

# South Carolina Water Resources Monthly Summary

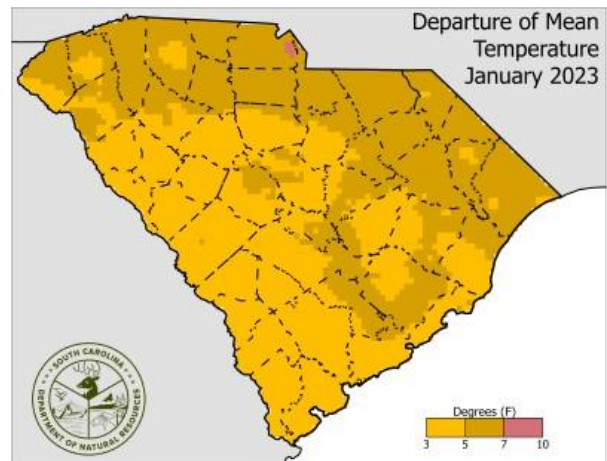
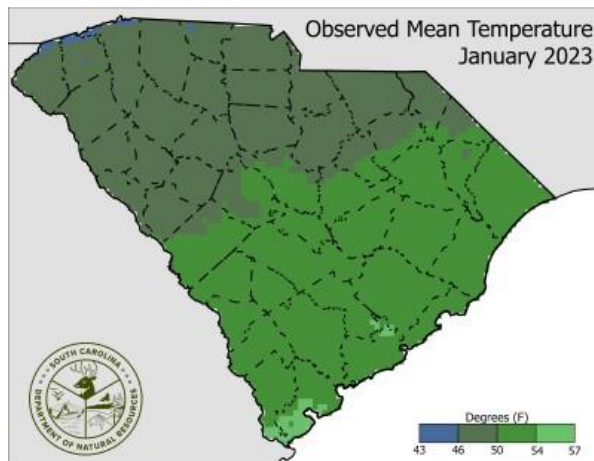
## For January 2023

Provided by

The South Carolina Department of Natural Resources

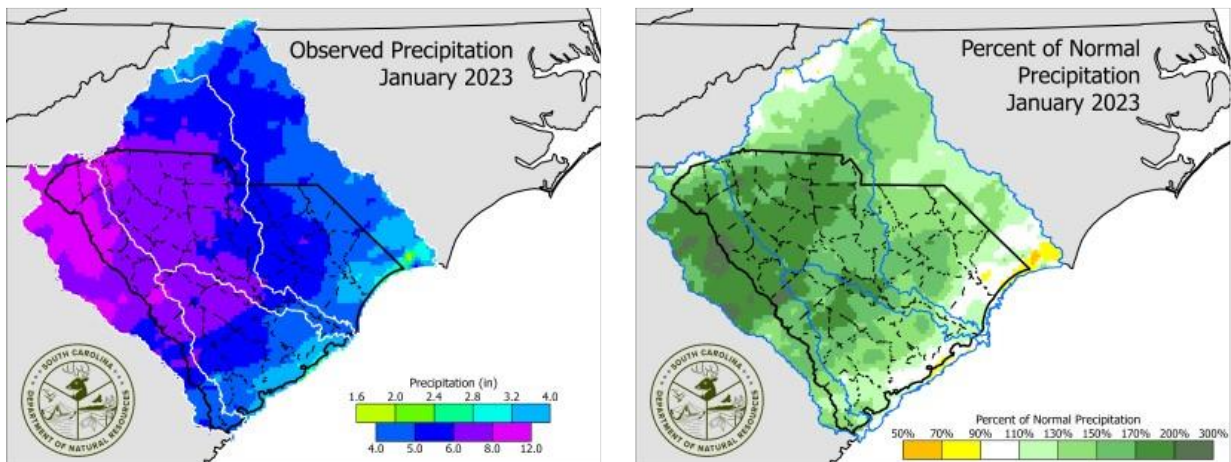
### Temperature

Statewide, South Carolina had an average temperature of 50.5 degrees, 5.80 degrees above the long-term average (1895-2022) of 44.7 degrees for January. While the entire state saw above normal temperatures for January, the Pee Dee Region and Upstate had a monthly average temperature that was 5 to 7 degrees above normal. The highest maximum temperature for the month was 81 degrees, recorded at the Elliott NWS station in Lee County. The lowest minimum temperature for January was 18 degrees at the Union NWS station.



