

# South Carolina Water Resources Monthly Summary

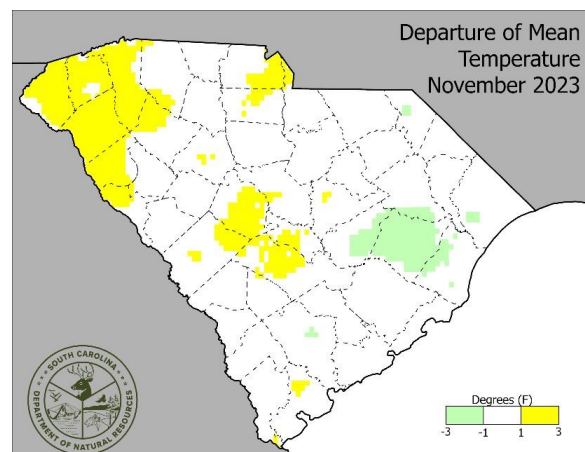
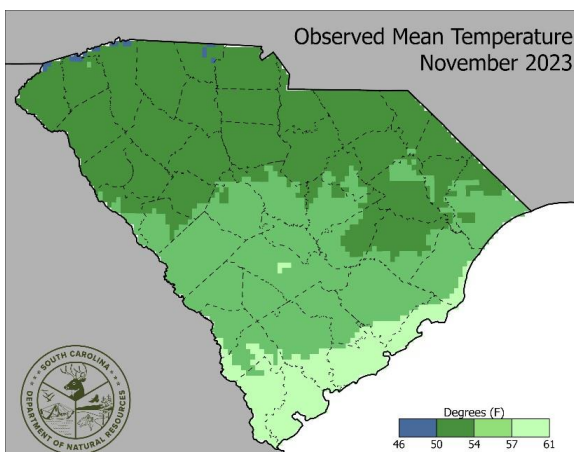
## For November 2023

Provided by

The South Carolina Department of Natural Resources

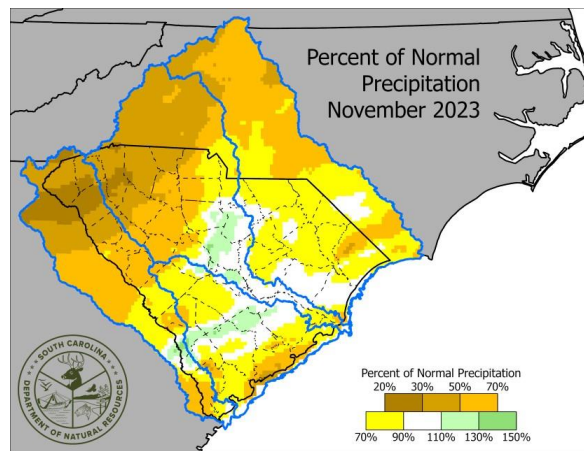
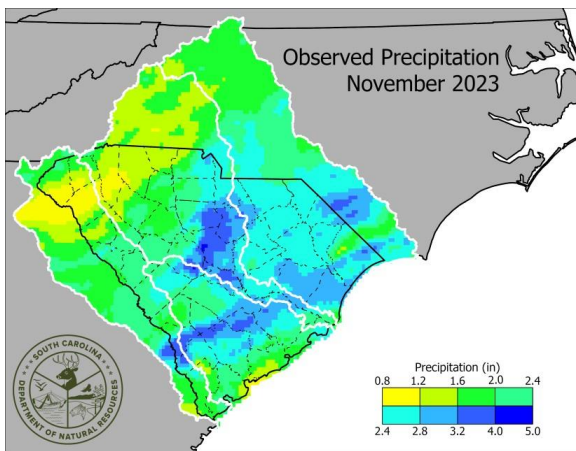
### Temperature

Statewide, South Carolina had an average temperature of 54.4 degrees, 1.0 degrees above the long-term average (1895-2022) of 53.4 degrees for November. Most of the State had near normal average temperatures for November, while portions of the Lower Pee Dee Region had temperatures 1 to 3 degrees below normal and portions of the Upstate, Midlands, and Lowcountry had temperatures 1 to 3 degrees above normal. The highest daily maximum temperature recorded in November was 87 degrees at the Barnwell 5 ENE NWS station in Barnwell County. The lowest daily minimum temperature recorded in November was 17 degrees at three different stations. The Jocassee 8 WNW NWS station in Oconee County and Chesnee 7 WSW NWS station in Spartanburg County recorded a minimum temperature of 17 degrees on both November 29<sup>th</sup> and 30<sup>th</sup>, while the Union 8 S station in Union County recorded a minimum temperature of 17 degrees on only November 29<sup>th</sup>.



