



# LAKE HURON BINATIONAL PARTNERSHIP

## 2010 Annual Report

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### What is the Lake Huron Binational Partnership?

The Lake Huron Binational Partnership (Partnership) was formed in 2002 to meet commitments in the Canada-United States Great Lakes Water Quality Agreement by prioritizing and coordinating environmental activities within the Lake Huron Basin.

The Partnership facilitates information sharing and priority setting for binational environmental protection and restoration. It promotes a flexible membership and the development of broader partnerships to undertake efforts on an issue by issue basis that cannot be accomplished by individual agencies alone.

The U.S. Environmental Protection Agency, Environment Canada, Michigan Department of Natural Resources and Environment and the Ontario Ministries of Environment and Natural Resources form the core of the Partnership which also includes all levels of government, Tribes/First Nations, non-government organizations and the public.

### Overview

The Lake Huron Binational Partnership is an effort that focuses in on key priorities and on the ground actions that help to improve and protect the overall quality of Lake Huron.

This first issue of the Lake Huron Binational Partnership's 2010 Annual Report provides information on the following topics:

- Accomplishments: Binational cooperative monitoring, lake trout rehabilitation, and community action planning throughout the Lake Huron basin;
- Challenges: Special efforts needed to help restore Saginaw Bay's coastal area including the control of *Phragmites*, addressing beach contamination along the coast, aquatic ecosystem change, and biodiversity conservation;
- Next Steps: Planning for actions in 2011 and the 2012 cooperative monitoring year;
- Special Events: Events scheduled over the next year and;
- Contacts: Information on how to obtain more detailed information on any of the activities of the Lake Huron Binational Partnership.

The partners involved in protecting and restoring Lake Huron hope that you find this brief report informative and interesting; but encourage you to learn more about the lake and the collaborative approach to understanding its ecosystem, protecting high quality areas and restoring those areas that have been degraded. For more information visit [www.binational.net](http://www.binational.net). ♡



Kayaking near the Les Cheneaux Islands in northern Lake Huron.  
Credit: Michigan Department of Natural Resources and the Environment



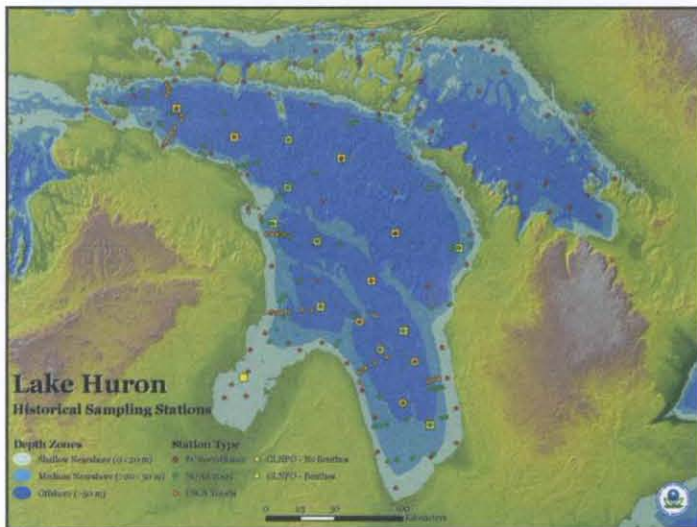
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### Accomplishments

#### 2007 Cooperative Monitoring in Lake Huron

Over the past several decades the lower food web of Lake Huron has undergone dramatic changes following the spread of invasive species and changes in water levels and water quality. To better understand these changes, the lower food web and water quality were studied in 2007 as part of a multi-agency, binational effort. Researchers from federal, state and provincial natural resource agencies partnered with universities to investigate population dynamics, growth and conditions of fish, plankton and bottom dwelling organisms throughout the lake. Many of these research findings were presented at the 52nd annual International Conference on Great Lakes Research in May 2009 and will be incorporated into the next Lake Huron Action Plan to be released in the fall of 2011.



Lake Huron Historical Sampling Stations  
Credit: U.S. EPA

#### Taking Action: Promoting Community Involvement in the Lake Huron Basin

Through the Canadian Lake Huron-Georgian Bay Framework for Community Action – a partnership of agencies, organizations and local community leaders made great strides on community projects in Eastern Georgian Bay’s Biosphere Reserve, Nottawasaga Valley and the North Bayfield Gullies. In the fall of 2009, a Youth Summit brought together high school students from Sarnia to Sault Ste. Marie to discuss and promote local community action. In addition, over 100 aboriginal elders also met at the French River to celebrate the fall equinox and discuss changes in Lake Huron and how they can help. To learn more about these community activities visit: [www.lakehuroncommunityaction.ca](http://www.lakehuroncommunityaction.ca). Through the new U.S. Great Lakes Restoration Initiative, state and federal environmental protection and natural resource agencies also plan to engage regional stakeholders to implement projects

and build partnerships. In Canada, the Canada-Ontario Agreement Respecting the Great Lakes Basin Ecosystem (COA) will continue to support the objectives of the Partnership. More information on COA can be found at [www.ec.gc.ca/grandslacs-greatlakes](http://www.ec.gc.ca/grandslacs-greatlakes).

