

Summer 2022

Issue No. 197

Special Non-Point Source Pollution Issue



Storm Run Off into Thompson Lake

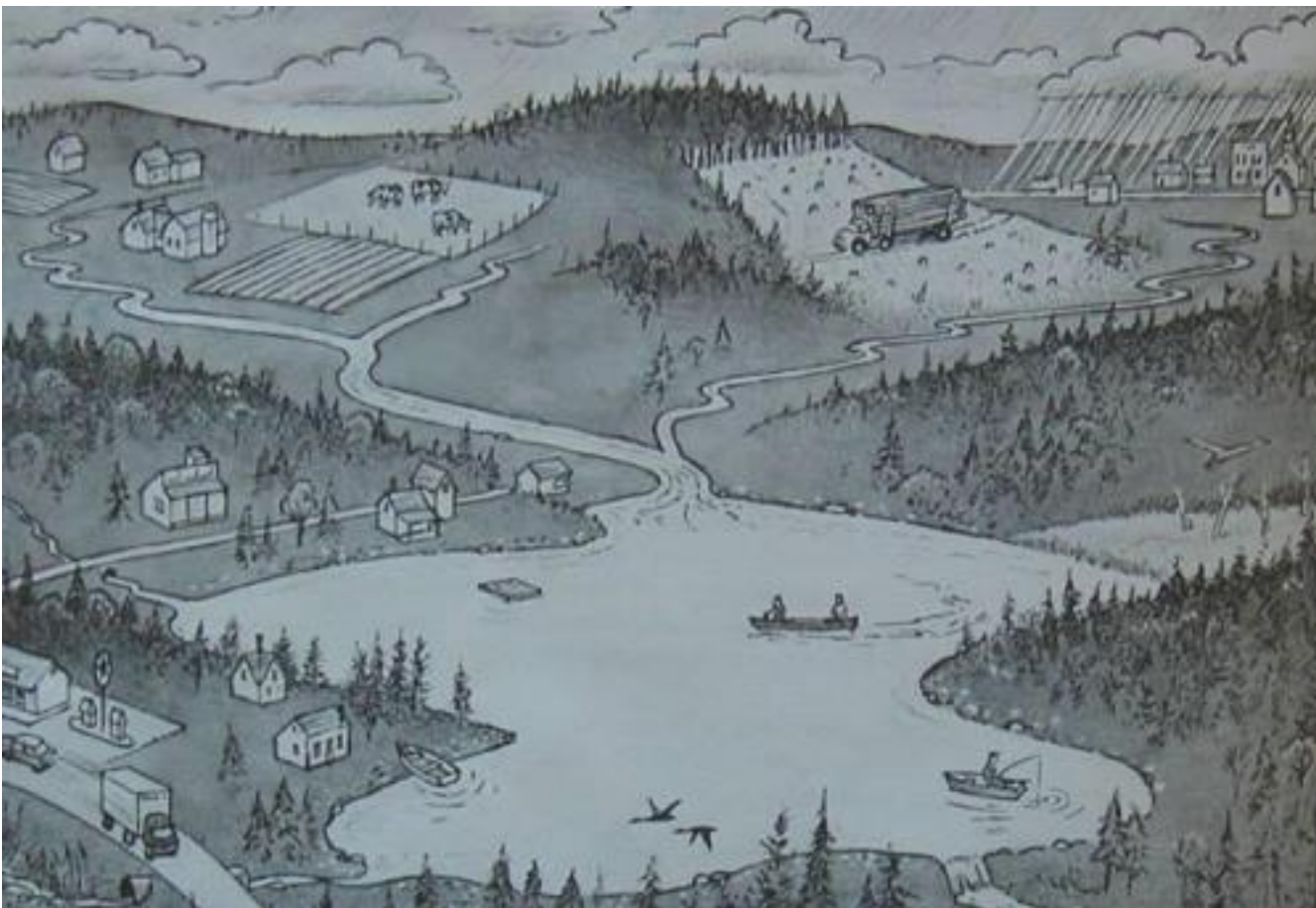
(Photo by Kathy Cain)

Non-Point Source Pollution: The Largest Threat to Thompson Lake

With this issue of the Observer, we will be highlighting our efforts to reduce non-point source pollution (NPS) of the lake. Over the past 50 years, TLEA has developed programs to protect Thompson Lake from invasive species, provide water quality monitoring, education on environmental issues, advocacy and our annual loon count. Just recently we completed our Capital Campaign in which we raised over \$500,000 to remove over 500 tons of milfoil from the lake and to continue to monitor and remove further infestations of invasive species. We have accomplished a lot and we appreciate the support of the membership in these efforts. We now want to enhance our efforts in reducing non-point source pollution of the lake.

