

BRENDA M. PRACHEIL
Aquatic Ecologist
Environmental Sciences Division
Oak Ridge National Laboratory
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EDUCATION

PhD 2010 University of Nebraska; Natural Resources & Applied Ecology
Dissertation: Multiscale Perspectives on Paddlefish Populations: Implications for Conservation and Management; Advisor: M.A. Pegg

MS 2006 Michigan State University; Zoology & Ecology, Evolutionary Biology, & Behavior
Thesis: Parasite Population and Community Dynamics of Juvenile Bluegill and Largemouth Bass from Three Lakes II and Gull Lake, Michigan; Advisor: P.M. Muzzall

BS & BA 2001 University of Nebraska; Biological Sciences & Philosophy
Honors Thesis: Susceptibility of Northern Pike to *Leptorhynchoides thecatus* Infections; Advisors: B.B. Nickol & J.J. Janovy

PROFESSIONAL EXPERIENCE

2014-present	Aquatic Ecologist, Environmental Sciences Division, Oak Ridge National Laboratory
2013	Postdoctoral Research Associate, School of Natural Resources, University of Nebraska-Lincoln
2011-2013	Postdoctoral Research Associate, Center for Limnology, University of Wisconsin-Madison
2006-2010	Research Assistant, School of Natural Resources, UNL
2003-2006	Teaching Assistant, Department of Zoology, MSU
2002	Fisheries Technician I, Missouri River Program, Nebraska Game and Parks Commission
2000-2001	Laboratory Technician, School of Biological Sciences, UNL

PEER-REVIEWED PUBLICATIONS

26. B.C. Chakoumakos, B.M. Pracheil, R.P. Koenigs, R.M. Bruch, M. Feygensohn. 2016. Empirically testing vaterite structural models using neutron diffraction and thermal analysis. **Scientific Reports** 6.
25. J.D. Lyons, D. Walchak, J. Hagland, P. Kanehl, B.M. Pracheil. 2016. Reproductive ecology of shovelnose sturgeon (*Scaphirhynchus platyrhynchus*), blue sucker (*Cycleptus elongatus*), and associated species in the Lower Wisconsin River, USA. **Journal of Applied Ichthyology** 32: 1003-1015.
24. B.M. Pracheil, M.S. Bevelhimer, G.F. Cada, C.R. DeRolph, and R.A. McManamay. 2016. A traits-based approach for prioritizing species for monitoring and surrogacy selection. **Endangered Species Research**. 31: 243-258.
23. B.M. Pracheil, B.C. Chakoumakos, M. Feygensohn, R. Koenigs, R. Bruch. 2016. Sturgeon sagittal otoliths are comprised of vaterite and calcite calcium carbonate polymorphs. **Journal of Fish Biology** DOI: 10.1111/jfb.13085.
22. L.R. Bock, G.W. Whitledge, B.M. Pracheil, and P. Bailey. 2016. Relationships between water and paddlefish *Polyodon spathula* dentary elemental and stable isotopic signatures: potential application for reconstructing environmental history. **Journal of Fish Biology** DOI: 10.1111/jfb.13047.
21. B.M. Pracheil, T.J. Mathews, M.S. Bevelhimer, M.J. Peterson, M.S. Greeley, Jr., A.M. Fortner, and C.A. Murphy. 2016. Relating Fish Health and Reproductive Metrics to Metal Bioaccumulation at the Tennessee Valley Authority Kingston Coal Ash Spill Site. **Ecotoxicology** 25:1136-1149.
20. S.R. Januchowski-Hartley, L.A. Holtz, S. Martinuzzi, P.B. McIntyre, V.C. Radeloff, B.M. Pracheil. 2016. Future land use threats to intrinsically vulnerable freshwater fishes in the coterminous United States. **Diversity and Distributions** 22: 663-671.
19. H.I. Jager, M. Parsley, J.J. Cech, Jr., R.L. McLaughlin, P.S. Forsythe, R.S. Elliott, and B.M. Pracheil. 2016. Reconnecting fragmented sturgeon populations in North American rivers. **Fisheries** 41:140-148.
18. B.M. Pracheil, C.R. DeRolph, M.P. Schramm, and M.S. Bevelhimer. 2016. A fish-eye view of riverine hydropower systems: the current understanding of the biological response to turbine passage. **Reviews in Fish Biology and Fisheries** 2016:1-15.
17. McIntyre P.B., C. Reidy Liermann, E. Childress, E.J. Hamann, J.D. Hogan, S.R. Januchowski-Hartley, A.A. Koning, T.M. Neeson, D.L. Oele, and B.M. Pracheil. 2015. Conservation of migratory fishes in freshwater ecosystems. In Closs G, Krkosek M, & Olden JD: **Conservation of Freshwater Fishes**. 324p.

