

Cyanobacteria Task Force
Assessment Subcommittee
April 1, 2019 Update

First Meeting of the Subcommittee

The Assessment Subcommittee held its first meeting on March 15. The subcommittee discussed its scope of responsibilities, available information, information gathering plans, and community volunteers desired. It also had a preliminary discussion about how to develop a cyanobloom reporting protocol and decided to invite Steve Wingate (Chair of the Tuftonboro Conservation Commission and resident on Winter Harbor) to join the subcommittee. (Minutes of the meeting follow).

Cyanobacteria Identification Training

The USEPA cyanobacteria van and training is confirmed for June 26. Hilary Snook (USEPA) and Shane Bradt (UNH) will conduct the training. We expect that Parks and Rec beach staff, NH Lakes Assoc. Lake Hosts, and numerous interested citizens to participate in the 2-3 hour long training. The training will take place in the Brewster Boathouse and adjacent waters. Depending upon the numbers expected, there will be one or two sessions. (They can handle up to 50 people per session.)

Existing Watershed Assessment and Management Plans for Wolfeboro Waterbodies

Watershed Assessment and Management Plans have been completed for Rust Pond, Mirror Lake, Lake Wentworth, and Crescent Lake. These plans assess the water quality of the watersheds and identify and prioritize sources of additional nutrients to the waterbodies. These assessments are used as the basis for state and federal funding to support local source mitigation actions. All of these plans and the status of the lakes will be discussed at the Water Summit in May.

A similar Watershed Assessment and Management Plan is underway by the Lake Winnepesaukee Association for portions of Lake Winnepesaukee in Tuftonboro, as well as the rest of Winter Harbor in Wolfeboro. The town's voters recently approved funds for Wolfeboro to support and formally participate in this ongoing assessment. Many of the assessment activities planned by our subcommittee will seek to provide important input into this assessment. A

Biggest Gaps in Information

Our first priority is to assess Winter Harbor and other parts of Lake Winnepesaukee in Wolfeboro. The biggest gaps in monitoring in the lake seem to be general/standard assessments of water quality in specific local sections of the lake, as well as some special data on parameters at some specific times, in some locations, particularly deep-water sites and total phosphorous levels during the autumn lake turnover (mixing).

Our next priority is to learn more about Sargents Pond. We will then evaluate where the other waterbodies in the town stand relative to the conditions and mitigation priorities identified in their watershed assessment and management plans.

Pat Tarpey, Steve Wingate, and Warren Muir met with Bob Craycraft (head of the UNH volunteer water monitoring program) and Jim Haney (UNH's lead expert on cyanobacteria) to get their assessment of our situation, to discuss our views on additional information needed, and to let us know what they can offer to help us fill the gaps that we have. To fill those gaps, UNH (Bob) has agreed to supply and train five additional water sampling volunteers and to analyze the samples that they collect this year. It has also agreed to loan us temperature, dissolved oxygen, and deep-water grab sampling equipment. He will provide all of their analytical results from our samples, including some from previous years.

Several questions were posed to Jim Haney about exactly what is going on with the algal and cyanobacterial growth on the bottom of Winter Harbor (and presumably other parts of our waters) and the water chemistry. He viewed our existing data as very valuable and interesting and proposes to make Winter Harbor a study site for his course in the fall. So, he plans to bring students, boats, and sampling equipment to take measurements and to conduct numerous analyses in Winter Harbor in September, when growth is greatest on the bottom of the lake and just after the time of the Gloeotrichia bloom last year. Among the analyses will be ones to determine the concentrations of other nutrients (such as nitrogen and iron), the makeup of the growth on the bottom, and, if it contains cyanobacteria, whether they are producing cyanotoxins. (The only proposed costs of the UNH analyses would be \$1,000 for kits to analyze for two different classes of cyanotoxins—those associated with the types of cyanobacteria that may be found.)

Note: Jim Haney has agreed to be the keynote speaker at the Water Summit in Wolfeboro on May 11 and Bob Craycraft has agreed to participate, as well.

Water Sampling Volunteers

We have identified volunteers for water sampling at all the sites in Winter Harbor, plus Johnson's Cove, Jockey Cove, Back Bay/Front Bay, and Clark Pont to Cannopache Shores. We will be seeking additional volunteers to cover Wolfeboro Bay and Delings Cove. Warren and/or Steve will conduct the dissolved oxygen and deep-water sampling.

Nick at Dive Winnepesaukee has volunteered where diver assistance would be helpful.

Shoreline Source Identification Volunteers

We have volunteers to help us identify sources of storm water runoff along their lakeshores in several parts of Winter Harbor and to obtain permissions for Lake Winnepesaukee Association Americorps volunteers to access their land to identify and assess such sources. (Should this include permission for drone or other survey methods?) The areas where volunteers have been identified include: Port Wedeln, Nary Shore, Whitegate Road, Wyanoke, and portions of the

Tuftonboro shoreline near the Wingate home. We will seek similar volunteers for the remaining shorelines in the harbor and for other Winnepesaukee shorelines in Wolfeboro.

Lake Sunapee Protective Association and Dartmouth

We will be meeting in Sunapee, NH, on April 30 with the executive director of the Lake Sunapee Protection Association (LSPA) and one or more members of their scientific advisory group. LSPA has existed since 1898, has had experiences with Gloeotrichia blooms in the lake, and has had several scientific studies done there. We will seek to learn about their experiences and efforts to gain understanding of this particular cyanobacteria and to learn what ongoing and future research is being planned there. We will also be seeking to learn about any new information that may have arisen at an international meeting on cyanobacteria held at LSPA at the beginning of March.

Among the scientists involved with studying Lake Sunapee have been scientists at Dartmouth. The lead scientist doing the work at Dartmouth is currently on leave in Washington, DC, as a temporary program officer at the National Science Foundation. She and her colleagues are working hard to catch up on a backlog caused by the Federal Government shutdown several weeks ago. She is very willing to meet with us, at least by phone, but asks that we delay such a meeting until at least June, which we will do.

Other Observations and Opinions Shared with us

Our Jockey Cove sampling volunteer reports a major spring out in the cove. Steve Wingate and our Wyanoke Shoreline volunteer report many small springs along their Winter Harbor Shores. Warren has not seen evidence of such springs along the Whitegate shore and will ask others nearby and along the northern shore of the harbor whether they have seen any. (Springs are good news.)

Our Wyanoke shoreline volunteer indicated that his family has seen little algal growth in the lake near their home and that nearby rocks do not appear to be slippery from biofilms. (More good news.) They also report that there are few storm water runoff streams that reach the lake in their development (but that will be confirmed with ones being identified). However, he has expressed concerns about soil being washed off their shoreline into the lake by waves from large wake-producing boats.