

# BBLA Water Quality Reporting

## OVERVIEW

- 1) Water testing performed seasonally from May to October (twice monthly) by BBLA volunteer team
  - 1a) Test team is certified annually by Lake Stewards of Maine personnel
  - 1b) Test results are reviewed by Lake Stewards of Maine before submission to Maine DEP
- 2) Parameters measured: Water Clarity (by "Secchi disk"), Dissolved Oxygen, Total Phosphorous, Chlorophyll A (once annually in August)
- 3) All the measured parameters can vary season-to-season and month-to-month primarily driven by weather conditions (amount of rainfall, air temperature, pollen, etc)

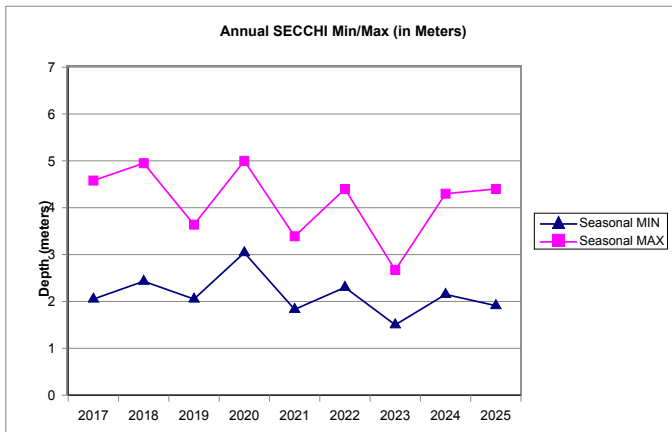
### Results Quick View

	Historical Avg	2025 Range	Notes
Clarity	3 m	1.9 to 4.4 m	
Phosphorous	14 to 18 ppb	11 to 21 ppb	on Lake
Chl-A	5 to 12 ppb	4 ppb	ppb = parts per billion

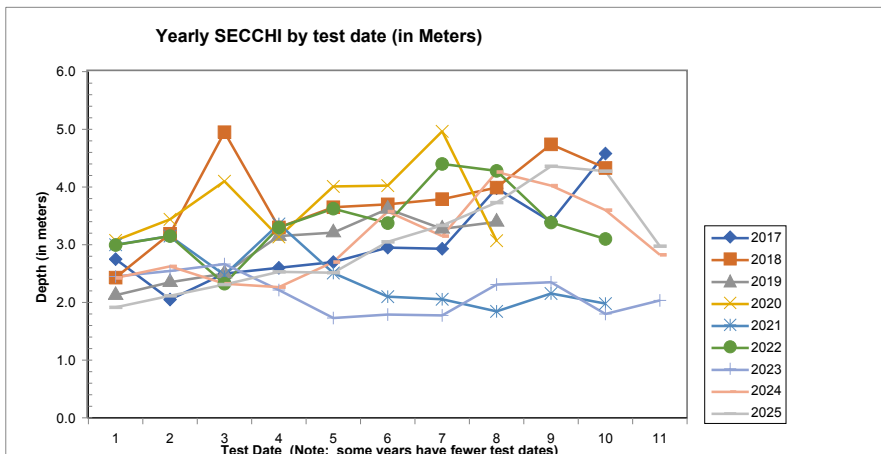
## WATER CLARITY

Water clarity is established by how deep a black & white Secchi disk is visible from the surface  
 Water clarity is mainly related to the amount of rainfall (more rain = poor clarity; less rain = improved clarity)  
 Note that Bauneg Beg Lake water has a brown tint due to staining from leaves and pine needles  
 The brown color does result in decreased visibility vs clear lakes but does not indicate a problem with water quality

The chart below shows the minimum and maximum visibility depth measured each season



The chart below shows that for most years, the Secchi disk is visible to a depth of approx 3 to 4 m depth  
 Recently, 2 years stand out (2021 & 2023) as poor clarity due to cool, wet summers



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## DISSOLVED OXYGEN

Dissolved oxygen is a measure of the amount of oxygen in the water that is available for fish and other wildlife. The oxygen is measured at various depths using a special sensing meter. The team is re-certified on use of the meter and the measurement technique annually.

