

South Carolina Water Resources Monthly Summary

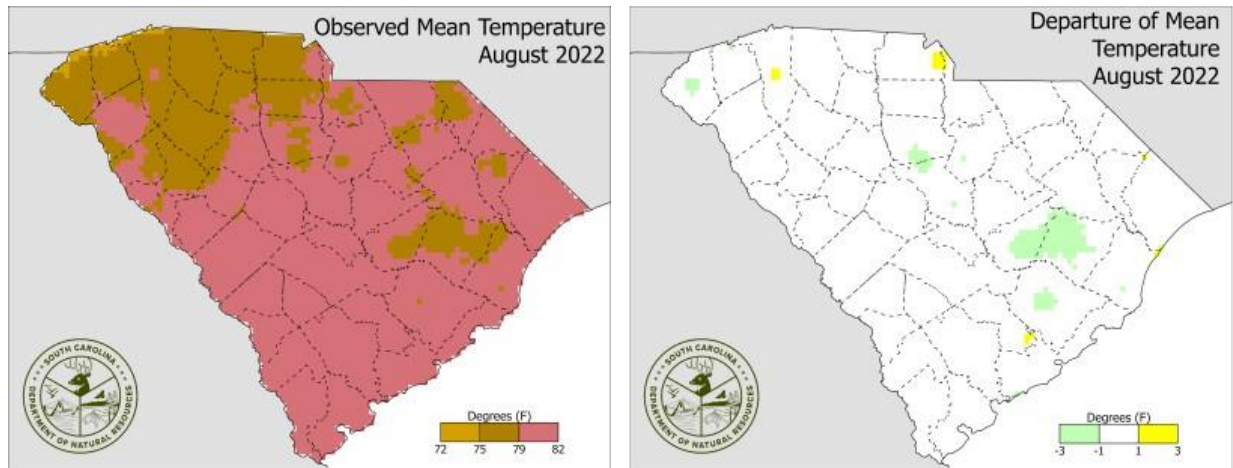
For August 2022

Provided by

The South Carolina Department of Natural Resources

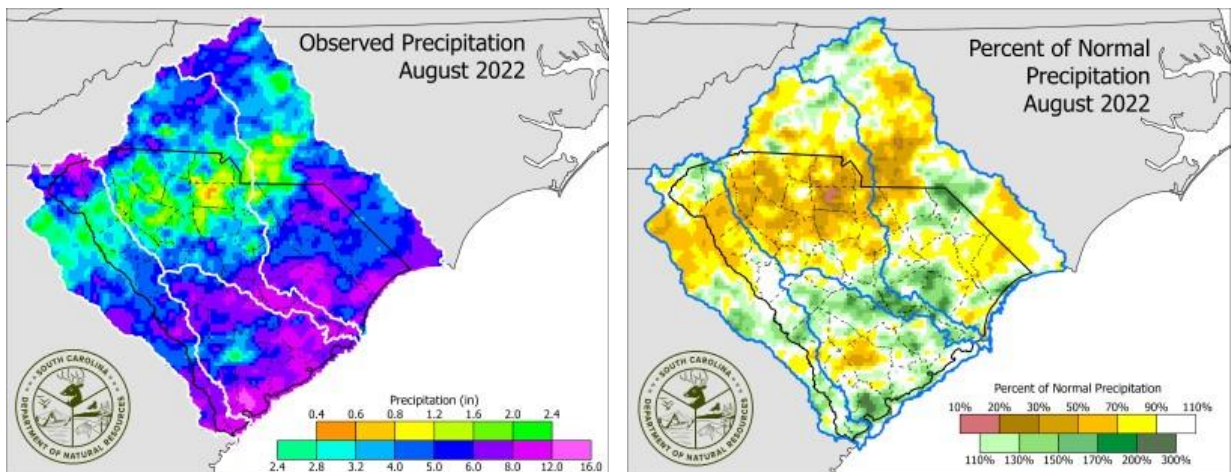
Temperature

Statewide, South Carolina had an average temperature of 79.2 degrees, 0.2 degrees above the long-term average (1895-2021) of 79.0 degrees for August. The highest temperature for the month was 101 degrees, observed on August 2 at the National Weather Service (NWS) station in Barnwell. The lowest temperature was 56 degrees at the NWS station near Jocassee in Oconee County on August 24.



