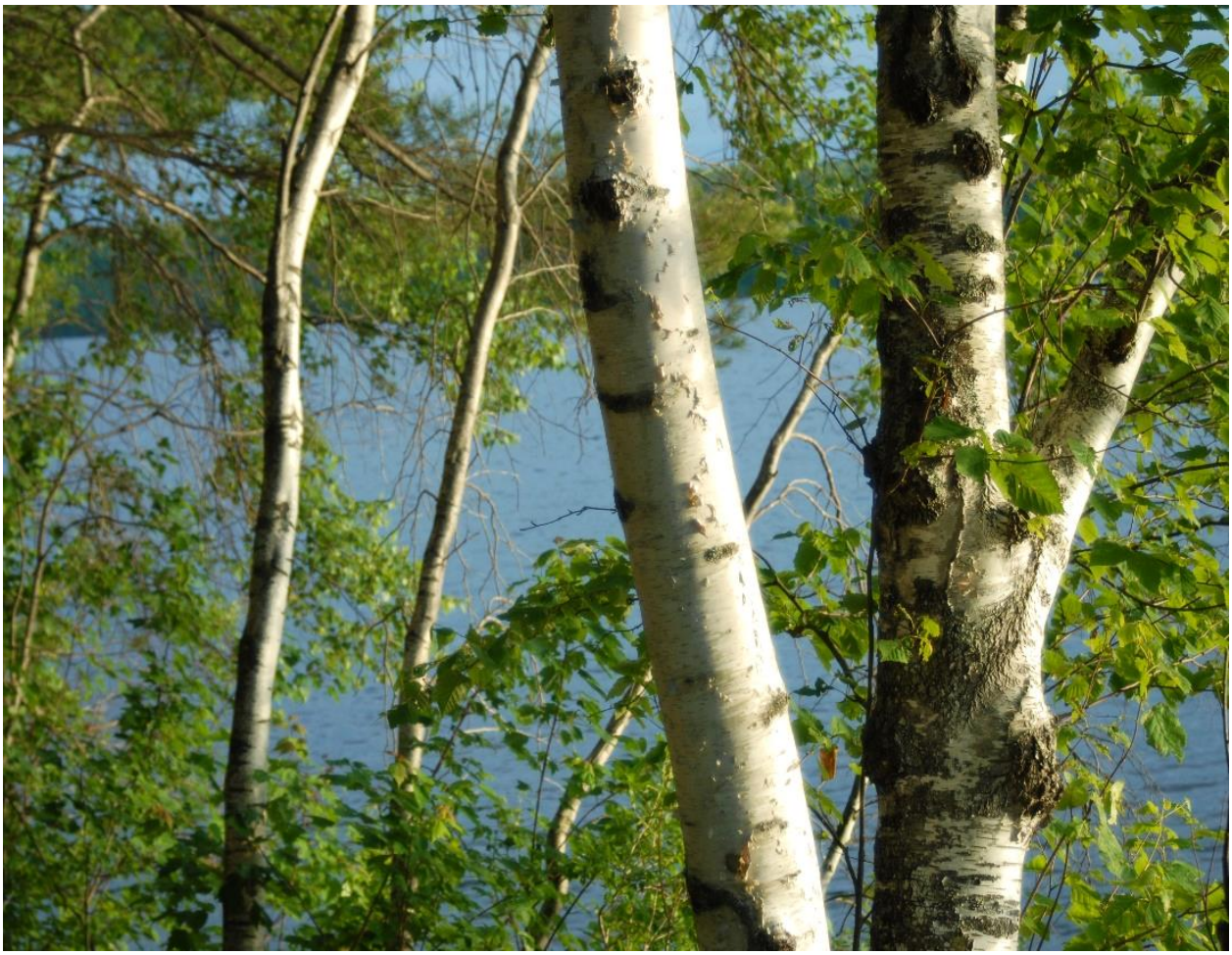
THE THOMPSON LAKE OBSERVER

Summer 2021 Issue No. 194



Waiting on a summer breeze…

(Photo by Kathy Cain)

