

South Carolina Water Resources Monthly Summary

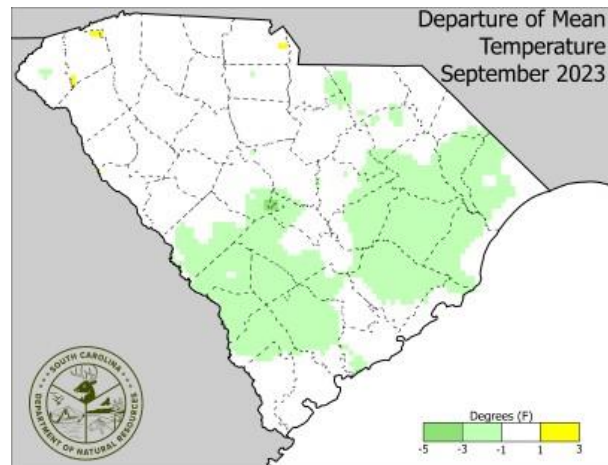
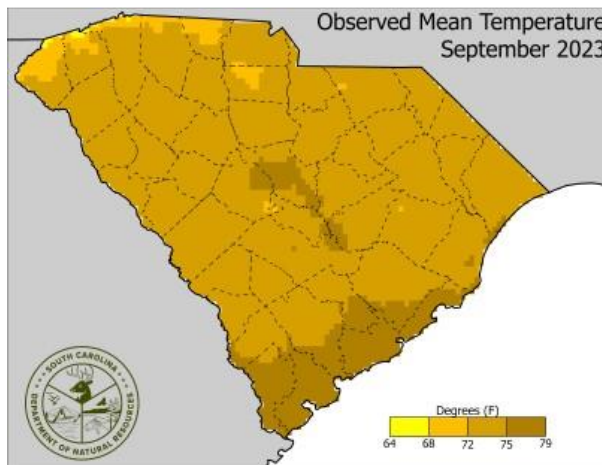
For September 2023

Provided by

The South Carolina Department of Natural Resources

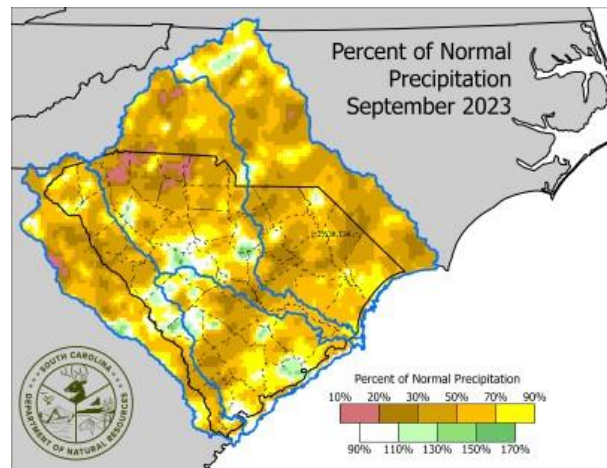
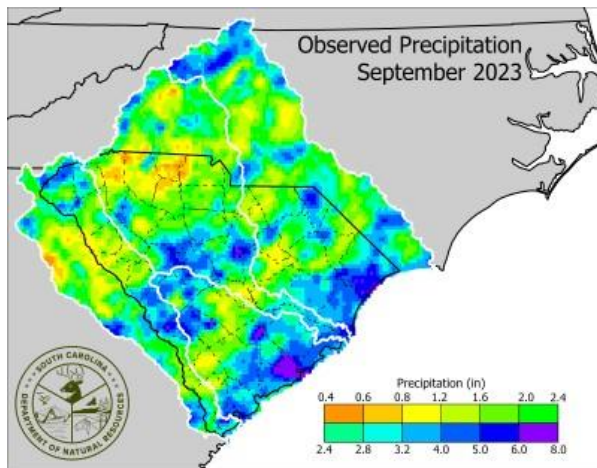
Temperature

Statewide, South Carolina had an average temperature of 73.6 degrees, 0.3 degrees below the long-term average (1895-2022) of 73.9 degrees for September. Most of the State had near normal average temperatures for September, while portions of the Coastal Plain had temperatures 1 to 3 degrees below normal. The highest daily maximum temperature recorded in September was 99 degrees at the NWS Wateree Dam station in Kershaw County. The lowest daily minimum temperature recorded in September was 46 degrees at the NWS Jocassee 8 WNW station in Oconee County.



