Drought Information Statement for The Central Tennessee Valley

Aug 1, 2024

Issued By: WFO Huntsville, AL

Contact Information: **sr-hun.webmaster@noaa.gov**

- Drought conditions have improved, but some areas of drought remain. 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 IMPROVED OVER THE PAST COUPLE OF WEEKS, ALTHOUGH DROUGHT DESIGNATIONS REMAIN FOR PORTIONS OF THE AREA.

U.S. Drought Monitor

Latest U.S. Drought Monitor Map

- **Drought intensity and Extent**
  - **D4 (Exceptional Drought)**: None
  - **D3 (Extreme Drought)**: None
  - **D2 (Severe Drought)**: A relatively small area in portions of eastern Lauderdale, far northern Limestone, and western Lincoln Counties.
  - **D1 (Moderate Drought)**: Areas generally north of a line from the Quad Cities, eastward to Courtland, Tanner, Huntsville, Grant, and Fort Payne (with the exception of areas in D3 drought noted above). Also, a small area in SW Cullman County.
  - **D0 (Abnormally Dry)**: All remaining areas in the Huntsville County Warning and Forecast area are in Abnormally Dry (D0) status.

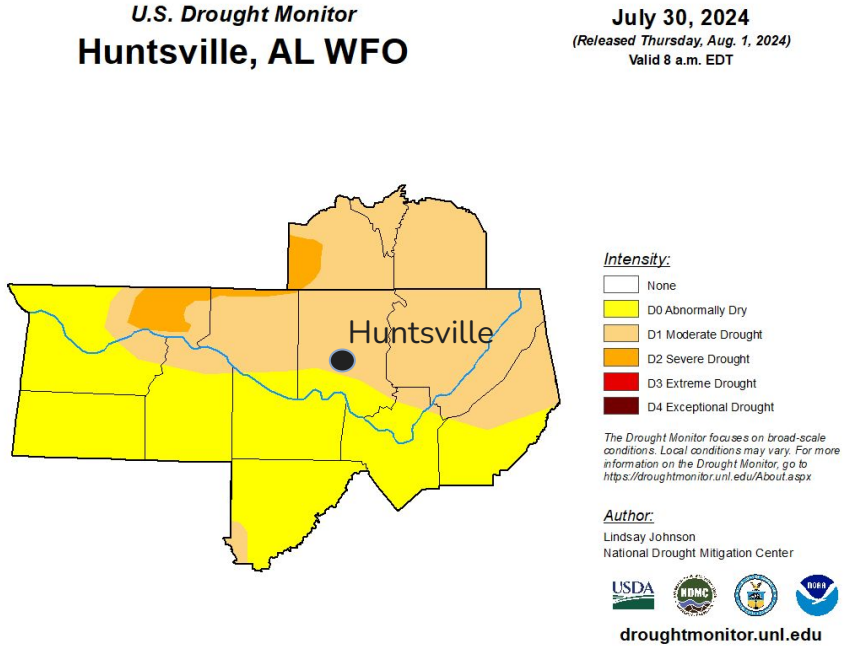


Image Caption: U.S. Drought Monitor valid 7 AM CDT, July 30, 2024.

Recent Change in Drought Intensity

- Two-Week U.S. Drought Monitor Class Change
  - **Drought Worsened:** None
  - **No Change:** A relatively small area from S. Huntsville area eastward into Jackson County and northern DeKalb County.
  - **Drought Improved:** Drought improved everywhere except for the area noted above in portions of Madison, Jackson, and DeKalb Counties. Drought conditions improved two categories over the last two weeks in portions of eastern Lauderdale, northern and central Limestone, northern and western Madison and southern Lincoln Counties. Also, drought improved two categories across much of Marshall County, southern DeKalb County, small areas in east-central and west-central Cullman County.

