

**David F. Raikow**  
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**A. PUBLICATIONS**

*In-Preparation*

Atkinson, J. F., D. F. **Raikow**, and T. E. Croley, In Preparation, Hydrodynamic modeling for resource shed prediction in the Great Lakes. For *Ecological Modeling*.

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*In-Review*

**Raikow**, D. F., D. M. Walters, K. M. Fritz, M. A. Mills, In Preparation, The spatial extent of aquatic subsidy and contamination in lake riparian food webs, *Ecological Applications*.

Walters, D. M., K. M. Fritz, M. A. Mills, D. F. **Raikow**, In Review, Riparian spiders as sentinels of aquatic sediment contamination. *Environmental Science and Technology*.

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*In-Revision*

**Raikow**, D. F., J. F. Atkinson, and T. E. Croley, In Revision, Factors affecting resource shed configuration in aquatic ecosystems. For *Environmental Science and Technology*.

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*Peer-reviewed*

Croley, T. E., D. F. **Raikow**, J. F. Atkinson, and C. He, 2008, Hydrological resource sheds. *Journal of Hydrologic Engineering* 13:873-885.

**Raikow**, D. F., D. F. Reid, and P. F. Landrum, 2007b, Aquatic invertebrate resting egg sensitivity to glutaraldehyde and sodium hypochlorite. *Environmental Toxicology and Chemistry* 26: 1770-1773.

**Raikow**, D. F., D. F. Reid, E. R. Blatchley III, G. Jacobs, and P. F. Landrum, 2007a, Effects of proposed physical ballast tank treatments on aquatic invertebrate resting eggs. *Environmental Toxicology and Chem.* 26: 717-725.

**Raikow**, D. F., D. F. Reid, E. E. Maynard, and P. F. Landrum, 2006, Sensitivity of aquatic invertebrate resting eggs to SeaKleen® (Menadione): A test of potential ballast tank treatment options. *Environmental Toxicology and Chemistry* 25: 552-559.

Sarnelle, O., A.E. Wilson, S. K. Hamilton, L. B. Knoll, D. F. **Raikow**, 2005, Complex interactions between the zebra mussel, *Dreissena polymorpha*, and the noxious phytoplankter, *Microcystis aeruginosa*. *Limnology and Oceanography* 50: 896-904.

**Raikow**, D. F., 2004. Food web interactions between larval bluegill sunfish (*Lepomis macrochirus*) and exotic zebra mussels (*Dreissena polymorpha*). *Canadian Journal of Fisheries and Aquatic Sciences* 61: 497-504.

**Raikow**, D. F., O. Sarnelle, A. E. Wilson, and S. K. Hamilton, 2004, Dominance of the noxious cyanobacterium *Microcystis aeruginosa* in low-nutrient lakes is associated with exotic zebra mussels. *Limnology and Oceanography* 49: 482-487.

Hamilton, S. K., J. L. Tank, D. F. **Raikow**, E. Siler, N. Dorn, and N. Leonard, 2004, The role of instream vs. allochthonous N in stream food webs: modeling the results of an isotope addition experiment. *Journal of the North American Benthological Society* 23: 429-448

**Raikow**, D. F., and S. K. Hamilton, 2001, Bivalve diets in a Midwestern U.S. stream: A stable isotope enrichment study. *Limnology and Oceanography* 46: 514-522.

- Hamilton, S. K., J. L. Tank, D. F. **Raikow**, W. M. Wollheim, B. J. Peterson, and J. R. Webster, 2001, Nitrogen uptake and transformation in a Midwestern U.S. stream: A stable isotope enrichment study. *Biogeochemistry* 54: 297-340
- Raikow**, D. F., S. A. Grubbs, and K. W. Cummins, 1995, Debris dam dynamics and coarse particulate organic matter retention in an Appalachian mountain stream. *Journal of the North American Benthological Society* 14: 535-546
- Searcy, W. A., S. Coffman, and D. F. **Raikow**, 1994, Habituation, recovery, and the similarity of song types within repertoires in red-winged blackbirds (*Agelaius phoeniceus*). *Ethology* 98: 38-49

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#### *Technical Memos, Proceedings, and Reviews*

