



## SUMMER 2022 BY THE NUMBERS

### WATER QUALITY (see stories on pages 5-6)

**862** water samples for phosphorus analysis

**178** water clarity measurements

**54** samples run through FlowCam to study algae

**121** profiles of temperature and oxygen levels

**19** chlorophyll samples extracted

**6** summer research students from Colby College

**4,986** volunteer observations of Gloeotrichia algae since 2005

### INVASIVES (see story on page 4)

**19** acres in Great Meadow Stream cleared of invasive milfoil manually and with a herbicide treatment

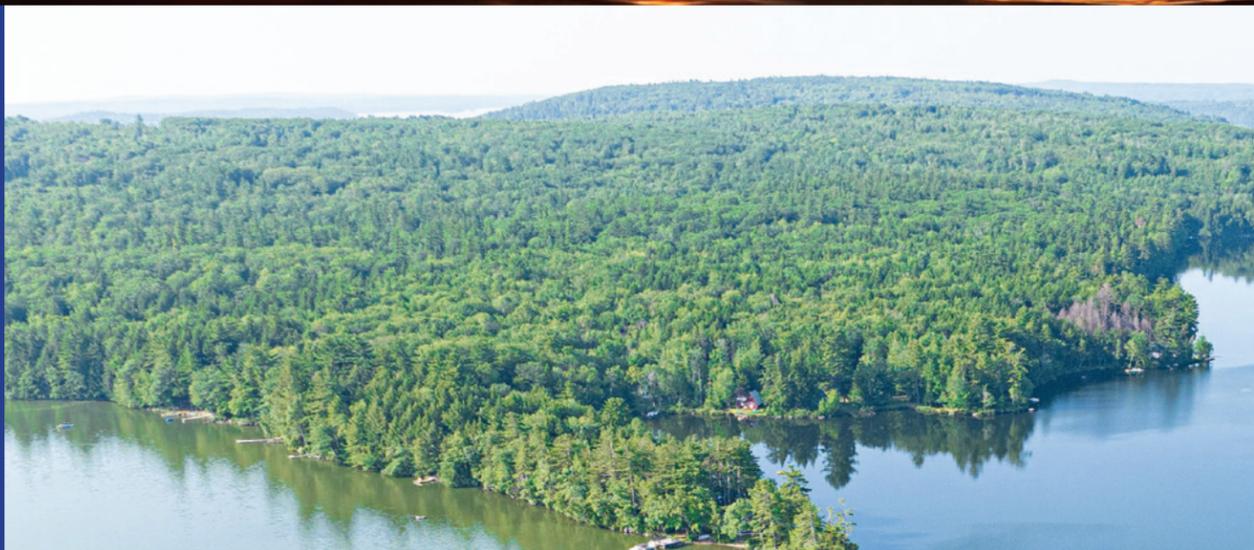
**13** acres cleared of invasive curly-leaf pondweed manually in East Pond's Serpentine and North Pond's Old Mill Stream

**0** new invasives found in Great, Long, North, East, McGraw and Watson ponds, and Salmon Lake

**5.9K** courtesy boat inspections

Long Pond – 1.5K  
Great Pond – 2.2K  
North Pond – 820  
Salmon Lake – 612  
East Pond – 717

SEE NUMBERS PAGE 5



## NORTH POND ASSOCIATION EMBRACES 7 LAKES PARTNERSHIP

North Pond is facing a gauntlet of issues: an algal bloom, an aggressive invasive plant, questions of dam management and the crafting of a plan to improve water quality.

North Pond Association President Kelly Marshall and her fellow board members admit the challenges they are confronting can seem overwhelming at times. Navigating them, however, seems less daunting because of NPA's partnership with 7 Lakes Alliance.

Marshall describes the relationship between NPA and 7 Lakes Alliance as a mutually beneficial collaboration. 7 Lakes provides specific expertise NPA's volunteers lack; NPA members' constant presence on North Pond yields real-time info on lake conditions.

"We're passionate, but we're not scientists," Marshall said. "7 Lakes is always available to provide expertise that guides us with making decisions."

The convergence of four complex issues has made collaboration between 7 Lakes and NPA even more critical for North Pond.

The lake has suffered algal blooms the last four summers. That spurred the need for a watershed-based management plan to identify sources of phosphorus that feed

SEE NORTH POND ON PAGE 8

## CONSERVATION PRESERVED UNIQUENESS OF BELGRADE FARMSTEAD

Land conservation, Roy Bouchard counsels, begins with the owner's values.

When he and his late wife Sue Gawler placed a conservation easement on 100 acres they owned in 2013, the move reflected their commitment to conserving habitat, protecting a place elemental to their family's life, and preserving a local tradition of farmsteads and open spaces.

