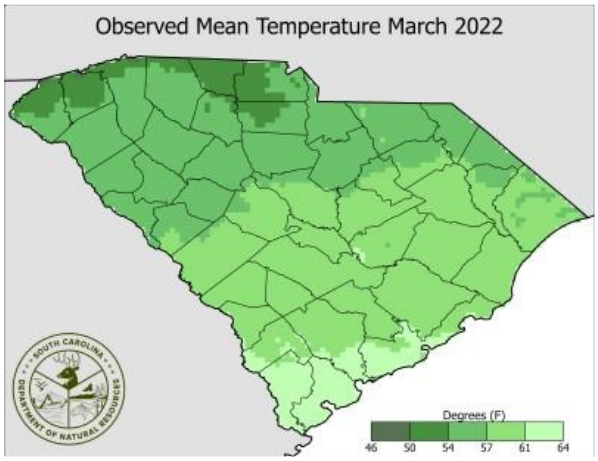
South Carolina Water Resources Monthly Summary For March 2022

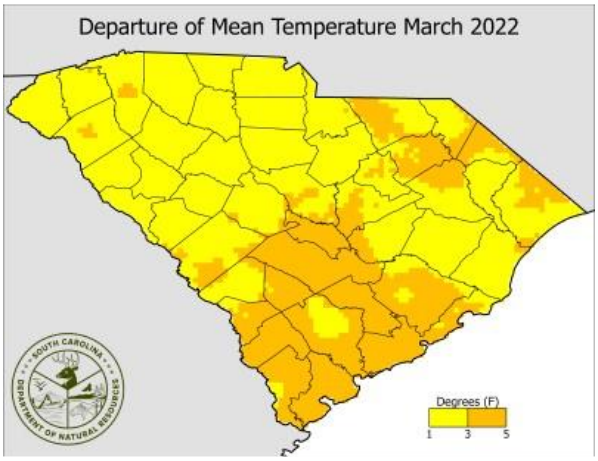
Provided by

The South Carolina Department of Natural Resources

Temperature

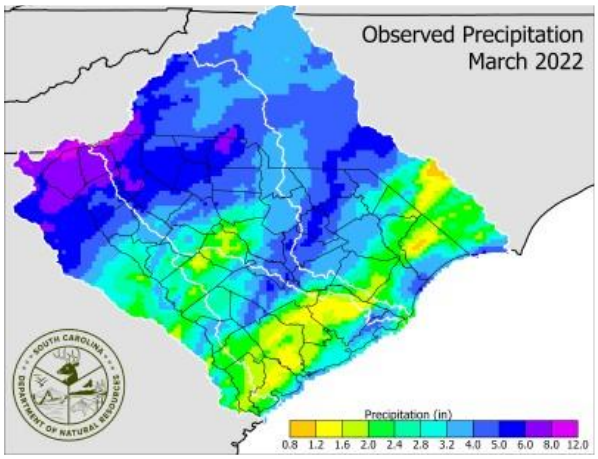
Statewide, South Carolina had an average temperature of 58.0 degrees, 3.9 degrees above the long-term average (1895-2021) of 54.1 degrees for March. The National Weather Service (NWS) stations near Graniteville and Wagener in Aiken County and the station on the campus of the University of South Carolina in Richland County recorded a maximum temperature for the month, 86 degrees on March 31, and there were multiple maximum temperatures at the beginning of the month reaching the lower 80s. A significant cold front moved through mid-March, dropping temperatures across the state into the teens and mid-20s. Damage was reported to the apple, blueberry, peach, and strawberry crops that had started to bloom due to the warm temperatures in February and the beginning of the month. The lowest temperature observed during the month was 12 degrees at the NWS station in Caesars Head in Greenville County on March 13.

