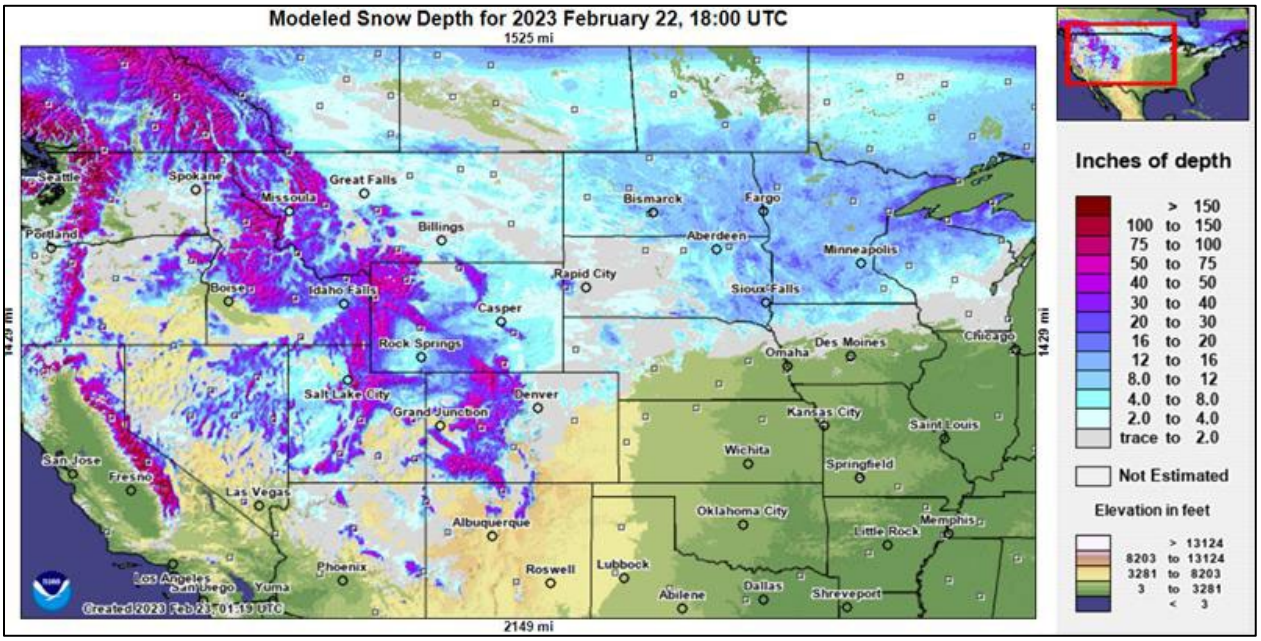
United States Department of Agriculture

Water and Climate Update

February 23, 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.

Another powerful winter storm cycle sweeps across the U.S.

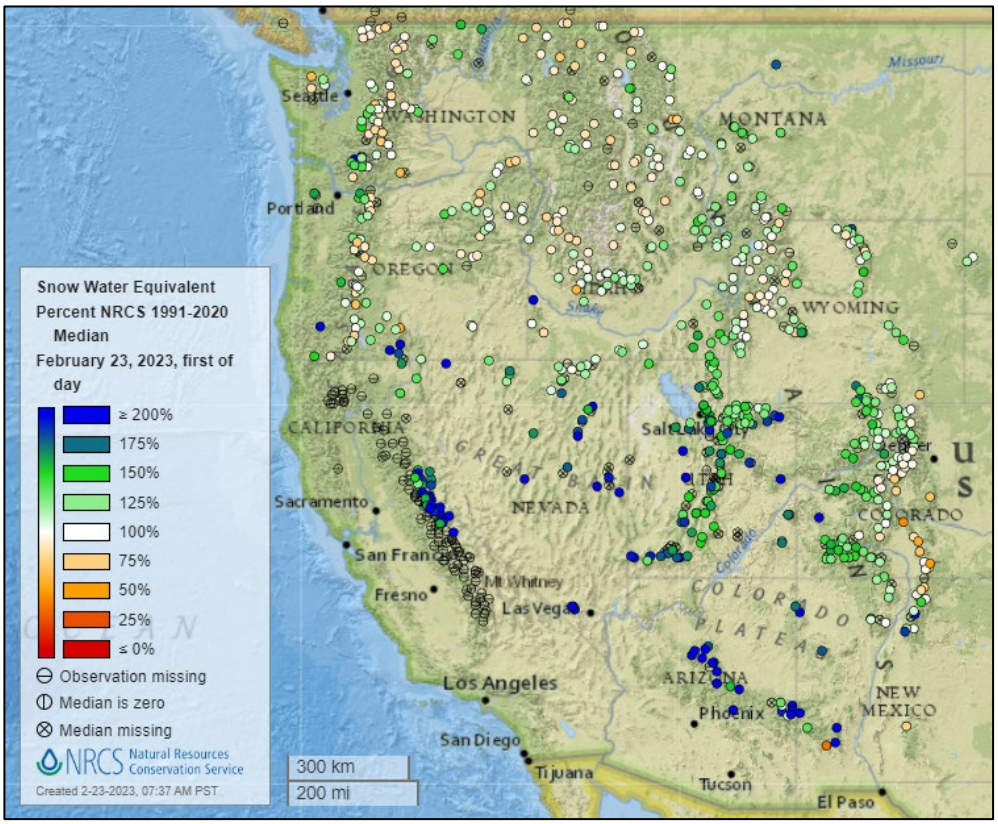


High winds, extreme cold, and heavy snow have been impacting a large section of the U.S. beginning February 21. Blowing and drifting snow closed major highways throughout the central Plains and caused over 1 million reported power outages and thousands of cancelled or delayed flights. Meanwhile, temperatures around 80°F have been reported in the southeastern U.S. on February 22, as California braces for another predicted winter storm. Mountain snowpacks throughout the West continue to increase from these recent storm events, enhancing winter recreation conditions and potentially providing more streamflow and runoff in the spring and summer.

Related:

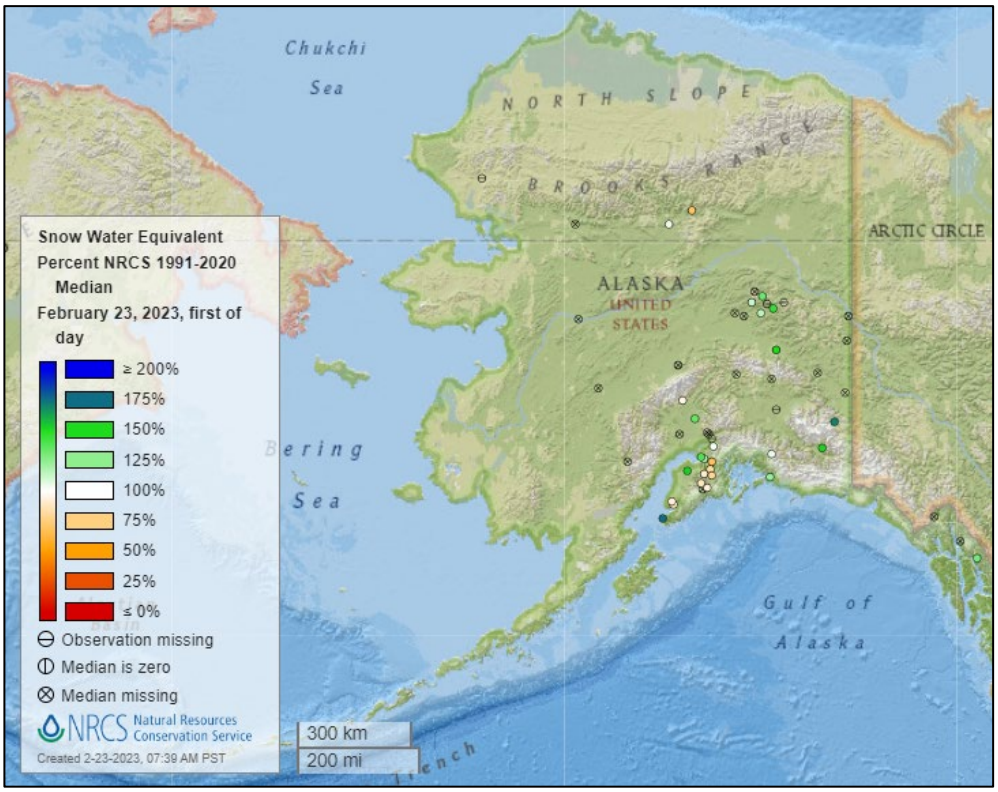
Over 1,600 Flights Canceled, Major Highways Closed as Winter Storm Wallops US – NBC DFW (TX)
Winter storm causes over 1 million power outages, traps drivers in cars and delays travel nationwide – CBS News
A million households have lost power so far as major winter storm blasts the U.S. – NPR
Winter storm in the North and heat wave in the South creates 100-degree difference across US – CNN
Winter storm sending heavy snow where California rarely sees it – NPR
Portions of I-94, I-29 to close in ND overnight due to extreme winter weather – KFYRTV (ND)

Snow



[Snow water equivalent percent of median map]