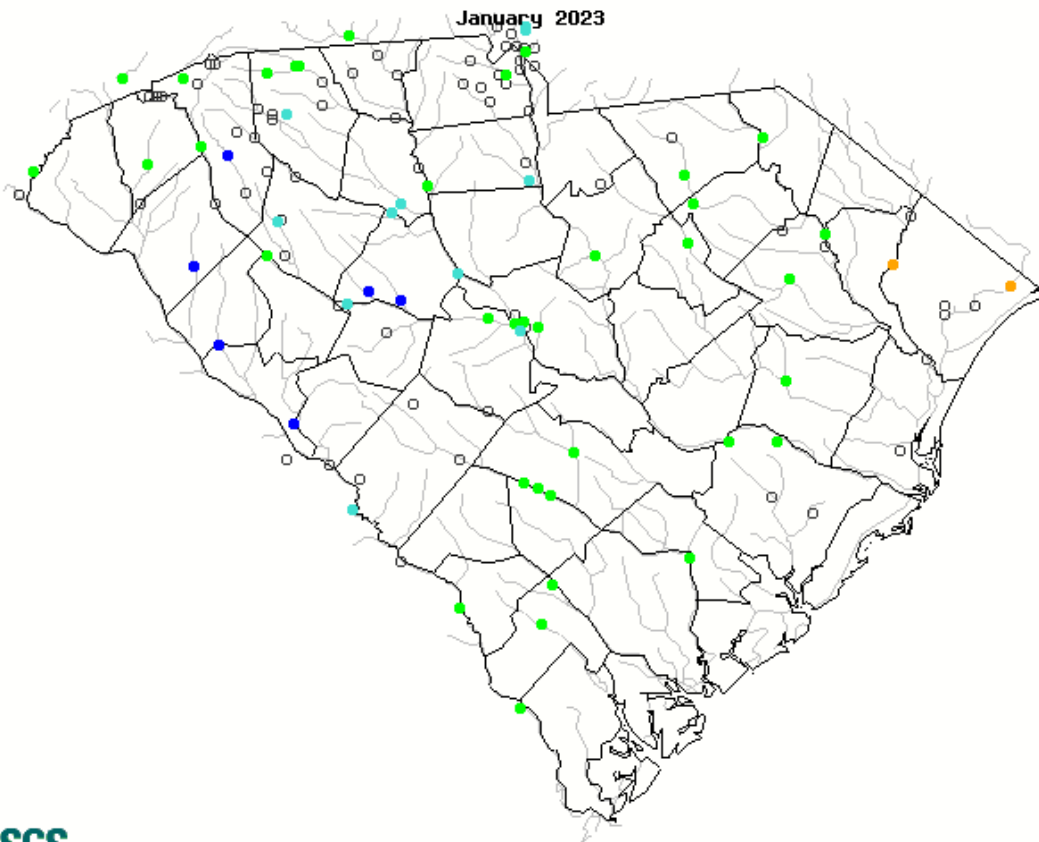
## Precipitation

The statewide average precipitation for January 2023 was 5.55 inches, 1.86 inches above the long-term average for the month (1895-2022) of 3.69 inches. Most of the Upstate and CRSA received over 6 inches of rain in January, with so portions of the Upstate receiving over 8 inches. Portions of the Pee Dee Region and the Coast received less rain, generally under 5 inches. The few areas that received 4 inches or less had more normal precipitation for January, while areas received 5 inches or more received over 110% of normal precipitation. The Langley NWS station (Aiken County) recorded the highest totals in South Carolina for January of 13.08 inches. Contrastingly, the Georgetown County Airport station recorded 2.17 inches for the month of January.



