Approaches for Data Sharing

Lake Superior Environmental Monitoring Collaborative

November 19-20, 2014

Duluth, Minnesota

Outline

- Water Quality Portal
- EnDDaT
- SiGL Mapper
- Science Explorer

NCWI

NWQMC

NATIONAL WATER QUALITY MONITORING COUNCIL

Water Quality Portal

www.waterqualitydata.us

Search over 150 million water-quality data records from States, Tribal Partners, USEPA, and USGS

USGS science for a changing world

EPA United States Environmental Protection Agency

USGS science for a changing world

GLRI Data Delivery Overarching Goal:

To create a publicly accessible data network that:

- Seamlessly provides efficient **discovery** of and **access** to multi-disciplinary monitoring data sets to advance Great Lake science
- Enables policy makers to plan and evaluate restoration activities

Sensors are Everywhere



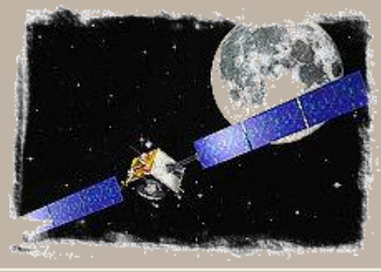













Courtesy: Dr. Mike Botts

EnDDaT

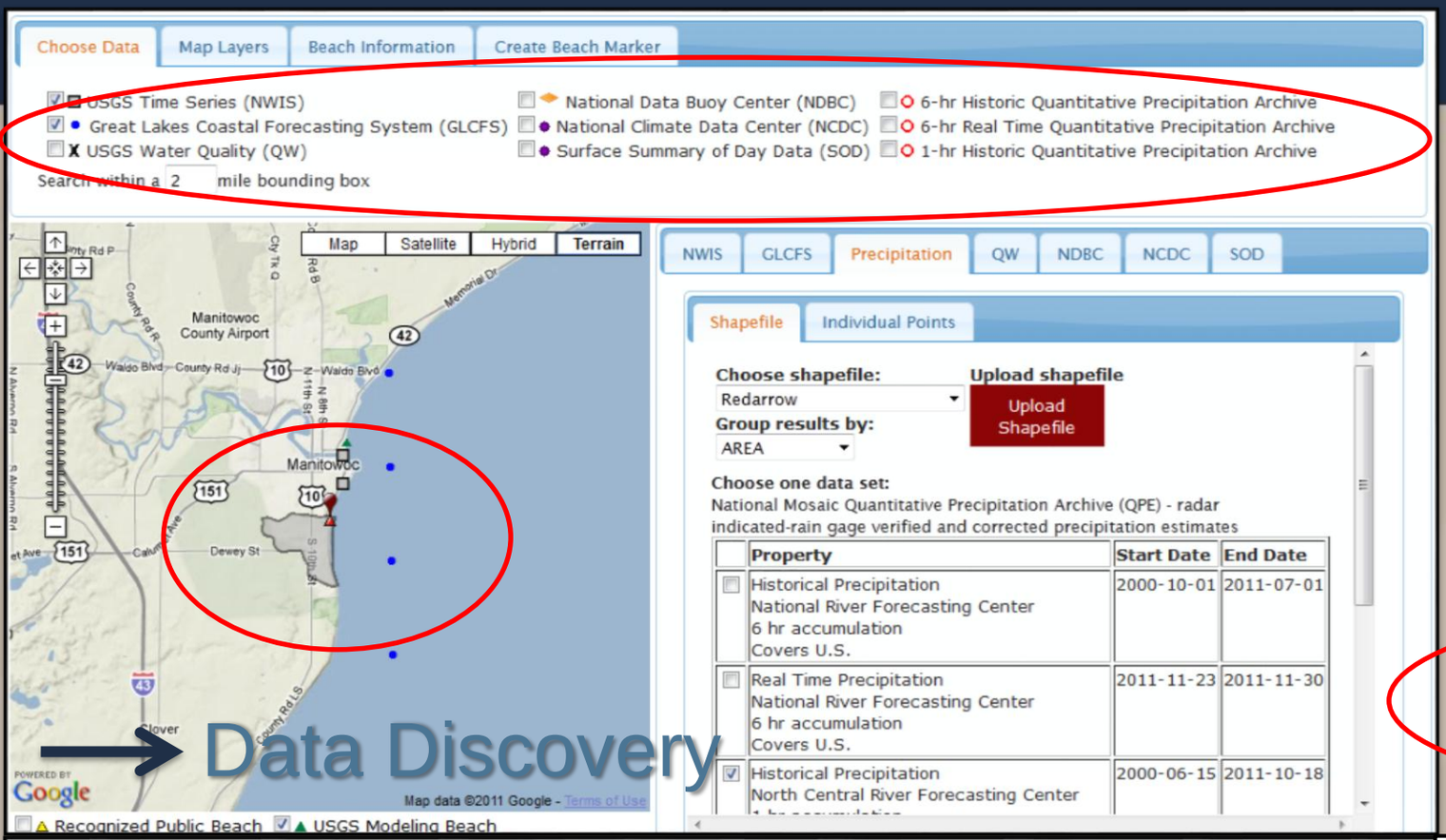
Environmental Data Discovery and Transformation

