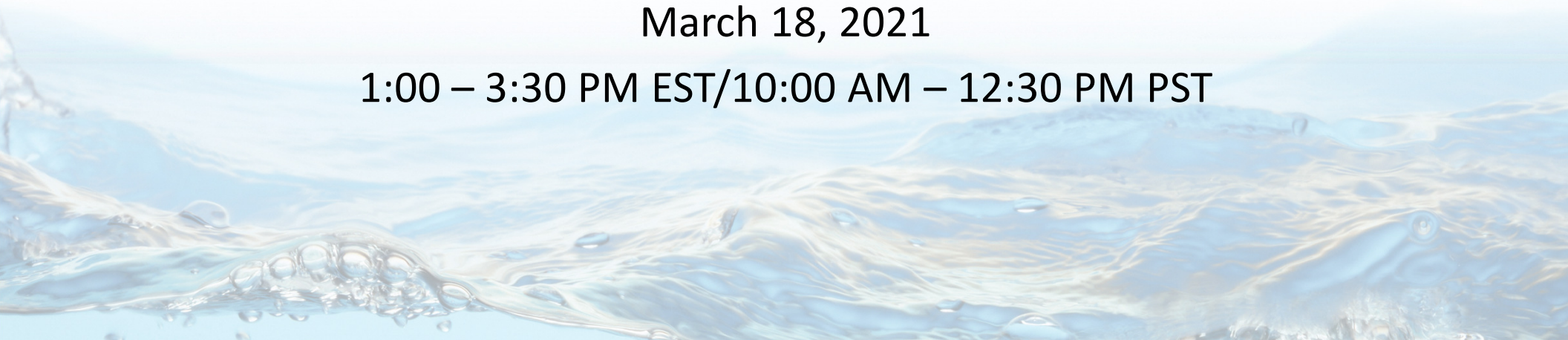


Managing Harmful Algal Blooms in Tribal Waters Webinar Series

Day 3: Funding HABs Management and Communicating Risks

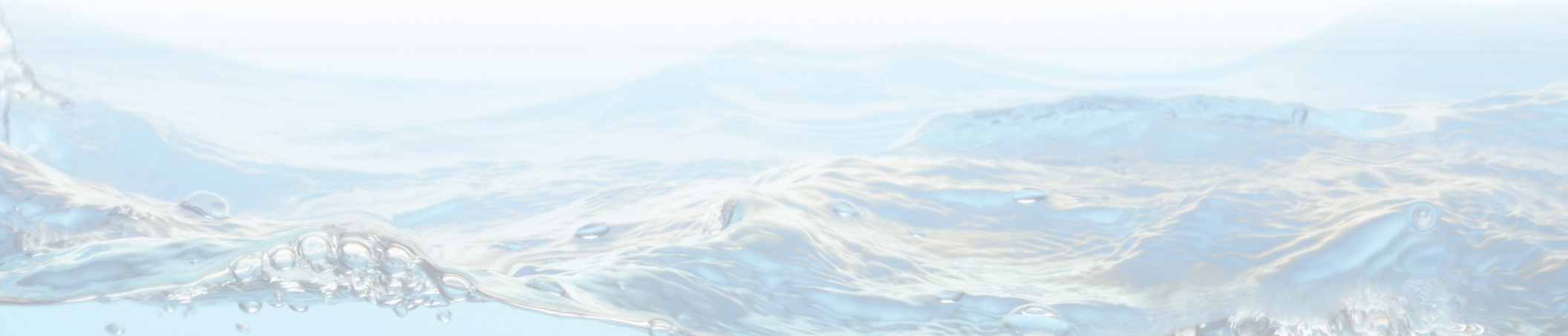
March 18, 2021

1:00 – 3:30 PM EST/10:00 AM – 12:30 PM PST



Welcome

- **Moderator: Tina Laidlaw, U.S. EPA Region 8**



Reminders

- **Slide presentations and speaker bios are downloadable as handouts**
- **If you are having technical difficulties, let us know in the chat box**
- **If you have a question for a speaker, type it in the chat box**
 - **Moderators will ask questions at the end of each session, time permitting**
- **During the webinar, participants on the phone can send questions to meetings@erg.com**

Session 1: Resources Available for Managing and Mitigating HABs

- **Maggie Broadwater, NOAA**
- **Marc Suddleson, NOAA**
- **Rachael Novak, Bureau of Indian Affairs**
- **Tim Wilhite, U.S. EPA Region 9**
- **Kate Pinkerton, U.S. EPA Region 9**
- **Andrew Sallach, U.S. EPA Region 9**
- **Chris Whitehead, SEATOR**

EPA Tribal Webinar

Maggie Broadwater, Marc Suddleson
NOAA



NOAA Extramural HAB research programs

- HAB Event Response
- ECOHAB—Determine causes & impacts of HABs
- MERHAB—Build HAB response capacity through managers, researchers, & shellfish industry partnership projects
- PCMHAB—develop, demonstrate and transition HAB prevention, mitigation, and control technologies and assess their costs/benefits
- HAB Socioeconomic Program Concept

NOAA Extramural Research Program Information

HAB Event Response Contact: nccos.hab.event.response@noaa.gov

–Event Response Funding

<https://coastalscience.noaa.gov/research/stressor-impacts-mitigation/rapid-response/#eventresponse>

Extramural HAB Research Funding Programs

–Ecology & Oceanography of HABs (ECO HAB)

<https://coastalscience.noaa.gov/research/stressor-impacts-mitigation/ecohab/>

–Monitoring & Event Response for HABs (MERHAB)

<https://coastalscience.noaa.gov/research/stressor-impacts-mitigation/merhab/>

–Prevention, Control, and Mitigation of HABs (PCM HAB)

<https://coastalscience.noaa.gov/research/stressor-impacts-mitigation/pcmhab/>

Tribal Climate Resilience Program



• 2021 Awards Program •

TCRP Coordinator & Climate Science Coordinator: Rachael Novak
Natural Resources Specialists: Alyssa Samoy & Corwin Carroll

March 18, 2021



TCRP Purpose



Empower Federally-recognized tribes and BIA Trust managers to achieve long-term program goals by **mainstreaming climate change considerations to reduce risk to tribal and Trust resources.**

- Enable identification of climate resilience strategies to improve outcomes for existing program operations
 - Planning and project design can minimize impacts, reduce the scale of emergencies, infrastructure damage, and threats to human health and well-being
 - Leadership engagement, delivery of data and tools, training, tribal capacity-building and federal coordination for improved planning and management
- * Implementation is largely the responsibility of the Tribal Program**

TCRP Focus Areas

TCRP supports resilient **adaptation planning** for climate risks

TCRP supports **management, and relocation, managed retreat and protect-in-place planning** in coastal and riverine communities

TCRP also supports **ocean and coastal management and planning**

- Includes Great Lakes tribes



Solicitation on Grants.gov



Open to **Federally-recognized tribes and tribal organizations that serve federally recognized tribes** as defined in 25 U.S.C. 5304(I)

- Solicitation Opportunity Number: TEMP-11663
- Posted 02/22/2021, Closes 04/23/2021
- Federal Register list of Federally-recognized tribes (01/29/2021): <https://www.federalregister.gov/documents/2021/01/29/2021-01606/indian-entities-recognized-by-and-eligible-to-receive-services-from-the-united-states-bureau-of>
- Submit proposals **directly on the Grants.gov** this year
- Please limit length to **6 pages** for the proposal, not including supplemental materials
- Other entities may participate as sub-grantees

Where to find more information



Find the solicitation two places:

- Grants.gov: <https://www.grants.gov/web/grants/view-opportunity.html?oppld=331566>
- TCRP site homepage: <https://www.bia.gov/bia/ots/tribal-climate-resilience-program>

2021

Award Summary

The BIA Tribal Climate Resilience Program is pleased to announce the 2021 Notice of Funding Opportunity. Application materials and the official solicitation may be found below. This year, Federally recognized tribes and authorized tribal organizations may apply directly on the Grants.gov **Grant Opportunity**. There are now nine Categories of funding. See below:

[Solicitation](#)

[Proposal Cover Page](#)

[FAQ's](#)

Optional Application Forms (fillable pdf) for:

Category 3

[Adaptation Planning
Travel](#)

Category 5

[Ocean and Coastal
Management Travel](#)

Category 6

[Capacity Building](#)

Category 8-9

[Internships and Youth
Engagement](#)

2021 Categories of Funding



Adaptation Planning (Categories 1-3)

- Cat 1: Trainings and Workshops (\$150,000 max)
- **Cat 2: Adaptation Planning (\$150,000 max)**
- **Cat 3: Travel Support for Adaptation Planning (\$15,000 max)**

Ocean & Coastal Management Planning (Categories 4-5)

- **Cat 4: Ocean & Coastal Management Planning (max \$150,000)**
- **Cat 5: Travel Support for Ocean & Coastal (\$15,000)**

Capacity Building to develop a Category 2 proposal
(Category 6- \$65,000)

Relocation, Managed Retreat, & Protect-in-Place Planning
(Category 7- \$150,000)

Internships & Youth Engagement (Categories 8-9)

- Cat 8: Internships (\$50,000)
- Cat 9: Youth Engagement (\$50,000)

Common Questions



Are there prerequisites to this funding?

- No

Are there matching requirements?

- No, but extra points for tribal contributions

How competitive is the process/funding?

- In 2020, TCRP received 194 proposals and funded 157 awards (74% of requested funding; 81% of proposal requests)
- Funded 113 Tribes and tribal organizations

TCRP-Funded HABs-Related Tribal Activities

- \$1.4M HABs-related tribal awards/60.8M total since 2011 for all TCRP awards
- 12 HABs-related/704 total awards since 2011
- Sitka Tribe of Alaska, Klawock Cooperative Association; Kodiak Area Native Association; Knik Tribe; Metlakatla Indian Community, Annette Island; Skokomish Indian Tribe (5 AK, 1 WA)
- Example Award Titles:
 - Increasing the Resiliency of the Southeast Alaska Tribal Ocean Research(SEATOR)Partnership through Climate Risk Management Training
 - Assessing Vulnerability of Amnesic Shellfish Poisoning in Subsistence Shellfish Resources
 - Travel for Expansion of Collective Monitoring of Harmful Algal Blooms and Marine Biotoxins on Kodiak Archipelago
 - Skokomish Indian Tribe Travel for Marine Algal Toxins and Environmental Data Development in Hood Canal, WA
 - Vulnerability Assessment: Prevalence of Paralytic Shellfish Toxins in the Marine Food Webs of the Bering, Chukchi and Beaufort Seas of Western and Northwestern Alaska
 - Collective Monitoring of Harmful Algal Blooms and Paralytic Shellfish Poisoning on Kodiak Archipelago: Advancing Tribal Resilience and Subsistence Food Security
 - Capacity Building Workshop: Monitoring of Toxic Phytoplankton Impacts on Subsistence Foods



Helpful Resources



Helpful Regional Contacts



List of regional points-of-contact:

https://www.bia.gov/sites/bia.gov/files/assets/bia/ots/tcrp/TRP_Contacts.pdf

- BIA Tribal Climate Resilience Program POCs
- Tribal Climate Resilience Liaisons at DOI Climate Adaptation Science Centers (CASCs)

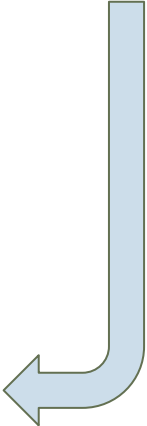
Contact the Tribal Resilience Program staff above for national program questions and federal coordination. Regional support is listed below.

BIA Alaska Region		
POC: Rosalie Debenham (907)586-7444	✉ Rosalie.Debenham@bia.gov	
Alternate: Keith Kahklen	✉ Keith.Kahklen@bia.gov	
Alaska CASC Tribal Liaison		
POC: Malinda Chase O: (907)474-2768 C: (907)460-8438	✉ MalindaC@apiai.org	

1

TRIBAL RESILIENCE PROGRAM

BIA Eastern Region		
POC: Harold Peterson (615)564-6838	✉ Harold.Peterson@bia.gov	
Alternate: Chester McGhee	✉ Chester.McGhee@bia.gov	
Alternate: Leonard "Lindy" Rawlings	✉ Leonard.Rawlings@bia.gov	
Northeast & Southeast CASC Tribal Liaison		
POC: Casey Thornbrugh (615)589-1629	✉ CThornbrugh@usetinc.org	
BIA Eastern Oklahoma Region		



Regional Support– Tribal Climate Resilience Liaisons

Tribal Climate Resilience Liaisons are located at Regional DOI
Climate Adaptation Science Centers (CASCs)



Potential Regional Partners- Cooperative Ecosystems Studies Units



Want to partner with expertise at a university?

- BIA partnership in the CESU network allows tribes to access expertise at a low 17.5% indirect cost rate = more funds to support project.
- Check if your partner is at a participating institution here:
<http://www.cesu.psu.edu>
- Write it into your proposal (Cover Page, Proposal description and budget.)



Other Helpful Resources

- BIA's Tribal Climate Resilience Program Home Page:
<https://www.bia.gov/bia/ots/tribal-resilience-program>
- Tribal Resilience Resource Guide:
<https://biamaps.doi.gov/tribalresilience/resourceguide/>
- NAU's Institute for Tribal Environmental Professionals (ITEP)
<http://www7.nau.edu/itep/main/tcc/Resources/newsletters>
- UO's Tribal Climate Change Guide:
<http://tribalclimateguide.uoregon.edu/>
- Cooperative Ecosystem Studies Units: <http://www.cesu.psu.edu/>

- **Intro to Applying on Grants.gov:**
<https://www.youtube.com/watch?v=fIZZH74021I&feature=youtu.be>
- **How to Register with Grants.gov:**
<https://www.youtube.com/watch?v=sj3X2XPAQ5g&feature=youtu.be>

Thank you/Ahe'hee!