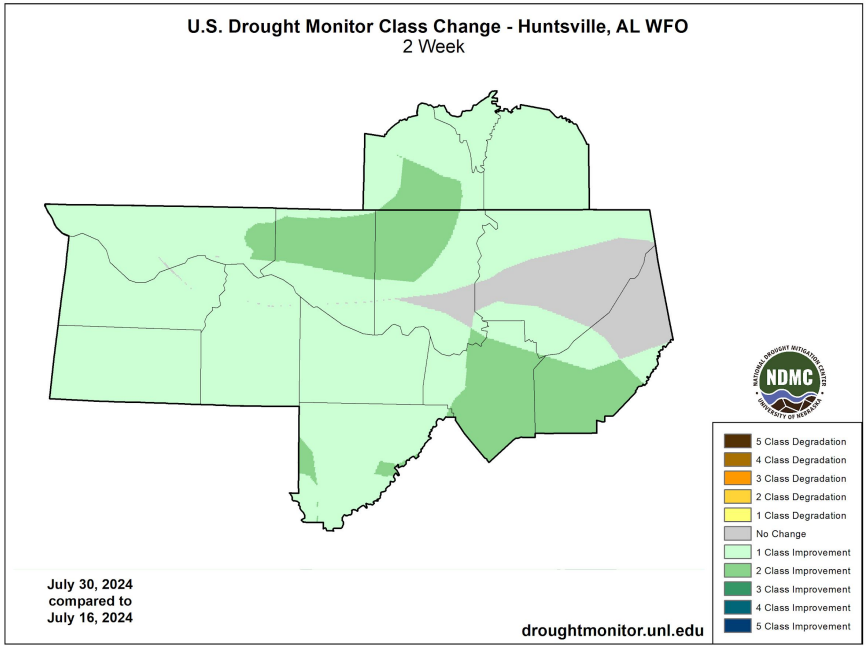
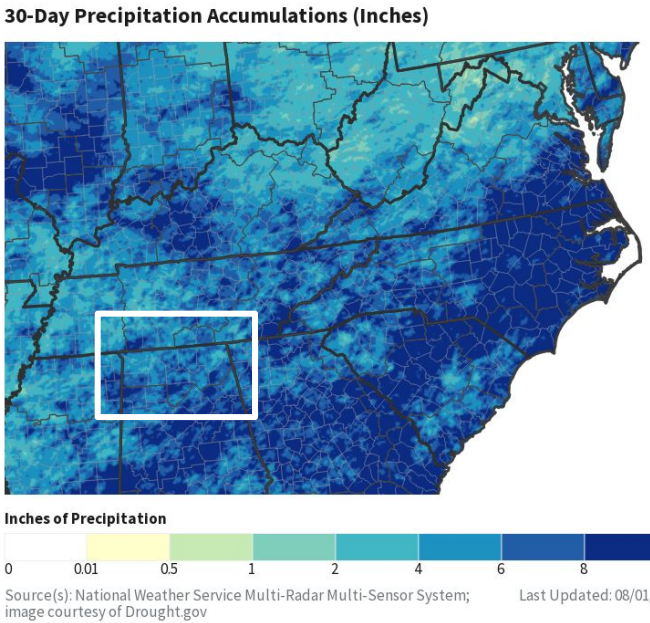


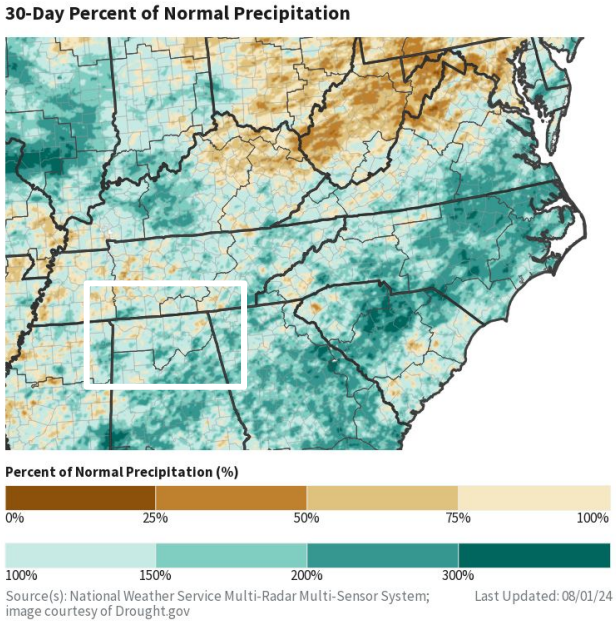
Image Caption: U.S. Drought Monitor 1-week change map valid 7AM CDT July 30, 2024.