Dissolved Oxygen is directly related to water temperature. Colder water at greater depths is not able to hold as much oxygen as warmer water. The charts below show the measured dissolved oxygen at various depths (in meters) at various times of the season.

What does the plotted data tell us ?

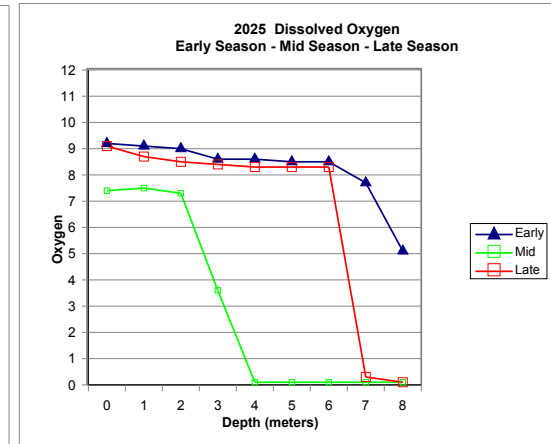
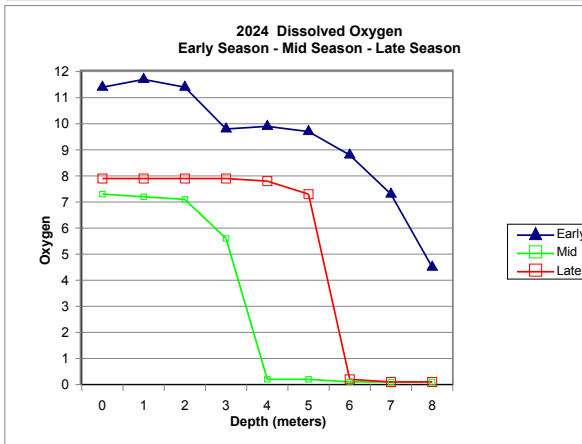
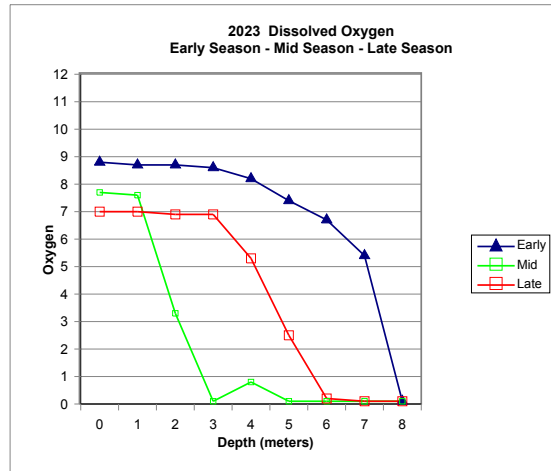
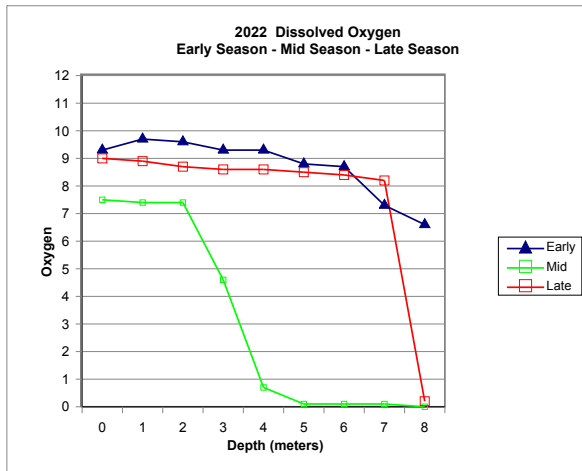
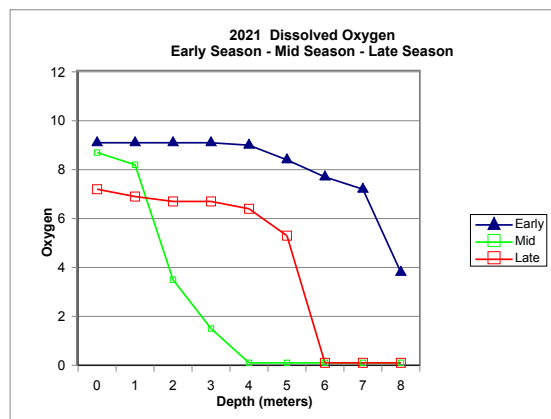
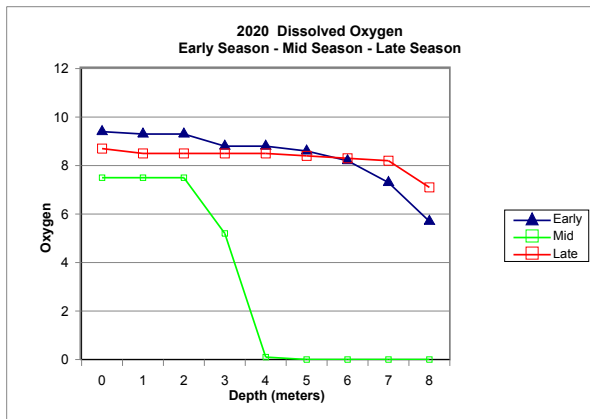
Typically in Early season, the lake water is just beginning to form thermal layers which results in a more uniform amount of dissolved oxygen (Blue plot line). By Mid season, the lake has warmed and distinct thermal layers have formed, resulting in a significant reduction in oxygen at greater depths (Green plot line). In Late season, the lake has cooled and much of the thermal layering has disappeared, yielding oxygen levels more like the Early spring (Red plot line).

