

# LAKE WALLENPAUPACK

## WATER QUALITY IN ACTION

A COMMUNITY-LED MONITORING PROGRAM

2019 - 2025 UPDATE

POCONO LAKE ECOLOGICAL OBSERVATORY NETWORK – LACAWAC SANCTUARY



Photo credit: Chuck Green, 2024

## PLEON: MONITORING LAKE ECOSYSTEMS IN A CHANGING WORLD

Lakes are the economic backbone of tourism in the Pocono region. They provide both recreational enjoyment and critical wildlife habitat. Lakes are also some of the world’s most vulnerable ecosystems, often acting as sentinels of climate change and other human impacts. The Pocono Lake Ecological Observatory Network, or PLEON, is a lake stewardship program focused on educating the public on water quality and lake management. PLEON is based at Lacawac Sanctuary & Biological Field Station. Our mission is to:

*Empower the public to better understand and manage their freshwaters*

*Create a community of scientists, students, educators, and landowners working to preserve Pennsylvania’s lakes*

*Collect and communicate ecological data that help inform responsible lake management*

## PLEON’S WATER QUALITY IN ACTION PROGRAM: GENERATING DATA AND CREATING PARTNERSHIPS BETWEEN SCIENTISTS AND THE COMMUNITIES THEY SERVE

### WHY COMMUNITY SCIENCE?

PLEON’s hands-on, community-led water quality monitoring program connects scientists who study lakes with the communities who live on and enjoy lakes. Too often, these two groups are isolated from each other; scientists can struggle to communicate effectively with non-scientists while lake communities can feel as though scientific data are inaccessible and unintelligible to “regular” people. This disconnect can have real consequences for lake communities facing emerging management challenges.

We believe that these groups have much to learn from each other during this time of rapid environmental change. Members of lake communities are often the first to notice changes in water quality and lake scientists have the training and expertise to interpret water quality data and place them in a larger context. Working together, these groups can advance our understanding of effective lake management and preservation.

### HOW THE PROGRAM WORKS

The PLEON Water Quality in Action program has three stages (Figure 1). First, participants are trained to properly measure several water quality variables and collect water samples.

Next, participants receive a kit containing all of the equipment needed for the sampling program. They choose a location from which to collect data, such as a dock or moored boat, and collect data through the summer according to a standardized schedule.

Finally, PLEON scientists summarize the data and communicate the results and their implications to program participants and the larger community. This vital part of the program connects the conceptual learning that occurs in the trainings to the data gathering component with the goal of equipping participants to become change-makers in their communities.



Figure 1: Components of the Water Quality in Action program.

## THE LAKE WALLENPAUPACK PROGRAM

### THE LAKE

Lake Wallenpaupack is an impoundment created in 1926 for hydroelectric power. It is the 3<sup>rd</sup> largest lake in Pennsylvania and a major source of tourism and recreation in the region. Wallenpaupack has 5,700 acres of open water, a length of 13 miles, 52 miles of largely residentially developed shoreline, and a 219 square mile watershed.

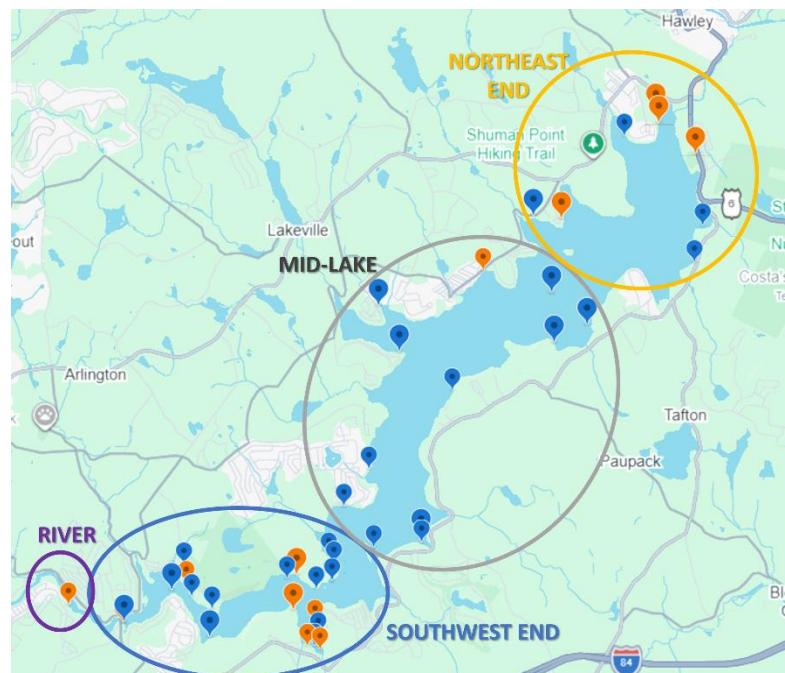
Working together, participants collect data from many locations many times over the summer, capturing water quality dynamics over space and time. These data can then be used to identify pristine or problem areas and identify trends in water quality.

