

## **Blue-Green Algae**

Blue-green algae are microscopic bacteria that live in surface water like lakes, ponds, rivers and streams. The scientific name for it is cyanobacteria.

Blue-green algae may produce toxins that can make you sick. If you think you see a blue-green algae bloom, do not drink or swim in the water. Please report it to your local [Nova Scotia Environment office](#).

## **Recognizing blooms**

Despite the name, blue-green algae blooms can also be turquoise, olive-green, or red. Blooms can look like fine grass clippings in the water or a large scum on the surface. They can be seen floating on the surface or suspended in the water.

There may be algal mats at the bottom of clear shallow areas of lakes and rivers. They can be dark black, brown or green with a leathery texture and earthy, musty odour. People and animals can easily come in contact with mats when they build up along shorelines. When dogs eat the mats, they can be poisoned and die.

It can be difficult to distinguish between blue-green algae and green algae. A trained professional using a microscope can identify it. Whenever you see a bloom or mat, you should treat it as potentially toxic until you know for certain that it is not blue-green algae.

## **Health effects**

Health effects can be caused by contact with the skin or inhaling or swallowing contaminated water. Symptoms include:

- Itchy, irritated eyes and skin if you swim in contaminated water
- Headaches, fever, diarrhea, abdominal pain, nausea, and vomiting if you swallowed or inhaled contaminated water

Children are at greater risk due to their lower body weight. Also, they generally spend more time in the water than adults and are more likely to accidentally swallow contaminated water.

Prolonged or high exposure in people, such as swallowing a large quantity of toxins, may damage the liver. In smaller animals, it can cause death.

In the event of an algae bloom:

- Do not drink, swim, bathe, shower, or brush your teeth with the water.
- Do not allow children, pets, or livestock to drink or swim in the water.
- Use alternative water sources such as bottled, carted or tanked water, or call a water treatment specialist for help.
- Do not rely on jug or pitcher-type filtration systems. They do not make the water safe.
- Do not boil the water. Boiling water may release more toxins into the water.

- Do not cook with the water. Food may absorb toxins from the water.
- Do not water your vegetable garden with the water.
- You can wash dishes or other objects, as long as you rinse them with uncontaminated water and dry them thoroughly.
- Be careful with recreational water activities that generate sprays, such as motor-boating, because the toxins can be inhaled.
- When watering non-vegetable plants, avoid spray drift that may affect people and animals through inhalation or contact.
- Do not use herbicides, copper sulphate, or other algicides and do not treat the water with a disinfectant like chlorine (bleach). They may break open algae cells and release toxins.
- Be cautious about eating fish caught in water where blue-green algae blooms occur. Do not eat the liver, kidneys and other organs because the toxins can be stored here.
- If you have contact with a bloom, you should shower or wash yourself and any items that may have come in contact. If you get sick, seek medical attention.

### **Drinking water**

Blue-green algae can [contaminate drinking water](#) from a surface water source (such as a lake or river) that has a bloom, or from a shallow dug well adjacent to surface water with a bloom. High concentrations of toxins are typically released when blooms die off.

Most municipal water supplies use specialized treatment to manage blue-green algae.

Surface water such as lakes or rivers is not recommended as a drinking water source for people's homes. However, if you use surface water for your drinking water, you should get it [tested regularly](#).

If blue-green algae are a concern, the best time to take a water sample is once the bloom has died off and there are no longer visible signs of it. Make sure you ask the lab to test for the toxin "microcystin." Contact [Nova Scotia Environment](#) to find out which labs test for it.

Check the results to make sure microcystin is not over the [limit of 0.0015 milligrams/litre](#). If it is, you should find a different source of water as noted above. Residential-scale treatment systems generally do not remove blue-green algae toxins.

### **How blooms happen**

Blooms occur all around the world, and across Nova Scotia. They normally happen when the weather is warmest in late summer and early fall (May to October).

Blue-green algae are not usually visible on the surface. When conditions are favourable, the bacteria can quickly reproduce to form a large mass called a bloom or scum. The bacteria thrives in areas where the water is shallow, warm, slow-moving, high in nutrients such as phosphorous and nitrogen, and there is sufficient light penetration.

Phosphorus and nitrogen are naturally occurring elements that are essential to plant and animal life. Excess nutrients can make their way into our freshwater systems and promote the growth of blue-green algae. Sources of nutrients include:

- Surface water runoff from different land uses;
- Agriculture
- Forestry
- Residential
- Industrial effluents
- Wastewater effluent
- Faulty septic systems

Controlling or eliminating these sources can help reduce the occurrence and severity of blooms.