

1998 ANNUAL REPORT



Vision

Our vision is a Great Lakes basin that offers a strong and growing economy, a healthy environment and a high quality of life for its citizens by applying principles of sustainable development in the use, management and protection of its water, land and other natural resources.

Mission

The Great Lakes Commission, an eight-state compact agency founded in state and federal law and dedicated to the use. management and protection of the water, land and other natural resources of the Great Lakes basin, provides leadership in the implementation of principles of sustainable development throughout the basin. In partnership with the Great Lakes states, the Commission addresses issues of resource management, environmental protection, transportation and economic development by serving as an accurate and objective source of information; an effective forum for the development and coordination of public policy; and an active and committed advocate of basin interests.

—Great Lakes Commission Strategic Plan

Commission Overview

The Great Lakes Commission, an interstate compact agency comprised of governor-appointed and legislatively mandated representatives of the eight Great Lakes states, was established by joint legislative action of the Great Lakes states in 1955 and granted congressional consent in 1968. As stated in the Great Lakes Basin Compact, the Commission was established "to promote the orderly, integrated and comprehensive development, use and conservation of the water resources of the Great Lakes basin." Objectives associated with this goal include

- Plan for the welfare and development of the water resources of the basin as a
 whole, as well as for portions of the basin that may have problems of special
 concern;
- Make it possible for the states of the basin and their people to gain the
 maximum benefit from utilization of public works, in the form of navigational
 aids or otherwise, which may exist or occasionally be constructed;
- Advise in securing and maintaining a proper balance among industrial, recreational and other legitimate uses of the basin's water resources; and
- Establish and maintain an intergovernmental agency to effectively and efficiently accomplish the objectives outlined in the Great Lakes Basin Compact.

To pursue these objectives, the Commission focuses on three principal functions:

- Information sharing among the Great Lakes states and the larger Great Lakes community;
- Coordination of state positions on issues of regional concern; and
- Advocacy of those positions on which the states agree.

The Commission addresses a range of issues involving environmental protection, resource management, transportation and economic development. A committee and task force structure, comprised of Commission members, Observers and other partners, is the vehicle for identifying and developing issues, and subsequently recommending the adoption of positions by the membership. Federal, provincial, regional and tribal government Observers participate, but do not vote, in all Commission activities.

The Great Lakes Commission is the only Great Lakes organization with a statutory mandate to represent the collective views of the eight Great Lakes states. The organization's structure, program and staffing arrangements are determined by, and accountable to, its member states. The Commission is based in Ann Arbor, Michigan.

"..to promote the orderly, integrated and comprehensive development, use and conservation of the water resources of the Great Lakes basin."

(Article 1, Great Lakes Basin Compact)

Messages from the Chair and Vice Chair

his past fall, I was bestowed the honor of serving as chair of the Great Lakes Commission. I received this honor through a vote of confidence from my fellow Commissioners in all eight Great Lakes states. My predecessor as chair, Don Vonnahme, is a great inspiration to the entire membership, and his legacy will be a foundation for my own efforts.

As we move into the 44th year of the Commission's mission, we continue to build upon the solid foundation established by the efforts of our Great Lakes constituency. The pages of this annual report review those achievements and progress of this foundation over the past year.

Recognizing our successes and our unparalleled efforts to promote and advocate sound science and policy development, we continue to strengthen partnerships throughout the region, including our Canadian partnerships. To further strengthen these efforts we must build a bridge beyond our region and form the link to other regions with similar interests.

Looking beyond our own boundaries, we discover endless opportunities to advance our efforts through inter- and intraregional cooperation that makes us better managers and stewards. We have much to learn and much to teach regarding areas of administration, membership building, priority setting and program development. We must work together on projects and policy issues that transcend boundaries. We must be the catalyst for increased coalition building and a higher profile in Washington D.C. And, as always, we must maintain a focus on our mission of protecting the world's



greatest fresh water resource. We must remain vigilant of threats to the region while, at the same time, we must also embrace the idea of stronger inter-regional cooperation in order to enhance our ever-growing collective interests.

Looking back at our progress over the past year fuels the excitement for the coming year. We will continue aggressive pursuit of provincial membership, initiate an unprecedented number of new projects, and continue to strengthen our advocacy efforts to better advance member interests. I welcome the support and guidance of Vice Chair Nathaniel E. Robinson, fellow Commissioners, Observers and other members of the Great Lakes family in advancing the goals and objectives of the Commission.

s Vice Chair of the Great Lakes Commission, I am pleased to join with Chair Irene Brooks and my colleagues in fulfilling a singularly important responsibility: promoting the informed use, management and protection of the Great Lakes. The Great Lakes basin is blessed with an abundance of natural resources, a healthy economic climate, and a high quality of life. Basin residents and member states increasingly recognize the inseparable connection between economic development and environmental protection, and the need to embrace the notion of sustainability as a means to achieve and maintain this balance.

We at the Commission are presented with challenges and great opportunities in making a reality of our vision for the Great Lakes basin. Events over the past year have demonstrated that we are up to the task. The Commission has proven to be an influential advocate for programs, policies and legislation for the lakes. We have also taken the concept of interjurisdictional partnering to a new level, and found ways to identify and maximize common goals, objectives and concerns that unite us.

As chair of the Wisconsin Delegation to the Commission, I can say without reservation that the work and success of the Commission must continue. The unique ability to rally members—and the entire Great Lakes community—around issues and opportunities of common interest is the hallmark of the Commission's well-deserved reputation. Wisconsin is proud to be a part of this dynamic team effort, and applauds the membership and its dedicated staff for a successful 1998 and a very promising 1999.

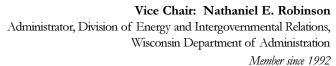
Nathaniel E. Robinson, Vice Chair

Irene Brooks, Chair

Executive Committee 1998



Chair: Irene B. Brooks
Executive Director, Office for River Basin Cooperation,
Pennsylvania Department of Environmental Protection
Member since 1995





1

John P. Cahill
Commissioner, New York Department of
Environmental Conservation
Member since 1997







Dr. Frank L. KudrnaIllinois Governor's Appointee;
Chief Executive Officer, Kudrna & Associates, Ltd. *Member since 1978*

Larry D. Macklin
Director, Indiana Department of Natural Resources

Member since 1997





G. Tracy Mehan, III

Director, Office of the Great Lakes,

Michigan Department of Environmental Quality

Member since 1995

Succeeded Frank J. Kelley, Michigan Attorney General, as Delegation Chair in Nov. 1998





Commissioners

* Indicates chair of state delegation in 1998

Illinois

Anthony Ianello, Executive Director, Illinois International Port District

*Frank Kudrna, Chief Executive Officer, Kudrna & Associates, Ltd.

Brent Manning, Director, Illinois Dept. of Natural Resources

E. Norman Sims, Jr., Director, Illinois Dept. of Commerce and Community Affairs

Donald Vonnahme, Director, Office of Water Resources, Illinois Dept. of Natural Resources (Commission Chair through 10/98)

Alternates

John Comerio, Deputy Director, Illinois Dept. of Natural Resources

Dan Injerd, Chief, Lake Michigan Management Section, Illinois Dept. of Natural Resources

Indiana

John Hamilton, Commissioner, Indiana Dept. of Environmental Management

*Larry Macklin, Director, Indiana Dept. of Natural Resources

E. Peter McCarthy, Port Director, Indiana's International Port/Burns Harbor at Portage

Gerry Nannenga, Assistant Business Manager, N.W. Indiana District Council of Carpenters

Ray Sierra, Vice Chair, International Longshoremen's Association

Alternates

Lori Kaplan, Deputy Director, Bureau of Water and Resource Regulation, Indiana Dept. of Natural Resources

Matt Rueff, Assistant Commissioner, Office of Water Management, Indiana Dept. of Environmental Management

Michigan

Hon. William Callahan, State Representative

Frank D'Itri, Professor, Institute of Water Research, Michigan State University

*Hon. Frank J. Kelley, Attorney General (Delegation Chair through 11/98)

G. Tracy Mehan, III, Director, Office of the Great Lakes, Michigan Department of Environmental Quality (Delegation Chair since 11/98)

Hon. Walter North, State Senator

Alternate

A. Michael Leffler, Assistant Attorney General

Minnesota

*Hon. Thomas Huntley, State Representative

Hon. Cal Larson, State Senator

Theodore Mellby, Governor's Appointee

Hon. Mary Murphy, State Representative

Hon. Steve Novak, State Senator

Alternates

Henry Hanka, Executive Director, Arrowhead Regional Development Commission

Hon. Edward Oliver, State Senator

New York

*John P. Cahill, Commissioner, New York State Dept. of Environmental Conservation

Sean Hanna, Governor's Appointee

Tom McAuslan, Executive Director, Port of Oswego Authority

John Francis O'Mara, Governor's Appointee

Carl Tuohey, Governor's Appointee

Gerald Mikol, Regional Director, New York State Dept. of Environmental Conservation, Region 9

Ohio

Alternates

Jeffrey Busch, Executive Director, Ohio Lake Erie Office

Hon. Rex Damschroder, State Representative

Hon. Robert Gardner, State Senator

*J. William Moody, Asst. Director, Ohio Department of Natural Resources

George Ryan, President, Lake Carriers' Association

Alternates

James Hartung, President, Toledo-Lucas County Port Authority

Wayne Warren, Chief, Division of Real Estate and Land Management, Ohio Department of Natural Resources

Pennsylvania

*Irene Brooks, Executive Director, Office for River Basin Cooperation, Pennsylvania Department of Environmental Protection (Commission Chair since 10/98)

Hon. Jane Earll, State Senator

Sidney Smith, President, Erie Sand Steamship Co.