### SAMPLING SITES

Participants sampled 41 different sites along Lake Wallenpaupack between 2019 and 2025 (Figure 2). Data were collected from the same location every Saturday ( $\pm 1$  day) in June through September.

Nineteen sites were located at the southwest (SW) end of the lake, 9 sites were located at the northeast (NE) end, 12 sites were located mid-lake (ML), and 1 site was located in the river (RV), Wallenpaupack Creek. Not all sites were sampled every year.

Participants collected qualitative and quantitative data. Qualitative data are simple but important data that characterize water quality, such as water color. Quantitative data express an amount or quantity using standardized units of measure. Examples of quantitative data include Secchi depth, water temperature, and chlorophyll *a* concentration. Both types of data are useful for assessing water quality.



**Figure 2: Sampling sites on Wallenpaupack. Open ellipses denote lake zones. Orange dots were sampled in 2025; many of these sites were sampled in previous years as well. Blue dots denote sites that were sampled only in years prior to 2025.**

COMMUNITY SCIENTISTS

Thank you to all the community scientists who have participated in the Wallenpaupack program over the years:

AIDEN & BONNIE BOUCHARD	KRYZAN FAMILY
VERA DEMCHENKO & MELANIE STOCKWELL	BILL LEISHEAR
BILL BAINES	TERRI MARCELLUS
BETTINA BONSALL	SHERYLL MCCLOSKEY
CATHERINE BOLTON	KAREN MAYER
MARY ELLEN BENTLER	VAL PATE
BEN BRUNELLI & JEAN MARIE BROZZESE	MARY BETH & JOHN SECOY
OWEN & AMY GILLESPIE	RICK SHEMA
NAOMI DRUCKER	JENNIFER SLADE
JULIE DEVRIES	REILLY SEELEY
KAREN FELIX	SARAH STRAUSE
CHARLES GREEN	DAVE SAVAGE
JAMES HECK FAMILY	CARA SCHWEITZER
SHELLY & WES HUME	LINDA TUCKMANTEL
ROB JAEGER	MIKE & MERRILEE ULISNEY
CAROL KUHN	SUSAN & DEREK WARNER
BETH KULIK	ROBERT WASYLYK & CARMELA FOX

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PLEON FUNDING SOURCES

PLEON is a program of Lacawac Sanctuary Biological Field Station and Environmental Education Center. We also thank the following funders for their support of this and other PLEON programs:



**Overlook Estate Foundation**



## KEY FINDINGS

**Average algal abundance was higher in 2025 than all previously sampled years (2019 through 2024).** Algal abundance was greatest in July 2025, though algal blooms have typically occurred in August and September in previous years. Higher algal abundance was most often seen in the southwest section of the lake.

**July 2025 average Secchi depth was the lowest (least clear) across the dataset.** Secchi depth tends to decrease throughout the summer, indicating decreasing water clarity. Year-to-year trends are variable.

Over the dataset, there has been a moderate statistical relationship between higher algal levels and decreased Secchi depth, indicating that **algal levels play a role in water clarity**. Water clarity can also be impacted by precipitation/runoff and boat activity.

**Visible algae were present in 65% of citizen scientists' assessments in 2025.** Participants' perception of recreational suitability and physical condition of the lake declined over the course of the summer in each sampled year.

## DETAILED RESULTS

### AIR & WATER TEMPERATURE

#### *Why is water temperature important?*

Water temperature plays a key role in the physical structure of temperate lakes during the summer. Surface water, or the epilimnion, is warmed by the sun while deeper water, or the hypolimnion, remains cool. These layers remain distinct because warm and cold water have different densities and so layers of different temperatures do not mix easily. The depths of these two layers and the difference between their temperatures can affect many aspects of lake ecosystems, including the amount of oxygen in the water.

Lake organisms have specific temperature tolerances impacting survival. Many species of sport fish, including trout and salmon, require cool water (less than ~72°F or ~22°C). Cyanobacteria, the algae that cause harmful algal blooms, have a higher temperature tolerance than other algae groups and often thrive in warm water.

Water temperature is affected by air temperature, sun exposure, inflows and outflows, wind speed, and dissolved materials that can trap heat. Underwater springs and stream inflows can also affect local water temperature.

In 2025, citizen scientists began collecting air temperature data in addition to water temperature data.