For more programmatic questions, please email rachael.novak@bia.gov
or alyssa.samoy@bia.gov;
For questions on the application process, please contact jo.metcalfe@bia.gov;

The presentation will be recorded and archived for those unable to attend the live




INDIAN ENVIRONMENTAL GENERAL ASSISTANCE PROGRAM (GAP)

- **Can** be used to fund select HAB work:
 - ✓ Plan, develop, and establish capacity to protect human health and the environment from HAB-related impacts
- **Can't** be used for implementation work:
 - ✓ Ongoing water quality monitoring activities typically supported through Clean Water Act funding




GAP BASICS

- Tribes and Intertribal Consortia are Eligible
 - Non-competitive continuing program funding
 - Scaled for ~ \$110,000 per year for each tribe
 - No pre-requisites
 - No match required
 - Awarded in GAP grants or Performance Partnership Grants
- 



ALLOWABLE ACTIVITIES

- Conduct a Baseline Needs Assessment
 - ✓ Gather existing data, collect New Data.
Analyze Data, Identify & Prioritize Needs
 - Develop an Outreach Program
 - ✓ Inform members about HAB conditions, drivers, environmental and health risks.
 - ✓ Develop a posting program
 - Coordinate and Consult with Various entities
 - ✓ Tribes, states, EPA, Counties, IHS
- 



Clean Water Act Section 106 and 319 Programs

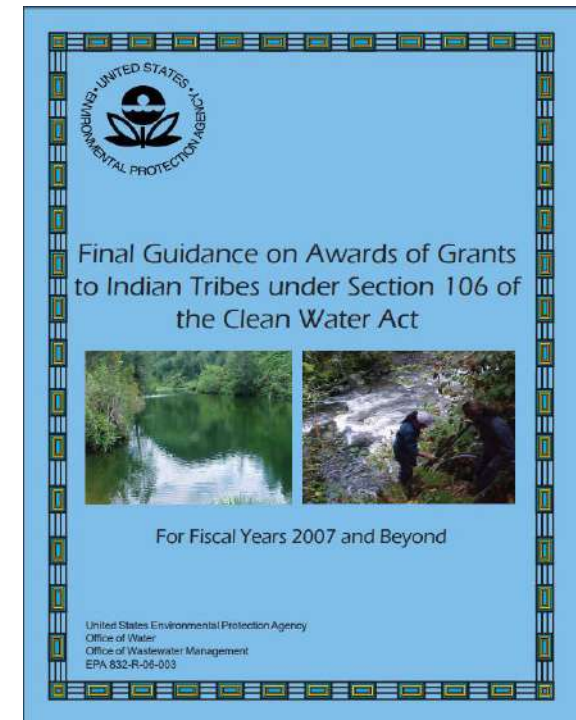
KATE PINKERTON, US EPA REGION 9

FUNDING OPPORTUNITIES FOR MANAGING AND MITIGATING HABS

MARCH 18, 2021

Clean Water Act Section 106 Program Basics

- ▶ Section 106 of the Clean Water Act (CWA) authorizes EPA to provide financial assistance to states and eligible interstate agencies to establish and administer programs for the prevention, reduction, and elimination of water pollution.
- ▶ In 1987, Congress amended CWA to include provisions that allow EPA to treat an Indian tribe in a manner similar to a state (i.e., treatment in a manner similar to a state, or TAS) for the purpose of providing Section 106 funding.



Common CWA 106 Program Activities



Water Quality Monitoring

QAPP development, monitoring equipment, lab analysis, staff salaries and benefits



Outreach and Education

Earth Day activities, newsletters, website, educational videos, field trips, etc.



Training/Travel

EPA Water Quality Standards Academy, RTOCs/Annual Conference, Online Courses

+including HABs!

CWA §106 Tribal Water Pollution Control Program Reporting Requirements

- ▶ Monitoring Strategy/Quality Assurance Project Plan
- ▶ Data submitted electronically in WQX-compatible format
 - ▶ Annually
- ▶ Water Quality Assessment Report (WQAR)
 - ▶ Annually



Moapa Band of Paiutes

CWA 319 Program

► Funding

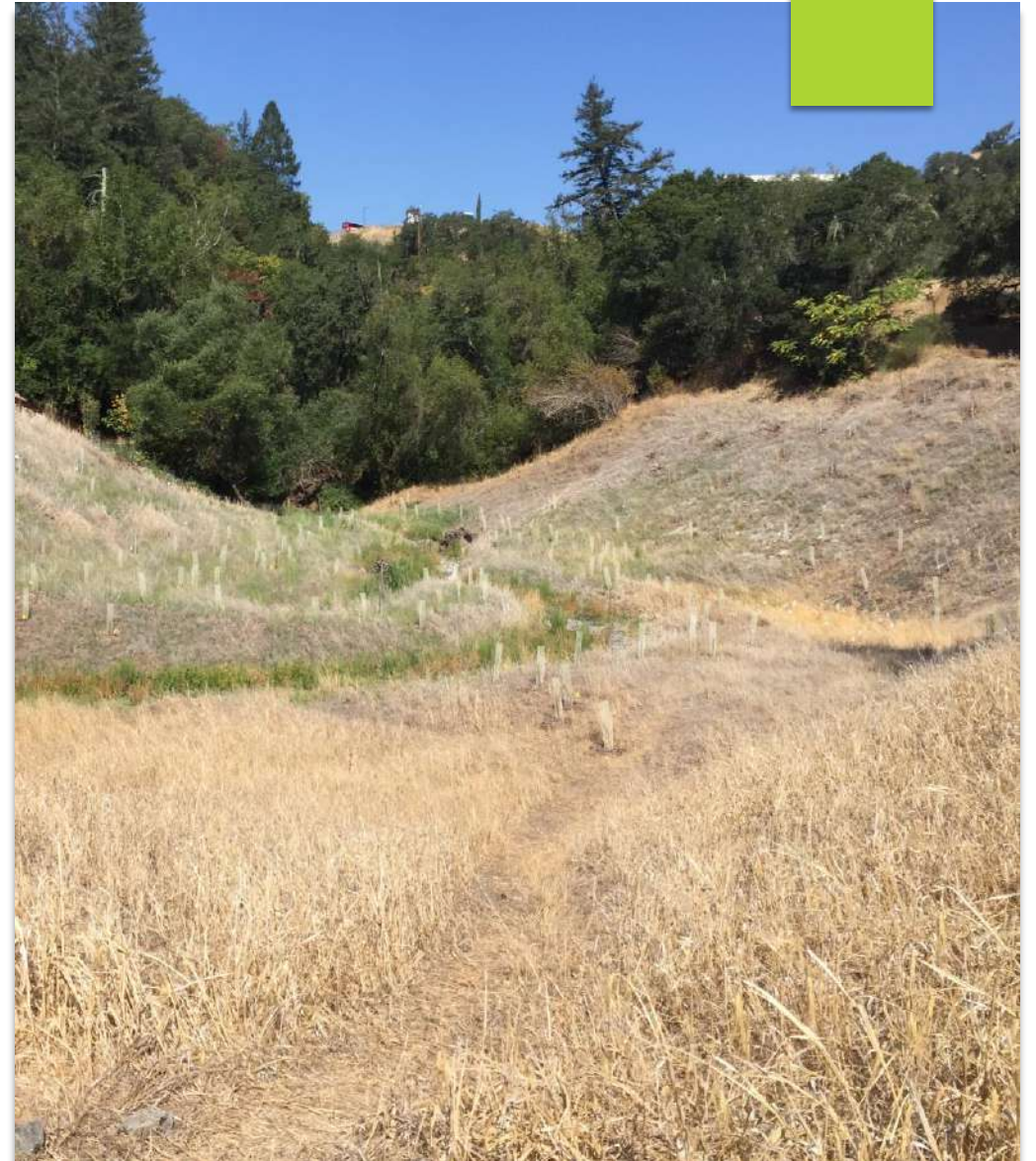
- Base: \$30,000 or \$50,000
- Competitive: ≤\$100,000

► HABs Activities Under CWA 319

- Riparian Area Restoration/Planting
- Wetland Restoration
- Exclusion Fencing
- Watershed Planning
- Outreach & Education

► Required

- Nonpoint Source Assessment Report and Management Plan



Clean Water Act Section 106 & 319 Program Financial Assistance Eligibility Requirements

- ▶ **Federally recognized**
- ▶ **Governing body**
- ▶ **Capable of managing program**
- ▶ **Jurisdiction/authority over water resources**



Tribal Contacts – Water Pollution Control Grants

- EPA Region 1 -- Boston (serving CT, ME, MA, NH, RI, and VT)
[Jeff Butensky](mailto:butensky.jeff@epa.gov) (butensky.jeff@epa.gov)
(617) 918-1665
- EPA Region 2 -- New York City (serving NJ, NY, Puerto Rico, and the U.S. Virgin Islands)
[Andrea Coats](mailto:coats.andrea@epa.gov) (coats.andrea@epa.gov)
(212) 637-3850
- EPA Region 3 -- Philadelphia (serving DE, DC, MD, PA, VA, and WV)
[Edward Hopkins](mailto:hopkins.edward@epa.gov) (hopkins.edward@epa.gov)
(215) 814-5401
- EPA Region 4 -- Atlanta (serving AL, FL, GA, KY, MS, NC, SC, and TN)
[Jennifer Shadle](mailto:shadle.jennifer@epa.gov) (shadle.jennifer@epa.gov)
(404) 562-9436
[Eve Zimmerman](mailto:zimmerman.eve@epa.gov) (zimmerman.eve@epa.gov)
(404) 562-9259
- EPA Region 5 -- Chicago (serving IL, IN, MI, MN, OH, and WI)
[David Horak](mailto:horak.david@epa.gov) (horak.david@epa.gov)
(312) 353-4306
- EPA Region 6 -- Dallas (serving AR, LA, NM, OK, a
[Nikole Witt](mailto:witt.nikole@epa.gov) (witt.nikole@epa.gov)
(214) 665-2781
[Kara Alexander](mailto:alexander.kara@epa.gov) (alexander.kara@epa.gov)
(214) 665-7312
[Samuel Reynolds](mailto:reynolds.samuel@epa.gov) (reynolds.samuel@epa.gov)
(214) 665-6682
- EPA Region 7 -- Kansas City (serving IA, KS, MO, :
[Kimberly Hill](mailto:hill.kimberly@epa.gov) (hill.kimberly@epa.gov)
(913) 551-7841
- EPA Region 8 -- Denver (serving CO, MT, ND, SD,
[Liz Rogers](mailto:rogers.liz@epa.gov) (rogers.liz@epa.gov)
(303) 312-6974
[Tina Laidlaw](mailto:laidlaw.tina@epa.gov) (laidlaw.tina@epa.gov)
(406) 457-5016
- EPA Region 9 -- San Francisco (serving AZ, CA, HI
Samoa, Commonwealth of the Northern Marian
Federated States of Micronesia, Guam, Marshall
Republic of Palau)
[Kate Pinkerton](mailto:pinkerton.kate@epa.gov) (pinkerton.kate@epa.gov)
(415) 972-3662
- EPA Region 10 -- Seattle (serving AK, ID, OR, and
[Krista Mendelman](mailto:mendelman.krista@epa.gov) (mendelman.krista@epa.gov)
(206) 553-1571

Questions?

[HTTPS://WWW.EPA.GOV/WATER-POLLUTION-CONTROL-SECTION-106-GRANTS/TRIBAL-CONTACTS-WATER-POLLUTION-CONTROL-GRANTS](https://www.epa.gov/water-pollution-control-section-106-grants/tribal-contacts-water-pollution-control-grants)

[HTTPS://WWW.EPA.GOV/NPS/CONTACTS-NONPOINT-SOURCE-NPS-POLLUTION-PROGRAMS#EPA](https://www.epa.gov/nps/contacts-nonpoint-source-nps-pollution-programs#EPA)



Funding of Drinking Water Infrastructure

ANDREW SALLACH, P.E.
US EPA REGION 9
TRIBAL DRINKING WATER TEAM
MARCH 18, 2021

Who Provides Funding in Indian Country



USDA Rural Development
U.S. DEPARTMENT OF AGRICULTURE

Funding Through Indian Health Service

- ❖ **Through Sanitation Facilities Construction**
- ❖ **Get project in the Sanitation Deficiency System**
- ❖ **Work with your area office**
- ❖ **Provides funding for Tribal member primary residence only**



Funding Trough Environmental Protection Agency

- ❖ Drinking Water Tribal Set-Aside
- ❖ Funding for PWSs
- ❖ Funds allocated by regions
- ❖ Some regions select projects from SDS
- ❖ Some regions select projects through regional priorities



EPA DWWSA Can Fund

- ❖ Projects that achieve compliance with drinking water standards
- ❖ Water treatment plants
- ❖ New sources of drinking
- ❖ Tanks and distribution

Ineligible Activities

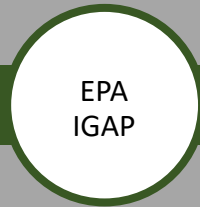
- ❖ Dams
- ❖ Land acquisition
- ❖ Monitoring
- ❖ Operations & maintenance

