LaMP UPDATE

LAKE ONTARIO • LAKEWIDE MANAGEMENT PLAN • LE PLAN DE GESTION PANLACUSTRE • DU LAC ONTARIO

LAKE ONTARIO LAKEWIDE MANAGEMENT PLAN UPDATE '08

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2008 Binational Collaborative Research and Monitoring Initiative

The Lake Ontario LaMP partners are getting to the bottom of changes to the lower food web. This year, LaMP agencies are working together on a detailed science investigation of the entire lake focusing on:

- the lower food web and its relationship to declining populations of fish, including impacts of invasive species and low nutrient levels;
- understanding altered lake dynamics that have led to relatively low nutrient levels in offshore waters coupled with much higher nutrient levels in the nearshore zone; and
- the status of legacy and new chemical pollutants and their impact on the lake.

In 2008, scientists from Canada and the U.S. are collaborating on intensive and innovative scientific research on Lake Ontario. Credit: USEPA, F. Luckey.

The 2003 Lake Ontario Lower Aquatic Food Web Assessment (LOLA) focused mainly on offshore waters and confirmed that invasive freshwater species such as zebra and quagga mussels, spiny waterflea and fish-hook waterflea are causing food web disruptions. Scientists are concerned that these invaders may be reducing food for native zooplankton and fish species. Quagga mussels dominate the bottom of the lake to depths of up to 90 metres (approximately 300 feet) and are outcompeting native organisms such as *Diporeia* for food. *Diporeia* is a bottom-dwelling organism that is an important food source upon which small forage fish depend. The decline of *Diporeia* is so great that scientists believe this important organism may be at risk of completely disappearing from the Lake Ontario portion of its range.

LOLA 2003 also documented that Lake Ontario has a nutrient-limited offshore fish community. Low nutrient levels are believed to have reduced algae production in the offshore. On the other hand, monitoring of Lake Ontario nearshore areas shows a resurgence of shoreline fouling by bottom-growing algae. In some cases, the problem today is as bad or worse than back in the 1970s when nearshore waters were more nutrient-rich. These days, however, the cause of the problem is less obvious since nearshore nutrient concentrations are generally lower than in the past. High densities of zebra and quagga mussels have colonized the lakebed, increasing water clarity and expanding the areas where bottom-growing … *Continued on page 2*

Blue-Green Algal Blooms

Blue-green algal blooms are on the rise in bays and marshes around Lake Ontario and the north shore of the St. Lawrence River. Researchers from Canada and the U.S. are working to find out why.

Naturally-occurring blue-green algae are known to produce toxins. High temperatures, high nutrients and low water circulation can combine to produce conditions that allow algae to grow rapidly, producing noxious algal blooms on the water's surface. In addition to aesthetic problems, the toxins threaten the health of plants, animals and people that may come in contact with the blooms. The blooms persist until wind, wave or precipitation breaks up the surface layer.

A blue-green algae bloom. Credit: Fisheries & Oceans Canada

Invasive mussels and urban development result in an increase in nutrients that may be the key factor promoting these blooms. Invasive mussels selectively filter out the higher food quality algae and leave behind the blue-greens. This has caused a shift in the algal population of the lake to a greater proportion of blue-greens and may be another factor causing the increase of harmful algal blooms.

Investigations into nutrient dynamics within the lake are part the Lake Ontario 2008 Binational Collaborative Research and Monitoring initiative. This study will provide technical information that will help lake managers in making decisions on nutrient management.

For more information on blue-green algae and precautions you can take in the event of a bloom, visit www.ene.gov.on.ca/cons/5087.pdf.

2008 Binational Collaborative Research and Monitoring Initiative

Continued from page 1… algae can grow. These mussels may also be making nutrients more available to bottom-growing algae. The re-emergence of extensive *Cladophora* beds that break off and foul shorelines has been getting worse. *Cladophora* is a long hair-like green algae that attaches itself to rocks and other hard surfaces. An increase of nuisance blue-green algal blooms has been documented in the bays around the lake.