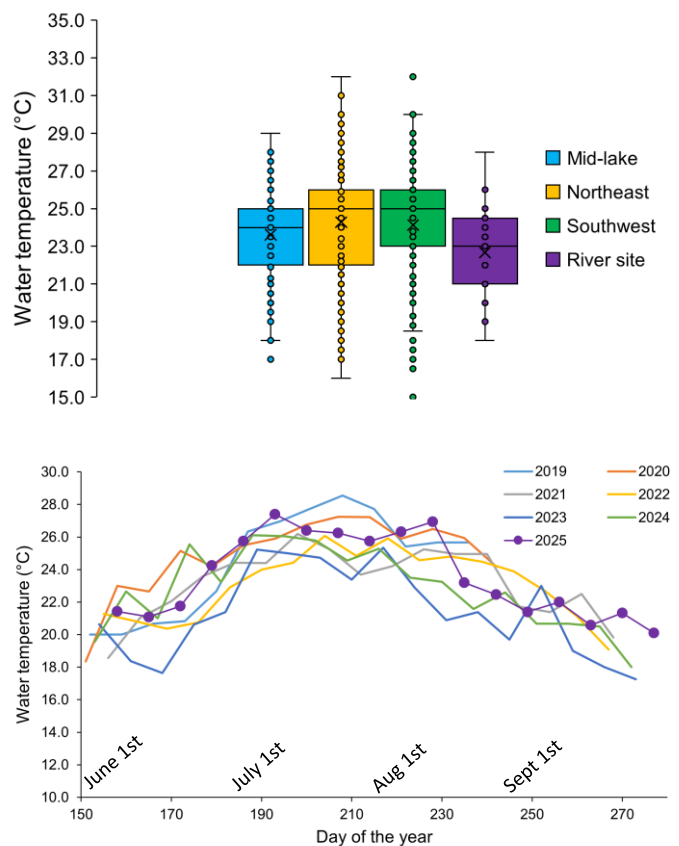
#### *How was temperature measured?*

Air temperature was taken with a dry thermometer, held about 4 feet off the ground in a shaded location. Temperature was recorded to the nearest ½ degree Celsius.

The weighted thermometer was then lowered in the water to a depth of 1 m (~3.3 ft) for a minimum of 5 minutes. Temperature was recorded to the nearest ½ degree Celsius.

#### *How did temperature compare among different areas of the lake?*

Average summer water temperature was similar in the NE (24.3°C average) and the SW (24.1°C average) sections of the lake. (Figure 3, top panel). The ML average summer water temperature was ~0.5°C cooler (23.6°C). The RV site had the lowest average summer water temperature at 22.7°C.

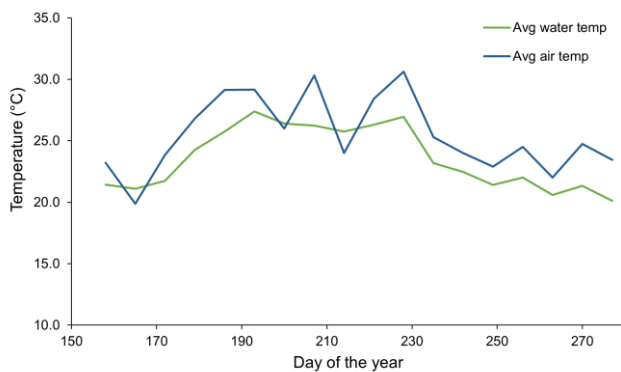


**Figure 3: Water temperature measured at 1 m depth. Top panel: Water temperature distribution by lake zone, 2019-2025. Horizontal lines and X symbols within boxes show the median and mean temperature within zones, respectively. Bottom panel: Average water temperature over the summer in 2019-2025.**

Air temperature was only measured in 2025. The average summer air temperature in 2025 was greatest in the SW section of the lake (26.7°C), followed by the NE (24.6°C), the RV site (24.7°C) and the ML site (24.6°C). The difference in air and water temperatures at the RV site is likely related to the flow of incoming water, which is typically colder than the standing water in the lake regions. Differences among lake sections should be interpreted with caution due to the different number of sites sampled.

*How did temperatures compare over the sampled years?*

Summer water temperatures were greatest in 2019 and 2020 and lowest in 2023 (average of all sites on each sampling date, RV site is excluded; Figure 3, bottom panel). Water sampling was extended into the fall in 2021 through 2025, with temperature values recorded through the end of September. Fall water temperatures were greatest in 2022. The lowest fall water temperatures were recorded in 2023, following a cool summer.



**Figure 4: Air and water temperatures, averaged across all sampling sites in 2025. The RV site is not included in averages.**

*How did air and water temperatures compare?*

Figure 4 displays a comparison of air and water temperatures across the 2025 sampling season, using averages of temperatures from all NE, SW, and ML sites on each sampling date. Water temperature was typically cooler than air temperature with the greatest difference in temperatures occurring on the July 26 sampling date; on which average air temperature was 4.1°C greater than average water temperature. Across the season air temperature averaged 1.9°C greater than water temperature, though as discussed above these differences varied by lake region.

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## SECCHI DEPTH

*Why is Secchi depth important?*

Secchi depth is a measure of water transparency. It is measured using an 8-inch diameter black and white disk that is lowered straight down into the water. The depth at which the disk disappears from view is the Secchi depth. Lakes with clear water have deeper Secchi depths than those with more murky or dark water (Figure 5).

According to the North American Lake Management Society (NALMS), a theoretical lake with pure water would have a Secchi depth of 70-80 m (or 230-262 feet). Several factors decrease water transparency in lakes, including the abundance of algae, the amount of suspended particles, and the amount and color of dissolved compounds. Secchi depth is not an exact measure of transparency and can be affected by factors such as sun glare, surface roughness, and differences among users. However, Secchi depth is an inexpensive and widely used method of monitoring changes in lake condition over time and space.

