

A Blueprint for the Future: Toward a Great Lakes Restoration Strategy



Proceedings of public workshops held in the Great Lakes states



February 2005



Preface

The Great Lakes Commission, in partnership with the Great Lakes Sea Grant Programs and the Council of Great Lakes Governors, hosted a series of stakeholder workshops in 2003-2004 to help shape and advance action items for ecosystem protection and restoration. During this series of eight workshops, approximately 700 people from a variety of backgrounds voiced their thoughts, concerns and opinions on Great Lakes protection and restoration.

These workshops were held concurrent with a flurry of activity within the Great Lakes region concerning development of a large-scale basin-wide protection and restoration strategy. This activity included the announcement of a set of regional priorities for ecosystem protection and restoration by the region's eight Governors and an increased impetus for collaboration among federal agencies on Great Lakes activities pursuant to a Presidential executive order. Collectively, the body of stakeholder input emerging from this series of workshops has informed—and will continue to inform—the development and implementation of protection and restoration priorities.

This report presents the stakeholder input received throughout this series of workshops. In addition to a brief overview of outcomes of the entire series, individual proceedings documents produced for each event are included. These materials are also available from the Great Lakes Commission's website at www.glc.org/restwkshp.

Table of Contents

Preface	i
Table of Contents	ii
Acknowledgments	iii
Planning and Implementing a Great Lakes Restoration Initiative:	
an Overview of Eight Public Workshops	1
Executive Summary	1
Background	2
Process.....	4
Toward a Shared Vision for a Restored Great Lakes.....	5
Key Findings	6
<i>Stakeholder Input – Action Items for Protection and Restoration Activities</i>	6
<i>Workshop Participant Input - Organization and Implementation</i>	8
Next Steps	11
Illinois – Indiana Workshop Proceedings	Appendix 1
Michigan Workshop Proceedings	Appendix 2
Minnesota Workshop Proceedings	Appendix 3
New York Workshop Proceedings	Appendix 4
Ohio Workshop Proceedings	Appendix 5
Pennsylvania Workshop Proceedings	Appendix 6
Wisconsin Workshop Proceedings	Appendix 7

Acknowledgments

By any measure, the design and conduct of eight major stakeholder workshops is a significant undertaking, not to mention the effort involved in the development, synthesis and analysis of detailed proceedings for each. The success of this effort is largely due to the strong partnership between the Great Lakes Commission, the seven Great Lakes Sea Grant programs and the Council of Great Lakes Governors.

Collectively, these partners produced a document that will help shape and influence the development and implementation of priorities for the restoration, protection and sustainable use of the greatest system of fresh water on the face of the earth.

Appreciation is extended to Dr. Ronald Baird, director of the National Sea Grant College Program, for his vision and foresight in conceptualizing the project and providing financial support. David Naftzger and Peter Johnson played an instrumental role on behalf of the Council of Great Lakes Governors by advising on project design, participating in various workshops, carefully reviewing the proceedings documents and, most importantly, linking this project with the continuing efforts of the region's Governors to develop and refine restoration priorities and implementation opportunities. The region's Sea Grant directors, along with their very capable staff, assisted with project design and provided leadership in workshop conduct. (Please see the appendices for more detailed acknowledgements.) The Great Lakes Commission supported the initiative via financial contributions and staff resources. Member states – including a number of Commissioners – were personally involved in the workshops. At the staff level, Jon Dettling provided invaluable coordination, writing, editing and organizational assistance.

A special note of appreciation is extended to the approximately 700 stakeholders who took the time and effort to join us for intensive – and sometimes lengthy – sessions that yielded a wealth of information, observations and advice that will collectively move us forward on our journey toward ecosystem restoration, protection and sustainable use.

Sincerely,

A handwritten signature in black ink that reads "Michael J. Donahue". The signature is written in a cursive, flowing style.

Michael J. Donahue, Ph.D.
President/ CEO
Great Lakes Commission

Planning and Implementing a Great Lakes Restoration Initiative: an Overview of Eight Public Workshops

Executive Summary

The Great Lakes Commission, in partnership with the Great Lakes Sea Grant Programs and the Council of Great Lakes Governors, hosted a series of stakeholder workshops in 2003-2004 to help shape and advance action items for ecosystem protection and restoration. During this series of eight workshops, approximately 700 people from a variety of backgrounds voiced their thoughts, concerns and opinions on Great Lakes protection and restoration. Many more submitted input through Internet questionnaires or in writing. These workshops were held concurrent with a flurry of activity within the Great Lakes region concerning development of a large-scale basin-wide protection and restoration strategy. This activity included the announcement of a set of regional priorities for ecosystem protection and restoration by the region's eight Governors and an increased impetus for collaboration among federal agencies on Great Lakes activities pursuant to a Presidential executive order. Collectively, the body of stakeholder input emerging from this series of workshops has informed—and will continue to inform—the development and implementation of protection and restoration priorities.

This broad effort to garner public input on Great Lakes ecosystem protection and restoration provided a unique opportunity to examine the collective thinking of the region's stakeholders on this complex topic. Despite very diverse participant backgrounds and a broad geographic scope, strong support for the Governors' list of priorities was evident at all the workshops. Numerous suggestions were made for translating these priorities from concept into action. The very constructive nature of participant comments revealed a large group of Great Lakes stakeholders eager to participate in planning and carrying out a collaborative protection and restoration strategy. In addressing the restoration themes presented by the Governors, participants urged the region's leadership to engage all stakeholders; incorporate all levels of governance; use existing institutions and programs; set goals and evaluate progress; use science-based decisionmaking; thoroughly support education and outreach programs; learn from other initiatives; train future professionals; and act promptly.

Background

The ecological and economic importance of the Great Lakes basin, coupled with its size, multiple use and multi-jurisdictional characteristics, has fostered the development of a rather complex set of institutional arrangements for its management. Policymaking and management authority is shared by two federal governments, eight states, two provinces, a multitude of First Nations/tribal authorities, several regional binational agencies, and hundreds of sub-state/provincial governments. Inter-agency agreements and cooperative arrangements are a common feature on the governance landscape, and there is growing recognition that an ecosystem-based, partnership-oriented approach is a fundamental component of successful basin governance. In particular, an increasing amount of discussion and action has emerged in recent years concerning development of a shared vision for the Great Lakes and a strategy, or blueprint, to achieve it.

In the mid-1990s, the Great Lakes Commission coordinated the development of “An Ecosystem Charter for the Great Lakes-St. Lawrence Basin.” This document—consisting of a vision statement, set of principles and a series of goals, objectives and strategic actions—was the product of a large binational “drafting committee” comprised of federal, state and provincial officials, and representatives of citizen organizations, business/industry interests, user groups and academia. The intent was to highlight fundamental resource management principles that enjoyed broad support. In essence, the Ecosystem Charter was an affirmation that the members of the Great Lakes community were generally “in the same boat rowing in the same direction.” Once completed, the Ecosystem Charter garnered the signatures of approximately 175 agencies, organizations and other entities.

While initiatives such as the Ecosystem Charter speak to the long standing interest in Great Lakes protection and restoration, the heightened awareness of this need is largely attributable to several recent developments. Congressional support for the Comprehensive Everglades Restoration Plan (a multi-year, multi-billion dollar initiative) showcased the potential for broadly supported, large scale restoration efforts and prompted many in the Great Lakes basin to consider a similar approach. The Great Lakes Commission heightened regional interest in a comprehensive, consensus-based plan when it began releasing (in March 2001) its *Great Lakes Program to Ensure Environmental and Economic Prosperity*, an annual publication of U.S. federal legislative and appropriations priorities. A multitude of other public agencies with Great Lakes responsibilities have in recent years launched comprehensive strategic planning initiatives that speak—to varying degrees—to Great Lakes protection and restoration.

The Congressional Great Lakes Task Force reaffirmed the desirability of a region-wide, consensus-based strategy that could help inform and direct its legislative/appropriations efforts, and invited the Great Lakes Governors (in a letter dated March 1, 2001) to help coordinate

contributions to that effort. This approach made evident the fact that a successful strategy must originate in the region and garner broad-based support among the range of regional interests. In October 2003, the Council of Great Lakes Governors responded by announcing a list of nine priorities for Great Lakes protection and restoration. The priorities are:

- Ensure the sustainable use of our water resources while confirming that the States retain authority over water use and diversions of Great Lakes waters.
- Promote programs to protect human health against adverse effects of pollution in the Great Lakes ecosystem.
- Control pollution from diffuse sources into water, land and air.
- Continue to reduce the introduction of persistent bioaccumulative toxics into the Great Lakes ecosystem.
- Stop the introduction and spread of non-native aquatic invasive species.
- Enhance fish and wildlife by restoring and protecting coastal wetlands, fish and wildlife habitats.
- Restore to environmental health the Areas of Concern identified by the International Joint Commission as needing remediation.
- Standardize and enhance the methods by which information is collected, recorded and shared within the region.
- Adopt sustainable use practices that protect environmental resources and may enhance the recreational and commercial value of our Great Lakes.

On May 18, 2004 the President signed an Executive Order calling the Great Lakes a “national treasure,” and directing the federal government to work with the region’s leaders to create a Great Lakes Regional Collaboration to address the significant challenges that remain from past and current environmental impacts to the Great Lakes. The Collaboration was launched on December 3, 2004. The Collaboration will develop a Great Lakes protection and restoration strategy within one year, using the Governors’ priorities as its organizing principles.

In partnership with the Great Lakes Sea Grant Programs and the Council of Great Lakes Governors, the Great Lakes Commission hosted a series of stakeholder workshops from 2003-2004 to help shape and advance action items for ecosystem protection and restoration. The Governors’ priorities were a focal point for discussion at each of the workshops (with exception of the first, which preceded announcement of the priorities). The large body of input received during these public workshops has provided a valuable basis for the work being done through the Great Lakes Regional Collaboration as well as related efforts. Thorough consideration of the full range of stakeholder input, as gathered during this workshop series, will be important in achieving broad support for the outcomes of such initiatives.

Process

Workshops were held throughout the Great Lakes region over an eleven month period on the dates and locations listed in the table below. Workshop agendas varied from one state to the next to meet distinct needs, but all centered around two key questions: 1) what are the priority components of a basin-wide Great Lakes protection and restoration strategy? and 2) what important considerations should be made in organizing and implementing such activities? A listing of the protection and restoration priorities released by the Council of Great Lakes Governors in October 2003 provided a basis for discussion in all but the first workshop (Michigan), which was held the week prior. Input on these and related topics were received from the hundreds of attendees through recorded discussions, comment sessions, written and online questionnaires, and letters and email.

Date	Location	Partner Organizations
Sept. 17, 2003	Ann Arbor, Michigan	Michigan Sea Grant, Michigan Department of Environmental Quality and Great Lakes Commission
Feb. 24, 2004	Parma, Ohio	Ohio Sea Grant, Council of Great Lakes Governors and Great Lakes Commission
Feb. 25, 2004	Erie, Pennsylvania	Pennsylvania Sea Grant, Council of Great Lakes Governors, Pennsylvania Lake Erie Watershed Association, Pennsylvania Department of Environmental Protection, Gannon University and Great Lakes Commission
April 27, 2004	Rochester, New York	New York Sea Grant, Council of Great Lakes Governors and Great Lakes Commission
May 24, 2004	Hammond, Indiana	Illinois – Indiana Sea Grant, Council of Great Lakes Governors and Great Lakes Commission
June 30, 2004	Duluth, Minnesota	Minnesota Sea Grant, Wisconsin Sea Grant, Council of Great Lakes Governors, Minnesota Department of Natural Resources, Wisconsin Department of Natural Resources, Minnesota Pollution Control Agency and Great Lakes Commission
Aug. 17, 2004	Green Bay, Wisconsin	Wisconsin Sea Grant, Council of Great Lakes Governors, Wisconsin Coastal Management Program, Wisconsin Department of Natural Resources and Great Lakes Commission
Aug. 18, 2004	Milwaukee, Wisconsin	Wisconsin Sea Grant, Council of Great Lakes Governors, Wisconsin Coastal Management Program, Wisconsin Department of Natural Resources and Great Lakes Commission

Throughout the series of workshops, participants enthusiastically shared their thoughts on the topic of Great Lakes protection and restoration. All workshops were well attended by a diverse group of Great Lakes stakeholders. In total, approximately 700 attendees shared their views, including representatives of local, state/provincial and federal governmental agencies; elected officials; non-governmental organizations; binational institutions; academic institutions; industry and commercial interests; tribal entities; and private citizens. Due to this diverse participation and the broad geographic scope of the workshop series, these events yielded a wealth of information and ideas that warrant careful consideration as any protection and restoration effort (state-specific or regional) moves forward.

Toward a Shared Vision for a Restored Great Lakes

Early in any discussion of Great Lakes restoration, questions emerge. For example, what does “restoration” mean in this context? And, what is to be restored, and to what state? The cumulative results of the workshops provide valuable insight into stakeholders’ interpretation of “restoration” and what they see as a desirable endpoint of a restoration initiative. Many participants recognized that achieving some precise, pre-existing state of the ecosystem is an impossibility. Rather than looking backward at where the lakes have been, the majority of workshop discussion focused on moving forward; on what the lakes might be. Rather than targeting a return to a precisely defined physical, chemical or biological state, the majority of comments centered on maintaining or restoring general qualities of the lakes that are commonly identified as desirable.

One frequently discussed quality was the notion of sustainability. Participants repeatedly referred to a need to achieve a sustainable state for fisheries, water use, ecosystems, industry, and land use, among others. Implicit in all these statements is the notion of allowing the present generation to use the resource in such a way that its quality and availability are maintained so future generations can fully benefit from its use as well. It was clear from the workshop outcomes that the notion of sustainability is a primary metric by which Great Lakes stakeholders identify the desired results of a restoration initiative.

Participants did recognize, however, that there is more to the vision of a restored Great Lakes than sustainability. They agreed that protection and restoration of the basin should entail the preservation and enhancement of the many qualities that make the Great Lakes basin unique, including native species, characteristic ecosystem structures, a clean environment, and natural landscapes.

The vision of a restored and sustainable Great Lakes emerging from these workshops included emphasis on preserving and enhancing the unique human history of the lakes, including recreational opportunities, transportation, industry, and components of pre- and post-European settlement cultures. This vision sees a system where a clean and healthy environment is sustained by a prosperous human population that enjoys the many opportunities provided by the region’s unique natural resources. Presented below is a summary of key findings that collectively emerged from the eight workshops. Considerable additional detail is provided in the proceedings of the individual events, available at www.glc.org/restwkshp.

Key Findings

Stakeholder input at the workshops touched upon many topics, including objectives for Great Lakes protection and restoration; current and potential impairments to the lakes; causes of impairments; recommendations for protection and restoration actions; and considerations in organizing and implementing a basin-wide protection and restoration strategy.

Much of the input received concerned desired objectives for a region-wide protection and restoration initiative. In the broadest sense, these objectives delineate the vision the participants have of what a restored Great Lakes ecosystem might look like: specific qualities they would like to see achieved, maintained or re-established. Objectives identified at the workshops include diverse, stable ecosystems; healthy people; native species; wide species distribution; clean water, air, soil and sediment; water-based recreational opportunities; accessibility; edible fish; preservation of property rights; equality of use/environmental justice; security; natural landscapes and waterscapes; an informed and active public; open and inclusive management; naturally fluctuating water levels; drinkable water; safe beaches; a scientific understanding of Great Lakes system; and economic factors such as employment, productivity, efficient transportation, and economic opportunity.

For each of the above objectives, current and potential impairments must be addressed by a protection and restoration strategy. Understanding the nature of these challenges, and associated risks, is essential if the strategy is to be successful. Throughout the workshops, many of the underlying causes of ecosystem impairments were identified, consisting of a range of contributing factors. The complexity and inter-related nature of these issues is primary justification for a comprehensive and integrated protection and restoration strategy and cause for rejection of fragmented and compartmentalized approaches.

Workshop participants provided a wealth of valuable comments on how to achieve and/or maintain each of the above mentioned objectives. In particular, comments centered on essential action items for achieving a restored and sustainable Great Lakes basin, and on how a large-scale strategy for addressing these action items should be established and carried out. Major themes are presented below.

Stakeholder Input – Action Items for Protection and Restoration Activities

Workshop participants contributed numerous constructive ideas for addressing and preventing impairments to the Great Lakes system. Actions suggested were largely complementary; stakeholders across the basin expressed a remarkable degree of common interests, concerns and suggestions. Collectively, these recommended actions present a general sense of what the components of a basin-wide protection and restoration strategy might be. The most frequently

suggested action items are provided below. Additional suggestions were voiced during the workshops, and the individual proceedings from these events offer a more complete record.

 Water resources management: Efforts to ensure sustainability of the Great Lakes are highly dependent upon effective management of the basin's water resources. Prevention of excessive water withdrawal, consumption and diversion was a frequent theme at the workshops. A lack of adequate information was frequently cited regarding locations and quantities of current water withdrawals, water dynamics within the system, and interactions between surface water, groundwater and the atmosphere. Key recommendations included addressing these knowledge gaps, instituting an improved regional water management framework (such as that being pursued under the Great Lakes Charter Annex 2001), promoting water conservation, and enhancing water recharge efforts.

 Aquatic invasive species: Stopping the introduction of new aquatic invasive species and preventing or slowing the spread of existing invasive species were recognized as urgent priorities for restoring and protecting the basin ecosystem. Ballast water was cited as a common introduction route and suggestions to counter this ranged widely, including developing ballast treatment technologies, banning ballast discharges and restricting access to the lakes by vessels without adequate capability to prevent introductions. Many other routes of entry were also recognized and actions to counter them included construction of additional electric barriers in canals, and banning the possession or sale of live species with invasive characteristics. Other frequently mentioned suggestions for preventing the spread of existing or new invasives included monitoring, early detection systems, and rapid response programs. In instances where invasive species have permanently altered the ecosystem, suggestions were made to adapt management policies and practices accordingly.

 Persistent toxic substances: Workshop participants identified the elimination/reduction of persistent toxic substances as an important priority for restoring the Great Lakes, including both past and continuing contamination. Regarding historical (e.g., legacy) contamination, participants emphasized a need to increase support for programs to identify, characterize, remediate (where appropriate) and monitor contaminated sites, particularly in Areas of Concern. It was frequently noted that the atmosphere is a primary pathway for many toxic substances in the lakes, and that atmospheric contaminants can originate from sites far outside the Great Lakes basin. A need exists to better characterize atmospheric emissions, transport and deposition and to reduce emissions on a regional, binational and world-wide scale. Restructuring the region's transportation and energy systems to be more efficient and less polluting was frequently noted as a means to decrease toxic air emissions. Many participants advocated improved fish monitoring and advisory programs to provide more accurate information in an accessible and understandable way.

-  Microbiological contamination: Many participants expressed concern over microbiological contamination, particularly at public beaches. Frequently cited sources of this contamination included municipal sewage systems—particularly combined sewer overflows—and livestock. Recommended actions to address this problem involved a combination of improved detection and advisory systems and programs to prevent beach contamination. Suggestions to reduce bacterial loading at beaches included upgrading sewer infrastructure to eliminate overflows and accommodate extreme weather events; identifying and eliminating illicit connections; and improving waste management at agricultural facilities. To improve beach closing advisories, participants suggested developing monitoring and modeling tools to allow determination of coliform levels on a real-time and forecasted basis.
-  Aquatic, nearshore, wetland and terrestrial habitat: Continuing habitat loss, fragmentation and degradation were frequently cited problems impairing wildlife populations, recreational opportunities, fisheries and natural landscapes. A particular emphasis was placed on nearshore and wetland habitat. Participants cited a need for improved understanding and inventories of species abundance and distribution. Urban sprawl and poor land use policies were frequently cited as causes for loss of terrestrial and wetland habitat. Programs to prioritize and preserve/restore highly sensitive habitat areas were strongly supported.
-  Nutrient loadings: Excessive nutrient loadings to the lakes and their tributaries were noted as high priority problems. Sources of particular concern include agricultural facilities, residential lawns, roadways, municipal waste systems, industrial facilities and the atmosphere. Establishing buffers around tributaries was also recommended to reduce loadings. A connection was often drawn between land use patterns and their impact on the quality of receiving waters.
-  Shoreline access, recreational opportunities and property rights: Many workshop participants expressed concern over limited shoreline access and associated implications for recreational opportunities. Factors cited included decreasing public ownership of shoreline, lack of public boating infrastructure, and closed, contaminated or eroding beaches. Many participants emphasized the need to increase access to the lakes and their shoreline and to improve infrastructure to support water-based recreation. They explained that public support for Great Lakes protection and restoration is a function of the public's ability to access and enjoy the resource. Many participants also expressed concern over rights of shoreline property owners and urged that potential protection and restoration efforts be respectful of such rights.

Workshop Participant Input - Organization and Implementation

Workshop participants provided significant insight into the challenges associated with organizing and implementing a basin-wide protection and restoration strategy. This insight builds upon the

large amount of experience in Great Lakes issues collectively possessed by the hundreds of participants. The most frequently offered comments relating to the process of strategy development and implementation are presented below.

 Engage interested parties: Involvement in planning, decision making, implementation and assessment must be broadly distributed among interested parties. Binational coordination is important in all aspects of planning and implementation. Among others, engagement must include individual citizens and citizen groups; Tribes and First Nations; government agencies (local, state/provincial, federal and binational); non-governmental organizations; industrial and commercial groups; and academics.

 Ensure coordinated intergovernmental efforts: A wide range of local problems and impairments was identified from one workshop to the next. While specific aspects differed due to unique State and local circumstances, the general themes present in participant comments were consistent across all workshops. It was noted that many such issues are regional in nature due to their causes and prospective solutions; a compelling argument for a well-coordinated protection and restoration strategy that approaches problems at a regional level, with a reliance on local level programs and institutions for implementation. Empowerment at the local level is essential to success. Scales that must be considered in developing a protection and restoration strategy include local/municipal, county, watershed, State, lake basin, regional, binational and, in some cases, international.

 Employ and empower existing institutions and programs: The region is characterized by a rich and detailed fabric of laws, policies, programs and institutions with a regional, multi-jurisdictional focus. Although some new programs may be necessary, full funding and support for currently authorized programs would allow them to achieve their full potential. Similarly, improving enforcement of, and accountability for existing laws and regulations is at least as important as promulgating new ones.

 Set goals and evaluate progress: A thorough evaluation system must be implemented, and include establishment of baseline conditions, indicator development, goal setting, monitoring, and assessment of progress. Restoration objectives presented in the workshop discussions must be precisely defined in specific, quantifiable and measurable terms. Participants recognized that defining such metrics for each objective is an essential preliminary task in implementing a basin-wide protection and restoration strategy. Means to accomplish this were suggested over the course of the workshop series and can be found in the individual proceedings. A successful protection and restoration strategy must involve a significant assessment component that monitors conditions and determines progress toward established goals. To support this, regional monitoring systems must be updated and expanded. Data collection, storage, processing, exchange systems and protocols must be

improved and standardized. Wherever possible, up-to-date data and information should be shared in readily accessible, electronic format.

-  Make science-based decisions: Great Lakes protection and restoration decisions should be based on best available science, and, toward that end, scientific and data analysis tools need to be enhanced. Improved forecasting tools that predict system conditions and impacts under various scenarios must be developed to better support informed management decisions.
-  Educate and reach out to the public: Public education and outreach must be incorporated in all phases of planning and implementation. Many of the actions necessary for successful Great Lakes protection and restoration require informed actions by individual citizens. Building broad public awareness of the state of the Great Lakes environment and encouraging individual actions to improve environmental quality are essential components of a successful protection and restoration strategy. Throughout the series of workshops, enhanced educational programs were strongly advocated, including primary and secondary education, professional training and adult education.
-  Learn from other initiatives: Numerous large-scale ecosystem restoration initiatives are underway in other regions of North America, and there exists a rapidly-growing body of science on ecosystem restoration. Great Lakes ecosystem restoration efforts should draw on this experience (and literature) to ensure that efforts are well planned and implemented. In adopting lessons from other regions, the unique characteristics of the Great Lakes system must be considered.
-  Train tomorrow's leaders: Secondary and graduate education programs focusing on Great Lakes issues need to be enhanced to ensure that the next generation of Great Lakes professionals are well-prepared for the challenges they will face. The need to provide quality educational opportunities for a coming generation of regional leaders and professionals was frequently mentioned as an important step in achieving and maintaining a restored basin ecosystem.
-  Act with urgency: Although planning and research are vital, they should not delay the onset of a basin-wide protection and restoration strategy. Workshop participants argued that many high-priority issues require immediate action, and any delay could result in long-lasting or permanent alterations and impairments to the Great Lakes system.

The above discussion provides a broad overview of comments presented or submitted during the series of eight workshops. The reader is referred to the individual workshop proceedings for more comprehensive coverage of outcomes (available on the Great Lakes Commission's website at www.glc.org/restwksph.)

Next Steps

Large scale, ecosystem-based protection and restoration strategy development is a matter of significant and growing interest in the binational Great Lakes basin. Recent years have seen many priority setting exercises at the agency, jurisdictional and regionwide levels; studies by the U.S. General Accountability Office focusing on intergovernmental coordination; multiple legislative and appropriations initiatives at the Congressional level; joint statements by the Great Lakes Governors; and the report of the U.S. Commission on Ocean Policy that elevates the stature of the Great Lakes to the national and international levels. The President's Executive Order of May 18, 2004 has prompted the development of a Great Lakes Regional Collaboration that has attracted broad support and participation that will yield an ecosystem protection and restoration strategy providing a blueprint for action. The goal of the Collaboration is to have a finalized strategy by the end of 2005.

The restoration workshops initiative is ideally suited to support, assist and advance Great Lakes Regional Collaboration efforts, as well as all associated / complementary activities. Individual and collective outcomes of the workshops will be broadly disseminated to the region's policy makers and opinion leaders including, but not limited to, Members of Congress; Governors and Premiers; state and provincial legislators; mayors; regional and binational agencies; federal, state/ provincial and local government officials; the scientific community; academic institutions; business and industry; citizen environmental interests and individual stakeholders. In particular, workshop series outcomes will be directed to the hundreds of individuals involved in the Great Lakes Regional Collaboration process. The many workshop sponsors, as well as the approximately 700 stakeholders participating in them, provide an impressive cadre of individuals with the interest, motivation and background to inform and advance ecosystem protection and restoration efforts from the local to basin-wide level.

Appendix 1:

Illinois – Indiana Workshop Proceedings

Illinois / Indiana Public Meeting Concerning Great Lakes Restoration Priorities

Proceedings

Hammond, Indiana
May 24th, 2004



Preface

This proceedings document presents the outcome of a workshop held in Hammond, Indiana on May 24th, 2004. The workshop was a cooperative effort of the Great Lakes Commission, the Illinois / Indiana Sea Grant Program, and the Council of Great Lakes Governors. The meeting brought together a range of participants from various Great Lakes constituencies to provide feedback on the Great Lakes Governors' priorities for restoration of the Great Lakes ecosystem and on the coordinative processes needed to achieve these priorities.

This meeting is part of a series of similar events being conducted throughout the Great Lakes region. The Council of Great Lakes Governors has assembled a number of priorities for restoring and protecting the Great Lakes. The workshop series, supported by the National Sea Grant College Program, provides an opportunity for Great Lakes constituents to review these priorities and inform their further development and implementation. Meeting outcomes will be shared with the region's Governors, Premiers, other public officials, meeting participants and the larger Great Lakes community. A primary objective is to inform and advance the restoration efforts of the region's leadership.

Acknowledgements

The Great Lakes Commission expresses its sincere thanks to Illinois/Indiana Sea Grant and the Council of Great Lakes Governors for their efforts as partners in hosting this workshop. Special thanks are in order for conference speakers: John R. Goss, Director of the Indiana Department of Natural Resources and Ron Burke, Associate Director of the Illinois Environmental Protection Agency.

The Great Lakes Commission also recognizes the efforts of Dave Naftzger and Peter Johnson of the Council of Great Lakes Governors, Richard Warner and Brian Miller of Illinois/Indiana Sea Grant, and Mike Molnar of the Indiana Department of Natural Resources. Jon Dettling of the Great Lakes Commission staff assisted in compiling these proceedings.

Dr. Ron Baird, director of the National Sea Grant Program, warrants special recognition for his personal support of this initiative and for facilitating his office's financial support for the workshop series.

Finally, and most importantly, thanks to all who joined us in Hammond and shared their thoughts and recommendations with us.

Sincerely,

A handwritten signature in black ink that reads "Michael J. Donahue". The signature is written in a cursive, flowing style.

Michael J. Donahue, Ph.D.
President/CEO
Great Lakes Commission

Table of Contents

<i>Preface</i>	2
<i>Acknowledgements</i>	3
<i>Table of Contents</i>	4
<i>I. Background</i>	5
<i>II. Presentations</i>	6
<i>III. Breakout Group Discussions</i>	7
Land use practices and sustainable development	7
Nonpoint source pollution	7
Toxic pollution and Areas of Concern	7
Aquatic invasive species	8
Human health	8
Wildlife and habitat	8
Research and modeling	9
Data and information management	9
Outreach and education	9
Planning and implementation	9
Other topics	10
<i>IV. Summary and Conclusions</i>	11
<i>Appendix A: Participants</i>	12
<i>Appendix B: Public Meeting Announcement and Program</i>	14
<i>Appendix C: Governors' Restoration Priorities Press Release</i>	16
<i>Appendix D: Breakout Session Summary Notes</i>	18
Group I	18
Group II	19
Group III	20
<i>Appendix D: Additional comments handed in</i>	22
<i>Appendix E: Speaker Handouts</i>	25

I. Background

This workshop is one in a series of similar events being held throughout the Great Lakes basin as part of a collaborative project between the Great Lakes Commission and the Sea Grant Programs in the Great Lakes region. The project, funded by the National Sea Grant Program, is directed at advancing Great Lakes ecosystem restoration efforts through the development of restoration priorities and a regional planning process for implementing these priorities.

Project collaborators recognize that development of a Great Lakes restoration strategy must be based upon sound science. It must proceed with a clear understanding of ecosystem conditions and objectives, relevant research activity, and the science/policy/management linkages needed to achieve the plan's vision. This workshop, along with the corresponding workshops in other Great Lakes jurisdictions and a companion project by the Northeast-Midwest Institute, will provide the Great Lakes Governors and Premiers with needed public input as well as detailed, science-based information as they continue their work implementing the restoration priorities.

Brief introductory remarks and an overview of the public meeting objectives were given by Dr. Richard Warner, Director of Illinois/Indiana Sea Grant, and Dr. Michael J. Donahue, President/CEO of the Great Lakes Commission. Following this, a summary of the current state of the Great Lakes and some thoughts on protecting and restoring them were shared by Peter Johnson, Senior Program Manager of the Council of Great Lakes Governors; John Goss, Director of the Indiana Department of Natural Resources; and Ron Burke, Associate Director of the Illinois Environmental Protection Agency. After these introductory comments, the meeting was divided into three breakout groups. The basis for discussion in the breakout groups was the list of nine basin-wide Great Lakes restoration priorities announced by the Great Lakes Governors on October 1, 2003 (Appendix B). Each of the groups was tasked with discussing the following two questions:

- What is your input on the Great Lakes governors' priorities and how are these priorities important to Illinois and Indiana?
- What are your action items for a large scale strategy that can address Great Lakes restoration, protection and use in Illinois and Indiana?

The objective of the Public Meeting was not necessarily to reach consensus, but to capture the diversity of thoughts throughout the two states on Great Lakes restoration needs and possible approaches to meeting them. An overview of the plenary presentations is provided in Section II. Section III presents outcomes of the breakout group discussions, as recorded in the minutes. A summary statement and conclusion are offered in Section IV. The appendices contain a list of participants; the public meeting announcement and program; a copy of the Governors' press release announcing their restoration priorities; the original summary notes taken during the breakout sessions; and written comments that were submitted during the meeting and handouts provided by speakers John Goss and Ron Burke.

II. Presentations

The meeting began with welcoming remarks from Dr. Richard Warner, Director of Illinois/Indiana Sea Grant. Following this welcome, Dr. Michael J. Donahue, President and CEO of the Great Lakes Commission, offered an overview of the current status of restoration programs and planning in the Great Lakes basin. Dr. Donahue explained that restoration initiatives have been ongoing in the basin for decades, but have been sporadic and piecemeal. There is a growing interest in the region for elevating and integrating these efforts into a single, inclusive initiative. The series of regional workshops, of which the current event is a part, is intended to advance ecosystem restoration and protection efforts by discussing the Governors' priorities and associated implementation opportunities. In addition to the workshop series, a research component and a capstone region-wide event and report are being planned. As a whole, these components will have significant application for policy making. Dr. Donahue explained the format of the workshop and the intent to capture and pass on all expressed ideas. Sharing and integrating ideas from each jurisdiction is essential in having a balanced regional initiative.

Peter R. Johnson, Senior Program Manager for the Council of Great Lakes Governors, offered some remarks concerning protection and restoration of the Great Lakes. Johnson reviewed the genesis of the Council of Great Lakes Governor's Restoration Priorities Task Force and the process this group used to develop a list of basin-wide priorities for the Governors' consideration. The outcome of this Task Force is described in a press release dated October 1, 2003, which is provided in Appendix C of this proceeding. Johnson went on to review the nine priorities that were identified by the Governors.

John R. Goss, Director of the Indiana Department of Natural Resources, gave an overview of the state of the Great Lakes and related programs from an Indiana perspective. Goss emphasized that restoration plans and associated efforts must thoroughly consider the past, present and desired future state of the lakes. He also emphasized the need to incorporate the wide range of current Great Lakes programs into any plans for additional programs. Goss summarized a wide range of ongoing activities in the State of Indiana to address restoration of Lake Michigan coastal areas in Indiana. These programs include clean-up projects on the Grand and Little Calumet Rivers; protection of fisheries and natural areas; increasing public access and recreation opportunities; preventing pollution; achieving sustainable water use; curbing sprawl, shoreline erosion and habitat loss; preventing invasive species introductions; and considering potential impacts of climate change.

Ron Burke, Associate Director of the Illinois Environmental Protection Agency, offered an overview of current Illinois programs relating the protection and restoration of Lake Michigan. Burke noted that, although Illinois contains only a small portion of the Lake Michigan basin, there are more than 7 million people in Illinois who use the lake for drinking water. Illinois spends millions of dollars annually through a wide range of programs, including those of the Illinois Environmental Protection Agency, Illinois Department of Natural Resources, Illinois State Water Survey, Great Lakes Protection Fund and City of Chicago to ensure the protection of Lake Michigan water quality and ecosystem health.

Handouts provided by both Mr. Goss and Mr. Burke are provided in Appendix E.

III. Breakout Group Discussions

The group breakout sessions saw productive discussion on a wide range of topics. The major discussion points, along with suggestions and recommendations that emerged from each of the three sessions, were captured by a recorder. This section contains a summary of the group discussions organized by topic.

Land use practices and sustainable development

One significant theme which emerged during the meeting was the impact that land use and development practices have on the quality and quantity of the region's water resources. A need was expressed to improve coordination among land managers. Participants advised slowing development outside of urban areas and increasing redevelopment within urban areas. Establishing and supporting programs that enhance brownfields redevelopment was an identified need. Integrating green space into development plans was also mentioned. Suggestions on improving implementation of land use policies included providing incentives for environmentally friendly development; funding existing institutions such as the Indiana Shoreline Development Commission; and creating an authority to oversee commercial and industrial redevelopment of the lakeshore. Public education and outreach on these topics is also needed to increase involvement and support.

Nonpoint source pollution

Continuing to decrease pollution from nonpoint sources was another priority that received considerable support. Among major categories of nonpoint pollution that were specifically identified were Combined Sewer Overflow (CSO) systems, septic systems and agricultural sources. Funding was cited as a major impediment toward achieving reduction from each of these source categories. Increased funding was an identified need for several programs, including sewer and septic replacement, Natural Resource Conservation Service programs, monitoring and reporting. Standardization of monitoring and reporting protocols for nonpoint sources is needed to establish goals and evaluate progress. Increasing awareness among the community, especially agricultural interests, was also mentioned. Establishment of conservation buffers is another important action toward mitigating nonpoint source pollution. Providing incentives to property owners for environmentally friendly land management practices was suggested.

Toxic pollution and Areas of Concern

Historical and ongoing pollution of the Great Lakes from toxic substances was a theme in numerous comments voiced during the meeting. Regulatory and other pollution prevention efforts were called for, and it was noted that achieving such reduction is necessary before significant restoration efforts can occur. Continuing to pursue the restoration and delisting of Areas of Concern was cited as an important priority. Improving coordination between projects and programs at numerous levels was mentioned as one measure needed for achieving restoration of AOCs. It was recognized that contaminated soils and sediments remain a major source of toxics to the waters of the Great Lakes.

Aquatic invasive species

Preventing the introduction and spread of aquatic invasive species in the Great Lakes was a priority mentioned by numerous participants. Monitoring programs to improve detection are needed, as are improved programs for controlling spread and responding to introductions. Regulations on exotic animal and plant imports are needed. Ecosystem impact and risk assessment models for aquatic invasives are also necessary. The need for the U.S. Army Corps of Engineers to fund a second permanent barrier on the Chicago Sanitary and Ship Canal was specifically mentioned. In addition to this barrier, funding is needed for monitoring, research and rapid response. Support was voiced for the National Aquatic Invasive Species Act.

Human health

The linkage between environmental quality and human health was recognized by meeting participants and reflected in a number of comments. Incorporating human health considerations into the implementation of each the Governors' priorities was mentioned. There were numerous comments concerning contamination of bathing beaches and beach closures. The continuing development of better testing protocols was advised, as was increased funding for epidemiological studies. Reducing pollution from sources that cause beach contamination, such as CSOs, is needed. The development of improved and standardized fish advisories was also advocated. Making such advisories consistent is necessary, especially in areas such as the southern portion of Lake Michigan, where several states issue separate and sometimes inconsistent advice on fish consumption. In addition to health concerns from historical contamination with well-known pollutants, concern was expressed over the health effects of "emerging" pollutants, such as hormones and pharmaceuticals. Increased research on this topic is needed.

Wildlife and habitat

Protection and restoration of habitat was identified as a priority concern by a number of participants. The development of measurable goals and objectives for restoration of coastal and isolated wetlands was identified as a need. Efforts to restore lake trout populations were advocated. Stopping further fragmentation of habitat and the creation of habitat corridors were suggested initiatives. Connectivity of habitat in planning restoration efforts was viewed as particularly essential, as was management and protection of endangered species. Establishing terrestrial fly-ways for migratory birds and conservation buffers were additional identified needs. It was noted that biodiversity and habitat protection efforts are most effective when undertaken as a region-wide effort.

Water resources

Several participants commented on the need to preserve the region's water resources. The states' retention of authority to govern water withdrawal and diversion was seen as essential. There was concern that withdrawal limits may be set too stringently to allow economic recovery in the region. In addition to quantity issues, protection of water quality was also mentioned numerous times. Ensuring that drinkable Lake Michigan water is available was mentioned as a high priority.

Research and modeling

Continued advances in research and ecosystem modeling efforts were mentioned by many participants as important components of a restoration strategy. Research on lake levels and how they are impacted by water uses was advised, as was research into the health impacts of pollutants and improved wastewater treatment methods. Modeling efforts specifically mentioned included those involving coastal currents and their effects on contamination levels, and those involving the process and impacts of climate change (environmental, economic and social). In addition to environmental models, improvements in regional economic models and their integration with environmental issues was suggested.

Data and information management

The standardization and integration of the region's data and information management systems was a topic discussed by many meeting attendees. Increasing compatibility of data across jurisdictions is essential, as is further development of centralized, accessible, web-based systems for data storage and retrieval. Coordination of monitoring efforts is needed to ensure that thorough baseline data is available on all aspects of the system and to reduce overlap and inefficiencies. Integrating data holdings with informational applications (e.g., a standardized Lake Michigan fish consumption advisory) and policy initiatives was recommended.

Outreach and education

Integrating public outreach and education into restoration efforts was identified numerous times at the meeting as an important component of all restoration activities. Infusing Great Lakes topics into curricula was mentioned as an important goal. In addition, outreach to the general public is needed to increase awareness. Providing accurate information to the public and policy makers is needed to achieve informed actions. Some specific topics that were cited as needing heightened educational efforts are dredging, brownfields redevelopment, and the linkages between economics and ecology.

Planning and implementation

A large number of comments addressed the issue of how a restoration planning process might proceed, and included recommendations for implementing a restoration strategy. One theme among these comments was the need to do a thorough review and assessment of existing programs to evaluate their strengths and weaknesses. This review would form the basis of recommendations for new programs or better integration and implementation of existing programs. Some existing programs that could form the foundation of future efforts are LaMPs, RAPs and TMDL programs, among others.

Coordination of projects between state, federal and local governments is needed to avoid duplication and improve efficiency. Coordination on an international level between the U.S. and Canada was also mentioned. It was stressed that new committees or task forces that are formed (such as President Bush's new task force) should be given authority to take necessary actions.

Formation and implementation of plans on a watershed basis was recommended. These and other plans should have identifiable ecosystem and human health endpoints for tracking progress. Development of a conceptual framework that would identify and prioritize among areas of action was also suggested, as was a clear system for making funding decisions. A major

identified barrier to successful implementation is funding. A need was cited to advocate strongly for authorization and appropriation of funding for restoration efforts and to secure local matches for these funds. Funding for restoration projects needs to be established in a sustained fashion and used within the region, based on a common set of objectives.

Other topics

The issue of climate change and its effects was raised, and participants noted that it has implications for all of the Governors' priorities. There was particular concern over possible impacts from climate change on rare species and ecosystems around the region. Additional suggestions for implementation of a regional restoration strategy are that it include "environmental justice" components and that it incorporate economic principals that assign non-market values to natural capital. The need for increased public ownership and access was identified as a necessary action toward achieving several of the Governors' priorities.

IV. Summary and Conclusions

During the public meeting, participants expressed a diverse range of concerns to be addressed as part of a region-wide Great Lakes restoration initiative. Although the ideas and comments expressed were wide-ranging in their focus, they were rarely conflicting. The resulting suite of comments, ideas and recommendations form a comprehensive overview of what “Great Lakes restoration” means to the Illinois / Indiana community, what the objectives of a restoration plan might be, and how such a plan might be implemented. The priority areas expressed at the meeting parallel those expressed by the Great Lakes Governors in October, 2003 (see Appendix C). The input received during the public meeting indicates a large degree of congruence between the Great Lakes issues being faced in Indiana and Illinois and those facing the region as a whole, as reflected in the Governors’ statement.

It is clear from the presentations made by John Goss and Ron Burke (see Appendix E), and the discussions at the public meeting, that Great Lakes stakeholders in Indiana and Illinois place a high value on their Great Lakes resources and have repeatedly demonstrated a willingness to contribute time, effort and money to protecting and restoring these resources.

The outcomes of the public meeting add depth and detail to what has emerged as a shared list of restoration priorities for constituencies around the basin. The input received from the Indiana and Illinois communities will help define the desired outcomes and actions necessary to achieve each of the stated priorities. This input, when combined with that from the rest of the Great Lakes basin, will form a comprehensive and detailed record of what is needed at the local, regional and national levels to achieve Great Lakes restoration. These public meeting outcomes will add additional value by defining problem areas and required actions that are unique to the Indiana / Illinois region. This process of defining priority problems and required actions is the first step in a lengthy but necessary process of restoring the Great Lakes to their full ecological, social and economic value.

Appendix A: Participants

Name	Organization
Thomas Anderson	Save the Dunes Council
Judy Beck	U.S. Environmental Protection Agency
Mike Boos	AWLI
Brian Breidert	Indiana Department of Natural Resources – Division of Fish and Wildlife
Ron Burke	Illinois Environmental Protection Agency
Dorreen Carey	City of Gary – Environmental Affairs
Young Choi	Purdue University Calumet
Rudy Clay	Lake County Board of Commissioners
Alex da Silva	Indiana Department of Environmental Management
Stephen Davis	Indiana Department of Natural Resources
Brian Dieringer	
Charles Dieringer	Thorn Creek Watershed Technical Committee
Michael J. Donahue	Great Lakes Commission
Leslie E. Dorworth	Illinois – Indiana Sea Grant College Program
Don Ewoldt	Lake Erie Land Company
Wayne Faatz	Indiana Department of Natural Resources – Fish and Wildlife
Michael Fischer	Office of Illinois Lieutenant Governor
Jennifer Gadzala	Northwest Indiana Regional Planning Commission
Jim Gentile	Aquatic Research Interactive
John Goss	Indiana Department of Natural Resources
Kerry Grempe	Resident of Lansing, Illinois
Marge Hefner	Kouts
Dan Injerd	Illinois Department of Natural Resources
Peter R. Johnson	Council of Great Lakes Governors
William J. Johnson Sr.	
Jenny R. Kintzele	IDNR - Lake Michigan Coastal Program
Chris Kline	JFNew
Reggie Korthals	Northwest Indiana Regional Planning Commission
Mike Lancioni	JFNew
Jennifer Lawton	National Oceanic and Atmospheric Administration – Office of Response and Restoration
Tim Longwell	D.J. Case and Associates
David Madden	Illinois Environmental Protection Agency
Phil Mankin	Illinois – Indiana Sea Grant
Ann McCabe	Policy Solutions, Ltd.
Mac McFeely	Aquatic Research Interactive, Inc.
Nora McGrath	Aquatic Research Interactive
Jason Meshberg	Charles Shabica and Associates, Inc.
James B. Meyer	Meyer and Wyatt, P.C.
Brian Miller	Illinois – Indiana Sea Grant
Mike Molnar	IDNR - Division of Soil Conservation- Lake Michigan Coastal Program
Roger Nanney	U.S. Department of Agriculture – Natural Resource Conservation Service
Mark O’Dell	Town of Chesterton
Eric M. Oliver	Indiana Department of Environmental Management

Proceedings - Indiana / Illinois Great Lakes Restoration Priorities Public Meeting

Name	Organization
Dan Olson	Sanitation District of Michigan City
Wayne Olson	Consultant
Charlotte Read	Save the Dunes Council
Alan Resetar	Field Museum of Natural History
Mark Reshkin	Indiana Coastal Advisory Board
Kathryn Smith	Indiana Department of Natural Resources – Lake Michigan Coastal Program
Dan Tompkins	Trail Creek Council
Kelsee Waggoner	Office of Congressman Pete Visclosky
Richard Warner	Illinois – Indiana Sea Grant
Gwen White	D.J. Case and Associates
Dwayne Williams	Town of Chesterton
Steve Yagelski	Town of Chesterton

Appendix B: Public Meeting Announcement and Program

FINAL NOTICE: REGISTER NOW!



Illinois/Indiana Public Meeting Concerning Great Lakes Restoration Priorities

May 24, 2004
1:00 p.m. - 4:00 p.m. (Central Time)
Gyte Building, Room 103
Purdue University - Calumet
2200 169th St.
Hammond, Indiana
219-989-2400

Introduction: What is your vision for the Great Lakes? What are your action items for restoration, protection and use in Illinois and Indiana? These and related questions will be addressed at a **May 24** public meeting for Great Lakes stakeholders from Illinois and Indiana. Come join us and help the region's policy leadership shape a restoration and protection agenda for the greatest system of freshwater on the face of the earth! **A preliminary program is attached, accompanied by a site map.**

Sponsors: Illinois/Indiana Sea Grant is hosting this event in partnership with the Great Lakes Commission and Council of Great Lakes Governors.

Background: The restoration and protection of the Great Lakes ecosystem is a widely recognized need, and the eight Great Lakes governors, acting through the Council of Great Lakes Governors, have responded by identifying nine broad priorities to guide such efforts. The Council, in partnership with Illinois/Indiana Sea Grant and the Great Lakes Commission, is seeking public input on these priorities, and ideas on how they can be best implemented for the region's benefit. The workshop for Illinois/Indiana stakeholders is one of a series of such workshops being conducted around the region. Your thoughts and ideas will be solicited, recorded and shared with the governors and other regional leaders as a collective restoration and protection initiative takes shape.

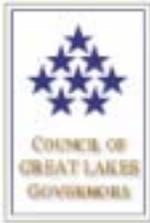
A listing of the Governors' nine priorities is available online at the Council of Great Lakes Governors' website: www.cglg.org. Details on the workshop series, supported by the National Sea Grant Program, can be found on the Great Lakes Commission's web site: www.glc.org. We can add links to any additional relevant plans and strategies you may be aware of. Please contact the Great Lakes Commission at 734-971-9135 or pegable@glc.org.

Format: The public workshop will feature brief presentations on the restoration priorities initiative, and on the state of the Great Lakes (with a focus on Illinois and Indiana). This will be followed by a facilitated, open forum for public comment and discussion. Again, all comments will be used by the Governors to inform their restoration and protection strategies.

Who Should Attend: All with an interest in the current status and future prospects of the Great Lakes are encouraged to participate. This includes local officials, citizen organizations, educators, students, business/ industry interests, elected officials, and any other individuals with an interest.

To Register: There is no fee for the workshop, but we encourage you to register by contacting Patricia Gable at 734-971-9135 or pegable@glc.org by **May 21**. This is an open meeting, and we encourage you to share this information with all who may have an interest.

For Further Information: **A preliminary program is attached.** Additional details on the workshop can be found online at www.glc.org.



Preliminary Program
Illinois/Indiana Public Meeting
Concerning
Great Lakes Restoration Priorities
May 24, 2004

1:00 p.m. - 4:00 p.m. (Central Time)
Gyte Building, Room 103
Purdue University - Calumet
2200 169th St.
Hammond, Indiana
219-989-2400

1:00 p.m.	Welcome and Introductions	Richard Warner, Ph.D. , Director, Illinois/Indiana Sea Grant
1:05 p.m.	The Great Lakes Restoration Priorities Initiative: Background and Workshop Objectives	Michael J. Donahue, Ph.D. , President/CEO, Great Lakes Commission
1:10 p.m.	Protecting and Restoring Our Great Lakes	Peter R. Johnson , Senior Program Manager, Council of Great Lakes Governors
1:20 p.m.	"State of the Lakes" Overview: Perspectives from Indiana and Illinois	John R. Goss , Director, Indiana Department of Natural Resources Representative , State of Illinois
1:55 p.m.	Charge to Breakout Groups	Michael J. Donahue
2:00 p.m.	Facilitated Breakout Group Discussions	
3:30 p.m.	Reporting Out	Moderator: Brian Miller, Ph.D. , Associate Director and Outreach Coordinator, IL/IN Sea Grant Group Volunteers
3:55 p.m.	Wrap Up / Next Steps	Richard Warner Michael J. Donahue
4:00 p.m.	Adjourn	

Appendix C: Governors' Restoration Priorities Press Release

GREAT LAKES GOVERNORS RELEASE PRIORITIES FOR PROTECTION AND RESTORATION OF THE GREAT LAKES

October 1, 2003

Contact: David Naftzger or Peter Johnson
312-407-0177

The Council of Great Lakes Governors today released nine priorities for the protection and restoration of the Great Lakes. The Great Lakes ecosystem is critically important to the quality of life for our citizens and to the economic vitality of region," said Ohio Governor Bob Taft, Council chairman. "In endorsing these priorities, the Great Lakes Governors affirm our commitment to protecting and restoring the natural habitat and water quality of the Great Lakes Basin, preserving diverse and thriving plant and animal communities, protecting the water supply, and safeguarding human health."

The priorities were included in a letter to the sponsors of S. 1398, the Great Lakes Environmental Restoration Act, and H.R. 2720, the Great Lakes Restoration Financing Act. The Great Lakes Governors praised Congressional sponsors and cosponsors for introducing legislation to address ongoing threats to the Great Lakes by providing substantial federal financial support to complement extensive state and local spending on protection and restoration projects.

"We applaud the strong bi-partisan commitment in Congress to restore and protect the Great Lakes," said Governor Taft. "The Great Lakes Governors look forward to partnering with Congress to secure the future of this irreplaceable national treasure."

The Council of Great Lakes Governors agreed that these priorities should guide Great Lakes restoration and protection efforts:

- Ensure the sustainable use of our water resources while confirming that the States retain authority over water use and diversions of Great Lakes waters.
- Promote programs to protect human health against adverse effects of pollution in the Great Lakes ecosystem.
- Control pollution from diffuse sources into water, land and air.
- Continue to reduce the introduction of persistent bioaccumulative toxics into the Great Lakes ecosystem.
- Stop the introduction and spread of non-native aquatic invasive species.

Proceedings - Indiana / Illinois Great Lakes Restoration Priorities Public Meeting

- Enhance fish and wildlife by restoring and protecting coastal wetlands, fish and wildlife habitats.
- Restore to environmental health the Areas of Concern identified by the International Joint Commission as needing remediation.
- Standardize and enhance the methods by which information is collected, recorded and shared within the region.
- Adopt sustainable use practices that protect environmental resources and may enhance the recreational and commercial value of our Great Lakes.

The Great Lakes Governors also committed to working with local governments, Canadian provinces, and other stakeholder organizations on a coordinated approach to safeguarding the Great Lakes, which are the largest source of fresh surface water in the world.

Appendix D: Breakout Session Summary Notes

Group I

Restoration Priorities

- \$ If AIS are edible, why concern over displacement of other species?
- \$ Increase and promote ecological responses to water and public land access.
- \$ Ensure human health as a component of priorities.
- \$ Computer modeling of coastal currents in relation to contamination
- \$ Increase funding for nonpoint source (NPS) pollution through additional sources above 319.
- \$ Modeling global climate change for Great Lakes (natural, economic, social, etc.)
- \$ Incorporate sustainable economic modeling into existing priorities.
- \$ Promote and support education curriculum in traditional and nontraditional ways (formal and outreach).
- \$ Incorporate existing brownfield projects with new priorities.
- \$ Examine connectivity both in natural and political.
- \$ Provide incentives for Green Development (large scale).
- \$ Under funded standardization methods for NPS, including reporting
- \$ Research in lake levels and water usage
- \$ Creation of reuse authority model for industrial/commercial redevelopment
- \$ Centralized resource for policy information
- \$ Establish measurable goals and objectives for nonpoint source pollution and wetlands.
- \$ Examine benefits of manmade structures on biological systems.

Action Items

- \$ Push for authorization and then appropriations and secure local match.
- \$ Build local support for the above process.
- \$ Educate the public with new approaches linking economics and ecology.

Group II

- Lake trout restoration effort funding support
- Increased funding for epidemiological studies related to human health and beach closings
- Research: hormones/pharmaceuticals in water legacy issues contamination related to health and environment
- Isolated wetlands
- Protect from habitat fragmentation
 - terrestrial - fly-ways-migratory birds
 - corridors for habitat
- Need for conservation buffer
 - sediment control and habitat
- Funding opportunities and incentives or septic removal/replacement
 - growth - land use changes smart growth
- NRCS program funding
 - agricultural community awareness
- Brownfields
 - public outreach and education
- Regional water resource supply efforts (potable Lake Michigan water)
- Coordination between federal, state and local projects/programs in AOCs to assure completion to the fullest extent.
- Reinstate Army Corps funding for shoreline nourishment establish a second permanent barrier for invasive species in and out of Lake Michigan.
- Monitoring and control increased for invasives
- Standardization of data and information sharing and compatibility
- Sufficient data collection
- Lake Michigan standard fish consumption advisories

Group III

Restoration Priorities

- \$ Control pollution.
- \$ Education and outreach (new priority).
- \$ Stop/control pollution before restoration.
- \$ Reduce invasives.
- \$ International priorities and coordination.
- \$ Human health - water use - quality (new).
- \$ Advocate redevelopment of Indiana areas, slow sprawl integrate green space.
- \$ Existing programs - evaluate strengths and weakness.
- \$ CSOs - human health - Recreational use.
- \$ Delist and restore AOCs.
- \$ Great Lakes agreement and Canada.
- \$ International coordination.
- \$ Evaluate existing programs.
- \$ Climate change.
- \$ Need baseline data. Enhance & coordinate data (evaluate existing programs).
- \$ Emphasis on health of environment in addition to human health.
- \$ Emphasize public education for the above.
- \$ Ground water quality and quantity.
- \$ States retain authority over diversions.
- \$ Sustain improvements – non degradation.
- \$ States partake on existing funding and programs.
- \$ Pollution prevention.
- \$ Environmental Justice.
- \$ Plan implementation - existing (319 plans, LCPlans, TMDLs, MS4, RAPs).

Action Items

- \$ Lakewide Management Plan (LaMP): planning and implementation of watershed plans in all tributaries to Great Lakes.
- \$ Remediate and restore AOCs in Great Lakes.
- \$ Consistent, sustained Federal funding for restoration and other programs.
- \$ Adequate funding for Indiana Shoreline Development Commission. (a legislative development which is not funded).
 - Marquette Plan proposals

Proceedings - Indiana / Illinois Great Lakes Restoration Priorities Public Meeting

- \$ Provide accurate information to public on restoration activities.
 - public education (e.g., dredging)
 - how?
- \$ Define ecosystem and human health endpoints of remediation and restoration.
- \$ States (IN) focus on all Great Lake drainage basins (Lake Michigan and Lake Erie)
- \$ Web based system.
- \$ Coordinate all existing federal, state and locally funded projects.
 - share info
 - no duplication
 - retrievable at local level
 - increase efficiency, save money
 - at basin level
- \$ Develop conceptual framework to identify and prioritize areas of action.
 - end result
 - areas of greatest concern
- \$ Coordinate Land Managers (public and private) restoration needs, resources, expertise.
- \$ Fund watershed projects regardless of state or political jurisdiction.
 - facilitate multi-state funding
 - set common objectives between states
- \$ Develop better Beach Closure testing.
- \$ Federal distribution of funds should correspond to agencies that match state and local priorities.
- \$ Assign non-market value to natural capital and implement through management and policy.
- \$ Endangered Species management.

Appendix D: Additional comments handed in

The comments below were submitted in writing at the public meeting on questionnaire forms that were provided.

Question 1: What is your input on the Great Lakes governors' priorities and how are these priorities important to Illinois/Indiana?

- Higher priority (more money) for sediment and brownfields clean-up. These are probably the largest sources of toxic pollutants going into southern Lake Michigan.
- Climate change cuts across or is part of almost all priorities, especially. 1,2,3,6,9. The President's new task force has to have real authority (coordination).
- Create a re-use authority model for transitioning industrial and commercial lakeshore property to new economic development that is ecologically responsible. Eco-tourism.
- Almost all are important to Indiana. Annex 2001 5MGD limit must not be structured to deter economic recovery in Northwest Indiana where water usage is a driving mechanism for re-establishing economic stability.
- Education: Traditional sense – support development of curriculum for science and ecology that is linked to state standardized tests. Nontraditional sense – outreach to “man on the street” to describe why their actions impact the watershed to why their tax money should support the listed priorities. Save the Bay model: “You are entering Great Lakes Watershed.” Education high in traditional and nontraditional sense.
- Protect human health. Enhance fish and wildlife by restoring coastal resources. Control air, water and land pollution - related to economic development and social issues. Foster (creative) partnerships and coordination of efforts.
- Public education is certainly something important to our office - funding for real beneficial construction. Construction of coastal wetlands. For private residents with riparian property rights, give tax break or incentive for appropriate/sustainable/environmentally sound developments (e.g. planting native species at a beach (Illinois) with a revetment). This cuts NPS pollution.
- Acquisition of public lands and public access is not directly or prominently addressed in the nine priorities (funding and outreach). Need greater emphasis on impact of global warming on unique biotic community of southern Lake Michigan and other lakeshores and habitat protection strategies to mitigate impact. Need landscape scale eco-region-wide multi-state planning for biodiversity and habitat protection efforts.
- We need to identify our top priorities in a manner that we are ready to approach public officials with a plan of Action!

- Where an invasive species is edible, why ought we to be concerned at the displacement of current species?
- It is important to consider habitat connectivity of selected restoration projects. Each project will have higher habitat value if connected to valuable habitat. Need to differentiate between habitat restoration and acquisition. Additionally, conservation easements should be a useful mechanism. Need full Legacy Act funding. Incentives for green development/conservation easements/buffers, etc. Emerging contaminants, pharmaceuticals, PBDEs, and other PBTs need to be tackled at EPA level to allow regulation for discharge.

Question 2: What are your action items for a large scale plan that can address Great Lakes restoration, protection and use in Illinois/Indiana?

- Identify the top priorities for Action internally and leave Great Lakes Commission / Great Lakes Council of Governors meetings in “relative” agreement that this is what we are now going to put forth as the most important projects.
- Coastal wetlands protection plan.
- Habitat restoration and conservation project.
- Healthy coasts - planning communities for environmental protection, economic development, and social equity.
- Incentives to private residents and individuals for appropriate development.
- Public education and PR for watershed; non-point source pollution; aquatic invasive species; tech-fast-new.
- The AIS barrier in Illinois has limited value if federal regulations of aquatic plant and animal imports remain lax. Invest in AIS risk assessment and ecosystem-level impact models to predict effects of potentially harmful species introductions. We need education and outreach for public on risks associated with AIS; Increased funding for AIS monitoring, research and rapid response; funding for Great Lakes ANS Panel; support for NAISA. Increase funding for implementation of state ANS management plans and state wildlife grants (comprehensive wildlife plans). Tighten federal regulation for wetlands protection. Convey sense of ecological urgency to a mobile consumption-oriented technology-dependent public who may have very little direct interaction with nature.
- Procedural implementation issues: Mechanism of project making needs to be identified. Who decides amount of funding per project? Need to incorporate new findings with existing programs and projects (to avoid redundancy and increase leverage). Need measurable endpoints to evaluate success of projects.

Proceedings - Indiana / Illinois Great Lakes Restoration Priorities Public Meeting

- Have the International Joint Commission and Great Lakes Mayors form an integrated steering group with President Bush's Task Force as members, for Indiana and Illinois screaming for all federal funds.
- Research wastewater treatment processes to look at the removal of pharmaceuticals from future drinking water supplies (work to develop new wastewater treatment methods).
- Help urban areas address Combined Sewer Overflows (CSOs) and upgrade sewer systems. Develop better beach closure tests.
- Replace *E. Coli* standard in better indicators of human health risk for beach closings.
- Take the discussion to the public(s) to a much greater degree.
- Explain the economic significance and values of Great Lakes restoration.
- Get Federal agencies into sync. These efforts each have their own goals.
- Use existing groups (Lake Michigan Federation, Michigan United, etc) for outreach but that's not enough - find other constituencies to buy into this effort.
- Research for lakes levels and water usage.
- Different approaches.
- Conceptual framework for establishing priorities for actions.
- Comparable database within and across resources.
- Human vs. environmental health comparisons.

Appendix E: Speaker Handouts

Handout from John Goss

Indiana State of the Lakes Overview

Where We've Been and Where We're Going

Any large scale restoration effort must address the past, present, and future of the Great Lakes ecosystem. In addition, it must recognize the current suite of restoration efforts underway and potential future partnership opportunities. The State of Indiana through partnerships and its own efforts has made strides in the past decade to improve the natural resources in the Lake Michigan Coastal Area. The following list of items includes some of these successes as well as future goals.

Marquette Plan

Incorporates public access, economic development, resource protection, and most importantly brings representatives from the local, state, and federal level to the table to work on a common cause. Plan brings together Hammond, Gary, Whiting, East Chicago and Portage.

- Recapture 75% of Lake Michigan shoreline between Illinois state line and eastern boundary of Portage for free public access by the end of the decade.
- Requiring a minimum setback from the water of at least 200 feet for any structures and facilities.
- Establish a continuous pedestrian trail from Illinois to the eastern boundary of Portage. Emphasis will be placed on using as much of the shoreline as possible for this pedestrian trail.
- Clean up and redevelop shoreline.

Public Boating Access

- Increase number of public boating launches.
- Lake Michigan access sites in Indiana few compared to other Great Lakes states.

Grand Calumet River Clean-up

- Only Area of Concern listed for all 14 beneficial use impairments.
- 21 miles of aquatic habitat impacted and 9.1 million cubic yards of sediment still in river and harbor.
- U.S. Steel has just dredged five miles of the Grand Calumet at a cost of \$50.9M.
- Goal is to make the area livable, usable and attractive.
- Need continued federal support and funding.

Little Calumet River Clean-up

- Acquired 170 acres as part of mitigation to date.
- Current phase budget request of \$7M, with \$5M Presidential request.
- Local match has limited amount of work done.

Native Fisheries Protection

- Many of our native species are being heavily impacted by competition with invasive species for available food resources.
- Need continued support for native species rehabilitation and restoration and prevention of exotic/invasive species.

Natural Areas Protection

- The area is in top five nationwide for biodiversity.
- Need to identify hotspots of biodiversity and preserve.

Pollution

- Nonpoint – need to implement BMPs and pair land use planning and watershed planning to avoid sensitive areas.
- Point – Reduce/eliminate deposition of airborne mercury and other hazardous materials
- Beach closures and *E. Coli*.

Water Resource Use

- Sustainable use of the resource.
- In-basin withdrawals could be problematic with current population growth patterns.

Sprawl / Growth

- Will continue to stress environment and induce changes in ecosystem.
- Need better planning requirements to avoid sensitive areas.

Shoreline Erosion

- Must address areas along the shoreline that are eroding at a high rate.
- Restore Army Corps funding for beach nourishment projects that mitigate damage from past Army Corps projects.

Habitat Loss

- Protect remaining wetlands and associated uplands.
- Restore degraded wetlands and increase amount dedicated to Wetland Reserve Program.

Invasive Species

- In excess of 180 exotic/invasive species in the Great Lakes system.
- Dedicate efforts to find ways to control spread of existing and prevent introduction of new species.

Climate Change

- Must be considered when designing restoration programs.
- The south shore of Lake Michigan is unique in that it contains a diverse cross section of species from different climates. Some species that once lived in an area may not be able to in the future due to climate change.

Handout from Ron Burke

Currently Funded State and Local Great Lakes Projects in Illinois – May 2004

Only a small portion of the Lake Michigan basin is within Illinois, and yet Lake Michigan is the source of drinking water for nearly 7 million people in our state. In partnership with federal agencies and other Great Lakes stakeholders, the State of Illinois and the City of Chicago are working diligently to protect and restore Lake Michigan. Some of our more unique accomplishments include:

Illinois Environmental Protection Agency

1.
 - \$75,000 annually to study and assess Lake Michigan water quality in cooperation with the City of Chicago
2.
 - \$37 million in low interest Drinking Water Revolving Loan Funds since 1998 have been made to public water system utilizing Lake Michigan as their water source (\$30M federal, \$7M state)
 - \$30,000 annually to analyze Lake Michigan fish samples and interpret results to issue fish consumption advisories
 - \$7500 in staff resources annually to participate on a multi-Agency panel to identify sources of high *E. Coli* found at some Lake Michigan beaches
3.
 - \$650,000 since 1993 to study problems and implement restoration activities at several Chicago Park District lagoons and Wolf Lake
 - \$2.2 million since 1991 for nonpoint source pollution environmental exhibits and education/outreach projects in areas directly affecting Lake Michigan (\$1.3M federal, \$0.9M state)
 - \$886,900 in 2003 to support Roof Greening Technology as a demonstration project for developers, homebuilders and conservationists as an ecologically and aesthetically friendly way to reduce urban nonpoint source pollution (\$532,100 federal, \$354,800 state/local)
4.
 - Since 2000, \$60 million in low interest Clean Water Revolving Loan Funds have been made for the control of combined sewer overflows (CSO) in the Lake Michigan basin (\$25M federal, \$35M state)
 - Since 2000, \$173 million in low interest Clean Water Revolving Loan Funds have been made to the Metropolitan Water Reclamation District for the Tunnel and Reservoir Plan for the control of combined sewer overflows in the Lake Michigan basin (\$72M federal, \$101M state)
 - Prior to 2000, \$228 million in low interest Clean Water Revolving Loan Funds have been made to the Metropolitan Water Reclamation District for the Tunnel and Reservoir Plan for the control of combined sewer overflows in the Lake Michigan basin.
 - Prior to 2000, \$122 million in grant funds have been made to the Metropolitan Water Reclamation District for the Tunnel and Reservoir Plan for the control of combined sewer overflows in the Lake Michigan basin.

Proceedings - Indiana / Illinois Great Lakes Restoration Priorities Public Meeting

- Committed \$300,000 in 2003/2004 to a mercury reduction initiative that provides for collection of mercury-containing products at schools and community education and outreach programs.
- 6. - \$1,316,700 since 1991 to support several Waukegan River ecological and habitat restoration projects (\$790,000 federal, \$526,700 state/local)
- 7. - \$48,000 in staff resources annually to coordinate activities pertaining to the Waukegan Harbor Area of Concern
- 8. - \$400,000 over the last 3 years to develop interactive GIS mapping tools for use by Agency professionals and the public through the Illinois EPA's Internet site.
- \$300,000 in grant funds since 1994 in support of the Waukegan River National Monitoring Strategy project.
- 9. - Pollution Prevention - \$216,000 over the last seven years has been spent to provide technical assistance to dozens of industries in the Lake Michigan basin. For example, IEPA has placed approximately 36 pollution prevention interns with industries in the Lake Michigan Basin in the past seven years
- 10. - Invasive Species – In conjunction with the federal government, education and outreach to the Chicagoland live-food markets has been conducted in an effort to prevent the spread of Asian Carp into Lake Michigan.
- 11. - Lakes Education Assistance Program Grants - \$25,000 has been spent since September of 1995 on approximately 50 Lake Education Assistance Program grants for schools to conduct hands-on studies of Lake Michigan. Each grant is for \$500
- 12. - Fort Sheridan – Located 25 miles north of Chicago along the shore of Lake Michigan, this was the first Vase Realignment and Closure site in Illinois and USEPA Region V to successfully transfer all of its transferable property (312 acres) for redevelopment and parkland. Significant work has been done to prevent contamination at the site from reaching Lake Michigan, including the removal of contaminated sediments and installation of shoreline erosion protection systems.
- 13. - Air Pollution Transport - \$27,825 for participation in the Air Transport committee for Lake Michigan to identify sources of targeted priority pollutants contributing to air deposition in to Lake Michigan
- 14. - Hazardous Waste Pickups – \$1 million has been spent 2003 to conduct Household Hazardous Waste Collections in Cook and Lake counties
- 15. - Waukegan Harbor AOC – The State of Illinois has focused a considerable amount of time and resources to address the Waukegan Harbor AOC since it was listed in 1981. In 1990, the Illinois EPA formed the Waukegan Harbor Citizens Advisory Group (CAG) to work on the development of the Waukegan Harbor remedial action plan. The membership of

the Waukegan Harbor CAG is diverse and includes: local, state and federal government agency representatives; local, state and federal elected officials; local industry; the local business community; environmental groups; and local citizens.