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

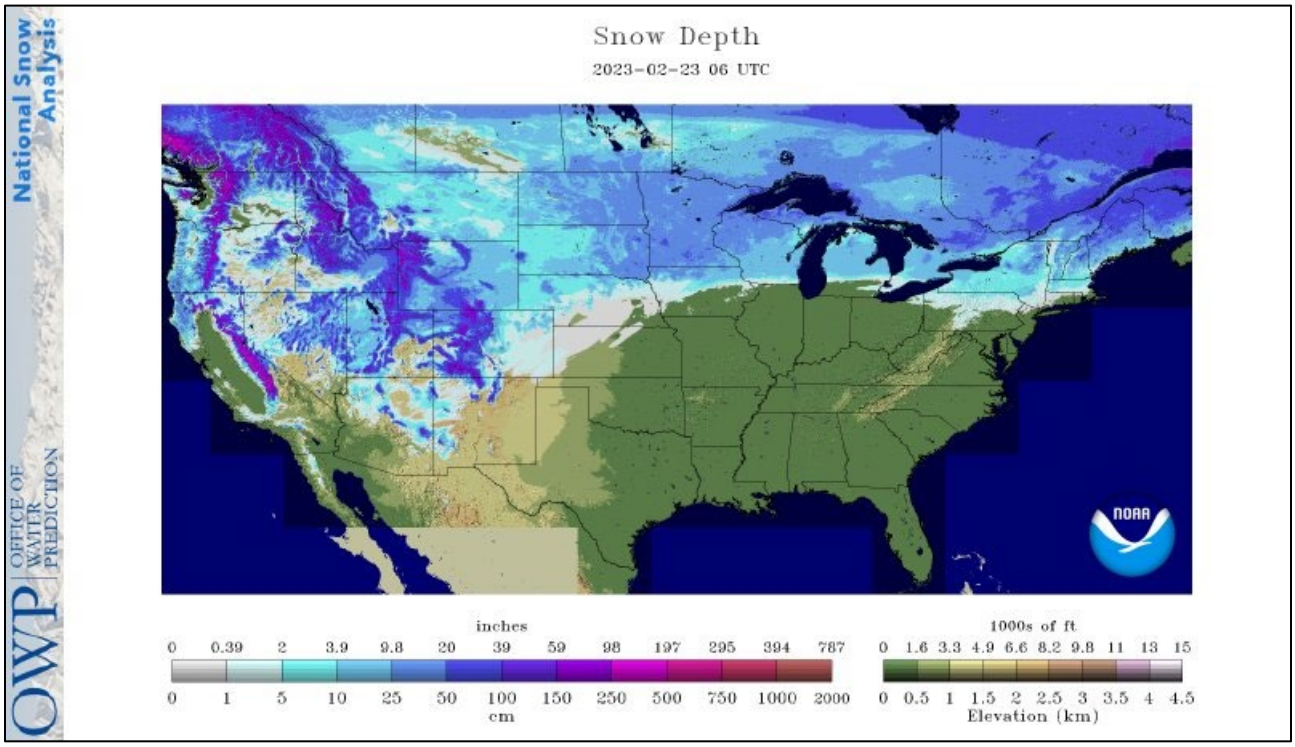


[Alaska snow water equivalent percent of median map]

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

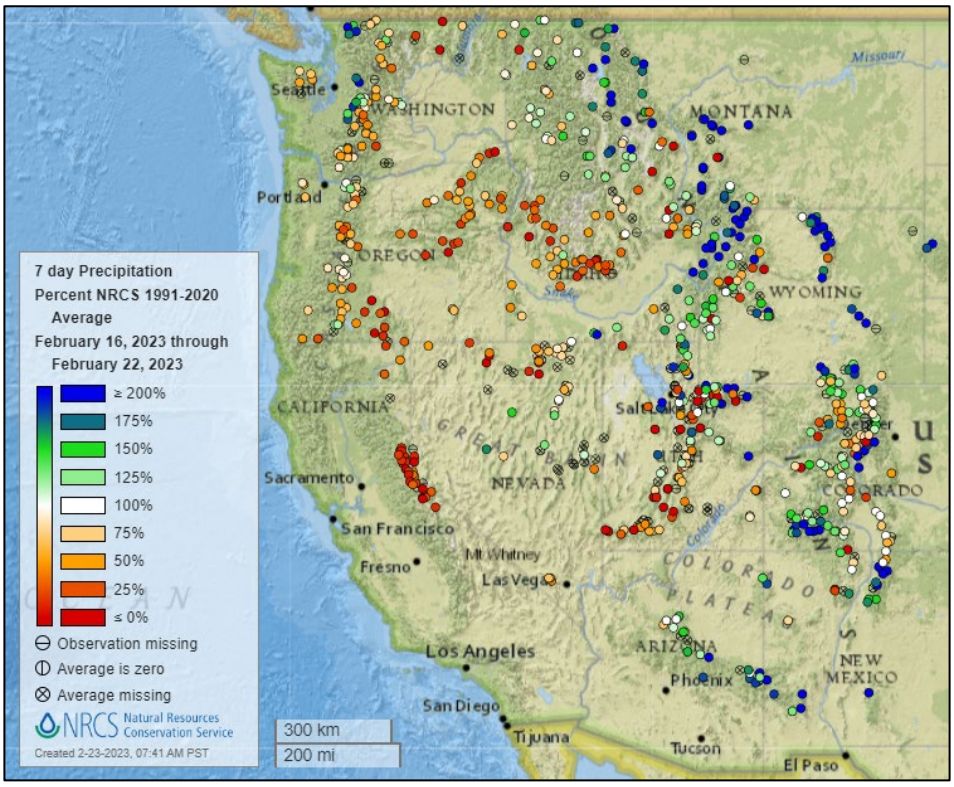
Current Snow Depth, National Weather Service Snow Analysis

Source: NOAA NWS National Operational Hydrologic Remote Sensing Center



Precipitation

Last 7 Days, NRCS SNOTEL Network

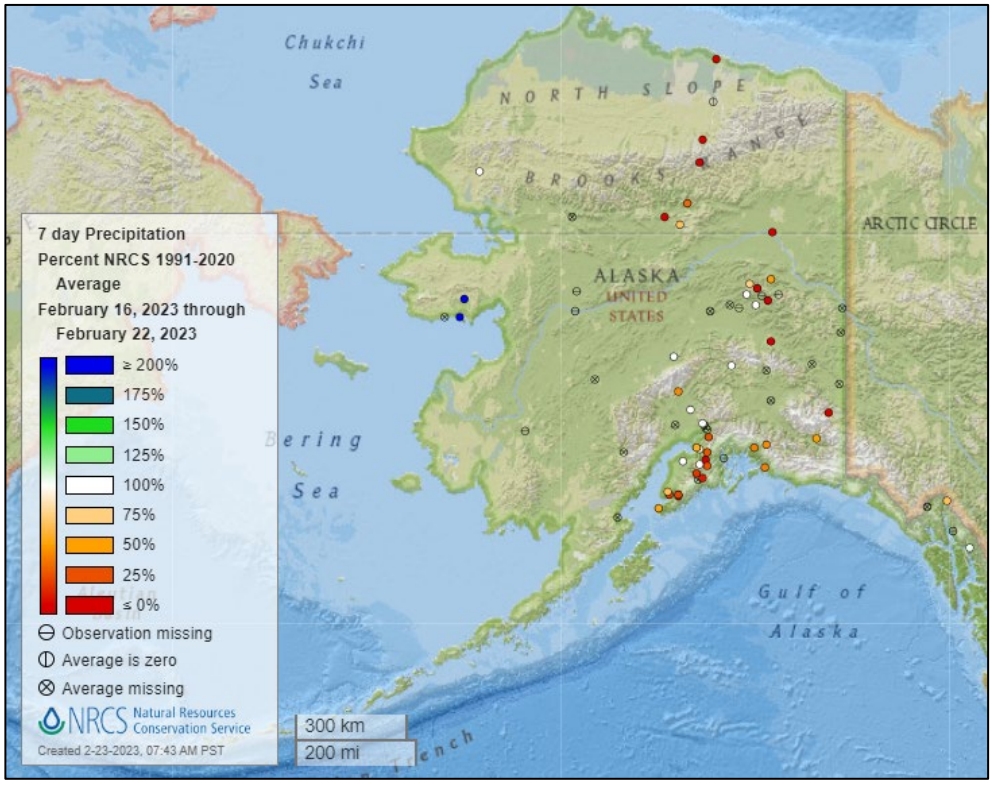


[7-day precipitation percent of average map]

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]

