

Catawba-Wateree Hydroelectric Project (FERC No. 2232)  
Lake Wylie Marine Commission

November 27, 2023

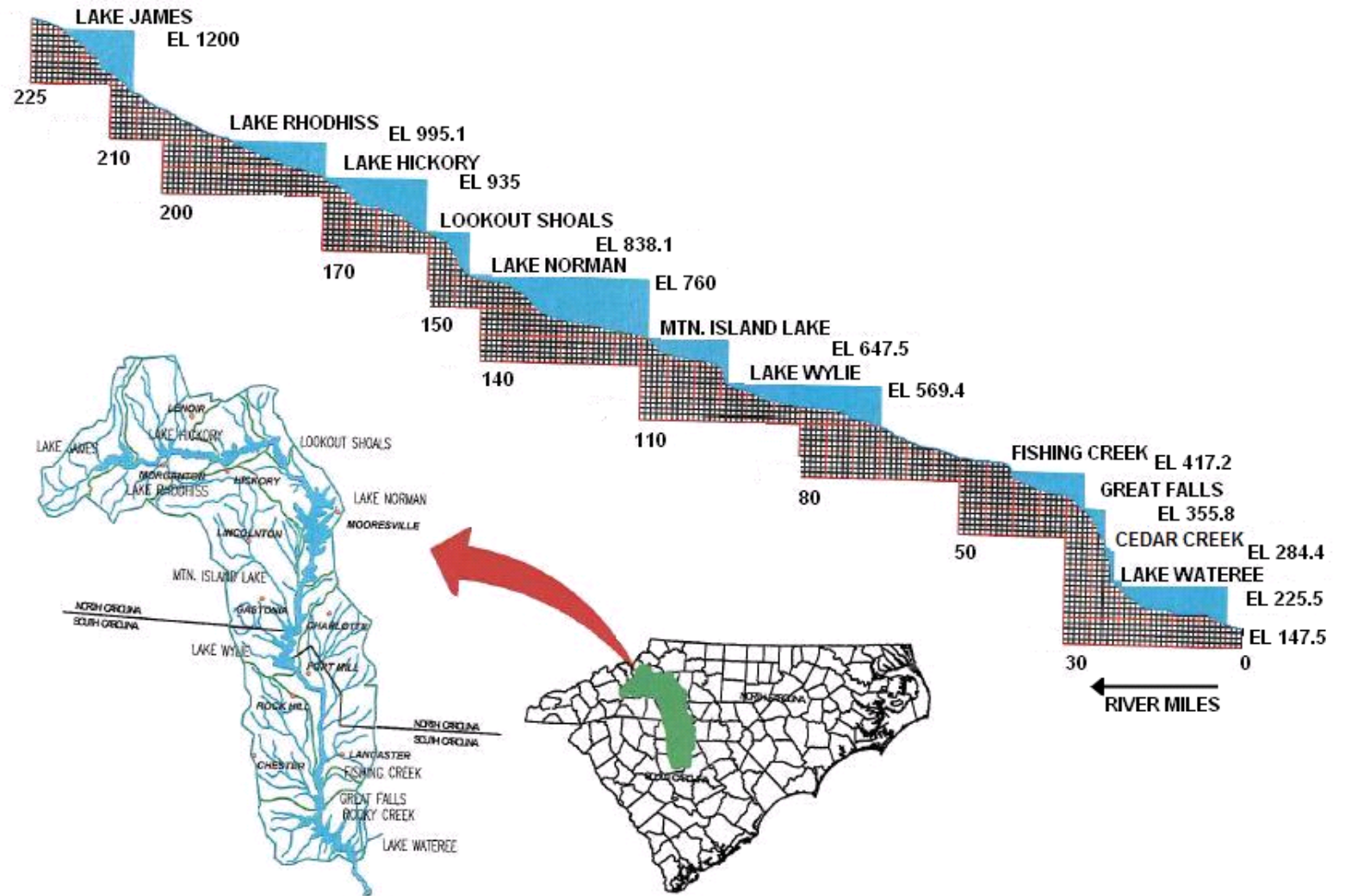
*Tami Styer, Senior Project Manager*

*Water Strategy, Hydro Licensing and Lake Services*



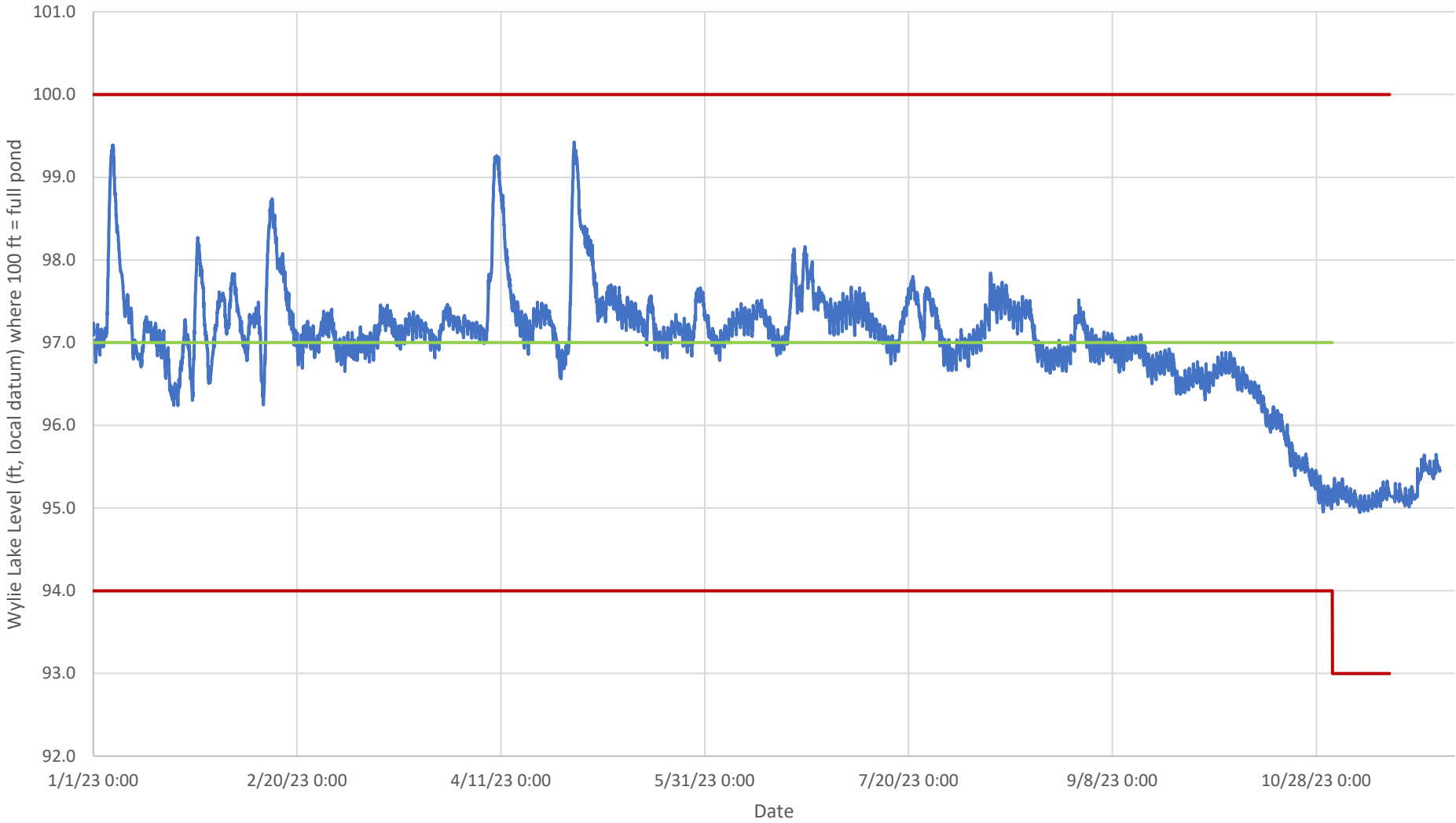
# CATAWBA-WATEREE HYDROELECTRIC PROJECT

- 11 lakes, 12 Hydro Stations, 2 Nuclear Stations, 2 Coal Stations
- Approximately 25% of Duke Energy's generation capacity in the Carolinas
- Drinking water for about 2 million people
- Over 16 million recreation visits/year plus tens of thousands of neighbors
- James + Norman + Wylie + Wateree = 86% Total Usable Storage for Project



