



great lakes
observing system

Great Lakes information
in your hands.

GLOS provides end-to-end data services that support science, policy, management, and industry in the U.S. and Canada.



2022 Annual Impact Report

glos.org

Seagull multiplies the value of lake data

Every year, people are getting smarter about interacting with their environment, and that includes using technology to learn about the Great Lakes. They wonder if their drinking water is safe, if their livelihood is now altered due to warming lakes, or simply if lake conditions are favorable for a safe day on the boat.

- This April, we launched Seagull, a new platform for Great Lakes data, built to support the New Blue Economy.
- It handles data from a growing network of 40 organizations that run nearly 200 buoys, sensors, and other real-time monitoring platforms.

This award-winning web app puts the region's observing network into the hands of anybody, for free, in real-time, so they can visualize the data and make better decisions.

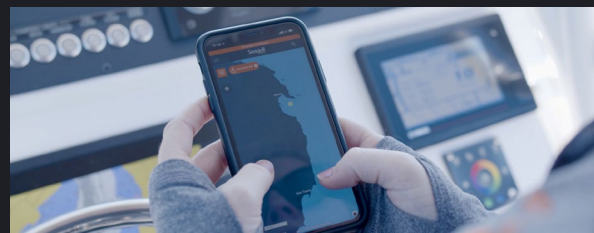


Photo by DIG

Conceived as infrastructure for the public good, Seagull is a cloud-based Internet of Things platform that can scale as the region's observing capacity grows and information needs change.

- Seagull can connect with other data systems so others can build new apps using shared data.
- This shared data is massively valuable. A 2021 study found that the information GLOS serves is worth about \$18 million per year. GLOS currently operates on roughly a \$3 million budget annually. Read the report at glos.org/2022valuation
- With the launch of our new Seagull platform, we hope to expand the online observing network to provide even more value to more people across the region.

Try it at seagull.glos.org

\$3M

vs.

\$18M

Approximate Yearly Budget

Yearly Value Created

Mini-grants invested in 24 smart, sustainable projects

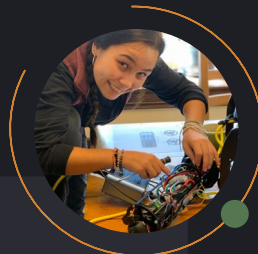
When we called for Smart Great Lakes mini-grant proposals in 2021, we were overwhelmed with the response.

We were able to support 24 of the more than 90 proposals. The diverse projects involved deploying new buoys, equipping old platforms to share data publicly, connecting platforms from the watershed, and supporting an Indigenous community-led monitoring effort.

Together, these projects are just a sampling of the innovative ways Great Lakes people can address Great Lakes challenges, given the proper funding.

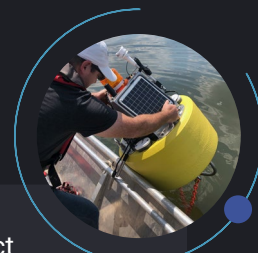
- GLOS invested \$1.1 million across 24 projects.
- Many projects were composed of partners from multiple sectors.
- The 43 grantee organizations represented individuals, organizations, and institutions from the U.S., Canada and Indigenous communities.
- Many of the projects have plans to continue after the mini-grant funding ends.
- More than 50 monitoring platforms began sharing data publicly through these grants.

Learn more at smartgreatlakes.org



Bima'azh Mini Grant Project

The Bima'azh project supported members of the Saugeen Ojibway Nation and researchers as they monitored the behavior of at-risk lake whitefish in Lake Huron. Photo by Mary-Claire Buell



Panther Buoy Mini Grant Project

Panther Buoys are low-cost, open-source monitoring platforms developed at the University of Wisconsin-Milwaukee. Photo by Todd Miller

Lakebed 2030 gets practical about mapping the remaining 85% of the lakebed

Since 2019, Lakebed 2030 has grown from a back-of-napkin concept to a full-fledged initiative with the enthusiastic support of NOAA and the Canadian Hydrographic Service (CHS).

- In 2020, GLOS published "Costs and Approaches for Mapping the Great Lakes," which found that a complete, high-density map of the lakebed is doable with today's technology and would cost \$200 million.
- As part of NOAA's Ocean Decade plan, NOAA and CHS are writing a Lakebed 2030 strategic plan, with GLOS' help.
- NOAA Office of Coast Survey is focusing on mapping the Great Lakes, including by bringing the NOAA Ship Thomas Jefferson back to the waters this past summer to map for the first time in decades.
- NOAA Office of Coastal Management awarded GLOS Regional Ocean Partnership funding in 2023 for Lakebed 2030 planning, data management, and survey missions.