EPA Region 9 Example



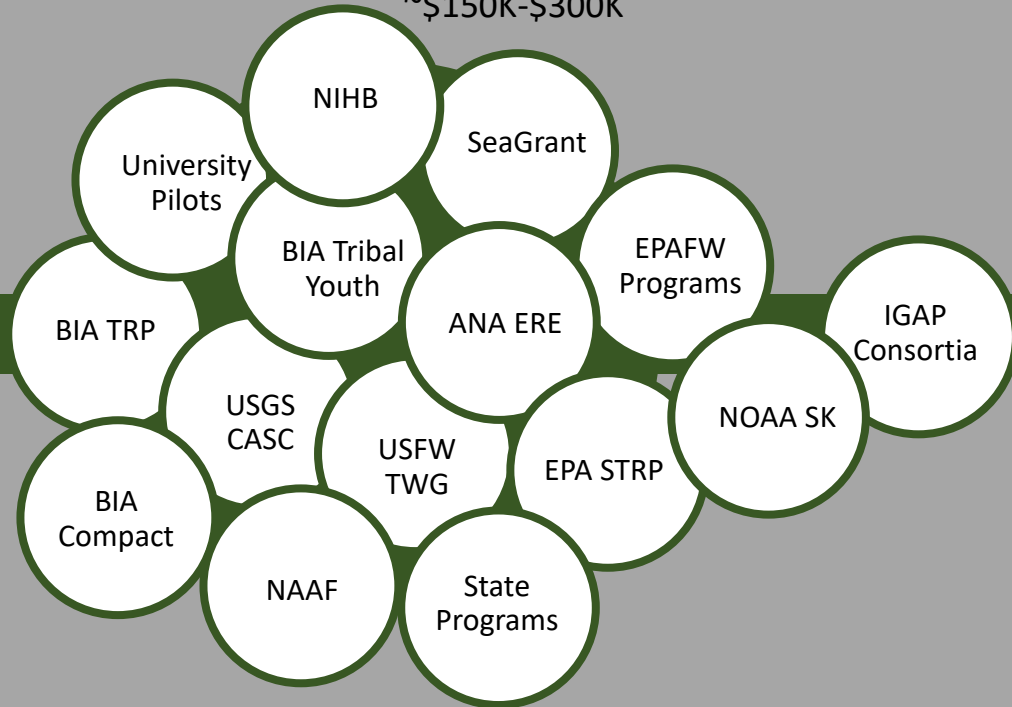
Baseline Funding

~\$125K



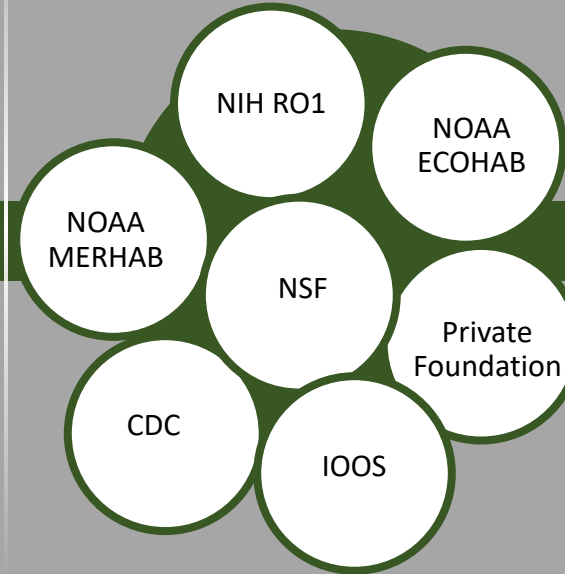
Capacity Building

~\$150K-\$300K



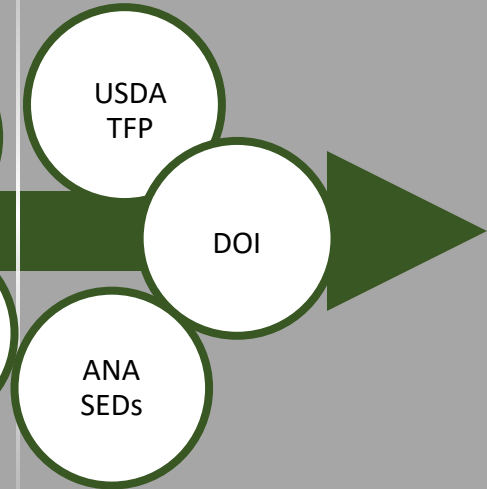
Science Capacity

~\$1M-\$5M



Momentum

Leverage and Build



\$7.8M SEATOR

Successful Program=Integrating Funding Sources
Invest in building capacity

Chris Whitehead
360-797-3152

Session 1: Resources Available for Managing and Mitigating HABs

QUESTIONS?

A background image showing a close-up of water splashing, with ripples and bubbles, set against a light blue gradient background.

BREAK AND AUDIENCE POLL

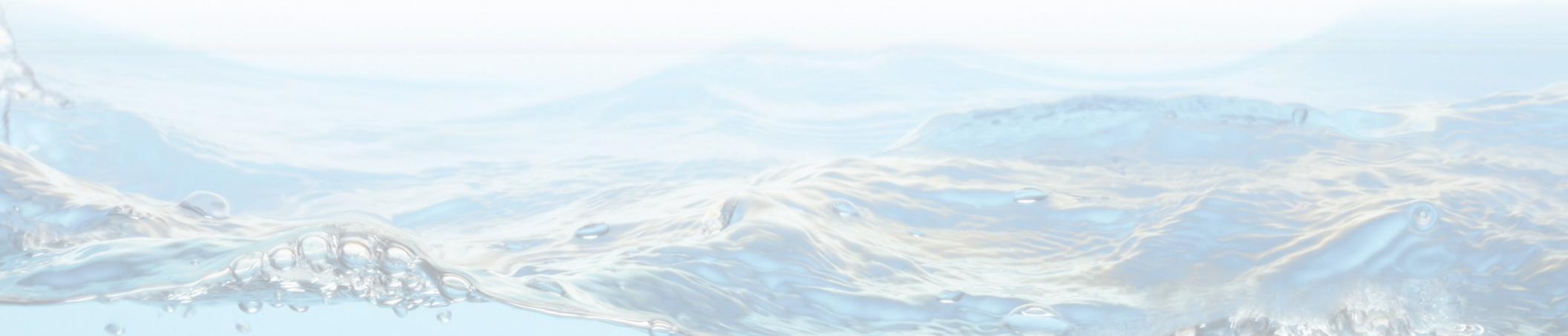
**What would you like to see covered in future webinars on
HABs?**

- Human, fish, animals and ecological adverse effects from HABs
- Management and prevention of blooms in surface waters
- Monitoring for HABs and their toxins
- Risk Communication of HABs
- Other

The webinar will resume at 2:15 p.m.

Session 2: HABs Preparedness and Risk Communication

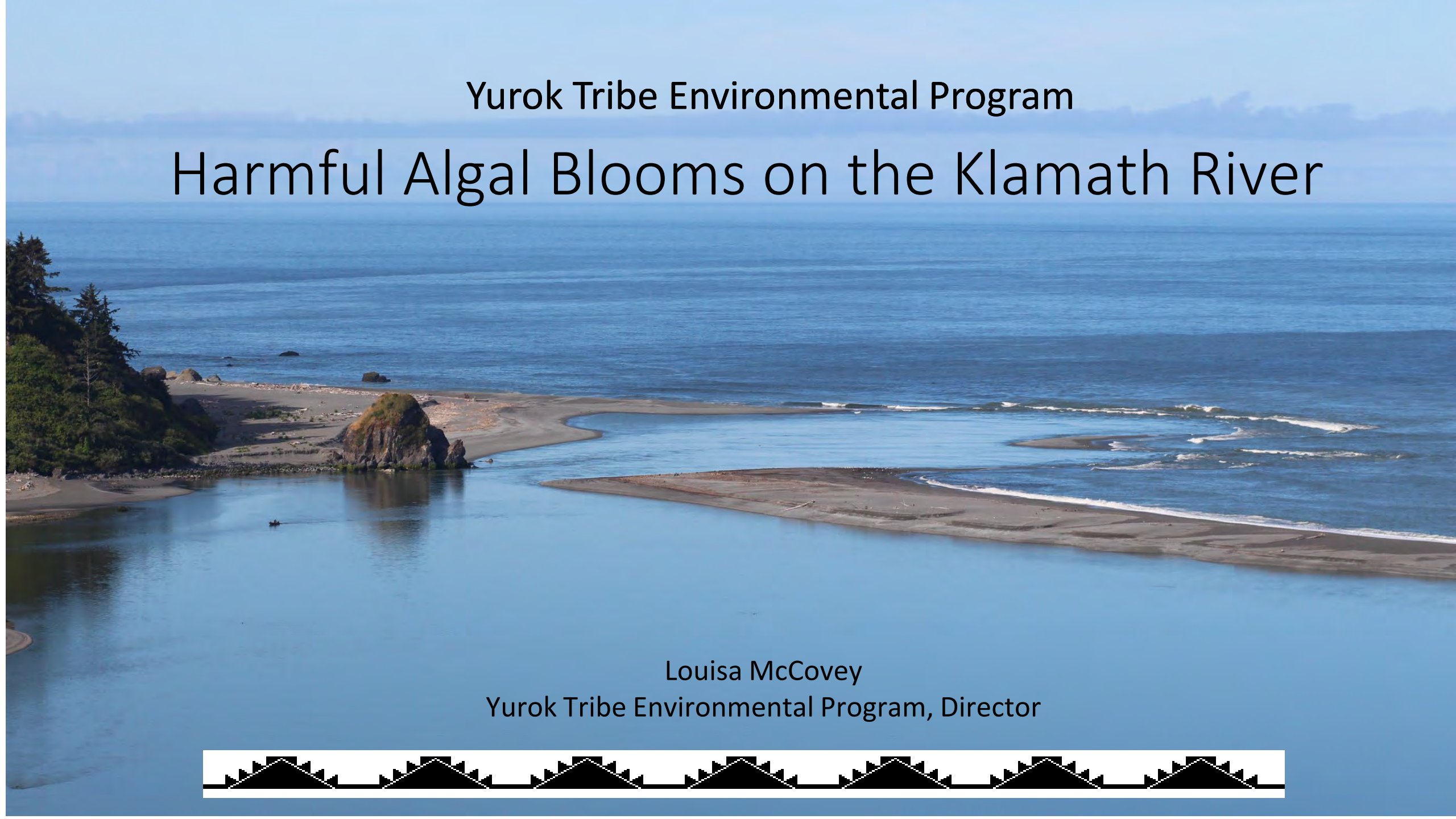
- **Moderator: Tod Leighfield, NOAA**



Session 2: HABs Preparedness and Risk Communication

- **Louisa McCovey, Yurok Tribe**
- **Jerry Borchert, Washington Department of Health**
- **John Healey, U.S. EPA, Office of Science and Technology**
- **Katie Foreman, U.S. EPA, Office of Ground Water and Drinking Water**
- **Jake Crosby, U.S. EPA Region 8**





Yurok Tribe Environmental Program

Harmful Algal Blooms on the Klamath River

Louisa McCovey
Yurok Tribe Environmental Program, Director



Yurok Ancestral Territory

Roughly corresponds to the Lower Klamath River Basin, but includes 56 miles of coastline

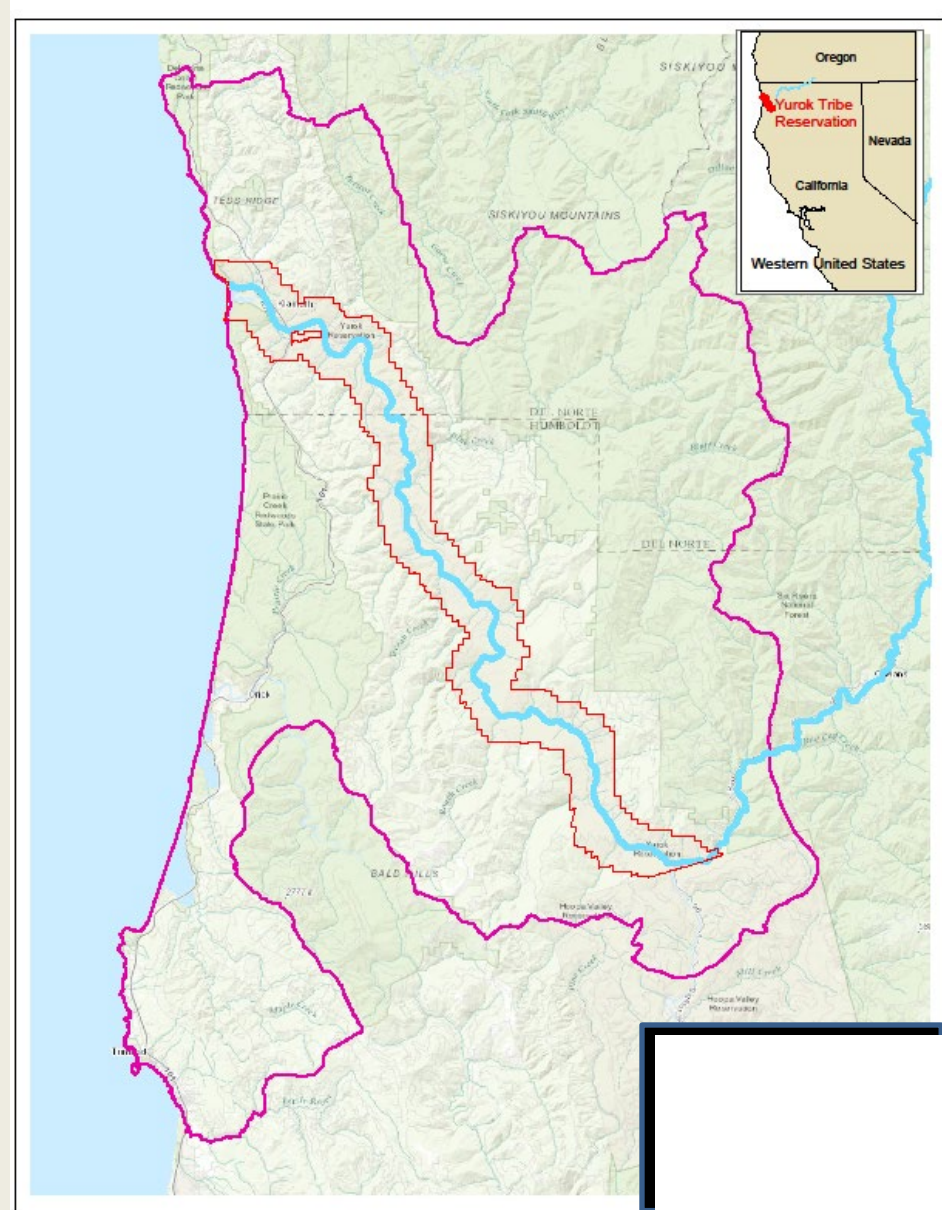
Yurok Reservation

One mile on each side across the Klamath River for last 45 miles

And has experienced

- *marine,*
- *estuarine and*
- *freshwater*

HARMFUL ALGAL BLOOM EVENTS



The Yurok Reservation has experienced
DETRIMENTAL
Toxic Cyanobacteria Blooms
THROUGHOUT ITS LENGTH &
FOR OVER A DECADE



