Drought Information Statement for the Central Tennessee Valley

Issued by: WFO Huntsville, AL

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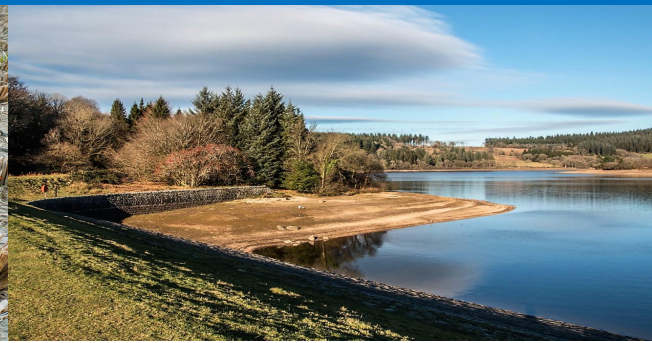
- Since much of the area is in D3-D4 drought, this product will be updated at least once per month, but statements may be updated otherwise to communicate any significant information.
- Please see all currently available products at https://drought.gov/drought-information-statements
- Please visit https://www.weather.gov/hun/DroughtInformationStatement for previous statements





U.S. Drought Monitor

Latest U.S. Drought Monitor Map

- **Drought intensity and Extent**
  - **D4 Exceptional Drought:** Expanded across much of Jackson and Dekalb County in northeast Alabama. Also added to SE portions of Madison, northern Marshall and eastern Morgan Counties in East-Central north Alabama, and much of Lauderdale, Colbert, and Franklin counties in northwest Alabama. Additionally, the SE corner of Franklin County, Tennessee was added.
  - **D3 Extreme Drought:** The rest of the National Weather Service County Warning area not included in D4. The far southeastern portions of Cullman, Marshall, and Dekalb Counties which were D2 last week have been added to D3.
  - D2 Severe Drought: None
  - D1 Moderate Drought: None
  - D0: Abnormally Dry: None

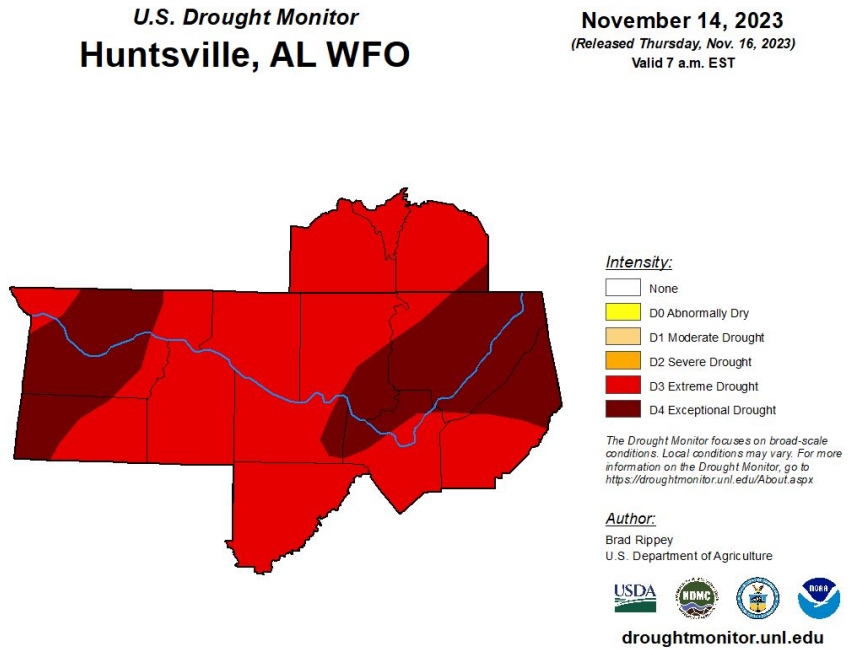


Image Caption: U.S. Drought Monitor valid 7 AM CDT, November 14, 2023.

