

Blue-green algae danger grows

By DON BEHM, Milwaukee Journal Sentinel
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Becky Mittelsteadt remembers watching Griffin, her yellow Labrador retriever, emerge from a Dane County pond near Lake Kegonsa covered in green slime after a June 2004 swim.

Within two hours, the 90-pound dog was near death with non-stop seizures as it lay in her arms in the back of a family vehicle being driven to a veterinarian.

"I was scared," Mittelsteadt said recently. "I tried to keep him calm. I laid on him and I hugged him."

Jim Stevenson, co-owner of the Oregon Veterinary Clinic, treated the dog with intravenous fluids and Valium to reduce the seizures.

"Every muscle on the dog was going," he recalled. "The legs were trying to run." But Griffin couldn't stand.

After Mittelsteadt described the thick concentration of blue-green algae in the pond, Stevenson also administered atropine, a poison antidote, and charcoal, to absorb any remaining algae in the dog's stomach.

Griffin survived that summer of slime in Dane County along with several other dogs that came to veterinarians with seizures after swimming in Lake Kegonsa or nearby ponds. One dog, owned by a family visiting the area, was reported to have died.

"I want people to be aware of this," said Mittelsteadt, a Town of Rutland resident.

Tests for algae

The 2004 illnesses in dogs prompted the state Department of Natural Resources to regularly test a limited number of lakes and ponds in Wisconsin for blue-green algae. A few native species, including *Anabaena* and *Microcystis*, produce a toxin. Testing was done in 2004 and 2005.

A few years earlier, in 2002, the death of a Cottage Grove teenager was linked to one of the toxins he likely swallowed while swimming in a Dane County golf course pond. The Dane County coroner announced in 2003 that tests of blood and stool samples found *Anabaena* and its toxin, Anatoxin-a.

After two years of water testing, DNR scientists said they found toxins released by common blue-green algae - and potentially deadly to people and pets - in more than 50 lakes and ponds throughout Wisconsin.

Signs warning swimmers and boaters of algal toxins were posted this summer at several lakes with thick concentrations of blue-green algae, from lakes Mendota and

Kegonsa in Dane County to Petenwell in Adams and Juneau counties, and Twin Valley in Iowa County.

Some of the heaviest loads of these scum-forming organisms were found this year at Lake Koshkonong in Rock and Jefferson counties; Redstone in Sauk County; Colladay and Stricker's ponds in Dane County; and an artificial pond at the Odana Hills Golf Course in Dane County, according to a preliminary report.

Though toxins were not detected each time there was a heavy concentration, possibly health-threatening levels of one of the poisons were found this year in at least one sample of water from lakes Mendota, Kegonsa, Nokomis, Petenwell and Redstone, and Stricker's Pond.

In 2004, high blue-green algae and algal toxin levels also were found in Tainter and Menomin lakes in Dunn County.

Limited testing - no more than five times a summer at each body of water - might have missed some population explosions of the nuisance blue-green algae, said Elisabeth Harrahy, an environmental toxicologist with the state Department of Natural Resources and coordinator of the study.

The monitoring done to date, however, confirmed that blue-green algae can be found everywhere in the state, from southern counties to the northern border, and that the release of toxins is not as rare as previously thought, Harrahy said.

Fertilizer runoff

Blooms of blue-green algae in state lakes have become more common in the last few decades as increasing amounts of nutrients, particularly fertilizers, have been flowing into lakes and ponds, according to DNR officials.

It is not known whether the frequency of toxin releases also is on the rise. They are being found now because of the regular monitoring.

About half of the 18 beach closings announced this summer in Madison were the result of high levels of E. coli bacteria, an indicator of fecal contamination, in lake water, and the other half were blamed on thick concentrations of blue-green algae, said Kirsti Sorsa, environmental technical services supervisor for the Madison Department of Public Health.

Madison checks for blue-green algae concentrations, but not toxins, at beaches in summer.

Should tests find thousands of colonies or filaments of the organisms, there is a moderate risk of ill health effects and the beaches are closed, Sorsa said.

"The health risk is real," Mark Werner, a toxicologist with the state Department of Health and Family Services, said. "There can be enough toxin in the water to cause harm to humans."

People could be exposed to the poisons if they swallow water through the mouth or nose while swimming or boating, Werner said.

The state Health Department advises the public to call a doctor if someone ingests water with algae and then becomes ill with one or more of the following symptoms: stomach cramps, vomiting, diarrhea, fever, headache, severe muscle or joint pain. A person showing signs of seizure or convulsions after swimming in water tainted with blue-green algae should be taken to an emergency room.

Contact with the water could cause allergic reactions and some of those symptoms include skin rash, hives and itchy eyes and throat.

Dogs, on their own, don't stay away from water thickened with blue-green algae. Signs of algal toxin poisoning in pets can include lethargy and loss of appetite or more severe symptoms, such as seizures, vomiting and convulsions.

Each of the 54 lakes and ponds tested in Wisconsin was selected for the study because it contained excessive amounts of nutrients and because so-called blooms, or population explosions, of blue-green algae had been reported in the past.

Blue-green algae were detected in about 74% of the water samples collected in each of the two years.

Because the tests were not random samplings of all Wisconsin lakes, however, she said the results do not imply that 74% of all state waters contain blue-green algae.

Cylindrospermopsis raciborskii, an exotic blue-green algae commonly known as Cylindro, had been found in a few state lakes in separate tests of 31 southern lakes in 2003, Harrahy said. Cylindro also can produce a toxin.

It was not detected in any lakes or ponds tested in 2004 and 2005, however