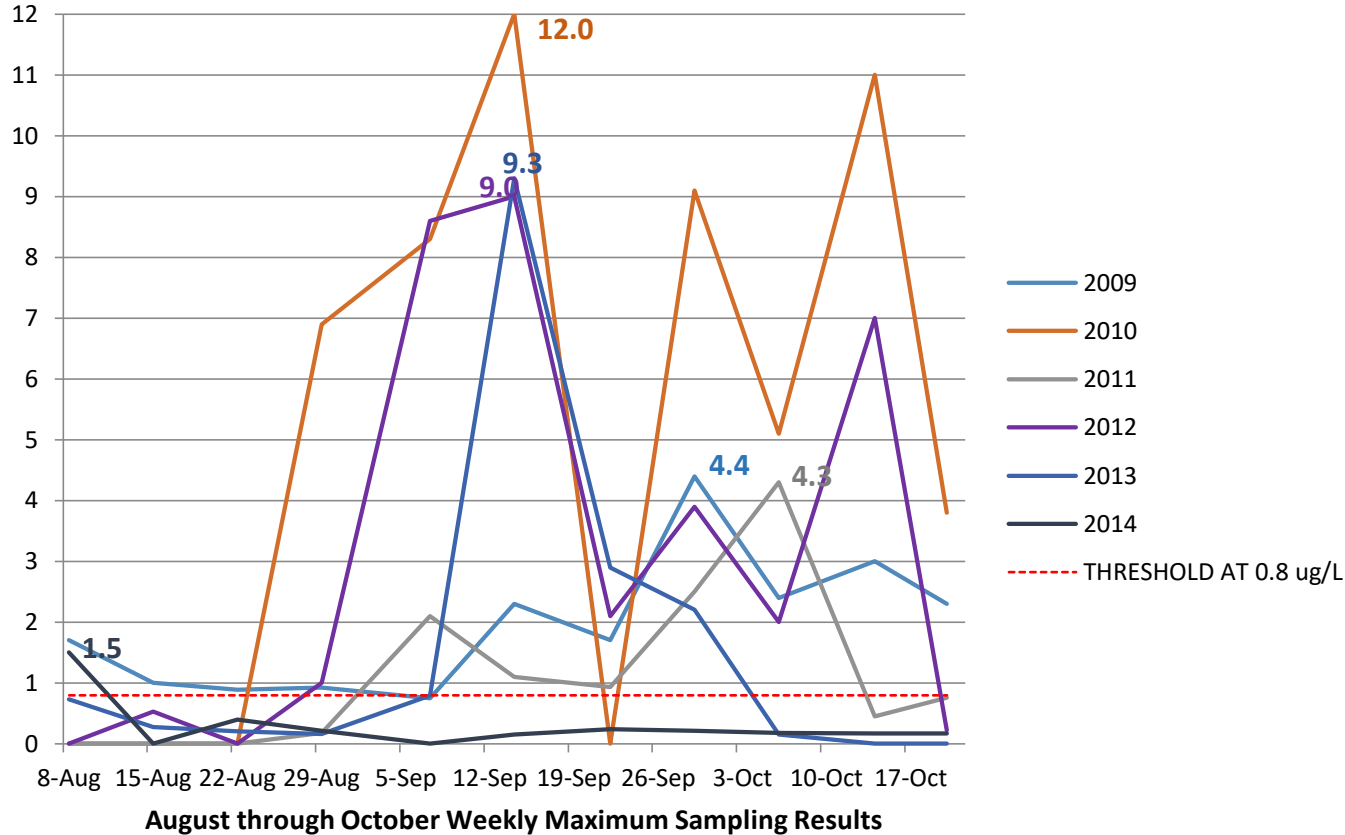
Toxic Cyanobacteria Blooms have:

- *been linked to reservoir water conditions behind the dams*
- *put highly exposed Yurok Tribal Members at risk*
- *generated, disproportionate negative health impacts and*
- *created a serious environmental justice issue*

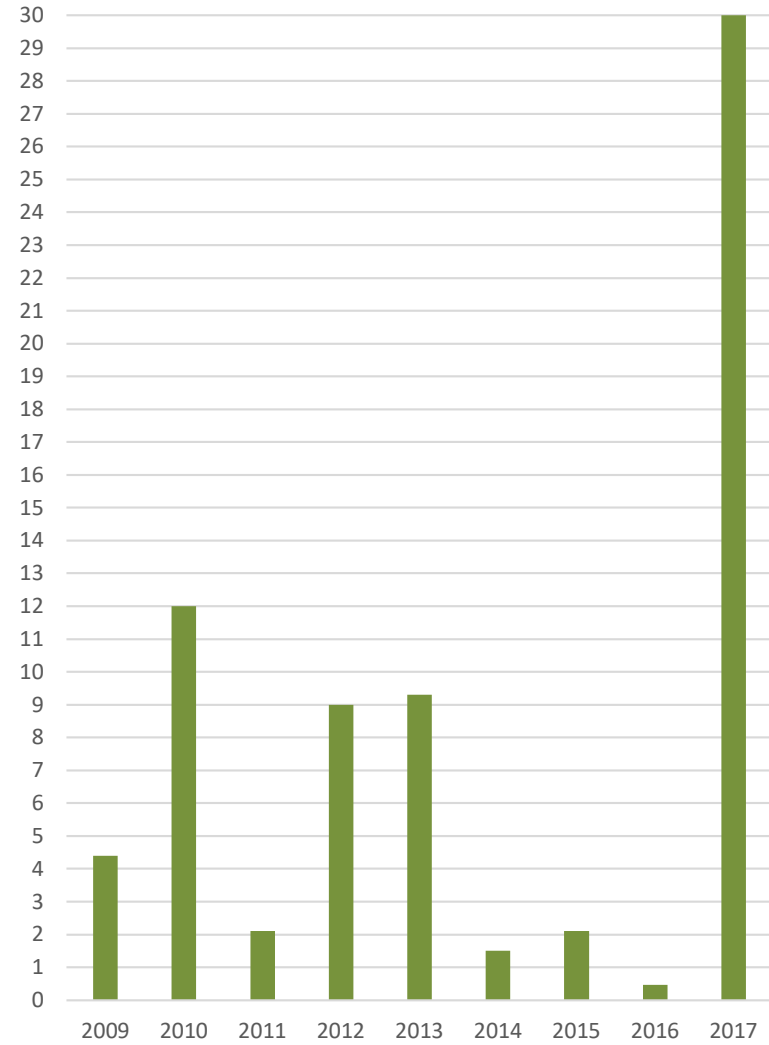
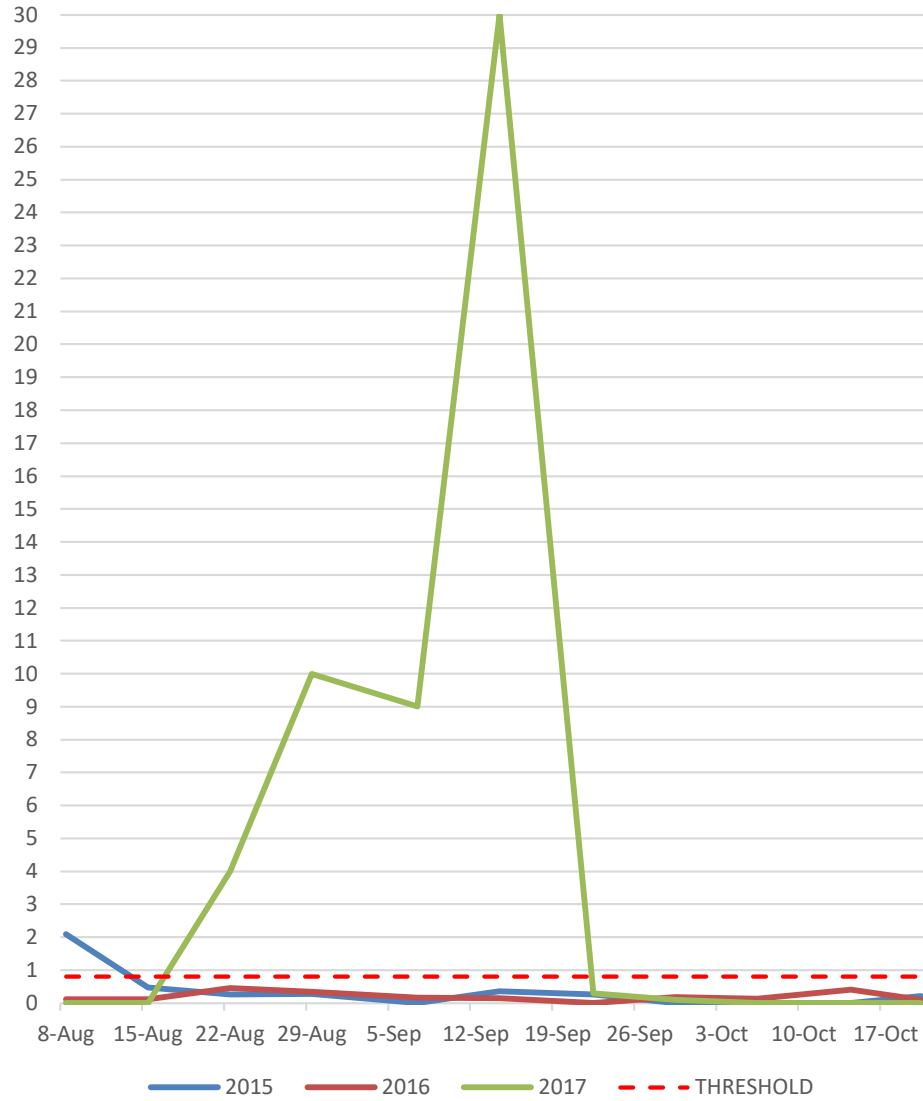


Toxic Cyanobacteria Blooms IN YUOK COUNTRY
(2009 -2014) average 10 weeks each year
at levels above a safe threshold
that puts Public Health at risk.