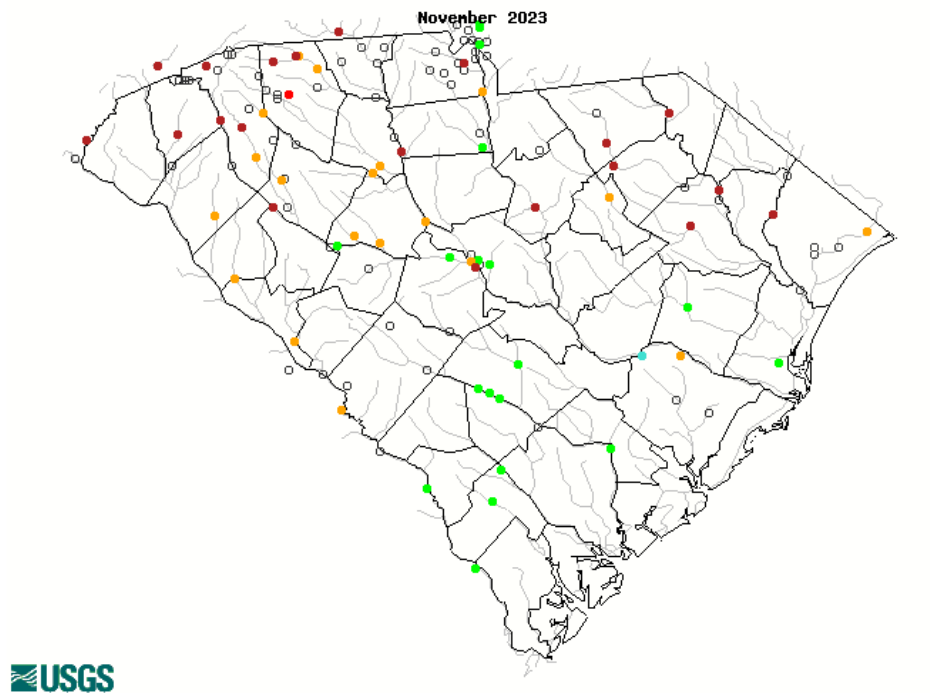
## Precipitation

The statewide average precipitation for November 2023 was 2.10 inches, -0.62 inches below the long-term average for the month (1895-2022) of 2.72 inches. The Upstate was the driest region of the state in November, with precipitation totals ranging between 20% and 90% of normal. The other regions of the state saw a mix of conditions, ranging from 50% below normal to 150% above normal precipitation. The Clemson Oconee County Airport station recorded only 0.74 inches of rain, which was the lowest recorded total at a station in the state for November. The Columbia 2.1 NNW CoCoRaHS reporter in Richland recorded 5.43 inches of rain, which was the highest recorded total at a station in the state for November.



## Streamflow

The USGS's monthly streamflow map compares the current monthly average streamflow to its historical monthly average streamflow conditions for the same month over the gage's period of record. While some of the southern counties in South Carolina benefitted from a few rain events in November, the Upstate counties continued to remain dry. Streamflows in the Upstate counties continued to drop and several gages in Upper Savannah, Saluda, Broad, Catawba, and in the Pee Dee River basin recorded below-normal to much below-normal streamflow conditions.