Recent Change in Drought Intensity

- One Week U.S. Drought Monitor Class Change
  - **Drought Worsened:** An upgrade to D4 (Exceptional) drought occurred mainly in western portions of Jackson County, southeast Madison, northern Marshall, and eastern Morgan Counties. An upgrade to D4 also occurred across a large swath of Lauderdale, Colbert, and Franklin (TN) counties. Deterioration to D3 (Extreme) drought occurred in southern DeKalb, southern Marshall and a small area of southeast Cullman Counties.
  - **No Change:** Drought remains in D3 (Extreme) across the remainder of the Tennessee Valley. No additional changes were made from last week's outlook.
  - Drought Improved: No areas

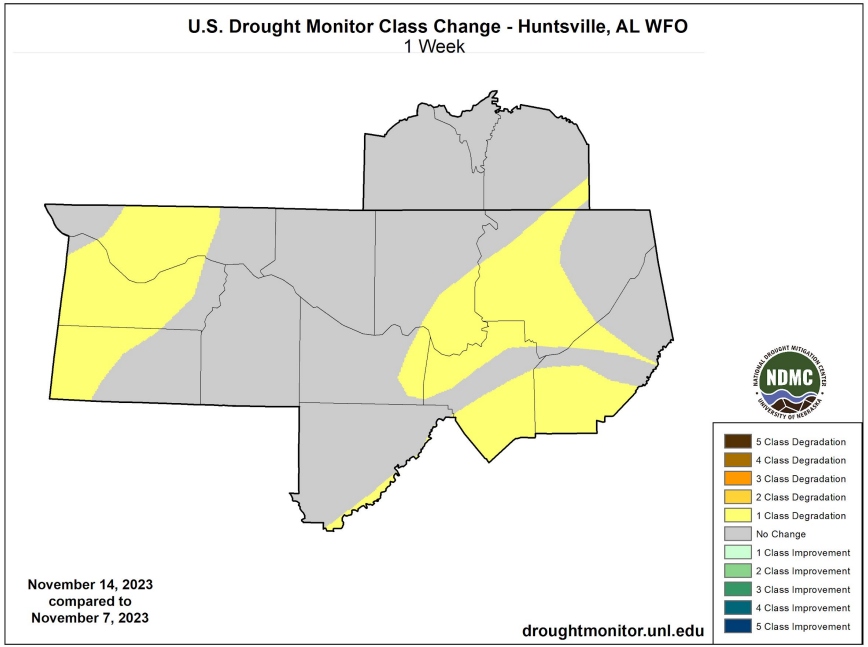
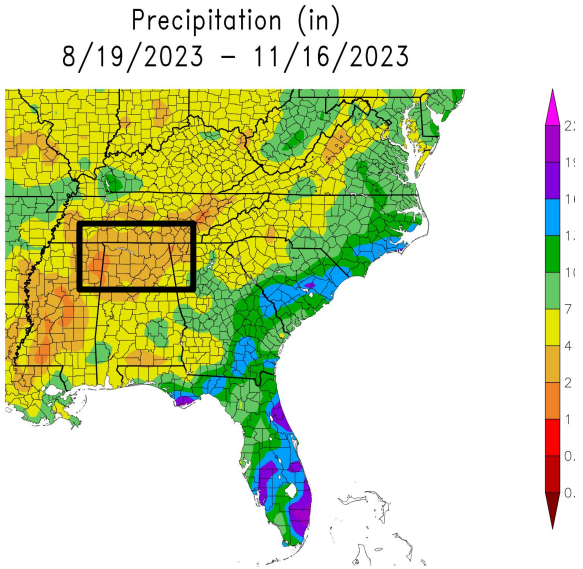