2009-2014 MICROCYSTIN DETECTIONS



2015-2017 MICROCYSTIN DETECTIONS

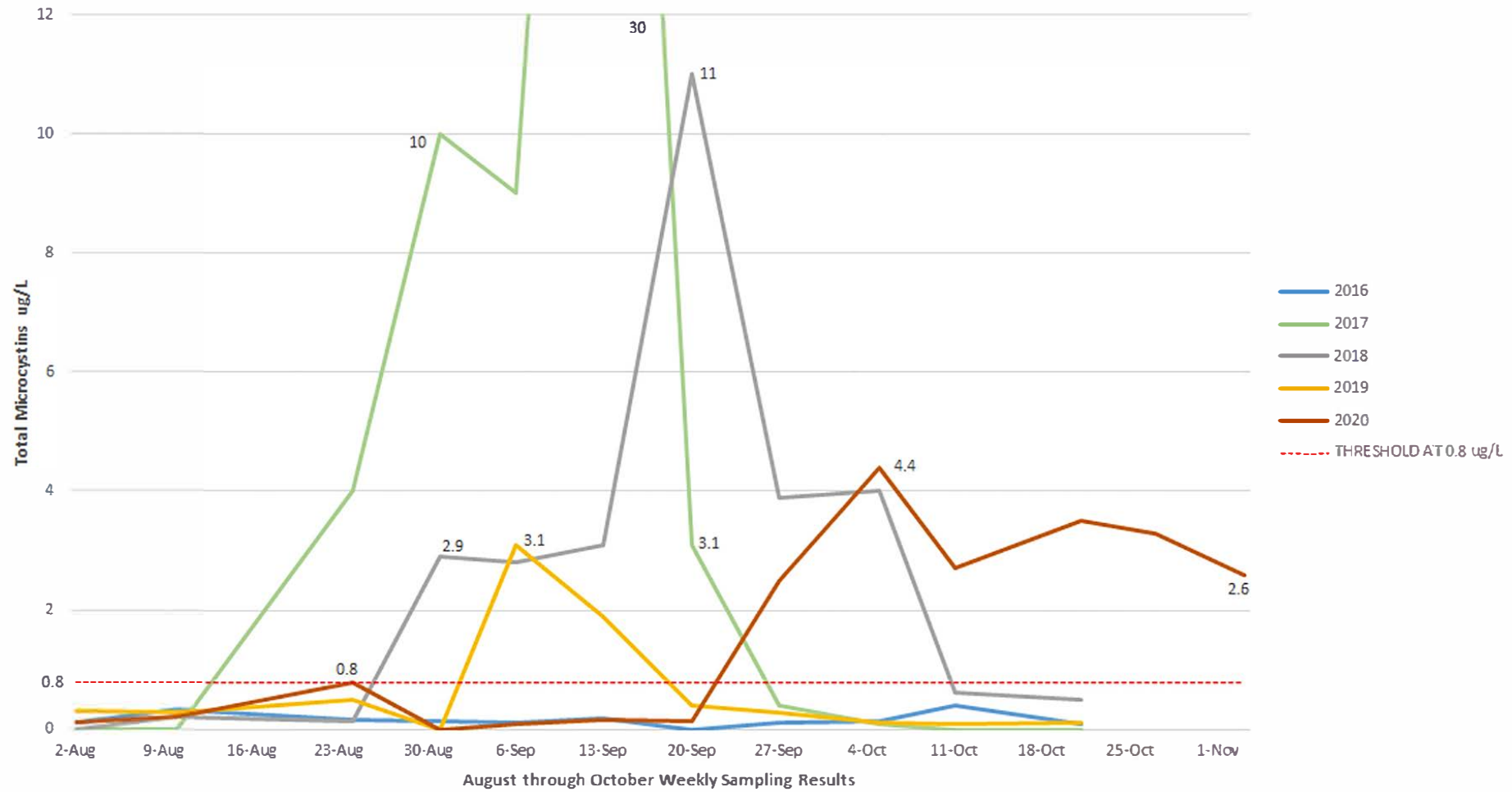


Average 5.6 Weeks over threshold

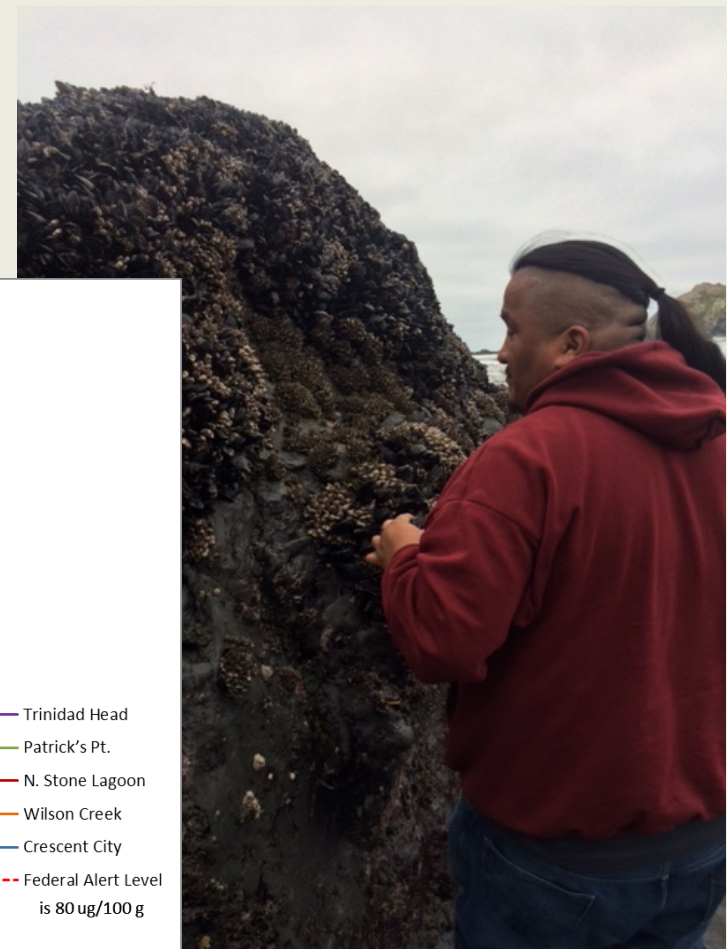
However, 2017 HIGHEST YEAR ON RECORD



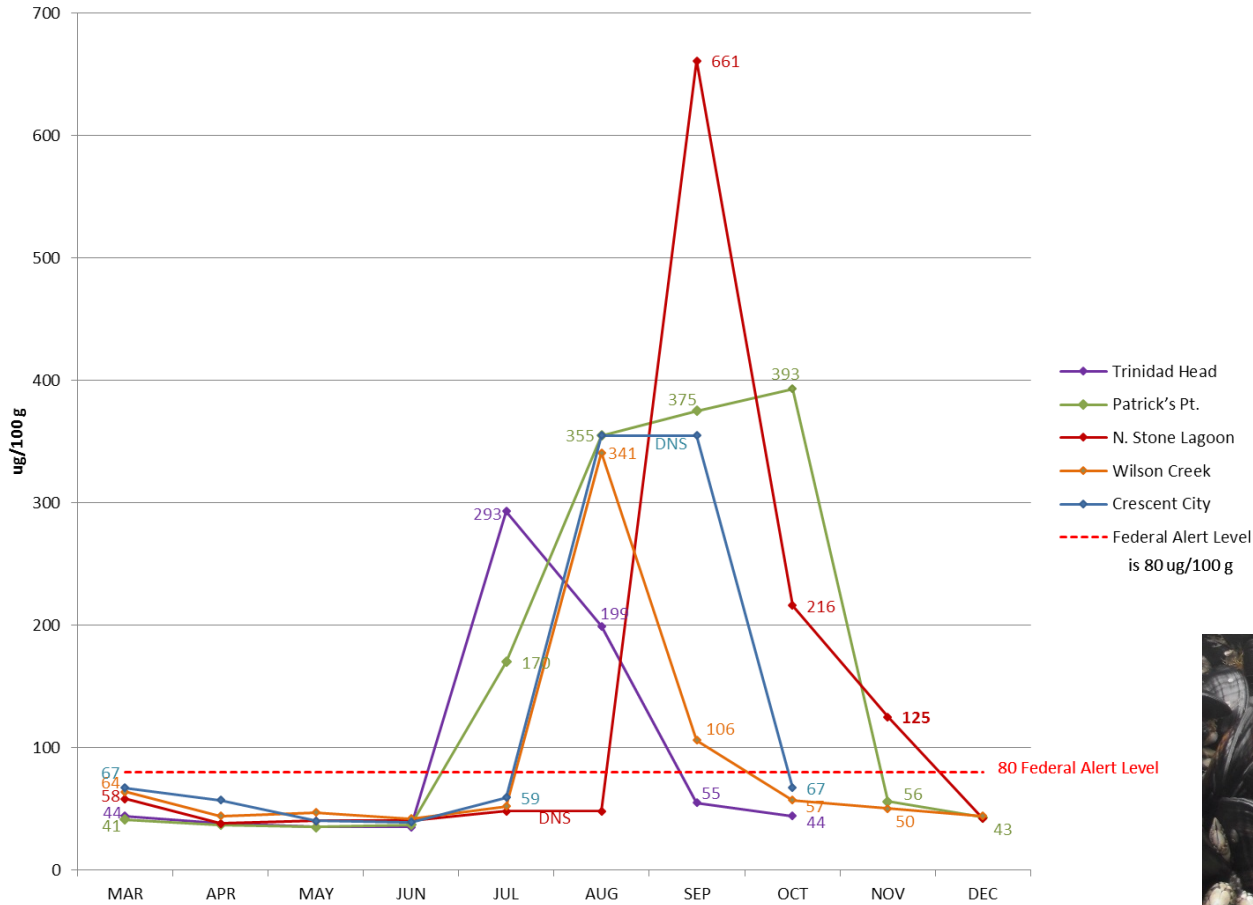
2016-2020 WEEKLY HIGH MICROCYSTIN DETECTIONS



PAST & ONGOING HAB CONCERNS IN YUOKO COUNTRY



Paralytic Shellfish Poison Detections 2013



Yuroks have unique tribal exposure pathways including:

- 1) DERMAL ABSORPTION
- 2) INGESTION
- 3) INHALATION



DANGER

RIVER WATER in the KLAMATH RIVER IS UNSAFE **AND CAN HARM PEOPLE & KILL PETS**

Levels of blue-green algae (*microcystin*)
were detected at **5 TIMES** the Public Health advisory thresholds (09/1/2017)



STAY OUT OF THE WATER UNTIL FURTHER NOTICE.

DO NOT TOUCH algae scum in the water or on the shore



DO NOT let PETS drink, or go into the water, or lick scum from fur.

DO NOT CONSUME FISH ORGANS- Wash fillets with drinking water

DO NOT EAT SHELLFISH from these waters they concentrate toxins

DO NOT USE THIS WATER for rinsing fish, drinking, or cooking.

Boiling will not make the water safe.



Call your doctor or veterinarian if you or your pet get sick after going in the water

For more information contact staff at:

North Coast Regional Water Quality Control Board at 707-576-2220 or Yurok Tribe Environmental Program (707) 954-9643

This water body is being monitored by the Yurok Tribe; this notice will be revised as conditions change.



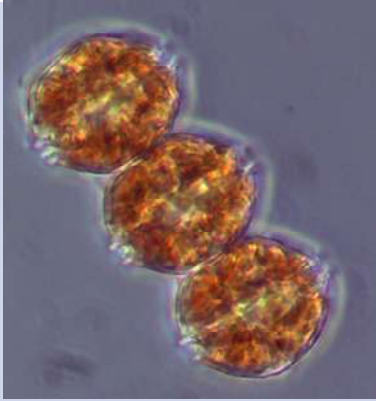
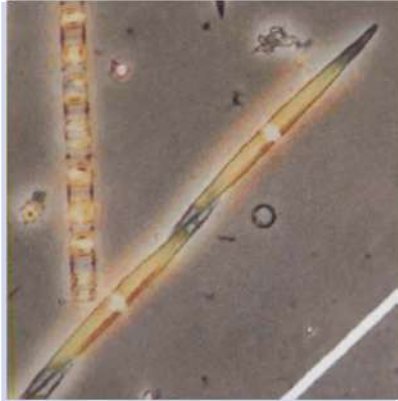

Washington State Department of Health

MARINE BIOTOXIN PROGRAM

Experiences Responding to HABs and Communicating Risks

March 18th 2021

Marine Biotoxins in WA

Biotoxin Type:	Paralytic Shellfish Poisoning (PSP)	Amnesic Shellfish Poisoning (ASP)	Diarrhetic Shellfish Poisoning (DSP)
Microscopic Phytoplankton:			
Caused by:	Dinoflagellate <i>Alexandrium spp.</i>	Diatom <i>Pseudo-nitzschia spp.</i>	Dinoflagellate <i>Dinophysis spp.</i>
Toxin Produced:	Saxitoxin (Neurotoxin)	Domoic Acid (Neurotoxin)	Okadaic Acid
Started Monitoring Samples/year:	1957 ~3000 tests/year	1991 ~2000 tests/year	2012 ~2500 tests/year
Action Level:	≥80 µg/100g tissue	≥20 ppm in tissue	≥16 µg/100g tissue

Phytoplankton Monitoring



- Established in 1999
- Test water sample for toxin
- Coastal beaches & bays



- Established in 2006
- Modeled after ORHAB
- Puget Sound

- Collect data on environmental conditions
- Collect and analyze water samples
 - Weekly in spring/summer
 - Every other week during fall/winter
- Identify HAB species and relative abundance (cells/L)



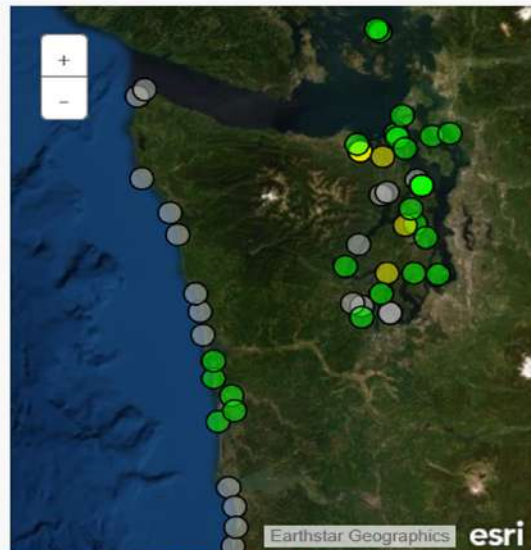
Phytoplankton Monitoring Early Warning Map System

Harmful Algal Bloom Alert Levels



Alexandrium Detailed Map
[Click here to view in a larger map](#)

Red: Present with cell count above 100 cells/L.
Yellow: Present with cell count between 1-99 cells/L.
Green: Absent.
Grey: April - October: not sampled for more than 15 days.
November - March: not sampled for more than 30 days.



Dinophysis Detailed Map
[Click here to view in a larger map](#)

Red: Present with cell count above 1,000 cells/L.
Yellow: Present with cell count between 1-999 cells/L.
Green: Absent.
Grey: April - October: not sampled for more than 15 days.
November - March: not sampled for more than 30 days.



Pseudo-nitzschia Detailed Map
[Click here to view in a larger map](#)

Red: Present with small cell count greater than or equal to 1,000,000 cells/L or large cell count greater than or equal to 50,000 cells/L.
Yellow: Present with small cell count below 1,000,000 cells/L and large cell count below 50,000 cells/L.
Green: Absent.
Grey: April - October: not sampled for more than 15 days.
November - March: not sampled for more than 30 days.

Shellfish Safety Resources

- www.doh.wa.gov/shellfishsafety “clickable” map
- [Mobile-friendly version](#)
- 1-800-562-5632 Biotoxin Hotline
- [Marine Biotoxin Bulletin](#) (text version)
- www.facebook.com/WAshellfishsafety





Shellfish Safety Information

Legend Links Search/Help

Last Update: Wed, 10 Mar 2021 03:00:51 PDT

Washington shellfish resources are managed by both the DOH (safety & water quality) and WDFW (harvest regulations).

Beach Status

All areas are closed for the recreational (sport) harvest of scallops due to biotoxins.

Public Shellfish Beaches (click beaches for info.)

- Closed (click beach for species)
- WDFW Harvest Seasons Closed
- Open
- Conditionally Open
- Unclassified

Marine Biotxin Closure Zones (click area for info.)

- Closed for all species including clams, geoduck, scallops, mussels, oysters, snails and other invertebrates (not crab or shrimp)
- Closed for all Species including Crab
- Closed for all Crab Species
- Closed for Butter and Varnish Clams only

Water Quality Classification (click area for info.)

- Approved
- Conditionally Approved
- Unclassified
- Closed Due to Pollution



Find us on Facebook



www.doh.wa.gov/shellfishsafety

Legend Links Search/Help

Last Update: Wed, 03 May 2017 03:00:02 PDT

• [Emergency Closures due to Marine Biotoxins - Text Version](#)

• [WDFW Seasons](#)

• [Razor Clam Advisory](#)

• [Mobile Friendly Version](#)

• [Northwest Indian Fisheries Commission](#)

• [Beach List by County](#)

• [Safe Shellfish Handling, Storing, and Cooking Practices](#)

• [Biotoxin Fact Sheets](#)

• [Vibriosis Fact Sheet](#)

• [Norovirus Fact Sheet](#)

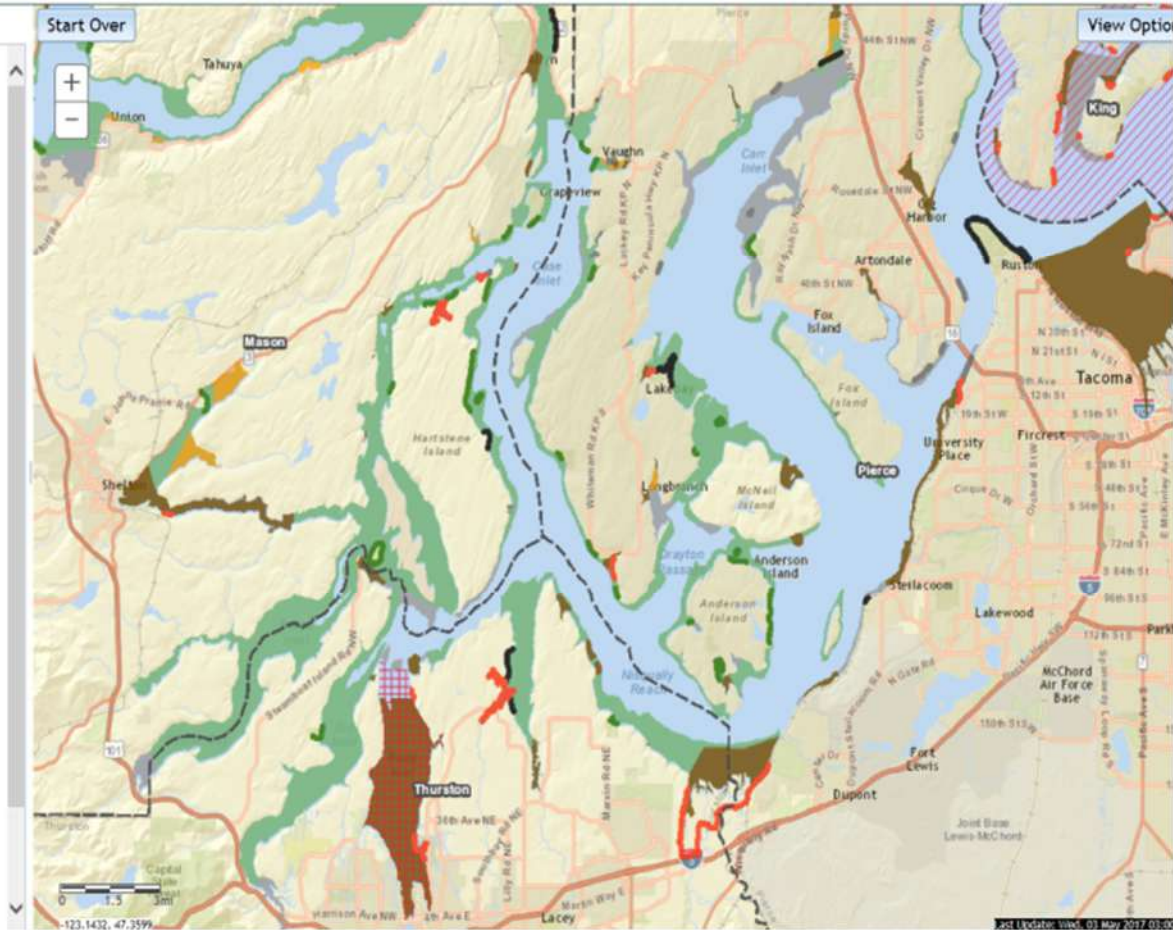
• [Recreational Shellfish Program](#)

