United States Environmental Protection Agency

May 2021

Harmful Algal Blooms (HABs) Newsletter

In this issue

'Looking for even more HABs information? **Visit EPA's CyanoHABs in Water Bodies website**

EPA Updates!

HABs Research, Resources, and Tools

Virtual Trainings on EPA's Sanitary Survey App

EPA released an improved web-based app to help communities identify potential sources of pollution to recreational waters. Citizen scientists and other members of the public can now use EPA's *Sanitary Survey App for Marine and Fresh Waters* to collect and share data on potential sources of fecal pollution and information on potential HAB events in local surface waters.

EPA is conducting virtual training sessions on how to use the App and access the saved data from the sanitary surveys. To register, please select the Event Registration page associated with your preferred date and time.

May 12, 2021 at 2:00-3:30 pm Eastern Time: Event Registration
May 25, 2021 at 2:00-3:30 pm Eastern Time: Event Registration
May 26, 2021 at 3:00-4:30 pm Eastern Time: Event Registration

For more information, please visit EPA's Beaches website at https://www.epa.gov/beach-tech/sanitary-surveys-recreational-waters or send an email to EPA_SanitarySurveyApp@epa.gov.

Proceedings of the Workshop on the Socio-economic Effects of Marine and Fresh Water Harmful Algal Blooms in the U.S.

The National Oceanic and Atmospheric Administration (NOAA) National Center for Coastal Ocean Science Competitive Research Program (NCCOS) and the U.S. National Office for Harmful Algal Blooms at the Woods Hole Oceanographic Institution (WHOI) are pleased to share proceedings from a 2020 workshop on the socio-economic effects of marine and freshwater (primarily the Great Lakes) HABs in the United States.

The report documents the proceedings and presents recommendations developed by 40 workshop participants, mostly university and federal economists and social scientists from a range of institutions, agencies, and U.S. regions. The recommendations advance both a socio-economic assessment framework and national research agenda that will lead to comprehensive evaluations of the social and economic effects of HABs in the fresh waters (primarily the Great Lakes) and marine waters of the United States.

The workshop and report is helping foster increased collaborations among U.S. funding institutions, social scientists and the HAB community that will lead to a better understanding of the socio-economic effects of HABs and provide the tools to increase the effectiveness of approaches (e.g., HAB forecasting) being developed to minimize their effects.

For more information about this challenge, contact R7PublicAffairs@epa.gov or visit the Challenge webpage *here*.

EPA Region 7 recently launched a new HABs Video challenge focusing on informing the public about HABs in urban water bodies and how to be safe around them. The challenge is open to any citizens over age 18, companies, non-governmental organizations, or educational institutions that are established residents or have a registered place of business in one of the following counties in the **Kansas City, Missouri, metropolitan area**: Bates, Caldwell, Cass, Clay, Clinton, Jackson, Lafayette, Platte or Ray.

In addition to earning cash prizes, winning videos will be posted on EPA's website and social media platforms. Winners will be announced in Fall 2021.

COURSE: Taxonomic Identification of Harmful Algae in U.S. Marine Waters

DATES: August 15-28, 2021 (inclusive of travel days and time to ensure on-site testing and other Bigelow safety policies related to COVID-19 to ensure a safe experience for all).

LOCATION: Bigelow Laboratory for Ocean Sciences Research and Education campus, East Boothbay, ME.

FOR: Local, state, tribal, federal, and international HAB managers and analysts expert training in HAB taxonomic identification

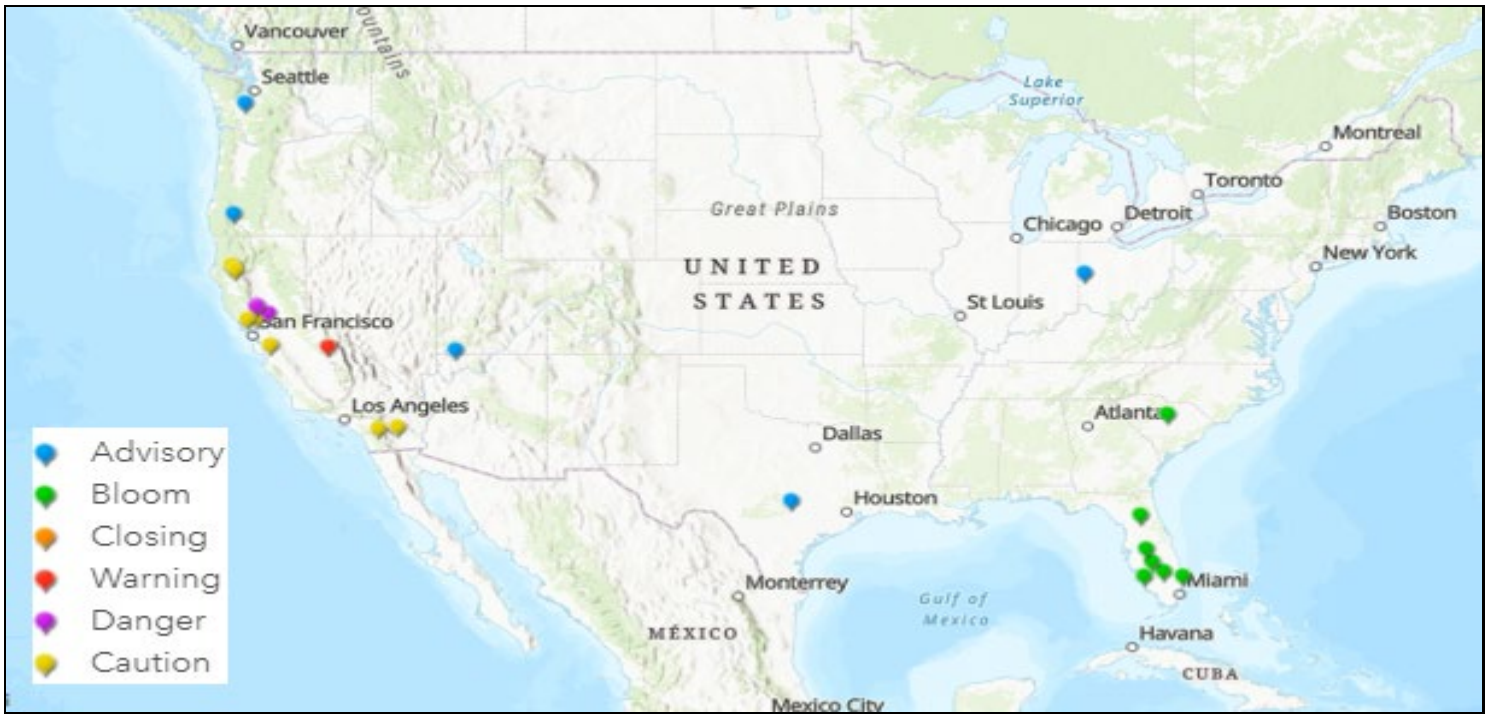
COST: $3,500 tuition (covers course material, housing, and meals, but not travel).

