



Water and Climate Update

September 14, 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.

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New England experiences flooding ahead of storm warnings



Photo courtesy of Rhode Island Department of Transportation

On September 12, a frontal system combined with a deep sub-tropical moisture source and delivered almost 10 inches of rain in six hours as it swept across New England. The rapid downpour caused extensive damage and prompted evacuations as communities were inundated by floodwater. The flooding came just days ahead of tropical storm watches and warnings issued from the National Hurricane Center in anticipation of Hurricane Lee’s path, which is expected to pass near the Northeast.

Related:

[Massachusetts city got nearly 10 inches of rain in 6 hours, flooding homes and eroding dams](#) - AP News

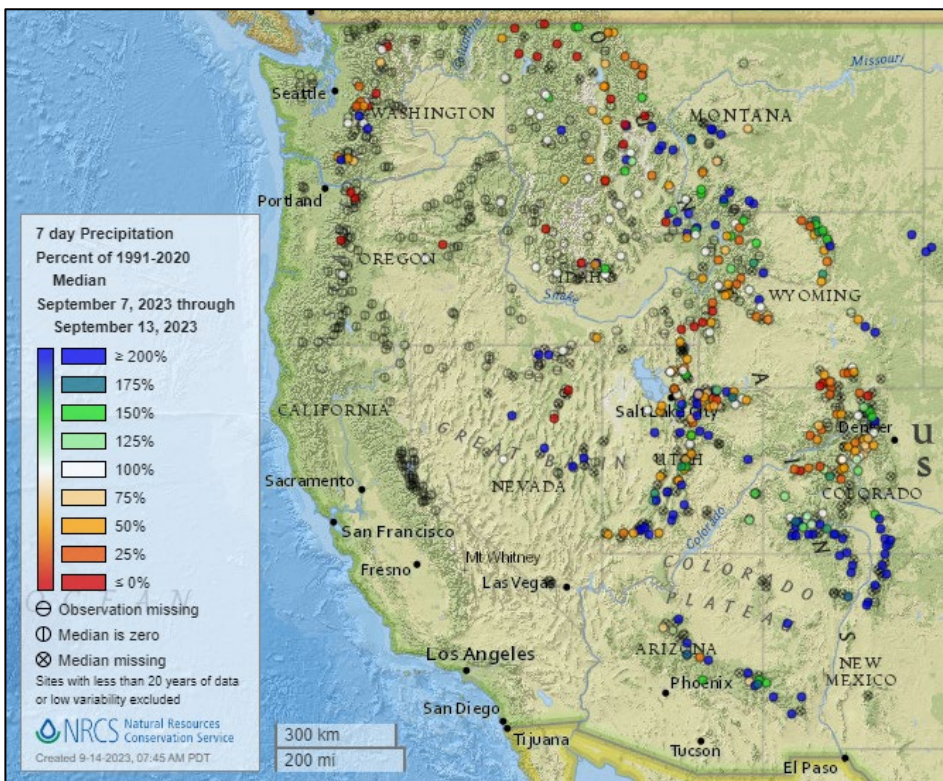
[Massive Hurricane Lee prompts tropical storm and hurricane watches for coastal New England as threat grows](#) – CNN

[Flooding evacuates residents in northern Massachusetts; waters recede showing damage](#) - USA Today

<https://www.wpri.com/weather/severe-weather/september-12-13-storm-coverage/> - WPRI 12 News (Providence, RI)

Precipitation

Last 7 Days, NRCS SNOTEL Network

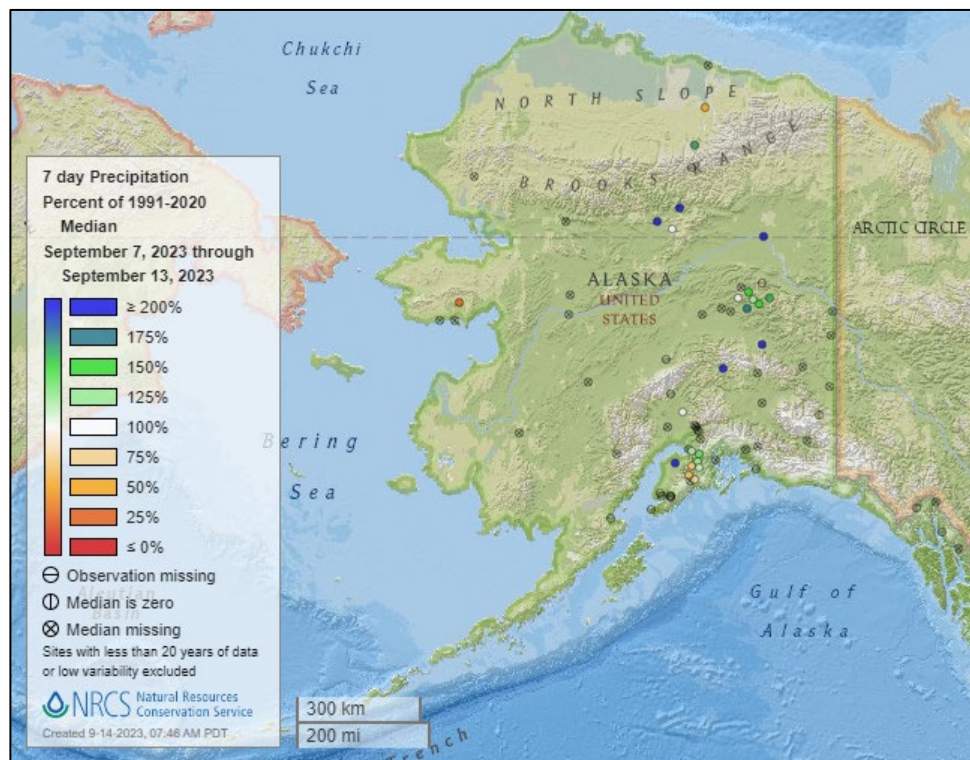


[7-day precipitation percent of median map](#)

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](#)



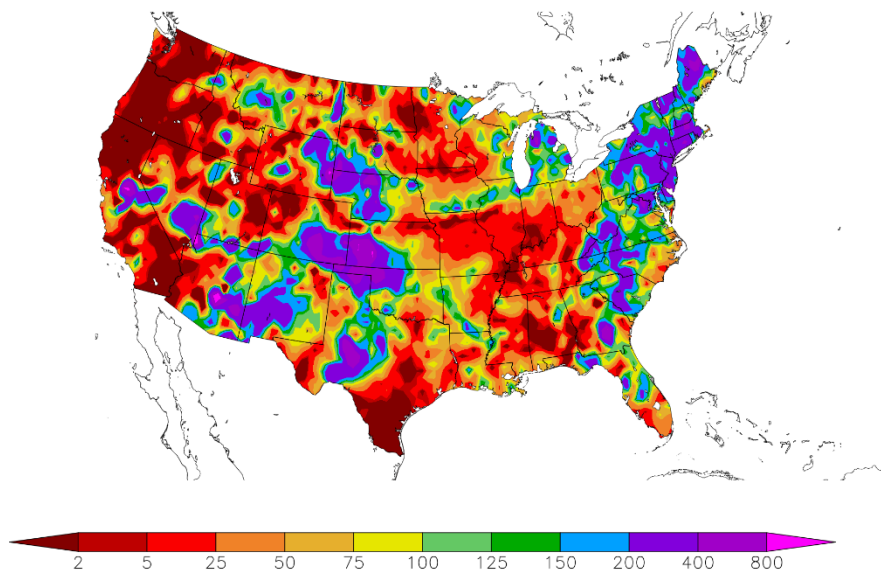
Last 7 Days, National Weather Service (NWS) Networks

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 (%)
9/7/2023 – 9/13/2023



Generated 9/14/2023 at HPRCC using provisional data.

