

GERALD J. NIEMI

Senior Research Associate
Center for Water and the Environment
Natural Resources Research Institute
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Professor
Department of Biology
University of Minnesota Duluth

Research Interests

Effects of natural and human-induced disturbances on natural resources; sustainability of natural resources; biostatistics; vertebrate ecology; conservation and landscape ecology

Education

PhD Biology, Florida State University, Tallahassee, 1983
MS Zoology, University of Minnesota, 1977
BS Biology, University of Minnesota, 1974
Included a Pre-doctoral Fulbright-Hays scholarship at the University of Helsinki, 1981

Relevant Professional Experience

Professor: Department of Biology, University of Minnesota Duluth, 1993 to present.

Senior Research Associate: Center for Water and the Environment, Natural Resources Research Institute, University of Minnesota Duluth, 2008-present.

Responsibilities: research program on environmental effects of natural resource development primarily focused on breeding birds, community sustainability, and issues in conservation biology.

Director: Center for Water and the Environment, Natural Resources Research Institute, University of Minnesota Duluth, 1989-2008.

Responsibilities: administration of an environmental and economic development program focused on basic and applied research on forests, soils, water, wetlands, and associated landscapes in the Upper Midwestern U.S. region, primarily Minnesota. The Center for Water and the Environment (CWE) is one of three centers within the Natural Resources Research Institute (NRRI), University of Minnesota Duluth. The Center currently employs more than 50 individuals including a core group of about 12 PhD level scientists, many technicians, graduate and undergraduate students, and support staff. The Center has an annual budget of about \$3.5 M with support by an annual state appropriation of about \$800 K and \$3 to 3.5 M from more than 20 externally-funded projects.

Associate Professor: Department of Biology, University of Minnesota Duluth, 1989-1993.

Graduate Faculty Appointments;

Chemical Toxicology (UM), 1992 to present;

Conservation Biology Program (UM-TC), 1996 to present;

Biology, Integrated Biological Sciences (UM-D), 1987 to present;

Department Chairman, Department of Biology, University of Minnesota Duluth, 1997-1998.

Responsibilities: administration of biology department that consisted of 12 tenure-track or tenured faculty, 2 instructors, and 6 support staff. The department served more than 600 undergraduate and pre-professional students, more than 30 active graduate students, and offers

more than 30 undergraduate and graduate courses. Annual budget is greater than \$1 M, excluding external research support.

Associate Director, Center for Water and the Environment, Natural Resources Research Institute, University of Minnesota Duluth, 1987-1989.

Responsibilities: assist in the administration of an environmental program as described above.

Supervisory Research Ecologist, (GM-14)/Branch Chief in Hazardous Waste Division, Environmental Research Laboratory-Duluth, U.S. Environmental Protection Agency, 1987-1988 (leave of absence from University of Minnesota).

Responsibilities: administration of one of five branches in the Environmental Research Laboratory, Duluth. Branch consisted of about 12 scientists (PhD, master, and bachelor level) with expertise in chemistry, toxicology, water quality, and ecology. I also served as the lead scientist in the development of an ecology program for the laboratory.

Research Associate, Natural Resources Research Institute, 1985-1987.

Graduate Faculty, Department of Biology, University of Minnesota Duluth, 1983-1985.

Research Associate, Department of Biology, Department of Pharmacology, and School of Medicine, University of Minnesota Duluth.

Scientist, Lake Superior Basin Studies Center, University of Minnesota Duluth (leave of absence and reduced time 1979-1981), 1976-1983.

Fulbright-Hays Scholar, Department of Zoology, University of Helsinki, Finland, 1981.

Teaching Assistant, Department of Biological Sciences, Florida State University, Tallahassee, 1979-1980.

Wildlife Biologist, Nongame Migratory Bird and Habitat Research Laboratory, U.S. Fish and Wildlife Service, Patuxent, Maryland, 1979.

Avian Ecologist, Minnesota Department of Natural Resources, St. Paul, Minnesota 1976.

Teaching and Research Assistant, Department of Biology, University of Minnesota Duluth 1974-1977.

Professional Organization Membership

American Association for the Advancement of Science
American Ornithologists' Union, Elective Member, 1994;
Fellow, 2006
Society for Conservation Biology

Ecological Society of America
International Association for Great Lakes Research
Ornithological Society of Finland
Raptor Research Foundation

Citizen Memberships

Minnesota Ornithologists' Union
Sharp-tailed Grouse Society
Nature Conservancy
Hawk Ridge Bird Observatory

National Audubon Society
Duluth Chamber of Commerce
Friends of Hartley Nature Center
Minnesota Center for Environmental Advocacy

Courses Taught

Conservation Biology - Graduate level class - 2000, 2002, 2005, 2007, 2009
Biostatistics - Graduate level class in mathematics - 1984-1985
Ornithology - Graduate level class in biology - 1987, 1991-1996, 1999, 2003, 2006, 2008
Topics Courses in Ecology - Graduate level classes on special topics
Seminar Evaluation - Undergraduate class on critical review of seminars - 1997, 1998
Quantitative Methods in Biology - Course for gifted students
General Biology - Laboratory classes for general students - 1979-1980
Natural History of Vertebrates- Teaching Assistant - 1979
Ornithology- Teaching Assistant -1974, 1975, 1976, 1977, 1980