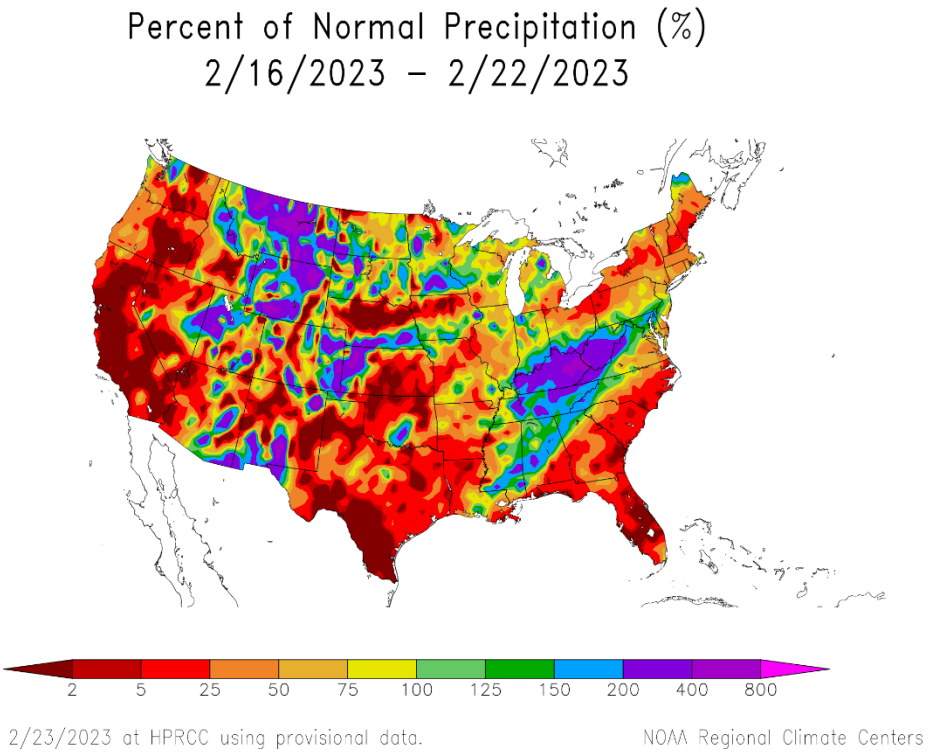


Last 7 Days, National Weather Service (NWS) Networks

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

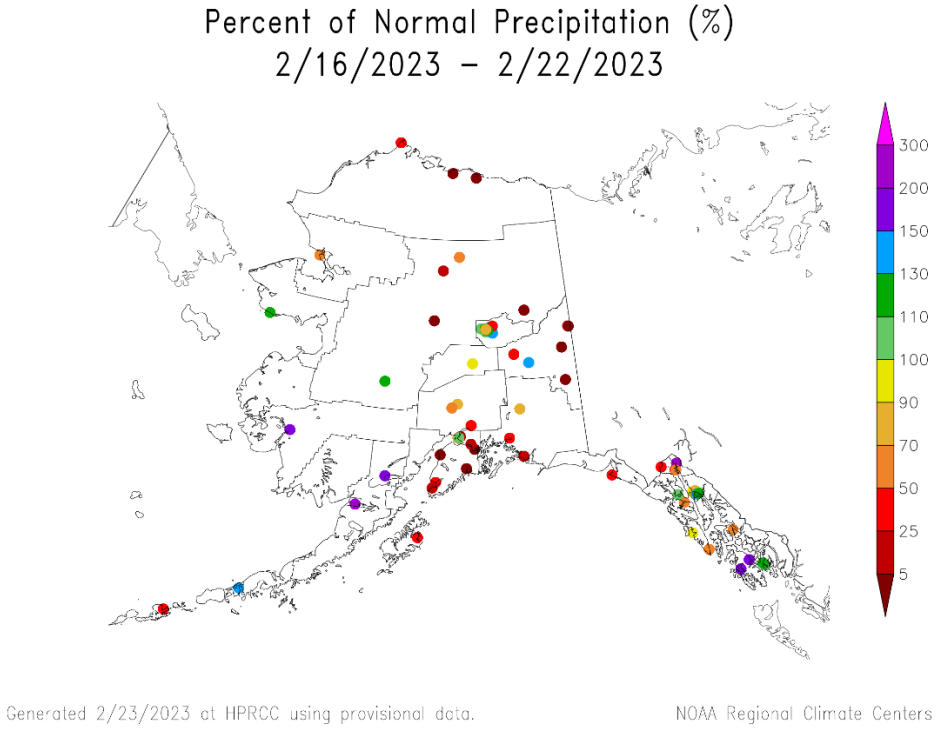


Last 7 Days, National Weather Service (NWS) Networks

Source: Regional Climate Centers

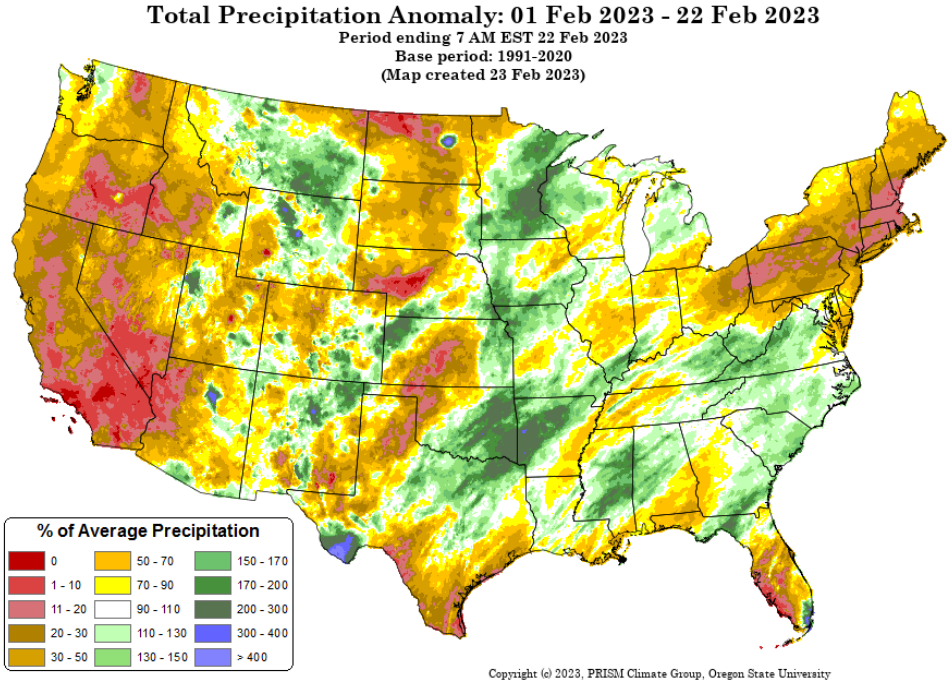
7-day precipitation percent of normal map for Alaska.

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



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

Source: PRISM

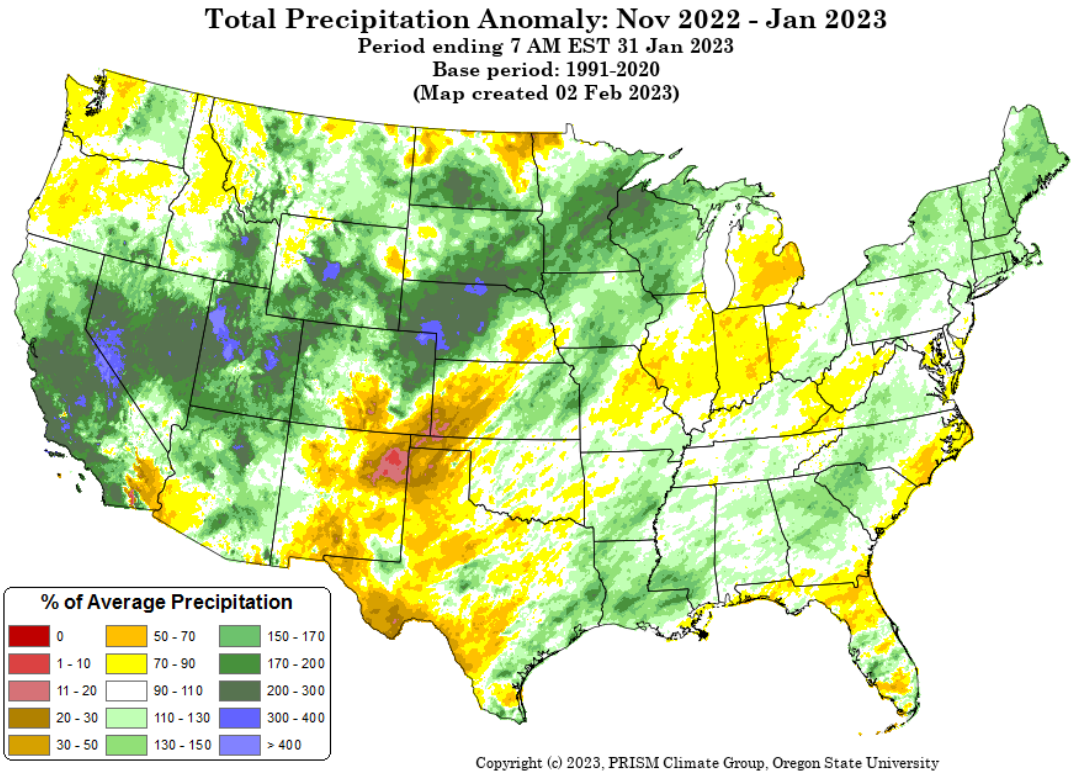


Month-to-date national total precipitation anomaly map

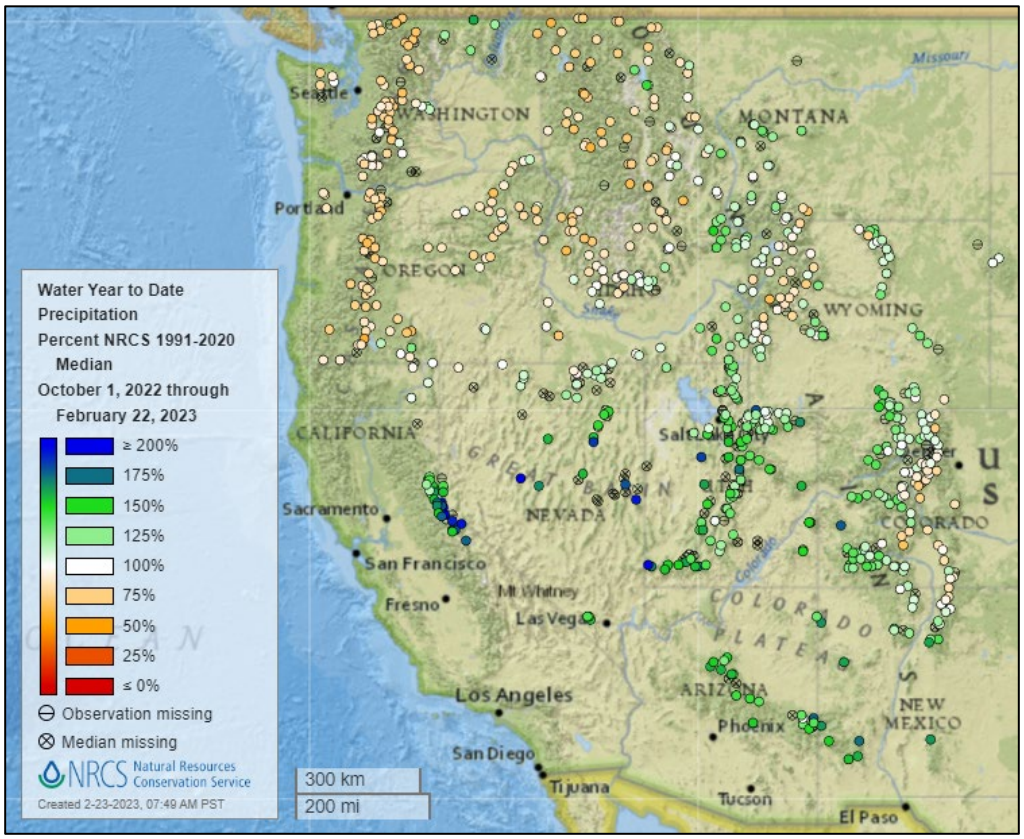
Last 3 Months, All Available Data Including SNOTEL and NWS Networks

