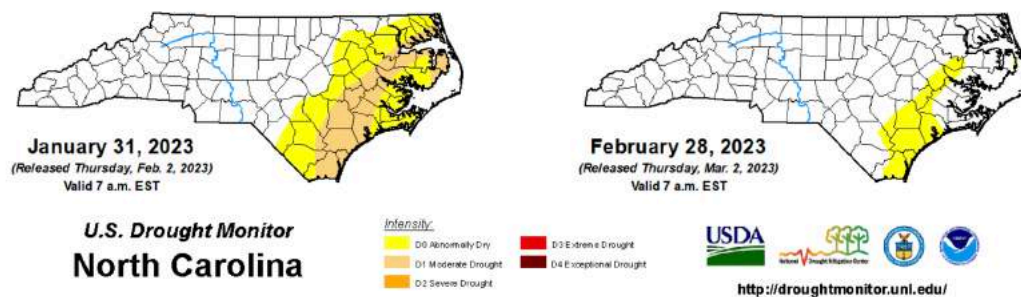


# Report to White Lake Town Board March 2023

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LIMNOSCIENCES

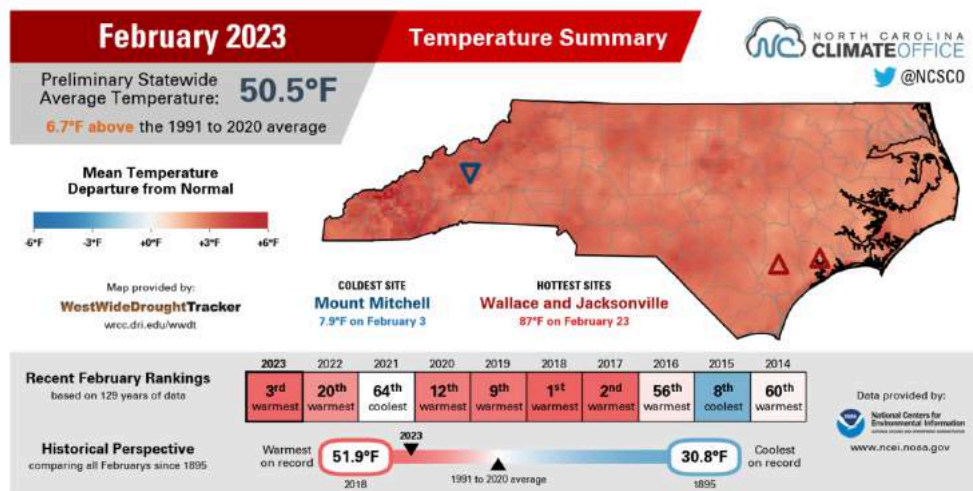
## 1. Rainfall and Lake Levels

The lake level on December 30, 2022, was 63.7 feet NAVD 88, and by the end of February 2023 it had increased to 64.2 feet (an increase of 6 inches). This is an inch below what it was at the same time in 2022. Despite the continued influence of La Niña, rainfall amounts in the first two months of 2023 were normal (based on long-term averages), although the region is presently categorized as abnormally dry, and temperatures have been well above normal.



US Drought Monitor maps from January 31 (left) and February 28 (right) for North Carolina.

Our first taste of the unseasonable warmth came on February 8-10 as an upper-level ridge over the Southeast US and offshore high pressure elevated our temperatures into the 70s.



The February 2023 temperature summary for North Carolina.