Alternates

John Hines, Executive Assistant, Office for River Basin Cooperation, Pennsylvania Department of Environmental Protection

Wisconsin

William Carey, Governor's Appointee

Thomas Kell, Governor's Appointee

*Nathaniel E. Robinson, Administrator, Division of Energy and Intergovernmental Relations, Wisc. Dept. of Administration (Commission Vice Chair since 10/98)

Alternates

Christopher Spooner, Policy Adviser, Governor's Office

Executive Director's Report



Making a difference

Thanks to the dedication and hard work of our members and many partners, we can look back on 1998 with a strong sense of accomplishment. More importantly, we can look ahead with confidence as we meet the many challenges and opportunities before us.

As the Commission's chief executive officer, my priorities in 1998 were directed at organizational growth and financial strength; administrative

efficiency; program development; advocacy and, most importantly, member services. Progress was made on all fronts. Record-setting double-digit increases were realized in virtually every revenue and investment category. Staff were added in all program areas without increasing administrative costs. Program breadth was expanded to address all Strategic Plan goals. Advocacy efforts—and a strengthened presence in Washington—were pursued with vigor. And, the entire Great Lakes community benefitted from the tremendous leadership of an active and involved Executive Committee and membership at large.

These accomplishments, while important, are only a means to an end. The fundamental question is whether we've made a difference; whether our efforts in 1998 have promoted public policy that is scientifically sound, administratively efficient, responsive to state needs and supportive of sustainable development principles. This question, I believe, can be answered with a resounding "yes," as evidenced on the pages of this annual report.

The next 12 months will be exciting ones under the very capable leadership of Chair Irene Brooks and Vice Chair Nathaniel E. Robinson. We'll be at the forefront of an unprecedented effort to build inter-regional alliances among interstate organizations nationwide to enhance our individual and collective efficiencies, programs and advocacy efforts. We'll be taking a major step forward in building intra-regional partnerships as well, both with our provincial membership initiative and other collaborative efforts. We'll be leading the region's efforts in applying electronic communications technology to current and future management priorities. We'll be re-dedicating ourselves to "down in the trenches" advocacy work ranging from maritime policy to environmental protection and resource management. And, more than ever before, we'll provide members and partners with a quick response capability to emerging issues. Indeed, we must be increasingly vigilant; 1998 saw bad public policy in the form of a Lake Superior water export proposal and the designation of Lake Champlain as a Great Lake. Thanks to Commission leadership—and the concerns of the entire Great Lakes community—both proposals were short-lived. New surprises are unquestionably around the corner, however, and the Great Lakes Commission will be there to respond.

The pages of this annual report offer a review of the Commission's work over the last year in each program area: Administration, Resource Management and Environmental Quality, Transportation and Economic Development, Communications and Information Management, and Regional Coordination. The narrative for each program includes its goals and associated responsibilities, a focus on key accomplishments and a preview of upcoming initiatives.

It's been a pleasure to serve the Great Lakes Commission membership and its partners in 1998. I welcome your continued dedication and support as we make a difference in 1999.

Michael J. Donahue, Ph.D.

Administration

The goal of the Administration Program is to enhance the Commission's leadership role in regional coordination, policy development and advocacy through efficient, costeffective and responsive service to member states. Program responsibilities include Executive Committee support, budgeting and financial management, human resources, office management, program development and fundraising, program oversight, strategic planning, organizational design and development, and member, Observer and partner relations.

Enhancing the Commission's leadership role

Growing resources to meet growing challenges

The Great Lakes Commission closed out FY1997 in outstanding financial condition: The largest budget in its history was complemented by a revenue and investment scenario that met or exceeded all goals. This positive outlook continued into FY1998, a year that saw a 15.5 percent increase in total budget and notable increases in restricted fund revenues, indirect cost recovery, market value of investments and total reserve funds. Revenues exceeded expenses, continuing a decade-long trend, and pushed reserve funds over the \$2 million mark for the first time in the organization's history. The only figure that did not increase was that of state dues; annual payments were held at a level unchanged since 1993.

Staff size at the Great Lakes Commission increased considerably over the previous year, with a total of 30 individuals serving the membership as managers, specialists, research associates, fellows or administrative assistants. Growth was particularly pronounced in technical areas, with enhanced expertise in Geographic Information Systems, web site design and Internet applications. Additional hiring in early 1999 will ensure that Commission priorities are fully addressed.

With major office renovations completed, the Commission turned its attention to enhancing its technological capabilities. Computer hardware was upgraded and internal networking was enhanced to move data management to a new level. Software upgrades and staff training ensured that the Commission remained on the leading edge of technology applications in the Great Lakes basin. Staff support to the Great Lakes Information Network (GLIN) was enhanced, as the basin's premier Internet-based clearinghouse received an average of approximately 400,000 hits per month in 1998. And, 1998 saw the beginning of a major redesign of the Commission's web site to enhance its navigation and usefulness for the Commission audience and the larger Great Lakes public.

The Executive Committee has placed a priority on long-term financial stability and controlled growth for the organization, with a careful balance between fundamental coordination, policy research and development and advocacy responsibilities. To achieve this, 26 different revenue sources were accessed to support 35 distinct projects, exclusive of state dues, meeting sponsorships and receipts, publications sales and investment income. Consequently, general operating funds (drawn largely from state dues) were available for advocacy initiatives and related efforts to publicize and promote the policy positions of the membership.

Revenues and Expenses

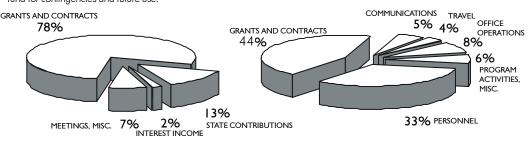
Revenues—FY1998*

Grants and contracts: \$2,063,737 State contributions: \$360,000 Interest income: \$51,603 Meetings, publications, misc.: \$194,799 Total: \$2,670,139

*Revenues over expenses (\$16,627) were placed in a reserve fund for contingencies and future use.

Expenses—FY1998

Total:	\$2,653,512
Program activities, misc.:	\$168,528
Office operations:	\$211,603
Travel:	\$93,257
Communications:	\$139,118
Grants and contracts:	\$1,161,564
Personnel:	\$879,442



Building a binational partnership: The state/provincial connection

The authors of the Commission's enabling legislation, the Great Lakes Basin Compact, were ecosystem thinkers, even though the term was rarely used in the mid-1950s. They envisioned a research, policy development and advocacy organization that would look past the artificiality of geopolitical boundaries and focus instead on hydrologic boundaries—the water and related land resources of the Great Lakes basin and the St. Lawrence River. Toward that end, every Great Lakes state adopted legislation providing for a 10-member Great Lakes Commission, the eight states and two provinces that lie fully or partially within the basin or along the river. The U.S. Congress consented to the compact some years later but, reluctant to recognize a state/provincial body, excluded provincial membership provisions from the consent legislation.

Times have changed and the Great Lakes Commission is changing with them. Under Executive Committee leadership, a provincial membership initiative is well underway. Progress in 1998 was notable. Support for provincial membership was secured in every Great Lakes state, and the premiers of Ontario and Québec enthusiastically concurred. Compact amendments were introduced in the U.S. House and Senate, and dialogue with the U.S. Department of State and Canadian Ministry of Foreign Affairs was initiated. Plans for an Associate Membership arrangement as an interim step were approved by the Commission membership. And, throughout the year, provincial representation and participation in virtually every aspect of Commission operations continued to increase.

"The Great Lakes Commission is a vibrant, growing organization with a solid financial base and an entrepreneurial spirit. Year after year, it provides its members with an impressive "return on investment" through pass-through funds and competitive grants. More importantly, its programs and advocacy efforts yield economic and environmental benefits for the entire basin."

- Frank L. Kudrna, Chair, Illinois Delegation Provincial membership is a common-sense initiative, a means to recognize and celebrate shared state/provincial stewardship responsibility; strengthen communication and coordination; share resources; and provide a more effective and efficient means for all members of the Great Lakes-St. Lawrence community to work together toward common goals. The initiative will continue into 1999 and beyond, accompanied by new and innovative ways to foster binational partnerships. The Great Lakes Commission looks at the lakes as a resource that draws our two nations and their state and provincial governments together, not as a boundary that keeps them apart.





Niagara Falls, New York, and Toronto, Ontario. Photo credits (I. to r.): Great Lakes Commission; Christine Manninen, Great Lakes Commission

Selected Accomplishments

- Successful program development efforts yielded the largest budget in the Commission's 44-year history, with record, double-digit increases in virtually every revenue and investment category
- Accessed 26 revenue sources, exclusive of state dues, to support 35 ongoing and new start initiatives consistent with Strategic Plan priorities
- Froze state dues at 1993 levels, while realizing a 450 percent increase in total budget over that period
- Returned almost 43 percent of budgeted revenues to member states via pass-through funds and competitive grants, a "return on investment" that far exceeded the dues payment for every member state
- Increased staff size in all program areas, enhancing member state services in an array of policy analysis, communications and technical support areas
- Expanded partnerships throughout the Great Lakes-St. Lawrence community, advancing a provincial membership initiative that will strengthen the Commission's binational dimension and further the collective resource management effort
- Initiated a Strategic Plan review process to ensure a continued leadership role for the Great Lakes Commission into the new millennium

Budget and finance. Efforts to diversify and enhance the funding base for program development over the long term continue.

Accessing foundation support and pursuing larger scale, multiyear projects will complement efforts to maintain and expand ongoing programs and associated revenue sources. Management of an investment portfolio will provide financial security over the long term and added revenue for project-specific activities over the short term.

Member support services.

Basic services, including committee and task force support, will be streamlined to increase administrative efficiency and maximize staff and financial resources available for progam implementation and advocacy efforts.

Provincial membership

initiative. State and provincial support, complemented by a receptive Great Lakes community, will provide an excellent foundation for progress in 1999, with benefits for the overall Great Lakes governance effort.

Strategic Plan. Progress under the Commission's five-year Strategic Plan will be assessed, with an eye to amending the plan in preparation for the next millennium. The review and assessment process will be open and inclusive, involving all partners in the binational Great Lakes basin.

