

THE EBBS AND FLOWS OF THE WATERS OF THE GREAT LAKES

A BRIEF HISTORY OF WATER MANAGEMENT IN THE GREAT LAKES

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The Ebbs and Flows of the Waters of the Great Lakes: a History of Water Management in the Great Lakes

14,000-9,000 years ago

The glaciers of the last ice age retreat from what is now the Great Lakes basin. The water they deposited makes up 99% of the volume of the Great Lakes. The other 1% of the water about 75 centimeters (30 Inches) is renewable.

8,000-9,000 years ago

The region is settled by humans, who followed the retreating glaciers. The water level of the lakes is about 100 meters higher than now.

In the period before contact with Europeans in the 1600s the aboriginal population of the Great Lakes basin is between 60,000 and 117,000.

1825

The Erie Canal opens, linking Lake Erie at Buffalo with Troy on the Hudson River nearly 600 km away, and allow a connection to the Atlantic Ocean. This is the first significant canal allowing direct water access past natural barriers of the Lachine Rapids and Niagara Falls.

1829

The Welland Canal opens, allowing ships to bypass the natural barrier of Niagara Falls, more than 50 metres high. Three more canal projects were to deepen and widen the passage, allowing both ocean-going boats and non-native species such as the sea lamprey to reach the upper lakes.

1848

The Illinois and Michigan ship canal is built at Chicago to enable boats to sail between the Great Lakes and the Illinois River, which connects to the Mississippi. This becomes known as the Chicago Diversion.

1891

A typhoid epidemic in Chicago caused by contaminated water leads to a move to deepen the canal to carry wastes away from the drinking water intake.

The Great Lakes population reaches 11.5 million.

The Chicago Diversion is enlarged and renamed the Chicago Sanitary and Ship Canal. The canal is deepened to the point that it reverses flow of the Chicago River from Lake Michigan and water pours out of the lake to reach the Des Plaines, Illinois and Mississippi rivers and eventually the Gulf of Mexico. It allows more ship traffic, and it flushes Chicago's sewage down the river and away from Lake Michigan, its source of drinking water. This leads to a long-running dispute over how much water should flow through the canal.

1909

The United States and Great Britain on behalf of Canada, sign the *Boundary Waters Treaty* a historic agreement on the sharing of common waters, aimed at eliminating disputes. The agreement contains a prescient clause: "Boundary waters and waters flowing across the boundary shall not be polluted on either side to the injury of health or property on the other."

The agreement creates a six-member International Joint Commission (IJC) with three members each appointed by the U.S. president and Canada's Prime Minister. The first commission is named in 1911, and starts meetings early in 1912.

1913

The IJC issues its first approval for a "control structure" above the St. Mary's rapids to allow a power dam to be built down stream. This is the first of several other control structures in the Great Lakes. Others at the outflow of Lake Ontario, and on the Niagara allow for power generation. Boards of Control were established to ensure that the control of flows through these structures satisfies the interests of power generators, the navigational interests, the desires of communities living up stream and downstream and to sustain fish and aquatic life.

1918

The first report on Great Lakes water quality is issued by the International Joint Commission on the Pollution of Boundary Waters Reference. The report states that the "...situation along the frontier is generally chaotic, everywhere perilous and in some cases, disgraceful."

1925

The U.S. Government challenges the right of Chicago to divert Lake Michigan water without consulting its neighbors. The other Great Lake states, with support from Canada, allege potential economic losses in a series of subsequent lawsuits. The suits lead to U.S. Supreme Court decrees in 1930 and 1967, with an amendment in 1980. The court allows the diversion to continue, but cuts its flow from a high of 280 cubic meters per second down to 90.

1941-43

The Long Lac and Ogoki diversions, completed in 1941 and 1943 respectively, divert water **into** Lake Superior that would naturally have flowed into James bay and on into Hudson's Bay. The combined average daily flow of these diversions is 13,468 mld (3,620 mgd). These diversions into the Great Lakes are almost 75 percent greater than all of the diversions out of the Great Lakes in 1997.

1950

The US and Canada sign a treaty concerning a diversion of waters from the Niagara River through the power plants on the river. The Seaway also opened up the invasion of species like eels and zebra mussels from bilge waters of these ships destroying fisheries and costing billions to the economy of the region.

1952

Canada and the United States sign an agreement to start the St. Lawrence Seaway project, which will open up the lakes to ocean ships.

1970s

Great Lakes water levels become a major issue late in the decade, as they reach the highest point in the century. This causes extensive flooding and damage to homes and buildings constructed during lower water levels. There are calls for governments to control the lakes, but an IJC study says that major controls are impractical.

Larger Great Lakes diversion schemes like the GRAND (Great Recycling and Northern Development) Canal and the NAWAPA schemes were hatched promoting huge engineering schemes to move water from the North through the Great Lakes to the west and south west. New York City officials discussed turning to the Great Lakes for future water.