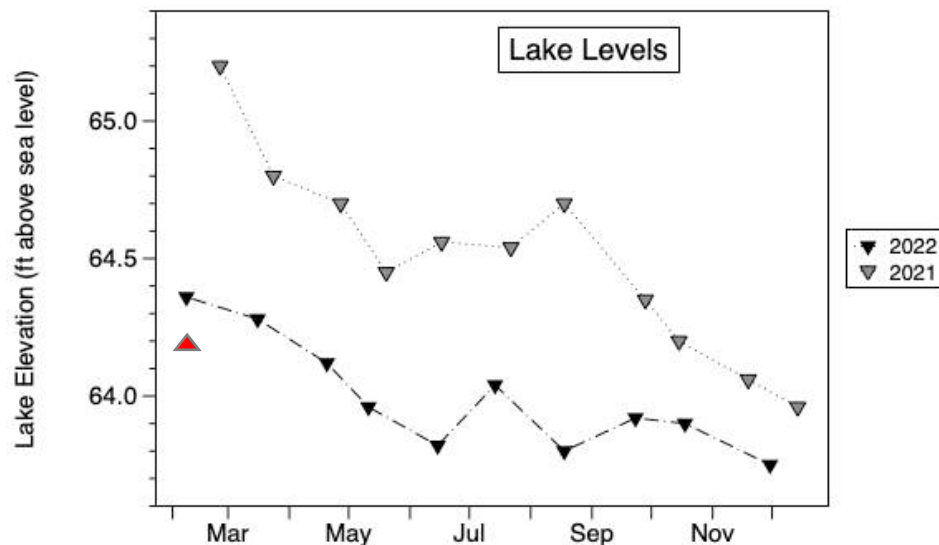
Another round of warm weather arrived the following week ahead of a cold front, with highs reaching 70°F even in westerly **Asheville** and **Murphy**.

The warmest weather arrived during the final week of the month, as another subtropical ridging pattern and a warm front surging in from the south left us with Florida-like temperatures in February. On February 23, sites across the state hit the 80s, breaking all-time record highs for the month in **Fayetteville** (85°F), **Raleigh** (85°F), and **Wilmington** (86°F).

Monthly rainfall measured at the Town of White Lake wastewater treatment plant, with the long-term monthly average for Elizabethtown (right column).

**Monthly Rainfall (inches) for White Lake 2012-2023**

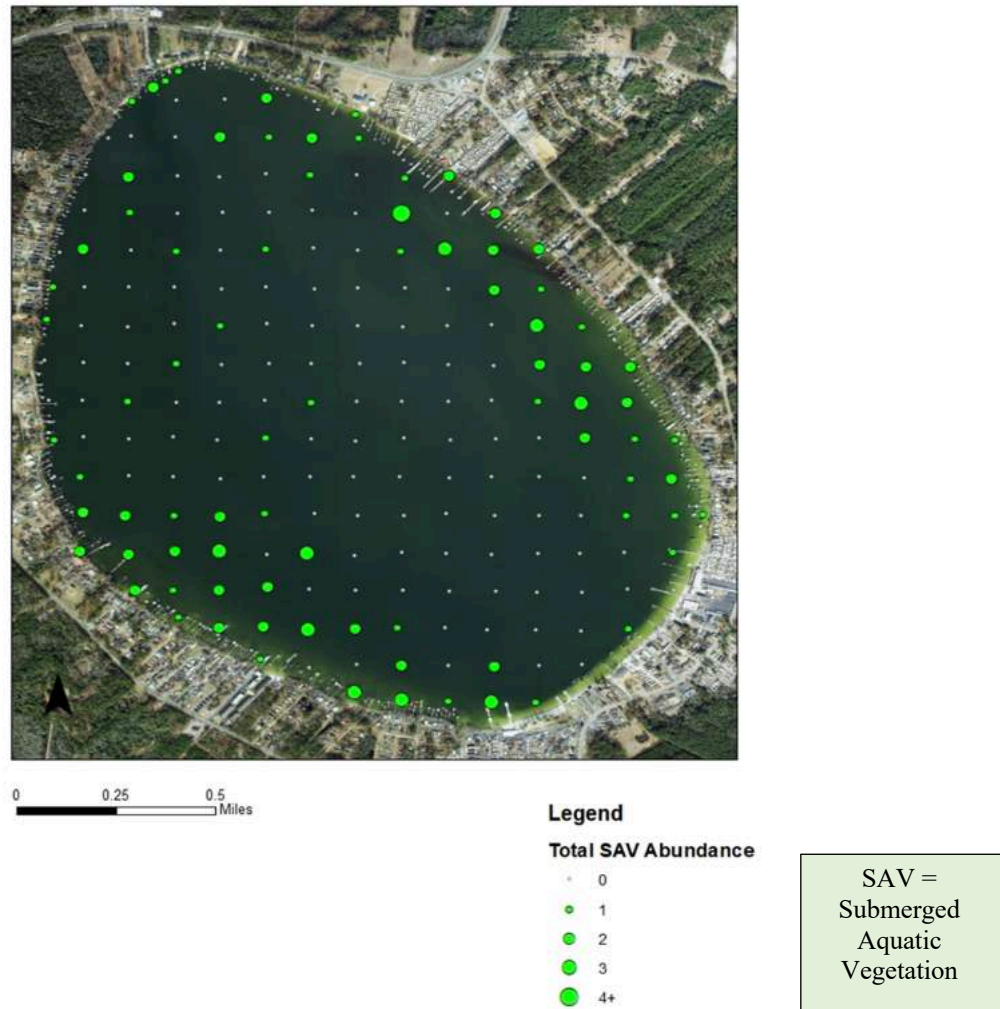
Month	2023	2022	2021	2020	2019	2018	2017	2016	2015	2013	2012	Monthly Average for Region
January	4.3	5.75	8.25	4.5	2.75	4.20	7.0	3.0	2.5	1.75	2.75	3.81
February	3.6	1.0	9.2	6.7	2.25	2.00	1.5	10.7	5.5	2.5	4.0	3.44
March		2.45	2.7	3.7	3.25	3.95	3.7	1.55	4.15	1.0	7.0	3.91
April		3.75	1.75	5.1	7.25	6.75	6.75	6.75	4.55	1.75	2.25	3.12
May		2.2	3.0	12.25	1.20	7.70	2.7	4.5	4.20	2.25	9.25	3.67
June		6.2	7.9	7.15	5.25	10.00	4.5	3.65	8.70	17.0	2.0	4.70
July		10.5	7.5	6.85	6.00	4.75	6.75	3.75	3.0	11.25	8.6	5.75
August		5.5	6.5	7.55	5.35	6.25	5.6	4.12	9.4	8.25	9.75	5.95
September		6.5	3.2	5.95	5.00	29.45	5.2	15.0	4.7	1.0	5.0	5.29
October		0.6	0.6	3.35	3.60	2.25	2.95	14.25	9.75	1.75	2.25	3.38
November		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



