

USEPA's Harmful Algal Blooms Regional Workshops Summary Report

Workshops Objectives

The EPA Office of Water in coordination with Regions facilitated a series of workshops across the country to build relationships and identify shared harmful algal bloom (HABs)-related goals, needs, and barriers among federal, state, and tribal Clean Water Act (CWA) and Safe Drinking Water Act (SDWA) programs. The workshops, held from 2015 to 2018 in nine regions (Figure 1), provided information on the health outcomes associated with exposure to HABs, strategies for the prevention and management of HABs in surface waters, and effective treatment techniques for HABs related cyanotoxins in drinking water. In addition, the workshops provided a forum for state and tribal health and environmental agencies to exchange information on their HABs programs, experiences, and needs.

Workshops Contents

Each workshop was organized with agendas uniquely developed to address the concerns and interests specific to their states and tribes. Critical to the development of the agenda and workshop input and leadership of EPA Regional staff in facilitating the engagement of states, tribes and other Regional partners. Some of the topics included general identification of cyanobacteria and cyanotoxins, their effects on human health, animals, and the environment, and ways to manage blooms and toxins in drinking and recreational waters. The workshops also included discussions on EPA tools and resources including guidelines for managing cyanotoxins in drinking and recreational waters, risk communication, and treatment for cyanotoxins in drinking water. These topics were covered through a series of presentations, as well as group and panel discussions by experts from academia, federal agencies, drinking water utilities, as well as experts from states and tribes. Networking activities, algae identification training, and open discussions on available EPA tools and resources



Dr. Rochelle Labiosa, USEPA Region 10, discussing the workshop agenda, March 2016

were also integral aspects of these workshops. Workshops in Regions 4, 9 and 10 included presentations on marine HABs. The workshop in Region 5 included a public meeting immediately following the workshop to get input on tools to support states and/or utilities in managing cyanotoxins in drinking water and to look at national level regulatory and policy issues.

Attendees

The participants of the workshops included drinking water managers and operators, recreational water managers, researchers, and states and tribal health, environment, and fish and wildlife agencies. Also included local governments, lake associations, academia, water suppliers, and industry. Members from the Centers for Disease Control (CDC), the United States Geological Society (USGS), National Oceanic and Atmospheric Administration (NOAA), Federal Emergency Management Agency (FEMA), Army Corps of Engineers (USACE), the National Science Foundation (NSF), and the Environmental Protection Agency (EPA) also participated.