Current Graduate Students in the PhD or MS Program

Name	Degree	Program	Title	Tentative completion
Anna Peterson	PhD	Conservation Biology Graduate Program	Migration of land birds and their stopover habitats	2011
Nicholas Danz	PhD	Graduate Program	The development of the prairie- forest ecotone in Minnesota	2009
David Grosshuesch	MS	Biology	Northern Hawk Owl – breeding habitat selection	2009
Heidi Seeland	MS	Integrated Biological Sciences	Patterns of raptor migration on the North Shore of Lake Superior	2009
Annie Bracey	MS	Biology	Radar patterns of bird migration in the western Great Lakes	2010
Carly Lapin	MS	Biology	To be determined	2010

Completed Ph.D. Dissertations

1. Chris Burdett, 2007. Ecology of the Canada lynx. U of Minnesota-Conservation Biology

Completed Master of Science Theses - University of Minnesota

1. Eric Jensen. 2007. Habitat and landscape perspectives of American Kestrel biology.
2. Julie Palakovich. 2007. Using GPS collars to monitor the activity and habitat use of Canada lynx in Minnesota
3. Nicholas McCann. 2007. Snowshoe hare population density and use of cover types in the Superior National Forest, Minnesota.
4. Anna Peterson. 2005. Evaluation of the Ohio rapid assessment method for wetlands in the Western Great Lakes: an analysis using bird assemblages.
5. Lisa Belmonte. 2005. Home range and habitat characteristics of boreal owls in northeastern Minnesota.
6. Chris Burdett. 2004. Comparison of predation rates of artificial nests in fragmented and contiguous forested habitats.
7. David Grandmaison. 2003. Landscape factors affecting productivity of breeding birds in Great Lakes coastal wetlands.
8. Christie Miller. 2003. Effects of anthropogenic development on breeding bird abundance and communities.
9. Anne Lacy. 2001. Predicting bird species distributions in northern Minnesota and Wisconsin forests.
10. Brady Mattsson. 2001, Relationship between multi-scale habitat features and breeding biology of ground nesting birds.
11. Jean Mengelkoch. 2000. Diet of the Nestling Tree Swallow (*Tachycineta bicolor*) as related to insect diversity and abundance.
12. Gaea Crozier. 1999. Using local patch and landscape variables to model bird abundance in a naturally heterogeneous landscape.
13. Mary Hammer, 1999. The value of artificial nests as a tool for studying nest predation.
14. Lisa Schulte. 1996. Bird communities of early successional burned and logged forests in northeastern Minnesota.
15. Tim Fenske-Crawford. 1995. Predation of artificial ground nests at two types of edges in a forest-dominated landscape.

16. Kent Montgomery. 1995. Discrimination of breeding habitats of forest birds in north-central Minnesota using satellite imagery.
17. Rita Hawrot. 1994. Effects of edge type, patch shape, and patch size on avian communities in a mixed conifer-hardwood forest.
18. Carol Pearson. 1994. Effects of habitat and landscape patterns on avian distribution and abundance in northeastern Minnesota.
19. Oksana Piterman. 1994. Diet of Red-winged Blackbird (*Agelaius phoeniceus*) nestlings in controlled, methoprene-and Bti-treated sites located in Wright County of central Minnesota.
20. Rebecca Boley. 1992. Effects of methoprene on site fidelity and reproductive success of male Red-winged Blackbirds (*Agelaius phoeniceus*).
21. Susan Olson. 1992. Habitat heterogeneity and bird species composition in wetlands of central Minnesota.
22. Patrick Collins. 1991. Relationships between invertebrate biomass and bird abundance in northern Wisconsin forests.

Recent and Current Graduate Committees

Michael Rentz, PhD 2005-2010
 Terry Hams, MS 2006-2009
 Brice Hansen, MS 2006-2009

Diana Ostrowski, MS 2006-2009
 Lindsey Blake, MS 2007-2009

Scholarships and Awards

- 2007 Outstanding Scientist of the Biennium-Great Lakes; International Joint Commission.
 1989 Scientific and Technical Achievement Award, U.S. Environmental Protection Agency, Outstanding peer-reviewed paper in Ecology.
 1982 Frank M. Chapman Memorial Award, American Museum of Natural History, New York.
 1980 Fulbright-Hays Scholarship, Institute of International Education.
 1980 Marcia Brady Tucker Award, American Ornithologists' Union.

Peer Reviewer of Professional Journals/Books (n)

Acta Ornithologica (1)	Global Ecology and Biogeography (1)
American Society for Testing and Materials-Aquatic Toxicology (3)	Journal of Applied Ecology (2)
Archives of Environmental Contamination and Toxicology (3)	Journal of Field Ornithology (3)
Auk (16)	Journal of Landscape Ecology (2)
Avian Ecology and Conservation (1)	Journal of Raptor Research (2)
Biological Conservation (2)	Journal of Wildlife Biology (3)
Canadian Journal of Zoology (2)	Journal of Wildlife Management (18)
Conservation Biology (4)	Landscape Ecology (3)
Ecological Monographs (2)	Oikos (1)
Ecology (15); Ecological Applications (6)	SAR and QSAR in Environmental Research (2)
Ecoscience (2)	The Condor (8)
Environmental Management (13)	University of Wisconsin Press (1)
Environmental Toxicology and Chemistry (15)	Urban Ecosystems (1)
Forest Ecology and Management (5)	Wetlands (2)
Frontiers in Ecology and the Environment (1)	Wildlife Society Bulletin (5)
	Wilson Bulletin (3)

