

FRESHWATER HARMFUL ALGAL BLOOMS {HABs}



King County

Department of
Natural Resources and Parks

Water and Land Resources Division



The King County
Lake Stewardship Program

WHAT ARE HARMFUL ALGAL BLOOMS?

- HABs are blooms of cyanobacteria (bluegreen algae) that are producing toxins.
- In our area, blooms have *typically* been most prevalent in our climate during summer through late fall (but not always).
- Cyanobacteria grow quickly in nutrient rich, warm water.
- Cyanobacteria only *sometimes* produce cyanotoxins – **only lab tests can confirm toxicity!**



WHAT CAUSES BLUEGREEN ALGAE TO BECOME TOXIC?

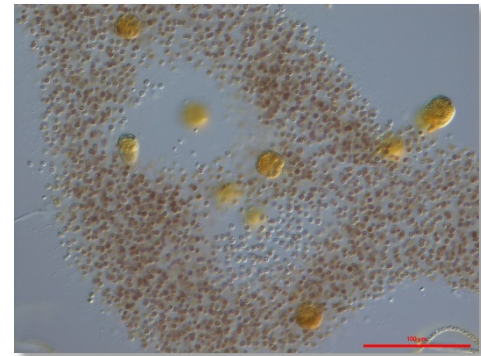


When in doubt, stay out!

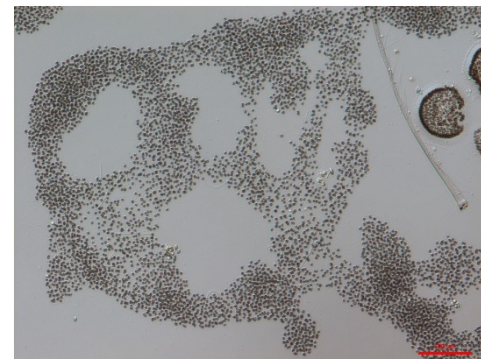


ALGAL TOXINS - MICROCYSTIN

- Liver toxin, potential carcinogen.
- Chronic and acute effects.
- Animals may show symptoms of poisoning from 30 minutes up to 24 hours after exposure.
- Symptoms include weakness, abdominal pain, nausea/vomiting, jaundice, shock, rapid/weak pulse, liver inflammation.



Microcystis



ALGAL TOXINS - ANATOXIN-A

- Neurotoxin.
- Acute and potent.
- Illness and/or death to an animal may occur within a few minutes up to a few hours after exposure.
- Symptoms include muscle twitching, staggering, convulsions, and paralysis. Humans may exhibit incoherent speech and experience tingling or numbness.



Anabaena



ALGAL TOXINS – SAXITOXIN AND CYLINDROSPERMOPSIN

- Saxitoxin
 - Neurotoxin
 - Paralytic shellfish poisoning
- Cylindrospermopsin
 - Liver and kidney toxin



Aphanizomenon



PATHWAYS FOR TOXIN EXPOSURE

Ingestion

Microcystin

-Liver toxin

Anatoxin-a

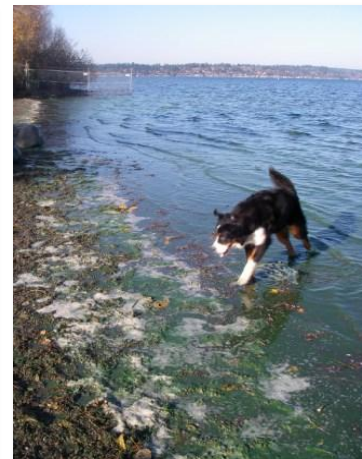
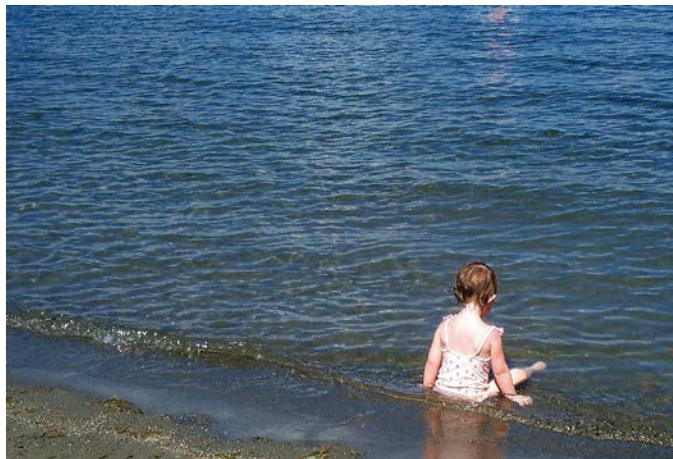
-Neurotoxin

Skin contact

- Rash, itching, blisters (dermatitis)
- Conjunctivitis (Pinkeye)

Inhalation

- Wheezing, coughing, chest tightness, shortness of breath (upper respiratory irritation/pneumonia)





WHAT CAN A HAB LOOK LIKE?

