



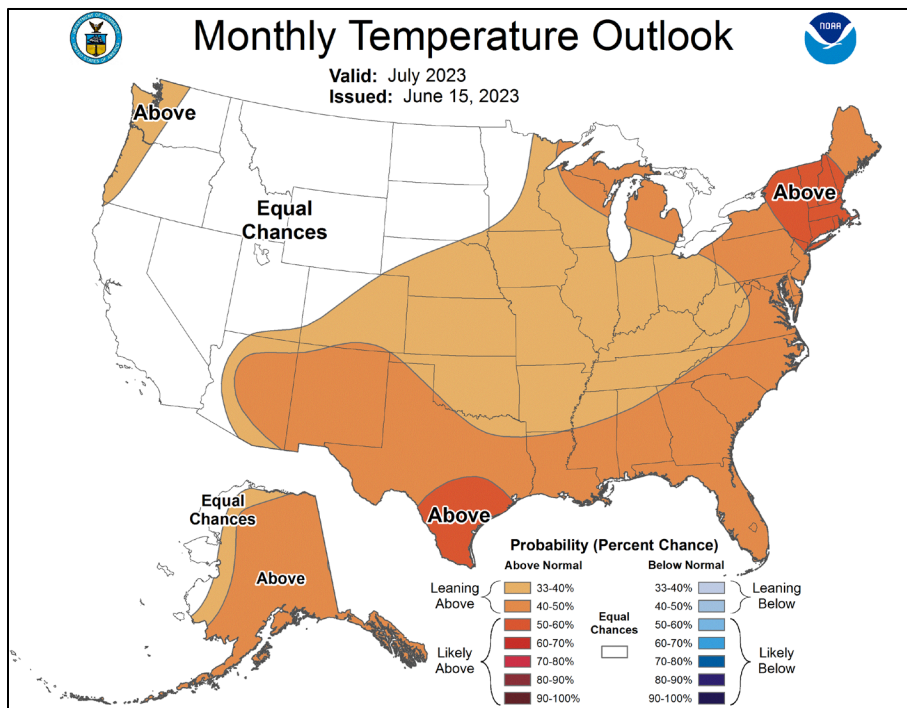
Water and Climate Update

June 22, 2023

The Natural Resources Conservation Service produces this weekly report using data and products from the [National Water and Climate Center](#) and other agencies. The report focuses on seasonal snowpack, precipitation, temperature, and drought conditions in the U.S.

Precipitation	2	Other Climatic and Water Supply Indicators	12
Temperature.....	6	More Information	18
Drought	8		

Early-summer heat wave hits the southern U.S.



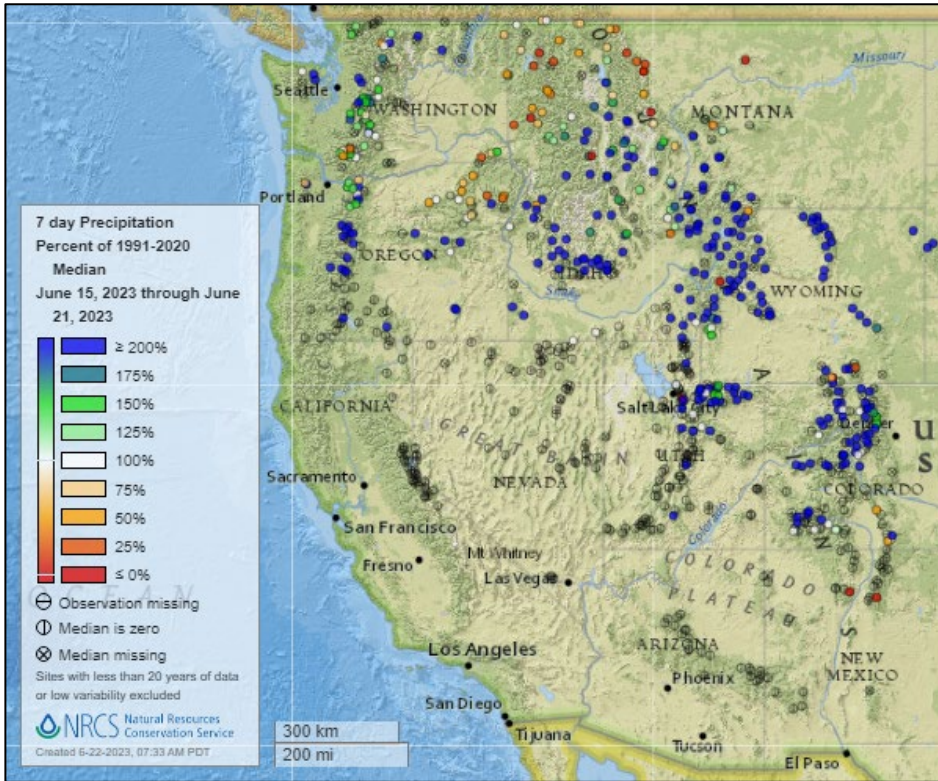
Summer heat in Texas and neighboring states is typical, but this June brought unusually hot days with overnight temperatures offering little relief. Locations such as San Angelo, Texas set a record high of 114°F on June 20. Recent severe weather, including tornadoes, moved through parts of the South, downing power lines and leaving hundreds of thousands of residents without power as demand surges in the region due to the excessive heat. The above-average temperatures are expected to continue through July according to the Climate Prediction Center Monthly Temperature Outlook.

Related:

- [‘Oppressive’ and ‘unbearable’ heat wave scorches Texas, with no end in sight](#) – USA Today
- [Sweltering heat tests Texas’ power grid and patience as thousands in South still without electricity](#) – AP News
- [What’s scare about this Texas heat wave? It’s not cooling down at night like it used to.](#) – San Antonio News Express News (TX)
- [The troubling heat in Texas and its ties to climate change in 5 maps](#) – Washington Post
- [At least 4 dead in Texas after severe storms bring tornadoes and tennis ball-sized hail to western and central US](#) – CNN

Precipitation

Last 7 Days, NRCS SNOTEL Network

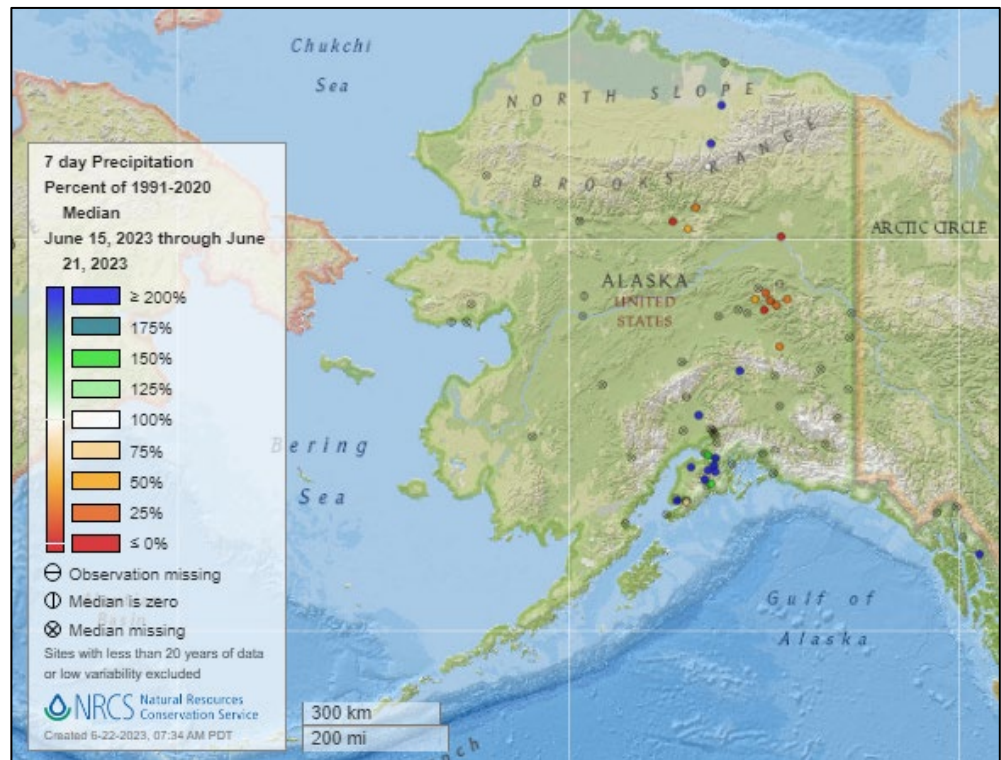


[7-day precipitation percent of median map](#)

See also:
[7-day total precipitation values \(inches\) map](#)

[Alaska 7-day precipitation percent of median map](#)

See also:
[Alaska 7-day total precipitation values \(inches\) map](#)



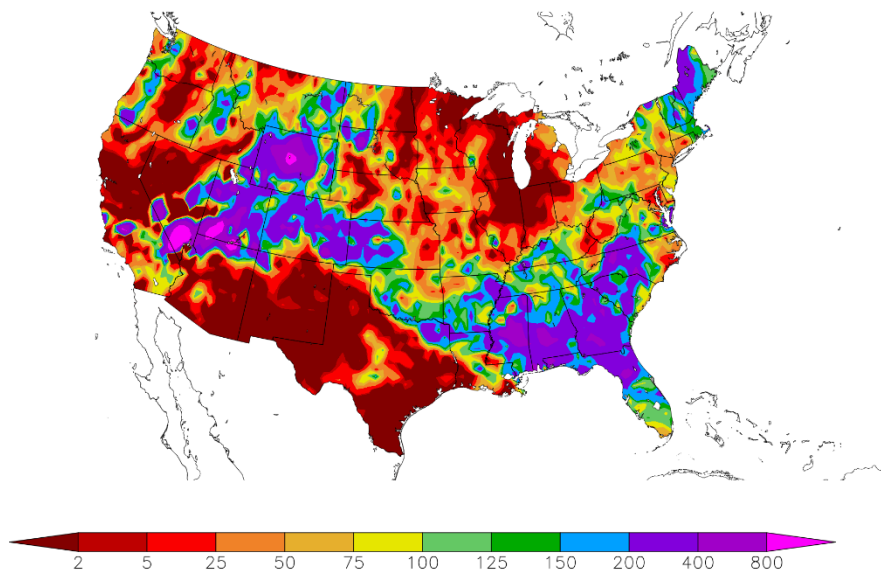
Last 7 Days, National Weather Service (NWS) Networks

Source: Regional Climate Centers

[7-day precipitation percent of normal map](#) for the continental U.S.

