Drought Information Statement for The Central Tennessee Valley

July 19, 2024

Issued By: WFO Huntsville, AL

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- Drought conditions have deteriorated, with Extreme (D3) now in some parts of the area. This information will be updated when drought conditions or impacts change significantly.
- Please see all currently available products at https://drought.gov/drought-information-statements
- Please visit https://www.weather.gov/hun/DroughtInformationStatement for previous statements
- Please visit https://www.drought.gov/dews/Southeast

- DROUGHT CONDITIONS HAVE WORSENED OVER THE PAST WEEK IN MANY AREAS, WHILE SOME AREAS REMAIN STATUS-QUO WITH RESPECT TO DROUGHT. HOWEVER, CONDITIONS MAY BEGIN TO IMPROVE BEGINNING THE NEXT WEEK.

U.S. Drought Monitor

Latest U.S. Drought Monitor Map

- **Drought intensity and Extent**
  - **D4 (Exceptional Drought)**: None
  - **D3 (Extreme Drought)**: Much of eastern Lauderdale, northern Limestone, northern Madison, and southern Lincoln Counties.
  - **D2 (Severe Drought)**: Remaining areas of Lincoln, and all of Moore and Franklin Counties in TN. The remainder of eastern Lauderdale, portions of NE Colbert and northern Lawrence, a very small area in NW Morgan, remainder of central/northern Madison, portions of northern and southern Jackson, southern DeKalb, central and eastern Marshall, and small portions of western and eastern Cullman Counties.
  - **D1 (Moderate Drought)**: All areas not in D3 or D2 are in D1 Drought.
  - **D0 (Abnormally Dry)**: None

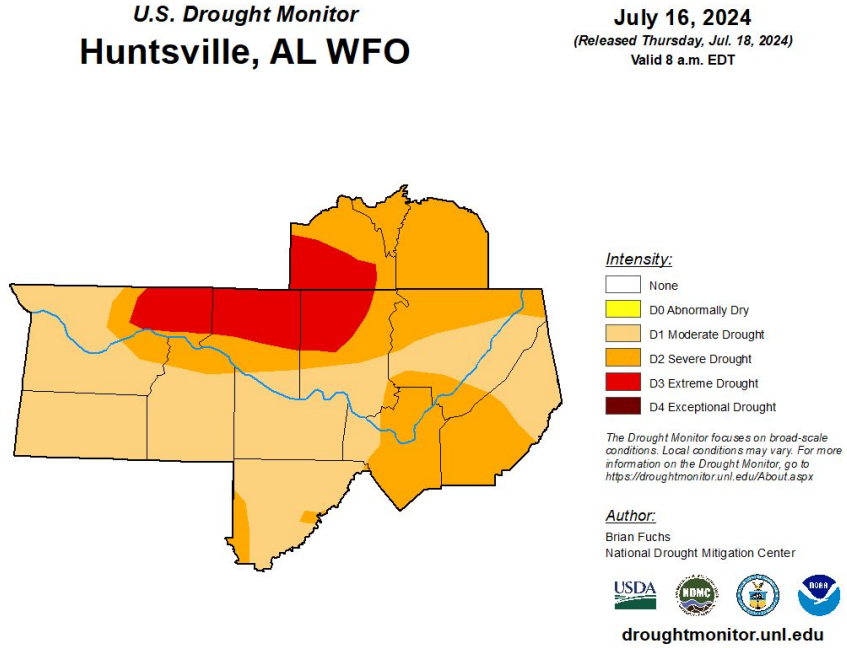


Image Caption: U.S. Drought Monitor valid 7 AM CDT, July 16, 2024.

Recent Change in Drought Intensity

- Four Week U.S. Drought Monitor Class Change
  - **Drought Worsened:** Mainly over northern portions of the area from near Muscle Shoals/Florence areas eastward to portions of the Huntsville metro and northward to Fayetteville, and eastward including portions of NE Alabama, and much of Franklin County. Also, southeast portions of the area, including much of Marshall County, southern DeKalb, and southern Jackson County, including small areas in western and eastern Cullman County.
  - **No Change:** None
  - **Drought Improved:** None

