

EAST POND NEWS



East Pond Water Quality Update

Dr. Danielle Wain, Lake Science Director, 7 Lakes Alliance

Data from the 7 Lakes Alliance-Colby Water Quality Initiative

Post-Alum Treatment Data

Throughout the last summer, staff from 7 Lakes and students from Colby collected profiles of temperature and oxygen, in addition to Secchi disk readings and water samples for phosphorus analysis. East Pond is one of our priority lakes as we continue to monitor the impacts of the 2018 alum treatment. East Pond is one of the shallower lakes in the Belgrades. Before the alum treatment, the reduced water clarity led to stratification in the lake, despite its shallow depth.

WHILE EARLY INDICATORS SUGGEST THAT THE ALUM TREATMENT WAS EFFECTIVE, WE ARE CONTINUING TO MONITOR SECCHI, OXYGEN, PHOSPHORUS, AND ALGAE TO UNDERSTAND HOW THE ECOSYSTEM HAS CHANGED AFTER THE TREATMENT.

Now, East Pond typically remains well mixed through much of the summer, which means it mostly stays well oxygenated down to the bottom. We only observed low oxygen near the sediments on one day in August but did not see any increase in phosphorus (which means the alum is doing its job!). The water samples collected over the summer indicate that the volume averaged phosphorus for the summer was 6 ug/L, compared with an average of 12ug/L for 2015-2018. The average Secchi disk reading last summer was 19 ft, 6 ft deeper than 2015-2018 average.

While early indicators suggest that the alum treatment was effective, we are continuing to monitor secchi, oxygen, phosphorus, and algae to understand how the ecosystem has changed after the treatment. There has been a significant reduction in algal biomass since the treatment, and consequently a reduction in the number and size of the zooplankton that eat the algae. Zooplankton are a key food source for young fish, and thus are an integral part of the food chain. This is commonly observed after alum treatments and the zooplankton population typically rebounds within a couple of a years. We will be putting up to date water quality information online this summer at:

<https://hobbes.colby.edu/7LA-Colby-WQI/InSitu/>

Wake Boat Study

Dr. Danielle Wain

A wake boat study was initiated in response to concern from the East Pond Association that wake boats might impact the longevity of the alum treatment. There are two possible mechanisms in which this may occur: (1) direct disturbance of the treated sediment beneath the boat and (2) disturbance of shallower untreated sediments followed by lateral sediment transport leading to burial of treated sediments. In August 2019, with the assistance of Camp Manitou, an experiment was designed to test the depth of penetration of the wakes to determine the likelihood of these mechanisms.

To measure the boat wakes, a 1-MHz pulse-coherent acoustic Doppler current profiler (ADCPs - Nortek Aquadopp) was placed by divers on the bottom of the lake at the deepest point. Additionally, two sediment traps were deployed for two months in East Pond, one at the deep hole and another at 16 ft (5 m) depth. The purpose of the sediment traps was to measure the deposition of sediments in the lake to get an estimate of how much sediment is resuspended and/or transported over the summer.

Camp Manitou ran the same boat configured in three ways (surfing, extreme wakeboarding, and water skiing) over the ADCP. Three passes in each configuration were made, each separated by 10 minutes. The configurations are defined as follows:

- Surfing: 10 mph, full ballast, wake plate
- Extreme wakeboarding: 20 mph, full ballast, no wake plate
- Water skiing: 30 mph, no ballast, no wake plate
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We observed that when the boat is configured for surfing, the wake penetrates approximately 7 ft (2 m). When the boat is configured for extreme wakeboarding, the wake penetrates approximately 3 ft (1 m). Not surprisingly, the use of the wake plate seems to be the key difference in how deep the wake penetrates.

So, what does this mean for water quality? As discussed above, in summer 2019, we saw continued improvement in water clarity and phosphorus concentrations compared with conditions pre-alum treatment. But there was a moderate increase in both in late July and early August (although still much better than pre-alum treatment!).

