'A blue-green Godzilla'

Experts are closely monitoring an ancient bacterium that has appeared in Southeastern fisheries

By ROBERT MONTGOMERY
BASS Times Senior Writer

HIGH POINT, N.C. — City Lake is a small fishery in High Point, N.C., that has become the latest battleground in a war being waged against an ancient bacterium that one expert called a potential "Godzilla" in terms of the deadly impact it can have on a bass lake.

The enemy is *Lyngbya wollei*, a toxic bacterium masquerading as a filamentous, blue-green alga. It has also been detected in Lay and Jordan lakes in Alabama, several Florida rivers and in other isolated locations in the Southeast.

The saltwater version can kill humans through its contamination of shellfish.

"The reason no one is worked up over *Lyngbya* in freshwater is that few people eat shellfish out of freshwater," said William Frazier, a dedicated bass angler, as well as supervisor of compliance support services for the City of High Point's Water and Wastewater Utility.

Frazier, however, is extremely concerned about it.

"Nuisance algae are becoming a problem everywhere, but *Lyngbya* is something prehistoric on the evolutionary ladder, between algae and bacteria," he explained. "For heaven's sake, it has survived multiple mass extinction events on this planet. *Lyngbya* is a bad B horror film come true. I have no problem calling it a very primitive, very real, blue-green Godzilla."

Dr. John Rodgers, a Clemson University toxicologist at the forefront of developing treatments to combat *Lyngbya*, calls it "the beast of water algae."

"I consider it among the top 10 worst natural environmental enemies I've seen in my 30-year career," he said.

Neither man wants to cause unnecessary panic, which likely is one reason that Rodgers is reluctant to talk publicly about this cyanobacteria and the potential threat that it presents. But Frazier wants to educate people, especially anglers, because they will be at the forefront of the action in this evolving drama.

"As ugly as it sounds, my opinion of its primary threat is it used to be fairly scarce and isolated. Now it seems to be getting established all over the world," Frazier said.

"Wherever it comes from, however it spreads, whatever causes it to bloom, it does not take off and take over until the water temperature is a constant 80 degrees [Fahrenheit]. That's the trigger.

"We know *Lyngbya* and many of its ugly buddies like these types of conditions," he continued. "We know they are spreading. And it's important to note the spread is trending northward. If temperature is the trigger, the only way for it to become permanently established and bloom year after year farther and farther north is for it to be getting warmer. Period. If you don't believe in global warming, this in-your-face issue confirms global climate change."

And what's the problem with *Lyngbya* and other blue-green algae spreading in freshwater?

First, they can threaten health. Livestock, dogs and other animals, in fact, have died from drinking water contaminated by their toxins.

"Many of these cyanobacteria release toxins into the water, causing health concerns in both animals and humans," reports Bioremediate.com LLC. "People exposed to the cyanobacteria, blue-green algal blooms by swimming in affected lakes or rivers have experienced skin irritations, allergic reactions, gastrointestinal symptoms and respiratory problems."

Frazier added that skin problems associated with exposure often are misdiagnosed as "swimmer's itch."

But he cautioned that blaming *Lyngbya* solely for health-related problems is unwise. "Research and analytical tools are scarce," he said. "[Lyngbya] usually does not exist as the sole toxin-producing alga in a system at any given time, and there are issues with other organisms, such as known problematic and pathenogenic bacteria that may coexist."

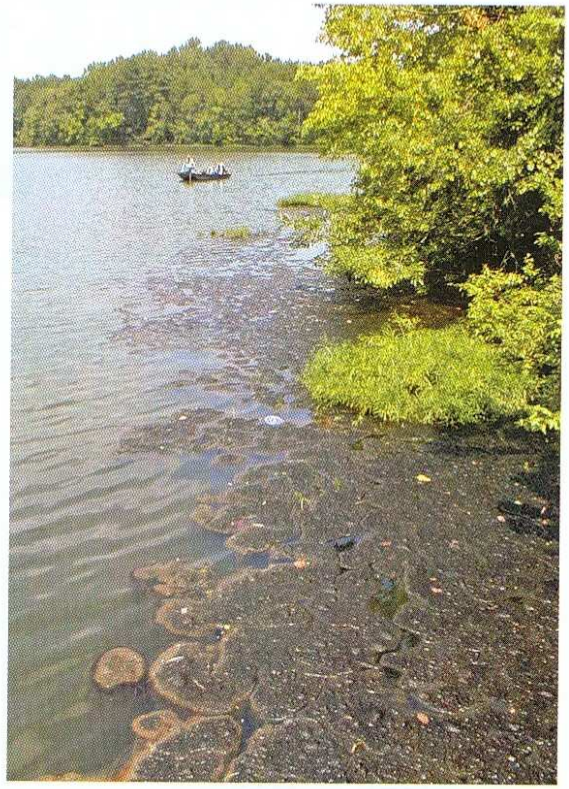
On the positive side, *Lyngbya* is not as virulent a fish killer as some of its ugly cousins, including golden alga and red tide.

What it does do, though, is stop anglers from fishing, as it turns a once live ecosystem into an aquatic cemetery.

Lyngbya typically grows in dense mats along the bottom of nutrient-rich lakes and spring-fed rivers. In doing so, it smothers plants and the invertebrates that live on them, eliminating both cover and lower rungs of the food chain.

Once established, Frazier explained, the alga can live without light.

"If there is too much light, it creates a scab to block it out to a level it likes. This is what most people see floating on top of the water and blocking whole areas of waterways."



The mats formed by Lyngbya look like raw sewage. The toxic alga has shown up in Southeastern waters.
Photo courtesy of William Frazier

People smell it as well as see it, sometimes mistaking the mats for discharges of raw sewage.

"It stinks to high heaven," Frazier said. "It burns your eyes and nose during peak bloom, but we are not sure exactly why."

The black "scab" absorbs heat, as decomposition robs the water of oxygen.

"I've never seen anything close to it in my career other than one of our sewer lagoons," Frazier said, adding that temperatures in the contaminated areas can reach 100 degrees, while surrounding waters are in the 80s.

If any fish were to remain in such inhospitable conditions, an angler couldn't get a lure to them.

"I've yet to find any lure it will not goo up," said the wastewater facility supervisor. "And even if someone has figured it out, no dissolved oxygen and extreme temperatures keep anything of value to a fisherman from living in it."

Fortunately, *Lyngbya* hasn't contaminated most bass waters. But that doesn't mean it won't eventually. Frazier