

# WATER

## Blue Green Algae Fact Sheet

Blue Green Algae (BGA), technically known as cyanobacteria and sometimes referred to as pond scum, are free-floating, microscopic organisms naturally present in reservoirs, lakes and streams.

They are normally found in low numbers but in very warm, shallow, and undisturbed waters that receive large amounts of sunlight, they can become very abundant or “bloom”. BGA are unique because certain types have tiny vesicles in their cells that allow them to float to the surface or sink to the bottom in response to changing light and nutrient availability. This gives them an advantage over other types of algae because it facilitates their ability to survive and flourish where nutrients are available in the water column.

When a bloom occurs, BGA often becomes visible across the water surface. Blooms may include all shades of green, blue-green, yellow, brown, or red. Water affected by a BGA bloom is often so strongly colored that it may develop a paint-like appearance. Most blooms do not last long, generally disappearing within days or weeks. However, when conditions remain favorable, blooms can last months with sufficient nutrients. Blooms often produce mats or scums that may be driven to the shore by the wind, drying and coating objects with a blue-green film.

BGA blooms are the result of nutrient addition to a waterbody. The main nutrient is phosphorus, but nitrogen can also play a role. Blooms are not



often caused by a one-time input of nutrients to a waterbody. They usually result from long term build up of nutrients in the waterbody.

BGA also differ from other common algae because of their ability to produce and release toxic chemicals into the water. The greatest potential for toxin exposure is after either a bloom or die-off, when toxins can remain in the water for weeks. Even after all the visual evidence of a bloom has disappeared, toxin concentration can remain very high. Toxins are colorless and odorless so swimmers may be exposed and not be aware of it until leaving the water.

The three BGA of primary concern when looking for toxin exposure are *Anabaena*, *Microcystis*, and *Cylindrospermopsis*. These species of BGA produce endotoxins (allergic reactions),

cally pets and livestock have suffered the ill effects of BGA, but more recently, symptoms affecting humans have become more common.

There are many ways that a BGA toxin exposure can occur. Recreational activities such as swimming in contaminated waters are probably the most common. Direct contact with skin often produces a skin irritation, often referred to as “swimmer’s itch.” It also can trigger allergic reactions to the eyes, nose, or throat and could be especially dangerous for people with asthma. If contaminated water is swallowed during recreational activities, it can cause stomach cramps, fever, nausea and headache. In severe cases, it can cause convulsions/seizures, vomiting, muscle weakness and vision problems. Children and infants may be



hepatotoxins (damage to the liver and other internal organs), and neurotoxins (damage to the Central Nervous System and the brain). Histori-

more susceptible to the ill effects of exposure and are more likely to participate in activities that might put them at risk.

**To minimize exposure to BGA, the following recommendations should be followed:**

1. Do not drink untreated water.
2. Do not swim, water ski, or boat in areas where the water is discolored or where you see foam, scum, or mats of algae on the water.
3. If you swim or wade in water that may have BGA present - rinse off with fresh water (and soap if available). This is also an effective method of reducing skin exposure for your pets.
4. Do not let pets or livestock swim or drink where the water is discolored or where you see foam, scum, or mats of algae on the water.
5. Respect water body closures.

BGA poses a risk to the recreational and drinking waters of the state. A workgroup made up of state agencies has been established to address BGA problems. For more information on BGA, contact Kara Williams at 405-702-1022.

To report a BGA bloom, please call the DEQ Complaints Hotline at 1-800-522-0206.



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Printed on recycled content paper. 9/13/06