

Origin of the Highland Lake Leadership Team (HLLT)

In response to the picocyanobacteria blooms over the past four years, the Highland Lake Association (HLA) began to explore what had been done in the past and what could be done now to address this problem. In reviewing a 2003 Phosphorus Control Action Plan for Highland Lake, HLA realized that the action items called for biannual meetings of the key stakeholders including the two Towns, the HLA, the Maine DEP, citizens and the Cumberland County Soil and Water Conservation District (CCSWCD). No one remembered ever having a meeting of those stakeholders, so the HLA approached Windham, since we had already begun a relationship with the Town Council, and scheduled a combined meeting with the two Town Managers to discuss the concept of getting together to improve and protect the water quality. The HLA was met with professional, willing, responsible Town leaders who were happy to spend time forming and actively participating in the newly formed Highland Lake Leadership Team (HLLT).

HLLT is chaired by Dennis Brown, Falmouth resident and treasurer of HLA. It is comprised of 11 voting members, three each from Falmouth and Windham and five from the HLA. In addition to the voting members, there are resource representatives from the Maine DEP and the CCSWCD supporting the overall effort.

The Charge and responsibilities of the HLLT are as follows:

1. To assist with the implementation of, and recommend, if necessary and appropriate, updates to the 1999 Highland Lake Watershed Management Plan, 2003 Phosphorus Control Action Plan, and 2005 Highland Lake Watershed Management Plan;
2. To monitor, assist, and coordinate, as deemed appropriate and necessary, scientific efforts to further understanding of watershed and water quality issues affecting Highland Lake:
3. To seek input and recommendations from experts and other stakeholders such as: Cumberland County Soil & Water Conservation District, Maine Department of Environmental Protection, Maine Department of Inland Fisheries and Wildlife, local experts, the general public and other stakeholders.
4. To report on its progress and identify any resource needs to the governing bodies of the respective members of the Team.
5. To review existing zoning and ordinances in the two towns for effectiveness in protecting the lake, recommend modifications as appropriate and research lake protections utilized by other towns for consideration in Falmouth and Windham.

The HLLT is made up of essentially three Committees, one Subcommittee and an adjunct group. The three committees are:

- Education and Outreach Committee** chaired by Nancy Lightbody of Falmouth
- Subcommittee **Public Forum** chaired by Rosie Hartzler (Chair of HLA)

The Charge of the Committee is:

To coordinate communications with the general public regarding water quality issues and to build an informed and actively engaged community.

The Charge of the Subcommittee is:

To prepare and present information to the general public about the existing conditions of Highland Lake, how they got there, what we've learned, what we still need to learn, and what residents within the watershed can do to minimize their own impact to the lake

Ordinance Committee chaired by John MacKinnon, Windham resident and former consulting engineer involved with many projects within the Highland Lake watershed. The Charge of the committee is:

To review existing zoning and ordinances in the two towns for effectiveness in protecting the lake, recommend modifications as appropriate, and research lake protections utilized by other towns for consideration in Falmouth and Windham.

Watershed Survey Committee chaired by Kim White of Windham and Rosie Hartzler also of Windham. The Charge of this committee is:

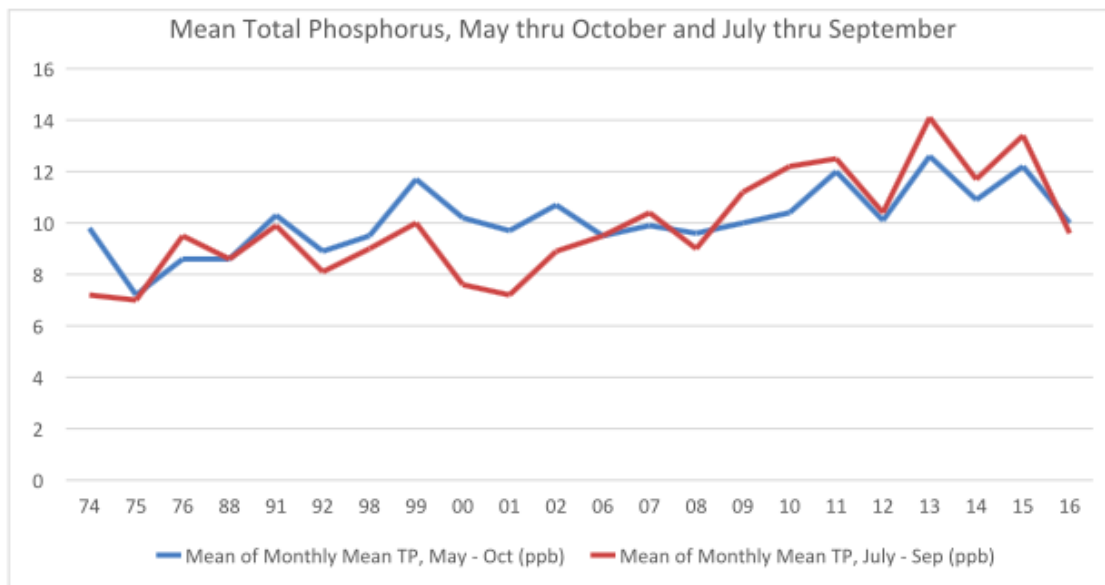
To organize, coordinate and implement the Highland Lake Watershed Survey scheduled for May 19, 2018. This effort will look at the entire watershed to identify sources of phosphorus and nitrates into the lake, prioritize, and make recommendations of what should be done to address the problems.

Science Advisory Group chaired by Rosie Hartzler. This is an adjunct group of mostly scientists looking to determine the likely hypotheses of the picocyanobacteria bloom experienced on the lake the past four summers. From those hypotheses, the group will determine the best testing to be conducted in 2018 to prove/disprove each of the hypotheses. Once that is done, efforts will be drawn up to specifically address the identified causes.

The HLLT has formally met just three times, but the enthusiasm from all members has been noticeable. All the committees have made great strides in outlining their specific charge and jumping into the efforts required of each. The two Towns are working together in identifying ordinance differences as the Ordinance Committee looks to both towns and surrounding areas for best practices that will protect the lake. From the trends that the lake has experienced, it is obvious that the existing ordinances and resident practices are not preventing greater concentrations of phosphorus from entering the lake.

Below is a graph that clearly shows the phosphorus trend in Highland Lake over the 40 years.

Figure 3. Mean of Monthly Mean TP in ppb from 1974 to 2016 for years with data.



This rise in phosphorus is very concerning, because phosphorus is the base of the food chain within the lake. Once the level gets above 10 parts per billion, the likelihood of algae blooms is high. While we don't know if it is directly related to the picocyanobacteria blooms or not, we do know that higher levels of phosphorus will exacerbate the blooms.

The Education and Outreach Committee is working with all the other committees to help communicate their information, needs and results to the general public. This includes the upcoming March 7 Public Forum, and reaching out to road associations to provide guidance on best practices on roads and individual home landscaping to minimize phosphorus export to the lake.

The Watershed Committee is in the process of identifying the many steps and tasks involved with the May 19, 2018 survey effort. There will be about 50 volunteers involved in the one-day survey. This will be the basis of what we have, and what we need to do to address existing conditions that are detrimental to the lake. Once this is completed, a new Phosphorus Management Plan will be developed. Both of these efforts are precursors to being able to apply for EPA grant funding, which will be necessary to address many of the identified issues. A portion of the funding, as was the case in the 2005-2008 timeframe, will come from matching funds from the community including residents and contractors.