Figure 1. Dates and Locations of USEPA's HABs Regional Workshops

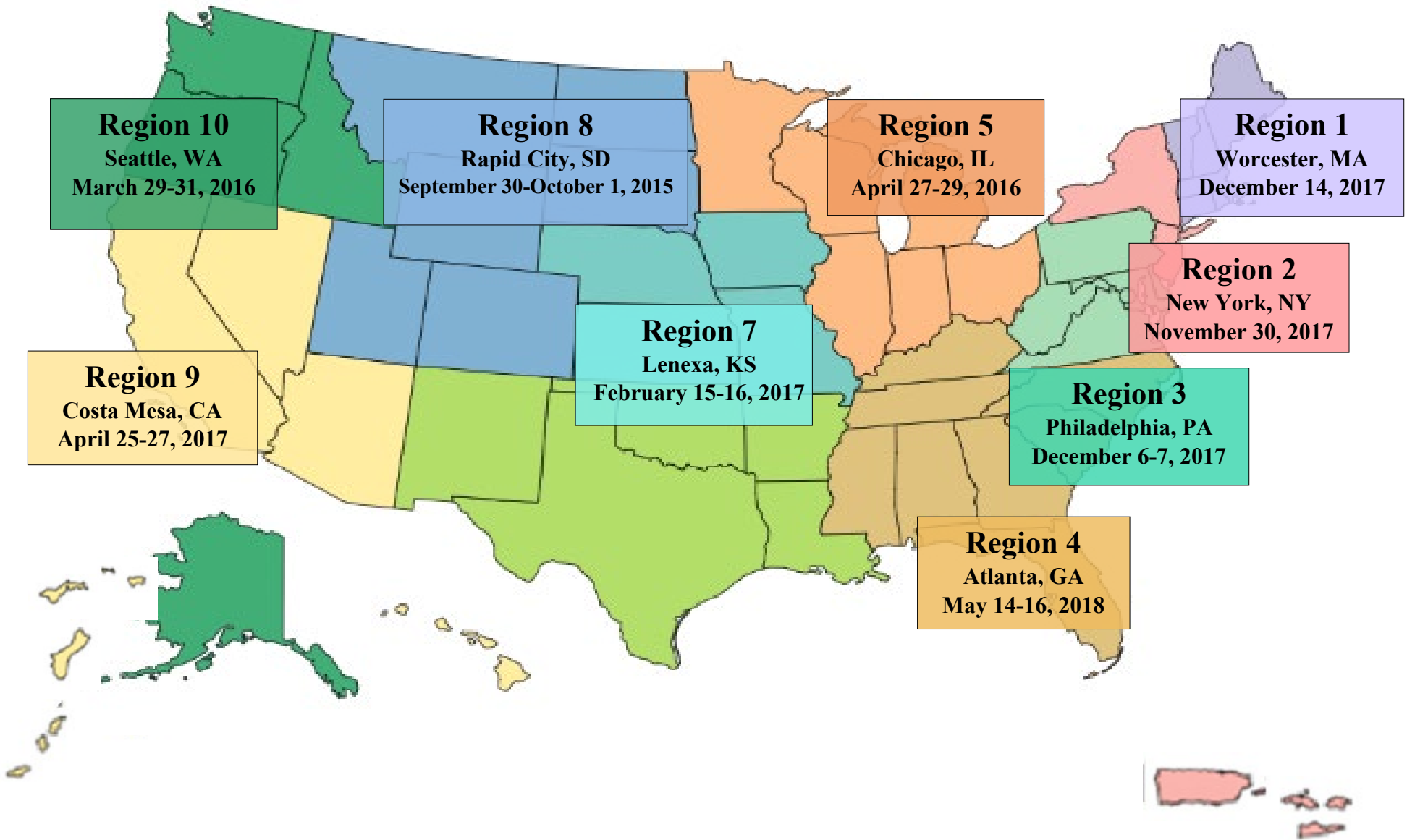


Table 1. Description of USEPA’s HABs Regional Workshops

<p>Region 1: Cyanobacteria-Monitoring and Treating Drinking Water: A Workshop for Water Suppliers</p> <ul style="list-style-type: none"> - One-day workshop - Drinking water focused - Two sessions: Waterbody Management and Drinking Water Treatment - Presentations from EPA, New England, VT, CT, NY and OH. 	<p>Region 2: Freshwater HABs and Public Drinking Water Systems in New York and New Jersey</p> <ul style="list-style-type: none"> - One-day workshop - Drinking and recreational waters focused - Presentations from NY, NJ, academia, a NJ water operator and EPA. 	<p>Region 3: HABs Technical Workshop</p> <ul style="list-style-type: none"> - Two-day workshop - Drinking and recreational waters focused - Five sessions: Health, Management, Response, Drinking Water and Recreational Water. - Round-table discussions - Presentations from EPA, MD, VA, WV, DE, OH, NY, and DC.
<p>Region 4: HABs Southeastern Regional Workshop</p> <ul style="list-style-type: none"> - Three-day workshop - Drinking, recreational and marine waters focused - Four sessions: Source Water Protection, Guidelines and Management, Monitoring, and States HABs Programs - Presentations from EPA, FL, AL, NC, SC, KY, MS, GA, and TN. - Interactive algae identification workshop and a toxins field test screening demonstration. 	<p>Region 5: HABs Clean Water Act/ Safe Drinking Water Act Workshop and Public Meeting</p> <ul style="list-style-type: none"> - Two-day workshop - Drinking and recreational waters focused - Five sessions: Health, Monitoring, Prevention and Management, Drinking Water Treatment and Risk Communication. - Public meeting to get input on the EPA Health Advisories and Recommendations document for cyanotoxins in drinking water. 	<p>Region 7: HABs Workshop</p> <ul style="list-style-type: none"> - Virtual one-day webinar before the workshop. - Two-day workshop - Drinking and recreational waters focused - Two sessions: Health, Guidelines and Management; and Monitoring - Presentations from EPA, other federal agencies and academia, Kickapoo Tribe, IA, NE, KS, MO, and case studies from UT, and ID. - Interactive algae identification workshop.
<p>Region 8: HABs Workshop</p> <ul style="list-style-type: none"> - Two-day workshop - Drinking and recreational waters focused - Presentations from EPA, SD, WY, UT, CO and OH. - Federal agencies panel discussion. 	<p>Region 9: HABs Meeting</p> <ul style="list-style-type: none"> - Virtual one-day webinar before the workshop - Drinking, recreational and marine waters focused - Five sessions: Fresh and Marine Waters Overview, Monitoring, Management and Mitigation, Drinking Water Management and States and Tribal HABs Experiences - Presentations from EPA, WA, OH and UT. - Basic cyanobacteria ID workshop. 	<p>Region 10: HABs Workshop</p> <ul style="list-style-type: none"> - Three-day workshop - Drinking, recreational and marine waters focused - Six sessions: Health, Water Quality Trends, Monitoring, Guidelines and Management Strategies, Building Partnerships, and State and Tribal HABs Efforts - Presentations from EPA, AK, ID, OR, WA, Sitka Tribe, and Jamestown S’Klallam Tribe. - Basic cyanobacteria ID workshop.

