



# CANDLEWOOD LAKE AUTHORITY

P.O. BOX 37 • SHERMAN, CONNECTICUT 06784-0037 • (860) 354-6928 • FAX (860) 350-5611

## Minutes of Regular Meeting July 10, 2019

### Attending:

P. Schaer	Sherman
G. Linkletter	Sherman
D. Cushnie	Sherman
C. Robinson	Danbury
J. Archer	New Fairfield
J. Main	New Fairfield
J. Wodarski	New Milford
M. Toussaint	New Milford
S. Kluge	New Milford
D. Rosemark	Danbury (electronic)
J. Murphy	Brookfield (7:47pm)
W. Lohan	Brookfield
M. Gaffey	Brookfield

### Absent:

B. Licht	New Fairfield
E. Siergiej	Danbury

M. Howarth, Executive Director  
J. Neil Stalter, Director of Ecology and Environmental Education  
F. Frattini, CLA Administrative Coordinator (electronic)  
R. Barnard – CLAMP Chief of Marine Enforcement

Recorder: J. Neil Stalter

Guests: Four members of the public

Chairman, Phyllis Schaer, called the regular meeting of the Candlewood Lake Authority to order at 7:31 P.M. at Brookfield Town Hall Brookfield, CT. She welcomed the guests and asked that the new delegate for the Town of Brookfield Marianne Gaffey to say few words. Ms Gaffey noted that she has been in the area for 25 years, has a financial background and has worked with many volunteer organizations and is looking forward to serving on the CLA.

**Public Comment:** None

**Secretary's Report:** *In the absence of the Secretary, Phyllis Schaer made a motion to accept the minutes of the June 12, 2019 meeting as written, seconded by Bill Lohan; motion was voted with all in favor. Motion carried, and minutes have been accepted as written.*

**Candlewood Lake Authority Marine Patrol:** Chief Ron Barnard advised Fireworks went well. Even though it was the rain date, it was a very successful event. Patrols are going well, the 4<sup>th</sup> of July was hectic, and the extra patrols helped. The whistle program is being well received by the public only positive comments. Also, the micro-fiber towels are being well

received. Ms. Schaer commented that under the new AIS Bill that was recently passed there is section on noise enforcement on the lake, there will be fine-tuning and she will keep him advised.

**Chairman's Report:** Chairman Phyllis Schaer reported items from the Executive Committee meeting noting that there is no update on the SMP. She recently had coffee with John Howard of FLPR to discuss the Nuisance Plant Mapping and she reiterated that CLA would prefer the CAES to do Candlewood and Mr. Howard noted that he would speak to CAES. He also advised that he will be returning to Massachusetts and that FLPR is looking for a new person to cover here in New Milford. She advised that she has purchased two banners that say Education Outreach and Research Volunteer with the CLA logo for use when she takes stakeholders out on the lake in her personal vessel. She thanked Jeff Main for his work on the Sherman Buffer Garden and asked anyone who might be willing to help to let Jeff know. He will be presenting on pollinators at State of the Lake this weekend.

Jerry Murphy arrived at 7:47PM

Mrs. Schaer advised that to help with the job transitioning between Larry Marsicano and Neil Stalter the committee agreed that Mr. Marsicano would be accessible to Mr. Stalter such as joining him for the July Water Quality Monitoring and any other items that are within budget (not to exceed \$2,100.00). A preliminary Admin job posting has been prepared and will be sent to the delegates. Mr. Stalter will be checking with the participants from last year's Zebra Mussel Hotel program to see if they will participate again this year. The final set of the Comments which were approved by the Executive committee on the Vegetated Buffer Report are attached to Neil Stalter's Report and were sent to FLPR by the deadline. *Mrs. Schaer made a motion to approve the CLA comments on the Vegetated Buffer Report as approved by the Executive Committee and submitted to FLPR, seconded by Jeff Main and voted with all in favor.*

Mrs. Schaer reported that Nic Marsicano has resigned as the CLA Operations Manager as of July 3<sup>rd</sup>. Mr. Howarth and Mr. Cushnie are drafting a job posting for this position and plan to work with the HR Committee.

Mr. Howarth addressed the delegates noting that the Personnel Policy of the CLA is outdated in that it requires that all job postings be in print media, based on the job postings last year it was noted that all applicants came from on line postings and the cost of in print is very high. Discussion followed. He asked that the Board approve allowing electronic posting of the positions for Admin, Ops and CLAMP this year and not require the posting in print media. Discussion continued. *Mrs. Schaer made a motion to make a temporary exception to the Personnel Policy, due to the circumstances, to eliminate the print ad requirement for job posting for the positions of Admin, Ops and CLAMP for 2019, seconded by Chris Robinson and voted with all in favor.* Discussion continued and *Mrs. Schaer made a motion that at the August (or next) CLA meeting the Board will consider a one item change to the Personnel Policy to eliminate the requirement for a print ad on new job position postings and allow electronic postings that cover the five Town area. Seconded by Bill Lohan and voted with all in favor. Wording of the change will be provided on the Agenda for the August meeting.*

