

**CYANOBACTERIA (BLUE-GREEN ALGAE) BLOOMS**

When in doubt, it's best to keep out!

**What are cyanobacteria?**

Cyanobacteria, also called blue-green algae, are microscopic organisms found naturally in all types of water. These single-celled organisms live in fresh, brackish (combined salt and fresh water), and marine water. These organisms use sunlight to make their own food. In warm, nutrient-rich (high in phosphorus and nitrogen) environments, cyanobacteria can multiply quickly, creating blooms that spread across the water's surface. The blooms might become visible.

**How are cyanobacteria blooms formed?**

Cyanobacteria blooms form when cyanobacteria, which are normally found in the water, start to multiply very quickly. Blooms can form in warm, slow-moving waters that are rich in nutrients from sources such as fertilizer runoff or septic tank overflows. Cyanobacteria blooms need nutrients to survive. The blooms can form at any time, but most often form in late summer or early fall.

**What does a cyanobacteria bloom look like?**

You might or might not be able to see cyanobacteria blooms. They sometimes stay below the water's surface, they sometimes float to the surface. Some cyanobacteria blooms can look like foam, scum, or mats, particularly when the wind blows them toward a shoreline. The blooms can be blue, bright green, brown, or red. Blooms sometimes look like paint floating on the water's surface. As cyanobacteria in a bloom die, the water may smell bad, similar to rotting plants.

**Why are some cyanobacteria blooms harmful?**

Cyanobacteria blooms that harm people, animals, or the environment are called cyanobacteria harmful algal blooms. Harmful cyanobacteria blooms may affect people, animals, or the environment by:

- blocking the sunlight that other organisms need to live. Cyanobacteria blooms can steal the oxygen and nutrients other organisms need to live.
- making toxins, called cyanotoxins. Cyanotoxins are among the most powerful natural poisons known. They can make people, their pets, and other animals sick. Unfortunately, there are no remedies to counteract the effects.
- You cannot tell if a bloom has toxins by looking at it.

**How can people and animals come in contact with cyanobacteria and cyanotoxins in the environment?**

People and animals can come in contact with cyanobacteria and cyanotoxins that are in the environment by:

- drinking water that comes from a lake or reservoir that has a cyanobacteria bloom.
- Swimming or doing other recreational activities in or on waters that have cyanobacteria blooms.

**How do I protect myself, my family, and my pets from cyanobacteria blooms?**

To protect yourself, your family and your pets from cyanobacteria blooms:

- Don't swim, water ski, or boat in areas where the water is discolored or where you see foam, scum, or mats of algae on the water's surface.
- Do not allow children or pets to play in or drink scummy water.
- If you do swim in water that might contain harmful cyanobacteria, rinse off with fresh water as soon as possible afterward.



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**WWW.WEQUAQUETLAKE.COM**



- Don't let pets or livestock swim in or drink from areas where the water is discolored or where you see foam, scum, or mats of cyanobacteria on the water's surface.
- If pets, especially dogs, swim in scummy water, rinse them off immediately. Do not let them lick the cyanobacteria off their fur.
- Report any "musty" smell or taste in your drinking water to your local water utility.
- Follow any water-body closures announced by local public health authorities.

**Why do dogs get sick more often than people from cyanobacteria blooms?**

Dogs will get in a body of water even if it looks or smells bad, including when it contains cyanobacteria. Dogs are also more likely to drink the contaminated water.

**How are people or animals that have been exposed to cyanobacteria toxins treated?**

- If you or your pet comes in contact with a cyanobacteria, wash yourself and your pet thoroughly with fresh water.
- If you or your pet swallow water from where there is a harmful algae bloom, call your doctor, a Poison Center, or a veterinarian.
- Call a veterinarian if your animal shows any of the following symptoms of cyanobacteria poisoning: loss of appetite, loss of energy, vomiting, stumbling and falling, foaming at the mouth, diarrhea, convulsions, excessive drooling, tremors and seizures, or any other unexplained sickness after being in contact with water.

**How can you help reduce cyanobacteria blooms from forming?**

To help reduce cyanobacteria from forming:

- Use only the recommended amounts of fertilizers on your yard and gardens to reduce the amount that runs off into the environment.
- Properly maintain your household septic system.
- Maintain a buffer of natural vegetation around ponds and lakes to filter incoming water.

**Is there testing for cyanobacteria toxins?**

Yes, but the testing is specialized and can only be done by a few laboratories. Scientists are working to develop toxin test kits for water resource managers and others.