- Croley, T. E., C. He, J. F. Atkinson, and D. F. **Raikow**, 2007, Resource shed definitions and computations, NOAA Technical Memorandum GLERL-141, Great Lakes Environmental Research Laboratory, Ann Arbor, Michigan.
- Croley, T. E., J. F. Atkinson, and D. F. **Raikow**, 2007, Hydrologic-hydraulic-ecologic resource sheds, The 18th International Association of Science and Technology for Development (IASTED) Conference on Water Resources Planning, May 30 – June 1, 2007, Montreal, Quebec, Canada.
- Stevens, M. H. H., D. F. **Raikow**, M. R. Servedio, R. J. Collins, T. L. Schumann, A. N. Tipper, and W. P. Carson, 1996, Hutchinson's chariot: A review of Species Diversity in Space and Time, by M. L. Rosenzweig. *Plant Science Bulletin* 42:48-49.

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#### *Non-peer reviewed contributing authorship*

- Troutman, K., 2007, The Federal Resume Guidebook, 4th ed., Jist Works, Indianapolis, IN, ISBN: 978-1593574260.
- Troutman, K., and E. Troutman, 2004, The Student's Federal Career Guide: 10 Steps to Find and Win Top Government Jobs and Internships, The Resume Place, Baltimore, MD, ISBN: 978-0964702561.
- Troutman, K., 2004, The Federal Resume Guidebook, 3rd ed., Jist Works, Indianapolis, IN, ISBN: 978-1563709258.

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## B. PRESENTATIONS

#### *Conference contributions*

- Raikow, D.F.**, D. M. Walters, K.M. Fritz, M. Mills. 2009. Not without cost: ecological subsidy and the lateral extent of polychlorinated biphenyl (PCB) export from aquatic to riparian food webs. American Society of Limnology and Oceanography, Nice, France.
- Walters, D.M., Mills, M. A., Fritz, K. M., **Raikow**, D.F., 2009, Using riparian spiders as sentinels of PCB export and risk at contaminated sediment sites, Society of Environmental Toxicology and Chem., New Orleans, LA.
- Mehling, M., Gevertz, A., Hammerschmidt, C., **Raikow**, D.F., Walters, D.M., Oris, J., 2009, Effect of Eutrophication on Mercury Accumulation and Distribution in Stream Ecosystems, Society of Environmental Toxicology and Chemistry, New Orleans, LA.
- Raikow**, D.F., J.F. Atkinson, and T.E. Croley. 2008. Delineating resource sheds in aquatic ecosystems. North American Benthological Society, Salt Lake City, Utah.
- Walters, D.M, K.M. Fritz, D.F. **Raikow**, M. Mills, R.R. Otter. 2008.  $\delta^{13}\text{C}$  and  $\delta^{15}\text{N}$  track contaminant flux from aquatic to terrestrial food webs, The 6th International Conference on Applications of Stable Isotope Techniques to Ecological Studies, Honolulu, HI.
- Croley, T.E., C. He, C. DeMarchi, and D.F. **Raikow**. 2008. Managing Saginaw Bay nutrient loading by surrounding watersheds through near real time hydrologic resource sheds. International Hydrological Programme: The Role of Hydrology in Water Resources Management, Capri, Italy.
- Raikow**, D.F., J.F. Atkinson, and T.E. Croley. 2007. Applying resource sheds to coasts and lakes. American Society of Limnology and Oceanography, Santa Fe, New Mexico.
- Atkinson, J.F., D.F. **Raikow**, and T.E. Croley. 2007. Hydrodynamic Modeling for Resource Shed Delineation in the Great Lakes. American Society of Limnology and Oceanography, Santa Fe, New Mexico.