*How was Secchi depth measured?*

Secchi depth was measured by lowering a Secchi disk off the shady side of a boat or dock from a standing position until just out of sight. Depth was measured to the nearest ¼ of a meter according to a pre-marked rope.

Lake scientists often graph Secchi depth in reverse order with the surface, or zero depth, at the top of the vertical axis with depth increasing down the page (see Figure 6, top and bottom panels). This orientation is intuitive if one imagines the top of the graph as the surface of the lake.

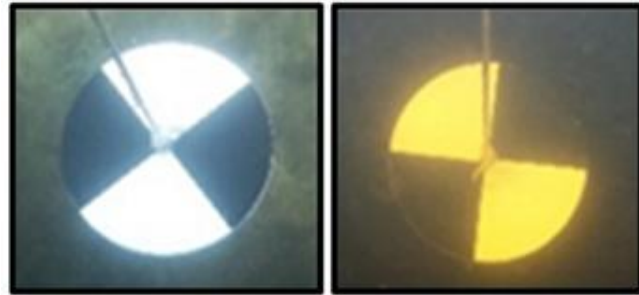


Figure 5: Secchi disk in a clear lake (left) and a dark-colored lake (right). Photo credit: Dr. Craig Williamson.

*How did Secchi depth compare among different areas of the lake?*

The NE section of the lake had the deepest average Secchi depth (1.8 m or ~5.9 feet), followed by the ML section with an average of 1.6 m (~5.3 feet; Figure 6, top panel). The SW section averaged 1.5 m (~4.9 feet). As with water temperature, differences among lake sections should be interpreted with caution due to the different number of sites sampled.

*How did Secchi depth compare over the sampled years?*

Secchi depth, averaged across all sites on a specific date, was compared across the entire sampling season, from 2019 to 2025, including fall data from 2021 to 2025 (Figure 6, bottom panel). The deepest Secchi depth, indicating the clearest water, generally occurred during early June. Secchi depth steadily decreased from early July to early September during most sampled years, with a steady or increasing level of clarity in September. In 2025, Secchi depth decreased by an average of 0.7 m between June 21<sup>st</sup> and June 28<sup>th</sup>. July 2025 average Secchi depth was the lowest (least clear) across the dataset. Secchi depth increased slightly in mid-July, then remained nearly steady through the late summer and fall.

There is a moderate negative correlation ( $r^2 = 0.38$ ) between Secchi depth and algal levels across all seven years of data,

**Deep Secchi depth means water is more clear**

**Shallow Secchi depth means water is less clear**

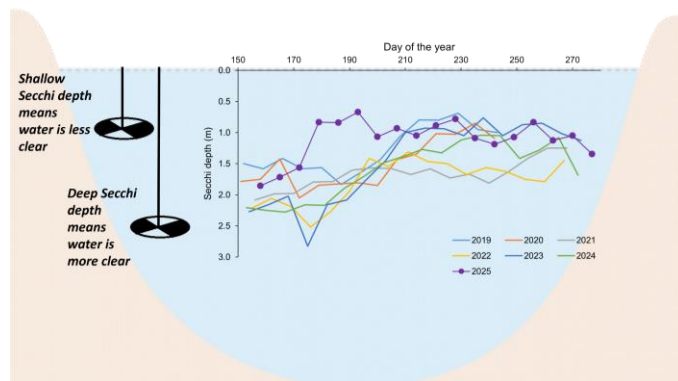
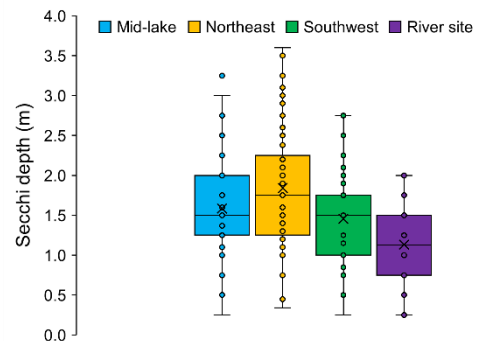


Figure 6: Secchi depth in Wallenpaupack. Top panel: Secchi depth distribution by lake zone, 2019-2025. Horizontal lines and X symbols within boxes show the median and mean Secchi depth within zones, respectively. Bottom panel: Average Secchi depth over the sampling season in 2019-2025. RV sites were excluded from data in bottom panel.

meaning that a low Secchi depth (low water clarity) is often associated with a high algal abundance. This indicates that algal levels play some role in water clarity. Water clarity is impacted by algal blooms and by boat activity, both of which tend to increase across the summer with boat activity decreasing into fall. Variability in Secchi depth from year to year is also related to precipitation differences. Heavy precipitation before a sampling date will lead to increased sediments in the water and a lower Secchi depth.

## WATER COLOR

### *Why is water color important?*

The color of lake water can be indicative of the types of compounds in the water. Lakes with few particles can appear blue because water molecules absorb longer, red wavelengths of light. Lakes with a lot of algae can appear green because algae, like terrestrial plants, contain green pigments called chlorophyll. Lakes that receive a lot of sediment can appear cloudy while lakes that have a high amount of dissolved material such as tannins may be tea-colored.

