

HABs Update September 10-16, 2018

Harmful Algal Blooms on Cayuga Lake: Information

Blooms reported, sampled, tested & mapped, from July 2 - present

Attention: DO NOT ENTER THE WATER IF HABs ARE PRESENT!

- If you see a bloom, don't touch it. Keep your children and dogs away. Report the bloom to habshotline@gmail.com with the location, time, date and two photos.
- View the map of reported HABs locations around Cayuga Lake with test results, and shoreline zones regularly patrolled by HABs Harriers: <http://www.communityscience.org/cayuga-lake-2018-harmful-algal-blooms-results/>
- News: Preliminary results indicate "high toxin" levels of microcystin in several samples - see preliminary results below.

Blooms Report for the Week of September 3-9

Last week - September 3-9 - was a hot one. With the sunshine and still, warm air came numerous reports of Harmful Algal Blooms from our lakewide team of HABs Harriers.

On September 6 and 8, Claire Weston, head of the HABs team at the Community Science Institute in Ithaca, sent out two updates.

Thursday, Sept. 6: "Things have really been heating up on the HABs front! In the past 48 hours I received over a dozen bloom reports and accepted a total of nine samples. Five of these samples will be sent to Upstate Freshwater Institute today. CSI will be analyzing all nine samples for microcystin tomorrow, which means that toxin results will be posted on the [Cayuga Lake HABs Reporting Page](#) by the end of the day on Friday.

Although what we observed on Tuesday was not technically a lakewide bloom, based on the bloom distribution, it was a lakewide problem. Interestingly enough, bloom composition varied sample to sample. 18-3400-B6 was collected from the northern tip of Cayuga Lake and was composed primarily of microcystis. In contrast, 18-3416-B3 from the shoreline near Atwater, was predominantly composed of dolichospermum.

One thing that has been on everyone's mind is what conditions lead to a bloom. As you're all aware, it was exceptionally warm on Labor Day and then abnormally calm the following day. My suspicion is that these two factors contributed to the high number of blooms. September has only just begun so it's important that we remain vigilant! Thank you all for your diligence and a special thank you to all who reported blooms and collected samples. Stay tuned for results!"

Saturday, Sep. 8: "Greetings, Please find below the microcystin testing results from Cayuga Lake HABs sampled on Tuesday, September 4th.

Please note that most of these results, if confirmed by DEC, would exceed the "high toxin" threshold of 20 ug/L.

<u>Sample ID</u>	<u>Concentration (µg/L)</u>
3408-B1	>5.00
3418-B4	>5.00
3441-B1	>50.0
3444-B1	>50.0
3449-B1	>50.0

3416-B3	374
3440-B1	54.8
3447-B1	389
3400-B6	>500

You can view more detailed information and bloom locations on the [Cayuga Lake HABs Reporting Page](#). I have updated the map and table there. Please keep in mind that I can not change the color of the marker on the map or use the terminology "confirmed with high toxins" until the microcystin assay is run at UFI and DEC confirms the results. In the meantime, Tuesday's bloom markers will remain yellow and labeled as "suspicious."

You'll notice that a number of results have the "greater than" symbol in front of them. This is because the calibration curve was exceeded so we weren't able to get an exact concentration. You can get around this problem by diluting the sample. However, increasing the number of dilutions effectively makes more sample which significantly extends the length of the assay. Dilutions on the twelve samples were based on two factors: 1) relative abundance of *Microcystis* (and to a lesser extent *Dolichospermum*) and 2) chlorophyll concentration as an approximation of bloom density. We will be running the assay again for those samples that exceeded their calibration curve so that we can get an exact concentration."

September is upon us: The weather is now cold and rainy, but warm, still days may yet return. Claire's message, to the HABs Harriers and the general public:

"September is upon us. Unfortunately, September is the month that I've been worried about from the beginning. From what we can tell, last year all of Cayuga Lake's "confirmed with high toxins" blooms were in September. Specifically, three blooms were confirmed with high toxins from 9/14 through 9/26. Although these high toxin blooms were significant, the situation on Cayuga Lake paled in comparison to the situation on Seneca. Seneca Lake had a total of 57 blooms and they were all observed in a span of two weeks from September 15th - September 25th. 22 of the 57 blooms were confirmed with high toxins. Suffice to say we are not out of the woods yet."

- Keep track of the locations of blooms and their severity at the [Cayuga Lake HABs Reporting Page](#).
- Read previous issues of the Cayuga Lake HABs Update, and more information about Harmful Algal Blooms; family and drinking water safety, and health precautions: <http://www.cayugalake.org/harmful-algal-blooms-habs-immediate-action-and-information.html>
- View DEC's HABs reporting pages <https://www.dec.ny.gov/chemical/83310.html>

Thank you!

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