



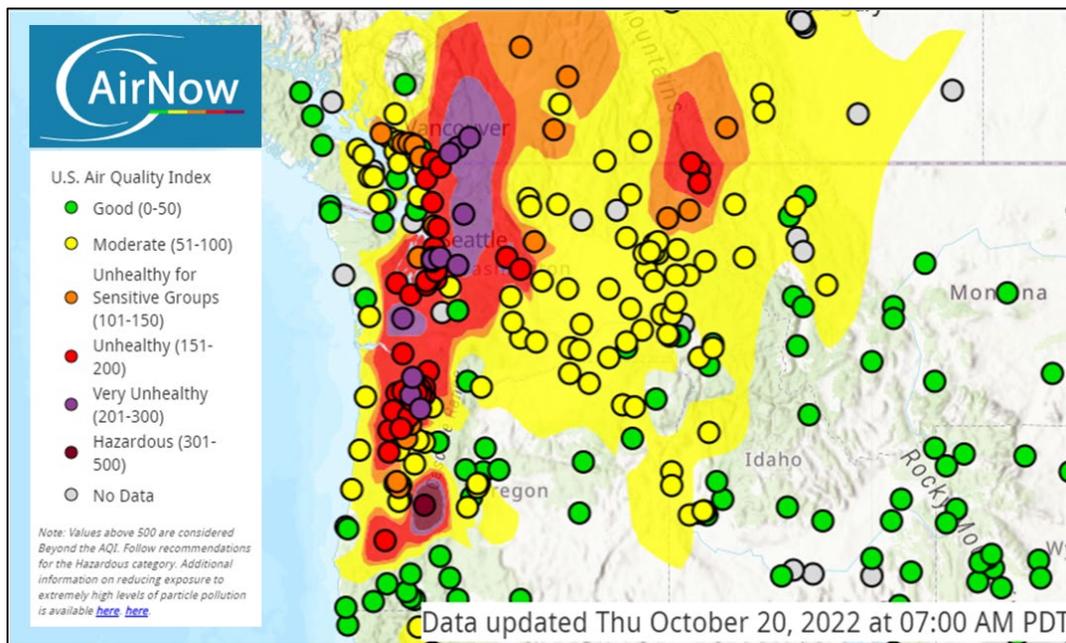
Water and Climate Update

October 20, 2022

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

Wildfire smoke impacts air quality across Pacific Northwest



October temperature records have been broken across the Pacific Northwest over the last week. Late-summer heat and lack of precipitation have helped produce conditions for several wildfires across the region. According to the [National Interagency Fire Center](#) there are currently over 60 large wildfires burning across the Pacific Northwest, including the Nakia Creek fire in Washington State which forced the evacuation of thousands of residents. The collective smoke from these wildfires has blanketed the region for several days, degrading the air quality for millions of U.S. and Canadian residents. Air quality conditions over the period have ranged from Moderate to Very Unhealthy according to the U.S. Air Quality Index, with Seattle, WA claiming the worst air quality worldwide as of 5:00 PM on October 19.

Related:

[Nakia Creek Fire explodes amid powerful winds, forcing thousands of evacuations in Washington state](#) – CNN

[Historic October heat shatters records in the Pacific Northwest](#) – The Washington Post

[At 88 degrees, Seattle breaks heat record as wildfires and smoke spread](#) – The Seattle Times

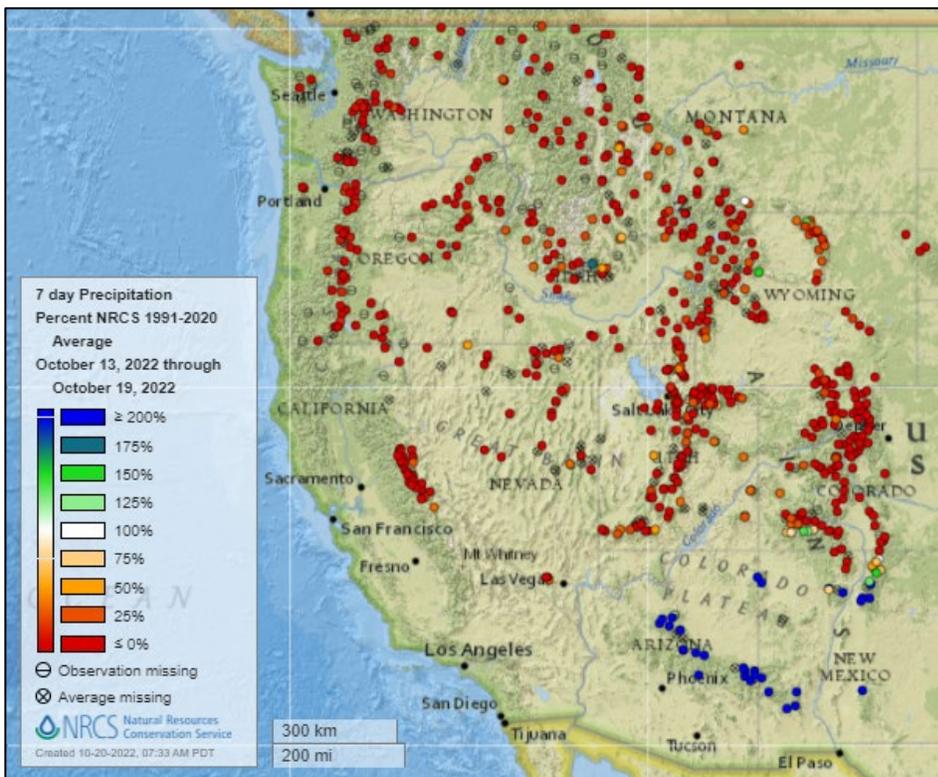
[Seattle ranks worst in the world for air quality due to 'widespread smoke' from multiple wildfires](#) – USA Today

[Air Quality Alert in western Washington to last until Monday](#) – KGW8 (OR)

[Air quality advisory issued for Oregon counties as stale, warm air traps wildfire smoke 'like a lid'](#) – The Oregonian (OR)

Precipitation

Last 7 Days, NRCS SNOTEL Network

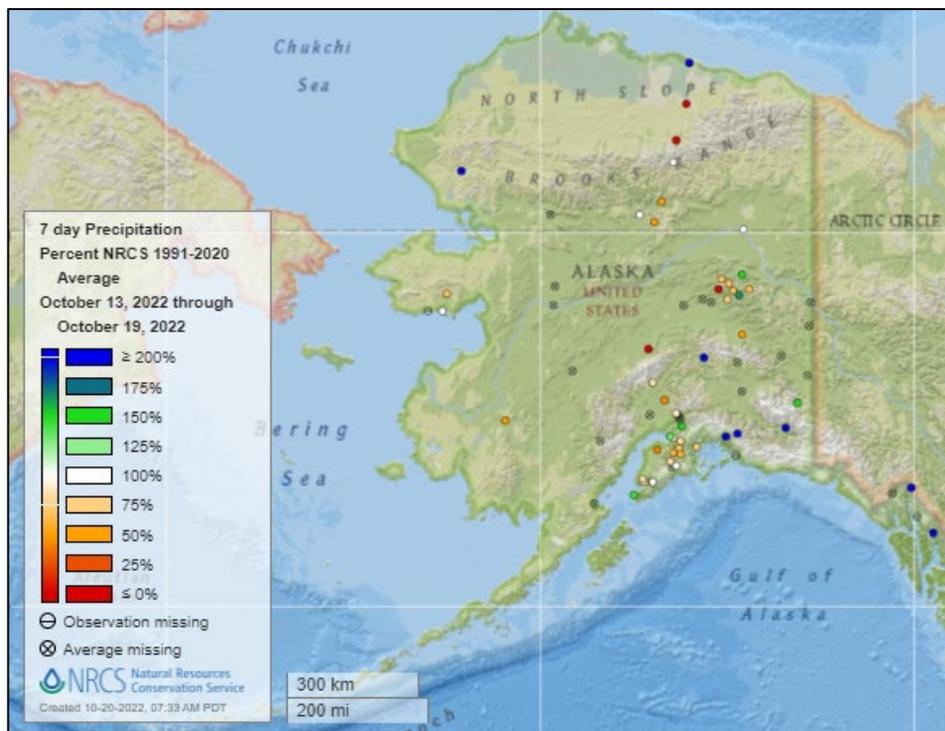


[7-day precipitation percent of average map](#)

