

2024 Spring/Summer



The MONITOR

The Newsletter of the Newfound Lake Region Association

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The State of the Lake

Conservation in the Classroom

OUR MISSION

The Newfound Lake Region Association's mission is to protect Newfound Lake and its watershed. The Association – through education, programs, and collaboration – promotes conservation and preservation of the region's natural, social, and economic resources.

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FROM THE EXECUTIVE DIRECTOR



In my nearly five years here at NLRA, I've witnessed a lot of change. From a global pandemic, to wildly different weather from year to year, change does seem to be a constant.

At NLRA we've seen some overwhelmingly positive changes. Our staff has grown from year to year, with five year-round staff members. We'll welcome our biggest AmeriCorps Watershed Steward cohort in May. Our network of dedicated volunteers—water quality monitors, weed watchers, and more—keeps expanding. Our base of supporters has grown and deepened their investment in Newfound each year. All this growth in human capacity translates directly to an expansion of our mission-led work to protect the lake and watershed.

In 2024 we're continuing our trajectory of growth as we launch a special campaign that builds the infrastructure needed to support Newfound's conservation. The Grey Rocks Conservation Center is becoming a reality. This new space for NLRA, located at our property along the Cockermouth River, will enhance every aspect of our work. From the Conservation Center we will launch into a new era for NLRA and for Newfound.

We'll have a dedicated laboratory space to grow our water quality monitoring program. Our land conservation efforts will reach further with educational exhibits. We'll connect with watershed residents and visitors, ensuring our community has knowledge and passion to steward Newfound into the future. And our community will have a place to connect on our shared love of this special place. The Grey Rocks Conservation Center will support NLRA as we face the changes the future will inevitably bring.

I hope you will join us on this journey. Look for more exciting news and developments this summer, and please reach out with your thoughts, questions, and ideas.

Rebecca Hanson

Executive Director

Rebecca@NewfoundLake.org

Introducing NLRA's Grey Rocks Conservation Center

Nestled at the north end of Newfound Lake along the Cockermouth River is Grey Rocks Conservation Area. Formerly a summer camp and then a marina, Grey Rocks has experienced many changes over the years. When it was donated to NLRA in 2011, we began working toward a new vision for Grey Rocks; creating a space that serves to connect the Newfound community to the lake and watershed and furthers the protection of our natural resources.

To fulfill this vision, NLRA is launching Building for the Future, a campaign for the Grey Rocks Conservation Center. The Conservation Center will be a hub for innovative watershed science, a community gathering place for collaboration, an educational space for schools and visitors, and an example of sustainable development. It will showcase leadership in watershed conservation, provide a physical space for the community to interact with our natural environment, and ultimately advance the protection of Newfound Lake and its watershed.

Threats to Newfound are growing, from a changing climate bringing damaging storms and stormwater pollution, to invasive aquatic species and toxic cyanobacteria. The Grey Rocks Conservation Center is an answer to these threats and an investment in the future. Together, we are building a clean, clear future for Newfound Lake and our community.



THE GREY ROCKS CONSERVATION CENTER WILL:

- Expand opportunities for participation in educational programming around watershed science and conservation for people of every age, ability, and socioeconomic status.
- Broaden the visibility of NLRA and our services, engaging the community in watershed exploration in all four seasons and in any weather.
- Strengthen our scientific capabilities and response time to emerging conservation threats.
- Build out our volunteer force and remove barriers to volunteer participation.



PROJECT FEATURES

Water Quality Lab
Stormwater Landscaping
Pollinator Gardens
Enhanced Site Accessibility
Exploratory Activities and Interactive Exhibits
Energy-Efficient Building and Solar Array

For more information and project updates visit:
NewfoundLake.org/building-for-the-future

2023 ANNUAL REPORT SUMMARY

NLRA's conservation efforts are made possible by the support of the Newfound community. With special thanks to our hardworking volunteers, enthusiastic supporters, dedicated organizational partners, and everyone who cares for Newfound's land and water, here are some of the highlights of 2023:



96 free community programs.

NLRA programs connected more than 1,000 participants with the Newfound Watershed, building a community united behind conservation.



35 stormwater assessments.

NLRA worked with watershed property owners to assess stormwater problems and create solutions that protect Newfound Lake from pollution.



2,368 boat inspections.

In partnership with NH LAKES, Lake Hosts checked incoming boats for invasive plants and animals, stopping them from harming Newfound Lake.



115 community volunteers.

From leading education programs to monitoring water quality, volunteers are critical to all of NLRA's conservation efforts.