Throughout the 2008 field season, scientists from Canada and the United States will undertake a massive study of Lake Ontario to further understand the challenges facing lake managers. Scientists will be investigating the role invasive mussels play in restricting the movement of nutrients from nearshore to offshore waters. Extensive monitoring of rivers and streams will be undertaken to more accurately measure pollutant and nutrient loadings to the lake and assess their impact on nearshore water quality. The status of the lower food web will be assessed to determine if conditions have improved or deteriorated since 2003. A whole-lake assessment of lake trout populations will be done to determine if there is a self-sustaining reproducing population of these fish and if population numbers are stable, increasing or continue to be stressed.

Relatively new approaches will be used to assess predator-prey relationships. These studies will help to determine the relationship between fish communities and changes to the lower food web. Part of the 2008 Lake Ontario intensive study will include the application and testing of high-tech monitoring methods and instruments such as remote satellite sensing. It will also include the development, refinement and application of a Lake Ontario ecosystem model to integrate research and monitoring information into a predictive tool that will assist future management decisions.

The scope of the work being undertaken in Lake Ontario is well beyond the capability and resources of any one agency. The Lake Ontario LaMP has provided the vehicle to bring the necessary partners together to take on the research and monitoring required to better understand the challenges faced in this important body of water. ♦

Water Levels and the Lake Ontario Ecosystem

This year the International Joint Commission concludes an intensive effort to revise the current regulatory plan for managing Lake Ontario – St. Lawrence water levels and outflows. The final plan will have crucial implications for future ecosystem restoration activities implemented through the LaMP and by many communities around Lake Ontario.

Shoreline ecosystems depend upon natural disturbances such as water level fluctuations in order to function. The Lake Ontario shoreline varies from gently sloping wetlands, beaches and sand bars to very steep rock cliffs and sand bluffs. All along this shoreline, natural water level fluctuations are vital to sustaining important processes that create and maintain different shoreline types. Naturally fluctuating water levels constantly affect nearshore and coastal wetlands, and biological communities respond by evolving into rich, dynamic groups of species.

Everyone with an interest in the Lake Ontario ecosystem must understand the importance of naturally fluctuating water levels. Natural water level fluctuations have occurred in all the Great Lakes since they were formed. These are the result of several natural factors and have, more recently, been influenced by human activities. Natural factors affecting water levels include precipitation, runoff from the drainage basin, lake surface evaporation, inflow and outflow. Human factors that affect water levels include diversions into or out of the drainage basin, water consumption, dredging of outlet channels and regulation of outflows. Lake Ontario water levels depend on the lake's storage capacity, the amount of water supply received, outflow characteristics and operations of St. Lawrence River regulatory structures.

There are three natural types of water level fluctuations in Lake Ontario: long-term (multi-year), seasonal (one-year) and short-term (less than an hour to several days). Long-term water level fluctuations result from multi-year weather trends and have the most impact on shoreline features such as sand or cobble beaches, wetlands and bays. Seasonal water level fluctuations reflect the annual hydrologic cycle characterized by high water supplies in spring and early summer and lower supplies for the rest of the year. This seasonal cycle is important for fish and wildlife habitat, sand replenishment for beaches and dunes and to support various human uses like recreational boating. Short-term water level fluctuations last from less than an hour to several days and are caused by weather conditions. The effect of wind, temperature and barometric pressure differences over the lake surface create temporary imbalances in the water level at one end of the lake or the other that are called seiches. These short-term increases in water levels can lead to flooding or abnormal erosion that can significantly affect the character and quality of the lake's shoreline and aquatic communities.

Allowing for more natural ranges and long-term patterns of water level fluctuations would provide an opportunity to truly restore the Lake Ontario ecosystem. ♦

Emerging Chemicals of Concern

The term "emerging chemicals of concern" has been used to describe various classes of compounds including brominated flame retardants, endocrine disrupting compounds, pharmaceuticals and personal care products.

Brominated flame retardants are all around us. They are used in textiles, polyurethane foam, acrylonitrile butadiene styrene plastic, building materials and electrical components such as computers and televisions. Brominated flame retardants greatly reduce risks due to fires. Unfortunately, they are also highly mobile in the environment and are now recognized as a globally persistent organic pollutant. They are found in increasing amounts in Lake Ontario lake trout and even in remote Arctic environs.