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

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

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



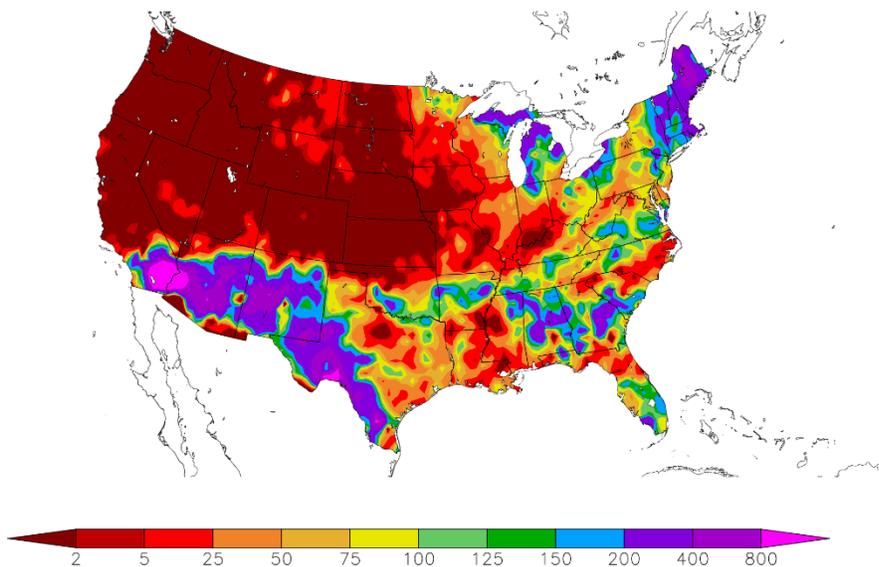
Last 7 Days, National Weather Service (NWS) Networks

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 (%)
10/13/2022 – 10/19/2022



Generated 10/20/2022 at HPRCC using provisional data.

NOAA Regional Climate Centers

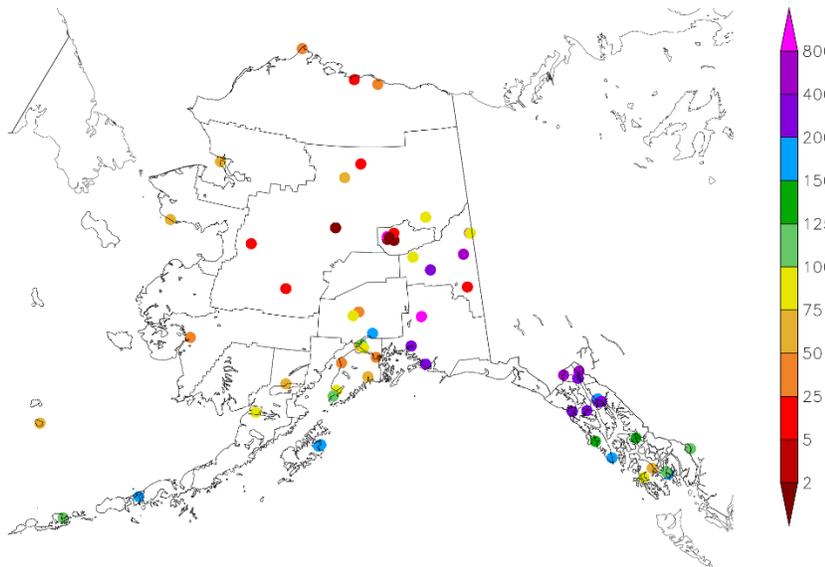
Last 7 Days, National Weather Service (NWS) Networks

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 (%)
10/13/2022 – 10/19/2022



Generated 10/20/2022 at HPRCC using provisional data.

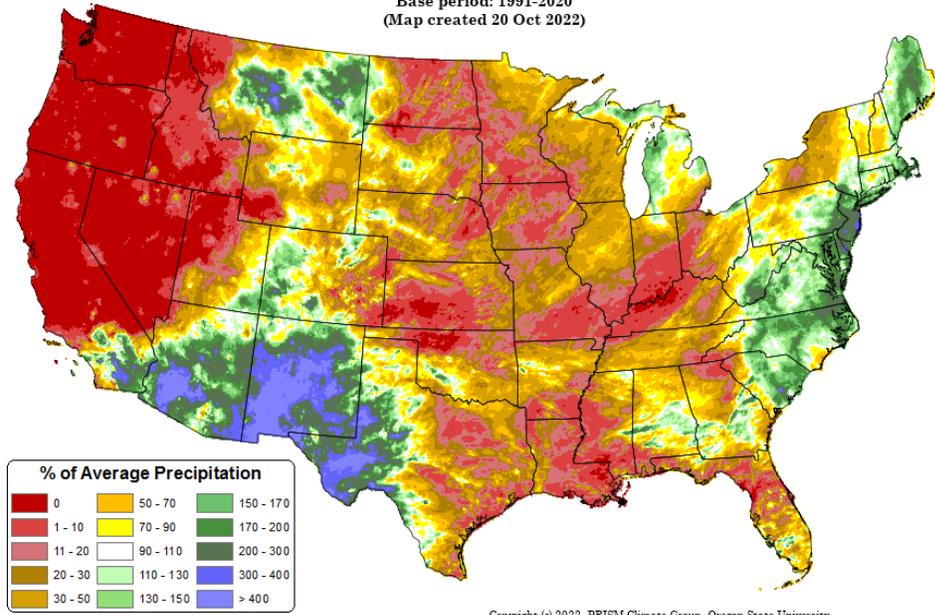
NOAA Regional Climate Centers

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

Source: PRISM

Total Precipitation Anomaly: 01 Oct 2022 - 19 Oct 2022
Period ending 7 AM EST 19 Oct 2022
Base period: 1991-2020
(Map created 20 Oct 2022)

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



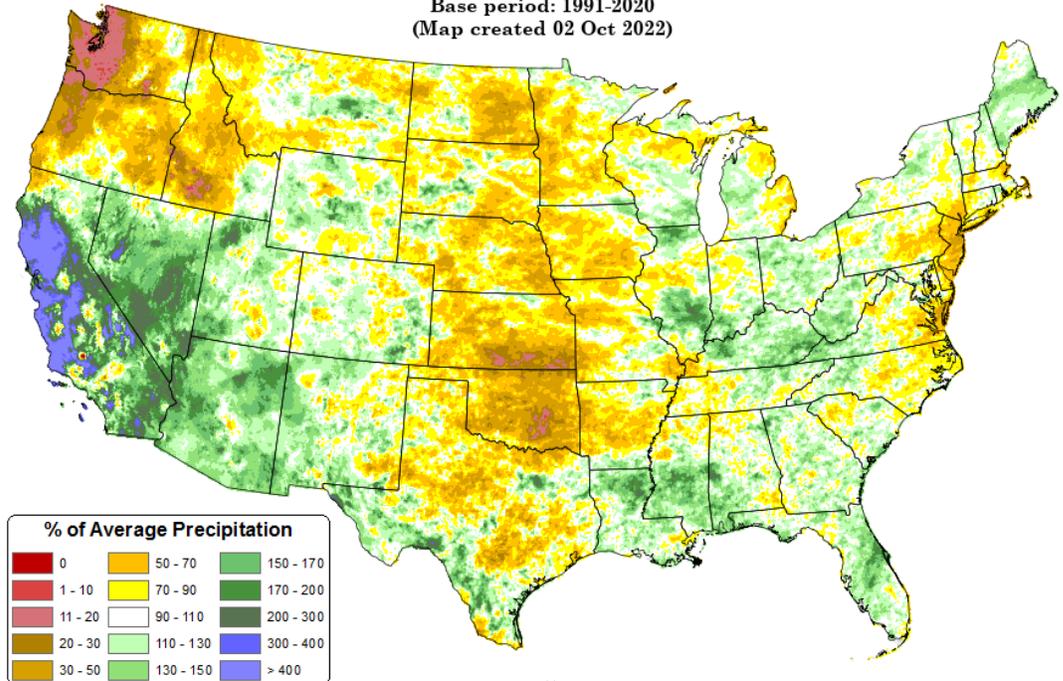
Copyright (c) 2022, PRISM Climate Group, Oregon State University