We did not observe anoxia in the lake until early August, indicating that the increase in phosphorus (and subsequent decrease in Secchi depth) was not likely to be due to internal loading from the sediments. Even if anoxia were present, the alum in the sediment would prevent such release. Analysis of other elements present in the water column confirms this. Aluminum does not dissolve from sediments under anoxic conditions (which is why it is used as a phosphorus binder). Thus, an increase in aluminum in the water column (as observed) must be due to a different mechanism, likely sediment transport from other regions of the lake. While sediment transport can be due to wind and wave action, the increase in aluminum coincides with peak boating activity in the lake of all types.

In summary, regular boat wakes penetrates down to about 3 ft, and wake boats are about twice that (7 ft), which is not deep enough to directly disturb the alum treatment. That doesn't preclude disturbing shallower untreated sediments (if boats go in water less than 7 ft), which can be suspended and redeposited on top of the treated sediments. To avoid disturbing sediments underneath the boat, wake boats should be operated in water that is > 10ft. In East Pond, this is actually much of the lake.

Serpentine Clearing – Thank You Note

EPA heartily thanks Keith Richards and Jimmy Hines for volunteering their equipment & substantial time clearing several downed trees that were blocking the Serpentine!

Wave action erodes this tree-laden shoreline; it doesn't take much for storms to bring them down; the erosion adds phosphorus that feeds algae - into our water-column.

Maintaining NO WAVE/Headway Speed Only 200' from Any Shore is important in preserving water quality and maintaining access to our unique resources.

Let's all do our part to preserve this resource and observe the state law NO WAVE/Headway Speed Only 200' from Any Shore!

A Note From The Treasurer

I would like to personally thank all of you who have renewed your memberships for 2020. We are ahead of where we were at this time in 2019 but for those of you who are still waiting to renew/join, why not do so right now and get a family member or neighbor to join as well. You can download a printable membership form, or use the convenience of PayPal, by going to our website <https://eastpond.org/> and clicking on the "Renew or Join" button under the Membership tab.

I would also encourage you to make whatever donation you feel comfortable with towards the Invasive Plant Fund. **This is our largest yearly expense and covers the wages we pay for paid Courtesy Boat Inspectors.** Our membership has always been very generous in helping fund this effort, but another major source of funding comes from voluntary donations made by Alden Camp guests. Over the last three years that donation has averaged over \$2,200. Because of the present COVID19 travel restrictions for out of state residents, I expect that we will see a drastic decrease in this donation for 2020 so please help us offset this shortfall.

Thank-you,

David Jackson – Treasurer, East Pond Association

Septic Information

Last Winter the board of directors applied for a grant to help accomplish the goals set out in our Watershed Protection Plan to research the impact of septic systems on water quality and to provide property owners with current information about septic system maintenance. The grant was not funded. Plan B is that we will begin working with other lake associations in the region to develop a regional approach to the issue. Meanwhile, here are some points to remember to make your system last longer. It is the homeowner's responsibility to ensure that a septic system's design complies with the Maine Subsurface Wastewater Disposal Rules, 10-144A CMR 241, as well as applicable local ordinances.

1. It is the homeowner's responsibility to obtain all required local, state, and federal permits required for installing a septic system. Contact the Maine DEP @ 207-287-2111 and Army Corps of Engineers @ 207-623-8367 with questions.
2. Garbage grinders are NOT recommended with septic systems. The Subsurface Wastewater Disposal Rules require additional septic tank capacity, tanks in series, or a septic tank outlet filter if a grinder is used. The tank should be pumped more often.
3. Low volume toilets (max. 1.6 gal. per flush) and shower/faucet flow reducing fixtures will minimize water use and should extend the life of the septic system.
4. Limit wastewater generation so that the septic system design capacity is not exceeded on any day. Exceeding design flow will saturate and plug the disposal field.
5. Connecting roof or floor drains to a septic system may cause premature failure.
6. Don't send backwash from water treatment devices to the septic system. This will prevent the associated high flow and harmful chemicals.
7. Don't use powdered soaps or detergents; their components plug disposal field soil pores.
8. It is illegal to dispose of hazardous or toxic substances (paints, pesticides, solvents, drain openers, etc.) in your septic system. They can kill living organisms critical to your system and pollute surface/ground waters. Use snakes, **or** baking soda solutions.
9. Do not dispose of non-biodegradable materials (disposable diapers, cat litter, coffee grounds, cigarette filters, paper towels, etc.). Use National Sanitation Foundation recommended toilet paper, which breaks down quickly.
10. Don't dispose of fats or greases; wipe heavy grease off of dishes before washing.
11. Chemical septic tank additives are prohibited in Maine (yeast, horse manure, Rid-X), and may in fact cause plugging of the disposal field.
12. Pump the septic tank regularly to prevent premature failure of the disposal field: once after the first year of use, and then every 2-5 years based on the first inspection. Adjust the frequency to lifestyle changes. Inspect the tank's internal baffles. Install a filter at the tank outlet if subject to great fluctuations in septic system usage.
13. Do not drive over or store heavy materials on top of septic system components, unless it is designed for heavy loads.
14. Divert all surface water away from the septic tank, pump station and disposal field.

