

LAKE ERIE



LAKEWIDE  
MANAGEMENT  
PLAN

# Lake Erie LaMP Update 2003

**"So I'm sending them off.  
Oh, their future is dreary.  
They'll walk on their fins  
and get woefully weary.  
In search of some water that isn't so smeary.  
I hear things are just as bad up in Lake Erie."  
- *The Lorax*, Dr. Seuss, 1971**

"Things" were definitely bad for Lake Erie when that little ditty was written in 1971. But, as noted by Random House, publishers of the popular Dr. Seuss books, Lake Erie had improved by 1991 to the point that the last line of *The Lorax* was emphatically incorrect. Subsequently, it was removed from all future editions – deep-sixed by a re-energized lake!

Today, work to improve water quality and the health of the lake is vigorously moving ahead through various programs such as the Lake Erie Lakewide Management Plan (LaMP).



Photo: Steve Sauder

With this in mind and to deal with the many chemical, physical, and biological complexities of the Lake Erie ecosystem – as well as the often-competing interests of diverse stakeholders – the LaMP applies an “adaptive management” method to its actions.

Why? Because things change and, as a result, flexibility is a must! For example, ongoing research may bring new problems to light that must be acted upon, priorities of society and governments shift with the times, and that constant bugbear that drives us all – *money* – fluctuates in resource budgets, which thereby determines the ability to proceed with various projects.

Guided by terms of the Great Lakes Water Quality Agreement (GLWQA) – an agreement between governments of the United States and Canada concerning stewardship of the Great Lakes basin – the Lake Erie LaMP has waded in hip-deep in its efforts to protect and nurture this great natural resource.

Part of this process calls for the Lake Erie LaMP to produce a detailed report every two years highlighting its work and progress during the period, the lake’s current status, and remedial action suggested for immediate implementation. This *Update* is meant to provide a condensed version of the full **LaMP 2002 Report** which can be accessed at: [www.binational.net](http://www.binational.net)

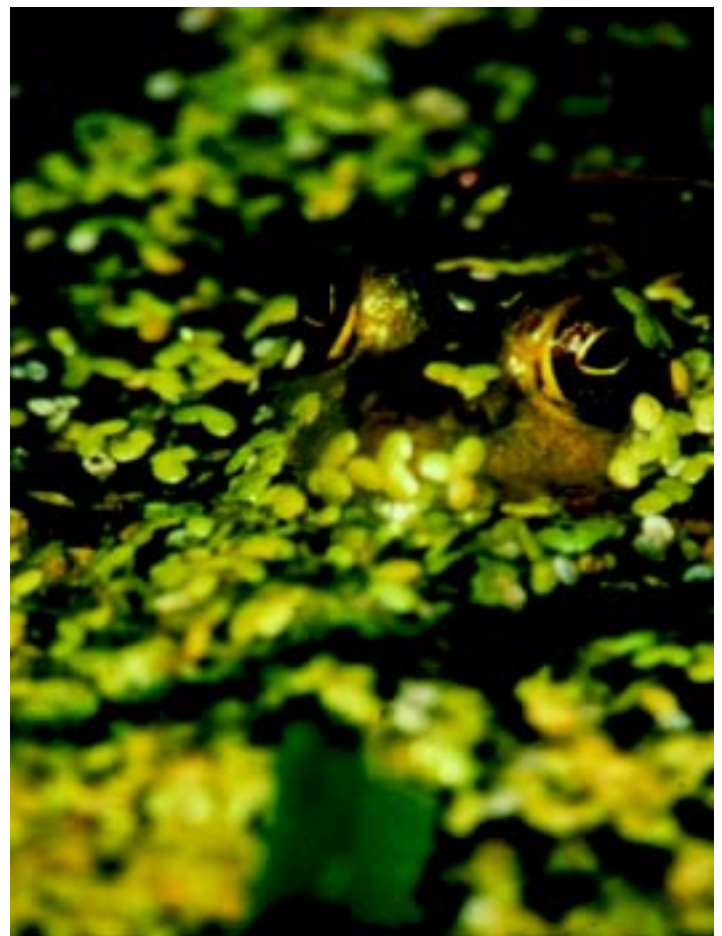
While **Environment Canada** and the **U.S. Environmental Protection Agency** head up the LaMP, it takes an array of federal, state, provincial and local agencies as well as *stakeholders*, including the *public*, to successfully implement the LaMP through consensus and action-oriented commitment.

