

Town of Sharon Lake Management Committee

Minutes of 10/13/2021

Meeting Held via Zoom

Present: Noah Siegel, Chair; Colin Barbera, Stanley Rosen, Laura Henze Russell

Absent: David Blaszkowsky, Steve Weiss

Other Attendees: Gary Bluestein (Chair, Recreation Advisory Committee), Debbie Tatro

Noah Siegel called the meeting to order at 7:38 pm, and reviewed the agenda:

1. Call to order
2. Update on committee membership
3. Quick review of annual budget
4. Review of 2021 season
5. Invasive weeds
6. Algae
7. Possible expansion of committee membership, scope of committee and budget
8. New business

Update on committee membership

Noah welcomed Laura Henze Russell to the Committee as a new Planning Board appointee. He asked her to take minutes, and she asked permission to record the meeting. David Blaszkowsky and Steve Weiss were not able to attend. Steve had indicated he is not interested in staying on.

Quick review of annual budget

For background, the Committee has an annual budget of \$6,500: \$2,500 for an annual weed survey, and \$4,000 for diver-assisted suction harvesting (DASH) of invasive weeds. It also contracts for herbicidal treatments as needed based on results, seeking additional funds for it.

Review of 2021 Season

Noah said it was a pivotal time with respect to Lake Massapoag. He read the Warrant Article forming the Committee in 1969 (attached), which has a narrow charge and membership.

In the context of being more inclusive, collaborative, open, and consistent, Noah invited a number of people to this meeting. In addition to weeds, there are some new factors. A number of us have been communicating with Peg, Leandra, Linda and Eric; they are very interested in more frequent communication. The charter for this committee goes back 50+ years, not all the essential players are involved. He thanked Gary Bluestein (Chair, Recreation Advisory Board) and Debbie Tatro for attending. This year we faced a number of challenges, including E. coli closures, invasive weeds, and blue green algae which presents a cyanotoxin risk and closures.

Noah will give background on invasive weeds, and he asked Laura to give background on blue green algae blooms and cyanotoxins.

Invasive Weeds

Noah: Invasive weeds have been there forever; mostly milfoil and fanwort. They are managed with herbicidal treatment, the last herbicidal treatment was applied in 2018. We now have an annual weed survey done professionally, typically a mid-summer survey. In addition, we work to keep down the invasive weeds through diver-assisted suction harvesting (DASH). This is done annually but not this year (due to permitting issues) The intent of the herbicidal treatments and DASH is not to solve the problem, but to keep it at bay.

Noah shared the Vegetation Surveys prepared by SOLitude for 2021, 2020, 2019 and 2018 (attached). The latest shows a large amount of fanwort and milfoil. Hot spots are the south cove (which came from the lagoon) and Fletcher's cove. Laura asked about the other weeds noted on the legend which includes the eastern side of the Memorial Beach swimming area. Noah said they are not invasive but are identified as tape grass, spikerush, and bladderwort. Laura said whether or not they are invasive a number of people have complained about them, and they present a swimming and safety hazard. Noah said this is a perfect reason why it is good to have the Recreation Department involved. In 2020, the southern and swim area weeds were smaller.

In 2019, there were not many weeds in evidence. In 2018, the lagoon was treated with fluridone for fanwort, pondweeds and yellow lilies, as it was seen as a source seeding the south area. There was also mixed growth in Fletcher's Cove, and native species of musk grass, pondweed and tape grass in the town swimming and other shoreline areas. Colin said there have been weeds in the swimming area for years, he was surprised to see none on the map for 2019. Gary asked how come nothing has happened in the last 2-3 years. Noah said the Committee has never considered treating on an annual basis. The Goal is management, not eradication.

The weeds have an optimal time to treat while in bloom, and the water level needs to be below the roots of an endangered species, Toothcup. The last herbicidal treatment in the lake itself was in 2014. They need to lower the lake level, put up barriers, make sure no storms are coming, etc. It was done in the spring and there was a drought that summer, so the lake never filled up. It was not widely announced in advance, and many people were surprised and upset.

