



Drought Information Statement for the Missouri Ozarks

Current Status, Impacts, and Outlook [Beta Test 2023]

Issued By: NWS Springfield, MO

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U.S. Drought Monitor

Latest U.S. Drought Monitor Map

● Drought intensity and Extent

- **D3 Extreme Drought:** All of Miller, Morgan, Benton, St. Clair, Hickory, and Camden Counties, central and western Maries, northwest Phelps, northern Pulaski, northern Laclede, northern and central Dallas, northern and central Polk, all but extreme southern Cedar, all but northwest Vernon and northern Barton Counties in Missouri, and all but southwest and northeast Bourbon and northeast Crawford Counties in southeast Kansas.
- **D2 Severe Drought:** In a narrow band south of the D3 area from St. James to Fair Grove to Stockton to Pittsburg, Kansas. Also over northwest Vernon, and extreme northeast Bourbon Counties.
- **D1 Moderate Drought:** South of the D2 area and north of a line from Round Spring to Fort Leonard Wood to Marshfield to Greenfield to Neosho to Baxter Springs, KS.
- **D0: Abnormally Dry:** The rest of the area south of the D1 designation, with the exception of northeast Taney, northwest and north central Ozark, and central and western Douglas Counties.

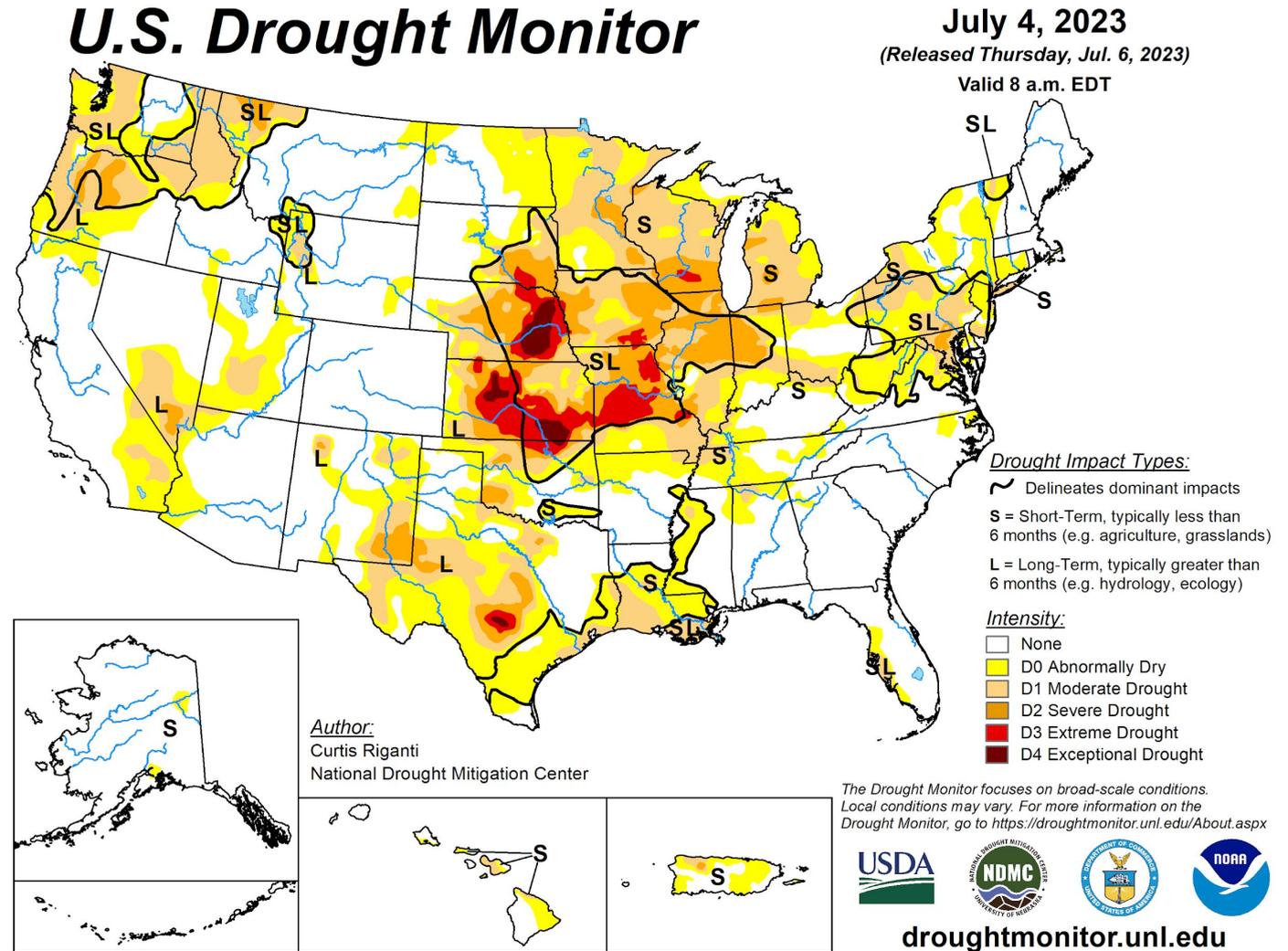


Image Caption: U.S. Drought Monitor valid 8am EDT July 6, 2023



Recent Change in Drought Intensity

- **Four Week Drought Monitor Class Change**

- **Drought Worsened:** Most locations along and north of Highway 60. A two to three class degradation occurred from Bolivar to Rolla.
- **No Change:** Most locations south of Highway 60, and portions of southeast Kansas west of a line from Baxter Springs to Girard, and over central Missouri north of a line from Warsaw to Versailles.
- **Drought Improved:** A small portion of south central Missouri from northeast Taney County to northeast Ozark County and central and western Douglas County.

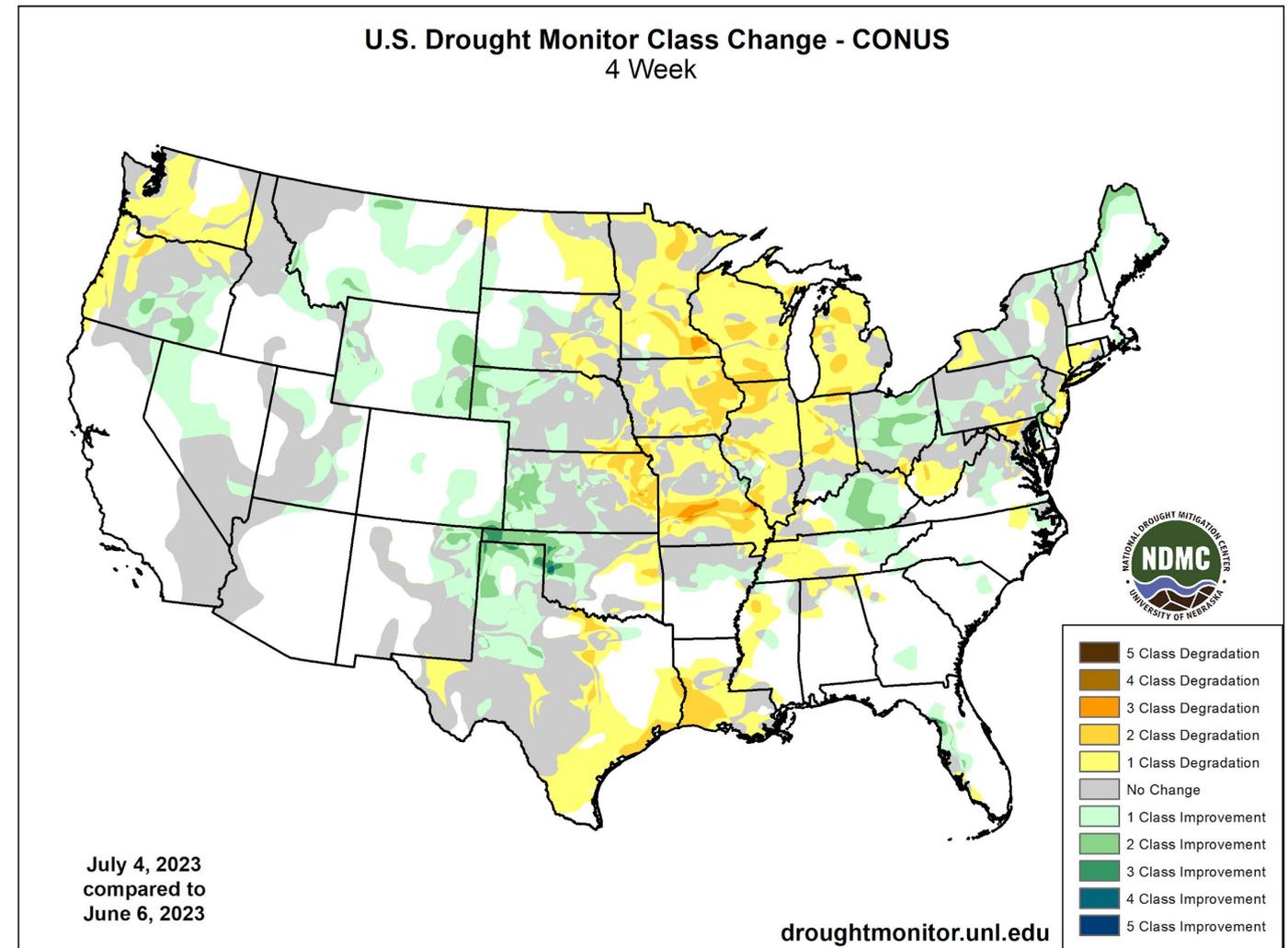


Image Caption: U.S. Drought Monitor 4-week change map valid 8am EDT July 4th.



