

Our Water

Keeping it Clean

North Dakota Department of Health  Environmental Health Section

Blue-Green Algae: Causes and Concerns

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Photo courtesy Aaron Larsen, Environmental Scientist, NDDoH.

Sitting lakeside, you notice a pungent odor and a green color to the lake that wasn't there a few days ago. Water splashes onto the rocks or beach leaving behind green "slime." This is a scene that plays out at many North Dakota lakes from summer to early fall. The culprits are blue-green algae, also known as Cyanobacteria.

What are blue-green algae?

Blue-green algae are actually a photosynthetic bacteria. Typically, the algae are blue-green in color, but it can be brown, reddish purple, green, or blue.

What causes algal blooms?

Blue-green algae "blooms" occur in lakes when the water is warm and nutrients like phosphorus and nitrogen are in abundant supply.

Growth can occur rapidly and becomes apparent when the algae float and form mats or layers on the surface. In North Dakota, blooms usually occur from late June to mid-September.

Why is blue-green algae a concern?

Blue-green algae can cause:

- Taste and odor problems in drinking water supplies
- Reduced light penetration for essential plants
- Reduced dissolved oxygen levels during algae die-off, which can lead to fish kills
- Unpleasant swimming conditions due to odor and algae mats
- Production of toxins that can be fatal if ingested by humans, livestock, and other animals. The severity of the toxins is dependent on the type of bacteria.

Almost every year, the North Dakota Department of Health receives calls from livestock producers and/or pet owners who have had animals die from drinking water where a blue-green algae bloom has occurred.

Developing of off-stream watering options and monitoring dugout ponds can help prevent problems for livestock. There are commercial products that will alleviate blooms in dugout ponds; however, they must be labeled as an algicide and the application approved by the Department. While the algicide may prevent a bloom, it will not remove the toxins if a bloom has occurred.

Pet owners should carry water for pets and examine water bodies before allowing pets to enter the water. If your pet swims in blue-green algae, it should be washed off immediately to avoid ingestion of the toxin. Livestock or pets that have ingested water with blue-green algae should be seen by a veterinarian for possible treatment.

How is blue-green algae prevented?

There are no fast or easy remedies to prevent blue-green algae. It takes a long-term commitment from people in the watershed to lower nutrient concentrations in the affected water body. This process can be prolonged due to the amount of nutrients in the bottom sediments that serve as food for the blue-green algae. Some practices to reduce nutrients include:

- Avoid applying fertilizer within 25 feet of the shorelines of water bodies.
- Keep lawn clippings out of storm drains and waterways that drain to lakes and rivers.
- Plant and maintain vegetative buffer strips between cropland and water bodies.

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