# U.S. Environmental Protection Agency
# Great Lakes National Program Office
# Significant Activities Report

On the Web at:
www.epa.gov/glnpo

January 2003

## *In this Issue:*



## SOLEC Online!

Presentations from the 2002 State of the Lakes Ecosystem Conference (SOLEC) are now available online from: http://www.epa.gov/glnpo/solec/2002/index.html.

Tom Skinner, USEPA Great Lakes National Program Manager gives SOLEC 2002 opening remarks

Slide from SOLEC presentation on Biological Integrity

Streaming video versions of the presentations are already available for your viewing pleasure at http://www.epa.gov/glnpo/solec/2002/plenaries.html. Users can experience the presentations fully by opening the video of the presentation and then opening the corresponding slideshows (Adobe Acrobat files) at the same time. The video provides a cue when to advance to the next high-resolution slide — *it's almost like being there* ... Try it!

The State of the Lakes Ecosystem Conference, or SOLEC, is the forum for the United States and Canada to report on the quality of the Great Lakes ecosystem. Through the SOLEC process, a partnership of Great Lakes scientists and managers is developing a consistent set of ecosystem indicators to objectively assess the health of the Great Lakes. SOLEC 2002, held in Cleveland, Ohio, in October 2002 was the fifth of the conferences that have been held every other year since 1994. The theme for SOLEC 2002 was ***Biological Integrity of the Great Lakes***.

More information on SOLEC can be found at: http://www.epa.gov/glnpo/solec/index.html.
(Contacts Pranas Pranckevicius, 312-353-3437, pranckevicius.pranas@epa.gov; Paul Bertram, 312-353-0153, bertram.paul@epa.gov; or Paul Horvatin, 312-353-3612, horvatin.paul@epa.gov)

## Priceless Dunes

The December 2002 issue of ***Coastlines*** featured a article by GLNPO's Karen Rodriguez on Great Lakes sand dunes. The Great Lakes sand dunes are the largest system of freshwater dunes in the world. Coastal dunes are of enormous ecological value to the Great Lakes area. They shelter inland ponds, wetlands, and woodlands from storms, and provide habitat for wildlife and rare species. The Federally endangered pitcher's thistle plant occurs on the dunes bordering Lakes Huron, Michigan, and Superior. The dunes offer shelter for migrating neotropical birds that seek quiet areas behind the foredunes to rest and feed. Foredunes, the portions of dunes closest to the beach, harbor vegetation such as marram grass, which in turn traps wind-blown sand and stabilizes dunes. Globally imperiled communities, such as pannes or interdunal calcareous wetlands, are protected from wind and waves behind foredunes.

Sand dunes at Indiana Dunes National Lakeshore

Sleeping Bear Dunes bluffs

Coastal dunes are also economically important; coastal dunes supplied sand to Detroit auto makers and iron and steel manufacturing industries. Although many dunes were removed by mining, those that remain have scenic and recreational value and provide millions of dollars towards local economies that rely upon tourism and recreation. Coastal dunes buffer inland areas from storm winds and waves, thus reducing property damage.

In spite of their value, there are many threats to these dunes. Non-native invasive plant species such as baby's breath and spotted knapweed have spread rapidly. Habitat destruction from sand mining and development poses the greatest threat. Recreational use by off-road vehicles and pedestrians damages vegetation and causes significant erosion. Along the New York shore of eastern Lake Ontario, years of unregulated, uncontrolled public use, including vehicle traffic, recreational activities, and sand mining caused a large dune to blow out and create a so-called walking dune. Walking dunes migrate more quickly than foredunes because there is no vegetation to hold sand in place.

In addition to facts about Great Lakes sand dunes, the article relates efforts by the Lake Ontario Dune Coalition and the Lake Michigan Dunes Alliance to protect and re-

store these precious resources. The article is available on the Internet at: http://www.epa.gov/owow/estuaries/coastlines/dec02/sand_dunes.html.

***Coastlines*** is a newsletter intended to provide information to the public about estuaries and near coastal waters. It is published by the Urban Harbors Institute at the University of Massachusetts in cooperation with USEPA's Office of Wetlands, Oceans, and Watersheds.
(Contact: Karen Rodriguez, 312-353-2690, rodriguez.karen@epa.gov)

## A Closer Look at Waukegan

On January 14th, a media day was held at Waukegan Harbor, Illinois which brought together the local community and stakeholders interested in the Waukegan Harbor Area of Concern. A new sediment sampling program for the harbor, set to begin the next day, was announced. The sampling is part of a collaborative effort to delineate the extent of sediment contamination within the harbor and determine the levels of contamination in these sediments for potential disposal in the Yeoman Creek Landfill. Opening remarks for this event were presented by U.S. Representative Mark Kirk, Waukegan Mayor Richard Hyde, Lt. Col. Norm Grady of the U.S. Army Corps of Engineers, and U.S. EPA Regional Administrator and Great Lakes National Program Manager Tom Skinner.