NPS pollution has been recognized as a growing threat to the water quality of Maine lakes. In 2013 the Maine Department of Environmental Protection listed Thompson Lake as a *Nonpoint Source Priority Watershed*, recognizing that it is threatened by the effects of development and a slow flushing rate. In this issue we will discuss NPS; what it is, and how it affects water quality as well as what we can do about it. Much of this material is from a presentation by Jen Jorgensen of Ecological Instincts to the TLEA Board.

What is a Watershed?



Non-point source pollution that occurs within a watershed will eventually make its way to the lake. Traditionally, we have thought of pollution as something that occurs from a major point of entry, such as a factory or mill depositing their byproducts into a water way. Since the Clean Air Act of the 1970's and increased awareness, much of this pollution has been reduced. Now the largest threat to lakes in Maine is from the combination of small sources of pollution throughout a watershed, which combine to adversely affect the water quality. These myriad sources are referred to as "non-point" and include soil erosion, yard waste, fertilizers, manure from farms, inadequate septic systems, winter road sanding and storm drain outlets. Presently, the most significant pollutant in the runoff from a watershed is the element phosphorous, which is concentrated in soil, human and animal waste, as well as fertilizers. Phosphorous is a major nutrient for algae, so as it accumulates in a body of water there will be an increase in algae growth, which can lead to less clear water, oxygen depletion and algal blooms. Even worse, with increasing accumulation, decomposing algae at the bottom of a lake can become a source of phosphorous production, which makes elimination of the algae almost impossible.

How does development watershed affect NPS?

Development of a watershed area results in smoothing of the land, creation of impervious surfaces such as a driveways or lawns, and removal of vegetation which leads to larger and more rapid drainage. Studies have shown that a developed watershed will result in 5- 10 times the amount of phosphorous in runoff compared to forested watershed. As an example, if a lakeside property has only a grass lawn as a buffer, 82% of stormwater will run directly into the lake. If a similar property has 100 feet of vegetated buffer at the shoreline, the runoff is reduced to 27%. Increased runoff from developed areas can also lead to erosion of the shoreline, habitat damage, increase in invasive plants and ultimately, a decrease in the aesthetic value of the lake, and property damage.

When we look for ways to reduce polluted storm runoff of developed areas, it is helpful to consider the 3 "S's" of erosion control: *Soak*, *Steady* and *Send*. Primarily the goal is to create or maintain vegetated areas that will soak in runoff. Secondarily it is crucial to steady the shoreline land, with measures such as planting or mulching bare areas and placing crushed stone or mulch on paths. Additionally, we should send or divert areas of concentrated runoff to adjacent vegetated buffers or armored basins as much as possible.

What is TLEA doing about NPS?

- **Watershed Surveys and Protection Plans**

Most recently TLEA conducted a volunteer watershed survey of the lake in 2008-2010. This included the towns of Oxford, Poland, Casco and Otisfield, and was partially funded by EPA 319 funding. Sites within the watershed were inspected and rated as to their amount of erosion and likelihood of contamination of the lake. The sites were also evaluated as to the cost to fix the erosion and the technical level required. Overall, 345 NPS sites were documented over 11 different land use types. From this we developed our Watershed Protection Plans, which are available on our website. The goals of the most recent 2013 plan were to reduce phosphorous in the lake by 180 tons, prevent new sources of NPS, conduct ongoing assessments of the watershed and maintain our Class A water quality level.

These Protection Plans allowed us to apply for federal EPA 319 grants allocated through the Clean Water Act. These funds were used to help start out Youth Conservation Corps, and to assist in the implementation of best management practices erosion control projects at over 40 NPS sites, and to supply technical assistance visits at over 100 sites. In 2015 TLEA was awarded the Stewardship Group award from the Cumberland County Soil and Water Conservation District for its work on obtaining 319 grants for erosion control. This effort was led by our outgoing president Marcia Matuska. Other members of the 319 Committee were Pete Laverdiere, Ron Armontrout, K C Putnam and Kathy Cain. Many thanks to these volunteers!

Youth Conservation Corps

After a brief hiatus caused by COVID-19, we have resurrected our YCC program. The YCC crew will be led by Chris Stoechner, an instructor at the Oxford Hills Community High School. This season Chris will be planning erosion control projects, obtaining the necessary permits, and directing a 2-member crew of local high school students. We have number of projects that are pending, and we will be looking for more opportunities this season to cut down on shoreside erosion. The program will also be available for some work recommended by our LakeSmart inspections. Our crew will be available for jobs such as placing mulch and plants along areas of drainage, installing diversion trenches, razor bar, ditches and retention pools. This program is subsidized through TLEA membership dues and donations, so we can offer discounted rates to property owners.