16 classroom visits.

NLRA educators introduced 350+ local students to watershed science and conservation principles, inspiring the next generation of lake stewards.



936 members and donors.

The generosity of all NLRA supporters make possible all of NLRA's year-round conservation efforts. Thank you!

Treasurer's Report

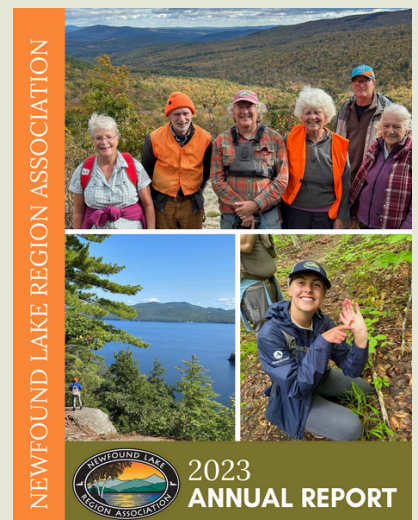
by Jim Fitts, Treasurer

I continue to have the enviable charge of communicating great news: NLRA ended 2023 even stronger this year than last. There were two main areas of activity in 2023: our ongoing operations protecting the watershed through education, stormwater management and conservation programming, and the acceleration of our planning for construction of the Grey Rocks Conservation Center. Both activities contributed positively to NLRA's financial strength year over year, with a single common denominator: your support! We wouldn't exist, much less achieve our goals, without the incredible contributions our members make on behalf of the lake. A comprehensive review of 2023 is available in our annual report, but the highlights include:

- Another fiscal year where our revenue from memberships, the annual fund and other sources exceeded the costs of personnel and programming, providing a slight positive addition to an already strong balance sheet.
- Robust financial markets which added over \$211,000 to our endowment, this in addition to contributions from donors to our permanent fund.
- Wonderful commitments from our donors and trustees, on top of what they provide the annual fund, in pledging support for the construction of our new home at Grey Rocks.

All three activities caused your Association's assets to grow to \$3.5 million, and with liabilities of less than \$10,000! Thank you for continuing your long-standing investment in the future of Newfound Lake. NLRA is on the cusp of a great leap forward in 2024 because of your support.

OUR ANNUAL REPORT IS NOW ONLINE!



Read about all of NLRA's programs, see special acknowledgements for supporters and volunteers, review the full report of NLRA's fiscal health, and more:
Newfoundlake.org/annual-report



Printed copies can be requested by contacting: Audrey@NewfoundLake.org



The State of the Lake: A Water Quality Update

Last year was one of record-setting weather. Large storms brought upwards of 57 inches of rain to the watershed—washing out roads, flooding homes and sending thousands of tons of sediment into Newfound Lake. While roads have been repaired and flood waters have receded, the environmental impacts and important lessons from all the rain of 2023 are still with us.

2023 saw 14 large rain events that brought more than one inch of rain in 24 hours. When rain falls at this rate it can damage both infrastructure and the environment. Rather than soaking into the ground, it flows over surfaces as stormwater, picking up eroded sediment, plant debris, and pollution. Stormwater is the biggest threat to Newfound's excellent water quality, and weekly lake water quality sampling over the summer of 2023 revealed substantial declines in water quality across all sites.

With 38 years of water quality monitoring data, we know that while the effects of 2023 may linger for some time, they don't necessarily indicate a long-term decline. Large, deep lakes like Newfound have some natural ability to handle occasional pulses of stormwater pollution from major storms and wet years. With a changing climate we can expect to see more frequent, intense rain events like those in 2023, so preventing stormwater pollution from reaching the lake is crucial to ensuring Newfound's future remains clean and clear.

Working Together to Protect Water

The repeated storms of 2023 have sharpened the community's focus on the impact that stormwater can have and highlight the need to make improvements and manage stormwater proactively. NLRA has stormwater resources available to anyone in the watershed. We offer property assessments, site designs, and project implementation assistance. The process begins with a free stormwater assessment. NLRA staff meet with the property owners on site to identify sources of storm-

water concentration and look for signs of stormwater runoff. A report is generated with recommendations and resources to assist homeowners in implementing stormwater management best practices. Properties that meet the highest criteria of lake-friendly practices are eligible to receive the NH LAKES LakeSmart award. Find out more about the stormwater resources available to you at: NewfoundLake.org/stormwater.



From free property assessments to project assistance and implementation, NLRA works with property owners to stop stormwater pollution in their backyards.

