

Webinar: U.S. EPA's Tools for Managing CyanoHABs in Drinking and Recreational Waters



OFFICE OF WATER
U.S. ENVIRONMENTAL PROTECTION AGENCY

JULY 29TH, 2021



WEBINAR LOGISTICS



- **TO ASK A QUESTION OR MAKE A COMMENT** – CLICK THE “SHOW CONVERSATION” BUTTON AT THE TOP OF YOUR SCREEN (CIRCLED BELOW IN RED) TO OPEN THE CHAT WINDOW. YOU CAN ALSO RAISE YOUR HAND (CIRCLED BELOW IN YELLOW) AND A MODERATOR WILL CALL ON YOU TO ASK YOUR QUESTION.



- **TO REPORT ANY TECHNICAL ISSUES (SUCH AS AUDIO PROBLEMS)** – TYPE YOUR QUESTION/COMMENT IN THE CONVERSATION CHAT WINDOW AND HIT ENTER. WE WILL RESPOND BY POSTING AN ANSWER IN THE CHAT WINDOW.
- **IF YOU HAVE TROUBLE WITH COMPUTER AUDIO:**
 - IN TEAMS, CLICK ON MORE ACTIONS
 - THEN, CLICK ON DEVICE SETTINGS AND CHECK WHETHER YOUR SPEAKERS/HEADPHONES NEED TO BE UNMUTED
 - CHECK MASTER COMPUTER AUDIO (GENERAL DEVICE SETTINGS IN THE BOTTOM RIGHT CORNER OF YOUR SCREEN) IS TURNED UP AND NOT MUTED
- **TO LISTEN TO AUDIO OVER THE PHONE** – USE THE INFORMATION BELOW:
 - CALL-IN NUMBER: **+1 757-578-1812**
 - CODE: **128 002 21#**



NOTE THAT CALLING INTO THE PHONE LINE IS NOT REQUIRED. IF YOU USE BOTH YOUR COMPUTER SPEAKERS AND THE PHONE NUMBER BELOW YOU WILL HEAR AN ECHO. AUDIENCE MEMBER LINES HAVE BEEN MUTED TO REDUCE BACKGROUND NOISE. IF YOU UNMUTE YOUR MICROPHONE TO SPEAK (BY CLICKING ON THE MICROPHONE ICON AT THE TOP OF THE PAGE), PLEASE BE SURE TO MUTE YOUR LINE WHEN YOU ARE FINISHED BY CLICKING ON THE MICROPHONE ICON AT THE TOP OF THE PAGE AGAIN.

Agenda

- Overview of EPA's Drinking Water Health Advisories and Recommended Recreational Water Quality Criteria/Swimming Advisories for Microcystins and Cylindrospermopsin
- Tools for managing cyanotoxins in drinking water
- Tools for managing harmful algal blooms in recreational waters
- New and Upcoming HABs Resources: Cyanotoxins Preparedness and Response Toolkit (CPRT) and Tracking CyanoHABs Story Map
- HABs Outreach and Communication Resources Examples: NY, OR, OH and CA
- Q&A



Overview of EPA's Drinking Water Health Advisories for Microcystin and Cylindrospermopsin and Recommended Recreational Water Quality Criteria/Swimming Advisories for Microcystins and Cylindrospermopsin



EPA's Drinking Water Health Advisories



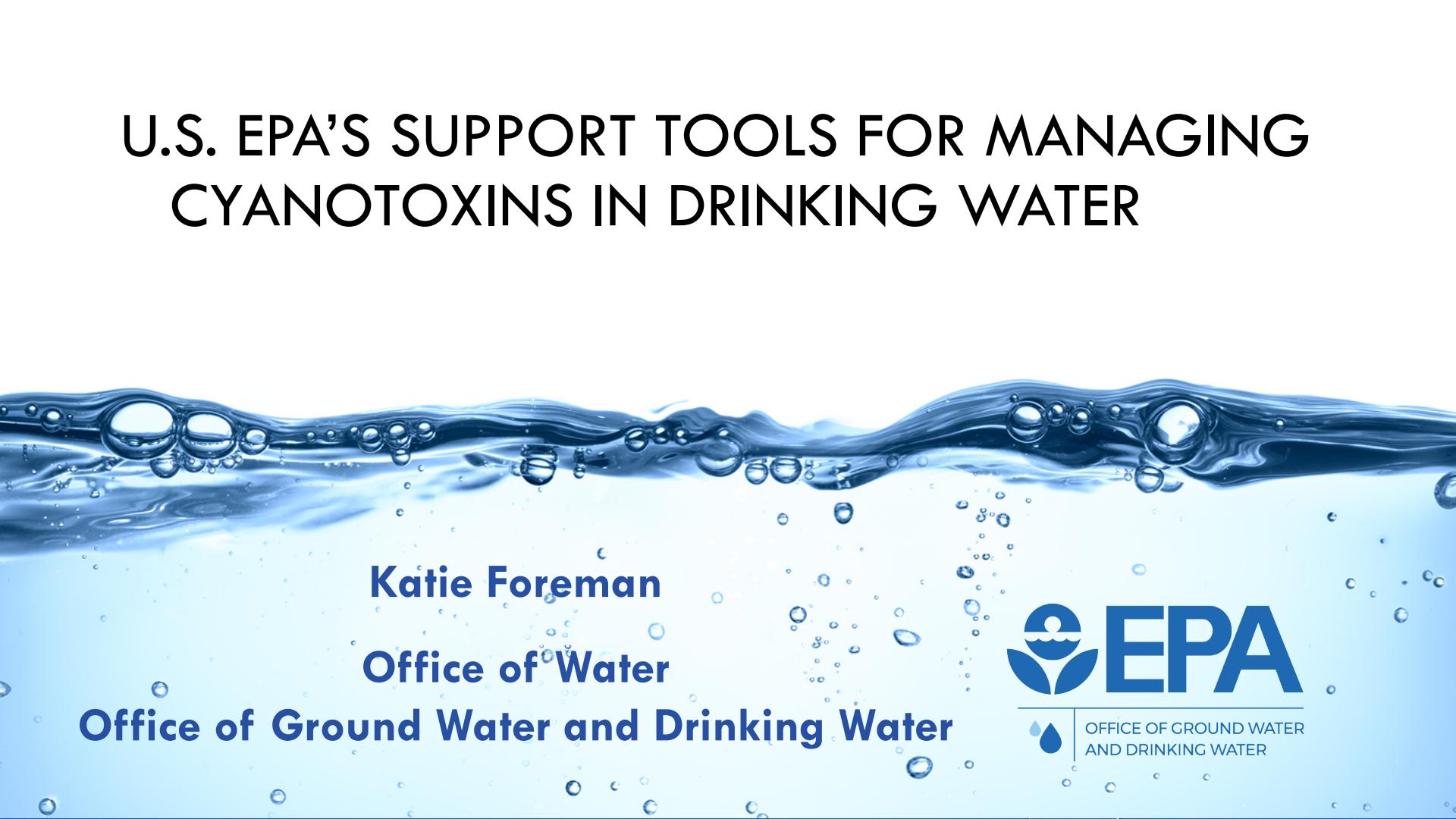
Ten-day Health Advisory	Toxin (µg/L)		Population
	Microcystins	Cylindrospermopsin	
Bottle-fed infants and pre- school children	0.3	0.7	Bottle-fed infants and young children of pre-school age because these age groups have higher intake per body weight relative to adults
School age children and adults	1.6	3.0	School age children (children older than or equal to 6 years) through adulthood because children's intake of DW relative to body weight in this age group is almost the same as those of an adult (>21 years).

EPA's Recommended Recreational Ambient Water Quality Criteria/Swimming Advisories



Application of Recommended Values	Microcystins			Cylindrospermopsin		
	Magnitude (µg/L)	Duration	Frequency	Magnitude (µg/L)	Duration	Frequency
Recreational Water Quality Criteria	8	1 in 10-day assessment period across a recreational season	More than 3 excursions in a recreational season, not to be exceeded in more than one year	15	1 in 10-day assessment period across a recreational season	More than 3 excursions in a recreational season, not to be exceeded in more than one year
Swimming Advisory		One day	Not to be exceeded		One day	Not to be exceeded

U.S. EPA'S SUPPORT TOOLS FOR MANAGING CYANOTOXINS IN DRINKING WATER



Katie Foreman

Office of Water

Office of Ground Water and Drinking Water



OFFICE OF GROUND WATER
AND DRINKING WATER

PRESENTATION OVERVIEW

- OVERVIEW OF HARMFUL ALGAL BLOOMS (HABS) AND DRINKING WATER IMPACTS
- EPA'S RECENT AND ONGOING HAB-RELATED ACTIVITIES IN DRINKING WATER
- DISCUSSION OF KEY SUPPORT TOOLS FOR MANAGING CYANOTOXIN RISKS IN DRINKING WATER