Source: PRISM

November 2022 through January 2023 precipitation anomaly map



Water Year-to-Date, NRCS SNOTEL Network

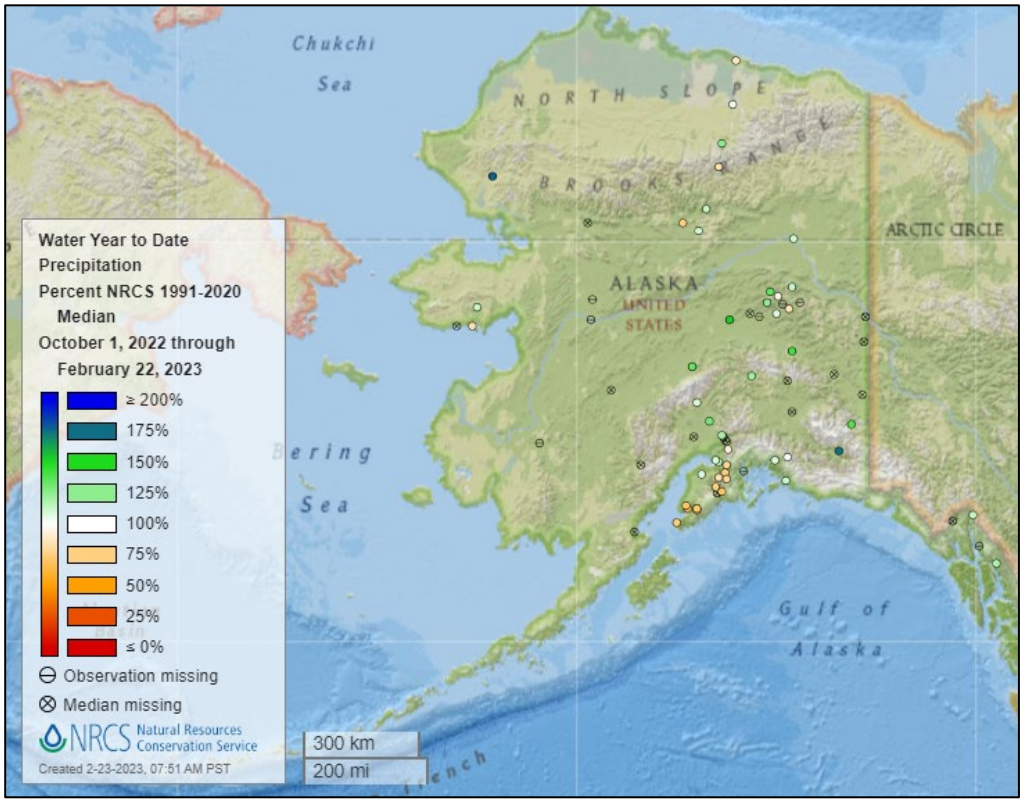


[2023 water year-to-date precipitation percent of median map]

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]

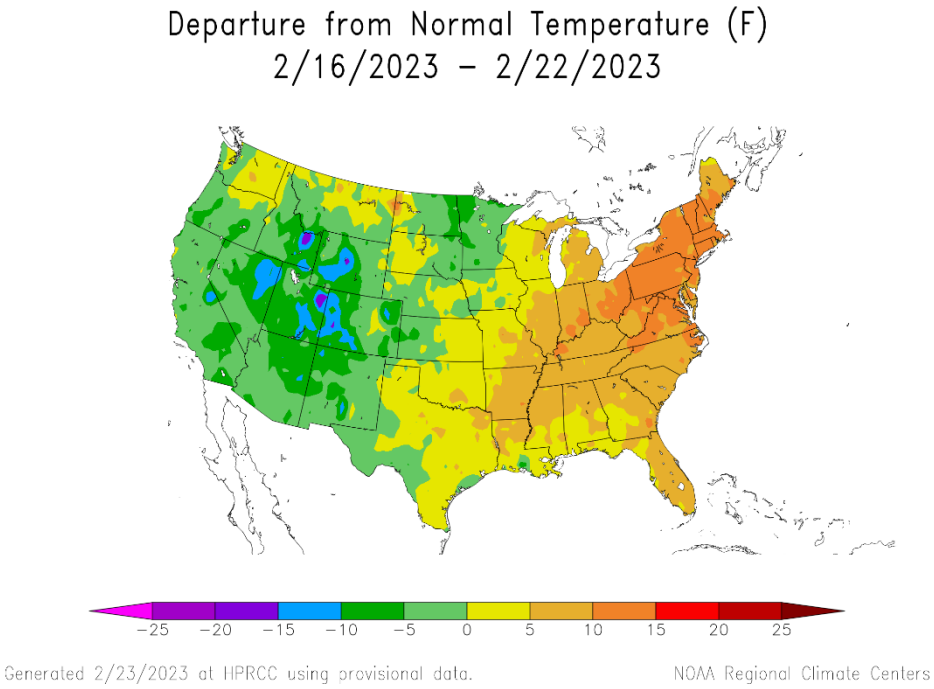
Temperature

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

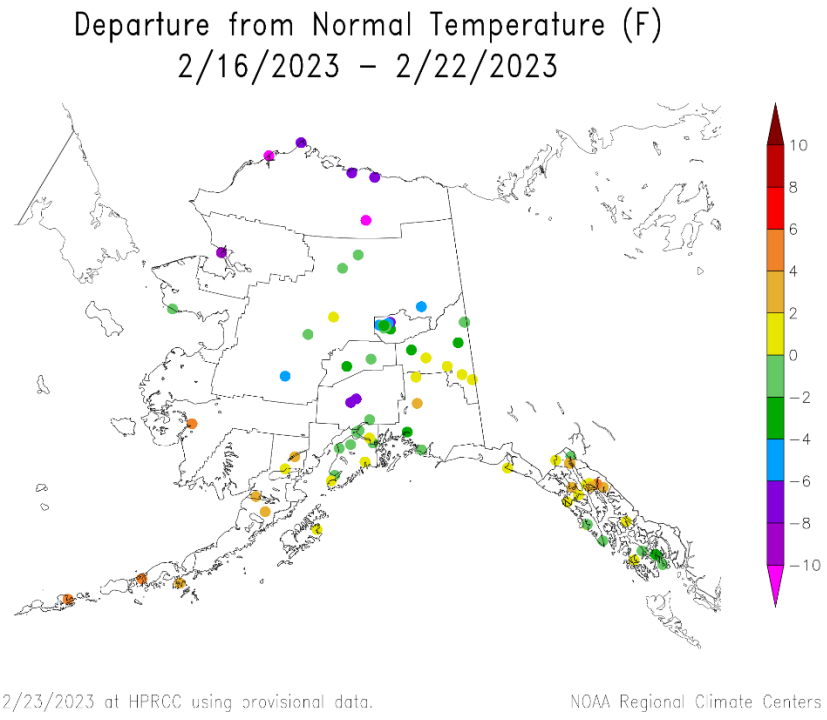


Last 7 Days, National Weather Service (NWS) Networks

Source: Regional Climate Centers

7-day temperature anomaly map for Alaska.

