Drought Information Statement for The Central Tennessee Valley

October 11, 2024

Issued By: WFO Huntsville, AL

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- Rainfall in recent weeks helped to alleviate drought conditions to some extent, but drought remains in some areas. This statement will be updated 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

- RECENT RAINFALL HAS HELPED TO REDUCE DROUGHT IMPACTS, BUT DROUGHT STILL REMAINS IN SOME AREAS.

U.S. Drought Monitor

Latest U.S. Drought Monitor Map

- **Drought intensity and Extent**
  - **D4 (Exceptional Drought)**: None
  - **D3 (Extreme Drought)**: A small area of west-central Lincoln County, TN.
  - **D2 (Severe Drought)**: Mainly areas from northern Limestone into western and northern Lincoln County and a small portion of northwestern Moore County.
  - **D1 (Moderate Drought)**: Areas from eastern Lauderdale through much of Limestone, Madison, and Jackson Counties, and a small portion of western DeKalb County. Other areas of southern Middle Tennessee not in D2 drought are in D1 drought.
  - **D0 (Abnormally Dry)**: The remainder of the area not in D2 or D1 drought is under a D0 designation.

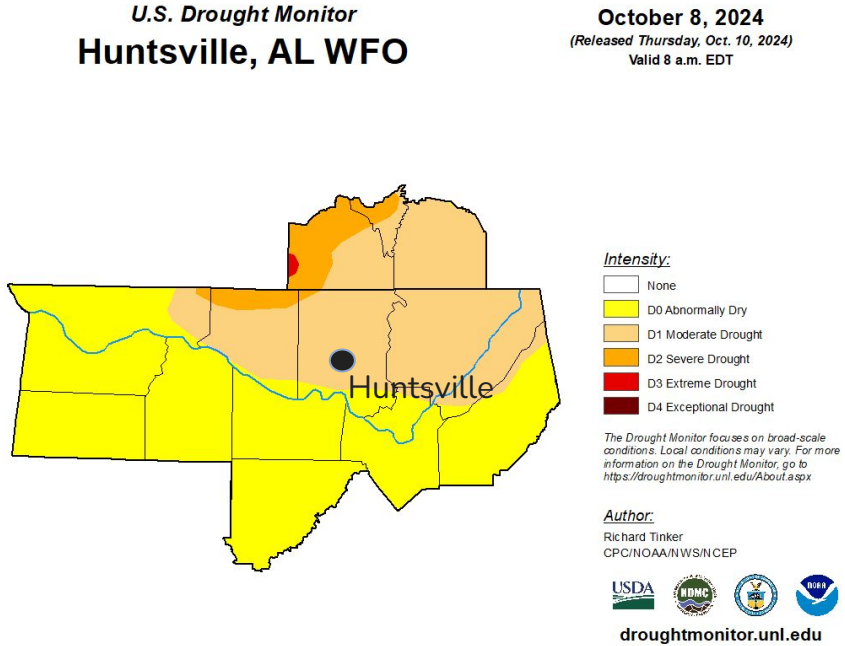


Image Caption: U.S. Drought Monitor valid 7 AM CDT, October 8, 2024.

Four-Week Change in Drought Intensity

- Four-Week U.S. Drought Monitor Class Change
  - **Drought Worsened:** In a relatively small area in Lincoln County, and about the northern half of Moore County.
  - **No Change:** Various areas from western areas of southern Middle Tennessee, and mostly in Madison County and southern Jackson County in northern Alabama.
  - **Drought Improved:** Drought conditions improved two categories in much of northwestern Alabama, especially due to rainfall associated with Francine. A one category improvement has occurred otherwise in much of northern Alabama and southeastern Franklin County, TN.

