Saving Lake Pocotopaug

EVERBLUE LAKES

A CASE STUDY FOR WHOLE LAKE SOLUTIONS

Reversing decades of decline and eliminating toxic algae blooms through a natural approach to lake restoration.

Generations of Frustration

In the 1980s, overdevelopment around Lake Pocotopaug began to cause nutrient overloading and disrupt the natural balance of the lake. Once the algae blooms started, lake residents took action. And then they took action again. And again. But nothing seemed to stick. Over the course of twenty years, numerous costly treatments did nothing to stop the toxic algae in the lake and resources and patience began to wear thin. Conflict beset this community and, not long after that, apathy crept in alongside bad press and declining property values.

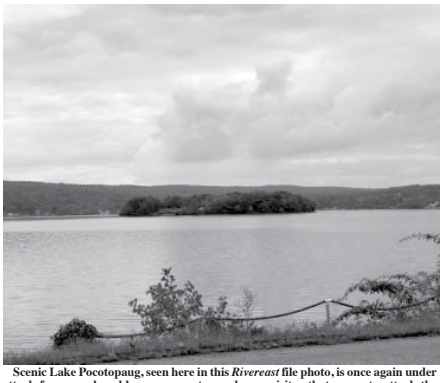
The community, now divided on their opinions about the causes of the lake's decline, was also split between those who had given in to frustration, and those who refused to give up. But as so often happens, the younger generation refused to let the status quo remain. They decided that Lake Pocotopaug, which had become the butt of jokes and no more than a headache, could actually be restored in their lifetime.

In 2018, Wes Jenks and Austin Cornelio formed a new group called the Lake Pocotopaug Project. Their personal commitment to this lake that their families have lived on for generations led to a new wave of community support and a new approach to lake restoration. After conversations with EverBlue Lakes, Wes and Austin brought EverBlue founder John Tucci to give a presentation to the East Hampton Lake Association.

P.O. BOX 373, GLASTONBURY, CT, 06033
POSTAL CUSTOMER LOCAL
U.S. POSTAGE PAID GLASTONBURY CITIZEN, INC. PRESORTED STANDARD

RIVEREAST
News Bulletin
Serving Amston, Andover, Cobalt, Colchester, East Hampton, Hebron, Marlborough, Middle Haddam and Portland

Volume 41, Number 13 | Published by The Glastonbury Citizen | July 29, 2016



Scenic Lake Pocotopaug, seen here in this *Rivereast* file photo, is once again under attack from an algae bloom – a most-unwelcome visitor that seems to attack the lake every summer.

Algae Bloom Rears Ugly Head

by Elizabeth Regan

It's the return of the unwanted summer visitor that has been plaguing residents on Lake Pocotopaug for at least 30 years: the algae bloom.

Public areas of the lake were under an advisory as of Tuesday due to potentially-unsafe water conditions, leaving it up to swimmers to decide if they should risk exposure.

The unsightly algae bloom is made up of potentially toxic bacteria that can multiply fast in hot and bright conditions where certain nutrients, such as nitrogen and phosphorous, are concentrated.

Toxins in the bloom can be harmful to the skin and liver. Low levels of exposure can cause skin irritation or nausea and diarrhea in humans and animals, according to the Department of Public Health. The agency cautions that swallowing relatively large amounts of tainted water can cause liver damage and nervous system effects.

Research cited in a 2011 report from the U.S. Environmental Protection Agency found that young swimmers ingest 60 milliliters of water during one hour of active play in the water.

A July 19 test of water samples from Sears Park Beach on Lake Pocotopaug showed the levels of blue-green algae were borderline high, but the levels of associated toxins were low.

Results from that test came in at 100,000 blue-green algae cells per milliliter. However, a test conducted a week later, on July 26, resulted in 51,000 cells per millimeter. The samples are sent to Northeast Laboratories in Berlin.

Why the steep drop in a week's time? Chatham Health District director Don Mitchell speculated Thursday it was perhaps due to there not being "a lot of major rainfall washing anything in" to the lake.

The state-recommended threshold for closing the public beaches is greater than 100,000 blue-green algae cells per milliliter, according to guidance published jointly by the state Department of Public Health and the Department of Energy and Environmental Protection.