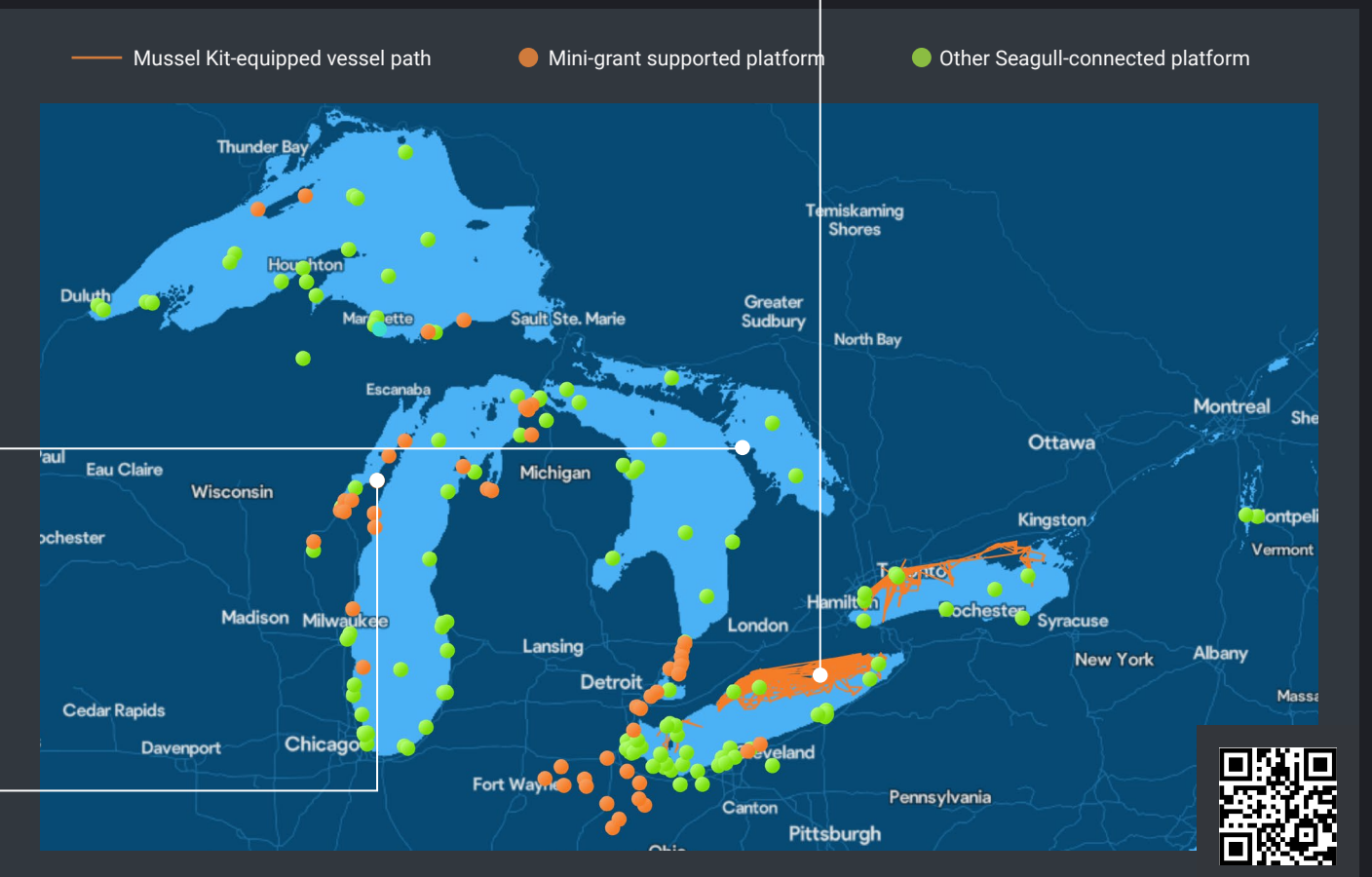
Learn more at lakebed2030.org



In 2022, the NOAA Ship Thomas Jefferson returned to map in the Great Lakes for the first time in decades. Photo by NOAA

Mussel Kits Mini Grant Project

Mussel Kits turn fish finders on ordinary vessels into basic lakebed scanners that automatically send depth data to a public database. So far, they have collected data over 13,500 miles.



