United States Department of Agriculture

Water and Climate Update

January 12, 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.

Torrential rainfall continues to inundate California

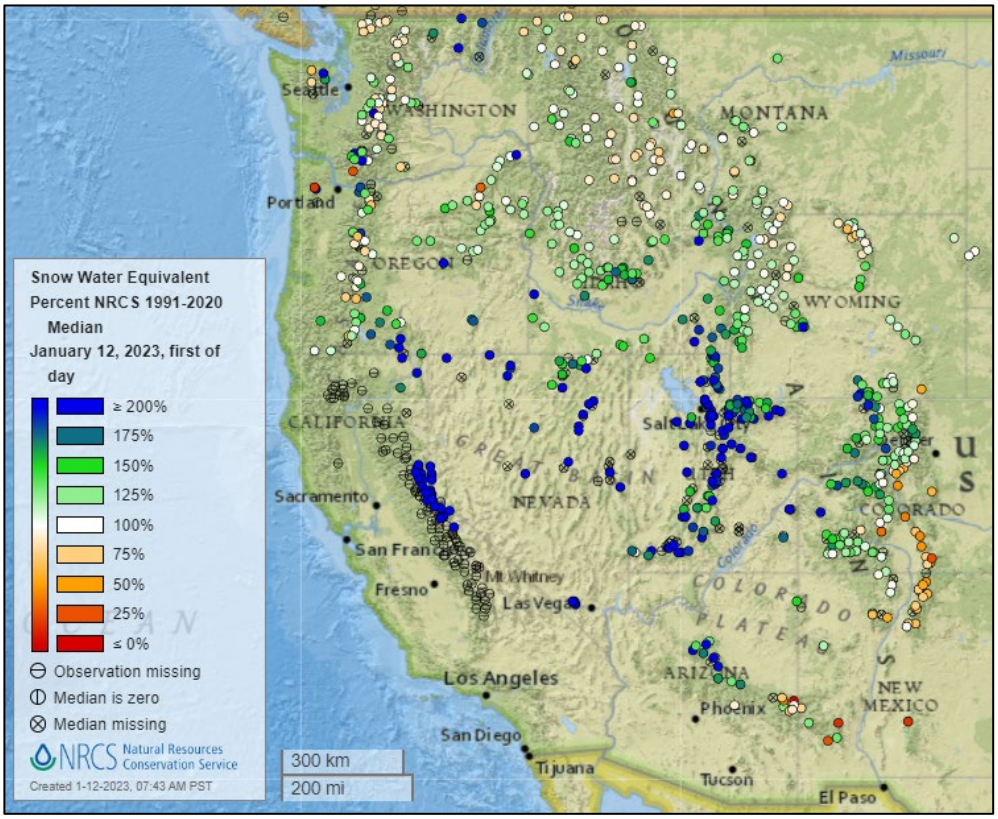
Photo by Josh Edelson/AFP/Getty Images

Storm after storm has continued to impact California and its residents. Flooding and landslides in the region have been prevalent, displacing people from their homes and causing fatalities along with extensive amounts of damage to property and critical infrastructure. In addition to the negative impacts, the heavy precipitation has increased reservoir storage for the state and continues to build mountain snowpack, breaking historic records and potentially providing relief for some drought conditions in the spring and summer.

Related:

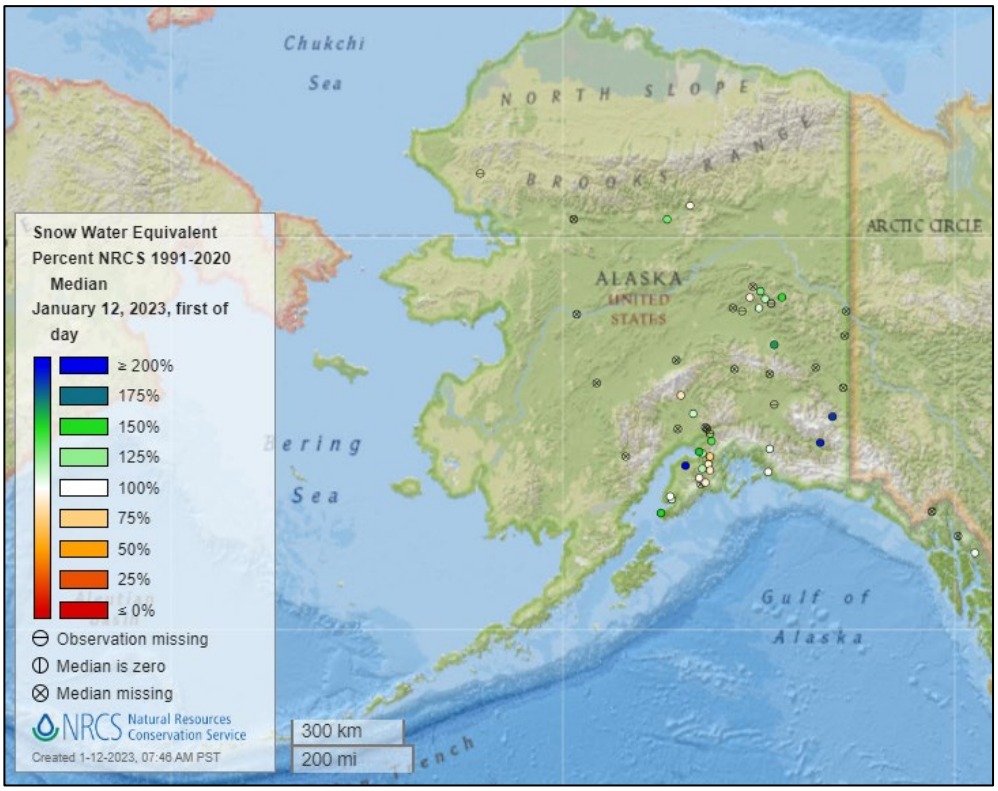
California's flooding, in pictures – CNN
At Least 17 People Killed in Violent Flooding Across California: Here's What to Know - Time
Monterey Peninsula could become an island as epic flooding engulfs California cities. And more rain is on the way - CNN
Flooding in California – National Weather Service
Snowpack records as of January 12, 2023 – USDA-NRCS Snow Survey & Water Supply Forecasting Program
First survey of 2023 shows some of the highest snowpacks on record – KOLO-TV (NV)
Water year off to a great start, current snow amounts better than peaks measured last year – KTVN 2 News (NV)

Snow



[Snow water equivalent percent of median map]

See also:
[Snow water equivalent values (inches) map]

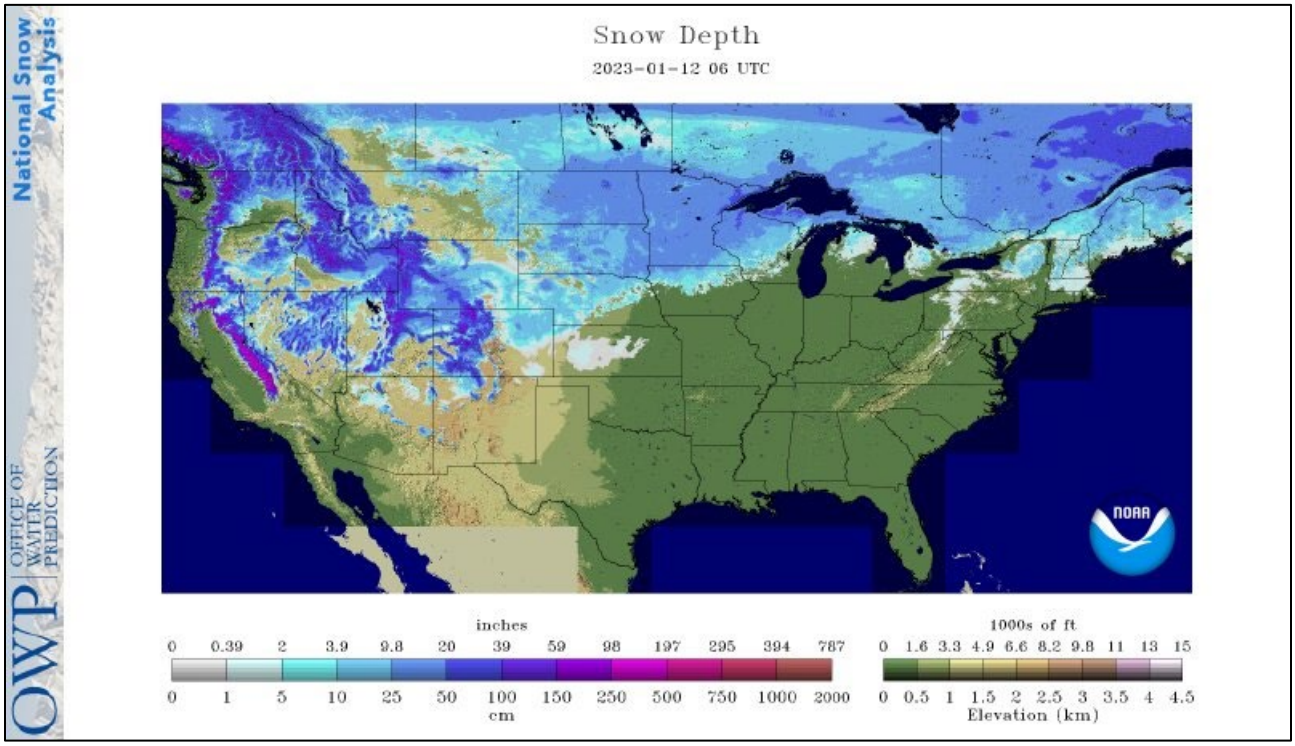


[Alaska snow water equivalent percent of median map]

See also:
[Alaska snow water equivalent values (inches) map]

