



U.S. Environmental Protection Agency Great Lakes National Program Office (GLNPO) Significant Activities Report

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

July 2004

IN THIS ISSUE:

- Lake Superior Day
- Lake Michigan Diporeia Survey
- School-Ship
- Limnology Courses Bear Fruit
- Organic Contaminants Survey
- Binational Coordination
- Great Lakes Mayors Meet
- Watershed 2004
- Fish and Wildlife Goals for AOCs

Lake Superior Day

The second annual Lake Superior Day was held at Wisconsin Point (Duluth-Superior Harbor) on Sunday, July 18th. Copies of Lake Superior Day proclamations were displayed at the ceremony. The following governments/institutions signed proclamations for Lake Superior Day this year:

- From Michigan: Governor Jennifer Granholm; Keweenaw Bay Indian Community; Villages of L'Anse, Baraga, Eagle Harbor, and Calumet; the cities of Houghton and Hancock; and Keweenaw County.
- From Minnesota: Governor Tim Pawlenty and the City of Duluth.
- From Wisconsin: Governor James Doyle; the cities of Ashland, Superior, and Washburn; Douglas County; Northland College, a private environmental liberal arts college in Ashland; Bad River Tribal Council.



Members of the Little Eagles youth drumming group from Duluth, MN, sing ceremonial songs during a Lake Superior Day celebration on Wisconsin Point, WI, on July 18, 2004. Several recipients of the Lake Superior Binational Program's inaugural Environmental Stewardship award listen in the background. (Photo courtesy of Jeff Frey)

The winners of the Lake Superior Environmental Stewardship Awards were also announced. As part of the \$50,000 GLNPO grant to the Lake Superior Forum, the first Environmental Stewardship Awards Program announced seven winners: four from the U.S. and three from Canada. These awards highlight successful efforts to protect and restore Lake Superior. The awards program recognizes the important contributions that individuals, businesses, industry, communities, and First Nations/Tribes have made to protect and restore the natural resources in the Lake Superior basin in the U.S. and Canada.

The U.S. winners include:

- **Roy Johnson** of Cloverland, Wisconsin, a lifelong resident of Wisconsin's Lake Superior basin. He has converted 160 acres of farmland to restored wetlands. Through two separate partnerships with the Wisconsin Department of Transportation, he has helped to turn cropland into a

diverse range of wetland habitat, including shallow ponds, deep marsh, sedge meadows, and mudflats. Once home to crops and cattle, the wetlands now host a number of sensitive wetland birds and plants. Johnson's commitment to land stewardship began in the 1950s when he and his father dug a pond in their hay field to establish a home for geese and ducks. In 1995, Johnson sold 80 acres of land to the Wisconsin Department of Transportation for the purpose of establishing a wetland mitigation site. In 2001, he signed a permanent limited easement with the WDOT that provided lasting protection for an additional 80 acres of wetlands. The restored wetlands are adjacent to the Brule River State Forest, which links them to over 50,000 acres of public land. The Johnson property is four miles from the Lake Superior shore, which makes it uniquely suited for shorebird habitat restoration.

The U.S. winners in the Industry and Business category were Minnesota Power and the Pinehurst Inn at Pikes Creek (a tie).

- **Minnesota Power** of Duluth, Minnesota, tackled the issue of mercury emissions from coal-fired power plants from both the production and consumption side of the problem. The company carried out full-scale mercury emissions control technology testing at their Laskin Energy Center (which is within the Lake Superior watershed) as part of an Electrical Power Research Institute study. In the emissions study, Minnesota Power found carbon injection and chemical additives show some promise towards removing mercury from that facility's stack. To reduce mercury emissions at a consumer level, the company designed and constructed a model energy-saving house called the Millen-



Lake Superior Stewardship Awards on display

ium Star in Duluth. The model house showed that building design, materials, and construction techniques can significantly reduce energy consumption and costs. The Millennium Star house runs on a yearly heating bill of less than \$300. This demonstrated that if more houses were energy-efficient, demand for electricity would decrease, resulting in lower mercury emissions from fossil fuel-fired power plants.