#### Lake Trout Rehabilitation: Progress is Encouraging

The decline and eventual collapse of lake trout populations in the 1940s represented one of the largest ecological catastrophes in the Lake Huron basin. Overfishing, lamprey predation, and habitat change all contributed to this collapse. However, millions of dollars have been spent in an effort to restore this keystone predator and these efforts continue to this day. Although fish populations in the lake are a long way from being rehabilitated, recent signs of natural reproduction in many areas of the lake, and in Parry Sound in particular, are encouraging. 🐟



Lake Trout in Parry Sound.  
Credit: Ontario Ministry of Natural Resources (MNR)

### Challenges

#### Significant changes to the Lake Huron aquatic ecosystem

Recent dramatic changes to the Lake Huron aquatic ecosystem include major declines in lower trophic level organisms such as Diporeia, a small freshwater shrimp-like animal that helps form the base of the Lake Huron foodweb. In addition, invasive species like the zebra and quagga mussels are thought to be responsible for the precipitous decrease of alewife, a non-native prey fish. Predatory fish such as chinook salmon have been most negatively impacted by these changes primarily through reduced growth rates and abundance. Some native species such as lake trout, walleye (pickerel), and cisco (lake herring) have benefited from these changes with increased natural reproduction and early survival due to the reduced level of predation by alewife and rainbow smelt. To learn more visit: [http://www.epa.gov/glnpo/lamp/lh\\_2008/lh\\_2008\\_4.pdf](http://www.epa.gov/glnpo/lamp/lh_2008/lh_2008_4.pdf)



### Lake Huron Biodiversity Conservation Strategy

Biodiversity refers to the variety of life, as expressed through genes, species, interactions and ecosystems, and is shaped by ecological and evolutionary processes. The full spectrum of Lake Huron's biodiversity is essential to maintain the ecological functions, processes and connections that sustain us, and provide the many economic and social benefits. Unfortunately, past and current neglect of this ecosystem has placed it under stress resulting in rapid, drastic, and in some cases, unexplained changes in food web structure, nutrient dynamics, hydrological and temperature regimes, and increased the threat of invasive species.

The Partnership is responding to biodiversity conservation challenges by developing the Lake Huron Biodiversity Conservation Strategy. This initiative advances efforts to rehabilitate, maintain and protect the chemical, physical, and biological integrity of the waters of Lake Huron, and provide long-term conservation strategies for biodiversity in the watershed. The Strategy is in its final stages, and has been led by representatives from government agencies, academic scientists, stakeholders, aboriginal groups, and non-governmental conservation practitioners.

### Taking Control of Invasive Species: The Phragmites Control Demonstration Project

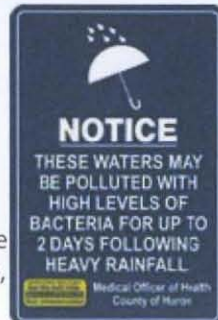
Over the past 10 years, the spread of Phragmites (common reed) has become a major problem in Saginaw Bay and southern Georgian Bay. This is because *Phragmites* grow in thick monocultures overtaking native species. In order to address the rapid infestation of this invasive wetland grass, the Michigan Department of Natural Resources and Environment has joined with other partners to undertake a Phragmites Control Demonstration Project. The intent of this project is to exhibit the effectiveness of various Phragmites controls. Landowners interested in learning more about control techniques are encouraged to visit: [www.michigan.gov/deqaquaticinvasives](http://www.michigan.gov/deqaquaticinvasives). Control strategies are also being investigated on Georgian Bay's Wasaga Beach.



Extensive growth of the Common Reed "*Phragmites*" on Lake Huron's Coast. Credit: Michigan Department of Natural Resources and Environment

### Beach Issues on Lake Huron's Coast

Concern has increased in recent years about human-related activities degrading beach water quality along the coast. Fecal contamination and complaints of fouling of the shoreline by algae are common along the shores of the main basin of the lake. While a great deal of work has and continues to occur, to reduce contamination sources affecting the shore, a number of questions remain about the fate of pollutants when they reach the shoreline. Of utmost concern are the mechanisms of bacterial survival in beach sands, and how environmental changes caused by invasive species affect nutrient distribution and cycling. Watershed management plans and remedial actions continue to address these concerns by helping to further define the threats and control the sources. ♣



Permanent signs alert swimmers to risk at Ontario's beaches. Credit: Huron County Health Unit.



Algae harvester clearing beaches near the Pine River, Ontario. Credit: Doug Brown, Pine River Watershed Initiative Network.

## Next Steps

### Exciting Times Ahead

Upcoming activities taking place on Lake Huron will include:

- The Lake Huron Action Plan will be updated in the fall of 2011 and planning for the next cooperative monitoring effort will be initiated this year.
- Activities to implement the Biodiversity Conservation Strategy and to promote local community action throughout the watershed will continue. Public outreach and education are important.
- Look for opportunities to learn more about Lake Huron including the new documentary "Lake Invaders: The Fight for Lake Huron". More information can be found at [www.lakeinvaders.com](http://www.lakeinvaders.com). ♣



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## Lake Huron Basin

The Lake Huron drainage basin is defined by an expansive watershed and abundance of shoreline habitat. Lake Huron has over 30,000 islands and, as a result, has the longest shoreline of any lake in the world.



### Special Events 2010

**October 5-7, 2010**

Lake Huron Partnership meeting,  
Tobermory, Ontario

**Late September/Early October**

Lake Huron Environmental Youth Summit,  
Midland, Ontario

### For More Information:

For more information, please visit our website at [www.binational.net](http://www.binational.net) or contact:

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