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Global warming to blame?

Lake levels continue to sink; Great Lakes' water line may drop 3 feet in the next 30 years



David Coates / The Detroit News

Matt Darga, Lydia Shanks and Matt's daughter, Savanna Darga, sit on the edge of the canal in their St. Clair Shores back yard. The canal used to be full of water but now it's "a mosquito haven," Darga says.

By Jeremy Pearce / The Detroit News

HARRISON TOWNSHIP -- Great Lakes levels could fall rapidly by another three feet during the next 30 years, as the Earth's temperature rises.

Michigan's waters -- in retreat for the fourth straight year -- remain as much as 23 inches below long-term average levels, exposing shorelines, hampering boaters and commercial freighters, fueling dredging, and closing marinas across the basin.

Climate experts, in a widely respected federal report, are now examining global warming as the possible cause behind the sharp and continuing drops in water levels of all five lakes.

With 3,000 miles of coastlines, Michigan sits at the center of the storm:

Residents own nearly 1 million registered boats, including 45,000 boats longer than 26 feet with deeper hulls that make them vulnerable in marinas, channels and shallow shore waters.

At the top of the scale, 1,000-foot freighters are being forced to carry 5 percent to 8 percent less in goods to guarantee enough buoyancy to avoid

Special report

The Detroit News series "[Our lakes in peril](#)" examines the widespread effects of falling water levels in four Great Lakes.

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 (updated April 17,
 2000).

running aground. The result may be higher prices for the coal, iron ore, salt and crushed stone they carry.

Federal officials this year report a 40-percent rise in dredging permits. Boaters in the Grosse Pointes, St. Clair Shores, Harrison Township and other shore communities are demanding deeper dredging to access Lake St. Clair, as homeowners on canals reach a desperate note.

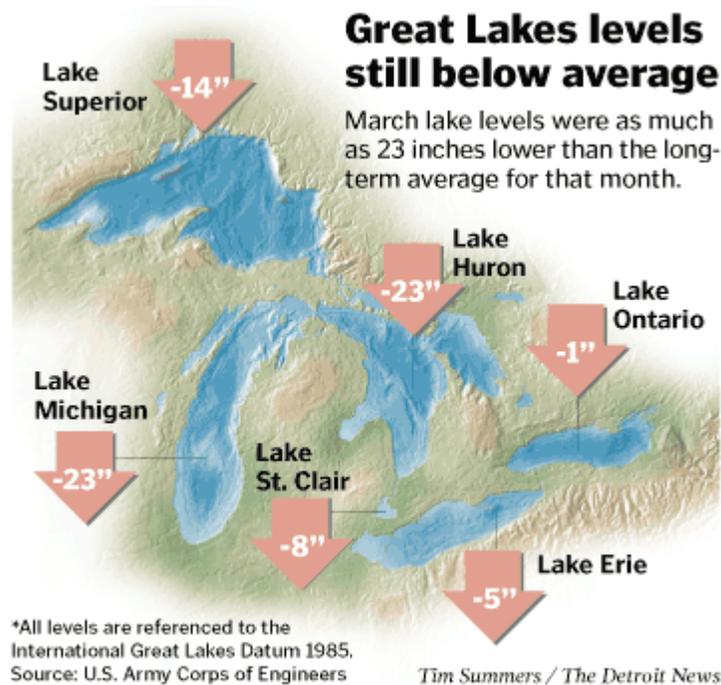
"There is no canal anymore," said Matt Darga, whose St. Clair Shores house now borders a muddy trench, once a canal connected to the lake. His family is considering moving inland. "When we got here six years ago, we had four feet of water. Today, it's nothing but a mosquito haven."

Until now, scientists have suggested water losses are part of a natural cycle of highs and lows occurring in the Great Lakes every three decades. The U.S. Global Change Research Program report is the first signal from the scientific community that local drought has the potential to worsen and extend for decades.

"The jury is still out, but Great Lakes declines might be related to climate change," said Dr. Peter Sousounis, a University of Michigan meteorologist and co-editor of the report.

Last month, snow and rainfall within the Lakes Michigan and Huron watershed was less than average for March, a trend that federal scientists expect to continue, further draining water levels for at least the next three months.

