

2023 Canandaigua Lake Sampling and Monitoring Program

Report to the Canandaigua Lake Watershed Council
June 5, 2024

Patty Rockwell, M.S.

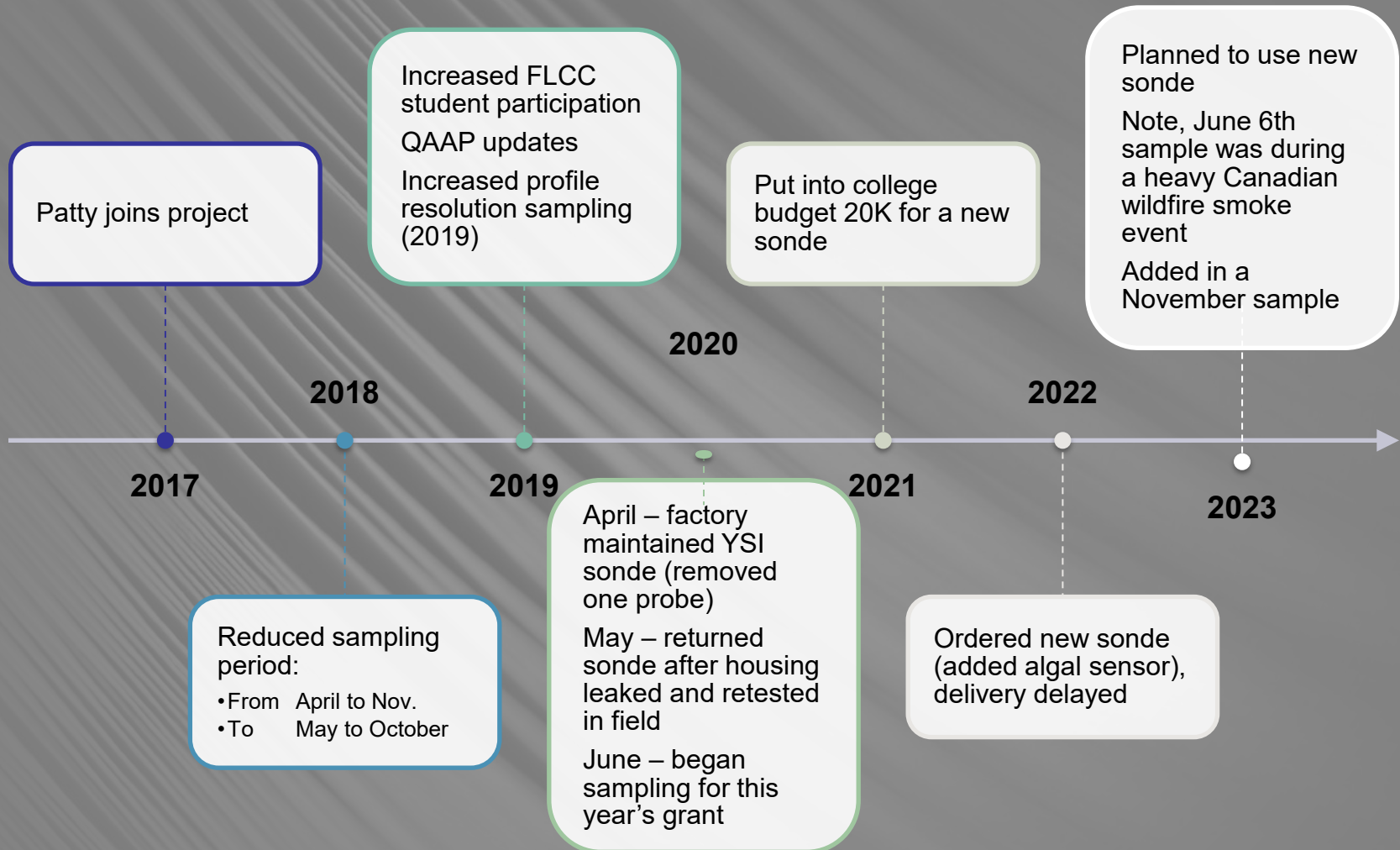
Associate Professor of Environmental Conservation



Program Background

- Program in it's 29th year (1996 – 2024)
- FLCC's role
- Lake attributes that are monitored each year since 1996:
 - Water clarity (secchi disk)
 - Lake algal productivity (chlorophyll-a)
 - Lake nutrients (Phosphorus)
 - Water quality profiles: temperature, dissolved oxygen, pH, conductivity

Program Notes



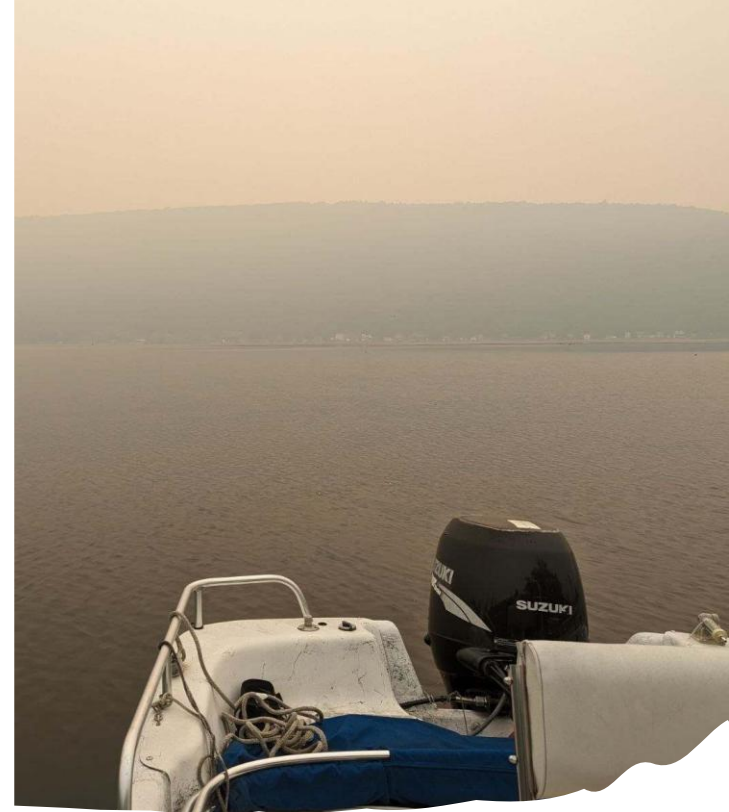
This map illustrates the Connecticut River watershed, with the river itself highlighted in blue. The river flows from the north (top) towards the south (bottom). Key towns labeled on the map include Canandaigua, Hopewell, Bristol, Gornham, South Bristol, Middlesex, and Potter. The map is overlaid with a grid of roads, many of which are labeled with numbers in small boxes (e.g., 30, 32, 16, 21, 22, 18, 247, 11, 32, 10, 31, 21, 64, 12, 21, 245, 364). Several black arrows point from the right side of the map towards the river, indicating specific locations or features of interest. The map also shows numerous smaller, unlabeled towns and a complex network of roads and waterways.

Hope Point (HP)

mid-lake locations

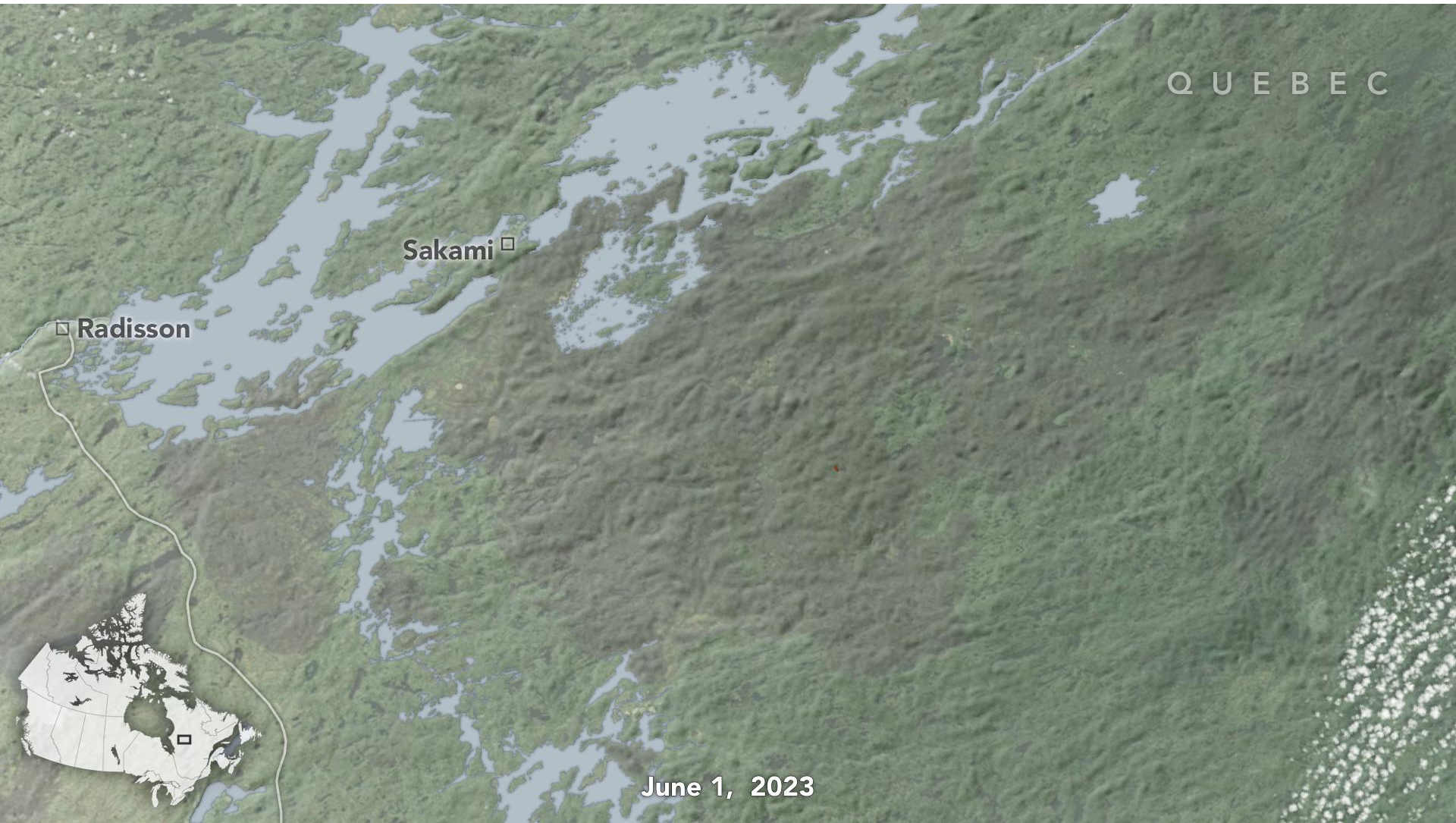
Vine Valley (VV)

