

Spring 2022

Dear Friends of Lake Waramaug,

Spring and summer promise to be exciting seasons on Lake Waramaug. The ice has melted, the docks are in and soon the boats will arrive! The State Park will come alive with campers, kayakers and swimmers. (And, I for one, love the smell of the camp fires on summer evenings!)

The homes around the lake will be busy with family and friends, all of whom come to see our magnificent lake and enjoy its beauty.

Each year brings hope for great weather, family gatherings and a sense of community as we all help in some way to preserve our great lake. The Task Force will once again be deploying all of our resources to keep our lake as pristine as possible. Each year the Task Force Executive Director, Sean Hayden, and his dedicated staff place teams of scientists, divers, plant harvesters and monitoring equipment on the lake to check its clarity, health, bacteria levels and for the presence of invasive weeds. With the help of the boat inspection program, a new level of cooperation at the State Park, the private clubs and the three towns around the lake, we are hopeful for a very successful year.

In this newsletter you will find articles written about a few of the scientists who monitor the lake. Their work reflects the attention they devote to inspecting the lake for clarity and quality each week of the season. This monitoring and the use of the aerators near Washington Beach and Arrow Point are critical to achieve one goal: to help our lake fight against the environmental obstacles it faces each year.

This year and in the future, the Task Force will be placing greater emphasis on water quality in the feeder streams and on the environmental issues affecting the lake in the watershed. According to our scientific teams the watershed is where the Task Force and the local town governing bodies can do the most good for the lake's health now and in the future. Pollution and sediment filled runoff from the watershed area, even five miles away, will continue to cause significant negative issues for Lake Waramaug if we do not address them at this moment in time.

None of these initiatives can be undertaken without the continued support of our local communities. The Task Force is deeply grateful for the donors who support its efforts every year. Without the strength of this backing, Lake Waramaug would not be the exceptional resource that it is today.

On behalf of the Task Force Board, I wish you and your family a great season on what can only be described as one of the most beautiful places.

Muhael Guadogro

Mike Guadagno Chair, Lake Waramaug Task Force

Lake Waramaug Task Force, Inc.

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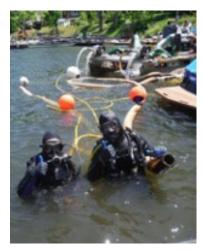
The Lake Waramaug Task Force is a non-profit scientific and educational organization dedicated to maintaining and preserving the ecology and water quality of Lake Waramaug and its watershed.

GIVING CURLY-LEAF PONDWEED THE BOOT



Mature Curley leaf pondweed

Our efforts have paid off! Lake Waramaug is the only Lake in Connecticut that has been successful in controlling and nearly eliminating all non-native invasive aquatic weeds *without the use of herbicides*. Our goal has always been to avoid the use of herbicides. That way, we keep the water in the Lake clean, clear and swimmable.



Hand Pulling and Suction Harvesting of CLP by New England Aquatic Services Divers

It has been a long and laborious journey - a program that called for identifying and harvesting of invasives before they had an opportunity to flourish. For the past 15 years, the Task Force has been working with George Knoecklein, the Principal Limnologist with Northeast Aquatic Research (NEAR). In 2006. NEAR's annual scan for invasive aquatic plant species

in Lake Waramaug turned up Curly-leaf pondweed (Potamogeton crispus or CLP), a very aggressive invasive. CLP was present in four different locations in the Lake. Knoecklein and his team helped us create and implement a strategy to successfully eradicate CPL without using chemicals.

Curly-leaf pondweed has a unique reproductive habit and an aggressive growth cycle. CLP starts growing early in May reaching maturity by early July. By late July and certainly by August, the plants die back and are gone and out of sight until they re-emerge with vigor again in September. Just one plant can produce 50 new plants. The plant's primary mode of reproduction is to release turions, or hardened shoot tips (winter buds) that sprout and grow a new shoot and root. Each mature plant can form many of these turions (see photo on page 3). The turions float and drift, driven by the prevailing winds to different parts of the Lake. Eventually the turions waterlog and sink where the tiny rootlet establishes a new plant and a new population center. By 2014, CLP populations expanded to 120 locations in seemingly all corners of the Lake.



