

### ***Harmful Algal Blooms (HABs) Update***

Thus far, there have been 42 blooms documented this monitoring season, of which 22 have had microcystin toxin levels that far exceed any safe guidance values set for microcystin concentrations in water used for recreational purposes. Many of the blooms this year have been dominated by the cyanobacteria *Microcystis* and have had high toxin levels, which is in contrast to the patterns observed over the past two years during early summer. The program hopes to continue documenting patterns that may arise over the next month and a half left of the monitoring season. Since the start of the monitoring season, new HABs Harriers have joined the program, enabling the lake-wide network to monitor over 50% of the Cayuga Lake shoreline.

*Reminder: You may visit [CLWN's website](#) for previous weeks' HABs Updates from the 2020 Monitoring Program.*



Bloom 20-3450-B1, located along the shorefront of 3869 Westfall Dr. in Canoga.

Through public outreach, CLWN works with CSI to support their water quality research. Below is a partial chart showing the reported blooms from August 11th to August 18th. To get the latest update, visit CSI's [Cayuga Lake HABs Reporting Page](#), which also provides a map visualizing where the blooms are located.

<b>Bloom Sample Code</b>	<b>Date Sampled</b>	<b>Location Description</b>	<b>Bloom Extent</b>	<b>Microscopy</b>	<b>Microcystin Toxin (µg/L)</b>
<b>20-3458-B11</b>	8/12/2020	Along the Beacon Bay Marina, properties north of the marina and near Harris Park.	Widespread	Dense Microcystis, sparse to moderate Limnoraphis	Results pending
<b>20-3474-B2</b>	8/13/2020	Along the shoreline of Frontenac Park in Union Springs.	Small localized	Sparse Microcystis, sparse Oscillatoria	Results pending
<b>20-3402-B3</b>	8/13/2020	Along residential shorelines on Lower Lake Rd. and Lower Lake Dr. south of the Village of Cayuga.	Large localized	Results pending	Results pending
<b>20-3449-B1</b>	8/13/2020	Along residential shorelines on Bull Farm Rd. in Canoga.	Small localized	Results pending	Results pending
<b>20-3450-B1</b>	8/14/2020	Along the shorefront of 3869 Westfall Dr. in Canoga.	Small localized	Results pending	Results pending
<b>20-3408-B1</b>	8/17/2020	Along the beach at the Wells College Dock in Aurora.	Small localized	Results pending	Results pending

## ***New York State Department of Environmental Conservation (NYSDEC) Harmful Algal Bloom Action Plan Cayuga Lake***

The NYSDEC is responsible for protecting water quality to sustain healthy communities, clean drinking water, and recreational activity for local and regional economies. HABs have increasingly become a threat to water quality in New York State. Therefore, New York State's Water Quality Rapid Response Team, national experts and local stakeholders collaboratively implemented HAB Action Plans for twelve lakes that are most vulnerable to HABs and are important sources of drinking water, including a HAB Action Plan for Cayuga Lake. Within the HAB Action Plans, NYSDEC states specific factors that contribute to HAB occurrences across New York State lakes.

