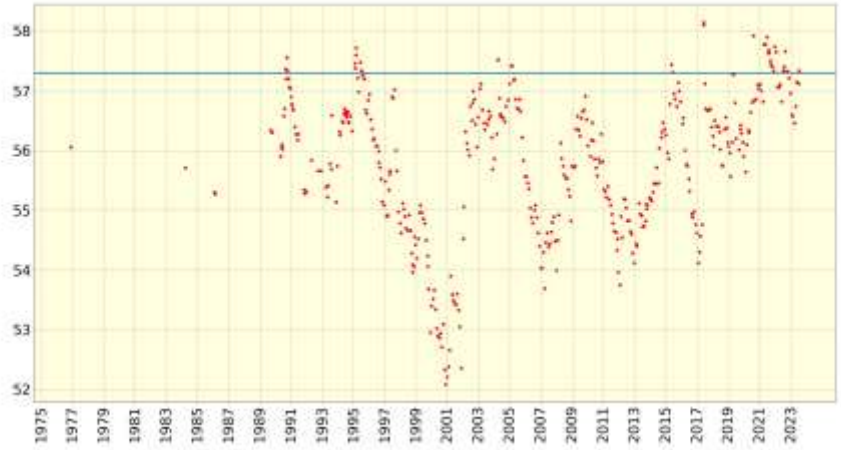
SWFWMD scientist visit to CCC/Lake Okahumpka

Discussion summary

1. High lake levels are damaging the trees and affecting lake vegetation growth.
2. The lake has been above set levels quite a bit since 2021. Rainfalls were also above average.
3. Lake level is driven primarily by rainfall.
4. High rainfalls in recent years caused high water levels.
5. The lake has an outlet weir set to 57.3 feet above sea level.
6. Level is measured and the weir is lowered (board(s) removed) when water levels go beyond the set level, taking a few weeks to adjust before the 57.3 feet weir height is restored.
7. The set level appears be too high, considering the damage occurring.
8. Lake Okahumpka water levels won't be reviewed by SWFWMD for a few years from now.
9. We were given a link to obtain Lake Okahumpka water levels and rainfall histories.
10. The SWFWMD scientist has taken many photos and has gone to inspect the lake at the Gazebo and the weir - water level control structure.
11. We asked him to provide us with any documentation resulting from his discoveries.
12. He promised to determine whom to contact about the vegetation in the lake.
13. He is interested in riding on the lake and perhaps using a drone to investigate lake conditions away from shore.

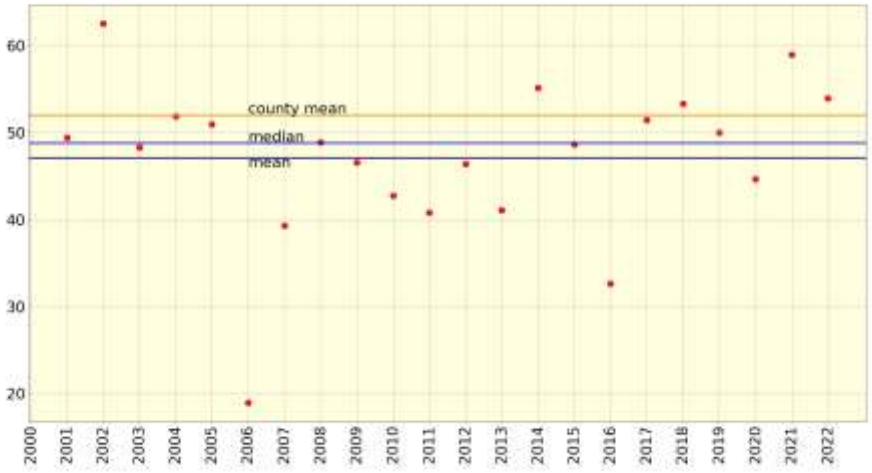
Pre Dec 8, 2023 meeting correspondence from the SWFWMD scientist
Hello Mr. Burr,

I know this is last minute, but I wanted to send you some information for Lake Okahumpka for our meeting tomorrow. There are water levels for the lake dating back to 1976 but there are large gaps in the data before 1991. I've included a few graphs of the water levels below. The horizontal line represents the level at which the structure on the lake is operated, 57.3 ft. NAVD88. When the lake is at or above this level the structure is opened to allow the lake to overflow to the south. You can see the lake has been above this level quite a bit since around 2021.



As you can see the lake levels have remained high since around 2021 coinciding with high rainfall totals that year. As you can see in the next two graphs, the rainfall totals in 2021 and 2022 were above average for the lake (47.1 inches) and above the county average (51.96 inches) as well. These are just rainfall totals measured at the closest active rain gauge going back to 2001. I did not include 2023 since there is not a complete record yet but, the total so far for the lake this year is 45.67 inches which is only 1.43 inches below the period of record average for the lake. This year, (the rainfall) will likely end up being pretty close to average for the lake.

Rainfall



The 50th percentile,(P50), or the median water level for the period of record (POR) on the lake is 56.1 ft. NAVD88. The annual median water level on the lake has been above the POR median since 2018. As you can see from the rainfall graph, rainfall has been above average since 2014 in all but two years.

I found some old bathymetry for the lake and mapped the median water levels of the last 3 years compared to the POR median. With the bathymetry being older, these contour lines are not going to be the most accurate, but it can give you a general idea of where the median water levels have been the last 3 years compared to long term median water levels.

We can discuss some more of this when we meet up at the lake, but the lake getting high due to high rainfall is obviously normal for every lake, but Okahumpka has remained high these last few years coinciding with the above average rainfall at the lake. Again, we'll discuss more when we meet up, I just wanted to provide you with a little background of what's been happening the last few years before we meet up in person.

Also, just in case you ever want to download or view some data on the lake on your own, you can find that data at the Districts Environmental Data Portal at the following link:
https://www.swfwmd.state.fl.us/resources/data-maps/environmental-data-portal

Thanks, and I look forward to meeting up with you tomorrow.

T.J. Venning, PWS

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