NOAA Regional Climate Centers

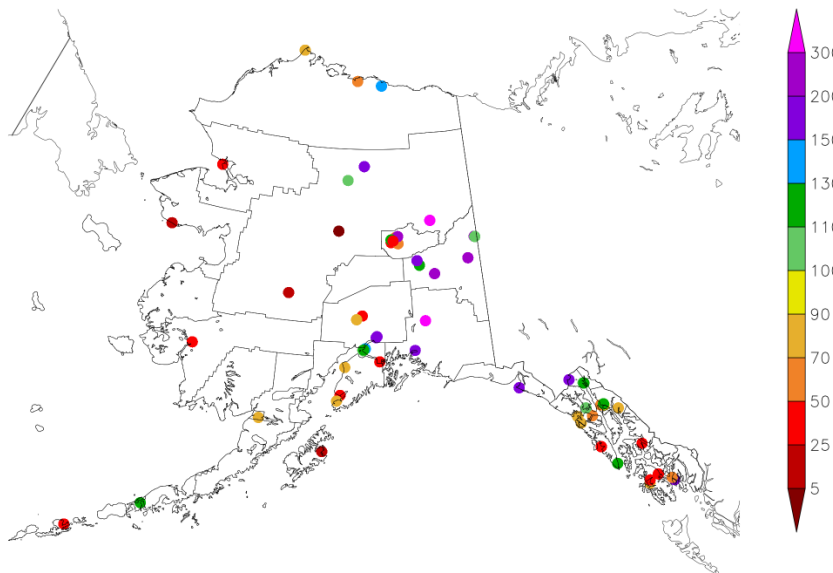
Last 7 Days, National Weather Service (NWS) Networks

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 (%)
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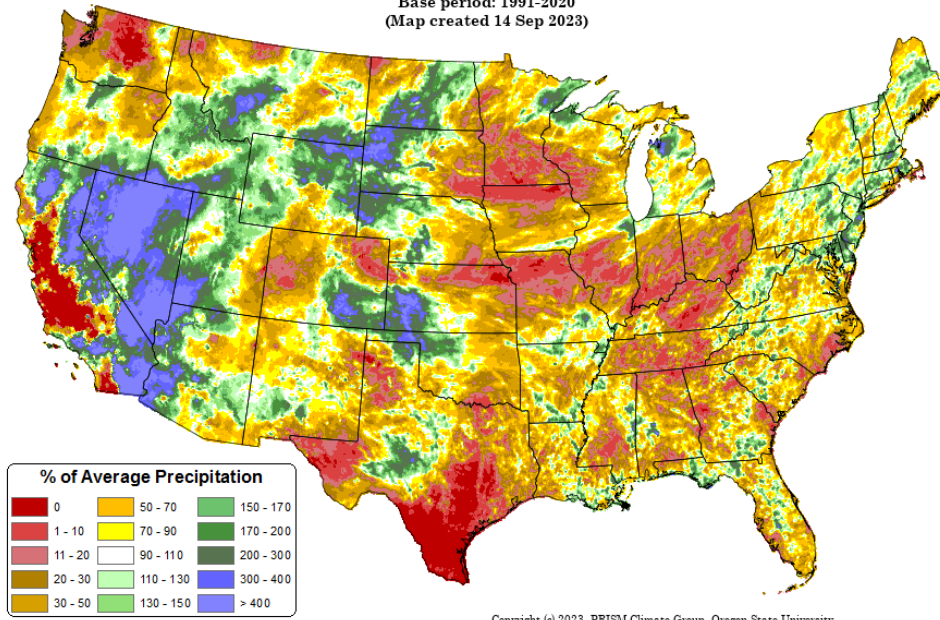
NOAA Regional Climate Centers

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

Source: PRISM

Total Precipitation Anomaly: 01 Sep 2023 - 13 Sep 2023
Period ending 7 AM EST 13 Sep 2023
Base period: 1991-2020
(Map created 14 Sep 2023)

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



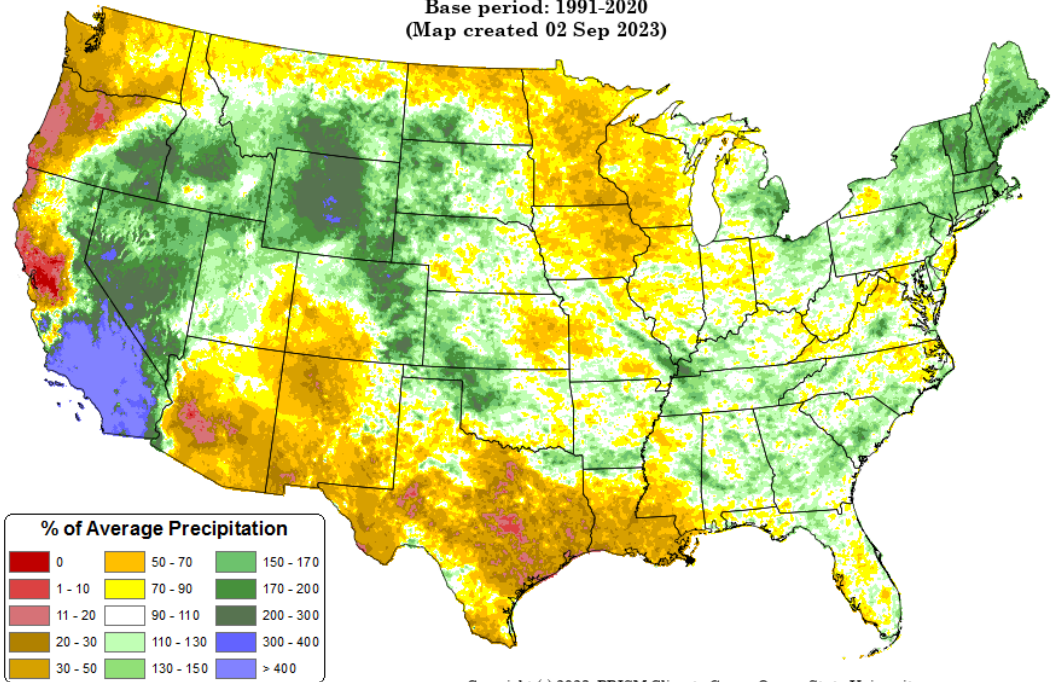
Copyright (c) 2023, PRISM Climate Group, Oregon State University

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

Source: PRISM

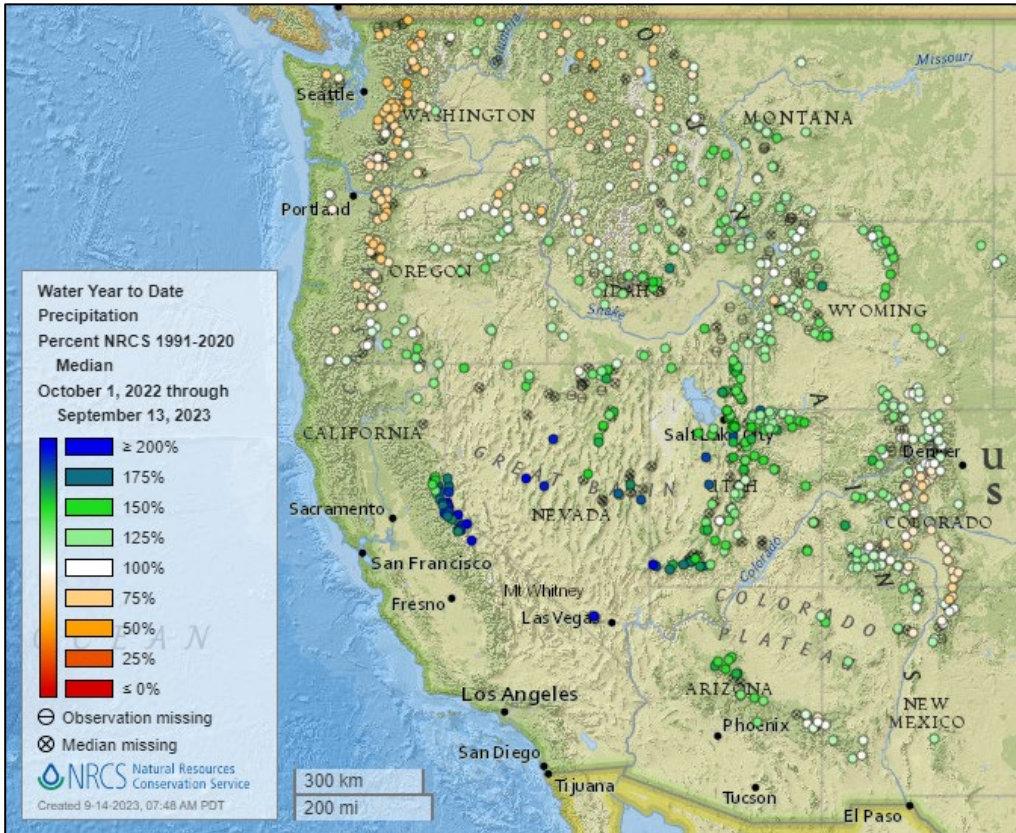
[June through August 2023 precipitation anomaly map](#)