Annual Meeting

The Thompson Lake Environmental Association 2021 Annual Meeting will be held at the Oxford Recreational Hall, King St., Oxford, on Saturday August 7 from 9:00-11:00 AM. This meeting is an important time to catch up on the environmental issues affecting the lake and what TLEA is doing about them. It is also a chance to have your voice heard if you have a question or concern about the lake. We will have progress reports on our programs and elections for board directors. Ken Mendelson is nominated as a new TLEA board member. The following are up for renewal: Sarah Rice, Jade Doyle, Sharon Rice, Susan O'Byrne, Peter Siebert and Bill Booth. Mark this date on your calender. We are looking forward to seeing you all after this long period of quarantine. We request that you use a mask if you are not vaccinated and maintain social distances. We can do this!

Thompson Lake Water Quality Report

(*Submitted by Scott Williams, Liminologist, Lake and Watershed Resource Management)*

Test samples of the lake were performed (*by Scott*) in August and September, which is generally considered to be the most critical period of the year for assessing annual water quality. Additional lake Secchi transparency (lake clarity) data were gathered by certified citizen lake scientists Ron Armontrout and John Powers, who took readings from June through September. Historical data reference sources referenced are the Maine Department of Environmental Protection, Lake Stewards of Maine (www.lakesofmaine.org) and historical LWRMA field records and reports.

Overall, the water quality of Thompson Lake was average, to slightly above average in 2020; based on the clarity of the water, the concentration of the nutrient phosphorus, and the concentration of planktonic algae in the lake during the summer monitoring period. In 2020, the average lake clarity (Secchi transparency – the distance one can see down into the water from the surface) was 9.15 meters, which is the historical average for the lake (9.1M). Clarity readings ranged from a low of 8.3 meters on June 16, to a high of 10.39 meters (exceptionally clear) on August 31. The three total phosphorus samples taken in August and September each measured 3 parts per billion/micrograms per liter, the historical average for the lake is 5 ppb. Chlrophyll-a (CHL) samples, which are indicators of algae, taken in August and September measured 2.0 and 1.0 ppb, averaging 1.5 ppb. These samples

are low, indicating very low-density algae growth in the lake during the period. The historical annual CHL concentration for Thompson is 2.4 ppb.

The three "trophic state indicators" of biological productivity: temperature, dissolved oxygen and gloeotrichia levels, correlated well in 2020. Temperature and dissolved oxygen profiles were taken on August 13 and September 9. Readings were taken from the lake surface to the bottom of the lake (approximately 32 meters depth) at 1-meter intervals. The lake was strongly thermally stratified on both dates, with temperatures ranging from 27.5 degrees C at the surface to 8.7C at 32 meters on August 13, at which time the surface oxygen level measured 8.1 mg/l, and 7.8 mg/l at 32 meters depth. On September 9, the surface to bottom water temperature ranged from 22.9C to 9.4C, and dissolved oxygen ranged from 8.7 mg/l to 6.7 mg/l at the deepest point in the lake. The relatively high, late summer oxygen levels in the deepest area of Thompson Lake continue to support a healthy cold-water fishery when the lake is stratified and oxygen is not able to be replenished until the lake mixes in the fall.

Gloeotrichia echinulate is a colonial cyanobacteria (aka: bluegreen algae) that has been present at low densities in Thompson Lake during the late summer (Aug-Sept) for at least four decades. In recent years, there has been a significant increase in the density of this organism in many lakes in the region. The presence of Gloeo in lakes does not appear to be tied to lake productivity or to anthropogenic influences in lake watersheds. High density Gloeo has been documented in a number of lakes throughout the country where there is virtually no human activity in the watersheds of the lakes. The increase in the presence and abundance of this organism in lakes is the subject of ongoing research. There has been speculation that some aspect of climate change may be involved in the phenomenon. The concentration observed in Thompson in 2020 was very low and is not a cause for concern.