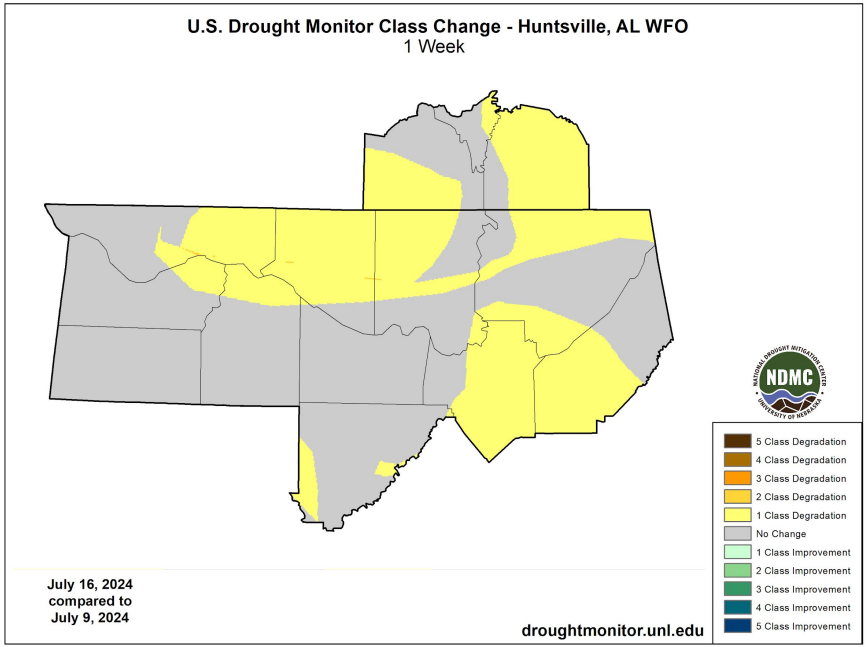
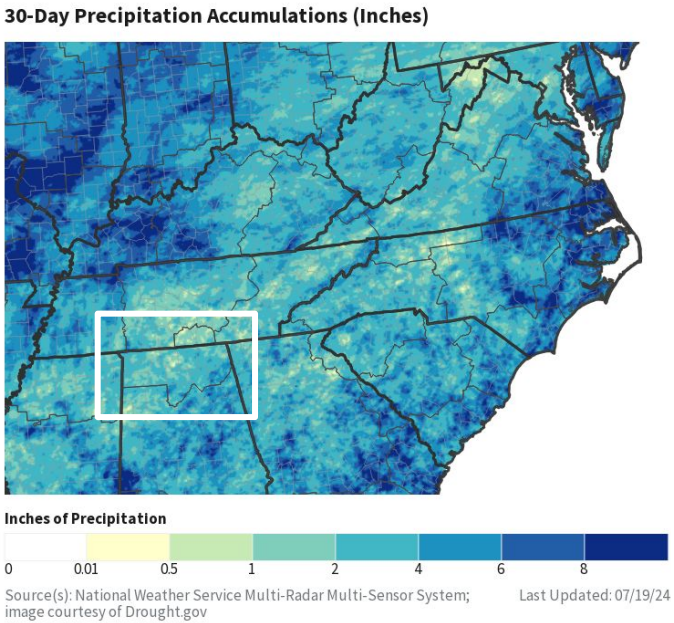


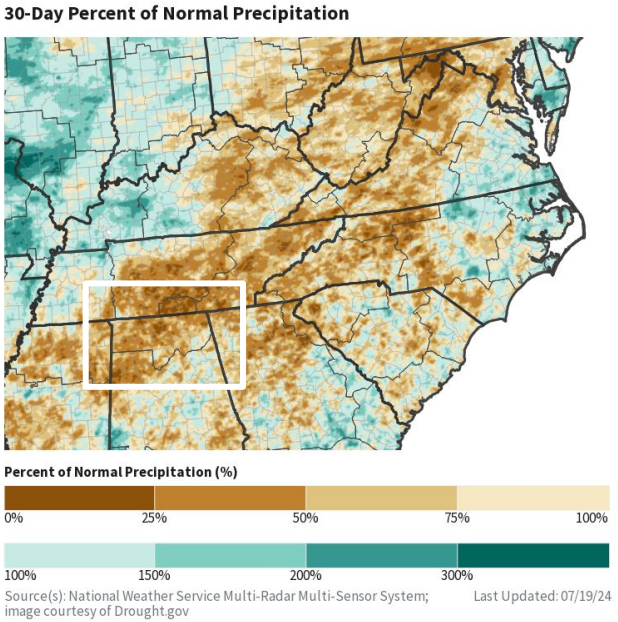
Image Caption: U.S. Drought Monitor 4-week change map valid 7AM CDT July 16, 2024.

