



ORLEANS TOWN CLERK

**Marine and Fresh Water Quality Committee  
Meeting Minutes  
August 28 2023 (Nauset Room and via Zoom)**

**Attendees:** Judith Bruce, Mary Griffin, Ed Hafner, Carolyn Kennedy, Richard Levy, Valerie May Robert Mullin and Judy Scanlon (Chair)

**Regrets:** None

**Other:** Ed Eichner, SMAST; Meff Runyon, SB; Alexandra Fitch, Health Department, Orleans

**AGENDA**

**1. Call to Order.**

The Chair called the meeting open at 10:02 AM.

**2. August 2023 Pilgrim Lake Cyanobacteria Bloom**

The Chair mentioned that she will allow public comments. She welcomed Ed Eichner, George Meservey, Meff Runyon and Alexandra Fitch.

**A. Discuss recent bloom, causes, potential present and future impacts, recent DO/temperature profile measurement results, and whether past lake management recommendations should now be revisited regarding an interim alum treatment for the deeper areas of Pilgrim Lake.**

The Chair made a brief statement on the cyanobacteria bloom in Pilgrim Lake. She expressed concern over the impact of blooms on herring run. The notice of the bloom was issued on August 5<sup>th</sup>-6<sup>th</sup>, and the Lake is still closed as of today.

Judith reported that OPC (APCC) volunteers will sample tomorrow morning. She also reported that the Orleans Pond Coalition (OPC) is urging people by email blast to register for OPC emails and Orleans Town public health notices. Judith said the cyanobacteria species was identified and is one which is not known to be dangerous. She then asked why the water levels in Pilgrim Lake have a dropped, questioning whether the herring run might have been opened to let the fry out? No one in attendance had any more information.

The Chair said that at this point it may be helpful to audience for Ed Eichner to speak on the current conditions in Pilgrim Lake. He pointed out that Pilgrim Lake was predisposed to have an algal bloom as reported in 2017 management plan. Ed then reported on August 21st water quality readings in the Lake and that there was a loss of O<sub>2</sub> in the warmer water layers. He noted that phosphorous is then released from the colder layers into epilimnion which stimulates the growth of cyanobacteria.

The Chair reported that there were also conditions approaching that level in Crystal Lake.

Carolyn reported that the August 7<sup>th</sup> drone footage of Pilgrim Lake showed a green color in south end of the lake. In spite of the conditions, small children and life guards were there. The bloom is now dying back. She noted that there needs to be better coordination between relevant groups and better training for life guards.

**B. Begin informal discussions with Orleans Board of Health (BOH) Agents on how this Committee might assist the Board of Health if needed, with developing revised Cyanobacteria warning protocols, and/or assist with the creation of some related informational/educational materials.**

Alexandra Fitch reported that there is a misconception on that what the Orleans Health Board does. State Health advisory will need to see two negative test reports two weeks apart before opening of the Lake again. She reached out to APCC and APCC tested again. Once this Wednesday's results are back, the Health Board will provide an update on August 30th. An additional warning sign went up on August 9<sup>th</sup>. Health Department policy protocol is followed. Civic Ready text messages the abutters immediately after a public health notice was agreed upon.

The Chair said when in doubt, stay out. The Committee can assist the Town with revised scientific information and education, helping to minimize misinformation this going forward. Meff stated that public education on the subject of cyanobacteria booms is inadequate and is a recognized need – creating messages independently is to be discouraged and he urged that everyone communicate with appropriate other channels. Meff also reported that the Select Board is in the middle of the developing the October town warrant.

George explained that there is a allocation from a couple years ago that appears to apply to this situation, that is Article 18 from the 2021 October Town Warrant. The article included Consultant: \$9K for a consultant and \$35K for a lake treatment of for a total ask of \$44K. The Town has approved greater than that amount for an alum treatment in a prior allocation. The Notice of Intent to treat process could take over six weeks. Then the Town has to solicit a vendor for treatment and application. This would mean a start date of April 1st, which is too late for Pilgrim Lake due to the arrival of herring. If some of the actions were concurrent, he feels we could be ready to go by the end of February or early March. Ed Eichner said they can treat any time of the year; however, the best time to do the treatment is before warm up preferably before or in early March. He also noted that once you get a bloom a critical threshold in the lake has been crossed.

