EPA United States Environmental Protection Agency

New Organizational and Emerging Policy Efforts USEPA National HAB Program

Michael Paul, PhD, USEPA

National HAB Program Lead

Presentation for

Oregon Lakes Association Meeting

"The views expressed in this presentation are those of the author and do not necessarily represent the views or policies of the U.S. Environmental Protection Agency."

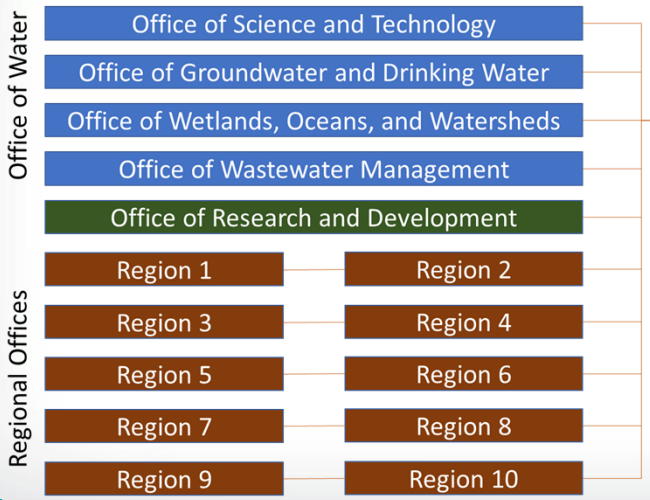
March 8, 2024

1

EPA

USEPA National HAB Program

USEPA National HAB Program – Improving Intra-agency HAB Coordination



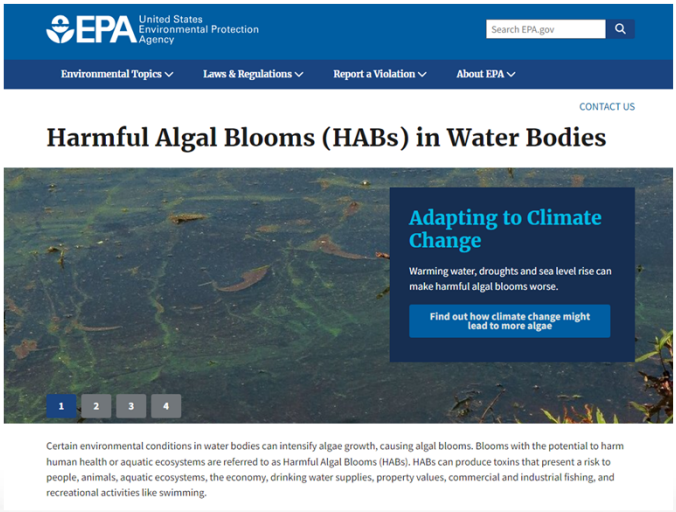
"Serves as the center for communication, coordination, and collaboration among EPA programs and regional offices involved in HAB-related work."

2

2

USEPA National HAB Program

- **Prevent**
- **Monitor**
- **Forecast**
- **Control**
- **Response**



New Website!
Hot off the Press!!

https://www.epa.gov/habs

3

3

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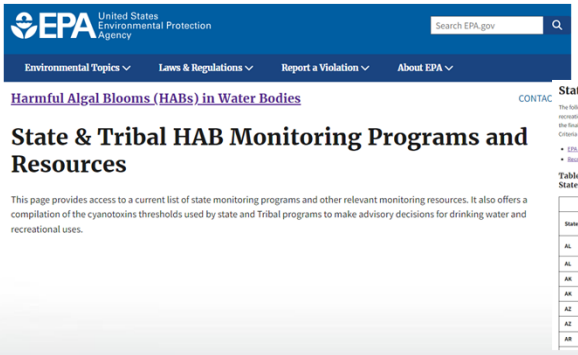
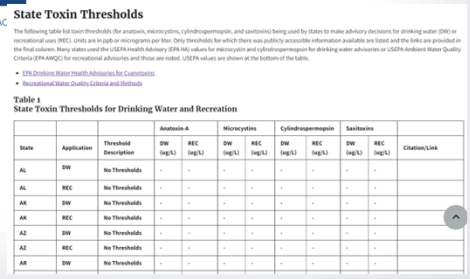
Cyanotoxin	Drinking Water Health Advisory (10-day)	
	Bottle-fed infants and pre-school children	School-age children and adults
Cylindrospermopsin	0.7 µg/L	3.0 µg/L
Microcystins	0.3 µg/L	1.6 µg/L

Table. Recommended magnitude for cyanotoxins.