The state guidelines were instituted in 2012 after a high-profile algae bloom in Bolton. But the recommended response plan is advisory only, as the state public health department does

See Algae Bloom Page 2

'Tis the Season for Lake Algae

by Elizabeth Regan

Public areas of East Hampton's Lake Pocotopaug are under a swimming advisory due to potentially unsafe water conditions resulting from the return of the annual blue-green algae bloom.

"Here we go again," said Chatham Health Director Don Mitchell.

The advisory means it's up to swimmers at the Sears Park beach and Schoolhouse Bay to decide if they should risk exposure in the potentially toxic lake.

"Unprecedented" blue-green algae blooms first appeared in Lake Pocotopaug almost 30 years ago and have been showing up every summer since, according to consultant George Knoecklein of Northeast Aquatic Research.

Toxins in the algae bloom can be harmful to the skin and liver. Low levels of exposure can cause skin irritation or nausea and diarrhea in humans and animals, according to the Department of Public Health. The agency cautions that swallowing relatively large amounts of tainted water can cause liver damage and can affect the nervous system.

The public warning has been in effect since last Friday, Aug. 4. The Chatham Health District is awaiting the results of the latest round of water testing, which are expected early next week, to determine if the advisory will continue or if the beach will be closed due to rising levels of toxic bacteria.

Blue-green algae can multiply fast in hot and bright conditions where certain nutrients, such as nitrogen and phosphorous, are concentrated.

For the past two years, the beach has been closed for three weeks in August due to blue-green algae levels. In 2014, the bloom arrived later in the season – just in time to close the beach for Labor Day weekend.

The current advisory only applies to the lake's public access points, according to Mitchell. He has said those who see algae formations similar to those present at the public beach can reasonably assume their area of the lake is also compromised.

Results came in at 97,000 blue-green algae cells per milliliter in a sample collected by the health district on Aug. 2. The state-recommended threshold for closing the public beaches is greater than 100,000 blue-green algae cells per milliliter, according to guidance published jointly by the state Department of Public Health and the Department of Energy and Environmen-

See Lake Algae page 2

Blue-Green Algae Blame Goes Around

loan Brewster

omeowners around Lake Pocotopaug can low-cost steps to reduce runoff from their erties.

question-and-answer session hosted by the Hampton Town Council last Thursday at Hampton High School gave concerned ents a chance to get information directly a host of experts familiar with the notori- impaired lake.

e community conversation came amid con- d accusations among town officials and ents about who is responsible for the lake's decline.

e cost to implement a comprehensive wa- ed management plan could range from t $1 million to $10 million, based on vari- estimates.

t some of the recommended improvements be accomplished without spending much ey by those who live near the lake, accord- officials.

ooms of cyanobacteria, or blue-green al- high levels of which have caused the clo- of the Sears Park beach for the past sev- years – thrive on nitrogen and phospho- according to officials. The nutrients are nt in typical lawn fertilizer.

hen speakers at the meeting asked why the town doesn't stop chemicals from running into the lake, Steven Trinkaus – a consulting engineer working for the town on low impact, sustainable development strategies – said part of the problem is that folks on the quest for luscious green lawns use more fertilizer than the soil can absorb. The excess lands in the water, feeding the problematic algae.

"I think everybody, including myself, is guilty," he said.

Trinkaus recommends a couple of ideas to prevent runoff. First, he said to read the label on fertilizer and follow the instructions.

"If the Scotts bag says five pounds to 1,000 square feet, you want to put the right application down," he said. "If you put down 10 pounds, the lawn can't absorb the added five pounds."

Any amount above what's recommended ends up in the lake, he said.

Trinkaus also recommends testing soil to determine what the soil needs versus taking "a one-size approach."

"Before you go to Home Depot or Lowes, test your soil to see what nutrients it lacks," he said. "If you are deficient in phosphorous, fine, then you buy a fertilizer that is giving you the necessary nutrients that you need. It's not giving you the nitrogen or nutrients that you don't need."

Jane Brawerman, executive director of The Connecticut River Coastal Conservation District that covers 26 towns including East Hampton, reiterated the need for testing in a phone call this week.

"You should always test your soil before you apply nutrients," she said.

