

South Carolina Water Resources Monthly Summary

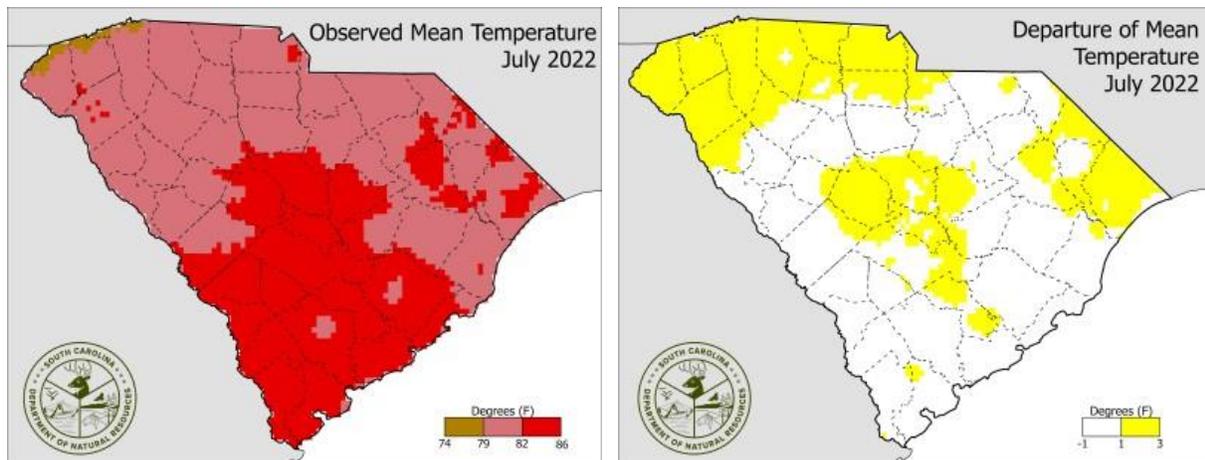
For July 2022

Provided by

The South Carolina Department of Natural Resources

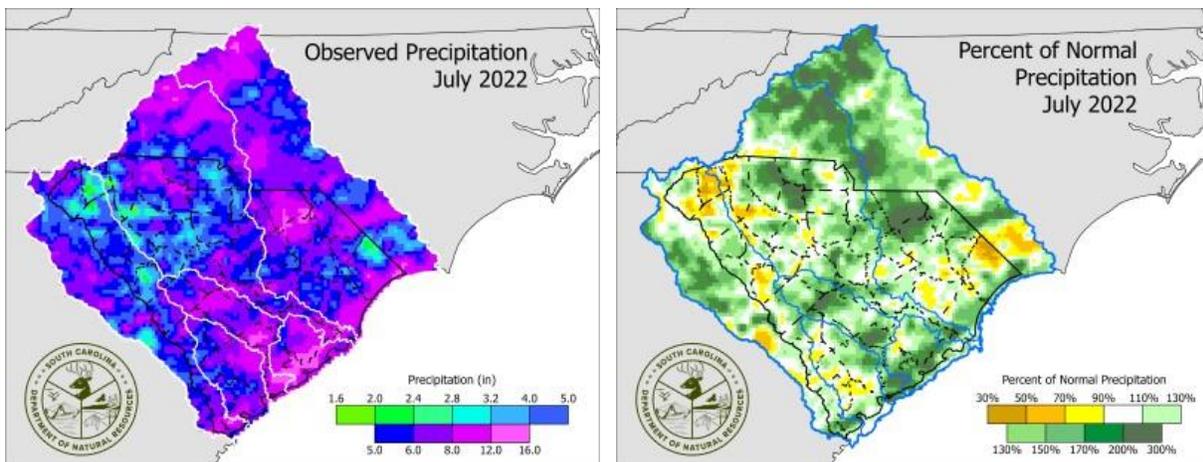
Temperature

Statewide, South Carolina had an average temperature of 81.6 degrees, 1.6 degrees above the long-term average (1895-2021) of 80.0 degrees for July. The highest temperature for the month was 100 degrees, observed on July 8 at the National Weather Service (NWS) station in Barnwell. The lowest temperature was 55 degrees at the NWS station near Jocassee in Oconee County on June 15.



