

FREQUENTLY ASKED QUESTIONS ABOUT CYANOBACTERIA BLOOMS AND ADVISORIES Summer 2021

This list was developed from frequent posts, questions, and conversations in no particular order. Answers were prepared with input from the experts at NHDES.

These FAQs are meant to address what we are hearing from you - by no means is this list meant to be exhaustive. Please continue to monitor your area of the lake and notify the Rapid Response Team or Water Quality Chair of any updates or unusual sightings.

Fixing our lake will take a concerted effort by all of us - Thanks in advance for doing your part!

FAQ: When will NHDES retest the lake?

Answer: Typically, NHDES will retest a widespread bloom like ours weekly until it clears. In our case, their experience shows the current bloom conditions will not be gone in a few days. NHDES is relying on the LKWA team on the lake to monitor current conditions. If the LKWA team informs NHDES that the lake looks clear, they will certainly perform their testing sooner. If we continue to see blooms like those we collected this past Monday, NHDES will not need to test until the lake clears. If conditions worsen in your area, please coordinate with the Rapid Response Team or Water Quality Chair. They are a response team and are not responsible for catching everything happening on the lake, and many members are not at the lake full-time. They are out on the lake observing when available, but we all rely on sightings reported by anyone in the lake community.

FAQ: When will the advisory be lifted? It's been a few days and the water looks good to me, is the advisory over?

Answer: The advisory will end only when NHDES issues a notification that it is officially released. Once the advisory is lifted, we will share the information immediately. You can also subscribe to their notification list. NHDES will not remove the advisory until the current conditions clear up and retesting has confirmed all cell counts remain below the state threshold of 70,000 cells/ml. If there are clouds, scums on the surface, or the specs still in the water (specs look like a snowstorm or a snow globe), the cyanobacteria is still in an active bloom. This will not typically clear in a few days, unfortunately, it will take longer. NHDES is committed to removing the advisory as soon as possible, and LKWA is working hard to support this.

FAQ: Can I go into the water if it looks okay where I am? Can we swim in an area if we don't see anything?

Answer: As a reminder, the advisory was put in place by NHDES for a reason. Due to the bloom, toxic conditions are likely, and there are a variety of cyanobacteria species present in the water. Most prevalent and concerning is Dolichospermum, a fast-acting, rapidly changing, toxic type.

NHDES is emphasizing that the bloom is coming from anywhere and everywhere on the lake, is moving up and down in the water column, and is being moved around constantly by local changing weather conditions as well as boat traffic, etc. The bloom is unpredictable. You cannot necessarily tell conditions by looking at the water from your beach, often the bloom begins to show up a little offshore in slightly deeper water, such as at the end of the dock. Mid-lake conditions are best observed when your boat is not underway.

Toxins can linger in the water after the most visible signs are gone. Toxins are very unpredictable and can turn on and off rapidly. Scientists continue to look for how to predict when toxins will be released.

Everyone needs to make their own decision if their waterfront appears clear. If it does appear clear, it is less risky. The lake is not closed. NHDES does not prohibit swimming and recreating. But there is a valid risk during the advisory. The risk is higher with exposure to larger amounts of toxins, which is impossible to predict from one minute to the next. The risk is higher for pets and children, who often swallow the water and get it in their nose, mouth, and eyes. Open cuts and wounds are also a concern. Airborne particles and spray are concerns. We cannot shut down the lake, but we are trying our best to notify everyone and give them the latest information so they can make their own informed decisions.

FAQ: Why aren't you publishing exact counts at each location?