See also: [7-day total precipitation values \(inches\) map](#)

Percent of Normal Precipitation (%)
6/15/2023 – 6/21/2023



Generated 6/22/2023 at HPRCC using provisional data.

NOAA Regional Climate Centers

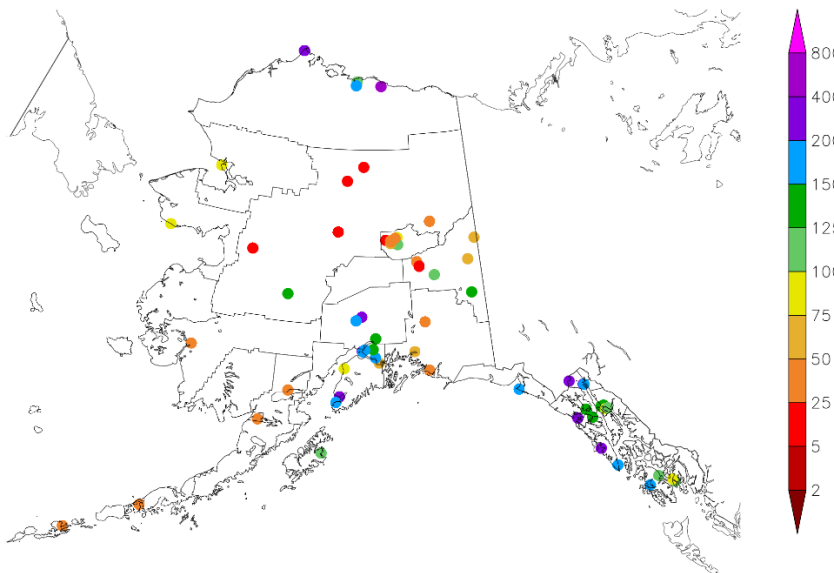
Last 7 Days, National Weather Service (NWS) Networks

Source: Regional Climate Centers

[7-day precipitation percent of normal map](#) for Alaska.

See also: [7-day total precipitation values \(inches\) map](#)

Percent of Normal Precipitation (%)
6/15/2023 – 6/21/2023



Generated 6/22/2023 at HPRCC using provisional data.

NOAA Regional Climate Centers

Month-to-Date, All Available Data Including SNOTEL and NWS Networks

Source: PRISM

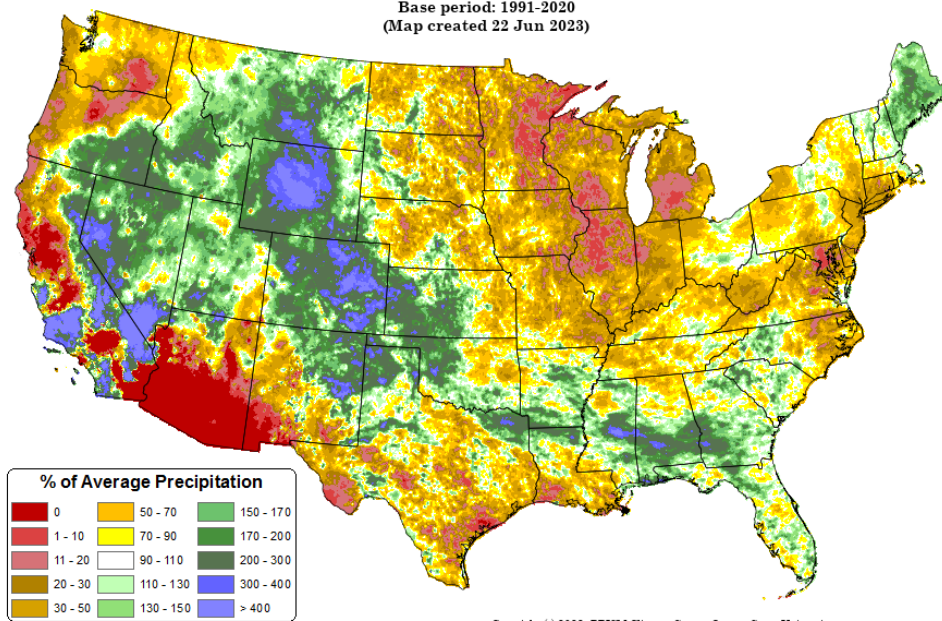
Total Precipitation Anomaly: 01 Jun 2023 - 21 Jun 2023

Period ending 7 AM EST 21 Jun 2023

Base period: 1991-2020

(Map created 22 Jun 2023)

[Month-to-date national total precipitation anomaly map](#)



Copyright (c) 2023, PRISM Climate Group, Oregon State University

Last 3 Months, All Available Data Including SNOTEL and NWS Networks

Source: PRISM

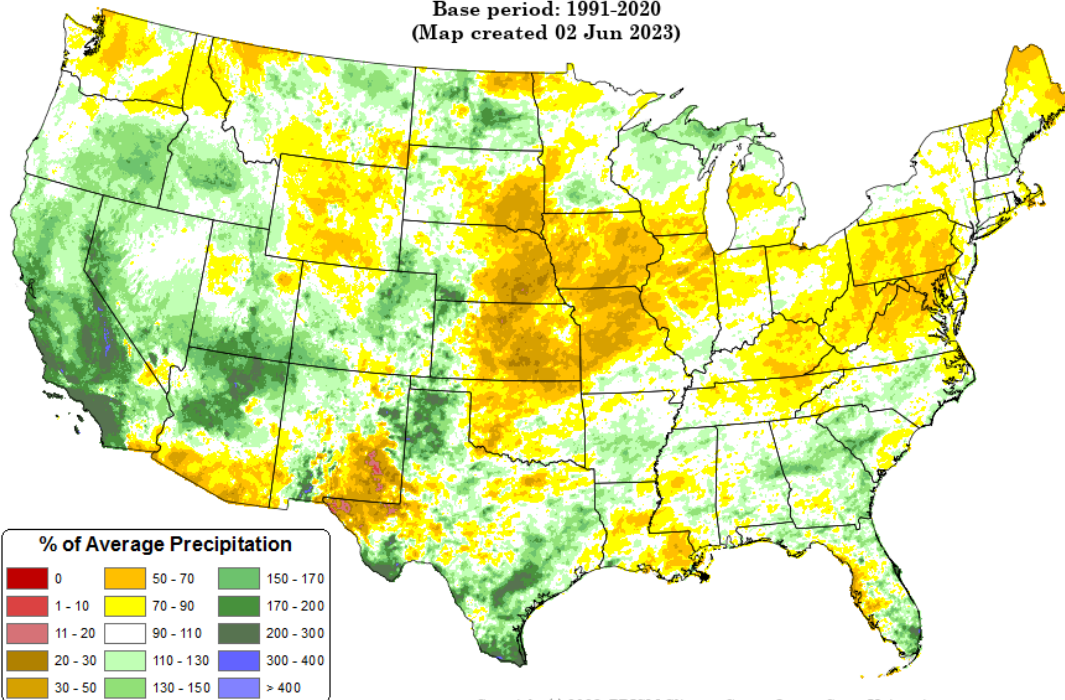
[March through May 2023 precipitation anomaly map](#)