## Ecosystem Approach

The GLWQA directs that the LaMP take an ecosystem approach to assessing problem definition and applying remedial actions. That concept, woven throughout the **LaMP 2002 Report**, is particularly apparent in the ecosystem objectives and habitat strategy development sections of the document.

The report notes “the environmental integrity of Lake Erie is dependent not only on various characteristics and stressors within the lake itself, but also on actions implemented throughout the Lake Erie watershed and beyond.”

- urban sprawl,
  - shoreline development,
  - climate change,
  - the introduction of exotic species,
  - exploitation and destruction of natural lands and resources,
  - the dominant agricultural and industrial practices within the lake basin, and
  - long-range transport of contaminants from outside the basin.
- *all* impact the health of Lake Erie.





## Ecosystem Alternatives

The *LaMP 2000 Report* first introduced the concept of *ecosystem alternatives* or potential outcomes for the lake. Scientists and government agencies gave lengthy study to a variety of factors that impact upon the lake and what could be expected if certain management actions were exercised.

All of that was boiled down to provide four potential ecosystem alternatives for consideration in the *LaMP 2002 Report*. Each of the alternatives points to different future potential outcomes for the lake as a result of management actions involving land use, nutrient controls, contaminant sources, and resource exploitation.

It's an approach that differs from those used for developing objectives for the other Great Lakes. The process of analysing ecosystem alternatives for Lake Erie has provided a greater understanding of those management actions that impart the greatest effect and of those components that are most directly impacted.



Photo: Upper Thames River Conservation Authority

As a component of choosing a vision for the environmental future of Lake Erie, the LaMP's Work Group sought input on the four ecosystem alternatives through discussions with members of the Lake Erie Binational Public Forum, along with agency reviews, culminating in the selection of *Alternative 2*.

Alternative 2 was judged as being the most desirable, targeting themes of sustainable development and of multiple benefits to society through a healthy Lake Erie ecosystem. It highlights the importance and urgency of improving land use activities, supports continued diligence in nutrient management, and recognizes the vulnerability of fish and wildlife species.



Photo: Upper Thames River Conservation Authority



## Management Objectives

The next step in the process is the determination of ecosystem management objectives. These objectives are targets that, when *all* are achieved, result in the preferred ecosystem alternative being realized.

The **LaMP 2002 Report** points out that the challenge for Lake Erie lies in developing ecosystem objectives that are compatible within its three distinctive basins – Eastern, Central and Western – and their very different characteristics.

Development of sub-objectives for each basin may also be required, resulting in substantial management of their watersheds and land use activities, the report indicates.

So what ecosystem management objectives are currently seen as necessary for the improvement of Lake Erie? The **LaMP 2002 Report** contains *full documentation* on each of the goals, but briefly, they are set down and defined as follows:

### Land Use:

All land use activities within the basin result in gains in the quantity and/ or quality of natural habitat to the extent that native biodiversity and species integrity can be realized to the greatest degree possible throughout the basin and be maintained for the benefit of future generations.

### Nutrients:

Nutrient inputs from both point sources and non-point sources will be managed to ensure that loadings are within bounds of sustainable watershed management and consistent with ecosystem requirements as described in Ecosystem Alternative 2.

### Exploitation:

Exploitation and disturbance of aquatic and terrestrial species shall be managed to ensure that the integrity of existing healthy communities be maintained. In addition, exploitation and disturbance should be managed to ensure that these factors do not prevent recovery of degraded communities, to the extent allowed by habitat. The harvest of valued timber resources, extraction of aggregate deposits and the utilization of other features of the working landscape should be done in a manner that is sustainable and that affords the greatest opportunity to preserve and enhance the biological integrity of the Lake Erie ecosystem.

### Contaminants:

In order to achieve Ecosystem Alternative 2, toxic chemical and biological contaminant loadings within the basin must decline to a level that would permit sustainable use of natural resources.



Photo: Upper Thames River Conservation Authority

## Beneficial Use Impairments

The main cause of wildlife habitat impairment in the Lake Erie basin, the **LaMP 2002 Report** notes, is the dramatic change in land use since European colonization began. Recent assessment of more than 300 species show that 38 species – 10 reptiles, 5 amphibians, 19 birds, and 4 mammals – were clearly impaired in *all five* Lake Erie jurisdictions, while another 11 species – 2 reptiles, 3 amphibians, and 6 birds – were impaired in *4 out of 5* jurisdictions.





