



# LAKE ERIE LAKEWIDE ACTION AND MANAGEMENT PLAN

## Annual Report 2013

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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 Action and Management Plans (LAMPs) for each lake. Lake Erie LAMP participants have identified ecosystem goals and objectives and assessed the state of the lake. Through the development of issue related strategies, the LAMP identifies 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](http://www.binational.net) or [www.epa.gov/glnpo/erie.html](http://www.epa.gov/glnpo/erie.html).

### Overview

Lake Erie 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 threatened by 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 primarily to excessive nutrient inputs from urban and rural land uses. In addition, Lake Erie water quality is affected by habitat loss and degradation and the introduction of non-native aquatic and terrestrial plant species.

The top priority for Lake Erie Lakewide Action and Management Plan (LAMP) partners is to address excess algal blooms by reducing nutrient inputs to the lake. This Annual Report summarizes recent progress, identifies current challenges, and defines next step actions. Recent progress includes:

- An update on the LAMP's Nutrient Management Strategy and nutrient reduction efforts at local and regional scales;
- An update on the Biodiversity Conservation Strategy (BCS) for Lake Erie;
- Report on projects supported by the Great Lakes Restoration Initiative (GLRI) and Canada-Ontario Agreement (COA); and
- Progress reports on the St. Clair-Detroit Connecting Waterway and priority watersheds in Canada and the United States.

### Canada-U.S. Great Lakes Water Quality Agreement (GLWQA) of 2012



On February 12, 2013, the Governments of Canada and the United States ratified the Great Lakes Water Quality Agreement of 2012. The Agreement facilitates binational action on threats to water quality and ecosystem health. More information on the Agreement can be found on the following website: [www.binational.net](http://www.binational.net).



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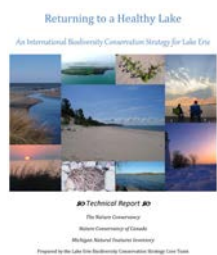
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### Accomplishments

#### Nutrient Management Strategy

Complementing its [2009 Status of Nutrients in the Lake Erie Basin](#) the Lake Erie LAMP work group developed and published the [Lake Erie Binational Nutrient Management Strategy](#). Both documents were created by the work group at the direction of the LAMP Management Committee, as a response to the alarming eutrophication problems in Lake Erie over the past decade. The Strategy is a coordinated and strategic response from Canada and the United States that outlines nutrient management actions to reduce excessive phosphorus loading and eutrophication of the lake. The success of the Strategy will depend on the commitment from various stakeholders to join forces and change how nutrients are currently used, applied, transported, and discharged. Multiple jurisdictions in both Canada and the United States will be responsible for implementing actions. The Strategy can be viewed at: [www.epa.gov/glnpo/lakeerie/binational\\_nutrient\\_management.pdf](http://www.epa.gov/glnpo/lakeerie/binational_nutrient_management.pdf).

#### Lake Erie Biodiversity Conservation Strategy



In order to restore and protect the distinctive biodiversity and extraordinary fish production of Lake Erie for future generations, a binational Biodiversity Conservation Strategy (BCS) has been completed by The Nature Conservancy, Michigan Natural Features Inventory, and Nature Conservancy Canada, with support from Environment Canada and U.S. Environmental Protection Agency (US

EPA), and the participation of hundreds of individuals and organizations from around the Lake Erie watershed. Covering Lake Erie and its watershed, including the St. Clair River, Lake St. Clair, the Detroit River, and the Niagara River above Niagara Falls, the BCS focuses on eight biodiversity features including the offshore and nearshore waters, connecting channels, native migratory fish, coastal wetlands, islands, the coastal terrestrial ecosystem, and aerial migratory species. The BCS identifies priority areas for conservation action and recommends strategies to deal with critical threats to biodiversity, including:

**Reducing the Impact of Agricultural Pollutants:** A) Target and intensify adoption of nutrient management Best Management Practices to reduce Soluble Reactive Phosphorus loadings to Lake Erie; and B) Promote in-field management of water and management of surface and subsurface drainage channels.

**Preventing and Reducing the Impact of Invasive Species:** A) Develop a common framework for aquatic invasive species control and management; and B) Assemble key regional partners to create a coordinated action plan for Common Reed and other priority terrestrial invasive species.

**Coastal Conservation: Preventing and reducing the impacts of Incompatible Development and Shoreline Alterations:** A) Build a business case for coastal conservation; and B) Develop a comprehensive education and outreach program for healthy shorelines.

**Reducing the Impacts of Urban Pollutants:** Improve municipal storm water management throughout the basin to mitigate phosphorus and contaminant impacts on water quality in the basin.