Precipitation - Past 30 Days

Main Takeaways

- Generally, rainfall has ranged around 3-7 inches for the past 30 days, however, some locations have observed upwards of 8-10 inches.
- These rainfall amounts are largely above normal for the last 30 days, even 200-300% of normal in areas that received more than 8 inches, but there are some locations in both western and eastern portions of the area, where the 3 inch amounts were just about 75% of normal.



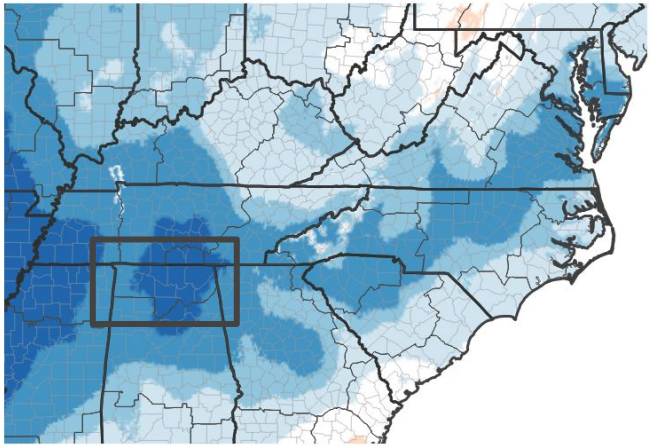


Left - 30-Day Precipitation Totals, Right - 30-Day Percent of Normal Precipitation. Data ending Aug 1, 2024

Temperature - Latest 7 and 30 Day Anomalies

- For the weekly period ending on July 27th, daytime high temperatures had largely averaged around 5-7 degrees below normal. For the longer 30-day period, daytime highs have averaged near to around 1 degree (F) above normal.

7-Day Temperature Anomaly



Departure from Normal Max Temperature (°F)

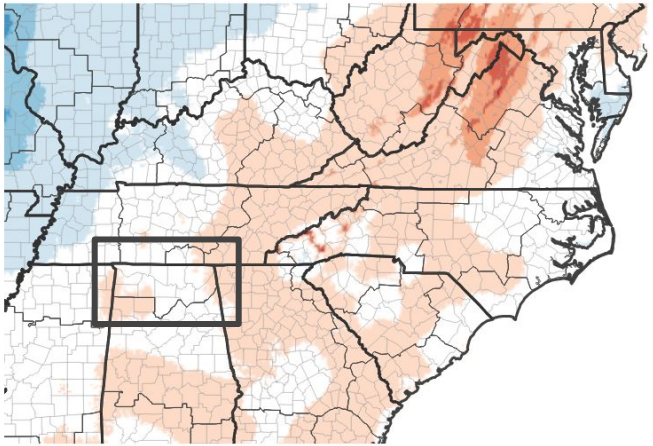
-8 -6 -4 -3 -1 0

0 1 3 4 6 8

Source(s): NOAA's National Centers for Environmental Information; image courtesy of Drought.gov

Data Valid: 07/27/24

30-Day Temperature Anomaly



Departure from Normal Max Temperature (°F)

-8 -6 -4 -3 -1 0

0 1 3 4 6 8

Source(s): NOAA's National Centers for Environmental Information; image courtesy of Drought.gov

Data Valid: 07/27/24

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 27, 2024

Summary of Impacts

Hydrologic Impacts

- No hydrologic impacts of note currently, although streamflows and soil moisture fell significantly from early June into early/mid July 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 during June and July indicated that crops had been negatively impacted due to the hot and generally dry weather from early June to early July, 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 had indicated lack of sufficient grazing grasses due to the hot, dry weather, and that supplemental feeding was required to maintain livestock conditions. However, recent reports over the last two weeks have indicated an improvement in soybeans, hay and pastures. 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 reported (July 13th) by the Alabama Forestry Commission in Franklin County, although it was reported contained on July 16th. Keetch-Byram Drought Index (KBDI) values have improved recently. KBDI values across the area now range from around 400 to 600 in western areas and 300-400 in the east.

