

What is GLOS?



The Great Lakes Observing system (GLOS) is a non-profit organization dedicated to coordinating, integrating and strengthening the network of observations in the Great Lakes and St. Lawrence River system and turning them into useful and meaningful information

products. GLOS connects with data users and integrates data from federal and non-federal sources to identify needs, information, products and services, gaps and redundancies that exist in the Great Lakes.

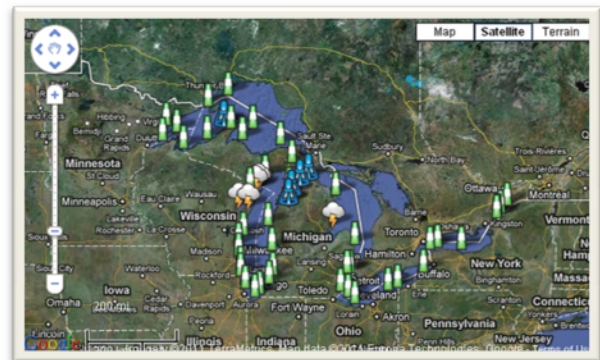
“When responding to spills, we use the Huron-Erie Corridor model to help us identify the location and timing of the spill to determine where local oil spill recovery organizations can still reach with equipment,” said James Marquez, United States Coast Guard.

In effect, GLOS improves the economic, social, and environmental state of the Great Lakes by providing resource managers and other decision-makers, researchers, special interest groups, and other data-users access to needed information. GLOS provides support to decision-makers responsible for ecosystem health, marine operations, public health, and climate change and hazard mitigation. GLOS is one of 11 regional associations in a national Integrated Ocean Observing System coordinated by the National Oceanic and Atmospheric Administration.

Acting as facilitator, GLOS provides information and services to help resolve multiple use conflicts in the Great Lakes. For example, boaters in the St. Lawrence complained to the International Joint Commission (IJC) that IJC-authorized releases from the Moses-Saunders Dam unexpectedly create undesirable boating conditions while they are out of port. The water releases are needed to meet electrical demands however, in

many cases it is wind set-up, not the dam, which causes the problem. GLOS is working with boaters, researchers and New York Sea Grant to develop a river model and an information system that will inform boaters whether it will be a good day for boating before they commit to a day on the water. There are similar GLOS bridges between GLOS’ nearshore buoy network team and the Cleveland water utility. And GLOS is working to develop a complementary relationship between water level managers and climate data agencies in the U.S. and Canada.

The need for more comprehensive, coordinated and accessible data and information about the Great Lakes has been a growing issue for the region. As technology advances GLOS is positioned to address the information needs for priority management and policy issues in the Great Lakes and help resource managers make better informed and timely decisions. For example, the Cleveland Division of Water provides clean, safe water to 1.5 million customers. “Since 2009, through its federal partner at the NOAA Great Lakes



The GLOS portal or Observation explorer integrates observations from data providers in the Great Lakes and allows users to easily search for real-time and historic data

Environmental Research Laboratory, GLOS has provided a nearshore buoy... (which) tells us when we are in danger of taking in hypoxic water and ... warns us that there is the potential for internal waves allowing us to shut down our intakes in order to avoid taking in low quality raw water or adjust treatment appropriately,” said Rolfe Porter, the Acting Commissioner of Water.

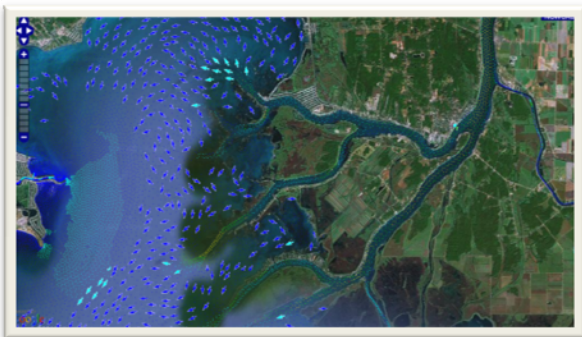
The Observation Explorer is a GLOS tool that integrates observations from data providers in the Great Lakes and allows users to easily search for information they need. The Wisconsin DNR is working under the Great Lakes Restoration Initiative to facilitate operational beach water-quality “nowcasts” around Wisconsin. “The GLOS portal ... (is) a great tool for the effort, in that it could potentially provide our local cooperators (health departments) with a “one-stop shop” for the real-time data they need to operate nowcast models,” said Adam Mednick, Senior Research Scientist at WDNR.

In addition to providing information, GLOS connects with users to help inform and guide research projects in order to produce useful operational tools. Eric Anderson began testing the Finite Volume Coastal Ocean Model (FVCOM) as part of his post-doctoral research in

2006. With funding from GLOS, Anderson implemented the model in the connecting channels between Lake Huron and Lake Erie and found it able to predict currents and water levels with high accuracy in the corridor. GLOS held a series of iterative workshops to understand user needs, which then informed the further development of the Huron-Erie Corridor Waterways Forecast System (HECWFS), a real-time forecast system that uses outputs from Anderson’s model. These iterative workshops were critical to the development process because they identified specific concerns related to the decision-making processes of municipal water system managers, local and federal spill responders and search and rescue personnel and incorporated them into further HECWFS development.

For example, in order to demonstrate the accuracy of the model, GLOS tested its outputs against the results of dye spill studies in the St Clair River. After seeing the model’s accuracy, water utility managers were interested in look-up tables that simulate a range of spills under different conditions providing an easy-to-use tool for use during emergencies. HECWFS outputs have been used by the US Coast Guard to plan deployment of spill response equipment, Michigan DNR fisheries division to understand the origin of a significant fish kill and by the Macomb County Sheriff’s department to help identify the entry point of a murder victim to Lake St. Clair.

With a small staff, a volunteer board and strong partnerships with local, state, and federal agencies and the region’s exceptional research universities, GLOS provides considerable benefits to the region. GLOS seeks funding from diverse sources for specific projects, always with the mission of providing useful products and services to data users, connecting to stakeholders to understand and meet their information needs, increasing observing capacity in the most critical locations, and managing data for the region.



The Huron Erie Corridor Waterways Forecast System provides real time and predicted forecasts of water levels and currents.