THE BALL POND ADVISORY COMMISSION

Town of New Fairfield
New, Fairfield, CT 06812

REGULAR MEETING MINUTES -REVISED 031523

March 7, 2023 @ 7:00 pm
Community Room @ 33 Route 37
New Fairfield Conference Room
New Fairfield CT

Mission: *The Ball Pond Advisory Committee closely monitors the water quality and living community comprising Ball Pond. applying best lake management practices, and encouraging good stewardship by the watershed community, to ensure the health of the lake for current and future generations, as well as for the wildlife that relies upon it.*

Present: Monica Santos (chairman), Pete Viola, James Mellett (phone), Mary Yulo, Julian Lammerhirt, George Buck (absent), Anthony Nunes (alternate-absent)

Guest(s): Frank Yulo

1. **Call to Order** – Monica Santos called the meeting to order at 7:03 pm

2. **Approval of minutes from the Regular Meeting on February 7, 2023** - Pete Viola made a motion to approve the minutes of the February 7, 2023 Regular Meeting. Mary Yulo seconded the motion. (4-1-0). **All in favor**

3. **Review of AER final report** – Monica Santos read in the Final AER report (see enclosure). Mary Yulo had a question as to who would be doing what on the below items. A discussion was held on phosphorus. Mary Yulo stated that Larry would be the contact or could recommend a group that could help with the different items.

- **Community Bloom Watch on Ball Pond** – would have to be a subcommittee. Julian Lammerhirt suggested having a contact person that pictures and location of the bloom could be sent to. The person doing it would have to have a scientific background. Monica Santos stated that verification is needed with Larry to see where he intended for the data to go. Mary Yulo stated that partnering with FOBP and BPAC to do collection of the blooms is an idea and brings in more volunteers. This will be further discussed at the April meeting.
- **Modification of the Cyanotoxin Monitoring Program** – Mary Yulo stated that Western where the BPAC needs to ask them to also look at Saxitoxin. Mary stated that the review of the literature that Larry recommended might be something that WCSU students might help with.
- **Understanding Phosphorus Levels Below the Thermocline** – Larry and his company. Talked about a phosphorus budget.
- **Sediment Phosphorus Fractions** – very technical and has to do with historical data.
- **Examination of Use of Deicing Salts and BMPs** – Frank Yulo said he would help take samples. Training would be needed. Monica Santos stated that there was a

recommendation was made for the use of brine by the town rather than salt on the roads around the pond. Jim Mellett stated that calcium chloride is just as effective as brine. Jim Mellett will investigate calcium chloride and sodium chloride. Monica Santos stated that the amount of salt laid down is a very thick amount of salt. Mary Yulo asked about the possibility of a retention pond in the wooded area above the part of the road that always has an ice problem because of run off. Monica Santos stated that you cannot see the water on the surface and did not seem to think a retention pond would be a good resolution.

- **Water Quality Monitoring Program** – Larry will take care of this.

The above items will be discussed over the next few months of meetings. A protocol would have to be set up on collection. A suggestion was given to reach out to the high school biology teacher and get the kids involved.

4. **Status on Frank's swear in to join the committee** – Frank Yulo has not been sworn in due to his application being overlooked by the town. Mary Yulo talked with Jean Green and Jean stated that she will get it taken care of.

5. **Update from FOBP** – Mary Yulo stated that FOBP met for a brief meeting on February 22, 2023 and that the only thing covered was setting a calendar for events. Mary Yulo requested $100 which was approved for testing of the samples for salt sample testing. Mary Yulo stated that the discussion on the proposed walkway had 30-35 attendees from the community. Not all homeowners are on board for the walkway. There will be a full environment study. There are some concerns regarding the use of cement in building the walkway as well as additional concerns. Monica Santos read in a portion of George Buck's email: *this is not an easy issue; Route 39 is a state road and a walkway along the road would be on state property so there are approvals required from the DOT etc... or if it involved a raised platform over the water with pilons into the water...* These items also came up at the meeting. Mary Yulo stated that the permitting process is more like 10 months vs 10 weeks and due to the questions brought up at the meeting the project may be modified. The first phase of the feasibility study was $15,000 which was covered by a grant. FOBP is currently applying for a grant for the second phase. Mary Yulo will find out how much grant money was requested. Julian Lammerhirt stated that he would love to have a walkway around the lake but is concerned about how it is going to look when it is finished, will it be appealing to the eye, and how will it look as you are looking down on to the pond. Mary Yulo stated that the initial proposal is going to be greatly modified including the location and length. The consensus was that additional meetings should be held regarding walkway. The walkway will be elevated and was shown as being close to the road level.

