



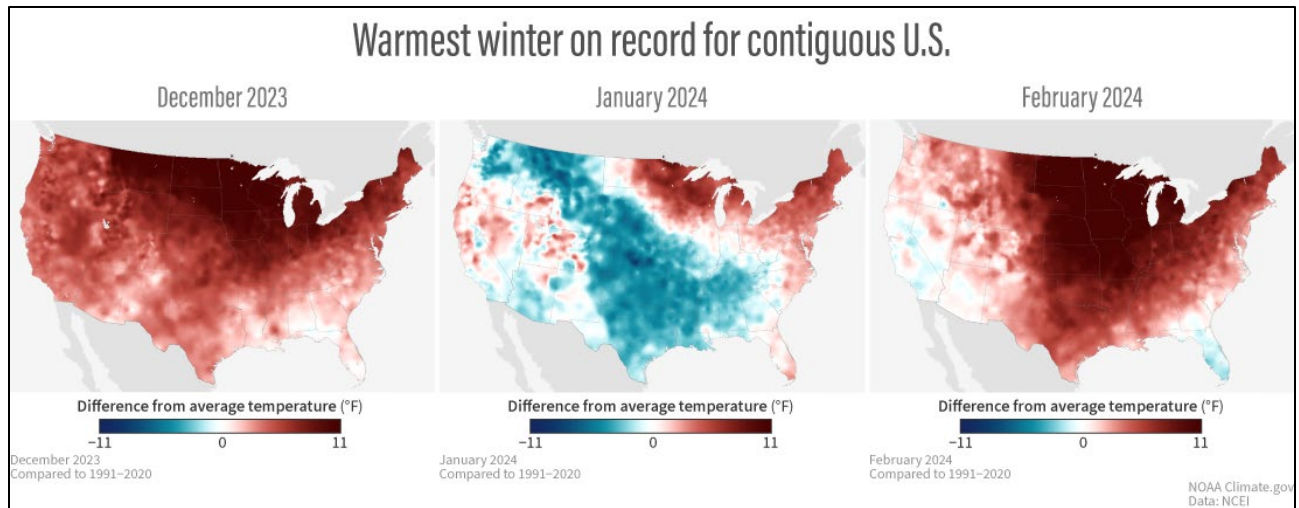
Water and Climate Update

March 14, 2024

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.

Snow	2	Drought	10
Precipitation	4	Other Climatic and Water Supply Indicators	14
Temperature.....	8	More Information	20

Contiguous U.S. experiences the warmest winter on record



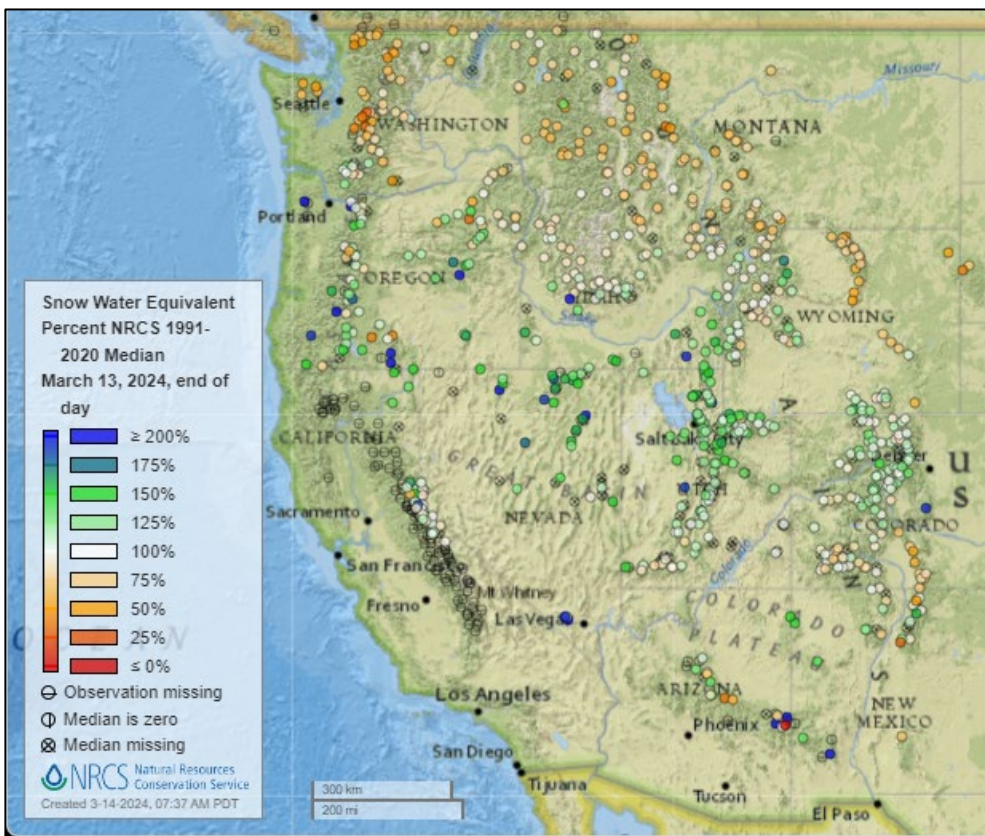
According to the National Oceanic and Atmospheric Administration (NOAA), the contiguous U.S. experienced the warmest meteorological winter (December-February) and the third warmest February on record. One noticeable implication has been the record-low amount of ice coverage throughout the Great Lakes. Per the March 8 report from NOAA:

“The average temperature across the contiguous U.S. last month was 41.1 degrees F, 7.2 degrees F above the 20th-century average and ranking as the third-warmest February in NOAA’s 130-year climate record. Iowa, Minnesota, Missouri, and Wisconsin each had their warmest February on record. An additional 20 states saw their top-10 warmest February on record. Persistent winter warmth resulted in a steady decrease in ice coverage across the Great Lakes, which reached a historic low of 2.7% on February 11 — the lowest amount of ice coverage on record during mid-February.”

Related:

- [The U.S. had its warmest winter on record – NOAA](#)
- [Lake Minnetonka just misses breaking 100-year record, ice remains after warm winter - USA Today](#)
- [New Lows for Great Lakes Ice Cover – NASA](#)

Snow



[Snow water equivalent percent of median map](#)

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

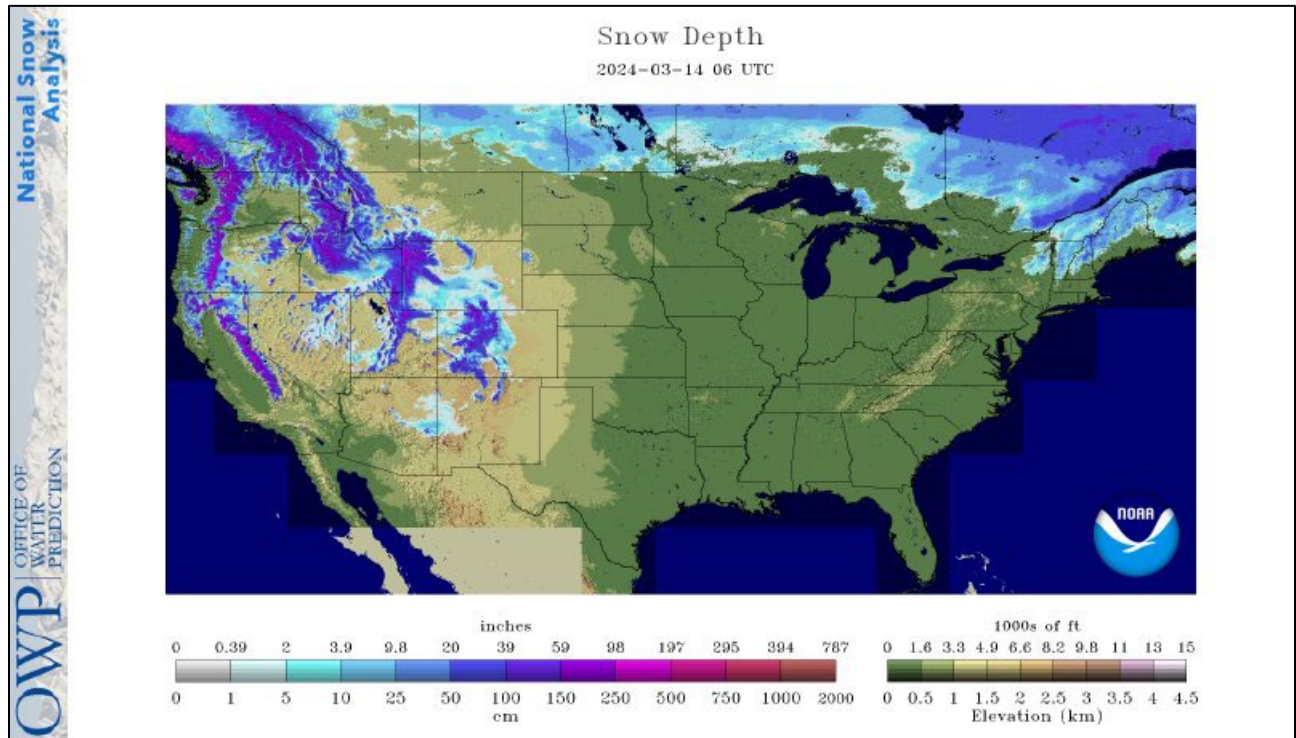


[Alaska snow water equivalent percent of median map](#)