- Croley, T.E., J.F. Atkinson, and D.F. **Raikow**. 2007. Hydrologic-hydraulic-ecologic resource sheds. The Second IASTED International Conference on Water Resources Management. Honolulu, Hawaii.
- Raikow**, D.F., J.F. Atkinson, and T.E. Croley. 2006. Resource shed delineation in Lake Erie. International Association of Great Lakes Research, Windsor, Ontario, Canada.
- Raikow**, D.F., D.F. Reid, and P. Landrum. 2006. Sensitivity of aquatic invertebrate resting eggs to proposed ballast tank treatment methods. International Conference on Aquatic Invasive Species, Miami, Florida.
- Raikow**, D.F., O. Sarnelle, A.E. Wilson, and S.K. Hamilton. 2004. Dominance of the noxious cyanobacterium *Microcystis aeruginosa* in low-nutrient lakes is associated with exotic zebra mussels. International Conference on Aquatic Invasive Species, Ennis, Ireland.
- Raikow**, D.F., D.F. Reid, P. Landrum, and H. Vanderploeg. 2004. Acute toxicity of SeaKleen (Menadione) to zooplankton diapausing eggs. International Conference on Aquatic Invasive Species, Ennis, Ireland.
- Raikow**, D.F., 2004. Great Lakes aquatic nonindigenous species information system. Regional Data Exchange Conference, Detroit, Michigan.
- Sarnelle, O., A.E. Wilson, S.K. Hamilton, L.B. Knoll and D.F. **Raikow**. 2003. Complex effects of zebra mussels (*Dreissena polymorpha*) on the bloom-forming bluegreen, *Microcystis aeruginosa*. International Association of Great Lakes Research. Chicago, Illinois.
- Raikow**, D.F., O. Sarnelle, A.E. Wilson, and S.K. Hamilton. 2002. Zebra mussel impacts on phytoplankton across a productivity gradient in Michigan lakes. Ecological Society of America. Tucson, Arizona.
- Raikow**, D. F, and S. K. Hamilton. 2001. The promises and problems of using stable isotopes to study unionid diets. North American Benthological Society, La Crosse, Wisconsin.
- Wilson, A.E., D.F. **Raikow**, O. Sarnelle, and S.K. Hamilton. 2001. Mussels and Microcystis: Do zebra mussels promote blue-green algal blooms in oligotrophic lakes? Ecological Society of America, Madison, Wisconsin.
- Hamilton, S.K., J.L. Tank, D.F. **Raikow**, E. Siler, N. Dorn, J. Halliday, and N. Leonard. 2001. Food webs in a Midwestern U.S. stream: Insights from a 15N tracer experiment. North American Benthological Society, La Crosse, Wisconsin.
- Raikow**, D.F. and S.K. Hamilton. 2000. An examination of stream bivalves and their food resources using stable isotopes. North American Benthological Society, Keystone, Colorado.
- Raikow**, D.F., 2000. Nitrogen uptake in newly conditioned stream organic matter. Long Term Ecological Research All Scientist Meeting, Snowbird, Utah.
- Raikow**, D.F., 2000. Competition for food between zebra mussels and larval bluegill. Ecological Society of America. Snowbird, Utah.
- Hamilton, S.K., J.L. Tank, D.F. **Raikow**, and W.M. Wollheim. 2000. Ammonium uptake by heterotrophic microbes, nitrifiers, and algae in a Midwestern U.S. stream. North American Benthological Society, Keystone, Colorado.
- Raikow**, D.F., 1999. Nitrogen uptake in newly conditioned stream organic matter, North American Benthological Society. Duluth, Minnesota.
- Raikow**, D.F., 1999. The contribution of unionids to nitrogen cycling in a stream ecosystem. Freshwater Mollusk Conservation society, Chattanooga, Tennessee.
- Raikow**, D.F., 1997. Substrate heterogeneity and macroinvertebrate diversity in stream riffles. North American Benthological Society. San Marcos, Texas.
- Raikow**, D.F., 1997. Substrate heterogeneity and macroinvertebrate diversity in stream riffles. Ecological Society of America.
- Raikow**, D.F., S. A. Grubbs, and K.W. Cummins. 1994. Debris dam dynamics and coarse particulate organic matter retention in an Appalachian mountain stream. North American Benthological Society. Orlando, Florida.