West River (WR)



June 6, 2023 ...
Canadian Wildfires





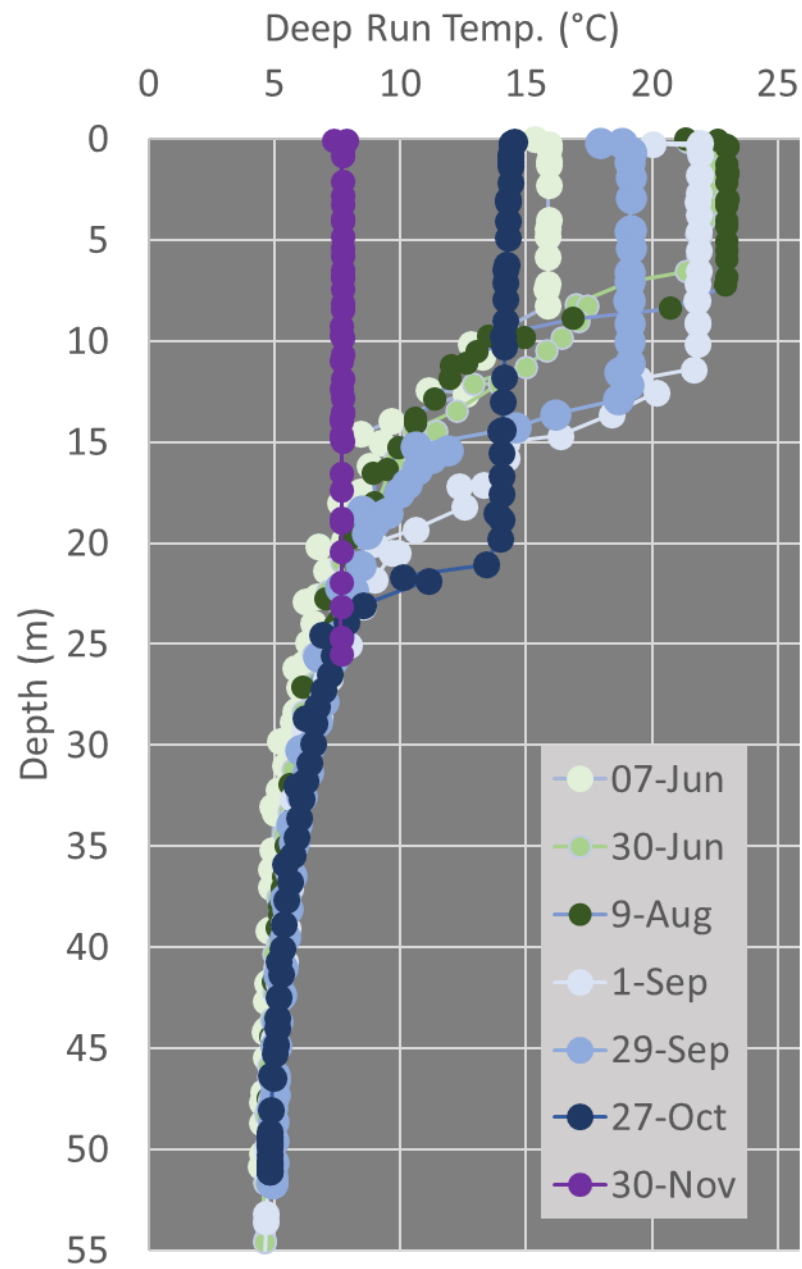
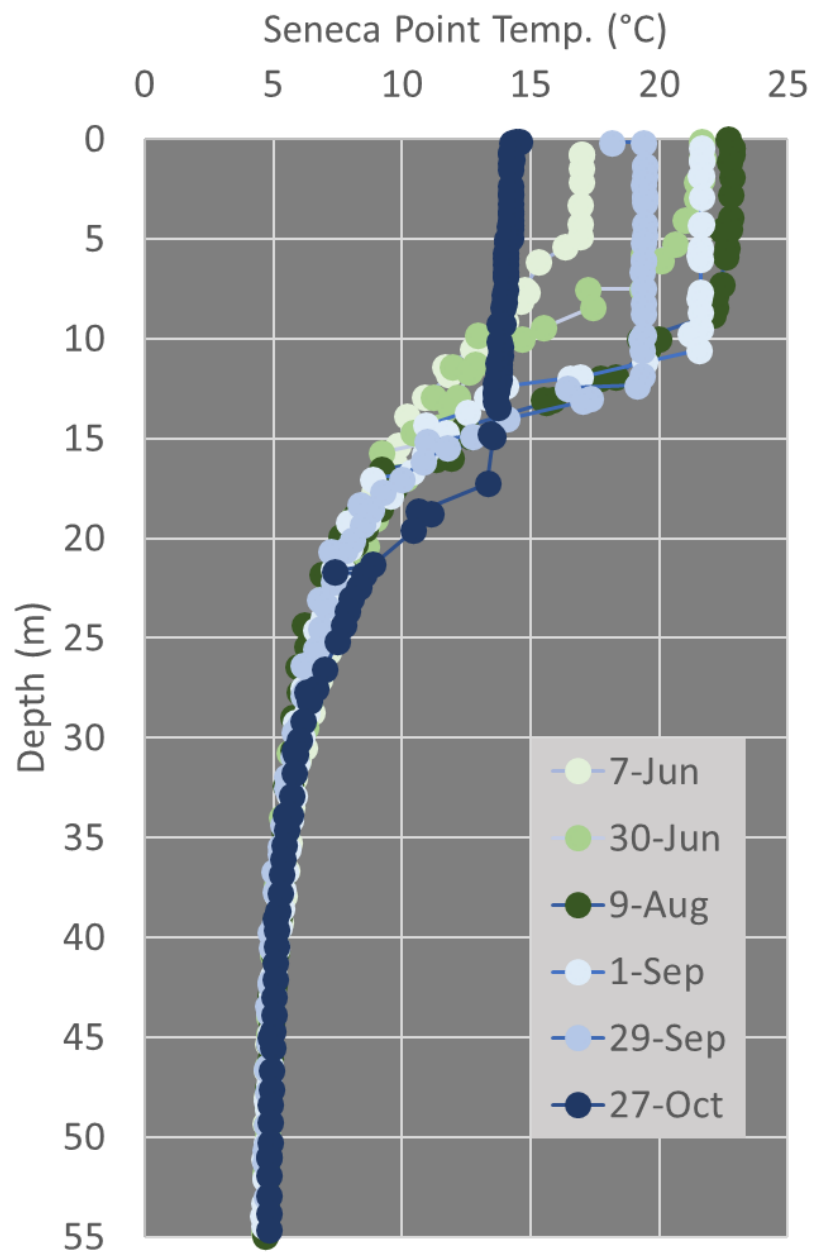
QUEBEC