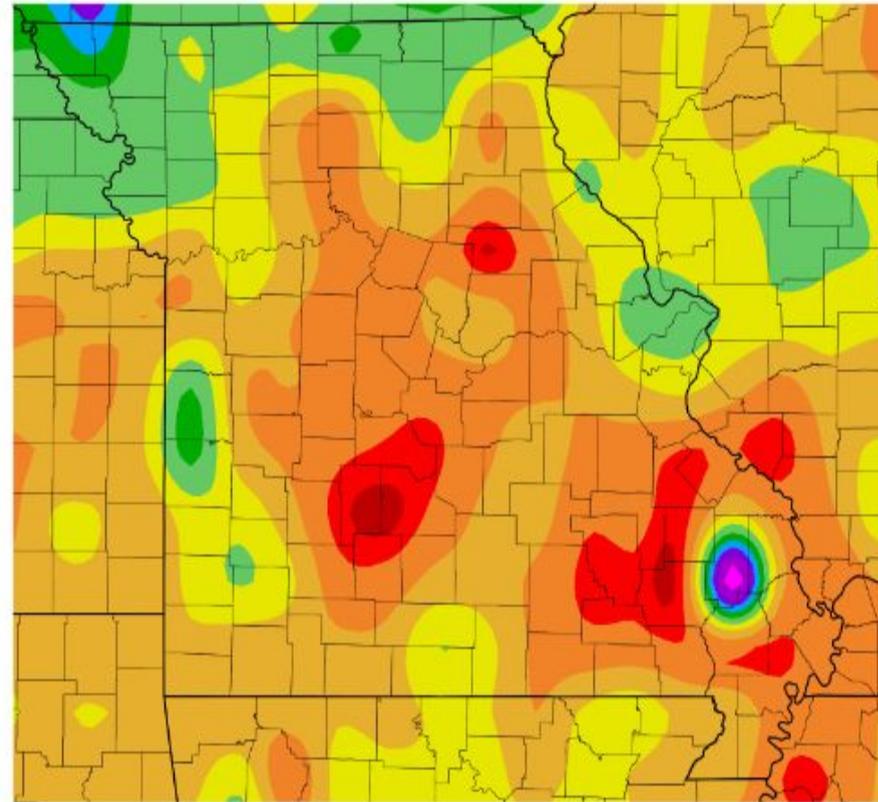


Precipitation

Main Takeaways

- Most of the area received less than 2 inches of rain over the past 30 days.
- Much of central Missouri and southeast Kansas received less than 50% of their normal rainfall.
- The bullseye in southeast Missouri is due to bad data.

Precipitation (in)
6/6/2023 - 7/5/2023



Percent of Normal Precipitation (%)
6/6/2023 - 7/5/2023

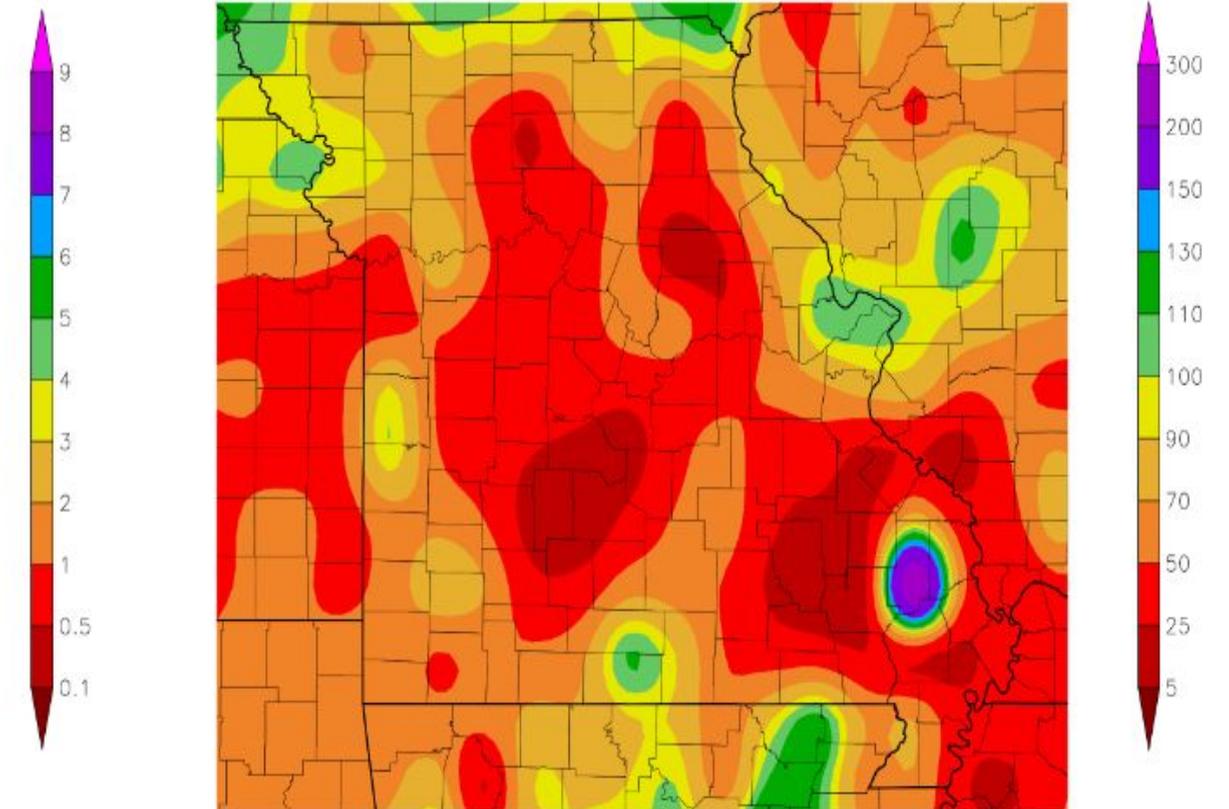


Image Captions:
 Left - Precipitation Amount for Missouri and eastern Kansas
 Right - Percent of Normal Precipitation for Missouri and eastern Kansas
 Data Courtesy High Plains Regional Climate Center.
 Data over the past 30 days ending July 5, 2023



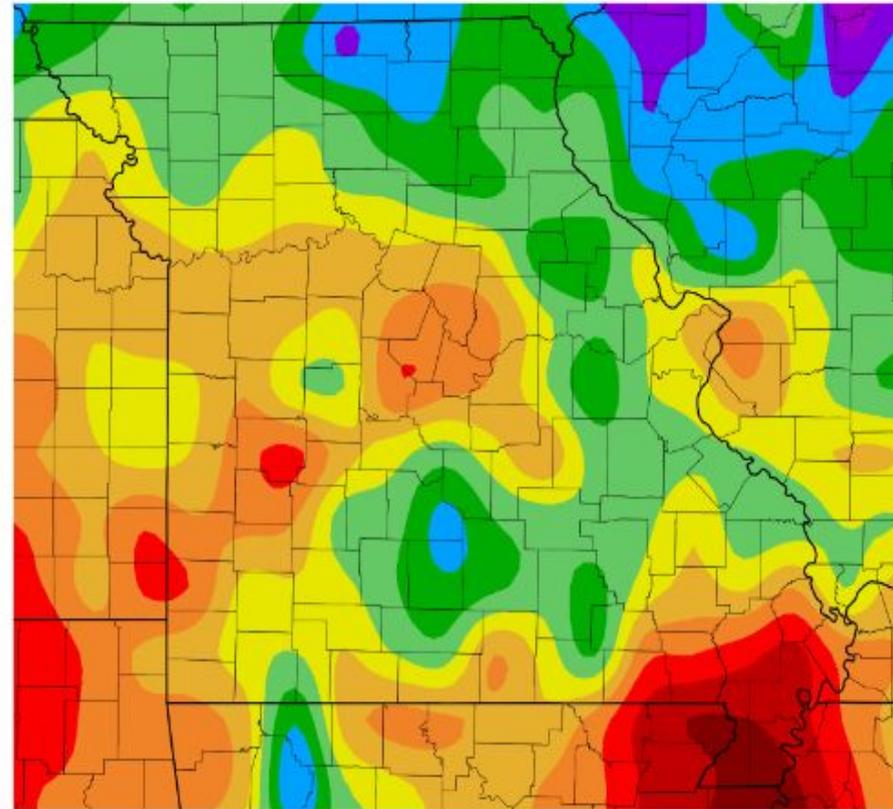


Temperature

Main Takeaways

- Average temperatures ranged from the lower 70s over south central Missouri to the upper 70s over west central Missouri and southeast Kansas.
- Departures from normal were within two degrees of normal values.