Proposal Reviewer

National Science Foundation (several programs)
U.S. Environmental Protection Agency
Strategic Environmental Research and Development Program (DOD, EPA, and DOE)
Finnish Academy of Science
UNESCO- Man and the Biosphere
University Council on Water Resources
Minnesota Department of Natural Resources
Great Lakes Protection Fund
Florida Fish and Game Commission

Foreign Travel (n)

Africa (South Africa) (1)	Costa Rica (1)	Italy (3)
Australia (1)	Finland (extensive- 6)	Mexico (3)
Austria (2)	France (2)	Netherlands (2)
Belize (3)	Germany (2)	New Zealand (1)
Canada (extensive)	India/Bangladesh (3)	

Major Committees and Organization Participation

1. Association of Ecosystem Research Centers - NRRI representative, 1989 to 1995.
2. Technical Advisory Committee, Minnesota Pollution Control Agency, Ecological Effects Subcommittee, Water Quality, 1989-1991.
3. Guest Editor, Environmental Management - Recovery of Aquatic Systems, 1989-1990.
4. Technical Advisory Committee, Minnesota Pollution Control Agency, Ecological Effects Subcommittee, Air Quality, 1991-1993
5. Minnesota Water-1992, Minnesota Environmental Quality Board, Advisory Group on identifying and prioritizing Minnesota water issues.
6. Resource Planning Advisory Group, Minnesota Power, 1991-1992.
7. QSAR '92 - International Conference, co-organizer, July 1992.
8. Generic Environmental impact statement - Effects of increased forest harvesting and management in Minnesota's forests - Team leader - Forest birds and biodiversity, consultant to Jaakko Poyry Consulting Inc. - 1991-1993.
9. GEIS on forest harvesting and management in Minnesota- implementation round table - appointed by MN DNR Commissioner and Environmental Quality Board Commissioner 1993-1995.
10. Riparian forest task force in Minnesota - workshop held June 1995.
11. SETAC Foundation Steering Committee - Ecological risk assessment modeling system, Pellston Conference, Pellston, MI - 1994.
12. U.S. Environmental Protection Agency, Consultant reviewer of the U.S. EPA Ecological Risk Assessment Guidelines, 1995 (through consultancy with Eastern Research Group, Inc., Lexington MA)
13. Raptor Research Foundation, Annual meeting - 1995, organizer - Duluth, MN
14. Guest Editor, Journal of Raptor Research, Raptor responses to forest management- a holarctic perspective. 1995-1997.
15. Minnesota Logger Education Program - Board of Directors, 1995 - 2000, executive committee/secretary 1999-2000, associate member.
16. Sustainability in Boreal Regions: sources and consequences of variability, invited speaker and participant. Sponsored by Beijer International Institute for Ecological Economics, MacArthur Foundation, and MN DNR, Lake Itasca, MN, October 1997.

17. Expert Witness, Ecology/Forestry, U.S. Department of Justice, 1997.
18. Strategic Environmental Research and Development Program. Consultant-peer reviewer. Department of Defense through HydroGeoLogic, Inc. Herndon, VA. Sept.-Oct. 1998.
19. Terrestrial Wildlife Community Committee, Lake Superior Binational Program, 1998 to 2001.
20. Lake Superior Binational Forum. 1999 to 2001.
21. Public Advisory Committee, UPM Kymmene Blandin. 1999 to present.
22. Landscape Advisory Panel, Minnesota Forest Resources Council, 1999 to 2003.
23. Consultant, Helsinki Consulting Group, Landscape and Ecological Planning, Finnish Forest and Park Service, 2001.
24. Symposium co-chair, American Society of Limnology and Oceanography, Salt Lake City, UT, Annual Meeting, 2003.
25. Society for Conservation Biology, co-leader/host, 2003 annual meeting, Duluth, MN.
26. Symposium co-chair, Ecological Society of America, Savannah, GA, annual meeting, 2003.
27. Minnesota Chapter, Society for Conservation Biology, vice-president (elected), 2003-2006.
28. Search Committee - director of U.S. EPA-Mid-continent Ecology Division, 2003-2004.
29. Consultant- reviewer, Holt, Rinehart, & Winston Publishing, 2003.
30. Board member, Hawk Ridge Bird Observatory, 2004-present.
31. Landscape Pattern in the Coastal Zone, committee member, Heinz Center, Washington DC, 2004, 2006.
32. Organized Oral Discussion, co-chair, Ecological Society of America and International Ecological Society, Montreal, Canada, 2005.
33. Owls on the Move - A Symposium on Northern Owl Invasions, co-organizer, Duluth, MN 2006.
34. Society for Conservation Biology - consultant/reviewer for Conservation Assessments. 2005.
35. Owl Symposium, chair-scientific program. U of Minnesota Duluth, 2006.
36. Minnesota Campaign for Conservation, 50-Year Vision Committee, 2006 to present.
37. International Association of Great Lakes Research, chair- special session, Windsor, Ontario, 2006.
38. International Association of Great Lakes Research, guest editor for special issue on Great Lakes Coastal Regions, 2006-2007.
39. Capacity-building for SCB Chapters in the 21st Century, Society for Conservation Biology Workshop, co-organizer, San Jose, California, June 2006.
40. Board member (secretary), Great Woods North, 2006 to present.
41. National Science Advisory Committee, AAAS, reviewer for Desert Research Institute, Nevada, 2006.
42. Minnesota Breeding Bird Workshop, co-organizer, February 14-15, 2007, Duluth, MN.
43. Minnesota Conservation and Preservation Plan, 2007-2008; core team co-lead, Wildlife, 2007; Legislative Commission for Minnesota Resources, co-lead Land and Aquatic Conservation team, 2007-2008.
44. QSAR Foundation, Board Member – 2007 to present.
45. Eastern Research Group for U.S. Environmental Protection Agency, consultant on National Indicators of Ecological Processes for U.S. EPA Report on the Environment, December 2007 – January 2008
46. International Joint Commission, Upper Great Lakes Water Level Study, Technical Advisory Committee for Ecosystems, 2008.
47. Raptor Research Foundation, Co-chair for 2011 Annual Meeting, Duluth, October 2011.