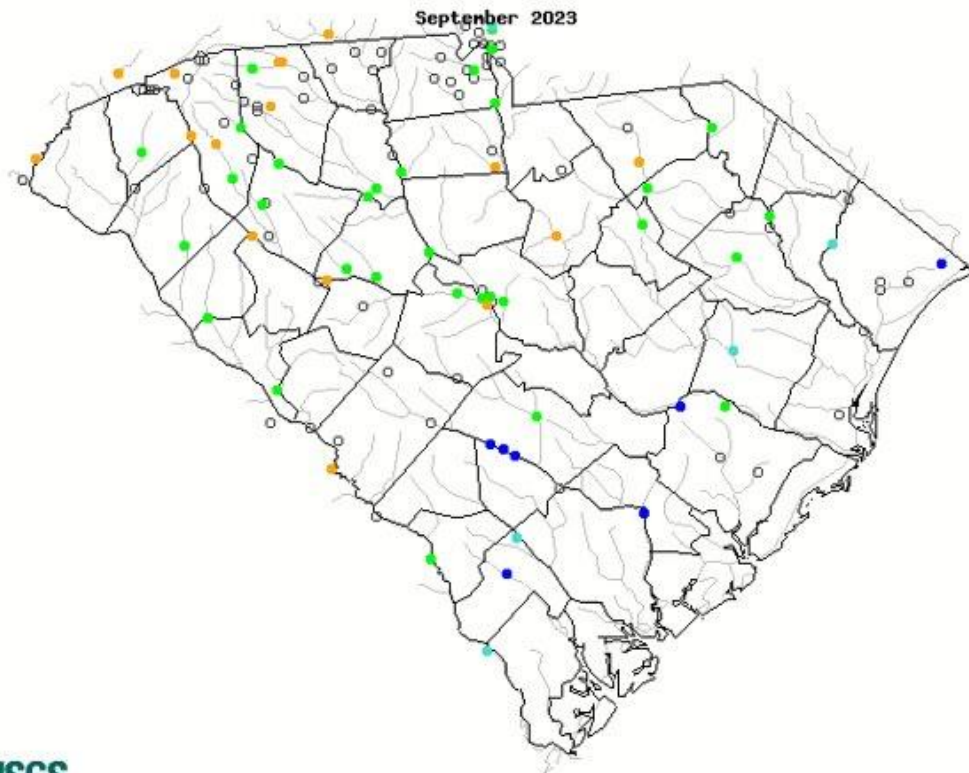
Precipitation

The statewide average precipitation for September 2023 was 2.77 inches, 1.41 inches below the long-term average for the month (1895-2022) of 4.18 inches. Other than a few isolated portions of the Midlands and Lowcountry, most of the state received less than 70% of normal precipitation. The driest portions of the state were in the Upstate, where some areas received less than 20% of normal precipitation for the month of September. The NWS station at Ninety Nine Islands in Cherokee County recorded only 0.52 inches of rain in September. This was the lowest recorded total at a station in the state for September, which is 14.3% of normal for the month. The NWS Station at Sullivans Island in Charleston County recorded 8.06 inches of rain in September. This was the highest recorded total at a station in the state for September, which is 147% of normal precipitation.



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. Although the coastal plain region received rain in September, regions of the Savannah, Saluda, Broad, Catawba, and Pee Dee River basin missed most of these rain events and remained dry. Several gages in Upper Savannah, Saluda, Broad, Catawba River basins, and a gage in the Pee Dee River basin have recorded below-normal streamflow conditions.