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 fell significantly with 14-day average streamflow values around the 10th to 24th percentile for many streams by mid-July, and even below the 10th percentile in some cases. However, as shown by the graphic on teh right, streamflow conditions have improved in the last couple of weeks.

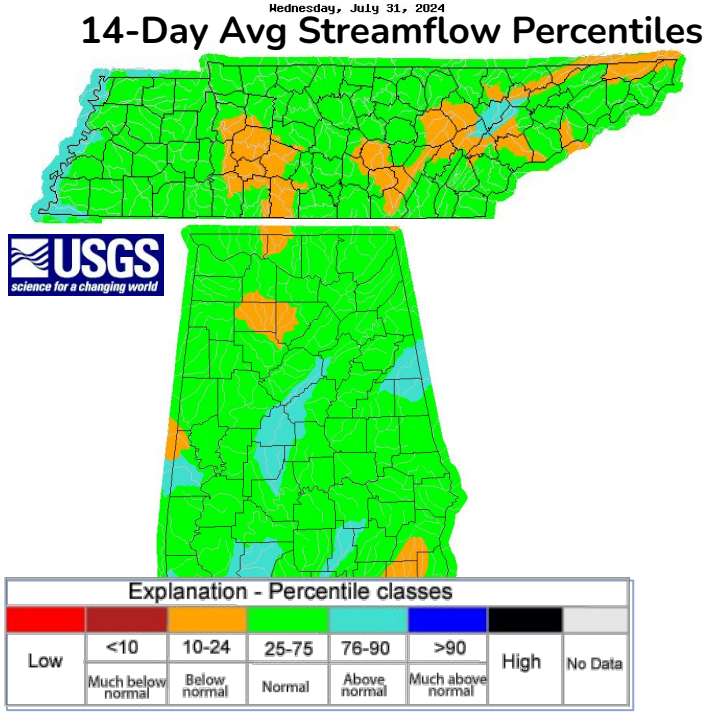


Figure Caption: USGS 14-day streamflow percentiles for Tennessee and Alabama, valid July 31, 2024

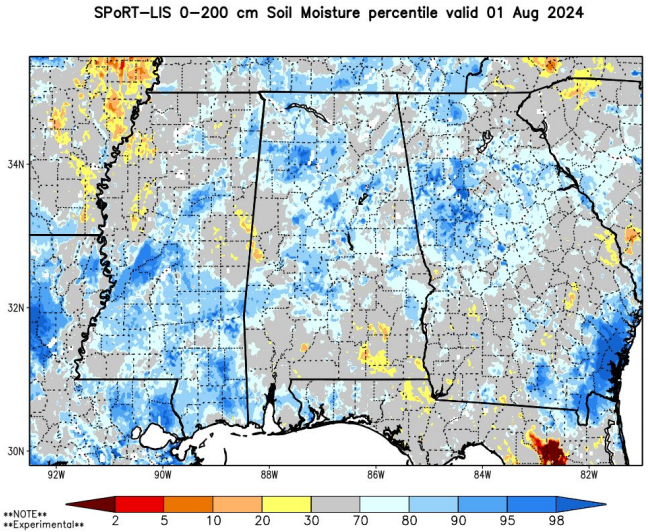
Lake Stages

Reservoir/ Lake	Pool Elevation (ft)	Current Elevation (ft)	Percent Full
Bear Creek	576	578	>100%
Little Bear Creek	620	619	<100%
Cedar Creek	580	580	100%
Tim's Ford	888	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	507	507	100%

Table caption: Reservoir conditions as of Jul 31, 2024

Agricultural Impacts

- Per the latest NASA SPoRT soil moisture data, 0-200 cm relative soil moisture values have increased in some areas, but decreased in some others over the last 30 days. However, 0-200 cm climatological percentiles are generally near to above normal for this time of year, with most areas above the 70th percentile.