Precipitation - Past 30 Days

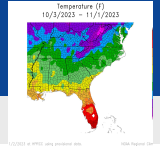
Main Takeaways

- Generally, rainfall has ranged around 1-2 inches for the past 30 days, with some areas receiving smaller amounts below one inch. Few, small areas have experienced heavier rainfall.
- These rainfall amounts are generally around 25-50% of normal for the past 30 day period, although some locations, especially in areas of D3 drought are lower than 25% of normal.



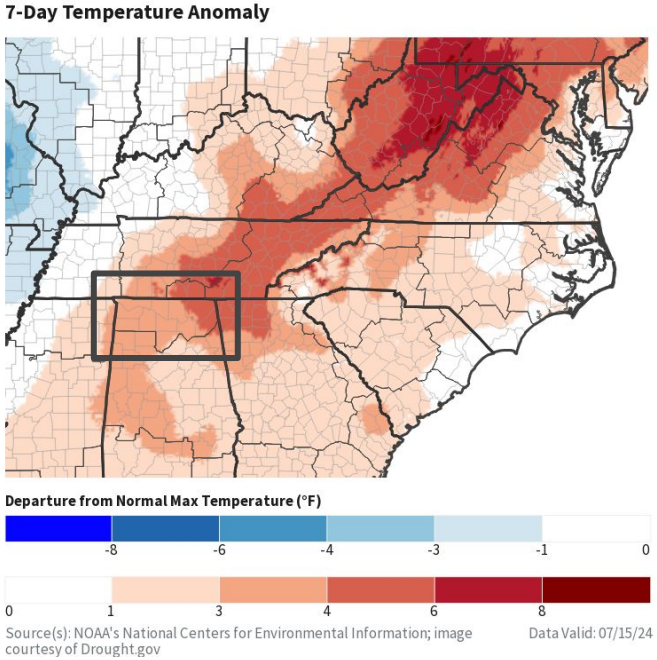


Left - 30-Day Precipitation Totals, Right - 30-Day Percent of Normal Precipitation. Data ending July 18, 2024



Temperature - Past 7 and 30 Days

- Temperatures have largely averaged around 1-3 degrees (F) above normal over the past 7 days for western and central portions of the area, but 3-4 degrees above normal for eastern portions of the area. For the 30-day period, temperatures have largely been 3-4 degrees above normal, with some areas in the east at 4-6 degrees above normal. Note: the data period ends on July 14.



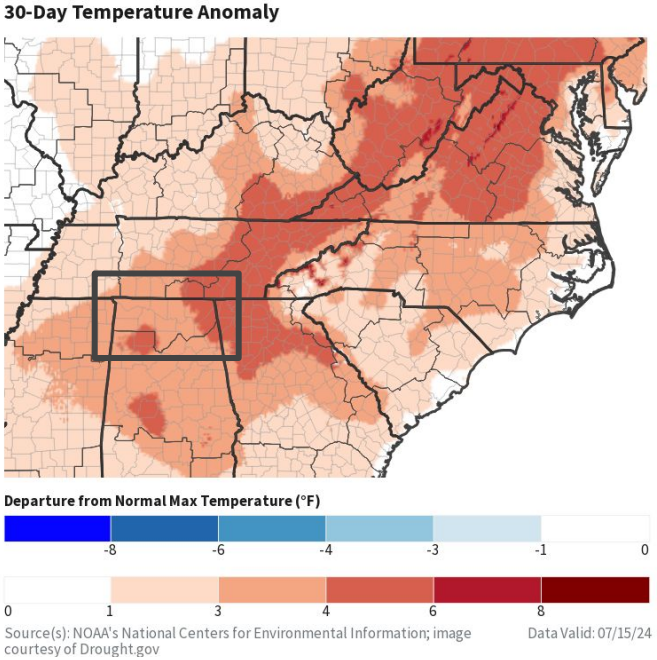


Image Captions:
Left - 7-Day Departure from Normal Temperature
Right - 30-Day Departure from Normal Temperature
Data Courtesy High Plains Regional Climate Center.
Data period ending July 14, 2024

Summary of Impacts

Hydrologic Impacts

- No hydrologic impacts of note currently, although streamflows and soil moisture have fallen significantly since early June due to the mostly dry and hot conditions. See next slide for more hydrologic information including streamflows and lake levels.