Conservation easements let landowners retain ownership while legally restricting future development in perpetuity. 7 Lakes Alliance often conserves land to protect water quality; undeveloped land is up to 10 times less likely to erode and degrade water quality. 7 Lakes also seeks to preserve habitat and provide outdoor recreational opportunities.

Bouchard and Gawler's interest in conservation was organic. He worked more than two decades for the Maine Department of Environmental Protection and was a founder of the Belgrade Regional Conservation Alliance, 7 Lakes' precursor. She was a landscape and plant population ecologist who earned the BRCA's Eddie Mayer Conservation Award.

Sue's parents bought 600-plus acres along the Guptill Road in the 1960s. The Gawlers later donated nearly 400 acres to the state as a game management preserve. They kept 100 acres and split the remaining land among their five children. In 1985, Roy and Sue moved to the family compound, where the siblings and close

friends raised 10 children. They later purchased the 100 acres from Sue's family. The farm is best known for its 25 years hosting the Buttermilk Hill music shows.

"There was a strong family connection to the land," Bouchard said. "There was a feeling of responsibility and joy with that land."

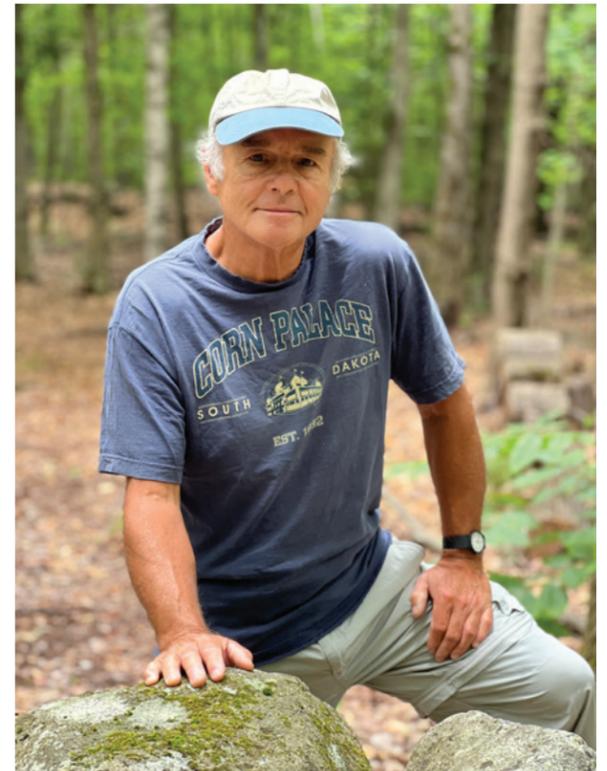
Placing an easement on their property was also logical. It abuts the land in state conservation and other large tracts. Because of their emotional attachment to it and its value to the community, they wanted to prevent the property from being subdivided and developed. The easement would protect habitat. And the Gawler clan realized future owners might not share their values, thus the easement's prohibitions on mining and cell towers.

"If you want to honor the ethic and the emotional ties to the land, you can do that with an easement," Bouchard said. "It doesn't take land out of production, but allows for scenic and aesthetic opportunities, recreation, habitat preservation. And it leaves intact a piece of history that could easily get swallowed up."

Bouchard recommends families thoughtfully consider what they want from conserving their property, focusing on the family's values, interests and needs, including financial and tax implications. Consulting with 7 Lakes Alliance, an accredited land trust, about options and factors to consider is the first step, he said. This clarifies and eases the process for landowners.

Bouchard sold the property in 2017 following his wife's passing. The new owners are maintaining its character while renovating barns, building fences and trails, and raising sheep.

Bouchard encouraged owners with deep ties to their land to consider conservation. "You'll feel better if you know the land is cared for and reflects your values," he said.



Roy Bouchard on the 100 acres he and his late wife Sue Gawler placed into conservation with an easement in 2013. The easement restricts future development in ways that mesh with the couple's shared values.

## LAND CONSERVATION: WHAT IS THE PROCESS FOR CONSERVING A PIECE OF LAND?

By Laura Rose Day, 7 Lakes Alliance President & CEO

Have you ever considered conserving your land but are not sure where to start? With the vast majority of land in the Belgrade Lakes watershed and in the state in private ownership, landowners hold significant power to determine whether the watershed will be able to forever support healthy water quality, iconic wildlife, outdoor recreational opportunities and local economies that support healthy communities.

Landowners are diverse, and so are their reasons for conserving their lands. Driven by a passion for the natural world, many choose to provide habitat where wildlife such as moose, loons, songbirds and pollinators can thrive. Others want to ensure the many joys of healthy lands are forever passed through future generations of their families. A strong belief in continuing forestry, farming, outdoor recreation and other traditions motivates others. Some wish to leave a legacy of protecting the water quality of lakes and streams.