Going forward, we plan on doing an herbicidal treatment in the coming year. Noah has two proposals. Herbicidal treatment by SOLitude for \$10,000; and endangered species oversight by Oxbow for \$7,700, for a total of \$17,700. We need to figure out timing, and notify the town in advance. Noah went to FinCom and got a special appropriation of \$17,700. Gary said we can treat the weeds till mid-September, not much beyond Labor Day. He recommends after Labor Day. Everyone agreed best to do it at the end of the summer.

Noah said there is not a new decision to be made, it has already been recommended to ConCom, and we have the quotes and approval. Gary said he didn't think we have any choice, looking at the growth. Laura said it would be good to give a lot of notice, as Massapoag Yacht Club has its annual regatta in mid-September, and may need adjust its plans. Noah shared the SOLitude 2021 Services contract to treat 8 acres within the southern and western basin only. Colin asked whether SOLitude said how much the weeds may expand before treatment by the end of next summer; we don't yet have their report. Laura asked whether the suction harvesting would include the swimming area, and if not, how much to add that. Noah said suction harvesting did not happen this year. His recommendation was two solid weeks of two suction harvesters, before it was only for two days. It is a common method done many places.

Blue-Green Algae

Laura: To give the big picture, she summarized BOH data on E. coli test results and noted algae closures in two pages, one weekly for swimming areas (town and non-public), and one for monthly for non-swimming inflow areas (see both attached). The lake was closed July 15-July 28 after visual algae bloom sightings by Recreation Department staff were reported to the MA Department of Public Health, which required two weekly tests below cyanotoxin limits before the lake can reopen. After July 28, beach closings were on a day to day based on visual sightings. We were one of the few lakes to reopen as water flowing out the lake lowered the concentration.

We also had E. coli beach closings, frequently at the Community Center beach as in the past. Colin asked outside the Community Center beach which has consistently high levels, why in a few places is there a spike and then a quick lowering, could something be wrong with the testing? Laura said it more likely it reflects the weather: rainfall, the rate of outflow from the lake (which is adjusted by the Conservation Administrator), and the wind have a huge impact.

She thinks the algae never fully left the lake this summer. It's been very wet, and warm: June, Aug and Sept. averaged 6 inches of rain, and July hit the jackpot with 10.5 inches. Rec Dept. staff monitoring of algae blooms ended when the Town beach season ended August 23. Laura showed photos of an algae bloom at Massapoag Yacht Club (MYC) September 25, and at Veterans Memorial Beach October 12 (see attached). More were reported on the BloomWatch tracking app, <https://cyanos.org/bloomwatch/>.

Conservation Administrator John Thomas (who left for another position Friday) did a visual survey and added some new inflow test areas in late August. BOH expanded weekly swim area testing until the water goes below 60 degrees, and monthly inflow testing through September. Laura said she spoke with John Thomas, and he recommended going upstream and testing in the three hot spot inflow areas which showed high levels of E. coli going into the Lake at the end of August: Sucker Brook, Fletcher's Cove, and Memorial Beach. Laura asked DPW for the drainage maps for these three sites so we could learn more about them (see attached).

1. Sucker Brook: Salvation Army's Camp Wonderland has a new state of the art septic system which requires quarterly testing and the latest test results were very good. Upstream there are two branches: one from the Town Landfill that was capped, and one from the Mountain/Morse street area where there are some wetlands. John had suggested testing upstream of Camp Wonderland, and upstream on both branches. Gary said that near Morse and Mountain Mr. Biondi used to run an informal site where he had a massive amount of stuff that he used to fill in some of the property. If he was to do testing, he would definitely look into that.
2. Memorial Beach outlet: the map doesn't show an orange pipe but instead a culvert, we can ask DPW for more information. The water comes from between the wetlands and the SHS athletic field. Apparently when SHS put in a new septic system BOH stopped testing here (also during low water years there wasn't any inflow). However, there was frequent drainage here into the lake this summer, so in August John recommended adding this to the inflow sites tested. He said it also drains some of the downtown area; there are marked culverts on the map.
3. Sturges/Livingston/Fletcher's Cove: this site had a spike in E. coli in late August, it has several drainage pipes on the map. We can learn more about this area from DPW. Laura has a meeting with Kevin Davis on October 28 at 2 pm, and invites others to join.

