

Toward a new Chicago waterway system: protective and improved

Responding to an ecological threat to the Great Lakes potentially as great as lamprey eels and zebra mussels, the Great Lakes Commission took a leadership position in 2010 to prevent Asian carp from being the next catastrophic invader.

At its 2010 semiannual meeting in Washington, D.C., the Commissioners adopted a resolution recognizing ecological separation as the best long-term solution to the threat of Asian carp and other species moving between the Mississippi River and the Great Lakes. The Commission then partnered with the Great Lakes and St. Lawrence Cities Initiative on a project that will identify engineering options for Chicago's waterway system that will prevent interbasin movement of aquatic invasive species such as Asian carp, while also modernizing the system's roles in commercial navigation, recreational boating, flood and stormwater management, and water quality.

The \$2 million project, *Envisioning a Chicago Area Waterway System for the 21st Century*, is being supported by six funders: the Frey Foundation, the Great Lakes Fishery Trust, the Great Lakes Protection Fund, the Joyce Foundation, the C.S. Mott Foundation, and the Wege Foundation.

HDR Engineering, Inc. was selected as the lead consultant for the project and has assembled a national, multidisciplinary technical team with expertise in hydrology and hydraulics; environmental engineering; lock, dam and canal engineering; ecology and fisheries biology; transportation planning and commercial logistics; sanitary engineering; regional planning; and economics.

Movement of two Asian carp species up the Mississippi River system over the past two decades has prompted measures to stop them from entering the Great Lakes via the Chicago Sanitary Ship Canal, the only direct link between the Mississippi and Great Lakes watersheds. The primary deterrent has been construction of two electronic fish barriers on the canal. Discovery of eDNA from the carp, and one live adult fish, beyond the barriers in 2010 brought a heightened sense of urgency to the situation.

Both the Great Lakes Commission and the Cities Initiative have taken positions favoring separation as the best approach to keep the invasive fish from entering the Great Lakes and threatening businesses, tourism and a \$7 billion sport fishery. The Chicago waterway project will evaluate the economic, technical and ecological elements of separation, along with associated costs, impacts and potential benefits of a re-engineered hydrologic system.

The project is designed to support the work of the U.S. Army Corps of Engi-

neers' Great Lakes and Mississippi River Interbasin Study, but is committed to produce findings on a more accelerated schedule with completion expected by January 2012.

Keeping on message in Washington

Great Lakes Day 2010 on Capitol Hill focused on opportunities, namely the second funding cycle of the Great Lakes Restoration Initiative (GLRI), and issues, particularly the growing threat of Asian carp to the Great Lakes ecosystem.

Great Lakes Day events included the Great Lakes Commission's 2010 Semiannual Meeting which was called to order by the then-chair of the Commission, Illinois Gov. Pat Quinn, and featured high level speakers including Cameron Davis, senior advisor to EPA Administrator Lisa Jackson; Peter Silva, U.S. EPA assistant administrator for water; Jo-Ellen Darcy, assistant secretary for civil works, U.S. Army Corps of Engineers; and Ann Mills, deputy undersecretary, U.S. Department of Agriculture.

In a unanimously supported resolution, the Commission called on Congress and the U.S. Army Corps of Engineers to embrace a clear goal of ecological separation



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of the Great Lakes and Mississippi River watersheds as the key, permanent strategy in the war against Asian carp and their threatened invasion of the Great Lakes. The measure also requested Congress to provide the Corps with authority and substantial resources to complete their study of ecological separation – defined as prevention of the movement of invasive species between the watersheds – and to accelerate completion of the Chicago Sanitary and Ship Canal portion of the study to September 2011.

The annual Great Lakes Day Congressional Breakfast featured remarks from

a number of members of the Great Lakes Congressional Delegation, including Reps. Vern Ehlers and Mark Schauer of Michigan, Marcy Kaptur of Ohio and Kathy Dahlkemper of Pennsylvania. One of the less distinguished, but most attention-grabbing attendees of the breakfast was an actual Asian carp on ice, displayed to highlight the concern in the Great Lakes over aquatic invasive species.