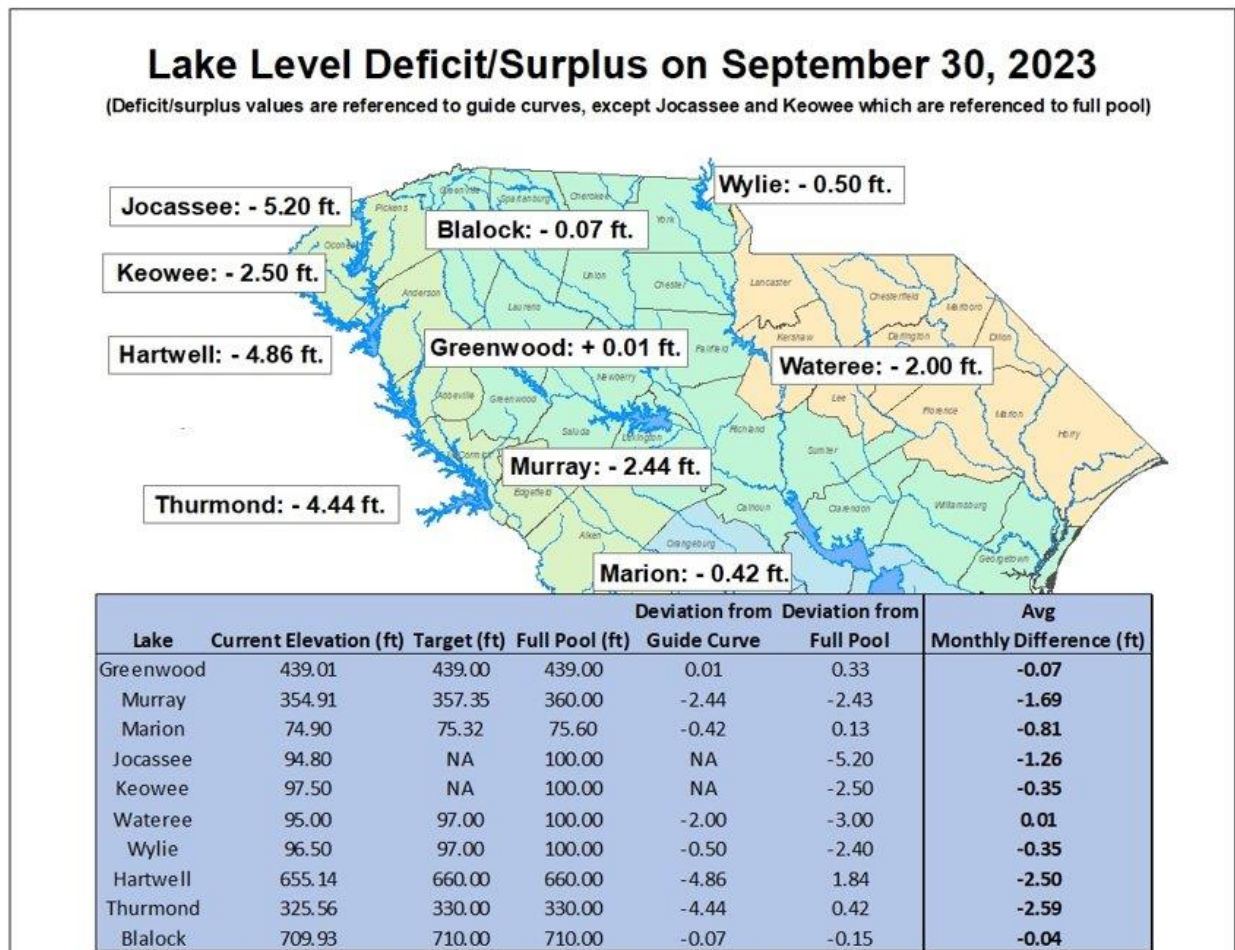


Explanation - Percentile classes							
Low	<10	10-24	25-75	76-90	>90	High	No Data
	Much below normal	Below normal	Normal	Above normal	Much above normal		



