Drought Information Statement for The Central Tennessee Valley

September 19, 2024

Issued By: WFO Huntsville, AL

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- Heavy rainfall associated with Francine has helped to alleviate drought conditions in western parts of the area, but drought intensifies in eastern areas that received less rainfall. This information will be updated if or when drought conditions or impacts change significantly in the next several weeks.
- 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

- THE REMNANTS OF FRANCINE HELP TO ALLEVIATE DROUGHT CONDITIONS IN PARTS OF THE WEST, BUT DROUGHT INTENSIFIES IN PARTS OF THE EAST.

U.S. Drought Monitor

Latest U.S. Drought Monitor Map

- **Drought intensity and Extent**
  - **D4 (Exceptional Drought)**: None
  - **D3 (Extreme Drought)**: A small portion of northern Limestone County, northeast Jackson County, and southeast Franklin County (TN)
  - **D2 (Severe Drought)**: Mainly areas from northeastern Lauderdale County, through northern Limestone, western/northern Lincoln County, much of Moore and Franklin Counties (TN), northern and central Jackson, and far northern DeKalb Counties.
  - **D1 (Moderate Drought)**: Various areas, including the cities of Huntsville, Decatur, Cullman, Guntersville, Albertville, Fort Payne, Russellville, and Fayetteville.
  - **D0 (Abnormally Dry)**: A swath from southern/western Cullman County, northwestward through the Bankhead Nat'l Forest, Moulton, and Courtland, then through the Quad Cities, and westward through western Colbert County.

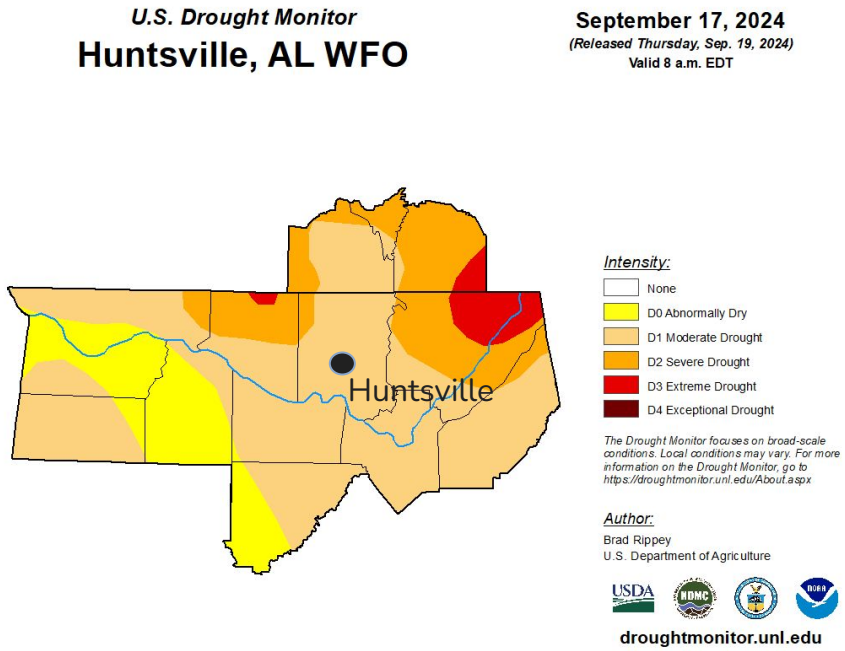


Image Caption: U.S. Drought Monitor valid 7 AM CDT, September 17, 2024.

One-Week Change in Drought Intensity

- One-Week U.S. Drought Monitor Class Change
  - **Drought Worsened:** In northeastern parts of the area, from northern Lincoln County, eastward and southward through Moore, Franklin, northern Jackson and DeKalb Counties.
  - **No Change:** Much of the remainder of eastern portions of the area.
  - **Drought Improved:** Drought improved significantly (two-categories) from western Cullman County, northwestward through much of Lawrence County, and farther westward through northeast Franklin, much of Colbert and southern Lauderdale Counties. Drought improved one category in much of the remainder of western portions of the area.