Introducing Newfound Water Quality Targets

Newfound Lake has excellent water quality. Current state-wide standards defining high water quality in lakes do little to guide the active stewardship of Newfound because even on a bad day, Newfound's water quality is better than many lakes on their best.

NLRA worked in partnership with representatives from NH Department of Environmental Services and the University of New Hampshire, as well as community volunteers, to develop a new set of water quality targets specific to Newfound Lake. This group of lake experts determined that maintaining excellent water quality in Newfound Lake is an ambitious and attainable goal, and in certain areas, the group set targets to improve water quality.

Specific targets are set for three of our seven long-term monitoring sites and aim to capture lake-wide and as well as basin-specific trends moving forward. By establishing clear goals for indicators of lake health the Newfound community

gains meaningful standards to evaluate ecosystem health, gauge the success of conservation efforts, and inform future decision making.

The health and resilience of Newfound Lake is directly tied to that of its watershed and community. Setting meaningful water quality targets has been a community effort. Ensuring NLRA can lead the way in meeting these targets also takes a community. Our partnerships with watershed towns, state agencies, and conservation groups will help us reduce pollution that reaches the lake through stormwater management and land conservation projects.

Learn more about lake water quality, view the most recent water quality readings, and read the full water quality target report at: NewfoundLake.org/water-quality.

NEWFOUND WATER QUALITY TARGETS

Water quality targets guide NLRA's work to maintain Newfound Lake's excellent water quality. Target values are set for three important indicators of lake health - water clarity, total phosphorus (TP), and chlorophyll a (CHLA) - at three long-term monitoring sites. Targets specific to each site and indicator are based on the median value of data collected between 2013-2022. We have set targets that aim to improve water quality in two of the lake's most at-risk bays.

1. NEWFOUND'S DEEPEST POINT

Samples taken from a lake's deepest point (182 ft) best represent overall water quality.

Target: Maintain at 2013-2022 median values (TP=3.5 ppb, CHLA=1.42 ppb, CLARITY=9.5 m)

2. PASQUANEY BAY

Targets for Pasquaney Bay reflect its unique water quality characteristics and account for the impact of development on the east side of the lake.

Target: Maintain at 2013-2022 median values, reduce CHLA concentration by 5%. (TP=3.6 ppb, CHLA=1.72 ppb, CLARITY=8.5 m)

3. MAYHEW SITE

This site is influenced by Newfound's largest tributary and nearby shoreland development.

Target: Maintain at 2013-2022 median values (TP=3.5 ppb, CHLA=1.42 ppb, CLARITY=9.5 m)



UNDERSTANDING THE INDICATORS

Water Clarity measures how far you can see into the lake - the deeper the better!

Total Phosphorus (TP) is the primary nutrient limiting the growth of aquatic plants and algae. It is measured in parts per billion (ppb). Even small increases can make a big impact. We want to keep this number as low as possible.

Chlorophyll a (CHLA) is the plant pigment that makes leaves and algae green. Measuring chlorophyll a allows us to track algae growth. Low numbers are better here, too.

Planting Seeds of Conservation:

Working with Schools to Build Environmental Literacy

NLRA Education and Outreach Manager Dr. Mirka Zapletal is on a mission to inspire the next generation of scientists making a difference for Newfound. She works with local schools and community groups to introduce science and conservation using the environment right outside our doors. This year NLRA has partnered with the Bridgewater-Hebron Village School for a one-of-a-kind science program that expands the science curriculum and helps meet statewide science standards and goals while also connecting scientific understanding to the everyday lives and environments of students.

Once a week, Mirka and the 5th grade class head outside for hands-on science learning. Bringing science outside invites new perspectives on the schoolyard and the nature inhabiting it. They might dig down through the snow to inspect how the snow crystals form layers, follow the tracks of a deer, or sample the water around their school for road salt pollution. Each excursion expands student knowledge of their local ecosystem and makes 5th grade science a part of their personal experience.

By getting outside and using the schoolyard as the laboratory, students make observations and ask questions that lead them naturally along a journey of scientific discovery. Here are some of the questions fifth graders have explored.



"When students are outside measuring the temperature of snow or creating watersheds with paper and spray bottles, they are observing, conversing, and asking questions. This authentic learning builds excitement about science and the natural world, so that students can appreciate and positively contribute to the communities and landscapes that we live in."

- Eliza Boswell, BHVS 5th grade teacher

Why does water collect in some places and not others?



With the help of topographic maps and a snowstorm that left six inches of soft, fresh snow across the playground, students made three-dimensional models of the Newfound Watershed to visualize how water moves across the landscape. This activity also led to another question: Why do we get snow some days and ice or rain on others?

