



## NRRI Natural Resources Research Institute

### NRRI Awarded \$6 Million Grant

Duluth, Minn. -- The Natural Resources Research Institute (NRRI) of the University of Minnesota Duluth (UMD) has been awarded a \$6 million grant from the U.S. Environmental Protection Agency (EPA) to develop and test environmental indicators for the coastal and near shore regions of the U.S. Great Lakes.

This is the largest single research grant ever awarded to UMD and the largest ecological grant ever awarded by the EPA's Science to Achieve Results (STAR) research program.

The project, which is headed by NRRI center director and professor Dr. Gerald Niemi, will identify, evaluate and recommend a portfolio of environmental indicators to measure the condition of the Great Lakes. These assessment tools will help maintain the lakes' integrity and long-term sustainability. Like medical doctors who start with vital signs and then move on to specific diagnostic tests, these 27 experts will closely examine the health of the Great Lakes.

Environmental indicators are biological, chemical or physical attributes of an ecosystem that can be measured and monitored to provide insight on the study area's condition. For example, scientists currently monitor the spread of exotic species such as zebra mussels. Studying zebra mussel populations, relocation patterns and reproduction, helps researchers evaluate the amount and intensity of human impact on certain aquatic ecosystems. Indicators provide an early warning system of potential problems and a proactive approach to integrating ecosystem management with increasing human needs.

In addition to researchers at NRRI and UMD, the project will include experts from the University of Minnesota Twin Cities campus, Minnesota Sea Grant, University of Wisconsin-Green Bay, University of Wisconsin-Madison, Cornell University (New York), University of Windsor-Canada, John Carroll University (Ohio) and University of Michigan. Scientists from the U.S. EPA Mid-Continent Ecology Division in Duluth and research station in Grosse Ile, Michigan, are also major cooperators on the project.

Study sites for this massive project will span the 200,000-square-mile basin. Research will be broken into five major components: water quality and diatoms (group of microscopic algae); fish and macroinvertebrates (aquatic insects, crustaceans and worms); wetland vegetation; birds and amphibians; and chemical contaminants.

The EPA has identified over 80 indicators that will be considered during the study. Based on nearly 500 years of cumulative expertise, Niemi and his team will compile and

rigorously test what they consider to be the best and most comprehensive of existing and new indicators.

“At the end of the four-year period, we will provide recommendations to the environmental community on what indicators are their best bets for future monitoring efforts,” said Niemi. “The EPA has provided a wonderful opportunity to critically examine which indicators can be used to determine the health of the U.S. Great Lakes coastal and near shore regions.”

The Minnesota Sea Grant Program will distribute the information to the public and management agencies across the Great Lakes.

“NRRI scientists have achieved state, national and international acclaim for their previous work,” noted U.S. Congressman Jim Oberstar. “By securing this grant, they have proven that NRRI is competitive with the best universities and research institutes in the country. Not only will the results of their work on this initiative play an important role in sustaining the long-term health of the Great Lakes, but they will also be a model for critical watersheds throughout the world.”

Just as the human body has many different systems that must work cohesively, so does the environment. The Great Lakes basin, which spans two countries including eight states and one province, contains approximately 18 percent of the world’s surface fresh water. What happens in one section has ripple effects across the entire basin and affects more than 36 million residents.

The population explosion along the coasts of the United States has put enormous pressure on coastal ecosystems. In order to develop the sound science required to monitor these important areas, STAR developed the Estuarine and Great Lakes (EaGLe) initiative. This grant is the first being awarded to four focus areas that include the Great Lakes, East Coast, West Coast and Gulf Coast.

NRRI director Mike Lalich agrees that the importance of this project reaches beyond northeastern Minnesota. “Results of the research will provide a context that will assist resource managers and leaders to make sound environmental and economic decisions relating to the Great Lakes ecosystem in the future.”

NRRI, where the majority of work will be centered, was created to promote economic development of Minnesota’s natural resources in an environmentally sound manner. Niemi is a Duluth native, UMD alumnus and internationally known and published scientist.

For more information on UMD, contact Susan Latto at 218-726-8830.

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