Microcystins	Cylindrospermopsin
8 µg/L	15 µg/L





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4

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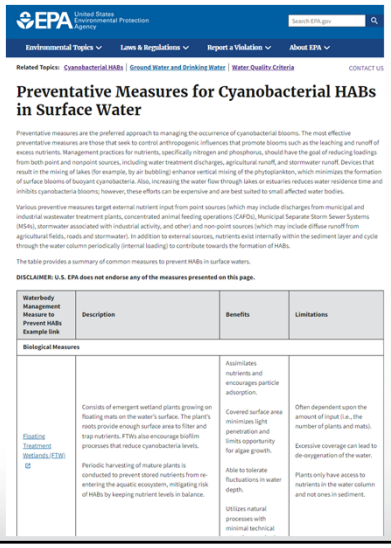

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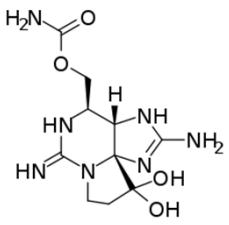
Emerging HAB Topics



Saxitoxin HESD

United States Environmental Protection Agency | Office of Water Mail Code 4304T | EPA- 820R15104 June 2015

"The available data on toxicity are not adequate to derive a health-based value for anatoxin-a at the present time. EPA will reevaluate the ability to derive an HA for anatoxin-a as new information becomes available"

Health Effects Support Document for the Cyanobacterial Toxin Anatoxin-A

6

6

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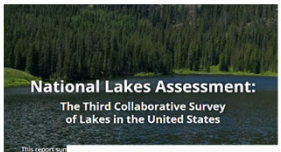
Cyanobacteria Assessment Network Application (CyAN app)

Make faster decisions related to cyanobacterial algal blooms



What was the condition in 2017?

Microcystins were detected in 21% of lakes in 2017. The detection of microcystins in the ecoregions ranged from 2% to 58%. Levels exceeded EPA's recreational criterion in 2% of lakes, representing 4,400 lakes nationally, as shown below.

Cyanotoxins and the Safe Drinking Water Act: Drinking Water Protection Act, Contaminant Candidate List and the Unregulated Contaminant Monitoring Rule

7

7

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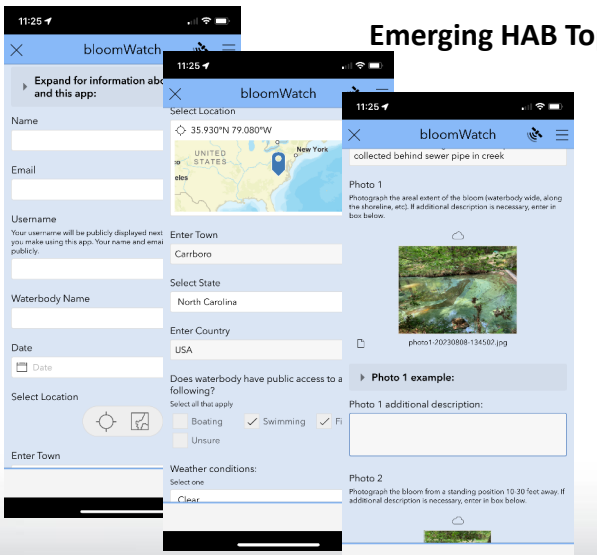
Emerging HAB Topics



8

8

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Emerging HAB Topics

Benthic HABs Discussion Group

Mission Statement:

The mission of this international collaborative is to accelerate mutual understanding of benthic HABs in rivers and lak sharing data and monitoring protocols, experiences and lessons learned.

Calendar of Webinars:

- Benthic HABs Discussion October 17, 2023

Contact Information:

Benthic HAB Workgroup Facilitators – Contact us to join the workgroup or to be a presenter!

Name	Affiliation	Contact Information
Eric Zimdars	U.S. Army Corps of Engineers	Phone: 206-764-3506 Email: Eric.S.Zimdars@usace.army.mil
Margaret Spoo-Chupka	Metropolitan Water District of Southern CA	Phone: 909-392-5127 Email: MSpoo-Chupka@mwdh2o.com
Keith Bouma-Gregson	U.S. Geological Survey	Phone: 510-230-3691 Email: kbouma-gregson@usgs.gov
Janice Alers-Garcia	US EPA, Washington, DC	Phone: 202-566-0756 Email: Alers-Garcia.Janice@epa.gov

Related Info

Past Benthic Webinars

* **Disclaimer:** The information presented in the Benthic HABs Discussion Group Webinars does not constitute an official endorsement by the U.S. government.