Precipitation

The statewide average precipitation for August 2022 was 5.08 inches, 0.17 inches below the long-term average for the month (1895-2021) of 5.25 inches. The Lowcountry Climate Division (CD7) reported an average of 7.30 inches of precipitation, which was above normal. Some CoCoRaHS observers recorded between ten and fifteen inches of rain in the Beaufort, Charleston, and Horry counties. At the same time, the North Central Climate Division (CD3), along the Catawba and Wateree rivers, recorded its 19th driest August, with an average of 2.65 inches of precipitation. However, some areas within this area measured less than 50% of their average monthly rainfall, with some isolated locations recording less than two inches, including 0.66 inches at the Rock Hill York County Airport and 1.11 inches in Laurens County.

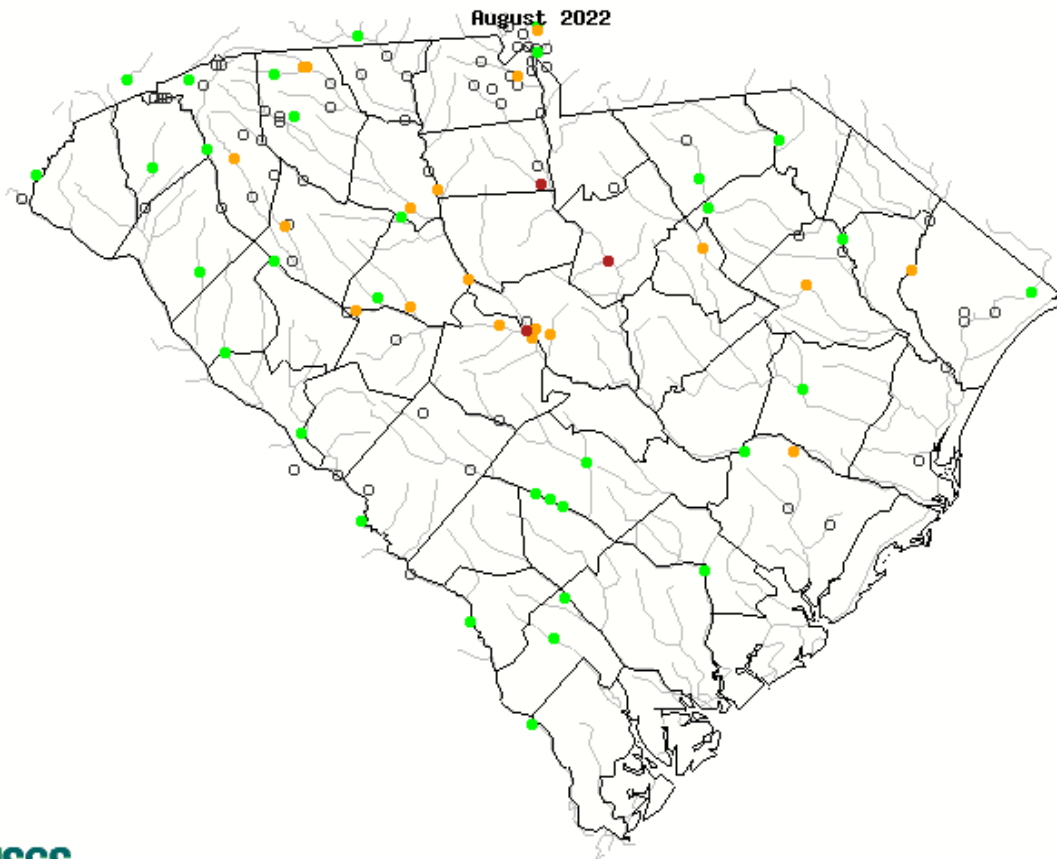


*Precipitation images show observed and percent of normal precipitation for the Water Basins that either flow into or are shared with South Carolina.