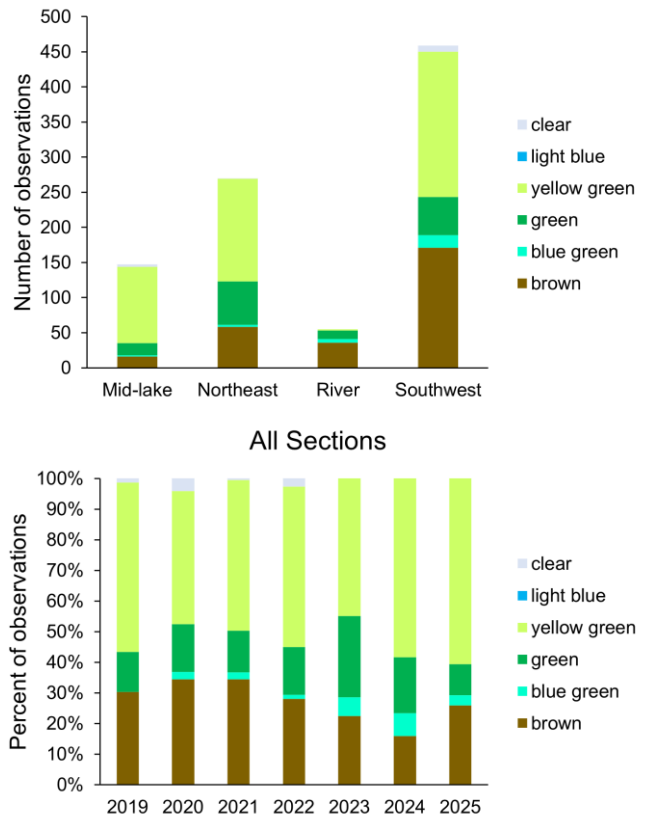
Sediment plumes or algal blooms can cause temporary and localized changes in color. Lakes experiencing eutrophication, or an increase in algal productivity, may permanently change color from blue to green. Many clear blue lakes in the Northern Hemisphere are becoming increasingly brown due to an increase in the amount of dissolved organic matter entering the lakes from their watersheds.

### *How was water color measured?*

A Secchi disk was lowered to  $\frac{1}{2}$  the Secchi depth and the color of the water covering the white sections of the disk was observed. Water color was assigned to one of the following categories according to a standardized color chart: “clear”, “blue”, “blue/green”, “yellow/green”, or “brown”<sup>1</sup>.

### *How did water color compare among different areas of the lake?*

Again, lack of data and the different number of sites among lake sections made detecting spatial patterns of water color difficult. “Yellow-green” was the most commonly reported color in ML, NE, and SW. The color “brown” was reported most frequently in the SW section and “green” was reported most frequently in the NE. The RV site reported “brown” as the most frequent water color.



**Figure 7: Water color in Wallenpaupack. Top panel: observations by lake zone, 2019-2025. Bottom panel: frequency of each color observed in all lake zones in 2019-2025.**

<sup>1</sup> Klug et al. 2017. Tool-kit for implementing a Citizen-led Environmental Observatory (CLEO) on your lake. CES4Health.info

*How did water color compare over the sampled years?*

In general, the water color of Wallenpaupack was most frequently described as “yellow-green”, “brown”, or “green” during all seven years (Figure 7, bottom panel). The frequency at which these colors were observed were similar among the years, with “yellow-green” being most frequent in all seven years. “Blue-green” was higher in frequency in 2023 and 2024. “Clear” coloration ranged from 0.5% to 4.1% of observations between 2019 and 2022 but was not reported at all in 2023, 2024, or 2025. However, the total number of observations were different among years, with a much lower number of observations in 2023.

**ALGAL ABUNDANCE**

*Why are algae important?*

Algae, including phytoplankton, are a diverse group of aquatic plant-like organisms that use energy in sunlight to convert carbon dioxide into sugars during a process called photosynthesis. Algae are an important part of open water food webs (Figure 8). Algae provide food for microscopic animals called zooplankton, who in turn are food for fish.

Algae are also key drivers of oxygen dynamics in lakes. Many lake organisms require oxygen to breathe. Algae produce oxygen during photosynthesis. Because photosynthesis also requires light, algae are actively producing oxygen in the well-lit surface waters. When algae cells die, they sink to the dark, deep waters where they are decomposed by bacteria. Decomposition uses oxygen and the lack of sunlight prevents photosynthesis. Therefore, deep water can be depleted of oxygen.

Algae require nutrients such as nitrogen and phosphorus to grow. Human activities within a watershed such as the use of fertilizers, leaky septic systems, and changes in land use can increase the amount of nutrients in a lake and influence the amount of algae. Although algae are critical components of a healthy lake ecosystem, too much algae can be problematic. An “algal bloom” occurs when algae populations grow quickly and reach high abundances. Algal blooms can decrease water clarity and exacerbate deep water anoxia. In addition, algae called cyanobacteria are capable of producing toxins that are harmful to humans and pets.

