LAKE ERIE LAKEWIDE MANAGEMENT PLAN

Annual Report 2010

In this Issue

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 identified ecosystem goals and objectives and assessed the state of lake. Through the development of issue related strategies, it 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 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 due to the presence of numerous beaches and extensive wetland complexes. It is sensitive to pressures from urban and rural land uses, such as excessive nutrient inputs, habitat loss and degradation and the introduction of non-native invasive species.

Lake Erie Lakewide Management Plan (LaMP) participants continue to tackle the challenge of managing this variable and sensitive ecosystem. This Annual Report summarizes recent progress, as well as challenges and next steps for the future. Highlights in this report include:

- A summary of a completed assessment on the Status of Nutrients in Lake Erie;
- An update on the development of a Binational Nutrient Management Strategy that includes new nutrient targets for the lake;
- The challenges associated with implementing and achieving nutrient targets;
- An update on future plans to develop a Binational Biodiversity Conservation Strategy for Lake Erie, and;
- An update on the achievement of significant milestones for two Lake Erie Areas of Concern: Wheatley Harbour and the Maumee.

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

Lake Erie is known for its many recreational beaches, like this one near Point Pelee National Park in Ontario Canada. Credit: Joe Barber, Ohio DNR, Division of Wildlife.

Accomplishments

Assessing the Status of Nutrients in Lake Erie

Why do nutrients matter?

In recent years, Lake Erie water quality has declined. Algal blooms that threatened the Lake Erie ecosystem in the past have returned. In the 1970s and 1980s, collaborative efforts to reduce phosphorus in Lake Erie by treating point source discharges were successful and lake conditions improved. However, in the mid 1990s problems resurfaced, but the reasons for the resurgence of the algal blooms are much more complex than in past decades.

What is the current situation?

To better understand the current nutrient situation, the Lake Erie Lakewide Management Plan team developed a *Status of Nutrients in the Lake Erie Basin Technical Report*. The technical report describes the status of nutrients in Lake Erie (as of November 2008), identifies the potential sources and transport mechanisms that move nutrients through the ecosystem and defines the role of nutrients in increased algal growth. Ongoing research will continue to fill knowledge gaps and answer outstanding questions.

Challenges

Meeting Total Phosphorus Targets

Why set phosphorous targets?

Phosphorous is a nutrient essential to lake ecosystem health, but in excess amounts it stimulates algal blooms like those recently observed in Lake Erie. These algal blooms lead to additional problems such as a potential to produce toxins, declines in recreational enjoyment of the lake (including beach closures), added costs to treat drinking water, and the degradation of important fish and wildlife habitats.

Recently, the Lake Erie Lakewide Management Plan Committee assessed the science on nutrients and identified targets to reduce phosphorus concentrations in surface water in an attempt to decrease problem algal blooms in the lake. Phosphorus targets were identified for four different habitat types: tributaries, nearshore, coastal wetlands and offshore.

What are the challenges to achieving these targets?

Because Lake Erie is a complex ecosystem, there are challenges to implementing and achieving lakewide targets and phosphorous targets may not be immediately achieved in all parts of the lake.

Some of the factors that make the implementation and achievement of nutrients targets for Lake Erie difficult include:

- **Climate change** and its potential impact on the lake's hydrological processes, including warmer water, reduced lake ice cover, increased severe storms and lower water levels;
- The introduction of **aquatic invasive species** and their affect on the way that nutrients are used or transported through the food web;
- **Shoreline modifications** and their impact on how water is transported to the lake;
- The **multiple partners** managing the lake and their differing mandates and regulatory frameworks;
- Lake Erie's **three distinct basins**, which causes differences in how nutrients behave within the lake, and;
- The threat of the **large human population and intense urban and rural development** in increasing nutrient inputs.

Despite these challenges, setting and working towards nutrient targets is important. They mark a goal that, when reached, will lead to a sustainable ecosystem that supports beneficial economic and social activities for society.