There have been recent reports detecting some endocrine disrupting compounds and pharmaceuticals in surface waters, particularly in Areas of Concern such as Hamilton Harbour. Endocrine disrupting compounds (EDCs) are chemicals that mimic hormones or interfere with hormone receptors in some manner. They are found in many pharmaceutical and personal care products. EDCs include birth control hormones, detergents such as nonylphenol ethoxylates and plastics components such as bisphenol A. Pharmaceuticals that may be in the aquatic environment include antibiotics, anti-depressants, lipid regulators and analgesics/anti-inflammatory drugs. Personal care products include fragrance compounds (synthetic musks), anti-microbial agents (e.g. triclosan), detergents/surfactants and cosmetic agents. These compounds are discharged as part of everyday household wastewater and pass through our sewage treatment plants and into the environment. It is unclear at this time whether EDCs and pharmaceuticals are of significant concern in Lake Ontario.

Further assessment of the presence and potential impacts of emerging chemicals of concern will be a focus of the Lake Ontario 2008 Binational Collaborative Research and Monitoring Initiative. The LaMP continues to monitor, support and evaluate scientific research into these bioaccumulative or toxic contaminants that may cause lakewide impairments. ♦

Pharmaceutical Collection Event A Success

Pharmaceuticals are coming into the spotlight as emerging chemicals of concern for our waterways and Lake Ontario. Few municipal water supplies are tested for such chemicals, and there are no standards for treating and removing them from wastewater or drinking water.

Surveys show that about half of Americans flush unused pills down the toilet. Because sewage treatment plants aren't designed to filter out drug compounds, antibiotics, antidepressants and heart medicines are now showing up in small amounts in freshwater systems including the Great Lakes. Research suggests that certain drugs may cause ecological harm. However, to date scientists have found no evidence of adverse human health effects from pharmaceuticals in the environment (www.epa.gov/ppcp).

The Center for Environmental Information has teamed up with the City of Rochester and Monroe County, NY to conduct pharmaceutical collection events. At the Earth Day 2008 event, more than 42,000 pills were collected in addition to liquid medicines and inhalers, representing almost 60,000 doses of medication. These were sent to a hazardous waste incinerator in Niagara Falls, NY. A second collection took place in June in the City of Rochester and the program is planning to expand to other areas in the Lake Ontario watershed.

Surplus medications collected at a pharmaceutical collection event on Earth Day 2008 in Monroe County, NY. Credit: T. Sinclair, Monroe County Dept. of Environmental Services.

Aquatic Invasive Species Management in Lake Ontario

The Great Lakes basin is a North American hot spot for the introduction of aquatic invasive species (AIS). More than 182 non-native aquatic species have been reported in the Great Lakes, with an average of one new invader found about every seven months. Federal, state and provincial agencies around Lake Ontario have programs to protect the lake's aquatic biodiversity from the threats of AIS including food web disruptions, disease introduction, habitat alterations and declines in native diversity.

Preventing the Introduction and Spread of AIS

Preventing introductions of potentially harmful species is the most efficient and effective way to reduce the threat of AIS. Fisheries and Oceans Canada's Centre of Expertise for Aquatic Risk Assessment (CEARA) is working to identify potential high risk species and pathways of introduction. Risk assessments have been completed for the Asian carp, northern snakehead, Chinese mitten crab and bloody red shrimp. In 2008, CEARA will conduct a risk assessment for New Zealand mudsnail in Canadian waters. By predicting and assessing the biological risk of potential AIS, information is provided on the vectors these potential future invaders may use thereby providing the opportunity to prevent their introduction and spread.

Viral hemorrhagic septicemia (VHS), a deadly fish disease caused by an invasive virus, was confirmed in Lake Ontario in May 2006. This disease may have adverse effects on fish populations. To prevent or delay the spread of VHS to other states, the U.S. Department of Agriculture's Animal and Plant Health Inspection Service issued a Federal Order in October 2006. The order prohibits the import of certain species of live fish from Ontario and Quebec into the U.S. and prevents interstate movement of these species from eight states bordering the Great Lakes. The New York State Department of Environmental Conservation (NYSDEC) quickly assessed the extent of VHS-affected fish and implemented regulations in 2007 to restrict the movement of bait fish and the stocking of fish from infected areas.

Hazard Analysis and Critical Control Point (HACCP) planning is a management tool to identify risks and focus procedures for preventing the introduction and spread of non-native aquatic species. The U.S. Fish and Wildlife Service (USFWS) and NY Sea Grant conduct HACCP planning workshops for natural resource agencies, hatcheries the and bait industry around the northeast U.S.

