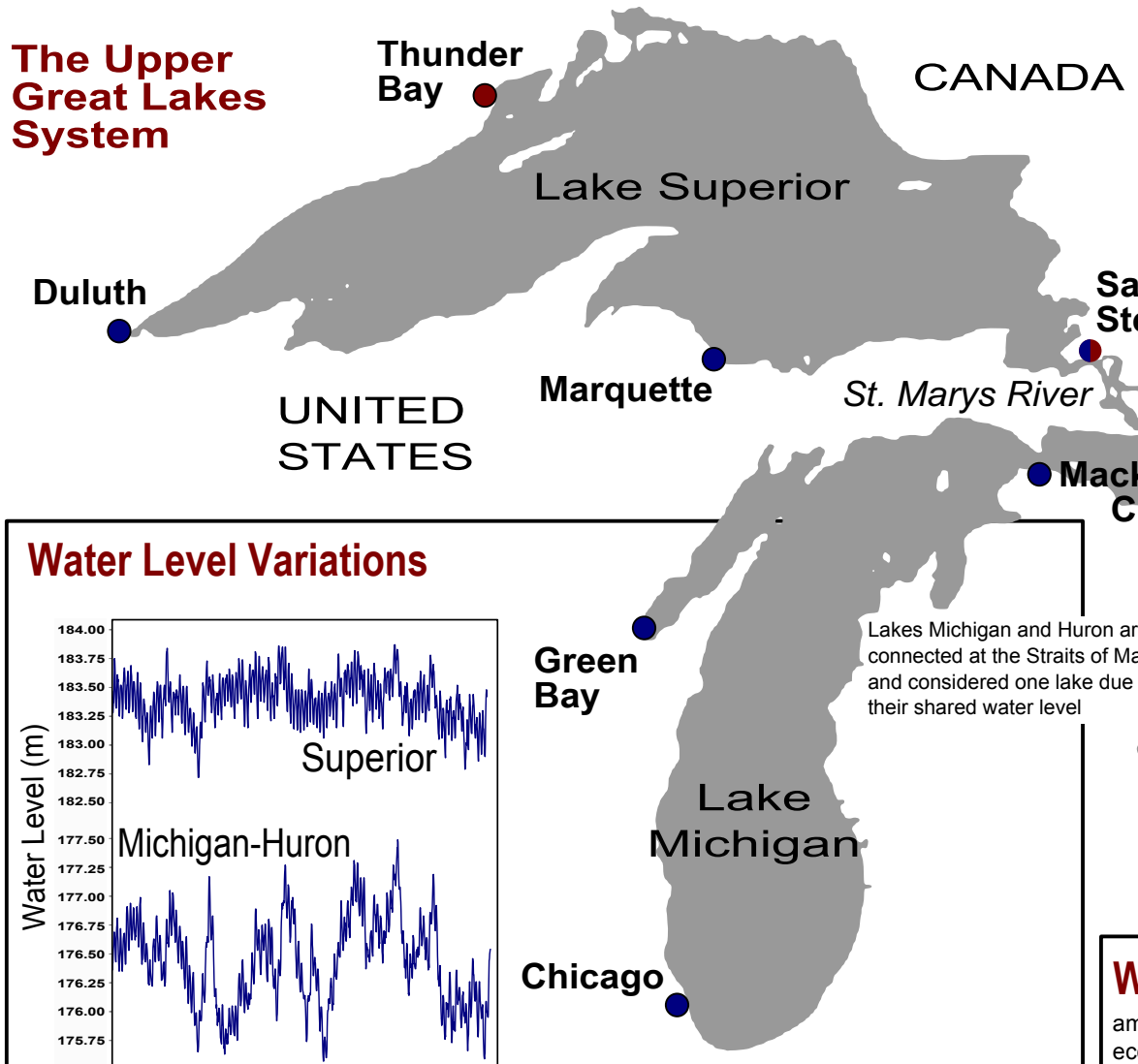
International Lake Superior Board of Control

Lake Superior REGULATION PLAN 2012

The Upper Great Lakes System



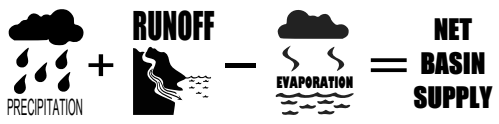
Lake Superior Outflows and Regulation

Water from Lake Superior flows to Lake Michigan-Huron through a number of structures stretching across the St. Marys River in the twin cities of Sault Ste. Marie in Ontario and Michigan. Regulating the release of water and overseeing operation of the control structures are the responsibilities of the International Lake Superior Board of Control, under the authority of the International Joint Commission.