Total Precipitation Anomaly: Mar 2023 - May 2023

Period ending 7 AM EST 31 May 2023

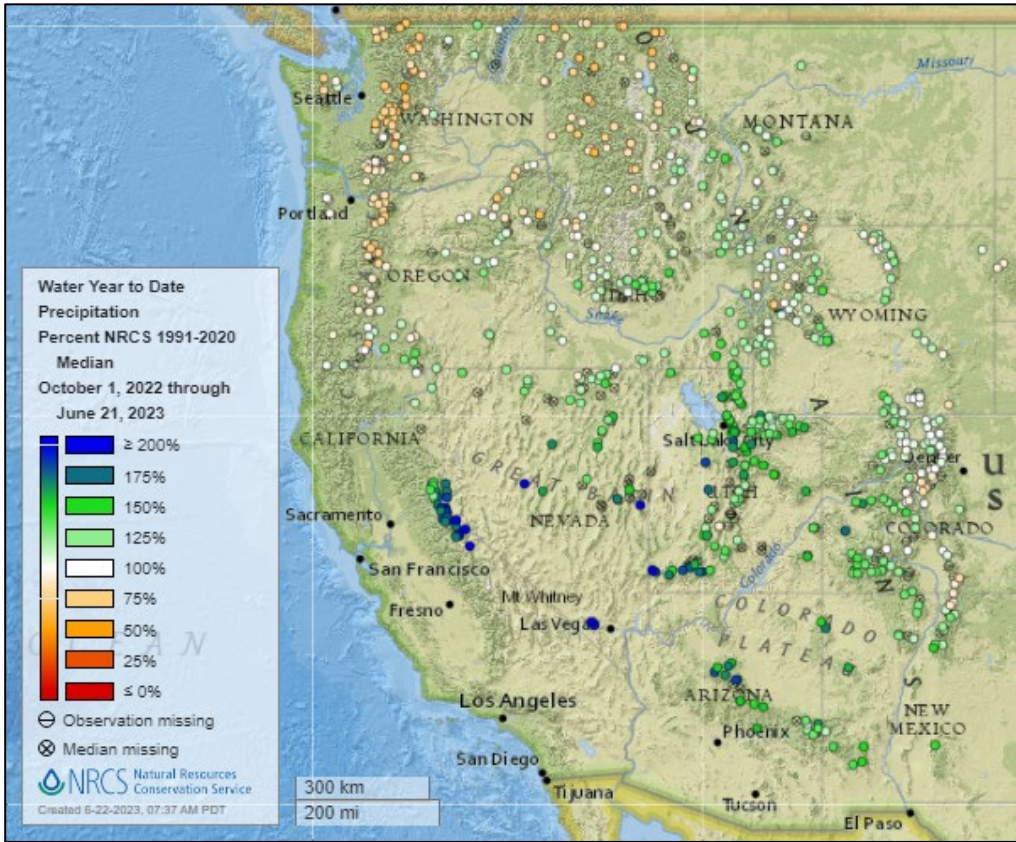
Base period: 1991-2020

(Map created 02 Jun 2023)



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Water Year-to-Date, NRCS SNOTEL Network

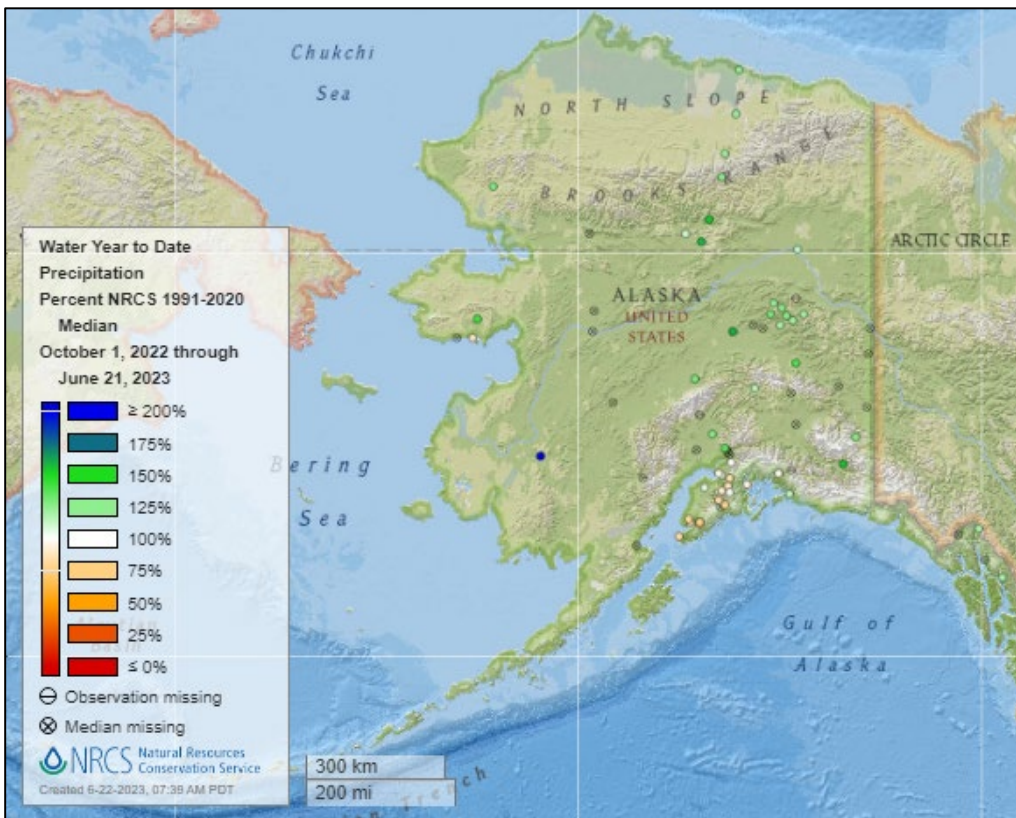


[2023 water year-to-date precipitation percent of median map](#)

See also:

[2023 water year-to-date precipitation percent of average map](#)

[2023 water year-to-date precipitation values \(inches\) map](#)



[Alaska 2023 water year-to-date precipitation percent of median map](#)

See also:

[Alaska 2023 water year-to-date precipitation percent of average map](#)

[Alaska 2023 water year-to-date precipitation values \(inches\) map](#)

Temperature

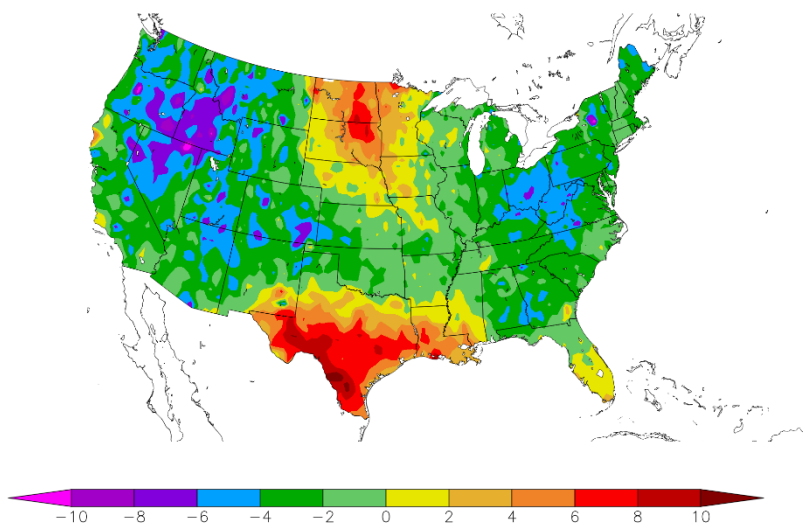
Last 7 Days, National Weather Service (NWS) Networks

Source: Regional Climate Centers

[7-day temperature anomaly map](#) for the contiguous U.S.

See also: [7-day temperature \(° F\) map](#)

Departure from Normal Temperature (F)
6/15/2023 – 6/21/2023



Generated 6/22/2023 at HPRCC using provisional data.

NOAA Regional Climate Centers

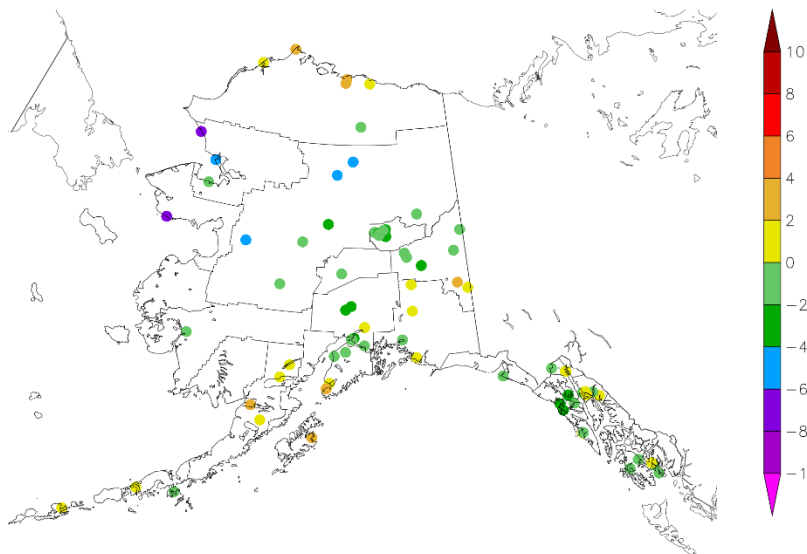
Last 7 Days, National Weather Service (NWS) Networks

Source: Regional Climate Centers

[7-day temperature anomaly map](#) for Alaska.

See also: [7-day temperature \(° F\) map](#)

Departure from Normal Temperature (F)
6/15/2023 – 6/21/2023



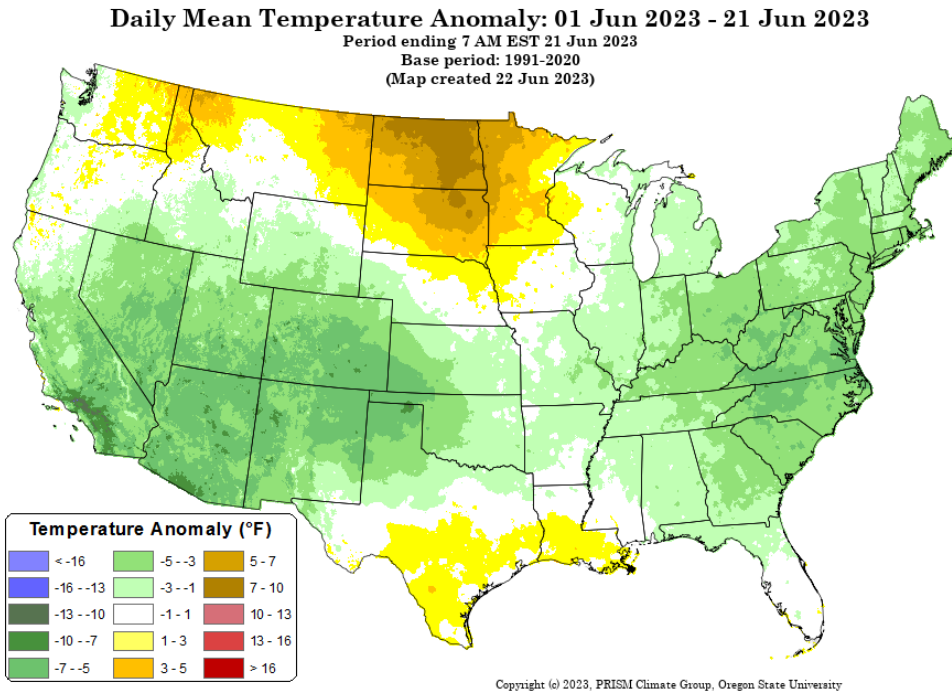
Generated 6/22/2023 at HPRCC using provisional data.