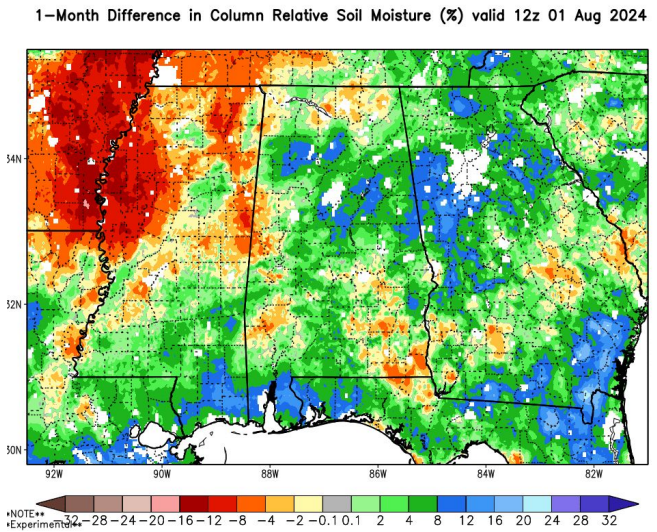


Image Captions:
Left: NASA Short-term Prediction Research and Transition (SPoRT) Center 0-200 cm Soil Moisture Ranking Percentile based on a 33-year climatology (1981-2013), Aug 1, 2024
Right: NASA SPoRT 1-Month Difference in 0-200 cm Relative Soil Moisture, ending Aug 1, 2024

Agricultural Impacts

- The Lawn and Garden Moisture Index for northern Alabama and southern Middle Tennessee has shown a significant improvement in moisture levels necessary for the production of healthy lawns and gardens across the area. Values now largely show surpluses around 1-2 inches.