- **Pinehurst Inn** at Pikes Creek, Bayfield, Wisconsin, is a bed and breakfast that consists of an historic inn built in 1885 and a one-year-old Garden House offering guest and common rooms. The Garden House was designed to architecturally compliment the main house, yet built using "green building" techniques, materials, and systems that complemented natural systems. Owners Steve and Nancy Sandstrom wanted to minimize the inn's impact on Lake Superior and the surrounding environment by reducing its contribution to air and water pollution, minimizing solid wastes, and enhancing the inn's natural landscaping. The inn and addition have new, energy-efficient thermo-pane windows, energy-efficient light bulbs and appliances, significantly increased insulation in the at-

tic and walls, and a solar hot water heater for the addition. Inside the inn, the Sandstroms use only non-toxic, biodegradable laundry and dishwashing detergents and cleaning supplies. The owners also use only eco-friendly, non-toxic fertilizers in the gardens and landscaping.

The U.S. winner in the Community/Organization Category was:

- The **City of Superior**, Wisconsin. Staff at the city's wastewater treatment facility have conducted extensive reduction and education programs that prevented mercury from entering the lake through wastewater discharges. By working in partnerships with state agencies, regional tribes, area schools, and private businesses, the city has kept 300 pounds of bulk mercury, 400 lab thermometers, 4,000 fever thermometers, and 1,000 vehicle switches that contain mercury out of landfills and waterways. City staff have incorporated mercury reduction curriculum and activities in public schools, conducted workshops for builders to teach them how to recycle thermostats and other toxic materials during construction, organized free mercury thermometer exchanges for digital devices, organized light bulb collections with area hardware stores, worked with dentists to identify and remove mercury in dental offices, and numerous other programs.

The Lake Superior Binational Program consists of a partnership of U.S. and Canadian government agencies, First Nations/Tribes, and citizen stakeholders that work together to protect and restore the natural environment in the Lake Superior basin. The Lake Superior Binational Forum, a volunteer stakeholder group, is funded in the U.S. by

GLNPO, and in Canada by Environment Canada. The U.S. coordinator is housed at the Sigurd Olson Environmental Institute at Northland College in Ashland, Wisconsin. (Contacts: Elizabeth LaPlante, 353-2694, laplante.elizabeth@epa.gov, or Lissa Radke Sigurd Olson Environmental Institute Northland College at (715) 682-1489)

Lake Michigan Diporeia Survey

Dr. Thomas Nalepa, of the National Oceanic and Atmospheric Administration's Great Lakes Environmental Laboratory, sampled Lake Michigan from the *R/V Lake Guardian*, from July 24th through July 27th, looking for the half-inch-long shrimp-like crustaceans, *Diporeia hoyi*. This GLNPO-supported study is documenting the disappearance of this important animal from Lake Michigan.

The *Diporeia* is a small benthic invertebrate that is an important source of food for fish.

The *Diporeia* population has declined severely over the last ten years in southern Lake Michigan. This survey examines the trends in the *Diporeia* population to better understand



Diporeia
(actual size about ½ inch)

population dynamics. This was the fifth year of this investigation. *Diporeia* abundance is examined in sediments collected using a ponar grab sediment sampler. Samples are collected from approximately 60 stations.

The final *Diporeia* survey will be conducted in August in southwestern Lake Michigan (off of Waukegan, Illinois) home to the last

healthy population of *Diporeia* in the southern part of the Lake.
(Contact: Glenn Warren, 312-886-2405, warren.glenn@epa.gov)

School-Ship

The *R/V Lake Guardian* was on Lake Superior from July 5th through 10th and on Lake Michigan from July 19th to 23rd for week-long teacher institutes. The courses were designed to teach elementary, middle, and high school educators about the physical, chemical, and biological components of the Great Lakes ecosystem. In an exciting week aboard the *Lake Guardian*, participants had the opportunity to live and work in the research ship's scientific labs beside researchers doing hands-on data collection and analysis. The course is also designed to help K-12 educators to integrate Great Lakes concepts into their programs and/or curricula through both field and laboratory sessions aboard the vessel. The classes were taught using a combination of lectures and practical hands-on exercises. The classes were given high marks by the participants.

