



LAKE ERIE LAKEWIDE MANAGEMENT PLAN

Annual Report 2012

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What is the LaMP?

Under the Great Lakes Water Quality Agreement, the governments of Canada and the United States agreed "to restore and maintain the chemical, physical, and biological integrity of the waters of the Great Lakes Basin Ecosystem".

This is accomplished in part through the development and implementation of binational Lakewide Management Plans (LaMPs) for each lake. Lake Erie LaMP participants have identified ecosystem goals and objectives and assessed the state of lake. Through the development of issue related strategies, the LaMP will identify actions required to restore and protect the lake and evaluate the effectiveness of those actions.

The Lake Erie LaMP is coordinated by a committee of water quality and natural resource managers from both Canada and the United States, with participation from federal, provincial, state and local governments that have a role in implementation.

For more information about the Lake Erie LaMP, visit: www.binational.net or <http://www.epa.gov/glnpo/erie.html>.

Overview

The Lake Erie ecosystem is unique. It is the shallowest and the most biologically diverse of all the Great Lakes. The Lake Erie watershed is home to over 11 million people, supports one of the largest freshwater fisheries in the world, and provides many recreational and tourism opportunities.

Lake Erie's ecosystem and economy are under threat from excess algal blooms that have become a regular occurrence throughout the Western basin of the lake during summer months, leading to poor aesthetics, recreational beach closures and reduced tourism revenue. The blooms are attributed to excessive nutrient inputs and urban and rural land uses. In addition, Lake Erie is sensitive to habitat loss and degradation and the introduction of non-native invasive species.

The top priority for Lake Erie Lakewide Management Plan (LaMP) participants is to address excess algal blooms by reducing nutrient inputs to the lake. This Annual Report summarizes recent progress, as well as challenges and next steps. Highlights in this report include:

- An update on nutrient reduction efforts at local and regional scales;
- Report on projects supported by the Great Lakes Restoration Initiative (GLRI) and Canada-Ontario Agreement (COA);
- Progress reports on the St. Clair-Detroit Connecting Waterway, and priority watersheds in Canada and the United States;
- An update on the Biodiversity Conservation Strategy; and
- Actions that individuals and groups can take to reduce their nutrient use.

Although progress continues, there is still much work to be done. If you would like to know more, please visit www.binational.net or use the contacts listed on the back page.

Canada-U.S. Great Lakes Water Quality Agreement (GLWQA) Amendments
Negotiations to amend the 1987 GLWQA were launched in early 2010. The Governments of Canada and the United States held the final negotiation session in early 2012 and the amended GLWQA has been finalized and approved. The amended Agreement was signed on September 7, 2012. ♦

In March 2012, large amounts of algae and suspended sediment were already visible in Lake Erie. These are attributed to warm winter temperatures that led to increased rainfall and much higher than average amounts of runoff from tributaries. Credit: NASA Visible Earth Gallery, www.visibleearth.nasa.gov





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Accomplishments

Local Projects Funded to Address Lake Priorities

Over the past two years, the U.S. Environmental Protection Agency (USEPA), through Great Lakes Restoration Initiative (GLRI) funding, conducted two competitive grant competitions to support restoration activities over the entire Great Lakes basin. These competitions resulted in the awarding of nearly US\$25 million for projects in the Lake Erie basin to address LaMP priorities such as phosphorus reduction, habitat restoration, and the creation of nearshore monitoring programs. Detailed information on GLRI projects can be found at: <http://greatlakesrestoration.us>.

In Canada, action on LaMP priorities is supported through federal funding and COA. In 2011, the Government of Canada announced CDN\$5 million over two years for the Great Lakes, to improve nearshore water and ecosystem health, and to better address the presence of phosphorus. Accomplishments in 2011 include: reporting on the current status and proposed ecosystem restoration strategies for the lower Grand River priority watershed; completion of the Lake Erie binational nutrient management strategy; ongoing LaMP management; and continuing research, monitoring and implementation actions to address LaMP priorities. An overview of recent successes and accomplishments of the 2007-2010 COA, as well as challenges that have been faced, can be found at <http://www.ec.gc.ca/grandslacs-greatlakes/default.asp?lang=En&n=B903EE0D-1>.

Enhanced Public Forum Implements Nutrient Projects

In 2011, the Ohio Environmental Council (OEC) received funding to effectively promote the implementation of the goals and priorities of the Lake Erie LaMP.

