

PLA Annual Meeting

July 27, 2024

9:30-12:00 am

Edge Lake Farm

Welcome - Jim Aiken, President

Jim welcomed everyone and asked for people to sign in. He thanked Sabin and Province Lake Golf for the use of Edge Lake Farm. The agenda has been condensed to focus on cyanobacteria. There are several volunteer opportunities.

Guest Speaker - Nisa Marks, Watershed Coordinator, NHDES

Nisa is the general point of contact for associations in the state, and she works a lot on cyanobacteria. A link to her presentation is provided on the PLA website ... [here](#). In her presentation she focused on Province Lake and shared that she mentions our lake in many of her talks, both for good reasons and for bad. Our bad news is that we have a lot of blooms, which go back 60-70 years. Only a handful of lakes have this history. Having blooms means we are more likely to have more (a system in a specific state is more likely to stay in that state, inertia).

On the good news side, Province Lake has an extraordinary record of success in implementing phosphorus reduction projects with lots of people coming together from New Hampshire and Maine. One of our important tools is the PLA's 2014 Watershed plan, the 2015 Implementation Plan, Phase 1, the 2016 Implementation Plan, Phase 2 and the 2021 Implementation Plan, Phase 3.

The presentation includes a wealth of information for homeowners and on the importance of working with partners like the Acton Wakefield Watersheds Alliance (AWWA). The presentation includes many recommendations of specific actions to take including:

- Use native plants with deeper root systems.
- Selectively trim trees and keep the root systems.
- Modern septic systems that are maintained do a pretty good job of removing phosphorus. Other systems do not. Full time residents should clean out systems every three years.
- Associations can help coordinate "pump out" days, which may result in discounts from the Septic companies.

- Pass local regulations requiring modern systems. A number of associations are working on this now.
- Blooms affect property values – homes have lost up to around 1/3 of value in some areas.
- Investment in water quality is an investment in your home.
- An important and repeated recommendation: “Spread the Word”.

Nisa summarized next **Actions**: Keep doing what we’re doing. The infiltration trench along Bonnyman Road in Effingham needs to be cleaned out. It has not been done as much as it should be. Get grant funding. There are resources to help like AWWA. NH’s Lakesmart program has helpful resources. Treatments are very expensive and, in the long-term, are not effective without phosphorus reduction work. There isn’t one quick, easy, cheap effective solution. There is no “silver bullet” for cyanobacteria.

Jon Balanoff - Executive Director of Acton Wakefield Watersheds Alliance

Jon summarized AWWA’s projects at Province Lake and the money spent:

2012 Watershed Plan	\$161K
2015 Implementation Phase 1 - High Priority	\$203K
2016 Phase 2 - Septic Systems, Golf Course, & Campground Shoreline	\$178K
2021 Phase 3-Septic Survey (replaced 12 septic systems) & Bonnyman Shoreline Stabilization Project	\$82K
Total number of grants:	\$625K

Province Lake was a pilot for the stabilization project on Bonnyman Road for the state. It is the first time that live staking was used on a lake versus mostly on rivers and appears to be quite successful.

It has taken 10 years to reduce the phosphorus load by **143 lbs per year, this is a huge accomplishment**. It could take 10 more years to get to the 250 lbs goal.

There were several questions from the floor for Nisa and Jon.

- Do boats stir up sediment?

Part of the original watershed plan in 2014 and the follow-on sediment analysis in 2019 looked at the extent of the contribution from boats and did not find evidence of boat wakes causing a big increase in Province Lake. Although the sediment analysis did indicate that there is phosphorus in the bottom of the lake, it was not clearly demonstrated that a large portion of phosphorus comes from the sediment.

- How often are the pounds of phosphorus measured?

It is not something that is recalculated every year. It is a cumulative number. When a project is implemented, we calculate the amount of phosphorus that is stopped from entering the lake using the EPA Region 5 model. If a project isn't maintained, then in theory some amount should be subtracted.

- How are the 143 lbs. of phosphorus measured?