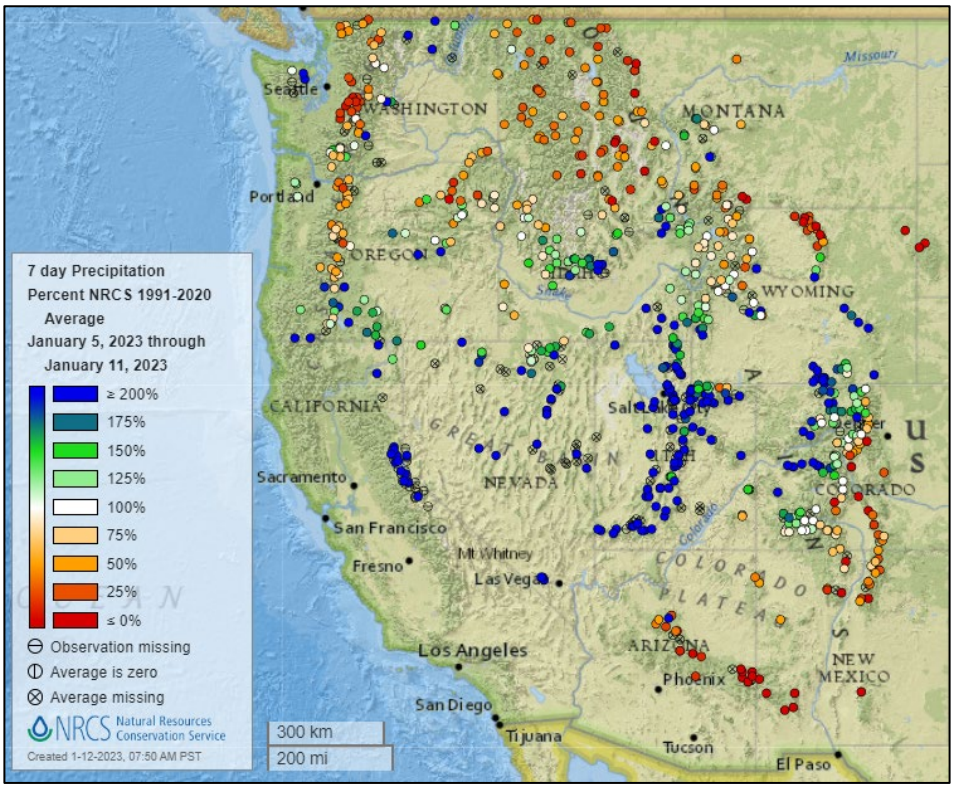
Current Snow Depth, National Weather Service Snow Analysis

Source: NOAA NWS National Operational Hydrologic Remote Sensing Center



Precipitation

Last 7 Days, NRCS SNOTEL Network

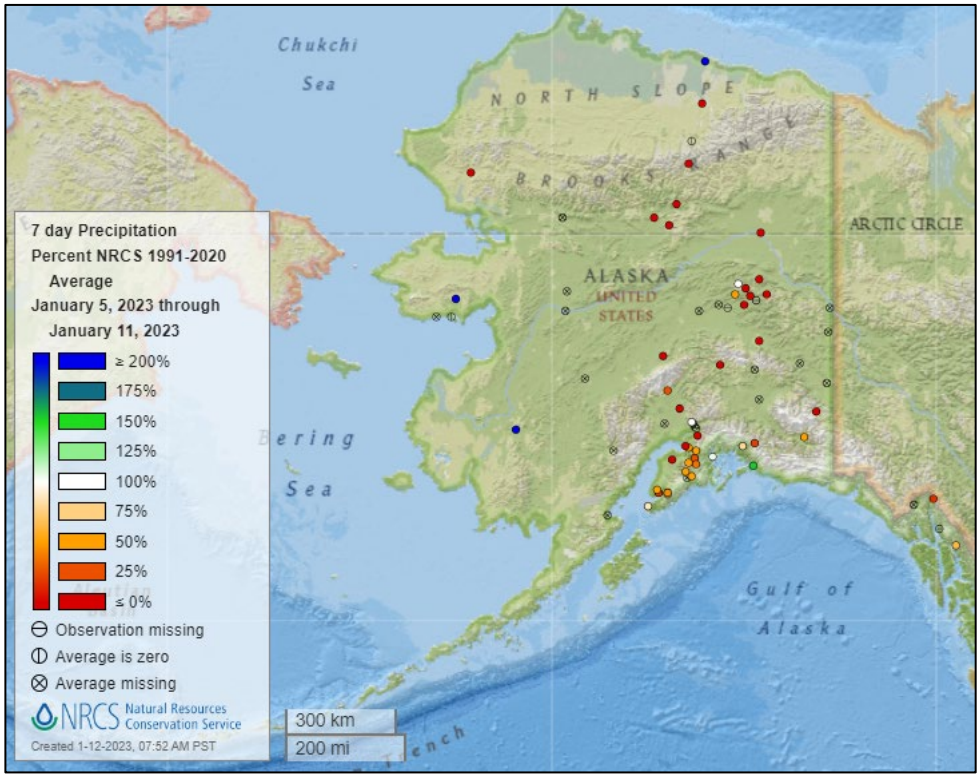


[7-day precipitation percent of average map]

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]

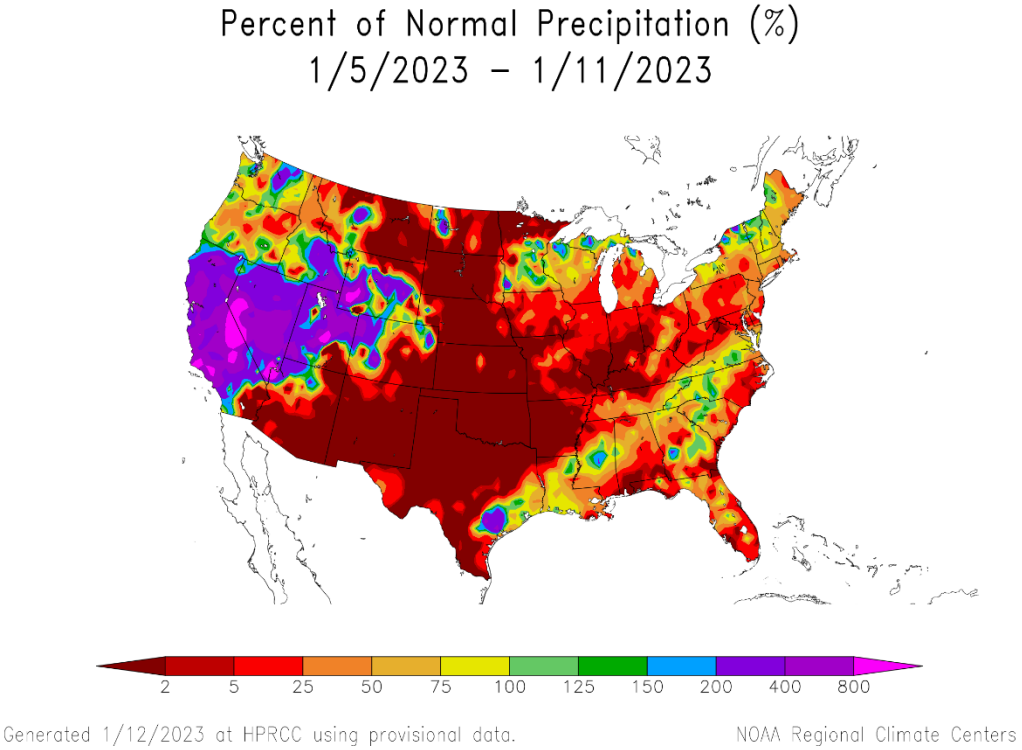


Last 7 Days, National Weather Service (NWS) Networks

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](#)