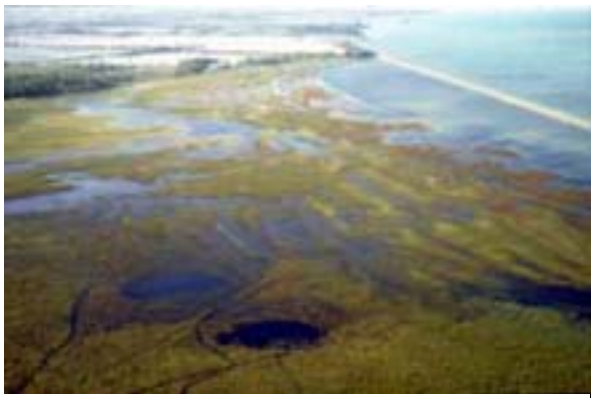
Waukegan Harbor, Illinois

Then, from January 15th to 17th, GLNPO, USEPA Region 5, and the U.S. Army Corps of Engineers collected sediment samples at sixteen locations from within Waukegan Harbor. The samples were collected using a barge-mounted drill rig. The samples are being analyzed for PCBs, PAHs, mercury, heavy metals, total organic carbon, benzene, tricholorethene, and phenols by USEPA Region 5 Central Regional Laboratory. Results are expected in approximately 90 days. The USEPA's Superfund and FIELDS groups are currently working to gather all historical sampling data, and plans are to combine this with the current 2003 sampling data in order to determine any data gaps in Waukegan Harbor.
(Contacts: Demaree Collier, 312-886-0214, collier.demaree@epa.gov or Marc Tuchman, 312-353-1369, tuchman.marc@epa.gov)

## Mussel-bound Marsh

One of the ecological problems caused by zebra mussels has been the virtual elimination of native clams from infested waters. Zebra mussels readily colonize clam shells, disrupting feeding, movement, and reproduction. Clams generally die within one or two years after infestation, with near total mortality reported in western Lake Erie. In 1996, a large population of native mussels was discovered in Metzger Marsh, a Lake Erie coastal wetland in the Ottawa National Wildlife Refuge near Toledo, Ohio.

This marsh was originally protected from



Metzger Marsh

storm activity on Lake Erie by a barrier beach that gradually eroded away as sediment supply decreased due to progressive armoring of the shoreline. By 1990, much of the original wetland was gone. In 1996, a dike was installed to protect the area from Lake Erie wave-action. When the water level in the marsh was drawn down to promote restoration of the marsh, over 6,000 native mussels representing twenty different species were discovered. The draw-down was necessary to allow restoration to a functioning coastal wetland, but it would have resulted in the destruction of the native mussels. On the other hand, release of the mussels into Lake Erie would also result in their destruction from zebra mussels.

To allow the restoration to continue, the mussels had to be removed and boarded while a water-control structure was installed to restore the hydrologic connection with Lake Erie. The mussels were marked and measured before being returned to the marsh, and annual monitoring has shown a high growth rate. Larval forms of the mussels require a period of attachment to the gills of fish, and although none of these glochidia was observed, the mussels are reproducing based on the presence of young.

One long-term concern is that only a few or even single individuals of several species were collected and returned to the marsh. Their populations were low to begin with, and even though they survived the boarding experience, their ability to successfully reproduce is limited. Without the influx of individuals of these species from outside Metzger Marsh, the diversity of mussels may continue to decline. Since the discovery of native mussels at Metzger Marsh, they have been found at five other locations. These additional populations are widely separated, usually low in numbers of individuals, and are vulnerable to water level fluctuations.