Sakami

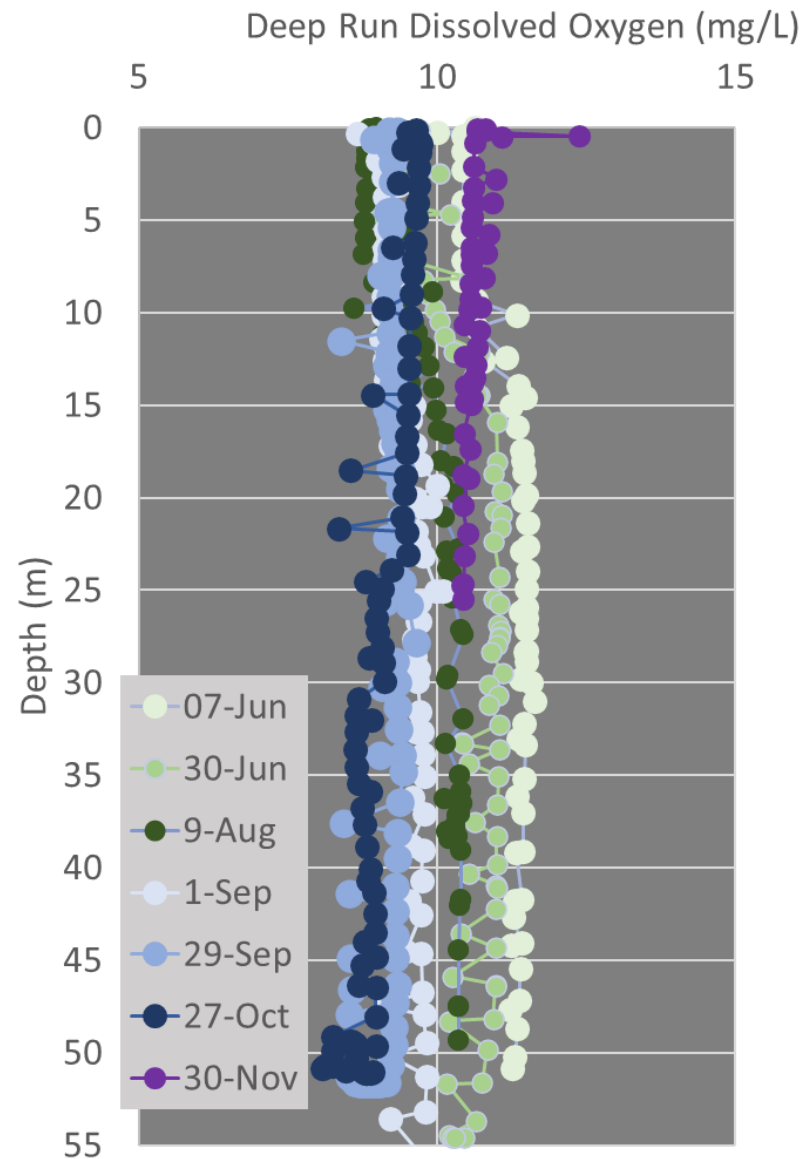
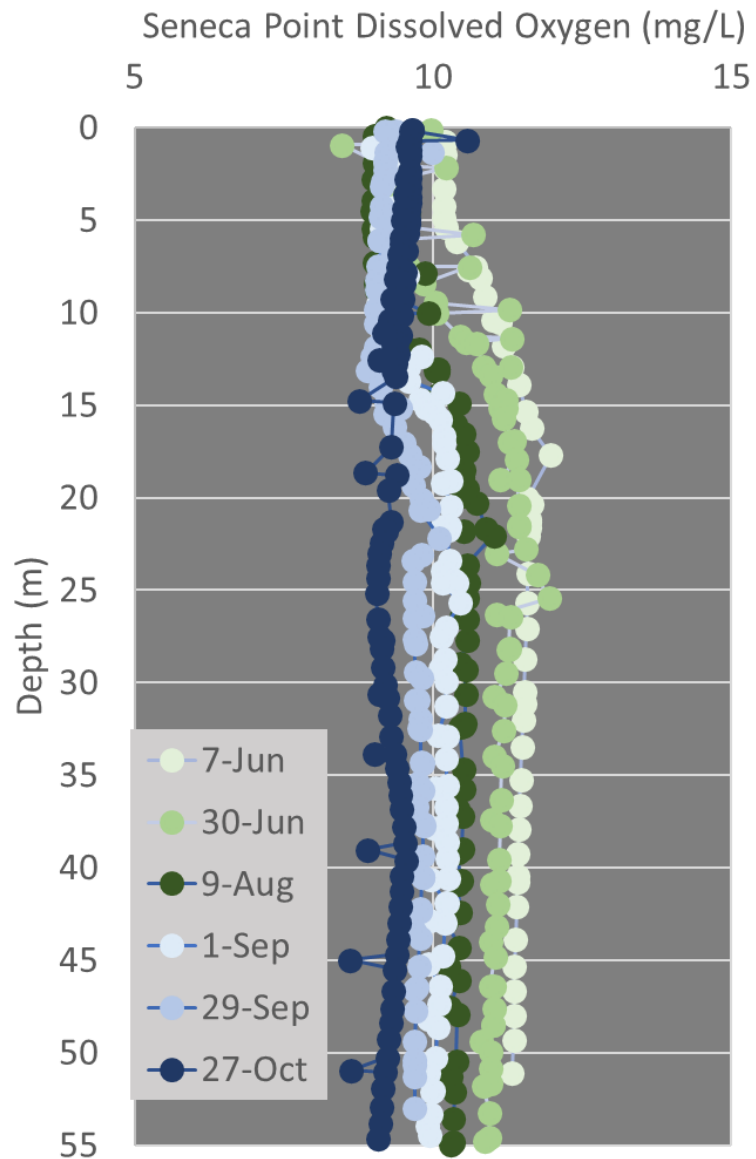
Radisson

June 1, 2023

2023 Temperature profiles

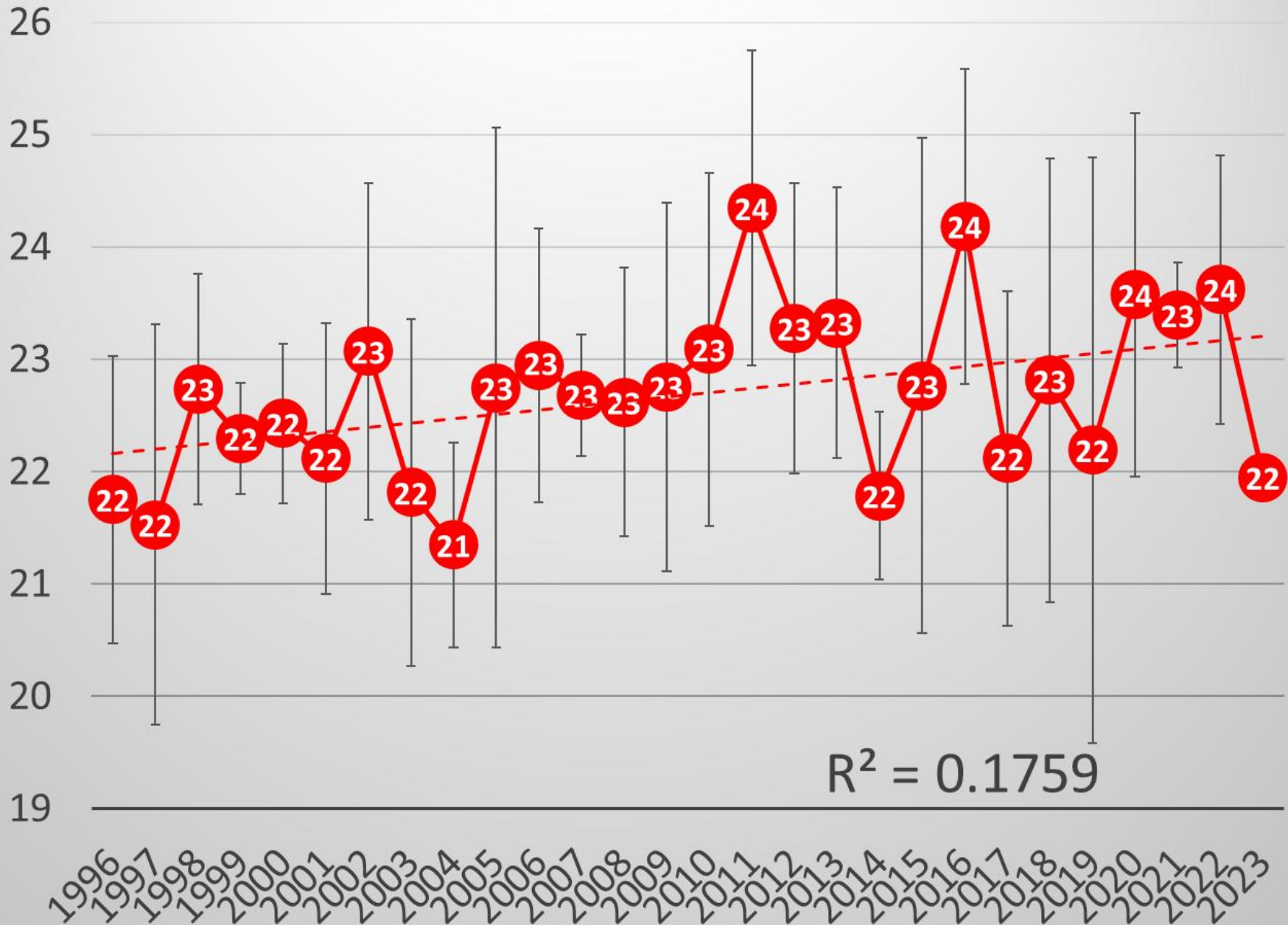


2023 Dissolved Oxygen profiles



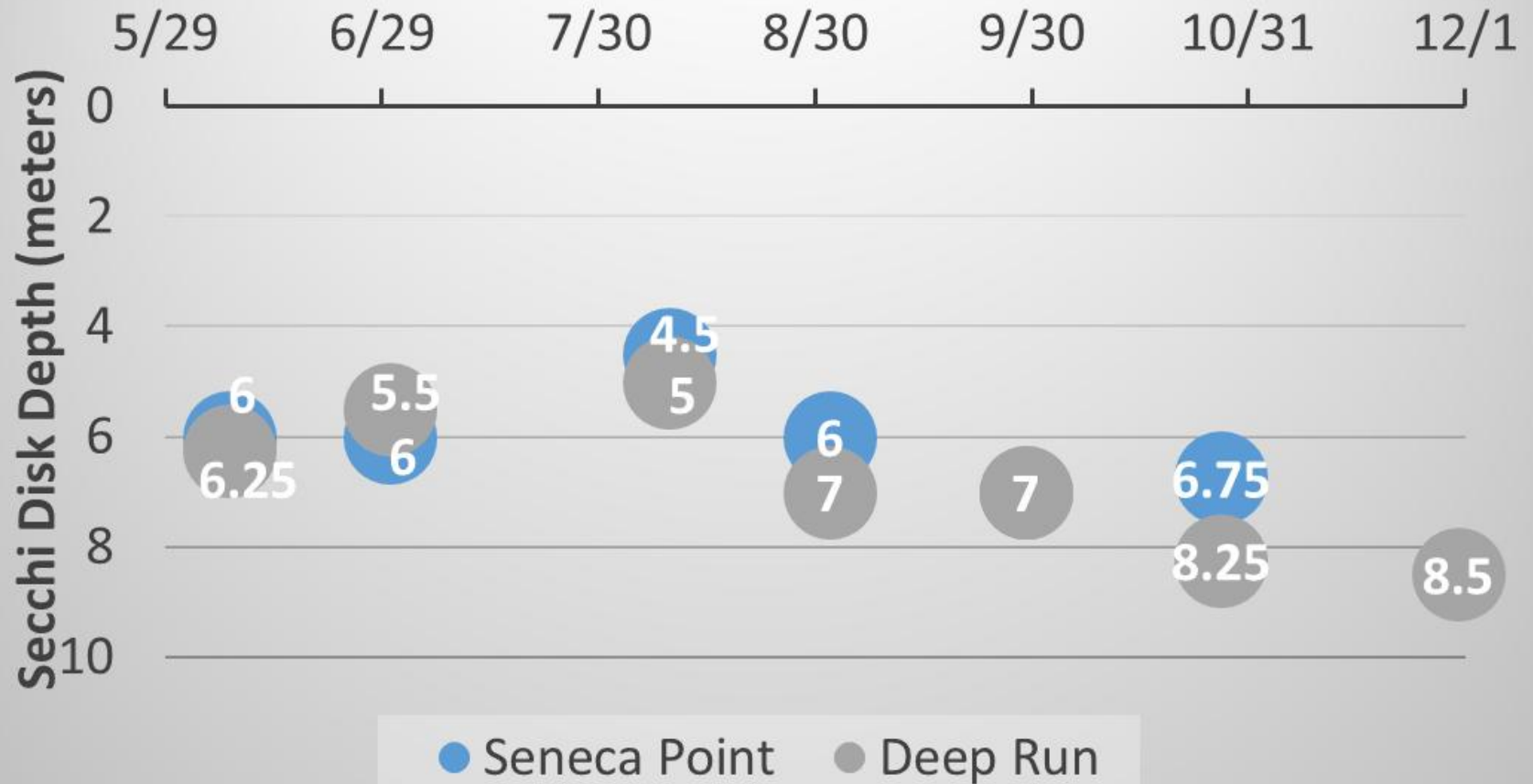
Summer Surface Temperatures (1996 - 2023)

