



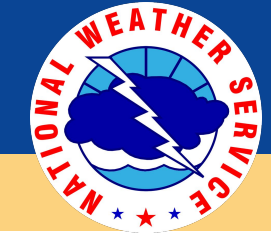
Drought Information Statement for the Missouri Ozarks

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

Issued By: NWS Springfield, MO

Contact information: contact.sqf@noaa.gov





U.S. Drought Monitor

Latest U.S. Drought Monitor Map

● Drought intensity and Extent

- **D4 Exceptional Drought:** Central and northern Morgan, northern Miller and northeast Benton Counties.
- **D3 Extreme Drought:** Southern Morgan, central and southern Miller, all but northeast Benton, western and central Maries, Camden, all but southeast Hickory, St. Clair, northwest Phelps, northern Pulaski, northwest Polk, all but southeast Cedar, northwest Dade, all but northwest Vernon, and northern Barton Counties in Missouri, and central and southern Bourbon and northeastern Crawford Counties in southeast Kansas.
- **D2 Severe Drought:** Central Phelps, central Pulaski, northern Laclede, central and northern Dallas, central and northern Polk, central, northeast and southwest Dade, northwest Vernon, central and southern Barton, Jasper, northwest Lawrence, and northern Newton Counties in Missouri, and northern and southwest Bourbon, all but northeast Crawford and all but southwest Cherokee Counties in southeast Kansas.
- **D1 Moderate Drought:** South of the D2 area including locations from Neosho to Cassville to Nixa, north of a line from Mount Vernon to Fort Leonard Wood, and east of a line from Thayer to Cabool to Licking.
- **D0: Abnormally Dry:** The rest of southwest and south central Missouri except for Ozark, all but western Douglas, west central Howell, western Texas, all but southwest Wright and central Webster Counties.

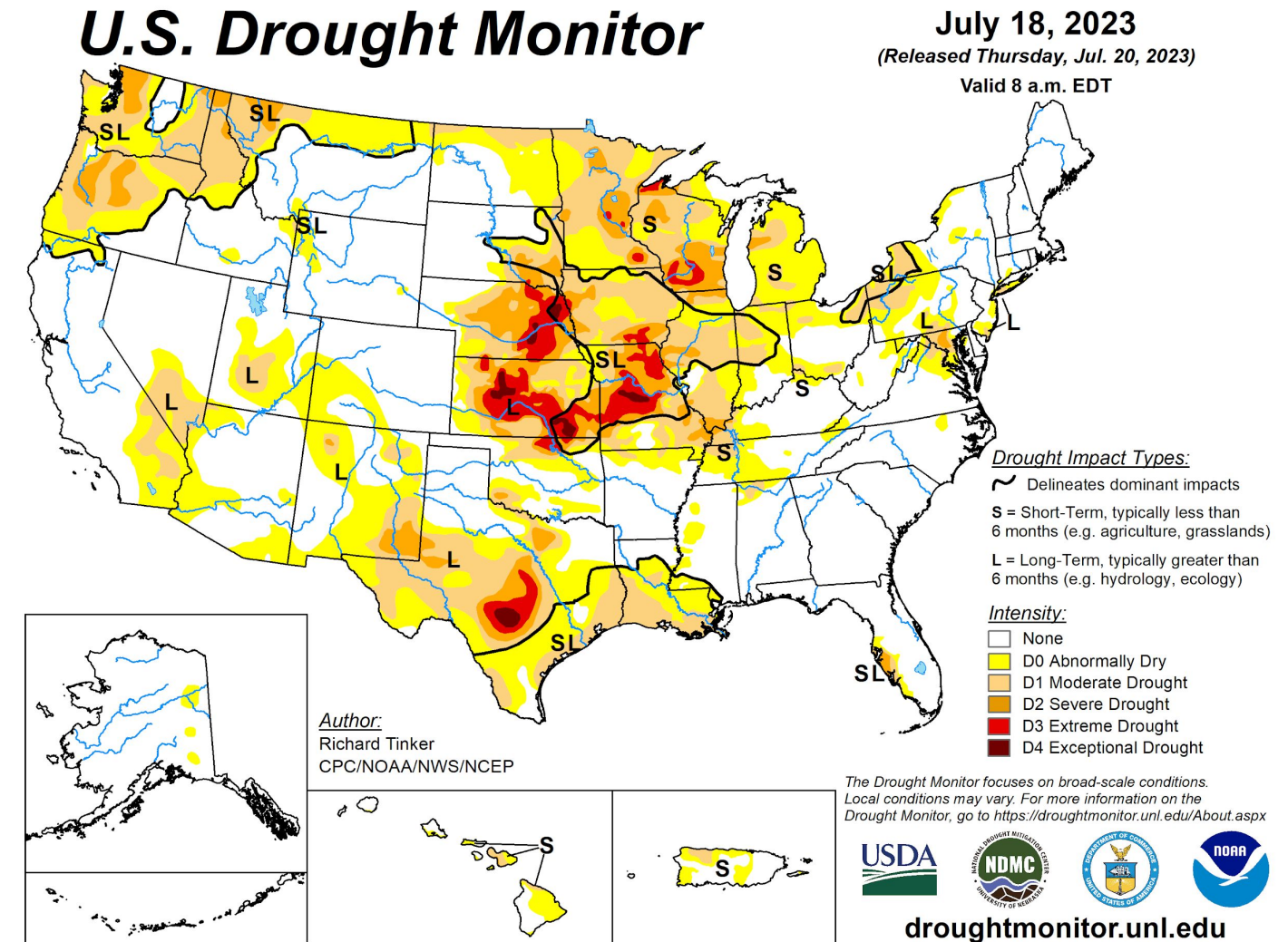
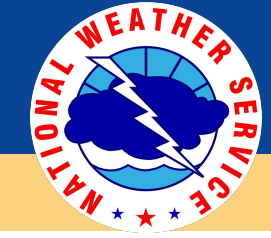


Image Caption: U.S. Drought Monitor valid 8am EDT July 20th.



Recent Change in Drought Intensity

- **Four Week Drought Monitor Class Change over Missouri and Kansas.**
 - **Drought Worsened:** Central Missouri and southwest Missouri, and eastern Kansas.
 - **No Change:** Portions of west central, northwest and northeast Missouri, and much of central and western Kansas
 - **Drought Improved:** The Bootheel, east central Missouri and locations near the Iowa border in Missouri and south central and southwest Kansas.