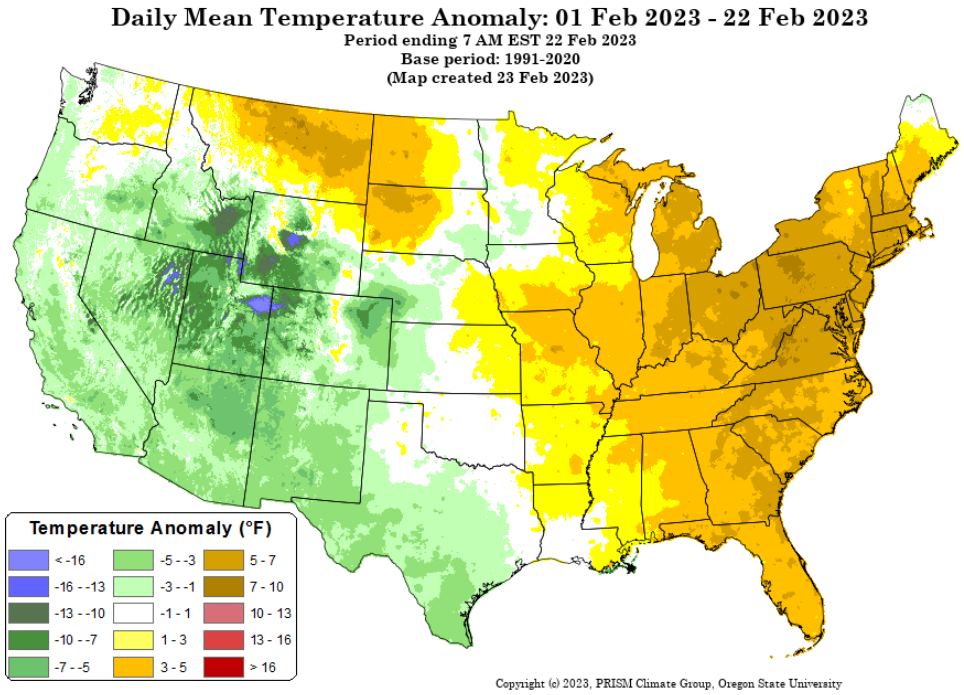
See also: 7-day temperature (° F) map



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

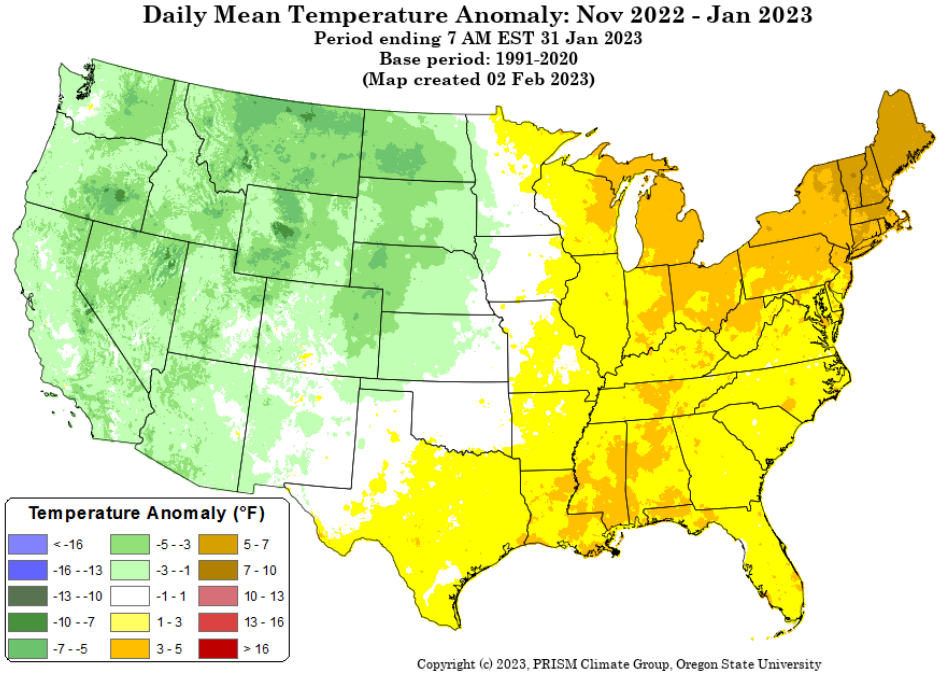
Source: PRISM

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



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

Source: PRISM

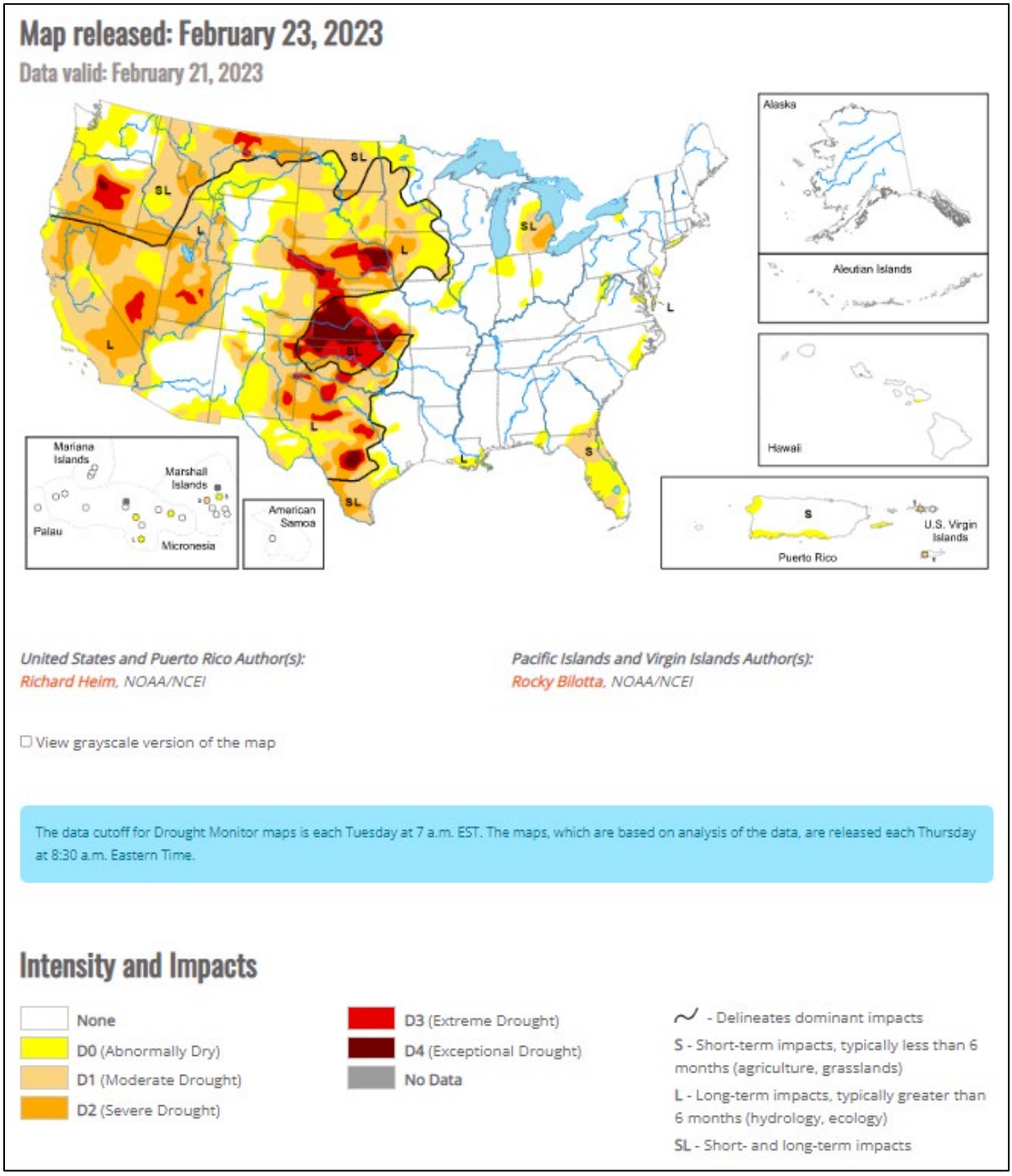


[November 2022 through January 2023 daily mean temperature anomaly map]

Drought

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

U.S. Drought Portal
Source: NOAA



Current National Drought Summary, February 21, 2023

Source: National Drought Mitigation Center

“An upper-level ridge over the northeastern North Pacific Ocean deflected Pacific storm systems away from the West Coast of the contiguous U.S. (CONUS) during this U.S. Drought Monitor (USDM) week (February 15-21). This resulted in a generally drier-than-normal week over much of the West. An upper-level trough developed over the western CONUS downstream from the ridge, and the trough was responsible for a cooler-than-normal week over the West. Strong high pressure over the Gulf of Mexico extended into a ridge across the East Coast. A southerly flow between the trough and eastern ridge spread warm, moist air from the Gulf of Mexico across the eastern CONUS and directed weather systems northeastward from the southern Plains to Great Lakes. Two weather systems early in the week generated above-normal precipitation across parts of the central to eastern CONUS. As the week ended, weather systems moved across the northern tier states, bringing areas of snow. The week was wetter than normal across parts of the northern Rockies, from the Four Corners states to western Great Lakes, and from the central Gulf Coast states to Ohio Valley and Mid-Atlantic states. It was a drier-than-normal week across much of the West, southern Plains, coastal Southeast, and southern Great Lakes to New England, and parts of the northern to central Plains. Drought or abnormal dryness expanded where it continued dry in parts of the Pacific Northwest, southern Plains, and Florida. Drought or abnormal dryness contracted or reduced in intensity where it was wet over parts of the Four Corners area, southern and central Plains to Upper Mississippi Valley, and the Big Island in Hawaii.”

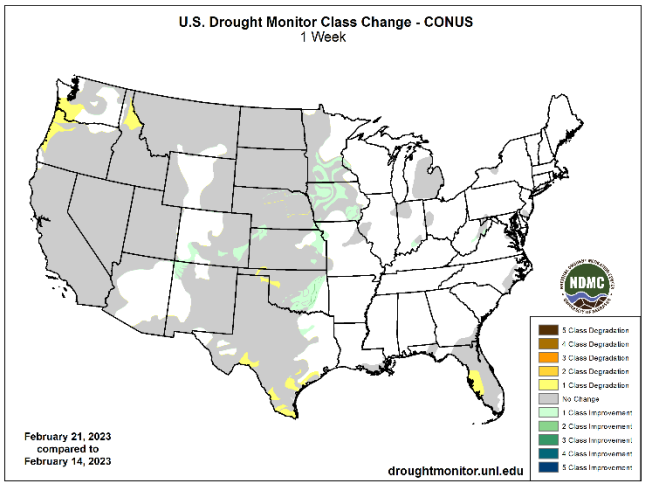
National Drought Summary – Looking Ahead

“A strong Pacific weather system moved across the West on February 22, with a low pressure and frontal system spreading rain and snow from the Plains to Mississippi Valley and across northern states. A series of weather systems will follow during February 23-28, spreading an inch or more of precipitation from Oklahoma to the Great Lakes, from the Tennessee to Ohio Valleys, and across much of the Northeast, as well as along the West Coast and into the interior West. Some precipitation totals will exceed 2 inches in the Upper Mississippi Valley and western Great Lakes, and exceed 4 inches along coastal Washington and California and into the Sierra Nevada range. The Gulf of Mexico Coast, western parts of the Great Plains, and parts of the Mid-Atlantic Coast will see little to no precipitation. High pressure over the Gulf of Mexico will keep temperatures warmer than normal from the southern Plains to Ohio Valley and Gulf Coast to Mid-Atlantic Coast, while temperatures will be cooler than normal across the Far West to northern Plains. For February 28-March 8, the outlook favors colder-than-normal weather across the West and Alaska, with warmer-than-normal weather from the southern Plains to Atlantic Coast and Great Lakes. Above-normal precipitation is likely across Alaska, the western CONUS, and much of the CONUS east of the Rockies except along the Gulf Coast where below-normal precipitation is favored.”

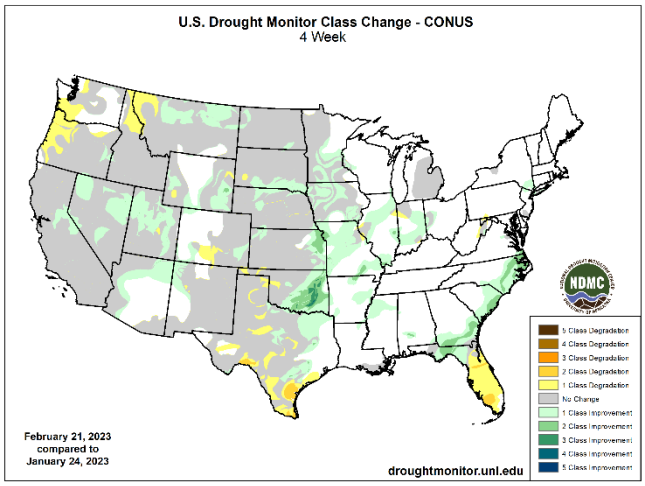
Changes in Drought Monitor Categories over Time