## Streamflow

The USGS's monthly streamflow map compares the current monthly average streamflow at each gage for a given month to each gage's historical monthly average streamflow for the same month over the gage's period of record. The cooler temperatures and rainfall received throughout January have continued to improve streamflow conditions in most of the State. The Upper Savannah basin and parts of the Saluda basin have gages recording much above normal conditions. Gages in Hampton County have also improved from below-normal to normal conditions. The Waccamaw gage has however continued to remain at below-normal conditions since December.



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 January 31st. Six out of ten reservoirs were below their target or full-pool elevations.

The Duke Energy lakes in the Catawba-Wataree River basin are no longer in Stage 0 of the Low Inflow Protocol (LIP) based on the storage index triggers. The LIP gets initiated when any two of the three triggers (Storage Index, U.S.Drought Monitor, and Streamflow) support Stage 0 or higher status. Due to the below-normal rainfall conditions in the past several months and the pumping operations, the LIP status continued to be in Stage 0 until January 3rd, 2023.

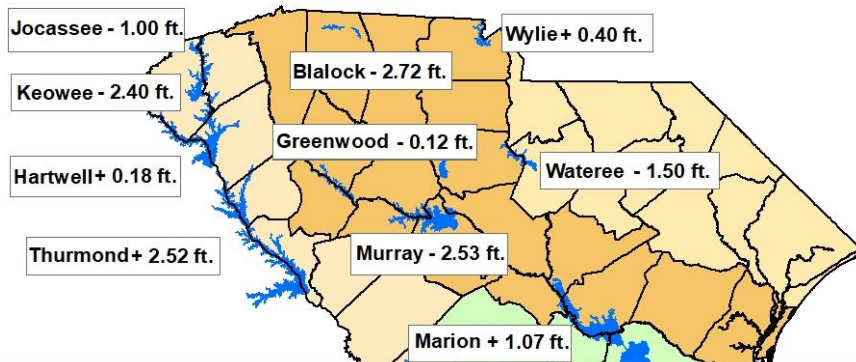
Fortunately, the increase in rainfall in the past few months resulted in increasing usable water storage and improving the other drought triggers as well. Duke Energy also manages Lake Jocassee and Keowee. These lakes are pump storage systems, and their levels fluctuate based on their power generation, maintenance requirements, and weather conditions.

On December 21st, the USACE declared their lakes to be no longer in drought operations pertaining to the recent rain events in the basin. Improved rainfall conditions helped improve the drought trigger and lake levels continued to stay above Level 1 through December. Lake levels at Lake Hartwell and Thurmond also stayed above their guide curves throughout most of January. Lake levels at Lake Murray and Blalock were lowered for maintenance purposes.

### Lake Level Deficit/Surplus on January 31, 2023

(Deficit/surplus values are referenced to guide curves, except Jocassee and Keowee which are referenced to full pool)