Developing Standardized Methods for Sampling, Analyzing and Assessing Benthic Harmful Algal Blooms

Innovative Science for a Sustainable Future

Background

Benthic harmful cyanobacterial blooms (HCBs) and their toxins pose a significant environmental threat to domestic animals, wildlife, and humans, and have impacted drinking water treatment operations in recent years. Specifically, dog and cattle deaths have have recently experienced benthic HCBs. Researchers are looking to characterize locations on wadeable streams and wadeable areas of larger rivers where high exposure risks have the potential to occur, such as places where children and pets (i.e., dogs) play in water, wade, or have the potential

9

9

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- Forecast
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Emerging HAB Topics

EPA United States Environmental Protection Agency — Search EPA.gov

Environmental Topics | Laws & Regulations | Report a Violation | About EPA

Cyanobacterial HABs — CONTACT US

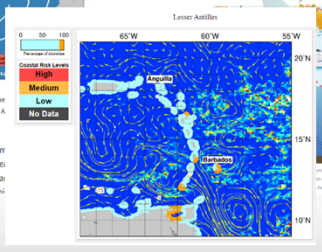
Sargassum Inundation Events (SIEs)

Related information in Spanish

Sargassum is a type of floating algae that forms large aggregations or floating mats in the ocean and is historically found in the Sargasso Sea, a region in the North Atlantic Ocean. Despite being a familiar sight on beaches on the Atlantic coast, *Sargassum* has gained significant attention from scientific and coastal communities since 2011 because of new, large aggregations of the algae outside of the Sargasso Sea. The area this new aggregation of *Sargassum* occupies has been named the Great Atlantic *Sargassum* Belt (GASB) and stretches from the west coast of Africa to the Caribbean and Gulf of Mexico.

Diagram highlighting the location and extent of *Sargassum* in the Atlantic *Sargassum* Belt, which stretches from the west coast of A Gulf of Mexico. Source: López Miranda et al. 2021.

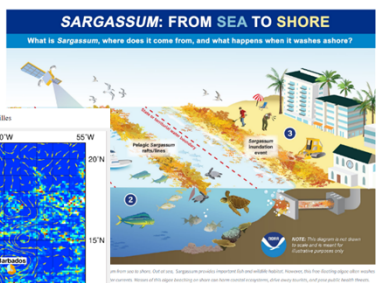
When in abundance at sea, *Sargassum* is a foundational ecosystem species that provides habitat for diverse assem invertebrates, sea turtles, and sea birds. However, when large amounts of *Sargassum* from the GASB aggregate nea onto shore (also known as *Sargassum* inundation events- SIEs) these can harm human health, the environment, a When a large amount of beached *Sargassum* decomposes it can release gases (e.g., hydrogen sulfide and ammoni



National Ocean Service — National Oceanic and Atmospheric Administration

Sargassum: From Sea to Shore

What is *Sargassum*, where does it come from, and what happens when it washes ashore?



10

10

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- Control
- Response

Cyanobacteria Assessment Network Application (CyAN app)

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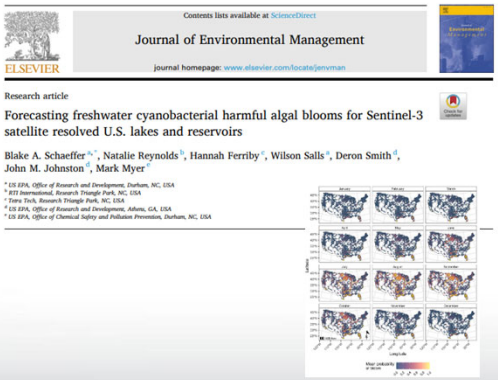