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

Source: PRISM

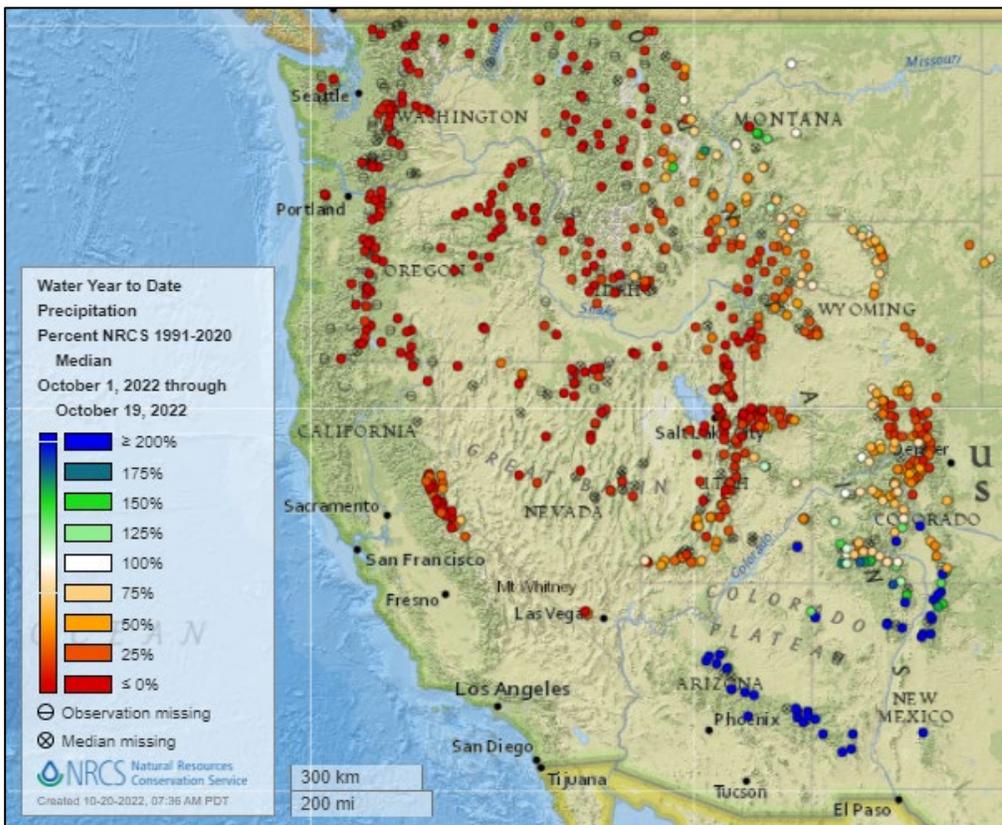
[July through September 2022 precipitation anomaly map](#)

Total Precipitation Anomaly: Jul 2022 - Sep 2022
Period ending 7 AM EST 30 Sep 2022
Base period: 1991-2020
(Map created 02 Oct 2022)



Copyright (c) 2022, PRISM Climate Group, Oregon State University

Water Year-to-Date, NRCS SNOTEL Network

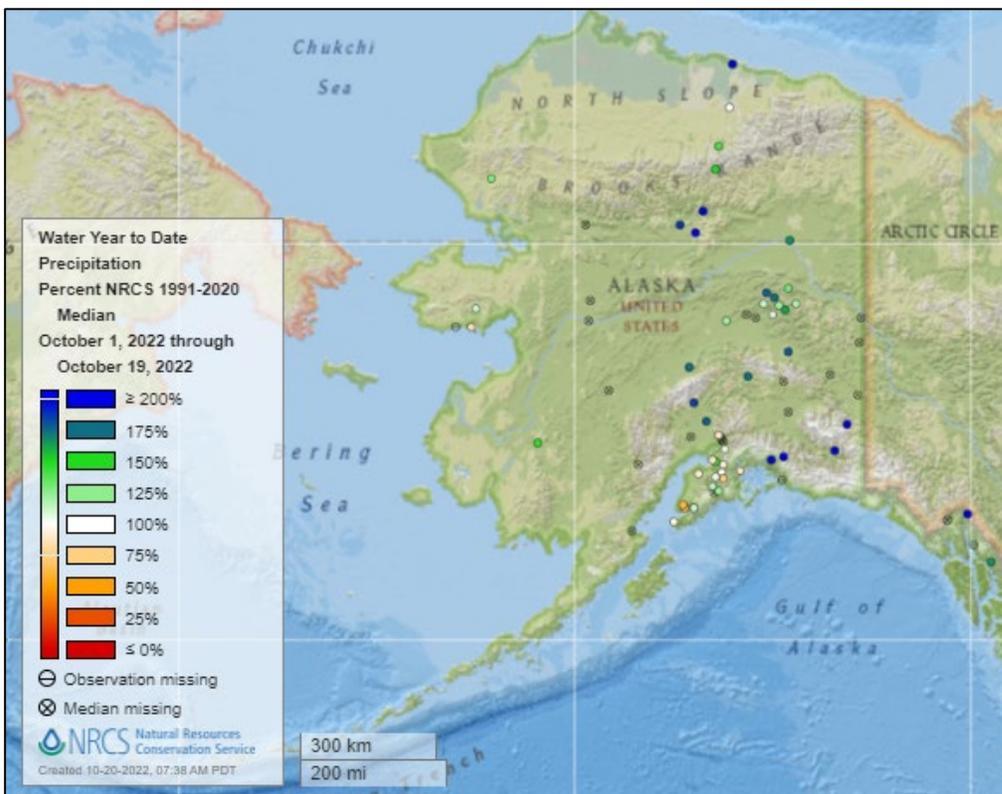


[2023 water year-to-date precipitation percent of median map](#)

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

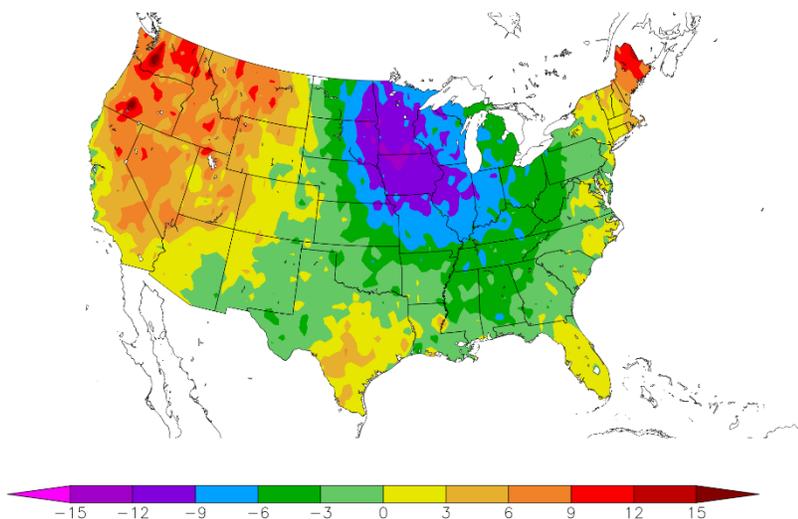
Last 7 Days, National Weather Service (NWS) Networks

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)
10/13/2022 – 10/19/2022



Generated 10/20/2022 at HPRCC using provisional data.

NOAA Regional Climate Centers

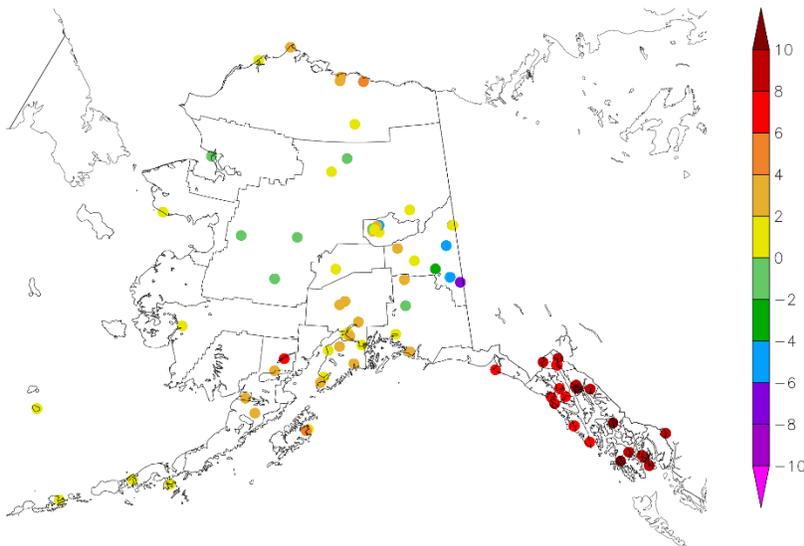
Last 7 Days, National Weather Service (NWS) Networks