- Tool for assisting in the construction and operation of nearshore water-quality models
- Formalize common workflows for accessing and preparing environmental data
- Two primary modes:
  - Historical data for model creation (>2 years)
  - Real-time data for model operation
- Based on GLOS Enterprise Architecture

EnDDaT Data Streams

- USGS NWIS Sensor & Stream Discharge
- NWIS Water Quality Data
- STORET Water Quality Data
- NOAA Great Lakes Coastal Forecasting System (GLCFS), NOWCAST
- Radar indicated-rainfall (point or shapefile)
- National Data Buoy Center (NDBC)

Environmental Data Discovery and Transformation (EnDDaT)



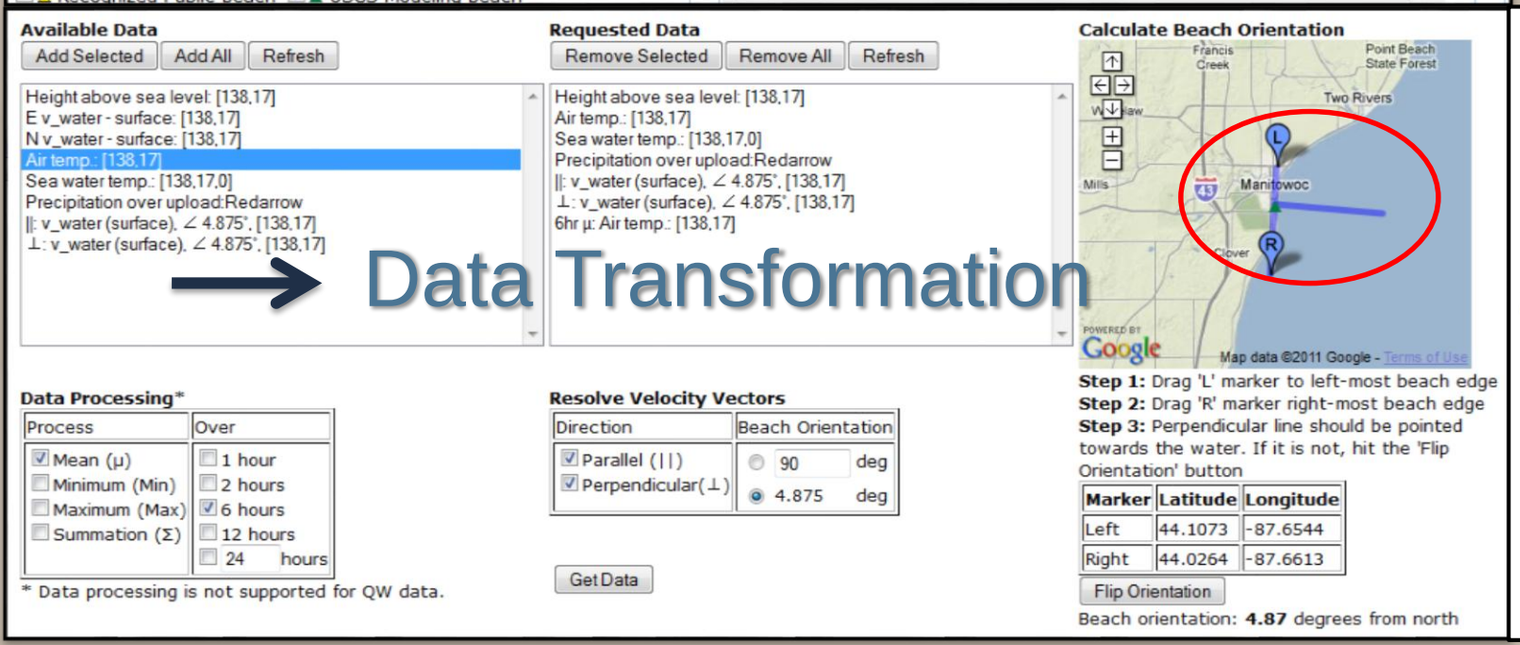
Data Discovery

Data Discovery Transformation

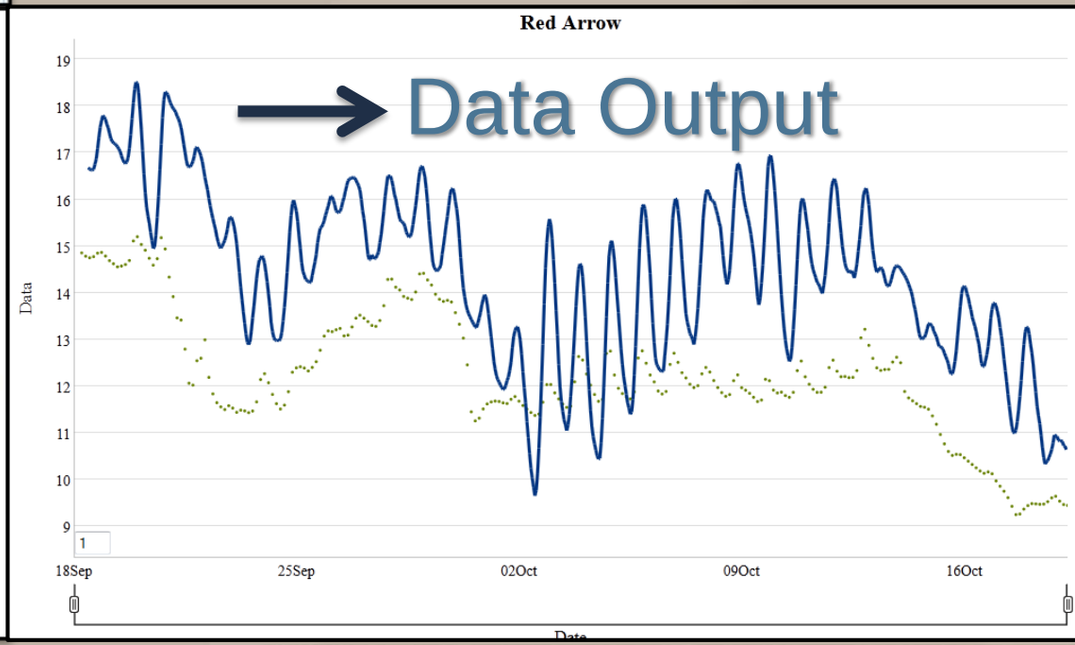
NWIS	Temporal
Water Quality	Spatial
GLCFS	Statistical
Weather	