Total Precipitation Anomaly: Jun 2023 - Aug 2023
Period ending 7 AM EST 31 Aug 2023
Base period: 1991-2020
(Map created 02 Sep 2023)



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

Water Year-to-Date, NRCS SNOTEL Network

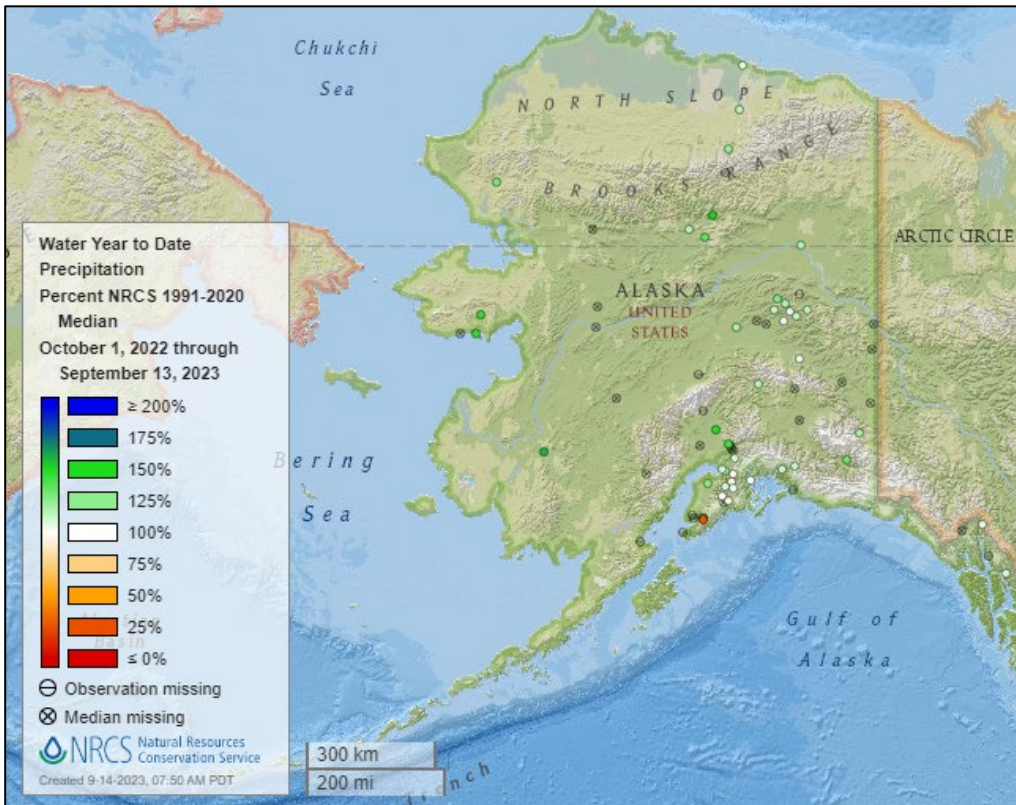


[2023 water year-to-date precipitation percent of median map](#)

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

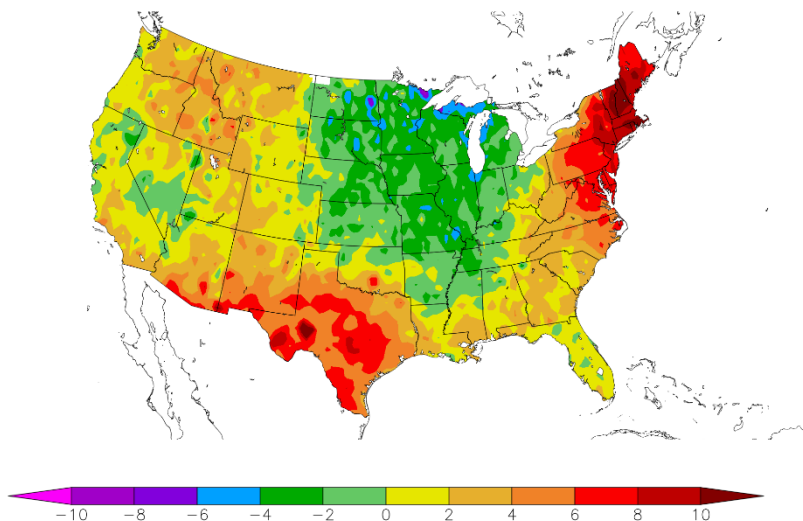
Last 7 Days, National Weather Service (NWS) Networks

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)
9/7/2023 – 9/13/2023



Generated 9/14/2023 at HPRCC using provisional data.

NOAA Regional Climate Centers

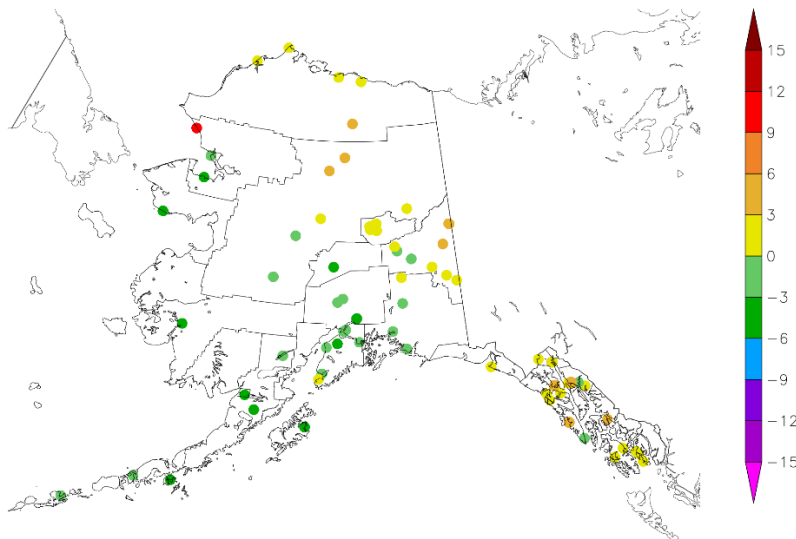
Last 7 Days, National Weather Service (NWS) Networks

Source: Regional Climate Centers

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

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

Departure from Normal Temperature (F)
9/7/2023 – 9/13/2023



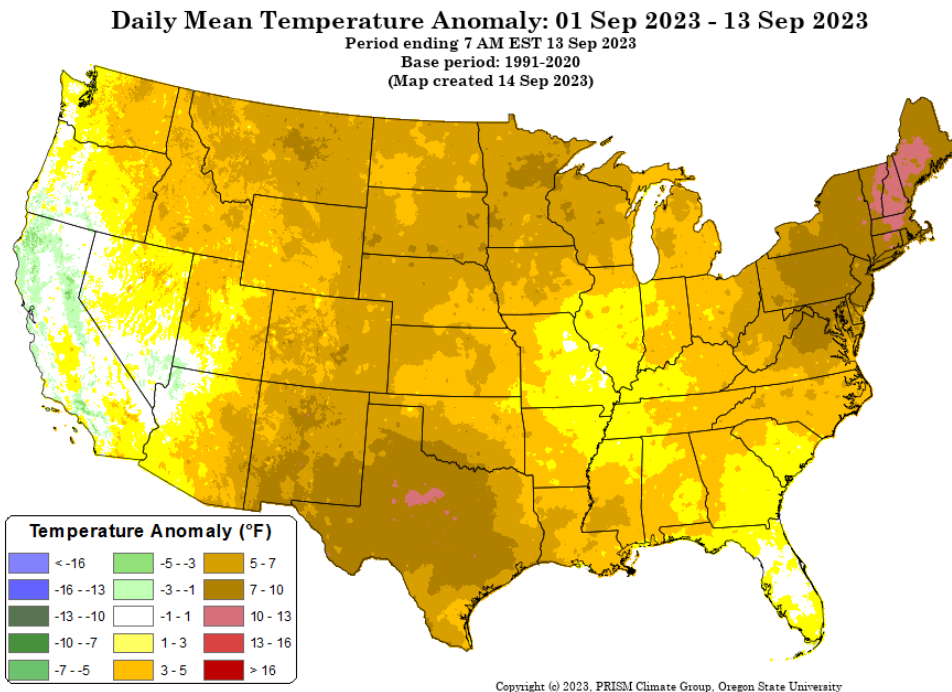
Generated 9/14/2023 at HPRCC using provisional data.