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. In July, most of the state had received beneficial rain except for some pockets of regions in the York, Spartanburg, Greenville, Pickens, Laurens, and Abbeville counties. Unfortunately, in August, several counties in the Upstate continued to receive inadequate recharge. As observed from the map below, counties in the Catawba, Broad, Saluda, and Pee Dee basins have streamflows at below normal or much below normal status. The past month's dryness was not relieved in these regions due to the lack of beneficial recharge. However, most of the southern counties benefitted from rain received in August.



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		



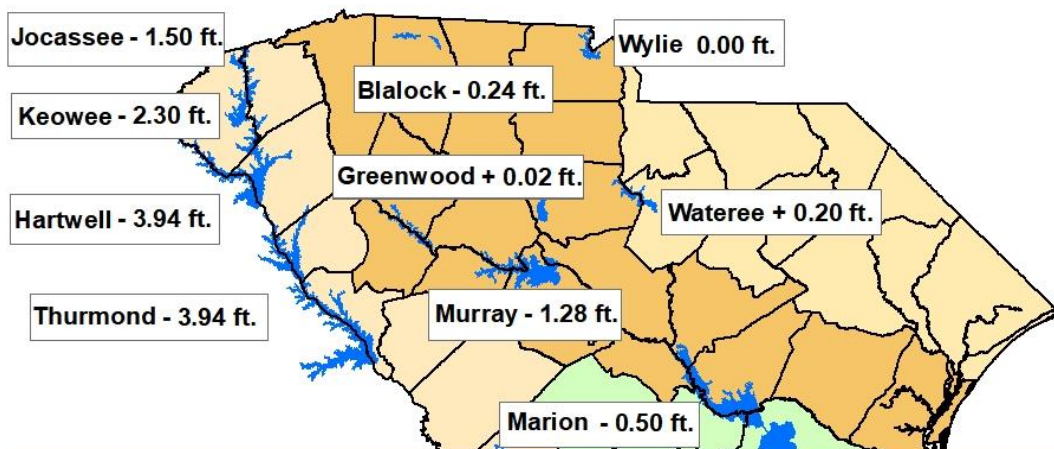
Reservoirs

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 August 31st. Seven of the ten reservoirs were below their target or full-pool elevations in August. The Duke Energy lakes in the Catawba-Wataree River basin continue to be in Stage 0 of the Low Inflow Protocol (LIP). The LIP gets initiated when two of the three triggers (Storage Index, U.S.Drought Monitor, and Streamflow) support Stage 0 or higher status. In July, the lakes were in Stage 0 due to the Streamflow, and the Storage Index triggers. As the past drier months got excluded, the Streamflow trigger improved in August, but the Storage index trigger remained in Stage 0. 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. The Army Corps of Engineer lakes- Hartwell and Thurmond lake levels are about 3.9 ft below their target elevations. As of the end of August, the monthly average lake elevations for six of the ten lakes have dropped from the past month, reflecting the dry conditions in parts of the State.