Soil samples can be sent to the Soil Nutrient Analysis Lab at the University of Connecticut or the Connecticut Agricultural Experiment Station in New Haven, Brawerman said. The university charges a nominal fee for the tests and the experiment station will do them free of charge.

For more information on testing through UConn, visit www.soiltest.uconn.edu. For information on the experiment station, visit https://tinyurl.com/y5yvvnn7.

Savvy homeowners can also do the testing themselves, according to Trinkaus. He said testing kits are available online through Forestry Suppliers, formerly known as Ben Meadows.

Trinkaus also recommended that lakefront homeowners consider creating a buffer area between their lawns and the lake. Depending on the size of the lawn, the area can be any-

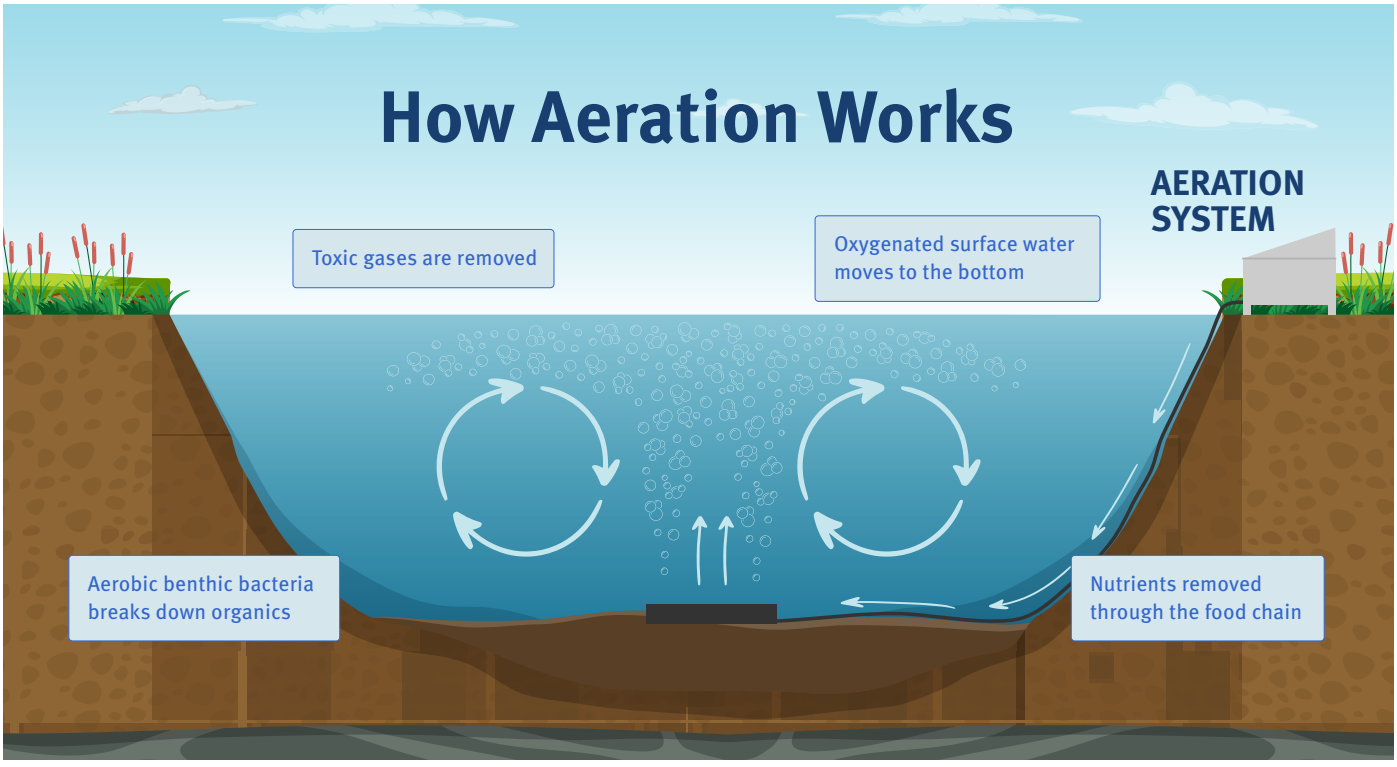
See Affordable Options page 2

The EverBlue Lakes Approach

The lake community appreciated and ultimately approved of the EverBlue Lakes ethos: A natural solution powered by cutting-edge technology. EverBlue Lakes combines large scale lake aeration with natural, proprietary blends of enzymes and benthic bacteria that break down toxic chemicals and restore the lake to its natural balance. We don't believe in quick fixes or 'maintenance-free' promises, but our positive results happen quicker than you might expect. In this case, our program kept the lake open all summer long for the first time in decades in 2020.