Because of this evaluation, the Lake Erie LaMP will be developing a habitat strategy that will focus on habitat protection, restoration, and enhancement efforts within the basin. The data on impaired species will also be used in the formation of ecosystem objectives for the preferred ecosystem alternative chosen for the Lake Erie basin.

Happily, some pluses are also apparent in the current report. Among them, Lake Sturgeon appear to be making a comeback after being nearly wiped out by over-fishing, pollution, and damming of rivers in the early 1900s. Fishery biologists are optimistic and say the population is rising. Catches of juvenile sturgeon (three to six years old) and a seven-inch fish, spawned last spring, suggest that sturgeon are reproducing in Lake Erie.

As well, management efforts will be improved for various fish because LaMP evaluations found that the fish community was unstable. An increase in populations of walleye and yellow perch is a goal under the Co-ordinated Percid Management Strategy developed by Lake Erie fisheries management agencies.

Positive signs are apparent in the western basin fish community, where white bass stocks are increasing and prey fish populations have recovered from low levels of the mid-1980s.

Top that with a five-year fisheries restoration program initiated by Ontario Ministry of Natural Resources for eastern Lake Erie and the future for fish stocks of the lake shines even brighter. This program, in co-operation with the New York State Department of Environmental Conservation, is now establishing regulations for conservative harvest, instigating a major stock assessment program, and implementing a fisheries inventory program and habitat assessment for near-shore waters and lake-affected zones of rivers.

## Habitat Strategy

While the *LaMP 2000 Report* looked toward a habitat action plan, subsequent review has indicated a need for strategic planning to determine what best can be done to tie existing efforts together on a lakewide basis.

The *LaMP 2002 Report* adopts this theme, envisioning that such a strategy will provide a framework to guide and co-ordinate habitat protection and restoration efforts in the Lake Erie basin. Key groups and agencies will be joining this effort to determine appropriate basin-wide goals to be pursued by the Lake Erie LaMP.

The focus at this time includes:

- Encouraging habitat projects through existing programs and grants;
- Co-ordination of bioregional projects in Ontario, New York, Pennsylvania, Michigan and Ohio to develop a comprehensive, Geographic Information System (GIS)-based, natural heritage map to help establish priority habitat work areas, assist in project monitoring, and reflect the basin's continually changing land use;
- Analyzing existing habitat management objectives for Lake Erie and its watershed and determining ways to support objectives that meet LaMP goals;
- Determining habitat quality and quantity by measuring ecological function;
- Networking with groups conducting research or who are developing and implementing solutions to key habitat stressors such as climate change, exotic species, sediment loading;
- Encouraging stronger controls on key stressors impacting Lake Erie habitats;
- Linking habitat planning with ecosystem objectives for the selected Lake Erie ecosystem alternative;
- Formalizing a distribution network to provide information on priority areas being targeted by the LaMP.