Contents lists available at ScienceDirect

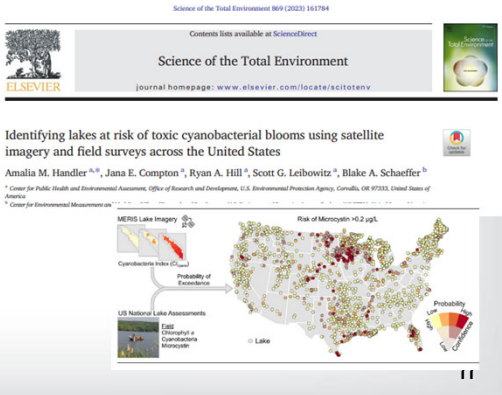
Journal of Environmental Management

journal homepage: www.elsevier.com/locate/jenvman

Research article

Forecasting freshwater cyanobacterial harmful algal blooms for Sentinel-3 satellite resolved U.S. lakes and reservoirs

Blake A. Schaeffer, Natalie Reynolds, Hannah Ferriby, Wilson Salls, Deron Smith, John M. Johnston, Mark Myer


Science of the Total Environment 869 (2023) 161784

Contents lists available at ScienceDirect

Science of the Total Environment

journal homepage: www.elsevier.com/locate/scitotenv

Identifying lakes at risk of toxic cyanobacterial blooms using satellite imagery and field surveys across the United States

Amalia M. Handler, Jana E. Compton, Ryan A. Hill, Scott G. Leibowitz, Blake A. Schaeffer

11

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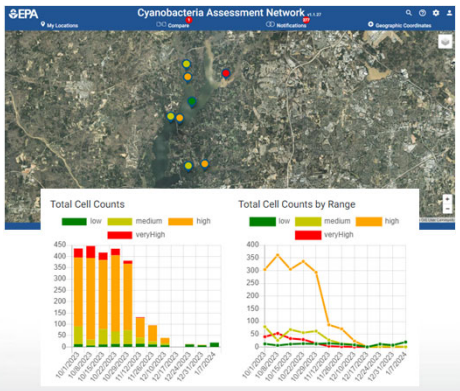
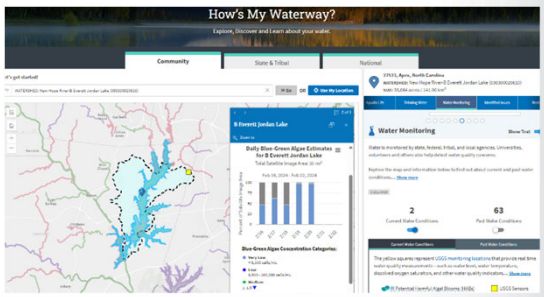
- Control
- Response

