

Blue Green Algae Information

Blue-green algae, also known as Cyanobacteria, are a group of photosynthetic bacteria that many people refer to as "pond scum." Blue-green algae are most often blue-green in colour, but can also be blue, green, reddish-purple, or brown. Blue-green algae generally grow in lakes, ponds, and slow-moving streams when the water is warm and enriched with nutrients like phosphorus or nitrogen.

When environmental conditions are just right, blue-green algae can grow very quickly in number. Most species are buoyant and will float to the surface, where they form scum layers or floating mats. When this happens, we call this a "blue-green algae bloom. Talkin Tarn often suffers from these blooms.

Blooms, when they occur, are capable of producing toxins that can be fatal to dogs and livestock, and cause illness in humans. It is advised at all times to observe caution and to avoid particularly when the hazard rating is AMBER OR RED.

The current hazard rating will be shown on the site information panel on the front of the changing rooms and on the car park notice board.

Blue-green algae are capable of producing several different toxins. People may be exposed to these toxins through contact with the skin (e.g., when swimming), through inhalation (e.g., when motor boating or water skiing), or by swallowing contaminated water. Types of toxins and potential health effects include the following:

Dermatotoxins and Gastrointestinal Toxins—These toxins affect the skin and mucous membranes, and can cause allergy-type reactions such as rashes, eye/nose/throat irritation, and asthma, as well as headaches, fever, and gastroenteritis (nausea, stomach cramps, vomiting, diarrhea). Examples include lyngbyatoxin and lipopolysaccharide endotoxins.

Hepatotoxins—These toxins affect the liver and other internal organs, and can cause gastroenteritis, tissue damage, muscle weakness, paralysis, and respiratory failure (with acute exposure), tumors, and possibly liver cancer (with long-term, chronic exposure). Examples include microcystins and nodularins.

Cytotoxins—These toxins also affect the liver and other organs (though through a different mode of action than hepatotoxins) and can cause malaise, headache, anorexia, vomiting, chromosome loss, DNA strand breakage, and damage to organs. An example is cylindrospermopsin.

Neurotoxins—These toxins affect the central nervous system and can cause seizures, paralysis, respiratory failure or cardiac arrest. Examples include anatoxin-a and saxitoxin. (Saxitoxin is the same toxin associated with red tide and paralytic shellfish poisoning in marine systems).

Blue-green algae have been around for millions of years. Scientists have recorded blue-green algae blooms dating back to the 12th century and they have documented the toxic effects to livestock for more than 100 years. However, it is possible that the frequency and duration of blooms are increasing as a result of increased nutrient concentrations. Nutrients, particularly phosphorus and nitrogen, can be carried into water bodies as a result of many human activities, including agriculture, discharge of untreated sewage, and use of phosphorus-based fertilizers and detergents.

There are no quick or easy remedies for the control of blue-green algae once they appear in a lake or pond. Reducing the amount of nutrients that wash into our lakes and ponds will eventually reduce the frequency and intensity of blue-green algae blooms, but it may take a long time and a lot of community involvement to effectively change the nutrient concentrations in a water body. This is because there may still be large amounts of nutrients in the sediment at the bottom that may continue to serve as food for the blue-green algae.