Staffing to serve the membership

In November 1998, the Great Lakes Commission announced a new fellowship program that offers Great Lakes professionals from federal, state, provincial and/or tribal governments an opportunity to serve a "tour of duty" at Commission offices in Ann Arbor, Mich. Under this arrangement, the Commission provides the fellow with a fully equipped office, staff support, travel funds and an opportunity to work with staff professionals on an array of current policy issues. The individual retains his or her agency affiliation over the course of the program, which can be customized to meet individual needs. The program is the latest in a series of creative staffing arrangements initiated to meet Commission goals and contribute to the collective Great Lakes management effort. In 1998, the Great Lakes Commission also hosted a Fulbright Scholar from the University of Western Ontario, an environmental protection specialist from the U.S. Environmental Protection Agency (U.S. EPA)-Region 5, and laid the groundwork for a Sea Grant Fellowship position based at Commission offices.

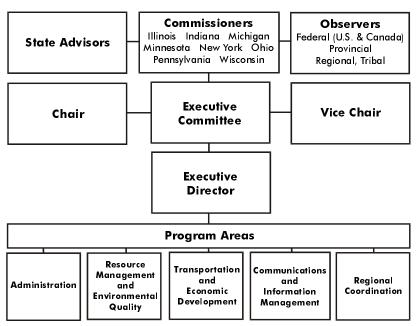
Win-win scenario for the Commission and its members

Almost 43 percent of all Commission revenues budgeted for FY1998 were returned to member states in the form of pass-through funds or competitive grants. This "return on investment" far exceeds annual dues payments in every member jurisdiction, as documented in an annual analysis prepared for the Executive Committee and transmitted to the Great Lakes governors. Coupled with the coordination, policy research and advocacy services of the Commission, the financial returns associated with membership have helped ensure the full and active participation of members in all aspects of the Commission's operations.

A strategic approach to member priorities

The Commission's Strategic Plan remained a guiding force for the organization in 1998, and its five goals, 24 objectives and 95 strategic actions influenced the direction and focus of all program development and policy analysis initiatives. At the request of the Executive Committee, a thorough assessment of progress in Strategic Plan implementation was initiated in preparation for prospective amendments in the year 2000.

How the Commission is organized



Protecting Great Lakes basin resources

Controlling soil erosion and sedimentation

The Great Lakes Basin Program for Soil Erosion and Sediment Control provides funding support to regional, state and local entities involved in soil erosion and sediment control activities throughout the U.S. portion of the Great Lakes basin. Through FY1998, the Basin Program has awarded \$3.91 million for 118 demonstrations and special projects under the competitive grants component of the program. In 1998, 20 projects from seven of the Great Lakes states received \$246,477 in funding. In keeping with the Commission's Strategic Plan, the Basin Program continues to increase community and political awareness, demon-

strate successful erosion control practices, and build partnerships that will have a positive, long-term impact on the land and water resources of the Great Lakes basin.

In 1998, the Commission, through its Soil Erosion and Sedimentation Task Force and numerous other partners, convened a multi-day conference on soil erosion and sediment control titled "Keeping it on the land...and out of the water!" Fulfilling one of the Basin Program's primary objectives, the conference distributed information and shared technical expertise developed through the demonstrations grants process to a wider audience in the Great Lakes basin.



Reducing agricultural erosion is a Great Lakes Commission priority.

Photo credit: Great Lakes Commission

Other Basin Program-related activities in 1998 included

- Development of a quarterly soil erosion and sediment control newsletter that features demonstration projects funded through the Great Lakes Basin Program; news from the Great Lakes states and the basin's soil and water conservation districts; and relevant articles and announcements of conferences, workshops and training opportunities;
- Planning for an updated and expanded soil erosion and sediment control web site with detailed descriptions of all completed and ongoing projects funded through the Great Lakes Basin Program; and
 - An expanded grants program with up to \$350,000 available for eligible applicants to

"Marketing our successes is the challenge before us in 1999. With increased emphasis on communications, including the soil erosion newsletter and online services, the Commission will provide the leadership to advance the Great Lakes Basin Program for Soil Erosion and Sediment Control into the next century."

—Percy Magee, USDA-

Natural Resources Conservation

Service

demonstrate innovative erosion and sediment control practices or develop creative approaches to inform and educate target audiences about the need to control erosion and reduce sedimentation.

From 1991 to 1997, Great Lakes Basin
Program efforts have kept approximately 475,000
tons of soil, 380 tons of nitrogen and more than
413 tons of phosphorus on the land and out of
the water. These figures represent the savings
from the program's first 79 projects. The program
is supported by the U.S. Department of
Agriculture-Natural Resources Conservation
Service and administered through a memorandum
of understanding with the NRCS and U.S. EPA.

Resource Management and Environmental Quality

The Resource Management and Environmental Quality Program promotes the informed use, development and protection of Great Lakes basin water, land and other natural resources. Projects continue to evolve in the areas of soil erosion and sediment control; emergency preparedness and response for oil and hazardous materials spills; aquatic nuisance species prevention and control; and Remedial Action Plans and Lakewide Management Plans. In each of these areas, the Commission offers a wide-range of support and services to its project partners, including regional coordination, policy development, advocacy, data/information management and distribution, and education and outreach.

Selected Accomplishments

- · Obtained funding for new projects to expand online information related to spill protection and prevention, Remedial Action Plans (RAPs) and Lakewide Management Plans (LaMPs)
- · Completed multiple inland waterways spill response atlases
- Secured \$500,000 for continuation of the Great Lakes Basin Program for Soil Erosion and Sediment Control, via an agreement with the USDA-NRCS
- Awarded 20 Great Lakes Basin Program grants for soil erosion and sediment control projects totaling nearly \$250,000
- Conducted a successful RAP Summit, state legislative briefing and local training session on quality issues for the Statewide Public Advisory Council under Michigan's Areas of Concern Program
- Completed and distributed two fact sheets on spill prevention planning and regulatory compliance for the Great Lakes Spill Protection Initiative
- Revised and marketed Biological Invasions brochure and produced model guidance to enhance interjurisdictional consistency in laws, regulations and policies
- Convened the second annual Great Lakes Science Vessel Coordination Workshop

Advancing spill prevention and response efforts

In the aftermath of the 1989 Exxon Valdez oil spill in Prince William Sound, Alaska, the inherent risks of oil transport and storage received renewed public attention. As an amendment to the Clean Water Act, the U.S. Congress passed the Oil Pollution Act of 1990 (OPA) to reduce the frequency of major oil spills, improve the efficiency of spill response, expand preparedness activities, and provide better coordination for spill response and planning among local, state, and federal agencies and private groups.

Since 1992, the Commission has been assisting the U.S. EPA Region 5, Emergency Response Branch (Oil Section) in the collection and mapping of data mandated under OPA.

Western Lake Erie Contingency Plan Coastal/Inland Western Lake Erie Committee

The Commission's efforts to date have focused on mapping the coastal counties in the region in a geographic information system (GIS) and the development of oil spill contingency plans to augment the collection of environmental, economic and cultural sensitivity data.

In 1998, the Commission completed final Inland Waterways Spill Response atlases for the Milwaukee and Western Lake Erie sub-areas. Also, draft atlases were either initiated or completed for the Northwest Indiana, Eastern Lake Erie, and Duluth sub-areas, as well as for the entire state of Michigan and other inland areas of the Great Lakes states.

To support and complement the mapping work underway, the Commission has been assisting the individual sub-areas in developing oil spill response and contingency plans. This

work has resulted in the first joint U.S. EPA/U.S. Coast Guard (USCG) OPA plan known as the Western Lake Erie Area Contingency Plan. In addition, the Commission helped to develop the Northern Michigan Sub-area Plan for 27 counties of the Upper and Lower peninsulas of Michigan and is working with the committees developing plans for the Detroit and Cleveland sub-areas.

During 1999, the Commission will focus on producing final products for ongoing mapping and planning efforts in the coastal areas of the Great Lakes and will intensify its efforts on the inland areas of the basin.

"It is imperative to focus on protecting inland waterways from oil spills because river and lake currents are important mechanisms for movement of materials in the inland freshwater habitats."

— Ann Whelan, U.S. EPA Region 5

Public/private sector partnership for environmental protection

The Great Lakes Spill Protection Initiative (GLSPI) is a partnership between state and federal agencies and petroleum companies with a goal of protecting the Great Lakes from the environmental and economic damages associated with an oil spill. The Commission and the Council of Great Lakes Governors, who provide staff support to the GLSPI, completed a three-year effort funded by the Great Lakes Protection Fund in 1998. As part of that grant, the GLSPI completed its trilogy of spills-related brochures that cover practical opportunities for preventing, planning for and responding to a spill. The GLSPI will continue to meet on a regular basis to discuss spill prevention and preparedness in the Great Lakes region and to determine data and information needs to assist agencies and companies in protecting the Great Lakes water resources from the impacts of spills.

Areas of Concern

The Commission provides staff support to the Statewide Public Advisory Council for Michigan's Areas of Concern Program. Building upon work with the Michigan AOC program, the Commission (in partnership with the U.S. EPA) began a regional initiative to assess monitoring efforts in the Lake Michigan AOCs, involving AOC communities in Illinois, Indiana, Michigan and Wisconsin. The Commission also has begun training RAP participants to establish local monitoring programs and assess monitoring needs. Finally, the Commission continued to update online information for the U.S. Areas of Concern for the U.S. EPA's Great Lakes National Program Office. In 1999, this project will be expanded to include additional AOC information as well as information on Lakewide Management Plans (LaMPs).

"Having an accurate, historical database of water use information is a prerequisite for forecasting water demands of Great Lakes water, an important component of the comprehensive Great Lakes water resources management program. This information will improve the region's ability to assess the impacts of future out-of-basin transfer projects and consumptive use proposals."