Source: Regional Climate Centers

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

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

Departure from Normal Temperature (F)
10/13/2022 – 10/19/2022



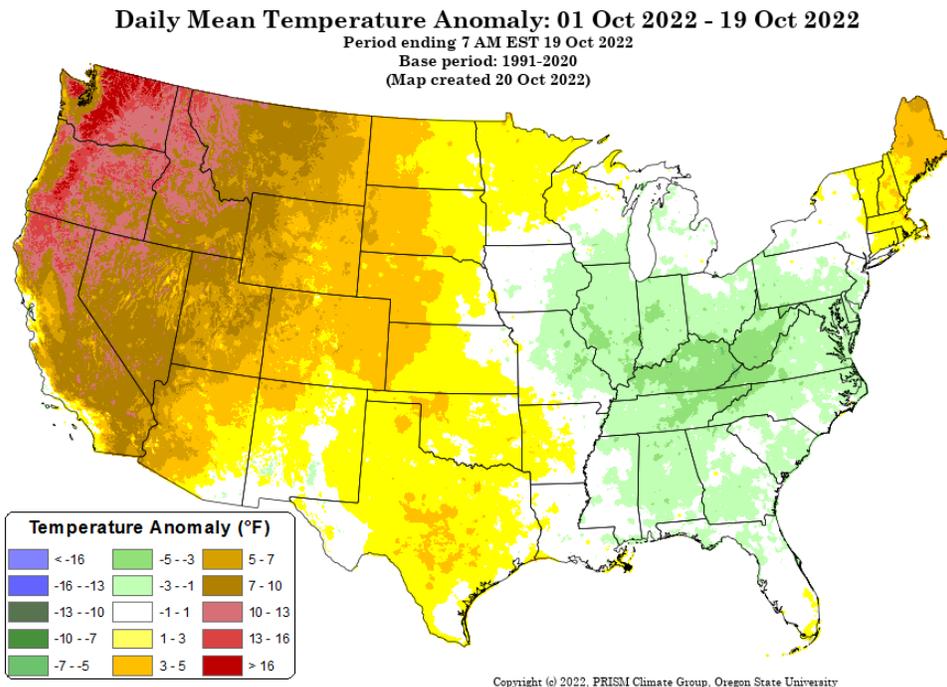
Generated 10/20/2022 at HPRCC using provisional data.

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

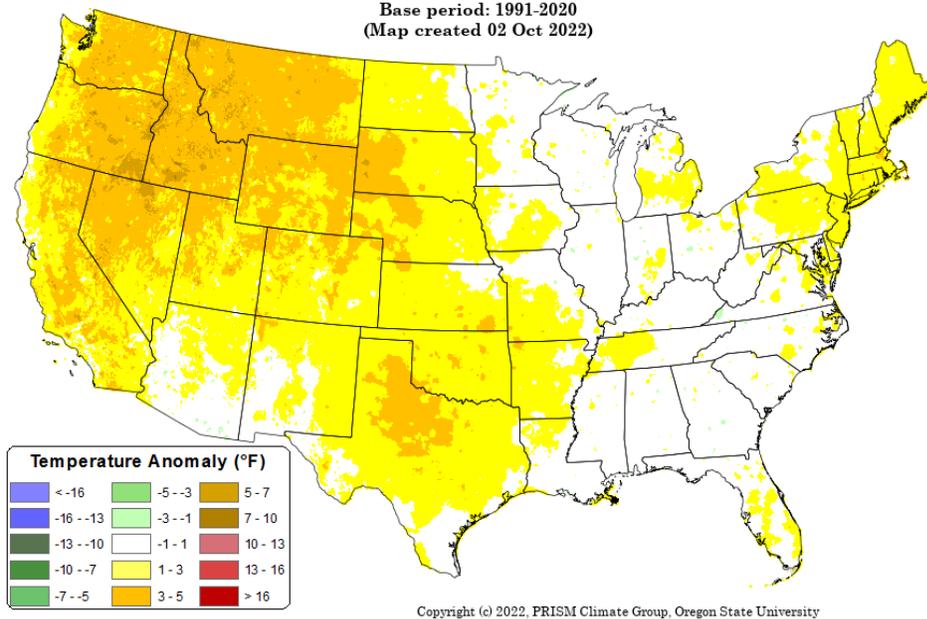
Daily Mean Temperature Anomaly: Jul 2022 - Sep 2022

Period ending 7 AM EST 30 Sep 2022

Base period: 1991-2020

(Map created 02 Oct 2022)

[July through September 2022 daily mean temperature anomaly map](#)



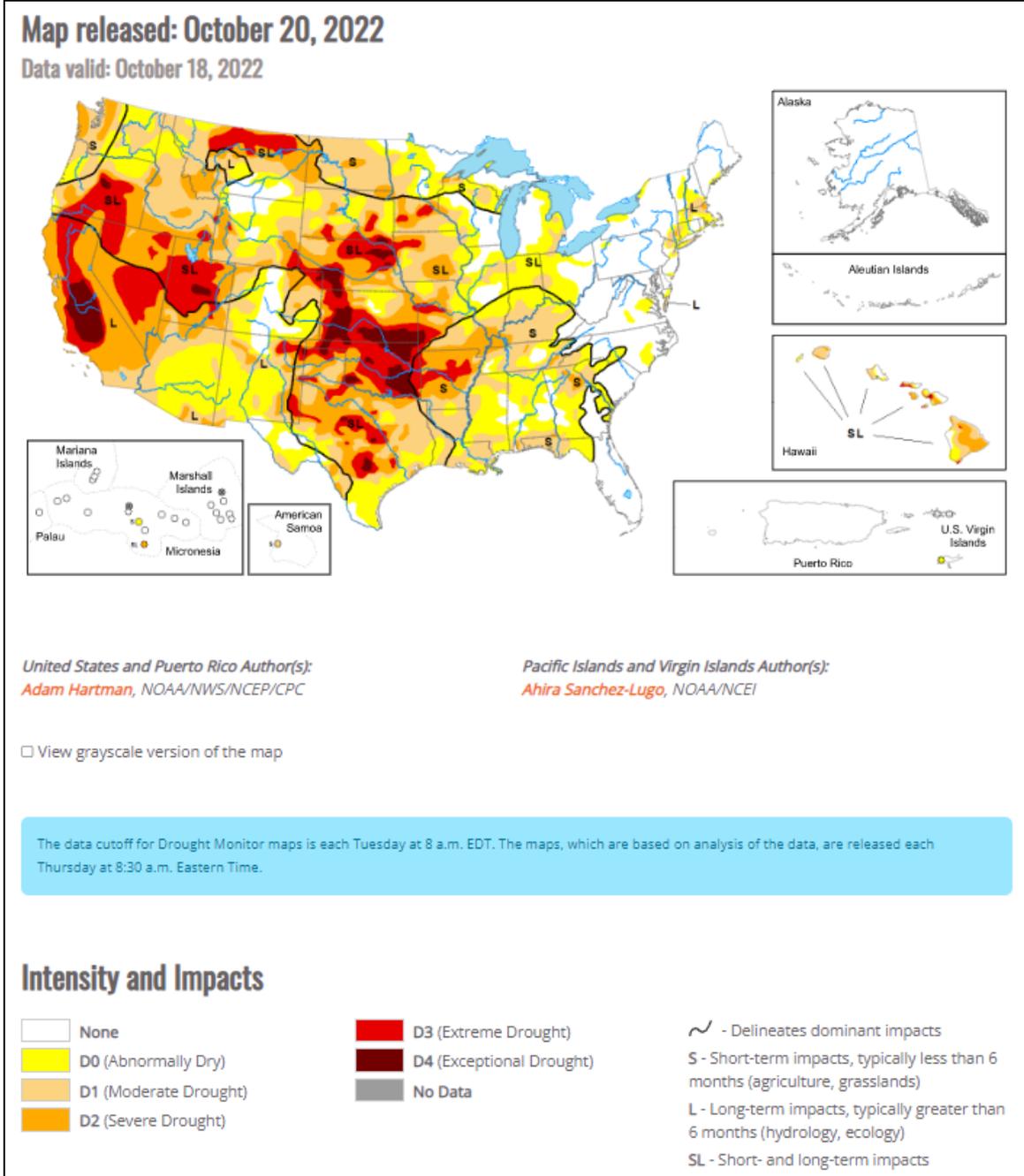
Drought

[U.S. Drought Monitor](#)