As with the above question, AWWA uses the EPA Region 5 model. Phosphorus is not measured annually. That amount of removed phosphorus is calculated using the Region 5 model and should remain unless the project area is not maintained. We don't subtract from maintenance issues. However, the level of phosphorus in the water is measured annually during our water sampling events throughout the summer.

- What is the impact of old septic systems and outhouses?

Outhouses do contribute phosphorus, however it is unknown by how much. There is direct seepage through the soil. Outhouses can leak into groundwater that goes into the lake. Outhouses are not effective in holding back phosphorus. Holding tanks are also not ideal and are now illegal for new installations in NH. The most effective are well-maintained septic systems. Septic systems of full-time residents should be pumped at least every 3 years, and pumping for seasonal residents should probably be about the same. Per the watershed management plan and the updated sediment analysis, septic systems are the second highest contributor of phosphorus. Outhouses specifically were not calculated.

- Does mulch going into the lake during winter erosion contribute?

Jon is not positive, but felt that mulch has very little phosphorus in it.

- Can cyanobacteria exist in the cold?

We have seen blooms under the ice. Blooms don't require warm water conditions. It just makes blooms more likely.

- Why are native plants important and how to get them?

Native plants have deeper roots, which are better at holding back runoff. New Hampshire has a list of native plants that the PLA has posted [here](#). Native plants can be hard to find. Farm Field Greenhouses in Sanford, ME is beginning to stock native plants. Garden in the Woods in Framingham, MA is also a good place. NH is offering "Landscaping at the Water's edge" conferences to work with landscapers. The demand for attending is increasing.

- Are the new culverts on Bailey Rd, Effingham affecting cyanobacteria?

Nisa & Jon were not familiar with that project. Jon Samuelson, PLA Vice-President, said the culverts are probably not going to affect the flushing rate of the lake. The lake empties into a giant marsh, so it is slow to leave. It takes about a year to flush out the lake. It would be nice if we could expedite the water out, but that is not the case.

- What about trees that came down in the winter and fell into the lake? Is there any funding for removal?

They are not a big contributor of phosphorus. DES recommends leaving them in place unless they are interfering with a swim area or dock area. Otherwise, leave them. Province Lake has intrinsic characteristics contributing to blooms. It's large, shallow and has a slow flushing rate so it has warm water that doesn't change over often. The watershed is not that large, but all the phosphorus from the surrounding land ends up in Province Lake.

- Is there any way to increase participation in the septic survey?

The PLA did a survey in 2016. It's a volunteer survey. We don't have data on every system on the lake. Grants can give up to \$5,000 toward a system upgrade, but systems can cost \$20,000. Every year AWWA applies for grants for 4, maybe 6 grants. This is where you talk to your neighbor – a lot of people don't think about septic.

- There is a bill that passed this year that will require septic inspection (and possible upgrade) at the time of sale. This is why some lake associations are working with localities on regulations.

- A homeowner reported that AWWA came out to their property and changed how they managed their property. It was super easy and gave them good hints. Very helpful.

- Comments on “when is it safe to swim?”.

What if one side of the lake had high bloom but the other side was not active? There is risk if there is any bloom anywhere. The bottom line is everyone’s risk tolerance is different. Blooms can move around quite rapidly in response to wind, and wake and can change minute to minute. The recommendation is not to swim when there is a warning present. The PLA will never say it’s safe to go in the lake. You must use your own judgment. If it doesn’t look good, you probably should stay out. Nisa said that she has been sick with cyanobacteria before and would not like it again. There can be serious side effects.

- A speaker mentioned that AWWA had helped in replacing his septic system.

- If homes are being “upgraded” is it required to upgrade the septic system? A homeowner said that they did have to upgrade theirs and that the state was helpful and the homeowners did have steps that they followed. There is a relationship between the number of bedrooms and the septic system. House size and bathrooms are not relevant as it is the number of potential people in the house that makes the difference.

ACTION: Jim Aiken recommended talking with your neighbors and supporting local organizations like AWWA, Green Mountain Conservation, and the PLA.