The *R/V Lake Guardian* has been offered as a floating classroom at low-cost to individual students since 1993. These courses are designed to teach undergraduates, graduate students, or teachers about the physical, chemical, and biological components of the Great Lakes ecosystem.
(Contact: George Ison, 312-353-1669, ison.george@epa.gov)

Limnology Courses Bear Fruit

In 2003 Clarkson University, Potsdam, New York was given a grant to conduct a limnology course on Lake Ontario in conjunction with EPA Region II. Three papers resulting from this class are being submitted to the *Journal of Great Lakes Research*:

1. *The Lake Ontario Great Lakes Science*



Students collect samples of organisms dwelling in the bottom sediments of Lake Michigan (photo courtesy of William M. Kane)

Practicum: A model for training limnology students on how to conduct ship-board research in the Great Lakes. Michael R. Twiss, Tom A. Langen, George S. Bullerjahn, and Steven W. Wilhelm, and David C. Rockwell.

2. *Phosphorus bioavailability and plankton distributions in Lake Ontario in the aftermath of Hurricane Isabel, September 2003.* Gouvêa, Sandra P., Christyanne Melendez, Matthew Carberry, George S. Bullerjahn, Steven W. Wilhelm, Tom A. Langen, and Michael R. Twiss.
3. *Pelagic bird survey on Lake Ontario following Hurricane Isabel, September 2003: Observations and remarks on methodology.* Tom A. Langen, Michael R. Twiss, George S. Bullerjahn, and Steven W. Wilhelm.

One of the authors, Christyanne Melendez, was a GLNPO intern and Dr. Michael Twiss, the lead professor for the limnology course, was a student in the 1993 limnology class aboard the *Lake Guardian*.
(Contact: David Rockwell, 312-353-1373, rockwell.david@epa.gov)

Organic Contaminants Survey

During the week of July 12th to 17th, Dr. Matt Simcik of the University of Minnesota took samples for trace (ultra-low levels) organic contaminants in Lake Michigan. Water was sampled for a suite of hydrophobic organic contaminants (HOCs) including PCBs, PAHs, organochlorine pesticides, toxaphene, PBDEs, PFOS, Mercury and dioxins and furans. Because hydrophobic (avoiding water) contaminants prefer to dissolve in lipids (fat) rather than in water, they tend to bioaccumulate in living organisms (benthic organisms, fish), raising concerns about their impacts on wildlife and human health. This study will produce a coherent data set on HOCs in Lake Michigan waters consistent with measurements currently being made in the air and fish of the Great Lakes. For some of the HOCs (PBDEs and PFOS/PFOA) this data will represent some of the first measurements in the water column of the Great Lakes providing baseline information on water concentrations of these emerging contaminants.

Data from the study will be compared to fish concentration data from the Great Lakes Fish Monitoring program to calculate bioconcentration factors and with air monitoring data from the Integrated Atmospheric Deposition Network to help understand the exchange of HOCs between the air and water. Because of the very low concentrations of HOCs in the water, large volumes of water must be processed. In this study, Dr. Simcik sampled approximately 800 liters (over 200 gallons) of water from each of five sites in Lake Michigan.

(Contact: Melissa Hulting, 312-886-2265, hulting.melissa@epa.gov)

Binational Coordination

On July 13th and 14th, the Great Lakes Binational Executive Committee (BEC) held its



The setting sun reflects off a window onboard the R/V Lake Guardian

semi-annual meeting in Chicago, Illinois to discuss binational programs being implemented under the terms of the Great Lakes Water Quality Agreement (the Agreement). The BEC serves a crucial role in coordinating a variety of binational commitments in the Great Lakes Basin. Federal, State, Provincial, Tribal and non-governmental observer agency personnel from both the U.S. and Canada met to discuss vital Great Lakes issues including President Bush's Executive Order on the Great Lakes, the upcoming review of the Agreement, updates on the Great Lakes Integrated Atmospheric Data Network (IADN), the next State of the Lakes Ecosystem Conference (SOLEC), and the Great Lakes Binational Toxics Strategy, as well as informational items on work to coordinate binational monitoring activities. Fruitful, in-depth discussions led to a number of assignments for actions to be completed before the next BEC meeting in December 2004. On the evening of the first day, a farewell reception for Mr. John Mills, the BEC Canadian Co-Chair, was hosted by the Canadian Consul General to Chicago. Mr. Mills, the Regional Director General of the Ontario Region of Environment Canada, is retiring from the federal service. (Contact: Mark Elster, 312-886-3857, elster.mark@epa.gov)