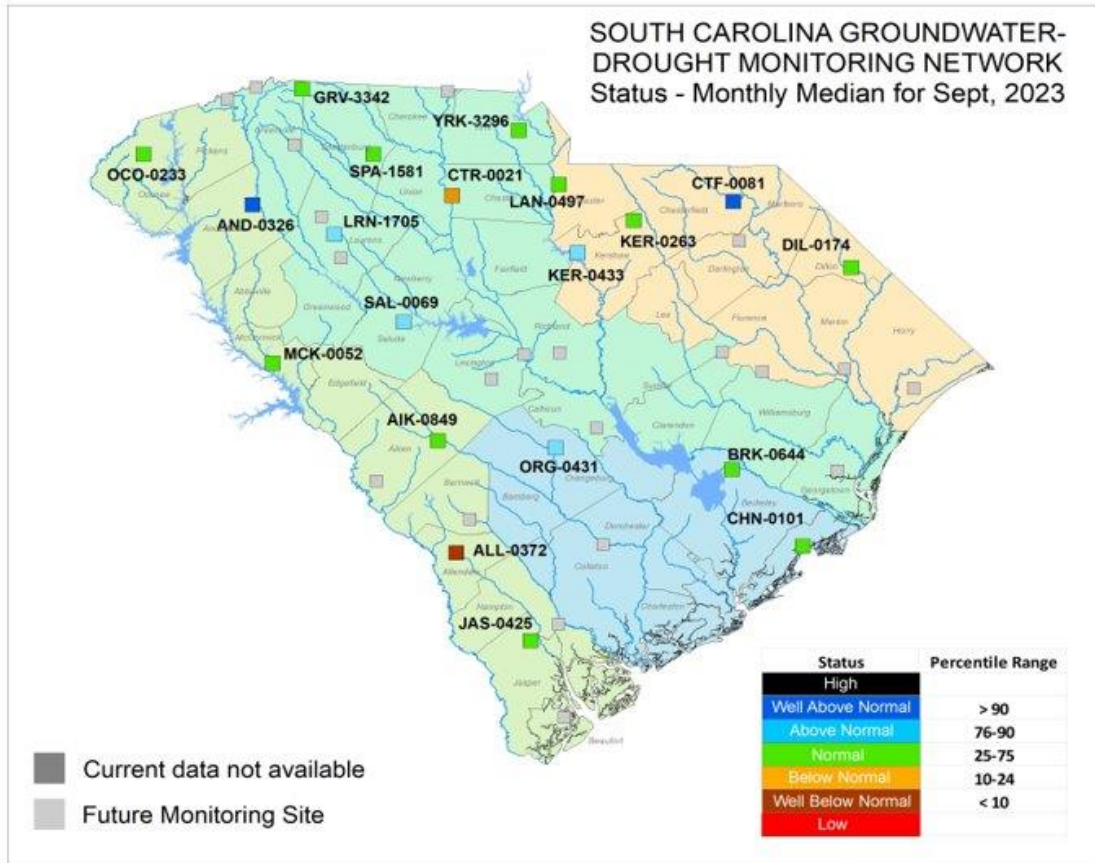
Reservoirs

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 September 30th. Nine out of ten reservoirs were below their target or full-pool elevations. The Savannah River basin did not receive beneficial rain in September. 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 declared the first drought level on September 10th in response to the pool elevation at Thurmond Lake dipping below 326.0 feet above mean sea level (ft-msl). The Keowee-Toxaway project which includes Lake Jocassee and Lake Keowee under Duke Energy's management, declared their drought level 0 following the Low Inflow Protocols (LIP). The Stage 0 condition was triggered by the four-month long-term average streamflow that indicated Stage 1 according to LIP. The low reservoir storage for Duke Energy and the USACE lakes supported Stage 0 conditions. Although the 12-week rolling average of the U.S Drought Monitor for the Upper Savannah River Basin supports Normal conditions, the three indicators combined supported the Duke Energy lakes in LIP Stage 0.



Groundwater

The groundwater condition map for September is based on the monthly medians for the data collected by the USGS and SCDNR. Twelve of the eighteen wells observed a drop in the monthly medians from August to September. Although the coastal counties received rain in September, the Upstate counties remained dry which resulted in the gradual decline of groundwater wells specially in the Upstate regions. Groundwater levels at Chester gradually declined into Below-Normal status and remained at or Below Normal status through September. Allendale well also continued to stay at much below normal conditions in September.