Answer: It is not the NHDES approach to identify specific locations on a lake. NHDES posts notices where advisories exist and publish the appropriate standard information. Publicizing the specific test locations can give a misleading impression and lead to more misinformation. There are several reasons: First, some areas are closely checked by local residents every day and other areas are not. We do not want to give any incorrect impression it is a 'that part of the lake' issue. Second, the bloom is lake-wide and moves around constantly with the wind, weather, waves, and boat traffic. The wind has been changing directions a lot over the past week. The accumulation factor is extremely variable. We can have high cell counts in some places one morning, and other places in the afternoon or a day later. Third, blooms do not form on the shorelines, they get blown or washed ashore. Blooms are rising to the surface and forming striated patterns out in the middle of the lake, even in the largest and deepest sections. The specs (snowstorm appearance in the water column) are visible in most locations, except very near-shore, but are difficult to see on a moving boat or if the lake surface is not relatively calm. The specs can vary in size and color, based on the variety of cyanobacteria and how much they are breaking down.

FAQ: What are the signs of exposure to toxins?

Answer: Acute, which are more immediate, symptoms can include: nausea or upset stomach, fatigue, fever and other flu-like symptoms, ear ache, itchy eyes, tingling or numbness of lips or tongue, rashes or itchy skin, and asthma-like symptoms. Anatoxins can be fast-acting and extreme, and in the most severe cases can lead to nervous system failure. They are dangerous because the concentrations in the water change continuously, making the behavior of the blooms unpredictable. Dogs can become critically ill and even die from high levels of exposure and ingestion of the water. Severe or chronic exposure could be extremely serious long-term.

Chronic, or long-term, exposure to the toxin BMAA can lead to neurological problems, such as neurodegenerative diseases like ALS and Parkinson-dementia complex. Much is still unknown about many specific toxins, but they include neurotoxins and hepatotoxins.

Exposure to toxins can come from ingesting or otherwise consuming the water, getting it in your ears/nose/mouth/eyes. The toxins can vaporize and be breathed when showering in lake water. It can also come from boat spray, especially while tubing. It can also become airborne.

For more information, see this link: https://www.cdc.gov/habs/pdf/292944-A_CyanoHAB_Facts-508.pdf

If you or your pets become ill, NHDES asks that you submit a report at [NH Online Forms System - Beach Illness Report for People and Pets. Version 5.4](#)

FAQ: I have tested my water with a kit and there are no toxins present. Why are you saying toxicity is a danger?

Answer: Results from home testing kits purchased online can be highly inaccurate for several reasons. There are many different toxins. The test for one specific type of neurotoxin, for example, will not show results for other types. Samples must be processed properly, an example is hepatotoxins are often held within the cell, which must be scored to get a proper result. Labs use liquid chromatography mass spectrometry systems that cost many thousands of dollars, and a home test kit purchased online cannot substitute for results attainable in a lab and provide reliable information on the safety of the water. If anyone has access to a liquid chromatography mass spectrometry system and training on their specific use, we invite you to join the LKWA team!

NHDES does not have the capacity to run the very complicated toxin tests during the busy summer months. They store the samples and run toxicity analysis over the winter. Even the best labs cannot test for all toxins.

FAQ: Is the bloom caused by fertilizers? Is it the lawns? Is it the geese?

Answer: All of the above, and more. There are many contributing factors we cannot control: cyanobacteria already existing in all lakes, earlier ice-out and lake stratification, higher temperatures and/or sunnier days heating up the lake water, severe storms with the potential to bring in more run-off and more nutrients, better water clarity letting the sunlight penetrate deeper, evaporation and concentration of lake water, anoxia at deeper areas of the lake.

There are many contributing factors every property owner can control, and they are all related to nutrients, especially phosphorus, entering the lake. One major contributor to nutrients entering the lake comes from stormwater runoff. This is especially the case before vegetation emerges in the spring or during intense storms throughout the year. Inspect your property for areas of stormwater runoff that leads to soil erosion from lack of stabilization. Make sure to slow down and divert the runoff with sufficient vegetation, including a vegetative buffer along the shoreline. Do not add sand near the shoreline or elsewhere on the property. Avoid the use of fertilizers, including organic varieties, all have N-P-K numbers. Properly maintain your septic system and replace aging systems. Remove or avoid pet and other animal waste, including deterring geese. Do not welcome geese and other waterfowl, keep them away with a vegetative buffer and reflective tape or motion sensor sprinklers. Keep yard waste such as clippings and leaves from being deposited or blown into the lake. Check the ingredients of detergents/soaps/cleaners to ensure they are phosphate free.