Agricultural Impacts

- USDA Crop and Progress Condition Reports have recently indicated that crops have been negatively impacted due to the hot and mostly dry weather in recent weeks, with corn, soybeans, cotton, hay and pastures all being affected. However, it's been noted that the most significant damage has occurred specifically to the corn crop. Also, livestock producers have indicated lack of sufficient grazing grasses due to the hot, dry weather, and that supplemental feeding has been required to maintain livestock conditions. Please see the 2024 Crop and Progress Condition Reports for Alabama and Tennessee from the USDA for more information.

Fire Hazard Impacts

- No significant fire activity has been reported over the last 30 days, although a 55 acre fire was recently reported (July 13th) by the Alabama Forestry Commission, although it was reported contained on July 16th. Keetch-Byram Drought Index (KBDI) values have increased significantly in recent weeks. KBDI values across the area now range from around 500 to over 600. Values of this magnitude indicate that lower duff and litter layers actively contribute to fire intensity and will burn actively.

Mitigation Actions

- On July 17, 2024, The Alabama Dept. of Economic and Community Affairs - Office of Water Resources placed Drought Regions 1 and 3 (which encompasses all of the Huntsville, AL NWS County Warning and Forecast Area) in a Drought Watch.
- Water managers are urged to carefully monitor conditions and encourage the wise and efficient use of our water resources.

Other Impacts - None at this time.

Hydrologic Conditions

- Streamflows have fallen significantly over the last several weeks, with 14-day average streamflow values around the 10th to 24th percentile for many streams, and even below the 10th percentile in some cases. Notable low flow streams are: Big Nance Creek (1st percentile), Elk River (6th percentile), Big Wills Creek (7th percentile), Sipsey Fork (9th percentile), Paint Rock River (11th percentile).

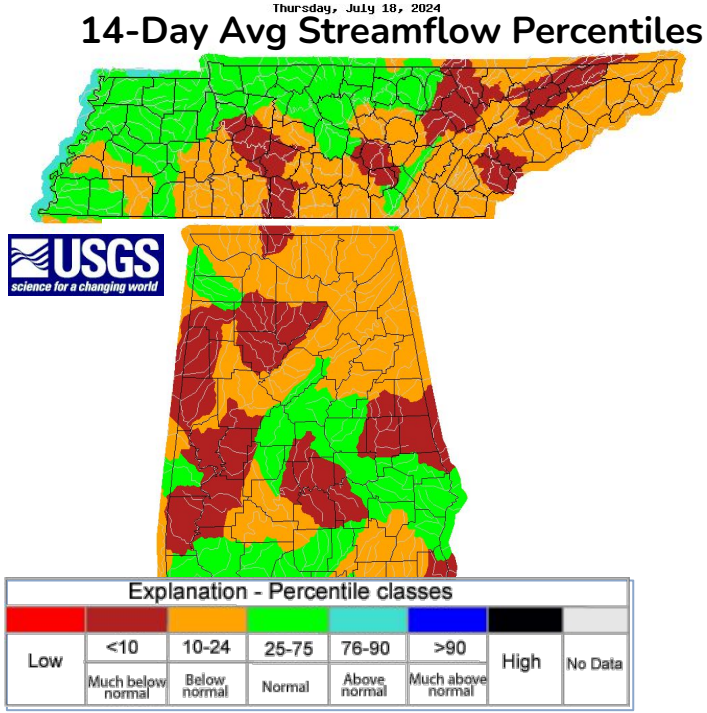


Figure Caption: USGS 14-day streamflow percentiles for Tennessee and Alabama, valid July 18, 2024

