LEVEL *news*

Great Lakes - St. Lawrence River Water Levels

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Greater Than Average Decline Seen on Most Lakes

Lake Superior Levels Appear to Have Peaked for the Year

Monthly mean water levels on Lake Superior increased 2 cm from September to October; however, trends in daily water levels experienced during October, suggest that the lake has peaked for the year and has joined the other Great Lakes in their annual seasonal decline.

Lakes Michigan-Huron, St. Clair, Erie and Ontario continued their seasonal decline during October. Monthly mean water levels on these lakes fell 10, 12, 9 and 16 cm, respectively, from September to October. The declines experienced on lakes Michigan-Huron, St. Clair and Ontario were 3 cm more than average. Lake Erie's decline was 1 cm less than the average amount.

Water levels on all of the Great Lakes remain below average. At the beginning of November, lakes Superior and Michigan-Huron were 10 and 38 cm below average, respectively. Lakes St. Clair, Erie and Ontario began the month 21, 16, and 17 cm below average. Water levels on all lakes are expected to decline during November, but remain above Chart Datum.

The level at Montréal Harbour remained below Chart Datum for all but one day during October. Montréal Harbour levels averaged 5.40 m during October; 15 cm below Chart Datum, 97 cm below average, and a new period-of-record low for the month.

How Much Have the Lakes Declined So Far This Year?

While it appears that Lake Superior has finally peaked for the year, as LEVEL*news* readers are aware water levels on lakes Michigan-Huron, St. Clair, Erie and Ontario have been declining steadily since peaking in either June or July. Although levels on these lakes are expected to decline further, it is interesting to note how much these lakes have declined as of the beginning of November.

Since the day they peaked during July, daily water levels on lakes Michigan-Huron and St. Clair have declined by 29 and 41 cm, respectively. Both lakes have declined by about 15 cm more than average so far this year. Since peaking in June, daily water levels on Lake Erie have declined by 50 cm—about 20 cm more than average.

The decline in Lake Ontario water levels has been the most notable at almost twice the average amount. Since peaking on June 22nd, Lake Ontario's level has declined 95 cm. While Lake Ontario's level was about 30 cm above average when it peaked in June, at the beginning of November it was 17 cm below average. The larger than average decline experienced so far this year on Lake Ontario is due in the most part to below average water supplies; however, 7 cm of the 95 cm decline is the result of outflows greater than those specified by the lake's regulation plan. These over-discharges have been made under the direction the International St. Lawrence River Board of Control in order to release all of the 5 cm of water previously stored on the lake by the Board and, more recently, to help maintain water levels on the Lake St. Louis and in Montréal Harbour.

Environment Canada Environnement Canada

Canada

Lake-Effect Snow

Increased evaporation from the Great Lakes during the early winter not only causes declines in water levels; it can also lead to significant lake-effect snowfalls in traditional snowbelt areas throughout the region.

Arctic air from the northwest is very cold and dry when it enters the Great Lakes basin, but is warmed and picks ups moisture travelling over the comparatively warmer lakes. When it reaches land, the moisture condenses as snow, creating heavy snowfalls on the lee side of the lakes in areas frequently referred to as snowbelts. It is interesting to note that outside of the Great Lakes region, very few people have ever heard of, or experienced, lake-effect snow.

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October Precipitation Over the Great Lakes

As a percentage of the long-term October average:

Great Lakes Basin	**108%**	**Lake Erie (including Lake St. Clair)**	**69%**
Lake Superior	**151%**		
Lakes Michigan-Huron	**97%**	**Lake Ontario**	**100%**

NOTE: These figures are preliminary

IJC Funds Testing of Potential Second Barrier to Stop Asian Carp

The International Joint Commission (IJC) has issued a contract to bring experts from the United Kingdom to assist with the collective efforts to prevent Asian carp, and other invasive species, from entering the Great Lakes through the Chicago canal that connects the Great Lakes with the Mississippi River basin by way of the Illinois River.

In July the IJC alerted the Governments of the United States and Canada of the need for immediate action to prevent the Asian carp from invading the Great Lakes through the Chicago Sanitary and Ship Canal. Initial results from experiments that are currently being undertaken by the Illinois Natural History Survey indicate that the present electric barrier in the canal shows promise, but may not be 100 percent effective in preventing the upstream movement of Asian carp. Therefore, other barrier types, such as acoustic and bubble barriers, should also be assessed individually and in conjunction with the electric barrier. The IJC issued the contract to bring experts from Fish Guidance Systems, Ltd. to evaluate the ability of acoustic and bubble barriers to prevent further migration of Asian carp through a series of controlled experiments in hatchery raceways.

October Outflows From the Great Lakes

As a percentage of the long-term October average:

Lake Superior	**97%**	**Lake Erie**	**94%**
Lake Huron	**90%**	**Lake Ontario**	**94%**

NOTE: These figures are preliminary