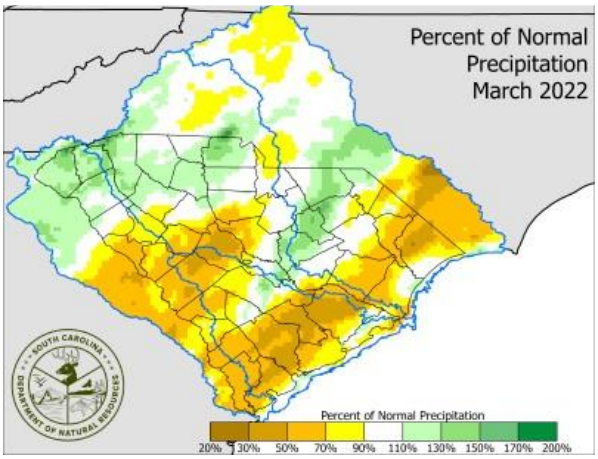




Precipitation

The preliminary statewide average precipitation for March 2022 was 3.55 inches, which is 0.61 inches below the long-term average for the month (1895-2021) of 4.16 inches. Locations in the Upstate reported slightly above normal rainfall totals during the month, with widespread totals around six inches. Some CoCoRaHS observers in northern portions of Greenville, Oconee, and Pickens counties recorded between seven and nine inches of rain. However, most areas south and east of the Fall Line measured between half an inch and an inch, or less than 75% of their normal rainfall for March. Some areas in the Lowcountry measured less than 50% of their average monthly precipitation, including the NWS station in Walterboro, which recorded 1.25 inches (2.25 inches below normal).

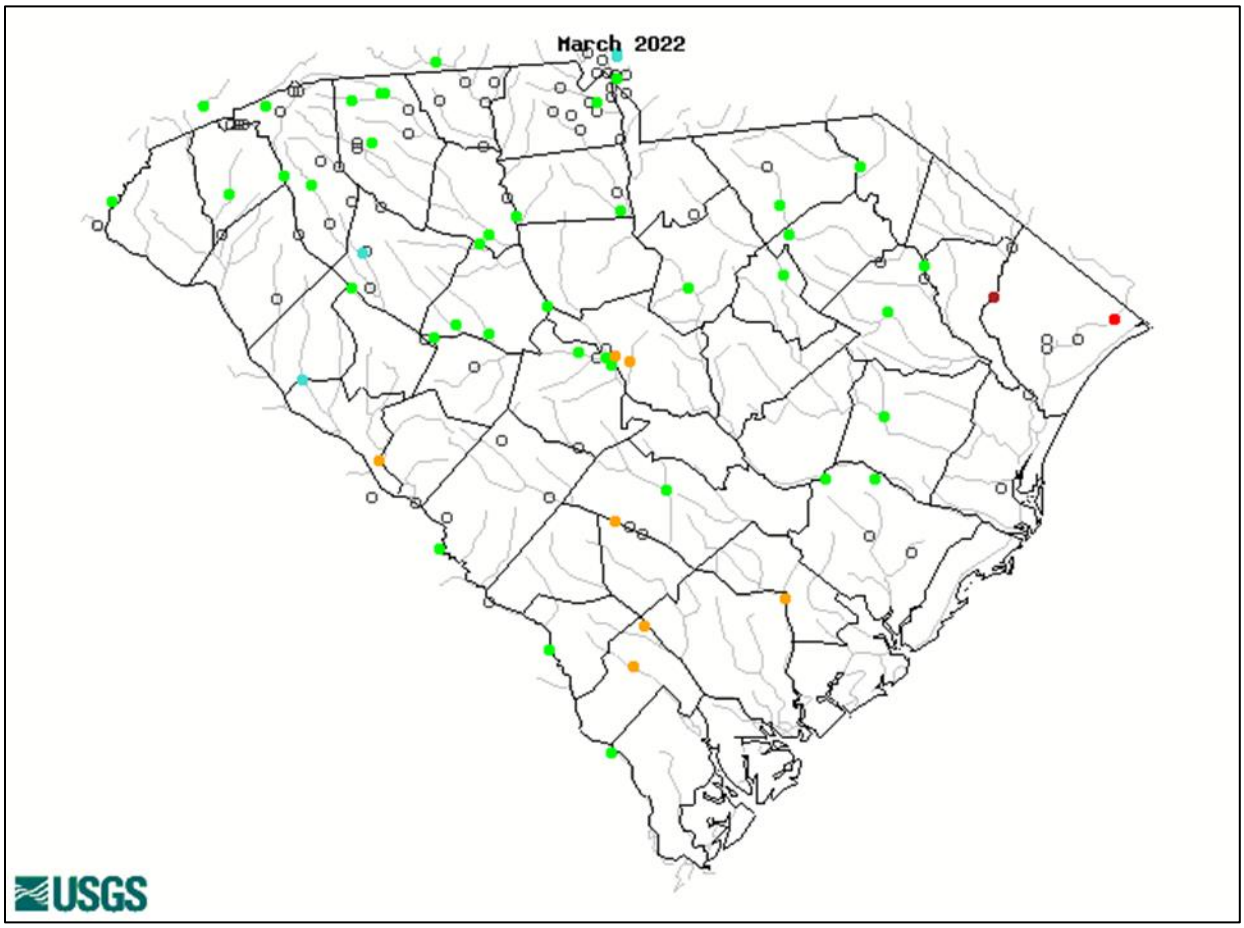




*Precipitation images show observed and percent of normal precipitation for the Water Basins that either flow into or are shared with South Carolina.

