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Environment

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New algae threat clogs shore
Freeze doesn't stop toxic growth along Lake Erie

By TOM HENRY
BLADE STAFF WRITER

Western Lake Erie has a new form of toxic, blue-green algae — and this time, it's a hardy one that hugs the shoreline.

Called lyngbya wollei, it's stringy stuff that balls up in the shape of marbles as it rises to the surface and forms thick mats along the shore. And unlike many other forms of algae, it doesn't necessarily fade away as the water cools.

"It's very resistant to freezing and cold weather. It's tough stuff. Once it's established, it's hard to get rid of it," said Tom Bridgeman, a Lake Erie researcher for the University of Toledo who said the algae has the texture of coarse hair.

"It's a new nuisance algae in western Lake Erie," he said. "It might potentially impact swimming areas and shoreline use."

Mr. Bridgeman said he saw it in September — as well as recently — in Lake Erie's Maumee Bay, along Bay Shore Road and near Maumee Bay State Park's Lake Erie beach.

The bay is near Toledo and in the Great Lakes region's warmest and shallowest water.



Tom Bridgeman of the University of Toledo holds up toxic algae found on the swimming beach at Maumee State Park. (THE BLADE/DAVE ZAPOTOSKY)

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To his surprise, the algae survived the winter. Now, as a result of the unseasonably warm weather from earlier this spring, there's "new growth growing on top of old growth," he said.

David Culver of Ohio State University, an algae expert who has testified before Congress and led U.S.-Canada algae research teams, said carbon-activated filtration systems, such as the one Toledo uses to treat raw water it draws in from Lake Erie, are highly effective at removing the toxins from this form of algae and others known to be in the lake.

TOXIC ALGAE

- Known as *lyngbya wollei*, the blue-green algae rises to the surface of water and forms along the coast.
- It is resistant to freezing and cold, which means it doesn't necessarily fade as water cools.
- The algae has been spotted recently in western Lake Erie.
- Experts said people and pets should stay away from all forms of blue-green algae.

Both he and Mr. Bridgeman warned people to keep themselves and their pets at a distance from all forms of blue-green algae.

Three others known to exist in the lake are free-floaters in the open water. They are commonly referred to as "Annie," "Fannie," and "Mike" in reference to their scientific names of *anabaena*, *aphanizomenon*, and *microcystis*.

While Lake Erie's toxic forms of algae are not known to have killed anybody, a *microcystis* outbreak in Brazil was linked to as many as 75 deaths at a kidney dialysis center in 1996 when water was not treated. An investigation by the U.S. Centers for Disease Control and Prevention showed the Brazilian facility's water-treatment system was not working at the time.

John Hageman, manager of Ohio State's Stone Laboratory on Gibraltar Island, near Put-in-Bay, is no stranger to Lake Erie algae.

For the past four or five years, he has seen a type of algae near the Lake Erie islands that sounds similar to what Mr. Bridgeman saw in the Toledo area.

But Mr. Hageman said he was unsure if it was *lyngbya wollei* or something else. Mr. Culver said there are various forms of *lyngbya* algae — some that are believed to have existed at least as far back as the early 1970s — but not all are toxic.

Like other forms of algae, *lyngbya wollei* is believed to have grown along the bottom of the lake and floated to the surface via oxygen bubbles.


It could have lain dormant, existing in its microscopic form for decades and then proliferated as the lake's ecology changed. Mr. Culver blames zebra mussels and their more robust cousins, quagga mussels, which have been throwing the lake's longtime phosphorus-nitrogen ratio out of whack since the late 1980s.

Both phosphorus and nitrogen are common farm nutrients. The Maumee River, which flows into the bay, has the most runoff of any Great Lakes tributary. The mussels are known to spit out and excrete phosphorus they suck out of the water column, causing an imbalance of the nutrients and helping all forms of algae to grow at the lake bottom, Mr. Culver said.

A 1997 paper published by the National Library of Medicine, the National Institutes of Health, and the American Society for Microbiology said *lyngbya wollei* is predominantly in lakes and reservoirs of the southeastern United States. People exposed to it may have symptoms that resemble paralytic shellfish poisoning, according to the paper, co-authored by Wayne Carmichael of Wright State University in Dayton, an international algae expert who has testified in Congress with Mr. Culver.

Mr. Bridgeman said he has received numerous calls about *lyngbya wollei*.

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"People are kind of upset and amazed," he said. "I've noticed a horrible smell. I don't know if it's coming from the algae or not."

Contact Tom Henry at: thenry@theblade.com or 419-724-6079.

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