Source: National Drought Mitigation Center

[U.S. Drought Portal](#)

Source: NOAA



Current [National Drought Summary](#), October 18, 2022

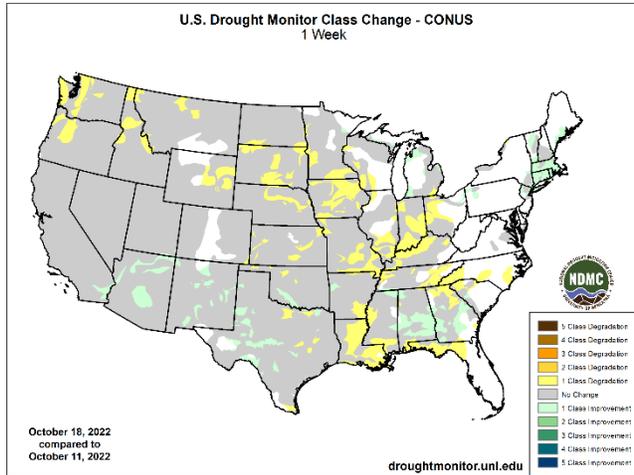
Source: National Drought Mitigation Center

“Much of the western half of the lower 48 states observed above-normal average temperatures this week. The Intermountain West and Pacific Northwest experienced the largest positive temperature anomalies, where widespread temperatures averaged 5°F to 10°F above-normal, with a few pockets exceeding 10°F above-normal for the week as whole. In addition to the above-normal temperatures, precipitation was also lacking for most areas from the Central and Northern Plains westward to the Pacific Coast, warranting drought deterioration. Parts of the Four Corners and Desert Southwest were the exception to this, as an area of low pressure meandered across the Southwest before being picked up by a frontal boundary dropping southward across the central U.S. This resulted in improvements to long-term drought conditions across parts of the Four Corners, with targeted improvements in the Southern Plains. Across the eastern half of the lower 48, frontal boundaries associated with a couple of strong low-pressure systems in the Great Lakes brought heavy precipitation and cooler than normal temperatures to portions of the Great Lakes, Northeast, and Southeast. Therefore, a widespread mix of improvements and deterioration was warranted in many locations where the heaviest precipitation did and did not fall, respectively.”

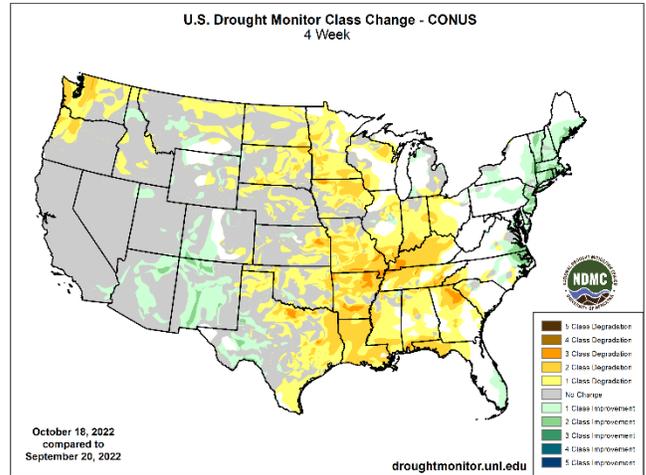
Changes in Drought Monitor Categories over Time

Source: National Drought Mitigation Center

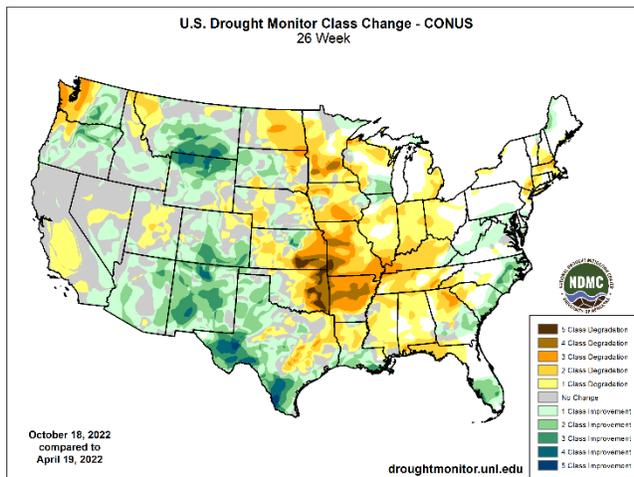
1 Week



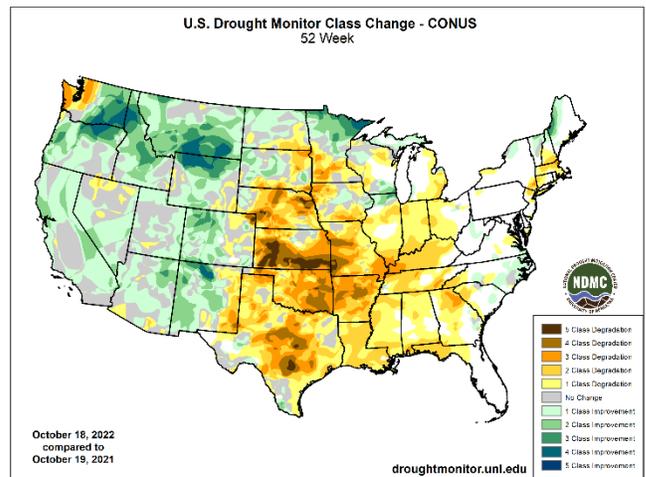
1 Month



6 Months



1 Year



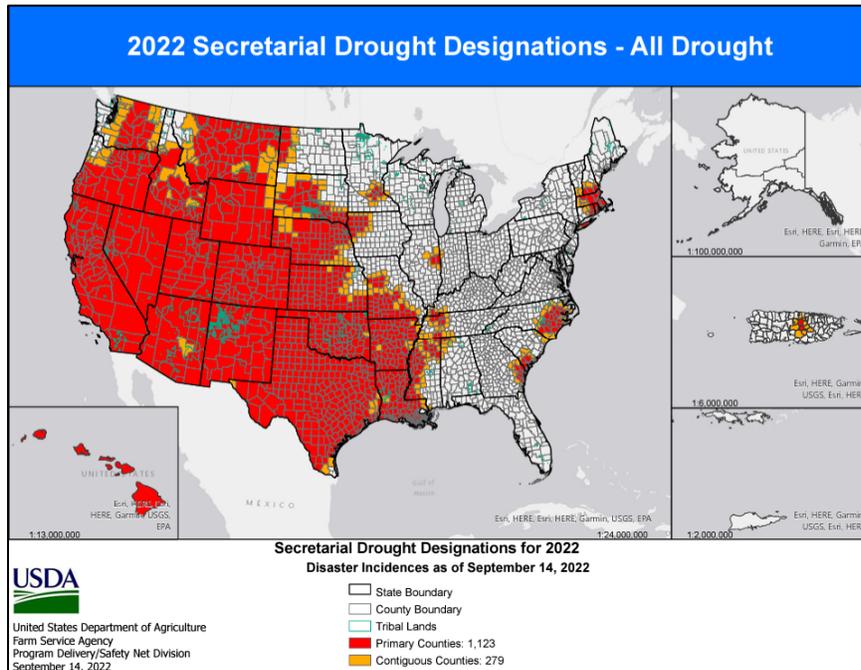
[Changes in drought conditions over the last 12 months for the contiguous U.S.](#)

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: USDA Forest Service Active Fire Mapping