**Vice-Chairman's Report:** Vice Chairman, Mark Toussaint, noted he had nothing at this time.

**Treasurer's Report:** Treasurer Bill Lohan advised that we have completed the fiscal year and are preparing for the annual Audit. He advised that for the Fiscal year ended 6/30/2019 there are Receivables of \$13,324.00 and Payables of \$10,091.00, two of the Receivables have been received. He noted that budget transfers to 6/30/2019 total \$10,858.84 these were sent to the delegates and two items needed transfer lines and Mr. Lohan advised that Item #13 will come from Line #119 and Item #14 will come from Line #262. *Mr. Lohan moved to accept the Funds*

*Transfer of \$10,858.84 dated June 30, 2019 as presented, seconded by Mark Toussaint and voted with all in favor. Transfer sheet will be attached to these minutes.* Profit and Loss Budget vs. Actual for June 30, 2019 has income at 96% of budget and expenses year to date are Admin at 90.2% of budget, Equipment/Facilities 90.6% of budget, Public Safety 101% of budget, Public Awareness 81.2% of budget, and Watershed Management 80.1% of budget, making overall expenses 89.4% of budget or 94% of the original budget. These numbers are subject to audit and are not final. He did advise that the budget did not go over but will not have the final numbers until the audit has been completed.

**Executive Director's Report:** Mark Howarth advised his report is attached to these minutes and then noted the highlights.

- State of the Lake, Saturday July 13<sup>th</sup> topics were discussed.
- Bacteria Monitoring by the NF Senior Environmental Corps has begun
- Micro fiber towels are with CLAMP for distribution
- Water Quality and Aquatic Invasive Species Monitoring is on going
- Homeowner's Guide distribution going well
- Sherman Base – updating Fire Marshal items
- Upgrade to the Computer Network – may need second estimate
- Danbury Chamber of Commerce – Leadership Danbury July 24<sup>th</sup>
- Working with Doug Cushnie to keep operations going while looking for new person
- Blue Green algae testing by WCSU has begun and all results are below the allowed limits of 8 parts per billion
- He and Mr. Cushnie tested the Boat Wash Decontamination Station and it is operational
- Village Fair Days – July 26<sup>th</sup> and 27<sup>th</sup> still need volunteers
- He and Mr. Stalter met with Mr. Wood and Ms Richardson of FLPR to discuss items that CLA/FLPR can collaborate on. Two items discussed were a tour of the Dike's Point Buffer Plantings and a Tour of the Rocky River Plant.

**Director of Ecology and Environmental Education:** Neil Stalter noted his report is attached to these minutes. Highlights from his report are:

- Clean Up
- Water Quality Monitoring 2019
  - June Sampling done, delegates George Linkletter and Marianne Gaffey joined him on the water
  - The May water quality summary is attached to his report.
  - Aquatic Invasive Plant monitoring will be done tomorrow delegate Steve Kluge will join him on the water.
- Vegetated Buffer Report and Comments
- Boat Wash Station program
- Drafted letter to stakeholders regarding the Lake Management Plan process and asking them to select a representative to work with the CLA during this process
- FERC approved the CLA as an intervener on the FLPR LLC transfer

### **Committee Reports**

**Public Safety Committee:** Joe Wodarski noted that the next Committee meeting will be held at Sherman Base and this will make it a Special Meeting – all are welcome to attend.

**Equipment/Facilities Committee:** Doug Cushnie reported that Mr. Howarth covered it and that he and Mr. Howarth will be covering until a new Ops person is in place. He also noted that the Boat wash station is a serious piece of equipment and advised that Echo Bay has been very helpful to the CLA and hopes to continue the good relationship.

**Public Awareness Committee:** George Linkletter, Committee Chairman noted that volunteers are still needed for Village Fair Days.

**Watershed Management Committee:** Mark Toussaint Committee Chairman noted it as already been covered. He did note that the committee would like to have an outline of the Lake Management Plan to present to the full board at the September CLA meeting.

**Old/New Business:** Mr. Howarth advised that he will be ordering Polo shirts for the Staff and if any delegates would like one, they should contact the office and send in their check.

With no other business, *Jerry Murphy moved to adjourn the meeting. Seconded by Joe Wodarski. Meeting adjourned at 8:44 P. M.*

Respectfully submitted,

Jerry Murphy, Secretary  
Frances Frattini, Administrative Coordinator  
r/b/mh

*These minutes are not considered official until they have been approved at the next regularly scheduled meeting of the Candlewood Lake Authority.*

