

Great Lakes Research at Michigan



Researchers at the University of Michigan are working together to address the root causes of, and potential solutions for, the most important issues impacting the Great Lakes.

With \$1.55 billion in annual research expenditures, U-M researchers are partnering with communities and government agencies to tackle emerging challenges in the Great Lakes, including harmful algal blooms, invasive species and climate change.

Researchers in disciplines ranging from science and engineering to public policy and sustainability are working to ensure the continued health and safety of the Great Lakes, a primary catalyst for the regional economy.

\$5.8
trillion

annual economic impact
to the Great Lakes-
St. Lawrence region

20
percent

of the world's
supply of surface
freshwater is in
the Great Lakes

40
million

people get their drinking
water from the Great Lakes

11
thousand

miles of
Great Lakes shoreline



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Harmful Algal Blooms

Formed by dense populations of cyanobacteria or blue-green algae, harmful algal blooms can produce toxins, threaten public health and contribute to economic losses that exceed \$2 billion annually. U-M is at the forefront of monitoring and forecasting these toxic blooms to keep people safe and protect drinking water. Researchers at U-M are working to pinpoint the main causes of harmful algal blooms, paving the way to prevent future environmental crises.



Invasive Species

As one of the greatest stressors facing the Great Lakes' aquatic ecosystem, invasive species have changed the ecology of the lakes and damaged critical industries like fisheries, agriculture and tourism, costing millions of dollars annually in control and mitigation. Asian carp species are at the Great Lakes' doorstep and could be the next new invader. U-M researchers are informing management decisions by developing models to predict the potential devastation caused by an Asian carp invasion.



Climate Change

From 1951 to 2017, extreme precipitation in the Great Lakes has increased by 35 percent, and average annual air temperatures have increased by 2.3° F. Lake levels and ice coverage also are changing at unprecedented rates. These impacts already are, and will continue to be, deep and widespread, affecting water quality, fish and wildlife, shipping, tourism, recreation, cities and tribes. Researchers at U-M are working with communities to better understand these impacts, to predict future changes, and to prepare and adapt to climate change.