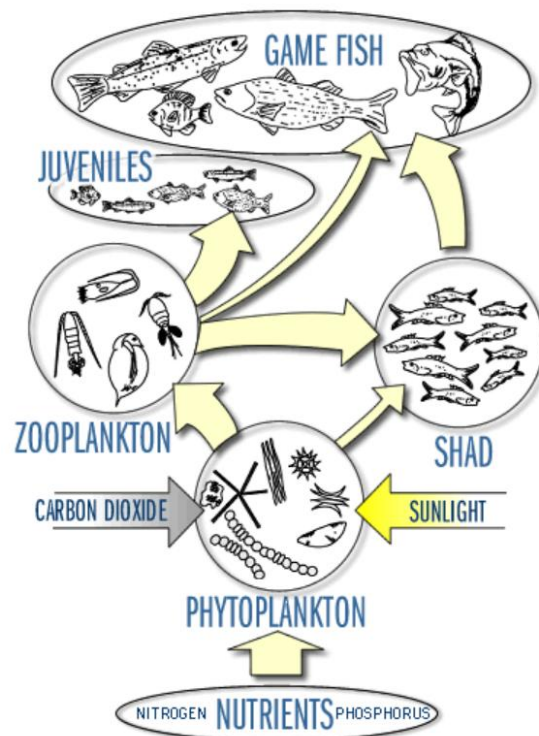


Figure 8: Basic lake food web. Figure from [www.waterontheweb.org](http://www.waterontheweb.org).

*How was algal abundance measured?*

Surface water samples (wrist deep) were collected every other week and brought to Lacawac Sanctuary, for a total of nine sampling dates in 2025. Algae were captured on glass fiber filters. Chlorophyll *a*, a pigment in algal cells, was extracted using acetone and was quantified using fluorometry, a technique where the sample is illuminated with a certain wavelength of light. When chlorophyll *a* absorbs this energy, it emits light that can be measured.

Chlorophyll *a*, expressed as a concentration (or amount per volume), is a proxy for the amount of algae in the water: the greater the chlorophyll *a* concentration, the more algae.

*How did algal abundance compare among different areas of the lake?*

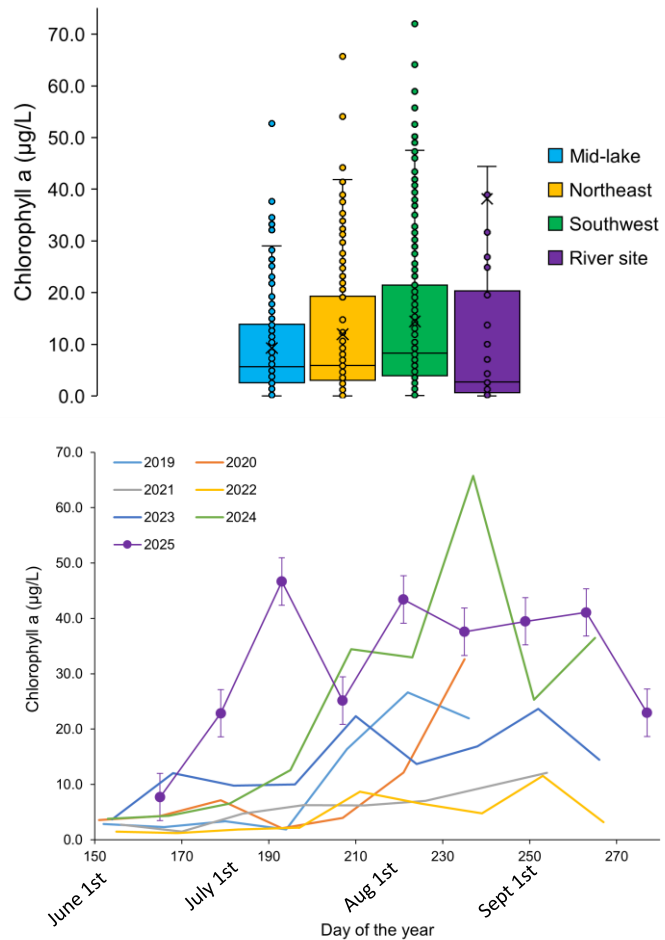
The SW section of the lake had the highest in-lake algal levels, with an average of 14.4 µg/L of chlorophyll *a* concentration across all sampled years (Figure 9, top panel). The NE section had an average chlorophyll *a* concentration of 12.0 µg/L, while the ML section had an average of 9.3 µg/L.

The RV site on the Wallenpaupack Creek was sampled from 2021 to 2025. The average chlorophyll *a* concentration across sampled years was 38.1 µg/L. One very high chlorophyll *a* concentration was obtained from the water sample taken on July 12, 2025, with a concentration of 488.9 µg/L. Two very high chlorophyll *a* concentrations were detected in 2024 as well (on July 27, 2024 at 251.5 µg/L and August 26, 2024 at 317.2 µg/L). In years prior to 2024, the RV site had the lowest average chlorophyll *a* concentration of 4.2 µg/L (average of 2021 to 2023 only).