HAB-RELATED DRINKING WATER CHALLENGES



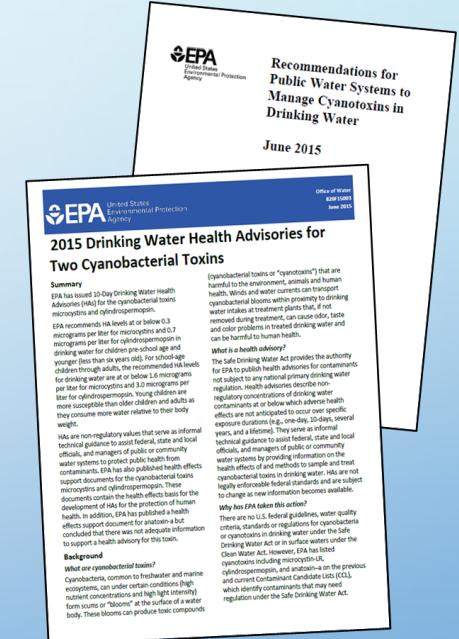
- DRINKING WATER QUALITY
 - TASTE AND ODOR PROBLEMS
 - HUMAN HEALTH EFFECTS FROM INGESTING TOXINS: GASTROENTERITIS, LIVER AND KIDNEY DAMAGE
 - POTENTIAL DEVELOPMENT OF DISINFECTION BYPRODUCTS
- PUBLIC WATER SYSTEMS
 - INCREASING OPERATIONAL COSTS
 - NEEDING ADDITIONAL RESEARCH ON HOW TO PREVENT, PREDICT, ANALYZE, MONITOR AND TREAT TOXINS
 - DEVELOPING AND IMPLEMENTING COST EFFECTIVE METHODS TO REDUCE HABS IN SOURCE WATERS
 - DETERMINING HOW TO COMMUNICATE RISK TO THE PUBLIC



KEY OW CYANOTOXIN DRINKING WATER ACTIVITIES



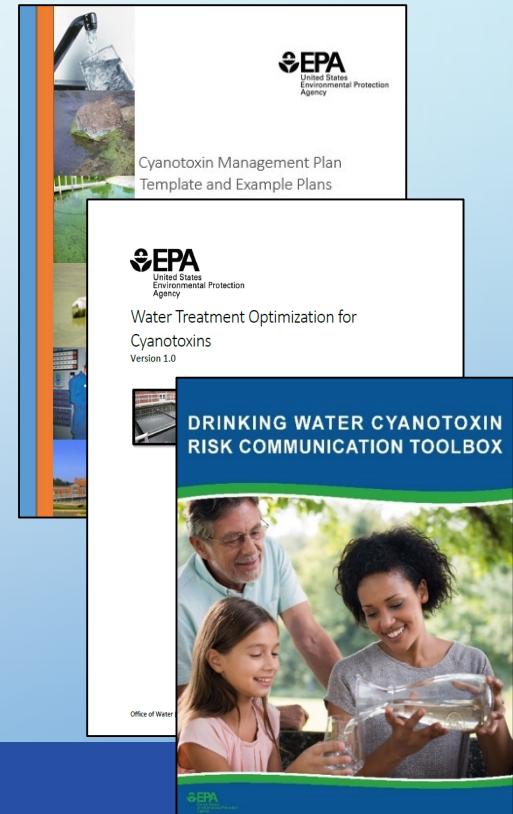
- DEVELOPED DRINKING WATER HEALTH ADVISORIES FOR TWO CYANOTOXINS – 2015
- RELEASED RECOMMENDATIONS DOCUMENT FOR PUBLIC WATER SYSTEMS TO MANAGE CYANOTOXINS IN DRINKING WATER – 2015
- SUBMITTED “ALGAL TOXIN RISK ASSESSMENT AND MANAGEMENT STRATEGIC PLAN FOR DRINKING WATER” TO CONGRESS – 2015
- INCLUDED ALGAL TOXINS ON THE SAFE DRINKING WATER ACT’S CONTAMINANT CANDIDATE LISTS (CCLS), INCLUDING CCL 4 – 2016
- DEVELOPED CYANOTOXIN DRINKING WATER TOOLS AND VIDEO; UPDATED SELECT TOOLS – 2016-2019
- CONDUCTING CYANOTOXINS MONITORING FOR THE FOURTH UNREGULATED CONTAMINANT MONITORING RULE (UCMR 4) – 2018-2021
- FACILITATING REGIONAL AND NATIONAL HABS WORKSHOPS/WEBINARS - ONGOING
- ENHANCING SOURCE WATER PROTECTION PARTNERSHIPS - ONGOING



EPA HAB DRINKING WATER TOOLS



- RECOMMENDATIONS DOCUMENT
- CYANOTOXIN MANAGEMENT PLAN TEMPLATE AND EXAMPLE PLANS
- WATER TREATMENT OPTIMIZATION FOR CYANOTOXINS
- CYANOTOXIN RISK COMMUNICATION TOOLBOX
- FACTSHEET: POSSIBLE FUNDING SOURCES FOR MANAGING CYANOBACTERIAL HARMFUL ALGAL BLOOMS AND CYANOTOXINS IN DRINKING WATER
- FACTSHEET: ADDRESSING HABS AND CYANOTOXINS IN DRINKING WATER WITH THE DRINKING WATER STATE REVOLVING FUND
- FACTSHEET: CYANOBACTERIA AND CYANOTOXINS: INFORMATION FOR DRINKING WATER SYSTEMS



Tools available online at: <https://www.epa.gov/ground-water-and-drinking-water/what-cyanotoxin-tools-are-available-public-water-systems>



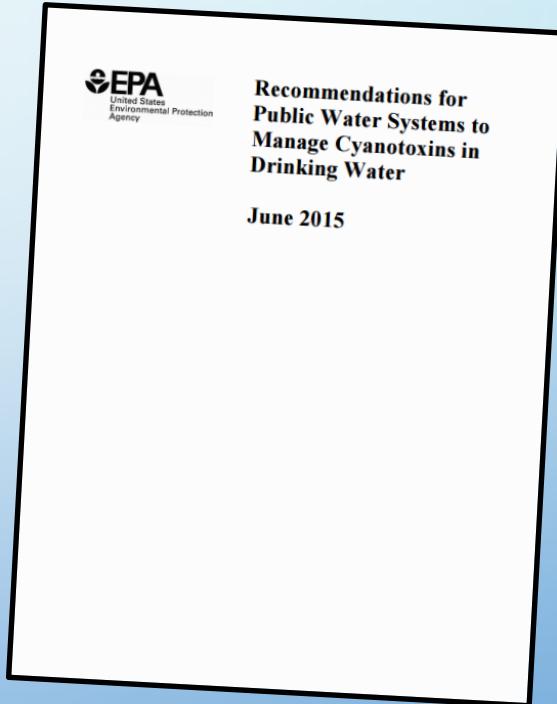
Tools for Addressing the Risks of Cyanotoxins in Drinking Water

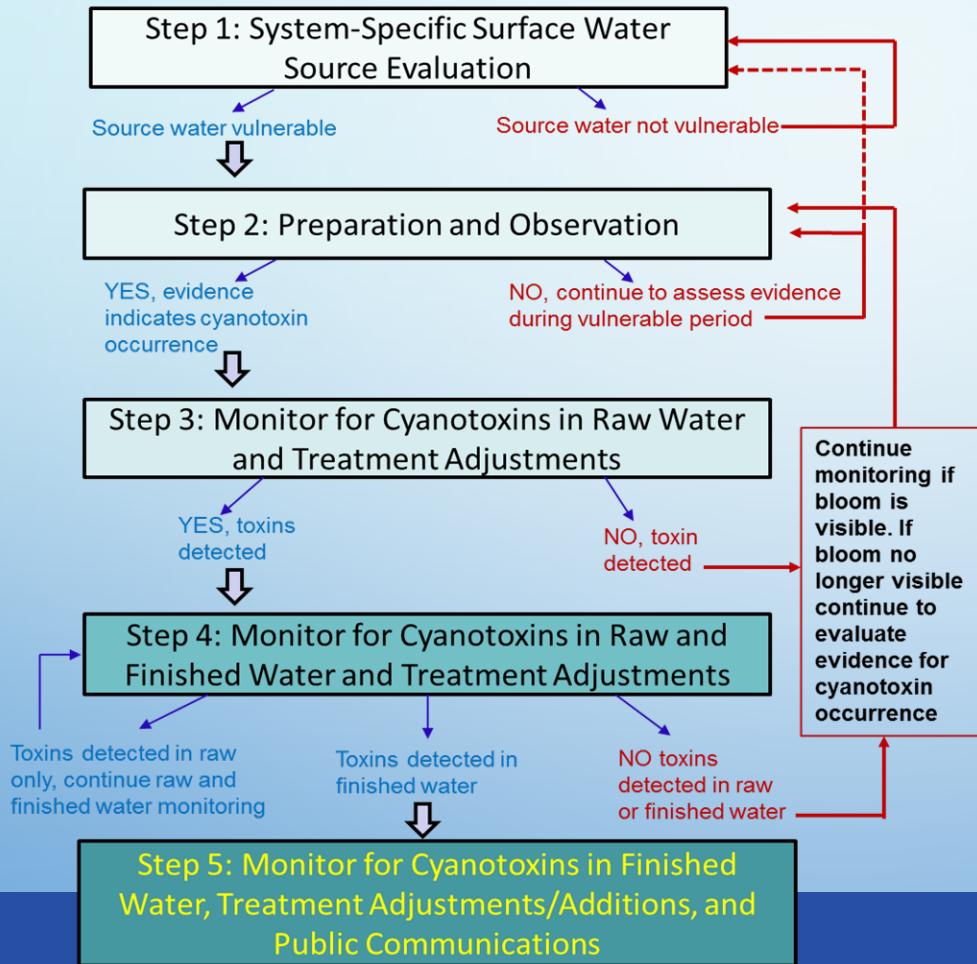
VIDEO SUMMARIZING TOOLS FOR MANAGING CYANOTOXINS IN DRINKING WATER

RECOMMENDATIONS DOCUMENT



- POTENTIAL 5-STEP FRAMEWORK FOR MANAGING RISKS OF TOXINS IN DRINKING WATER
- MONITORING, TREATMENT AND COMMUNICATION COMPONENTS IN EVERY STEP
- AVAILABLE ONLINE:
[HTTPS://WWW.EPA.GOV/SITES/PRODUCTION/FILES/2017-06/DOCUMENTS/CYANOTOXIN-MANAGEMENT-DRINKING-WATER.PDF](https://www.epa.gov/sites/production/files/2017-06/documents/cyanotoxin-management-drinking-water.pdf)