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

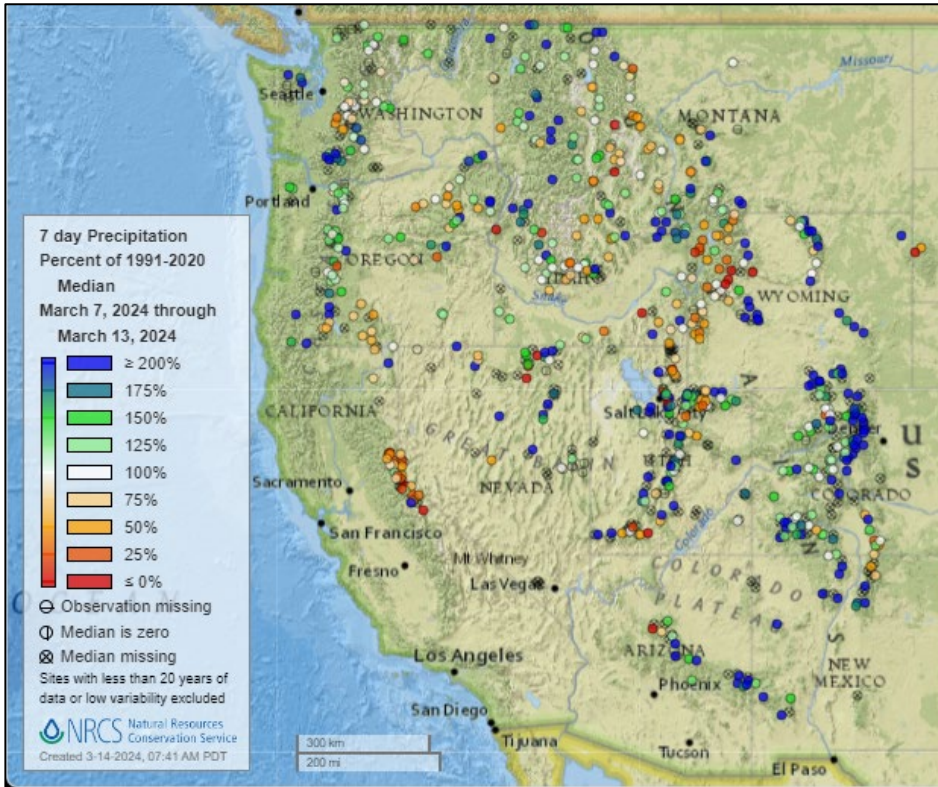
Current Snow Depth, National Weather Service Snow Analysis

Source: NOAA NWS National Operational Hydrologic Remote Sensing Center



Precipitation

Last 7 Days, NRCS SNOTEL Network

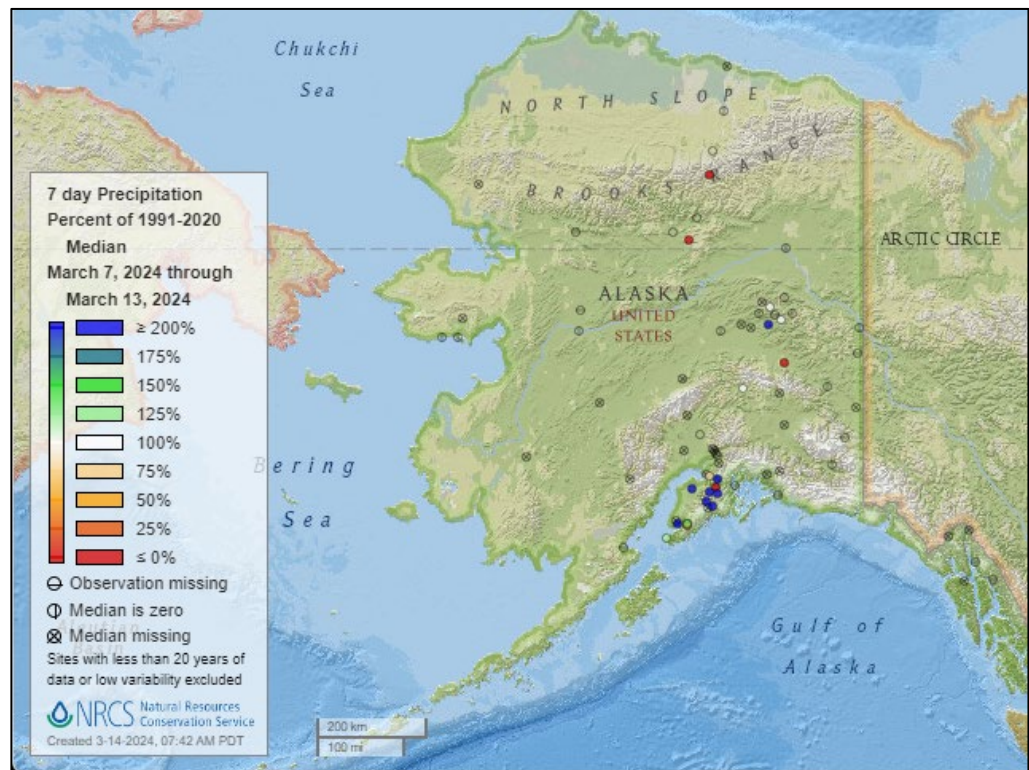


[7-day precipitation percent of median map](#)

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](#)



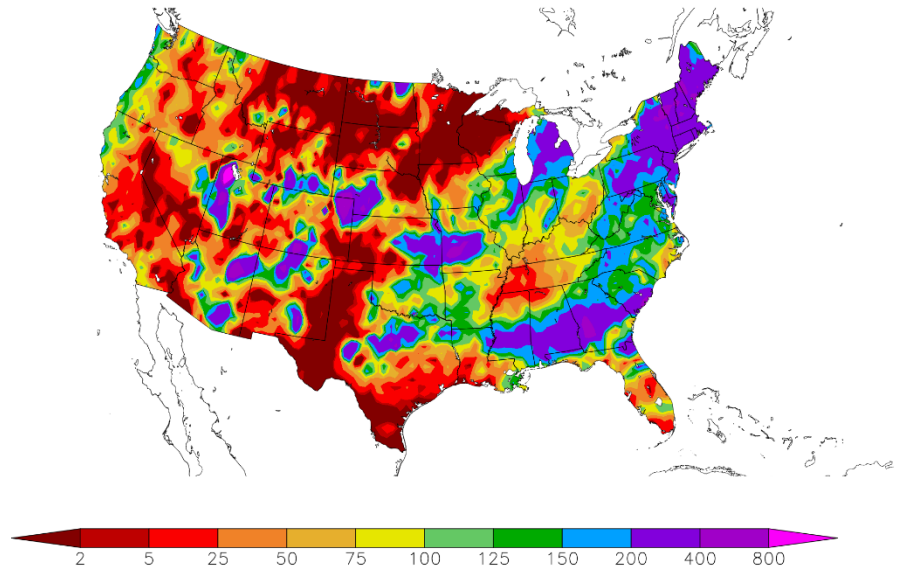
Last 7 Days, National Weather Service (NWS) Networks

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 (%)
3/7/2024 – 3/13/2024



Generated 3/14/2024 at HPRCC using provisional data.

NOAA Regional Climate Centers

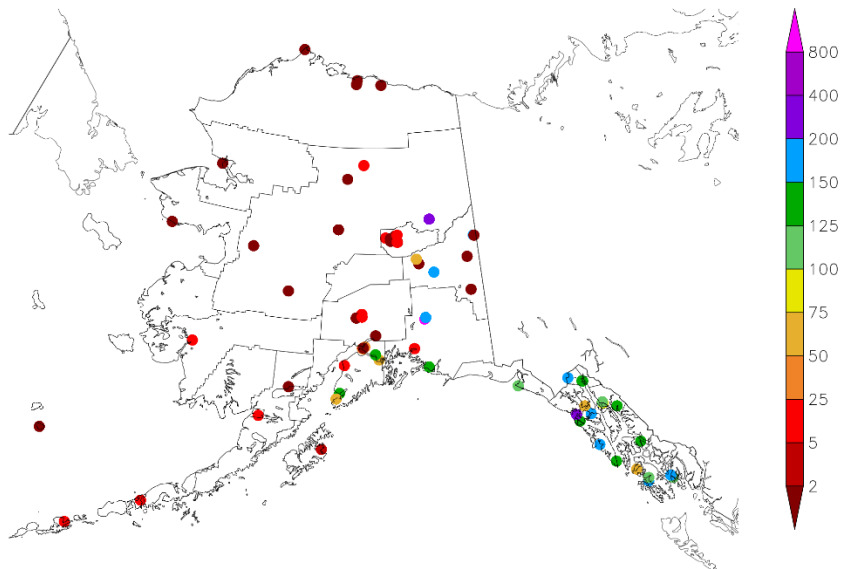
Last 7 Days, National Weather Service (NWS) Networks

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 (%)
3/7/2024 – 3/13/2024



Generated 3/14/2024 at HPRCC using provisional data.