11:00: Cyanobacteria Subcommittee - Jon Samuelson

The subcommittee had two meetings in the fall & spring to look into potential treatment options. They prepared a list of Environmental Protection Agency recommended treatment options – although the options are not endorsed by the EPA. They researched the options and contacted companies that do the work to answer would it work, costs, etc. The information was pulled together and reviewed by the water quality experts of NH DES and Don Kretchmer, water quality consultant to get their thoughts. The answer is there is “no silver bullet.” The long-term fix is to stop the phosphorus from getting to the lake. The subcommittee is still working with DES on the potential of alum treatments, which are more effective if a lake is deep. The treatment requires a stratification of temperature, which we don’t have in our shallow lake. Province Lake might be a “test child” for an “alum light” treatment. Alum Light would be a light application

of aluminum based compounds to try to strip the phosphorus from the water column and have it settle to the bottom. Phosphorus clings to the aluminum compounds. This would only be a short term fix and expensive to have done. This has not been done in NH before, but it is something that NH DES is looking into. It has been done in CT and MA lakes.

The PLA is close to filing for a NH grant for a “shovel ready” project on a section of Route 153 beach. AWWA has done a similar project in the past. We would like to do an additional 600 ft. over the next few years. We will be looking for volunteers if this money is approved. We will also be looking at Maine.

A question was asked about mechanical aeration. Aeration typically does not help shallow lakes. On a deeper lake, a lot of your phosphorus may be coming out of the bottom sediment. When the oxygen at the bottom level is depleted, the phosphorus releases into the water and can cause a bloom. Province Lake doesn't have a dissolved oxygen issue and the lake isn't deep enough to have that issue. In Vermont a lake put in a million-dollar system and is now taking it out as they have determined that the aerator actually made things worse. There was a bubbler in Province Lake in the 70's. Someone stole the compressor. The conclusion from the study that was done is that it did not help. In the 60's copper sulfate was used. This is not recommended anymore and it was mentioned that cyanobacteria have become copper resistant.

11:10 Watershed Steering Subcommittee

Carl Davis reported for Dennis Badman

Carl presented the 2014 Watershed survey and the two addendums. The plan's goals were for 10 years and then the goals would need an update. The PLA will update the survey and will coordinate with Jon Balanoff and AWWA on the data collection. This is a new subcommittee for the PLA. The goal is to revisit the plan and update for the next 10 years. Surveys will be done in the spring of 2025 for a new plan in 2026. The survey will require lots of volunteers. The last time there were 30 – 40 volunteers. This information is used to target the highest phosphorus contributing projects. Every landowner around the lake will get a letter requesting permission to look at their land. The septic survey will be done electronically or by mail. The Effingham project on Bonnyman Rd was brought up again about not being maintained.

Effingham Selectman Chris Seamans spoke. He is relatively new to the board. He will try and set up a meeting to do a site visit. Last year there were 60-70 inches of rain. He explained that the state of NH and Effingham have a right of way, but they don't own anything. They need to get permission to do things. For example, they have to get landowners permission for easement culverts. They can't easily increase culverts from 15 – 18 ft. Projects can be done, but they can be complicated and time consuming.

ACTION: The Watershed Steering Committee needs to arrange a meeting with AWWA and the Effingham Selectmen.

11:15 Business Meeting

Bylaws/Board Member Changes/Nominations/Election of Directors

Bylaws: Jon Samuelson made a motion for a bylaw change on a minor addition of a form 990 NEC that is completed for tax purposes by the Treasurer to be approved. **VOTE:** Bylaw change approved by majority of members present.

Upcoming board member changes: Donna Luce who has been secretary for a long-time and is stepping off the board; Tucker Vye is stepping down, Lorie Dunne, past president is leaving the Board due to a move. Past members were thanked for their service.

Nominations:

Officers (2 year terms):

President: Ryan Ruel

Vice President: Jon Samuelson

Treasurer: Thom Townsend

Secretary: Debbie Cunha

At Large Board members (renewing 2 year terms):

Jim Aiken

Carl Davis

Remaining Board members (terms ending in 2025):

Peter Dinger

Mindy Schuman-Vye

Dennis Badman

Larry Moody

Marcia Fletcher

VOTE: All Officer and Board Members up for new 2 year terms were approved by the majority of members present.