Output Options

Tab delimited	Web report
Web Services	Interactive plot



Data Transformation

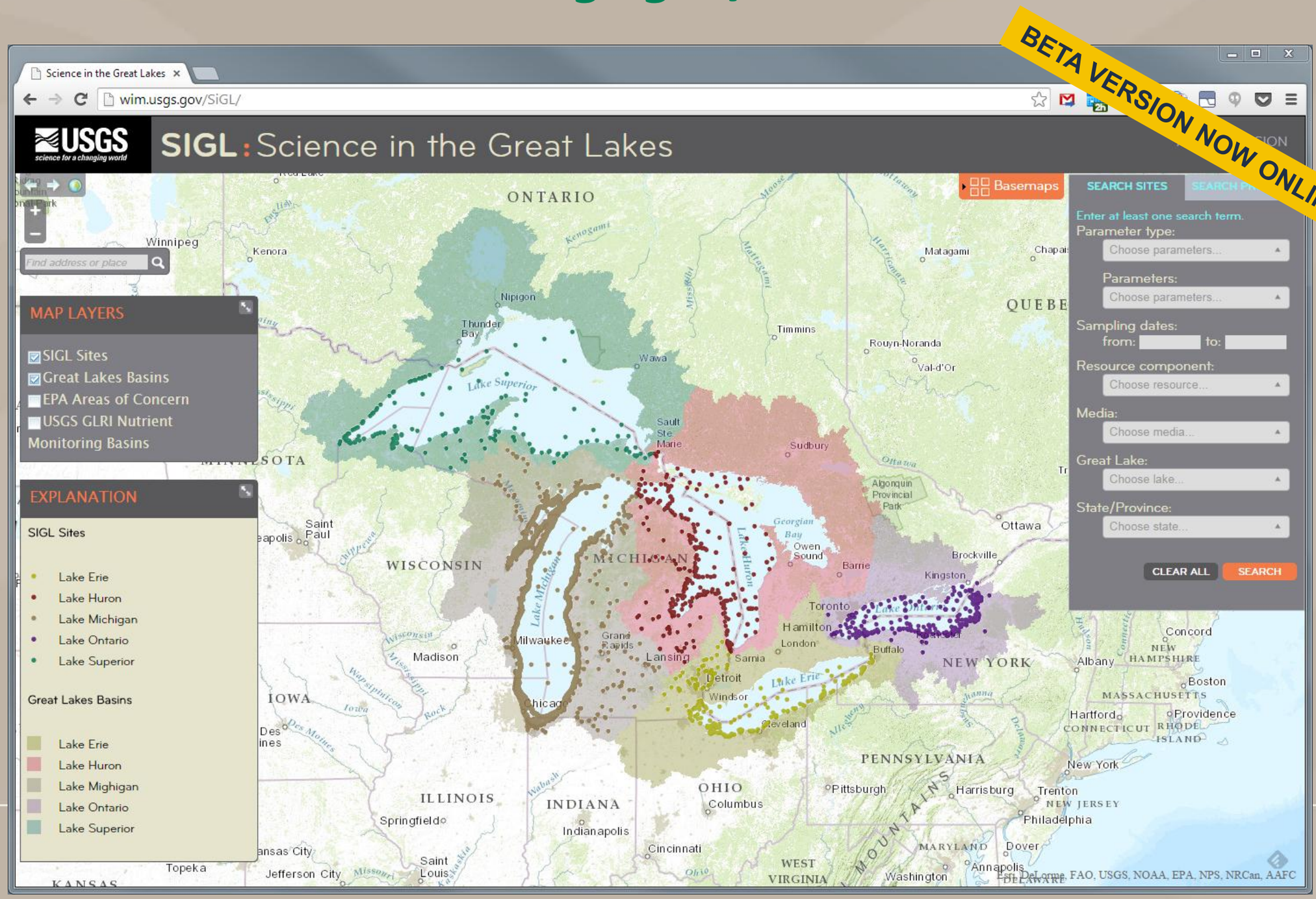


Data Output

What is the SiGL Mapper?

