



Drought Information Statement for the Central Tennessee Valley

Issued by: WFO Huntsville, AL

Contact information: sr-hun.webmaster@noaa.gov

- Since much of the area is in D2-D3 drought, this product will be updated at least once per month, but statements may be updated otherwise to communicate any significant information.
- Please see all currently available products at <https://drought.gov/drought-information-statements>
- Please visit <https://www.weather.gov/hun/DroughtInformationStatement> for previous statements





U.S. Drought Monitor

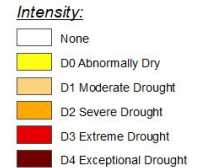
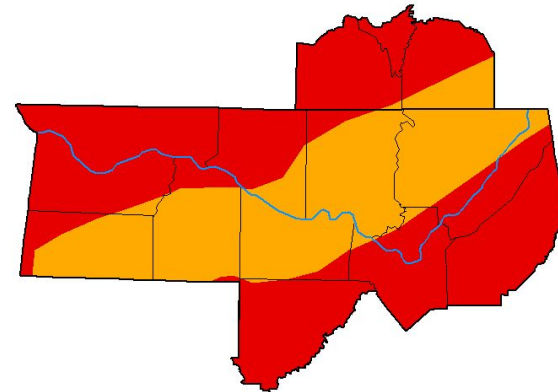
Latest U.S. Drought Monitor Map

- **Drought intensity and Extent**

- D4 Exceptional Drought: None
- **D3 Extreme Drought:** Much of northwestern Alabama and southern middle Tennessee as well as portions of northeast Alabama remain in the D3 category.
- **D2 Severe Drought:** A large portion of north Alabama into portions of northeast Alabama and southern middle Tennessee has improved over the past week and been downgraded in the D2 category. This includes much of the Paint Rock/Flint River basins and the Bankhead National Forest.
- D1 Moderate Drought: None
- D0: Abnormally Dry: None

U.S. Drought Monitor Huntsville, AL WFO

December 5, 2023
(Released Thursday, Dec. 7, 2023)
Valid 7 a.m. EST



The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

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droughtmonitor.unl.edu

Image Caption: U.S. Drought Monitor valid 7 AM CDT, November 28, 2023.



Recent Change in Drought Intensity

- One Week U.S. Drought Monitor Class Change
 - **Drought Worsened:** No areas
 - **No Change:** Drought remains in D3 (Extreme) across much of southern middle Tennessee, northwest Alabama, and northeast Alabama.
 - **Drought Improved:** Moderate to heavy rainfall occurred on Dec 2-3 across much of north central Alabama and portions of northwest and northeast Alabama. This includes portions of Franklin, Colbert, Lawrence, Morgan, Lawrence, Marshall, Madison, Jackson, and Franklin (TN) counties.

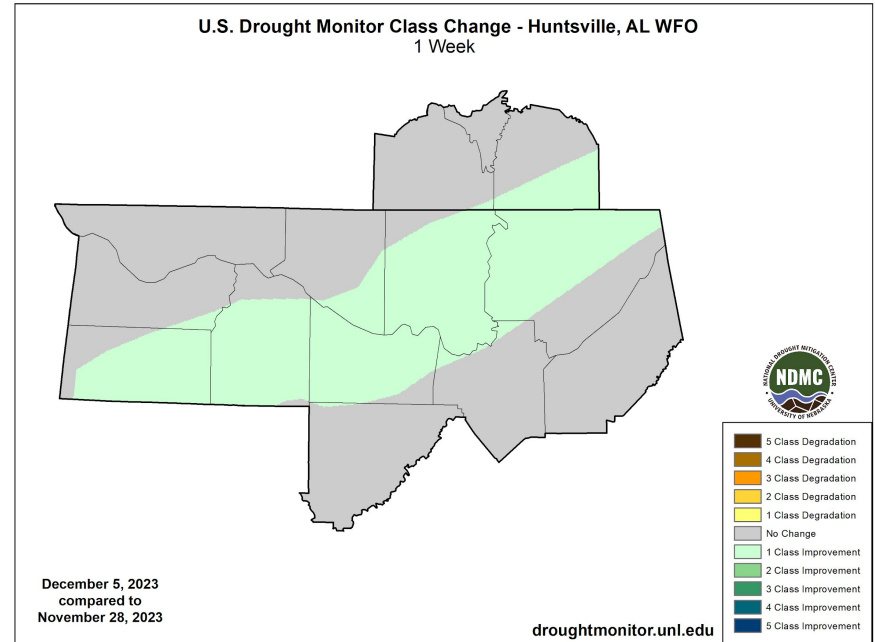
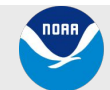


