

Fall 2015



Province Lake Association Newsletter



Message from the President

Another summer at Province Lake has passed (far too quickly) and become part of our fond memories; enjoying the ever changing but always beautiful view, rafting with friends and family, floating in our clear water on hot summer days, water skiing jumps and spills, landing that big bass or little sunny, enjoying seeing cute baby fuzz balls riding on the loon's back, smores by the campfire,

Our Lake and Watershed Plan: Summer Progress

In the midst of all this fun and relaxation, your Lake Association has been busy monitoring and working to improve water quality. Our Phase II Watershed grant was approved. This led to hiring of Princeton Hydro to develop an erosion control road plan for both Rt. 153 and Bonnyman Road. The current grant also has provisions for installing two Best Management Practice (BMP) erosion control fixes on Bonnyman Road, sharing the cost of septic evaluations and repairs to problematic systems, and providing erosion control design support for the two properties with major erosion problems.

Acton Wakefield Watersheds Alliance (AWWA), our very valuable partner in obtaining and administrating the grants, also sponsors the Youth Conservation Corps (YCC) which designs and installs erosion control improvements for residential landowners around local lakes. This work is available for the cost of materials – labor is free (small donations are requested). AWWA is looking for several Province Lake locations for 2016 projects. Call 603 473-2500 if you are interested.

See you next spring,
Pete Dinger
President, PLA

Stay current on all happenings around Province Lake at www.provincelake.org.
[Like Us on Facebook – Province Lake Association](#)

Province Lake Program Reports

Water Testing Report, by Steve Craig & Pete Dinger

Province Lake waters had greater clarity and no cyanobacteria blooms this year. The major environmental negative event was the death of large numbers of perch over a few weeks in late August and early September. In spite of investigation by DES and UNH, no specific cause for the fish kill was determined. The best technical guess is that it was a bacterial infection specific to the perch (over 90% of the dead fish were perch). There was never a threat to people or pets and no lake use restrictions were posted. Whenever there is a threat to people or pets, warning signs will be placed at key points around the lake and information will be put on our website at provincelake.org. (Samplings are being taken seven months of the year, with tests done by the University of New Hampshire.)

Dam Report, by Tucker Vye

The water level of the lake this summer was good, but it did vary from 3" to 6" above and below the ideal level. Good flow of water out into the South River was maintained all summer. There was no beaver activity seen in the river until October. Now the flow in the south river is reduced and the lake level is not dropping even with all of the dam flow control boards removed. PLA is working with a local expert to resolve the problem before the lake freezes.

Lake Host Program Report, by Pete Dinger

This past summer, we extended our inspection coverage at the boat launch ramp to ten hours a day from Friday morning thru Monday evening. In addition we had a Lake Host person at the ramp for the days before and after the Fourth of July. Besides high levels of phosphorus in the water that causes excessive plant growth and algae/cyanobacteria blooms, our other major threat continues to be invasive species – especially Eurasian Milfoil. We had another successful year without any introduction of milfoil. This was confirmed via our weed watcher program: 30 volunteers with assigned areas around the lake making monthly inspections of the near shore waters.

We know that some people are frustrated by being delayed for a few moments for an inspection - they just want to quickly get their boat in or out of the water. Please realize how important this inspection is – getting milfoil has dire consequences leading to significantly impaired water for swimming and boating. In addition, removal is impossible and containment is very expensive. When you move your boat in or out of any body of water, please be aware of the problem. Clean your vessel and trailer – especially if it has been in another water body -- and work with us. We are only there to help preserve your enjoyment.

The Lake Host boat and trailer inspection program is paid for by NH Lakes, the towns of Effingham and Wakefield and by the Province Lake Association. This coming year the Bachelder family, which has covered the ramp for the last four summers, will not be able to return. We are in need of paid Lake Hosts for next summer. If you know of a friend or neighbor who would like to spend part of their summer protecting Province Lake, talking to people and relaxing next to the water, please contact me by sending a message to president@provincelake.org. Full or part time jobs are available at the rate of \$10/hour.

Weed Watching Update by Tucker Vye and Damaris Rohsenow

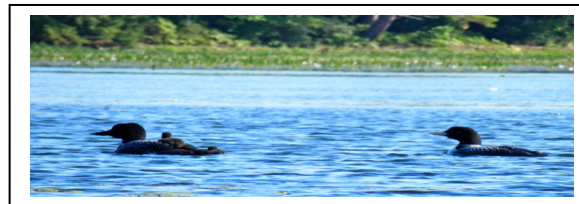
The first year of organized weed watching started this year with around 30 volunteers from around the lake. All areas of the lake were inspected, with the exception of the beach along RT. 153, and no invasive weeds were reported from June through September. Thanks to all the volunteers for their time and effort but we can always use more people. Please contact Tucker Vye at tavye@msn.com or Carl Davis at 112remickcd@gmail.com if you are interested in volunteering to weed watch next summer.

