

II. Introduction

The 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. One of these islands, Manitoulin Island, is the largest island of any freshwater lake on Earth. Lake Huron's drainage basin is larger than any other Great Lake, and its relatively undisturbed nearshore areas support a high diversity of aquatic and riparian species of importance to the Great Lakes region. Over 40 species of rare plants, five rare reptile species, and 59 fish species are found in the coastal wetlands of Lake Huron. Lake Huron's coast remains diverse and has retained significant remnants of historic fish and wildlife habitat. Saginaw Bay, Georgian Bay and the North Channel support some of the most extensive high quality coastal habitat in the Great Lakes region.

The U.S.-Canada border divides the main basin of Lake Huron almost in half. The Canadian portion of the Lake, including Georgian Bay, is wholly within the Province of Ontario. The U.S. portion is entirely within the State of Michigan. The drainage basin on the Ontario side (86,430 square kilometers or 33,500 square miles) covers twice the area, has approximately five times the shoreline, and roughly 300,000 fewer residents than in Michigan. While the Lake Huron watershed is home to about 2.5 million people, both sides of Lake Huron have relatively low human population densities. The Lake Huron basin contains no major metropolitan areas. The largest urban centers in the basin are Sudbury and Sault Ste. Marie on the Ontario side and Flint, Saginaw and Bay City on the Michigan side. With populations under 120,000, these urban areas are relatively small compared to urban areas in the more populous Great Lake basins.

Lake Huron is the third largest freshwater lake in the world in terms of area, and the sixth largest in volume. Its average depth is 59 metres (195 feet). The average retention time for water in Lake Huron is 22 years. This long retention time makes Lake Huron, and the other Great

Lakes, susceptible to the build up of persistent toxic substances that can bioaccumulate in fish, fish-eating wildlife and humans.

Rocky shores associated with the Precambrian shield cover the northern and eastern shores of Georgian Bay and the North Channel; limestone dominates the shores of Manitoulin Island, the northern shore of the Bruce Peninsula the north shore, including Drummond Island, and "Straits" area of the Main Basin, the Thunder Bay area, the north shore of Michigan's 'Thumb' peninsula, as well as Lake Huron's midlake reefs known as 6-Fathom Bank and Yankee Reef. Glacial deposits of sand, gravel, and till predominate in the remaining portions of the shore. Mining of limestone, nickel, uranium, copper, platinum and gold has been an important activity in the northern portion of the Lake Huron basin. The Lake Huron basin is also heavily forested in the northern region, and more urbanized in the southernmost portion of the lake. Much of the the Saginaw River watershed and the "thumb" area of Michigan, along with the Bruce Peninsula and the southeast shore of the main basin is dominated by agricultural land use (e.g., field crops) and supports many beef and dairy farms.

Though residential land use makes up a small percentage of current total land use in the Lake Huron basin, much of the recent development has occurred along the coast. In the past 20 years, and as more people begin to retire, there has been increasing development pressure for cottages and year-round retirement properties in rural areas. Undoubtedly, the next 20 years will bring more development to the coastal regions of the basin, especially as urban populations continue to grow and more people desire to live in less densely populated areas.

The Areas of Concern

In 1987, as part of an effort to clean up the most polluted areas in the Great Lakes, Canada and the United States identified five Areas of Concern (AOCs) in the Lake Huron basin: Spanish Harbour (Ontario), Severn Sound (Ontario), Collingwood Harbour (Ontario), Saginaw Bay (Michigan), and the St. Marys River, which connects Lakes Huron

and Superior (a binational AOC). Canada and Ontario have recognized Spanish Harbour as an “Area in Recovery” where all remedial actions have been implemented and the environment will take some time to recover. Severn Sound was delisted as an AOC in 2003, and the Collingwood Harbour AOC, was delisted in 1994. The causes of impairment within the remaining AOCs continue to be addressed; fish and wildlife habitat, fish and wildlife populations, and environmental quality are subsequently recovering.

