

# CILER

Cooperative Institute for Limnology  
and Ecosystem Research

## Who We Are

The Cooperative Institute for Limnology and Ecosystems Research (CILER) works to enhance the quality of the Great Lakes and its related ecosystem services, through a research partnership between universities, NOAA scientists, and other stakeholders in the Great Lakes region. CILER is a regional consortium of nine universities hosted by the University of Michigan School of Natural Resources and Environment and trains the next generation of researchers through undergraduate, graduate and post-doctoral fellowships. CILER research crosses five thematic areas focused on enhancing the preservation, protection and understanding of the Great Lakes.

## Research Themes

### ***Protection and Restoration of Ecosystem Services:***

Promoting and improving conservation and preservation of Great Lakes natural, cultural, and social resources.

### ***Great Lakes Observing and Forecasting:***

Providing products and predictions essential for management of the Great Lakes by using computer models, real-time buoy networks, and improved data analysis and distribution.

### ***Invasive Species:***

Monitoring the occurrence and distribution of established invasive species and developing forecasts for potential invaders as well as assessments of the potential for impacts on fisheries and the Great Lakes ecosystem.

### ***Ecological Risk Assessment:***

Evaluating the potential effects of contaminants, invasive species, and non-biological stressors on the Great Lakes ecosystem.

### ***Education and Outreach:***

Translating research findings for the general public; distributing information to stakeholders to aid in decision-making; and providing education and training opportunities for undergraduate, graduate and postdoctoral students.

## Research Impact

**\$7,336,071**

Internal Funding 2012-2014

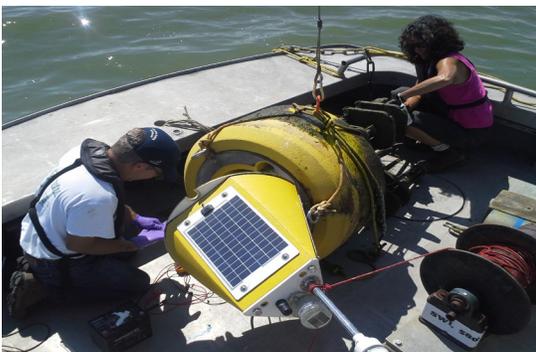
**\$2,979,104**

Funding to Partners 2012-2014

**90+**

Number of Peer  
Reviewed  
Publications

Number of  
Researchers Supported **81**



## Highlight of Current Projects

### *Harmful Algal Blooms (HABs)*

CILER is developing advanced water quality predictions to provide regional managers with real-time five-day forecasts of harmful algal bloom location, intensity and size in Lake Erie. CILER has also helped develop a network of real-time continuous monitoring buoys that provide data on current water quality and HABs conditions to water intake managers and recreational users.

### *Great Lakes Ice Cover and Climate Change*

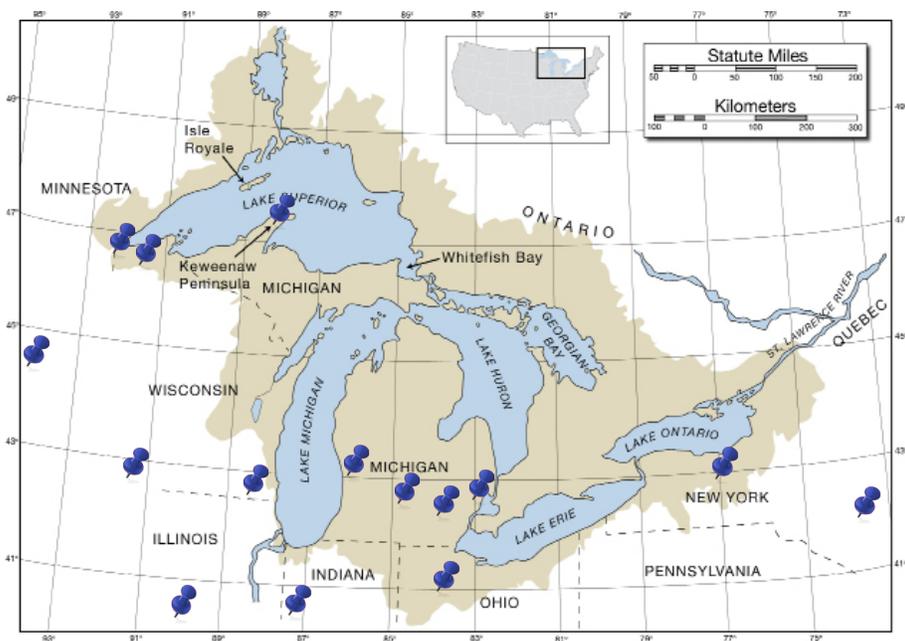
CILER's ice forecasting has two approaches, the first is to develop real-time predictions of ice conditions on the Great Lakes based on wind, currents, and weather. The second is to develop long-term (seasonal) forecasts of ice cover and link the influence of ice cover extent to water levels, nutrient runoff and climatic conditions in the Great Lakes.

### *Great Lakes Fisheries and Invasive Species*

CILER is assessing the potential impact Asian carp (Bighead and Silver carp) may have on the food web through models that examine potential food consumption, growth and reproduction rates if they become introduced to the Great Lakes. CILER also researches the impact existing invasive species have on fish populations and ecosystem sustainability to assist in managing a multi-billion dollar recreational fisheries resource.

## Undergraduate and Graduate Opportunities

Since 1999, CILER has hosted undergraduate and graduate students from about 50 national and international colleges and universities. These students participate in research projects with CILER, NOAA-GLERL and other academic and federal scientists from around the Great Lakes. This highly competitive program provides an academic venue for students to work and train with prominent Great Lakes research scientists.



## Feedback from Students and Fellows

*"The knowledge and connections I gained as a CILER Post-doc were pivotal for establishing my long-term career."*

*"Being a CILER Postdoc allowed me to discover my place within the Great Lakes research community."*

*"The events offered as part of the summer fellows program gave me a lot of good experiences for job hunting, for presentations and in many other valuable ways."*

## Our Partners

CILER has supported more than 100 research projects totaling over \$17 million. Collaborators from around the Great Lakes include government, academic, private and non-profit partners.

Push pins in the map above reflect CILER's research and collaborations with universities and organizations.

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