The bright green weed by the boat ramp was inspected by Dr. Barre Helquist (Professor at North Adams State College) in July, who said that a similar occurrence of this plant (*callitriche stagnalis*, or pond water-starwort) in Lake Ossipee is fragile and never grew overly much so should not be of concern for our lake.



Lake Birds update by Damaris Rohsenow, Steve Craig and Thom Townsend

This summer our pair of loons was blessed with two baby loons which survived all season, due to attentive parenting and protection by the adults. In mid-October the loons are still on the lake, but will be departing for the winter shortly. Thanks to all of you who used extra care on the water when the chicks were young and were careful to not stress them by getting too close. The eagles on the point also had two eaglets that thrived. The unexpected visitor this year was a pair of Greater Scaup, a duck-like bird with black head and tail and white wings, at the edge of their usual range. Canada geese families continue to grow, which will increase phosphorus deposits in the lake. Each fall, we see migrating cormorants, ospreys, and mergansers visiting our lake.



Photographs courtesy of Thom Townsend.

Special Report: Association Partner

Cyanobacteria Monitoring & Bloom Watch, by Linda Schier, Acton Wakefield Watershed Alliance (AWWA)

In the summer of 2015 AWWA volunteers participated in the **newly developed Cyanobacteria Monitoring and Bloom Watch program on Province Lake** as well as Great East Lake, Lovell Lake and Wilson Lake. Cyanobacteria are bacteria that photosynthesize. Many species grow in colonies and can form surface water “blooms.” The blue-green blooms consist of thousands of individual cells. Formerly called “blue-green algae”, cyanobacteria blooms are still frequently referred to as “harmful algal blooms” or “HABs.” Province has had cyanobacteria blooms multiple times in its history but none in 2014 or 2015.

Cyanobacteria have been on earth for 3.5 billion years and are naturally occurring in all our lakes, generally in relatively low numbers. However, research has shown that when nutrient levels in the lakes increase so does cyanobacteria abundance. They are part of the aquatic food web and can be eaten by various grazers in the ecosystem such as zooplankton and mussels.

While the blooms are most commonly noticed as scums floating on the surface of a waterbody, most cyanobacteria spend much of their lives in the sediments or throughout the water column. When conditions are right they migrate up the water column to the sun where they can photosynthesize and form the surface scums.

Some cyanobacteria are capable of producing liver and neuro toxins which can affect human health when in bloom. Studies are investigating the possible link between cyanobacteria blooms and ALS. The neuro toxins have almost immediate effects when ingested. The liver toxins tend to act more slowly. Exposure to toxic cyanobacteria scums may cause various symptoms including nausea, vomiting, diarrhea, mild fever, skin rashes, eye and nose irritations, and general malaise. In 2014, people in Toledo, Ohio were advised to not drink or bathe in the city's water due to cyanobacteria contamination, and this year 500 miles of the Ohio River were in bloom for over a month. It does seem that we are seeing increased frequency and intensity of cyanobacteria blooms world-wide.

Cyanobacteria abundance increases as nutrients increase. Current studies indicate that when total phosphorus levels are greater than 10 ppb the likelihood of toxicity increases greatly. Province Lake has an average phosphorus level above that threshold. Phosphorus, a naturally occurring element, is the limiting factor in freshwater ecosystems meaning that the level of phosphorus determines the productivity (growth) in the lake. High levels of phosphorus lead to excess algae, plant and cyanobacteria growth reducing water clarity and declining water quality.

All of the work that AWWA does is focused on reducing phosphorus loading to Province and the other lakes in our region. Phosphorus enters the lake through atmospheric deposition (we can't do anything about that), septic leakage, excess fertilizer applications, and primarily attached to sediments that are washed into the lake with storm water. Phosphorus pollution can be reduced by eliminating the human impacts that introduce it into the lake – lake friendly landscaping, properly functioning septic systems, and road maintenance practices to enhance infiltration and minimize erosion.