16. S.V. Amaral, M.S. Bevelhimer, G.F. Cada, D. Giza, P. Jacobson, B.J. McMahon and B.M. Pracheil. 2015. Evaluation of behavior and survival of fish exposed to an axial-flow hydrokinetic turbine. **North American Journal of Fisheries Management** 35: 97-113.
15. R.B. Gagne, J.D. Hogan, M.J. Blum, B.M. Pracheil, P.B. McIntyre, E.F. Hain, J.F. Gilliam. 2015. Spread of an introduced parasite among populations of an endemic Hawaiian stream fish. **Freshwater Biology**. 60: 311-322. *Featured on journal cover
14. B.M. Pracheil, G.E. Mestl, and M.A. Pegg. 2015. Movement through dams facilitates population connectivity in a large river. **River Research and Applications** 31: 517-525.
13. B.C. Neely, B.M. Pracheil, and S.T. Lynott. 2014. Hydrologic variables predict harvest in a recreational paddlefish fishery. **Fisheries Management and Ecology** 32: 259-263.
12. B.M. Pracheil, J.D. Hogan, J. Lyons, and P.B. McIntyre. 2014. Conservation and management applications of hard part microchemistry for freshwater fishes **Fisheries**. 39: 451-465. *Featured on journal cover
11. S. Martinuzzi, S.R. Januchowski-Hartley, B.M. Pracheil, P.B. McIntyre, A.J. Plantinga, D.J. Lewis, and V. Radeloff. 2014. Threats and opportunities for freshwater conservation under future land use change scenarios in the United States. **Global Change Biology** 20: 113-124.
10. B.M. Pracheil, P.B. McIntyre, and J.D. Lyons. 2013. Enhancing conservation of large-river biodiversity by accounting for tributaries. **Frontiers in Ecology and the Environment** 11: 124-128.
9. B.M. Pracheil, L.A. Powell, M.A. Pegg, and G.E. Mestl. 2012. Swimways: protecting paddlefish through movement-centered management. **Fisheries** 37: 449-457. *Featured on journal cover
8. D.R. Martin, B.M. Pracheil, J. DeBoer, K.L. Pope, and G. Wilde. 2012. Using internet technology to reveal patterns of angler behavior. **Fisheries** 37: 458-463.
7. B.M. Pracheil, D.D. Snow, and M.A. Pegg. 2010. Distribution of selenium, mercury, and methylmercury in surficial Missouri River sediments. **Bulletin of Environmental Contamination and Toxicology** 84: 331-335.
6. B.M. Pracheil and P.M. Muzzall. 2010. Population dynamics of larval trematodes in juvenile bluegills from Three Lakes II, Michigan and potential of overwinter parasite induced host mortality. **Transactions of the American Fisheries Society** 139: 652-659.
5. M.A. Pegg, J.H. Chick, and B.M. Pracheil. 2009. The influence of non-native species on paddlefish. Pages 185-202 in C. Paukert and G. Scholten editors. Paddlefish management, propagation, and conservation in the 21st century: building from 20 years of research and management. American Fisheries Society, Symposium 66, Bethesda, Maryland.

4. B.M. Pracheil, M.A. Pegg, and G.E. Mestl. 2009. Tributaries influence recruitment of fish in large rivers. **Ecology of Freshwater Fish** 18:603-609.
3. B.M. Pracheil and P.M. Muzzall. 2009. Chronology and development of juvenile bluegill parasite communities. **Journal of Parasitology** 95: 838-845.
2. P.M. Muzzall and B.M. Pracheil. 2007. Parasites of tadpole madtom, *Noturus gyrinus* (Mitchill, 1817) (Ictaluridae), from Silver Creek, Michigan, U.S.A. with a checklist of North American parasites of tadpole madtom. **Comparative Parasitology** 74:154-159.
1. B.M. Pracheil, G.E. Mestl, and P.M. Muzzall. 2005. Metazoan parasites of young-of-the-year paddlefish from Lewis and Clark Lake, Nebraska, U.S.A. **Comparative Parasitology** 72:227-229.