Source: National Drought Mitigation Center

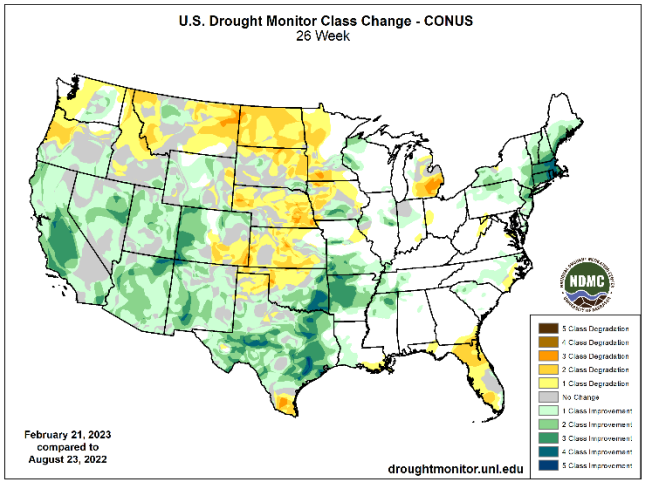
1 Week



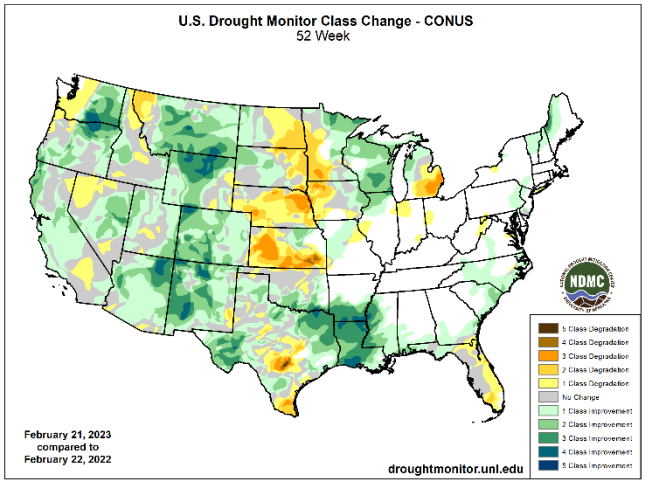
1 Month



6 Months



1 Year



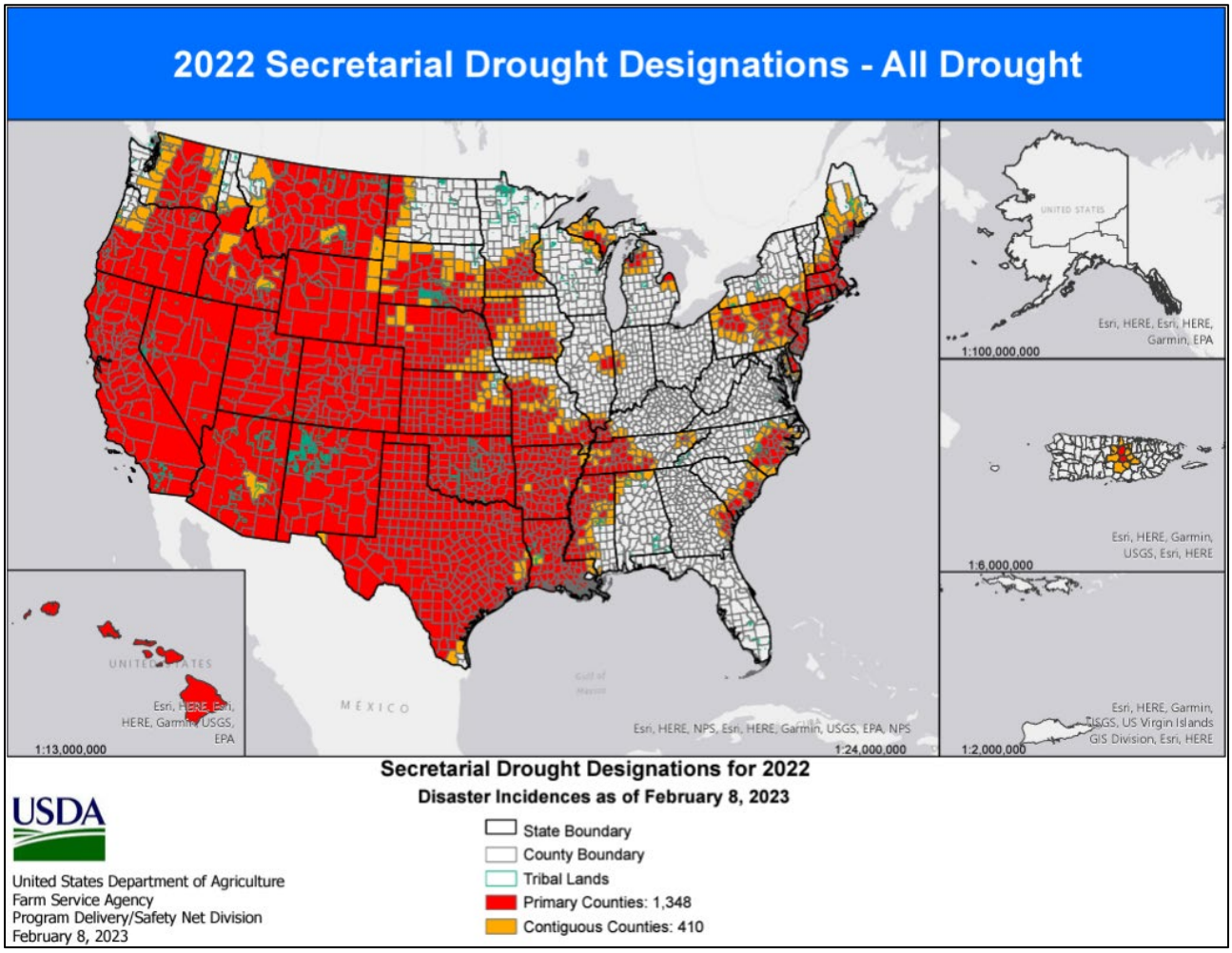
Changes in drought conditions over the last 12 months for the contiguous U.S.