Did you know 7 Lakes Alliance is an accredited land trust certified by the national Land Trust Alliance, a third-party independent organization that audits and ensures the financial and operational integrity of land

trusts? 7 Lakes can help landowners explore options that meet their goals for the permanent conservation of their land through a wide range of conservation tools based on their individual properties, goals and circumstances. Staples of the landowner's conservation toolbox include:

- Conservation easements, a flexible option in which a landowner retains ownership of the property while granting public benefits such as protecting wildlife habitat, ensuring traditional uses, maintaining scenic views and/or providing recreational trail access. The easement holder (the land trust) becomes responsible for ensuring those benefits in perpetuity. Landowners whose easements provide qualifying public benefits through a qualified entity, such as a nonprofit land trust, may secure tax benefits if the easement is donated.
- Donations of land, a tool that ensures land donated to a qualified entity, such as a nonprofit land trust, will be forever conserved, and ensuring the donee's responsibility to forever protect the land. Donation of land to a qualified charitable

entity for public benefit is considered a charitable contribution and may result in a tax benefit.

- Sales of land to a qualified conservation organization, such as a nonprofit land trust. A bargain sale – sale for less than fair market value – is considered a charitable contribution and may result in a tax benefit for the difference.
- Estate planning and many other tools are available to help meet landowners' individual circumstances and needs.

Consider a confidential conversation with 7 Lakes to learn more, including information on conservation options, sources of independent expert advice, and a network of land trusts and landowners with experience to help guide you. We will get you on the path to peace of mind about the permanent protection of your land.

7 Lakes uses and recommends *Conservation Options: A Guide For Maine Landowners*, published by our conservation partner Maine Coast Heritage Trust. It is a guide filled with helpful information for landowners.

## TRAIL-BUILDING REQUIRES ELEMENT OF ART

By Jonathan Milne, 7 Lakes Alliance Land Steward

A hiker once asked me, “How do you even begin to build a trail through a tangle of downed trees and the impenetrable Maine woods?” My response was concise: “It’s part GIS mapping, part ‘ground-truthing’ and part visual art.” The hiker pondered that response and headed downslope. Not sure if I scared him or if he had a coffee date at Hello, Good Pie, so I reflected on my response, internally.

GIS (Geographic Information System) is always my first stop for any natural resource work. GIS mapping software allows one to visually assess a landscape and the known natural features that occur there. With GIS, I can locate wetlands, streams, deer-wintering areas, soils, slopes, etc. Once I finish this desktop exercise, I use the mapping to “ground-truth,” or check the accuracy of the remotely sensed data with on-the-ground observation, the potential trail corridor. Now the real fun begins!

Armed with my phone and a tablet, I begin the slow process of walking the contours of a potential trail. While there, I note any additional sensitive habitat and begin weaving my way

through the forest. The technology tracks my every footstep, measures the distance and shows areas I should avoid. While progress can be slow, the process allows a trail to be flagged for further work. Most would say cutting downed trees, moving boulders and prepping a trail surface is not their idea of fun on a hot and humid day. But it really is an enjoyable exercise.

The visual art portion of trail-building is one of the great joys of performing hard work in the Maine woods. Within minutes of beginning a trail, I get lost in the pure bliss of building a trail that will capture a hiker’s eye. A large rock here. A super-canopy Eastern Hemlock there. An area of solid moss just visible in the sunlight. It all works together to make a trail a memorable and sustainable experience.

Our trails offer places where I’m reminded of my early days in conservation in Oregon or my decade working in Maine’s Baxter State Park. That is one of the best results of a well-designed trail – it touches our hearts and minds, and reminds us of the power of a simple walk in the Maine woods.



7 Lakes Land Steward Jonathan Milne used a chainsaw to carve this directional sign on a trail that will soon make its public debut.

## CONSERVATION VS. STEWARDSHIP

Conservation and stewardship are distinctly different, yet share a hand-in-hand symbiosis.

Traditionally, conservation has referred to acquisition -- such as the Allen’s blueberry lands atop Vienna Mountain. Stewardship is the long-term caretaking of acquisitions that considers why an asset was conserved. 7 Lakes typically conserves property to protect water quality, preserve habitat and/or provide recreation.

“Stewardship is as important as acquisition,” 7 Lakes Land Steward Jonathan Milne explained. “I view it as part of the same process of acquiring land.”

Milne said conservation organizations must consider stewardship prior to acquisition to ensure they possess the wherewithal to care for acquired lands in perpetuity. If land was acquired to act as a buffer against erosion while also soaking up stormwater runoff, thus protecting water quality, caretaking is minimal.