Image Caption: U.S. Drought Monitor 1-week change map valid 7 AM CDT Nov 28, 2023.



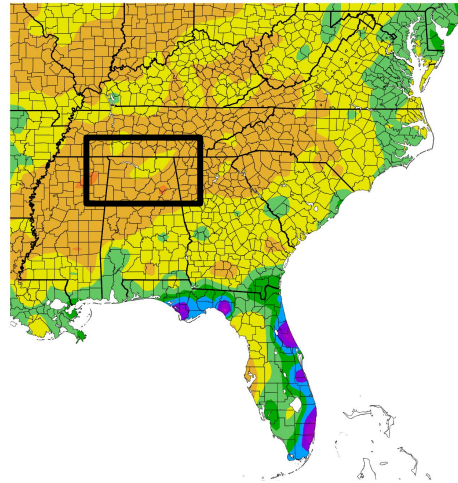


Precipitation - Past 90 Days

Main Takeaways

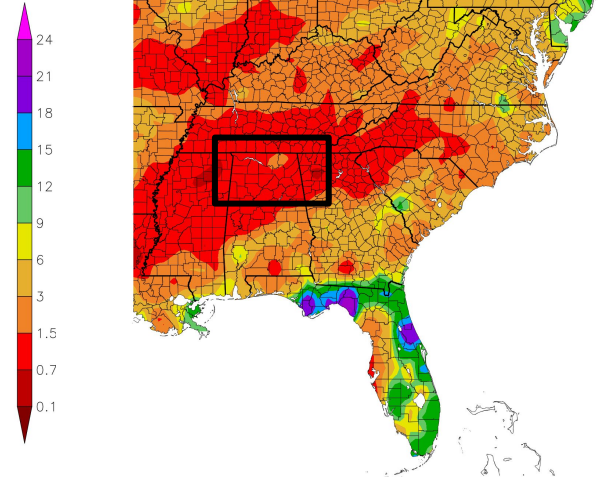
- Rainfall has largely totaled around 3 to 8 inches over the past 90 days, with most of that rain falling on Dec 2-3. The heaviest rainfall on those dates occurred from the Bankhead National Forest areas of Franklin and Lawrence counties northeastern across portions of Morgan, Madison, and Jackson Counties. This includes the Flint River basins. Normal 90-day rainfall this time of year is around 11-12 inches.
- Rainfall amounts are generally around 50% of normal for the past 90 days as shown in the graphic on the right.

Precipitation (in)
9/10/2023 - 12/8/2023



ted 12/9/2023 at HPRCC using provisional data.

Percent of Normal Precipitation (%)
9/10/2023 - 12/8/2023



NOAA Regional Climate @/9/2023 at HPRCC using provisional data.

NOAA Regional Clir

Image Captions from ACIS High Plains Regional Climate Center:

Left - 90-Day Precipitation Totals, Right - 90-Day Percent of Normal Precipitation. Data ending December 8, 2023



Summary of Impacts

Hydrologic Impacts

- No hydrologic impacts of note, although streamflows had fallen over recent weeks. However, streamflows have risen over the past few days due to rainfall on Dec 2-3.
- See next slide for more hydrologic information and streamflows and lake levels.

Agricultural Impacts

- Per recent USDA Crop and Progress Condition Reports, reporters noted that continued dry weather prevented operators from planting winter wheat and other winter crops. Also, pastures were reported to be in poor condition. Operators continued to feed supplemental hay to cattle due to increasingly poor pasture conditions. Late planted soybeans and the apple crop, especially in Cullman County, have been negatively impacted. Please see the latest Crop and Progress Condition Reports for [Alabama](#) and [Tennessee](#) from the USDA.

