

# WHEN GREEN TURNS MEAN

Algae, cyanobacteria, and aquatic plants in lakes, ponds,  
and streams: What's safe and what's not



It's a hot summer day, and you are at your favorite swimming hole or checking out a pond on your property used by kids, pets, or livestock.

There is a lot more green in the water than usual, but is it something to worry about? You may have heard about harmful algal blooms causing health concerns for people and animals in Wyoming waters, but is this what you are seeing?

Most lakes, ponds, and streams have aquatic plants, algae, and cyanobacteria that can make the water appear green. Normally, they occur at low densities and play an important role in aquatic food webs. Sometimes, however, when conditions are right, they can become quite abundant. Overgrowths of aquatic plants and algae can be a nuisance and deplete oxygen for fish and other aquatic organisms. Dense accumulations of cyanobacteria can also cause similar issues, but are also irritants and can produce toxins, so you really want to be on the lookout for and avoid cyanobacteria.

### **Is it algae, aquatic plants, or cyanobacteria?**

If cyanobacteria can make people and animals sick, why are they called harmful algal blooms (since they are actually bacteria, not algae)? Cyanobacteria look and act like algae, so are commonly referred to as "blue-green algae." Despite this, there are some easy ways to differentiate algae from cyanobacteria.

Algae usually attach to a surface such as rocks, sand, or concrete and can form a film or mat, or grow into long hair-like filaments. If you poke at algae with a stick, it will usually drape over and stay attached to the stick when removed from the water.

Cyanobacteria will generally not attach to a stick when removed from the water since cyanobacteria usually float freely on or just below the water surface. Some cyanobacteria may be so small and numerous the water just looks green, while other types may look like green floating threads, clumps, or scums. Cyanobacterial blooms can look like green spilled paint or cottage cheese or small grass clippings. Cyanobacteria can also wash up on shore and leave a turquoise "paste" or "ring" around the waterbody.

Aquatic plants are pretty easy to spot since they are typically much larger, generally attach to the bottom, and have extensive stem and leaf networks and may produce

flowers. Common aquatic plants include cattails, horsetail, water lilies, reeds, and sedges.

### **Heavy populations concentrate irritants and toxins**

Cyanobacteria become harmful at dense concentrations because they are irritants and affect the skin, eyes, noses, and mouths of people and animals who come into contact with them. Cyanobacteria can also produce cyanotoxins such as microcystin and cylindrospermopsin that may affect liver, kidney, and central nervous system function if consumed when drinking, swimming, or licking fur.

Human symptoms of cyanobacteria and cyanotoxin exposure may include rashes, blisters, itching, nausea, abdominal pain, vomiting, diarrhea, shortness of breath, disorientation, numbness, headache, and fever.

Animal symptoms include loss of energy, loss of appetite, vomiting, stumbling or falling, foaming at the mouth, diarrhea, convulsions, excessive drooling, tremors and seizures, or any unexplained sickness that occurs within a day or so after being in contact with the water. In extreme cases, consuming cyanobacteria or cyanotoxins can lead to pet or livestock death. Contact your doctor or veterinarian if you think you or your animals are experiencing cyanobacteria-related symptoms.

You cannot tell if a bloom is toxic just by looking at it. Some cyanobacterial blooms may not produce toxins or may only produce toxins at certain times when environmental conditions are right. It is also important to note that if toxins have been produced, they may persist in the water after the cyanobacteria have disappeared until they are broken down by natural processes. There are no known cures for cyanobacteria- and cyanotoxin-related illnesses, so it's best to keep people, pets, and livestock away from cyanobacterial blooms.

### **Popular treatments will not make water safe to drink**

Health risks are generally localized to the bloom itself, so areas of a waterbody away from a cyanobacterial bloom are likely safe. Boiling, filtering, and other treatments will not make the water safe for drinking since these methods do not remove toxins if present. And while applying algaecides or herbicides

<< *Harmful cyanobacterial bloom that looks like a swirl of green paint along the shoreline. Note the turquoise "paste" that has collected onshore.*

may kill cyanobacteria, any associated cyanotoxins will be released into the water once the cells die. Any cyanotoxins released will break down and dissipate, but we can't accurately predict how long this process may take.

To help increase awareness of the potential health risks associated with cyanobacterial blooms, the Wyoming Department of Environmental Quality (DEQ), Wyoming Department of Health (WDH) and Wyoming Livestock Board (WLB) developed a response plan should a bloom occur in a publicly accessible lake or reservoir in Wyoming.

The agencies rely on the public to report suspected blooms to DEQ using their Report a Spill hotline (307-777-7501 or [WyoSpills.org](http://WyoSpills.org)); however, DEQ has recently started to identify potential blooms using

cyanobacteria density estimates from satellite images of larger Wyoming reservoirs. Once a potential bloom has been reported or detected via satellite, DEQ samples the waterbody to determine if levels of cyanobacteria or cyanotoxins exceed thresholds identified to be unsafe for contact recreation.

WDH issues a recreational use advisory for the waterbody if unsafe levels are present. Advisories remain in effect until the cyanobacterial bloom disappears, usually in late fall when air and water temperatures begin to drop, cyanobacteria die, and any associated cyanotoxins break down.

Be on the lookout for harmful cyanobacterial blooms in the waters you or your pets or livestock use. If you have any doubts whether you are seeing cyanobacteria or not, it is best for people, pets, and livestock to

stay out. Also, report any suspected blooms to DEQ and visit [WyoHCBs.org](http://WyoHCBs.org) for additional information, including recreational advisories issued by the Wyoming Department of Health.

.....  
**Lindsay Patterson** is the surface water quality standards supervisor with the Wyoming Department of Environmental Quality, Water Quality Division Watershed Protection Program. She can be reached at (307) 777-7079 or at [lindsay.patterson@wyo.gov](mailto:lindsay.patterson@wyo.gov).

**Michael Thomas** is a natural resource analyst with the Wyoming DEQ Water Quality Division, Watershed Protection Program. He can be contacted at (307) 777-2017 or at [michael.thomas@wyo.gov](mailto:michael.thomas@wyo.gov).

*Harmful cyanobacterial bloom that looks like floating clumps just below the water surface. At high densities, the cyanobacterial clumps may look like floating cottage cheese.*