Temperature (F)
6/6/2023 – 7/5/2023



Departure from Normal Temperature (F)
6/6/2023 – 7/5/2023

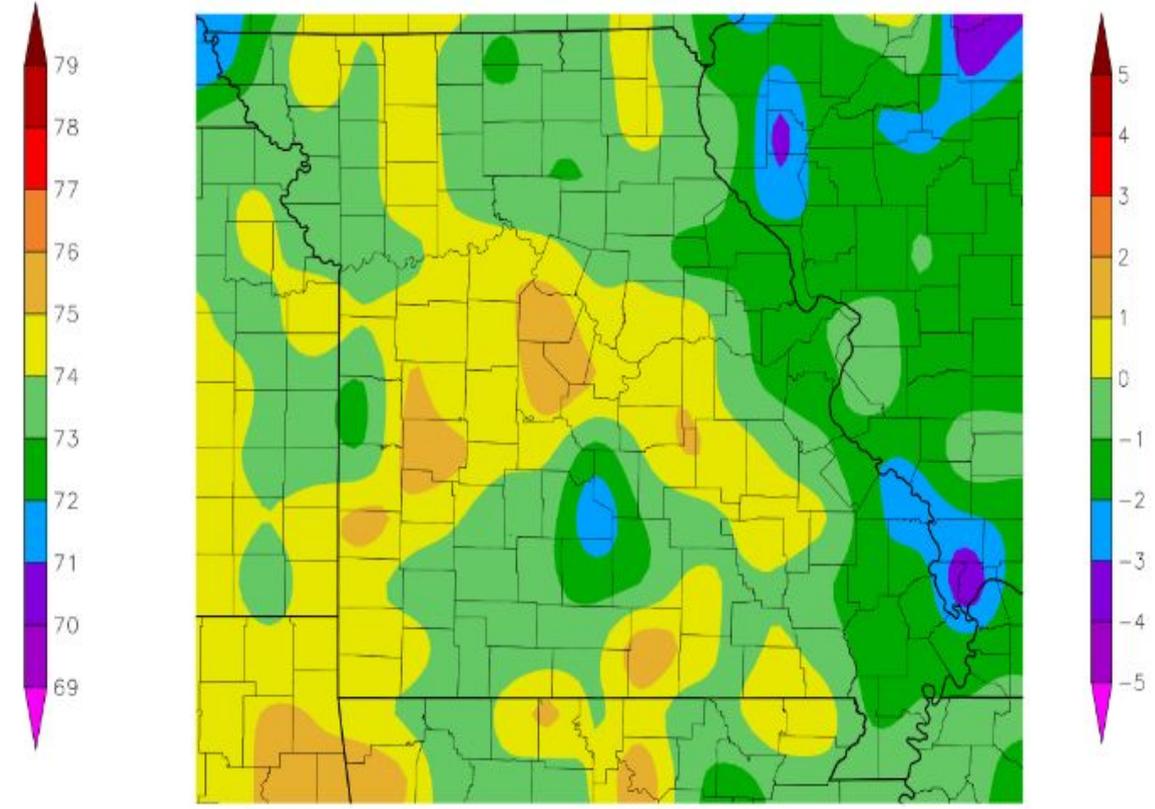


Image Captions:
Left - Average Temperature
Right - Departure from Normal Temperature
Data Courtesy High Plains Regional Climate Center.
Data over the past 30 days ending July 5, 2023





Summary of Impacts

Hydrologic Impacts

- Over the past 7 days, much below normal streamflows were observed over the Neosho, Little Osage, Pomme de Terre and James Rivers. Below normal streamflows were observed along the Spring, Osage, Marmaton and Gasconade Rivers.

Agricultural Impacts

- Condition Monitoring Observer Reports (CMORs) continue to indicate dry ponds, dead grass, crop failures and reduce crop yield, and increases in invasive insects in the D2 and D3 areas.

Fire Hazard Impacts

- There are no known impacts at this time.

Other Impacts

- There are no other known impacts at this time.

Mitigation actions

- Farmers were hauling water for cattle, supplementing feed and culling herds.
- The Missouri Department of Agriculture has an AgriStress Helpline at 833-897-2474 .
- The University of Missouri Extension Office has set up a Psychological Service Clinic to aid farmers and ranchers.
- More information is available at muext.us/PSCFarmRanch.





Hydrologic Conditions

Main Takeaways

- Much below streamflow percentiles were observed in southeast Kansas along the Neosho River, and along the Little Osage, James and Pomme de Terre Rivers in southwest and west central Missouri.

Below normal streamflow percentiles were observed along the Spring River in southeast Kansas and southwest Missouri, and along the Elk, Marmaton, Osage and Gasconade Rivers in the Missouri Ozarks.

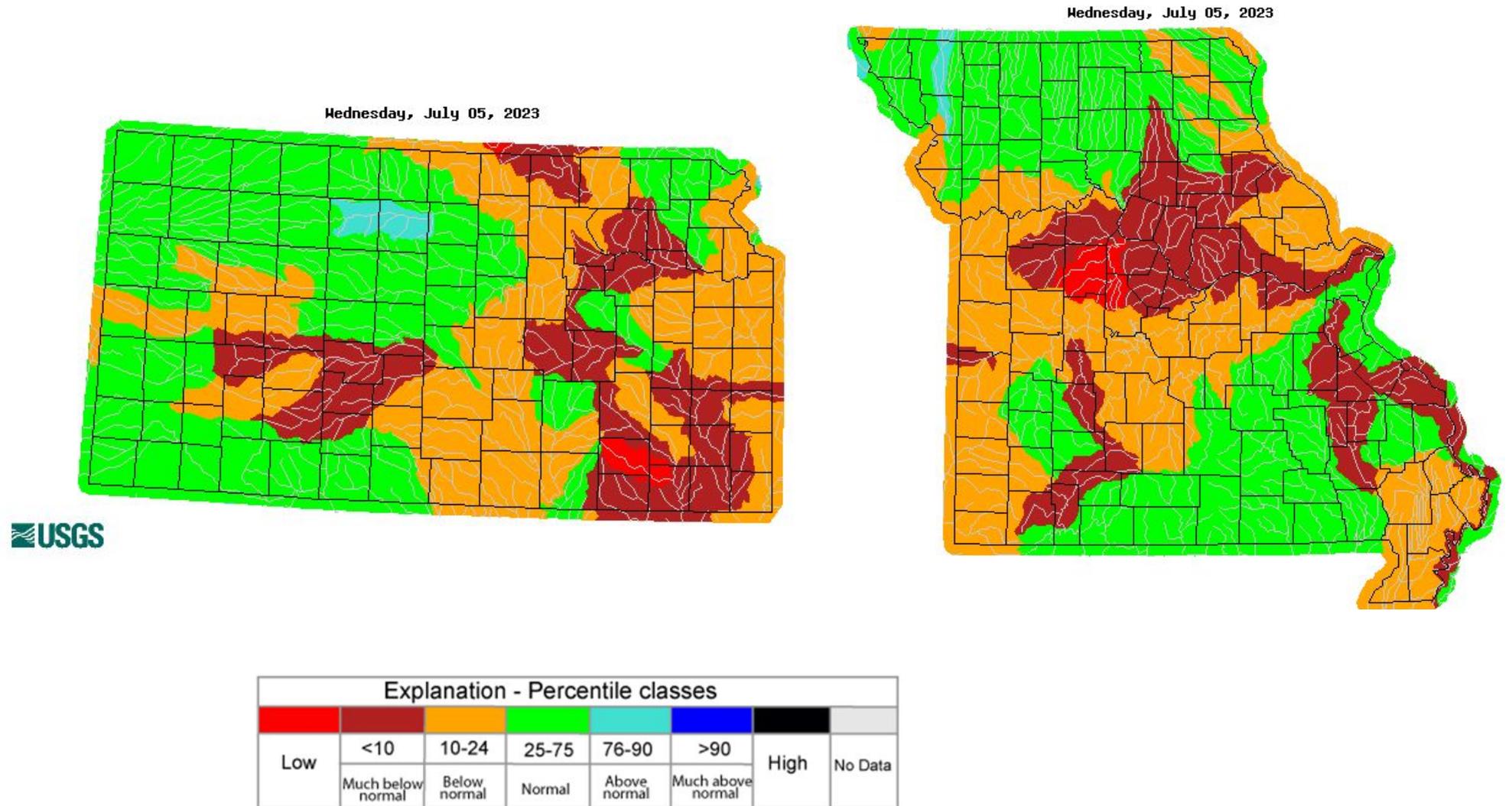


Image Caption: USGS 7 day average streamflow HUC map valid July 5, 2023.



Agricultural Impacts

Main Takeaways

- Soil moisture percentile rankings are below 2 percent over portions of central Missouri and southeast Kansas.
- The Crop Moisture Index is abnormally dry over the southern half of Missouri.

