

# Water Use and Ecosystem Restoration

## An Agenda for the Great Lakes and St. Lawrence River Basin

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### Summary

Water defines the world for people who live in the Great Lakes and St. Lawrence River basin.

Water is the economic, recreational, and spiritual basis of human society here. Water is the foundation of the region's fish, plant, and wildlife communities.

But the basin water system is in danger. Climate change, diversion and export proposals, and industrial, agricultural, and municipal misuse all threaten the source of our culture, our well-being, and the well-being of the living things around us.

Fortunately, news of threats to the lakes has galvanized both public opinion and government interest in better protecting the region's waters. Basin political leaders have begun to act. The U.S. and Canadian federal governments asked the International Joint Commission to write a comprehensive report on protecting Great Lakes waters, which was delivered in March 2000. Ontario, Québec, and Minnesota are developing strategies for managing water use. The Great Lakes provinces and states have been meeting and will soon put forward a collective plan to reform basin water use practices.

The public has a crucial role to play in this process: We must insist that new solutions for sustaining water for future generations *fully* protect *and* restore the already heavily damaged basin water system. To do this, reform projects must address *all* the many changes people cause in the natural state of water, from exporting it for drinking to draining wetlands for development and damming streams for electricity.

This document recommends a comprehensive set of reforms based on specific environmental protection and restoration objectives. These recommendations—environmental “must haves” for any reform project to succeed—can distinguish proposed approaches that lead to sustainable use of Great Lakes waters from those that push the region further down the spiral of non-sustainable water use.

In brief, these recommendations are:

1. The federal, tribal, state and provincial governments should place a moratorium on new or increased water uses, diversions, and other changes to the Great Lakes and St. Lawrence River water system, until a comprehensive conservation and ecosystem restoration strategy has been developed and implemented in legislation and permitting
2. The goal of the strategy must be to protect *and* affirmatively restore the basin water system, not just fend off additional harm

13. The effects of all approved water uses must be monitored for periodic evaluation of the uses against the standard and strategy, and to inform future water use decisions. This monitoring information should be included in the binational water information base
14. Water use approvals must be rescindable if evidence later arises that they are no longer, or never were, consistent with the strategy and standard
15. Every individual's right to water for basic human needs—drinking, cooking, and bathing—must be guaranteed

## **Introduction**

In the Great Lakes region and throughout the globe, the quantity and movement of available water have fundamental impacts on the well-being of plant, fish, wildlife and human communities. When the amount and movement of water in a region is altered, the life that depends on that water is changed, sometimes in ways that threaten its very existence.

Although the Great Lakes and the St. Lawrence River seem vast and powerful, they are in delicate balance with the climate and watersheds that support them. Unfortunately, both climate and watershed functioning are undergoing significant alteration by human beings, with much more such alteration to come if the region does not reform its water use system.

Increasingly reliable projections of climate change effects on the Great Lakes indicate a possible two-foot drop in average water levels within thirty years. U.S. national population and economic trends point to long-term water shortages in the South and Southwest. With 20 percent of the world's fresh water and 95 percent of North America's fresh water, in the long term the Great Lakes region is a predictable target for slaking continental and global thirsts.

The unceasing rise in world population and per-capita water consumption poses serious threats to both the human and nonhuman life that depends on fresh water. By 2025, up to two-thirds of the world's population will face water shortages and several observers have predicted that water will be a major factor in international politics by mid-century. Waters the world over are already being diverted, exported and shipped to thirsty areas, sometimes with disastrous consequences for local ecologies and people. A large world commercial water market could be realized soon. A company is shipping water out of Norway by towing it in large fabric bags across the ocean to Cyprus. A Canadian company wishes to export water from a Newfoundland lake to the Middle East by tanker. Another Canadian company is nearing completion of plans to ship Alaskan water to China. In October 1999 the Sunbelt Corporation of California filed a \$10.5 billion claim under the North American Free Trade Agreement over a failed plan to ship water from British Columbia to California.

### **Trade in water**

In 1998 an obscure private company sought, and the province of Ontario granted and then cancelled, a permit to export Lake Superior water to Asia. The abortive proposal was never financially viable, but it pointed up a trend: private water markets may eventually play a role in future water politics. Water services companies have grown rapidly in the last five years, raising large amounts of capital, acquiring firms in related industries, merging into powerful conglomerates and attaining multinational status. International trade agreements created or updated during the 1990s will facilitate the growth of world trade in water, because they define water as a commodity, may apply to water in

- Basin agriculture, whose practices lose 70 percent or more of irrigation water to evaporation
- Companies that envision selling water or facilitating the movement of water from the Great Lakes and St. Lawrence River basin to the Mississippi River basin, the south and southwestern United States, and the Middle East
- Severe water shortages in other parts of the continent and the world, which in the long term may result not only in export schemes but also in an influx of people and industry to the region because of its abundant water supplies. Unless substantial changes are made in the way basin communities control development, this population shift will result in substantially increased stresses on basin waters

### **What needs to be done**

We do not have adequate regional mechanisms to prevent and correct the problems caused by these activities. Basin jurisdictional coordination is inadequate and decisions are made without taking into account their cumulative and long-term impact on all basin life. Our actions are not guided by an overarching strategy or plan. We do not have an understanding and ethic that recognises the value of conserving and restoring the waters of the Great Lakes and St. Lawrence River basin.

In its February 2000 report, *Protecting the Water of the Great Lakes*, the International Joint Commission notes that basin governments “should develop, with full public involvement and in an open process, the standards and the procedures” for considering water removals from the basin and major new or increased consumptive uses within the basin. The commission also says that the governments “should not authorize or permit any new removals and should exercise caution with respect to major new or increased consumptive use until such standards have been promulgated.”