# 2023 Rainfall Very Low Since September

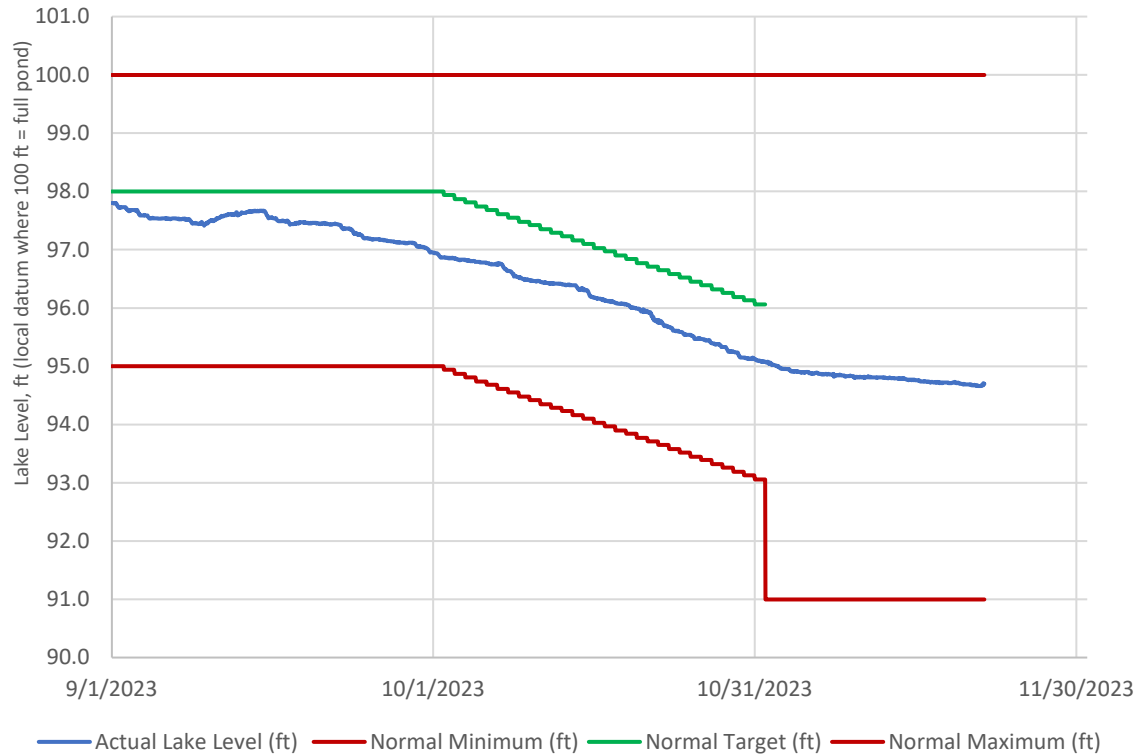
2023 Wylie Lake Level



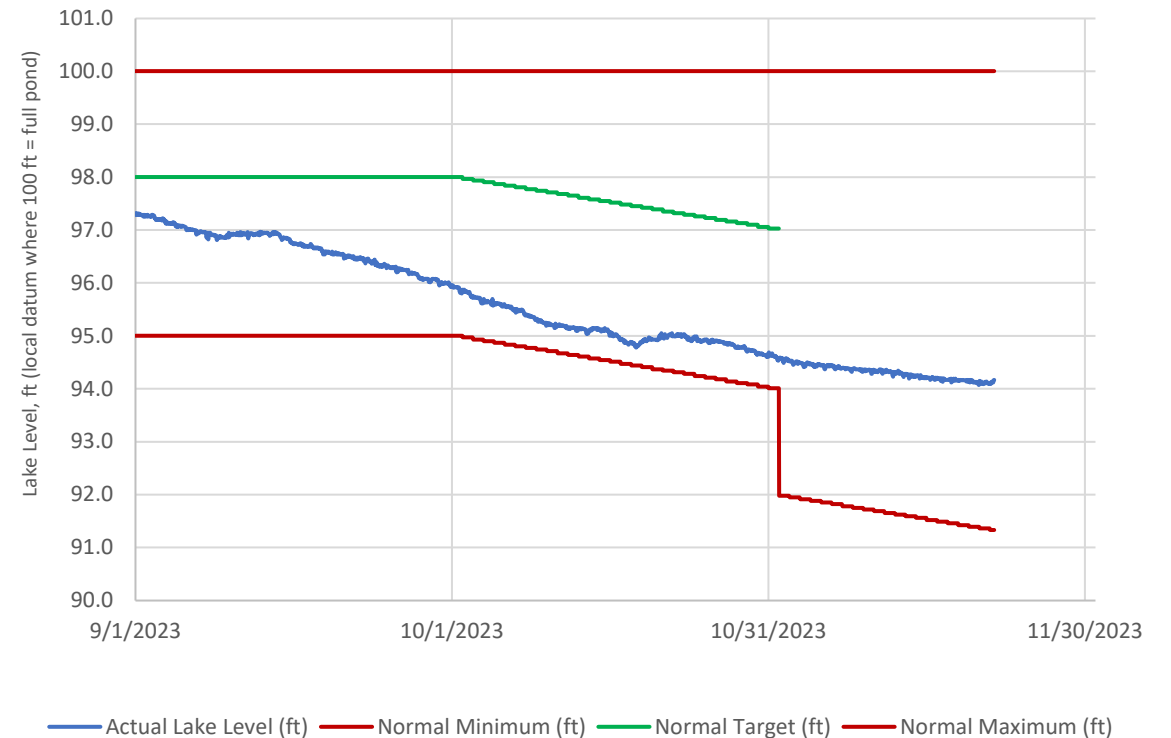
— Wylie Lake Level (ft)    — Normal Maximum (ft)    — Normal Minimum (ft)Min    — Normal Target (ft)