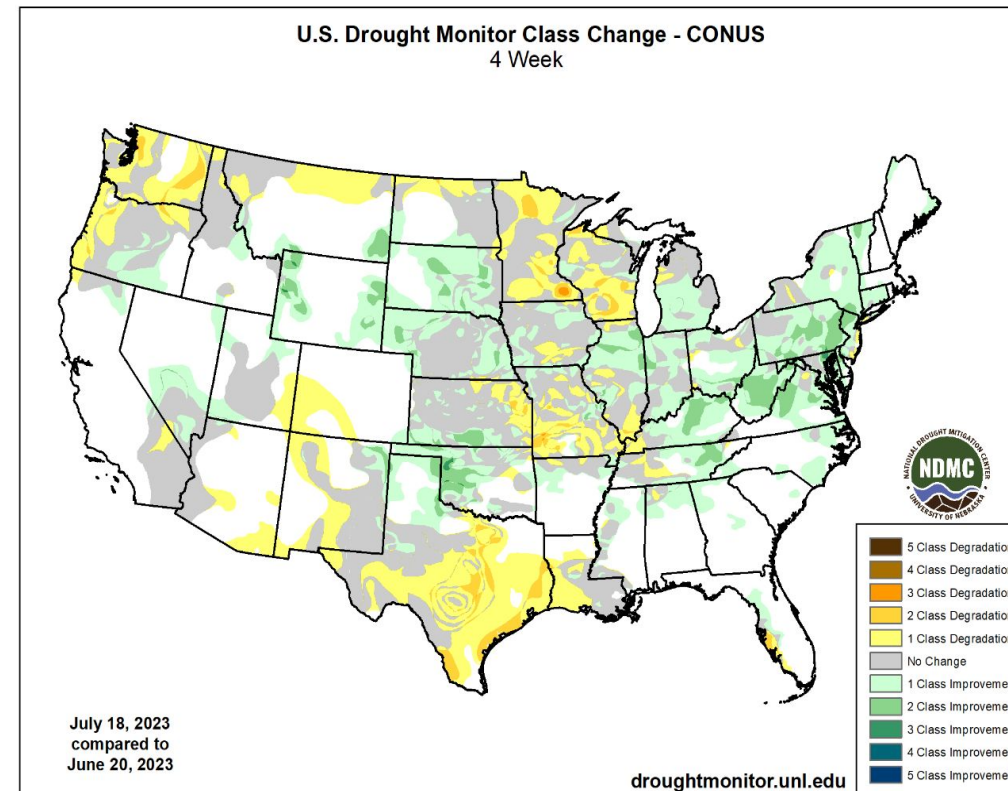
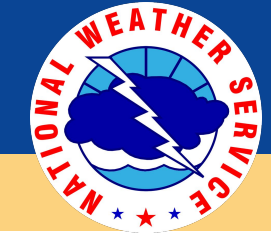


Image Caption: U.S. Drought Monitor 4-week change map valid 8am EDT July 18, 2023



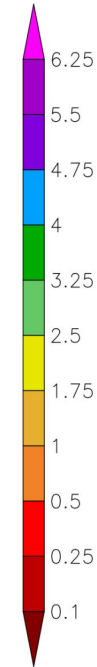
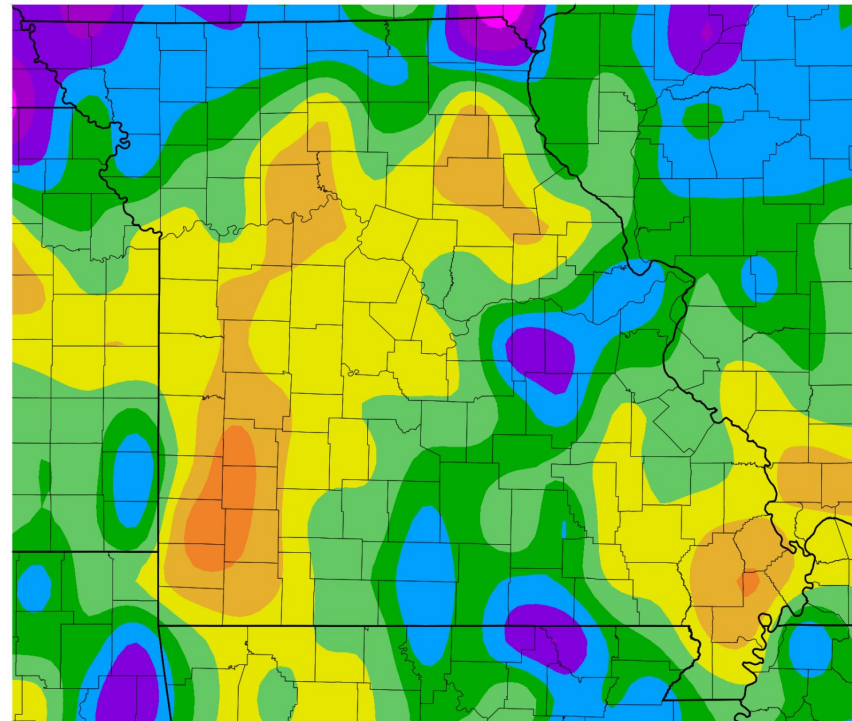


Precipitation

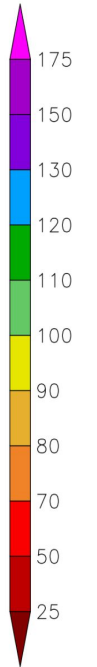
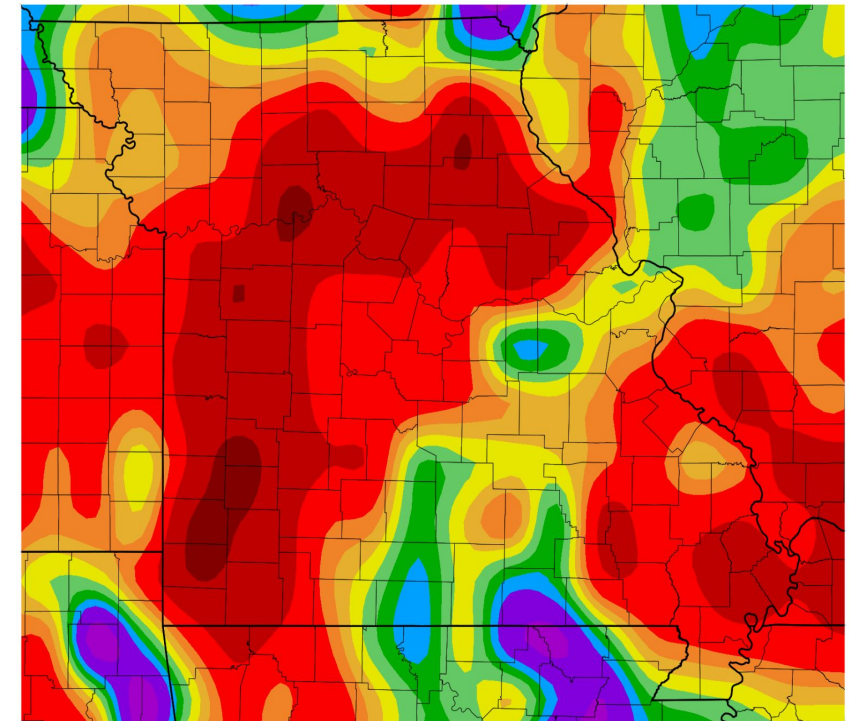
Main Takeaways

- Precipitation accumulations over the past 30 days ranged from less than one inch over southwest Missouri to over four inches over south central and east central Missouri.
- Much of southwest, central and west central Missouri had less than half of their normal precipitation.