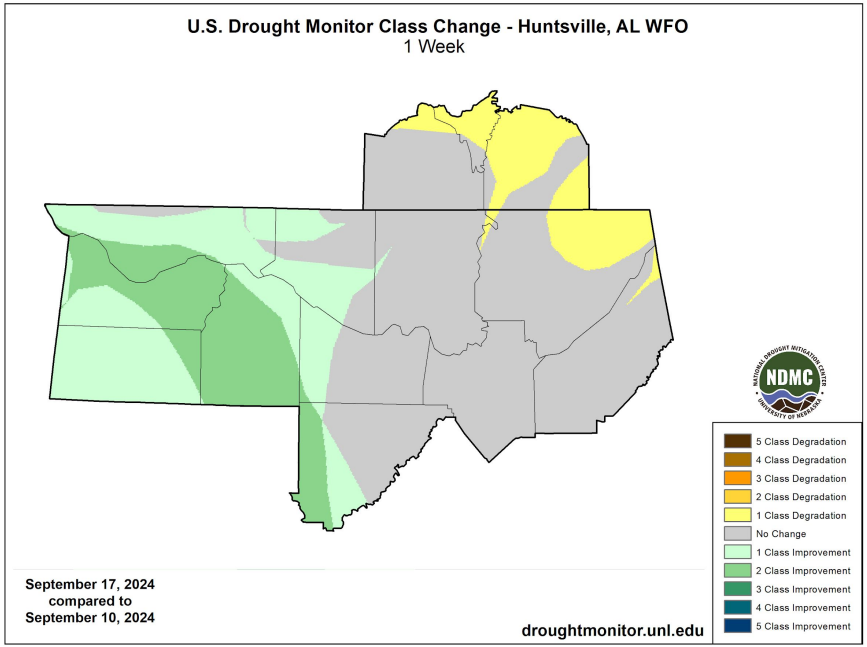
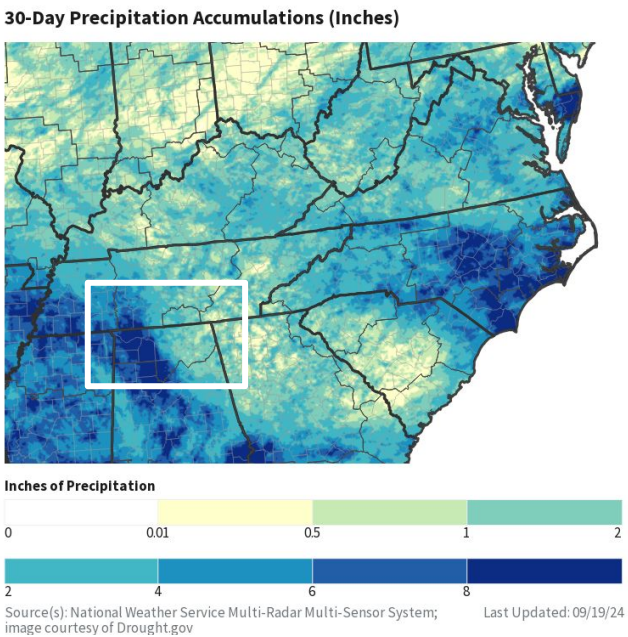


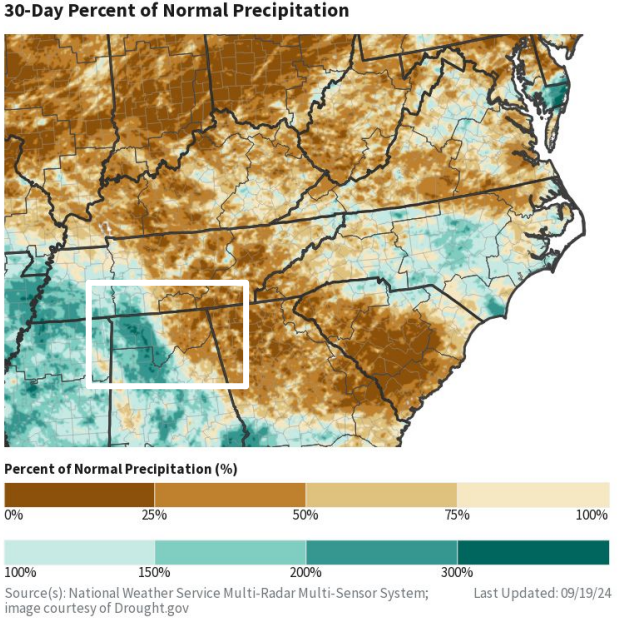
Image Caption: U.S. Drought Monitor 1-week change map valid ending 7AM CDT September 17, 2024.

