White Lake Board Report
July 2024

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LIMNOSCIENCES

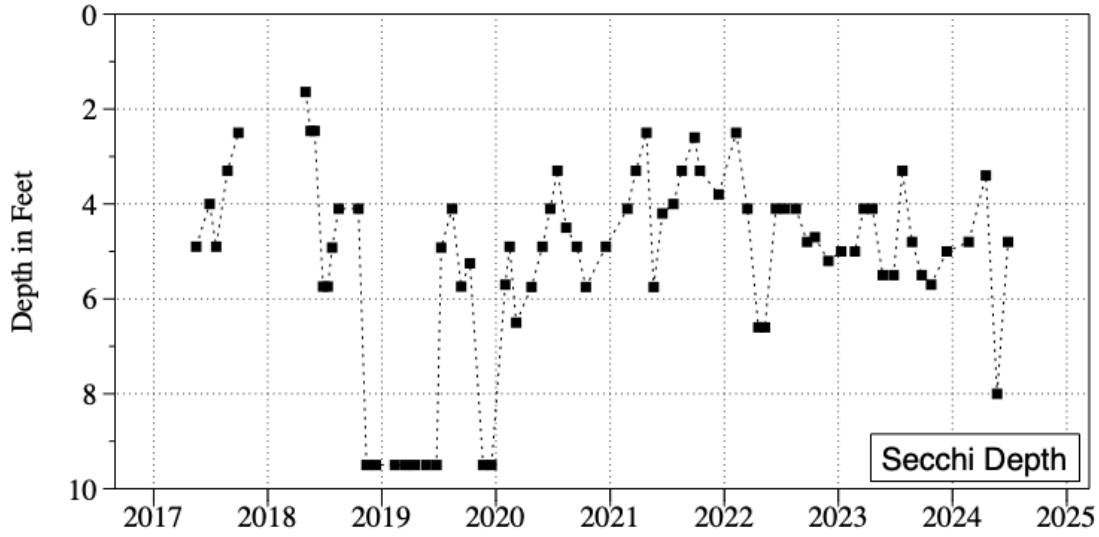
1. July is Lake Appreciation Month at many lakes around the country, and the Town Board approved a proclamation to do the same for White Lake in July 2019. There is much to be thankful for in this and every month.

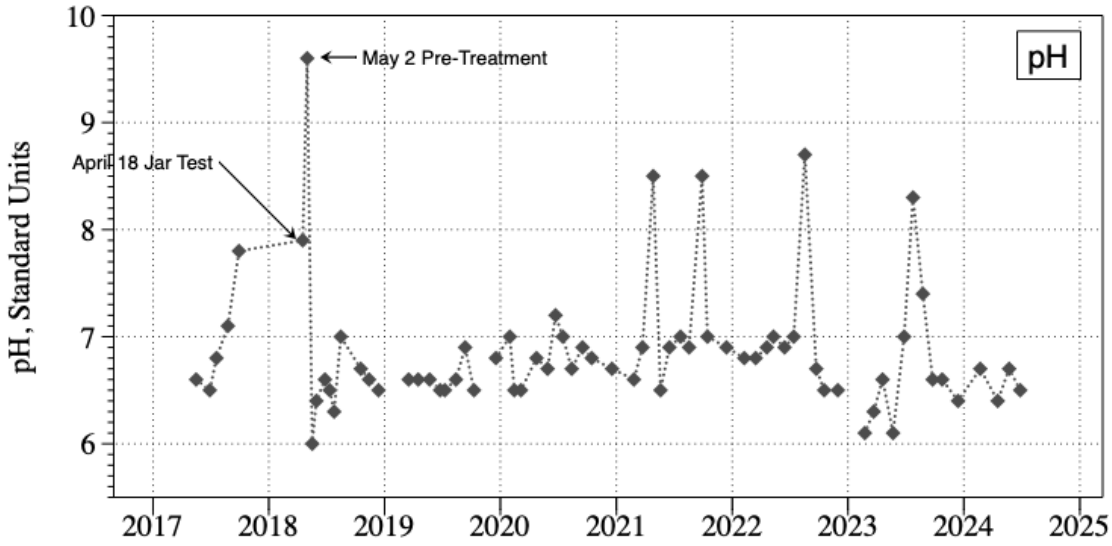
2. The monthly lake monitoring that is done every month includes measurements that are taken using "field" equipment, and collection of water samples that are analyzed in an analytical laboratory. The lab results, which includes analysis of nutrients, can take up to a month to get back. The most recent data available is for the month of May, and a comparison with May results from previous years indicates that the relatively low nutrient levels in May 2024 were similar to what was measured in May 2019, and the clarity levels were similar as well. Low phosphorus levels = lower phytoplankton abundance. The red arrow shows lake data collected the day before the May 2018 alum treatment started, when phosphorus levels were 5x higher.

A Comparison of White Lake Data for May, From 2013-2024

	5/21/2013	5/17/2017	5/2/2018	5/31/2019	5/8/2020	5/20/21	5/31/2022	5/23/2023	5/23/2024
Temperature (C)	25	25	23	27	25.5	23.5	19.6	23.0	25.4
Water Clarity, Measured as Secchi Depth (m)	2.5	1.5	0.5	B	1.5	1.75	2.1	1.6	2.4
Turbidity (NTU)	1.3	2.3	4.9	-	1.6	1.5	1.9	1.9	1.6
Phytoplankton Biomass as Chlorophyll a (µg/L)	2.5	9.5	52	2.9	17.3	3.8	5.2	3	2.7
pH Range (std. units)	5.6-5.9	5.9-6.4	9.1-9.6	6.2-6.6	6.7-6.8	6.5-6.6	7.0-7.1	6.1-6.2	6.5-6.7
Dissolved Oxygen % Saturation	102	103	123	99	99	92	108	98	104
Mean Total Nitrogen (ug/L)	340	570	1,260	330	776	509	704	803	465
Mean Total Phosphorus (ug/L)	<20	20	60	14	19	24	25	28	12
TN/TP (mass)		28	21	23.7	26.4	21.2	27.9	29.1	39.3

3. Field data collected in June show that the lake has transitioned to typical summer conditions with respect to clarity and phytoplankton abundance. The pH level, however, was still below 7.





4. Keep in mind that the baseline pH for the lake is a reflection of rainfall pH, which is around 6 (and the high ammonia emissions in the region are what is influencing this). Lake pH will be lower when photosynthesis is lower—generally November-December—which is when nutrient levels are typically lower.

5. Increased temperatures and evaporation rates in combination with a lack of rain means lake levels are dropping, with a 4-inch decline seen in White Lake for the month of June. Lake levels have dropped considerably at the other Bay lakes as well.