Remediation of Waukegan Harbor began in 1991 under the Superfund program. 1 million pounds of PCB contaminated sediments from the harbor and drainage areas were remediated. In 1997, warnings against eating any fish from Waukegan Harbor were dropped, marking another major milestone.

In order to de-list the harbor from the International Areas of Concern, the residual contamination must be addressed. To date more than 20 sites in the Waukegan area have been evaluated for placement of the remaining harbor sediments. The technological feasibility of the project must be considered along with the resources and concerns for the community. Illinois EPA is optimistic that an acceptable strategy will be identified for completing the harbor dredging project and de-listing the Waukegan Harbor AOC.

Illinois Department of Natural Resources

1.
 - Lake Michigan Waterwall - \$16.7 million to construct a new, watertight wall to prevent the leakage of Lake Michigan water into the Chicago River, thereby providing for a more efficient use of our U.S. Supreme Court allocation of Lake Michigan water. This wall also contains pumps to allow for the pumping of any clean water, which still might be leaking through facilities owned by the U.S. Government, back to Lake Michigan. The pumps also provide for a more efficient use of our U.S. Supreme Court water allocation.
2.
 - Water Conservation Program – Mandatory water conservation program for users of the Lake Michigan water allocation; should allow Illinois to liquidate its alleged overuse of Lake Michigan water 15 years ahead of schedule.
3.
 - Lake Michigan Shoreline Protection Project - \$169 million (\$47 million state of Illinois), non-federal cost share of the \$345 million Lake Michigan Shoreline Protection Project. This project will help prevent shoreline erosion, which contributes to the pollution of Lake Michigan. The project will also provide for urban flood control, recreational use and commercial development.
4.
 - Electrical Invasive Species Barrier - \$10,000 annually toward the non-federal share for field assessment of an Electric Dispersal Barrier to prevent migration of invasive species. In addition, IDNR will provide the non-federal cost share for the installation of a permanent, electrical, invasive species, fish barrier in the Chicago Sanitary and Ship Canal. The electrical barrier is being designed to prevent Asian Carp from accessing Lake Michigan and the rest of the Great Lakes. The current cost estimate is \$7.0 million. The federal funding limit for this type of project is \$5.0 million; therefore, Illinois is prepared to provide the remaining \$2.0 million
5.
 - Restoring coastal wetlands - \$100,000 to construct an artificial reef to enhance smallmouth bass habitat and fishing opportunities

6.
 - Enhance shipping, boating, tourism and fishing - \$70,000 annually for Illinois Lake Michigan fishery surveys and investigations.
 - \$4,000 annually for investigating smallmouth bass populations along Illinois shoreline of Lake Michigan.
 - Plus, \$270,000 annually for raising and stocking 800,000 trout and salmon for Lake Michigan
 - \$60,000 annually for investigating the yellow perch population in the southwestern Lake Michigan.
 - \$25,000 annually for investigating the growth and survival of nearshore fishes in Lakes Michigan
 - \$39,000 annually for assessing the annual sport fish harvest on the Illinois portion of Lake Michigan.
7.
 - Future Illinois DNR Restoration Plan for Lake Michigan - \$2 million for producing a high-resolution bathymetric map of the Illinois jurisdictional waters.
 - \$100,000 annually for mapping and model development of micro-current patterns in the Illinois jurisdictional waters.
 - \$800,000 annually for a research program investigating the inshore aquatic ecological processes and the impact of established populations of non-native species upon those processes
8.
 - Illinois Beach State Park – Since the late 1990’s, approximately \$830,000 has been expended for studies, testing and removal of asbestos. It remains an ongoing issue, and beach nourishment using dredged material from the outer entrance channel of Waukegan Harbor has been temporarily suspended until additional testing confirms the safety of this material.
 - Since 1990, approximately \$3.6 million has been expended on beach nourishment projects at Illinois Beach State Park. This nourishment is necessary in order to prevent additional erosion of prime natural areas and to maintain beach areas.

Illinois State Water Survey / Illinois DNR

1.
 - Reconstruction of past and future Precipitation Monitoring - \$175,000 per year for the reconstruction of historical and modeling of future precipitation and temperature in the Great Lakes basin. Climate conditions affect water levels in the Great Lakes. Future climate scenarios range from persistent severe drought with low lake levels to persistent floods with high lake levels. This research is aimed at reducing this unacceptably large range of uncertainty and improve the scientific basis for resource management and restoration.

2002 Great Lake Protection Fund Projects in Illinois

- \$200,000 TetraTech EMI – TetraTech EMI will lead a team in building case studies of how small communities near the edge of the Great Lakes drainage basin can meet their water needs under the management system contemplated by Annex 2001 to the Great

Lakes Charter. The cases will explore the issues faced by both small communities that need water and those that have access to abundant supplies.

- \$494,000 Policy Solutions Ltd. – Policy Solutions Ltd. will lead a team in building and evaluating three case studies of how new or expanded in-basin water use can meet the requirements of the system contemplated by Annex 2001. The cases will explore how in-basin public water supplies can meet new needs.
- \$75,000 The Nature Conservancy – The Nature Conservancy will lead a workshop on identifying ecological flow requirements for streams and implementing strategies to achieve them.

City of Chicago

- Chicago Water Main Replacement – Approximately \$50 million per year since 1996 to annually replace 40 to 50 miles of the City’s large diameter water mains, most of which are 75 to 100 years old. This capital investment has greatly reduced Chicago’s water usage and provides for a more efficient use of our Lake Michigan water allocation.

Metropolitan Water Reclamation District of Greater Chicago

- Construction of the District’s Tunnel and Reservoir Program (TARP) – IEPA’s Bureau of Water continues to work closely with the District on the program, which will dramatically improve water quality in Chicago and suburban Cook County, and allow for the increased usage of the Lake Michigan water allocation for water supplies. In addition to the funds supplied by the Illinois EPA previously mentioned, the District has expended \$1,855M (\$1,250M in federal grants; \$605M in district funds) on the construction of TARP for the elimination of combined sewer overflows in the Lake Michigan Basin. The last tunnel associated with the pollution control phase is under construction and scheduled for completion in 2006.
- An additional \$58 million in FY04 Loan Funds are allocated for the Metropolitan Water Reclamation District to complete the last tunnel on the Tunnel and Reservoir Plan CSO control project in the basin (\$24M federal, \$34M state)

Appendix 2:

Michigan Workshop Proceedings

Restore the Greatness!

Developing Restoration Priorities for the Great Lakes

Workshop Proceedings

Ann Arbor, Michigan
September 17, 2003



Preface

This proceedings document presents the outcome of a workshop held in Ann Arbor, MI on September 17, 2003. Titled, "*Restore the Greatness! Developing Restoration Priorities for the Great Lakes,*" the workshop was a cooperative effort of the Great Lakes Commission, Michigan Sea Grant College Program, and the Michigan Office of the Great Lakes. Funding was provided by the National Sea Grant College Program and the University of Michigan. The event brought together an array of participants representing various Great Lakes constituencies within the state of Michigan, most of whom expressed a desire to share their thoughts on ecosystem restoration priorities and on the planning processes needed to advance them.

The workshop was the first in a series of such events to be conducted throughout the binational Great Lakes region. The intent is to help inform and advance the development and implementation of priority actions to restore the Great Lakes basin ecosystem. Each workshop will feature a collaborative arrangement between the Great Lakes Commission, the relevant Sea Grant Program, and representatives of the governor/ premier in the host jurisdiction. Workshop outcomes will be shared with the region's governors/ premiers, other public officials, workshop participants and the larger Great Lakes community. A primary objective is to inform and advance the restoration efforts of the region's leadership.

The Council of Great Lakes Governors has assembled a Priorities Task Force that has identified a number of broad themes for restoring and protecting the Great Lakes. The workshop series, supported by the National Sea Grant College Program, will also provide an opportunity for Great Lakes constituents to review these restoration themes and inform their further development and implementation.

Acknowledgements

The Great Lakes Commission thanks Michigan Sea Grant and the Michigan Office of the Great Lakes for their valued role as partners in the design and conduct of this initial restoration priorities workshop. Through their sound advice and leadership, Drs. George Carignan and Jennifer Read (Michigan Sea Grant) helped ensure a successful event and coordinated the considerable resources of the University of Michigan and its School of Natural Resources. Ken DeBeaussaert, Michigan Office of the Great Lakes, carried Governor Granholm's message of interest in and support for the event, and assured participants that outcomes would enjoy careful consideration at the state and regional levels. David Naftzger, Council of Great Lakes Governors, is acknowledged for his support as well, and for ensuring that the workshop series is of maximum relevance to the Council's needs.

Special thanks are in order for Jon Dettling, Great Lakes Commission- Sea Grant Fellow, and Heather Kirshman, research assistant at Michigan Sea Grant. Jon is the primary author of the proceedings and received significant support from Heather, who also assisted in workshop organization and conduct. Recognition is also extended to the many individuals who assisted by serving as breakout group facilitators and recorders. (See Appendix A.)

Dr. Ron Baird, director of the National Sea Grant College Program, warrants special recognition for his personal support of this initiative and for facilitating his office's financial support for the workshop series.

Finally, thanks to all the dedicated individuals – almost a hundred in total – that joined us for a day of creative thinking and strategizing as we work to restore and protect the Great Lakes- the greatest system of freshwater on the face of the earth!

Sincerely,



Michael J. Donahue, Ph.D.
President/Chief Executive Officer
Great Lakes Commission

Table of contents

PREFACE	2
ACKNOWLEDGEMENTS	3
TABLE OF CONTENTS	4
I. BACKGROUND	5
II. PRESENTATIONS	7
III. RESPONSES TO QUESTIONS	11
QUESTION 1: WHAT ARE YOUR PRIORITIES FOR GREAT LAKES RESTORATION YOU WISH TO SHARE WITH THE GREAT LAKES GOVERNORS?	11
A. Water Resource Management, Withdrawals and Diversions.....	11
B. Aquatic Nuisance Species	11
C. Wildlife and Habitat	11
D. Toxic Contaminants	12
E. Areas of Concern and Other Toxic “Hot Spots”	12
F. Nonpoint Source Pollution	13
G. Land Use Planning.....	13
H. Sustainability.....	13
I. Commercial and Recreational Maritime Transportation	13
J. Water-based Recreation and Beaches	14
QUESTION 2: WHAT ADVICE DO YOU HAVE ON THE DESIGN AND IMPLEMENTATION OF A LARGE SCALE RESTORATION PLAN TO ADVANCE THE GOVERNOR’S PRIORITIES FOR THE GREAT LAKES ECOSYSTEM?	15
A. Public Education, Outreach and Participation	15
B. Science, Monitoring and Data Access.....	16
C. Funding.....	16
D. Institutional Arrangements.....	17
E. Accountability and Enforcement.....	17
F. Priority Setting.....	17
G. Policy Review and Research.....	18
H. Scale and Focus.....	18
I. Action Orientation	19
IV. GROUP BREAKOUT SUMMARY	20
V. SUMMARY AND CONCLUSIONS	21
APPENDIX A: WORKSHOP PARTICIPANTS*	23
APPENDIX B: INDIVIDUAL RESPONSES	24
APPENDIX B: INDIVIDUAL RESPONSES	25
APPENDIX C: GROUP BREAKOUT SUMMARIES	33

I. Background

This workshop was the first in a series of similar events to be held throughout the Great Lakes basin as part of a collaborative project between the Great Lakes Commission and the Sea Grant Programs in the Great Lakes region. The project, funded by the National Sea Grant Program is directed at advancing the Great Lakes ecosystem restoration efforts through the development of restoration priorities and ideas on how to implement them through a regional planning process.

In so doing, the project is providing the scientific and technical basis for the region's governors and premiers, in collaboration with the larger Great Lakes community, to develop a shared vision and the principles, goals, objectives and strategic actions needed to achieve that vision.

Project collaborators recognize that development of a Great Lakes restoration plan must be based upon sound science, and proceed with a clear understanding of ecosystem conditions and objectives, relevant research activity, and the science/policy/management linkages needed to achieve the plan's vision. This workshop, along with upcoming workshops in other Great Lakes jurisdictions and a companion project by the Northeast Midwest Institute, will provide the Great Lakes governors and premiers with detailed, science-based information needed to formulate, refine and advocate restoration priorities.

The workshop was organized into three sessions. In the first session, a number of presenters offered background information on the state of the Great Lakes ecosystem, highlighting issues ranging from ecosystem health to socio-economic considerations. Following this, the workshop was divided into six breakout groups, each of which was tasked with discussing the following two questions:

- What are your priorities for Great Lakes restoration you wish to share with the Great Lakes governors?
- What advice do you have on the design and implementation of a large scale restoration plan to advance the governors' priorities for the Great Lakes ecosystem?

At the conclusion of the breakout sessions, these groups were asked to identify the five most salient items that arose from their discussion of each of these two questions. In the final session of the workshop, the groups reported back in plenary on the outcome of their discussions.

In addition, participants were invited to present their thoughts on these two questions on response sheets. These responses (57 in total) were collected at the end of the workshop. This represented 243 distinct comments on the first question and 169 on the second. In addition, the minutes of the breakout sessions were recorded by each group on newsprint. These comments, along with the outcomes of the breakout group discussions, provide the basis for the proceedings document.

Participation in the workshop was excellent. Almost 100 individuals attended, representing a diversity of disciplines and interests as noted in Appendix A. The objective was not necessarily to reach consensus, but to capture the diversity of thoughts throughout the state on Great Lakes restoration needs and approaches. Section II of this

document summarizes the presentations from the first portion of the workshop. Section III summarizes the collective thinking of participants, while Section IV presents outcomes of individual breakout groups. A summary statement and conclusion are offered in Section V. The appendices contain a list of participants, a compilation of the individual responses to the questions, and summaries of each of the breakout groups.

II. Presentations

The workshop began with a number of presentations to provide background on the state of the Great Lakes and to stimulate thought among participants as they prepared to discuss ecosystem restoration priorities and associated planning approaches. Dr. George Carignan, director of Michigan Sea Grant, welcomed attendees and provided an overview of, and context for the workshop. He explained that Governor Granholm and the other Great Lakes governors are leading a region-wide effort to establish restoration priorities. These priorities are intended to guide effective and efficient resource allocation. Congressional legislative proposals are currently being debated in both the House and the Senate, and focus on Great Lakes restoration. The goal of this workshop is to gain broad public input into the priority setting process. A partner project is being conducted by the Northeast-Midwest Institute to analyze restoration plans in other regions and explore their applicability to Great Lakes restoration efforts.

The group was welcomed by Dr. Fawaz Ulaby, Vice President for Research at the University of Michigan, and Dr. Robert Huggett, Vice President for Research at Michigan State University. They both stressed the importance of the workshop and urged participants to develop a meaningful set of priorities and a system for successfully implementing them.

Dr. Michael J. Donahue, President/CEO of the Great Lakes Commission, briefed the group on the schedule for the workshop and the specific charge to the participants. This workshop is the first step in a large, multi-year effort. This effort will collect input from stakeholders in all Great Lakes states and provinces concerning restoration needs. The charge to the workshop participants is to provide input regarding the two major questions posed to them: what priorities for Great Lakes restoration should be established, and how might an associated plan be designed and implemented to advance them? He noted that event organizers are committed to capturing all ideas presented throughout the day. The speakers will not be offering a comprehensive overview of the state of the Great Lakes or their restoration, but will stimulate thought and help provide a uniform knowledge base for participants.

Ken DeBeaussaert, director of the Michigan Office of the Great Lakes, thanked the sponsors for hosting the event and participants for their attendance. He emphasized that the idea of developing a Great Lakes restoration plan is not new. There are numerous Great Lakes plans in existence. Missing is a comprehensive, overarching strategy to integrate these plans. That is the goal of today's workshop and the upcoming workshops. The Great Lakes restoration legislation presents a great opportunity. This workshop will be critical in informing Governor Granholm on these issues and on prospective state priorities. He concluded by noting that Michigan voters and politicians have repeatedly shown that Great Lakes protection is a major priority for the state.

Dave Naftzger, acting executive director of the Council of Great Lakes Governors, emphasized the interest of the governors in this process. The governors have assembled a Priorities Task Force which will develop an approach to guide Great Lakes restoration. Coordination is needed to make good use of limited resources. It is important to build on

efforts to date, incorporate broad public participation, foster sound public policy and sustainable behavior, and address the environmental issues of the present while anticipating the issues of tomorrow. He noted that Great Lakes jurisdictions have many new leaders with an opportunity to take important steps forward. Preliminary themes of the governors' priorities are:

- Ensure sustainable use of water resources while assuring that the states retain authority over water use and diversion
- Promote programs to protect human health against adverse effects of pollution
- Control pollution from diffuse sources, including land, water and air
- Continue to reduce the introduction of persistent toxic substances
- Stop introduction and spread of aquatic invasive species
- Enhance fish and wildlife by restoring and protecting coastal wetlands and fish and wildlife habitats
- Restore the environmental health of the Areas of Concern
- Standardize and enhance methods for collecting, storing and sharing information
- Adopt sustainable use practices that protect environmental resources and enhance the recreational and commercial value of the Great Lakes

Naftzger added that the region's governors are committed to devoting resources to restoration projects, and value the input these workshops will provide.

The first presenter was Dr. William Taylor, Chair of Michigan State University's Department of Fisheries and Wildlife, and associate director of Michigan Sea Grant. Dr. Taylor spoke about fisheries, invasive species and habitat. He stated that it is important to view the Great Lakes from a vantage point of ecosystem goods and services, using business concepts to evaluate the functioning of the system and its value to society. The fishing industry has a large economic value nationwide, for example, including \$4 billion annually in the Great Lakes region. There are numerous other values that can be assigned to the resource, including shipping, aesthetic values, health, and many others. All these values interrelate. When we think about what it costs to restore, we need to ask "What is the cost of not restoring? What is the cost to future generations?"

Dr. Taylor suggested the following as important actions to restore Great Lakes fisheries:

- Embrace an ecosystem perspective, and provide for assessment and monitoring programs
- Enhance research and outreach programs
- Fully appropriate funds for the Fish and Wildlife Restoration Act
- Stop introductions of invasive species
 - Authorize National Aquatic Invasive Species Act
 - Use ecologically sound controls
 - Initiate ballast water management practices
- Address habitat alteration and degradation
- Improve water quality and reduce sedimentation
- Initiate land use planning and address watershed level effects
- Recognize connections between tributaries and lakes
- Initiate soft engineering practices
- Improve forage fish abundance and nutrient value
- Share databases
- Work with partners (Habitat Advisory Board of the Great Lakes Fishery Commission, NGOs, etc.).

In addition, Taylor stated that the following points should be considered when addressing all aspects of Great Lakes restoration:

- Monitor and track progress
- Encourage transparent decision making
- Align institutional and ecosystem processes
- Appropriate legislation at full authorized levels
- Enhance cross-jurisdictional collaboration

Dr. James Diana, Associate Dean of the University of Michigan’s School of Natural Resources and the Environment, discussed the state of toxic cleanup and prevention in the Great Lakes. The Great Lakes basin has a long history of addressing water quality issues. Cholera epidemics were rampant in Chicago in the 1800s. Effluents from tanneries and sawmills were prevalent problems in the early 1900s. Today, issues such as atmospheric deposition and contaminated sediment are major concerns.

Dr. Diana described numerous ways that pollution of the Great Lakes affects the region’s economy. Two major economic sectors to consider are tourism and industry. Major tourism components dependant on water quality are fishing, swimming and boating. Industries with strong ties to water quality are food processing, metals, and the chemical and pharmaceutical industries, among others. In addition, invasive species, or “biological pollution,” costs regional industries millions of dollars per year. There are currently three main areas of focus for pollution cleanup and prevention efforts in the Great Lakes:

- Cleaning up Areas of Concern and other incidences of “legacy pollution”
- Reducing non-point source pollution, such as from urban runoff, agriculture and sewerage systems
- Reducing deposition of airborne pollutants, particularly persistent bioaccumulative toxics

Dr. Donahue spoke on sustainability and sustainable use of the Great Lakes. He began by stating that ecosystem restoration has multiple dimensions, including environmental, economic, social and cultural. All these dimensions need to be accommodated to achieve successful restoration. It is also essential to address the relationship between ecosystem restoration and sustainable use, as these are mutually interdependent. Restoration efforts will be futile if they do not include provisions for sustainable use. Dr. Donahue offered a provisional definition for sustainability, “a state of resource use that meets the needs of the present without compromising the ability of future generations to meet their needs.” His definition of restoration was presented as, “a reinstatement of beneficial uses in an ecosystem through projects and activities that improve environmental quality and ensure environmentally sound and sustainable resource use.”

Dr. Donahue explained that there are numerous socio-economic components of water resources. The Great Lakes waters are an important mode of transport; factor of production (e.g., manufacturing, agriculture); a supporting resource (e.g. fisheries, waterfowl, wetlands); and a marketable amenity (e.g. including recreational and aesthetic value).

Donahue suggested a range of considerations when developing plans and priorities to ensure sustainability of the basin ecosystem:

- A strong infrastructure for science, research and monitoring
- Methodologies to bring data and information, monitoring, modeling, and sound science to bear on sound public policy decisions
- Reliable long term funding for research institutions, both within and outside government
- Sustainable use laws, policies and programs, such as for water quantity management, air and water quality, land use policy and fisheries
- Inclusion of economic dimensions to ensure that businesses can thrive
- Gubernatorial leadership
- An inclusive process that involves all stakeholders
- Need to fully exploit existing laws, institutions, policies, programs and restoration plans as a basis for future activity
- A clear set of priorities to ensure efficient and effective allocation of resources
- Benchmarking and monitoring of goals and indicators
- A sustainable source of adequate funding

He concluded by noting that sustainability must be a critical consideration for restoration planning. Any plan must withstand the test of time, remain relevant as beacon for the future, represent a collective vision, and light the way to achieving that vision.

III. Responses to Questions

The breakout groups were tasked with providing feedback on the two questions below. These questions were posed to the workshop participants during the introductory comments. Individual responses to these questions were also solicited through worksheets that were collected at the conclusion of the workshop. This section of the proceedings presents a summary of themes that emerged from the responses to these questions.

Question 1: What are your priorities for Great Lakes restoration you wish to share with the Great Lakes governors?

A. Water Resource Management, Withdrawals and Diversions

A major restoration priority for the Great Lakes is managing the basin's water resources, including regulation of withdrawals and diversions. In addition to a handful of calls to ban water diversions outright, there were several requests for an improved diversion and withdrawal regulatory system. Some participants suggested expanding on the Great Lakes Charter Annex 2001 and on the riparian doctrine to achieve this. Another priority cited in this area is to gain an improved understanding on how the Great Lakes basin's surface water interacts with its groundwater and how changes in these can affect hydrologic functions. Programs that encourage water conservation were also supported by numerous participants.

B. Aquatic Nuisance Species

Among the most common responses was the prevention and control of aquatic nuisance species (ANS). A major focus in this area is the prevention of new ANS entering the system, as little can usually be done once they have entered and spread. Major control actions include ballast water policies, on-vessel technologies and dispersal barriers. Looking at other human activities that can result in introductions was also mentioned. Once introductions have occurred, a need was cited to identify what roles ANS are playing in the altered ecosystem and to adapt management policies accordingly. All of these measures were cited as necessary in protecting the ecological integrity of the Great Lakes.

C. Wildlife and Habitat

Wildlife protection and habitat restoration emerged from the workshop as prominent priorities. The protection of native species, particularly threatened or endangered species, was a recurrent theme. The status of these species can serve as indicators of ecosystem stability and function. An essential component of wildlife protection is habitat restoration. A wide array of habitat types were specified, including nearshore, offshore, coastal, inland, forested, dunes, beaches, islands and rivers. In addition to their wildlife benefits, these habitat types need to be preserved for the other functions they serve, such as water quality improvement and groundwater recharge. Some participants suggested developing regional inventories of habitats and species. These inventories could be used

to track habitat losses, threatened areas, and strategic locations for habitat restoration. Establishment of stopover sites for migratory flyways was also mentioned as a habitat priority.

Among the specific types of habitat, the coastal zone was mentioned most often. A need was identified to restore, stabilize and maintain shoreline. Development pressures and non-point source pollution pose threats to these areas. Preserving a portion of the coastline as wilderness was advocated. In addition to their inherent ecosystem values, coastal areas are important to tourism and other economic sectors.

Wetlands also were mentioned repeatedly as being major restoration targets. Easing the development pressures on these areas and reclaiming some that have already been developed are important. Wetlands serve valuable functions in providing habitat for waterfowl and other wildlife and by improving water quality. Coastal wetlands were cited as being particularly threatened.

Several participants raised fishery restoration as a high priority. Enhancing fisheries through habitat restoration, particularly nearshore habitat, and protecting food web dynamics were raised as key needs. For many species, traditional predator-prey relationships need to be reestablished. In addition, improving tributary habitat, such as by removing non-essential dams, was mentioned in several comments. The ultimate goal for fishery restoration is balanced and self sustaining fish populations.

D. Toxic Contaminants

Reducing the input of toxic contaminants to the lakes is a high priority issue. Continuation and strengthening of programs in this area, such as the Binational Toxics Strategy, was strongly supported. Decreasing emissions of air toxics in the region was a commonly mentioned priority, reflecting the fact that the major input to the lakes for many of the highest priority toxics is air deposition. Strengthening regulatory schemes in this area was advocated by several participants, as was determining how to account for and control long-range atmospheric transport of toxic substances. Mercury, in particular, was frequently mentioned. In addition, continuing research into emerging toxic pollutants was emphasized.

A major concern surrounding toxic contaminants is fish consumption advisories. Achieving fish that are safe to consume across the basin was a frequently raised priority. Consistency and validity of the fish advisory process was also a concern, and multiple people advocated a thorough study of this issue by the National Academy of Sciences.

E. Areas of Concern and Other Toxic “Hot Spots”

The remediation of historically polluted areas throughout the Great Lakes was a prominent priority at the workshop. Cleaning up Areas of Concern (AOCs) and reducing pollutant inputs to these areas were cited as essential actions for a restoration plan. Lack of funding for Remedial Action Plans (RAPs) was cited as a major impediment. In addition, cleaning up contaminated “hot spots” which are not currently listed as AOCs

was raised as a priority. Increasing the use of risk-based decision making was emphasized as an important consideration in implementing these efforts.

F. Nonpoint Source Pollution

Nonpoint source pollution was cited as a priority by a large number of participants. Sewerage issues, including combined sewer overflows (CSOs) and sanitary sewer overflows (SSOs), were a common theme. In addition, agricultural pollution runoff and fertilizer use are priorities. Phosphorous and oxygen demand were specifically mentioned. The impact that land use decisions have on nonpoint source pollution should also be targeted. Soil and erosion control in both the Great Lakes and their tributaries was mentioned as an additional priority.

G. Land Use Planning

Many participants recognized the substantial impact land use planning decisions have on Great Lakes water quality and quantity. Slowing development pressures, both industrial and residential, on undeveloped areas is an important ingredient of a Great Lakes restoration plan. Both coastal and inland areas are in need of such protection. Increased support for brownfield development and urban infill programs was supported, as were incentives that encourage responsible land use. Improving the understanding of how future population growth and land use patterns will affect resource use and environmental quality is seen as critical. Transforming this information into effective land use planning policies is a strongly needed area of focus for preserving the environmental quality of the Great Lakes basin. Multiple participants called for a state-wide or region-wide land use initiative to address this issue.

H. Sustainability

Sustainability issues were discussed in detail at the workshop. Achieving regional economic prosperity that is closely tied to the region's environmental quality is a major goal. Strengthening knowledge of the region's economy-environment link was cited as a method to help achieve economic support for restoration. Resource conservation and infrastructure development are also vital to the restoration effort. Programs supporting recycling, and environmentally friendly industries and transportation systems were advocated. Taking a life cycle approach to regional decisions was recommended. Additionally, the involvement of the Great Lakes basin's numerous cities as focal points of restoration efforts was suggested to improve the urban-natural interface.

I. Commercial and Recreational Maritime Transportation

A number of responses focused on Great Lakes navigation, both commercial and recreational. Improved infrastructure for shipping and recreation is an important way to ensure these activities continue in a way that is beneficial to the region's economy and environment. Concern was expressed that recreational boating facilities are too few, too crowded and of poor quality. Management of dredged material was also raised in several comments. There were calls to ban open-water discharges of dredged material and to purchase and retain adequate dredged material disposal sites. In addition, environmental dredging activities were recommended as an important means of restoring some

beneficial uses to AOCs. Some respondents called for expansion of the Great Lakes-St. Lawrence Seaway System, while others advocated eliminating ocean-going vessels from Great Lakes trade.

J. Water-based Recreation and Beaches

Many participants mentioned enhancing water-based recreational opportunities as a priority. In addition to recreational boating, use of beaches was a recurring concern. Cleaning up beaches, reducing the number of beach closings and preventing beach erosion are needed to maintain the lakefront as a valuable recreational resource. In addition, creating and maintaining opportunities for public access to the lakes, such as through public ownership of shoreline, was cited by several participants. As one participant noted, a restored Great Lakes will “provide for ecologically sound levels of public use, economic benefits, and the enjoyment of natural resources.” In addition, there were calls to take account of the aesthetic value of the lakes and their related natural systems.

Question 2: What advice do you have on the design and implementation of a large scale restoration plan to advance the Governor’s priorities for the Great Lakes ecosystem?

A. Public Education, Outreach and Participation

One overwhelmingly common response regarding the design and implementation of a Great Lakes restoration plan is that it should provide for significant public engagement. An informed and active citizenry was repeatedly described as not only desirable, but necessary to the success and viability of any plan. Outreach and communication efforts should be a significant component of all stages of the plan. The public has a strong interest and stake in this process and, if engaged, can be a valuable partner.

Without public support and involvement, successful restoration will be difficult. As one participant stressed, the public, as landowners, are the stewards of much of the land in the basin. In addition, they hold the responsibility for management of public lands and resources. Building political support for restoration actions was repeatedly mentioned as a benefit of a strong public outreach campaign. In one person’s words, “Only strong public sentiment will carry us forward.”

Education was also identified as a key component to plan design and implementation. The need for both child and adult education was repeatedly stressed. Great Lakes issues should be made a stronger part of the standard educational curriculum in the region. In many cases, children can be a good conduit for educating their parents. In addition, these issues should be continually raised in newspapers, television, and other regional media to ensure an informed and updated adult population. One participant emphasized the need to “make education a cornerstone so that future generations understand the value of the Great Lakes.”

A number of comments focused on the content of education and outreach efforts. A need was identified to make information available to the public in understandable formats and vocabulary. Having easy access to information, such as through a centralized website, is desirable. Informing people about what they can do to help the restoration effort and who they can contact is important. People can be made more aware of what actions they can take to benefit the ecosystem and prevent pollution. The public needs to know what restoration of the Great Lakes means, what it involves and why it’s imperative for each individual. Connections should be made to economics, social values and public health. In addition, outreach to those outside the region is important in raising awareness about the uniqueness and value of the Great Lakes ecosystem.

Education of professionals and development of the region’s “human resources” were also mentioned as crucial educational goals. Where possible, university students should be involved in planning and implementation to help cultivate informed regional leadership in the future.

B. Science, Monitoring and Data Access

A recurrent theme in the comments was the need for a robust and centralized system for environmental monitoring, scientific research, forecasting, and easy access to the resulting data. There was overwhelming support for a centralized, regionally coordinated information management and decision support system.

Perhaps the most strongly desired component of this system is improved monitoring programs throughout the basin. Needs were raised for improved monitoring of physical and biological parameters, ecosystem status, water quality and quantity, habitat and species indicators, and contamination. High quality monitoring is needed to establish baseline conditions, identify critical needs, and measure progress toward goals. Numerous participants noted the desirability of a centralized, comprehensive, real-time, online monitoring system. Compatibility of data collection and reporting methods across and within disciplines is also an important concern. Basin-wide standards for ecosystem monitoring, such as State of the Lakes Ecosystem Conference (SOLEC) indicators, could be more broadly implemented.

Closely tied to comments about monitoring was the need to ensure that actions are thoroughly grounded in science. There were several calls to strengthen the scientific basis for policy decisions and regional Great Lakes research institutions. Monitoring and scientific analysis were seen as important components of a system that would be able to forecast the impacts of ecosystem management decisions.

A large number of participants referred to a comprehensive decision support system that could integrate Great Lakes related data and information, make it broadly available, and provide value-added interpretations. Use of Geographic Information Systems (GIS) will be a central component of such a system. One participant summarized this sentiment, citing a need to “develop a multi-scale, interactive, understandable, easily accessible, visually oriented spatial decision support system that informs on present and past conditions and predicts implications of proposed actions.” There were many comments calling for easy public access for such a “database of databases.”

C. Funding

Workshop participants recognized that Great Lakes restoration will require a large amount of funding and offered a range of suggestions about how and where these funds should be directed. A large number of people mentioned the need to establish a long-term, stable funding source. Achieving a sustainable Great Lakes is seen as a multi-generational commitment and requires a restoration plan that is itself sustainable on this time frame. A large number of current programs were identified that were in need of enhanced funding. Prominent among these were the RAPs, water quality monitoring and enforcement, research programs, and outreach efforts. There was a realization that a large-scale, well researched plan will be highly efficient and therefore more cost effective than smaller, disjointed plans. Some potential sources of funds were also identified, including cleanup settlements and North American Waterfowl Management Plans. It was suggested that routing restoration funds through competitive grants will help increase broad participation and ensure high quality work.

D. Institutional Arrangements

The roles of existing institutions and laws and the potential for new ones was a large area of focus for the comments. The overwhelming majority of responses on this topic advocated an elevated role for existing institutions and mechanisms. Several people noted that fully funding and strengthening current programs should take priority over establishing new ones. Among the programs and institutions that were cited as needing an elevated or strengthened role were the International Joint Commission (IJC), Lakewide Management Plans (LaMPs), and the Great Lakes Water Quality Agreement (GLWQA). One participant suggested replacing the GLWQA, while several others recommended improving its implementation and updating its content.

Many participants called for better coordination among existing Great Lakes institutions. The handful of comments that referred to creation of a new institution referred to a multi-agency “task force” that would oversee and coordinate restoration planning and implementation. This sentiment was echoed in a large number of comments stressing the need to use current structures in a more coordinated fashion. A common theme was the need to “utilize existing mechanisms and organizations under a new, single, inclusive structure.” This structure should include input from all relevant agencies and stakeholders. There were many calls to improve communication and coordination among existing agencies to increase efficiency and avoid overlap. In addition, partners in Canada need to be closely engaged and involved in all stages. A binational plan was seen by many as essential. In addition, involvement of tribal authorities / First Nations was repeatedly called for. There were recommendations to “work with other regions, where appropriate, on shared priorities.” The experience of regions such as the Chesapeake Bay could provide valuable guidance.

E. Accountability and Enforcement

Two common and closely linked themes emerging from the workshop were the needs for the plan to have clear mechanisms for enforcement and accountability. In addition to improved enforcement of current requirements, such as air and water pollution control laws, some participants cited the need for new efforts to have clear enforcement components. There were a few suggestions to vest enforcement authority in a regional agency. Enforcement mechanisms were seen as one component of accountability. Accountability requires clear planning, setting of goals with measurable outcomes, and establishing deadlines. A system of enforcement with penalties and rewards was repeatedly cited as necessary in ensuring accountability for achieving restoration goals. As one response stated, “Vest authority in a group so there is responsibility and accountability for implementation.” Improving enforcement and accountability was mentioned both in the context of strengthening existing institutions and in creating a new regional agency or “task force.”

F. Priority Setting

A substantial number of participants described the initial planning process as being critical to the plan’s success. People stressed a need to identify and prioritize areas of focus, develop indicators, and set goals. Several people described the importance of establishing common basin-wide standards and targets. Benchmarks for improvement

need to be set and actions formulated to achieve those benchmarks. In addition, many participants recognized the need to establish priorities among the various goals and programs of the restoration plan. This is needed so that the number and complexity of the issues involved does not impede progress toward the most vital restoration goals. One possibility is to develop a tiered priority list, with the most immediate restoration priorities receiving increased funding for immediate action. Keeping the priority list flexible to account for emerging opportunities and improved science was also mentioned. Several people voiced a concern about setting goals reasonably, noting that pre-European settlement conditions are in many ways unachievable.

Numerous participants called for establishment of quantifiable benchmarks to allow progress toward goals to be tracked over time. This will facilitate assessment, evaluation and enforcement. Establishment of benchmarks (including timelines) was encouraged for wetland restoration, fish contamination, mercury emissions, AOC delisting, and beach closings, among other priority areas.

G. Policy Review and Research

Another important activity in the early stage of plan development is to review the effectiveness of past and current restoration policies and actions in both the Great Lakes basin and other ecosystems. Seeing what has worked well in the past and what has failed is an important process in designing a restoration plan. Understanding why some measures succeed and why others fail will inform better policy planning in the future. Recognizing the similarities and differences between the Great Lakes and other ecosystem restoration activities (such as the Chesapeake Bay and Everglades) is important when adapting aspects of these programs. In addition, some participants identified policy areas where creativity is needed due to the uniqueness of the Great Lakes system. Examples are water use policies, such as expansion of the riparian doctrine and further development of Great Lakes Charter Annex 2001, and policies for achieving sustainability and preservation of a system as expansive as the Great Lakes, such as designating it a National Priority Area or “permanent protected area.”

H. Scale and Focus

Workshop participants had various perspectives on plan scale and focus; some recommended a broad ecosystem-wide approach while others preferred a local approach. As one participant commented, “A large scale success must be based on layers of small scale successes.” Another reminded us not to “forget the power of small scale programs and partnerships to inspire bigger successes.” A multi-scale restoration project would pair the necessity of working toward restoration on the local level, where many critical decisions are made, with the synergies achieved by ecosystem-wide coordination. The basin-wide efforts must make informing and empowering local decision makers a priority.

Many participants emphasized the importance of achieving consensus and support for a single Great Lakes restoration plan. This plan should involve the input and involvement of all the involved states, provinces, nations, tribes, and other interests.

I. Action Orientation

Another shared sentiment at the workshop was the need to begin restoration actions in the near future. Although there may be benefits to further planning, critical actions should not be postponed by further research and deliberation. There were many comments concerning the need to avoid “terminal planning” and “waiting for the perfect plan.” Participants expressed a sense of urgency in initiating a restoration plan and were eager to assist in the process.

IV. Group Breakout Summary

Workshop participants had an opportunity to discuss their priorities and recommendations for Great Lakes restoration in a group setting. The groups were organized to achieve a diversity of backgrounds in each. The groups were asked to identify the five most salient themes from each of the two questions posed to participants. These themes identified by the groups are presented here in no prioritized order. Detailed summaries of the discussions from each breakout session can be found in Appendix C.

Restoration Priorities	Implementation Advice
<ul style="list-style-type: none"> • Invasive species control, prevention, and elimination, including a binational ballast water treaty. Improved understanding of altered ecosystems and adaptive management • Fish and wildlife restoration, including coastal, nearshore and wetland habitat • Land use planning, including coastal preservation, brownfield development and urban infill • Water use, withdrawals and diversions, and interactions of ground and surface water • Habitat inventory • Addressing legacy/historical pollution in AOCs and other “hot spots”, including contaminant cleanup and remediation of contaminated sediments • Watershed health and management • Air pollutant control, especially mercury and long range transport • Education, awareness and marketing of the Great Lakes • Elimination of persistent bioaccumulative toxics • Balanced and self-sustaining fish populations • Consistent data collection and reporting methods • Nonpoint pollution, including CSOs and SSOs • Decision support system for the Great Lakes with continuous monitoring and assessment • Measurable goals for pollution prevention and cleanup, such as for delisting of AOCs, toxic emission reduction and polluted sediments 	<ul style="list-style-type: none"> • Develop better basin wide management for restoration efforts, including adaptive management principles • Build on existing actions, capabilities and knowledge • Be inclusive in process planning and implementation, diverse stakeholders • Educate and involve citizens across all interest sectors • Enforcement of regulations and accountability for results • Ensure an economic base sufficient to support plan • Develop short-term priorities in addition to large-scale, long-term plan. • Develop multi-agency coordination among tribal, state, national and international entities • Couple research, monitoring and assessment with restoration. Set restoration benchmarks and monitor scientifically for long-term trends • Adequately fund science and research infrastructure • Define “restoration” or desired future • Streamline and improve accountability of governmental processes • Look to other models of successful restoration projects • Develop accessible and comprehensive databases • Consider use of sanctions and incentives • Recognize the Great Lakes basin as a National Priority Area • Use risk based decision making for sediment clean-up • Increase public access to information • Allow the priority list to be flexible to capitalize on opportunities • Enforce existing laws uniformly across the basin and evaluate their effectiveness • Apply any new laws uniformly across the basin • Revise the Great Lakes Water Quality Agreement

V. Summary and Conclusions

Workshop participants offered a substantial number of suggestions concerning the identification of Great Lakes restoration priorities and their inclusion in a plan that would advance and guide efforts to address them. Significantly, a relatively small number of recurrent themes emerged. One major theme was protection of the basin's wildlife and ecological integrity through actions such as habitat restoration, invasive species prevention, and coastal zone and wetland restoration and conservation. Strengthening the region's capability to manage its water resources was a dominant theme, especially concerning withdrawals and diversions. Addressing pollution issues in the lakes was also a major focus of responses. Remediation of sites of historical pollution (e.g., AOCs) was a common theme, as was preventing toxic pollution, especially through airborne routes, and addressing non-point source pollution from sources such as agricultural operations and sewerage systems. Other prominent items were regional land use planning, sustainability in the Great Lakes region, maritime transportation and recreational boating issues, and other recreational uses of the lakes.

The fact that such a large and diverse group of stakeholders identified a relatively small number of themes is an indication of a large degree of unity throughout the state concerning what issues need to be addressed most forcefully in planning for restoration of the Great Lakes basin ecosystem. There were surprisingly few contradictory comments concerning what regional priorities should be.

Workshop participants provided recommendations for designing and implementing a Great Lakes restoration plan. Several themes were consistent across the large majority of participants. The plan must have a substantial focus on public education and outreach. It must engage and involve the public and a wide range of stakeholders in decision making and implementation processes. The array of existing Great Lakes programs and institutions must be the foundation for any planning activity, and the focus should be on fully funding, coordinating and strengthening this current institutional infrastructure. Recommendations for improving the operation of current programs included establishing an overarching regional "task force" and improving the enforcement and accountability of the current mechanisms. There were many calls to ensure that Great Lakes restoration be organized under a single unified plan that is informed and supported by all interests, including both nations, all states, provinces, tribal authorities, First Nations, and the public. In addition, the plan needs to integrate actions at the regional scale with those at the local scale.

The first stage in the restoration process should be the establishment of priorities and development of measurable benchmarks for achieving them. There was overwhelming support for a comprehensive, regionally coordinated data storage and decision support system that integrates monitoring, analysis and forecasting of Great Lakes conditions and allows public access to such information. Strengthening Great Lakes science institutions was also strongly advocated. One final theme that emerged from the workshop was the need to act quickly. An overarching plan is important, but there are sufficiently articulated priorities that demand action now.

Workshop participants agreed that the structure of the restoration plan will largely determine its effectiveness. It is clear from the enthusiastic participation at the workshop and the quality of the comments received that Michigan has a large body of interested participants eager to contribute their ideas, time and effort to planning and executing the actions needed to achieve a restored Great Lakes basin. Michigan workshop participants made it clear that they recognize the necessity to coordinate a single restoration effort that incorporates the needs and abilities of stakeholders and jurisdictions throughout the basin. Participants look forward to hearing the priorities and recommendations of the other Great Lakes jurisdictions, and encourage the Great Lakes governors and premiers, as well as other policy leaders and decisionmakers to consider them.

Appendix A: Workshop Participants*

- Adlerstein, Sara, University of Michigan – School of Natural Resources and the Environment (3)
- *Adriaens, Peter, University of Michigan (4)
- Andersen, John E., The Nature Conservancy, Great Lakes Program
- Bartholic, Jon, Michigan State University (2)
- Basiji, Alex, Environment Canada (5)
- Batie, Sandra, Michigan State University
- Becker, Mary Lynn, Canadian Consulate General (3)
- Beeton, Alfred, Great Lakes Environmental Research Laboratory(6)
- Bennett , Julie Metty, Great Lakes Fishery Trust(6)
- Boik, Bill, Michigan Department of Natural Resources (5)
- Bondy, Doug, International Joint Commission
- Brandt, Stephen, Great Lakes Environmental Research Laboratory (2)
- Bratzel, Marty, International Joint Commission (1)
- *Breederland, Mark, Michigan Sea Grant (6)
- Burrows, Mark, International Joint Commission (2)
- Carignan, George, Michigan Sea Grant
- Chu, Xuefeng, Annis Water Resources Institute, Grand Valley State University (1)
- Coon, Tom, Michigan State University
- Corgan, Christine, Clinton County Conservation District (1)
- Coscarelli, Mark, Public Sector Consultants Inc. (5)
- Czarnecki, Craig, U.S. Fish and Wildlife Service (1)
- DePinto, Joseph V., Limo-Tech, Inc. (2)
- Dettling, Jon, Great Lakes Commission (5)
- Diana, James, University of Michigan
- Dobson, Tracy, Michigan State University (3)
- Donahue, Michael J., Great Lakes Commission
- Elbing, Lauri - University of Michigan – School of Natural Resources and the Environment (3)
- English, Frank, Michigan Charter Boat Association (4)
- Eshenroder, Randy, Great Lakes Fishery Commission (5)
- Fang, Andrew, Kieser and Associates (6)
- Fetterolf, Carlos, Sea Grant (4)
- Francis, Anthony, University of Michigan (6)
- Gannon, John E., International Joint Commission (3)
- *Gillespie, Nat, University of Michigan – School of Natural Resources and the Environment (2)
- Glassner-Shwayder, Kathe, Great Lakes Commission (6)
- Gustafson, David, Dow Chemical Co. (3)
- Habib, Bahi, City of Detroit Water and Sewage Dept.
- Hamilton, David A., Michigan Department of Natural Resources (4)
- Hartingh, Vicky, Macomb County Health Dept (6)
- Huggett, Robert, Michigan State University (4)
- Iversen, Christine M., Weston Solutions of Michigan Inc. (1)
- *Jadd, Christopher, University of Michigan – School of Natural Resources and the Environment (1)
- Johengen, Tom, University of Michigan - Cooperative Institute for Limnology and Ecosystems Research
- *Kasat, Rahki, University of Michigan – School of Natural Resources and the Environment (6)
- Kautz, Joe, Conservation District - Sanilac County (2)
- Kautz, Stacey, Conservation District - St. Clair County (3)
- Kavetsky, Bob, U.S. Fish and Wildlife Service (2)
- Kelly, Thomas M., Inland Seas Education Association (3)
- Kerfoot, W. Charles, Michigan Technological University (5)
- Kivikko, Renee, Land Trust Alliance, Midwest Program (5)
- Kozubal, Krioti, City of Bay City (5)
- Krantzberg, Gail, International Joint Commission (4)
- Kuper, George H., Council of Great Lakes Industries (2)
- Lake, Mary Beth, Michigan Groundwater Stewardship Program (1)
- Lee, Taehwan, University of Michigan - Museum of Zoology (1)
- Lewis, Brent, Kettering University
- MacDonagh-Dumler, Jon, Great Lakes Commission (5)
- Madigan, Kate, Public Interest Research Group In Michigan (6)
- Madsen, Barbara, University of Michigan (1)
- Marks, Douglas, Macomb County Water Quality Board (1)
- McCarthy, Terri, Wege Foundation (6)
- Merckel, Kenneth E., Michigan Steelhead and Salmon Fishermen's Association
- *Meyers, Philip A., University of Michigan (2)
- Morrissey, Lewis A., University of Michigan
- Myers, Philip , University of Michigan

* An asterisk identifies participants serving as breakout group facilitators or recorders.

Numbers indicate breakout group assignments

Proceedings – Michigan Workshop – Restoration Priorities for the Great Lakes

- *Norton, Dick, University of Michigan (3)
- O'Donnell, Patty, Great Traverse Band of Ottawa and Chippewa Indians
- O'Foighil, Diarmaid, University of Michigan (3)
- O'Keefe, Gary, U.S. Army Corps of Engineers (5)
- Pearsall, Douglas R., The Nature Conservancy (1)
- Peter, Adriaens, University of Michigan
- Petry, Donna, Conservation District - Wayne County
- Phenicie, Dale, Council of Great Lakes Industries
- Pistis, Charles, Michigan Sea Grant (2)
- Read, Jennifer, Michigan Sea Grant
- Ryan, Jill, Tip of the Mitt Watershed Council
- Schwartz, John E., Michigan Sea Grant (3)
- Sellinger, Cynthia, Great Lakes Environmental Research Laboratory (1)
- Shaffer, Ruth, United States Department of Agriculture Natural Resource Conservation Service (4)
- *Short, Joe, University of Michigan – School of Natural Resources and the Environment (5)
- Sinha, Sanjiv K., Environmental Consulting and Technology, Inc. (4)
- Smith, William E., Clinton River Area of Concern Public Advisory Committee (5)
- Snider, Van W. Jr., Michigan Boating Industries Assoc. (3)
- Song, Gang, City of Detroit Water and Sewage Dept. (6)
- Stoermer, E.F., University of Michigan – School of Natural Resources and the Environment (2)
- Sullivan, Vera, Conservation District - Wayne County (5)
- Swan, Dick, Lake Michigan Fishery Advisory Committee (4)
- Talbot, Brian, University of Michigan Business School(4)
- Terry, Russell, Ducks Unlimited (6)
- Thomas , Vicki, U.S. Environmental Protection Agency (6)
- Todd, Thomas, U.S. Geological Survey Great Lakes Science Center (3)
- Ulaby, Fawwaz, University of Michigan
- *Webb, Paul, University of Michigan (1)
- Wieting, Scott, Hannahville Indian Community
- Woods, Michael, Green Peace (2)
- *Wyns, Dan, University of Michigan – School of Natural Resources and the Environment (4)
- *Yaffee, Steven, University of Michigan (5)
- Zavislak, James, Thunder Bay Watershed Council (2)

Appendix B: Individual Responses

This listing presents the verbatim comments of workshop participants as submitted on the comment sheets.

Question 1: What are your priorities for Great Lakes restoration you wish to share with the Great Lakes governors?

Water Resource Management, Withdrawals and Diversions

- Insure water usage/withdrawal for individual and industry use
- Regulate water use, withdrawal, and diversion
- Ban water diversion
- Establish stable water levels
- Groundwater/surface water interactions and protection
- Adequate consideration for how changes in water resource statutes impact the hydrologic functions and provide protection for the functions.
- Evolution of riparian doctrine
- Sustainable water use, better water resource management and water conservation
- Theft of Great Lakes Waters (illegal diversion, ballast tanks).
- Protection of water quality and quantity
- Water quantity issues - communication and cooperation between users
- Need for a more regional approach to water management in the State and other Great Lakes
- Develop use standards per Annex 2001

Aquatic Nuisance Species

- Preventing new ANS / controlling existing ANS
- Stability in aquatic ecosystems - restoring native species complexes
- Stop the spread of exotic species through ballast water policies and canal policies
- Ecological integrity
- Treat ballast water discharges to destroy microorganisms.
- Changing biodiversity of the Great Lakes, interference in the food web
- Address human activities that facilitate the introduction of invasive species
- Identify roles of invasive species in altered ecosystems
- Keep international ships out of the Great Lakes
- Zebra Mussel

Wildlife and Habitat

- Habitat restoration and protection
- Reestablish nearshore habitats
- Offshore habitat restoration
- Inland habitat restoration and continued protection
- Watershed habitat restoration
- Forested watershed conservation
- Protection of natural areas
- Protecting sand dunes from mining
- Protection and restoration of barriers beaches, islands, and dunes
- Dam removal
- Fish and wildlife health/contamination
- Migratory flyway - stopover sites: protection and restoration
- Biodiversity and native species
 - biodiversity
 - inventory and monitoring of biodiversity
 - promote natural, self-sustaining populations for native species within their historic
- Endangered species
 - habitat sustainability of biota - threatened and endangered species
 - restoring/rehabilitating habitats necessary to support state and federally listed species
 - recognize state and federally listed species as “canary in the coal mine”
- Emphasis should be on habitat with the understanding not all habitats can be restored to some perceived original state; rather they can be rehabilitated
- Provide for stewardship (appropriate management) and monitoring of “protected” and restored (habitats) - funding and accountability
 - coastal zone issues
 - coastal zone ecosystem protection
 - restore, stabilize and maintain shoreline
 - development pressures on coastal zones

- habitat loss in coastal zones
- non-point source pollution in coastal zones
- the condition of our coastlines directly impacts the tourism industry and other sectors.
- maintain natural coastal ecosystem diversity functions and productivity (coastline leads basin restoration)
- maintain wilderness shoreline
- Wetlands
 - wetlands - restoration and maintenance
 - development pressures on wetlands
 - restore coastal wetlands
 - by 2010 restore or enhance 100,000 acres of wetlands
 - restoration of wetlands and associated uplands to provide habitat for waterfowl and other wildlife
- Fisheries
 - establish balanced and self sustaining fish populations
 - enhance fisheries
 - restoration/creation of fishery habitat
 - improve near-shore fisheries habitat
 - restore whitefish populations and other fish populations

Toxics Contaminants

- Mercury
- Phase out of mercury emissions by 2020 and meaningful timeline and benchmarks to achieve this
- By 2007 reduce conc. of PCB's in lake and walleye by 25%
- Major review by National Academy of Sciences on the Fish consumption advisories
- Study emerging chemicals
- Eliminate / reduce toxic substances
- Edible fish
- Control air emissions and air deposition of toxics
- Fish consumption advisory coal fired power plants (Mercury Reduction)
- Environmental contaminant clean-up with emphasis on NRDA, take into account the damages incurred by fish and wildlife resources subjected to these pollutants
- Stronger policies for airborne pollutants/enforcement
- Continue to abate impacts of pollutants and contaminants
- Pollution prevention

Areas of Concern and Other Toxic “Hot Spots”

- Clean up AOCs (delist)
- Clean up of polluted hot spots / contaminated sediments
- Clean up and delist 3 AOCs with a total of 10 by 2010. Clean up all sites by 2025
- contaminated sediment remediation, especially in-land rivers and streams
- How to deal with contaminated systems connected to the Great Lakes that are not classified as AOCs (Mona Lake, Lake Macatawa, etc.)
- More funding appropriated to clean up AOC (implement RAPs)

Nonpoint Source Pollution

- Reduce/eliminate loading from nonpoint sources
- Sewage / CSO / SSO
- Agricultural pollution
- Fertilizer
- The influence of land use change on nonpoint source pollution
- The role of internal loading of phosphorus in drowned river mouth systems
- Point source pollution
- Sedimentation and erosion control not only in the Great Lakes but also the tributaries leading to them as those tributaries greatly affect the water quality at the lakes

Land Use Planning

- Offer tax breaks for those that follow sustainable planning efforts
- Development pressures, industrial and residential
- Establish 300,000 acres of buffer strips in agricultural lands
- Shoreline development - upland development impacts
- Protection of ecologically - sensitive GL coastal areas and wetlands through coordinated, effective land use planning (that values natural habitats and ecosystems and the benefits they provide)
- Engage municipal and land use decision makers in planning that accounts for water/ecosystem quality protection
- Support watershed and land use planning throughout Great Lakes
- Support and promote Brownfields Redevelopment and Urban Infill
- Low impact Development incentives
- Support land use as an alternative to run-off management

Proceedings – Michigan Workshop – Restoration Priorities for the Great Lakes

- Minimize land use impact from ecological standpoint
- Improved planning to prevent sprawl which directly effects water quality
- Better land use laws and policies, and effective enforcement

Sustainability

- Work toward a sustainable economy within a sustainable ecosystem
- Economic sustainability (tourism, industry, agriculture)
- Focus on sustainable development needs of the basin over the next 5-6 decades including: 1) infrastructure - sewage treatment, power generation, transportation, 2) economic base - manufacturing, energy management 3) husbanding natural resources - water, raw materials, 4) human resource development - education.
- Regional, multi-state recycling efforts
- Maintain sustainable use of resources
- Sustainability
- Green industry/transportation
- Biodiversity and cultural diversity and tradition (i.e. holistic life cycle approach)
- Sustainable practices/activities even everyday choices

Water-based Recreation and Beaches

- Beaches :
 - swimable beaches
 - beach cleanups- much debris, animal waste etc. if affecting the quality of our water and our lives as we try to enjoy the lakes. public awareness is a key factor in controlling this issue
 - making the Great Lakes somewhere where you can swim and enjoy the beach
 - by 2010, 90% of Great Lakes beaches well be open 95% of the time
- Enhance recreation
- Public access
- Provide for ecologically sound levels of public use, economic benefits, and the enjoyment of natural resources

Commercial and Recreational Maritime Transportation

- Ban all open water dredging spoils disposal.
- Designate dredging spoils disposal sites (purchase and retain)
- Environmental dredging
- Great Lakes-St. Lawrence Seaway expansion
- Boating facilities are too crowded, of poor quality

Miscellaneous

- Reconnect natural tributary and lake systems
- Connections between nearshore and offshore
- Co-management of natural resources
- Provide/upgrade infrastructures to meet clean-/treatment needs.
- Aesthetic value - difficult for economy ecological models
- The use of “soft” engineering practices in areas of need
- Integration of ecology and economics
- Improve understanding and prediction of impacts of tributary inputs to food-web dynamics and water quality
- “1000” more ecologically informed decision by state and mainly local leaders and citizens to wisely maintain and improve the environment for both business and ecologically.
- Restore chemical physical and biological integrity of the Great Lakes basin ecosystem
- Research for new technology for remediation and field testing of technology (promotion of environ. technology)
- Need to catch up on deficiencies of the past - almost total ignorance of many parts of Biota
- Continuous funding for “real” research
- Awareness of what’s “natural” (Great Lakes water cycle/level) and adaptability
- Infrastructure coordination - delivery mechanism/framework/someone in charge to deliver
- Headwaters management – to be defined and included as a restoration goal

Question 2: What advice do you have on the design and implementation of a large scale restoration plan to advance the Governor’s priorities for the Great Lakes ecosystem?

Public Education, Outreach and Participation

- Restoration efforts must include strong public education component to build public awareness and understanding
 - outreach and communication as significant part of each project, including research

Proceedings – Michigan Workshop – Restoration Priorities for the Great Lakes

- public awareness/education/ communication must be a key component of any initiative undertaken. Only strong public sentiment will carry us forward.
- massive education and promotion so that everyone, even the public is on the same page to restore, protect, and creating and following land use laws/ordinances
- make education a cornerstone so that next generations understand the value of the Great Lakes - any progress here should result in activities that suffer no backslide in future decades
- Education efforts should target both kids and adults
 - work on outreach to adults, K-12 schools, get “freshwater ecosystems” far more integrated into the K-12 curriculum, so students get facts, ways of thinking, value, and they tell their parents.
 - build a base of “watchful” and “helpful” kids and adults - get them involved with data collection, monitoring, finding answers.
 - grass roots and multi-level education
- Use simple language in educational efforts
 - use understandable, straight forward language to identify objectives and goals to gain public understanding and support of process
 - avoid overly “techie” advocacy tendencies (they hinder public support)
 - market the plan to a broad audience and in lay terms wherever possible
- Educate landowners to promote stewardship
- Education to build political support
 - create awareness of importance of issues and concerns; ownership of issues and commitment to participation and action to effect solutions (i.e. political will to act)
 - create political will to act and take ownership
 - support Lake friendly politicians
- Content of educational materials
 - start with public education - develop ongoing communication/information campaign covering what we need to do, how we will do it, how you can help, and who you can contact
 - educate public as to importance of ecological issues to each person
 - educate the public about what restoration means: broadcast- print-web - schools - libraries - nature centers- tourism publications
 - education on the values of wetlands and the role they play in the Great Lakes ecosystem and in society and economy
 - publicize successes
 - public outreach – storm water permitting issues - make more efficient and realistic for LUB’s, educate public officials and market the urgency of the issue to the public
 - public education of issues and roles in pollution and protection
 - once again “soft” engineering practices and making people aware of the impact that they have on the lakes when they don’t use these practices
 - education - tell how great the lakes are
- A central web site to list restoration work plans (not enough time for us to prepare if we hear only from newspapers, radio and TV)
- Include events, illustrations, problems, and successes in local TV News coverage
- Changing the image of the Great Lakes both in Michigan and the world. This would be good for business (economy in general)
- Let affected entities know who is doing restoration work and why types of work will be done. For example, when dredging sediment from Lake St. Clair, let us know. Monitoring research by Wayne State U. was only known to us by newspaper.
- Open, inclusive process - all stakeholders present from initiation point
- Increase public participation in Michigan Department of Environmental Quality oversight
- Make sure all interests are actively involved
- frequent and on-going public participation
- Convene representative of all sectors to identify sustainable development issues they anticipate and build an agenda accordingly
- Be open to suggestion!
- Be certain to include all interested parties in deliberation and decision-making (based on water use/non-use values)
- Avoid alienating water user groups
- Balance of interests - recreational, wildlife/ecosystems, commercial
- Public-private partnerships are used and fostered
- Getting industry support, engagement
- Get sportsmen engaged in data collection, interpretation
- A framework that includes: a) corporate social responsibility; b) governance that includes a mix of command and control, voluntary interests, and economic instruments; c) basic eco-efficiency (also pollution prevention); d) facilitate change; e) dialogues and partnerships; f) informed consumers; and g) innovation

Science, Monitoring, and Data Access

- Must include monitoring component
 - it must include science-based, long-term monitoring/observations to measure effectiveness of restoration efforts in the context of large-scale natural variability
 - monitoring and assessment of physical and biological parameters
 - monitoring to develop knowledge base for work - rec’d more data and evaluation of progress
 - adequately monitor Great Lakes ecosystem to provide benchmark and document changes and establish goals
 - institutionalize large scale measurement and monitoring, to enable ecological forecasting and policy response
 - couple monitoring with restoration efforts
 - monitor and evaluate progress toward goals (closed circle)
 - require that all funded projects incorporate monitoring

- fund planning, implementation, and monitoring
- comprehensive monitoring and assessment
- expand the program for monitoring water, habitat and species to track changes, identify problems, and verify progress
- institutionalize continual monitoring and testing
- ecosystem monitoring
- monitoring, a comprehensive real time online monitoring system that works from the premise “If you can’t measure it you can’t manage it” trend analysis and spot checks do not protect drinking water intakes from terrorists, mistakes, and illegal dumping. Water is the basic effect level, which the currently monitoring actions are not effectively detecting
- assessing and monitoring status of the system
- monitoring/data – need to track progress and define NQT steps
- institutionalize continuing program of monitoring and assessment. It is a disaster we have no real estimates of phosphorus loading to the lakes beyond the 1980s!!
- funding for consistent water quality testing
- need to set targets, establish and track indicators so we can know how well we’re doing.
- monitoring of ecosystem health status (and reporting)
- closer watershed monitoring - this is what directly effects our lakes so we need to correct those problems first
- It must be science-based
- System for forecasting changes and implications of management decision
 - develop a multi-scale (spatial) interactive, understandable, early accessible, visually oriented Spatial Decision support system that informs on present and past conditions and predicts implications of proposed actions. (include optimization and risk components)
 - Great Lakes observation and ecosystem forecasting system
- Couple research with restoration efforts
 - invest some of restoration funds in rebuilding Great Lakes science and research infrastructure
 - establish a strong independent research unit - “Woods Hole of the Midwest”
- Need for a centralized region-wide information base
 - Great Lakes basin-wide GIS-based data base - contain geographic state indicator, pressure indicator, and response indicator data.
 - develop a means to coordinate the various efforts and information that already exists within the Basin. The issues have been researched and information obtained for many years.
 - environmental data (e.g. water quality monitoring data, GIS data, sharing among states; and their accessibility by the public and researchers)
 - integrate information across ecosystems
- Harmonize indicator development, measurement, reporting, data, endpoints
- Strong support/cooperative effort with observation network
- Pick an agency – mandate delivery system which reaches to the local level using
 - design mechanism to plan and implement and communication
 - who’s in charge
 - assessment
 - monitoring
 - feedback loop

Funding

- Adequate, long term, sustainable funding
 - long term commitment-invest for long term, even at short term expense
 - take a multi-generational view
 - create a design that could be self sustaining not requiring maintenance and constant upkeep in money, through the state. (Example: start a buffer strip program that the grasses could be harvested once a year and be sold by the land owner).
- Fund cleanup of AOCs
- Look at division of funding - percentages based on 4-5 main priorities: 1) research 2) outreach/education/communication/ legislative education 3) restoration projects 4) project evaluation and reports
- Faster process for recovering funds from court cleanup decisions
- Dedicate funding to accomplish the enforcement agency and task force goals
- Fully fund current authority
- Fund more research/outreach
- Significant resources are required for long-term, focused research so that a) restoration efforts can be science based and effective; b) changes can be forecast in the context of natural variability and c) restoration can be cost-effective and prioritized on the basis of sound scientific advice.
- Adequate funding of Michigan Department of Environmental Quality and agencies to enforce clean water laws
- Funding for water quality monitoring
- Availability of financial resources for restoration projects
- Commitment of intellectual and financial support
- We don’t need a large scale restoration plan; we need adequate funding for each individual watershed to solve their own most important environmental issues; and modification or creation laws and institution to facilitate this
- GAO missed or skimmed over significant funding sources for Great Lakes restoration that must be tapped into

Institutional Arrangements

- Create a “task force” to oversee restoration
- Design a task force that includes representative from all states and Canada to formulate the regulatory laws necessary to accomplish the goals established by the Task Force.
- Establish federal/state/tribal task force to establish goals and priorities (binational)
- Multi-disciplinary, multi-agency task force to oversee implementation organized around functions much like an emergency pollution response - planning -finance - logistics - operations. Cut through bureaucracy and focus on operational efficiency. Its done that way in emergency clean-up operations and the lessons learned can be extended to long term clean up
- Perhaps a joint agency accepted by all to implement restoration based upon information collected
- Establish Great Lakes as permanent protected area
- Consider a new (replace the GLWQA) bi-national sustainable development agreement that embraces restoration priorities
- Use existing plans and institutions
 - focus on executing existing plans - implementation - not more planning
 - involve many groups that are already in place-each with their own expertise. They could include many great environmental groups now existing.
 - build on existing plans
 - consider and utilize existing Great Lakes plans
 - improve on existing co-operation/organizations
 - do not reinvent the wheel - take advantage of previous plans as much as possible - avoid duplication of effort and starting an isolated process
 - use existing plans (conservation, restoration) to guide priorities
 - don't reinvent the progress. Continue the progress – we've made much and need to build on it.
 - should utilize existing mechanisms and organizations under new, single, inclusive structure
- Give oversight responsibilities and authority to well-defined existing organizations
- Strengthening the IIC? (advisory/should they be given power?)
- Our primary venue for binational cooperation is the Water Quality Agreement. The substance of the Agreement maybe out-of-date but its structure and governance mechanisms remain sound. We should continue to build on this structure and initiate the process of updating the substance. We don't want to create a new - duplicate institutional structure.
- Implement Annex II of the Great Lakes Water Quality Agreement and add enforcement. Annex II needs to reviewed, updated with 21st century technologies to prioritize what has the biggest benefit.
- Coordination of existing programs, research a la Chesapeake Bay
- Reduce and streamline federal and state efforts, make these more “continuous mission”
- MI Dept of health should have implementation policy
- Build on lake basin-oriented - LaMPs (SOLEC)
- Encourage/explore means of restoration other than legislation as well as new technologies and ideas for clean up and prevention.
- Integrated multi-agency management and research
- Establish an on-live collaboration process with in the professional community and with a section for public involvement
- Need a coordinated effort entire watershed, currently very disjointed.
- Realize that habitat conservation and H₂O quality are directly linked – lots of initiatives / programs are available benefiting both.
- Tribes/states/U.S./ Canada
- Work with coalitions (across states, provinces, both national governments.)
- Improved coordination of state, federal, local and tribal programs
- Encourage/foster partnerships at all levels of government, private sector and public and across boundaries
- multi-state, regional networking needs full development
- Require cross-jurisdictional cooperation
- Create strong alliance with all entities working together for Great Lakes restoration
- Increase cooperation; delegate; avoid overlap
- An agreement on institutional arrangements to formalize validate existing network and collaborative efforts, and create cooperative arrangements.
- Create partnerships and appropriate scale of pieces/programs that will comprise action
- Work with other regions where appropriate, on shared priorities
 - avoid distraction of jurisdictional conflict; join with other regions when priorities are shared. For example, if storm water management represents a critical priority for Great Lakes and Chesapeake. Bay, work together on this issue
 - work with other basins (Chesapeake) on common priorities
- The effort must be binational
- Binational cooperation is very critical for Great Lakes restoration to succeed

Accountability and Enforcement

- Create mechanisms for accountability through measurable outcomes
- Concrete deadlines, goals, penalties/rewards
- Form an accountable delivery system
- Vest authority, accountability for planning and implementation in a respected entity
- Vest authority in a group so there is responsibility and accountability for implementation/getting things done.
- Enforcement of current pollution laws and control measures
 - enforcement of current **air** pollution laws
 - stronger policies for airborne pollutants/enforcement
 - close gap in Clean Air Act for old coal burning power plants, enforce new source review (Not Clear Skies), increase standards for all four (NO_x, SO_x, CO₂, Hg) pollutants.