Judith stated she is not opposed to this being done; however, it is still probable that it will reoccur. She asked Ed Eichner to weigh in on why this bloom has persisted so long and will possibly reoccur. Ed noted that the conditions that might trigger another bloom are already present and it will take a while to reach equilibrium again.

Regarding the **communication** of the public health issues associated with cyanobacteria blooms, Valerie thought an up to date and accurate information sheet could be made available. Bob Mullin encouraged using other modes of communication as well. Mary said it would be helpful to have a Town employee to cooperate with the Orleans Board of Health regarding posting, information distribution and how the community can reduce their impact on water quality.

Judith asked about who if anyone approved what goes up on the Committee's webpage. George answered there is currently no one person responsible for gating those postings.

Judith said that the abutters' concerns need to be addressed. She continued that they need to be offered additional education on blooms, and they need to stop using fertilizers immediately and consider rain runoff controls. The Conservation Committee will discuss at a December-January alum treatment as well as a December **beach renovation**. Ed Eichner said that based on 20 feet (emerging vegetation), the renovation it is not likely to interact with any alum treatment and it is not necessary to delay one action in order to conduct the other.

George reiterated that we do have funds that may be used and that we can use the same access for the renovation in December for the alum treatment.

Carolyn said that Pilgrim Lake is a great pond, and that State, in addition to local, permitting is required. The State has already signed off on alum applications in 15 ponds on the Cape. She noted that because of the herring run, the Division of Marine Fisheries would probably provide input.

Meff asked if there any reason to have any concerns about the alum treatment? Ed Eichner noted that the alum layer will be sequestered in the sediments and that the ecosystem will be back to normal in a matter of months. Alum is commonly used because of the way it can be applied and alum has been used for treatment of drinking water for centuries if the source is a reservoir or a river.

Judith raised the relationship between herring and daphnia in the lake. Ed said the 15 other treatments have been successful and that reducing the cyanobacteria will benefit the overall zooplankton population.

**Actions:**

1. Orleans Health Department to work with the Committee to generate a list of how Committee can help them.
2. There should be a follow up on this at a future Committee meeting.
3. The Select Board does not meet until two weeks from now. Meff will talk to Michael Herman and Kim Newman about the possible release of the funds that have been already have allocated.

**Motion:**

1. The Committee recommends that the Select Board use existing funds to move forward with an alum treatment of Pilgrim Lake as soon as possible. Ed motioned; Valerie seconded. Vote approved 6-1-0.

**3. Town Estuary and Freshwater Ponds Data Summary Updates and Citizen/User Friendly Data Presentation-Update. Review/discuss a potential draft scope of work with Ed Eichner (if he is available), to be initiated if funding can be obtained.**

The chair asked the Committee if there were any comments on the scope of work as presented.

Valerie asked of the data from 2000 from 2022, what would be included. Ed Eichner reported that the data from 2019 through 2022 has already been consolidated.

Mary asked what are the trends. Hope that we can build something that can move forward. Ed Eichner noted that this project would be a stepping stone to building additional information on additional water bodies. He cited the Vineyard website as an example.

Judith noted that people who live on ponds, use the ponds and sample the ponds would like to know what the collected water quality data means and see it as simple graphs. She would also like to see the data back to the year 2000 consolidated so we have all the data in one place.

Regarding the short list of freshwater bodies (five) to be "summarized," Judith recommended Ice House, Twinning's, Boland, Deep and Shoal. Carolyn would recommend that we add Uncle Seth's to the list. The Chair stated that she wants at least one great pond to be included on the list.

George reported that there is \$40K from a 2020 Wastewater Article available for water quality work and the Town would like to close it out. This amount is from a source that is separate from the funds described above for alum treatment.

Mary agreed we want to use the available funds if possible. She requested that we create a simplified chart of the ponds tested and Ed Eichner agreed that this is part of the process. The goal would be then built on the data year by year. Judith reiterated that the data reported should go back to 2000.

The Chair said we need to work out the process, and now is the time to support the use of the funds, and then we can fill in the details

Carolyn suggested that we coordinate with Pleasant Bay Alliance.

Ed Eichner said there needs to be as balance between multiple sites and reporting some areas (e.g., Town Cove) as a composite of multiple sampling sites and multiple parameters and graphics.

Ed Hafner asked if Ed Eichner is available to do this work, and if so can funding be obtained? Ed agreed that they can accommodate the scope of work as presented. George noted that \$40K is available from prior approved funds as described above.

