

Cyanobacteria are in Brickyard Pond: Is it Safe?



A photo at Volpe's Pond on Sept. 3, 2022, taken by Charles Paul



Brickyard Pond in early September 2021

By Charles Paul, Barrington resident and member of the Resilience & Energy committee

A recreational health advisory was issued last September for Brickyard Pond due to high levels of blue-green algae, also known as cyanobacteria. These cyanobacteria can, but do not always, produce and release toxins, the release happening especially as they die off. This was the first such advisory ever issued for a Barrington water body. Residents naturally question: Why did it happen? Will it happen again this year? How will we know? How was it controlled last year?

Cyanobacteria obtain their energy by photosynthesis, thus their green color. The name sounds exotic and dangerous, but in fact, cyanobacteria have been on earth before even fish and are present today almost anywhere there is water. We need them. It is estimated that they are responsible for as much as half of the photosynthesis in the open oceans, creating oxygen for fish and fixing nitrogen

from the atmosphere. Fortunately, cyanobacteria and their potential toxins do not normally create health issues for most of the population except when there is a bloom. This is when the trouble starts for us and is an indicator the water body is already in trouble. Blooms are often easy to spot and are something one would naturally avoid, looking like thick green paint or scum covering the water.

At high concentrations of cells or toxins, the cyanobacteria can cause irritation to skin and eyes, and, if ingested – diarrhea, nausea, vomiting. Who/what would enter a pond looking like these? Maybe your dog?

Brickyard Pond early last September was not this uniformly bad to the eye, but the unappealing picture below was taken by a resident and sent to the Department of Environmental Management which prompted their testing.

Brickyard Pond early September 2021

Clearly, the pond was not healthy – not just for us humans but for everything else in the pond that needs light or oxygen, including plants, fish, crustaceans. Brickyard pond has health issues, as do other ponds in Barrington, such as Prince's Pond (aka Tiffany Pond) and other lakes and ponds in Rhode Island. This is due to over-enriched conditions from human sources, i.e. fertilizer and stormwater runoff, and also from waterfowl. Brickyard Pond has been listed as impaired by the Rhode Island Department of Environmental Management for nutrients, specifically phosphorus, and dissolved oxygen, since 2002. The explosive growth of algae and

cyanobacteria blocks out light to submerged plants which die and sink to the bottom of the pond along with dead algae and cyanobacteria. All of this dead organic matter serves as food for non-photosynthetic bacteria at the bottom of the pond, which consume oxygen in the process – oxygen which fish and crustaceans depend on. The process is called eutrophication, and we are its cause.

Brickyard pond is much larger than other ponds in Barrington, such as Volpe, which appear in far worse shape, although Volpe has never been tested. Brickyard still serves as a herring run as does Echo Lake. Still, you may recall the carp die-off in 2017 at Brickyard. And if you have been to Brickyard recently, I think most would find it less than inviting. The water is green and cloudy. Let's help our ponds out of trouble by minimizing fertilizer runoff. Our town website has guidelines on responsible fertilization practices. Search "fertilizer" and the fact sheet will be found. Especially important for Brickyard Pond is to avoid using any phosphorous unless a soil test determines it is clearly needed.

Oh yes, how was the problem fixed last year? Can we just do that again? Cyanobacteria levels increase as the temperature rises and when the water remains stagnant so they can form colonies. Late summer is ideal for them. Their presence in Brickyard Pond was identified in early September during such conditions and was luckily unmeasurable by the end of September. I say

lucky because no action was taken by either the town or state. Rainfall in September 2021 was substantially above average, which presumably helped to mitigate and flush out the bloom.

Additional Resources:

Nadis S (December 2003). "The cells that rule the seas" (PDF). *Scientific American*. 289 (6): 52–53.

Rhode Island DEM's webpage for Integrated Reporting under the federal Clean Water Act: <http://www.dem.ri.gov/programs/water/quality/surface-water/integrated-water-quality-monitoring.php>



For the article



For the RI DEM's report



To see current advisories and report a suspected bloom



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