

## **Reuben Ratterree Goforth, Ph.D.**

195 Marstellar Street, Dept. of Forestry and Natural Resources  
Purdue University, West Lafayette, IN 47907  
Office: (765) 494-0009 Mobile: (269) 967-7620 E-mail: rgoforth@purdue.edu  
Web: <http://www.fnr.purdue.edu/faculty/goforth/index.shtml>

### **EDUCATION**

**Ph.D. Natural Resources, Concentration: Fisheries and Aquatic Sciences (August 1999)**

Cornell University, Ithaca, New York, Aug 1994 – Aug 1999.

**M.S. Aquaculture, Fisheries and Wildlife; Minor Experimental Statistics (August 1994)**

Clemson University, Clemson, South Carolina, Aug 1992 – Aug 1994.

**B.S. Biological Sciences, Summa Cum Laude, Calhoun Honors College (Dept. Honors; May 1992)**

Clemson University, Clemson, South Carolina, Aug 1988 – May 1992.

### **PROFESSIONAL EXPERIENCE**

**Assistant Professor of Aquatic Community Ecology**

Department of Forestry and Natural Resources, Purdue University, West Lafayette, Indiana,  
Jul 2007 – Present.

**Faculty and Lecturer**

Department of Fisheries and Wildlife, Michigan State University, East Lansing, Michigan,  
Aug 2004 – Jun 2007.

**Senior Conservation Scientist**

Michigan Natural Features Inventory, Michigan State University Extension, Lansing, Michigan,  
Feb 1998 – Jun 2007.

### **PROFESSIONAL ACTIVITY AND SERVICE**

**Professional Service:** Assoc. Editor for *Journal of the American Water Resources Association*  
Assoc. Editor for *American Midland Naturalist*  
Guest Editor for a Special Issue of *Journal of Great Lakes Research* titled,  
*Nearshore, Coastal, and Benthic Habitats of the Great Lakes*  
EPA STAR Graduate Fellowship Review Panel (2002, 2004, 2005)  
EPA STAR Grant Review Panel (2002)  
Board Member, Indiana Water Resources Monitoring Council

**Society Membership:** North American Benthological Society      Ecological Society of America  
International Assoc. for Great Lakes Res.      Society for Conservation Biology  
American Institute of Biological Sciences      American Fisheries Society  
Amer. Assoc. for Advancement of Science      Amer. Water Resources Assoc.

**Academic Affiliations:** Purdue Center for the Environment  
Purdue Interdisciplinary Center for Ecological Sustainability  
Purdue Climate Change Research Center

### **AWARDS AND RECOGNITION**

H.W. Close Fellow, Clemson University, Clemson, SC. 1992-1994. A 2-year, \$12,000/yr graduate recruiting award administered by the Clemson University Graduate School.

College of Agriculture New Faculty Teaching Award Finalist, Michigan State University, East Lansing, MI. 2007.

Purdue Research Foundation Summer Faculty Grant, Purdue University, West Lafayette, IN. 2008.

## PUBLICATIONS

### Peer-Reviewed Publications and Manuscripts in Progress

- Goforth, R. R. and J. W. Foltz. 1998. Movements of the yellowfin shiner, *Notropis lutipinnis*. *Ecology of Freshwater Fish* 7: 49-55.
- Bain, M. B., A. Harig, D. P. Loucks, R. R. Goforth and K. E. Mills. 1999. Criteria for aquatic ecosystem protection and restoration: approaches using biological and physicochemical structure. Proceedings of a Conference on Power Generation Impacts on Aquatic Resources, Electric Power Research Institute, Atlanta, Georgia, April 12-15, 1999.
- Bain, M. B., A. Harig, D. P. Loucks, R. R. Goforth and K. E. Mills. 2000. Aquatic ecosystem protection and restoration: advances in methods for assessment and evaluation. *Environmental Science and Policy* 3: S89-S98.
- Mackey, S. D. and R. R. Goforth. 2005. Great Lakes nearshore habitat science. *Journal of Great Lakes Research* 31 (Suppl. 1): 1-5.
- Goforth, R. R. and S. M. Carman. 2005. Nearshore community characteristics related to shoreline properties in the Great Lakes. *Journal of Great Lakes Research* 31 (Suppl. 1): 113-128.
- Meadows, G. A., S. D. Mackey, R. R. Goforth, D. M. Mickelson, T. B. Edil, J. Fuller, D. Guy, L. A. Meadows, E. Brown, S. M. Carman, and D. L. Liebenthal. 2005. Cumulative habitat impacts of nearshore engineering. *Journal of Great Lakes Research* 31 (Suppl.1): 90-112.
- Goforth, R. R. and S. M. Carman. *In Press*. Multiscale relationships between Great Lakes nearshore fish and anthropogenic shoreline factors
- Goforth, R. R. and M. B. Bain. Rapid assessment of stream integrity using map-based sub-basin properties. (In Final Revision for *Journal of the American Water Resources Association*)
- Goforth, R. R. Responses of benthic communities to local changes in riparian structure. (Submitted to *Freshwater Biology*)
- Goforth, R. R., D. S. Stagliano, J. Cohen, M. Penskar and Y. M. Lee. Using remotely-sensed riparian properties to predict aquatic and terrestrial biodiversity refuge potential in a fragmented landscape. (In preparation for submission to *Ecological Applications*)