—Daniel Injerd, Lake Michigan Management Section, Illinois Department of Natural Resources.

Tracking basin water use

The Commission houses and manages the Great Lakes Regional Water Use Database, a service it has provided since 1988. The Great Lakes Charter of 1985, signed by the Great Lakes governors and premiers, called for the establishment of a uniform, consistent and common base of data pertaining to Great Lakes water use. In 1998, the Commission revised and upgraded the Great Lakes water use database to enable staff to complete annual water use reports in a more timely manner. The new system will provide improved options for comparing and manipulating data, enabling the monitoring of trends in withdrawals, diversions and consumptive uses of Great Lakes water. When fully operational in 1999, the database also will be more accessible to water resources professionals and the public through the Great Lakes Information Network (www.great-lakes.net).

Hazmat '98

The 14th International Hazardous Material Spill Response Conference (Hazmat '98), held in Chicago in April, was co-sponsored by the Great Lakes Commission, the National Response Team and several other organizations. The Commission participated in the conference planning for Hazmat '98, which attracted 735 participants from 15 countries.

The conference focused on risk management with breakout sessions offered on topics ranging from rural response to counter terrorism. Risk management planning was highlighted by sessions on U.S. EPA's implementation of Risk Management Program (RMP) regulations and the unveiling of prototype software designed for RMP submission and review. Additional sessions reviewed case studies of response efforts and computer-based training. The Commission will have a key role in Hazmat 2000.

Prevention and control of aquatic nuisance species

State and provincial efforts to slow the spread of established nuisance species—and close the door on incoming ones—took major steps forward in 1998, thanks to the work of the Commission-staffed Great Lakes Panel on Aquatic Nuisance Species. The panel's popular *Biological Invasions* brochure was revised and distributed internationally, its *Model Comprehensive State Management Plan* was extensively used by member states, and its *Model Guidance for Legislative*, *Regulatory and Policy Approaches* was completed. Commission staff served on the national Aquatic Nuisance Species Task Force, assisted other regions with panel development, and provided fiscal management services for projects addressing ballast management options and dispersal barrier approaches for prevention and control.

Spill protection.

The Commission will establish an online spills information center.

Activities will include: linking web sites; providing information on spills research and technology; education; and preparedness and response programs.

Remedial Action Plans (RAPs) and Lakewide Management Plans (LaMPs). Online resources will be enhanced, making updated information on all Areas of Concern and LaMPs available to researchers, managers, policymakers and the

Water quantity management.

general public.

The Commission will initiate development of a Basinwide Water Resources Management Program called for under the Great Lakes Charter of 1985. The Commission also will assume a central role in a new International Joint Commission reference on the diversion, consumptive use and removal of Great Lakes water.

Conference and meeting planning/facilitation. Major events taking place in 1999 are in the areas of science vessel coordination, lake levels fluctuations, and chemical emergency preparedness and prevention.

Aquatic nuisance species.

A multi-agency "Action Plan" for aquatic nuisance species prevention and control will be released to ensure that the individual and collective Great Lakes state/provincial effort is comprehensive, coordinated, strongly supported, efficient and effective.

Transportation and Economic Development

The Transportation and Economic Development Program promotes sustainable, resource-based economic activity and the use, development and maintenance of the Great Lakes-St. Lawrence transportation system. The program continues its emphasis on brownfields redevelopment, land use, sustainable development, regional tourism, Great Lakes dredging, advocacy and coordination for the Great Lakes-St. Lawrence Seaway maritime system.

Promoting sustainable, resource based economic activity in the region

Building bridges for sustainable development

In September 1998, the Commission began a two-year initiative, Brownfields Redevelopment and Greenfields Protection: Building Bridges for Sustainable Development in the Great Lakes Basin. Known as BRIDGES, this project responds directly to recommendations contained in the Sustainable America report issued by the President's Council on Sustainable Development and, in particular, highlights the need for multi-sectoral partnerships. The report also places a special emphasis on sustainable communities and the role of brownfields redevelopment and greenfields preservation in achieving sustainability.

BRIDGES is a collaborative effort among the Commission, the Council of Great Lakes Industries and the National Wildlife Federation-Great Lakes Natural Resource Center. BRIDGES builds on the Commission's other work to address brownfields as part of a larger effort to promote sustainable development. The project places the brownfields issue in a broad basinwide context, recognizing the connection between urban redevelopment and protection of agricultural lands and other open spaces. Specifically, BRIDGES will identify

and promote linkages between efforts in brownfields redevelopment and greenfields protection. Part of this project will involve developing a regional greenfields information web site and integrating it with the Regional Online Brownfields Information Network (ROBIN). *BRIDGES* also will involve a series of local workshops and development of a community consultation process to incorporate grassroots perspectives into broader brownfields initiatives and policies. Funding support for the project is provided by the C.S. Mott Foundation.

"By joining with environmental and business interests to promote reuse of urban industrial sites and protection of agricultural land and open spaces, the BRIDGES project holds promise to advance sustainable development through the region."

— Keith Schneider, Michigan Land Use Institute



Decaying urban areas are abandoned while agricultural lands are cleared to accommodate new housing. Photo credits (1. to r.): Victoria Pebbles, Great Lakes Commission; Paula McIntyre.

Cleaning up and re-using the region's brownfields

During 1998, the Council of Great Lakes Governors called on the Commission to provide technical support services for its Brownfields Project, a two-year initiative funded through the Great Lakes Protection Fund.

"The Commission's work on the Brownfields Project has helped Michigan promote its own brownfields successes and learn how it might benefit from the successes of other Great Lakes jurisdictions."

— Andrew Hogarth, Environmental Response Division, Michigan Dept. of Environmental Quality The Commission's effort was threefold:

- Create a regional Internet consortium for brownfields issues;
- Develop a series of case studies of successful brownfields redevelopment; and
- Identify and promote effective and promising tools and techniques for brownfields redevelopment, known as "ideas that work."

The Regional Online Brownfields Information Network (ROBIN) was publicly unveiled in July 1998. The case studies and "ideas that work" were incorporated into the council's publication, *A Blueprint for Brownfields* Redevelopment, also released in July.

Regional Online Brownfields Information Network http://www.glc.org/projects/robin/robinhome.html

Great Lakes Dredging Team

For more than 150 years, dredging for navigation purposes has taken place in the Great Lakes. Dredging activities and related issues have long been an area of policy interest for the Commission, which is a member of the Great Lakes Dredging Team. The team is a federal/state partnership created in 1996 to provide a mechanism for timely resolution of conflicts by involving all agencies and maximizing interagency coordination in the dredging decisionmaking process. The Commission also provides technical and secretariat support to the Great Lakes Dredging Team.

The Dredging Team meets biannually, often in conjunction with Commission meetings, and has established various subgroups to tackle specific problems and create products. In 1998, a white paper describing the Great Lakes dredging decisionmaking process was approved and new workgroups were established to address beneficial use and watershed planning opportunities, as well as options for streamlining the Dredged Material Management Plan process.

A Beneficial Use of Dredged Material Workshop, convened in September, included the presentation of several case studies about dredged material being used for habitat development, shoreline protection and restoration, and upland and commercial uses. Other public outreach efforts of the team, funded by a grant from the U.S. Environmental Protection Agency, include the production of a web site, brochure, fact sheets and a video.

Selected Accomplishments

- Partnered with the Council of Great Lakes Governors in preparing
 A Blueprint for Brownfields
 Redevelopment, released in July 1998
- Continued advocacy for a new Soo Lock, moving the region's costshare funding process forward
- Began a sustainable development project known as Brownfields Redevelopment and Greenfields Protection: Building Bridges for Sustainable Development in the Great Lakes Basin (BRIDGES) that will identify and promote linkages between brownfields redevelopment and greenfields protection
- Began work on several public outreach work products, including the production of a video, web site and brochure for the federal/state Great Lakes Dredging Team
- Coordinated planning of a Great Lakes–St. Lawrence Seaway
 Symposium event to be held in May 1999
- Provided staff support to the annual International Great Lakes-St. Lawrence Mayor's Conference, held in Windsor, Ontario
- Arranged "Circle Tour" designation for the Lake Michigan carferry
- Assumed a leadership role in identifying maritime, infrastructure and policy provisions for an upcoming federal Water Resources Development Act

Marine sanitation devices.

Staff will research the use and effectiveness of marine sanitation devices on the Great Lakes and organize a regional workshop for its member states and partners.

Harbor maintenance. A newly established task force will develop a regional policy position on funding for maintenance of federally authorized Great Lakes harbors.

Soo Lock. A regional Soo Lock funding plan for the nonfederal cost share will be a priority along with a congressional waiver of the interest requirements.

Book publication. With several chapter contributions from staff, publication by Harbor House Publishers, Inc., of The Future of the Great Lakes: Perspectives on North America's Most Vital Region is planned for 1999.

St. Lawrence Seaway

Symposium. A symposium focusing on the future of the Great Lakes-St. Lawrence Seaway system is planned for May in Montreal.

Online initiatives. The BRIDGES web site will be activated and the ROBIN site will be enhanced under continuing brownfields redevelopment and greenfields protection project efforts.

Maritime web site. A project proposal will be prepared and funding sought for a Great Lakes-St. Lawrence Seaway maritime web site.

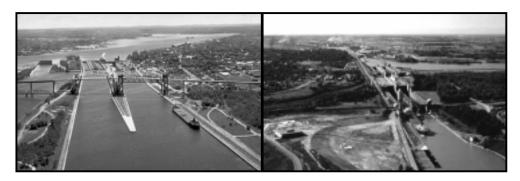
Great Lakes Dredging Team.

A dredging brochure and video will be completed to support team goals.

The next Soo Lock

Authorizing a new large lock at Sault Ste. Marie, Mich., has been a longstanding Commission priority. This proposed project will replace two old, outdated locks and ensure against structural or capacity problems in moving most of U.S.-mined iron ore and western coal to Great Lakes ports.

