



Advisor

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A look back . . . a look forward

Commission to assess progress, obstacles in aquatic nuisance species prevention and control

The Nonindigenous Aquatic Nuisance Prevention and Control Act, landmark U.S. federal legislation, celebrates its 10-year anniversary this year amidst largely positive, yet mixed, reviews. This law, and the National Invasive Species Act (NISA) that reauthorized it in 1996, are credited with bringing public attention, programs and funds to a pressing issue with regional, national and global dimensions. Despite notable progress, however, Great Lakes-St. Lawrence officials are increasingly asking whether these laws — and the various programs and regulations that have followed — are sufficient to meet future needs and challenges. The issue of ballast management, for example, has been both a focal point and lightning rod in recent years. After a decade of experience with the federal legislation, officials are asking “What’s the next step?”

In cooperation with the Great Lakes Panel on Aquatic Nuisance Species, the Great Lakes Commission is bringing its considerable resources to bear on this question. With this issue of the *Advisor*, the Commission is pleased to announce a major new, 12-month initiative titled *Preparing for the Next Decade in ANS Prevention and Control*. Funded by the U.S. Environmental Protection Agency’s Great Lakes National Program Office, the effort has two goals: 1) to recognize innovative policies, programs and measures that have advanced prevention and control efforts over the last decade; and 2) to identify gaps and unmet needs, with a particular emphasis on ballast management. Initiative outcomes, in the form of findings and recommendations, will feed into the NISA reauthorization process next year. Complementing this initiative are several others. For example, the panel-endorsed Great Lakes Action Plan for Aquatic Nuisance Species Prevention and Control is now in the hands of the governors and premiers for their signatures. The panel’s Ballast Management Committee will release a comprehensive policy statement later this year. Additionally, a television documentary on invasive plants, a companion video to an earlier ANS documentary, is in production.

In its 10th year of existence, the Great Lakes Panel on Aquatic Nuisance Species is a federally chartered body responsible for setting and advocating regional policy, program and funding priorities, and promoting consistency among jurisdictions with regard to laws and programs. “The panel is well-positioned, from both a policy and technical standpoint, to serve the region’s ANS prevention and control needs,” states Great Lakes Panel Chair Ron Martin of Wisconsin. “The panel offers a balanced membership and hard-earned reputation for objectivity and sound science and is, therefore, a valuable resource that our governors and premiers, and all government officials, can draw on.” For information on panel products and related Great Lakes Commission activities, contact Mike Donahue, mdonahue@glc.org, at 734-665-9135.

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Commission Chair Irene Brooks

The Advisor is published bimonthly by the Great Lakes Commission. The Great Lakes Commission is a binational agency established in 1955 to promote the orderly, integrated and comprehensive development, use and conservation of the water and related natural resources of the Great Lakes basin and St. Lawrence River.

Commission News & Views

From the desk of the executive director...

Great Lakes Commission

The Great Lakes Commission is a binational public agency dedicated to the use, management and protection of the water, land and other natural resources of the Great Lakes-St. Lawrence system. In partnership with the eight Great Lakes states and provinces of Ontario and Québec, the Commission applies sustainable development principles in addressing issues of resource management, environmental protection, transportation and sustainable development. The Commission provides accurate and objective information on public policy issues; an effective forum for developing and coordinating public policy; and a unified, systemwide voice to advocate member interests.

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Cover photo: Rock Harbor Lighthouse, Isle Royale National Park. Credit: Christine Manninen.

What's in a name?

Did you notice something different about the cover page of this issue of the *Advisor*? It's subtle, but significant, and reflects a multi-year evolution for the Great Lakes Commission. Or, perhaps I should say, Commission des Grands Lacs.

The Commission has a new, bilingual logo, thanks to Executive Committee action Sept. 7. The reason? It's found in our past, our present and our future. The original authors of our enabling legislation, the Great Lakes Basin Compact, envisioned an organization with a binational focus, provincial membership and a mandate that most certainly

does not recognize the mythical "dotted line" down the middle of the lakes and St. Lawrence River. The historical basis of this binational focus also has manifested itself in the present, as evidenced by the many state/provincial and other U.S./Canadian partnerships found in all areas of Commission activity. And, the need for a binational ecosystem-based approach is

beyond question when we look to the future. A quick review of our new strategic plan is proof.

What's in a name? The bilingual aspect of the logo recognizes the two official national languages present in the Great Lakes-St. Lawrence region. It's also a case of first impression; the new logo, in so many words, speaks to our binational orientation.

Members of the Great Lakes Commission community should know that a bilingual logo does not infer wholesale change from an operational standpoint. All communications and meetings, for example, will continue to

be conducted in English, although translation of parts of our annual report and selected publications will occur. (Most assuredly, I will continue to answer my own phone calls in English. I did study another language in college, Latin in fact, but in my professional life it has been useful only in pronouncing the scientific names of aquatic nuisance species.)