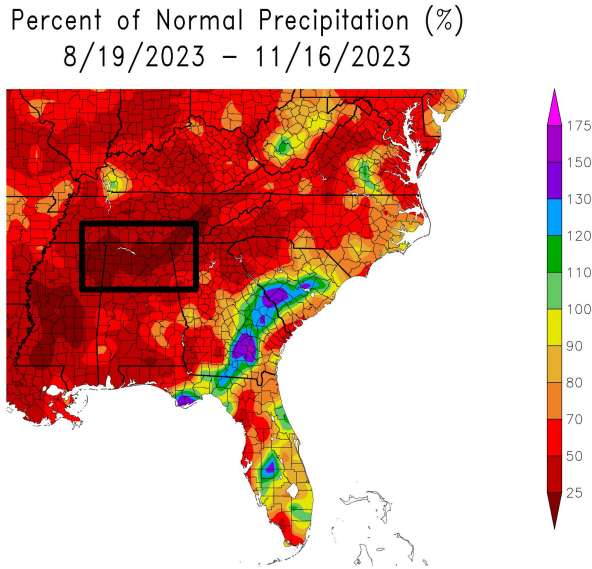
Image Caption: U.S. Drought Monitor 1-week change map valid 7 AM CDT Nov 14,, 2023.

Precipitation - Past 90 Days

Main Takeaways

- Rainfall has largely totaled around two to four inches over the past 90 days, although some locations have experienced a little less or more. Normal 90-day rainfall this time of year is around 11-12 inches. Precipitation since August 20th has only totaled 1.11 inches at Muscle Shoals and 2.31 inches at Huntsville. These are the lowest 90-day totals for this period on record at both locations.
- Rainfall amounts are less than 25% of normal for most of the area over the last 90 day (dark red shading), as shown in the graphic on the right.





0 11/17/2023 at HPRCC using provisional data. NOAA Regional Climate /2023 at HPRCC using provisional data. NOAA Regional Climate C

Image Captions from ACIS High Plains Regional Climate Center:
Left - 90-Day Precipitation Totals, Right - 90-Day Percent of Normal Precipitation. Data ending November 16, 2023

Summary of Impacts

Hydrologic Impacts

- No hydrologic impacts of note, although streamflows have fallen significantly over recent weeks.
- 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 October 24th to indicate that no burn permits will currently be issued for all counties in northern Alabama. Additionally, on November 8th, Alabama Governor Kay Ivey issued a declaration prohibiting burning across the state. The AFC has reported that fires have burned over 1500 acres of land in northern AL in the past month. Debris burn permits are currently required in TN counties, but a burn ban is in place in Franklin County, TN.. 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

- Degradation in streamflows has occurred in recent months. Many basins in the area are experiencing 7-Day avg flows in the 10th-24th percentile for this time of year. However, streamflows at some individual basins have fallen below the 10th percentile (e.g., Paint Rock River: 5th percentile).
- Lake/Reservoir levels remain generally near normal.

Additional data:

None at this time to report

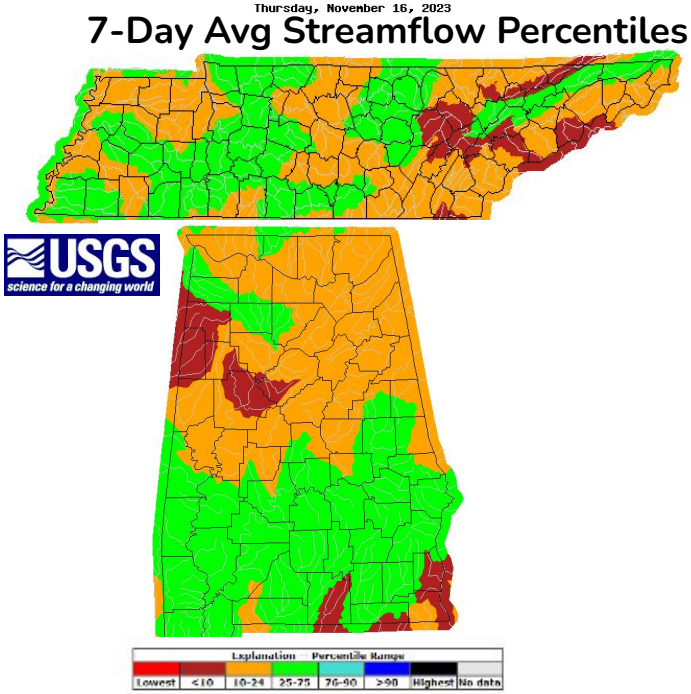


Figure Caption: USGS 7-day streamflow percentiles for Tennessee (top) and Alabama (bottom) , valid Nov 15, 2023

