PRP Association 2023 Newsletter

President's Message

The NH Lake Region Tourism Association has a great quote, "Thankfully, there is no shortage of seasonal fun on and around the lake" – isn't that the truth!

The summer of 2023 looks to be a great summer with people getting involved and taking steps to preserve our lake and watershed. If you want to get involved, let us know and we'll try to match your interests with ways you can help.

Being part of the Weed Watch group is a great way to relax and contribute. Cindy Pfeiffer will consider your location and how much time you can offer to assign an appropriate amount of shoreline for you to cover. Training is provided, and every set of eyes helps. It's a great way to meet people on the lake too!

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While our 2022 water quality results are good, the benthic cyanobacteria mats and low dissolved oxygen numbers continue to be concerning. On page 2 our experts from NHDES and UNH LLMP were kind enough to assist in explaining the results. Bottom line is that we are heading in the right direction with the steps we've taken to complete the watershed survey and management plan.

Look for a new summer concert this year. Michawanic resident Andy Morrison's Boston-based band, Surfhenge®, will play instrumental surf rock and modern surf tunes on the deck. The concert, along with the Boat Parade, are fundraisers for the PRP invasive species fund so reserve August 5th and watch the eNews for the time.

Please share this Newsletter with any new neighbors, and have them visit www.pineriverpond.org for information about joining the lake association.

Relax and enjoy the summer of 2023!

Patty Philbrook

It's Time to Renew Your Membership

Renew your membership today – it's due by July 1st!

Mark up your enclosed renewal form with any changes to your information and mail it with your check or drop it off at the PRP Store where you can pay by check, cash, credit card, or Venmo. If you use the ramp on Lord Road, you may include the $25 fee, and we'll get it to the PRA. Also, please donate for the fireworks show!

Important 2023 Dates

Annual Meeting - July 8th, 9am at 71 Chandler Ln.
Rain date July 15th same time and location.
Fireworks - July 8th at dusk, mid-lake.
Rain date July 15th
Waterfront Concerts - See eNews for details.
August 5th - Surfhenge @ Michawanic Deck
September TBD - Jonathan Sarty & the Knotty Boys
Boat Parade - September 3rd, 2pm.
Rain date September 4th, 10am.

Watershed Management Plan

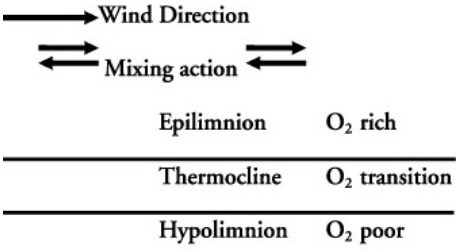
The Watershed Management Plan (WMP) details our long-term management strategy to protect and improve water quality and the other natural resources in the PRP watershed. It is posted on the website for all to read. Thank you to the many volunteers who contributed to this huge accomplishment.

We're seeing great success with our first Federal 319 Grant. Projects to implement Best Management Practices (BMPs), and many of the approved septic system cost-share projects are underway. We received some unexpected septic program requests due to system failures, and it's great that the grant can help with those unplanned costs. Given the success we are having with this first 319 grant, NHDES suggests that we consider applying for a second grant for 2024.

Water Quality and Cyanobacteria

with assistance from Sally Soule, NHDES, Bob Craycraft, UNH LLMP, and Amanda McQuade, Ph.D, UNH Extension Director of LLMP

2020 - no data/COVID	2017	2018	2019	2021	2022
Water Transparency (meters)	4.9 exc.	5.7 exc.	5.5 exc.	5.6 exc.	6.2 exc.
Total Phosphorus (ppb)	7.1 exc.	5.9 exc.	5.9 exc.	6.8 exc.	6.5 exc.
Chlorophyll a (ppb)	3.9 fair	1.9 exc.	3.0 exc.	3.3 fair	2.4 exc.
Dissolved Oxygen (mg/L)	1.7 poor	1.7 poor	0.3 poor	0.2 poor	0.0 poor



The 2022 water quality results are excellent, and remain consistent with past years, but let's take a closer look at the Dissolved Oxygen (DO), which is the concentration of oxygen gas incorporated in water. The DO is averaged from the hypolimnion (bottom layer of the lake). On September12, 2022, our DO concentration was measured. This is a late summer reading, and it's common for DO levels to fluctuate throughout the year. Generally, the still waters in the hypolimnion layer have less DO because the epilimnion (top most) layer is affected by wind and wave action. The DO on our report is not an average of the entire water column, and we are not at risk of being declared impaired for DO because NHDES only considers samples from the epilimnion layer of the lake.