If property is conserved for recreational purposes, such as hiking and biking, stewardship can be involved. Milne maintains trails with three priorities in mind:

- Safety is always the chief concern. Milne recently added steps and fortified ropes on an especially steep stretch of Mount Philip, a popular hiking destination.
- Ecology is secondarily important. Milne spent part of the summer installing water bars to divert and slow stormwater flows on French’s Mountain.
- The experience also matters. When blazing a trail, Milne seeks routes with interesting or surprising vistas.

Vienna Mountain is a good example of a property conserved to preserve habitat – in this case, wild blueberry barrens. While preservation of habitat is often thought of in terms of wildlife, Milne noted a property could also be conserved to protect stands of old-growth trees from timber harvesting.

## PRESIDENT’S MESSAGE

Friends,

As autumn colors spread across the Belgrade Lakes region, 7 Lakes remains hard at work in the woods and on the water. We continue to monitor water quality and invasives, craft trails, and connect with you on porches and mountaintops.

This summer, endless bluebird skies beckoned us outdoors. Moon- and star-gazing, hiking on familiar trails or exploring new ones, fishing

or birding at sunrise. Our spectacular lands and lakes are more than a backdrop for these lifetime memories; they are inseparable, interwoven, essential ... and so is their future.

One of the most effective ways to ensure our watershed sustains people and wildlife is to forever conserve lands. Intact lands are up to 10 times as effective as developed lands at filtering runoff that pollutes our interconnected lakes and causes disruptive algal blooms. That’s why 7 Lakes takes a science- and

watershed-based approach to our work, including our longstanding collaboration with Colby College.

As you read these summer highlights, know that all we do is possible only through you, our supporters and partners. You make us optimistic that together, we will conserve the lands and waters of the Belgrade Lakes watershed for all.

Laura Rose Day, President and CEO



## STAFF Q&A

**Name:** Sharon Mann.

**Title:** Invasive Aquatics Program Director.

**Staff member since:** May 2018.

**Education:** Associate of Science, Southern Maine Community College; bachelor's degree and master's studies in biology, University of Southern Maine (transferred into PhD program); doctorate in ecology and environmental science (projected May 2024).

**Previous work experience:** Sous chef, commercial and charter fishing boat deck-hand in Alaska, microbiology laboratory manager and teaching assistant at USM.

**What are the responsibilities of your role?** Oversee these programs:

- Courtesy Boat Inspections: hiring, scheduling, training, data entry, ordering, grant writing, organizing with lake associations.
- Invasive Aquatic Plant (IAP) Remediation: same duties as above plus map development, research, crafting management plan, influencing legislation.
- IAP Education & Adopt-A-Shoreline: developing trainings, data management, volunteer recruitment, organizing group paddles, survey, plant ID.

**What's the most rewarding aspect of your job?** Improving conditions for wildlife and having dockside encounters with people on the lakes.

**What's the most challenging facet of what you do?** Explaining the importance of continuous maintenance – there are no silver bullets. Like it or not, we are stuck with invasives and will likely get more. This is a tough sell for people, so I must keep it positive and have an optimistic (but realistic) approach.

**What about your job might surprise others?** My job is year-round, and I am not a college intern.

**What is the one best practice for preventing the spread of invasive aquatic plants?** Follow the mantra of “Clean, Drain and Dry.” While cleaning, draining and leaving your boat to dry for a few days may seem excessive, it is worth the slight inconvenience considering the serious implications invasive aquatic organisms have on the health of the ecosystem and the huge financial burden. *Our remediation efforts to manage invasive milfoil in Great Meadow Stream has been a 12-year effort costing more than \$1.5 million to remove and survey for the plants (not including the CBI program's cost).* The best practice to stop the spread is to remove all plants from fishing gear and boat equipment.

## LIKE WEEDING A GARDEN (BUT UNDERWATER)

By Sharon Mann, Invasive Aquatics Program Director

Summertime is over, but the work of 7 Lakes' invasive aquatics field crew continued into the fall, painstakingly removing invasive weeds from murky waters among snapping turtles and leeches.

Three recent college graduates – Briahna Loring, Jill Holden and Brennan Gunster – served on the dive crew this summer, as did two high school students, Katherine Fuller and Maya Cohen. All are certified SCUBA divers who underwent vigorous plant identification and safety training to ensure they remain calm and composed underwater, often with no visibility. Most of our divers don't wear gloves, identifying aquatic plants by touch alone.

Last year, a new invasive aquatic plant was found in our watershed, doubling our crew's burden in 2022. 7 Lakes received some much-needed assistance from the Maine Department of Environmental Protection in the form of an effective, but low-risk to wildlife, herbicide treatment of the milfoil infestation in Great Meadow Stream. The treatment knocked back the invasive milfoil, saving us valuable time and effort that would have gone into pulling acres of plants out by the root.