The Executive Committee made a number of other forward-looking decisions at its recent meeting. It decided, for example, to dramatically elevate the Commission's political influence and profile. This will entail the creation of a new staff position dedicated exclusively

"Le logo de la Commission a changé, de même que se sont élargis les ressources, les adhésions et les champs d'intérêt de notre organisation. Ce que représente ce logo, toutefois, n'a pas changé."

The Commission logo has changed, and the organization's resources, membership and focus have broadened. What that logo stands for, however, has not changed."

to advancing the Commission's policy agenda and associated legislative, appropriations and program priorities. The Committee also took initial steps to secure long-term, enhanced financial support for such advocacy work. It also gave its blessing to a suite of new and continuing proj-

ect initiatives that touch on all aspects of the Commission's mandate.

The Commission logo has changed, and the organization's resources, membership and focus have broadened. What that logo stands for, however, has not changed. We have always been, and always will be, an organization dedicated to a strong economy, a clean environment and a high quality of life for the Great Lakes-St. Lawrence region.



Michael J. Donahue, Ph.D.

Sensitivity atlas promotes spill protection

The Great Lakes Commission is helping to develop an Inland Sensitivity Atlas series, giving oil and hazardous substance spill responders and planners a detailed, yet easily understandable visual interpretation of the area surrounding a potential spill. The atlas highlights areas that need protection, such as endangered species habitats, green spaces or potable water intakes, as well as resources that could be used for response activities, such as dams or boat launches. Potential spill sources, such as oil and oil product pipelines and oil storage facilities, also are included on the atlas.

To fulfill requirements of the Oil Pollution Act of 1990, the U.S. Environmental Protection Agency's Region 5 has been working on the atlas series in partnership with the Commission, Upper Mississippi River Basin Association and the U.S. Geological Survey's (USGS) Upper Midwest Environmental Services Center. In conjunction with the area contingency plans, the atlas offers a comprehensive guide to spill responders and planners. The atlas is prepared

using Geographic Information System (GIS) software and provided to responders either as traditional paper maps or electronic files served on CD-ROMs or over the Internet (www.epa.gov/region5/oil). While some of these atlases are currently being distributed, the remainder of the areas should be complete by summer 2001.

Approximately 5,500 designated trout streams in Michigan were remapped by the Commission (for the Michigan Department of Natural Resources) to an accuracy of 40 feet. All oil and oil product pipelines are mapped by the Commission and forwarded to the U.S. Department of Transportation's Office of Pipeline Safety. The Commission also has been coordinating efforts between the National Oceanic and Atmospheric Administration and USGS to digitize the relative shoreline sensitivities of lakes Erie and Huron.

A special presentation on this project and the ongoing GIS work by the Commission will be highlighted at the Commission's annual meeting in Hamilton, Ontario. Contact: Tom Rayburn, tray@glc.org.



Executive Committee charts Commission's course

Meeting onboard the U.S. Coast Guard ice-breaker *Mackinaw*, the Great Lakes Commission's Executive Committee convened Sept. 7 to chart a new course for the organization. Among other actions, the committee adopted a new, bilingual logo to signify the Commission's enhanced binational focus; approved a new staff position to broaden advocacy initiatives; agreed to a dues adjustment to accommodate expanded programs; and moved forward on an endowment campaign feasibility study. The committee also was briefed on Commission programs and new grant/contract awards that have led to some 50 funded projects across five program areas in FY2001. "Our objective is to provide the organizational infrastructure and profile needed to aggressively implement our new strategic plan," explained Chair Irene Brooks. "At the center

of that plan is a strong binational focus, effective advocacy, and the capacity to address the current and emerging needs of our member states and provinces."

The Executive Committee meeting, which took place at the *Mackinaw's* home port of Cheboygan, Mich., was organized at the invitation of Adm. James Hull, commander of the Ninth Coast Guard District in Cleveland, Ohio. Presentations by vessel captain John Nickerson and Capt. Randy Helland, Ninth District, were complemented by a tour of the vessel. The Commission has been a longstanding advocate for adequate ice breaking capability on the lakes and is supporting a congressional appropriation for replacement of the *Mackinaw*, constructed in 1943. Contact: Mike Donahue, mdonahue@glc.org.



Scholarship opportunity

High school seniors and current students enrolled at a Great Lakes-St. Lawrence college or university are encouraged to apply for the 2001 Carol A. Ratza Memorial Scholarship. Awarded annually, the \$500 scholarship supports students with an interest in electronic communications technology and its environmental or economic applications in the Great Lakes-St. Lawrence region. For an application packet, contact Christine Manninen at 734-665-9135, manninen@glc.org; or visit www.glc.org/announce/00/scholar01.html. The application deadline is March 30, 2001.

GIS tools advance Great Lakes management efforts

Many Great Lakes agencies and organizations now produce spatially referenced data that can be mapped and managed in a Geographic Information System (GIS). It is a challenge, however, to ensure that such data is packaged to promote application to Great Lakes management.