The presence of native mussels in these marshes offers hope that such marshes may serve as refuges for native mussel populations, and could serve as brood stock to repopulate Lake Erie if the zebra mussel population could be controlled. The project to protect and restore Metzger Marsh and the native mussels was undertaken through an Interagency Agreement between the U.S. Geological Survey's Biological Resources Division and USEPA's Great Lakes National Program Office.
(Contact: Duane Heaton, 312-886-6399, heaton.duane@epa.gov)

## Visiting the Islands

From December 10th to 12th, the U.S. Fish and Wildlife Service's Great Lakes Basin Ecosystem Team, along with GLNPO, the new Great Lakes Regional Coastal/Aquatic GAP Analysis Project Group, and other partners, participated in a workshop to formulate products, strategies, and actions to promote conservation of Great Lakes islands and coastal nearshore habitats. The Workshop was entitled “Great Lakes Islands Conservation and Coastal Habitat Restoration and Great Lakes GAP Workshop.”

Great Lakes islands face development pressures

The more than 80 participants committed to put in place resources and working groups to:

- Develop a model strategy for conservation of Great Lakes islands at both the landscape and local levels;
- Develop an island and coastal habitat conservation ranking/prioritization system;
- Update the State of the Lakes Ecosystem Conference (SOLEC) indicator report;
- Develop a Coastal GAP island pilot project and inventory of databases available for conservation;
- Produce a plan to improve the utility of the Islands GIS Decision Support System; and
- Come up with a communications outreach campaign on Great Lakes islands.

Workshop materials are available on a CD from Rich Greenwood or at the following web site: http://www.glc.org/gis/GLBET/index.html. (Richard Greenwood, 312-886-3853, greenwood.richard@epa.gov)

## Saving Tug Hill

Working in partnership with the Tug Hill Commission, forest products companies, the New York Department of Environmental Conservation (NYSDEC), and a local land trust, and funded in part by a grant from GLNPO, The Nature Conservancy launched a community-based conservation program to protect the wetlands, rivers and streams, and working forests on Tug Hill. Tug Hill is a core forest area of more than 200,000 acres on the eastern shore of Lake Ontario. It is the source of 11 rivers and one of the largest intact landscape blocks in New York.

In conjunction with the NYSDEC, the Tug Hill Commission and Tug Hill Tomorrow Land Trust purchased conservation easements that are targeted towards critical properties to ensure sustainable forestry. Forest blocks that can be set aside or placed on longer rotation in order to restore forest habitats were acquired. Local communities were informed about the ecological significance of Tug Hill and the contribution working forests make to both local quality of life and economic well-being.

Tug Hill Plateau, New York
(Photo courtesy of The Nature Conservancy)

Project managers worked closely with state land managers to create forested corridors on state lands that protect aquatic resources and ensure that management on public lands avoids sensitive lands. In conjunction with the Tug Hill Commissions, local stakeholders and experts explored economic development options that diversify the local economy. The project effectively developed strong partnerships with public agencies and

private organizations, protected over 45,000 acres and the headwaters of two river systems, and reached out locally and statewide.
(Contact: Karen Rodriguez, 312-353-2690, rodriguez.karen@epa.gov)

## Safety First

GLNPO's Deborah Lamberty, working with USEPA Region 5 Resource Management Division's Maryann Lafaire, recently completed a new safety video for use by personnel who will be sailing aboard the *R/V Lake Guardian.* The video provides guidelines and instructions on safe use of the ship and its equipment, as well as a general overview of safety requirements while working on the deck and in laboratories. The video will be made available to anyone using the ship, as well as anyone interested in the *R/V Lake Guardian* and can be obtained in VHS or CD format.
(Contact: Deborah Lamberty, 312-886-6691, lamberty.deborah@epa.gov)

USEPA GLNPO's 180-foot research vessel
*R/V Lake Guardian*

## Floating Classroom

Five proposals were received in response to a Request for Proposals issued by GLNPO for educational courses aboard the *R/V Lake Guardian* this Summer. Two proposals were received for a course in Lake Ontario, one from Lake Erie, one from Lake Michigan, and one from Lake Superior. The evaluation of the proposals resulted in the selection of Niagara University (Lewiston, New York) and Clarkson University (Potsdam, New York) for education courses on Lake Ontario. This year's shipboard courses will continue GLNPO's well-received program of environmental education courses for Great Lakes educators and students aboard the *Lake Guardian*.
(Contact: David Rockwell, 312-353-1373, rockwell.david@epa.gov)

