

Lakebed 2030

Modern Mapping of the Great Lakes

The Great Lakes have never been mapped in detail. Maps you see of Great Lakes bathymetry (shape and depth of the lake floor) are created using data that is sometimes decades old. Often, this outdated data is also **low-density**, meaning it contains very few measurements taken over large areas. **High-density data is critical** for effective management, research, and innovation, particularly under mounting **climate change threats** and as the **blue economy** grows.

<15%

of the Great Lakes have been mapped at high-density

40M

people get their drinking water from the Great Lakes

21%

of the Earth's surface fresh water is held in the Great Lakes

17,017

kilometers of shoreline, more than the distance from Detroit to Melbourne

Depth

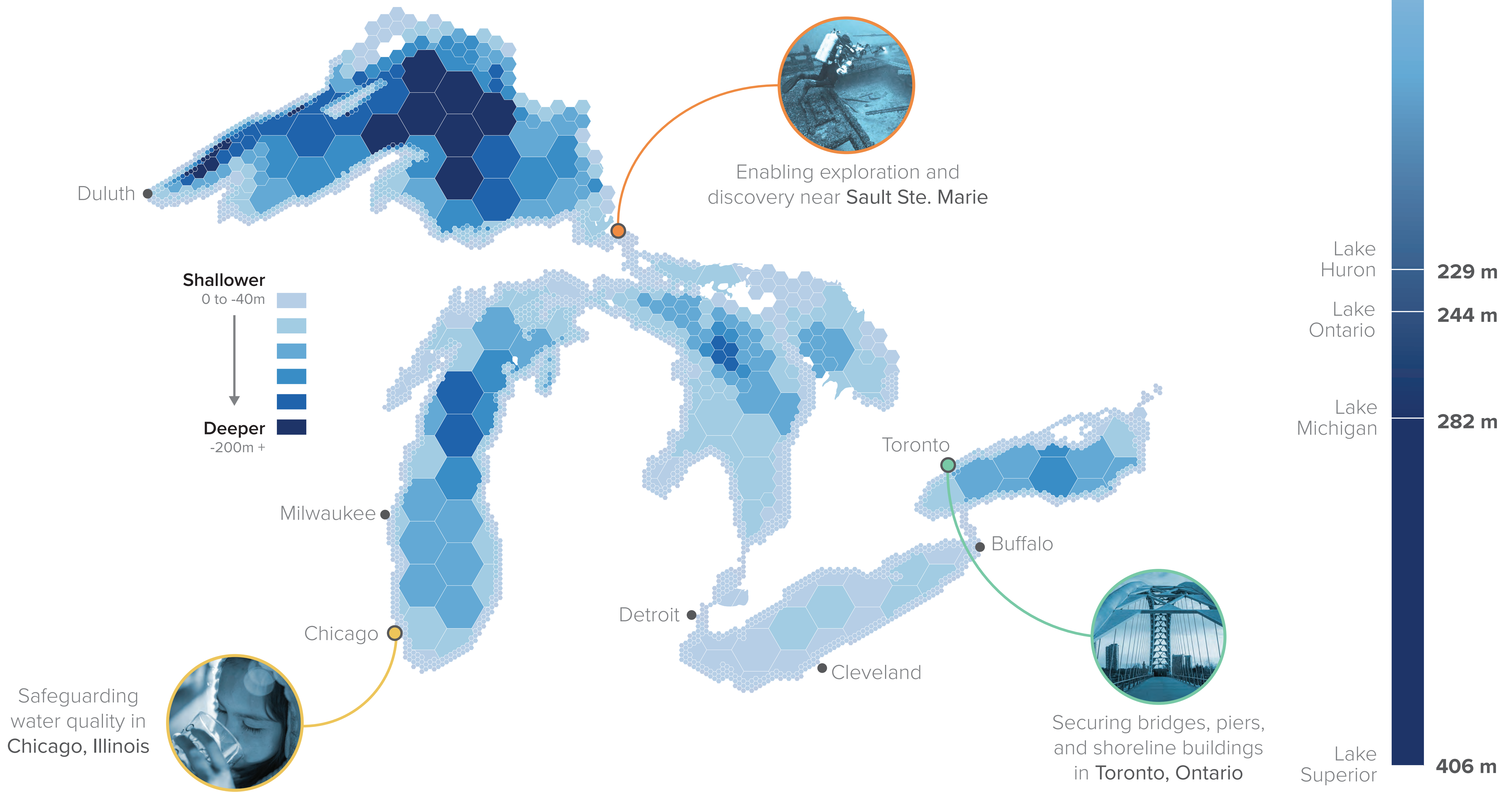
Lake Erie 64 m

Lake Huron 229 m

Lake Ontario 244 m

Lake Michigan 282 m

Lake Superior 406 m



Shallower
0 to -40m

Deeper
-200m+

The Map Today

Legend	Resolution	Level of Detail	Extent	Collection Method
	Low-density Generalized depths and shape of submerged ridges, basins, and other large features.	100's of meters 		Legacy sonar, Leadline
	Medium-density Large underwater features such as sinkholes, glacial moraines, and ancient river channels.	10's of meters 		Single-ping sonar, Satellite
	High-density Small objects like shipwrecks, anchors, boulders, pipelines, and cables.	<10 meters 		Modern methods (Sonar and Laser)

Benefits of a Better Map

Aquatic Health

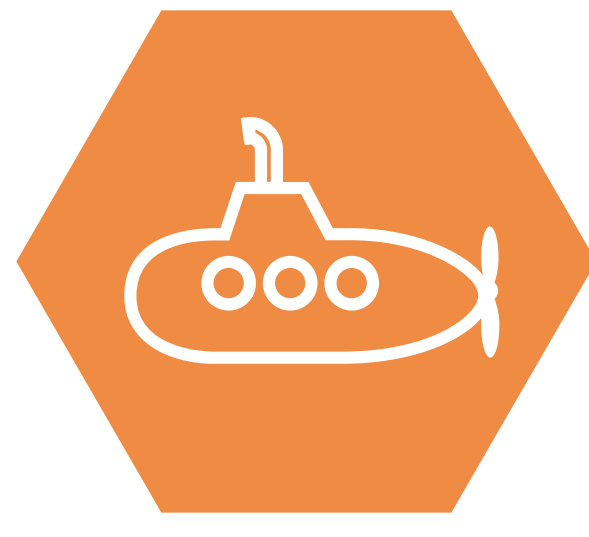


Identify habitats to **protect fisheries**.

Monitor chemical changes and lakefloor dynamics to keep **drinking water** safe.

Mitigate **invasive species** populations.

Exploration



Locate submerged **cultural sites**.

Analyze mysterious lakefloor **sinkholes** that have distinct biochemical properties and support unique communities of microorganisms.

Discover and preserve thousands of lost or unidentified **shipwrecks**.

Security



Track erosion and other climate change trends to keep **homes, buildings, and infrastructure** safe.

Inform **coastal development and ecosystem planning** with accurate lakefloor and water column information.

Visualize the changing lakefloor to improve **national security**.

\$200M

Cost to map all five lakes

\$7B

Annual value of all Great Lakes fisheries

\$500M

Estimated regional cost of coastal erosion and flood damage to cities in 2019

\$6T

Annual GDP of the Great Lakes region

A Great Map by 2030

Build and test new **supporting technologies**.

Map all five Great Lakes, ping by ping.

Educate to inspire **innovation and community action**.