Precipitation - Past 30 Days

Main Takeaways

- Precipitation ending on September 18th totaled just around 0.10 inch to around 1 inch in eastern areas. However, heavy rainfall occurred generally near and west of I-65. The greatest amounts occurred from western Cullman County northwestward to Lauderdale County, where amounts were over 8 inches. In fact, portions of the Bankhead Nat'l Forest through Moulton and Leighton totaled around 10-15 inches!
- Over the last 30 days, rainfall generally ranged from around 10% to 75% of normal for eastern areas, to more than 600% of normal for parts of the west.





Left - 30-Day Precipitation Totals, Right - 30-Day Percent of Normal Precipitation. Data ending Sep 19, 2024. These maps help to illustrate the stark contrast in rainfall between western and eastern areas, particularly due to the effects of Francine, that brought heavy rainfall mainly to western areas from Sept 13th through the 15th.

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. However, deficits began to build again in August into early September due to the dry weather. Due to the heavy rainfall associated with Francie, Big Nance Creek reached Major Flood Stage, but has since receded.

Agricultural Impacts

- USDA Crop and Progress Condition Reports in the early summer indicated crops had been negatively impacted due to the hot, dry weather, with corn, soybeans, cotton, hay and pastures all being affected. However, the most significant damage occurred specifically to the corn crop. Very recent reports over the last several weeks have indicated wilting with some row crops, stress to soybeans, and continuation of poor grazing conditions for livestock with the need for supplemental feeding, and even near or total crop failure in some instances. Please see the 2024 Crop and Progress Condition Reports for Alabama and Tennessee from the USDA for more information.

Fire Hazard Impacts

- As reported by the Alabama Forestry Commission, since late June 999.15 acres have burned within Huntsville County Warning and Forecast Area. This includes the following larger fires: 100 acres in Colbert County (controlled on Sep 10th), 135 acres in Colbert County (controlled on June 26th), and 203 acres in Lawrence County (controlled on August 29th).

Mitigation Actions

- All TN and AL counties in the Huntsville County Warning and Forecast Area have been included in a USDA Secretarial Disaster Declaration for Drought. Go to this link for more information: https://www.fsa.usda.gov/programs-and-services/disaster-assistance-program/disaster-designation-information/index
- 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. This remains in effect.

Hydrologic Conditions

- 14-Day average streamflows are around the 10th-25th percentile for this time of year across north central areas. This includes 14-day avg low flow in the Elk River (9th percentile) and the Paint Rock River (23rd percentile). Streams from western Cullman County northward through Lauderdale are above the 90th percentile due to the recent swath of heavy rainfall across that area.
- Lake Stages remain generally near normal, but levels on Smith Lake rose several feet due to heavy rainfall from remnants of Francine.