- **5 STEP RISK MANAGEMENT FRAMEWORK**

CYANOTOXIN MANAGEMENT PLANS



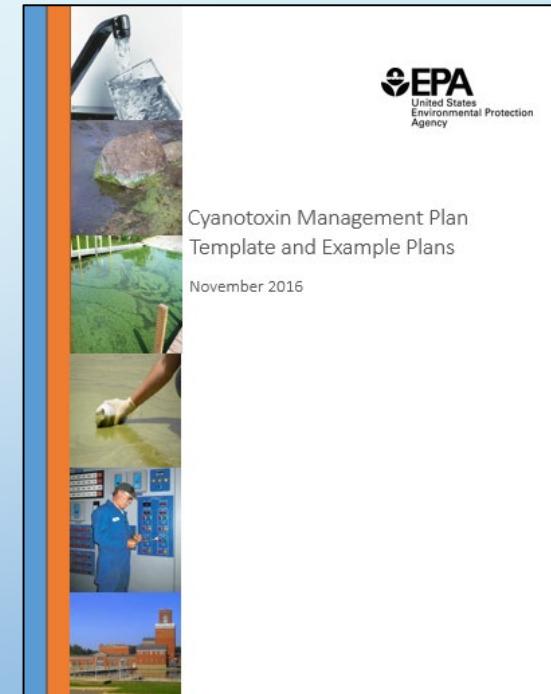
- TWO PARTS:

1. TEMPLATE

- FRAMEWORK FOR PUBLIC WATER SYSTEMS (PWSS) TO DEVELOP THEIR OWN CYANOTOXIN MANAGEMENT PLANS AS THEY DEEM APPROPRIATE – 5-STEP PROCESS

2. FIVE EXAMPLE CYANOTOXIN MANAGEMENT PLANS

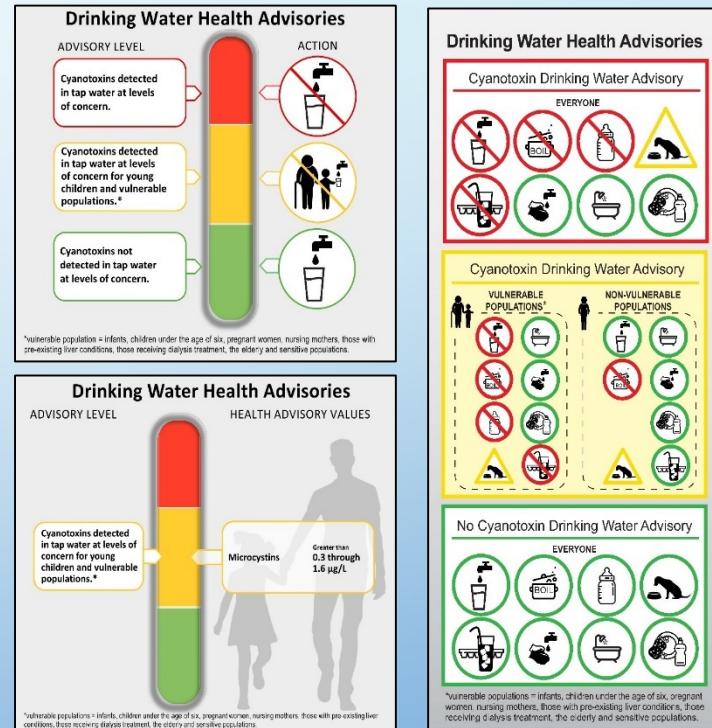
- EXAMPLES FROM FIVE PARTNER PWSS REPRESENTING DIVERSITY IN SYSTEM CHARACTERISTICS AND GEOGRAPHY



RISK COMMUNICATION TOOLBOX CONTENTS



- **TEMPLATES**
 - PRESS RELEASES
 - DRINKING WATER ADVISORIES
 - SOCIAL MEDIA AND TEXT ALERTS
- **GENERAL INFORMATION**
 - PUBLIC MESSAGING
 - FREQUENTLY ASKED QUESTIONS
 - FACTSHEETS
- **GRAPHICS**
 - MENU OF MULTIPLE DOWNLOADABLE OPTIONS



Available online at:

<https://www.epa.gov/ground-water-and-drinking-water/drinking-water-cyanotoxin-risk-communication-toolbox>

and

<https://espanol.epa.gov/espanol/caja-de-herramientas-para-la-comunicacion-del-riesgo-de-cianotoxinas-en-el-agua-potable>

CONTACT INFORMATION



- KATIE FOREMAN
 - FOREMAN.KATHERINE@EPA.GOV
- CYANOTOXINS IN DRINKING WATER WEBSITE
 - [HTTPS://WWW.EPA.GOV/GROUND-WATER-AND-DRINKING-WATER/MANAGING-CYANOTOXINS-PUBLIC-DRINKING-WATER-SYSTEMS](https://www.epa.gov/ground-water-and-drinking-water/managing-cyanotoxins-public-drinking-water-systems)
- CYANOHABS WEBSITE
 - [HTTPS://WWW.EPA.GOV/CYANOHABS](https://www.epa.gov/cyanohabs)

U.S. EPA'S TOOLS FOR MONITORING AND RESPONDING TO HABS IN RECREATIONAL WATERS



Lars Wilcut

Office of Water
Office of Science and Technology



PRESENTATION OVERVIEW

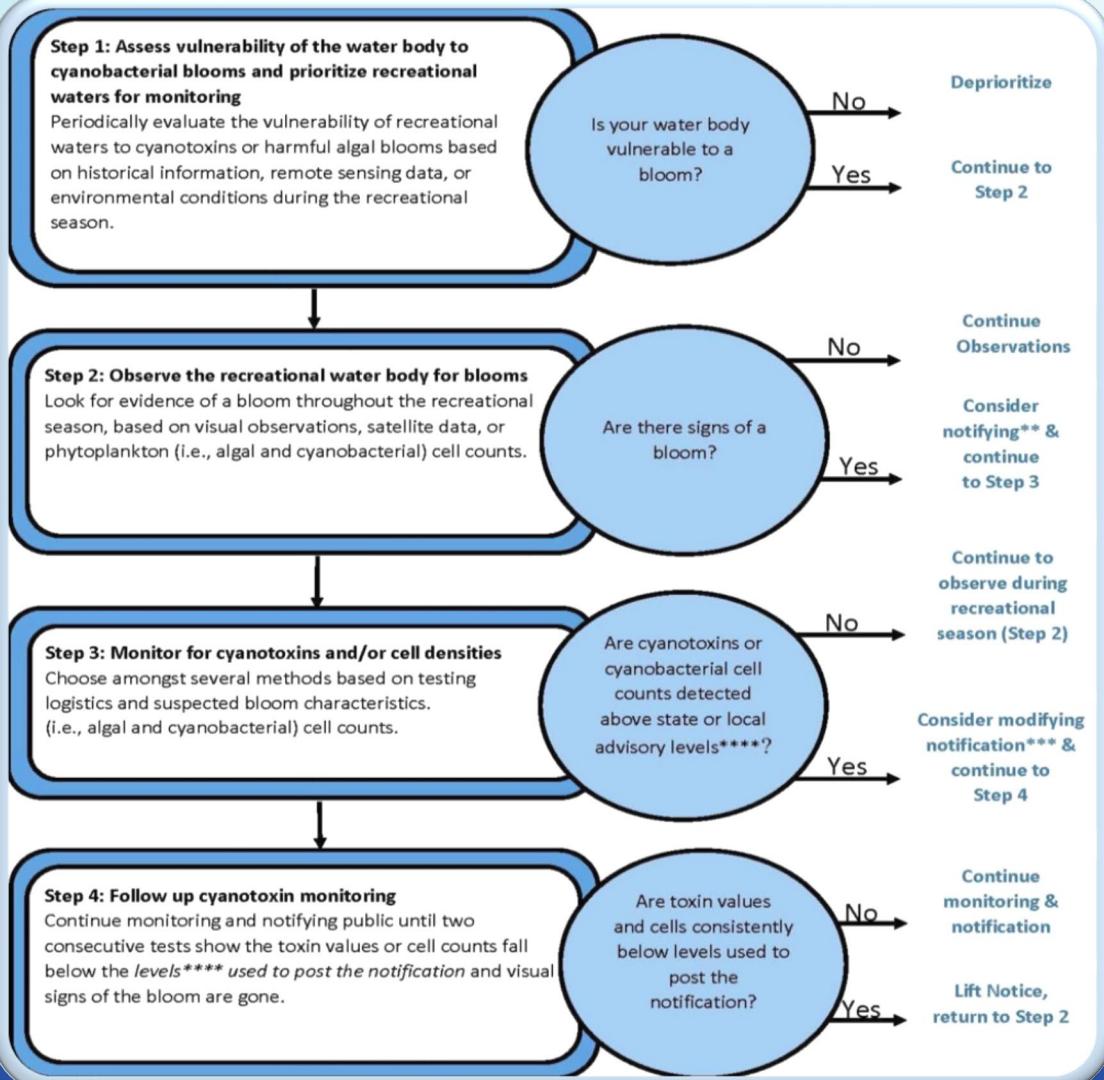


- DISCUSSION OF TOOLS FOR WATERBODY MANAGERS TO MONITOR FOR AND RESPOND TO CYANOHABS
 - MONITORING AND RESPONDING TO CYANOBACTERIA AND CYANOTOXINS IN RECREATIONAL WATERS
 - COMMUNICATING ABOUT CYANOBACTERIAL BLOOMS AND TOXINS IN RECREATIONAL WATERS
 - CRITERIA IMPLEMENTATION Q&A DOCUMENT