MOTION and VOTE: A motion was made that the duly elected officers; Ryan Rule-President, Jon Samuelson, Vice-President, and Thom Townsend, Treasurer, be authorized to be the signatures on the Province Lake Profile Bank checking account. The motion was seconded and then approved by a majority of members present.

Secretary's Report - Approval of 2023 Annual Meeting minutes

Presented by Donna Luce

MOTION and VOTE: A motion was made to approve the 2023 Annual Meeting minutes. The motion was seconded and was passed by a majority of members present.

Financials

Presented by Thom Townsend, Treasurer

Thom Townsend read the following annual treasurers report:

“Good morning. My name is Thom Townsend, and I have been your Treasurer for 12 years. Financially, 2023 was much like the past 2 or 3 years.

We began 2023 with a balance of \$50,003.12 During the year we had an income of \$22,201.38. The major components were Members' Dues & Contributions: \$12.4K, contributions from the towns of Wakefield and Effingham of \$7.4K (to offset much of our Lake Host payroll expenses), and Corporate contributions of \$2.3K.

Our expenses during 2023 totaled \$22,620.74. Included were our Lake Host Inspection payroll expense of \$9.6K (of which \$7.4 is subsidized by the towns), Partnership contributions (primarily AWWA, LPC, UNH Lay Lakes, and NH

Lakes) of \$4.7K, , Insurance expenses of \$2.1K, beaver population control expense of \$3.0K, and Water Quality Testing of \$1.3K

We have an expert on beaver control who has an annual contract to maintain the South River.

At the end of 2023 our Treasury had a balance of \$49,583.76, a net decrease for the year of \$ 419. During 2023, the Board voted to invest \$30K of our funds in a CD, so the actual balances were \$19,583.76 in our checking account, and \$30,000.00 in our CD, both of which are with Profile Bank.

Looking forward into 2024, our major income sources and expenditures are consistent with past years. Nearly 70% of our members contribute greater than our Associations nominal \$25 membership fee.

We are prepared to apply funding for any identified and approved remediation of threats to our lake.

Respectfully submitted,

Thom Townsend, Treasurer”

Financial Audit

Presented by Carl Davis on behalf of Michelle Schank

Michell’s audit agreed with all of Tom’s numbers. Carl read the most important part of the letter stating that “To the best of my knowledge, all records appear to be complete and maintained accurately with detailed monthly breakdowns for both income and expenses and supporting receipts. I applaud the meticulous bookkeeping of our Treasurer and thank him for the time and effort that he has put forth as a volunteer.” The full Audit Report is available on the Province Lake Website [here](#).

Loons

Presented by Donna Luce, “Loon Ranger”

The loon report for 2024 is quite different from last year’s report. Last year Donna recorded twelve pages of information including the loon nesting activities as well as the many times people were seeing Bella the loon chick out on the lake. This year’s report was only two pages because there was no nesting activity to record and no chick(s) to be watched.

The male loon arrived back to Province Lake on April 6th and the female loon arrived on April 9th. Carl Davis and Steve Craig put the loon raft out in the Spring, a close watch was kept on the loon raft to see if there was any nesting activity but they would only stay on for short periods of time. For many weeks, five loons have been seen on Province Lake, two pair and one single loon. Cassie, the loon biologist from the Loon Preservations Committee, has visited our lake three times and she said it's possible that the "intruding" pair of loons could have prevented our loons from nesting. Loons are territorial and our lake is not large enough to have another nesting pair.

On July 20th four boats participated in the LPC annual loon count and five loons were seen on Province Lake. Bella will remain on the coast for two more years and when it is mature and ready to mate it will go to another lake. I recently learned that only the male loon does the loud yodel. For more information on loons, you can visit the Loon Preservation Committee's website and Facebook page.

The meeting adjourned at 11:50.

Respectfully submitted,
Debbie Cunha, Secretary