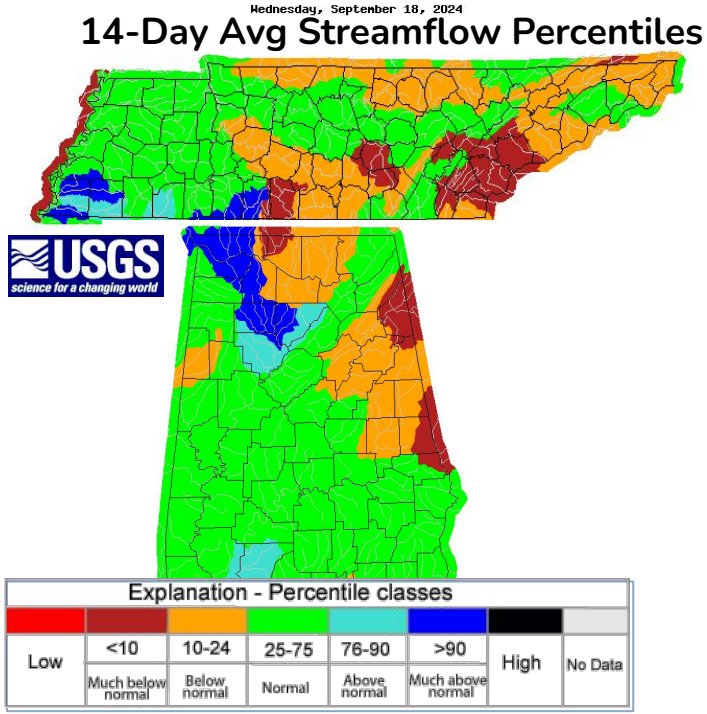


Figure Caption: USGS 14-day streamflow percentiles for Tennessee and Alabama, valid Sep 18, 2024

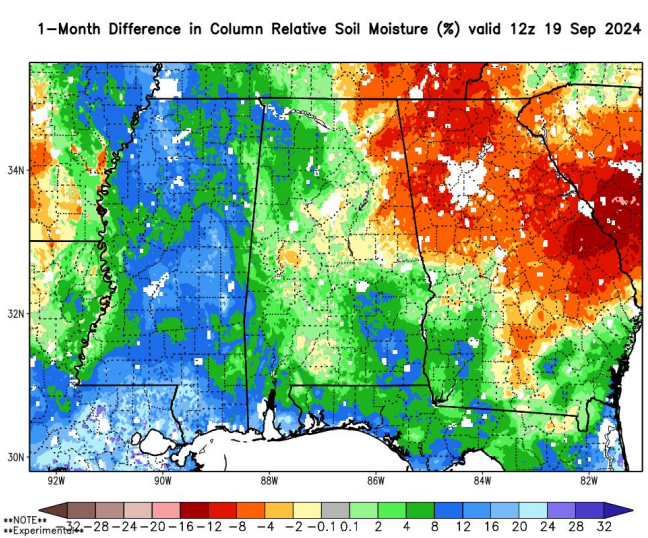
Lake Stages

Reservoir/ Lake	Pool Elevation (ft)	Current Elevation (ft)	Percent Full
Bear Creek	576	576	100%
Little Bear Creek	620	619	<100%
Cedar Creek	580	580	<100%
Tim's Ford	888	887	<100%
Nickajack	633-635	634	Within Operating Range (WOR)
Guntersville	594-595	594	WOR
Wheeler	554-555	554	Low end of Operating Range
Wilson	506-508	507	WOR
Pickwick	412-413	413	WOR
Lewis Smith	503	507	>100%

Table caption: Reservoir conditions as of Sep 19, 2024

Agricultural Impacts - Soils

- Per the latest NASA SPoRT soil moisture data, 0-200 cm relative soil moisture values decreased significantly in most areas of northeastern Alabama, and in Lincoln, Moore, and Franklin Counties in TN. However, soil moisture increased in other areas in north-central and northwestern AL.
- 0-200 cm soil moisture is around the 10th to 30th percentiles in parts of the east, but values have risen significantly to the 70-90th percentiles in parts of the west.