- MONITORING AND RESPONDING TO HABS:
 - RECOMMENDATIONS FOR CYANOBACTERIA AND CYANOTOXIN MONITORING IN RECREATIONAL WATERS ([PDF](#))
 - MONITORING AND RESPONDING TO CYANOBACTERIA AND CYANOTOXINS IN RECREATIONAL WATER ([WEBSITE](#))
- COMMUNICATING RISK TO THE PUBLIC:
 - RECREATIONAL WATER COMMUNICATION TOOLBOX ([WEBSITE](#))
 - HABS INFOGRAPHIC ([PDF](#))

RECOMMENDATIONS FOR CYANOBACTERIA AND CYANOTOXIN MONITORING IN RECREATIONAL WATERS [\(PDF\)](#)



WEBPAGES FOR MONITORING, RESPONDING AND COMMUNICATING TO THE PUBLIC



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Related Topics: [Cyanobacterial HABs](#) | [Ground Water and Drinking Water](#) | [Water Quality Criteria](#)

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Monitoring and Responding to Cyanobacteria and Cyanotoxins in Recreational Waters

This information is intended for recreational waterbody managers, which may include public health officials, lake managers, or other state, local or tribal officials, involved in monitoring water quality and protecting the health of people and animals that use waterbodies within their jurisdiction.

DISCLAIMER: *This information does not impose legally binding requirements on the EPA, states, tribes, or the public, nor does it confer legal rights. It does not constitute a regulation, nor does it change or substitute for any Clean Water Act provision or EPA regulation. Any mention of trade names, products, or services does not convey and should not be interpreted as conveying official EPA approval, endorsement, or recommendation for use.*

On this page:

- [Visual signs of a cyanobacterial bloom](#)
- [Developing an emergency response plan for cyanotoxins](#)

Visual Signs of a Cyanobacterial Bloom

Visual signs of a bloom include:

- surface water discoloration (e.g., a green, white, brown, red, or blue tint);
- reduced transparency (e.g., water that looks like pea soup or lets limited light through); and/or



Environmental Topics Laws & Regulations About EPA

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Related Topics: [Cyanobacterial HABs](#) | [Ground Water and Drinking Water](#) | [Water Quality Criteria](#)

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Communicating about Cyanobacterial Blooms and Toxins in Recreational Waters

EPA designed the tools on this page to support states, tribes, territories, and local governments as they develop their own risk communication materials. The tools can help water managers inform people using recreational waters, as well as pet and livestock owners, of the health risks associated with cyanobacteria and their toxins in lakes, rivers or other recreational water bodies.

Communication to the public may occur through signage at the recreational water body; radio and TV announcements; and/or social media. Messages should clearly define levels of risk and of potential contamination, such as the exposure potential for specific recreational activities. Managers should also be aware that toxins may be transported and affect downstream waters.

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On this page:

- [Good Practices when Developing Notifications for the Public](#)
- [Templates and Generic Examples](#)
- [State/Tribal Examples](#)

22

LOOK OUT FOR HARMFUL ALGAL BLOOMS

A harmful algal bloom (HAB) is an overgrowth of algae in a water body that could affect water quality and aquatic life. Some HABs produced by bacteria can create toxins that may also harm people, animals, and the local environment.

DANGER

TOXIC ALGAE
PRESENT



HOW TO IDENTIFY A HARMFUL ALGAL BLOOM

Algal blooms can make the water appear green, blue, brown, gold, or red.

Seeing colors, scum, mats, foam, or paint-like streaks in the water or clumps on the shore may indicate a bloom. However, only professional water testing can confirm if HABs and toxins are present. States often have monitoring programs for this purpose.



See a doctor immediately.
See a doctor or vet if symptoms occur.

SYMPOTMS OF EXPOSURE

Very depending on how the person or animal was exposed, and whether the HAB is in salt or fresh water.



Ear, eye, nose, skin, throat irritation, and headache



Paralysis, respiratory illness, and seizures



Abdominal pain, diarrhea, liver and kidney damage, and vomiting



Diarrhea, dizziness, low energy, not eating, stumbling, tremors, and vomiting

WHEN IN DOUBT, STAY OUT!

Stay away from the water when a suspected HAB is present.



DON'T Play with scum or mats on the shore



DON'T Let animals drink water, eat algae, or swim



DON'T Swim



DON'T Fish or wade



DON'T Boat or kayak

FOR MORE INFORMATION OR TO REPORT POSSIBLE HARMFUL ALGAL BLOOMS:

(XXX) XXX-XXXX |xxxxxxxxxxxx.html

partner logo space



LOOK OUT FOR HARMFUL ALGAL BLOOMS

A harmful algal bloom (HAB) is an overgrowth of algae in a water body that could affect water quality and aquatic life. Some HABs produced by bacteria can create toxins that may also harm people, animals, and the local environment.

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WHEN IN DOUBT, STAY OUT!

Stay away from the water when you suspect a harmful algal bloom is present.

WHO CAN GET SICK FROM A HAB?

People, dogs, horses, and other animals can get sick from a HAB.

ROUTES & SYMPTOMS OF EXPOSURE TO HABs

Symptoms can vary depending on how the person or animal was exposed and whether the HAB is in salt or fresh water.

ROUTES OF EXPOSURE

- SKIN CONTACT
- SIMPLE INHALATION
- INJECTION

SYMPTOMS OF EXPOSURE

- For skin, eyes, nose, and throat irritation
- Respiratory irritation
- Abdominal pain, diarrhea, liver and kidney damage, and vomiting
- Diarrhea, dizziness, low energy, not eating, stumbling, tremors, and vomiting

WHAT TO DO IF EXPOSED TO A HAB

Take a shower or bathe immediately. Contact your doctor or animal care provider for advice.

SHOWER IMMEDIATELY

For more information or to report possible harmful algal blooms: (XXX) XXX-XXXX |xxxxxxxxxxxx.html

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EPA

HABS INFOGRAPHIC (PDF)

NOTE: THE SHORT AND LONG VERSIONS
OF THIS GRAPHIC ARE CUSTOMIZABLE,
FOR PROVIDING STATE OR LOCAL
AGENCY CONTACT INFORMATION, OR TO
REPORT A POSSIBLE BLOOM.

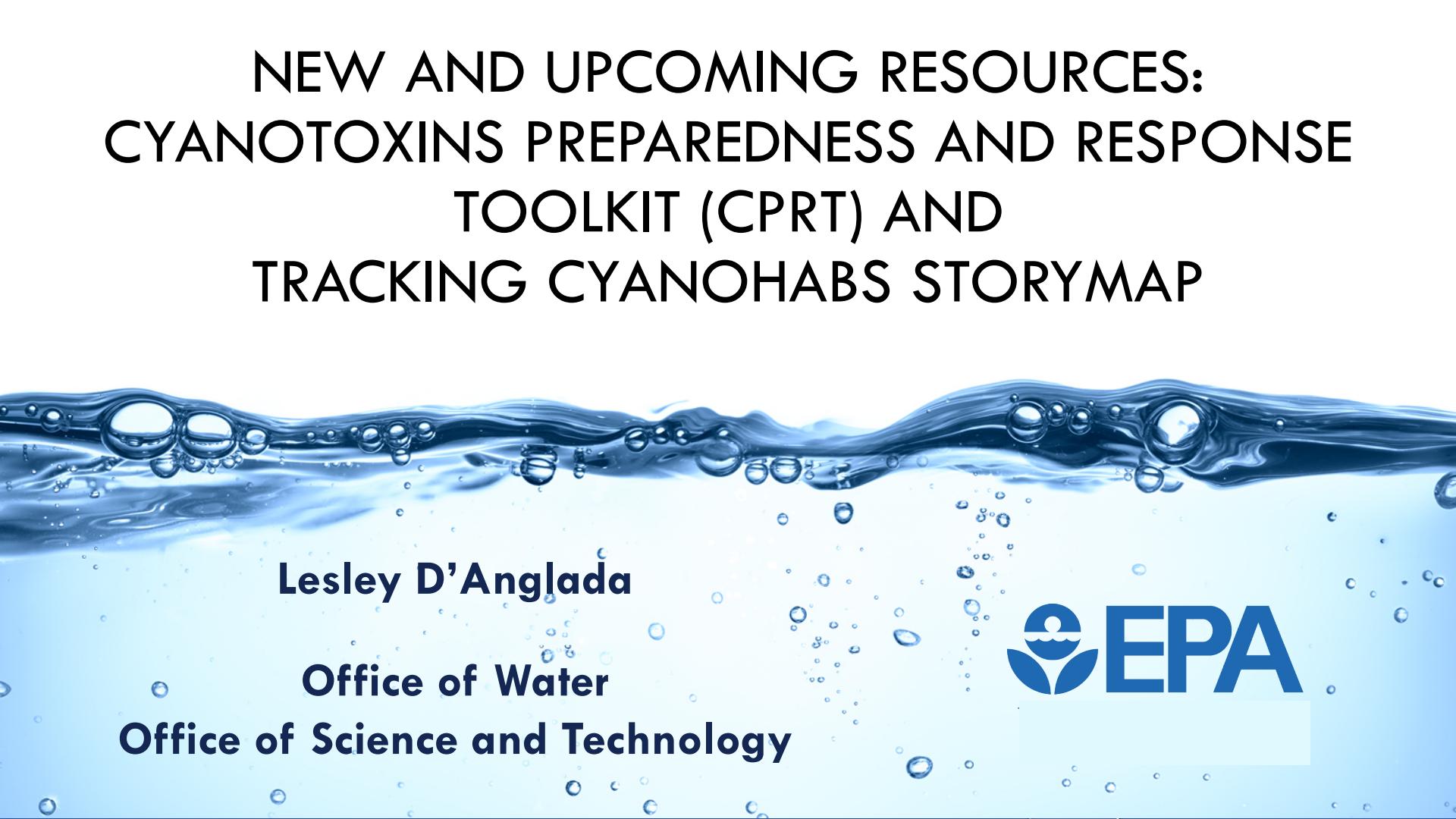
CRITERIA
IMPLEMENTATION
Q&A DOCUMENT
FOR PUBLIC
COMMENT

- SINGLE FAQ DOCUMENT COVERING CRITERIA IMPLEMENTATION, WITH Q&AS ON MONITORING AND ASSESSMENT
- WORKING WITH ACWA FOCUS GROUP (8 STATES: CA, CO, FL, IN, IA, NJ, NC, WI) AND INTERNAL EPA WORKGROUP (OST, OWOW, OWM)
- ACWA MSA COMMITTEE REVIEW IN MARCH 2019
- JUNE-AUGUST: INTERNAL MANAGEMENT REVIEW
- DRAFT FOR PUBLIC COMMENT FALL 2019