NOAA Regional Climate Centers

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

Source: PRISM

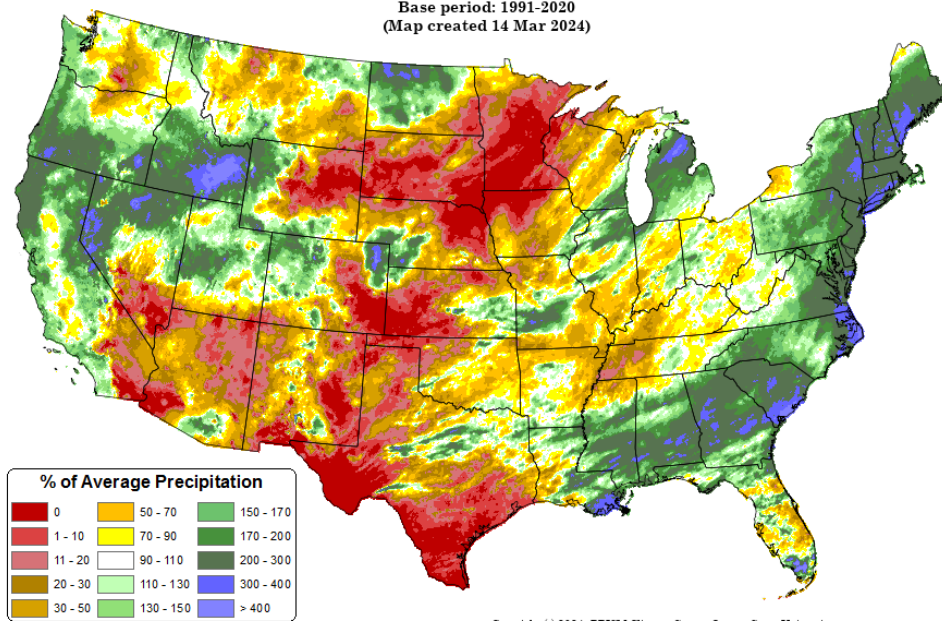
Total Precipitation Anomaly: 01 Mar 2024 - 13 Mar 2024

Period ending 7 AM EST 13 Mar 2024

Base period: 1991-2020

(Map created 14 Mar 2024)

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



Copyright (c) 2024, PRISM Climate Group, Oregon State University

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

Source: PRISM

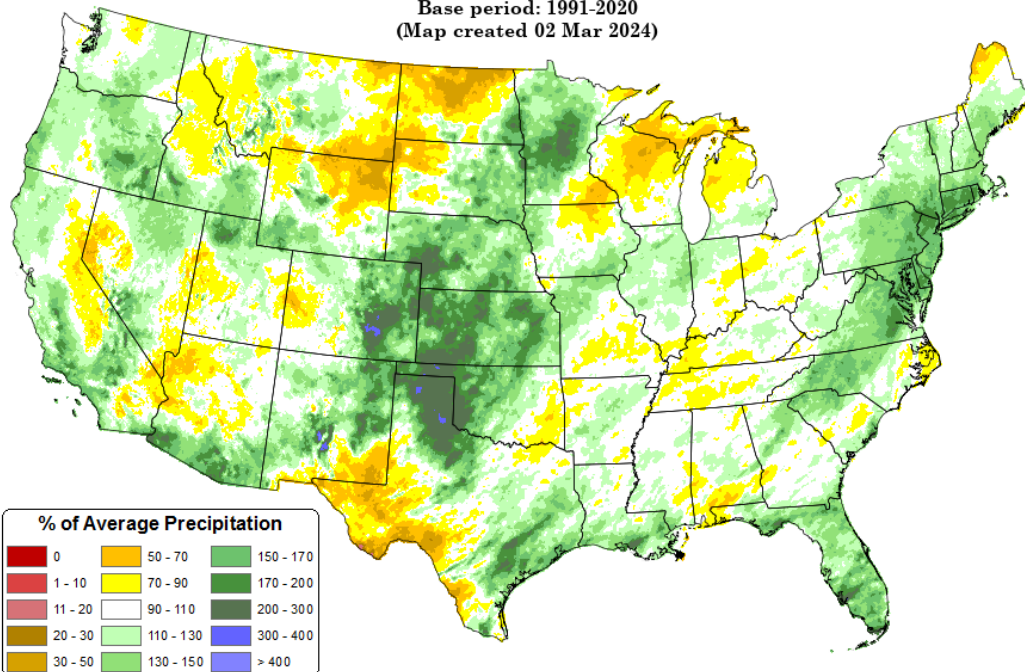
[December 2023 through February 2024 precipitation anomaly map](#)

Total Precipitation Anomaly: Dec 2023 - Feb 2024

Period ending 7 AM EST 29 Feb 2024

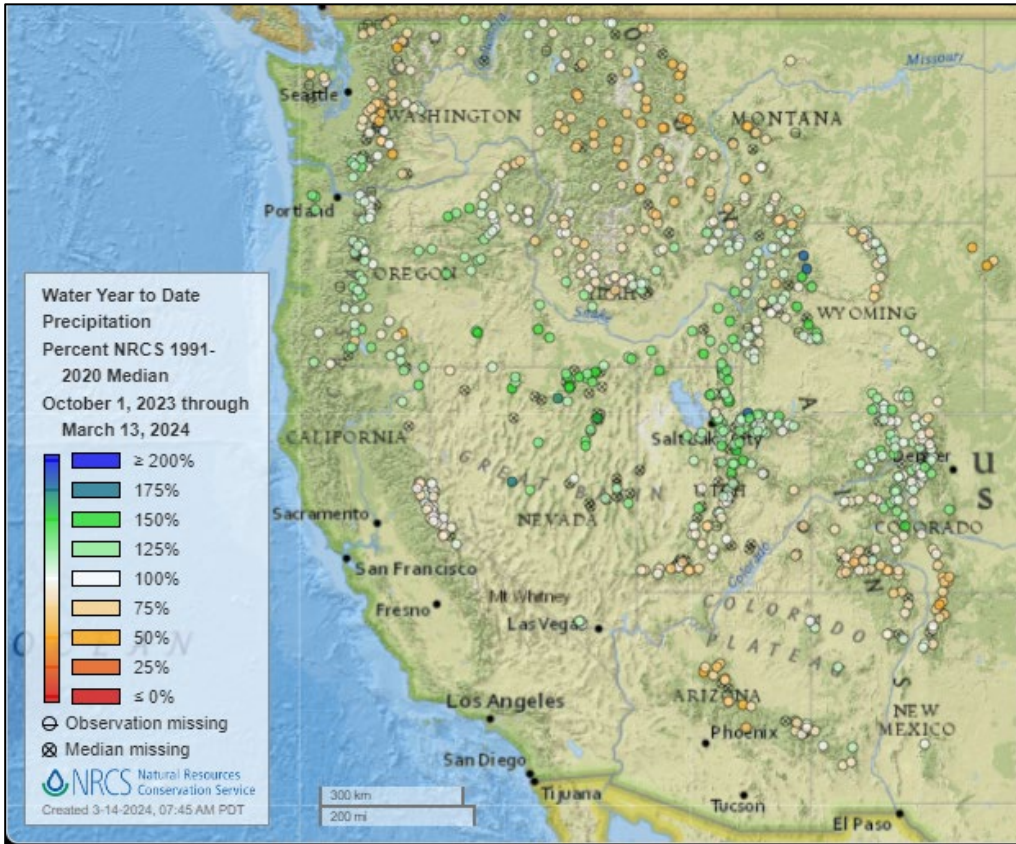
Base period: 1991-2020

(Map created 02 Mar 2024)



