



LEA Lake News

Spring/Summer 2023

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LEA dive crew examines an extensive milfoil infestation (left) next to native waterlilies (right) in Sebago Cove

President's Message

Lydia Landesberg

LEA was founded in 1970, the year of the first Earth Day and a time of deepening environmental awareness, and while we are lake-focused, we are also an environmental organization. Over the years, we have learned how closely related the quality of the environment surrounding our lakes is to the quality of the water in those lakes. Today, our lakes are under threat from increasing usage and from climate change, forces which threaten to make us feel powerless. But we are not powerless. Individual choices matter. They make a difference. By living thoughtfully and treading lightly, we can prolong the health of our lakes, and indeed, our planet. Many people think that it's expensive to make eco-friendly choices, but on the contrary -- frugality is the best route to sustainability. Buy less stuff and select items with less packaging, do not invest in expensive landscaping that alters the natural shoreline, choose watercraft that have a low impact on the lakes, and most importantly, get outside to enjoy the abundant, free recreation that our lakes and forests provide.

I have, at times, been asked if LEA is a governmental agency funded by tax dollars. The answer is no. We are a 501(c)(3) nonprofit organization, and our greatest source of funding is our members. Our membership is diverse, comprised of locals and summer residents, local business owners, landowners, both on and off the lakeshore, boat owners, anglers, and families who rely on the lake for wholesome outdoor activity year round. If you are among this group, I thank you. If you are not, I invite you to join us. As an LEA member you will be granted many opportunities for getting outside with other like-minded folks to learn about the unique ecosystems in our area, as well as access to resources you can use to do your part in ensuring that our lakes stay clean and healthy well into the future.

With gratitude,
Lydia Landesberg
President, LEA Board of Directors



LEA's Statewide Impact

Colin Holme

While LEA does lots of on the ground (and in the water) work in the upper Sebago Lake and Saco River watersheds of western Maine, our board and staff realized long ago the importance of statewide initiatives to protect our lakes. As our past director, Peter Lowell, would often say, "All boats rise with the tide!"

Early on, LEA recognized the problem of invasive aquatic species, and the organization was a catalyst for the original "Milfoil Bill," which passed in 2002 and established the Lake and River Protection Sticker and its Fund. Since then, we have worked with local legislators to update the funding structure of this vital lake-protecting mechanism multiple times (including during this legislative session). We have also worked with our federal delegation to help bring in dedicated funding for control and prevention of aquatic invasive species, like milfoil.

Since our inception, LEA has been a strong advocate for Shoreland Zoning, and over the years, our staff has participated in several state shoreland zoning stakeholder groups. These groups' work has led to common sense upgrades to some of the more complex aspects of shoreland zoning laws. We also watch for legislative bills relating to shoreland zoning laws and help rally others in support (or against) proposed changes to these important rules governing land use around Maine's waters. Similarly, our staff regularly review and weigh in on laws relating to stormwater management. Around ten years ago, LEA cofounded the Lake Leaders group with Maine Lakes (formerly the Congress of Lake

Associations). This group is comprised of staff from lake associations across the state; our meetings focus on upcoming lakes issues, pending legislation, and administrative infrastructure. The organizations involved in this group were key partners in another broad-reaching project, which we spearheaded, called the Maine Lakes Collaborative. Under this project, we cooperated on monitoring, training, and education projects with other lakes groups across the state. We have played a key role in statewide groups, like the Maine Boating Impacts Coalition, which we helped form in 2021, based on growing concern about the effects of large wakes on our lakes.

Another wide-reaching initiative that we are involved with is the collaborative Sebago Clean Waters, which is working to protect the water quality of Sebago Lake by preserving forestland and restoring stream connectivity in the entire Sebago Lake watershed.

Our water monitoring and research program has long been a cornerstone of LEA, and over the years, we have helped numerous groups navigate logistical and technical issues associated with lake testing. Today, we run an annual Lake Researcher Retreat (see Ben's article on page 14) and have helped other groups across the state with projects from depth mapping to bacterial monitoring.

While we are very proud of these accomplishments, we are most grateful for all the partners and partnerships we have in Maine, New England, and beyond. We could not do this work without many friends, allies, and supporters like you!



The Latest Trends at LEA

Ben Peierls

LEA has been monitoring lake water quality for decades. When we report on each lake's annual condition, we also describe the long-term trends for three important water quality parameters that we measure: Secchi depth, total phosphorus, and chlorophyll *a*.

But what do we mean by trends? To some, bell bottoms and the artificial intelligence app ChatGPT are trends (and no, I am not using AI to write this!). But for water quality data, a trend describes if and in what direction measurements change over time.