SiGL = Science in the Great Lakes

wim.usgs.gov/SiGL



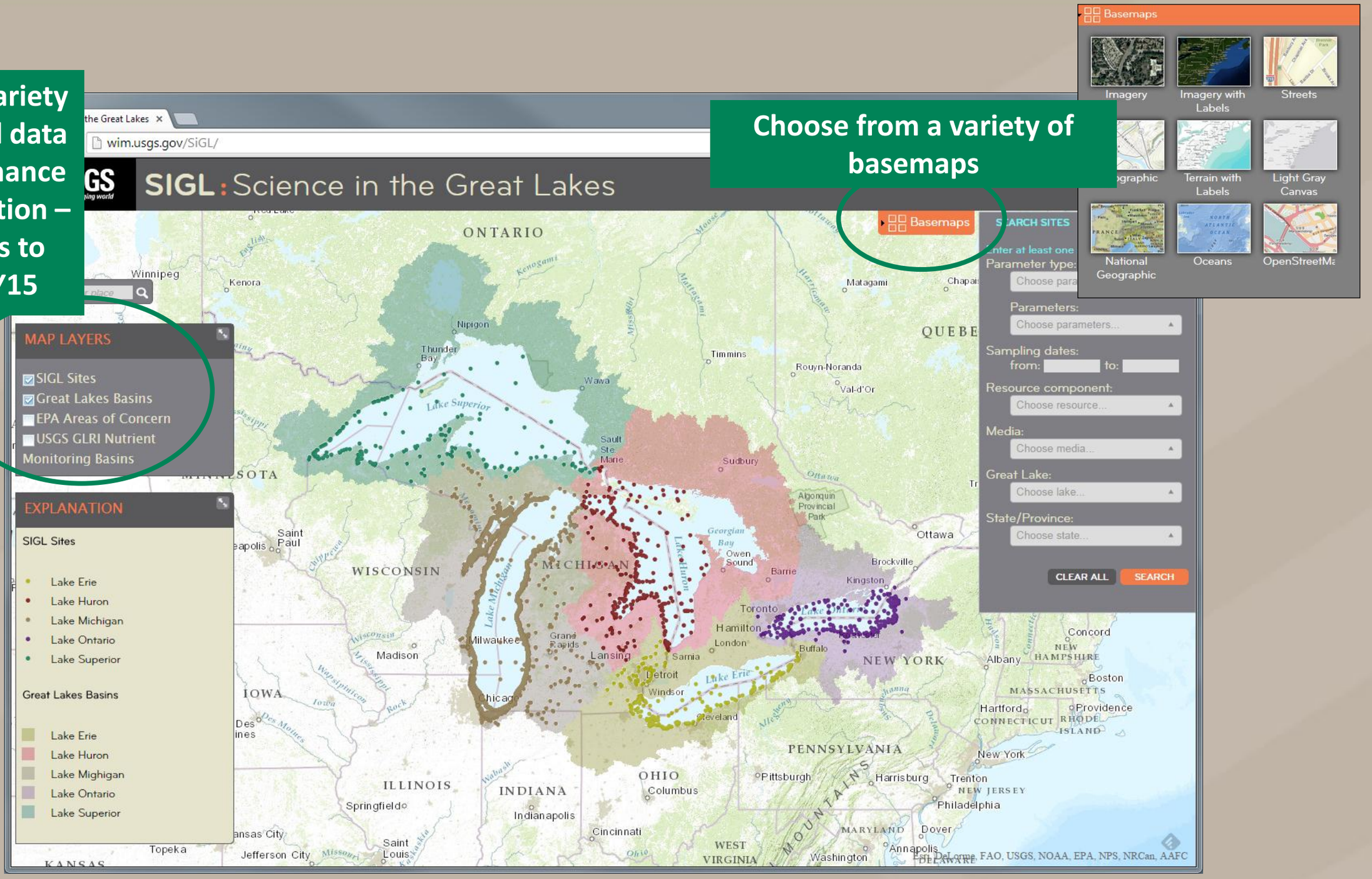
Purpose of the SiGL Mapper

- **Supports strategic Great Lakes data collection and analysis**
  - Identifies areas and topics that need more study
  - Allows future projects to build on existing data
- **Captures and displays spatial data component**
  - Those without GIS capabilities can share data