The project will focus on reducing nutrient loadings from tributaries through an aggressive outreach program. The project will engage the LaMP Public Forum network and new partners, such as resource conservation and development networks. Using a web site, PowerPoint presentations, and fact sheets, the OEC will coordinate an intensive and strategic outreach program aimed at reducing the most problematic sources of nutrients, including agricultural nonpoint sources.

The OEC's goal is to reach out to the agricultural community and local governments. The OEC will provide these audiences with information about the damaging impacts of nutrient pollution, links between certain farming practices and nutrient loss, and conservation practices that can reduce nutrient losses.

Targeting Resources in Priority Watersheds

U.S. Priority Watershed: Maumee River

The Lake Erie LaMP places a priority focus on the Maumee River watershed, because it is the source of approximately half

of the total phosphorus entering Lake Erie from the U.S. side. The USEPA is coordinating numerous GLRI projects and activities with other federal agencies, local partners and the agricultural community to reduce the amount of phosphorus leaving farm fields in the Maumee River watershed. The USEPA is currently in discussion with its GLRI federal partners to identify subwatersheds within the Maumee River watershed for even more intensive, targeted implementation in 2013 and beyond.

At the same time, habitat protection and restoration projects are also underway in the Maumee River watershed. GLRI projects totaling more than US\$6 million are effectively restoring wetland, coastal, and riparian habitats resulting in improved water quality, healthier fish and wildlife populations, and increased property values near restored areas. These projects are benefitting many species of concern.



Students participate in a shoreline re-vegetation project that will help to reduce nutrients and improve water quality in the nearby stream and ultimately Lake Erie. Credit: Grand River Conservation Authority.

Canadian Priority Watershed: Grand River

The Grand River, Thames River and Essex Region watersheds have been identified as parts of the Canadian Lake Erie basin that have a high impact on water quality in the lake. The Grand River is the largest Canadian tributary, draining into the eastern basin.

A new Grand River Water Management Plan (GRWMP) is being developed to ensure water quality and water quantity are maintained and improved over the next 25 years. When completed, this plan will: ensure sustainable water supplies for communities, economies and ecosystems, reduce flood damage potential, improve water quality to improve river health and reduce its impact on Lake Erie, and increase resiliency to deal with climate change.

Agencies helping to develop the new plan include: federal, provincial, and municipal governments; First Nations; and the Grand River Conservation Authority. Many of these same agencies are involved with the Lake Erie LaMP, and are working to ensure that the GRWMP supports the LaMP.



In 2012, the GRWMP received CDN\$900,000 from the Government of Ontario's *Showcasing Water Innovation* program, which was matched with funds from other project partners. In addition, municipal projects that support the broad goals of the GRWMP received over CDN\$4 million.

The GRWMP is scheduled for completion in 2013. For more information, please visit www.grandriver.ca/wmp. ♦

Challenges

Help Needed to Reduce Nutrients

In order to reduce the amount of nutrients entering Lake Erie, there is an urgent need for coordinated and strategic actions.

In 2011, the Government of Canada announced CDN\$5 million over two years for the Great Lakes to improve nearshore water and ecosystem health and to better address the presence of phosphorus. In the United States, the GLRI has dedicated more than US\$200 million over the past three years to improve nearshore water and mitigate the effects of nonpoint source pollution, particularly phosphorus throughout the entire Great Lakes basin.

You can help by taking action at home and in your community. At home, you can compost your food wastes; use low-phosphorus or slow release fertilizers, and only when dry weather is expected; and ensure septic systems are regularly inspected and maintained. In your community, you can raise local awareness about the importance of nutrient reduction in the Lake Erie basin.

For more information, please visit Environment Canada's web site at www.ec.gc.ca/greatlakes or the USEPA web site <http://epa.gov/greatlakes>.

Harmful Algal Blooms Continue

The 2011 *Microcystis* bloom in the western basin of Lake Erie appears to be the largest in the past 10-15 years, and posed a human health risk to swimmers at Maumee Bay area beaches. Phosphorus is a major contributor to excess algal blooms in Lake Erie, and identifying phosphorus sources is a key step towards developing and implementing effective reduction efforts. Researchers and scientists believe the 2011 algal bloom can primarily be attributed to farming practices in the Maumee River watershed, such as the type of fertilizer applied, the application method and the timing. These practices led to increased nutrient loadings from significant wet weather runoff events in the spring, which then triggered extensive summer algal bloom growth in the western basin of Lake Erie.

