

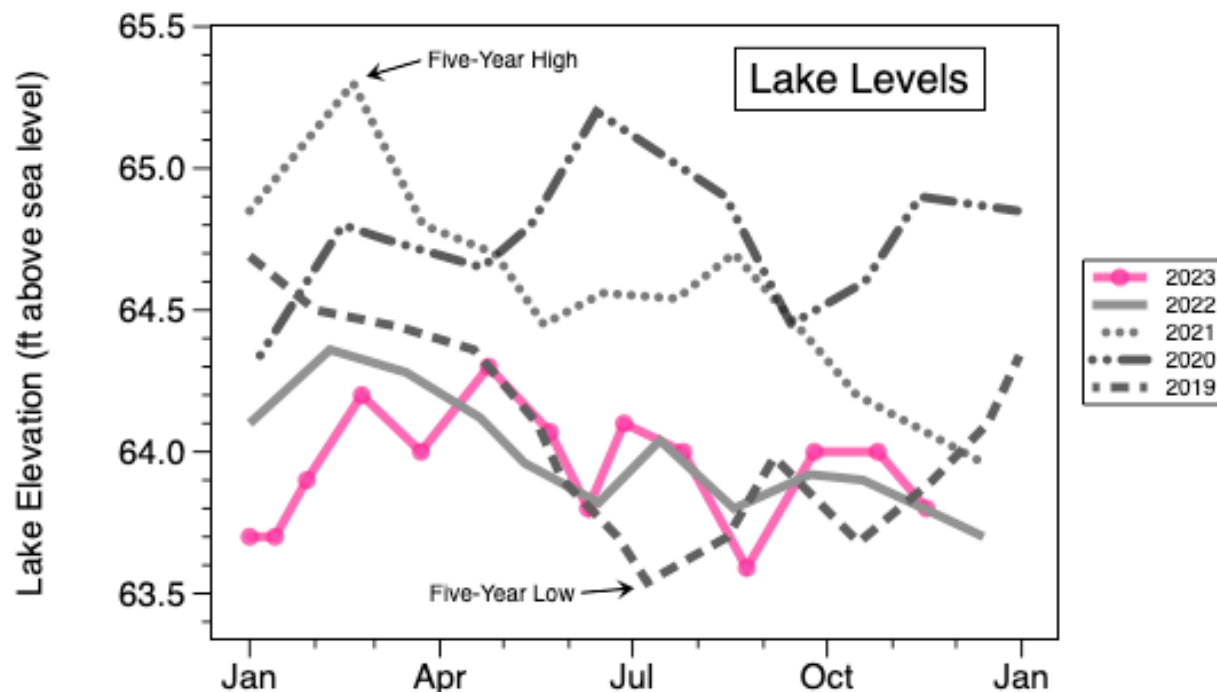
Report to White Lake Town Board December 2023

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LIMNOSCIENCES

Monthly Rainfall (inches) for White Lake 2012-2023

Month	2023	2022	2021	2020	2019	2018	2017	2016	2015	2013	2012	Monthly Average for Region
January	4.3	5.75	8.25	4.5	2.75	4.20	7.0	3.0	2.5	1.75	2.75	3.81
February	3.6	1.0	9.2	6.7	2.25	2.00	1.5	10.7	5.5	2.5	4.0	3.44
March	2.5	2.45	2.7	3.7	3.25	3.95	3.7	1.55	4.15	1.0	7.0	3.91
April	8.5	3.75	1.75	5.1	7.25	6.75	6.75	6.75	4.55	1.75	2.25	3.12
May	1.5	2.2	3.0	12.25	1.20	7.70	2.7	4.5	4.20	2.25	9.25	3.67
June	6.3	6.2	7.9	7.15	5.25	10.00	4.5	3.65	8.70	17.0	2.0	4.70
July	3.8	10.5	7.5	6.85	6.00	4.75	6.75	3.75	3.0	11.25	8.6	5.75
August	7.5	5.5	6.5	7.55	5.35	6.25	5.6	4.12	9.4	8.25	9.75	5.95
September	3.05	6.5	3.2	5.95	5.00	29.45	5.2	15.0	4.7	1.0	5.0	5.29
October	1.75	0.6	0.6	3.35	3.60	2.25	2.95	14.25	9.75	1.75	2.25	3.38
November	3.25	1.55	0.4	7.5	4.90	4.25	1.0	0.50	7.25	0	2.25	3.16
December		1.2	3.4	4.25	6.00	7.5	5.45	5.1	6.5	5.75	4.25	3.14
Total		47.2	54.4	74.85	52.80	89.05	53.1	72.87	70.20	54.25	59.35	49.32
% of Lake Volume		61.8	71	97	69	116	69	95	91	70	77	64

Total rainfall for the year to date is similar to last year (and the long-term average for the region), while lake levels are also similar to what was measured last year.