Key: Lake Name, Current lake level deviation from GC/FP

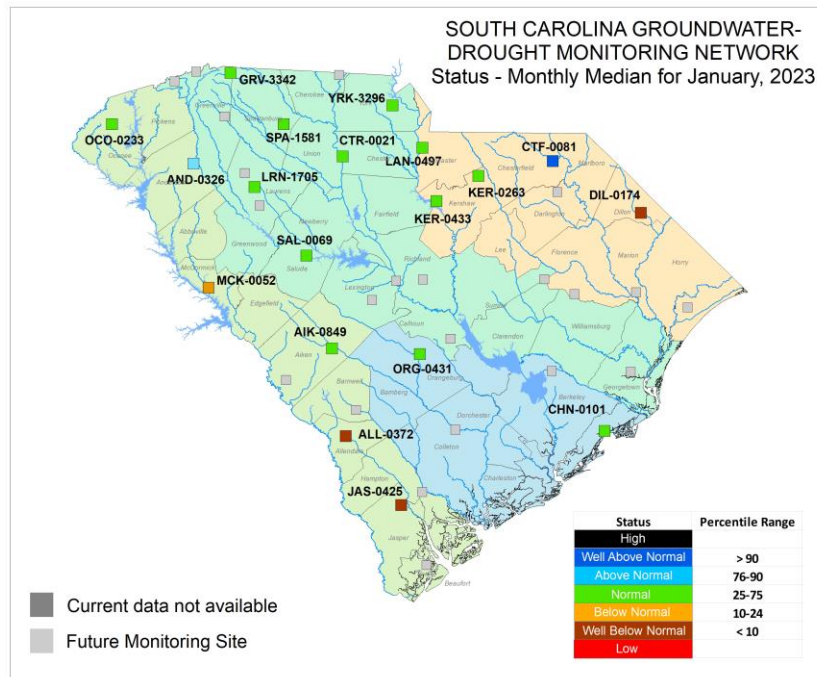


Lake	Current Elevation (ft)	Target (ft)	Full Pool (ft)	Deviation from		Avg Monthly Difference (ft)
				Guide Curve	Full Pool	
Greenwood	434.38	434.50	439.00	-0.12	0.33	-1.61
Murray	353.41	355.94	360.00	-2.53	-2.43	-0.05
Marion	74.95	73.88	75.60	1.07	0.13	0.38
Jocassee	99.00	NA	100.00	NA	-1.00	0.92
Keowee	97.60	NA	100.00	NA	-2.40	0.07
Wateree	93.50	95.00	100.00	-1.50	-3.00	0.15
Wylie	97.40	97.00	100.00	0.40	-2.40	-0.59
Hartwell	657.47	657.29	660.00	0.18	1.84	1.95
Thurmond	329.81	327.29	330.00	2.52	0.42	1.98
Blalock	707.28	710.00	710.00	-2.72	-0.15	-0.72



## Groundwater

The groundwater condition map for January is based on the monthly medians for the data collected by the USGS and SCDNR. Although most of the wells are at normal status, six of the seventeen wells observed a drop in the monthly medians from December to January. Parts of Dillon, McCormick, Allendale, and Jasper counties did not observe much improvement in their dry conditions from the rainfall received through December and January. The Dillon well has data only going back to 2014 and is therefore missing some of the record droughts of the past and therefore its percentile values is not exactly comparable to other wells with longer period of record. The York well dropped below normal levels since June and finally recovered in December. Water levels at the Jasper well dropped below historical low values in November. Rainfall received in December and January helped improve the water levels, however the median value is still Well Below Normal. Similarly, water levels at the Allendale well dropped below normal conditions in May and continued to drop gradually, currently in well below normal conditions. As of the end of January, while most of the wells have groundwater levels at or above normal, some of the dry wells will take longer to recover.