June, July, August Temperature (C°)

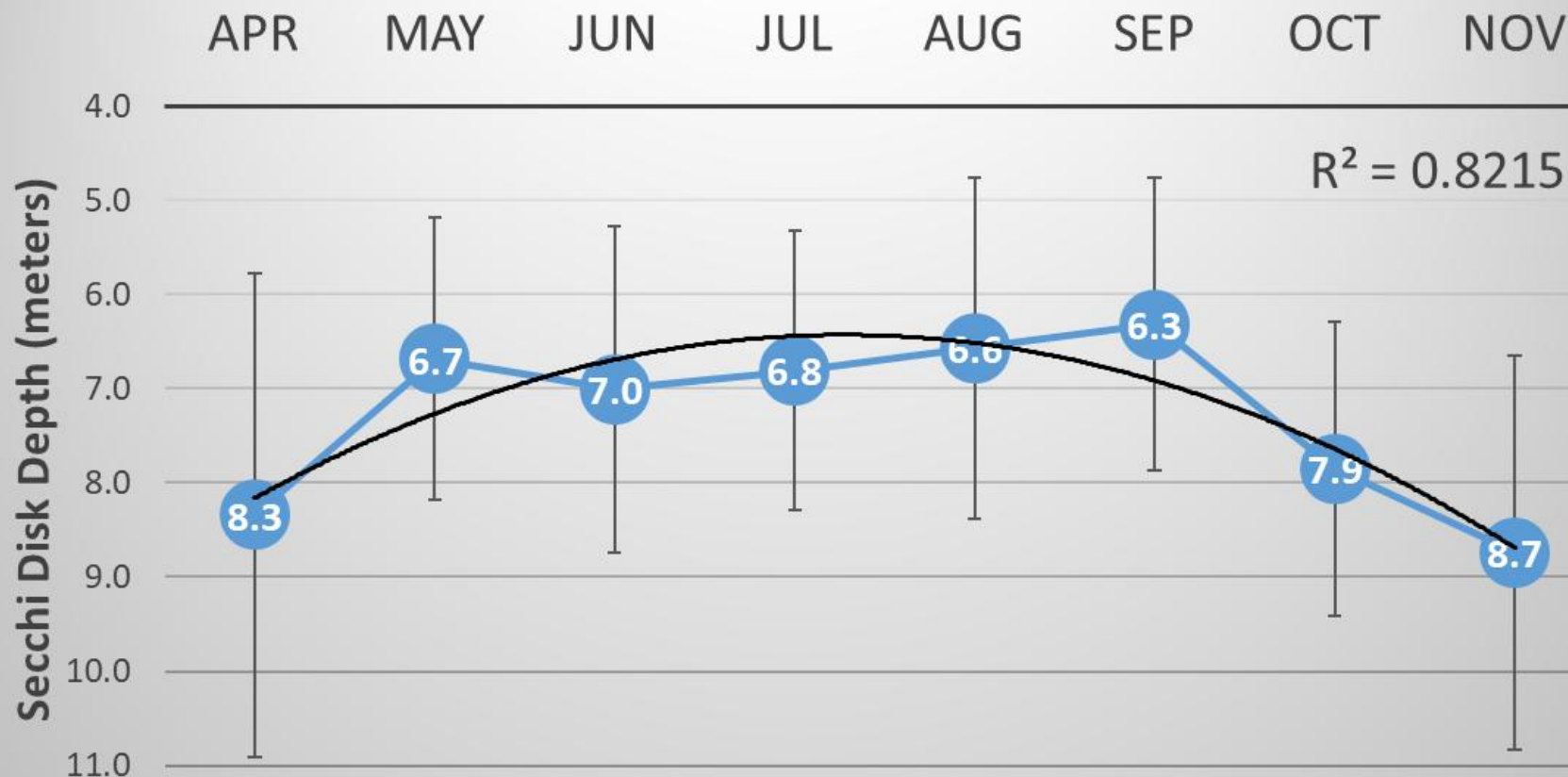


Lake Clarity

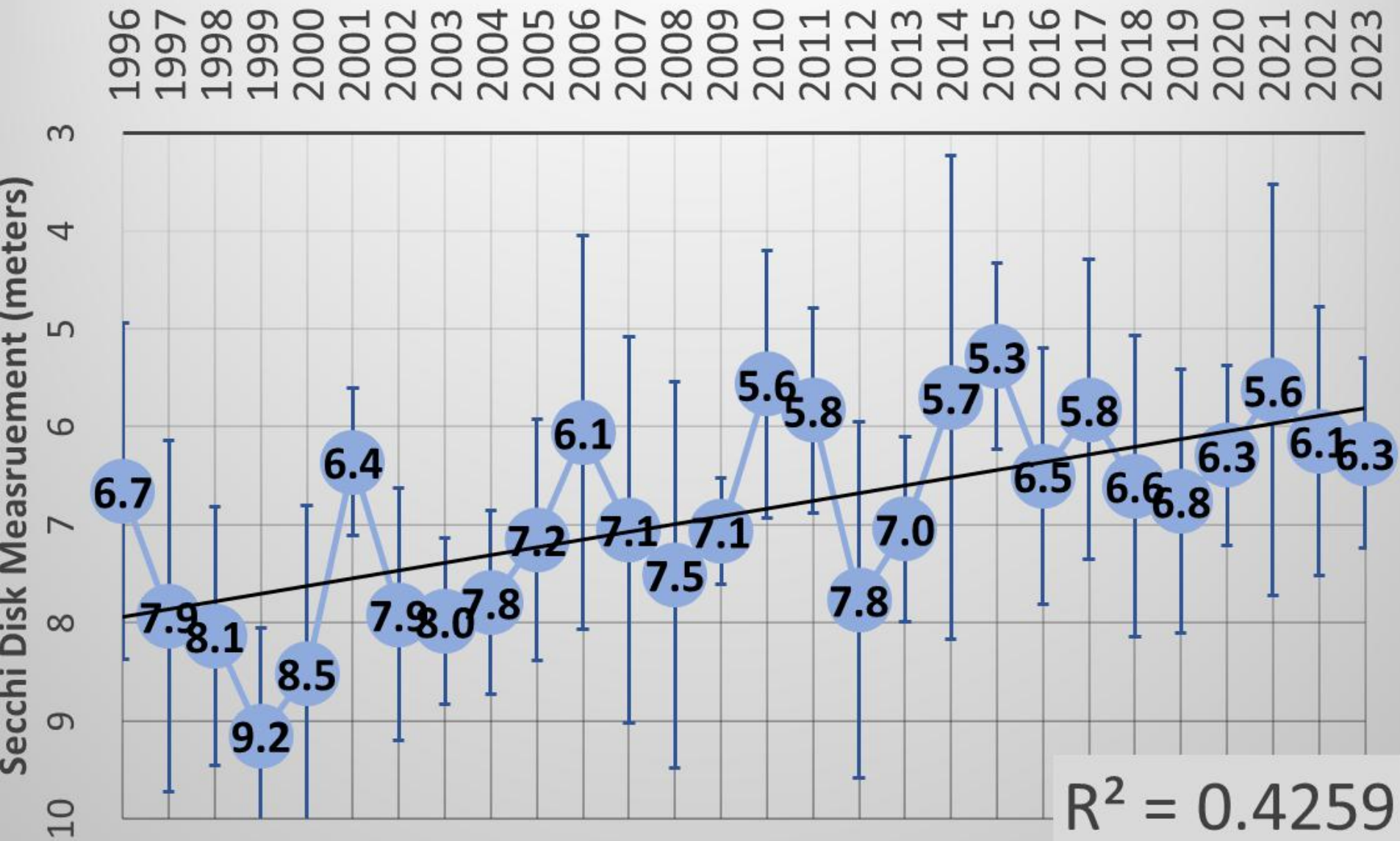
2023 Secchi Disk Measurements (meters)



Seasonal Mean Lake Clarity (1996-2023)