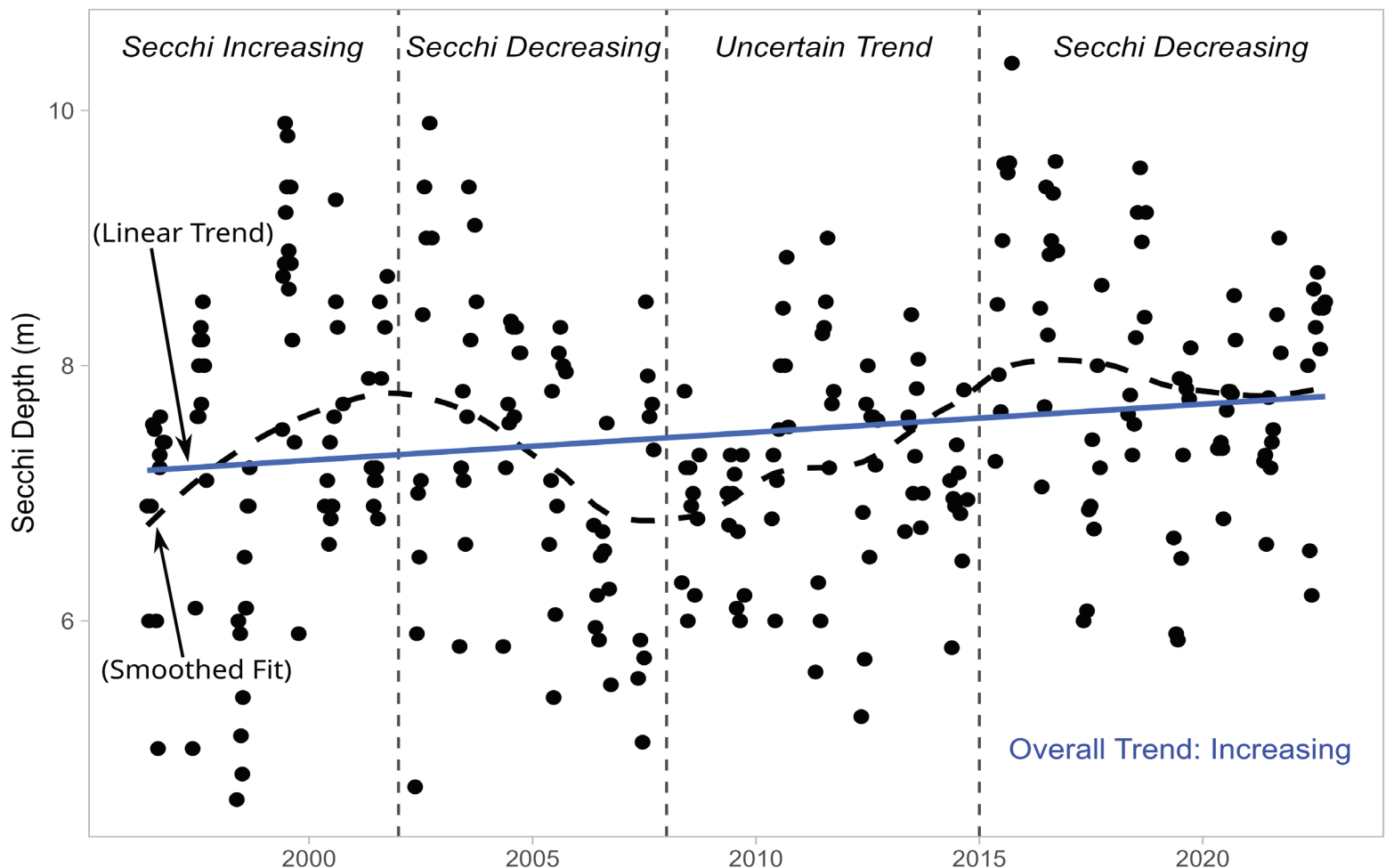
The simplest way to determine trends in an environmental time series is to find the best-fit straight line that passes through the data (otherwise known as a linear regression). If that regression line is flat or has zero slope to it, then the measurements are not changing or trending over time. If the regression line is statistically different from a flat line, then we report it as an increasing or decreasing trend, depending on the slope direction. We prefer to see no change or an upward trend for Secchi disk depth (water clarity) in the lakes

LEA monitors. For chlorophyll *a* and total phosphorus, no change or downward trends keep our stress levels trending down.

Environmental data tends to be noisy and rarely varies in a constant up or down fashion. Depending on the parameter, measurements may change at seasonal, annual, and even decadal scales. That means an observed trend will depend on the length of the dataset. Looking at only part of a time series, you might detect a trend in one direction, while the overall trend is completely different. For example, a smoothed fit through Peabody Pond Secchi depth data (dashed black line in figure) shows alternating trends at short time scales, while the combined data shows a long-term increase in water clarity (solid blue line).

What this means is that the longer we collect data, the better we are at being able to detect long-term trends above the “noise” of seasonal and multi-annual fluctuations. Your generous support helps LEA continue to collect this important data — and we hope our membership continues to trend upward!

Peabody Pond



Plant Picks for your Shoreline

Lauren Pickford

Living, vegetated shorelines are essential to our lakes, serving as important buffers between land and water. Planting native species near the water can help prevent erosion, filter pollutants, and provide habitat for wildlife. Because these plants are so important, our staff compiled a list of their favorite shoreline native plants to inspire your next planting project.

Colin is a fan of button bush, which is known for its unique, globe-shaped flowers. This plant is often found near shorelines and wetlands, and its flowers are loved by butterflies and other pollinators.

Alyson likes bee balm, which comes in a variety of colors, such as red, pink, white, and violet. These summer blooms are a favorite among pollinators, including hummingbirds.

Ben chose the milkweed plant family, which includes butterfly weed and common milkweed because they also attract pollinators and provide critical habitat for monarch butterflies.

Jenny likes asters, which come in a variety of colors and are known for their fragrant blooms. The name "aster" is derived from the Greek word for "star," which refers to the shape of the daisy-like flower head. Many asters also bloom later in the season than other plants, which is a nice addition to your property in the twilight of summer.

Lauren loves moss phlox, which produces beautiful purple, pink, or white flowers and is a popular ground cover. These plants are great for creeping over stone walls and shorelines with enough sunlight.

Maggie's favorite plant is lowbush blueberry, which is beloved by all for its delicious fruit. Of course, it is not only a snack for people but also for wildlife. This plant is a great groundcover and can tolerate a wide variety of conditions but needs a fair amount of sun to produce berries.

Mary loves chokecherries, which produce clusters of small, dark fruit that are good at attracting fall birds like robins, waxwings, and grosbeaks. Historically, the fruit was used to make pemmican -- a mixture of dried meat, fat, berries, or dried fruits.

Mike chose juniper for its hazy-blue berries, which are a common snack for birds and mammals. Juniper is great for stabilizing steep slopes and does well on dry, sandy sites where other shrubs struggle. Plus, the berries can be used to make gin!

