
PRP Association 2022 Newsletter

President's Message

Thank you to the many volunteers who are passionate about PRP. We are a success because of your help. With our Watershed Plan (long-term management strategy) in its final stages, and our first federal 319 grant pending approval, we are poised to confront the challenges we can control that threaten PRP's water quality.

It's shocking to know that over half of US lakes and rivers are "impaired" (not suitable for recreation, fishing and/or drinking water), and it's due to an exploding number of algae blooms and aquatic invasive species (AIS) infestations.

Unfortunately the 1972 Clean Water Act paid little attention to lake and river watersheds, and those watersheds have been delivering generous amounts of pollutants that harm the ecosystems. Half a century of this buildup of pollutants, called "nonpoint source" (NPS) pollution, is the main concern, and experts are calling it a recipe for disaster given that it's had 50 years to fester. NPS comes from everywhere. It comes from fertilizer and manure runoff, leaky septic systems, and road runoff after heavy rains, it's all damaging and all sources damage the water quality. Once a pollutant gets into the lake it cannot be removed, it can only be treated. While experts don't yet agree on solutions, they do agree we face increasing harm and any fix will require difficult changes to how we maintain roads, care for lawns, and manage waterfront properties. We know that cyanobacteria can pose serious human and pet health risks, and in-lake treatments options have drawbacks. Some say that nitrogen and phosphorus pollution has the potential to become one of the costliest and most difficult problems of the century. One thing we can do is adopt Best Management Practices, and use the free services offered by AWWA for technical assistance. Next time it rains, go out and watch what the water on your property does. If it runs off into the lake instead of filtering into the ground, you can be a part of reducing stormwater runoff to help maintain PRP's high quality waters by reducing stormwater runoff.

AIS, first identified in NH about 60 years ago, are now in 91 NH lakes. As AIS spread, the rate of invasion compounds. Preventing its introduction is best, and when it's found early, we can better respond. AIS in Minnesota are so bad you cannot walk barefoot on the beaches because the infestations of zebra mussels will cut your feet.

The NH legislature is taking the growing problem of cyanobacteria to heart with HB 1066. The bill was amended by the House to forgo the creation of a study commission, and direct NHDES to create a plan to address cyanobacteria blooms in NH waters. The bill has been further amended to add funding for DES to begin work developing the plan, and to establish an advisory committee to support DES during the plan's development. HB1066 is expected to pass.

Please share this Newsletter with your neighbors, especially those who are not members of the PRP Association. Encourage them to join the lake association to stay informed as we all have a vested interest in PRP's water quality.

Enjoy the summer of 2022!

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 your \$25, and we'll get it to the PRA. Also please consider a donation for the fireworks show.

Officers

Patty Philbrook
President@pineriverpond.org

John Myers
VicePresident@pineriverpond.org

Phil Valenti
Secretary@pineriverpond.org

Howie Knight
Treasurer@pineriverpond.org

Important 2022 Dates

Annual Meeting - July 9th, 9am at 71 Chandler Ln.
Rain date July 16th same time and location.

Waterfront Concert - July 9th, time TBD.
Watch the eNews for further details.

Fireworks - July 9th at dusk, mid-lake.
Rain date July 16th

Boat Parade - September 4th, 2pm.
Rain date September 5th, 10am.

Watershed Planning

In the 2-years we've been working on our watershed planning, we've accomplished a lot of work. We completed our watershed survey, conducted core sediment sampling and analysis of the lakebed, contracted for our water quality assessment and Lake Loading Response Model (LLRM) Report, are in the final reviews of our Watershed Management Plan, and are awaiting final approval of a \$75,000 federal 319 Watershed Assistance Grant. Only with the help and generous time of Jon Balanoff from the Acton Wakefield Watersheds Alliance (AWWA), Sally Soule from the NHDES Watershed Assistance Section/NPS Management Program, and Amanda Murby McQuaid, Ph.D. from UNH Cooperative Extension/LLMP were we able to do all this.

In all the analysis during the watershed planning, one theory our experts are considering is that substantial phosphorus loading to the lake may be occurring during periods of vegetative die-back in the fall during drawdown, and from snowmelt and spring rain runoff. To fully understand this, we are collecting additional seasonal data to learn more about the timing of phosphorus loading to PRP. We are also gathering further data on the low dissolved oxygen problem.