In 1998, the Commission's Soo Lock Funding Alternatives Task Force continued to devise an equitable funding plan for the nonfederal cost share, which is more than \$60 million. The task force has ruled out a regionally imposed tonnage tax or other form of vessel toll at the Soo Locks complex. At this point, the funding plan hasn't abandoned the private sector contribution factor but states it should be up to each individual state for implementation. Another key decision involved the need to waive the interest requirement that would apply to the nonfederal share. Last year's progress on the funding plan has generated two different origin-destination tonnage formulas and renewed interest among Great Lakes governors and state legislators on funding mechanisms for individual state shares.



An aerial view of the Soo Locks and the "flight locks" of the Seaway's Welland Canal.

The St. Lawrence Seaway approaches its 40th anniversary

Planning and construction of the St. Lawrence Seaway in the 1950s, and its potential for aiding economic development, were issues that galvanized regional interest in establishing the Great Lakes Commission. Since completion of the Seaway, the Commission has promoted its efficient use as a primary competitive route for the region's agricultural, mining and manufacturing industries, both for imports and exports.

During 1998, Minnesota Rep. James Oberstar introduced legislation—the Binational Great Lakes Seaway Enhancement Act of 1998—that would create a single entity to operate the Seaway and thereby improve administrative efficiency. The Commission, at Oberstar's request, reviewed the draft legislation and subsequently endorsed it through its Legislative and Appropriations Priorities policy statement. In October, the Canadian government turned over management of its portion of the Seaway to a not-for-profit corporation controlled by major Canadian users of the system.

In light of these significant developments during the past year, and to commemorate the Seaway's 40th anniversary, the Commission has taken the lead in organizing a Seaway Symposium for May 1999 in Montreal. At the symposium, noted experts and leaders from the Great Lakes-St. Lawrence Seaway system will review the last four decades and concentrate their focus on the system's future.

Spinning the Web: Communications for the new millennium

Air quality project features release of first basinwide inventory

For the members of the air emissions inventory steering committee, 1998 was a banner year marked with notable success. The air programs of the eight Great Lakes states and the province of Ontario completed the first basinwide inventory of toxic air emissions. This inventory, based on 1993 point and area source emissions data for 49 toxic compounds, provides the first practical test of processes, procedures and systems software developed to ensure that basinwide inventories are accurate and consistent.

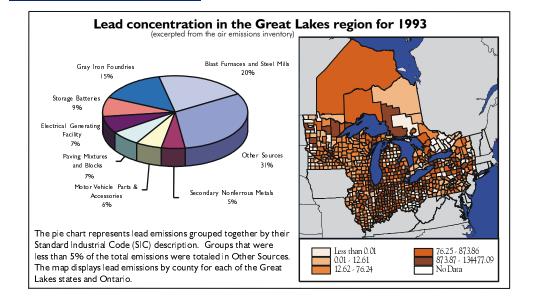
In keeping with a commitment to the ongoing health of the Great Lakes region and providing the most relevant and current data available, the next phase of the project inventory will expand the original list of targeted pollutants to 82 toxic compounds. Many of the additional pollutants are associated with mobile sources such as aircraft, trains and automobiles. To accommodate these changes, the Regional Air Pollutant Inventory Development System (RAPIDS) was enhanced to include a new module for the estimation of mobile sources; RAPIDS version 2.0 was released this year. Completion of the inventory using data from 1996 will be completed in spring 1999.

Current endeavors are focusing on increased accessibility of inventory data to a broader audience. Two priority initiatives include providing access to visualization of data on the Internet and making data available to air quality modelers. Designed in conjunction with the Great Lakes GIS Online project, emissions data will be mapped and made available on the Internet for scientists and the general public to view. Demand for accurate and reliable data has made the inventory a valuable asset to researchers. The inventory steering committee is working closely with other Great Lakes research teams in providing data to other projects, such as modeling the deposition of mercury from atmospheric emissions. The Great Lakes Regional Toxic

"We have successfully assembled the infrastructure and mechanisms that allow the Great Lakes states and Ontario to work cooperatively and share resources to approach regional air pollution problems."

—Orlando Cabrera-Rivera, Wisconsin Department of Natural Resources, Bureau of Air Management Emissions Inventory has already been incorporated into the U.S. National Toxics Inventory, which the U.S. Environmental Protection Agency is compiling. Accomplishments of the past year have laid the foundation for enabling annual comprehensive inventories that benefit multiple levels of interest.

Supported by the U.S. EPA, the Great Lakes basin inventory has been a collaborative effort between the air agencies of the eight Great Lakes states since 1987, with the province of Ontario becoming an active participant in 1996. The Great Lakes Commission will continue its role in project management and technical support.



Communications and Information Management

The goal of the Communications and Information Management Program is to promote informed public policy by developing communications and information management technology and programs for use and application by member states and all basin interests. Under the leadership of this program, the Commission is working to enhance communication between government, business and industry, citizen groups, academia and the general public in and around the Great Lakes basin. Through the Great Lakes Information Network (GLIN) and other technology-driven projects like the Regional Air Toxic Emissions Inventory and Great Lakes GIS Online, policymakers in the Great Lakes basin are "connecting." We are all benefiting as a result. These initiatives are facilitating transfer of the latest technology to the Great Lakes states and provinces and other partners. In addition, the Commission remains committed to reaching out through more traditional communications vehicles, including the popular bimonthly newsletter, the ADVISOR, and an increasingly varied array of policy documents and educational materials.

Selected Accomplishments

- Released the first basinwide
 Great Lakes Regional Air Toxic
 Emissions Inventory and full report using 1993 data as the base year
- Released upgrade of the Regional Air Pollutant Inventory Development System software (RAPIDS 2.0), capable of handling mobile source emissions
- Brought together more than 40 Great Lakes GIS practitioners in Chicago in December to prioritize data selection for the Great Lakes GIS Online project
- Presented the GIS Online Ohio pilot area at the Ohio Lake Erie Commission's Annual Meeting in Ashtabula, Ohio
- Focused on new GLIN content development and topical applications, including Great Lakes education, a media corner, and online databases (BEACHES, GIS)
- Showcased GLIN as a model for similar initiatives in South America and the Gulf of Maine
- Completed writing and design of a Great Lakes Water Levels *Living* with the Lakes brochure, which will be published in early 1999 with a circulation of more than 30,000
- To help Great Lakes agencies better communicate their messages, established a Great Lakes Communicators Network in cooperation with a regional task force

Mapping the Great Lakes

Geographic Information Systems (GIS) have become one of the standard tools for geographic data analysis and planning. GIS is already being applied to a broad variety of Great Lakes data sets related to topics such as the environment, economy, population, land use and transportation. The number of GIS users in the Great Lakes region is exploding, the volume and variety of GIS data continues to grow, and new areas of application are constantly being discovered.

The Great Lakes Commission's GIS Online project will use the World Wide Web to facilitate GIS efforts in the Great Lakes region. Customized online mapping tools will render GIS coverages and related data from a broad spectrum of agencies and make it accessible over the Internet. This access will open new channels of communication among GIS users in the region, increase awareness of existing data and help eliminate redundant data production efforts. Internet-based data and mapping tools also will increase the level of public understanding with regard to the Great Lakes basin's physical, environmental, cultural and economic features.

Pilot area work continues on the Maumee River/Lucas County area in northern Ohio, with revisions and refinements to be completed this spring. This work has been carried out in conjunction with the Ohio Department of Natural Resources, Ohio Environmental Protection Agency, Ohio Lake Erie Commission and Eastern Michigan University. See http://www.glc.org/projects/glin/gis.

In December 1998, the Great Lakes GIS Online project hosted a workshop, held in Chicago at the University of Chicago's Gleacher Center. This workshop brought together more than 40 GIS experts from the Great Lakes region to refine the GIS Online project's strategic plan and set future directions. As a result of the workshop, the project's first priority is to provide online access to a central computer hosting the fundamental basinwide GIS coverages that currently exist. This basinwide data can then serve as a framework that will evolve to contain multiple, inter-related levels of information, such as from lakewide or statewide perspectives. The project will eventually include computers in each state hosting specialized data.

The Great Lakes Information Network (GLIN): great-lakes.net

With the core GLIN infrastructure firmly in place and usage continuing to grow, the focus in 1998 was on applications, new content and GLIN sustainability. Future plans include large development projects focusing on educational modules for students and teachers, an online press room that will highlight news and current events, an online database of Great Lakes grants and funding sources, and an enhanced maritime section. Two GLIN-sponsored workshops, "Great Lakes Education" and "Travel, Tourism and Recreation," are planned for 1999 to build new partnerships for these initiatives.

The "Environment" and "Travel, Tourism and Recreation" sections continue to be the most popular on GLIN. Other top hitters include Areas of Concern, Site of the Month, Jobs, Economy, Education and Hydrology. The core GLIN server averages 400,000 hits per month.

"After spending the summer surfing for data providers, GLIN really stands out as a welldesigned, great looking, easyto-navigate site."

—Tom Dickinson, NOAA National Geophysical Data Center E-mail lists, hosted by GLIN, also continue to be very popular. Several thousand Great Lakes practitioners actively participate in these online forums, which range in topic from pollution prevention to education to air quality to general environmental news and information.

The GLIN Advisory Board convened twice in 1998: April in Ann Arbor, Mich., followed by a Symposium on Global Applications of GLIN; and December in Chicago, followed by a Great Lakes GIS Online workshop.

Internet access to Great Lakes beach status

The U.S. Environmental Protection Agency has selected the Great Lakes region as a pilot for a beach health survey. Together with the U.S. EPA's Great Lakes National Program Office and headquarters, the Great Lakes Commission is assessing the current degree of consistency among beach closure and restriction advisories, generating a report of action items, and expediting a Great Lakes mapping effort that will connect with and enhance a national database.



Beach at East Harbor State Park, Port Clinton, Ohio.