# Lakes James and Norman – Daily Lake Levels Sept 1 – Nov 20, 2023

Lake James Lake Levels  
Sept 1, 2023 - Nov 20, 2023

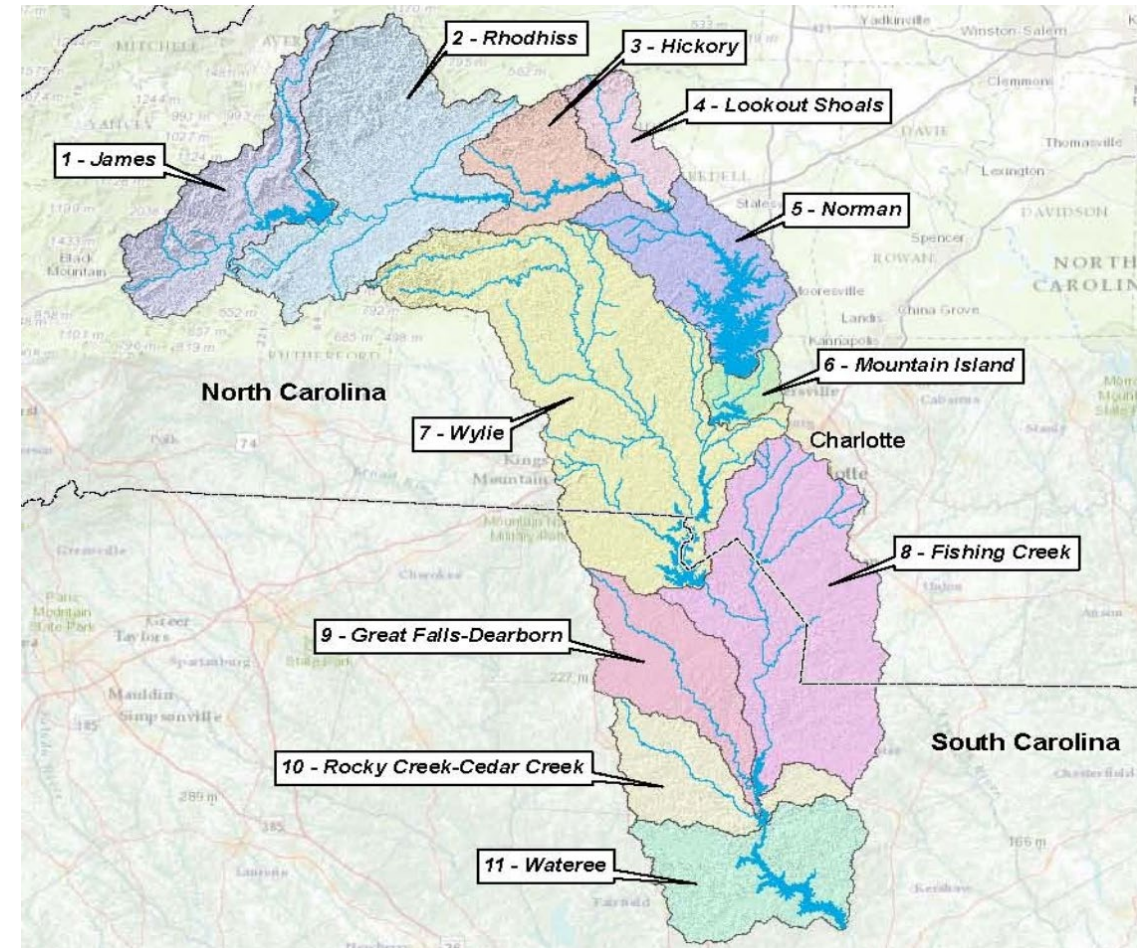


Lake Norman Daily Lake Level  
Sept 1-Nov 20, 2023



# Low Inflow Protocol Stage 1 Triggered on Nov 1, 2023

- The 11-lake Catawba-Wateree system is rainfall driven and this fall has been particularly dry.
- Duke Energy has limited its hydro generation to try and remain close to seasonal targets.
- License includes Low Inflow Protocol (LIP) that stipulates the operational approach and communications processes during drought conditions.
- Duke Energy and other large water users and governmental agencies formed the Catawba-Wateree Drought Management Advisory Group (CW-DMAG).