**What is CDC doing to address concerns about cyanobacteria blooms?**

The Centers for Disease Control and Prevention (CDC) is working to understand and prevent the health effects associated with cyanobacteria blooms by:

- Conducting surveillance on human and animal illnesses that are associated with exposures to cyanobacteria blooms in recreational and drinking waters.

For more information on cyanobacteria, visit <https://www.cdc.gov/nceh/habs/general.html>

**For information on animal health and safety:**

Veterinarian reference card - [https://www.cdc.gov/habs/pdf/habsveterinarian\\_card.pdf](https://www.cdc.gov/habs/pdf/habsveterinarian_card.pdf)

Animal Alert flyer - [https://www.cdc.gov/habs/pdf/algabloom\\_tall\\_card.pdf](https://www.cdc.gov/habs/pdf/algabloom_tall_card.pdf)

Animal Alert poster - [https://www.cdc.gov/habs/pdf/algabloom\\_poster.pdf](https://www.cdc.gov/habs/pdf/algabloom_poster.pdf)

**For information on human health and safety:**

Physician reference card - [https://www.cdc.gov/habs/pdf/habsphysician\\_card.pdf](https://www.cdc.gov/habs/pdf/habsphysician_card.pdf)

**For more information on cyanobacteria blooms:**

Call CDCInfo: 800-CDC-INFO (800-232-4636)

or Contact your local or state health department <https://www.cdc.gov/mmwr/international/retires.html>

or Call the Poison Information Center (800-222-1222)

FALL / WINTER 2019



**WEQUAQUET LAKE**  
PROTECTIVE ASSOCIATION, INC.

People that care about Lake Wequaquet

A Word from the President



Hi All,

It was a tough thing having beach closings all around the lake. Many thanks to the directors and members who worked to educate Town Councilors about how serious the situation has become. Over 800 people signed a petition requesting that the lake get sewer pipes installed earlier than phase 2. Many came to a Town meeting to speak on the subject. Directors have had several extra meetings to discuss strategies that might most improve lake water health. Directors have met with Town Personnel to discuss the problem. We have sent post cards to the membership and some members have broached their neighbors to educate about the harm fertilizer causes to the lake. Thanks to the members who wrote letters to Town Councilors. Enjoy the holidays and have a safe winter.

All the best, Mike Falkson

Town Health Department Tests reveal that our lake water is in serious decline Summer 2019 produced a Series of Warnings and Closures

2019 Water Testing by Town of Barnstable Board of Health

Wequaquet Test Sites					
Date of Report	Bearse	Gooseberry	Wequaquet Heights: Jimmie's	Town Beach	Yacht Club
6/20/2019	Closed		Pet	Pet	
7/1/2019	Closed		Pet	Closed	
7/2/2019	Warning	Pet	Pet	Warning	Pet
7/10/2019	Warning	Pet		Closed	Closed
7/12/2019	Warning	Pet	Pet	Closed	Closed
7/16/2019	Warning	Pet		Closed	Warning
7/17/2019	Warning	Pet		Closed	
7/22/2019	Pet	Pet		Pet	
7/24/2019	Pet	Pet		Pet	
7/26/2019	Pet	Pet		Pet	
7/30/2019	Pet			Pet	
8/5/2019	Pet			Pet	
8/7/2019					
8/14/2019					
8/21/2019		Pet			
8/28/2019		Pet			
9/4/2019		Pet			
9/9/2019					
9/18/2019					
9/23/2019					

**Definitions:**  
**Pet Advisory:** Toxic cyanobacteria are present < 20,000 cells per ml. Cyanobacteria may have not collected into a film on the surface. Pond shows slight discoloration, but you can see through the water. Low to minimal health risk to people. Higher risk for pets.  
**Warning:** Toxic cyanobacteria may have started to collect and form a film on the surface > 20,000 cells per ml. Pond shows slight to moderate discoloration, but you can see through water, but water is cloudy. Low to moderate health risk for people. Higher risk for babies and small children. Higher risk for pets.  
**Closure:** Toxic cyanobacteria have collected and formed a scum or thick film on the surface (looks like soup or paint) > 70,000 cells/ml and Microcystin (toxin) > 10ppb. Pond shows moderate to extreme discoloration. Moderate health risk for adults. Higher risk for babies and small children. Highest risk for pets.

AREA TESTING SITES



This map shows the beaches and sites around Wequaquet, Bearse, and Gooseberry that are tested for cyanobacteria by the Barnstable Health Division biweekly during the summer months. Testing is increased to weekly when water problems are indicated.