- enforcement of current **water** pollution laws
 - enforcement of Clean Water Act and pollution reductions
 - adequate funding for Michigan Department of Environmental Quality water enforcement
- Uniform state laws and commitment to enforcement among the Great Lakes states and provinces
- Authorize an enforcement agency with watershed-wide authority to enforce the laws

Priority Setting

- Define the goal, vision and acquire consensus on the priorities
 - the goals should be ecosystem-based and have a defined timeframe
- Establish common basin-wide standards and targets
 - set benchmarks of improvement and set in place steps to reach those benchmarks
 - develop system to prioritize and follow priorities in restoration.
- Concentrate on addressing a few priority issues
 - avoid the “squeaky wheels”; stay focused on the big picture
 - focus on the key issues which are of mutual concern to all involved.
- Establish restoration as the major goal
- Deal with source of problems first
- Be realistic about goals – it does not necessarily have to be pre-settlement conditions.
- Use available indicators (air, water, wildlife)

Policy Review and Research

- Review policy for sustainable usage
- Develop use standards per Annex 2001
- Rehabilitation of the Great Lakes commenced in the 1970s. Actually much was accomplished when one realizes the degradation of the lakes in the 1950s to 1960s. It would be useful to understand the successes we have had. What has worked and what have been our failures? Those who ignore history are subject to repeat failures. Need to evaluate present legislation and laws, federal and state, to determine if gaps occur, what can do to strengthened, sources of funds.
- Research and quantify economic benefits of Great Lakes remediation
- Review successes and failures

Scale and Focus

- It must be an ecosystem plan
- More biologists working on the total ecosystem
- Work watershed wide and not just coastal areas
- Revamp institutions to enable their operation on an ecosystem basis
- Define “ecosystem approach” and implement all restoration within that context
- Consider restoration in the context of the system as a whole
- Involve local communities
- Funding for smaller entities for restoration efforts of tributaries and coastal shoreline.
- A large scale success must be based on layers of small-scale successes. Don’t forget small (520k) project programs like the U.S. Fish and Wildlife Service’s Coastal Program. Small, nimble project programs like these get the citizen busy in through participation and marshal seed money to make successes that can be exported to other areas within the Great Lakes basin
- Don’t forget power of small scale programs/partnerships and the use of volunteers to inspire bigger successes
- We don’t need a large scale restoration plan. We need adequate funding for each individual watershed to solve their own most important environmental issues; and modification or creation laws and institution to facilitate this.
- Single Plan
 - well-coordinated “single voice.”
 - development of a Great Lakes Master Plan
 - the large number of players and the size of the area under consideration lends itself well to addressing large-scale pollutant inputs and problems in a coordinated fashion.
 - must have one plan for all states, provinces, nations and interests.

Take Action

- Action is needed now; cannot wait for further research / planning
 - much planning has already been completed. It’s time to focus on implementation. NAWMP is a proven model that could be followed.
 - work on the things you know about now, do not wait for a perfect plan
 - get it done! (1 yr max timeline) and don’t let it sit on a shelf – no terminal planning
 - make the commitment to go ahead
 - we know what needs to be done; we don’t need further research on minute details
 - focus on executing existing plans: implementation; not more planning
 - actions are needed - have been talking, studying these for years. Cannot make any of these above another – all connected

Specific Actions

- Credit new incentive for private land conservation; local, state, provincial, federal incentives and program (e.g. tax incentives, purchase programs, cost shares)

Proceedings – Michigan Workshop – Restoration Priorities for the Great Lakes

- Involve university departments and undergrad/grad students with design and implementation. Those in school now will be left with task of implementing in future - involve students now in process.
- Close gap in Clean Air Act for old coal burning power plants, enforce new source review (Not Clear Skies), increase standards for all four (NO_x, SO_x, CO₂, Hg) pollutants.
- Implementation of state wide land use initiative
- Naming of Great Lakes basin as a federally-recognized National Priority Area by both U.S. and Canada. (Like Chesapeake Bay or Everglades)
- Develop safe treatment for ballast water

Miscellaneous

- Employ true environmental adaptive management principles
- Accept inevitability and prepare to adapt to future ecosystem changes (e.g., lake levels, invasive species)
- Manage use of shorelines but avoid artificial protection
- Accept that cleanup of historical pollution is hazardous in itself, is often unwise, and is unlikely to be cost-effective
- Recognize/focus on urban interface - Detroit, Chicago, Cleveland, Duluth, etc. represent areas of restoration utility
- To create infrastructure - use a variety of drivers - economic, human, health, societal.
- Hydrologic system/natural systems how to evaluate models/lake and transport
- Watershed management - U.S. geopolitical lines
- Design for success implementation - lake committees

Appendix C: Group Breakout Summaries

Group One

The group had several priorities to share with the Great Lakes governors. There is a need for clearly articulated restoration goals that are mutually accepted. Shoreline stabilization and development is of concern, particularly northern Lake Michigan. Land is of importance in maintaining water quality. Inland lakes often get neglected. It is important to think of the Great Lakes as an integrated ecosystem – all water is connected (not just open water). Migratory flyway and stopover sites need to be addressed. The known stopover sites are threatened by development and degradation.

Headwater management of watersheds is top priority, which includes stream bank stabilization. The Green Code needs to be updated and re-written. We need continued assessment and monitoring of restoration goals, more coordination of the Great Lakes groups, and greater knowledge of the impacts of water quantity and quality.

There is need to examine the economics of the restoration situation. The plan can be mutually beneficial to all involved. There should be emphasis on relationship of economic and environmental stability. With regard to education, it is not just higher education and research education, but also elementary education that should be a focal point. Invasive species prevention and control are very pressing threats. Prevention as a priority will potentially avoid future costs. Awareness of these issues should be created so people take ownership of the issues and commit themselves to act. Watersheds should be used as political boundaries.

Outreach to non-environmental groups is important. Diversity is not just important in relation to species (biodiversity), but also includes human cultures, and groups. Traditional knowledge should be drawn upon in addition to western science. Non-traditional partners should be involved to capture cultural diversity in addressing basin issues. The region should take a holistic, life-cycle approach to these issues. The sustainability of Great Lakes ecosystems (overarching theme of Great Lakes restoration) should include four broad categories: biota/biological, physical, chemical, and people.

The governors need to coordinate with interstate agreements to see what has been done and what is being done. A database and monitoring system is needed for restoration management. Authority and accountability need to be vested in an entity that they can deal with these issues (i.e., Great Lakes Commission, International Joint Commission). There are 1800 units with planning authority within Michigan. Restoring is one side of the coin; the other side is to protect.

Group Two

The group's five recommendations for actions toward restoration are:

1. Decrease delivery of point source contaminants;
2. Decrease delivery of non-point source contaminants;
3. Separate storm and municipal sanitary sewage systems;
4. Restore shoreline to “natural” conditions; and
5. Identify roles of invasive species in altered systems.

Restoration should focus on the chemical, biological and physical integrity of Great Lakes basin. Land use planning needs to engage municipal land use decision makers to account for ecosystem protection.

Restoration needs to be a regional effort, maintaining natural coastal ecosystem diversity, functions and productivity. It should promote natural, self-sustaining populations of native species within their historic ranges. The goal should be to achieve ecologically sound levels of public use, economic benefits and the enjoyment of natural resources. Small-scale programs and partnerships and the use of volunteers have the power to inspire bigger successes. There is a need for some type of continuous funding for small scale research. The Great Lakes needs a basin-wide observation and ecosystem forecasting system. The region also needs agreements on institutional arrangements; there are a lot of existing networks that aren't formalized.

Infrastructure, sewage treatment, power generation, and transportation systems are all sources of contamination. It is important to recognize the economic base itself, including the manufacturing base on both sides of the border. Human resource development plays a large role in how this restoration effort will succeed. Education systems need to be re-evaluated, including methods and content. The focus should be on the entire watershed, not just "hot-spots". An economic base is needed that is sufficient to support environmental health and develop a short-term agenda to address acute needs.

Group Three

There are seven recommendations that the group found equally important:

- Clearly defined desired future;
- Education at all levels with media;
- Streamline accountability of government;
- Look for successful model;
- Substantial and stable funding;
- Explore use of sanctions and;
- Comprehensive and accessible database.

More specifically, a clear definition is needed of the desired outcome of Great Lakes restoration. The group developed focus areas for several broad restoration topics. Habitat alteration should look at wetlands, water loss and invasive species. Coastal land use should focus on shoreline access, dependent versus non-dependent uses, aesthetics and development. Habitat alteration should include wetland and water loss, and invasive species. Watershed health and management must involve watershed-based land use planning and improved government collaboration. Contaminant cleanup and pollution control needs to include fish issues, toxic sediments, and beach closing/containment advisories. There is also a strong need for public awareness and stewardship.

Group Four

Five top priorities were selected:

- An invasive species-ballast water bi-national treatment program needs to be established. This requires a stronger, better-organized voice from the environmental side.
- There is a need to recognize the global nature of the air emissions problem and develop regional control. This should start by building a regional support base, and then expand to a

national and, finally, an international level. Initially, the focus should be on continuing sources of emissions. How pollutants get to the lakes needs to be better understood.

- Cleanup should be prioritized by determining what the continuing sources of contaminated sediments are. Areas of Concern need to be priorities. More funding and research is needed to determine whether it is safer to leave sediments in place or to remove/treat them.
- Education and marketing are needed for image improvement. We should focus on tourism, fisheries, size, physical attributes, aesthetics, and more to promote Great Lakes education and to show how GREAT they are! Educating both Congress and the public will help. Get message out to boaters and homeowners on lakes. Starting in schools, get the masses interested by targeting young audiences. Include Sea Grant in educational program to get information disseminated.
- Water usage and diversion may be inevitable. It is necessary to have a plan of protection and of action for when it happens.

The following is advice on the design and implementation of a large-scale restoration plan to advance the governors' priorities for the Great Lakes ecosystem:

- Establish the Great Lakes as a National Priority Region. This influences nearly every other issue. Organizations will allow for more funds to flow to the Great Lakes region. Cooperation and organization between groups will have many benefits and make other issues more readily achievable. Coalition building between state, federal, and binational cooperation is required. One cannot manage part of a basin effectively; it must be the whole basin. Tribal considerations are also an important group to include.
- It is necessary to define what restoration means in the Great Lakes context. Where are we going, what is the goal? How clean is clean? Developing criteria and metrics to achieve goals is critical. Long-term monitoring is required to track progress. Prioritizing what sites to cleanup first is important. What sites are continuing sources of pollution? Using cost-benefit type analysis to allocate efforts could improve efficiency of actions. It is important to get the most out of an investment.
- Stable funding sources are critical to long-term stability. It is necessary to upgrade infrastructure using new funds, which may come from establishing the Great Lakes region as a federally recognized national priority.

Group Five

The goal of Great Lakes restoration should be to achieve beneficial uses of the Great Lakes ecosystem that are socially and ecologically sustainable. This needs to be a unique arrangement of institutions with accountability and authority. Prioritization cannot be a one-time thing—it must be revisited. Long term planning and adaptive management are essential.

The group has numerous recommendations for this process:

- Continue the clean water and clear air acts that are already in effect;
- Support existing brownfield redevelopment and urban infill programs and promote additional urban infill;
- Eliminate and prevent invasive organisms;
- Establish balanced and self-sustaining fish populations;
- Data gathering is of utmost importance, not just gathering, but international compatibility;
- Encourage sustainable use of water;
- We need a monitoring program to assess and evaluate the data we gather;
- Ban all open water dredge disposal;
- Acquire upland lands for disposal locations;

- Educate public officials and market the urgency of these issues to the public;
- Create a Great Lakes interstate institution empowered to implement the restoration plan;
- Persistent toxic substances should be eliminated and reduced at their source;
- Reduce or eliminate loading from non-point sources (different from persistent toxics).
- Stress implementation of Annex 11 of GLWQA;
- Establish lake water levels for the purpose of banning or regulating any diversions;
- Restore predator-prey relationships in the lakes system;
- Maintain or establish wilderness shoreline;
- Address urban and suburban issues such as runoff and stormwater;
- Establish permanent research and study centers looking at the relationship of Great Lakes resources to basin institutions—economic, social, and political; and
- Ensure stringent accountability for plan execution.

Group Six

The restoration plan should include plans for ridding the Great Lakes of aquatic and terrestrial nuisance species. It should institutionalize continuous programs of modeling and assessment with stable funding. Habitat protection and rehabilitation should include a watershed-wide focus on wetlands and grassland buffers and other valuable ecosystems components. *Measurable* pollution prevention and clean-up goals (very specific) should be in place. It is essential to protect Great Lakes water as a *regional* resource. Constant, sustainable funding is needed before implement a plan can be developed. Diverse stakeholders need to be included in creating the plan such as: scientists, business, economists, and the private sector. A coordinated effort across the entire watershed is critical. A key issue or rallying point would help to get people coordinated on a regional basis. Public involvement and education are instrumental. The public and other stakeholders need to be made aware of what measures are being taken. Specific programs for each targeted group (professional, general public, and children) would be ideal. The priority list should be flexible so it capitalizes on what is politically relevant at the time. The priorities should include everyone that can contribute and keep them at the table with some sort of incentive. A lot of plans are already done; there is a need to start implementing existing plans and find funding. All states/provinces should have an equal share in the outcome, but different monetary commitments are needed from different sources.

Appendix 3:

Minnesota Workshop Proceedings

Developing Restoration and Protection Priorities for Lake Superior

Proceedings

Duluth, Minnesota
June 30th, 2004



Preface

This proceedings document presents the outcomes of a workshop held in Duluth, Minnesota on June 30, 2004 entitled, "*Lake Superior Restoration and Protection Priorities*". The workshop was a cooperative effort of the Minnesota and Wisconsin Offices of Governors, Minnesota Sea Grant, and Wisconsin Sea Grant, Minnesota Department of Natural Resources, Minnesota Pollution Control Agency, Wisconsin Department of Natural Resources, the Council of Great Lakes Governors, and the Great Lakes Commission. Funding was provided by the National Sea Grant College Program and the Great Lakes Commission. The event brought together an array of participants representing various Great Lakes constituencies within the states of Minnesota, Wisconsin, and Michigan, all of whom shared their thoughts on ecosystem preservation and restoration priorities and on the coordination processes needed to advance them.

The overall intent of these workshops held across all the Great Lakes states is to help inform and advance the development and implementation of priority actions to restore the Great Lakes basin ecosystem. The outcomes of these workshops will be shared with the region's governors, premiers, other public officials, workshop participants and the larger Great Lakes community. A primary objective is to provide insight to the region's leadership. The Council of Great Lakes Governors has assembled a Priorities Task Force and has identified nine broad themes for restoring and protecting the Great Lakes. The workshop series also provided an opportunity for Great Lakes constituents to review these protection and restoration themes and influence their further development and implementation.

Acknowledgements

The Great Lakes Commission thanks Minnesota and Wisconsin Sea Grant, the Minnesota Department of Natural Resources, the Minnesota Pollution Control Agency, and the Wisconsin Department of Natural Resources for their valued role as partners in the design and conduct of this workshop.

Special thanks are in order for planning committee representatives - Carl Richards (MN Sea Grant), Pat Carey (MN Pollution Control Agency), Cindy Hagley (MN Sea Grant), Jim Weseloh (MN Dept of Natural Resources), Diane Desotelle (MN Sea Grant), Tricia Ryan (Minnesota's Lake Superior Coastal Program), Nancy Costa (Fond du Lac Reservation), Jeff Cook (Duluth Township), Keith Hanson (MN Power), Gene Clark (WI Sea Grant), and Linda Talbot (WI Dept of Natural Resources). Also, Peter Johnson, Council of Great Lakes Governors, is acknowledged for his support and for ensuring that the workshop series is of maximum relevance to the Council's needs. Special thanks go to the Minnesota Environmental Partnership for sharing the results of their forum addressing similar issues (Appendix D).

Recognition is also extended to the many individuals who assisted by serving as breakout group facilitators and recorders (Appendix A). Dr. Ron Baird, Director of the National Sea Grant College Program, warrants special recognition for his personal support of this initiative and for providing financial support for the workshop series. Finally, thanks to all the dedicated individuals (Appendix A) that joined us for a day of creative thinking and strategizing as we work to restore and protect the Great Lakes- the greatest system of freshwater on the face of the earth!

Sincerely,



Michael J. Donahue, Ph.D.
President/Chief Executive Officer
Great Lakes Commission

Table of Contents

<i>Preface</i>	2
<i>Acknowledgements</i>	3
<i>Table of Contents</i>	4
<i>I. Background</i>	5
<i>II. Presentations</i>	7
<i>III. Responses to Breakout Session I</i>	11
<i>General Conclusions</i>	11
<i>Individual Group Comments</i>	13
<i>IV. Responses to Breakout Session II</i>	16
<i>A. Ensure the sustainable use of our water resources while confirming that the States retain authority over water use and diversions of Great Lakes Waters</i>	16
<i>B. Promote programs to protect human health against adverse effects of pollution in the Great Lakes ecosystem</i>	16
<i>C. Control pollution from diffuse sources into water, land and air</i>	17
<i>D. Continue to reduce the introduction of persistent bio-accumulative toxics into the Great Lakes ecosystem</i>	18
<i>E. Stop the introduction and spread of non-native aquatic invasive species</i>	19
<i>F. Enhance fish and wildlife by restoring and protecting habitats and coastal wetlands</i>	20
<i>G. Restore to environmental health the Areas of Concern (AOC) identified by the International Joint Commission as needing remediation</i>	22
<i>H. Standardize and enhance the methods by which information is collected, recorded and shared within the region</i>	22
<i>I. Adopt sustainable use practices that protect environmental resources and may enhance the recreational and commercial value of our Great Lakes</i>	23
<i>V. Summary and Conclusions</i>	25
<i>Appendix A: Workshop Agenda</i>	27
<i>Appendix B: Workshop Participants</i>	29
<i>Appendix C: Individual Responses</i>	32
<i>Appendix D: Minnesota Environmental Partnership Forum Summary</i>	41
<i>Appendix E: Governors’ Restoration Priorities Press Release</i>	47

I. Background

This workshop was the sixth in a series of similar events being held throughout the Great Lakes basin as part of a collaborative project between the Great Lakes Commission, Council of Great Lakes Governors, and the Sea Grant programs in the Great Lakes region. The project, funded by the National Sea Grant Program, is directed at advancing Great Lakes protection and restoration efforts through the development of protection and restoration priorities and ideas for their implementation through a regional process.

Project collaborators recognize that development of a Great Lakes restoration plan must be based upon sound science, and proceed with a clear understanding of ecosystem conditions and objectives, relevant research activity, and the science/policy/management linkages needed to achieve the plan's vision. This workshop, along with workshops in other Great Lakes jurisdictions and a companion project held by the Minnesota Environmental Partnership (see Appendix D), is providing input from the broader Great Lakes community into this process to develop a shared vision and provide the principles, goals, objectives and strategic actions needed to achieve that vision.

A planning committee was developed to provide feedback during the organization and planning of the workshop. Planning committee representatives included:

Carl Richards – MN Sea Grant
Cindy Hagley – MN Sea Grant
Diane Desotelle – MN Sea Grant
Nancy Costa – Fond du Lac Reservation
Keith Hanson – MN Power
Linda Talbot – WI Dept of Natural Resources

Pat Carey – MN Pollution Control Agency
Jim Weseloh – MN Dept of Natural Resources
Tricia Ryan – MN Coastal Program
Jeff Cook – Duluth Township
Gene Clark – WI Sea Grant

The workshop was organized into two different breakout sessions. The first breakout session's goal was to discuss the Council of Great Lakes Governors' nine priorities (presented in Appendix E) and provide feedback on the following questions:

1. What are the major themes or needs for Lake Superior and where should they be placed within these 9 priority areas?
2. Are there other conservation and restoration priorities for Lake Superior's basin that you wish to share with the Council of Great Lakes Governors?
3. What are the top 3 priorities from the Governors' list?

The goal of the second breakout session was to examine each of the Council of Great Lakes Governors' priorities in more detail to determine:

1. What are some action items specific to Lake Superior for each priority?
2. What interest groups should be involved in implementing these action items?
(Includes groups such as local government, business and industry, education, resource management agencies, etc.)

The second session went for two rounds to give people a chance to provide input on their

choice of two of the governor's nine priorities. Each facilitator worked on the same priority for both rounds, consolidated and summarized results from the two rounds, and reported results to the whole group.

In addition, ample opportunity was given to provide written comments. Comment sheets were provided at the tables before, during and after the breakout sessions. These individual comments are compiled in Appendix C.

Ninety-seven people attended the workshop; an excellent turnout considering the small population in this area relative to other areas of the Great Lakes. The attendees represented a diversity of disciplines and interests as noted in Appendix B. Categorized by affiliation, the 97 participants broke out as follows: 25 from state management agencies or government, 21 from education/research, 15 from local government (including staff), 14 from nonprofits, 8 from the federal government, 5 listed no affiliation, 3 from international organizations, 3 from tribal, and 3 from the private sector. The objective of the workshop was to capture their ideas and issues concerning the protection and restoration needs and approaches for Lake Superior.

Section II of this document summarizes the presentations from the first portion of the workshop. Section III summarizes the collective thinking of participants during the first breakout session. Section IV summarizes the collective thinking of participants during the second breakout session. Conclusions are provided in Section V. The appendices contain the workshop agenda and charge to breakout session participants; list of participants; compilation of individual comments; a summary of results from the Minnesota Environmental Partnership forum held to discuss similar issues; and the Council of Great Lakes Governors' press release announcing their nine priorities for Great Lakes restoration.

II. Presentations

The workshop began with a number of presentations to provide background on the state of the Great Lakes, and Lake Superior in particular, to introduce the Council of Great Lakes Governors' nine priorities and to stimulate thought among participants as they prepared to discuss protection and restoration priorities for the region.

Participants were welcomed by Dr. Carl Richards, Minnesota Sea Grant and Dr. Anders Andren, Wisconsin Sea Grant. In his talk, Dr. Richards welcomed the participants and set the goals for the workshop. His talk emphasized the following:

- The importance of the combined Minnesota-Wisconsin workshop for addressing issues relevant to Lake Superior restoration and protection priorities.
- How the outcomes of the workshop would be used; i.e., they will be captured in proceedings documents with the other Great Lakes states to be shared with Great Lakes leadership and the entire community of stakeholders in the interest of promoting consensus and unity of purpose in restoration and protection initiatives across all the Great Lakes states.

Dr. Andren discussed:

- Wisconsin's decision to hold three separate workshops to reflect the differences in issues faced by Lake Superior and Lake Michigan and to reduce travel distances for workshop attendees.
- A similar effort organized by the Great Lakes mayors.
- The difficulty in defining restoration. There is not one definition of restoration, as it is a young science, and communities need to decide what state they wish to restore to, i.e., pre-settlement or somewhere in between. However, restoration can generally be thought of as an improvement of the ecological structure and function. The NOAA Coastal Ocean's Program framework provides a useful definition of restoration:

The process of re-establishing a self sustaining habitat that in time can come to closely resemble a natural condition in terms of structure and function.

Dr. Michael Donahue, President/CEO of the Great Lakes Commission, provided a regional overview on the role of the Great Lakes Commission and the specific charge to the participants. This workshop is the sixth of eight workshops across the Great Lakes States to collect input from stakeholders in the Great Lakes region concerning protection and restoration needs. He emphasized:

- Effort has been motivated by other successful efforts in this realm (e.g., the Everglades) and bills supporting the Great Lakes that lie before Congress.
- Results will be synthesized and products provided to the regional leadership, Great Lakes community, and Congress.
- There is a commitment to capture all ideas presented through the workshop.
- The Great Lakes Commission in support of the Council of Great Lakes Governors can synthesize the workshops as one strong, harmonized voice to help show the common need for moving forward to protect and restore the

Great Lakes basin.

Chuck Ledin, Wisconsin Department of Natural Resources and Council of Great Lakes Governors, introduced the nine priorities. He explained:

- The importance of coordination to make good use of limited resources.
- The importance of building on efforts to date, incorporating broad public participation, fostering sound public policy and sustainable behavior, and addressing the environmental issues of the present while anticipating the issues of tomorrow.
- That the nine governors' priorities were intended to be broad-based.

The Nine Priorities

- ❖ Ensure the sustainable use of our water resources while confirming that the States retain authority over water use and diversions of Great Lakes waters.
- ❖ Promote programs to protect human health against adverse effects of pollution in the Great Lakes ecosystem.
- ❖ Control pollution from diffuse sources into water, land and air.
- ❖ Continue to reduce the introduction of persistent bio-accumulative toxics into the Great Lakes ecosystem.
- ❖ Stop the introduction and spread of non-native aquatic invasive species.
- ❖ Enhance fish and wildlife by restoring and protecting habitats and coastal wetlands.
- ❖ Restore to environmental health the Areas of Concern (AOC) identified by the International Joint Commission as needing remediation.
- ❖ Standardize and enhance the methods by which information is collected, recorded and shared within the region.
- ❖ Adopt sustainable use practices that protect environmental resources and may enhance the recreational and commercial value of our Great Lakes.

Following introductions, Nancy Costa, Fond du Lac Reservation Water Projects Coordinator, and Chuck Ledin, Wisconsin Department of Natural Resources, provided the keynote addresses on Lake Superior restoration and protection issues.

Ms. Costa described the tremendous amount of work already done on the Great Lakes basin, particularly Lake Superior. Inter-jurisdictional agreements and treaties go back to 1909; over the last 100 years issues on water quantity and quality have been discussed, monitored, and surveyed. She emphasized:

- The importance back then, as now, for the International Joint Commission (IJC) to speak as a single voice by providing investigations, determinations and recommendations to the nations. The original 1972 Great Lakes Water Quality Agreement (amended 1978 and 1987) brought to public attention the need for elimination of persistent toxicants and restoration of Areas of Concern (AOCs).
- The role of the Binational Executive Committee (BEC) in coordinating the international aspects of the Water Quality Agreement. The BEC includes representations from federal governments, states, provinces, tribes, and local governments to help with management planning.

- The role of the Water Quality Agreement framework as amended in 1987 in setting up the AOC and Remedial Action Plan (RAP) process.
- The binational agreement of 1991 was made to protect and restore the Lake Superior basin. Lake Superior is the least degraded of the Great Lakes and there is a great need for protection, as well as restoration. Lake Superior has a higher standard for persistent bioaccumulative toxicants (zero discharge) as well as a broader ecosystem approach. Both the work group (technical participation) and forum (public participation and outreach) make recommendations and help to implement the Lakewide Management Plan (LaMP) for Lake Superior. LaMPs are designed in four phases 1) problem identification; 2) load reductions; 3) remedial options; 4) monitoring of pollutants until they are eliminated. The Lake Superior LaMP (2004) was released in the last 6 months. The reporting and documenting of pollutants is the main piece. In addition, developing sustainable behavior has been set as a higher priority.
- Progress made on the St. Louis River RAP (published in 1992, followed by a progress report in 1995). The RAP provides 43 recommendations for projects related to the Governors' nine priorities. In 1996, the St. Louis River Citizen's Action Committee (SLRCAC) was formed to carry the work forward. Some of the recommendations relate to Area of Concern Superfund sites; these areas have great potential for opportunities beyond clean-up as funds may be available for protection, education, and outreach. One of most prominent pieces of work prepared by the SLRCAC is the St. Louis River Habitat Plan. It not only is very descriptive of the plant communities, habitat types, fish spawn areas, plant and animal communities of special concern, etc., but the areas have been mapped in GIS, allowing for better visual clarity and outreach materials. The document has been used extensively to consider potential planning and restoration efforts.
- Another prominent and recent document – the Lake Superior Basin Plan – is a partnership of state, county, and local efforts to plan for Lake Superior's North Shore. The planning process used a watershed assessment protocol developed by the U. S. Forest Service to measure the regional vulnerability parameters of North Shore watersheds. This helps decision makers and citizens prioritize the best type of land use practices for any particular watershed. Implementation of the plan has begun.

Ms. Costa pointed out that from her brief overview, one can get a sense of the remarkable depth and breadth of organizations working to address goals for Lake Superior. Within the framework of these binational agreements Lake Superior has led the way on many fronts, e.g., the LaMP, SLRCAC, coordinated agency/partner commitments.

Ms. Costa pointed out that the Everglades restoration effort received eight billion dollars for 16 counties and an area of 18,000 sq. mi. In contrast, the Great Lakes basin is 94,000 square miles of open water, includes 18% of the world's freshwater, and has 33 million people residing in the watershed on the U.S. side alone. There is a long history of industrialization along with binational agreements to manage and protect the resources. Right now there is a funding request to make sure that dollars already authorized in the past continue to be allocated. She emphasized that we need to think bigger and make our

voices heard for Lake Superior and the rest of the Great Lakes. She concluded with the theme that we need to speak together on the issues of concern so the governors and mayors can fight for full appropriations to address the protection and restoration needs in the Great Lakes basin.

Mr. Ledin followed Ms. Costa by suggesting:

- That we are careful not to jump too quickly to conclusions of what needs to be done. The “high” priorities of cities vary across the basin and too often representatives and senators will include independent authorizations for their own personal priorities.
- That we speak with one voice and work together to make it happen. Lake Superior is a planning model that has been adopted by the other lakes. There is a sense here of what needs to be done, but we need to get to a higher resolution in order to provide specific cost details for each project. EPA Administrator Mike Leavitt has stated that he wants to design a process that will continue through any administration. The Council of Great Lakes Governors’ priorities are a starting point. We need to develop details of what is needed for these priorities. All groups (state, county, and local government, nonprofit, private sector, etc.) need to provide input to build a consistent plan.
- The importance of moving forward toward implementation when adequate information is available to do so. We should not let planning hold us up.

III. Responses to Breakout Session I

Following the introductory talks and a short break, participants broke into nine groups. In this session, each group was asked to work together to determine their top three priorities from the Council of Great Lakes Governors' (CGLG) list of priorities (see Table 1 below for list).

In addition to identifying their top three priorities, groups used the limited time available to discuss major needs for Lake Superior, determine where those needs fit within the 9 priorities identified by the CGLG, and identify additional conservation and restoration priorities specific to Lake Superior's basin that were not included in the Governors' priorities.

Groups were encouraged to turn in any additional notes and comments they generated for inclusion in the summary report. These are included following the general summary below.

General Conclusions

Workshop participants rated two priorities as being most critical to needs for the Lake Superior basin (7 of 9 groups listed these two priorities as one of their top 3 choices). These included:

- ◆ Enhance fish and wildlife by restoring and protecting habitats and coastal wetlands.
- ◆ Adopt sustainable use practices that protect environmental resources and may enhance the recreational and commercial value of our Great Lakes.

Two additional priorities received enough votes to be worthy of mentioning (4 of 9 groups chose them as one of their top 3 choices), including:

- ◆ Stop the introduction and spread of non-native aquatic invasive species.
- ◆ Control pollution from diffuse sources into water, land, and air.

Table 1 – Top Priorities Selected by Nine Participating Groups

7 groups selected	4 groups selected	2 groups selected	1 group selected	No group selected
Enhance fish and wildlife by restoring and protecting habitats and coastal wetlands.	Stop the introduction and spread of non-native aquatic invasive species	Promote programs to protect human health against adverse effects of pollution in the Great Lakes ecosystem	Ensure the sustainable use of our water resources while confirming that the States retain authority over water use and diversions of Great Lakes waters	Standardize and enhance the methods by which information is collected, recorded and shared within the region
Adopt sustainable use practices that protect environmental resources and may enhance the recreational and commercial value of our Great Lakes	Control pollution from diffuse sources into water, land and air	Restore to environmental health the Areas of Concern (AOC) identified by the International Joint Commission as needing remediation		
		Continue to reduce the introduction of persistent bio-accumulative toxics into the Great Lakes ecosystem		

Three general themes emerged from individual group reports.

1. Nearly every group stressed that education and outreach were missing from the Governors’ priorities and should be stated explicitly.
2. Concern was expressed that Lake Superior is somewhat unique relative to the other Great Lakes, in that there is still a great deal to protect as well as restore. The groups stressed that protection needs to be recognized as a priority for Lake Superior along with restoration. Many groups suggested that protection should be broken out as a separate priority.
3. Many groups felt that a number of the Governors’ priorities overlapped or were subsets of one another and could be combined. A suggestion was made that the Governors’ list be divided into 2 sets – one set dealing with programmatic issues and one set dealing with ecosystem issues.

Individual Group Comments

Additional comments on the priorities also emerged from the individual groups. These comments revolved around a number of issues as discussed below. Additional comments received during this session that dealt with a specific priority are included in Section IV.

Selection of priorities - A number of individual groups recommended considering one or more priorities together, in some cases, identifying action items that may promote different components of a single priority as discussed below.

- Consider addressing one or more of the priorities in a coordinated fashion to address both point and nonpoint protection:
 - *Control pollution from diffuse sources into water, land and air.*
 - *Continue to reduce the introduction of persistent bio-accumulative toxics into the Great Lakes ecosystem.*
 - *Adopt sustainable use practices that protect environmental resources and may enhance the recreational and commercial value of our Great Lakes.*
- Consider addressing the following priorities in a coordinated fashion:
 - *Promote programs to protect human health against adverse effects of pollution in the Great Lakes ecosystem.*
 - *Control pollution from diffuse sources into water, land and air.*
- Consider addressing the following priorities in a coordinated fashion:
 - *Stop the introduction and spread of non-native aquatic invasive species.*
 - *Enhance fish and wildlife by restoring and protecting habitats and coastal wetlands.*
- Consider splitting into two types of priorities, those dealing with ecosystems and those dealing with programmatic issues. Priorities that might be considered programmatic include:
 - *Standardize and enhance the methods by which information is collected, recorded and shared within the region.*
 - *Adopt sustainable use practices that protect environmental resources and may enhance the recreational and commercial value of our Great Lakes.*
- Consider the priority, *Ensure the sustainable use of our water resources while confirming that the States retain authority over water use and diversions of Great Lakes waters* as a more specific example of *Adopt sustainable use practices that protect environmental resources and may enhance the recreational and commercial value of our Great Lakes.*
- The following three priorities – *Ensure the sustainable use of our water resources while confirming that the States retain authority over water use and diversions of Great Lakes waters; Stop the introduction and spread of non-native aquatic invasive species; and Enhance fish and wildlife by restoring and protecting habitats and coastal wetlands* were considered to be subsets of *Adopt sustainable use practices that protect environmental resources and may enhance the recreational and commercial value of our Great Lakes.*

Clarification of priorities - Some comments were intended to add depth and clarification to individual priorities as discussed below.

- The priority, *Ensure the sustainable use of our water resources while confirming that the States retain authority over water use and diversions of Great Lakes waters*, actually has 3 different issues embedded within it: sustainable use, water diversion, and states' authority.
- The priority, *Ensure the sustainable use of our water resources while confirming that the States retain authority over water use and diversions of Great Lakes waters*, should include the issues of global climate change, changing water levels, and hydrology.
- The Areas of Concern already have so much time and money invested in them and should remain a high priority. Continuing to emphasize this priority will help achieve some of the other objectives as well.
- The priority, *Adopt sustainable use practices that protect environmental resources and may enhance the recreational and commercial value of our Great Lakes*, should have a strong emphasis on watershed based development and sound development processes. It should have a stronger emphasis on ecological value and biodiversity, not just commercial and recreational values.
- The priority, *Standardize and enhance the methods by which information is collected, recorded and shared within the region* really applies to all of the other priorities. The programs developed to address the priorities can't have performance benchmarks, won't have baseline data for comparison, and won't lend themselves to assessments unless we collect sound information and share it with other managers.

Protection as a priority - Many individual comments related to the importance of protection as a priority for Lake Superior along with restoration. This does not fit readily into any one of the priorities and it is important to emphasize as Lake Superior still has intact areas to protect, rather than simply restore. Therefore, particular emphasis should be placed on the protection components of the priorities. We should also identify low impact areas systematically for protection. This would help ensure Lake Superior receives the attention it needs and that funding is equally appropriated for Lake Superior needs. Additionally, programmatic considerations might include promoting awareness, stressing prevention as well as restoration, and researching and collecting baseline data for decision-making.

Ecosystem based approach –The idea of working toward maintaining ecosystem health at a large scale was discussed. It was noted that we should think in terms of whole ecosystems and focus on how land and the various land uses affect the Great Lakes and its sub-watersheds. A watershed approach to management is used in Minnesota. This could be implemented in all Great Lakes states/provinces, but help is needed to prioritize which watersheds need attention first.

Political/Policy Related Issues – It is important to develop an inter-jurisdictional vision of sustainable policy. Policies that encompass the whole region, including Canada, are needed to implement prevention and restoration policies. More funding is needed for this. In order to do this, we need to address our political will to implement solutions by

developing a Great Lakes Political Action Committee that involves all local units of government.

Education Related Issues – It was recommended that we build a platform for long-term citizen participation on education related issues. There is a need to build an environmental ethic that links people to their land and water activities and helps citizens understand the link between the environment and their lives. Education needs to be a high priority.

Diversion Related Issues - Diversion should not be discussed as inevitable. We should tie sustainability requirements (e.g., water conservation) to the diversion potential. Conservation comes before diversion. To do this we need to make sure that all the Great Lakes are protected from water diversion and not impacted by an individual state's decision that will impact the entire basin. Responsible science-based decisions will protect Great Lakes resources, not decisions based on individual politics. Local control is also very important, and therefore, we need to find ways to retain this in the decision-making process.

Atmosphere Related Issues – Energy use and climate change are important issues that do not fit readily into any one of the priorities, but may need to be addressed within the context of several priorities. There needs to be a better understanding of how increased energy production will affect natural resources. Energy conservation should be more of a focus and there should be outreach and advocacy on this important issue. Furthermore, climate change planning needs to take place. There has to be direction to questions such as “what can be done to slow global climate change (e.g., increase energy efficiency and improve transportation efficiency)?”

IV. Responses to Breakout Session II

The second breakout session was organized around each of nine priorities in order for the discussion to center on the following questions:

1. What are some action items specific to Lake Superior for each priority?
2. What interest groups should be involved in implementing these action items?

Below is a synopsis of the feedback received from the facilitators. Each facilitator was responsible for one of the nine priorities. Their role was to lead discussion, listen, and record outcomes over two different sessions. This gave each participant an opportunity to provide input on two of the Governors' nine priorities.

A. Ensure the sustainable use of our water resources while confirming that the States retain authority over water use and diversions of Great Lakes Waters

Policy and Planning – The overall theme of responses related to protection and preservation of existing water supply and use. Definitions of “diversion”, “sustainable use”, and “privatization of water use” need to be developed that Great Lakes stakeholders can agree on. It may mean that a special designation be put in place to protect the lakes (i.e., national treasure, endangered resource, etc.) or a ban be implemented on water export. If water becomes a commodity, strong protection measures will be required to regulate distribution.

Research and Science – Emphasis was given to providing resources for research to assess present and future water consumption in relation to sustaining Lake Superior's ecosystems. There are complex surface and ground water interactions, human impacts, and future needs for both humans and the natural ecosystems that must be understood for each of the subwatersheds that feed the entire Lake Superior watershed. Answers or directions to these questions will aid with the policy and planning component.

Education and Information – Education should be provided to all stakeholder groups in water conservation, water use, and global climate change.

Groups needed to accomplish actions – There are many groups/agencies working on these issues already. These groups need to work together to combine resources and provide information, policy guidance, and education. It is important to involve everyone, including local, state, national, international, private, and public sectors, interested groups, and citizens to come together on policies necessary to maintain water quality and quantity.

B. Promote programs to protect human health against adverse effects of pollution in the Great Lakes ecosystem

Policy and Planning – Our society needs to continue to support legislation to prevent contaminants from entering the water cycle and to work toward reducing the human

health risks we have created. Suggestions to help move us in this direction include developing source water protection plans and implementing them; encouraging more grey water use; reducing airborne contaminants; and promoting recycling.

There is a great void in funding to local governments for much needed infrastructure repairs; wastewater treatment repairs, upgrades and maintenance; and individual sewage treatment system repairs and maintenance. We also need to provide more funding for risk assessments (e.g., pharmaceuticals, fertilizers, endocrine disrupters, bio-accumulative contaminants). Finally, in order to protect our aquifers, funding is needed to support wellhead protection plans and the sealing of abandoned wells.

Research and Science – In order to provide the best available information to decision makers, we must provide better data on human exposure and risk, and continue investigations on the validity of *E. coli*. as an indicator of human health risk. This will help better refine the techniques and frequency of monitoring as well as appropriate indicators needed for implementing beach closures, etc. From a restoration perspective, improved methods are needed for removing toxicants and preventing toxicant introduction to watersheds. From a sociology perspective, more research is needed to understand human behavior and how to better change behaviors that cause impacts to our water resources.

Education and Information – Education should be provided on the meaning of health risk limits (i.e., fish consumption advisories) and impacts to water resources from property owners, agriculture providers, and consumers of industrial and commercial products. Citizen-based monitoring should be incorporated into the overall monitoring program from an education as well as an information gathering perspective.

Groups needed to accomplish actions – There are many groups/agencies working on these issues already. These groups need to work together to combine resources and provide assistance in areas missing information, policy, and education. The following groups involved with this priority include: Minnesota Pollution Control Agency, Minnesota Department of Health, risk assessors, Minnesota/Wisconsin Extension, Wisconsin Department of Health, the media, Minnesota/Wisconsin Department of Natural Resources, schools, and individuals.

C. Control pollution from diffuse sources into water, land and air

Policy and Planning – In this category, participants emphasized the importance of protection in addition to restoration as a goal. The goal of protecting human health was also stressed. From a broader perspective, but very important to the Lake Superior basin is the issue of air pollution and mercury. This is a problem that goes well beyond the borders of local communities, reaching out to the entire world.

In order to accomplish these goals, pollution sources and impacts should be considered using a watershed framework rather than discreet point versus nonpoint sources. This will help improve planning for appropriate development, both in terms of location and design. It is also necessary to identify areas within the watershed to protect and restore, along

with the tools necessary to enable the community to protect these areas (e.g., education, financial incentives, ordinances). The NPDES permit regulation program also needs more support in terms of enforcement. Finally, although we can not solve the international problems related to air quality on a local basis, we can set the example by driving fuel efficient cars, providing better mass transit, using alternative fuels, consuming less, and reducing industrial sources.

Research and Science – Drawing from the field of ecological economics, more research is needed on methodologies that will provide a dollar value to obtaining clean water. We also need a better understanding of the nonpoint source pollution impacts to Lake Superior under existing conditions as well as future build-out scenarios.

Education and Information – There is a need for site design and stormwater runoff best management practices education for developers, engineers, architects, consultants, and contractors. Local government also needs more assistance with decision-making tools that will help their community prioritize areas for protection and restoration within the sub-watersheds which eventually impact the entire Lake Superior basin; e.g., expand the NEMO (Nonpoint Education for Municipal Officials) program and the Natural Resources Research Institute Lake Superior Decision Support Tools Web site.

Groups needed to accomplish actions – There are many groups/agencies working on these issues already. These groups need to work together to combine resources and provide assistance in areas missing information, policy, and education. Federal, state, and local government agencies are important contributors to accomplishing some of the actions listed above.

D. Continue to reduce the introduction of persistent bio-accumulative toxics into the Great Lakes ecosystem

Policy and Planning – One of the major concerns under this priority is mercury contamination. Our fish consumption advisories are the most prevalent indication of the large impact of mercury deposition in this region. We do not want to live with fish advisories forever. Cleaning existing trouble spots is not going to solve the atmospheric pollution problem. Rather, a more comprehensive federal atmospheric pollution policy that deals with persistent pollutants is necessary. Mercury reduction from industrial production (i.e., utility emissions, taconite) should start with the state's emissions, even if it is not the largest source to our waters. Our states should first cap and then reduce mercury emissions over time by providing incentives to producers accomplishing reduction goals. Furthermore, atmospheric deposition activities occurring outside of the Lake Superior basin (i.e., mining, coal tar emissions, etc.) should be reduced and/or eliminated.

There are many other persistent toxicants to be addressed including dioxins and pesticides. In addition, there are new and emerging chemicals we need to be aware of. Proactive policies are required that address the long term and synergistic effects of bioaccumulative toxicants. These include, but are not limited to: policies requiring energy conservation and the use of alternative energy supplies; end-of-stack treatment

incentives; hazardous waste collection facilities; landowner education on burning waste; and garbage collection in rural areas. Dedicated, long-term funding is necessary to provide effective and efficient programming and research.

Research and Science – Research should continue in the areas of human and environmental risk assessments, the sources and pathways of persistent toxicants, and synergistic effects. Substitutes for chemicals such as plastics should also be explored. Finally, it is important to identify reference indicator species and ecosystems for monitoring purposes. Monitoring programs should not only be organized according to source type, but also in accordance to the type of ecosystem/watershed.

Education and Information – Some ideas for education include providing information to the public on relative mercury contributions from different sources (e.g., taconite, fuel combustion) and providing information to rural landowners on toxic emissions from household waste burning.

Groups needed to accomplish actions – There are many groups/agencies working on these issues already. These groups need to work together to combine resources and provide assistance in areas missing information, policy, and education. The federal, state and local government agencies as well as public and private research institutions are important groups needed to accomplish some of the actions listed above.

E. Stop the introduction and spread of non-native aquatic invasive species

Policy and Planning – This priority absolutely needs to include terrestrial as well as aquatic invasive species. Most important, a coordinated control effort that prioritizes control and prevention efforts should be in place. The responsibility of implementing control and prevention programs needs to be well defined and standardized. This includes standardizing requirements for federal and state agencies to prevent/control the spread of exotics on their own projects (e.g., contract specifications, guidelines for cleaning equipment). Some programming concepts given include the following:

- Incorporating a mandatory ballast water treatment/screening process;
- Developing international regulations for transport of terrestrial and aquatic invasive species;
- Considering a license system for entry into the Great Lakes;
- Connecting an inspection program with the Homeland Security Program;
- Controlling aquaculture; and
- Adopting a strong native seed and stock program that provides seed mixes that have native seed and not invasive terrestrial or aquatic species.

Research and Science – Explore mechanisms to detect and respond rapidly to outbreaks. This includes information on how species disperse and protocols and methods of control. Provide a comprehensive inventory and risk assessment of all non-native species.

Education and Information - Public education and information outreach on identifying species as well as understanding policies should be provided to citizens, shipping industry, recreational enthusiasts, etc.

Groups needed to accomplish actions – There are many groups/agencies working on these issues already. These groups need to work together to combine resources and provide assistance in areas missing information, policy, and education. Some of the groups needed to accomplish these actions include the states, Coast Guard, Department of Commerce, maritime industry, and federal government.

F. Enhance fish and wildlife by restoring and protecting habitats and coastal wetlands

Policy and Planning – The over-riding goal for this priority is to focus on protection with a long term perspective. The Lake Superior basin has far more protection opportunities than the lower Great Lakes. We need to first identify and quantify habitat both on- and off-shore. Next, benchmarks for selecting high quality areas should be established and these areas selected. Finally, the information gathered should be used to assess threatened areas. (e.g., a process similar to that being used at Isle Royale). This process should also be used to identify impacted habitats and restoration needs.

Planning for development was emphasized as an important goal to focus on for long-term watershed/ecosystem protection. Concern about the complexity of land use alterations across the basin and the wide range of local government oversight were discussed throughout the day. It was suggested that north and south shore elected officials gather periodically to talk about where collective decision-making is taking the region and to prioritize key target areas for development. This is also an opportunity to standardize regulations and definitions that will protect and maintain natural resources for their economic and social values as well as their ecological values.

Participants stressed that local land use regulations are insufficient to protect the ecosystem. They emphasized the need to find ways to talk about what we value without offending people or threatening their lifestyle. Increases in population and standard of living affect development trends and increase impacts on fish and wildlife. This needs to be addressed, particularly with regard to loss of habitat. Local communities should require and regulate best management practices based on land use design and construction; acquire critical habitat areas, especially on the shore of Lake Superior; and adopt forest management strategies to maintain the integrity of upstream areas (e.g., work by Dr. Sandy Verry). Giving more authority to citizen advisory boards or groups that are set up to manage issues at larger scales (i.e., watersheds) will involve more people in the community.

It was suggested that the north and south shore regions consider establishing Great Lakes “watershed districts” with taxing authority to help fund some of these strategies. It is believed that taxing authority would allow communities to obtain increased funding for more comprehensive, larger scale projects.

Decision-makers should consider whether bigger is better as it relates to development, given the costs associated with infrastructure, septic and wastewater, and stormwater management. Future legislation and related ordinances must concentrate more on pollution prevention. There is also concern about conversion of small cabins to large, elaborate vacation homes. For example, there are 1200 new units of development between Two Harbors and Grand Marais, MN. Is the infrastructure sufficient and will an increase of impervious surfaces impact natural resources? We need to:

- Encourage planned developments that minimize impacts on natural resources;
- Encourage incentives for private landowners to employ best management practices on their property;
- Emphasize enhancing fish and wildlife on Lake Superior shorelands;
- Protect unique lakeshore; and
- Monitor discharges better by providing funds for staff (currently, one Wisconsin Department of Natural Resources staff person oversees 18 northern Wisconsin counties regarding stormwater discharge).

Just as importantly, we need to implement existing plans, such as the Lower St. Louis River Habitat Plan. Wildlife and fishery management should focus on native species and reduce modification to coastal habitats for non-native species. Specifically the following areas need attention:

- Clough Island and surrounding wetlands need protection;
- The Poplar River is stressed by sedimentation, sewage, and over development;
- Bay-mouth bars and the processes that sustain them need protection – they are unique habitats; and
- The Lake Superior coast is very important for the migration of birds, which needs to be reflected in management goals. For example, Park Point should be managed for migratory bird habitat.

Research and Science – Identifying the physical and biological processes that create aquatic and terrestrial habitat and developing methods to protect and restore biodiversity are very important management principals that need support from scientifically-based research.

Education and Information – Education is the number one priority, as information on the issues discussed above will hopefully lead to decision making and actions that will protect and restore the Lake Superior basin. In addition, just providing landowners and lakeshore owners with ways they can maintain ecological values of native communities at home will go a long way toward making a difference.

Groups needed to accomplish actions – There are many groups/agencies working on these issues already. These groups need to work together to combine resources and provide assistance in areas missing information, policy, and education. Some of the groups needed to accomplish these actions include federal, state, and local government, private sector, and interested parties/individuals. A clearinghouse of groups involved should be provided.

G. Restore to environmental health the Areas of Concern (AOC) identified by the International Joint Commission as needing remediation

Policy and Planning - The U.S. AOCs for Lake Superior include the St. Louis River, Torch Lake, Deer Lake, St. Mary's River. The major goal is to accelerate movement toward delisting these areas. The criteria for delisting these sites are currently inadequate and should move toward a common methodology. There should be better monitoring and an effort to protect high quality areas within AOCs while protecting human health from exposure to toxicants. There is also a need to improve nonpoint and point source pollution controls in these areas, including providing better infrastructure (e.g., sewers), individual sewage treatment system maintenance, addressing invasive species, and assessing land use impacts on water quality.

Work on AOCs, as with the entire basin, should include a renewed public participation process and an effort to work with local governments (i.e., county, city, township) to complete/update land use plans where needed (e.g., county water plans, port plans, local land use plans) and implement those plans. It is very important to implement the St. Louis River Habitat Plan. This includes managing contaminated sediments in addition to sediments at Superfund sites and developing an overall clean-up plan, instead of performing the work piece-by-piece.

Research and Science – There is a need to be able to fingerprint chemical sources (e.g., PAHs) and to find additional remedies/alternatives for contaminated sites.

H. Standardize and enhance the methods by which information is collected, recorded and shared within the region

Policy and Planning – It is important to coordinate efforts to collect and share information. In addition, methods need to be developed for evaluating cumulative impacts as well as for detecting environmental changes. This priority is really a part of all of the other priorities, and therefore, a development commission that includes representation from the Great Lakes states and provinces, federal agencies, and citizens should be appointed to oversee the following tasks:

- Develop a list of priority parameters (i.e., what parameters are needed to announce a beach closing, what are acceptable remediation standards, etc.);
- Provide information about the various testing methods and protocols (e.g., EPA, MDA, USGS, state agencies);
- Dictate protocols for future sampling methodologies, quality assurance and quality control;
- Form a central database repository of past and present data collected by states, local, tribal, and private entities doing work in the Great Lakes basins;
- Establish and maintain a website that incorporates the tasks above;
- Set up long-term monitoring programs to evaluate existing conditions as well as restorations to monitor progress toward restoration goals; and

- Provide adequate funding for monitoring as well as research and development on long term evaluations of the basin and of individual successes or failures of clean-up projects.

Research and Science – Presently, we know very little about the highest quality habitats in the Great Lakes basin. We should address this deficiency by providing base-line assessments of best attainable conditions in order to set goals for managing and restoring impaired habitats. In addition there needs to be better documentation and understanding of biological diversity.

Furthermore, methods for compiling and interpreting results must be standardized for all groups collecting data. In order to do this and to be able to incorporate historical data, we need to develop common research protocols and determine how past analytical detection limits, analysis procedures, and consequent data quality relate to present data. We also need to develop a common baseline vocabulary to describe results and a common communication method to provide the same message and data to the public.

Education and Information – As stated above it is very important that we standardize methods used to communicate information and educate people outside the scientific community by using a common vocabulary and similar protocols, methodologies, and analyses.

Groups needed to accomplish actions – A newly developed commission will need to work to combine resources and provide assistance in areas missing information. In order to help accomplish these actions all the groups that collect and analyze data should be partners in the effort. This includes all the Great Lakes resource agencies, private research groups, federally funded groups, education groups, communication groups, universities, tribes, local government units, and environmental groups.

1. Adopt sustainable use practices that protect environmental resources and may enhance the recreational and commercial value of our Great Lakes

Policy and Planning – This priority contains important action items that should be applied comprehensively across the watershed. To begin with we need to define “sustainable use” and provide for a comprehensive growth management strategy that protects the basin. Economics must include ecology and this can be accomplished by re-defining the Gross National Product to include the value of sustainability. This concept considers environmental concerns with society’s economic and social values, allowing policies to be formulated on the local level for all types of development (residential, commercial, industrial, etc.) that incorporate factors such as where best to develop, how to design development, and how to construct development. In addition, land protection tools should be incorporated on the local level for options including fee title acquisition, conservation easements, transfer of development rights, purchase of development rights, etc. It was suggested that polluters be taxed to help fund these programs.

Specific action items were recommended for local government, forestry, and shipping. From a local government perspective, efforts are needed to provide incentives for using best management practices that value watershed development thresholds, address pollution from traffic, decrease impervious surfaces, and set aside shoreline for protection. From a forest management perspective, there needs to be continued improvement on incorporation of best management practices. Fragmentation by subdividing large tracts of private land also needs to be addressed. From a shipping perspective, we need to stop dumping human waste from ships/boats, control sea lamprey, limit stocking programs of non-native species, and provide for a native fishery that is self-sustaining. There also needs to be a focus on resource extraction in the Lake Superior basin in terms of potential impacts to natural resources.

Research and Science – This priority is a good opportunity for community-based social marketing to work toward change in behavior on an individual and corporate level. More research is also needed on the threshold limits of watersheds in the basin.

Education and Information – The community at large, including local officials, real estate, agents, developers, and corporations, needs more positive insights into sustainable living and design methodologies for developing with minimal effects. People also need more education on watersheds and the inter-connections among watersheds. The book Adopt-A-Watershed Curriculum by Kim Stokley and Bob Miller was recommended. Finally, education and information is needed at the local government level on how to change, incorporate, and enforce ordinances.

Groups needed to accomplish actions – There are many groups/agencies working on these issues already. These groups need to work together to combine resources and provide assistance in areas missing information, policy, and education. Some of the groups needed to accomplish these actions include real estate agents, developers, mining industry, local government boards/commissions/councils, researchers, scientists, politicians, state and federal agencies, schools, residents, visitors, and bankers.

V. Summary and Conclusions

There appeared to be general acceptance of the governors' priorities, although the two priorities considered most important for the Lake Superior basin were:

- ◆ Enhance fish and wildlife by restoring and protecting habitats and coastal wetlands.
- ◆ Adopt sustainable use practices that protect environmental resources and may enhance the recreational and commercial value of our Great Lakes.

Although these priorities were ranked highest, they were closely followed by the priorities:

- ◆ Stop the introduction and spread of non-native aquatic invasive species.
- ◆ Control pollution from diffuse sources into water, land, and air.

Two very strong themes emerged during discussion of the governors' nine priorities. These include:

1. Education and outreach should be stated explicitly in the priorities.
2. Lake Superior is unique relative to the other Great Lakes, in that there is still a great deal to protect as well as restore. Protection needs to be recognized as a priority for Lake Superior along with restoration.

Some additional major themes drawn from the discussions involving the nine Council of Great Lakes Governors' priorities are the following:

1. Ensure the sustainable use of our water resources while confirming that the States retain authority over water use and diversions of Great Lakes waters by first and foremost preserving the existing water supply.
2. Promote programs to protect human health against adverse effects of pollution in the Great Lakes ecosystem by continuing to support legislation to prevent contaminants from entering the water cycle and to work toward reducing the human health and environmental risks we have created.
3. Continue to reduce the introduction of persistent bio-accumulative toxics into the Great Lakes ecosystem by working toward the elimination of the need for fish advisories. Cleaning existing trouble spots is not going to solve the atmospheric pollution problem. Rather a more comprehensive federal atmospheric pollution policy that deals with persistent pollutants is necessary.
4. Control pollution from diffuse sources into water, land and air by emphasizing the importance of protection in addition to restoration as a goal. The issue of air pollution and mercury is also a problem that goes well beyond the borders of local communities, but needs to be addressed.
5. Efforts to stop the introduction and spread of non-native invasive species need to consider terrestrial as well as aquatic invasive species. Most importantly, a Great Lakes-wide coordinated management effort that prioritizes control and prevention should be in place.

6. Enhance fish and wildlife by restoring and protecting habitats and coastal wetlands by focusing on protection with a long term perspective. The Lake Superior basin has far more protection opportunities than the lower Great Lakes. There needs to be better planning and enforcement of local land use policies that will focus on long term watershed/ecosystem protection. Coordination of programs among jurisdictions is essential to success.
7. Restore to environmental health the Areas of Concern (AOC) identified by the International Joint Commission as needing remediation by accelerating movement toward delisting these areas. The criteria for delisting these sites are currently inadequate and should move toward a common methodology. There should be better monitoring and an effort to protect high quality habitats/areas within AOCs while protecting human health from exposure to toxicants.
8. Standardize and enhance the methods by which information is collected, recorded and shared within the region by coordinating efforts to collect and share information in accordance to a defined sampling, analysis, and reporting methodology. Methods also need to be developed for evaluating cumulative impacts as well as for detecting environmental changes.
9. Adopt sustainable use practices that protect environmental resources and may enhance the recreational and commercial value of our Great Lakes by first defining “sustainable use” and next providing for a comprehensive growth management strategy that protects the basin. The way we evaluate economics must include ecological considerations (e.g., re-define the Gross National Product to include the value of sustainability).

The Lake Superior basin has a strong base of committed public and private sector groups that are hoping to build a network throughout the Great Lakes basin to jointly support preservation of natural resources, restoration of degraded areas, better planning for future land uses, stronger enforcement of regulations, and a cohesive methodology for monitoring and assessing data that will support and improve the promotion of a more sustainable Great Lakes basin.

Appendix A: Workshop Agenda

Lake Superior Restoration and Protection Priorities

Wednesday June 30, 2004

12:30 to 5:00 PM

Kirby Ballroom on the University of Minnesota – Duluth Campus

- | | |
|---------------|---|
| 12:30–12:45 | Welcome, Goals for the Day
Carl Richards, MN Sea Grant
Anders Andren, WI Sea Grant |
| 12:45 – 12:55 | Regional Overview
Mike Donahue, President, Great Lakes Commission |
| 12:55 – 1:10 | Presentation of Governors' Priorities
Chuck Ledin, WI Department of Natural Resources |
| 1:10 – 2:00 | Keynote: Lake Superior Restoration and Protection Issues
Nancy Costa, Fond du Lac Reservation Water Projects Coordinator
Chuck Ledin, WI Department of Natural Resources |
| 2:00 – 2:45 | Breakout Session I – Ranking Priorities |
| 2:45 – 3:00 | Reports from Breakout Groups |
| 3:00 – 3:15 | Break |
| 3:15 – 3:45 | Breakout Session II – Round 1 |
| 3:45 – 4:15 | Breakout Session II – Round 2 |
| 4:15 – 5:00 | Reports from Breakout Groups, Next Steps |

Background

Congress is reviewing a number of funding bills that may include dollars for the Great Lakes. In an effort to put Great Lakes restoration and protection priorities on our legislators' front burner, the Great Lakes Commission and the Council of Great Lakes Governors have sponsored a series of workshops in Great Lakes states. The workshops are intended to solicit public input on development and implementation of priorities for ecosystem restoration and protection. Our workshop, focusing on Lake Superior, represents a cooperative effort among MN and WI Sea Grant, the Governor's offices, state agencies, the Council of Great Lakes Governors, and the Great Lakes Commission. We welcome your input on the restoration and protection priorities developed by the Council of Great Lakes Governors and additional thoughts and ideas relevant to Lake Superior restoration and protection priorities. The outcome of the Minnesota/Wisconsin

Lake Superior workshop will be captured in a summary document and in proceedings documents compiled with the other Great Lakes states. It will then be shared with Great Lakes leadership and the entire community of stakeholders in the interest of promoting consensus and unity of purpose in restoration and protection initiatives across all the Great Lakes states. The documents will be posted on the Great Lakes Commission Web site at www.glc.org.

Breakout Session I

Goal for the Session: Each table will agree upon their top three priorities from the Council of Great Lakes Governors' list of priorities.

Discussion: The groups will discuss the following:

1. What are the major themes or needs for Lake Superior and where should they be placed within these 9 priority areas?
2. Are there other conservation and restoration priorities for Lake Superior's basin that you wish to share with the Council of Great Lakes Governors?
3. What are the top 3 priorities from the Governors' list?

Product from Each Group: Each group will report back on their top priorities. Responses will be tallied and used to help structure Breakout Session II.

Important Note: Groups can turn in additional notes and comments for inclusion in the summary report (use this sheet and/or the list of Council of Great Lakes Governors' priorities you received with your agenda).

Breakout Session II

Goal for the Session: Identify Lake Superior-specific action items and important participants for each of the Council of Great Lakes Governors' priorities.

Note: This session is divided into two rounds. Everyone will get the opportunity to participate in discussions of two Council of Great Lakes Governors priorities, one during each round. Each table will have a placard on it indicating which of the nine priorities from the Governors' list will be discussed at that table. You are welcome to submit additional comments and ideas for any or all of the nine priorities. Sheets are available at each table for your comments.

Discussion: The groups will discuss the following:

1. What are some action items specific to Lake Superior for each priority?
2. What interest groups should be involved in implementing these action items? (Includes groups such as local government, business and industry, education, resource management agencies, etc.)

Product from Each Group: The facilitator at each table will consolidate and summarize the action items identified in Rounds 1 and 2 for each priority.

Appendix B: Workshop Participants

* = Facilitator

<u>First Name</u>	<u>Last Name</u>	<u>Affiliation</u>
Anders	Andren	Wisconsin Sea Grant
Jean	Battle	U.S. National Park Service (Isle Royale)
Dale	Bergeron	Duluth Seaway Port Authority
Gail	Bong	U.S. Dept of Agriculture – Natural Resources Conservation Service
John	Brazner	U.S. Environmental Protection Agency
Erik	Brown	Large Lakes Observatory, University of Minnesota Duluth
Bob	Browne	Lake Superior Binational Forum
Sally	Bujold	Citizen
Chris	Butler	Minnesota Pollution Control Agency
Pat	Carey	Minnesota Pollution Control Agency
Gene	Clark	Wisconsin Sea Grant
Pat	Collins*	Minnesota Department of Natural Resources
Jeff	Cook	Town of Duluth
Nancy	Costa	Fond du Lac Reservation
Mike	Costello	Service Eng.
Judy	Crane	Minnesota Pollution Control Agency
Diane	Desotelle	Minnesota Sea Grant
Mike	Donahue	Great Lakes Commission
Dean	Einerson	State of Minnesota Dept of Corrections
Amy	Eliot	Lake Superior Binational Program
Bob	Farrell	Citizen
Joanne	Fay	St. Louis County Commissioner
Len	Ferrington	University of Minnesota
Sharon	Frank	Izaak Walton League
Terry	Frank	Izaak Walton League
Brian	Fredrickson*	Minnesota Pollution Control Agency
Jean	Goat*	Minnesota Department of Natural Resources
Cindy	Hagley	Minnesota Sea Grant
Jim	Hall	Cook County Soil and Water Conservation District
Joan	Hall	Cook County Soil and Water Conservation District
Lynelle	Hanson	St. Louis River Citizens Action Committee
Mark	Hershfield	Minnesota Board of Water and Soil Resources
Lynne Ann	Hollatz	City of Duluth Planning
Gabe	Horner	The Nature Conservancy
Matt	Hudson	Great Lakes Indian Fish and Wildlife Commission
Cathy	Jensen*	Minnesota Pollution Control Agency
Ted	Koehler	US Fish & Wildlife Service
Mike	Kroenke	UW-Extension
Duane	Lahti	Wisconsin Department of Natural Resources
Larry	Larson	Lake County
Tim	Larson	Skyline Parkway Preservation Alliance
Nancy	Larson	Wisconsin Department of Natural Resources
Jason	Laumann	Northwest Regional Planning Commission - Wisconsin
Le Rosen	Lind	Save Lake Superior Association

Proceedings – Developing Restoration and Protection Priorities for Lake Superior

<u>First Name</u>	<u>Last Name</u>	<u>Affiliation</u>
Barb	Liukkonen	Minnesota Sea Grant
Rosie	Loeffler-Kemp	Clean Water Action
Carri	Lohse-Hanson*	Minnesota Pollution Control Agency
Kent	Lokkesmoe	Minnesota Department of Natural Resources
Marnie	Lonsdale	City of Duluth
Bryce	Luchterhand	North Wisconsin Office for Governor Doyle
Glenn	Maxham	The Nature Conservancy
Joe	Mayasich	Natural Resources Research Institute
Pat	McCann	Minnesota Department of Health
Kay	McKenzie	Douglas County Board – Wisconsin
Connie	Minowa	Environmental Association for Great Lakes Education (EAGLE)
Sharon	Moen*	Minnesota Sea Grant
Joan	Morrice	U.S. Environmental Protection Agency
Phil	Moy	Wisconsin Sea Grant
Al	Mozol	U.S. Army Corps of Engineers
Clair	Nelson	Lake County
Mark	Nelson	Minnesota Board of Water and Soil Resources
Gerald	Niemi	Natural Resources Research Institute and CWE Biology UMD
Julie	O'Leary	Minnesota Environmental Partnership
Bob	Olsgard	Lake Superior Alliance
Christine	Ostern	Douglas County Land Conservation Department
Arnold	Overby	Save Lake Superior Association
Ann	Perkins	Lake Superior College/ University of Minnesota Duluth Student
Daryl	Peterson	The Nature Conservancy
Cathy	Podeszwa	Minnesota Environmental Partnership
Lisa	Radke	Lake Superior Binational Forum
Carl	Richards	Minnesota Sea Grant
RD	Ricketts	Large Lakes Observatory, University of Minnesota Duluth
April	Rust	Minnesota Department of Natural Resources Project Wet
John	Sandberg	University of Minnesota Duluth
Tom	Schaub	Minnesota Pollution Control Agency
Steve	Schlobohm	U. S. Forest Service / Lake Superior Binational Program
Pat	Schoff	Natural Resources Research Institute
Jesse	Schomberg*	Minnesota Sea Grant
Don	Schreiner	University of Minnesota Duluth Fisheries
Ron	Shelito	Minnesota Board of Water and Soil Resources
Stuart	Sivertson	Great Lakes Fishery Commission Advisor and Sivertson Fisheries
Mike	Sladewski	Keweenaw Bay Indian Community
Leon	Solberg	National Audubon Society
Dan	Swenson	City of Duluth Planning
Nelson	Thomas	Citizen
Diane	Thompson	City of Superior
Nick	Tiedeken	Minnesota Department of Transportation
Jim	Topie	Citizen
Tim	Tuominen	Western Lake Superior Sanitary District
Walt	Van Den Heuvel	Lake County
Nigel	Wattrus	Large Lakes Observatory – University of Minnesota Duluth
Kaija	Webster	University of MN Duluth Recreational Sports Outdoor Program
Pete	Weidman	Ayres Associates

Proceedings – Developing Restoration and Protection Priorities for Lake Superior

<u>First Name</u>	<u>Last Name</u>	<u>Affiliation</u>
Jim	Weseloh*	Minnesota Department of Natural Resources
Rebecca	Wiinanen	Cook County Soil and Water Conservation District
Stephen	Wittman*	Wisconsin Sea Grant
Marie	Zhuikov	Minnesota Sea Grant
Zandra	Zwiebel	Minnesota Sea Grant

Appendix C: Individual Responses

This listing presents the comments of workshop participants as submitted on the comment sheets.

Ensure the sustainable use of our water resources while confirming that the States retain authority over water use and diversions of Great Lakes waters.

- As one who has traveled around most of the Great Lakes, lived on one (Lake Michigan) and who spends time on the North Shore of Lake Superior two weekends out of the month, the most critical issue, in my opinion, is one where other states (AZ, CA, NV, NM, UT, etc.) will lobby to use these waters or buy these waters for profit. These governments have not, in my opinion, acted responsibly with their own water resources over the decades, i.e., green lawns which need to be watered in desert environments, etc., non-use of low-flush toilet, shower systems, etc.
- I think it is important that the waters of Lake Superior not be privatized! Individuals and/or corporations should not be able to buy or trade the lake's waters in private interest.
- Where does transportation fit within sustainable use?
- For certain harbors, water levels are critical. Need to protect habitats.