### Textbooks

- W. S. Carlsen, N. M. Trautman, C. M. Cunningham, M. E. Krasney, A. Welman, H. Beck, H. Canning, M. Johnson, E. Barnaba, R. Goforth, and S. Hoskins. 2004. *Watershed Dynamics*. Cornell Scientific Inquiry Series, National Science Teachers Association Press, Arlington, VA.
- R. R. Goforth. 2009. Michigan's Aquatic Fauna. Chapter 23 in *Michigan: Geography and Geology* (R. Schaetzl, D. Velbel, and J. Darden, eds.). Pearson Custom Publishing.

### Recent Technical Reports

- Goforth, R. R., A. A. Olesen, J. I. Sloan, and H. Campbell. 2006. Benthic invertebrate and zooplankton community characteristics at Great Lakes nearshore monitoring sites along the Michigan shoreline. Michigan Natural Features Inventory Report Number 2006-10. Prepared for the Michigan Clean Michigan Initiative.
- Goforth, R. R. and S. M. Carman. 2005. Multi-scale relationships of Lake Michigan native and introduced biological communities to anthropogenic shoreline alterations. Michigan Natural Features Inventory Report Number 2005-1. Prepared for the Michigan Department of Environmental Quality, Office of the Great Lakes and Coastal Zone Management Unit, Lansing, MI. 100 pp.
- Carman, S. M. and R. R. Goforth. 2003. An assessment of the current distribution and status of native mussels (Unionidae) in the Muskegon River, Michigan. Michigan Natural Features Inventory Report Number 2003-18. Prepared for the Michigan Department of Environmental Quality, Coastal Zone Management Unit, Lansing, MI. 54 pp.
- Goforth, R. R., D. Stagliano, J. Cohen, M. Penskar and Y. M. Lee. 2002. Biodiversity analysis of selected riparian ecosystems within a fragmented landscape, phase II. Michigan Natural Features Inventory Report Number 2002-26. Prepared for the Michigan Great Lakes Protection Fund, Michigan Department of Environmental Quality, Office of the Great Lakes, Lansing, MI. 126 pp.

