



A Cooperative Institute for Great Lakes Research scientist deploys sensors in the western basin of Lake Erie to measure the water's optical properties to aid in monitoring and forecasting HABs. Photo Credit: Holly Kelchner

Understanding the Drivers of HAB Toxicity and Nuisance Algae Growth

In 2022, the U.S. Geological Survey and National Oceanic and Atmospheric Administration continued their collaborative efforts to better understand and predict the toxicity of HABs in Lake Erie and Saginaw Bay, Michigan. The project seeks to establish a baseline of HAB microbial communities and cyanotoxins, and how they change under varying environmental and nutrient conditions. The resulting data is being used to characterize and measure HAB toxicity and support restoration of the Great Lakes by improving understanding of the relationship between drivers of toxicity and management options to control those drivers. The project is completing an assessment of these potential drivers including substrate, light availability, temperature and dreissenid abundance.

Share your thoughts on the Great Lakes and consider the following questions.

1

What information about the Great Lakes ecosystem health is important and meaningful to you and what are your sources of this information?

2

What other Great Lakes ecosystem issues would you like to better understand?

Science

Overview

Science is a key foundation to any successful ecosystem restoration and protection program. Assessing the overall health of the Great Lakes and identifying and investigating the most significant problems affecting their health is essential for resource managers to be able to take actions to address chemical, biological and physical stressors.

Under Action Plan III, between 2020-2024, Great Lakes Restoration Initiative (GLRI) federal agencies and their partners worked to understand issues such as:

- Drivers of harmful algal bloom (HAB) toxicity
- Impacts of current and future changes in lake levels, ice coverage, waves and surge
- Changes in shorelines and nearshore habitat integrity due to sediment movement and bluff erosion within coastal areas.

Enhanced Great Lakes monitoring and research activities were implemented through the Cooperative Science and Monitoring Initiative to generate data and information that filled critical data gaps and advanced the management of eutrophication, contaminants, invasive species, habitat loss and climate change.

Under Action Plan IV, GLRI federal agencies and their partners intend to continue to support targeted science projects and implement programs that will help track the effectiveness of GLRI projects and inform future restoration actions taken to address the major issues facing the Great Lakes.



For more information visit,
GLRI.us/Action-Plan
Share your thoughts by email:
GLRIActionPlanIV@epa.org