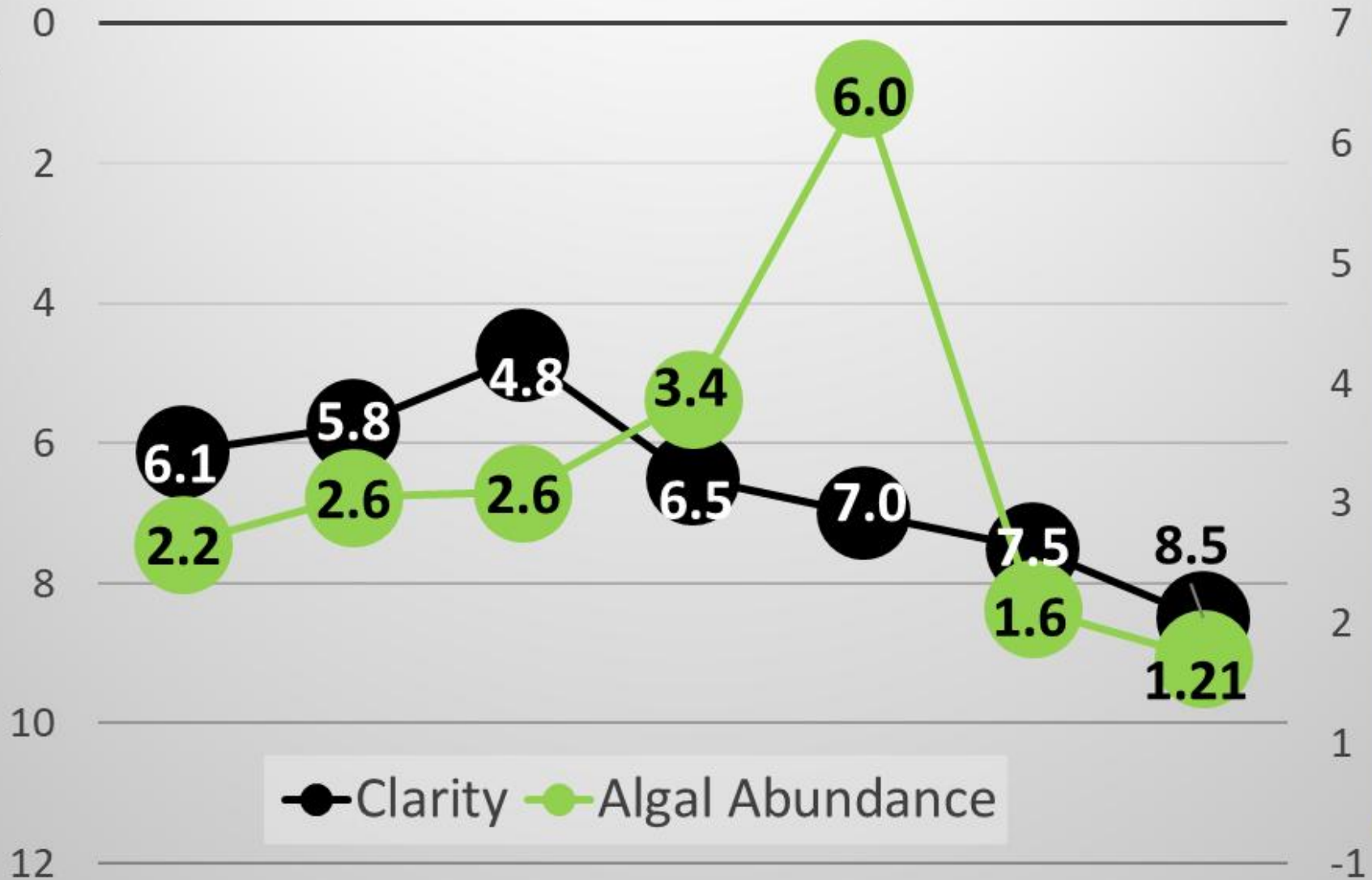
Summer Mean Lake Clarity (1996 - 2023)



Clarity versus Algal Abundance (2023)

MAY JUN JUL AUG SEP OCT NOV

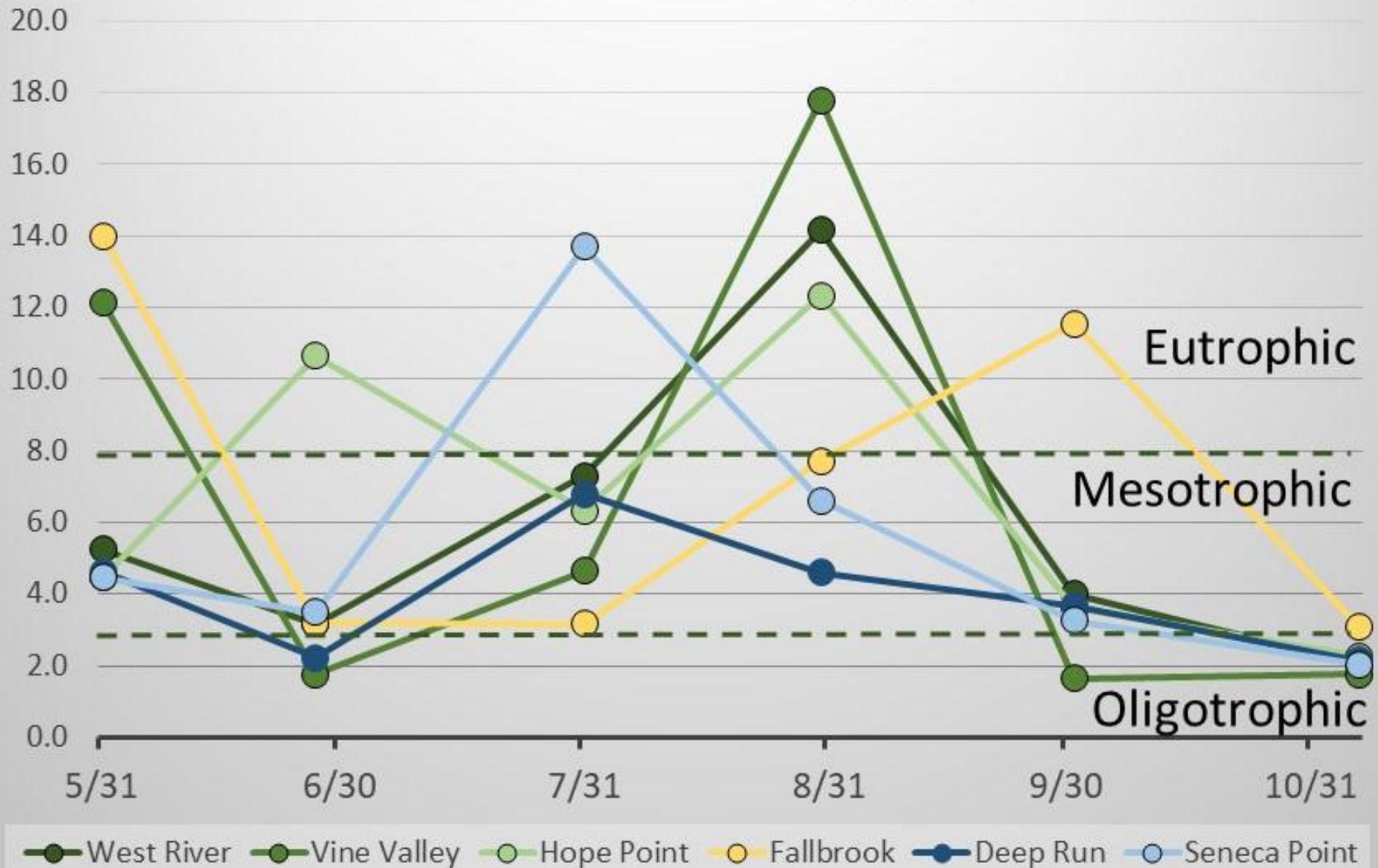
Secchi Disk Measurement (meters)



Chlorophyll-a Measurements (ug/L)