Precipitation

The statewide average precipitation for July 2022 was 5.99 inches, 0.51 inches above the long-term average for the month (1895-2021) of 5.48 inches. A low-pressure system along the South Carolina coast dropped much-needed rainfall in the Lowcountry on July 2 before strengthening into Tropical Storm Colin on July 3. Portions of the Lowcountry, Midlands, and Pee Dee recorded more than five inches of rain, with some CoCoRaHS observers recording between ten and fifteen inches of rain in the coastal counties. However, some areas in the northern Savannah and Santee basins measured less than 75% of their average monthly precipitation, with some isolated locations recording less than two inches, including 1.19 inches in Anderson County and 1.47 inches in Greenwood County.

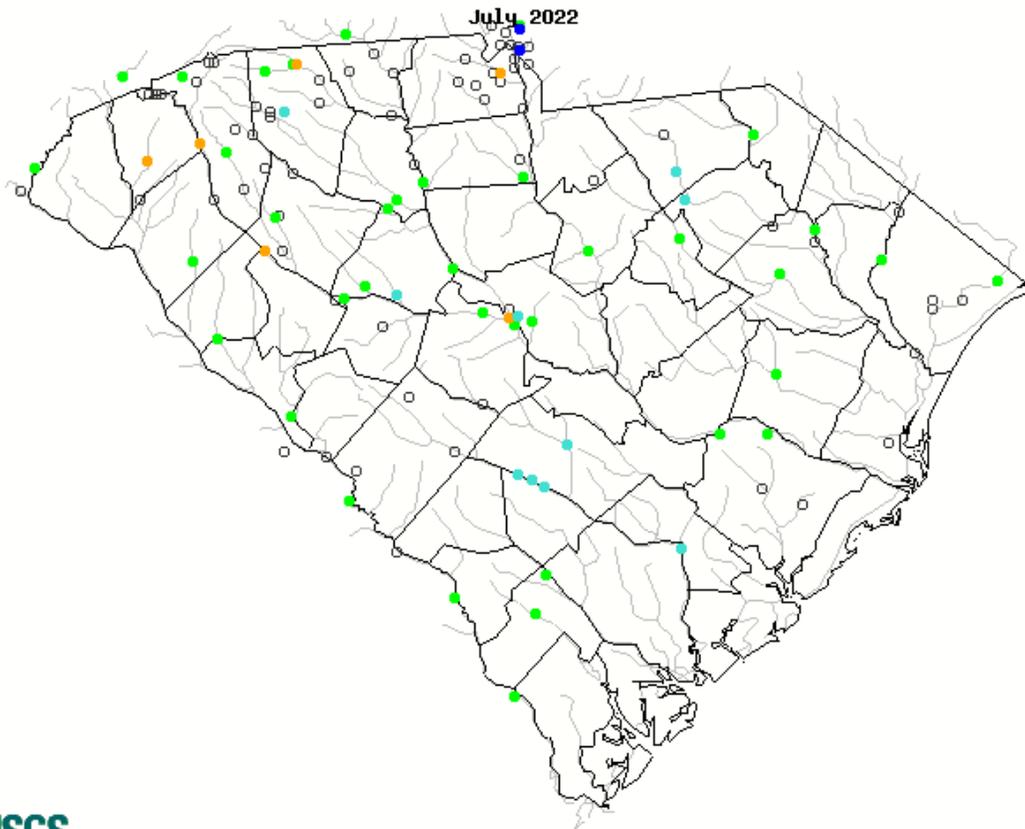


*Precipitation images show observed and percent of normal precipitation for the Water Basins that either flow into or are shared with South Carolina.