It is important to consider the DO in the bottom layer as it relates to phosphorus (P) released from the lakebed sediments. We can't say that low DO always means a release of P, but it is noteworthy, especially considering sources of P and how those sources might affect management decisions. We will continue to watch the P concentrations in the hypolimnion.

Unfortunately, cyanobacteria do well under all conditions, and there are so many complex factors that allow for their success. They can even thrive under low-nutrient conditions. Our benthic mats represent an entirely different group of cyanobacteria. Their prevalence in coves is likely due to a shallow, warm, sheltered environment, however, the steep-sided slopes, even in undeveloped areas, may be factors that support their success. For example, clear water could support deeper benthic mats under low light conditions. The lake bottom is undisturbed, and growth of the mats could be slowing. It is possible for the benthic mats to influence DO and P. Usually, cyanobacteria create oxygen and the low DO typically occurs when they die off, but there could be mats deeper in the lake given the high-water transparency. Sampling of deep benthic mats is difficult, and use of an underwater camera could offer interesting findings.

While the presence of cyanobacteria is frustrating, it is a common phenomenon in NH. We need to prevent the problem from worsening. We can look to the southern US for examples of how bad a cyanobacteria problem can get. Our Watershed Management Plan (WMP), located on our website, shows the locations of benthic cyanobacteria mats in 2021. These mats have likely been around for some time. More research is needed on benthic cyanobacteria mats, and our WMP is intended to prevent issues from worsening. It's a never-ending task to be diligent on watershed concerns. A link to the UNH Lay Lakes Monitoring Program (LLMP) water quality reports for PRP can be found on our website at www.pineriverpond.org.

If you have questions or concerns regarding cyanobacteria, contact Cindy Pfeiffer at clpfeiffer9@gmail.com or Patty Philbrook at president@pineriverpond.org.

Boats Registered Out-of-State

NH requires anyone operating a motorboat with a registration from another state to purchase and display a NH aquatic species decal from NHDES. Decals can be purchased online at the NHDES Home and Recreation, Boating and Fishing, Invasive Species website https://www.des.nh.gov/home-and-recreation/boating-and-fishing/invasive-species for $20.

All powerboats (including electric) must be registered while on NH waterways. In addition, all sailboats 12 feet and over are required to be registered.

Annual Macrophyte Survey

SOLitude Lake Management again conducted a macrophyte (aquatic plant) survey of the lake in August of 2022. The survey observes vegetation growth visually when possible, or with the use of a throw-rake where needed. As observed in 2021, PRP has moderate vegetation growth at depths up to 15 to 20 feet. In years with good seasonal water clarity, plant growth can increase at deeper depths, and lessen in years with poor water clarity.

In 2022, twenty-two (22) species of aquatic plants were identified, and the dominant plants were bladderwort, bushy pondweed, variable-leaf pondweed, and spikerush. Vegetation coverage was sparse to moderate density (25-65%), with higher density found in protected cove areas.

Whorled watermilfoil, native to NH but not PRP, was in several locations. As in 2021, growth in the lagoon with the floating island near Sleepy Hollow Road was most dense, and growth in the cove between Bo's Island and Fay Way was sparse-moderate throughout the cove.

It is imperative that anyone boating out of –

1) the lagoon with the floating island near Sleepy Hollow Road, and

2) the cove between Bo's Island and Fay Way

ensure NO watermilfoil is caught on the watercraft or motor (this includes motorboats and paddle boats too) before leaving these areas. This will help limit the spread of watermilfoil to other parts of the lake.

SOLitude's recommendations remain unchanged from past years. The proximity of PRP to known infestations in the region creates a high likelihood of AIS introductions. Efforts to prevent introduction of non-native aquatic species to PRP through the Weed Watch and Lake Host programs should remain a priority for the PRP Association and lake residents. Early detection is critical for the success of preventative management.