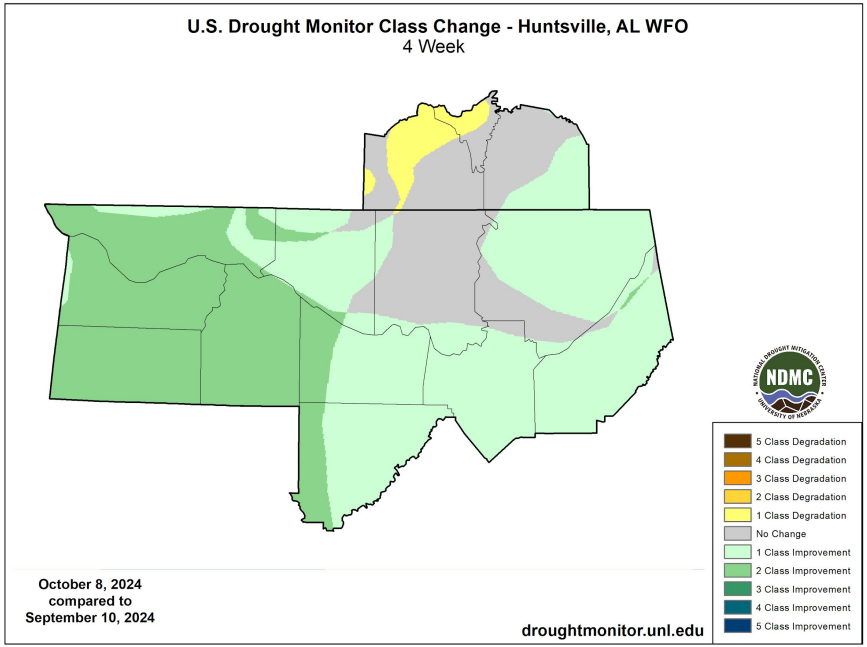
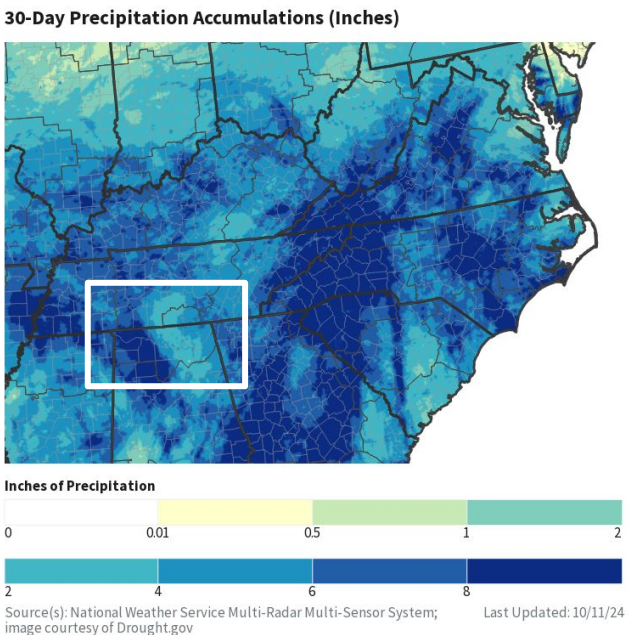


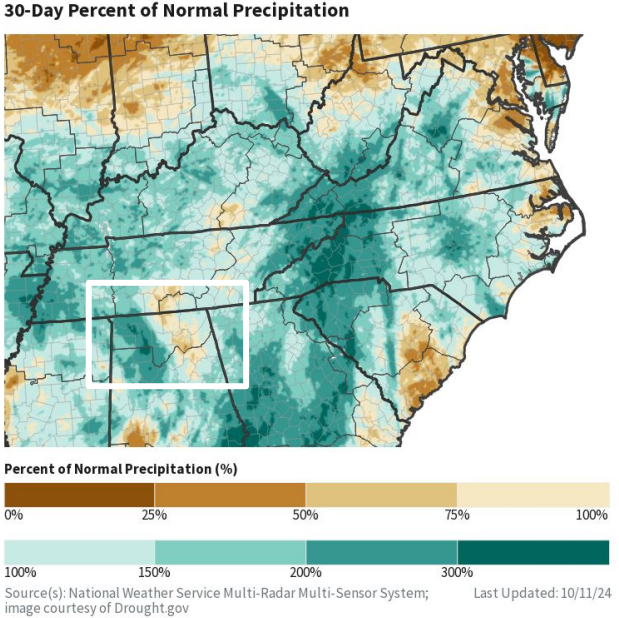
Image Caption: U.S. Drought Monitor 4-week change map valid ending 7AM CDT October 8, 2024.

Precipitation - Past 30 Days

Main Takeaways

- Precipitation ending October 11th totaled around 6-12 inches in portions of the Big Nance Creek and Sipsey basins northwest to the Florence and Muscle Shoals areas. Some areas in north central and northeastern Alabama have just received around 2-3 inches of rainfall...mainly from around Guntersville to South Huntsville. Otherwise, areas in the east have largely received around 3-8 inches of rainfall.
- Rainfall has been as much as 300-400% of normal in parts of the west and as low as 50-75% of normal in areas mainly from Marshall County north westward into Lincoln County.