Lake Stages

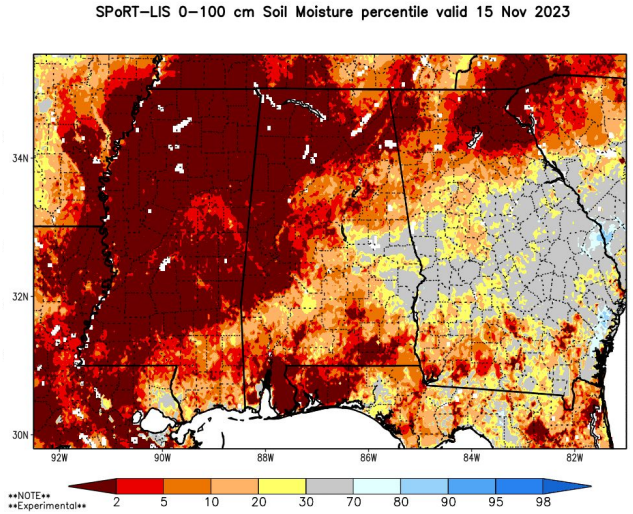
Reservoir/ Lake	Pool Elevation (ft)	Current Elevation (ft)	Percent Full
Bear Creek	576	576	100%
Little Bear Creek	616	616	100%
Cedar Creek	575	575	100%
Tim's Ford	882	881	93%
Nickajack	634	634	Within Operating Range (WOR)
Guntersville	594	594	WOR
Wheeler	552	552	WOR
Wilson	N/A	507	WOR
Pickwick	410	410	WOR
Lewis Smith	497	499	>100%

Table caption: Reservoir conditions as of Nov 16, 2023

Agricultural Impacts

Main Takeaways

- Soil Moisture values have decreased in recent months due to below normal rainfall.
- 0-100 cm depth soil moisture percentiles (left image) indicate values largely at or below the 2nd percentile.
- Meanwhile, the crop moisture index (right image) indicates values are abnormally dry for northern Alabama climate division zones for the weekly period ending Nov 11, 2023.



