

News from

LAKE FAIRLEE NATURE ASSOCIATES

February 25, 2021

Dale Gephart, editor

Colleagues, we thank you for interest and contributions of ideas as we plan a “Nature Program” for Treasure Island and for our lake community. Here is a status report.

PHOSPHATE

The WQAC (Water Quality Action Committee) was formed in the end of 2019 by the Lake Fairlee Association (LFA) to investigate the increasing phosphate levels in Lake Fairlee. The Vermont Department of Environmental Conservation (VDEC) Vermont SCORE CARD listed the lake “Summer TP Trend: Highly significantly increasing” (but still in the mesotrophic zone). See <https://dec.vermont.gov/watershed/lakes-ponds/data-maps/scorecard>.

In the summer of 2020 the volunteer committee collected samples for phosphate in five lake tributaries five times. The Ompompanoosuc Community Trust paid for the testing at the Vermont state laboratory (VAIL). In January 2021 the VDEC staff reviewed the data with us. The phosphate levels in three streams were the same, matched the lake levels, and did not change over time. One very small creek had elevated levels which probably were related to dirt road grading, an active beaver dam, and house construction. One major brook had elevated phosphate levels in August and September. We do not know if this was related to cows and horses being pastured in the brook upstream. Note that our testing was for phosphate concentration but did not include stream flow or volume and thus cannot describe the amount of phosphate added to the lake

In working in 2021 with the VDEC, we have decided to measure the one major brook in five places and five times. We have a grant from the LaRosa Foundation which also allows testing for flow rates, nitrates, and chlorides.

In 2018 the VDEC tested Lake Fairlee vertically in the center of the lake down to the lakebed at 40 feet. This was well below the thermocline in midsummer. Phosphate levels were very high (180 ug/L) and the dissolved O² was very low. The iron was quite high. All of this suggests we may have significant “phosphate loading” at the lake bottom. A team from the VDEC will come in mid-summer 2021 to spend two days testing the vertical water column.

Here is a very good video from the VDEC on the Vermont Lake Scorecard and current theory about phosphate changes in our lakes:

<https://www.youtube.com/watch?v=AyrDgPQCbmG&feature=youtu.be>

UVM SUMMER INTERN

We have applied to Rubenstein School Perennial Summer Internship Program and have been accepted to host an intern on Lake Fairlee for 12 weeks (June, July and August). This is a two-way educational program that connects the “nature of Lake Fairlee” to faculty at the University of Vermont and provides access for a student to several scientific and volunteer projects in the

community. UVM provides cost sharing for the employment of the intern. We have committed to \$3000 for the basic intern stipend. Depending on the number of projects, the student logistics, and transportation, there added funding may be required. We are hoping to enlist members of our “Nature Associates” group to be mentors or advisors for the intern. Depending on their interest, the intern may assist with phosphate measurement, informing the public about the Lake Wise Program, nature education at the camps and with public programs, cyanobacteria monitoring, and research or creation of a lake inventory of species.

Via the intern program we have made contact with Dr. Mindy Morales-Williams at the UVM limnology lab. She plans to add Lake Fairlee to the list of seven Vermont lakes being studied for “triggers of cyanobacterial dominance” by her department. See <https://www.uvm.edu/rsenr/profiles/mindy-morales-williams>.

With the phosphate studies and the several intern projects the LFA-WQAC will have the need of a boat this summer. Two members of the LFA have volunteered intermittent loans of boats. We are looking for others to offer use of their boats.

VERMONT LAKE WISE PROGRAM

The White River Conservation District and the VDEC Division of Lakes and Ponds have applied for a grant to produce a video to promote the Lake Wise Program in lakeshore ecology protection. The LFA has offered \$500 in support of this project. A good part of the video may relate to the problems of Lake Fairlee and what we are doing about them. We expect that making the video in itself will educate all of us in lakeshore preservation. Here is the updated web site <https://dec.vermont.gov/watershed/lakes-ponds/lakeshores-lake-wise/science>

NATURE EDUCATION, LFA WEB PAGE, TREASURE ISLAND

Specific plans on community education programs are just beginning. We think that there is a lot of talent and experience in nature education among those who live near Lake Fairlee. It is not clear which institution will take leadership in this domain. We are sure volunteers for walks or talks will be easy to recruit.

Web Page—Tom Babbott-Ward presented a draft revised web page to the LFA Board. The intention is to serve a wider population in the Lake Fairlee region with education as well as lake-related information. The website includes sections on milfoil, greeters, WQAC, and Lake Wise. Separately there is information on natural history such as geology, flora and fauna, and ecosystems. The LFA is asking the Nature Associates to contribute ideas, resources and links.

Treasure Island—The Thetford-based “Treasure Island Exploration Committee” continues to work on the future of the “park” on the northern end of Treasure Island. A town email survey with over 200 replies ask respondents to name their highest priority with regard to Treasure Island: 47 said memories and the community aspect; 46 said swimming; 36 said access to the water and beach; 22 said nature. Currently the group is working on management and maintenance issues. Repeatedly, the committee returns to creating a place for multiple kinds of users and for going beyond the recent history of limited services. The new Thetford Town Manager is attending meetings.