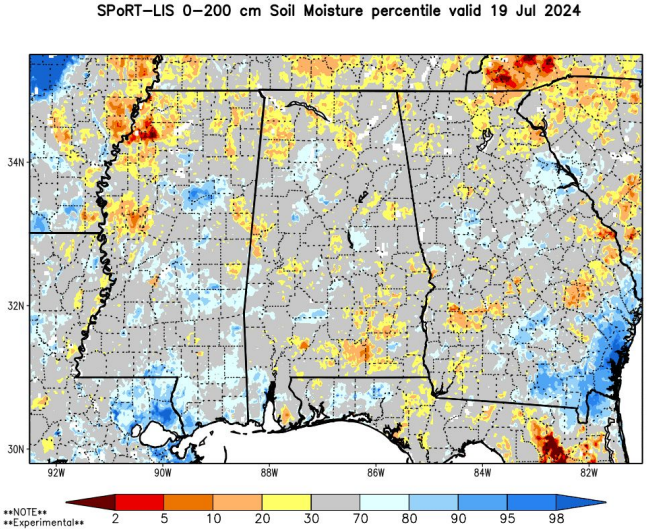
Lake Stages

Reservoir/ Lake	Pool Elevation (ft)	Current Elevation (ft)	Percent Full
Bear Creek	576	577	>100%
Little Bear Creek	620	619	<100%
Cedar Creek	580	580	100%
Tim's Ford	887	888	<100%
Nickajack	633-635	634	Within Operating Range (WOR)
Guntersville	594-595	595	WOR
Wheeler	555-556	556	WOR
Wilson	506-508	507	WOR
Pickwick	413-414	414	WOR
Lewis Smith	508	508	100%

Table caption: Reservoir conditions as of Jul 19, 2024

Agricultural Impacts

- Per the latest NASA SPoRT soil moisture data, 0-200 cm relative soil moisture values have decreased considerably, around 8-16% during the last 30 days. Relative soil moisture values in the deep 0-200 cm layer are currently around 20-40%, but values are lower in more shallow layers due to the recency of the drought (not shown).



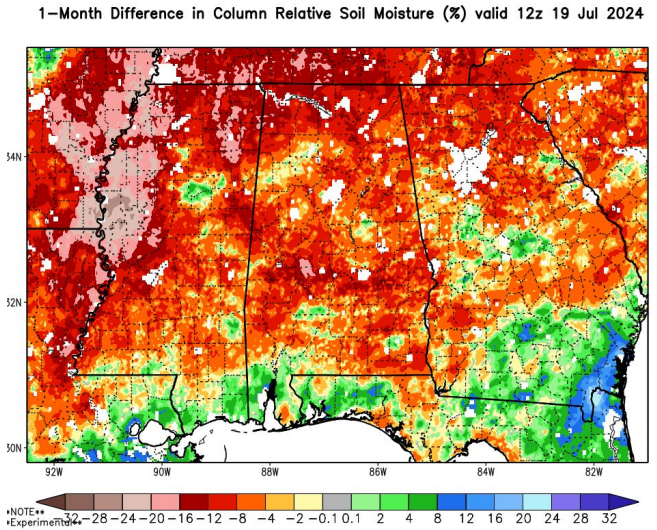


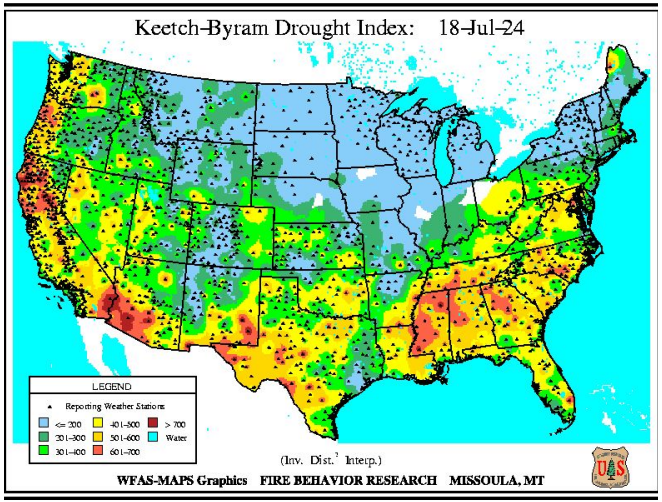
Image Captions:
Left: NASA Short-term Prediction Research and Transition (SPoRT) Center 0-200 cm Soil Moisture Ranking Percentile based on a 33-year climatology (1981-2013), July 19, 2024
Right: NASA SPoRT 1-Month Difference in 0-200 cm Relative Soil Moisture, ending July 19, 2024

Fire Hazard Impacts

Link to [Wildfire Potential Outlooks from the National Interagency Coordination Center.]