If you want more advice on planting your shoreline, visit www.mainelakes.org/resources or reach out to lauren@mainelakes.org for a Clean Lake Check-Up or LakeSmart evaluation.



New England Aster



Blueberry



Chokecherry

Summer Milfoil Plan

Michael Flannery

One thing we know about milfoil is that it is very resilient. Control work is only successful if it is methodical and continued over time. That is why every summer LEA deploys teams of divers to locate and remove variable leaf milfoil in order to prevent its spread and maintain all the areas we have previously cleared.

Last year, we removed 462 bags of milfoil (~11,500 lbs) and laid a record 249 benthic barriers (~150,000 square feet)! These barriers cover dense patches of milfoil and cut off sunlight, killing the plants. This year, we will begin by removing all of last year's barriers and surveying the areas around them to assess regrowth.

After a few years of placing hundreds of barriers, we cleared milfoil out of the 15-acre Northwest River Cove. However, at the end of last season, we noticed some regrowth. To sustain the amazing progress we have made, we will again deploy a five-person team in the cove.

The crew will also survey and remove plants from select locations around Sebago Lake, including Kettle Cove, Frye Island, and parts of Sebago Basin.

Another five-member crew will continue our work in Sebago Cove. The shallow water and organic sediments in this cove provide an ideal environment for milfoil and several species of native aquatic plants. However, unlike many of the native plants in the cove, milfoil reproduces through fragmentation. This gives it a competitive advantage in Sebago Cove, which has significant boat traffic that can cut up and spread the plant. Still, we have made progress in high traffic areas and will continue to address large monocultures similar to last season when we laid 186 benthic barriers.

While we have eliminated all the large patches, we still find milfoil growing along the edges of the channel and in many of the oxbows of the Songo Riv-

er. Again, we will have a five-member crew working on the river all summer. The Songo is the busiest inland waterway in Maine, so boat traffic is one of our biggest obstacles. We ask boaters to drive at headway speed while in the river and be on the lookout for swimmers and divers. Please be patient and give our crews plenty of space when passing.

We will have a smaller crew of three on Long Lake and Brandy Pond this season. Thankfully, both these waterbodies have few plants compared to some of our other locations. This crew will spend much of this summer surveying the 38 miles of shoreline, focusing on known hotspots, such as Cape Monday Cove, Mast Cove, and marina and docking facilities. Even with our full-time crew, there are not enough eyes on Long Lake and Brandy Pond. If you see suspicious plants, please report them to Michael@mainelakes.org.

Samantha Parkman rolling benthic barriers



Walker and Morgan pulling benthic barriers



Why Invest in Milfoil Control?

Colin Holme

Across the country, Maine is known for its beautiful landscapes and pristine waters. However, our region is facing a serious threat from invasive species, like milfoil, which can have devastating effects on our lakes, the people and wildlife that use them, and the economy.

The best way to deal with invasive species is to prevent them from becoming established in the first place. This is why LEA hires and trains around 35 Courtesy Boat Inspectors each year. Unfortunately, on some lakes in our area, milfoil has already been found, and this is why we run the largest milfoil control team in the state.

As you can imagine, physically removing or killing milfoil underwater is expensive and difficult. For this reason, LEA relies on a variety of funding sources. This includes private and state grants, municipal and business support, and individual donations. Without this funding, it would be impossible for LEA to take the necessary steps to control this species and prevent its spread.

Invasive milfoil can have serious environmental consequences, crowding out habitat for other species and adding organic muck to the bottom of the lake. When this plant or another invasive species take hold, it makes the lake less enjoyable for users, which in turn hurts the local economy, property values, contractors, tourism, and service-based industries.

The Lake Region stands apart from many other areas in the country because of its scenic beauty and clean, unspoiled waters. Our lakes, ponds, and rivers are a cherished resource, and it is imperative to protect them for future generations.

An important thing to understand is that investing in the control of invasive aquatic species like milfoil is similar to other types of investments. Putting funding in early and regularly will have major positive effects down the road. We know from experience that we can functionally remove milfoil from small- to medium-sized areas

and keep it from getting re-established -- as long as we have the resources. But once it takes over a large portion of a waterbody, it is very difficult to deal with. The earlier we take this problem seriously, the better the outcome for the environment, the people, our economy, and our lakes.

Morgan Cross holding a milfoil fragment



Want to support our work?
Please return the enclosed envelope, or donate online: mainelakes.org



DONATE AND JOIN LEA TODAY!



If a Tree Falls in the Lake...

Lauren Pickford

For years, a beautiful tree provided shade, a perch for kingfishers, and a home for wildlife on the edge of the water. But in an afternoon, everything changed when a summer thunderstorm knocked it into the lake and left it partially submerged in the shallows. Now, a gap in the shoreline remains and you are left wondering what to do next.

While we may not be able to tell you whether it made a sound or not when it fell into the lake, we can tell you what you need to know legally and ecologically.

Neither Shoreland Zoning Ordinances nor the Natural Resource Protection Act require you to remove the tree after it falls in the water unless it falls into a navigational channel. However, if you do decide to remove it, you should do it within one season, if possible. If it stays in the lake longer than that, the Maine Department of Environmental Protection considers it habitat and would like to see it stay in place. You should also contact your local code

enforcement officer to let him or her know that it fell and you are going to remove it. While you can legally cut and remove a tree that has fallen, the stump needs to be left in place. That is because the roots of the tree act like an underground net, stabilizing the soil and shorefront. Finally, if there are few (or no) other trees around, you will likely be required to replant. This means planting a similar, native tree species to the one that fell in the same general location. For instance, if a white pine fell and there's not enough sunlight for a pine, you could plant a different type of evergreen, like a hemlock or a cedar.

