



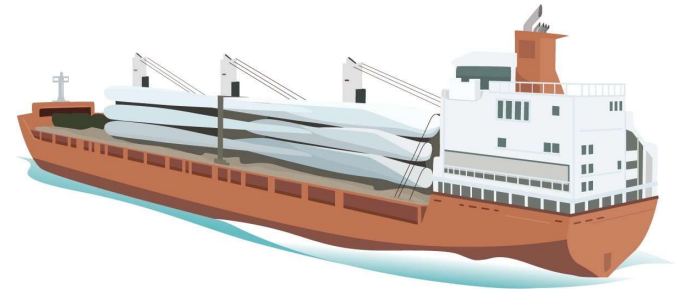
# LAKE HURON

Lakewide  
Management

Lakewide Action and  
Management Plan  
(LAMP)

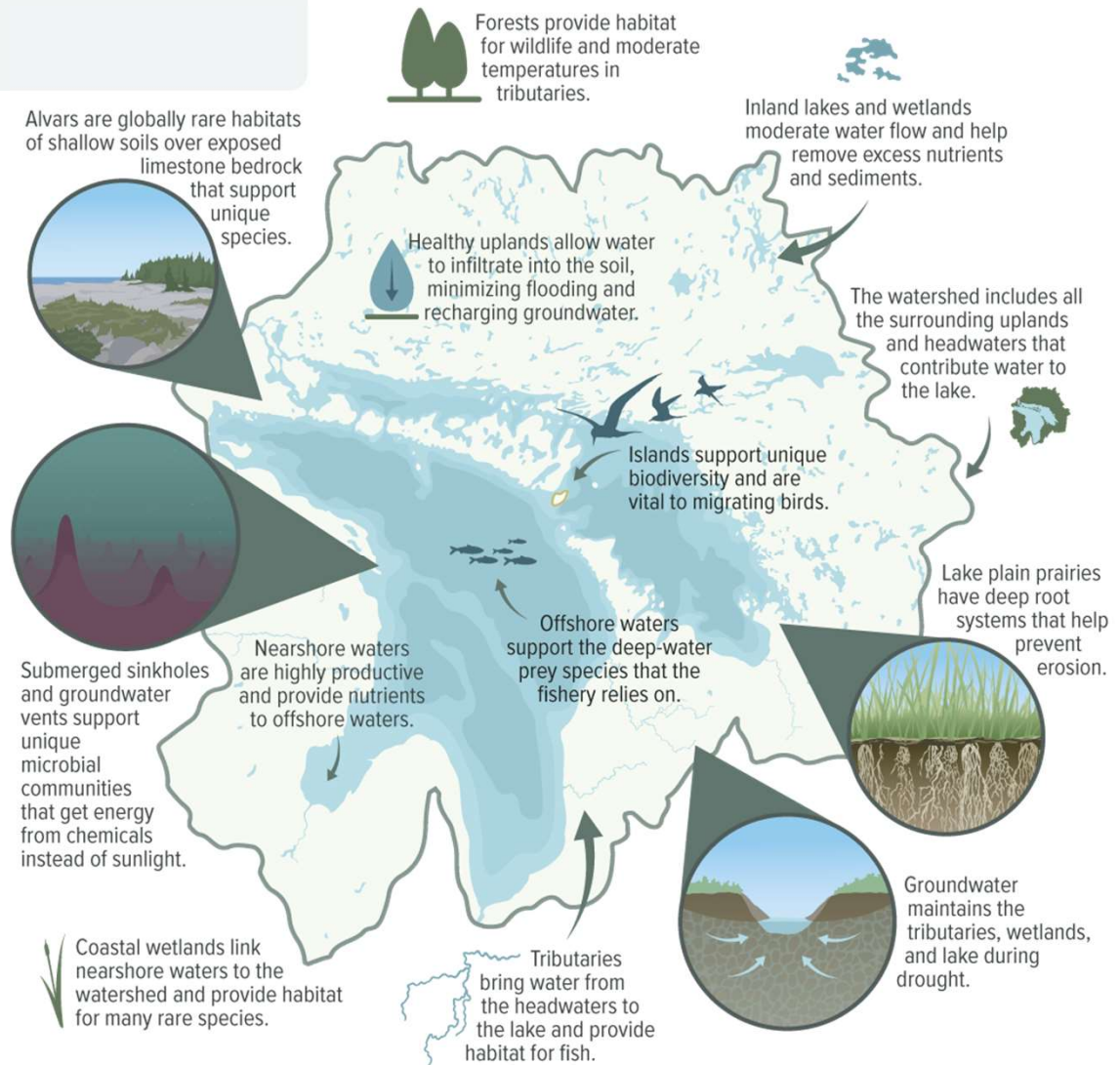
## Why is lake health important?