Precipitation (in)
6/19/2023 – 7/18/2023



Percent of Normal Precipitation (%)
6/19/2023 – 7/18/2023



Generated 7/19/2023 at HPRCC using provisional data.

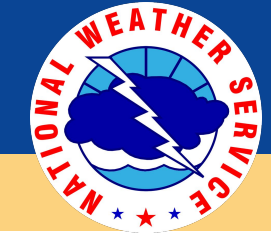
NOAA Regional Climate Centers

Generated 7/19/2023 at HPRCC using provisional data.

NOAA Regional Climate Centers

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 18, 2023





Summary of Impacts

Hydrologic Impacts

- Below normal streamflow percentiles were observed along the Pomme de Terre River in southwest Missouri and the Marmaton and Little Osage Rivers in southeast Kansas and west central Missouri. Above normal streamflow percentiles were observed along the Big Piney River in south central Missouri. All other basins had near normal streamflows.

Agricultural Impacts

- Condition Monitoring Observer Reports (CMORs) continue to indicate dry ponds, dead grass, crop failures, reduce crop yield, and increases in invasive insects in the D2, D3 and D4 areas. In Jasper County, Christmas Tree Farms have been impacted with half of the planted trees lost.

Fire Hazard Impacts

- There are no known impacts at this time.

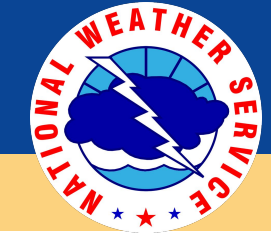
Other Impacts

- There are no known impacts at this time.

Mitigation actions

- Farmers were continuing to haul water for farms and livestock, supplement feed for livestock, and cull 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

- Below normal streamflow percentiles were observed along the Pomme de Terre River in southwest Missouri and the Marmaton and Little Osage Rivers in southeast Kansas and west central Missouri.
- Above normal streamflow percentiles were observed along the Big Piney River in south central Missouri. All other basins had near normal streamflows.

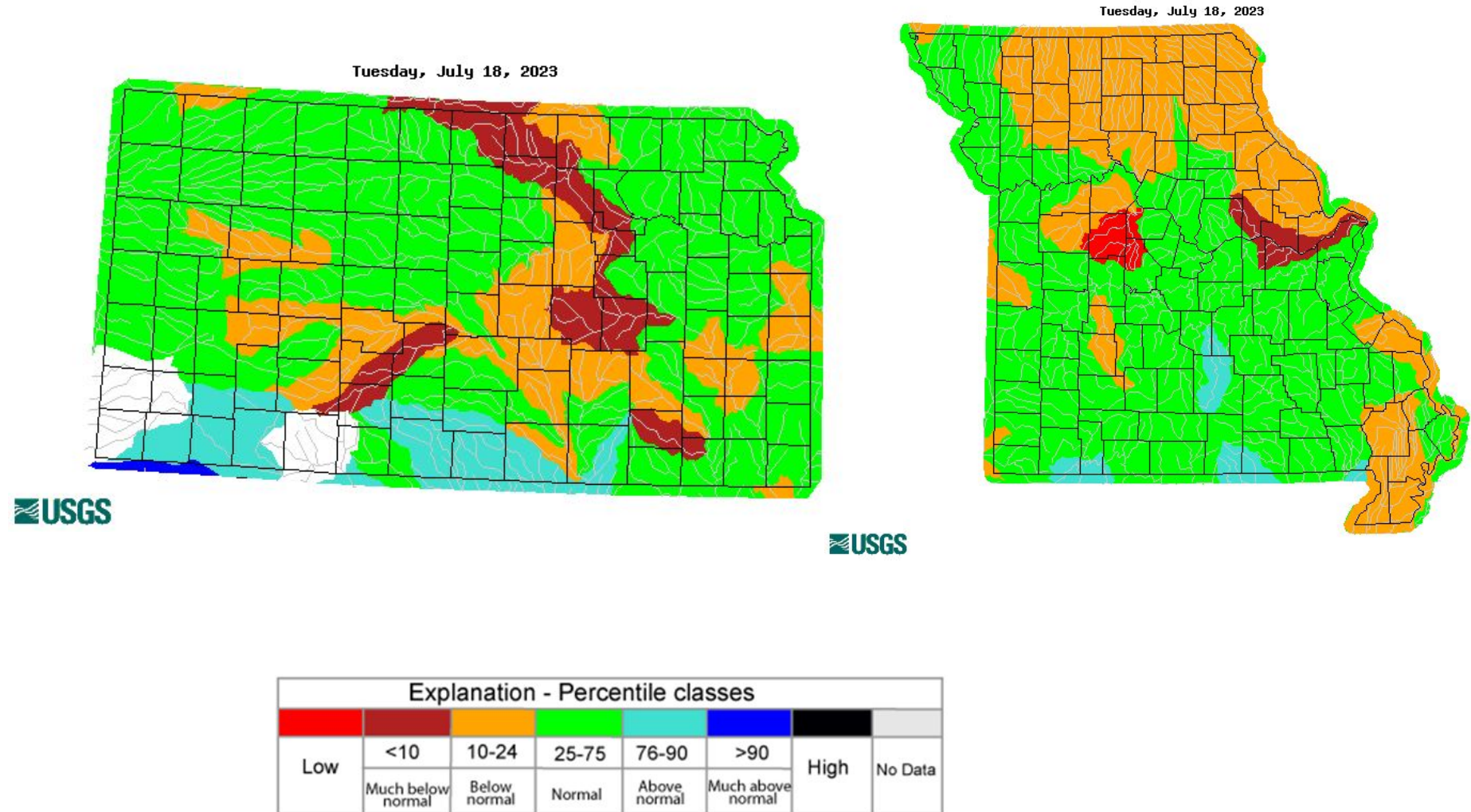
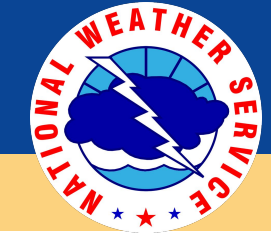


Image Caption: USGS 7 day average streamflow HUC map valid July 18, 2023



Agricultural Impacts

Main Takeaways

- Soil Moisture was less than the 10 percentile over much of the Missouri Ozarks and southeast Kansas.
- The Crop Moisture Index was unusually dry over west central Missouri.