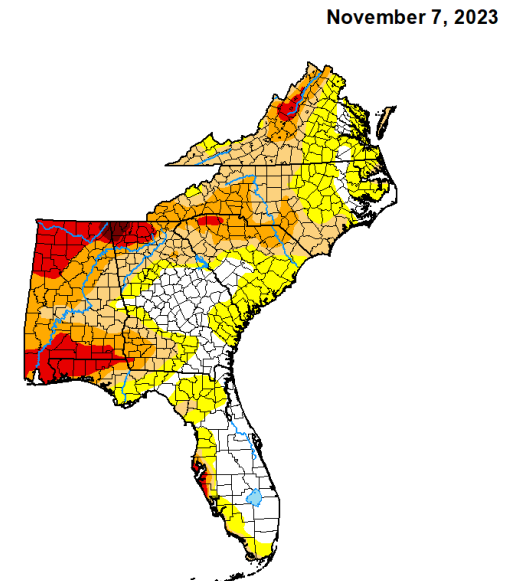
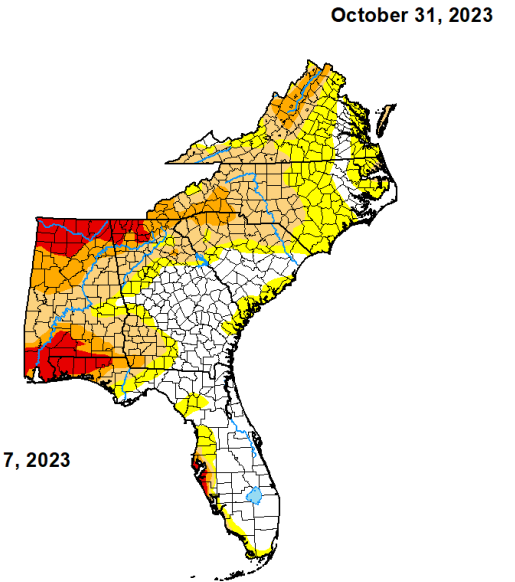
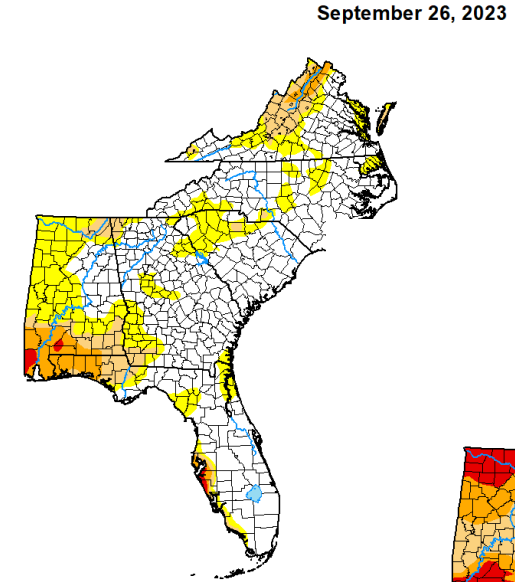
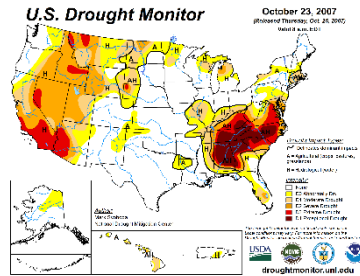


# US Drought Monitor and Duke Energy System Rainfall

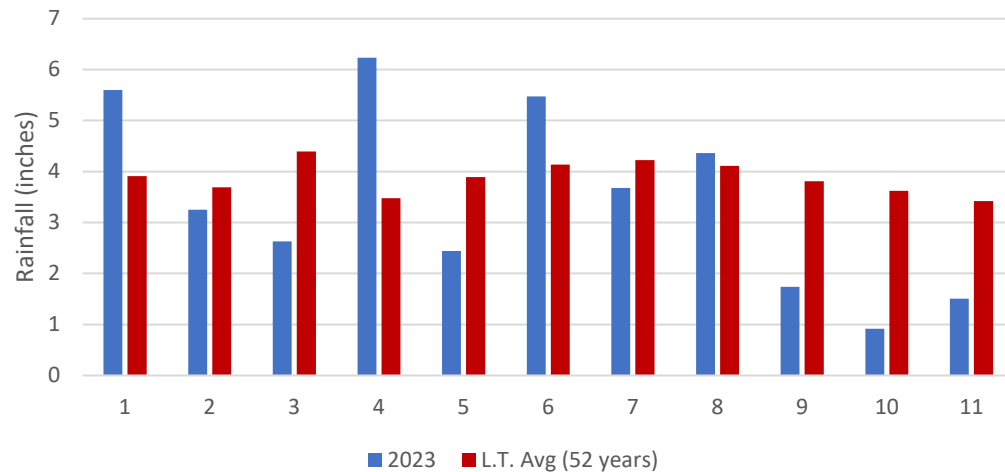
Three-month Numeric Average (as of November 1, 2023) = - 0.16 (Supports Normal Conditions)

## Drought Classifications

- D0 - Abnormally Dry
- D1 - Moderate Drought
- D2 - Severe Drought
- D3 - Extreme Drought
- D4 - Exceptional Drought



Duke Energy System Rainfall  
(Recording since 1971)