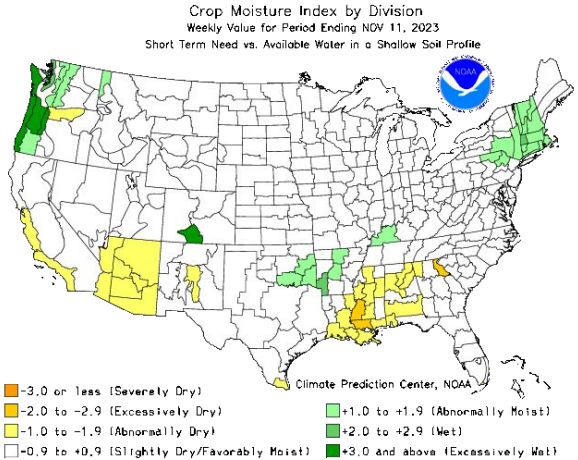


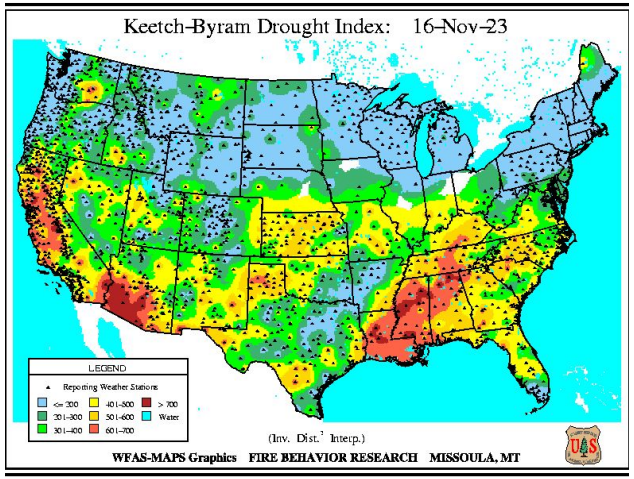
Image Captions:
Left: NASA Short-term Prediction Research and Transition Center 0-100 cm Soil Moisture Ranking Percentile based on a 33-year climatology (1981-2013), Nov 15, 2023
Right: Crop Moisture Index by Division. Weekly value for period ending Nov 11, 2023

Fire Hazard Impacts

Main Takeaways

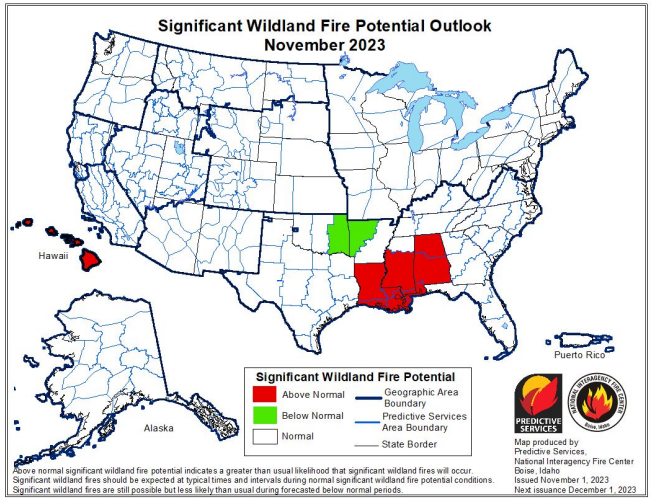
- Keetch Byram Drought Index (KBDI) values have increased significantly in recent months, with values around 600-700.
- NWS offices may issue Red Flag Warnings when KBDI values climb above 300 in Alabama, although other weather criteria must be met. At this time, the Alabama Forestry Commission has issued a Fire Alert for all of northern Alabama, with a burn ban in place. A burn ban is in place also in Franklin County, TN. To see more about wildfire and burn restrictions, click for Alabama and Tennessee.
- All of northern AL is in an Above Normal Significant Wildland Fire Potential for November, 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 Nov 16, 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 lead 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 indicates 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:
  - A slightly more active pattern will begin to take shape over the next week, with around 1.50 inches of rainfall expected across much of the area.
  - Around 1-1.25 inches of precipitation is normal for this time of year for a weekly period.