Left - 30-Day Precipitation Totals, Right - 30-Day Percent of Normal Precipitation. Data ending Oct 11, 2024. These maps help to illustrate the contrast in rainfall between western and eastern areas in recent weeks.

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 Francine Big Nance Creek reached Major Flood Stage in September, 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. Reports in early to mid-September, before heavy rainfall occurred in some areas indicated wilting with some row crops, stress to soybeans, and continuation of poor grazing conditions for livestock, 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 about 990 acres have burned in northern Alabama within the Huntsville County Warning and Forecast Area. This includes the following larger fires: 100 acres in Colbert County (controlled on Sep 10th), 130 acres in Lawrence County (controlled on September 17th), and 135 acres in Colbert County (controlled on June 26th).

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 have improved significantly from low flow situations experienced during parts of the summer. Many flows are in the normal category, with flows in northwestern Alabama still considered much above normal. However, below normal flows are currently being experienced especially along the Elk River basin, with the daily average flow at the 19th percentile.
- Lake Stages remain generally near normal.

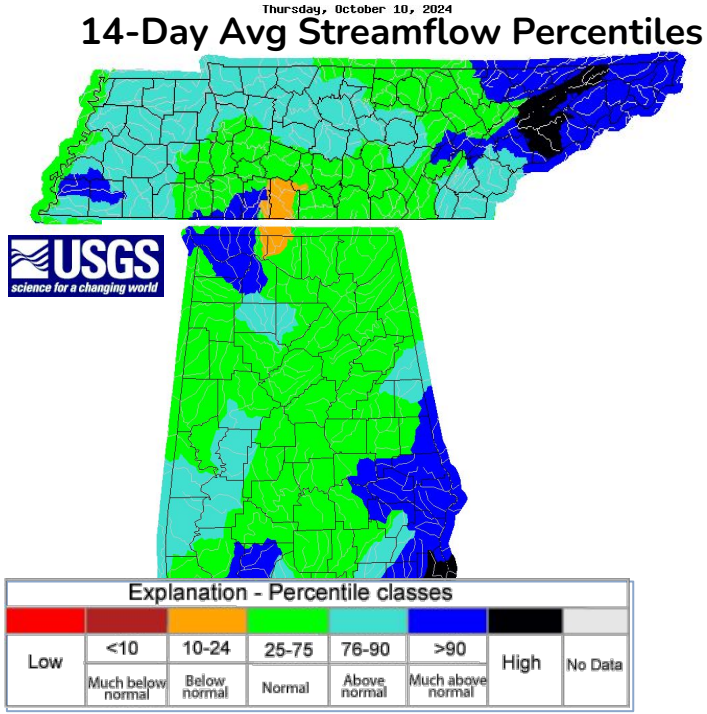


Figure Caption: USGS 14-day streamflow percentiles for Tennessee and Alabama, valid Oct 10, 2024

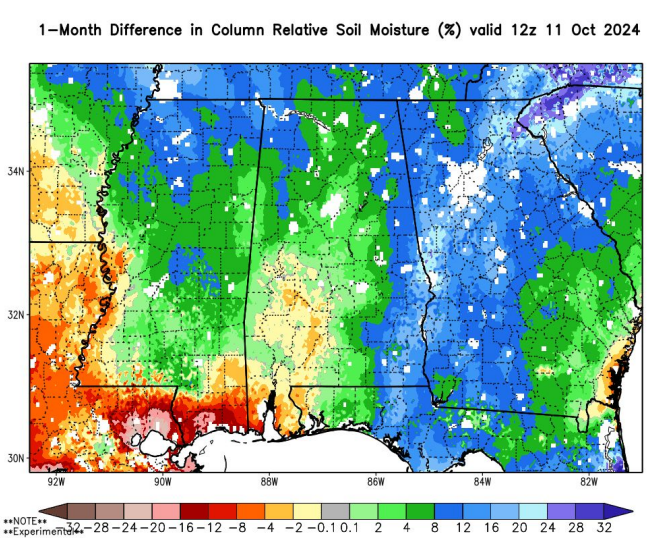
Lake Stages

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	553-554	554	Low end of Operating Range
Wilson	506-508	507	WOR
Pickwick	411-412	412	WOR
Lewis Smith	501	501	>100%

