



HABs Weekly Newsletter

A product of the 2021 Cayuga Lake HABs Monitoring Program

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Photo of Myers Point by Bill Hecht

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HABs Update

by CLWN Staff Intern Alora Cisneroz

Smoky air from the West Coast, heat waves set to arrive soon, and a new IPCC report. It's the trifecta of climate change!

You likely saw the headlines yesterday about the new report released by the Intergovernmental Panel on Climate Change (IPCC). After a HABs update for Cayuga Lake, I give a (very) brief overview of the report and what it has to say about HABs.

Beyond this newsletter, there was a wonderful [article in the Tompkins Weekly](#) that explored the The Southern Cayuga Lake Intermunicipal Water Commission's approach to protecting water quality for its 30,000 consumers in the wake of increasing HABs and COVID-19.

HABs Update

(as of Monday 8/9)

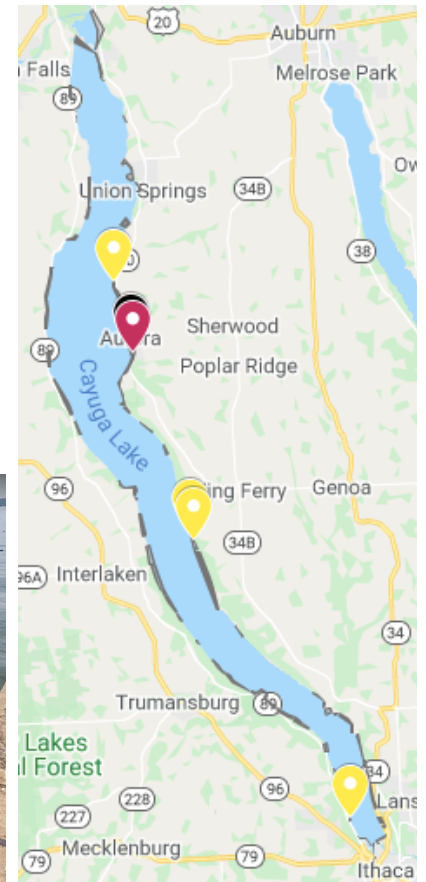
Similar to last week, HABs occurrences have been relatively calm since the most recent newsletter last Tuesday 8/3. The details of the six blooms can be found in the chart below or in CSI's HABs Map linked in the description of the photos.

Interesting to note: the reported blooms are all confirmed HABs that all contain colonies of *Dolichospermum* cyanobacteria.



Photos of bloom 21-3408-B1, located near the Wells College Boathouse. This bloom had the highest Microcystin toxin levels amongst this week's blooms that have been tested.

Photo credit: [CSI's HABs Map](#)



Map indicating the locations of the six recent blooms on Cayuga Lake.

Credit: [CSI's HABs Map](#)

HABs Technical Chart

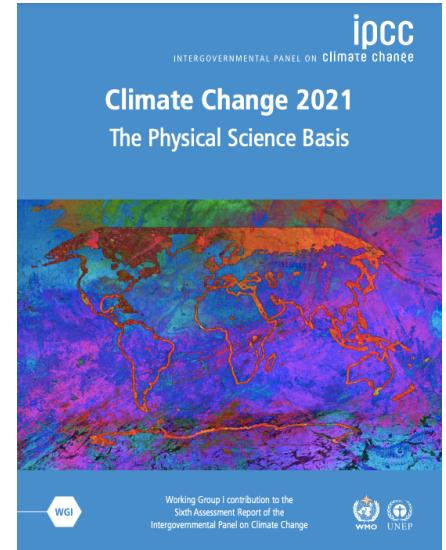
Bloom Code	Date Sample Received at CSI Lab	Location Description	Bloom Extent	Microscopy	Total Chlorophyll (ug/L)	Microcystin Toxin (ug/L)	Bloom Status
21-3460-B2	8/3/2021	Bloom located along the shoreline near 483 Powers Rd in King Ferry.	Small Localized	Very sparse colonies of <i>Dolichospermum</i> .	Results Pending	< 0.30	Cyanobacteria Bloom: HAB with a microcystin toxin concentration less than the drinking water limit (0.3 ug/L).
21-3430-B2	8/4/2021	Bloom located along the shoreline of properties on Taughannock Boulevard, just north of Ithaca.	Small Localized	Very sparse colonies of <i>Dolichospermum</i> .	46	0.85	Cyanobacteria Bloom (HAB): Cyanobacteria bloom a microcystin toxin concentration in between the drinking water limit (0.3 ug/L) and the limit for contact recreation (4.0 ug/L).
21-3407-B4	8/5/2021	Bloom located along the shoreline of waterfront properties on Main St. in Aurora.	Large Localized	Very sparse colonies of <i>Dolichospermum</i> .	Results Pending	Results Pending	Cyanobacteria Bloom (HAB): Cyanobacteria are present in bloom (HAB) sample. Microscopic examination indicates the presence of cyanobacteria and therefore the potential for the bloom to be harmful.
21-3408-B1	8/6/2021	Bloom located near the Wells College Boathouse and public swimming beach in the Village of Aurora.	Large Localized	Moderate colonies of <i>Dolichospermum</i> and sparse colonies of <i>Microcystis</i> .	Results Pending	14.67	Cyanobacteria Bloom (HAB): Cyanobacteria bloom with a microcystin toxin concentration that exceeds the limit for contact recreation (4.0 ug/L).
21-3483-B2	8/7/2021	Bloom located along the shoreline of waterfront properties near Ellis Point.	Large Localized	Sparse to moderate colonies of <i>Dolichospermum</i> .	Results Pending	3.31	Cyanobacteria Bloom (HAB): Cyanobacteria bloom a microcystin toxin concentration in between the drinking water limit (0.3 ug/L) and the limit for contact recreation (4.0 ug/L).
21-3460-B3	8/7/21	Bloom located along the shoreline of waterfront properties on Powers Rd. in King Ferry, NY.	Small Localized	Sparse colonies of <i>Dolichospermum</i> and sparse colonies of <i>Microcystis</i> .	Results Pending	3.26	Cyanobacteria Bloom (HAB): Cyanobacteria bloom a microcystin toxin concentration in between the drinking water limit (0.3 ug/L) and the limit for contact recreation (4.0 ug/L).

