



Lake Waramaug Task Force, Inc.

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The lake Waramaug Task Force is a non-profit scientific and educational organization dedicated to maintaining and preserving the ecology and water quality of Lake Waramaug and its watershed.

Dear Friends of Lake Waramaug:

Summer 2018

The beauty of our surroundings never fails to uplift my spirit. How fortunate are we all to enjoy the benefits of a clean, clear and swimmable lake.

We can't thank you enough for all the support you have provided over the years to get us to this point.

As our long awaited spring arrives, I am happy to report that the state of the Lake is good.

- We turned our four aerators on mid-May, and recent testing of the Lake's oxygen and temperature documents our extensive in-lake aeration systems continue to improve water clarity. We are averaging 9 feet as of this writing.
- The results from our annual testing for the presence of naturally occurring cyanobacteria in the Lake indicates it continues to decline year over year — as evidenced in the chart in our Clean Water Corner on page 4.
- Even more satisfying, our spring invasive weed survey indicates our decision to bite the financial bullet and double down on our suction harvesting and hand pulling program was a success. Our efforts have kept the growth of Curlyleaf Pondweed at bay without the use herbicides. Our divers report populations have diminished where extensive pulling was concentrated.

We continue to work on our Zooplankton Farm — which releases millions of hungry, algae-eating microorganisms into the Lake each week. Our complimentary Water Quality Planning Assistance Program for landowners planning construction and landscaping projects near the lake is proving effective. Several property owners have installed some beautiful — and Lake beneficial — buffer plantings as a result. Others are now aware of the importance of keeping their catch basins clean. Our agreement is in place with Tanner Farm to end the farm's dairy operation, which will minimize harmful Lake water pollution and nutrient runoff. The farm plans on converting to a hay operation.

Our Executive Director, Sean Hayden, continues to expand our community outreach. He and Kelsey Sudol, our summer research assistant, hosted several classes for the Warren Elementary School at our Zooplankton Farm. Sean will also be hosting an invasive weed identification seminar on June 28, and a State of the Lake talk at the Gunn Museum on August 9.

All this is good news. But this good news does not call for complacency. Development, erosion, a warming climate and toxic runoff present ever increasing challenges. As challenges mount, we must do more. Our costs have increased dramatically. In 2016, expenses in our three major programs: 1) in-lake systems, 2) invasive plant control, and 3) watershed programs have exceeded \$230,000. In 2017, they exceeded \$280,000. In 2018, we project operating expenses to hit \$300,000.

Please contribute, and allow us to continue and intensify our lake saving programs.

Best,

Molly Butler Hart
Chair, Lake Waramaug Task Force

AN UPDATE FROM SEAN HAYDEN

In winter the Lake sleeps, but not the Task Force

In winter, the lake is usually covered with ice and the aquatic environment goes almost completely dormant. However, the Lake Waramaug Task Force is hard at work collecting lake data that will make our lake management decisions throughout the year better informed. This year, our water quality sampling crew braved a stiff February wind to auger holes into the



ice to collect water samples and record some physical and chemical properties of the water column. Recently, our focus has been on what effects climate change is having on the lake. Also during our February sampling event, we installed a series of temperature and dissolved oxygen sensors that will be

recording hourly values at different depths through Memorial Day. These sensors were installed to monitor how the lake absorbs heat and oxygen as the ice leaves. This data will help us to better plan initiatives to minimize the negative water quality impacts that climate change will bring to the lake. We believe that the best way to protect the lake is to understand its internal processes and behaviors through vigilant research and by promoting watershed-wide water quality protection measures. And yes, we work hard all winter long performing these important lake protection tasks.

NEW SUMMER RESEARCH ASSISTANT LWTF Welcomes Kelsey Sudol

This year we welcome Kelsey Sudol, an Rensselaer Polytechnic Institute graduate. She will be with us all summer. Kelsey is assisting with our water quality sampling in both Lake Waramaug and Sucker Brook. She is also assisting in collecting stream flow data in both Sucker Brook and the East Aspetuck in an effort to better understand the effects of pollutant loading generated by the watershed. We will be on and around the lake all summer, so feel free to ask us questions if you see us out and about.



THANKS FOR FLOATING OUR BOAT THROUGH GIVE LOCAL

Thanks to all who supported us during our Give Local Float-the-Boat fund raising campaign*. We raised over \$10,000 which we immediately put to use as an initial payment to start the manufacturing process of the boat parts, which we will need to build the kit. Once constructed this boat will be regularly used to test water quality, survey for invasive aquatic weeds, monitor the shoreline for dangerous soil erosion, study lake currents and take small groups on scientific /educational excursions. Having our own boat, docked and ready to go, will greatly enhance our ability to monitor the health of Lake Waramaug, and over time decrease the costs of our ongoing lake management programs.

*If you missed the Give Local event you can still get in on our Float-the-Boat fundraising campaign by using the enclosed donor envelope.

LAKE WARAMAUG SCIENCE ADVENTURE DAY



This Spring the Lake Waramaug Task Force Arrow Point Facility was a key stop on the Warren Elementary School's Lake Science Adventure Day. Students, teachers and chaperones saw what we do and how we use lake science every day to protect and preserve the water quality in Lake Waramaug. LWTF hosted five groups at our Arrow Point Facility for hands-on learning. Students grabbed samples from our Zooplankton Farm and examined the tiny organisms in a sample jar; they peered into the compressor area for a primer on what it takes to run our four aerators; and they climbed down to the shore on Arrow Point with our Dissolved Oxygen Meter to measure the temperature and oxygen concentration in the Lake (53 degrees, yikes!). This was the first in what we hope will be a robust program of engagement with the many schools in our community. Our goal is to introduce the next generation to what it takes to be good environmentalists and stewards of our precious Lake Waramaug.

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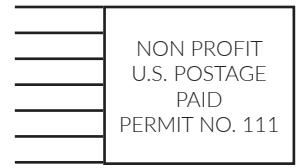
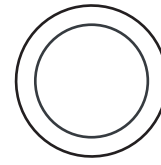
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CLEAN WATER CORNER

LWTF has been monitoring cyanobacteria (aka blue-green algae) in the Lake for decades. Cyanobacteria are naturally occurring in all open water, but can be toxic to people and animals in high concentrations. Since 1999, our average cyanobacteria levels have steadily decreased. Why did this happen?

- Our in-lake layer aeration system increases oxygen circulated, reducing nutrient cycling and improving clarity.
- We work with the surrounding communities to decrease nutrient run-off, encourage good agriculture waste practices and manage polluted stormwater runoff.
- Our zooplankton farm increases the population of zooplankton that feed on toxic cyanobacteria.
- Our annual brown trout release puts close to 2,000 trout in the Lake to feed on alewives, which feed on zooplankton.

LWTF is dedicated to maintaining this positive trend and your continued support is helping and needed.

LAKE WARAMAUG
Avg. Summer Cyanobacteria Levels (Cells/ML)