Mary reiterated that a simple chart should be developed for each sampling site as we move forward.

**Motion:**

To recommend to the Town that we use the currently available funding to support a modified scope of work based on the discussion at today's Committee meeting and that the Committee will select five freshwater bodies at a later date to be included as summary sheets before any SMAST work commences.  
Approved 7-0-0

**4. 2023 Season Freshwater Lake and Pond WQ Sampling, and Summer Estuary WQ Monitoring-Update (Carolyn Kennedy, Judith Bruce, and Chair). (NOTE: This will be a recurring agenda item during the active water quality monitoring time periods).**

**Estuary**

After a brief discussion of which days would work best for the volunteers, September 5<sup>th</sup> was chosen as the last sampling date for this year.

**Freshwater Ponds**

Carolyn's presented the dissolved oxygen water quality data from August 21<sup>st</sup> (including Ed's data) for the 15 freshwater ponds being tested (See Appendix 1). The data shows that Pilgrim Lake (at 2 meters) and at Crystal Lake (at 5 meters) are below the 5.0 mg/L MA state standard. Ed confirmed that two areas of Pilgrim were comparable. Deep Pond exhibited similar characteristics (at 3 meters). The data on average Secchi readings indicate that both Pilgrim and Crystal are comparable, although Crystal is deeper (12.5m vs. 9.2m) in total depth.

Sue Sargent, President of Friends of Crystal Lake, noted that Crystal Lake is very clear right now. Judith mentioned that our freshwater bodies tend to become anoxic in the deeper waters in the summer. The Chair mentioned that you don't want the anoxic conditions to go the upper levels for reasons we

discussed today. Rich asked if there is any dissolved oxygen and water clarity data before this period of time, after our April sampling. Mefford asked about other water quality data by other testing groups that might be complimentary? Ed Hafner answered that there is data from other independent sources, and that is a good scientific practice, although you can't directly compare them.

#### **5. Orleans Pesticide Reduction Home Rule Petition - Follow-up discussion.**

The Chair asked if there is any discussion on the clarification of the final wording in the Orleans Pesticide Reduction Home Rule Petition Final Article.

Judith was happy with the original version and would like to see the Committee vote to support the current home rule proposal. She is not concerned about the inclusion of so many candidates for removal as there undoubtedly will be changes to it as it proceeds through the MA Legislature. She said that if approved, the Town would then decide on what is included. She noted that this version restricts the use strictly around and outside of the foundation of the home, not in the home.

Mary clearly supports the Town's efforts to reduce these pesticides, herbicides and rodenticides. However, as an attorney, she believes that this petition is preempted (both expressed and implied) by the MA Pesticide Control Act (there was also an MA Attorney General opinion in 2022 regarding a Belchertown petition to enforce as provision that would more strictly regulate pesticides). She also believes that the home rule petition will either pass as is or will die in the Legislature. She prefers that the Committee work with Town on a robust education plan to reduce the use of pesticides. She believes there is a better way to achieve the same goals.

Judith replied that petitioning the State to say we wish to have our own requirements cannot be against the law. She also believes that the Town Manager would have to enforce any approved rules.

Ed said this Committee does not get involved in legalities and he would like to leave this up to the Town. He supports the petition which he believes needs to be very restrictive; then if approved, it would be back to the voters for further clarification of the details

Meff said it is important to submit the petition this in spite of the legal impediment. He sees the petition as a political statement from the Town and that the petition process itself that could lead to further restrictions.

Bob Mullin reported that Orleans Conservation Trust presented detailed opinions on exceptions to the proposed pesticide bylaw; however, OCT's document was not found on the Town's web site posting regarding the bylaw. Exceptions to pesticide use restrictions in the proposed bylaw do not address invasive insects and apply only to use on invasive plants for ecological restoration or if an emergency public health situation warrants pesticide use. It also does not address preventative treatments for harmful native species.

Sue Sargent asked if homeowners would be allowed to spray for carpenter or termites outside of the house to protect their homes. Meff said there is a state approved list of chemicals which are allowed to be used – she needs to check that for more details.

**Motion:** The Committee (Mary) will draft a letter to the Select Board supporting the goal of reducing general pesticide use and offering to assist the Town in any way we can. The draft letter will be shared with the Committee before being finalized. Ed motioned; Valerie's seconded. Vote: 6-1-0.

