

# Why Lake Ontario turned neon blue last week

Cyanobacteria, known as blue-green algae, responsible for burst of colour

[CBC News](#)

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If you flew over the Great Lakes last week — either in an airplane or aboard the International Space Station — you might have noticed an explosion of colour between Ontario and New York state.

Lake Ontario was an electric blue on all but its westernmost surface.

The phenomenon was visible from orbit, where an astronaut on the space station captured it with a camera.

A NASA satellite also recorded images.

The lively neon hue used to be a common event on Lake Ontario, but has grown rarer over the last two decades, said biologist Michael Twiss, a professor at Clarkson University in New York state who studies the Great Lakes.

Twiss explained that the colour develops from blue-green algae, which thrive in warm temperatures. They cause the water's pH to rise, which in turn makes calcium and carbonate ions that are naturally present in the water condense into white blocks of calcite on the surface of the algae.

- [Canada, U.S. urged to curb phosphorus run-off into lakes](#)
- [Blue-green algae closes nearly all Chatham-Kent beaches](#)

Those tiny white chunks reflect blue and green light especially well, Twiss said, giving the water its vibrant aquamarine tint.

The phenomenon is called a "whiting event."

"It's odd for it to happen in Lake Ontario. It used to happen all the time," he said. But then invasive zebra mussels swept into the Great Lakes in the early 1990s. "They started accumulating the calcium in their shells. So now this only tends to happen when it's warm, because calcite precipitates even more when it's warm."

Eventually, the colouring from the whiting event fades as the water cools and as the condensing chunks of calcite get large enough to sink the tiny plankton.

Twiss said the proliferation of cyanobacteria is not to be confused with a harmful algal bloom, where algae multiply and produce a toxin that can make the water unsafe for swimming or drinking.

It's very difficult to distinguish a harmful bloom using satellite images alone, but in this case, available evidence suggests the cyanobacteria are not part of one, said Greg Boyer, a chemistry professor at the State University of New York and director of the Great Lakes Research Consortium.

"It so happened we had an Environment Canada ship doing a survey of Lake Ontario during Aug. 19-24 — same time as the [NASA] satellite," he said in an email. "What few algae were there were dominated by dinoflagellates, diatoms and other generally beneficial algae.... There is no ground-truth data that would support the presence of a bloom and lots of contradictory data that says a bloom did not occur."

Such blooms occur often enough on Lake Erie. Scientists even warned earlier this year that [Lake Erie was in for "very bad algae"](#) this summer.

The predictions were right: by mid-July, the public health department in Chatham-Kent, Ont., had to [close all but one of the region's public beaches](#) due to the bacteria.

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**H1llbilly**

It's a shame that CBC couldn't interview said Environment Canada scientists for this piece, and had to resort to a professor from New York State. Thanks Conservatives, for muzzling our scientists.

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**jimfrieson**

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Can we expect an orange lake or a red lake next?

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**CBCfanzine**

".... burst of colour .... explosion of colour .... electric blue .... lively neon hue .... vibrant .... "

Notice how positive these descriptions sound? Nothing less than accolades, if you ask me.

Meanwhile, the last time I read anything about waters in the Athabasca region of Alberta, they made it sound disgusting.

CBC seems to work hard at trying to make Southern Ontario look ultra-positive and make Alberta look ultra-negative.

Part of this on-going conspiracy by big government ... [» more](#)

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**sazooky**

"Global warming wreaks havoc by turning the great lakes blue"

That would have been the cbc headline about two years ago.  
Then the resident bug scientist would have come out to repeat::  
Shut down the tarsands.