



LAKE SUPERIOR LAKEWIDE MANAGEMENT PLAN

Annual Report 2010

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What is the LaMP?

The 1987 amendment to the Great Lakes Water Quality Agreement required the development of Lakewide Management Plans (LaMPs) to “restore and maintain the chemical, physical and biological integrity of the Great Lakes Basin Ecosystem”.

The Lake Superior LaMP is an adaptive management plan for restoring and protecting the Lake Superior ecosystem. It is coordinated by Canadian and U.S. federal, state, provincial and tribal/First Nations governments. Public participation is achieved through the involvement of a Binational Forum.

The Lake Superior Binational Program, under which the LaMP is implemented, is a collaborative effort between Canada and the United States that identifies, addresses, and monitors progress on environmental issues affecting Lake Superior. It includes the LaMP as well as the Zero Discharge Demonstration Program that aims to virtually eliminate nine critical chemical pollutants in the basin.

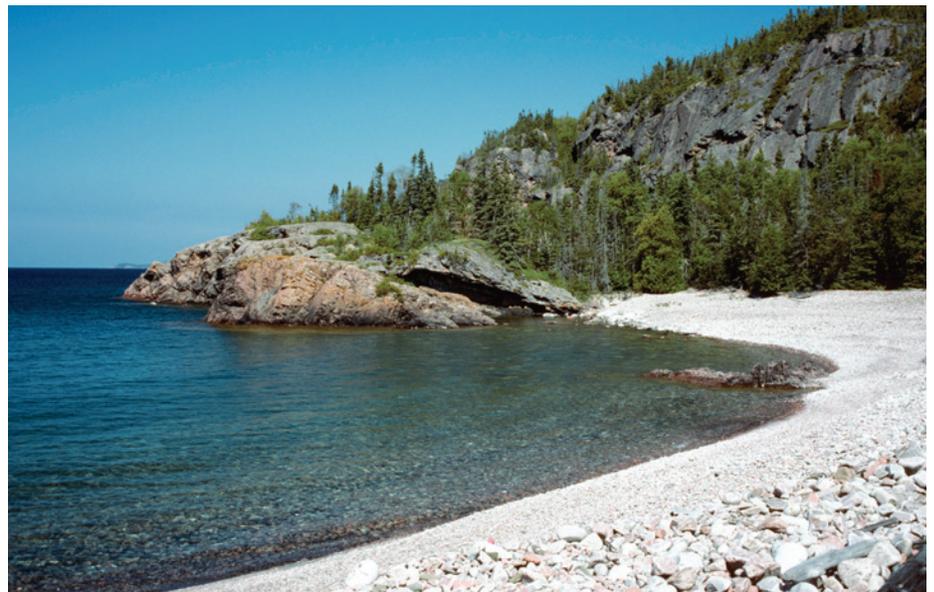
Overview

Lake Superior is the largest freshwater lake in the world by surface area. It is the most northerly of the North American Great Lakes and has many distinctive features such as cobble beaches, soaring bluffs and waterfalls. These features create a unique ecosystem that is home to many plant and animal species. However, the ecosystem is under pressure from threats such as aquatic invasive species, chemical pollution and climate change.

The Lake Superior LaMP and Binational Program participants are working together to protect vital habitat and address the pressures on the lake. In some cases, the Lake Superior LaMP team is showing leadership by taking on these issues for the first time at a lakewide scale. This Annual Report summarizes some of the recent accomplishments, challenges and next steps for the future. Highlights include:

- Drafting a Complete Prevention Plan to address aquatic invasive species;
- Understanding the ecosystem impacts of mining;
- Preparing to implement high-priority monitoring projects;
- Measuring and reporting on progress toward pollution reduction targets; and
- Continuing to make progress in Areas of Concern.

In the future, LaMP participants will continue to address legacy issues and take on new challenges that threaten ecosystem health. For more information, please visit www.binational.net or use the contacts listed on the back page. 💧



Lake Superior’s cobble beaches, soaring bluffs and cold water combine to create a unique ecosystem, home to many plants and animals. Credit: J.P. Jérôme, provided by Parks Canada.