**CLA Budget - Funds Transfer**

**Date:**

6/30/2019

	\$ Amount	Transfer From	Account Name	\$ Amount	Account Name	Transfer To	
1	866.76	#112	Admin/ Fringe B	866.76	Admin/Admin Coor Wage	#110	
2	793.02	#100	Admin/ED Wage	793.02	Admin/Admin Coor Wage	#110	
3	113.29	#115	Admin Office Supplies	113.29	Admin/Postage	#116	
4	43.35	#115	Admin Office Supplies	43.35	Admin/ Comp Hardware/Software	#123	
5	1643.17	#118	Admin/ Prof Serices	1643.17	Admin/ Comp IT	#124	
6	307.65	#210	EF/Fringe Beneftis	307.65	EF/OPS/Wage	#212	
7	44.73	#228	EF/ Dock & Trash	44.73	EF/SB/Repairs	#221	
8	4.45	#228	EF/ Dock & Trash	4.45	EF/ Utilities	#222	
9	279.57	#262	EF/ Miscel Repairs	279.57	EF/Work Boats	#226	
10	4518.29	#300B	LP/Wage Admin	4518.29	PS/LP/Wage	#300	
11	328.43	#322	PS/ Unifoms	328.43	PS/LP/Wage	#300	
12	170.12	#318	PS/Maint-Miscl	170.12	PS/Boat Miant/Reimb	#311	
13	220.00	#119	Admin/Bank fees	220.00	PS/Training	#314	
14	738.06	#262	E/F - repairs	738.06	PS/Fireworks	#324	
15	11.98	#412	PA/Ed Bulletins	11.98	PA/ Subsription Services	#414	
16	775.97	#531	WM/ Cynobateria	775.97	WM/Lake & Stream Monitoring	#511	
17							
18			Approved at CLA meeting 9/10/2019				
19							
20							
	10,858.84	<b>TOTAL</b>		10,858.84	<b>TOTAL</b>		





# CANDLEWOOD LAKE AUTHORITY

P.O. BOX 37 • SHERMAN, CONNECTICUT 06784-0037 • (860) 354-6928 • FAX (860) 350-5611

**July 10, 2019**  
**Executive Director**  
**Mark Howarth**

## **Monthly Report:**

- **State of the Lake:** We are preparing for the 2019 State of the Lake on Saturday July 13<sup>th</sup> at the New Fairfield Company A Volunteer Fire Department Fire House. It will begin at 9:30 AM and run until about 11:30. In addition to topics and questions from the audience, some of the planned topics of discussion are:
  - Candlewood's Sterile Grass Carp Program
  - CLA's Upcoming Lake Management Plan
  - Blue-green Algae
  - Safe Boating
  - Pollinator Gardens
  - Invasive Species Monitoring
  - Candlewood Lake Homeowner's Guide
- **Bacteria Monitoring:** The NF Senior Environmental Corps has begun the annual summer E. coli monitoring program by taking water samples around the lake and dropping them off at the lab for testing.
- **Microfiber Towels:** The towels have been received and are with the Marine Patrol for distribution.
- **Fire Marshal:** We are working with the Sherman Fire Marshal to make some improvements to the Sherman Base.
- **Tech Review:** We are looking to ensure our technology systems are up to date and have had an initial review by a consultant. We will review the information we receive and plan to make necessary upgrades.
- **Operations and Administrator Positions:** We have been working on transitions and future plans for our operations and administrator positions.
- **June e-Appeal:** We sent out the June/Summer electronic appeal and received some donations in response.
- **Danbury Men's Club Talk:** Neil and I went and spoke at the Danbury Men's Club's June 26<sup>th</sup> Meeting. We had a great time and enjoyed an interactive morning – filled with lots of questions from the audience members! We look forward to returning.

- **Candlewood Lake Club Talk:** Also, on June 26<sup>th</sup> we spoke at the Candlewood Lake Club and enjoyed another fun lake conversation with the attendees. We discussed a number of topics and fielded a variety of questions about the lake and the CLA. We had fun and would welcome an invitation to return.
- **Blue Green Algae:** Western Connecticut State University has begun the weekly cyanobacteria monitoring program. We have received the first two sets of results. Below is the information we post on the CLA Facebook and Instagram pages, and website.

## Blue-Green Algae WEEKLY TEST RESULTS

**Sampling Date: 7/3/2019**

**NOTICE:** The threshold for the microcystin toxin in State of CT guidance for public beaches *has changed for 2019. It is now 8.0 parts per billion (ppb), revised from 4.0 ppb in 2018.*

**Below are the blue-green algae test results from Western Connecticut State University.**

**All samples tested indicated toxin levels below the State of CT new 2019 threshold of 8.0 ppb noted above.**

**Brookfield Town Park (0.058ppb)**  
**Danbury Town Park (0.204 ppb)**  
**Lynn Deming Town Park (0.115 ppb)**  
**New Fairfield Town Park (0.146 ppb)**  
**Sherman Town Park (0.099 ppb)**



- **Boat Wash:** Doug Cushnie and I went and texted out the Brookfield boat wash unit. We were able to start and operate the unit without major difficulty.
- **Village Fair Days:** We are making plans for Village Fair Days at the end of July. We are still looking for additional delegates to assist us in the booth.