If you plan to do the work yourself, another thing to be aware of is that all the bar oil you put in your chainsaw is lost to the environment. This oil is necessary to keep the chain lubricated, but if you are working over the water, it is going to end up in the lake. While it is not a perfect solution, using a vegetable-based oil from your kitchen for the short time you are working over

the lake can help mitigate this impact, while keeping your saw functioning correctly.

But what if you want to do what's best for the lake and the wildlife that call it home? In that case, leaving the tree in place might be the right choice. The fallen tree can serve as habitat for a variety of creatures. Fish seek refuge in the shade provided by the tree branches, and turtles often bask on downed logs. Birds perch on the branches and search for food, while beavers might snack on the smaller branches, leaving other nearby live trees and shrubs untouched.

While a fallen tree in your lake might seem like a problem, it doesn't have to be (so long as it's not a safety hazard!). Trees have been falling in the lake for thousands of years; it is part of a natural process that benefits the ecosystem and its inhabitants. If you have questions about what is allowed or just want advice about how to handle a downed tree in the water (or near the water), please reach out to me at lauren@mainelakes.org.



Edes Falls Dam Removal

Lauren Pickford

Why did the beaver approve the removal of the dam? Because he heard the fishing was going to be great after the “dam” construction was complete! While we are doing this dam removal project for fish passage and not for beavers, next year LEA and partners plan to remove the majority of the Edes Falls Dam as part of a larger effort to reconnect fragmented waterways. The Crooked River runs nearly 60 miles and is home to a wild population of landlocked Atlantic salmon, brook trout, and smelts. Upstream of the Edes Falls Dam lies over 90% of the spawning habitat for the landlocked salmon in Sebago Lake, making passage through this impediment vital for the population. The river itself provides great recreational fishing opportunities, but it also supports the wild salmon sport fishery in Sebago Lake. According to Maine Department of Inland Fisheries and Wildlife, the Crooked River is the single most important spawning and nursery tributary for the fishery.

In its current state, the Edes Fall Dam can block fish passage during periods of low water -- and climate change has only made weather patterns during spawning season drier and more unpredictable.

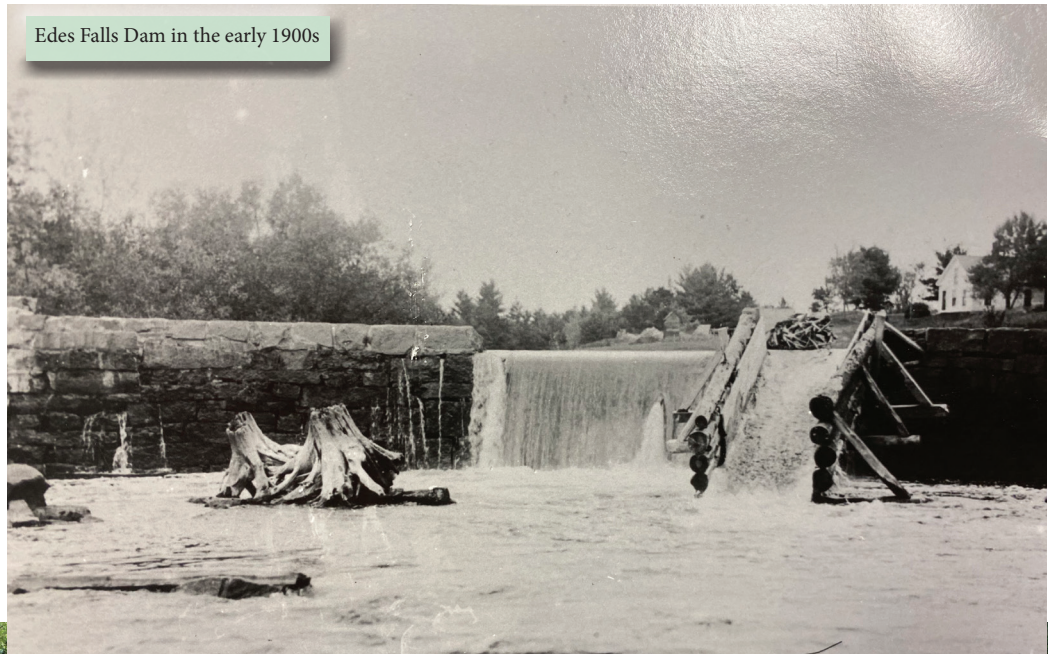
Not only is Edes Falls important to the fish, the community uses the small sandy beach and park adjacent to the dam remnants. In recognition of the history of Edes Falls, part of the split stone structure will remain for its historical and cultural significance. However, the parts that block fish passage during low water will be removed. This will restore the natural flow of the river, allowing the fish to move up- and downstream freely.

While the early settlers who constructed the Edes Falls Dam used the river for two main industries, timbering and agriculture, the Crooked River now is known for recreation, wildlife,

and a renowned fishery. Formerly a bustling grist mill and then a lumber mill, removal of the partially-breached dam will allow the river's ecosystem to thrive once again.

The Edes Falls Dam removal project is a collaborative effort managed and funded by several partners, including the Sebago Chapter of Trout Unlimited, Casco Bay Estuary Partnership, LEA, Maine Council of Trout Unlimited, Maine Department of Inland Fisheries and Wildlife, Natural Resources Conservation Service, Sebago Clean Waters, Sebago Lake Anglers, Sebago Rotary, The Nature Conservancy, and US Fish and Wildlife Service.