**Action**

1. When convenient, Mary to write a draft letter support letter to the Select Board and share with the Committee.

**6. Wastewater Management Advisory Committee-MFWQ Committee Representative Report (Judith Bruce WMAC Rep).**

The Committee is working on updates and revisions to the Comprehensive Wastewater Management Plan which is due to DEP by the end of this calendar year. There will be a pre-sit down with DEP to ensure that the submission covers what is necessary

**7. APCC Cyanobacteria Monitoring Program, and OPC Sarah’s Pond Oxygenation Project (Ed Hafner, Judith Bruce)-Project Status Update.**

Ed reported that all but one of our tested freshwater bodies is acceptable. We have already discussed the situation at Pilgrim Lake.

Judith reported that Sarah’s Pond is doing great. This is the final year of the oxygenation project.

**8. Review and Approval of Meeting Minutes- July 24, 2023.**

The Clerk reported on the revisions recommend by several Committee members. The revised draft minutes were approved as amended by the Committee members. 7-0-0

**9. Committee Reorganization/Officer Elections (Chair, Vice Chair, Clerk).**

The Chair informed the Committee that she would like to set down as Chair having been honored to serve for over 3 years. She requested nominations for the officers. The following individuals were nominated and approved:

Chair – Rich Levy. Approved 7-0-0.

Vice Chair – Judy Scanlon. Approved 7-0-0.

Clerk – Bob Mullin. Approved 7-0-0.

**10. Announcements**

There were none.

**11. Public Comment**

There were no public comments.

**12. Adjourn**

Motion to adjourn at 12:59 PM. Carolyn motioned to adjourn, then Judith seconded. Approved 7-0-0.

**Future MFWQC Meeting Dates: YR 2023- 9/25, 10/23, 11/27, 12/18.**

**Approved at MFWQC Meeting on September 25, 2023. Vote: 5-0-1**

Handwritten signature in blue ink, possibly 'RJ', with the date '09/28/23' written below it.

**Appendix 1. Orleans Ponds and Lakes, Recent Water Quality Data**

Orleans Ponds and Lakes 2023	DRAFT					Readings taken 8/21/23, AM					*Readings taken 8/31/23				
	DO in m →	→	→	→	→	→	→	→	→	→	→	→	→	→	→
Pond depth in m	Baker	Boland	Crystal	Deep	Gould	Ice House	*Kettle	*M Bog	Pilgrim	Sarahs**	Shoal	Twinings	*U Harveys	*U Israels	*U Seths
0.5	7.02	5.87	8.32	8.72	5.46	7.34	2.44	6.53	5.15	10.49	1.51	7.64	5.90	6.25	6.19
1.0	7.89	3.40	8.32	8.67	5.57	7.07	0.75		5.16	10.58	0.49	7.74	6.01		4.83
2.0	7.08	0.44	8.30	6.31	5.14	6.68	0.15		4.53	10.84	0.11	7.35	6.08		1.46
3.0	7.05	0.27	7.87	1.75	5.04	6.06			3.84	12.62		4.04	5.87		0.20
4.0	7.10	0.25	6.97	0.13		3.33			0.11	9.81		0.22	0.97		
5.0	7.06		0.13	0.13		0.16			0.07	11.43			0.25		
6.0	7.07		0.23						0.02				0.16		
7.0	7.00		0.82						0.01						
8.0	7.35		0.62						0.01						
9.0	9.26		0.03						0.01						
10.0	8.32		0.41												
11.0	7.47		0.44												
12.0	5.03														
13.0	3.18														
14.0	1.11														
15.0	0.56														
16.0	0.33														
<b>Total depth</b>	17.1 m	4.20 m	12.5 m	5.30 m	3.80 m	5.70 m	1.9 m	0.95 m	9.20 m	5.15 m	1.85 m	4.10 m	5.60 m	0.75 m	2.90 m
<b>Avg Secchi depth</b>	4.53 m	1.52 m	2.35 m	1.85 m	3.72 m	3.12 m	0.25 m	0.95 m	2.65 m	2.20 m	0.55 m	3.05 m	2.45 m	0.75 m	1.31 m
<b>Light penetration</b>	26%	36%	18%	34%	97%	54%	13%	100%	28%	42%	29%	74%	43%	100%	45%
Key:															
Between 2 depths															
Poor O2 level										**O2 input at bottom					
							75 Ducks!								
Collated by CLK															
9/1/2023															