NOAA Regional Climate Centers

Month-to-Date, All Available Data Including SNOTEL and NWS Networks

Source: PRISM

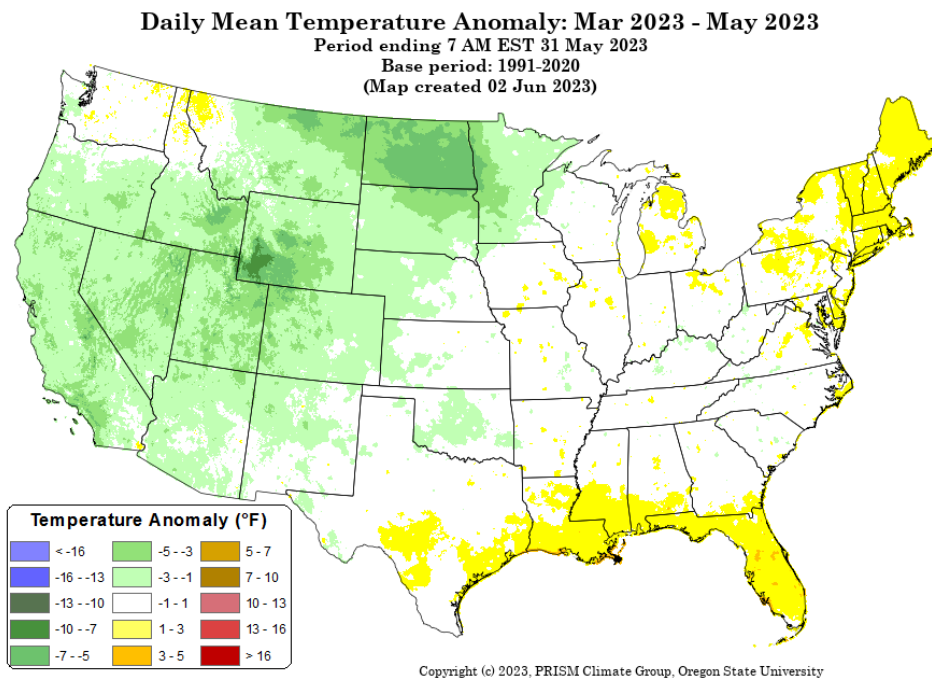
[Month-to-date national daily mean temperature anomaly map](#)



Last 3 Months, All Available Data Including SNOTEL and NWS Networks

Source: PRISM

[March through May 2023 daily mean temperature anomaly map](#)



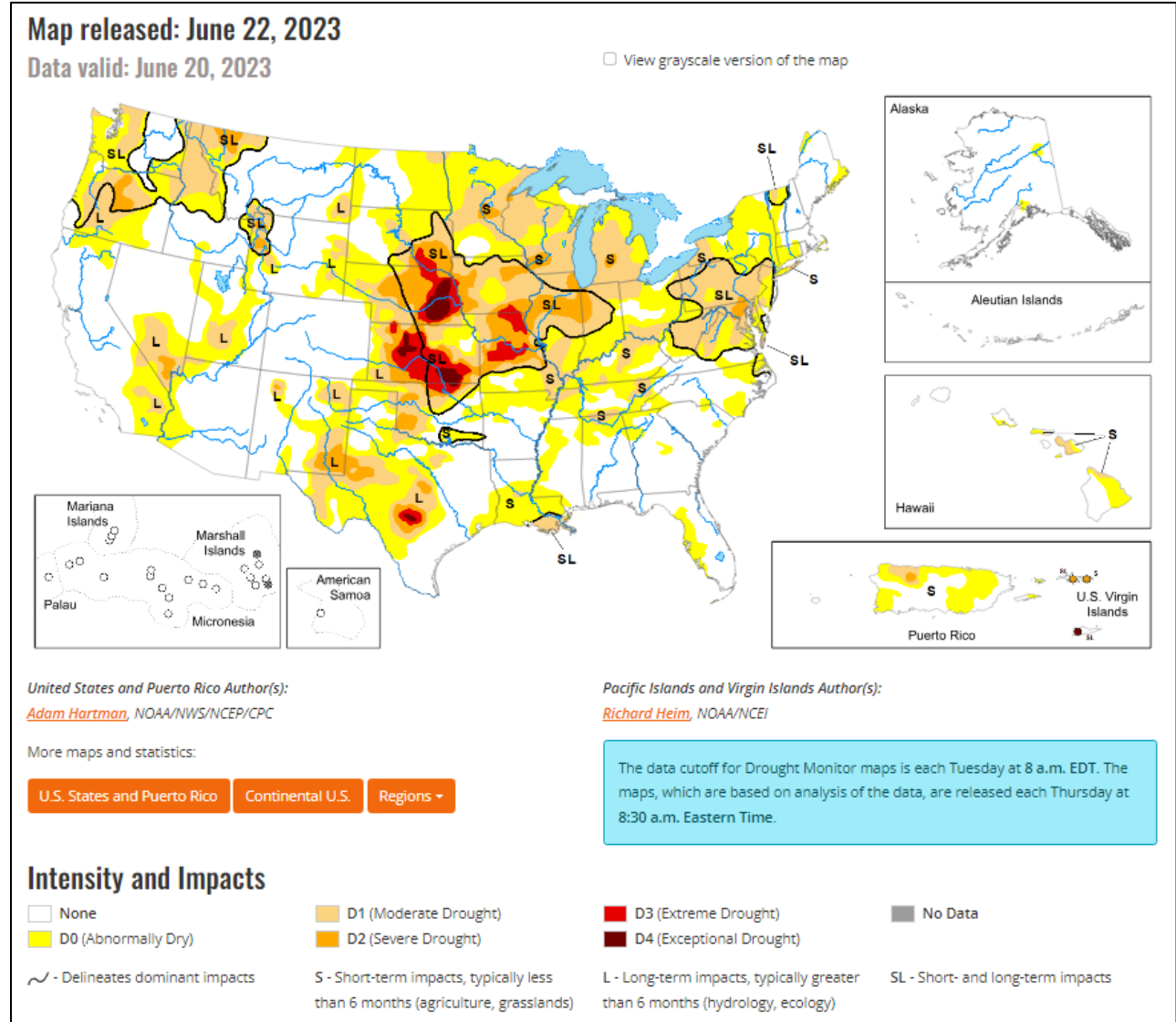
Drought

[U.S. Drought Monitor](#)

Source: National Drought Mitigation Center

[U.S. Drought Portal](#)

Source: NOAA



Current [National Drought Summary](#), June 20, 2023

Source: National Drought Mitigation Center

“Much of the lower 48 states experienced near to below normal temperatures this week, with the exception of parts of the northern Great Plains, Upper Midwest, southern Texas, and parts of the Lower Mississippi Valley. Large portions of southern Texas experienced excessive heat this week, with daytime high temperatures averaging well above 100°F for several locations. A mean frontal boundary draped across much of the lower 48 states resulted in periods of heavy rainfall across portions of the western Great Plains and Intermountain West, leading to improvements to drought conditions across much of the western half of the lower 48 states. The only exception was in the northern Cascades in Washington, where below-normal precipitation led to worsening drought conditions. Heavy rain also fell across parts of the Southeast, with many locations across the Deep South receiving in excess of 5 inches of rainfall, leading to improvements to abnormally dry and moderate drought conditions from central Mississippi southeastward to Florida. Toward the end of the weekend, a slow-moving storm system traversing eastward across the Middle Mississippi and Ohio Valleys resulted in additional periods of heavy rainfall across portions of the eastern U.S. However, much of the Mississippi and Ohio Valleys and the Northeast experienced a mix of worsening and improving drought conditions based on antecedent dryness and where the heaviest rain fell, respectively. Another round of deterioration was warranted again this week across much of the Midwest and eastern Great Plains, where below average precipitation continued to add to precipitation deficits that go back several months.”