Major University Committees

University of Minnesota Graduate School Proposal Reviewer - 1997 to 2002
Chemical and Radioactive Materials Management Advisory Committee, 1992-1996
Biology Graduate Committee, 1989-1991
NRRI Building Committee, 1988 to present
Biology Task Force - Physical Planning, 1992
Biology - Facility Planning, 1992

University Campus Assembly, 1994 to 1997
 University Campus Planning Committee, 1994-1997
 Search Committees and Chairs - more than 40 for positions ranging from directors and faculty positions to research associates/fellows; biology department head - 2005-06.
 Interdisciplinary Advisory Committee, Vice-President for Research and Graduate School, 1998 to 2002
 University - Water Resources Planning - 1993 to 2001
 University - Vice-Chancellor Performance Review Committee - 2003
 Integrated Biological Sciences Graduate Program, Chair-Faculty Screening Committee, 2005 to present.

Research Programs as Principal or Co-Principal Investigator (Total > 48, >\$18 Million)

2008	White paper on the ecosystem responses to regulation-based water level changes in the Upper Great Lakes. International Joint Commission, \$25,000, Co-principal investigator.
2008-present	Minnesota breeding bird atlas project. Legislative Citizen's Commission for Minnesota Resources. Principal Investigator. \$101,000 (2008-2010).
2008-present	Developing a model for sustainable communities: integrating environmental, sociological, and economic information in a natural resource-rich area. U of Minnesota-Institute on the Environment, \$59,880; MN Power \$10,000, UM Institute for Advanced Studies, \$10,000.
2007-2008	Minnesota conservation and preservation plan. Legislative Citizen's Commission for Minnesota Resources. Core Team, Lead for Wildlife portion, Co-Lead-Land and Aquatic Habitat Conservation, \$450,000 (Total funding).
2007-2008	Effects of water level fluctuations on breeding waterfowl. Minnesota Power, \$43,000.
2003-present	Effects of riparian forest harvesting on Minnesota wildlife. Legislative Commission for Minnesota Resources, USDA Forest Service, and Minnesota Forest Resources Council. \$230,000.
2001-2006	Development of environmental indicators of condition, integrity, and sustainability in the Great Lakes basin. U.S. Environmental Protection Agency, \$6,379,667.
2001-2006	Development of environmental indicators for the U.S. Great Lakes using remote sensing technology. National Aeronautics and Space Administration, \$600,000.
2005-present	Weber Stream Restoration Initiative. Individual private donors. \$200,000.
1991-present	Monitoring bird populations in Minnesota and Wisconsin national forests. Chequamegon, Chippewa, and Superior National Forest, USDA Forest Service and U.S. Fish and Wildlife Service. \$308,508.
2003-present	Canada lynx ecology in the Superior National Forest. USDA Forest Service, USDI-U.S. Geological Survey, and U.S. Fish and Wildlife Service. Cooperative Agreement through Minnesota Cooperative Fish and Wildlife Unit. \$247,000.
1991-2003	Effects of changes in the forest ecosystem on the biodiversity of Minnesota's northern forest birds. Minnesota Legislative Commission on Minnesota Resources. \$2,112,473.
2000-2001	Relationships between multi-scale habitat features and breeding biology of forest songbirds. U.S. Fish and Wildlife Service and MN Department of Natural Resources. \$17,800.
1999-2002	Testing efficacy of buffers and residual trees at protecting seasonal ponds and forest songbirds. USDA Forest Service, NC Research Station. \$36,000.
1999-2003	Boreal Owl: its habitat and prey in the Superior National Forest. Joint funding from the USDA Forest Service and Minnesota Department of Natural Resources. \$123,000.