The Great Lakes Commission is addressing this need by organizing agency data and GIS layers, making them widely available via the Internet through the "Maps and GIS" section of the Great Lakes Information Network (GLIN) (www.great-lakes.net/gis/). Basinwide reference data are the latest additions to this section, clickable under the heading "GIS Data." Basinwide data include state/provincial political boundaries, watersheds within the Great Lakes region and basin boundaries for each Great Lake.

By providing a common set of reference layers available to all interested parties, the Commis-

sion is enhancing the depiction, sharing and analysis of data at the regional level. It is also encouraging refinements to regional reference data and the sharing of other data sets relevant to the Great Lakes.

The Air Mapper (www.glc.org/air/airmapper.html) is another GIS tool recently released by the Commission. It enables users to create interactive maps showing specific air pollutant emissions levels. The Air Mapper will benefit users who want quick access to emissions levels across the region.

The Commission staff also continues work on the GIS online interactive mapper, due out this winter, which will enable users to view GIS data without specialized software. Contact: Julie Wagemakers, juliew@glc.org; or Stuart Eddy, seddy@glc.org.

Progress in brownfields redevelopment and greenfields protection

Brownfields redevelopment and greenfields protection are critical elements of sustainable development. That is the premise of the *BRIDGES* project, a collaborative effort between the Great Lakes Commission, the National Wildlife Federation-Great Lakes Natural Resource Center and the Council of Great Lakes Industries. In recent months, the Commission staff has conducted research and analyses of Great Lakes state policies related to brownfields redevelopment and greenfields protection. Research results will be used to identify areas where public policies can be developed or enhanced to improve efforts to revitalize urban and older suburban areas and protect farmland and open space from development due to unplanned growth. A series of recommendations will be developed that build on successes in the Great Lakes region and elsewhere and promote their transferability and application within the region. Recommenda-

tions will be in the form of strategic actions directed at private and non-profit, as well as public sector, activities to advance brownfields redevelopment and greenfields protection in ways that reinforce and complement one another.

Initial project findings and recommendations will be presented by Commission staff at a special session of Brownfields 2000, Oct. 11-13 in Atlantic City, N.J. A *BRIDGES* project advisory committee meeting will be held Oct. 26 in Detroit to review, discuss and fine-tune the findings and recommendations. The final project report, including research results, analysis and strategic actions, will be published early in 2001. The report also will include recommendations for improved community involvement in brownfields decisionmaking, the outcome of two local brownfields workshops held as part of the project. Contact: Victoria Pebbles, vpebbles@glc.org; or Steve Thorp, sthorp@glc.org.



Decaying urban area in Detroit, Mich. Photo credit: Victoria Pebbles.

Great Lakes outflows, hydromet station directory coming online

The Great Lakes Commission is developing a new web site and interactive database to chart the outflows of the Great Lakes for the U.S. Army Corps of Engineers (USACE).

The rate of flow, or discharge, of a river is determined by the channel depth and width and the velocity of the flow. Flow data is essential to the coordination of outflows under varying low and high water level conditions. Compiled by USACE and Environment Canada and coordinated under the auspices of the Coordinating Committee on Great Lakes Basic Hydraulic and Hydrologic Data, the flow data include monthly mean values from the year 1900 to the present. Other data include annual mean, long-term average, maximum and minimum flows. Flows will be charted for the St. Marys, St. Clair, Detroit, Niagara and St. Lawrence rivers and the Long Lac and Ogoki, Lake Michigan at Chicago, Welland Canal, and New York State Barge Canal diversions.

"Our plan is to display the entire data set and be able to query it by user-specified parameters," says Scott Thieme, chief of the Hydraulic Engineering Branch at USACE-Detroit District. Visitors to the site will be able to select a flow location

and view the data in tabular or graphical format.

The flows database project is just one in a series of efforts underway to enhance the "Levels and Hydrology" section of the Great Lakes Information Network (www.great-lakes.net/envt/water/levels/hydro.html). Through a partnership with the Coordinating Committee, overviews of various hydrology topics are being prepared, as well as interactive gauging station maps that display current water levels.

In a related effort with the National Oceanic and Atmospheric Administration's Great Lakes Environmental Research Laboratory, an interactive database is being created to display information about more than 6,000 hydrometeorological stations around the Great Lakes. Locational information from the data records allows them to be incorporated into a Geographic Information System for remote access through the Internet. This metadata collection includes descriptive information about each station, years of record, type and availability of data, operating agency, and acquisition agency. Project funding is provided by USACE. Contact: Christine Manninen, manninen@glc.org.

U.S. and Canadian scholars to examine binational Great Lakes-St. Lawrence governance

Canadian and U.S. scholars will take a fresh look at Great Lakes-St. Lawrence governance, thanks to a new Great Lakes Commission project supported by the Canadian Embassy in Washington, D.C. The grant will fund the latest seminar of the 30-year-old Canada-United States Inter-university Seminar series (CUSIS). CUSIS originated as a forum for Great Lakes scholars and policymakers to address significant binational issues. Past CUSIS series have been credited with influencing the original Great Lakes Water Quality Agreement of 1972 and originating the

concept of the Ecosystem Charter for the Great Lakes-St. Lawrence Basin (1994). This iteration will be co-chaired by Commission Executive Director Mike Donahue and Professor Marcia Valiante of the Great Lakes Institute and Faculty of Law, University of Windsor. "This partnership will allow scholars from both sides of the border to have a real impact on the issues we are going to face over the next 20 to 50 years," says acting institute director, Peter Sale. Contact: Mike Donahue, mdonahue@glc.org; or Marcia Valiante, mvalian@uwindsor.ca.



