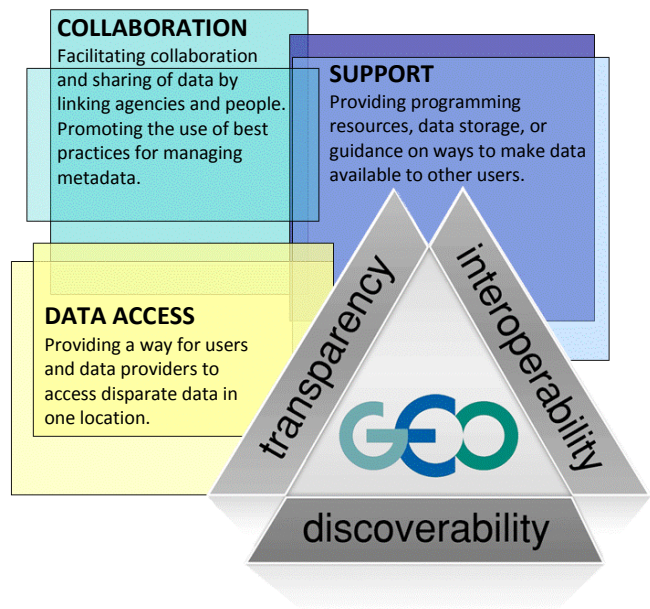# GEOSS Great Lakes Testbed

The Great Lakes Testbed is part of the Global Earth Observation System of Systems (GEOSS). GEOSS is a coordinated effort of the Group on Earth Observations (GEO) to build decision support tools that link observing and information systems across the globe. The Testbed **supports data collaboration efforts between the United States and Canada in the Great Lakes Region** and includes representatives from Environment Canada, the National Oceanic and Atmospheric Administration, US Environmental Protection Agency, US Geological Survey and others. The group works to make bi-national datasets **discoverable** (easy to find), **transparent** (easy to understand) and **interoperable** (easy to use). These needs are met through application of internationally accepted standards that ensure that the data are accurate, consistent and verified.

COLLABORATION
Facilitating collaboration and sharing of data by linking agencies and people. Promoting the use of best practices for managing metadata.

SUPPORT
Providing programming resources, data storage, or guidance on ways to make data available to other users.

DATA ACCESS
Providing a way for users and data providers to access disparate data in one location.

transparency

interoperability

GEO

discoverability

What can the Testbed do for you?

Meeting Data Needs

The Testbed advances data exchange to support public policy and strategic initiatives such as:

- *Great Lakes Water Quality Agreement*
- *International Joint Commission's Adaptive Management Task Team and water levels studies*
- *Coordinating Committee on Great Lakes Basic Hydraulic and Hydrologic Data*
- *Great Lakes Information Network*
- *Great Lakes Observing System*
- *Great Lakes Commission*
- *National Ocean Policy and the Regional Ocean Partnership*
- *… and many more*

Data Access: Provide consistent methods for users to access data. Regardless of where it might actually reside, users will be able to find the data they need and feed it into appropriate display or analytical tools.

Support and Guidance: Provide data management support including: programming to bring your data to the portal, training, assistance with gathering metadata to meet international standards, or guidance in making your data accessible to the end-user community. We may also be able to provide data storage to make sure that resources are not lost when projects or funding end.

Collaboration: Provide connections and collaboration with other agencies and people where you can share your projects or needs, helping you get your information out to the right people at the right time.

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To subscribe to the Great Lakes Testbed Listserv:
http://mailman.great-lakes.net/mailman/listinfo/geo-gltestbed

Example: Simple Data Access

The GEOSS principles of discoverability, transparency and interoperability are key to the implementation of the Great Lakes Observing System (GLOS) Data Portal (http://data.glos.us/portal/). The GLOS Data Portal provides ready access to an ever-increasing collection of data from field observations such as dissolved oxygen, water temperatures and water level, as well as satellite images, weather reports and model forecasts.

