PUBLIC HEALTH
ALWAYS WORKING FOR A SAFER AND
HEALTHIER WASHINGTON

To report a blue-green bloom (cyanobacteria), call your local health department or Washington State Department of Ecology: 360-407-6000

For information on Ecology's Fresh Water Algae Control Program:
http://www.ecy.wa.gov/programs/wq/plants/algae/index.html

For information on applying for grants for algae management:
http://www.ecy.wa.gov/programs/wq/plants/algae/grants/index.html

For up-to-date information on preventive measures:
http://www.ecy.wa.gov/programs/wq/plants/algae/lakes/index.html

For additional help or information:
Washington State Department of Health
Office of Environmental Health Assessments
1-877-485-7316

For information on human health and toxic blooms:
http://www.doh.wa.gov/ehp/oehas/algae

For information on recreational beach closures, including lake and beach closures due to toxic blooms:
http://www.doh.wa.gov/ehp/ts/WaterRec/beach/default.htm

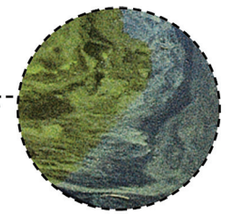
Washington State Department of Health
Division of Environmental Health
Office of Environmental Health Assessments

DOH Pub 334-136 8/2007

For persons with disabilities, this document is available on request in other formats. To submit a request, please call 1-800-525-0127 (TDD/TTY 1-800-833-6388).

TOXIC

BLUE-GREEN *algae* BLOOMS



If you . . .

- Are a lake resident
- Enjoy lake activities such as swimming, fishing, boating
- Graze your livestock near a lake or pond
- Are a veterinarian

. . . you may be able to help prevent a health threat to people and animals from toxic blue-green algae blooms.

In their toxic form, blue-green algae can kill pets, waterfowl, and other animals. They can also cause serious illness in humans.

You can help by:

- Learning how to identify and avoid contact with a bloom.
- Reporting algae blooms to your local health department or the Washington State Department of Ecology.
- Decreasing excessive amounts of nitrogen and phosphorus in lakes and streams.

What is a blue-green algae bloom?

Blue-green algae, or cyanobacteria, reproduce rapidly in fresh water when the amount of sunlight, temperature, and nutrients are adequate. Within a few days a "clear" lake, pond, or ditch can become cloudy with algae growth. This is called a bloom. Blue-green blooms usually float to the surface and can be several inches thick near the shoreline.

A blue-green algae bloom:

- Often looks like green paint floating on the water.
- Is made up of extremely small organisms that are hard to pick up or hold.
- Can be bright green, or bluish, brownish, or reddish green.
- Is most common in the summer and fall but can occur anytime.

Although blue-green blooms can create nuisance conditions and undesirable water quality, most blue-green blooms are not toxic.

What is a toxic bloom?

Some blue-green algae produce toxins or poisons. Eventually the toxins break down and are destroyed naturally. Ingesting the algae while they are still poisonous can cause serious illness. Residential drinking water taken from a lake may be affected.

Signs of a toxic bloom may include:

- Large numbers of dead fish, waterfowl, or other animals.
- Sudden, unexplained sickness or death of a cat or dog, especially if it has algae on its mouth, legs, or feet.
- Skin rashes on humans after being in the water.

What if I see a bloom?

As soon as you notice a bloom or possible signs of poisoning:

- Avoid all contact with water containing the algae.
- Keep pets and livestock away from the water.
- Call the environmental health section of your local health department or the Washington State Department of Ecology.

Laboratory tests of water samples can confirm whether or not a bloom is toxic.

What types of toxins are produced by cyanobacteria?

Several types of toxins may be produced, depending on the cyanobacteria genera.