Lake highs and lows are also very similar between 2022 and 2023.

***Annual Lake Elevations, High, Low, and
Mean High-Water Level***

2019 High (January 25): 64.6 Ft NAVD 88

2020 High (June 16): 65.2 Ft NAVD 88

2021 High (February 19): 65.3 Ft NAVD 88

2022 High (January 17): 64.3 Ft NAVD 88

2023 High (April 24): 64.3 Ft NAVD 88

2019 Low (July 9): 63.5 Ft NAVD 88

2020 Low (January 1): 64.3 Ft NAVD 88

2021 Low (November 29): 63.9 Ft NAVD 88

2022 Low (May, Oct-Dec.): 63.7 Ft NAVD 88

2023 Low (August 28): 63.6 Ft NAVD 88

2019 Lake Level Variation (High to Low): 12.7 Inches

2020 Lake Level Variation (High to Low): 10.3 Inches

2021 Lake Level Variation (High to Low): 16.8 Inches

2022 Lake Level Variation (High to Low): 7.2 Inches

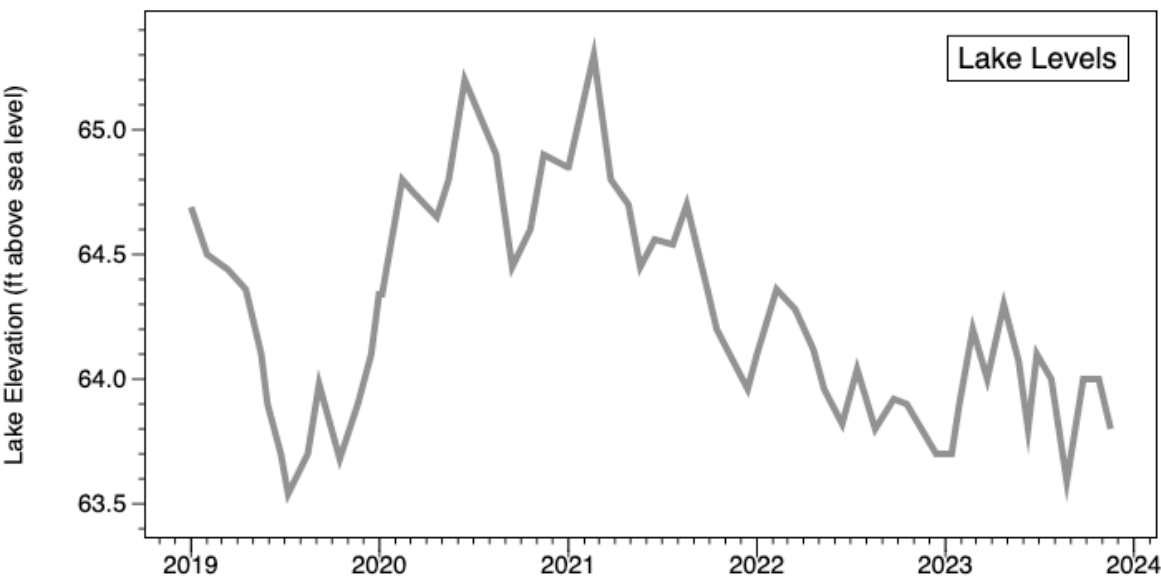
2023 Lake Level Variation (High to Low): 8.4 inches

