

# South Carolina Water Resources Monthly Summary

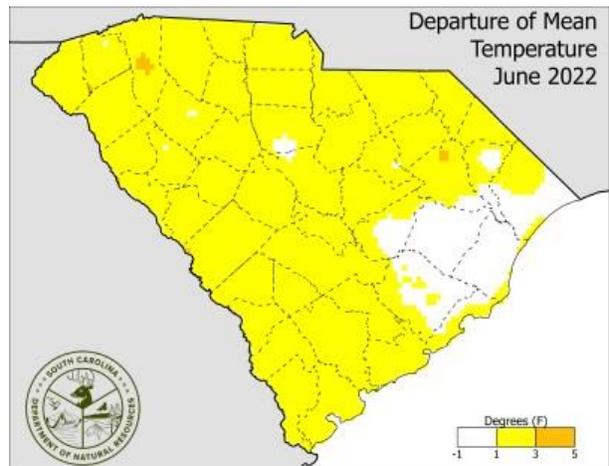
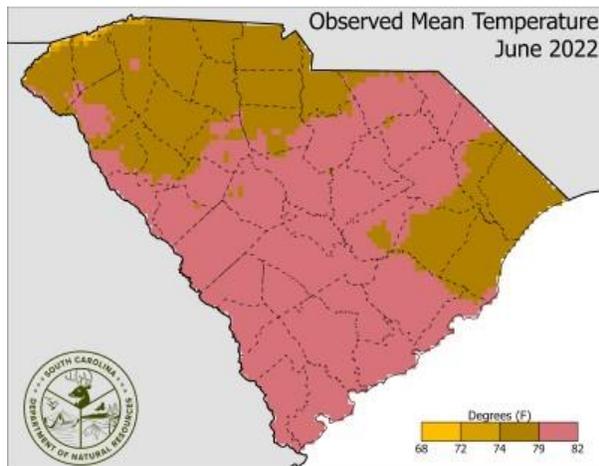
## For June 2022

Provided by

The South Carolina Department of Natural Resources

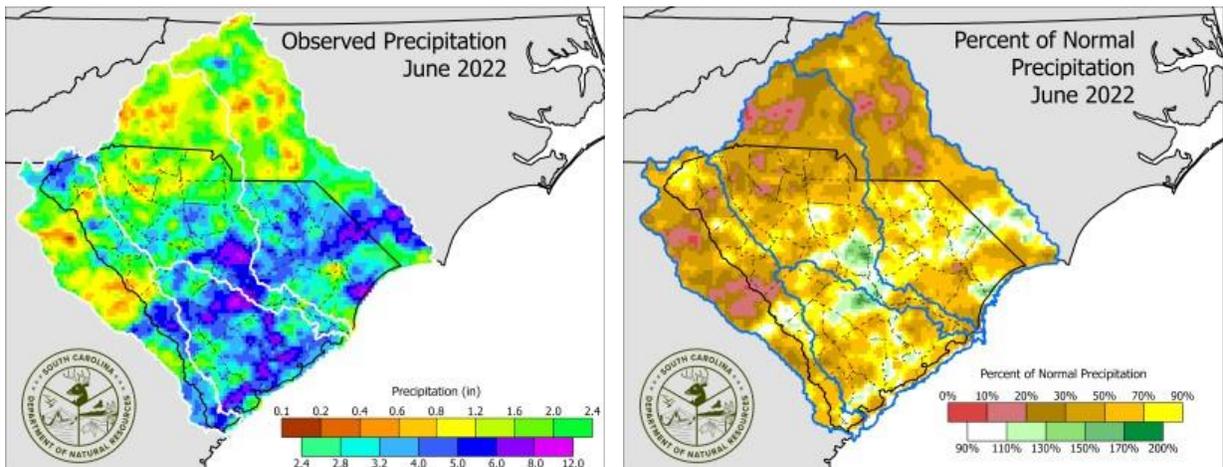
### Temperature

Statewide, South Carolina had an average temperature of 79.3 degrees, 2.0 degrees above the long-term average (1895-2021) of 77.3 degrees for June. Multiple National Weather Service (NWS) stations in the Midlands recorded a maximum temperature of 103 degrees during the month. The NWS stations at the Columbia Metropolitan and Florence Regional Airports observed five (5) days with maximum temperatures at or above 100 degrees. In addition to the warmer than average temperatures, a dry air mass around June 20 produced overnight temperatures in the 50s. The lowest temperature observed during the month was 44 degrees at the NWS stations near Jocassee in Oconee County on June 20.