Table caption: Reservoir conditions as of Oct 10, 2024

Agricultural Impacts - Soils

- Per the latest NASA SPoRT soil moisture data, 0-200 cm relative soil moisture has increased significantly in portions of northwestern and northeastern AL along and near the Georgia border and in Franklin County, TN. Increases in soil moisture have occurred in all areas, but have been more modest in central portions of the area.
- 0-200 cm soil moisture is around the 30th to 70th percentiles in most areas, but is higher in western and eastern portions of the area. There is a dry signal with below normal soil moisture in north central AL.



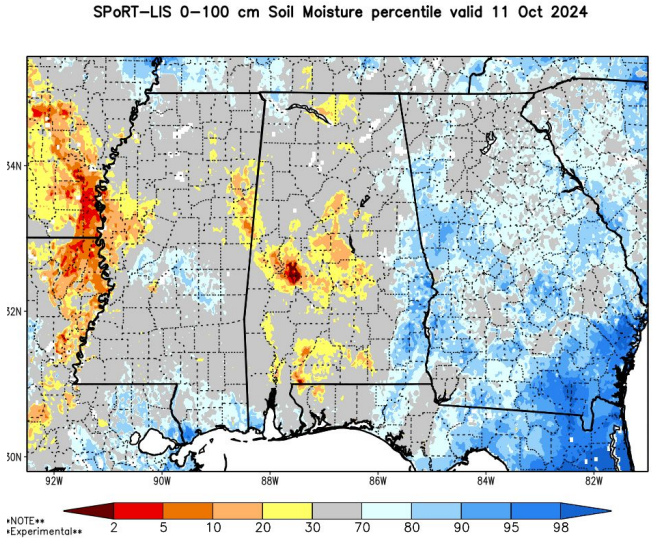
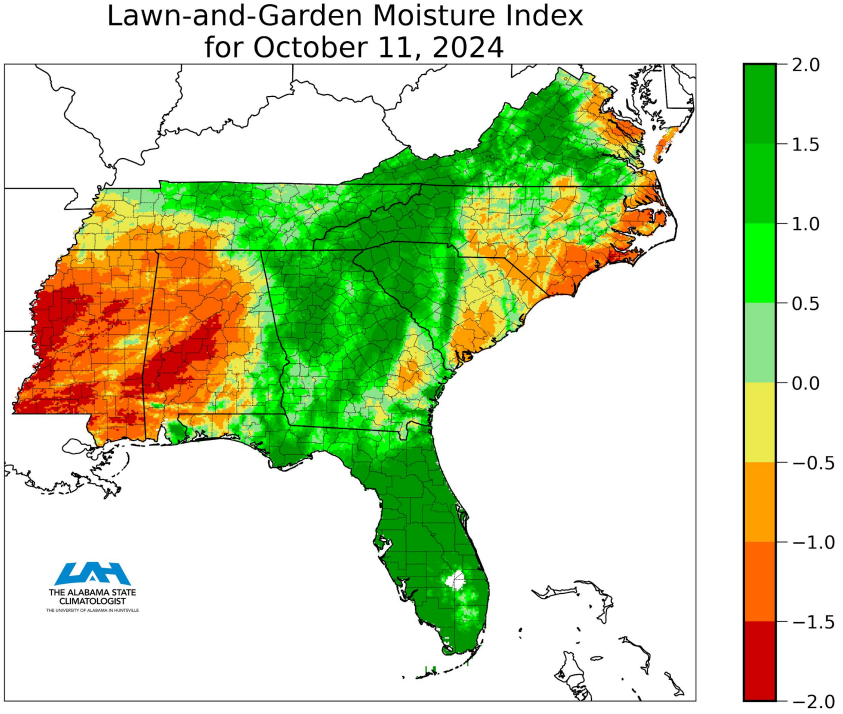


Image Captions:
Left: NASA SPoRT 1-Month Difference in 0-200 cm Relative Soil Moisture, ending Oct 11, 2024
Right: NASA Short-term Prediction Research and Transition (SPoRT) Center 0-200 cm Soil Moisture Ranking Percentile based on a 33-year climatology (1981-2013), Oct 11, 2024

Agricultural Impacts

- The Lawn and Garden Moisture Index for northern Alabama and southern Middle Tennessee takes into account more shallow moisture and has shown decreases very recently, with soil moisture deficits having developed in most areas, but especially in the northwest. Shallow moisture surpluses still exist in portions of northeastern AL and mainly Franklin County, TN due to more recent rainfall associated with Helene. Values in the drier areas generally indicate about 0.5 to 1.5 inch deficits 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.