# CANDLEWOOD LAKE AUTHORITY

Member Municipalities: Brookfield • Danbury • New Fairfield • New Milford • Sherman

PO BOX 37 • SHERMAN, CT 06784 • P (860) 354-6928 • F (860) 350-5611

**J. Neil Stalter**

**Director of Ecology and Environmental Education**

**Candlewood Lake Authority**

**Re:** July Meeting: Monthly Report

**Date:** 7/10/19

- **WQ Monitoring 2019:** The second water quality monitoring for the month of June occurred on Monday May 24<sup>th</sup> for Squantz Pond, and Thursday May 27<sup>th</sup> for Candlewood.
  - The results looked very positive and showed a noticeable increase in clarity from May to June. We are waiting on final nutrient measurements from Hydro Technologies, at which point I will write up a WQ Summary for inclusion on the website.
  - Thank you in particular to our delegates George and Marianne for joining me! It was a great day out on the water, and their help was invaluable. I look forward to other delegates, community members, public officials, and anyone who's interested joining for WQ monitoring in the future.
  - All water quality results, including historical measurements are being organized for ease of reference and use in analyses, figures, etc. and are always available for anyone who would like to consult them.
  - The May water quality summary has been completed and added to a newly updated page on the website where community members can visit and read summaries, annual reports, and learn about exactly what we are monitoring and how we do it. The May summary is attached.



- As of this writing, the next Invasive Plant monitoring at the public launches is scheduled for Thursday July 11<sup>th</sup>. A new tool was made (thanks to my dad for helping to build the new sampling tool over the July 4<sup>th</sup> holiday!) and is ready for our use!
  - Writing up a final methodology based on our tools and the boat that we'll be using to ensure that the program can continue into the future.
- We received the draft of the 2018 vegetated buffer report from FirstLight Power Resources, which included a vegetation classification study using aerial imagery. I have had the opportunity to review the report and study and have written comments.
  - Those comments have been updated by the Watershed and Executive committees and have been sent to FirstLight before their deadline of Tuesday July 9<sup>th</sup>.
  - The version that was sent by the Executive Committee is attached to this report.
- I have drafted a letter to send to each of the stakeholders to alert them of the beginning of the Lake Management Plan process, and to allow them time to select a representative/contact who we can work with throughout the process. I am also continuing to review other Lake Management Plans, as well as guiding documents from NALMS and other lakes that have undergone this process.
  - These will be used to help create an outline, structure, and strategy that we can base our own LMP around, using past studies and management documents created by the CLA and consulting organizations to inform all the different pieces of our LMP.
- Mark and I presented to both the Danbury Men's Club and the Candlewood Lake Club a little about current lake topics, the homeowner's guide, lake protection best practices, and answered many questions!
  - Thank you to both the Men's Club and the Candlewood Lake Club for great days, and for a captive audience. We really enjoyed answering your questions and talking about the lake.
- We released a brief June appeal for donations before the end of the 2018/2019 fiscal year that we emailed and posted onto our Facebook.
- Thanks to more active management by Mark and I, the Facebook page traffic has increased over the past few months, and we hope to continue to improve our ability to interact with the community via social media.
- Working on organizing and completing the various parts and requirements for both a possible short- and long-term boat decontamination program.
- FERC let us know that our filing to become an intervenor in the FirstLight LLC transfer process has been approved. We will inform the board of any updates.



# CANDLEWOOD LAKE AUTHORITY

Member Municipalities: Brookfield • Danbury • New Fairfield • New Milford • Sherman

PO BOX 37 • SHERMAN, CT 06784 • P (860) 354-6928 • F (860) 350-5611

**J. Neil Stalter**

**Director of Ecology and Environmental Education**

**Candlewood Lake Authority**

**Re: May 2019 Water Quality Observations**

**Details:** Sampling was conducted on May 29<sup>th</sup> (Squantz) and May 30<sup>th</sup> (Candlewood). This is the first month of water quality monitoring for the 2019 season. **Secchi Depth, a measure of water clarity, ranged from a low of 1.68m in Danbury Bay, to a high of 2.26m in Squantz Pond.**

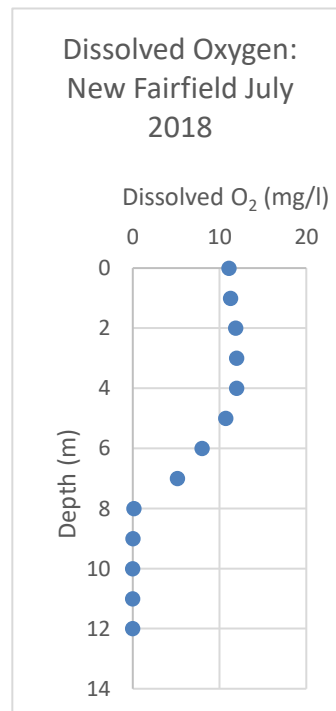
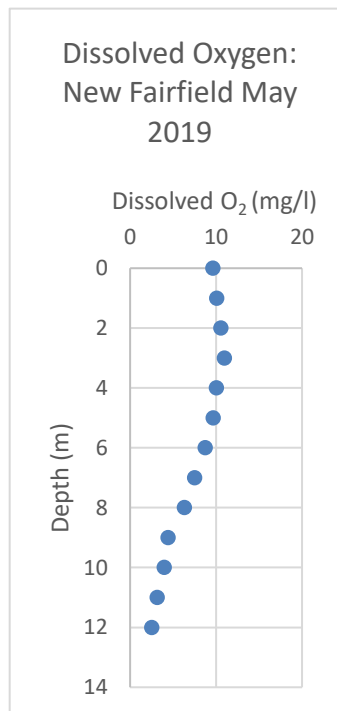
These are modest to somewhat low measures of clarity, but secchi measurements in 2018 (one of the highest clarity years on record) range from 2.23m – 2.62m, while in 2017 secchi measurements ranged from 1.18m to 1.59m. This is meant to illustrate that lower secchi measurements are not uncommon in May for a variety of reasons, including but not limited to increases in algal productivity (higher chlorophyll-a measurements) and suspended “particulate matter” a term meant to describe sediments and soil, from snow melt and recent heavy rains. The weather was also overcast and cloudy – which can contribute to slightly lower secchi readings, as the disk can be more easily seen at a deeper depth when there is more sunlight that can penetrate the surface water of the lake.