Copyright (c) 2024, PRISM Climate Group, Oregon State University

Water Year-to-Date, NRCS SNOTEL Network

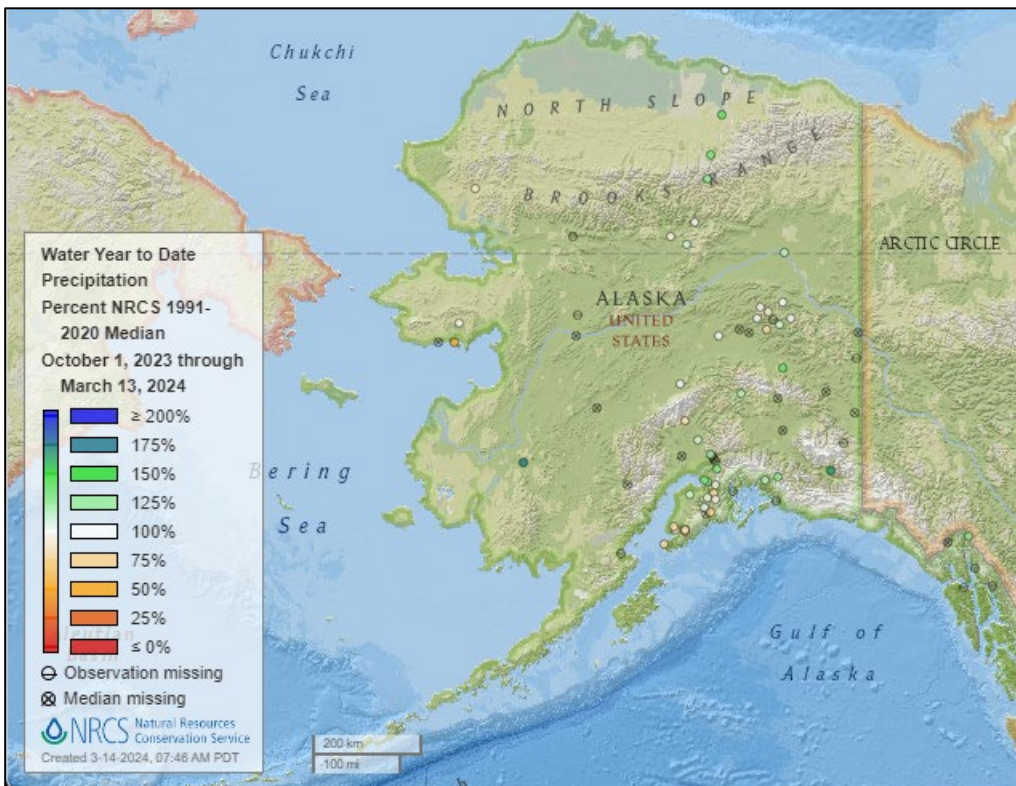


[2024 water year-to-date precipitation percent of median map](#)

See also:

[2024 water year-to-date precipitation percent of average map](#)

[2024 water year-to-date precipitation values \(inches\) map](#)



[Alaska 2024 water year-to-date precipitation percent of median map](#)

See also:

[Alaska 2024 water year-to-date precipitation percent of average map](#)

[Alaska 2024 water year-to-date precipitation values \(inches\) map](#)

Temperature

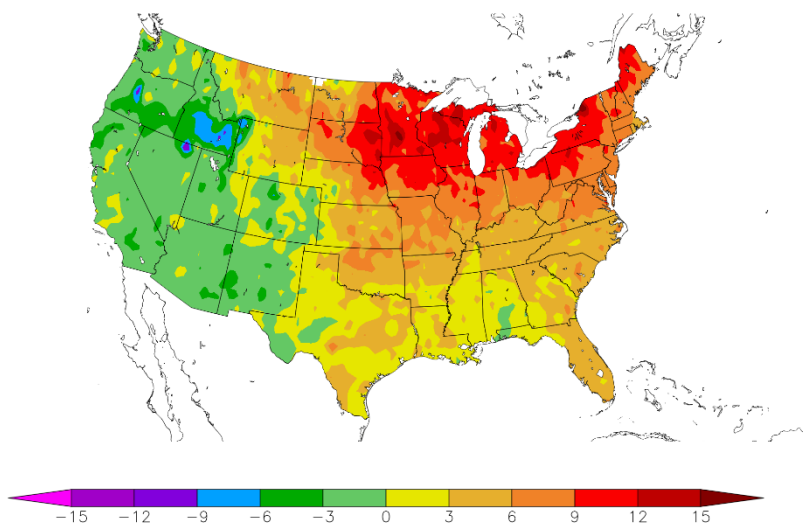
Last 7 Days, National Weather Service (NWS) Networks

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)
3/7/2024 – 3/13/2024



Generated 3/14/2024 at HPRCC using provisional data.

NOAA Regional Climate Centers

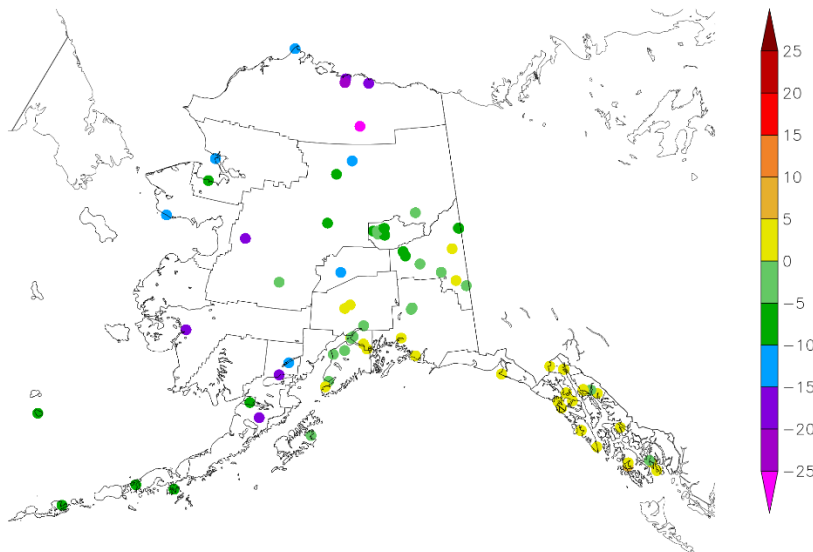
Last 7 Days, National Weather Service (NWS) Networks

Source: Regional Climate Centers

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

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

Departure from Normal Temperature (F)
3/7/2024 – 3/13/2024



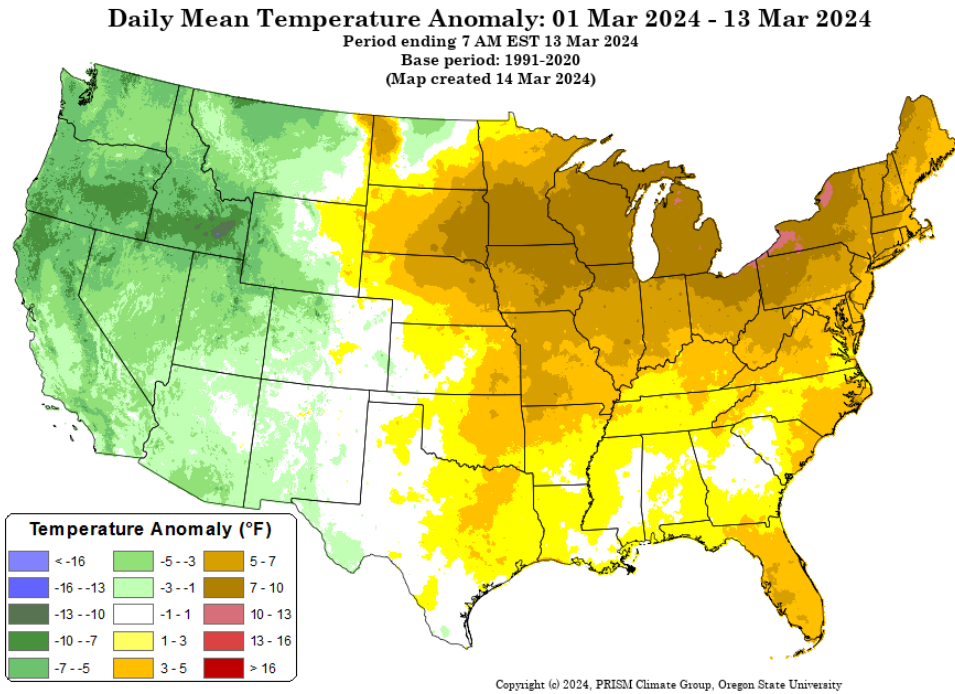
Generated 3/14/2024 at HPRCC using provisional data.

