



International  
Joint  
Commission

Commission  
mixte  
internationale

June 29, 2000

## Open Letter to Great Lakes Leaders and the Great Lakes Community

In 1978, the United States and Canadian governments made an historic commitment to restoring the water quality of the Great Lakes. The Great Lakes Water Quality Agreement calls for the restoration and maintenance of the integrity of the waters of the Great Lakes basin ecosystem.

The power of the vision captured in the Agreement has not been reflected in the two governments' implementation efforts. Although progress has been made, Governments have not committed adequate funding or taken the decisive actions required to restore and protect the Great Lakes. Much more must be done to ensure that citizens of both countries can safely swim in and drink water and eat fish from the Great Lakes.

The integrity of the Great Lakes ecosystem has been and continues to be compromised. Contaminated sediments in the lakes produce health problems. Although point-source emissions of toxic substances within the Great Lakes basin have been reduced in some measure, significant amounts of these contaminants are reaching the lakes through the air from places within and far beyond the basin.

Drinking water must be extensively treated. Swimming must often be prohibited and beaches closed. Fish in the Great Lakes are contaminated with persistent toxic substances, including mercury and PCBs. These fish pose a threat to the health of those who eat them and to their unborn children.

Increasing urbanization is adversely affecting water quality. As a result of human activities, alien invasive species are entering the lakes and causing billions of dollars in damages and massive aquatic ecosystem disruption.

Moreover, the public lacks the information to identify sources of contamination, or judge the adequacy of remedial and preventive programs. These problems are not new. Indeed, the Commission and the governments have been aware of many of them for almost a quarter century.

Now is the time for the governments to act to fulfill the terms and spirit of the Agreement, and to take coordinated action in the key areas of human health, general ecosystem health, and accountability. Without such action, which requires the provision of adequate resources for Great Lakes Water Quality Agreement programs, there can be little hope of fully restoring and protecting the Great Lakes.

## **Contaminated Sediment**

The major issue in many of the 42 toxic hot spots in the Great Lakes basin is how to clean up sediments that contain persistent toxic substances. These sediments pose a continuing threat to human health, to the ecosystems of Areas of Concern, and to the Great Lakes ecosystem generally. The Commission believes that actions required for dealing with contaminated sediment in Great Lake communities are proceeding far too slowly due to inadequate funding.

Governments must jointly and publicly commit themselves to a long-term clean-up strategy that projects costs and time frames to achieve the restoration of beneficial uses in Areas of Concern and open-lake waters. Governments must lead by allocating the large amounts of money and other resources that are needed to carry out difficult but essential remedial actions.

## **Contaminated Sport Fish**

Sport fish consumption advisories continue to vary from jurisdiction to jurisdiction and are often difficult to understand. Eating contaminated Great Lakes sport fish is one of the main routes by which humans in the basin are exposed to persistent toxic substances which can cause birth anomalies and other serious health problems. There is strong evidence that pregnant women who eat certain sport fish may have babies who are delayed in their neurological development. The threat tends to affect the most vulnerable in society, those who rely on diets of Great Lakes sport fish and those who do not have access to information about the risks of eating these fish. People must be advised which fish should be totally avoided in the light of the precautionary approach. They must also be advised about how to prepare any fish that may be consumed.

## **Airborne Toxic Pollutants**

Progress has been made in the Great Lakes basin in reducing emissions of persistent toxic substances. Nevertheless, these substances, which threaten the health of the ecosystem, including human health, continue to reach the Great Lakes through the air, coming from well beyond the Great Lakes basin. Without addressing the air transport of persistent toxics, the clean-up of sediments may never be fully achieved. It is now possible, with an atmospheric computer model and adequate emissions data, to link specific distant sources of an airborne pollutant to its deposition in a particular Great Lake. Adoption of this methodology can enable governments to

design control measures to reduce atmospheric deposition of toxic substances to the Great Lakes. These airborne sources should be considered in determining the total pollution load of each lake, in developing lakewide management plans, and in implementing the Great Lakes Binational Toxics Strategy.