- Three million people currently live in the Lake Huron watershed, relying on its resources and services to sustain their way of life.



# The lake ecosystem

- The water quality of the lake depends on the health of the entire watershed.
- Protecting an interconnected landscape requires an understanding of all its different habitats, how they are linked, and the various ecosystem services they provide.



## What is a LAMP?

Lakewide Action and Management Plans (LAMPs) are ecosystem-based strategies designed to help governments and their partners fulfil the commitments they made to protect and restore water quality.

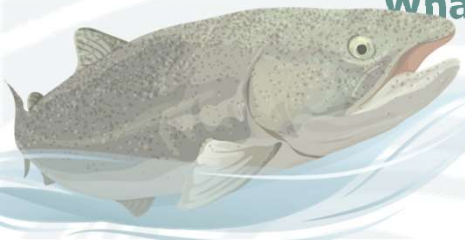
**LAMP documents help keep lake waters safe and healthy by outlining:**

**What is it like now?** — the current condition of lake health

**How is it changing?** — threats to lake health

**What information is still needed?** — priorities for research and monitoring

**What do we need to do?** — actions that governments and the public can take






## What are the threats to lake health?



Chemical  
contaminant  
pollution



Nutrient and  
bacterial  
pollution



Threats to habitat  
and species



Invasive  
species



Additional  
threats

## How is lake health measured?

### Nine Objectives and Indicators of Ecosystem Health

● GOOD    ● FAIR    ● POOR    ● UNDETERMINED



BE FREE FROM AQUATIC AND TERRESTRIAL INVASIVE SPECIES



BE FREE FROM POLLUTANTS THAT COULD HARM PEOPLE, WILDLIFE, OR ORGANISMS



ALLOW FOR UNRESTRICTED HUMAN CONSUMPTION OF THE FISH AND WILDLIFE



SUPPORT HEALTHY AND PRODUCTIVE HABITATS TO SUSTAIN OUR NATIVE SPECIES



BE FREE FROM OTHER SUBSTANCES, MATERIALS, OR CONDITIONS THAT MAY NEGATIVELY AFFECT THE GREAT LAKES



BE FREE FROM THE HARMFUL IMPACTS OF CONTAMINATED GROUNDWATER



BE A SOURCE OF SAFE, HIGH QUALITY DRINKING WATER



ALLOW FOR UNRESTRICTED SWIMMING AND OTHER RECREATIONAL USE



BE FREE FROM NUTRIENTS THAT PROMOTE UNSIGHTLY OR TOXIC BLOOMS

- Each objective (indicator) aligns with one of the five threat categories.
- Each threat category has sub-indicators that are used to help determine the current status of the objectives.

# Identify and eliminate chemical contaminant pollution

## Current Status

- Good
- Poor
- Fair
- Undetermined

## Trend

- ▲ Improving
- ▼ Deteriorating
- Unchanging
- Undetermined

- ■ Treated Drinking Water
- ▲ Contaminants in Edible Fish
- ■ Toxic Chemicals in Sediment
- ■ Toxic Chemicals in Water
- ■ Toxic Chemicals in Whole Fish
- ▲ Toxic Chemicals in Herring Gull Eggs
- ▲ Toxic Chemicals in the Atmosphere
- ■ Groundwater Quality

## Objectives



ALLOW FOR  
UNRESTRICTED HUMAN  
CONSUMPTION OF  
FISH AND WILDLIFE



BE FREE FROM  
HARMFUL IMPACTS  
OF CONTAMINATED  
GROUNDWATER



BE A SOURCE OF  
SAFE, HIGH  
QUALITY  
DRINKING WATER



BE FREE FROM  
POLLUTANTS THAT COULD  
HARM PEOPLE, WILDLIFE,  
OR ORGANISMS

# Protect habitat and species



## Current Status

- Good
- Poor
- Fair
- Undetermined

## Trend

- ↑ Improving
- ↓ Deteriorating
- Unchanging
- Undetermined
- ▨ Variable
- ↑ Increasing
- ↓ Decreasing