Status of Lake Water at Test Sites

Go to the Town of Barnstable Website at:  
<https://www.townofbarnstable.us/Department/healthdivision>

Go to the Association for the Preservation of Cape Cod Interactive Map at:  
<https://www.apcc.org/cyano/>

Pet advisories, Warnings, and Closures of all Barnstable Beaches are listed

Test results for cyanobacteria in all Cape Lakes are posted.

# Town Officials Answer Questions At 26th Annual Meeting ~ June 8, 2019

Excerpts from WLPAs Secretary Mary Ann Anthony's Minutes

**Attendance:** There were 51 members, 4 officers, and 5 Town Officials present

**Call to Order:** President Michael Falkson called the meeting to order and introduced the Town Officials who were present: Police Chief Matthew Sonnabend, Natural Resource Officer Chris Nappi, Town Councilor Eric Steinhilber, Assistant Harbormaster Brian Taylor, and Public Works Director Dan Santos, who would be the guest speaker. The Town Officials were invited to address the membership and take questions from the floor, as follows:

- **Eric Steinhilber** spoke first. He mentioned that the operational budget for the town was finished and work was already begun on the next year's budget. He invited members to call him with concerns and observations needing his attention.
- **Chief Sonnabend** urged members to call when issues arise because his is a public service office. The police lake boat is in the water, moored at Paul Canniff's dock, which allows easier and quicker access to lake patrols than the town beach provides. Frank Ward mentioned that the WLPAs had mailed refrigerator magnets, with the phone number to call for lake safety issues.
- **Chris Nappi** said he manages the herring runs in town to facilitate spawning and get the herring numbers to rebound. Wequaquet Lake presents a large area for them to spawn in, but the population is not as high as it should be. His responses to some questions:

**The herring run:** the herring run is cleaned out every week. The tree and brush canopy is intentionally left there to protect against predators. The herring swim underneath it. Wequaquet has counted only several hundred herring this year in contrast to Santuit River which is the most populated run at close to 2,500.

**Coyotes:** Hayes Rd is a popular spot for coyotes. They communicate by howling. Coyotes naturally fear humans. Don't feed them, and take down bird feeders, which attract rodents that coyotes feed on. You can shake keys or a coffee can full of washers to make noise to scare them off.

**Status of bald eagles:** they are rebounding on Cape Cod. They are in Barnstable and elsewhere on the Cape, and may be nesting on or near Wequaquet.

**Wild Turkeys:** turkeys were over-hunted for years, and have now rebounded. The population has exploded on the Cape. They learn to fly within two weeks, and roost in trees at night. Take in birdfeeders in the spring to discourage them from hanging out in your yard.

**Canada Geese:** they can be aggressive at times. Waterfront properties can install a low fence to deter them from soiling the lawn. Don't encourage them by feeding them.

- **Brian Taylor** described his job as being responsible for all aids to navigation in the town. As far as the lake goes, he issues permits for moorings and places the buoys in the lake, often in conjunction with the WLPAs Board. The WLPAs purchased several new buoys, with chain and anchors, last year and again this year, to replace old ones. If members have suggestions about locations for warnings to navigation, the Harbor Master, or he (Brian) will work with them. He also wants to know about hazards to navigation, such as floating docks, loose water craft, and other dangerous debris. Those wanting to install a mooring outside a designated mooring field should get an application at the Harbor Master's office. Bass tournaments and their intrusion into swim areas were also raised as issues, and Brian stated the regulations for speed and distance from shore boats must be observed. Report any unsafe boating by bass fishermen, or others.
- **Eric Steinhilber** said that the scheduled Bearse's Pond fanwort treatment with Sonar was paused because of growing concerns about water quality in Barnstable, and the possible effects of the herbicide on groundwater and drinking water supplies. Other possible remedies for fanwort are being investigated, including hand pulling it, the so called DASH method.

**Guest Speaker:** Director of Public Works for the Town of Barnstable updated the membership on the town's plans for waste water treatment. He said the current town council is very interested in public works programs, especially sewage and wastewater solutions, and in identifying funds to make it possible. Mr. Santos displayed a chart that describes the proposed three phases of sewerage over a 60 year period, (see map to the right: red is phase 1, first 20 years; yellow is phase 2, next 20 years; and blue is phase 3, final 20 years) as defined in the "208 plan" through the Cape Cod Commission. The three phases are prioritized by the urgency of ground water quality in the watersheds.