Streamflow

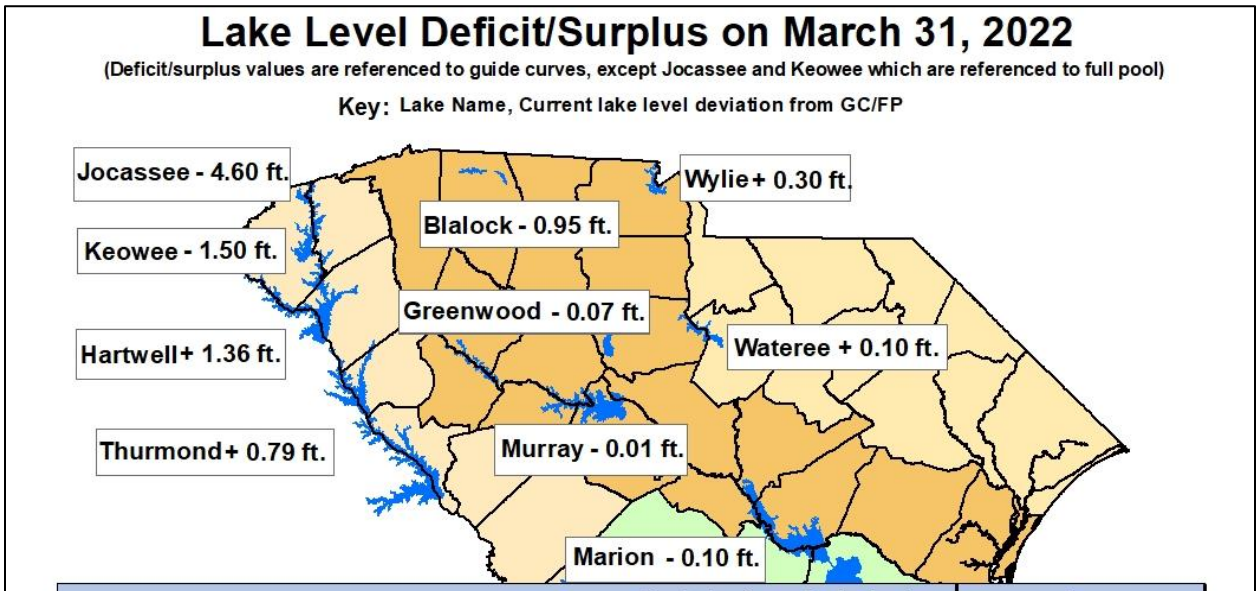
The USGS's monthly streamflow map compares the current monthly average streamflow at each gage for a given month to each gage's historical monthly average streamflow for the same month over the gage's period of record. Although streamflows in the State improved from the beneficial rainfall in March, several gages remained below-normal conditions. As seen from the map, below-normal streamflows were observed at gages in the Savannah, Edisto, Salkehatchie, Pee Dee, and Saluda basins. Streamflows at the Waccamaw and the Little Pee Dee gages, in Horry County, stayed at low and much-below normal status, respectively. In summary, streamflows across the State improved over the past month, but some of the dry areas would need more rain events to further improve the 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