"Spring levels are already peaking," said Roger Gauthier, the U.S. Army Corps' senior hydrologist in Detroit. "Our forecasts don't bode well."



Gains won't be enough

Issued by the White House Office of Science Policy and Technology, the new report reviews Canadian and British computer models in an effort

to forecast climate patterns.

The two models factor rain, snowfall, wind speeds and temperature into mathematical calculations in a bid to predict regional weather conditions.

Results from the Canadian model show lake levels may fall by 1.5 to 3 feet before 2030. The British model indicates no change or even a slight rise in waters. Scientists said neither model shows water gains that would offset the recent declines.

"These represent our best guesses, our most plausible results," said Dr. Frank Quinn, senior research hydrologist with the National Oceanic and Atmospheric Administration in Ann Arbor. "The preponderance of evidence is in favor of global warming."

But legitimate questions remain about the extent of warming. British modelers foresee an alarming temperature rise of 3.6 to 7.2 degrees Fahrenheit by 2100, dwarfing the single-degree Celsius increase recorded during the past 100 years.

Both models reflect a minimum increase in summer temperatures of 1.8 to 3.6 degrees Fahrenheit by the 2030s.

With the Great Lakes experiencing their fourth year of water losses, other scientists disagree about how much more data is required to tie the trend to warming worldwide. Calls vary from two more years to seven years to three decades.

"It's not that unusual to have three low-water years in a row," said Dr. James Angel, Illinois's state climatologist.

"Only from looking at 20 or 30 years of data can we really spot an emerging trend. We don't have that kind of record for global warming yet."

Water sports affected

Measured last month, water levels in Lakes Michigan and Huron are 23 inches below their long-term average. Lake Superior, at the top of the lake system, remains 14 inches below its average level, according to U.S. Army Corps of Engineers records.

Lake Erie's level hovers at 5 inches below the long term; Lake Ontario's level is the least extreme, at only 1 inch below average. Held back by sluice gates, Ontario swings less violently because it is mechanically regulated.

Closest to Metro Detroit, shallow Lake St. Clair is suffering some of the most dramatic effects of the drought; its level remains 8 inches below average.

Rudi Nicholas, a Clinton Township real estate broker, acknowledged the frustration to boaters, but said lake drops have yet to harm shoreline property values. Demand and economic prosperity, he said, continue to boost prices.

"You can always dredge another canal -- you can't dredge another lake," he said. "I can't get enough



Dale G. Young / The Detroit News

lakefront to sell."

Observing a 40-percent increase in dredging along Michigan's shores in the past year,

environmentalists raise concerns about reviving heavy metals, pesticides and chemicals dormant in bottom sediments.

Last year, the Sierra Club issued a letter to eight Great Lakes states, calling for uniform guidelines to limit dredging and ensure that polluted sediment is properly contained.

The group has been critical of dredging operations in Chicago, Green Bay, Duluth and other deep commercial ports known to harbor high levels of industrial contamination.

"We hear this hue and cry from marinas to dredge for their businesses," said Eric Uram of Sierra Club's Midwest Office in Milwaukee, Wisc.

"What about fish? They want to dredge during spawning times, when fish are especially vulnerable. The impact is going to be substantial."

Chain reaction

Yet the federal climate report concludes that dredging may be only one of several disturbances to wildlife.

As the Great Lakes warm, both computer models suggest, oxygen in the water will be restricted, with less reaching lake depths, reducing plant and animal life by 20 percent.

Migratory bird species such as ducks and warblers -- including Michigan's endangered Kirtland's warbler -- would face a loss of habitat. The report specifies that 61 percent of Michigan's wood warbler species could be lost and that a third of neotropical bird species would disappear.

Hotter summers would affect common native trees such as the yellow birch, quaking aspen, red pine, white pine and jack pine, curbing their growth. In their place, black walnut and black cherry trees could advance northward across Great Lakes states.

On the beneficial side, moister weather could raise agricultural yields. The lake system, flush with carbon dioxide and offering a longer growing season, might propel farm crops until 2050, before slowing later in the century, according to the models.

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