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Water resources project management team announced

The first phase of a “Water Resources Management Decision Support System for the Great Lakes,” one of the newest and largest Great Lakes Commission projects, is now underway. Supported by the Great Lakes Protection Fund, the two-year project will lay the framework for the data, information and process required to ensure timely and well-informed public policy decisions concerning the use and management of surface and groundwater resources. The project management team was announced in late August.

“The 17 members are a mix of policy, management and technical experts, providing a highly professional team to address critical issues of importance to the entire Great Lakes-St. Lawrence

community,” says Mike Donahue, Commission executive director.

The team’s first meeting took place at the end of September, initiating an ambitious effort to support the ongoing efforts of the Great Lakes-St. Lawrence governors and premiers to develop and implement a management regime to address water withdrawal, consumptive use, diversion and related issues. Mike Donahue and Tom Crane serve as project co-directors, while Tom Rayburn serves as project manager. Look for project updates in upcoming issues of the *Advisor*. Interested parties should contact the Commission (734-665-9135) or their team representative, below, for further project information.

Great Lakes Commission Annual Meeting

October 16, 2000

Effective Advocacy for the Great Lakes-St. Lawrence Region

Look for meeting highlights in the next *Advisor*!

Annual Meeting

STATE/PROVINCIAL TEAM MEMBERS

- Illinois: Daniel Injerd, Illinois Department of Natural Resources; 312-793-3123; dinjerd@dnrmail.state.il.us
- Indiana: Jim Hebenstreit, Indiana Department of Natural Resources; 317-232-4163; jhebenstreit@dnr.state.in.us
- Michigan: Keith Harrison, Michigan Department of Environmental Quality; 517-335-3666; mesb@state.mi.us
- Minnesota: Kent Lokkesmoe, Minnesota Department of Natural Resources; 651-296-4810; kent.lokkesmoe@dnr.state.mn.us
- New York: Michael Holt, New York State Department of Environment Conservation; 518-457-9514; mdholt@gw.dec.state.ny.us
- Ohio: Richard Bartz, Ohio Department of Natural Resources; 614-265-6730; bartz@nrult1.dnr.oh.gov
- Ontario: David de Launay, Ministry of Natural Resources; 705-755-1620; david.delaunay@mnr.gov.on.ca
- Pennsylvania: Tom Denslinger, Water Use Planning Division; 717-772-4048; Denslinger.Thomas@al.dep.state.pa.us
- Québec: Andre Carpentier, Environment et Faune Québec;

- 418-521-3825x7108; andre.carpentier@menv.gouv.qc.ca
- Wisconsin: Bruce Baker, Wisconsin Department of Natural Resources; 608-266-1902; bakerb@dnr.state.wi.us

FEDERAL TEAM MEMBERS (U.S. and Canadian)

- Environment Canada: Doug Cuthbert, Canada Centre for Inland Waters; 905-336-4713; doug.cuthbert@ec.gc.ca
- National Oceanic and Atmospheric Administration: Dr. Frank Quinn; 734-741-2255; quinn@glrl.noaa.gov
- U.S. Army Corps of Engineers: Roger Gauthier; 313-226-3054; roger.l.gauthier@usace.army.mil
- U.S. Geological Survey: Dr. John Gannon; 734-214-7237; john_e_gannon@usgs.gov
- U.S. Geological Survey: James Nicholas; 517-887-8906; jrnichol@usgs.gov

REGIONAL TEAM MEMBERS

- Council of Great Lakes Governors: Jeffrey Edstrom; 312-407-0177; edstrom@cglg.org
- Great Lakes Commission: Dr. Michael J. Donahue; 734-665-9135; mdonahue@glc.org

New additions to Commission staff

The Great Lakes Commission welcomes Ron Hasselbring and Hao Zhuang to its staff.

Hasselbring handles accounting and human resources functions for the Commission as the new financial manager. He holds a bachelor’s degree in accounting from Michigan State University and a master’s degree in business administration from the University of Michigan. He comes to the Commission from William Tyndale College in Farmington Hills, Mich., where he served as director of accounting services.

As a web database programmer, Zhuang assists with design and implementation of applications for the Great Lakes Information Network and related projects. He is working toward a master’s degree in computer science from Eastern Michigan University. A native of China, he holds bachelor’s degrees in literature from Nanjing Normal University and in information systems from Nanjing University of Science and Technology. Contact: Ron Hasselbring, ronh@glc.org; or Hao Zhuang, hzhuang@glc.org.

Which way to environmental improvement: Voluntary compliance and reporting, or strict standards and enforcement?