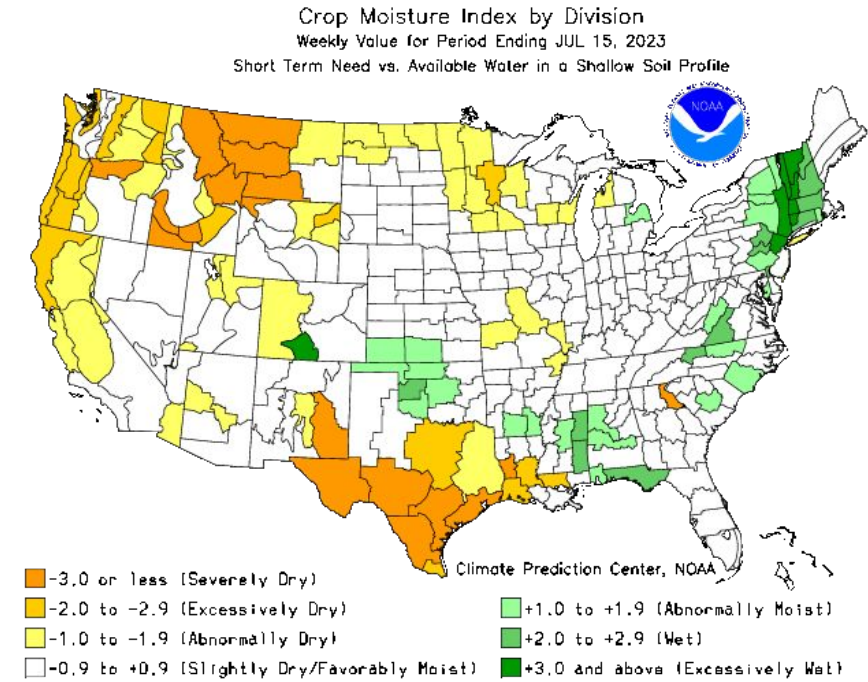
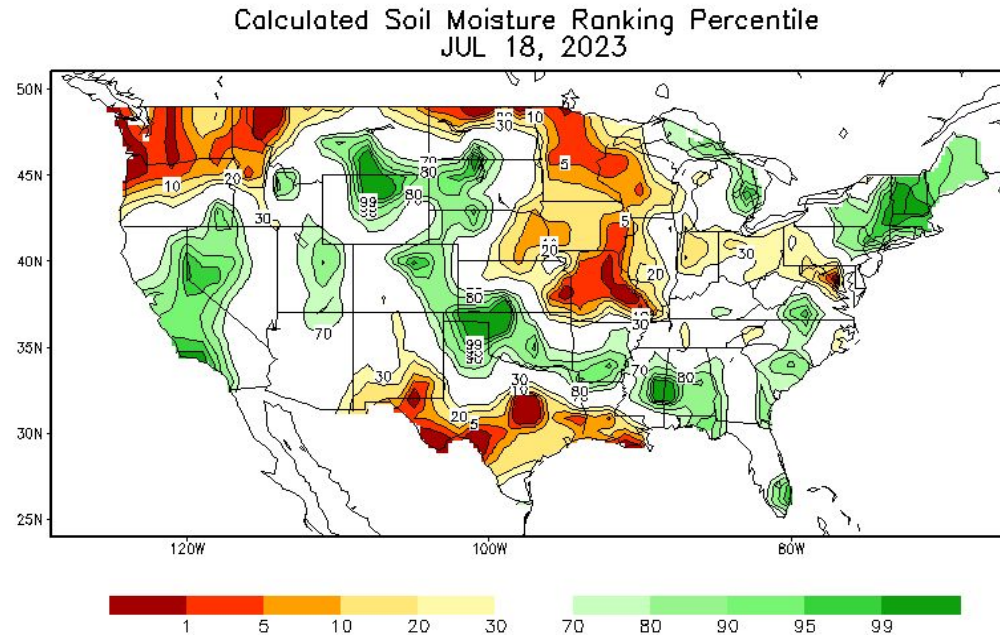
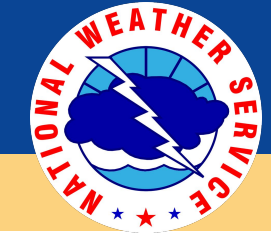


Image Captions:

Left: CPC Calculated [Soil Moisture Ranking Percentile](#) valid July 18, 2023

Right: [Crop Moisture Index by Division](#). Weekly value for period ending July 15, 2023





Seven Day Precipitation Forecast

- Next 7 days:
 - Average rainfall accumulations are expected to range from around one tenth of an inch over southern Missouri and southeast Kansas, to around one inch over central Missouri

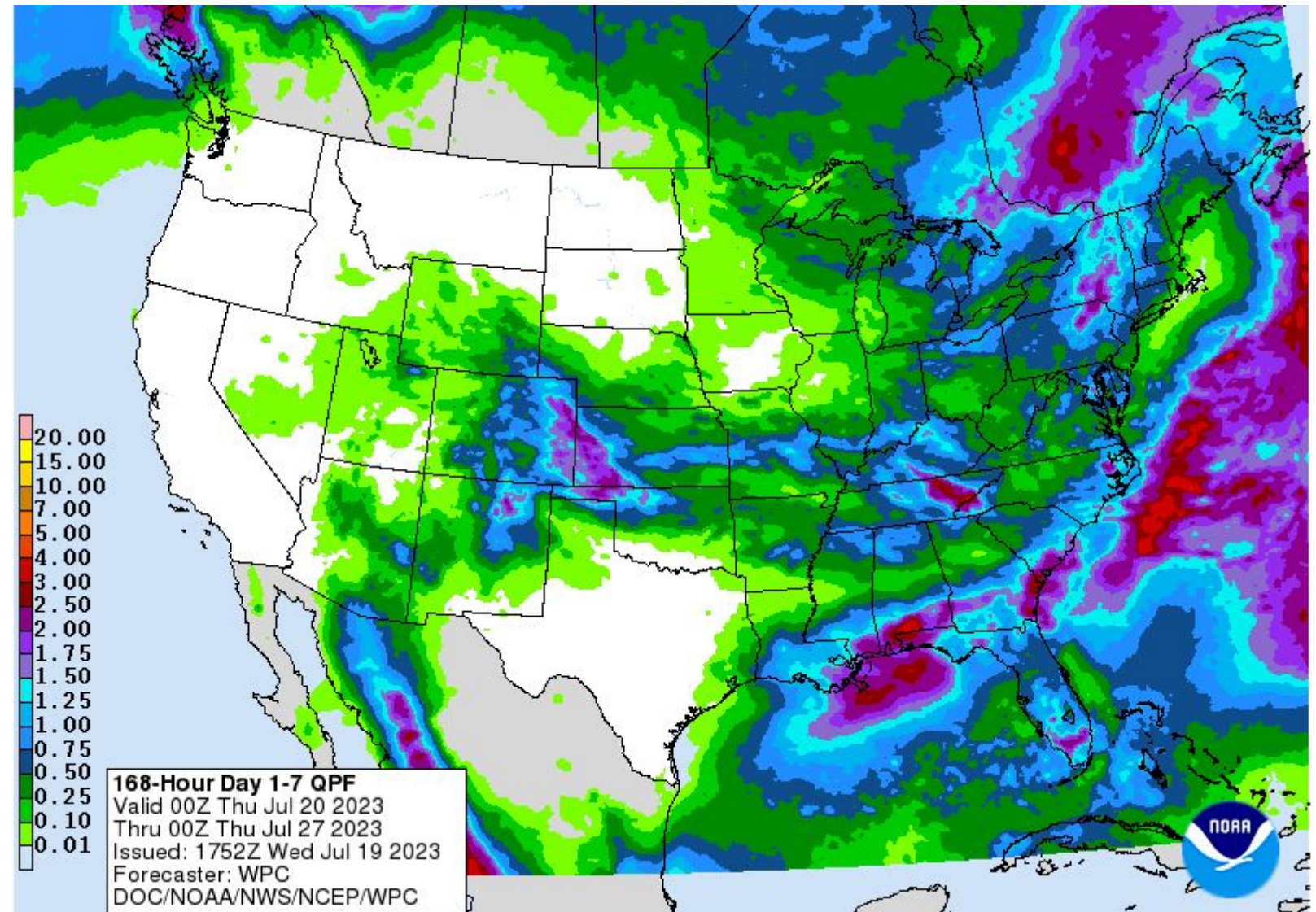
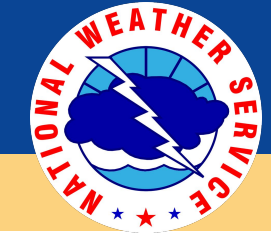