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. Most of the state received beneficial rain over the month of July, but some pockets of regions in the Upstate missed the thunderstorms and did not receive enough recharge. The past month's dryness was not relieved in these regions due to the lack of beneficial recharge. As observed from the map, a couple of the gages in the Broad, Catawba, and Saluda basins were below normal conditions for July. The rest of the state shows streamflows at normal or above normal 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		



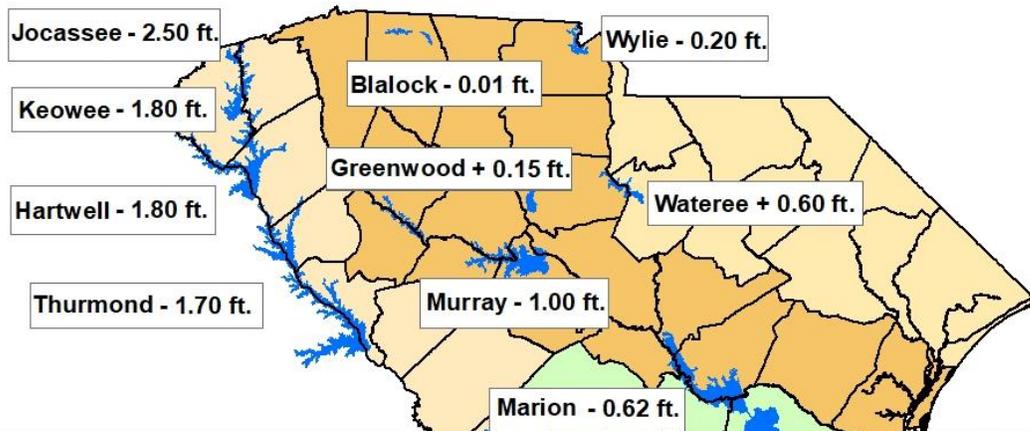
Reservoirs

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 July 31st. In July, eight of the ten reservoirs were below their target or full-pool elevations but maintained close to their target elevations. The Duke Energy lakes in the Catawba-Wateree River basin are still in Stage 0 of the Low Inflow Protocol (LIP). Due to the warmer and drier than normal weather conditions in the past months, the LIP status continues to be in Stage 0. The LIP gets initiated when two of the three triggers (Storage Index, U.S. Drought Monitor, and Streamflow) support Stage 0 or higher status. The U.S. Drought monitor and Streamflow triggers are long-term indicators based on more than one month of data. In the upcoming months, as the past drier months get excluded from the averages, the lakes will be able to return to normal status, provided there's enough support from all three triggers. 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. As of the end of July, the monthly average lake elevations for seven of the ten lakes have dropped from the last month but remained close to their guide curve elevations.

Lake Level Deficit/Surplus on July 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