Promote programs to protect human health against adverse effects of pollution in the Great Lakes ecosystem.

- Funding for infrastructure city sewage, etc.
- Funding educational programs.
- Safety and traffic issues – working on the biking trail.
- Risk assessors and more risk assessment studies to determine TRUE risks.
- Data on PBT exposure to humans; education and outreach on citizen monitoring.
- There is discussion of funding for combined sewer overflows which is very important. However funding sanitary sewer overflows should also be an important funding priority.
- Big issue – wide spread need for funding for this priority. Should mention sanitary sewer overflows in this priority – not just combined sewer overflows; however, for Lake Superior this is not a major issue.

Control pollution from diffuse sources into water, land and air.

- Poor land use practices really exacerbate problems such as sedimentation and pollution due to lawn chemicals. Cities on Lake Superior need to enact ordinances that eliminate the use of lawn chemicals. They also need to inventory their wetlands and protect and enhance the wetland habitats that control runoff and sedimentation. It doesn't work to re-create wetlands outside the watersheds or even to expect that a created wetland is as functional or useful as a natural wetland. Natural wetlands

protection must be much stronger, and cities should recognize that wetlands protection is much less expensive than engineered solutions or wetlands restoration. Money from any Great Lakes act should go towards acquiring wetlands. It should also go toward public education on non-point issues and how the general public can help to eliminate/reduce their portion of the non-point-source load.

- Need resources at the local level to assist developers with erosion control, stormwater management, and wetland conservation.
- Need support (financial and technical) for citizen monitoring programs so that under- and non-staffed stormwater compliance can be improved and enforced.
- Need financial and technical support for citizen monitoring and education/outreach to better understand sources and reduce runoff.
- Toxic dumping is another issue that should continue to be addressed.
- How do we measure and evaluate this?
- What are the impacts of modal shifts in transportation?
- Emphasize pollution prevention.

Continue to reduce the introduction of persistent bio-accumulative toxics into the Great Lakes ecosystem.

- Develop energy conservation programs.
- Develop alternative energy sources in the basin.
- Develop a coordinated monitoring program across jurisdictions with a funding base.
- Continue to reduce the introduction of persistent bio-accumulative substances.
- Source monitoring is needed to begin to address this.
- Keep “Clean Sweep” programs in place/funded.
- Decreasing cap and incentive approaches.
- Instead of setting static “acceptable levels” for bio-accumulative toxins, set up standards that can be ratcheted down as science shows increasing negative impacts.
- Acknowledge the regional to global connection of industrial activities to toxic accumulations in remote/pristine areas. (Look at data collected at national parks on mercury, for example)
- Incentive programs needed to reduce fossil fuel use (i.e., hybrid solar vehicles).
- Look at methods being used by “greener” nations to control bio-accumulation.
- Continue to fund long-term monitoring of sources/vectors (air, water, etc.) in sensitive indicator species and systems.
- Require utility companies to pay for more research and monitoring based on the amounts they emit.
- More research on how bioaccumulatives interact with other toxins in systems.
- Need a government committed to reducing toxins by targeting the industrial offenders and subsidizing mass transit, organic farming, and environmentally responsible natural resource extraction.
- Stop subsidizing natural resource (mining, forestry) extraction on federal lands!
- Reduction of emissions by strict limits on state permits.
- Federal regulation regarding air and water discharges and strict enforcement.

- Retrofit all existing power plants with best available technology to reduce emissions of mercury, sulfur dioxide, nitric oxide, particulates, etc.
- Make public aware of endocrine disrupters and their source, and affects on humans, animals and fish.
- LaMPs are focused on reducing loads of critical pollutants and should be an integral part of this government's priority.
- Question – How is this related to air toxins – is there any political will to do anything about this?
- Air trading problem – local deposition can still be an issue.
- New chemicals are found to be issues.
- Coordinate the efforts nationally.
- Again energy is a mentioned as another problem – funding not there for alternative approaches – develop an energy conservation program.
- Coordinated monitoring: Environmental monitoring – the reasons are to have something to back up that the work is being successful.
- Continue the funding for such programs.
- This is an important strategy and should be continued. But we hear about new problem chemicals (i.e., Polybrominated Diphenyl Ethers – PBDEs and others) that may become a bio-accumulative chemical of concern and may need a future effort to eliminate it from the environment. If what some researchers say is true about PBDE toxicity; some greater effort should be made to keep bio-accumulative chemicals of concern out of general use in the first place. I believe programs such as TSCA (Toxic Substances Control Act) should be revamped in order to prevent chemicals that may be a problem from getting developed in the first place.
- Fish consumption advisories are an indication of serious trouble for Lake Superior, yet state agencies (e.g., Minnesota Pollution Control Agency) issue permits which allow discharge of mercury, sulfur dioxide, particulates, etc.
- Need to work on harbor remediation.

Stop the introduction and spread of non-native aquatic invasive species.

- We need a national and international coordinated program to address containment, rapid response to and eradication of invasive species.
- Stopping the import of non-native species:
 - Ballast water treatment
 - Sterilization techniques
 - Cargo inspections (tie to Homeland Security – terrorist threat)
 - Education and outreach
 - Scientific protocol
- Mandatory lethal treatment of all ballast water of incoming foreign ships.
- One agency to be responsible for ballast water inspection.
- There's a blatant double-standard on the part of the Department of Natural Resources (DNR) where exotic aquatic life in Lake Superior is involved. I have no argument with this agency's efforts to rid or at least control the exotic spiny water flea, the

goby, zebra mussel, lamprey and others that were accidentally introduced. The criterion for initiating programs to wipe out these creatures is to pick for eradication those that do harm to the Lake Superior aquatic environment. I fully agree with that criterion. Where my double-standard accusation enters into the mix is that the same criterion is not applied by the DNR to the introduced exotics – the so-called “sports fish” classified as the salmonids (members of the salmon family) including the steelheads, brown trout, cohos, kamploops, Atlantic salmon, etc. Like those exotics accidentally infecting Lake Superior, they are also very harmful.

- The return of the once numerous coaster brook trout in sustainable numbers is not likely as long as the exotic sports fish are raised, stocked, and catered to. The Great lakes Fisheries Commission, of which all Great Lakes states are members, has repeatedly placed blame on the exotics. In the Commission’s Special Publication 90-3, for example, it stated “(*coaster*) brook trout are native to Lake Superior, but populations were reduced to low levels in most areas through competition with introduced anadromous salmonids.”
- If Lake, Cook and St. Louis Counties want to prevent or reduce the odds of the snail populating North Shore rivers and becoming impaired by this invasive little mollusk, action must be taken before it’s discovered in the watershed at the western end of Lake Superior.
- All invasive species, both aquatic and terrestrial should be included in *Stop the introduction and spread of non-native aquatic invasive species*.
- This can’t just include ballast exchange. Great Lakes versus a national issue.
- The threat from the snail incursion in Lake Superior is extremely serious. If you want to get a better handle on it, I suggest you see available references on the Internet. Just type in: New Zealand Mud Snails.
- It’s my contention that not one additional cent be spent on the non-native salmon family fish in Lake Superior. Trout stamp income should all go for native brook, coasters, and lake trout. If you buy a fishing license you can insist that the DNR take none of your fee for the exotics, or buy a trout stamp only if and when the DNR uses that fee exclusively for native trout species.

Enhance fish and wildlife by restoring and protecting habitats and coastal wetlands.

- Non-native salmonid stocking should be phased out in favor of managing native fish species. Management of non-natives is expensive, alters the national system, and has a detrimental effect on coastal wetlands, as beaver dams are destroyed to allow non-native fish to migrate up river to spawn.
- The Lake Superior Basin Plan has developed a database of important habitat sites which identifies specific locations that need protection and restoration. Use this work to identify priorities and projects.
- Fully fund and implement the Lower St. Louis River Habitat Plan.
- Overcome the resistance by parochial interests and develop an ambitious land acquisition plan for the Lake Superior shoreline. Then fund and implement the acquisition (through CELCP and other sources) before it is too late (or too much later).
- Protection before Lake Superior becomes degraded should be a top priority. Lake Superior is unique; it has unique soils, high quality cold water tributaries, streams, coastal wetlands, and excellent water quality. Shoreland and riparian zone development are having drastic cumulative impacts on nonpoint runoff and habitat loss through removal of shore cover and grading in the buffer zone. We need stronger laws, not weaker ones as appears to be the case. Also – funding is difficult to obtain until the resource becomes degraded. More money is needed for protection/prevention.
- Some months ago the publicity wing of the DNR let the media know that it was planning to reintroduce the native coaster brook trout in the Minnesota waters of Lake Superior. There's no current funding to implement these plans and all appears to have been for show.
- The hard rock of Knife River waterfalls was removed with dynamite and jackhammers. This opened many miles of the river as habitat for the exotic steelheads...non-native fish that could easily transport the mud snail from the river's delta to countless inland sites.

So what is the answer to this problem? Persuade the DNR to begin an immediate remedial project in which natural-looking, simulated rock replaces the original material removed and sculpted to re-create the waterfalls at Knife River on the North Shore. This would effectively keep the steelheads from moving upstream, thus blocking the spread of the mud snails.

What about funding for this restoration project? There could be as much as \$1,314,391* available annually. This is the amount spent in fiscal year 2003 by the Section of Fisheries of the Minnesota DNR in its largely failed stocking of the exotic members of the salmon family in Lake Superior (*Figure from Ron Payer, Chief, Section of Fisheries, DNR in letter to Glenn Maxham on 2/10/04).

This would be a win-win solution. The snails would be prevented—or at least long delayed—from infecting eight North Shore rivers and the esthetic value of the replaced waterfalls would once more attract tourists and local residents.

There's a third residual benefit. With the steelheads no longer in these rivers, the DNR would cease draining thousands of gallons of beaver-impounded water, a procedure done to give the non-native steelheads unimpeded access to the far reaches of these waterways.

Wetlands are extremely scarce in the Lake Superior watershed and the deliberate destruction of beaver dams causes flooding and loss of habitat for native brook trout, minnows, mink, otter, wading birds, amphibians, song birds, and many others.

Money now wasted on the rearing and stocking of exotics in this exorbitantly expensive program to benefit a few sports anglers can be put to far better use.

What is your choice?...do nothing and gamble that a miracle will hold back the invasive snail so the non-native steelheads can continue to use your rivers? Or do you convince the DNR that, since it destroyed the waterfalls, that agency must restore these natural barriers and allow the beaver to create new wetlands?

To protect North Shore rivers in Lake County from future despoiling acts of waterfall removal by the DNR, I urge you to seek legislation that forbids river re-configuration. Exceptions could be made for road construction or repairs after flood damage.

While the blockage of the rivers will likely cause a further decline in the numbers of steelheads, this could help the DNR Fisheries Section in its announced intent to try to return the coaster brook trout to the North Shore.

The Great Lakes Fisheries Commission has stated repeatedly that the steelheads and other predatory exotic salmonids in Lake Superior are one of the reasons the coaster rehabilitation program has not been successful.

- We should move forward to “renewal” rather than imply moving back in time to “renovation.”
- Re-use of dredged materials (to create habitat).
- Protection aspect needs emphasis.

Restore to environmental health the Areas of Concern (AOC) identified by the International Joint Commission as needing remediation.

- The RAP process in the 1980s identified several AOCs that needed to be cleaned up to protect the integrity of Lake Superior. How many have actually been cleaned up? Political pressures and lack of monetary resources have limited the ability to get this done. Before setting more priorities, these earlier identified priorities (hot spots!!) should be cleaned up.

Standardize and enhance the methods by which information is collected, recorded, and shared within the region.

- Include National Park Service's Great Lakes Network Office to get important baseline data (Contact: Bill Route, Ashland, Wisconsin, NPS Great Lakes Network Office).
- Standardize methods used by federal agencies to prevent/control spreading of exotic species during agency projects (Ex: (1) Standards for cleaning equipment used for

construction prior to moving it to a new site. Terrestrial and aquatic. (2) Standardized exotics control language in federal contracts.

- Extremely important.
- Needs to be looked at in a broader context. A common vocabulary needs to be developed.

Adopt sustainable use practices that protect environmental resources and may enhance the recreational and commercial value of our Great Lakes.

- The last priority on adopting sustainable use practices needs to be considerably expanded to include the conservation and protection of native biological diversity of the Great Lakes region and effective watershed/airshed management.
- The present beach monitoring programs are interesting but do very little to correct the problem (of contaminated beaches). In fact they can hurt the perception of the recreational value of our waters. Numerous peer reviewed scientific papers (Environmental Science & Technology) have been published recently about the quality of beach testing programs and the timeliness of information they release to the public. Money should be spent on the cure not just documentation of the problem. If a beach monitoring program is conducted there should also be a program to identify the cause of the problem and correct the source.
- I don't see how the Beach Act money enhances the commercial value of the Great Lakes. Unless tourism is the only commercial value the Great Lakes has, and then the beach sampling program as it stands now only hurts tourism and recreation. Get to the root cause and spend money on that.
- The Governors' priorities have sustainable use practices as their last priority. I think that sustainable watershed development needs to be included under this umbrella. If it is, it should be a top priority since this will protect against diffuse pollutants (including nutrients and sediments), protect coastal habitats and the fish and wildlife dependent on them, and reduce human health pollutant and persistent contaminant introductions. It seems to me to be the key issue to focus on. And Lake Superior still has mostly undeveloped watersheds, so these efforts towards sustainable watershed development will be especially effective here compared to the more developed portions of the Great Lakes.
- Sustainability – what is it? Different for each of the lakes? For jurisdictions within the lakes? This must be defined.
- End this priority with "... protect environmental resources." Delete "... *and may enhance the recreational and commercial value of our Great Lakes.*"
- Consider the impact of the St. Lawrence Seaway on commercial interests.
- Emphasize pollution prevention. Needs a lot of additional definition to expand far beyond what is in the May 14, 2004 Governors' letter.

General Comments Not Addressed under Priorities above

- I would like to see Lake Superior made a symbol, internationally, for freshwater restoration and preservation. Why?
 - Because it's one of the greatest freshwater resources in the world.
 - Because it's relatively intact as a basin.
 - Because it's affected by atmospheric change – threatened by global climate changes, mercury deposition and volatile organic compounds – that respect no (state, national, or watershed) boundaries.

To protect our freshwater, we need a global consciousness about protecting our world ecosystem. I propose that we should make Lake Superior a symbol of what is at stake.

- Lake Superior is at the brink of being developed like the lower lakes.
 - In terms of sustainability – improve waterfront development; enhance public access to Lake Superior.
 - Improve infrastructure development.
 - Need to plan for climate change and find ways for people of the basin to slow down climate change, e.g., efficiencies of transportation.
 - Provide incentives for retaining natural undeveloped shoreline and preventing pollution.
- All these issues are interrelated – we must focus on the “sources” or “source areas” rather than the “band-aid” areas. (i.e., focus on renewable energy and conservation). Change our mindset. If we want contaminant-free fish, we must change our energy consumption and production patterns. We must have a sustainable goal to address the other issues.
- There are good plans in place for Lake Superior (e.g., the Lakewide Management Plan, state, and local plans). These need to be recognized and fully funded.
- Add priority for water education. This was a key component mentioned in all the break-out group summaries.
- Climate change in Lake Superior Basin likely to result in :
 - Warmer conditions
 - Greater evaporation/precipitation
 - More storminess
 - Changes in lake stratification and mixing dynamics

These can play into issues including:

- Changing lake ecosystem
- Vulnerability to exotic species
- Increased storm runoff
- Decreased lake levels; impacting shipping

This needs to be considered in developing plans for long-term sustainability, and for anticipating challenges of tomorrow.

- All of the priorities are important but will not happen if political support is not there. Lake Superior and the whole Great Lakes system need more than lip service – we need the political will and money to protect and restore them.
- Are the Tribes/First Nations being adequately included in this dialogue?

- Lake Superior (and the Great lakes) are a global resource; diversion to support continued excessive consumption and uncontrolled growth/sprawl is a criminally irresponsible notion.
- Population continues to grow and is the base of most of our environmental problems. If nothing is done we may not be able to feed ourselves in 50 years.

Appendix D: Minnesota Environmental Partnership Forum Summary

Below is a summary of a Great Lakes Restoration Public Forum (MEP forum) that was held by the Minnesota Environmental Partnership (MEP) on June 16, 2004 in Duluth, Minnesota prior to the Sea Grant workshop.

The MEP forum had a similar theme to the Sea Grant workshop although the audience was not as diverse. MEP primarily represents environmental organizations. Workshop organizers publicized their events together to build support and offer two formats for the public to voice their ideas about protection and restoration of Lake Superior. Both the MEP forum and the Sea Grant workshop were open to the public.

Minnesota Environmental Partnership Great Lakes Restoration Public Forum June 16, 2004 Duluth, Minnesota

Summary of Small Group Reporting

Group 1

What is important to preserve?

- Environmental and ecological health
- Economic health/sustainability
- Quality of life

What needs to be restored?

- Legacy problems (infrastructure and Areas of Concern)
- Current contributors
- Watershed development/Land ownership/Forest management
- Exotics

How should citizens be involved?

- Government, industry, private citizens
- Non-government organizations
- Coordinated planning is needed at multiple levels

Group 2

What is important to preserve?

- Natural integrity of lakeshore (development, zoning differences)

- Native species (invasive species as well as introduced non-native species)
- Protect habitat
- Standardization/centralization of information
- We want efficient use of our monetary resources
- Fewer studies, more action

What needs to be restored?

- Water quality
- Remove all known toxins
- Fix all municipal sewer systems
- Set standards and enforce for all known toxins (mercury, et al)
- Habitat restoration of fish, wildlife, vegetation (wild rice)

How should citizens be involved?

- Public hearings, public meetings with federal agencies
- Advisory board participants should include community members (non political)
- This should include any voting boards
- Community can be/is involved with decision-making

Group 3

What is important to preserve?

- We need more knowledge about what we hope to preserve and restore in the first place – none of the questions address this
- Preserve watershed integrity
- Preserve whole ecosystems – the hydrological cycle
- What needs to be restored?
- Restore water quality with infrastructure
- Research is needed for understanding the role of wetlands
- Areas of concern – obvious restoration priorities
- Planning to avoid impervious surfaces – need better zoning/planning/shoreline regulation

How should citizens be involved?

- Education is important
- Change the role of money in politics
- Aquatic Invasive Nuisance Species Act needs reauthorization
- Coordination and overview of entire Great Lakes Basin

Group 4

What is important to preserve?

- Need a coordinated, comprehensive inventory
- Monitoring of chemical, biological, ecological conditions

- Clean water/watersheds
- Public values/access vs. private control
- Natural sounds, light vs. man-made
- Green space, not our current consumptive lifestyle

What needs to be restored?

- Chemical/ecological health of the St. Louis River estuary
- Wetland health for fish reproduction
- Commercial and recreational fishery at a sustainable level
- Watershed vegetation vs. erosion
- North shore streams

How should citizens be involved?

- Education of citizens and government/politicians on issues
- Work towards community consensus
- Advocacy by non-profits of all sorts
- Duluth's comprehensive planning process
- Bird-dogging government agencies (e.g. invasive species)

Group 5

What is important to preserve?

- Widespread recognition of the problems by citizens
- Clean water, watersheds
- Water levels/ water quantity
- Ecological integrity of the shoreline
- What needs to be restored?
- Wetlands, watersheds, i.e., water quality
- Native fish, fisheries, species (implies reduction/control of exotic species)
- St. Louis River

How should citizens be involved?

- Education, outreach, awareness
- Encourage activism – governmental, non-profits, volunteer
- Coordination

Group 6

What is important to preserve?

- Water quality
- Coastal shorelines
- Quality of life
- Cultural, economic, ecological, recreational
- What needs to be restored?
- "Areas of Concern" should be addressed once and for all

- Air transport of toxics
- Habitat for native species
- Eliminate invasive species

How should citizens be involved?

- Develop a personal relationship with the lake
- Get children involved in environmental projects, litter clean-ups, loosestrife removal, etc.

Results of voting on priority issues

Each participant was asked to vote on 3 issues before they left the meeting. The list of issues was drawn from the report-outs of the small groups.

- ⇒ Great Lakes exploration program to assess what we have (6)
- ⇒ Preserve the natural integrity of lakeshores (including native species) (6)
- ⇒ Shoreline development concerns (5)
- ⇒ Exotic species (5)
- ⇒ Water privatization issues (5)
- ⇒ Better political processes for planning, zoning, etc., such as community consensus, property taxes (4)
- ⇒ Restore legacy problems, such as infrastructure and Areas of Concern (4)
- ⇒ Fund infrastructure needs (4)
- ⇒ Air transport of toxics to Great Lakes Basin (4)
- ⇒ More public hearings and citizen partnership and citizen ownership, activism (3)
- ⇒ Recognition and awareness (by public) of the problems (2)
- ⇒ Coordination of planning at multiple levels and of multiple groups (2)
- ⇒ Preserve watershed quality (2)
- ⇒ “Restore” water quality (i.e. standards, all municipal water treatment systems) (2)
- ⇒ Standardization and centralization of information
- ⇒ Preserve culture, quality of life (2)
- ⇒ We can’t lose what’s left of our ecosystem (2)
- ⇒ Manage and sustain economic health and sustainability (1)
- ⇒ Native/indigenous peoples should have a seat at the table (1)
- ⇒ Rights AND responsibilities of property ownership (1)
- ⇒ Citizenship test for all who live in the Great Lake Basin
- ⇒ Threats to recreational and commercial fisheries
- ⇒ Manage and enhance ecological health
- ⇒ Use children to help educate adults
- ⇒ Keep funding for the Blue Heron

Additional Notes from 6-16-04

MEP Forum

Duluth, MN

Rep. Tom Huntley, Vice Chair of the Great Lakes Commission talked about the three federally chartered groups that worked on Great Lakes Restoration

1. IJC (International Joint Commission): Regulates water levels on the international Great Lakes border.
2. GLFWS (Great Lakes Fish and Wildlife Service): Programs on fish and wildlife habitat in the Great Lakes.
3. GLC (Great Lakes Commission): Develops policies to advocate with a single voice on major issues within the basin

Rep. Huntley's main point was that we need to look at where the Great Lakes should be in 40 years and working toward moving them in that direction.

Mayor Ross, Mayor of Superior, Wisconsin said he was a member of the Great Lakes Cities Initiative (led by Mayor Daley), which supports Great Lakes Restoration.

Deb Swackhamer, Professor at University of Minnesota and co-director of the Water Resources Center was the keynote speaker. She started by saying that we really have no definition of Restoration. We need to decide what Restoration is. Is it:

- ⇒ A return to a "natural" state?
- ⇒ Rehabilitation?
- ⇒ Return to a degree of functionality such that the ecosystem is sustainable?

She brought up that there are many different groups and organizations working toward Great Lakes Restoration in their own way. There are many on-going efforts and no complete list of what's going on.

- ⇒ CGLG (Council of Great Lakes Governors) has restoration priorities
- ⇒ USFWS has coastal program and damage assessment cases
- ⇒ USEPA has Great Lakes Strategy (research)
- ⇒ Environment Canada has mostly coastal resources
- ⇒ Sea Grant and Partners work on purple loosestrife
- ⇒ GLFC works on lamprey control, lake trout restoration
- ⇒ MN DNR has lost of small projects
- ⇒ St. Louis River Groups
- ⇒ Other groups and organizations work on many other projects

**The main message of both Ms. Swackhammer and Rep. Tom Huntley was the need to speak with one voice to support the larger picture if we are ever going to get things done.

Proceedings – Developing Restoration and Protection Priorities for Lake Superior

Some key points from the break-out session:

- ⇒ The people in the House and Senate talking about Restoration need to make sure we don't lose what's left in the meantime.
- ⇒ Good stewardship equals behavior modification (we can't rely on property taxes)
- ⇒ Oberstar's office said we can't separate the Lakes from the people
- ⇒ Dayton's aid is meeting the MEP to gather this compiled information and work it in as they work toward future legislation for the Great Lakes.
- ⇒ Make sure that Lake Superior (which is already relatively pristine) receives an equal amount of funding and that it all doesn't go to the more polluted lakes
- ⇒ Lake Superior Day on July 18th. Drum Ceremony on WI Point at 9am!

Appendix E: Governors' Restoration Priorities Press Release

GREAT LAKES GOVERNORS RELEASE PRIORITIES FOR PROTECTION AND RESTORATION OF THE GREAT LAKES

October 1, 2003

Contact: David Naftzger or Peter Johnson
312-407-0177

The Council of Great Lakes Governors today released nine priorities for the protection and restoration of the Great Lakes. The Great Lakes ecosystem is critically important to the quality of life for our citizens and to the economic vitality of region," said Ohio Governor Bob Taft, Council chairman. "In endorsing these priorities, the Great Lakes Governors affirm our commitment to protecting and restoring the natural habitat and water quality of the Great Lakes Basin, preserving diverse and thriving plant and animal communities, protecting the water supply, and safeguarding human health."

The priorities were included in a letter to the sponsors of S. 1398, the Great Lakes Environmental Restoration Act, and H.R. 2720, the Great Lakes Restoration Financing Act. The Great Lakes Governors praised Congressional sponsors and cosponsors for introducing legislation to address ongoing threats to the Great Lakes by providing substantial federal financial support to complement extensive state and local spending on protection and restoration projects.

"We applaud the strong bi-partisan commitment in Congress to restore and protect the Great Lakes," said Governor Taft. "The Great Lakes Governors look forward to partnering with Congress to secure the future of this irreplaceable national treasure."

The Council of Great Lakes Governors agreed that these priorities should guide Great Lakes restoration and protection efforts:

- Ensure the sustainable use of our water resources while confirming that the States retain authority over water use and diversions of Great Lakes waters.
- Promote programs to protect human health against adverse effects of pollution in the Great Lakes ecosystem.
- Control pollution from diffuse sources into water, land and air.
- Continue to reduce the introduction of persistent bioaccumulative toxics into the Great Lakes ecosystem.
- Stop the introduction and spread of non-native aquatic invasive species.

Proceedings – Developing Restoration and Protection Priorities for Lake Superior

- Enhance fish and wildlife by restoring and protecting coastal wetlands, fish and wildlife habitats.
- Restore to environmental health the Areas of Concern identified by the International Joint Commission as needing remediation.
- Standardize and enhance the methods by which information is collected, recorded and shared within the region.
- Adopt sustainable use practices that protect environmental resources and may enhance the recreational and commercial value of our Great Lakes.

The Great Lakes Governors also committed to working with local governments, Canadian provinces, and other stakeholder organizations on a coordinated approach to safeguarding the Great Lakes, which are the largest source of fresh surface water in the world.

Appendix 4:

New York Workshop Proceedings

Great Lakes Restoration Priorities Workshop

Proceedings

Rochester, New York
April 27th, 2004



Preface

This proceedings document presents the outcome of a workshop held in Rochester, New York on April 27, 2004. The workshop was a cooperative effort of the Great Lakes Commission, the New York Sea Grant College Program, and the Council of Great Lakes Governors. Additional steering committee members included representatives from the New York State Department of Environmental Conservation's Great Lakes Program and Department of State's Division of Coastal Resources, the Center for Environmental Information; the Finger Lakes - Lake Ontario Watershed Protection Alliance; the Great Lakes Basin Advisory Council; the Great Lakes Fishery Commission; the Great Lakes Research Consortium; and the U.S. Fish and Wildlife Service. The meeting brought together a range of participants from various Great Lakes constituencies to provide feedback on the Great Lakes Governors' priorities for restoration of the Great Lakes ecosystem and on the coordinative processes needed to achieve these priorities.

This meeting is part of a series of similar events being conducted throughout the Great Lakes region. The Council of Great Lakes Governors has assembled a number of priorities for restoring and protecting the Great Lakes. The workshop series, supported by the National Sea Grant College Program, provides an opportunity for Great Lakes constituents to review these priorities and inform their further development and implementation. Workshop outcomes will be shared with the region's Governors, Premiers, other public officials, workshop participants and the larger Great Lakes community. A primary objective is to inform and advance the restoration efforts of the region's leadership.

Acknowledgements

The Great Lakes Commission expresses its sincere thanks to New York Sea Grant and the Council of Great Lakes Governors for their efforts as partners in hosting this workshop. Additional thanks are also in order for the workshop's steering committee members: New York State Department of Environmental Conservation's Great Lakes Program; Department of State's Division of Coastal Resources; the Center for Environmental Information; the Finger Lakes - Lake Ontario Watershed Protection Alliance; the Great Lakes Basin Advisory Council; the Great Lakes Fishery Commission; the Great Lakes Research Consortium; and the U.S. Fish and Wildlife Service.

Special thanks are in order for conference speakers: Dr. Jack Mattice and Chuck O'Neill of New York Sea Grant; Don Zelazny, Gerry Mikol, Jeff Myers and Robert Townsend of the New York State Department of Environmental Conservation; Fred Anders of the New York State Department of State; and Dr. Edward Mills of Cornell University.

The Great Lakes Commission also recognizes the efforts of Dave Naftzger and Peter Johnson (Council of Great Lakes Governors), and the many New York Sea Grant staff members who helped ensure a well attended, successful event. Jon Dettling of the Great Lakes Commission staff is also to be recognized for his assistance in compiling these proceedings.

Dr. Ron Baird, director of the National Sea Grant Program, warrants special recognition for his personal support of this initiative and for facilitating his office's financial support for the workshop series.

Finally, and most importantly, thanks to all who joined us in Rochester and shared their thoughts and recommendations with us.

Sincerely,

A handwritten signature in black ink that reads "Michael J. Donahue". The signature is written in a cursive, flowing style.

Michael J. Donahue, Ph.D.
President/CEO
Great Lakes Commission

Table of Contents

<i>Preface</i>	2
<i>Acknowledgements</i>	3
<i>Table of Contents</i>	4
<i>I. Background</i>	5
<i>II. Presentations</i>	6
<i>III. Breakout Group Discussions</i>	14
A. Water Resource Management	14
B. Human Health	14
C. Nonpoint Source Pollution	14
D. Land Use	15
E. Persistent Bioaccumulative Toxics	15
F. Non-native Aquatic Invasive Species	15
G. Protecting Coastal Wetlands, Fish and Wildlife Habitats	15
H. Restoring Areas of Concern and other Toxic Hot-spots	16
I. Research, Monitoring and Information Sharing	16
J. Sustainable Use and Economics	16
K. Public Education, Outreach and Involvement	17
L. Implementation	17
M. Other Items	17
<i>IV. Concluding Observations</i>	19
<i>Appendix A: Participants</i>	23
<i>Appendix B: Workshop Announcement and Program</i>	27
<i>Appendix C: Governors’ Restoration Priorities Press Release</i>	30
<i>Appendix D: Breakout Session Summary</i>	32
Group 1	32
Group 2	35
Group 3	37
Group 4	40

I. Background

This workshop was one in a series of similar events held throughout the Great Lakes basin as part of a collaborative project between the Great Lakes Commission, the Council of Great Lakes Governors and the Sea Grant Programs in the Great Lakes region. Funded by the National Sea Grant Program, the project is directed at advancing Great Lakes ecosystem restoration and protection efforts through the development of action items and ideas on how to implement them through a regional process.

Project collaborators recognize that development of a Great Lakes protection and restoration strategy must be based upon sound science, and proceed with a clear understanding of ecosystem conditions and objectives, relevant research activity, and the science/policy/management linkages needed to achieve the strategy's vision. This workshop, along with the corresponding workshops in other Great Lakes jurisdictions, will provide input from the broader Great Lakes community into this process.

The New York workshop was designed to maximize the opportunity for the public to offer input into the process of implementing basin-wide protection and restoration strategies for achieving the Governors' priorities. The meeting used the list of nine priorities released by the Great Lakes Governors on October 1, 2003 as a framework for discussion (Appendix C). Following several brief introductory presentations, the workshop was divided into four breakout groups. Each of the groups was tasked with discussing the following two questions:

- What is your input on the Great Lakes Governors' priorities and how are these priorities important to New York?
- What advice do you have on the design and implementation of a large scale restoration plan to advance the Governors' priorities for the Great Lakes ecosystem?

More than one hundred participants attended the workshop. The objective of the workshop was not necessarily to reach consensus, but to capture the diversity of thoughts throughout the state on Great Lakes restoration needs and approaches. Section II of this document presents a summary of the opening remarks and presentations. Section III summarizes the outcomes of the breakout group discussions, as recorded in the minutes. A summary statement and conclusion are offered in Section IV. The appendices contain a list of participants, the workshop announcement and agenda, a copy of the Governors' press release announcing their restoration priorities, and the original summary notes taken during the breakout sessions.

II. Presentations

The morning began with a welcome and introduction from Dr. Jack Mattice, Director of New York Sea Grant. Dr. Mattice briefly explained the details of the Great Lakes restoration bills that have recently been introduced in Congress. The purposes of this workshop are to help define what the goals of Great Lakes restoration efforts, such as those called for in these bills, should be. More specifically, Dr. Mattice specified the goals of the workshop as: 1) to help identify what we should spend the money on first; and 2) to make sure that the wants and needs of the Lower Great Lakes - Lakes Erie and Ontario - are presented and included in the mix of work that is done when the legislation is finally written and passed.

Dr. Mattice then gave a selective historical look at Lakes Erie and Ontario and made a few observations to help guide thinking during the workshop.

A few years ago, great excitement accompanied the news that a blue pike had been found in someone's freezer. No one had seen a blue pike for years – they were thought to be extinct. Many people were excited by the possibility to obtain a copy of the gene pool of the blue pike and perhaps even to clone the species to restore it to the Great Lakes. It turned out that this was a false alarm. It was not a blue pike. So far as we know, it is still impossible to include blue pike in the restoration plans.

The lesson in this story is that, even if we wanted, we could not restore the Great Lakes to their original state.

In the 1950s, Lake Erie's yellow perch, walleye and blue pike fishery collapsed as a result of degraded environmental quality and population pressure from overfishing. In the mid-to-late 60s the lake was considered by almost everyone to be dying or dead. The lake was hyper-eutrophic – there were so many nutrients in the lake water that it was green. Summer decay of dead algae and the occurrence of toxic blue-green algae (*Microcystis*) in the lake made life impossible.

Jumping ahead to the late 1970s, reductions in sewage and other nutrient inputs to the lake in response to the U.S. Clean Water Act, the Canada Water Act and the Great Lakes Water Quality Agreement made life in the lake possible again. Organisms began to re-populate the lake and recreational fishing became possible again. Unfortunately, some of the species moving into Lake Erie were non-indigenous species (quickly to be known as aquatic nuisance species) such as the zebra and quagga mussels. These mussels remove nutrients from the water, clearing it of suspended matter. In recent years some concern has been expressed that perhaps the nutrient levels have dropped too low – low enough that the fishery has declined and a sustainable fishery might not be feasible.

This conclusion is controversial. The lesson in this story, whether the conclusion is really true or not, is “Be careful what you ask for, you may get it.” It is true that water can be too clean to maintain uses that we might want.

A final example from Lake Erie surrounds Type E, or Avian, botulism. Fish and birds in eastern Lake Erie have been dying in large numbers over the last few years. There is some anecdotal evidence that the mortalities have been mediated through the food chain that includes the invasive round goby. The hypothesis involves two paths for food chain transfers to kill birds. In both paths, the round goby eats organisms in the sediments that are contaminated by botulism bacteria. Then, either 1) contaminated gobies are eaten by the birds directly; or 2) the birds eat the flesh of larger dying fish that have eaten contaminated gobies; either case would lead to bird deaths.

The lesson here is that we need to understand the etiology of Type E botulism before we can develop a plan to restore the lakes to the conditions that existed more than five years ago before the outbreak of fish and bird kills.

Experiences on Lake Ontario have also provided valuable lessons. Banning of use of organochlorine pesticides, such as DDT, has permitted populations of fish eating birds such as peregrines and cormorants to restore themselves. In 1970, there were 89 cormorants in all the Great Lakes; by 2001 there were over 200,000. To smallmouth bass fishermen on eastern Lake Ontario near Little Galloo Island, it must have seemed as if all 200,000 cormorants reproduced there. This smallmouth fishery is one of the draws that bring tourists and their much-needed dollars to the economically depressed eastern Lake Ontario region. Beside killing trees and other vegetation and driving away other birds wherever they nest, cormorants eat large numbers of smallmouth young-of-the-year. Finally, after research proved the impact of cormorants on smallmouth bass, some control methods are being allowed.

The lesson here is that restoration can be a double-edged sword, improving conditions for some indigenous species while deteriorating them for others. It can also carry with it economic or other impacts that were not predicted and/or require secondary responses to balance all ecosystem components including human.

Lake Ontario now has world class Coho, Chinook and Atlantic salmon, as well as brown trout and steelhead fisheries. In the mid-1960s I remember seeing windrows of alewife on the shores of Lake Ontario. Prior to the 1960s, a combination of poor water quality, excess nutrients, damming of tributary streams, and invasion of the alewife and parasitic lamprey via the opening of the St Lawrence Seaway resulted in loss of the Atlantic salmon and lake trout fisheries. Low water quality and uncontrolled alewife populations resulted in spring/summer kills. Subsequent introduction and continuous stocking of the salmon, brown trout and steelhead non-indigenous species led to fast growth, record catches and great influx of tourist dollars. The fishery peaked in the late 80s and early 90s, but still is critical to the economy of upstate NY.

The lesson here is that non-indigenous species are not always perceived as bad.

As a last example, we know that lake sediments especially around Great Lakes urban areas are contaminated with materials such as PCBs, dioxins, furans, organochlorine pesticides (such as DDT), polycyclic aromatic hydrocarbons (PAHs) and heavy metals (cadmium, lead and mercury). Fish advisories are still in force intermittently on the Great Lakes especially for children and pregnant or child-bearing-age women. Some studies have shown that the

economics of clean-up favor spending large amounts of money to get rid of the contaminated sediments.

The lesson here is that local economics may be an appropriate driver for some restoration and free up federal money for less economically feasible restoration.

Dr. Mattice concluded by reiterating that restoration is not a simple process. The goals and mechanisms need to be thought out carefully, perhaps after conducting some critical eye-opening research. Mattice encouraged the participants to consider the lessons he's mentioned as they discuss Great Lakes restoration throughout the workshop.

Following Dr. Mattice's opening remarks, two keynote addresses were presented. The first of these, by Don Zelazny, New York State Department of Environmental Conservation, provided a New York perspective of the state of the Great Lakes. Mr. Zelazny gave examples of the significance of the Great Lakes: it is the largest fresh surface water system on Earth; home to over 33.5 million people; the water route into heart of the continent; and a great influence on both native and modern cultures. A series of maps and photographs showed New York's Great Lakes basin, its important tributaries and its international rivers: the Niagara and St. Lawrence. New York's Great Lakes are important for drinking water, recreation, fish and wildlife as well as for bulk shipping, industry and hydropower. But the legacy of the Great Lakes also includes combined sewer overflows and sanitary sewer overflows, hazardous waste sites, industrial emissions, and aquatic invasive species.

Mr. Zelazny showed charts depicting hydrographs of Lake Erie and Lake Ontario and discussed water quantity and water quality policy and issues. Great Lakes policy comes about from a hierarchy of international and tribal treaties and conventions; binational agreements, strategies and plans; statewide programs; and regional and local initiatives. New York's Great Lakes water quantity policy is the result of the International Boundary Waters Treaty of 1909; the Great Lakes Charter of 1985 and Annex 2001. The International Joint Commission, a binational government body, oversees flows and hydropower uses on the two international rivers through the International Niagara Board of Control and the International St. Lawrence River Board of Control.

Water Quality policy comes about through the Great Lakes Water Quality Agreements of 1972, 1978 and 1987; the Great Lakes Binational Toxics Strategy of 1997; Lakewide Management Plans (LaMPs), Remedial Action Plans (RAPs), and the Niagara River Toxics Management Plan. The goals of water quality policy is to have drinkable water, swimmable water, and edible fish. The focus of the Agreement is to address critical pollutants such as persistent toxics, to remediate 14 beneficial use impairments in Areas of Concern, and to employ an ecosystem approach to restoration. The contaminants that cause fish consumption advisories in Lake Erie are PCBs and mercury; in Lake Ontario, these are PCBs, dioxin and mirex.

Mr. Zelazny also discussed the management of fish and wildlife habitat in the islands, coastal wetlands and uplands of New York's Great Lakes region. Management policy comes about through the Canadian/U.S. Convention on Great Lakes Fisheries of 1955; Lake Ontario and Lake Erie Fish Committees; North American Bird Conservation Initiative; and North American

Waterfowl Management Plan. A State of the Lakes Ecosystem Conference (SOLEC) indicators assessment chart was presented to show the kinds of pressures affecting the environment of Lake Erie and the status of efforts to improve the situation. Some factors which are showing improvement are: sea lamprey control, contaminants in colonial nesting water birds and edible fish, acid rain, and contaminants affecting productivity of bald eagles. However, shoreline hardening is increasing and such emerging issues botulism and aquatic nuisance species are affecting the environment of the lakes.

The second keynote, by Fred Anders, of the New York State Department of State, focused on Great Lakes shoreline communities.

Following these keynote addresses, a series of additional presentations were made, providing an overview of the state of the Great Lakes and some initial thoughts on planning for a restoration initiative. Dr. Edward Mills, Director of Shackelton Point Biological Field Station at Cornell University, discussed ecological changes in the Lake Ontario ecosystem from 1970 to 2000. Phosphorus controls implemented in the Lake Ontario ecosystem in the early 1970s were undeniably successful; lower food web studies showed declines in algal abundance and epilimnetic zooplankton production, and a shift in pelagic primary productivity toward smaller organisms. Stressors on the fish community prior to 1970 such as exploitation, sea lamprey (*Petromyzon marinus*) predation, and effects of nuisance populations of alewife (*Alosa pseudoharengus*) were largely ameliorated by the 1990s. The alewife became a pivotal species supporting a multi-million dollar salmonid sport fishery, but alewife-induced thiamine deficiency continued to hamper restoration and sustainability of native lake trout (*Salvelinus namaycush*). Expanding salmonine populations dependent on alewife raised concerns about predator demand and prey supply, thereby leading to reductions in salmonine stocking in the early 1990s. Relaxation of the predation impact by alewives and their shift to deeper water allowed recovery of native fishes such as threespine stickleback (*Gasterosteus aculeatus*) and emerald shiner (*Notropis atherinoides*).

The return of the Lake Ontario ecosystem to historical conditions has been impeded by unplanned exotic-species introductions. Establishment of *Dreissena* spp. led to increased water clarity and increased vectoring of lower trophic-level production to benthic habitats and contributed to the collapse of *Diporeia*, behavioral modifications of key fish species, and the decline of native lake whitefish (*Coregonus clupeaformis*). Despite reduced productivity, exotic-species introductions, and changes in the fish community, offshore *Mysis* populations remained relatively stable. The effects of climate and climate change on the population abundance and community dynamics of Lake Ontario fish were unknown in 1970, but a historical temperature time series begun in the late 1950s in the Kingston Basin has since provided evidence of climate warming and associated fish community changes. Ecological surprises should be expected in the coming decades that will challenge scientists and fishery managers especially in the face of naturalized and new exotic species, climate warming, and escalating stakeholder demands on the Lake Ontario resource. Continuous long-term ecological studies were critical toward interpreting changes in Lake Ontario's fish community over the past three decades and will be essential for both scientific understanding and management of the Lake Ontario fishery resource in the future.

The following presentation, by Jeff Myers of the New York State Department of Environmental Conservation, provided an overview of NYSDEC water quality assessment programs and efforts to identify water quality priorities in New York State. Myers explained that Clean Water Act Section 305(b) requires states to report on the quality of all state waters. Categories for classifying water bodies include: no known impacts (good); minor impacts/threats (okay); impaired waters (problems); need verification (maybe); unassessed (questionable). Clean Water Act Section 303(d) requires states to identify waters that do not meet water quality standards and do not support designated uses. These impaired waters require a restoration strategy.

There are numerous water quality programs underway at NYSDEC. These include: the Statewide Water Monitoring Program, with 2-year basin monitoring studies; the Waterbody Inventory and Priority Waterbodies List, which assesses all waters in each basin, is compiled biennially, and includes impaired waters, waters with minor impacts and threatened waters; the Clean Water Act Section 305(b) Water Quality Report; the Clean Water Act Section 303(d) List of Impaired Waters, which includes waters that do not support designated uses and problems requiring restoration strategy; and the Restoration and Protection Strategies, which are segment-specific watershed strategies.

The Waterbody Inventory and Priority Waterbodies List update water quality data and information for 2 or 3 basins each year. The entire state is updated over 5 years. The update effort is a public process incorporating all available data and information. This effort is coordinated through the NYSDEC Department of Water (DOW) office in Albany, DOW regional staff, and local water quality partners (WQCC/SWCD).

Myers provided an overview of New York's 303(d) list of impaired waters. Of the 718 waterbody/pollutant listings:

- 212 (30%) are acid rain impaired
- 209 (29%) are due to impaired fish consumption, of which
 - 57% are due to organics in sediment
 - 20% are due to atmospheric deposition
 - 19% are due to “migratory species”
 - 3% are due to industrial or hazardous waste
- 67 (9%) are shellfishing restricted waters
- 79 (11%) are due to urban, storm, and combined sewer overflow, of which
 - 35% of which are in New York City
 - 65% are elsewhere
- 21 (3%) are small, high nutrient lakes
- 51 (7%) have other site-specific issues
- 79 (or 11%) require verification of impairment or pollutants, of which
 - 67% require verification of impairment
 - 33% require verification of the pollutant

Robert Townsend, of the NYSDEC, offered additional perspective on Lake Ontario water quality problems. Townsend addressed five water quality topics which should be considered in any

Great Lakes restoration planning effort: background activities; trends and issues; modeling results; impairment listings; and Areas of Concern.

The statewide priority pollutants include: aldrin/dieldrin, alkyl-lead, benzo(a)pyrene, camphechlor (toxaphene), chlordane, dichlorodiphenyltrichloroethane(DDT) (+DDD & DDE), dioxins/furans, hexachlorobenzene, mercury and mercury compounds, mirex, octachlorostyrene, polychlorinated biphenyls (PCBs).

Some of the actions that are being taken to improve New York's Great Lakes water quality, and means of measuring the progress, include:

- Great Lakes LaMPs and RAPs
 - Fish and Wildlife Health Advisories
 - Specific Studies and Remedial Measures
 - Ecosystem Objectives & Environmental Indicators
- Statewide Programs
 - Monitoring
 - Threshold Reporting
 - Permits and Plans (SPDES)
 - Health Surveys / Special Samplings
- Voluntary Actions
 - Industrial Incentives, Benefits and Costs
 - Pesticide Collection (Clean Sweeps Funding)
 - Hospitals for a Healthy Environment

Information on the *Pesticides Clean Sweeps* was presented and can be found on the NY Sea Grant web site at <http://www.nyseagrant.org/glrestoration>

A chart on *Great Lakes Ecosystem Goals* for Restoration and Pollution Prevention can also be found at the Sea Grant website at <http://www.nyseagrant.org/glrestoration>

Things that can be done to prevent pollution include: preventing introduction; reducing the risk of exposure (to humans/environment); halting media transfer (air, water, land); substituting materials; reducing waste; reuse and recycling of materials; implementing proper disposal methods; employing good housekeeping and careful materials handling; and training employees in better inventory control and careful use of materials.

A number of charts from this presentation can be found at <http://www.nyseagrant.org/glrestoration>. These charts show:

- Percent Reductions in Niagara River Basin Suspended Solids Contaminant Loads (to Lake Ontario 1986 – 1999)
- PCB Trends in Sediment (ug/Kg)
- Lake Ontario Surface Water Critical Pollutant concentrations compared to NYS water quality standards (WQS)/ criteria
- 50 cm Coho Salmon Skinless Fillet 1976 – 2001
- Lake Trout PCB Trends 1977 – 2001
- Whole Fish Age 4 – 6, Lake Trout PBDE Trends 1978 – 1998

Proceedings – New York Great Lakes Restoration Workshop

- Biomagnification of Contaminants through the Foodweb
- Lake Ontario Lakewide Fishery Contaminant Issues
- Recovery of Lake Ontario Bald Eagles
- PCB Mass Balance Model Results
- Relative Contribution of PCB loadings
- Baseline and Load Reduction Scenarios
- Lake Ontario PCB Mass Balance information
- LOTOX2 Findings – Management of PCBs in Lake Ontario
- Model Confirmation - Lake Trout PCBs
- Priority Waterbody Listings for the Great Lakes Basin (NY)
- Areas of Concern (AOCs) for Lake Ontario

Mr. Townsend discussed the common impairments found in the Areas of Concern, including:

- Fish Consumption Restrictions
- Contaminated Sediments
- Degraded Benthos
- Habitat Loss
- Fish Tumors / Deformities

Information on the general content of the Remedial Action Plans (RAPs) for the Buffalo River AOC, the Niagara River AOC, the Eighteen Mile Creek AOC, the Rochester Embayment AOC, the Oswego River AOC, and the St. Lawrence River at Massena AOC can also be found at the website: <http://www.nyseagrant.org/glrestoration>.

Mr. Townsend summarized the fundamental principles and strengths of the RAP process:

- Public involvement
- Use of an ecosystem approach
- Identification of a sequence of events required
- Working to influence events

Priority AOC monitoring measures include:

- Land-based remediation
- Sediments and benthos
- Water quality and point sources
- Plankton population
- Fish tissue and tumors
- Habitats

Among the things that have been learned from the AOC RAP process are:

- Work needs to be comprised of manageable components
- Concerns are not limited to AOC geography
- The ecosystem approach is complex
- Public participation in restoration efforts is essential
- Environmental monitoring is very important

Dr. Michael J. Donahue, President and CEO of the Great Lakes Commission, offered some remarks on ensuring the sustainable use of Great Lakes resources. Dr. Donahue began his presentation with the “take home message” that ecosystem restoration has multiple dimensions, and we need to acknowledge and accommodate them as we establish our vision. He focused his presentation on four key points: the relationship between ecosystem restoration and sustainable use; the benefits of sustainable use; some ideas on restoration priorities; and, sustainability in the context of ecosystem planning.

He defined *sustainability* as a state of resource usage “which meets the needs of the present without compromising the ability of future generations to meet their own needs.” *Restoration* was defined as “reinstatement of beneficial uses in an ecosystem through projects and activities that improve environmental quality and ensure environmentally sound and sustainable resource use.” He then discussed the socioeconomic importance of Great Lakes water resources as a mode of transport, a factor of production, a supporting resource, and a marketable amenity.

According to Dr. Donahue, restoration (in the context of sustainability) can be categorized into: decision support systems; scientific and research infrastructure; and sustainable use laws, policies and programs. Dr. Donahue discussed sustainability in the context of ecosystem planning. Some operational and structural characteristics of such planning include: explicit recognition of state/provincial stewardship role; precise definition of “restoration;” true partnership among stakeholders; use/exploitation of existing mechanisms; clear set of priorities to allocate resources; benchmarking and monitoring; and long term adequate funding that augments, not replaces, resources.

In conclusion, Dr. Donahue restated his take home message that ecosystem restoration has multiple dimensions and we need to acknowledge and accommodate them as we establish our vision.

III. Breakout Group Discussions

The group breakout sessions saw productive discussion on a wide range of topics. The major discussion points, along with comments and recommendations that emerged were captured by a recorder in each session. This section contains a summary of the group discussions organized by topic.

A. Water Resource Management

Several groups noted the importance of developing a regional strategy for managing water resources. It was generally agreed that Great Lakes water should not be diverted outside the basin. In addition to preventing diversions, participants noted the importance of decreasing water consumption. Water resource management was described as an act of balancing numerous competing demands on the region's water resources. Further development of the region's legal and scientific capabilities for such management decisions is needed. It was recognized that water will continue to become a more limited resource and that demands on it will grow. It was noted that natural factors play a large role in the hydrology of the Great Lakes system; these factors go beyond any influence that management decisions may have. A need was mentioned for adapting use patterns to natural fluctuations. There were several comments during the sessions concerning the need to restore the region's natural hydrological components (such as embayments, streams, rivers and coastline).

B. Human Health

Many participants in the workshop noted a strong connection between the health of the ecosystem and the health of the region's human populations. Further scientific and epidemiological studies to clarify these connections were recommended. Several uses of the region's water resources were specifically discussed with regard to their impact on human health. There were a number of comments concerning the quality of drinking water and the need to protect drinking water supplies from pollution sources. The need to restore the quality and safety of swimming beaches, many of which have bacterial problems, was highlighted. Reduction of contaminants in fish was also cited as an important goal for improving human health.

C. Nonpoint Source Pollution

Preventing pollution of the Great Lakes basin from nonpoint sources was a popular topic of discussion, focusing on a wide range of source types and recommended actions. Runoff of nutrients and chemicals from agricultural and residential lands was identified as a leading problem. Improving stewardship and land management practices among homeowners and farm operators was identified as a prospective solution, as was developing incentives for proper management practices. Several participants also commented on the need to improve regional sewerage systems and upgrade sewer infrastructure. Eliminating sewer overflows and improving

technology for waste water treatment plants were recommended. Lack of funding for such programs was cited as a significant impediment.

Many participants noted the need to address issues of pollution and sedimentation on a watershed basis. Significant exceptions to this were the topics of atmospheric deposition of toxic chemicals and acid rain. In these instances, decreasing sources of pollution often require actions at a larger scale that transcend individual watersheds and even nations.

D. Land Use

Several comments centered upon the need for improved land use planning policies. There was considerable recognition that land use patterns and urban sprawl are closely linked to several aspects of environmental degradation throughout the region, including habitat loss and nonpoint source pollution. Suggestions for actions which regional governments should be taking include establishment and enforcement of zoning laws; building codes and community plans; improved community coordination; public acquisition of land and development rights; urban revitalization; and changing of policies that create incentives for living in cities. A lack of resources and incentives at the local level were cited as major impediments to implementing these actions.

E. Persistent Bioaccumulative Toxics

Reducing or eliminating toxic substances from the region's waters was a goal mentioned by several participants. A preventive approach was advocated for stopping the introduction of new chemicals. There was support for increased education among the public and politicians on toxics issues. Deposition of these substances from the atmosphere was frequently mentioned as a dominant route of entry into the region's waters; continued development of scientific and political solutions for mitigating this problem is needed.

F. Non-native Aquatic Invasive Species

Workshop participants agreed that both preventing the spread of existing invasives and preventing the introduction of additional species are high priorities. Many comments focused on the need to implement effective technological and legal measures to stop additional introduction and spread through ballast water. Lack of resources, cooperation and legislation were cited as major impediments. In addition to stopping non-native invasions, restoring native species populations was a frequently mentioned priority.

G. Protecting Coastal Wetlands, Fish and Wildlife Habitats

The protection and restoration of wildlife habitat was of priority interest to many participants, with wetlands and nearshore aquatic habitats of particular interest. This was regarded as a vital step in maintaining biodiversity, protecting threatened species, restoring original species distributions, and restoring commercial fisheries. In addition to aquatic habitat issues, several participants mentioned habitat restoration on land, such as preserving forestation in coastal

zones. Numerous competing demands on the resource, the difficulty of defining goals and targets, and the lack of funding were all mentioned as impediments in realizing progress on this restoration priority.

H. Restoring Areas of Concern and other Toxic Hot-spots

Restoring the use of the region's Areas of Concern was recognized as an important component of a basin-wide restoration strategy. Remedial Action Plan implementation efforts are viewed as an important part of such a strategy. In addition to the Areas of Concern, remediation of contaminated sediments at other sites throughout the basin is also needed. The identification and development of appropriate disposal methods for contaminated sediment was noted as a continuing impediment to achieving these needs.

I. Research, Monitoring and Information Sharing

Considerable interest was expressed in improving and standardizing methods of collecting, sharing and using regional data and information. The need for improved monitoring systems was emphasized, both as a basis for research programs and as a system of benchmarking and measuring progress toward restoration goals. A desire was expressed for a long-term monitoring system that could measure a set of standardized criteria. A need was also expressed for improved models that are able to represent the high level of complexity of the system. A call was made to initiate a whole-ecosystem modeling framework. A need was cited to distill scientific information to an understandable level and provide this information to policy makers and the public. Major impediments to such a large-scale monitoring system include lack of funds, inadequate staffing, lack of technology and a lack of will to maintain the programs.

J. Sustainable Use and Economics

Numerous participants commented on the need to achieve sustainable use of Great Lakes resources. It was emphasized that a balance needs to be struck between economic development and environmental protection that promotes both of these items simultaneously, rather than one at the expense of the other. It was mentioned that a lack of quality information concerning the linkages between the environmental and economic aspects often prevents good management decisions. In particular, tourism and recreation were mentioned as uses of the Great Lakes that can contribute to the sustainability of the system. Increasing the profile of regional tourism opportunities is a method of improving the region's economy while protecting the environment. It was mentioned by several participants that lack of adequate public access is currently hampering the use of the lakes for recreational purposes. A systematic plan for public acquisition of prime recreational lands, and developing them in a way that balances use with preservation, was advocated as a way to increase the use and value of these resources, while preserving them for future generations. The contamination of many public beaches was cited as an additional hindrance to recreational opportunities.

K. Public Education, Outreach and Involvement

The inclusion of public education and outreach components into a restoration strategy was advocated by a large number of participants. Education was seen as necessary to compensate for a general lack of understanding concerning many Great Lakes topics and to increase the public's support for restoration efforts. High priority audiences include private landowners and local governments, both of whom have significant impacts on many environmental quality issues and are often uninformed concerning what actions they can take to protect the region's resources. In addition to education, inclusion of the public in making management decisions was advocated as part of a comprehensive public involvement component of a larger restoration strategy.

L. Implementation

Workshop participants shared numerous comments and recommendations concerning the implementation of a regional restoration strategy. Many of these comments focused on political and institutional barriers that are likely to be encountered during future restoration efforts. The need to compete with political interests in other regions to obtain support and funding was one item mentioned. Reaching consensus among diverse interest groups concerning the relative importance of Great Lakes issues is needed. In addition, building greater support for restoration among a public that is sometimes disinterested was a cited concern. Thoroughly involving the public was mentioned as a necessary step for success, and the inclusion of public involvement in the Remedial Action Plan process was cited as a prospective model. Involvement of a diversity of groups, including various cultural groups and Native Americans, was considered essential.

Recommendations to involve and empower local governments on an unprecedented scale were also offered by participants. Many local governments have had limited involvement in Great Lakes and other environmental issues. For those governments that are actively pursuing environmental protection and restoration, there is a lack of capacity to adequately address these issues. Increasing the number of trained people at the local level, as well as increasing the tools available to local governments, was mentioned as an important part of a locally-focused strategy. A call was also made to reevaluate the structure of agencies at a regional level. Impediments to effective regional management include the lack of enforcement of existing regulations and a high turn-over rate in government which inhibits the stability of programs and funding. In addition, a preventive approach to ecosystem management was advocated.

M. Other Items

Several additional needs were mentioned at the workshop, with adequate and stable funding being frequently mentioned. The difficulty of obtaining such funding in an "anti-taxation" climate was discussed. The need for increased efforts to control algae and weeds was also mentioned by several participants. These efforts should include a multi-faceted approach that includes nutrient control from several sources, research and education. The development of a comprehensive plan to oversee dredging activities in the region was mentioned as an important

need. Deteriorating infrastructure throughout the region, particularly in cities, was mentioned as a future challenge. Understanding and addressing the potential impacts of climate change on the system was also identified as a priority need.

IV. Concluding Observations

The workshop successfully brought together over one hundred individuals to discuss the needs, priorities and strategies for implementation of a large-scale restoration effort for the Great Lakes. As described above, the participants shared a wide variety of comments concerning what such restoration effort might seek to accomplish and how it might be organized. Below are some summary conclusions and observations provided by Dr. Jack Mattice, Director of the New York Sea Grant Program at the State University of New York at Stony Brook.

The organization of discussion topics presented above in sections III-A through III-J (except for III-D) mirrors the priorities of the Great Lakes Governors. This scheme is one of a number of possibilities for organizing the information, but the fact that the breakout topics reasonably fit the Governors' priorities indicates the wisdom and validity of the Governors' choices. However, by comparing lists from all the breakout groups, several larger umbrella issues surfaced. Although these issues have some overlap, each is organized around scientific concepts that require similar types of information and ways of integrating that information. The following summary presents this second perspective, not better, but perhaps more pragmatic in the sense that it is organized around the collection, coordination and integration of information for graded solutions to problems and opportunities for Great Lakes Restoration.

Ecosystem and human health impacts of toxic contaminants

The umbrella issue that seemed to play across all the breakout sessions and encompass the largest number of categories within the lists was ecosystem and human health impacts of toxic contaminants. Examples of topics that fit under this umbrella include: losses of aquatic organisms due to release of new chemicals (e.g., PCBs--polychlorinated biphenyls), endocrine disruption in fish by pharmaceuticals in sewage effluents, fish consumption advisories due to sediment contaminants, and clean-up of Areas of Concern (AOC).

One category of information needed to deal with this issue is related to ecosystems effects and requires an accounting of contaminants from their production through detoxification. Identifying industrial or municipal sources is the starting point, followed by estimating realistic exposures based on hydrology of the water bodies. Then, the levels of toxicity of the contaminants to individual organisms can be measured or predicted. Measurement requires development of valid monitoring protocols and prediction requires development of contaminant risk assessment methodologies. Finally, effective schedules, processes and impacts of mitigation would complete the analytical requirements.

Another category of information needs is the prevention of effects on humans and requires measurement of significant contaminant burdens in sediments and biota and assessment of their potential impacts on human health. Measurement of bioaccumulation, food chain magnification, and body burdens at various stages of human development from fetus to adult is important in determining the need for advisories and to clean up "hotspots" or AOCs. Assessment of the risk benefit of various decisions is important for making the right choices for society.

Non-Indigenous, Aquatic Nuisance and Invasive Species

A second umbrella issue that bubbled up from all the breakout groups was referred to by several acronyms including NIS (Non-Indigenous Species), ANS (Aquatic Nuisance Species) and IS (Invasive Species). The presumed mode of introduction of these species has been in ballast water of ships bringing raw materials and finished goods in and out of the Great Lakes. A primary example is the zebra mussel, the species that brought the issue of invasive species into public consciousness because of its rapid and well-publicized transport around the Great Lakes Basin, its effects on municipal water and power plants and its potential impacts on the entire Great Lakes ecosystem.

There was universal consensus at the workshop that the Lower Great Lakes (Lakes Erie and Ontario) have been impacted economically and ecologically by introduced species. The most obvious negative economic impacts have resulted from the effects of IS on structures and processes of industries that withdraw lake water for cooling, drinking and other uses. Estimates of the costs of these impacts and their prevention or control are in the billions of dollars. Conversely, the stocking of non-indigenous salmon and trout has had a positive economic impact by bringing in tourism stimulated by the establishment of world-class fisheries. The total economic impact of these fisheries is in the hundreds of millions of dollars per year. Some ecological changes that have been attributed to species introductions include shifts in food web structure from the water column to the lake bottom (benthification), occurrence of Type E Botulism in eastern Lake Erie, and decline in smallmouth bass recruitment due to cormorant predation. Although the economics of ecological change is difficult to assess, the sustainability of lake ecosystems in the face of species introductions is a major concern.

Information that seems most effective for dealing with NIS/ANS/IS involves prevention of introduction; control after introduction is frequently difficult or impossible. The first line of defense is developing methods and schedules of ballast water treatment that will prevent transport of organisms over long distances into new environments. But public education also is needed to prevent activities that lead to unintended introductions or to make clear the substantial damage that can occur from supposedly valuable intended introductions. Knowledge of the biology and ecology of each NIS that might be introduced, as well as the biology of similar indigenous species, is critical for evaluating the impacts of introduction.

During the discussion of introduced species, all groups agreed that the goal of restoration of historical species complements efforts to enhance the biodiversity of the Great Lakes. Many participants espoused the idea of a return to native species. Others maintained that this goal was ultimately impossible given the loss of some species such as the blue pike. Still others pointed out that the upstate New York economy now is heavily dependent on the introduced salmon and trout fisheries, making such a goal extremely controversial. Regardless, one conclusion was that fuller representation of user stakeholders would be required to give validity to any consensus regarding a return to native fish communities.

Non-point source pollution

Non-point pollution was a third umbrella issue identified by all of the groups. The focus in this issue seemed primarily related to storm sewers, septic system controls and other nutrient management. Examples presented were impacts of nutrient (fertilizer) runoff and groundwater

influences. Source controls and avoidance of runoff were major subjects to be mined for needed information. Stormwater runoff control received consensus emphasis. Education, such as incorporated in the Non-point Education for Municipal Officials (NEMO) program, was identified as an important contributor to the restoration needed to rehabilitate the Great lakes.

Coastal processes and related issues

The fourth umbrella issue included a range of topics related to coastal processes and implications for uses of the Great Lakes. Lake level control seems to be an organizing principle that pulls these different topics together. One primary concern is the transport of water outside the Basin. With the Great Lakes containing about 95% of the North American fresh water supply, pressures to use Great Lakes water to solve shortages are increasing along with the fresh surface water demands in other areas of the US and Canada. Executives of Basin area states and provinces have banded together to head off such future out-of-basin uses. However, current lake levels are influenced by consumptive uses within the Basin and multiple competing goals of flow control. Lake levels in the future also may be influenced by the effects of global climate change on Great Lakes rainfall and temperatures. Lake levels, in turn, affect erosion and influence sedimentation rates. This translates to changes in dredging requirements to maintain navigation channels and lake access from private property, marinas and boat ramps. Lake levels also affects future needs for land acquisition and development rights of community property for public access.

The scientific information needed to support decisions on lake level and coastal processes management covers a wide scope. It includes: influence of global climate change on basin-wide rainfall and evaporative rates; development of water use prediction tools; environmental and economic assessment and risk analysis of flow decision trade-offs; social sciences of negotiation and decision-making; effects of lake level and storm occurrence on erosion, erosion control, and sedimentation; and assessment and schedules of sediment removal techniques such as dredging.

Watershed management

The fifth and final umbrella issue was watershed management to maintain habitat. Clearly, the watershed management concept is important for the point and non-point contaminant effects and the coastal processes issues as well. However, the participants wished to emphasize that land uses and surface and ground water hydrology distances away from the Great Lakes themselves have important influences on Great Lakes habitat. They mentioned the maintenance or restoration of wetlands in particular because of their role in processing contaminants and nutrients and for providing reproductive havens for so many aquatic species. Some wetland species are important in their own right because they are endangered, threatened or harvested, or because of their unique niche in the ecosystem.

The primary information needs for this issue are likely to be indicated by watershed ecosystem models that focus on quantifying surface and ground water hydrology and processes as they relate to the conditions needed to maintain wetlands species components, as well as those important in other desirable habitats. Process-level understanding of wetlands and other habitats is also necessary for development of effective and lasting habitat restoration as well.

Many other specific topics or issues were identified in the breakout sessions and appear in Appendix D. It is instructive that the issues identified by the Governors' priority list and by the

participants of this workshop demonstrate a significant degree of similarity. This reinforces confidence that major issues have not been omitted.

Impediments to restoration

The various breakout groups considered impediments to restoration in different ways. Some groups identified impediments in general, while others considered the primary impediments for each issue. Regardless of the process, the overall list was, again, very similar from one group to the next. Adequacy of funds for restoration, particularly in an environment of competition for funds that are inadequate to do everything, was at the top of all lists. Other impediments included lack of knowledge; lack of public understanding; lack of political will; degraded infrastructure for attacking problems; and lack of consensus on the appropriate endpoints of restoration.

These impediments included some issues that would have to be addressed in the interest of developing and implementing effective Great Lakes restoration programs. Education of the public appears to be the first and most critical task required for the initiation of a restoration program. Involvement of the public, including **all** stakeholders, users, conservers and preservers alike, into the restoration planning process is necessary for developing the will, the ultimate goals and the funding stream for the program. Another necessity is to identify and collect the scientific information needed to effectively restore the Great Lakes to the conditions supported by consensus agreement. Finally, social sciences techniques must be applied (or first developed then applied) to compare results of trade-offs and facilitate the consensus that will be necessary to foster the political will to conduct what will be a long and involved process. If all this is accomplished, the restoration plan will balance conflicting uses in ways that will be espoused by the stakeholders.