The treatment is no silver bullet; we expect moderate regrowth of invasive milfoil in 2023 or 2024. However, the total area covered by invasive milfoil should be greatly reduced.

The divers spent significant time in the Serpentine, a beautiful stream connecting

East and North ponds, removing the new “big bad” – the invasive plant curly-leaf pondweed. We are forever grateful to our most dedicated invasive aquatic volunteer, Bonnie Jones, who alerted us to this new infestation. Without her keen eye and diligence, we could not say with confidence that we are keeping this new invasive in check.

Once an invasive is introduced into an ecosystem, eradicating it is almost impossible. The only examples of successful eradication of an invasive aquatic plant in Maine involved detection before the plant could establish in the ecosystem.

For this reason (not to mention the massive financial burden of managing an infestation), we emphasize prevention efforts such as inspecting fishing and boating equipment as you leave and enter a waterbody. Thoroughly inspecting a motorboat and fishing gear takes about 60 seconds ... and costs \$0. If a single fragment of an invasive plant establishes itself in a new system, the subsequent weeding can cost hundreds of thousands of dollars annually.

So when a courtesy boat inspector approaches you at a public boat launch, thank them for their service! If you see a diver emerging from the pondweeds like the creature from the black lagoon, know they are putting their all into keeping our lakes and streams healthy!



*Much of the 7 Lakes dive crew's time this summer was spent pulling curly-leaf pondweed from the murky waters of the Serpentine stream that links East and North ponds.*

# RESOLVING ALGAE BLOOMS IS NEITHER SIMPLE NOR QUICK

When a lake suffers an algae bloom as North Pond has the past four summers, a natural assumption is that environmental groups spring into action to quickly remedy the green water. But as 7 Lakes Alliance Science Director Dr. Danielle Wain explains, that expectation is not feasible, either from a scientific or a logistical standpoint.

The most prudent approach to addressing water quality is through a watershed-based management plan. A plan is being developed for North Pond. As with recent plans for Great Pond and Long Pond, the North Pond plan will identify what is contributing to its degraded water quality and consider scientifically backed actions for mitigating the decline. Typically, recommendations are long-term in nature, focused primarily on remediating sources of erosion that introduce phosphorus into a water body. Phosphorus feeds algae.

East Pond’s alum treatment in 2018 occurred only after completion of its watershed-based management plan, which considered unique characteristics of the lake that were contributing to its algal blooms. But the process leading up to an alum treatment is long and laborious.

A state permit must be issued beforehand. Issuance of a permit takes many months, partly to ensure a rushed effort does not cause unintended consequences that could irreparably harm a lake’s ecology. If a permit is issued, funding for an alum treatment must be raised, budgeted and appropriated by the public and private entities involved. That

amounted to more than \$1 million on East Pond.

Even then, the project must be put out to bid, contracts negotiated and the work scheduled. Vendors typically schedule alum treatments a year in advance.

None of these processes are navigated swiftly. Again, whether to apply alum to a lake is, first and foremost, a question of science ... and a murky one at that, with no guarantees of success. What has worked thus far on East Pond may not work on lakes that are larger and deeper, with more tributaries and more or less shoreline development.

When North Pond first bloomed in 2018, observers were unsure whether that would be the new normal or was a one-time event. Momentum for the watershed-based management plan that is now underway grew following the 2020 bloom.

An alum treatment in North Pond would yield long-lasting benefits only if measuring and modeling determines most of the phosphorus is coming from the lake’s sediment (as in East Pond) rather than from external sources. As Dr. Wain notes in the article on page 6, North Pond represents a different scenario



The algae bloom on North Pond caused a whiting event at the North Pond dam and in Great Meadow Stream in late August when the algae began to die. There were no quick fixes available to alleviate the issue. Gaining a full understanding of environmental issues takes time, as does the logistics of most solutions.

than East Pond. We must let data drive the management decisions.

All of this underscores the need for actions with long-term ramifications for preserving and, hopefully, restoring water quality. That includes land conservation, sustainable development, erosion control, septic system maintenance and observance of no-wake zones – all of which 7 Lakes Alliance promotes and facilitates year-round across the Belgrade Lakes watershed.

