

Harmful Algal Blooms (HABs) Newsletter



In this issue

EPA Updates **P.1**

News **P.2**

Upcoming Events **P.3**

Useful Resources **P.3**

HABs Advisories **P.3**

Recently Published
Articles **P.4**

Mention of trade names, products, or services in this newsletter does not convey and should not be interpreted as conveying official EPA endorsement, approval, or recommendation for use.

'Looking for even more HABs information? Visit EPA's [CyanoHABs in Water Bodies website](#)

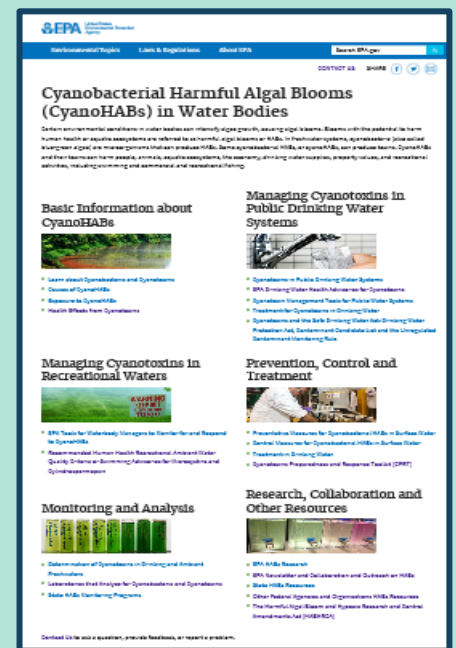
EPA Updates!

HABs Research, Resources, and Tools

Useful Resources to Manage HABs in Drinking and Recreational Waters

- [Health Advisories for Cyanotoxins in Drinking Water](#)
- [Recommendations for Public Water Systems to Manage Cyanotoxins in Drinking Water](#)
- [Analytical Methods for Cyanotoxins](#)
- [Treatment Techniques for Cyanotoxins in Drinking Water](#)
- [Water Treatment Optimization for Cyanotoxins Document](#)
- [Drinking Water Cyanotoxin Risk Communication Toolbox](#)
- [EPA HABs Incident Action Checklist](#)
- [Recommended Human Health Recreational Ambient Water Quality Criteria or Swimming Advisories for Microcystins and Cylindrospermopsin](#)
- [Recommendations for Cyanobacteria and Cyanotoxin Monitoring in Recreational Waters](#)
- [Recreational Water Communication Toolbox for Cyanobacterial Blooms](#)
- [Control Measures for CyanoHABs in Surface Waters](#)
- [List of Laboratories Conducting Cyanotoxin Analysis](#)
- [Cyanotoxins Preparedness and Response Toolkit \(CPRT\)](#)

For more resources please visit the EPA CyanoHABs website [here](#).



Kansas State Pollution Prevention Institute launches a HABs Resource for Privately-held Waterbodies

In partnership with the [Kansas Department of Health and Environment or KDHE](#), [K-State's Pollution Prevention Institute, or PPI](#), has developed a new website to fill in the gap and provide HAB education and resources for privately owned, nonagricultural waterbodies such as private, homeowners association and golf course ponds. This [HAB toolkit](#) offers a variety of resources, including downloadable materials and [laboratory screening resources](#) for HAB testing, all tailored for smaller private waterbodies in Kansas; see the [toolkit](#) for details. A hotline number is also available for private waterbody owners at <https://www.sbeap.org/water-quality/harmful-algal-blooms>.

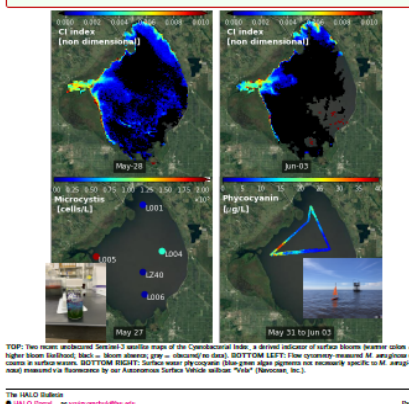
HALO

Bulletin: JUNE 7, 2021, No. 1

HARBOR BRANCH
FARMER'S UNIVERSITY
FACULTY OF AGRICULTURE
GCCOOS

BLOOM BRIEF: *Microcystis aeruginosa* presence was confirmed at all five of our routine sampling sites on 5/27 (bottom left). Green surface scum filaments remained widespread in the lake on 5/28 (top left), but due to sustained winds from the southeast were confined to the north/west shorelines by 6/1 (not shown), with little change as of 6/2 (top right). The most recent in-water measurements reveal a similar pattern (bottom right). Please see the [TOEP Algal Bloom Dashboard](#) for more measurements in nearshore areas (courtesy of the SPHMC), and the [HALO Portal](#) for our most up-to-date information.