Photo credit: Amold W. Ehrsam (as submitted to the Ohio Lake Erie Office).

This online service will include web pages for public beaches showing beach locations and characteristics; responsible agencies for management; key contacts for water quality monitoring and reporting; monitoring and assessment standards, advisory authority criteria and reporting; closure frequencies; closure and re-opening protocols; history and causes (when known) of a closure or restriction; and information on any current closure or restriction. This service will be incorporated into the U.S. EPA national Beaches Environmental Assessment, Closure and Health (BEACH) Program database and be widely accessible through GLIN.

Demand for GLIN outreach remains high

The Great Lakes Information Network continues to provide inspiration for other regions of the world with binational watersheds. In May, Christine Manninen, GLIN project manager, traveled to Asunción, Paraguay, and Santa Cruz, Bolivia, to speak about the Great Lakes online partnership as part of an Organization of American States-funded mission. The trip contributed to inclusion of GLIN in a proposal to the Global Environment Facility. Also, the experience provided Commission staff with new perspectives and ideas for GLIN enhancement and applications.

GLIN also was represented at a "Water on the Web" workshop in October at Florida Atlantic University. Outcomes included a WaterWeb Ring and inclusion of a GLIN paper in the June 1999 issue of the Journal of the International Water Resources Association.

To round out the year, GLIN was featured as a proposed model for the Gulf of Maine at the "Out of the Fog" workshop in November at the New England Aquarium.

Informing the region: The ADVISOR

With a carefully targeted distribution of well over 2,500, the *ADVISOR* continues to update decisionmakers across the Great Lakes region on Commission policy positions and programs, regional events and information on Great Lakes issues. Subscribers include, among others, all members of the Great Lakes Congressional Delegation; Great Lakes governors and premiers; state legislators; federal, state, provincial, regional and tribal leaders; and other policymakers and opinion leaders.

In 1998, the *ADVISOR* featured in-depth articles on a controversial plan to export Great Lakes water to overseas markets, the Commission's appropriations priorities for the 105th Congress, geographic information systems as tools for sharing spatial data throughout the basin, and returning brownfields to productive use. See http://www.glc.org/docs/advisor/advisor.html.

Scholarship awarded in memory of longtime employee

The Great Lakes Commission awarded the first Carol A. Ratza Memorial Scholarship to Jill Hallden, a graduate student in geography at Michigan State University. The scholarship supports students with an interest in electronic communications technology and its applications in the Great Lakes region. For information on the 1999 scholarship, see http://www.glc.org/announce/98/scholar99.html. Application deadline: April 15, 1999.

Great Lakes Regional Air Toxic Emissions Inventory.

Using 1996 as the base year, the inventory will be released in spring 1999. It will include mobile as well as point and area sources, and the number of toxics tracked will increase from 49 to 82 pollutants. Users also will be able to browse GIS maps of toxics through the Great Lakes GIS Online Project pages.

Great Lakes Information

Network. GLIN will undergo a redesign with an atlas-style navigation, enhancing the use of GIS technology to locate and chart Great Lakes data.

Great Lakes

Communicators Network. Staff will continue to guide

development of a Great Lakes

Communicators Network,
including an online press room on
GLIN.

Great Lakes GIS Online. This project will be broadened to include spatial data layers specific to ecology, economy and community development within the region. This will be a multiyear initiative and be closely tied to the current research interests of our GIS partner agencies.

Great Lakes Commission
web site (www.glc.org). The
site will be updated and
redesigned for users to better
navigate their way to
Commission policy positions
and program priorities. The new
look will be unveiled at the
Commission's semiannual
meeting in Montreal.

Regional Coordination

The goal of the Regional Coordination Program is to strengthen the collective Great Lakes management effort by providing regional leadership, generating consensus on regional priorities among diverse interests and building partnerships for decisive regional action. This program has a legislative mandate to represent and advocate the interests of its membership before the U.S. Congress, Administration and federal government; the Canadian federal and provincial governments; various binational institutions; and other basin interests. Other Regional Coordination responsibilities include expanding partnerships with likeminded public and private sector interests, fostering regional unity, and promoting interjurisdictional consistency and comprehensiveness in laws, policies and programs.

Eyes, ears and voice of the Great Lakes states

Strength in numbers: Taking our message to Washington

The Great Lakes Commission is unique among publicly funded regional organizations: It has an explicit mandate under state and federal law to represent the interests of its members before the Congress, the Administration and relevant federal agencies. In recent years, the Commission has emerged as a leading voice for the Great Lakes, with a year-round presence in Washington and a successful track record in elevating the profile of critical Great Lakes issues.

Advocacy efforts in 1998 were formally launched with "Great Lakes Day in Washington," an annual tradition comprised of a Great Lakes Congressional Breakfast and Issues Briefing for congressional staff. The breakfast—once again a "standing room only" event—featured keynote remarks by Reps. Marcy Kaptur (Ohio) and James Oberstar (Minn.), and a special tribute to retiring Sen. John Glenn (Ohio). Co-sponsored by the Northeast-Midwest Institute and attended by more than 120 Great Lakes leaders, the event attracted several dozen members and staff of the Great Lakes Congressional Delegation. Commissioners Irene Brooks (Pa.) and Frank Kudrna (Ill.) were on hand to present Commission priorities for the Second Session of the 105th Congress. The Issues Briefing was tailored to the needs of congressional staff, and featured 13 speakers who focused on Commission priorities in the areas of environmental protection and research; Great Lakes maritime issues; and resource management needs. Speakers included U.S. EPA's David Ullrich, Environment Canada's John Mills and Commissioners Gerry Mikol (N.Y.), Frank Kudrna (Ill.), Tracy Mehan (Mich.), Nathaniel E. Robinson (Wis.), William Moody (Ohio) and Irene Brooks (Pa.).

The Commission approved and released its "Legislative and Appropriations Priorities" policy position on April 3, a detailed 23-point document complementing Great Lakes Day statements. Funding needs for multiple, federally funded Great Lakes research and management institutions were documented, key programs were endorsed (e.g., Great Lakes Basin Program for Soil Erosion and Sediment Control, Great Waters Program for air quality, aquatic nuisance species prevention and control), and transportation and infrastructure requirements were advanced (e.g., Water Resources Development Act authorizations and appropriations, icebreaking capability, a second large lock at the Soo). The priorities statement provided the centerpiece for an elaborate congressional advocacy strategy comprised of targeted mailings, congressional testimony and personal communications to advance member state interests. Among others, Commission testimony before subcommittees of the House Committee on Resources and the Senate Committee on Environment and

Public Works, helped secure reauthorization of the Great Lakes Fish and Wildlife Restoration Act.

Thanks to the advocacy efforts of Commission members, staff and partner agencies and organizations, a Great Lakes presence in Washington was secured and translated into much needed appropriations and legislative initiatives.

"The Great Lakes Commission has become the most effective advocacy organization of its kind in the world."

—Frank J. Kelley, Michigan Attorney General

A quick response capability for the Great Lakes states

The Great Lakes Commission serves as the eyes, ears and voice of the Great Lakes states, monitoring issues and activities of potential interest and/or concern, and advising on appropriate responses. This function has allowed the Commission to seize many opportunities that resulted in new legislation, programs, policies and appropriations. It also has allowed the Commission to identify and actively oppose initiatives that are simply bad policy. In 1998, two such initiatives arose and were successfully addressed. One involved the unwanted "import" of water, and another involved an unwanted export.

The Commission responded promptly when Sen. Leahy (Vt.) buried a short phrase within the National Sea Grant Program Reauthorization bill that redefined Lake Champlain as a "Great Lake," thereby opening the door for Sea Grant funds that had previously been unavailable to landlocked states. The measure went largely unnoticed and, with one stroke of the president's pen, the five Great Lakes had a new



Pictured Rocks, Lake Superior, Mich.

Photo credit: Julie Wagemakers, Great Lakes Commission.

sister. The precedent was unsettling, and the Commission responded with a resolution and letter targeted to every member of the Great Lakes Congressional Delegation. "Lake Champlain is outside the Great Lakes basin and, from a hydrologic and broader scientific standpoint, has not and should not be considered a Great Lake," concluded the Commission, adding that "efforts to secure additional federal funds for Lake Champlain research should be evaluated on their own merits rather than through legislated redefinition of the lake as a 'Great Lake.'" A few weeks later, a classic compromise was reached: Lake Champlain lost its Great Lakes designation but retained its eligibility for National Sea Grant Program funds.

The Commission's quick response capability served its membership well some months later when a Sault Ste. Marie, Ontario, company received a provincial water withdrawal permit with the objective of establishing a bulk water export industry serving Asian markets. The permit was cancelled soon thereafter following a regional outcry prompted, in part, by Commission correspondence to the Great Lakes Congressional Delegation, Great Lakes governors, Ontario premier, Ontario Ministry of Environment and various other U.S. and Canadian federal officials. The company challenged the cancellation, however, prompting a hearing before the Ontario Environmental Appeal Board. The

"The Great Lakes Commission has a unique ability to weave a common thread of consensus among otherwise diverse interests. Its partnership-based advocacy efforts provide a much-needed voice for the Great Lakes community. And, its influence at the state and federal level—and in the halls of Congress—is nothing short of remarkable."

—William J. Moody, Ohio Department of Natural Resources challenge was subsequently abandoned, but the issue was elevated to the highest levels of discussion and action in both the United States and Canada. The Commission, via formal resolution, reiterated its call for a Great Lakes Water Resources Management Program under the terms of the 1985 Great Lakes Charter that "will provide the data, information, guidance and decisionmaking processes needed to ensure a consistent, basinwide approach to water quantity management." In so doing, the Commission also pledged its support for an intergovernmental initiative to review and assess the legal, policy and institutional options—at the domestic and binational levels—to address issues of diversion, consumptive use and water export.