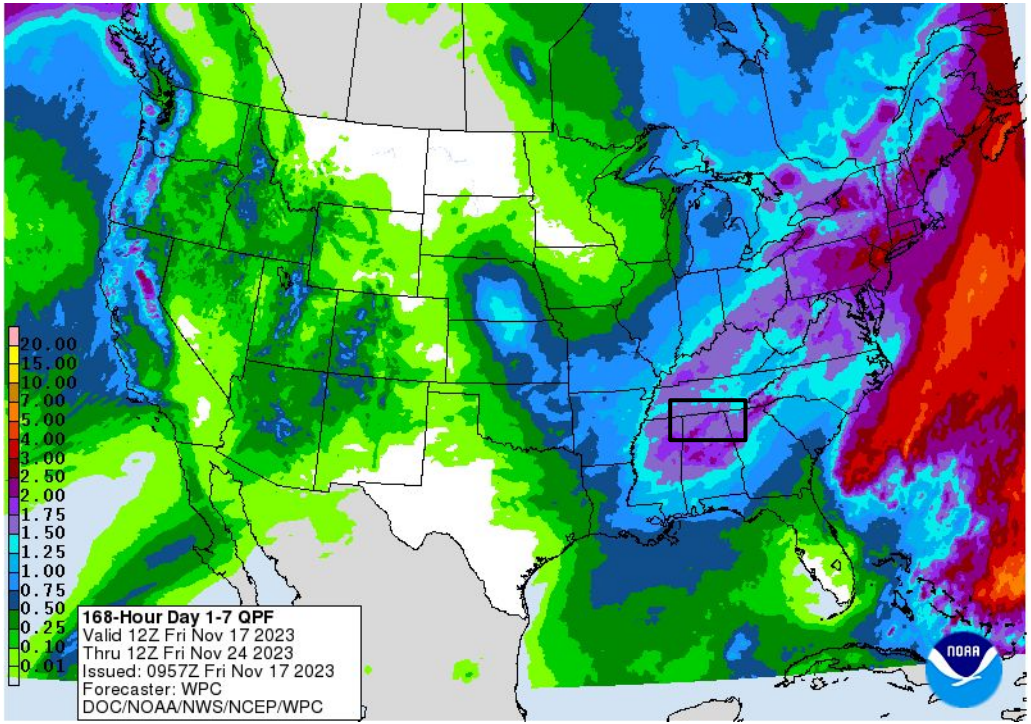


Image Caption: Weather Prediction Center 7-day precipitation forecast valid 7 PM Nov 17 to 7 PM Nov 24 (CDT)

8-14 Day Outlook

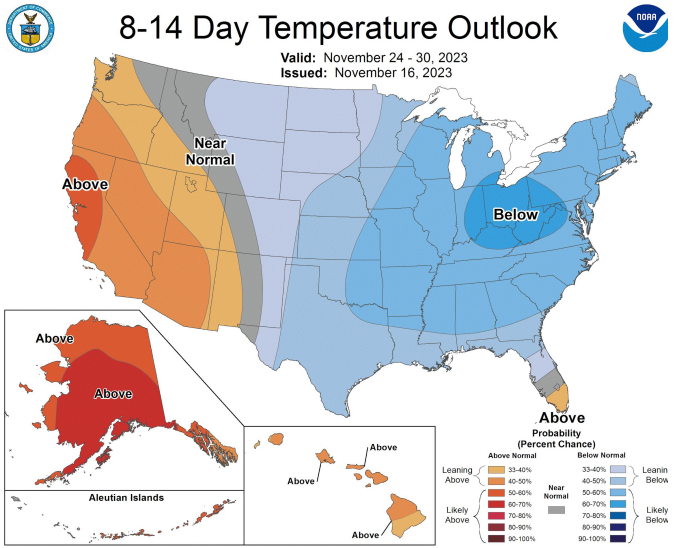
Temperature and Precipitation Outlook

Main Takeaways

- Below Normal temperatures are moderately favored (40-50% chance) for the area.
- Equal chances for below, near, or above normal precipitation, although there is a slight tip towards above normal precipitation (33-40% chance) outlooked for far southeast portions of the area.