6. **New Business: Salt/calcium spray around the pond** – Jim Mellett is going to work on this.

7. **Review of AER proposal for water quality testing forth 2023-2024 budget** –The wording needs to be in more understandable verbiage. The budget is for the next fiscal year. Mary Yulo questioned if there was money in the budget for the first part of the water quality testing. Monica stated that the budget is $10,000. $8,000 budgeted for Larry and $1,600 for West Conn. Monica Santos stated that a comparison to the last budget and then further discussion at the next meeting will be needed.

8. Monica's request to step down / organization of the committee – A discussion was held on who could take on that role. Mary Yulo stated that the organization of the board needs to be addressed so everything does not end up in the lap of the chairperson. Monica Santos said she will continue if tasks are divvied out among the board members. Delegation will be key as the BPAC moves forward. Recruiting of members for the committee to bring it up to seven board members and two alternates is needed. Jim Mellett suggested having a vice chair. A discussion was held on potential members.

9. Dana's notification to step down as recording secretary – Dana Ulibarri will be stepping down as BPAC recording secretary. This will be her last meeting.

10. Finding a New Secretary – Mary Yulo reached out to the other candidate and she is not available. An ad has been posted.

11. Adjournment - Pete Viola made a motion to adjourn the meeting at 8:08 pm. Mary Yulo seconded the motion. (5-0-0) **All in favor**

Enclosure
AER Final Report Recommendations

Received by email on 03/15/2023 @ 12:27 p.m.
by Chrystie M. Bontempo, Asst. Town Clerk, New Fairfield

This season, epilimnetic total phosphorus levels were, on average, lower than that observed last year, while chlorophyll-*a* levels were higher than what we would expect, and Secchi disk transparencies were lower than what we would expect based on total phosphorus levels. Those relationships are graphically displayed again using the Carlson Index (Fig. 21).

In both 2021 and 2022, Secchi disk transparencies increased as the season progressed. This was despite total phosphorus concentrations that could support greater productivity as observed in 2021, or increasing epilimnetic concentrations over time as observed this season. This raises the question, "What are the most important drivers of algal productivity at Ball Pond?"

CONCLUSIONS AND RECOMMENDATIONS

If one were to assess historical changes over the last 30 years based on average epilimnetic data, one could conclude that there are increases in the salt content of the lake, but little changes in the trophic characteristics (Table 4). From the trophic perspective, annual Secchi transparency and chlorophyll-*a* concentrations have not significantly changed. Moreover, the 2022 average epilimnetic total phosphorus was lower (better) than the 2021 and 1993 averages.

Despite those data, shoreline cyanobacteria blooms and highly elevated cyanobacteria biomass below the thermocline are common and likely related. Buoyancy regulation by the cyanobacteria is what maintains an elevated biomass, largely of *Planktothrix spp.*, below the thermocline, and also results in shoreline cyanobacteria blooms, which have been dominated by *Woronichinia spp.* Below we have provided several recommendations to begin to address the cyanobacteria issues at Ball Pond.

- *Community Bloom Watch on Ball Pond*

  Currently there is a small group of residents who have reported and photo-documented shoreline blooms. We recommend formalizing a Community Cyanobacteria Bloom Watch on Ball Pond. The development of data on shoreline bloom events, including locations, dates, extent, and weather conditions (including wind direction) could be important in understanding the variables associated with blooms and also create the necessary public awareness to develop the momentum to mitigate the problem.

