



Spring 2016

Issue No. 178



Photo by Kathy Cain

Ice Out Cometh

Annual Meeting 2016

The Thompson Lake Environmental Association Annual meeting will be held at the Oxford Recreational Hall, King St., Oxford at 9:00 – 11:00 AM on August 6. Make sure you mark this on your calendar as we will discuss environmental issues affecting the lake and will be electing new members to the TLEA Board. The following names have been placed in nomination for re-election to the board: Ron Armontrout, Paul Cain, Peggy Dorf, Marcia Matuska, Dan Pontbriand, Tim Worden, Sue Ellis, KC Putnam, and Stan Tetenman. Steve Arnold is a new nominee and Scott Bernardy and Anita Delekto will be retiring from the board. We will also have a slate of educational speakers and there will be TLEA merchandise for sale. It should be a good chance to visit with neighbors, learn about the lake and contribute to its health. There will be baked treats as well. Be there!

Report on the Water Quality of Thompson Lake 2015

Excerpts from the report by Scott Williams, our contracted Aquatic Biologist:

This report is a summary and analysis of findings of water quality monitoring of Thompson Lake from May through September, 2015. Most of the readings, samples and observations were gathered at the deepest point in the lake, situated to the west of Hayes Point in Oxford. The majority of historical water quality information for Thompson Lake is also based on sampling at the Hayes Point deep station.

Water Clarity: Lake clarity is primarily influenced by the concentration of algae in the water. Suspended sediment particles from eroded soil in the watershed can also, at times, influence clarity. During the course of the monitoring season, the distance that one could see down into the water from the lake surface (aka: Secchi transparency) varied from a very high (good) reading of 11.4 meters on August 5, taken by Ron Armontrout, to the lowest reading of the season – 6.9 meters, also taken by Ron on May 16. The low reading in May was very likely the result of a spring rain event, combined with winter runoff, because a reading taken only a day

later by Scott Williams measured 8.6 meters. The exceptionally clear reading in August occurred during a time in the season when weather conditions were dry and calm. Historical water clarity data for Thompson have shown on many occasions that the lake is very sensitive to heavy rain events and storm water runoff, often resulting in rapid measurable negative changes in water clarity. *The average for the May through October period was 9.9 meters (about 32 feet!), which is nearly a full meter higher/better/clearer than the Thompson Lake historical average of 9.0 meters!* The previous five years had shown a short-term decline in Thompson's water clarity. However, similar trends have been observed in the lake in the past, followed by recovery, including short-term improvements in lake clarity. The sharp improvement in 2015, while no doubt due, in part to the influences of weather, also demonstrates the resilience (and sensitivity) of the lake system.

Total Phosphorus: The concentration of the nutrient phosphorus in lake water largely determines the growth of algae in the water, which in turn influences water clarity and oxygen levels. The average concentration of total phosphorus (TP = combined organic and inorganic forms) in the lake in 2015 was 4 parts per billion, as was the case in 2014. The historical average for the lake is 5 ppb. During the course of the 5 month monitoring period, TP varied from a very low concentration of 2 ppb in August, to a high of 9 ppb in May, following the period of spring runoff. The June sample measured 3 ppb, and remained low for the remainder of the summer. Thompson Lake has experienced relatively high concentrations of phosphorus a number of times from spring samples, suggesting possible watershed runoff-related factors.

Dissolved Oxygen: The amount of oxygen that is dissolved in the water in the deepest area of a lake during the late summer and early fall, before the lake mixes or "turns over", is a critical indicator of overall lake health. Thompson Lake has maintained high levels of dissolved oxygen through the summer/fall period for as long as data have been collected for the lake – even in the deepest and most critical location of the "deep station" near Hayes Point. This characteristic of exceptional water quality is the primary factor that allows cold water fish to thrive in Thompson lake.

Water temperature and dissolved oxygen profiles measured throughout the 5 month monitoring period *may* be showing a slight decline in oxygen in the deepest area of the lake during the month of September. This *may* be due to the combined influences of increasing lake water temperature, and a lengthening of the period of thermal stratification, during which cold, oxygen-rich water in the deep area of the lake is isolated from the atmosphere.