Fisheries and Oceans Canada (DFO), in partnership with Transport Canada and academic institutions, began a collaborative two-year study to examine ballast water of domestic commercial trade vessels, commonly called Lakers, as a means of introducing and/or spreading AIS within the Great Lakes basin. The study will analyze the geographic movements of Lakers within the Great Lakes St. Lawrence Seaway system over a three years to determine how much and where ballast water is being moved. The project will also sample ballast water of about 75 vessels over two years to determine the types of organisms are being transported by these ships. Project results of the project will be used to determine if regulations are needed to manage domestic ballast water.

A New Great Lakes Invader: Bloody Red Shrimp

The bloody red shrimp (*Hemimysis anomala*) was first reported in Lake Ontario off Oswego, NY in 2006. Native to the Azov, Black and Caspian Seas, it was likely introduced through ballast water release from transoceanic ships. The bloody red shrimp generally inhabits shallow waters (0 to 50 m) in rocky areas or around man-made structures. It is an omnivore, eating a variety of smaller zooplankton and algae. The bloody red shrimp may compete with young fish and has been found in the diet of larger fish. In 2007, the Lake Ontario Hemimysis Group convened for the first time to prioritize and coordinate monitoring efforts and discuss possible impacts of the bloody red shrimp on the Lake Ontario food web. Many of the participants (OMNR, DFO, USGS, SUNY, USFWS and Shaw Environmental Group) sampled over the 2007 field season to determine the spread of the bloody red shrimp in Lake Ontario. For more information about bloody red shrimp and where they have been found, see: www.glerl.noaa.gov/hemimysis/hemi_reports.html. Monitoring and evaluation of the impacts of this new species will continue in 2008.

A bloody red shrimp (magnified). Credit: S. Pothoven, Great Lakes Environmental Research Laboratory, NOAA.

Aquatic Invasive Species Management Continued…

Detection and Monitoring

Though prevention is the most effective approach to the problem of invasive species, early detection of newly introduced AIS is critical to eradication or control before species become widespread. Monitoring and reporting locations is also vital to preventing the spread of aquatic invaders. When high risk or well-traveled paths are identified during monitoring activities, outreach efforts can be targeted to these pathways. Monitoring efforts include:

- In 2007 and 2008, USFWS conducted surveys in the lake and various tributaries to assess current distribution and movement of New Zealand mudsnail in southeastern Lake Ontario. In addition, public signs warning of potential AIS were posted at 49 fishing access points between Niagara River and Salmon River, NY, through the efforts of USFWS, NYSDEC and NY Rivers United. The New Zealand mudsnail was first recorded in Lake Ontario in 1991 and in two New York tributaries in 2007.
- In 2008, DFO will conduct surveys of the aquatic community in Hamilton Harbour, including the detection and monitoring of AIS. Other efforts involve collaborative work between DFO and Transport Canada to monitor and evaluate methods to reduce of the risk of AIS introductions by transoceanic ships in the Great Lakes St. Lawrence Seaway. Canada and the U.S. continue to actively enforce Ballast Water Control and Management Regulations through a joint inspection program that inspects documentation and measures ballast water salinity to ensure compliance. In addition to a scientific sampling program to monitor the effectiveness of current ballast water management regulations, projects in 2006-07 included the evaluation of high salinity brine as an alternative treatment solution for ballast water.

Ballast water monitoring. Credit: Fisheries and Oceans Canada.

Control and Management of AIS

When an AIS has established in a new location and eradication is no longer feasible, minimizing their impacts through control and management becomes the focus.

Sea lamprey control is one of the most successful AIS control programs in the Great Lakes. Led by the Great Lakes Fishery Commission in collaboration with DFO, USFWS and U.S. Army Corps of Engineers, the control program uses several techniques including population assessment, lampricide control, physical barriers, live traps and the sterile-male-release technique.

Outreach and Education

Public awareness is one key to addressing the problems caused by AIS. However, reaching each person whose activities may affect our natural environment is a daunting task. Collaboration, cooperation and coordination across federal, state and provincial agencies, local governments, tribal entities, and the public and private sectors are required. To accomplish this, agencies have developed informational web sites, conducted workshops and created outreach materials.