Invasive Aquatic Weed Survey Crew

The Task Force and NEAR decided that the best method of attack was to coordinate the searching, surveying and mapping of the plants with a crew of divers that would hand harvest the CLP. The methodology consists of a NEAR survey team first searching the entire Lake for invasive plants, locating them with GPS (see photo of 3-person survey team above). The total GPS location file of all the CLP found during the survey is then transferred to the hand harvesting dive crew. The survey allowed Matt Vogt of New England Aquatic Services (NEAS) and his team of divers to use their GPS instrument to travel directly to the plants instead of having to search for them.

In 2016 NEAR refined the timing on the survey and removal methodology so that we could find and eradicate plants earlier in the season. NEAR began doing surveys of the Lake in early May to learn when



CLP Turion Breaks off from Plant and Starts a new Population Elsewhere

the plants first start to grow since every lake is different. Their survey consisted of traversing the entire littoral zone (shallow water shoreline zone) of the lake, with particular attention given to locations where CLP has been found in previous years. This survey methodology of utilizing a combination of visual assessments, hand-raking in shallow water, grappling rake tosses, and depth-soundings to view plants growing in deep water (>6 feet) turned out to be most effective. With knowledge gained on how CLP behaved in Lake Waramaug, we modified our survey and removal schedule: including sending out the removal dive teams early to immediately start working on the documented "hot spots" while at the same time doing an early season survey to find any new curly-leaf pondweed colonies. As part of our campaign to re-double our efforts, in 2017 we decided to keep the NEAS suction harvest dive crew in the Lake for an extra week to make sure all CLP that was visible was eradicated because of its ferocious reproductive capabilities.

The surge in effort has led us to contain any spread of the plant over the last 5 years. The large dense beds that were 20 to 50 feet long, have vanished, the hot spots still produce a few plants each year, but the new methodology, tailored to Lake Waramaug, has reduced population in the Lake to only a handful of plants that are easily controlled.

We recognize there will continue to be new plants in the hot spots until we can exhaust the turion pool in the sediments. But, now, the removal team spends only a few days on Lake Waramaug searching for a few CLP plants to pull, as opposed to weeks and removing thousands of plants. Fundamental to the success of our chosen CLP eradication method was finding and removing the plants prior to their reaching maturity, before turions form and disperse. This is a hallmark of the Task Force: using science, information and years of regular collection of in-lake data to fine tune strategies that work best to restore the Lake.



WE LOST A TRUE LAKE HERO THIS SPRING

In November we lost long time LWTF director Tom Yamin. Tom was a devoted member of the Lake Waramaug Task Force for many years, and a true Lake Hero. Tom grew up in Toledo, Ohio, but moved to New England to attend Hotchkiss School and Yale. During those years, he developed his abiding love for Litchfield County. He and his wife Patti Schulte Yamin divided their time between their home on Lake Waramaug and New York City. We will miss his wise counsel and warm smile.



Tom Yamin 1938-2021, Third from left. Also pictured from left to right are former board members Jay Combs and Jim Hicks, and current board member David Robinson



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CLEAN WATER CORNER

MAINTAINING THE FLOW

One of the many responsibilities of The Task Force includes the regular monitoring of both the level of the Lake and the in-stream flow of the East Aspetuck River. In order for the complex ecosystems of the Lake to be maintained, a certain amount of water is needed. This is also true for the East Aspetuck River. But the Town of Washington needs regular data concerning the outflow of the River and Lake levels in order to determine how much water to allow through the dam at Lake Waramaug. A healthy balance that is simple to manage with the right data collection.

The flow of the river is not a new concern. Early 19th Century New Preston land deeds to properties on the banks of the East Aspetuck River always included "pondage" and "privileges of the stream." Occasionally, titles included language that outright forbade operating a gristmill, particularly if the sellers had another water-powered industry further downstream. Competition wasn't necessarily the Grantor's reason for this language, but the amount of water needed to mill wheat into flour. Gristmills required power on a vertical plane to operate the numerous gears, and a "never-failing" stream. With as many as 21 mills from the mouth of the Lake to the Housatonic River, the language of the deeds was complicated because of a commodity in high demand: water.

We are so lucky that CT has an abundance of rainfall every year and even when we have dry periods there is still plenty of water to keep both a healthy level of water in the Lake as well as adequate flow in the East Aspetuck River. Through the efforts of the Task Force collecting Lake elevation and stream flow data, the Town of Washington is able to strike a balance for the health of two very important clean water resources that benefit the Town, Lake Waramaug and the East Aspetuck River.





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