Emerging HAB Topics

Operationalizing CyAN Forecasts





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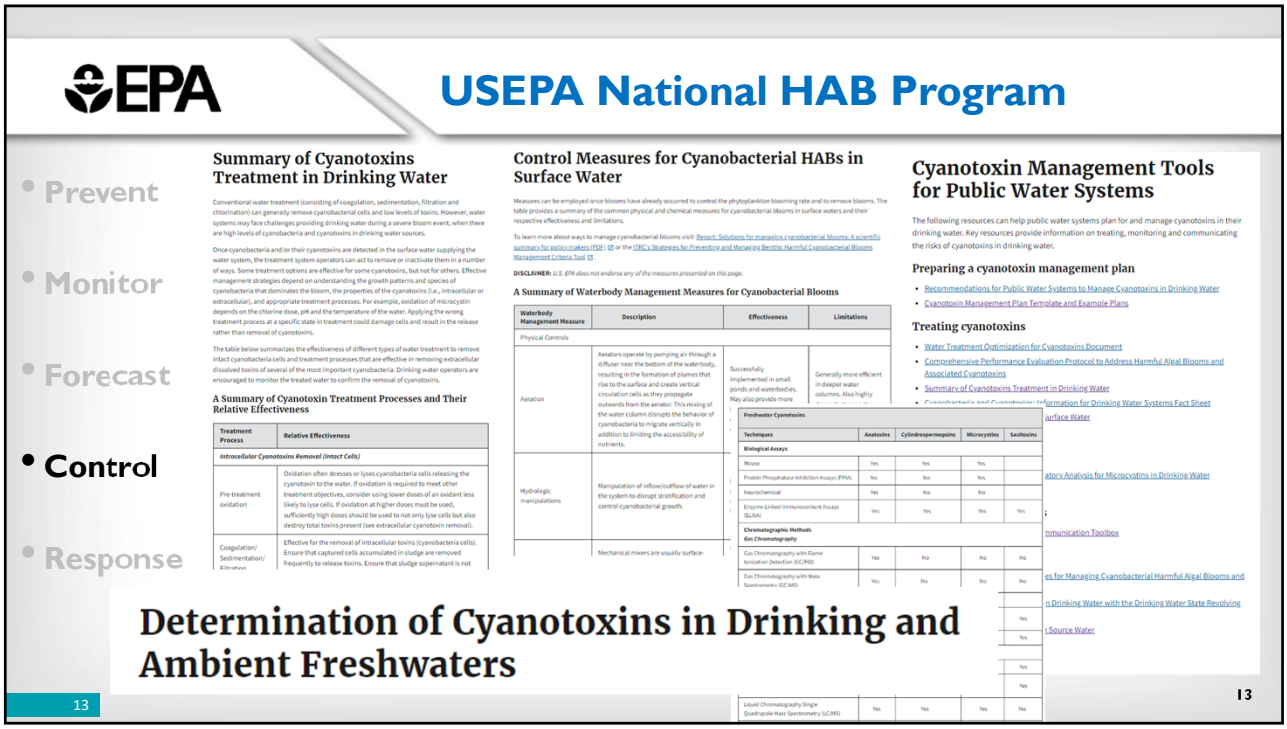
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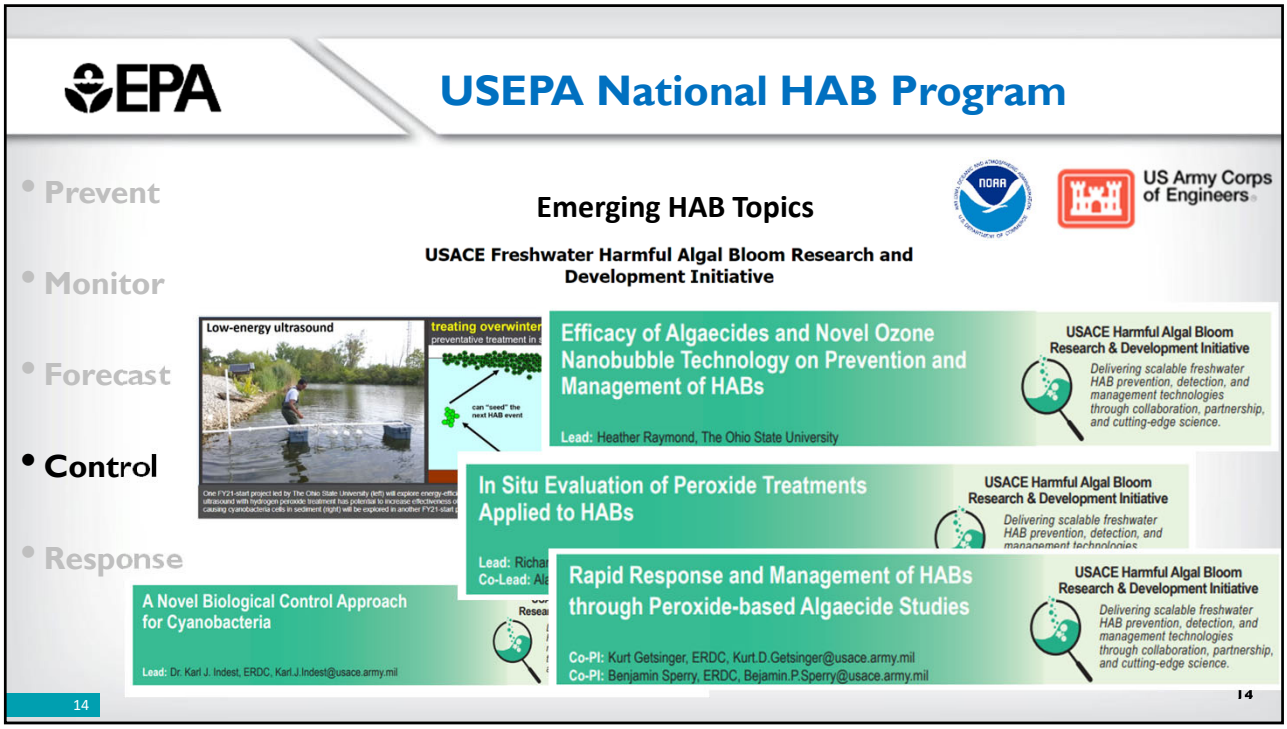
Prevent
Monitor
Forecast
Control
Response
Summary of Cyanotoxins Treatment in Drinking Water
A Summary of Cyanotoxin Treatment Processes and Their Relative Effectiveness
Control Measures for Cyanobacterial HABs in Surface Water
A Summary of Waterbody Management Measures for Cyanobacterial Blooms
Cyanotoxin Management Tools for Public Water Systems
Preparing a cyanotoxin management plan
Treating cyanotoxins
Determination of Cyanotoxins in Drinking and Ambient Freshwaters
13