For more information about AIS:

- U. S. Federal Aquatic Nuisance Species (ANS) Task Force
  www.anstaskforce.gov
- ANS Task Force Habitattitude™ Initiative
  www.habitattitude.net
- ANS Task Force Stop Aquatic Hitchhikers Campaign
  www.protectyourwaters.net
- U.S. Fish and Wildlife Service Aquatic Nuisance Species Home Page
  www.fws.gov/contaminants/ANS/ANSSpecies.cfm
- Fisheries and Oceans Canada's Environmental Science Division
  www.dfo-mpo.gc.ca/science/environmental-environnement/invasive_e.htm
- Fisheries and Oceans Canada's Centre of Expertise for Aquatic Risk Assessment
  www.dfo-mpo.gc.ca/science/ceara
- Ontario Federation of Anglers and Hunters
  www.invadingspecies.com ♦

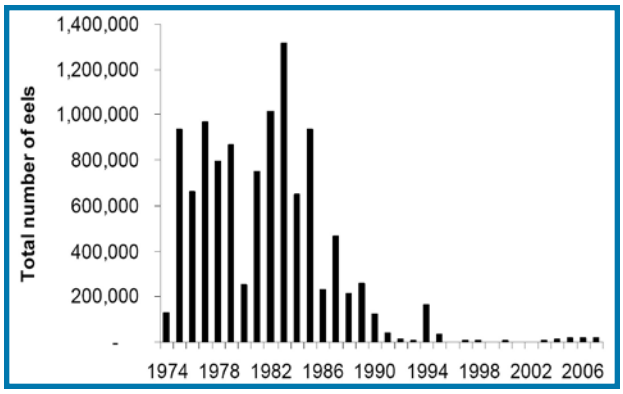
• Aquatic Invasive Species Management Continued…

Restoring the American Eel in the Lake Ontario Ecosystem

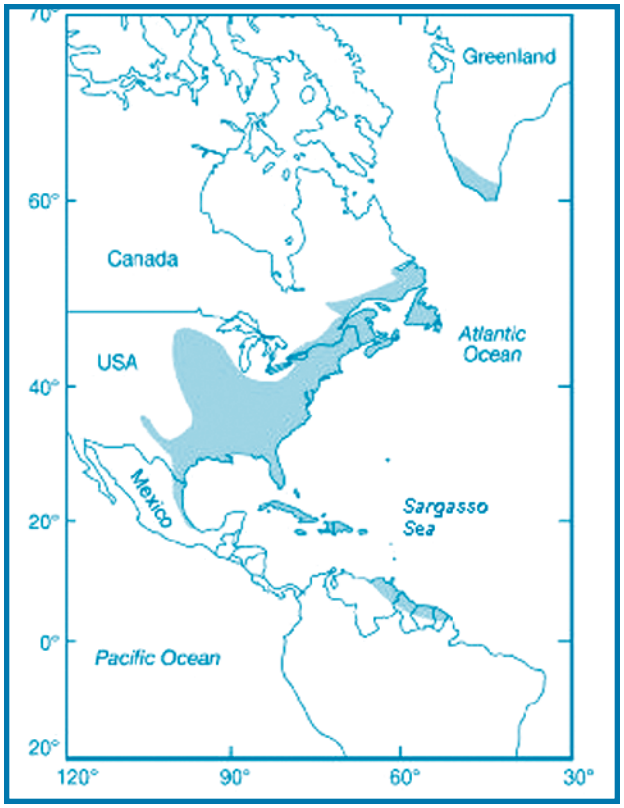
The American eel is an important part of the biodiversity of Lake Ontario and an indicator of ecosystem health. It is a critical predator that provides balance to the fish community, as well as being valued as a food fish by aboriginal and commercial fishermen. Unfortunately, American eels are experiencing a serious long-term population decline and are now on the brink of disappearing completely from Lake Ontario. Concern about the global population of this unusual and valuable species has led to an international recovery effort involving provincial, state and federal governments along with industry partners.