Edes Falls Dam in the early 1900s

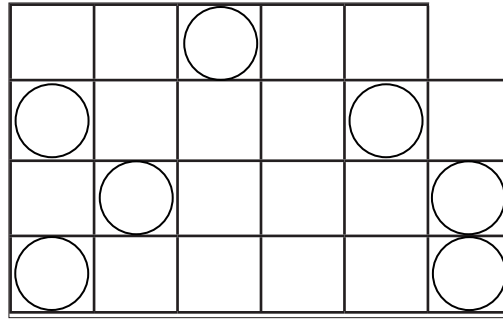


The center portion of the Edes Falls Dam today blocks passage during dry periods



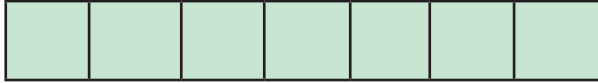
Lake Turnover Jumble

T T O R U
A L N D I S
T E D A N O
M E M U S R



Now, rearrange the circled letters to find the answer to the puzzle:

UNDERSIZED CULVERTS CAN LEAD TO:



Visit www.mainelakes.org for game solution

The Other Invaders

Michael Flannery

LEA has a robust control program to manage variable leaf milfoil, but that is far from the only invasive species in our area. There are numerous other aquatic and terrestrial invasive species in the Lake Region that are negatively impacting local ecosystems.

When removing milfoil, we spend much of our time in the shallows with a wide variety of plant species. These areas provide fish with cover from predators and allow for some species to hunt. We see many native sunfish, yellow perch, and chain pickerel. However, we have also noticed more and more invasive northern pike. This fish is a larger relative of chain pickerel and native to the Great Lakes and Mississippi River basin. They were first introduced to Maine in the Belgrade Lakes in the 1970s for sport fishing and have since spread. They are generalists, meaning that they eat anything that they can fit in their mouths. They grow rapidly and are considered the largest freshwater fish species found in Maine, weighing in at over 30 pounds. These fish greatly impact the food web, as they compete with smaller, native species. In the Songo River, pike are known to feed on our prized native landlocked salmon,

whose population is already struggling. These salmon spend time in the Songo River, as they swim upstream each fall to spawn in the Crooked River and surrounding tributaries. Thus, limiting the number of pike in the ecosystem will help maintain a healthy salmon fishery. There are no size or bag limits for these fish, and the Maine Department of Inland Fisheries and Wildlife recommends harvesting pike when you catch them to reduce their overall number.

Other invasive fish in our waters include black crappie and bluegill. Large-mouth and smallmouth bass are also non-native and considered invasive in many Maine waters. Chinese mystery snail is an aquatic animal invader that many of our readers are familiar with. On the land, barberry, bittersweet, honeysuckle, purple loosestrife, Japanese knotweed, and multiflora rose are just a few of the terrestrial invasive plants that thrive in fields, road ditches, trails, and even in (seemingly untouched) forest. Many of these invasive plants were first introduced as garden ornamentals but spread across the surrounding landscapes. These plants are hardy, reproduce prolifically, and

outcompete native species for space, sunlight, and nutrients. While specific management strategies differ between each, removing the entire plant, along with its roots, is an effective strategy for reducing regrowth. Cutting off and disposing of the flowering and seeding structures on these species will also help prevent them from spreading further. Also, remember that it is best not to compost any parts of these species.

Another aquatic invasive that is now threatening Maine is the zebra mussel. These tiny mollusks have been found just across our northern border in Quebec. The Maine DEP is partnering with coordinators in Canada to assess the threat to our waterbodies from this source.



Zebra Mussels on Prop. Courtesy of the US Park Service

Forever Chemicals/PFAS in our Lakes?

PFAS (per- and polyfluoroalkyl substances) are man-made chemicals that have been used in industrial settings and in products like non-stick cookware, waterproof clothing, and fire-fighting foam since the 1950s. PFAS are considered “forever chemicals,” meaning they do not break down easily in the environment or the human body and can accumulate over time.

PFAS chemicals have been detected in soil, water, and air and have been associated with a range of adverse health effects, including cancer, immune system dysfunction, and developmental delays in children. These substances can enter lakes through wastewater, stormwater runoff, infiltration via groundwater, and direct discharge from industrial or commercial facilities.

Unlike an algal bloom, which is easy to recognize, PFAS contamination is not visible nor discernible in the water. Although you can't see it, PFAS are dangerous and bioaccumulate in the food chain. This means that animals at the top of the food chain (like humans) tend to have much higher levels of these chemicals than those found in plants or first- or second-level consumers. For example, a bait fish may absorb a small amount of PFAS from the water and some additional PFAS from its food, but the fish is largely unaffected by it. However, when that fish (along with many other similarly-sized fish) gets eaten by a larger fish, the larger fish gets all of the PFAS that the smaller ones had in their bodies. When that large fish gets eaten by an even larger fish, the PFAS accumulation is amplified further. Since PFAS does not easily pass through the body (it stays in living tissues), this magnification of the chemical continues as it moves up the food chain.

In Maine, there has been relatively little monitoring of PFAS in our lakes or fish, but the state is gearing up these programs now. Portland Water District, which pulls its water from Sebago Lake, recently tested for six of the most common PFAS chemicals, and the results for all were below the detection limits of the tests. LEA is now looking into PFAS testing of the lakes in our service area, and hopefully we will find similar results. However, because of the bio-accumulation of PFAS, low (or undetectable) amounts in our lakes

does not mean that fish or wildlife that live in or on our lakes will have similarly low levels. Thus, after determining levels of PFAS in lake water, LEA will likely embark on a project to test for PFAS levels in local fish.

Overall, addressing the issue of PFAS in lakes will involve multiple types of monitoring initiatives to understand possible risks to people and wildlife. Then we can craft education programs, like PFAS fish consumption advisories and prevention programs, to reduce further contamination.

Save The Date!