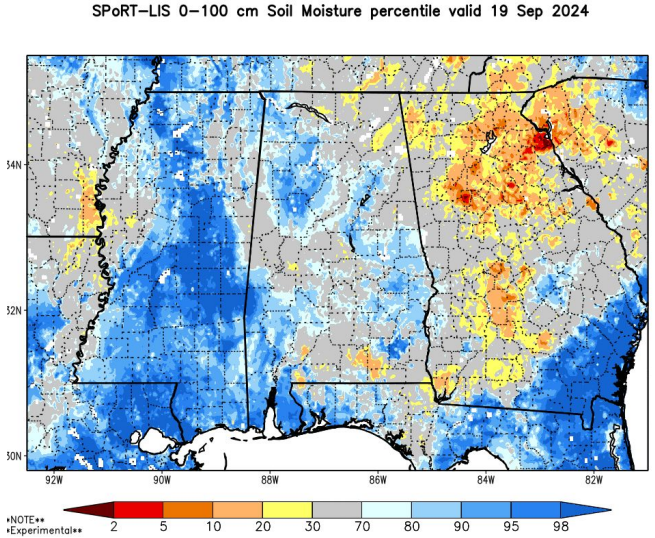
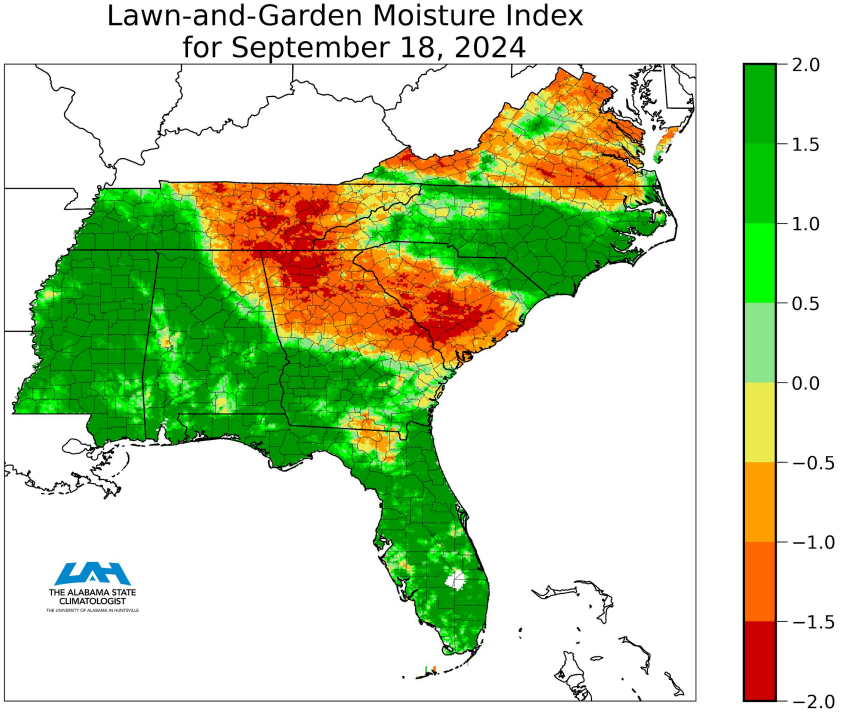


Image Captions:
Left: NASA SPoRT 1-Month Difference in 0-200 cm Relative Soil Moisture, ending Sep 19, 2024
Right: NASA Short-term Prediction Research and Transition (SPoRT) Center 0-200 cm Soil Moisture Ranking Percentile based on a 33-year climatology (1981-2013), Sep 19, 2024

Agricultural Impacts

- The Lawn and Garden Moisture Index for northern Alabama and southern Middle Tennessee is reflective of other data, with soil moisture deficits in the east and surpluses in the west. Values in the eastern counties are largely around negative 1-2, indicating at least one to two inch rainfall deficits in most areas for the maintenance of healthy lawns and gardens.

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.