## NUMBERS CONTINUED FROM PAGE 1

18 Invasive Aquatic Plant ID & Adopt-A-Shoreline workshops

5 courtesy boat inspector (CBI) training sessions

3 invasive plant paddles

50 new Adopt-A-Shoreline volunteers

16 miles of shoreline adopted

### EROSION CONTROL

49 projects completed involving 89 best management practices (BMPs)

160.5 yards of riprap placed on shorelines

550 square feet of blueberry sod planted

169 yards of erosion-control mulch laid

69 vegetative buffer plantings

48 yards of crushed stone laid

16 driplines built

15 meandering pathways built

3 rubber razors built

3 infiltration step projects

7 miles of gravel road and driveway improvements using Clean Water Act funds, amounting to \$275K in construction, including matching funds

### STEWARDSHIP (see story on page 3)

1.3 miles of new trail constructed between Route 225 and the Mountain in Rome

20 stone steps installed

40 downed trees removed from trails

1.5 miles of trails re-blazed

6 new “you are here” signs installed for hiker safety

14 waterbars (an erosion-control measure) maintained

10 new waterbars installed

1 new kiosk built at Mount Philip

7 directional signposts installed

### OUTREACH

54 educational and recreational programs/ events hosted

### DEVELOPMENT

\$80K raised in total in response to a \$25K challenge gift



Assistant Lake Scientist Lizzy Gallagher analyzes a water sample taken from the discolored water in Great Meadow Stream near the North Pond dam in August. 7 Lakes’ scientists believe the discoloration was caused by a dying algal bloom. The samples contained none of the toxin most often associated with algal blooms in Maine.

## WILL MY LAKE BLOOM AS NORTH POND HAS?

By Dr. Danielle Wain, 7 Lakes Science Director

Even if you don't live on North Pond, you probably know that lake has experienced a significant bloom of blue-green algae (cyanobacteria) this summer. So why did this happen?

Lakes are natural systems, and algae plays a key role in maintaining the ecological health of the system. Algae are the base of the food chain – they are eaten by zooplankton, which are eaten by small fish, which are eaten by big fish.

When excessive nutrients (particularly phosphorus) are in a lake, algae growth can get out of control, leading to an algal bloom.

When there are extended periods of hot weather, blue-green algae in particular can thrive. Cyanobacterial blooms have the potential to be toxic, as we have been sadly reminded of with the death of two dogs in southern Maine in August, possibly due to exposure to cyanotoxins.

For most lakes, the primary source of phosphorus is the watershed – the surrounding land that drains into a lake or other waterbody. When it

rains, some water seeps into the ground, but a lot of it runs off the surface and into the lake, bringing sediments and phosphorus with it.

**When excessive nutrients (particularly phosphorus) are in a lake, algae growth can get out of control, leading to an algal bloom**

Phosphorus sources are different in each lake and can include septic systems, waterfowl, the atmosphere, and lake sediments under certain conditions.

What does that mean for your lake?

It's important to remember every lake is different. North Pond is most similar to East Pond, which experienced similar blue-green algae blooms until the alum treatment in 2018. Alum treatments are successful when most of the phosphorus comes from lake sediments, as was the case with East Pond. But North Pond is also vastly different than East Pond in that it has three times the drainage area, four times as much developed land, and three times

as much impervious surfaces. All this means North Pond likely has much more phosphorus entering the lake from the watershed, in addition to phosphorus that comes from the lake sediments. In both cases, the shallowness of the lakes contributed to their blooms.

With the exception of McGrath Pond, all the other lakes in the Belgrade Lakes watershed are deep. Thus, they stratify by temperature in the summertime. This makes them generally more stable than shallow lakes, which are constantly mixing through the summer. Phosphorus levels in the surface waters of all the other lakes in the Belgrades in the peak of summer is less than half that in North Pond. But that can change if we don't prevent phosphorus from entering the lakes.

The North Pond Association, the 7 Lakes Alliance-Colby College Water Quality Initiative, the Maine Department of Environmental Protection and others are working together to monitor various aspects of the North Pond bloom, including its toxicity. We are also collecting data to help determine where the phosphorus is coming from for the development of a watershed-based management plan to help prevent the likelihood of future blooms.

## 7 LAKES-LAKE ASSOCIATION PARTNERSHIPS KEY TO CONSERVATION EFFORTS

By Lenny Reich, McGrath Pond-Salmon Lake Association President

The McGrath Pond-Salmon Lake Association (MPSLA) embarked on its first comprehensive watershed survey in 1988 to learn where phosphorus-laden runoff entered our two lakes. Working with 7 Lakes Alliance's predecessor, the Belgrade Regional Conservation Alliance (BRCA), MPSLA used federal funds administered through the state to remediate runoff issues at more than 100 shoreline properties. The Youth Conservation Corps, today a bedrock 7 Lakes program, provided most of the labor.

That effort began a working relationship between MPSLA and 7 Lakes Alliance that has continually grown stronger. In 2017, 7 Lakes staff helped organize our second watershed survey, served on the steering committee and provided professional guidance during the survey process. 7 Lakes also worked with our outside consultant and with the Kennebec Soil and Water Conservation District to transform the survey results into a decade-long watershed-based protection plan.

