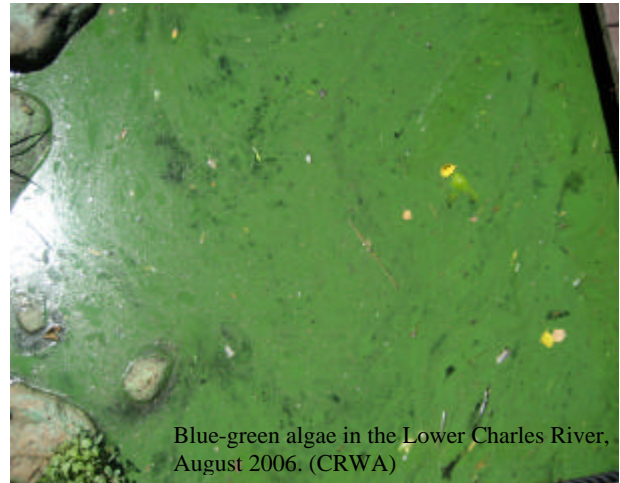




Cyanobacteria/ “Blue-Green” Algae Fact Sheet

What are algae and Cyanobacteria?

Algae are microscopic plants that grow naturally in rivers and lakes and are common in the Charles River. Most types of algae are harmless to people and are an important part of the food chain, though excess algae can cause problems like fish kills. “Blue-green” algae are not actually true algae, but are a type of microscopic organisms called Cyanobacteria. One of the common blue-green algae found in the Charles River is *Microcystis*. Blue-green algae grow in the summer in calm, warm, shallow water that is rich in nutrients (nitrogen and phosphorous).



Blue-green algae are not always visible on the surface of the water. Generally, they become visible when they are present in large numbers in one area, blue-green algae “bloom.” A bloom can be detected by a bright green coloration in the water or at the water surface. It may look like thick pea soup, green paint, or green cottage cheese. Blue-green algae mats may smell like freshly cut grass.

Why be concerned with blue-green algae?

Blue-green algae can produce natural toxins, which are released into the water as the algae die and break down. The toxins can persist for up to three weeks in the water after the bloom is no longer visible. The toxin can cause harm to people and their pets.



What are the health effects?

Blue-green algae and the toxins they produce may cause health effects. Skin rashes, and irritation of the nose, eyes, and or throat are common side effects that result from skin contact with water containing algal toxins. If water containing algal toxins is ingested, health effects include stomach ache, diarrhea, vomiting and nausea. Young children and pets are more at risk to algal toxins than adults, since they are more likely to drink contaminated water. Other health effects, which are rarer, include dizziness, headache, fever, liver damage, and nervous system damage.

For more information on the flagging program, please visit www.charlesriver.org, call the daily water quality hotline at 781-788-0007 ext. 301, or contact CRWA at 781-788-0007

What causes a bloom?

There is no single factor that causes a blue-green algae bloom. A combination of factors, such as excess nutrients, warm temperatures, and sunlight, encourage blue-green algae growth. The presence of excess nutrients, such as phosphorous, is mainly due to runoff from urban areas (streets, parking lots, lawns) and from direct discharges such as wastewater treatment facilities.



Are there any solutions?

Many organizations are working to reduce the amount of nutrients that enter the river by limiting fertilizer use, maximizing effectiveness of wastewater treatment, and treating stormwater before it reaches the river. There are currently no recognized methods to eliminate cyanobacteria from the water. The only way to prevent blooms from forming is to reduce the levels of nutrients and the water temperature in the river.

What is being done?

- Massachusetts Department of Public Health (MassDPH), in consultation with Massachusetts Department of Environmental Protection (MassDEP) and Massachusetts Department of Conservation and Recreation (MassDCR), created public health guidelines for blue-green algae and toxins
- CRWA, in collaboration with MassDEP, MassDCR, US Environmental Protection Agency (US EPA), Charles River Swimming Club, and a group of volunteers will monitor the river for conditions favorable for blue-green algal blooms, for blue-green algae presence, and for toxins
- MassDCR will post warning signs around water when blue green algae toxins reach levels that could pose risks to public health
- CRWA will include algae in its water quality flagging program. A red flag will be flown at participating boathouses when blue-green algae toxins or bacteria counts indicate potential public health risks. (For more information on bacteria in the Charles, please see the CRWA bacteria fact sheet.)

What precautions should you take on red flag days?

- Avoid unnecessary contact with the water
- Keep pets and young children away from the water
- Avoid river areas with obvious blue-green algae presence
- If you come into contact with the water, rinse your skin with clean water as soon as possible, and when you get home, take a shower and wash your clothes
- Remember that toxins may persist in the water after the blue green algae bloom is no longer visible
- If symptoms persist after a few days, consult your doctor

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