**RECENT PRESENTATIONS (Last 5 Years)**

- Goforth, R.R. 2008. Stream community responses to riparian recovery in an agricultural watershed. Oral presentation at the annual meeting of the Association of Ichthyologists and Herpetologists. Montreal, QC, Canada. *Invited*
- Goforth, R.R. and S.M. Carman. 2008. Multi-scale relationships between nearshore fish and anthropogenic shoreline factors. Oral presentation at the annual meeting of the Ecological Society of America. Milwaukee, WI.
- Goforth, R., D. Stagliano, J. Cohen, Y. M. Lee and M. Penskar. 2008. Biodiversity patterns associated with varied riparian buffer width and connectivity. Oral presentation at the American Water Resources Association Specialty Conference – Riparian Ecosystems and Buffers: Working at the Waters' Edge. Virginia Beach, VA. *Session Moderator*
- Goforth, R. R. 2008. Conservation and management of freshwater mussels native to North America (Unionacea). Lecture presented to Hillsdale College class, Conservation (BIO350), Hillsdale, MI. *Invited*
- Goforth, R., D. Stagliano, J. Cohen, Y. M. Lee and M. Penskar. 2008. Biodiversity patterns associated with varied riparian properties of southern Michigan's fragmented landscape. Seminar presented to the Hillsdale College Biology Department, Hillsdale, MI. *Invited*.
- Goforth, R. R. 2007. Stream form and function. Lecture presented to the Department of Forestry and Natural Resources, Purdue University, West Lafayette, IN. *Invited*.
- Goforth, R., D. Stagliano, J. Cohen, Y. M. Lee and M. Penskar. 2007. Biodiversity patterns associated with varied riparian properties of a fragmented landscape. Seminar presented to the Department of Forestry and Natural Resources, Purdue University, West Lafayette, IN. *Invited*.
- Goforth, R. R. 2006. Life history, ecology, and identification of non-native fish species in the Great Lakes. Oral presentation and fish identification workshop at the Great Lakes Fishery Commission's Law Enforcement Committee Meeting, Toronto, ON. *Invited*.
- Goforth, R. R. and S. M. Carman. 2006. Nearshore community characteristics related to shoreline properties in the Great Lakes. Oral Presentation at the 136<sup>th</sup> Annual Meeting of the American Fisheries Society, Lake Placid, NY.
- Olesen, A. A. and R. R. Goforth. 2006. Multi-scale relationships of Great Lakes nearshore benthos to land use composition of adjacent shorelines. Poster Presentation at the 55<sup>th</sup> Annual Meeting of the North American Benthological Society, Anchorage, AK.
- Armstrong, B. and R. R. Goforth. 2006. Age and growth of mottled sculpin (*Cottus bairdi*). Poster Presentation at the University Undergraduate Research and Arts Forum, Michigan State University, East Lansing, MI.
- Sloan, J. and R. R. Goforth. 2006. Behavioral interactions of the mottled sculpin with the invasive round goby in nearshore areas of the Laurentian Great Lakes. First Annual Graduate Student Research Symposium, Department of Fisheries and Wildlife, Michigan State University, East Lansing, MI.
- Olesen, A. A. and R. R. Goforth. 2006. Multi-scale relationships of Great Lakes nearshore benthos to land use composition of adjacent shorelines. First Annual Graduate Student Research Symposium, Department of Fisheries and Wildlife, Michigan State University, East Lansing, MI.
- Goforth, R. R. 2006. Conservation and management of freshwater mussels native to North America (Unionacea). Lecture presented to the Department of Forestry and Natural Resources, Clemson University, Clemson, SC. *Invited*.
- Goforth, R. R. 2006. The importance of spatial scale in freshwater ecosystem management. Seminar presented to the Department of Forestry and Natural Resources, Clemson University, Clemson, SC. *Invited*.
- Goforth, R. R. 2004. Programs and methodologies for establishing restoration targets: assessing and setting targets for benthic communities. Oral presentation at a Michigan Public Advisory Council workshop titled: Restoring fish and wildlife in Michigan's Great Lakes Areas of Concern: establishing a pathway for action. Great Lakes Commission, Monroe, Michigan. *Invited*.

## RESEARCH PROJECT FUNDING

- Goforth, R. R. 2009. Fish responses to sediment associated with increasing biofuel-related crop production in the Wabash River watershed. Indiana Water Resources Research Center. **Award Amount: \$15,000.**
- Prokopy, L., L. Bowling, J. Frankenberger, R. Turco, and R. Goforth. 2009. Wabash River: Lafayette-West Lafayette Reach Proposal for Watershed Management Plan. Indiana Department of Environmental Management 319 Nonpoint Source Management Program. **Award Amount: \$320,468.**
- Goforth, R. R., O. E. Rhodes, Jr., M.S. Sepúlveda, R. Williams, and T. Höök. 2008. Acquiring tagging and tracking equipment to enhance Purdue fish and wildlife education. College of Agriculture, Purdue University. **Award Amount: \$29,275.**
- Goforth, R. R. 2008. Lake Huron nearshore monitoring. Awarded by the State of Michigan Department of Environmental Quality and the Great Lakes National Program Office of the US Environmental Protection Agency. **Award Amount: \$50,000.**
- Goforth, R. R. 2006. Habitat and biological community characterization, mapping, and modeling in eastern Lake Michigan nearshore zones. Awarded by the U. S. Fish and Wildlife Service. **Award Amount: \$79,000.**
- Goforth, R. R. 2006. Great Lakes nearshore plankton and benthic monitoring to detect changes in environmental quality and biotic integrity. Awarded by the State of Michigan Department of Environmental Quality via Clean Michigan Initiative Funds. **Award Amount: \$152,000.**
- Goforth, R. R. 2005. Evaluation and integration of stream classification units as elements of biodiversity in the Michigan Natural Features Inventory Biotics Database. Awarded by the State of Michigan Department of Natural Resources, Wildlife Division. **Award Amount: \$75,000.**
- Goforth, R.R. 2005. Nearshore habitat inventory and mapping in western Lake Michigan: project expansion grant. Awarded by the Great Lakes National Program Office of the US Environmental Protection Agency. **Award Amount: \$15,000.**
- Goforth, R. R. 2005. Great Lakes nearshore monitoring to detect changes in environmental quality and biotic integrity. Awarded by the State of Michigan Department of Environmental Quality via Clean Michigan Initiative Funds. **Award Amount: \$141,000.**
- Goforth, R.R. 2004. Nearshore habitat inventory and mapping in western Lake Michigan. Awarded by the Great Lakes National Program Office of the US Environmental Protection Agency. **Award Amount: \$128,500.**
- Goforth, R. R. 2004. Nearshore benthic community patterns related to multi-scale land cover properties of Lake Michigan shorelines. Awarded by the Michigan Department of Environmental Quality, Coastal Zone Management. **Award Amount: \$35,000.**
- Goforth, R. R., P. Brown, M. A. Kost, P. J. Higman, M. R. Penskar, and P. B. Pearman. 2004. Development of a protocol for rare, threatened, and endangered species and natural community site assessments to streamline the endangered species clearance process. Awarded by the State of Michigan Department of Transportation. **Award Amount: \$49,983.**
- Goforth, R. R. Nearshore benthic community patterns related to multi-scale land cover properties of Lake Michigan shorelines. 2003. Awarded by the Michigan Department of Environmental Quality, Coastal Zone Management. **Award Amount: \$50,000.**
- Goforth, R. R. Patterns of aquatic nuisance species distribution and abundance related to multi-scale environmental properties of Great Lakes shorelines. 2003. Awarded by the Michigan Great Lakes Protection Fund, Michigan Department of Environmental Quality, Office of the Great Lakes. **Award amount: \$320,000.** *Note: Due to State of Michigan budget crisis, the final level of funding was reduced to \$102,000 following a Governor's Executive Order*
- Goforth, R. R. Research, assessment and data management needs to promote protection of Great Lakes Nearshore fisheries habitat: an expert's workshop. 2003. Awarded by the Great Lakes Fishery Trust. **Award amount: \$30,000.**
- Goforth, R. R. Nearshore benthic community patterns related to multi-scale land cover properties of Lake Michigan shorelines. 2002. Awarded by the Michigan Department of Environmental Quality, Coastal Zone Management. **Award amount: \$47,500.**