Wind Collaborative assesses ports for capabilities to handle turbines

With almost all of the Great Lakes Commission's member states and provinces banking heavily on wind to meet their goals for alternative energy and to help rejuvenate economies, the Commission continued to provide leadership in 2010 in the regional discussion of this fast-emerging industry. The GLC's activities in wind energy are anchored by its coordination

of the Great Lakes Wind Collaborative, a multi-sector coalition of wind energy stakeholders working to facilitate the sustainable development of wind power in the binational Great Lakes region.

Responding to requests from its Offshore Wind Workgroup to learn more about the Great Lakes-St. Lawrence marine transportation system and its potential role in offshore wind energy development, GLC staff surveyed all major ports in the system to assess their readiness and willingness to handle wind turbine cargo. The resulting report, *The Role of the Great Lakes-St. Lawrence Seaway Ports in the Advancement of the Wind Energy Industry*, provides a general overview of the Great Lakes wind energy industry as well as a comprehensive discussion of the role of the Great Lakes St. Lawrence Seaway ports in advancing the industry.

The document's appendix provides detailed information about the individual ports and/or port operators who responded to the GLWC survey including contact information, infrastructure specifications (handling equipment, staging and



Photos, from left to right:

1. Illinois Gov. and then-GLC Chair Pat Quinn opens the 2010 Semiannual Meeting in Washington, D.C.
2. Rep. Kathy Dahlkemper of Pennsylvania at the Great Lakes Day Congressional Breakfast.

3. Cameron Davis, U.S. EPA special advisor on the Great Lakes, addresses the Healing Our Waters - Great Lakes Commission joint luncheon in Washington, D.C.
4. Ohio Congresswoman Marcy Kaptur addresses the Great Lakes Day Congressional Breakfast.
5. Peter Silva, U.S. EPA assistant administrator for water, at the GLC Semiannual Meeting in Washington, D.C.
6. Jo-Ellen Darcy, assistant secretary for civil works, U.S. Army Corps of Engineers, at the GLC Semiannual Meeting in Washington, D.C.

Photos, from left to right:

1. On display on Great Lakes Day in Washington, D.C., was an actual Asian carp on ice.
2. Great Lakes Commission Vice Chair and Wisconsin Commissioner Todd Ambs, center, turned over leadership duties at the 2010 Annual Meeting to newly elected GLC Chair James Tierney, right, assistant commissioner for water resources of the New York State Department of Environmental Conservation, and new GLC Vice Chair Kari Bennett, left, then general counsel for the Indiana Department of Natural Resources.



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3. Dave Ullrich, left, executive director of the Great Lakes and St. Lawrence Cities Initiative, and John Goss, Asian carp director for the U.S. Council on Environmental Quality, at the 2010 Annual Meeting in Toronto, Ont.
4. A view of the GLRI-funded Little Elkhart River project site in LaGrange, Ind. The site is one of the Great Lakes Basin Program's watershed-scale sediment reduction projects.
5. Great Lakes Commission Executive Director Tim Eder, left, joined Mark Evans, project volunteer



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6. NOAA Administrator Dr. Jane Lubchenco, and WMSRDC Environmental Planning Program Manager Kathy Evans on Earth Day 2010 at the Muskegon Lake restoration project.



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dockage area), bimodal transportation options, and past experience handling wind turbine components.

Energy and water initiatives inform Water Compact implementation

The Great Lakes Commission launched two new initiatives in 2010 with grants from the Great Lakes Protection Fund to generate information that can help the states collectively achieve the goals of the Great Lakes-St. Lawrence River Basin Water Resources Compact and Agreement.

The Great Lakes Energy-Water Nexus initiative will advance integration of energy and water resource decisionmaking and inform next generation energy development and deployment. The Commission is partnering with the U.S. Department of Energy National Laboratories, Cornell University, and a host of other institutions and individuals who

are leaders on the relationships between water and energy.

The first phase of this initiative was an 18-month project to develop new tools and processes for integrating environmental considerations into energy planning and regulation. It included development of energy-water nexus maps, a modeling tool to demonstrate water resource impact tradeoffs under different energy production scenarios. It will also produce a report on the region's energy-water nexus that analyzes relationships between energy and the Great Lakes environment. A final component of the project will be follow-on work to test and refine outputs from the planning phase.