PROFESSIONAL ACTIVITIES AND SERVICE

- 2014-present Associate Editor, North American Journal of Fisheries Management
- 2013-2014 Eastern Tallgrass Prairie and Big Rivers Landscape Cooperative river restoration science advisory group
- 2008-2013 Mississippi Interstate Cooperative Resource Association Paddlefish and Sturgeon Committee technical advisor
- 2007-2010 South Dakota-Nebraska paddlefish working group

Peer-reviewer for

- American Fisheries Society Paddlefish Symposium Publication
- American Midland Naturalist
- Aquatic Conservation: Marine and Freshwater Ecosystems
- Behavioral Ecology
- Canadian Journal of Fisheries and Aquatic Sciences
- Environmental Engineering Science
- International Journal of Soil, Sediment and Water
- Journal of Environmental Quality
- Journal of Fish Biology
- Journal of Fish and Wildlife Management
- Lake and Reservoir Management
- Nature Climate Change
- North American Journal of Fisheries Management
- Parasitology Research
- PloS One
- Proceedings of the Royal Society B
- Science of the Total Environment
- Science
- Transactions of the American Fisheries Society

B.M. Pracheil. 2010. University of Nebraska Lincoln School of Natural Resources travel grant to Midwest Fish and Wildlife Conference (\$200).

B.M. Pracheil. 2008. University of Nebraska Lincoln School of Natural Resources Meritorious PhD Student Award (\$1,000).

B.M. Pracheil. 2007. University of Nebraska Lincoln Chancellor's Fellowship (\$1,000).

B.M. Pracheil. 2006. University of Nebraska Lincoln Chancellor's Fellowship (\$1,000).

B.M. Pracheil. 2006. Annual Midwest Conference of Parasitologists George LaRue Platform Presentation Award.

B. M. Pracheil. 2004. Department of Zoology Thesis Improvement Grant. Michigan State University. (\$200).

B. M. Pracheil and B. B. Nickol. 2001. Assessment of the role of northern pike, *Esox lucius* as a host for the acanthocephalan parasite *Leptorhynchoides thecatus*. UNL UCARE. (\$2,500).

B. M. Pracheil and B. B. Nickol. 2000. Assessment of the role of northern pike as a host for the acanthocephalan parasite *Leptorhynchoides thecatus*. UNL UCARE. (\$1,500).

TEACHING EXPERIENCE

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|---------|---|
| 2013 | Stable isotope and heavy metal microchemistry in fish hard structures, University of Nebraska-Lincoln fisheries management course. |
| 2013 | Guest lecture "Fish, people, sediment, and water: a case study from the Grand Canyon Adaptive Management Program": Virginia Polytechnic and State University fisheries management course. |
| 2011-13 | Guest lecture fish parasite ecology: U. Wisconsin-Madison Fish Ecology course. |
| 2010 | Lecturer, School of Natural Resources, UNL Introduction to Agriculture and Natural Resources Recitation. |
| 2009-10 | Guest lectures telemetry, mark-recapture and conservation implications of stocking. U. Nebraska Fisheries Science course |
| 2008-09 | Guest lectures fish osmoregulation, buoyancy, and circulation U. Nebraska Ichthyology |
| 2003-06 | Graduate Teaching Assistant, Department of Zoology, MSU
General Biology—3 semesters
Integrative Studies Biology—2 semesters
General Parasitology—3 semesters |

2001 Teaching Assistant, School of Biological Sciences, UNL
General Biology—1 semester (BIOS 101L)
General Parasitology—1 semester (BIOS 386L)