Fire Hazard Impacts

- The Alabama Forestry Commission (AFC) updated a Fire Alert on November 21st from a No Burn order to a Fire Alert. Across the Huntsville forecast area, all counties are included. In these counties, one-day burn permits will be issued to certified burn managers only. The AFC has reported that fires have burned over 1100 acres of land in northern AL in the past 30 days. Debris burn permits are currently required in TN counties. [AFC link](#); [TN Wildland Fire Link](#).

Drought Mitigation Actions

- The Alabama Dept of Economic and Community Affairs - Office of Water Resources upgraded Drought Regions 1 and 3 to a Drought Warning as of November 8, 2023.
- Water managers are urged to carefully monitor conditions and encourage the wise and efficient use of our water resources.
- Public water system customers are encouraged to follow their local water system's recommendations regarding water use.
- All other water users should make prudent decisions on their water use to protect available resources
- You can see the latest Alabama Drought Declaration here...
<https://adeca.alabama.gov/wp-content/uploads/DroughtDeclaration.pdf>.
- Please refer to your municipality and/or water provider for any mitigation information in the future.





Hydrologic Conditions

Main Takeaways

- Some appreciable improvements have occurred in in streamflows in recent weeks. Many basins in the area are experiencing 7-Day avg flows in the 25th-75th percentile for this time of year. Portions of southern middle Tennessee remain in the 10th to 25th percentile.
- Lake/Reservoir levels remain generally near normal.

Additional data:

None at this time to report

7-Day Avg Streamflow Percentiles

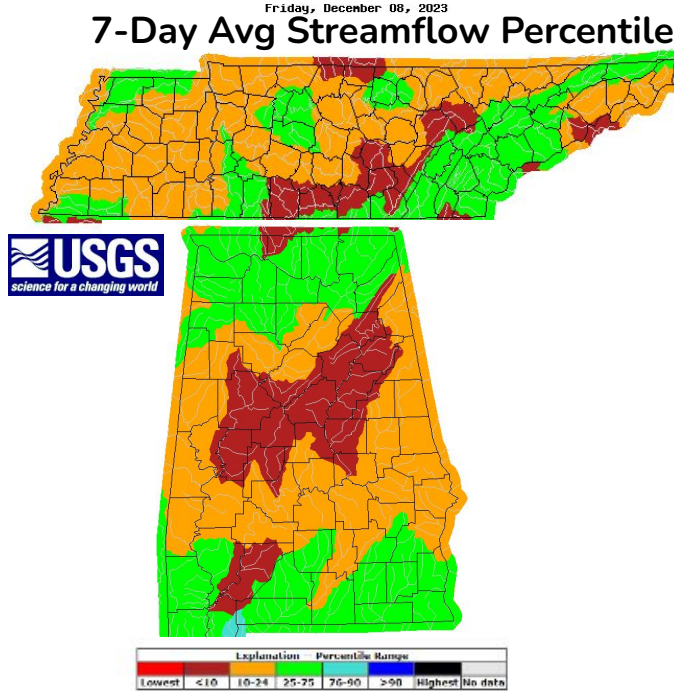
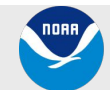


Figure Caption: USGS 7-day streamflow percentiles for Tennessee (top) and Alabama (bottom) , valid Nov 29, 2023

Lake Stages

Reservoir/ Lake	Pool Elevation (ft)	Current Elevation (ft)	Percent Full
Bear Creek	576	574	>100%
Little Bear Creek	615	615	100%
Cedar Creek	573	573	100%
Tim's Ford	877	879	>100%
Nickajack	634	634	Within Operating Range (WOR)
Guntersville	593	594	WOR
Wheeler	552	552	WOR
Wilson	N/A	507	WOR
Pickwick	409	410	WOR
Lewis Smith	497	499	>100%

Table caption: Reservoir conditions as of Nov 30, 2023





Agricultural Impacts

Main Takeaways

- Soil Moisture values have increased in recent months due to below normal rainfall. Recent rainfall however contributed to some increases in soil moisture, especially in parts of northeastern Alabama.
- 0-100 cm depth soil moisture percentiles (left image) indicate values have improved into the 30th to 50th percentile range across northeast Alabama and are closer to the 15th to 25th percentile across northwest Alabama.
- Meanwhile, the crop moisture index (right image) indicates values are near normal due to recent rainfall in northern Alabama climate division zones for the weekly period ending Dec 2, 2023.