One climate-related factor that may negatively influence this process is the lengthening of the period of time during the year when the lake is free of ice cover.

Summary: Overall, the water in Thompson Lake was substantially clearer than the historical average for the lake in 2015. The concentration of phosphorus in the lake was lower (better) than the historical average, and the concentration of algae in the lake, while higher than average for Thompson, may (or may not) have been the result of anomalous conditions in the lake during one of the sampling visits, or possibly laboratory error for one of the samples . Late summer oxygen levels in the deepest area of the lake have been relatively low during the past few years, possibly due to shorter duration of the period of ice cover, warmer water temperatures, and a resulting lengthening of the period of thermal stratification. The September, 2015 oxygen concentration at the deepest area of the monitoring station was not as low as it has been during the past few years – likely due to the fact that “ice-out” was closer to average for the lake in 2015, unlike recent years when ice-out has been earlier than average for Maine lakes. Factors that cause the temperature of the lake water to increase, or the period of thermal stratification to be longer, will very likely have a negative effect on late season dissolved oxygen levels in the lake.

Thompson Lake continues to exhibit water quality that is significantly above the average for Maine lakes. The number and complexity of threats to Maine lakes will very likely continue to grow as climate change exacerbates the effects of everything from watershed development to the breadth of invasive species infestations. TLEA has played a critically important role in protecting the lake for more than four decades. The protection of our lakes is ultimately a local issue, and TLEA has the proven experience and capacity to assume the role of leadership in the Thompson Lake watershed community.

Editor's note: The full report can be seen at our TLEA website.

TLEA Fireworks Survey Results

(Submitted by Marcia Matuska, Co-President)

At our Annual Meeting of 2015 members of the Association expressed concerns about the effects of increased use of fireworks on the water quality and peacefulness at Thompson Lake. In response to these concerns, the board received information about the effects of fireworks on lakes. We determined that our role should be that of surveying the members regarding their attitudes and concerns regarding increased firework use on the lake and educating association members on this issue. Accordingly, last fall a survey was sent to all 2014 and 2015 members of TLEA regarding this issue. 510 surveys were sent and 226 were returned, a 44% response rate. Of the 226 responders, 2 had spent no time at the lake in 2015 and are not considered in the calculations.

Of those who responded, 157 of 224 (70%) had concerns about the effects of fireworks on the lake. 68 of 224 (30%) were neutral on the effects of fireworks or expressed only positive comments.

The concern most often voiced was the effect of the noise on the tranquility of the lake and the effect on pets, wildlife and veterans suffering from PTSD. Many were concerned about the pollution caused by the heavy metals and debris deposited by the fireworks. Debris was noted on neighboring properties and boats, but most did not see any debris unless they had consciously looked for it on the bottom of the lake, directly in front of the property from which the fireworks are shot. Others were concerned about fire and the danger of exploding rockets causing injury.

Those who made positive comments about fireworks noted the beauty of the display and the patriotic tradition of fireworks.

The survey was divided into 7 sectors around the lake. The reported frequency of discharges varied dramatically within each section but averaged around twice a week all summer in each section. The average number of sites per sector was 4.

Survey responses are documented on the TLEA website on 8 Excel spreadsheets. The summary to the right of the spreadsheet is my subjective interpretation of the respondent's attitude towards fireworks.

Fireworks and their effect on the lake is a study in progress. The frequency and number of discharges is unprecedented. Thompson Lake has a very slow turnover of water (flush rate) and we have concern that the deposition of debris and heavy metals may have a detrimental environmental impact. Fireworks are also a source of celebration and national pride that are enjoyed by many of our residents and visitors.

TLEA's mission is to monitor and educate on environmental issues. Please read these comments on our web site from your neighbors and friends. Consider not allowing or at least limiting fireworks if you rent your camp or house. Consider decreasing the frequency of displays. If you use fireworks, clean up all debris including that which sinks to the bottom of the lake. Be considerate of your neighbors and our water quality. Moderation is always the key.