The New IPCC Report

This Monday, the United Nation's Secretary General called [the new 3,049 page report](#) nothing less than "a code red for humanity. The alarm bells are deafening, and the evidence is irrefutable".

What does that new evidence say? Well in no uncertain terms, that human activity has warmed our global temperature approximately 1.07°C above 1850-1900 levels which has resulted in a host of widespread changes. Some including: increased frequency and intensity of heat extremes, marine heatwaves, heavy precipitation, droughts, intense tropical cyclones, and reductions in Arctic sea ice, snow cover and permafrost.

Every inhabited region in the world, the report asserts, has already been affected by climate change. And all of this will continue to worsen with the global temperatures [likely to climb to 1.5°C above pre-industrial levels in the near future](#). According to the report's co-chair there's only way forward: "strong, rapid, and sustained reductions in greenhouse gas emissions, and reaching net zero CO2 emissions."



The cover of the new [Intergovernmental Panel on Climate Change \(IPCC\) report](#).



While I won't attempt to summarize the entire mammoth of a report in this newsletter, if you don't have enough time to read over the entire report, I recommend looking over [this UN article](#) or [this Q&A/summary article](#) that highlight some of the key takeaways.

The New IPCC Report: What it has to say about HABs

I will, however, briefly outline the report's key mentions of Harmful Algal Blooms. As I [wrote about in a previous newsletter](#), there's a relationship between climate change and HABs that is becoming increasingly clear by the scientific community. The new IPCC report makes that case even stronger.

Here are some instances where the IPCC report outlines how climate changes interact with harmful algal blooms:

- **Ocean acidification**

- As the ocean uptakes more CO₂, ocean acidity increases. The report concludes, "Lower pH may provide more favourable conditions for toxic algal blooms" ([page 3170](#))

- **Heatwaves**

- Marine heatwaves (extreme high sea temperature relative to the long-term mean) are associated with harmful algal blooms ([page 3169](#)).

- **Sand and dust storms**

- Sand and dust storms may deposit nutrients that "feed algal blooms" ([page 3166](#)). Also see: the report's definition of eutrophication, which mentions HABs.

- **Winds**

- Changes in wind speed and direction may impact the frequency and duration of blooms because of the ways that seasonal winds influence algal blooms ([page 3165](#)).

Arts Feature



This week's feature is a photograph titled "Spectators watching Cornell Crew from a train" estimated to be taken around the 1890's. It captures so many parts of the culture of the day: clothing fashions, water sports, and the leisurely pastime of waving from a moving train.

Image Credit: Archives picture collection, #13-6-2497. Division of Rare and Manuscript Collections, Cornell University Library.

FAQs

What is the HABs Monitoring Program?

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). Through this monitoring program, we seek to protect public health, water quality, and the larger ecosystem from HABs.

How can I know if there is a HAB near me?

The fastest way is to [look at CSI's HABs Reporting Page](#), which provides an updated map with all the critical information. NY's Department of Environmental Conservation (DEC) also [maintains a HABs map](#). Additionally, this email newsletter will also communicate any reported HABs for the past week.

Where can I report a potential HAB?

[Use this form](#) or email habshotline@gmail.com. Please be sure to include all of the information required: personal information (your name, email, and phone number), bloom information (observation date and time and location of the bloom), and two pictures (one close up to show bloom composition and one from far away to show bloom extent).

Where can I easily view past HABs newsletters?

The CLWN website posts each weekly newsletter under the [2021 HABs Update page](#).

If I have more questions, who can I contact?

Cayuga Lake Watershed Network (CLWN)

CLWN Executive Director, Hilary Lambert: steward@cayugalake.org

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Community Science Institute (CSI)

info@communityscience.org

HABs Monitoring Program Coordinator, Nathaniel Launer:

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Discover Cayuga Lake (DCL)

(607) 327-5253