

Frequently Asked Questions

Cyanobacterial Blooms in Alberta Recreational Waters

What are Cyanobacteria?

Cyanobacteria, also referred to as blue-green algae (BGA), are common photosynthetic bacteria that live in Alberta's surface waters. Under favorable conditions, such as warm water and increased nutrient content, these bacteria can form nuisance "blooms". Blooms are of interest to public health because some genera are capable of producing very potent toxins, such as neurotoxins, hepatotoxins, and lipopolysaccharide endotoxins.

What to look for?

Although often referred to as "blue-green" in color, cyanobacterial blooms range in color and can be blue, green, brown or red, depending upon the species composition and age of the bloom. Identification of cyanobacteria can be difficult because of its microscopic size, range in color and the presence of other organisms that may resemble a bloom. Other floating organisms that may be misidentified as cyanobacteria include green algae, duckweed and pollen.

What are the public health concerns?

Health effects from exposures to cells and their toxins have been documented. Dermal contact with cyanobacterial blooms can cause skin rashes and irritation, and contact with the head can cause itchy, red eyes and ear infections. Inhalation of water may cause allergic-like reactions, runny noses or sore throats. Ingestion of toxins can cause a range in symptoms, including, but not limited to:

- Gastrointestinal illness, including diarrhea and vomiting;
- Liver and kidney damage;
- Neurological symptoms, such as numb lips, tingling fingers and toes or dizziness.

Although there have not been any documented human related deaths from recreational exposure to cyanobacteria or its toxins, animal (dogs and livestock) deaths from ingestion of water affected by cyanobacterial blooms are relatively common.

What are the guidelines?

The Guidelines for Canadian Recreational Water Quality (2012) outline two health guidelines for cyanobacteria in recreational waters: 1. Total microcystins: 20 µg/L (expressed as microcystin-LR) 2. Total cyanobacteria: 100,000 cells/mL. Exceedances of these values or development of a bloom indicates

the potential for exposure to cyanobacterial cells and/or their toxins in amounts that may be harmful to human health.

Why does the number of samples decrease over the years?

Between 2010 and 2018, recreational water samples were collected by Alberta Health Services for the purpose of bloom monitoring at public beaches. Sample collection location and sampling frequency were based on staffing resources and funding availability in each year. In 2019, the Alberta Safe Beach Protocol transferred responsibility for voluntary routine bloom monitoring to beach operators at priority sites. Priority sites include those that experience high use and have a history of bloom development. The number of samples collected in a given year does not necessarily reflect the prevalence of blooms across the province that year. For information about current bloom conditions at Alberta Lakes and active public health advisories, please visit the Alberta Health Services website:

<https://www.albertahealthservices.ca/news/bga.aspx>

How can I print my results?

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