American eels from Lake Ontario migrate more than 6000 km (3728 miles) to join others from as far away as Greenland and northern South America on the only eel spawning ground in the world: the Sargasso Sea in the Atlantic Ocean. After hatching, young eels drift with ocean currents and then migrate to fresh and coastal marine waters across their range. Eels feed and mature for 10 to 25 years before migrating back to the Sargasso Sea to spawn, completing their unusual life cycle.

The number of American eels entering Lake Ontario has declined dramatically, decreasing from over 1 million annually during the 1980s to roughly 15,000 annually since 1997. The commercial catch of eels in Lake Ontario, the upper St. Lawrence River and throughout its range declined precipitously during the same period. The American eel is now listed as an endangered species under the new Endangered Species Act in the Province of Ontario.



Average number of eels ascending the eel ladder per day, for each year from 1974 to 2007. The ladder is located at the R.H. Saunders Hydroelectric Dam, in Cornwall, ON.



Global distribution of American eel. (Fisheries and Oceans Canada, American eel, Underwater World.) (Reproduced with the permission of Her Majesty the Queen in Right of Canada 2006).

The long life span of American eel combined with their lengthy migration makes them susceptible to the cumulative effects of a wide range of factors. Dams have blocked eels from migrating up rivers and turbines may kill them as they migrate downstream. Commercial fishing harvests across the North American range may have contributed to their decline. Contaminants may affect their fertility and survival. Seaweed harvesting may have reduced their spawning habitat. Changes in ocean currents due to climate change may be prohibiting migration.

Restoring the American eel involves a coordinated effort to tackle these complex factors. New eel ladders - structures designed to enable upstream migration in obstructed waterways - have been installed on the St. Lawrence River by the New York Power Authority and Quebec Hydro. Ontario Power Generation, in partnership with the Ontario Ministry of Natural Resources, stocked almost 500 000 juvenile American eels above the hydroelectric dams on the St. Lawrence River. A new initiative is planned for 2008 to capture mature eels and transport them downstream around hydroelectric facilities. The commercial and recreational harvest of American eels is prohibited in Ontario and New York State and reduced in Quebec. A restoration plan for Canada and a new plan for North America will coordinate restoration efforts.

International interest and investment provides hope for the future of the American eel. This fish provides a unique link between the Lake Ontario, St. Lawrence River and Atlantic Ocean ecosystems. The status of the American eel provides an indication of the status of global aquatic biodiversity and the success of collaborative efforts to protect a unique species. ♦

Sportfisheries to Benefit from Natural Resources Damages Settlement

Projects funded by the Natural Resources Damages settlement include improvements to public fishing opportunities, including channel access and public fishing rights. Credit: New York Sea Grant Extension, Pat MacNeill.

As a result of a 2006 settlement of New York State's Natural Resources Damages (NRD) lawsuit against Occidental Chemical Corporation, monies are funding the implementation of the Lake Ontario Sportfishery Restoration and Spending Plan that supports the lake's fish community objectives and the LaMP's ecosystem objectives. Under the $12 million settlement, New York State Department of Environmental Conservation (DEC), as trustee of New York's natural resources, developed the revitalization plan with extensive public input. In all, the plan will fund 42 projects in four categories from Niagara to St. Lawrence counties that will restore and enhance recreational sportfisheries throughout the lake ecosystem and promote stewardship of Lake Ontario's fisheries resources.

Four project implementation categories provide for improvements, enhancements and new initiatives that address: public fishing access (boat launch sites, fishing piers, channel access and public fishing rights), habitat (restoration and creation of habitats, including spawning beds, stream bank stabilization, fish passage and lamprey barriers), angler education (outreach on where and how to fish, instruction on reducing exposure to contaminants when eating Great Lakes fish, visitor centre interpretive displays, sportfishing promotion etc.) and fish population management and research (improvements to existing NYS Great Lakes hatchery facilities that increase DEC's ability to effectively manage fisheries).

The NRD claim arose under the federal Superfund and New York State common law, and compensates the people of the State for injuries to natural resources caused by the release of harmful chemicals to the environment. The settlement was based on an assessment of the damages to the State's natural resources, in particular a loss of recreational fishing benefits resulting from the imposition of fish consumption advisories because of the presence of contaminants in the fish. The $12 million resolution is one of the largest in the nation for a NRD claim based on recreational fishing losses.