NOAA Regional Climate Centers

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

Source: PRISM

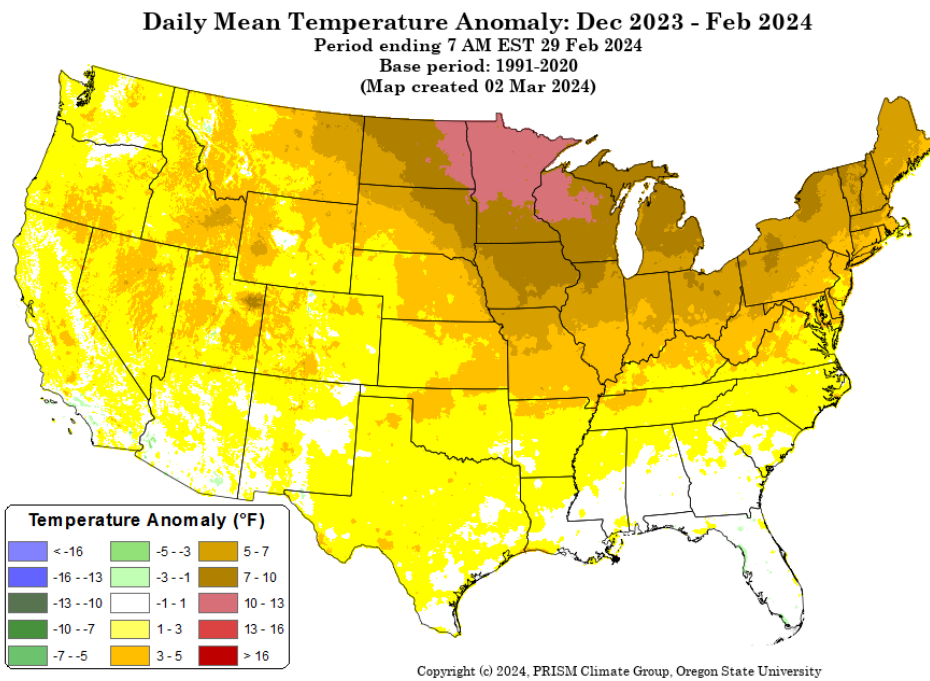
[Month-to-date national daily mean temperature anomaly map](#)



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

Source: PRISM

[December 2023 through February 2024 daily mean temperature anomaly map](#)



Drought

[U.S. Drought Monitor](#)

Source: National Drought Mitigation Center

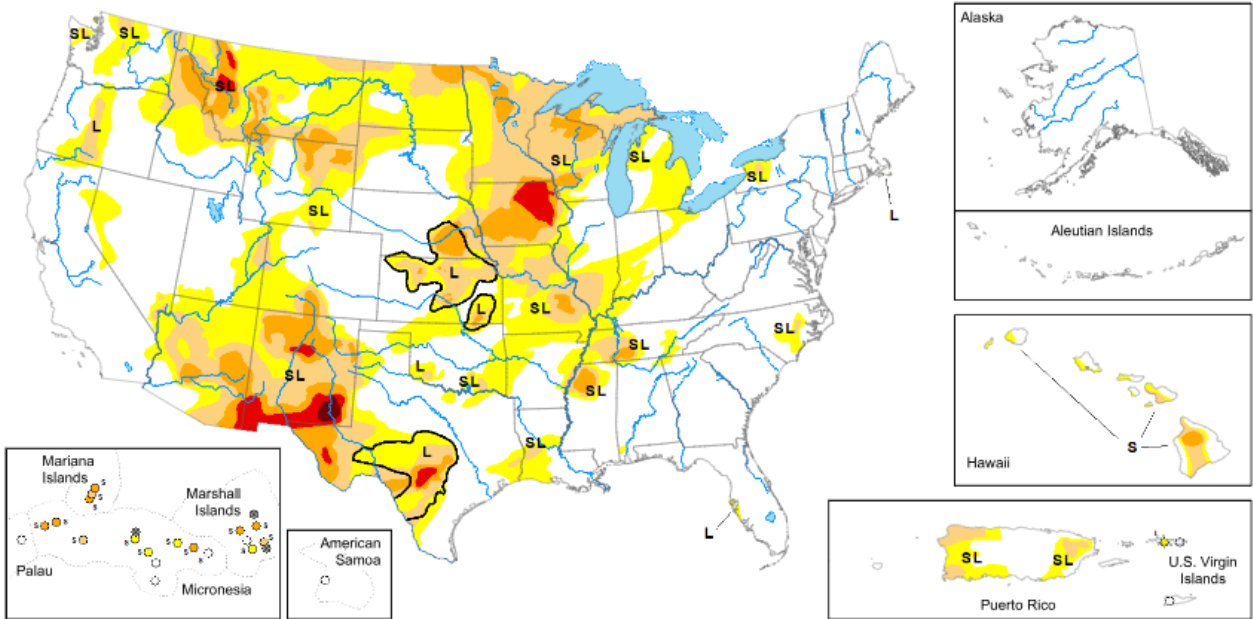
[U.S. Drought Portal](#)

Source: NOAA

Map released: March 14, 2024

Data valid: March 12, 2024

View grayscale version of the map



United States and Puerto Rico Author(s):

[Curtis Riganti](#), National Drought Mitigation Center

Pacific Islands and Virgin Islands Author(s):

[Denise Gutzmer](#), National Drought Mitigation Center

More maps and statistics:

- [U.S. States and Puerto Rico](#)
- [Continental U.S.](#)
- [Regions ▾](#)

The data cutoff for Drought Monitor maps is each Tuesday at 8 a.m. EDT. 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	D1 (Moderate Drought)	D3 (Extreme Drought)	No Data
D0 (Abnormally Dry)	D2 (Severe Drought)	D4 (Exceptional Drought)	

- 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](#), March 12, 2024

Source: National Drought Mitigation Center

“Moderate to heavy rain amounts fell across parts of the Southeast and Northeast this week, leading to localized improvements to ongoing drought and abnormal dryness in the Southeast, and mostly unchanged conditions in the Northeast, aside from western New York, which missed out on the heavier precipitation and saw minor degradations. The central third of the contiguous U.S. saw a mix of improvements and degradations, based on where heavier precipitation did or did not fall and where dry and windy conditions continued. Parts of Illinois, Indiana, Ohio, the Michigan Lower Peninsula, southern Missouri and southeast Kansas saw improving conditions after heavier rains fell there. Meanwhile, moderate drought expanded in northwest Missouri and portions of west-central Wisconsin, Minnesota, northwest Iowa, the far southern Michigan Upper Peninsula and far northeast Wisconsin. Much of Texas remained the same, with a few degradations in the southeast corner and several degradations in central and southern Texas where long-term drought conditions are still causing impacts. Recent dryness and warm and windy weather in northwest Oklahoma and the Texas and Oklahoma panhandles led to abnormal dryness developing there. Short-term dryness and high evaporative demand led to large areas of degrading conditions in northeast Wyoming, while west-central Wyoming, north-central Colorado, northeast Utah, western Montana, and the northern Idaho Panhandle all saw areas of improvement due to lower evaporative demand and improving snowpack recently. In Hawaii, an active trade wind pattern continued, leading to some improvements on the windward (northeast) slopes of the Big Island and Kauai, while a small area of moderate drought developed on the leeward (southwest) portion of Kauai. In Puerto Rico, a few improvements were made where recent rainfall has improved streamflows and crop stress, and lessened rainfall deficits and raised reservoir levels. No changes were made to the Drought Monitor this week in Alaska.”

National Drought Summary – Looking Ahead

“According to forecasts from the National Weather Service Weather Prediction Center, heavy snowfall is forecast in the Colorado Front Range area near the beginning of the forecast period (March 14-15), while heavy precipitation with this storm system is also likely across other parts of the Four Corners states. Aside from portions of the Four Corners states, much of the West is likely to stay dry through Monday evening. Farther east, through Monday evening, half an inch (or more) of precipitation is forecast from central Nebraska eastward into parts of the Rust Belt. Rainfall amounts of a half inch to 2 inches, with locally higher amounts, is also forecast from central Texas eastward through southeast Oklahoma, Arkansas and southeast Missouri to most of Georgia and Tennessee and southern Kentucky.

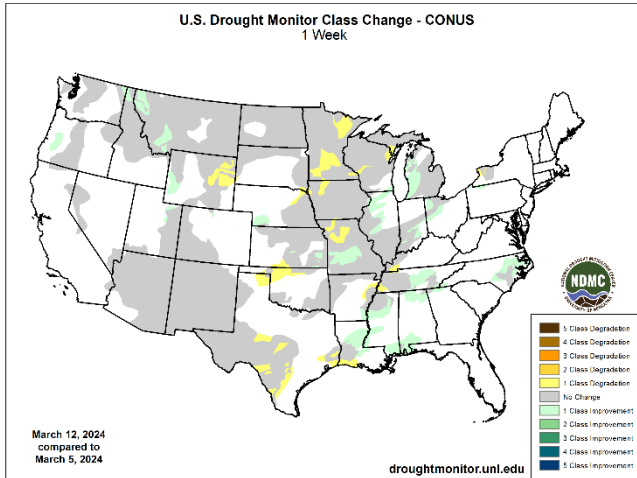
The National Weather Service Climate Prediction Center 6-10 day forecast favors near-normal precipitation or above-normal precipitation across the contiguous U.S., covering the period from March 19-23. The highest confidence areas for above-normal precipitation are the Florida Peninsula, along the Gulf Coast, and from the Arizona/New Mexico border northward through Montana. Warmer-than-normal temperatures are favored across parts of the West, especially in Utah, Nevada, California, Idaho, Washington and Oregon, and in parts of the central and southern Great Plains. Below-normal temperatures are favored in the Southeast, excluding the southern Florida Peninsula where near- or above-normal temperatures are favored. Below-normal temperatures are also favored from central Montana eastward through North Dakota and northern South Dakota, Minnesota, Wisconsin and Michigan, with below-normal temperatures slightly favored in the Ohio River Valley and Rust Belt.