• [Shellfish ID Chart](#)

• [Fish Advisories](#)

• [Crab Advisories](#)

• [Tide Predictions](#)



LINKS TAB

Legend Links **Search/Help**

Last Update: Wed, 03 May 2017 03:00:02 PDT

Fort Flagler SP

Find Beach

1000 Point Whitney RD, 98320

Find Address

Oak Bay

Find Landmark or Water Body

Select a County:

Show My Location

Tips for using this map

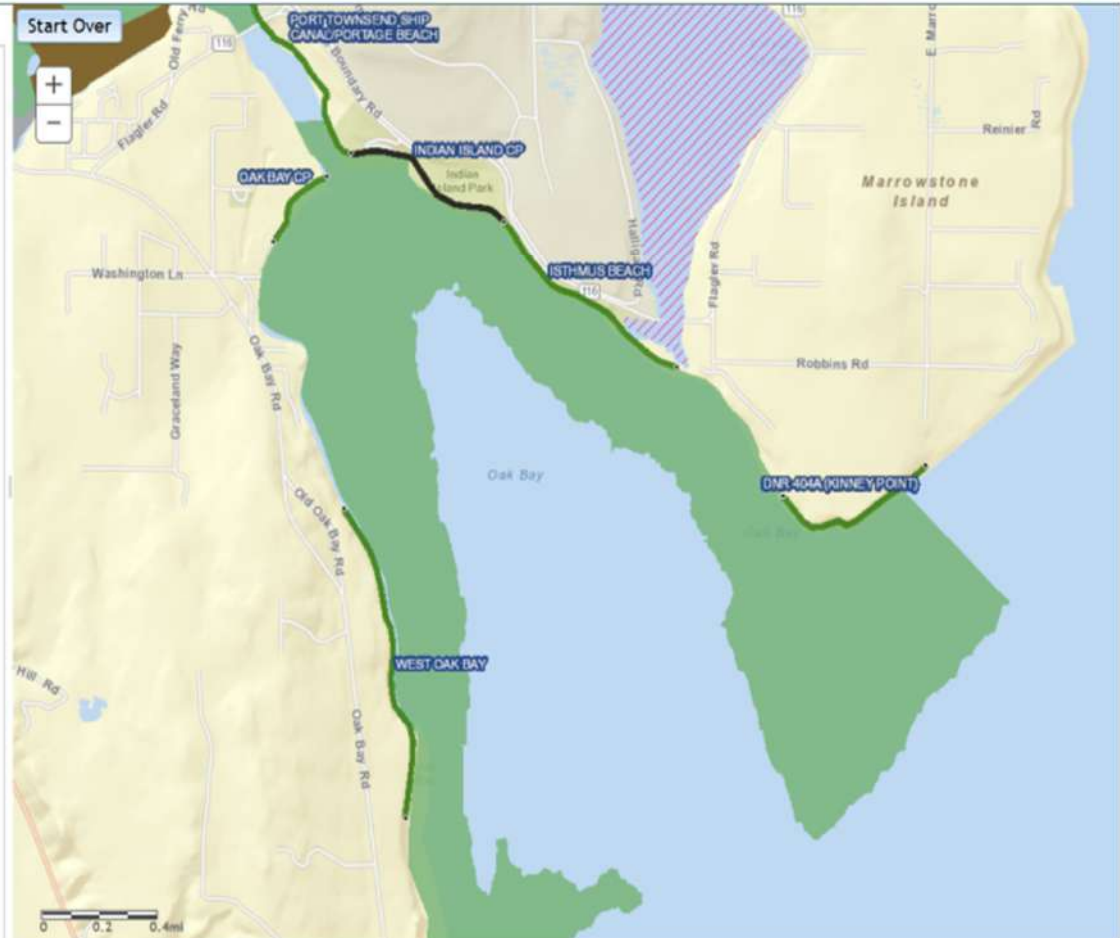
- Click on a beach or marine area for more information
- Dragging the vertical bar on the right side of the map will temporarily remove health information
- Use the mouse wheel to zoom in, or
- Holding down the shift key while dragging a box on the map will also zoom in

Contact us

- Call the 24-hour Shellfish Safety Hotline, 1-800-562-5632, for recorded information on health closures.
- Call our Office, 360-236-3330, for more information about shellfish safety.
- Email your questions or comments about this web site to our [Web Coordinator](#).



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SEARCH/HELP TAB
Waterbody

Legend Links **Search/Help**

Last Update: Wed, 10 Mar 2021 03:00:51 PDT

BIRCH BAY SP
(e.g., Hope, Portlatch)

Find address or place
(e.g., Poulsbo, 10541 Flagler Road,98358)

Find Landmark or Waterbody
(e.g., Hood Canal Bridge, Deception)

Zoom to County:

Tips for using this map

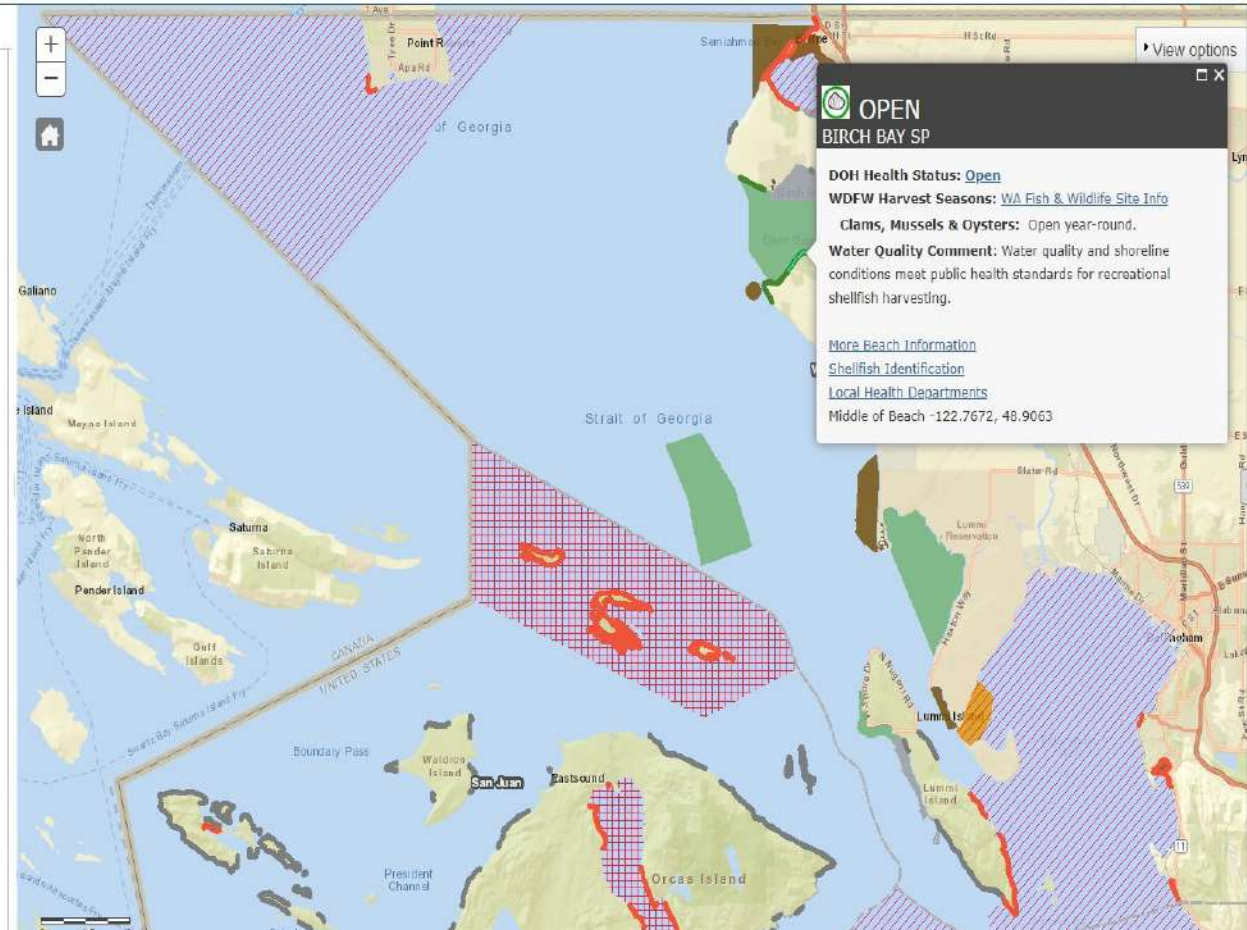
- Click on a beach or marine area for more information.
- Dragging the vertical bar on the right side of the map will temporarily remove health information.
- Use the mouse wheel or the +/- keys to zoom.
- Holding down the shift key while dragging a box on the map will also zoom in.
- Popups are moveable by clicking/holding the title.

Contact us

- Call the 24-hour Shellfish Safety Hotline, **1-800-562-5632**, for recorded information on shellfish biotoxin closures.
- Call our Office, 360-236-3330, for more information about shellfish safety.
- Email your questions or comments about this web site to our [Web Coordinator](#).



[Find us on Facebook](#)



SEARCH/HELP TAB
Public Beach

DANGER



Toxic butter and varnish clams! DO NOT EAT

Butter and varnish clams in this area
are unsafe to eat due to biotoxins.

위험! 개조개(butter clams)와 갈색 껍질의 빛조개(varnish clams)를 먹지 마십시오.
치명적인 독성분이 검출되었습니다.

Nguy Hiem! Đừng ăn sò mỡ (butter clams) và sò có vỏ nâu bóng
(varnish clams). Vì chúng bị nhiễm độc.

ប្រុងប្រយ័ត្ន! សូមកុំទទួលបានលៀងពីប្រភេទទាំងលៀងនិងទាំងខ្មៅខ្លាញ់ណាដែលមានសំបកពណ៌ប្រ
ផេះ (varnish clams) ជាព្រឺងឬឬប្រភេទដែលរស់នៅក្នុងទឹកសប្បុរសភ្នំឯទឹកសាបា
វាជាលៀងដែលមានជាតិគុណ។

Peligro! No coma almejas mantequilla (butter clams) ni con conchas de color
marrón brillante (varnish clams). Son tóxicas.

Опасно! Не употребляйте в пищу двустворчатых моллюсков butter clams
и моллюсков с блестящими коричневыми раковинами (varnish clams).
Они ядовиты.

ចំពោះការប្រើប្រាស់ប្រភេទ butter ធាតុ និង ប្រភេទដែលមានសំបកពណ៌ប្រផេះ (varnish clams),
ដែលមានជាតិគុណ។

危險！請勿食用奶蓋蛤和有亮棕色外殼的蛤蜊 (varnish clams)。這種蛤蜊有毒。



Butter Clam



Varnish Clam

Washington State Department of
Health
360-236-3330

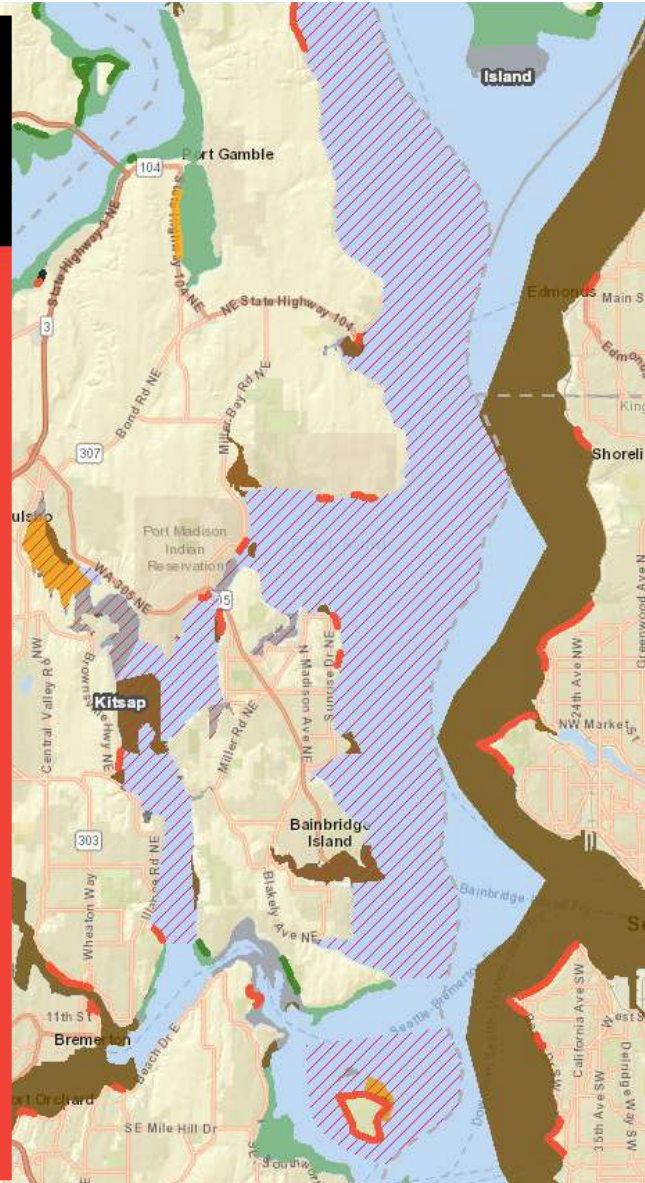
Always check the shellfish safety hotline:

1-800-562-5632 or

www.doh.wa.gov/shellfishsafety.htm



For more information, contact:



Biotoxin Outreach Tribal Collaboration

CLOSED
for Shellfish Harvesting
Biotoxin (red tide) levels are high; shellfish are unsafe to eat.

Lummi Nation
Lhaq'temish
People of the Sea

OPEN
for Shellfish Harvesting
Shellfish are safe to eat.