RESEARCH MEDIA FEATURES

- 2016 Research on using materials science techniques to understand biological calcium carbonates featured by [Oak Ridge National Lab Blog](#)
- 2016 Research on sturgeon conservation featured on [Oak Ridge National Lab Blog](#)
- 2016 Research on impacts of hydropower on fish featured in [Hakai Magazine](#)
- 2015 Research on parasites and land-use change featured on the [cover of Freshwater Biology](#)
- 2014 Research on otolith microchemistry featured by
Fisheries journal cover photo
[Oak Ridge National Lab Blog](#)
- 2013 Research on large-river conservation featured by
[Ecological Society of America Blog](#)
[University of Wisconsin Center for Limnology Blog](#)
[University of Wisconsin News](#)
[Tennessee Aquarium Conservation Institute Blog](#)
- 2012 Research on migratory fish management featured by
Fisheries journal cover photo
[University of Wisconsin News](#)
[The Daily Cardinal Science Feature 24 October 2012](#)
- 2010 Research on large-river conservation featured by
[The Nature Conservancy Blog](#)

Nebraska's Paddlefish by Eric Fowler. Nebraskaland Magazine. pp. 36-43.

Year of the Walleye by Eric Fowler. Nebraskaland Magazine. pp 40-41.

INVITED PRESENTATIONS

17. [B.M. Pracheil](#). October 2016. New tools to answer old questions about sturgeon and paddlefish. Biological Sciences Seminar Series. Michigan Technological University.

16. [B.M. Pracheil](#). February 2016. Managing riverine connectivity for biodiversity conservation. University of Tennessee-Knoxville.

15. B.M. Pracheil. April 2015. Fish, laser beams and the Kingston ash spill: an introduction to fish hard-part microchemistry. Tennessee Technological University Environmental Sciences Spring Colloquium.
14. B.M. Pracheil. January 2015. Conservation and constraint: balancing the needs of people with the needs of fish. Furman University.
13. B.M. Pracheil. December 2014. Fish, laser beams, and the Kingston ash spill, Oak Ridge National Lab, student–selected speaker for visiting high school science students.
12. B.M. Pracheil. May 2013. Managing connectivity to protect riverine biodiversity. Oak Ridge National Laboratory.
11. B.M. Pracheil. April 2013. Managing connectivity to protect large river biodiversity. University of Missouri Department of Fisheries and Wildlife.
10. B.M. Pracheil. February 2013. Managing connectivity to protect freshwater biodiversity. Virginia Polytechnic and State University Department of Fisheries and Wildlife Conservation.
9. B.M. Pracheil, P.B. McIntyre and J.D. Lyons. August 2012. Movements of shovelnose sturgeon in the Mississippi and Wisconsin rivers inferred from otolith microchemistry. Symposium oral presentation. American Fisheries Society Annual Meeting. Minneapolis, MN.
8. B.M. Pracheil and G.E. Mestl. August 2012. Opportunities, challenges, and considerations for large scale stock assessment: lessons learned from the MICRA paddlefish stock assessment. Symposium oral presentation. American Fisheries Society Annual Meeting. Minneapolis, MN.
7. B.M. Pracheil. March 2012. Managing connectivity to protect Great River biodiversity. Seminar: University of Wisconsin Center for Limnology Seminar Series.
6. B.M. Pracheil. March 2012. Managing connectivity to protect Great River biodiversity. Seminar: Wisconsin Department of Natural Resources Bureau of Science Services Seminar Series.
5. B.M. Pracheil. March 2012. Managing connectivity to protect Great River biodiversity. Seminar: Fisheries and Wildlife Graduate Student Organization Seminar Series, Michigan State University.
4. B.M. Pracheil. October 2011. Multi-scale perspectives on managing connectivity in Great River ecosystems. Seminar: United States Geological Survey Upper Midwest Environmental Science Center Seminar Series.
3. B.M. Pracheil, P.B. McIntyre, M.A. Pegg, and J.D. Lyons. September 2011. Defining the riverscape: tributaries as a key to great river fish conservation. Symposium oral presentation. American Fisheries Society Annual Meeting, Seattle, WA.

2. B.M. Pracheil. September 2010. Paddlefish from a multi-scale perspective: Implications for management and conservation. Seminar: University of Wisconsin-Madison Center for Limnology Seminar Series.

1. B. M. Pracheil. April 2009. Potential implications of stocking to the United States paddlefish population. Seminar: UNL School of Natural Resources Ecology Seminar.