The nine workshops included face-to face participants from 36 states, 25 tribes, and the District of Columbia, with around a total of 450 attending in person workshops, and an additional 300 joining the workshops online.

Participant Takeaways from the Workshops

At the end of each workshop, a short evaluation was distributed to the participants. The comments received were largely favorable and constructive and represented the different agencies, departments and organizations that participated in the workshop. Most of the participants commented on the importance of having discussion sessions and appreciated the experience of networking with other states, tribes and federal experts. Many evaluations recommended including more in-depth small-group discussion sessions to improve the overall workshop experience.



Mrs. Laura Webb, USEPA Region 7, presenting at the HABs Workshop, February, 2017

Over the course of the nine workshops, the following themes emerged in the feedback from participants about steps EPA could take to better support the Regions on managing HABs:

- **Provide tools and resources for managing cyanotoxins in drinking and recreational waters**
In addition to the tools EPA developed to assist the states and tribes, participants suggested the EPA provide additional tools and resources on control and management of cyanobacterial blooms in surface waters, treatment of cyanotoxins in drinking water, and risk communication.
- **Provide more information and tools on public health risks from exposure to cyanotoxins**
Many participants indicated interest in learning more about human and animal health impacts from exposure to cyanotoxins in water and food, especially from consuming toxin-contaminated fish. Also, participants requested more information on the adverse effects from exposure to anatoxin-a and saxitoxins, and from ingesting food irrigated with toxin-contaminated water.
- **Provide information on funding opportunities for cyanotoxin monitoring and management**
Many attendees requested information on available cost-effective techniques and funding opportunities to assist in monitoring and management of cyanotoxins in surface water systems.
- **Continue outreach and communication opportunities**
Most of the participants commented that learning from other states' experiences with blooms and monitoring programs helped them review and improve their own monitoring and cyanotoxins management plans. Many suggested using these workshops as a starting point for developing regional workgroups to discuss HABs issues such as blooms mitigation, watershed restoration, benthic HABs, and analytical analysis, among others.

- **Facilitate cyanobacteria ID training and other “hands on” monitoring and analysis training**

Most of the attendees that participated in the algae-identification workshops (three regions) and the toxins field test screening demonstration (R4), commented that in addition to learning about cyanobacterial species and analytical methods, these activities created engagement, and facilitated a successful networking experience.

- **Continue hosting Regional HABs Workshops**

Many of the participants suggested to have more opportunities such as in-person workshops, webinars, and newsletters for states, tribes, federal agencies and other stakeholders to share information. Many participants also requested that EPA hold these HABs workshops annually.

Successes

As a result of the workshops, the Office of Water and the participant Regions have built relationships and exchanged information with federal, state, tribal and local partners such as public water utilities, to effectively address HABs in drinking and recreational waters. Other successes from the regional workshops are:

- **Increase knowledge of State and Tribal goals, needs, and barriers in addressing HABs**

During the workshops, EPA had the opportunity to learn about state and tribal experiences with HABs, and their needs and barriers to prevent, control and manage HABs in drinking and recreational waters. This information helps EPA to provide better support that responds directly to their needs.

- **Increase integration among SDWA and CWA programs**

Having workshops that incorporate both drinking and recreational HABs issues resulted in more coordination among surface and drinking water managers across State lines.