THANKS
FOR YOUR
ATTENTION

- LARS WILCUT
 - WILCUT.LARS@EPA.GOV
- CYANOHABS WEBSITE
 - [HTTPS://WWW.EPA.GOV/CYANOHABS](https://www.epa.gov/cyanohabs)
- EPA TOOLS FOR WATERBODY MANAGERS TO MONITOR FOR AND RESPOND TO CYANOHABS
 - [HTTPS://WWW.EPA.GOV/CYANOHABS/EPATOOLS-WATERBODY-MANAGERS-MONITOR-AND-RESPOND-CYANOHABS](https://www.epa.gov/cyanohabs/epa-tools-waterbody-managers-monitor-and-respond-cyanohabs)

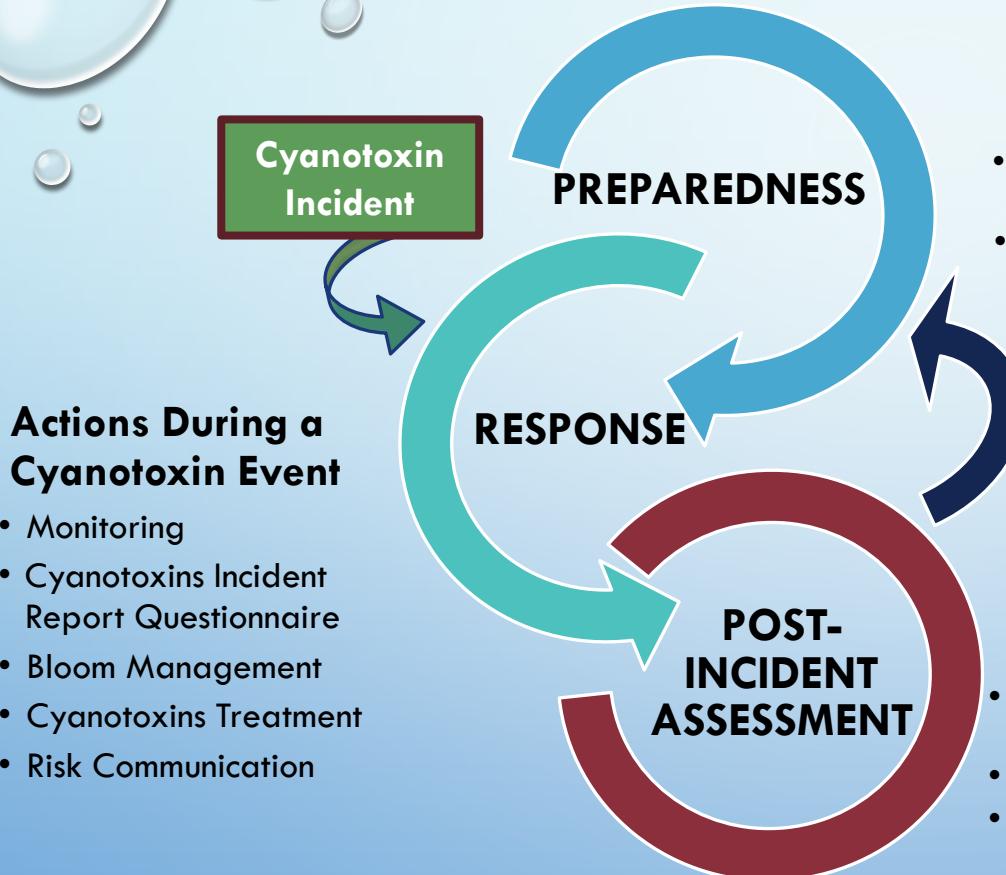
NEW AND UPCOMING RESOURCES: CYANOTOXINS PREPAREDNESS AND RESPONSE TOOLKIT (CPRT) AND TRACKING CYANOHABS STORYMAP



Lesley D'Anglada

Office of Water
Office of Science and Technology





Actions Prior a Cyanotoxin Event

- Incident Response and Communication Team
- Cyanotoxins Management Plan (CMP)

Actions After a Cyanotoxin Event

- Post-Event Review Questionnaire
- CMP Revision
- Risk Communication

Cyanotoxins Preparedness and Response Toolkit

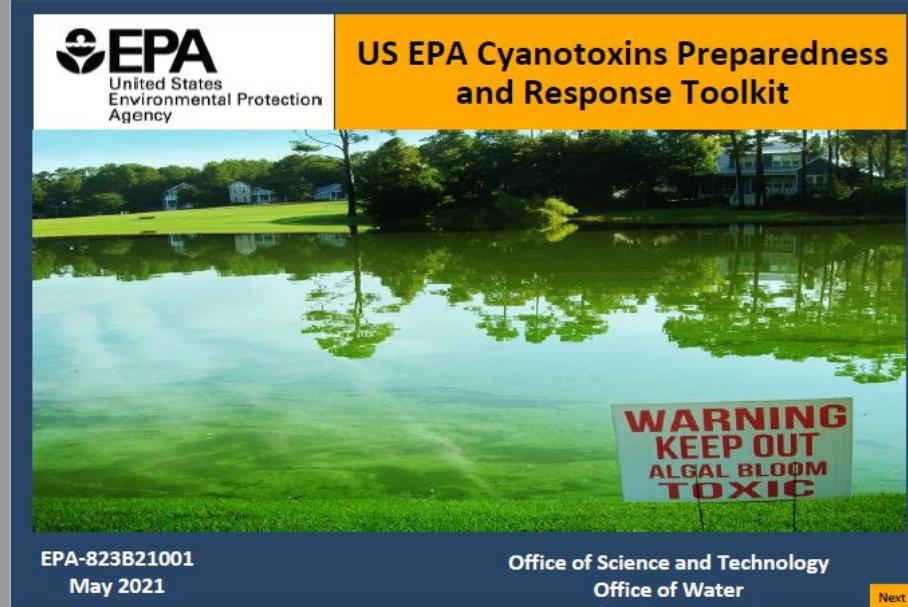


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Actions prior to a harmful algal bloom or cyanotoxin event

States and tribes can be greatly affected by cyanobacterial blooms in surface waters used for recreation and as a source of drinking water. Initiating communications between states, tribes and other stakeholders prior to a HABs event will ensure a quick and effective response. Before a HABs event, it is recommended that states and tribes compile information accessible on resources, tools, and personnel in order to coordinate effective technical assistance and communication with the appropriate public health response partners, including EPA staff, during the cyanotoxin event. Each organization's role and contact information should be clearly outlined and updated regularly. The contact information should include names, titles, addresses, and all applicable phone numbers, as well as a secondary contact in case the primary contact cannot be reached.

State, local, tribes, and federal response parties could include:

- EPA staff from the Regions, Program Offices and the Office of Research and Development;
- Public health and environmental agencies;
- Recreational water managers;
- Drinking water utilities;
- Monitoring and laboratory personnel;
- Other local, state and federal agencies.

✓ Click the box on the right to access a contact list template to help initially respond to a cyanobacterial bloom.

[Cyanobacterial Bloom Response Contact List](#)

Actions prior to a Cyanotoxins event in drinking water systems and recreational waters

When assisting during a suspected or confirmed cyanotoxin event, states and tribes should be prepared to conduct a proper and timely assessment of the incident to make sure the appropriate technical assistance is provided. It is therefore essential to have available a list of important questions to guide a better response to the cyanotoxin incident. Possible topics include:

- ❖ Existing guideline values for cyanotoxins and any response plans currently in place
- ❖ Water quality observations, sampling methods and laboratory analyses performed, access to sampling results;
- ❖ For events affecting drinking water systems, location of intakes, types of treatments in place, and any additional drinking water sources available;
- ❖ Any reported animal or human health impacts from exposure to blooms and/or cyanotoxins; and
- ❖ Risk communication guidelines in place.

Resources to prepare for a cyanotoxins event

- [Cyanotoxin Management Plan Template and Example Plans](#)
- [Drinking Water Cyanotoxin Risk Communication Toolbox](#)
- [Tools for Addressing the Risks of Cyanotoxins in Drinking Water Video](#)
- [Incident Action Checklist - Harmful Algal Blooms](#)
- [Water Treatment Optimization for Cyanotoxins](#)
- [Drinking Water Advisories for the Cyanotoxin Cylindrospermopsin](#)
- [Drinking Water Health Advisories for the Cyanotoxin Microcystins](#)
- [Recommendations for Public Water Systems to Manage Cyanotoxins in Drinking Water](#)
- [Drinking Water Utility Emergency Response Plan](#)
- [Water Utility Communication During Emergency Response](#)

[Cyanotoxins Incident Response Questionnaire](#)

✓ Cyanotoxins Incident Report Questionnaire that can be used as a guide to conduct the initial assessment could be found in the box on the right.