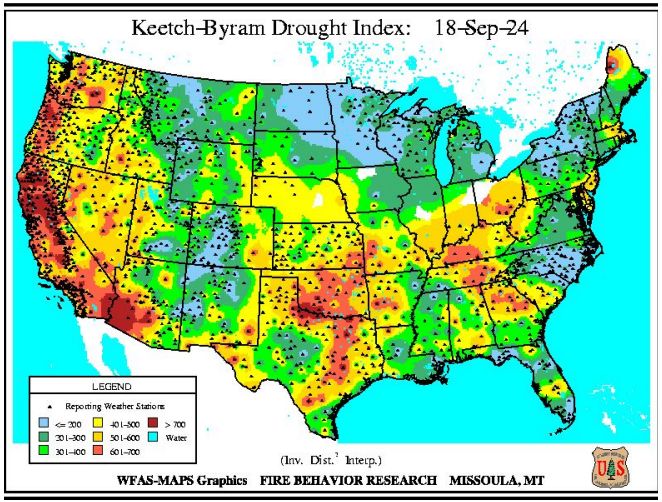


Fire Hazard Impacts

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

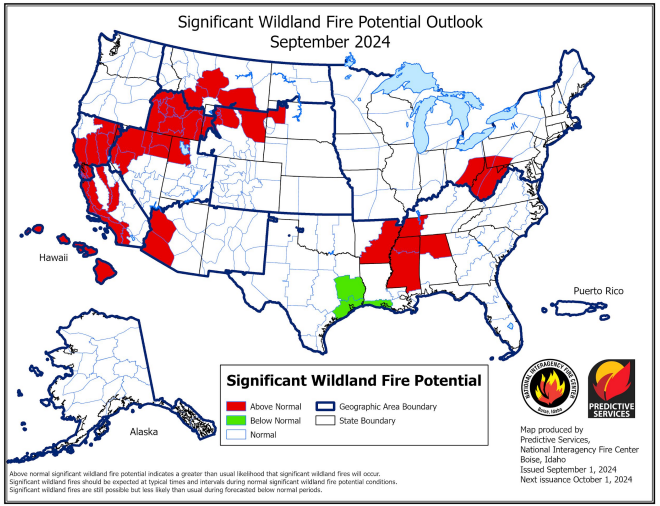
- Keetch Byram Drought Index (KBDI) values have risen in eastern areas, with values around 500-700, however values have fallen in the west due to recent heavy rainfall, with most values around 200-400.
- NWS offices may issue Red Flag Warnings when KBDI values climb above 300 in Alabama, although other 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 Sep 18, 2024

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



Seven Day Precipitation Forecast

- Forecast Precipitation (Sep 19-Sep 26):
  - Rainfall amounts over the weekly period are expected to be around one quarter to one half inch in western areas, with amounts around one quarter of an inch or less in eastern and central areas.
  - Around 0.75 to 1.00 inch of precipitation is normal for this time of year for a weekly period.

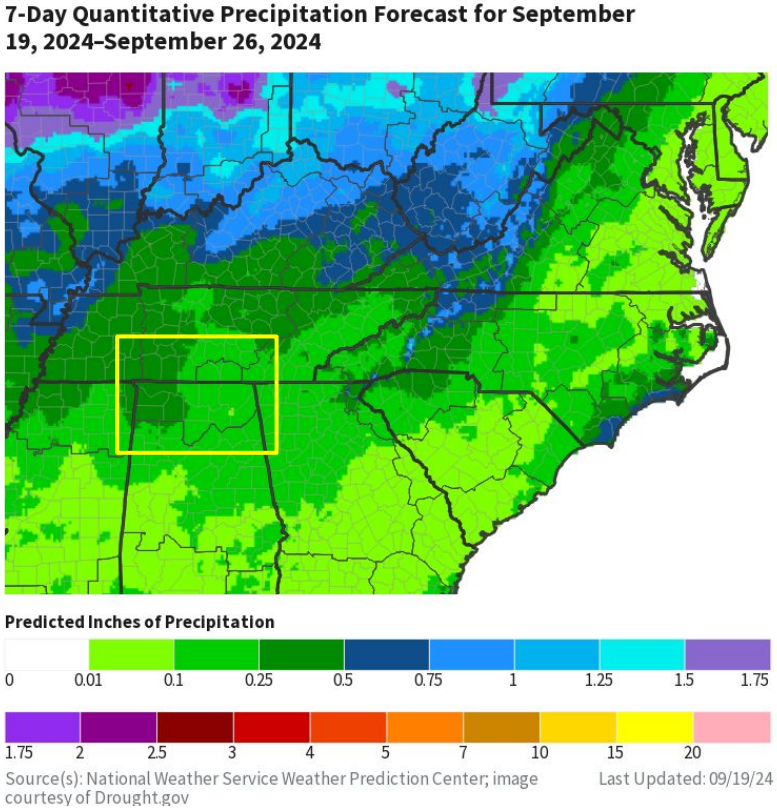
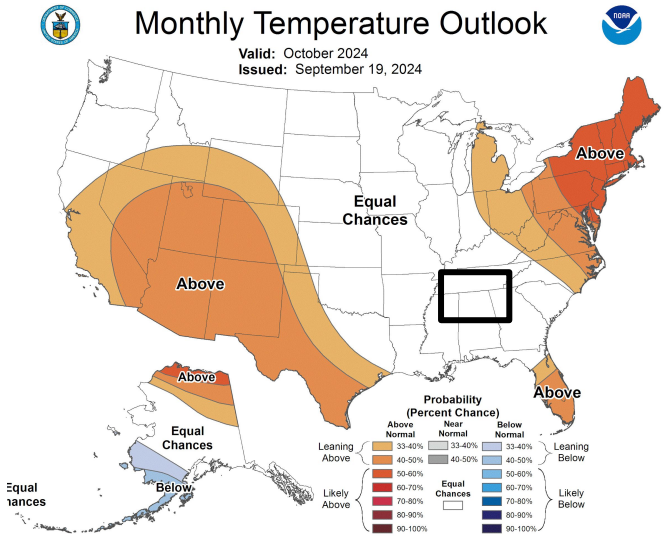