Lake Host Program

Each year, the PRP Association partners with NH LAKES to hire Lake Hosts who staff the PRA Access Point on Lord Road. They offer courtesy boat and trailer inspections, and encourage boaters to practice the **Clean, Drain & Dry** program to prevent the spread of both plant and animal aquatic invasive species (AIS). Preventing the introduction of AIS is far preferable to managing the growth after it occurs. This is the 13th year we have participated in the program, and experts continue to reaffirm that it's likely the most effective way to prevent AIS from entering the lake.

We have been awarded a payroll grant of $1,730 from NH LAKES for the 2023 season (that's an increase of $480 from 2022). You can learn more about the Lake Host program at www.nhlakes.org.

Docks, Moorings, Rafts

Anyone planning to install a new dock must obtain a wetlands permit. Swim rafts and moorings do not need an NHDES wetlands permit, but must be installed in accordance with all applicable state laws. Information is available on the NH Department of Safety's Mooring Program website, and the NHDES Water website under Wetlands/Wetlands FAQs.

Erosion Control Measures Apply when No Permit is Required

If you're doing construction, modifications, excavation, or earth moving in the 250' protected shoreland zone and the work will disturb the terrain, you are required to have erosion and sediment control in place even when no permit is needed. Rule Env-Wq 1406.20 - Conditions Applicable to All Projects in the Protected Shoreland is applicable **regardless of whether a permit is required**, and requires that erosion and siltation measures shall:

- Be installed prior to the start of work;
- Be maintained throughout the project; and
- Remain in place until all disturbed surfaces are stabilized.

Preventing soil and sediment from washing into the lake (runoff) is essential to maintaining water quality. Please do your part and ensure erosion and silt controls are in place if you disturb terrain near the lake.

Canada Geese

Canada Geese contribute excessive nutrient loading to the lake that can cause algal blooms, and excessive plant growth. While the USDA has determined that the Canada Goose population in NH exceeds a balanced relationship with humans, they remain a protected bird that can only be hunted with a hunting license and stamp during the normal hunting season or with a federal permit. Short of that, there are a few things we can do such as **DON'T FEED THEM (or ducks)**; scare them off with loud noises (dogs barking work well); create a buffer of vegetation; build a string fence along the shoreline that the geese/ducks can't step over; or utilize helium-filled balloons, pinwheels, mylar flags, or other objects that that move and flash light.

AWWA: What's up in the Watershed

by Jon Balanoff, Executive Director

In 2020, PRP started experiencing cyanobacteria blooms in the lake. These blooms have been occurring more frequently around the country and the world in recent years, and result from environmental stress caused by warmer temperatures, longer summers, and an influx of nutrients into the lake that provide a food source for bacteria and other microscopic life. Sources of nutrients include lawn fertilizer, human and animal waste, and soil erosion.

Once these blooms occur, it can be hard to turn things around. Fortunately, the PRP community has acted with unprecedented speed to reverse course. Working with AWWA, the PRP Association coordinated a watershed survey to identify erosion, conducted sediment tests, and developed a Watershed Management Plan (WMP) that serves as an action plan for the lake by setting a target water quality goal and identifying steps to address the primary sources of pollution to the lake over ten years.

Tho enact this plan, the PRP Association and AWWA applied for and received a $75,000 319 Grant from NHDES, which provides funds for residential erosion landscaping, assistance with replacing outdated septic systems, and funds to engineer and install permanent stormwater controls at the PRA access point on Lord Road to address excessive stormwater runoff. The grant is only the first step in enacting the WMP. The watershed survey in 2022 generated an outpouring of interest in addressing erosion, and AWWA has scheduled over 20 site visits with homeowners on the lake this past spring.

The eagerness of the PRP community to preserve the lake has been inspiring. Historically, PRP has had fantastic water quality and now rests at a tipping point that could go in either direction. The diligence, cooperation, and speed with which people have rallied show an immense passion for the lake and, if this momentum remains, will go a long way to keeping the lake healthy for generations to come.

Have you noticed erosion on your property? AWWA can help fix it. We provide free consultations and will produce a site-specific landscape design to address stormwater and erosion on your property for no charge. Every summer, our Youth Conservation Corps installs stormwater control landscaping on dozens of properties in the region, and homeowners only pay for materials. Call 603-473-2500 or email jbalanoff@awwatersheds.org anytime to set up a visit. Have a great summer, and remember to give back to the lake you love!

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