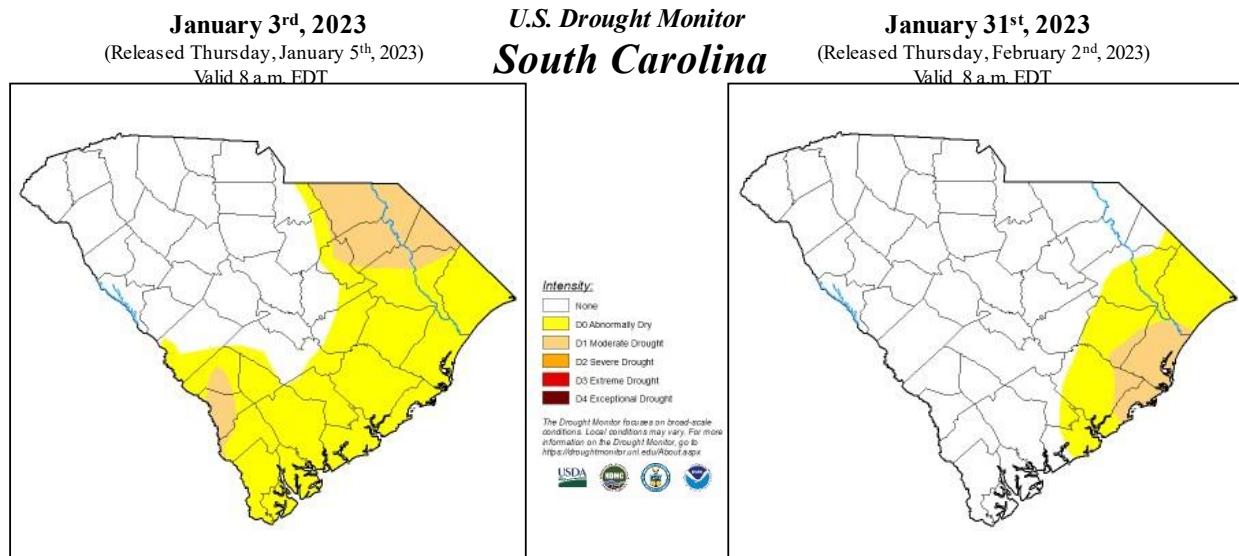
	USGS well sites										DNR Telemetry sites								
	MCK-0052	AND-326	OCO-233	KER-0433	SPA-1581	CTR-0021	YRK-3296	LAN-0497	JAS-0425	CHN-0101	DIL-0174	CTF-0081	GRV-3342	KER-0263	LRN-1705	SAL-0069	ORG-0431	AIK-0849	ALL-0372
Dec 2022 Monthly median (ft, below land surface)	40.19	3.00	29.27	53.76	43.20	89.31	22.70	32.64	65.14	13.11	5.20	86.73	45.46	36.35	15.09	18.67	28.57	42.43	56.65
January 2023 Monthly median (ft, below land surface)	40.29	2.78	28.95	53.63	43.38	89.64	20.48	30.14	60.86	13.23	5.11	86.70	45.53	36.35	14.21	13.81	28.12	42.25	57.01
Difference in monthly median from past month (ft)	-0.10	0.22	0.32	0.13	-0.18	-0.33	2.22	2.50	4.28	-0.12	0.09	0.03	-0.07	0.00	0.88	4.86	0.45	0.18	-0.36



## Drought

The first U.S. Drought Monitor (USDM) in January (1/3) had 39.89% of the state in abnormally dry (D0) conditions and 10.67% of the state was in moderate drought (D1) conditions. The next two USDM maps had increase in D1 conditions along the Coast and the Southern Savannah River Basin, with D1 covering 22.20% of the state on 1/10 and 24.42% of the state on 1/17. The increases in D1 conditions were primarily due to limited 60-day rainfall along the Coast and declining hydrologic conditions in the Southern Savannah River Basin. The second half of January provided much needed rainfall for areas south of the Fall Line, resulting to improvements to the USDM. The map of 1/24 had 33.18% of the state in D0 conditions and 11.92% in D1 conditions. The final map of the month (1/31) had 14.07% of the state in D0 conditions and 4.75% in D1 conditions.

The South Carolina Drought Response Committee (DRC) did not meet in January.



## Summary

While January was warmer than normal, it was wetter than normal for most of the state. The much-needed rain for the coastal plain generally took place in the second half of the month. This rain helped to improve much of the dry conditions, including streams, reservoirs, and groundwater levels. While some hydrologic conditions are not back to normal status, the rain did improve their conditions from the start of the month.

## Looking Forward

To date (2/13) the first half February has been similar to second half of January: wet. Currently, month-to-date precipitation ranges from 1.5 to 5 inches across the state, with the higher range falling along the coast and portions of the Midlands (3 inches or more). This equates to 200% to 300% of normal precipitation for this period. These rains have helped to remove moderate drought (D1) conditions from the U.S. Drought Monitor (as of 2/7). Abnormally dry (D0) conditions have been reduced to only 4.74% of the state.

The forecast for the rest of the month of February shows high confidence for above normal temperatures, while it shows near normal to slight probability for above normal precipitation. If this forecast holds, it is likely that the entire state will be free of all U.S. Drought Monitor conditions. This should also help to help improve any hydrologic indicators that are still recovering from previously dry conditions.

## Contact

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