Lake Level Deficit/Surplus on August 31, 2022

(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

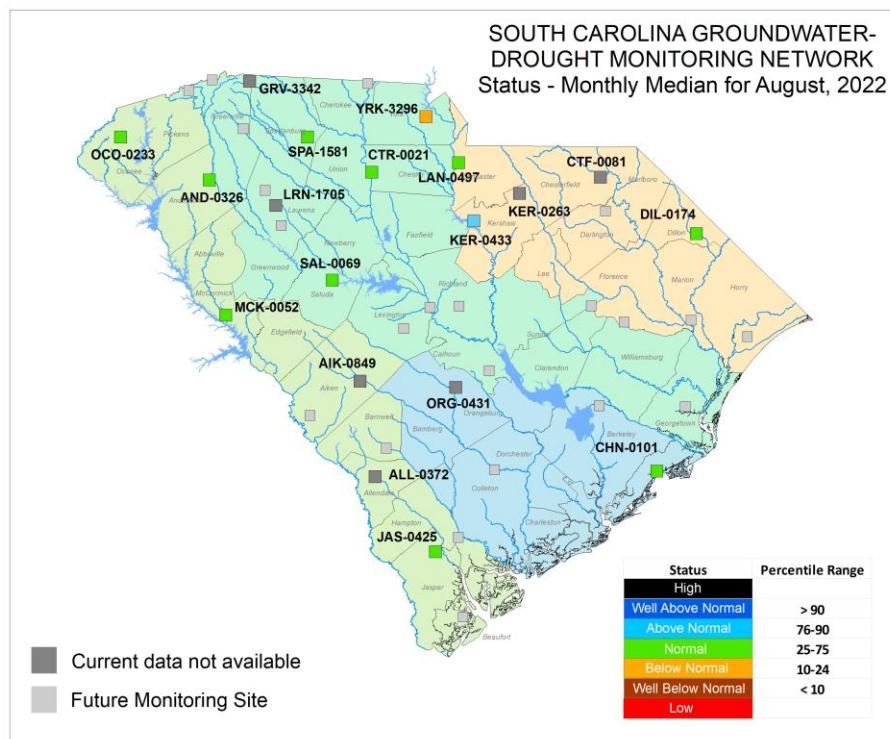


Lake	Current Elevation (ft)	Target (ft)	Full Pool (ft)	Deviation from	Deviation from	Avg Monthly Difference (ft)
				Guide Curve	Full Pool	
Greenwood	439.02	439.00	439.00	0.02	0.33	-0.06
Murray	356.72	358.00	360.00	-1.28	-2.43	-0.42
Marion	75.06	75.56	75.60	-0.50	0.13	-0.37
Jocassee	98.50	NA	100.00	NA	-1.50	0.45
Keowee	97.70	NA	100.00	NA	-2.30	0.34
Wateree	97.20	97.00	100.00	0.20	-3.00	-0.15
Wylie	97.00	97.00	100.00	0.00	-2.40	0.22
Hartwell	656.06	660.00	660.00	-3.94	1.84	-2.28
Thurmond	326.06	330.00	330.00	-3.94	0.42	-2.13
Blalock	709.76	710.00	710.00	-0.24	-0.15	0.13



Groundwater

The groundwater conditions map for August is based on the monthly medians for the data collected by the USGS and SCDNR (Sal-0069). Although most wells are at Normal or Above-Normal status, eight of the eleven wells observed a drop in the monthly medians from July to August. Due to the lack of reported data for July, the difference between July and August median water levels was not calculated for the Saluda well. The groundwater levels in the Upstate region have gradually dropped due to the lack of beneficial rain. The water levels in the York County well have dropped below normal levels since the last week of June. CHN-101, KER-433, and DIL-174 are the only wells that observed improvements and benefitted from the recharge received in August.