0-100 cm Relative Soil Moisture (available water; %) valid 12z 08 Dec 2023
Precipitation in previous hour (1,2,5,10,15,20,25 mm contours)

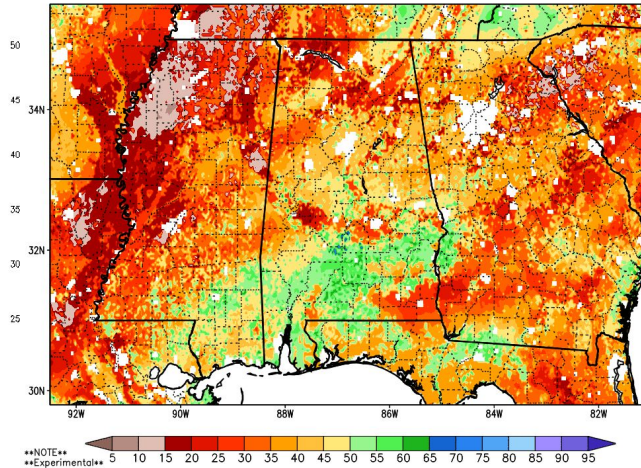
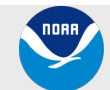
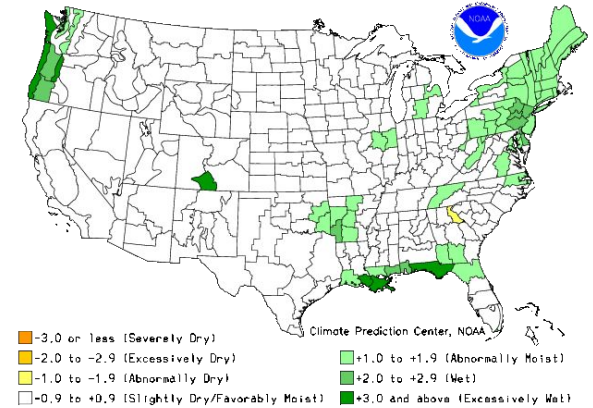


Image Captions:

Left: NASA Short-term Prediction Research and Transition Center 0-100 cm Soil Moisture Ranking Percentile based on a 33-year climatology (1981-2013), Dec 8, 2023

Right: Crop Moisture Index by Division. Weekly value for period ending Dec 2, 2023

Crop Moisture Index by Division
Weekly Value for Period Ending DEC 2, 2023
Short Term Need vs. Available Water in a Shallow Soil Profile