National Drought Summary – Looking Ahead

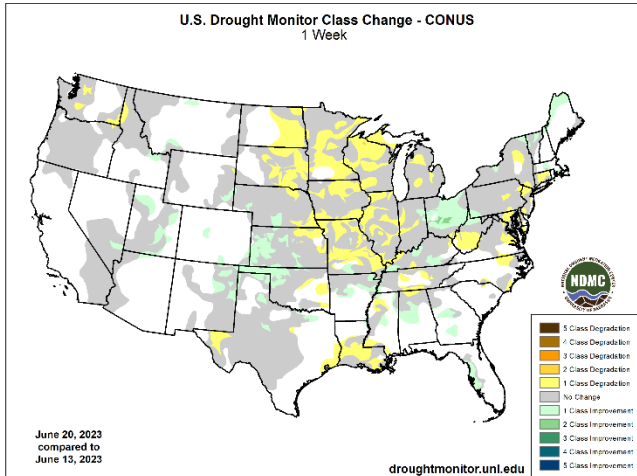
“According to the Weather Prediction Center (WPC), over the next 6 days (June 22 - 27) above normal temperatures are forecast to dissipate and become more seasonal across the Great Lakes and Middle and Upper Mississippi Valley, and become confined to the south-central U.S. Parts of the Southern Plains could see record heat this week, as temperatures are likely to soar well above 100°F for many locations, with the potential for some locations to exceed 110°F. Much of the remainder of the lower 48 states is likely to experience seasonal to below normal temperatures. WPC predicts above normal precipitation across portions of the Central and Northern Plains and Upper Midwest, with the potential for several areas to receive in excess of 3 inches of rainfall. Above normal rainfall is also expected across much of the Eastern U.S., associated with a lingering storm system helping to usher in moisture from the western Atlantic.

During the next 6 to 10 days (June 27 - July 1), the Climate Prediction Center (CPC) favors near to below normal temperatures across much of California and the central Great Basin. Near to below normal temperatures are also predicted across much of the northern tier states from the Northern Plains to the Great Lakes, and southeastward into the Mid-Atlantic. Above normal temperatures are favored in the Pacific Northwest and New England. Above normal temperatures are strongly favored across the south-central U.S., with the potential for record heat across portions of the Southern Plains and Lower Mississippi Valley. Near and above normal precipitation is favored across much of the lower 48 states. However, below normal precipitation is more likely across the Four Corners region, extending eastward into the Southern Plains and Lower Mississippi Valley.”

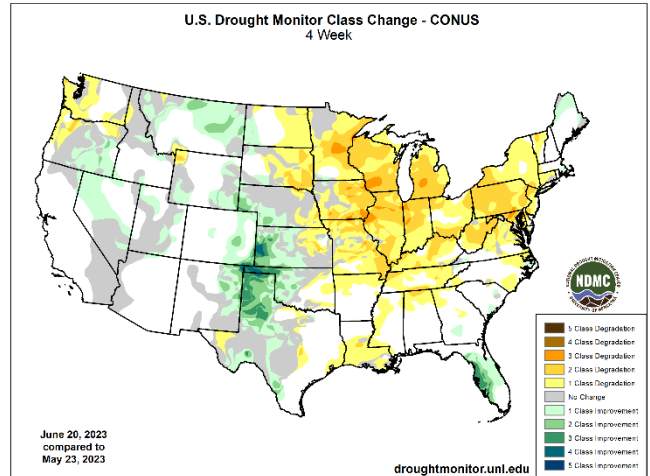
Changes in Drought Monitor Categories over Time

Source: National Drought Mitigation Center

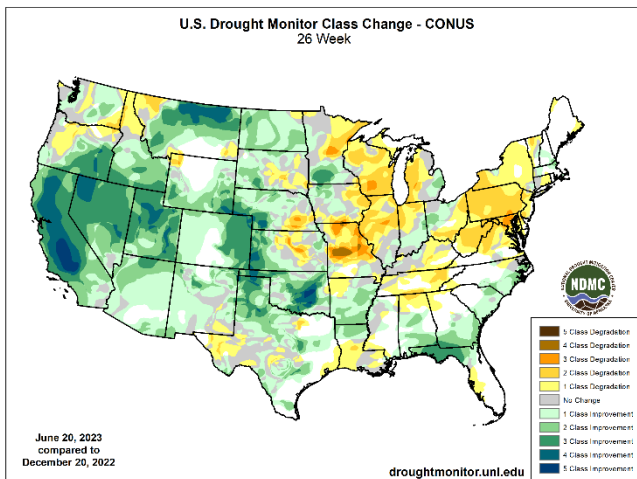
1 Week



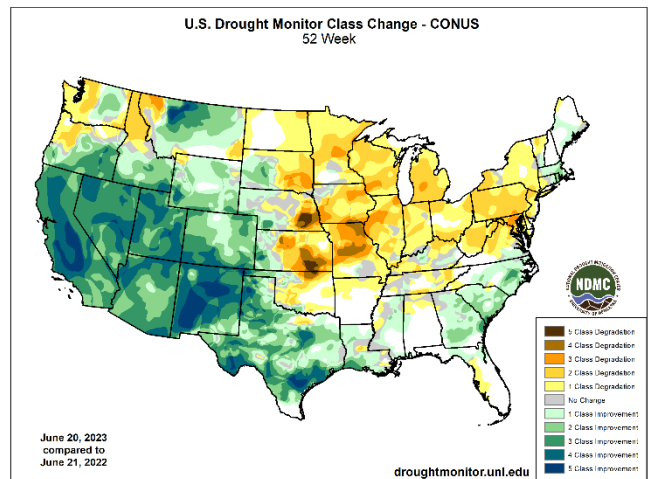
1 Month



6 Months



1 Year



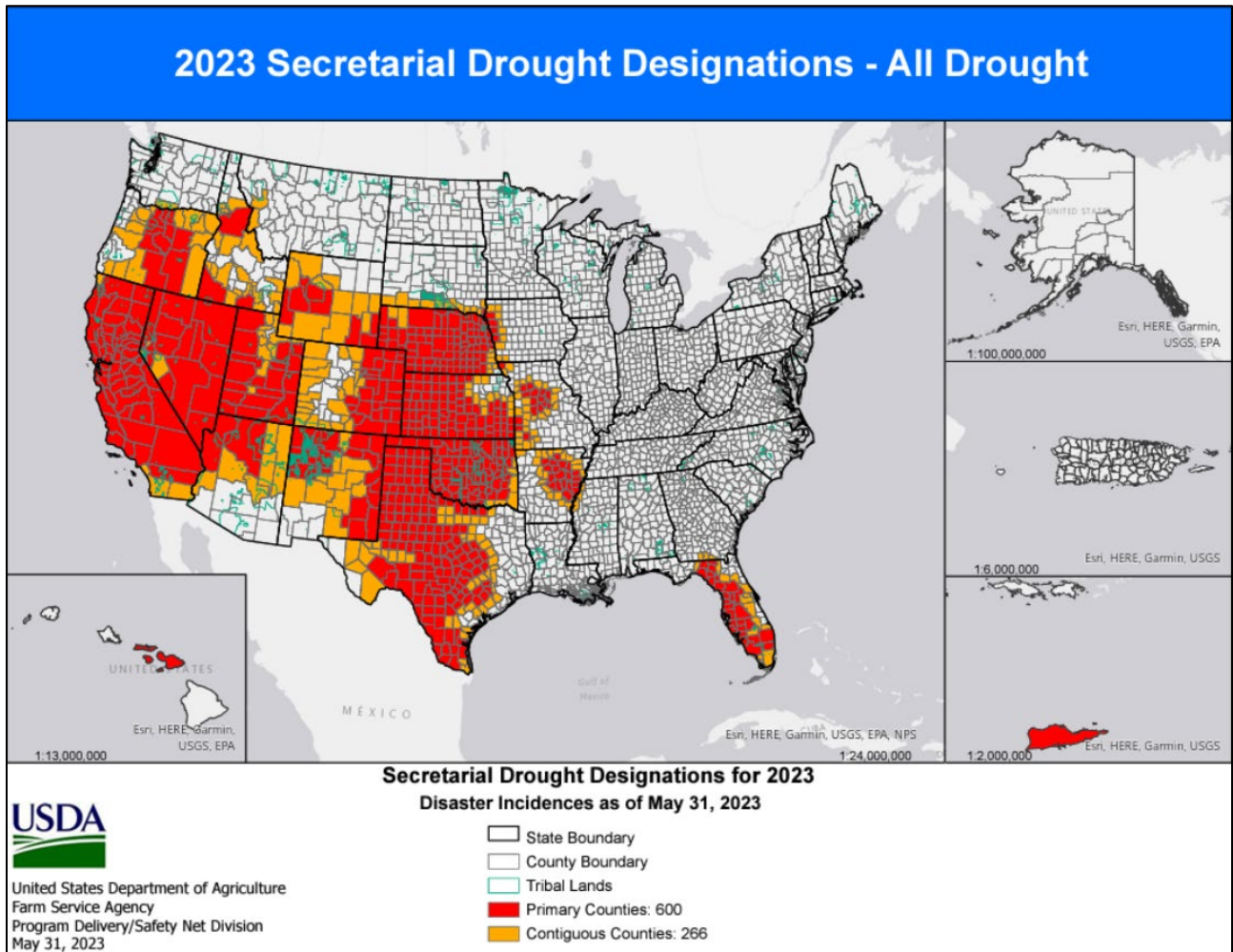
[Changes in drought conditions over the last 12 months for the contiguous U.S.](#)

Highlighted Drought Resources

- [Drought Impact Reporter](#)
- [Quarterly Regional Climate Impacts and Outlook](#)
- [U.S. Drought Portal Indicators and Monitoring](#)
- [U.S. Population in Drought, Weekly Comparison](#)
- [USDA Disaster and Drought Information](#)

USDA Secretarial [Drought Designations](#)