Appendix A: Participants

Name	Address	City, State, ZIP	Phone	Email	Organization / Title
Anders, Fred	41 State Street		518-473-2477	fanders@dos.state.ny.us	
Anderson, Sarah	100 State Street, Rm. 3280	Albany, NY 12231	585-263-6250	sarah-anderson@clinton.senate.gov	Regional Director
Atkinson, Joseph	202 Jarvis Hall	Rochester, NY 14614	716-645-2088	atkinson@eng.buffalo.edu	Professor & Director
Ayers, Carl E.	3339 Brockport Spencerport Rd.	Buffalo, NY 14260	585-352-3216	TecTeach@aol.com	Retired
Ballantine, Kate	415 Hudson Street	Spencerport, NY 14559-2169	607-277-6015	kab226@cornell.edu	Graduate Student
Balyszak, Marion E.		Ithaca, NY 14850	315-781-4390	BALYSZAK@hws.edu	Hobart and William Smith Colleges
Bastuk, Bill	700 West Metro Park	Geneva, NY 14456	585-342-1375	wbastuk@rochester.rr.com	Municipal Marketing Coordinator
Bell, Rochelle	50 West Main Street, Suite 8100	Rochester, NY 14623	585-428-5464	rbell@monroecounty.gov	Environmental Planner
Berkeley, Philip	1776 Niagara Street	Rochester, NY 14614	716-879-4145	Philip.E.Berkeley@usace.army.mil	US Army Engineer
Billhardt, Nichelle	446 West Avenue	Buffalo, NY 14207	585-589-5959		District Manager
Blake, Barry	3 Cypress Circle	Albion, NY 14411	585-377-1002	bblake2@rochester.rr.com	PBIA Board Member
Boergers, Dick	343 Louvaine Drive	Fairport, NY 14450	716-873-4454	rboergers@adelphia.net	Retired, Avid Fisherman
Boyer, Greg		Buffalo, NY 14223	315-470-6825	glboyer@esf.edu	SUNY-ESF Professor of Biochemistry
Brace, Tom	1290 Terry Hill Road	Syracuse, NY 13210	607-594-2034	brace@empace.netWater	Quality Specialist
Branca, Barbara	121 Discovery Hall	Alpine, NY 14805	631-632-6956	Barbara.Branca@stonybrook.edu	Communications Manager
Brazda-Poirier, Margit	657 East Avenue	Stony Brook, NY 11794	585-271-4552	margit_brazda@rpsc.org	Director, Water Education Collaborative
Caslick, Fred	3817 Luker Road	Rochester, NY 14607	607-753-9334	Fred_Caslick@fws.gov	Outreach Specialist
Crouse, Jeff	PO Box 684	Cortland, NY 13045		jcrouse1@tweny.rr.com	
Culligan, Bill	178 Point Drive North	Liverpool, NY 13088	716-366-0228	wjcullig@gw.dec.state.ny.us	Great Lakes Section Head
Dennie, Richard	4839 County Line Road	Dunkirk, NY 14048	585-872-3691	lzcharters@aol.com	
Domske, Helen	SUNY Buffalo	Macedon, NY 14502	716-645-3610	hmd4@cornell.edu	
Donahue, Michael J.		Buffalo, NY 14260		mdonahue@glc.org	President, Great Lakes Commission
Drave, Capt. Steve				kingme@frontiernet.net	N King Me Sportfishing Charters
Drury, Alinda	30 Church Street, Rm. 201A	Lake Ontario, NY	585-428-6140	Drurya@cityofrochester.gov	Executive Staff Assistant

Proceedings – New York Great Lakes Restoration Workshop

Name	Address	City, State, ZIP	Phone	Email	Organization / Title
Eberhardt, Anthony J.	1776 Niagara Street	Rochester, NY 14614	716-879-4257	anthony.j.eberhardt@lrb01.usace.army.mil	U.S. General Manager
Focazio, Paul	121 Discovery Hall	Buffalo, NY 14207	631-632-6910	Paul.Focazio@stonybrook.edu	Writer & Web Designer
Garcia, Ginette	1111 Westmoreland Road	Stony Brook, NY 11794		ginette@sas.upenn.edu	Graduate Student
Gersitz, Paul A.	108 Gardenwood Lane	Alexandria, VA 22308	716-874-2009		
Gibbs, Peter B.	133 N. Pleasant Street	Kenmore, NY 14223	315-788-4222	pgibbs@ducks.org	Biologist
Goodwin, Tom	50 West Main Street, Suite 8100	Watertown, NY 13601	585-428-5418	tgoodwin@monroecounty.gov	Senior Environmental Planner
Greene, David	229 Jarvis Hall, Univ. at Buffalo	Rochester, NY 14614	716-645-3610	hdg2@cornell.edu	
Guilford, John	PO Box 339	Buffalo, NY 14260	315-938-5083	john.guilford@oprhp.state.ny.us	Parks Manager
Hale, Wayne Jr.	14016 Rt. 31	Sackets Harbor, NY 13685	585-589-3187	whale@orleansny.com	Manager
Hawkes, Janet E.	1554 Taughanock Blvd.	Albion, NY 14411	607-387-3726	jeh34@cornell.edu	Board Chair
Haynes, James M.	350 New Campus Drive	Ithaca, NY 14850	585-395-5783	jhaynes@brockport.edu	Professor
Hogarty, Heather	6 Court Street, Room 305	Brockport, NY 14420	585-243-1638	hhogarty@co.livingston.ny.us	County Planner
Hope, Michele	1776 Niagara Street	Geneseo, NY 14454	716-879-4124	michele.l.hope@usace.army.mil	Project Manager, Planning Branch
Howard, Ann	85 Lomb Memorial Drive	Buffalo, NY 14207	585-475-5104	MAH8652@RIT.EDU	Interim Director Science, Technology and Society
Hoyt, Pat	112 Rice Hall	Rochester, NY 14623	607-255-2386	prh22@cornell.edu	Administrative Assistant
Hyde, Jim	Flanigan Square, 547 River Street	Ithaca, NY 14850	518-402-7711	jbh01@health.state.ny.us	Research Scientist
Ingmire, Scott	PO Box 606	Troy, NY 12180-2216	315-366-2498	scott.ingmire@co.madison.ny.us	Senior Planner
Keane-Yancey, Nora	1180 Canandaigua Rd.	Wampsville, NY 13163	315-597-6138	Nora.Yancey@mail.house.gov	Staff Assistant
Klein, David	1048 University Ave.	Palmyra, NY 14522	585-546-8030	dklein@tnc.org	Senior Field Representative
Knauf, Charles L.	111 Westfall Road Room 976	Rochester, NY 14607	585-274-8440	Cknauf@monroecounty.gov	Environmental Health Project Analyst
Knospe, Chris		Rochester, NY 14692			Office of US Representative Reynolds
Koon, David	268 Fairport Village Landing		585-223-9130	koond@assembly.state.ny.us	Assemblyman
Kreusch, Arleen	1776 Niagara Street	Fairport, NY 14450	716-879-4438	arleen.k.kreusch@LRB01.usace.army.mil	US Public Affairs Specialist
Landre, Betsy	309 Lake Street	Buffalo, NY 14207-3199	315-536-7488	blandre@eznet.net	Program Coordinator
LaPan, Steve	PO Box 292	Penn Yan, NY 14521	315-654-2147	srlapan@gw.dec.state.ny.us	Lake Ontario Unit Leader
Lederthiel, Gerald	4884 Dewey Ave.	Cape Vincent, NY 13618	585-663-9318	J-Leder@msn.com	Walk-in
Lozano, Jose	525 Third Street	Rochester, NY 14612	607-273-8381	jll13@cornell.edu	IAWWTF Laboratory Director
MacNeill, Dave	SUNY Brockport	Ithaca, NY 14850	585-395-2638	dbm4@cornell.edu	

Proceedings – New York Great Lakes Restoration Workshop

Name	Address	City, State, ZIP	Phone	Email	Organization / Title
Makarewicz, Joe	125 Lennon Hall	Brockport, NY 14420	585-395-5740	Jmakarew@brockport.edu	Distinguished Professor
Manno, Jack	SUNY ESF, 1 Forestry Drive, 24 Bray Hall	Brockport, NY 14420	315-470-6720	jpmano@mailbox.syr.edu	Executive Director
Marks, Thomas	7004 Waring Circle	Syracuse, NY 13210	716-947-9350	Tommarks@verizon.net	Past President
Mattice, Jack	SUNY Stony Brook	Derby, NY 14047	631-632-6905	Jack.Mattice@stonybrook.edu	Director
Miller, David	160 Genesee Street	Stony Brook, NY 11794	315-253-1276	dmiller@cayuga.ny.us	Director, Cayuga County Planning & Development
Mills, Edward	Cornell University	Auburn, NY 13021		elm5@cornell.edu	
Mitchell, Kerry	3000 HSBC Center		716-858-9581	kerry.mitchell@dfait-maeci.gc.ca	Manager
Monostory, Les	125 Euclid Drive	Buffalo, NY 14203		lesmonostory@ongov.net	Environmental Planner
Montgomery, Kelly	100 Ouellette Ave., 8th Floor	Fayetteville, NY 13066	519-257-6723	montgomeryk@windsor.ijc.org	Junior Environmental Scientist
Myers, Caroline	249 Highland Ave.	Windsor, ON N8X 3X6	585-473-2120	caroline-myers@ny.nacdnet.org	Executive Director
Myers, Jeff	625 Broadway	Rochester, NY 14620			Management
Nale, Lee	1376 Calkins Road	Albany, NY 12233-3502	585-359-4207		
O'Brien, Dennis	268 Fairport Village Landing	Pittsford, NY 14534	585-223-9130	koond@assembly.state.ny.us	Legislative Aide
Oleson, Diane	SUNY Brockport 50 West Main Street, Suite 8100	Fairport, NY 14450	585-395-2638	djo5@cornell.edu	
Olufsen, Steve		Brockport, NY 14420	585-325-5043	solufsen@monroecounty.gov	Planning Technician
O'Neill, Chuck	SUNY Brockport	Rochester, NY 14614	585-395-2638	cro4@cornell.edu	
Pearsall, Webster	6274 East Avon-Lima Road	Brockport, NY 14420	585-226-5335	wepearsa@gw.dec.state.ny.us	Regional Fisheries Manager
Peppas, Terry	5222 Columbia Avenue	Avon, NY 14414	716-627-6699	tpeppas@verizon.net	Energy Consultant
Raab, Michael	95 Franklin Street, 10th Floor	Hamburg, NY 14075-5707	716-858-6231	raabm@erie.gov	Deputy Commissioner
Ricotta, Frank	6274 E. Avon-Lima Rd.	Buffalo, NY 14202	585-226-5454	fricott@gw.dec.state.ny.us	Regional Engineer
Rogers, Brad	520 East Main Street	Avon, NY 14414	585-344-0978	bfrogers@usadatanet.net	
Rosenbaum, Peter	213 Piez Hall, Biology Dept.	Batavia, NY 14020	315-312-2775	par@oswego.edu	Professor
Sage, Samuel	658 West Onondaga Street	Oswego, NY 13126	315-475-1170	Samuel.Sage@aslf.org	Director
Sander, Ed	368 Titus Ave.	Syracuse, NY 13204	585-544-1830	esander@rochester.rr.com	Advisor
Sanza, Frank	242 Yarkerdale Drive	Rochester, NY 14617-3816	585-865-5419	frankjs@rochester.rr.com	
Sawyko, Paul M.	200 Meridian Centre, Suite 110	Rochester, NY 14615	585-241-5058	psawyko@aol.com	
Scudder, Dave		Rochester, NY 14618	315-587-2272	Dscudder@rochester.rr.com	
Sessler, Sally	202 Iroquois Lane		315-457-6653	ssessler@twcny.rr.com	
Shearer, Robert		Liverpool, NY 13088	585-226-5397	risheare@gw.dec.state.ny.us	NYSDEC Deputy Regional Permit Administrator

Proceedings – New York Great Lakes Restoration Workshop

Name	Address	City, State, ZIP	Phone	Email	Organization / Title
Sikka, Harish	1300 Elmwood Ave.	Avon, NY 14414	716-878-5422	sikkahc@buffalostate.edu	Research Director, Environ- Toxicology Laboratory
Skaley, James	940 Dryden Road	Buffalo, NY 14222		JESkaley@aol.com	Environmental Consultant
Snyder, James	412 St. Rt. 37	Ithaca, NY 14850	518-358-5937	jim_snyder@srmtenu.org	Water Quality Tech.
Songin, Bob	96 Vista Drive	Hogansburg, NY 13655	585-726-5739	reelxite@rochester.rr.com	Charter Captain
Squires, George	29 Liberty Street, Suite #3	Rochester, NY 14615	585-343-2362	george-squires@ny.nacdnet.org	District Manager
Stemp, Art	Box 296, Rt. 86	Batavia, NY 14020	518-897-1211	awstemp@gw.dec.state.ny.us	New York Lake Champlain Coordinator
Stendardi, Debbie	30 Lomb Memorial Drive	Ray Brook, NY 12977	585-475-5040	dmsgrl@rit.edu	VP for Government & Community Relations
Streibel, Max	93 Brushcreek Drive	Rochester, NY 14623	585-581-6320	Mstreibel@greeceny.gov	Deputy Supervisor
Strnisa, Dee	56 Game Farm Rd.	Rochester, NY 14612	518-475-0291	distrnis@gw.dec.state.ny.us	Water Education Specialist
Terninko, John	55 St. Paul Street	Delmar, NY 12054	585-262-2870	ceiroch@frontiernet.net	Program Coordinator
Thompson, Molly	SUNY Oswego	Rochester, NY 14604	315-312-3042	mat36@cornell.edu	Dune/Habitat Educator
Thompson, Peter	658 West Onondaga Street	Oswego, NY 13126	315-475-1170	Peter.Thompson@aslf.org	Educator
Townsend, Robert E.	625 Broadway	Syracuse, NY 13204	518-402-8284	retownse@gw.dec.state.ny.us	Management
Twiss, Michael R.	Dept. of Biology	Albany, NY 12233-3502	315-268-2359	mtwiss@clarkson.edu	Assistant Professor
Verdoliva, Francis J.	2133 Ct. Rt. 22	Potsdam, NY 13699-5805	315-298-7605	fjverdol@gw.dec.state.ny.us	Special Assistant Salmon River
Vodacek, Anthony	54 Lomb Memorial Drive	Mexico, NY 13302	585-475-7816	vodacek@cis.rit.edu	Assistant Professor
Wagenet, Linda	Warren Hall	Rochester, NY 14623	607-255-6518	lpw2@cornell.edu	Senior Extension Associate
Wager, Bruce	270 Michigan Ave.	Ithaca, NY 14853	718-851-7070	bdwager@gw.dec.state.ny.us	Environmental Engineer
Waterhouse, Capt. Mike	13810 Waterport-Carlton Rd.	Buffalo, NY 14202	585-682-4925	lureum@aol.com	Captain
Waud, John	85 Lomb Memorial Drive	Albion, NY 14411	585-475-2182	JMWSCL@RIT.EDU	Director of Environmental Science
Westling, Susan T.	7 N. Erie Street	Rochester, NY 14623	716-752-4296	STW@co.chautauqua.ny.us	Director of Planning and Intermunicipal Services
White, David	SUNY Oswego	Mayville, NY 14757	315-312-3042	dgw9@cornell.edu	
Zelazny, Donald	NYSDEC	Oswego, NY 13126			
Zorn, David	50 W. Main Street, Suite 8107		585-454-0190	dzorn@frontiernet.net	Executive Director

Appendix B: Workshop Announcement and Program

Event Details:

On April 27, 2004, New York Sea Grant will host "Great Lakes Restoration Priorities Workshop: Your Chance to Make a Difference in Our Lakes' Future." This event, to be held in Rochester, will bring together public and private stakeholders from along New York's Lake Erie and Lake Ontario shorelines to identify and refine lake-wide restoration needs and priorities and to help foster a collective vision to guide the process. Everyone who uses or is interested in New York's Great Lakes resources is invited to attend the workshop.

The Great Lakes Commission first embarked upon this project to provide the scientific and technical assistance needed to inform the development of legislative, appropriations, and policy priorities for the Council of Great Lakes Governors' Great Lakes restoration initiative. At this meeting, New York Sea Grant, in association with the Great Lakes Commission, will seek input on the priorities from stakeholders interested in New York's Great Lakes waters. This input will help develop a shared vision and the principles, goals, objectives and strategic actions needed to achieve that vision.

Agenda Items:

- GL Restoration Financing Act H.R. 2720 (Congressman Reynolds invited)
- The State of the Great Lakes
- GL Shoreline & Economic Development
- Ecosystem, Fisheries and Invasive Species
- Water Quality and Pollution Prevention
- Ensuring the Sustainable Use of Resources

Breakout Sessions:

- What are your priorities for Great Lakes restoration you wish to share with the Great Lakes governors?
- What advice do you have on the design and implementation of a large-scale restoration plan to advance the Governor's priorities for the Great Lakes ecosystem?

Background on this Great Lakes Initiative:

The Great Lakes make up one-fifth of the world's fresh surface water resource, so large that it would seem nothing could ever damage them. But the lakes are in peril. Human development and use of this unique natural resource has degraded the lakes to the point that the lakes are in need of protection and restoration. To this end, the Governors of the eight Great Lakes states have generated priorities toward the development of restoration strategies for the lakes.

Proceedings – New York Great Lakes Restoration Workshop

In response to this, the Great Lakes Commission is sponsoring a series of workshops throughout the Great Lakes states (including New York, Ohio and Pennsylvania) in the Winter and Spring of 2004 to solicit public input on the development and implementation of priorities for ecosystem restoration. The initiative is funded by the National Sea Grant Program and each workshop features a partnership between the state's Sea Grant Program, the Governor's office, relevant state agencies and the Great Lakes Commission.

Participants will have an opportunity to review and discuss restoration priorities developed by the Council of Great Lakes Governors, and share additional thoughts and ideas relevant to their jurisdiction and the entire region. Workshop outcomes will be captured in proceedings documents and shared with Great Lakes leadership and the entire community of stakeholders in the interest of promoting consensus and unity of purpose in restoration and protection initiatives.



GREAT LAKES RESTORATION WORKSHOP

Rochester, NY, 27 April 2004

8:00 a.m.	Registration	
8:30 a.m.	Welcome and Introduction	Dr. Jack Mattice, New York Sea Grant Dr. Michael Donahue, Great Lakes Commission
8:45 a.m.	Great Lakes Restoration Policy Initiatives	Dr. Michael Donahue
	Keynotes:	
9:00 a.m.	State of the Great Lakes: A New York Perspective	Don Zelazny and Gerry Mikol, NYS DEC
9:45 a.m.	Great Lakes Shoreline Communities	Fred Anders, NYS DOS
10:30 a.m.	Break	
	The State of the Great Lakes	
10:45 a.m.	Ecosystem, Fisheries and Invasive Species	Dr. Edward Mills, Cornell University
11:15 a.m.	Identifying Water Quality Priorities for NYS: Lake Ontario Water Quality Priorities	Jeff Myers and Robert Townsend, NYS DEC
11:45 a.m.	Ensuring the Sustainable Use of Resources	Dr. Michael Donahue
	Great Lakes Basin Restoration	
12:15 p.m.	Council of Great Lakes Governors Priorities for Great Lakes Restoration	Dr. Michael Donahue
12:30 p.m.	Lunch	
1:20 p.m.	Charge to Breakout Groups	Chuck O'Neill, New York Sea Grant
1:30 p.m.	Breakout Groups - Addressing two questions: 1. What are your priorities for Great Lakes restoration you wish to share with the Great Lakes governors? 2. What advice do you have on the design and implementation of a large scale restoration plan to for the Great Lakes ecosystem?	Facilitators
2:45 p.m.	Break	
3:00 p.m.	Breakout Groups Reports	Facilitator
4:00 p.m.	Consensus-Building	Moderator: Dr. Jack Mattice
4:30 p.m.	Wrap-up and Next Steps	Dr. Michael Donahue
4:45 p.m.	Adjourn	



Appendix C: Governors' Restoration Priorities Press Release

GREAT LAKES GOVERNORS RELEASE PRIORITIES FOR PROTECTION AND RESTORATION OF THE GREAT LAKES

October 1, 2003

Contact: David Naftzger or Peter Johnson
312-407-0177

The Council of Great Lakes Governors today released nine priorities for the protection and restoration of the Great Lakes. The Great Lakes ecosystem is critically important to the quality of life for our citizens and to the economic vitality of region," said Ohio Governor Bob Taft, Council chairman. "In endorsing these priorities, the Great Lakes Governors affirm our commitment to protecting and restoring the natural habitat and water quality of the Great Lakes Basin, preserving diverse and thriving plant and animal communities, protecting the water supply, and safeguarding human health."

The priorities were included in a letter to the sponsors of S. 1398, the Great Lakes Environmental Restoration Act, and H.R. 2720, the Great Lakes Restoration Financing Act. The Great Lakes Governors praised Congressional sponsors and cosponsors for introducing legislation to address ongoing threats to the Great Lakes by providing substantial federal financial support to complement extensive state and local spending on protection and restoration projects.

"We applaud the strong bi-partisan commitment in Congress to restore and protect the Great Lakes," said Governor Taft. "The Great Lakes Governors look forward to partnering with Congress to secure the future of this irreplaceable national treasure."

The Council of Great Lakes Governors agreed that these priorities should guide Great Lakes restoration and protection efforts:

- Ensure the sustainable use of our water resources while confirming that the States retain authority over water use and diversions of Great Lakes waters.

Proceedings – New York Great Lakes Restoration Workshop

- Promote programs to protect human health against adverse effects of pollution in the Great Lakes ecosystem.
- Control pollution from diffuse sources into water, land and air.
- Continue to reduce the introduction of persistent bioaccumulative toxics into the Great Lakes ecosystem.
- Stop the introduction and spread of non-native aquatic invasive species.
- Enhance fish and wildlife by restoring and protecting coastal wetlands, fish and wildlife habitats.
- Restore to environmental health the Areas of Concern identified by the International Joint Commission as needing remediation.
- Standardize and enhance the methods by which information is collected, recorded and shared within the region.
- Adopt sustainable use practices that protect environmental resources and may enhance the recreational and commercial value of our Great Lakes.

The Great Lakes Governors also committed to working with local governments, Canadian provinces, and other stakeholder organizations on a coordinated approach to safeguarding the Great Lakes, which are the largest source of fresh surface water in the world.

Appendix D: Breakout Session Summary

Below are the transcripts of the recorders' notes from the Breakout sessions. Only grammatical and punctuation changes have been made.

Group 1

- Economic impact - cost/benefit
- Water quality
- Restoration of native species - commercial fishery
- Research/education/scientific monitoring (detection and evaluation)
- Shoreline erosion
- Land acquisition - public ownership for stewardship
- Urban sprawl - land use - pesticides
- Great Lakes water should not be diverted outside basin.
- Restore structure and function of coastal zone by managing watershed (embayments, streams, rivers, coastline)
- Lakeshore wetlands (protection and restoration)
- Economic and biological sustainability
- Protecting and restoring natural hydrology
- Education needed
- Watershed based impact from upper watershed
- Human health and ecosystem health must be restored.
- All bird conservation
- Recovery of threatened and endangered species
- Protect of ecologically significant areas.
- Implement cost effective technology to deal with invasive species.
- Goal - eliminate / prevent future exotic invasion
- Reduce erosion and sedimentation due to agriculture.
- Take a preventive approach to chemical use and introduction.
- Native American involvement/multi-cultural involvement
- Need better models to predict complex system
- Impacts of global climate change

- Restore swimmable waters.
- Impact of recreation on water quality
- Development of managed wetlands
- Cleanup contaminated sediments.
- Restoration efforts should include small and large scale projects.

Impediments/Solutions

- Degrading infrastructure - “big cities”
- Inadequate socio-economic data
- No enforcement of existing laws
- No long term goal for restoration
- Current engineering technologies limited - funding allocations
- Economic impact - regulation / enforcement
- Political/lack of public education, toxins
- Expectations are not always realistic or easily obtained.
- Crisis management
- Secure funding stream
- Lack of education - concept of “big picture”
- Private landowner
- Money - fear of more taxation
- Zoning laws/building codes - inadequate plans
- Limited town resources
- No incentive for community coordination
- Water is becoming a limited resource. Economic pressures are outweighing environmental concerns. Water use is excessive.
- Agency structure
- Focus of RAPs
- Lamps focus on offshore.
- Lack of trained people - money
- Local perspective - need regional approach
- Development pressures
- Politics
- Inability to develop wetlands naturally

Proceedings – New York Great Lakes Restoration Workshop

- The definition of sustainability includes both economic/environmental.
- Told either or choice
- Lack of complete scientific knowledge of “natural” hydrology
- Competing interests for water levels
- Lack of public understanding
- Local politics and home rule autonomy
- Lack of knowledge link between ecosystem health and human health
 - Lack of adequate incentive programs - landowners
- No incentive for private landowners to cooperate

Group 2

1. Aquatic Nuisance Species - manage existing species, reduce new invasions
 2. Impacts of contaminants on human health
 3. Cleaning up contaminated sediments and AOCs.
Create a balance of species.
Include nearshore areas and embayment.
 4. Public education and outreach
Sustainable economy
 5. Habitat restoration - wetlands
Groundwater interactions at hazardous waste sites
Nonpoint source pollution
Use a watershed approach.
 6. Out-of-basin influences (atmospheric deposition)
Smart growth-zoning
Monitoring programs
 7. Need for standardized criteria
- ANS - stop new introductions
 - Aquatic nuisance species
 - NIS - both plants and animals
 - Public involvement
 - Existing manage those species
 - Cleaning up contaminated sediments - remediate AOCs figure out methods of disposal
 - Out of basin (atmospheric) influences of contaminants must be defined and reduced.
 - Address impacts of contaminants on human health.
 - Habitat destruction
 - Wetland restoration
 - Loss of biodiversity
 - Minimize water quality impacts through smart growth - zoning
 - Include infrastructure, land-use (WWTP) - CSOs
 - Groundwater interactions with hazardous waste
 - Reduce or minimize nonpoint sources such as pesticides, fertilizers, agriculture run-off, and lawns.
 - Monitoring systems long-term - ships, buoys

Proceedings – New York Great Lakes Restoration Workshop

- Balanced species mix - pelagic, nearshore, avian which mirrors original mix in lake
- Public education and outreach - research sharing
- Watershed approach (lake-shed)
- Standardized criteria for (fish consumption) contaminant levels - impediment epidemiological studies
- Make water-dependant economies - sustainable and thriving include recreation
- Nearshore and embayment areas must be included

Impediments

- Funding
- Data gaps - lack of long-term data - need for data linkages - information needs to get to decision makers - need long-term planning
- Lack of public will and concern
- Lack of political will conflict of political priorities
- Lack of local ownership - must move from local government up
- Lack of scientific understanding - disconnect between science and policy
- Out-of-basin sources (atmospheric) don't lend themselves to in-basin problems
- Legal liability (polluters)

Steps for implementing

- \$ Need for whole - ecosystem model framework
- \$ Long-term monitoring program is essential
- \$ Pass HR2720 and fund

Group 3

Priorities Ranked

1. Algae and weed management
2. Address ballast treatment - Invasive species introductions.
3. Tied - Building local capacity to address restoration issues
Atmospheric and water deposition of toxics into Great Lakes system
4. Focus on restoring the nearshore area.
5. Create greater public access to the lake shore.
6. Develop long term monitoring for environmental conditions
7. Tied - Maintain recreational fishing.
Addressing storm sewer overflow abatement
8. Create a unified channel dredging plan.
9. Address the balance between conflicting uses of the lake resource.

Suggestions

- Ballast - cleaning - implementing - steam-clean tanks - recirculate exhaust
- Focus on nearshore forestation.
- Carry out unified channel dredging - managed by one organization make efforts coordinated
- Greater public access to the lake shore especially Lake Erie
- Include a focus on potable water in terms of information and restoration.
- Reduce production of algae.
- Build local capacity to address restoration issues.
- Atmospheric deposition - to be addressed as a cross border issue - even beyond borders of this watershed
- Acid rain needs to be addressed as a global issue beyond watershed borders.
- Evaluate and approve effective ballast water treatment technologies.
- Address storm sewer overflow abatement.
- Maintain recreational fishing.
- Purchase of development rights of commercial properties
- Develop management tools based on successful program models like clean sweeps.

- Outreach programs to local governments at low or no cost to governments.
- Reduction of toxics and organics entering the water
- Address the balance between conflicting uses of the lake resource
- Mechanism needs to be developed to assure long term monitoring
- Develop practical approaches to weed control.

Impediments

- Ballast cleaning impediments
 - shipping industry
 - money
 - legislation - lack of defined standards for discharge
- Nearshore restoration
 - Balance of competing interests
 - Ecological question - how productive is “good”
 - Nearshore habitat conditions which are best for restoration/protection - what is “good”
 - Lack of funding for extant plans
- Channel dredging - developing a coherent management plan
 - lack of funds
 - need an overarching regulatory/management group
- Need for great public access
 - need support from local governments
 - private ownership is a problem.
 - need a plan to prioritize land acquisition
 - need a comprehensive development plan to balance access/commercial development/ open space/ habitat preservation - **will require partnerships**
 - storm sewer and combined sewer outfall discharges contaminating beaches and other public access area.
- Focus on potable water
 - funding
 - lack of a network for water treatment plants to communicate. They need to have outreach to let them define common interests.
- Algae and macrophyte control
 - nutrient control
 - educate shoreline residents about septic.
 - agricultural runoff contributes to problem - management problem

Proceedings – New York Great Lakes Restoration Workshop

- develop programs to educate farmers - outreach
 - lack of best management practice programs already in place
 - research focus with coherent plan developed to address weed control
- Building local capacity to address restoration issues
- Outreach programs to local governments
 - turnover in governments that results in a lack of continuity in responses and funding.
 - difficult to build a constituency for involvement in a specific issue.
 - pilot projects lacking that demonstrate an effective solution
 - lack of regional approaches to a problem on a greater than local scale
- Acid rain/atmosphere deposition
 - need to be able to influence areas outside of the region contributing to the problem
 - jurisdictional issues within the basin. Who is in charge?
 - both air and water pollution inputs from outside the watershed and jurisdiction
- Storm sewer overflow
 - funding lacking
 - current technology inadequate
 - education of watershed residents lacking
- Maintain recreational fishing
 - contaminants in the fish
 - invasive species disrupting the food web
 - lack of access to fishing sites or lake itself
 - lack of public interest in fishing
 - perception of water quality/animal rights issue/
- Balance of conflicting issues
 - Lack of education/consensus among stakeholder groups
 - Lack of compromise on “turf” issues - “giving up something”
 - Lack of management options
- Long term monitoring
 - lack of funds
 - turnover of monitoring personnel
 - technology inadequate
 - lack of management options
 - lack of will to maintain programs

Group 4

- Lake level issues
- Some managed some Mother Nature
- Phosphorus loading
- Residential nonpoint source
- Funds
- Prevention and control of invasive species
- Loss of aquatic habitat
- Lack of monitoring
- Increasing drinking water quality decrease pollution
- Improve health of system by performing research and increasing monitoring developing restoration program for system as whole
- Clearly define where we are holistically
- Restoration of native fish species
- Lack of public access
- Lack of public participation in official management
- Agriculture nutrient management
- Need for public consensus on end points
- Lack of political support
- Control of water diversions and consumption
- Accumulation of toxic contaminants
- Sedimentation
- Perception of economic reality
- Septic system controls
- Toxics / pharmaceuticals
- Increasing native species
- Tourism promotion
- Urban revitalization - anti sprawl
- Identification of diverse stakeholders and their interests
- Plan that impacts largest audience “Tourism” If follow that plan this will be accomplished
- To move process forward

Proceedings – New York Great Lakes Restoration Workshop

- Successes of RAPs
- Strong public participation
- Spirals
- Funding drops as involvement drops
- Respond to crisis
- Ounce of prevention worth pound of cure
- Too willing to use cure
- Process flawed, not representative sample of publics at this meeting
- Need to include public in management process
- EPA structure
- Involvement vs. participation
- If want to reach “public” find out what “public” is define and reach each target audience in means effective to them.
- Process engagement overcome obstacles
- It is critically important to define process of gaining public priorities and build it into whatever we do, including:
 - education
 - media
 - planning
 - technical approaches
 - dollars
 - communicating research
 - representative public
 - Native Americans
 - farmers
 - inner city
- Public participation in a real sense must be built in
- Discussion revolved around classic issues and impediments
- Took step further to say what’s missing
- We should review the process that has us where we are today and determine what we’ve learned and what we’re doing wrong.
- Sustainability of institution and resources

Impediments

- Changing habits

Proceedings – New York Great Lakes Restoration Workshop

- Lack of understanding
- Competition for money
- Will and money
- Hopeless case
- Funding
- Pressure for multiple uses
- We need to restore pre-industrial biodiversity.
- Lack of will and knowledge
- Time and funding
- Funds and true ability to work together
- Challenge of coordination to eliminate overlap
- Funds self preservation
- Funding - would ecosystem support it
- Money: existing development fish hatchery - Lake Erie
- Lack of money and political support
- Structure
- Slurry for money
- The bureaucratic process creates obstacles.
- People have other priorities
- Legal
- Lack of knowledge for proper methods
- Requires tributary renovations
- Land stewardship
- Lack of vision
- Political
- Public education
- Coordinated infrastructure
- Political process that is anti-city
- No real interest in broadening the base
- Impediments:
 - self-appointment
 - funding
 - landownership
 - structure
 - process-openness
 - complexity

Proceedings – New York Great Lakes Restoration Workshop

- dedication
- technology
- perceptions
- standards
- education
- long-term
- politics
- engagement

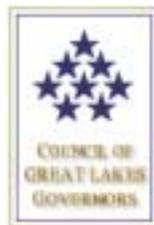
Appendix 5:

Ohio Workshop Proceedings

Ohio Public Meeting Concerning Great Lakes Restoration Priorities

Proceedings

Parma, Ohio
February 24, 2004



Preface

This proceedings document presents the outcome of a public meeting held in Parma, Ohio on February 24, 2004. This meeting was a cooperative effort of the Great Lakes Commission, Ohio Sea Grant College Program and the Council of Great Lakes Governors. The National Sea Grant College Program provided funding for this event. The meeting brought together a range of participants from various Great Lakes constituencies to provide feedback on the Great Lakes Governors' priorities for restoration of the Great Lakes ecosystem and on the coordinative processes needed to achieve these priorities.

This meeting is part of a series of similar events that are being conducted throughout the Great Lakes region. The Council of Great Lakes Governors has assembled a number of priorities for restoring and protecting the Great Lakes. The workshop series, supported by the National Sea Grant College Program, provides an opportunity for Great Lakes constituents to review these priorities and inform their further development and implementation. Workshop outcomes will be shared with the region's Governors, Premiers, other public officials, workshop participants and the larger Great Lakes community. A primary objective is to inform and advance the restoration efforts of the region's leadership.

Acknowledgements

The Great Lakes Commission recognizes the outstanding work of its several partners in the design and conduct of the workshop. Special thanks are in order to Dr. Jeff Reutter of the Ohio Sea Grant College Program and Lisa Morris, Julie Letterhos, Pat Madigan and Susan Willeke of the Ohio Environmental Protection Agency for their valued role as partners in the design and conduct of this restoration priorities workshop. Their sound advice and leadership helped ensure a successful event. David Naftzger, Council of Great Lakes Governors, is acknowledged for his support as well, and for ensuring that the workshop series is of maximum relevance to the Council's needs. Recognition is also extended to the many individuals who assisted by serving as breakout group facilitators and recorders (See Appendix A), and Jon Dettling of the Great Lakes Commission staff who assisted in the compilation of these proceedings.

Dr. Ron Baird, director of the National Sea Grant College Program, warrants special recognition for his personal support of this initiative and for facilitating his office's financial support for the workshop series.

Finally, thanks to all the dedicated individuals that joined us for a day of creative thinking and strategizing as we work to restore and protect the Great Lakes- the greatest system of freshwater on the face of the earth!

Sincerely,

A handwritten signature in black ink that reads "Michael J. Donahue". The signature is written in a cursive, flowing style.

Michael J. Donahue, Ph.D.
President/Chief Executive Officer
Great Lakes Commission

Table of Contents

<i>Preface</i> _____	2
<i>Acknowledgements</i> _____	3
<i>Table of Contents</i> _____	4
<i>I) Background</i> _____	5
<i>II) Public Input on the Governors’ Restoration Priorities</i> _____	6
A. Ensure the sustainable use of our water resources while confirming that the States retain authority over water use and diversions of Great Lakes waters _____	6
B. Promote programs to protect human health against adverse effects of pollution in the Great Lakes ecosystem _____	6
C. Control pollution from diffuse sources into water, land and air _____	7
D. Continue to reduce the introduction of persistent bioaccumulative toxics into the Great Lakes ecosystem _____	8
E. Stop the introduction and spread of non-native aquatic invasive species _____	9
F. Enhance fish and wildlife by restoring and protecting coastal wetlands, fish and wildlife habitats _____	9
G. Restore to environmental health the Areas of Concern identified by the International Joint Commission as needing remediation _____	10
H. Standardize and enhance the methods by which information is collected, recorded and shared within the region _____	10
I. Adopt sustainable use practices that protect environmental resources and may enhance the recreational and commercial value of our Great Lakes _____	11
J. Additional topics _____	12
<i>III) Conclusions and Discussion</i> _____	13
<i>Appendix A: Participants</i> _____	14
<i>Appendix B: Governors’ Restoration Priorities Press Release</i> _____	16
<i>Appendix C: Original Transcripts of Comments</i> _____	18

I) Background

This workshop was the second in a series of similar events to be held throughout the Great Lakes basin as part of a collaborative project between the Great Lakes Commission, the Council of Great Lakes Governors and the Sea Grant Programs in the Great Lakes region. Funded by the National Sea Grant College Program, the project is directed at advancing Great Lakes ecosystem restoration and protection efforts through the development of action items and ideas on how to implement them through a regional process.

Project collaborators recognize that development of a Great Lakes protection and restoration strategy must be based upon sound science, and proceed with a clear understanding of ecosystem conditions and objectives, relevant research activity, and the science/policy/management linkages needed to achieve the strategy's vision. This workshop, along with upcoming workshops in other Great Lakes jurisdictions, will provide input from the broader Great Lakes Community into this process.

The Ohio public meeting was designed to maximize the opportunity for the public to give input into the process of implementing basin-wide protection and restoration strategies for achieving the Governors' priorities. The meeting used the list of nine priorities released by the Great Lakes Governors on October 1, 2003 as a starting point for discussion. Participants moved among nine stations that were set up to receive comment, answer questions and create discussion concerning each of the nine identified priorities. State agency and Ohio Sea Grant personnel knowledgeable in the particular area staffed each station. In addition, a tenth station was available to receive comments not directly related to the nine identified priorities. Ohio Sea Grant created an online forum for the public to submit comments. As of June 2nd, 143 respondents had completed the survey. Results can be viewed at:

<http://www.surveymonkey.com/Report.asp?U=35038722246>

Written and verbal comments were recorded at each of the ten stations during the meeting. These records are the basis of the material presented in Section II. Section III contains a summary statement and some concluding remarks. A list of meeting attendees is provided in Appendix A. The press release presenting the Governors' restoration priorities is provided in Appendix B. Original transcripts of participant comments are included in Appendix C.

II) Public Input on the Governors’ Restoration Priorities

A. Ensure the sustainable use of our water resources while confirming that the States retain authority over water use and diversions of Great Lakes waters

There was considerable interest in protecting the Great Lakes basin’s water resources as a component of an overall regional restoration initiative. Support was given for developing a regional water resource management program based on the principles outlined in the Great Lakes Charter Annex 2001 that would govern withdrawals from both within and outside of the basin. There was interest in making such standards legally binding and open to citizen suits that could ensure implementation. As a component of a regional water resource management program, a need was cited for an official process for approval of any diversions. A sentiment was expressed that “major” diversions should be disallowed entirely, while “minor” diversions should be considered on a case-by-case basis. Additional considerations included the impacts of groundwater withdrawals, impacts on water quality that may result from altered flow regimes, and variations in withdrawal permitting that reflect lake levels. It was also suggested that local planning documents, such as 208 plans, should note any diversions that might be proposed.

It was recognized that the ability to restore and protect the region’s water resources depends largely on building a management strategy, similar to that described above, in a timely fashion. These mechanisms will be most effective if they are in place and operating in a preventive capacity rather than as a response to specific situations. It was further noted that restored and protected water resources would be a major regional economic development stimulus.

In the Ohio Sea Grant on-line forum, “ensuring sustainable use of our water resources” was rated at 5.99 by 141 respondents on a seven point scale with 1 = lowest importance to 7 = highest importance. Fifty-one percent (72) of the respondents rated this item at 7 (highest importance).

B. Promote programs to protect human health against adverse effects of pollution in the Great Lakes ecosystem

The importance of restoration efforts to protect the health of the region’s populations was widely recognized. Support was expressed for a regional restoration strategy to adequately address the strong linkages that human activities have to water quality and the consequent impact on human health.

Among major pollution sources mentioned were sewer overflow systems (CSOs and SSOs) and non-point sources. Further, public awareness campaigns explaining the part each person plays in contributing to nonpoint sources were encouraged.

Bathing beaches were mentioned a number of times. It is important to maintain good quality public beaches, as they are often the only access a local community has to the lakes. A need was cited for reducing bacterial levels at beaches, as well as for improved programs to detect and communicate bacteria levels to provide a better indication of what is normal and what is high (such as by a color-coded warning system). More federal funding to remediate or eliminate CSOs was identified as a necessary step to improve benefits downstream (i.e., at beaches). Seeking volunteer community involvement in beach cleanup programs to pick up trash, especially for scouts, was encouraged.

Achieving safe consumption of the basin's fish was seen as an important goal. A number of comments submitted under the Persistent Bioaccumulative Toxics Priority also focused on the issuance of fish consumption advisories. These included providing more printed information on fish advisories, providing a better description of risk, and ensuring that advisories are based on new data. There was also a suggestion to revisit the protocol used for analyzing and assessing fish tissue information.

Safely managing dredged material is another important factor in protecting water quality and human health. Assessments of health impacts were encouraged to consider cumulative impacts of exposure to multiple chemicals, the possible absence of toxicity thresholds and the impacts of endocrine disrupting chemicals. There may also be a need to expand the list of toxic contaminants that are currently analyzed. Existing plans, such as the Lake Erie Protection and Restoration Plan, were cited as valuable guidance in many of these areas.

In the Ohio Sea Grant on-line forum, "protecting human health" was rated at 6.00 by 143 respondents on a seven point scale with 1 = lowest importance to 7 = highest importance. Forty-seven percent (67) of the respondents rated this item at 7 (highest importance).

C. Control pollution from diffuse sources into water, land and air

This priority received considerable attention from the meeting participants. There were numerous suggestions for efforts that are needed to reduce pollution from nonpoint sources. The value of basin-wide efforts to control these sources was recognized. The dependence of the water quality of the lower lakes on pollution problems in the upper lakes, such as the impact of Lake St. Clair on Lake Erie, was noted.

Implementation of Best Management Practices (BMPs) was recommended to reduce nutrient loadings. Several participants also mentioned prevention of sediment loadings. The need for improved maintenance and damage-reporting for silt fences was noted. Providing assistance to lakefront property owners for erosion control was mentioned as a valuable incentive. Improved regulation of thermal pollution from power plants is another need. Consideration was also given to land use planning and other strategies to reduce the impacts of development on water quality.

The funding of BMPs to address storm water management and to aid in upgrading aging infrastructure was a major concern. A need was seen for a balance between support for

regional efforts and support for local efforts. The basin-wide strategy should recognize the importance of local projects in restoring and maintaining the basin's water quality. It was mentioned that financial support is needed to make upgrades to sewerage system and other infrastructure viable. A need was mentioned for local projects to prevent runoff from contaminated sites.

In the Ohio Sea Grant on-line forum, “controlling pollution” was rated at 6.57 by 143 respondents on a seven point scale with 1 = lowest importance to 7 = highest importance. Sixty-nine percent (99) of the respondents rated this item at 7 (highest importance).

D. Continue to reduce the introduction of persistent bioaccumulative toxics into the Great Lakes ecosystem

Persistent bioaccumulative toxics (PBTs) were an important priority for many of the meeting attendees. Pollution prevention was recognized as an essential strategy in addition to remediation of contaminated sites. The importance of atmospheric deposition as a source of many PBTs was recognized.

Several participants specifically mentioned mercury. The need for improved controls on industrial mercury sources, including coal-fired power plants and chlor-alkali plants, was mentioned. Other pollutants, including polychlorinated biphenyls (PCBs) and methyl tert-butyl ether (MTBE), were also mentioned. In addition, a need was cited to update lists of contaminants of concern to include additional compounds not currently covered by many programs.

Fish contaminant testing and fish consumption advisories were the focus of a large number of comments. Improved fish testing programs, including tests with better spatial and temporal resolution, are desired. In addition to testing, improved means of communicating test results and consumption advisories to the public are needed. Participants suggested a need for improved communication tools for the public on these topics that would do a better job of explaining the risks from eating fish and clearly explaining scientific topics, such as bioaccumulation. Current outreach efforts on these topics are not seen as adequate. These comments are also presented under the Human Health Priority (section 2B above).

Achieving decreased emissions from major sources, including coal and diesel fuel burning, throughout the region was mentioned as a high priority. Increased authority for regulatory agencies was cited as an important means of controlling emissions from these and other sources. Some concern was also expressed over managing toxics that have settled into sediments. Preventing re-suspension of these, such as during dredging activities, was mentioned as a priority.

In the Ohio Sea Grant on-line forum, “reducing the introduction of toxics” was rated at 6.35 by 142 respondents on a seven point scale with 1 = lowest importance to 7 = highest importance. Sixty-one percent (87) of the respondents rated this item at 7 (highest importance).

E. Stop the introduction and spread of non-native aquatic invasive species

Meeting participants expressed concern over non-native aquatic invasive species, which they characterized as a problem in need of immediate, heightened attention and definite inclusion in any restoration strategy. The most prominent issue discussed was the need for increased control technologies and regulations for ballast water. Many participants noted that ballast water research and regulation have seemingly been priorities for many years, yet a truly effective program of stopping ballast water introductions has not been designed and implemented. There was also concern about entry of species to the basin from other means, including through the Mississippi and Illinois rivers and through the trade in live aquatic invasives. The continued development of an infrastructure for preventing and responding to invasive species was a widely mentioned need.

In the Ohio Sea Grant on-line forum, “stopping the **introduction** of non-native aquatic invasive species” was rated at 6.27 by 143 respondents on a seven point scale with 1 = lowest importance to 7 = highest importance. Sixty-three percent (90) of the respondents rated this item at 7 (highest importance).

In the Ohio Sea Grant on-line forum, “stopping the **spread** of non-native aquatic invasive species” was rated at 5.99 by 14 respondents on a seven point scale with 1 = lowest importance to 7 = highest importance. Fifty percent (72) of the respondents rated this item at 7 (highest importance).

F. Enhance fish and wildlife by restoring and protecting coastal wetlands, fish and wildlife habitats

Habitat protection was a priority for a large number of participants. There were strong links made with this and others of the nine priorities. In particular, prevention of nonpoint source pollution and aquatic invasive species were regarded as important to habitat protection efforts. Regional approaches to habitat protection were seen as critical. Development of a regional habitat restoration plan was suggested for both terrestrial and aquatic habitats.

Control of non-native invasive species such as *Phragmites*, and nuisance species such as cormorants, which have adverse effects on habitat for other species, were cited as priorities.

Protection and restoration of both wetlands and coastal habitats were encouraged by many participants. Creating buffer zones around these areas and restoring natural vegetative cover were some suggested actions. Assessing and mitigating impacts of upstream activities on downstream habitat is an additional topic of concern. It was also noted that the amount of natural areas should be increased and development in these areas decreased.

Mitigating the impacts of development and property ownership issues were also raised, as was requiring mitigation to occur within the project watershed. Growth strategies that preserve and

protect habitat were encouraged. Public ownership of critical habitat areas was seen as an important step toward their protection. Placing priority on the protection of existing habitat will help prevent the need for restoration in the future.

In the Ohio Sea Grant on-line forum, “enhancing wildlife by **restoring** wetlands” and habitat was rated at 5.89 by 143 respondents on a seven point scale with 1 = lowest importance to 7 = highest importance. Forty-three percent (62) of the respondents rated this item at 7 (highest importance).

In the Ohio Sea Grant on-line forum, “enhancing wildlife by **protecting** wetlands and habitat” was rated at 6.21 by 141 respondents on a seven point scale with 1 = lowest importance to 7 = highest importance. Fifty-nine percent (83) of the respondents rated this item at 7 (highest importance).

G. Restore to environmental health the Areas of Concern identified by the International Joint Commission as needing remediation

Participants stressed the importance of continuing to clean up the Areas of Concern (AOCs). The benefits of cleaning up these areas far outweigh the costs in terms of jobs, tourism and quality of life. However, there needs to be a strong public education outreach effort to link the importance of economic development with environmental restoration and protection. To make a Remedial Action Plan (RAP) successful, it is important to achieve an effective balance between funding RAP administration, additional studies and on the ground implementation.

An interest was expressed in reviewing the criteria for AOCs. Some participants expressed support for potentially adding additional areas, such as Maumee Bay, to the list. There was also a suggestion to consider emerging chemicals, synergistic effects and additive effects as part of the AOC criteria. There is a need to look beyond the usual chemicals associated with fishable, swimmable and drinkable. Several people stressed the importance of preventing recurrence of the causes of AOCs, including severely limiting industrial and development activities near the region’s waterways.

In the Ohio Sea Grant on-line forum, “restoring Areas of Concern” was rated at 5.81 by 143 respondents on a seven point scale with 1 = lowest importance to 7 = highest importance. Thirty-seven percent (53) of the respondents rated this item at 7 (highest importance).

H. Standardize and enhance the methods by which information is collected, recorded and shared within the region

Meeting porkshop participants noted that enhancing the region’s information management capabilities was central to a successful basin-wide restoration strategy. Maintaining data in a centralized and easily accessible location was highly encouraged. Additionally, providing the public with access to high quality and easily understandable data is a high priority. Standardizing collection and reporting methods was seen as an important step in making data

from disparate sources comparable. A large repository of comparable data from around the basin is essential for identifying and addressing the interactions and cumulative impacts of the multiple stressors on the basin, including habitat loss, pollution, water withdrawals and more.

Participants emphasized the importance of including a wide range of audiences in data dissemination and communication efforts. In addition to researchers and resource managers, a need to provide reliable information to civic leaders and the general public was expressed. One method mentioned for doing this is to improve the quality and quantity of media coverage on Great Lakes restoration issues. Educational programs for youth were also mentioned as an important outreach effort.

In the Ohio Sea Grant on-line forum, “standardizing information **collection**” was rated at 5.19 by 142 respondents on a seven point scale with 1 = lowest importance to 7 = highest importance. Twenty-two percent (31) of the respondents rated this item at 7 (highest importance).

In the Ohio Sea Grant on-line forum, “standardizing information **sharing**” was rated at 5.20 by 143 respondents on a seven point scale with 1 = lowest importance to 7 = highest importance. Forty-one percent (58) of the respondents rated this item at 7 (highest importance).

I. Adopt sustainable use practices that protect environmental resources and may enhance the recreational and commercial value of our Great Lakes

There was substantial interest in this priority action as part of a regional restoration strategy. An improved interaction of human and natural systems was the focus of many comments. One major theme that was voiced was the need for improved land use planning and restrictions on use of sensitive areas, especially the Lake Erie coastline. Promoting model zoning ordinances and encouraging redevelopment of brownfields were among the recommended actions in this area. Planning should be done on a watershed scale. Involving and educating the public was mentioned as an important step in sustainable land use. Increased funding for local governments to make better land use decisions is an important need. Public ownership of the shoreline and other sensitive areas is seen as an essential part of their restoration and preservation. Shoreline ownership was also mentioned in the context of public access for recreation. Drawing on examples from other regions was mentioned as a source of ideas for sustainable use practices as well as funding structures.

Several comments focused on the need to find methods of using the region’s water resources as an economic driver that also preserves the resource. Supporting businesses that have practices compatible with this goal was encouraged. Public sector resources, such as community infrastructure, should also be an area of focus for implementing sustainable use. Many participants commented on methods for advancing the recreational value of the Great Lakes through increasing public access, promoting recreational tourism, and encouraging recreational uses that have minimal impacts.

In the Ohio Sea Grant on-line forum, “adopting sustainable use to **protect environmental resources**” was rated at 6.14 by 142 respondents on a seven point scale with 1 = lowest importance to 7 = highest importance. Forty-nine percent (69) of the respondents rated this item at 7 (highest importance).

In the Ohio Sea Grant on-line forum, “adopting sustainable use to **enhance recreational values**” was rated at 5.74 by 143 respondents on a seven point scale with 1 = lowest importance to 7 = highest importance. Thirty-four percent (48) of the respondents rated this item at 7 (highest importance).

In the Ohio Sea Grant on-line forum, “adopting sustainable use to **enhance commercial values**” was rated at 4.87 by 143 respondents on a seven point scale with 1 = lowest importance to 7 = highest importance. Twenty-one percent (30) of the respondents rated this item at 7 (highest importance).

J. Additional topics

There were a number of additional comments received concerning participants’ views on restoration priorities. Participants noted that the importance of sediment loading management and erosion control, management of dredged material, and storm water management were not clearly articulated under any of the more broadly stated priorities. Public education was an important topic that should be considered as a component under all the priorities. Increasing the communication capacity among interested parties was also mentioned as an important step toward a successful restoration effort. Inclusion of point source controls and permitting was mentioned. Current restoration plans, such as the Ohio Lake Erie Protection and Restoration Plan, were recommended as guidance for additional planning both within the Lake Erie basin and around the region.

In the Ohio Sea Grant on-line forum, “enhancing science education in our schools” was rated at 5.71 by 14 respondents on a seven point scale with 1 = lowest importance to 7 = highest importance. Forty-one percent (58) of the respondents rated this item at 7 (highest importance).

III) Conclusions and Discussion

The importance of generating and addressing public comments in the development of plans to protect and restore the Great Lakes cannot be understated. The interest of the public in this process was reflected by the attendance and the number of comments submitted. There appeared to be acceptance of these nine priorities as the ones important to the Great Lakes, although some commenters suggested that certain issues needed to be more strongly addressed under the more broadly stated priorities. These issues included: BMPs for storm water management in urban areas; disposal of dredged materials; erosion control and prevention; and more financial support to improve/update sewage treatment infrastructure and CSOs. In future references to the Governors' priorities it should be clearly stated that all of these issues fall under the Diffuse Sources and/or Reduction of Persistent Bioaccumulative Toxics priorities.

The need for more public education/awareness for Lake Erie/Great Lakes issues was submitted as a topic to be emphasized under all priorities or perhaps be made a priority on its own. The Ohio Lake Erie Protection and Restoration Plan was recommended as an existing document that each state should adopt as their own, and perhaps use as a model for a combined Great Lakes plan.

A number of comments were submitted that addressed more localized issues. Several of these comments included: expanding the Maumee Area of Concern to include Maumee Bay; concerns about saltwater intrusion from an old salt tailings site into Mentor Marsh; impacts of dredging in the Cuyahoga River, and local beach closing and fish consumption advisories. These comments will be taken into consideration by State of Ohio agencies.

Appendix A: Participants

- Matt Adkins, Ohio DNR* (3)
- Harry Allente
- Robert Baisch
- Dick Bartz, Ohio DNR*(1)
- Mark Bergman, Ohio EPA* (3)
- Sandy Bihn, Maumee Bay Association
- Lynn Boydelatour, Ohio DNR* (9)
- Jim Boddy, Lorain County Board of Health
- Randy Bournique, Ohio EPA* (6)
- Kathleen Bradley
- Tyrone Butler, Cleveland Division of Water
- Edith Chase, OCRMP
- Ted Conlin, Ohio EPA* (7)
- J.W. Cowden, Cuyahoga RAP
- Dave Covell, Cuyahoga County Board of Health
- Jim Daniek, Cuyahoga County Planning Agency
- Tom Denbow, Cuyahoga RAP
- Jeff DeShon, Ohio EPA* (2)
- Albert Dispenza
- Mike Donahue, Great Lakes Commission
- Michael Eggert, Ohio EPA* (2)
- Molly Flanagan, Ohio Environmental Council
- John Flower
- Nick Gattozzi, Senator Voinovich's Office
- John Gomolka
- Brian Hall, Ohio EPA* (8)
- Robin Halperin, Cleveland Division of Water
- Ed Hammett, Ohio EPA/Ohio Lake Erie Commission
- Dave Hanselmann, Ohio DNR* (3)
- Ed Hauser
- Tom Henry, Toledo Blade
- Steve Holland, Ohio DNR* (10)
- Gary Isbel, Ohio DNR* (9)
- Ronald Janke, Jones Day
- Jim Kastelic, Cleveland Metroparks
- Hourtis Kaufman
- David Kelch, Ohio Sea Grant* (4)
- Don Killinger, Cuyahoga County Board of Health
- Roger Knight, Ohio DNR* (6)
- Kurt Kraus, City of Mentor, Parks
- Stephanie Kutsko, Black River Watershed Project
- Julie Letterhos, Ohio EPA* (7)
- Frank Lichtkoppler, Ohio Sea Grant* (7)

Proceedings – Ohio Public Meeting Concerning Great Lakes Restoration Priorities

- Maude Linden, West Creek Preservation
- Frank Lopez, Old Woman Creek
- John Loftus, City of Toledo
- Ted Lozier, Ohio DNR* (1)
- Joe Lucente, Ohio Sea Grant* (10)
- Pat Madigan, Ohio EPA*
- Rick Magni, Ohio EPA* (8)
- Elaine Marsh, Ohio Greenways
- Barbara Martin, League of Women Voters
- Tom Mayher
- Mary McCaron, Ohio EPA*
- Erin McDonough, National Wildlife Federation
- John McLeod, Cuyahoga County Board of Health
- Phil Miller, Ohio DNR* (9)
- Joe Mion, Ohio DNR* (5)
- Lisa Morris, Ohio EPA*
- Eric Nygaard, Ohio EPA* (4)
- D.C. Olenhew
- Rolfe Porte, Cleveland Division of Water
- Jeff Reutter, Ohio Sea Grant * (10)
- John Rhoades, Northeast Ohio Regional Sewer District
- Randy Sanders, Ohio DNR* (5)
- Mylynda Shaskus, Ohio EPA* (2)
- Mike Shelton, The Nature Conservancy
- Fred Snyder, Ohio Sea Grant* (5)
- Roger Thoma, Ohio EPA* (6)
- Dave Ullrich, Great Lakes Cities Initiative
- Chris Vild
- Audrey Wahl
- Jim White, Cuyahoga River Community Planning Organization
- Susan Willeke, Ohio EPA*
- Tom Zabolty, Northeast Ohio Regional Sewer District
- David Zeber
- Susan Zurovchak, West Creek Preservation

* Resource person, (#) Priority Station

Appendix B: Governors' Restoration Priorities Press Release

GREAT LAKES GOVERNORS RELEASE PRIORITIES FOR PROTECTION AND RESTORATION OF THE GREAT LAKES

October 1, 2003

Contact: David Naftzger or Peter Johnson
312-407-0177

The Council of Great Lakes Governors today released nine priorities for the protection and restoration of the Great Lakes. The Great Lakes ecosystem is critically important to the quality of life for our citizens and to the economic vitality of region," said Ohio Governor Bob Taft, Council chairman. "In endorsing these priorities, the Great Lakes Governors affirm our commitment to protecting and restoring the natural habitat and water quality of the Great Lakes Basin, preserving diverse and thriving plant and animal communities, protecting the water supply, and safeguarding human health."

The priorities were included in a letter to the sponsors of S. 1398, the Great Lakes Environmental Restoration Act, and H.R. 2720, the Great Lakes Restoration Financing Act. The Great Lakes Governors praised Congressional sponsors and cosponsors for introducing legislation to address ongoing threats to the Great Lakes by providing substantial federal financial support to complement extensive state and local spending on protection and restoration projects.

"We applaud the strong bi-partisan commitment in Congress to restore and protect the Great Lakes," said Governor Taft. "The Great Lakes Governors look forward to partnering with Congress to secure the future of this irreplaceable national treasure."

The Council of Great Lakes Governors agreed that these priorities should guide Great Lakes restoration and protection efforts:

- Ensure the sustainable use of our water resources while confirming that the States retain authority over water use and diversions of Great Lakes waters.
- Promote programs to protect human health against adverse effects of pollution in the Great Lakes ecosystem.
- Control pollution from diffuse sources into water, land and air.
- Continue to reduce the introduction of persistent bioaccumulative toxics into the Great Lakes ecosystem.
- Stop the introduction and spread of non-native aquatic invasive species.

Proceedings – Ohio Public Meeting Concerning Great Lakes Restoration Priorities

- Enhance fish and wildlife by restoring and protecting coastal wetlands, fish and wildlife habitats.
- Restore to environmental health the Areas of Concern identified by the International Joint Commission as needing remediation.
- Standardize and enhance the methods by which information is collected, recorded and shared within the region.
- Adopt sustainable use practices that protect environmental resources and may enhance the recreational and commercial value of our Great Lakes.

The Great Lakes Governors also committed to working with local governments, Canadian provinces, and other stakeholder organizations on a coordinated approach to safeguarding the Great Lakes, which are the largest source of fresh surface water in the world.

Appendix C: Original Transcripts of Comments

Below are transcripts of the notes taken at each of the ten booths at the meeting. Some minor editing has been done to correct spelling and grammatical errors. Changes have not altered the meaning or intent of any comments.

Priority #1 - Water Use and Diversions

- \$ No “major” diversions. “Minor” diversions on a case-by-case (lake-by-lake) basis. Not all uses and lakes are equal.
- \$ Need a process for approving diversions
- \$ Important to weigh all options before it becomes a full blown crisis; “ounce of prevention vs. pound of cure”
- \$ Implement legally binding standards based on the principles outlined in Annex 2001 to regulate out-of-basin diversions of Great Lakes water as well as in-basin water withdrawals
 - \$ Allow citizen suits to ensure implementation of the laws under this new set of legally binding standards
- \$ Any “no net loss” policy should include “no lowering of water quality” in the stream (of water that is both the diverted from and diverted to sub-watersheds)
- \$ 208 should note any diversions which might be proposed
- \$ Remember groundwater withdrawals when considering diversion and “no net loss”!
- \$ Consider flow regime impact on returning water.
- \$ Consider diversions as it relates to lake levels:
 - high levels - allow more diversion
 - low levels - no diversions
- \$ Capture the potential for water resources to be an economic development stimulus for the region

Priority #2 - Human Health

- \$ Recreation use-status
- \$ Cuyahoga fish consumption
- \$ Cleveland area bathing beaches
- \$ More funding for sewer projects/source identification
- \$ Everything that hits the ground anywhere in Ohio becomes part of our drinking water. Gas stations, Jiffy Lubes, parking lots, drives, animal waste (even dog droppings) and chemical fertilizers all become part of the “soup” that makes up the Great Lakes. Public awareness campaigns of what part each person plays in this scenario are desperately needed. All these things (anti-freeze, salt) affect us through our water.
- \$ Involve volunteer groups like the Girl Scouts and Boy Scouts to help clean up Ohio beaches and keep them clean
- \$ More research is needed in “Dead Zone’ characterization and algal toxicity as these pertain to drinking water
- \$ More federal funding for CSO/SSOs in CVAP and all metropolitan areas
- \$ Beach advisories
- \$ Educate public by posting actual bacteria levels to give an idea of “normal” vs. “high”
- \$ Red, orange, yellow, green indication levels of bacteria
- \$ Stop ignoring impact of multiple exposures and lack of thresholds
- \$ Assume endocrine disrupters are drugs and regulate them
- \$ Bacteria levels on private beaches and public beaches
- \$ Important resource for large metro areas where public beach may be only lake access/contact for many in the community. Need for more attention, especially with regard to safety issues (i.e. bacteria).
- \$ Effects of open lake dredge material disposal and Confined Disposal Facilities on fish populations and water quality (Maumee Bay).
- \$ Follow the Lake Erie Protection and Restoration Plan (2000) to achieve human health wildlife health priority.
- \$ Get signatures from all Great Lakes states and provinces to advance the strategies and goals of the LEPR Plan:
 - \$ Chapter: Water Quality pp. 12-16
 - \$ Chapter: Pollution pp. 17-22
 - \$ Chapter: Habitat pp. 23-28
 - \$ Biological pp. 29-32
 - \$ Beaches pp. 42-43
 - \$ Tourism pp. 44-45

Priority #3 - Nonpoint Source Pollution

- \$ Control pollution from diffuse sources into water, land and air.
- \$ Organic pollution (nutrients) need more best management practice use to reduce organic pollutants.
- \$ Will their be clean up of Lake St. Clair because of its impact on other Great Lakes?
- \$ Lake St. Clair should be taken into consideration for projects/programs; without Lake St. Clair there is limited good for Lake Erie projects.
- \$ Consideration should be given to provide financial assistance to lakefront property owners, or groups of them to prevent further shoreline recession.
- \$ What are the most effective ways to reduce sedimentation in tributaries of the Great Lakes?
- \$ Model ordinances for low impact development needed for communities and education of local officials to understand why new zoning is needed.
- \$ Regional planning is needed to enforce and encourage communities to work on non-point solutions.
- \$ Coal power plant intakes need to be regulated for cooling towers - stop fish kills - water heated to 94° at discharge.
- \$ Better incentives to stop sediments from entering the Maumee River/Bay basin
- \$ NPDES permits need to be collectively considered on the impacts to segments of the Great Lakes.
- \$ Priorities # 2 and #3 need to be rewritten: Eliminate all pollution to protect human health and to protect the health of our ecosystem for wildlife & people.
- \$ Regional plan should duplicate Lake Erie Protection and Restoration Plan (2000):
 - Chapter “Water Quality” pp. 12-16
 - Chapter “Pollution Sources” pp. 17-22
- \$ Reduce the size of cargo vessels that use the Great Lakes and that enter the rivers of concern to eliminate the need for deep dredging of rivers for harbors.
- \$ Engineering Best Management Practices - devices to retrofit stormwater basins
- \$ Need underground solutions which would be reasonably priced.
- \$ Must be able to incorporate existing properties and tie into stormwater drainage.
- \$ Must be affordable to implement.
- \$ Bring in speakers from Center for Watershed Protection to promote new ideas.
- \$ Aging infrastructure (i.e. stormwater, sanitary sewers, failing systems). Could some of this be used to help fund sanitary sewers or upgrades small plants? If residents have to pay for the entire sewer cost, they claim it is too expensive and fight the process. Consider best management practices that retain stormwater in urban areas, even if have to knock down old structures
- \$ Concerned about the cap covering the salt tailings at the Osborne site. It appears to be leaking and saltwater intrusion is a concern to the wetlands at Mentor March. The Morton Salt Company is not interested in helping since they no longer own the property. A 400 acre development near Route 2 and Route 44 will be 90% impervious surface will flow into a creek that flows over the cap area. This should be a priority issue for the MARC.
- \$ Money for restoration needs to go 100% to the projects with none taken out for operation. This money should be matched and needs to be in perpetuity.
- \$ Process is too focused on watershed plans and not getting other worthy projects funded.
- \$ Buffer material areas that drain into the lake.
- \$ Watershed coordinators are doing a good job. However, do not use this funding to pay them.
- \$ Need to stop having a distinction between stormwater and non-point source.
- \$ Prevent privatization of the Lake Erie shoreline.
- \$ Concerned about sedimentation from construction sites and farm fields. Silt fences are rarely maintained so they become ineffective. Tired of sloppy fishermen who leave garbage (e.g., cups, bait containers, beer cans) along the shoreline.
- \$ Construction runoff 1-800 number or contact for reporting of malfunctioning silt fences and runoff control measures for development sites is needed. Weather and timing for runoff prevention as it

pertains to silt.

Priority #4 - Persistent Bioaccumulative Toxics

- Mercury - Industrial Sources
- MTBE - New 303d list Problems in Ohio?
- Better printed info on fish consumption advisories for public knowledge
- More thorough testing of Great Lakes fish
- Get the tuna lobby funding out of the monies designated for FDA research. Also, use the higher mercury standards established by EPA for public safety.
- Restrict emissions of utilities - give EPA back their power.
- Increase EPA enforcement with respect to industrial waste permit dumping (tributary streams/rivers).
- More EPA authority to fine pollution violation
- Education - oriented to long-term advisory. Pregnant women should not eat Great Lakes fish.
- Understanding of consequences of persistent pollution from multiple perspectives needed to change attitudes.
- All Chlor-alkali production should be converted from mercury or eliminated.
- Coal power plants should pay a fee to communities for health costs.
- More attention to atmospheric deposition (e.g. mercury and PCBs)
- More attention to pollution prevention and source reduction
- More research on effects of BCCs on women as mothers (real or potential) (body-burdens carried generation to generation)
- Annual testing of Great Lakes fish for accumulated toxics at multiple locations and covering all popular species
- Annual fish consumption advisories based on current data and not data from 2-3 years or before
- Annual publication for fish consumption advisory that fully explains ‘risk’ - what it is, how to think about risk
- Revisit test protocol for fish tissue.
- Expand list of toxic contaminants; current listing is not adequate.
- Better/more thorough technical information regarding toxics and bioaccumulation for the lay person. (i.e. written publications explaining bioaccumulation in a way non-scientific individuals can understand)
- Clamp down on toxic emissions in air to streams and lakes from coal burning and diesel.
- Cuyahoga Channel (harbor) - Increased ore boat traffic/suspension of sediment problem - Environmental Assessment - Toxics more available and widespread (Ohio Coastal Management Program - Coastal Consistency Review)
- Dredged material / open lake disposal and Confined Disposal Facilities (long-term impact on water quality?) Maumee River /Bay
- Reconfigure hierarchy of decision making
 - EPA’s #1: End Pollution
 - Human health - health of wildlife
 - Commercial interests are last

Priority #5 - Aquatic Invasive Species

- We know what the problem is - foreign ships with ballast water and the solution is available. What's taking so long? (Many people with this perspective)
- Remember the back door, from the Mississippi and Illinois Rivers, for Asian carp, plus the live trade in ANS
- This issue does not seem to receive the attention it deserves.
- Serious development of invasion pathway controls for ANS, especially ballast water.
- Reference and implement the Lake Erie Protection and Restoration Plan; ask for all Great Lakes states and provinces to sign on to this plan.