DEADLINE: Application submissions are due May 31, 2021.

CONTACT: For more information contact CAI-education@bigelow.org or call (207) 315-2567 ext. 1.

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

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



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

California (14) Florida (6) Ohio (1) Oregon (1) South Carolina (1) Texas (1) Utah (1) Washington (2)

Upcoming Virtual Events: 2021

10.5 US HAB Symposium - May 25-27
Presentations from student, postdoctoral, and early career (< 3 years post terminal degree) community members

ASLO 2021 Aquatic Sciences Meeting - June 22-27
Special Session on *Interactions of HABs, Eutrophication and Carbonate Chemistry in Coastal Oceans and Large Lakes*

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

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

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

USEFUL

Recordings from the panel discussion and presentations from the Cyanobacteria Monitoring Collaborative 2021 Mini-Conference held virtually on March 23rd and 24th are now available online *here*

Recently Published Articles*

Increasingly severe cyanobacterial blooms and deep water hypoxia coincide with warming water temperatures in reservoirs
Nathan J. Smucker, Jake J. Beaulieu, Christopher T. Nietch and Jade L. Young. Global Change Biology, March 2021

Cyanotoxin mixture models: Relating environmental variables and toxin co-occurrence to human exposure risk
Christensen, V.G., Stelzer, E.A., Eikenberry, B.C., Olds, H.T., LeDuc, J.F., Maki, R.P., Saley, A.M., Norland, J., and Khan, E. J. Haz. Mat., 415 (2021) 125560.

Treatment of microcystin-LR cyanotoxin contaminated water using Kentucky bluegrass-derived biochar
Hak Jin Song, Ranjit Gurav, Shashi Kant Bhatia, Eun Bin Lee, Hyung Joo Kim, Yung-Hun Yang, Eunsung Kan, Ho Hyun Kim, Sang Hyun Lee, Yong-Keun Choi, Journal of Water Process Engineering, Volume 41, 2021, 102054.

Insight into cyanobacterial preservation in shallow marine environments from experimental simulation of cyanobacteria-clay co-aggregation
Hongchang Liu, Peng Yuan, Dong Liu, Weiwei Zhang, Qian Tian, Hongling Bu, Yanfu Wei, Jinlan Xia, Yinchu Wang, Junming Zhou. Chemical Geology, 2021, 120285.

Pre-oxidation enhanced cyanobacteria removal in drinking water treatment: A review
Jing Qi, Baiwen Ma, Shiyu Miao, Ruiping Liu, Chengzhi Hu, Jiuhui Qu. Journal of Environmental Sciences, 2021,

Using sodium percarbonate to suppress vertically distributed filamentous cyanobacteria while maintaining the stability of microeukaryotic communities in drinking water reservoirs
Hangzhou Xu, Yiming Pang, Yizhen Li, Shasha Zhang, Haiyan Pei. Water Research, Volume 197, 2021, 117111.

Capitalizing on harmful algal blooms: From problems to products
Alina A. Corcoran, Ryan W. Hunt. Algal Research, Volume 55, 2021, 102265.

Coagulation removal of phosphorus from a southern China reservoir in different stages of algal blooms: Performance evaluation and AlP matching principle analysis
Xi Wang, Hui Xu, Ruyuan Jiao, Gefei Ma, Dongsheng Wang, Science of The Total Environment, Volume 782, 2021, 146849.

Real-time automated identification of algal bloom species for fisheries management in subtropical coastal waters
Jiu-Hao Guo, Yao-Yao Ma, Joseph H. W. Lee. Journal of Hydro-environment Research, 2021

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

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