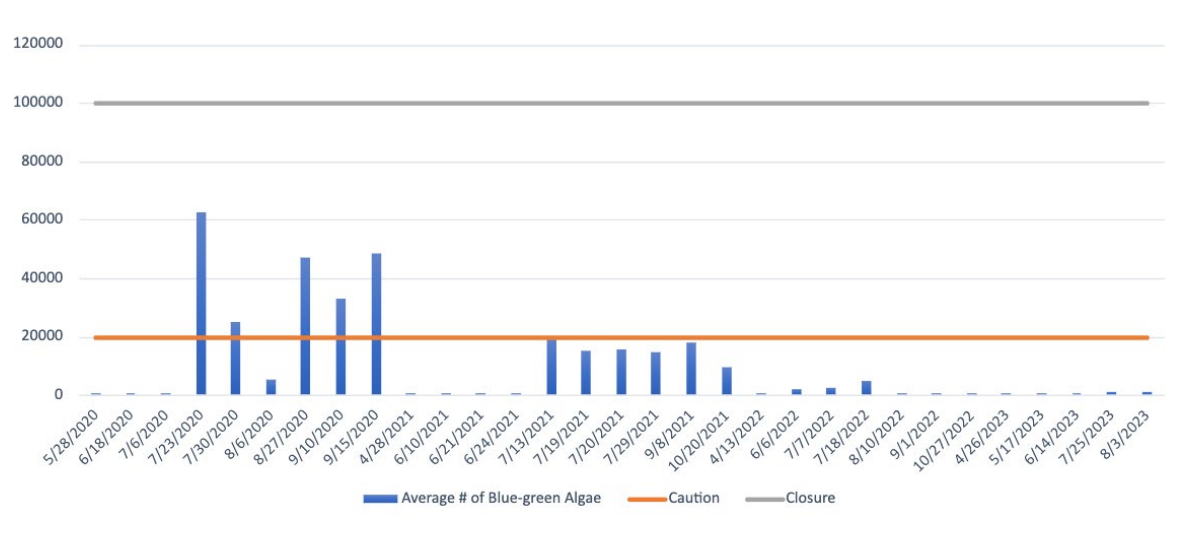
We are proud to say that the beaches of Lake Pocotopaug have remained open for three out of the last four seasons (2020-2023) with a brief closure in 2021— the worst watershed loading year in decades.

Our performance based contract ensures that the residents of East Hampton can enjoy this valuable community resource now, as the program continues to work in the background, and reverse decades of decline. But don't just take our word for it. Review the data to see our measures of success.