Priority #6 - Habitat

- Kill the cormorants (non-native species)
 - Killing old growth trees at a rapid rate
 - Hurting small mouth bass population
 - Introduce predators
 - Cormorant bounty
- Phragmites elimination
- Prevent privatizing of Lake Erie shoreline
- Restoration of coastal wetlands
- Control nutrient, sediment and pesticide runoff
- Honor existing Lake Erie shoreline deeds
- Protection and restoration of upland and shoreline wetlands
- Control populations of alien species, plants and animals (ANS) dead zone
- Buffer all natural wetlands (coastal)
- Restore natural vegetative cover, especially to protect water resources - streams, wetland, lakes, ditches
- Fund genetic research into control of alien species
- Increase the amount of natural areas to improve source water supplies
- Regional coordination of government to address basin wide issues
- Have the state of Ohio take over more land to make available to all the public
- Stop making so much land available to private investors and builders
- Start limiting property size for homes (for example, from 50' x 75' to 1/4 , 1/2 or more acreage)
- Make all areas around the circumference of all the Great Lakes into public parks accessible to everyone
- House Bill 218, if passed, will lead to more habitat destruction
- Facility #3 (Maumee) develop master plan for habitat: terrestrial and aquatic
- Bayshore cooling water in Maumee Bay (thermal habitat)
- Develop and utilize “green bulkheads” to provide aquatic habitat.
- Protect and preserve headwater habitats to protect downstream uses
- Use regional approach, using existing agency and organization plans
- Prioritize protection before restoration is necessary
- Keep mitigation within the watershed where impacts take place
- Reference, utilize and implement the Habitat chapter (pp. 23-28) and the Biological chapter (pp.24-32) of the Lake Erie Protection and Restoration Plan. Get all Great Lakes states to sign on to this already existing plan.

Priority #7 – Areas of Concern

- Ensure funds are available for core support of Remedial Action Plans and Lake Erie programs.
- Any natural areas designated as part of the “Public Trust” should never by law be leased to corporations.
- Never allow developers to develop land near or within two miles of Lakes Erie.
- The benefits of cleaning up our Areas of Concern will far outweigh the costs, in terms of jobs, tourism, and quality of life.
- Money for support of the Remedial Action Plans should go to projects, not to general operating.
- No studies - Projects
- Public education to link the importance of economic development with environmental restoration
- Education in relation to our cultural usage; water is not to use, it is here to relate to. Water is intrinsic to life. Water flows like blood and sap in trees. If not flowing correctly there is no life.
- Maumee Bay should be part of the Maumee Remedial Action Plan.
- Impacts of coal burning power plants on the Great Lakes - temperature and fish kills and mercury
- Need to consider emerging chemicals, synergistic effects and additive effects. Need to look beyond just the usual chemicals associated with fishable, swimmable, and drinkable.

Priority #8 – Data and Information

- Public and recreational access to beach water quality data
- Standardization of data and information
- Incorporate appropriate volunteer data
- Central repository(ies)
- Timely data and information sharing between federal, state, local, international, private, and university institutions
- Focus group to determine what data is important
- More information (press and media coverage) should be available on all environmental and water quality issues. No more tabloid coverage on the news. Our health and public trust are much more important.
- Keep lobbyists and big business out of any involvement in Lake Erie development. Have more strict laws on what can and cannot be done in and on and around Lake Erie.
- Resources are not being effectively used.
- We cannot identify and address the cumulative effects of wetlands destruction, water quality discharges, air emissions, and habitat loss until we have a basin-wide system of information collection and dissemination that is readily accessible to the public and decision makers.
- Importance of maintaining Lake Erie water quality data for making management decisions over many years
- It is important for Ohio to keep and maintain water quality database for Lake Erie tributaries – current and historical data that can be readily accessed by public.
- Have another session – more available to public – outside at the source – Lake Erie.
- More programs for youth
- No money should be spent for information management. It should go toward restoration projects.
- Target public officials and civic leaders for education on the value of Lake Erie for quality of life.
- Concentrate environmental education on health effects – BCCs – target civic leaders.

Priority #9 – Sustainable Use Practices

- Prevent privatization of Lake Erie shoreline.
- Public ownership of national coastline should be a priority.
- Model zoning ordinances needed for all Lake Erie counties.
- Projects within counties that have model zoning ordinances should get priority consideration.
- No mitigation of coastal wetlands should be approved for any reason.
- Public access to shoreline should be expanded, especially in areas with recreational potential (beaches, fishing areas, shoreline)
- Foster locating businesses which are compatible with Lake Erie along the lake.
- Shoreline - public access preserved
- Zoning ordinances between communities coordinated/compatible/consistency for addressing resource issues - preservation protection
- Encourage low impact development.
- Encourage the use of existing property (brownfields). Redevelop first, before new impacts.
- A Governor with leadership and a vision to protect and restore the natural areas of Ohio
- Watershed stewardship is an emerging requirement of local governments – needs to be a local funding mechanism – strategic plan with a 10-year vision (funds, rules, resources to implement plan)
- Look to Chesapeake Bay for example of “Watershed Utility” to manage watershed issues at level of tributaries within watershed regions. Funding for improvements would come from some kind of “utility charge,” not property tax, assessed to owners within the watershed. This localizes the decision making and funding to the regional level where individuals are directly impacted by those decisions. Decreases reliance on state/federal grant funding.
- Improve access at the western end for Lake Erie (Maumee Bay area).
- Sustainable, but with the ability to generate economic benefit from the resource/location and growth (perhaps not dominated by too much open space)
- Learn how to work with the water, not simply use it. Be concerned with quality, not just quantity.
- We all need to understand and address the connections between land use and water quality. Each of us has the responsibility for stewardship of our natural resources – as individuals and collectively.
- Invest in the community infrastructures that improve water quality allowing sustainable public use: recreation and swimming.
- Parks with public access to the lake for public interaction with the water: fishing, wading, swimming.
- More funding for land acquisition – island open space and mainland areas, with endangered species (Lake Erie water snake, etc.)
- Increase ecotourism opportunities (marketing, public private partnerships – targeted audiences (birding)).
- Encourage regional tourism (for example, Coastal Lake Erie – Lake Erie Circle Tour).
- Use watersheds as the geographic area for land use planning and create policies and incentives for local municipalities to participate together.
- Educate public to overall needs and purpose of plans and planning.

#10 - General Comments

- \$ Grant money for erosion control to private individuals
- \$ Erosion control and prevention is missing from the nine priorities.
- \$ Educate the public more about Lake Erie issues.
- \$ Easier access is needed to the Ohio EPA interested parties list (for example, a 1-800 number).
- \$ Lake Erie taxing district should be established throughout the eight Lake Erie counties.
- \$ Support for sewage treatment infrastructure, including Combined Sewer Overflows (CSOs)
- \$ Development of Best Management Practices (BMPs) for storm water management in urban areas
- \$ Disposal of dredged material
- \$ Regional plan should reference, utilize and implement all aspects of the Lake Erie Protection and Restoration Plan (2000).
- \$ Advocate for signatures from all Great Lakes states and provinces to adopt this plan for all of the Great Lakes. Don't reinvent the wheel.

Appendix 6:

Pennsylvania Workshop Proceedings

Restoration Priorities for the Great Lakes

Workshop Proceedings

Erie, Pennsylvania
February 25th, 2004



Preface

This proceedings document presents the outcome of a workshop held in Erie, Pennsylvania on February 25, 2004. Titled, *Restoration Priorities for the Great Lakes*, the workshop was a cooperative effort of the Great Lakes Commission, Pennsylvania Sea Grant Program, and the Council of Great Lakes Governors. The workshop received considerable additional support from the Pennsylvania Department of Environmental Protection, the Lake Erie Region Conservancy, the Pennsylvania Lake Erie Watershed Association, the City of Erie's Mayor's Office, and Gannon University. The event brought together an array of participants representing various Great Lakes constituencies to provide feedback on the Great Lakes Governors' priorities for restoration of the Great Lakes ecosystem and on the coordinative processes needed to achieve a basin-wide restoration.

This workshop was one in a series of such events being conducted throughout the binational Great Lakes region. The Council of Great Lakes Governors has assembled a number of priorities for restoring and protecting the Great Lakes. The workshop series, supported by the National Sea Grant College Program, provides an opportunity for Great Lakes constituents to review these priorities and inform their further development and implementation. Workshop outcomes will be shared with the region's Governors, Premiers, other public officials, workshop participants and the larger Great Lakes community. A primary objective is to inform and advance the restoration efforts of the region's leadership.

Acknowledgements

The Great Lakes Commission expresses its sincere thanks to Pennsylvania Sea Grant, the Council of Great Lakes Governors, City of Erie Mayor’s Office, Pennsylvania Department of Environmental Protection (DEP), DEP Coastal Zone Management, and supporting partners Lake Erie Region Conservancy, Pennsylvania Lake Erie Watershed Association, and Great Lakes United. These organizations played a key role in the development and facilitation of this conference.

Special thanks are in order for conference speakers: Tom Fuhrman (Lake Erie Region Conservancy); Kelly Burch (Pennsylvania Department of Environmental Protection (DEP), Northwest Region); Margaret Wooster (Great Lakes United); Sister Pat Lupo (Pennsylvania Lake Erie Watershed Association (PLEWA)); Jim Grazio (DEP, Northwest Region); Dave Skellie (Pennsylvania Sea Grant); Cathy Curran-Myers (DEP, Deputy of Water Management); Lori Boughton (DEP, Office of the Great Lakes); and Eric Obert (Pennsylvania Sea Grant).

The Great Lakes Commission also recognizes the efforts of Dave Naftzger (Council of Great Lakes Governors), Pennsylvania Sea Grant staff members (Anne Danielski, Sean Rafferty, Julie Heiser, John Cingolani and Marti Martz) and also the steering committee comprised of Lori Boughton; Sister Pat Lupo; Tom Fuhrman; Mark Kwitowski (Erie Mayor’s Office); Freda Tarbell (DEP Northwest Region); Dr. Rick Diz (Gannon University); John Booser (DEP, Office of River Basin Cooperation); and Dave Skellie and Eric Obert (Pennsylvania Sea Grant). Jon Dettling of the Great Lakes Commission staff assisted in compiling these proceedings.

Dr. Ron Baird, director of the National Sea Grant Program, warrants special recognition for his personal support of this initiative and for facilitating his office’s financial support for the workshop series.

The Great Lakes Commission also extends its thanks to the host facility of Gannon University and its Waldron Center Conference staff for providing exceptional service and a beautiful setting for the conference.

Finally, and most importantly, thanks to all who joined us in Erie and shared their thoughts and recommendations with us.

Sincerely,

A handwritten signature in black ink that reads "Michael J. Donahue". The signature is written in a cursive, flowing style.

Michael J. Donahue, Ph.D.
President/CEO
Great Lakes Commission

Table of Contents

<i>Preface</i>	2
<i>Acknowledgements</i>	3
<i>Table of Contents</i>	4
<i>I. Background</i>	5
<i>II. Presentations</i>	6
<i>III. Group Discussions</i>	9
A. Ensure the sustainable use of our water resources while confirming that the states retain authority over water use and diversions of Great Lakes waters	9
B. Promote programs to protect human health against adverse effects of pollution in the Great Lakes ecosystem	10
C. Control pollution from diffuse sources into water, land, and air	11
D. Continue to reduce the introduction of persistent bioaccumulative toxics into the Great Lakes ecosystem	12
E. Stop the introduction and spread of non-native aquatic invasive species	12
F. Enhance fish and wildlife by restoring and protecting coastal wetlands, fish and wildlife habitats	12
G. Restore to environmental health the Areas of Concern identified by the International Joint Commission as needing remediation	12
H. Standardize and enhance the methods by which information is collected, recorded and shared within the region	12
I. Adopt sustainable-use practices that protect environmental resources and may enhance the recreational and commercial value of our Great Lakes	12
J. Presque Isle Bay	12
K. Other Items	12
L. Suggested Language Revisions	12
<i>IV. Ranking of Priorities</i>	12
<i>V. Summary and Conclusions</i>	12
<i>Appendix A: Announcement and Agenda</i>	12
<i>Appendix B: Governors' Restoration Priorities Press Release</i>	12
<i>Appendix C: Participants</i>	12
<i>Appendix D: Questionnaire</i>	12
<i>Appendix E: Priority Rankings</i>	12
<i>Appendix F: Breakout Session Summary Notes</i>	12

I. Background

This workshop was one in a series of similar events to be held throughout the Great Lakes basin as part of a collaborative project between the Great Lakes Commission and the Sea Grant Programs in the Great Lakes region. The project, funded by the National Sea Grant Program, is directed at advancing Great Lakes ecosystem restoration efforts through the development of restoration priorities and ideas on how to implement them through a regional planning process.

Project collaborators recognize that development of a Great Lakes restoration plan must be based upon sound science, and proceed with a clear understanding of ecosystem conditions and objectives, relevant research activity, and the science/policy/management linkages needed to achieve the plan's vision. This workshop, along with upcoming workshops in other Great Lakes jurisdictions, will provide input from the broader Great Lakes community into this process.

The workshop was organized into three sessions (Appendix A). In the first session, a number of presenters offered background information on the state of the Great Lakes ecosystem, highlighting issues ranging from ecosystem health to socio-economic considerations. Following this, the workshop was divided into eight breakout groups. The basis for discussion in the breakout groups was the list of nine basin-wide Great Lakes restoration priorities announced by the Great Lakes Governors on October 1, 2003 (Appendix B). Each of the groups was tasked with discussing the following two questions:

- What is your input on the Great Lakes Governors' priorities and how are these priorities important to Pennsylvania?
- What advice do you have on the design and implementation of a large-scale restoration plan to advance the Governors' priorities for the Great Lakes ecosystem?

In addition, participants were asked to rank the nine priorities from the Governors' list according to their own opinion of relative importance.

At the conclusion of the breakout sessions, these groups were asked to identify the three priorities that ranked highest based on the consensus of their group. They were also asked to summarize additional items that arose from their discussion of each of the two questions. In the final session of the workshop, the groups reported back on the outcome of their discussions.

Participation in the workshop was excellent. One hundred ten individuals attended, representing a diversity of disciplines and interests as detailed in Appendix C. The objective was not to reach consensus, but to capture the diversity of thoughts throughout the state on Great Lakes restoration needs and approaches. Section II of this document summarizes the presentations from the first portion of the workshop. Section III presents outcomes of the breakout group discussions. Section IV contains a summary of the ranking results for the nine priorities. A summary statement and conclusion are offered in Section V. In addition to the items identified above, the appendices contain a copy of the questionnaire issued to the participants (Appendix D); questionnaire outcomes (Appendix E); and the summary notes taken during the break out sessions (Appendix F.)

II. Presentations

The morning began with a welcome and introduction from Tom Fuhrman, President of the Lake Erie Region Conservancy. Tom expressed appreciation for the efforts and contributions of the participants, sponsors, and supporters of the workshop.

Dr. Michael J. Donahue, President and CEO of the Great Lakes Commission, offered an overview of the current status of restoration programs and planning in the Great Lakes basin. Dr. Donahue explained that restoration initiatives have been ongoing in the basin for decades, but have been sporadic and piecemeal. There is a growing interest in the region for elevating and integrating these efforts into a single, inclusive initiative. The series of regional workshops, of which the current event is a part, is intended to advance ecosystem restoration and protection efforts by identifying priorities and associated implementation opportunities. In addition to the workshop series, a research component and a capstone region-wide event and report are being planned. As a whole, these components will have significant application for policy making. Dr. Donahue explained the format of the workshop and the intent to capture and pass on all ideas that are expressed. Sharing and integrating ideas from each jurisdiction is essential in having a balanced region-wide initiative.

Kelly Burch, the Northwest Regional Director for the Pennsylvania Department of Environmental Protection, presented an overview of the Council of Great Lakes Governors' priorities for ecosystem restoration (Appendix B). He challenged the workshop participants to consider what the important priorities are for Pennsylvania's Great Lakes community. Burch gave an overview of Presque Isle Bay's history and status as an Area of Concern (AOC). Presque Isle Bay, Pennsylvania's only AOC, was officially moved into the recovery stage in 2002 and activities currently consist of monitoring contamination levels, setting delisting targets, and public outreach. Burch outlined several challenges that will continue to face Presque Isle Bay, and the rest of the region, including invasive species and nonpoint source pollution.

Margaret Wooster, former executive director of Great Lakes United, shared thoughts on Great Lakes restoration. She discussed *A Citizen's Action Agenda*, a plan authored by multiple stakeholders for improving the environmental quality of the Great Lakes basin. The recent past has seen a deterioration of several components of the Great Lakes environment, including beach closings, fish advisories, and spread of aquatic invasive species. The *Action Agenda* presents a series of priority goals and targets that are intended to reverse such trends. Components of the *Action Agenda* include, among others, toxic cleanup; implementing clean production; green energy; water quantity; water quality; air quality; habitat protection; and invasive species. Wooster stressed the importance of broad involvement of all stakeholders in the process of Great Lakes restoration.

Sister Pat Lupo, President of the Pennsylvania Lake Erie Watershed Association, offered an overview and historical perspective on the Presque Isle Bay Area of Concern.

Jim Grazio, a water pollution biologist with the DEP, presented a summary of invasive species, habitat, pollution clean-up and prevention issues facing Lake Erie. Mr. Grazio identified the

loss, fragmentation and degradation of coastal wetlands as critical habitat issues. Such problems are compounded by pollution of coastal areas. Lake Erie was the first of the Great Lakes to have significant eutrophication problems. However, many pollution problems persist today, including the legacy of past pollution in the Lake's sediments. These contaminants enter the food chain, where many of them accumulate and can ultimately be consumed by humans or piscivorous animals. Grazio outlined the importance of the Lake Erie Management Plan in continuing the improvements in Lake Erie's environment. Invasive species continue to be an issue of elevated concern. Grazio also outlined the challenges presented in managing zebra mussels and the round goby. There are several additional species of concern which may invade the system in the near future, including Asian carp.

David Skellie, land use and economic specialist at Pennsylvania Sea Grant, discussed the importance of land-use issues in addressing restoration. Urban sprawl, a rapidly increasing trend, has a number of adverse impacts including increasing costs, consuming land and habitat, concentrating poverty, and increasing pollution. There is a need for sustainable development of the Great Lakes basin to ensure that present needs are met without compromising the opportunities of future generations to meet their needs. Between 1980 and 2000, Erie County's population grew by less than one percent. However, the metropolitan urbanized area increased nearly 50 percent. Maintaining an urbanized environment costs the county substantially more money. Skellie discussed Pennsylvania Sea Grant's Nonpoint Education for Municipal Officials (NEMO) program, which educates local land-use officials on the linkage between land use and natural resource protection. A Brookings Institute report, *Back to Prosperity*, outlines a number of sustainable development goals that are essential for revitalizing Pennsylvania. Much of this is reflected in Governor Rendell's proposed 2004-2005 budget. Skellie discussed a survey of Erie County residents concerning the influences on their choice of home and the factors that affect their quality of life. It is clear from the responses that residents want a combination of urban amenities and a preserved environment. This desired combination is the hallmark of sustainable development.

Dr. Michael J. Donahue gave another brief presentation on the sustainable use of Great Lakes resources. He reiterated the need for acknowledging and incorporating the many dimensions of ecosystem restoration as we establish our vision for the Great Lakes. The topics of sustainability and restoration are difficult enough to come to an agreed definition of, much less a detailed plan for implementation. Donahue offered the following working definitions for these terms for the purposes of this workshop. He offered a definition of sustainability as "a state of resource usage which meets the needs of the present without compromising the ability of future generations to meet their own needs." A working definition of restoration was given as "reinstatement of beneficial uses in an ecosystem through projects and activities that improve environmental quality and ensure environmentally sound and sustainable resource use." Donahue gave a brief overview of the economic dimensions of the Great Lakes region's water resources, including its role in transportation, industrial production, support of other resources (such as fisheries), and as a marketable amenity in its own right. Some essential underlying components of a successful regional restoration initiative are decision support systems; scientific and research infrastructure; and laws, policies, and programs that can be sustained over the long term. Some additional characteristics of a successful initiative include explicit recognition of a state and provincial stewardship role; a precise definition of "restoration"; true partnership among stakeholders;

use/exploitation of existing mechanisms; a clear set of priorities to allocate resources; benchmarking and monitoring; and long-term adequate funding that augments rather than replaces current funds.

III. Group Discussions

The group breakout sessions saw productive discussion on a wide range of topics. The major discussion points, along with suggestions and recommendations that emerged from each of the eight sessions, were recorded by a volunteer. This section contains a summary of the group discussions organized according to the nine priorities introduced by the Great Lakes Governors.

A. Ensure the sustainable use of our water resources while confirming that the states retain authority over water use and diversions of Great Lakes waters

There was substantial recognition among the workshop participants that water resource management is an issue of increasing importance. There was general agreement that diversions and major withdrawals from the Great Lakes system should be categorically disallowed. Many participants recognized the importance of establishing and maintaining the state's authority to govern withdrawals from the system and having this authority recognized at the federal level. However, a few participants voiced concern that centralizing such authority at the state level may diminish local control of water resources. A view was expressed that the current system does not go nearly far enough in protecting the system from prospective withdrawals.

Regional coordination was cited as extremely important for protecting water resources. In addition to agreements between the states, it was recognized that agreements would need to be reached between the United States and Canada. Examination of the success or failure of current binational water use and trade agreements, such as the North American Free Trade Agreement (NAFTA) and the Colorado River agreements, was recommended as guidance for creating any new binational agreement. Part of a region-wide water use plan would involve creating and sharing inventories for water resource availability and withdrawal rates. Pennsylvania Act 220 (Water Resources Planning Act) was mentioned as one example of how such inventories could be structured. New regional plans should involve these pre-existing state-level actions. A feeling was expressed that the stringency of withdrawal permitting might vary with water levels, allowing for more withdrawals when levels are high.

In addition to addressing withdrawals and diversions, many comments reflected a need for additional programs for water conservation to protect and improve the status of the region's water resources. Examples of such programs include promoting industrial water recycling, composting toilets, water conserving appliances, and educating homeowners on water conservation issues. Addressing groundwater recharge issues through land- cover programs was also mentioned.

B. Promote programs to protect human health against adverse effects of pollution in the Great Lakes ecosystem

Participants at the workshop voiced considerable support for programs to protect human health from adverse effects of pollution. The programs suggested to achieve this included a wide variety of research, monitoring, education and regulatory initiatives. Enforcement of current environmental regulations, including those on air quality, water quality, drinking water and waste disposal, was an identified need.

A frequently mentioned topic was the need to improve and expand fish consumption advisories. Increased support for the monitoring and research programs that underlie these efforts is needed. Some participants suggested expanding the consumption advisory programs to other wildlife, including turtles and piscivorous birds. Additionally, education and outreach programs are needed to ensure people are aware of the advisories and are aware of additional information, such as preparation and cooking methods that can reduce contaminants. Populations at increased risk should be especially targeted by such efforts. Improving the consistency of advisories between jurisdictions was mentioned as a needed action to reduce confusion.

In addition to monitoring of fish and wildlife, other monitoring programs are needed to protect human health in the Great Lakes basin. Increased funding for such monitoring programs was advocated. Improving the availability of testing for personal water supplies was also mentioned. In addition to monitoring, remediation programs need to be available when contamination problems are identified.

Education programs for the public on environmental health issues were mentioned as an important need. It was suggested that an educated public would be better able to reduce their exposure to chemicals, as well as becoming better stewards of the environment. The medical community and the media were two potential sources of improved information for the public on these topics.

Increasing research programs concerning the exposure and impacts of contaminants in the Great Lakes basin was suggested. Some particular areas of research mentioned include endocrine disrupting chemicals, emerging pollutants (including polybrominated diphenyl ethers and perfluorinated compounds), other persistent bioaccumulative toxics (PBTs) and exposures through the food web and other sources.

Coordination of research, monitoring, and management efforts across the region and sharing of data were also cited as priority issues to be addressed. In particular, better international cooperation on the Lakewide Management Plans was called for. Adding human health issues as a beneficial-use impairment under Remedial Action Plans was suggested as another way to integrate these issues with other programs.

C. Control pollution from diffuse sources into water, land, and air

Preventing pollution from diffuse sources was a high priority among the workshop participants. Reducing sources of nonpoint pollution was described as requiring a combination of actions at the local and regional governmental level and at the individual landowner level. Priority actions at the governmental level included land-use planning and improving regulation of land-management practices. At the landowner level, education and outreach programs were called for to improve land-management practices. In addition to land-based nonpoint source pollution, several participants expressed concern over air emissions, especially from large sources such as coal-fired power plants. Tightening regulations on these sources and promoting alternate energy sources were recommended – approaches for reducing emissions.

Workshop participants discussed the importance of improved educational programs on these topics. It was suggested that a given percentage of all funds going to remediation and cleanup programs should be devoted to educational programs to prevent pollution. A key target audience for educational programs is municipal officials. This group could be better informed on possible actions it can take to improve land-use practices and encourage the implementation of best management practices (BMP) concerning municipal infrastructure. A recommended program in this area is Nonpoint Education for Municipal Officials (NEMO). Improved coordination between officials at the local level with those at the state and regional level was also encouraged. Incentive programs for municipalities with good planning practices were mentioned as a way to make local officials more responsive to these needs. Targeting rural areas as well as urban municipalities was also identified as an unmet need.

Implementing sustainable land-use planning was advocated as being essential to controlling urban sprawl and associated problems. Support for brownfield redevelopment was similarly mentioned as a priority. In addition to encouraging sustainable planning practices at the local level, promotion of these activities at the state and regional level is also needed.

Educational programs are also needed that target landowners and encourage sustainable land-use practices. In particular, landowners should be better informed on practices to reduce their use of harmful pesticides and reduce nutrient runoff from their properties. It was suggested that homeowners should be required to take an educational course if they are to use pesticides. Support for education on these topics in the public school system, as well as public service programs for youth and adults, were additional suggestions.

Strengthened regulations and bans were discussed as potential methods to reduce pesticide use. Programs to encourage and facilitate disposal of pesticides and other chemicals were also mentioned. It was suggested that certain sensitive areas, such as riparian zones, might receive more stringent management regulations than other areas. Support for pesticide-free agriculture was another recommendation.

Lack of appropriate funding was a commonly cited barrier to successful implementation of many nonpoint source pollution reduction efforts. An area mentioned particularly often as lacking funding was the upgrade and maintenance of sewerage and water treatment systems. Improved funding for these systems is a high priority. Other efforts mentioned as lacking funding include:

- grant programs to land-owners to improve storm water management and implement BMPs;
- pollution control programs at conservation districts;
- retro-fit programs to adopt new technologies;
- spill prevention;
- other municipal infrastructure and maintenance issues, such as permeable parking lots and salt-free road de-icing; and
- research programs, such as to determine the contaminant contributions of individual source types.

Tax incentives for industries to implement pollution controls were also discussed. Finally, it was noted that the public needs to be better informed of funding issues, both where funds are available and where unmet needs exist.

D. Continue to reduce the introduction of persistent bioaccumulative toxics into the Great Lakes ecosystem

Reducing the loadings of persistent bioaccumulative toxics (PBTs) to the Great Lakes was a recurrent theme during the workshop. PBT issues were discussed on both a local and regional scale, with participants mentioning the importance of programs at both scales.

Among the most commonly discussed topics within this category were emissions from coal power plants, particularly of mercury. In addition to more stringent controls on these facilities, there were a large number of participants who suggested the importance of establishing alternate sources of energy for the region. One impediment to this is the historical and continued importance of coal to the Pennsylvania economy. Economic incentives were suggested as a method to improve mercury emission reductions, although pollution trading systems were discouraged.

“Clean industry” was cited as an important step in reducing toxic pollution in the region. The need to promote existing green technologies and develop new ones was a widely voiced priority. Audits to assess the energy efficiency of various industries and to identify opportunities for improvement in this area were recommended. Energy conservation programs were encouraged for all sectors, including residential.

Other pollutants that received specific mention were polychlorinated biphenyls (PCBs) and other organochlorines, organophosphates, polybrominated diphenyl ethers and perfluorinated compounds. It was recognized that effective control strategies vary widely for these compounds and might include banning production, restricting use, and improving recovery of products. It was noted that, for many contaminants of concern, sources have not yet been reliably identified.

Another recurrent theme was the importance of educating and enabling the public to undertake environmentally sound actions. Proper disposal of hazardous products was among the topics mentioned. The lack of available disposal sites and limited public knowledge of the issues were

identified as barriers. Other topics include reducing consumption of products, purchase of environmentally friendly products, and non-toxic yard management. Lack of high quality information on these topics for consumers was cited as a major impediment. Public education of toxic sources and impacts in general was mentioned as a priority. It was suggested that a better-educated public would be more supportive of stricter environmental legislation and regulations.

Strengthening regulation of toxic emissions was identified as an important component of toxic reduction efforts. In addition to air emission regulations under the Clean Air Act, the National Pollution Discharge Elimination System (NPDES) of the Clean Water Act was mentioned as not being stringent enough.

Monitoring and research activities were described as central to PBT programs within the region. Monitoring is needed to evaluate trends, identify sources, and support impact assessments. In particular, funding to improve fish consumption advisory programs was mentioned. Among research topics that need attention are causal determinations for toxic impacts (such as brown bullhead tumors), and impacts of newly recognized contaminants. Another research need is developing methodologies for remediating contaminated sites, as these remain a source of toxics to other areas.

E. Stop the introduction and spread of non-native aquatic invasive species

A number of comments suggested that the issue of aquatic invasive species was of great concern to stakeholders. Several participants noted that non-aquatic invasive species should also be a priority and be reflected in the language of the Governors' priority statement. In addition to "natural" species, several attendees voiced concern over genetically modified organisms entering the Great Lakes. Programs for re-introduction of native species were also cited an important action in this category.

Participants had a range of suggestions for both stopping the spread of invasives currently in the system and preventing new introductions. Building physical barriers was mentioned as a method for preventing the spread of some species, as was eliminating warm-water discharges which can act as havens for some invasive species. Lack of funding for control of already introduced species was cited as an impediment to effective management. Ballast water controls were cited by many as an important measure for stopping new introductions. Elimination of other introduction routes, such as sale of live species, is also of high priority. Legislative and regulatory actions were suggested in the area of aquatic invasives, including stricter regulation of ballast water discharges and prohibitions on the sale, purchase, and possession of some species.

F. Enhance fish and wildlife by restoring and protecting coastal wetlands, fish and wildlife habitats

Workshop participants widely agreed that restoring and protecting habitat are high priority actions toward Great Lakes restoration. An important first step cited in many comments was the need to identify those environmental areas that are most critical for restoration and preservation. Establishing and protecting buffer zones along water bodies was mentioned as a high priority task, as was the enhancement of marginal wetlands. Connectivity of habitat areas was mentioned and development of “greenways” to link habitat was encouraged.

A number of suggestions focused on how habitat protection and restoration might best be achieved. Public ownership of sensitive areas was seen as an important step. Use of conservation easements was mentioned as a potential mechanism, where applicable, to secure development rights at a lower cost than purchase of full property rights. Establishment of development restrictions in sensitive areas was another suggested strategy. Implementation of new technologies, such as porous concrete, was suggested as important ways of improving hydrologic flow and, consequently, wetland habitat. Reducing runoff of harmful substances, such as oil, was also described as important to habitat protection.

G. Restore to environmental health the Areas of Concern identified by the International Joint Commission as needing remediation

Several participants commented on the importance of restoring the Areas of Concern (AOCs) as a key to the overall ecosystem restoration effort. The contaminated sediments in the AOCs receive contamination from, and contribute contamination to, the lakes as a whole. AOC clean up was recognized as a high priority for improving human health in the basin, as many of them are near populated areas.

Among suggestions for achieving AOC restoration was the need to take advantage of local university and research facilities to participate in designing and implementing innovative remediation programs. Involvement of primary and secondary students was also suggested, as was the importance of involving industry stakeholders and resource-user groups, such as anglers. Efforts to link AOC programs more fully throughout the extent of the watershed were seen as important to mitigating problems that originate outside of the AOC itself.

H. Standardize and enhance the methods by which information is collected, recorded and shared within the region

The coordination and communication of data and information across the basin were recognized as important priorities for Great Lakes restoration. Improved standardization and coordination are desired for information collection efforts as well as data storage and management. Having

data that is comparable and accessible across the geographical scope of the basin was mentioned as an important prerequisite for the ability to set and monitor progress toward benchmarks and restoration goals.

The need for improved data sharing and information dissemination was also mentioned as important to a regional restoration strategy. In addition to the research and regulatory communities, the general public is an important audience that needs access to information. The differing information needs of these separate audiences need to be accounted for to achieve effective communication. Centralizing data gathering and storage was mentioned as a high priority. The possibility of using or adapting established systems, such as the U.S. EPA's STORET, was suggested.

I. Adopt sustainable-use practices that protect environmental resources and may enhance the recreational and commercial value of our Great Lakes

Implementing programs for sustainable use of the Great Lakes was a priority that received numerous comments. Several participants noted the interdependence of economic and environmental issues and the need to identify and implement programs that would benefit both. Recreation was commonly mentioned as a use that generated economic gains while being protective of the environment. Developing regional support for clean industries was also mentioned by numerous participants. It was suggested that taking environmentally protective actions now will contribute to considerable economic gains in the future.

J. Presque Isle Bay

A large number of comments voiced during the workshop centered on restoration of Presque Isle Bay, Pennsylvania's only Area of Concern.

One topic mentioned was the need to restore habitat within the AOC, including the internal lagoons. Dredging of the lagoon channel and other parts of Presque Isle Bay may be needed to recover habitat. Structures for baitfish and game fish reproduction need to be constructed and maintained. Current habitat restoration efforts need additional support.

Removal of invasive species and promotion of native species are also needed within the bay. Expansion of educational and public involvement programs on this topic is needed, including a student intern program.

Scott's Run, part of the Presque Isle Bay drainage area, is also in need of significant restoration efforts. Nonpoint source pollution and sedimentation need to be addressed. Weather event-based flooding is a continuing problem. Bank stabilization and erosion control measures are needed in some of the bluff areas. Improving groundwater recharge in these areas is another concern.

Promoting research and educational opportunities, such as at the Tom Ridge Center, were suggested as important priorities for Presque Isle Bay restoration. Research topics needing to be addressed are aquaculture for food and game fish; aquaculture for endangered and threatened species; invasive species control; botulism; human health issues related to pollution; beach cleaning and restoration; and beneficial use of beach debris. The Tom Ridge Center was also suggested as needing an increased role in educational initiatives, including changeable exhibits and curricula, and possible development of a Presque Isle Bay documentary.

Implementing more sustainable practices at Presque Isle Bay State Park was also encouraged. Ideas included a shuttle system between the Tom Ridge Center and the park, a cleaner vehicle fleet, implementing solar power (where feasible), and a park-wide recycling program.

In addition to Presque Isle Bay, additional sites within Pennsylvania are in need of restoration, including Elk Creek, the Coho site and Duck Run. Dredging and sand-bar recycling projects are needed at Elk Creek. Duck Run requires monitoring of stream water quality. There were recommendations for updating the Coho site with “sustainable infrastructure,” including new sewage, drinking water, power generation, and transit systems. At each of these sites, improving access and environmentally friendly recreation opportunities were encouraged.

K. Other Items

A number of comments voiced during the workshop were not directed specifically at the Governors’ nine priorities, but were relevant to the broader topic of Great Lakes restoration.

There was a concern that a balance needs to be struck within a regional plan between initiatives that are region-wide and those that are locally based. Local programs need to fit within a regional framework to ensure that small-scale local projects received adequate attention. It was recognized that a successful restoration initiative cannot be exclusively local or region-wide, but must be a combination of the two. Lakewide programs need to fit into this framework. It is clear that establishing an effective management system for basin-wide restoration that involves and enables all scales of activity will be one of the key challenges.

The need for restoration efforts to successfully engage Canada and its provinces was also mentioned.

It was recognized that funding for restoration is an item that underlies all the priorities being discussed. Similarly, lack of enforcement of existing environmental laws and regulations was cited as a concern that underlies the problems dealt with in each priority. Education of the public and decision makers was mentioned as being critical to achieving most, if not all of these priorities.

It was suggested that, during the implementation of a restoration strategy, additional prioritization will need to be made within the list of priorities in order to address those items that are most urgent.

In addition, it was indicated that the following items might be incorporated into priorities in some manner: sand movement and migration; alternative energy; research to identify new problems; public access and public ownership of resources; security issues (including bio-security); and community and social issues.

Participants also highlighted the need for prompt action. Although the importance of planning was recognized, urgency was expressed for initiating restoration activities.

L. Suggested Language Revisions

Many workshop comments were specifically focused on the language and content of the nine restoration priorities advanced by the Council of Great Lakes Governors. One of the break-out groups suggested adding a tenth priority to the list, “Promote the development of energy and transportation policies that enhance reduction of pollution sources.” The concept behind this new priority was echoed in many of the other breakout groups.

There were several suggestions to alter the language of the existing nine priorities. Concerning the first priority, addressing sustainable water use, one group commented that there were two issues involved, water conservation issues and states rights regarding water control. It was suggested that the priority might be split to reflect this. The group recommended rearranging the verbiage between this priority and the ninth one, which addresses sustainable use practices. Proposed language is as follows:

- Ensure the sustainable use of our water resources and adopt sustainable-use practices that protect environmental resources.
- Confirm that states retain authority over water use and diversion of Great Lakes waters to enhance the recreational, commercial, and socioeconomic value of our Great Lakes.

This rearrangement reflects the necessary linkage between the sustainable water use concepts from the first priority and the sustainable use practices from the ninth.

Another group stated that the second priority, concerning human health, was too reactive and that additional emphasis should be placed within this priority on preventing pollution of the ecosystem in addition to protection from existing pollution.

Additionally, it was thought that the fourth priority, concerning persistent bioaccumulative toxics, should explicitly reference the need to continually and proactively evaluate the potential impact of newly recognized contaminants.

It was also recommended that the fifth priority, concerning aquatic invasive species, be altered to include non-aquatic species and specifically mention genetically altered species.

IV. Ranking of Priorities

The workshop split into eight randomly selected groups of six to ten participants each for break-out discussions. The focus of these discussions was the priorities for restoration of the Great Lakes basin. Participants were given a questionnaire (Appendix D) to evaluate their opinions concerning the relative importance of the nine priorities proposed by the Council of Great Lakes Governors. Following this independent ranking, the groups discussed the importance of these priorities and potential methods of implementing them as part of a basin-wide strategy. The priority rankings are presented on a person-by-person basis for each group in Appendix E.

The table below presents the results of the questionnaire for each breakout group. It also presents a rank based on the sum of these group rankings (lower number indicates higher priority). For the reader’s convenience, the top three priorities for each group are shaded dark grey, the middle three are lightly shaded, and the lowest three are unshaded.

Priority	Overall Rank	Overall Score	Individual Group Rankings							
			#1	#2	#3	#4	#5	#6	#7	#8
Ensure the sustainable use of our water resources	3	34	1	6	9	2	6	2	3	5
Promote programs to protect human health against adverse effects of pollution	4	36	8	2	3	5	3	1	7	7
Control pollution from diffuse sources into water, land and air	1	15	3	1	1	4	1	3	1	1
Continue to reduce the introduction of persistent bioaccumulative toxics	2	26	2	3	2	8	2	5	2	2
Stop the introduction and spread of non-native aquatic species	6	46	9	5	6	6	5	4	5	6
Enhance fish and wildlife by restoring and protecting fish and wildlife habitats	7	51	7	8	7	7	7	6	6	3
Restore to environmental health the Areas of Concern	7	51	5	9	5	3	4	9	8	8
Standardize and enhance the methods by which information is collected and recorded	9	58	6	4	4	9	9	8	9	9
Adopt sustainable use practices that protect environmental resources	5	43	4	7	8	1	8	7	4	4

Proceedings – Pennsylvania Restoration Priorities for the Great Lakes

The following table presents the number of individuals from the entire workshop who gave a particular ranking to each priority. (Because several respondents ranked two priorities as tied in rank, the columns in this table do not all sum to 58, as they would otherwise.) Items that received the same ranking by more than 10 respondents are shaded in dark grey, items with six to 10 respondents are lightly shaded and items ranked the same by five or fewer respondents are unshaded.

Priority	Number of individuals who gave a rank of :								
	1st	2nd	3rd	4th	5th	6th	7th	8th	9th
Ensure the sustainable use of our water resources	8	8	3	8	5	6	9	2	9
Promote programs to protect human health against adverse effects of pollution	8	5	7	7	6	6	9	4	6
Control pollution from diffuse sources into water, land and air	18	9	13	8	6	1	1	2	0
Continue to reduce the introduction of persistent bioaccumulative toxics	2	17	10	9	10	4	0	5	1
Stop the introduction and spread of non-native aquatic species	2	2	9	3	12	15	5	7	3
Enhance fish and wildlife by restoring and protecting fish and wildlife habitats	1	6	7	3	4	12	15	5	5
Restore to environmental health the Areas of Concern	0	6	5	5	9	5	7	11	10
Standardize and enhance the methods by which information is collected and recorded	5	2	3	8	1	6	4	9	20
Adopt sustainable use practices that protect environmental resources	14	3	1	7	5	3	10	10	5
0 to 5 is shaded white	6 to 10 is shaded light gray			More than 10 is shaded dark gray					

V. Summary and Conclusions

Workshop participants were overwhelmingly supportive of the Governors' priorities and the prospect of a region-wide Great Lakes restoration initiative. The comments received were constructive and evidenced the careful thought that Pennsylvanians have given and continue to give to these topics. Although enthusiasm and support was shown for all nine of the Governors' priorities, the ranking exercise allowed a valuable opportunity to gauge the comparative importance of each of these priorities in the minds of the workshop participants.

It is clear from the ranking results that chemical pollution issues are the most prominent concern in the minds of those attending the workshop. The third priority, concerning diffuse pollution sources, ranked first overall and was ranked as the top priority by five of the eight individual groups. Similarly, the fourth priority, involving persistent bioaccumulative toxics, was ranked second by five of the groups and placed second overall. Both of these priorities deal with stopping additional release of contaminants into the ecosystem, rather than dealing with historical pollution, evidencing the widespread support for pollution prevention programs.

Ranking third was the priority concerning sustainable use of water resources. This priority received both a first place and a last place ranking by two separate groups, signifying a wide divergence of opinion on this topic. Ranking fourth was the priority of protecting human health from pollution-related impacts. Again, a divergence of opinions was evidenced by four groups ranking this priority among the top three and three groups ranking it among the bottom three. The fifth-ranking priority was the adoption of sustainable-use practices, which received a top ranking by one group and a ranking within the bottom three by four other groups.

The priority concerning aquatic invasive species ranked sixth overall. Six out of the eight groups ranked this priority either fifth or sixth, indicating some consistency of opinion. Tied for seventh were the priorities involving restoring and protecting habitat and restoring Areas of Concern. The lowest ranked priority was that involving improvement and standardization of data collection and management. This priority received last place ranking by four of the eight groups and no rankings among the top three. The group suggesting inclusion of a tenth priority concerning sustainable transportation and energy policies included this in their questionnaires and ranked it fourth. It bears repeating that all of the priority topics were met with considerable support during the discussions; low rankings only indicate opinions relative to the other priorities, as opposed to a sense that any of them are unimportant.

Although valuable, the results of such a ranking are only a first step toward achieving a consensus within Pennsylvania, let alone the Great Lakes region, over which priorities are of most concern in implementing a regional restoration initiative. Each state and each locale is likely to have different views on the relative importance of these priorities based on the history and relationship each community has with the lakes, whether for recreation, transportation, sustenance, or the resource's existence value. Integrating these multiple views of the lakes and our relation to them will be one challenge in the organization of a regional strategy. Fortunately, as evidenced in this workshop and the others in this series, there is more similarity in viewpoint than disparity.

The priorities have been ranked here as though they are separate, but the issues involved are clearly linked among priorities. This fact was voiced during a number of the workshop discussions. Due to this, it is clear that any successful restoration strategy must approach these nine topics, and perhaps several more, simultaneously. This workshop series is a starting point toward integrating the thoughts, and ultimately the actions of the region toward a single goal of a restored and sustainable Great Lakes.

Appendix A: Announcement and Agenda

Restoration Priorities for the Great Lakes

Sponsored by Pennsylvania Sea Grant, the Great Lakes Commission, Council of Great Lakes Governors and Local Supporters: PADEP Northwest Region, Lake Erie Region Conservancy, Pennsylvania Lake Erie Watershed Association, City of Erie's Mayor's Office, and Gannon University

February 25, 2004
Waldron Center, Gannon University
Erie, Pennsylvania

It is our pleasure to invite you to a workshop dedicated to developing priorities to guide Great Lakes ecosystem restoration efforts. The workshop will be held from 9:00 a.m. to 4:30 p.m. on Wednesday, February 25, 2004 at the Waldron Center on Gannon University's campus in Erie, Pennsylvania. The workshop is being sponsored by Pennsylvania Sea Grant, Council of Great Lakes Governors, and the Great Lakes Commission. Local program supporters include Pennsylvania Department of Environmental Protection, Lake Erie Region Conservancy, Pennsylvania Lake Erie Watershed Association, and the city of Erie's Mayor's Office.

In recent years there has been an increased interest, from within and outside government, in the development of a large scale plan that would guide Great Lakes ecosystem restoration efforts. Federal legislation toward this effort has recently been introduced to the House (H.R. 2720) and Senate (S 1398), which is expected to result in billions of dollars for restoration efforts. Last October, the Great Lakes Governors developed a series of prospective Great Lakes restoration priorities that will provide a basis for our discussion.

The February 25 workshop aims to assist in this effort. Policy makers and opinion leaders representing diverse sectors of Pennsylvania's Great Lakes community are invited. Plenary and breakout sessions will provide opportunities for all voices to be heard. Workshop outcomes will be forwarded to our Great Lakes governors, Congressional members, and the larger Great Lakes community for guidance as restoration planning efforts move forward.

There is no charge for this event, and lunch will be provided. However, you must register by contacting Pennsylvania Sea Grant's Lake Erie Coastal Outreach Specialist Sean Rafferty at (814) 898-6358 or via email at sdr138@psu.edu by Wednesday, February 18. Attendance is limited due to facility capacity, and registrations will be accepted on a "first come, first served" basis. Please register early!

We do hope you can join us! Should you have any questions, please contact Sean Rafferty at the above number or Eric Obert at (814) 898 - 6453.

Agenda

9:00 Welcome and Introduction

Tom Fuhrman, President Lake Erie Region Conservancy

9:10 Regional Overview

Dr. Michael J. Donahue, President/CEO, Great Lakes Commission

9:20 Great Lakes Governors' Priorities and Pennsylvania's Role in the Great Lakes

Kelly Burch, Northwest Regional Director, PADEP

9:50 Restoring the Great Lakes - St. Lawrence River Ecosystem

Margaret Wooster, (Past) Executive Director, Great Lakes United

10:10 Coffee Break

10:30 A historical review of Presque Isle Bay and the Area of Concern

Pat Lupo, OSB, President, Pennsylvania Lake Erie Watershed Association

10:50: Invasive species, habitat, pollution, clean up and prevention issues facing Lake Erie

Jim Grazio, Water Pollution Biologist, PA DEP

11:10 Land-use issues and policies that concern restoration

David Skellie, Land Use and Economic Specialist, Pennsylvania Sea Grant

11:40 Ensuring the sustainable use of our resources

Dr. Michael J. Donahue, GLC

12:00 Lunch

1:00 Charge to Breakout Groups

Lori Boughton, Chief, PA DEP Office of the Great Lakes

1:15 Breakout Groups

- What is your input on the Great Lakes Governor's priorities and how are these priorities important to Pennsylvania?
- What advice do you have on the design and implementation of a large scale restoration plan to advance the Governor's priorities for the Great Lakes ecosystem?

3:00 Breakout Group Reports

Eric Obert, Extension Director, Pennsylvania Sea Grant

4:15 Wrap Up and next steps

Dr. Michael J. Donahue, GLC

Cathy Curran-Myers, Deputy Secretary for Water Management, PA DEP

4:30 Adjourn

Appendix B: Governors' Restoration Priorities Press Release

GREAT LAKES GOVERNORS RELEASE PRIORITIES FOR PROTECTION AND RESTORATION OF THE GREAT LAKES

October 1, 2003

Contact: David Naftzger or Peter Johnson
312-407-0177

The Council of Great Lakes Governors today released nine priorities for the protection and restoration of the Great Lakes. The Great Lakes ecosystem is critically important to the quality of life for our citizens and to the economic vitality of region," said Ohio Governor Bob Taft, Council chairman. "In endorsing these priorities, the Great Lakes Governors affirm our commitment to protecting and restoring the natural habitat and water quality of the Great Lakes Basin, preserving diverse and thriving plant and animal communities, protecting the water supply, and safeguarding human health."

The priorities were included in a letter to the sponsors of S. 1398, the Great Lakes Environmental Restoration Act, and H.R. 2720, the Great Lakes Restoration Financing Act. The Great Lakes Governors praised Congressional sponsors and cosponsors for introducing legislation to address ongoing threats to the Great Lakes by providing substantial federal financial support to complement extensive state and local spending on protection and restoration projects.

"We applaud the strong bi-partisan commitment in Congress to restore and protect the Great Lakes," said Governor Taft. "The Great Lakes Governors look forward to partnering with Congress to secure the future of this irreplaceable national treasure."

The Council of Great Lakes Governors agreed that these priorities should guide Great Lakes restoration and protection efforts:

- Ensure the sustainable use of our water resources while confirming that the States retain authority over water use and diversions of Great Lakes waters.
- Promote programs to protect human health against adverse effects of pollution in the Great Lakes ecosystem.
- Control pollution from diffuse sources into water, land and air.
- Continue to reduce the introduction of persistent bioaccumulative toxics into the Great Lakes ecosystem.
- Stop the introduction and spread of non-native aquatic invasive species.

Proceedings – Pennsylvania Restoration Priorities for the Great Lakes

- Enhance fish and wildlife by restoring and protecting coastal wetlands, fish and wildlife habitats.
- Restore to environmental health the Areas of Concern identified by the International Joint Commission as needing remediation.
- Standardize and enhance the methods by which information is collected, recorded and shared within the region.
- Adopt sustainable use practices that protect environmental resources and may enhance the recreational and commercial value of our Great Lakes.

The Great Lakes Governors also committed to working with local governments, Canadian provinces, and other stakeholder organizations on a coordinated approach to safeguarding the Great Lakes, which are the largest source of fresh surface water in the world.

Appendix C: Participants

<i>Last Name</i>	<i>First Name</i>	<i>Organization</i>	<i>E-mail</i>
Anderson	Pat	PA Game Commission	panderson@state.us.pa
Andraso	Greg	Gannon University	ANDRASO@gannon.edu
Ballard	Erin	PennPIRG	
Benczkowski	Don	DEP	dbenczkows@state.pa.us
Blackman	Julie	Asbury Woods Nature Center	blackman@troy.mtsd.org
Booser	John	PA DEP	jbooser@state.pa.us
Boughton	Lori	PA DEP	lboughton@state.pa.us
Breniman	Ben	North East Borough	neboro.bbreniman@adelphia.net
Bugler	Alan	PA Futures	pafutures@earthlink.net
Burch	Kelly	PA DEP	keburch@state.pa.us
Campbell	Mike	Mercyhurst College	jcampbell@mercyhurst.edu
Cingolani	John	PA Sea Grant	jkc140@psu.edu
Covert	Jerry	CamTech	jcovert@gocamtech.com
Curran-Myers	Cathy	PA DEP	cathmyers@state.pa.us
Dangel	Margarita	Earth Force	leaearthforce@adelphia.net
Danielski	Anne	PA Sea Grant	add118@psu.edu
DeSarro	Anne	PI State Park	presqueislesic@state.pa.us
Diz	Rick	Gannon University	DIZ001@gannon.edu
Donahue	Michael J.	Great Lakes Commission	mtonahue@glc.org
Ebert	Doug	Health Department	c-debert@state.pa.us
Eisenberg	Rich	BCMS	catketch@hotmail.com
Flanagan	Molly	Ohio Environmental Council	molly@theoec.org
Foust	Kyle	Mercyhurst College	kfoust@mercyhurst.edu
Freeman	Deborah	Army Corps of Engineers	Deborah.A.Freeman@LRB01.usace.army.mil
Frenzel	Kathleen	Carrie T. Watson Garden Club	
Fuhrman	Tom	LERC	lerc@ma.rr.com
Gault	Jeff	Mayors Office	JGault@ci.erie.pa.us
Galloway	Sarah	Conservation District	eriecons@erie.net
Gorniak	Julie	North East Township	
Grazio	Jim	DEP	jagrazio@state.pa.us
Griffin	Salley	Sierra Club	SALMMT@earthlink.net

Proceedings – Pennsylvania Restoration Priorities for the Great Lakes

<i>Last Name</i>	<i>First Name</i>	<i>Organization</i>	<i>E-mail</i>
Gross	Leroy	Conservation District	eriecons@adelphia.net
Hall	Jennifer	PA DEP	jehall@state.pa.us
Heiser	Julie	PA Sea Grant	jah351@psu.edu
Higby	Dave	Environmental New York	-
Hill	Brian	French Creek Watershed Assoc.	Frenchcrik@aol.com
Hoachlander	Shane	PA Game Commission	shoachlander@state.pa.us
Hoskin	Bob	Army Corps of Engineers	Robert.Hoskin@lrp.usace.army.mil
Howze	Ron	Coastal Zone Management	rhowze@gecac.org
Hultgren	Phil	LECOM	phultgren@lecom.edu
Jacobs	Kevin	PA Game Commission	kjacobs@state.pa.us
Kennedy	Sister Mary Claire	Benedictines	s.mckennedy@ssjerie.org
Kissell	Ed	S.O.N.S.	sonslakerie@aol.com
Koon	Teresa	Representative John Evans Office (Chief of Staff)	tkoon@pahousegop.com
Kugler	Alan	PA Futures	pafutures@earthlink.net
Kukla	Mark	City of Erie	mkukla@ci.erie.pa.us
Kulich	Mark	DCNR	mkulich@state.pa.us
Kwitowski	Mark	City of Erie	mkwitowski@ci.erie.pa.us
Larson	Geri	Army Corps of Engineers	geraldine.l.larson@usace.army.mil
Leslie	Harry	PI State Park	hleslie@state.pa.us
Lupo	Pat	Earth Force	leaearthforce@adelphia.net
Macaluso	Kathy	Best of All Tours Unlimited	CAPBESTBOAT@aol.com
Macaluso	Tom	Best of All Tours Unlimited	CAPBESTBOAT@aol.com
Maggio	Tom	Erie Port Authority	tmaggio@porterie.org
Mangoni	Anthony	Ninth Coast Guard District	Amangoni@d9.uscg.mil
Martz	Marti	PA Sea Grant	-
Marks	Tom	Southtowns Walleye Association	tommarkf@verizon.net
Marshall	Annette	Earth Force	annettemarshall@adelphia.net
McCartney	Anna	Erie Times News	
McConnell	Lucas	Allegheny Earthforce	
McSkimming	Michael	Gannon University	meskimming@gannon.edu
McDonough	Erin	National Wildlife Federation	McDonough@nwf.org
Mosbacher	Eric	PADEP	emosbacher@state.pa.us
Mindex	Donna	Harborcreek Township	

Proceedings – Pennsylvania Restoration Priorities for the Great Lakes

<i>Last Name</i>	<i>First Name</i>	<i>Organization</i>	<i>E-mail</i>
Mulvihill	Dave	City of Erie, Public Works	
Mumau	Mike	PI State Park	mmumau@state.pa.us
Neiswonger	Frances	Strong Vincent H.S. - student	
Obert	Eric	PA Sea Grant	eco1@psu.edu
Peden	Joe	Gannon University	PEDEN001@MAIL1.GANNON.EDU
Pedler	Cathy	LERC	cpedler@mercyhurst.edu
Perry	Dale & Andrianna	Stakeholder	ATP5030@AOL.COM
Phillips	Christine	Fairview Evergreen Nurseries, Inc.	christine@velocity.net
Pingel	Pat	PA DEP	ppingel@state.pa.us
Prazer	Stan	Harbor Improvement Council	
Rafferty	Sean	PA Sea Grant	sdr138@psu.edu
Randall	Eric	Edinboro University	erandall@edinboro.edu
Rectenwald	Dave	U.S. EPA	Rectenwald.Dave@epa.gov
Reese	Bill	Girard Township	
Ritz	Matt	Strong Vincent H.S. - student	jerry753@webtv.net
Rouch	Jake	Erie Regional Chamber & Growth Partnership	jrouch@eriepa.com
Rutkowski	Jim	Strong Vincent H.S.	jk.touch@verizon.net
Sabol	Becky	Girard Township	bsgrdtwp@adelphia.net
Sampsell	Tod	Western PA Conservancy	TSampsell@paconserve.org
Sayers	Jason	City of Erie	
Sceiford	Mary	Lake Front Property owner	
Sisson	Jim	Citizens Coalition	
Skellie	Dave	PA Sea Grant	dus18@psu.edu
Smith	Regina	Congressman English	regina.smith@mail.house.gov
Smith	Larry	PA Game Commission	lmsmith3@earthlink.net
Stark	Norman	Lake Front Property owner - Lawyer	
Sterret	David J.	Herbert, Rowland & Grubic, Inc.	dsterrett@hrg-inc.com
Stumpf	Curt	Western PA Conservancy	cstumpf@paconserve.org
Taylor	Judy	PADEP	jutaylor@state.pa.us
Tucker	Eva	Erie City School Board	
Ullrich	Dave	Great Lakes Cities Initiative	
Welsh	Bill	Erie County Environmental Coalition	america@velocity.net
Wasiesky	Steve	Asbury Woods Nature Center	wasiesky@troy.mtsd.org

Proceedings – Pennsylvania Restoration Priorities for the Great Lakes

<i>Last Name</i>	<i>First Name</i>	<i>Organization</i>	<i>E-mail</i>
Weinheimer	Jerry	North East Borough	
Wellington	Bob	Health Department	c-rwelling@state.pa.us
Wheeler	Victor	Citizens Coalition	
Wilcox	Sister Carole	Benedictines	ssjnn@svhs.org
Wilkinson	Danielle	Strong Vincent H.S. - student	ranytime@juno.com
Williams	Melanie	Waste Management	Mwilliams7@wm.com
Wilmoth	Luke	Strong Vincent H.S. - student	
Wolford	Matt	Wolford Law firm	
Wooster	Margaret	Great Lakes United	mwooster@adelphia.net
Zimmerman	Ephraim	Western PA Conservancy	EZimmerman@paconserv.org
Hines	Micheal	stakeholder	striper@zoominternet.net
Visnosky	Marty	PLEWA	
Earll	Jane	State Senator	jearl@pasen.gov

Appendix D: Questionnaire

The following questionnaire was provided to all workshop participants. Their responses were used to evaluate the overall priorities of the workshop participants.

Great Lakes Restoration Priorities Ratings	
	Group Number: _____
	Rate the following priorities 1 through 9. One being the most important and nine being the least.
_____	Ensure the sustainable use of our water resources while confirming that the States retain authority over water use and diversions of Great Lakes waters.
_____	Promote programs to protect human health against adverse effects of pollution in the Great Lakes ecosystem.
_____	Control pollution from diffuse sources into water, land and air.
_____	Continue to reduce the introduction of persistent bioaccumulative toxics into the Great Lakes ecosystem.
_____	Stop the introduction and spread of non-native aquatic invasive species.
_____	Enhance fish and wildlife by restoring and protecting coastal wetlands, fish and wildlife habitats.
_____	Restore to environmental health the Areas of Concern identified by the International Joint Commission as needing remediation.
_____	Standardized and enhance the methods by which information is collected, recorded and shared within the region.
_____	Adopt sustainable use practices that protect environmental resources and may enhance the recreational and commercial value of our Great Lakes.

Appendix E: Priority Rankings

Breakout Group #1

Priority	Overall Rank	Overall Score	Group Tally (Person #)							
			1	2	3	4	5	6	7	8
Ensure the sustainable use of our water resources	1	26	3	4	1	5	2	9	1	1
Promote programs to protect human health against adverse effects of pollution	8	49	2	7	9	1	9	7	9	5
Control pollution from diffuse sources into water, land and air	3	30	1	5	5	2	5	4	5	3
Continue to reduce the introduction of persistent bioaccumulative toxics	2	28	6	3	4	3	4	2	4	2
Stop the introduction and spread of non-native aquatic species	9	51	7	6	3	7	6	5	8	9
Enhance fish and wildlife by restoring and protecting fish and wildlife habitats	7	47	5	1	6	9	7	6	6	7
Restore to environmental health the Areas of Concern	5	43	4	9	2	6	8	3	7	4
Standardize and enhance the methods by which information is collected and recorded	6	46	9	8	7	4	1	8	3	6
Adopt sustainable use practices that protect environmental resources	4	39	8	2	8	8	3	1	2	7

Top Three Priorities:

1. Ensure the sustainable use of our water resources while confirming that the States retain authority over water use and diversions of Great Lakes waters.
2. Continue to reduce the introduction of persistent bioaccumulative toxics into the Great Lakes ecosystem.
3. Control Pollution from diffuse sources into water, land, and air.

Break Out Group #2

Priority	Overall Rank	Overall Score	Group Tally (Person #)					
			1	2	3	4	5	6
Ensure the sustainable use of our water resources	6	39	9	8	7	2	8	5
Promote programs to protect human health against adverse effects of pollution	2	20	1	4	4	7	2	2
Control pollution from diffuse sources into water, land and air	1	19	5	2	1	4	4	3
Continue to reduce the introduction of persistent bioaccumulative toxics	3	22	3	3	2	5	3	6
Stop the introduction and spread of non-native aquatic species	5	33	2	5	6	6	7	7
Enhance fish and wildlife by restoring and protecting fish and wildlife habitats	8	44	6	6	8	10	6	8
Restore to environmental health the Areas of Concern	9	57	10	10	9	9	9	10
Standardize and enhance the methods by which information is collected and recorded	4	30	7	1	5	3	10	4
Adopt sustainable use practices that protect environmental resources	7	41	8	9	10	8	5	1
Reduce Pollution through better energy use and transportation		25	4	7	3	1	1	9

Top Three Priorities:

1. Control Pollution from diffuse sources into water, land, and air.
2. Promote programs to protect human health against diverse effects of pollution.
3. Continue to reduce the introduction of persistent bioaccumulative toxics.

Breakout Group #3

Priority	Overall Rank	Overall Score	Group Tally (Person #)					
			1	2	3	4	5	6
Ensure the sustainable use of our water resources	9	46	9	2	9	9	9	9
Promote programs to protect human health against adverse effects of pollution	3	27	4	4	5	6	7	1
Control pollution from diffuse sources into water, land and air	1	15	1	5	3	2	1	3
Continue to reduce the introduction of persistent bioaccumulative toxics	2	18	3	6	2	3	2	2
Stop the introduction and spread of non-native aquatic species	6	32	7	8	6	1	4	6
Enhance fish and wildlife by restoring and protecting fish and wildlife habitats	7	36	2	9	8	7	3	7
Restore to environmental health the Areas of Concern	5	29	5	3	7	4	5	5
Standardize and enhance the methods by which information is collected and recorded	4	29	7	1	1	8	8	4
Adopt sustainable use practices that protect environmental resources	8	36	6	7	4	5	6	8

Top Three Priorities:

1. Control pollution from diffuses sources into water, land, and air.
2. Continue to reduce the introduction of persistent bioaccumulative toxics into the Great Lakes ecosystem.
3. Promote programs to protect human health against adverse effects of pollution in the Great Lakes ecosystem.

Breakout Group #4

Priority	Overall Rank	Overall Score	Group Tally (Person #)					
			1	2	3	4	5	6
Ensure the sustainable use of our water resources	2	27	2	2	4	7	7	5
Promote programs to protect human health against adverse effects of pollution	5	30	9	3	3	1	8	6
Control pollution from diffuse sources into water, land and air	4	30	3	4	7	4	4	8
Continue to reduce the introduction of persistent bioaccumulative toxics	8	36	4	8	8	2	5	9
Stop the introduction and spread of non-native aquatic species	6	32	5	6	9	3	6	3
Enhance fish and wildlife by restoring and protecting fish and wildlife habitats	7	32	6	5	6	8	3	4
Restore to environmental health the Areas of Concern	3	29	7	7	2	9	2	2
Standardize and enhance the methods by which information is collected and recorded	9	40	8	9	1	6	9	7
Adopt sustainable use practices that protect environmental resources	1	14	1	1	5	5	1	1

Top Three Priorities:

1. Adopt sustainable land use practices that protect environmental resources and may enhance the recreational and commercial value of our Great Lakes.
2. Ensure the sustainable use of our water resources while confirming that the States retain authority over water use and diversions of Great Lakes waters.
3. Restore to environmental health the Areas of Concern identified by the International Joint Commission as needing remediation.

Breakout Group #5

Priority	Overall Rank	Overall Score	Group Tally (Person #)						
			1	2	3	4	5	6	7
Ensure the sustainable use of our water resources	6	40	8	1	7	4	7	9	4
Promote programs to protect human health against adverse effects of pollution	3	30	6	5	2	1	5	4	7
Control pollution from diffuse sources into water, land and air	1	15	1	6	1	3	2	1	1
Continue to reduce the introduction of persistent bioaccumulative toxics	2	29	2	8	4	5	1	3	6
Stop the introduction and spread of non-native aquatic species	5	34	3	3	3	6	6	5	8
Enhance fish and wildlife by restoring and protecting fish and wildlife habitats	7	41	9	7	6	7	4	6	2
Restore to environmental health the Areas of Concern	4	32	4	2	5	2	8	8	3
Standardize and enhance the methods by which information is collected and recorded	9	51	5	9	9	9	3	7	9
Adopt sustainable use practices that protect environmental resources	8	44	7	4	9	8	9	2	5

Top Three Priorities:

1. Control pollution from diffuse sources into water, land, and air.
2. Continue to reduce the introduction of persistent bioaccumulative toxics into the Great Lakes ecosystem.
3. Promote programs to protect human health against the adverse effects of pollutants on the Great Lakes ecosystem.

Breakout Group #6

Priority	Overall Rank	Overall Score	Group Tally (Person #)							
			1	2	3	4	5	6	7	8
Ensure the sustainable use of our water resources	3	34	1	6	9	2	6	2	3	5
Promote programs to protect human health against adverse effects of pollution	4	36	8	2	3	5	3	1	7	7
Control pollution from diffuse sources into water, land and air	1	15	3	1	1	4	1	3	1	1
Continue to reduce the introduction of persistent bioaccumulative toxics	2	26	2	3	2	8	2	5	2	2
Stop the introduction and spread of non-native aquatic species	6	46	9	5	6	6	5	4	5	6
Enhance fish and wildlife by restoring and protecting fish and wildlife habitats	7*	51	7	8	7	7	7	6	6	3
Restore to environmental health the Areas of Concern	7*	51	5	9	5	3	4	9	8	8
Standardize and enhance the methods by which information is collected and recorded	9	58	6	4	4	9	9	8	9	9
Adopt sustainable use practices that protect environmental resources	5	43	4	7	8	1	8	7	4	4

Top Three Priorities:

1. Promote programs to protect human health against adverse effects of pollution in the Great Lakes ecosystem.
2. Ensure the sustainable use of our water resources while confirming that the states retain authority over water use and diversions of Great Lakes waters.
3. Control pollution from diffuse sources into water, land, and air.

Breakout Group #7

Priority	Overall Rank	Overall Score	Group Tally (Person #)						
			1	2	3	4	5	6	7
Ensure the sustainable use of our water resources	3	29	4	1	3	1	7	6	7
Promote programs to protect human health against adverse effects of pollution	7	37	6	8	2	4	4	9	4
Control pollution from diffuse sources into water, land and air	1	20	1	2	4	3	5	2	3
Continue to reduce the introduction of persistent bioaccumulative toxics	2	27	5	5	1	5	2	4	5
Stop the introduction and spread of non-native aquatic species	5	34	3	3	5	2	8	7	6
Enhance fish and wildlife by restoring and protecting fish and wildlife habitats	6	36	7	6	7	8	3	3	2
Restore to environmental health the Areas of Concern	8	47	8	7	6	6	6	5	9
Standardize and enhance the methods by which information is collected and recorded	9	54	2	9	9	9	9	8	8
Adopt sustainable use practices that protect environmental resources	4	31	9	4	8	7	1	1	1

Top Three Priorities:

1. Control pollution from diffuse sources into water, land, and air.
2. Continue to reduce the introduction persistent bioaccumulative toxics into the Great Lakes ecosystem.
3. Ensure the sustainable use of our water resources while confirming that the states retain authority over water use and diversions of Great Lakes waters.

Breakout Group #8

Priority	Overall Rank	Overall Score	Group Tally (Person #)									
			1	2	3	4	5	6	7	8	9	10
Ensure the sustainable use of our water resources	5	49	4	4	4	7	6	2	5	2	9	6
Promote programs to protect human health against adverse effects of pollution	7	56	7	3	7	5	8	1	6	3	7	9
Control pollution from diffuse sources into water, land and air	1	25	2	1	1	1	2	3	4	1	2	8
Continue to reduce the introduction of persistent bioaccumulative toxics	2	41	3	2	2	4	3	4	8	5	5	5
Stop the introduction and spread of non-native aquatic species	6	54	8	6	5	6	1	5	3	8	8	4
Enhance fish and wildlife by restoring and protecting fish and wildlife habitats	3	45	9	7	3	2	7	6	2	4	3	2
Restore to environmental health the Areas of Concern	8	67	5	5	8	3	9	8	7	9	6	7
Standardize and enhance the methods by which information is collected and recorded	9	67	6	8	9	9	4	9	9	6	4	3
Adopt sustainable use practices that protect environmental resources	4	46	1	9	6	8	5	7	1	7	1	1

Top Three Priorities:

1. Control pollution from diffuse sources into water, land, and air.
2. Continue to reduce the introduction of persistent bioaccumulative toxics into the Great Lakes ecosystem.
3. Enhance fish and wildlife by restoring and protecting coastal wetlands, fish, and wildlife habitats.

