

LAKE HURON



2019
Annual
Report

LAKEWIDE ACTION AND MANAGEMENT PLAN

Flowerpot Island, Georgian Bay, Source: Great Lakes Commission

In this issue

Overview.....	1
Accomplishments	2
Addressing Challenges	4
Outreach and Engagement	4
Contact Information	4

What is the Lake Huron LAMP?

Under the Great Lakes Water Quality Agreement (GLWQA), the governments of Canada and the United States 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 an ecosystem-based strategy for protecting and restoring the water quality of Lake Huron and the St. Marys River. The LAMP is developed and implemented by over 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 (ECCC) to facilitate information sharing, set priorities, and assist in coordinating binational environmental protection and restoration activities. This 2019 Annual Report provides an update on the state of Lake Huron as well as recent activities, and explains how challenges to the ecosystem will be addressed.

OVERVIEW

Lake Huron continues to be in fair ecologic condition with high-quality drinking water, beautiful sand beaches, and healthy coastal wetlands, especially in Georgian Bay. However, the ecosystem continues to face challenges such as invasive species, degradation of natural habitat, chemical concentrations in some fish, and nutrient imbalances. Sea Lamprey continue to prey on larger predator fish and require ongoing control activities. Environmental protection programs are minimizing impacts to Lake Huron from many different stressors, but continued work is needed to improve conditions.

This table summarizes overall Lake Huron conditions in relation to the Great Lakes Water Quality Agreement General Objectives, based on information from the State of the Great Lakes 2019 Highlights Report and other sources.

GLWQA GENERAL OBJECTIVES	STATUS FOR LAKE HURON
Drinking water	Good
Swimming	Good
Fish and wildlife consumption	Fair
Chemical pollutants	Good
Habitats and native species	Fair
Nutrients and algae	Fair
Invasive species	Poor
Groundwater impacts	Good
Other	Fair

ACCOMPLISHMENTS

REDUCING NUTRIENT AND BACTERIAL POLLUTION

Nutrient Control Project

The Nottawasaga Valley Conservation Authority (NVCA) completed 46 nutrient and bacteria control projects with farmers and rural residents, resulting in the prevention of about 160 kg/year of total phosphorous discharge from entering waterways. Projects included installation of 3.4 km (2 miles) of livestock exclusion fencing, construction of manure storages and clean water diversions, and establishment of stream-side vegetated buffers. In addition, NVCA constructed two rock riffle spawning habitats in Coates Creek near New Lowell, Ontario, to provide a demonstration site for stream habitat restoration. NVCA completed 137 site visits with private landowners to discuss proposed water quality improvement projects and grant opportunities. NVCA also engaged 3,757 volunteers in hands-on environmental restoration work.

Beeton Creek Trout Stream Restoration Initiative

This project was coordinated by the NVCA in partnership with Nottawasaga Futures and the South Simcoe Streams Network. The primary goal of the project was to re-establish a fish migratory route through a failed ice-control structure located on Beeton Creek north of Tottenham, Ontario. A secondary goal was to eliminate the stagnant head pond which had formed upstream from the failed structure, in order to improve water clarity and decrease summer stream temperatures. A third goal was to re-establish free-flowing gravel-bottom cold water habitat further upstream from Coventry Park where a series of woody debris jams had created stagnant impoundments.

The ice-control structure was retrofitted in October 2018 through the removal of three blocked culverts and installation of a new culvert, which restored a migratory route extending 4.7 km (3 miles) upstream. Volunteers from the Nottawasaga Steelheaders Club and the local community removed five large woody debris jams in Coventry Park and re-established 1 km (0.6 miles) of free-flowing trout stream habitat.

In addition to the goals outlined above, the project was intended to restore spawning populations of Rainbow Trout, as well as set the stage for the potential re-introduction of native Brook Trout. After completion, Rainbow Trout returned to Beeton Creek. Fish community sampling completed in August 2019 documented eight wild juvenile Rainbow Trout that had hatched in Beeton Creek in Spring 2019.