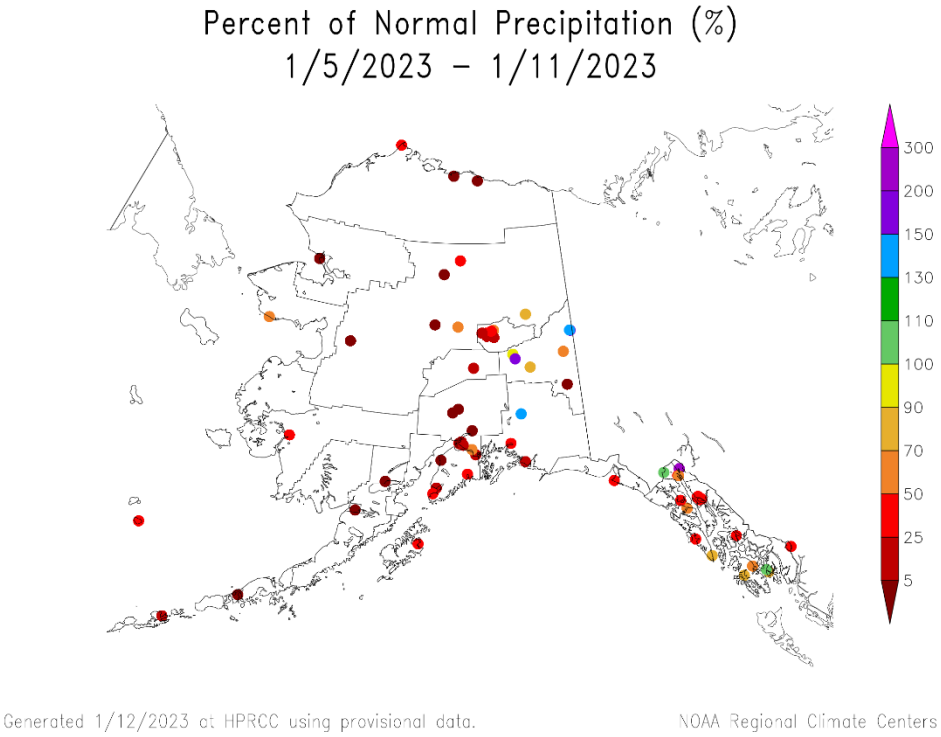


Last 7 Days, National Weather Service (NWS) Networks

Source: Regional Climate Centers

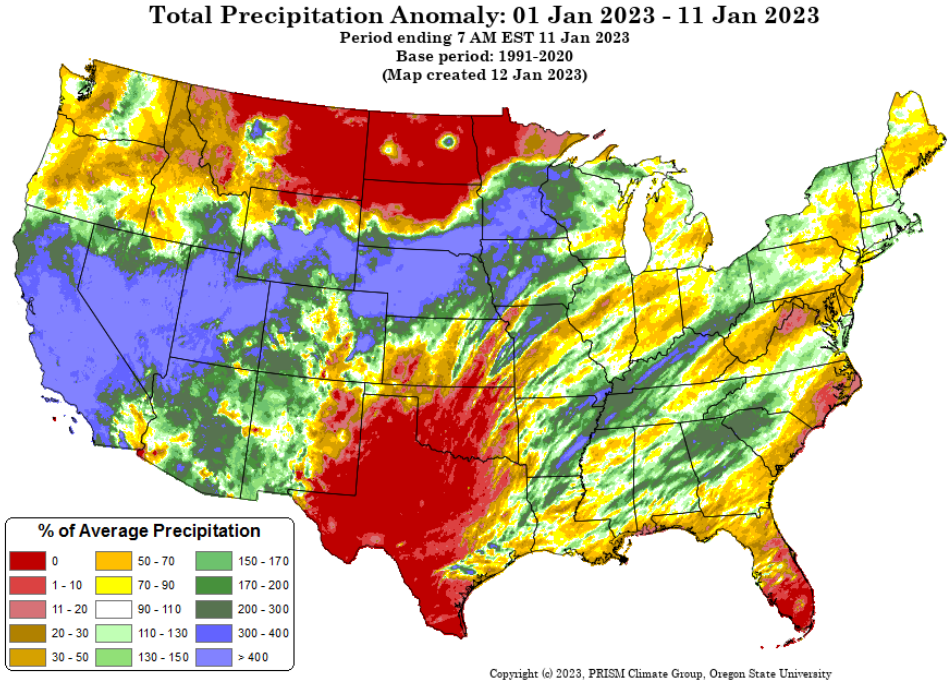
[7-day precipitation percent of normal map](#) for Alaska.

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



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

Source: PRISM

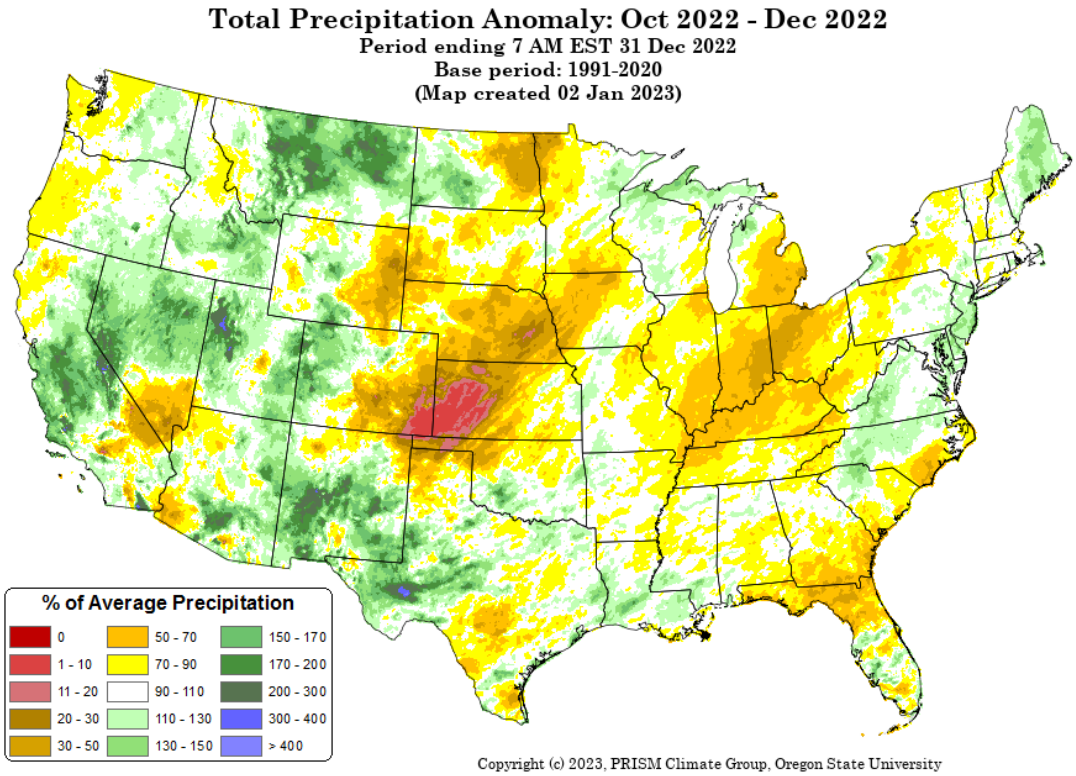


[Month-to-date national total precipitation anomaly map]

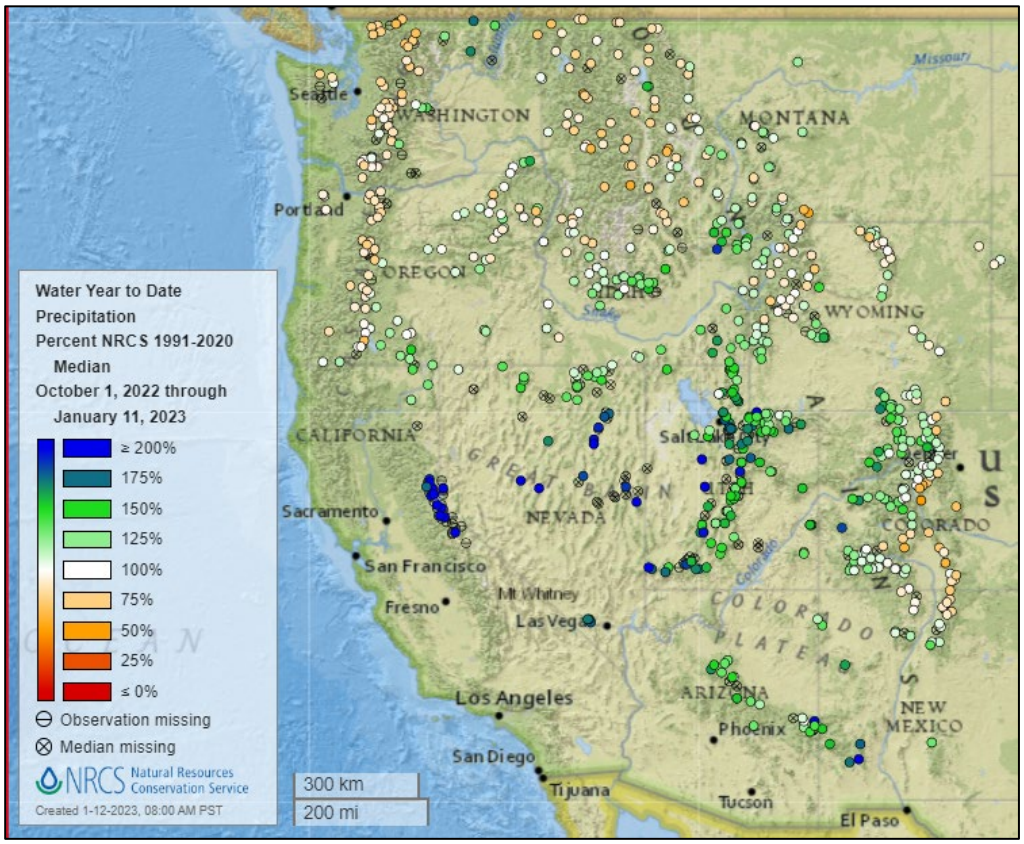
Last 3 Months, All Available Data Including SNOTEL and NWS Networks

Source: PRISM

[October through December 2022 precipitation anomaly map]



Water Year-to-Date, NRCS SNOTEL Network

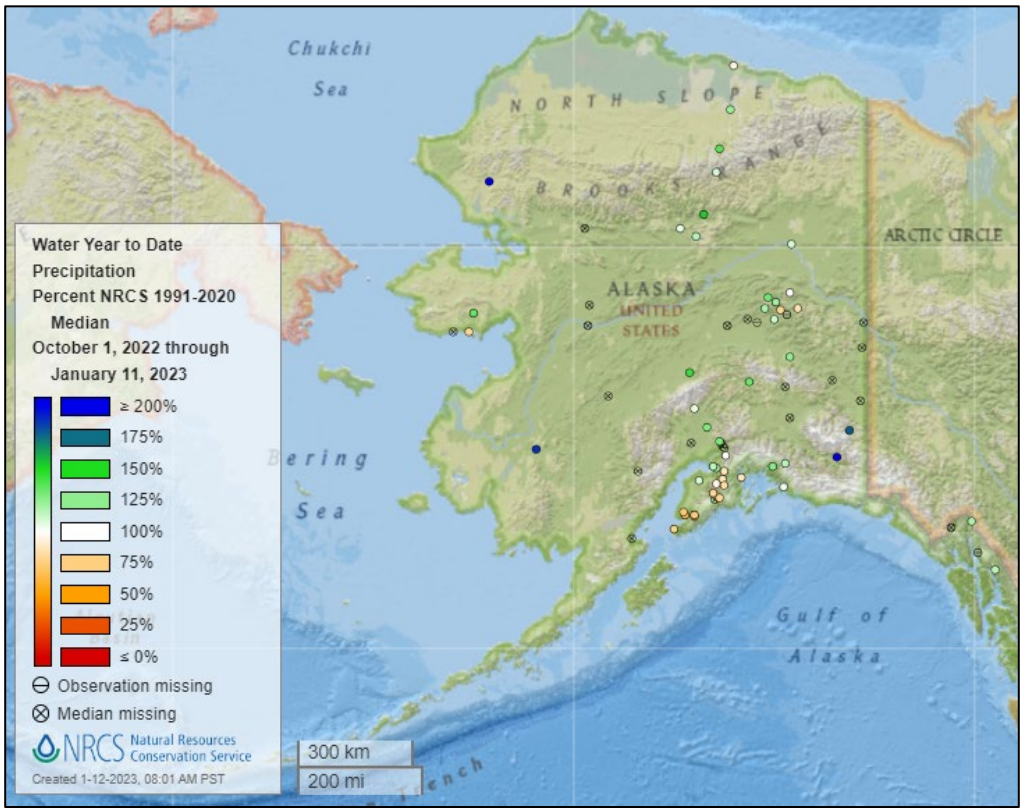


[2023 water year-to-date precipitation percent of median map]