The LLRM evaluates the impact of potential reductions of phosphorus loading to the lake. This helps us determine the value of phosphorus loading reduction measures, and the influence of such measures on in-lake conditions including a reduced probability of algal blooms. As you may recall, we were all quite surprised by the surface cyanobacteria bloom last November, so late in the season. Several other lakes in the state also had late season blooms, which was unusual. This could indicate declining lake health because, while water quality reports are informative, they look at the past. Think of them as report cards for past years.

To all the volunteers who contributed many hours walking, hiking, and supporting us during the Survey, and to those who are reviewing the Plan – **THANK YOU!**

Water Quality

You may recall that we expanded the 2021 sampling plan to include 1) increased upper layer total phosphorus (P) sampling at the extreme ends of the lake; 2) supplemental temperature, dissolved oxygen (DO), and conductivity profiles; and 3) additional small stream sampling near Wentworth Cove. The 2021 data continues to show much of what we've seen in the past. NOTE - Due to the pandemic preventing sampling during 2020, no meaningful data is available for that year.

	2016	2017	2018	2019	2021
Water Clarity shown in m	5.8 exc.	4.9 exc.	5.7 exc.	5.5 exc.	5.6 exc.
Total Phosphorus shown in ppb	6.7 exc.	7.1 exc.	5.9 exc.	5.9 exc.	6.8 exc.
Chlorophyll a shown in ppb	2.5 exc.	3.9 fair	1.9 exc.	3.0 exc.	3.3 fair
Dissolved Oxygen shown in mg/L	0.2 poor	1.7 poor	1.7 poor	0.3 poor	0.2 poor

While continued low DO levels might suggest some internal P loading is occurring, evidence from the lakebed sediment analysis shows very little iron is present. With iron being the most common element that breaks down and releases P in low DO environments, the low iron is good but it makes figuring out what's happening all the more mysterious. The one thing the experts all agree on is that we need to monitor it closely.

Cyanobacteria

In 2020, 100% of PRP's shoreline was visually surveyed for benthic cyanobacteria mats. These mats are slow-growing and have likely been around for some time. Unfortunately, more research is needed to understand why these mats are here, but we know that phosphorus and nitrogen entering the lake in stormwater runoff and leakage from failing septic systems is what feeds them. Advice from the NHDES is to avoid areas where mats are known to be present.

We need to monitor the mats for any changes (growth or disappearance). If you are near a known mat location and have questions or concerns, contact Cindy Pfeiffer at clpfeiffer9@gmail.com or Patty Philbrook at president@pineriverpond.org. A location map of the identified benthic mats will be in the Watershed Plan.

Lake Host Program

The NH LAKES Lake Host Program is about educating boaters on the **Clean, Drain & Dry** program, and preventing the spread of both plant and animal aquatic invasive species (AIS). This is the 12th year we have participated in the program, and experts continue to confirm it's one of the most effective ways to prevent AIS from entering the lake. Preventing the introduction of AIS is far preferable to managing the growth after it is present.

The Lake Hosts are local youth, often those who live on PRP, and they offer courtesy inspections to catch hitchhiking AIS from being spread into or out of the lake. Please remember that the Lake Hosts on the PRA access point ramp are employees of NH LAKES, not the lake or any road/neighborhood association.

We have been awarded a payroll award of \$1,250 from NH LAKES for the 2022 season. You can learn more about the Lake Host program at www.nhlakes.org.

Annual Macrophyte Survey

SOLitude Lake Management again conducted a macrophyte (aquatic plant) survey of the lake last fall. The survey observes vegetation growth up to depths of about 15 to 18 feet (the littoral zone).

In 2021, 25 species of aquatic plants were identified. Bladderwort, bushy pondweed, big-leaf pondweed, and bur-reed dominate the littoral zone. Vegetation cover is sparse to moderate density (25-65%) throughout most of the littoral zone, with higher densities in protected cove areas. Scattered, low-density growth was found along the more exposed shoreline areas at deeper depths of 13 to 18 feet.

Whorled watermilfoil, native to NH but not PRP, is in several locations as previously noted. Growth in the lagoon with the floating island near Sleepy Hollow Road is most dense, and growth in the cove between Bo's Island and Fay Way is sparse-moderate throughout the cove. During the 2021 survey, no whorled watermilfoil were observed in Penniman's Basin. This confirms reports from our Weed Watch team who could not locate any milfoil in that location either.

When boating in or out of the lagoon or cove with whorled watermilfoil growth, please be aware these plants can catch on boats and ski craft, and be dragged out into other areas of the lake. Please check when leaving these areas to ensure you have no hitchhiking plants.