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- 1999-2004 Distribution of Canada lynx in the upper Midwestern United States. Joint funding from USDA Forest Service, Minnesota Department of Natural Resources, and U.S. Fish and Wildlife Service. \$77,000.
- 1996-1998 Nesting success of forest birds in the upper Mississippi River, Minnesota. USGS, NBS. \$75,560 (with Minnesota Department of Natural Resources).
- 1997-2000 Wildlife species: response to forest harvesting and management in riparian stands and landscapes. Minnesota Forest Resources Council. \$185,000.
- 1994-2001 Boulder Lake Management Area - Environmental Education and Research Program (Partnership program between Center for Water and the Environment, Natural Resources Research Institute, University of Minnesota; Minnesota Power; Minnesota Department of Natural Resources; and St. Louis County). \$82,000.
- 1996-1998 Forest bird biodiversity: indicators of environmental condition and change in the Great Lakes watershed. Great Lakes Protection Fund. \$382,000.
- 1994-1996 Spatial modelling of forest ecosystem landscapes and bird species diversity. National Science Foundation. \$200,000.
- 1992-1998 Bird and mammal use of hybrid poplar plantations. North Central Forest Experiment Station, USDA Forest Service, Department of Energy, and National Audubon Society. \$195,000.
- 1992-1994 Computational techniques to quantify chemical similarity. U.S. Environmental Protection Agency. \$353,638.
- 1992-1993 Development of management indicator species for Chequamegon National Forest. USDA Forest Service. \$12,600.
- 1991-1994 Sediment contamination and bioaccumulation in wildlife: an experimental approach using Tree Swallows. U.S. Environmental Protection Agency. \$216,000.
- 1991-1993 Forest birds biodiversity - Generic environmental impact statement - Effects of increased forest harvesting and management. Jääkko Pöyry Consulting, Inc. \$18,500.
- 1990-1994 Predictive modeling and experimental design of lotic mesocosms. U.S. Environmental Protection Agency. \$618,000.
- 1990-1994 Structure-activity relationships (SAR) for anticonvulsant drug development. National Institutes of Health. \$1,030,000.
- 1989-1991 Assessment of environmental toxicity of chemicals from structure: a computational approach. U.S. Environmental Protection Agency. \$75,000.
- 1989-1990 Post-impact bird populations and vegetation at the Biwabik wetland treatment area. John Baker Engineering, Chisholm, MN. \$14,434.
- 1989-1990 Software development - predictive model for carcinogenicity and mutagenicity of organic chemicals. Greater Minnesota Corporation. \$50,000.
- 1989-1990 Ecological and economic feasibility of crayfish aquaculture. Greater Minnesota Corporation. \$28,000.
- 1988-1989 A cooperative facility for research on the ecology of spatial heterogeneity. National Science Foundation. \$348,060. An examination of reproductive impairment in vertebrates in the Fox River/Green Bay ecosystem. U.S. Environmental Protection Agency. \$75,000.
- 1988 Evaluation of biodegradation potential for six organic compounds. Eli-Lilly Company. \$300.
- 1987-1995 Integrated study on the effects of mosquito control agents (methoprene and Bti) on non-target organisms in aquatic communities. Metropolitan Mosquito Control District, Minnesota. \$1,197,000.

- 1987-1989 Evaluation of the cumulative effects of wetland loss on ecosystem function. U.S. Environmental Protection Agency. \$75,000.
- 1986-1988 Bioavailability of chlorinated dioxins and related compounds associated with freshwater sediments and anthropogenic particulates. U.S. Environmental Protection Agency. \$950,999.
- 1986-1988 Factors controlling the recovery of aquatic systems from disturbance. U.S. Environmental Protection Agency. \$221,032.
- 1985-1986 Birds and vegetation at a proposed wetland treatment area, Biwabik. Minnesota Pollution Control Agency. \$9,500.
- 1984-1994 Monitoring the effects of the ELF antenna system on bird species and communities. Department of Navy through Illinois Institute of Technological Research. \$1,100,000.
- 1984-1986 Multivariate model development for fiber carcinogenicity and the bioavailability of fine particles. U.S. Environmental Protection Agency. \$320,000.
- 1983-1985 Monitoring asbestos fibers in Lake Superior. U.S. Environmental Protection Agency. \$140,000.
- 1983-1985 Computerized integration and statistical analysis of structure-activity relationships for industrial chemicals. U.S. Environmental Protection Agency. \$160,221.
- 1983-1984 Habitat requirements of species with special concern and their importance in habitat reclamation. MN Department of Natural Resources. \$25,000.
- 1982 Assessment of biodegradation data base. U.S. Environmental Protection Agency. \$5,000.
- 1982 Biological inventory of Hovland Woods, Cook County, MN. Nature Conservancy. \$1,000.
- 1980-1981 An assessment of impact of Arrowhead Bridge construction on a Ring-billed Gull colony. Wisconsin Department of Transportation. \$7,178.
- 1979-1982 Impact of a transmission line on bird populations in the Red Lake Peatland, Minnesota. Northern States Power Company. \$92,000.
- 1979-1980 Overview of wildlife species and their habitats in the Ottawa National Forest. USDA Forest Service. \$12,000.
- 1978-1980 Habitat and wildlife use of the St. Louis River estuary. U.S. Fish and Wildlife Service. \$18,500.
- 1978-1980 Role of dead trees to breeding bird populations. USDA Forest Service. \$4,500.
- 1978-1979 Persistent organic residues and movements of gulls and terns at the western tip of Lake Superior. U.S. Environmental Protection Agency. \$2,500.
- 1978 Birds of the Superior National Forest - a summary. USDA Forest Service. \$4,000.
- 1977-1979 Flora and fauna of the Western Waterfront Trail, Duluth. City Planning Department. \$6,000.
- 1976-1979 Habitat assessment and bird populations of the St. Louis River estuary. Office of Coastal Zone Management. \$25,000.
- 1974-1977 Breeding birds of burned and logged habitats. USDA Forest Service. \$2,500.

Publications - * Peer Reviewed, # invited - Total > 135

- 2009* Etterson, M., G. Niemi, and D. Danz. Estimating the effects of detection heterogeneity and overdispersion on trends estimated from avian point counts. *Ecological Applications*: submitted.
- 2009 Niemi, G.J. Book review – *The Last Flight of the Scarlet Macaw: One Woman’s Fight to Save the World’s Most Beautiful Bird*. *The Auk* 126:229-230.