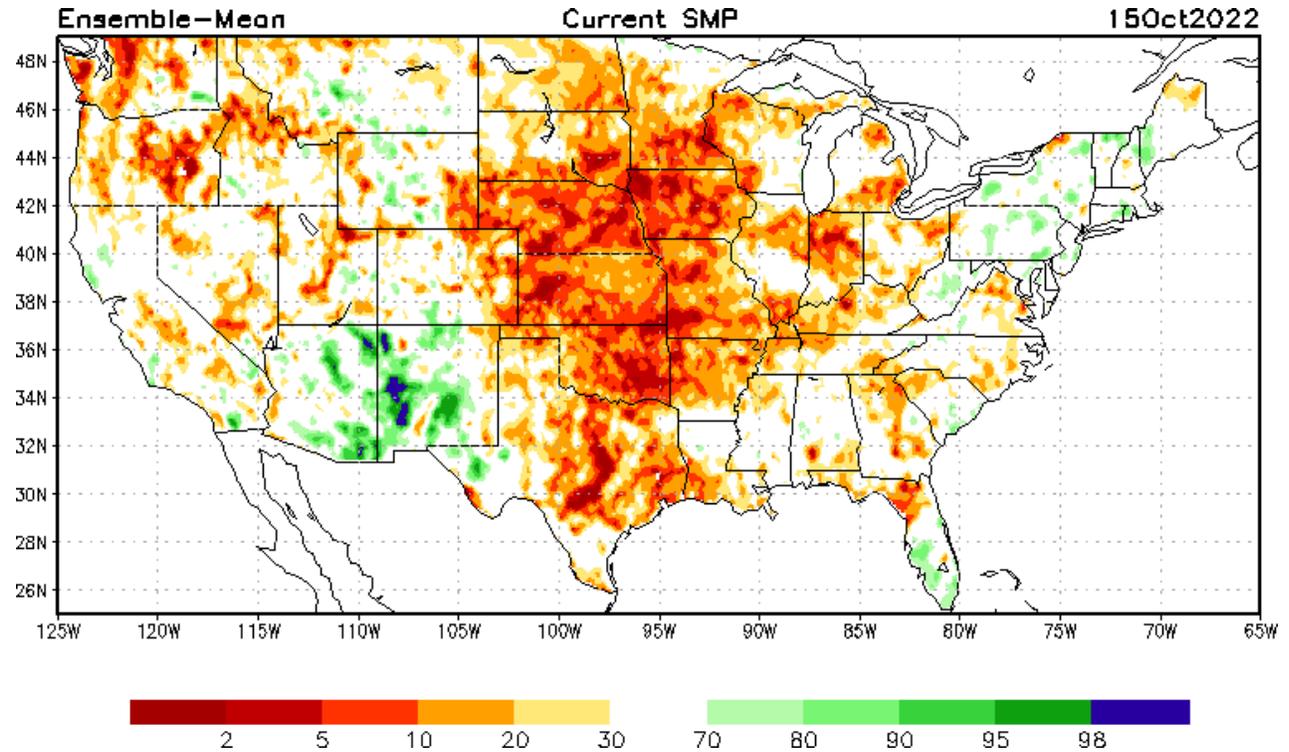
**Highlighted
Wildfire
Resources**

- [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

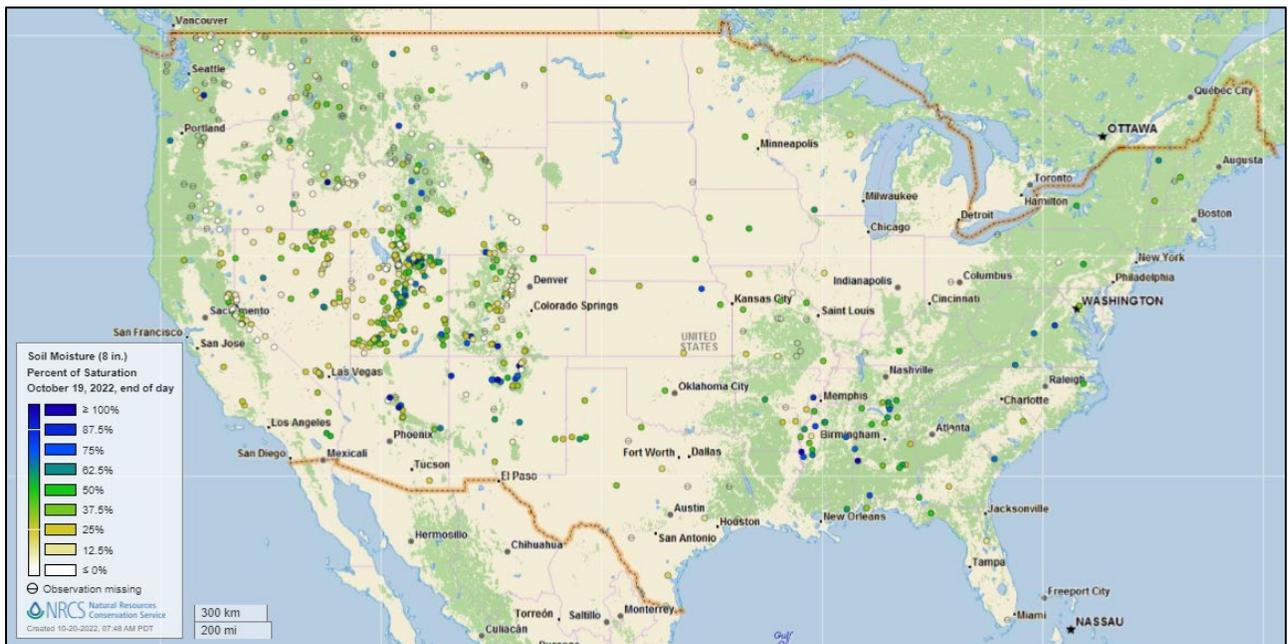


[Modeled soil moisture percentiles](#) as of October 15, 2022

Soil Moisture Percent of Saturation

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

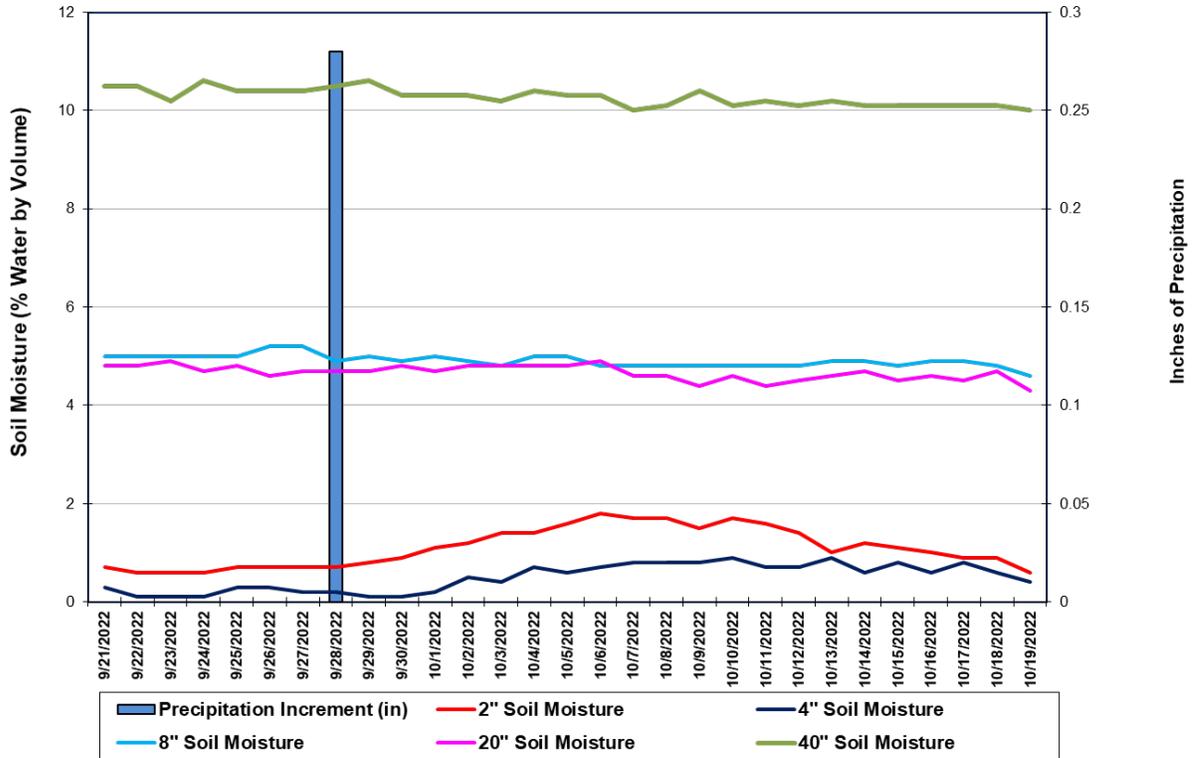
[U.S. soil moisture map at 8-inch depth:](#)



Soil Moisture

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

Lind #1, Washington (SCAN site 2021)
Daily Mean Soil Moisture vs. Daily Precipitation



This chart shows the precipitation and soil moisture for the last 30 days at the [Lind #1](#) SCAN site in Washington State. The only precipitation received during the period was 0.28 inches on September 28. Drier-than-normal conditions for the area are reflected in the soil moisture readings over the period, with all but the -40-inch sensor reporting less-than-six percent water by volume.