PLEASE – call the local Plumbing Inspector, or the Plumbing Program in the Maine State Division of Health Engineering (207-287-5672) for help with any questions.

History Project

Fellow members, I am Chris Stevens. I would like to introduce you to the East Pond Association history project. If you go to the eastpond.org web site and select the drop down menu “about”, you will see the history page.

So far, we have the leadership section of the project for you to view.

The next stage is to work on events that have had importance to the lake. Examples of this includes the Dam, fishing, camps, development, water quality programs and more.

The third stage will be the people, communities, and families that make up East Pond.

I have never done a history project before. I don't have experience or the technology to sort, verify and organize large chunks of material. So, my approach has been “old school round dial” methods that just take a little bit more time. I would love to have any volunteers to help with our project.

In the meantime, if you have “The Story” such as your family history on east pond that is ready to print, please send it to us.

Lastly, I would like to thank Dave Brown for all his work toward this project and his years of leadership with the East Pond Association

Opening and Closing Camp While Protecting the Lake

Camp Opening

A springtime ritual for many families is opening up their lakeside camp or cottage for the summer. To help protect the lake and wildlife that make camp so special, it is important to conduct this yearly procedure in such a way to minimize harm.

The following are tips to make the opening of your camp safer for the lake and its wildlife:

- Raking - DO NOT rake up the duff layer of leaves and pine needles that build up under the trees. These leaves act like a sponge which filter and help prevent pollutants from getting into the lake. As a cottage owner, it is one of the best things you can do to protect lake water quality.
- Dock painting - Paint or stain docks away from the lake and allow at least 14 days of drying time before putting them in the water. Make sure to clean brushes, etc. away from the water to prevent materials from washing into the lake.

- Check for erosion - Check the shoreline and other areas of your property for soil erosion. Stabilize these areas with plants or rock riprap. If more than minor maintenance and repair is required, or if structural measures are necessary, contact your local code enforcement officer and the DEP to determine if permits will be needed before doing the work.
- Septic system - Check your septic system's leach field for any breakouts and consider having the tank pumped if it has not been pumped recently (tanks should be pumped every 2-3 years for year-round residences and every 4-5 years for seasonal residences). A properly functioning septic system prevents harmful pollutants from getting into the lake.
- Boats - When preparing your boat for another season, make sure to dispose of drained lubricating oils at a recycling facility or bring the oil to your local dealer for disposal. Wash the boat away from the water or at a commercial car wash. Check to make sure that the boat, trailer, and other equipment are free of all hitchhiking plants. And tune-up that motor.
- Cleaning products - When using cleaning agents, use natural products like baking soda and lemon juice and save money while protecting your health and nature.
- Paint color - When using paints and stains, consider using earth tone colors so that buildings and other structures will blend better with the natural shoreline.

