamas bull trout reintroduction monitoring 2016-2021, Portland General Electric Company, \$112,732

10/15 – 09/17: Distribution of spawning and rearing habitat for bull trout in the Odell Lake Recovery Unit, US Fish and Wildlife Service, \$86,000

10/13 – 09/15: Documenting the current status of bull trout in the Odell Lake Recovery Unit, US Fish and Wildlife Service, \$60,000

10/12 – 09/17: Life-history characteristics of redband trout in the Blitzen River Basin, Oregon, US Army Corps of Engineers, \$840,000

01/12 – 12/12: Spawning characteristics and early life history of mountain whitefish in the Madison River, Montana, C. Walker Cross Foundation-Madison River Foundation, \$56,000

07/11 – 06/12: Use of mobile electrofishing to induce mortality in lake trout embryos, Montana Fish, Wildlife & Parks, \$96,300

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- 05/10 – 05/11: Characterization of naturalized rainbow trout (*Oncorhynchus mykiss*) populations in the Fallen Leaf Lake watershed, US Fish and Wildlife Service, \$50,329
- 03/04 – 12/04: Survival and tag retention of larval and recently metamorphosed Pacific lampreys marked with coded wire tags, \$13,661
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OTHER QUALIFICATIONS

Bayesian II: Intermediate Bayesian Inference using Gibbs Sampling (BUGS) for Fish Biologists: Continuing Education Course, American Fisheries Society, 08/15

Bayesian I: Introduction to Bayesian Inference Using Gibbs Sampling (BUGS) for Fish Biologists:

Multivariate Statistical Analysis: National Conservation Training Center, 09/02

Foundational Training: Management and Leadership Training, Oregon Department of Administrative Services, 04/16

Collaboration and Conflict Resolution: Continuing Education Course, Montana Chapter of the American Fisheries Society, 02/11

Fluvial Geomorphic Processes in River Restoration: Northwest Environmental Training Center, 09/06

First Aid, CPR, and AED: American Red Cross, 07/15

Wilderness First Aid Basics: American Red Cross, 04/05

Electrofishing Safety and Policy: Montana Fish, Wildlife and Parks, 05/04

Scientific Diver (SCUBA): US Geological Survey, 09/11

Motorboat Operators Certification Course: US Fish and Wildlife Service, 03/09

SCUBA Certified: PADI, Advanced Open Water, 07/89