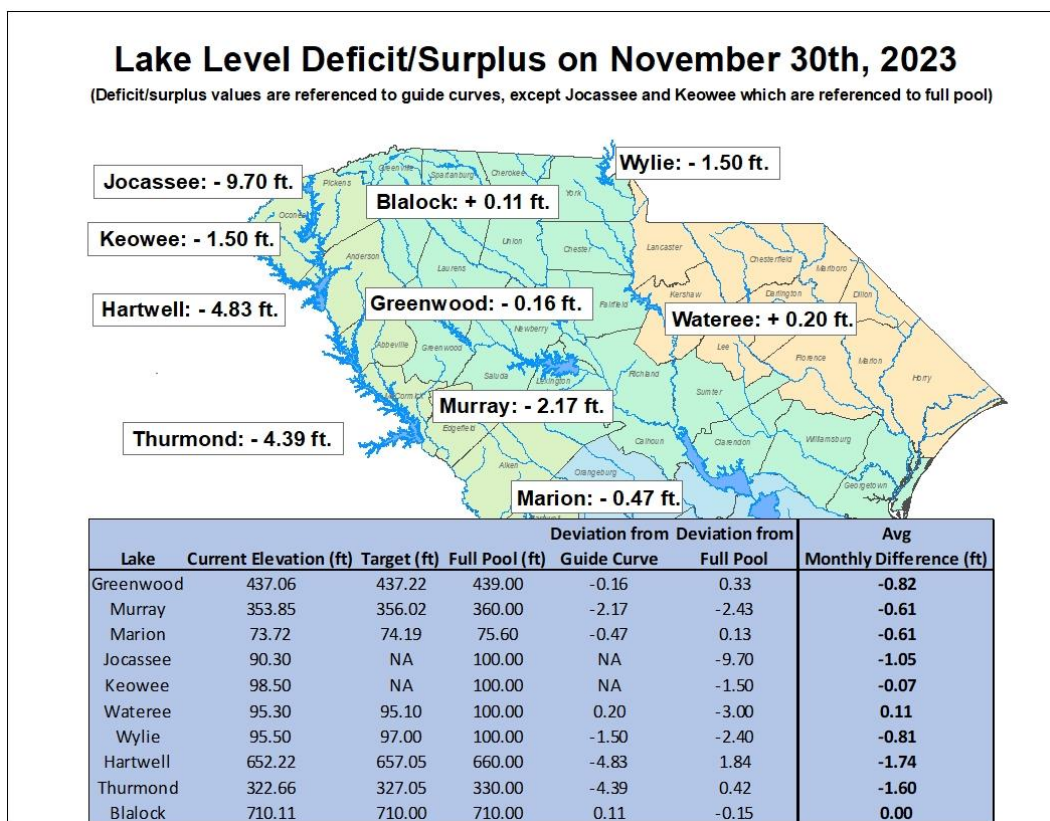


Explanation - Percentile classes							
Low	<10	10-24	25-75	76-90	>90	High	No Data
	Much below normal	Below normal	Normal	Above normal	Much above normal		



