



Updates

The HABS monitoring season has officially begun, and the Community Science Institute's HABS Reporting Page has launched! The page can be found [here](#) and includes information on the locations of confirmed cyanobacteria blooms on Cayuga Lake in the form of an interactive map, along with the results of lab analyses conducted on samples retrieved from our wonderful HABS Harriers. For this newsletter, I would like to write a bit on how to read the HABS Results Master Table once lab results start coming in.

A number of suspicious, now confirmed, HABS blooms were reported on the shorelines around Cayuga Lake this week. Here is a brief update from Nate Launer, CSI's HABS team leader: "Please check the [Cayuga Lake 2019 HABS Reporting Map](#) to see the reports and pictures we have received of suspicious HABS and confirmed HABS in this area. This page will be updated with the results of lab analysis as soon as they are available."

Please report any suspicious HABS you may see to habshotline@gmail.com. When doing so, be sure to include pictures of the bloom, its location, and the date and time it was observed!

Guide to the 2019 HABS Master Table

The 2019 HABS Information and Results table is available to view in spreadsheet format here:

https://docs.google.com/spreadsheets/d/18_gffaF6jdNfchXhXFBTawOnT58PpbAt32NgW75pShY/edit#gid=936873064

At first glance, this table may seem confusing and a bit hard to read. Here is the breakdown to make understanding HABS results a bit easier!

Bloom Sample Code

A unique bloom sample code is assigned to every suspicious HAB sample that comes through the CSI lab doors. Each code is created using the format below.



The first two numbers will be the year the HAB was found (so now it will be 19, not 18!). The second two digits will be the lake code. Cayuga Lake's code is 34, so these two numbers will remain the same across the table as well. The zone number refers to the monitoring zone in which the HAB was found. The locations of each monitoring zone can be found on the interactive Cayuga Lake HABs map [here](#). Finally, the bloom number is assigned in ascending order for each bloom found in that zone. For example, the above code would indicate that this is the first cyanobloom found in zone 3446. If it were the second, the code would read "18-3446-B2", and so on.

Microscopy

Microscopy is the first step the CSI lab takes in analyzing a HAB sample. During this assessment, the sample is observed under a microscope to determine if the bloom is indeed comprised of cyanobacteria. If present, the cyanobacteria taxa found will be listed in this column.

Chlorophyll A

According to a UC Berkeley Museum of Paleontology [article on photosynthetic pigments](#), there are three types of chlorophyll: chlorophyll a, chlorophyll b, and chlorophyll c. Chlorophyll a is found in all plants, algae, and cyanobacteria that photosynthesize. Chlorophyll b, on the other hand, is only found in green algae and plants. Chlorophyll c is found only in photosynthetic members of the kingdom Chromista and dinoflagellates.

The CSI measures chlorophyll a in order to obtain an estimate of the total biomass in a suspicious HAB sample. Used in conjunction with the microscopy results, it can also help estimate the total cyanobacterial biomass. Chlorophyll a concentrations are determined

using spectrophotometry and are reported on the master table in either parts per billion (ppb) or micrograms/liter (ug/L).

Microcystin

Microcystin is one of the many toxins produced by cyanobacteria, and is known to be toxic to humans. The CSI website includes the following note on microcystin:

“Detailed toxicity studies have not been performed, and there is not yet a consensus on acceptable exposure levels. The New York State Department of Health (NYSDOH) has set safe limits for public drinking water supplies at 0.3 ug/L and for public swimming beaches at 4.0 ug/L ([EPA, 2017](#)). The New York State Department of Environmental Conservation (NYSDEC) defines a ‘bloom with high toxin’ as 20 ug/L near the lake shore and 10 ug/L in open water ([NYSDEC HABs Program Guide, Section 3](#)).”

The CSI’s microcystin results will be reported on the master table down to the drinking water standard set by the EPA of 0.3 ug/L.

Now that you know how to read the HABs Master Table, be sure to check back frequently to stay up to date on reported HABs this season! Additionally, the 2018 season results can be found in the 2018 HABs Master Table [here](#).

Check the beach for HABs before you go!

You can find the most up to date information on water quality by calling the park office ahead of your trip.

[Taughannock Falls State Park](#)

(607) 387-6739

[Cayuga Lake State Park](#)

(315) 568-5163

[Long Point State Park](#)

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

[Lansing Myers Park](#)

(607) 533-7388 ext. 17

For more information about HABs and what to do if you believe you have had contact with one, check out the DEC’s HABs page here: <https://www.dec.ny.gov/chemical/77118.html>

Jessica Biggott, Cayuga Lake Watershed Network 2019 HABs Communication Intern
habsintern@gmail.com

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).

Cayuga Lake Watershed Network
programs@cayugalake.org 607-319-0475
Community Science Institute
info@communityscience.org 607-257-6606