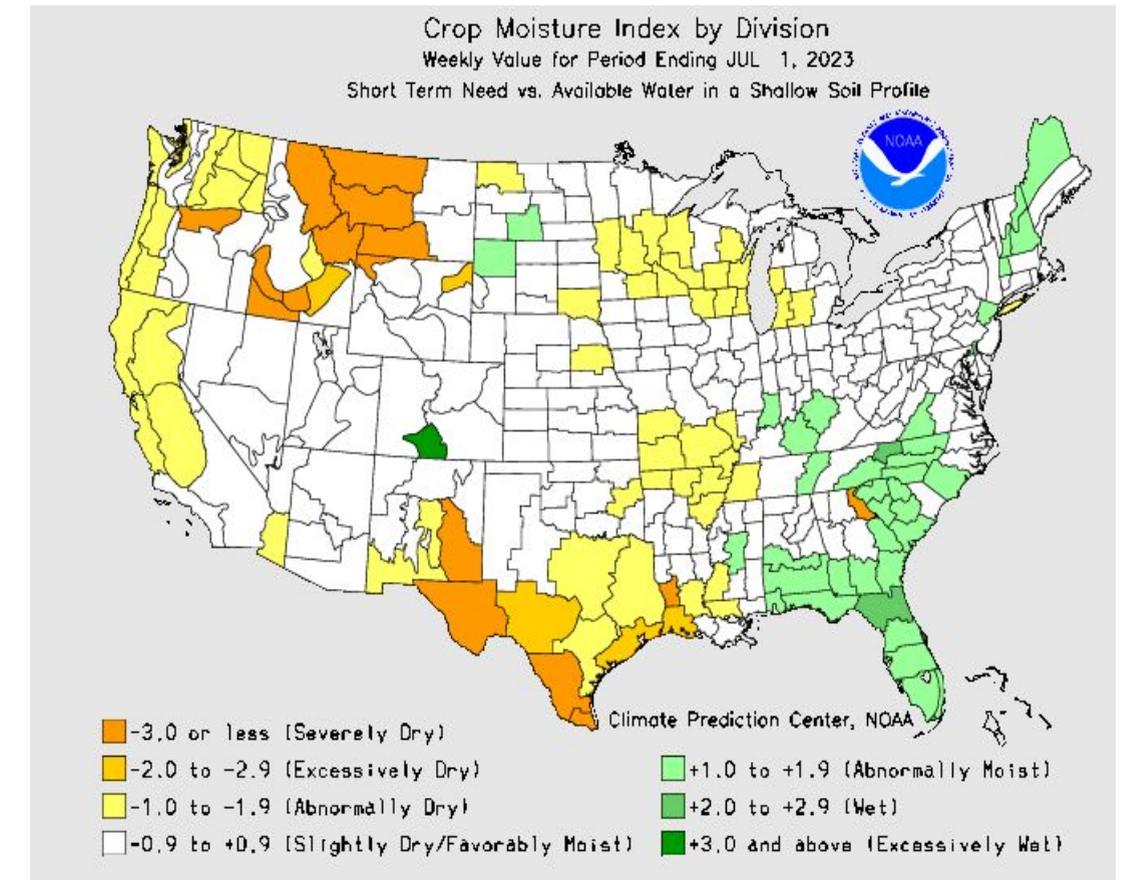
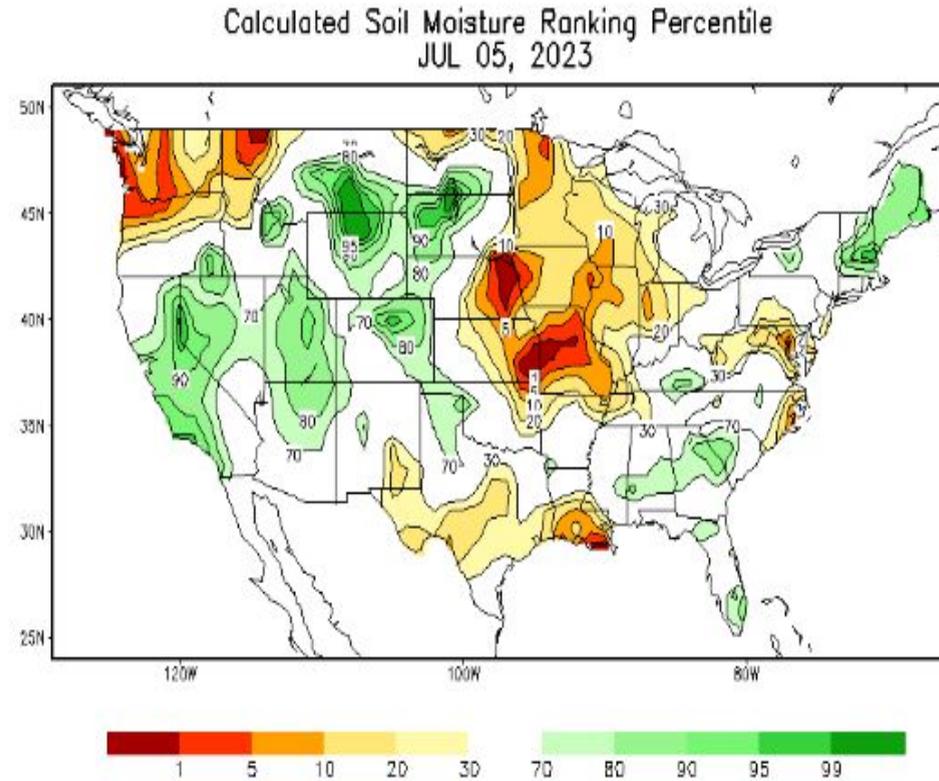


Image Captions:

Left: CPC Calculated [Soil Moisture Ranking Percentile](#) valid July 5, 2023.

Right: [Crop Moisture Index by Division](#). Weekly value for period ending July 1, 2023.





Seven Day Precipitation Forecast

- Next 7 days:
 - Much of the Missouri Ozarks and southeast Kansas may see over two inches of rain as a series of upper level disturbances move over the region.

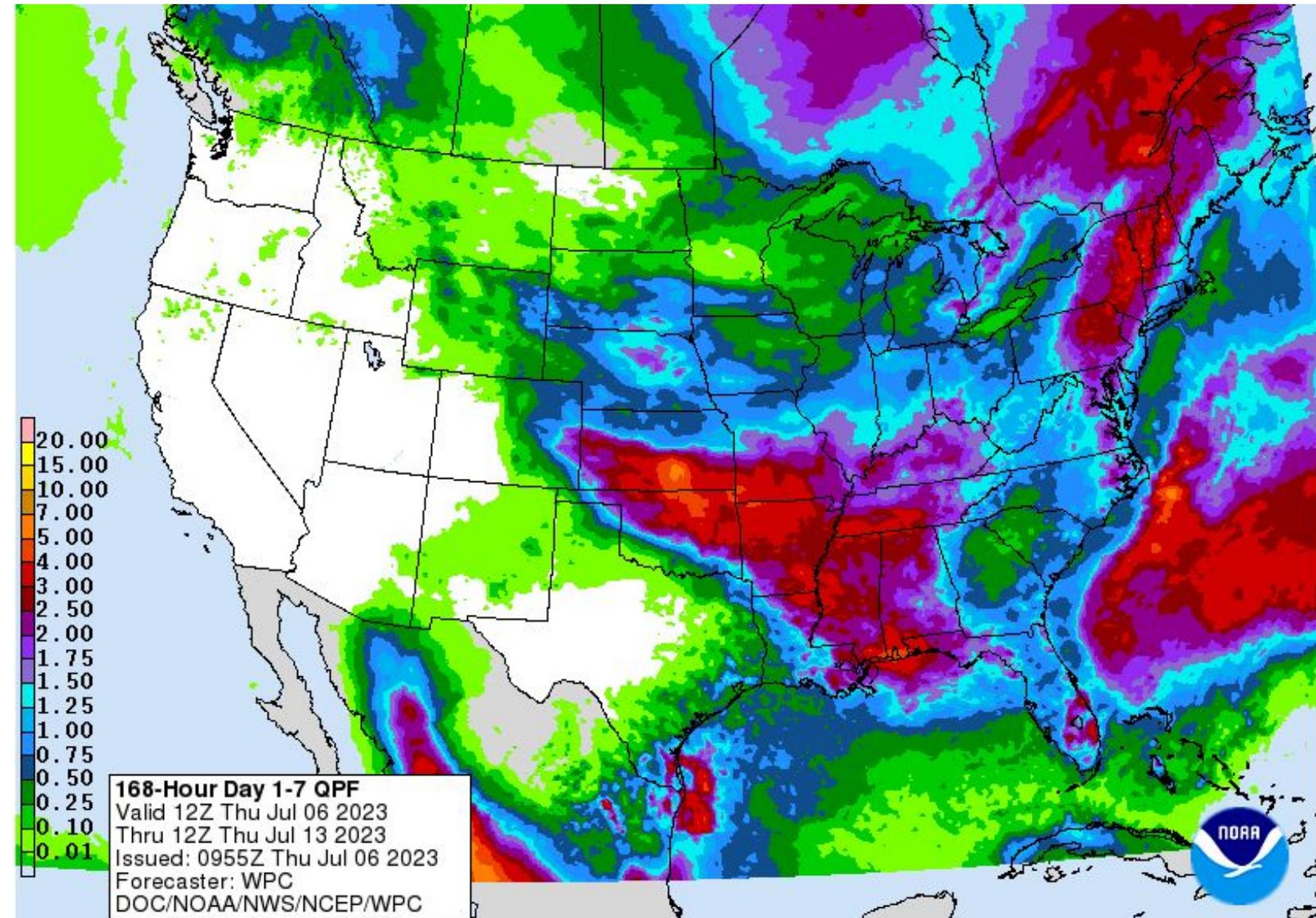


Image Caption: Weather Prediction Center [7-day precipitation forecast](#) valid Thursday July 6- Thursday 13, 2023.