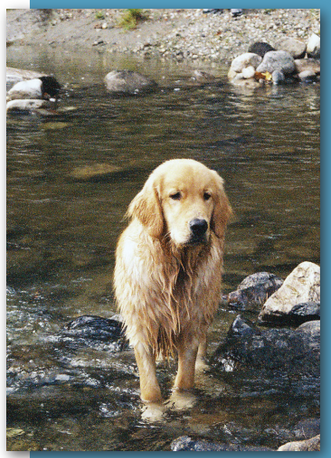
- Neurotoxins target nerve synapses or axons in mammals. Symptoms of neurotoxins may include muscle cramps, twitching, paralysis, cardiac failure, or death in animals.
- Hepatotoxins target the liver in mammals. Symptoms of hepatotoxins may include nausea, vomiting, or acute liver failure.
- Other toxins include irritants that may affect the skin, GI tract, or any exposed tissue.

What happens if a test is positive for toxicity?

If a test shows that a bloom is toxic, county health officials will decide whether to close the lake for recreation, post notifications of potential health concerns, or wait for further testing.

Can testing ensure that all areas of the lake are safe?

No. Cyanobacterial blooms are known to be very patchy in nature. It is possible for higher cyanobacteria densities to be present in areas not surveyed, particularly along shorelines. Recreational users should avoid contact with water whenever surface concentrations of algae are evident or when the lake has an obvious green to blue-green appearance.



Contact With Blue-Green Algae Can Be Poisonous

- **Blue-green algae can produce nerve toxins and liver toxins. Call your doctor or veterinarian right away if you or your pets or livestock have signs of poisoning.**
- **Signs of neurotoxin poisoning appear within 15–20 minutes after ingestion.**
  - **In animals, signs include weakness, staggering, difficulty breathing, convulsions, and death.**
  - **In people, signs may include numbness of the lips, tingling in fingers and toes, and dizziness.**
- **It may be hours or days before signs of liver poisoning appear. Liver toxins can cause abdominal pain, diarrhea and vomiting in humans and death in animals.**

How is it determined when the water becomes safe once a bloom is reported?

Washington State Department of Health guidelines advise that a lake continue to be sampled and tested once a week for toxicity after toxin levels are above a certain concentration. Recreational use should be avoided until levels drop below recommended guidelines. Local health officials will decide when to re-open the lake.

Can I eat fish from cyano-bacteria contaminated water?

Microcystins can accumulate in fish tissues, especially in the liver, kidneys and other organs. Exercise caution when considering consumption of fish caught in a water body where major cyanobacteria blooms occur. Before eating, remove the internal organs, which may contain more of the algae/toxin.

What can I do about it?

Algae blooms are likely to occur during sunny, calm weather when high concentrations of nutrients are present in the water. Two important nutrients algae require for growth are phosphorous and nitrogen. These are found in animal and human waste (sewage) and in fertilizers. Excessive amounts of nitrogen and phosphorus may lead to "nutrient loading" in a lake, which may eventually lead to an algae bloom.

To help decrease nutrient loading:

1. Maintain or restore native plants around lake shorelines and streams that feed the lake. Native wetland plants help filter water and do not require pesticides or fertilizers for maintenance.
2. Be cautious with lawn and plant fertilizers and pesticides. Do not over-water, overfertilize, or use more than the recommended amount of pesticides.
3. Use proper care and maintain your septic system. Damaged septic systems are a source of nutrient loading into nearby water. Have your system pumped and inspected every 3–4 years.
4. Prevent surface water runoff from agricultural and livestock areas. Do not allow livestock to drink or defecate in streams or lakes. Do not feed waterfowl.
5. Take steps to prevent erosion around construction and logging operations. Erosion can carry nutrient-rich soil into nearby lakes.

PRINTING SPECIFICATIONS

Title:	**Toxic Blue-Green Algae Blooms**
Size:	14 x 8.5
Paper stock:	70# text Sterling dull white
Ink color:	4-color process
Special instructions:	2-sided printing with full bleeds. Finished job folds to 3.5 x 8.5
DOH Pub #:	334-136