

Watershed Management: 2020 Update (Jim O'Brien & Sal Girifalco)

LAON conducted its first watershed survey on North Pond in 2016 to find erosion sites which enable sediment and phosphorus to flow into the lake. This was prompted by our regular water quality sampling, which indicated high phosphorus levels, and by increasing reports of algae in the pond. Since increased levels of phosphorus means increased algae, reducing phosphorus became an important goal. We applied for a grant to address the erosion sites, and working together we were able to remediate 26 sites in 2017 and 2018. We addressed significant issues on private roads, on many residential properties, and on one town road. Collectively, those efforts prevented an estimated 35+ tons of sediment from entering the pond annually.

Our Water Quality Report (on our website: www.norwaylakes.org) indicates that North Pond phosphorus levels in 2019 were the lowest they have been in years, well below historic averages. With many factors to consider, we can't say for sure if erosion control was the primary reason for the improvement, but it is a very good sign. Since nothing lasts forever, each site needs to be monitored and maintained by its owner to counter the inevitable effects of nature. It would be a shame to have done all that work, which was costly in both time and expense, if uncontrolled erosion eventually erased these positive results of our efforts.

Building on the North Pond experience, LAON conducted a survey of the Lake Penneesseewassee watershed in 2019, identifying 180 erosion sites impacting the lake. Sites included state, town and private roads, residential properties, and commercial and public access areas. Common observations on roads included unstable shoulders and culvert openings, ditch erosion, and clogged and or rusted culverts. Sites on residential properties tended to have eroded slopes with worn paths, or little vegetation to protect soil and absorb phosphorus. It was gratifying to learn that a few property owners have already remediated their site or plan to do so in the near future. The complete Survey Report is in the "Keep Lakes Healthy/Lake Reports" section of our website. The report details the full survey effort, provides descriptions of problem areas and possible solutions, and includes the names of our tireless Survey team.

LAON submitted a Lake Penneesseewassee Watershed – Based Protection Plan in February 2020 that was approved by the Maine Department of Environmental Protection (MDEP) and the US Environmental Protection Agency (EPA). The Plan presents a strategy to remediate the identified sites in three phases within a ten-year period, with the first phase addressing some of the more impactful and complex sites. (The complete Plan is also on our website under "Keep Lakes Healthy/Reports.") For each phase LAON plans to apply for a grant funded by the EPA under Section 319(h) of the Federal Clean Water Act.

We applied for our Phase 1 grant in mid-May that would provide 50% matching funds to address erosion on 48 of the identified sites, including 28 on town and private roads, 17 on residential properties and 3 public access sites. The 18 sites on state roads are excluded from the grant because the Maine Department of Transportation is responsible for their remediation. The private property sites are mostly clustered in the area fed by Sandy Shore Lane (see map, below). Two private road sites are also in this phase (Gibson Brook Lane and Gravier Road). We were fortunate to have LAON member Alice Goodwin, who is a professional engineer, assist us

with assessing many sites. We have financial commitments from the areas where the majority of private property work will be done, and a commitment from the town of Norway to complete approximately 21 sites between this spring and the end of 2022, so things are looking promising. LAON hosted a meeting of the property owners who use Gibson Brook Lane and we facilitated the creation of a new road association committed to funding their portion of the remediation effort and to maintaining the improved road according to best management practices.

Many problems on private property are relatively easy and inexpensive to resolve (see general recommendations, below). The grant has a provision for those known as “Residential Matching Grants,” to provide up to \$350 in matching funds. The Maine DEP is expected to announce grant awards in August for work in 2021 and 2022.

The health of our lakes depends on us all, on our individual actions, and how we maintain our property and camp roads. To enable us to be better lake stewards, we plan to conduct two workshops under the grant in 2021, one on road/driveway maintenance, and one on the use of vegetation to keep phosphorus out of our lakes. We are considering holding an online workshop this year, but that is not certain. When the dates for any workshops are set we will contact all members for whom we have email addresses.

Each of us knows our own property the best and can note change over time caused by erosion. Look for signs that runoff is washing erosion into our lake or a stream. Contact us (norwaylaon@gmail.com) if you would like a team member to provide advice. How we assess your area will depend on the state of the virus at that time.

Our goal is to reduce the amount of harmful nutrients that flow into our lakes. Here are things you can do on your property to protect your lake:

- Divert water into vegetated areas by creating berms (Erosion Control Mulch, known as ECM, works great), or physical barriers, to change the flow of water;
- Plants along the shore make a huge difference, so establish or reinforce shoreline plant buffers. Unfortunately, grass is not a strong solution. It can hold the soil, but it does not absorb phosphorus.
- Define paths so that large areas are not compacted. Using ECM for a path works very well
- Don't rake. The collection of pine needles, bark, sticks, and leaves form what is known as the “duff layer.” The duff creates a protective layer over the soil, preventing raindrop erosion, and absorbing stormwater (which can contain nutrients) like a sponge, and prevents it from continuing to the lake;
- Cover bare areas. Vegetation is best, but if that can't work, ECM is a good solution
- Place crushed stone under roof drip lines.
- Check out the “Keep Lakes Healthy” section of our website for more detailed information on what you can do to control erosion.

Phase 1 sites off of Sandy Shore Lane