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]

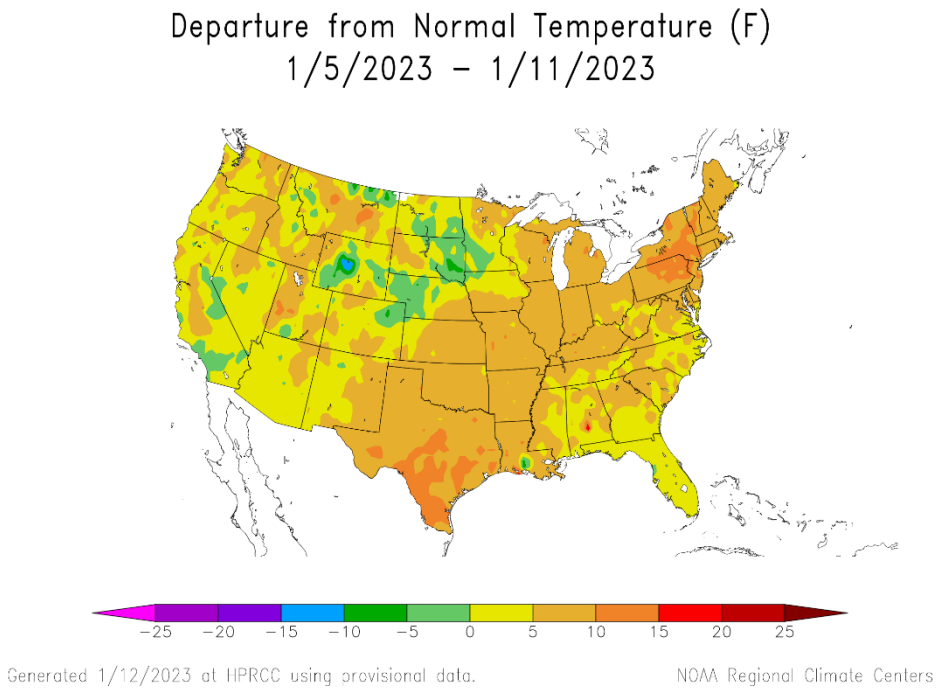
Temperature

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

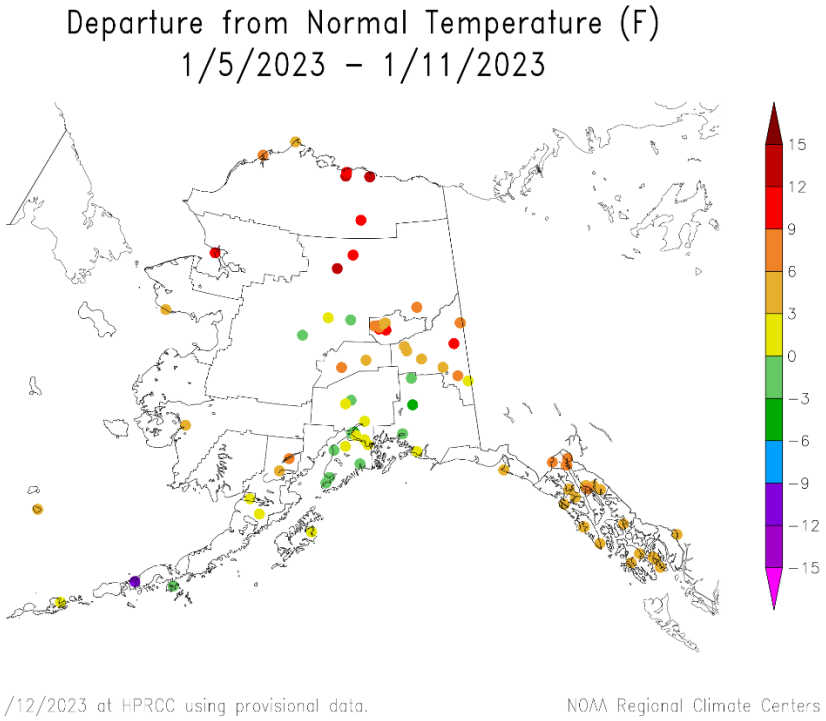


Last 7 Days, National Weather Service (NWS) Networks

Source: Regional Climate Centers

7-day temperature anomaly map for Alaska.

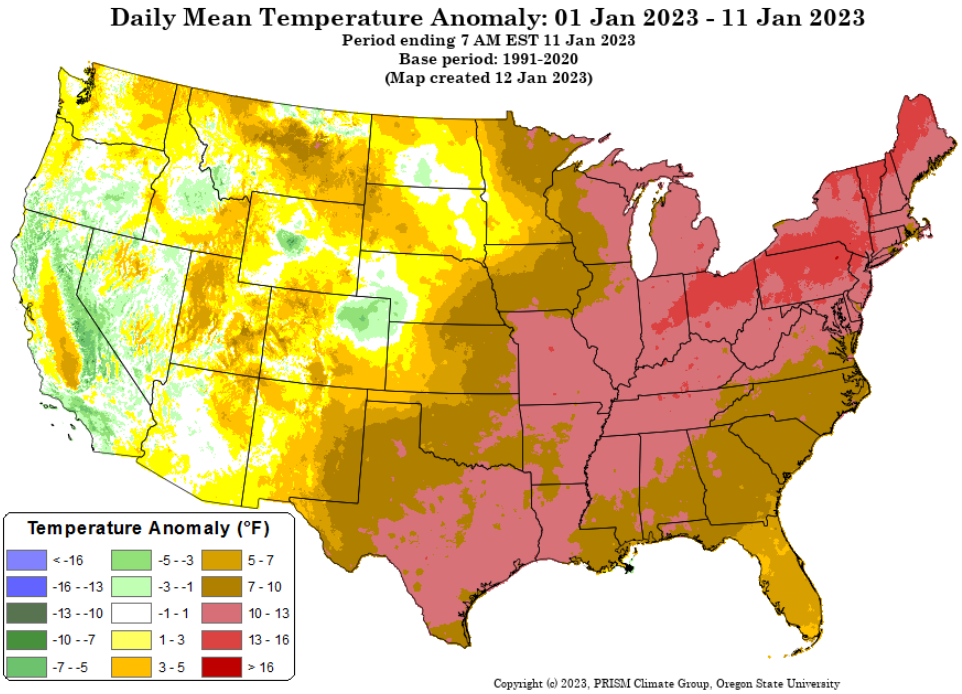
See also: 7-day temperature (° F) map



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

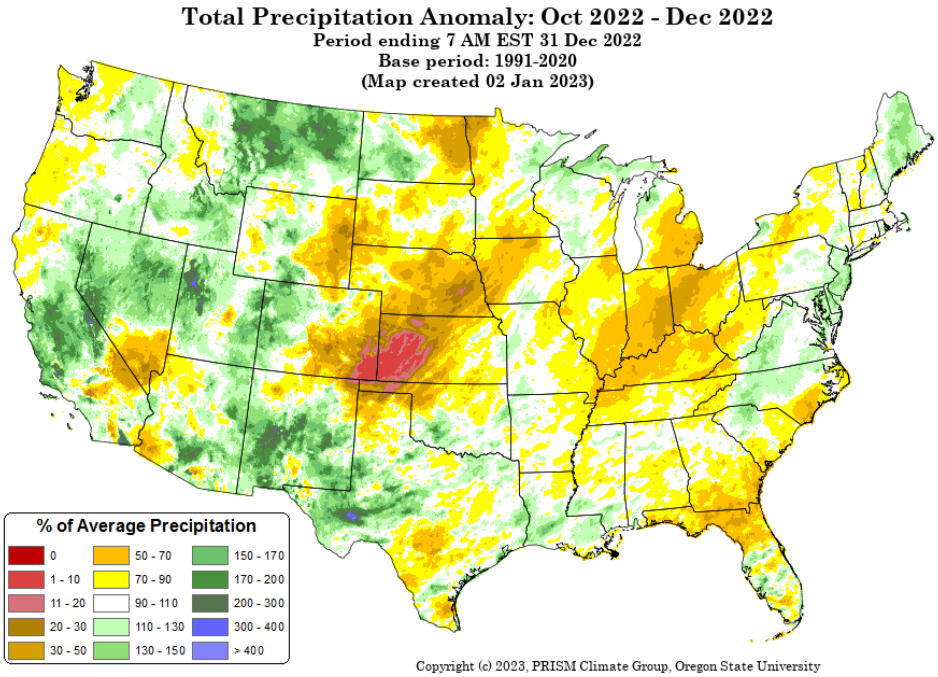
Source: PRISM

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



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

Source: PRISM



[October through December 2022 daily mean temperature anomaly map]