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

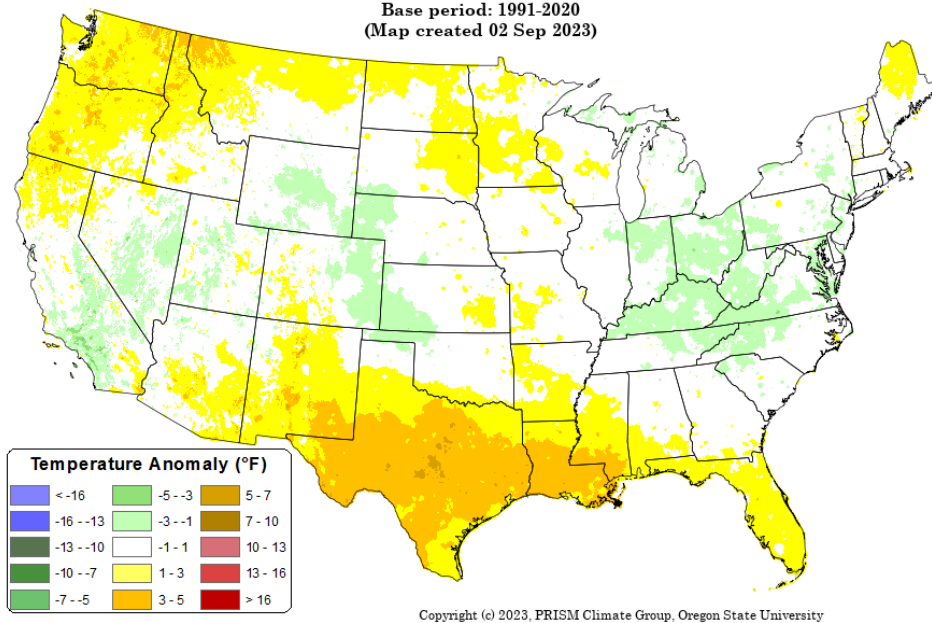
Daily Mean Temperature Anomaly: Jun 2023 - Aug 2023

Period ending 7 AM EST 31 Aug 2023

Base period: 1991-2020

(Map created 02 Sep 2023)

[June through August 2023 daily mean temperature anomaly map](#)



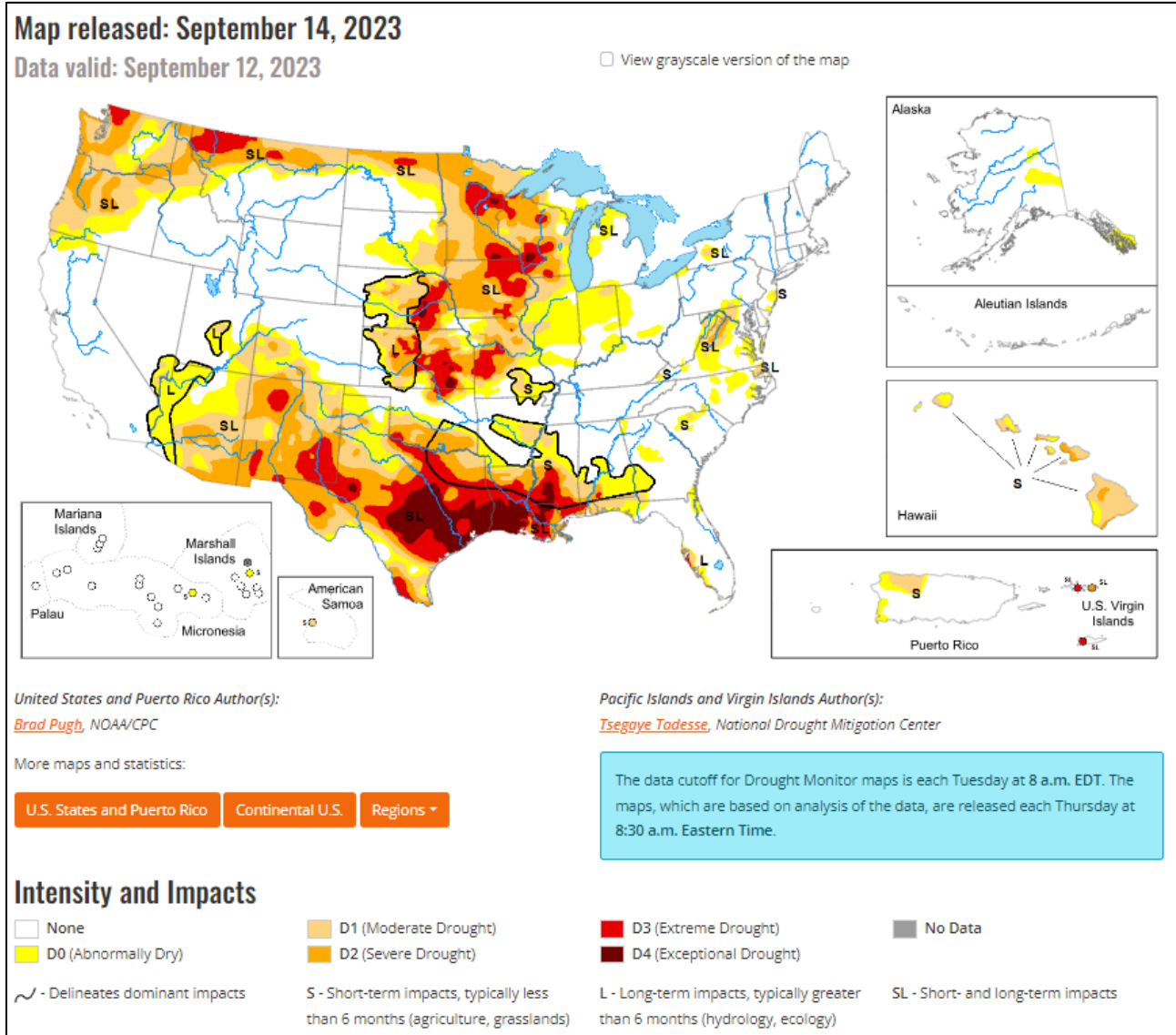
Drought

[U.S. Drought Monitor](#)

Source: National Drought Mitigation Center

[U.S. Drought Portal](#)

Source: NOAA



Current [National Drought Summary](#), September 12, 2023

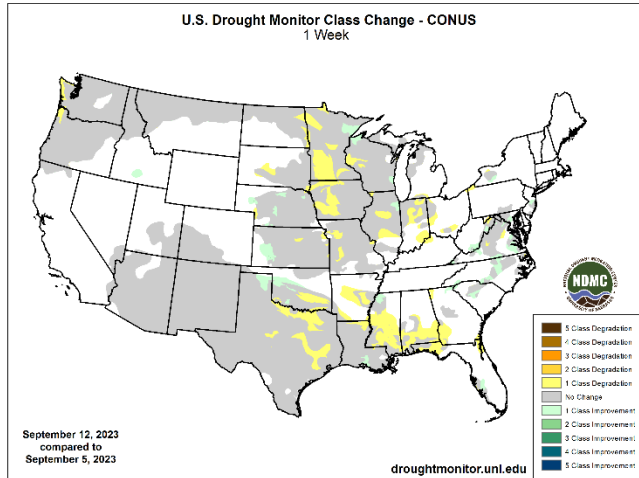
Source: National Drought Mitigation Center

“Widespread precipitation amounts of 0.5 to 2 inches (locally more) were observed across much of the Great Plains, Upper Mississippi Valley, and East. Improvements were made to areas that received the heaviest amounts. In the wake of a cold front, 7-day (September 5 to 11) temperatures averaged near to slightly below normal for the Northern Great Plains and Upper Midwest. Farther to the south, above-normal temperatures continued across the southern Great Plains and western Gulf Coast. Since early August, persistent excessive heat coupled with a lack of adequate rainfall led to a rapid onset and intensification of drought from Texas eastward to the Lower Mississippi Valley and parts of the Southeast. Monsoon rainfall began to decrease throughout the Four Corners region and Southwest during early September, while seasonal dryness prevailed along the West Coast.”