Soil Moisture Data Portals

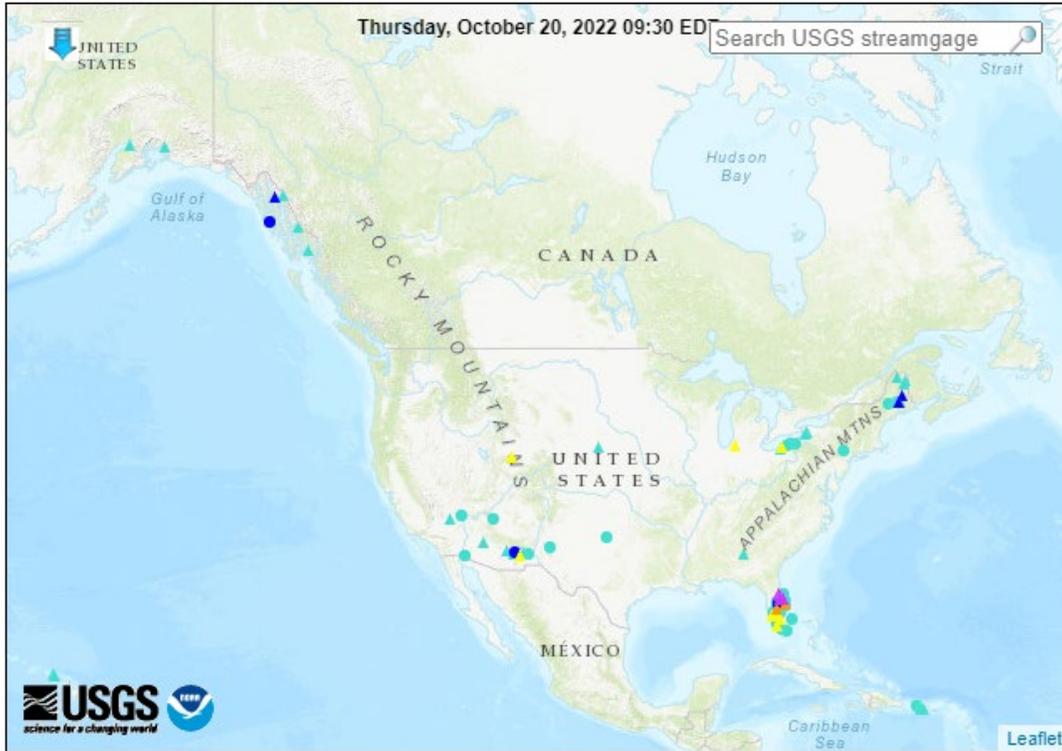
- [USCRN Soil Moisture](#)
- [National Soil Moisture Network](#)
- [NOAA Climate Prediction Center Soil Moisture](#)
- [NASA Grace](#)

Streamflow, Drought, Flood, and Runoff

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

Map of flood and high flow conditions

(6 in floods [major: 4, minor: 2], 9 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

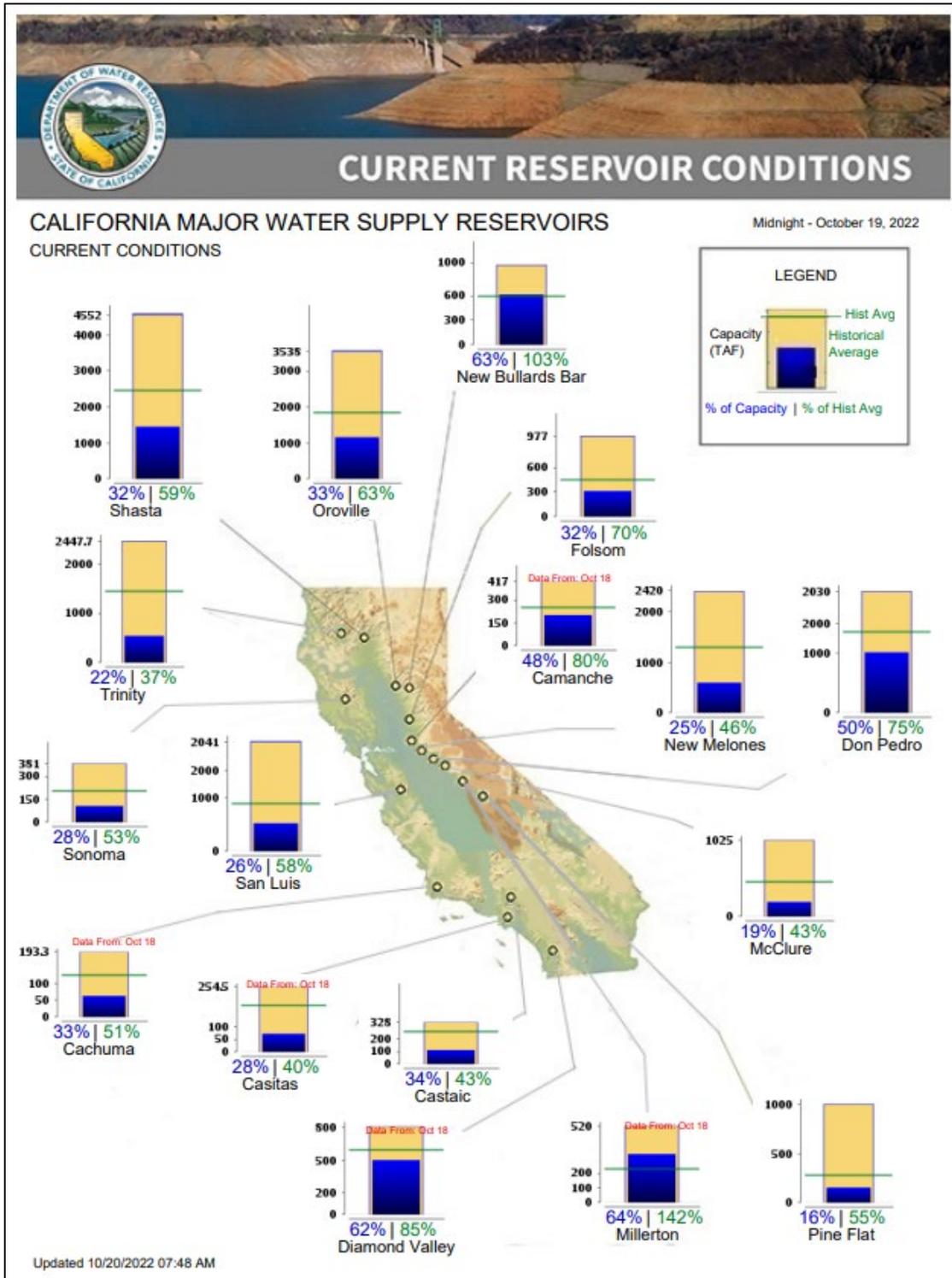
Hydromet Teacup Reservoir Depictions

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, October 20, 2022: “Cold air across the eastern half of the U.S. will retreat, with much warmer weather arriving late in the week and during the weekend. In fact, weekend high temperatures will approach or reach 90°F across the central and southern Plains. Cool conditions will linger, however, along the Atlantic Seaboard, where a coastal storm system may result in cloudiness and showers. Meanwhile, a dramatic pattern change will commence on Friday in the Northwest, where cooler weather will accompany widespread rain and snow. The Northwestern precipitation should benefit winter wheat and aid wildfire containment efforts. Subsequently, cool, cloudy, showery weather will engulf a broader area, with locally an inch or more of rain affecting the nation’s mid-section late in the weekend and early next week. Some of the heaviest rain may fall across the northern Plains. The NWS 6- to 10-day outlook for October 25 – 29 calls for above-normal temperatures in the East, while cooler-than-normal conditions will cover much of the western and central U.S. Meanwhile, near- or above-normal precipitation across most of the country should contrast with drier-than-normal weather in southern sections of the Rockies and High Plains. The Northwest and Southeast will have the greatest likelihood of experiencing wet weather.”

