



Precipitation in the Great Lakes basin was above average in February. It was a month of wide variation. Lakes Michigan-Huron were particularly notable for lack of precipitation, at about 80% of their usual amount. The Lake Erie basin, on the strength of three winter storms, received 2-1/2 times its average total precipitation in February and may have set a record for total precipitation. The following tables shows estimated precipitation for the month of February and for the year to date.

Provisional
Great Lakes Precipitation (inches)

I. February

Basin	1990*	1900-89 Average	Diff.	% of Ave.
Superior	1.4	1.4	0.0	100%
Mich-Huron	1.4	1.7	-0.3	80%
Erie	5.2	2.1	+3.1	250%
Ontario	2.9	2.4	+0.5	120%
Great Lakes	2.1	1.8	+0.3	115%

II. Year to Date

Basin	1990*	1900-89 Average	Diff.	% of Ave.
Superior	3.3	3.3	0.0	100%
Mich-Huron	3.6	3.8	-0.2	95%
Erie	7.5	4.5	+3.0	165%
Ontario	5.3	5.0	+0.3	105%
Great Lakes	4.3	3.9	+0.4	110%

* Estimated

The National Weather Service is forecasting above-average precipitation during March for all of the Great Lakes. March's temperature forecast is for above-average throughout the Great Lakes basin.

The water levels of Lakes Superior and Michigan-Huron continue to be well below average for this time of year. Lakes St.

Clair and Erie levels increased to well above average in February. Also last month, Lake Ontario levels went from below to above average in the first half of the month and continued above average in the last half.

Lakes Superior and Michigan-Huron are continuing their seasonal decline towards their winter lows. Lakes Erie and Ontario are continuing their seasonal rise towards next summer's highs. Concerning Lake Ontario, the forecast, at this time, does not reflect any significant actions that the International St. Lawrence River Board of Control needs to take this spring to reduce outflows during the Ottawa River freshet.

During the past two months, I have begun a series of discussions on shore processes in the Great Lakes. The feature continues this month.

Water levels, of and by themselves, do not cause shore erosion. Waves and storm surges are primary agents in causing erosion; waves and storm surges are present at all water levels. Much of the Great Lakes shoreline is clay or bedrock. During the recent high water period of 1985-87, waves cut wide benches across the clay. As water levels returned to average and below, these widened benches were covered with thin layers of sand as the water retreated across them. Now storm generated waves are eroding the edges of the benches, and may continue to do so for several years, so long as the water levels are low, without reaching the bluff. Each year of low-water erosion that passes can mean that faster bluff recession will occur at clay based shores when water levels rise again. If the bench is not protected by stones or a thick beach, and if a property owner uses seawalls or revetments to prevent the bench from widening,

he may see his structures undermined and attacked by ever-larger waves.

There are many places on the shoreline where such an acute situation exists. Prominent examples are the Tawas Point area (Lake Huron), the Grand Mere Lakes area (Lake Michigan), the south half of Juniper Beach near Little Sable Point (Lake Michigan), and much of Racine and Kenosha Counties in Wisconsin.

If you are concerned about erosion of your property, you should avoid excavating any gravel or stones from your lakebed. If your shoreline is soft clay or soft clay under a few feet of sand, any shore protection structure which rests on that material may be very vulnerable to down-cutting. More next month.

Note that if you have not yet returned your form, sent in the last Bulletin, to remain on our mailing list for this publication, please do so now. We will be creating a new mailing list, based upon the returned forms, next month. Any names not received by 31 March, the end of this month, will be removed from future distribution of this Bulletin.



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