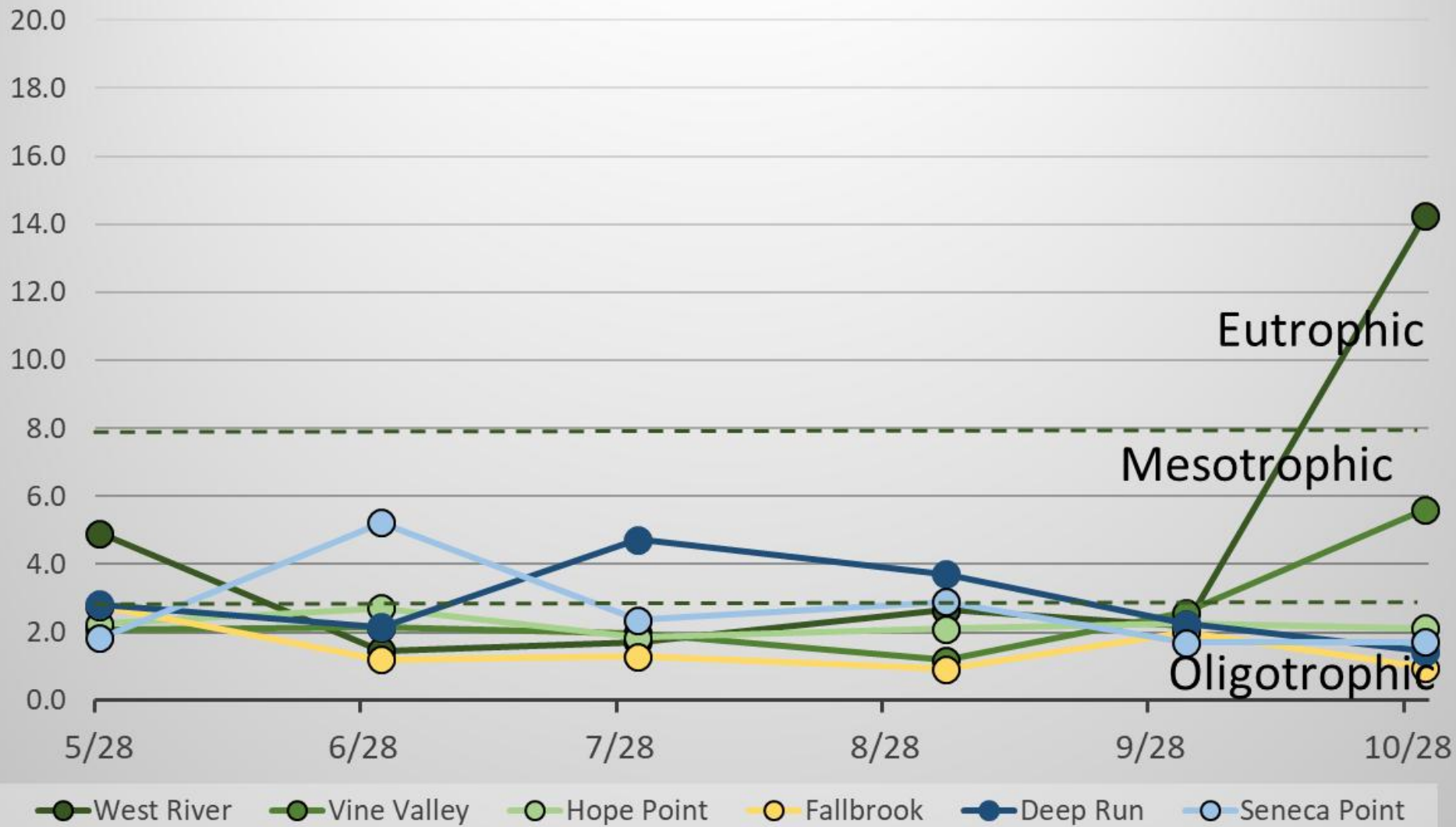
2019 Seasonal Algal Abundance

Chlorophyll-a (ug/L)



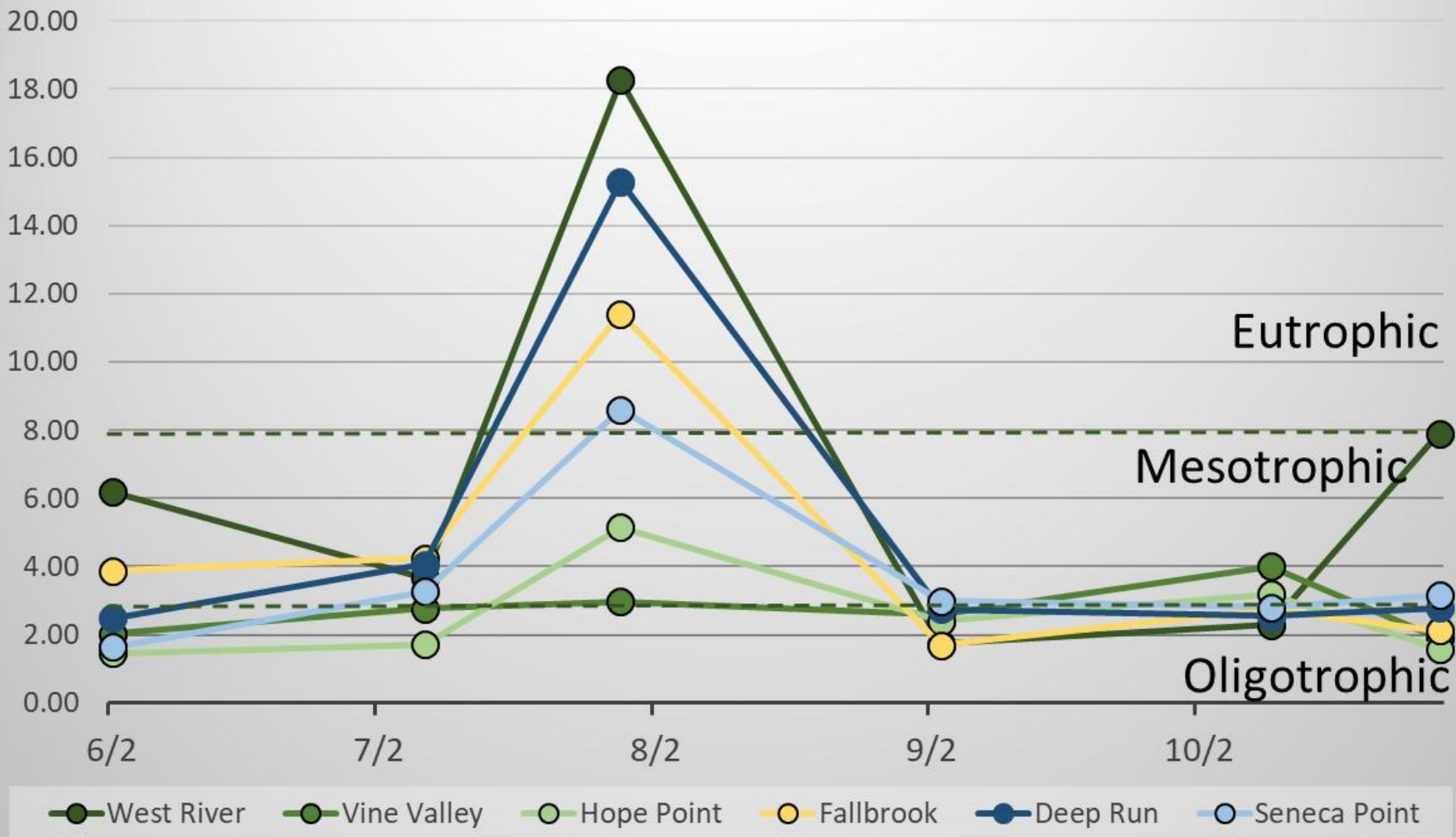
2020 Seasonal Algal Abundance

Chlorophyll-a (ug/L)



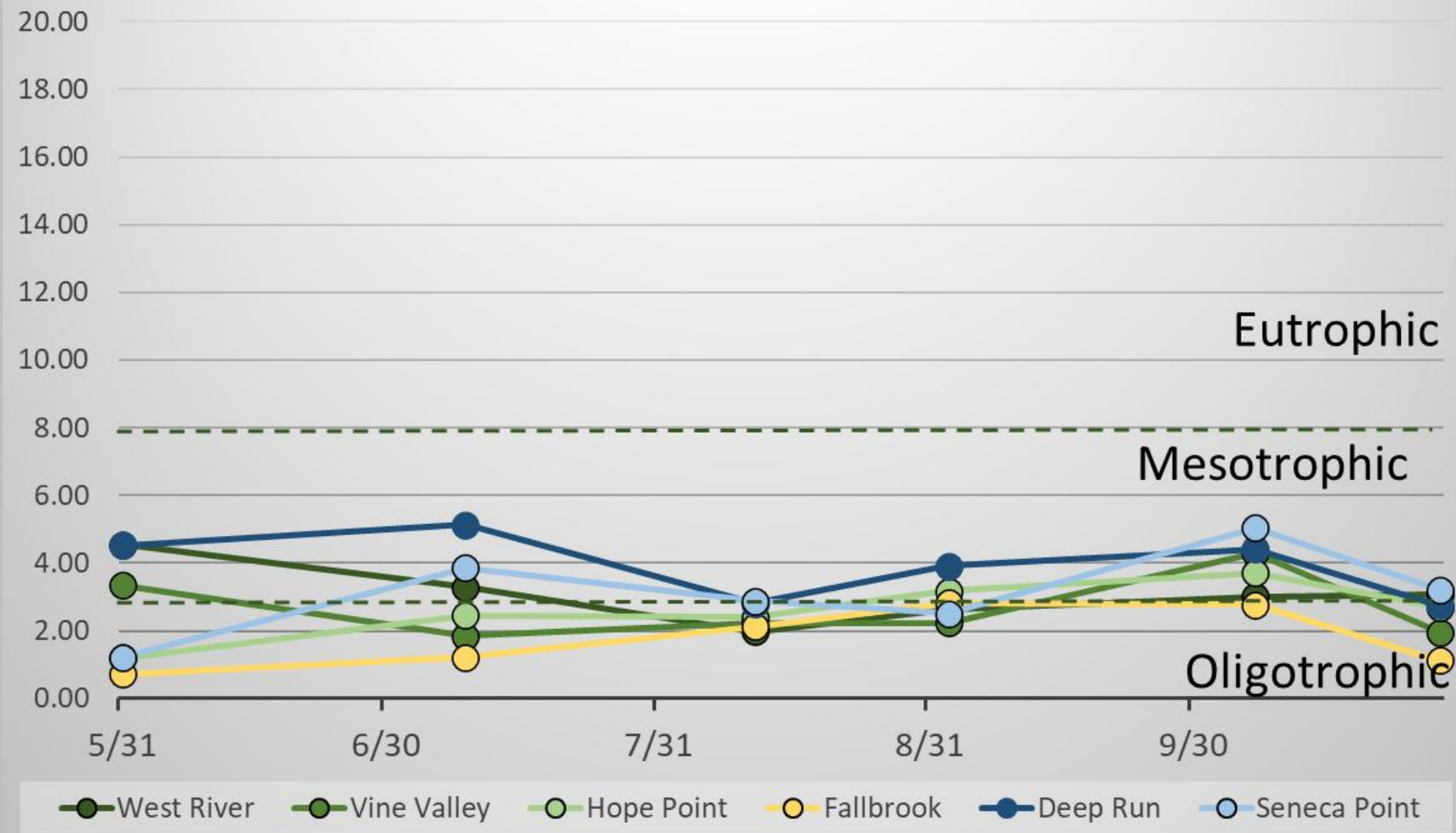
2021 Seasonal Algal Abundance

Chlorophyll-a (ug/L)