CONTRIBUTED PRESENTATIONS

28. B.M. Pracheil, T. Mathews, A. Fortner, M.J. Peterson, M.S. Greeley, and C.A. Murphy. Relating Fish Health and Reproductive Metrics to Metal Bioaccumulation at the Tennessee Valley Authority Kingston Coal Ash Spill Site. American Fisheries Society National Meeting, Portland, OR.

27. B.M. Pracheil, B.C. Chakoumakos, R. Koenings, R. Bruch. Structure and Nanostructure of Sturgeon Otoliths and Implications for Microchemistry Studies. American Fisheries Society National Meeting, Portland, OR.

26. B.M. Pracheil, M.S. Bevelhimer, G.F. Čada, C.R. DeRolph, R.A. McManamay. 2015. A quantitative traits-based approach for choosing and prioritizing study species and surrogate species in altered ecosystems. International Fish Passage Conference, Groningen, The Netherlands.

25. B.M. Pracheil, M.S. Bevelhimer, G.F. Čada, C.R. DeRolph, R.A. McManamay. 2015. A quantitative traits-based approach for choosing and prioritizing study species and surrogate species in altered ecosystems. Southern Division of the American Fisheries Society Annual Meeting, Savannah, GA.

24. B.M. Pracheil, P.B. McIntyre, and J.D. Lyons. Connectivity of large-river networks is important throughout fish life history. American Fisheries Society Annual Meeting. Little Rock, AR.

23. B.M. Pracheil, L.A. Winslow, S.R. Januchowski-Hartley, A. Cooper, D. Infante, and P.B. McIntyre. Movements of a mega-fish across its species range. American Fisheries Society Annual Meeting. Little Rock, AR.

22. B.C. Neely, B.M. Pracheil, and S.T. Lynott. Hydrologic variables predict harvest in a recreational paddlefish fishery. American Fisheries Society Annual Meeting. Little Rock, AR.

21. J.S. Perkin and B.M. Pracheil. Threats and opportunities for fish habitat connectivity conservation in the Missouri River Basin at multiple scales. American Fisheries Society Annual Meeting. Little Rock, AR.

20. S.R. Januchowski-Hartley, B.M. Pracheil, M. Diebel, and P.B. McIntyre. August 2012. Connections and cost: important considerations for effective broad-scale freshwater conservation. American Fisheries Society Annual Meeting. Minneapolis, MN.

19. B.M. Pracheil, P.B. McIntyre, and J.L. Lyons. Inferred movement and habitat use of shovelnose sturgeon and blue sucker from otolith microchemistry. February 2011. Wisconsin-Michigan American Fisheries Society Conference.
18. J. DeBoer, D.M. Martin, B.M. Pracheil, K.L. Pope, and G.W. Wilde. December 2011. A LK @ 2DAYS ANGLR: How technology reveals patterns in the internet age. Midwest Fish and Wildlife Conference.
17. B.M. Pracheil, M.A. Pegg, L.A. Powell, and G.E. Mestl. September 2011. Range-wide movements of paddlefish demonstrate need for interjurisdictional management. American Fisheries Society Annual Meeting, Seattle, WA.
16. B.M. Pracheil, M.A. Pegg, L.A. Powell, and G.E. Mestl. April 2011. Range-wide movements of paddlefish demonstrate need for interjurisdictional management. Upper Mississippi River Research Consortium.
15. B.M. Pracheil, M.A. Pegg, L.A. Powell, and G.E. Mestl. December 2010. Range-wide movements of paddlefish demonstrate need for interjurisdictional management. Midwest Fish and Wildlife Conference.
14. B.M. Pracheil, M. A. Pegg, and G. E. Mestl. September, 2010. Examination of movement of stocked paddlefish demonstrates need for cohesive interjurisdictional management. International Large River Symposium.
13. B.M. Pracheil, D.D. Snow, and M.A. Pegg. March 2010. Distribution of selenium, mercury, and methylmercury in surficial Missouri River sediments. Missouri River Natural Resources Conference.
12. B.M. Pracheil, M. A. Pegg, and G. E. Mestl. March 2010. Paddlefish Population Viability between Ft. Randall Dam and Gavins Point Dam. Missouri River Natural Resources Conference.
11. B.M. Pracheil, D.D. Snow, and M.A. Pegg. February 2010. Distribution of selenium, mercury, and methylmercury in surficial Missouri River sediments. Nebraska Chapter of the American Fisheries Society Conference.
10. B.M. Pracheil, M. A. Pegg, T. K. Porter, and G. E. Mestl. March 2009. Status of Missouri River paddlefish in Nebraska: What we know and what we don't know. Missouri River Natural Resources Conference.
9. B.M. Pracheil, M. A. Pegg, T. K. Porter, and G. E. Mestl. February 2009. Status of Missouri River paddlefish in Nebraska: What we know and what we don't know. Nebraska American Fisheries Society Conference.