Coastal water-way quality is driven mostly by nitrogen pollution, while inland fresh water bodies are affected more by phosphorus pollution. In each phase of the plan the town will need to remove and replace each and every septic system with public sewers and water treatment capacity. There are 3 ways to solve water treatment issues: septic systems, traditional sewerage, and alternatives, such as new septic/treatment systems that address nitrogen, e.g. permeable walls between the nitrogen source and ponds, rivers and estuaries.

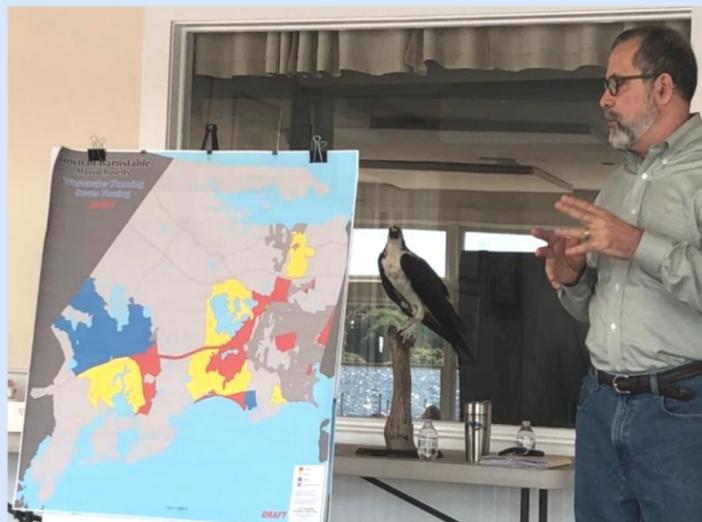
Cost is also a question. How much will be borne by taxpayers? The town has a variety of options for funding. There will be public meetings and town council meetings as time goes on.

The town is working on a plan that will then go to the DEP and Cape Cod Commission. Mr. Santos anticipates that they will approve and support the plan.

The majority of the lake is likely to be seweraged at least 20 years out. The red areas on the chart are prioritized vs yellow areas, because they are generating nitrogen that goes into the Centerville River, and thence directly into the coastal water.

Storm water is a source of contaminants, and the town is now moving to treat it. He will look into whether the storm drain on Pleasant Pines Ave. drains directly into the lake. Asked about the rain garden at Holly Point, he said it was installed by the Conservation Commission. It is useful for storm water treatment to capture contaminants and attenuate them. However it mitigates contaminants only in the "first flush" of rainwater, and in a heavy downpour can be overwhelmed. It is not expensive to install, perhaps a few thousands or so.

Frank Ward thanked Mr. Santos for providing the update, and opined that if families around the lake want to become more vocal and actively involved in the politics of the waste water issues it could be possible to move the sewer question forward.



# How to Prevent Fertilizer Runoff

Co-authored by Lauren Kurtz, Horticulturist  
Updated: July 8, 2019

Explore this Article:  
Practicing Sustainable Gardening Related Articles References

When chemicals and nutrients from fertilizer run into water sources like lakes and streams, they can cause a lot of damage to the environment. Runoff can harm the delicate water ecosystems in your area, which can lead to less wildlife and plant diversity in your town. To prevent fertilizer runoff, you can manage your home landscaping by practicing sustainable gardening and planting filtering plants.

How do you prevent fertilizer runoff?  
STEPS

1. Use phosphorus-free fertilizer. Most fertilizer bags will have a ratio of nitrates-phosphorus-potassium printed on the outside of the bag.
2. Clean up grass, leaves, and other yard debris. ...
3. Use a fertilizer with slow-release granules. ...
4. Apply half of the recommended amount of fertilizer. ...
5. Clean up your pet's waste.

Practicing Sustainable Gardening

1

**Use phosphorus-free fertilizer.** Most fertilizer bags will have a ratio of nitrates-phosphorus-potassium printed on the outside of the bag. Look for a number like 32-0-25, where the middle number, denoting phosphorus content, is zero.<sup>[1]</sup>

Phosphorous is the largest source of concern when it comes to controlling fertilizer runoff, because it's dangerous to aquatic plants and wildlife.

2

**Clean up grass, leaves, and other yard debris.** It's especially important to avoid getting yard debris in the road because most drains in the road lead to major water sources like streams and rivers. Keep grass clippings and leaves in the yard, raking them into a pile for later disposal.<sup>[2]</sup>

Some cities and towns will pick up yard debris for recycling or disposal, or you can drop it off at designated locations. Check your town's specific rules regarding yard waste disposal.