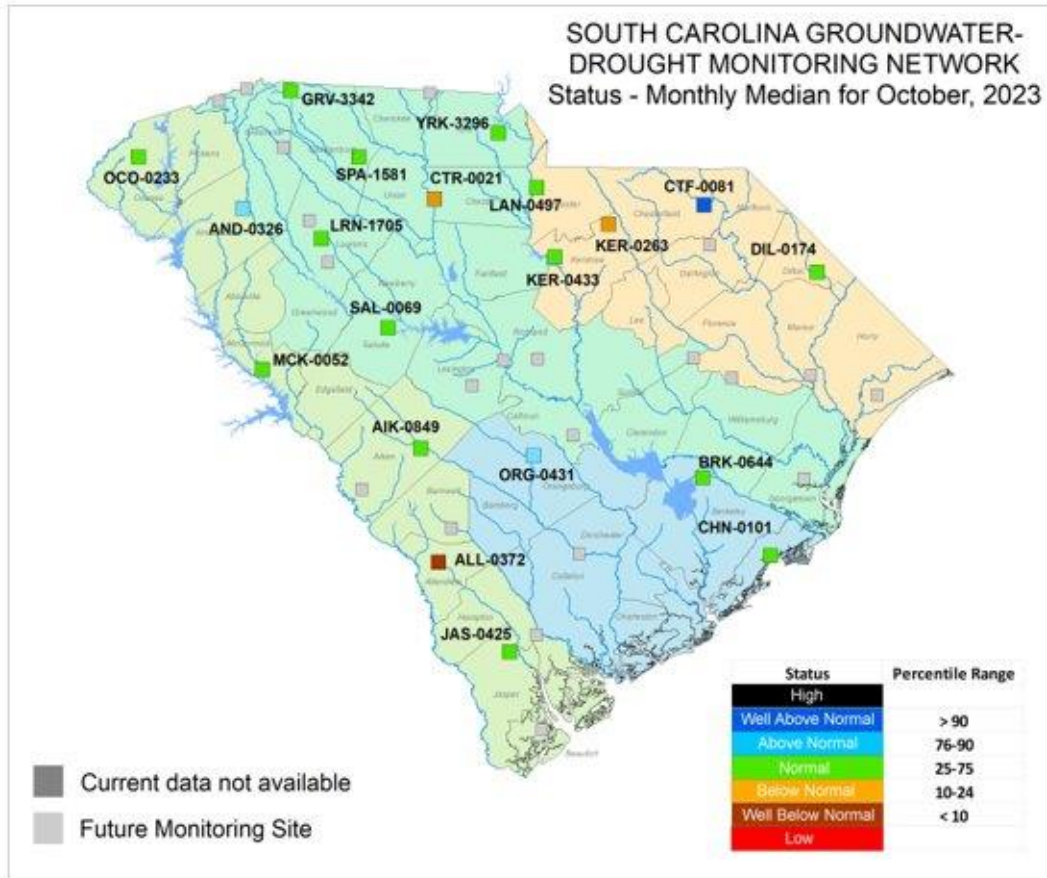
## Reservoirs

The map below shows a surplus or deficit from the guide curves or full-pool elevations for the major reservoirs in the State, based on conditions for November 30th. Eight out of ten major reservoirs were below their target or full-pool elevations. Counties in the upper part of the State continued to remain dry in November. The past few months of dryness have caused Hartwell, Thurmond, Jocassee, and Keowee reservoir levels to drop. All three USACE reservoirs, Lake Hartwell, Russell, and Thurmond continued to remain under Drought Trigger Level 2 conditions. The Keowee-Toxaway project which includes Lake Jocassee and Lake Keowee under Duke Energy's management, also continued to stay at Low Inflow Protocol (LIP) Stage 2. The dry conditions extending into the Catawba Wateree basins also supported continuation of the LIP Stage 1 for the basin.



## Groundwater

The groundwater condition map for November is based on the monthly medians for the data collected by the USGS and SCDNR. Nineteen of the twenty wells observed a drop in the monthly medians from October to November. The Upstate counties continued to remain dry which resulted in a gradual decline of groundwater levels in those counties. Groundwater levels at Chester and Kershaw wells continued to stay at below-normal status through November. Allendale and Jasper well also continued to stay at much below normal and below normal conditions in November.



	USGS well sites										DNR Telemetry sites									
	MCK-0052	AND-326	OCO-233	KER-0433	SPA-1581	CTR-0021	YRK-3296	LAN-0497	JAS-0425	CHN-0101	DIL-0174	CTF-0081	GRV-3342	KER-0263	LRN-1705	SAL-0069	ORG-0431	AIK-0849	ALL-0372	BRK-0644
Oct 2023 Monthly median (ft, below land surface)	38.21	3.18	29.91	53.04	43.18	91.12	23.24	31.96	59.65	13.12	4.75	86.80	45.92	36.47	16.05	20.43	27.01	42.88	58.36	13.57
Nov 2023 Monthly median (ft, below land surface)	38.65	3.23	30.15	53.58	43.29	91.45	24.12	32.64	63.03	13.49	4.98	86.90	46.23	37.00	16.08	22.26	27.48	42.87	58.47	13.59
Difference in monthly median from past month (ft)	-0.44	-0.05	-0.24	-0.54	-0.10	-0.32	-0.88	-0.68	-3.38	-0.37	-0.23	-0.10	-0.31	-0.53	-0.03	-1.83	-0.46	0.00	-0.11	-0.02