CYANOBACTERIA





WHAT CAN AN HAB LOOK LIKE?

NOT CYANOBACTERIA



Green Algae



Pollen



Green Algae

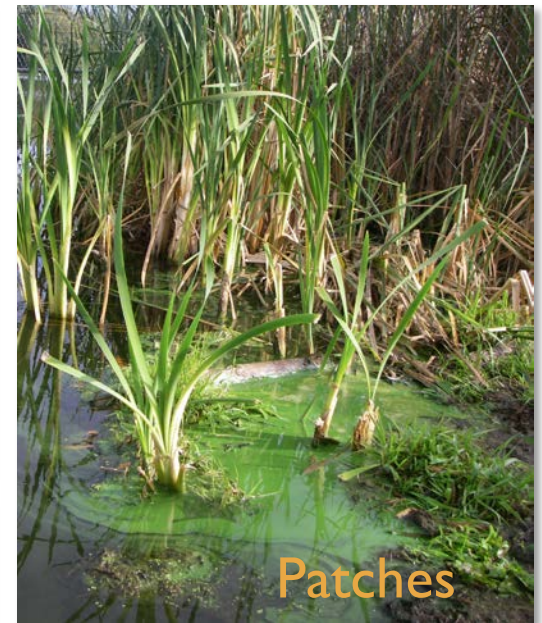


Green Algae



Golden Algae

HOW TO DESCRIBE AN ALGAE BLOOM



BLOOM SAMPLING

How to submit a sample through the...

Lake Stewardship Program

- Collect the bloom sample in one of the extra bottles provided.

- The sample must be collected within 48 hours of Monday sample pick-up. Store the sample in the refrigerator, and in a plastic bag to avoid contact with any food items. Please make notes about the sample on your data sheet.

- We will collect the sample on Monday along with your regular samples and deliver it to the King County Environmental Lab.

- Depending on results, King County staff will work with Seattle –King County Public Health and local lake managers to coordinate further action.



NW Toxic Algae Program

- Contact Freshwater Assessment in the Science and Technical Support Section **OR**

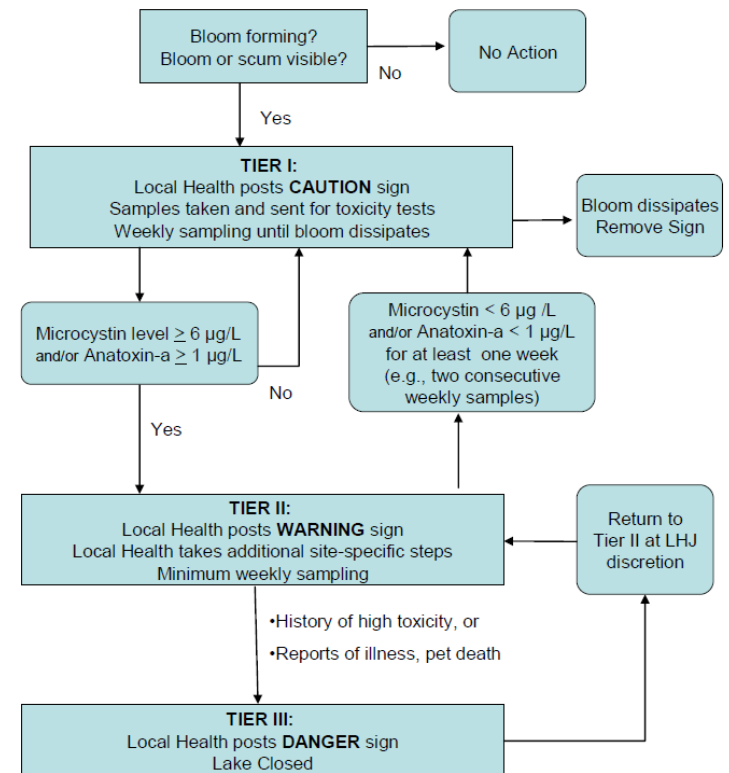
- Visit the “Report a bloom” section of the Washington State Toxic Algae web page for instructions on how to submit a sample for toxicity testing.

- Collect and deliver the sample to the King County Environmental Lab – KC staff will assist if possible and track samples for results.

- Depending on results, King County staff will work with Seattle –King County Public Health and local lake managers to coordinate further action.

WASHINGTON STATE DEPT OF HEALTH

3-TIERED HAB MANAGEMENT



OTHER SIGNS

TOXIC ALGAE

Stay Alert!