George H. Kuper, President, Council of Great Lakes Industries*

The significant environmental improvement we have experienced in the Great Lakes in the last 25 years resulted from a combination of regulations and voluntary efforts. There will continue to be a role for both, but the nature of the remaining environmental challenges will require even greater creativity through voluntary measures.

Great Lakes' fish and wildlife populations are rebuilding. Ecosystem and human exposure to toxics has been reduced by more than 90 percent in most cases. This does not mean that we have met the very tough goals we set for ourselves via the Canadian-U.S. Great Lakes Water Quality Agreement, U.S. Clean Water Act, Canadian Environmental Protection Act and other policies. Finishing the job will require careful application of the regulatory programs in place and additional voluntary efforts by each of us.

In the past 25 years we have used regulatory pro-

grams to mandate standards of performance and "level the playing field." At the same time, voluntary programs were used successfully to address site-specific issues. These maximized cost-effectiveness and stimulated the creativity needed to address the sometimes very small quantities of the substances targeted for virtual elimination.

The new environmental challenges we face today are not so clearly defined as those we've addressed using the world's most aggressive regulatory programs. We must capitalize on our momentum and promote innovation through voluntary challenges like those advanced by the U.S. and Canadian governments in the Great Lakes Binational Toxics Strategy.

Voluntary approaches, as opposed to command and control regulations, allow each sector of society to apply its knowledge, experience and creativity to find solutions that best provide the most effective results.

POINT



John Jackson, former President, Great Lakes United*

Many governments and polluters now use "environmental controls and regulations" as dirty words. They espouse voluntarism as the solution to environmental problems, but our experience over the years has proven that the voluntary approach will fail to achieve the zero discharge goal of the Great Lakes Water Quality Agreement.

In September 2000, the Organization for Economic Cooperation and Development criticized Canada for overuse of voluntary instruments, stating "reliance on voluntary agreements has not been sufficient to achieve environmental objectives, for example, in the case of management of toxic substances." Environment Canada's review of its hallmark voluntary program, Accelerated Reduction and Elimination of Toxics Initiative (ARET), concluded, "ARET participation was not one of the main factors in motivating industry to reduce releases of toxic substances."

Zero discharge can only be achieved if there is zero use of persistent toxic substances. Otherwise, contaminants will inevitably be released to the

environment. History repeatedly shows that alternative production processes and substances will not be used until and unless governments require the changeover. Alternatives to chlorofluorocarbons (CFCs) were used only once government announced the intention to phase out CFCs, although alternatives had existed for many years. The same is true of PCBs and other substances now put out of use.

Rather than focus on voluntary programs, we should develop pollution prevention regulations that:

1. Set goals, including timetables, based on ecosystem health using a precautionary approach;
2. Let industry determine how to achieve the goals;
3. Require regular reporting to the public on progress toward goals; and
4. Impose penalties if industry does not achieve goals by specified dates.

Only through developing regulations based on such principles will we achieve zero discharge. Those who are pushing for voluntary programs clearly are not dedicated to achieving zero discharge.

counterpoint



**Views expressed are those of the authors and do not necessarily represent the views of their affiliated organizations.*

Freshwater Spills Information Clearinghouse

Visit this new web site dedicated to linking the freshwater spills community for planners, responders and researchers at www.freshwaterspills.net

Inland Sensitivity Atlas

www.epa.gov/region5/oil

Carol A. Ratza Memorial Scholarship

www.glc.org/announce/00/scholar01.html

Great Lakes Information Network

Maps and GIS: www.great-lakes.net/gis/
Levels and Hydrology: www.great-lakes.net/envt/water/levels/hydro.html

Air Mapper

www.glc.org/air/airmapper.html

Double-crested Cormorants

migratorybirds.fws.gov/issues/cormorant/cormorant.html and www.on.ec.gc.ca/glimr/data/cormorant-fact-sheet/

St. Lawrence Action Plan

www.slv2000.qc.ec.gc.ca

Tenth Biennial Report on Great Lakes Water Quality

www.ijc.org/comm/10br/en/indexen.html

Living with the Lakes

This booklet offers a broad overview of how water levels on the Great Lakes change and how the changes affect those who live or play along the Great Lakes. View it online (www.glc.org/docs/lakelevels/lakelevels.html) or order a free hard copy from the U.S. Army Corps of Engineers (huron.lre.usace.army.mil/order/lwls.html)

Tenth Biennial Report on Great Lakes Water Quality released

"Failure to address the challenge of restoration during this time of economic prosperity will result in future generations of Great Lakes citizens inheriting the consequences of our inaction," concludes the Tenth Biennial Report on Great Lakes Water Quality, recently released by the International Joint Commission (IJC). Under the Great Lakes Water Quality Agreement, the IJC assesses the adequacy and effectiveness of programs and progress toward restoring and maintaining the health of the Great Lakes. It reports its findings and makes recommendations to the governments of Canada and the United States biennially.