**RESEARCH PROJECT FUNDING (CONT.)**

- Goforth, R. R. Surveys of native unionids at selected sites in the Muskegon River Watershed to facilitate ecological assessment and environmental management. 2002-2003. Awarded by the Michigan Department of Environmental Quality, Coastal Zone Management. **Award amount: \$70,000.**
- Goforth, R. R. Surveys of native unionids in Michigan coastal areas and lower reaches of Great Lakes tributary rivers. 2002-2003. Awarded by the Michigan Department of Environmental Quality, Coastal Zone Management. **Award amount: \$50,000.**
- Goforth, R. R. Surveys of native unionids in Michigan coastal areas and lower reaches of Great Lakes tributary rivers. 2001-2002. Awarded by the Michigan Department of Environmental Quality, Coastal Zone Management. **Award amount: \$36,400.**
- Goforth, R. R. Biodiversity analysis of selected riverine ecosystems within a fragmented landscape – phase II. 2000-2001. Awarded by the Michigan Great Lakes Protection Fund, Michigan Department of Environmental Quality, Office of the Great Lakes. **Award amount: \$130,286.**
- Goforth, R. R. Evaluating the current status of freshwater mussels and associated communities in the St. Joseph and Grand Rivers, Michigan. 2000-2001. Awarded by the Michigan Department of Environmental Quality, Office of the Great Lakes. **Award amount: \$35,000.**
- Goforth, R. R. Surveys for the clubshell (*Pleurobema clava*) and other rare clams in Michigan. 2000-2001. Awarded by the US Fish and Wildlife Service, Region 3 Endangered Species Office, Twin Cities, MN. **Award amount: \$61,491.**
- Goforth, R. R. Biodiversity analysis of selected riverine ecosystems within a fragmented landscape – phase I. 1999-2000. Awarded by the Michigan Great Lakes Protection Fund, Michigan Department of Environmental Quality, Office of the Great Lakes. **Award amount: \$109,702.**
- Goforth, R. R. Surveys for the clubshell (*Pleurobema clava*) and other rare clams in Michigan. 1999-2000. Awarded by the US Fish and Wildlife Service, Region 3 Endangered Species Office, Twin Cities, MN. **Award amount: \$60,894.**
- Goforth, R. R. Evaluating the current status of freshwater mussels and associated communities in the Grand River, Michigan. 1999-2000. Awarded by the Michigan Department of Environmental Quality, Office of the Great Lakes. **Award amount: \$35,000.**
- Goforth, R. R. Surveys for the clubshell (*Pleurobema clava*) and other rare clams in Michigan. 1998-1999. Awarded by the US Fish and Wildlife Service, Region 3 Endangered Species Office, Twin Cities, MN. **Award amount: \$60,894.**