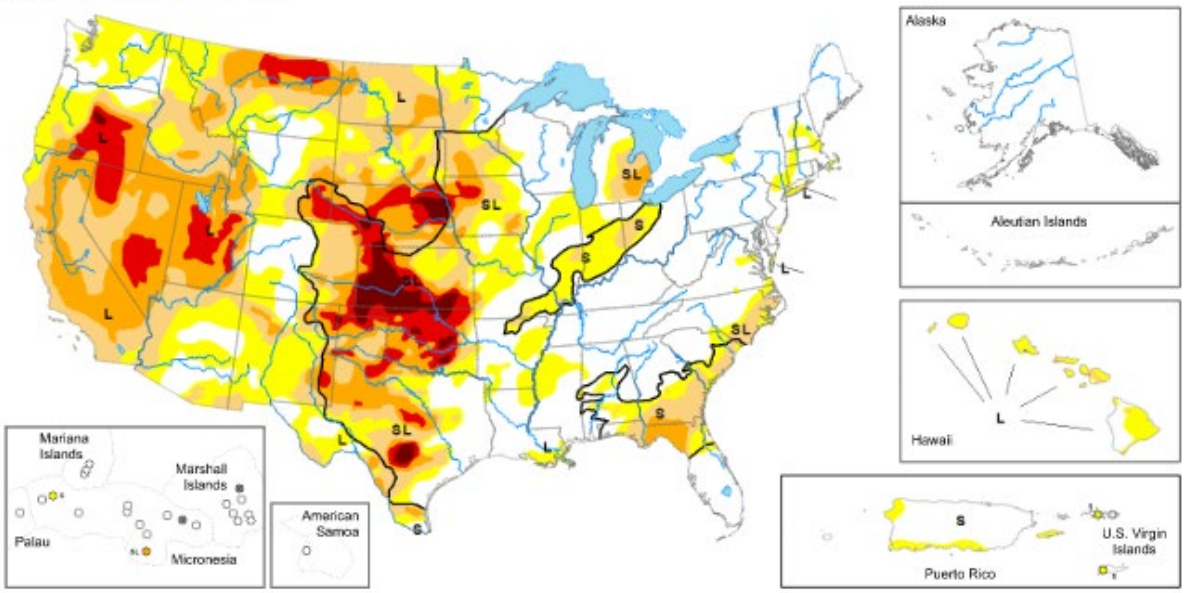
Drought

U.S. Drought Monitor
Source: National Drought Mitigation Center

U.S. Drought Portal
Source: NOAA

Map released: January 12, 2023

Data valid: January 10, 2023



United States and Puerto Rico Author(s):
Richard Tinker, NOAA/NWS/NCEP/CPC

Pacific Islands and Virgin Islands Author(s):
Curtis Riganti, National Drought Mitigation Center

☐ View grayscale version of the map

The data cutoff for Drought Monitor maps is each Tuesday at 7 a.m. EST. The maps, which are based on analysis of the data, are released each Thursday at 8:30 a.m. Eastern Time.

Intensity and Impacts

- None
- D0 (Abnormally Dry)
- D1 (Moderate Drought)
- D2 (Severe Drought)
- D3 (Extreme Drought)
- D4 (Exceptional Drought)
- No Data

~ - Delineates dominant impacts

S - Short-term impacts, typically less than 6 months (agriculture, grasslands)

L - Long-term impacts, typically greater than 6 months (hydrology, ecology)

SL - Short- and long-term impacts

Current National Drought Summary, January 10, 2023

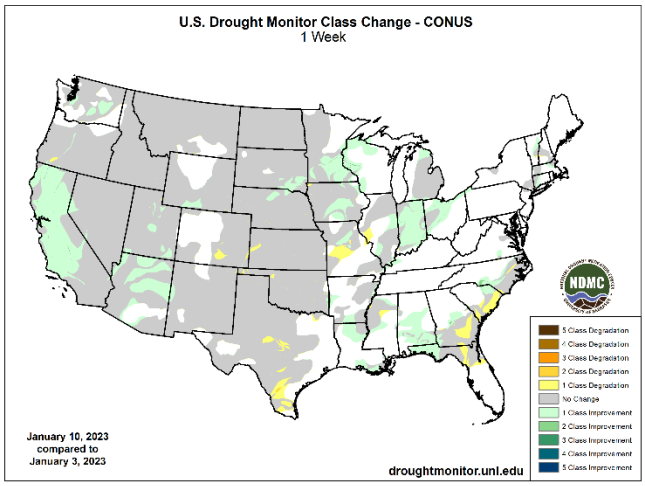
Source: National Drought Mitigation Center

“A series of atmospheric rivers (AR) led to heavy rain and high-elevation snow across parts of the West, especially across California. Precipitation totals exceeding 4 inches (liquid-equivalent) were widespread, and several areas in and near the Sierra Nevada, Cascades, and coastal ranges recorded over one foot of precipitation. Moderate to heavy precipitation was also common along the coast and in the higher elevations of the Pacific Northwest, some higher elevations in the central and northern Rockies, part of the upper Midwest, portions of the lower Mississippi Valley, the interior Southeast, and scattered locales across the Ohio Valley and the Northeast. Precipitation totals generally exceeded 1.5 inches, and topped 4 inches in parts of the Southeast, central Utah, and the higher elevations in the Pacific Northwest. Much of the precipitation fell on areas experiencing dryness and drought, so across the country, improvement was much more common than deterioration. Mild temperatures prevailed across the country except where significant precipitation was observed in the northern Plains and Far West. Daily high temperatures averaged more than 12 deg. F above normal in central and southern Texas while daily low temperatures averaged 10 to 13 deg. F above normal across the Great Lakes, the Southeast, and the southern Plains.”

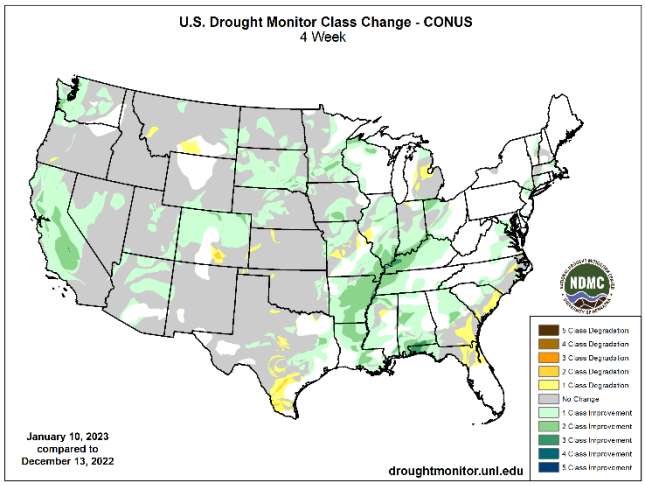
Changes in Drought Monitor Categories over Time