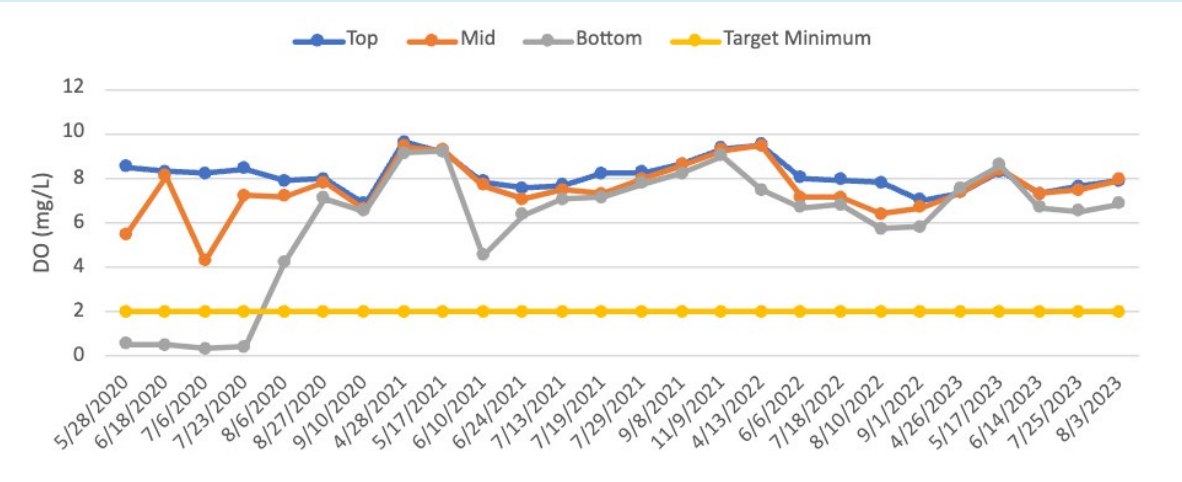
DIVE IN TO THE DATA

Blue-Green Algae Improvement



Blue Green Algae: Toxic blue green algae aka cyanobacteria is harmful to people and pets. As this graph shows, the data demonstrate steadily **decreasing** levels of blue green algae from 2020-2023.

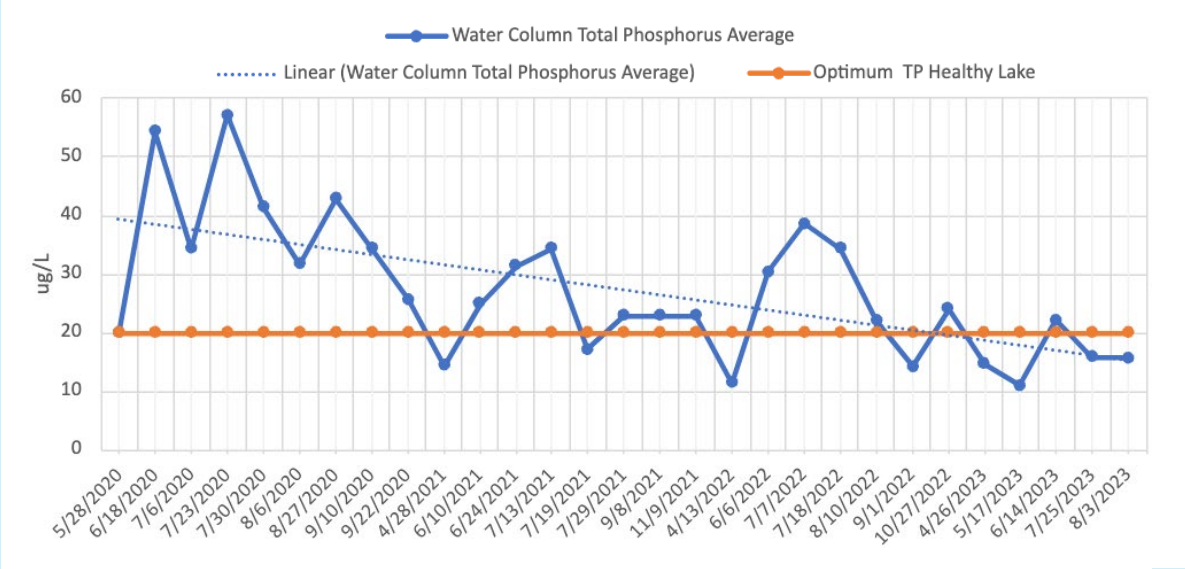
Dissolved Oxygen Improvement



Dissolved Oxygen: This graph shows dissolved oxygen (DO) levels at the top, middle, and bottom of the lake — often called the water column. It shows how aeration **increases** DO levels at the bottom of the lake to above the target minimum and brings the measurement in harmony with the rest of the lake. Dissolved oxygen is one of the most important factors in overall lake health, especially at the bottom of the lake. Without dissolved oxygen at the bottom of the water column, the natural decomposition organisms that live in the sediment cannot grow, thrive, and adequately complete the natural cycles of a healthy lake.