Maine Milfoil Summit 2016

The 17th Annual Maine Milfoil Summit was held on February 26 at the Lewiston-Auburn campus of USM and lake associations throughout Maine were in attendance. Board members Sue Ellis, Scott Bernardy and Kathy Cain represented TLEA to hear the latest on the state's efforts to reduce milfoil and protect our lakes.

The first part of the summit reviewed the Maine boat registration funds and the breakdown of those revenues. Last year the Boat Registration Sticker income was 1.1 million dollars with 80% of those funds going to the Maine Department of Environmental Protection (DEP) and 20% going to Maine Inland Wildlife and Fisheries (IW&F). Of the roughly \$880,000 the DEP received, over \$202,000 went towards Maines Courtesy Boat Inspectors (CBI) and \$283,000 towards the removal of invasive aquatic plants.

Last year TLEA was awarded \$15,000 by the Maine DEP to help pay for our program which had expenses of \$33,000.

The DEP does carry some over funds from the previous year, but the DEP expects that for this upcoming year there will be a reduction in what is allocated to invasive plant removal programs of about \$250,000.

The majority of the rest of the summit had to do with Maine State and Federal OSHA getting involved with the public and private operations of invasive plant removal. This new presence in the state's plant removal programs by these government agencies is intended to ensure the safety and health of the divers. The impact of these requirements and the proposed reduced funding from the DEP are elaborated on in the following Milfoil Mitigation article.

Milfoil Mitigation for Thompson Lake 2016 (Submitted by Scott Bernardy)

It's spring time and TLEA's is heading into the 8th year of managing milfoil on Thompson Lake. Each year brings on new challenges and new faces into our efforts to return Thompson Lake to its more natural state, without invasive aquatic plants choking off the coves. First the changes: after 7 years of exemplary leadership, Rob McVety will be handing the supervision of our dive crew to his most senior employee, Alex Bernardy. Dr. McVety is now a graduate of the University of Connecticut Dental School. TLEA applauds Rob for the major improvements he and his crew have made in Otisfield, Edwards, Serenity and Hancock Cove. These areas have seen at least an 80% reduction in the invasive plants in these areas.

Another change this year is that the Maine DEP has extended its oversight of Lake Association's plant removal operations and is mandating we adhere to State and Federal OSHA Commercial Diving policies. These requirements are intended to improve safety; however they will be extra expenses that will not be covered by the Maine DEP. This change, combined with a projected reduction of funds granted to TLEA by the Maine DEP for milfoil management, potentially limits our efforts to remove milfoil. We will have to reduce the time our divers spend extracting milfoil from the lake unless the TLEA members contribute more robustly to the Plant Removal Fund. ***I encourage those of you who have contributed in the past to increase your contribution by 10%. For those who have yet to contribute to the Plant Removal Fund to please do so.*** Please help to manage the largest threat to the health and natural beauty of Thompson Lake.

Another change will be my departure, as this will be my last season as the Environmental Director at TLEA. I will be handing over the position to fellow board member Dan Pontbriand, who has previous experience at invasive plant management while working for the US Forestry Dept. I spearheaded this Program over 8 years ago and have thoroughly enjoyed working with everyone involved.

New Leadership at YCC

This year Tom Ray will be stepping down as the director of the Youth Conservation Corp (YCC). Many thanks, Tom, for your years of dedication and hard work. Steve Arnold will now be taking over the reins of this extremely important TLEA program.

The YCC will be working again this summer on projects to decrease runoff and erosion into the lake. These non-point sources of pollution are the most concerning for the long term health of the lake. The YCC crew is available to help land owners maintain their property and protect the waters of the lake. If you have a path, driveway or shorefront that shows evidence of erosion, YCC may be able to help. This may be in the form of placing rip rap, planting buffer plants, developing drainage systems or simply maintaining existing box culverts or other erosion controls. If you have an erosion control or drainage project in mind, the YCC can help. Send us an email at mmtlea@gmail.com with your contact information so that we can schedule a time to come out and evaluate your property.