Variation (Highest-Lowest) Over the Five-Year Period 2019-2023: 21.1 Inches

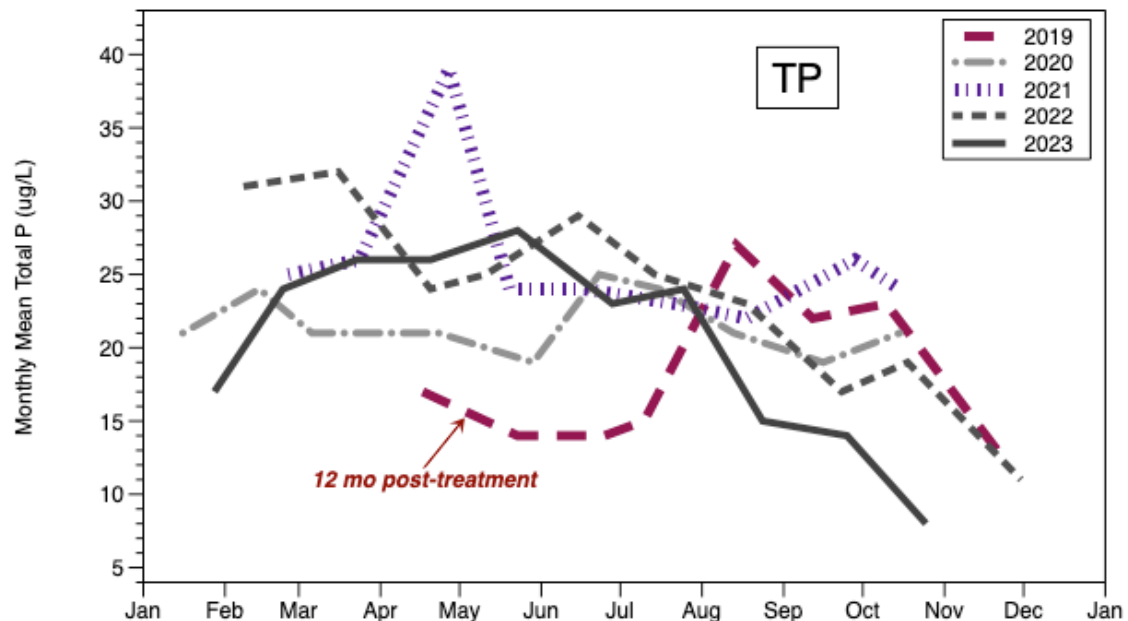
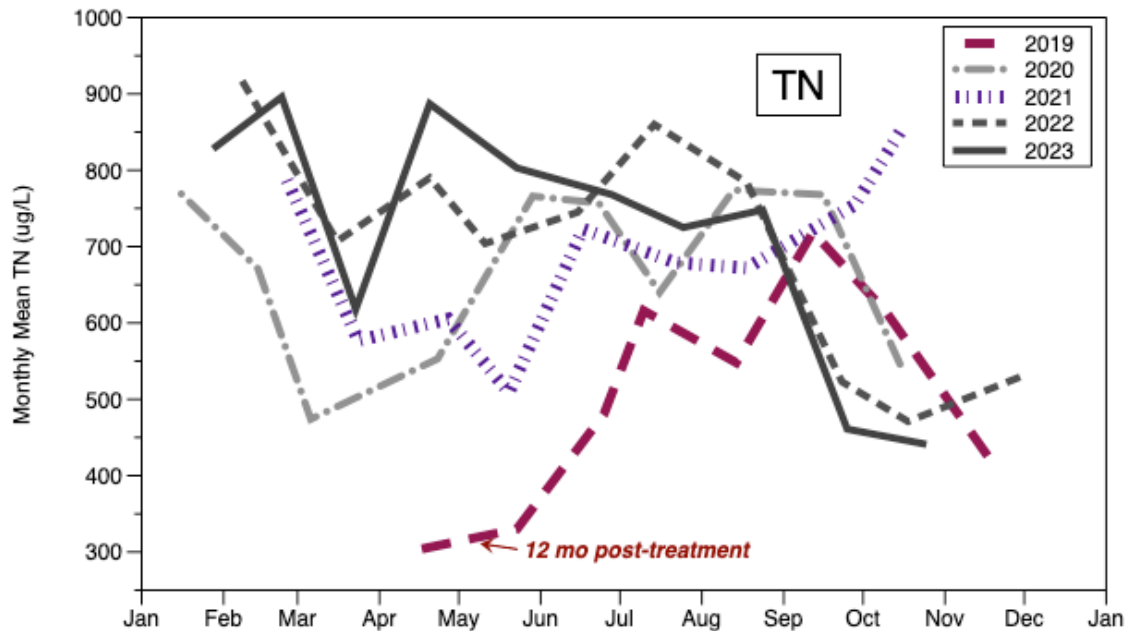
Five-Year Mean High-Water Level: 64.74 Feet NAVD 88

Lake Level Changes in White Lake, December 2019 to November 2023

Total Variation = 21.1 inches



Comparisons of nutrient levels over the past five years (2019-2023) show that both total nitrogen (TN) and total phosphorus (TP) can vary a good bit from month to month but show the same general trends from year to year. October 2023 levels of both TN and TP were relatively low. The alum treatment in May 2018 lowered both nitrogen and phosphorus levels, and the lower levels persisted until mid-summer 2019. Rainfall is the largest contributor of nitrogen to the lake.



TP levels in October were the lowest seen in the past 5 years