

Google Groups

Harmful Algal Bloom - followup

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Posted in group: **town-of-Ulysses**

Hello Ulysses residents

Harmful Algal Blooms (HABs or cyanobacteria) in lakes across the state are of great concern, unfortunately there are many unanswered questions, especially for people who draw drinking water directly from the lake. The following information is from many sources.

First, as of today, there do not seem to be any reports of HABs in Cayuga Lake that I could find on record, but these blooms can come and go quickly. The DEC website has helpful identification photos <http://www.dec.ny.gov/chemical/81962.html>. The blooms are complicated and there has not been enough research funding or staff allocated to fully understand the biology of these blooms or the variables that cause them.

Toxins associated with HABs are dangerous - The toxins from HABs vary and most often affect the nervous system, liver, and skin. The toxins associated with the HAB in Cayuga Lake are mostly contained inside the bacterial cells, so anything that kills the cells, like boiling, will release more of the toxins into the water.

Swimming - One source of information for swimming beaches is at the NYS Parks website <https://parks.ny.gov/recreation/swimming/beach-results/documents/results/BeachResults.pdf>. All the beaches listed that have been monitored in the Finger Lakes as of August 7 are open. While not all beaches are monitored, it looks like the HABs have cleared in many areas as of today. The rule of thumb seems to be that swimming is safe 12-24 hours after water is visually clear of HABs. But again, these blooms come and go. LOOK first! If you see green streaks, green clumps, mats, or areas that look like pea soup or green paint, don't go in.

Trumansburg drinking water - From what I gather, the Trumansburg water supply is in good shape due to the water being drawn from a well, not directly from the lake.

Water Districts 3 and 4 - These districts draw water from Bolton Point i.e. directly from Cayuga Lake. At a seminar I attended yesterday, it's clear there are methods Bolton Point can use to clear any toxins from the drinking water if necessary.

Residents who draw drinking water from the lake - This is the hardest information to find. The Tompkins County Health Department says "*household water treatment such as Ultraviolet (UV), boiling, or chlorinating will not make your water safe for use. During a bloom, do not drink, prepare food, cook, or make ice with water from the lake or from beach wells*". This would indicate that the toxins clear relatively quickly from the water once the HABs are not visible. I haven't found the answer to how persistent the toxins are in the water, but from what I've gathered, they seem to be relatively easily broken down once the visible bloom is gone. The toxins appear to be broken down by oxidation, but again, I can't exactly find what that means in a residential water supply drawing from the lake. The recommendations against boiling, chlorine or UV light are because these methods kill the cyanobacterial cells which will then release more toxin into the water. Filtering the HABs out is a method sometimes used for municipal water, however for residential systems there is some concern that reverse osmosis (RO) filters might use too much pressure that would kill the cyanobacteria releasing more toxins and it's not clear whether the RO filter filters the toxins out. The research does not seem to have kept up with this problem. There are some studies that show that activated charcoal filters help reduce the toxin levels in pre-filtered water, but there is not guidance on how often these filters would need to be changed.

The best information I could find on water treatment is from the EPA at https://www.epa.gov/sites/production/files/2014-08/documents/cyanobacteria_factsheet.pdf. After reading this article, it seems like there might be a combination of techniques that could reduce the toxin levels, but there simply isn't a good set of recommendations for home systems. The best thing to do is not drink the water during a HAB event.

Please report a bloom - As a reminder, the DEC is relying on people's reports about suspected HABs. If you think

you see one, **please report it** to the DEC using this form: http://www.dec.ny.gov/docs/water_pdf/suspalgformedit.pdf.

What can we do to prevent HABs? This too is not straight forward. It seems that higher nitrogen (N) and phosphorus (P) levels are associated with HABs, but it's not clear exactly how. Other variables affecting HABs are temperature, wind, rainfall, and maybe even zebra mussels or other invasive species. NYS just launched the Finger Lakes Water Hub this year and their first goal is to compile research on this topic so it can be better understood. There is general scientific agreement that reducing the input of N and P into the lake would help prevent HABs. Many municipalities are now more engaged than ever on this topic and I do hope that working together, we can help prevent these in the future, but we will need help from the state to do so and the federal government to provide funding for more research on this subject.

Please remember, I'm not an expert in this area but as the professionals provide reliable information, I will forward it on.

In defense of clean water,
-Liz

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