



Aquatics **in** Brief

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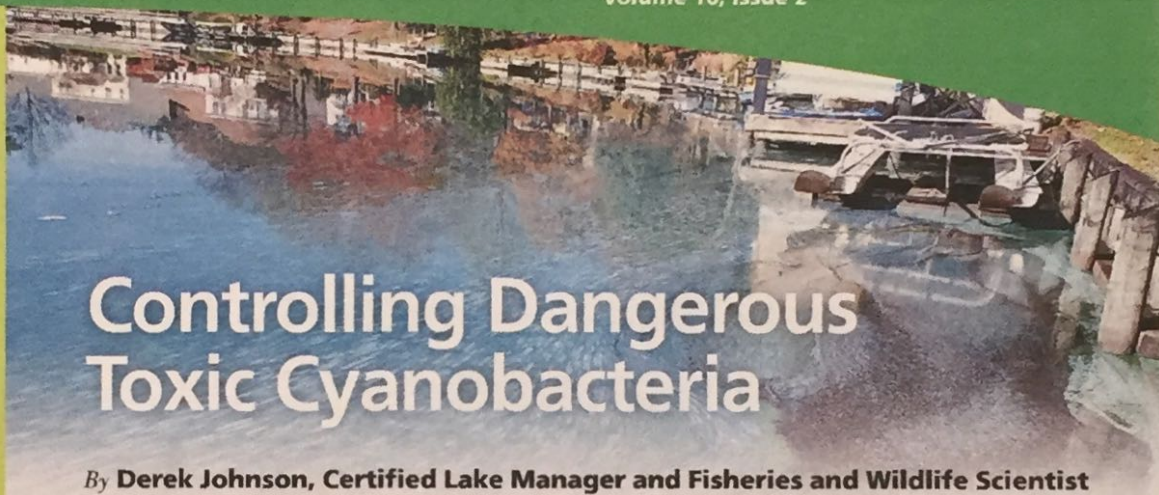
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Controlling Dangerous Toxic Cyanobacteria

By **Derek Johnson, Certified Lake Manager and Fisheries and Wildlife Scientist**

Excessive cyanobacteria growth has become a serious nuisance and concern in our lakes and ponds across the nation. Commonly referred to as blue-green algae, they are best known for their blooms that have the appearance of spilled paint. Blue-green algae can grow quickly when the water is warm and enriched with nutrients. There are many different species, but the most commonly detected is Anabaena, Aphanoizomenon, Microcystis, and Planktothrix. However, multiple species can create a bloom in a waterbody, and the dominant species can change over the course of the season.

Many species of blue-green algae have evolved to control their buoyancy. As the availability of light and nutrients change with the time of day and weather conditions, an algal cell is able to move up and down water depths. At night, when there is no light, cells are unable to adjust their buoyancy and often float to the surface, forming a surface bloom. This means that a bloom can literally appear overnight and stay on the surface until wind and waves are able to scatter the cells throughout the waterbody and dissipate the bloom.

Common concerns associated with blue-green algae are taste and odor compounds

and toxin production causing drinking water contamination. An "earthy" odor emanating from a waterbody is indicative of the compound, geosmin. Some of the more dangerous compounds that could potentially be produced are neurotoxins (nerve damage), hepatotoxins (liver damage), and endotoxins (skin irritants). Toxins are naturally produced chemical compounds within the cells. When the cells are broken open, the toxins are released into the water. This could result in a substantial concentration of the toxins in the water and lead to health issues in humans and surrounding wildlife. Even when the blue-green algae is no longer visible, toxins may be present for some period of time. The only way to determine if these toxins are present is to have water samples collected and analyzed in a laboratory.

There are no quick fixes for the control of blue-green algae once they appear in a lake or pond. Using an algaecide and water quality enhancer in the early stages of a bloom may help to limit the growth and help mitigate excessive nutrients in the waterbody. Eventually, by reducing the overall amount of nutrients within a waterbody, bloom frequen-

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