Closing Camp

The summer months have flown by. It seems like just yesterday you were opening up your cottage for the summer, but it is time to get the cottage ready for the harsh fall and winter months ahead. When going through this yearly winterizing ritual, it is important to consider possible impacts to the lakes and wildlife from these activities. The following are some tips to help you in doing this:



- Drainpipes - Winterizing a cottage requires preventing pipes from freezing. Drain the water system to ensure that it will not freeze, do not use anti-freeze to protect plumbing. Antifreeze is toxic and it poses a threat to ground and surface waters, not to mention the danger of it being ingested by pets. Adding *antifreeze to plumbing fixtures is not necessary* provided all the fixtures are completely drained.
- Protect from rodents - Damage from rodents such as mice and squirrels are a concern for cottage owners. Refrain from using pesticides or poisons. To prevent these unwanted guests, inspect the cottage inside and out to make sure there are no openings for rodents to enter. Remove all food sources from the cottage before you close it.
- Check for erosion - To make sure that shorefront areas will not succumb to ice or wave damage, inspect the shoreline thoroughly. Stabilize any eroding areas with plants or rock riprap if necessary. If using riprap, patching a retaining wall, or doing anything more than minor maintenance and repair, state and local permits are required, so plan

accordingly. This is also a good time to inspect parking and landscaped areas for signs of erosion.

- Remove dock - When removing docks and boats from the water try to store them in an area that will not kill vegetation. A stable shoreline and healthy vegetation are important in keeping eroding soil from harming water quality.
- Boats - Do not try to drain gasoline from fuel tanks of outboard motors or other power equipment. Instead, use fuel stabilizer (available from your dealer or auto parts store) to keep fuel fresh for next season. Winterize your engine(s) away from the water. When changing lubricating oils, collect the oil and bring it to your dealer or a recycling facility for proper disposal. Wash boats away from the water, preferably at a commercial car wash. Many detergents and motor oils contain chemicals that can pollute the lake and harm fish.

LakeSmart: A Tale of Two Seasons

Hold the phone; beat the drum; East Pond remained clear throughout the entire summer of 2019; our second year of no algae blooms and encouragement that our alum treatment is working! This summer promises to be just as beautiful. And by the way, there are rocks in our lake that I never knew existed until I drove my boat over them these past two summers, teeth clenched and worrying that I was going to strike one! They appear to be only inches below the waterline; fortunately, that was just an optical illusion due to the clear water. Yes, I am really enjoying the clear water! But now is not the time to relax; **we need to continue to improve the way storm water travels across and through our properties to keep every little bit of phosphorous out of the water.** The LakeSmart program can help do that.

Many of you on the lake may have noticed some green algae in the lake in early June, but most of it was concentrated in the uppermost foot or so of the water column. I took a secchi measurement on Friday June 6 and could see the disc all the way to bottom at 7.01 meters, a very good measurement for East Pond. Last year we had similar concentrations of green algae in June, and still had a great summer of clear water. We're hopeful for the same this year.

We had a banner East Pond LakeSmart program in the summer of 2019! We evaluated twenty-nine properties, well over twice as many as in any other year since we began the program on East Pond in 2009. **Fourteen** of those twenty-nine **properties earned the much coveted LakeSmart award.** The criteria to earn the LakeSmart award have been set very high. Many of the properties that did not earn the award passed portions of the evaluation. With a little work they will eventually pass.

Colby College also pitched in and provided three students to help me do the evaluations. They did an excellent job and freed up some of my time to enjoy all that beautiful clear water

We kicked off the season with a LakeSmart social last summer on June 29 at the home of Joe and Cindy Reese where we introduced our *Now What?* Campaign. Part of that campaign is to keep phosphorous out of the lake by stepping up our LakeSmart efforts. About forty dedicated lake lovers attended the social and enjoyed great food while socializing with one another. I reviewed the status of the alum treatment and the need to continue to keep phosphorous out of our lake. We toured the properties of the Reese's and their neighbors Dick and Joan Schmaltz, where we discussed many of the Best Management Practices they have installed that are managing water runoff. I'm convinced that the social and hard

work of several board members led to the record number of LakeSmart evaluations last summer. Our first LakeSmart Social at the home of Joe and Cindy Reese; a very LakeSmart property!