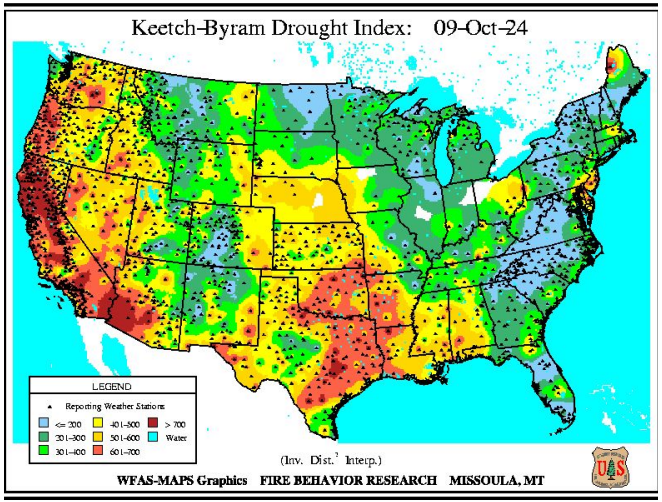


Fire Hazard Impacts

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

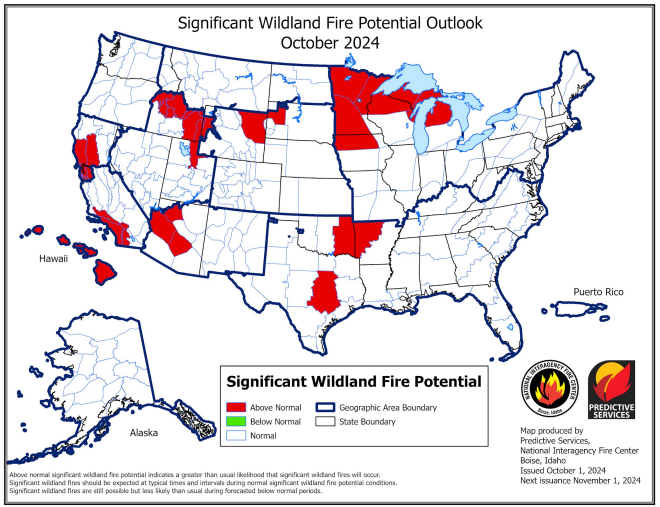
- Keetch Byram Drought Index (KBDI) values have risen again in the past 1 to 2 weeks with dry weather again developing since late September. Values generally range from 300-500.
- NWS offices may issue Red Flag Warnings when KBDI values climb above 300 in Alabama, although other weather criteria based on wind speeds and relative humidity must also 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 Oct 9, 2024

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



Seven Day Precipitation Forecast

- Forecast Precipitation (Oct 5-12):
  - No rainfall is currently forecast for the period from October 12th to the 19th.
  - Around 0.75 to 1.00 inch of precipitation is normal for this time of year for a weekly period.