**Improving Habitat Connectivity by Reducing the Impact of Dams and Other Barriers:** Increase connectivity to Lake Erie, focusing on first barriers.

To download the final BCS report, please visit: <http://www.conservationgateway.org/ConservationByGeography/NorthAmerica/UnitedStates/michigan/Pages/lakeerie.aspx>.

#### Local Projects Funded to Address Lake Priorities



Over the past three years, the US EPA, through Great Lakes Restoration Initiative (GLRI) funding, conducted three competitive grant competitions to support restoration activities over the entire Great Lakes basin. These competitions resulted in awards of more than US\$60 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: [greatlakesrestoration.us](http://greatlakesrestoration.us).

GLRI funding also supported the final cleanup to remove the Presque Isle Bay Area of Concern (AOC) from the list of 11 remaining toxic hotspot AOCs in Lake Erie, as designated by the GLWQA. In February 2013, Presque Isle Bay became the first U.S. AOC in Lake Erie to be officially removed from the AOC list (the first Canadian Lake Erie AOC, Wheatley Harbour, was removed in April 2010).

In Canada, the COA and federal and provincial funding continue to support action on LAMP priorities, such as nutrients, biodiversity and the nearshore, including research and monitoring, local implementation in priority watersheds, and ongoing LAMP management.

#### Targeting Resources in Priority Watersheds

##### U.S. Priority Watershed: Maumee River



The Lake Erie LAMP continues to place priority on the Maumee River watershed, because it is the source of about half of the total phosphorus entering Lake Erie from the United States. The US EPA 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. Beginning in 2012 and continuing through 2013, U.S. federal GLRI partners identified the Upper Blanchard sub-watershed, upstream of Findley, OH, as an area of the Maumee River Watershed where phosphorus reductions are needed.

##### Canadian Priority Watershed: Grand River

The Grand River is the largest Canadian tributary to Lake Erie and drains into the eastern basin. In the early 2000s, efforts were initiated to assess the state of the lower Grand River. The importance of this reach, and of the inter-connection between the river and Lake Erie, has come to light over the past decade, as have the causes of its impairment. Lake Erie LAMP partners are utilizing a Decision Analysis approach to engage a broad range of stakeholders and partners in developing a shared vision and assessing options for restoring natural ecological processes in the lake-effect zone of the Grand River.



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Development of the new Grand River Water Management Plan continued in 2012. Scheduled for completion in 2013, the plan will ensure sustainable water supplies for communities 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. In 2012, broad objectives for the plan were finalized and the development of targets and indicators to track progress was initiated. The Water Management Plan has received over CN\$1 million in funding support from the Province of Ontario.

### **Lake Erie Binational Public Forum Activities**

In 2012, the Ohio Environmental Council, working with the Lake Erie LAMP Public Forum continued its 2011 GLRI project which consists of two major components:

- (1) Creation of an educational website ([www.lakeerieforum.org](http://www.lakeerieforum.org)) that focuses on Lake Erie's unique physical characteristics, its economic contributions and its environmental health. The site includes detailed scientific information about the lake and features educational videos that can be used as teaching modules.
- (2) A series of educational programs focusing on Lake Erie's most urgent problem—nutrient pollution directed toward two key constituencies within the watershed—farmers and local government officials. This series of educational meetings began in the fall of 2012 and will continue through the summer of 2013.

Canadian Forum members have been working to promote the Lake Erie Binational Nutrient Management Strategy recommendations by organizing presentations to community and environmental groups, and by distributing information, including a display, to conferences and meetings across the watershed. Members were also active in providing comments on the GLWQA and the Province's Proposed Great Lakes Protection Act.

## **Challenges**

### **Help Needed to Reduce Nutrients**

You can help reduce the amount of nutrients entering Lake Erie 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](http://www.ec.gc.ca/greatlakes) or the USEPA website [epa.gov/greatlakes](http://epa.gov/greatlakes).

### **Preventing the Invasion of Asian Carp**

The invasion of Asian carp species poses a significant biological threat to Lake Erie. Although live Asian carp have been found within Lake Erie, monitoring by the U.S. Fish and Wildlife Service suggests that reproducing Asian carp populations do not currently exist. There remains, however, 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 the Great Lakes basin in Ohio. If introduced, the voracious appetite of these fish for plankton and other microscopic organisms could deprive native fish of their key food source. A binational, multi-agency federal, state, local, and private stakeholder 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 [asiancarp.us](http://asiancarp.us).