Actions Prior to a Cyanotoxins Event



Planning for HABs Events: Risk Communication

Planning for a HABs event also involves establishing communication plans to be prepared for any public communication as appropriate or required by the state, tribe or territory.

- ✓ The EPA developed tools and resources to assist water managers and drinking water systems to develop their risk communication plans. Click the appropriate box below to access these resources.

[Drinking Water Cyanotoxin Communication Toolbox](#)

[Recreational Water Cyanotoxin Communication Toolbox](#)

Getting prepared on risk communication

- [CDC's Drinking Water Advisory Communication Toolbox](#)
- [Recommendations for Public Water Systems to Manage Cyanotoxins in Water \(Appendix D\)](#)
- [Cyanotoxin Management Plan Template and Example Plans](#)
- [Water Utility Communication During Emergency Response](#)

The EPA recommends for states and tribes to report suspected or confirmed HABs or cyanotoxins human and animal illnesses associated with cyanobacterial blooms to the One Health Harmful Algal Bloom System (OHHABS). The Centers for Disease Control and Prevention (CDC) developed OHHABS as a voluntary reporting system available to state and tribal public health departments and their designated environmental health or animal health partners. The goal of OHHABS is to collect information to support the understanding and prevention of HABs and HAB-associated illnesses. The OHHABS can be accessed [here](#).

When communicating with the public about risk, it is important to communicate that HABs pose a significant health threat to pets. Pets and other animals can be exposed to cyanobacteria and their toxins through drinking toxin-contaminated water or by swimming in waters with a cyanotoxin. If you suspect a HAB is present in a water body, do not let your pet swim or drink the water, play or eat scum mats, and do not let your pet lick their fur after swimming in contaminated water. If your pet has come into contact with water with a HAB, rinse them with tap water as soon as possible. Seek veterinary care immediately if your pet has consumed or licked scum on its fur after swimming or playing in water that has a HAB. More information on how to protect pets go [here](#).

Actions During a Cyanotoxins Event

Overview CPRT Actions Prior to Cyanotoxins Events **Actions During Cyanotoxins Events** Actions After Cyanotoxins Events Resources Rules and Regulations Contact Information States Monitoring Programs HAB or Hypoxia Events of National Significance

Actions During a Cyanotoxins Event

During a cyanotoxins event, states and tribes drinking water systems and recreational water managers should be prepared to provide information on action levels, sample collection and analysis, effective treatment options, and resources available to provide technical assistance and to communicate risks. Information that could be helpful include:

- When and where cyanotoxins have been found and what the risks are to people, pets, animals and the environment.
- Action steps to protect your health and the health of your family and pets.
- Options for treatment and management.
- How to learn when and if information is updated.
- Basic information on HABs and cyanotoxins and what are the common concerns:
 - Information about how HABs are likely to become more common over time due to climate change.
 - Recommended advisory values for cyanotoxins and what they mean.
 - Most common HABs and cyanotoxins in your state.
 - How you can spot signs of cyanotoxins if you are not aware of an advisory.
 - Information from initial laboratory analyses at a specific site or sites such as the toxins and their concentrations and what this means for risk.

This information can be supported by different types of risk communication materials including the resources included in this toolkit.

15

[Back](#) [Actions During Cyanotoxins Events 1 of 3](#) [Next](#)

Overview CPRT Actions Prior to Cyanotoxins Events **Cyanotoxin Management Plan** Actions During Cyanotoxins Events Actions After Cyanotoxins Events Resources Rules and Regulations Contact Information States Monitoring Programs HAB or Hypoxia Events of National Significance

Risk Communication During a Cyanotoxins Event

It is recommended that the states and tribes use consistent communication tools during an event. The EPA developed an infographic and ready-to-use templates to develop risk communication materials, including:

- Templates: for press releases, drinking water advisories and recreational criteria/swimming advisories, and social media and text alerts;
- General Information: talking points and messages for consumers and recreationists, frequently asked questions and fact sheets;
- Graphics: downloadable options for graphics.

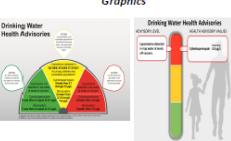
Click the appropriate box below to access these resources:

[Drinking Water Cyanotoxin Communication Toolbox](#) [Recreational Water Cyanotoxins Communication Toolbox](#)

Infographic



Graphics



Templates



17

[Back](#) [Actions During Cyanotoxins Events 3 of 3](#) [Next](#)

Overview CPRT Actions Prior to Cyanotoxins Events **Cyanotoxin Management Plan** **Actions During Cyanotoxins Events** Actions After Cyanotoxins Events Resources Rules and Regulations Contact Information States Monitoring Programs HAB or Hypoxia Events of National Significance

Actions During a Cyanotoxins Event (continued)

✓ The link below provides access to a frequently asked questions document discussing cyanobacteria and cyanotoxins as well as information regarding health effects and what are the drinking water health advisories for cyanotoxins.

Harmful Algal Blooms and Cyanotoxins FAQs

➤ Will help you answer what are cyanobacterial HABs, what are the possible health effects from exposure to them and their toxins; what are the recommended advisory values for cyanotoxins; etc.

✓ To improve communication during cyanotoxins events, the EPA developed a form to track new and/or persistent cyanobacterial blooms and cyanotoxins events. To access the template click the box below.

Template Summary of State HABs Events

Template of Bloom Reports

➤ To record each bloom individually and to summarize the blooms season in your state; locations, dates, how, where and when the cyanotoxins were detected; and information from initial laboratory analyses such as the identification of the toxins and concentrations.

✓ To address further questions on approaches to optimize drinking water treatment in case cyanotoxins are present in drinking water systems, the EPA developed the Water Treatment Optimization for Cyanotoxins Document. To access this document, click the box below.

Water Treatment Optimization for Cyanotoxins Document

➤ Contains proactive approaches for water sampling and monitoring to help drinking water systems anticipate treatment needs and treat cyanotoxins in drinking water. Information is presented for treating cyanotoxins using many types of water treatment.

16

[Back](#) [Actions During Cyanotoxins Events 2 of 3](#) [Next](#)



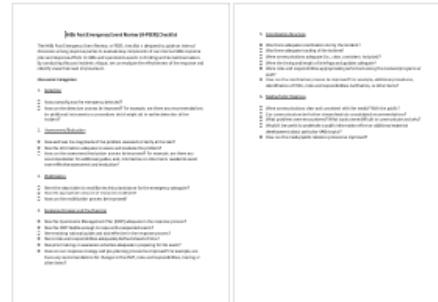
Actions After a Cyanotoxins Event

Once the HABs and cyanotoxins event is over, it is recommended for states and tribes to conduct a post-incident comprehensive assessment to identify the adequacy of the cyanotoxins incident response and assess the effectiveness of the response and the risk communication activities to improve the future responses. A part of this post-incident assessment and debrief should be to explicitly plan to incorporate insights into future event planning.

A debrief with all the involved agencies, e.g. drinking water systems and managers of recreational sites, after the incident helps to identify problems and flaws during the incident and determine areas that need improvement, as well as those actions that contributed to a successful response and that should be repeated in future cyanotoxins contamination events.

- ✓ The EPA developed a HABs Post Emergency Event Review Questionnaire to be used as a guide to conduct the post-event assessment response. To access the questionnaire, click the box below.

[HABs Post Emergency Event Review Questionnaire](#)



18

Actions After Cyanotoxins Events 1 of 1

Next

Back

Actions After a Cyanotoxins Event

Other Resources

Overview
CPR

Actions Prior to Cyanotoxins Events

Cyanotoxin Management Plan

Actions During Cyanotoxins Events

Actions After Cyanotoxins Events

Resources

Rules and Regulations

Connect Information

States Monitoring Programs

HAB or Cyanotoxin Event of National Significance

EPA's Regional Contact Information



Click here to see a list of Regional EPA Contacts

23

Contact Information 1 of 1 [Next](#)

[Back](#)

EPA's Regional Contact Information

Overview
CPR

Actions Prior to Cyanotoxins Events

Cyanotoxin Management Plan

Actions During Cyanotoxins Events

Actions After Cyanotoxins Events

Resources

Rules and Regulations

Connect Information

States Monitoring Programs

HAB or Cyanotoxin Event of National Significance

States Monitoring Programs

Listed below are States monitoring and resources websites to list HABs and cyanotoxin events and information.

