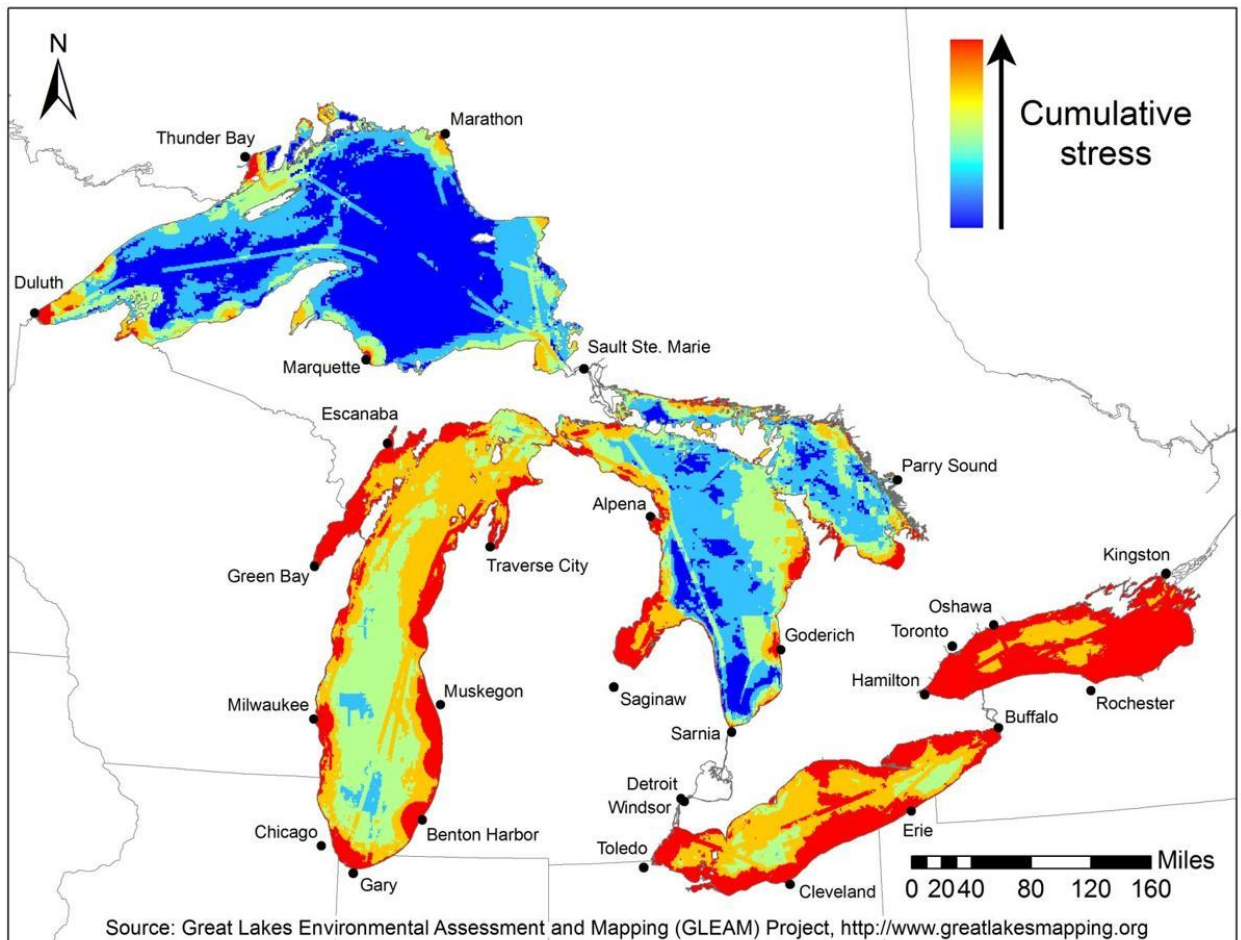


https://buffalonews.com/news/why-environmental-stressors-hit-lakes-erie-ontario-hardest/article_ff1e6d4a-fd09-11ea-819f-1be281e0a69e.html

Why environmental stressors hit Lakes Erie, Ontario hardest

- [Jerry Zremski](#) Sep 24, 2020, Updated Sep 28, 2020



A map by David Allan of the University of Michigan shows that the Great Lakes' environmental challenges – ranging from climate change to invasive species to pollution – come together in Lakes Ontario and Erie.

