

Water Quality Program Policy 1-11 Chapter 1

Harmful Algae Blooms Methodology

Public Review November 7, 2022 – January 6, 2023

The following is a new proposed Water Quality Policy 1-11 methodology for evaluating the impacts of harmful algae blooms in the Water Quality Assessment (WQA). This methodology utilizes a combination of public health advisory information, algae and toxin data, public health assessment information, and Department of Health recreational guidance to determine the health of water contact recreation uses. Since we do not have numeric criteria for harmful algae blooms or their by-products, we are using our Narrative Water Quality Standards as the basis for impairment. When approved, this methodology will be incorporated into Part 2 of the policy as a standalone section.

Please submit comments online via [the e-Comment form](#) by end of the public comment period, scheduled to end January 6, 2023.

Questions?

Justin Donahue
Water Quality Assessment Scientist
Department of Ecology
Justin.donahue@ecy.wa.gov
360-628-3630

ADA Accessibility

The Department of Ecology is committed to providing people with disabilities access to information and services by meeting or exceeding the requirements of the Americans with Disabilities Act (ADA), Section 504 and 508 of the Rehabilitation Act, and Washington State Policy #188.

To request an ADA accommodation, contact Ecology by phone at 360-407-6600 or email at Justin.Donahue@ecy.wa.gov. For Washington Relay Service or TTY call 711 or 877-833-6341. Visit [Ecology's accessibility website](#) for more information.

2D. Harmful Algae Blooms – Freshwater

Designated Uses:

Water contact recreation

Narrative Standards:

WAC 173-201A-260 & -300

Assessment Information and Data Requirements

Freshwater harmful algae blooms (HABs) are events during which excessive growth of algae in lakes and rivers produces toxins or other environmental conditions harmful to humans and animals. While algae blooms can be natural events in aquatic environments, they can be worsened by nutrient inputs from human activities. The Washington State Department of Health (DOH) has developed freshwater contact recreation guidance values for four toxins produced by cyanobacteria (blue-green algae), as well as a framework for local health jurisdictions to issue public health advisories for waterbodies with active HABs (DOH, 2011). Under this framework, local health jurisdictions are encouraged to use a combination of algae bloom spatial extent and physical characteristics, cyanobacteria toxin (cyanotoxin) data, and historical information of bloom toxicity when deciding to issue advisories. The guidance also provides a framework for removing advisories when blooms have dissipated and no longer pose a threat to human or animal health.

Under Washington’s Freshwater Algae Control Program, Ecology, DOH, local health jurisdictions, and stakeholders routinely collaborate to monitor algae blooms during the summer growing season. Monitoring for HABs generally includes visual surveys and collecting surface water samples from active blooms. Water samples collected under this program are sent to King County Environmental Laboratory who analyze for cyanotoxins and qualitatively identify algae species. Toxin results are reported to local health jurisdictions within 48 hours. Data are stored in the [Washington State Toxic Algae database](https://www.nwtoxicalgae.org/)¹.

Ecology will utilize a combination of public health advisory information, cyanotoxin data from the Northwest Toxics Algae Database, public health assessment information, and the DOH recreational guidance as the basis for evaluating the health of contact recreation in the Water Quality Assessment (WQA).

¹ <https://www.nwtoxicalgae.org/>

For cyanotoxin data evaluated in the WQA, Ecology will use only one value per assessment unit (AU) per day. For all waterbody types, the highest value collected within an AU will be used to represent the daily value.

Ecology will review local health jurisdiction webpages for public health advisory information. In the event an advisory is issued for a waterbody, Ecology will review data and information used to support the advisory and coordinate with the local health jurisdiction to retrieve all relevant data and information on the advisory. Any advisory issued solely for the preemptive purposes of protecting human health and without reasonable information to support bloom toxicity will not be used to support an impairment determination.

Category Determinations

Category 5

Ecology will place an AU in Category 5 when:

1. Two cyanotoxin sampling events meet DOH recommendations for a WARNING or DANGER public health advisory² in each of two or more years. Samples should be collected a minimum of one week apart. The years do not need to be consecutive.

OR

2. A WARNING or DANGER public health advisory for potentially toxin-producing cyanobacteria or algae has been issued by a local or state health jurisdiction in two or more years. Each advisory must be in place for a minimum of two weeks and supported by cyanotoxin or other toxicity data. The years do not need to be consecutive.

OR

3. DOH public health assessment has identified one or more probable or confirmed human³ or animal⁴ HABs exposure events resulting in illness or death.

Category 4

Ecology will place an AU in Category 4A when EPA has approved a TMDL that addresses HABs.

Ecology will place an AU in Category 4B when an alternative pollution control program (meeting the requirements in Section 1F) is actively addressing the HABs problem.

² 'WARNING' and 'DANGER' defined by DOH's two-tiered approach to managing Washington waterbodies with cyanobacterial blooms, <https://doh.wa.gov/sites/default/files/legacy/Documents/4300/333-279-GuidanceFreshwaterToxins.pdf>

³ 'Confirmed' defined by the CDC's One Health Harmful Algal Bloom System (OHHABS) Tool, <https://www.cdc.gov/habs/pdf/OHHABS-Human-Case-Public-Health-Assessment-Tool-4.3.19-p.pdf> .

⁴ <https://www.cdc.gov/habs/pdf/ohhabs-public-health-assessment-tool-animal-case-508.pdf>

Category 3

Ecology will place an AU in Category 3 when the available data are insufficient for another category determination (such as only one year of cyanobacteria data or bloom information are available). This information will be maintained in Ecology's WQA database for future use. As additional data and information become available in future listing cycles, Ecology will again assess all available data to update the category determination according to this policy.

Category 2

Ecology will place an AU in Category 2 when:

1. At least one cyanobacteria sampling event meets DOH recommendations for a WARNING or DANGER public health advisory, but the listing does not qualify for Category 5.

OR

2. A WARNING or DANGER public health advisory for potentially toxin-producing cyanobacteria or algae is issued by a local or state health jurisdiction, but the listing does not qualify for Category 5.

Category 1

Ecology will place an AU in Category 1 when:

- The waterbody is free of public health advisories for three consecutive years and has supplemental data (photos, algae cell counts, cyanotoxin or other toxin levels) in each year consistent with DOH advisory removal procedures.

AND

- There have been no suspected, probable, or confirmed human or animal HABs exposure events resulting in illness or death in the waterbody within the assessment data collection period.

Ecology will only use Category 1 to move a waterbody out of Category 5, 4A, or 4B when the waterbodies meets the above requirements.

Helpful Documents

Washington Department of Health. 2021. Washington State Recreational Guidance for Microcystins, Anatoxin-a, Cylindrospermopsin and Saxitoxin. Publication Number 333-279.