What plants and animals are found in the watershed?



A healthy watershed supports a diversity of plant and animal life, and the types and amounts of plants and animals we find can indicate just how healthy the watershed is. Students investigated animal tracks and signs and used those findings to build food webs. This led to conversations about climate change and other ways that the balance of plants and animals in the watershed can be affected.

Is it warmer above or below the snow?



Snow acts like insulation, making it warmer underneath layers of snow than it is on the surface of the snowpack. When students dug a snow pit and measured the air temperature above and deep inside the pit, they recorded a nine degree temperature difference. This is important for animals like voles and shrews that live in the subnivean zone (the area above the ground but under the snowpack) during winter.

Where does water pollution come from?



Using water samples collected from wells, ditches, and parking lots, students explored the properties of water. They saw how water's cohesion moves food coloring (and dissolved pollutants!) from one jar to another; they tested the samples for evidence of acid rain; and they looked for evidence of chloride pollution from road salt.

Today's students are the future stewards of Newfound. NLRA's classroom visits expand the science curriculum and create a personal connection with the field of science and the local environment. By building environmental literacy and teaching watershed science in local schools, NLRA is preparing the next generation with the skills they need to care for Newfound Lake and its watershed.

Making a Splash as a Monthly Donor

Monthly donors sustain and grow the projects and programs that conserve Newfound. By spreading your gift over the course of the year, you make a constant impact that translates into the year-round work to protect the place you love.

Whether you are joining as a new member or have supported NLRA for decades, monthly giving is an easy way to be a part of the work that keeps Newfound clean. And your gift will go further - when we know we can count on your monthly support, we can stay focused on the meaningful work of conserving the watershed.

JOIN NLRA AS A MONTHLY DONOR!



[NEWFOUNDLAKE.ORG/MONTHLY-GIVING](https://newfoundlake.org/monthly-giving)

EXPLORE MORE WAYS TO GIVE:

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Estate Gifts

In Memory and In Honor Of

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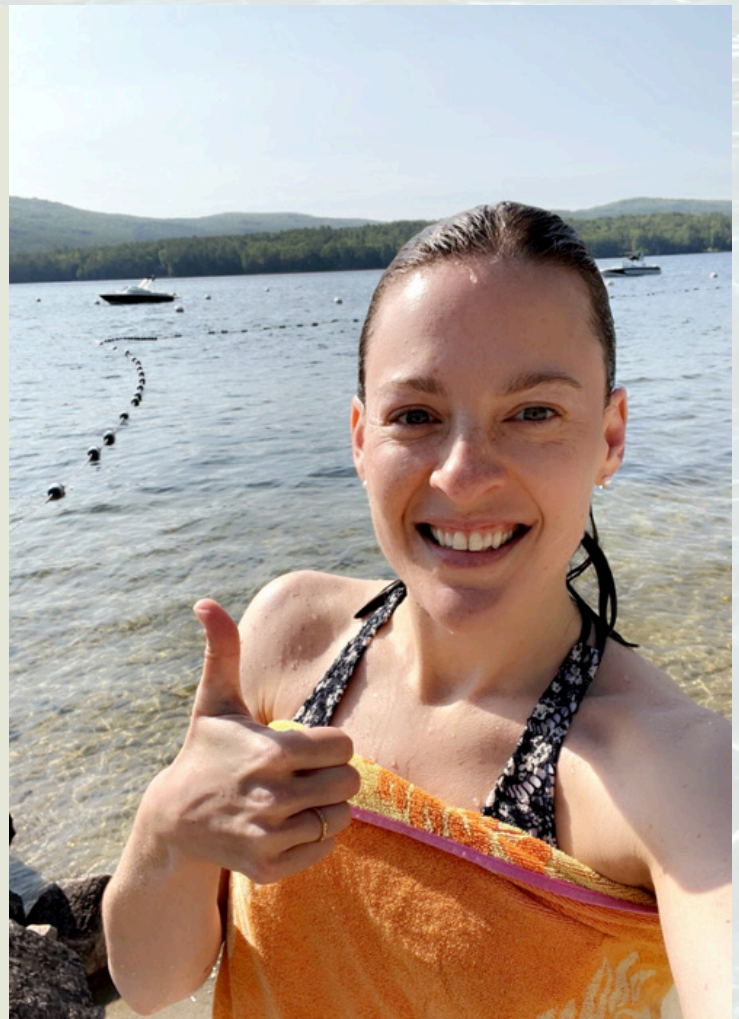
Learn more at:
NewfoundLake.org/membership

Monthly Supporter Story: Kristen Gould

Kristen chooses to support NLRA as a monthly donor, a sustainable way to make a long-term difference. She enjoys Newfound Lake with the peace of mind that she is making a lasting impact on local conservation every month of the year.

