



City of Cañon City

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Third Quarter 2018 Stormwater Management Program News

NUTRIENTS

What are nutrients? Nutrients are natural chemical elements that all living organisms need to grow. The nutrients of concern are primarily nitrogen and phosphorus.

Why are we concerned about nutrients? When too much nitrogen and phosphorus enter waterways they can act as catalysts to promote algae growth, leading to massive overgrowth called an “algae bloom”. Algae are microscopic plants that live in water, forming the base of the aquatic food chain. They can be green, blue, red or brown and often form slick, slimy layers of scum on the surface of water or coat the surface of submerged rocks and vegetation. While algae blooms do occur naturally, human activities are contributing to an increase in their frequency and severity. Algae blooms consume large amounts of oxygen that fish, shellfish and other aquatic organisms need to survive. They cloud the water blocking sunlight which is needed by the plants in the water to grow and to produce oxygen. Algae can also clog fish gills, reducing the amount of oxygen they are able to extract from the water.

Certain types of algae can emit poisons which can cause health problems for humans and wildlife. Coming into contact with these poisons can cause stomach aches, rashes or more severe problems for humans and can severely sicken or kill pets and wildlife. Humans can also become sick after eating fish or shellfish which have absorbed these toxins. Harmful algae blooms can also release airborne toxins which can cause sore throats, headaches and serious respiratory problems. Excess nitrogen in drinking water can have impacts to human health, particularly for infants under 6 months of age.

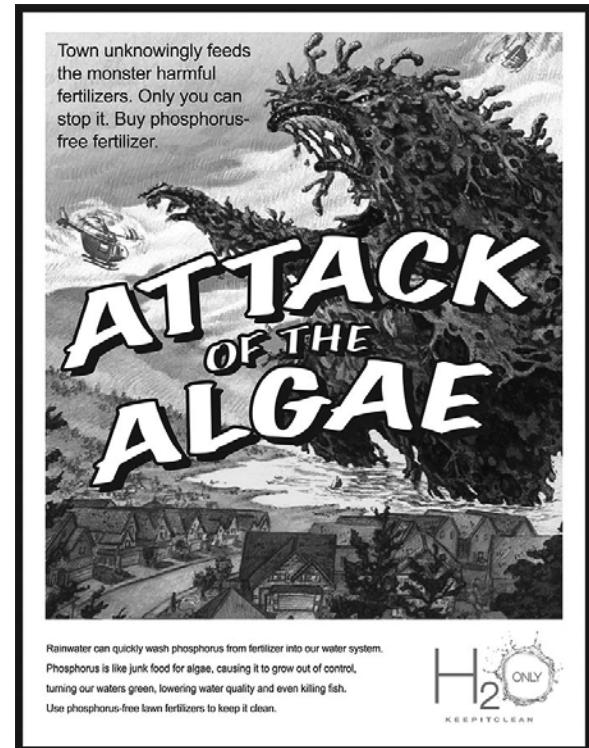
Algae blooms do happen in Colorado, often during hot sunny weather in slow-moving bodies of water such as lakes. Most are comprised of blue-green algae. Harmful algae blooms also occur in Colorado; they can occur anywhere but are less likely to occur in high mountain lakes and reservoirs. The only way to know if an algae bloom is harmful is to have it tested. The best way to avoid becoming sick from an algae bloom is to stay out of the water, keep pets and livestock out of the water and don't drink the water.

What is the source of excess nutrients? The primary sources of excess nitrogen and phosphorus are the improper use of fertilizers, pet and animal waste, failing septic tanks and sewage treatment plant discharges.

How can nutrient pollution be reduced? We can all help reduce nutrient pollution through the choices we make at home, with our pets, in lawn care and on our farms and ranches.

Lawn and Garden Care:

- Apply fertilizers only when necessary and at the recommended amount.
- Don't apply fertilizer before windy or rainy days.
- Apply fertilizer as close as possible to the period of maximum uptake and growth for grass and other plants, which is usually spring and fall in cool climate, and early and late summer in warm climates.
- Avoid applying fertilizer close to waterways.



- Do not overwater lawns and garden; use a soaker hose, a porous hose that releases water directly to the ground, which can reduce overwatering that carries away fertilizers that would otherwise enrich lawns and gardens.
- Fill fertilizer spreaders on a hard surface so that any spills can be easily cleaned up.
- Properly store unused fertilizers and properly dispose of empty containers.
- Plant a rain garden of native plants, shrubs and trees that reduce the amount of fertilizer needed and provide a way for water to soak into the ground.
- Use pervious pavers for walkways and low traffic areas to allow water to soak into the ground.
- Use yard waste, which includes grass clippings and leaves, in mulch or compost for your garden. If this is not an option, bag all clippings and leaves for disposal, which keeps them from washing into streams.
- Maintain your lawn mowers, snow blowers, chain saws, leaf vacuums and similar outdoor power equipment to reduce nitrogen oxide emissions.

Pet Waste:

- Always pick up after your pet and dispose of the waste properly.
- Avoid walking your pet near streams and other waterways. Instead, walk them in grassy areas, parks or undeveloped areas.

Washing Your Car:

- Use a commercial car wash; commercial car washes are required to properly dispose of wastewater and many filter and recycle their water.
- If washing your car at home consider the following actions:
 - Wash your car on a pervious surface such as grass or gravel (not concrete or asphalt) so water is filtered before reaching a water body.
 - Use nontoxic, phosphate-free soaps.
 - Use soap sparingly.
 - Minimize runoff by reducing water use, using a spray nozzle to restrict water flow.
 - Wring out sponges and rags over the bucket or in a sink, not the ground.
 - Empty wash water into the sink or toilet, or the grass if you wish to dispose of it outside.
 - Use waterless car wash products for spot-cleaning or a car wash kit, which redirects water from storm drains.
- When conducting car wash fundraisers use a car wash kit

Don't Feed the Storm Drain:

- Prevent materials/pollutants such as oil, pesticides, fertilizers, paints, soaps, trash, etc. from going down the storm drain. Stormwater runoff and runoff from over watering of lawns picks up materials and chemicals on the ground before entering the storm sewer which discharges directly to the Arkansas River and Four Mile Creek untreated.

References:

Colorado Department of Public Health & Environment: <https://www.colorado.gov/pacific/cdphe/harmful-algae-blooms>

EPA Fact Sheet [The Facts about Harmful Algal Blooms](#); EPA 820-F12-048 December 2012

EPA Fact Sheet [The Facts about Nutrient Pollution](#); EPA-840-F12-003 May 2012

Colorado Stormwater Council brochure [You Can Help Protect Our Waterways](#); August 31, 2017

Nutrient Pollution by the Numbers

- EPA's 2010 National Lakes Assessment found that almost 20 percent of the nation's lakes have high levels of nitrogen and phosphorus pollution. The report also showed that poor lake conditions related to nitrogen or phosphorus pollution doubled the likelihood of poor ecosystem health.*
- According to EPA's 2006 Wadeable Stream Assessment, 30 percent of streams across the country have high levels of nitrogen or phosphorus.*
- States have identified about 15,000 water bodies in the United States as having one or more nutrient-related impairments and there are likely many more since not all waters have been monitored.
- Reported drinking water violations for nitrates have doubled in the last eight years. **

*National Aquatic Resource Surveys
(www.epa.gov/aquaticsurveys)

***An Urgent Call to Action: Report of the State-EPA Nutrient Innovations Task Group*, Aug. 2009