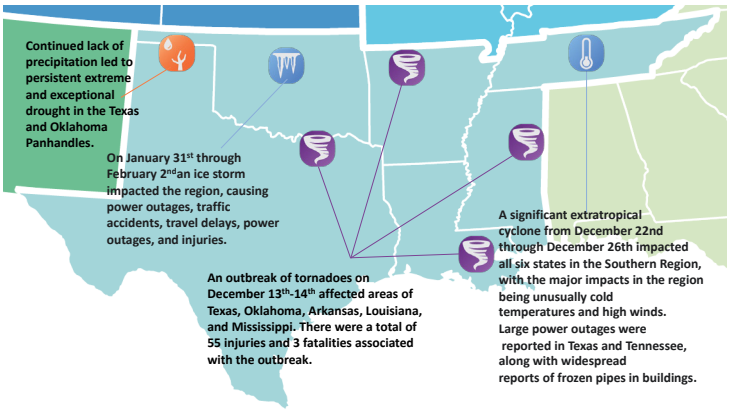
Quarterly Climate Impacts and Outlook

Southern Region

March 2023

Southern Region Significant Events — *Winter 2022-2023*



Severe weather was prevalent across the Southern Region during winter 2022-2023 with significant outbreaks of tornadoes in December, January, and February. During December there were 55 reported injuries and three fatalities, in January there were eight reported injuries, and in February there were 15 reported injuries and one fatality. Cold air outbreaks and ice storms caused several injuries, fatalities, and much property damage over winter 2022-2023.

Winter 2022-2023 started off warm across the southern portions of the region, transitioning to cooler than average temperatures in the north in December. The east of the region was wet with above normal precipitation, while western Texas and Oklahoma continued to see drought conditions. A significant cold air outbreak in late December led to 136 stations reporting daily low temperatures below 0 F.

January saw warmer than normal temperatures, with larger anomalies in the east. Five of the six states and the region as a whole experienced one of the top 10 warmest Januarys on record. Precipitation was varied across the region, above normal precipitation in the east and generally below normal precipitation in the west. Livestock in west Texas and Oklahoma continued to be affected by drought, with herd numbers substantially lower than prior years.

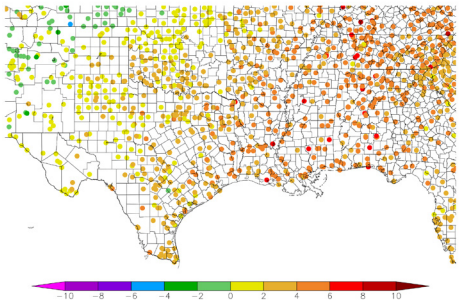
February was a mixed month for temperatures across the Southern Region with near-normal temperatures observed across much of Texas and Oklahoma. The eastern portions of the region were well above normal during February. Precipitation was near normal across much of the region, with areas of well above normal precipitation in eastern Oklahoma, western Arkansas, and the Big Bend area of Texas, and well below normal precipitation in southern Texas, portions of far west Texas and the Texas Panhandle.

Regional Climate Overview — *Winter 2022-2023*

Temperature and Precipitation

Departure from Normal Temperature °F

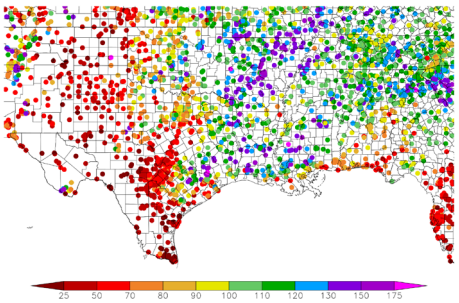
12/1/2022 – 2/28/2023



Winter 2022-2023 temperatures were above normal across much of the Southern Region, with stations averaging 0 to 2 F above normal in the west and 4 to 8 F in the east. Stations with departures greater than 6 F above normal were limited to Louisiana, Mississippi, and Tennessee. The only below average temperatures for winter 2022-2023 were observed at isolated stations in Texas and Oklahoma.

Percent of Normal Precipitation (%)

12/1/2022 – 2/28/2023

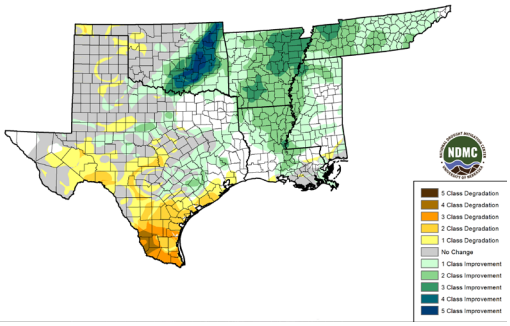


Below normal precipitation was common in southern, western Texas, the Texas Panhandle, western Oklahoma, and along the Gulf coast. Many stations in western Texas and Oklahoma received less than 25 percent of normal precipitation. In eastern Oklahoma, much of Louisiana, Mississippi, Arkansas, and Tennessee precipitation was above normal with many stations receiving 110 to 150 percent of normal precipitation.

Drought

Overall Change

12/6/2022 – 3/7/2023



Drought conditions were mixed across the Southern Region during the winter. Degrading drought conditions were common in southern Texas, portions of southwestern Texas, and isolated areas of the Texas and Oklahoma Panhandles. Substantial improvements were observed in eastern Oklahoma, Arkansas, Tennessee, western Mississippi, and northern Louisiana. Some areas of eastern Oklahoma received as much as 5 categories of improvement from December 6th to March 7th. Persistent drought remained an issue in western Texas and Oklahoma.