- ❖ California Water Quality Monitoring Council, HAB Portal
- ❖ Connecticut Department of Public Health, Blue Green Algae Blooms
- ❖ Delaware Division of Water, Blue-Green Algae in Delaware
- ❖ District of Columbia Department of Energy & Environment, Algae Blooms in District Waters
- ❖ Florida Department of Environmental Protection: Blue-Green Algae Information
- ❖ Idaho Department of Environmental Quality, HAB Map
- ❖ Illinois Environmental Protection Agency, HAB
- ❖ Indiana State Department of Health, HAB Map
- ❖ Iowa Department of Natural Resources, Beach Monitoring
- ❖ Kansas Department of Health and Environment, Blue-Green Algae Blooms
- ❖ Kentucky DEP Division of Water, HABs
- ❖ Maine Department of Environmental Protection, Blue Green Algae
- ❖ Maryland Department of Natural Resources, Algae
- ❖ Massachusetts Department of Health and Human Services, Algae Monitoring
- ❖ Michigan Department of Environmental Quality, Algae HAB
- ❖ Minnesota Pollution Control Agency, HABs
- ❖ Nebraska Department of Environmental Quality, Blue-Green Algae
- ❖ Montana Department of Public Health and Human Services: Public Health & Safety, HAB
- ❖ New Hampshire Department of Environmental Quality, Beach Inspections Program
- ❖ New Jersey Department of Environmental Protection, HAB
- ❖ New York Department of Environmental Conservation, HABs
- ❖ North Carolina Department of Environmental Quality, HABs Monitoring
- ❖ North Dakota Department of Environmental Quality, HABs
- ❖ North Dakota Game and Fish Department, HABs
- ❖ Ohio Environmental Protection Agency, HABs Monitoring
- ❖ Oregon Health Authority, Algae Bloom Advisories
- ❖ Rhode Island, HAB
- ❖ Texas Parks and Wildlife, HABs
- ❖ Utah Department of Environmental Quality, HAB Map
- ❖ Vermont, HAB Map
- ❖ Virginia Department of Health: Algal Bloom Surveillance Map
- ❖ Washington State Toxic Algae Online
- ❖ Wisconsin Department of Natural Resources Blue-Green Algae website

24

States Monitoring Programs 1 of 1 [Next](#)

[Back](#)

States Monitoring Program

Overview
CPR

Actions Prior to Cyanotoxins Events

Cyanotoxin Management Plan

Actions During Cyanotoxins Events

Actions After Cyanotoxins Events

Resources

Rules and Regulations

Connect Information

States Monitoring Programs

HAB or Cyanotoxin Event of National Significance

EPA Resources on Cyanotoxins

- ❖ EPA CyanoHABs Website
- ❖ EPA Managing Cyanotoxins in Public Drinking Water Systems Webpage
- ❖ Drinking Water Health Advisory for the Cyanobacterial Toxin Cylindrospermopin
- ❖ Drinking Water Health Advisory for the Cyanobacterial Microcystins Toxins
- ❖ EPA Health Effects Support Document for the Cyanobacterial Toxin Anatoxin-a
- ❖ EPA Health Effects Support Document for the Cyanobacterial Toxin Cylindrospermopin
- ❖ EPA Health Effects Support Document for the Cyanobacterial Microcystins Toxins
- ❖ Analytical methods for cyanotoxins
- ❖ Recommendations for Public Water Systems to Manage Cyanotoxins in Drinking Water
- ❖ EPA HABs Incident Action Checklist
- ❖ Cyanotoxin Management Plan Template and Example Plans
- ❖ Water Treatment Optimization for Cyanotoxins Document
- ❖ Drinking Water Cyanotoxin Risk Communication Toolbox
- ❖ Cyanobacteria and Cyanotoxins: Information for Drinking Water Systems Fact Sheet
- ❖ Possible Funding Sources for Managing Cyanobacterial Harmful Algal Blooms and Cyanotoxins in Drinking Water
- ❖ Video: Tools for Addressing the Risks of Cyanotoxins in Public Water Systems
- ❖ Recommended Human Health Recreational Ambient Water Quality Criteria or Swimming Advisories for Microcystins and Cylindrospermopin
- ❖ Recreational Water Communication Toolbox for Cyanobacterial Blooms
- ❖ Recommendations for Cyanobacteria and Cyanotoxin Monitoring in Recreational Waters
- ❖ Frequently Asked Questions: Laboratory Analysis for Microcysts in Drinking Water

19

Resources 1 of 3 [Next](#)

[Back](#)

EPA's Resources on Cyanotoxins

Coming Soon to the EPA Website!



Annual Harmful Algal Blooms, Beach Closures & Advisories

Freshwater HABs, Advisories and Closures Reported by States and Other Public Sources Since 2015

Year	Events
2015	~10
2016	~100
2017	~120
2018	~200
2019	~250
2020	~300
2021	~100

The map displays Current HABs Advisories for the month of June, 2021, across the North American coastline. Various colored dots (blue, yellow, red, green) are scattered along the coastlines of Canada, the United States, and Mexico, indicating the locations of Harmful Algal Blooms (HABs). The map also includes labels for major bodies of water and regions.

Thanks for your attention!

Lesley V. D'Anglada, Dr.PH
U.S. Environmental Protection Agency
Office of Water / Office of Science and Technology
202-566-1125
Danglada.lesley@epa.gov

EPA's Cyanobacteria HABs Website
www.epa.gov/cyanohabs

EXAMPLES OF STATE'S HABS OUTREACH AND EDUCATION TOOLS AND RESOURCES

NEW YORK, OHIO, OREGON and CALIFORNIA

NEW YORK

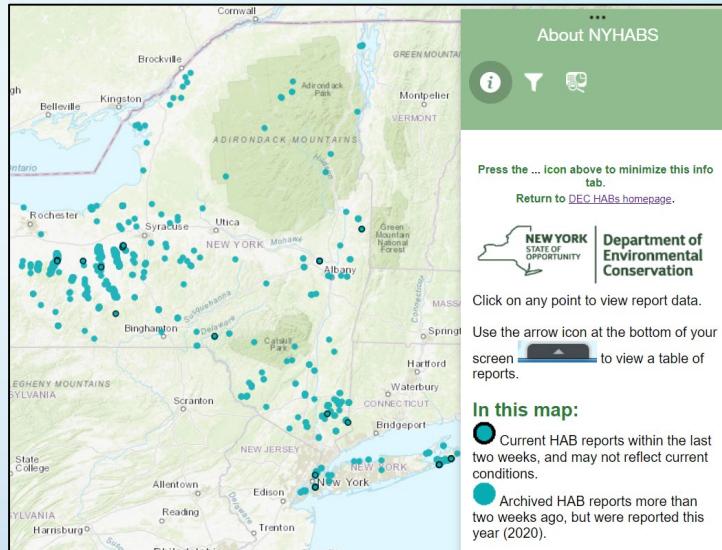
Source: Rebecca Gorney, Ph.D. Division of Water, DEC & Gena Gallinger, MS, Center For Environmental Health, DOH

AGENCIES RESPONSIBLE

- DOH: coordinated guidance and templates for water suppliers, beach operators and local health departments, materials that address risk.
- DEC: LAKE WQ sampling, habs reporting programs, oversee public and inter-agency notification platform (NYHABS)
- Interagency collaboration and coordination: regular communication and collaborative response to HAB events

EDUCATION, RESEARCH & OUTREACH

- Simple Actionable Messaging: "Know It, Avoid It, Report It"
- Maintain DEC & DOH Websites with HABs Brochure, Photo Gallery, Signage, Notification Templates, and More: On.Ny.Gov/Hab & Www.Health.Ny.Gov/Harmfulalgae
- Conduct and Support Research, Publish Articles, Respond to Press Inquiries, Public Presentations, Training Workshops and Technical Consultation.
- Daily Updates to NYHABs (Statewide Map) and Weekly Dec Division of Water email Newsletter (Makingwaves), Social Media Posts
- For More Info, Email: Habsinfo@dec.Ny.Gov or Harmfulalgae@health.Ny.Gov



WARNING

Avoid Harmful Blue-green Algae Blooms while swimming, fishing and boating

Keep kids and pets away from areas with blooms or scum. Swim, fish and boat in areas with no blooms or scum.

Contact can make people and animals sick.

BEACH CLOSED

Harmful Blue-green Algae Blooms No Swimming or Wading

Contact can make people and animals sick.

If contact occurs, rinse with clean water. If symptoms occur, contact a medical provider.

If you see blooms or scum outside the beach, don't swim, fish or boat in those areas. Keep kids and pets away.

Learn more: www.health.ny.gov/HarmfulAlgae and on.ny.gov/HABs

Harmful Blue-green Algae

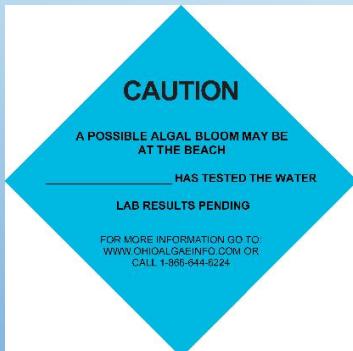
Know it. Avoid it. Report it.

Ohio

Source: ohioalgaeinfo.com

Agencies Responsible

- Ohio Environmental Protection Agency
- Ohio Department of Natural Resources
- Ohio Department of Health



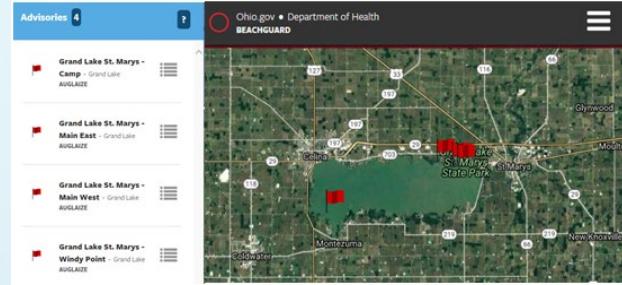
Recreational Caution



Recreational Public Health Advisory

Current advisories posted on BeachGuard:

<http://publicapps.odh.ohio.gov/beachguardpublic/>



A screenshot of a mobile application titled "Advisories 4". It lists four current advisories for Grand Lake St. Marys:

- Grand Lake St. Marys - Camp - Grand Lake ALGALIZE
- Grand Lake St. Marys - Main East - Grand Lake ALGALIZE
- Grand Lake St. Marys - Main West - Grand Lake ALGALIZE
- Grand Lake St. Marys - Windy Point - Grand Lake ALGALIZE

The background shows a map of the lake and surrounding areas.