- **Regional follow-up activities to increase collaboration and support to states and tribes**

Several regions have established workgroups and set-up calls to promote communication among the Region, the states and tribes as follow-up activities from the workshops. For example, EPA’s Water Division in Regions 5, 7, 8 and 10 hold monthly (R8), quarterly (7 and 10), and triannual (5) calls with states and tribal staff and managers from CWA and SDWA programs to discuss HABs-related issues. In many of these calls, a guest speaker is invited to discuss current issues and research on HABs. While also increasing information and coordination between the Regions and states and tribes, these follow-up activities provide the



Participants looking at samples on microscopes during the interactive algae identification workshop at Region 4, May 2018

opportunity for technical assistance and the development of HABs research projects. Other regions, for example, Region 10, hold annual in person and/or virtual harmful algae identification trainings for states, tribes, and their partners.

- **Enhanced research coordination among the Regions and the Office of Research and Development**

As a result of sharing information and networking activities during the workshops, some regions have engaged in research activities with the EPA Office of Research and Development.

- **Additional follow on workshops to support Regional needs associated with managing HABs**

As a result of the Regional workshops, two additional workshops have been executed in Region 10 and in Region 7 to address specific topics related to HABs.

The Office of Water and Region 10 hosted a Regional Cyanobacterial HABs Workshop and Tabletop Exercise (TTX) in October 2019, to help states and tribes in enhancing the ability of drinking water utilities and water managers to prepare for, manage and respond to cyanobacterial blooms and their toxins in drinking and recreational waters. During the TTX, a hypothetical HABs scenario was presented for participants to discuss in small groups. Participants had the opportunity to share their individual experiences in responding to previous events, and their roles and responsibilities in their organizations. Following the TTX, participants were engaged in a “Hotwash” session to discuss the key issues raised during the TTX section and opportunities for program improvements.

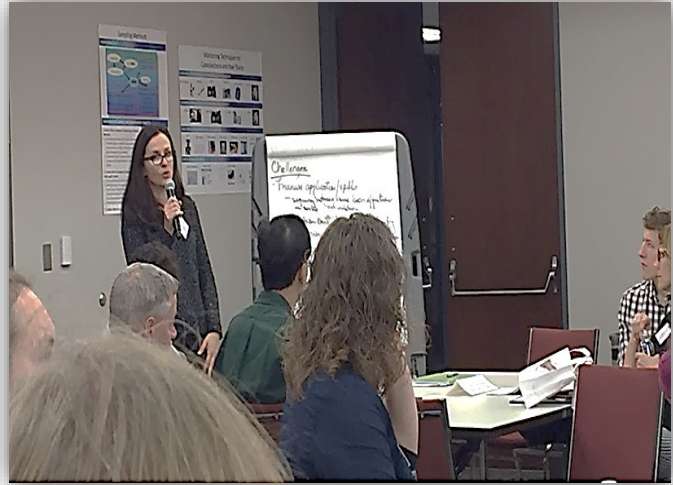
In February 2020, a multi-regional HABs workshop was hosted in partnership with Office of Water, Office of Research and Development and Regions 5, 7 and 8, as well as the University of Kansas. This workshop focused on discussing common issues and solutions for managing HABs and excess nutrients in Regions 5, 7 and 8. Over 170 people attended the workshop including water quality professionals from federal, state and local governments, drinking water systems, regional watershed associations, the agricultural community and academic institutions representing more than 17 states and two tribes, including states from Regions 5, 7 and 8. Attendees presented on, discussed and shared their experiences managing HABs and nutrients, including opportunities for source water protection and prevention of HABs in agricultural landscapes. Outcomes of the workshop included a proceedings document that outlines next steps in managing HABs and nutrients in Regions 5, 7 and 8 as well as a shared understanding of best practices for managing HABs and nutrients across the participating states.



Mr. Jeff Gratz, USEPA Region 2, delivers opening remarks at the Region 2 Workshop, November 2017

Next Steps

The EPA intends to continue supporting HABs workshops on topics of interest to states and tribes. Such topics include holding regional HABs response and preparedness trainings to promptly and effectively respond to HABs and their toxins in drinking and recreational waters. EPA also plans to continue hosting national and regional webinars focusing on approaches for monitoring, managing and preventing HABs in drinking, recreational and marine waters, including EPA's tools and resources that can be used by public water systems and water managers to address cyanobacteria and cyanotoxins.



Dr. Elizabeth Hinchey, USEPA Great Lakes National Program Office, presenting at the Region 5 HABs Workshop, April 2016

For More Information

Additional information on the Office of Water's efforts to address harmful algal blooms in freshwater systems is available on the EPA's Cyanobacteria Harmful Algal Blooms (CyanoHABs) in Water website: <https://www.epa.gov/cyanoHABs>