Summary and Recommendations: The water quality of Thompson Lake continues to appear to be relatively stable, and it is well above the average for Maine lakes. Thompson Lake is among Maine's clearest and cleanest lakes. However, during the past decade, several clear Maine lakes have experienced dramatic, unanticipated downward water quality trends. Climate warming is thought to have been a factor in this phenomenon. Water quality conservation practices, such as vegetated buffers and other erosion control measures help to offset the effects of climate warming on water quality. Thompson has sustained excellent water quality during the past several decades, due in no small part to the exceptional

diligence and persistence of watershed-based conservation measures and public education initiatives undertaken by TLEA. Such efforts to protect the fragile ecology of Thompson Lake are more important now than ever.

Lakesmart Program

(Submitted by Ron Armontrout)

TLEA directors Kathy Cain, Marcia Matuska, Jim Skinner and Ron Armontrout recently spent the day with LakeSmart program manager Mary Wicklund, learning to evaluate properties for LakeSmart identification. The team visited 3 lakefront properties. Thanks to Mary's thorough training the team now is now qualified to move forward this summer to do other evaluations.

LakeSmart is an educational and reward program that helps lakefront homeowners manage landscapes in ways to reduce erosion and protect water quality. *The program is free, non-regulatory, and voluntary.* Participating homeowners receive individualized suggestions for keeping pollutants in stormwater out of lake waters. Homeowners fill out a questionnaire and the team will use this information and their own observations in the following 5-part evaluation: Driveway and parking areas, Outdoor structures, Outdoor areas, Shoreline buffer and water access, and Buffer integrity.

The homeowners will receive a written evaluation along with suggestions to better control runoff. This will be important in reducing "non-point source pollution" around the lake which is our biggest threat with respect to water quality. The LakeSmart program is free to Thompson Lake homeowners, but due to the limited number of evaluators all requests will be handled on a first come, first served basis as time permits this summer. If you would like to participate in this program, contact us at mmtlea@gmail.com or call 207 539-4535.

Milfoil Removal Update

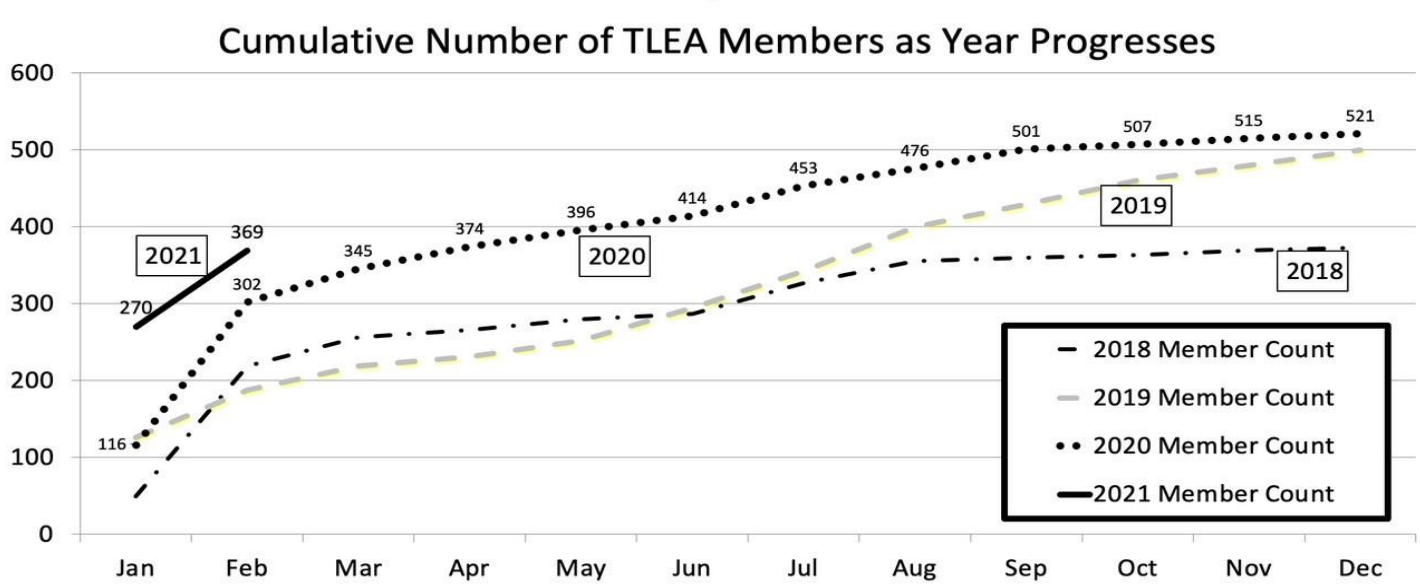
Milfoil crew chief Alex Bernardy reports that they started their removal efforts in the first week of June. They have primarily worked in the Pismo Beach area, checking for signs of re-growth from last summer. The early spring and warm weather seemed to cause a slight increase in milfoil growth, but no large colonies were encountered. Sporadic individual plants were found in the cove and removed with hand pulling. The crew does not plan to use benthic barriers in this cove.