The Value of Great Lakes Water initiative was launched in 2010 to study the pricing of public water in the Great Lakes region and look at ways that pricing can be used to better manage the water resource. The project will also help inform public water utilities looking to implement more sustainable practices for municipal water systems. An end goal of the 18-month planning phase will be to design a demonstration pilot comparing efficiency-oriented public water rate structures to more traditional rate structures to determine their potential for broader application in the region.

GLRI provides \$5 million to Basin Program's watershed-scale sediment reduction

With some \$5 million in funding from the Great Lakes Restoration Initiative (GLRI), the Great Lakes Commission was able to award nine major grants in 2011 to projects aimed at reducing sediment pollution in priority Great Lakes watersheds. The grants were awarded by the GLC and the U.S. Dept. of Agriculture Natural Resources Conservation Service (NRCS) under the Commission-administrated Great Lakes Basin Program for Soil Erosion and Sediment Control. The GLRI-supported grants represented the largest single award cycle in the Basin Program's 20-year history.

Project sites selected for funding included Blue Creek, the St. Marys River and Little Elkhart River in Indiana; the Pinebog River, River Raisin, and Shiawassee River in Michigan; the Poplar River in Minnesota; Black and Oatka Creeks in New York; and Old Woman Creek and the Sandusky River in Ohio.



Total requests to the competitive watershed-scale grants program exceeded \$20 million. The nine funded projects were selected by a regional Soil Erosion and Sedimentation Task Force made up of representatives of the eight Great Lakes states and are expected to save upwards of 24,000 tons of soil erosion on an annual basis.

The GLC's Great Lakes Basin Program for Soil Erosion and Sediment Control has funded 439 local small-scale projects since 1991, allocating over \$15 million to control erosion and sediment. These projects have reduced soil erosion in the Great Lakes basin by more than 1.6 million tons and phosphorus loadings by over 1.6 million pounds.

Webinar series showcases air quality research

The Great Lakes Commission kicked off a ten-part Atmospheric Toxics Webinar Series in 2010 featuring results of research conducted through the GLC's Great Lakes Air Deposition (GLAD) program supported by U.S. Environmental Protection Agency funding. 41 research grants have been awarded and managed by the Commission since 2004 under the direction of a team of senior air pollution control staff representing each of the eight Great Lakes states.

As a result of this effort, a substantial amount of new scientific knowledge concerning atmospheric contaminant loadings, fate and transport within the Great Lakes basin, and the associated adverse effects on wildlife and human health, has been accumulated. The webinars, which continued into 2011, allow GLAD award recipients to report their research findings, including follow-up measures and recommended policy actions. They are also aimed at promoting coordination and implementation of consistent regional policies and exploring future funding opportunities.

The Muskegon Lake restoration project is part of the U.S. Department of Commerce's initiatives to bolster the economy and create jobs that promote blue-green growth while ensuring conservation

NOAA ADMINISTRATOR
DR. JANE LUBCHENCO

Earth Day attracts special guest to inspect Muskegon Lake

NOAA Administrator Dr. Jane Lubchenco, under secretary of commerce for oceans and atmosphere, spent Earth Day 2010 in Muskegon, Mich., celebrating an American Recovery and Reinvestment Act (ARRA)-funded wetland and shoreline restoration project managed by the Great Lakes Commission and the West Michigan Shoreline Regional Development Commission.

A \$10 million stimulus grant awarded by NOAA is enabling the removal of more than 180,000 tons of sawmill waste and demolition materials from the Muskegon Lake shoreline and the restoration of almost two miles of hardened shoreline to native vegetation for fish and wildlife habitat.

"This is part of the U.S. Department of Commerce's initiatives to bolster the economy and create jobs that promote blue-green growth while ensuring conservation," said Lubchenco, who noted that the project has generated work for some 70 full-time employees while restoring almost 24 acres of wetland habitat.

Lubchenco joined GLC Commissioner and Michigan Office of the Great Lakes Director Ken DeBeaussaert, GLC Executive Director Tim Eder, WMSRDC Environmental Planning Program Manager Kathy Evans and other project partners on a NOAA research vessel to inspect the project work sites by water.