Image Caption: Weather Prediction Center [7-day precipitation forecast](#) valid Thursday July 20 to Thursday July 27, 2023.



6-10 Day Outlook

Temperature and Precipitation Outlook

Main Takeaways

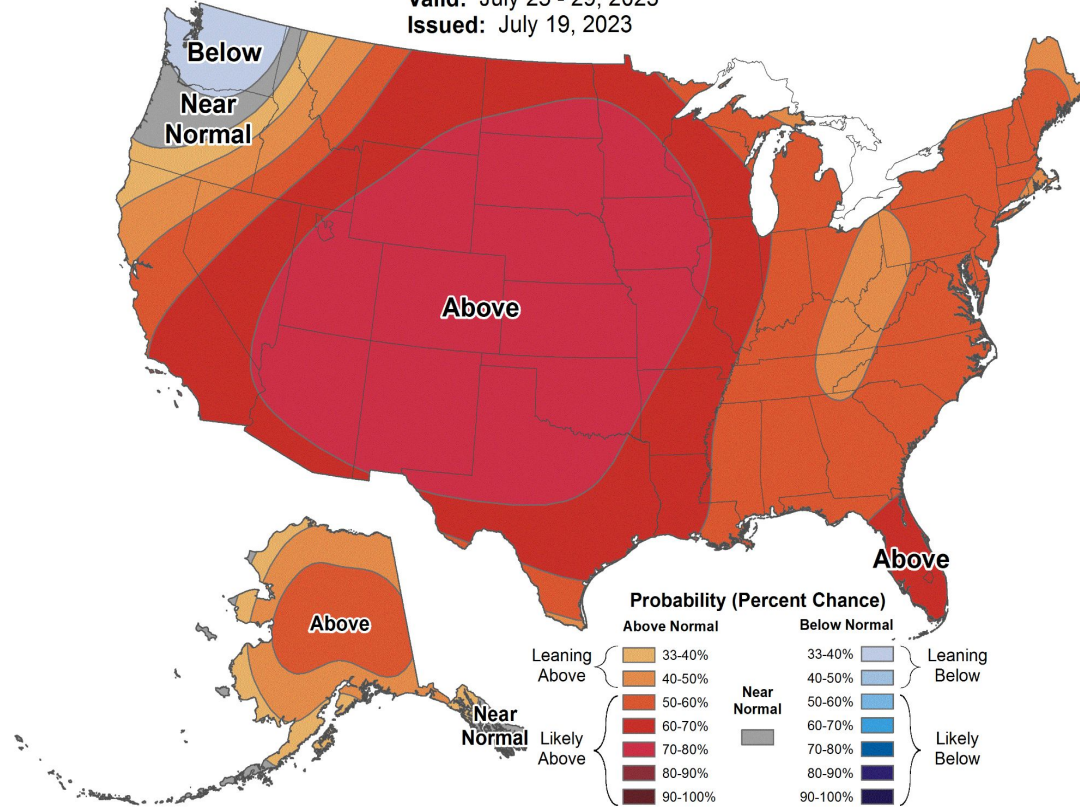
- Above normal temperatures are favored over the Missouri Ozarks and southeast Kansas.
- Below normal precipitation is favored.



6-10 Day Temperature Outlook



Valid: July 25 - 29, 2023
Issued: July 19, 2023



6-10 Day Precipitation Outlook



Valid: July 25 - 29, 2023
Issued: July 19, 2023

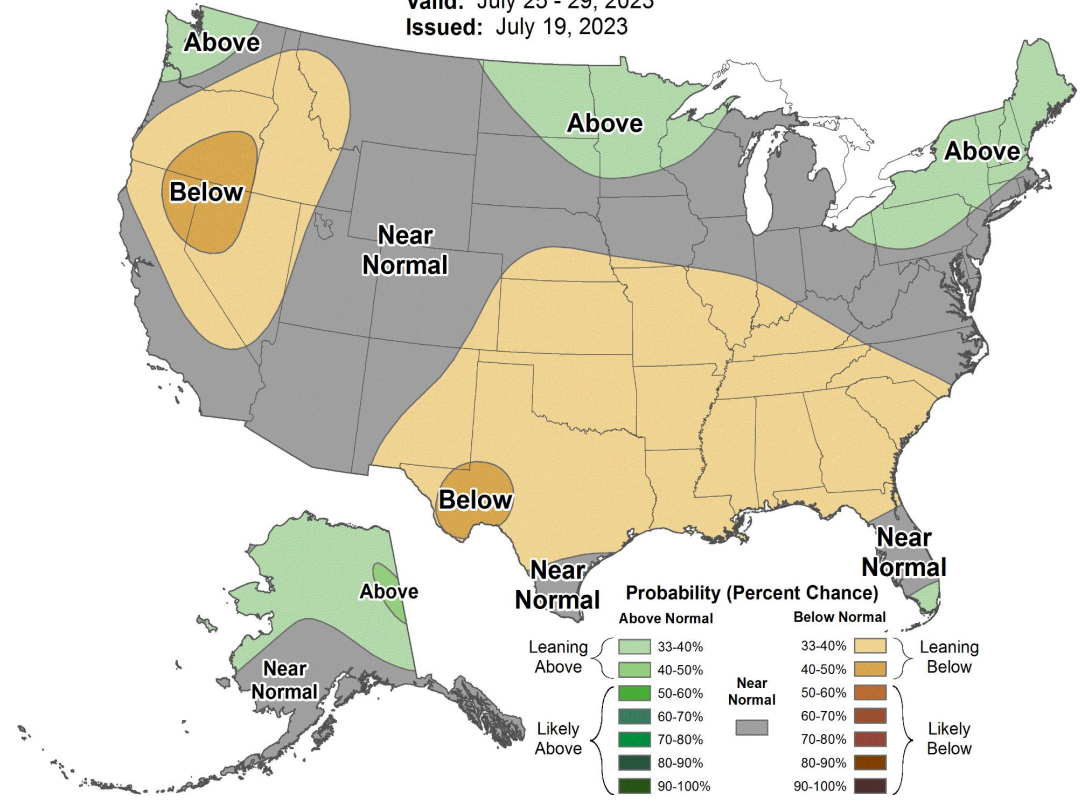
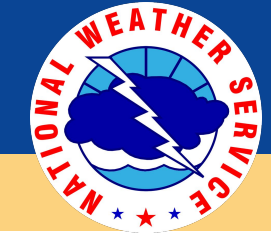