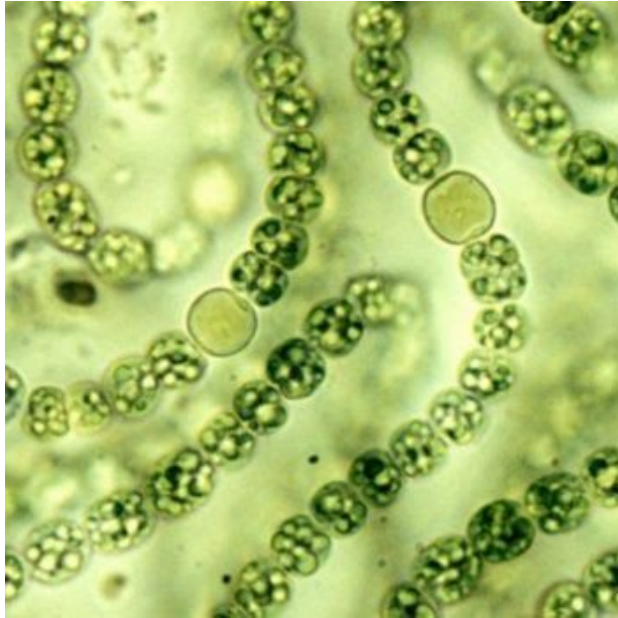
NYSDEC compiled a dataset spanning 2012 to 2017 from 163 water bodies in New York State to better understand the factors that promote HAB occurrences. Of the variables evaluated, four were sufficiently correlated with the occurrence of HABs: the average total phosphorus levels in a lake, the presence of dreissenid mussels, the maximum lake fetch length (i.e. the maximum length of open water wind can travel) and the lake compass orientation of that maximum length. For every 0.01 mg/L increase in total phosphorus levels, a lake in New York is 10% to 18% more likely to have a HAB in a given year. The other associated factors have a broader range of uncertainty, but are still statistically significant. The presence of dreissenid mussels is correlated with an 18% to 66% increased annual probability of HABs. Further, every mile of increased fetch length in a given lake increases the annual probability of HABs by up to 20%. Lastly, lakes with a northwest orientation along their maximum fetch length are 10% to 56% more likely to have a HAB in a given year.

This analysis is still only a preliminary step in understanding state-scale patterns of HAB occurrences, as it does not account for lake-specific drivers of HABs such as light intensity, runoff events, temperature, and wind. Further state-wide water quality monitoring and HABs observations is necessary to fully understand the factors that promote HABs.



To learn more about NYSDEC's Harmful Algal Bloom Action Plans, click [here](#).

***Check Out the Upcoming Field Lab Event at Stewart Park!***



Date: Saturday, August 29th

Time: 1:00 PM - 3:00 PM (drop-in)

Location: Stewart Park in Ithaca, NY

CSI's 4-H2O Education Program enables children to explore the world of science and environmental stewardship through hands-on activities. At the upcoming event, CSI will have a field lab set up at Stewart Park to allow participants to collect and observe lake samples. At 2:00 PM, a presentation will be given for kids to learn more about the ecology of cyanobacteria. To learn more and to register for the program, visit [CSI's website!](#)

***Watch the Newest Video on CLWN's Youtube Channel!***

[Harmful Algal Blooms and the Cayuga Lake HABs Monitoring Program](#) — A new 6-minute video has been posted explaining what HABs are and the risks they present. The video further describes the Cayuga Lake HABs Monitoring Program, with goals of informing the public of HAB occurrences as well as accumulating information on HABs to better understand the factors that promote their development on Cayuga Lake. Almost all of the video and image content features the Cayuga Lake watershed, as well as fellow HABs Harriers and members of the HABs Leadership Team!



Produced and Edited by Sofia Walzer

## ***Reporting a HAB***

If you observe a suspicious HAB, avoid it and report it! Email [habshotline@gmail.com](mailto:habshotline@gmail.com) with the location of the bloom, the date and time, and two pictures. If possible, include the GPS coordinates of its location using the Compass app or Google Maps on smartphones. Otherwise, an address or nearby landmark will do the job! You may also call CSI at (607) 257-6606.

## ***Stay Informed!***

Before heading on the lake, you can view the interactive map on CSI's [Cayuga Lake HABs Reporting Page](#) that is regularly updated. All of the confirmed HABs that occur on Cayuga Lake are sent by CSI to the New York State Department of Environmental Conservation (NYSDEC), which is then reported on the state-wide [New York HABs Reporting Page](#). You may also call your local park office on the most up-to-date water quality information (see below).

### Taughannock Falls State Park

(607) 387-6739

### Cayuga Lake State Park

(315) 568-5163

### Long Point State Park

(315) 364- 5637 or (315) 497-0130

### Lansing Myers Park

(607) 533-7388 ext. 17

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*The Cayuga Lake HABs Monitoring Program is a collaborative effort led by a local consortium of three nonprofits: the Community Science Institute (CSI), the Cayuga Lake Watershed Network (CLWN), and Discover Cayuga Lake (DCL), working in collaboration with the New York State Department of Environmental Conservation (NYSDEC) and the State University of New York Environmental School of Forestry (SUNY-ESF).*

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