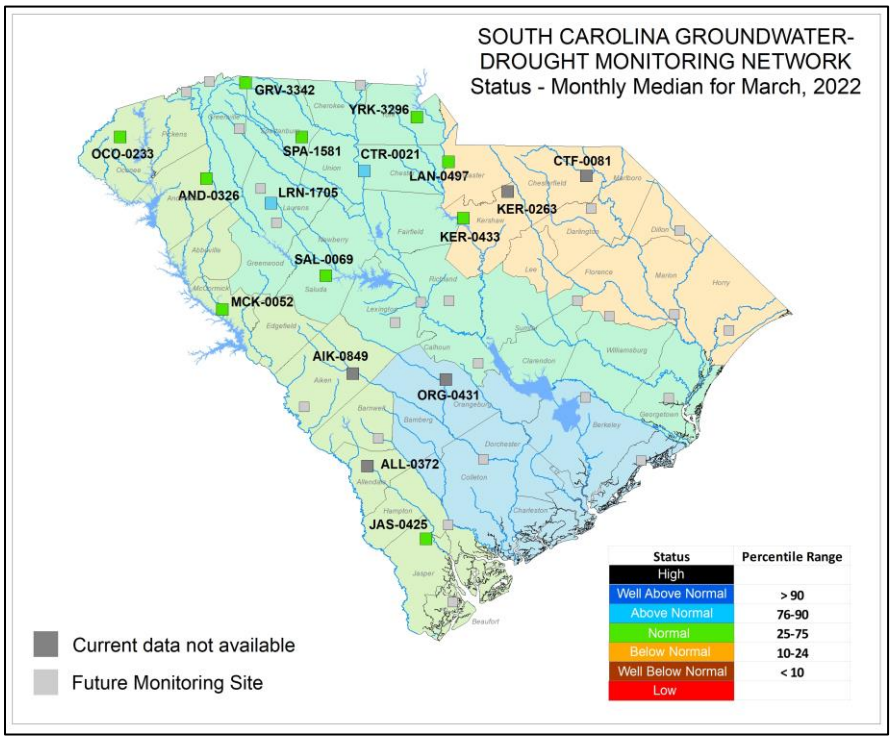
The map below shows a surplus or deficit from the guide curves or full-pool elevations for the major reservoirs in the State, based on conditions for March 31st. Six out of the ten reservoirs are below their target or full pool elevations. In January, Duke Energy declared Stage 0 of the Low Inflow Protocol (LIP) for all its lakes in the Catawba-Wateree basin. 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, so the basin will need more rain events to remove the Stage 0 status. Duke Energy also manages Lake Jocassee and Keowee. However, these lakes are pump storage systems, and their levels fluctuate based on their power generation requirements. As of the end of March, the monthly average lake elevations for five of the ten lakes dropped from the last month but are maintained close to their guide curve elevations.



Lake	Current Elevation (ft)	Target (ft)	Full Pool (ft)	Deviation from Guide Curve	Deviation from Full Pool	Avg Monthly Difference (ft)
Greenwood	438.02	438.09	439.00	-0.07	-0.98	**1.96**
Murray	357.99	358.00	360.00	-0.01	-2.01	**1.30**
Marion	75.20	75.30	75.60	-0.10	-0.40	**0.66**
Jocassee	95.40	NA	100.00	NA	-4.60	**0.16**
Keowee	98.50	NA	100.00	NA	-1.50	**-0.13**
Wateree	97.10	97.00	100.00	0.10	-2.90	**2.02**
Wylie	97.30	97.00	100.00	0.30	-2.70	**0.41**
Hartwell	661.27	659.91	660.00	1.36	1.27	**1.59**
Thurmond	330.70	329.91	330.00	0.79	0.70	**1.15**
Blalock	709.05	710.00	710.00	-0.95	-0.95	**0.07**

Groundwater

The groundwater condition map for March is based on the monthly medians for the data collected by the USGS and SCDNR. As noted in the table below, three out of the twelve wells observed a drop in the monthly median levels from February to March. Due to the lack of data, no drought statuses are assigned to well sites Kershaw-0263 and Chesterfield-0081. The lower evapotranspiration rates in the past couple of months along with the recharge received in March at the well sites helped the groundwater levels in these locations maintain their normal and above normal status.