The GLOS Data Portal lets users quickly locate and view observation and model data.
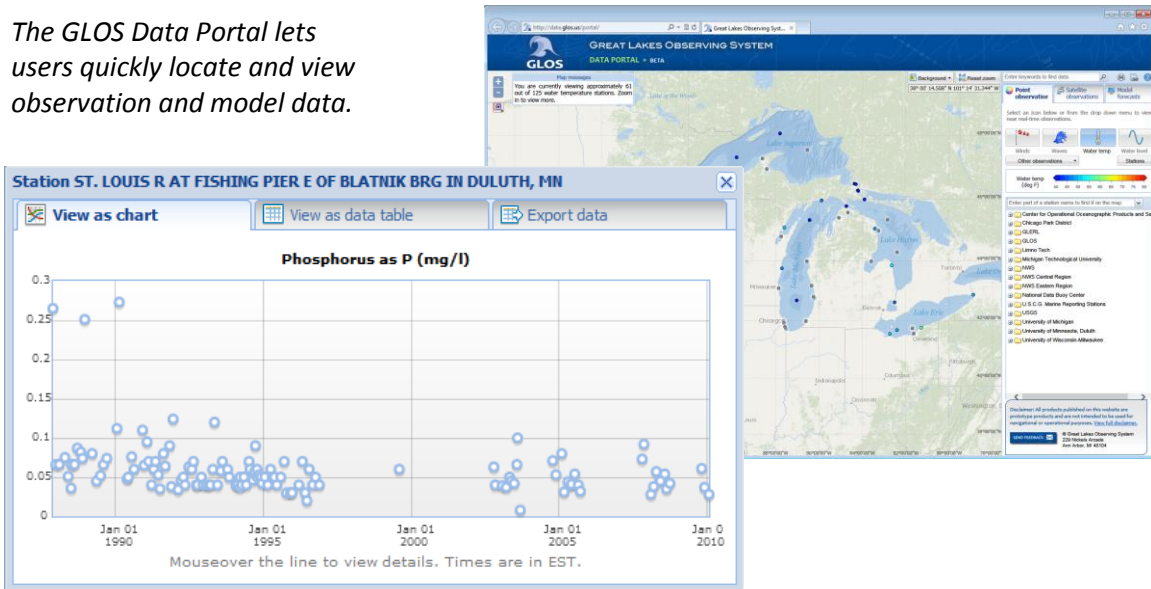
Example: Decision Support

Heidelberg College (Tiffin, Ohio) is currently exploring the use of GEOSS-compatible datasets to estimate the likelihood of severe algal blooms. Harmful algal blooms (HABs) in Lake Erie have been increasing in frequency over the past decade, with the increase linked to high nutrient loads from tributaries. Heidelberg is planning to register its tributary loading datasets with GEOSS through the Testbed, and to implement a simple charting tool for daily cumulative loadings. The chart – automatically updated weekly as new data are posted – shows how current loads compare to historical observations. Higher-than-average cumulative loads in May and June likely indicate HABs later in the year.
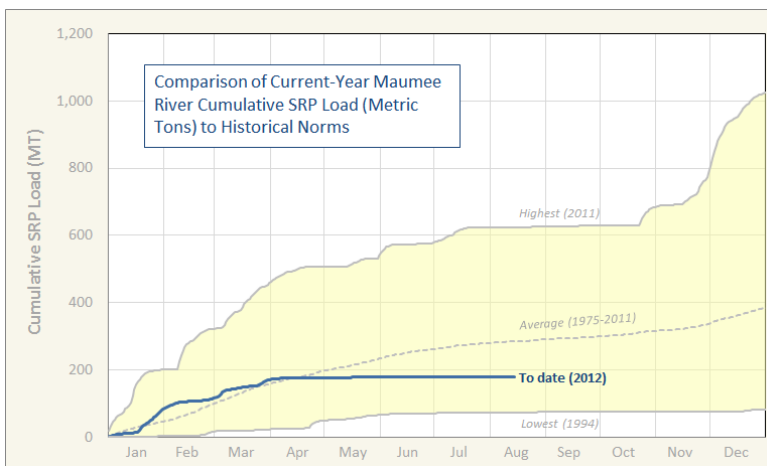
2012's below-average cumulative daily load signaled below-average late-summer HABs activity.