

A. Center/Institute/Program

Center Name: Center for Water and the Environment, University of Minnesota

Natural Resources Research Institute
University of Minnesota Duluth
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Director/Chairperson: Lucinda B. Johnson, PhD
Representative to AERC: Lucinda B. Johnson, PhD

B. Major objectives of the Center/Institute/Program

1. To conduct innovative basic and applied research so that sustained and efficient utilization of the natural resources of the Great Lakes area proceeds in an ecologically sound manner.

C. Major ecosystem research emphases:

1. Ecosystem and landscape studies
2. Environmental chemistry
3. Resource analysis

D. Staff:

Permanent scientific staff:	PhD: 10, MS: 4
Adjuncts:	12
Scientific support staff:	Postdocs: 0, Technicians: 9
Other support staff:	3
Graduate students:	PhD: 2, MS: 8
Summer grad/undergrad:	15

E. Approximate annual funding (recent year)

Core funding: \$932,301/yr, State of Minnesota
Grants: \$1,510,959

- Major federal sources: Air Force, CDC, DOD, DOE, EPA, NASA, USGS, National Fish & Wildlife, NCASI, NIH, NOAA Coastal Program and Sea Grant, NSF, USDA Forest Service, USGS NPS (Voyageurs and Isle Royale National Park; Great Lakes Network; and the Northeastern Coastal Network.
- Minnesota sources: MN DNR; Legislative-Citizen Commission on MN Resources; Fond du Lac Tribal and Community College, Lac Courte Oreilles, and Mille Lacs Bands of the Chippewa Tribe, Potawatomi Tribal Environmental Program; Lake of the Woods, South St. Louis, Benton, Cook, Itasca County Soil and Water Conservation Districts; MN PCA, MN's Lake Superior Coastal Program, Nature Conservancy (Blandin Foundation, prime), city of Duluth, MN Board of Water and Soil Resources, Minnesota Sea Grant.

F. Areas and facilities for ecosystem research studies

1. Natural Resources Research Institute
2. Ely Field Station
3. Voyageurs National Park, Minnesota, 250 km²
4. Isle Royale, Lake Superior, 574 km²
5. Chippewa National Forest, Minnesota, 5,000 km²
6. Superior National Forest, Minnesota, 8,000 km²

G. Research staff directly involved in ecosystem research (names and specialty areas)

Axler, Richard	lake and stream water quality, nutrient cycling, stream restoration, climate change
Brady, Valerie	stream ecosystems, environmental indicators
Breneman, Dan	stream ecosystems, environmental toxicology
Brown, Terry	ecosystem modeling and simulation, advanced spatial and other data analyses, web-based applications
Hale, Cynthia	forest ecology, exotic earthworm invasions, citizen science
Hollenhorst, Tom	GIS, remote sensing, landscape ecology
Host, George	forest ecosystems, landscape ecology
Johnson, Lucinda	stream ecosystems, landscape ecology, amphibian ecology, climate change, environmental indicators
Kireta, Amy	diatoms, aquatic ecology, limnology and paleolimnology
Reavie, Euan	great lakes and rivers, algae, water quality, paleolimnology
Moen, Ron	modeling, physiological ecology, radiotelemetry
Niemi, Gerald	avian communities, biological diversity, environmental indicators
Olker, Jennifer	amphibian communities and wetland ecology
Ruzycki, Elaine	mercury cycling, limnology
Schoff, Patrick	reproductive and developmental biology, ecotoxicology

Official Adjuncts:

Branstrator, Donn	zooplankton ecology, predator-prey interactions, invasive species
Danz, Nick	quantitative ecology, ecological statistics, plant ecology
Degitz, Sigmund	environmental chemistry
Etterson, Matthew	population modeling, ornithology
Gran, Karen	stream geomorphology, sediment transport
Guntenspergen, Glenn	wetland and landscape ecology, climate change
Hill, Brian	stream and watershed ecology, nutrient cycling
Hrabik, Tom	fish ecology, predator-prey interactions
Johnson, Rodney	ecophysiology, developmental biology
Kelly, John	limnology, nutrient cycling
Mayasich, Joe	ecotoxicology
Mount, David	ecotoxicology
Pastor, John	foraging behavior, plant-herbivore interactions, carbon, nitrogen cycling, climate change
Regal, Ron	applied statistics, statistical computing, biostatistics

H. Long-term data sets (code name, number of years of data, computer accessibility)

1. Voyageurs National Park, 15 years, not accessible
2. Isle Royale, 15 years, not accessible
3. Forest Bird Diversity, 18+ years, data in process of being made accessible. (Note: some data are available in the form of pre-set queries on our website www.nrri.umn.edu/mnbirds)
4. MN's Climate Change Lakes, working on project involving assembling long-term data sets for ~ 500 lakes with > 15 years of data as part of a climate change project. In progress.
5. Aquatic plant data base developed for DNR (available from MN DNR)