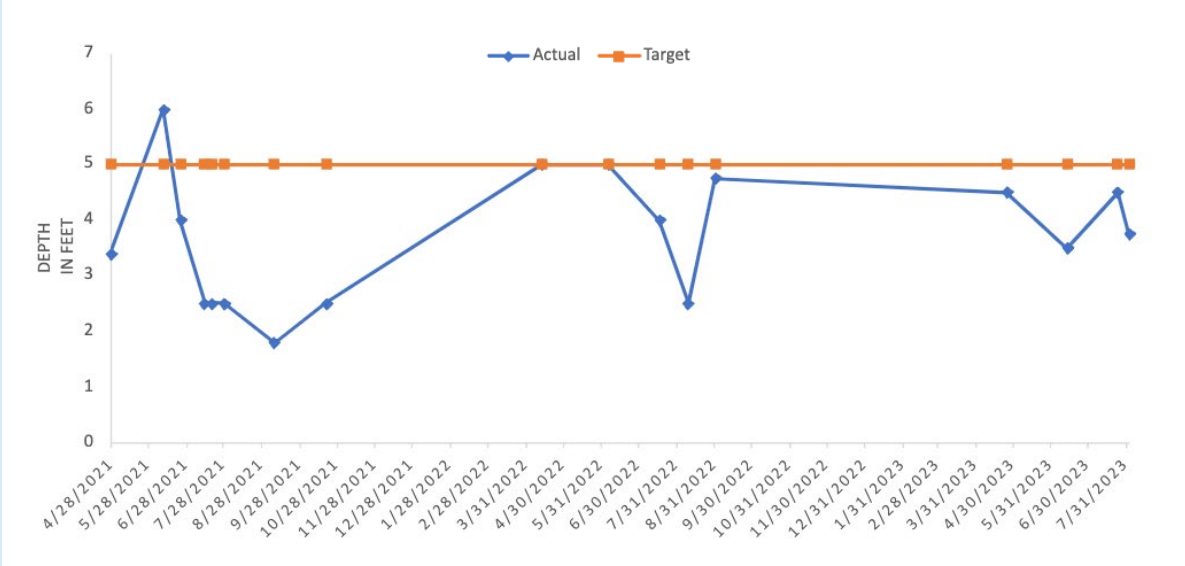
DIVE IN TO THE DATA

Phosphorus Improvement



Total Phosphorus: This graph demonstrates a trend of **decreasing** average phosphorus in the Lake Pocotopaug water column. As you can see, before treatment, Lake Pocotopaug had crisis levels of phosphorus which fueled algae blooms. Over the course of the treatment, levels were consistently lowered, although spikes still occurred in the summer. The decreased levels of phosphorus and the elimination of deadly algae blooms resulted in open beaches and safer, healthier lake ecosystems.

Average Water Clarity



Water Clarity: Average water clarity is measured in how many feet you can see down. So, higher is better. This metric is slowly trending **upwards**, but water clarity remains an area for improvement as we continue the treatment program. As one resident remarked, "When I was a kid, we could see all the way to the bottom of the lake."

Reversing Decades of Decline

With the EverBlue Lakes approach, this community broke a 20-year cycle of toxic algae blooms. Now, residents enjoy the lake every summer and feel comfortable swimming and fishing as their parents and grandparents did. This community often takes to their personal social media accounts and their dedicated Facebook group to share how much the lake has improved and how happy they are with the program. Even the local newspaper published an article commenting on the lake's increased health.

"Thank you to everyone who is involved with the lake efforts. We would never have been able to swim this time of year in the past. My children used to get rashes, yesterday evening was beautiful."

– Erika Tucker

East Hampton • East Hampton • East Hampton • East Hampton • East Hampton • East Hampton • East Hampton • East Hampton • East Hampton • East Hampton

Lake Pocotopaug Seeing Better Days

By London Brazal

A three-part strategy of prevention, remediation and education has aided several organizational efforts to keep Lake Pocotopaug open for the summer. In the past, the lake has closed due to blue-green algae outbreaks, but now it appears to be "green-free" and clearer than it's been in decades.

Numerous organizations have coordinated their goals to ensure the continuous improvement of the lake. These groups include the Friends of Lake Pocotopaug, Lake Pocotopaug Project, Lake Smart, and Save Lake Pocotopaug Coalition. As well as town efforts from the Conservation Lake Commission (CLC), Town Council, and Board of Finance. EverBlue Lakes, which touts itself as "a natural alternative to chemical treatment" for lakes, has been brought in to help with treatment. And a new limnologist company, GZA Geo-environmental, will be brought on soon.