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- 2009* Niemi, G.J., V.J. Brady, T.N. Brown, J.J.H. Ciborowski, N.P. Danz, D.M. Ghioca, J.M. Hanowski, T.P. Hollenhorst, R.W. Howe, L.B. Johnson, C.A. Johnston, E.D. Reavie. Development of ecological indicators for the U.S. Great Lakes coastal region - A summary of applications in Lake Huron. *Aquatic Ecosystem Health & Management*,12(1):77 - 89.
- 2008 Ciborowski, J.H., G.J. Niemi, V.J. Brady, S. Doka, L.B. Johnson, J.R. Keough, S.D. Mackey, D.G. Uzarski. Ecosystem responses to regulation-based water level changes in the Upper Great Lakes. Official white paper to the International Joint Commission. 51 pp.
- 2008* Moen, R., Burdett, C., G. Niemi. Movement and habitat use of Canada lynx during denning in Minnesota. *Journal of Wildlife Management* 72:1507-1513.
- 2008* Mattsson, B. and G. Niemi. Causes and consequences of distribution patterns in a migratory songbird across its geographic range. *Canadian Journal of Zoology* 86:314-328.
- 2008* McCann, N.P., R.A. Moen, G.J. Niemi. Using pellet counts to estimate snowshoe hare numbers in Minnesota. *Journal of Wildlife Management* 72:955-958.
- 2008* Morrice, J.A., N.P. Danz, R.R. Regal, J.R. Kelly, G.J. Niemi, E.D. Reavie, T. Hollenhorst, R.P. Axler, A.S. Trebitz, A.M. Cotter, G.S. Peterson. Human influences on water quality in Great Lakes coastal wetlands. *Environmental Management* 41:347-357.
- 2007 Niemi, G.J., and T. Arnold. Wildlife profile. In Preliminary plan for Minnesota Conservation and Preservation. Minnesota Legislative Citizen Commission for Minnesota Resources.
- 2007* Grandmaison, D. and G.J. Niemi. Local and landscape influence on the Red-winged Blackbird (*Agelaius phoeniceus*) nest success in Great Lakes coastal wetlands. *Journal of Great Lakes Research* 33(3):292-304.
- 2007* Hanowski, J.M., N.P. Danz, R.W. Howe, R.R. Regal, G.J. Niemi. Considerations for monitoring breeding birds in Great Lakes coastal wetlands. *Journal of Great Lakes Research* 33(3):245-252.
- 2007* Howe, R.W., R.R. Regal, J.M. Hanowski, G.J. Niemi, N.P. Danz, and C.R. Smith. An index of ecological condition based on bird assemblages in Great Lakes coastal wetlands. *Journal of Great Lakes Research* 33(3):93-105.
- 2007* Miller, C., G.J. Niemi, J.M. Hanowski, and R.R. Regal. Breeding bird communities across an upland disturbance gradient in the Western Lake Superior region. *Journal of Great Lakes Research* 33(3):305-318.
- 2007* Niemi, G.J., Kelly, J., and N. Danz. Environmental indicators for the North American Great Lakes Coastal Region: Introduction and Prospectus. *Journal of Great Lakes Research* 33(3):1-12.
- 2007* Peterson, A. and G.J. Niemi. Evaluation of the Ohio Rapid Assessment method for wetlands in the Western Great Lakes: an analysis using bird communities. *Journal of Great Lakes Research* 33(3):280-291.
- 2007* Price, S.J., Howe, R.W., J.M. Hanowski, G.J. Niemi, C.R. Smith, and N.P. Danz. Are anurans of Great Lakes coastal wetlands reliable indicators of ecological condition? *Journal of Great Lakes Research* 33(3):211-223.
- 2007* Danz, N.P. G.J. Niemi, R.R. Regal, T. Hollenhorst, L.B. Johnson, J.M. Hanowski, R. Axler, J.J.H. Ciborowski, T. Hrabik, V.J. Brady, J.R. Kelly, J.C. Brazner, R.W. Howe, C.A. Johnston, G.E. Host. Integrated gradients of anthropogenic stress in the U.S. Great Lakes basin. *Environmental Management* 39:631-647.
- 2007* Brazner, J.C., Danz, N.P., Trebitz, A.S., Niemi, G.J., Regal, R.R., Hollenhorst, T., Host, G.E., Reavie, E.D., Brown, T.N., Hanowski, J.M., Johnston, C.A., Johnson, L.B., Howe, R.B., Ciborowski, J.H. Responsiveness of Great Lakes wetland indicators to human disturbances at multiple spatial scales: a multi-assemblage assessment. *Journal of Great Lakes Research* 33(3):42-66.