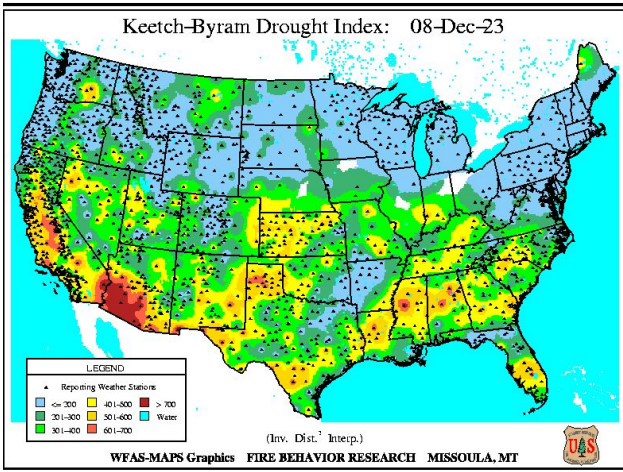


Fire Hazard Impacts

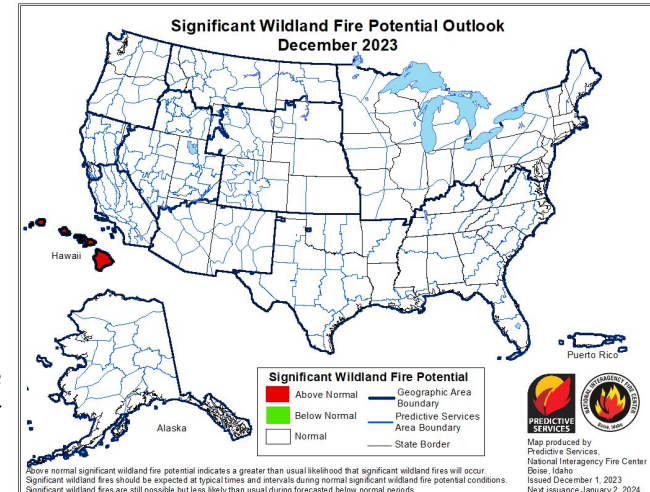
Main Takeaways

- Keetch Byram Drought Index (KBDI) values have since fallen to around 100-301 due to recent rainfall.
- NWS offices may issue Red Flag Warnings when KBDI values climb above 300 in Alabama, although other weather criteria must be met. At this time, the Alabama Forestry Commission has issued a Fire Alert for all of northern Alabama. To see more about wildfire and burn restrictions, click for [Alabama](#) and [Tennessee](#).
- Due to recent rainfall, all of northern AL is in “Near Normal” Significant Wildland Fire Potential for December, 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 Dec 8, 2023.



Right Image Caption:
Significant Wildland Fire Potential Outlook, November 2023





Other Impacts

Main Takeaways

- Lack of normal rainfall from late August to mid-November has led to impacts especially to the agricultural industry.

Impacts

- The overall lack of normal rainfall over the past 2-3 months has resulted in very dry soils and lack of necessary grasses and forages for livestock farmers. Numerous reports from around the region over recent weeks indicate that the lack of grass and ability to grow cold season grasses has resulted in the need for supplemental hay feeding. Also, stress to livestock has been reported due to the dry, hard ground conditions. Farm water resources such as retention ponds are drying up or have dried up, resulting in increased hauling of outside water resources. Some producers have indicated the need to sell livestock.
- Some reports have indicated increased wildlife foraging near people.

You can go to the [Condition Monitoring Observer Reports](#) page from the National Drought Mitigation Center to see individual reports of drought impacts at various timescales across the region.

Further Drought Mitigation Actions

- All counties in the Huntsville County Warning and Forecast area have been placed as Primary Counties in the USDA Secretarial Disaster Declaration for Drought. To learn more, go to the [USDA Disaster Designation Information](#) web page.





Seven Day Precipitation Forecast

- Next 7 days:

- An active pattern will continue as a couple of passing storm systems are expected to bring some much needed rainfall to the region this week. Storm total amounts are forecasted to range from around 1" to 2".
- Around 1.25 to 1.50 inches of precipitation is normal for this time of year for a weekly period.

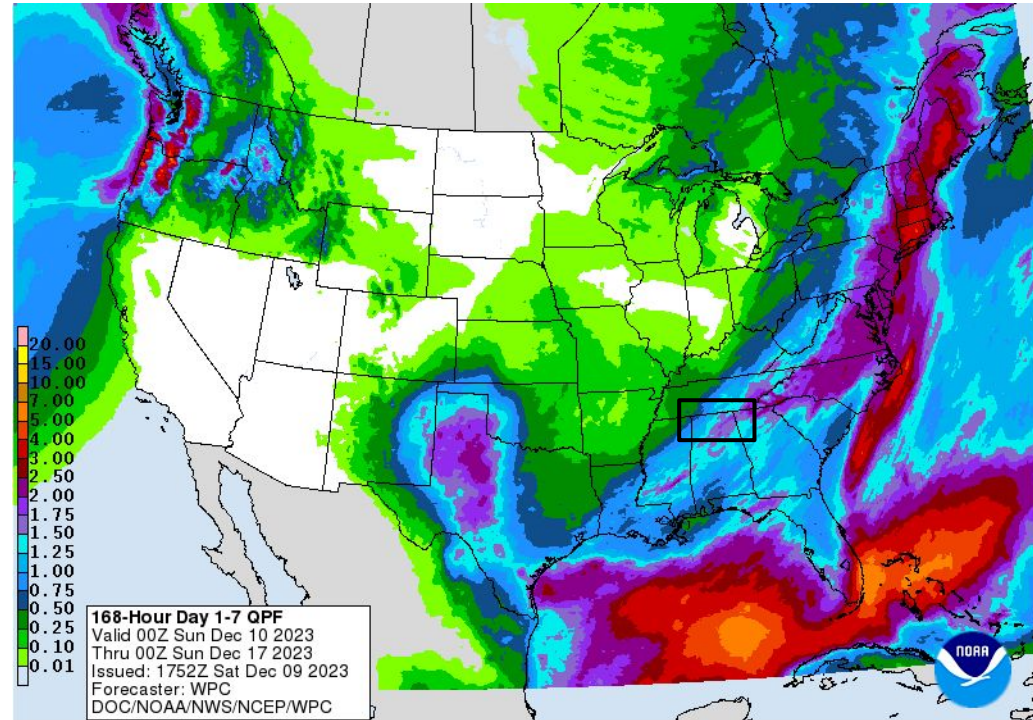
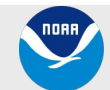


