



# LAKE HURON LAKEWIDE ACTION AND MANAGEMENT PLAN

## 2018 Annual Report

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### What is the Lake Huron LAMP?

Under the 2012 Great Lakes Water Quality Agreement (GLWQA), the governments of Canada and the United States have committed to restore and maintain the physical, biological, and chemical integrity of the waters of the Great Lakes.

The Lake Huron Lakewide Action and Management Plan (LAMP) is a binational ecosystem-based management strategy for protecting and restoring Lake Huron water quality. The LAMP is developed and implemented by 23 government agencies around the lake, together known as the Lake Huron Partnership. The Partnership is led by the U.S. Environmental Protection Agency (U.S. EPA) and Environment and Climate Change Canada. The Partnership facilitates information sharing, sets lakewide management priorities, and assists in coordinating binational environmental protection and restoration activities.

The current 2017-2021 LAMP was released April 2018.

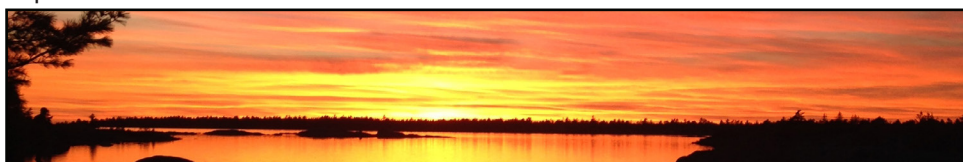
### Overview

Lake Huron provides high-quality drinking water, beautiful beaches for swimming, and a home to diverse native species and habitats. The lake supports abundant recreational and tourism opportunities, as well as industries such as agriculture, fishing, mining, and shipping.

The overall condition of Lake Huron, however, is fair. Invasive species continue to negatively impact the ecosystem, harming native species such as Lake Whitefish which are valuable to commercial and recreational fisheries. Some nearshore locations are experiencing harmful algal blooms, which are degrading some beaches and affecting recreational opportunities. A legacy of past pollutants, such as polychlorinated biphenyls, has led to the continuation of fish consumption advisories to minimize risks to human health. The table below summarizes overall lake conditions in relation to the GLWQA General Objectives as found in the [State of the Great Lakes 2017 Technical Report](#).

GLWQA GENERAL OBJECTIVES	STATUS FOR LAKE HURON
Be a source of safe, high-quality drinking water.	Good
Allow for unrestricted swimming and other recreational use.	Good
Allow for unrestricted consumption of the fish and wildlife.	Fair
Be free from pollutants that could harm people, wildlife and organisms.	Good
Support healthy and productive habitats to sustain our native species.	Fair
Be free from nutrients that promote growth of algae and cyanobacteria.	Fair
Be free from the introduction and spread of aquatic and terrestrial invasive species.	Poor
Be free from the harmful impacts of contaminated groundwater.	Good
Be free from other substances, materials or conditions that may negatively affect the chemical, physical or biological integrity of the Waters of the Great Lakes.	Fair

To help restore and protect the lake, the Lake Huron Partnership agencies are working with others to implement the 2017-2021 Lake Huron LAMP. The LAMP includes 43 actions to help address chemical contaminants, nutrient and bacterial pollution, loss of habitat and native species, the spread of non-native invasive species, and climate change impacts. 💧



Sunset on the French River Delta, Ontario. Photo: Ontario Ministry of Natural Resources and Forestry.



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## Accomplishments

### U.S. Communities Protecting Water Quality

The southwestern shores and Saginaw Bay are the priority areas for addressing nutrient and bacterial pollution on the western coast of Lake Huron. To address this problem, Monitor Township, in Bay County, Michigan, with support from the U.S. Forest Service via the U.S. Great Lakes Restoration Initiative (GLRI), is planting trees and plants to keep soil and nutrients out of the Bay. The Township is reducing runoff to the Bay from agricultural fields, roads, and developed sites by planting 1,200 acres (486 hectares) of cover crops and 2.6 miles (4.2 kilometres) of buffer strips, as well as 300 trees and shrubs at the 20 acre (8 hectare) township park. As a result, over 17,000 gallons (64,000 litres) of storm water runoff is filtered each year, and soil and nutrient runoff from lands that drain into the Bay is prevented. This project reduces both the volume of storm runoff and nutrient and sediment loads that flow from the land to the water.