Laura said once the beaches are closed for the season, MA DPH no longer does cyanotoxin testing. Some other communities have built capacity for community-based algae identification and testing, using resources developed by USA EPA. For example, Lake Archer Association in Wrentham uses BloomWatch app to track, EPA's CyanoScope to identify, and a fluoroscope to determine the concentration, which determines toxicity. Laura shared an information sheet prepared by Debbie Tatro on Cyanotoxin Identification Resources (attached), with three tools:

- BloomWatch: an app to help community members identify and report algal blooms,
- CyanoScope: people can use a digital microscope (about \$125) to make and send digital slides to EPA for species identification, and
- Fluoroscope: buy (about \$1,100) and training to use it to determine the concentration of cyanotoxins. Not all blooms reach toxic level, this helps decisions reflect risk.

Debbie is willing to help looking at samples and submitting digital slides to CyanoScope. She's been in Colorado a few months helping with her granddaughter and will be back in November. Laura shared that she started using the BloomWatch app when she returned to Sharon from a few weeks away in late September, and another lake abutter started using it as well. By looking at online pictures, the algae is likely microcystis, which can contain the cyanotoxin microcystin. Risk depends on concentration and exposure. Debbie said toxins are released when algae dies, so you can't tell based on color or thickness. There is a DIY test for cyanotoxin safety for dogs and farm animals developed in Finland which concerned pet owners can use (not lab certified).

Laura reported that some of the Committee members attended a webinar by SOLitude on nutrient remediation, where you add chemicals to help lock up phosphates, which feed algae growth in fresh water (in salt water, nitrates feed algae). There are also substances you can put in an inflow area to help filter what comes in, e.g. biochar. It's sort of like a charcoal filter in a fish tank. You can do these while working on longer term solutions (such as improving septic systems and lawn fertilizer phosphate use, especially in summer months).

Big picture, a lot of lakes in MA closed down for algae blooms and cyanobacteria this summer. We are very fortunate that we have a lake that water flows through, but with this kind of rainfall, we had problems. Laura showed the rainfall and temperature data from the Blue Hills Weather Station (attached). She also showed a chart with Lake water level changes for 2021, 2020, 2016, 2015, and some historical comparisons (attached). It shows a much higher lake level in 2021 consistently through the season than past years. Laura said several storms this summer had about 3 inches of rain, and Memorial Beach lost a lot sand at the end of August when runoff poured off the parking lot making deep channels between the planted berms below the lot.

Gary: We also need to consider the rock groin at the Town boat launch ramp. It was originally built to stop the flow of sand down the stream at the flume house. It has since filled in and needs to be looked at, the question is should the sand be dug out and reclaimed on the beach. Also since the sand is building up has it impacted the swimming area by filling it in? Is it still doing its job if the sand is left in place?

Noah: to sum up, this year was the perfect storm. The real question is, is it going to continue? To be realistic, we need to plan for and anticipate more intense rainfall, test, remediate, reach out, and engage residents to learn about the Lake, what they can do, and how they can help.

Laura: Testing is expensive, but there are some places and resources we can look to. Neponset River Watershed Association (NepRWA) does point testing up and down the whole watershed

area on a monthly basis for E. coli, phosphates and dissolved oxygen. See www.neponset.org. They have two testing sites in Sharon: Massapoag Brook (after the water's left the lake) and Beaver Brook (from Moose Hill), we can reach out and work with them to explore adding some in the upstream inflow areas to regular monitoring. It might be less expensive to piggyback onto that on an ongoing basis, in addition to testing in connection with a nutrient assessment and remediation proposal by a contractor like SOLitude.

There is also a seasonal algae bloom when the water shifts in the lake with changing temperature, which releases stored phosphates. Colin said he sees green patches when swimming, little balls; is that coming up from the bottom? Laura said she doesn't think so, because the water is still so warm. She thinks it never really left the lake this year, it blows from shore to shore, breaks up into pieces, then a suspended soup.