Image Caption: Weather Prediction Center 7-day precipitation forecast valid 7 AM Dec 10 to 7 AM Dec 17 (CDT)





8-14 Day Outlook

Temperature and Precipitation Outlook

Main Takeaways

- Above Normal temperatures are favored for the area.
- Near Normal precipitation is favored for the period.

Possible Impact

Conditions should continue to improve slightly during this period, with at least a temporary improvement in shallow layers soils and smaller order streams.

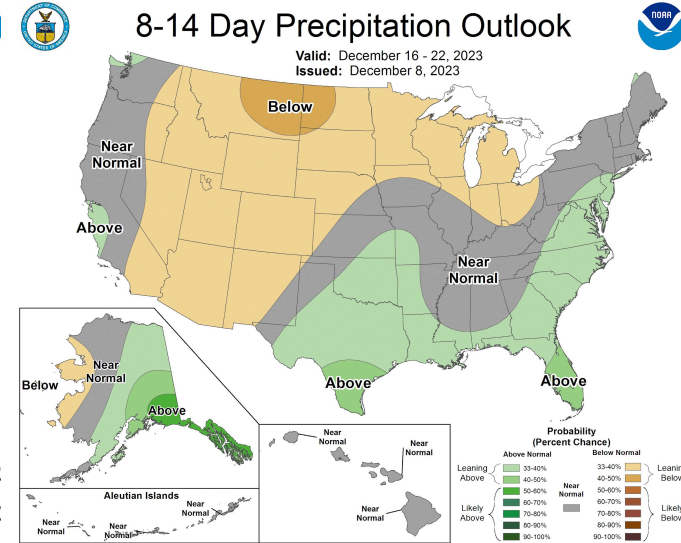
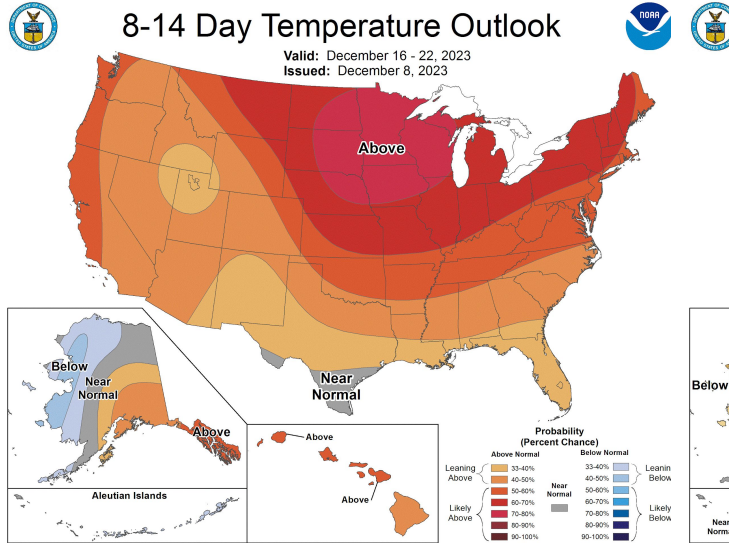