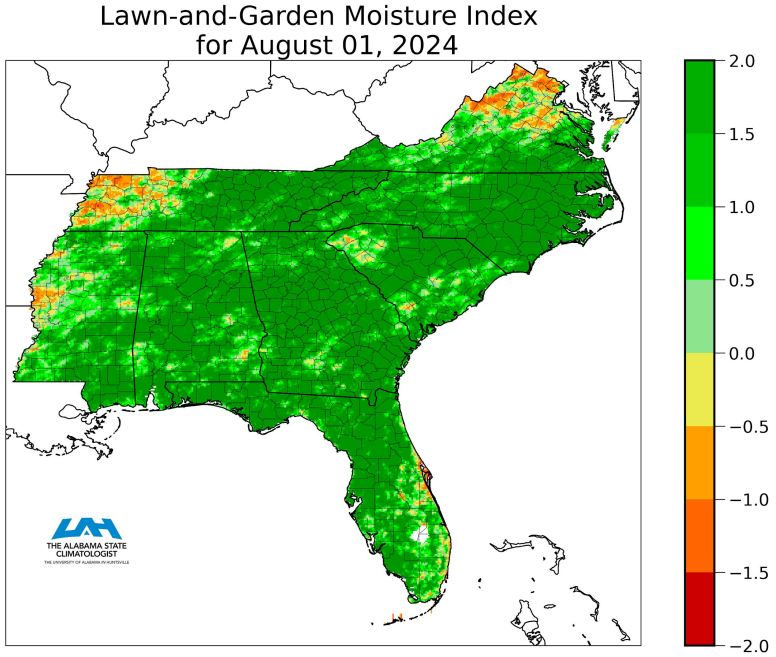


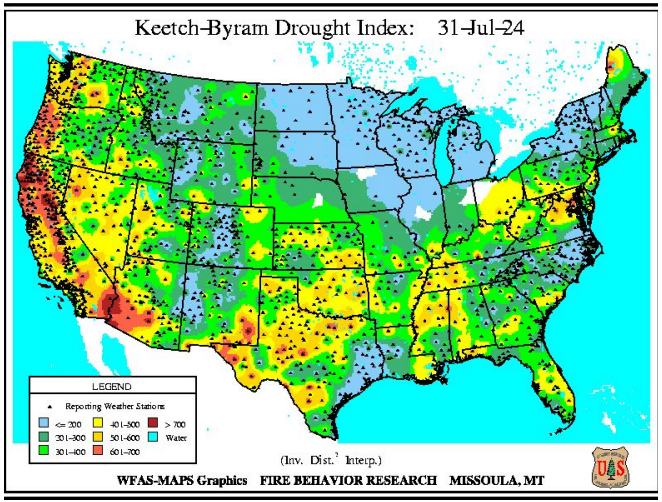
Image Captions:
The image to the right is the Lawn and Garden Moisture Index from the Office of the State Climatologist of Alabama. Negative values (warm colors) indicate soil moisture deficits, while positive values (shades of green) indicate moisture surplus.

Fire Hazard Impacts

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

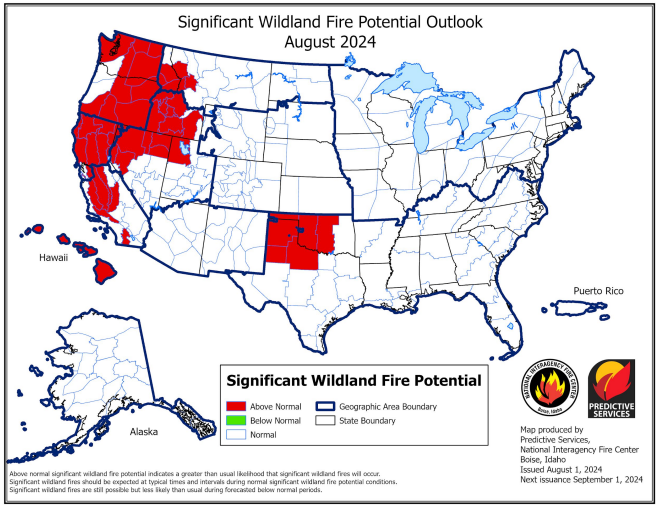
- Keetch Byram Drought Index (KBDI) values have fallen in the last couple of weeks especially, with values around 300-400 in the east and 400-600 in western areas.
- NWS offices may issue Red Flag Warnings when KBDI values climb above 300 in Alabama, although other weather criteria must be met.

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 31, 2024

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



Seven Day Precipitation Forecast

- Forecast Precipitation (Aug 1-8):
  - Rainfall amounts over the next week are expected to be below normal, with amounts generally below 0.25”. However, much higher rainfall amounts could occur in isolated locations due to heavy shower activity.
  - Around 1.00 inch of precipitation is normal for this time of year for a weekly period.