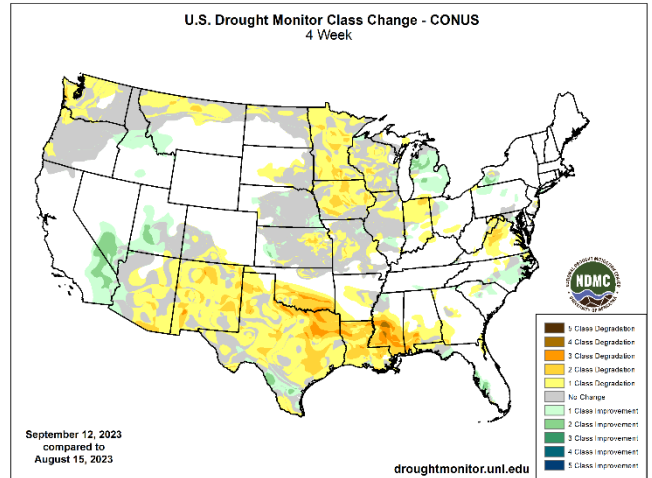
Changes in Drought Monitor Categories over Time

Source: National Drought Mitigation Center

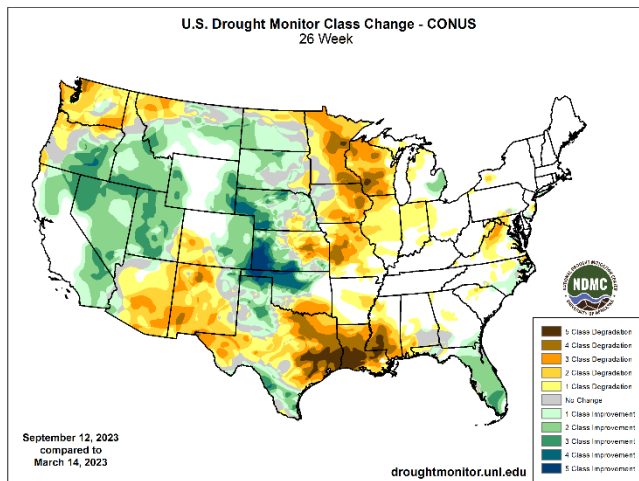
1 Week



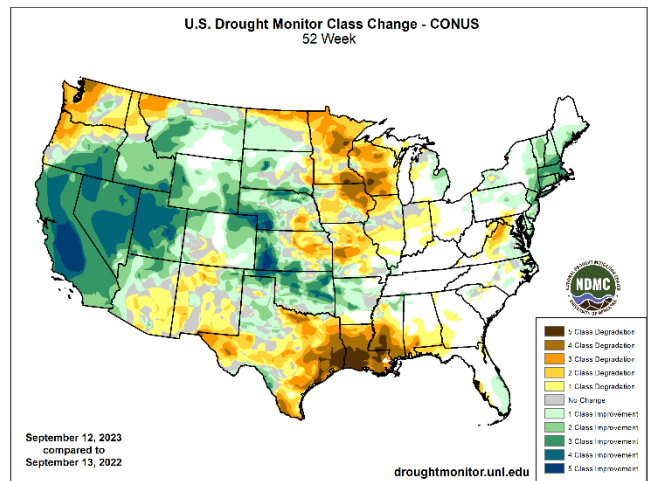
1 Month



6 Months



1 Year



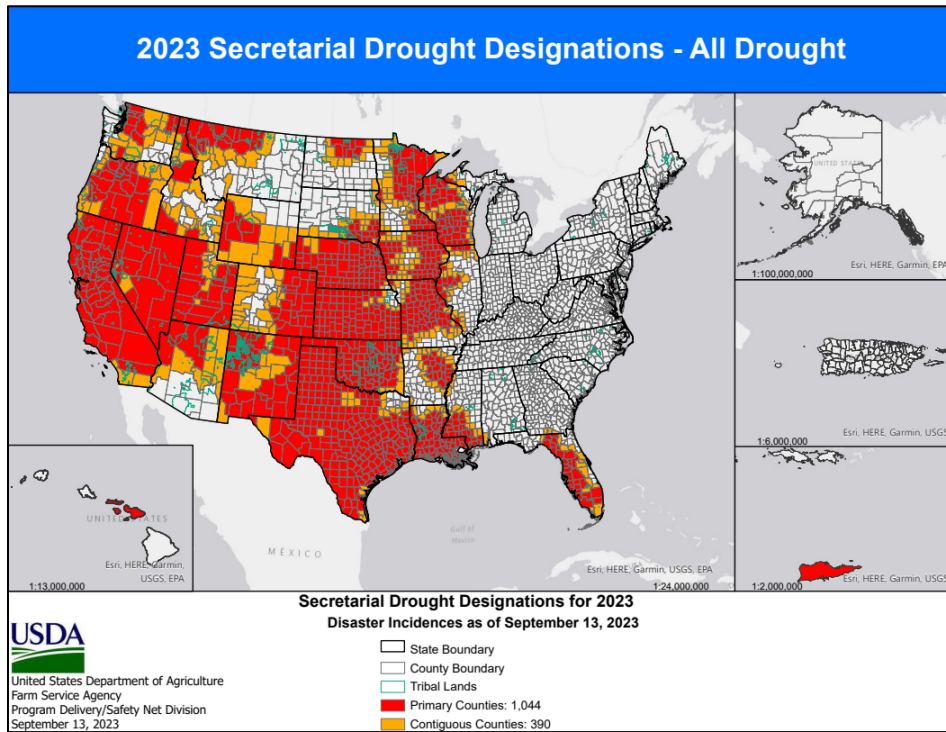
[Changes in drought conditions over the last 12 months for the contiguous U.S.](#)

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](#)

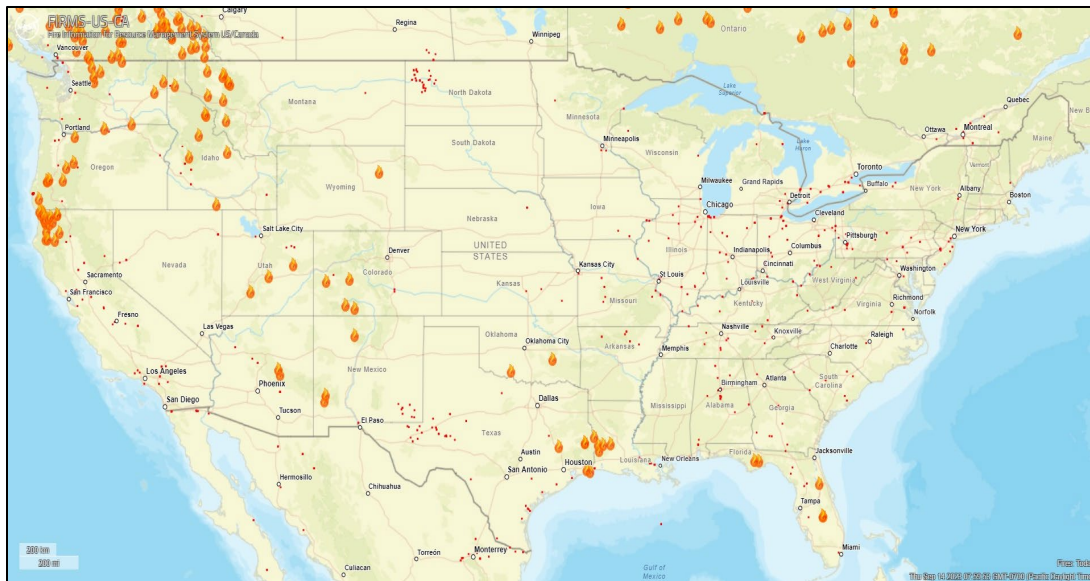
USDA Secretarial [Drought Designations](#)

Source: USDA Farm Service Agency



Wildfires: [Fire Information for Resource Management System US/Canada](#)