Preventing the Invasion of Asian Carp

The invasion of Asian carp poses a very significant biological threat to Lake Erie. Between 1995 and 2003, five live Asian carp have been individually collected from western Lake Erie.

However, monitoring of western Lake Erie at Sandusky and Toledo by the U.S. Fish and Wildlife Service since 2004 suggests that a reproducing Asian carp population does not currently exist. There is a potential risk of Asian Carp being transported to the Lake Erie basin in the event of a flood or high water levels, because flood conditions could create temporary connections between the Mississippi and Great Lakes basins in Ohio.

Individual fish can weigh up to 100 lbs (45 kg) and each day a fish can consume between 5-20% of its weight in plankton and other microscopic organisms. This voracious appetite would deprive most native fish of their key food source, and would threaten native mussel and sturgeon populations. One species of carp is easily startled by the sound of boat motors, and can leap out of the water and damage boats or injure boaters.

A multi-agency federal, state, local, and private stakeholder Regional Coordinating Committee has been established to implement actions to prevent the introduction of Asian carp into the Great Lakes. Details of these efforts can be found at: <http://asiancarp.us>. ♦

St. Clair – Detroit Connecting Waterway Update

Multiple federal, state, provincial, local, and non-profit agencies are partners on numerous restoration projects within the St. Clair – Detroit Connecting Waterway to increase habitat, clean up contaminated sediment, remediate Areas of Concern (AOCs), control pollution, and decrease stormwater inputs.

In 2010, GLRI provided US\$9.6 million in funding for eight projects that restore shoreline, coastal marshes, and fish habitat. Recent Canadian accomplishments include softened shoreline and restoration of aquatic, terrestrial, and wetland habitat. An assessment of sediment management options on the Canadian side of the St. Clair River AOC and a cleanup investigation of sediments in the Upper Trenton Channel of the Detroit River AOC are also underway.

In Southeastern Michigan, GLRI has also provided over US\$5 million in funding to "green infrastructure" construction projects that use vegetation to capture and treat stormwater runoff and associated pollutants, and to reduce combined sewer overflows to the Lake Erie basin. In Ontario, loadings of phosphorus are being reduced as a result of CDN\$240 million worth of upgrades to secondary treatment systems in Windsor, Amherstburg, Corunna, and Courtright, and construction of a Combined Sewer Overflow retention basin along the Windsor riverfront.



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Next Steps

Completing the Biodiversity Conservation Strategy

Of all the Great Lakes, Lake Erie is the most biologically diverse and has the greatest fish production. In order to restore and protect these assets for future generations, a binational Lake Erie Biodiversity Conservation Strategy (BCS) is being developed. This process is being led by The Nature Conservancy, Michigan Natural Features Inventory, and Nature Conservancy Canada, with support from Environment Canada and USEPA, and participation from hundreds of individuals and organizations from around the Lake Erie watershed and beyond. This is the second of two years where this process will produce lake-specific strategies that will recommend tailored approaches to most effectively conserve the unique biodiversity features of Lake Erie.

The geographic scope of the BCS encompasses Lake Erie and its watershed, as well as the St. Clair River, Lake St. Clair, the Detroit River, and the Niagara River above Niagara Falls.

Six biodiversity features have been identified as priority targets for conservation: the aquatic ecosystem, native migratory fish, coastal wetlands, islands, the coastal terrestrial ecosystem, and aerial migratory species. Threats to these targets include: invasive species, climate change, pollution from agriculture, shoreline alteration, and housing development.

Now that targets and threats have been identified, the project team is developing and refining custom conservation strategies for each area. For more information about the BCS, please visit <http://conserveonline.org/workspaces/erieblueprint>.

The Lake Erie Drainage Basin

Lake Erie naturally functions as three distinct basins. Its shoreline includes Point Pelee, the most southerly point in Canada, as well as portions of Ontario and the states of Michigan, Ohio, Pennsylvania and New York. Eleven Areas of Concern and one delisted Area of Concern, Wheatley Harbour, are found in the drainage basin.



For More Information:

For more information about the Lake Erie Lakewide Management Plan, visit the web site at www.binational.net or contact:

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