- **Built for both large and small datasets**
  - Captures smaller datasets that aren't created using current data standards or may not have access to online data hosting
- **Provides metadata and contact info, links to data repositories**

The SiGL interface

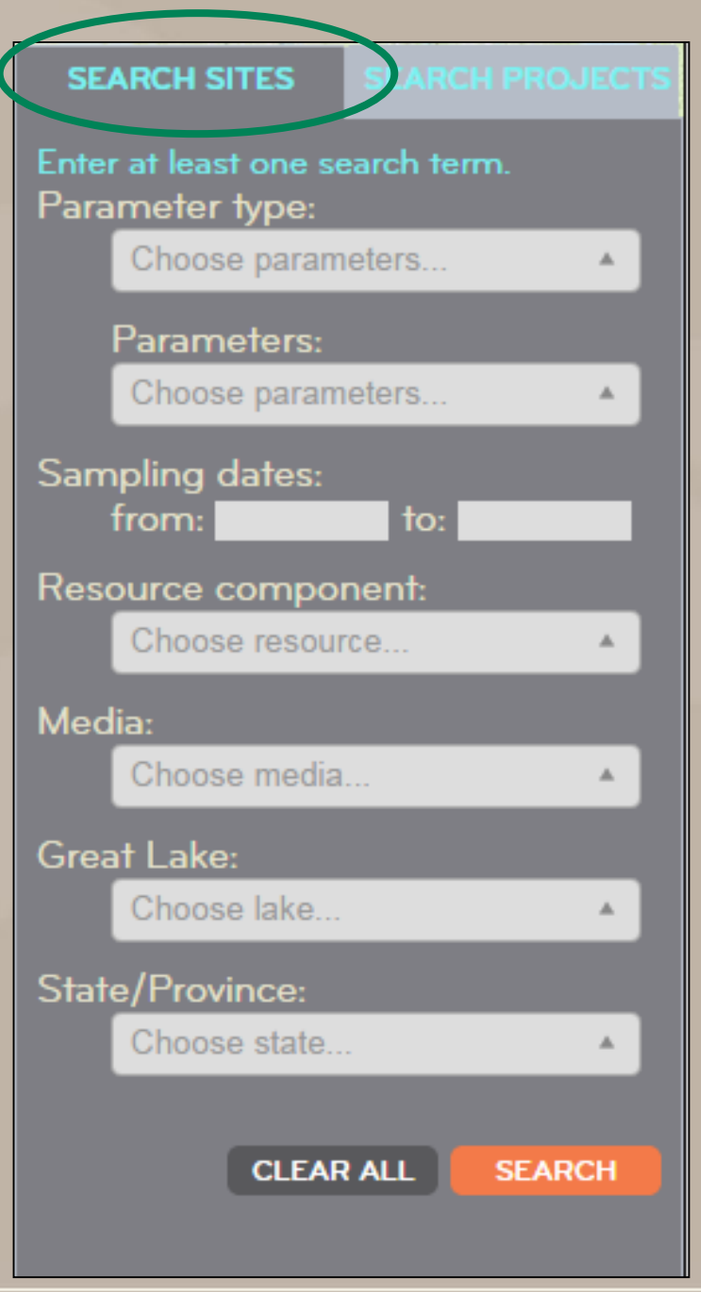
Contains a variety of additional data layers to enhance data exploration – more layers to come in FY15

