

As more information on cyanobacteria and cyanotoxins becomes available, OHA makes periodic changes to guidance documents and protocols to improve program effectiveness. OHA appreciates the guidance you have provided over the years and wants you to be aware of ongoing efforts to improve the Harmful Algae Bloom Surveillance (HABS) program. OHA plans to update its *Recreational Use Public Health Advisory Guidelines for Cyanobacterial Blooms in Freshwater Bodies* prior to the 2019 cyanobacterial bloom season.

Until recently, OHA has relied mainly on size, geography and satellite imagery to drive the geographic extent of an advisory. Beginning with the 2019 HABS season, OHA will use tailored advisories for large waterbodies when possible and will use a lifting protocol designed for use when there is a high frequency of sampling.

Specifically, OHA will:

1. Tailor advisories for **large water bodies** to target public health information where risk is high and not where continued recreation is low risk,
2. Modify the protocol for lifting advisories where there is a **high frequency of sampling**,
3. Eliminate establishment of recreational advisories based on **cell count data**, and
4. Include *Aphanizomenon flos-aquae* in the list of potentially toxigenic species.

#### **Advisory Protocol for Large Water Bodies**

During the past two years OHA tailored recreational advisories on very large and geographically unique lakes (*e.g.*, Lake Billy Chinook, Upper Klamath Lake, Detroit Lake) that lend themselves to partial vs. whole lake advisories. These tailored advisories simultaneously provided protection of public health and allowed recreational activities to continue in nonaffected areas by working with waterbody managers and using satellite imagery tools. OHA will continue to use such information and collaboration on a case-by-case basis in the future.

#### **Lifting Protocol for Frequently Sampled Waterbodies**

In 2018 OHA received data that indicated the presence of cyanotoxins more frequently than usual for certain lakes, particularly for Detroit Lake and Upper Klamath Lake. Partners collected samples at Detroit Lake and other sources of public water supply as part of the OHA Drinking Water Program's emergency rules for cyanotoxins in drinking water. These rules, which are now permanent and will go into effect in spring of 2019, will provide OHA staff with raw water analyses on a biweekly or more frequent basis throughout the season for susceptible water bodies used as drinking water sources.

Data for Upper Klamath Lake were collected throughout the season as part of a monitoring partnership among tribes and local, state, and federal agencies. The volume of data from 2018 confirmed OHA's concerns regarding the high variability of toxin levels during the life of a bloom. This variability led to increased issuing and lifting of recreational advisories, prompting OHA to change the recreational use advisory protocol for these waterbodies. The change in protocol resulted in less frequent advisories, which in turn helped to reduce advisory fatigue and public confusion between drinking water and recreational water advisories. Managers can

find information on the changes to protocol on waterbodies with higher than average sampling and analysis in [OHA's Advisory Guidance](#) document.

### **Elimination of cell count data<sup>1</sup>**

The use of cell count data to issue and lift recreational advisories has been a concern for many. Specifically, there is no standard method for performing cell counts that provides assurance that cells are counted consistently across the industry. Current research has also provided information showing cell counts do not always correlate to the level of toxins produced. For these reasons, OHA is planning to remove cell count data from advisory issuing and lifting criteria.

### **Addition of *Aphanizomenon flos-aquae* (AFA)**

The 2012 edition of Recreational Use Public Health Advisory Guidelines for Cyanobacterial Blooms in Freshwater Bodies noted that although “some studies have shown this species (AFA) to produce toxins in other parts of the world, subsequent evaluations of that work show that the species either was or likely was misidentified”. From 2012 through 2018 OHA excluded AFA from calculation of combined cell counts of toxigenic species for purposes of issuing advisories using cell counts. This exclusion is supported by work from Dr. Theo Dreher’s lab (Oregon State University) that has shown through genomic testing only non-toxigenic AFA to be present in tested Oregon waters. However, since 2012, studies have shown that AFA can produce cyanotoxins in other parts of the world. Given this uncertainty relative to our former position, and although OHA is removing the cell count option for posting advisories, OHA no longer supports the exclusion of AFA from the list of potentially toxigenic species used to determine which toxin tests to conduct.

### **Summary**

Because cyanotoxins monitoring and advisory management is an emerging topic with many unknowns and limitations, OHA plans to move towards an overall assessment of available data to inform advisories.

In addition to currently used factors such as size, geography and satellite imagery OHA will exclude consideration of cell count data, include AFA on the list of toxigenic species of interest, and will consider additional data for a better-informed approach to issuing and lifting future advisories. These data could include:

- Frequency of sampling
- Visual assessment of the bloom appearance and size
- Level of toxins in relation to the recreational (and drinking water) advisory values

Ongoing efforts will be made to incorporate more defined advisory protocol, as practicable, to make the advisory process more effective.

OHA would like to thank all stakeholders and partners for their efforts to provide staff with data to assist in providing the public information regarding exposure to cyanotoxins associated with

---

<sup>1</sup> Species identification will still be required to determine what toxins to analyze for.

cyanobacterial blooms in recreational waters. OHA looks forward to our future partnership. If you have any questions or concerns about the information in this email, you can call or email Rebecca Hillwig at 971-673-0431 or [Rebecca.Hillwig@dhsosha.state.or.us](mailto:Rebecca.Hillwig@dhsosha.state.or.us).

March 29, 2019