## Precipitation

The statewide average precipitation for June 2022 was 3.02 inches, 1.70 inches below the long-term average for the month (1895-2021) of 4.72 inches. Some areas north of the Fall Line measured less than 50% of their average monthly precipitation, with some isolated locations recording less than an inch, including 0.79 inches near Sandy Springs in Anderson County. Conversely, portions of the Lowcountry, Midlands and Pee Dee recorded more than five inches of rain, with some CoCoRaHS observers in Georgetown and Horry counties recording between eight and ten inches of rain.

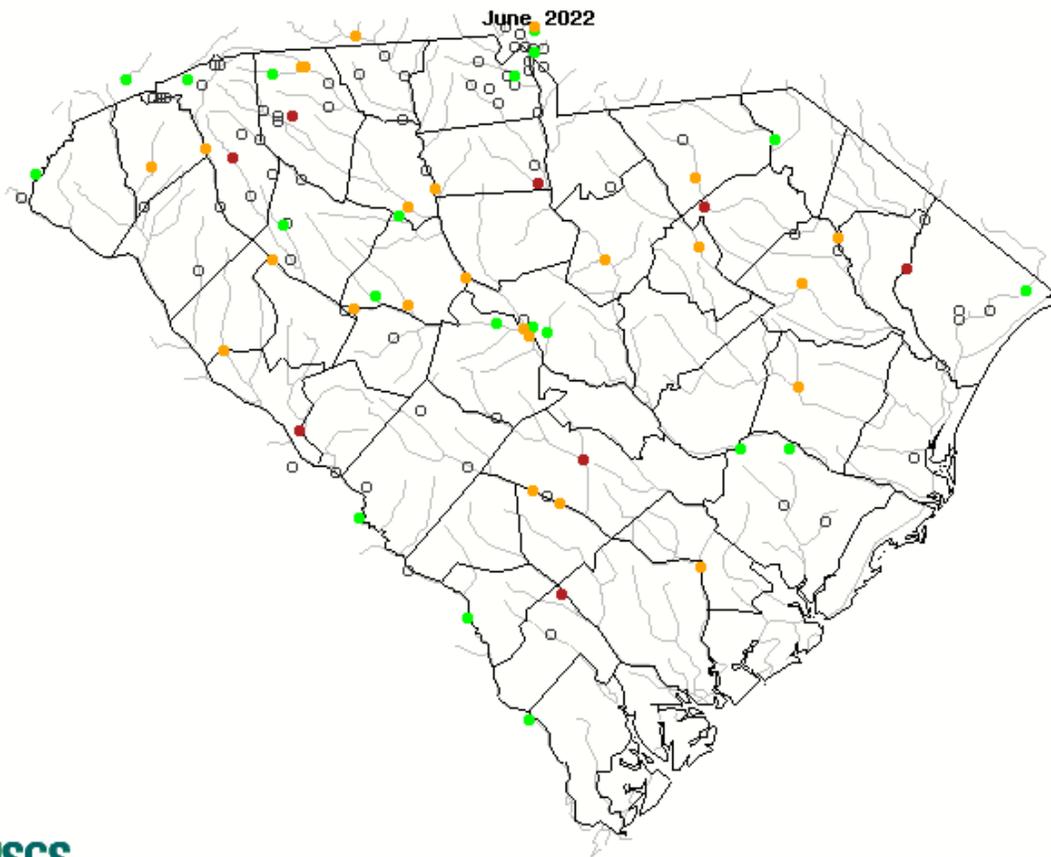


\*Precipitation images show observed and percent of normal precipitation for the Water Basins that either flow into or are shared with South Carolina.