## Cruise Schedule Online

A draft schedule for the *R/V Lake Guardian*'s activities in 2003 has been posted on the GLNPO website at: http://www.epa.gov/glnpo/guard/schedule_2003.html. The upcoming year will include work on Lake Ontario in cooperation with USEPA Region 2. In 2003, Region 2 is implementing several binational cooperative monitoring projects with Canada and other partners as part of the Lake Ontario Lakewide Management Plan, including continuing the binational LOADS (Lake Ontario Atmospheric Deposition Survey) to measure critical bioaccumulative pollutants to the lake, and an intensive study of the lower food web to determine how the zebra/quagga mussels have changed the food web. (See April 2002 Significant Activities Report for details on the LOADS project)

The annual Spring and Summer surveys of all the Great Lakes, and the Lake Erie dissolved oxygen surveys will also be conducted. The schedule is preliminary and subject to change. The schedule will be updated as plans are finalized and links to further information about the *Lake Guardian* are also available from the Ship's Schedule Web Page.
(Contacts George Ison, 312-353-1669, ison.george@epa.gov; or Glenn Warren, 312-

886-2405, warren.glenn@epa.gov)

Western Lake Superior Sanitary District
Duluth, Minnesota
(Photo courtesy of WLSSD)

## *Focus on Lake Superior LaMP:* WLSSD Gets the Mercury Out

Effluent testing using a new sensitive method for mercury shows the progress made by the Western Lake Superior Sanitary District (WLSSD) in Duluth, Minnesota in reducing mercury discharges. Using a newly approved low-level test method for mercury, EPA Method 1631, shows that WLSSD is approaching the water quality-based limits set by the State of Minnesota to implement the Water Quality Guidance for the Great Lakes System, also known as the Great Lakes Initiative. The new method, which can measure mercury concentrations under one part per trillion in water, has been a useful tool in showing how close the WLSSD effluent is to meeting the limit. The old test method couldn't accurately measure mercury concentrations as low as that in the WLSSD effluent and skewed the old data high. WLSSD was pleasantly surprised by the new data showing how clean their effluent is.

The lower concentrations testify to the success of efforts to reduce mercury use and emissions. Federal regulation of mercury in paint, batteries, and mildewcides and reduced use of mercury in consumer products are starting to show benefits. WLSSD has been working with customers of all sizes to reduce or eliminate mercury discharges at the source. Demonstration grants from USEPA Region 5 Water Division and GLNPO and the Great Lakes Protection Fund have allowed WLSSD to demonstrate innovative source reduction efforts.

WLSSD's latest effort at reducing mercury inflow to the wastewater treatment plant is the voluntary installation of amalgam removal equipment at dental offices. Presently, 90 percent of the dental practices in the WLSSD service area are using simple on-site treatment that captures 95 to 99 percent of the mercury that previously went into the sewer. WLSSD also works with industrial customers to substitute cleaner raw materials containing less mercury. Finally, a large educational effort is directed at households and schools to promote the use of alternatives to mercury containing products. (Contact: Steve Hopkins, 218-340-1257, hopkins.steve@epa.gov)

## Habitat Plan for St. Louis River

The St. Louis River Citizens Action Committee (SLRCAC), a non-profit group formed to protect and restore the St. Louis

Great blue heron along St. Louis River, Minnesota

River, has completed a multi-year study and management plan to enhance the habitat on the Lower St. Louis River, St. Louis Bay and Superior Bay.

The lower St. Louis River was designated as an "Area of Concern" by the International Joint commission in 1987 due to restrictions on public use of the area caused by pollutants, loss of habitat for fish and wildlife, and the threat that this damage poses to Lake Superior. The SLRCAC facilitates the restoration of these beneficial uses. The Lower St. Louis River provides essential spawning and nursery habitat for fish populations throughout western Lake Superior as well as tremendous recreational and ecological value to the Duluth-Superior area. This value is the basis for the economic survival of the area. The SLRCAC recognized that a lack of information about land use and habitats made it impossible to identify or prioritize projects to restore the river. With multiple partners, the SLRCAC set out to gather information and develop a strategy to restore habitat through a Habitat Plan for the Lower St. Louis River.

This project was undertaken in cooperation with a wide host of partners. USEPA Region 5 Water Division provided some of the funding for the effort. Participants included the Minnesota and Wisconsin Departments of Natural Resources, the U.S. Fish and Wildlife Service, The Nature Conservancy, Minnesota Pollution Control Agency, Minnesota Sea Grant, the cities of Duluth and Superior, the Natural Resources Research Institute of the University of Minnesota Duluth, large landowners, the Western Lake Superior Sanitary District and many individuals. Working together, they identified existing land use and habitat, identified areas important to maintaining wildlife and fish populations and provided recommendations for improving the capacity of the area to sustain native fish, plant, and wildlife populations.