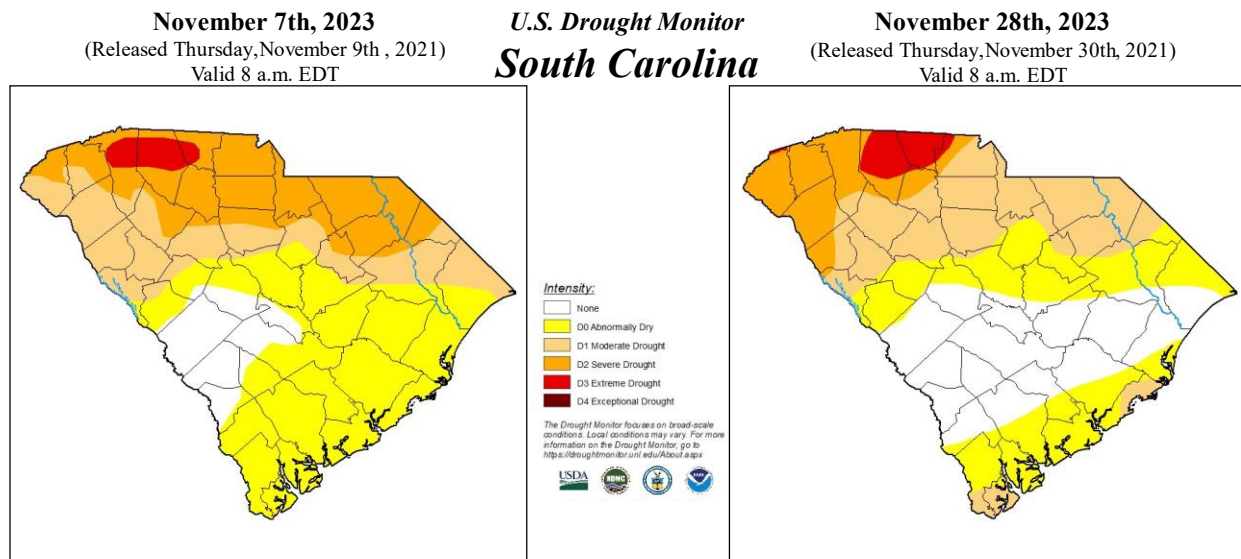




## Drought

Throughout October, drought conditions expanded and intensified, particularly north of the Fall Line. On the first U.S. Drought Monitor (USDM) map of November 41.29% of the state was in abnormally dry (D0) conditions, 21.77% was in moderate drought (D1), 23.89% was in severe drought (D2) and 2.56% were in extreme drought (D3). This was the first time since 2019 that any portion of South Carolina has been in D3 conditions. The expansion and intensification of drought conditions were due driven by below normal precipitation and above normal temperatures that severely impacted soil moisture and agricultural conditions, increased the potential for wildfire, and caused significant impacts to hydrological conditions, leading to some water systems to enact voluntary water restrictions. Drought conditions peaked on the third USDM map for the month (11/21) where 13.22% of the state was in D0 conditions, 29.08% was in D1 conditions, 26.11% were in D2 conditions, and 9.70% were in D3 conditions. By the last USDM map of the Month (11/28), there was some improvements to the map due much needed rain. On this map, 27.88% of the state was in D0 conditions, 26.63% was in D1 conditions, 11.42% were in D2 conditions, and 3.38% were in D3 conditions.

The South Carolina Drought Response Committee (DRC) met on November 30<sup>th</sup> and declared seven counties in moderate drought conditions, while keeping 16 counties in incipient drought conditions and 23 counties in normal status. Greenville, Spartanburg, Cherokee, Union, York, Chester, and Fairfield counties were put in moderate drought conditions due to agricultural impacts, decreases in streamflows (affecting some water systems), and the increased potential for wildfire. Areas in incipient drought noted that conditions were still dry, but comprehensive impacts were not as significant as those counties that were moved to moderate drought. More information can be found here: <http://scdrought.com/current.html#>. The next DRC meeting is scheduled for January 11<sup>th</sup>, 2024.



## Summary

Average temperature for most of the state was near normal, with a few areas experiencing slight above or below normal temperatures. However, precipitation in November was below normal for most of the state. The impacts to soil moisture, agriculture, hydrology, and the increase in wildfire potential were due to seasonal dryness, starting at the end of summer and beginning of Autumn. Between September and November, most of the state received below normal precipitation. The Upstate received between 4.00 to 10.00 inches below normal precipitation (25% to 75% of normal). Oconee, Pickens, Anderson, Greenville, Spartanburg, and Cherokee counties experienced their 3<sup>rd</sup> or 4<sup>th</sup> driest Autumn on record (since 1895).

The dry conditions, as well as impacts to agriculture, water systems, and increased wildfire potential caused drought conditions to spread and intensify in South Carolina, with portion of the Upstate being classified in extreme drought (D3) conditions for the first time since 2019. On November 30<sup>th</sup>, the Drought Response Committee put Greenville, Spartanburg, Cherokee, Union, York, Chester, and Fairfield counties in moderate drought status due agricultural impacts as well as below normal hydrological conditions that causes impacts to some water systems.

## Looking Forward

As of December 12<sup>th</sup>, the state has picked up some rain, with totals ranging from 1.5 to over 5 inches. These conditions helped to make a dent in precipitation deficits, particularly in the Upstate, leading to some improvements to soil moisture and agricultural conditions, as well as hydrologic conditions. As of 12/12, U.S. Drought Monitor (USDM) shows improvement in conditions with 24.59% of the state in abnormally dry (D0) conditions, 28.49% in moderate drought (D1) conditions, and 11.36% in severe drought (D2) conditions. This was the first USDM map since November 7<sup>th</sup> that did not have any extreme drought (D3) conditions in the state.

## Contact

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