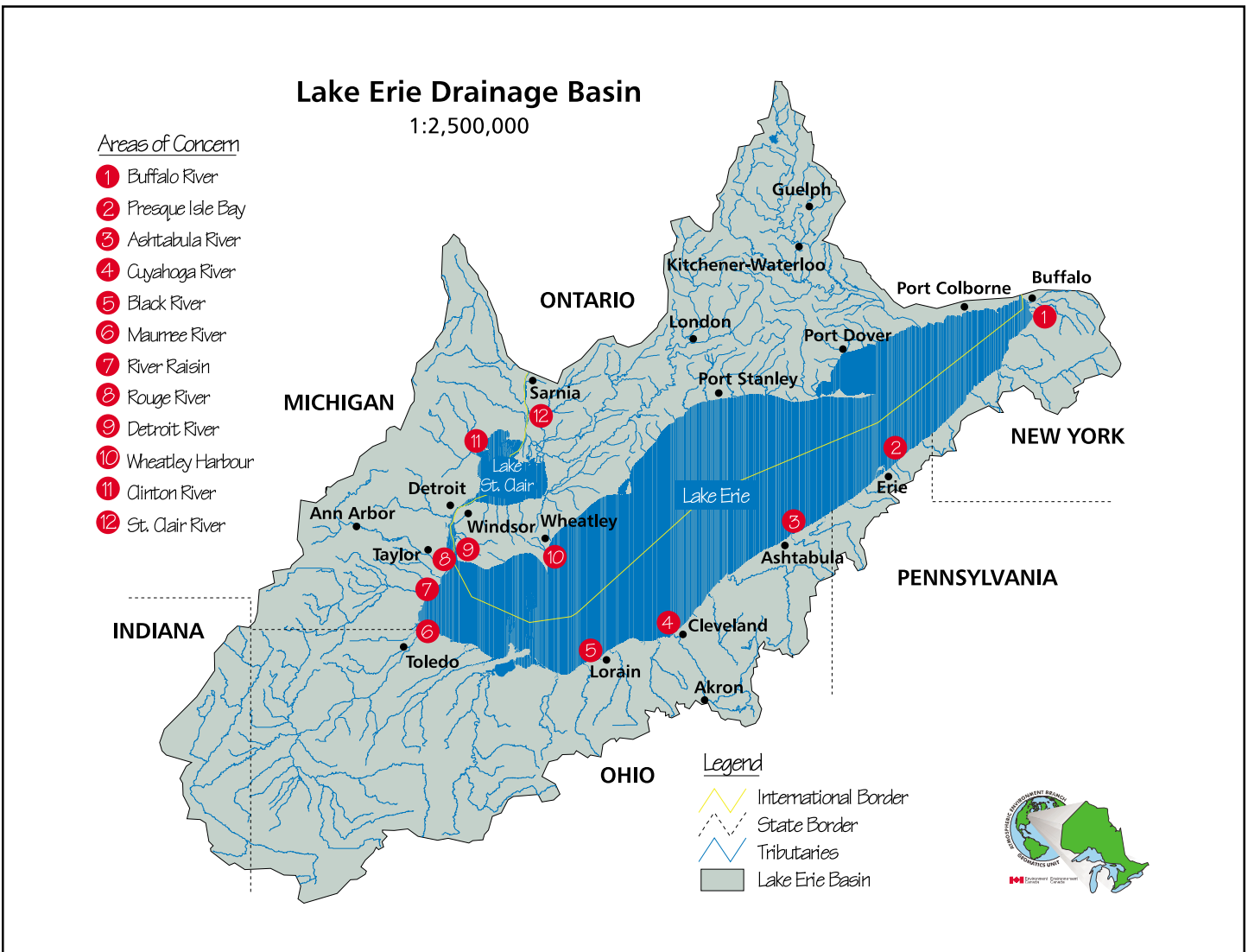


## Sources and Loads

Information continues to be collected on the sources of pollutants affecting Lake Erie's ecosystem by monitoring sediments, tissues of benthic invertebrates and fish, municipal and industrial discharges, and chemical use by our society. Together they provide a picture that LaMP agencies are using in pollution prevention and in special areas that warrant priority remediation attention.

Work is progressing towards amassing a database, essential in the development of a specialized Geographic Information System (GIS) program. This program will be an important scientific tool to be used, in areas such as tracking and identifying locations that are potential source areas for contaminants.

Mercury and polychlorinated biphenyls (PCBs) remain the chief contaminants of concern in Lake Erie, according to the report. Despite the fact their levels have declined by one-third from those of 30 years ago, they remain the prime reason for the majority of Great Lakes fish consumption advisories today, thereby reinforcing their placing on the Lake Erie LaMP's critical pollutants list.



## Human Health

While the *LaMP 2000 Report* pointed to drinking water, recreational water use, and fish/food consumption as pathways of exposure that are relevant to human health, the **LaMP 2002 Report** indicates that limited human health expertise residing in the LaMP agencies and lack of resources made it difficult to focus in this area.

As a result, creation of a Great Lakes Human Health Network is underway to bring together experts from across the region in an effort to provide a forum for collaborating and sharing of information to reach a consensus on Great Lakes environmental human health priorities and to enhance the work of the various LaMP agencies.