Appendix F: Breakout Session Summary Notes

(As recorded by volunteers in each group)

Group 1

General Comments

- A lot of the decision depends on where we have been, where are we going, and how we get there
- Need to develop a system to disseminate valid information so we know the facts
- Standardize the methods of study (research) and information gathering
- Freshwater is becoming a very important commodity
- Focus on local Pennsylvanian Lake Erie problems as opposed to the Great Lakes system
- Approach the restoration from an individual perspective and see how it fits into the broader picture
- Global perspective or local?
- Exodus of manufacturing facilities, causing pressure to divert water to the southwest
- Identifying critical environmental areas is the most important thing
- Water diversion out of the Great Lakes: out how are water levels maintained?
- Fish consumption is not a local issue, rather it is a lake-wide issue
- Presque Isle Bay problem or Great Lakes problem
- Funding issues, need to benefit local issues
- Issues should be looked at lake-wide
- Sand movement, migration
- States retain authority or local citizens would not have input?
- Would the Governors in basin have the authority to regulate?
- What about developers?
- What is the safeguard to prevent the federal government from insisting on water diversion?
- There is no absolute assurance guarding against federal government interference
- Agreement between states and provinces
- Colorado River example – we have not lived up to the agreement with Mexico
- Cause and Effect between priorities; priorities are linked
- Standardization of data and methods is important
- Communicate easily to the public what the risks are
- Nobody knows for sure what causes the brown bullhead tumors

Specific Priority Comments

Ensure the sustainable use of our water resources while confirming that the States retain authority over water use and diversions of Great Lakes waters

- Keep water from being transferred out of the system
- Water quality
- Governors must develop a water use plan for the Great Lakes
- Continue to support the system of Governors' authority
- Make the system more binding

Continue to reduce the introduction of persistent bioaccumulative toxics into the Great Lakes ecosystem

- Identify the sources of toxins.
- Place the emphasis on research
- Mercury – coal fired power plants / PCBs no longer manufactured
- Local mercury and hazardous chemical collections
- Move away from coal combustion
- Develop alternate energy sources, beneficial not harmful to the environment
- Control pollution still coming from coal fired power plants
- Establish stricter pollution control
- Offer incentives opposed to penalties

Proceedings – Pennsylvania Restoration Priorities for the Great Lakes

- Coal is a big industry in Pennsylvania
- Must look at this regionally
- Clean Air Act – strengthen or revise
- Fund and promote local pollution prevention programs
- There is a need for public education to support legislation (general public and academic populations)
- Improve local mechanisms to set pollution control procedures and make it easy for local people to comply
- Tire disposal problem, changing oil
- People would comply if they could dispose

Control pollution from diffuse sources into water, land, and air

- Non-point source pollution
- Make funding available to improve water treatment systems to local areas
- Old properties are not required to retro-fit
- City of Erie has water control measures in place. However, there are no measures outside the city
- City of Erie has no power to regulate existing land owners to do anything to control water
- Provide funding for local property owners to upgrade storm water management
- Increase public awareness on grant availability
- Offer funding to address problems
- Offer funding to retro-fit existing land use to BMPs

Specific actions to address priorities

- Promote green technology and develop new technology
- Reclaim old asphalt areas (i.e. parking lots and abandoned stores)
- Use old buildings for new uses
- Do not allow localities to give up their green space – money incentives
- Urban sprawl must be controlled
- State must require regional planning
- Look at systems for planning based on larger regions instead of small municipalities

Group Summary

Ensure the sustainable use of our water resources while confirming that the States retain authority over water use and diversions of Great Lakes waters

- Public should support a compact among the Governors that shores up their authority to control Great Lakes waters
- Develop a system that is binding and recognized at the federal level

Continue to reduce the introduction of persistent bioaccumulative toxics into the Great Lakes ecosystem

Big Picture:

- Clean Air Act – strengthen rather than weaken
- Public education to develop the potential will to have stiff regulations
- Fund an incentive program for voluntary “above/beyond” emissions control

Local Picture:

- Develop a comprehensive plan for collections of toxics, make it easy to participate
- Public education – what are sources of toxics – proper disposal methods

Control Pollution from diffuse sources into water, land, and air

- Funding available to improve water treatment, sewer systems, etc.
- Address already developed properties not regulated by new construction regulations; perhaps set up a fund to create incentives for retro-fitting (e.g., East Erie Plaza)
- Control pollution still coming from coal fired power plants – long term national program for alternate sources of energy.
- Emphasis on public education in BMPs such as use of permeable parking lots

Group 2

Specific Priority Comments

Ensure the sustainable use of our water resources while confirming that the States retain authority over water use and diversions of Great Lakes waters

- Be open minded about export of water, especially during extreme excess

Promote programs to protect human health against adverse effects of pollution in the Great Lakes ecosystem.

- Develop/maintain open-eyes approach to monitoring potential pathways of contaminant transfer from the environment to the people.
- Share health data between EPA, states, etc.
- Have consistent advisories.
- Address existing issues (e.g., turtles contain high levels of PCBs, but there are no consumption advisories)

Control pollution from diffuse sources into water, land and air

- Develop laws prohibiting pesticides/herbicides for cosmetic purposes

Continue to reduce the introduction of persistent bioaccumulative toxics into the Great Lakes ecosystem

- Proactively evaluate potential negative impacts of newly recognized contaminants
- Look at PBDEs, PFCs, etc.
- We are not reducing the introduction so how are we going to continue?
- Explore “green energy”

Stop the introduction and spread of non-native aquatic invasive species

- Consider a policy to prevent introduction and spread of genetically altered organisms
- Remove aquatic from the definition

Standardize and enhance the methods by which information is collected, recorded and shared within the region

- Establish benchmarks and goals for restoration
- Needs stronger suggestive language

New Priorities and Existing Priority Language Change

New Priority:

- Enhance the fundamental reduction of pollution sources by promoting changes in national policy to encourage changes in energy use and transportation

Revised Priorities:

- Reduce and eliminate the introduction of persistent bioaccumulative toxics into the Great Lakes ecosystem and proactively evaluate the potential impacts of new recognized contaminants
- Stop the introduction and spread of non-native invasive species and genetically altered species
- Develop programs to protect human health against adverse effects of pollution in the Great Lakes ecosystem
- In general make the language more proactive opposed to reactive

Priority Implementation Suggestions

Control pollution from diffuse sources into water, land, and air

- Public education is key
- Phase out cosmetic pesticide use

Proceedings – Pennsylvania Restoration Priorities for the Great Lakes

- Determine what you are controlling (e.g., coal fired power plants, air deposition, etc.)
- Collect data on the percent contribution of contaminants (i.e. water, air, etc.)
- Broaden horizons
- Coordinate all existing local, state, and federal programs to address the issue
- BMPs
- Allocate monies for infrastructure changes – stop “band-aiding” problems

Develop programs to protect human health against adverse effects of pollution in the Great Lakes ecosystem

- Get the medical community involved with environmental health issues
- Public education
- Coordinate efforts with multiple regulatory agencies
- Develop consumption advisories for other game animals
- Increase funds for testing and monitoring potential sources for human health degradation
- Make environmental testing more affordable (e.g., for well water testing) by developing large scale regional testing centers
- Have remedial plans in place if problems arise during testing
- Put more regulations on ingredients used in products
- Educate at risk populations

Reduce and eliminate the introduction of persistent bioaccumulative toxics into the Great Lakes ecosystem and proactively evaluate the potential impacts of new recognized contaminants

- Promote smart growth
- Introduce stronger ordinance language into development rights
- Provide evidence for why more environmentally friendly practices are worth the effort
- Educate municipal officials on pollution issues (NEMO) and require them to involve the public
- Purchase conservation easements

Group Summary:

- Public education and education of municipal officials is critical
- Coordinate local, state, and federal programs
- Broaden horizons – “think outside the box”
- Identify problems

Group 3

Specific Priority Comments

Control pollution from diffuse sources into water, land, and air

- Less political control over government environmental agencies (allow free communication to the public through the media)
- Better education and outreach (NEMO)
- More tax breaks to industries that implement pollution control

Continue to reduce the introduction of persistent bioaccumulative toxics into the Great Lakes ecosystem

- More research (grants for universities)
- Education by: Government/Environmental Agencies, and Doctors/Public speakers
- Alternative energy sources (Hg-Mercury)
- Conservation

Promote programs to protect human health against adverse effects of pollution in the Great Lakes ecosystem

Proceedings – Pennsylvania Restoration Priorities for the Great Lakes

- Between the Great Lakes States and Canada
- Coordination between environmental groups (must do this to implement strategies of priorities)
- Better coordination in LaMP implementation between United States and Canada

Group 4

General Comments

Sustainable Use Practices

- Follow goal and reach it – everything will fall in line
- Need to watch the present for the future – may enhance value (win – win situation)
- Promoting recreation can have a tremendous turn around on the Great Lakes
- Blue pike disappearance – over-fishing, sewage disposal, and chemicals from Cleveland
- In order for sustainable use to work there has to be quantifiable standards change
 - Need presets to measure as years go by
 - Historical information and surveys
 - Integrate decision makers to develop standards
- Environment vs. Economics
 - Can they survive at the same time?
 - Stopping non-natives has a huge cost associated with it
 - Hard to gauge
 - Need compromise
 - Aging population – the government is burdened by expenses
 - No tax base to rely on
 - Water resources are a huge selling point – need recreation to support
 - Need to keep jobs
 - Increased water clarity due to zebra mussels (Is the cost of water treatment because of zebra mussels?)
 - Quality of life issues
 - Recreation issues
 - Land use planning issues
- Water diversion – small portion of Pennsylvania could be severely affected

Priority Implementation Strategies

- Educate youth about the effects non-natural items thrown out the window have on the environment
- Water conservation
- Check out conservation practices – are they really energy efficient?
- Legislation and treatment
- How important is it for states to retain authority over water diversion?
 - Are Lake Erie water levels fluctuating because of economics (Lake Erie is not regulated)?
- Fish advisories as well as waterfowl consumption advisories
 - Do not eat fish eating birds
 - Do not eat skin and fat tissue
- Programs are being promoted through Fish and Boat Commission advisories and Game Commission advisories
- There is a need for sharing data
- Some pollutants are not able to be controlled because of emissions
- We are not only dealing with the states, but also provinces whose regulations do not always satisfy what we need and think
- As a contractor there are dealings with Areas of Concern
 - Local areas vs. large areas
 - Clean up the whole thing
 - AOCs are especially important to populated areas
- We need to stop “talking” and start “doing”

Group 5

General Comments

- The first and last priorities listed on the Governor’s list should be spliced and re-meshed in the following manner:
 - Ensure sustainable use of our water resources and adopt sustainable use practices that protect environmental resources.
 - Confirm that states retain authority over water use and diversion of Great Lakes waters that may enhance recreational, commercial, and socioeconomic value of our Great Lakes.
- Because you cannot ensure sustainable use of water resources without adopting sustainable practices; there is separation between the issue of sustainability and the issues of recreation, economics, etc.
- Identify, restore, and protect sensitive environmental areas and construct wetlands (that can be self-sustaining) through the public ownership, easements, or development restrictions
- Public policy issue – needs to be addressed through PA water law
- Use STORET (EPA system) as a starting point for data gathering and input from the Great Lakes region. Have assigned authors for data entry

Specific Priority Comments

Control pollution from diffuse sources into water, land, and air

- Recommend that legislations be re-visited and perhaps strengthened on the following topics:
 - Sewage, water supply, coal fired power plants (to reduce mercury), vehicular emissions, industrial pre-treatment, land use in riparian areas, and education
 - Education – mandate through use of the Pennsylvania public school system using the PA standards for environment, ecology/science, and technology
- Recommend implementation of rural education programs utilizing schools and watershed organizations, etc.
- Riparian areas should be clearly defined for public vision and knowledge. Riparian management should be a mandatory education requirement for all persons using fertilizers, pesticides, etc. This should/must involve private individuals, not just high volume farmers.
- Land use and planning should be done using smart growth technology and concepts. We should make use of natural heritage inventory to determine a starting point for our resources. Create planning incentives for smaller municipalities (anything under county level) to do a plan in conjunction with the county’s resource plans. An inventory of water use in all commonwealth municipalities needs to be kept, and Pennsylvania water laws need to be addressed and clarified (more directly) – this will require work and revision of the PA constitution.

Restore to environmental health the Areas of Concern identified by the International Joint Commission as needing remediation

- This can be accomplished by taking advantage of nearby university and research facilities and programs to do innovative clean-ups as part of research projects for degree programs (i.e., thesis work, doctorate work) and using public primary and secondary schools to do clean-up and restoration projects. Rely on fisherman and local industries to take an active role in both physical and technical aspects of clean-up and restoration projects – this creates a sense of community and responsibility surrounding the Great Lakes region.

Continue to reduce the introduction of persistent bioaccumulative toxics into the Great Lakes ecosystem

- Eliminate or heavily legislate coal fire plants (lower mercury emissions). Provide incentives to comply with lower levels. Regulate pesticide use.

Promote programs to protect human health against the adverse effects of pollutants on the Great Lakes ecosystem

- Continue to use fish advisories, but use media vigilance to promote public awareness on other environmental and public health problems (e.g., “expose” industries in non-compliance on TV just like they do for restaurants who do not meet health standards).

Proceedings – Pennsylvania Restoration Priorities for the Great Lakes

Stop the introduction and spread of non-native aquatic nuisance species

- Set up physical barriers, treatment, and inspections to reduce invasions through ballast and transport. Physical barriers will reduce larger invaders from traveling. Make it illegal to buy, grow, or sell known exotic invasives. Utilize knowledge centers like universities to do elimination programs/projects. Use public schools to do projects for service hour graduation requirements. Students can learn while they do something good for the environment. It is a win-win, “communal”/symbiotic system.

Presque Isle State Park and Bay Related Projects (priority implementation strategies)

Restoration of Presque Isle internal lagoons

- Current conditions – slowly filling in, invasive aquatics throughout, and reduced habitats for fish and wildlife
- Solutions
 - Develop environmental friendly sustainable plans to dredge lagoon channel
 - Incorporate invasive control practices to reduce aquatic invasives or promote the introduction of native species for better fish and wildlife habitat

Restoration of Scott Run (Presque Isle Bay drainage)

- Sedimentation burden at the mouth
- Erosion and bank stabilization issues from 6th street to the Bay
- Non-point source pollution due to storm water runoff
- Stream corridor extensively tubed – no area of groundwater re-charge
- Slope stabilization needed for sustainable development on bluff areas above from 6th street to the Bay
- Need to reduce stream flow rates during storm events – causing flooding downstream

Continuation/Expansion of Presque Isle State Parks invasive species control program through student intern program

- Aquatic and terrestrial invasive species control
- Re-introduce native species
- Improve fish/wildlife habitat
- Educational opportunities – demonstration site

Funding to promote research opportunities at Tom Ridge Center

- Aquaculture exploration for food and game fish species
- Aquaculture project for restoration/re-introduction of endangered/threatened native fish and aquatic plants
- Invasive species remediation control research
- Botulism research
- Human health issues associated with pollution issues in Presque Isle Bay and Lake Erie watersheds
- Research work for issues concerning management of resources at Presque Isle Bay and State Park, and Lake Erie
 - Specialized equipment to clean cladophora from swimming beaches
 - Beneficial use of organic beach debris other than burning
 - Specialized equipment to clean non-developed shoreline of non-organic litter and debris

Funding for educational initiatives at Tom Ridge Center

- Develop changeable exhibits and curriculum (can also be loaned out as traveling exhibits)
- Development of a Presque Isle Bay/Lake Erie documentary to be shown at the center

Fish habitat improvement project in Presque Isle Bay

- Expand current efforts by Presque Isle State Park, PA Fish and Boat Commissions, and S.O.N.S of Lake Erie
- Install structures
- Promote baitfish structures/habitat

Proceedings – Pennsylvania Restoration Priorities for the Great Lakes

Presque Isle State Park sustainable operations project

- Implement a clean air shuttle system – to operate between the Tom Ridge Center and park
- Convert vehicle fleet to clean-air vehicles
- Promote/implement, full scale park-wide recycling project for visitors and personnel
- Research and implement, where feasible, solar power alternatives

Coho Site and Elk Creek projects

Planning and development of the Coho site

- Create using sustainable design and meeting all restoration fund initiatives

Duck Run restoration

- Heal scars of ATV usage along drainage and bluffs
- Monitor stream quality

Reforestation and native species restoration of agriculture lands

Elk Creek access restoration project

- Design and develop sustainable dredging/sand bar recycling play at mouth to maintain deep water access to the area from Lake Erie
- Design and develop sustainable access, trails, and paths that connect the area to the Coho site

Coho site utilities infrastructure development

- Sustainable design and “state of the art” facilities for sewage, drinking water sources, power generation/use, and transit

Group 6

Specific Priority Comments

Stop the introduction and spread of non-native aquatic invasive species

- Adopt a zero tolerance policy for exotic species introduction (pass a strong NAISA with immediate eliminations of ballast water discharge)
- Include non-aquatic invasive species
- Adopt a stiff penalty system for careless or intentional import/export of invasive species
- Maximize controls for already introduced invasive species (provide funding/Asian carp sharpshooters)
- Support programs to re-introduce native species
- Eliminate warm water discharges (act as havens for AIS)
- Genetically modified species (e.g., glo-fish) and commercially introduced species (e.g., pond species)

Control pollution from diffuse sources into water, land, and air

- Create pesticide and herbicide ordinances (support organic programs)
- Subsidize green energy alternatives to fossil fuels
- More restrictive nutrient management laws
- Phase out coal and nuclear power plants
- Mandatory 100 feet riparian buffers on all Great Lakes waters, tributaries, and wetlands
- Percentage of any remedial action dedicated to education
- Invest in sewage treatment plant upgrades to eliminate CSOs and SSOs

Promote programs to protect human health against adverse effects of pollution in the Great Lakes ecosystem

- Local organic small family farms
- Promote education – need to understand link between human health and the environment.

Proceedings – Pennsylvania Restoration Priorities for the Great Lakes

- Include human health as a beneficial use in RAP.
- Create uniform fish consumption advisories.
- Fund environmental health research (i.e. endocrine disruptors)
- Eliminate persistent bioaccumulative toxins (production, use, impact) and ban PBDEs
- Create a multi-stakeholder coalition
- Implement international food labeling laws
- Eliminate sewage overflows

Ensure the sustainable use of our water resources while confirming that the states retain authority over water use and diversions of Great Lakes waters

- Implement conservation practices – industrial water recycling, composting toilets, fire insurance breaks for sprinkler systems in buildings, tax breaks for water “energy star” appliances, and methane digesters.
- Craft and adopt a strong basin-wide water use and diversion policy
- Water should not be considered a commodity
- Reconsider foreign trade policies (NAFTA, WTO, etc.)

Group 7

Clarification of Priorities

- “Sustainable use of water resources” includes land cover (e.g., trees)
- Programs protecting human health from pollution include clean air and water programs, NPDES, drinking water, and mercury in pristine lakes
- Diffuse pollution stoppage – nonpoint sources
- Bioaccumulative toxins – PCBs, organochlorines, organophosphates, etc.

Additions/Changes to Priorities

- Invasive species should apply to all invasive exotics, including terrestrial (e.g., Japanese knotweed)
- Existing laws are not being enforced – enforce them
- Stop pollution credits/pollution trading

High Priority

- Alternative Energy
- Need funding and resources to enforce existing laws

Problems with Governors Priorities

- First one regarding water use and state control are actually two
- Alternative energy promotion helps cut pollution and is wise use of resource.
- Programs to protect health contingent upon existing pollution (No pollution, no need)

Specific Priority Comments

Control pollution from diffuse sources into water, land, and air

Programs

- Education
- Preventing spills from entering lakes (oil-water separation)

Policies

- Control home pesticide use through ordinances
- Funding for agencies doing MS4 and E&S control work
- Promote alternative forms of road de-icing

Proceedings – Pennsylvania Restoration Priorities for the Great Lakes

Strategies

- Educating the general public
- Look at cumulative effects of NPS pollutants
- Develop additional funding to support existing NPS programs (conservation districts, etc.) MS4 programs
- Enforce buffer zones along streams for pesticide/herbicide spraying (agriculture)

Continue to reduce the introduction persistent bioaccumulative toxics into the Great Lakes ecosystem

Programs

- Dedicated funding for the Fisheries Advisory Programs
- Monitoring

Policies

- Pursue more stringent NPDES limits

Strategies

- Promote non-toxic alternatives to land/yard management
- “Clean” production (closed-loop “Natural step” approach) for industries
- Education for homeowners, consumers on what it takes to manufacture products (e.g., waste produced)

Ensure the sustainable use of our water resources while confirming that the states retain authority over water use and diversions of Great Lakes waters

Policies

- Work on ground water inventories, legislation regarding ground water use
- Address riparian rights use
- Protect head waters

Strategies

- Make sure there is coordination with Act 220 process
- Educate on water conservation, water reuse

Group 8

Specific Priority Comments

Control pollution from diffuse sources into water, land, and air

- Public education (e.g., coastal clean-up)
- BMPs – industry, agriculture, construction, and landscaping
- Stronger emissions standards
- Regular pickup of household hazardous waste (e.g., pesticides, etc.)
- Maintain EPA standards (or increase) for coal fired power plants
- NEMO

Continue to reduce the introduction of persistent bioaccumulative toxins into the Great Lakes ecosystem

- Reduce or eliminate dependence on items that use toxics through legislation, if possible
- Extend boundaries of AOC into watersheds
- Do more research on how to detoxify or remediate already contaminated sites (e.g., dumps, and industrial brownfields)

Proceedings – Pennsylvania Restoration Priorities for the Great Lakes

Enhance fish and wildlife by restoring and protecting coastal wetlands, fish, and wildlife habitats

- Establishment of greenways should be a priority
- Conservation easements
- Wetland restoration of shallow water impoundments – CREP – in an ongoing manner rather than yearly
- Enhance marginal wetlands
- Porous parking lots
- Oil grit separators
- Restoration of riparian buffer zones

Additional Comments

In the context of the Governor’s nine priorities, what is important to Pennsylvania’s Great Lakes community?

- We need Health Departments to aggressively look at environmental contaminants (e.g., PBDEs, PFCs, PCBs, cadmium). Understand the food web; if you protect human health, including mental and aesthetic issues, you will go a long way in improving the environment in general.
- Need an environmental ethics committee – “Department of Morality and Common Sense”
 - Fire employees (public employees) who go out of their ways to avoid doing their job
 - Get people to work together to solve problems rather than not accept some responsibility to try to solve problems
- Public trust doctrine and public access
- Water quality, sustainable community and environment, and bio-security
- Add 10th Priority – “Promote development and adoption of energy and transportation policies that enhance reduction of pollution sources”
 - Energy in particular came up in several group discussions as an important area of conservation that affects water quality
 - Great Lakes states and Commission could be a good lobby for advancing improved national policies for energy and transportation

What strategies and projects do you recommend to address Pennsylvania’s restoration priorities?

- Use sustainable energy on Great Lakes (e.g., wind, solar, wave energy) to replace oil and gas
- Need for energy audits and assessments
- Institute energy conservation
- Identification of critical environmental components to prioritize investment strategies in protection and restoration
- Enhanced movement of sand along the shoreline
- Pollution prevention and site remediation and reuse
- Environmentally compatible design regardless of land use classification
- Develop an effective water management process

Appendix 7:

Wisconsin Workshop Proceedings

Wisconsin – Lake Michigan Restoration Priorities Workshops

Proceedings

Green Bay, Wisconsin
August 17, 2004

Milwaukee, Wisconsin
August 18, 2004



Table of Contents

<i>Executive Summary</i>	3
<i>Acknowledgements</i>	6
<i>I. Background</i>	7
<i>II. Presentations</i>	10
<i>III. Breakout Group Discussions</i>	13
<i>A. Ranking of Priorities</i>	13
<i>B. Comments on Each Priority</i>	
1. <i>Ensure the sustainable use of our water resources while confirming that the States retain authority over water use and diversions of Great Lakes waters</i>	15
2. <i>Promote programs to protect human health against adverse effects of pollution in the Great Lakes ecosystem</i>	16
3. <i>Control pollution from diffuse sources into water, land and air</i>	17
4. <i>Continue to reduce the introduction of persistent bioaccumulative toxics into the Great Lakes ecosystem</i>	17
5. <i>Stop the introduction and spread of non-native aquatic invasive species</i>	18
6. <i>Enhance fish and wildlife by restoring and protecting habitats and coastal wetlands</i>	18
7. <i>Restore to environmental health the Areas of Concern (AOC) identified by the International Joint Commission as needing remediation</i>	19
8. <i>Standardize and enhance the methods by which information is collected, recorded and shared within the region</i>	19
9. <i>Adopt sustainable use practices that protect environmental resources and may enhance the recreational and commercial value of our Great Lakes</i>	19
<i>C. Additional topics</i>	20
<i>IV. Summary and Conclusions</i>	22
<i>Appendix A: Registered Participants</i>	23
<i>Appendix B: Workshop Program and Breakout Instructions</i>	25
<i>Appendix C: Council of Great Lakes Governors Priorities Letter to Federal Appropriations Leaders</i>	27
<i>Appendix D: Workshop Rankings of CGLG Priorities and Related Concerns</i>	30
<i>Appendix E: Breakout Session Summary Notes</i>	35
<i>Appendix F: Individual Responses – Comment Forms, Email, and Letters</i>	42
<i>Appendix G: Feedback Received via Wisconsin Sea Grant Website</i>	45
<i>Appendix H: ‘Summary and Conclusions’ from the Joint Workshop on Lake Superior Restoration and Protection Priorities</i>	50
<i>Appendix I: Lake Michigan Workshops Planning Committee</i>	52
<i>Appendix J: Constituent Group Representatives Receiving Special Invitations</i>	53

Executive Summary

This proceedings document presents the outcome of a pair of half-day workshops held August 17-18, 2004, in Green Bay and Milwaukee, Wisconsin. These workshops were a cooperative effort of the Great Lakes Commission, the Council of Great Lakes Governors and the University of Wisconsin Sea Grant Institute, and the Wisconsin Coastal Management Program. The meeting brought together a range of participants from various Great Lakes constituencies to provide feedback on the Great Lakes Governors' priorities for restoration of the Great Lakes ecosystem and on the coordinative processes needed to achieve these priorities.

These meetings were part of a series of similar events conducted throughout the Great Lakes region. The Council of Great Lakes Governors has identified nine priorities for restoring and protecting the Great Lakes. The workshop series, supported by the National Sea Grant College Program, provides an opportunity for Great Lakes constituents to review these priorities and inform their further development and implementation. Workshop outcomes are being shared with the region's Governors, Premiers, other public officials, meeting participants and the larger Great Lakes community. A primary objective is to inform and advance the restoration efforts of the region's leadership.

The results of these two focus group-style workshops involving over 100 Wisconsin citizens indicates that—while all of the nine Great Lakes restoration and protection priorities developed by the Council of Great Lakes Governors are important—the four most critical priorities for Wisconsin waters of Green Bay and Lake Michigan, and the specific actions needed to address them, are:

1. Ensure the sustainable use of water resources while confirming state authority over the use and diversions of Great Lakes waters:

- ◆ Affirm state/local sovereignty regarding Great Lakes water
- ◆ Pass laws to require water conservation
- ◆ Guarantee adequate groundwater replenishment within the Great Lakes watershed
- ◆ Establish specific goals or objectives for reductions in storm water runoff
- ◆ Ensure return of water to basin
- ◆ Educate the public on significance of water cycle, recharge areas, aquifers, watershed, and groundwater

2. Control pollution from diffuse sources into water, land and air:

- ◆ Establish environmental regulations that can be implemented and enforced
- ◆ Adopt a watershed approach and stop nonpoint-source pollution and wetland loss
- ◆ Promote groundwater replenishment
- ◆ Fund long-term monitoring to ensure that problems are actually being solved (accountability)
- ◆ Support education
- ◆ Focus on land use as a way to improve water quality in the Great Lakes

3. (tie) Enhance fish and wildlife by restoring and protecting habitats and coastal wetlands:

- ◆ Apply Coastal Zone Management more broadly within the watershed (not just along the Great Lakes coast)
- ◆ Identify important habitat and conservation areas for protection
- ◆ Locate and protect groundwater recharge areas for Great Lakes

Stop the introduction and spread of non-native aquatic invasive species:

- ◆ Strengthen local and federal invasive species laws
- ◆ Regulate ballast waters

In addition—noting the need for better K-12, university and public education on all Great Lakes issues—citizens at both workshops suggested that it be added as a tenth protection and restoration priority, or that the need for greater public and formal education be made explicit in each of the Governors’ nine priority areas (see Appendices D and E).

Feedback received during a two-week public comment period tended to confirm the priority selections made by workshop participants (Appendices F and G). The respondents generally emphasized the same concerns about sustainable use of Great Lakes water and diversions, pollution and water quality, and non-native invasive species issues.

The University of Wisconsin Sea Grant Institute also partnered with the Minnesota Sea Grant Program in hosting a half-day workshop on June 30, 2004, in Duluth, Minnesota. This meeting, with a focus on western Lake Superior and a similar agenda, was attended by more than 100 Wisconsin and Minnesota citizens. The results of this workshop indicated that, while invasive species and pollution from diffuse sources were important, the two most important priorities for the Wisconsin and Minnesota waters of Lake Superior and some actions needed to address them are:

1. Enhance fish and wildlife by restoring and protecting habitats and coastal wetlands.

- ◆ Identify important aquatic and coastal watershed habitat in need of protection and/or restoration, including migratory bird habitat
- ◆ Improve planning and enforcement of local land-use policies with a focus on long-term watershed/ecosystem protection
- ◆ Coordination of programs among jurisdictions is essential to success
- ◆ Education about habitat protection and restoration issues is the number one priority

2. Adopt sustainable use practices that protect environmental resources and may enhance the recreational and commercial value of our Great Lakes.

- ◆ Define “sustainable use” and provide for a comprehensive growth management strategy that protects the Lake Superior basin
- ◆ Provide incentives for best management practices to address watershed and coastal development issues at the local level
- ◆ Economic valuations must include ecological considerations and value sustainability

Proceedings – Wisconsin Lake Michigan Restoration Priorities Workshops

Nearly every breakout group at the Lake Superior workshop likewise stressed that the need for education and outreach on these issues should be stated explicitly the Governors' priorities. The outcomes of this workshop are presented in a separate proceedings and are not fully included here. The summary and conclusions of that workshop are reprinted in Appendix H.

The workshop organizers are very satisfied with the focused, high-quality feedback received from the 100-plus individuals who participated in the Green Bay and Milwaukee workshops, and they are pleased to have contributed to this effort to build consensus and unity among the eight Great Lakes Governors for advocating for long-term, large-scale federal funding to restore and protect the Great Lakes.

The Great Lakes are a freshwater resource without equal in the world. These inland seas are the regional economic cornerstone of the U.S. and Canada, and they provide high quality drinking water for more than 25 million of both nations' residents. The citizens of Wisconsin and the other Great Lakes states—indeed, all Americans—share a special responsibility to preserve and protect this treasure for future generations. This Great Lakes restoration and protection workshop series—an unprecedented partnership between the Great Lakes Commission, Great Lakes Sea Grant Network, the Council of Great Lakes Governors, and relevant agencies in each state—is a demonstration of how seriously we take that responsibility.

Acknowledgements

The Great Lakes Commission expresses its sincere thanks to University of Wisconsin Sea Grant Institute, the Council of Great Lakes Governors, the Wisconsin Department of Natural Resources and Wisconsin Coastal Management Program for their efforts as partners in hosting these workshops. Special thanks are in order for conference speakers: Anders Andren, director of the University of Wisconsin Sea Grant Institute; Chuck Ledin, director of the Wisconsin Department of Natural Resources Great Lakes Office; Bud Harris, professor emeritus of natural and applied sciences at University of Wisconsin-Green Bay; Peter Johnson, senior program manager for the Council of Great Lakes Governors; and John Janssen, senior scientist at the University of Wisconsin-Milwaukee Great Lakes WATER Institute.

The commission appreciates the efforts of Lake Michigan Workshops Planning Committee in organizing these outstanding events: Anders Andren, James Hurley, Stephen Wittman, Victoria Harris and James Lubner of the University of Wisconsin Sea Grant Institute; Charles Ledin and Linda Talbot of the Wisconsin Department of Natural Resources Office of the Great Lakes; and Michael Friis and Alberto Vargas of the Wisconsin Coastal Management Program.

The Great Lakes Commission also recognizes the efforts of Dave Naftzger and Peter Johnson of the Council of Great Lakes Governors, and the assistance of the breakout session facilitators: Jenny Erickson and Kendra Axness of University of Wisconsin-Extension; Kathy Schmidt, John Karl, Stephen Wittman and Jim Hurley of the University of Wisconsin Sea Grant Institute; Mike Friis of the Wisconsin Coastal Management Program; and Kate Barrett, Marsha Burzynski, Diane Figiel, Vic Pappas, Shaili Pfeifer, Rhonda Volz, Kelley O'Connor and Jim Baumann of the Wisconsin Department of Natural Resources. It also thanks Stephen Wittman of the University of Wisconsin Sea Grant Institute and Jon Dettling of the Great Lakes Commission staff for coordinating the compilation, editing and production of these proceedings.

Dr. Ronald Baird, director of the National Sea Grant College Program, warrants special recognition for his support of this initiative and for facilitating financial support for this workshop series.

Finally—and most importantly—thanks to all who joined us in Green Bay and Milwaukee to share their thoughts and recommendations.

Sincerely,

Michael J. Donahue, President/CEO
Great Lakes Commission

Anders W. Andren, Director, Sea Grant Institute,
University of Wisconsin-Madison

Charles Ledin, Director, Great Lakes Office,
Wisconsin Department of Natural Resources

Michael Friis, Manager, Coastal Management Program,
Wisconsin Department of Administration

I. Background

A number of bills have been introduced in Congress that may provide large-scale, long-term funding for state-implemented programs for restoring and protecting the Great Lakes. In a May 14, 2004, letter to leaders of the U.S. Senate and House appropriations committees, the Council of Great Lakes Governors requested a series of appropriations, using as their organizing principle nine broad priorities for future Great Lakes restoration and protection efforts that had been agreed upon in October of 2003. (Appendix C).

The Green Bay and Milwaukee workshops were two in a series of similar events held throughout the Great Lakes basin as part of a collaborative project between the Great Lakes Commission and the Sea Grant programs in the Great Lakes region. These workshops are intended to solicit the public's input on the most critical Great Lakes restoration and conservation needs of each state. These workshops were conducted in collaboration with each state's Governor's office and relevant state agencies.

This region-wide effort, funded by the National Sea Grant College Program, is directed at advancing Great Lakes ecosystem restoration efforts through the development of restoration priorities and a regional planning process for implementing those priorities. The goal of these workshops was to build consensus and unity among the citizens and leaders of the eight Great Lakes states for action items in support of the Governors priorities, and for long-term, large-scale programs to restore and protect the Great Lakes. The results will be shared with all Great Lakes stakeholders.

Project collaborators recognize that development of a Great Lakes restoration strategy must be based upon sound science. It must proceed with a clear understanding of ecosystem conditions and objectives, relevant research activity, and the science/policy/management linkages needed to achieve the strategy's vision. These workshops, along with corresponding workshops in other Great Lakes jurisdictions and a companion project by the Northeast-Midwest Institute, will provide the region's leadership with needed public input as well as detailed, science-based information as they continue their work to implement the restoration priorities.

The workshops were held on August 17, 2004, at the KI Convention Center in Green Bay and August 18 on the University of Wisconsin-Milwaukee campus. They were organized and hosted by the UW Sea Grant Institute and the Wisconsin Coastal Management Program (CMP) (Appendix I). The DNR, CMP and UW Sea Grant distributed more than 400 individual invitations to key constituents and constituent groups (Appendix J). Thousands more were informed via announcements on the UW Sea Grant, DNR, CMP and Great Lakes Commission websites, email listservers, and stories in newsletters and state news media.

At both workshops, brief introductory remarks and an overview of the workshop objectives were given by Professor Anders Andren, director of the University of Wisconsin Sea Grant Institute, and Dr. Michael J. Donahue, president/CEO of the Great Lakes Commission. Following this, brief presentations were made on the Council of Great Lakes Governors' Priorities Task Force and a summary of current restoration and protection issues for Lake Michigan. At the Green Bay

Proceedings – Wisconsin Lake Michigan Restoration Priorities Workshops

event, these brief presentations were made by Charles “Chuck” Ledin, director of the Wisconsin Department of Natural Resources Great Lakes Office, and Hallett J. “Bud” Harris, professor emeritus of natural and applied sciences at University of Wisconsin- Green Bay. At the Milwaukee event, they were made by Peter Johnson, senior program manager for the Council of Great Lakes Governors, and John Janssen, senior scientist at the University of Wisconsin-Milwaukee’s Great Lakes Wisconsin Aquatic Technology & Environmental Research (WATER) Institute.

After these introductory comments, the meetings divided into three sessions of breakout groups interspersed with plenary reporting-out sessions. The basis for discussion in the breakout groups was the list of nine basin-wide Great Lakes restoration priorities announced by the Council of Great Lakes Governors on October 1, 2003 (Appendix C). During the first breakout session, groups discussed Great Lakes protection and restoration in broad terms and focused on the highest priority issues from the Governors’ list. Each of the groups was tasked with discussing the following three questions:

- What are the major themes or needs for Lake Michigan and where should they be placed within these nine priority areas?
- Are there other conservation and restoration priorities for Lake Michigan’s basin that you wish to share with the Council of Great Lakes Governors?
- What are the top three priorities from the Governors’ list?

Following reporting-out from this session, workshop participants participated in two breakout sessions focused on individual priority areas. These sessions were repeated, allowing participants to join in discussion on two of the nine priorities. Written comments were encouraged, allowing participants to comment on all priorities. The discussion points for these breakout sessions were:

- What are some action items specific to Lake Michigan for each priority?
- What interest groups should be involved in implementing these action items? (Includes groups such as local government, business and industry, education, resource management agencies, etc.)
- What are some of the measures of progress and success in satisfying this priority?

The objective of the workshops was to capture the diversity of thoughts throughout the state on Great Lakes restoration needs and possible action items for achieving them. Participants were invited to also submit written comments and take comment forms to distribute to others. A statewide news release and email distribution was also made by Sea Grant, DNR and CMP inviting feedback from all interested members of the public unable to attend the workshops. Comments were accepted via by email, website, fax or mail over a two-week period ending August 31. Comments received through these means are also included in these proceedings.

A total of 106 people participated in the workshops (Appendix A), representing harbors and ports, community and public service organizations, environmental engineering and lakeshore

Proceedings – Wisconsin Lake Michigan Restoration Priorities Workshops

development businesses, recreational and commercial fishing interests, educators, public universities, environmental and conservation groups, Indian tribes, city and county government, and concerned state and federal government agencies. All of these individuals were actively engaged in participating in a focus group numbering 10 or fewer people, each led by a pre-selected discussion facilitator.

Section II provides an overview of the plenary presentations from the Milwaukee and Green Bay workshops. Section III presents outcomes of the breakout group discussions. A summary and conclusions are offered in Section IV.

The appendices contain a list of participants; the workshop program; the Governors' letter to Congress announcing restoration priorities; the summary notes taken during the breakout sessions; written comments that were submitted during and after the meeting; feedback from the website survey; outcomes and conclusions from the Minnesota-Wisconsin Lake Superior workshop; planning committee members; and a list of workshop invitees.

II. Presentations

Both workshops began with welcoming remarks from Anders Andren, a professor of environmental chemistry at the University of Wisconsin-Madison and director of the UW Sea Grant Institute. Andren explained that the diversity of Great Lakes issues across the state of Wisconsin warranted holding separate workshops in three different areas of the state. One was held previously in the Lake Superior area in Duluth in cooperation with partner organizations in Minnesota, while these two workshops were being held near the Lake Michigan coasts of Wisconsin.

Andren briefly discussed the two proposed bills in the U.S. Congress concerning Great Lakes restoration. To inform the development of a broad restoration plan, whether under this legislation or otherwise, the Council of Great Lakes Governors jointly developed a set of nine priorities for regional ecosystem restoration. The workshops are an effort to incorporate broad public input into the process of planning for Great Lakes restoration, he said.

Recognizing that the word “restoration” means different things to different people, Andren presented several of the definitions being used. He noted four common themes present in most definitions of restoration: (1) recovering original ecological processes; (2) integration of the water-side and the land-side; (3) establishment of a resilient and resistant system, and (4) the recognition of the impossibility to entirely recreating historical conditions.

Following Andren’s welcome, Dr. Michael J. Donahue, president and CEO of the Great Lakes Commission, offered an overview of the current status of restoration programs and planning in the Great Lakes basin. He described the role of the Great Lakes Commission and discussed its primary duties of communication, policy research and development, and advocacy for its member states. Donahue explained that restoration initiatives have been ongoing in the basin for decades but have been sporadic and piecemeal.

There is a growing interest in the region for elevating and integrating these efforts into a single, inclusive initiative. A series of workshops throughout the region, of which these workshops are a part, is intended to advance ecosystem restoration and protection efforts by identifying implementation opportunities. Besides the workshop series, a research component and a synthesis activity are being planned. As a whole, these components will have significant application for policy making.

Donahue explained the format of the workshop and the intent to capture and pass on all expressed ideas. He emphasized the need for restoration planning to proceed with an open and inclusive process. The importance of incorporating local ideas and local actions into regional initiatives was emphasized. Sharing and integrating ideas from each jurisdiction is essential in having a balanced regionwide initiative.

At the Green Bay workshop, Chuck Ledin, director of the Wisconsin Department of Natural Resources Great Lakes Office, presented the Council of Great Lakes Governors’ restoration priorities. He noted the large number of groups and organizations in the region that have

developed plans for Great Lakes environmental restoration. Ledin reviewed the genesis of the Council of Great Lakes Governor's Restoration Priorities Task Force and the process the Governors used to develop a list of basinwide priorities for achieving Great Lakes restoration. One motivation for this was to develop a restoration agenda that would combine and be inclusive of these many existing plans.

Ledin noted that the effort to establish a set of clear and concise priorities is merely the first stage in a long process. It was recognized that, although "restoration" involved the notion of regaining a prior state, there is a need to look forward rather than backward in the planning process. The Governors' priorities are described in a letter to congressional leaders dated May 14, 2004, which is provided in Appendix C of this proceedings. Ledin went on to review the nine priorities that were identified by the Governors.

During the Milwaukee workshop, Peter R. Johnson, senior program manager for the Council of Great Lakes Governors, delivered a presentation similar to Ledin's. Johnson emphasized the role of abundant clean water and economic opportunities in drawing people to the region in the past. He pointed out the need to maintain these characteristics to preserve the region's high quality of life.

Johnson noted that the Governors in the region are very supportive of Great Lakes protection and restoration and of the present series of workshops to inform that process. He also noted that prior workshops within the region found a great amount of similarity of concerns among jurisdictions, as well as some unique characteristics in each. Perhaps one of the most valuable aspects of this workshop initiative, he said, is its contribution in helping the region speak with a single voice on restoration issues.

At the Green Bay event, Bud Harris, professor emeritus of natural and applied sciences at the University of Wisconsin-Green Bay, discussed Green Bay and Lake Michigan restoration and protection issues. Harris discussed some historical events that have shaped the current condition of these water bodies. There were many instances in the past that led to degradation of the bay's water resources, including discharges of raw sewage. Other formative events included the introduction of nonindigenous species, persistent toxic substances, and increased levels of sedimentation and suspended solids.

Correcting these problems is the underlying theme of restoration efforts. Harris emphasized nonpoint-source pollution as a particularly difficult problem to overcome because of the very diffuse nature of these sources. Increased runoff and suspended solids has greatly impaired Green Bay's littoral zone and submerged aquatic vegetation.

Harris also emphasized the need to set achievable and observable restoration goals, saying such goals should focus on ecosystem qualities rather than on specific actions. He gave an example concerning suspended solids by defining a potential goal of reducing suspended solids to a certain level. He explained how progress toward such a goal might be tracked as actions are taken to achieve it, noting the need for quality control on monitoring efforts and suggesting that goals be set and progress be tracked at the watershed level. Harris pointed out the dependency of

a strong economy on a functioning ecosystem, and he emphasized the need to make this point clear to the public and policy makers to ensure support of restoration efforts.

During the Milwaukee event, introductory remarks on the restoration and protection of Lake Michigan were provided by John Janssen, senior scientist at the University of Wisconsin-Milwaukee Great Lakes WATER Institute. Janssen began by pointing out that research on the overall Great Lakes ecosystem has lagged in the past few decades. Using the parable of the blind men who describe an elephant based on feeling different parts of it, he said the Governors' nine priorities are like the parts of an elephant, the whole of which is the entire ecosystem. Unless we integrate these nine priorities into a single, whole-ecosystem plan, Janssen said, we will be like the blind men who don't realize that they are describing different parts of the same elephant.

Janssen then presented a series of images illustrating several recent Great Lakes issues, including cladophora blooms and zebra mussel infestations, and several examples of the complexity of the Great Lakes ecosystem derived from his own research. He reiterated Andren's comment on the impossibility of ever completely restoring the basin to its prior state, giving examples of some actions that would be necessary for "restoration" of the Great Lakes ecosystem to its original state—such as eradicating the lakes' populations of popular and economically valuable exotic species like Pacific salmon, steelhead trout, brown trout and smelt.

III. Breakout Group Discussions

The group breakout sessions saw productive discussion on a wide range of topics. The major discussion points, along with suggestions and recommendations that emerged from each of the three sessions, were captured by a recorder. This section contains a summary of the group discussions organized by topic. The following section summarizes the collective outcome of breakout groups' attempts to rank the priorities from the Council of Great Lakes Governors' list. The following sections summarize the comments received on each of the Governors' priorities, plus comments received on additional topics.

A. Ranking of Priorities

The results of two focus group-style workshops involving over 100 Wisconsin citizens indicates that—while all of the nine Great Lakes restoration and protection priorities developed by the Council of Great Lakes Governors are important—the three most critical priorities for Wisconsin waters of Green Bay and Lake Michigan, and the specific actions needed to address them, are:

1. Ensure the sustainable use of water resources while confirming state authority over the use and diversions of Great Lakes waters:

- ◆ Establish sovereignty regarding Great Lakes water
- ◆ Pass laws to require water conservation
- ◆ Guarantee groundwater replenishment within the Great Lakes watershed
- ◆ Establish specific goals or objectives for reductions in storm water runoff
- ◆ Ensure return of water to basin
- ◆ Educate the public on significance of water cycle, recharge areas, aquifers, watershed, groundwater

2. Control water, land and air pollution from diffuse sources:

- ◆ Establish environmental regulations that can be implemented and enforced
- ◆ Adopt a watershed approach and stop nonpoint-source pollution and wetland loss
- ◆ Promote groundwater replenishment
- ◆ Fund long-term monitoring to ensure that problems are actually being solved (accountability)
- ◆ Support education
- ◆ Focus on land use as a way to improve water quality in the Great Lakes

3. (tie) Enhance fish and wildlife by restoring and protecting habitats and coastal wetlands:

- ◆ Apply Coastal Zone Management more broadly within the watershed (not just on Great Lakes coast)
- ◆ Identify important conservation areas for protection
- ◆ Locate and protect groundwater recharge areas for Great Lakes

3. Stop the introduction and spread of non-native aquatic invasive species:

- ◆ Strengthen local and federal invasive species laws
- ◆ Regulate ballast waters

In addition—noting the need for better K-12, university and public education on all Great Lakes issues—citizens at both workshops suggested that it be added as a tenth protection and restoration priority, or that the need for greater public and formal education made explicit in each of the council’s nine priority areas (see Appendices D and E).

Feedback received during a two-week public comment period tended to confirm the priority selections made by workshop participants (Appendices F and G). The respondents generally emphasized the same concerns about sustainable use of Great Lakes water and diversions, pollution and water quality, and non-native invasive species issues.

The Minnesota-Wisconsin workshop held in Duluth indicated that, while invasive species and pollution from diffuse sources were important, the two most important priorities for the Wisconsin and Minnesota waters of Lake Superior are:

1. Enhance fish and wildlife by restoring and protecting habitats and coastal wetlands.

- ◆ Identify important aquatic and coastal watershed habitat in need of protection and/or restoration, including migratory bird habitat
- ◆ Improve planning and enforcement of local land-use policies with a focus on long-term watershed/ecosystem protection
- ◆ Coordination of programs among jurisdictions is essential to success
- ◆ Education about habitat protection and restoration issues is the number one priority

2. Adopt sustainable use practices that protect environmental resources and may enhance the recreational and commercial value of our Great Lakes.

- ◆ Define “sustainable use” and provide for a comprehensive growth management strategy that protects the Lake Superior basin
- ◆ Provide incentives for best management practices to address watershed and coastal development issues at the local level
- ◆ Economic valuations must include ecological considerations and value sustainability

Nearly every breakout group at the Lake Superior workshop likewise stressed that the need for education and outreach on these issues should be stated explicitly the Governors’ priorities (Appendix H).

In Green Bay, the Council of Great Lakes Governors priority selected as most important based on rankings by participants was “*Controlling pollution from diffuse sources into water, land and air,*” while “*Ensuring sustainable use of Great Lakes water and confirming state authority over water use and diversions*” was a close second. In Milwaukee, those priorities were also seen as the two most important, though reversed in ranking (see Appendix D).

The priority ranked third most important at the Green Bay workshop was “*Enhancing fish and wildlife by restoring and protecting habitat and wetlands*”, with “*Reducing the introduction of persistent bioaccumulative toxic chemicals*” a close fourth. In Milwaukee, participants split on whether the third top priority should be “*Stopping the introduction and spread of non-native aquatic invasive species*”, or education about all nine priority issues. Two groups in Green Bay also nominated education as the third or fourth top priority.

Several of these groups offered a number of concerns related to Lake Michigan restoration and protection (see Appendix D). Concerns expressed by groups at both workshops include the need for better regional coordination and regional management of the Great Lakes independent of politics, a related need to agree on a set of common regional goals and priorities for their restoration and protection, and adoption of a whole-ecosystem approach to managing Great Lakes resources.

These needs and concerns are reflected in the specific actions and performance measures for addressing these priorities that were suggested at the workshops. Additional comments were provided by nearly two dozen individuals via comment sheets, email and letters, (Appendix F) as well as a feedback form on the UW Sea Grant website (Appendix G). All comments received are included, unedited and without attribution.

B. Comments on Each Priority

Priority #1: Ensure the sustainable use of our water resources while confirming that the States retain authority over water use and diversions of Great Lakes waters

The workshops saw a substantial amount of discussion concerning water use, withdrawal and diversion. Participants expressed strong support for the development of enforceable regulations that would provide Great Lakes states the ability to prevent any diversion of water outside of the basin. An underlying concern was that, under current authorities, the interest of other states, provinces or federal governments may be able to override the authority of the Great Lakes states and provinces. Some felt that water conservation and decreased development in areas with water shortages were better solutions than diversions of Great Lakes water. Others suggested banning any large diversions or withdrawals of Great Lakes water unless the return of the water can be ensured and requiring that returned waters must be of similar quality to withdrawn waters. Several participants voiced support for the approval and implementation of the Great Lakes Charter Annex 2001, which they felt would make major strides in this area. Some suggested a formal binational treaty on Great Lakes water quantity.

Participants also expressed considerable support for improved water conservation programs within the basin. Several pointed out the interconnectedness of the region's ground and surface waters and stressed the need to conserve both. Suggested water conservation programs included public outreach efforts to promote efficient water use in such areas as lawn watering, car washing and household use. Innovative water conservation practices, such as using of rain barrels and xeriscaping, were also discussed. Water pricing structures were among the other potential means of promoting conservation. Both market incentives and enforceable regulations were suggested for ensuring water conservation. General educational programs about the water cycle to enhance public understanding of these issues were recommended by some participants. Education and the involvement of public officials were also mentioned. Better control of storm water, such as the preservation and creation of permeable surface and groundwater recharge areas, was also recommended. To enable this, participants recommended implementing water utility fees and taxes, as well as increased research to map groundwater recharge areas. Regulations on new development, requiring better storm water management planning, were also suggested.

It was pointed out that, for local authorities to make a legitimate claim to authority over Great Lakes water resources, they need to improve their stewardship of these resources with regard to improving water quality and conserving water supplies. The importance of good water resource stewardship for preserving ecosystem health, as well as fulfilling human needs, was emphasized. Further examination of the impacts of water level fluctuations of coastal ecosystems and communities was recommended, as were potential actions to improve control of water levels.

Priority #2: Promote programs to protect human health against adverse effects of pollution in the Great Lakes ecosystem

Participants at both workshops recognized that the health of the Great Lakes and the health of the people living within the Great Lakes basin are closely intertwined. It was noted that achieving this priority was highly dependant on achieving the other priorities, such as those dealing with pollution prevention and reducing toxic substance releases, and engaging the public in programs to improve ecosystem and public health alike. Two major topics of concern with regard to human health were bacterial contamination at beaches and toxic chemical contaminants, particularly in fish.

Several participants cited the need to prevent bacterial contamination of bathing beaches. In addition to threatening the health of beach-goers, contaminated beaches and beach closures deter people from visiting the lakes, which in turn reduces the lakes' public visibility and hampers public support for their restoration. One recommended goal was elimination of the need for beach closures entirely. Direct sewage discharges to Lake Michigan were identified as a major cause of beach closings, and funding of infrastructure improvements to prevent this was recommended, including complete separation of sanitary and storm sewers.

Protecting human health from toxic chemicals was a prominent concern, with an emphasis on exposure through fish consumption. Both preventing contamination of fish and improving fish consumption advisories were identified needs for protecting human health. Improved fish

monitoring was recommended to improve the quality of fish advisories. Improved public outreach programs and public access to fish advisory information were also recommended. One suggestion was to issue fish consumption advisory information with fishing licenses. Others felt better educational programs are needed to inform the public about risks and benefits from consuming fish and how these vary based on types of fish consumed. Low-income populations were mentioned as a particularly important audience for such outreach. Preventing toxic contamination and remediating contaminated sites were also discussed as important components of protecting public health. These were also discussed in other breakout sessions (see below).

Priority #3: Control pollution from diffuse sources into water, land and air

Pollution control was a prominent concern among participants at both workshops. Control of sewage system discharges and nonpoint-source discharges were common topics, along with improving sewerage infrastructure to eliminate overflows. These discussions emphasized taking a watershed-based approach to managing water quality in Lake Michigan and its tributaries, which will require collaborative solutions among the many neighboring state, municipal and county governments within a watershed. Implementing Total Maximum Daily Loads for impaired waterways was cited as another important step toward controlling pollution. Monitoring of water quality is needed throughout the region to track progress.

There were many comments about preventing runoff from residential and agricultural properties, including reducing fertilizer and pesticide use on lawns and increasing controls on agricultural manure. Implementing buffer strips around all waterways was deemed an important means of reducing runoff and improving water quality. Addressing land use planning throughout the Lake Michigan watershed and recognizing its relationship to water quality was recommended. Preventing sedimentation was emphasized as an important means of reducing dredging demands. Creation of new programs to prevent and respond to spills was also supported. Implementing each of these recommendations will require working with public officials to achieve funding and implement plans. The enforcement of and accountability for current and possibly new regulations was a concern. Other topics of discussion included concerns about the use of road salt, bacterial contamination from wildlife, and air emissions from automobiles and energy production.

Priority #4: Continue to reduce the introduction of persistent bioaccumulative toxics into the Great Lakes ecosystem

Persistent toxic substances was a topic receiving considerable attention at both workshops. Several specific chemicals of concern were discussed, including mercury, PCBs, PBDEs and other flame retardants, and pharmaceuticals. For many of these, especially mercury, the atmosphere was recognized as the dominant source to the lakes. Many participants suggested additional controls on mercury air emissions, particularly for coal-burning power plants. One suggestion was to impose a small electricity tax to fund such controls. Besides preventing continued contamination, preventing resuspension of previously deposited toxic substances was also a concern. Preventing the introduction of new persistent toxic substances to the system is a

critical need. Public education on the sources and effects of toxic substances was advised to encourage citizen participation in pollution prevention initiatives. Some participants expressed concern that the “reduce introduction” wording of this priority might be interpreted as less stringent than the “virtual elimination” goals of the Great Lakes Water Quality Agreement.

Priority #5: Stop the introduction and spread of non-native aquatic invasive species

Almost all workshop participants recognized the importance of preventing the spread and further introductions of aquatic invasive species. Among the specific organisms of concern were Asian carp, the spiny waterflea, zebra mussels and sea lamprey, as well as cladophora and other aquatic nuisance plants. Ballast water discharge was the most commonly mentioned route of entry, and implementing technologies and regulations to prevent introductions through this route was strongly advocated. At least one participant suggested banning ocean-going ships from the Great Lakes. Some additional routes of entry mentioned included the aquaria trade of live species and the Chicago Sanitary and Ship Canal. Banning sales of potential invasive species and fully funding barriers in the Chicago canal were among the recommended solutions to these issues, along with faster identification of newly introduced species and response actions. Some participants advocated passage of a tough National Aquatic Invasive Species Act.

For established exotic species, adaptive management was suggested. Salmon were cited as an example of an exotic species that is considered useful. It was suggested that beneficial uses might also be found for some of the other exotic species. Assessing the long-term costs of new invasions was suggested as a method for demonstrating the urgency of preventing new invasions. Obstruction of water intake pipes by zebra mussels was mentioned as an example of a costly long-term impact. Measuring progress toward realistic targets was mentioned as one difficulty in addressing the issue of aquatic invasives. Possible measures of success include no new introductions, and no major aquatic population shifts or ecosystem changes.

Priority #6: Enhance fish and wildlife by restoring and protecting habitats and coastal wetlands

Habitat protection and restoration initiatives were strongly advocated by participants at both workshops. Wetlands and coastal habitats were specifically mentioned as needing protection and restoration. The important role wetlands play within the Great Lakes ecosystem, such as filtering water, was discussed. Preservation of undeveloped shoreline areas was cited by some as an urgent need. It was also suggested that upland habitat initiatives in Great Lakes need to be included in restoration plans, as these have important impacts on the region’s ecosystem. Comprehensive habitat planning was advocated to ensure adequate and efficient preservation. Although greater research into Great Lakes ecosystems was supported, it was emphasized that habitat preservation actions are urgently needed now.

Many comments were made about the management of commercial and recreational fisheries within the region. The ability to accurately detect and evaluate fluctuations in fish populations is

key to making proper management decisions. Consistency in fishery policies across the basin was suggested. Several participants noted that better integration of fisheries management efforts with ecosystem management efforts is needed.

Priority #7: Restore to environmental health the Areas of Concern (AOC) identified by the International Joint Commission as needing remediation

Restoring the portions of the basin identified as Areas of Concern (AOC) was the subject of many participant comments. Remedial Action Plans have been developed for many AOCs, including Green Bay, and it was recommended that local communities work with local, regional and national leadership to implement them. It was noted that additional funding is needed to put these plans into action and that receiving this funding would help reinvigorate Remedial Action Plan committees. It was suggested that the local communities for each AOC be engaged to develop implementation priorities for the actions listed in these Plans. Additional outreach and education to citizens is needed to emphasize the impacts that AOC impairments have on health and the economy.

Priority #8: Standardize and enhance the methods by which information is collected, recorded and shared within the region

During the workshops, considerable attention was given to the region's monitoring and information management systems. It was recognized that restoration activities within the basin would require significant monitoring and data management components to aid in project prioritization, implementation and tracking of progress. There was broad agreement among participants that regional data and information management systems need better standardization to allow interoperability. The lack of data-sharing across jurisdictional boundaries was cited as an important problem, and the creation and maintenance of data clearinghouses for the region were recommended, along with programs to increase data sharing among agencies, jurisdictions and institutions. One suggestion was to formally recognize or give awards to projects exemplifying good regional information management.

Among the specific types of crucial data mentioned were fish stocking records, pollutant emissions and monitoring, beach monitoring, conservation areas, water quality monitoring, and native and non-native species distributions. It was recommended that data systems that incorporate monitoring input by citizen groups be developed, and that consolidated, understandable information be provided back to the public. Some were concerned that, even when data is collected and distributed, it may not be used adequately or appropriately.

Priority #9: Adopt sustainable use practices that protect environmental resources and may enhance the recreational and commercial value of our Great Lakes

There were many comments from participants concerning the environmental and economic sustainability of the region and its natural resources. Among the most important Great Lakes

economic activities mentioned were recreation, tourism, shipping and fishing. Participants pointed to a need to restore recreational opportunities on the lakes, expressing concern that polluted beaches and restricted access are increasingly limiting recreational opportunities. Increased production and use of alternative energy was advocated, including wind, solar, hydro and biomass energies. The concept of “sustainability” was generally well received because it connoted a future vision rather than a focus on the past. To achieve sustainability, a process was that examines what our targets are, where we are now and how to move forward was recommended. Social values and quality of life issues also need to be incorporated into basinwide restoration and protection activities.

C. Additional topics

A variety of additional issues were raised at the two workshops. Education, public involvement, quick action and efficient use of resources were identified as necessary characteristics for any Great Lakes restoration and protection plan.

Many workshop participants felt the importance of education and public involvement needs to be made explicit in the Governors’ list of priorities. In particular, the need for educational programs on Great Lakes issues and aquatic science was a prominent theme at both workshops. As mentioned previously, participants at the Lake Superior workshop in Duluth likewise cited education as a high priority. Better educational programs are seen as essential for stimulating and training a new generation of Great Lakes resource managers and scientists. Education at the grade school level was cited as particularly important. Adequately funding agencies to carry out public outreach and education programs was also mentioned. Getting the media more interested in Great Lakes issues was cited as key to generating greater public involvement. Participants also called for continued involvement of the public in the priority setting and planning process.

It was noted by many participants that there is a considerable amount of interrelatedness and synergy among the items on the Governors’ list. Increased funding of research programs in the region was supported. Improved connections between scientists and policy makers is needed. Efforts should be made to ensure that laws concerning the Great Lakes are consistent across the international border, as well as state and local borders. To that end, better interaction among lawmakers within the region on Great Lakes topics was suggested.

Several participants noted the need for leadership in restoration planning and implementation. Accountability for all existing and new programs needs to be enforced. In addition to increasing accountability for agencies and politicians, citizens also need to accept greater responsibility for Great Lakes stewardship. Full funding and implementation of current programs was suggested as one way to address a considerable number of current needs; however, there was concern that the multitude of Great Lakes agencies may result in redundancy, inefficiency and ineffectiveness in some aspects of Great Lakes management. Regulatory authority concerning many Great Lakes issues needs clarification. Some participants suggested that a more defined leadership structure needs to be created among Great Lakes agencies, and others called for solidarity and consistency among Great Lakes organizations in their requests for national support and federal assistance. Remaining apolitical throughout the restoration process is seen as crucial to effectively setting

and achieving restoration goals. It was also suggested that Great Lakes organizations ensure they are adequately representing the regional interests of Canada as well as the United States.

Despite the complexity of planning restoration for the entire Great Lakes ecosystem, workshop participants nonetheless recommended that restoration plans start with a view of the Great Lakes basin as a single, living system and that restoration strategies be formed in the context of the whole ecosystem, as opposed to addressing various issues separately. Participants stressed the importance of comprehensive planning at the regional level. This regional approach should also incorporate and support local-scale initiatives and organizations as part of a tiered structure with multiple levels—a comprehensive structure that also promotes and builds on citizen action.

Three organizations submitted comments concerning the need to protect or increase the rights of shoreline property owners (see Appendix F). Others pointed to the need to substantially redesign many of the ports in the system and to evaluate the vulnerability of the lakes to terrorist attack. Others offered comments on such issues as dredging, long-term trends in Great Lakes water levels, boater safety education, land use impacts, shoreline access, determination of high-water marks and urban sprawl. Finally, many of the comments made at and after these workshops urged that the protection and restoration process be initiated quickly.

IV. Summary and Conclusions

Over the course of these two focus group-style workshops, a considerable amount of input was received from two relatively small yet highly representative groups of stakeholders regarding Great Lakes restoration needs, particularly for Wisconsin waters of Lake Michigan (see Appendix A). Workshop participants provided a wide spectrum of viewpoints on the relative importance of each of the Governors' Great Lakes restoration priorities for Green Bay and Lake Michigan, pointed out a few priorities that they felt should be added to or made explicit in the Governors' list, and shared many valuable opinions on how a Great Lakes restoration initiative might be structured and implemented.

Nonetheless, the majority of the recommended actions and objectives from these two workshops complement each other. Despite the diversity of viewpoints from participants in two very different regions of the state, they all tended to share similar opinions on the most important priorities for Great Lakes restoration. In sum, this spectrum of viewpoints blends into a unified vision of a restored Great Lakes that provides a valuable basis for developing a comprehensive regional restoration strategy in concert with the other states of the region. Moreover, the action items identified at the Wisconsin workshops correspond closely with those expressed by the Great Lakes Governors in their May 14, 2004, letter to federal appropriations leaders (Appendix C). The comments received regarding the Governors' priorities were of a constructive nature, and the feedback from participants at both workshops indicates a large degree of congruence between the Great Lakes issues confronting Wisconsin and those facing the region as a whole, as suggested in the Governors' letter.

The outcomes of these workshops add depth and detail to what has emerged as a shared list of restoration priorities for constituencies throughout the Great Lakes basin. The input received from the Wisconsin community will help define the desired outcomes and actions necessary to achieve each of the stated priorities. This input, when combined with that from other areas of the basin, will form a detailed and comprehensive record of what is needed at the local, regional and national levels to bring Great Lakes restoration to fruition. These workshop outcomes provide additional value by defining problem areas and required actions that are unique to Wisconsin's portion of the basin. This process of defining priority problems and required actions is the first step in a lengthy but necessary process of restoring the Great Lakes to their full ecological, social and economic value.

The organizers are very satisfied with the focused, high-quality feedback they received and are grateful to the 100-plus individuals who took the time to participate in these half-day workshops in Green Bay and Milwaukee. They are pleased to have contributed to this effort to build consensus and unity among the eight Great Lakes states for advocating long-term, large-scale federal funding to restore and protect the Great Lakes. The citizens of Wisconsin and the other Great Lakes states—indeed, all Americans—share a special responsibility to preserve and protect this treasure for future generations. The Great Lakes restoration and protection workshop series—an unprecedented partnership between the Great Lakes Commission, Great Lakes Sea Grant Network, and the Governor's office and concerned agencies in each state—demonstrates how seriously we take that responsibility.