Possible Impact

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



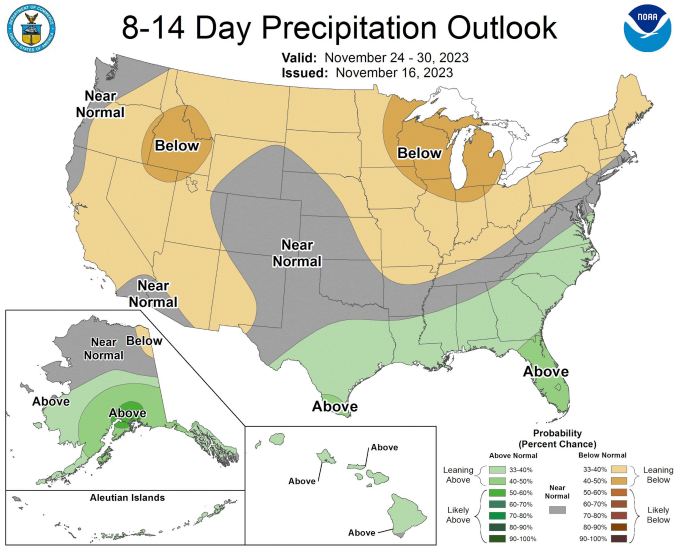


Image Captions:
Left - Climate Prediction Center 8-14 Day Temperature Outlook
Right - Climate Prediction Center 8-14 Day Precipitation Outlook
Valid November 24 to November 30, 2023

Monthly Outlooks

Monthly Temperature and Precipitation Outlook

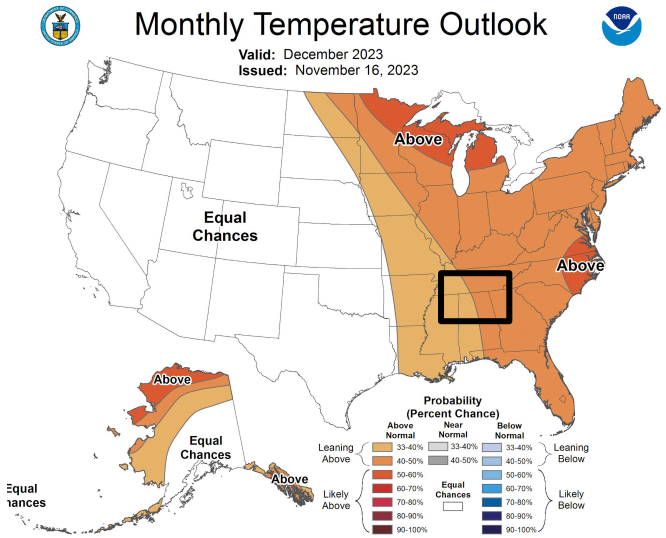
Main Takeaways

- Above normal temperatures are moderately favored (40-50% 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.



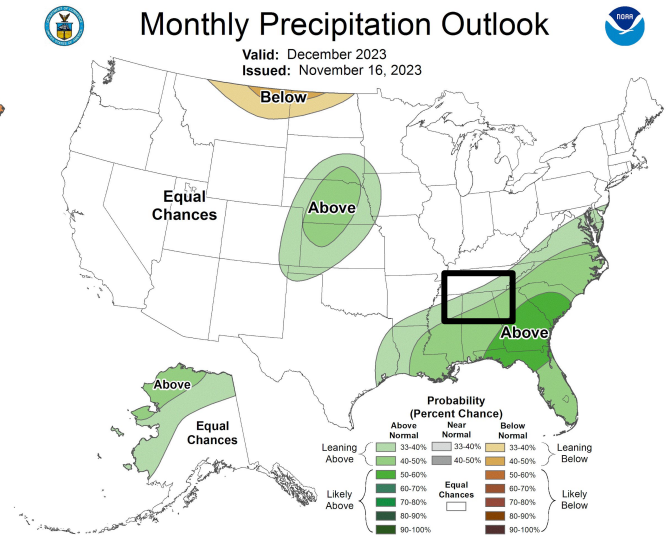


Image Captions:
Left - Climate Prediction Center Monthly Temperature Outlook.
Right - Climate Prediction Center Monthly Precipitation Outlook.
Valid December 2023

Seasonal Outlook (December to February)