The amount of algae can vary over space for several reasons. There may be point source nutrient inputs that affect localized areas of the lake. Algae can also be pushed to one area by prevalent winds and waves.

*How did algal abundance compare over the sampled years?*

Average algal abundance across 2025 was greater than other sampled years, with concentrations exceeding all other years of data on 5 of 9 sampling dates (Figure 9, bottom panel). This trend remains even when excluding the very high Wallenpaupack Creek algal levels. Algal abundance on two sampling dates was exceeded only in 2024; previously the year with the greatest average algal abundance.



**Figure 9: Algal abundance in Wallenpaupack as chlorophyll *a* concentration.** Top panel: Chlorophyll *a* distribution by lake zone, 2019-2025. Horizontal lines and X symbols within boxes show the median and mean concentration within zones, respectively. Outliers for the River Site in 2025 are not shown. Bottom panel: Average chlorophyll *a* concentration over the sampling season in 2019-2025. Vertical lines are standard error. RV sites were excluded from data.

## VISUAL ASSESSMENT OF ALGAL BLOOMS

### *Why is looking for algal blooms important?*

Algal blooms occur when algae populations rapidly achieve high abundances. Blooms can be visible in or on the water (Figure 10). Blooms that cause direct or indirect harm to humans or other animals are called “harmful algal blooms” or HABs. HABs can be aesthetically displeasing, release unpleasant odors, or impair recreation. HABs can exacerbate oxygen depletion in lakes because decomposition is a process that uses oxygen. When a HAB dies and decomposes, the decrease in oxygen can be severe, leading to fish kills and dead zones.

Some algae are capable of producing toxins that affect humans, pets, and wildlife. In freshwater, toxic HABs are commonly made up of cyanobacteria, also called blue-green algae. As a group, cyanobacteria can produce many types of toxins that affect the nervous system, liver, kidneys, and skin. The only way to know if a HAB is composed of cyanobacteria is to look at the algae using a microscope and the only way to know if cyanobacteria are producing toxins is to measure the toxin concentration in the water. However, visual assessment is often used to quickly identify *potential* toxic HABs.

### *How were algal blooms visually assessed?*

Participants could record their observations of algae in the water column and at the surface by choosing from a list of options (Figure 11). Participants could select more than one option and could include a photograph. This data was recorded from 2020 to 2025.



**Figure 10: Photos of visual algal blooms in 2025. Left: Photo displaying green color of lake at the Managan Cove sampling site in the north-eastern section of the lake on September 5, 2025. Algae was described as consisting of both dots/clumps and spilled paint. Photo by Marge Black. Right: Algae with the appearance of spilled paint at the Ledgeale dock site, on the southwest section of the lake. Photo by Theresa Black, taken on August 22, 2025.**

### *How did visible algal blooms compare over the sampled years?*

Comparisons of visible algal blooms (which included all descriptions listed in Figure 11 except “nothing”) between 2019 and 2025 are difficult due to differences in the number of sampling sites between the years. Sampled sites ranged from a low of 52 visual assessments of algae in 2023 to 265 visual assessments in 2021. However, the data point to some potential differences over time and space that further monitoring may clarify.

Visible algae were present in 65% of the assessments done in 2025, compared to 50% in 2024, 77% in 2023 (as discussed previously, there was a low number of observations in this year), 44% in 2022, 29% in 2021, and 31% in 2020 (Figure 12). There is an increase in observations of visible algae over time, although more data will need to be

collected to determine if this is a trend. Breaking up these data by location, NE sites have consistently had a greater percentage of visible algae observations relative to sites in the SW section of the lake. The most common description of algae appearance across all locations was “dots/clumps”.

Description	
<b>On the Surface</b>	<b>In the Water</b>
<input type="checkbox"/> Streaks	<input type="checkbox"/> Thick soup
<input type="checkbox"/> Dots or clumps	<input type="checkbox"/> Dots or clumps
<input type="checkbox"/> Spilled paint	<input type="checkbox"/> Nothing
<input type="checkbox"/> Full scum	<input type="checkbox"/> Other
<input type="checkbox"/> Duckweed/watermeal	
<input type="checkbox"/> Nothing	
<input type="checkbox"/> Other	

Figure 11: Standardized descriptions of algae on the surface and in the water column for visual assessment.