DEC began soliciting ideas for the spending plan in early 2007, holding a series of public meetings across the Lake Ontario region. Approximately 150 project proposals were considered and 77 were advanced to a panel that scored the submissions. From those, 42 projects were selected for implementation including 25 projects to improve public use access, 14 projects to enhance habitat and resources, and 3 projects to promote improved fishing in the Lake Ontario region. Some project highlights include:

- Construction of a boat launch will improve public fishing access at Golden's Marina on the isthmus to Point Peninsula in the town of Lyme (Jefferson County).
- Niagara Falls Aquarium renovations will add fish, displays and sportfishing seminar enhancements.
- Niagara River trail improvements in the lower river, Whirlpool and Devil's Hole state parks; and the creation of fishing platforms in Artpark will improve public fishing access
- Stream bank improvements to an 18-mile stretch of the Salmon River (Oswego County), one of the most extensively fished waterways in the State.
- Sea lamprey low head control barriers will block lamprey migration and spawning in Lake Ontario
- Fish marking equipment will improve DEC's ability to monitor, track and study species including chinook salmon, steelhead and lake trout.
- Fish hatchery upgrades on the Salmon River (Oswego County) will improve trout and salmon production and at Cape Vincent (Jefferson County) will launch stocking for walleye, northern pike and muskellunge.
- Walleye monitoring and habitat improvements will assess their presence in tributaries and improve spawning habitat.
- Fisheries promotion assistance will improve Great Lakes region sportfishing tournaments, fairs and other public events. ♦

Upcoming LaMP Activities

The government agencies responsible for implementing the Lake Ontario LaMP work plan are continuing their efforts to restore and protect the Lake Ontario ecosystem. The current LaMP, a five-year workplan that came into effect in January 2007, is being updated to include new activities to achieve this goal.

Further reduction of critical pollutants is of primary importance to the LaMP. Contaminant trackdown efforts in the U.S. and Canada will continue so contaminant sources can be identified and controlled.

Coordination of binational monitoring efforts will continue, particularly those related to LaMP ecosystem indicators. The Lake Ontario Lower Aquatic Foodweb (LOLA) project was the start of a binational cooperative initiative to assess the status of the changing lower food web. LaMP agencies are now conducting the Lake Ontario 2008 Binational Collaborative Research and Monitoring Initiative focusing on measuring the lower food web and chemical status of the lake in both nearshore and open lake zones. Various chemicals of emerging concern in water and sediment also need to be studied. Planning is underway to build on this binational monitoring effort by continuing data analysis, disseminating the results and evaluating lakewide management implications.

The Lake Ontario LaMP will continue to expand collaborative efforts towards bald eagle conservation and restoration projects, and the LaMP will also increase contaminated sediment monitoring efforts through the use of sediment cores collected by USEPA, EC, OMOE and DEC.

The binational habitat strategy that began in 2006 will set the stage for coordinating future habitat protection and restoration priorities to achieve the LaMP's biodiversity goals. Once the strategy is finalized, targeted restoration or protection projects will be selected and eligible for funding, and resources and partners will be sought to implement these projects. The LaMP also plans to expand its links with watershed organizations.

Providing the public with a sound understanding of the complex problems facing the lake is the first step in gaining public support and participation in achieving LaMP goals. Ongoing and planned activities include meeting with existing groups in the basin, forming local partnerships in support of LaMP projects and informing stakeholders. Stewardship of the lake was emphasized at the 2005 LaMP meeting in Kingston, Ontario. The LaMP will continue to inform the public about progress toward restoring and protecting the Lake Ontario ecosystem through reports and public meetings, with opportunities for additional outreach activities being developed in the future. ♦

Collaborative efforts towards bald eagle conservation are just one of many priorities for the Lake Ontario LaMP. Credit: U.S. Fish and Wildlife Service.

For More Information

Please visit our Web site at **www.binational.net** or contact:

In Canada:

Ms. Pamela Finlayson
Environment Canada
Phone: (416) 739-5996
Fax: (416) 739-4804
E-mail: pamela.finlayson@ec.gc.ca

In the United States:

Mr. Mike Basile
U.S. Environmental Protection Agency
Phone: (716) 551-4410
Fax: (716) 551-4417
E-mail: basile.michael@epa.gov

The Lake Ontario Management Plan is a binational partnership among 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 Conservation.