Monitor Township Tree Planting. Photo: U.S. Forest Service.

### Making a Difference One Project at a Time: The Lake Huron-Georgian Bay Canadian Community Action Initiative

Community-based groups and local environmental organizations are the foundation of successful restoration and protection efforts throughout the Lake Huron watershed. These groups help identify local issues and are effective champions in achieving environmental sustainability in their own backyards and communities.

Begun in 2007, the Lake Huron-Georgian Bay Watershed Canadian Community Action Initiative represents a collaborative effort to address complex environmental issues that impact Lake Huron. This effort connects federal and provincial resource management agencies, municipal governments, Indigenous people, watershed management agencies, non-government organizations, and the public to raise awareness of lakewide

stressors and inspire community-based environmental action.

There are many community-based environmental initiatives underway in the areas of education and outreach, stewardship, and monitoring and research. Examples include the Central Algoma Freshwater Coalition, which is addressing local algal blooms through watershed planning, promotion of best management practices, and issuing a "Guide to Sustainable Living in Algoma"; and the Bruce Peninsula Biosphere Association, which is initiating the Six Streams watershed project to help prevent thousands of cattle from entering local streams. To date, more than 12 kilometres (7.5 miles) of fences have been installed along with 66 cattle watering systems. The Ausable Bayfield Conservation Authority has initiated a Healthy Headwaters Wetlands Initiative which assists landowners in restoring or creating wetland habitat. In 2017, three wetland restoration projects were completed which will help manage nutrients and ultimately improve the quality of water that reaches Lake Huron. For more information on these and many other projects please go to: <https://www.lakehuroncommunityaction.ca/success-stories/>.



Six Streams watershed project. Photo: Bruce Peninsula Biosphere Reserve.

### St. Marys River Little Rapids Restoration Project Completed

The Little Rapids Restoration Project modified the Sugar Island causeway by replacing two culverts 6 feet (1.8 metres) in length with a 600 foot (183 metre) bridge. The increased water flow under the new bridge has restored rapids/riffle area downstream, creating important fish habitat.

The project flushes out stagnant water and creates habitat for fish spawning and invertebrates. Minnows and salmon were observed in the Little Rapids within days of flow restoration. The new bridge offers a safe pedestrian walkway and fishing access. Native vegetation was planted the following spring to further naturalize the area.





Funding by the U.S. GLRI made this project possible. This project completes required restoration actions on the U.S. side of the St. Marys River and is a positive step toward eventually removing the river from the list of Great Lakes Areas of Concern.



Little Rapids Restoration, Michigan. Photo: Bay Mills Indian Community.

## Addressing Challenges

### Responding to Decline In Lake Whitefish Population

Strong and consistent populations of Lake Whitefish in Lake Huron from the late 1970s to the early 2000s drove near-historic levels of commercial yields by tribal and state-licensed fisheries. However, Lake Whitefish populations and growth rates have declined sharply during the past decade, resulting in a steep decline in commercial harvests in many areas of Lake Huron. The declines in Lake Whitefish coincided with the arrival and proliferation of Dreissenid mussels, as well as the collapse of the energy-rich food supply for Lake Whitefish, the amphipod *Diporeia*. The collapse of *Diporeia* remains a priority concern for the food web and ecosystem function in Lake Huron. A 20+ year sampling program conducted by National Oceanic and Atmospheric Administration and U.S. EPA shows current *Diporeia* abundances at a fraction of historic levels and completely absent in most areas in Lake Huron. The Chippewa Ottawa Resource Authority began their efforts to better understand the causes for the declines in Lake Whitefish populations and growth rates in early 2017. The near-term objective was to build a collaboration of researchers and agency managers that would help direct management activities and research funding toward identifying the forces impeding Lake Whitefish populations. The Great Lakes Fishery Trust, a major research funding entity, established a research focus on Lake Whitefish in 2017, with emphasis on population and growth rate bottlenecks. Similarly, the Great Lakes Fishery Commission indicated its support for targeted Lake Whitefish

research. These 2 entities co-sponsored a workshop in early 2018 to develop research priorities, which in turn, will be used



Lake Whitefish. Photo: Michigan Sea Grant.