Source: NASA/USDA Forest Service



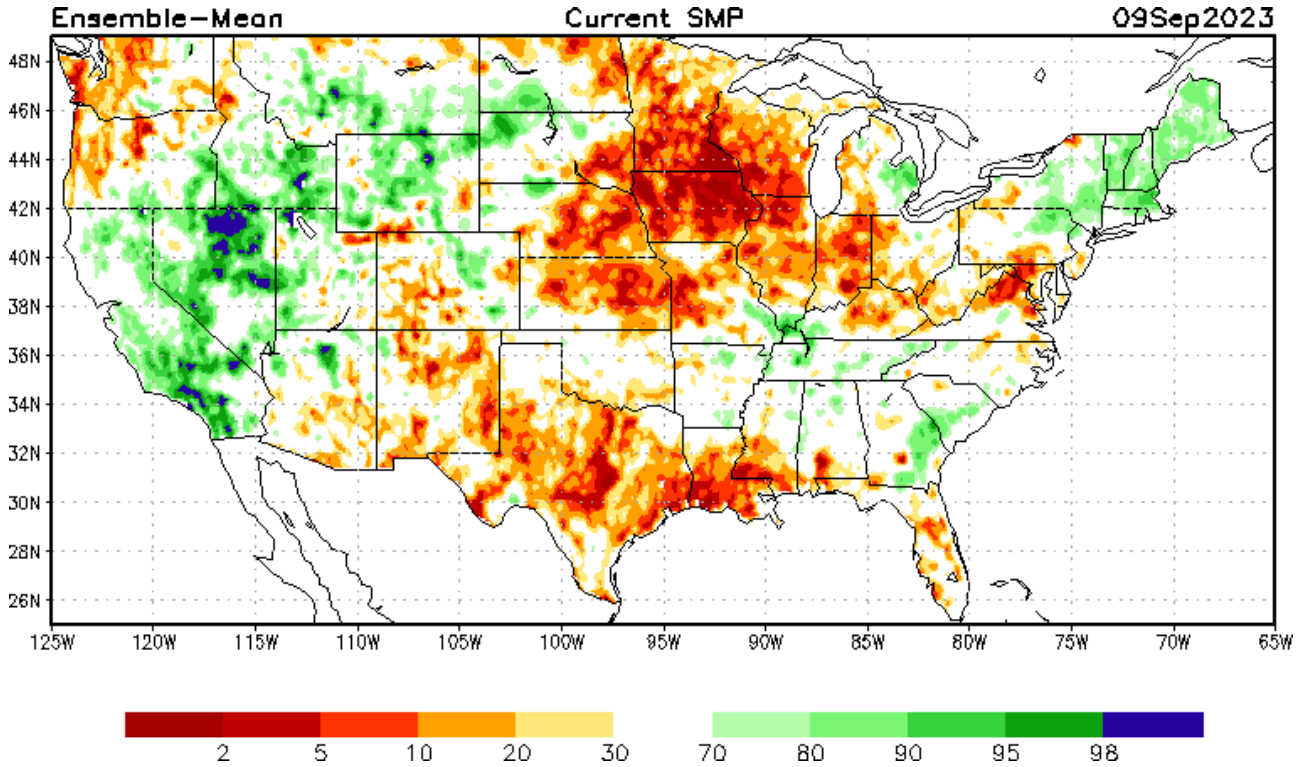
Highlighted Wildfire Resources

- [National Interagency Fire Center](#)
- [InciWeb Incident Information System](#)
- [Significant Wildland Fire Potential Outlook](#)

Other Climatic and Water Supply Indicators

Soil Moisture

Source: NOAA National Centers for Environmental Prediction

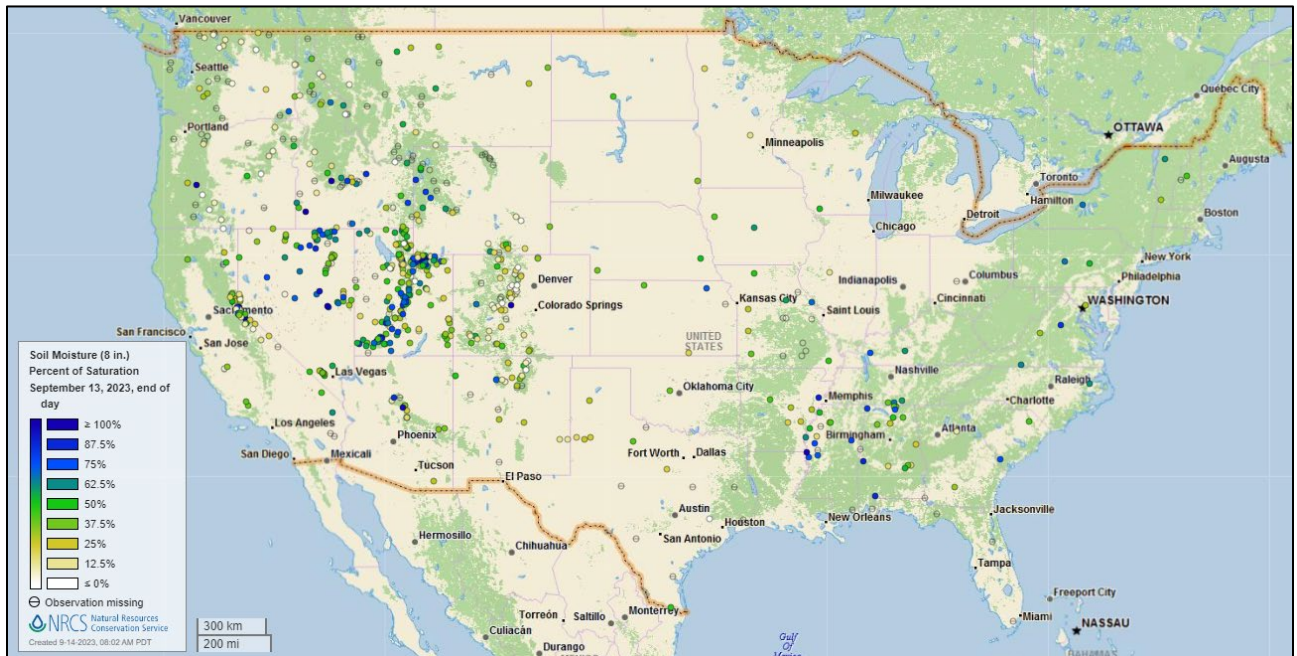


[Modeled soil moisture percentiles](#) as of September 09, 2023

Soil Moisture Percent of Saturation

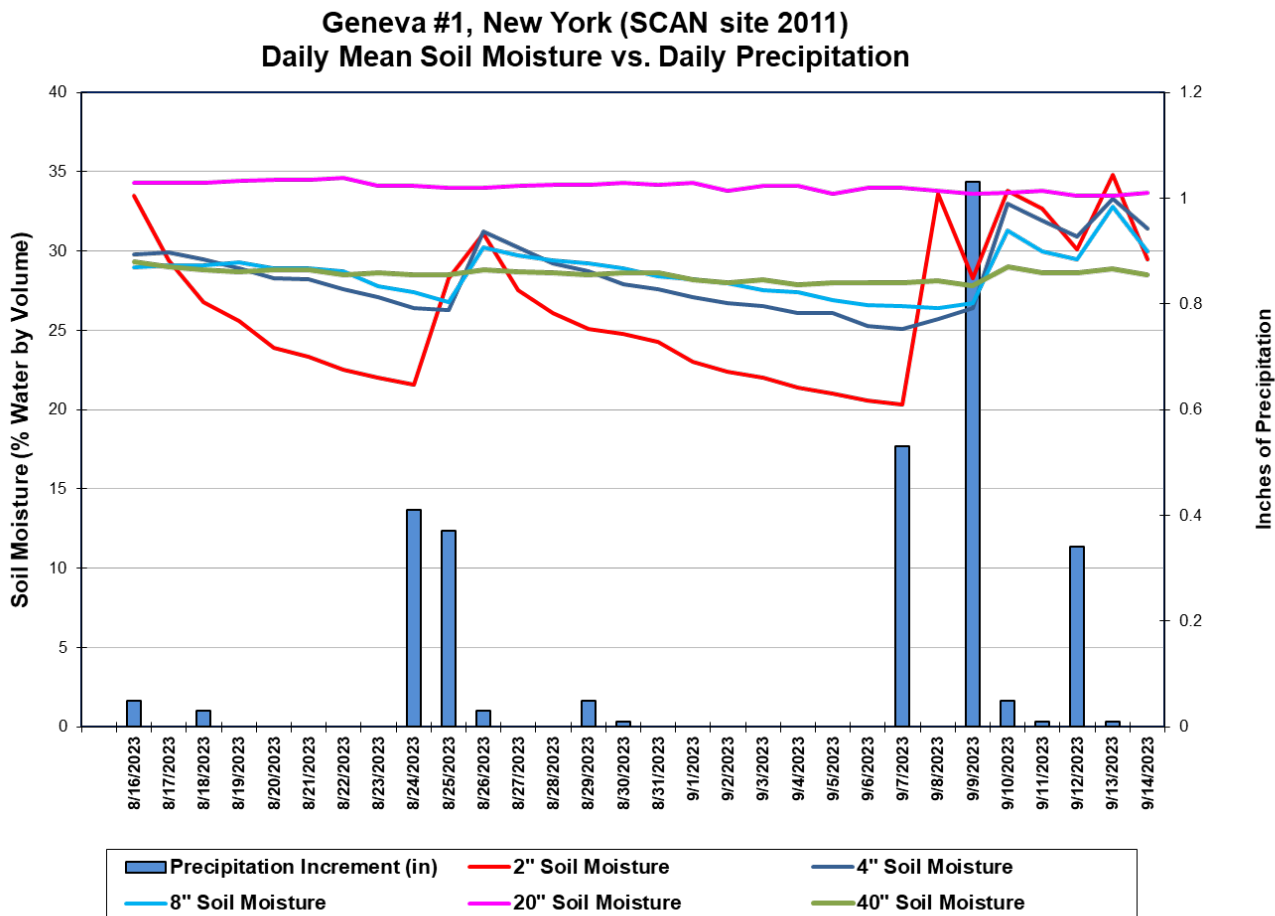
Source: NRCS SNOTEL and [Soil Climate Analysis Network \(SCAN\)](#)