The Save Lake Pocotopaug Coalition began with Robert Yenkner knocking on his neighbors' doors to gauge interest in helping the lake. "Naturally, what came back was everyone pretty much had an invested interest in having the lake be healthy year-round," Yenkner said. At that time, he described the Lake Commission as "inactive" and "lame ducks;" dissimilar to how the Conservation Lake Commission has been in more recent years.

In research, CLC vice chair Jack Solomon, and EverBlue Lakes have measured levels of bacteria, phosphates and nitrates in the lake. Results, provided by Robert Yenkner, show a decrease in phosphorous levels, a decrease in blue-green algae cells per milliliter, and an increase in oxygen levels. Ultimately, "we are currently at the lowest risk for an algae bloom in the last 20 years," Yenkner said.

As part of the education strategy, the Friends of Lake Pocotopaug and CLC created the Lake Smart Award Program. Grants for the program are given to property owners on the lake or the surrounding watershed area that comply with Lake Smart Guidelines. Per the Lake Commission, members will visit the home to "review the Lake Smart Guidelines while making suggestions specific to the yard being evaluated." This encourages homeowners to make property improvements that help prevent negative drainage such as phosphates and nitrates into the lake.

The Lake Pocotopaug Project nonprofit was started in 2018 by Wesley Jenks and Austin Cornelio to help spread public awareness and research. On its website and Facebook page, the organization provides areas of concern, current projects, applicable resources, and scientific information. Jenks, who has also served on the CLC for more than 10 years, provides videos to update the community on what is happening on the commission level.

John Tucci, president and founder of EverBlue Lakes, saw a publication of Jenks' discomfort with the Town Council and the problems with the Town Hall project's runoff. Tucci's company works across the country to offer solutions to blue-green algae and invasive weed problems. After hearing about the issues surrounding the lake and town, Tucci reached out to the Lake Pocotopaug Project. This summer marks the fourth season with EverBlue Lakes.

Various organizations coordinate their efforts to keep Lake Pocotopaug open and cleaner than ever.

As remediation, 56 aerators were installed in the spring of 2020 to increase oxygen levels. A BioBlast water treatment process that uses naturally occurring microbes that eat blue-green algae has also been used. Currently, the Conservation Lake Commission is working with a company out of Cape Cod that conducts testing of their bacteria-absorbing "sponges" used in the oil industry.

Since collective efforts started to form in 2019, 21 projects have been completed and more are in the planning stages. Prevention projects are aimed to help minimize runoff before it gets into the lake.

"What we're doing behind the scenes that people don't see is using grant money and town capital to do a lot of the watershed infrastructure projects making the water filter better before it gets to the lake," Jenks said.

With his nonprofit, they make graphics to help visualize what is happening and so that people understand improvements are occurring.

Though there have been concerns about the processes, the collaborating organizations are available to provide their research and explain further.

"At the end of the day, you can't argue with success," Yenker added. "The lake has not been closed."

As Lake Pocotopaug remains open this summer, conservationists are asking people in the watershed area to be mindful of what products they use in their backyard.

"Look up whether their property is in the watershed area," Jenks said. "There are maps available online and if you are, be conscientious of what you do on your property because eventually it will make its way into the lake."

"Even after all that rain the lake is still crystal clear!"

– Angela Cornelia

Lake Pocotopaug has become a source of natural beauty and pride for the residents. With budding photographers traveling to capture the sunrises and sunsets around the lake, it has even become a source of inspiration— when only a few years ago it was a source of endless frustration. That is the power of an ecosystem in balance, and the power of the EverBlue Lakes approach to restoration.

"Couldn't ask for a more perfect weather day at the lake today. In the water could seet 3 ft down to my feet even with some waves, so nice for the end of July."

– George Worralliiv

What Happens Next?

As we continue our performance-based contract with the community of East Hampton, we will continue to monitor lake health indicators, educate local residents, and work together to mitigate the causes of nutrient overloading. After breaking the cycle of apathy and frustration by turning this lake around, we're excited to implement even more innovative approaches and new technology to continue to improve the overall water clarity in the lake. We are confident that in partnership with the local community we can save this lake, whatever it takes.

EVERBLUE LAKES

Keep Lakes Natural

Contact EverBlue Lakes
Call: (269) 383-3400
Email: info@everbluelakes.com
everbluelakes.com/save-your-lake/