7 Lakes staff applied for the first two rounds of remediation grants through the Maine Department of Environmental Protection for federal funds under the Clean Water Act, and they've overseen the resulting projects. Currently, seven projects budgeted at more than \$180,000 are underway.

What 7 Lakes Alliance achieved with the McGrath Pond-Salmon Lake watershed survey, it's accomplished on all seven lakes in the Belgrade Lakes watershed in recent years,

working with each lake association. 7 Lakes' science staff also visits each lake regularly year-round to perform water-quality testing, looking for trends and developing a more complete understanding of each lake's internal dynamics.

When North Pond began experiencing algae blooms four years ago, the 7 Lakes staff ramped up efforts both with testing to ensure none of the most common toxin associated with algal blooms was in the water and by consulting with outside experts to accelerate scientific understanding of the lake's dynamics.

7 Lakes staff have also administered three rounds of Clean Water Act grants based on North Pond Association's 2016 watershed survey. 7 Lakes is currently helping to develop an advanced management plan, which includes agriculture and other properties farther back in the watershed, septic systems and recycling of nutrient-rich sediments from the lake bottom up into the water column.

Just across the Serpentine stream from North Pond, East Pond bloomed annually for many years as a result of bottom sediments recycling, making the water unusable for recreation beginning mid-summer. After extensive analysis and careful calculations, 7 Lakes staff in conjunction with consultants and Colby College experts determined that laying a coating of alum over the sediments would contain the upwelling of phosphorus that fed the bloom.

East Pond Association led the fundraising, and during the summer of 2018, 7 Lakes Alliance handled the logistics, hiring the contractor and

overseeing the entire successful operation. Happily, East Pond has remained clear every summer since.

In addition to the water-quality issues discussed here, 7 Lakes also provides support, expertise and staffing for prevention and – where needed – removal of invasive aquatic plants such as variable-leaf milfoil and curly-leaf pondweed. A volunteer trained in a 7 Lakes invasive plants workshop found the latter in the Serpentine last summer and, through quick response by the 7 Lakes removal team, it has been contained there.

In a vital effort to limit the spread of invasive aquatic plants, 7 Lakes runs the summer program employing courtesy boat inspectors (CBIs) staffing the public boat launches on six of the seven Belgrade Lakes. Friends of Messalonskee runs its own CBI program.

It's fair to say 7 Lakes Alliance serves as a major resource center for the five lake associations. It hosts Lake Trust meetings that bring together representatives of all the lake associations every other month throughout the year to discuss common interests and to develop programs together. Working with 7 Lakes staff, the lake associations comprise the Lake Trust, complementing the organization's accredited land trust operations and making 7 Lakes Alliance the only land and lake trust in Maine, a truly powerful combination for preserving the Belgrade Lakes watershed.

*In addition to serving as MPSLA president, Lenny Reich is a member of the 7 Lakes Alliance board of directors.*

## COLBY-7 LAKES PARTNERSHIP BENEFITS ALL INVOLVED, LAKES INCLUDED

The research partnership between 7 Lakes Alliance and Colby College is, at its heart, a value proposition, says Dr. Whitney King, an originator of the collaboration. That's true not just for the students, King says, but for 7 Lakes, Colby and, ultimately, the lakes and the people who enjoy them.

For 10 years now, 7 Lakes and Colby have collaborated to provide summer research opportunities to six Colby students. The students are paid for their efforts, with 7 Lakes and Colby splitting the costs.

For the cost of three summertime positions, 7 Lakes Alliance gets six motivated and capable young people gathering water quality data across seven waterbodies. That not only expands the capability of 7 Lakes staff to perform other professional tasks, such as data analysis, expanded sampling and responses to situations such as algal blooms, it yields data crucial for understanding water-quality trends and how best to combat declines in water clarity.

For the cost of three summertime positions, Colby extends invaluable research experience to six students that connects what they've learned in the classroom to the real world ... and better prepares them for their studies to come. The experience also boosts the students' chances of gaining admission into a top-flight graduate program – a key selling point in marketing a Colby science education.

The students benefit in the same ways – a broader and deeper educational experience and an advantage in the graduate admissions process. As important, King noted, is the chance for science students to learn what they

like and don't like – lab work versus field work, for instance. "Research experience is always informative," said King, a Colby chemistry professor, the college's lead on the 7 Lakes-Colby Water Quality Initiative and a 7 Lakes board member.



Six Colby College students spent the summer taking measurements and gathering water samples on all seven lakes in the watershed under a research partnership between Colby and 7 Lakes. The data collected by students offers a more robust understanding of water quality trends. Here, Adrian Gellert, a junior biology major from Tennessee, prepares water sample tubes.