Source: National Drought Mitigation Center

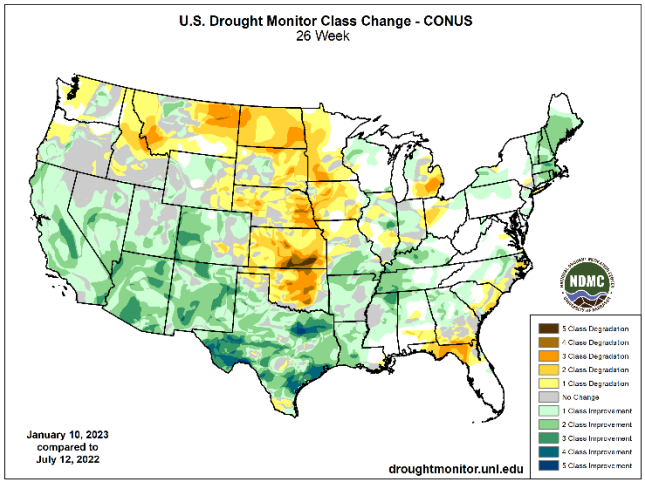
1 Week



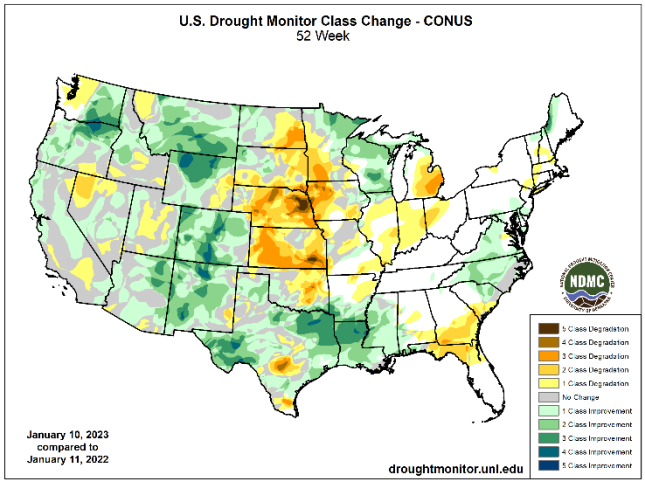
1 Month



6 Months



1 Year



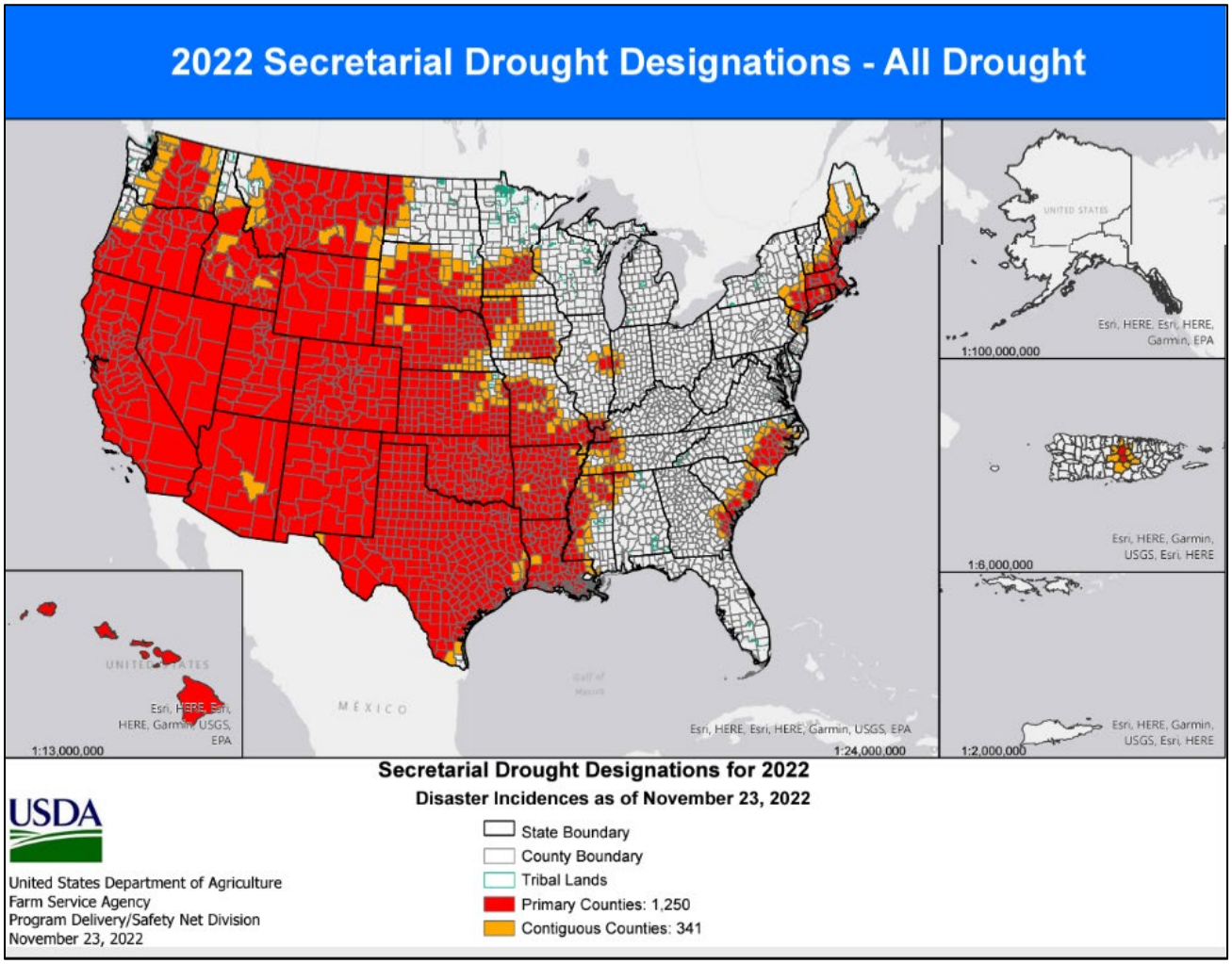
Changes in drought conditions over the last 12 months for the contiguous U.S.