**This was the first month that we were able to use our new Chlorophyll-a sensor** (a fluorometer, which uses certain wavelengths of light to measure the relative concentration of chl-a). Because this is a new monitoring method, **we are using both the new sensor, as well as taking water samples for in-lab analysis of chl-a** so that we can ensure we know how to compare the new results to historic measurements. Chlorophyll-a measurements are most often used to measure how much algal material is in the lake. Below is a table comparing the chl-a results at 1m depth returned to us from the lab with the chl-a results using the new sensor (all measurements are in µg/l):

	<b>DB</b>	<b>NF</b>	<b>NM</b>	<b>SH</b>	<b>SQ</b>
<b>Fluorometry (New Sensor)</b>	3.29	2.53	2.78	2.91	1.1
<b>Spectrophotometry (Lab Analysis)</b>	6.12	6.79	7.78	11.27	2.01

As you can see, there are a number of differences in the two measurements, but the lab-analysis is consistently measuring modestly higher than the sensor analysis. In May of 2018, the analysis was only done via spectrophotometry in the lab, and the measurements ranged from 5  $\mu\text{g/l}$  to 13.6  $\mu\text{g/l}$ , which is a very similar range to this year. **The low secchi disk measurements from May 2019 tend to agree with a slightly higher chl-a measurement**, but there are a number of possible explanations for those low secchi readings as discussed in the above paragraph. The new chl-a sensor also measures relative concentration based on a set standard, which is another possible explanation for the difference in these measurements. **We will continue to measure chl-a using both methods until we can analyze any differences between the two methods statistically and ensure that we can compare any measurements going forward to historical measurements.**

Dissolved oxygen plays an important role in allowing organisms to thrive in the lake, particularly certain sport fish species. **Dissolved oxygen in the water illustrated heavy mixing throughout the water column** meaning that there was oxygen throughout most of the water, from the surface all the way to the bottom. Below you can see a comparison of the profile of dissolved oxygen concentration in New Fairfield from May 2019 and July 2018. You can see the dramatic drop in dissolved oxygen at roughly 6m depth in July (the metalimnion, or “middle layer” of the lake), whereas the **decrease of oxygen with increasing depth is much more modest in May and doesn’t decrease all the way to 0**. This is due to the temperature throughout the water column being more uniform in May than in July, allowing the oxygen to mix more easily throughout the entire “water column” (a word to describe the vertical column of water from the surface to the bottom of the lake).



Nutrient loading (particularly the concentration of important compounds like nitrogen and phosphorus in the water) has important effects on lake health. High concentrations of these nutrients can lead to algal growth and blue-green algae blooms that can harm water quality, as well as lead to greater growth of nuisance plant species like milfoil. We take one measurement of nutrient concentration in each layer of the lake (so 3 samples at each of the 5 different sites; 15 times total). **Nutrient measurements (including both nitrogen and phosphorus) are low this month** compared to historical May measurements. This includes low hypolimnion (lake bottom) nutrient measures, indicating that the dissolved oxygen in the deep water of the lake are slowing or stopping internal loading (nutrients entering the processes. The only exception was a measurement of 40 µg/l in the hypolimnion sample in Squantz Pond, indicating that internal loading might have begun at the site. This is also the site with the lowest measurement of dissolved oxygen (0.1 mg/l) at the bottom depth, further illustrating this relationship between oxygen and internal loading.

Some important ions (sodium, potassium, calcium, chloride, and magnesium) were also measured at all three lake layers at all five sites as well. **Ion measurements are very similar to May measurements taken in 2018, if slightly lower.** These measurements provide important information about important molecules that can affect certain parts of Candlewood's ecology, including calcium, which is an important raw material for zebra mussels. **Water samples were taken on June 12<sup>th</sup> near the pump-up station in New Milford and analyzed for zebra mussel veligers (larva), and none were found.**

**Summary:** Water clarity was somewhat low in May, indicating possible algae growth, suspended particulate matter (solids), a lack of sunlight on sampling days, or a combination of all three. This was the first month using a new chl-a sensor on our water probe, and the new sensor returned slightly lower readings than those measurements received from the lab. Comparisons of these two methods will continue to ensure we can continue to compare new data to historical measurements. Dissolved oxygen measurements showed modest mixing throughout the water column. Nutrient measurements were low this month, including measurements at the bottom of the lake, indicating very little internal loading – this is likely due to the relationship between high dissolved oxygen and low nutrient loading at the bottom of the lake. Ion measurements are similar or slightly lower than in past years, and no zebra mussel larvae were found during monitoring.