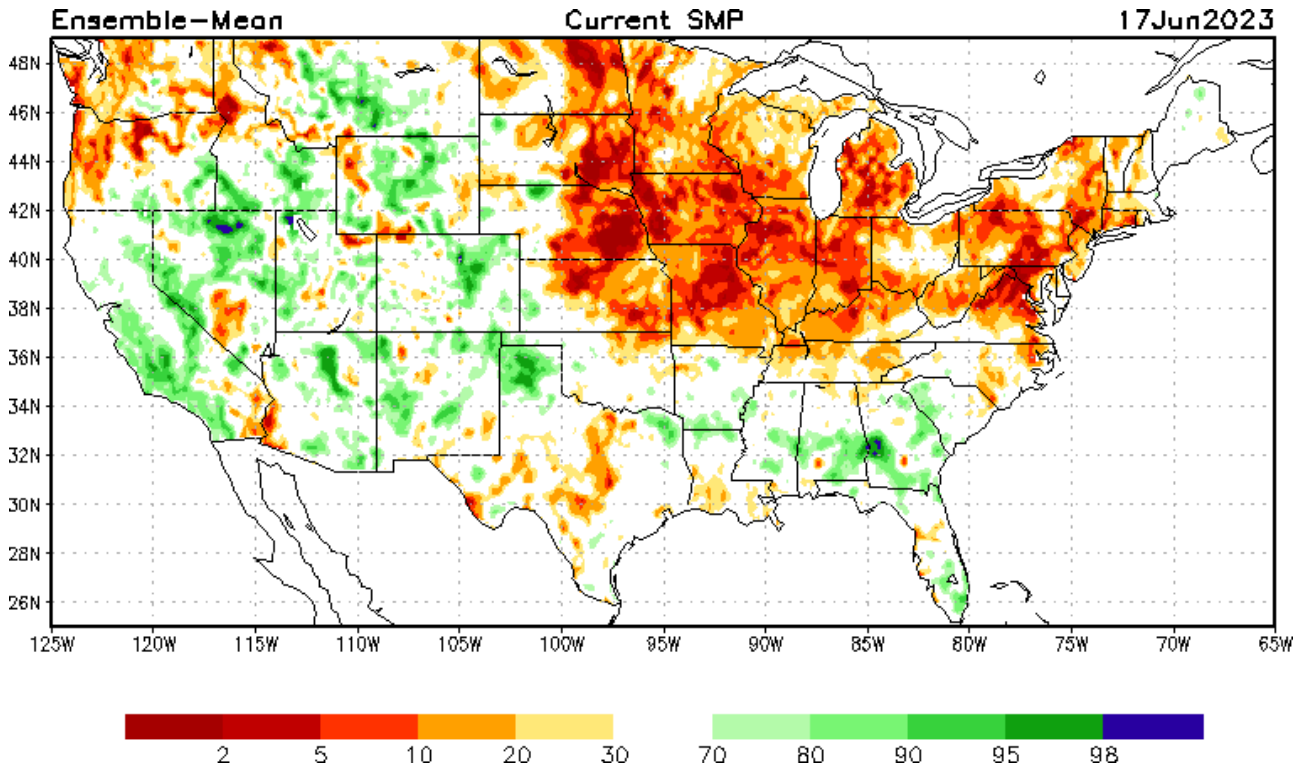
Source: USDA Farm Service Agency



Other Climatic and Water Supply Indicators

Soil Moisture

Source: NOAA National Centers for Environmental Prediction

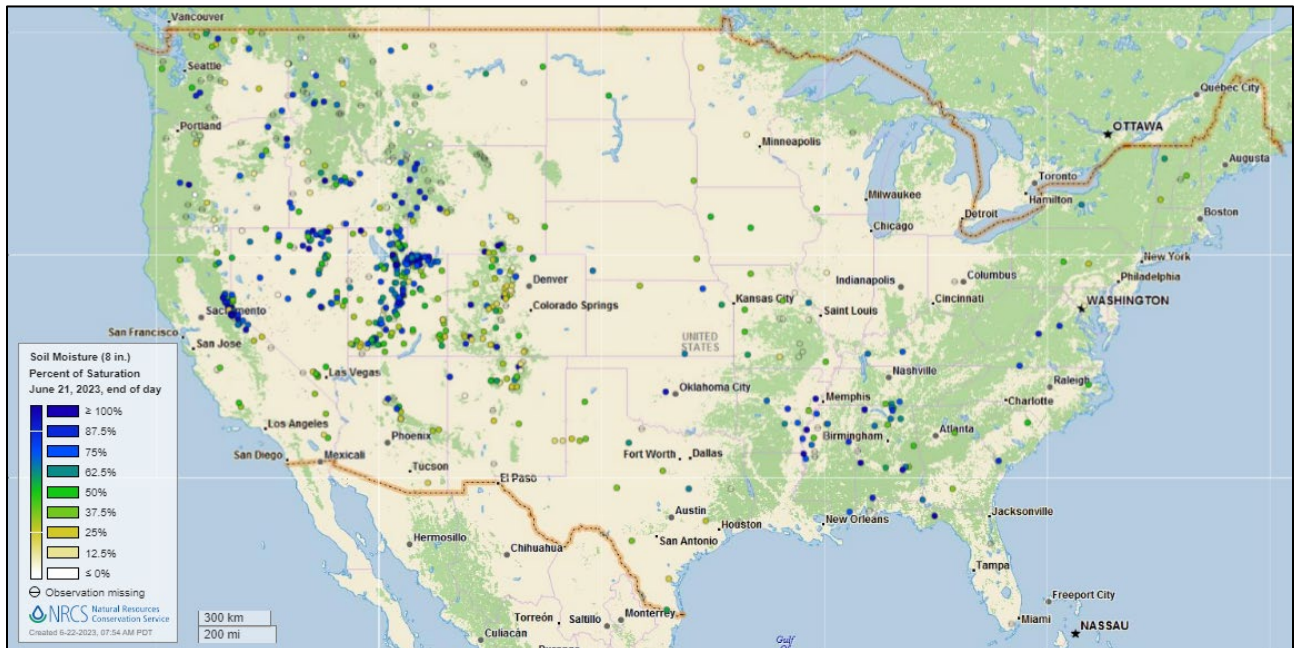


[Modeled soil moisture percentiles](#) as of June 17, 2023

Soil Moisture Percent of Saturation

Source: NRCS SNOTEL and [Soil Climate Analysis Network](#) (SCAN)

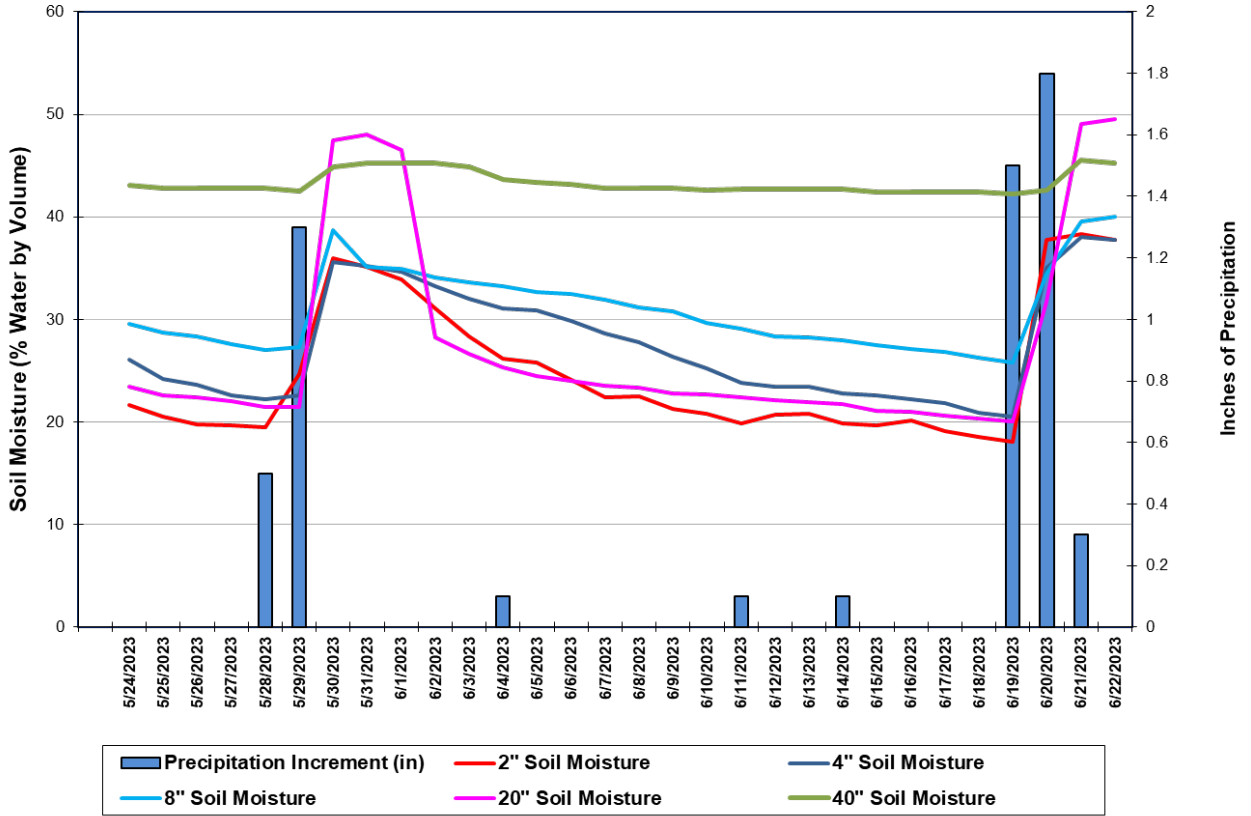
[U.S. soil moisture map at 8-inch depth:](#)



Soil Moisture

Source: NRCS [Soil Climate Analysis Network](#) (SCAN)

Reynolds Homestead, Virginia (SCAN site 2089)
Daily Mean Soil Moisture vs. Daily Precipitation



This chart shows the precipitation and soil moisture for the last 30 days at the [Reynolds Homestead](#) SCAN site in Virginia. Soil moisture levels increased at all sensor depths after the site received 1.8 inches of precipitation between May 28-29, and then steadily declined until 3.6 inches of precipitation fell on the site between June 19-21. Total precipitation for the 30-day period was 5.7 inches.