## **Urbanization**

Land use in the Great Lakes basin has changed significantly over the past twenty years. In particular, urbanization, which has far-reaching water quality implications, is accelerating rapidly. The impervious surfaces of cities, towns and suburbs increase runoff, which can introduce nutrients, pathogens, sediment, industrial chemicals, and pesticides into waterways. This increased runoff can also exacerbate erosion and the risk of flooding, and pose threats to groundwater. Moreover, urbanization often destroys habitats for fish and wildlife. Although measures have been taken to address these problems in specific locations, governments have not given adequate attention to addressing the general phenomenon of urbanization in the Great Lakes basin.

All levels of government have a role in watershed management and associated land use. Local authorities on their own are not able to approach the issue from the necessary basin-wide perspective. In the light of the accelerating pace at which land in the basin is being turned over to urban and residential use, there is an urgent need for provincial and state governments, with support from the federal governments, to critically reassess the effects of land uses on Great Lakes water quality, and to determine whether responsive measures are required. There is also a clear need to target some of the most ecologically important areas for long-term monitoring and scientific studies. In addition, Great Lakes communities must work to identify and protect critical areas for conservation and public use. Because it is easier to manage development rather than remedy its negative effects, governments should act before the situation deteriorates further.

## **Alien Invasive Species**

Invasions of alien species are irreversible and can disrupt ecosystem integrity. As zebra mussels have shown, when alien invasive species are introduced into the Great Lakes, they can upset the balance of the natural ecosystem, threaten native species, and require the expenditure of many millions of dollars in control and management costs. These invasions are estimated to cause billions of dollars in damages. Alien invasive species may survive in residual sediment in the ballast tanks of vessels and may be flushed into the Great Lakes when such a vessel subsequently takes on and discharges ballast water into the Great Lakes. Alien invasive species may also be introduced when ships, which have transited the St. Lawrence Seaway, discharge their ballast water into the Great Lakes. Other sources of alien invasive species are the baitfish and aquarium trades, and aquaculture has the potential to become one. These also need to be addressed.

There are no easy solutions to the challenge of preventing further introductions of alien invasive species. Existing regulations and guidelines that call for ballast exchange are inadequate to protect the lakes, and exchanging ballast water at sea may put vessels and crews at risk. The Commission continues to believe that there is an immediate need for a clearly defined and coordinated binational research and development program, and for the development of appropriate binational ballast water discharge standards.

## **Monitoring and Information Management**

Without data and information from a full range of sustained and consistent environmental monitoring and surveillance programs, the governments, the public and the Commission are not in a position to identify issues that threaten human and ecosystem health, to choose effective solutions, and to assess whether progress is being achieved. The governments are not undertaking these programs and the Commission cannot fill this gap. With the cuts made to monitoring and surveillance programs in recent years, we are proceeding blind. Even where information is available, public access is sometimes restricted by confidentiality requirements and cost-recovery policies.

**In the light of the foregoing, the Commission makes the following recommendations which are among those set out in greater detail in the Commission's Tenth Biennial Report.**

## **Human Health**

- Federal, provincial, and state governments should immediately develop a comprehensive binational sediment remediation program, setting priorities and timetables and providing the resources for completion of the program in each Area of Concern.
- The federal governments should identify both in-basin and out-of-basin sources of atmospheric deposition of persistent toxic substances, and use this information to formulate and implement appropriate prevention and control measures. The Great Lakes Binational Toxics Strategy must be strengthened to address fully the treatment of airborne toxic substances.
- Provincial and state governments should require that sport fish consumption advisories state plainly that eating Great Lakes sport fish may lead to birth anomalies and other serious health problems for children and women of child-bearing age. These advisories should be addressed and distributed directly to women, in addition to their general distribution. Consumption advisories should clearly identify fish which, in the light of the precautionary approach, should be totally avoided in the light of the precautionary approach.