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



Soil Moisture

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



This chart shows the precipitation and soil moisture for the last 30 days at the [Geneva #1](#) SCAN site in New York. Soil sensors at the shallower depths, 2”, 4”, and 8” below land surface, reported increases in soil moisture at the site following precipitation events throughout the period. The deeper sensors at 20” and 40” below land surface show little-to-no change in soil moisture, even after the site received 1.03 inches of precipitation on September 9. Total precipitation for the 30-day period was 2.92 inches.

Soil Moisture Data Portals

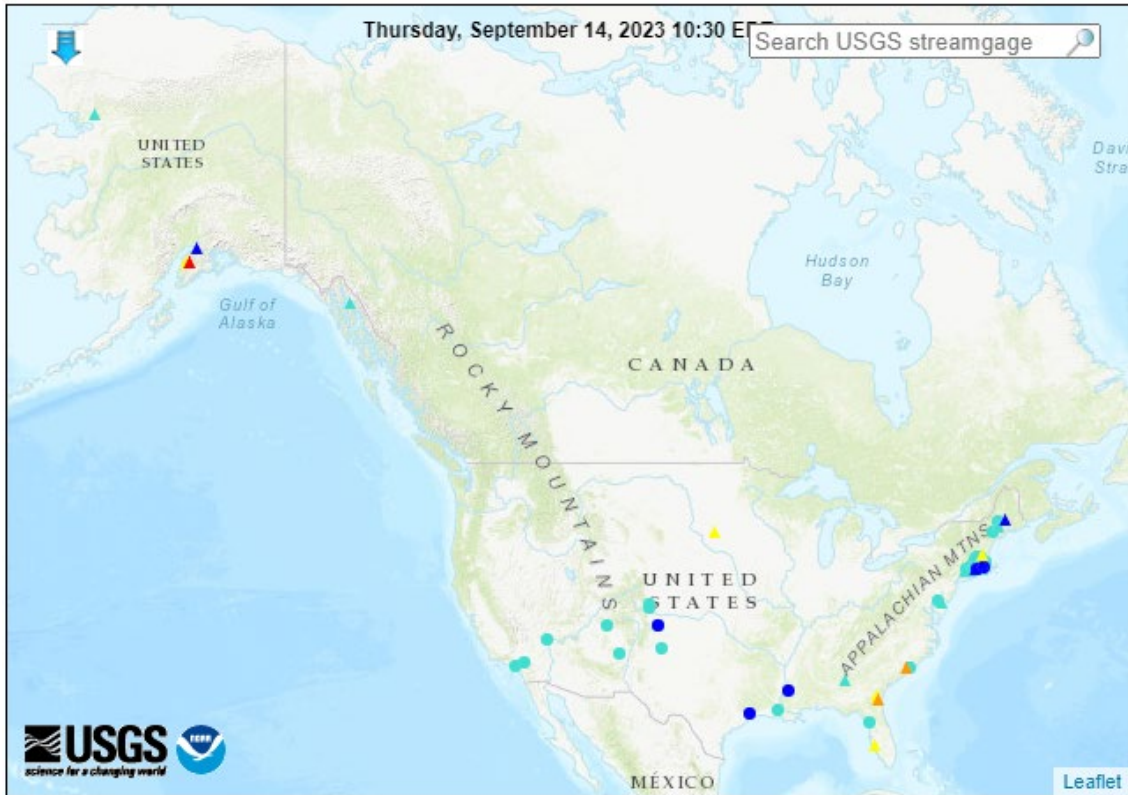
- [USCRN Soil Moisture](#)
- [National Soil Moisture Network](#)
- [NOAA Climate Prediction Center Soil Moisture](#)
- [NASA Grace](#)

Streamflow, Drought, Flood, and Runoff

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

Map of flood and high flow conditions

(3 in floods [moderate: 1, minor: 2], 5 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