Among others, IJC recommendations to restore and maintain the Great Lakes basin ecosystem include:

- The federal governments should prepare a consolidated report on Remedial Action Plan progress that lists the accomplishments to date, funds expended, what remains to be done, funds and timing required to finish the necessary work, and the governments' role with each Area of Concern.
- Federal, provincial and state governments should immediately develop a comprehensive binational sediment remediation program, setting priorities and timetables and providing the resources for completion of the program in each Area of Concern.
- The federal governments should identify both in-basin and out-of-basin sources of atmospheric deposition of persistent toxic substances, and use this information to formulate and implement appropriate prevention and control measures. The Great

Lakes Binational Toxics Strategy must be strengthened to fully address the treatment of airborne toxic substances.

- Provincial and state governments should require that sport fish consumption advisories state plainly that eating Great Lakes sport fish may lead to birth anomalies and other serious health problems for children and women of childbearing age. These advisories should be addressed and distributed directly to women, in addition to their general distribution.

- Federal, provincial and state governments should provide for a binational study of the effects of changes in land use on Great Lakes water quality to determine measures that should be taken by governments at all levels to control pollution from increasing urbanization and other changes.

- The federal governments should adopt and implement a binational ballast water research strategy and plan, and give a reference to the IJC to develop binational standards for discharges of ballast water and residual sediments.

- Federal, provincial and state governments should develop and maintain the full range of coordinated monitoring and surveillance programs necessary to enable them to fulfill their commitments under the Great Lakes Water Quality Agreement and adopt a binational information policy to support implementation of the agreement.

The full report is available on IJC's web site at www.ijc.org. Contact: Jennifer Day, 519-257-6700 or 313-226-2170.

U.S. EPA approves state programs to clean up Great Lakes

The U.S. Environmental Protection Agency (U.S. EPA) has approved six Great Lakes states' programs designed to clean up the lakes. Under the 1995 Great Lakes Guidance issued by U.S. EPA and the eight Great Lakes states, the states agreed to adopt programs consistent with the Guidance to ensure cleanup of the Great Lakes. Under the Clean Water Act, states may adopt their own programs, providing they are consistent with and as stringent as federal criteria and standards.

Minnesota and Pennsylvania's programs were determined to be fully consistent with federal Clean Water Act standards and the 1995 Great Lakes Guidance. The Illinois, Indiana, Michigan and Ohio programs were approved with minor exceptions. U.S. EPA will implement federal Clean Water Act standards to cover gaps in these states' programs. This fall U.S. EPA will publish its decision concerning New York and Wisconsin's programs.

20-year settlement reached in treaty fishing issue

Longstanding differences concerning the implementation of 1836 treaty fishing rights in portions of the waters of lakes Michigan, Huron and Superior were recently resolved by the agreement of all parties to a 20-year settlement. Parties to the settlement include Bay Mills Indian Community, Grand Traverse Band of Ottawa and Chippewa Indians, Little River Band of Ottawa Indians, Little Traverse Bay Bands of Odawa Indians, Sault Ste. Marie Tribe of Chippewa Indians, the state of Michigan, and the United States. Conservation and sportfishing groups that participated in negotiations leading up to the agreement also support the settlement.

The parties have committed themselves to an ambitious plan to rehabilitate lake trout in lakes Michigan and Huron. In Lake Superior, where natural lake trout rehabilitation appears to have succeeded, a different regime will be exercised. The heart of the agreement calls for the removal of more than 14 million feet of annual gill net effort. To accomplish this goal, many of the largest tribal gill

net fishing operations will be converted to trap net operations. Conversion will be accomplished, in part, by state commercial fishers in Bay de Noc (in northern Lake Michigan) selling their trap net operations to the state, which will then turn these operations over to tribal commercial fishers who choose to participate.

The dispute resolution provisions of the agreement place a heavy emphasis on intergovernmental consultation between the tribes and the state. A Technical Fisheries Committee, an intergovernmental body comprised of biologists, will seek to resolve issues that arise, using the best available science and striving for consensus among all parties.

The agreement is embodied in a consent decree that has been submitted to Judge Richard Enslen, chief judge of the U.S. District Court for the Western District of Michigan. The settlement will become final and binding once approved by the court. Contact: John Bickerman, mediator, 202-347-8787.



Lake trout on spawning bed (above). Photo credit: U.S. Geological Survey. Lake trout fry (below). Photo credit: American Fisheries Society. Photos courtesy of the Great Lakes Fishery Commission.



Great Lakes Commission supports SOLEC 2000

The State of the Lakes Ecosystem Conference (SOLEC), hosted by the U.S. Environmental Protection Agency and Environment Canada, provides a biennial forum for information exchange on the health of the Great Lakes basin ecosystem. SOLEC 2000, to be held Oct. 17-19 in Hamilton, Ontario, will focus on the use and application of indicators that collectively help define the status of the ecosystem and its components. Several hundred Great Lakes officials — drawn from government agencies, the private sector and citizen interests — will be present to assess progress and problems in meeting goals for ecosystem health.