Denver Township Restoration Project – Davis Property

In July 2018, the Saginaw-Chippewa Indian Tribe initiated an important floodplain enhancement and streambank restoration project on their Davis Property. The goals of this project were to reduce flooding and erosion, improve natural habitat, reduce sedimentation from runoff, and create a healthy, sustainable landscape. Conifer trees were planted and secured in eroded parts of the bank for stabilization. Native wetland plant species were planted to help filter pollutants from runoff and absorb water. Overall, this beautiful, restored wetland provides an excellent example of green infrastructure to “slow the flow” of runoff, help retain stormwater, and encourage soil infiltration to reduce flooding.



Davis Property before restoration, April 2017. Source: K. Henige



Davis Property directly after fresh plantings (but before growth), October 2018. Source: K. Henige

PROTECTING HABITAT AND SPECIES

North Point Peninsula Property

The Nature Conservancy (TNC), with the support and collaboration of the Friends of the Thunder Bay National Marine Sanctuary, Huron Pines, and the Michigan Department of Natural Resources, recently acquired a significant parcel of property along the shores of Lake Huron in Thunder Bay, Michigan. The largely undeveloped 1,400-acre (566 hectares) property includes over 4 miles (6 km) of Lake Huron shoreline. The property is important for fish and wildlife and provides a critical stopover site for migratory birds. With over 6 acres (2.4 hectares) of high-quality Great Lakes coastal wetlands, the property supports a valuable wetland type that many Great Lakes fish species use for at least a portion of their lives.

Just offshore from the property is a significant reef spawning complex that is used by Lake Whitefish, Lake Trout, Cisco, and a variety of other native species. With over 200 acres (81 hectares) of coastal fen and 700 acres (283 hectares) of rich conifer swamp, the North Point Peninsula property not only provides important habitat to a variety of plants and animals, but also helps protect the health of the adjacent shoal and reef spawning habitats. This collaborative effort ensures that this beautiful stretch of Lake Huron shoreline is permanently protected and will continue to provide high-quality habitat for many of Lake Huron's fish and wildlife species.



North Point Peninsula Property. Source: D. Ludwig

Michigan Wild Rice Initiative: A Strategy for Co-Management

Manoomin (wild rice) is important to Tribes ecologically, spiritually, culturally, and economically. Wild rice provides nesting habitat and food for small mammals, waterfowl, and other birds; improves water quality; and has been a staple food for Great Lakes native peoples since time immemorial. Harvesting, preparing, and consuming Manoomin, therefore, is of great historic, economic, cultural, and spiritual importance.

Recognizing historical and cultural practices of Tribes, a large group of State, Tribal, and individual partners came together (see picture below) to develop a plan to protect, honor, and sustain the health of Manoomin beds for the next generations. The Michigan Wild Rice Initiative (MWRI) stems from a collective understanding among State and Tribal governments that the protection and restoration of wild rice in Michigan should be elevated in importance. The MWRI was designed as a long-term, ongoing collaboration that builds on previous planning and priority-setting efforts. The State of Michigan classified Manoomin as a culturally-significant species in the Michigan Water Strategy. The MWRI is intended to be a working model for co-management of other culturally significant resources moving forward.



Michigan Wild Rice Initiative partners assembling, Source MWRI

Lake Huron Protection and Conservation

Keeping the Lake Huron ecosystem “wild” has been an ongoing focus of several land trust and land conservancy efforts. Cockburn Island ranks as one of the top 10 islands in the Great Lakes for conservation importance. The island provides key aquatic habitat for migrant birds and facilitates movement of large animals across a chain of North Channel islands. The Nature Conservancy of Canada (NCC), in part with funding support from ECCC through the Natural Heritage Conservation Program and the Canada Nature Fund, has led an international effort to conserve habitat on the island since 2012 and has protected about 10,117 hectares (25,000 acres)—over 60 percent of the island—along with 48 km (29 miles) of undeveloped shoreline. There is an ongoing effort to secure an additional 567 hectares (1,400 acres), providing a critical north-south link between existing NCC lands.

