

## **Lakebed 2030: Crowd Sourced Bathymetry in the Great Lakes**

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The Great Lakes region is home to 60 million people and accounts for more than 50% of trade across the US/Canada border. Marine commerce, government agencies, utilities, the science community, port infrastructure, commercial fisheries and recreational boaters all utilize and leverage what the lakes have to offer. Yet, all stakeholders currently operate without a comprehensive understanding of the underwater topography. Without this critical bathymetric information, resource management, benthic habitats, and recreational activities cannot be fully realized, nor can the full impact of environmental change be monitored.

Crowd-Sourced Bathymetry provides an avenue towards filling in these gaps and a means to cost effectively force multiply survey efforts. The Great Lakes Observing System (GLOS) and Orange Force Marine Ltd. (OFM) have developed a near real-time system and data pipeline to ingest single beam echosounder data from multiple vessels to increase the amount of available depth measurements and assist in creating a detailed bathymetric surface of the Great Lakes in support of the Lakebed 2030 initiative.

Currently installed on a series of vessels from academia, government and industry, data is being transmitted ashore directly to cloud-based servers with processing capabilities to facilitate near real time updates. An automated pipeline managing accumulation, processing, and distribution of the data via GLOS' Seagull platform is utilized to create a continuous, high resolution bathymetric surface of the Great Lakes.