**Seminars**

- “Legacy contamination of streams: forgotten but not gone”, Public Seminar, Powdermill Nature Reserve, Rector, PA, 2009
- “Ecological subsidy and resource sheds: under-used concepts in conservation”, Invited Seminar, The Nature Conservancy, Chicago, IL, 2008.
- “Commercial online professional networks”, EPA Postdoc face-to-face meeting, Washington, DC, 2008.
- “Linking watersheds and coasts by delineating resource sheds”, Environmental Protection Agency, Research Triangle Park, NC, 2007.
- “Applying the dose-response model to ecological questions”, The laboratory group of Dr. Emma Rosi-Marshall, Loyola University, Chicago, IL, 2007.
- “Linking watersheds and coasts by delineating resource sheds”, Network of Cincinnati EPA Trainees (NCET), Cincinnati, OH, 2007.
- “Resource shed delineation and application”, Management advisory team meeting, University at Buffalo, Buffalo, NY, 2007.
- “Resource shed delineation in Lake Erie”, Ecosystem Research Branch, EPA-NERL, Cincinnati, OH, 2006.
- “Aquatic invasive species: trends and challenges”, Invited Seminar, Shared Waters: A Symposium on the Great Lakes, Western Michigan University, 2006.
- “Resource shed delineation in the Great Lakes”, MI Department of Natural Resources, Traverse City, MI, 2006.
- “Resource shed delineation in the Great Lakes”, MI Department of Natural Resources, Detroit, MI, 2006.
- “Resource shed delineation in the Great Lakes”, Advisory meeting, University at Buffalo, Buffalo, NY, 2006.
- “Great Lakes aquatic invasive species research priorities”, Invited Panelist, IAGLR: Understanding Michigan Great Lakes Research Needs and Looking Forward, 2005.
- “Biological invasions in the Great Lakes: science, policy, and management”, Invited Seminar, Great Lakes Research Planning Workshop, Purdue University, 2004.
- “Biological invasions in the Great Lakes: science, policy, and management”, Invited Seminar, NOAA Great Lakes Seminar Series, GLERL, 2004.
- “Newly discovered and corroborated deleterious effects of zebra mussels on lake ecosystems”, Invited Seminar, NOAA Great Lakes Seminar Series, GLERL, 2003.
- “The Lotic Intersite Nitrogen eXperiment (LINX)”, Invited Seminar, Department of Biological Sciences, University of Pittsburgh, 2001.
- “Biological invasions”, Public Seminar, Three Rivers Rotary Club, 2001.
- “Biological invasions”, Public Seminar, Seedlings Garden Club, 2000.

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**C. GRANTS**

\$ 15k	2009	Additional support for effect of eutrophication on mercury biomagnification in stream food webs, EPA Research Award.
\$ 70k	2008	Effect of eutrophication on mercury biomagnification in stream food webs, EPA Research Award.
\$ 150k	2006	Resource shed delineation in Lake Ontario and Lake Erie, NOAA New York Sea Grant.
\$ 19k	2006	Resting eggs, Great Lakes Aquatic Nonindigenous Species Information System, International Field Years on Lake Erie. NOAA Research Award.
\$ 35k	2005	Great Lakes Aquatic Nonindigenous Species Information System. Great Lakes Fisheries Trust.
\$ 12k	2005	Stable isotope analysis of the Lake Erie Food Web - International Field Years on Lake Erie. NOAA Research Award.
\$ 7k	2004	Resting eggs, Great Lakes Aquatic Nonindigenous Species Information System. NOAA Research Award.
\$ 22k	1999	Can the zebra mussel suppress bluegill and promote Microcystis?, Kalamazoo Community Foundation.
\$ 9k	1993-2002	Student research awards including Sigma-Xi, Howard Hughes Medical Institute, McKinley Research Fund, Lauff Research Award.

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## D. SELECTED COLLABORATORS

Atkinson, Joseph	Great Lakes Program, University at Buffalo
Croley, Tom	NOAA Great Lakes Environmental Research Laboratory
Fritz, Ken	EPA, National Exposure Research Laboratory
Fuller, Pam	USGS Center for Aquatic Resources Studies
Hamilton, Stephen	Dept. of Zoology, Michigan State University
Landrum, Peter	NOAA Great Lakes Environmental Research Laboratory
Reid, David	NOAA Great Lakes Environmental Research Laboratory
Ricciardi, Tony	Redpath Museum, McGill University
Sarnelle, Orlando	Dept. of Fisheries and Wildlife, Michigan State University
Walters, David	EPA, National Exposure Research Laboratory
Wilson, Alan	Dept. of Fisheries and Allied Aquacultures, Auburn University