# CANDLEWOOD LAKE AUTHORITY

- Preserving and Protecting Candlewood Lake Since 1972 -

## Water Quality Monitoring: What You Need to Know

**Temperature:** Often measured in Celsius, different layers (surface vs. very deep water) of the lake often have very different temperatures! A larger difference between the temperature of shallow and deep water can mean that those two layers are less likely to mix, since colder water is denser and sits at the bottom. A diagram of the various lake layers is illustrated below!

**Dissolved Oxygen:** This is measured in milligrams per liter (mg/L) and is a measure of how much oxygen the water has, which many fish species and other organisms rely on.

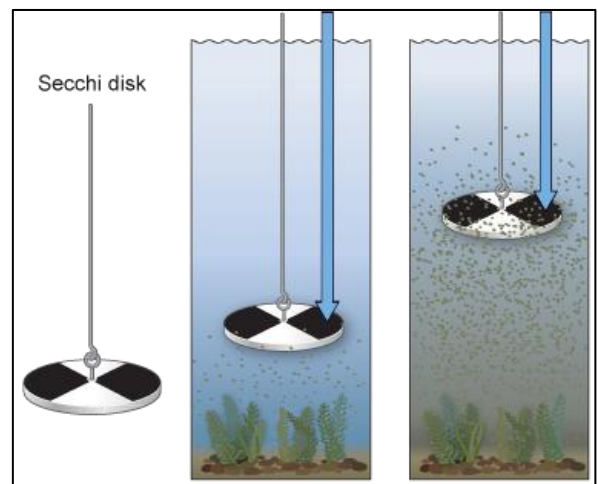
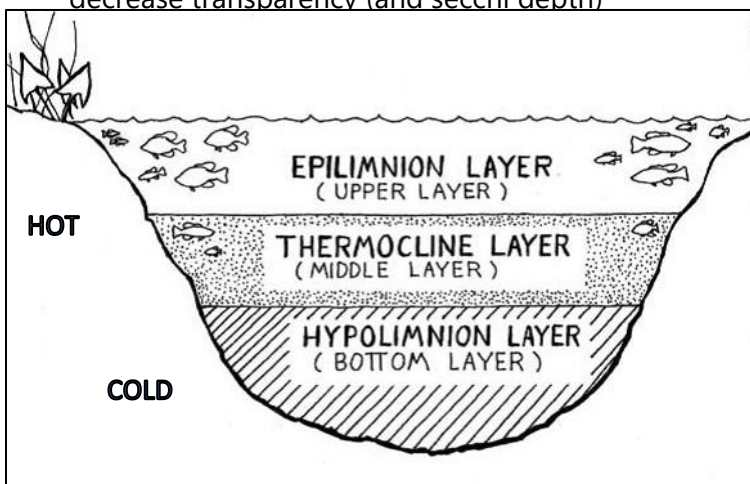
**Total Phosphorus:** This is measured in micrograms per liter ( $\mu\text{g/L}$ ) which is the same as "parts per billion" (ppb). This measures the concentration of phosphorus in the water which can feed algae and aquatic plants.

**Total Nitrogen:** This is measured in the same way as total phosphorus, but instead measures nitrogen concentration, which can also feed algae and aquatic plants.

**pH:** This is a measure of how acidic or alkaline (basic) the water in the lake is by measuring hydrogen ions ( $\text{H}^+$ ). This is measured on a scale from 0-14, where zero is the most acidic and 14 is the most basic. Neutral pH is 7, and this measure is of singular importance to organisms living in the water, many of which require a pH that is slightly basic (7-9). However, higher pH can also allow more phosphorus (and other compounds) to dissolve in the water; potentially increasing total phosphorus measurements.

**Secchi Depth:** This is a method used to measure how clear and transparent the lake water is. It is measured by dropping a circular black and white disk on a rope into the water, and the depth at which the disk can no longer be seen is recorded in meters (m). Higher measures mean the disk could be seen longer, and that the water is clearer. This is illustrated in the diagram below!

**Chlorophyll-a:** This is measured in micrograms per liter ( $\mu\text{g/L}$ ) which is the same as "parts per billion" (ppb). Chlorophyll-a is the compound that makes plants green, and what they use for photosynthesis. This measure gives insight into how much green algae is in the water and can decrease transparency (and secchi depth)



•



# CANDLEWOOD LAKE AUTHORITY

Member Municipalities: *Brookfield • Danbury • New Fairfield • New Milford • Sherman*

PO BOX 37 • SHERMAN, CT 06784 • P (860) 354-6928 • F (860) 350-5611

**To:** John Howard  
Director of Connecticut Operations  
FirstLight Power Resources  
P.O Box 5002  
New Milford Connecticut, 06776

## **Candlewood Lake Authority Comments on FirstLight Power Resource's Draft 2018 Vegetated Buffer Progress Report**

**Project Number: 2576**

**July 9th, 2019**

The Candlewood Lake Authority (CLA) would like to thank FirstLight Power Resources (FirstLight) for providing the draft 2018 buffer progress report for our review and comment. We have had the opportunity to review the document, as well as compare it to past years' reports and offer the following comments and questions to FirstLight and the Federal Energy Regulatory Commission (FERC) for consideration. We also understand that in light of the new proposed Shoreline Management Plan (SMP), the buffer reporting requirements might very well change. However, until such a time that FERC returns a ruling with an approval, denial, or modifications to that proposed SMP we have no way of knowing what form that final reporting requirement will take (note that we have requested that requirement take a different form than the one proposed by FirstLight in their proposed SMP submitted on March 27<sup>th</sup>, 2019). There is also no discrete timeline for that ruling from FERC, and thus no guaranteed time when the current reporting requirements would be replaced. For those reasons, the below comments apply to the process as it stands under the current SMP approved on March 27<sup>th</sup>, 2013 – a process that we feel should continue until a new reporting requirement is approved by FERC.