Laura said she was at Sharon Day, talking about the Lake with Sustainable Sharon Coalition. They also want a more user friendly website with water quality, beach open/closure, lake level, and other information: user friendly, updated in real time, easy access. People who live on the lake really want to know what the lake level is; it used to be posted on the LMSC website. BOH posts test results and beach status, not always easy to find, and many don't use the Town site.

Laura began a draft list of Web Resources on Lake Massapoag (attached), which is a starting point for where to find information on the lake, and might provide an outline for a more comprehensive website. In addition to the above type of information, it includes various town plans, past report on the Great Cedar Swamp, NepRWA (which collaborates with DPW on stormwater management and water conservation education), and algae awareness and monitoring models in other towns (Wrentham, Worcester and Falmouth).

Summation

Noah: in addition to the perfect storm of weather, we've also had a loss of people who were very knowledgeable about and deeply engaged in managing Lake Massapoag. For many years, Conservation Administrator Greg Meister and LMSC's Cliff Towner managed the lake in consultation daily, and a lot of local knowledge left with them. They did a very good job, many said they saved the Lake when it was facing great challenges several decades ago.

Gary: When we had problems with the lake years ago, we had a backup person from the DPW when Greg was out of town. Is there nobody else watching this? With all the resources we have, we need a backup person. Laura shared that Peg Arguimbau said she would manage the lake level until the new Conservation Administrator is hired. Gary said we need a backup person on staff, like from DPW. Noah said we invited Eric to the meeting but did not give him enough notice, and he responded with a good summary. If Noah asks for help on this we will get it.

Noah: To sum up, we need to learn and share more about what are the weather conditions and environmental factors that lead to an algal bloom? E coli, temperature, rain, phosphorus, septic, lawn fertilizer, animal waste, etc.

One of our biggest challenges is explaining what we can do, both together as a town, and as individuals and families. There are some things we can control. We need to educate the town that this was an unusual year for a lot of factors, and there are real challenges for the future; there are things we can do to help, here they are.

Possible expansion of committee membership, scope of committee and budget

Noah: Next topic: Expanding the lake committee. Need better coordination. We are an advisory committee to the Conservation Commission (ConCom). Gary asked: Do you communicate with Select Board? Noah: The Committee reports to ConCom. There is not always consistent reporting to Planning Board and Select Board; that is through their respective appointees.

Gary: As chair of the Recreation Advisory Board, doing PR is going to be very important. The Lake is such a massive resource. It affects property values, and everything else. Are there any quick remediation efforts? Debbie: better identification to confirm if algal bloom sightings are truly toxic could help. If somebody reports it, the state DPH and Sharon BOH can't ignore it. The need to act as if it is positive (unless determined otherwise).

Noah: We've talked to SOLitude, what are the different services you provide? Can you identify the conditions that increase the chances of a bloom, and how to remediate it? He strongly recommends bringing in professionals to help guide the town. In previous years they have been very good at communication, this year it has been a process to get them to respond.

Discussion: Such a proposal may be a significant expense, need to go to the Town for that. Some of the other organizations like NepRWA may help us plug into efforts to get ongoing monitoring to supplement targeted professional services.

Noah asked about Sustainable Sharon Coalition (SSC) and other interested organizations. Laura said she attended SSC meeting in August to ask about interest in the Lake; they said it would fall within their Water Interest Group and she agreed to lead it. To date SSC attended a meeting of the SNEP Network on the Canoe River Aquifer Project, had a listening table at Sharon Day, and is talking with an SHS club interested in working to help the Lake. There is a large Friends of Lake Massapoag Facebook Group. A number of Sharon residents are active in Neponset River Watershed Association. The lake has a lot of friends, we need to mobilize them. In addition to other town departments like Recreation, BOH, and DPW, there are many concerned stakeholders: abutters, beach pass holders, camps, MYC, swimmers, boaters, etc.

Debbie asked about a website. Noah loves the idea. We need someone who has the bandwidth to develop and keep it current. Probably part of a big picture, with water quality, water level, boats, fishing, etc. A great idea. Needs someone with experience in managing a site. He likes the idea of the website, also newspaper articles and media, signs to post, etc. Laura said that Town IT staff asked who will supply Committee updates to the Town website. Laura said she is happy to volunteer if that function is open, people agreed.