## General Ecosystem Health

- Federal, provincial and state governments should provide for a binational study of the effects of changes in land use on Great Lakes water quality to determine the measures that should be taken by governments at all levels to control pollution from increasing urbanization and other changes.
- The federal governments should adopt and implement a binational ballast water research strategy and plan, and give a Reference to the Commission to develop binational standards for discharges of ballast water and residual sediments, and the most appropriate methods for implementing those standards.

## Accountability

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

The foregoing proposals are made in coordination with the detailed findings and complete recommendations of the International Joint Commission's Tenth Biennial Report. The full report outlines important steps towards re-launching progress in the implementation of the Agreement.

It is clear that unless the United States and Canadian governments take the actions the Commission now recommends, they will fail to achieve the purpose they set for themselves in 1978: "to restore and maintain the chemical, physical, and biological integrity of the waters of the Great Lakes Basin Ecosystem."

Every delay in achieving this purpose carries a price. With time the price will grow heavier, and the line between delay and outright failure will be stretched thinner. Governments need to show a new sense of urgency and a commitment to action in restoring and protecting the Great Lakes. They must demonstrate this commitment by immediately taking steps to provide the financial and personnel resources to implement the Great Lakes Water Quality Agreement.



---

L. H. Legault  
Canadian Chairman



---

Thomas L. Baldini  
United States Chairman



---

C. Francis Murphy  
Commissioner



---

Susan B. Bayh  
Commissioner



---

Robert Gourd  
Commissioner



---

Alice Chamberlin  
Commissioner

# Tenth Biennial Report

**Under the Great Lakes Water Quality Agreement of 1978  
to the Governments of the United States and Canada and the  
State and Provincial Governments of the Great Lakes Basin**

International Joint Commission, July 2000

Tenth Biennial Report on Great Lakes Water Quality

ISBN 1-894280-20-2

Photo Credits

Front Cover      Inset Photo by Arnold Ehram, Sandusky, Ohio  
Background Photo (detail) by Jeffery Foltice

Back Cover, and Chapter Pages © John and Ann Mahan



# 10th Biennial Report on Great Lakes Water Quality

## Table of Contents

Chapter 1	INTRODUCTION	1
Chapter 2	RAPS AND LAMPS	3
2.1	Annex 2 - Remedial Action Plans and Lakewide Management Plans (RAPs and LaMPs)	3
2.2	The Four Agency Framework	6
2.3	Lake Superior: Zero Discharge Demonstration Program	8
Chapter 3	PERSISTENT TOXIC SUBSTANCES	11
3.1	Annex 12 - Persistent Toxic Substances	11
3.2	Annex 14 - Contaminated Sediment	17
3.3	Annex 15 - Airborne Toxic Substances	21
3.4	The Great Lakes Binational Toxics Strategy	24
Chapter 4	LAND USE	29
4.1	Annex 13 - Pollution from Nonpoint Sources	29
Chapter 5	COAST GUARD ANNEXES	33
5.1	Annexes 4, 5, 6, 8 and 9	33
5.2	Alien Invasive Species (AIS)	34
Chapter 6	INFORMATION AND DATA MANAGEMENT	39
6.1	Annex 11 - Surveillance and Monitoring	40
6.2	Data Management	43
6.3	Information Management	45
Chapter 7	INDICATORS AND SOLEC	45

Chapter 8	OTHER ISSUES	47
8.1	Issues Raised by the Public	47
8.2	Involvement of Local Governments	48
8.3	Response of Governments to Commission Recommendations	48
CONCLUSIONS AND RECOMMENDATIONS		49
SIGNATURE PAGE		54
APPENDIX A	1997-1999 PUBLIC CONSULTATION ACTIVITIES, WORKSHOPS AND REPORTS ISSUED WITH RESPECT TO GREAT LAKES WATER QUALITY	55
APPENDIX B	STUDIES ON FINDINGS IN HUMAN POPULATIONS	61
APPENDIX C	BIBLIOGRAPHY	63