Hey'sxwq'e - Thank You
Lummi Fisheries Hotline: (360) 380-6899
Lummi Natural Resources: (360) 384-7119

Sign Designed by

Hey'sxwq'e - Thank You
Lummi Fisheries Hotline: (360) 380-6899
Lummi Natural Resources: (360) 384-7119

Sign Designed by



Jerry Borchert

Marine Biotoxin/Arsenic Lead

Jerry.Borchert@doh.wa.gov

360-236-3328

Tracie S Barry

Marine Biotoxin Specialist

Tracie.Barry@doh.wa.gov

360-236-3354



U.S. EPA's Tools for Monitoring and Responding to HABs in Recreational Waters

Tribal HABs Webinar Series

March 18, 2021

John Healey, Healey.John@epa.gov

EPA HABs Monitoring and Response Tools

- Tools for Waterbody Managers to Monitor for and Respond to CyanoHABs: <https://www.epa.gov/cyanoHABs/epa-tools-waterbody-managers-monitor-and-respond-cyanoHABs>
- Monitoring and Responding to HABs:
 - Monitoring and Responding to Cyanobacteria and Cyanotoxins in Recreational Water ([website](#))
 - Recommendations for Cyanobacteria and Cyanotoxin Monitoring in Recreational Waters ([PDF](#))
- Communicating Risk to the Public:
 - Recreational Water Communication Toolbox ([website](#))
 - HABs infographic ([PDF](#))
- Criteria Implementation Technical Support Document

Webpages for Monitoring, Responding and Communicating to the Public



Environmental Topics | Laws & Regulations | About EPA | Search EPA.gov

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

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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



Related Information

- [Learn about Cyanobacteria and Cyanotoxins](#)
- [Causes of CyanoHABs](#)
- [Communicating about Cyanobacterial Blooms in Recreational Waters](#)
- [Nutrient Pollution Policy and Data](#)

You may need a PDF reader to view some of the files on this page. See EPA's [About PDF](#) page to learn



Environmental Topics | Laws & Regulations | About EPA | Search EPA.gov

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

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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.

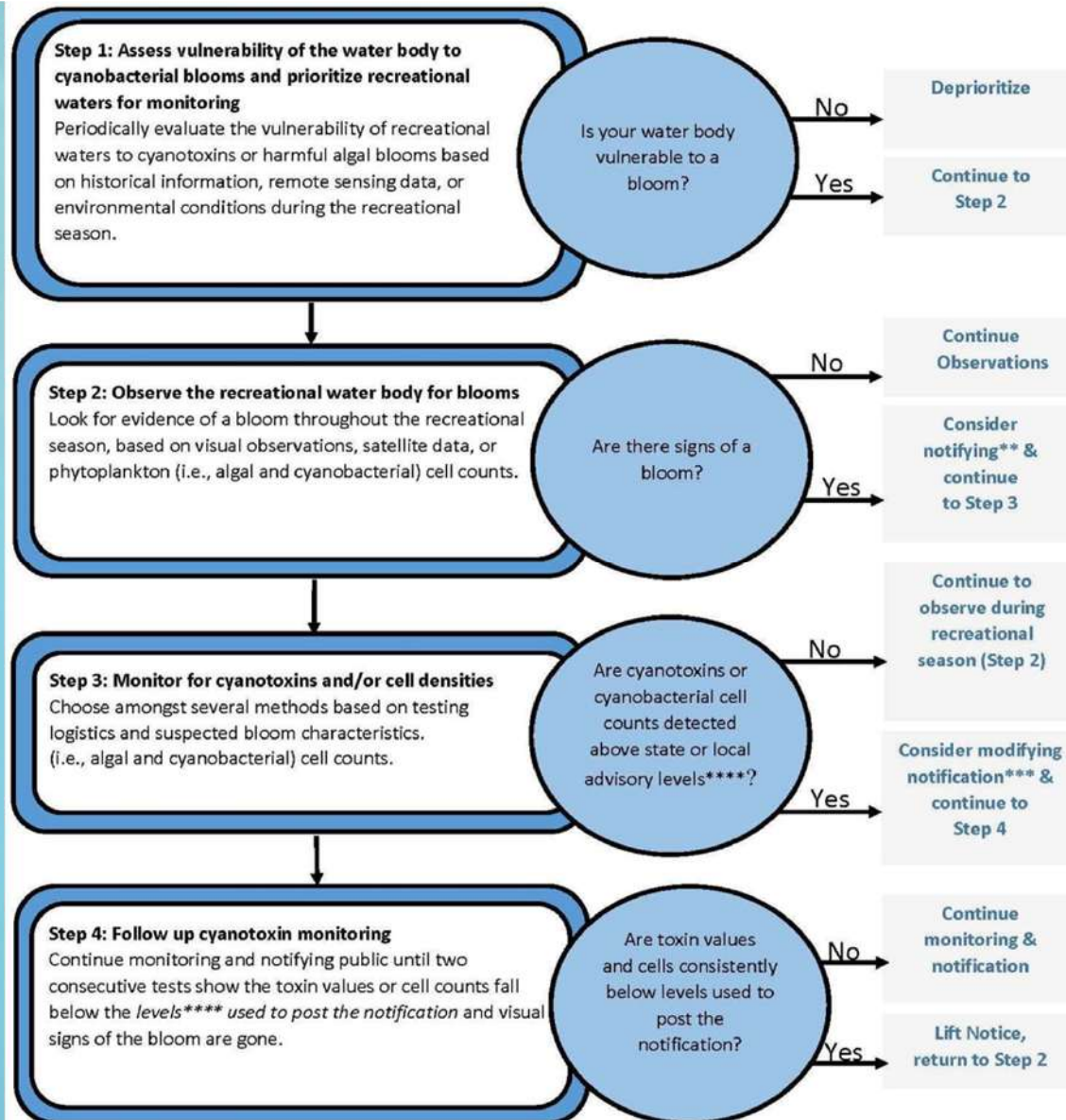
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- On this page:**
- [Good Practices when Developing Notifications for the Public](#)
 - [Templates and Generic Examples](#)
 - [State/Tribal Examples](#)

Related Information

- [Recreational Water Quality Criteria or Swimming Advisories for Cyanotoxins](#)
- [Recommendations for Cyanobacteria and Cyanotoxin Monitoring in Recreational Waters](#)
- [Determination of Cyanotoxins in Drinking and Ambient Freshwaters](#)
- [Control Measures for Cyanobacterial HABs in Surface Water](#)
- [What EPA is Doing to Reduce Nutrient Pollution](#)

Recommendations for Cyanobacteria and Cyanotoxin Monitoring in Recreational Waters



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.



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.

SYMPTOMS OF EXPOSURE

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



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



Paralysis, respiratory illness, and seizures



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



Drooling, diarrhea, 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 toys or mats on the shore

DON'T
Let animals drink water out of 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 | xxxxxxxxxxxxxxxx.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.



HOW TO IDENTIFY A HARMFUL ALGAL BLOOM



Algal blooms can make the water appear green, brown, gold, or red. They often produce scum, foam, or paint-like streaks in the water or clumps on the shore. However, only professional water testing can confirm if HABs and toxins are present. States often have monitoring programs for this purpose.

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?



ROUTES & SYMPTOMS OF EXPOSURE TO HABs

SYMPTOMS VARY DEPENDING ON HOW THE PERSON OR ANIMAL WAS EXPOSED, AND WHETHER THE HAB IS IN SALT OR FRESH WATER.

ROUTES OF EXPOSURE



SYMPTOMS OF EXPOSURE



WHAT TO DO IF EXPOSED TO A HAB



SHOWER IMMEDIATELY

FOR MORE INFORMATION OR TO REPORT POSSIBLE HARMFUL ALGAL BLOOMS:
(XXX) XXX-XXXX | xxxxxxxxxxxxxxxx.html



HABs infographic

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.



Office of Water
EPA 823-X-21-###
2021

**Final Technical Support Document:
Implementing the 2019 National Clean Water
Act Section 304(a) Recommended Human
Health Recreational Ambient Water Quality
Criteria or Swimming Advisories for
Microcystins and Cylindrospermopsin**

Coming Soon:

- General Questions about Recommended Cyanotoxin Water Quality Criteria
- Implementation Questions about Monitoring, Assessment and Listing
- Implementation Questions about Water Quality Management Plans (e.g., TMDLs and NPDES permitting)

U.S. EPA's Tools for Managing Harmful Algal Blooms in Drinking Water

Katie Foreman
March 18, 2021



HAB-Related Drinking Water Challenges



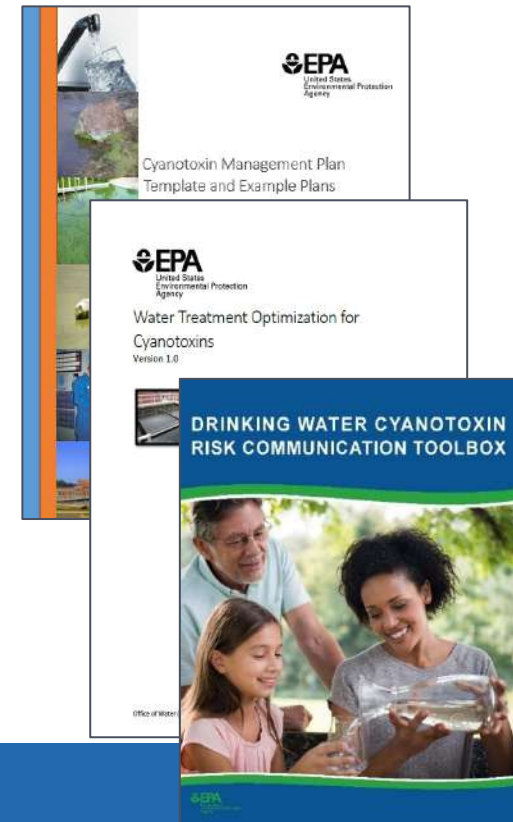
- Drinking water quality
 - Taste and odor problems
 - Human health effects from ingesting toxins: gastroenteritis, liver and kidney damage
 - Potential development of disinfection byproducts
- Public water systems
 - Increasing operational costs
 - Needing additional research on how to prevent, predict, 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



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
- Video summarizing tools for managing cyanotoxins in drinking water – linked [here](#)



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



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>

CyanoHABs website:

<https://www.epa.gov/cyanoHABs>



EPA Region 8 – Drinking Water HABs Response

Jake Crosby

The views expressed in this presentation are those of the author(s) and do not necessarily reflect the views or policies of the U.S. Environmental Protection Agency.

3/16/2021

U.S. Environmental Protection Agency

1



EPA Region 8 Direct Implementation Surface Water PWS Summary

- 62 public water systems that use surface water
 - 46 Wyoming, 16 Tribal
- 26 public water systems that use ground water under the direct influence of surface water
 - 24 Wyoming, 2 Tribal



Region 8 Drinking Water – Historical HABs Event Summary

- Presedimentation pond HABs.
- HABs documented in several reservoirs in Wyoming that have DW intakes or are upstream of DW intakes.
- Several toxin detections at PWS intakes at very low levels.
- No finished water detections.





EPA Region 8 – HABs Response Flowchart Primary Steps

- **Step 1:** Ongoing indicator monitoring
- **Step 2:** Notify EPA if monitoring indicates potential HAB.
- **Step 3:** Raw water cyanotoxin monitoring (lab analysis preferred).
- **Step 4:** (following detection in raw water) Raw water and finished water cyanotoxin monitoring (lab analysis preferred). Treatment optimization recommended.
- **Step 5:** (following detection in finished water) Continued monitoring at more frequent intervals, issue PN if HAL exceeded.
- **Step 6:** Discontinue cyanotoxin monitoring (two consecutive samples non-detect, evidence of bloom dissipation).



EPA Region 8 – HABs Response – Implementation Issues



- Mostly small water systems (many <500 population).
- Cyanotoxin analysis by laboratories is relatively expensive.
- HAL issued by EPA, but no regulatory requirement for PWSs to monitor.
- Fate and transport of cyanotoxins from upstream reservoirs is unknown.

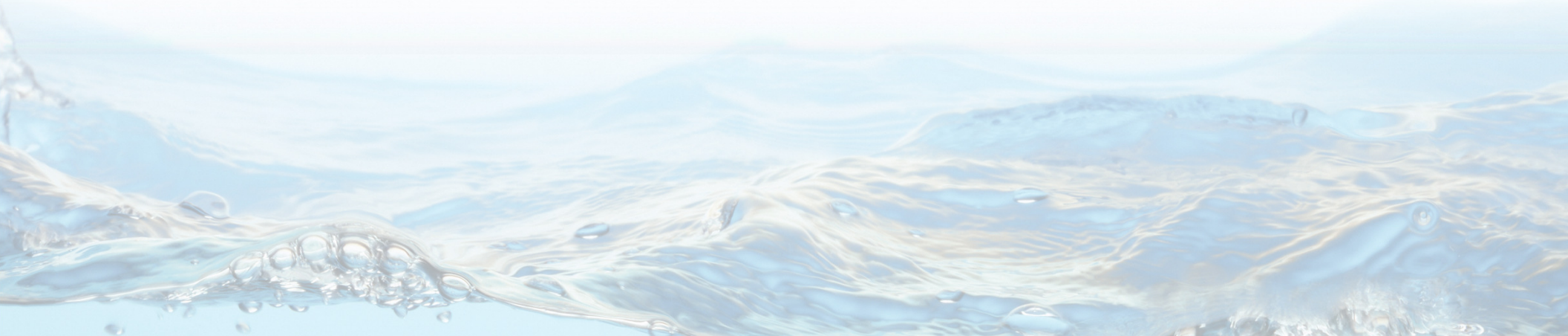
Session 2: HABs Preparedness and Risk Communication

QUESTIONS?

The background of the slide features a close-up, high-speed photograph of water splashing. The water is clear and bright blue, with numerous small bubbles and ripples visible. The splash is centered horizontally and occupies the lower half of the slide. The word "QUESTIONS?" is printed in a large, bold, black, sans-serif font, centered over the water splash.