The initiative was formalized 10 years ago between Colby and Tom Klingenstein, a past president of the 7 Lakes board and a current

board member. Students – typically science majors but all with an interest in the environment – are selected for the summer research program by King and 7 Lakes Science Director Dr. Danielle Wain through a competitive application process.

For future scientists, research experience is "not just nice; it's necessary," King said. "It's become a de facto requirement to have significant research experience. Plus, students learn what they don't know. That's super-important."

At the same time, 7 Lakes taps into "motivated researchers" to help accomplish its water-quality mission. "You need hands and bodies on the lakes," he said. The addition of Assistant Lake Scientist Lizzy Gallagher will amplify the students' efforts by giving them strong supervision to maximize the benefit of their efforts, King noted.

Ultimately, the lakes benefit most, he said. "You can't manage something you can't understand," King said. "We could not have done the East Pond alum addition without expanded field and laboratory data. We're able to understand the lakes at a much higher level than the rest of the lakes in the state" because of the data collected by student researchers.

7 Lakes and Colby recently executed a 10-year extension of their memorandum of agreement, confirmation that the partnership has been fruitful for all involved. That means both organizations will continue to share facilities, bodies of knowledge and a commitment to improving water quality in the Belgrade Lakes watershed.

## 7 LAKES HELPED COLBY STUDENT ACHIEVE GOALS



Margo Kenyon embarked on her 7 Lakes Alliance summer job wanting to improve her presentation skills, better understand environmental issues and learn about the research that drives environmental policy.

Check. Check. And check.

A Colby College sophomore double-majoring in environmental policy and government, Kenyon spent 12 weeks as a summer research student pulling double-duty. Some of her time was spent researching septic systems in Smithfield. She created a septic system database for North Pond Association to use in creating a watershed-based management plan for its lake.

After scouring state and local septic records, she focused on 72 parcels the Maine Department of Environmental Protection identified as having "vulnerable soils." Her research found 53% of the properties' septic

records were either missing or pre-dated 1995, when standards were updated, and needed to be inspected. Kenyon presented her findings publicly in August.

**"I wouldn't have wanted to spend my summer doing anything else," Kenyon said.**

**"I learned so much from the experience."**

When she wasn't poring over public records and spreadsheets, Kenyon often served as the face of 7 Lakes, working in the gallery of its Belgrade Lakes village headquarters (and occasionally helping gather water quality data). Pleasant and poised, the 19-year-old chatted with visitors, answered lake questions and, with intern Tamra Benson, spearheaded a raft of creative new recreational and educational programming.

"Margo was a sensational ambassador for 7 Lakes Alliance," Science Director Danielle Wain said. "There was not a person she encountered whom she didn't impress; that is especially true of her colleagues. Her competency, social grace and maturity are off the charts."

Kenyon said one benefit of her internship experience was learning to communicate complex information in accessible conversations. "I learned a lot about working with people and about the intersection of water quality and small towns," she said.

Kenyon was approached about a summer job by Dr. Wain after taking Wain's class on water sanitation at Colby earlier this year. Aspiring to be an environmental attorney, Kenyon was less interested in collecting water samples than honing soft skills while learning about the issues confronting the region's lakes. Because her father grew up in the Belgrade Lakes village, she felt an immediate affinity for the area.



**SO LONG, SUMMER.**

### **NORTH POND CONTINUED FROM PAGE 1**

algae. 7 Lakes is using federal Clean Water Act grants to improve gravel roads that are eroding into North Pond.

The blooms have raised questions about whether East and North pond dams should be lowered to increase water flow through North Pond. Data gathered for the watershed plan may yield insights into dam management. Meanwhile, the North and East pond associations are weighing forming a dam committee with representation from communities bordering the lakes.

Marshall said North Pond Association looks to 7 Lakes for guidance to ensure its actions don't exacerbate concerns, such as potentially spreading invasive curly-leaf pondweed by opening dams. Because it is a science-driven organization, 7 Lakes wields credibility the public trusts, she said.

"We all want the lakes to be healthy," Marshall said. "7 Lakes is the umbrella – you're looking at the whole watershed and how the lakes are connected. We're one panel on that umbrella. Nothing we do is in isolation."

Marshall said NPA members increasingly reach out to 7 Lakes, which has proven to be responsive, helpful and appreciative. If not for 7 Lakes, she added, there would be no courtesy boat inspections, no adopt-a-shoreline program, and no invasive plant removal and identification workshops.

"We can't address all these things by ourselves," she said. "And if we try, we won't do it well. What you guys provide – credibility, science, experience – helps in our job to keep the lake clean. Without you, we don't have the support to do our job."

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