2022-2023 Financials

Program Revenue:

\$4,290,100



Expense Breakdown:

- Observing Activities.....36%
- Manage and Build GLOS.....33%
- Data Management.....19%
- Outreach and Communications.....12%

Our Board Members

- Jennifer Boehme, Chair
- Thomas Rayburn, Vice Chair
- Lynne Chaimowitz, Treasurer
- Leon Carl
- Aaron Fisk
- Stephanie Gandulla
- Pete Giencke
- Bob Lambe
- Rhonda Wille

Our Partners

A sincere thanks to all those across the region who've collaborated with us over the past few years. We look forward to what's next!

- Aqua Ohio
- Avon Lake Regional Water
- Bowling Green State University
- Canadian Integrated Ocean Observing System
- Carroll Township
- Chicago Park District
- Chippewas of Nawash Unceded First Nation
- City of Cleveland
- City of Defiance
- City of Elyria
- City of Huron
- City of Lorain
- City of Oregon
- City of Toledo
- City of Vermillion
- Clarkson University
- Cleveland Water Alliance
- Collective Environmental Consulting
- Conservation Ontario
- Cooperative Institute for Great Lakes Research
- Council of the Great Lakes Region
- Current
- DataStream
- DIG
- Environment and Climate Change Canada
- Fisheries and Oceans Canada
- Flood Dog Company
- Florida Atlantic University
- Fondriest Environmental, Inc.
- Grand Valley State University
- Great Lakes Commission
- Great Lakes Fishery Commission
- Heidelberg University
- Illinois-Indiana SeaGrant
- International Joint Commission
- Lake County Department of Utilities
- Limnotech
- Little Traverse Bay Bands of Odawa Indians
- McMaster University
- Michigan Technological University
- Mohawk Council of Akwesasne
- MWRD Commissioner Kimberly Neely Du Buclet
- National Oceanic and Atmospheric Administration (NOAA)
- NEW Water
- NexSens
- NOAA Great Lakes Environmental Research Laboratory

- Northeast Midwest Institute
- Northern Michigan University
- Northwestern Michigan College
- Northwestern University
- Ontario Ministry of Natural Resources and Forestry
- Ontario Ministry of the Environment, Conservation and Parks
- Orange Force Marine
- Ottawa County
- Purdue University
- Queens University
- Real-Time Aquatic Observing Network
- Regional Science Consortium
- RPS
- Salmon Unlimited Wisconsin
- Saugeen Ojibway Nation
- Sofar Ocean
- Southern University of New York ESF
- SpinDance
- St. Lawrence River Institute of Environmental Sciences
- Superior Watershed Partnership and Land Conservancy
- The Ohio State University
- Trent University
- U.S. Army Corps of Engineers
- U.S. FWS Lower Great Lakes Fish and Wildlife Conservation Office
- U.S. Geological Survey
- University of Illinois
- University of Michigan
- University of Minnesota-Duluth
- University of Toledo
- University of Toronto-Scarborough
- University of Vermont
- University of Wisconsin-Milwaukee
- University of Wisconsin-Green Bay
- University Prep High School
- Upstate Freshwater Institute
- USGS Lake Ontario Biological Station
- Village of Marblehead
- Village of Put-in-Bay
- Water Rangers
- Wayne State University

Our Staff Members

- Becky Pearson
Chief Operations Officer and
Interim Chief Executive Officer
- Ana Sirviente
Chief Technology Officer
- Tim Kearns
Chief Information Officer
- David Fitch
Communications Specialist
- Josephine Cacciatore
Financial Manager
- Joe Smith
Cyberinfrastructure Engineer
- Katie Rousseau
Smart Great Lakes Liaison
- Linden Brinks
Geospatial Analyst
- Shelby Brunner
Observing Tech. Manager
- Sneha Bhadbhade
Senior Advisor



Try Seagull!



@RealGLOS

glos.org

GLOS is one of the 11 regional associations that make up the Integrated Ocean Observing System (IOOS). ioos.noaa.gov

Cover photo by Jessica Grow, University of Wisconsin-Milwaukee