## 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. The consistent warm temperatures and lack of enough rain in June have resulted in dry conditions and most of the gages recording much below normal status in the Pee Dee, Edisto, Salkehatchie, Broad, Catawba, and Savannah basins. Although the State received some rain in May, the following consistent dry weather conditions in June have impacted the streamflows, with most of the gages in the State to record below normal status.



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		



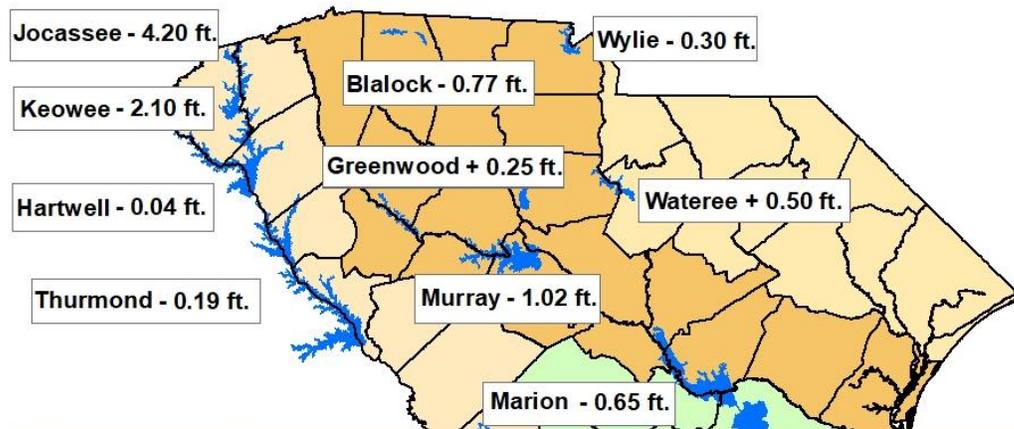
## Reservoirs

In June, eight out of the ten reservoirs are below their target or full-pool elevations but are 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 and maintenance requirements. As of the end of June, the monthly average lake elevations for five of the ten lakes have dropped from the last month but remained close to their guide curve elevations.