Buhl Dam Area Restoration Project Highlight

The Buhl Dam Area Restoration Project brought together Lake Huron partners to enhance fish migration, restore watershed function, and maintain public access to recreational opportunities. Through the collaboration of Huron Pines, Michigan Department of Natural Resources, National Fish and Wildlife Foundation, Pine River-Van Etten Lake Watershed Coalition, US Fish & Wildlife Service, US EPA's Great Lakes Restoration Initiative, and US Forest Service, an outdated dam on the South Branch Pine River was removed and replaced with a new footbridge that allows for easier access to Forest Service lands. This restoration project reconnected more than 20 miles (32 km) of upstream habitat for Brook, Brown, and Steelhead Trout, and restored 500 feet (0.15 km) of floodplain and stream channel. Protecting cold-water resources through habitat improvement and stewardship initiatives is critical for ensuring the long-term health of aquatic plants and animals.

This project is part of the South Branch Pine River Watershed Restoration and Action Plan to implement critical actions that will improve watershed condition and protect the river.



Buhl Dam before removal. Source: A. Ania



Buhl Dam after removal, Source: A. Ania

ADDRESSING CHALLENGES

CHEMICAL CONTAMINANTS

Tittabawasee River Cleanup

The Michigan Department of Environment, Great Lakes, and Energy (EGLE) continues to work with the US EPA on efforts to clean-up dioxins in the Tittabawasee River system. Clean-up activities have been completed along 14 miles (22.5 km) of the river and floodplain. These activities will continue into the Saginaw River and Saginaw Bay portions of the Superfund site. In 2017 and 2018, clean-up activities focused on the lower reaches of the river, resulting in the restoration of approximately 5 miles (8 km) of the river and bringing the cumulative total volume of remediated sediments and floodplain deposits to approximately 170,000 cubic yards (129,974 cubic meters). In 2018, the U.S. EPA released a proposed clean-up plan for the last 7 miles (11 km) of the Tittabawasee River. Efforts are currently underway to implement remedial actions in this section of river and floodplain, including approved capping and bank stabilization technologies. Remediation work in this last section of the river is expected to be completed by 2020 or 2021.

Lakewide Sediment Survey

ECCC undertook a lakewide survey in 2017 to assess contaminant levels in sediment. Legacy contaminants, such as mercury, as well as new and emerging chemicals, such as flame retardants, were investigated. Concentrations are low for most contaminants across the entire lake. Mercury concentrations in Lake Huron are generally the lowest of the Great Lakes and continue to decline. Sedimentation rates are variable in Lake Huron, which when low, can result in short-term trends in cores being classified as “no change” or “increasing” for some contaminants, even though concentrations are well below historic highs, and generally below federal sediment quality guidelines for protection of aquatic life.

Invasive Species

As a major stressor to the Lake Huron ecosystem, invasive species are the focus of many projects aimed at combating this continuing problem. For example, the US Army Corps of Engineers completed feasibility studies of Sea Lamprey traps on the Au Gres and Au Sable Rivers. The results support using these traps to capture Sea Lamprey, once funding is secured. The U.S. Fish and Wildlife Service annually treats 300+ hectares (740+ acres) of larval Sea Lamprey habitat with lampricide. They continue to target streams and tributaries of the St. Marys River and Lake Huron that produce the largest number of Sea Lamprey.

Parks Canada continues annual monitoring and active management of invasive species in Bruce Peninsula and Fathom Five National Marine Park. For example, over 150 hours were spent cutting phragmites infestations in 2019. Parks Canada was able to manage the majority of patches that were identified in 2018 monitoring surveys.

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

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