Selected Accomplishments

- Spearheaded a Congressional Advocacy Strategy to advance member state legislative and appropriations priorities
- Introduced thousands of elected officials, policymakers, managers and other interested parties to Commission programs, policy positions and priorities by sponsoring or speaking at more than 140 events within and outside the Great Lakes basin
- Designed and implemented innovative projects that forged partnerships between government, industry and citizen organizations
- Advocated member state interests through the preparation and presentation of testimony before committees of the U.S. House and Senate
- Forged an unprecedented partnership among multiple U.S. river basin organizations for information exchange, joint initiatives and heightened stature and influence at the U.S. federal and congressional levels
- Coordinated the work of more than 400 Great Lakes professionals—drawn from an array of agencies, organizations and disciplines—who served on 24 Commission committees and task forces directed at member state priorities

Advocacy efforts. "Great Lakes Day in Washington" events, and the Commission's annual "Legislative and Appropriations Priorities" statement, will provide the foundation for expanded advocacy efforts in 1999. Testimony and targeted correspondence will be complemented by enhanced interaction with individual member offices, increased involvement in the earliest stages of legislative drafting and budgeting, and coalition building with like-minded interests.

Outreach to legislators. The next year will feature an outreach campaign for state legislative action on key Great Lakes issues, focusing on appearances before relevant committees, targeted correspondence and heightened awareness of Commission services.

Coast-to-coast coalition

building. Commission members and staff will assume a leadership role in a new initiative to forge alliances among interstate river basin organizations across the United States. A landmark summit involving multiple organizations will be hosted in September 1999 with the Interstate Council on Water Policy.

Keeping an ear to the ground.

Ill-conceived initiatives (e.g., Lake Champlain designation, Lake Superior water export) demand vigilance and a quick response capability. The Commission will complement its advocacy efforts with ongoing monitoring to promptly identify and address public policy initiatives that are simply bad for the Great Lakes.

Cooperation—not competition—among regions

In 1998, the Commission, through the leadership of newly elected chair Irene Brooks, helped spearhead a new initiative that will lead to an unprecedented level of interregional cooperation. The outcome was a new Standing Committee on Interstate River Basin Organizations within the Interstate Council on Water Policy. Directors and officers of numerous interstate organizations will work together to share ideas on regional planning and management; initiate joint projects on items of shared interest; and establish a unified and enhanced presence in Washington, D.C. A classic "win-win scenario" will result: Individual organizations will benefit, and efforts to advance and institutionalize the watershed approach to regional management will move forward with conviction. The Commission's 1999 Annual Meeting in Pittsburgh, Pa., will showcase and celebrate this new partnership when representatives from a multitude of regional organizations will gather for a joint meeting.

Spreading the word: From the local level to the global arena

As a principal advocate for the Great Lakes basin, the Great Lakes Commission realizes that sound and objective policy research must be complemented by an aggressive effort to publicize and promote its research results and associated policy positions. To accomplish this, Commission staff sponsored, spoke at or otherwise participated in more than 140 events in 1998 that afforded an opportunity to promote the positions and perspectives of its membership. Coupled with more than 50,000



Networking at the Commission's Semiannual Meeting, March 1998, Ann Arbor, Mich.

hits per month on its home page, the Commission helped keep basin issues and opportunities before elected leaders, managers, other policymakers, and the citizenry affected by management policies and programs.

The last year also saw the Commission assume more stature at the international and global levels, as other regions of the world sought out its experience and expertise in institution building, interjurisdictional collaboration and electronic communications technology. In North America, for example, Commission staff helped Gulf of Maine officials develop their own version of our "Ecosystem Charter," helped western state officials lay the framework for a new interstate aquatic nuisance species panel; and helped the Interstate Council on Water Policy establish a new Standing Committee on Interstate River Basin Organizations. In other international arenas, a Commission representative was appointed to the board of the Inter-American Water Resources Network; a staff member highlighted global applications of the Great Lakes Information Network during events in Bolivia and Paraguay; and emerging partnerships with the Stockholm International Water Institute and other multinational groups will benefit the Great Lakes and other large freshwater systems of the world.

A foundation for success

As a forum for coordination, collaboration and joint action, the Commission recognizes partnershipbuilding as the foundation of its success. Alliances with like-minded interests yield many benefits. Limited resources are used efficiently and effectively, expertise is shared, constituencies are broadened and the interests of the basin can be expressed in a clear, consistent and influential voice.

In 1998, Commission staff contributed (via committee membership and/or technical support) to the activities of a multitude of organizations including, but not limited to, the Science Advisory Board of the International Joint Commission; the Inter-American Water Resources Network; the national Aquatic Nuisance Species Task Force; the national Clean Beaches Council; the Legal Institute for the Great Lakes (U. of Toledo); Michigan Great Lakes Protection Fund; Lake Erie Protection Fund; Michigan Sea Grant Program; Michigan's Statewide Public Advisory Council; Binational Great Lakes Climate Change Program; State of the Lakes Ecosystem Conference; International Great Lakes-St. Lawrence Mayors' Conference; Council of Great Lakes Governors; Council of Great Lakes Industries; and the Northeast-Midwest Institute.

Observers

Anders Andren, Great Lakes Sea Grant Network

Ron Sundell, Argonne National Laboratory, U.S. Dept. of Energy

Thomas Behlen, International Joint Commission

Jeffrey Benoit, NOAA, Office of Ocean and Coastal Resource Management

Stephen Brandt, NOAA, Great Lakes Environmental Research Laboratory

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Roger Clark, Committee on Institutional Cooperation

Christopher Goddard, Great Lakes Fishery Commission

William Gradle, USDA, Natural Resources Conservation Service

Maggie Grant, Council of Great Lakes Governors

Gary Gulezian, U.S. EPA, Great Lakes National Program Office

Capt. Randy Helland, U.S. Coast Guard—Ninth District

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Sheila Tooze, Canadian Embassy



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Council of Great Lakes Governors

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Environment Canada

Great Lakes Fishery Commission

Great Lakes Protection Fund

Illinois International Port District

International Great Lakes St. Lawrence Mayors' Conference

Marathon Ashland Petroleum LLC

Michigan Dept. of Environmental Quality • Coastal Zone Management Program

National Oceanic and Atmospheric Administration (NOAA) •

Great Lakes Environmental Research Laboratory

NOAA • Headquarters

NOAA • National Marine Fisheries Service

Ohio Lake Frie Commission

State of Illinois

State of Indiana

State of Michigan

State of Minnesota

State of New York

State of Ohio

State of Wisconsin

U.S. Army Corps of Engineers • Great Lakes and Ohio River Division, Detroit District

U.S. Department of Agriculture • Natural Resources Conservation Service

U.S. Environmental Protection Agency (U.S. EPA) • Great Lakes National Program Office

U.S. EPA • Headquarters

U.S. EPA • Office of Air Quality Planning and Standards

U.S. EPA Region 5 • Air and Radiation Division

U.S. EPA Region 5 • Water Division

U.S. EPA Region 5 • Superfund Division

U.S. Fish and Wildlife Service

Commission Staff



Back (l. to r.): Julie Wagemakers, Peter Murchie, Matt Doss, Tom Crane, Mike Donahue, Karl Geil, Richard Garcia, Mike Schneider, Steve Thorp, Stuart Eddy and Lara Slee.

Front: Cappy Bilakos, Christine Manninen, Jennifer Read, Rita Straith, Lisa Rives, Tom Rayburn, Al Ballert, Kathe Glassner-Shwayder, Victoria Pebbles, Derek Moy and Pat Gable.

Not pictured: Laura Beer, Mike Conley, Mandy Grewal, Kate Hackett, Margaret Le, Julie Rajzer and Marilyn Ratliff.

MICHAEL J. DONAHUE, Ph.D., EXECUTIVE DIRECTOR (mdonahue@glc.org)

Donahue is the Commission's chief executive officer, with responsibilities in areas of administration, strategic planning, program development and sight, and federal/congressional and state relations. He manages the Administration and Regional Coordination programs and serves as an ex-officio member of all task forces and committees. Appointed in 1987, he previously held planning and management positions with The Center for the Great Lakes (director, U.S. office) and the Great Lakes Basin Commission (state liaison). Donahue is an adjunct professor at the University of Michigan (U-M), has lectured extensively in the United States and Canada, and has authored more than 150 professional papers, journal articles and book chapters on resource policy and institutional design and analysis issues. He currently serves as U.S. chair of the Science Advisory Board of the International Joint Commission, and has been a member of the board of directors of more than a dozen regional organizations and associations. Donahue holds three degrees from the U-M, including a doctorate in urban, technological and environmental planning.

PROGRAM MANAGERS

Thomas R. Crane (tcrane@glc.org)

Resource Management and Emironmental Quality
Crane joined the Commission in 1986 and has more than
16 years of Great Lakes research/policy experience.
Previous work includes positions with the Great Lakes
Basin Commission, NOAA's Great Lakes Environmental
Research Laboratory and four years of NGO experience
in Virginia and Missouri. He is involved with several
professional associations, including the American Water
Resources Association. He holds bachelor's and master's
degrees from the University of Michigan.

${\bf Stephen\,J.\,Thorp\,(sthorp@glc.org)}$

Transportation and Economic Development
Since 1982, Thorp has been responsible for transportation and economic issues research and policy analysis.
Previously he was a transportation planner with the Minnesota Department of Transportation and also held positions in regional and city planning. He received his bachelor's and master's degrees from the University of Minnesota.

$\textbf{Julie R. Wagemakers} \ (\texttt{juliew@glc.org})$

Communications and Information Management
Wagemakers comes to the Commission from the
International Institute for Sustainable Development in
Winnipeg, Manitoba, where she served as publisher and
development manager. She has a bachelor's degree in
microbiology from the University of Manitoba and
previously held positions with Canada's Great Lakes
Forestry Centre; Canada Centre for Inland Waters,
Bayfield Institute; and the Department of Fisheries and
Oceans' Freshwater Institute.