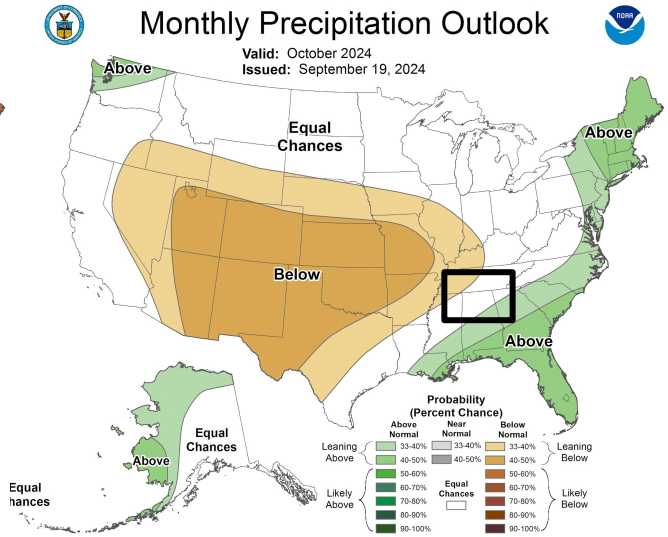
Image Caption: Weather Prediction Center 7-day precipitation forecast valid 7PM Sep 19 – 7PM Sep 26 (CDT)

Monthly Outlooks - October 2024

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

- For October, there area Equal Chances for Below, Near, or Above Normal Temperatures.
- For October, there area Equal Chances for Below, Near, or Above Normal Precipitation.





Seasonal Outlooks - Oct to Dec

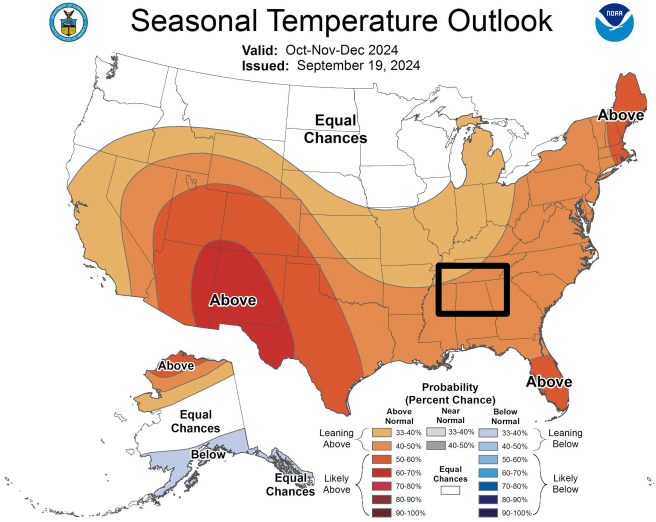
The latest monthly and seasonal outlooks can be found on the CPC homepage