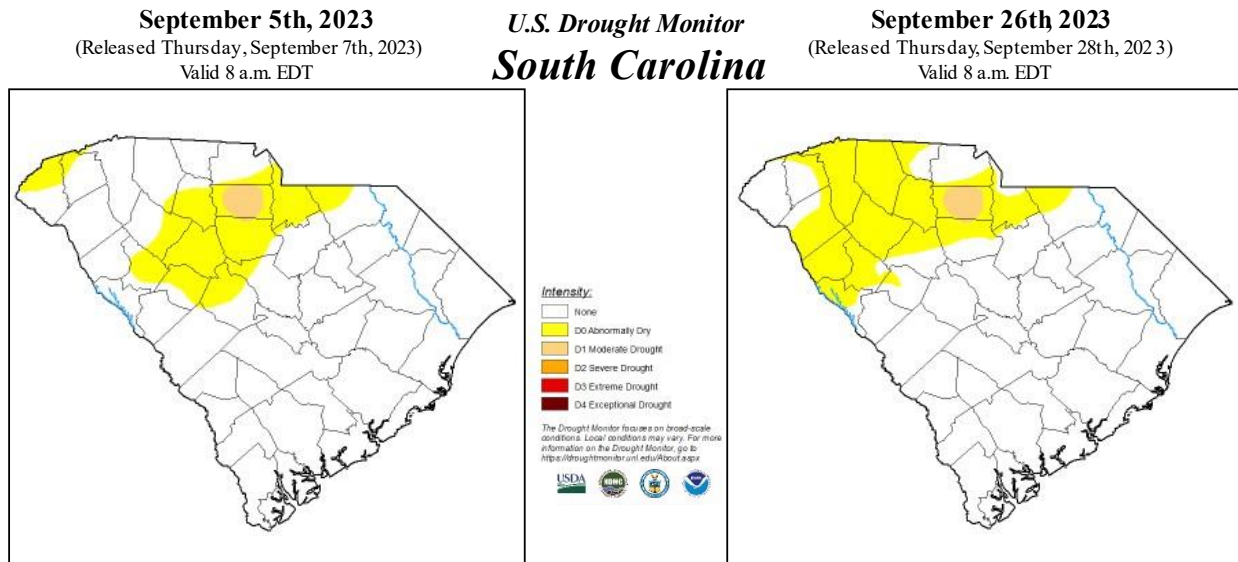
	USGS well sites										DNR Telemetry sites									
	MCK-0052	AND-326	OCO-233	KER-0433	SPA-1581	CTR-0021	YRK-3296	LAN-0497	JAS-0425	CHN-0101	DIL-0174	CTF-0081	GRV-3342	KER-0263	LRN-1705	SAL-0069	ORG-0431	AIK-0849	ALL-0372	BRK-0644
Aug 2023 Monthly median (ft, below land surface)	37.75	2.84	29.30	52.14	43.29	90.86	21.23	29.89	56.26	13.30	4.88	86.73	45.34	35.48	14.70	18.69	26.45	43.21	58.21	
Sept 2023 Monthly median (ft, below land surface)	37.92	3.02	29.59	52.59	43.20	90.84	22.22	31.03	58.09	13.25	4.42	86.71	45.65	36.00	15.69	18.95	--	42.62	58.25	13.35
Difference in monthly median from past month (ft)	-0.17	-0.18	-0.29	-0.45	0.09	0.02	-0.99	-1.14	-1.83	0.05	0.46	0.03	-0.31	-0.52	-0.99	-0.25	--	0.59	-0.05	--



Drought

For the first U.S. Drought Monitor (USDM) map of September (9/5), 15.21% of the state was classified in abnormally dry (D0) conditions and 1.19% was classified in moderate drought (D1) conditions. Conditions improved for the second USDM map of the month (9/12), with only 9.94% of the state in D0 conditions and 1.19% of the state in D1 conditions. From this point on, dry conditions expanded, with 11.57% of the state in D0 conditions for the third USDM map of the month (9/19). By the last map of the month (9/26), 21.89% of the state was in abnormally dry conditions and 1.19% of the state was in moderate drought (D1) conditions. While there were changes to the amount of the state in D0 during September, the amount of D1 conditions stayed constant. Below normal rainfall, allowing for declines in soil moisture and streamflow values caused the expansion of D0 conditions through September.

The South Carolina Drought Response Committee (DRC) kept an eye on the increasing dry conditions in September but did not convene a meeting.



Summary

Average temperature in September was near normal to below normal for most of the state, while precipitation was below normal for most of the state except a few isolated spots. Due to the dry conditions in September, precipitation deficits allowed for soil moisture and surface water (streamflows and reservoirs) values to drop. The declining values of these factors allowed abnormally dry (D0) conditions to expand in the Upstate on the U.S. Drought Monitor (USDM). With drying conditions, the SC State Climatology Office, SCDNR Hydrology, and the SC Drought Response Committee kept a watchful eye on how conditions developed into early October.

Contact

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