- 2007* Howe, R.W., R.R. Regal, G.J. Niemi, N.P. Danz, J.M. Hanowski. A probability-based indicator of ecological condition. *Ecological Indicators* 7:793-806.
- 2007* Johnston, C.A., T. Brown, T. Hollenhorst, P. Wolter, N. Danz, G. Niemi. GIS in support of ecological indicator development. *Manual of geographic information systems*. American Society for Photogrammetry and Remote Sensing, MD: in press.
- 2007* Burdett, C.L., Moen, R., Niemi, G.J., Mech, L.D. Defining space use and movements of Canada lynx with global positioning system telemetry. *Journal of Mammalogy* 88:457-467.
- 2007 Niemi, G.J. and J.B. Niemi. Old and new applications of multivariate statistics to problems in QSAR. First Indo-U.S. Lecture Series on Discrete Mathematical Chemistry, PESIT, Bangalore, India, January 8-11, 2007.
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3. Davis, T., G. Niemi, J. Kotar, and P. Hofslund. 1978. Phase II - Habitat assessment and bird populations of the lower St. Louis River estuary. Report to Office of Coastal Zone Management by the University of Minnesota Duluth. 95 pp.
4. Niemi, G.J., and J. Hanowski. 1978. The importance of dead trees to breeding birds in northern Minnesota. Report to USDA Forest Service by the University of Minnesota Duluth. 25 pp.
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Doctoral Dissertation

Ecological morphology of breeding birds in Old World and New World peatlands. Florida State University, Tallahassee. 155 pp. F. James - major advisor; committee members: D. Meeter, D. Simberloff, J. Travis

Master's Thesis

Habitat alteration: its effect on avian composition and habitat selection. University of Minnesota Duluth. 109 pp. P. Hofslund - major advisor; Committee members: B. Krogstad, P. Monson

National and International Papers/Seminars Presented at Scientific Meetings/Institutions

- 2009 Fourth Indo-US Lecture Series on Discrete Mathematical Chemistry, Jan. 6-9, 2009, Hyderabad, India (Invited)
- 2008 Partner's in Flight, Fourth International – Tundra to Tropics, McAllen, TX (Invited)
- 2007 21st Meeting of the Society for Conservation Biology, Port Elizabeth, South Africa
International Joint Commission Biennial Meeting, Chicago, IL. Keynote talk (invited)
International Association for Great Lakes Research, State College, PA (invited)
Second Indo-US Lecture Series on Discrete Mathematical Chemistry, Bangalore, India (Invited)
- 2006 International Association of Great Lakes Research, Windsor, Ontario, 5 talks, session chair and organizer
1st MN Natural Resources Conference, Brainerd, MN - co-organizer (3 talks)
Society for Conservation Biology, San Jose, CA - Workshop co-organizer - Capacity Building for SCB Chapters in the 21st Century (1 talk)
- 2005 200 Years of Finnish Ecology, Joensuu, Finland (invited)
Ecological Society of America and INTECOL, Symposia co-organizer and speaker, Montreal, Canada
Finnish Environmental Science Society, Jyvaskyla, Finland (invited)
- 2004 International Association of Great Lakes Research, Waterloo, Ontario, 3 talks.
Tall Timbers Research Station, Tallahassee, FL
Environmental Monitoring and Assessment Program, Newport, RI, 2 talks.
- 2003 Department of Statistics, Oregon State University, Corvallis, OR.
Ecological Society of America, Symposia, Savannah, GA (invited)
Midwest SETAC, Keynote Speaker, Rhinelander, WI (invited)
Society for Conservation Biology, Duluth, MN (2 talks)
U.S. EPA Region 5, STAR Research program, Chicago, IL (invited)
International Association of Great Lakes Research, Symposia, Chicago IL, 2 talks.
- 2002 Bodega Marine Laboratory, U of California-Davis, Bodega, CA (invited).
Partners in Flight, Asilomar, CA (3 papers)
International Association of Great Lakes Research, Winnipeg, Manitoba.
- 2001 North American Forest Ecology Workshop, Duluth, MN (4 papers)
Tall Timbers Research Station, Tallahassee, FL
Environmental Monitoring and Assessment Workshop, Pensacola, FL
MN DNR - Forest Summit/Demonstration, invited speaker, Grand Rapids, MN
International Association of Great Lakes Research, Green Bay, WI (2 papers)
Ecological Society of America, Madison, WI
Society of Conservation Biology, Hilo, Hawaii