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

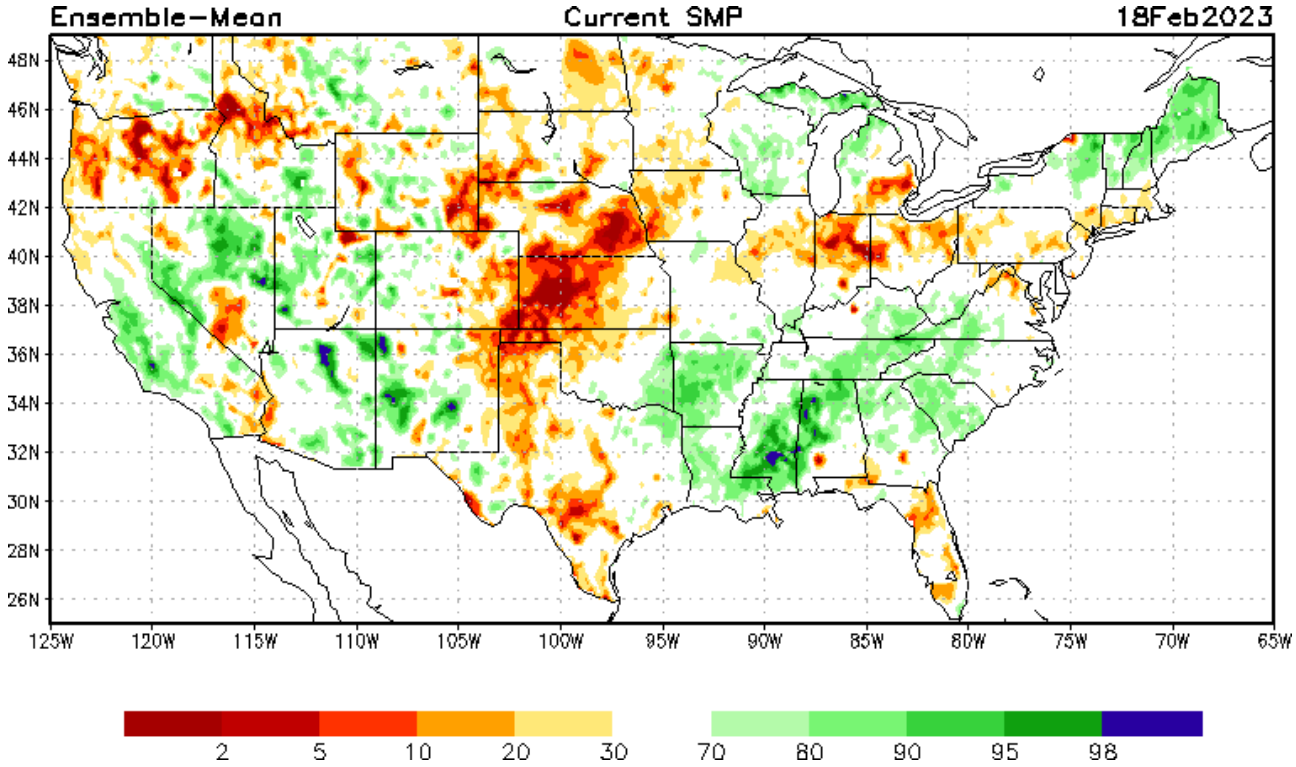
Source: USDA Farm Service Agency



Other Climatic and Water Supply Indicators

Soil Moisture

Source: NOAA National Centers for Environmental Prediction

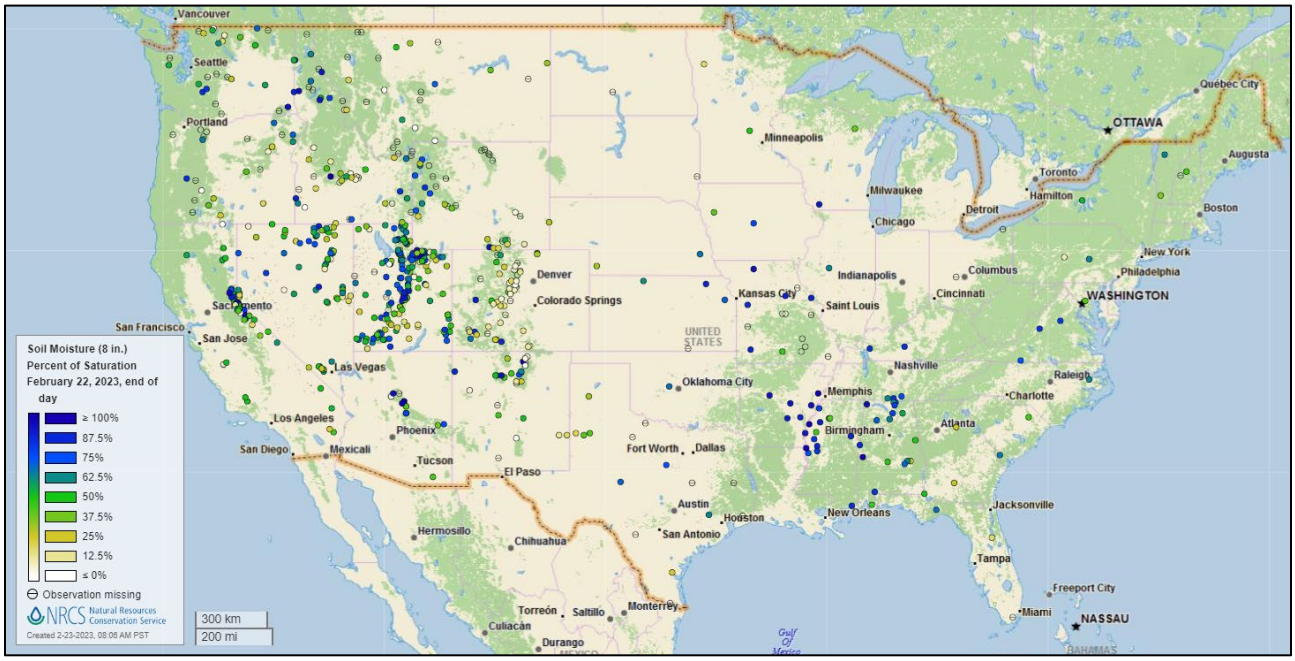


Modeled soil moisture percentiles as of February 18, 2023

Soil Moisture Percent of Saturation

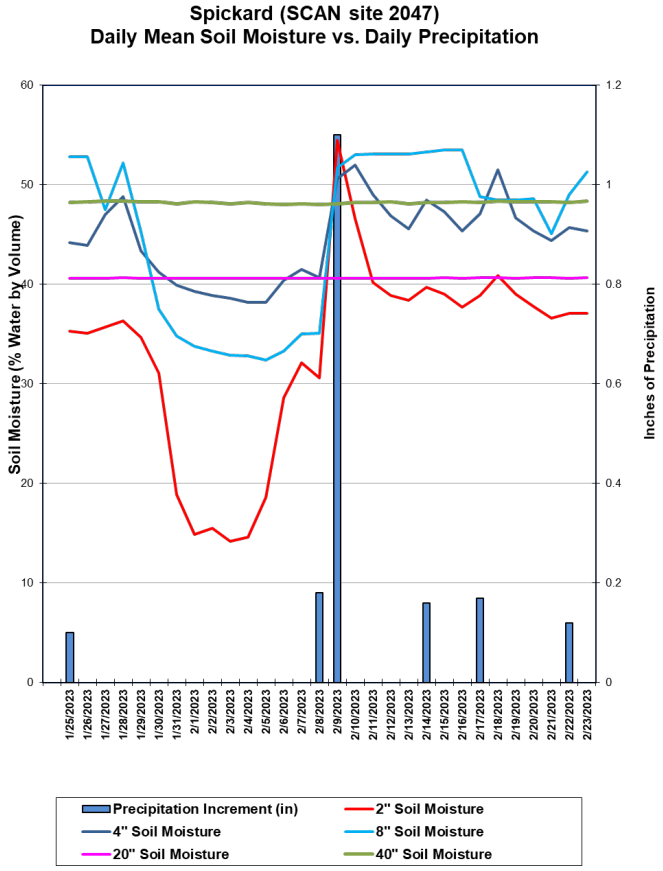
Source: NRCS SNOTEL and Soil Climate Analysis Network (SCAN)

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



Soil Moisture

Source: NRCS Soil Climate Analysis Network (SCAN)



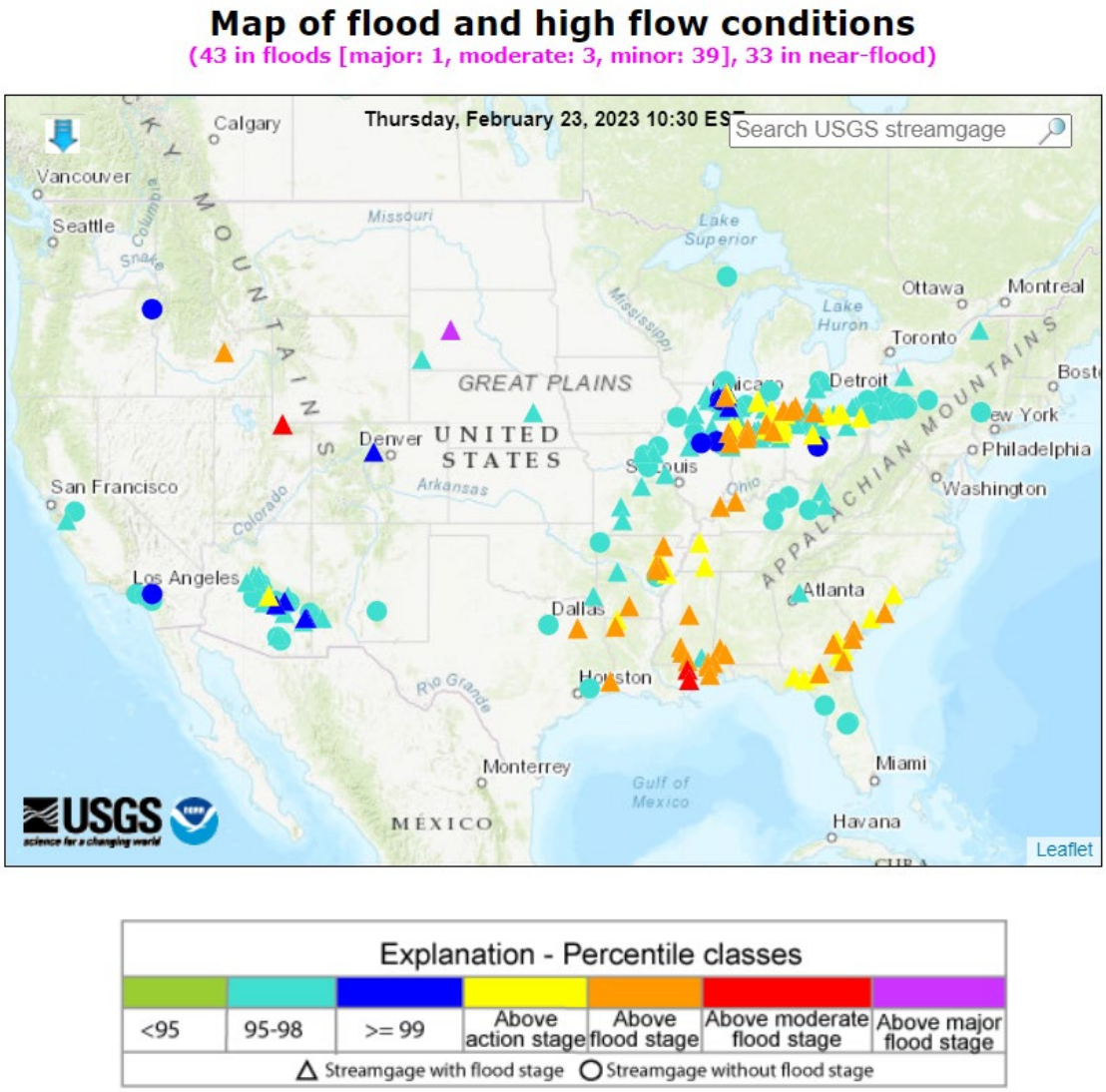
This chart shows the precipitation and soil moisture for the last 30 days at the Spickard SCAN site in Missouri. Storm activity on February 9 brought 1.1 inches of precipitation to the station with the -2, -4, and -8-inch soil sensors reporting an increase in soil moisture during most of the precipitation events. Total precipitation for the 30-day period was 1.83 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]



[WaterWatch: Streamflow, drought, flood, and runoff conditions]