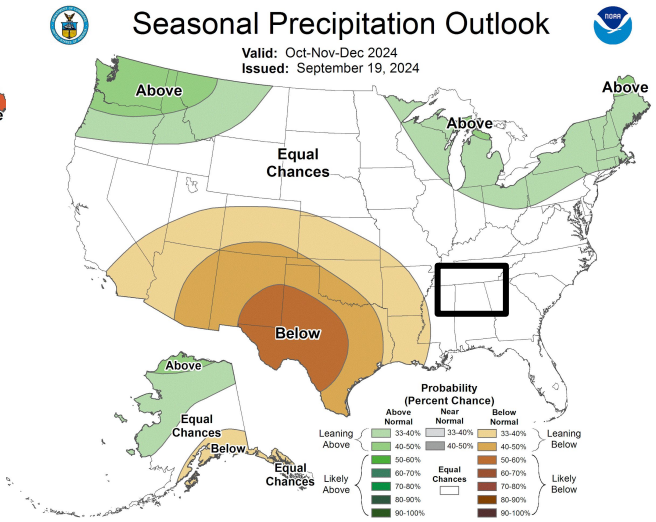
Main Takeaways

- **Temperatures:** Above Normal temperatures are moderately favored (40-50% probability) for the October to December period.
- **Precipitation:** Equal Chances for Below, Near, or Above Normal Precipitation for the September to November period.

Possible Impact

Uncertainty in the precipitation outlook limits the ability to assess impacts, however, above normal temperatures would generally help to exacerbate drought conditions due to increased evaporation and evapotranspiration potential. It's important to note that recent rainfall in western areas may still be factored into future drought designations as the rainfall impacts are assessed.

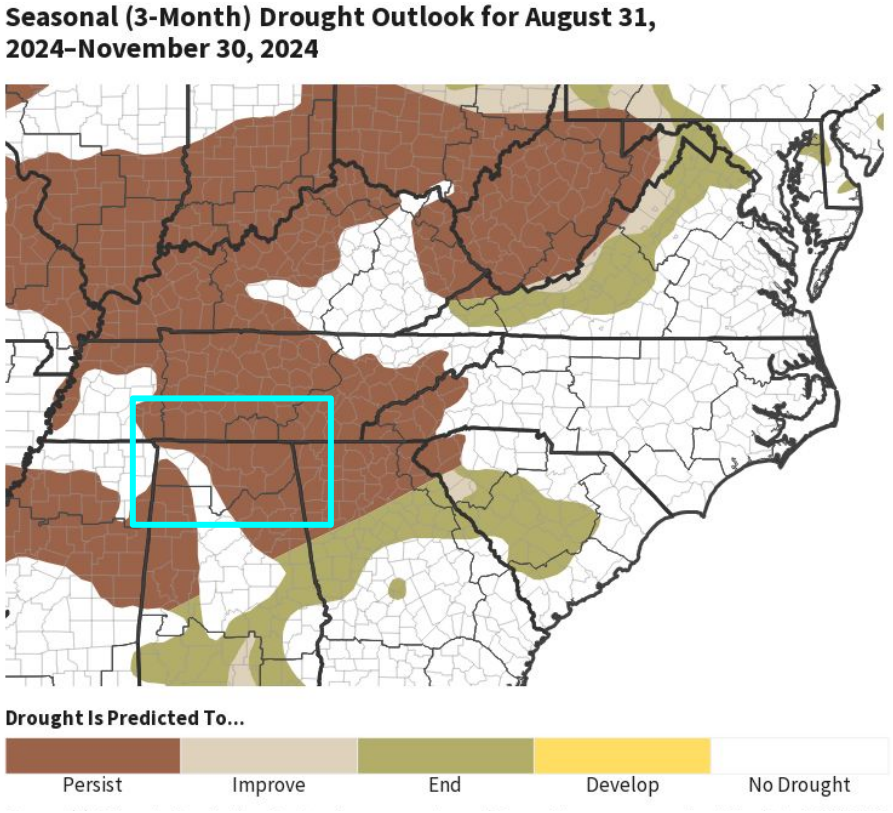




Seasonal Drought Outlook

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

- As of the latest Seasonal Drought Outlook last updated on September 19, 2024, drought conditions were expected to persist across areas where drought levels of D1 or higher existed at the time.



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