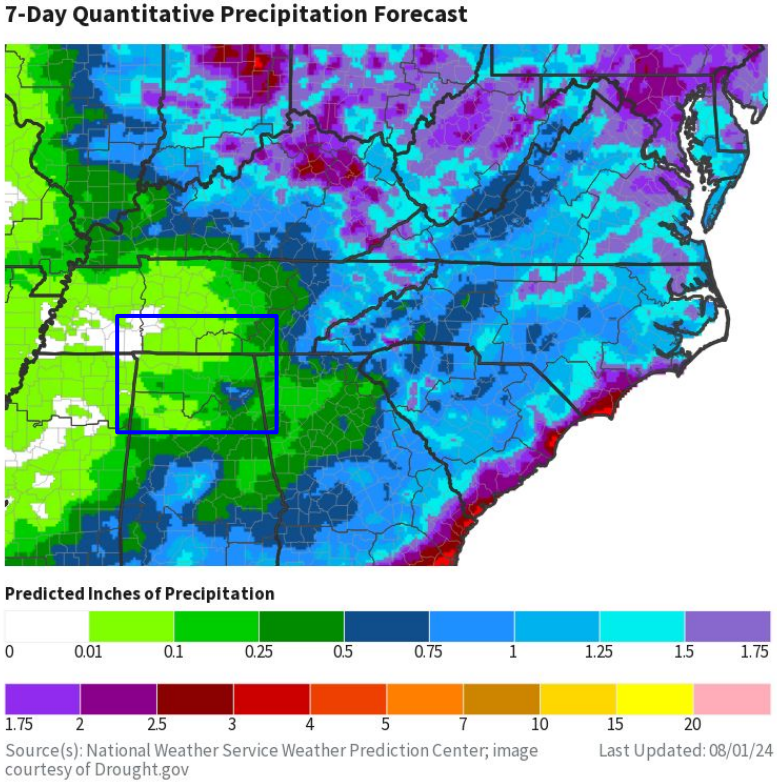
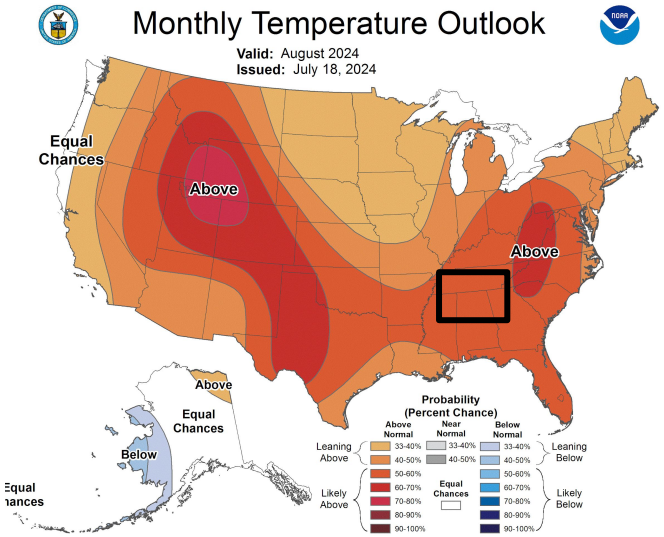


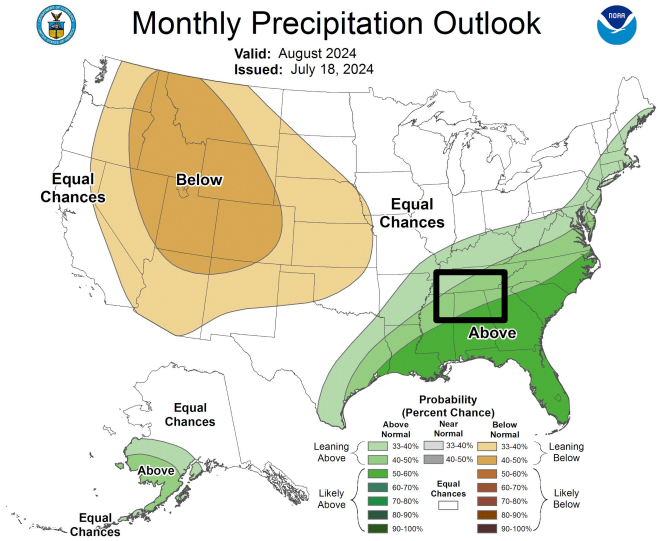
Image Caption: Weather Prediction Center 7-day precipitation forecast valid 7PM Aug 1 – 7PM Aug 8 (CDT)

