North Coast Regional Water Quality Control Board
Freshwater Harmful Algal Bloom Monitoring & Response Program
End of Year Summary 2025

Overview

Freshwater harmful algal blooms (FHABs) are dense proliferations of planktonic (floating) and/or benthic (attached) cyanobacteria capable of producing cyanotoxins that impact human and animal health. In 2025, the North Coast Regional Water Quality Control Board (North Coast Water Board) FHAB Program recommended 35 public health alert postings on rivers and lakes within the Region (Table 1). For more information on the locations of regional postings, see the California Water Quality Monitoring Council's FHAB Reports Map (https://mywaterquality.ca.gov/habs/resources/reports-map/). These planktonic and benthic FHAB postings are discussed in more detail below.

Table 1. Number of planktonic and benthic postings in the North Coast Region, 2025.

Report Type	Planktonic Postings			Benthic Postings
	Caution	Warning	Danger	Toxic Algae Alert
Routine Monitoring	6	2	1	5
Pre-Holiday Assessment	2	1	0	2
Incident Response	4	0	1	6
Studies & Research	0	0	0	5
Total	12	3	2	18

See the California Water Quality Monitoring Council's FHAB Response Guidance (https://mywaterquality.ca.gov/habs/resources/response-guidance.html) for more information on posting protocols.

In addition to responding to FHAB reports, North Coast Water Board staff worked with partners on other FHAB-related matters including routine monitoring; performing pre-holiday water quality assessments; conducting studies and research; reporting and presenting study findings; providing FHAB program trainings; and assisting partners in developing their monitoring programs. Staff worked with various partners including Blue Lake and Big Lagoon Rancherias; Karuk, Yurok, Hoopa, Pulikla, Wiyot, and Cahto Tribes; Big Valley Band of Pomo Indians; Quartz Valley Indian Reservation (QVIR); Del Norte, Humboldt, Lake, Mendocino, Siskiyou, Sonoma, and Trinity Counties; and the Klamath Basin Monitoring Program, US Environmental Protection Agency (USEPA), US Army Corps of Engineers, US Forest Service, US Fish and Wildlife, Sonoma Water, and Pacific Gas & Electric.

Routine & Partner Monitoring

Routine monitoring was conducted for three waterbodies:

- *Big Lagoon* – biweekly planktonic monitoring by Big Lagoon Rancheria for a common class of cyanotoxins called microcystins and analyzed by USEPA. Monitoring resulted in Caution, Warning, and Danger posting recommendations.

- *Klamath Basin* (https://kbmp.net/maps-data/blue-green-algae-tracker) – biweekly to monthly planktonic monitoring for microcystins by Hoopa, Karuk, Yurok, and Pulikla Tribes and analyzed by USEPA. North Coast Water Board staff also coordinated with the Tribal Consortium, including QVIR, to conduct tiered monitoring for benthic cyanobacteria at 12 stations from July through November in the Klamath, Salmon, Scott, and Trinity Rivers as well as Kidder Creek (see links in Reports section for more information on tiered monitoring). Monitoring resulted in five Toxic Algae Alert posting recommendations.
- *Russian River* – tiered benthic monitoring by Sonoma County at recreational beaches, and four stations monitored for cyanobacteria by Sonoma Water. Monitoring resulted in two Toxic Algae Alert posting recommendations.

Pre-Holiday Assessments

North Coast Water Board staff and partners collected water grab or algal mat samples from popular recreational lakes and rivers to inform visitors of waterbody conditions prior to major holiday weekends (Table 2). For more information on pre-holiday assessments and partner participation, see FHAB Wiki Page (https://sites.google.com/view/fhab-program-wiki/pre-holiday-assessment).

Table 2. FHAB waterbody posting status following pre-holiday assessments, 2025.