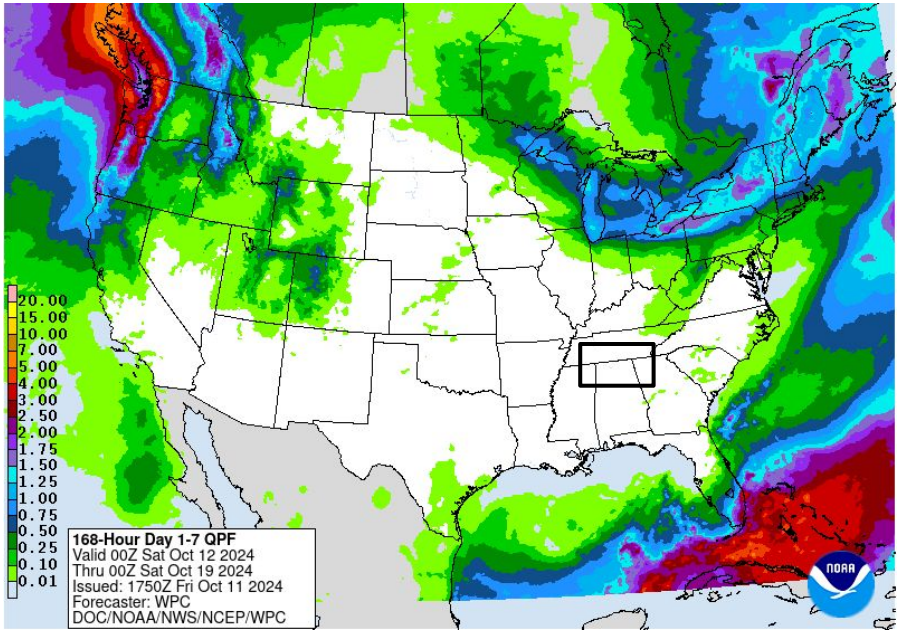


Image Caption: Weather Prediction Center 7-day precipitation forecast, valid 7PM Oct 12 – 7PM Oct 19 (CDT)

Monthly Outlooks - October 2024

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

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

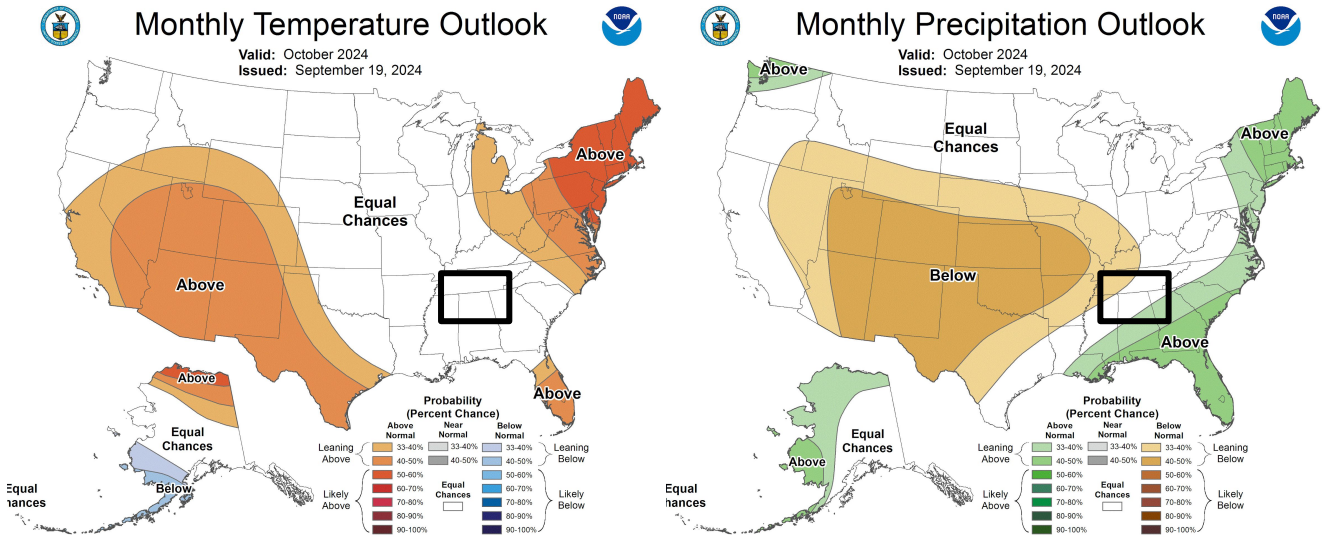


Image Caption: Climate Prediction Center Monthly Outlooks for Temperatures (left) and Precipitation (right) for October 2024

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.