A number of Great Lakes Commission staff are contributing to SOLEC 2000. Victoria Pebbles will offer a plenary presentation on land-use and near-shore terrestrial indicators and also has authored a background paper on the brownfields indicator. Steve Thorp is a panelist for the breakout session on water levels and is co-authoring a background paper

on the economic prosperity indicator. He's also responsible for nominating and evaluating candidate success stories that highlight exceptional efforts in improving the Great Lakes basin ecosystem. Matt Doss is helping to organize a breakout session on the St. Clair River-Lake St. Clair-Detroit River corridor as part of a new Commission project to develop a management framework for Lake St. Clair. Ric Lawson is discussing the results of the Commission's Lake Michigan Tributary Monitoring Project in the Lake Michigan breakout session. Mike Donahue and Steve Thorp serve on the SOLEC steering committee. The Commission also is co-hosting the SOLEC opening reception Oct. 16 at the Sheraton Hotel in Hamilton. Early arrivals to SOLEC are invited to join the Commission at its 2000 annual meeting, held at the Sheraton that day. Contact: Harvey Shear, Environment Canada, 416-739-4704; or Paul Horvatin, U.S. EPA, 312-353-3612.

DID YOU KNOW?

The retention/replacement time of Lake Erie's waters is 2.6 years, while Lake Superior's retention time is 191 years.

Great Lakes Atlas, Environment Canada and U.S. EPA, 1995

Double-crested cormorants: A management challenge



Photo credit: U.S. Fish and Wildlife Service. Courtesy of the New York Field Office.

In the span of a few decades, the double-crested cormorant (*Phalacrocorax auritus*) has gone from a species in peril to a pest, as some consider it. A long-lived, colonial-nesting waterbird native to North America, the double-crested cormorant is the most widespread and abundant of six cormorant species found on the continent, and one of 37 species found worldwide. It is the only cormorant species that occurs regularly on freshwater lakes and streams in North America.

Its Great Lakes population was devastated during the 1960s, primarily by chemical contamination of its food supply (fish), most notably by DDT. In 1972, the species received protection under the 1918 Migratory Bird Treaty Act. Because of this, the banning of DDT, and

new food resources on its breeding and wintering grounds, the number of double-crested cormorant nests in the Great Lakes region increased from 89 in 1970 to 88,000 in 1997, leading to its current population at historic highs. Its rise in numbers, however, has elevated concern over the species' economic and environmental impacts. Cormorants have been implicated in economic losses at commercial aquaculture facilities, particularly in their wintering grounds in the southeast United States; damage to trees and other vegetation near breeding colonies and roosting sites; impacts on other migratory bird species in the vicinity of cormorant breeding colonies; declines in sport fish and associated revenues; and lowering of private property values.

U.S. and Canadian fish and wildlife agencies have responded over the years to public and private concerns about cormorants in the Great Lakes basin. The U.S. Fish and Wildlife Service (FWS) has funded Great Lakes population monitoring surveys of the bird in coordination with states and the Canadian Wildlife Service. In

12 southeastern states and Minnesota, where economic impacts have been well-documented and nonlethal control has proven ineffective, the FWS has implemented a depredation order allowing catfish and bait fish farmers to kill unlimited numbers of double-crested cormorants preying or about to prey on aquaculture stocks. The agency also has issued permits for oiling cormorant eggs to prevent hatching at Little Galloo Island in Lake Ontario, N.Y., and Young Island in Lake Champlain, Vt. An extensive review of published studies on the impacts of double-crested cormorants on sport fish populations in North America, conducted by the FWS, indicated that fish species valued by sport and commercial anglers make up only a small proportion of the cormorant diet. Therefore, the FWS has not issued permits directed at reducing cormorant predation on sport fish in open waters. However, research on this issue continues throughout the Great Lakes.

Recent initiatives to address cormorant management include numerous research and monitoring projects; a video, *Managing Cormorants in the Great Lakes*, recently released by New York Sea Grant; and FWS efforts to prepare an environmental impact statement and accompanying national management plan addressing impacts of double-crested cormorants. The FWS held scoping meetings across the country this spring and plans to have a draft environmental impact statement available for public comment by the end of the year. According to Diane Pence, FWS wildlife biologist, "We received comments ranging from no action to large-scale population control, and we are carefully considering each alternative."

Further information is available online at migratorybirds.fws.gov/issues/cormorant/cormorant.html and www.on.ec.gc.ca/glimr/data/cormorant-fact-sheet/. Contact: Diane Pence, FWS-Region 5, 413-253-8577; Steve Lewis, FWS-Region 3, 612-713-5473; or Dave MacNeill, New York Sea Grant, 716-395-2638.

The St. Lawrence Action Plan: A productive partnership

by Raymonde Goupil, Environment Department, Government of Québec

The St. Lawrence Action Plan, known as St. Lawrence Vision 2000, is a successful example of government and non-governmental bodies working together to enhance the effectiveness of measures to protect, conserve and develop the St. Lawrence River ecosystem.