Reservoir Storage

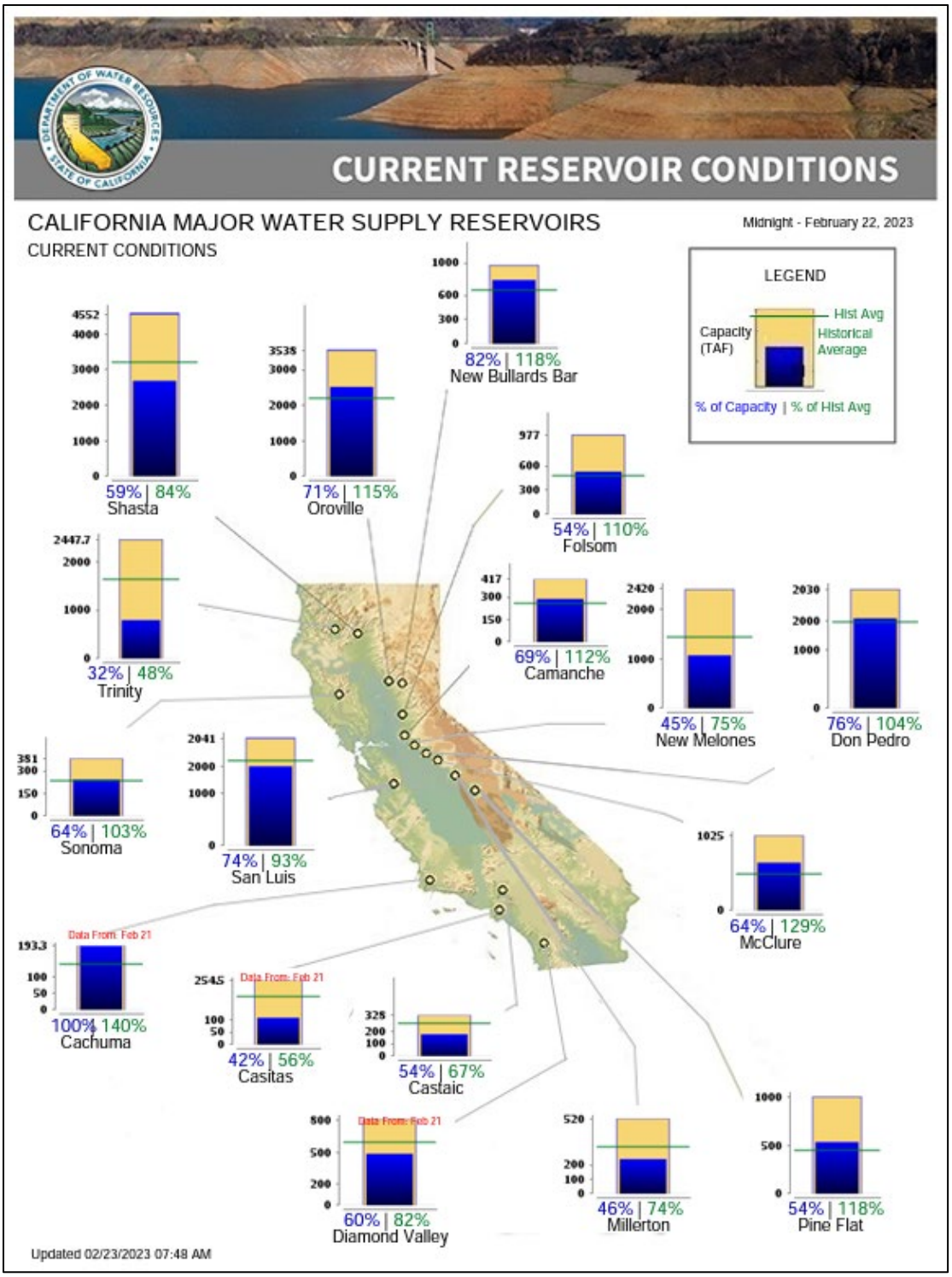
Hydromet Teacup Reservoir Depictions

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

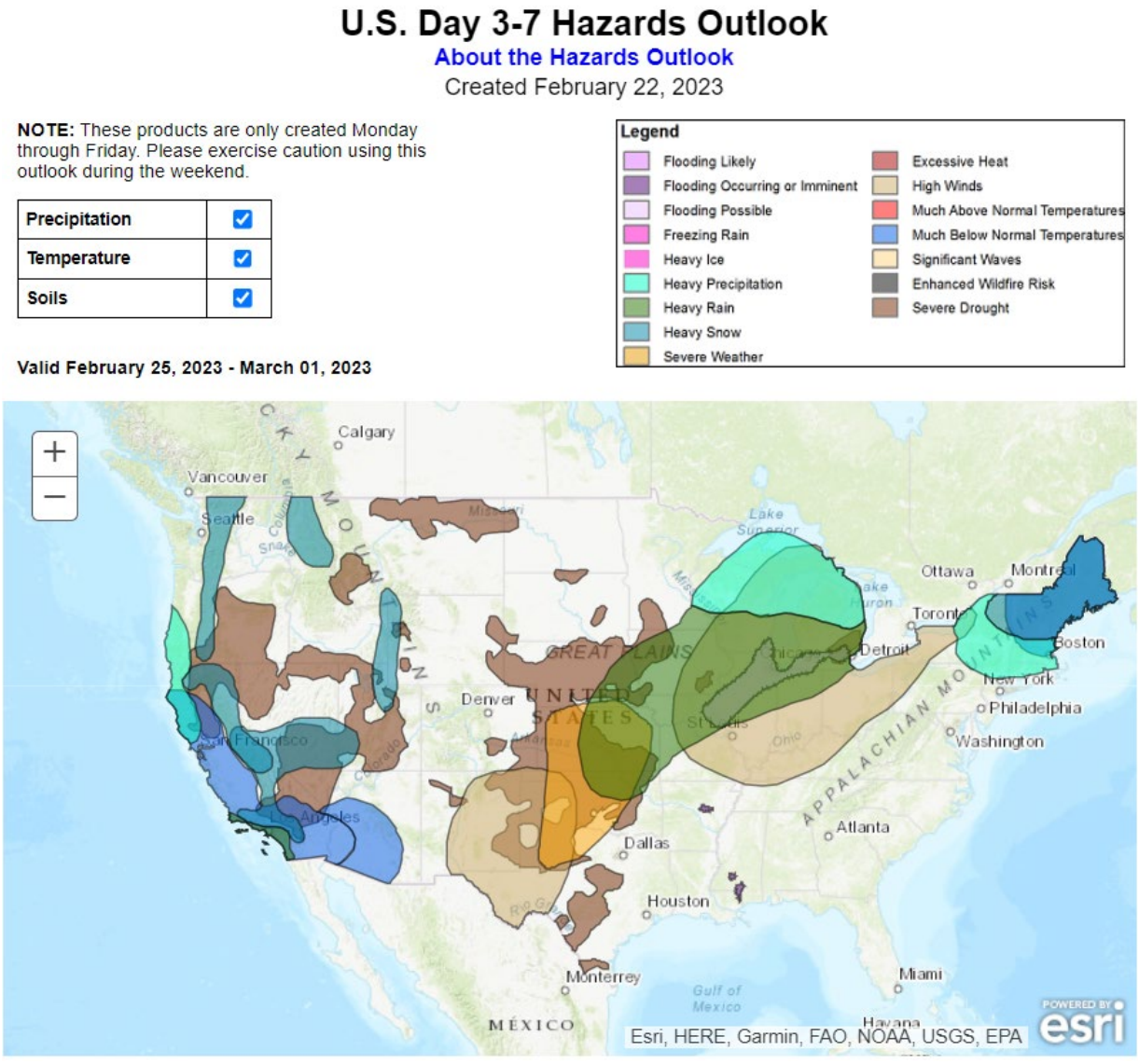
Agricultural Weather Highlights

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

National Outlook, Thursday February 23, 2023: "A late-winter storm currently crossing the Great Lakes region will gradually weaken and reach northern New England early Friday. As Northern snow- and wind-related impacts from that storm slowly wane, a new weather system will move southward along the Pacific Coast. The trailing system, which will be followed by additional disturbances, will maintain cold, unsettled weather across much of the western U.S. Meanwhile, frigid conditions across the northern Plains and upper Midwest will peak on Friday morning, with many locations reporting temperatures below -20°F. During the weekend, lingering warmth will be limited to the South. Early next week, a storm system emerging from the western U.S. could result in showers and thunderstorms across the central and southern Plains, along with rain and wet snow in the Midwest. The NWS 6- to 10day outlook for February 28 – March 4 calls for the likelihood of near- or above-normal temperatures across the eastern half of the U.S., while colder-than-normal conditions will prevail in the West and the northern High Plains. Meanwhile, near- or below-normal rainfall in the Deep South, from Texas to the southern Atlantic Coast, should contrast with wetter-than-normal weather across the remainder of the country."

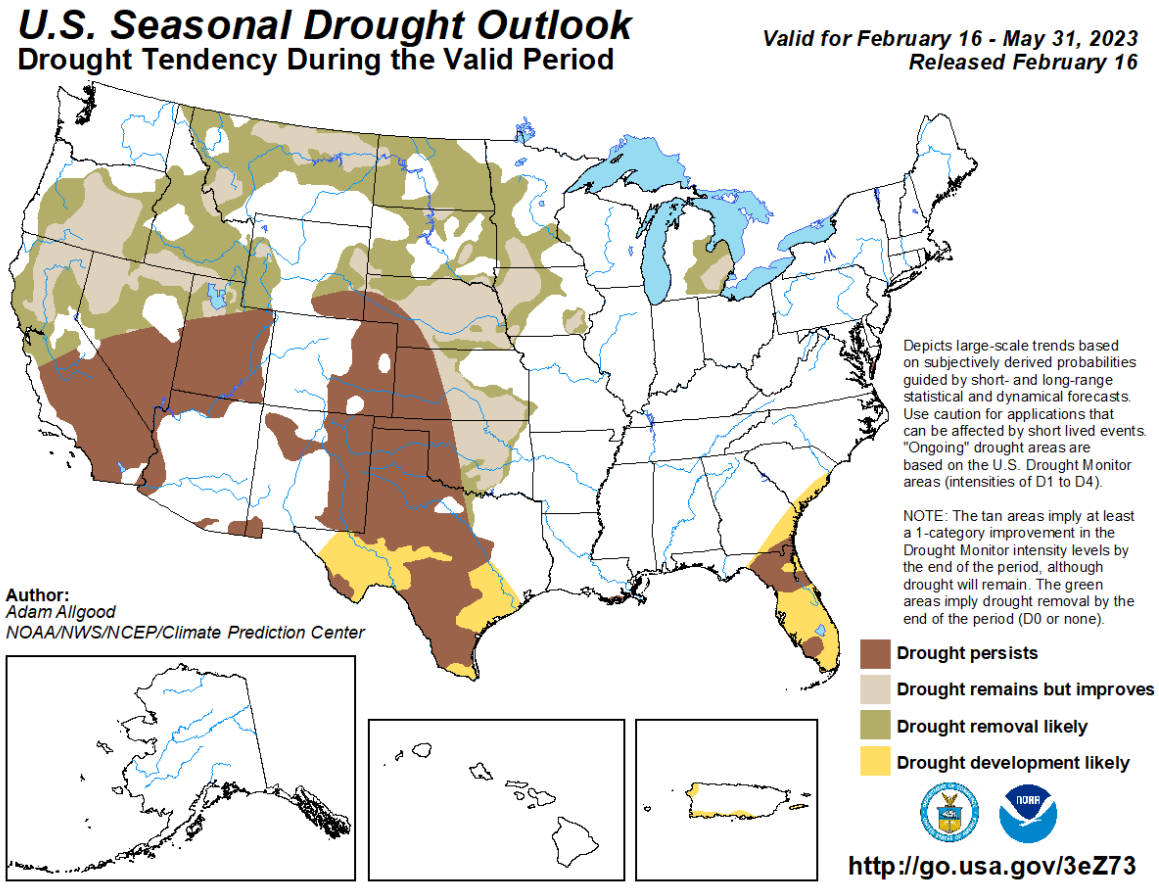
Weather Hazards Outlook: February 25 – March 01, 2023

Source: NOAA Weather Prediction Center



Seasonal Drought Outlook: February 16 – May 31, 2023

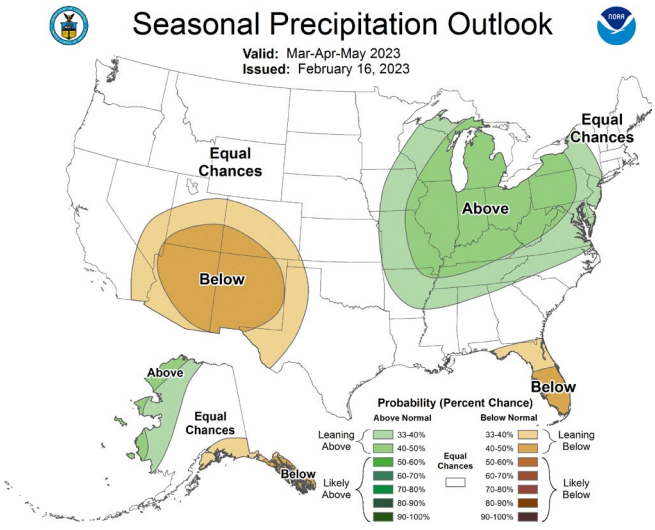
Source: National Weather Service



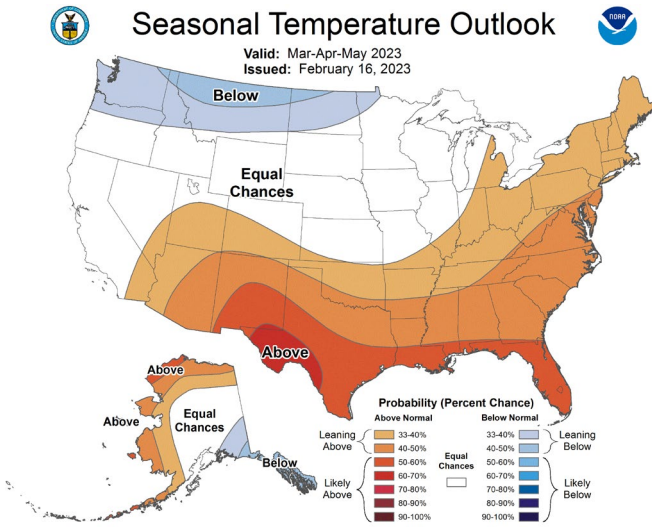
Climate Prediction Center Three-month Outlook

Source: National Weather Service

Precipitation



Temperature



March-April-May 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.