Image Captions:
 Left - [Climate Prediction Center 6-10 Day Temperature Outlook.](#)
 Right - [Climate Prediction Center 6-10 Day Precipitation Outlook.](#)
 Valid July 25 to 29.





8-14 Day Outlook

Temperature and Precipitation Outlook

Main Takeaways

- Above normal temperatures are favored over the Missouri Ozarks and southeast Kansas.
- Below normal precipitation is favored over southwest Missouri and southeast Kansas.
- Near normal precipitation is favored over central and south central Missouri,

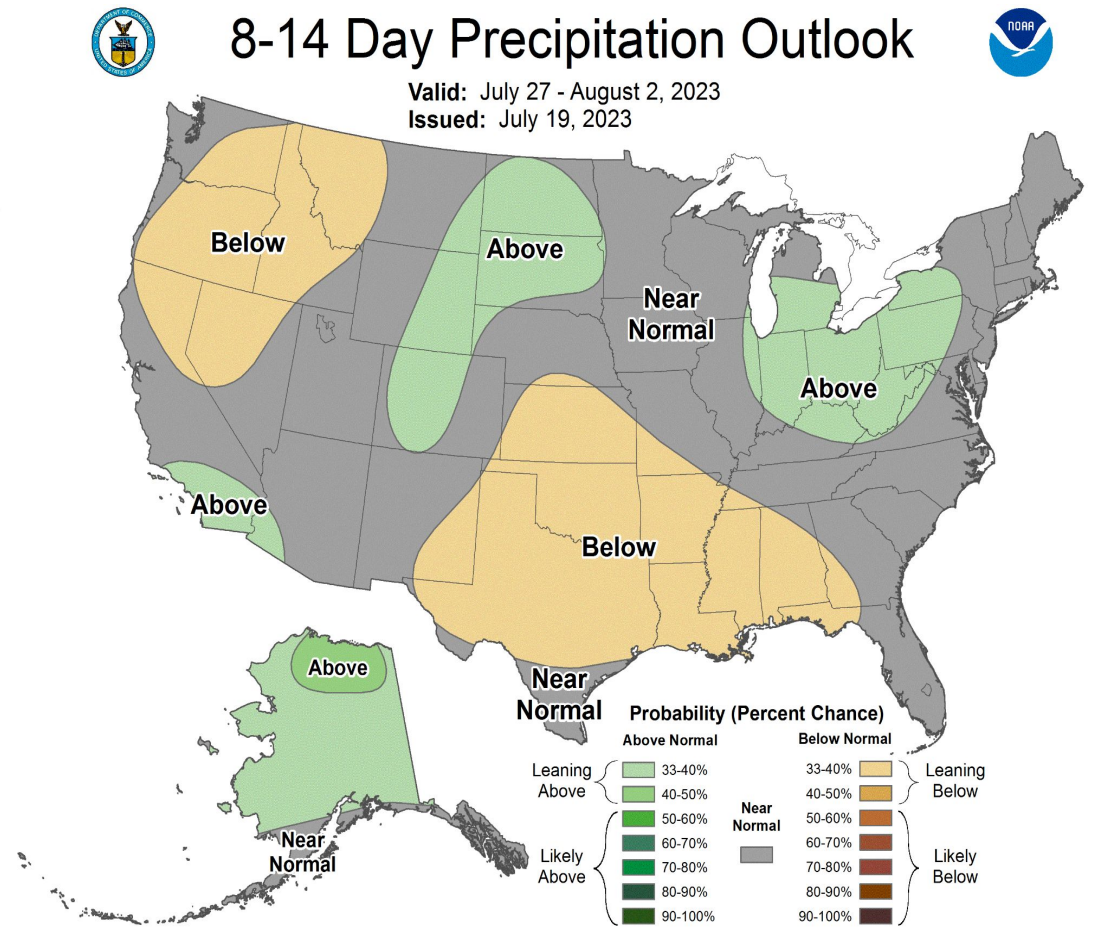
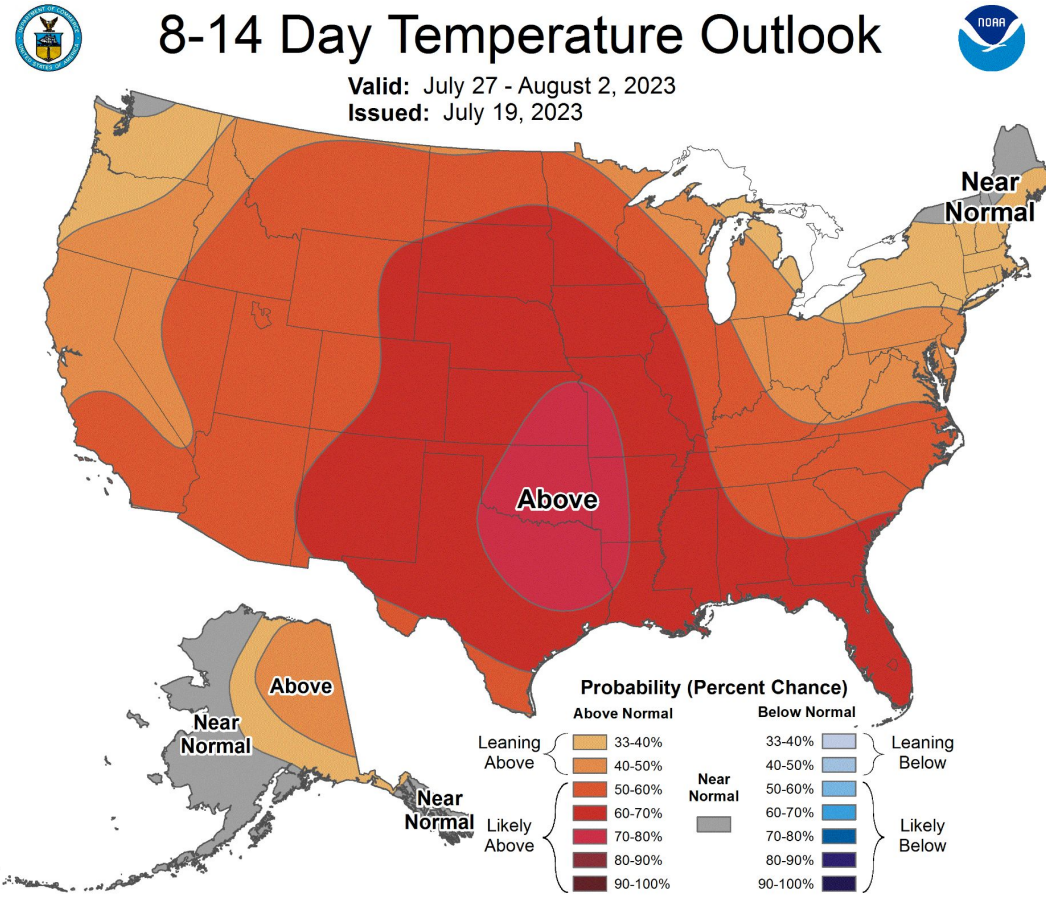
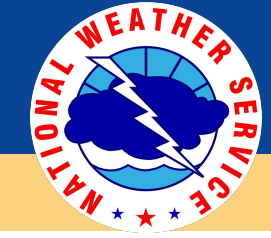