## E. HONORS AND AWARDS

- Term Position Extension, EPA, 2009
- Superior Accomplishment Recognition Award, EPA, 2007, 2008
- Service Recognition, GLERL, for "The Environmental Science Careers Seminar Series", 2006
- Term Position Extension, NOAA, 2005
- Fellowship, Graduate Research Training Group (RTG), Michigan State University, 1997-1999
- Graduation Cum Laude, University of Pittsburgh, 1993
- Departmental Honors, Biological Sciences, University of Pittsburgh, 1993
- Departmental Honors, History and Philosophy of Science, University of Pittsburgh, 1993

## F. PROFESSIONAL SERVICE

### *Panels and Symposia*

- Attendee: EPA Integrated Modeling for Integrated Assessment Workshop, 2008, 2007.
- Invited Participant: "EPA Future Midwestern Landscapes Study Design Meeting", 2007.
- Alternate NOAA Representative to the Great Lakes Aquatic Nuisance Species Panel, 2005.
- Invited Panelist and Speaker on Invasive Species Research Priorities: IAGLR conference forum "Great Lakes Research Needs", MI Dept. of Environ. Quality (sponsor), 2005.
- Invited Participant: "Aquatic Nuisance Species and the Disruption of the Great Lakes Food Web Symposium", National Wildlife Federation (sponsor), 2005.
- Invited Participant: "Aquatic Invasive Species Database Summit", 2005.
- Invited Participant: "NOAA Aquatic Invasive Species Retreat", 2005.
- Participant: "AIS Rapid Response Workshop", Great Lakes Commission, 2004.
- Participant: "Lake Erie Science Planning Workshop", GLERL, 2004.
- Participant: "National Ecological Observation Network Workshop", MSU - KBS, 2004.
- Attendee: "Great Lakes - Baltic Sea Invasive Species Symposium", 2004.
- Attendee: "Great Lakes Aquatic Nuisance Species Panel Meeting", 2004.

### *Written Contributions*

- Review: "Evaluation of non-target effects associated with transgenic crops", EPA NRML report, 2008.
- Review: "An Analysis of the Effectiveness of Ballast Water Exchange in Controlling Aquatic Nonindigenous Species Introductions to the Great Lakes Basin and Chesapeake Bay", NOAA Report to Congress, 2006.
- Aquatic Invasive Species Program Five Year Strategic Plan, NOAA, 2006.
- Aquatic Invasive Species Research Priorities, Great Lakes ANS Panel, 2004.
- Aquatic Invasive Species Control and Management Research Priorities, NOAA AIS Research Strategy Workshop, 2004.

- International Maritime Organization (IMO) Ballast Water Organism Mitigation Standards, Ballast Water Technology Type Testing Regulations, and Draft Guidelines for Ranking Invasive Species Projects in Natural Areas, U.S. Coast Guard, 2004.

#### *Symposium and Workshop Organization*

- “Quantifying Ecological Subsidy and Resource Sheds”; Propose and run a special session at the ASLO Conference, 2007.
- “Environmental Science Careers Seminar Series”; Create and present a four-part seminar series for undergraduate and graduate students, GLERL, 2005.
- “NOAA Aquatic Invasive Species Research Strategy Workshop”; Lead the Control and Management breakout workshop, 2004.
- “Stable Isotopes in Aquatic Food Web Research: Pitfalls and Potentials”; Propose and run a workshop at the LTER All-Scientist Meeting, 2001.
- “First Biennial Western Pennsylvania Symposium of Ecologists, Evolutionary Biologists, and Systematists”; Co-organize and co-host, Powdermill Nature Reserve, 1995.

#### *Proposal review*

- US National Science Foundation
- Cooperative Institute for Coastal and Estuarine Environmental Technology
- Great Lakes Environmental Research Laboratory
- NOAA Great Lakes Ecosystem Research
- NOAA Sea Grant

#### *Manuscript review*

- *Journal of the North American Benthological Society*
- *Canadian Journal of Fisheries and Aquatic Sciences*
- *Journal of Great Lakes Research*
- *Marine Ecology Progress Series*
- *Limnology and Oceanography*
- *Marine Biology*
- *Hydrobiologia*
- *Wetlands*