The Partnership

In 2002, the federal, state and provincial agencies that manage binational environmental activities under the Great Lakes Water Quality Agreement (GLWQA) formally endorsed the formation of a Lake Huron Binational Partnership (“the Partnership”) to prioritize and coordinate environmental activities in the Lake Huron basin. The United States Environmental Protection Agency (USEPA), Environment Canada (EC), Michigan’s Departments of Environmental Quality (MDEQ) and Natural Resources (MDNR) and Ontario’s Ministries of Environment (OMOE) and Natural Resources (OMNR) form the core of the Partnership, by providing leadership and coordination. However, the Partnership emphasizes the importance of maintaining a flexible membership, which is inclusive of other agencies and levels of government, Tribes/First Nations, non-government organizations (NGOs), and the public on an issue-by-issue basis.

The Partnership builds upon the efforts that were begun by the MDEQ’s Office of the Great Lakes during the Lake Huron Initiative (“the Initiative”). In 2000, the Initiative developed an Action Plan for Lake Huron which outlined priority programs and initiatives. The Initiative identified basin-wide priority actions necessary to address use impairments, critical pollutants, habitat, and biodiversity. The Initiative’s Action Plan was updated in 2002. Since 2004, many of the activities outlined in Action Plan have been addressed by the Partnership.

The Partnership facilitates information sharing and priority setting for binational environmental

protection and restoration activities of importance in the Lake Huron basin and promotes cooperation and collaboration towards shared objectives that are unachievable by individual agencies alone. Public consultation is an important component of the Partnership’s activities in the Lake Huron basin, particularly on a project-specific level. Those individuals and organizations which have a direct interest in an issue are encouraged to participate or provide input to project direction and implementation. The Partnership agencies work with existing mechanisms and groups, as much as possible, to consult with and provide outreach information to the public. To support this outreach, a series of stand-alone fact sheets were produced on the following topics: The Lake Huron Binational Partnership, Contaminants in Fish, Contaminants in Wildlife, Developing Environmental Objectives for Fish Communities, Lake Huron GIS, and Changes in the Lake Huron Fish Community. In addition, two fact sheets were developed on domestic activities in support of the Partnership, including The Canadian South-East Shore Working Group and Phosphorus Concentrations in Saginaw Bay, Michigan.

The Partnership has developed a process for identifying priority issues and efforts needed to ensure a healthy Lake Huron basin and watershed. The binational work plan includes U.S., Canadian, and joint actions that focus on short term project implementation and longer-term priority setting goals.

The Issues

The participants of the Partnership have agreed upon three binational issues to focus on:

- Contaminants in fish and wildlife,
- Biodiversity and ecosystem change, and
- Fish and wildlife habitat.

These key issues were given priority for immediate action, while other issues will be tracked and added as the Partnership pursues an iterative process of updating and expanding activities over time. The types of activities which address the binational issues include:

- Documenting the status and trends of contaminants in fish and wildlife causing fish consumption restrictions;
- The identification of potential sources of contaminants and implementation of reduction measures;
- Determining the scope and causes of observed changes in ecosystem structure and function;
- The impact of invasive species on food web dynamics, fish communities and biodiversity; and,
- Evaluating, protecting, and restoring critical habitat such as wetlands, fish spawning areas, and nesting sites for waterbirds.

While these topics are being addressed binationally, other issues are the subject of Canadian or U.S. domestic activities. These include the restoration of beneficial uses in the AOCs, and other local issues, such as fouling of beaches by algae and bacteria. The Partnership facilitates the sharing of information between countries on these domestic issues.

Lake Huron basin's size and multiple binational political jurisdictions require coordination among existing basinwide natural resource programs and local initiatives. In order to streamline activities and minimize costs, the Partnership interacts closely with representatives of these existing programs. One example of the collaborative effort is the Partnership's close ties to the Great Lakes Fishery Commission's (GLFCs) Lake Huron Technical Committee (LHTC). The LHTC has representation on the Partnership committee, informing the Partnership of the LHTC activities and recommendations, such as the Environmental Objectives document developed for Lake Huron fish community. Success also requires collectively engaging local governments whose authority and local decision making has a significant impact on the sustainability of localized natural resources and communities throughout the Lake Huron basin. While governmental agencies are in a position to provide leadership, success depends on leveraging both governmental and non-governmental organization (NGO) involvement and resources.