In Hawaii, cooler-than-normal temperatures are favored. Below-normal precipitation is likely on all islands except for the Big Island, where near-normal precipitation is favored. Warmer-than-normal weather is favored in Alaska, especially in the western reaches of the state. Wetter-than-normal weather is favored for central, northern and western Alaska, while drier-than-normal weather is favored in southeast Alaska.”

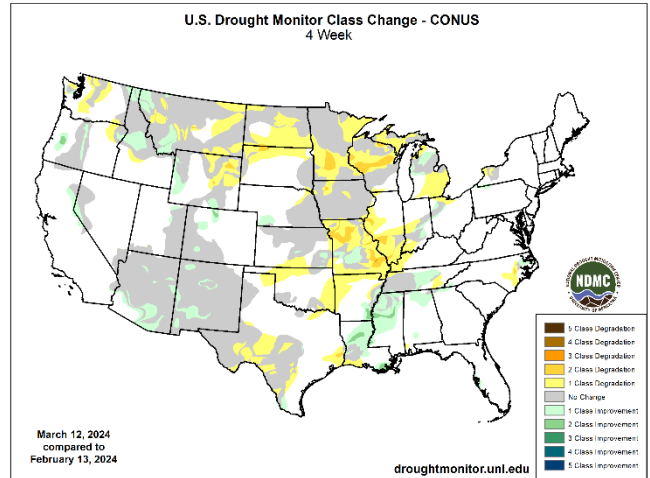
Changes in Drought Monitor Categories over Time

Source: National Drought Mitigation Center

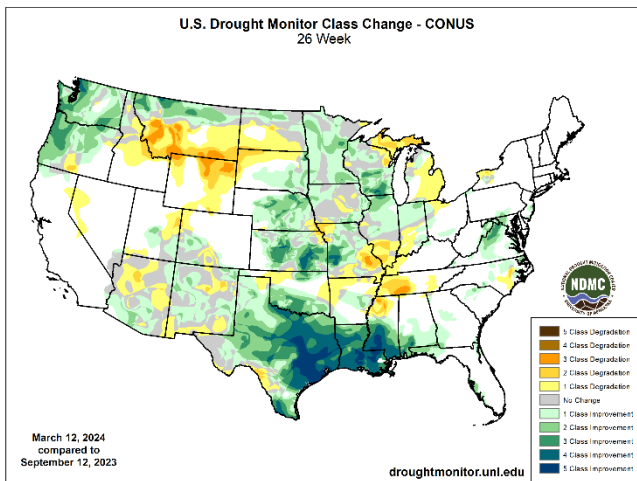
1 Week



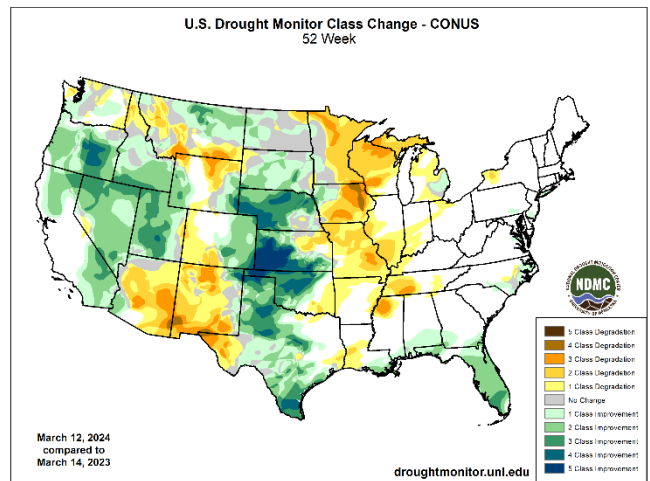
1 Month



6 Months



1 Year



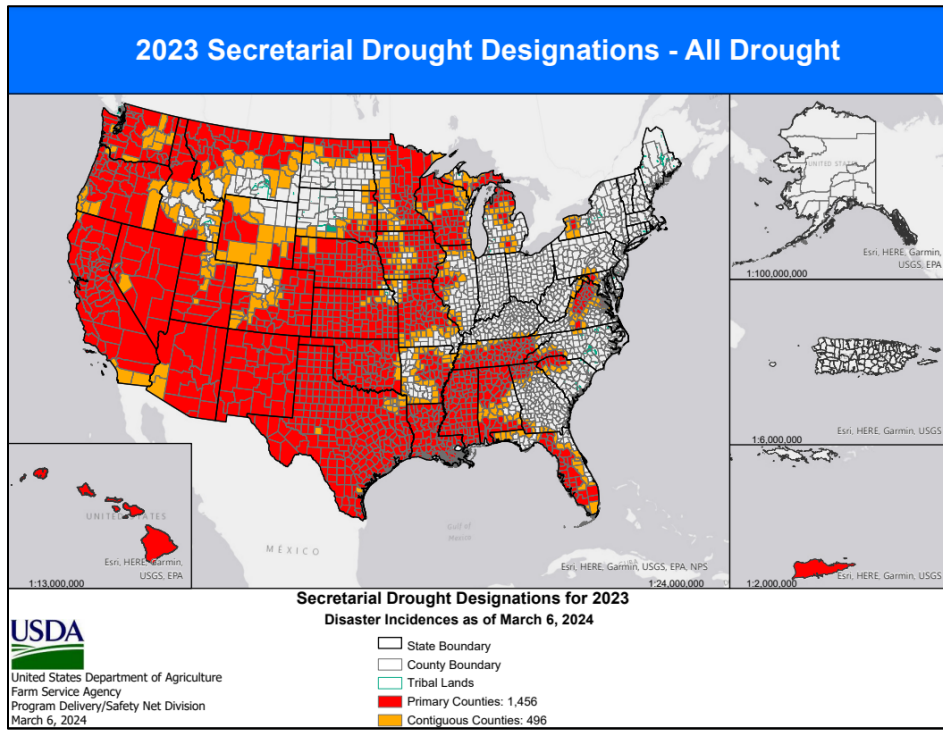
[Changes in drought conditions over the last 12 months for the contiguous U.S.](#)

