

# 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 Often, this outdated data is also **low-density**, meaning it contains very few measurements taken over large areas.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**

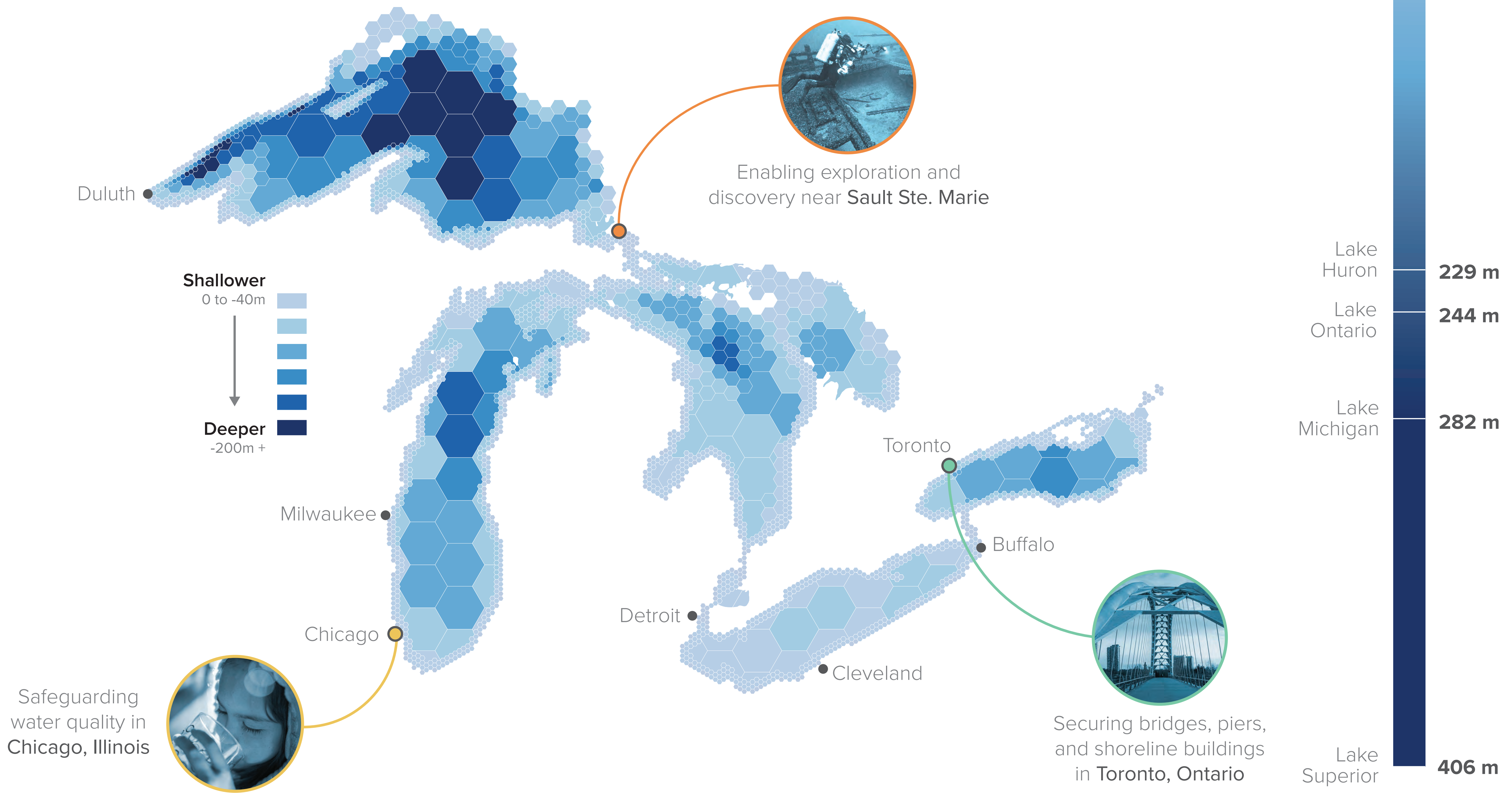
people get their drinking water from the Great Lakes

**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



### The Map Today

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

### Benefits of a Better Map

#### Aquatic Health

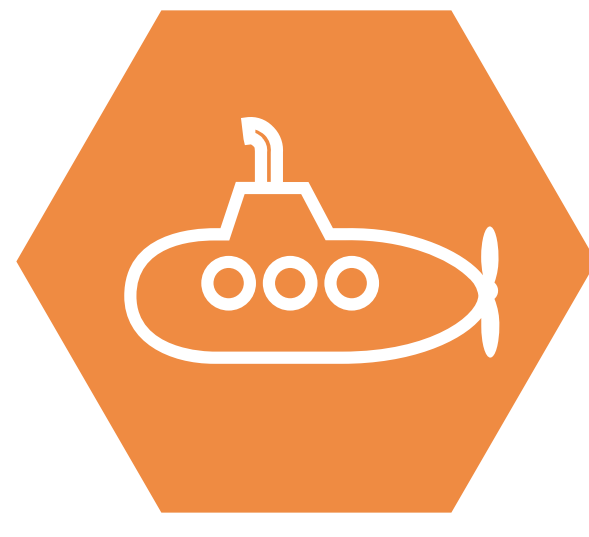


Identify habitats to **protect fisheries**.

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.**