"Newfound Lake has been a part of my life since I was a small child. Growing up, I spent every summer on Newfound. This became my "home base" as my family moved all around the country and internationally during my childhood. Now I am an adult, and Newfound has been the greatest constant—and one of the greatest gifts—in my life. My favorite pastime in the summer is open-water swimming. Being in the water gives me a sense of calm, and the cold, clean water of Newfound only contributes to that sense of peace. The lake is immensely important to me, particularly preserving the quality of the lake. I want it to be there for future generations to enjoy the same gifts that we have been so lucky to receive. That is why I support NLRA—because they are working to protect the lake."

– Kristen Gould, Monthly NLRA Member



Using Maps to Make a Difference:

PSU Students Test Their Skills for Conservation

A partnership between NLRA and Plymouth State University (PSU) is expanding conservation efforts in the Newfound Watershed. Students in the Environmental Science and Policy program are drawing from their academic experience to enhance NLRA's mission work through two capstone projects, each addressing a unique conservation issue.

Tracking the Path of Stormwater

When rain falls onto roofs, roads, and lawns, it doesn't soak into the ground. Instead, it travels over these surfaces as stormwater runoff, picking up pollution like fertilizers and pet waste on its way to the nearest stream, river, or lake. Stormwater can also damage infrastructure by causing flooding and wash outs. NLRA has resources available for neighborhoods and homeowners to protect their property and Newfound Lake from stormwater pollution, but we rely on homeowners to reach out to us with stormwater issues. Often, stormwater problems only become apparent after serious damage has been done.

PSU students are working with NLRA to develop a mobile app that highlights potential "hotspots" for stormwater runoff. The app maps stormwater infrastructure, such as culverts and drainage ditches, and documents key landscape features that contribute to stormwater, like roofs and lawns. By pinpointing areas most at risk from stormwater, NLRA can address potential issues proactively.

In April students put the new app to the test on Whittemore Point in Bridgewater. Over the course of two days, they mapped driveway culverts, estimated the amount of impervious surfaces like roofs, and noted signs of erosion caused by previous stormwater flow. Their work highlights potential problem areas, like clogged or undersized drainages that can lead to serious stormwater pollution. NLRA can now work with homeowners to address these issues before there is an impact to Newfound's water quality. In the future the app can be applied throughout the watershed, stopping stormwater one neighborhood at a time.

Locating Vernal Pools

A second group of students is examining the presence and distribution of a special type of wetland in the watershed. Vernal pools provide critical habitat for several species of frogs and salamanders and are an important part of a healthy ecosystem. Vernal pools are threatened by pollution, land development, and climate change. As indicators of water quality, amphibians are an important part of local ecosystems. By keeping an eye on the places they gather, such as vernal pools, and how they move through the landscape, we can have a better sense of the challenges they face and how they are dealing with those challenges.

If you know of any vernal pools or suspected vernal pools in the watershed, please share! Contact Mirka at Mirka@NewfoundLake.org to help get more amphibian breeding spots on the map.

Partnerships Boost Conservation

Conservation takes a community. NLRA collaborates with educational institutions, local and state agencies, and other nonprofits and community groups to enhance our mission while enriching the work of our partners. Together, we're building a cleaner, clearer future for the Newfound Watershed.



PSU students are developing a mobile app to locate stormwater pollution sites in Newfound neighborhoods.



Vernal pools are an important part of a healthy watershed. PSU students are gathering data on vernal pools to gain insight into their distribution in Newfound.



Newfound Lake Region Association

10 N. Main St., Unit 1

Bristol, NH 03222

NewfoundLake.org

EXPLORE NEWFOUND

GUIDED HIKES • PADDLING EXCURSIONS • BOAT TOURS
YOUTH ACTIVITIES • VOLUNTEER OPPORTUNITIES

NLRA has a reason for everyone to get outside and connect with the
Newfound Watershed. Find upcoming events and register at:
NewfoundLake.org/events

MARK YOUR CALENDARS FOR THESE KEY EVENTS!

Volunteer Kick Off

June 7, 3:30-5:30pm
Grey Rocks Conservation Area

NLRA Annual Meeting

August 10, 9-11am
Grey Rocks Conservation Area

Weed Stampede

August 24 & 25, 8-11am
Lake wide!