Weather Hazards Outlook: [October 22 – 26, 2022](#)

Source: NOAA Weather Prediction Center

U.S. Day 3-7 Hazards Outlook

[About the Hazards Outlook](#)

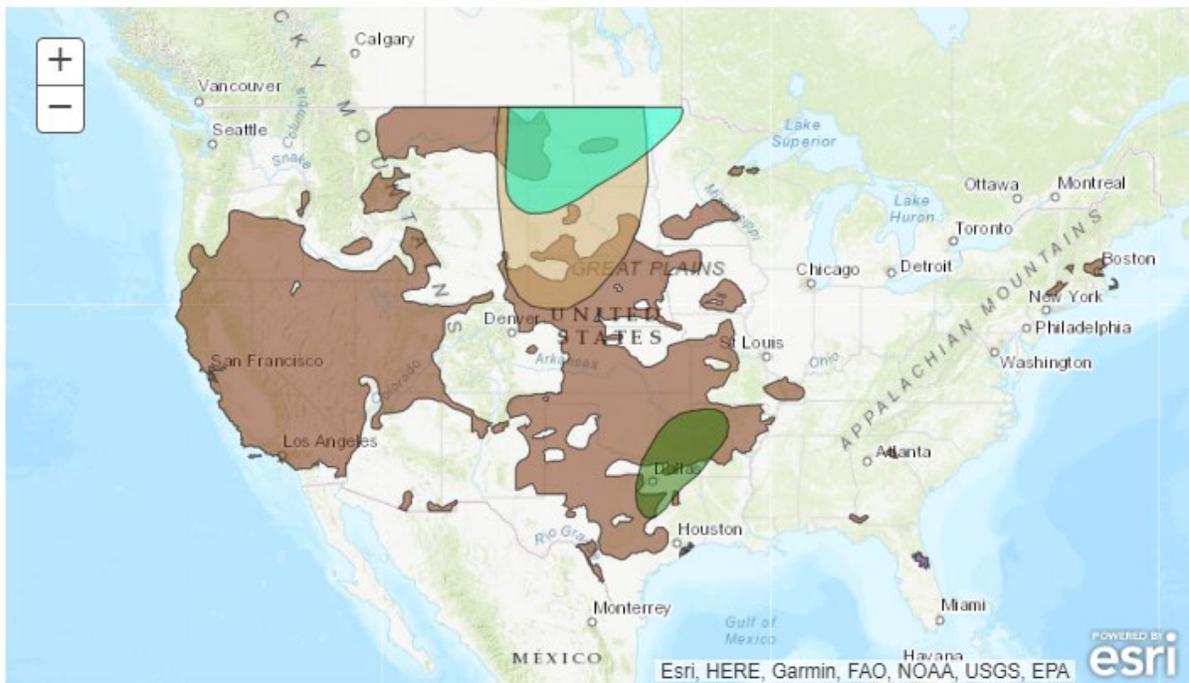
Created October 19, 2022

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 checked="" 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 October 22, 2022 - October 26, 2022

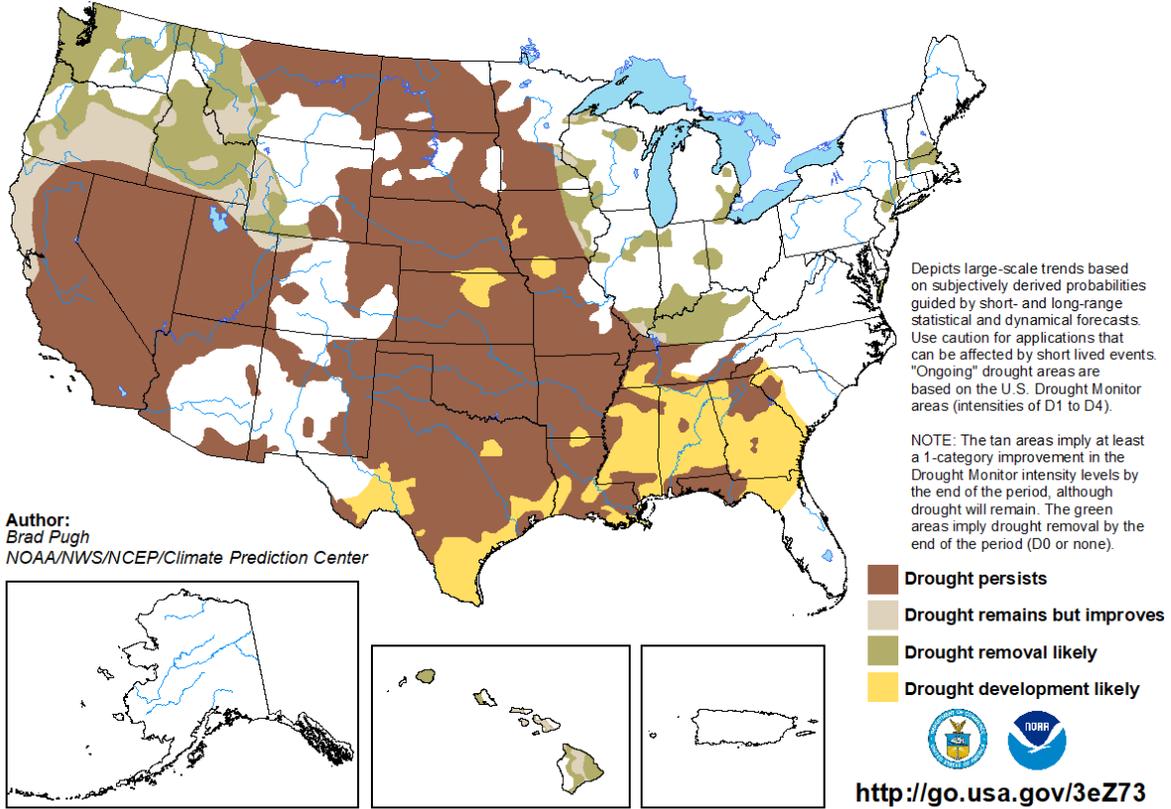


Seasonal Drought Outlook: [October 20, 2022 – January 31, 2023](#)

Source: National Weather Service

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

Valid for October 20, 2022 - January 31, 2023
Released October 20, 2022

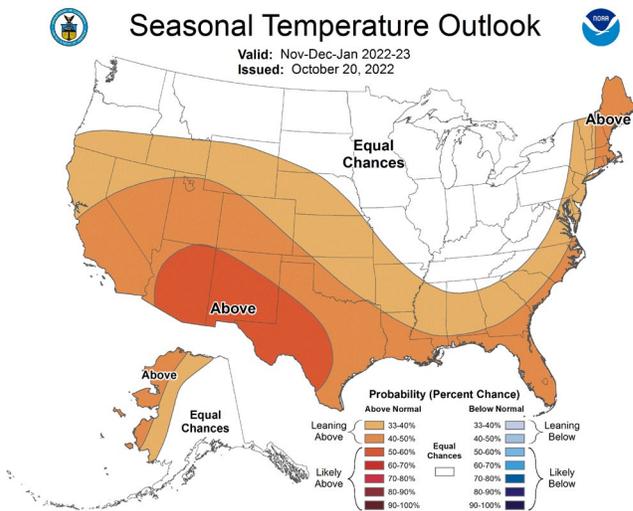
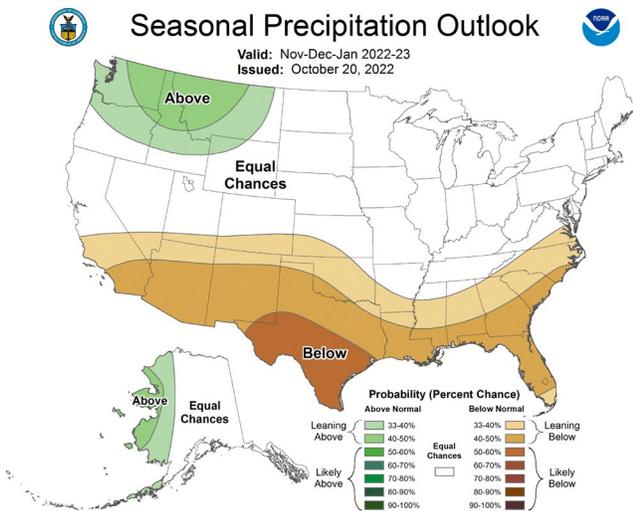


Climate Prediction Center 3-Month Outlook

Source: National Weather Service

Precipitation

Temperature



[November-December-January 2022-2023 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](#).