Image Captions:
 Left - [Climate Prediction Center 8-14 Day Temperature Outlook.](#)
 Right - [Climate Prediction Center 8-14 Day Precipitation Outlook.](#)
 Valid July 27 to August 2, 2023.



Seasonal Climate Outlook

Seasonal Temperature and Precipitation Outlook

Main Takeaways

- Above normal temperatures are favored through the end of September.
- Above normal precipitation is favored through the end of September.

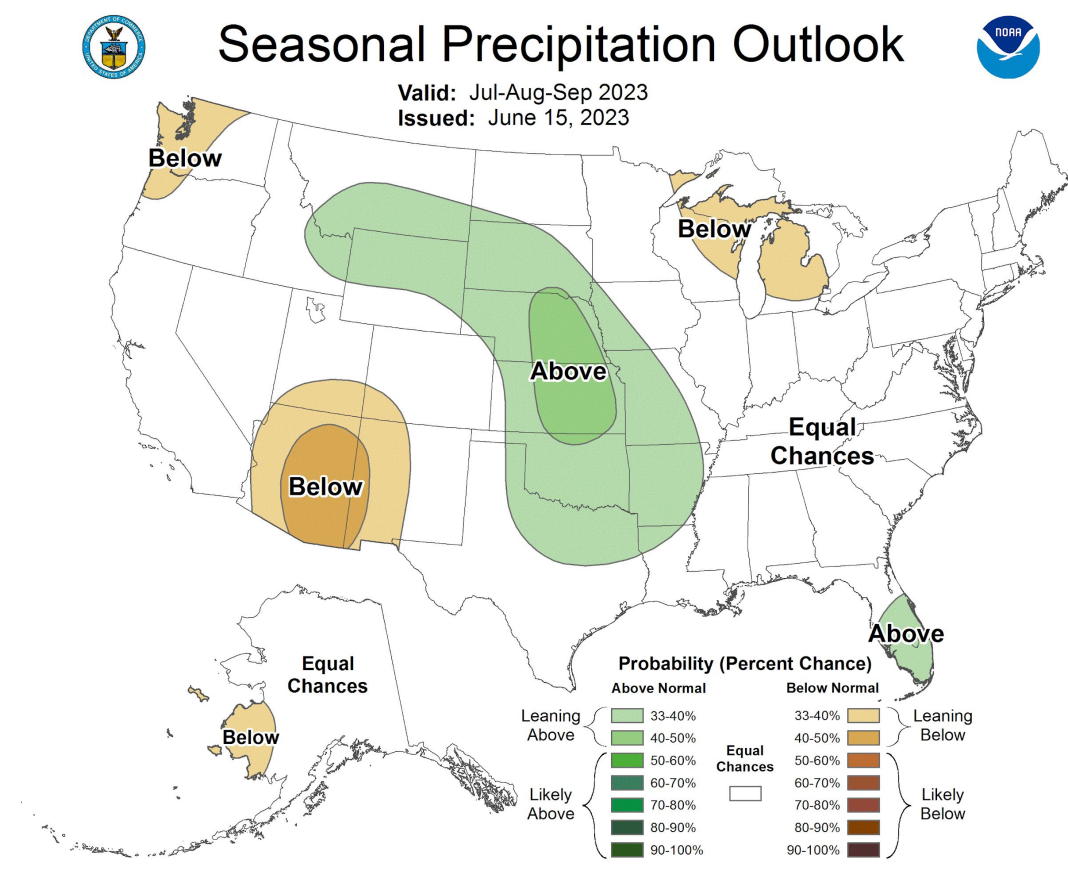
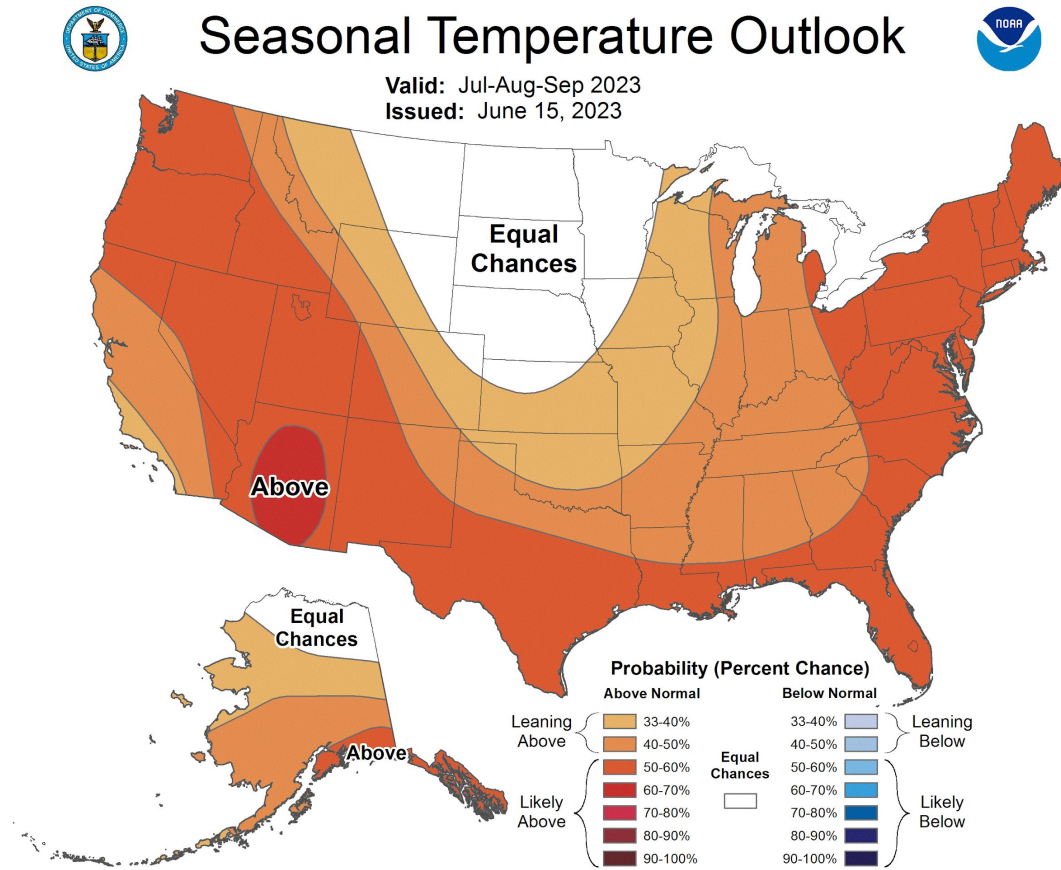
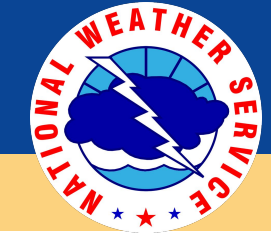