LEA Annual Meeting
Tuesday, August 15 at
the Bear Mountain Inn
register [@mainelakes.org](https://mainelakes.org)



Algae and Our Lakes

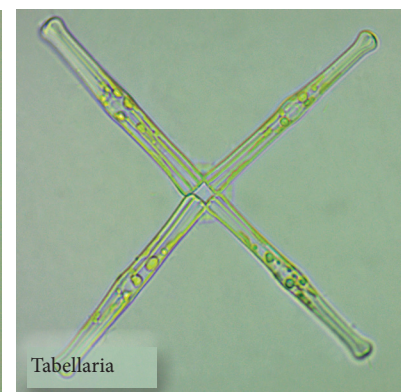
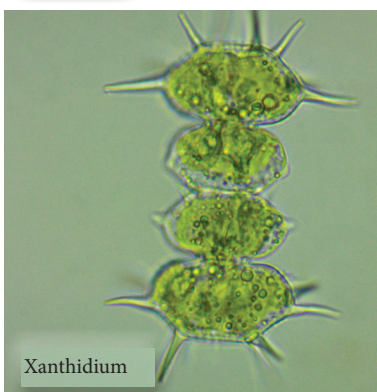
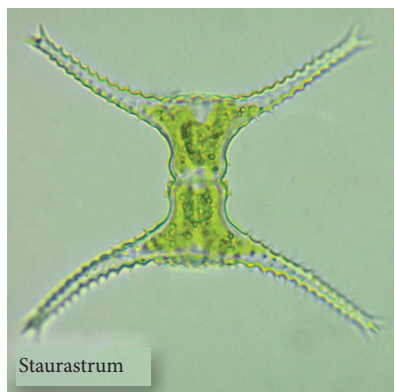
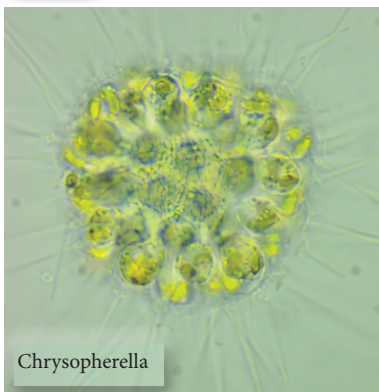
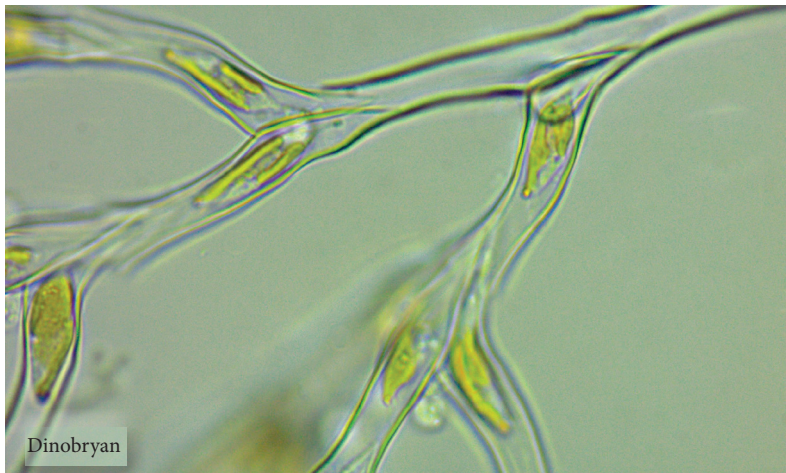
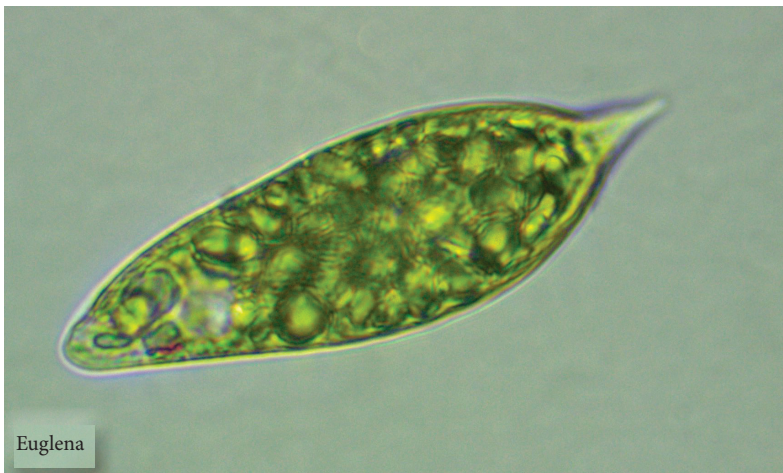
Maggie Welch

While there are certain types of algae that can produce toxins under some conditions, almost any species can become a nuisance when present in large enough quantities. Because of this, people often become concerned when they see algae. However, these tiny plants (and sometimes bacteria) are both fascinating and beautiful, and they form the base of the aquatic food web and play an important role in nutrient cycling.

The ability of algae populations to swiftly adjust to their environment offers us another way to evaluate water quality changes over time. When excess nutrients enter a lake, algae populations can rapidly adapt to the situation and reproduce exponentially. The nutrients nitrogen and phosphorus often control which algae are dominant and which are sparse or even non-existent. Individual algal cells have a relatively short lifespan, and new cells can mature in an environment very different from the one its parent lived in. Algae populations in waters lacking nutrients in June may expand rapidly after a July rainstorm ushers phosphorus-laden runoff into a lake. Alternatively, an algae population that grows dense in warm August waters may decrease in size as waters cool in September.

LEA has undertaken algae assessments in the past, and thanks to some generous donors, we now have even better tools to identify and document different species in our waters. As our monitoring program continues, our ongoing community characterization will allow LEA to measure how algae populations are, or are not, changing over time. This information, combined with our robust physical and chemical datasets, will provide LEA, lake associations, and interested people with a better understanding of our lake systems.

LEA's algal community monitoring efforts use water collected at the deepest portion of a lake during both winter and summer monitoring seasons. Algae samples are brought to the Maine Lake Science Center and analyzed via a Flow-Cam. This instrument provides qualitative algal concentration information and enables identification to genus level. This year, we will begin combining FlowCam analyses with microscopy analyses to ensure we are fully capturing community composition. Building baseline datasets for algal communities, or any bioindicator, takes time, but the ability to more fully assess water quality is worth the effort! If you happen to find any algae blooms while enjoying our beautiful lakes, please contact me at maggie@mainelakes.org so we can take a sample as soon as possible.