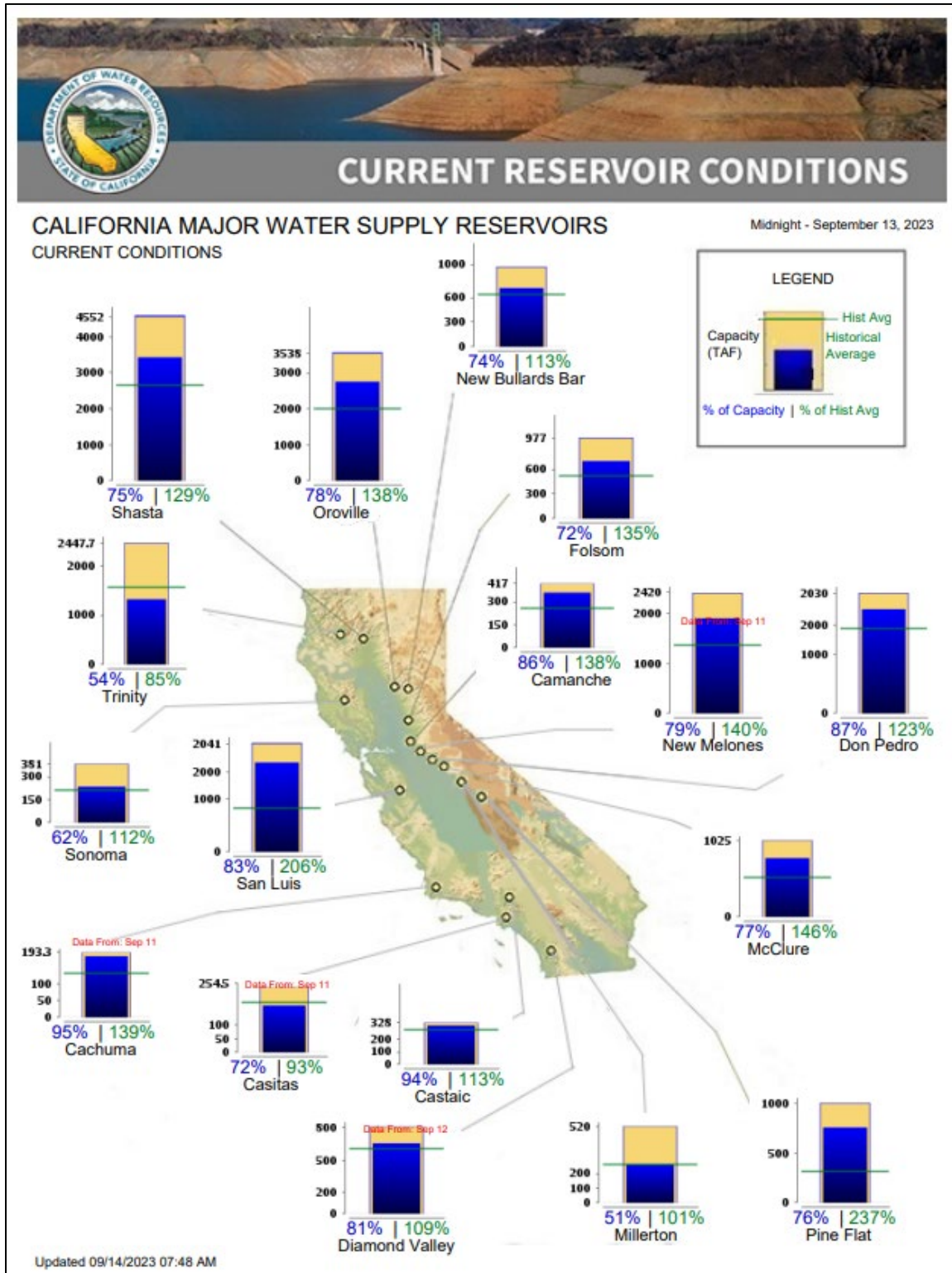
Hydromet Teacup Reservoir Depictions

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 September 14, 2023: “Hurricane Lee will continue to churn northward, with landfall expected in the Canadian Maritimes or eastern Maine during the weekend. However, weakening will occur as the tropical cyclone approaches the Atlantic Coast, and Lee may no longer be a hurricane or may be undergoing a post-tropical transition while moving ashore. Still, high winds, heavy rain, and a dangerous storm surge may occur in parts of coastal New England. Farther west, a storm system affecting portions of the south-central U.S. will gradually weaken and shift southward, although additional rainfall could reach 1 to 3 inches or more in Texas and portions of neighboring states. In contrast, dry weather will prevail during the next 5 days in several areas, including much of the mid-South, Ohio Valley, and Far West. Warmth in the West will shift eastward, with weekend temperatures possibly reaching 90°F as far north as Montana. The NWS 6- to 10-day outlook for September 19 – 23 calls for the likelihood of near- or above-normal temperatures from the Plains to the East Coast, while cooler-than-normal conditions will prevail in the West. Meanwhile, near- or below-normal rainfall in much of the East and Far West should contrast with wetter-than-normal weather across the remainder of the country, including the Plains, Rockies, and western Corn Belt.”

Weather Hazards Outlook: [September 16 – 20, 2023](#)

Source: NOAA Weather Prediction Center















U.S. Day 3-7 Hazards Outlook

[About the Hazards Outlook](#)

Created September 13, 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"/>
Wildfires	<input checked="" type="checkbox"/>
Soils	<input type="checkbox"/>

Legend			
	Flooding Likely		Hazardous Heat
	Flooding Occurring or Imminent		Hazardous Cold
	Flooding Possible		Frost/Freeze
	Freezing Rain		High Winds
	Heavy Precipitation		Significant Waves
	Heavy Rain		Critical Wildfire Risk
	Heavy Snow		Severe Weather

Valid September 16, 2023 - September 20, 2023

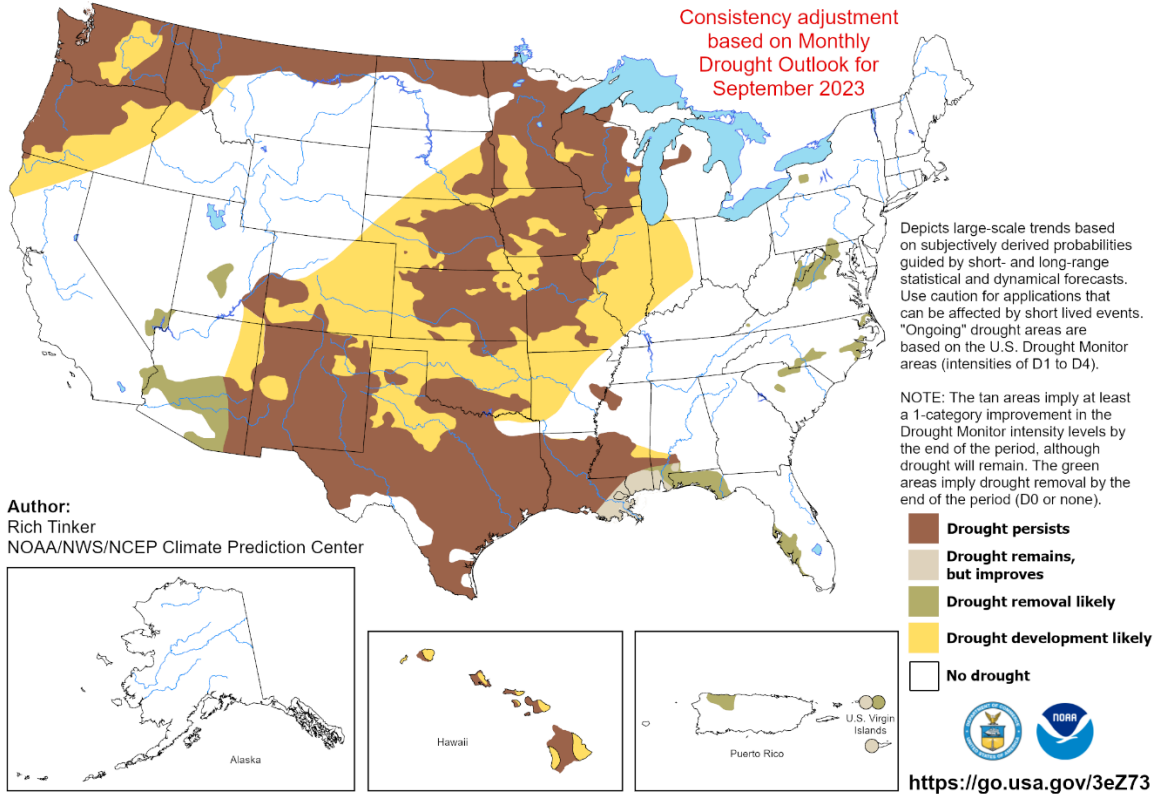


Seasonal Drought Outlook: [September 01 – November 30, 2023](#)

Source: National Weather Service

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

Valid for September 1 - November 30, 2023
Released August 31, 2023

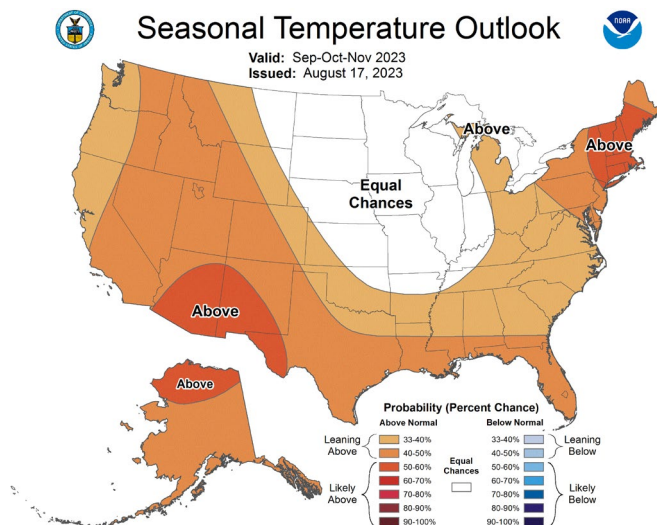
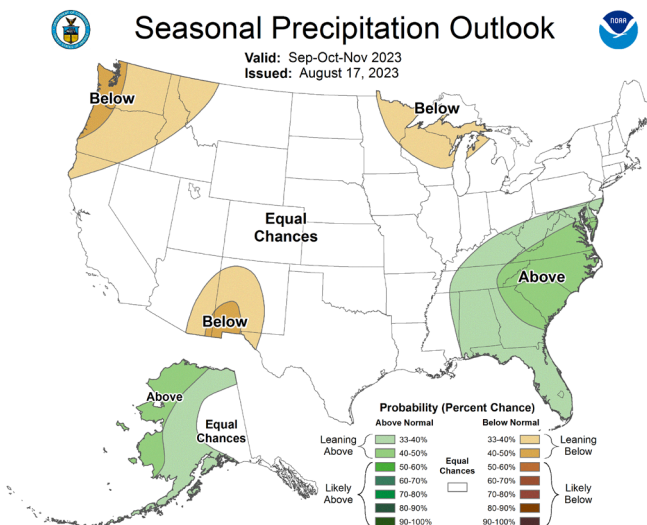


Climate Prediction Center Three-month Outlook

Source: National Weather Service

Precipitation

Temperature



[September-October-November 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](#).