FORECAST: (Note: forecasts are currently provisional as models are not yet operational.) Over the next week, despite N (as nitrate) and inorganic P availability, we anticipate minimal bloom expansion at the pelagic sites L004, L240, L005 (and central/lower) given forecasted winds and thus turbidity. Nutrient inflow due to recent precipitation may increase cyanobacterial activity at L001 (north), albeit not necessarily that of *M. aeruginosa* given continued observed competition with other algae at this site. Similarly, inflow from Falmouth Creek may alleviate extreme nutrient limitation at L002 (west) but we have no confidence as to whether *M. aeruginosa* will be the species that benefits.



Harmful Algal Bloom Assessment of Lake Okeechobee (HALO) Bulletin

The HALO bulletin was developed to better understand HABs proliferation in Lake Okeechobee and to identify problem areas early to allow the most efficient mitigation. This bulletin synthesizes information published in the [HALO Data Portal system](#), a web-based platform for visualizing Lake Okeechobee freshwater HAB bloom intensities and extents, as well as results of environmental characterization and modeling.

To subscribe to the bulletin or for further questions please reach out to Dr. Veronica Ruiz-Xomchuk at vruizxomchuk@fau.edu.

Centers for Disease Control and Prevention (CDC) Useful Resources on Harmful Algae and Cyanobacteria

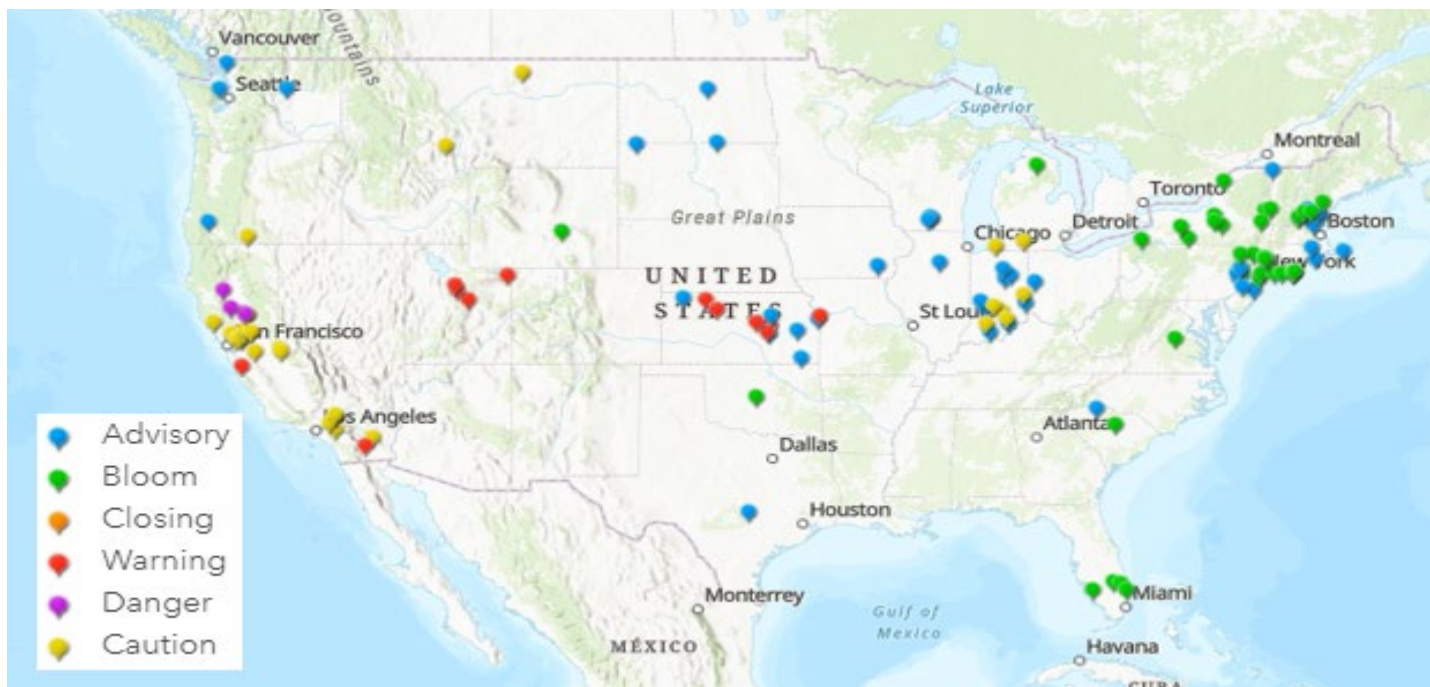
CDC has created a new communication toolkit to supplement previous educational materials to educate healthcare providers, veterinarians, and the public about HABs and cyanobacteria. The new toolkit and previous educational materials are listed below.