The crew has also put in time maintaining the progress that they made last season at the Pismo beach/Oxford dam area. They will be using benthic barriers here, but these will be either out of travel lanes for boats or deep enough so that they should not interfere with boat propellers.

Alex will be surveying the remaining coves of the lake; Otisfield, Hancock and Edwards, for signs of any regrowth of milfoil or other invasive aquatic plants. So far, they have found only isolated plants, which were pulled.

Membership

Bill Booth of the Membership Committee reports that current membership at the end of May 2021 is at 422, versus 396 at the same time last year. Members renewing their membership have slowed, with only 3 renewals during the month of May. There are still about 110 Members from 2020 who have not renewed. If you have not had a chance to send in your renewal, we hope you will before the end of July. The underlying graph shows our progress towards full membership of all who benefit from the lake.

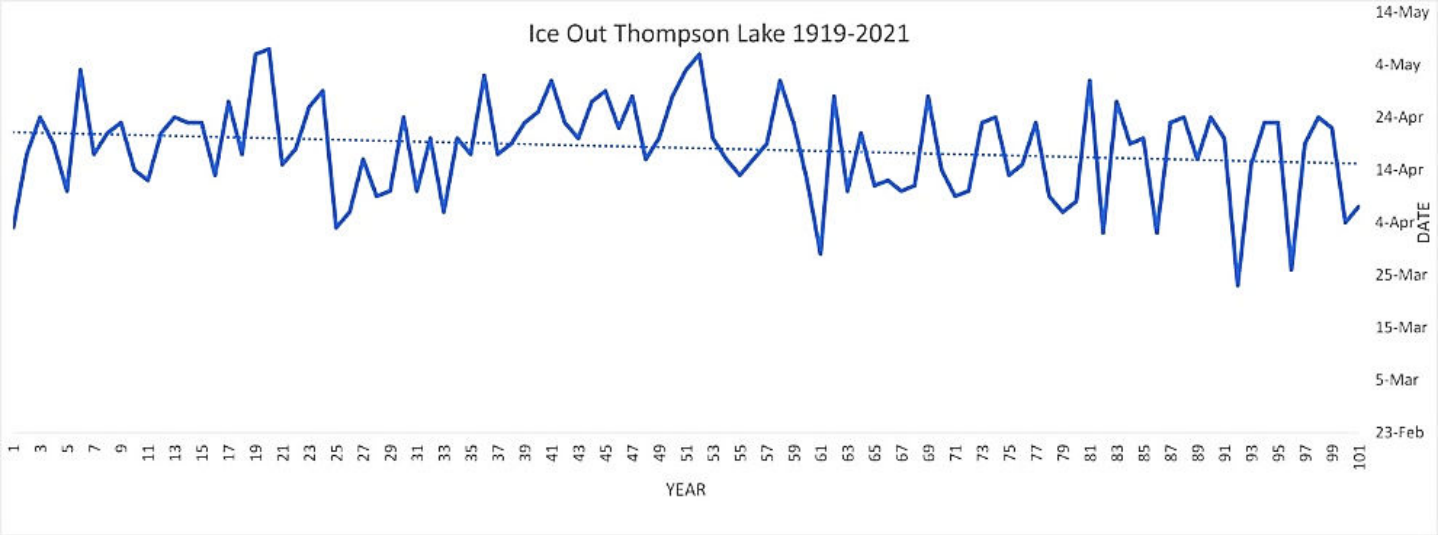


If you are a member, many thanks for your loyal support. ***If not, please sign up.*** Our programs for water quality depend on a strong membership. You can join by contacting us mmtlea@gmail.com; and soon you will be able to join through our website.

The Effect of Reduced Ice Coverage on Lakes

This past year the official ice out date for Thompson Lake was April 7, the previous year it was April 4. In 1919 it was April 12. As the graph below shows, the date

varies, but the trend is a steady recession of this date over the years. Additionally, ice is forming later, leading to a significant reduction of ice coverage for Maine lakes. This is compounded by the fact that there are more rain events during the winter, leading to thinner ice and less snow coverage, which insulates the ice. This is one of the many effects of climate change that has been occurring over the past century.



What does this mean for water quality and our fisheries? Salmonoids (in Thompson Lake salmon and lake trout) rely on cold water and plentiful oxygen to survive. When there is less ice coverage there is more time for algae to grow. This is exacerbated by warmer water temperature and dissolved phosphorus. This can lead to algal blooms which will then die, sink to the bottom of the lake and decompose. This, in turn, leads to lower levels of oxygen where these fish are concentrated in the summer months.