6-10 Day Outlook

Temperature and Precipitation Outlook

Main Takeaways

- Near normal temperatures are favored for all but extreme southwest Missouri and southeast Kansas, where above normal temperatures are favored.
- Above normal precipitation is favored over all of the Missouri Ozarks and southeast Kansas.

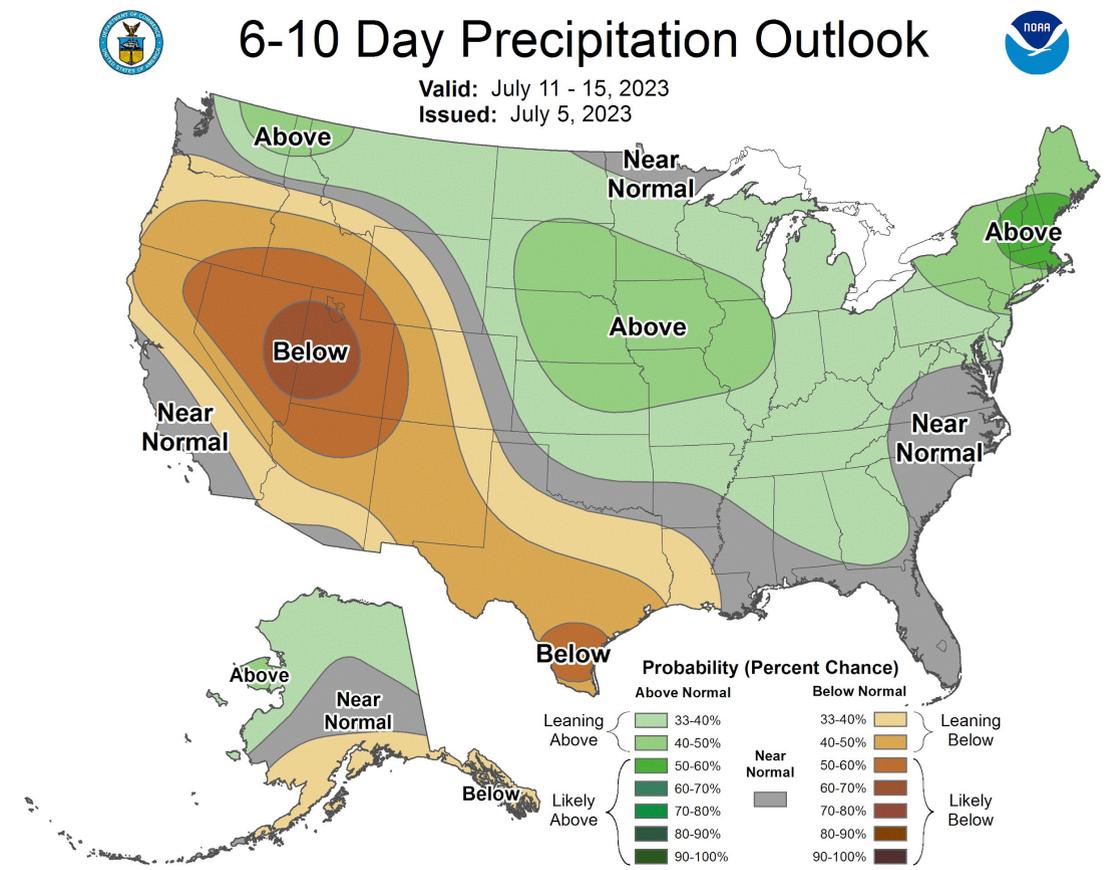
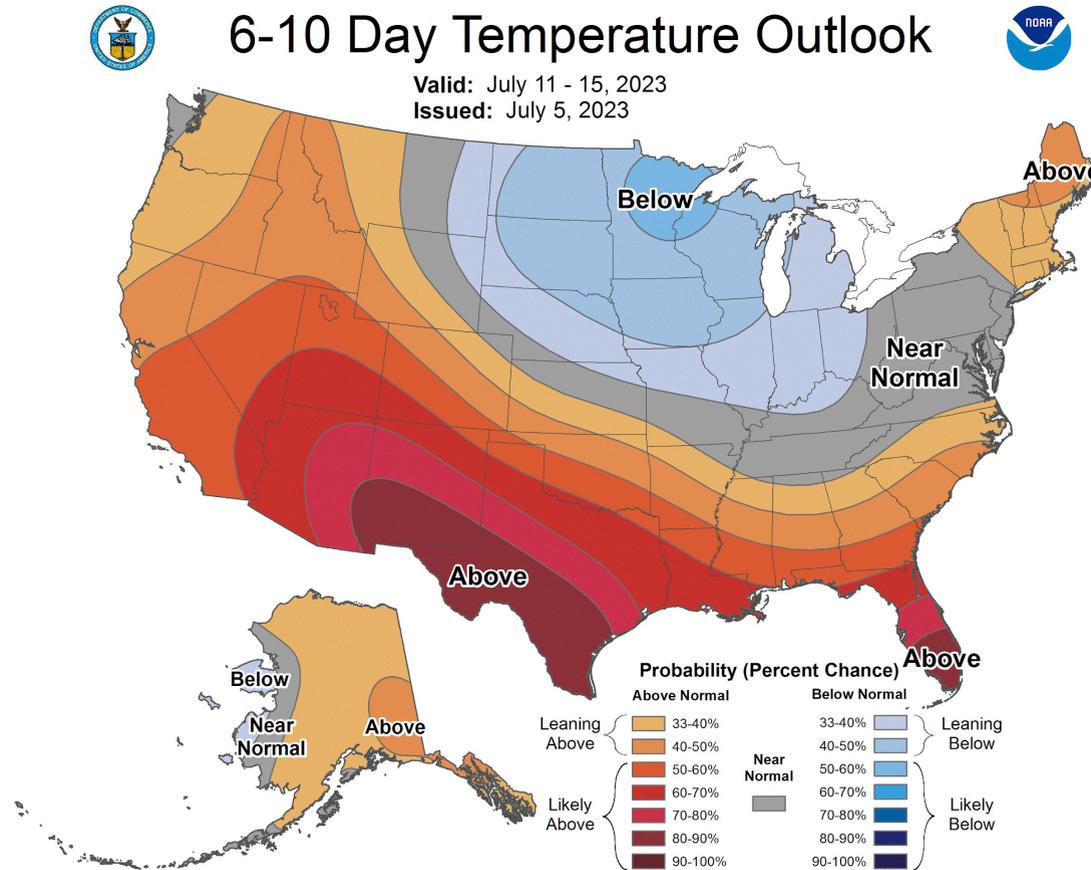


Image Captions:
 Left - [Climate Prediction Center 6-10 Day Temperature Outlook.](#)
 Right - [Climate Prediction Center 6-10 Day Precipitation Outlook.](#)
 Valid July 11-16, 2023.



8-14 Day Outlook

Temperature and Precipitation Outlook

Main Takeaways

- Above normal temperatures are favored for the Missouri Ozarks and southeast Kansas.
- Above normal precipitation is favored for the Missouri Ozarks and southeast Kansas.