The 2020 chart is a good example of "expected" behavior but the other charts indicate that thermal layering varies from year-to-year.

Note: Dissolved Oxygen data is plotted for "Early Season" (May), "Mid Season" (July), and "Late Season" (Oct)

Limiting the plotted data allows for observing seasonal trends which are difficult to see if all data is plotted.

Note: For 2024, the Blue early season data is likely faulty for 0, 1, and 2 meters. That data seems inconsistent with other years and with 2024 at other depths.



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### TOTAL PHOSPHOROUS

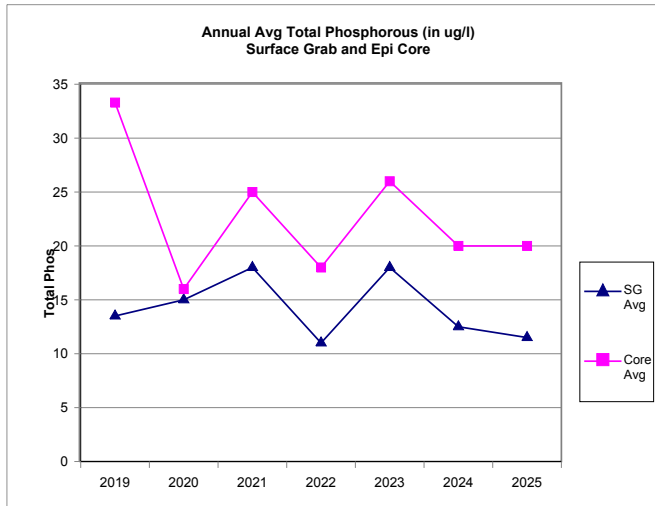
Phosphorous levels are one way to measure the lake's potential to support plant life and algae

Phosphorous samples are typically taken during July/Aug/Sept on the lake

Samples are also taken annually on 2 tributaries flowing into the lake plus the phosphorous barrier off Country Club Rd

Typically, 2 samples are taken each time: water grabbed from the surface ("SG") & a core of water taken to around 3m to 4m depth ("Epi Core")  
The samples are then mailed or driven to the Dept of Environmental Testing Lab in Augusta for analysis.

Generally, the surface sample yields lower phosphorous levels than the core sample



### CHLOROPHYLL A

Chl A is another measure of the lake's ability to support plant life and algae.

CHL A	in ppb
2019	5
2020	3
2021	
2022	
2023	7
2024	5
2025	4.1

historical avg 5 to 12 ppb