Image Captions:
 Left - [Climate Prediction Center Seasonal Temperature Outlook](#).
 Right - [Climate Prediction Center Seasonal Precipitation Outlook](#).

Valid July to September 2023.



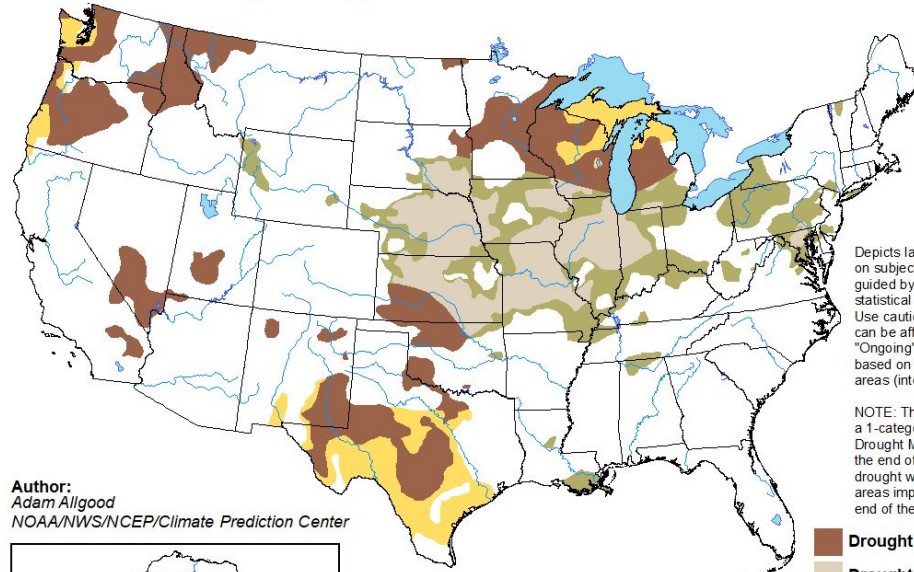
Drought Outlook

Main Takeaways

- Drought is expected to persist but improve through the rest of July.
- Drought is expected to continue but improve through the end of September.

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

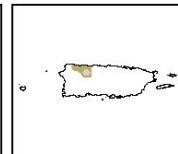
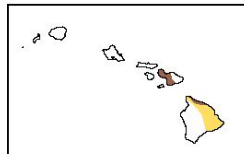
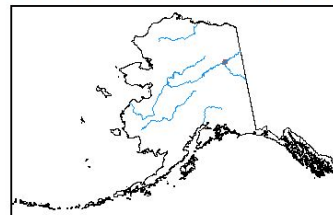
Valid for July 2023
Released June 30, 2023



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



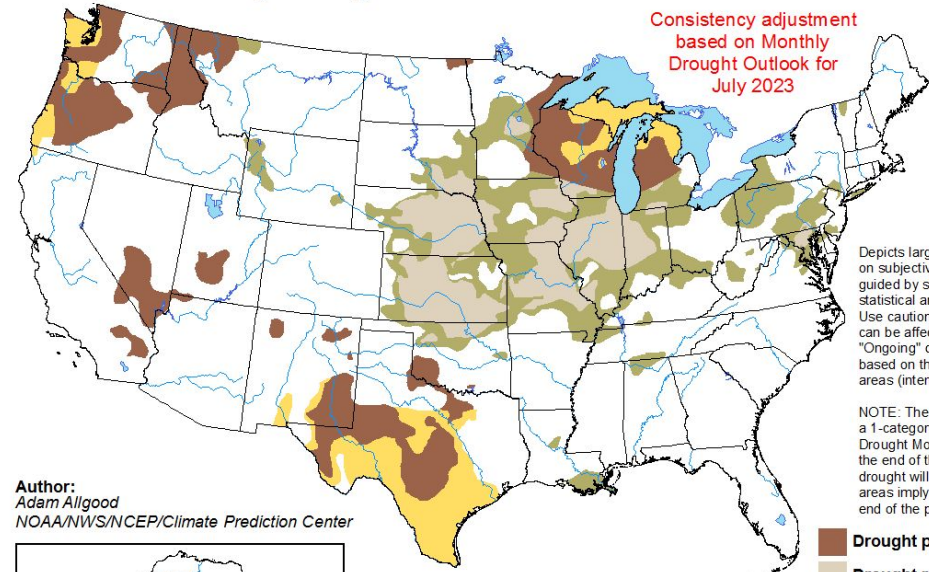
- Drought persists
- Drought remains but improves
- Drought removal likely
- Drought development likely



<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

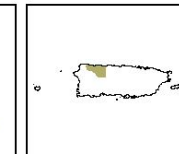
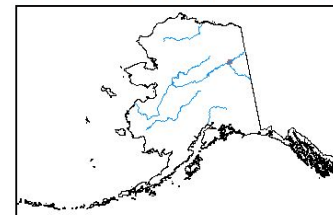


Consistency adjustment
based on Monthly
Drought Outlook for
July 2023

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/3eZ73>

Image Captions:

Left - Climate Prediction Center Monthly Drought Outlook Released June 30, 2023 valid for July 2023

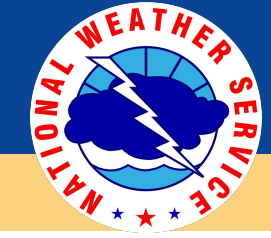
Right - Climate Prediction Center Seasonal Drought Outlook Released June 30, 2023 valid for July - September 2023.



National Oceanic and
Atmospheric Administration

U.S. Department of Commerce

National Weather Service
Springfield, MO

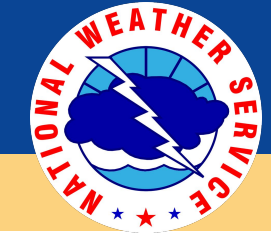


Drought Classification

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

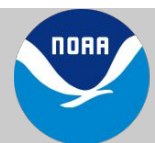
Practice Fire Prevention

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