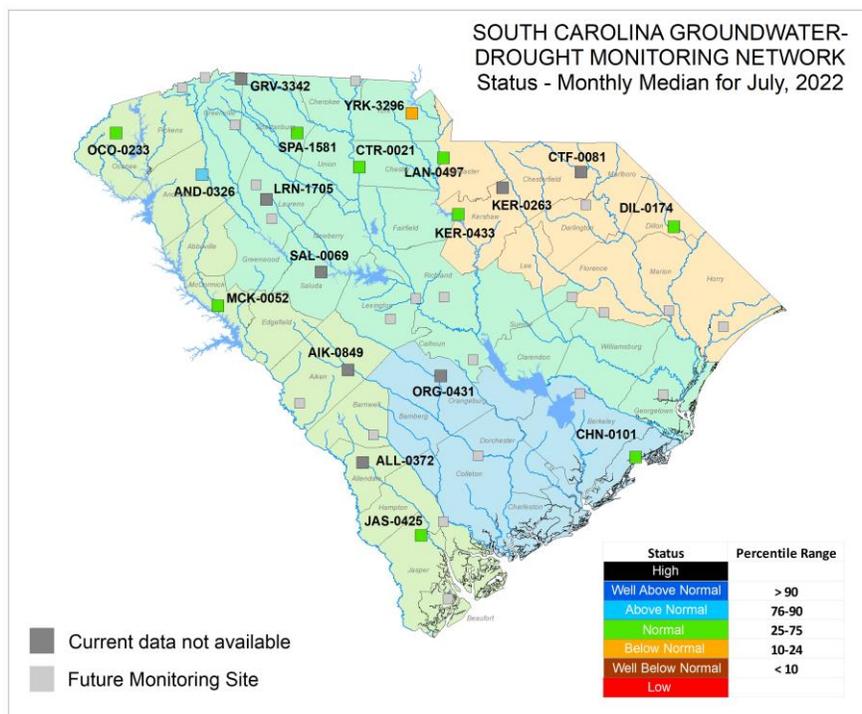


Lake	Current Elevation (ft)	Target (ft)	Full Pool (ft)	Deviation from		Avg Monthly Difference (ft)
				Guide Curve	Full Pool	
Greenwood	439.15	439.00	439.00	0.15	0.33	-0.03
Murray	357.00	358.00	360.00	-1.00	-2.43	-0.05
Marion	75.04	75.66	75.60	-0.62	0.13	-0.02
Jocassee	97.50	NA	100.00	NA	-2.50	1.74
Keowee	98.20	NA	100.00	NA	-1.80	-0.28
Wateree	97.60	97.00	100.00	0.60	-3.00	0.29
Wylie	96.80	97.00	100.00	-0.20	-2.40	-0.17
Hartwell	658.20	660.00	660.00	-1.80	1.84	-1.69
Thurmond	328.30	330.00	330.00	-1.70	0.42	-1.16
Blalock	709.99	710.00	710.00	-0.01	-0.15	0.11



Groundwater

The groundwater condition map for July is based on the monthly medians for the data collected by the USGS. Due to the lack of data (SCDNR sites are temporarily out of commission), the DNR's telemetry well sites were not assigned any drought status for July. Well monitored by USGS in Dillon county has started reporting and will be added to the map. As noted in the table below, eight of the eleven wells observed a drop in the monthly median levels from June to July. The upstate region has not received enough recharge in the past month, that has caused the groundwater levels to drop. Although most of these wells are still at their normal levels, they have experienced consistent lowering in the past month. The York county well has dropped below normal levels since the last week of June. The wells in the coastal plain region, CHN-101, KER-433, and DIL-174 observed improvements in the levels and have benefitted from the recharge received in July.



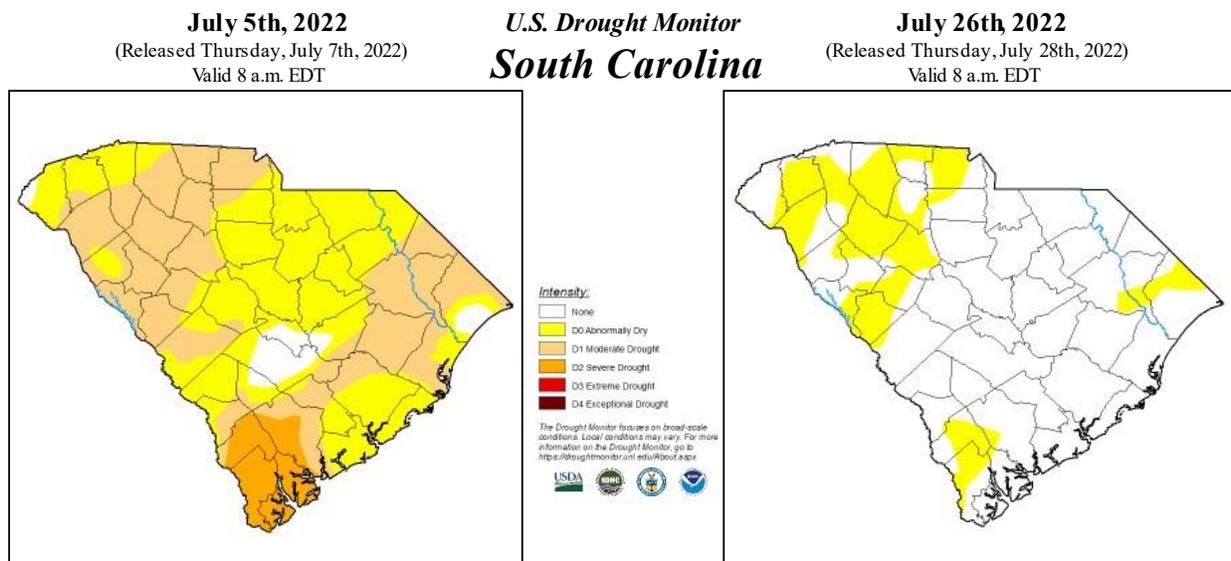
	USGS well sites											DNR Telemetry sites				
	MCK-0052	AND-326	OCO-233	KER-0433	SPA-1581	CTR-0021	YRK-3295	LAN-0497	JAS-0425	CHN-0101	DIL-0174	CTF-0081	GRV-3342	KER-0263	LRN-1705	SAL-0069
June 2022 Monthly median (ft, below land surface)	38.16	2.82	28.45	46.53	42.00	87.56	19.91	29.77	57.24	14.02	5.48	NA	43.57	NA	14.57	15.65
July 2022 Monthly median (ft, below land surface)	38.39	2.96	28.88	46.15	42.17	87.76	21.29	31.66	57.70	13.85	5.00	NA	NA	NA	NA	NA
Difference in monthly median from past month (ft)	-0.23	-0.14	-0.43	0.38	-0.18	-0.20	-1.39	-1.89	-0.47	0.17	0.47	NA	NA	NA	NA	NA