Is Your Septic System Hurting the Lake?

David Rocque, Site Evaluator and Soil Scientist

Most people know that household wastewater contains pathogens that can make people sick or even die if not properly disposed of. But fewer people realize this same wastewater also contains nutrients that, if they reach a lake or pond, can trigger an algal bloom. Not only do those algal blooms look, smell, and feel awful, they can contain toxins that can sicken or kill fish, animals, and humans. That is why it is important for lakefront homeowners to do everything they can to limit nutrient inputs to the lake, including taking good care of their septic systems.

In order for a septic system to work, it has to be designed, installed, and maintained properly.

One of the most important things a homeowner can do to maintain a system is to have the tank pumped every three to five years. The purpose of a septic tank is to trap and hold solids that are either heavier or lighter than water. Because septic tanks don't have enough oxygen for rapid decomposition of the solid matter, it accumulates faster than it can break down. Over time, the septic tank can become too full of solids to work properly, and then this material goes out into the drain field where it will clog the soil pores and cause wastewater to come to the surface. Surfacing wastewater is unsightly, smelly, and full of nutrients and pathogens. Little children and dogs love to play in it, and then they bring it back into the house. Surfacing wastewater is also able to wash into the lake with stormwater runoff, adding nutrients and pathogens to our waters.

In my 45 years as a site evaluator, I often asked, "When was the last time you had your septic tank pumped?" One of the most typical responses I received was "I didn't have to until now." I equate pumping your septic tank to having the oil changed in your car. If you wait until your engine seizes to change the oil, it is too late. The same is true for pumping your septic tank. Once the disposal field fails due to being overloaded with solids from the septic tank, it is too late and you will need a whole new system, which can cost \$20,000 or more -- an expensive lesson that could have been prevented by simply having your tank pumped regularly.

There are a number of other tips homeowners should know about taking care of their septic systems, which can be found at www.mainerlakes.org/resources.

If your septic system was installed before July 1, 1974, it should be replaced as soon as possible. That is the date when Maine switched from using a perk test for septic system design to site evaluation, which we use now. Those older systems were under-designed and are probably failing. Most of the older systems that have not failed were installed in sand or gravel or on top of fractured bedrock and are not properly treating wastewater. This is called "Short Circuiting" and can be a major source of pathogens and nutrients going to the lake or your well water.

Advancing the Retreat

Ben Peierls

After a two-year hiatus, LEA staff once again organized and hosted our wintertime Lake Researcher Retreat. This time, we increased the number of participants and changed the event location. Our Science Center conference room is a wonderful venue for meetings, but space gets tight when we have more than about thirty people.

Thanks to Lauren and Richard Packard, we convened the 2023 Retreat in the roomy Hayloft at Dragonfly Barn in Bridgton. Even with some cancellations due to snow, 42 people showed up in person and four people joined via Zoom — our biggest turnout to date. University faculty, Maine Department of Environmental Protection and US-EPA staff, environmental consultants, and staff from several non-profits made up the guest list. Attendees came from Maine, New Hampshire, and Massachusetts to take part.

The day consisted of a dozen short presentations, with some time for questions and discussion. Topics included lake shoreline habitat, cyanobacteria and algae, environmental DNA tools, sediment phosphorus and use of alum treatments, wave impacts, mountain pond studies, mercury in fish, and sediment microplastics. Informal discussions continued throughout the day during breaks and lunch. By all accounts, the Retreat was a great success! We received very positive and useful feedback, which we will use to plan our next version of this now-popular LEA tradition.



Your IRA, Your Donation, Your Tax Benefit

Roy Lambert

This is another in a series of articles about legacy funding for LEA.

Lakes Legacy League

If you are the beneficiary of an IRA and are over 72 ½ years old, you have a great, tax-efficient giving opportunity available to you. You probably already realize that you must make required minimum distributions (RMD) from your IRA. But did you know that you can directly donate a part of your RMD to LEA and thereby:

- Completely exclude the gift amounts from your taxable income (i.e., equivalent to being 100% deductible);
- Compute the social security retirement benefits you receive for a future year with a smaller income tax offset; and
- Simultaneously claim the income tax benefit of a standard deduction.

If this idea sounds intriguing, please read on. I have a detailed example to share below.

Federal income tax law (and possibly your state's income tax law) allows gifts made directly from your retirement plan or IRA to a charitable organization to:

- be credited against this required minimum distribution; and
- be excluded from your taxable income. This exclusion does not affect your ability to claim a standard income tax deduction on your tax return.

Let's look at a simple example. Assume a taxpayer:

- made an aggregate of \$10,000 in charitable gifts in 2022;
- has \$15,000 of additional itemized deductions;
- pays a federal income tax rate of 31%, plus a marginal state tax rate of 5% in a state which incorporates federal computation of adjusted gross income in calculating state taxable income.

If the \$10,000 in charitable gifts were paid by you, there would be no tax benefit, as the standard deduction applies in lieu of any charitable deduction.