## Catawba-Wateree LIP Trigger Status Summary for 11/01/23 and Changes Compared to 10/02/23

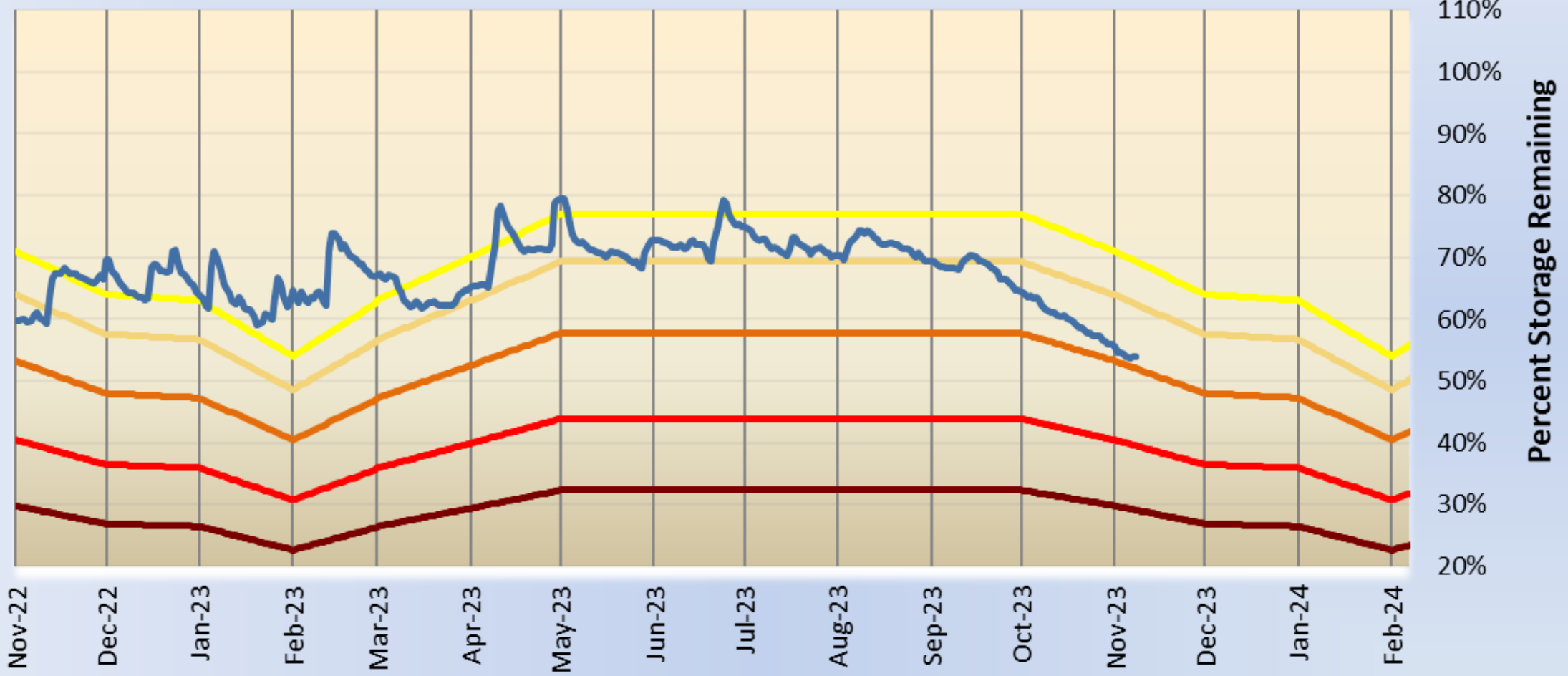
	Reservoir Storage as % of Target	% of 6-Month Long-Term Avg Streamflow	3-Month Avg of US Drought Monitor	C- W Groundwater Network (% of Historic Range) <i>For Informational Use Only</i>
			↓ -0.16	
Normal	>=100%	>85%	<0	
LIP Stage 0	>90%	<=85%	>=0	
↓ Nov 1, 2023	↓ 77.5% >75%	↓ 76.5% <=78%	>=1	↓ 39.5%
LIP Stage 1	>75%	<=78%	>=1	↓ 39.5%
LIP Stage 2	>57%	<=65%	>=2	
LIP Stage 3	>42%	<=55%	>=3	
LIP Stage 4	<=42%	<=40%	4	

**To recover to a less restrictive LIP Stage the Trigger Indicators above, unless noted otherwise, must support that Stage or lower.**

