LAKE ONTARIO LAKEWIDE MANAGEMENT PLAN (LaMP)

Annual Report 2011

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What is the Lake Ontario LaMP?

The Lake Ontario Lakewide Management Plan (LaMP) is a binational plan to restore and protect the health of Lake Ontario by reducing chemical pollutants entering the lake and addressing the biological and physical factors impacting the lake. The LaMP s activities are coordinated by Canadian and U.S. federal, state and provincial government agencies.

The Lake Ontario LaMP includes ecosystem goals, objectives and indicators. Ecosystem objectives have been identified for aquatic communities, wildlife, human health and stewardship. The twelve indicators are designed to track progress towards achieving the ecosystem objectives.

Overview

The Lake Ontario LaMP Committee is continuing its efforts to restore and protect the lake's ecosystem. The LaMP continues to work on the implementation of the *Lake Ontario Binational Biodiversity Conservation Strategy*, establishing monitoring programs for coastal wetlands indicators, determining the research and monitoring needs for the next binational cooperative intensive study of the lake, and undertaking programs that lead to the reduction of toxic chemicals and sediments impacting the nearshore.

This annual report focuses on the following key challenges and activities taking place on the lake:

- The reduction of critical pollutants such as PCBs to the lake through on-going trackdown efforts in both Canada and the United States;
- Updates on lake trout, Atlantic salmon and American eel restoration programs;
- Fisheries and Oceans Canada's Ecosystem Research Initiative;
- The challenge of increased urbanization on the Canadian side of the western end of Lake Ontario;
- An update of next steps to be taken by government agencies on both sides of the border to address lake priorities;
- The use of funds through the Great Lakes Restoration Initiative and Canada-Ontario Agreement to support LaMP priorities and goals.

The LaMP Committee will also continue to track issues such as newly recognized chemicals of concern, invasive species, climate change and water level regulation.

Recently commissioned fisheries assessment vessel *Ontario Explorer* brings new capacity to Ontario Ministry of Natural Resources and its partners to monitor the Lake Ontario ecosystem. Photo credit: Ontario Ministry of Natural Resources.

Accomplishments

Tracking Down PCBs in the Lake Ontario Watershed

The LaMP continues to stress the importance of reducing concentrations and loads of six critical pollutants through its *Sources and Loadings Strategy*. This Strategy provides the framework and governments' commitment to implementing source trackdown and pollution prevention and reduction from in-basin, upstream and transboundary sources. The six critical pollutants are: PCBs, dioxins/furans, DDT and metabolites, dieldrin, mirex and mercury. Four of these are the chief causes for restrictions on eating fish from Lake Ontario.

On the U.S. side, the U.S. Environmental Protection Agency (EPA) and New York State Department of Environmental Conservation (DEC) continue to track down and remediate PCBs and other contaminant sources. A remedial alternatives assessment is now underway for a section of the Black River (near Watertown N.Y.) containing elevated levels of PCBs and dioxins and furans in sediments. Sediment on the bottom of the river and along the banks, primarily downstream of the historical and present locations of paper mills and other industrial facilities, was found to be highly contaminated.

The EPA and DEC, in conjunction with Niagara County, are also conducting an extensive track down and site characterization of contaminated sediments in Eighteenmile Creek, an Area of Concern along the south shore of Lake Ontario. One major source area of PCBs and heavy metal contamination, a former industrial complex in the upper reaches of the creek within the City of Lockport, has been evaluated and remedial alternatives are being formulated for this site.

On the Canadian side, one of the sources of PCB in the Beaverdams Creek subwatershed (near Thorold, Ontario) was cleaned-up in the fall of 2010 (coordinated by the Ontario Ministry of Environment). In the second phase of this remediation project (see the 2010 Annual Report for details of Phase 1) approximately 6,000 cubic metres (7848 cubic yards) of PCB contaminated sediment was excavated from a 700-metre (765-yard) section of the creek's channel. The PCB contamination dates back to the 1960s, when a local paper recycling company recycled carbonless copy paper containing the once-ubiquitous PCB chemical compounds. The area of PCB contamination is part of the Twelve Mile Creek watershed, a western Lake Ontario tributary. Work is continuing to address other sources of PCBs and persistent contaminants within the Twelve Mile Creek watershed.

USEPA consultants collecting contaminated sediment samples in Eighteenmile Creek. Photo Credit: Victor DiGiacomo, provided by U.S. EPA.

Fishery Assessment Update

Lake trout abundance in Lake Ontario is now at the lowest level that has been observed since modern restoration efforts began in the 1970s. While the continued observations of small numbers of naturally spawned juveniles, as well as suspected naturally produced adults is encouraging, the low abundance of the stocked population is not. Lake trout assessments will continue through annual monitoring in selected regions of the lake. For more information go to: *http://www.dec.ny.gov/outdoor/27068.html*.

