

LEVEL *news*



Great Lakes - St. Lawrence River Water Levels

Volume 16, Number 2

February 7, 2008

High Winds Tilt Lake Erie's Surface 4.7 metres

An incredibly sharp Arctic cold front with very powerful winds in its wake passed through the Great Lakes region on January 30.

Behind the cold front, there were very strong westerly winds, with the highest wind reading – 126 kilometres per hour – recorded at Port Colborne at 6 a.m. These winds caused numerous downed trees and power lines. Local whiteout conditions due to lake-effect snow were reported and an empty Niagara-bound tractor-trailer crossing the Burlington Skyway Bridge was flipped onto its side. The storm also

had a significant effect on short-term water levels, resulting in localized flooding and ice problems at the eastern end of Lake Erie and in the Niagara River.

Sustained winds pushed the water in Lake Erie toward the eastern end of the lake, causing a maximum positive surge (a short time-period increase in water levels often referred to as storm set-up) of 2.95 metres above pre-storm levels at Buffalo, NY. As levels rose at the eastern end of the lake, there was a corresponding negative surge (or set-down) at the western end of the lake. At Toledo, Ohio, levels fell 2.39 metres below pre-storm levels. Although the maximum positive and negative surges

did not occur at the same time, for a short period of time during the storm the difference between water levels recorded at Buffalo and Toledo was more than 4.7 metres. In fact, the tilt in the lake's surface from one end to the other was more than 4 metres for more than 4 ½ hours and in excess of 3 metres for almost eight hours during the storm.

The storm also caused smaller, but notable, surges at other locations around the Great Lakes. For example, at Goderich and Parry Sound on Lake Huron, water levels rose approximately 0.4 and 0.6 metres, respectively, for a short period of time. On Lake Ontario, levels at Kingston increased by 0.5 metres as levels at Burlington dropped roughly 0.4 metres.

Great Lakes Water Level Information

Lake	January 2008 Monthly Mean Level		Beginning of February 2008 Level	
	Compared to Monthly Average (1918-2006)	Compared to One Year Ago	Compared to Beginning-of-Month Average (1918-2006)	Compared to One Year Ago
Superior	26 cm below	16 cm above	25 cm below	18 cm above
Michigan-Huron	62 cm below	30 cm below	57 cm below	24 cm below
St. Clair	19 cm below	32 cm below	5 cm below	21 cm below
Erie	4 cm below	29 cm below	4 cm below	38 cm below
Ontario	same	42 cm below	5 cm above	40 cm below



Environment
Canada

Environnement
Canada

Canada

Please be Cautious

As the January storm demonstrates, local water levels can rise or fall dramatically in a very short period of time due to meteorological disturbances. Large wind-induced waves are usually superimposed on these short time-period changes. LEVELnews readers are reminded to exercise extra caution when near the water's edge during a storm event. Please don't risk being knocked over or swept into the lake by a storm-induced surge or wave.

Water Level Update

The early January thaw, snowmelt and rainfall over the Great Lakes basin resulted in above-average water supplies to each of the lakes in January. Water levels on all the lakes except Lake Superior rose in January. Lake Superior's level fell by 4 cm in January, while on average it declines by 7 cm

R 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/greatlakes/>

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

LEVELnews/Info-NIVEAU is a publication of Boundary Waters Issues Unit, Environment Canada-Ontario. Contents may be reproduced without permission, but credit would be appreciated. Comments and inquiries are welcome.

Editor, Chuck Southam

Aussi disponible en français

January Precipitation over the Great Lakes

As a percentage of the long-term January average:

Great Lakes Basin	110%	Lake Erie	113%
Lake Superior	72%	(including Lake St. Clair)	
Lakes Michigan-Huron	163%	Lake Ontario	77%

NOTE: These figures are preliminary

during the month. The level of Lakes Michigan-Huron rose by 8 cm during the month, while on-average they decline by 2 cm in January. The well-above-average supply to the Lake Erie basin more than offset the lower-than-average inflow Lake Erie received from the upper lakes. As a result, the lake's level rose by 4 cm last month, compared to an average 1 cm decline in January. Above-average supplies to Lake Ontario combined with below-average outflows caused its level to rise by 20 cm last month. On average, Lake Ontario rises by 5 cm in January. With average water supply conditions, the level of Lake Superior is expected to continue to decline in February, while the levels of the other Great Lakes are not expected to change appreciably.

found at:

http://www.water.levels.gc.ca/C&A/tidal_e.html

Six-Month Forecast

For a complete range of probable water levels on each of the lakes over the next six months, please refer to the January 2008 edition of the Monthly Water Level Bulletin

January Outflows from the Great Lakes

As a percentage of the long-term January average:

Lake Superior	89%	Lake Erie	103%
Lake Huron	86%	Lake Ontario	95%

NOTE: These figures are preliminary