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## G. CONTINUING EDUCATION

- Project Management, In-house guest trainer Michael Greer, 2006 (16 hrs)
- Advanced Conservation GIS and Remote Sensing, Smithsonian’s National Zoological Park Conservation and Research Center, 2006 (32 hrs)
- Introduction to ArcGIS I & II, ESRI, 2005 (40 hrs)
- Introduction to ArcGIS I, ESRI, 2005 (16 hrs)
- Microsoft Access I & II, Washtenaw Community College, 2004 (16 hrs)
- Confined Space Entry, Hazmat School, 2004

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## H. TEACHING & OTHER EXPERIENCE

#### *Great Lakes Summer Student Fellowship Program*

- Mentored undergraduate interns conducting research at Great Lakes Environmental Research Laboratory (GLERL), 2004, 2005

#### *Certification in Teaching College Science & Mathematics, Program of Michigan State University, College of Natural Science, 2002*

- Mentored Teaching Project: “Improving links between the elements of a field ecology course.”
- Designed and presented 10 workshops including Planning a Course, Pedagogical Changes, The Systematic Introduction of Ethics, and Designing Group Experiences; and a class (Teaching College Science).

**Instructor and Teaching Assistant**

- *Instructor:* Genetics Recitation; Michigan State University; led discussions, wrote quizzes, graded tests, 2002.
- *Instructor:* Ecology Lab; Michigan State University and University of Pittsburgh; Operated campus-based labs, and assisted in field-based courses, 1995, 2001.
- *Instructor:* Introductory Biology Lab; Michigan State University and University of Pittsburgh. Ran labs, created tests, and evaluated student presentations, 1994-1997.
- *Assistant:* Ecology; Michigan State University and University of Pittsburgh field stations. Assisted lecture classes, wrote and evaluated tests, 1995, 2001.
- *Assistant:* Ecology of Fishes; University of Pittsburgh, assisted field course, 1996.

**Guest Lecturer:** "Biological Invasions", Community and Ecosystem Ecology (Graduate), MSU, 2000-2004

**Writer,** The Resume Place, Baltimore, MD, 2002 - 2004

**Graduate Student,** Michigan State University, Kellogg Biological Station, 1996 - 2002

- *"How the feeding ecology of native and exotic mussels affects freshwater ecosystems"* (Obtained \$21,650 grant). Discovered phytoplankton community dominance of toxic *Microcystis aeruginosa* in lakes invaded by zebra mussels. Identified competitive food-web interactions between zebra mussels and larval fish.
- *"The Lotic Intersite Nitrogen eXperiment (LINX)"*, Created 3 new experiments. Supported stream food web and nutrient cycling experiments. Identified organic matter subsidy to stream mussels from wetlands in a complex watershed.
- *"Long Term Ecological Research (LTER)"*, Collected samples and measured parameters for long-term aquatic ecosystem monitoring.

**Graduate Student,** Department of Biological Sciences, University of Pittsburgh, 1994 - 1996

- Completed internship with the Center for Hazardous Materials Research, Government Programs Division, a not-for-profit subsidiary of the University of Pittsburgh Trust and environmental consulting firm focusing in training programs, contracts with governments, international programs, laboratory programs, and technical programs with business. Completed a health and safety course and received training in federal environmental regulations: Clean Air Act Amendments (CAAA); Toxic Substances Control Act (TSCA); Resource Conservation and Recovery Act (RCRA); Superfund Amendments and Reauthorization Act (SARA); Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA); and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Co-authored fact sheets.

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## I. SOCIETY MEMBERSHIPS

- American Society of Limnology and Oceanography, 2000 - present
- Ecological Society of America, 1997 - present
- North American Benthological Society, 1993 - present

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## J. OUTREACH AND COMMUNITY SERVICE

- **National Ocean Science Bowl**, Moderator, Science Judge, 2004-2006
- **Interviewee** for newspapers, television, and radio concerning biological invasion, 2000-2005
- **Invited Speaker**, Lego Robotics Teams, Women in Science (University of Michigan), 2005
- **Volunteer** at the NOAA Booth in the Detroit International Boat Show, 2004
- **International Science and Engineering Fair**, Grand Awards Judge, 2000, 2004
- **Mentor local 7<sup>th</sup> grader science project:** "Will turtles eat zebra mussels?", 1998
- **Emergency Medical Technician**, Medical Supply Officer, Secretary: Foxwall EMS, 1989-1992