  In 2021, the BPAC purchased a microscope and the accessories to photo-document the dominant genera in the blooms. Former BPAC members had developed the necessary microscopic techniques and learned to identify the major cyanobacteria genera. AER reported on these efforts in our 2021 report. This type of data should also be incorporated into a Community Bloom Watch program.

- *Modification of the Cyanotoxin Monitoring Program*

  The microcystin monitoring program at Ball Pond, in conjunction with Western Connecticut State University, provides excellent information for the community for making informed decisions regarding the recreational use of the lake. The program could be expanded to measure toxin levels in the surface bloom, where cyanobacteria concentrations are typically much higher.

  It was fortuitous that research on saxitoxins in lakes occurred at WCSU in 2022. The findings of elevated saxitoxin levels in the benthic *Lyngbya spp.* mat on August 14th was concerning, even if it was one sample. There was one other sample collected two weeks later when saxitoxin levels were within the acceptable levels for Ohio.

  Saxitoxin testing should be incorporated into the annual lake management program and expanded to include several sites that are sampled on a regular basis during the summer. Additionally, a thorough literature search on mitigating benthic cyanobacteria communities in lakes should be undertaken.

- *Understanding Phosphorus Levels Below the Thermocline*

  As described above, phosphorus is released from bottom sediments under anoxic conditions and creates high concentrations in the strata near the bottom. Phosphorus concentrations near the thermocline and one meter below the surface are often similar. What is not understood are concentration gradients between the bottom strata and the thermocline. Understanding concentrations, below the thermocline or lower metalimnetic boundary down to the depth of the hypolimnetic sample could shed light on the high cyanobacteria concentrations near the thermocline and possibly in the shoreline booms.

  Understanding phosphorus dynamics throughout the water column with higher resolution than the current epilimnetic, metalimnetic and hypolimnetic sampling regime should be developed in conjunction with a phosphorus budget study.

- *Sediment Phosphorus Fractions*

  It is highly possible that much of the phosphorus budget of Ball Pond is driven by internal loading. While addressing watershed-generated phosphorus with best management practices and education is important, it will also be important to understand phosphorus in the lake sediment, particularly in the area of the bottom that is anoxic for a protracted period of time (Fig. 21).

  Quantifying the phosphorus fractions (e.g., phosphorus bound to iron, aluminum, organics, etc.) in the sediments that experience protracted periods of anoxia is an important step in planning for phosphorus sequestering with alum. Ball Pond has been identified as a candidate for this type of effort since at least the early 1980s (Norvell 1982).

- *Examination of Use of Deicing Salts and BMPs*

  The specific conductance and ion concentrations at Ball Pond are clearly increasing. The measured ion concentrations that have increased the most are sodium and chloride, which implicate increased use of deicing salts on roads. Since Ball Pond is largely spring fed, we believe the groundwater ion concentrations should be tested to understand contributions from that source.

  We additionally recommend that the BPAC review the web pages of the Carey Institute on road salts at https://www.caryinstitute.org/our-expertise/freshwater/road-salt. There, a report entitled *Road Salt: The Problem, The Solution, and How to Get There* can be downloaded and also reviewed. Additionally, a Western Connecticut State University seminar that occurred on October 17, 2022 featured Vicky Kelly, author of the report. It also featured Robert Wyant, Highway Superintendent for the Town of Rhinebeck NY, who presented *"An introduction to available resources and expert support."* The seminar was recorded and available at https://www.wcsu.edu/biology/lake-symposium-2022-recordings/ and should be viewed by the Committee. From there, planning on how to reduce salt concentrations used in the Ball Pond watershed should be undertaken.

- *Water Quality Monitoring Program*

  The water quality monitoring over the last two years has served an important role in understanding current conditions at Ball Pond, and how those conditions have changed from the past. We believe this program should be continued, particularly if management initiatives are implemented. Regular water quality monitoring will provide a means of gauging efficacy of those management efforts.

203.794.4285 jennifer@aquilinecology.com www.aquilinecology.com