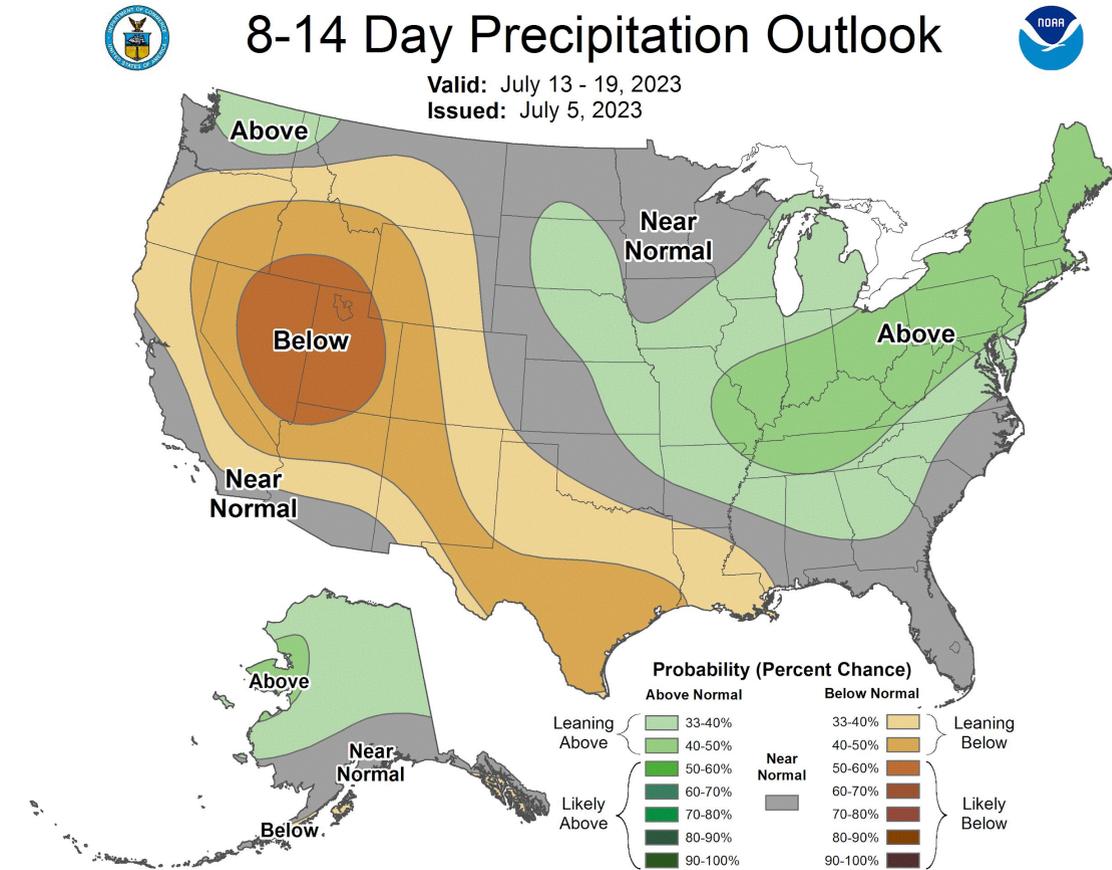
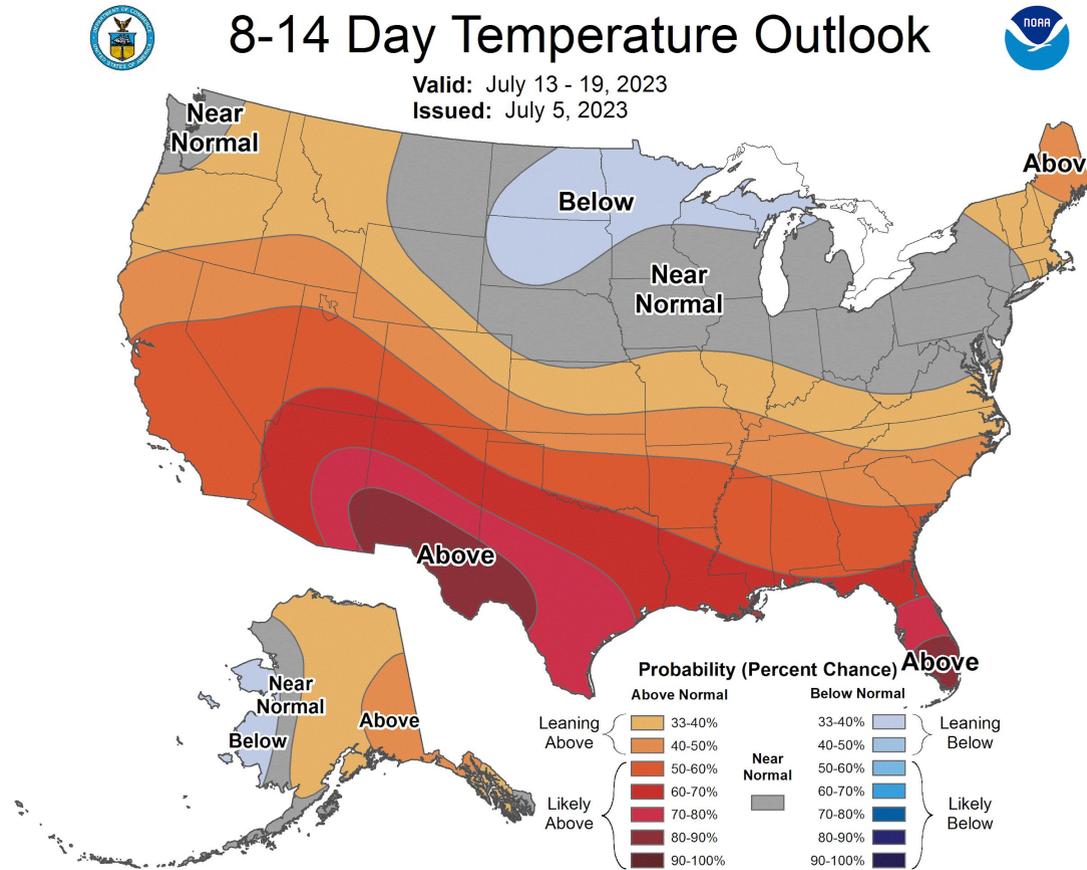


Image Captions:
Left - [Climate Prediction Center 8-14 Day Temperature Outlook.](#)
Right - [Climate Prediction Center 8-14 Day Precipitation Outlook.](#)

Valid July 13-18, 2023.





Weeks 3-4 Outlook

Temperature and Precipitation Outlook

Main Takeaways

- Below normal temperatures and above normal precipitation are favored for all areas except extreme southwest Missouri and southeast Kansas.
- There will be equal chances for above, below and normal temperatures and precipitation over far southwest Missouri and southeast Kansas.

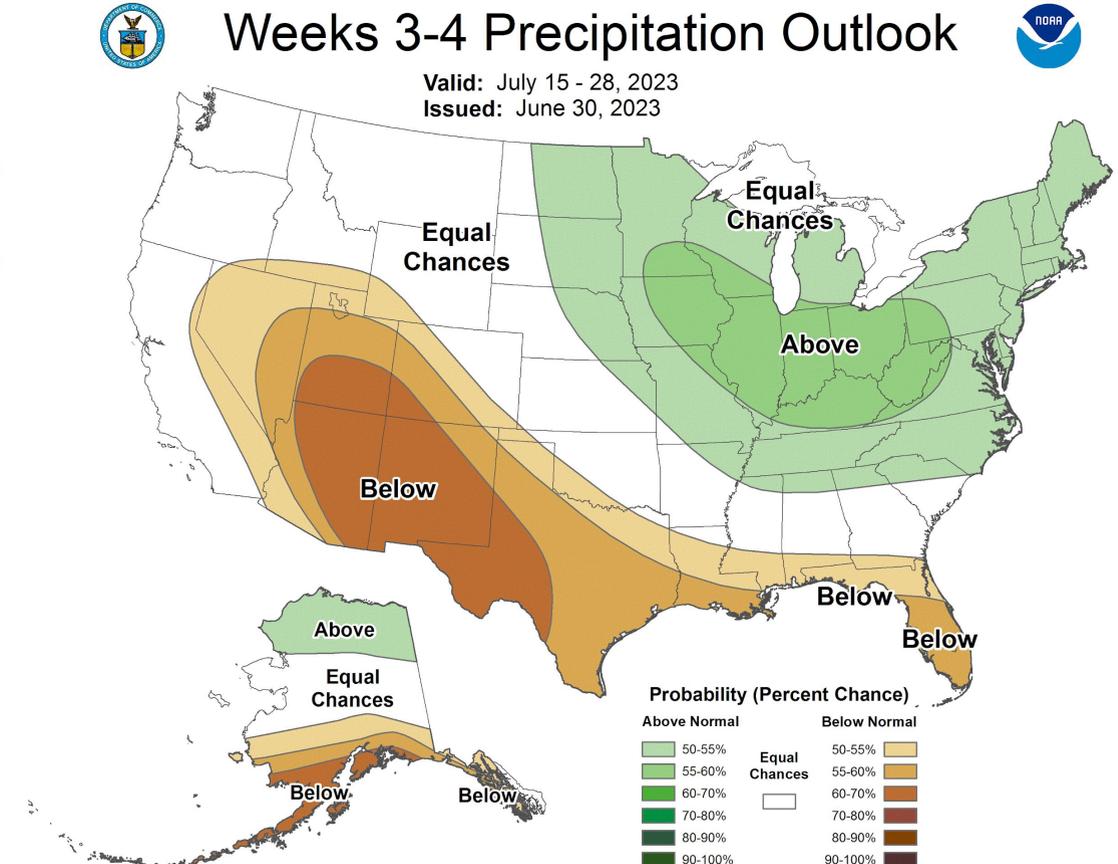
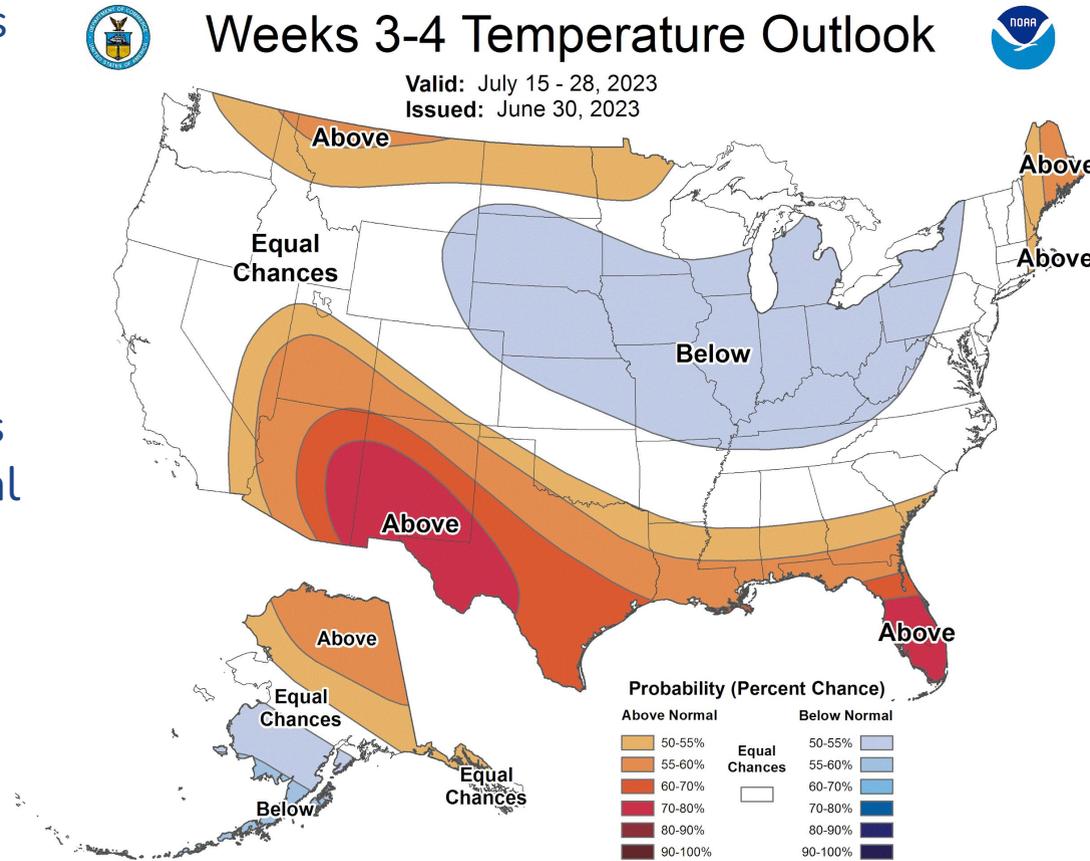