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

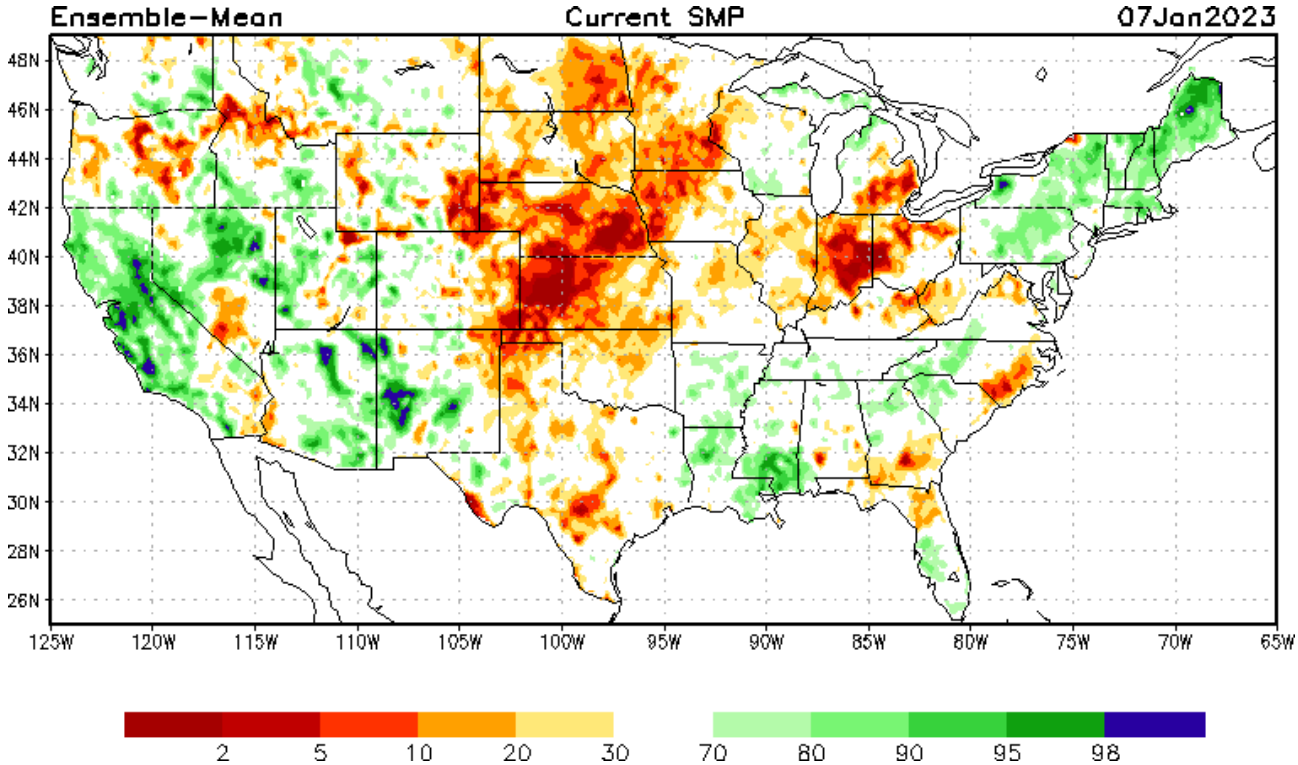
Source: USDA Farm Service Agency



Other Climatic and Water Supply Indicators

Soil Moisture

Source: NOAA National Centers for Environmental Prediction

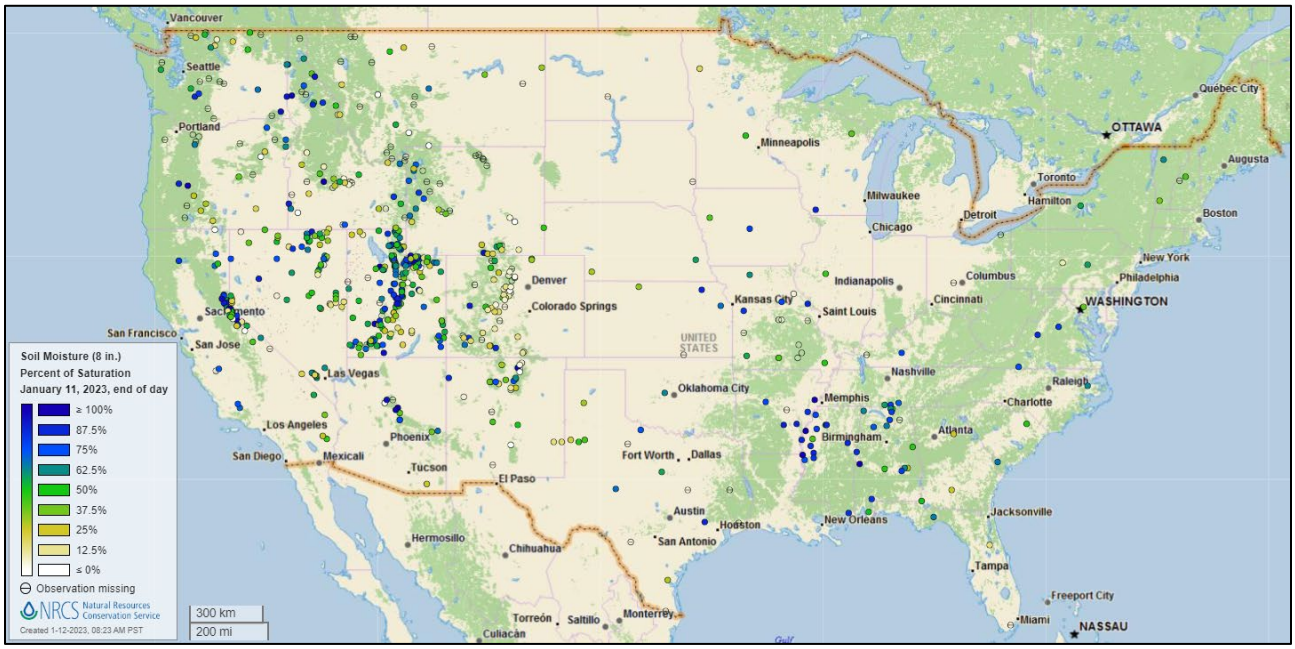


Modeled soil moisture percentiles as of January 07, 2023

Soil Moisture Percent of Saturation

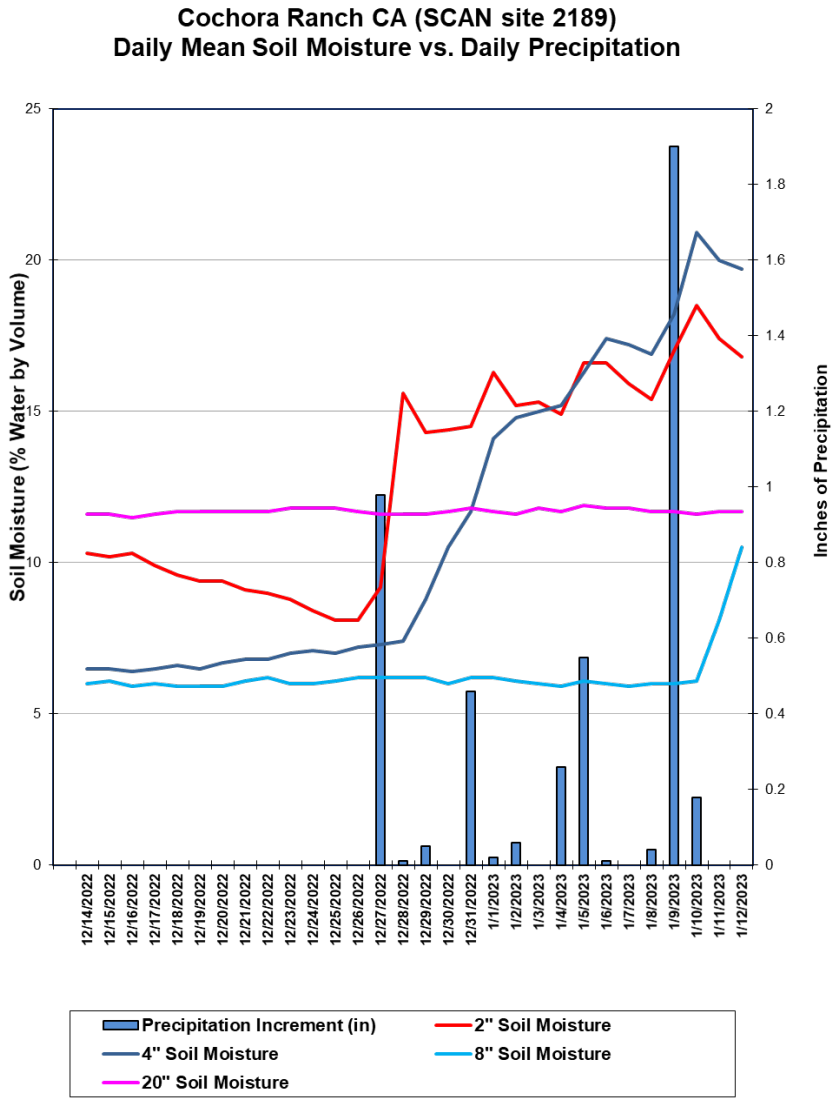
Source: NRCS SNOTEL and Soil Climate Analysis Network (SCAN)

U.S. soil moisture map at 8-inch depth:



Soil Moisture

Source: NRCS Soil Climate Analysis Network (SCAN)



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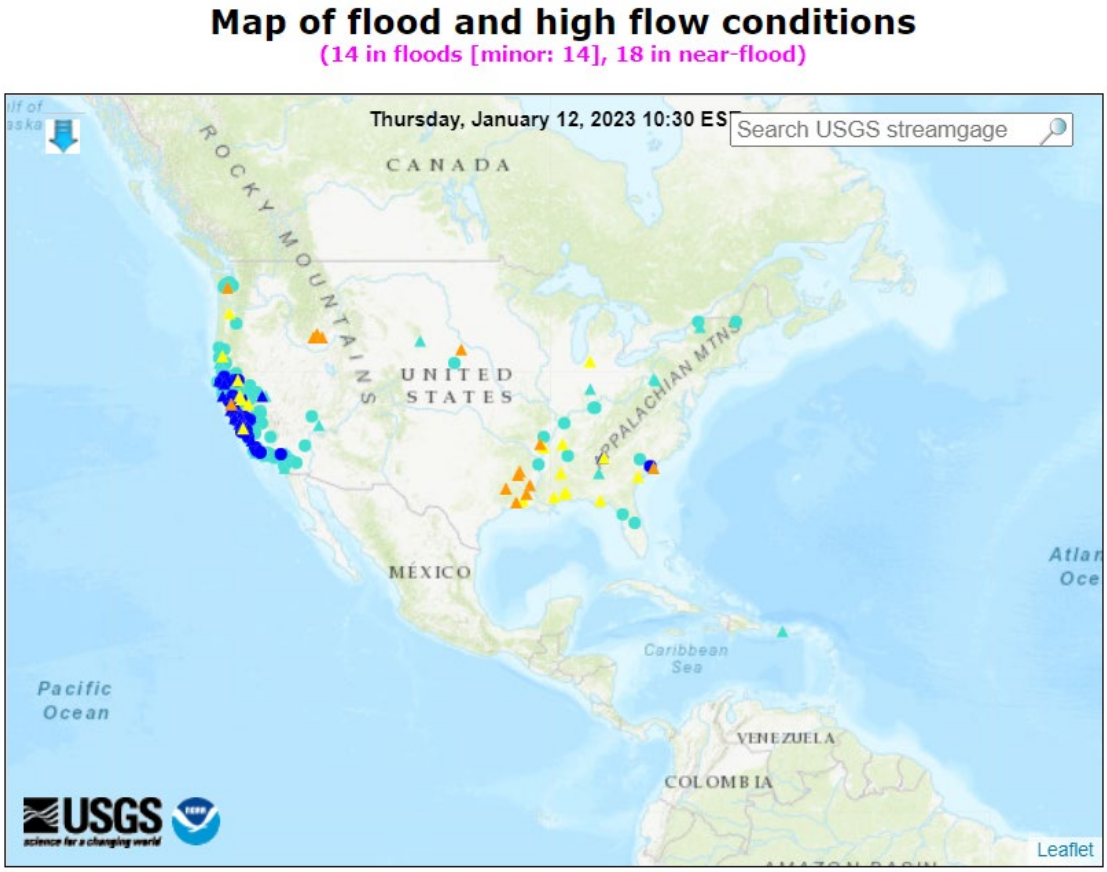
This chart shows the precipitation and soil moisture for the last 30 days at the Cochora Ridge SCAN site in California. Storm activity on January 9 brought 1.9 inches of precipitation to the station with the -2, -4, and -8-inch soil sensors reporting an increase in soil moisture. Total precipitation for the 30-day period was 4.52 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]



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

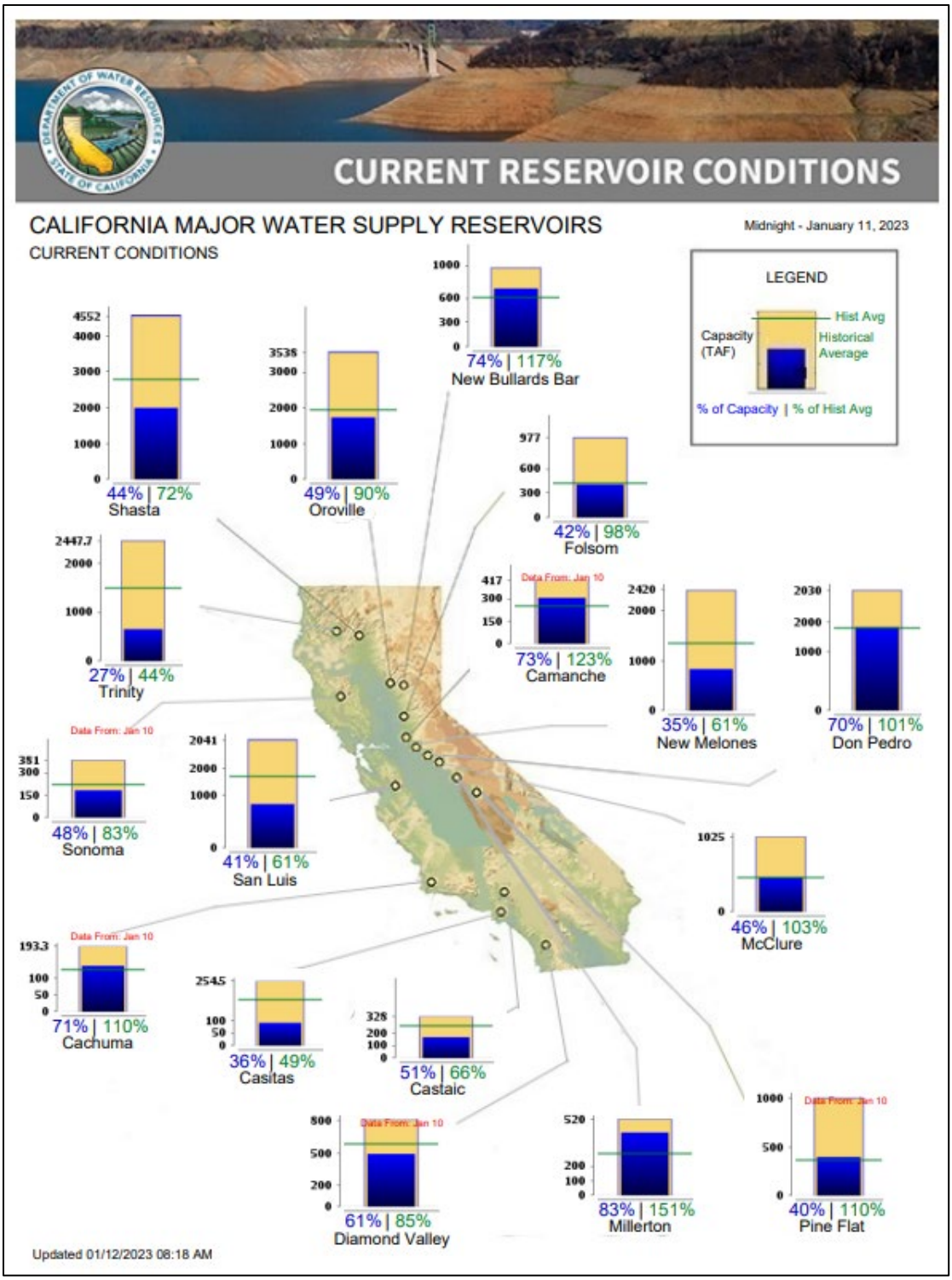
Hydromet Teacup Reservoir Depictions

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 January 12, 2023: **"**A subtle northward shift in the Pacific storm track should bring relief to areas in southern California where extensive flooding occurred on January 9-10. However, a continuation of periodically heavy precipitation in northern and central California could lead to additional flooding. Parts of the Northwest, especially from the Cascades westward, will experience increasing precipitation intensity. Farther east, much of the nation's mid-section will remain dry during the next 5 days. However, a fast-moving disturbance should produce some beneficial rain and snow across the central Plains, starting late today and ending Thursday morning. That disturbance will intensify over the eastern one-third of the U.S., with late-week snow expected from the lower Great Lakes region into northern New England. Additionally, showers and thunderstorms will sweep across the South on January 12-13. The NWS 6- to 10-day outlook for January 16 – 20 calls for the likelihood of near- or above-normal temperatures and precipitation nationwide, with minor exceptions. Cooler-than-normal conditions will be confined to central and southern California and the Desert Southwest, while drier-than-normal weather should be limited to the southern tip of Florida and parts of southern and western Texas."