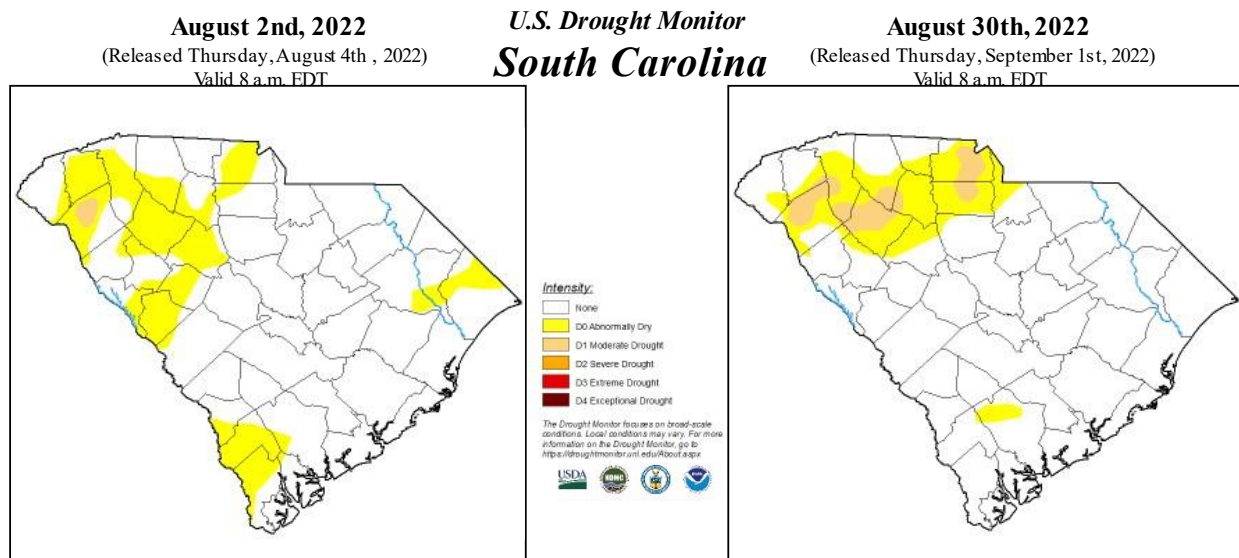
	USGS well sites										DNR Telemetry sites					
	MCK-0052	AND-326	OCO-233	KER-0433	SPA-1581	CTR-0021	YRK-3295	LAN-0497	JAS-0425	CHN-0101	DIL-0174	CTF-0081	GRV-3342	KER-0263	LRN-1705	SAL-0069
July 2022 Monthly median (ft, below land surface)	38.39	2.96	28.88	53.01	42.17	87.76	21.29	31.66	59.86	13.88	5.00	NA	NA	NA	NA	NA
Aug 2022 Monthly median (ft, below land surface)	38.66	3.15	29.11	52.59	42.36	88.08	22.86	32.43	61.14	13.73	4.85	NA	NA	NA	NA	21.10
Difference in monthly median from past month (ft)	-0.27	-0.19	-0.23	0.42	-0.18	-0.32	-1.57	-0.77	-1.28	0.14	0.15	NA	NA	NA	NA	NA



Drought

The first U.S. Drought Monitor (USDM) in August (8/2) had 20.89% of the state in abnormally dry (D0) conditions and 0.47% of the state in moderate drought (D1) conditions. Over the month of August, rain totals were above normal south of the Fall Line, while precipitation was spotty in the Upstate, leading to many areas seeing below normal precipitation. By the last USDM map of the month (8/30), almost all areas south of the Fall Line were back in normal conditions, while much of the state was still experiencing D0 and D1 conditions. This equated to 12.52% of the state in D0 conditions and 4.37% of the state in D1 conditions. The D1 conditions in the Upstate were due to 1-, 2-, and 3-month precipitation deficits that caused soil moisture and streamflow deficits.

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



Summary

For most of the state, August temperatures were near normal. However, precipitation was a mix for the state, with portions some areas receiving above normal rainfall with other areas seeing below normal rainfall. The Upstate generally had below normal rainfall for August, leading to soil moisture and streamflow deficits. These deficits caused an expansion of abnormally dry (D0) and moderate drought (D1) conditions on the U.S. Drought Monitor. Luckily, the rain totals south of the Fall line in August helped to remove much of the D0 conditions in the Coastal Plain.

Looking Forward

As of September 14th, temperatures have been 1 to 3 inches above normal for much of the state. Precipitation totals have ranged from 2.00 to 6.00 inches. To date, much of the state has received above normal precipitation, ranging from 125 to 300% of normal. Some portions of the coastal Pee Dee region have only had 75% of normal precipitation.

Currently, the state is under a high-pressure system, leading to limited rain over the next 7 days. During this period, temperatures will generally be slightly above normal, with daytime highs in the upper 80s. This dry and warm pattern is likely to continue for the rest of the month. If this pattern continues, it likely that there could be an expansion of U.S. Drought Monitor conditions in South Carolina.

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