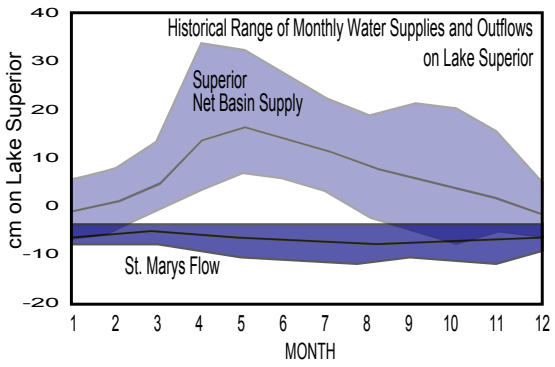
Water Level Variations

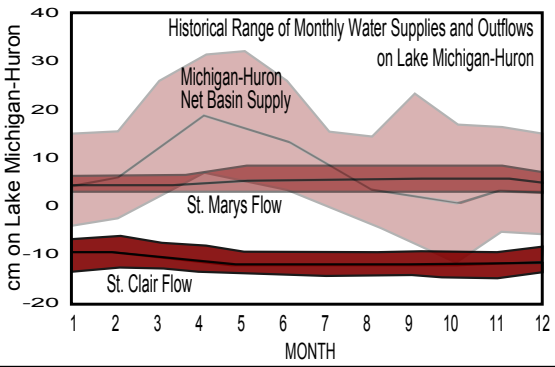
Water levels go up and down over time. These fluctuations are caused by variations in the lake's inflows and outflows.

Over the very long-term (decades or more), on average a lake's net inflow is approximately equal to its outflow. However, shorter-term month-to-month and year-to-year variations in inflows and outflows cause water levels to continually vary.



The ability to control Lake Superior's outflow does not mean full control of lake levels is possible. This is because the major factors that affect the water supply to the Great Lakes are over-lake precipitation, runoff, and evaporation (together known as net basin supply), and these cannot be controlled, nor can they be accurately predicted in the long term.





Lake Michigan-Huron Outflows

Outflow from Lake Michigan-Huron occurs by way of the St. Clair River. Unlike the St. Marys River, the St. Clair is uncontrolled, and its flow depends solely on lake levels and physical characteristics of the river itself. The St. Clair River flows to Lake St. Clair and through the Detroit River before entering Lake Erie and continuing on further downstream.

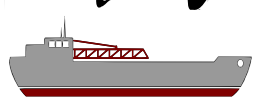
What is Plan 2012?

It is the current regulation plan for Lake Superior. It provides a set of rules used to determine the amount of water to release from the lake. The rules are designed to provide socio-economic and environmental benefits, both upstream and downstream, while respecting specific physical and operational limits.

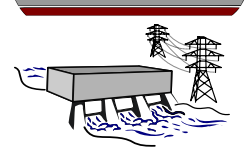
Plan 2012 provides modest ***benefits*** over the previous regulation plan, including:

Preserves Lake Superior levels and flow through the St. Marys River during extremely dry conditions

Protects important Lake Sturgeon spawning habitat in the St. Marys River



Economic benefits to navigation and hydropower, and reduced costs to protect and maintain shoreline property



More predictable flows and smaller month-to-month changes benefit hydropower and St. Marys Rapids interests

More natural St. Marys River flows help sustain riverine ecosystem health

Simpler rules make Plan 2012 easier to manage

How Plan 2012 Works:

1. Start with more NATURAL FLOWS

Basis of Plan 2012 is the

PRE-PROJECT* Flow Relationship

* What is *pre-project* flow?

It's the flow that would have occurred prior to the canals and dam being built in the St. Marys River, which began around the year 1887

2. Apply BALANCING PRINCIPLE

To help **BALANCE** water level conditions and their impacts on **ALL** stakeholders

Flows are adjusted depending on the difference of each lake's level from seasonal target levels based on average conditions

3. Respect PHYSICAL & OPERATIONAL LIMITS

November Maximum = 3260 m^3/s
(except if Superior > 183.90 m...)

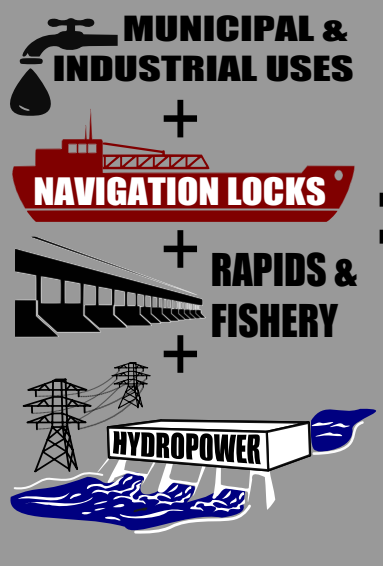
3800 m^3/s May to November if Superior > 183.90 m

Winter Max = 2410 m^3/s
Increased to 2690 m^3/s if Superior > 183.90 m

1700 m^3/s Minimum Flow Every 5th June

Lake Sturgeon

4. Determine RAPIDS FLOW & Multi-Use ALLOCATIONS



= PLAN 2012 FLOW & GATE SETTING

More Info:

International Lake Superior Board of Control
www.ijc.org/en_/ilsbc
facebook.com/InternationalLakeSuperiorBoardOfControl

International Joint Commission
www.ijc.org
facebook.com/InternationalJointCommission

Units

m = metres
1 m = 3.28 feet (ft)
m^3/s = cubic metres per second
1 m^3/s = 35.3 cubic ft per second (cfs)