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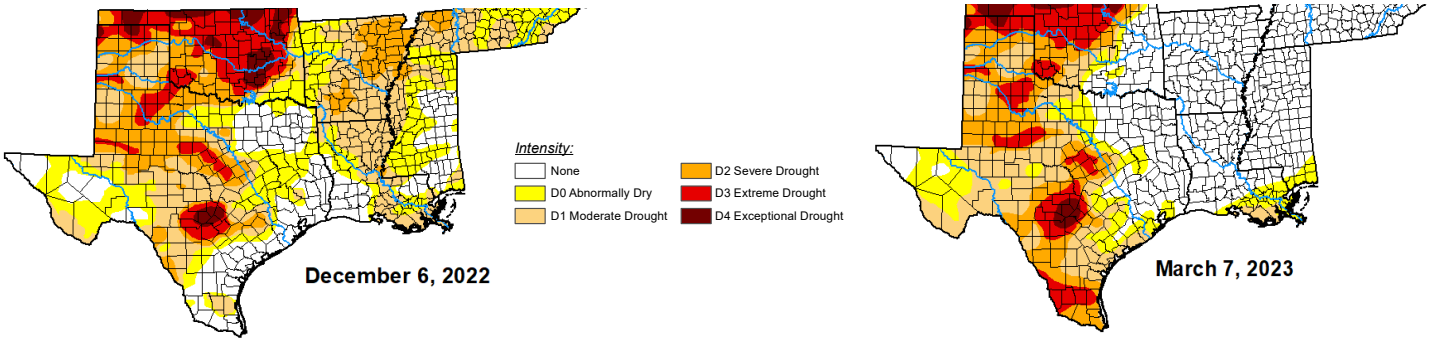
Southern Regional Impacts

Drought, Agriculture, and Water Supply

Winter 2022-2023 saw a decrease in the total area experiencing drought conditions, mainly in eastern Oklahoma, Arkansas, Tennessee, western Mississippi, and northern Louisiana. The percentage of the Southern Region experiencing moderate to exceptional drought decreased from 57 percent to 41 percent from December 6th through March 7th. Drought generally improved as the winter progressed in the east with Tennessee, Arkansas, Mississippi, and most of Louisiana being drought free as of March 7th. With improving drought conditions in the east, river levels along the Mississippi River had rebounded from record lows in the fall but remained below historical mean levels through the winter.

Ongoing drought conditions in western Texas and Oklahoma continued to affect livestock and agriculture in the region. The conditions of winter wheat crops and forage in these areas remain a concern. Reductions in herd size for cattle producers when compared to previous years were common. The beef cattle herd in Oklahoma was reportedly down 11.5% from January 1, 2022 to 1.981 million head.



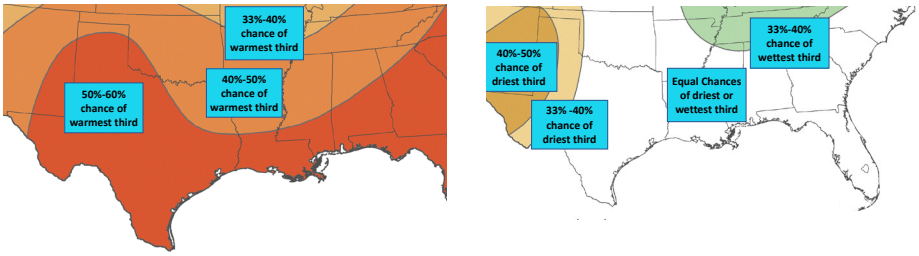
US Drought Monitor depiction of the Southern Region. The US Drought Monitor is produced by the National Drought Mitigation Center, the USDA, and NOAA.

Seasonal Outlook

Temperature

Precipitation

Outlook for April-June 2023



The seasonal temperature outlook from NOAA's Climate Center Prediction Center calls for elevated chances of above normal temperatures for the entire Southern Region through June. Chances of temperatures falling within the warmest third of 1991-2020 values are greatest across Texas, southern Louisiana and Mississippi, and decrease towards the north. This is supported primarily by the historical warming trend throughout the region.

The seasonal precipitation outlook reflects the emergence of neutral ENSO conditions in the tropical Pacific, suggesting equal changes of above-normal or below-normal precipitation for much of the region. Across western Texas and Oklahoma chances are greater for below-normal precipitation. The outlook suggests that chances for above-normal precipitation are greater in northeastern Arkansas, far northern Mississippi, and all of Tennessee.

ENSO Outlook

Neutral conditions are expected to persist through the spring months, making this the first spring in three years when neutral conditions are present. By summer, the chances for development of El Niño conditions are forecast to be ~50 percent. With the end of La Niña, chances of a wet spring have improved somewhat.

Southern Partners

NOAA/NWS Climate Prediction Center (cpc.ncep.noaa.gov)

NOAA National Centers for Coastal Ocean Science (coastalscience.noaa.gov)

NOAA Gulf of Mexico Collaboration Team (regions.noaa.gov/gulf-mexico)

NOAA/NESDIS National Centers for Environmental Information (ncei.noaa.gov)

NOAA/NWS Southern Region (weather.gov/srh)

Southern Climate Impacts Planning Program (southernclimate.org)

Southern Regional Climate Center (srcc.tamu.edu)

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