### Lake Level Deficit/Surplus on June 30, 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

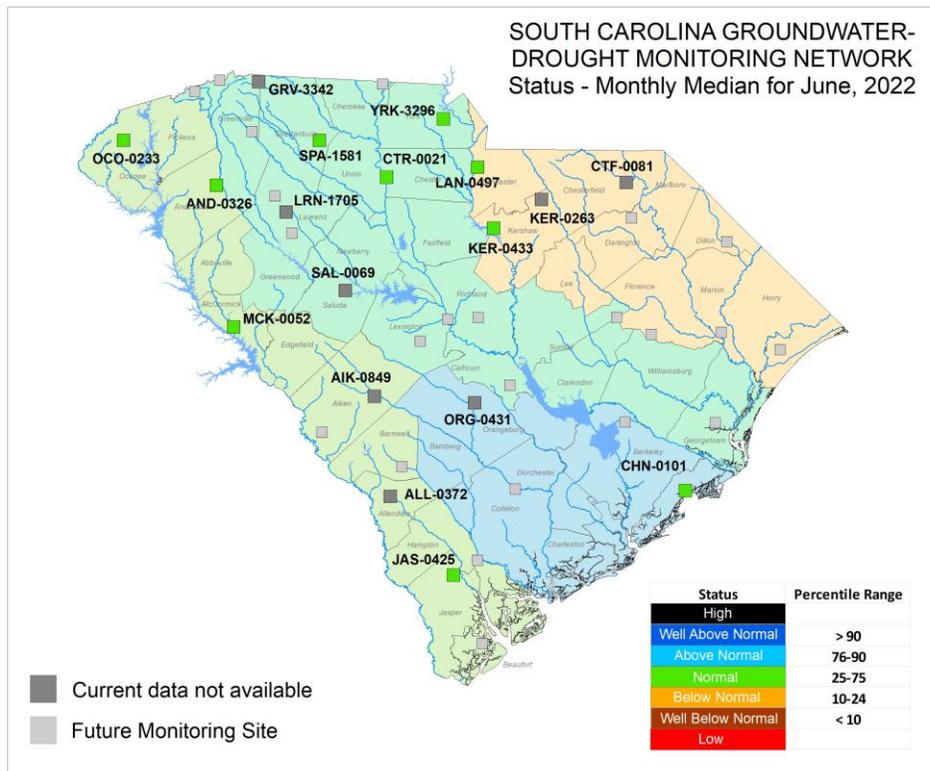


Lake	Current Elevation (ft)	Target (ft)	Full Pool (ft)	Deviation from		Avg Monthly Difference (ft)
				Guide Curve	Full Pool	
Greenwood	439.25	439.00	439.00	0.25	0.33	0.06
Murray	356.98	358.00	360.00	-1.02	-2.43	-0.19
Marion	75.04	75.69	75.60	-0.65	0.13	-0.09
Jocassee	95.80	NA	100.00	NA	-4.20	1.46
Keowee	97.90	NA	100.00	NA	-2.10	-0.72
Wateree	97.50	97.00	100.00	0.50	-3.00	0.38
Wylie	96.70	97.00	100.00	-0.30	-2.40	-0.06
Hartwell	659.96	660.00	660.00	-0.04	1.84	0.33
Thurmond	329.81	330.00	330.00	-0.19	0.42	0.32
Blalock	709.23	710.00	710.00	-0.77	-0.15	-0.20



## Groundwater

The groundwater condition map for June 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. As noted in the table below, nine out of the ten wells observed a drop in the monthly median levels from May to June. Although the water levels at these wells have been consistently dropping and their medians lower than in the last month, the water levels at these sites are still within a normal range for June.



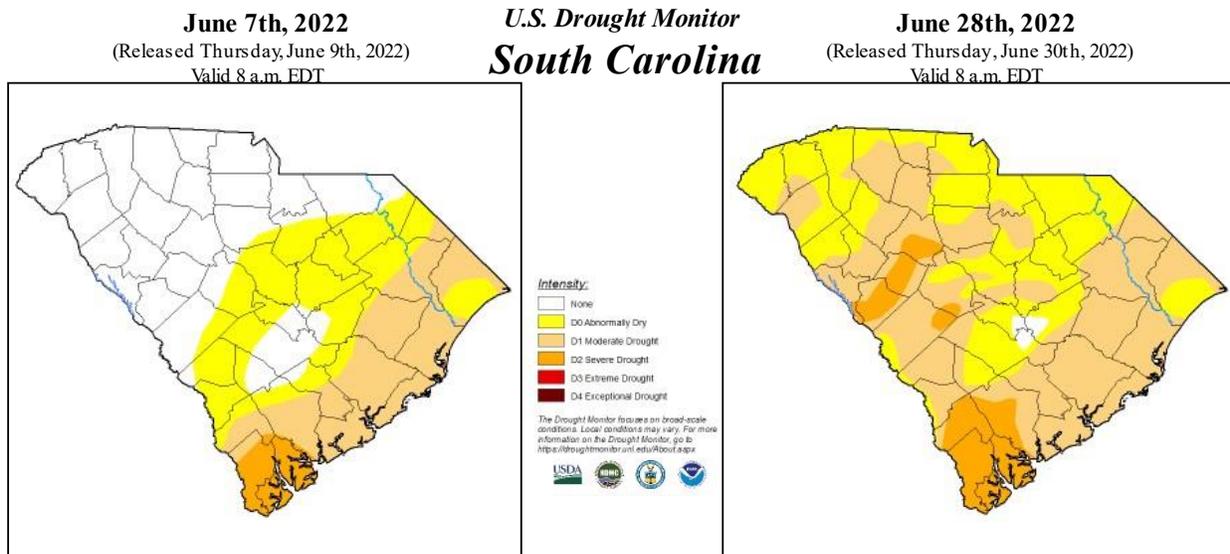
	USGS well sites										DNR Telemetry sites				
	MCK-0052	AND-326	OCO-233	KER-0433	SPA-1581	CTR-0021	YRK-3295	LAN-0497	JAS-0425	CHN-0101	CTF-0081	GRV-3342	KER-0263	LRN-1705	SAL-0069
May 2022 Monthly median (ft, below land surface)	38.18	2.74	27.77	46.33	41.82	87.37	18.83	27.97	56.03	13.66	NA	NA	NA	NA	12.28
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	NA	NA	NA	NA	NA
Difference in monthly median from past month (ft)	0.02	-0.08	-0.68	-0.20	-0.17	-0.19	-1.08	-1.80	-1.21	-0.36	NA	NA	NA	NA	NA