Choose from a variety of basemaps

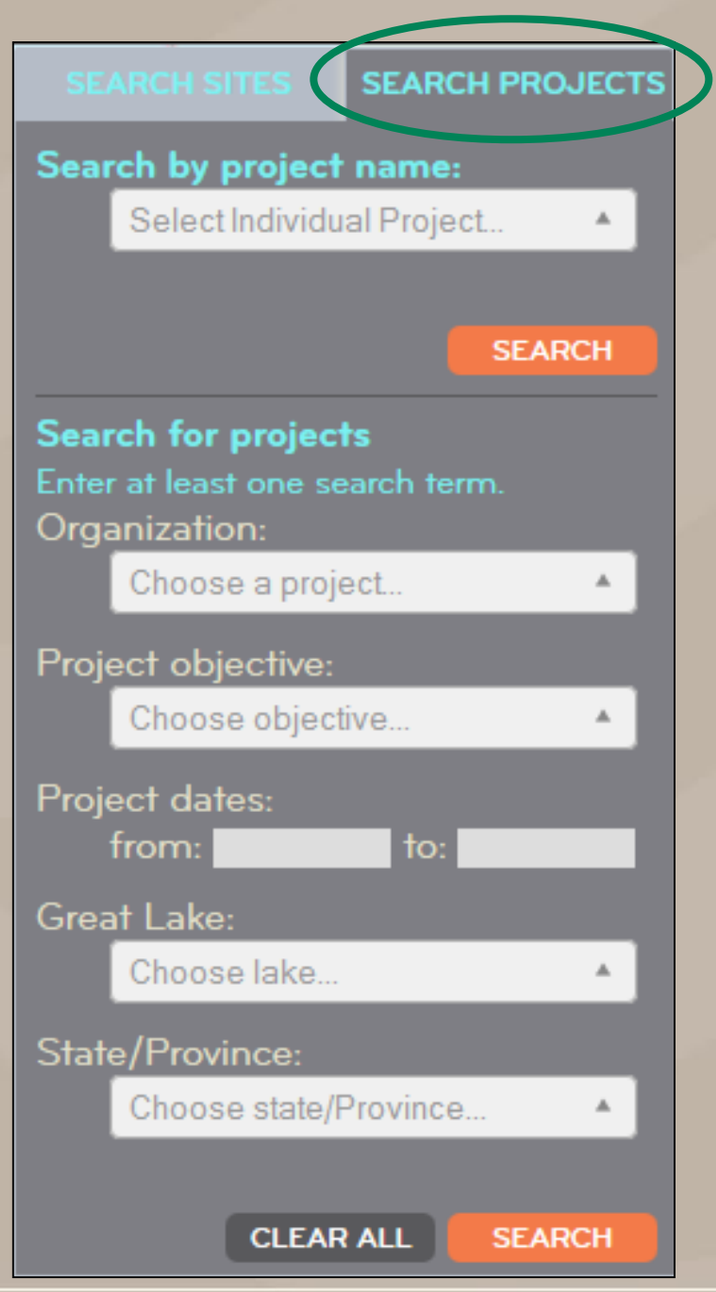


Searchable data

Search SITES



Search PROJECTS



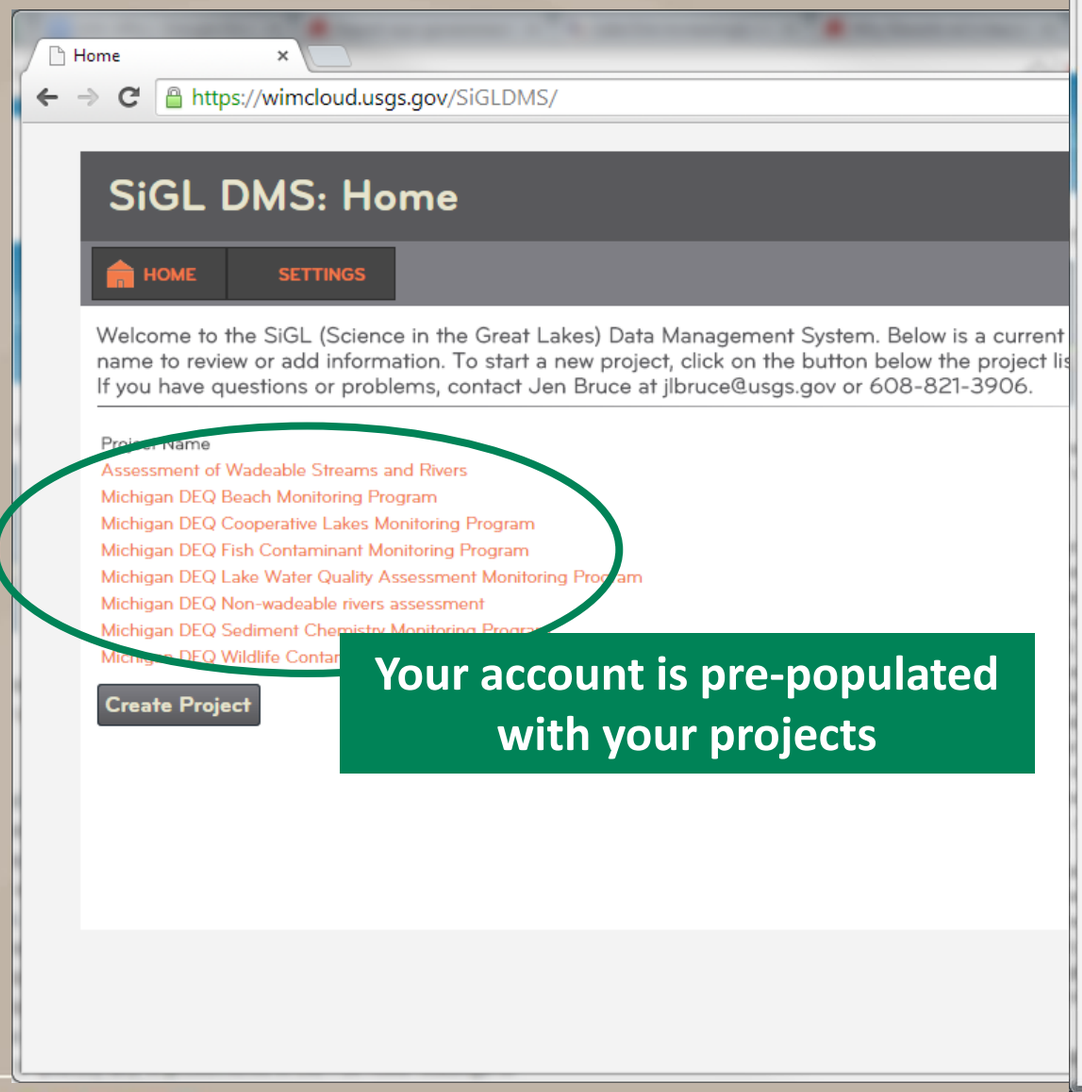
USGS science for a changing world

How to submit data to SiGL

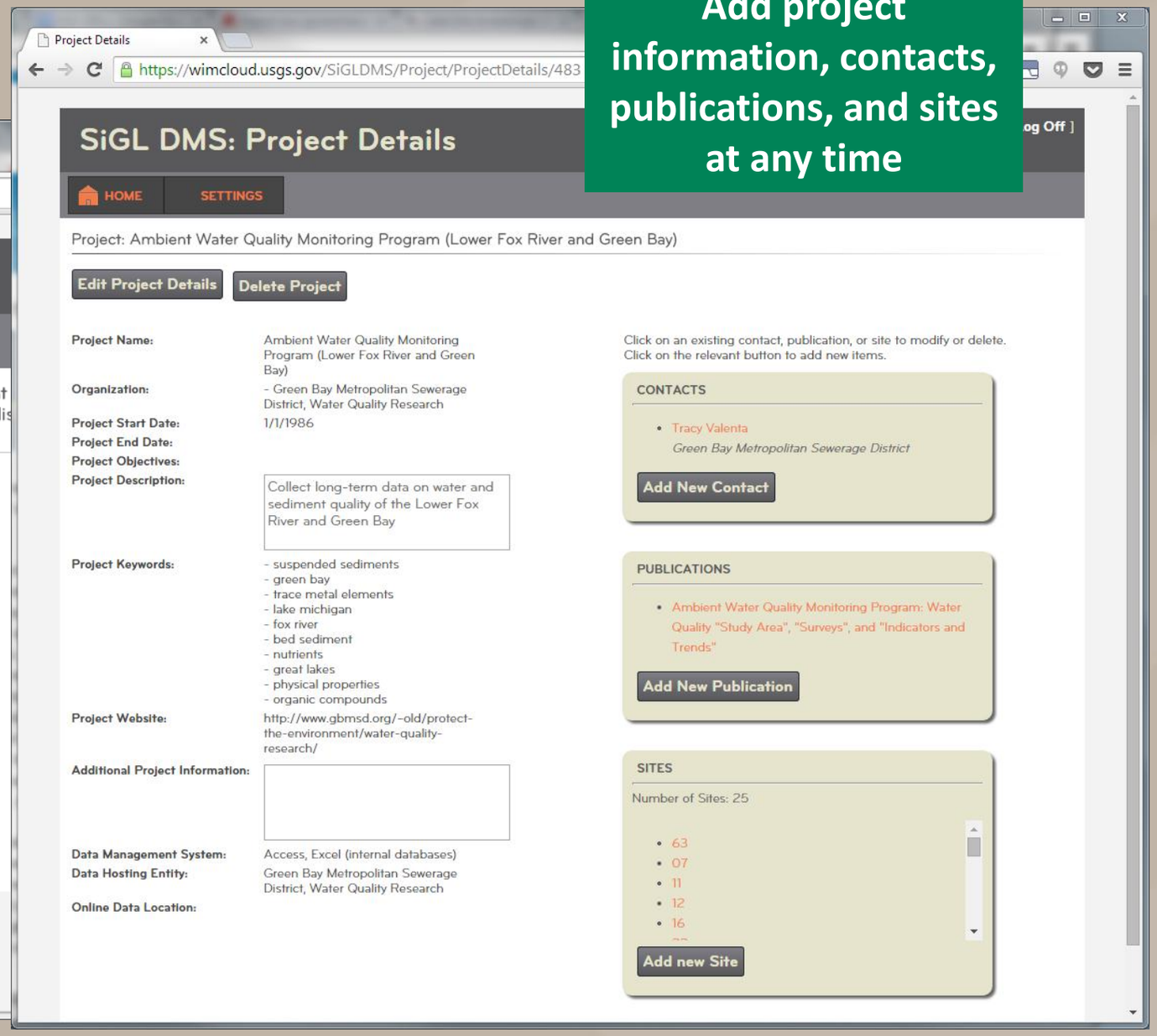
OPTION 1 – submit excel spreadsheet

OPTION 2 – SiGL Data Management System (DMS)

- New online tool
- Edit, update, and submit projects



Your account is pre-populated with your projects



Add project information, contacts, publications, and sites at any time

USGS science for a changing world

GLRI Science Explorer

- Tool to allow researchers, managers and the public to explore and find information about USGS GLRI science projects
- Presents project metadata, publications and datasets
- Project information is stored and managed in ScienceBase (USGS Product)

GLRI Science Explorer

USGS
science for a changing world

USGS Home
Contact USGS
Search USGS

Great Lakes RESTORATION Initiative Science Explorer

Discover USGS Science in the Great Lakes

Drag Map | Draw Bounds

Text Search Phragmites

Water Feature Any

Focus Area Invasive Species

Template Any

Resource Type

- Any
- Data 6
- Publication 0
- Project 2

Clear Form | Search