While boating, everyone on the lake can take care to prevent bank erosion from boat wakes and disturbance of shallower areas of the lake bottom.

Also, the answers are not always so simple. A wide vegetative buffer is best. But an established lawn is better than bare soil as long as fertilizer is avoided, and there are options that can achieve that, such as clover and other groundcovers and soil testing. UNH studies show “A healthy lawn efficiently prevents soil erosion and also helps remove soil particles from runoff water, absorbing 15 times more runoff than bare ground.”

A wonderful resource is the LakeSmart booklet put out by NH Lakes, copies can be downloaded here:

<https://nhlakes.app.neoncrm.com/np/clients/nhlakes/product.jsp?product=49&>

DES also recommends its Soak Up the Rain program, found here:

<https://www4.des.state.nh.us/SoakNH/> There are great tips to explore under the Resources tab.

FAQ: There is a lot of discussion about the cyanobacteria problem. What is the solution to eradicate it?

Answer: We are under way on the development of the Lake Kanasatka Watershed Management Plan. This effort will identify major sources of nutrients and major issues and outline what steps we need to take to solve those issues and stop excess nutrients from entering our lake. With the plan in place, we will start the process of remediation and implementation, while monitoring the effectiveness of the steps we are taking. You can see more discussion on this topic on the Kanasatka.org website under the Watershed Management Plan 2021 tab.

In the meantime, every property owner in the watershed can start now! Please refer to the preceding FAQ about whether the blooms are caused by fertilizers, lawns, or geese.

FAQ: Why are you asking me to contact the Water Quality Chair or the LKWA Rapid Response Team if the Advisory signs say NHDES

Answer: We have been working very hard to understand our blooms and to collect data to inform the Watershed Management Plan. The cell count and cyanobacteria species information that we collect gets combined with other information from our UNH-affiliated water monitoring program and from the UNH team visits. In addition, we worked with NHDES over last winter to establish the best way to coordinate with them, which they find actually helps them serve us better. They wish more lakes would use this model. NHDES is extremely busy this time of the year and cannot possibly respond to each call in a timely manner. We have a trusted, established relationship with them and can reach them quickly.

FAQ: Has Wakondah been tested for cyanobacteria?

Answer: Cyanobacteria testing happens only when suspected blooms or conditions are observed. We did have a Wakondah resident reach out to us last week, and photos indicated it was likely a sizeable bloom in one cove. Follow up included us taking a sample from that location, which was showing very minor signs of a bloom at the time. Analysis showed a very low cell count, but several species of cyanobacteria were present. We will continue to coordinate with them. Please do not infer our bloom is coming from our upstream neighbor lake, that is not the case.

FAQ: Is there any community effort we can undertake or treatment to remove the cyanobacteria?

Answer: Cyanobacteria occur naturally in all lakes, typically reside lower in the water column, and do not usually present much of a problem. In our situation, there are excess nutrients, combined with other factors, causing the cyanobacteria to grow and come to the surface in very large numbers lake-wide. The cyanobacteria are coming from deeper areas in the water throughout our lake, starting as deep as 7 to 10 meters, and rising to the surface.

There is no short-term solution. Cyanobacteria cannot be taken out of the lake, or treated in your area of the lake, and even if there were a quick fix, toxins are still potentially very present in the surface waters. Water filtration systems will remove bacteria, but none can remove cyanotoxins. Known treatments such as alum are very expensive and will only gain necessary governmental approvals (and hopefully funding) and can only be undertaken once all other steps to reduce the problem have been addressed. Many companies out there are selling solutions, but they are not meant for a water body as large as our lake. Many proposed approaches are impractical or would only create other problems.