Toxic algae in this lake accumulate in areas along the shoreline.

Harmful algae are a health risk to you, your family, and your pets.



DO NOT go into water where there are visible algae. Areas of clear water are open for activities.

People with allergies or sensitive reactions to substances may experience rashes or skin irritation after exposure.

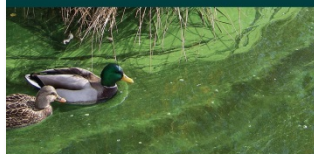
**If in doubt,
stay safe
and stay out!**



For more information on toxic algae and symptoms of poisoning, you can visit NWtoxicalgae.org. If you feel ill after being in the water, consult your physician as soon as possible.

Animal Safety Alert

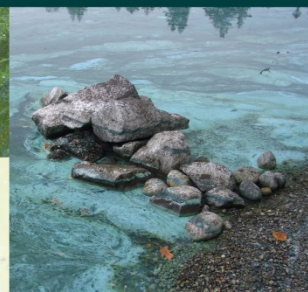
T O X I C Blue-Green Algae



When in Doubt... Stay Out!

If you see a bloom, do not let your pet in the water.

- Toxic algal blooms can poison animals, wildlife, and people.
- Toxic blooms can be different colors: green, blue, red, or brown.
- Blooms appear as foam, scum, or streaks on the surface of water.
- Look for blooms in lakes, ponds, and rivers.



If your pets go in the water:

- Do not let them lick their fur.
- Rinse them with clean water.
- Rinse your hands and any exposed skin.

Dogs can have severe signs within minutes to hours.

Look for these signs:

- Low energy
- Not eating
- Vomiting
- Stumbling
- Seizures
- Weakness
- Drooling
- Diarrhea
- Paralysis
- Tremors

If your pet becomes ill - Call your veterinarian immediately.



Report animal poisonings to your local health department:

WA Dept of Health 360-236-3330
www.doh.wa.gov/algae
www.nwtoxicalgae.gov

NW TOXIC ALGAE PROGRAM

Select “Find a Lake” followed by “Detailed Search” from the top menu bar.

Choose your lake and county from the “Site” drop-down menu, or use the other search options.

Click the “Get Toxins” button to view the results on your screen, or “Export Toxin Data” to save to your computer.

Washington State Toxic Algae
Freshwater Algae Bloom monitoring program

Home Find lake Report a bloom Health risks About toxic algae Summaries Program

Welcome to the freshwater algae site.
The purpose of this site is to provide train data related to cyanobacteria blooms in Washington lakes, ponds and streams. Washington State Department of Ecology (Ecology) uses the site to share the data from their ongoing freshwater algae monitoring program.

Find your lake
Use our database to locate a lake and find out the most recent testing.
Or find your lake >

Report a bloom
If you think that your lake has an algae bloom and you want to have the algae identified. Report a bloom.

Current lakes with values above guidelines

Location	Last Sample Date
Anderson Lake, Jefferson	04/18/2016
Hutton Lake, Thurston	04/18/2016

News and announcements
8/12/2015 M4Northwest.com
Green Lake: When in doubt, stay out.
7/10/2015 Seattle Times
High temperatures, sunny skies could aggravate algal bloom in lake.
4/24/2015 Kiroland Reporter
Waverly Beach open; Kiroland waterfront parks remain posted with algae alerts.

See lakes with algae blooms
Examples of local lakes experiencing algae blooms. View our gallery and descriptions.

Health risks
Learn about the potential health risks to people and pets exposed to algae blooms through swimming or consuming the water.

King County Health DEPARTMENT OF ECOLOGY King County

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Detailed search for your lake

This database contains the most current toxicity data available. Since there is a lag time from the date of sample to the date of analysis, be sure to check the sample date when looking at data or before you use the lake. Remember to use caution and avoid swims. "When in doubt, stay out!" Your local jurisdiction may have more specific information about your lake. Questions? Contact **Lizbeth Seebacher** at Department of Ecology.

If a lake is not listed, it has not been tested for toxic algae through the Ecology program.

The pins on the map represent the center of small lakes, regardless of where the sample was taken. To find more precise location information, download the toxin data and click the "view toxin info" link. That is where specific sampling location information will be if it is provided. On larger lakes, (such as Lake Washington, House Lake and Potholes) pins represent the location of the sample if provided.

Hold "shift" key and drag a box around an area or zoom in using the slider on the left.

Map Legend: ● Exceeded state recreation guideline ● Within state recreation guideline
No data is available for the past 4 weeks.