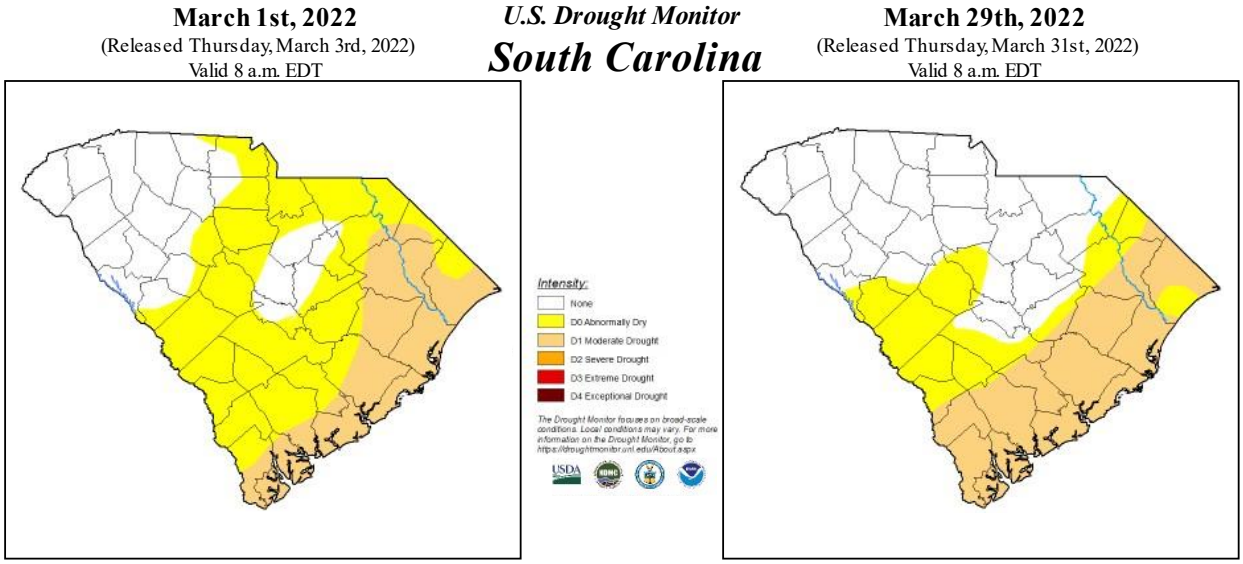


	USGS well sites									DNR Telemetry sites				
	MCK-0052	**AND-326**	**OCO-233**	**KER-0433**	**SPA-1581**	**CTR-0021**	**YRK-3295**	**LAN-0497**	**JAS-0425**	**CTF-0081**	**GRV-3342**	**KER-0263**	**LRN-1705**	**SAL-0069**
February 2022 Monthly median (ft, below land surface)	38.88	2.89	28.56	46.75	41.17	86.56	24.81	32.42	53.41	NA	42.93	NA	14.22	13.08
March 2022 Monthly median (ft, below land surface)	38.75	2.71	28.38	46.74	41.38	86.84	23.70	31.48	53.25	NA	43.25	NA	13.19	12.39
Difference in monthly median from past month (ft)	0.13	0.18	0.18	0.01	-0.22	-0.28	1.11	0.93	0.16	NA	-0.32	NA	1.03	0.69

Drought

The first U.S. Drought Monitor (USDM) in March (3/1) had 45.89% of the state in abnormally dry (D0) conditions and 23.04% of the state in moderate drought (D1) conditions. Through March, the biggest changes to the map were the reduction of D0 conditions in the Midlands and the Pee Dee region and the Expansion of D1 conditions in the interior coastal plain of the Lowcountry. The peak of dry conditions occurred during the week of March 8th, when 49.10% of the state was in D0 conditions and 37.74% of the state was in D1 conditions. From this point on, dry conditions were reduced throughout the state. In the final map of the month (3/29), 21.13% of the state was in D0 conditions and 30. 37% of the state was in D1 conditions.

The South Carolina Drought Response Committee (DRC) met on the March 22nd. Due to below normal precipitation, below normal soil moisture and streamflow conditions, and USDM conditions in the state, the DRC declared 11 of the 46 counties in incipient drought status. The Eleven counties put in incipient status were Jasper, Beaufort, Colleton, Dorchester, Charleston, Berkeley, Williamsburg, Georgetown, Florence, Marion, and Horry. The next DRC meeting is not currently scheduled but the DRC is monitoring conditions for future improvement or degradation of county-level drought status.



Summary

While the average temperature for March was above normal for the entire state, this was not the case for precipitation. Some portions of the state received below normal rainfall while others received above normal rainfall. Most of the state had average monthly streamflows, while some streams had below normal flows. The streams that had below normal flows were in areas that had below normal precipitation for the month of March. Luckily, the below normal precipitation in portions of the state did not negatively impact reservoir or groundwater storage. The U.S. Drought Monitor in the month of March saw an improvement in abnormally dry (D0) conditions but an expansion of moderate drought (D1) conditions. The D1 expansion was mostly driven by 1-, 2-, and 3-month precipitation deficits that allowed for soil moisture deficits and streamflow deficits to occur.

Looking Forward

The first part of April has been wet, due specifically to severe weather on 4/6 and 4/7. To date, the state has received between 0.75" to 5.00" of rain. This equates to 100 to 750% of normal rainfall for the first 8 days in April. During this period, most of the state has received between 3.00" to 4.00" of rain, which equates to 300% to 400% of normal. Temperatures for the state have ranged from 50 to 70 degrees. Generally, temperatures have been near normal in the Upstate and Central Savannah River Basin area, while temperatures have been 1 to 3 degrees above normal in the Lowcountry, Pee Dee region, and western Midlands.

For the rest of the month, the current climate outlooks suggest that there is a good probability precipitation will continue to be above normal. Temperature outlooks are mixes, with the middle of the month having above normal temperatures, the followed by a week of below normal temperatures, and then ending the month with above normal temperatures. If these outlooks hold, there is a good chance that the U.S. Drought Monitor conditions in South Carolina will improve through April.

Contact

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