1985

Concerns about the possibility of water diversions from the Great Lakes to dry southern parts of the United States prompt the eight Great Lakes states, Minnesota, Michigan, Wisconsin, Illinois, Ohio, New York, Pennsylvania and Indiana, along with Ontario and Quebec, to sign an anti-diversions agreement

called the Great Lakes Charter. Great Lakes United (GLU) is formed and co-ordinates efforts to have the Charter strengthened.

A senior Toronto alderman proposes a drinking water pipeline from Georgian Bay, 180 km away. This is one of a number of proposed or actual pipelines used to bypass contaminated areas of the Great Lakes. Environmentalists and power generators raise concerns about these intrabasin diversions.

Canada's federal water policy report is released.

1986

Lowell, Indiana a community five miles outside of the Great Lakes seeks to divert water to replace its fluoride contaminated groundwater supply of drinking water. Quebec, Ontario and Michigan object and GLU coordinates opposition and Michigan uses its *Water Resources Development Act* veto to oppose the diversion.

1988

A severe drought affects the U.S. mid-west, and the Mississippi River drops to its lowest recorded levels. The Illinois governor calls for the Chicago diversion to be further opened to draw more water Great Lakes, via Chicago on an emergency basis. This provokes strong opposition around the lakes.

Free Trade Agreement negotiations begin in North America.

1991-92

The City of Kenosha built a water line from Lake Michigan to an area slated for new development. Rather than return the water withdrawn to the Great Lakes they released their wastewater to Pleasant Prairie's wastewater system that flowed into the Mississippi. Great Lakes United and Lake Michigan Federation protested that this was a diversion. Public pressure led to Wisconsin forcing Kenosha to disconnect and return their water to the Great Lakes.

1993

GLU, CELA and the Institute for Agriculture and Trade publish *NAFTA and the Great Lakes: a preliminary Study of Environmental Implications*. This is one of the first reports raising environmental concerns about trade.

1995

The summer of 1995 brought record high temperatures and a rash of extreme weather events to North America that did away with the skepticism about climate change. Governments began to take scientists predictions for its impacts on the Great Lakes seriously. These included drops in Lake levels, changes in vegetation, increased forest fires, new diseases in the north, species disruption in the region impacts on all sectors of the economy dependent on Great Lakes water.

1996

Akron, Ohio proposes to divert 13 to 19 mld per day to growing suburbs outside its city limits and just over the boundary of the Great Lakes Basin. The City proposes no net loss from this diversion because they agree to return water to the Basin. Environmentalists remain opposed to the diversion because the water returned is from a different source in the State and there are no controls over the quality of the water returned.

1997

CELA and GLU publish their study of the state of water management in the Great Lakes Basin "*The Fate of the Great Lakes: Sustaining or Draining the Sweetwater Seas?*". This report chronicles the failure of the Great Lakes Charter to protect and sustain the waters of the Great Lakes. Further more it reveals

that their research and interviews shows that threats to the lakes are likely to come from thirsty cities just outside the boundaries of the basin planning to convert to Great Lakes water for future growth and development. Complacency bought about by high water levels for a decade after the Great Lakes Charter in 1985 led to neglect of the most important promise in the Charter to put a sustainable water management water strategy in place.

1999

The NOVA Group from Sault Ste Marie, Ontario receives a precedent taking permit to take water in bulk from Lake Superior and ship it in tankers to the Orient. Public outcry leads to quick action and the Ontario government withdraws the permit. The US and Canadian Federal Governments request that the IJC do a reference to look at threats to the Great Lakes from large withdrawals. The NOVA Group decides to appeal the withdrawal of its permit and CELA and GLU get standing in the environmental appeal. At the last minute the government negotiates a settlement with the company.

The Great Lakes Protection Fund meets with GLU and CELA to discuss the 1997 "*Fate of the Great Lakes Report*" and its recommendations as a focus for the Council of Great Lakes Governors programming.

2000

The IJC releases a report on its reference Protection of the Waters of the Great Lakes and call upon the governments to find a legally binding way to improve the protection of the integrity of the ecosystem. They stress that despite trade agreements the States and Provinces have the powers to exercise their sovereign rights to protect these resources.

The Canadian Government passes amendments to the *Boundary Waters Treaty Act* giving the Minister of Foreign Affairs veto power over any diversion from Canadian boundary waters.

2001

In June, the governors of the Great Lakes states and premiers of Ontario and Quebec sign Annex 2001, an update to the 1985 Great Lakes Charter, to help clarify policies to keep control of the use of water resources within the basin.

By 2001, water levels in Lakes Huron, Michigan St. Clair and Erie reach lowest levels since mid-1960s.

2004

After three years of negotiation the Council of Great Lakes governors releases a first draft of two Annex agreements. Ten thousand responses to the Agreements are received over the consultation period.

First Nations and Tribes object to their exclusion from the negotiations and meaningful consultations and issue a Tribal and First Nations Great Lakes Water Accord.

Ontario Ministry of Natural Resources responds to this request and the public response by setting up an advisory committee to their negotiators and undertake extended consultations with First Nations. The Ontario government announces the draft Annex Agreements are not strong enough and must include "no net loss".