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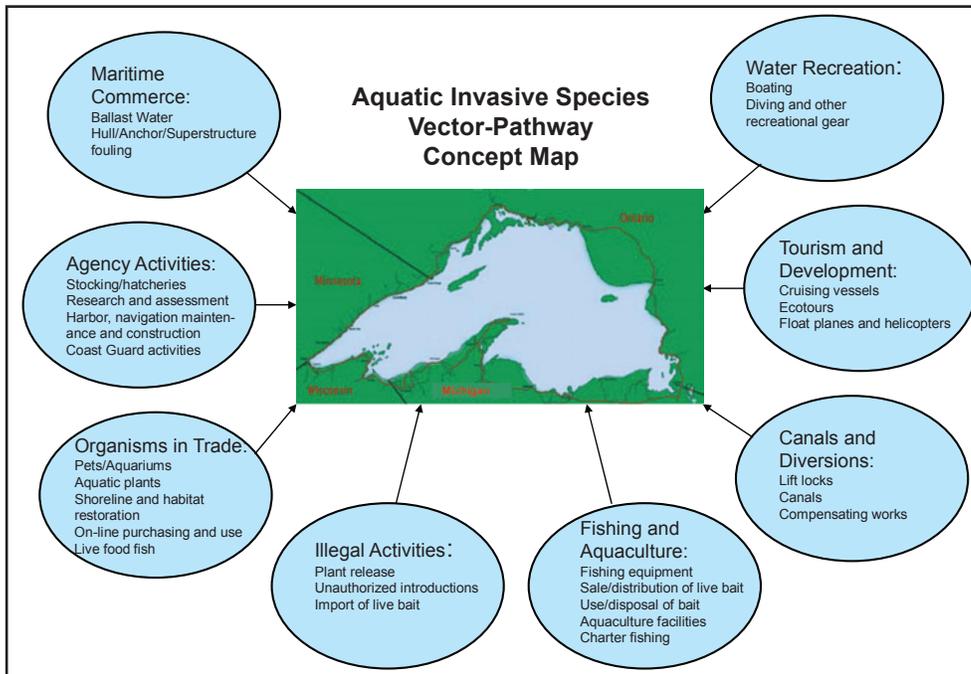
Accomplishments

Aquatic Invasive Species

Complete Prevention Plan Drafted

The LaMP team released a Draft Aquatic Invasive Species Complete Prevention Plan (the AIS Plan) in December 2009. The AIS Plan identifies vectors and pathways that aquatic invasive species use to enter and become established in the Lake Superior ecosystem (Figure 1), and outlines actions that need to be implemented in order to close them. The AIS Plan builds on a number of existing federal, state and provincial aquatic invasive species prevention and control plans, as well as regulatory programs that apply to the Great Lakes region. This is the first time a vector pathway prevention approach has been used on a binational lake scale in the Great Lakes. The AIS Plan was open for public comment through February 2010. It is currently being finalized with implementation scheduled to begin in 2010.

Figure 1: The Draft AIS Prevention Plan is the first to apply a vector-pathway prevention approach on a lake scale in the Great Lakes basin.
Credit: Lake Superior LaMP



Reptile and Amphibian Monitoring Improved

Amphibians and reptiles are important indicators of ecosystem health in the Great Lakes. Researchers from Canada and the U.S. recently worked together to test various methods for monitoring reptiles and amphibians within the Lake Superior basin.

These findings will be used to design and implement an effective Amphibian and Reptile Monitoring Program for Lake Superior to better understand the status and condition of these important indicators of ecosystem health.

First Watershed Fact Sheet Completed

LaMP participants are developing a series of watershed fact sheets for priority watersheds in the Lake Superior basin. The Marengo River, a tributary of the Bad River in Wisconsin, was selected as the first watershed to pilot the project. The Marengo River Watershed Fact Sheet is being distributed by the Bad River Watershed Association, a local watershed group.

Why Develop Watershed Fact Sheets?

The fact sheets will be used by state, tribal, provincial, regional, and local watershed groups to raise awareness about the importance of watersheds and their connection to the lake. The fact sheets will encourage watershed residents and visitors to take actions to restore and protect their watersheds and Lake Superior.

What's Next?

In future, three more fact sheets will be initiated for watersheds in Ontario, Minnesota and Michigan based on the Marengo River model.

Environmentally-Sensitive Areas Preserved

In 2009, two environmentally-sensitive areas in the Lake Superior basin were acquired by conservation groups to preserve them for future generations. Preserving these areas will help to maintain good water quality and high-quality fish and wildlife habitat in this portion of the Lake Superior ecosystem.

Pine Bay Nature Reserve

The Pine Bay Nature Reserve southwest of Thunder Bay, Ontario, was acquired by the Thunder Bay Field Naturalists. The 369 hectare (912 acre) nature reserve is important because it includes 800 metres (875 yards) of Lake Superior shoreline, and a portion of the Pine Bay Provincially Significant Wetland, one of the few remaining wetlands along Lake Superior's north shore.

Wilson Island Group

The Nature Conservancy of Canada and partners purchased the Wilson Island group, a cluster of eight islands near Rosspoint, Ontario. Located within the Lake Superior National Marine Conservation Area, the islands provide more than 1,900 hectares (4,700 acres) of ecologically-significant and relatively untouched habitat for many species of birds, wildlife and fish. ♡



Challenges

Understanding Nutrients in Lake Superior

Nutrient levels and cycling within the food web are two key components of ecosystem health. The Lake Superior ecosystem is naturally low in nutrients such as phosphorous and nitrogen, and has not experienced excessive aquatic plant and algal growth observed in the Lower Great Lakes. However, in sheltered areas and embayments, localized nutrient problems may exist. To assess the situation, nutrient research and monitoring will be part of the 2011 Cooperative Science and Monitoring Initiative (see below).