Image Captions:
 Left - [Climate Prediction Center Weeks 3-4 Temperature Outlook.](#)
 Right - [Climate Prediction Center Weeks 3-4 Precipitation Outlook.](#)
 Valid July 15-29, 2023.



Seasonal Climate Outlook

Seasonal Temperature and Precipitation Outlook

Main Takeaways

- Above normal temperatures are favored for the Missouri Ozarks and southeast Kansas for the July through September timeframe.
- Above normal precipitation is favored for the July to September time period.

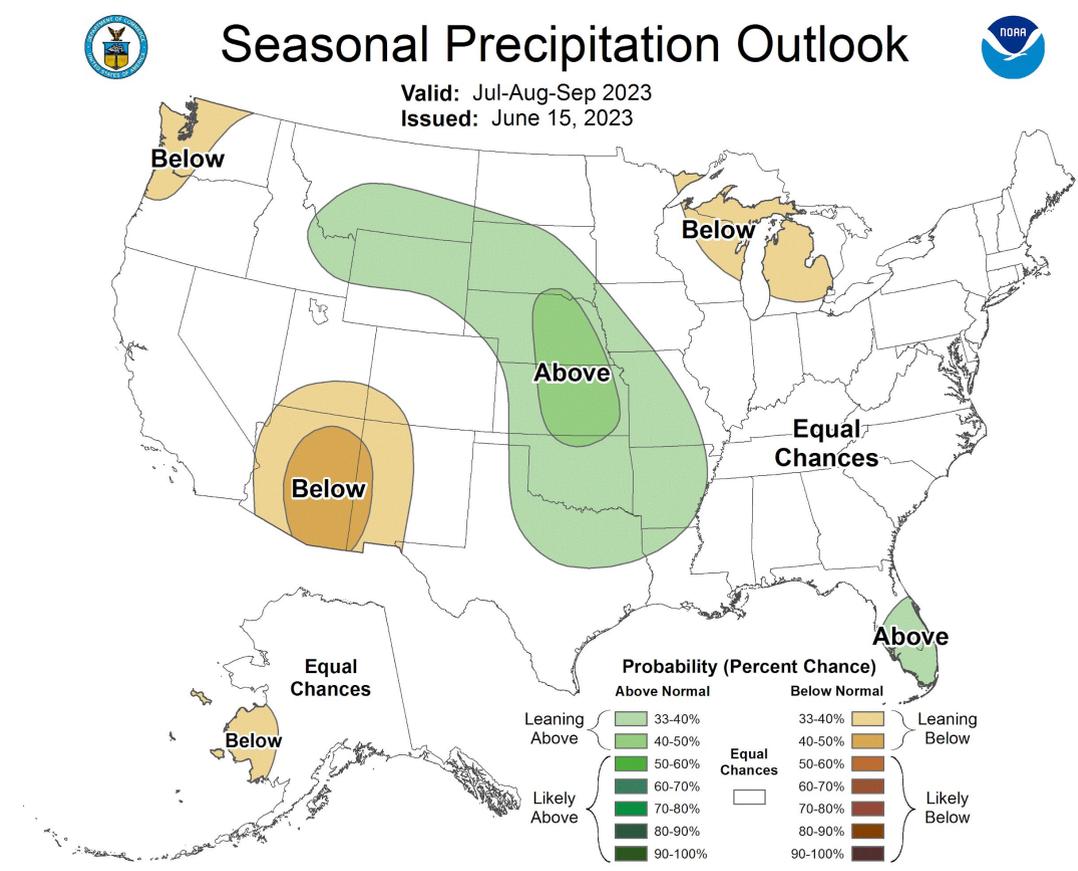
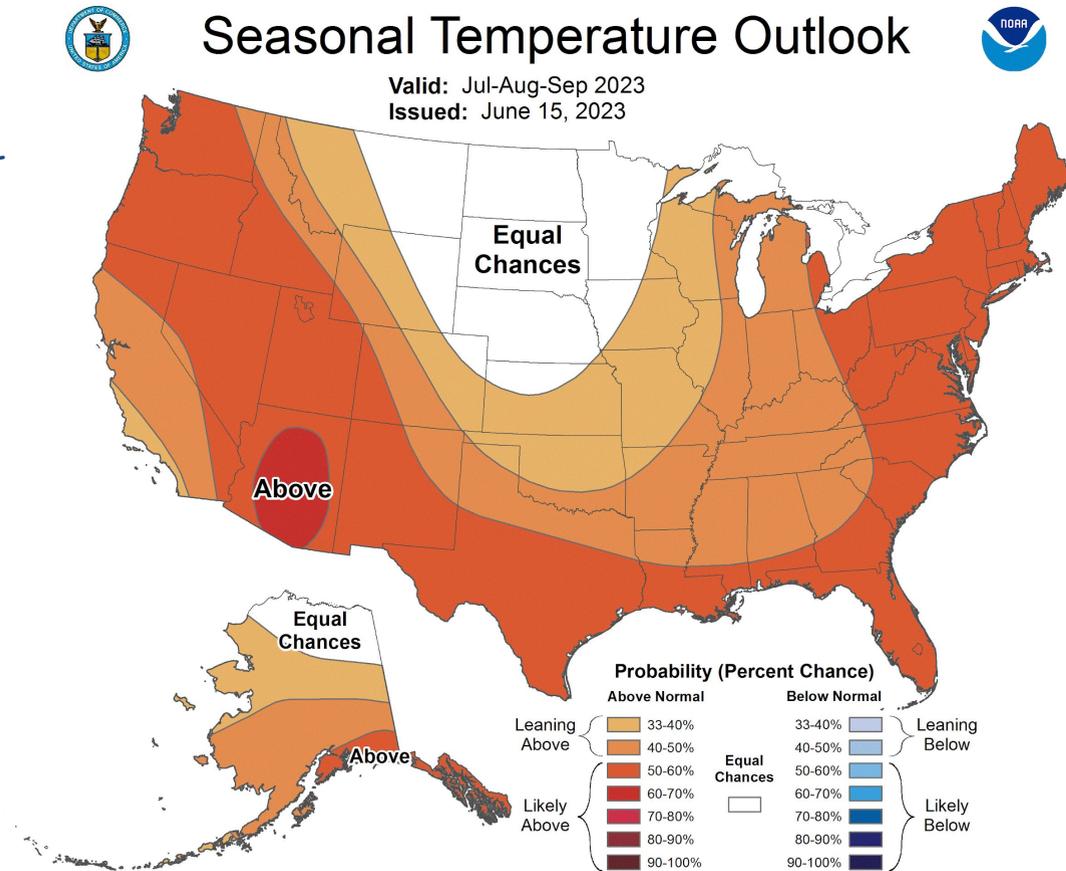


Image Captions:
 Left - [Climate Prediction Center Seasonal Temperature Outlook](#).
 Right - [Climate Prediction Center Seasonal Precipitation Outlook](#).
 Valid July to September, 2023.