Note: We are looking for local high school/college students interested in working on the YCC crew this summer. We will be hiring for 2-3 crew member positions and a new Apprentice position. This Apprentice position will go to someone interested in environmental studies or engineering. This person will be apprenticed to the crew leader and will gain valuable experience in evaluating properties, implementing solutions, managing the crew, ordering materials, documenting results etc. This person will most likely graduate to become crew leader the following year. If you or someone you know is interested in either of these positions please send an email with your name, address, telephone number and email to mmtlea@gmail.com.

Winter Water Levels of the Lake

(Submitted by Scott Bernardy, Chairman of the Dam Committee)

A factor that is often overlooked in the maintenance of the water quality of the lake is the consistency of water levels during the winter season. High levels and the effect of ice floes scouring at the shoreline can cause extreme amount of erosion and deposition of phosphorous into the lake. It can also cause damage to docks and shoreline structures. This past winter was mild and in contrast to the previous winter when the ice was thick and ice out delayed. This year the ice did not completely close up on our lake until the first few days of February. Unfortunately even a thin layer of ice can scour lake shoreline with tremendous pressure, as illustrated in this photo. The weight of huge sheets of shifting ice can uproot small trees and brush, pushing hundreds pounds of soil towards or away from shorelines.

TLEA is working in conjunction with the Oxford Dam Committee to get power to the Center Gate Dam at the Robinson Mill to better control the water level throughout the year and not rely on the less efficient boards on top of the dam/spillway.

The photo on the last page of this issue shows the effects of high levels of ice on the shoreline in the winter of 2015-16.

Meet Your Directors

Our profile for this issue of the Observer is Ron Armontrout. Ron and his wife Vickie live on Lunt's Point Lane and have owned property there since 1999. They have two children and three grandchildren.

Ron grew up in Northeastern Ohio and received his master's degree at the University of New Hampshire. He taught Middle School and High School mathematics for 43 years. During many of those years he also worked as a math educational consultant with Texas Instruments. He retired from teaching in 2013 but continues to work with Texas Instruments. Ron also mentors and coaches middle school math teachers in inner city Philadelphia as part of his work with the Texas Instruments program "Math Forward" and the federally funded program

“Gear UP”. His hobbies are boating, gardening, and x-country skiing but his passion is playing with his three grandchildren.

Ron became a director a little over two years ago when Kathy Cain, co-president, asked him if he was interested in working with TLEA. He was ready to give something back to the lake he has enjoyed so much.

He has been very active since becoming the director in charge of testing the water quality of the lake through Secchi disc readings. You may see him some days staring intently into the lake from his boat. Rest assured he is looking for his disc and working hard for the lake. Ron also is a member of the finance committee.

He and Vickie love living here full time. They enjoy the ebb and flow of the seasons on this precious lake.

Thank you, Ron.



Briefly Noted:

Ice Out Winners- Jill Deslandes and Joseph Stella successfully predicted our 2016 ice out date as March 26. Half the winnings will go to TLEA programs to protect the lake. Congratulations! Ice out is declared when the lake is navigable from the Casco launch to the northern end of the lake.

Note: This Observer is sent to all TLEA members whether your dues are paid or not. Please check your records and if you haven't paid the dues for 2016, please do so. Support our programs for the water quality of the lake!

TLEA Office hours: Office hours for TLEA is now by appointment only. If you would like to receive information or literature about the lake; have a question or wish to purchase some merchandise, please call our office telephone, 539- 4535 or Kathy Cain at 539-9122.

Clynk Program: Support TLEA by enjoying your favorite beverage and returning the empties to participating Hannaford stores. You can pick up the green “Clynck” bags at the TLEA office (May- November) or at 37 Black Island Rd (year round). The TLEA label on the bag needs to be scanned at the store when the bottles are returned.

If you have any comments or input for the Observer please let me know at paulcain@myfairpoint.net.



High levels of ice scouring the shore line. Photo by Scott Bernardy

Visit our website at:
www.thompsonlake.org

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