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

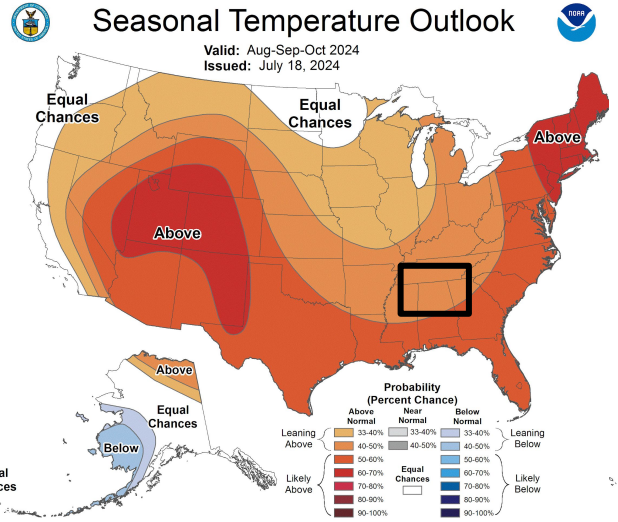
Main Takeaways

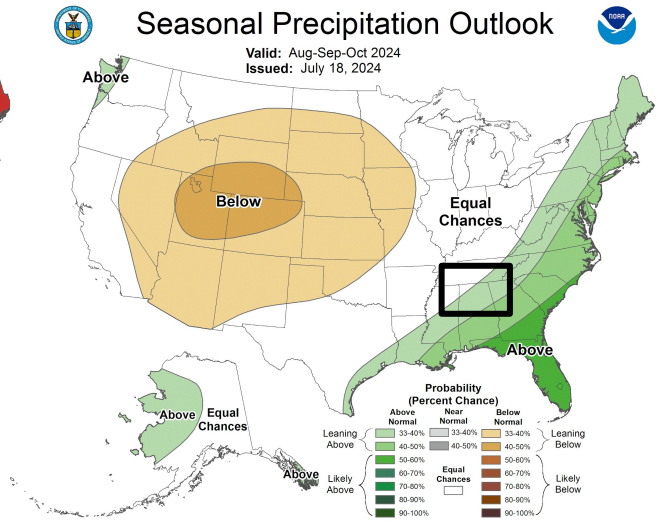
- **Temperatures:** Above Normal temperatures are moderately favored (40-50% probability) for the August to October period.

- **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.



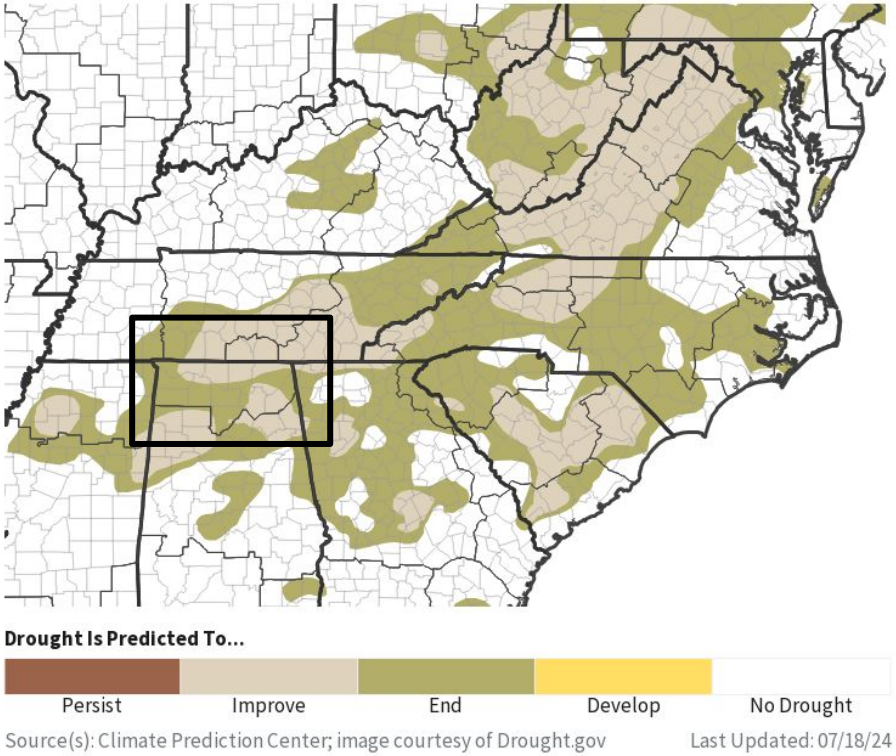


Drought Outlook

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.

Seasonal (3-Month) Drought Outlook



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