We intended to hold another social this June, but coronavirus changed everything. The owners of the LakeSmart program, the Maine Lakes Society (MLS), announced that there would be no evaluations done in May. I am still waiting to hear if the program will be able to operate in June, or later months. I'm confident that I can safely do the evaluations while social distancing, but understand that even if the MLS opens up the program this summer, some homeowners may not wish to have a stranger on their property. Evaluators are available to provide advice via email and telephone on how you can make your property more lake friendly. We've gone from a banner LakeSmart season to one that holds a lot of uncertainty. **Forty-eight properties on East Pond have earned the highly coveted LakeSmart award.** LakeSmart looks at four aspects of lakefront properties and rates them for how well they keep phosphorus from getting into the lake. This evaluation is done by trained volunteers who look at 1) Driveway and Parking Areas, 2) Structures (buildings) and Septic Systems, 3) Yard, Recreation, and Footpaths, and 4) Shorefront and Beach Areas. Properties that score well in all four categories receive the LakeSmart Award. **The evaluation is free.**

Let's build on our success! If your property is already LakeSmart, then please talk to your neighbor and suggest they call for an evaluation.

If you would like to have your property evaluated, contact me at 207-362-5340.

Mel Croft East Pond LakeSmart Evaluator

Fund Raising Update

The total amount of gifts, grants and pledges received for the East Pond Restoration Fund as of June 2020 is approximately \$1,110,000. Outstanding pledges are approximately \$113,000. These will be paid off at the rate of \$45,000 per year. We took out a demand loan to help fund the project. The current balance on the loan is approximately \$42,500. One of the pledge payments scheduled for 2020 was deferred until later this year or next year but, assuming pledge payments get back on schedule in 2021, we have ample pledges to pay off the loan and provide some reserves for future restoration needs when the pledges are completed. Because of the deferred pledge payment, the EPA board decided to take \$20,000 from one of our low yielding CD's and use it to make the scheduled spring payment on our demand loan which had a much higher rate of interest than we were earning on the CD.

We still welcome additional gifts to the restoration fund which will be used to build the reserve account to fund future East Pond restoration needs. Send donations to:
7 Lakes Alliance, PO. Box 250, Belgrade Lakes, ME 04918 Note: For East Pond Restoration

Please contact Jerry Tipper if you have any questions.

qtipper@gmail.com 207-592-4605

Bottle Returns now at Tri Pond Variety

Now that D&L has closed their redemption business, there is a new way to support the East Pond Association with your container deposits. Good news on the bottle return front. Tri Pond Variety has received their State permits and is ready to accept our bottles and cans. They agreed to honor the 6 cents we were receiving from D & L. All bags need to be labeled for **East Pond Association** and placed by the storage unit they brought in. They will be building a redemption building but will use the storage unit to get started. He realizes the state may not be endorsing returns yet but will hold them until they do. Once you drop off your labeled bags, please let the person at the register know you have done so. If you prefer no-contact, you can call 207-362-2010 and tell them they have been dropped off. Thanks to Cindy Reese for making the arrangements with Tri-Pond

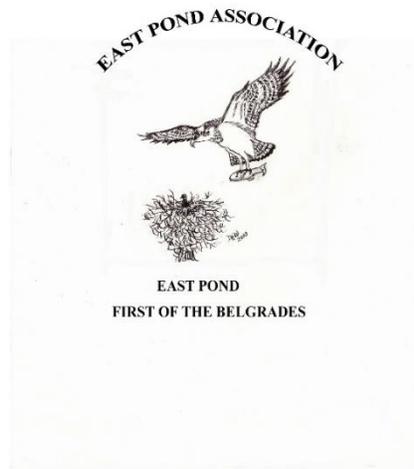
Dam Repair Needed

Our dam manager, Gordon Woods, discovered that the dam needs some minor repair work. He is getting an estimate of the cost and will schedule the work, probably for early fall. We will draw down the water level as much as possible to facilitate the work.



Please Note that due to the COVID-19 restrictions on meeting sizes, and in consideration of the safety of our members, the Annual Meeting of the East Pond Association has been cancelled. All EPA Board Members have agreed to extend their positions for another year due to this cancellation.

We look forward to seeing you in 2021!



DAVID JACKSON, TREASURER

East Pond Association
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