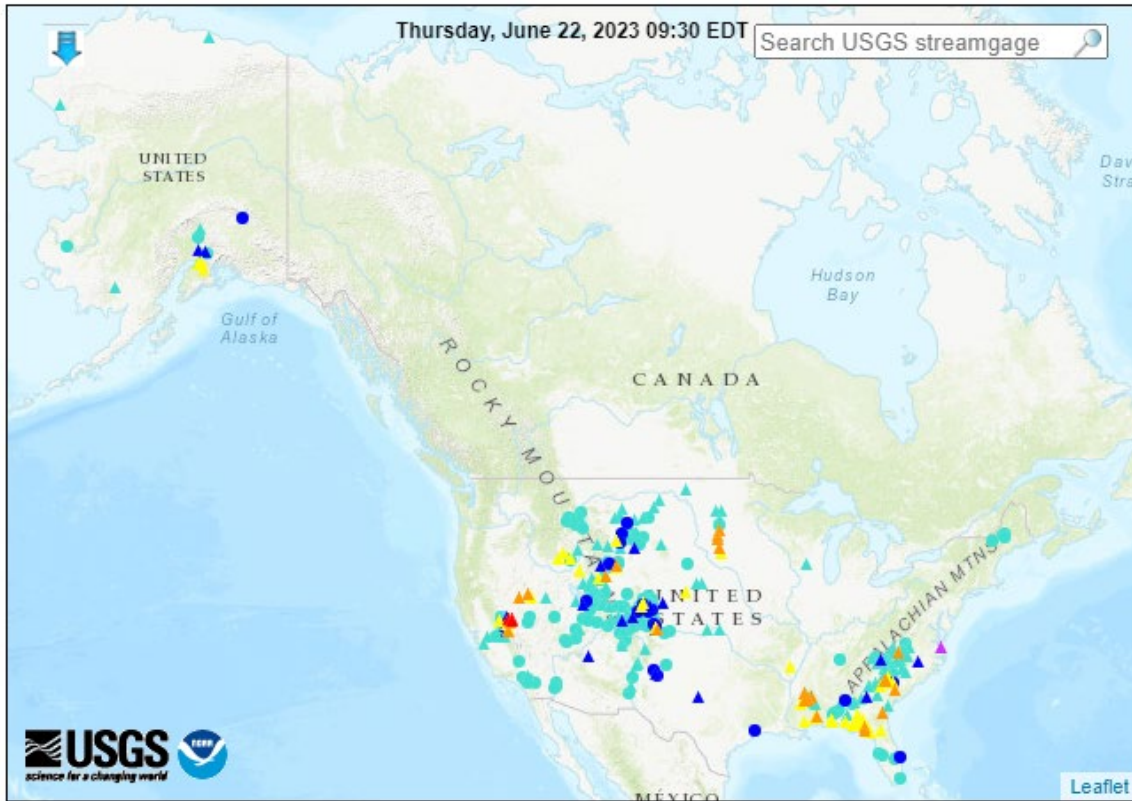
Soil Moisture Data Portals

- [USCRN Soil Moisture](#)
- [National Soil Moisture Network](#)
- [NOAA Climate Prediction Center Soil Moisture](#)
- [NASA Grace](#)

Streamflow, Drought, Flood, and Runoff

Source: U.S. Geological Survey [WaterWatch Streamflow Map](#)

Map of flood and high flow conditions (31 in floods [major: 1, moderate: 3, minor: 27], 38 in near-flood)



Explanation - Percentile classes						
<95	95-98	>= 99	Above action stage	Above flood stage	Above moderate flood stage	Above major flood stage
△ Streamgage with flood stage			○ Streamgage without flood stage			

[WaterWatch: Streamflow, drought, flood, and runoff conditions](#)

Reservoir Storage

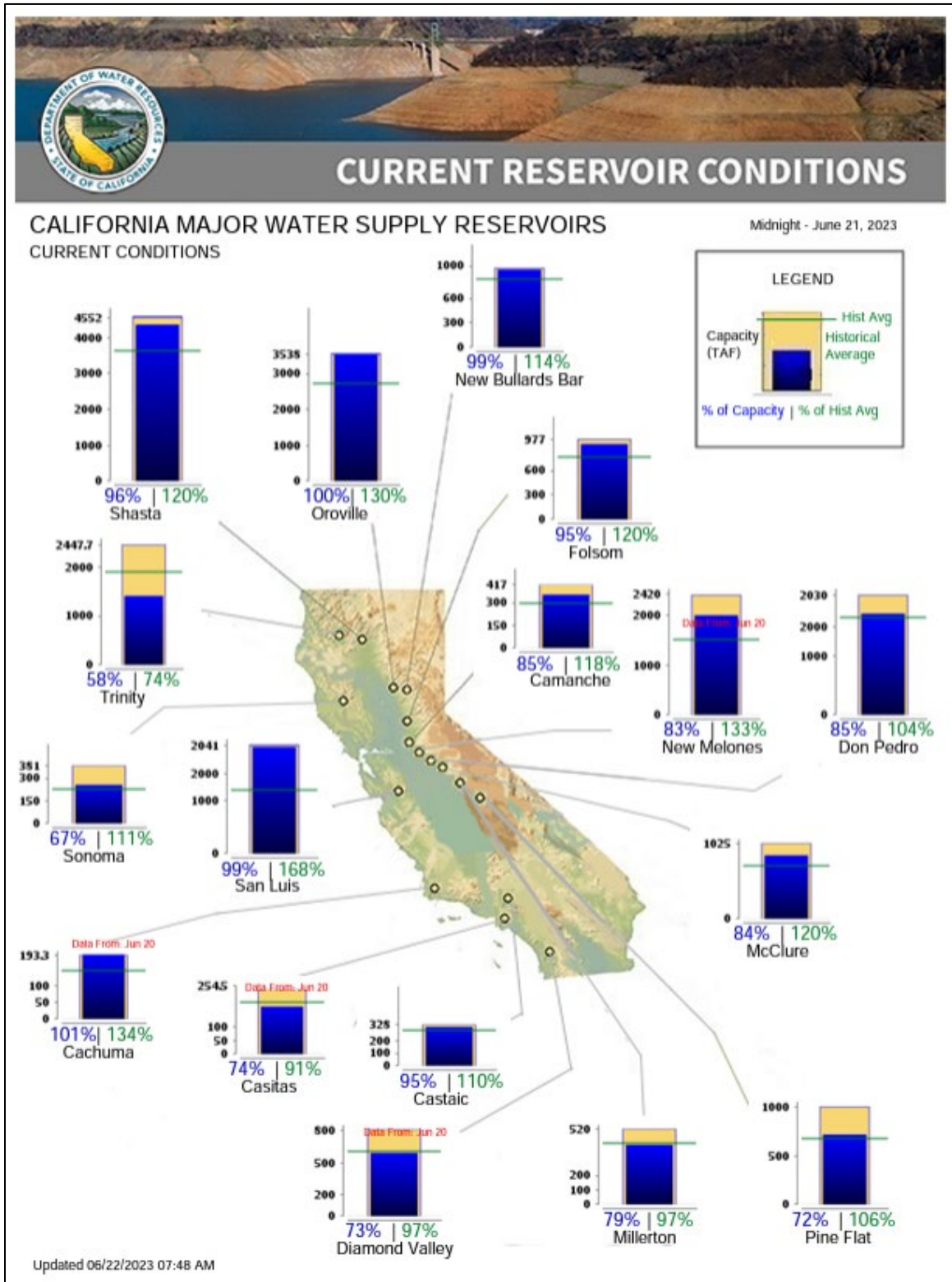
Hydromet Teacup Reservoir Depictions

Source: U.S. Bureau of Reclamation

- [Upper Colorado](#)
- [Pacific Northwest/Snake/Columbia](#)
- [Sevier River Water, Utah](#)
- [Upper Missouri, Kansas, Oklahoma, Texas](#)

Current California Reservoir Conditions

Source: California Department of Water Resources



[Current California Reservoir Conditions](#)

Agricultural Weather Highlights

Author: Brad Rippey, Agricultural Meteorologist, USDA/OCE/WAOB

National Outlook, Thursday June 22, 2023: “During the weekend and early next week, resurgent heat in the south-central U.S. could push temperatures to 110°F or higher as far north as western and central Texas. Additionally, temperatures should reach 100°F in parts of central Arkansas and eastern Oklahoma. In contrast, cooler air will overspread the upper Midwest, accompanied by occasional showers. Across the northern Plains and upper Midwest—including parts of Minnesota and the Dakotas—5-day rainfall totals could reach 1 to 3 inches. However, much of the remainder of Corn Belt, especially along an axis from Missouri to Michigan, will receive little or no rain. Mostly dry weather will also prevail during the next 5 days in the Pacific Coast States, Great Basin, Southwest, and Rio Grande Valley, while additional rainfall in the eastern U.S. could total 1 to 3 inches. The NWS 6- to 10-day outlook for June 27 – July 1 calls for the likelihood of ongoing hot weather in the south-central U.S. and warmer-than-normal conditions in Florida, New England, and the Pacific Northwest, while near- or below-normal temperatures will cover the remainder of the country. Meanwhile, near- or above-normal rainfall across most of the U.S. should contrast with drier-than-normal weather from the Four Corners States to the western half of the Gulf Coast region.”