Make sure you follow all parameters for yard waste disposal, which may include using a specific type of bag for your clippings or bundling larger debris for easy transportation.

3

**Use a fertilizer with slow-release granules.** This will prevent you from having to fertilize the garden every month. Instead, you'll be able to apply the fertilizer every 6-8 weeks, potentially eliminating 3-4 applications every year.<sup>[3]</sup> These will also prevent your plants from getting too much fertilizer at once, which can be harmful to their growth and the surrounding soil.

4

**Apply half of the recommended amount of fertilizer.** A lot of runoff can be prevented by using less fertilizer. Apply it first to the perimeter of the area that you're fertilizing, and then go back in a horizontal striped pattern across the area.<sup>[4]</sup>

If you feel like this won't be enough, go back over and apply the fertilizer sparsely in perpendicular stripes.

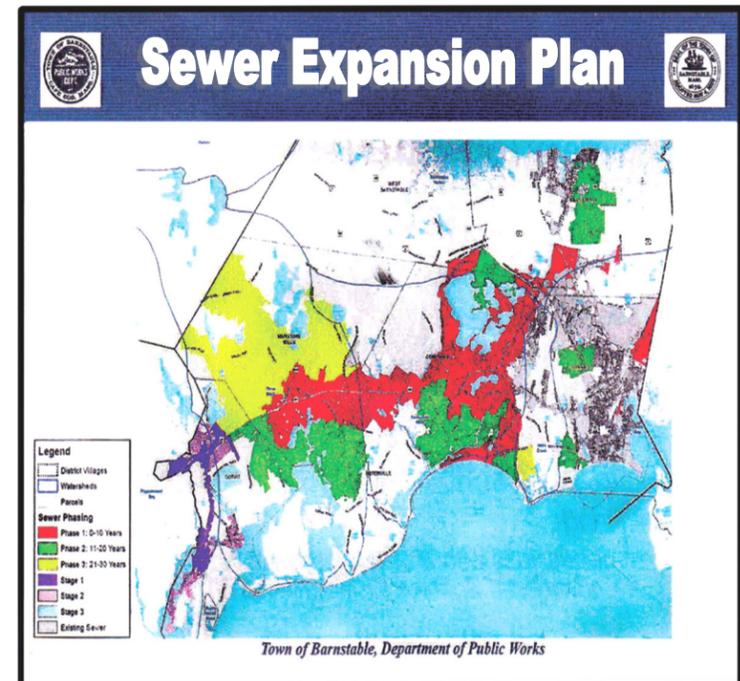
It's better to use too little fertilizer than too much, as plants and flowers will already receive some nutrients from the soil.

5

**Clean up your pet's waste.** Pet waste contains large amounts of phosphorus, the harmful chemical in some fertilizers. Always pick up and dispose of your pet waste properly in a waste bin to keep the nutrients from getting into a water supply.<sup>[5]</sup>

This is especially important to do in your yard and parks and public spaces to prevent runoff. If you don't pick it up, it can remain in the same place for a long time until the chemicals have seeped into the ground and water.

Keep your dog on a leash when it's going to the bathroom so you know exactly where its waste is.



The DPW has amended The Comprehensive Wastewater Management Plan to include additional portions of Lake Wequaquet in Phase 1 (red area).

## TAKE ACTION WHILE WAITING FOR PIPES IN THE GROUND

A cause of toxic bacteria can be excessive wastewater. Cape Wide, the lack of sufficient sewage treatment has become evident. Town managers plan to move forward on finalizing and financing a waste water plan. We *must* practice diligent stewardship by reducing or, better yet, dispensing with the use of fertilizer. Also, runoff areas need to be identified and remedied. Grants are offered to organizations wishing to fund storm water projects. Members familiar with grant writing, please contact a WLPAs Board Member. The reduction of fertilizer usage and remediation of runoff areas may slow the growth of cyanobacteria.

**\*\*Remember: It is illegal in the Town of Barnstable to dispense fertilizer within 100 feet of the lake.\*\***



## Bearse Pond Fanwort Treatment Update

Last spring, the Town allocated funding for herbicide treatment of fanwort in Bearse Pond. Later, the plans were changed because a moratorium was put on the usage of chemical treatments. The \$30,000 allocated for the sonar treatment was, instead, used to have fanwort hand pulled. There are no present plans for rescheduling chemical treatment in Bearse. The final reports from hand pulling of fanwort will need to be reviewed before the Town makes any decision concerning future treatment.