### Restoring Saginaw Bay Reef Habitat

The loss of inner Saginaw Bay's rock reefs, due to eroding soil from past logging and agriculture practices, was a contributing factor to the 1940s collapse of Saginaw Bay's Walleye fishery, and also negatively impacted local populations of Lake Whitefish, Lake Trout, Burbot, and other species. Federal, state, and local partners have started a project to construct and restore rock reef habitat at 2 locations within the inner Bay: the Coreyon and Saginaw River Mouth Reefs. This project will mimic the formation of natural reefs by placing approximately 5,000 cubic yards (3,823 cubic metres) of rock material at each restoration site.

When complete, this project will restore a 1 acre (0.4 hectare) rock reef at both the Coreyon and Saginaw River Mouth sites (restoring 2 acres (0.8 hectares) in total). These restored reefs will create important spawning habitat for many native fish species. During spawning, the gaps formed between the rocks will create a sheltered environment where fish eggs can incubate and be protected from predators. As the eggs hatch, the warm and highly productive waters of the inner bay will provide excellent nursery habitat and provide larval and young fish with abundant food sources, fast growth, and increased survival potential for later stages of life. This project will not only help to create and diversify spawning habitat, but will also help to facilitate a more resilient and diverse fish population.

Funding for this project was provided through the U.S. GLRI and the Saginaw Bay Watershed Initiative Network. Construction of the Coreyon and Saginaw River Mouth Reefs is anticipated to be completed by the fall of 2019.



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### Restoring Fish Habitat and Water Quality on Manitoulin Island

The Manitoulin Streams Improvement Association is working to restore habitat and water quality in popular spawning areas for fish. In 2017, the Association brought together Ontario Stewardship Rangers, First Nation students, and local volunteers to help safeguard M'Chigeeng Creek, Mindemoya River, and Smith Bay Creek ecosystems from erosion and sedimentation, and to increase available aquatic and terrestrial habitat. The projects included the establishment of 843 square metres (9,074 square feet) of in-stream fish and aquatic habitat, planting of 1,174 native trees and shrubs improving 1,255 square metres (or 0.3 acres) of riparian habitat, shoreline cleanups (3.1 hectares or 7.7 acres), and removal of log jams impeding fish migration to help improve the continuity of the streams. The work is made possible through funding from federal, provincial and municipal governments, corporate and local sponsors, and by the work of many dedicated volunteers.



Restoration in M'Chigeeng Creek, Manitoulin Island. Photo: Manitoulin Streams Improvement Association.

### How YOU can help improve Lake Huron

Everyone can take an active role in helping to improve the health of Lake Huron. Ideas include:

- Become involved with a shoreline clean-up event
- Do not use or always properly dispose of single use plastic products
- Plant native trees and shrubs on your property
- Stay on constructed beach and dune paths and avoid trampling the sparse and fragile vegetation in these areas
- Pick up pet waste
- Avoid use of lawn fertilizers and pesticides
- Use pharmaceutical take-back programs to properly dispose of unused or expired medication
- Conduct regular maintenance and inspection of septic systems
- Install rain barrels to collect rainwater that can later be used to water outdoor plants and gardens
- Learn to recognize invasive species and report sightings to authorities

### Outreach and Engagement

You can keep up to date on GLWQA engagement opportunities in the [Engagement](#) section of Binational.net. Information on many of our partner organizations' upcoming outreach and engagement opportunities can also be found at the Great Lakes Commission's [Great Lakes Calendar](#). ♦

## Contact Information

For more Information, please visit [Binational.net](#) or contact:

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