Ontario celebrated stocking the 2 millionth Atlantic salmon, in the 5th year of a partnership co-led by the Ontario Ministry of Natural Resources and the Ontario Federation of Anglers and Hunters. The groups are encouraged by the positive signs of progress towards restoring self-sustaining populations of this heritage species to Lake Ontario and its tributaries with almost 100 habitat enhancement projects having been completed on the Credit River, Duffins Creek, and Cobourg Brook. To learn more, visit *www.bringbackthesalmon.ca*.

For the 2nd consecutive year, the New York State DEC reported that Atlantic salmon catches in the lake were the highest observed since the mid-1990s. Anglers continued to enjoy a growing summer fishery on New York's Salmon River. Wild juveniles were recovered during assessment surveys again this year.

The American eel is an important part of the diversity of life in Lake Ontario – St. Lawrence River and offers valuable clues about the health of the ecosystem. The numbers of American eel returning to Lake Ontario from the sea are less than 3% of levels seen before the mid-1990s and these fish are in danger of extinction in the Lake Ontario – Upper St. Lawrence River part of its range. The decline of the eel is due mostly to human activity. The eel harvest reduced the eel population, dams block upstream migration routes, while hydro generation turbines kill eels during their downstream migration. Progress on the restoration of eel numbers is being made through binational government and hydro generation company efforts. For more info go to: *http://www.mnr.gov.on.ca/en/Business/SORR/2ColumnSubPage/EELPAGE.html*.

Ecosystem Research Initiative Provides Science Support for Management of Lake Ontario LaMP

Initiated in 2008, the Lake Ontario Ecosystem Research Initiative (LO-ERI) was designed as a Fisheries & Oceans Canada (DFO) pilot project to provide science support for integrated management in Lake Ontario. The LO-ERI focuses on the nearshore and builds on partnerships to address three goals related to the coastal zone including: contributing to the function of the lake ecosystem; sensitivity to cumulative effects of multiple stressors; and projected responses to future conditions. Research to address these goals is ongoing. The project is relevant to ongoing multi-agency discussions of the need for integrated coastal zone management in the Great Lakes, and is part of an ecosystem-based approach to the management of current and emerging issues.

Students from Belfountain Public School help stock Atlantic salmon fry into Credit River. Photo Credit: M. Daniels, Ontario Ministry of Natural Resources.

Challenges

Increased Urbanization at the Western End of Lake Ontario

Lake Ontario continues to experience rapid growth and urban development in the Canadian portion of the western end of the lake. This area, known as the Greater Golden Horseshoe, from Niagara-on-the-Lake to Oshawa, is one of the fastest-growing regions in North America. The population is expected to grow by almost 50% by 2031, from 7.7 million to 11.5 million people. The City of Toronto and the Greater Toronto Area (GTA) is anticipated to be home to close to 8 million people. While there are benefits that come with growth, there is also the need to understand how to accommodate this growth in a manner that doesn't further stress water quality in the western end of Lake Ontario, especially its nearshore. To help address the forecasted growth, the Ontario Government has developed the Growth Plan for the Great Golden Horseshoe area. For information on this growth plan see *https://www.placestogrow.ca/index.php?option=com_content&task=view&id=9&Itemid=14*.

Next Steps

Agencies Taking Action in Both Canada and the U.S.

Canada

Federal and provincial agency staff from Environment Canada and the Ontario Ministry of Environment, plus St. Lawrence River Restoration Council partners, have been consulting with the local community (municipalities, conservation authority, public and First Nations) to obtain their position on re-designating the St. Lawrence River (Cornwall) AOC, either by delisting the AOC, or identifying it as an Area in Recovery. The responses received will help inform the two levels of governments' decision on the status for this AOC, which is expected in the summer of 2011.

U.S.

The EPA and New York State DEC are looking at restoring water quality through the development of Total Maximum Daily Loads (TMDLs) to reduce phosphorus loads going into the waters of the Lake Ontario basin. For example, in Port Bay along the south shore, phosphorus buildup in sediments associated with wastewater treatment plant discharges and non-point sources, has contributed to heavy algae blooms, cyanobacteria and poor water quality.