Have fun on the water, but know that blue-green algae are in many Ohio lakes. Their toxins may be, too.

Be Alert! Avoid water that:

- looks like spilled paint
- has surface scums, mats or films
- is discolored or has colored streaks
- has green globs floating below the surface

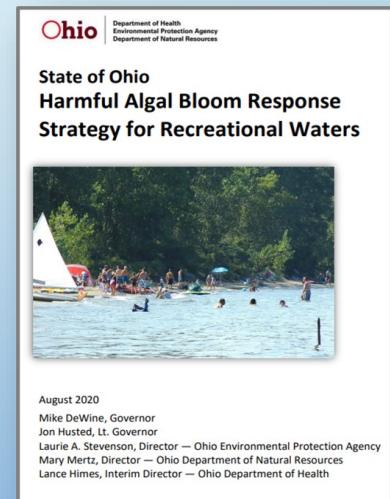
FOR MORE INFORMATION GO TO: WWW.OHIOALGAEINFO.COM OR CALL 1-866-644-6224

Avoid swallowing lake water.

For more information, visit ohioalgaeinfo.com or call 1-866-644-6224.



General Information



State of Ohio
Harmful Algal Bloom Response
Strategy for Recreational Waters

August 2020

Mike DeWine, Governor
Jon Husted, Lt. Governor
Laurie A. Stevenson, Director — Ohio Environmental Protection Agency
Mary Mertz, Director — Ohio Department of Natural Resources
Lance Himes, Interim Director — Ohio Department of Health

<https://epa.ohio.gov/Portals/35/hab/HABResponseStrategy.pdf>

Oregon

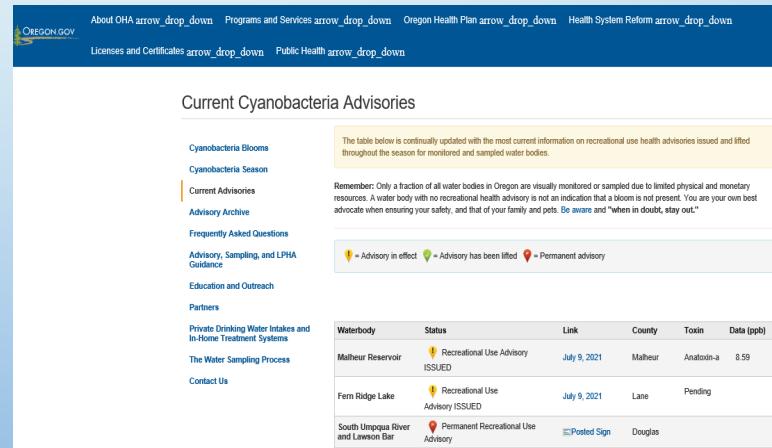
Source: Rebecca Hillwig, Oregon Health Department

Agencies Responsible

- Oregon Health Authority Public Health Division (OPHD) - assumed responsibility for the decision-making process and for issuing and lifting public health advisories.

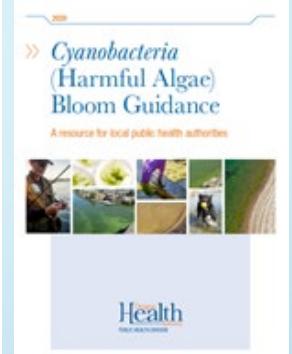
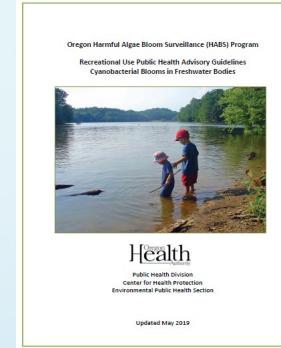
Resources

- Websites
- Tools For Local Health Authorities and Communities
- Posters And Outreach Materials on HABs, Animal Safety, etc.



The screenshot shows the Oregon Health Authority Public Health Division website. The top navigation bar includes links for About OHA, Programs and Services, Oregon Health Plan, Health System Reform, Licenses and Certificates, and Public Health. The main content area is titled "Current Cyanobacteria Advisories". A sidebar on the left provides links to Cyanobacteria Blooms, Cyanobacteria Session, Current Advisories, Advisory Archive, Frequently Asked Questions, Advisory, Sampling, and LPHA Guidance, Education and Outreach, and Partners. The main content area displays a table of current advisories:

Waterbody	Status	Link	County	Toxin	Data (ppb)
Malheur Reservoir	Recreational Use Advisory ISSUED	July 9, 2021	Malheur	Anatoxin-a	8.59
Fern Ridge Lake	Recreational Use Advisory ISSUED	July 9, 2021	Lane	Pending	
South Umpqua River and Lawson Bar	Permanent Recreational Use Advisory	Posted Sign	Douglas		



The image shows the cover of the "ALGAE BLOOMS IN OREGON" guidance document. It features a green circular graphic with text about what algae is, what the problem is, and why HABs are a health concern. It also includes a "When in doubt, stay out!" section and a note about reporting signs of an algae bloom.

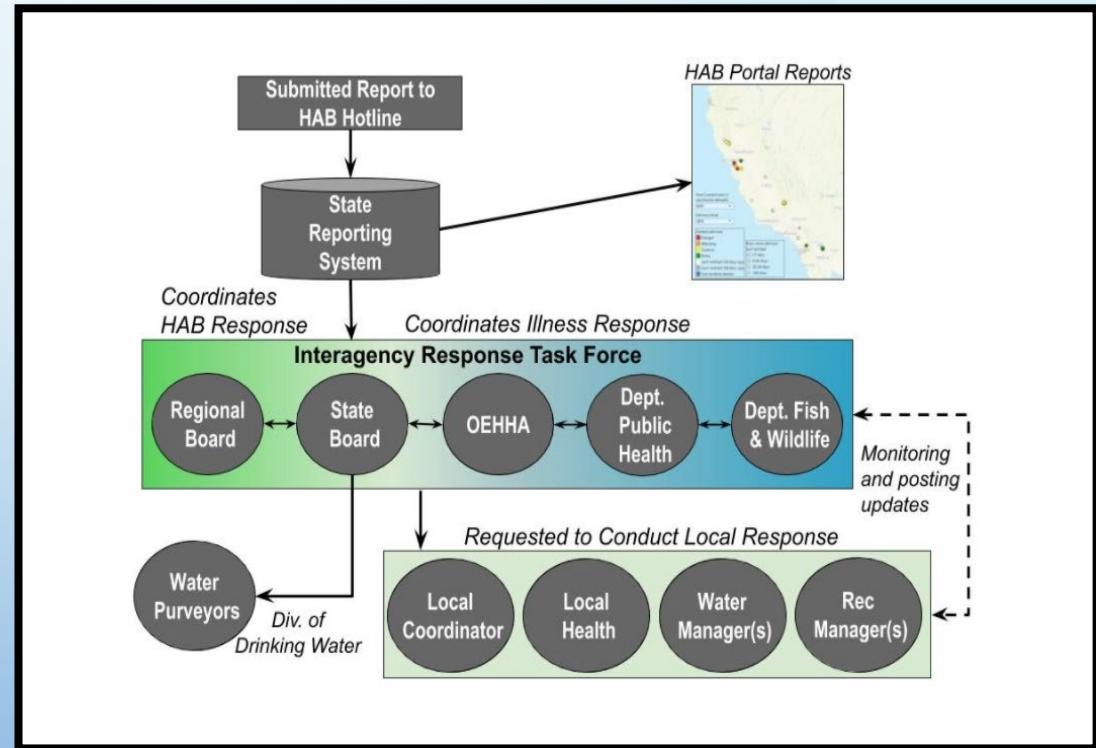
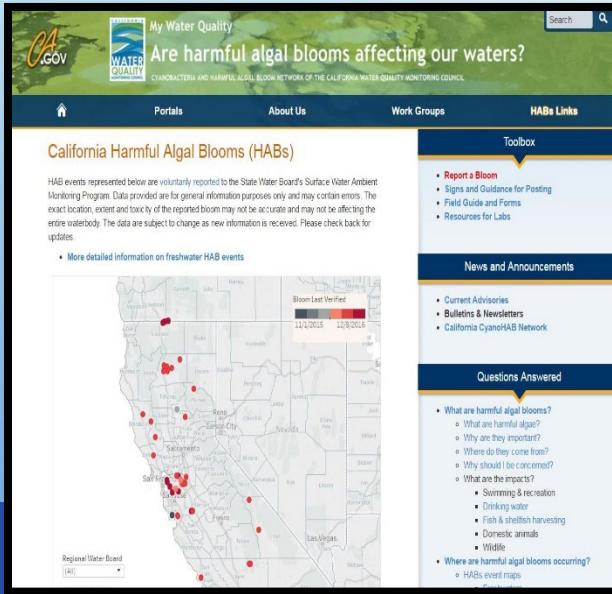
California

Source: Katharine Carter, CA North Coast Regional Water Quality Control Board



Agencies Responsible

- CA Environmental Protection Agency
- CA Water Boards
- CA Department of Public Health
- Other entities...



Understanding Key Challenges



What are the **challenges** that prevent you from managing and communicating the risks from cyanobacteria and their toxins?

If you want to share your challenges, please use the chat box and provide:

- 1. Your Response**
- 2. Your Role** (e.g., Drinking Water Manager/Operator, Recreational Water Manager, HABs Coordinator, other)

Thanks!



QUESTIONS



For More Information
Visit EPA's CyanoHABs Website
at

www.epa.gov/cyanohabs