Appendix A: Registered Participants

Green Bay Workshop (N = 52)

Anders Andren, UW Sea Grant, Madison
Kendra Axness, UW-Extension, Peshtigo
Kate Barrett, Wis. Dept. of Natural Resources, Madison
Jim Baumann, Wis. Dept. of Natural Resources, Madison
Richard Becker, Conservation Congress-Great Lakes, Two Rivers
Colette Charbonneau, U.S. Fish & Wildlife Service, New Franken
H. J. Day, Green Bay
Michael Donahue, Great Lakes Commission, Ann Arbor, Mich.
Dan Egan, *Milwaukee Journal Sentinel*
Ted Eggebreaten, Baileys Harbor
Diane Figiel, Dept. of Natural Resources, Madison
Michael Finney, Oneida Tribe, Oneida
Mike Friis, Wis. Coastal Management Program, Madison
Mary Gansberg, Wis. Dept. of Natural Resources, Green Bay
Jayson Giese
Joshua Giese, Great Lake Sport Fishing Green Bay Area, Green Bay
Mike Grimm, The Nature Conservancy, Sturgeon Bay
Dean Haen, Port of Green Bay, Green Bay
Bill Hafs, Brown County Land Conservation, Green Bay
G. Jag Halgten, Algoma
Bud Harris, UW-Green Bay
Vicky Harris, UW Sea Grant, Green Bay
Russ Hermsen, Suamico Harbor Commission, Suamico
Scott Hoberman, Manitowoc
Mark Holey, U.S. Fish & Wildlife Service, New Franken
John Huff, Wis. Dept. of Natural Resources, Peshtigo
Jim Hurley, UW Sea Grant, Madison
John Karl, UW Sea Grant, Madison
Rebecca Katus, Clean Water Action Council, Green Bay
Mike Kitt, Wis. Dept. of Natural Resources, Peshtigo
Steve Laszewski, Foth & Van Dyke and Associates, Inc., Green Bay
Chuck Ledin, Wis. Dept. of Natural Resources, Madison
Wayne Maki, Oconto

Mark Maricque, Green Bay
Mathew Marty, Archibald Lake Association, Madison
Roger Miller, Miller Engineers & Scientists, Sheboygan
Kelley O'Connor, Wis. Dept. of Natural Resources, Green Bay
Robert Paulson, Minergy, Neenah
Tom Peters, Suamico
Pete Petrouske, DePere Sportsman Club, Green Bay
Angela Pierce, Bay Lake Regional Planning Commission, Green Bay
Derek Scheer, Clean Wisconsin, Madison
Kathy Schmitt, UW Sea Grant, Madison
Janet Smith, U.S. Fish & Wildlife Service, New Franken
Rebekah Stauffer, Milwaukee Community Service Corps, Milwaukee
Jim TeSelle, International Great Lakes Coalition-Wis. Chapter, Grafton
Ron Vander Loop, Brown County Conservation, Green Bay
Jerry Viste, Door County Environmental Council, Sturgeon Bay
Tom Ward, Manitowoc County Soil & Water Dept., Manitowoc
Robert Wenger, UW-Green Bay
Bill Willis, Great Lakes Sport Fishing Green Bay Area, Green Bay
Stephen Wittman, UW Sea Grant, Madison

Facilitators

Kendra Axness, UW-Extension, Peshtigo
Kate Barrett, Wis. Dept. of Natural Resources
Jim Baumann, Wis. Dept. of Natural Resources, Green Bay
Diane Figiel, Wis. Dept. of Natural Resources, Green Bay
Mike Friis, Wis. Coastal Management Program, Madison
Jim Hurley, UW Sea Grant, Madison
John Karl, UW Sea Grant, Madison
Kelley O'Connor, Wis. Dept. of Natural Resources, Green Bay
Kathy Schmitt, UW Sea Grant, Madison
Stephen Wittman, UW Sea Grant, Madison

Milwaukee Workshop (N = 54)

Anders Andren, UW Sea Grant, Madison
Kate Barrett, Wis. Dept. of Natural Resources, Madison
Fran Bihowchi, West Allis
Gregory Bird, Bayview Historical Society, Milwaukee
Marsha Burzynski, Wis. Dept. of Natural Resources
Vince Bushell, River Revitalization Foundation, Milwaukee
Michael Donahue, Great Lakes Commission, Ann Arbor, Mich.
Jen Erickson, UW-Extension, West Allis
Daniel Feinstein, U.S. Geological Survey, Milwaukee
David Fowler, Milwaukee Metropolitan Sewerage District, Milwaukee
Michael Frome, Port Washington
Emily Green, Sierra Club, Madison
Sharan Guyan, Wis. Dept. of Natural Resources, Milwaukee
David Hart, UW Sea Grant, Madison
Anoy Holschbach, Ozaukee County Planning Resources Land Mgmt., Port Washington
Bill Horns, Wis. Dept. of Natural Resources, Madison
Mark Hosenberg, Wisconsin Federation of Great Lakes Sport Fishing Clubs, Kenosha
Jim Hurley, UW Sea Grant, Madison
John Janssen, UW-Milwaukee
Peter Johnson, Council of Great Lakes Governors, Chicago
John Karl, UW Sea Grant, Madison
Peg Kohring, The Conservation Fund, Sawyer, Mich.
Dave Kurczewski, Lake Shore Fishermans Club, Milwaukee
Chuck Ledin, Wis. Dept. of Natural Resources, Madison
Jim Lubner, UW Sea Grant, Milwaukee
Roger Miller, Miller Engineers & Scientists, Sheboygan
Mark Mittag, CH2M Hill, Whitefish Bay
Ron Ondrevka, Great Lakes WATER Institute, Whitefish Bay
Vic Pappas, Wis. Dept. of Natural Resources, Plymouth
Shaili Pfeiffer, Wis. Dept. of Natural Resources, Madison
Jeffrey Potter, Biodiversity Project, Madison

Jen Punzel, EAGLE Environ. Assoc. for Great Lakes Educators, Duluth, Minn.
Tina Rees, Triad Engineering, Inc., Milwaukee
Kyle Rogers, U.S. Environmental Protection Agency
Cathy Rose, Lake Michigan Federation, Milwaukee
Helen Sarakinos, River Alliance of Wisconsin, Madison
Merrie Schamberger, USDA Natural Resources Conservation Service, Port Washington
Donna Schieman, Preserve Our Parks, Milwaukee
Nick Schmal, USDA Forest Service, Milwaukee
Kathy Schmitt, UW Sea Grant, Madison
Jack Smies, Great Lakes Coalition, Oostburg
Jim Smith, Lake Shore Fishermans Club, Milwaukee
Rebekah Stauffer, Milwaukee Community Service Corps, Milwaukee
Stephanie Sward, City of Kenosha
Russ Tooley, Centerville Cares, Cleveland
Angelo Trentadue, Fishing Bug Charter, Racine
Alberto Vargas, Wis. Coastal Management Program, Madison
Rhonda Volz, Wis. Dept. of Natural Resources, Plymouth
Sara Wilson, Mayes Wilson Associates, Milwaukee
Michael Witkiewicz, Salmon Unlimited, Racine
Stephen Wittman, UW Sea Grant, Madison
Dick Yahr, Lincoln Park Center, Milwaukee

Facilitators

Kate Barrett, Wis. Dept. of Natural Resources, Madison
Marsha Burzynski, Wis. Dept. of Natural Resources,
Jenny Erickson, UW Extension, West Allis
Jim Hurley, UW Sea Grant, Madison
John Karl, UW Sea Grant, Madison
Vic Pappas, Wis. Dept. of Natural Resources, Plymouth
Shaili Pfeiffer, Wis. Dept. of Natural Resources, Madison
Kathy Schmitt, UW Sea Grant, Madison
Rhonda Volz, Wis. Dept. of Natural Resources, Plymouth
Stephen Wittman, UW Sea Grant, Madison

Appendix B: Workshop Program and Breakout Instructions

Noon – 12:30	Registration of Participants, Distribution of Agenda & Workshop Materials
12:25 – 12:30	Call to Order, Introductions
12:30–12:45	Welcome, Goals for the Day – UW Sea Grant Director Anders W. Andren What does ‘restoration’ mean?
12:45 – 1:00	Regional Overview – Great Lakes Commission CEO Michael Donahue The role of the Great Lakes Commission and charge to workshop participants
1:00 – 1:15	Presentation of Council of Great Lakes Governors’ Priorities GREEN BAY – WDNR Great Lakes Office Director Charles Ledin MILWAUKEE – CGLG Senior Program Manager Peter Johnson
1:15 – 1:40	Lake Michigan Restoration and Protection Issues GREEN BAY – UW-Green Bay Professor Emeritus H.J. “Bud” Harris MILWAUKEE – UW-Milwaukee Senior Scientist John Janssen
1:40 – 1:45	Overview, Format of Breakout Sessions – Lead Facilitator Stephen Wittman
1:45 – 2:30	Breakout Session 1 Ranking CGLG priorities
2:30 – 2:45	Reports of Priority Rankings by Breakout Groups Reports by a citizen member of each group
2:45 – 3:00	Refreshment Break
3:00 – 3:30	Breakout Session 2, First Round Action items, key participants, some measures of success for priority A
3:30 – 4:00	Breakout Session 2, Second Round Action items, key participants, some measures of success for priority B
4:00 – 4:10	Refreshment Break Facilitators compile/prepare reports from both rounds of Breakout 2
4:10 – 5:00	Breakout Groups Reports (Group Facilitators), Next Steps (Andren) Comments accepted until Aug. 31, send to UW Sea Grant Report sent to WDNR, WCMP, Wis. Governor’s Office for review Report submitted to GLC for incorporation into regional report Commission shares regional report with leaders & stakeholders

Instructions Provided to Breakout Groups in Workshop Handout

Breakout Session I

Goal for the Session: Each table will agree upon their top three priorities from the Council of Great Lakes Governors' list of priorities.

Discussion: The groups will discuss the following:

1. What are the major themes or needs for Lake Michigan and where should they be placed within these nine priority areas?
2. Are there other conservation and restoration priorities for Lake Michigan's basin that you wish to share with the Council of Great Lakes Governors?
3. What are the top three priorities from the Governors' list?

Product from Each Group: Each group will report back their top three priorities.

Note: You are welcome to submit your discussion notes and/or additional comments for inclusion in the summary report; please use the space below on this sheet and/or the sheet listing the Council of Great Lakes Governors' priorities.

Breakout Session II

Goals for the Session: Identify Lake Michigan-specific action items and important participants for addressing each of the Council of Great Lakes Governors' priorities.

Note: This session is divided into two rounds. Everyone will get the opportunity to participate in discussions of two Council of Great Lakes Governors priorities, one during each round. Each table will have a placard on it indicating which of the nine priorities from the Governors' list will be discussed at that table. You are welcome to submit additional comments and ideas for any or all of the nine priorities; please use the space below on this sheet and/or the sheet listing each of the Council of Great Lakes Governors' priorities.

Discussion: The groups will discuss the following for each priority:

1. What are some action items specific to Lake Michigan for addressing this priority?
2. What interest groups should be involved in implementing these action items? (Includes groups such as local government, business and industry, education, resource management agencies, etc.)
3. What are some of the measures of progress and success in satisfying this priority?

Product from Each Group: The facilitator at each table will consolidate and summarize the action items identified in Rounds 1 and 2 for each priority.

Appendix C: Council of Great Lakes Governors Priorities Letter to Federal Appropriations Leaders



BOB TAFT
CHAIRMAN
Governor of Ohio

ROD BLAGOJEVICH
Governor of Illinois

JIM DOYLE
Governor of Wisconsin

JENNIFER M.
GRANHOLM
Governor of Michigan

JOSEPH E. KERNAN
Governor of Indiana

GEORGE E. PATAKI
Governor of New York

TIM PAWLENTY
Governor of Minnesota

ED RENDELL
Governor of Pennsylvania

DAVID NAFTZGER
Executive Director

35 East Wacker Drive
Suite 1850
Chicago, IL 60601

Voice: 312-407-0177
Fax: 312-407-0038
Web: www.cglg.org
e-mail: cglg@cglg.org

May 14, 2004

The Honorable Ted Stevens
Chairman
U.S. Senate Committee on Appropriations
The Capitol, S-128
Washington, D.C. 20510

The Honorable Robert C. Byrd
Ranking Member
U.S. Senate Committee on Appropriations
The Capitol, S-125A
Washington, D.C. 20510

The Honorable C.W. Bill Young
Chairman
U.S. House Committee on Appropriations
The Capitol, H-218
Washington, D.C. 20515

The Honorable David R. Obey
Ranking Member
U.S. House Committee on Appropriations
1016 Longworth House Office Building
Washington, D.C. 20515

On October 1, 2003, we the Great Lakes Governors outlined nine Great Lakes restoration and protection priorities to guide Great Lakes restoration and protection efforts. To meet these priorities, we believe that it is important for the U.S. Congress to provide immediate support for important activities in addition to large scale, long-term funding. We continue to work with the region's Mayors toward this end.

As the Governors of our nation's Great Lakes States, we continue to support large scale, long-term funding programs to be implemented by the States. These programs will be essential to the restoration and protection of the Great Lakes. In addition to our continued support for the important principle of large scale, State-implemented restoration and protection funding, we urge the following appropriations in fiscal year 2005 to advance each of the priorities for Great Lakes restoration and protection that were outlined in our October 1 letter.

- **Ensure the sustainable use of our water resources while confirming that the States retain authority over water use and diversions of Great Lakes waters.**

To successfully implement the Great Lakes Charter Annex of 2001, the collection and application of scientific information regarding surface and ground water must be improved in the Great Lakes Basin.

We ask that an initial \$5 million be authorized and appropriated for this work by the U.S. Geological Survey, National Oceanic and Atmospheric Administration, and the U.S. Army Corps of Engineers. Producing three-dimensional geologic models of glacial materials by the Central Great Lakes Geologic Mapping Coalition is included in this request.

- **Promote programs to protect human health against adverse effects of pollution in the Great Lakes ecosystem.**

Combined sewer overflows are a major source of pollution concentrated mostly in the older cities of the Great Lakes Region and the northeastern U.S. The Wet Weather Water Quality Act of 2000 authorized \$1.4 billion nationally to begin to address this issue.

We ask that appropriations be prioritized to address combined sewer overflows in the Great Lakes region.

- **Control pollution from diffuse sources into water, land and air.**

Clean Water Act Section 319 program funding provides grants for nonpoint source controls. In fiscal year 2004, nationwide funding resulted in approximately \$60 million for the Great Lakes States. Continued funding is essential.

We would ask that \$60 million again be authorized and appropriated for the Great Lakes States.

Proceedings – Wisconsin Lake Michigan Restoration Priorities Workshops

- **Continue to reduce the introduction of persistent bioaccumulative toxics (PBT) into the Great Lakes ecosystem.**

The Bi-national Toxics Reduction Strategy has as its goal the minimization of continued PBT introductions.

Toward this end, we ask that funds be appropriated for a pollutant minimization incentive program for industries and municipalities in the amount of \$1.6 million for the region.

- **Stop the introduction and spread of non-native aquatic invasive species.**

The National Aquatic Invasive Species Act (NAISA) provides a tremendous opportunity to increase the national focus on prevention and control of harmful species that affect the environment and economy of our country. In the Great Lakes region, we have been stricken by sea lampreys, zebra mussels, round gobies and many other invading species. The impacts are real, affecting a major share of our nation's industrial and agricultural output and threatening the well-being of 25 million Americans who depend directly on the Great Lakes for water, recreation and food. Six of the Great Lakes states have developed and are currently implementing state management plans to control the economic and ecological impacts of invasive species.

We therefore ask that you reauthorize the NAISA by passing HR 1080 and S525 as well as appropriating funds to implement this Act. We also ask that an additional \$4.2 million be authorized and appropriated for sea lamprey controls in the Great Lakes and that the current U.S Fish and Wildlife Service's appropriation for implementation of state management plans be increased by \$1.8 million. Finally, we ask that you support the request of the House and Senate Great Lakes Task Forces for \$8 million to make permanent the existing barrier in the Chicago Sanitary & Ship Canal, to construct a second barrier, and to operate and maintain both barriers at full federal cost to prevent the spread of the Asian carp and other non-native species.

- **Enhance fish and wildlife by restoring and protecting habitats and coastal wetlands.**

It is crucial to protect sensitive coastal habitats, which are irreplaceable once lost. To that end, \$30 million was appropriated in 2001 as part of the Great Lakes Coastal Restoration Program. That funding attracted an additional \$42 million in State and local matches that was spent largely on habitat protection and restoration.

In addition, the U.S. Fish and Wildlife Service's Upper and Lower Great Lakes field stations provide critical research, monitoring and restoration of Lake Trout and endangered species like the Lake Sturgeon and Piping Plover. The hatcheries are the primary source of Lake Trout eggs and fingerlings stocked in the Great Lakes each year to maintain what has become a world class sportfishery, creating significant economic benefits for small businesses and communities throughout the Great Lakes Basin. It is also imperative that federal and State agencies coordinate marking of hatchery fish in the Great Lakes Basin to evaluate restoration efforts and sustainability of the fishery. We ask that \$5.6 million be appropriated to maintain this valuable asset.

We therefore ask that funding for these programs be reauthorized at a minimum level of \$35.6 million and that funding be appropriated in the same amount.

- **Restore to environmental health the Areas of Concern (AOC) identified by the International Joint Commission as needing remediation.**

The Great Lakes Water Quality Agreement directs Canada and the United States, working with State and provincial governments, to develop plans (known as Remedial Action Plans) to restore and protect ecosystem health so that the water is drinkable, beaches are swimmable and fish are safe to eat, among other such beneficial uses. The two nations also agreed that the worst areas, designated as "Areas of Concern" would be given priority attention.

We ask Congress to appropriate previously authorized funds in the amount of \$5.7 million to distribute to the Great Lakes States via program grants for Remedial Action Programs (RAPs) and Lakewide Management Plans (LaMPs); \$15.4 million for other AOC related activities; as well as \$45 million for Legacy Act implementation.

We therefore request that funds in the amount of \$66.1 million be appropriated to address Areas of Concern throughout the Great Lakes.

- **Standardize and enhance the methods by which information is collected, recorded and shared within the region.**

It is essential that indicators of water quality and related environmental factors in the Great Lakes be developed and a network created to monitor those indicators regularly throughout the Great Lakes Basin.

We therefore ask that funds in the amount of \$7 million be authorized in support of these efforts. We further ask that this amount be appropriated to ensure that the best scientific information can be provided to those who manage the waters of the Great Lakes.

Proceedings – Wisconsin Lake Michigan Restoration Priorities Workshops

- **Adopt sustainable use practices that can protect environmental resources and that may enhance the commercial and recreational value of our Great Lakes.**

In spite of extensive efforts in all the Great Lakes States and municipalities to improve sewage treatment, beach closings remain a vexing problem. Monitoring and early detection is essential to ensure that our citizens' health is adequately protected. The Beach Act authorizes critical funds to allow the Great Lakes States to improve beach-monitoring and posting programs.

We therefore ask that Congress appropriate \$2 million already authorized under the Beach Act. In addition, we urge you to allow State grant administration costs to be allowable in determining match requirements.

We welcome the opportunity to join you in protecting and restoring the Great Lakes by taking these substantive steps this year. We believe progress toward our shared goals for the Great Lakes is essential to the public health and economic vitality of our nation. We continue to engage the public in our dialogue and look forward to building on the partnership among our region's Governors, Mayors and Members of Congress.

[Signed]

Rod Blagojevich
Governor of Illinois

Jennifer M. Granholm
Governor of Michigan

George E. Pataki
Governor of New York

Edward Rendell
Governor of Pennsylvania

Joseph E. Kernan
Governor of Indiana

Tim Pawlenty
Governor of Minnesota

Bob Taft
Governor of Ohio

Jim Doyle
Governor of Wisconsin

cc: Great Lakes U.S. Congressional Delegation

Appendix D: Workshop Rankings of CGLG Priorities and Related Concerns

Combined Results of Breakout Groups at Both Workshops

*Scores in parentheses are based on points out of 27 possible**

- #1. Ensure the sustainable use of our water resources while confirming that the States retain authority over water use and diversions of Great Lakes waters. (18)
- #2. Control pollution from diffuse sources into water, land and air. (14)
- #3. Stop the introduction and spread of non-native aquatic invasive species. (5)
Enhance fish and wildlife by restoring and protecting habitats and coastal wetlands. (5)
- #4. Continue to reduce the introduction of persistent bioaccumulative toxics into the Great Lakes ecosystem. (4.5)
- #5. Enhance education about the Great Lakes at all levels. (3.5)
- #6. Promote programs to protect human health against adverse effects of pollution in the Great Lakes ecosystem. (2)
- #7. Adopt sustainable use practices that protect environmental resources and may enhance the recreational and commercial value of our Great Lakes. (1)
- #8. Standardize and enhance the methods by which information is collected, recorded and shared within the region. (0.5)
- #9. Restore to environmental health the Areas of Concern (AOC) identified by the International Joint Commission as needing remediation. (0)

**Based on top-3 votes from combined votes of a total of 9 breakout groups: #1 priority vote = 3 points; #2 = 2; #3 = 1; #4 (when so voted) = 0.5*

Green Bay Workshop Group Rankings & Related Concerns

All Groups Combined Results

- #1. Controlling pollution from diffuse sources into water, land and air
- #2. Ensuring sustainable use of Great Lakes water and confirming state authority over water use and diversions.
- #3. Enhancing fish and wildlife by restoring and protecting habitat and wetlands.

Group 1

- #1. Ensure the sustainable use of our water resources while confirming that the States retain authority over water use and diversions of Great Lakes waters.
- #2. Promote programs to protect human health against adverse effects of pollution in the Great lakes ecosystem.

Proceedings – Wisconsin Lake Michigan Restoration Priorities Workshops

- #3. Control pollution from diffuse sources into water, land and air.
- #4. Continue to reduce the introduction of persistent bioaccumulative toxics into the Great Lakes system.

Group 2

- #1. Control pollution from diffuse sources into water, land and air.
- #2. Continue to reduce the introduction of persistent bioaccumulative toxics into the Great Lakes ecosystem.
- #3. Enhance fish and wildlife by restoring and protecting habitats and coastal wetlands.
- #4. Standardize and enhance the methods by which information is collected, recorded and shared within the region.

Group 3

- #1. Ensure the sustainable use of our water resources while confirming that the States retain authority over water use and diversions of Great Lakes waters.
- #2. Continue to reduce the introduction of persistent bioaccumulative toxics into the Great Lakes ecosystem.
- #3. Stop the introduction and spread of non-native aquatic invasive species.

Related Concerns

- ♦ Control of invasive species critical to sustainable fishery.

Group 4

- #1. Ensure the sustainable use of our water resources while confirming that the States retain authority over water use and diversions of Great Lakes waters.
- #2. Enhance fish and wildlife by restoring and protecting habitats and coastal wetlands.
- #3. Education.

Related Concerns

- ♦ Where is citizen involvement recognized or promoted (marginalized?)
- ♦ Greater accountability: needs to be explicitly stated.
- ♦ Priorities do not address leadership requirements.
- ♦ Not enough emphasis on citizen/activist group partnerships.
- ♦ Political risks often impede results; many politicians are often out of office before results are realized .
- ♦ Public is not educated or informed on the issues (communication/educational component is necessary to raise public awareness on issues).
- ♦ Need to enforce existing rules.
- ♦ Importance of interconnection of all waters.
- ♦ Sustainability is very important.
- ♦ Water diversions: prevent outside use pressure.
- ♦ There isn't much time to address many problems: the time to act is now (much harder to restore habitat than preserve it).

Proceedings – Wisconsin Lake Michigan Restoration Priorities Workshops

- ♦ Great Lakes health is dependent on wetlands.
- ♦ Need accountability.

Group 5

- #1. Control pollution from diffuse sources into water, land and air.
- #2. Stop the introduction and spread of non-native aquatic invasive species.
- #3. Adopt sustainable use practices that protect environmental resources and may enhance the recreational and commercial value of our Great Lakes.

Priority that should be added: Education component in all priorities.

Related Concerns

- ♦ Combined sewer overflow.
- ♦ Threat of exotic species: Asian carp, spiny water flea and zebra mussels.
- ♦ Sediment management.
- ♦ Sustainable recreational uses: sport fishing, boating.
- ♦ Need to anticipate effects of increased water transport.
- ♦ Need better organization of the management structure within the Great Lakes region.
- ♦ Need a standardized fishery policy, as well as standardized data collection.
- ♦ Region needs to agree to common goals.
- ♦ Public must be educated on Great Lakes issues.
- ♦ Loss of wetlands and groundwater recharge are concerns.

Group 6

- #1. Control pollution from diffuse sources into water, land and air.
- #2. Enhance fish and wildlife by restoring and protecting habitats and coastal wetlands.
- #3. Stop the introduction and spread of non-native aquatic invasive species.

Related Concerns

- ♦ There has been a fragmented approach to solving Great Lakes problems.
- ♦ Problems should be addressed locally and regionally, but there also needs to be strong oversight in order to coordinate efforts of all agencies and groups.
- ♦ Need to be able to address emerging issues, such as exotics, in a preventative way rather than reactive.
- ♦ Need a management structure that isn't affected by political struggles.
- ♦ Even when we can gather the data, it's often not appropriately utilized.
- ♦ Governors need to be sure to combine both an economic and ecosystem vision for Great Lakes: need to avoid only focusing on isolated problems.
- ♦ Lakes are reflecting widespread abuse of ecosystem processes.

Milwaukee Workshop Group Rankings & Related Concerns

All Groups Combined Results

- #1. Ensuring sustainable use of Great Lakes water and confirming state authority over water use and diversions.
- #2. Controlling pollution from diffuse sources into water, land and air.
- #3. *(tie)* Stopping the introduction and spread of non-native aquatic invasive species.
Education about all nine priority issues.

Group 1

- #1. Ensure the sustainable use of our water resources while confirming that the States retain authority over water use and diversions of Great Lakes waters.
- #2. Control pollution from diffuse sources into water, land and air.
- #3. Stop the introduction and spread of non-native aquatic invasive species.

Group 2

- #1. Ensure the sustainable use of our water resources while confirming that the States retain authority over water use and diversions of Great Lakes waters.

Priorities that should be added:

- ◆ Education
- ◆ Land use planning

Related Concerns

- ◆ Prevent sewage dumping and beach closings.
- ◆ Need to address the connection between groundwater and the Great Lakes.
- ◆ Support citizen-based water monitoring to better inform public.
- ◆ Habitat biodiversity is tied to watersheds and the lakes.
- ◆ Lack of funding for research.
- ◆ There is too much focus on only popular sport fish species: need to look at the whole ecosystem.
- ◆ Public education and involvement is key.
- ◆ Introduction of exotics and perception of pollution is turning people away from the resource.
- ◆ Need to maintain public access to the public trust waters.

Group 3

- #1. Ensure the sustainable use of our water resources while confirming that the States retain authority over water use and diversions of Great Lakes waters.
- #2. Control pollution from diffuse sources into water, land and air.
- #3. Stop the introduction and spread of non-native aquatic invasive species.

Priority that should be added: Better coordination/identification of regulatory agencies.

Proceedings – Wisconsin Lake Michigan Restoration Priorities Workshops

Related Concerns

- ◆ Concern about the federal government overriding state control.
- ◆ In order to make progress with the priorities, it is necessary to identify which agency ultimately has the authority to make regulatory decisions regarding the Great Lakes.
- ◆ Many of the problems addressed in the nine priorities are largely a result of ambiguity in management.
- ◆ Need to focus funding on top priorities.
- ◆ Public needs to be aware of Great Lakes issues: what they are and what can be done.
- ◆ Beach closures reduce Great Lakes visibility with public.
- ◆ Need to protect habitat throughout the watershed, not just the coastal zone.
- ◆ Need to address sewage overflow issues (and storm water).
- ◆ Without standardization of information gathering and sharing, other priorities are impossible to accomplish.
- ◆ Great Lakes need more than just money, policy changes are needed, too (ex: mercury).
- ◆ Great Lakes Governors need to have a united voice for national issues that affect the Great Lakes (ex: mercury, coal-fired power plants).

Appendix E: Breakout Session Summary Notes

Combined Recommendations of Green Bay and Milwaukee Workshops:

Action Items for Addressing CGLG Priorities, Who Should Be Involved and Some Measures of Progress

Editor's note: *Original wording from workshop flipchart sheets has been edited slightly for clarity. Similar or related recommendations from different groups at both workshops have been grouped together under the most general one, and duplications have been combined or deleted in some cases.*

#1. Ensure the sustainable use of our water resources while confirming that the States retain authority over water use and diversions of Great Lakes waters.

Specific Actions

- ◆ Establish sovereignty regarding Great Lakes water
 - Do not allow any further trade agreements that include water
 - Pass Annex 2001 & approve; current laws don't protect agreement
 - Canada & the U.S. should sign a formal treaty to guarantee policies proposed by Council of Great Lakes Governors
- ◆ Pass laws to require water conservation
 - Provide market incentives for water conservation
 - Implement conservation measures by inserting incentives within water pricing structure
 - Require habitat conservation in exchange for water consumption (just as is required for water diversion)
- ◆ Guarantee groundwater replenishment within the Great Lakes watershed
 - Support more research to gather groundwater data
 - Identify, map and protect recharge areas
- ◆ Establish specific goals or objectives for reductions in storm water runoff
 - Provide tax incentives to reduce impervious surfaces
 - Use storm water utility fees for storm water management
 - Encourage use of rain barrels and rain gardens
- ◆ Ensure return of water to basin
 - Require that quality of water returned to the lakes is as good as the water taken out
 - Ensure that sustainable use includes reduction of toxics and management of recreational use
- ◆ Educate the public on significance of water cycle, recharge areas, aquifers, watershed, groundwater

Who Should Be Involved

- ◆ Canada
- ◆ Citizen groups
- ◆ Council of Great Lakes Governors
- ◆ Elected officials at all levels

Proceedings – Wisconsin Lake Michigan Restoration Priorities Workshops

- ◆ International Joint Commission
- ◆ State departments of natural resources
- ◆ Universities

Measures of Progress and Success

- ◆ Establishment of a treaty
- ◆ Monitoring that shows that water taken out of Great Lakes is of same quality as that taken out
- ◆ Increased water conservation

#2. Control pollution from diffuse sources into water, land and air.

Specific Actions

- ◆ Establish environmental regulations that can be implemented and enforced
 - Council of Great Lakes Governors should advocate for the U.S. EPA to fully implement the Clean Air Act Utility MACT for 90% reduction of mercury for 2008
 - Increase penalties/hold entities responsible
 - Promote programs to protect human public health from adverse effects of pollution (*priority #6*) – stress “healthy lake, healthy people”
 - Control pollution in order to reduce beach closings
- ◆ Adopt a watershed approach and stop nonpoint-source pollution and wetland loss
 - Establish some sort of watershed authority that bases regulation on a geographic area rather than on political boundaries
 - Restore natural hydrology (examine effect of drainage tiles)
 - Promote buffer strips, better nutrient management, wetland protection and urban storm water management
 - Involve private landowners
 - Manage manure better on farm fields; establish mandatory regulations and enforce them
 - Encourage lawns that do not require fertilizers
- ◆ Promote groundwater replenishment
 - Encourage low-impact development (designs that allow water to seep in)
 - Support rain gardens/rain barrels (better home designs)
 - Establish groundwater replenishment zones
 - Encourage creation of permeable land
 - Require permeable paving/pavement
 - Improve infiltration from impermeable development
- ◆ Fund long-term monitoring to ensure that problems are actually being solved (accountability)
 - Fund appropriate testing of rivers
- ◆ Support education
 - Use public education to encourage more people to be actively involved
 - Support a strong education program that explains issues to the general public (what needs to be done and why)
- ◆ Focus on land use as a way to improve water quality in the Great Lakes
 - Provide rebates or tax incentives for water conservation and improvements in agricultural practices
 - Establish a Statewide preservation plan for hydric soils that reduce flooding

Proceedings – Wisconsin Lake Michigan Restoration Priorities Workshops

- ◆ Require buffers
 - Establish 100% funding for buffer strips to remove landowner burden
 - Increase public awareness for need for buffer strips
- ◆ Increase standards for reducing phosphorus in soils tied to Total Maximum Daily Load (TMDL)
 - Establish alternative TMDLs in Wisconsin
- ◆ Manage/control shoreline development
 - Use a reward system to encourage municipalities to work together (incentive for revenue sharing) to keep development where it belongs
 - Protect undeveloped shoreline
 - Have a broad, inclusive discussion about coastal land use and development
- ◆ Elect supportive officials and hold officials accountable

Who Should Be Involved

- ◆ Farmers in Great Lakes States (need to be under same laws if their land is part of the same watershed)
- ◆ Governors
- ◆ School system (for public awareness)
- ◆ U.S. Department of Agriculture (but it needs to take a new approach)
- ◆ U.S. Environmental Protection Agency

Measures of Progress and Success

- ◆ Water quality
- ◆ 100% funded buffer strips on 100% of waterways
- ◆ Hydric soil plan implemented and completed

#3. Stop the introduction and spread of non-native aquatic invasive species.

Specific Actions

- ◆ Strengthen local and federal invasive species laws
 - Approve the National Aquatic Invasive Species Act
 - Develop effective regulations on live species importation
 - Establish more effective State laws to restrict invasive species
 - Enforce existing laws
- ◆ Regulate ballast waters
 - Neutralize ship ballast water to remove all invasive species
 - Need to control international ballast
 - Establish a “Great Lakes-only” shipping fleet
- ◆ Fully fund and build the Asian carp barrier
 - Secure funding for Sanitary Canal barrier and assess economic impact of not building
- ◆ Fund research and monitoring to measure progress and success
 - Determine economic and environmental impacts of invasive species
 - Research other routes of introductions of invasive species
 - Find uses for existing exotics
 - Manage fish quotas early – need to recognize fluctuations caused by exotics

Proceedings – Wisconsin Lake Michigan Restoration Priorities Workshops

- ♦ Educate public about threat of invasive species – K-12, boating safety courses

Who Should Be Involved

- ♦ Canadian Government
- ♦ Citizen watch groups
- ♦ Congress
- ♦ Educators
- ♦ Governors
- ♦ Interstate commerce
- ♦ Municipalities
- ♦ Sea Grant & universities
- ♦ Sport fishing groups
- ♦ Sportsmen and business associations
- ♦ State & provincial departments of natural resources
- ♦ U.S. Coast Guard
- ♦ U.S. Department of Agriculture
- ♦ U.S. Environmental Protection Agency

Measures of Progress and Success

- ♦ No new exotics[!]

#4. Enhance fish and wildlife by restoring and protecting habitats and coastal wetlands.

Specific Actions

- ♦ Allocate more funding for the Coastal Zone Management Act
 - Apply Coastal Zone Management more broadly within the watershed (not just on Great Lakes coast)
- ♦ Adopt more comprehensive planning for fish and wildlife habitat
 - Identify important conservation areas for protection
 - Locate and protect groundwater recharge areas for Great Lakes
- ♦ Use cost-sharing to restore shoreline
- ♦ Ensure an even playing field within federal grant process
- ♦ More education[!]

Who Should Be Involved

- ♦ Citizen groups
- ♦ Economic development groups
- ♦ Nonprofit groups
- ♦ State departments of natural resources
- ♦ Tribes
- ♦ U.S. Fish and Wildlife Service

Measures of Progress and Success

None suggested.

#5. Continue to reduce the introduction of persistent bioaccumulative toxics into the Great Lakes ecosystem.

Specific Actions

- ♦ Control mercury emissions and uses
- ♦ Stop new introductions of PCBs
- ♦ Support research to identify new threats (e.g., PBDEs)

Who Should Be Involved

No suggestions.

Measures of Progress and Success

None suggested.

#6. Promote programs to protect human health against adverse effects of pollution in the Great Lakes ecosystem.

Specific Actions

- ♦ Continue programs already in place
 - Keep raw sewage out of Lake Michigan – need to separate sewage from storm water
 - Obtain federal funding for big projects (such as Milwaukee sewer problem)
 - Charge impact fee for new development that will increase water demands
 - Increase budgets for departments that monitor levels of harmful chemicals
- ♦ Increase public access to information about toxic releases
 - More proactive work to prevent other chemicals (such as PBDEs) from entering the environment (need to change approach from "innocent until proven guilty" to "guilty until proven innocent")
 - Restore the Public Intervener position in Wisconsin State government
 - Educate the public about contaminated fish by issuing advisories – hand out advisories with fishing licenses

Measures of Progress and Success

None suggested.

#7. Adopt sustainable use practices that protect environmental resources and may enhance the recreational and commercial value of our Great Lakes.

Specific Actions

- ♦ Establish better storm water standards
- ♦ Encourage more groundwater recharge practices
- ♦ Promote alternative energy – wind, solar, hydro, biomass
- ♦ Support public outreach on sustainable uses – target private landowners

Who Should Be Involved

- ♦ Citizen groups
- ♦ Environmental groups
- ♦ Individuals
- ♦ Media
- ♦ Municipal governments
- ♦ Schools
- ♦ Volunteers

Measures of Progress and Success

- ♦ Track beach closings and other parameters
- ♦ Track citizen assessment of water quality

#8. Standardize and enhance the methods by which information is collected, recorded and shared within the region.

Specific Actions

- ♦ Ensure that information is shared and used
 - Establish a common and easy way to share and collect data (often difficult to do with so many entities doing research)
 - Establish standardization guidelines so that data is gathered in a consistent way
 - Establish a central clearinghouse for information
 - Uniform management or uniform approach between regions and States
 - More funding for GIS initiatives
- ♦ Information needs to stop having political boundaries

Who Should Be Involved

- ♦ Establish some sort of group (representing diverse stakeholders) that could decide on a system of standards for all agencies to use

Measures of Progress and Success

None suggested.

#9. Restore to environmental health the Areas of Concern (AOC) identified by the International Joint Commission as needing remediation.

Specific Actions

- ♦ Make Areas of Concern a national priority
 - Securing funding could jump-start implementation
- ♦ Develop mechanisms to deal with complacency
 - Provide incentives to local governments to implement RAPs
 - Support committees that are supposed to help implement RAPs
- ♦ Take each RAP and identify one priority to address first (community decides on priority)

Proceedings – Wisconsin Lake Michigan Restoration Priorities Workshops

- Local community to advocate addressing priority with local legislators
- ◆ Educate local citizens and decision makers
 - Establish connection between health issues and toxic environment

Who Should Be Involved

No suggestions.

Measures of Progress and Success

None suggested.

(#10.) Enhance education on Great Lakes issues on all fronts.

Specific Actions

None suggested; however, see specific priorities above.

Who Should Be Involved

No specific suggestions.

Measures of Progress and Success

None suggested.

Appendix F: Individual Responses – Comment Forms, Email, and Letters

(Total Number of Respondents: 10)

Diversions of Water

“I think the priorities are self-evidently desirable. I would like to add that Great Lakes' water should stay in the Great Lakes Basin. To divert water out of the basin could be disastrous to the Great Lakes' ecosystem. I would be particularly upset if diverted water is used on lawns! Xeriscaping should be the law for all ornamental uses, both in the basin and out.”

#

“With regard to the Great Lakes Charter Annex, I strongly believe we should prevent the diversion of Great Lakes water. I'm reminded of the historical precedent on how the timber of North America was treated. Of course it was never going to run out. Please do not let the fresh water supply of the Great Lakes be treated as cavalierly. Thank you – [name withheld]

#

Water Quality, Toxic Contaminants

“I'm expressing serious concern about the water quality of Lake Michigan particularly in the Milwaukee area. Serving in the military, I lived outside of Wisconsin for many years. I was shocked when making a trip to Bradford Beach near downtown Milwaukee on the terrible state of the beach. First, I found it odd no people were there anymore, it used to be a bustling beach where one found it difficult to even find a place to lay in the sand. After approaching the water, I can see why this beach had been abandoned. Green-black sludge covered the shoreline making it impossible to even reach the water. In addition to the physical appearance, the smell alone was sickening. I've returned several times to that area to walk along the lake trails however cannot just stand-by anymore looking at the terrible condition of the beach and the water quality.

“My wife and I will be permanently moving to the Milwaukee area soon and I told her that one of Milwaukee's greatest assets is the lake. I'm embarrassed for the city and the State to see our beaches in such a state. As Milwaukee as tries to rebuild downtown and boost the city as a desirable place to live, one would have to ask themselves, would they move near a lake in such disgusting condition?”

#

“Coal fired power (electricity) plants should be required to upgrade to best technology available to reduce sulfur, mercury and other pollutants.

“All coal user pay say a 1¢/ton tax that is combine and use to fund clean coals burning technology research for all.”

#

“Lake Michigan and Green Bay need to be clean enough for future generations. Our children and grandchildren will thank us for this effort.”

#

Invasive Species, Pollution

“Control exotic species at the source.

“No exotic fish, repticals [sic], birds, animals, insects & plants permitted [sic] into WI, unless a public hearing is held and the benefit is worth the long term risk.”

#

“Our names are [name withheld] and [name withheld]. We are two Boy Scouts working on our Citizenship in the Community merit badge. We noticed an article in the *Kenosha News* dated August 26, 2004, requesting public comments about draft annex 2001 implementing agreement.

“We looked on the Web site listed in the article to get some background information. We think that we shouldn’t send the water because of pollution and the zebra mussels that eat all of the food that the fish eat. The people requesting water should have known that there was no water in the Southwest region.”

#

Lake Water Levels, Lakeshore Property Rights, Regional Coordination of Restoration Efforts

“First, thanks again very much for organizing and managing these workshops. I think it’s an excellent first step in developing the dialogue between the public and the Governors’ Council that will be needed to resolve all the issues facing us. That said, I’d like to share a few observations with you:

“1 – I felt locked into the nine priorities provided by the Council, as though they were dictating the problems to us. Several issues came up in the breakout groups that I sat in that don’t fit neatly into any one of the nine priorities, for example fluctuating water levels, property owners’ rights, defining the OHWM, and others. I think a better approach would be to develop a vision statement for the lakes, then solicit public comment on what has to be done to attain it.

“2 – No-one seems to be in charge of the overall effort. Mike Donahue told me later that the EPA has been charged with overall responsibility for the restoration program, which is fine, but right now there are hundreds of groups, organizations, and agencies involved and little co-ordination of their efforts. I think this needs to be a priority item, to develop that co-ordination so someone is actually steering the ship.

“3 – Many of the attendees at the Green Bay workshop were associated with the DNR, FWS, Sea Grant Institute, or other non-public organizations. Perhaps less than 50% of the attendees were actually ‘the public’. Somehow we need to involve the public more. I think there’s a tremendous reservoir of support out there if only we can get their attention and buy-in. I suggest studying what was done around Chesapeake Bay, or a PR consultant, or public-service TV spots, etc. Something! The program will limp until the public gets behind it.

“Our group prepared a list of what we think the priorities are which is somewhat different than the Governors’ Council’s. I’ve attached a Word document that spells them out [*appended below*]. And as I mentioned to you, our groups are anxious to help in any way we can to accomplish our common objectives, the ecological and economic health of the Great Lakes and the Great Lakes Basin. We may not agree on every detail, but we do all want clean water, healthy beaches, and a strong regional economy. We welcome any opportunity to work with you and the DNR.”

#

“Comments regarding the Council of Great Lakes’ Governors’ priorities of restoration and protection of the Great Lakes. Submitted by [name withheld] and [name withheld] representing:

- **Wisconsin Lake Michigan Shoreline Chapter, International Great Lakes Coalition**
- **East Holland Citizens’ League**
- **Lakes Church Lakes Shore Citizens’ League**

“The nine priorities listed by the Governors are very broad and do not provide for either specific actions to be taken nor for objective and quantitative measures for their attainment. Our groups therefore would like to submit the following as our suggestions for specific objectives. They are listed in our priority order. They do not correspond

Proceedings – Wisconsin Lake Michigan Restoration Priorities Workshops

directly to the Council's list – a given item may even relate to more than one of the priorities – but it isn't difficult to see where they fit.

1. **Protection of lakeshore property owners' rights.** Given that property owners are the first and often the most directly affected parties to any change in the status of the lakes, and also given that they pay very high taxes and receive few municipal services in return, property owners' rights are our first priority. Lawsuits now in progress in other States seek to restore riparian rights that were taken away from property owners without compensation in Ohio, and to defend those rights in Michigan. Specific steps must be taken to assure that a) riparian rights cannot be removed without due legal process and compensation at fair market value; b) the ordinary high water mark (OHWM) is clearly defined and measurable; c) the right of a property owner to sell, improve, or maintain his property be assured and protected; d) property taxes must be based on services received and potential impact on the environment, not on property value.
2. **Water quality,** meaning the control and reduction of pollution from non-point sources such as storm sewers and farmlands, and the strict regulation of sewage dumping by municipalities. All municipalities in the Basin must conform to a new and stringent non-dumping standard and sewage treatment facilities must be upgraded to meet that standard. There must be no exception. Federal money should be made available to do this as the municipalities cannot afford it themselves, and the effect of dumping is area-wide, not limited to one city. Water quality should be measured regularly at both fixed and randomly chosen sites along the lakeshore, including residential as well as municipal sites. Watersheds in the entire Basin must be regulated and monitored, not just those streams that flow directly into the lakes, because eventually they will also affect ground water and aquifers that supply the Lakes. Pollution that may result from causes such as birds/seagulls must be studied to determine its extent and impact, and specific remedial measures should be developed. Water quality standards must conform to those set forth in the Clean Water Act and should be standard across the entire Great Lakes Basin.

We should also include in this priority the need to control cladofora [*sic*], the stringy algae that infests our beaches. Studies need to be made to identify the cause for its presence in the lake and on our shorelines and determine a means to eliminate it.

3. **Water levels.** Since high water levels can lead to serious erosion and property damage along the shoreline, procedures must be put in place to control them. Considerable data is already available that defines how much shoreline damage is done during high water periods and the cost to control the level. Such controls may include new or modified control structures in various places in the Basin. The International Joint Commission and the U.S. Army Corps of Engineers must be involved, one of the actions they should take is to review their policy for controlling Lake Superior water levels so as not to adversely impact Lakes Michigan-Huron, as has happened in the past. Specific proposals have been submitted to them, they should act upon them immediately before another high-water period arrives.

Low water also presents a problem. Not only are shipping and boating affected but there may be a correlation between the growth of cladofora [*sic*] and zebra mussels. Low water also causes the drying of wetland areas. It too must be managed and controlled.

4. **Exportation of water outside the Basin** should be prohibited 100% unless that water can be replaced or returned to the lake it was taken from.
5. **Control of non-native species,** meaning the reduction or elimination of those already here, such as zebra mussels, and the prevention of any new invasions, such as by bighead carp. Not all non-native species may be undesirable – salmon are a prime example, so each species' ecological impact and interrelationships must be studied and assessed.
6. **Protection of unique plant and animal life and the environment(s)** needed to support them. The Great Lakes riparian zones constitute unique biomes and habitats. More extensive scientific study is needed to identify the unique biological memberships and relationships that exist in these riparian zones.

“Our groups also feel that the Council should act quickly on the suggestions submitted to it, with decisions and detailed plans available for public review by early in 2005 and implementation beginning by the end of 2005.”

#

Appendix G: Feedback via Wisconsin Sea Grant Website

www.seagrant.wisc.edu/Feedback/Default.aspx?form=governors

INSTRUCTIONS

We highly recommend that you print this form and compose your answers in a word processing program. You can then return to this website and cut and paste your responses into the fields provided. This will provide you with a backup of your responses in the event that they are lost during transmission or if there is some other technical problem.

Background

On October 1, 2003, the Council of Great Lakes Governors outlined nine broad priorities to guide Great Lakes restoration and protection efforts (see list below). Congress is presently reviewing a number of bills that may provide large-scale, long-term funding for state-implemented programs for restoring and protecting the Great Lakes. On behalf of the Council of Great Lakes Governors, the Great Lakes Commission is soliciting public feedback and input on development and implementation of the council's priorities from each Great Lakes state.

On behalf of the commission and the council, the University of Wisconsin Sea Grant Institute is requesting your feedback on the restoration priorities developed by the Council of Great Lakes Governors and input regarding Wisconsin's most important Green Bay and Lake Michigan restoration and protection priorities. The commission will combine the feedback and input from Wisconsin with that received from the other Great Lakes states and share the results with Great Lakes leaders and the entire community of stakeholders in the interest of promoting consensus and unity of purpose in Great Lakes restoration and protection initiatives. These Great Lakes restoration and protection documents are being posted on the Great Lakes Commission Web site at www.glc.org/restwkshp.

The deadline for comments is Aug. 31, 2004.

Thank you for taking the time to share your thoughts with us. All comments will be compiled and forward to the Great Lakes Commission without attribution or any identification of the source.

Responses Received 8/23-31/04 (Total Number of Respondents: 12)

1. What do you consider to be the major restoration and protection issues or needs for Lake Michigan? If each fits under one or more of the council's nine priority areas (see list), please indicate which one(s) by priority number.

- ▶ Priorities #1 and #3/#4. Unfortunately, the argument [*sic*] that Lake Michigan water should stay in the basin may be difficult to make if Great Lakes communities continue to treat it as sewerage disposal site.
- ▶ I attended the public event at UW-Milwaukee this month and did part of the breakout activity, during which I indicated that I thought that all 9 items on the list were very much intertwined.
Taking sustainability [*sic*], it would not happen without authority of those in the watershed, there being protections from unhealthy pollution as in #2, 3 & 4, and #5, 6 & 7 if one considers non-natives to destroy the native systems that have their habitats [*sic*] destroyed by lazy development in areas of concern, having accessible numbers is necessary for all proposals, back to sustainability with #9.
I think that all pollutants' uses should tightened down, including fossil-fueled cars and salt. It may mean building heated bridges and roadways like is done in Europe where they have worse pollution problems, but those infrastructure features will last a lot longer. If these problems are to be controlled, stronger controls must be put in place. That has always meant government, of, for, and by the people. Private sector hasn't gotten it done, so they best get on board to limit problems.
Since most larger harbors have had industrial activities that render them areas of concern, consider establishing a standard harbor redesign that uses a low-head dam/breakwater to contain contaminants and allow them to settle, with wind, wave, and solar energy power generation, hoisting devices for recreational boats, and off-shore ship docking and unloading as is being done in other world-wide new harbors to save estuaries.
I feel the first item is of critical importance. Sustainable use is the key term --- control against diversions is essential --- water abuse situations in other areas must not be allowed to threaten the Great Lakes.
- ▶ Priority #1: No diversions.

Proceedings – Wisconsin Lake Michigan Restoration Priorities Workshops

2. Are there other conservation and restoration priorities for Lake Michigan's basin that you wish to share with the Council of Great Lakes Governors?

- ▶ It is important to think 'basin' --- this means that the health of the rivers and creeks that feed the lakes is of paramount concern. Land use cannot be overlooked. The upstream effect appears to be minimized [sic] and should have a higher profile
- ▶ You might want to explicitly address the issue of stormwater and sanitary water being discharged to Lake Michigan. Also, you might want to address the issue of protecting the lakes from terrorist attacks. I don't know if there are any WMD that could make the lake water undrinkable but it seems to me to be something that should be looked at.

3. What do you consider to be the top three priorities from the Governors' list for Wisconsin waters of Lake Michigan?

FIRST PRIORITY

#1 Ensure sustainable use/confirm State authority over ... diversions of Great Lakes waters.



SECOND PRIORITY

#2 Promote programs to protect human health against ... pollution in the Great Lakes ecosystem.



#4 Continue to reduce the introduction of persistent bioaccumulative toxins...



#5 Stop the introduction and spread of non-native aquatic invasive species.



#9 Adopt sustainable use practices that protect environmental resources... *



THIRD PRIORITY

#3 Control pollution from diffuse sources...



#9 Adopt sustainable use practices that protect environmental resources... *



4. For each priority, please identify:

- Some action items specific to Lake Michigan needed to address the issue.
- Which interest groups should be involved in implementing these action items (e.g., local government, businesses, industries, environmental organizations, schools, resource management agencies, etc.).
- Some measures of progress and success in satisfying the priority.

You don't need to respond to every priority; however, please do so for your top three priorities at minimum.

PRIORITY #1: Ensure the sustainable use of our water resources while confirming that the States retain authority over water use and diversions of Great Lakes waters.

1A. Specific actions needed

- ▶ Education programs/brochure required for all users of Lake water to know value of the lake and impact ie. in SDWA consumer reports, and information for shoreline owners.
- ▶ If people want water they should live inside the watershed. Great Lakes water should not leave its continental boundaries. Too much sprawl diminishes this resource. Tell the easterners that move west to learn to plant cactus.
- ▶ Retain strict control over diversions. Allowing water flows out of the basin only encourages uncontrolled development.
Encourage communities to use water more wisely. Frequent washing of cars or watering of lawns is a waste of water.

Proceedings – Wisconsin Lake Michigan Restoration Priorities Workshops

1B. Who should be involved?

- ▶ A unified front is needed by utilities, townships, cities, and research agencies to provide and present this information to the public.
- ▶ General education about water quality dynamics should become standard in our schools -- especially in middle and high school -- then every citizen should feel the need to participate in protecting our water resources at some level -- citizen action group should continue to grow and be more active.
- ▶ Laws should be passed in the US Congress and in the Canadian counterpart. Education at the grade school level is probably the best way to change people.
- ▶ US and Canadian Governors and the IJC.

1C. Some measures of progress/success

- ▶ Survey through health provider;
Survey through utility.
- ▶ This is important, but if you take care of the pollution problem, then you'll help yourself with the health problem.
- ▶ We need to be able to swim freely at all times in our lakes --if we can't we have a problem.

PRIORITY #2: Promote programs to protect human health against adverse effects of pollution in the Great Lakes ecosystem.

2A. Specific actions needed

- ▶ Education and advisories need to be continued to inform consumers of fish of the risks associated with consuming specific types of fish.
- ▶ Require that all development (inside the watershed) that would normally increase stormwater runoff be redesigned to maintain stormwater where it falls.

2B. Who should be involved?

- ▶ Local health departments to survey low income individuals on fish consumption
- ▶ Regional and local planners

2C. Some measures of progress/success

- ▶ Obtain statistics on people consuming fish and awareness of health problems

PRIORITY #3: Control pollution from diffuse sources into water, land and air.

3A. Specific actions needed

- ▶ A grass roots effort is needed to get legislative staff (both State & federal) to develop and vote for controls/rules to reduce sources of pollution - particularly [*sic*] when the sources of pollution is not normal and crossed State lines.
- ▶ Our air pollution and nonpoint source pollution laws need strengthening. We need to give people viable alternatives in terms of transportation and energy use. These alternatives must be non-polluting.

3B. Who should be involved?

- ▶ Business action teams should take the lead
- ▶ State, federal, and local individuals
- ▶ The Federal government;
Inventors and/or universities in collaboration with venture capitalists.

3C. Some measures of progress/success

- ▶ Pass guidance and laws to control contamination;
Educate people on process (cradle to grave pathways of contaminants) and alternatives to decrease contamination.
- ▶ Reduced toxics being released into the environment. Cleaner air and water. Fewer cars on the road.

PRIORITY #4: Continue to reduce the introduction of persistent bioaccumulative toxics into the Great Lakes ecosystem.

4A. Specific actions needed

- ▶ Continued education of people impacted by toxics and relative risks to other sources of toxics in their life.
- ▶ See number 3 [#3A-2] above.

Proceedings – Wisconsin Lake Michigan Restoration Priorities Workshops

4B. Who should be involved?

- ▶ Local health staff and research agencies.

4C. Some measures of progress/success

- ▶ Survey results of people impacted by toxics;
Brochure/online information.

PRIORITY #5: Stop the introduction and spread of non-native aquatic invasive species.

5A. Specific actions needed

- ▶ Hold the Army Corps of Engineers to their budgets to prevent invasive species from traveling.
- ▶ The dumping of ballast [*sic*] water in the Great Lakes needs to be better controlled.

5B. Who should be involved?

- ▶ Members of Congress representing the Great Lakes States and that gutless haircut currently in the oval office.
- ▶ State, federal, and international representatives.

5C. Some measures of progress/success

- ▶ Pass laws to regulate ballast water.

PRIORITY #6: Enhance fish and wildlife by restoring and protecting habitats and coastal wetlands.

6A. Specific actions needed

No Responses.

6B. Who should be involved?

No Responses.

6C. Some measures of progress/success

No Responses.

PRIORITY #7: Restore to environmental health the Areas of Concern (AOC) identified by the International Joint Commission as needing remediation.

7A. Specific actions needed

No Responses.

7B. Who should be involved?

No Responses.

7C. Some measures of progress/success

No Responses.

PRIORITY #8: Standardize and enhance the methods by which information is collected, recorded and shared within the region.

8A. Specific actions needed

- ▶ Continue to foster cooperation among [*sic*] interested parties

8B. Who should be involved?

- ▶ Universities should take the lead with citizen involvement

8C. Some measures of progress/success

- ▶ Identify successful [*sic*] projects utilizing teamwork among [*sic*] different agencies, States, and countries.

PRIORITY #9: Adopt sustainable use practices that protect environmental resources and may enhance the recreational and commercial value of our Great Lakes.

9A. Specific actions needed

- ▶ Share information among [*sic*] interested parties to identify good strategies for management of the Great Lakes.

Proceedings – Wisconsin Lake Michigan Restoration Priorities Workshops

9B. Who should be involved?

- ▶ All interested agencies in the Great Lakes region.

9C. Some measures of progress/success

- ▶ Development of laws and guidance to better manage the lake systems.

Do you wish to be notified when a copy of our report to the Great Lakes Commission is available?

Yes, please.



No, thank you.



No Response



Email Address:

4 responses [*withheld to protect anonymity*]

Fax (if you don't have an email address)

No Response

Additional Comments

None

Appendix H: ‘Summary and Conclusions’ from the Joint Workshop on Lake Superior Restoration and Protection Priorities

Held 12:30-5 p.m. Wednesday, June 30, 2004
Kirby Ballroom, University of Minnesota–Duluth
Co-Sponsored by the Minnesota and Wisconsin Sea Grant Programs

There appeared to be general acceptance of the Governors’ priorities, although the two priorities considered most important for the Lake Superior basin were:

- ♦ **Enhance fish and wildlife by restoring and protecting habitats and coastal wetlands.**
- ♦ **Adopt sustainable use practices that protect environmental resources and may enhance the recreational and commercial value of our Great Lakes.**

Although these priorities were ranked highest, they were closely followed by the priorities:

- ♦ **Stop the introduction and spread of non-native aquatic invasive species.**
- ♦ **Control pollution from diffuse sources into water, land, and air.**

Two very strong themes emerged during discussion of the Governors’ nine priorities. These include:

1. **Education and outreach should be stated explicitly in the priorities.**
2. **Lake Superior is unique relative to the other Great Lakes, in that there is still a great deal to protect as well as restore. Protection needs to be recognized as a priority for Lake Superior along with restoration.**

Some additional major themes drawn from the discussions involving the nine Council of Great Lakes Governors’ priorities are the following:

1. Ensure the sustainable use of our water resources while confirming that the States retain authority over water use and diversions of Great Lakes waters by first and foremost preserving the existing water supply.
2. Promote programs to protect human health against adverse effects of pollution in the Great Lakes ecosystem by continuing to support legislation to prevent contaminants from entering the water cycle and to work toward reducing the human health and environmental risks we have created.
3. Continue to reduce the introduction of persistent bio-accumulative toxics into the Great Lakes ecosystem by working toward the elimination of the need for fish advisories. Cleaning existing trouble spots is not going to solve the atmospheric pollution problem. Rather a more comprehensive federal atmospheric pollution policy that deals with persistent pollutants is necessary.
4. Control pollution from diffuse sources into water, land and air by emphasizing the importance of protection in addition to restoration as a goal. The issue of air pollution and mercury is also a problem that goes well beyond the borders of local communities, but needs to be addressed.
5. Efforts to stop the introduction and spread of non-native invasive species need to consider terrestrial as well as aquatic invasive species. Most importantly, a Great Lakes-wide coordinated management effort that prioritizes control and prevention should be in place.

Proceedings – Wisconsin Lake Michigan Restoration Priorities Workshops

6. Enhance fish and wildlife by restoring and protecting habitats and coastal wetlands by focusing on protection with a long term perspective. The Lake Superior basin has far more protection opportunities than the lower Great Lakes. There needs to be better planning and enforcement of local land use policies that will focus on long term watershed/ecosystem protection. Coordination of programs among jurisdictions is essential to success.
7. Restore to environmental health the Areas of Concern (AOC) identified by the International Joint Commission as needing remediation by accelerating movement toward delisting these areas. The criteria for delisting these sites are currently inadequate and should move toward a common methodology. There should be better monitoring and an effort to protect high quality habitats/areas within AOCs while protecting human health from exposure to toxicants.
8. Standardize and enhance the methods by which information is collected, recorded and shared within the region by coordinating efforts to collect and share information in accordance to a defined sampling, analysis, and reporting methodology. Methods also need to be developed for evaluating cumulative impacts as well as for detecting environmental changes.
9. Adopt sustainable use practices that protect environmental resources and may enhance the recreational and commercial value of our Great Lakes by first defining “sustainable use” and next providing for a comprehensive growth management strategy that protects the basin. The way we evaluate economics must include ecological considerations (e.g., re-define the Gross National Product to include the value of sustainability).

The Lake Superior basin has a strong base of committed public and private sector groups that are hoping to build a network throughout the Great Lakes basin to jointly support preservation of natural resources, restoration of degraded areas, better planning for future land uses, stronger enforcement of regulations, and a cohesive methodology for monitoring and assessing data that will support and improve the promotion of a more sustainable Great Lakes basin.

Appendix I: Lake Michigan Workshops Planning Committee

University of Wisconsin Sea Grant Institute

Anders Andren, Director

James Hurley, Assistant Director for Research and Outreach

Stephen Wittman, Communications Manager

Victoria Harris, Water Quality & Habitat Restoration Specialist, UW-Green Bay

James Lubner, Education Outreach Coordinator, UW-Milwaukee

Wisconsin Department of Natural Resources

Charles Ledin, Director, Office of the Great Lakes

Linda Talbot, Water Resources Specialist, Office of the Great Lakes

Wisconsin Department of Administration

Michael Friis, Manager, Wisconsin Coastal Management Program

Alberto Vargas, Intergovernmental Relations, Wisconsin Coastal Management Program

Appendix J: Constituent Group Representatives Receiving Special Invitations

(N = 400)

Great Lakes Forever (32 individuals)

Concerned Citizens of Newport (2)
Fox-Wolf Watershed Alliance
Friends of Milwaukee Rivers
Green Bay Metropolitan Sewerage District (2)
Groundwater Guardians
Milwaukee Community Service Corps
Milwaukee Metropolitan Sewerage District (2)
Ozaukee Co. Planning, Resources & Land Management Dept.
Pier Wisconsin (4)
Sierra Club-Midwest Office
The Nature Conservancy
Natural Resources Conservation Service, USDA
UW-Extension (2)
UW-Extension Environmental Resources Center
UW-Extension
UW-Stevens Point
UW-Stevens Point Center for Watershed Science & Education
Wisconsin Assn. of Lakes
Wisconsin Coastal Management Program (2)
Wisconsin River Alliance
Wisconsin Wetlands Assn.

Green Bay Science & Technical Advisory Committee (27)

Brown Co. Land Conservation Dept. (2)
Fox-Wolf Basin Alliance
Fox-Wolf Basin Alliance NPS Modeler
Green Bay Metropolitan Sewerage District (2)
Green Bay Press Gazette reporter
Industry consultant
Oneida Tribe
Oneida Tribe environmental planner
U.S. Army Corps of Engineers
U.S. Environmental Protection Agency Region 5
U.S. Fish & Wildlife Service biologist
U.S. Fish & Wildlife Service ecological services
U.S. Fish & Wildlife Service fisheries biologist
UW-Green Bay emeritus ecologist
UW-Green Bay emeritus limnologist
UW-Green Bay environmental policy researcher
UW-Green Bay limnologist
UW-Green Bay resources economist
UW-Green Bay soils scientist
UW-Green Bay statistician
UW Sea Grant water quality specialist

Wisconsin Dept. of Natural Resources Northeast Region water leader
Wisconsin Dept. of Natural Resources wastewater engineer
Wisconsin Dept. of Natural Resources water resources supervisor, Fox River Basin

Lake Michigan Fisheries Forum (80)

Bay de Noc Charters
Captain Bob Charter Fishing
Dumper Dan Charter Fishing
Green Bay Metropolitan Sewerage District
Haasch Services
Happi Hooker Charters
Hickey Brothers Fisheries
Kirsh Foundry
Lake Michigan Commercial Fishing Board
Reel Action Charters
Sea Dog Charters
Susie Q Fishing Charters
U.S. Fish & Wildlife Service (3)
UW Great Lakes WATER Institute
UW Sea Grant aquaculture specialist
UW Sea Grant education specialist
UW Sea Grant fisheries specialist
UW Sea Grant water quality specialist
UW-Milwaukee Aquaculture Institute
Waushara Charters
Wisconsin Dept. of Natural Resources (14)
Wisconsin Commercial Fisheries Board
Wisconsin Dept. Agriculture, Trade & Consumer Protection
Wisconsin Federation of Great Lakes Sport Fishing Clubs

Lakeshore Natural Resources Partnership (55)

Agricultural Heritage & Resources, Inc.
Bay-Lake Regional Planning Commission
Calumet Co. Land & Water Conservation Dept.
Centerville Cares
City of Algoma Mayor's Office
City of Manitowoc Engineering Dept.
Cofrin Center for Biodiversity
Door Co. Environmental Council
Door Co. Land Trust
Door Co. Land Use Forum
Friends of the Ahnapee Trail
GAT volunteer
Glacierland Resource Conservation & Development

Proceedings – Wisconsin Lake Michigan Restoration Priorities Workshops

U.S. Fish & Wildlife Service ecological services (3)
Historical & Environmental Learning Preserve
Institute for Rural America
Kewaunee Co. Land & Water Conservation Dept.
Manitowoc Co. Executive (2)
Manitowoc Co. Lakes Assn. (2)
Manitowoc Co. Soil & Water Conservation Dept.
Rural Land Legacy Committee
Sevastopol School
The Nature Conservancy
The Ridges Sanctuary
UW-Extension basin educator
UW-Extension community development educator, Door Co.
UW-Extension land use education specialist
UW-Extension Northeast NPM regional specialist
Wisconsin Dept. of Natural Resources drinking & groundwater specialist
Wisconsin Dept. of Natural Resources groundwater specialist
Wisconsin Dept. of Natural Resources wildlife biologist
Wisconsin Green Party
Woodland Dunes Nature Center

Lower Fox Basin Partnership Team (52)

1000 Islands Environmental Center
Appleton Dept. of Utilities
Baird Creek Parkway Foundation (2)
Bay-Lake Regional Planning Commission (2)
Brown Co. Conservation Alliance (2)
Brown Co. Homebuilders Assn.
Brown Co. Land Conservation Dept.
Brown Co. Planning Commission
Brown Co. Port & Solid Waste Dept.
Calumet Co. Land Conservation Dept.
East Central Regional Planning Commission (2)
Farm Bureau
Foth & Van Dyke
Fox/Wolf Rivers Environmental History Project
Fox-Wolf Watershed Alliance
Freelance outdoors writer
Friends of the Fox
Green Bay Area Chamber of Commerce
Green Bay Metropolitan Sewerage District
Kaukauna Electric Commission
Lower Fox Dischargers Assn.
Natural Resources Conservation Service, USDA
Northeast Wisconsin Woodland Owners Assn.
Oneida Tribe of Indians (5)
Outagamie Co. Land Conservation Dept.
Outagamie Co. Zoning
U.S. Fish & Wildlife Service (2)
UW Sea Grant water quality specialist
UW-Extension
UW-Green Bay

Wisconsin Dept. of Natural Resources (11)
Winnebago Land & Water Conservation Dept.

Milwaukee River Basin Partnership Team (54)

16th Street Community Health Center, Milwaukee
Audubon Society
Big Cedar Lake Property Owners Assn.
Bureau of Land Management, U.S. Dept. of the Interior
Citizens for a Better Environment
City of Cedarburg
City of Glendale
City of Mequon
City of Milwaukee
City of West Bend
Conrad Technologies
Dittmar Realty, Inc.
Federation of Environmental Technologists
Fire Ridge Golf Course
Friends of Milwaukee's Rivers
Greater Milwaukee Convention & Visitor Bureau
Growing Power
Keep Greater Milwaukee Beautiful, Inc.
Mayes -Wilson Associates
Menomonee Valley Partners
Metropolitan Assn. of Realtors, Milwaukee
Metropolitan Builders Assn. (2)
Milwaukee Co. Parks, Recreation & Culture Dept.
Milwaukee Community Service Corps
Milwaukee Metropolitan Sewerage District
Milwaukee Urban Garden
National Park Service, Milwaukee
Natural Resources Conservation Service, USDA
Ozaukee Co. Farm Bureau
Ozaukee Co. Land Conservation Committee
Ozaukee Co. Planning, Resources & Land Management Dept. (2)
Ozaukee Washington Land Trust
Pier Wisconsin (3)
River Revitalization Foundation
Riveredge Nature Center
Sierra Club-Great Waters Group
Southeast Wisconsin Regional Planning Commission
Urban Ecology Center
Urban Open Space Foundation
UW -Extension Basin Education Program
UW-Milwaukee Saukville Field Station
Walleyes for Tomorrow
Washington Co. Land Conservation Commission
Wisconsin Dept. of Natural Resources Southeast Region (2)
Wisconsin Electric (WE) Energies
Wisconsin Wastewater Operators Assn.
Wisconsin Woodland Owners Assn.

Proceedings – Wisconsin Lake Michigan Restoration Priorities Workshops

Sheboygan River Basin Partnership Team (26)

Alpha Terra Science, Inc. (2)
Earth Tech (2)
Maywood Environmental Park
Natural Resources Conservation Service, USDA (3)
Northern Environmental (2)
Sheboygan Co. Conservation Assn.
Sheboygan Co. Land Conservation Dept.
Sheboygan Co. Planning Resource Dept. (4)
Sierra Club
UW Extension Sheboygan River basin educator (3)
Wisconsin Dept. of Natural Resources Milwaukee & Sheboygan River Basins land leader
Wisconsin Dept. of Natural Resources Sheboygan water leader
Wisconsin Dept. of Natural Resources South Sheboygan water team leader
Wisconsin Dept. of Natural Resources Southeast Region land leader

WDNR's Urban Growth Boundary list (27)

Audubon Society
Bay-Lake Regional Planning Commission
Citizens at large (4)
District Con. NRCS
Marinette Co. Forestry (2)
Marinette Co. Land & Water Conservation Dept.
Marinette Co. UW-Extension
Oconto Co. Lakes Assn.
Oconto Co. Land Conservation Dept.
Oconto Co. Natural Resources Conservation Service, USDA
Oconto Co. UW-Extension (2)
Regional Real Estate Specialist
Snowmobile Club
Trout Unlimited (2)
U.S. Fish & Wildlife Service
U.S. Fish & Wildlife Service
UW-Extension
UW-Marquette
Wisconsin Dept. of Natural Resources (2)
Wisconsin Dept. of Natural Resources forester
Wisconsin Coastal Management Program

Special Advisory Invitations (47)

Office of Green Bay Mayor Schmitt
Office of Milwaukee Acting Mayor Pratt
State Rep. Bies, Sister Bay
State Rep. Colon, Milwaukee
State Rep. Cullen, Milwaukee
State Rep. Gard, Peshtigo
State Rep. Gottlieb, Port Washington
State Rep. Honadel, South Milwaukee
State Rep. Jensen, Waukesha
State Rep. Krawczyk, Green Bay
State Rep. Kreuser, Kenosha

State Rep. Krug, Milwaukee
State Rep. Krusick, Milwaukee
State Rep. Ladwig, Racine
State Rep. Lasee, Green Bay
State Rep. Lehman, Racine
State Rep. Montgomery, Green Bay
State Rep. Morris, Milwaukee
State Rep. Nischke, Waukesha
State Rep. Richards, Milwaukee
State Rep. Sinicki, Milwaukee
State Rep. Taylor, Milwaukee
State Rep. Turner, Racine
State Rep. Van Akkeren, Sheboygan
State Rep. Van Roy, Green Bay
State Rep. Wasserman, Milwaukee
State Rep. Weber, Green Bay
State Rep. Williams, Milwaukee
State Rep. Young, Milwaukee
State Rep. Zepnick, Milwaukee
State Rep. Ziegelbauer, Manitowoc
State Sen. Carpenter, Milwaukee
State Sen. Coggs, Milwaukee
State Sen. Cowles, Green Bay
State Sen. Dave Zien, Eau Claire
State Sen. Hansen, Green Bay
State Sen. Kedzie, Elkhorn
State Sen. Leibham, Sheboygan
State Sen. Moore, Milwaukee
State Sen. Plale, South Milwaukee
U.S. Rep. Green
U.S. Rep. Kleczka
U.S. Rep. Petri
U.S. Rep. Ryan
U.S. Rep. Sensenbrenner
U.S. Sen. Feingold
U.S. Sen. Kohl

General Announcements Published & Posted

Great Lakes Commission website
Great Lakes Information Network "Announce" email list (939)
Lake-Link.com *News* website
Salmon Unlimited *Hook 'n Line* newsletter
Salmon Unlimited-Wisconsin newsletter
The Journal Times, Racine
The Milwaukee Journal Sentinel
UW Sea Grant Institute website
UW Sea Grant *Littoral Drift* newsletter (~1,000)
UW-Green Bay Log newsletter for faculty & staff
Wisconsin Dept. of Natural Resources *WDNR News* website
Wisconsin Coastal Management Program website

For further information:



2805 S. Industrial Hwy., Suite 100
Ann Arbor, MI 48104

www.glc.org

February 2005