Taking Action to Manage Nutrients in Lake Erie

What is the Nutrient Management Strategy?

The Lake Erie Lakewide Management Plan Committee recognizes an urgent and immediate need for coordinated nutrient management actions. As a result, a *Lake Erie Binational Nutrient Management Strategy* is being drafted and once completed, it will define the goals, objectives, targets, indicators, priority watersheds, monitoring and research needed to limit further eutrophication and improve current conditions in Lake Erie.

Setting and achieving phosphorous targets will prevent excessive algal blooms such as this one near Maumee Bay, Ohio in September 2008. Photo credit: Joe Barber, Ohio Department of Natural Resources Division of Wildlife

Partnerships: A key to success

Achieving the goals of the *Lake Erie Binational Nutrient Management Strategy* is an essential next step towards the successful restoration of Lake Erie. Partnerships will be critical to the successful achievement of results and will require the commitment and participation of federal, state and local governments, non-government organizations, businesses, landowners and local citizens, in both Canada and the United States to work together and take action.

The community successfully faced the nutrients challenge before, and with the same commitment, collaboration and coordination, it can be done again.

Next Steps

Developing a Binational Biodiversity Conservation Strategy

What is biodiversity conservation?

Biodiversity conservation is the restoration and protection of the diversity of plants and animal life and their habitats. It is essential to a healthy lake ecosystem.

To effectively conserve biodiversity in Lake Erie, a coordinated, binational, lakewide approach is needed to define and achieve biodiversity targets.

The Canada-Ontario Agreement Respecting the Great Lakes Basin Ecosystem (COA) requires binational biodiversity conservation plans to be completed for four of the Great Lakes, including Lake Erie.

What's being done?

Lakewide Management Plan participants in Canada and the United States are collaborating with partners to develop a coordinated Binational Biodiversity Conservation Strategy for Lake Erie. This will involve compiling existing data and information, identifying conservation targets and developing recommended actions for restoration and protection.

Once completed, the Binational Biodiversity Conservation Strategy will strengthen partnerships and recommend actions that will contribute to conserving and restoring the biological diversity of the Lake.

Coming Soon: Lake Erie Cooperative Science and Monitoring Report

The Lake Erie LaMP team and participants depend on comprehensive and timely science and monitoring information in order to adapt policies and actions to restore and protect the lake. In 2009, scientists and researchers conducted intensive fieldwork and data collection on Lake Erie. Initial results are scheduled to be available in 2011 and will be assessed in the 2013 LaMP.

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

On October 30, 2009, U.S. President Barack Obama provided US$475 million for the Great Lakes Restoration Initiative (GLRI). In addition to providing resources for U.S. Federal Task Force partners, more than US$250 million is available for grants and project agreements to jump-start Great Lakes restoration efforts by states, tribes, local governments and not-for-profit organizations.

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

For more information on the GLRI, visit: *http://www.epa.gov/greatlakes/glri/index.html* and for updates, visit: *http://greatlakesrestoration.us/action/?p=161*.

Milestones Reached in Two Areas of Concern

Under the Great Lakes Water Quality Agreement, the governments of Canada and the United States committed to develop Remedial Action Plans (RAPs) to restore 43 Areas of Concern (AOCs) in the Great Lakes region. Progress is being made in all AOCs. Recently, two AOCs on Lake Erie have reached significant milestones: Wheatley Harbour in Canada and the Maumee in the United States.

Wheatley Harbour AOC delisted

In Canada, Wheatley Harbour AOC has completed restoration actions and has been removed from the list of Areas of Concern. Remedial actions were identified and implemented to control and improve industrial wastewater, agricultural runoff and other sources of water pollution. Water quality in Wheatley Harbour and Muddy Creek has improved significantly. There are no new sources of polychlorinated biphenyl compounds (PCBs) to the harbour. Levels of PCBs in sediments are low and no longer pose a risk to local fish and wildlife. Phosphorous and bacteria levels have declined, and fish and wildlife populations are healthy.

