LEVEL news

Great Lakes - St. Lawrence River Water Levels

Volume 13, Number 11 November 7, 2005

Lake Superior Water Levels respond to Precipitation

Heavy precipitation over the Lake Superior basin early in October caused daily water levels on Lake Superior to climb 12 cm from the 3rd to the 6th of the month. This rapid increase erased all but 2 cm of the decline in daily levels that lake had experienced since peaking for the year in mid-July. This reversal in the lake's downward trend was, however, short-lived and by month's end daily levels had fallen 7 cm. As a result, at the beginning of November, Lake Superior was 4 cm higher than it was at the beginning of October, but 9 cm lower than it was when it peaked in July.

Both the Lakes Michigan-Huron and Lake Erie basins received below average precipitation during October. Daily water levels on Lakes Michigan-Huron fell 14 cm during the month, which is about twice its 1918-2004 period-of-record average amount for the month. Daily water levels on Lake Erie fell 12 cm during October--about 2 cm more than average.

Although the Lake Ontario basin also received above average precipitation during October there were no notable increases in its daily water levels. Instead, levels on the lake declined about half as much as average.

Each of the Great lakes reached their annual peak water level one or two months earlier than average this year. With the exception of the sharp increase in Lake Superior levels already discussed, water levels have been steadily declining on each of the lakes since they peaked. Water levels are expected to continue to decline on all lakes during November.

Upper Lakes, Middle Lakes, or Lower Lakes—what's in a Name?

When you hear someone talking about the Great Lakes **(continued on next page)**

Great Lakes Water Level Information

Lake	October 2005 Monthly Mean Level		Beginning of November 2005 Level	
	Compared to Monthly Average (1918-2004)	Compared to One Year Ago	Compared to Beginning-of-Month Average (1918-2004)	Compared to One Year Ago
Superior	15 cm below	9 cm below	15 cm below	16 cm below
Michigan-Huron	47 cm below	15 cm below	49 cm below	20 cm below
St. Clair	18 cm below	7 cm below	22 cm below	13 cm below
Erie	5 cm below	7 cm below	8 cm below	10 cm below
Ontario	1 cm below	10 cm below	1 cm above	1 cm above

Environment Canada Environnement Canada

Canada

or read about them in LEVEL*news* or another publication you may find that some of the lakes are grouped together and referred to as the *upper lakes*, the *middle lakes*, or the *lower lakes*. Although commonly used, these terms can cause confusion because the groupings can change depending on the context.

The Great Lakes form a chain of lakes with each one draining into the next. Lake Superior, the largest of the five Great Lakes, drains into Lake Huron by way of the St. Marys River. Lake Michigan also drains into Lake Huron through the Straits of Mackinac. The straits are so wide and deep that the water levels in lakes Michigan and Huron are the same. From Lake Huron, water flows into Lake Erie via the St. Clair River, Lake St. Clair and the Detroit River.

October Precipitation over the Great Lakes

As a percentage of the long-term October average:

Great Lakes Basin	**92%**	**Lake Erie**	**44%**
Lake Superior	**173%**	**(including Lake St. Clair)**	
Lakes Michigan-Huron	**55%**	**Lake Ontario**	**109%**

NOTE: These figures are preliminary

The water then flows into Lake Ontario through the Niagara River and the Welland Canal. Lake Ontario, in turn, empties into the St. Lawrence River, which carries the lakes' total outflow to the Atlantic Ocean. The total drop in water surface elevation from Lake Superior to Lake Erie is only about 10 m. There is almost a 100 m drop in elevation between lakes Erie and Ontario, most of which occurs at Niagara Falls.

In LEVEL*news* we occasionally group lakes Superior and Michigan-Huron together and refer to them as the *upper lakes*. We will also group lakes Michigan-Huron, St. Clair (not a great lake by definition, but part of the Great Lakes-St. Lawrence River system) and Erie, and refer to them as the *middle lakes*. Finally, we'll pair lakes Erie and Ontario together as the *lower lakes*. These groupings, which seem to work well when describing weather and water supply conditions or water level changes, are based on the geographic locations of the lakes relative to one another. On the other hand, in the context of the Upper Great Lakes Plan of Study, lakes Superior, Michigan-Huron, St. Clair, and Erie are grouped together as the *upper lakes* because of the relatively small differences in elevation between these four lakes and between them as a group and Lake Ontario.

October Outflows from the Great Lakes

As a percentage of the long-term October average:

Lake Superior	**83%**	**Lake Erie**	**91%**
Lake Huron	**87%**	**Lake Ontario**	**99%**

NOTE: These figures are preliminary

FOR MORE INFORMATION:
Ralph Moulton, Manager
Great Lakes-St. Lawrence Water Level Information Office
P.O. Box 5050
Burlington, ON L7R 4A6
Tel. (905) 336-4580
FAX: (905) 336-8901
E-mail: water.levels@ec.gc.ca
http://www.on.ec.gc.ca/glimr/

David Fay
Great Lakes-St. Lawrence Regulation Office
111 Water Street East
Cornwall, ON K6H 6S2
Tel. (613) 938-5725

LEVEL*news/Info*-NIVEAU is a publication of Boundary Water Issues Division, Environment Canada-Ontario Region. Contents may be reproduced without permission, but credit would be appreciated. Comments and inquiries are welcome.

Editor, Chuck Southam

Aussi disponible en français