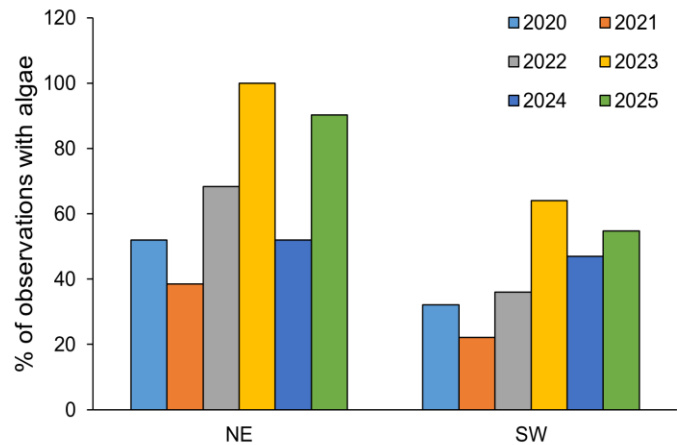


Figure 12: Observations of algae on surface and in water column. Top panel: total observations of algae on each 2025 sampling date. Middle panel: Percentage of observations with algae on each 2025 sampling date. Bottom panel: Percentage of observations with algae by year, over the entire sampling season 2020-2025.

**RECREATIONAL SUITABILITY**

Participants utilizing the Lake Observer website to document conditions were asked to rank the recreational suitability of the lake at their specific location and date. Participants chose from a list of five options (Table 1). For clarity, these options have been summarized for the tables below.

Table 1: Recreational Suitability Options on Lake Observer.

Recreational Suitability Option	Summary Term
Beautiful, could not be better	Ideal
Very minor aesthetic problems; excellent for swimming, boating	Minor aesthetic impairment
Swimming and aesthetic enjoyment slightly impaired because of algae levels	Moderate impairment
Desire to swim and level of enjoyment of the lake substantially reduced because of algae levels (but boating is okay)	Substantial impairment to use
Swimming and aesthetic enjoyment of the lake nearly impossible because of algae levels	Substantial impairment to use

*How did reported recreational suitability change over the sampled years?*

Recreational suitability of the lake was recorded by citizen scientists from 2020 to 2025. Although these data are subjective, there are some interesting trends across these five years of recorded data. It’s important to note that the number of recorded observations vary greatly by year. These numbers are included in Table 2. Participants observed fewer ideal conditions after 2022 (Table 2). Minor impairments increased by about 10% from 2022 to 2023 and 2024. Both minor and moderate impairments decreased in 2025, compared to previous years. Reports of substantial impairment to use increased greatly in after 2022, with the greatest percentage of observations of substantial impairment in 2025 (it’s worth noting that there were fewer observations in that year as shown in Table 2).

**Table 2: Recreational Use Conditions by year, 2020-2025, given as percentage of each reported condition and total number of observations in sampling season.**

	2020	2021	2022	2023	2024	2025
<b>Ideal</b>	35%	34%	39%	4%	10%	17%
<b>Minor aesthetic impairment</b>	37%	35%	33%	45%	44%	29%
<b>Moderate impairment to use</b>	18%	25%	28%	17%	13%	9%
<b>Substantial impairment to use</b>	11%	6%	0%	34%	33%	46%
<b>Total observations in calendar year</b>	57	77	57	47	39	35

*How did reported recreational suitability change over the course of the summer?*

Table 3 includes the total number of observations of each recreational use condition reported by month from 2020 to 2025. Reports of ideal conditions decreased through the summer into fall, while substantial impairment was reported with increasing frequency each season. Although this is subjective, data indicates that those using the lake find conditions to be less suitable in late summer and early fall.

**Table 3: Recreational Use Conditions by month, sum of total observations 2020 through 2025.**

	Ideal	Minor	Moderate	Substantial	Total Observations
<b>June</b>	41	23	14	3	81
<b>July</b>	20	37	18	13	88
<b>August</b>	13	29	17	19	78
<b>September</b>	6	25	11	21	63

## LOOKING FORWARD: WALLENPAUPACK COMMUNITY SCIENCE PROGRAM

### HOW TO JOIN THE CREW

We are always accepting volunteers for the next sampling season! The program requires sampling from the same location(s) every Saturday during June, July, August, and, if possible, September. Water samples collected bi-weekly need to be brought to Lacawac Sanctuary or a pre-determined drop-off location within 24 hours of collection. Missing a few sampling dates is ok, but remember that the more data you collect, the stronger the conclusions we can make.

Sampling methods are easy to learn and are appropriate for school age children and adults of all ages. This program makes a great summer school science project or a citizen science participation badge.

#### *How to join:*

Scheduled training events will be offered at Lacawac. Check the citizen science website for details:

<https://www.lacawac.org/citizen-science.html>

Or, if you cannot attend a scheduled event, contact Theresa Black to arrange a training session. Trainings include a brief introduction to lake ecology, instructions on how to use the Lake Observer app, and hands-on training in proper sampling methods.

Each participant will receive a sampling kit following the training. If you have participated previously and already have a kit, PLEON will provide you with a “kit refill”, which includes a sampling schedule and clean bottles, labels, and baggies for water sample collection.

The training workshops are free of cost. We kindly suggest a \$50 donation for new kits and a \$15 donation for kit refills. Donations help offset the cost of sample analysis.

### Questions about PLEON or the Wallenpaupack Citizen Science Program?

Contact: Theresa Black, PLEON Manager at Lacawac Sanctuary

[theresa.black@lacawac.org](mailto:theresa.black@lacawac.org)

570-689-9494