Our report states that the proximity of PRP to known infestations in the region creates a high likelihood of potential AIS introductions. The fact that none were found or reported previously is "undoubtedly due to the lack of suitable public boat access and the weed watching efforts of the Pine River Pond Association." They recommend we continue with preventive efforts of the weed watch and Lake Host programs.

"Early detection is paramount for the success of preventive management and should remain a priority for the Association and lake residents." SOLitude Lake Management

Docks, Moorings, Rafts, and Boats Registered Out-of-State

Anyone planning to install a new dock must obtain a wetlands permit. Swim rafts and moorings do not need a 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.

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.

AWWA: What's up in the Watershed by Jon Balanoff, Executive Director

With our sights set on the long-term health of Pine River Pond, and all the lakes in our watershed, the name of the game at the Acton Wakefield Watersheds Alliance for some time has been watershed planning. AWWA has been active on Pine River Pond in the last few years and in the community as well. Whether we're fixing erosion with our Youth Conservation Corps (YCC) crew, or teaching residents young and old about lake ecology and water quality, our primary focus has been on the vision we share with all of you: to keep the water clean and healthy for future generation to enjoy as we do.

We have learned a lot about what can harm the lake; how soil erosion, salt, and old or undersized septic systems can make small contributions that add up to big problems. We have also learned what we can do about it, and to keep the lake healthy we need to think long-term.

In 2021, the PRP Association and AWWA collaborated to conduct a watershed survey to identify erosion issues around the lake. This is being compiled with other water quality data from PRP into the Pine River Pond Watershed Management Plan, which is a planning document that conforms to criteria designed by state and federal agencies (like the EPA) to determine the health of a watershed and create water-quality goals for the future. These results have already spurred a great deal of interest in lake-friendly landscaping and camp road maintenance that will have a profound impact on the health of the lake and will allow us to determine projects that will have significant impacts on water quality and qualify for federal grant funding.

In January 2022, AWWA, in cooperation with the PRP Association, applied for a federal 319 grant to fund YCC projects on Pine River Pond, six septic system replacements, and several large-scale road erosion control projects. These projects require an extensive amount of coordination between road, lake, and neighborhood associations, as well as state and federal governments. If implemented, they will keep a significant amount of sediment from getting into the lake. Water Quality is a complex issue, and it takes the whole community to protect it to have a meaningful impact.

The PRP community has rallied strong in recent years and made many great strides toward preserving the health of the lake, but this should not be taken for granted. Water quality and cyanobacteria monitors, weed watchers, Lake Hosts, the YCC, local associations, and many more all work together to preserve the natural beauty of the lake and watershed.

Pending approval from the state, there will be funding for six (6) septic system replacements on Pine River Pond. If you have been on the fence about replacing an old septic system, now may be the time. Contact AWWA at 603-473-2500 or info@awwatershed.org, or visit the website Awwatersheds.org for more information about this \$5,000 grant. *Note: AWWA **must** approve your application before you begin installation to qualify for funds.*

As you enjoy the lake this summer, please remember that we are all responsible for keeping it healthy. A lake is an ecosystem and, much like a person, can be healthy or sick, and age gracefully or rapidly, depending on how it is treated and the level of stress it endures. We must all be good stewards of this resource.

Committees

Boat Parade - Tracey Kolb
tl.kolb@aol.com

Communications - Amy Burkam
aburkam@gmail.com

Cyanobacteria Sampling - Cindy Pfeiffer
clpfeiffer9@gmail.com

Erosion - Howie Knight
treasurer@pineriverpond.org

Financial Investment - Howie Knight
treasurer@pineriverpond.org

Fireworks - Doug Stewart
dcstewart77@yahoo.com

Heritage/History - Mike Crittendon
mike@bradfordrfsales.com

Lake Hosts - Paul Romano
paulromano@pipeline.com

Loon Protection - Ken Cobb
kncobb53@gmail.com

Macrophyte Survey - Doug Stewart
dcstewart77@yahoo.com

Membership - John Myers
vicepresident@pineriverpond.org

PRP Store - Tom & Shelly Daniels
shellydaniels4@gmail.com

Safety - Guy Philbrook
guyphilbrook@gmail.com

Water Quality LLMP - Dave Boisvert
nhhideaway@gmail.com

Watershed Plan - Patty Philbrook
president@pineriverpond.org,
and John Myers
vicepresident@pineriverpond.org

Weed Watch/Invasives - Cindy Pfeiffer
clpfeiffer9@gmail.com