- I. In the submitted draft 2018 Vegetated Buffer Progress Report FirstLight states: "FirstLight proposes that this study's results will close out this reporting requirement. Allowing for FirstLight to transition to a longterm vegetated buffer permitting and enhanced vegetated buffer educational program in partnership with the Candlewood Lake Authority and others."<sup>1</sup>

---

<sup>1</sup> "Housatonic River Project P-2576 2018 Final Vegetated Buffer Progress Report" P. 3. 6/9/2019, FirstLight Power Resources



- a. We see no reason why the attached report: “Vegetated Buffer Cover Analysis” is sufficient to “close out” the current reporting requirement.
    - i. As stated in the leading paragraph in these comments, there is no guarantee that the new reporting requirement proposed in the SMP submitted to FERC on March 27<sup>th</sup>, 2019 will be approved with or without modification by FERC. There is also no guarantee that a final ruling will be received from FERC before 2020’s vegetated buffer progress report comes due.
      - 1. In light of this, and due to the fact that these reports remain a useful tool for the Lake Authorities and Municipalities to evaluate the shoreline of their respective waterbodies, we request that this reporting requirement continue as stated in the *Order Modifying and Approving Shoreline Management Plan* issued by FERC on March 27<sup>th</sup>, 2013<sup>2</sup> until such a time that it is formally replaced by a new reporting requirement approved by FERC.
    - b. While we look forward to the partnership between FirstLight, the CLA, and other organizations to make buffer planting easier for residents as well as educating them on best practices, we do not view that program as a replacement for comprehensive and transparent buffer permitting and reporting.
- II. The CLA appreciates the addition of the Vegetated Buffer Cover Analysis (hereby referred to as “the study”) done by Kleinschmidt in the interest of “establishing a baseline against which future change can be analyzed” (attachment C, p.28). We also agree with the authors that there is still substantial work to be done to protect the project shoreline and ensure that the vegetated buffer area around the lake is conserved and expanded.
- a. It is unclear in the methodology of the study – are all measurements of pixels, and subsequent coverage percentages reported in this study only contained within the project boundary? The only example classification image included contains a substantial area that is not within the project boundary, so we are requesting clarification that this study was done only on shoreline lands contained within the project boundary.
  - b. The CLA also has concerns that the methodology of the study inherently overestimates vegetated buffer coverage by relying so heavily on tree canopy coverage. Tree canopies, particularly deciduous tree canopies, can be very large and cover a significant lateral area – and satellite imagery only

---

<sup>2</sup> “Order modifying and Approving Shoreline management Plan Pursuant to Article 407” 3/27/2013, Federal Energy Regulatory commission

accounts for the emergent (topmost) layer of a vegetated buffer, which would block the satellite view of an understory (or lack thereof). While trees can be an important part of a vegetated buffer – a truly effective buffer would contain multiple layers of vegetation. We are concerned that this satellite imagery ignores these important lower layers, and that these large trees could be obscuring large areas of manicured lawn or impervious surface underneath the canopy which would obviously not be an effective buffer.

- i. We are actively keeping an inventory of shoreline vegetation comparing the late summer 2018 shoreline with a baseline of photos from 2007. We have continuing concerns about the ongoing shoreline development below the 440 project boundary, including manicured lawns, impervious surfaces, shoreline disturbances, and removal of shoreline vegetation negatively impacting shoreline stability and runoff protection that might be obscured by the tree canopies analyzed during this study. A tree canopy view can hide a lot of disturbance.
  - c. All of the aerial photography used for the survey is from 2016<sup>3</sup>, and there have likely been substantial changes to shoreline vegetation since then, including development, vegetation removal, addition of impervious surfaces, etc.
    - i. There was also an extreme “macroburst” storm that hit multiple towns surrounding the lake on May 15<sup>th</sup>, 2018 and destroyed a significant amount of vegetation around the lake; particularly tree canopies.
    - ii. Because the information contained in the study was gathered during the “spring of 2016”<sup>4</sup>, prior to the “macroburst” and other significant shoreline changes, it should be noted that it does not accurately reflect the current status of shoreline vegetation in 2018.
- III. The study is very clearly project wide, and only reports discrete percentages of land cover class (along with Sq. ft and Acreages) as well as confusion matrixes to establish the efficacy of the method. However, while the ultimate interest of a buffer requirement and permitting process is project wide, assessment must occur on a property by property basis to establish whether the program is actually being implemented. Simply because the entire project is within compliance (a project

---

<sup>3</sup> “Housatonic River Project P-2576 2018 Final Vegetated Buffer Progress Report”, Attachment C, P.ES-2. 6/9/2019, Kleinschmidt, FirstLight Power Resources

<sup>4</sup> “Housatonic River Project P-2576 2018 Final Vegetated Buffer Progress Report”, Attachment C, P.ES-3. 6/9/2019, Kleinschmidt, FirstLight Power Resources

with a very significant amount of uninhabited shoreline which would dramatically increase reported percentage of vegetated coverage) does not mean that every individual property is within compliance and that there is not substantial progress to be made on an individual property basis.

