

## Highland Lake Leadership Team Meeting Minutes— September 10, 2018

Attendance—Kimberly Darling, Nathan Poore, Dennis Brown, Kim White, Gretchen Anderson, Heather True, Tony Plante, Tom Peterson, John McKinnon, Chantal Scott, Jeff Dennis, Rosie Hartzler, and guests Karen Wilson, Ginger Lawson, Meg Thurlow

Minutes from the June 19 HLLT meeting were approved with two minor changes.

### Committee/Lake Water Quality Updates

- **Watershed Survey**

Watershed survey data has been inputted and approved by John Maclaine of the DEP. Results show 129 sites where erosion is impacting the lake. Of the total 63 are residential sites and only 4 of those are rated as high impact sites. Private roads account for 27 sites. John Maclaine is still working on the final maps for the report and John McKinnon is starting the first draft of the report based on the Forest Lake template. A Resident Notification Letter has been drafted and will be sent to residents and road associations whose properties were identified as a “site”. It is planned to have the letters out by the end of September. It is also planned to have a draft of the written report to be reviewed by the watershed survey committee by the end of November and the report completed by year end. CCSWCD will be reviewing the final draft. (See attached Table)

- **Water Quality updates to date**

A presentation was given by Dr. Karen Wilson of USM and Jeff Dennis of the DEP.

The purpose of the sampling this past summer was to identify the source of the bloom that had been occurring over the past 4 years.

Hypotheses considered going into this year’s testing program:

1. Phosphorus driving the bloom
2. Fish-food web
3. Climate change
4. Or maybe a combination of all three

Samples were collected either weekly or every other week in some instances. Karen displayed a table with a list of measurements and their associated objective; many of which have samples that still need to be analyzed in the lab, which will be done later this fall.

Observations:

This year had the largest recorded alewife run on record at 65,000.

A chart plotting the chlorophyll (algae) readings associated with the Secchi disk readings showed that Secchi disk readings are a good proxy for the amount of algae in the lake. The bloom, if there really was one, took place at 3 meters and deeper; it never surfaced.

Another table was presented displaying dissolved oxygen and temperature from May through August. While we have similar data from prior years, that data was a blend of readings through different depths of the water column. While the data sets from the past are not taken the same way, we may be able to tease out whether or not this pattern of stratification has taken place in the past.

There was discussion on how and why the zooplankton seems to be layering at the thermocline, where there is a noticeable difference in water density above and below this depth.

Because daytime and nighttime measurements were being taken, we can see that some zooplankton go to the bottom during the day and come to the surface during the night—this type of data wasn't taken in previous years to compare to.

Rapid temperature change happens between 5-6 meters (thermocline). Spikes of phosphorus seem to correlate to this same temperature zone. In previous years, the only phosphorus data that was collected was a blend in the top 4 meters. This year, samples were collected in one meter increments over the entire water column and a spike was apparent at 6 meters. The blend samples that were taken in the past may explain why the previous years' data missed this.

The fish ladder was kept cleared of debris after the run of alewives into the lake this year compared to the recent past few years—Karen is going to check again to see if juveniles are still in the lake. However, we're not able to compare this to last year because we didn't measure fish or the same zooplankton data.

Once we get back all of the data, Karen would like to do a follow up on the first science roundtable before packaging the findings to present to the public in another forum like last year—probably in the same time frame of late February-early March.

- **Education and outreach**

The Education and Outreach Committee did not hold a meeting since the last HLLT meeting.

- **Ordinance recommendations**

The last meeting was held on August 21. A lot of this meeting was educational between Ethan Croce from Falmouth and from Jeff Dennis of the DEP. Maps that Jeff Dennis presented were developed to address the potential impact of septic systems on the lake. In Maine, septic systems are usually not a big deal because most Maine soils attenuate phosphorus very well—so there wouldn't be much movement towards the lake.

Using soil maps, and determining which soils would have shallow to bedrock soils and other sensitive soils, Jeff found about 25% of the lots around the lake are more likely than the rest to present a problem

to the lake. To test a septic system requires digging a hole into leach field to determine if the water is ponding there, and if it is being restricted in movement through the soils by a bacterial mat. If the mat isn't present, that would mean the water was penetrating through the system very fast.

Ordinance proposals from the committee—

- Decreasing the subdivision phosphorus export levels to 0.020 lbs/acres/year in Falmouth
- Initiating BMP inspections in Windham consistent with Falmouth's program.
- Requiring third party reviews for all subdivision development in great pond watersheds—a checklist to use during the review process is being developed.
- Manure management ordinance for both towns for farms with 5 large animals or more.

A discussion followed on how the process will work in both towns.

### **Discussion on HLLT next steps**

It is expected that while the Ordinance Committee efforts will be active as the above changes are made in each Town as appropriate, this committee's efforts will slow down subsequent to that effort. The E&O, Water Quality and Watershed Protection Committees will remain busy. As we transition from the first full year of activity, it is expected that the frequency of full HLLT meeting will begin to move toward the bi-annual level.

### **Horse Farm manure actions**

CCSWCD stopped by the Rand Farm in May; property owner said he didn't want to do anything because he was selling the property. It was recommended that CCSWCD reach out again to the owner of the farm. Jeff Dennis suggested that Matt Randall get involved from a State level. There will be a follow-up on this within the next few weeks.

### **Next Meetings**

Suggest meeting in about a month and then can start stretching out the meetings from there.