# Catawba Waterree Storage Index

## All Reservoirs Combined

- Target
- Stage 1
- Stage 2
- Stage 4
- Stage 3
- Actual Storage Index

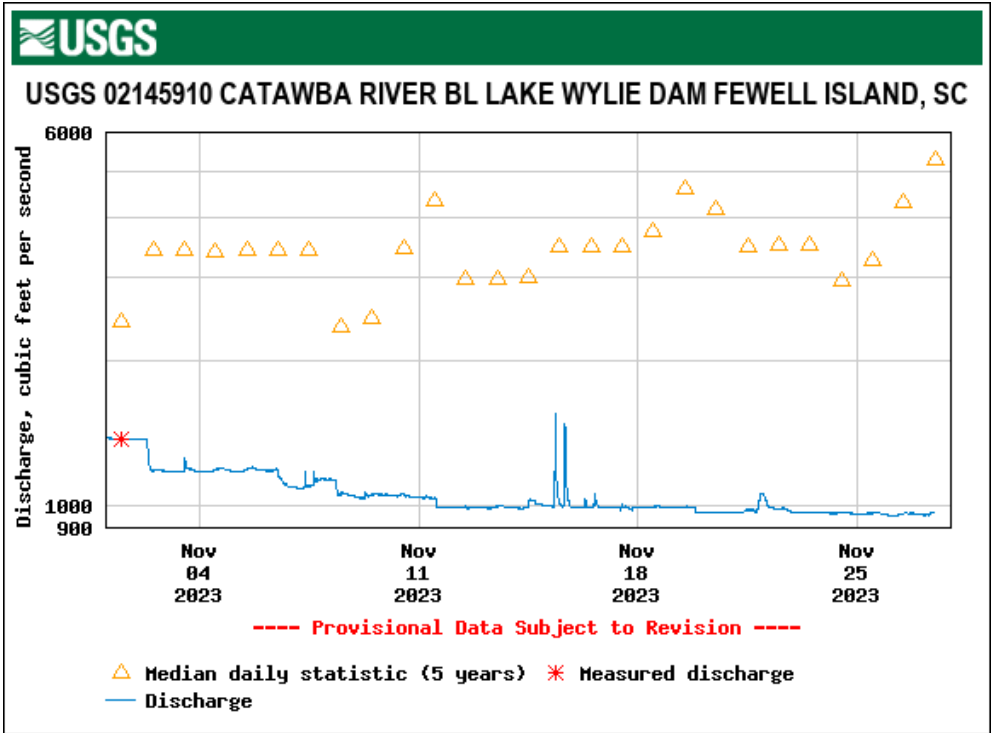




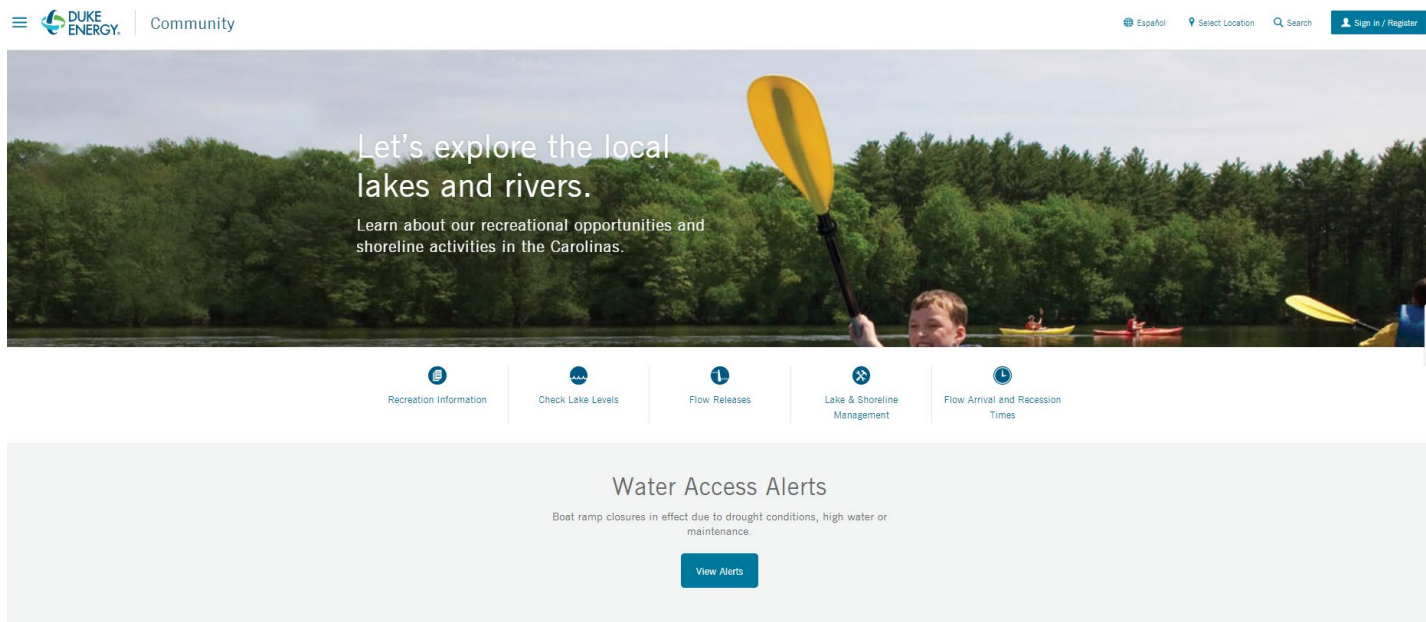
# How Does LIP Stage 1 Affect Wylie?

Catawba-Wateree Low Inflow Protocol - Minimum Lake Levels							
Station	Normal Min Elevation (ft)	Critical Elevation (ft)	Stage 0 (ft)	Stage 1 (ft)	Stage 2 (ft)	Stage 3 (ft)	Stage 4 (ft)
Wylie	94.0	92.6	94.0	93.0	92.6	92.6	92.6

Catawba-Wateree Low Inflow Protocol - Minimum Flows							
Station	Normal Min Flow (cfs)	Critical Flow (cfs)	Stage 0 (cfs)	Stage 1 (cfs)	Stage 2 (cfs)	Stage 3 (cfs)	Stage 4 (cfs)
Wylie (Jan-Dec)	1100	700	1100	860	720	700	700



# Boat Ramp Closures – Access Alerts on Lake View and Website



- Duke Energy closes ramps when there is less than 3 feet of water at the end of the ramp
- Signs indicating the end of the ramps have been ordered.