Weather Hazards Outlook: January 14 – 18, 2023

Source: NOAA Weather Prediction Center

U.S. Day 3-7 Hazards Outlook

About the Hazards Outlook

Created January 11, 2023

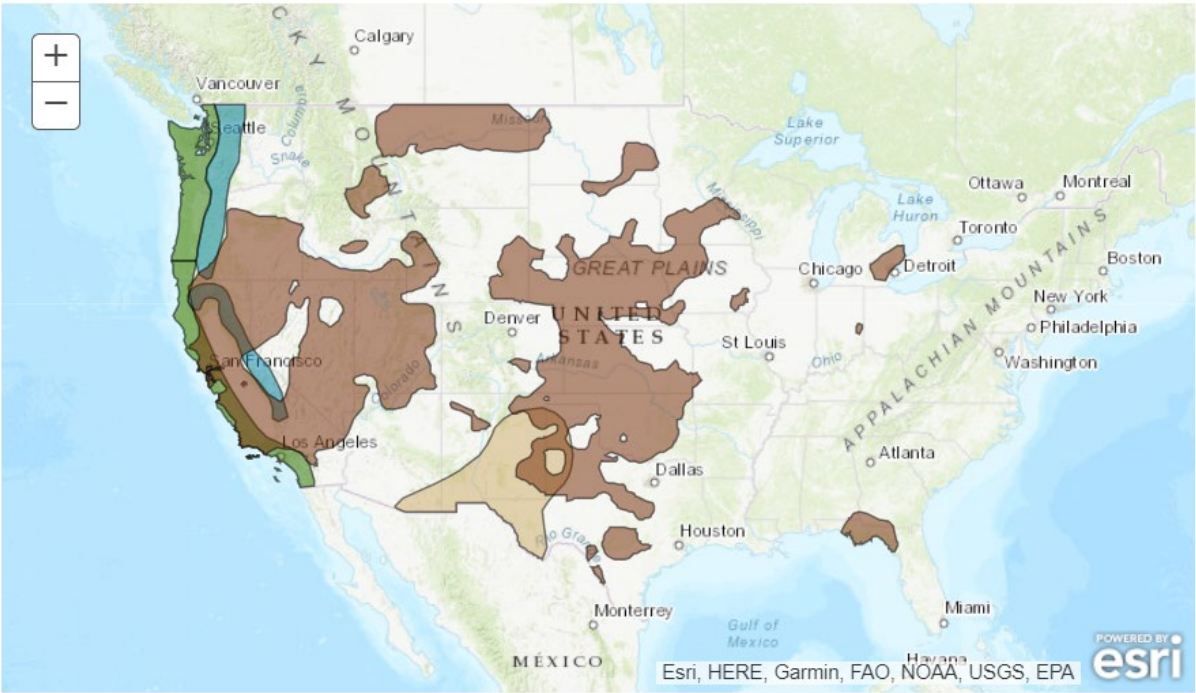
NOTE: These products are only created Monday through Friday. Please exercise caution using this outlook during the weekend.

Precipitation	☑
Temperature	☑
Soils	☑

Legend

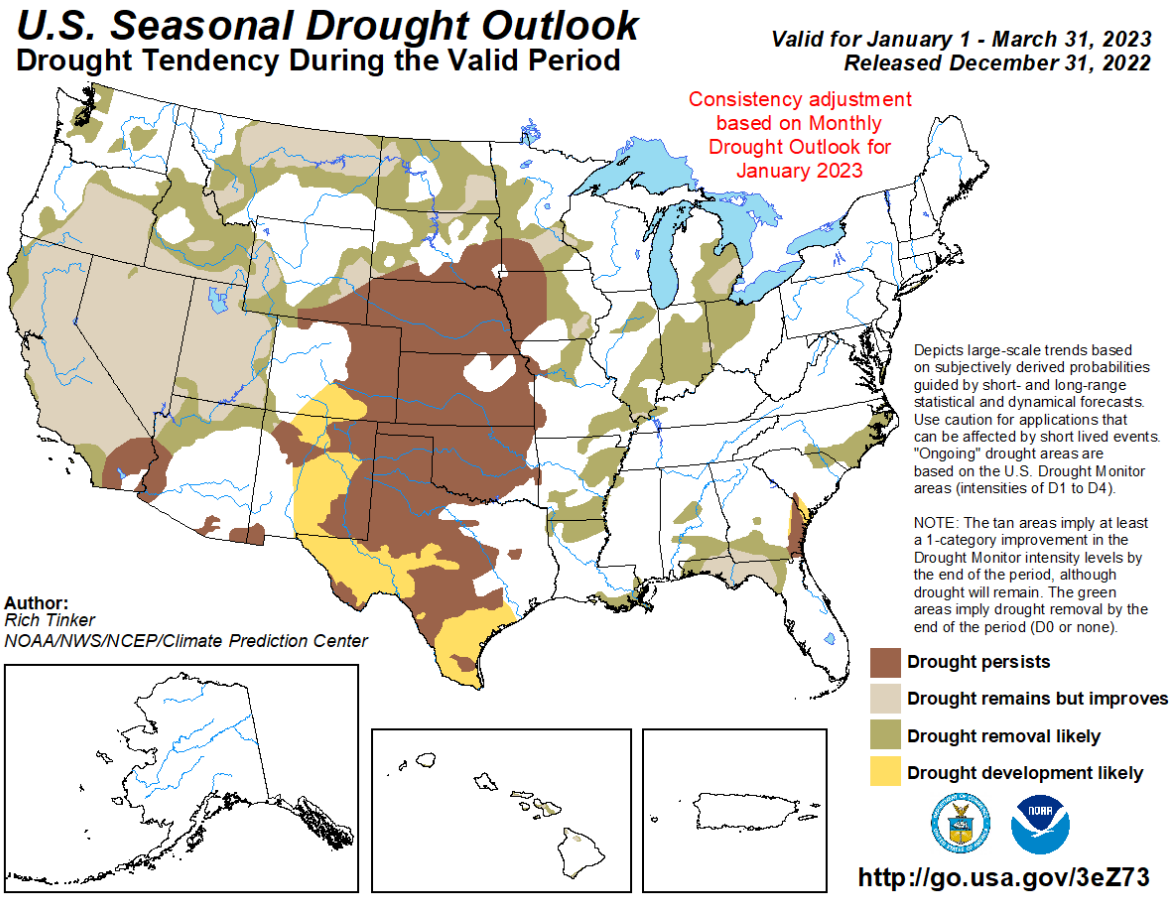
- Flooding Likely
- Flooding Occurring or Imminent
- Flooding Possible
- Freezing Rain
- Heavy Ice
- Heavy Precipitation
- Heavy Rain
- Heavy Snow
- Severe Weather
- Excessive Heat
- High Winds
- Much Above Normal Temperatures
- Much Below Normal Temperatures
- Significant Waves
- Enhanced Wildfire Risk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

Valid January 14, 2023 - January 18, 2023



Seasonal Drought Outlook: January 01 – March 31, 2023

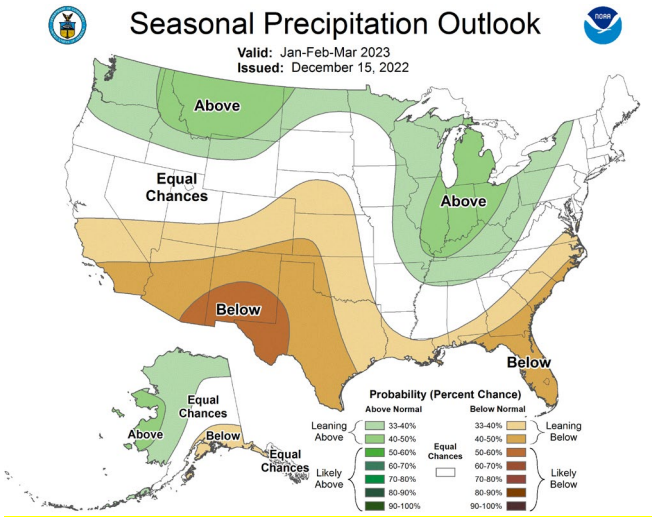
Source: National Weather Service



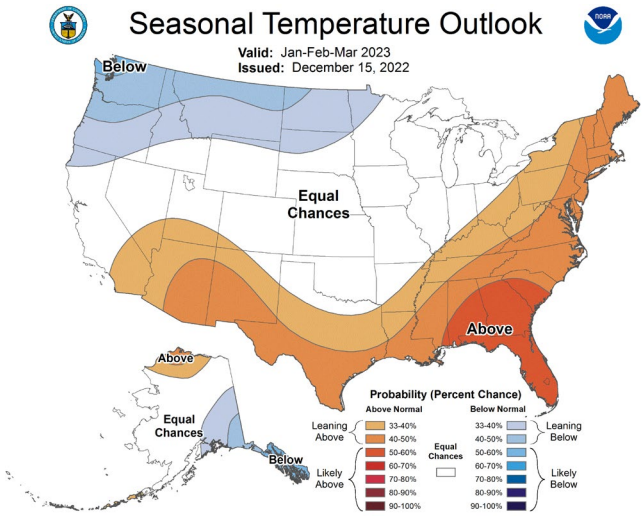
Climate Prediction Center Three-month Outlook

Source: National Weather Service

Precipitation



Temperature



January-February-March 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.