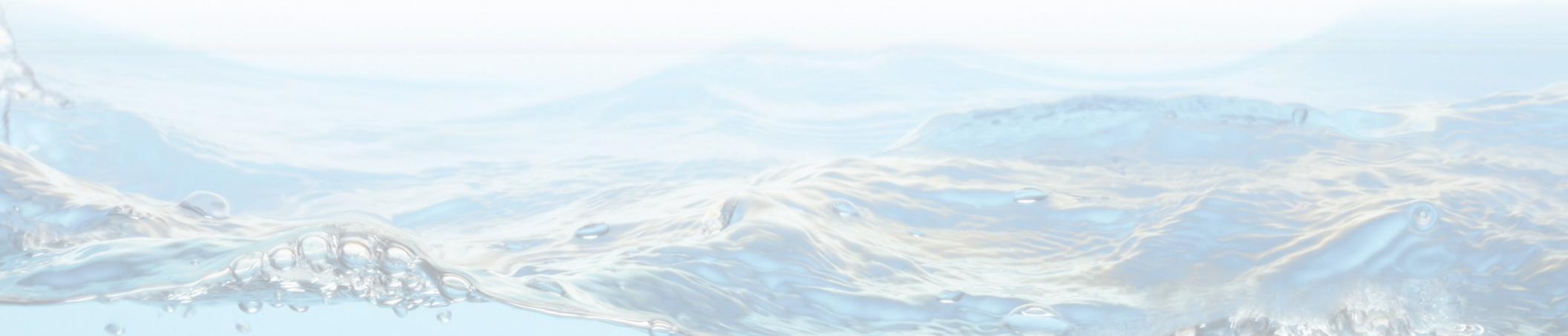
Session 3: Summary of Webinar Series

- **Moderator: Rochelle Labiosa, U.S. EPA Region 10**



Session 3: Series Summary – Responses to Polling Questions

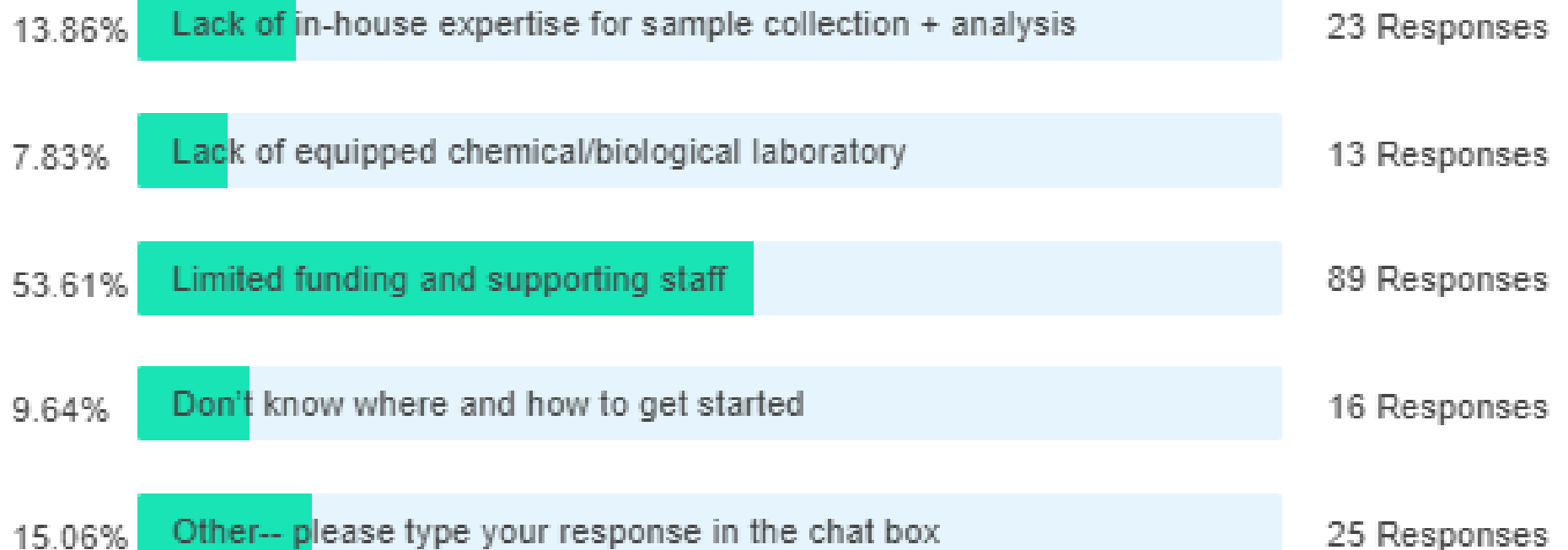
- **Chris Whitehead, SEATOR**



Webinar 1 Poll Recap

What is your biggest challenge in managing HABs?

Multiple choice with single answer



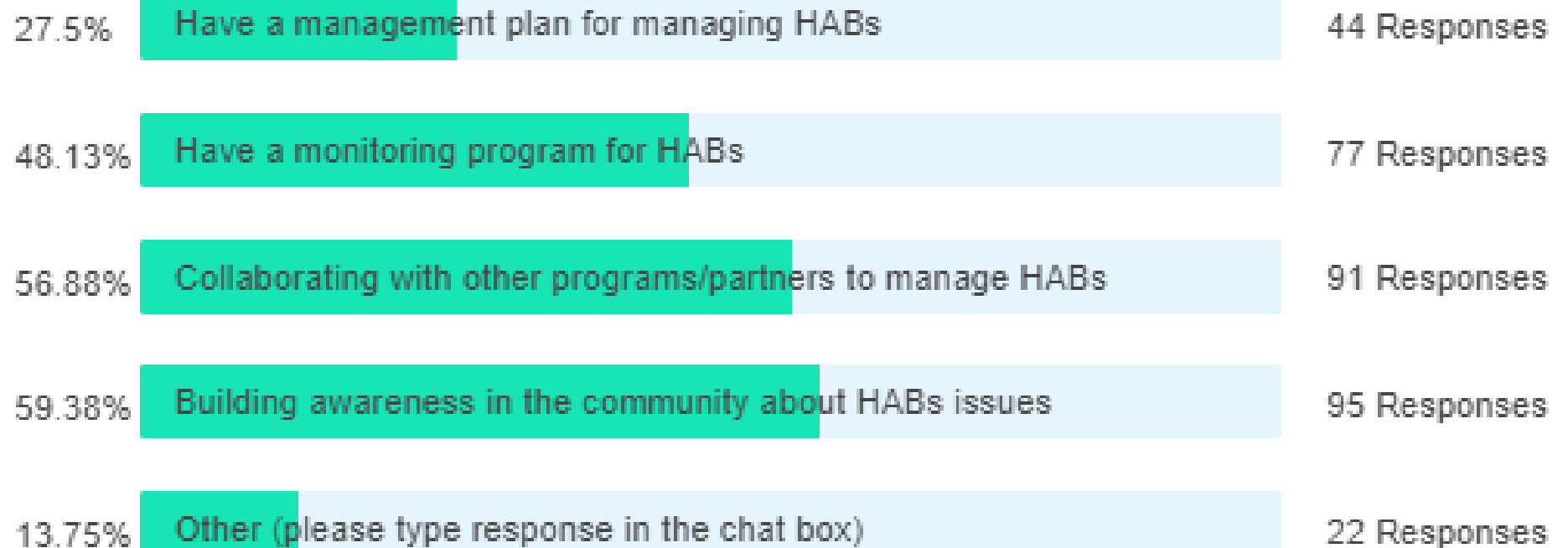
Poll 1 “Other” Responses – Biggest Challenges

- **Standardization of bloom definitions, data collection methods, risk communication methods, etc., across geographic areas**
- **Understanding relative vulnerability of waterbodies to freshwater cyanoHABs near population centers**
- **Sharing information with the general public about HABs events across large geographic areas and particularly for non-residents/tourists**
- **Even with HABs monitoring and advisories, HABs management (e.g., nutrient control) lags**
- **Knowing where and how long a bloom will last**
- **Difficulty in getting traction for state certification of laboratories and relative expense/investment in shellfish analytical methods given small budgets**

Webinar 2 Poll Recap

What actions are you taking to monitor for and manage HABs in your community/program?

Multiple choice with multiple answers

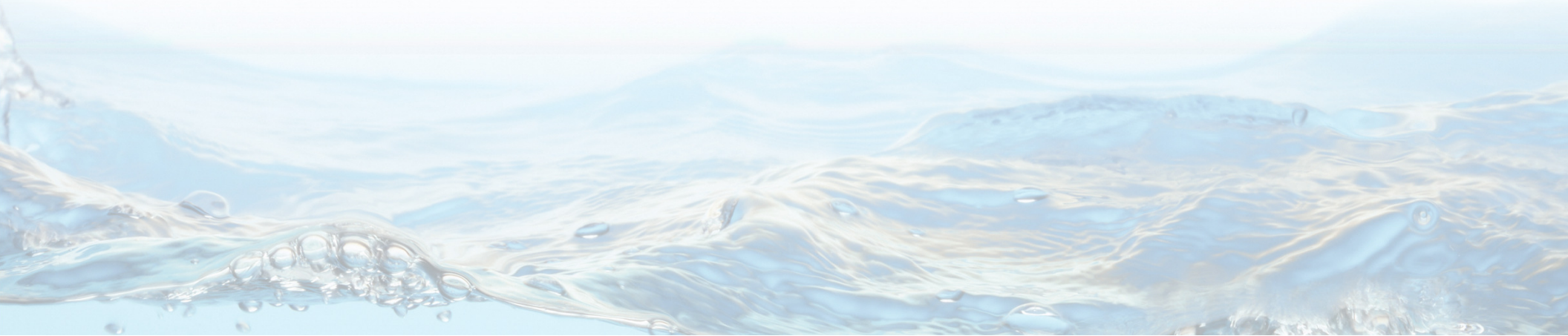


Poll 2 “Other” Responses – Actions on HABs

- **Some State Laboratories are able to analyze toxins in shellfish, drinking water, and recreational water, and also to screen for toxins in clinical testing/human health specimens like urine (a variety of media).**
- **General interest in additional training for tribes to help put together the building blocks for a HABs management program**

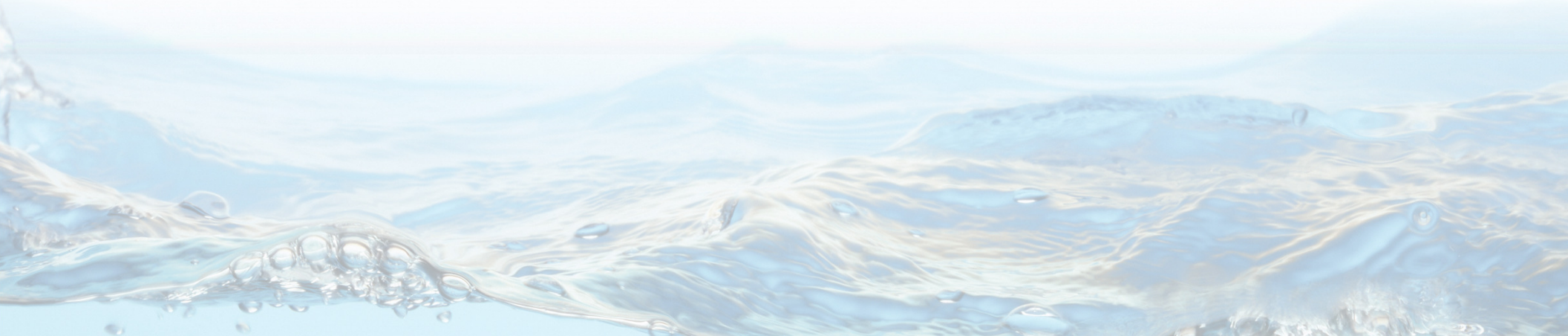


Webinar 3 Poll Recap



Session 3: Series Summary & Next Steps

- **Rochelle Labiosa, U.S. EPA Region 10**



March 10 – Webinar 1 Summary

- Many entities, from the federal level (primarily NOAA, EPA, and CDC), to tribal, state, and local governments, are involved in HABs monitoring and response. The federal agencies produce guidance and tools to help tribal, state, and local entities identify and address HABs in their waterways.
- Tribes are working to improve resilience against HABs in many ways developing regional adaptation plans, conducting an expanded monitoring season, and developing contingency plans.
- *Major Challenges and Follow-up Needs:*
 - It can be difficult to get community support for activities, especially if there are no data to support decisions. Links to traditional foods and health have been ways to get community support for HABs monitoring programs
 - Connection of HABs to other stressors that impact subsistence resource availability
 - Information on chronic as well as acute effects
 - More information on easy to use in situ monitoring and analytical tools that are affordable and accurate (low false negative rates)
 - Additional ways to include TEK in management programs

March 16 – Webinar 2 Summary

- Collaboration helps things happen quickly over broader geographic areas.
- Climate change impacts have disrupted traditional knowledge and cultural practices related to preventing illness from e.g., shellfish. Monitoring increases confidence in resource safety.
- There are comprehensive tools that programs have been able to put together to respond quickly to events over a larger geographic area– such as the sampling vans.
- Involvement of tribes highlights key areas of importance, such as identifying key resource use issues such as subsistence resources that may be affected, and outreach to youth and elders.
- *Major Challenges and Follow-up Needs:*
 - Building programs with structure and central point of contact is key.
 - Technology like apps to share information can help with engaging more people
 - Tribe-specific tools and template approaches for building a monitoring program including SOPs and templates for organizational structures/collaboration
 - Additional training specific to tribes and monitoring program development

March 18 – Webinar 3 Summary



Wrap-up and Next Steps

- We will follow up on all questions from the webinars and will provide responses via email
- Webinar Recordings will be provided in next couple of weeks
- Other items for follow-up will be identified
- For questions and to receive additional information about HABs, contact/sign up for the EPA CyanoHABs list serv at: EPACyanoHABs@epa.gov
- Please complete the attendee survey after the webinar ends

Webinar Series Planning Committee

Sitka Tribe of Alaska:

- Chris Whitehead, chris.whitehead@sitkatriben-sn.gov

EPA

- Katie Foreman, National HABs Lead for Drinking Water Foreman.Katherine@epa.gov
- Lesley D'Anglada, National HABs Coordinator, Office of Science and Technology DAnlada.Lesley@epa.gov
- Tina Laidlaw, EPA Region 8 HABs and Nutrients Lead Laidlaw.Tina@epa.gov
- Rochelle Labiosa, EPA Region 10 HABs and Nutrients Lead Labiosa.Rochelle@epa.gov
- Susan Conbere, EPA Region 10 Tribal Coordinator Conbere.susan@epa.gov

NOAA

- Tod Leighfield Chemist tod.leighfield@noaa.gov
- Steve Morton, Research Oceanographer and PMN Program Manager steve.morton@noaa.gov

We acknowledge input, coordination and support from additional EPA, NOAA, and Tribal environmental program staff

THANK YOU FOR ATTENDING