A comparison of lake levels for 2021 and 2022, with the February 2023 level indicated by a red triangle.

Given the amount of lake bottom disturbance last summer, causing large amounts of sediment and aquatic vegetation to wash ashore--particularly in the southern and southeastern parts of the lake--it is imperative to inform lake users in advance of the likelihood of continuing low lake levels through the summer of 2023. **Lake users can minimize the impacts of boating activity on lake aesthetics, but it will take a concerted, consistent, and continued effort by *EVERYONE*.** A stewardship letter to all property owners, and 1-2 stewardship workshops related to boating best practices in a very shallow lake (possibly combined with lake clean ups) is suggested.

## 2. Aquatic Vegetation Survey Report: Less Vegetation, No Hydrilla Found in 2022



**Table 1: White Lake SAV % Occurrence**

Species	2014	2017	2018	2019	2020	2021	2022
Hydrilla	0%	84%	0.50%	1.50%	0%	0.5%	0%
Tuckerman's Pondweed	0%	0%	0%	0%	13%	9%	6%
Spikerush	40%	9%	56%	68%	45%	3%	31%
Bladderwort	14%	0%	0%	0%	0%	4%	<1%
Dwarf Milfoil	0%	15%	20%	34%	20%	14%	20%
Low Milfoil	54%	0%	0.50%	0%	0%	0%	0%
Filamentous Algae	0%	0%	0%	0%	24%	28%	0%
Macroalgae	29%	66%	0%	0%	6%	27%	<1%
Aquatic Moss	43%	63%	32%	6%	8%	0%	0%
No Vegetation	11%	6%	36%	16%	25%	36%	60%
Vegetation	89%	93%	65%	84%	75%	64%	40%

### 3. Rain Exposes Stormwater Pipes—Runoff Goes to Lake



The pipe on the left appears to be relatively new, so was not included in the count of outfalls that was done in 2020. The pipes on the right, which carry water from an asphalt street, are underwater during periods of higher lake levels.