- ✓ [Harmful Algae and Cyanobacteria Awareness Social Media Toolkit](#)
- ✓ [Animal Safety Alert Poster](#), also available in [Spanish](#)
- ✓ [Cyanobacterial Blooms: Information for Healthcare Providers](#), also available in [Spanish](#)
- ✓ [Cyanobacterial Blooms: Information for Pet Owners](#), also available in [Spanish](#)
- ✓ [Cyanobacterial Blooms: Information for Veterinarians](#), also available in [Spanish](#)



Reported Blooms, Beach Closures, and Health Advisories* - June 2021

**Includes blooms, cautions, warnings, public health advisories, closings, and detections over state thresholds due to the presence of algae, and/or toxins. This is not a comprehensive list; not all blooms have been reported and/or not all lakes are actively monitored.*



Click the State below to see the reported blooms for the month of June 2021

[California \(28\)](#), [Florida \(4\)](#), [Illinois \(1\)](#), [Indiana \(15\)](#), [Iowa \(1\)](#), [Kansas \(13\)](#), [Massachusetts \(1\)](#), [Michigan \(1\)](#), [Montana \(2\)](#), [New Hampshire \(10\)](#), [New Jersey \(7\)](#), [New York \(25\)](#), [North Dakota \(3\)](#), [Ohio \(1\)](#), [Oklahoma \(1\)](#), [Oregon \(1\)](#), [Rhode Island \(2\)](#), [South Carolina \(2\)](#), [Texas \(1\)](#), [Utah \(4\)](#), [Vermont \(1\)](#), [Virginia \(1\)](#), [Washington \(3\)](#), [Wisconsin \(3\)](#), [Wyoming \(1\)](#)

Upcoming Virtual Event

19th International Conference on Harmful Algae
October, 10-15, 2021 La Paz, B.C.S. (live and virtual)

CERF 2021 - November 1-4 and 8-11, 2021
Impact of Climate Change on Harmful Algal Blooms

SETAC North America 42nd Annual Meeting
November 14-18, 2021
Pelagic and Benthic Harmful algal blooms (HABs): The detection, fate, effects, monitoring, and management of blooms and their associated toxins

12th International Conference on Toxic Cyanobacteria
May 22-27, 2022, Toledo, Ohio

More USEFUL



EPA has developed several YouTube videos to educate the public on nutrient pollution and the risks of people and pets from exposure to harmful algal blooms.

- ✓ [Nutrient Pollution](#)
- ✓ [Algal Blooms Can Harm Your Health](#)
- ✓ [Protect your Pooch from Harmful Algal Blooms](#)
- ✓ [Science Safeguards Drinking Water from Harmful Algal Blooms](#)

Recently Published Articles*

Potassium permanganate as a promising pre-oxidant to treat low-viability cyanobacteria and associated removal of cyanotoxins and extracellular organic matters

Xi Li, Jie Zeng, Xin Yu, Water Research, 2021, 117353.

Co-occurrence of co-contaminants: Cyanotoxins and microplastics, in soil system and their health impacts on plant - A comprehensive review

Sukhendu Maity, Rajkumar Guchhait, Ankit Chatterjee, Kousik Pramanick, Science of The Total Environment, 2021, 148752.

Effects of harmful algal blooms on stress levels and immune functioning in wetland-associated songbirds and reptiles

Jeanine M. Refsnider, Jessica A. Garcia, Brittany Holliker, Austin C. Hulbert, Ashley Nunez, Henry M. Streby, Science of The Total Environment, Volume 788, 2021, 147790.

An eco-environmental assessment of harmful algal bloom mitigation using modified clay

Xiuxian Song, Yue Zhang, Zhiming Yu, Harmful Algae, 2021, 102067.

Depth profiles of protein-bound microcystin in Küçükçekmece Lagoon

Latife Köker, Reyhan Akçaalan, Elke Dittmann, Meriç Albay, Toxicon, Volume 198, 2021, Pages 156-163.

Inhibitory effect of thiourea derivatives on the growth of blue-green algae

Nor Azman Kasan, Siti Zafirah Mohamad Yusof, Hidayah Manan, Wan Mohd Khairul, Hazlina Ahamad Zakeri, Journal of Environmental Management, Volume 294, 2021, 113008.

Cyanobacterial risk prevention under global warming using an extended Bayesian network

Peng Jiang, Xiao Liu, Jingjie Zhang, Shu Harn Te, Karina Yew-Hoong Gin, Yee Van Fan, Jiří Jaromír Klemes, Christine A. Shoemaker, Journal of Cleaner Production, Volume 312, 2021, 127729.

Assessing cyanobacterial frequency and abundance at surface waters near drinking water intakes across the United States

Megan M. Coffey, Blake A. Schaeffer, Katherine Foreman, Alex Porteous, Keith A. Loftin, Richard P. Stumpf, P. Jeremy Werdell, Erin Urquhart, Ryan J. Albert, John A. Darling, Water Research, 2021, 117377.

Two-year moving aeration controls cyanobacterial blooms in an extremely eutrophic shallow pond: Variation in phytoplankton community and Microcystis colony size

Yiyao Wang, Qiang He, Hong Tang, Yongwang Han, Ming Li, Journal of Water Process Engineering, Volume 42, 2021, 102192.

*Articles are retrieved from Science Direct research database searching for the following key words: cyanobacteria, cyanotoxins, harmful algal blooms, and HAB(s).



Would you or a colleague like to sign up to receive future issues of this newsletter? Simply send an email to epacyanohabs@epa.gov