## Drought

The first U.S. Drought Monitor (USDM) in June (6/7) had 53.06% of the state in abnormally dry (D0) conditions, 25.75% of the state in moderate drought (D1) conditions, and 3.95% of the state in severe drought (D2) conditions. Through the month of June, hot and dry conditions caused dry and drought categories to expand and intensify. Multiple agricultural impact reports across the state showed loss of crop yields, pastures, and severely depleted ponds. The last USDM map in June had 36.38% of the state in D0 conditions, 52.33% of the state in D1 conditions, and 10.44% of the state in D2 conditions. This meant that more than half of the state (62.77%) was in drought (D1 or D2) conditions.

The South Carolina Drought Response Committee (DRC) on Thursday, June 30<sup>th</sup>, downgrading the conditions for all counties across the state. Thirty-six counties were put into incipient drought conditions. The remaining 13 counties that had already been in incipient status were downgraded to moderate drought conditions. These were Beaufort, Charleston, Colleton, Darlington, Dillon, Dorchester, Florence, Georgetown, Horry, Jasper, Marlboro, Marion, and Williamsburg Counties.



## Summary

June was hot and dry for much of the state. Much of the Upstate received 50% or below normal rainfall for the month. Areas south of the Fall Line had a mix of above normal and below normal rainfall for the month. However, most of this rain came in inconsistent downpours from thunderstorm events. The hot and dry conditions had a negative affect on agriculture, due to severe depletion in soil moisture. The conditions also caused many streams across the state to have below normal flows for the month. The reduction in soil moisture, agricultural impacts, and reduced streamflows allowed for a rapid expansion and degradation on the U.S. Drought Monitor through June in South Carolina.

## Looking Forward

As of July 11<sup>th</sup>, average temperatures have been above normal, ranging from 1 to 4 degrees. Luckily, much of the state has received above normal rainfall to date, ranging from 1 to 5 inches. The above normal rainfall has helped to reduce the precipitation, soil moisture, and streamflow deficits that had built up in June, due to hot and dry conditions. This has also helped to reduce some of the abnormally dry and drought conditions in South Carolina on first U.S. Drought Monitor map for July (7/5).

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 1.5 to 4.0 inches. This could lead to some minor flooding in portions of the state. Through the rest of the month, the models show that temperatures and precipitation could be near normal to above normal. If these forecasts hold, it is likely that conditions will continue to improve on the U.S. Drought Monitor.

## Contact

For questions about:	Person to contact	Email	Phone
Drought, General	Elliot D. Wickham	<a href="mailto:Wickhame@dnr.sc.gov">Wickhame@dnr.sc.gov</a>	(803)-734-8311
Climate Data	Melissa Griffin	<a href="mailto:Griffinm@dnr.sc.gov">Griffinm@dnr.sc.gov</a>	(803)-734-9091
Hydrologic Data	Priyanka More	<a href="mailto:MoreP@dnr.sc.gov">MoreP@dnr.sc.gov</a>	(803)-734-3945
General Hydrology	Scott Harder	<a href="mailto:harders@dnr.sc.gov">harders@dnr.sc.gov</a>	(864)-986-6254