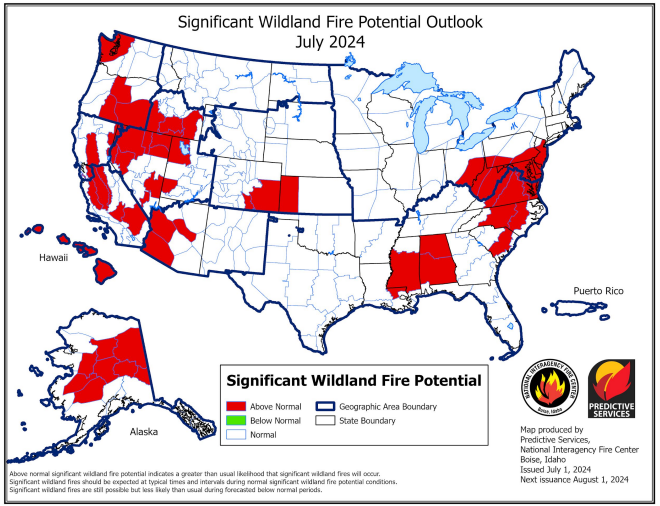
- Keetch Byram Drought Index (KBDI) values have increased to around 500-600 in recent weeks.
- NWS offices may issue Red Flag Warnings when KBDI values climb above 300 in Alabama, although other weather criteria must be met.
- All of northern AL is in an Above Normal Significant Wildland Fire Potential for July, from the Predictive Services of the Southern Area Coordination Center.

The Alabama Forestry Commission uses the KBDI as a system for relating current and recent weather conditions to potential or expected fire behavior. It is a numerical index calculated daily for each county. Each number is an estimate of the amount of rain, in hundredths of an inch, needed to bring the soil back to saturation. The index ranges from 0 to 800, with 0 representing a saturated soil and 800 a completely dry soil.



Left Image Caption: Keetch-Byram Drought Index (KBDI) for the Continental U.S., estimated for July 10, 2024

Right Image Caption: Significant Wildland Fire Potential Outlook, July 2024



Seven Day Precipitation Forecast

- Forecast Precipitation (July 19-25):
  - Heavier rainfall is expected over the next week! Around 3-5 inches is expected over much of the area, especially the SE half of the area over the next week. Amounts around 2-3 inches are anticipated for some areas currently stricken with D3 drought in northwest to north central portions of the area.
  - Around 1.00 to 1.25 inch of precipitation is normal for this time of year for a weekly period.

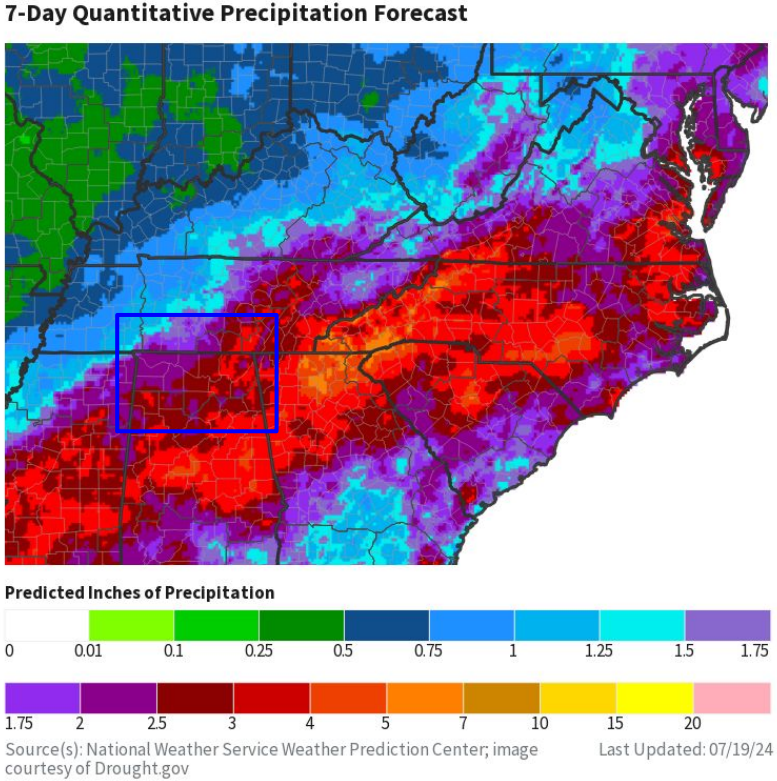
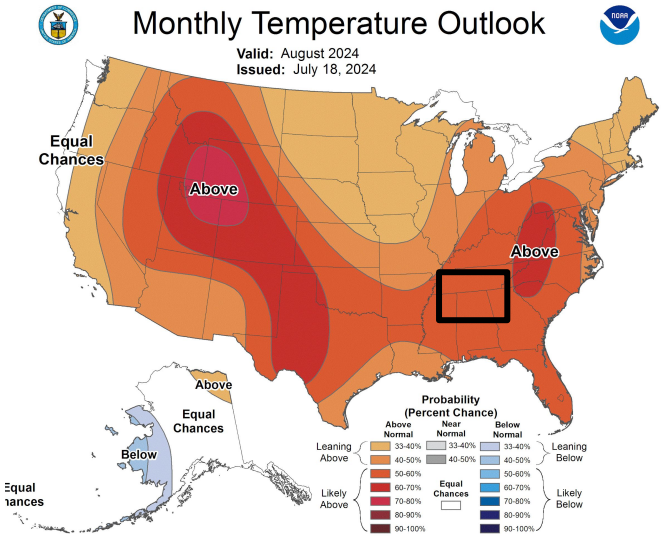