PROJECT MANAGERS

Laura Beer (through 6/98)

Beer managed the area contingency planning project at the Commission, focusing on emergency preparedness and response to oil and hazardous materials spills in the Great Lakes basin. She also provided staff support for the Great Lakes Spills Protection Initiative. In addition, Beer promoted expansion of the Great Lakes Information Network, helping to plan and implement GLIN conferences and sponsored events. She has a bachelor's degree in resource development from Michigan State University.

${\bf Matthew\,Doss\,(mdoss@glc.org)}$

Doss supports the Statewide Public Advisory Council for Michigan's Areas of Concern Program, the Great Lakes Panel on Aquatic Nuisance Species, the Great Lakes Basin Program for Soil Erosion and Sediment Control and the Lake Michigan Monitoring Coordinating Council. He has a bachelor's degree in political science and history from Kalamazoo College.

Katherine Glassner-Shwayder (shwayder@glc.org) Glassner-Shwayder has worked as an environmental policy analyst for the Great Lakes Commission since 1992. She provides support to the Great Lakes Panel on Aquatic Nuisance Species in the areas of policy development and information/education. Glassner-Shwayder holds a master's degree in water resources management from the University of Wisconsin, Institute for Environmental Studies (where she specialized in limnology and water quality) and a bachelor's degree in biology from Oberlin College.

Christine Manninen (manninen@glc.org)

As project manager for the Great Lakes Information Network, Manninen promotes partnership building and contributes to the network's overall content and design. She also oversees development of the Commission's web site and serves as managing editor of the ADVISOR newsletter. She has a bachelor's degree in biological sciences from Michigan Technological University and is working toward a master's in environmental journalism at Michigan State University.

Thomas Rayburn (tray@glc.org)

Rayburn works on the Commission's Area Contingency Planning, Great Lakes Spill Protection Initiative, and Hazmat 2000 planning projects. His work consists of data collection, mapping in a geographic information system, and management of environmental, economic, and cultural sensitivity data. In addition, Rayburn has authored oil and hazardous materials contingency plans including the first joint U.S. EPA/USCG Area Contingency Plan. He holds a bachelor's degree in Geosciences from Purdue University and has done graduate level work at George Washington University and Virginia Tech in environmental engineering.

PROGRAM SPECIALISTS

Mike Conley (through 3/98)

Conley was responsible for managing the toxic air emissions and Great Lakes GIS Online projects at the Commission. He also provided technical support for the Great Lakes Information Network. In addition, Conley acted as the Commission's local area network (LAN) administrator and computer specialist. He holds bachelor's and master's degrees in geography and a cartography certification from Michigan State University.

$Stuart\,Eddy\,(seddy@glc.org)$

Eddy works on the Great Lakes GIS Online and Great Lakes Regional Air Toxic Emissions Inventory projects. He holds a bachelor's degree in German and Asian studies from Western Michigan University. He is working toward a master's degree in geography at WMU, with a specialization in GIS.

Richard Garcia (rgarcia@glc.org)

Garcia is collecting data and using a Geographic Information System (GIS) to develop databases and digital map products for environmentally and economically sensitive areas as related to the Commission's area contingency planning project. He has a bachelor's degree in urban and environmental geography from the University of Illinois at Chicago.

Karl Geil (kgeil@glc.org)

Geil is collecting and mapping data and developing databases for environmentally and economically sensitive areas as related to the Commission's area contingency planning project. He has a bachelor's degree from Albion College with majors in biology and geology.

Mandy Grewal (through 5/98)

Grewal worked to expand the Great Lakes Circle Tour project and the economy component of the Great Lakes Information Network. She also was responsible for related web page design and development of database applications to support GLIN. Grewal has a bachelor's degree in economics and a master's in public administration from Punjab University in Chandigarh, India; a diploma in systems management from the National Institute of Information Technology in New Delhi; and a master's in economics from Eastern Michigan University.

Derek Moy (dmoy@glc.org)

Moy assists with management of the Great Lakes Regional Air Toxic Emissions Inventory and Great Lakes GIS Online projects. He is working toward a master's in geography from Eastern Michigan University and has a bachelor's degree in resource ecology and management from the University of Michigan.

Peter Murchie (pmurchie@glc.org)

Murchie joins the Commission on a six-month rotation from the U.S. Environmental Protection Agency Region 5. He assists with the Great Lakes Panel on Aquatic Nuisance Species, the Lakewide Management Plan (LaMP) Monitoring Project for Lake Michigan and the Michigan Statewide Public Advisory Council. Murchie has master's degrees from both the School of Natural Resources and Environment and the School of Public Health at the University of Michigan.

Prapassara Nilagupta (through 8/98)

Nilagupta worked on the area contingency planning project. She holds a bachelor's degree in agro-industrial product development from Kasetsart University in Bangkok, Thailand, and a master's in packaging from Michigan State University. Nilagupta is a graduate student in the Department of Resource Development at MSU.

Victoria Pebbles (vpebbles@glc.org)

Pebbles assists in transportation and economic development issues research and policy analysis, focusing primarily on initiatives related to land use, brownfields redevelopment and sustainable development. She also supports congressional advocacy efforts and the Ecosystem Charter for the Great Lakes-St. Lawrence Basin. She holds a master's degree in natural resources from the University of Michigan and a bachelor's degree in environmental studies from the University of California at Santa Cruz.

Jennifer Read (jread@glc.org)

Read, who was hosted by the Commission as a Fulbright scholar, is now assisting with the Great Lakes Basin Program and the Michigan Statewide Public Advisory Council. She is a doctoral student in environmental studies at the University of Western Ontario.

Lisa Rives (through 12/98)

Rives assisted in the collection, mapping and management of economically and environmentally sensitive data as related to emergency preparedness and response to oil and hazardous spills in the basin. She has a bachelor's degree in resource ecology from the University of Michigan's School of Natural Resources and Environment.

Michael Schneider (michaels@glc.org)

Schneider is assisting with collection and mapping of economically and environmentally sensitive data for the area contingency planning project. Currently pursuing a master's degree in public administration at Eastern Michigan University, Schneider has a broad background in government operations and regional planning initiatives.

Lara Slee (lslee@glc.org)

Slee is editor of the *ADVISOR* newsletter and assists with maintenance of the Commission's web site and the Great Lakes Information Network. She has a bachelor's degree in English from the University of Michigan and is currently a graduate student in written communication at Eastern Michigan University.

DIRECTOR OF RESEARCH, EMERITUS

Albert G. Ballert, Ph.D. (aballert@glc.org)

Ballert joined the Commission in 1956, a few months after its formation. He authors the Great Lakes Research Checklist, a bibliography of current Great Lakes-related publications. Other research activities include assembling data and reporting on Great Lakes-overseas vessel traffic and ports of call, and the traffic flow of coal, iron ore and grain on the Great Lakes. Ballert received a doctorate from the University of Chicago and a master's from Syracuse University, both in geography.

ADMINISTRATIVE STAFF

Cappy Bilakos (cbilakos@glc.org)

Financial Officer

Bilakos handles banking transactions, payroll, accounts receivable and payable; financial reports for general operating funds and outside grants and contracts; audit; travel and meeting arrangements; and staff benefits. She has served in various positions with the Commission, drawing on an extensive background in private business management. She has a bachelor of science degree.

$\textbf{Pat Gable} \ (pegable@glc.org)$

Administrative Assistant

Gable assists with support services and handles requests for publications and information. Previously a medical secretary and office manager in a private school, she has completed coursework in business management and tax preparation.

Marilyn Ratliff (mratliff@glc.org)

Database Administrator

Ratliff assists the support services manager, helping with word-processing tasks and maintaining the Commission's mailing lists. She taught school for several years, and held various administrative and training positions prior to joining the Commission in 1990. She has two bachelor's degrees, one in music and one in secondary education.

Rita J. Straith (rstraith@glc.org)

Manager, Support Services

Straith serves as the officer manager, assists with project production, and oversees support service staff and tasks. She previously served as an administrative secretary, managing a staff of five in an educational setting, and has spent several years in private business management. She is working toward a bachelor's degree in human resources.

RESEARCH ASSOCIATES

Kate Hackett (khackett@glc.org)

A master's student in public policy at the University of Michigan, Hackett assists with aspects of the Commission's brownfields and dredging projects. She holds bachelor's degrees in political science and environment studies from Yale University.

Margaret Le (through 7/98)

Le assisted Commission staff with design and implementation of the Regional Online Brownfields Information Network (ROBIN). She received a bachelor's degree in linguistics from the University of Michigan.

Julie Rajzer (jrajzer@glc.org)

Transportation and Economic Development
Rajzer is working with the Transportation and Economic
Development Program to develop web sites for the Great
Lakes Dredging Team and the Brownfields Redevelopment
and Greenfields Protection: Building Bridges for Sustainable
Development in the Great Lakes Basin (BRIDGES)
project. Rajzer is a senior in computer science at the
University of Michigan.

Photo credits

Front cover (I. to r.): Ship assisted by tugboat in Duluth, MN, Jerry Bielicki (courtesy of U.S. Army Corps of Engineers); Black bear, Don Breneman; Sailboat at sunset, S. Manitou Island, MI, Dan Tomaszewski (courtesy of Michigan Travel Bureau); Grand Haven, MI, lighthouse in storm, Carl Ter Haar (courtesy of Michigan Travel Bureau).

Back cover (I. to r.): Sleeping Bear Dunes, MI, Robert De Jonge (courtesy of Michigan Travel Bureau); Scuba diving in Frankfort, MI, Michigan Travel Bureau; Farm and sunflowers in Wolverine, MI, Randall McCune (courtesy of Michigan Travel Bureau); Sunset, Great Lakes Commission.

Most of these images can be found on the "Visualizing the Great Lakes" web site at http://www.epa.gov/glnpo/image. The site is cooperatively produced by Minnesota Sea Grant and U.S. EPA, Great Lakes National Program Office.

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