Over the past couple of years the EPA New England Regional Laboratory convened a region-wide (including NY) cyanobacteria monitoring and bloom watch workgroup consisting of state environmental water quality and beach monitoring programs, departments of public health, tribes, public water suppliers, NGO's, citizen monitoring groups and academics to establish a uniform and consistent approach to monitoring cyanobacteria. The first pilot season was in 2014 and the updated protocols were released in the spring of 2015. Citizen scientists throughout New England were charged with measuring the phycocyanin (cyanobacteria pigment) and chlorophyll (algae pigment) levels of the lake water using a handheld fluorometer to establish a dataset for cyanobacteria and algae levels.

This year AWWA's volunteers Stephanie Thornton and Kaitlin Carr joined Province Lake volunteer monitor Steve Craig on his sampling trips. Using an inexpensive microscope and a smart phone, they took photos of cyanobacteria that were sent to UNH and EPA for species identification and recorded the cyanobacteria levels. This was our first year work with the program so we don't expect a lot of results but monitoring the cyanobacteria levels over the years will provide a view of the way the lake is trending. **Please feel free to contact me at AWWA 603-473-2500 or info@AWWatersheds.org for more information or to get involved.**

Membership, Fundraising and Financial Status

Membership Report, by Mindy Schuman-Vye

I am pleased to report that the Province Lake Association membership continues to grow with 148 paid members to date, continuing our trend of setting new record levels each year. We have collected \$3,700 in membership dues and \$2,470 in additional contributions above the basic membership fee for a total of \$6,170. If you have been a member in the past and have not rejoined for 2015 or are new to Province Lake and have not joined for this year, it is not too late! The membership year is a calendar year from January 1st to December 31st. Your membership and involvement will help to restore Province Lake and assure it will be a beautiful resource for future generations. PLA is a 501(c)3 charitable organization and as such all donations are tax deductible to the full extent allowed by law. Our EIN is 23-7337832.

A BIG THANK YOU to the 44% of supporters of the lake who paid more than the \$25 dues. Your dues and additional contributions support the many projects and programs to improve our beautiful lake as discussed in this Newsletter. In recognition of your support, the names of the 2015 PLA members have been posted on the Province Lake website as a new feature. You can check it out by going to provincelake.org, clicking on the About link and then Membership. Please note, if you prefer not be recognized there in the future you can opt out by checking off the box indicated on the Membership Form.

Fundraising: PLA Logo Items, by Pete Dinger

A new fundraising activity is the sale of **PLA Shirts and Hats**. The T-shirts (short and long sleeve) and sweat shirts all have the PLA logo embroidered on the front and a silkscreened outline of the lake with all of the major residential areas noted on the back. The hats have the embroidered logo front with the message “Protect Province Lake” on the back. These items make an attractive addition to your wardrobe and are fine Christmas presents for your friends and family. You can order them on line via our website – click the dropdown menu “photos, ads, apparel”.



Fund Raising: Fourth Annual PLA Breakfast, by Carl and Donna Davis

Once again this year our major fund raising event was the **4th Annual PLA Breakfast**. We were blessed with good weather and continue to serve more people each year. We served 235 plates! (15 more than last year)

This year we made a financial profit of \$1,835, funds used in various efforts to preserve and protect our lake. In addition we earned \$5,472 in matching money from the volunteer hours, which is a necessary part of our current EPA/DEP Grant.

Many thanks to all of our wonderful volunteers, without you this event would not be possible. The Breakfast continues to serve not only as a fund raiser for PLA, but as a way for lake lovers and their guests to gather socially and exchange stories. Many thanks for all that attended and donated to support us, not only by eating, but buying t-shirts too.

Mark your calendars for **July 2, 2016** for the **5th Annual PLA Breakfast**
We look forward to seeing you next year!



Treasurer's Report, by Thom Townsend

PLA funds on balance with Profile Bank (including both short and long term cash assets) on 10-1-15 were \$43.6K. During 2015 (thru 10-1-15), PLA income from all sources was \$19.5K, while expenses were \$16.2K.

Major contributions to income came from:

- Members (dues and contributions) totaled \$6.3K
- State of NH reimbursement grant: \$ 4.7K
- Towns of Wakefield & Effingham contributed \$4.4K
- Fundraising yielded \$ 1.3K (net)

Major expenses were:

- Watershed remediation projects: \$ 2.4K
- Lake Host Weed inspections: \$ 4.8K
- Insurance & admin expenses: \$2.0K
- Association partnerships: \$2.5K
- Water quality analysis: \$1.3K

Newsletter editor: Damaris Rohsenow