Significant sediment remediation in the Maumee AOC

In the Maumee AOC near Toledo Ohio, work is underway to remediate 265 000 cubic yards (202 607 cubic metres) of contaminated sediment in Ottawa River and Sibley Creek portions of the AOC. In 2009, the U.S. Environmental Protection Agency and the Ottawa River Group began the Great Lakes Restoration Initiative/ Legacy Act Ottawa River Cleanup. At a total cost of US$49 million, this is one of the largest single projects funded through the Great Lakes Legacy Act and local cost share. The project is expected to be completed by late 2010. After completion, a long-term monitoring plan will be implemented to measure its success.

Special Events

International Association of Great Lakes Research Conference
Location: Toronto ON Canada
Date: May 17-21, 2010
For More Information:
www.iaglr.org/conference/

10th Annual Grand River Water Forum
Location: Cambridge ON Canada
Date: September 17, 2010
For More Information:
www.grandriver.ca

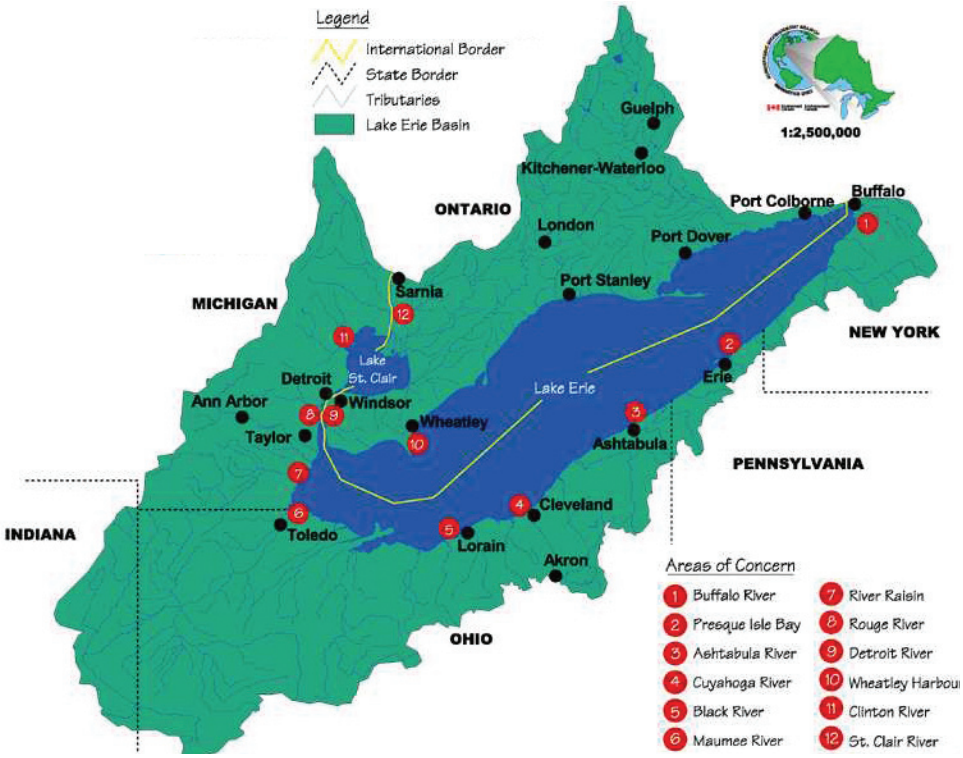
Ohio Coastweeks
Location: Multiple
Date: Sept. 18 – Oct. 3, 2010
For More Information:
www.lakeerie.ohio.gov/Coastweeks.aspx

Clean Your Streams
Location: Maumee AOC
Date: Sept. 18
For More Information:
www.partnersforcleanstreams.org

6th Annual Healing our Waters – Great Lakes Restoration Conference
Location: Buffalo, NY USA
Date: September 22-24, 2010
For More Information:
www.healthylakes.org

The Lake Erie Drainage Basin

The Lake Erie ecosystem naturally functions in 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.



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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