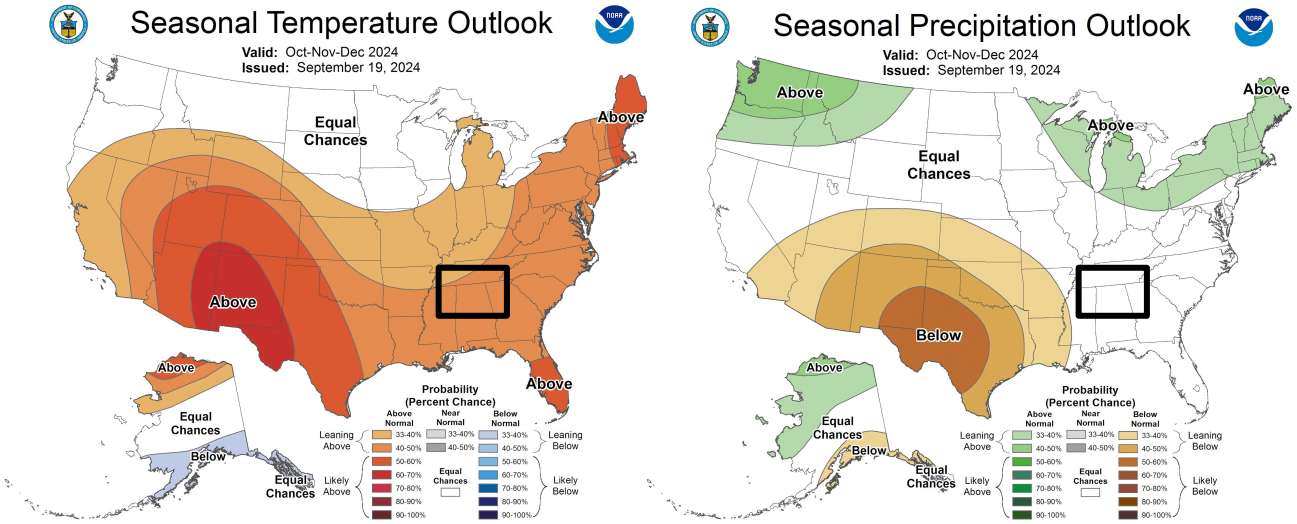
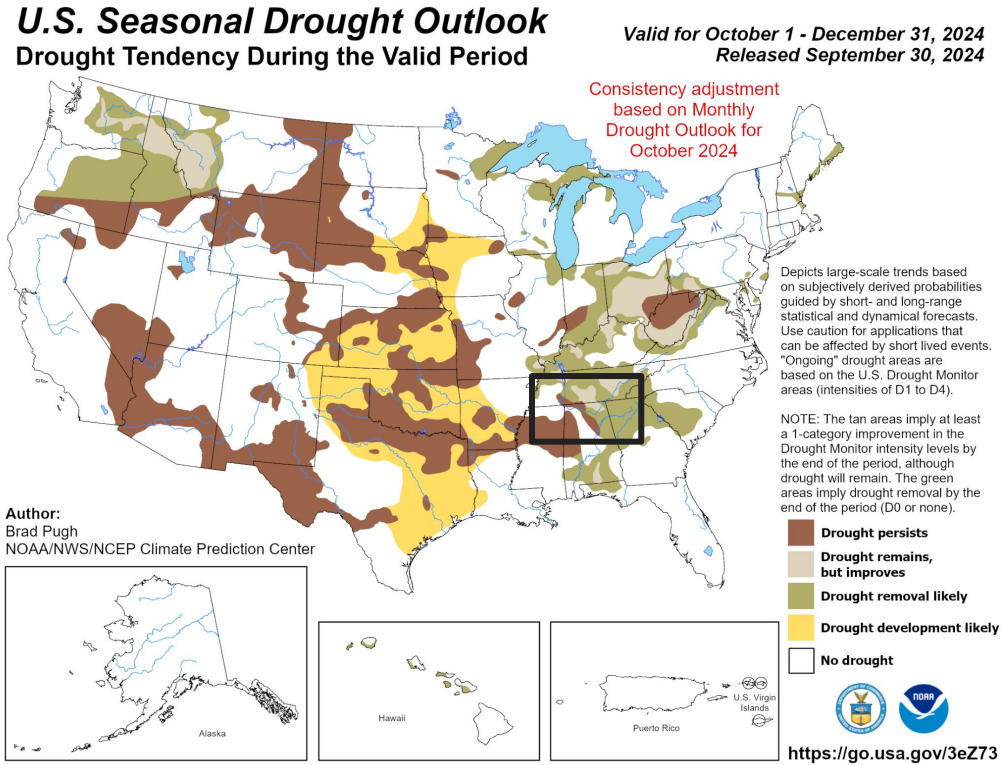


Image Caption: Climate Prediction Center Seasonal Outlooks for Temperatures (left) and Precipitation (right) for October-December 2024

Seasonal Drought Outlook

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

- As of the latest Seasonal Drought Outlook for the period from October through December, and last updated on September 30, 2024, drought conditions were expected to persist especially across central portions of the area, but conditions are expected to improve elsewhere.



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