Vanessa Paolella wrote an excellent article about this problem in the Lewiston Sun-Journal (www.sunjournal.com/2021//04/25/diminshing-ice) detailing how this is affecting fish populations in Maine lakes. An algal bloom occurred in Auburn Lake in 2012 which led to a "fish kill" of over 200 fish, many of them lake trout. Additionally, a state biologist points out that the warmer waters are causing fish eggs to hatch earlier, prior to the seasonal growth of plankton, which is the fledgling fish's primary food source. This "environmental mismatch" leads to a diminishing fish population.

What can we do about this? As a society and individuals, we need to look at how we can slow the global warming that comes with climate change, primarily by cutting down of the use of fossil fuels and reducing methane pollution. This will take time, which may be running out. For a more immediate response we should work at the local level on ways to maintain the feeder streams and springs that bring cold water into the lake. We also must decrease non-point source erosion that leads to phosphorous run off onto the lake. TLEA is working hard in this regard to preserve this precious resource for future generations.

Briefly Noted

TLEA Website: Our new and improved website should be operational this summer. This will be able to accept membership fees and donations. We will keep you posted.

Annual Loon Count: will be held on Saturday, July 17 from 7:00- 8:00 AM. If you would like to be a loon spotter on July 18, contact Peggy at peggydorf@ymail.com.

Membership: TLEA wishes to recognize the efforts of ***Anita Delekto*** and ***Rosemary Nicklaus*** in supporting our recruitment efforts. Anita annually reviews the tax records of the four towns surrounding the lake to alert us to new property owners. Rosemary was our previous Membership Director who diligently added these new homeowners to our mailing list for the Observer and new member mailings. Thank you, both! You are giving back to the Thompson Lake community.

Erosion control:Box culverts and vegetated buffer at the banks.

Visit our website at:
www.thompsonlake.org

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ELECTRONIC SERVICE REQUESTED

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