County:

Site:

Tools:

Minimum Toxin Concentration:

Maximum Toxin Concentration:

Start Date (MM/DD/YYYY):

End Date (MM/DD/YYYY):

Lab Sample Number:

Get data

Export data

Washington State Toxic Algae
Freshwater Algae Bloom monitoring program

Home Find lake Report a bloom Health risks About toxic algae Summaries Program

Detailed search for your lake

This database contains the most current toxicity data available. All instances of values above the recreational guidelines are kept as up to date as possible, but values below the guidelines may be somewhat delayed in entry. Since there is a lag time from the date of sample to the date of analysis, be sure to check the sample date when looking at data or before you use the lake. Remember to use caution and avoid swims. "When in doubt, stay out!"

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County	WASA Number	Site	Lab Sample Number	Collect Date	Parameter	Toxin Conc. (µg/L)	Min. (µg/L)	Above State Guideline	Additional Information
King	9	Arrow Lake	L61232-1	08/17/2014	Anatoxin-a	0.026	0.010	No	No
King	9	Arrow Lake	L61232-1	08/17/2014	Microcystin	<NGL	0.180	No	No
King	9	Arrow Lake	L62361-1	03/06/2015	Anatoxin-a	1.940	0.010	Yes	No
King	9	Arrow Lake	L62361-1	03/06/2015	Microcystin	<NGL	0.180	No	No

Get data

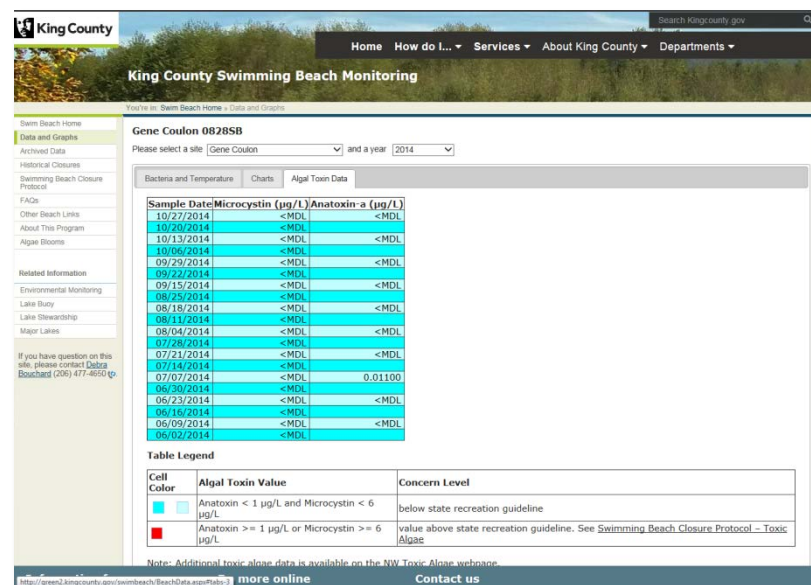
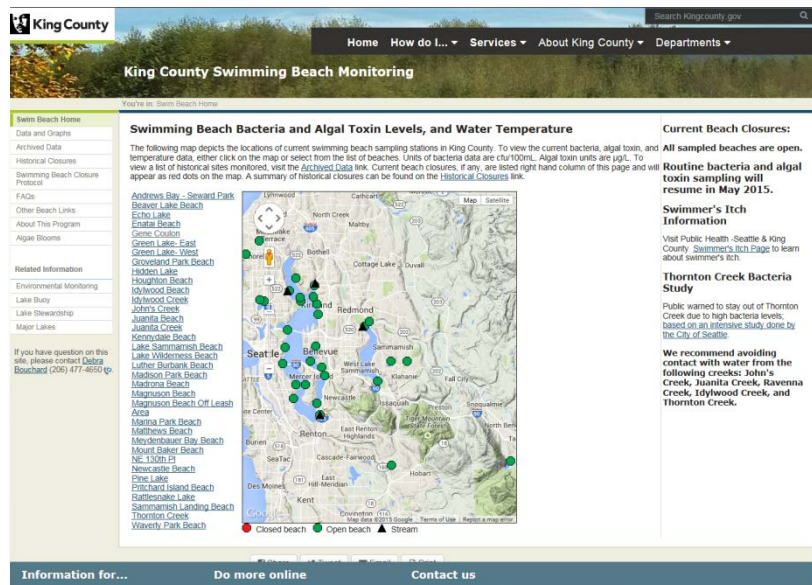
Export data

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KING COUNTY SWIM BEACH MONITORING

Select a beach from the list along the left side of the map.

Select a year from the drop-down menu at the top of the page, then click the “Algal Toxin Data” tab.



WEB RESOURCES

- Northwest Toxic Algae

<https://www.nwtoxicalgae.org/Default.aspx>

- King County Swim Beaches

<http://green2.kingcounty.gov/swimbeach/default.aspx>

- Washington State Department of Public Health

<http://www.doh.wa.gov/ehp/algae>