8. B.M. Pracheil, M. A. Pegg, and G. E. Mestl. December 2008. Relative impacts of mainstem and tributary flow on paddlefish recruitment. Midwest Fish and Wildlife Conference.
7. B.M. Pracheil. March 2008. Production area contribution and broad-scale movement patterns of paddlefish using stable isotopes. Midwest Student American Fisheries Society Symposium.
6. B.M. Pracheil and M.A. Pegg. February 2008. Impacts of Missouri River and Niobrara River flows on paddlefish recruitment. Missouri River Natural Resources Conference.
5. B.M. Pracheil and M.A. Pegg. February 2008. Impacts of Missouri River and Niobrara River flows on paddlefish recruitment. Nebraska American Fisheries Society Conference.
4. B.M. Pracheil and P.M. Muzzall. June 2006. Importance of lake trophic status and host trophic status as parasite community determinants in juvenile bluegill and largemouth bass from two Michigan lakes. Annual Midwest Conference of Parasitologists (AMCOP).
3. B.M. Pracheil and P.M. Muzzall. June 2005. Parasites of juvenile bluegill from two Michigan lakes. AMCOP.
2. B. M. Pracheil and P.M. Muzzall. June 2003. Parasites of age-0 paddlefish, *Polyodon spathula*, from Lewis and Clark Lake, Nebraska. AMCOP.
1. B.M. Pracheil and B.B. Nickol. April 2001. Assessment of the role of the northern pike as a host for the acanthocephalan parasite, *Leptorhynchoides thecatus*, University of Nebraska-Lincoln Undergraduate Creative Activities and Research Experience (UCARE) Conference.

TECHNICAL REPORTS

8. B.M. Pracheil, C.R. DeRolph, M.P. Schramm, and M.S. Bevelhimer. 2014. A fish-eye view of riverine hydropower systems: understanding the biological response to turbine passage. ORNL/TM-2015/65.
7. B.M. Pracheil and J.D. Lyons. 2013. Early life history of blue sucker below Prairie Du Sac Dam, Wisconsin River. Final Project Report.
6. B.M. Pracheil and P.B. McIntyre. 2012. Early life history of shovelnose sturgeon and blue sucker below Prairie Du Sac Dam, Wisconsin River. Annual Progress Report. 81 pp.
5. B.M. Pracheil and P.B. McIntyre. 2011. Early life history of shovelnose sturgeon and blue sucker below Prairie Du Sac Dam, Wisconsin River. Annual Progress Report. 7 pp.
4. B.M. Pracheil and M.A. Pegg. 2010. Habitat Use of Nebraska Paddlefish in the Missouri River. Final Performance Report submitted to The Nebraska Environmental Trust. 135 pp.
3. B.M. Pracheil and M.A. Pegg. 2009. Population Dynamics, Habitat Use and Response to Changes in Flow by Paddlefish in the Ft. Randall Dam to Gavins Point Dam Reach of the

Missouri River. Annual Performance Report submitted to Nebraska Game and Parks Commission, 21 pp.

2. B.M. Pracheil and M.A. Pegg. 2008. Habitat Use of Nebraska Paddlefish in the Missouri River. Annual Performance Report submitted to The Nebraska Environmental Trust. 21 pp.

1. B.M. Pracheil and M.A. Pegg. 2008. Population Dynamics, Habitat Use and Response to Changes in Flow by Paddlefish in the Ft. Randall Dam to Gavins Point Dam Reach of the Missouri River. Annual Performance Report submitted to Nebraska Game and Parks Commission, 18 pp.

CURRENT PROFESSIONAL MEMBERSHIPS

2007-present American Fisheries Society