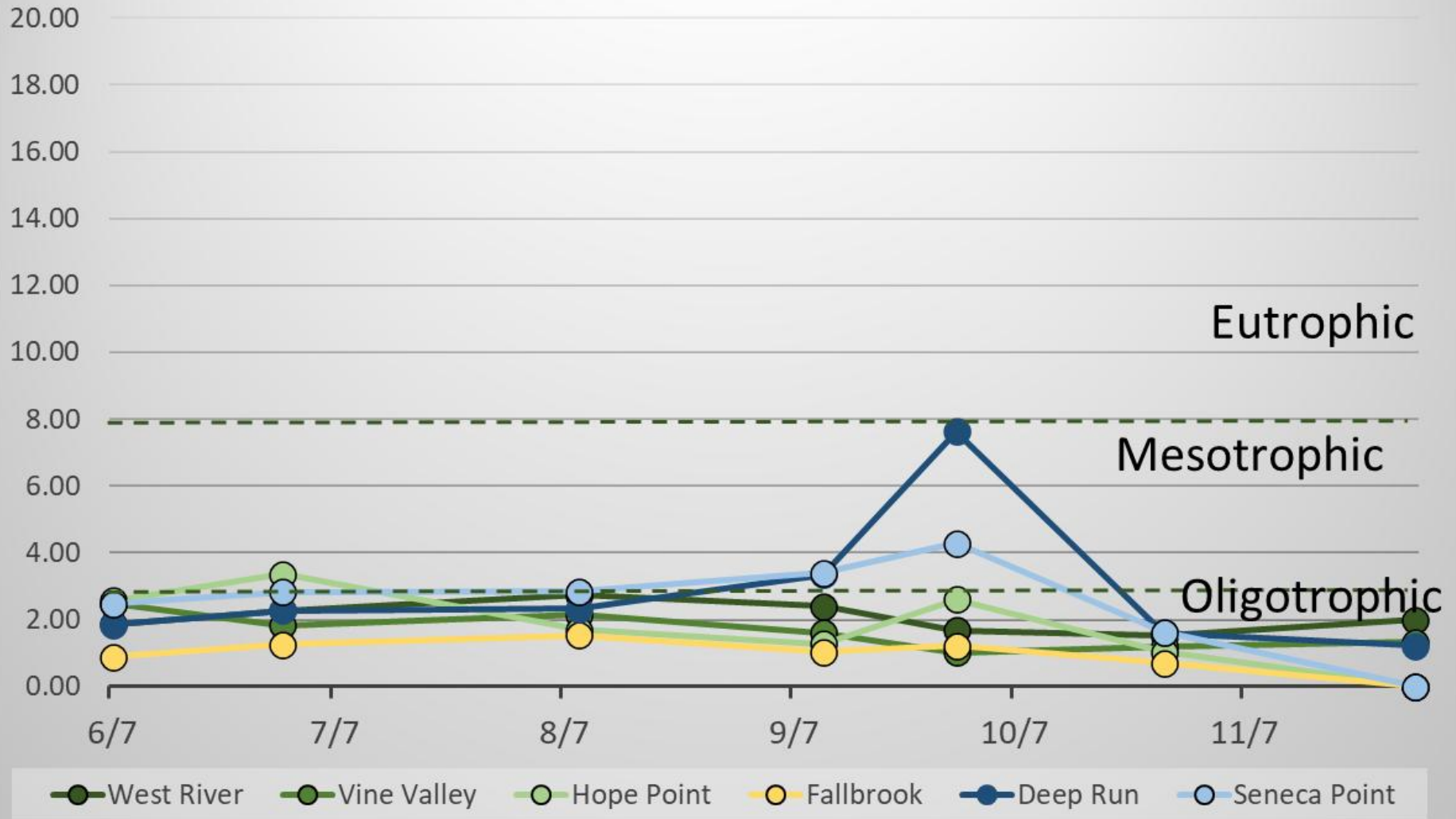
2022 Seasonal Algal Abundance

Chlorophyll-a (ug/L)

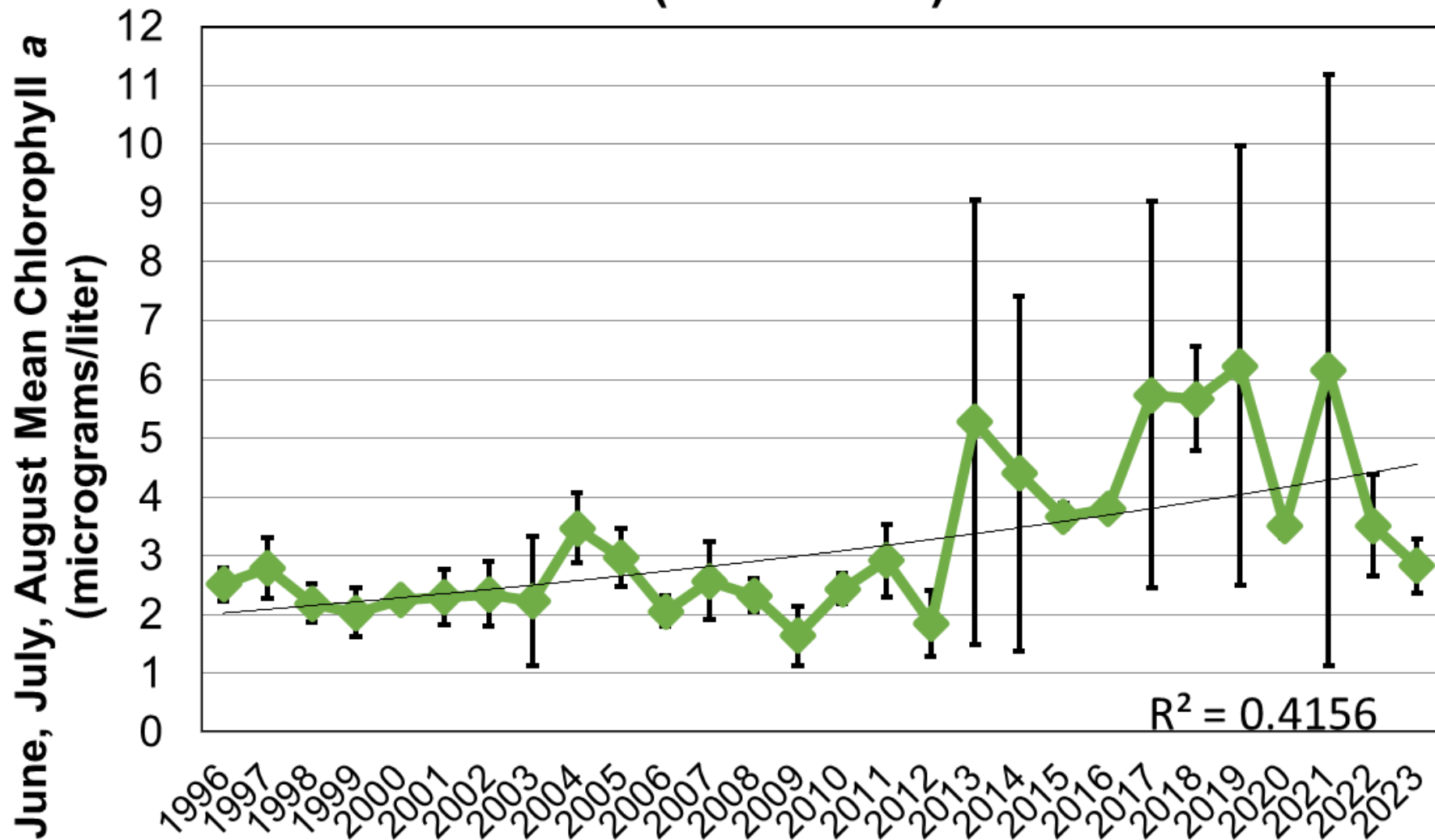


2023 Seasonal Algal Abundance

Chlorophyll-a (ug/L)



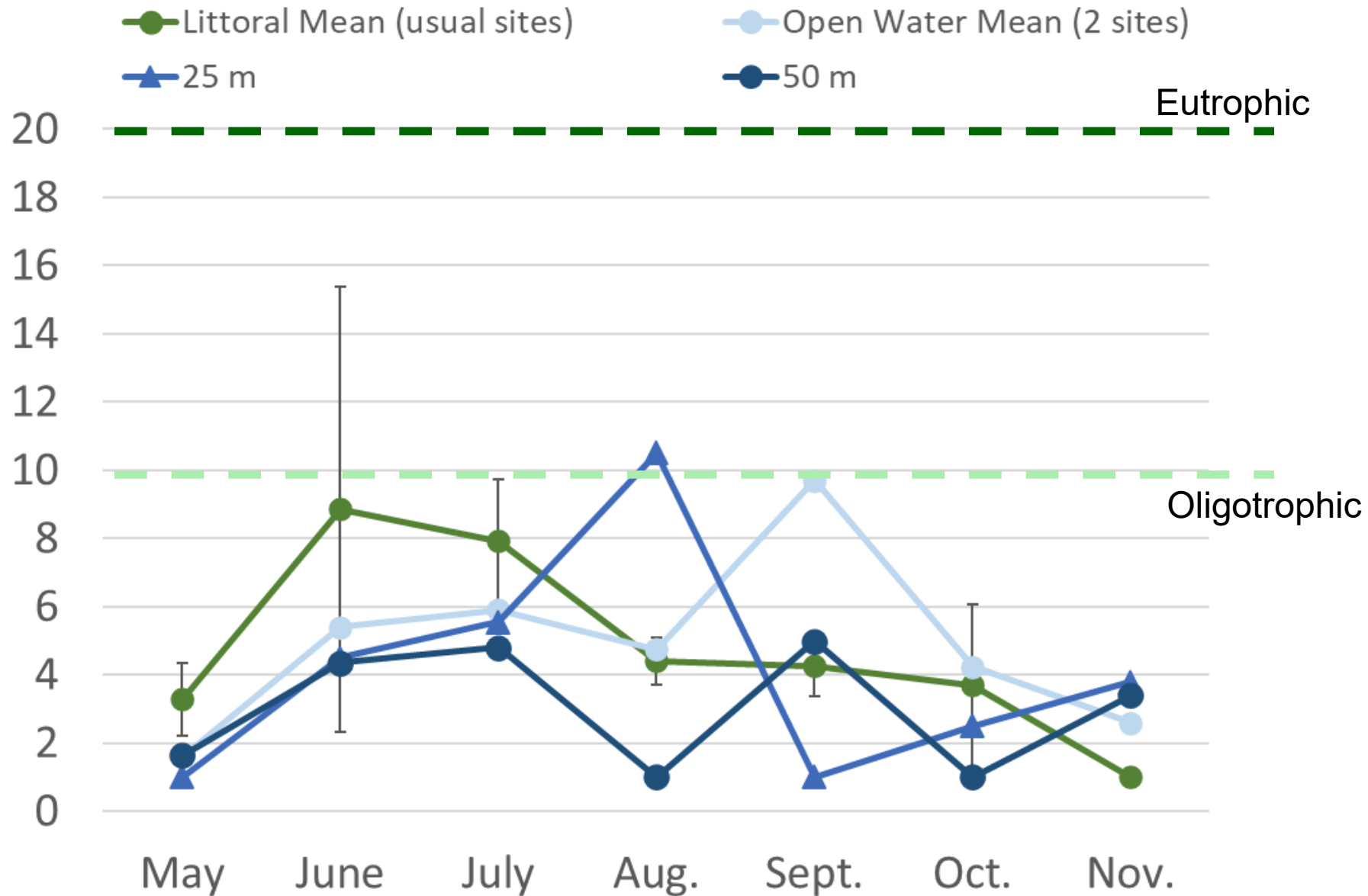
Long-term Summer Mean Algal Abundance (1996-2023)