Powered by ScienceBase

2 results, showing 1 - 2

Sort by: Title

< Previous 1 Next >

Show 5 10 15 results per page

Forecasting Potential Phragmites Coastal Invasion Corridors

Kurt P Kowalski (Principal Investigator), Russell M Strach (Associate Project Chief), USGS Great Lakes Science Center (Cooperator/Partner), and others.

U.S. Geological Survey (USGS) will use remote sensing data to establish a baseline understanding of current distributions of invasive wetland plants and then forecast potential invasion corridors. Alterations to the Great Lakes shoreline or water-level patterns associated with global climate change could have significant impacts on the extent and composition of coastal habitat. Low lake levels can expose fertile wetland bottomlands to invasive species such as common reed (Phragmites).

Project Home Page
Publications and Datasets

8 Child record(s) (projects and datasets) Close child list

Assessment of suitable habitat for Phragmites australis (common reed) in the Great Lakes coastal zone

Carlson Mazur, Martha L. (Author), Kowalski, Kurt P. (Author), Galbraith, David (Author), and others.

In the Laurentian Great Lakes, the invasive form of Phragmites australis (common reed) poses a threat to highly productive coastal wetlands and shorelines by forming impenetrable stands that outcompete native plants. Large, dominant stands can derail efforts to restore wetland ecosystems degraded by other stressors. To be proactive, landscape-level management of Phragmites requires information on the current spatial distribution of the species and a characterization of areas suitable for future colonization. Using a recent basin-scale map of this invasive plant?s distribution in the U.S. coastal zone of the Great Lakes, environmental data (e.g., soils, nutrients, disturbance, climate, topography), and climate predictions, we performed [...]

index page

Coastal Corridors Vulnerable Under Reduced Lake Level Scenarios

USGS
science for a changing world

Contacts

John Walker, USGS Wisconsin Water Science Center
Center Director
jfwalker@usgs.gov
608-821-3810

Jen Bruce, USGS Wisconsin Water Science Center
SiGL mapper project lead
wim.usgs.gov/sigl
jlbruce@usgs.gov
608-821-3906

Jessica Lucido, USGS Center for Integrated Data Analytics
EnDDaT, Science Explorer project lead
cida.usgs.gov/enddat
cida.usgs.gov/glri/glri-catalog
jlucido@usgs.gov
608-821-3841

USGS
science for a changing world