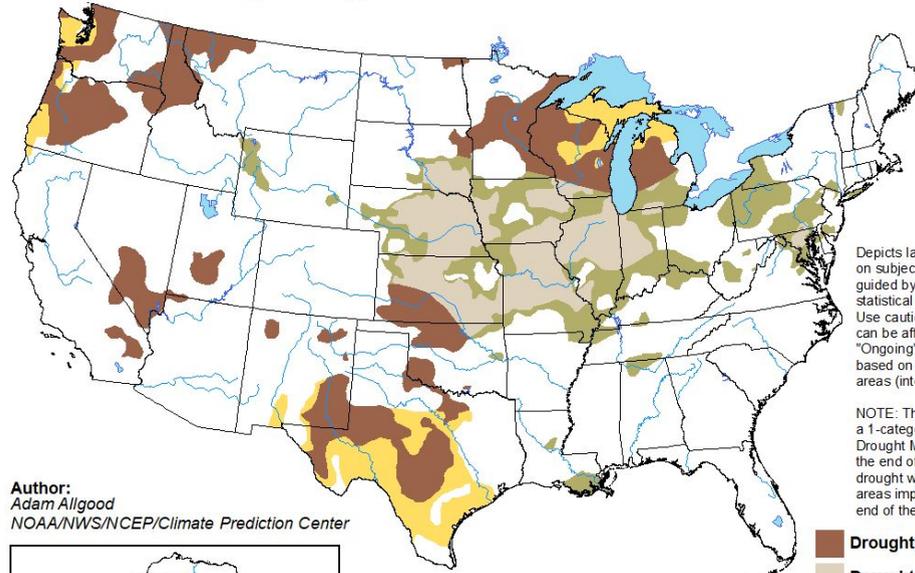
Drought Outlook

Main Takeaways

- Drought conditions are expected to remain but improve over central Missouri and southeast Kansas through the month of July.
- Continued improvement and possible removal of drought will be possible through the end of September.

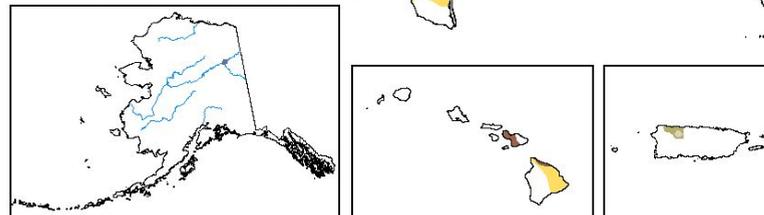
U.S. Monthly Drought Outlook Drought Tendency During the Valid Period

Valid for July 2023
Released June 30, 2023



Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Use caution for applications that can be affected by short lived events. "Ongoing" drought areas are based on the U.S. Drought Monitor areas (intensities of D1 to D4).
NOTE: The tan areas imply at least a 1-category improvement in the Drought Monitor intensity levels by the end of the period, although drought will remain. The green areas imply drought removal by the end of the period (D0 or none).

Author:
Adam Allgood
NOAA/NWS/NCEP/Climate Prediction Center



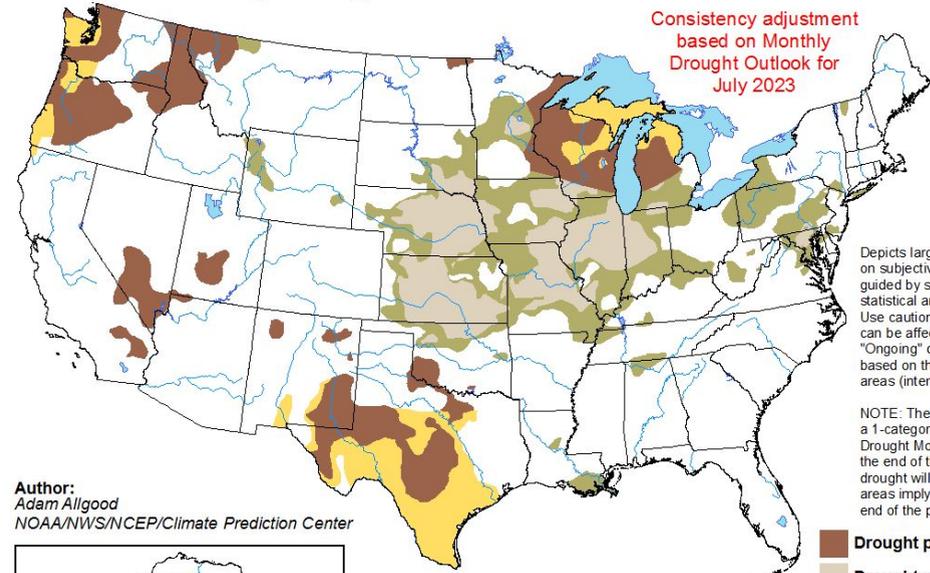
- Drought persists
- Drought remains but improves
- Drought removal likely
- Drought development likely



<http://go.usa.gov/3eZGd>

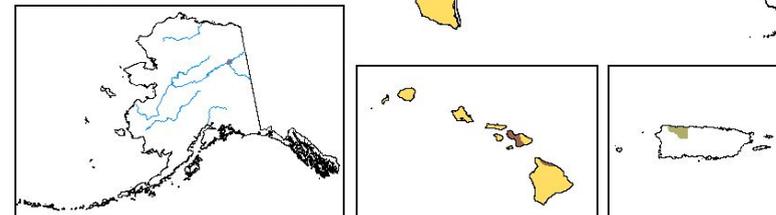
U.S. Seasonal Drought Outlook Drought Tendency During the Valid Period

Valid for July 1 - September 30, 2023
Released June 30, 2023



Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Use caution for applications that can be affected by short lived events. "Ongoing" drought areas are based on the U.S. Drought Monitor areas (intensities of D1 to D4).
NOTE: The tan areas imply at least a 1-category improvement in the Drought Monitor intensity levels by the end of the period, although drought will remain. The green areas imply drought removal by the end of the period (D0 or none).

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- Drought persists
- Drought remains but improves
- Drought removal likely
- Drought development likely



<http://go.usa.gov/3eZ73>

Image Captions:

Left - [Climate Prediction Center Monthly Drought Outlook](#) Released June 30, 2023, valid for July 2023

Right - [Climate Prediction Center Seasonal Drought Outlook](#) Released June 30, 2023, valid for July - September 2023.





Drought Classification

Drought Information

- [State Impacts](#)
- [Drought Impacts Toolkit](#)
- [Drought Monitor Archive](#)

Category	Description	Possible Impacts	Ranges				
			Palmer Drought Severity Index (PDSI)	CPC Soil Moisture Model (Percentiles)	USGS Weekly Streamflow (Percentiles)	Standardized Precipitation Index (SPI)	Objective Drought Indicator Blends (Percentiles)
D0	Abnormally Dry	Going into drought: <ul style="list-style-type: none"> • short-term dryness slowing planting, growth of crops or pastures Coming out of drought: <ul style="list-style-type: none"> • some lingering water deficits • pastures or crops not fully recovered 	-1.0 to -1.9	21 to 30	21 to 30	-0.5 to -0.7	21 to 30
D1	Moderate Drought	<ul style="list-style-type: none"> • Some damage to crops, pastures • Streams, reservoirs, or wells low, some water shortages developing or imminent • Voluntary water-use restrictions requested 	-2.0 to -2.9	11 to 20	11 to 20	-0.8 to -1.2	11 to 20
D2	Severe Drought	<ul style="list-style-type: none"> • Crop or pasture losses likely • Water shortages common • Water restrictions imposed 	-3.0 to -3.9	6 to 10	6 to 10	-1.3 to -1.5	6 to 10
D3	Extreme Drought	<ul style="list-style-type: none"> • Major crop/pasture losses • Widespread water shortages or restrictions 	-4.0 to -4.9	3 to 5	3 to 5	-1.6 to -1.9	3 to 5
D4	Exceptional Drought	<ul style="list-style-type: none"> • Exceptional and widespread crop/pasture losses • Shortages of water in reservoirs, streams, and wells creating water emergencies 	-5.0 or less	0 to 2	0 to 2	-2.0 or less	0 to 2



Additional Resources

For Additional Information

- [NWS Springfield Webpage](#)
- [IDSS Point Forecasts](#)
- [NWS Springfield Drought Monitor Resources](#)
- [Graphical Hazardous Weather Outlook](#)
- [Missouri Drought Monitor | Kansas Drought Monitor](#)
- [CPC Drought Information](#)
- [National Integrated Drought Information System \(NIDIS\)](#)
- [National Drought Mitigation Center \(NDMC\)](#)
- [Missouri USGS Streamflows | Kansas USGS Streamflows](#)
- [Drought Safety](#)

Drought Impacts



Agriculture

Farms, ranches, and grazing lands suffer, and increases the cost of their products



Public Health

A decrease of water can lead to an increase of illness, disease, mortality rates, and adverse mental health



Ecosystems

Harms fish, wildlife, and plants, as well as the benefits these ecosystems provide



Wildfire Management

Dry, hot, and windy weather combined with dried out vegetation can lead to more large-scale wildfires



Manufacturing

Interruptions in the water supply can result in a reduction of productivity or closure of facilities



Energy

Production of all types of energy requires water, and drought can severely impact energy systems and prices



During a Drought be Vigilant

Conserve Water

Practice Fire Prevention

Follow Directions from Local Officials

Trinity Lake, CA, dry lakebed during California Drought, 2014. Photo: USGS



weather.gov/drought



National Oceanic and Atmospheric Administration

U.S. Department of Commerce

National Weather Service
Springfield, MO