- a. It is for this reason that the CLA requested during the 2017 consultation<sup>5</sup> that a column containing “buffer status” be added to the report. Namely, this column would contain a description of whether a property that has triggered the buffer requirement currently has a buffer that is not yet started, is being installed, or is completed for each listed property. This would be extremely helpful to view “buffer progress and correlate possible improvements in water quality.”<sup>3</sup>
  - i. In response to this comment, FirstLight stated: “Due to the volume of properties that need to be inspected FirstLight does not have staffing capable to inspect all 700 plus properties.” (p. 37)
    1. In response to the above exchange, FERC stated in a letter dated September 11, 2018: “we find that the 2017 vegetated buffer report does not provide any specific information to indicate your progress toward meeting the vegetated buffer requirements. Further, your claim of inadequate staffing... is not a justifiable reason to avoid a measure that you proposed and that became a license requirement as part of the approved SMP.”<sup>6</sup>
- b. Unfortunately, the 2018 report is exactly the same as the 2017 report, with different numbers of issued permits and additional properties that have triggered a buffer requirement. The only addition to the report is the study meant to establish a project wide base-line; not to evaluate buffer progress on an individual property basis.
  - i. Thus, we again request the addition of another column contained in the buffer report describing the progress of buffers at each individual property.
  - ii. The included study itself supports the assertion that effective evaluation of buffer requirements should be done on a property by property basis, stating: “there are stretches of shoreline where heavy development has taken place and impervious surfaces and manicured lawns persist, particularly in Lake Candlewood. Given that development will continue to occur along and within close

---

<sup>5</sup> “2017 Vegetated Buffer Progress Report and Request Ammend [sic] Dock Foam Requirement Housatonic River Hydroelectric Project, FERC No. 2576”, CLA Consultation Email P.40. 6/15/2018. FirstLight Power Resources

<sup>6</sup> “Subject: 2017 Vegetated Buffer Report and Non-Encapsulated Foam” P. 3-4. 9/11/2018, Federal Energy Regulatory Commission

proximity to project lands as a lot of private property still exists, the existing deciduous and evergreen tree cover... along the shoreline should be conserved.”<sup>7</sup>

- c. In their response letter to the 2017 report FERC stated: “It is clearly our intent that your buffer reports serve to inform you, the stakeholders, and the commission of your progress towards meeting your approved buffer requirements, and we find that the 2017 vegetated buffer report does not provide any specific information to indicate your progress towards meeting the vegetated buffer requirements.”<sup>8</sup>
    - i. While potentially useful and interesting, in our analysis, the attached study still does not effectively inform us of the “specific information of... progress toward... buffer requirements”. What would effectively accomplish this goal is the simple addition of a buffer progress column next to each property, which we requested in 2017 and again request this year in comment III.b.i.
    - ii. Note that even if this reporting requirement should change following approval of a new SMP, ensuring progress toward buffer implementation would still require site visits to properties that trigger any buffer requirement to oversee progress. This information could then be easily reported to FERC and the stakeholders annually while keeping each property owner anonymous. This seems to us to be an effective and easy method to keep everyone informed of buffer requirements while still respecting FirstLight’s privacy concerns.
      1. Thus, what we are requesting here is not limited only to reports under the 2013 SMP but extends to buffer progress reports (i.e. significant activity reports) under the auspices of any future SMP.
- IV. The CLA is very excited about the new Shoreline Vegetation Demonstration Area on the Rocky River Project. The tour we took of the area with members of FirstLight staff, along with the photos and plans for the area, were very promising and we look forward to its completion for the public to enjoy!

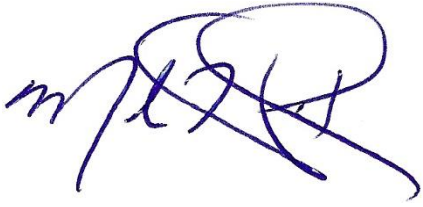
---

<sup>7</sup> “Housatonic River Project P-2576 2018 Final Vegetated Buffer Progress Report”, Attachment C, P.ES-11. 6/9/2019, Kleinschmidt, FirstLight Power Resources

<sup>8</sup> “Subject: 2017 Vegetated Buffer Report and Non-Encapsulated Foam” P. 3. 9/11/2018, Federal Energy Regulatory Commission

*Respectfully submitted,*

CANDLEWOOD LAKE AUTHORITY

A handwritten signature in blue ink, appearing to read 'M. Howarth', with a large, stylized flourish above the name.

Mark Howarth  
Executive Director  
/JNS