If the \$10,000 in charitable gifts were paid directly by the retirement plan or IRA, the following would occur:

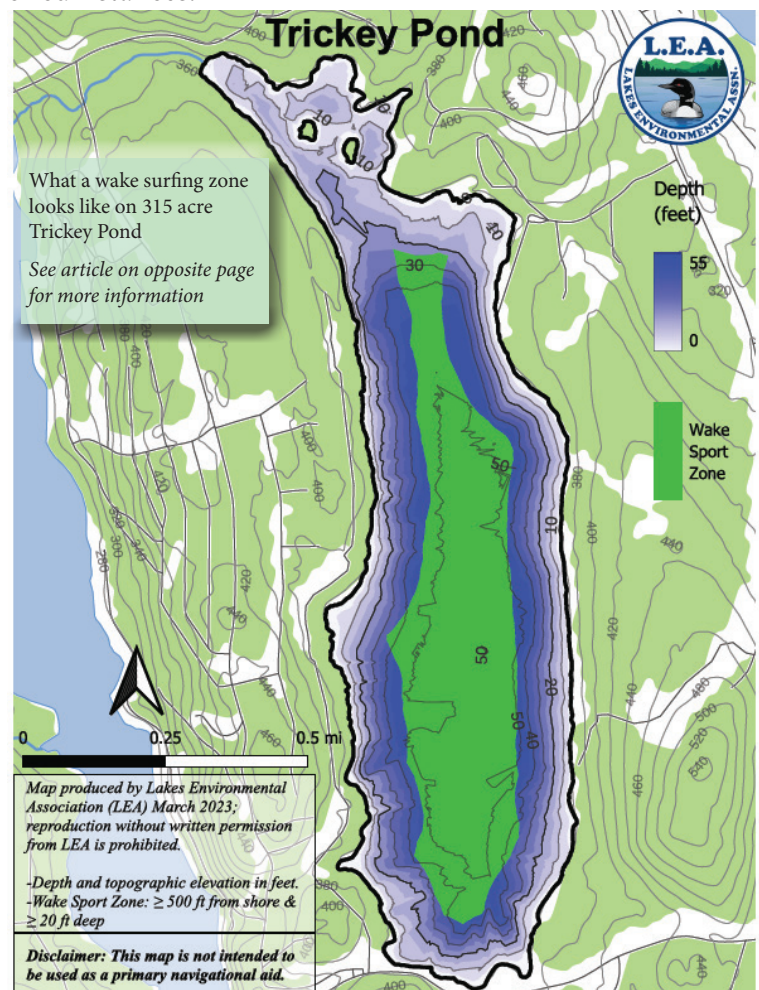
- Your adjusted taxable income would be reduced by \$10,000.
- The usual \$25,900 of standard deduction would still be available, resulting in a federal and state taxable income reduced by \$10,000.
- The combined federal and state income taxes would be reduced by \$3,600.
- Your social security benefits in that same future year would have a reduced offset.

Direct gifting in larger amounts would achieve larger tax and social security benefits.

If this approach interests you, discuss it with your tax advisor and the trustee of your retirement plan or IRA. The mechanics of direct gifting are typically easy to arrange with your plan or IRA trustee.

Disclaimer:

This article is not intended as a substitute for consulting with your tax advisor. The specifics of any taxpayer's situation may make generalized advice inappropriate in unusual circumstances.



Legislative Updates: Invasives and Big Wakes

Colin Holme

This past state legislative session, there were several bills put forward to benefit Maine's beautiful lakes and the people and wildlife that rely on them. In the end, we did not get everything we had hoped for, but we did make progress forward.

The first bill of interest was proposed by Representative Walter Riseman, who serves Bridgton, Harrison, and Denmark. Walter has been an outspoken advocate for Maine's lakes for many years, and he grabbed the helm to put a bill forward to limit the negative impacts of wake surfing. This relatively new sport creates waves between two and four feet high that enthusiasts can ride and surf behind without the need of a tow rope. Unfortunately, the waves take long distances to dissipate and can flood low-lying areas and churn up shallow waters. To create these huge waves, these powerful boats plow through the water with their bow tilted up and propellers angled further down than traditional boats. These characteristics allow for silt and sediment, which are high in the nutrient phosphorus, to be resuspended into the water column. To address these concerns, the lakes community relied on research findings from non-biased studies to develop guidelines for this sport that would require a minimum water depth of 20 feet and a 500-foot setback distance from the shore for wake surfing. The bill received astonishing support, and over 120 individuals testified in favor of the proposal. Less than 10 testified in opposition to the bill. Within a period of a week, another 1000 people signed on to an open letter supporting the legislation. Unfortunately, the Maine Department of Inland Fisheries and Wildlife (MDIF&W) had concerns over enforcement and wanted more time to study this issue, and the bill was narrowly voted down in the committee session. However, a second bill was proposed to study this issue further and report back to the legislature next year, and that bill passed unanimously. This was not the immediate action we were hoping for but a solid step in the right direction.

A bill to increase funding for control and prevention of invasive aquatic species ended with a similar outcome to the wake surf bill. Representative Riseman was again the sponsor of this proposed legislation, which would increase the cost of the Lake and River Protection Sticker. This sticker is the source of more than 90% of the funding that the Maine Department of Environmental Protection (MDEP) uses to help prevent the spread of invasive aquatic species. However, this funding is woefully inadequate, and MDEP funds are matched nearly one-to-one by non-profits across the state,

like LEA, running boat inspection and invasive control programs. While this bill did not pass, the legislators directed the MDEP and the MDIF&W to come back in the next session with a comprehensive budget showing programmatic and funding needs. This outcome delays an infusion of needed resources into control and prevention work but could yield better results and more collaboration between state agencies and non-profits down the road.

The biggest win this year came in the form of the Clean, Drain, Dry bill. This was the third time this legislation was proposed by Walter Riseman, and after minor agency language modifications, it finally passed! This bill will require boat plugs to be pulled and live wells drained when traveling between waterbodies to reduce the risk of new infestations by invasive species like zebra mussels, spiny water flea, and brittle naiad. This is an important law that will help people better understand how these species are moving around and what steps should be taken to reduce the risk. Thank you to all who submitted testimony on any of these bills and to Walter Riseman for consistently putting legislation forward to protect our lakes! If you would like to stay informed on upcoming bills, potential rule changes, or new legislation, please sign up for LEA's e-news at <https://mainelakes.org/email-sign-up/>.



Colin with Representative Riseman at Highland Lake



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