### **Our Purpose**

The current state of the waters of the Great Lakes and the St. Lawrence River basin is alarming. The lowest continuing water levels in thirty years, ongoing wasteful water use, and harmful alterations to natural flows all point to the need for a more effective regime to guide human water activities.

The purpose of this paper is to outline guiding principles for such a regime, and to help develop criteria for making decisions that could affect water quantity and movement. Our hope is that from this paper, and from discussions with U.S. and Canadian policy-makers addressing this challenge, our region will create a framework for protecting and restoring the waters for the benefit of people, plants, fish, wildlife, unique eco-communities and the ecosystem as a whole for generations to come. We see this as an opportunity to:

- Protect the Great Lakes and St. Lawrence River ecosystem from further disruption
- Improve water use so that natural flows in the Great Lakes and St. Lawrence River basin are restored

Based on these imperatives, it is clear that no form of human use or alteration of the natural water system should go unexamined. Therefore the principles and criteria we propose should be applied to:

- Both surface and ground waters
- All human activities that use, or change the movement of, the waters in the Great Lakes and St. Lawrence River basin

Decisions about proposals to remove water or alter its flow should be made in accordance with their scale. For example, the acceptability of a proposed use of water from a small stream should be judged according to the impact the use would have on that stream's watershed.

To implement the principle of living within the means of one's watershed, governments should prohibit non-natural transfers of water between watersheds. In those cases where non-natural interbasin transfers of water now occur, governments should phase out those transfers.

### **B. The precautionary principle should guide water use decisions and actions**

A new management approach must recognize that our understanding of the complexity of the Great Lakes and St. Lawrence River ecosystem is limited and will undoubtedly evolve. Proposed water use and water system alterations will inevitably have unknown impacts. Therefore we should use the precautionary principle—in the absence of certain knowledge, we should have a strong bias toward protection.

The assumption of the precautionary principle in water use management is that all water is used many times by living things in the ecosystem. Even if not readily apparent, using water or altering the water system will most likely harm some living thing. A precautionary approach implies a number of water management policies:

- No alteration of the basin water system should take place unless it is reversible. This means that we must ask ourselves: Can we repair any damage and return to previous conditions if we later discover that an action has unpredicted consequences?
- Any water use must be interruptible. That is, all permitting decisions must be renewed periodically. No permits should be permanent, and if new evidence of ecosystem damage comes to light, it must be possible to immediately reduce or end permitted water uses
- Water-use and alteration actions should be approved only on the basis of "reverse onus": those wishing to take an action should be required to provide information to the public and decision-makers upon which to evaluate its impact. This information should include assessments of potential harm to the ecosystem and how the action can be reversed if unexpected damage occurs
- Cumulative effects of water uses and changes in the water system should be assessed and be the basis upon which decisions are made
- The bias in decision-making should be toward leaving water in the ecosystem in an undisturbed condition, and taking care of human needs by increased conservation, efficiency and other means

### **C. Restoration and protection of the ecosystem must be the outcome of a basinwide water use management strategy**

Any strategy decided on by the state, provincial and tribal governments for managing basin water use must provide specific binational protection and restoration goals for the Great Lakes and St. Lawrence River water system. The strategy must embody a commitment to the public and include the means for meeting these goals.

Permitted alterations of the water system's flow or quantity must be consistent with the strategy. They should be approved only if they protect or restore the integrity of the watershed in which they are proposed. A definition of integrity should include the system's natural functions, such as aquifer

- Metering and full-cost pricing should be a priority for all sectors, but no one should be denied access to water for the basic human needs of drinking, cooking, and bathing
- Users who profit from consumptive uses of water or alteration of the water system should be charged a fee for the privilege. These fees should never establish a legal right to alter the system or maintain an alteration of the system. These funds should be invested exclusively in water management activities, such as monitoring, restoration, enforcement, data collection, and research
- Governments should ensure that public and local control is maintained over water provision and treatment systems
- All basin states, provinces, tribes and municipalities should develop drought policies that prioritize uses and practices in times of water shortage
- Humanitarian aid to water-short regions of the earth should not be provided in the form of physical water, but in the form of technology, professional expertise, and conservation planning assistance such as reforestation and other local water protection techniques
- Canada and the United States should fund extensive research into desalination technology, and should assist in the establishment of an economically viable world desalination industry.

**F. All decisions must be made in a way that is open and accessible to the public**

How and by whom decisions are made about using water or altering the water system are critical to proper management of the Great Lakes and St. Lawrence River ecosystem.

The full range of water-related decision-making processes must be open and subject to challenge by citizens. Such decisions include the development of strategies, policies, and standards as well as specific proposals to use water or alter the water system.

All basin citizens and users of the system, including those who speak for fish and wildlife, should be notified of all water-related decision-making plans, and have their views solicited and incorporated into final decisions. The permitting process must allow citizens to appeal decisions and sue to alter or reverse a permit decision after the fact if the permitted activity is inconsistent with government ecosystem protection standards or causes unanticipated damage.

**G. All levels of basin government must participate and work cooperatively in developing and implementing water use strategies and standards**

Since the Great Lakes and St. Lawrence River basin is one ecosystem, it is essential that all levels of the region's government work in cooperation. Water use management strategy, standards, information-gathering, and research should be conceived and carried out either collectively or cooperatively.

Given their disparate jurisdictions and resources, the different levels of government should take the lead in different aspects of basin water use management.