Noah: Final item on the agenda: We should talk about expanding the charter in a formal way. Fred Turkington offered the legal services of the town. We want to bring in Rec, BOH, Water, etc. to bring in more representation, and maybe more resources. There are a lot of interested parties. Timing: submit an article in January for TM in May. Most are in agreement – decide whether they are department reps or advisory committee members, voting or ex officio, etc..

Gary: Rec Advisory Board has School Committee and Town Administrator. The Board updated its charter and membership. Could do a placeholder. Highly recommend create a budget, be realistic so have enough resources. Have you explored CPC funds? They do a lot for the Rec Department, playgrounds, fields, etc. With the purchase of Rattlesnake Hill, it pretty much tied up recreation and open space funds for the next 10-15 years. Ask Fred what the dates are, you may want to put a placeholder in, e.g. \$50,000 to get rid of algae and invasive plants.

Laura: Just sent an email to CPC to ask if the Lake would qualify: Is the lake covered? Lake bottom land? Inflow areas? Also, we should explore Municipal Vulnerability Preparedness (MVP) funds. Sharon submitted its plan in May and can apply for an Action Grant next spring. The plan was done before the summer which made the threats so clear to the lake.

Gary: Ask the Town's finance guy to explore the Infrastructure bill. It sounds like you're working on a shoestring budget. When something happens, you should be able to go in and get it fixed. Recommends setting a more realistic budget, making sure sufficient staff support, etc.

Noah: What are we? Is the Committee more advisory, who goes in to execute? Cliff ran with it before. Who is doing what: Coming up with the game plan, and implementing it? This should be spelled out more clearly when we revisit the charter. The original plan was for ConCom to do this, but if they are not able to do it in a timely fashion, somebody needs to take the lead on this. This will be discussed at the next ConCom meeting 10/28 (date later changed to 10/21). A foundational question: whose turf is it?

Laura: We also need a more direct connection with DPW. There is a layer between us now, but DPW is involved with drinking water, culverts, stormwater drains, etc. Where the water hits the land, we don't have the right kind of interface.

Gary: PB, BOH, etc. have a DPW person going to every meeting. The town Harbormaster is the Town Administrator. So it should go back to his office (There has been talk of moving Harbormaster to the Conservation Administrator.) Colin and Noah said the charge has to be beyond invasive weeds. Gary: Cliff covered a whole lot of ground – well beyond weeds, the whole lake. He got a lot of things done. Some people say he saved the lake in the 80s and 90s. Laura said the charter does say algae and weeds, but more than that is needed. It's going to take testing remediation and treatment, reaching out and community education, asking people and the Town to take actions to reduce phosphates, other threats and help preserve the Lake, everybody needs to step up to the plate. She asked if the Conservation Administrator job description fleshes out duties for lake management. Colin: not sure, but will look at it.

Noah: We want to get a new proposal from SOLitude to for professional monitoring and remediation to address algae and phosphates, look into laying the groundwork for collaboration with NepRWA, look at a collaborative website and other ways to inform and engage residents, etc. This was a good discussion, we have a lot to do, talk about expansion/revised charter, loop in Rec, DPW, BOH, etc. Next meeting date: Wed. Nov 17, 7:30 pm.

Meeting adjourned at 9:25 pm.

Attachments: located at the bottom of <https://www.townofsharon.net/lake-management-study-committee/pages/lake-management-committee-latest%20updates>

1. Article 47 creating the Lake Management Study Committee (1969)
2. Weed Surveys 2021, 2020, 2019, 2018
3. 2021 Lake Massapoag E. Coli Results Swimming Areas
4. 2021 Lake Massapoag E. Coli Results Non-Swimming Inflow Areas
5. Lake Massapoag Algal Bloom Sept 25 and Oct 12 2021
6. Drainage Maps of Sucker Brook, Memorial Beach Outlet, and Fletcher's Cove
7. Cyanobacteria Identification Resources
8. Blue Hills Observatory Rain and Temp 2021
9. Lake Massapoag Water Levels – Historical Comparison and Recent Years

10. Web Resources on Lake Massapoag