Waterbody	Memorial Day	Fourth of July	Labor Day	Post-Holiday
Lake Mendocino		Awareness	Caution	Awareness
Lake Pillsbury	No Advisory	Awareness	Caution	Warning
Lewiston Reservoir		No Advisory	No Advisory	No Advisory
Ruth Lake		No Advisory	No Advisory	No Advisory
Salmon Creek	Toxic Algae	Toxic Algae	Toxic Algae	Toxic Algae
Stone Lagoon	No Advisory	No Advisory	No Advisory	No Advisory
Trinity Lake		No Advisory	No Advisory	No Advisory

Incident Response & Illnesses

North Coast Water Board staff received reports of three human illnesses, two dog deaths, and one fish illness in 2025 (Table 3). Reports of illnesses are referred to the State Illness Workgroup who determines if the incident is related to FHABs. All reports were determined not to be FHAB-related except for one dog death where environmental data supported the FHAB event. See the California Water Quality Monitoring Council's FHAB Illness Tracking webpage (https://mywaterquality.ca.gov/habs/resources/illness-tracking.html) for more information.

Table 3. FHAB reports of human, dog, and fish illnesses, 2025.

Illness Type	Waterbody	Status
Human illness	South Fork Eel River	Not FHAB-related; environmental observations suggest other waterborne factors
Human illness	South Fork Eel River	Not FHAB-related; environmental observations suggest other waterborne factors
Human illness	Mad River	Not FHAB-related; insufficient information and could not contact reporting party

Dog death	Lake Mendocino	Not FHAB-related; insufficient environmental data to support FHAB event
Dog death	South Fork Eel River	FHAB-related; environmental data support FHAB event; reported to federal database
Fish illness	East Fork Russian River	Not FHAB related

Studies & Research

The following studies and research were conducted in 2025:

- North Coast Water Board staff co-led the California Cyanobacteria Harmful Algal Bloom (CCHAB) Network Benthic Subcommittee, which completed and released revised statewide guidance for benthic cyanobacterial blooms (https://mywaterquality.ca.gov/habs/resources/response-guidance.html#benthic-cyanobacteria) based largely on the results of North Coast special studies.
- North Coast Water Board staff participated in State Board FHAB Program's special study to compare California's new benthic cyanobacteria sampling protocols (https://mywaterquality.ca.gov/cyanohab/docs/toxic-algal-mats-guidance-appendix-a.pdf) to draft USEPA and other state protocols.

Reports, Presentations, & Trainings

RB1 provided the following reports, presentations, and trainings in 2025:

- Benthic Monitoring in the North Coast Region. Presentation to Mendocino, Lake, Sonoma Tribal Environmental Program (MLSTEP), February 2025.
- Implementation of a Benthic Cyanobacteria Tiered Monitoring Program for Public Health Protection in Northern California Rivers (https://www.epa.gov/habs/benthic-hab-discussion-march-17-2025). Presentation to the USEPA Benthic HABs Discussion Group, March 2025.
- California Benthic Harmful Cyanobacteria Bloom Guidance (https://mywaterquality.ca.gov/cyanohab/docs/toxic-algal-mats-guidance-short.pdf). Benthic Subcommittee, California Cyanobacteria Harmful Algal Bloom Network, California Water Quality Monitoring Council, Sacramento, CA, 2025. Prepared by C Nilson, M VanDyke, M Thomas, R Fadness, and J Smith.
- FHAB Training for Tribal Consortium in Klamath Basin. Field Training, July 2025.
- Implementation of a Benthic Cyanobacteria Tiered Monitoring Program (https://www.bluelakerancheria-nsn.gov/harmful-algal-blooms-hab-training/). Presentation and Field Demonstration for Blue Lake Rancheria Harmful Algal Bloom Training, July 2025.
- FHAB Virtual Training for Partners in the North Coast Region (https://www.waterboards.ca.gov/northcoast/water_issues/programs/swamp/media/GMT20240807-170335_Recording_1920x1080.mp4) Virtual Training, August 2025.
- FHAB Field Trainings in the Scott, South Fork Eel, and East Fork Russian Rivers. Field Trainings, August 2025.

- Overview of Agency, Programs, and Projects. Presentation for Sonoma State University, October 2025.
- Predicting taxon-specific benthic cyanobacterial mat cover and anatoxin concentrations in northern California rivers. Ecological Applications (in review). Prepared by Z Jordan, T Elliot, M Hickey, K Bouma-Gregson, G Boyer, R Fadness, L Genzoli, R Goel, G Johnson, R Shriver, R Stancheva, M Thomas, Z Triumph, and J. Blaszczak.
- Tiered Monitoring for Benthic Cyanobacteria in the Klamath Basin, 2025. North Coast Regional Water Quality Control Board, Santa Rosa, CA (in review). Prepared by M Thomas.