- ↓ Phytoplankton
- ■ Zooplankton
- ■ Benthos
- ↓ Diporeia
- ↑ Lake Sturgeon
- ■ Prey Fish
- ↑ Lake Trout
- ■ Walleye

- ■ Coastal Wetland Invertebrates
- ■ Coastal Wetland Fish
- ■ Coastal Wetland Amphibians
- ■ Coastal Wetland Plants
- ■ Coastal Habitat
- ▨ Coastal Wetlands
- ▨ Open Water Ecosystem and Reefs
- ■ Coastal Wetland Birds / Colonial Nesting Waterbirds

- ↑ Aquatic Habitat Connectivity
- ■ Forest Cover
- ■ Land Cover
- ■ Hardened Shorelines
- ■ Watersheds and Tributaries
- ↑ Precipitation Amount
- ↑ Surface Water Temperature
- ↓ Ice Cover (1973–2018)
- Water Levels (1918–2017)

## Objective



SUPPORT HEALTHY AND PRODUCTIVE HABITATS TO SUSTAIN OUR NATIVE SPECIES



# Prevent and control invasive species

## Current Status

● Good  
● Fair

● Poor  
● Undetermined

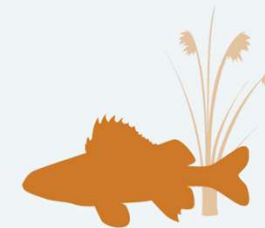
## Trend

↑ Improving  
■ Unchanging

↓ Deteriorating  
■ Undetermined

- ■ Rate of Invasion of Aquatic Non-Indigenous Species
- ■ Establishment of species from outside of the Great Lakes basin
- ■ Interbasin spread into Lake Huron basin
- ■ Impacts of Aquatic Invasive Species
- ↑ Sea Lamprey
- ↓ Dreissenid Mussels
- ■ Terrestrial Invasive Species

## Objective



BE FREE FROM AQUATIC  
AND TERRESTRIAL  
INVASIVE SPECIES

# Reduce and prevent nutrient and bacterial pollution

Current Status

- Good
- Fair
- Poor
- Undetermined

Trend

- ↑ Improving
- ↓ Deteriorating
- Undetermined
- ↑ Increasing
- ↓ Decreasing

- ■ Nutrients in Lakes
- ■ Harmful Algal Blooms
- ■ Cladophora
- ■ Water Quality in Tributaries
- ↑ Beach Advisories
- ↑ Surface Water Temperature (1980–2017)
- ↑ Precipitation Amounts (1948–2015)


## Objectives



ALLOW FOR UNRESTRICTED SWIMMING AND OTHER RECREATIONAL USE



BE FREE FROM NUTRIENTS THAT PROMOTE UNSIGHTLY OR TOXIC BLOOMS

An illustration of an underwater scene. A large, dark fish is on the right, looking towards the left. In the center, a large, crumpled white plastic bag floats. To the left, a white plastic bottle lies on the sandy bottom near some rocks and green plants. The background is a deep green color.

## Identify and address additional threats

*As new threats are identified by partnership agencies, they are added to the additional threats category. Current additional threats include risks from macro- and microplastics, risks from oil transport, and how various threats can cumulatively impact the **health of nearshore areas**.*

### Objective



BE FREE FROM OTHER  
SUBSTANCES, MATERIALS, OR  
CONDITIONS THAT MAY NEGATIVELY  
AFFECT THE GREAT LAKES

## Get involved in Lakewide Management...

- Review and provide input on the development of Lakewide Action and Management Plans.
- Stay informed, through access to LAMP annual updates at [www.binational.net](http://www.binational.net).
- Attend public meetings or summits hosted by government agencies of the Lake Huron Partnership.
- Participate in Great Lakes events, many of which are captured on [www.glc.org/greatlakescalendar/](http://www.glc.org/greatlakescalendar/).
- Contribute to projects run by local organizations to improve water quality and ecosystem health.
- Attend the triennial Canada-U.S. Great Lakes Public Forums: <https://binational.net/?s=public+forum>.



# Thank You

Visit [binational.net](http://binational.net)

Contact the Lake Huron Partnership Working Group, co-chairs

Paul A. Parete

Great Lakes Program Officer, Environment and Climate  
Change Canada [paul.parete@ec.gc.ca](mailto:paul.parete@ec.gc.ca)

Liz LaPlante

Lake Manager, U.S. Environmental Protection Agency  
[laplante.elizabeth@epa.gov](mailto:laplante.elizabeth@epa.gov)