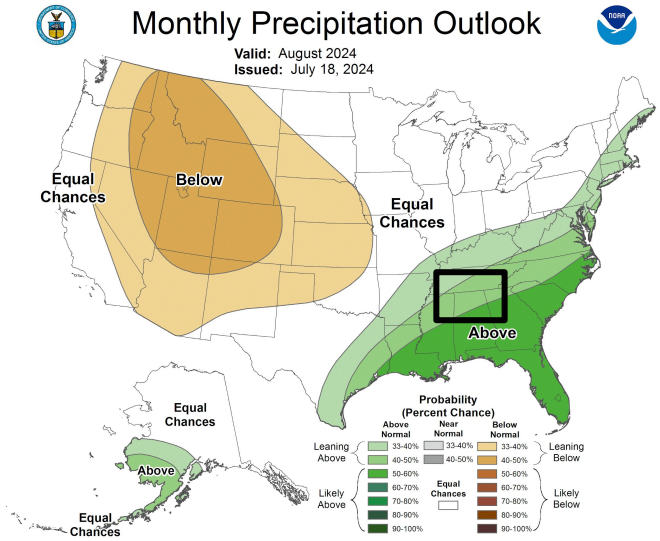
Image Caption: Weather Prediction Center 7-day precipitation forecast valid 7PM July 19 – 7PM July 25 (CDT)

Monthly Outlooks

The latest monthly and seasonal outlooks can be found on the [CPC homepage]

- Above Normal temperatures are favored (50-60% chance) for August.
- Above Normal Precipitation is moderately favored 40-50% for August.