Great Lakes Mayors Meet

The International Association of Great Lakes and St. Lawrence Mayors held their annual conference in Chicago, Illinois on July 15th and 16th. Among the highlights of the conference:

- Presentations on the economic benefits of cleaning up harbors were given by a number of Great Lakes Mayors.
- EPA Administrator Mike Leavitt and Wisconsin Governor James Doyle spoke on the unique opportunity for collaborative restoration work in the Great Lakes Basin.
- Administrator Leavitt stressed the complexity of the problems and the agenda of the Interagency Task Force (created by the President's Executive Order on the Great Lakes) to align all the programs. He used the needed funding for the Carp barrier as an example of where the Task Force can make a difference in moving efforts along.
- Governor Doyle stressed the need for protecting the waters of the Great Lakes through Annex 2001 and against "federalization of water."
- The co-chairs of the International Joint Commission, Herb Grey Canadian Section and Dennis Schornack U.S. Section, spoke of the need to involve the Mayors in the upcoming review of the Great Lakes Water Quality Agreement (the cornerstone of the binational program to protect and restore the Great Lakes).

GLNPO manned an informational display at the conference, fielding questions and handing out Great Lakes CDs, bookmarks, and magnets to interested visitors.

(Contacts: Judy Beck, 312-353-3849, beck.judy@epa.gov; or Tony Kizlauskas, 312-353-8773, kizlauskas.anthony@epa.gov)



GLNPO Display at International Association of Great Lakes and St. Lawrence Mayors Conference

Watershed 2004

Judy Beck, Lake Michigan Team Manager, participated in the National Watershed 2004 Conference in Dearborn, Michigan on July 11th to 14th. The Opening session featured Dennis Schornack, Chairman of the U.S. Section of the International Joint Commission, who outlined the many events currently underway in the Great Lakes. Mike Shapiro from USEPA's Office of Water presented the re-invigorated watershed vision of the agency which includes the alignment of all programs by watershed. Judy Beck presented a status report on Great Lakes Strategy 2002 and attended the field trip to the Ford Rouge River Complex. The tour covered not only the plant but its stormwater management and green roof. When completed, the Phase 1 Rouge Complex will retain and steadily discharge the precipitation of a 10-year storm over a 15-day period. This watershed will, as closely as possible, emulate the hydraulic and water quality behavior of the area's natural watershed.

(Contact: Judy Beck, 312-353-3849, beck.judy@epa.gov)

Fish and Wildlife Goals for AOCs

On July 21st, GLNPO staff presented “Restoration Planning for Fish and Wildlife in Michigan's Areas of Concern: A Preliminary Assessment and Guidance for Action,” to about 130 Michigan Public Advisory Council members and state and federal agency staff in Monroe, Michigan. The workshop outlined a process for achieving restoration goals and delisting fish and wildlife impairments in Michigan’s Great Lakes Areas of Concern.

Workshop presentations assessed the status of restoration efforts for fish and wildlife in the Areas of Concern and GLNPO staff provided a recommended pathway for establishing measurable targets for fish and wildlife habitat, populations, and benthic communities.

The keynote speaker, Keith Bowers (the current chair of the Society for Ecological Restoration), provided an introduction to the field of ecosystem restoration and outlined practical actions that local groups can take at the watershed level.

Successful local efforts were showcased and opportunities to integrate habitat restoration into other remediation activities were highlighted.

GLNPO staff concluded that AOCs have made progress toward restoring beneficial use impairments — but mostly through individual, small-scale projects. Explicit, AOC-wide site designs are almost absent from the Remedial Action Plan documents and monitoring programs are needed to assess progress toward delisting.

(Contacts: Karen Rodriguez, 312-353-2690, rodriguez.karen@epa.gov; or James Schardt, 312-353-5085, schardt.james@epa.gov)



A sandhill crane at home in a Great Lakes wetland

Upcoming Events**2004**

October 6-8 **State of the Lakes Ecosystem Conference: Toronto, Canada**

2005

November 30 **Great Lakes Binational Toxics Strategy Stakeholder Forum: Chicago, IL**

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.