13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Prevent
Monitor
Forecast
Control
Response
Emerging HAB Topics
USACE Freshwater Harmful Algal Bloom Research and Development Initiative
US Army Corps of Engineers
Low-energy ultrasound
Efficacy of Algaecides and Novel Ozone Nanobubble Technology on Prevention and Management of HABs
Lead: Heather Raymond, The Ohio State University
USACE Harmful Algal Bloom Research & Development Initiative
Delivering scalable freshwater HAB prevention, detection, and management technologies through collaboration, partnership, and cutting-edge science.
In Situ Evaluation of Peroxide Treatments Applied to HABs
Rapid Response and Management of HABs through Peroxide-based Algaecide Studies
Co-PI: Kurt Getsinger, ERDC, Kurt.D.Getsinger@usace.army.mil
Co-PI: Benjamin Sperry, ERDC, Bejamin.P.Sperry@usace.army.mil
A Novel Biological Control Approach for Cyanobacteria
Lead: Dr. Karl J. Indest, ERDC, Karl.J.Indest@usace.army.mil
14

14

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- Forecast
- Control
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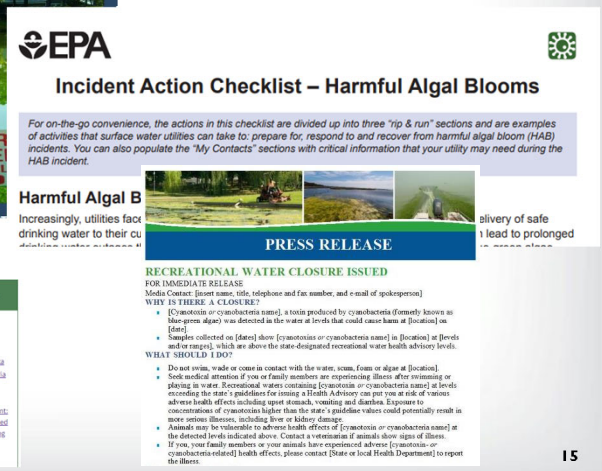

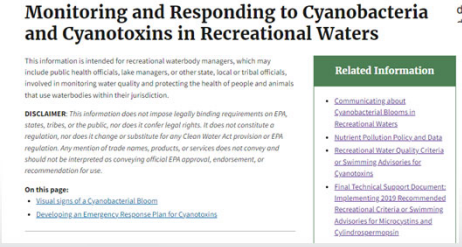

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15

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- Control
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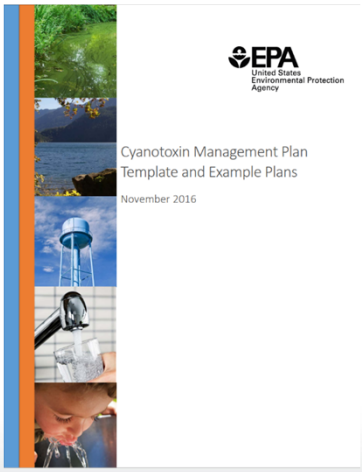

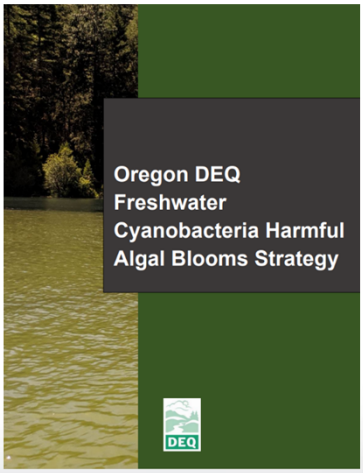

16

16

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paul.michael@epa.gov
https://www.epa.gov/cyanohabs

12th U.S. Symposium on Harmful Algae

October 27-November 1, 2024

Holiday Inn Portland by the Bay in Portland, Maine.

https://neiwpcc.org/events/ushab12/

Search: US HAB Meeting 2024

17

17