Seasonal Outlooks

The latest monthly and seasonal outlooks can be found on the CPC homepage

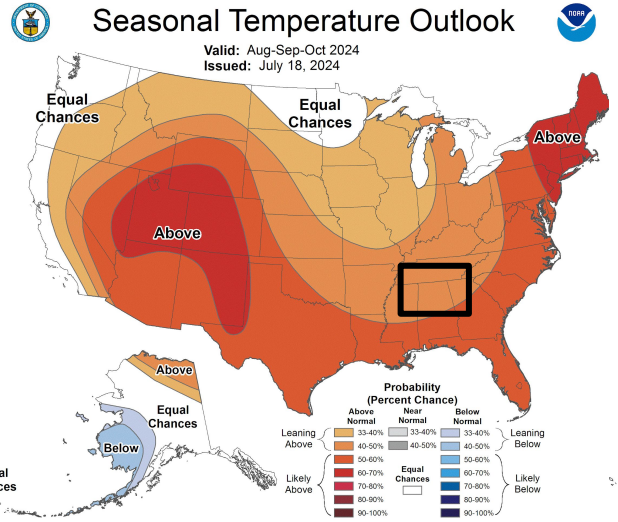
Main Takeaways

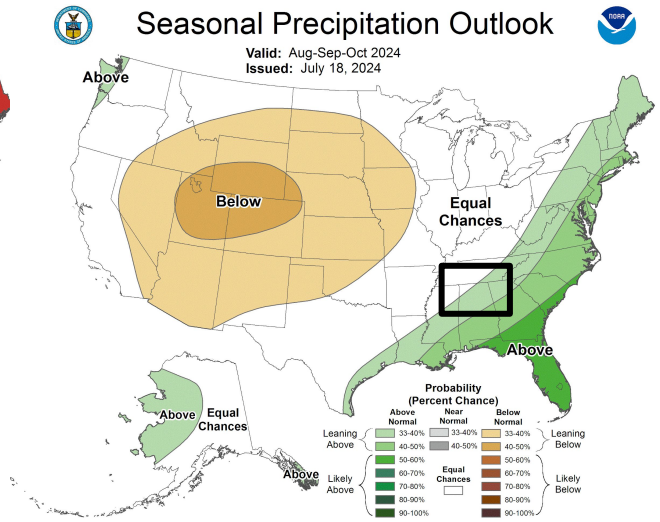
- **Temperatures:** Above Normal temperatures are moderately favored (40-50% probability) for the August to October period.

- **Precipitation:** Above Normal Precipitation is slightly favored (33-40% chance) for Aug-Oct for about the SE two-thirds of the area, equal chances for Above, Near, or Below Normal precipitation elsewhere.

Possible Impact

The possibility for wetter than normal conditions may keep drought conditions from worsening during this period, although the prospects for above normal temperatures would help drive evaporative water losses from the environment.

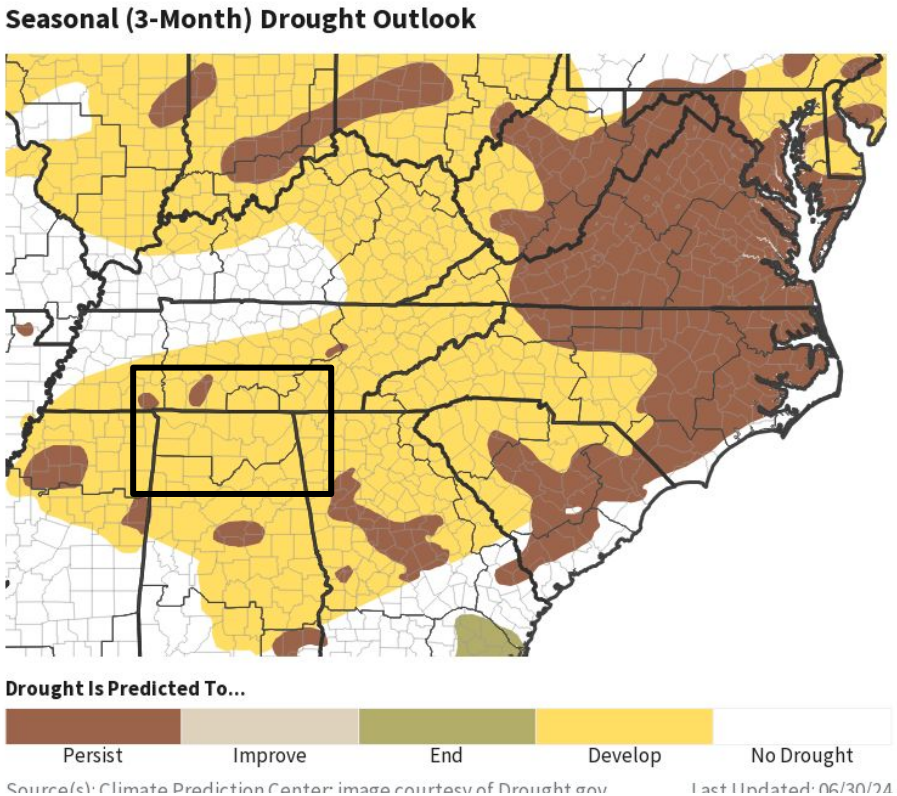




Drought Outlook

The latest monthly and seasonal drought outlooks can be found on the CPC homepage

- As of the latest Seasonal Drought Outlook last updated on July 18, 2024, drought conditions are expected to improve or end across the entire area for the period from July 18 to October 31.



Links to the latest:
Climate Prediction Center Monthly Drought Outlook
Climate Prediction Center Seasonal Drought Outlook