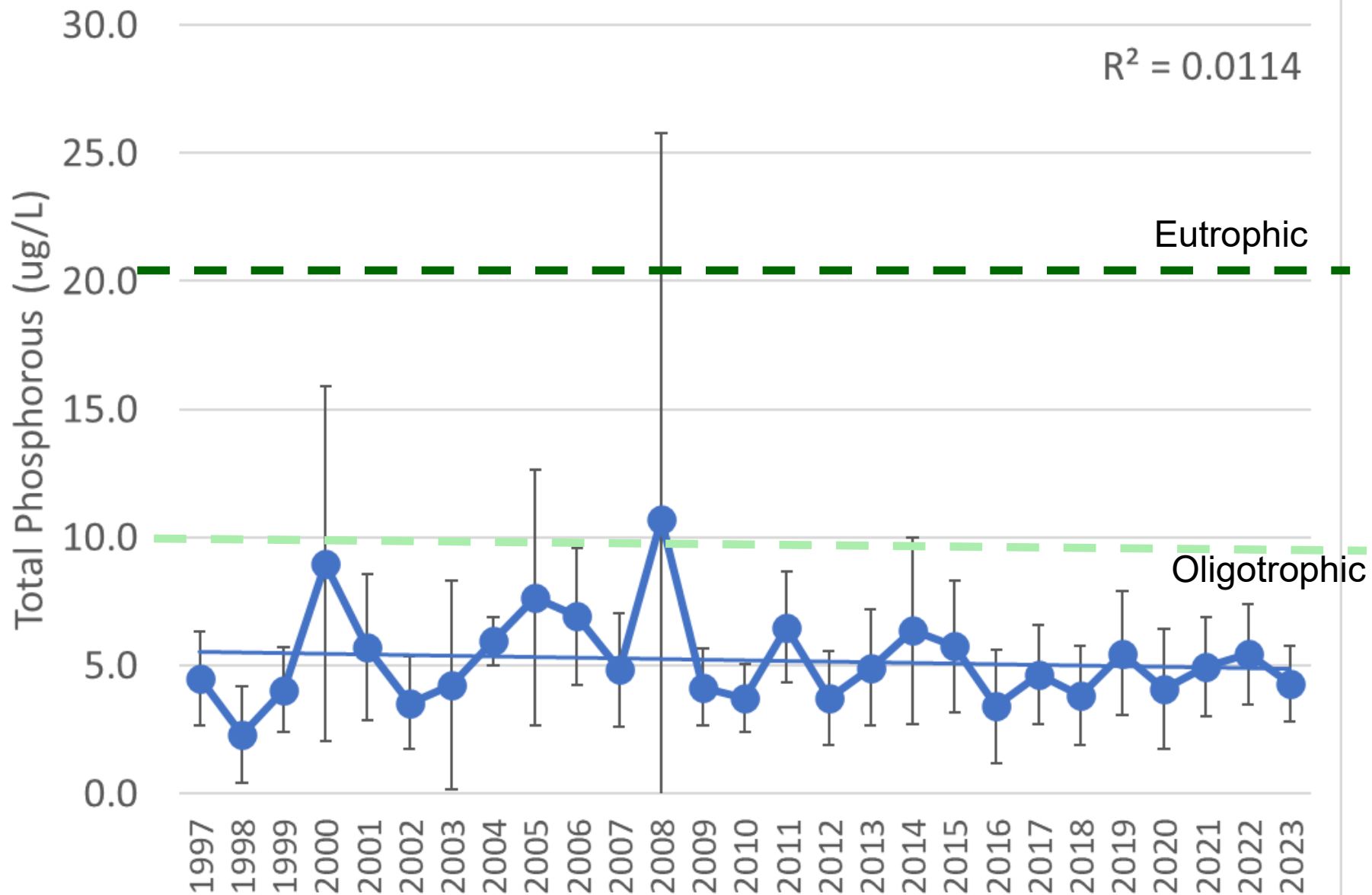
Total Phosphorous

- Includes ortho-phosphate and the phosphorus in suspended plant and animal fragments
- New York State's trophic assessments
 - Eutrophic: total phosphorus readings exceeded 20 ug/l
 - Mesotrophic: between the two categories
 - Oligotrophic: total phosphorus readings below 10 ug/l

2023 Total Phosphorus (ug/L)

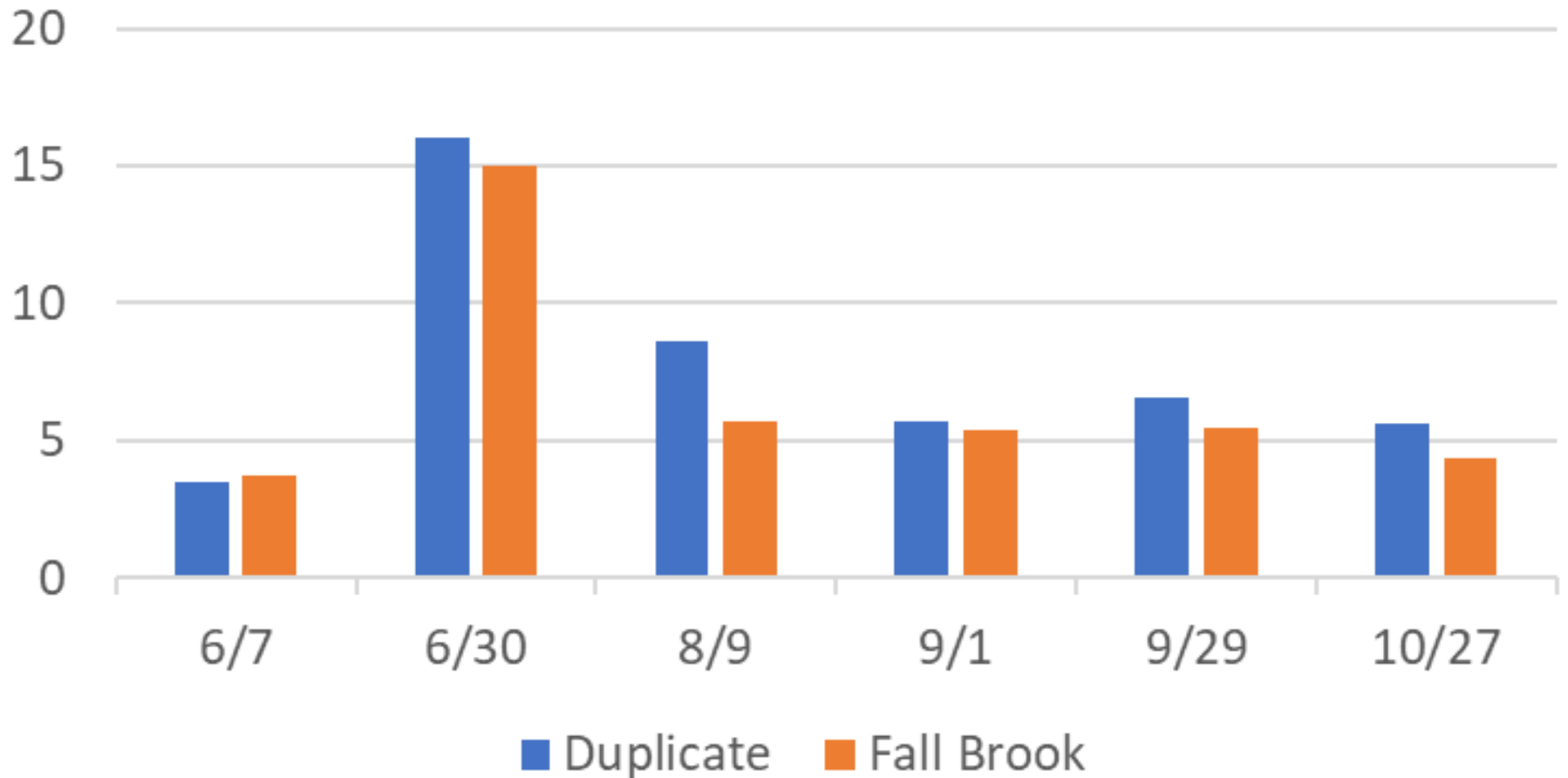


Mean TP (ug/L) May to October at Deep Run (2 m)



QAQC results

2023 Duplicates versus Site Samples



Thank you! Questions?

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