Image Captions:
Left - Climate Prediction Center 8-14 Day Temperature Outlook
Right - Climate Prediction Center 8-14 Day Precipitation Outlook
Valid December 8 to December 14, 2023





Monthly Outlooks

Monthly Temperature and Precipitation Outlook

Main Takeaways

- Above normal temperatures are moderately favored (30-50% chance) for the eastern half of the area, and slightly favored (33-40% chance) for the western half of the area during December.
- Above normal precipitation is slightly favored (33-40% chance) for most of the area during December, with moderate chances (40-50%) in far southeast areas.

Possible Impact

Some improvement in drought conditions is possible during December. However, confidence in is still relatively low for above normal precipitation. The best odds for improvement will be in southeast portions of the area.

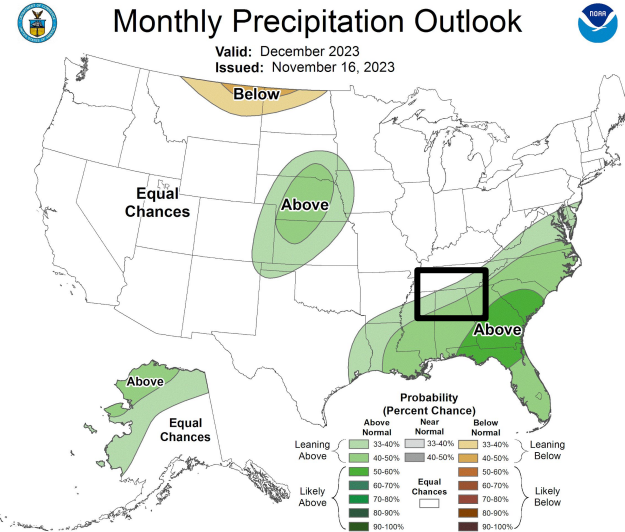
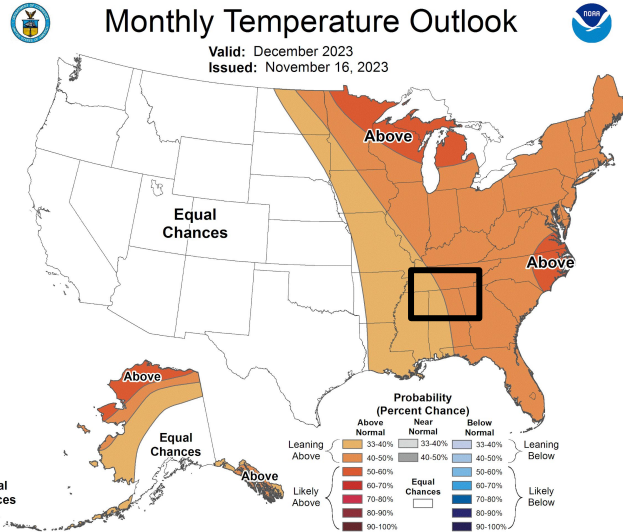
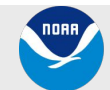


Image Captions:
Left - Climate Prediction Center Monthly Temperature Outlook.
Right - Climate Prediction Center Monthly Precipitation Outlook.
Valid December 2023





Seasonal Outlook (December to February)

Seasonal Temperature and Precipitation Outlook

Main Takeaways

- **Temperatures:** Equal chances for below, near, or above normal temperatures for the Dec-Feb timeframe.
- **Precipitation:** Above Normal precipitation is slightly favored (33-40% chance) for about the northern half of the area, with moderate chances (40-50%) for the southern half.

Possible Impact

Some improvement in drought conditions is possible overall during the December to February period. Although, confidence is not high for specific temperature and precipitation conditions.