## Water Access Alerts

### Lake Level Advisory Regarding Boat Ramps - October 27, 2023

- Lack of rainfall is resulting in lower than normal lake levels across the region. Extra caution should be taken when launching boats at shallow ramps. Ramps which are at or below the minimum launch depth levels are in the following locations: Ramsey Creek Park, Buster Boyd Access Area, and Allison Creek Access Area. User discretion at landings is advised until further notice.

# Lake Wateree Inflatable Gate

- Construction began in Nov 2022
- Construction currently ongoing on the spillway with concrete work complete, installation of gate sections underway
- Lake Drawdown 4.5-7 feet below full pond during construction
- Expected completion in Q1 2024 (required completion date is Mar 2026)
- CRA Rev 2 approved by FERC Jan 2018
  - Lake Wylie summer target elevations (May 1 –Oct 1) will increase from 97 ft to 97.5 ft after Wateree Dam is modified to improve flood management or 12/31/2025, whichever is later (**May 2026**).



Artist rendering of inflatable gate

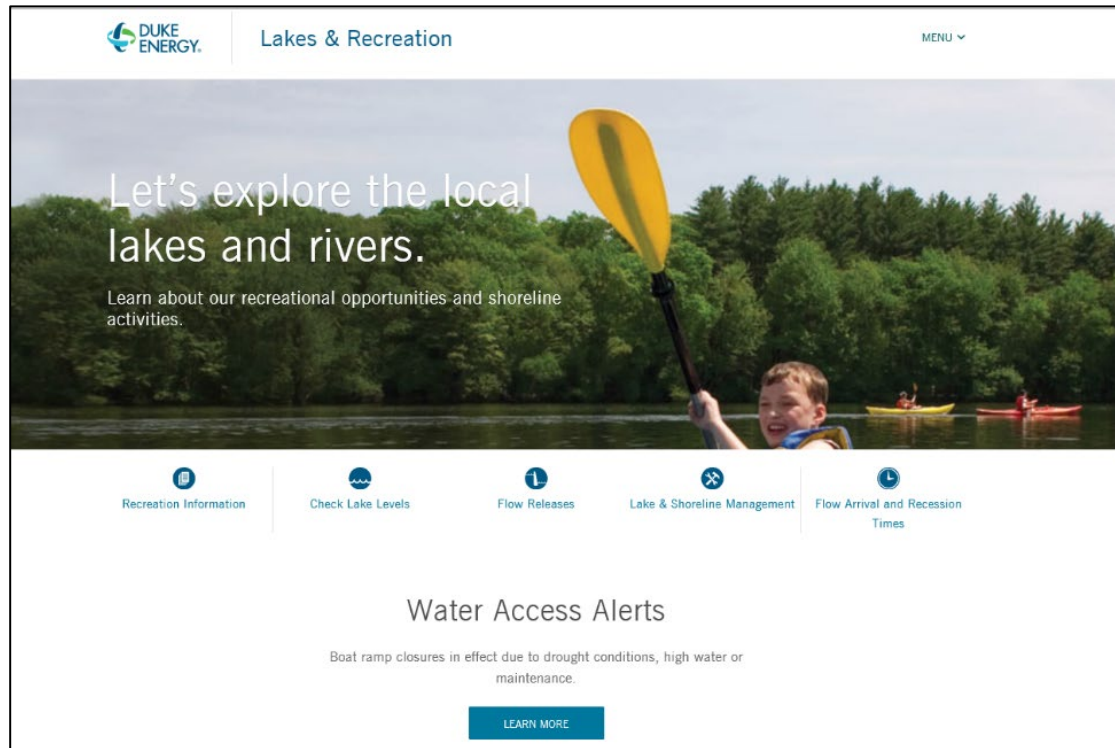


# Wylie Lake Level Expectations

- **Wylie's Role** - Downstream construction project needs more storage support from Wylie to manage inflow and stay on schedule (*Note: James and Norman are serving similar roles presently*)
- **Operating Strategy** – Lack of rainfall and license required releases have resulted in lower-than-normal lake levels
  - End of recreation season means fewer releases
  - Stage 1 of the LIP allows for reduced minimum continuous flow releases
- **Downstream Construction Projects**
  - **Great Falls**
    - **Flow Release Structures** – Construction was completed in July 2023.
  - **Wateree**
    - **Inflatable Gate** – License and CRA require dam modification to help manage high inflows - currently scheduled for completion in Q1 2024

Duke Energy Lake Information Line  
800-829-5253

Duke Energy Lakes and Recreation Website  
<https://www.duke-energy.com/lakes>



Duke Energy's  
Lake View app

**Real-time lake levels, flow releases, alerts and more.**  
Look into our lakes with the Lake View app. Whether you're boating, fishing or maintaining property along Duke Energy's waterways, Lake View can help keep you safe and informed.

- Lake levels
- Flow release info
- Alerts and special messages

**Duke Energy lakes and river basins, including:**

- Catawba-Wataree
- Keowee-Toxaway
- Pigeon River
- Yadkin-Pee Dee
- Nantahala Area

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