



FACT SHEET

Office of Water Resources

July 2016

Cyanobacteria (Blue-green Algae)

Cyanobacteria, also known as blue-green algae, are naturally found in many freshwater ecosystems. A combination of excess nutrients, sunlight, and high temperatures can lead to a rapid increase in cyanobacteria, called a “bloom.” Cyanobacteria blooms may look or smell bad, inhibit recreational activities or negatively affect water quality and other aquatic organisms. Some species of cyanobacteria can also produce toxins. These toxins are released when algae die-off or are ingested, posing a threat to human and animal health. Humans whose skin has come into contact with toxic cyanobacteria can develop rashes, blisters and hives, and eye and nose irritations. If swallowed, humans may experience diarrhea, vomiting or neurotoxicity. Humans exhibiting neurotoxicity may feel numb lips, tingling in fingers and toes, and dizziness. Pets, livestock and waterfowl that ingest water with blue-green algae toxins can also experience sickness, paralysis or even death. Neurotoxicity in animals is characterized by salivation, weakness, staggering, difficulty breathing, and convulsions. If these symptoms are experienced or observed in pets and children after contact with a blue-green algae bloom, consult a medical professional.



Figure A. Blue-green algae may make the water look like pea soup

Figure B. Thick green foam may wash ashore during a bloom

Figure C. Blue-green algae may make the water look cloudy with a green tint

Figure D. Film on surface of water can look like spilled paint

How to tell if there is a cyanobacteria bloom

Blooms of cyanobacteria generally occur in late summer into the early fall when water temperatures are warmest and an abundance of sunlight and nutrients are available. There are no visual properties of a cyanobacteria bloom that indicate the algae are producing toxins. Cyanobacteria blooms generally have the following properties:

- Blooms are generally bright green or blue-green in color, but may be brown, red or purple.
- Water may look like thick pea soup and foam may create shoreline scums (Figure A & B).
- The water can also look cloudy with a green tint (Figure C).
- A slick film or colored streaks may cover the surface of the water like spilled paint (Figure D).
- The color of the bloom may give clues to the type of algae, but confirmation of cyanobacteria can only be completed by a microscope.

Common plants and other algae mistaken for cyanobacteria blooms

Duckweed and watermeal are small, native, floating plants that appear similar to a cyanobacteria bloom from a distance (Figure E), but closer inspection of a cyanobacteria bloom will look like Figures A, B, & C. Each individual duckweed or watermeal plant is clearly visible to the naked eye (Figure F & G), whereas cyanobacteria are microscopic. Duckweed and watermeal may often be found in the same locations as cyanobacteria and thrive in similar nutrient-rich conditions. Other types of algae can also bloom in nutrient-rich waters. Cyanobacteria may appear as small chunks in the water, but they do not form long thread-like strands like other types of filamentous algae (see Figure H). When a cyanobacteria bloom is stirred with a stick, cyanobacteria cells appear to dissolve in water like Kool-aid®, while duckweed and watermeal will remain tiny solid bits floating on the surface and other types of algae will typically clump like hair (Figure H).



Figure E. Duckweed plants may appear as a film on the surface but are not algae

Figure F. It may be difficult to differentiate between an algae bloom and duckweed

Figure G. Individual duckweed plants against a ruler

Figure H. Filamentous green algae accumulating on a paddle

Avoid exposure to cyanobacteria toxins!

Not all species of cyanobacteria produce toxins. Sometimes those species that can produce toxins do not. It is only possible to determine if toxins are present with laboratory tests. If a cyanobacteria bloom is observed, it is best to take caution and stay out of the water to avoid any potential exposure to toxins.

- **People, pets and livestock should avoid contact with water that is discolored or has scum on the surface.** Colors can include shades of green, blue-green, yellow, brown or red. If contact does occur, wash yourself and animals with soap and water or rinse thoroughly with clean water to remove algae.
- **Never drink untreated surface water, whether or not cyanobacteria blooms are present.** Untreated surface water may contain other bacteria, parasites or viruses, as well as algal toxins, that all could cause illness if consumed.
- **If you treat and use your pond/lake water, do not drink it during a cyanobacteria bloom** because in-home treatments such as boiling and disinfecting water with chlorine bleach or UV and other water filtration units do not protect people from cyanobacteria toxins. The safest option is to abstain from using the surface water until clean water is available.

Where can I find more information or report a bloom?

Blooms can be reported to: DEM.OWRCyano@dem.ri.gov

More information regarding cyanobacteria blooms can be found at:

<http://www.dem.ri.gov/> or <http://www.health.ri.gov/>

To report a suspicious algae bloom, contact RIDEM at (401)222-4700
