United States Environmental Protection Agency

November 2018

Freshwater HABs Newsletter

Partnering to Mitigate Harmful Algal Blooms

Extension and Water Resources Research Institutes (WRRIs) at land-grant Universities are partnering to collect the results from research, including WRRI sponsored research, and transforming it into accessible information and tangible tools for the public. This project includes extension and outreach to compile state-based harmful algal bloom prevention, monitoring, and response efforts. This project will specifically document existing state programming responses to harmful algal bloom related issues, assess outreach programming needs in the North Central Region, and to develop recommendations for strengthening harmful algal bloom research and outreach throughout the region. As a part of this work the Partnering to Mitigate HABs team will host a session in conjunction with the 2018 North Central Region One Water Action Forum in Indianapolis to discuss current state responses and programming needs. A whitepaper will be developed as a result, outlining next steps to address needs related to HABs.

For more information go to: https://northcentralwater.org/nutrient-and-manure-management/habs/

Fourth National Climate Assessment (NCA4) Report

On Friday, November 23rd, the U.S. Global Change Research Program (USGCRP) released the Fourth National Climate Assessment (NCA4) focusing on the human welfare, societal, and environmental elements of climate change and variability for 10 regions and 18 national topics, with attention paid to observed and projected risks, impacts, consideration of risk reduction, and implications under different mitigation pathways. This assessment was written to help inform decision-makers, utility and natural resource managers, public health officials, emergency planners, and other stakeholders by providing a thorough examination of the effects of climate change on the United States.

According to the report, the occurrence of conditions that contribute to harmful algal blooms, can result in an increase of restrictions to water usage for drinking and recreation in the Midwest. In the northwest, razor clamming on the coast of Washington State is expected to decline due to ocean acidification, harmful algal blooms, warmer temperatures, and habitat degradation.

Explore the report online or download it at nca2018.globalchange.gov

This newsletter was created by Dr. Lesley V. D'Anglada, Office of Science and Technology, Office of Water, EPA. Mention of trade names, products, or services does not convey and should not be interpreted as conveying official EPA endorsement, approval or recommendation for use.

To sign up please send an email to: epacyanohabs@epa.gov. For previous newsletters, go to Freshwater HABs Newsletter or visit the USEPA's CyanoHABs Website

BLOOMS, BEACH CLOSURES and HEALTH ADVISORIES, November 2018

The following map includes blooms, cautions, warnings, public health advisories, closings and detections over State's threshold, due to the presence of algae, toxins or both. This is not a comprehensive list, and many blooms may have not been reported or are not actively monitored as many States close the season for Harmful Algal Bloom monitoring efforts by the end of October.

- **California (7):** Quarry Lakes, East Bay Park at Big Break, H.V. Eastman Lake, Hensley Lake, San Luis Reservoir Basalt Boat Launch, Huichica Pond near Napa River, Lake Anza
- **Idaho (2):** Mormon Reservoir, Fernan Lake
- **Massachusetts (7):** Billington Sea, Boot Pond and Halfway Pond, Plymouth; Central Pond, Seekonk; South Watuppa Pond, Fall River, Westport; Turner Reservoir, Seekonk.
- **New Jersey (10)**: Duck Pond, Weequahik Lake, Memorial Lake, Budd Lak, Unnamed Lake Saddle River Park, Little Swartswood Lake, Southard Park Pond, Crystals Springs Pond, Branch Brook Park Lake, Lake Hopatcong
- **Ohio (1):** Grand Lake St. Marys
- **Oregon (3):** South Umpqua River, Keno Dam and Upper Klamath Lake (lifted on Nov. 2)
- **Utah (3)**: Deer Creek Reservoir (lifted on Nov. 20), Utah Lake, Scofield Reservoir
- **Vermont (2)**: Lake Morey, Indian Brooke Reservoir
- **Virginia (2)**: Fisherman's Cove, Pamunkey Branches

Important Links

- ✓ EPA's November 2018 Fish and Shellfish Program Newsletter
- ✓ Frequently Asked Questions on Laboratory Analysis for Microcystins in Drinking Water
- ✓ West Virginia Department of Environmental Protection's Harmful Algal Blooms Webpage
- ✓ Oklahoma's Tourism and Recreation Department Facts About Blue-Green Algae and Lake Conditions
- ✓ USGS's Water quality of the Nation's streams and rivers: Current conditions

Recently Published Articles

Drivers of Cyanobacterial Blooms in a Hypertrophic Lagoon
Bartoli M, Zilius M, Bresciani M, Vaiciute D, Vybernaite-Lubiene I, Petkuviene J, Giordani G, Daunys D, Ruginis T, Benelli S, Giardino C, Bukaveckas PA, Zemlys P, Griniene E, Gasiunaite ZR, Lesutiene J, Pilkaitytė R and Baziukas-Razinkovas A (2018). *Front. Mar. Sci.* 5:434.

Addressing the Problem of Harmful Algal Blooms in Latin America and the Caribbean- A Regional Network for Early Warning and Response
Cuellar-Martinez T, Ruiz-Fernández AC, Alonso-Hernández C, Amaya-Monterrosa O, Quintanilla R, Carrillo-Ovalle HL, Arbeláez MN, Díaz-Asencio L, Méndez SM, Vargas M, Chow-Wong NF, Valerio-Gonzalez LR, Enevoldsen H and Dechraoui Bottein M-Y (2018) *Front. Mar. Sci.* 5:409.

Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II
USGCRP, 2018: Reidmiller, D.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, K.L.M. Lewis, T.K. Maycock, and B.C. Stewart (eds.). U.S. Global Change Research Program, Washington, DC, USA.

Screening of cyanobacterial cultures originating from different environments for cyanotoxicity and cyanotoxins
Nada Tokodi, Damjana Drobac, Gospava Lazić, Tamaš Petrović, Zoran Marinović, Jelena Lujić, Tamara Palanački Malešević, Jussi Meriluoto, Zorica Svirčev,Toxicon, Volume 154, 2018, Pages 1-6.

Microcystis aeruginosa and microcystin-LR removal by household slow sand filters operating in continuous and intermittent flows
U.C. Terin, L.P. Sabogal-Paz, Water Research, 2018.

Genetic toxicity of water contaminated by microcystins collected during a cyanobacteria bloom
Maria Tereza Pamplona-Silva, Letícia Cristina Gonçalves, Maria Aparecida Marin-Morales, Ecotoxicology and Environmental Safety, Volume 166, 2018, Pages 223-230.

Analytical methods for assessment of cyanotoxin contamination in drinking water sources
Marcela Jaramillo, Kevin E. O'Shea, Current Opinion in Environmental Science & Health, 2018.

Tumor-promoting cyanotoxin microcystin-LR does not induce procarcinogenic events in adult human liver stem cells
Jan Raska, Lucie Ctverackova, Aneta Dydowiczova, Iva Sovadinova, Ludek Blaha, Pavel Babica, Toxicology and Applied Pharmacology, Volume 345, 2018, Pages 103-113.

Upcoming Conferences

- **11th National Water Monitoring Conference, Denver, Colorado March 25-29, 2019**
- **11th International Conference on Toxic Cyanobacteria, Poland, May 5-10, 2019**

MDPI Special Issue "Effects of Harmful Cyanobacteria on Ecosystem Functioning, Food Webs, and Water Quality"

Summarize recent advances in the monitoring, analysis, and prevention of cyanoHABs including the effects of cyanobacteria on water chemistry, deep water, and sediment anoxia, grazing inhibition, animal kills, biodiversity, ecological status, human health, and analyses of societal costs. Deadline for manuscript submissions: June 30, 2020