- 63rd Midwest Fish and Wildlife Conference, Des Moines, IA (3 papers)
- 2000 Landscape Ecology, Orlando, FL.
- 62nd Midwest Fish and Wildlife Conference, Minneapolis, MN (3 papers)
- 1999 61st Midwest Fish and Wildlife Conference, Chicago, IL (2 papers)
- 1999 Wildlife modelling workshop, Snowbird Utah.
- 1999 8th International Grouse Conference, Rovaniemi, Finland
- 1999 invited seminars - U of Jyvaskyla, U of Oulu, and U of Joensuu, Finland (invited)
- 1999 Wisconsin DNR - state wildlife biologists meeting, Eau Claire, WI (invited)
- 1999 Symposia: Reducing the Environmental Impact of Toxic Chemicals in Asian Economies, Dhaka, Bangladesh and Calcutta, India (invited)
- 1998 NCASI regional meeting, Duluth, MN (invited)
- Minnesota Ornithologists' Union, Minneapolis, MN.
- 1997 59th Midwest Fish and Wildlife Conference, Milwaukee, WI (invited)
- American Ornithologists' Union, St. Paul, MN (4 papers)
- University of Minnesota, St. Paul (invited)
- Birds and Forests Workshop, (Keynote speaker), Lanesboro, MN
- University of Wisconsin, Madison (invited) (Department seminar)
- University of Minnesota, St. Paul (Conservation Biology seminar series)
- U.S. Fish and Wildlife Service, national mtg. on mosquito control (invited)
- Society of American Foresters, regional meeting (invited)
- 1996 University of Helsinki (invited)
- University of Oulu (invited)
- International Landscape Ecology Society, Galveston, TX.
- Society of Environmental Toxicology and Chemistry, Wash. D.C. (invited)
- NCASI regional meeting, Chicago, IL (invited)
- 1995 International Landscape Ecology Society, Minneapolis, MN.
- Minnesota Ornithologists' Union, Minneapolis, MN USA
- Midwest Meeting of Society of Environmental Toxicology and Chemistry, Duluth, MN USA
- University of Wisconsin, Stevens Point (invited)
- 1994 Society of Environmental Toxicology and Chemistry, Denver, CO.
- QSAR '94, Belgirate, Italy
- 1993 The Wildlife Society, Minnesota Region, Brainerd, MN. (invited)
- The Ecological Society of America, Madison, WI.
- 1992 American Society for Testing and Materials, Pittsburgh, PA. (invited)
- Ecological Society of America, Honolulu, HI.
- Society of Environmental Toxicology and Chemistry, Cincinnati, OH.
- Minnesota Ornithologists' Union, Minneapolis, MN.
- 1991 American Chemical Society, Indianapolis, IN.
- Society of Environmental Toxicology and Chemistry, Seattle, WA.
- Midwest Environmental Chemistry Workshop, Minneapolis, MN. (invited)
- 1990 American Society for Testing and Materials, 14th Aquatic Toxicology, San Francisco, CA, (invited)
- Eurocourse, QSAR and statistics, Ispra, Italy (invited)
- Ecological Society of America, Snowbird, UT.
- QSAR 90, Utrecht, Netherlands
- Lake Superior Biological Conference, Ashland, WI.
- ENVIROTECH VIENNA-1990, Vienna, Austria
- 52nd Midwest Fish and Wildlife Conference, Minneapolis, MN.
- International Ornithological Congress, Christchurch, New Zealand
- 1989 International Society for Environmental Protection, Vienna, Austria
- International Conference on Mathematical Chemistry, Galveston, TX.

- North Central Forest Experiment Station, St. Paul, MN. (invited)
 International Association of Great Lakes Research, Madison, WI.
 International Association of Landscape Ecology, Fort Collins, CO.
 PACIFICHEM, Mathematical and Computer Modelling Conference, Honolulu, HI.
 (invited)
 Mathematical Modelling in Chemistry, Chicago, IL.
 Forest change and biodiversity issues workshop, Bell Museum of Natural History, Minneapolis,
 MN. (invited)
- 1988 51st Midwest Fish and Wildlife Conference, Springfield, IL. (invited)
 European Science Foundation, Zurich, Switzerland
 QSAR88, 3rd International Conference, Knoxville, TN.
 Ecological Society of America, Davis, CA.
 Cooper Ornithological Society, Berkeley, CA.
 Natural Areas Conference, ecosystem management - rare species and significant habitats,
 Syracuse, NY.
 American Chemical Society, Los Angeles, CA.
 Applied Geography Conference, St. Paul, MN.
 Landscape Ecology Symposium, Albuquerque, NM.
 Lotic ecosystem recovery workshop, U.S. Environmental Protection Agency, Duluth, MN.
 Society of Environmental Toxicology and Chemistry, Washington, DC.
 50th Midwest Fish and Wildlife Conference, Columbus, OH.
- 1987 American Society for Testing and Materials, QSAR and data extrapolations, Cincinnati, OH
 American Ornithologists' Union, San Francisco, CA.
 Lake Superior Biological Conference, Duluth, MN.
 Society of Environmental Toxicology and Chemistry, Pensacola, FL.
 Cooper Ornithological Society, Moscow, ID.
- 1986 Biometric Society, Atlanta, GA.
 National symposium on wildlife in wetlands, Savannah River Ecology Laboratory,
 Charleston, SC.
 Bioelectromagnetics Society, Madison, WI.
 International Ornithological Congress, Ottawa, Canada
 International Congress of Ecology and Ecological Society of America, Syracuse, NY, USA
- 1985 Ecological Society of America, Minneapolis, MN.
 American Ornithologists' Union, Tempe, AZ.
 Minnesota Ornithologists' Union, Minneapolis, MN.
- 1984 American Chemical Society, Symposium on environmental applications of chemometrics,
 Philadelphia, PA.
- 1983 Florida State University, Tallahassee, FL.
 University of Wisconsin, Superior, WI.
 The Wildlife Society, Mesabi Community College, Virginia, MN. (invited)
 University of Minnesota, Minneapolis, MN. (invited)
 Ecological Society of America, Grand Forks, ND.
 International Peatland Congress, Bemidji State University, Bemidji, MN.
 U.S. EPA, Biodegradation Kinetics, Navarre Beach, FL. (invited)
- 1982 American Ornithologists' Union, Chicago, IL.
 University of Minnesota Duluth, MN.
- 1981 University of Helsinki, Helsinki, Finland
 University of Helsinki, Helsinki, Finland
 Florida State University, Tallahassee, FL.
- 1980 Florida State University, Tallahassee, FL.
 American Ornithologists' Union, Fort Collins, CO.

- 1979 U.S. Forest Service, Minneapolis, MN. (invited)
Bemidji State University, Bemidji, MN. (invited)
Lake Superior Biological Conference, Duluth, MN.
- 1978 Lake Superior Biological Conference, Superior, WI.
The Wildlife Society, University of Wisconsin, Stevens Point, WI. (invited)
Minnesota Ornithologists' Union, Minneapolis, MN.