Drought

The first U.S. Drought Monitor (USDM) in July (7/5) had 45.46% of the state in abnormally dry (D0) conditions, 42.89% of the state in moderate drought (D1) conditions, and 7.16% of the state in severe drought (D2) conditions. High rain totals after 7/5 allowed for reduction in USDM severity and extent on the next map. On the map for 7/12, only 42.89% of the state was in D0 conditions, while 7.20% of the state was in D1 conditions. All D2 conditions were removed for this map. Continued precipitation allowed for further improvement on the map of 7/19, with 26.89% of the state in D0 conditions and 0.32% of the state in D1 conditions. On the last map of the month (7/16), all drought designations (D1-D4) had been removed from South Carolina, leaving on D0 conditions that covered 22.42% of the state.

The South Carolina Drought Response Committee (DRC) met on Wednesday, July 13th to reassess conditions after the previous meeting on June 30th, where all counties across the state were downgrading by one level. During the meeting in July, 16 counties in the Upstate were kept in the same conditions (incipient), while 27 counties were improved by one category, either moderate to incipient conditions or incipient to normal conditions. Charleston, Dillon, and Marlboro Counties received a two-category improvement (moderate to normal) due to the heavy rain totals between the two meetings.



Summary

Unlike June, July brought above normal precipitation for most of the state. Concurrently, temperatures were generally near normal or slightly above normal. These conditions helped to improve conditions across the state on U.S. Drought Monitor. The precipitation totals also helped to improve the monthly streamflow levels, compared to those for June. While conditions have not completely returned to normal, impacts to agriculture have diminished compared to June.

Looking Forward

As of August 14th, temperatures have been near normal across the state. Precipitation has been less uniform. Precipitation totals have ranged from 0.25 to 3.00 inches, with localized amounts reaching over 5 inches. Some areas, such as the Central Savannah River Area, has generally received 2.00 or more inches, equating to 150 to 300% of normal for this period. Contrastingly, portions of the Lowcountry, Pee Dee Region, and Upstate have received less than 1.5 inches, equating to 10 to 75% of normal for this period.

Looking forward, the models show that South Carolina has a strong possibility of receiving above normal rainfall over the 7-day period, with totals ranging from 2.00 to 4.00 inches. This could lead to some minor flooding in portions of the state but would be beneficial for the growing dry conditions in the Upstate. Through the rest of the month, the models show that temperatures should be near normal, while precipitation could be above normal. If these forecasts hold, it is likely that conditions will continue to improve on the U.S. Drought Monitor.

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