Colorado Harmful Algal Bloom Workgroup

- Created to help Colorado water providers with a consistent approach to EPA’s 2015 cyanotoxin drinking water 10-day health advisories
- Included utilities, industry, organizations, universities, experts
- Resources to help large and small water providers
  - Guidance, trainings, troubleshooting, lab support, data sharing
5 Steps

1. Do you have a bloom?
2. Is it cyanobacteria?
3. Do you have toxins in your raw water?
4. Do you have toxins in your finished water?
5. Are lab results above the health advisory?
Toolkit for recreational water managers

- Collaboration: CO Parks and Wildlife, Toxicology, Water Quality

<table>
<thead>
<tr>
<th>Advisory value (μg/L)</th>
<th>Microcystin</th>
<th>Cylindrospermopsin</th>
<th>Anatoxin</th>
<th>Saxitoxin</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Contact Advisory</td>
<td>8</td>
<td>15</td>
<td>15</td>
<td>8</td>
</tr>
<tr>
<td>(post “DANGER” signage)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**TOXIC ALGAE**
( Harmful Algae Blooms)

Risk Management Toolkit
FOR RECREATIONAL WATERS

**DANGER**
LAKE IS CLOSED TO FULL-BODY CONTACT

Toxic algae is present!

- Water contact can cause illness
  - Keep kids out
  - No pets in water (death may occur)
  - Do not drink water
  - No water recreation (swimming, skiing, paddle-boarding, wading, etc.)
  - If exposed, shower immediately

Fishing permitted - rinse fish with clean water and properly dispose guts
Boating permitted - avoid algae

If you or your animals have nausea, vomiting, diarrhea, rash, irritated eyes, seizures or breathing problems, call Poison Control: 1-800-222-1222
Coordinated response and assistance

- ToxCall hotline receives algal bloom call
  - Poison control, dead dog report, taste and odor complaint, media, EPA inquiry
- Assess and notify drinking water program, clean water program, toxicology, Parks and Wildlife designated contacts
- Coordinate and follow up with caller and assist waterbody manager
  - Guidance on next steps
  - Assess waterbody
  - Provide test strips and training
  - Help with response plans
- Coordinate with state lab for testing
  - EPA may help with quick turnaround
Collaborate on website information and resources
https://cdphe.colorado.gov/toxic-algae

Toxic algae in Colorado
Algae is common and natural to our waters in Colorado. But some algae can multiply rapidly, form blooms or scums, and create toxins that can harm people, animals, and the local environment.

Toxic algae can
- Make the water look green, turquoise, gold, or red.
- Look like thick pea soup or spilled paint on the water’s surface.
- Be made up of small specs or blobs floating at or just below the water’s surface.

Toxic algae is typically not
- Stringy in appearance.
- Mustard yellow in color (this likely is pollen).

Learn more
- For questions about the health effects of toxic algae, call poison control at 1-800-222-1222.
- For more information about toxic algae, visit CDHP’s Toxic Algae website.

When in doubt, stay out!
Don’t go in the water if toxic algae is present.
- No swimming or wading in toxic algae.
- Keep kids and animals away from the water. Don’t let them eat or play with toxic algae.
- Don’t drink water that may contain toxic algae.
- Boating permitted: avoid areas with toxic algae.
- Clean fish well & discard guts appropriately.

Exposed?
Shower immediately. See a doctor or vet if symptoms occur.

Symptoms
- Pets
  - Drowning
  - Diarrhea
  - Vomiting
  - Low energy
  - Not sitting
  - Stumbling
  - Tremors
- People
  - Skin irritation, rashes
  - Nausea, vomiting
  - Diarrhea, stomach cramps
  - Fever, headache, sore throat
  - Liver damage
  - Allergic reactions
  - Asthma symptoms

1. What is toxic algae?
Toxic algae or harmful algae blooms are made up of what many people call blue-green algae. Technically, these organisms are a special type of bacteria called cyanobacteria or cyanobells. Although these organisms naturally occur in Colorado waters, they become a problem when they multiply rapidly, resulting in a dense cyanobacteria concentration or “bloom.” The blooms become harmful when the cyanobacteria produce toxins.

2. What causes toxic algae?
Bloom tend to occur when the ecosystem gets out of balance and the cyanobacteria are able to outcompete other phytoplankton. Excess nutrients, high temperatures, and standing or slow-moving water provide an optimal environment for cyanobacteria to reproduce. The peak season for toxic algae is during the hot summer months of June to September.

3. What should I look for?
Toxic algae may resemble thick pea soup, spilt paint on the water’s surface, and it may cause a thick mat of foam along the shoreline. Toxic algae is generally green, red, golden, or turquoise. You may also see small specs or blobs floating at or just below the water surface. Toxic algae is typically not stringy or mustard yellow in color (the latter is probably pollen).

4. Can I tell if a bloom is toxic by looking at it?
No. Laboratory testing or test strips are necessary to confirm the toxin levels. If you suspect toxic algae, the best advice is to avoid contact with the water until laboratory testing or test strips confirm the absence of or a safe level of toxins. See question number 5 below for more information about testing for algae.
Map of recent conditions
Coordination importance and challenges

- Increased public awareness and expectations
  - Calls about golf course, stormwater, private ponds, ditches
- Limited resources and not regulated
- Terminology consistency: harmful algae blooms, HCBs, cyanoHABs, cyanobacteria, blue-green algae, toxic algae
- Can be confusing to explain: Not all blooms produce toxins, toxins can be present without a visible bloom
- Need for coordinated education: “when in doubt, stay out!”
- Encourage caution not panic
- Keeping momentum in off-season
Thank you!

David Dani
david.dani@state.co.us

cdphe.colorado.gov/toxic-algae