### **Managing Non-Native Phragmites**

The non-native Common Reed (*Phragmites australis*) is the key terrestrial invasive species threatening Lake Erie. This aggressive invasive plant out-competes native wetland plants resulting in expansive mono-culture stands. The loss of native plant diversity impacts wildlife through reduction of suitable habitat. *Phragmites* is now very common along the Lake Erie coast, dominating several large coastal wetlands, and is continuing to spread. Currently, management actions to control invasive *Phragmites* are limited to spraying and burning. The Great Lakes *Phragmites* Collaborative ([greatlakesphragmites.net](http://greatlakesphragmites.net)) was established in 2012 to facilitate collaboration, communication, and the effectiveness of *Phragmites* management across the Great Lakes.

## **St. Clair – Detroit River System Update**

Federal, state, provincial, local, and non-profit agencies continue to collaborate on numerous projects to improve the St. Clair – Detroit River System (SCDRS). In 2011-2012, \$3.5M in U.S. funds from GLRI supported SCDRS and related Great Lakes regional projects, such as the Great Lakes Observing System, long-term Great Lakes contamination monitoring, habitat restoration, toxic chemical reduction, non-native species control, and ensuring healthy beaches. An additional \$1.33M in GLRI funds supported projects specifically related to Lake St. Clair. These projects are aimed at reducing the impact of storm water at Metro Beach, developing a watershed management plan for Anchor Bay, and eliminating sources of *E. coli* beach closures.

In Canada, a multi-partner project team is collaborating on the development of a new Water Management Plan for the Thames River, the largest Canadian tributary to Lake St. Clair and a priority watershed of the Lake Erie LAMP. The goals of the project include improving water quality, improving the management of water quantity issues, and strengthening community connections to the river. A broad objective of the plan is to recognize the important link between the Thames River, Lake St. Clair and Lake Erie. The project received \$402,000 (Canadian) in funding in 2011 from the Ministry of the Environment's Showcasing Water Innovation Program. These funds are being used for water quality assessment of the Thames River, revising flood risk scenarios through the adoption of climate change models, and to develop a First Nation engagement strategy.

Bi-nationally, measurable progress has been made in addressing impairments to beneficial uses in the St. Clair and Detroit River AOCs. Tainting of Fish and Wildlife Flavor and Added Costs to Agriculture or Industry in the St. Clair River were jointly re-designated as unimpaired by U.S. and Canada. Two additional St. Clair River Beneficial Use Impairments, Restrictions on Dredging Activities and Degradation of Aesthetics, have been re-designated on the U.S. side, while in the Detroit River AOC, Restrictions on Drinking Water Consumption or Taste and Odor Problems has been re-designated by both the U.S. and Canada.

The 6th Lake St. Clair Conference was held in November 2012 highlighting both Canadian and U.S. restoration efforts ([glc.org/stclair/conf2012\\_proceedings.html](http://glc.org/stclair/conf2012_proceedings.html)).



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### Next Steps

#### ***Cooperative Science and Monitoring Initiative (CSMI) 2014***

Each year, one of the Great Lakes is the focus of a binational cooperative science study called the Cooperative Science and Monitoring Initiative (CSMI). CSMI last came to Lake Erie in 2009 and returns in 2014. During a CSMI, U.S. and Canadian partners closely coordinate monitoring efforts with research agendas in order to answer the most prominent science-related questions of the LAMP, with the ultimate goal of providing environmental managers with the information needed to determine the appropriate management actions for restoring and protecting the chemical, physical, and biological integrity of each lake. Like the 2009 CSMI year for Lake Erie, it is expected that the 2014 year will focus on issues related to phosphorus (both total and soluble-reactive) in the nearshore of the lake's western basin, how that phosphorus is linked to the land and tributaries of the western basin, and the determination of specific management actions to curtail the development of algal blooms in the western basin, which can seriously damage the lake's water quality and habitat.

#### ***Implementation of the LAMP Binational Nutrient Management Strategy***

Now that the LAMP work group's binational Nutrient Management Strategy has been agreed upon and published, the LAMP work group will consider, in consultation and coordinated with the GLWQA Nutrients Annex work, what actions each of the LAMP partners and partner agencies need to conduct to effectively implement the plan and achieve its goals. In addition, the work group will review any new and emerging science to develop, review, revise or update any phosphorus targets as needed to achieve the goals of the Strategy and the renewed GLWQA commitments.

#### ***LAMP adoption of the Binational Biodiversity Conservation Strategy***

The LAMP work group will review the binational Lake Erie BCS (see Accomplishments section above) to determine how best to implement it in the United States and Canada and to incorporate it into future LAMP activities.

### 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. Two of Lake Erie's 12 designated Areas of Concern have been delisted: Wheatley Harbour and Presque Isle Bay.



### Contact Information

For more information about the Lake Erie LAMP, visit our website at [www.binational.net](http://www.binational.net) or contact:

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