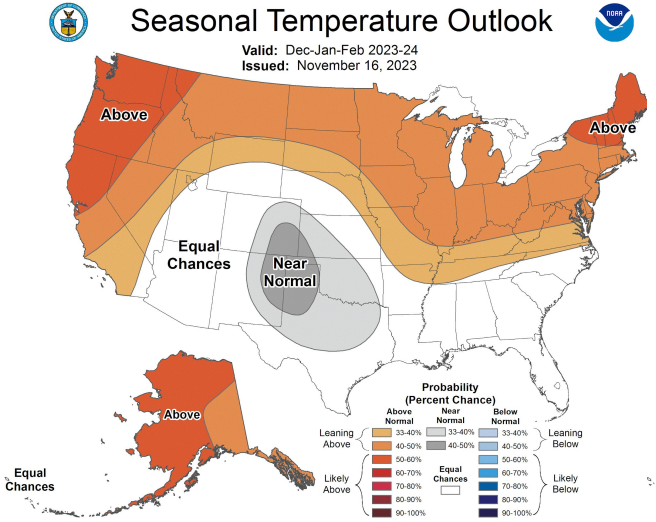
Seasonal Temperature and Precipitation Outlook

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.



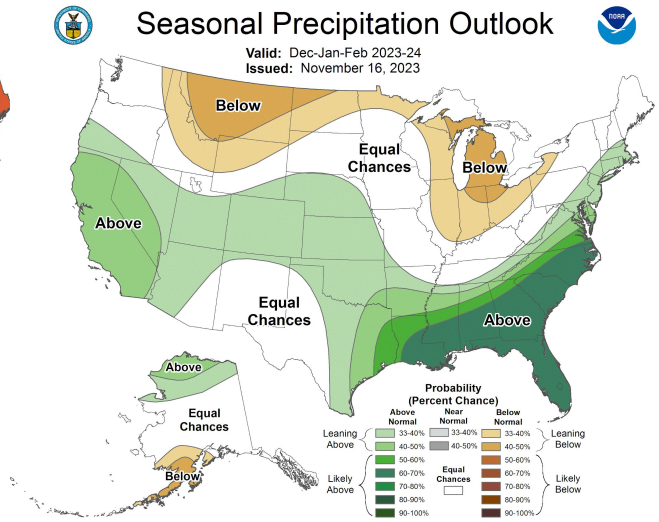


Image Captions:
Left - Climate Prediction Center Seasonal Temperature Outlook.
Right - Climate Prediction Center Seasonal Precipitation Outlook.
Valid December 2023 to February 2024

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.

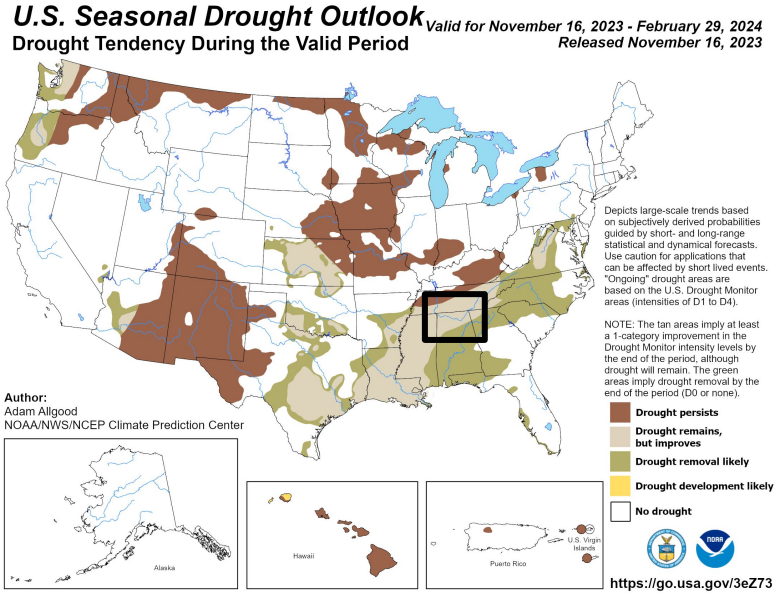


Image Caption:

Climate Prediction Center *Seasonal* Drought Outlook for November 16, 2023 to February 29, 2024, released November 16, 2023 (https://www.cpc.ncep.noaa.gov/products/expert_assessment/season_drought.png)