

## Bare Hill Pond Watershed Management Committee

### Meeting Notes

Date: 24 January 2022

Place: Online Zoom meeting

Members Present: Bruce Leicher (Chair), Kerry Shrives, Pablo Carbonell, Peter Von Loesecke, Megan Glew, Ben Baron

Members Absent: Morey Kraus (Alternate Member), Brian McClain

Others Present: Wendy Gendron

Bruce Leicher opened the meeting at 7:38 pm.

#### Secretary's Report

Minutes for October 25, 2021, approved as submitted.

#### Treasurer's Report

Review of invoices paid since the October meeting. Electricity charges reflect pumping from November 2, 2021, to keep the drawdown at 6.5 ft.

#### Discuss Algal Bloom Options with Wendy Gendron

Recap of some of the different options raised locally and online including bacteria chewing enzymes, skimmer technology, biochar, lake filtering. WD suggests self-education to beware of risky techniques or legitimate options that may not be scalable to the Pond or the condition. Some efforts are the last resort for ponds and lakes that are already severely distressed.

Seasonal succession was discussed; Summer sun heats the upper level (epilimnion), cold water sits at the bottom (hypolimnion), mid-level has the most variation (thermocline). In the fall, wind mixing, reduced light to heat up and stratify, there is more of a mix. In the winter, there is a reversal that turns over again. Plant matter accumulating on the bottom decomposes in the sediment layer. The bacteria use up the oxygen to convert from aerobic to anaerobic - start smelling sulfur. As the oxygen-depleted, manganese and other metals start to disassociate, and the iron-bound phosphorus-bond breaks.

Wendy Gendron shared historical data charting pond stratification and the depths at which oxygen is lost during warmer summer months. A lot of decomposition is happening that is depleting the oxygen, releasing phosphorus, and not hospitable for fish. Water temperature is higher at lower levels. The last two years look substantially different from prior years' data. Seeking more data from more test locations to see if the pattern's witnessed are consistent - this will help determine treatment options for iron-bound phosphorus, and if treatment could be localized.

Discussion of methods used in ponds and lakes to control symptoms (blooms):

- 1) Algicides. Cells release toxins as they die. Caution against creating a worse condition as a result. Consider setting a bloom target and monitoring frequently to kill off a portion of the algae.
- 2) Mechanical skimmers or booms. Creating artificial circulation to oxygenate the water and push algae around.
- 3) Biomanipulation to change the food web dynamic. Introduction of different larger fish types. A lot of data is needed to determine course of action.
- 4) Microbes and enzymes, basically introduction of sediment chewing bacteria.

Discussion of ways to control the causes:

- 1) Watershed management (stormwater retention, treatment) to control phosphorus levels. Keep it out of the Pond.
- 2) Inactivate the existing phosphorus so it isn't released by using alum, Phoslock, etc. to bind the phosphorus.
- 3) Hypolimnetic withdrawal. Run pump at 25Hz to draw anoxic water draw out with the pump under the dam instead of the top layer of water over the dam. Monitoring and testing are needed.

### Other Business

The Conservation Commission permits were renewed in 2019. Expires in August 2022. Opportunities to apply for grants to fund signage or educational activities may be available. Funding opportunities sought by the Climate Committee are for better culverts on Bowers Brook.

### Discussion of Activities and Committee Member Roles

Continued discussion around the list of responsibilities, tasks, and duties performed on behalf of the Pond Committee. Line items were discussed in detail for continuity and liaison opportunities with other Boards. Further discussion is planned.

9:07 pm meeting ended

Next Meeting: March 14, 2022