## The Lake Erie Binational Public Forum

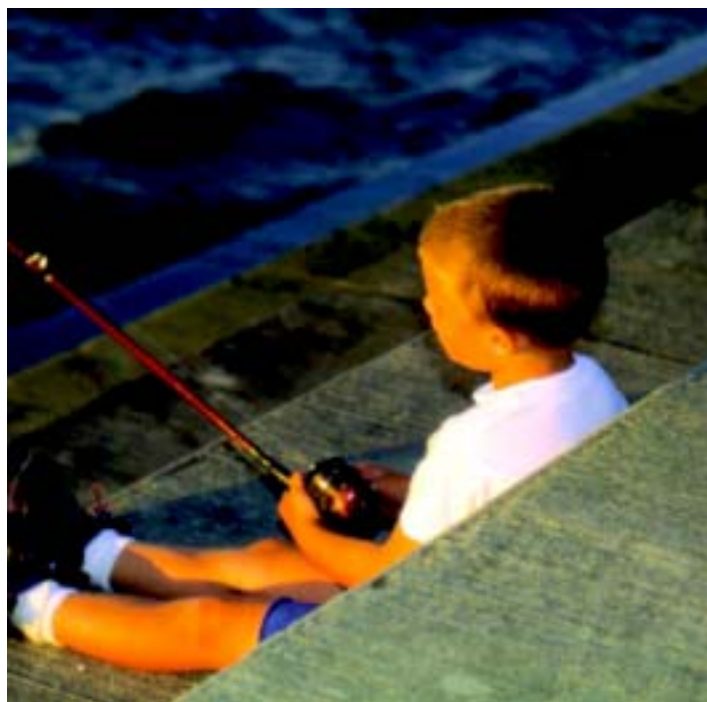
Established in 1995, the Lake Erie Binational Public Forum ([www.erieforum.org](http://www.erieforum.org)) has brought together citizens from around the basin representing a variety of talents, experience, and geographic areas to assist in the planning, development and implementation of the LaMP.

Self-governing, self-directed, and self-implementing, the Forum remains a vital public participation group, acting as a sounding board for proposed government initiatives, promoting its own recommendations, and providing an information link to

the widespread population of the Lake Erie basin.

The Forum has been an integral part of discussions surrounding the LaMP's ecosystem alternatives, sought out specifically by management for its input and advice on which alternative Forum members would endorse.

The Forum felt that the public needed to understand more about Lake Erie and the LaMP. To this end, Forum members created a communication



package containing text and pictures describing Lake Erie's past, present, and foreseeable future under topics such as: human health, recreation, habitat protection and restoration, fish and wildlife, PCB and mercury reduction, Remedial Action Plans, beneficial uses, land use, drinking water and exotic species.

After months of work involving many internal discussions and a variety of revisions, a colourful, informative 45-minute slide show was produced, resulting in favourable feedback from Canadian and American audiences who have viewed the presentation.

The Forum also won plaudits for producing an easy-to-read, culturally sensitive fish consumption brochure distributed throughout the South Shore region. In partnership with the Delta Institute, Great Lakes United, the National Wildlife Federation and the Ohio Environmental Council, the Forum members created the special pamphlet to alert at-risk families, both low income and minority, to the health dangers of consuming fish tainted by bioaccumulative substances such as mercury and PCBs. The booklet also gives positive alternatives for cooking, cleaning and fish selection to lower the toxic risk.

Initially targeted to specific local areas and communities, more than 12,000 brochures were distributed early in the campaign, with the number growing to a further 17,750 as a result of partnering with a wide variety of South Shore organizations. The brochure, together with related materials such as a fish advisory and fish identification guide, magnets, and posters, is being considered for distribution to the entire basin in the ensuing months.

### A Family's Guide to Eating Fish from the Lake Erie Basin

A must-read for eating fish caught in Lake Erie and the rivers and streams that feed into it!



picture by Anthea Soez

Fish is a source of protein and is low in saturated fat. Get the benefits and reduce the risks of eating fish by wisely choosing

- ~ safer places to catch fish ~
  - ~ safer types of fish ~
  - ~ safer ways to prepare fish ~
  - ~ safer amounts of fish to eat ~
- for yourself and your family.

## How to Get Involved

The report and other LaMP material can be accessed at: [www.binational.net](http://www.binational.net)

If you would like to receive the **Lake Erie LaMP Update** and other Lake Erie LaMP information as it becomes available, join the Lake Erie Network. Contact:

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## We Are Moving!

The LaMP web sites are moving! Information related to the Great Lakes and Lakewide Management Plans will be housed on one new website: [www.binational.net](http://www.binational.net)

In an effort to simplify things, Environment Canada and the U.S. Environmental Protection Agency have set up a web site that deals with binational programs. At this new site you will find such topics as the Lakewide Management Plans and Binational Remedial Action Plans as well as other binational programs that the two agencies participate in.

Remember to add [www.binational.net](http://www.binational.net) to your list of favourites!



February 5/03