- **LakeSmart**

This is a program offered by TLEA through the Maine Lakes Society and *is free, non-regulatory, and voluntary*. This is an educational program that helps lakefront homeowners manage their landscapes to reduce erosion and protect water quality. TLEA completed 27 property inspections in 2021, 9 of which received the LakeSmart certification. All participating homeowners received individualized suggestions for keeping pollutants in stormwater out of lake waters. Homeowners fill out a questionnaire; the LakeSmart team uses this information and their observations for a 5-part evaluation: driveway and parking areas, outdoor structures, outdoor areas, shoreline buffer and water access, as well as buffer integrity. The homeowners receive a written evaluation outlining methods to control runoff and reduce erosion. The LakeSmart program is available to Thompson Lake homeowners, but due to the limited number of evaluators all requests will be handled on a first come, first served basis. If you would like to participate in this program, contact us at mmtlea@gmail.com or call 207 539-4535.

- **Education**

TLEA offers educational programs for NPS pollution control through our website, Annual Meeting, community outreach programs and with communication with the surrounding town's Board of Selectmen. We fund an annual field trip for 6th graders from the Oxford Elementary and Otisfield Community Schools to the Schoodic Institute in Bar Harbor, to learn about protecting the environment. Recently TLEA board members conducted an outdoor class on erosion control for a visiting class from the Portland Breakwater school.

As you can see, TLEA is hard at work to create awareness of NPS and reduce this threat to Thompson Lake. All lakeside property owners and town managers should consider ways to reduce erosion along the watershed. The future of Thompson Lake depends on this.

Annual Meeting

The Thompson Lake Environmental Association 2022 Annual Meeting will be held at the Oxford Recreational Hall, King St., Oxford, on Saturday August 6 from 9:00-11:00 AM. We will be following the current CDC recommendations for this meeting. We will have progress reports on our programs and elections for board

directors. We also will have a speaker on an environmental topic. New nominees for the board are: Candace Nelson and Hobart Hardej. The directors up for re-election are: Jim Skinner, Marcia Matuska, Paul Cain, Peggy Dorf, Ron Armontrout, Stan Tetenman, and Paul Rausch. Tim Worden will be stepping down. Mark this date on your calender to hear about the association, environmental issues involving the lake, and to meet up with friends and neighbors. As usual, there will be an assortment of home baked goods and treats. See you there.

Milfoil Removal

Milfoil removal crew chief Alex Bernardy reports there has been moderate regrowth of milfoil in the Pine Point area of the lake. The crew has removed most of the plants that were found near the causeway with the use of the suction harvester and hand pulling. There was also moderate regrowth in Edwards Cove, most of which the crew has removed. The crew is still working on removal of the dense milfoil in the area between Robinson's Marina and the Oxford dam. This area often requires hand pulling of the plants, as there is lots of debris in this area from previous dumping. This extent of regrowth is expected and highlights the need for continued surveying and removal of invasive plants throughout the coves of the lake.

Overall, our milfoil removal program has been extremely sucessful. Our efforts have not gone unnoticed, recently WMTW Channel 8 interviewed Alex and some TLEA board members for a special report that they will be telecasting regarding the future of Maine's environment and the effects of climate change. There is some good video of the lake and discussion of our milfoil and NPS reduction efforts. *Make sure you check this out on WMTW Channel 8, tenatively on July 20. The telecast will also be available at the WMTW website.*

Board Membership

If you are a property owner, local business owner or simply someone who regularly visits the lake, you undoubtedly have an appreciation for its beauty, recreational and economic value. Thompson Lake is threatened by non-point source pollution, invasive species and climate change. TLEA is dedicated towards preserving the natural beauty, water quality and biological diversity of the lake. ***For us to continue our work we need more volunteers willing to serve on our board.*** If you value the lake and want to make a difference, please consider serving as a TLEA director. The most important qualifications for a director are an appreciation of the lake and a willingness to contribute time to help administer our programs. When we all work

together, the time commitment is entirely manageable. If you are willing to be considered as a director, please contact us by email at mmtlea.com, or call 207 539-4535.

Briefly Noted

Annual Loon Count: was held on Saturday, July 16. If you would like to be a loon spotter in the future, contact Peggy Dorf at peggydorf@ymail.com.

Marcia Matuska

Our sincere thanks go out to Marcia Matuska, who will be stepping down this year from the position of Co-President of TLEA. Marcia came on the TLEA board in 2010 and assumed the position of Co-President in 2014. Over the years she has provided exemplary leadership for the Board, and managed our programs of Courtesy Boat Inspection, Youth Conservation Corps and our EPA 319 grants for erosion control. Marcia has led the way with her special combination of thoughtfulness, dedication and good humor. Her efforts have gone a long way in protecting Thompson Lake as a resource for generations to come. Marcia will now have a little more time to enjoy the lake with her husband, Dave, and her family at their house in Potash Cove. Fortunately, Marcia will continue as a TLEA board director. Thank you, Marcia!



Lakeside property with a good buffer, preventing run off.

Visit our website at:
www.thompsonlake.org

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