Minimizing the Environmental Impacts of Mining

Mining activities have the potential to negatively affect air, water and land in the Lake Superior basin. As the global demand for metals increases, exploration and requests for permits to create new mines continue. LaMP participants are exploring opportunities to ensure that mining activities are consistent with the vision and goals of the Lakewide Management Plan. In the past year, a series of webinars were held to discuss past, current and potential mining issues in the basin. Based on these webinars, a draft set of recommendations will be developed to help the mining industry, lake managers and regulators better collaborate toward the vision and goals of the LaMP.

Preventing Backyard Burning of Garbage

Backyard burning of garbage is the largest source of dioxin in the Lake Superior basin -- and a completely preventable source of pollution. LaMP participants have teamed up with the Lake Superior Binational Forum on a joint outreach project to educate basin residents about the hazards of open burning and better alternatives for trash disposal. ♦

Next Steps

Coming Soon: 2010 Chemical Milestones Report

Lake Superior is the only Great Lake that has a highly structured, lake-specific chemical pollution reduction effort. The Lake Superior Zero Discharge Demonstration Program targets nine persistent, bioaccumulative and toxic chemicals for virtual elimination. The Program began in 1990 with five-year interim reduction milestones on the path toward virtual elimination by 2020. 2010 is a significant milestone year, with targets set for 80% reduction of mercury and 95% reduction of PCBs compared with 1990 levels. The milestones report will be released in 2011.

Cooperative Science and Monitoring Focus on Lake Superior

Effective lakewide management depends on comprehensive and timely science and monitoring information that can be used to determine and report on conditions in the lake.

The Lakewide Management Plan and Cooperative Science and Monitoring Initiative teams are collaborating to plan intensive field work and data collection activities in Lake Superior, scheduled to begin in 2011. Priority research subjects include: nutrients and contaminants; nearshore water quality; reptiles and amphibians; aquatic invasive species; and linkages between the lower food web and fish communities. Results will be available in 2013 and will be reported in the 2014 Lake Superior LaMP.

Binational Biodiversity Conservation Planning

Biodiversity conservation strategies are important for effectively restoring and protecting plants, animals and habitats. LaMP participants in Canada and the U.S. have been collaborating on biodiversity conservation efforts for nearly two decades. All the existing biodiversity conservation planning information for Lake Superior has been compiled into a single document which will be used to assess the extent and effectiveness of biodiversity conservation actions in Lake Superior. In the future, this document will form the basis of a Lake Superior Biodiversity Conservation Strategy. ♦

In 2011, scientists from both Canada and the U.S. will focus on Lake Superior. Credit: U.S. Environmental Protection Agency.



Making Progress in Areas of Concern

The governments of Canada and the United States are committed to restoring 43 Areas of Concern (AOCs) in the Great Lakes. Progress is being made in all Lake Superior AOCs. Highlights include:

- **Jackfish Bay AOC (Canada):** a recommendation to move to Area in Recovery status will be considered.
- **Peninsula Harbour AOC (Canada):** work will proceed on the plan to cap contaminated sediments.
- **St. Marys River AOC (Binational):** progress will continue on priorities such as stormwater management and contaminated sediments.
- **St. Louis River AOC (U.S.):** sediment assessment and remediation actions in the harbor will continue.
- **Torch Lake AOC and Deer Lake AOC (U.S.):** ongoing sources of pollution will be identified and minimized.

For more information, please visit www.epa.gov/glnpo/aoc and www.ec.gc.ca/raps-pas.



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Special Events



Get Ready for Lake Superior Day!

On July 18, 2010, the Lake Superior Binational Forum will celebrate the seventh annual Lake Superior Day, a special day established for people to connect to and enjoy the world's largest freshwater lake.

For information about the Lake Superior Binational Forum, upcoming events, an annual environmental stewardship awards program, and news and information about the Lake Superior ecosystem visit www.superiorforum.org.

Binational Forum Meetings

Date: May 7-8, 2010

Location: Sault Ste. Marie ON, CAN

Topic: Aquatic Invasive Species

Date: Sept. 17-18, 2010

Location: Ashland WI, USA

Topic: Watersheds and citizen science monitoring issues

Date: Nov. 5-6, 2010

Location: Thunder Bay ON, CAN

Topic: To be determined

U.S. Great Lakes Restoration Initiative and the Canada-Ontario Agreement

In October 2009, U.S. President Barack Obama signed into law an act that provides US \$475 million for the protection, restoration and maintenance of the Great Lakes ecosystem. Titled the Great Lakes Restoration Initiative, this legislative effort provides funding to state, tribal, and federal partners, as well as to academic institutions, non-profit and non-government organizations and public stakeholder groups, to implement high-priority, on-the-ground actions to protect the Great Lakes.

More information on the Great Lakes Restoration Initiative can be found at: www.epa.gov/greatlakes/glri/index.html.

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

Watershed Map

Lake Superior and its drainage basin spans over 209,000 square kilometres (81,000 square miles), and includes the province of Ontario and the states of Minnesota, Wisconsin and Michigan.



For More Information:

Visit one of the Lake Superior Lakewide Management Plan web sites www.binational.net or www.epa.gov/glnpo or contact:

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