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



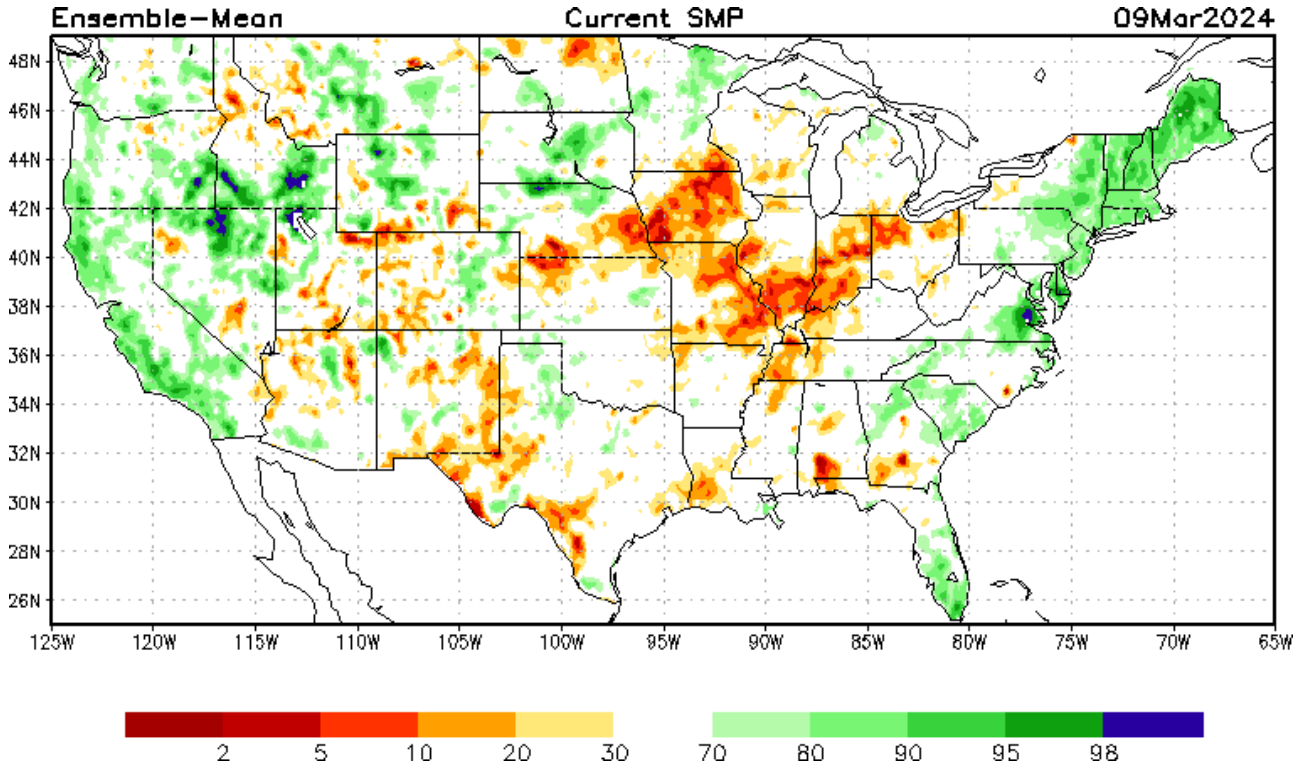
Highlighted Wildfire Resources

- [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

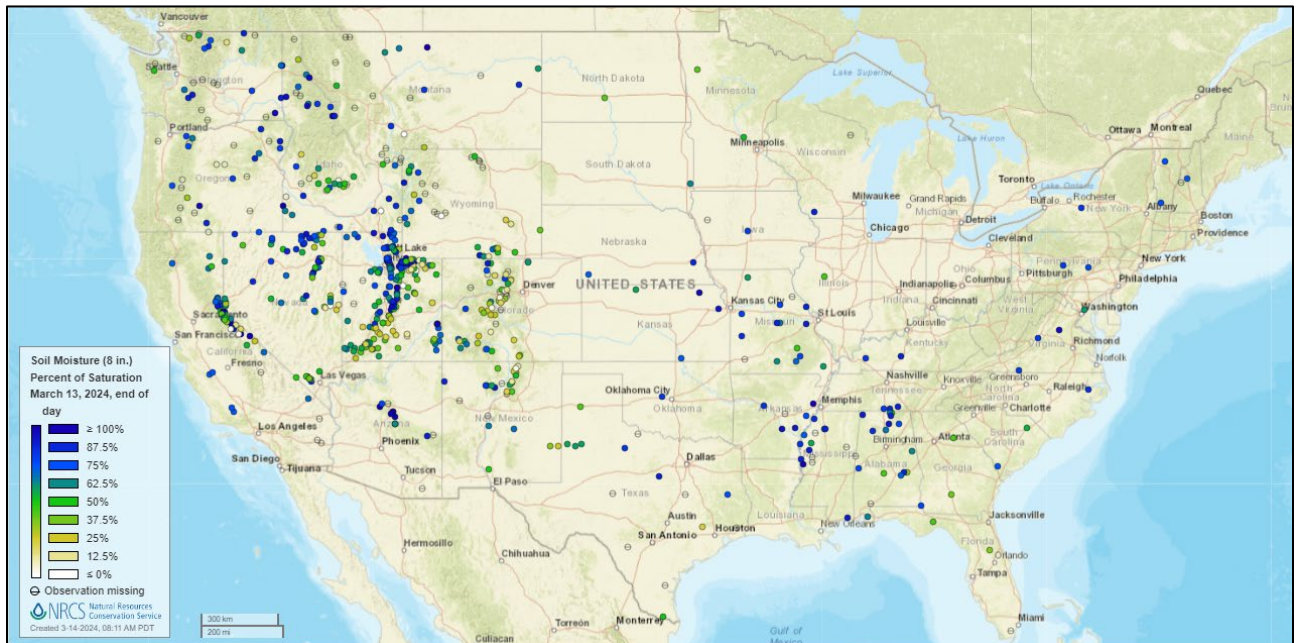


[Modeled soil moisture percentiles](#) as of March 09, 2024

Soil Moisture Percent of Saturation

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

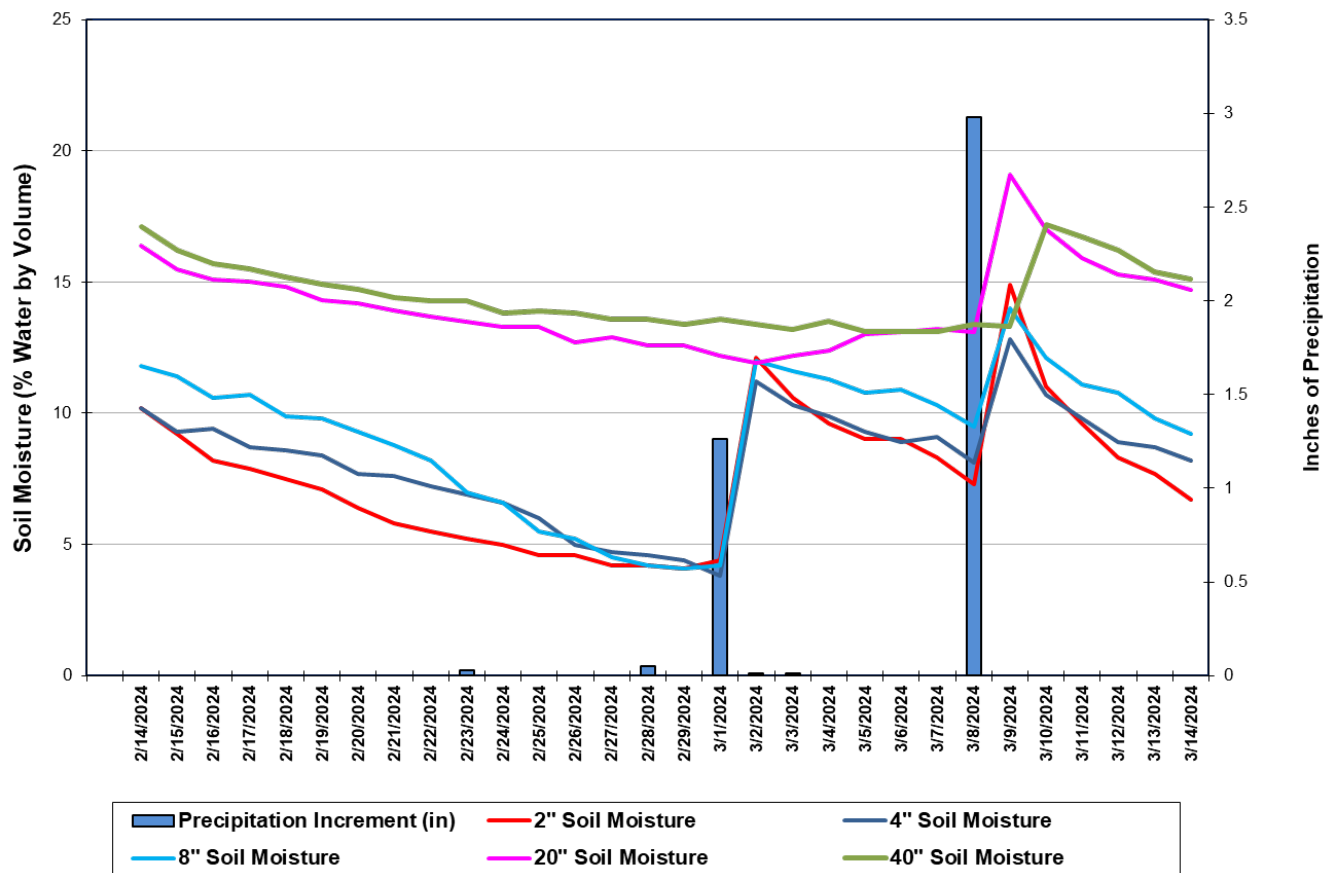
[U.S. soil moisture map at 8-inch depth:](#)



Soil Moisture

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

Selma, Alabama (SCAN site 2176)
Daily Mean Soil Moisture vs. Daily Precipitation



This chart shows the precipitation and soil moisture for the last 30 days at the [Selma](#) SCAN site in Alabama. Soil moisture levels steadily declined at all soil sensor depths during the first half of the period. After the site received 1.26 inches of precipitation on March 1, soil moisture levels can be seen sharply increasing at the -2, -4, and -8-inch sensor depths. An even more powerful storm moved through the area on March 8, depositing 2.98 inches of precipitation at the site in one day, after which soil sensors at all depths indicate a pronounced increase in soil moisture. Total precipitation for the 30-day period was 4.34 inches.