Since the early 1970s, studies have shown significant, widespread deterioration of the St. Lawrence River. Consequently, governments acknowledged the need for joint action, and a collaboration between the Canadian and Québec governments was born. The collaboration resulted in the signing of three successive five-year agreements (1988-2003).

Each of the action plan's three phases is predicated on harmonization between government programs, activities and action. Implementation of the current phase involves the participation of 13 federal and provincial government departments and agencies. Innovative management mechanisms, based on equal responsibility-sharing between government and non-government partners, allow all parties to take part in decisionmaking.

Citizen and riverside community involvement has proven essential and widespread in the pursuit of objectives related to protecting and conserving the St. Lawrence. Public participation

received government support in the form of the Priority Intervention Zones Program, which has led to the creation of 14 committees working on areas of prime concern along the entire length of the St. Lawrence River.

To date, partners' joint efforts have resulted in the following tangible results in reducing toxics, maintaining biodiversity, protecting human health and agricultural cleanup:

- significant reduction in toxic liquid discharge from the 106 St. Lawrence Vision 2000 priority industries
- conservation of 12,000 hectares (29,640 acres) of wildlife habitat
- implementation of 27 recovery plans targeting threatened or vulnerable species, including the beluga whale
- creation of the Saguenay-St. Lawrence Marine Park
- publication of reports on the state of the St. Lawrence and its tributaries
- completion of more than 150 community projects, 250 by the end of Phase III
- agricultural cleanup plans for four drainage basins

For further information, visit the St. Lawrence Action Plan web site at www.slv2000.qc.ec.gc.ca



Photo courtesy of the Environment Department, Government of Québec.

Great Lakes Calendar

Empowering Community Leaders to Address Contaminated Sediments

November 3; Muskegon, Michigan

Contact: Matt Doss, 734-665-9135, mdoss@glc.org

American Water Resources Association Annual Conference

November 6-9; Miami, Florida

Contact: Patricia Reid, 540-687-8390, pat@awra.org

Environmental Permitting Symposium II

November 14-16; Chicago, Illinois

Contact: Leo Stander, 919-541-2402,

STANDER.LEO@epamail.epa.gov

EEO 2000 Environment & Energy Conference

November 27-28; Toronto, Ontario

Contact: Bree Stanlake, 800-274-6027,

info@eeco.apfn.net

Midwest Fish and Wildlife Conference

December 3-6, Minneapolis, Minnesota

Contact: Paul J. (Jack) Wingate, 651-459-0851,

jack.wingate@dnr.state.mn.us

Environmental Strategies for Aquaculture Symposium

December 5-6; Minneapolis, Minnesota

Contact: Ron Kinnunen, 906-228-4830,

kinnunen@msue.msu.edu

Great Lakes Panel on Aquatic Nuisance Species Meeting

December 12-13; Ann Arbor, Michigan

Contact: Kathe Glassner-Shwayder, 734-665-9135,

shwayder@glc.org

Ohio Lake Erie Commission Meeting

December 20; Columbus, Ohio

Contact: Jeffrey Busch, 419-245-2514,

oleo@www.epa.state.oh.us

Further details and a more extensive calendar are available online via the Great Lakes Information Network (www.great-lakes.net). If you have an event you'd like us to include, please contact Courtney Shosh, Advisor editor, at 734-665-9135 or cshosh@glc.org.

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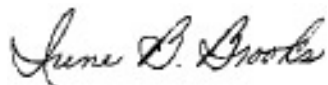
The Last Word

Reflections from the Commission Chair

It has been a true honor to serve as the Great Lakes Commission Chair over the past two years. The theme of my term has been to advance the interest of the Great Lakes through the development of increased interjurisdictional and interregional cooperation. Our successful initiatives over the past two years have been many. These have included the addition of Ontario and Québec as Associate Members; the signing of a Declaration of Partnership for the 21st Century among a number of interstate organizations; and the initiation of a coordinated, interregional approach to U.S. federal and congressional advocacy efforts.

Our collective achievements in the last two years have been built on the Great Lakes Commission's efforts over the last 45 years. We have laid the course for protection of Great Lakes-St. Lawrence resources. Now our journey will continue with new challenges and new solutions. I will continue to serve as chair of the Pennsylvania Delegation, and I look forward to working with the Commission's new chair to meet these challenges and to strengthen our efforts in the region.

I thank my fellow commissioners, observers and staff for both an exiting and enjoyable term as chair.



Irene B. Brooks
Commission Chair



Photo credit: Victoria Pebbles

Where in the Great Lakes?

Guess the location pictured in this Great Lakes photo, and you could win a prize! Send your guess via e-mail to cshosh@glc.org along with your name, address and daytime phone number (or call Courtney Shosh at 734-665-9135). All correct responses received by Nov. 27 will be entered into a drawing. The winner will receive his/her choice of a Great Lakes Commission t-shirt or a \$10 credit toward the purchase of a Commission publication.



The location of last issue's "Where in the Great Lakes?" photo was Pictured Rocks National Lakeshore in Michigan. The contest winner was Jim Baker of Chassell, Mich.

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