River flowing into Lake Superior along North Shore

The Habitat Plan developed by the SLRCAC provides information and recommendations to the Cities, Counties and States (Minnesota and Wisconsin) with jurisdiction over the lower St. Louis River. It includes graphical information and mapping data that allows multiple agencies to prepare maps, do planning and share information that will help achieve public, recreational and ecological goals for the basin.

A side benefit of developing the plan is building on the historically high level of cooperation and communication between all the stakeholders in the basin. Planning and restoration efforts reflect the community and allow multiple parties to work together to accomplish things that none could do alone. The SLRCAC facilitates a whole host of activities to clean up contamination and restore beneficial uses to the lower St. Louis River. They publish recreational guides to the St. Louis River, sponsor educational activities, and work directly with State and Local agencies to implement recommendations outlined in a ***Remedial Action Plan for the St. Louis River System Area of Concern***. The RAP was written in response

to the International Joint Commission designation of the St. Louis River as an Area of Concern.
(Contact: Steve Hopkins, 218-340-1257, hopkins.steve@epa.gov)

## Keeping the Basin Superior

Normally, planning documents aren't particularly newsworthy, but Minnesota's Basin Management Plan is an exception because of it's unique and innovative approach to environmental planning and streamlining government at the same time.
Ten years ago, Minnesota embraced the concept of doing environmental planning on a watershed by watershed basis, and undertook writing basin management plans for each of the seven major river basins in Minnesota. At the same time, a national effort was underway to recognize the unique assets and ecological importance of coastal areas and to manage them accordingly through a Federal program called Coastal Zone Management.

When the Minnesota Pollution Control Agency (MPCA), Duluth Office, undertook basin planning for the Lake Superior Basin, they found that over 150 management plans already existed at the State, County, or Local level which influenced water management in the basin. They recognized that the two plans they were working on with the Minnesota Department of Natural Resources (MDNR) and other state and federal resource management agencies had tremendous overlap with these existing plans.

There was even more overlap with the Lake Superior Lakewide Management Plan being written by the Lake Superior Binational Program. and the Remedial Action Plan (RAP) for the St. Louis River, mandated when the area was designated by the International Joint Commission as an “Area of Concern” because of restrictions on beneficial uses and threats to Lake Superior.

Fishing for herring on Lake Superior

MPCA took the bold step of bringing all the stakeholders together, including Wisconsin stakeholders on the St. Louis Bay, and selling the idea of incorporating the Coastal Nonpoint Source Management Plan, and Minnesota's implementation of the Lake Superior Lakewide Management Plan and St. Louis River RAP, and numerous other plans into a single document. This resulted in a four year collaborative effort and a comprehensive review of existing information on the watershed, developing a method to evaluate resource condition and vulnerability and providing a tool for managers to prioritize issues and remedial projects. The group utilized techniques used by the U.S. Forest Service to objectively examine how vulnerable to damage small watersheds are.

The document is now being circulated to the partners as a first draft of a comprehensive document and supporting geographic information system (GIS) data to provide a decision making framework which will assist each partner to maintain and enhance the unique and valuable resources that are so important to the economic vitality and quality of life for people living in or visiting the basin.

Not only is the document unique in it's comprehensive, collaborative approach, but the approach used is one that streamlines government and encourages future cooperation and collaboration. It will allow managers at the local level to identify areas of unique or special vulnerability and to easily see how their decisions may affect other local governments as well as provide a vehicle to share information and to leverage resources together to accomplish more than any could do alone.

Funding for this effort came from multiple sources, including grants from USEPA Region 5 and the USEPA Great Lakes National Program Office, and the National Oceanic and Atmospheric Administration (NOAA), support from MPCA, MDNR and the Natural Resource Research Institute of the University of Minnesota and countless hours from a host of stakeholders. This document will now go through a formal review and approval process and be the basis for Federal and state funding for projects to protect or restore the ecology of the area.

The effort built on information developed under other EPA grants for GIS data and a habitat plan for the Lower St. Louis River. (Contact: Steve Hopkins, 218-340-1257, hopkins.steve@epa.gov)

We welcome your questions, comments or suggestions about this month's Significant Activities Report. To be added to or removed from the Email distribution of the Significant Activities Report, please contact Tony Kizlauskas, 312-353-8773, kizlauskas.anthony@epa.gov.