WASHINGTON – If red means trouble – and in this case, it does – a map of the Great Lakes published by their binational overseer identifies Lakes Erie and Ontario as the places where the region's many environmental concerns come together.

On that map, Lake Ontario is mostly a sea of red, with a few spots in the center of the lake shaded orange, signaling that they are only slightly less troubled. Meanwhile, the map of Lake Erie features a deep red blotch stretching from metro Buffalo westward along the Canadian shoreline for about 130 miles. A similar red blotch stretches westward from Erie, Pa., past Cleveland and Toledo and into Michigan.

Neither Lake Ontario nor Lake Erie features the deep blue hue that dominates Lake Superior, signaling that it is comparatively free of environmental stress.

That map illustrates what an International Joint Commission panel found when it looked at the major challenges the lakes face – climate change, invasive species, excessive nutrients, pollution, habitat loss and others – cumulatively rather than as individual issues.

"The stress was greatest in Lake Erie and Lake Ontario because you have the confluence of strong stressors," said David Allan, a professor emeritus at the University of Michigan and the author of the report. "You have the most population, the most wastewater contributions, the most agricultural runoff contributions. You have an abundance of other stressors influencing those lakes as well."

Allan stressed in an interview that the map and the study, by the IJC's Science Advisory Board's Science Priority Committee, should not cause alarm. Instead, he said, the map and the study highlight a new way of thinking about the many environmental issues that the lakes have faced for years: that those issues interact.

“In terms of the magnitude of the damage that results from the interaction between two stressors, sometimes the relationship between stressors is additive, so one plus one equals two,” he said. “But sometimes there’s a synergy, so one plus one can exceed two. And, occasionally, one stressor can counteract the other stressor.”

The study did not focus on the flooding that has occurred on the Lake Ontario shoreline in recent years. Instead, it focused on environmental concerns.

Lake Ontario is mostly shaded in red on the map in part because of longstanding data showing that invasive mussels are common there, Allan said. Substantial pollution from farm run-off and shoreline development are issues along Lake Ontario as well.

The eastern portion of Lake Erie is shaded red because of the influence of industrialized cities such as Buffalo. Meantime, the Canadian shoreline west of Buffalo faces issues with agricultural runoff, while western Lake Erie in Ohio has suffered from algal blooms thanks to excess nutrients such as phosphorus.

The report said climate change exacerbates those issues throughout the Great Lakes basin.

"Climate change is the most pervasive stressor that merits further consideration in terms of its interaction with other stressors, including those described in this report (toxic chemicals, invasive species, habitat loss, nutrients and pathogens)," the report said.

Neither the report nor Allan called for any kind of new governmental agency or plan to deal with the confluence of environmental issues in the Great Lakes. Instead, Allan said, the report presents the IJC and government agencies with a new way of thinking about environmental challenges comprehensively, instead of as individual problems.

The report comes after years of progress in cleaning up the Great Lakes and their interconnected waterways, such as the Buffalo River, through the Obama-era Great Lakes Restoration Initiative.

It also comes amid the Trump administration's ongoing rollback of environmental regulations, including last month's announcement that it is loosening standards for wastewater emissions from power plants.

Environmental Protection Agency Administrator Andrew Wheeler has touted the EPA's revised guidelines as showing "President Trump's commitment to advancing American energy independence and protecting the environment."

But Rep. Brian Higgins, a Buffalo Democrat, warned that the looser regulations could lead to greater emissions of toxic heavy metals such as mercury and arsenic into the Great Lakes.

"This move threatens to yet again reverse years of hard-fought progress," Higgins said.