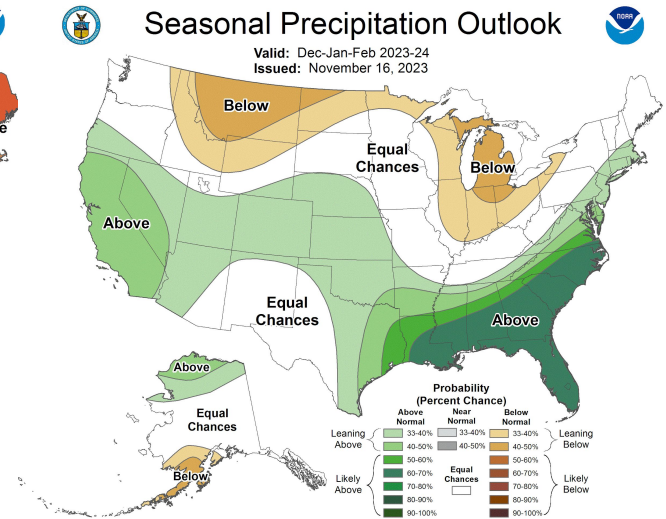
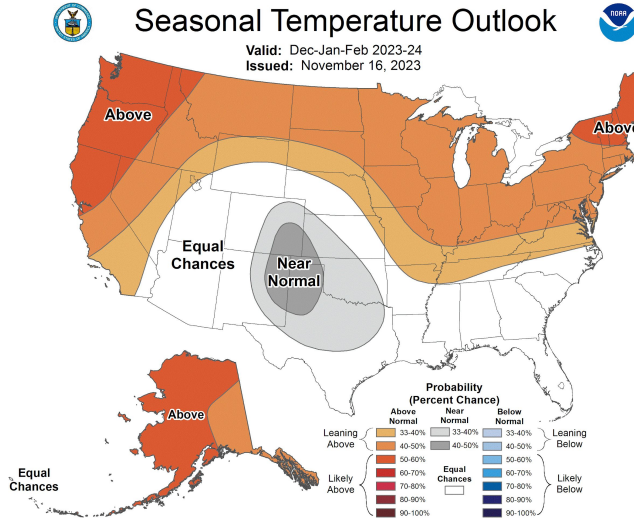


Image Captions:
Left - Climate Prediction Center Seasonal Temperature Outlook.
Right - Climate Prediction Center Seasonal Precipitation Outlook.
Valid December 2023 to February 2024





Local Drought Outlook

Seasonal Outlook

Main Takeaways

- Drought conditions are anticipated to persist, but some improvement is possible from mid November through February, per the latest Seasonal Drought Outlook.

U.S. Seasonal Drought Outlook

Valid for December 1, 2023 - February 29, 2024
Released November 30, 2023

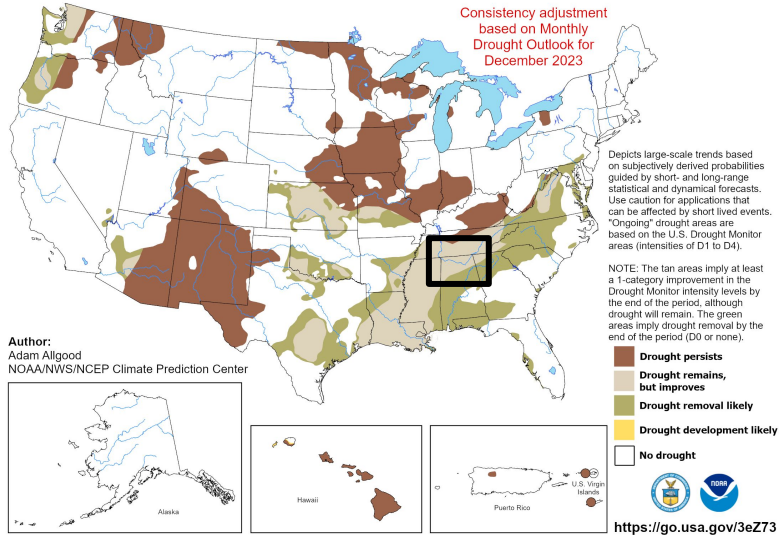


Image Caption:

Climate Prediction Center Seasonal Drought Outlook for December 1, 2023 to February 29, 2024, released December 1, 2023 (https://www.cpc.ncep.noaa.gov/products/expert_assessment/season_drought.png)