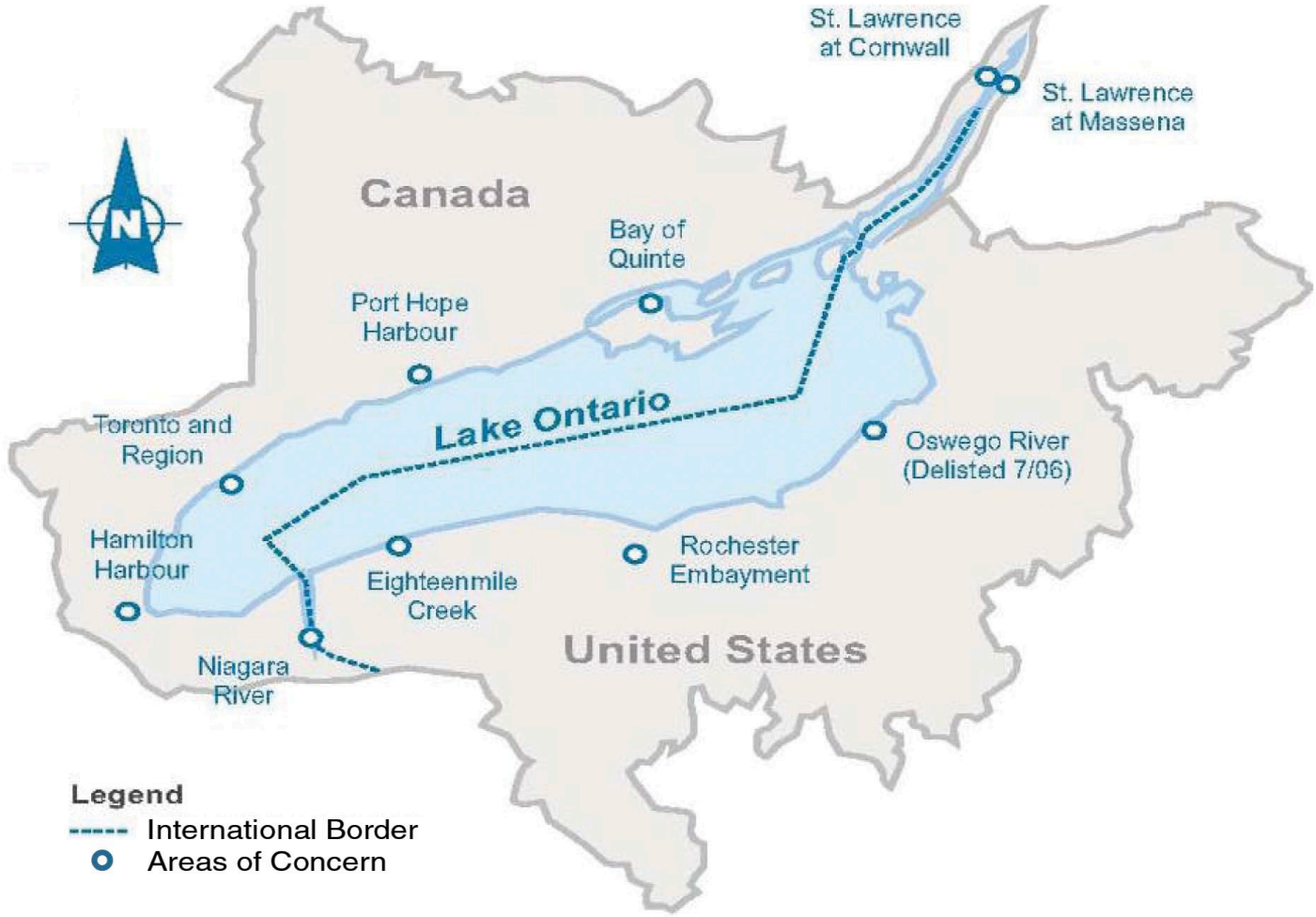
Programs Providing Funds to Take Action on Great Lakes

Through the Great Lakes Restoration Initiative (GLRI), EPA Region 2 awarded 28 grants totaling over US$20M to state, local governments, tribes, academia and non-profits for projects ranging from improving nearshore water quality, contaminant reduction, beach monitoring and other Lake Ontario LaMP goals. For more information on GLRI go to: *http://www.epa.gov/greatlakes/glri/*.

In Canada, LaMP objectives are supported through projects delivered under the Canada-Ontario Agreement Respecting the Great Lakes Basin Ecosystem (COA). For an overview of recent successes and accomplishments that have taken place, as well as challenges that are being faced under COA, *http://www.ec.gc.ca/greatlakes*, click on Canada-Ontario Agreement, and then *Keeping the Great Lakes Great* under 2007-2010 COA.

Lake Ontario Basin including Areas of Concern

Lake Ontario is the last of the chain of Great Lakes that straddle the Canada/United States border. Its shoreline is bordered by the Province of Ontario on the Canadian side and New York State on the U.S. side. Lake Ontario is the smallest of the Great Lakes, with a surface area of 18,960 km^2 (7,340 square miles), but it has the highest ratio of watershed area to lake surface area.



Special Events

Great Lakes & St. Lawrence Cities Initiative Conference

Niagara Falls, ON - June 15-17, 2011

For more information go to:
www.glslcities.org.

State of the Lakes Ecosystem Conference
Erie, PA – October 26-27, 2011

For more information go to
www.solecregistration.ca.

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Contact Information:

The Lake Ontario Lakewide Management Plan is a binational partnership of Environment Canada, Fisheries and Oceans Canada, U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, Ontario Ministry of Environment, Ontario Ministry of Natural Resources and New York State Department of Environmental Conservation.

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