Weather Hazards Outlook: [June 24 – 28, 2023](#)

Source: NOAA Weather Prediction Center

U.S. Day 3-7 Hazards Outlook

[About the Hazards Outlook](#)

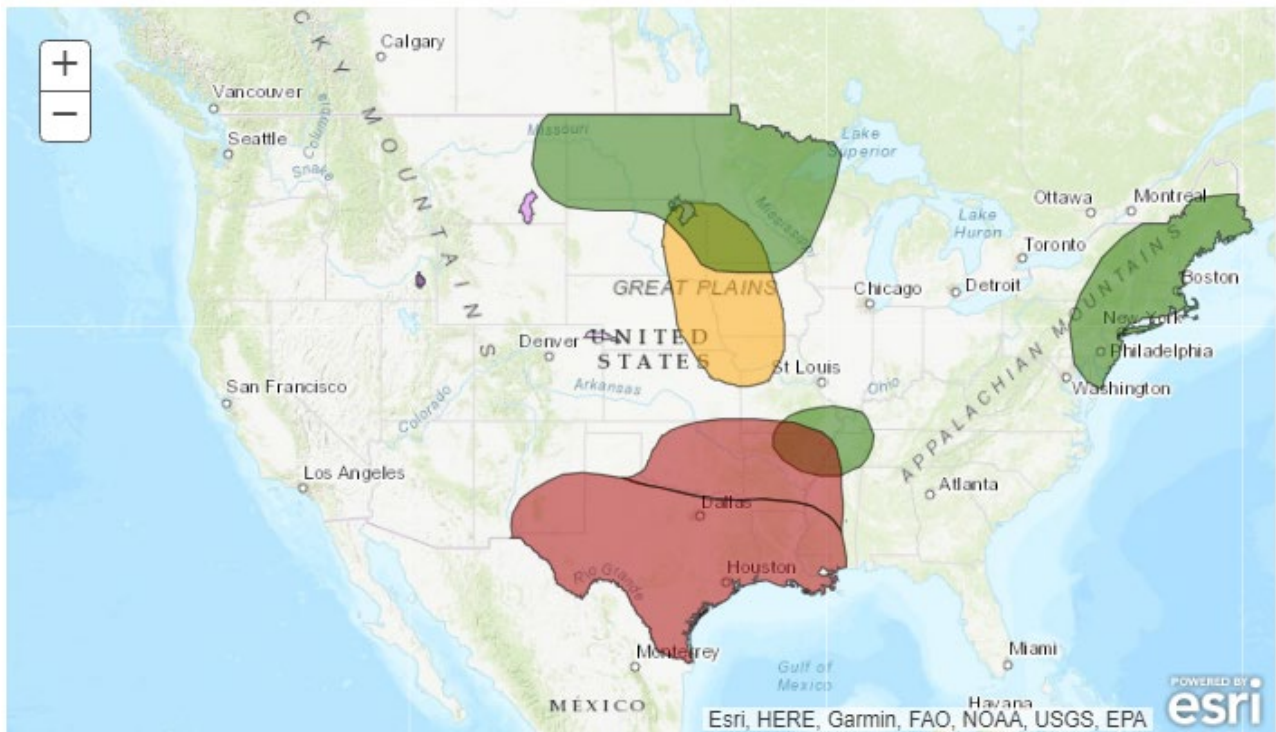
Created June 21, 2023

NOTE: These products are only created Monday through Friday. Please exercise caution using this outlook during the weekend.

Precipitation	<input checked="" type="checkbox"/>
Temperature	<input checked="" type="checkbox"/>
Soils	<input type="checkbox"/>

Legend			
	Flooding Likely		Excessive Heat
	Flooding Occurring or Imminent		High Winds
	Flooding Possible		Much Above Normal Temperatures
	Freezing Rain		Much Below Normal Temperatures
	Heavy Ice		Significant Waves
	Heavy Precipitation		Enhanced Wildfire Risk
	Heavy Rain		Severe Drought
	Heavy Snow		
	Severe Weather		

Valid June 24, 2023 - June 28, 2023

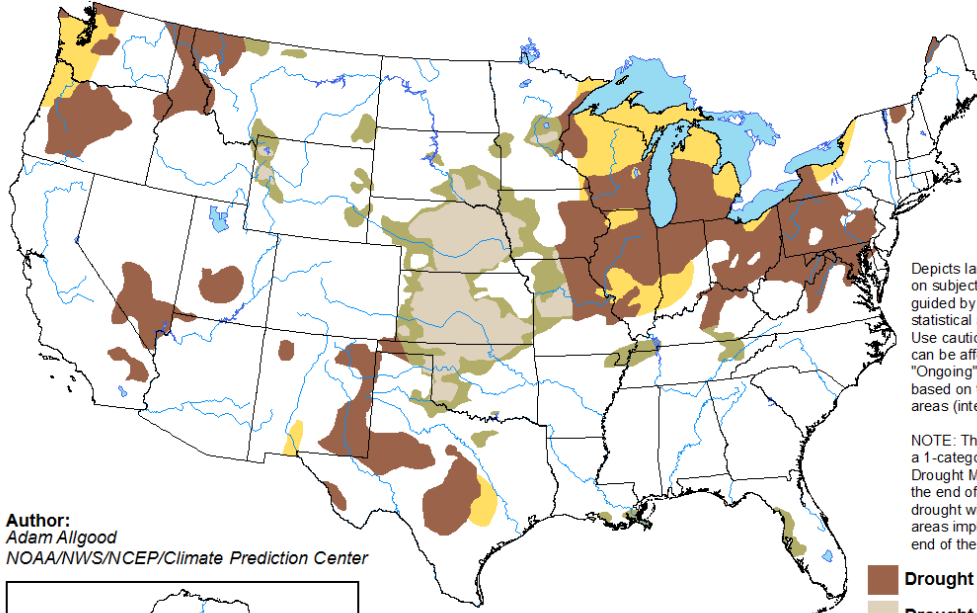


Seasonal Drought Outlook: [June 15 – September 30, 2023](#)

Source: National Weather Service

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

Valid for June 15 - September 30, 2023
Released June 15

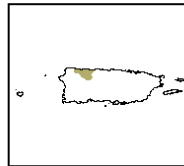
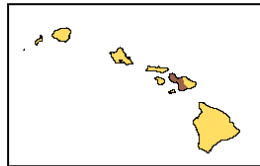
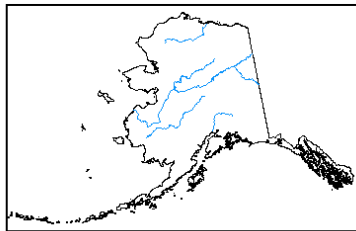


Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Use caution for applications that can be affected by short lived events. "Ongoing" drought areas are based on the U.S. Drought Monitor areas (intensities of D1 to 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



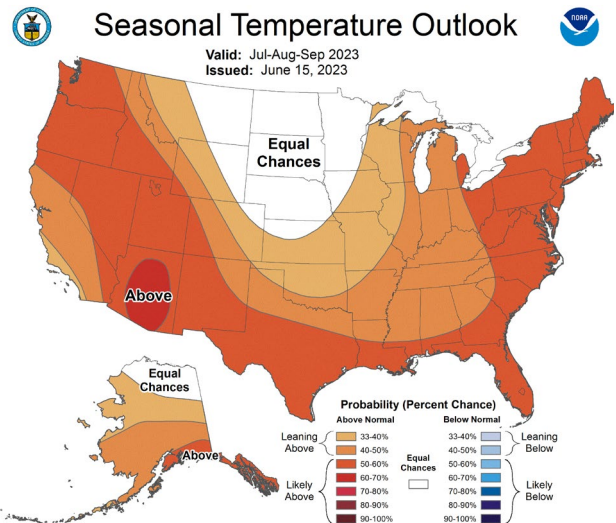
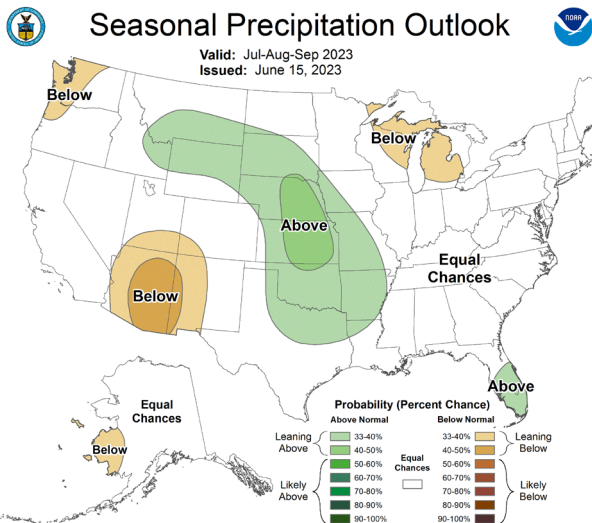
<http://go.usa.gov/3eZ73>

Climate Prediction Center Three-month Outlook

Source: National Weather Service

[Precipitation](#)

[Temperature](#)



[July-August-September 2023 precipitation and temperature outlook summaries](#)

More Information

The NRCS [National Water and Climate Center](#) publishes this weekly report. We welcome your feedback. If you have questions or comments, please [contact us](#).