

FACT SHEET:

Precautions and facts regarding toxic algae at Nebraska Lakes

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Nebraska Department of Health and Human Services Regulation and Licensure and the
Nebraska Department of Environmental Quality*

What is a toxic blue-green algae Health Alert?

The Health Alert designation means that the state believes that the level of toxins in the water make it potentially unsafe for full-body recreational activities, such as swimming. The toxin being measured is microcystin, which is generated from certain strains of blue-green algae.

During a Health Alert at a public lake, signs will be posted advising the public to use caution. Affected swimming beaches will be closed. Boating and other recreational activities will be allowed, but the public will be advised to use caution and avoid prolonged exposure to the water, particularly avoiding any activity that could lead to drinking the water.

The level to trigger a Health Alert declaration is 20 parts per billion of the toxin Microcystin. Lakes under Health Alert will be sampled weekly, and the Health Alert will stay in effect until the level stays below 20 parts per billion for two consecutive weeks.

What is toxic blue-green algae?

Although it technically is not a true algae, what is commonly referred to as toxic blue-green algae refers to certain strains of cyanobacteria that produce toxins. These toxins were found in a number of Nebraska lakes in 2004 through 2006.

Toxic blue-green algae can dominate the algal populations of a lake under the right combinations of water temperature, low water depths, and nutrients (such as, high nitrogen and phosphorus concentrations from wastewater discharges and runoff from agricultural land and communities).

What should I look for to avoid toxic algae?

The toxic strains of blue-green algae usually have heavy surface growths of pea-green colored clumps, scum or streaks, with a disagreeable odor and taste. It can have a thickness similar to motor oil and often looks like thick paint in the water. Algae blooms usually accumulate near the shoreline where pets and toddlers have easy access and the water is shallow and more stagnant. It is important to keep a watchful eye on children and pets so that they do not enter the water. Aspects to watch out for include:

- Water that has a neon green, pea green, blue-green or reddish-brown color.
- Water that has a bad odor.
- Foam, scum or a thick paint-like appearance on the water surface.
- Green or blue-green streaks on the surface, or accumulations in bays and along shorelines.

What are the risks and symptoms?

Pets and farm animals have died from drinking water containing toxic blue-green algae (or licking their wet hair/fur/paws after they have been in the water). Blue-green algae toxins have been known to persist in water for several weeks after the bloom has disappeared.

The risks to humans come from external exposure (prolonged contact with skin) and from swallowing the water. Symptoms from external exposure are skin rashes, lesions and blisters. More severe cases can include mouth ulcers, ulcers inside the nose, eye and/or ear irritation and blistering of the lips. Symptoms from ingestion can include headaches, nausea, muscular pains, central abdominal pain, diarrhea and vomiting. Severe cases could include seizures, liver failure, respiratory arrest – even death, although this is rare. The severity of the illness is related to the amount of water ingested, and the concentrations of the toxins.

Are some people more at risk?

Yes. Some people will be at greater risk from toxic blue-green algae than the general population. Those at greater risk include:

- Children. Toddlers tend to explore the shoreline of a lake, causing greater opportunity for exposure. Based on body weight, children tend to swallow a higher volume of water than adults, and therefore could be at greater risk.
- People with liver disease or kidney damage and those with weakened immune systems.

Here are some tips on what you can do, and things to avoid:

- Be aware of areas with thick clumps of algae, and keep animals and children away from the water.
- Don't wade or swim in water containing visible algae. Avoid direct contact with algae.
- Make sure children are supervised at all times when they are near water. Drowning, not exposure to algae, remains the greatest hazard of water recreation.
- If you do come in contact with the algae, rinse off with fresh water as soon as possible.
- Don't boat or water ski through algae blooms.
- Don't drink the water, and avoid any situation that could lead to swallowing the water.

Is it safe to eat fish from lakes that are under a Health Alert?

Although research is limited, most information to date indicates that toxins do not accumulate significantly in fish tissue, which is the meat that most people eat. At this time, fishing is permitted at lakes that are under a Health Alert. This issue is continuing to be studied, and this web site will be updated if more conclusive information becomes available.

Where can I find out more information about lake sampling for toxic algae?

The Nebraska Department of Environmental Quality (NDEQ) is conducting weekly and twice-monthly sampling at select public lakes that are either popular recreational lakes, or have historically had toxic algae problems. A list of lakes being tested in 2007 can be found at the end of this Fact Sheet, and the sampling information is updated weekly on the agency web site, www.deg.state.ne.us.

What should I do if I have concerns regarding a private lake?

As part of the University of Nebraska Water Quality Extension Program, UN-L has developed a "Volunteer Monitoring Program" and lake test kits that will be sent to interested lake associations, owners and individuals so they can collect a sample and send it to UN-L for analysis. To obtain more information and a test kit please contact the program at (402) 472-7783, or (402) 472-8190.

If I think a public lake has a toxic algae bloom, who do I call?

Please contact NDEQ's Surface Water Unit at (402) 471-0096, or (402) 471-2186.

If I am experiencing health symptoms, who do I call?

If you experience health symptoms, notify your physician, and also report it to the Nebraska Health and Human Services System at (402) 471-2937. You can also contact the Nebraska Regional Poison Center at 800-222-1222 for more information.

Updated information 2007: Lakes to be sampled

The following lakes will be sampled weekly, May through September 2007, for both toxic algae and bacteria:

Bader Park Lake #2, near Chapman
Big Indian Creek Reservoir, Kimball County
Bluestem Reservoir, near Martell
Branched Oak Reservoir (two sample locations), near Malcolm
Carter Lake
Conestoga Reservoir, near Denton
Cub Creek #12A, Gage County
Enders Reservoir, Chase County
Fremont Lake #9
Fremont Lake #10
Fremont Lake #20 (two sample locations)
Harlan Reservoir, Harlan County
Holmes Lake, Lincoln
Iron Horse Trail Lake, near DuBois
Johnson Lake (two sample locations), near Elwood
Kirkman's Cove Reservoir, near Humboldt
Lake McConaughy, at Martin's Bay Beach
Lake North, near Columbus
Lake Yankton
Lewis & Clark Reservoir, near Crofton
Louisville Lake #2
Maloney Reservoir, near North Platte
Maskenthine Reservoir, Stanton County
Medicine Creek Reservoir, Frontier County
Mormon Island Lake, near Grand Island
Pawnee Reservoir (two sample locations), near Emerald
Red Willow Reservoir, Frontier County
Rockford Reservoir, Gage County
Silver Creek City Pond
Sutherland Reservoir
Swan Creek #5A, Saline County
Swanson Reservoir, Hitchcock County
Two Rivers SRA Lake #4, near Venice
Wagon Train Lake, near Hickman
Wellfleet Reservoir, Lincoln County
Willow Creek Reservoir, Lincoln County
Wirth Brothers Lake, near Cook

The following lakes will be sampled two times per month, May through September 2007, for both toxic algae and bacteria:

Box Butte Reservoir, near Hemingford

Bridgeport Middle Lake

Merritt Reservoir, near Valentine

Minatare Lake

Oliver Reservoir, near Kimball

Valentine Mill Pond