Soil Moisture Data Portals

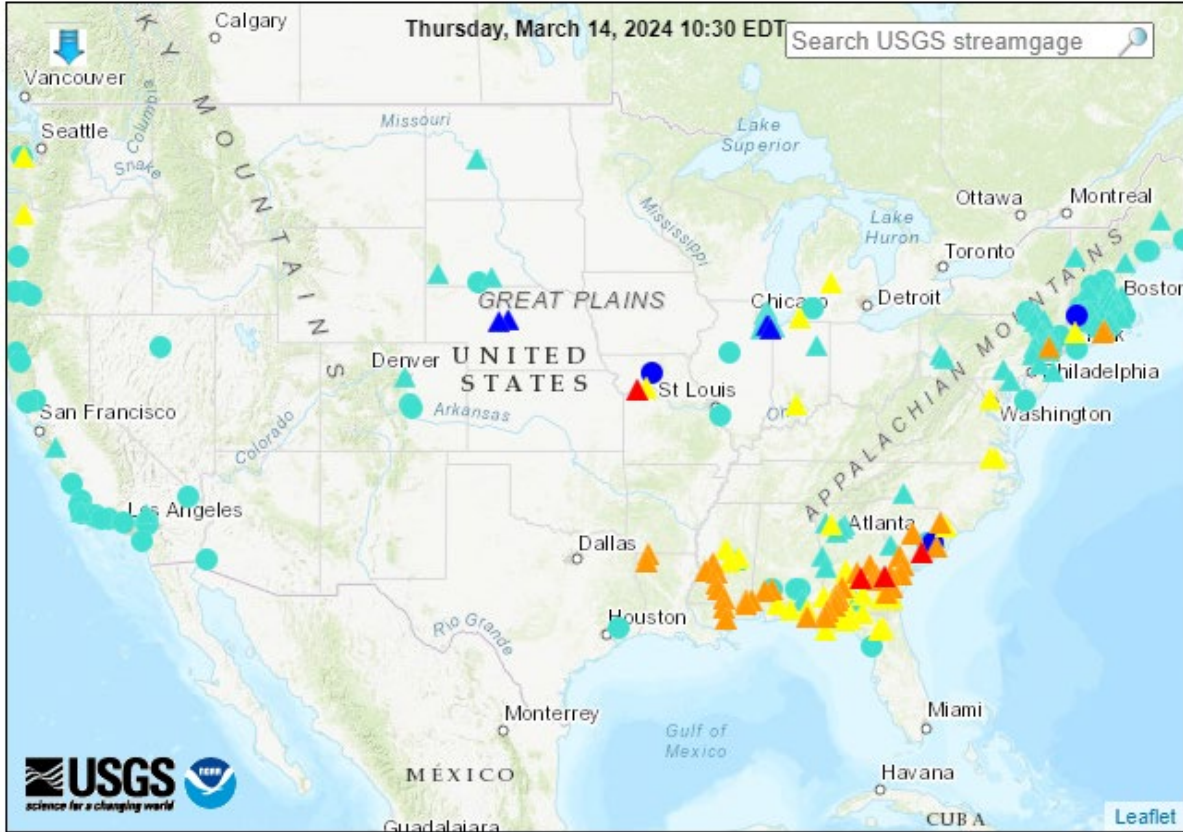
- [USCRN Soil Moisture](#)
- [National Soil Moisture Network](#)
- [NOAA Climate Prediction Center Soil Moisture](#)
- [NASA Grace](#)

Streamflow, Drought, Flood, and Runoff

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

Map of flood and high flow conditions

(47 in floods [moderate: 4, minor: 43], 35 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

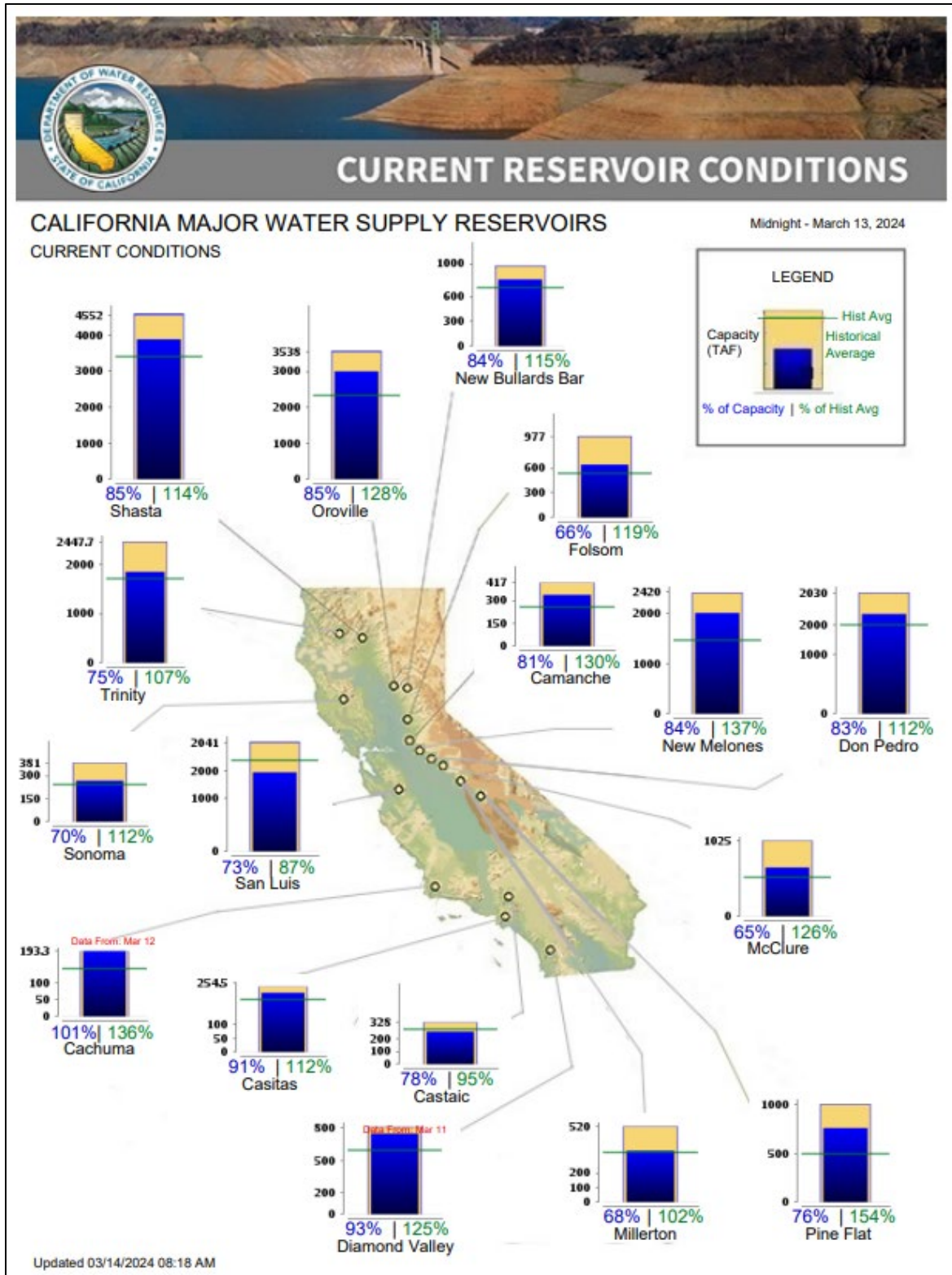
Hydromet Teacup Reservoir Depictions

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 March 14, 2024: “A variety of weather hazards will continue across much the country for the next several days. The late-season snowstorm underway across the Four Corners States will shift southward, with the heaviest snow moving from the central to southern Rockies. Event-total snowfall could reach 4 feet along the eastern slopes of the Colorado Rockies, with heavy, wet snow also accumulating in adjacent areas of the High Plains. Meanwhile, the severe weather threat currently affecting the southern Corn Belt will move farther to the south, with some strong thunderstorms persisting into the early part of the weekend from Texas to the southern Atlantic Coast. Five-day rainfall totals should broadly reach 1 to 3 inches east of a line from central Texas to Lake Michigan, although generally lighter amounts will be observed in the middle and southern Atlantic States. As storminess wanes over the weekend, a surge of colder air will arrive across much of the central and eastern U.S. By early next week, freezes will extend at least as far south as the Tennessee Valley, with frost possible deep into Alabama, Georgia, and Mississippi. The NWS 6- to 10-day outlook for March 19 – 23 calls for lingering below-normal temperatures across much of the northern and eastern U.S., while warmer-than-normal weather will be focused across the central and southern Plains and most of the West. Meanwhile, near- or above-normal precipitation can be expected nationwide, with the greatest likelihood of wet conditions stretching across the Deep South, as well as the Rockies and environs.”

Weather Hazards Outlook: [March 16 – 20, 2024](#)

Source: NOAA Weather Prediction Center















U.S. Day 3-7 Hazards Outlook

[About the Hazards Outlook](#)

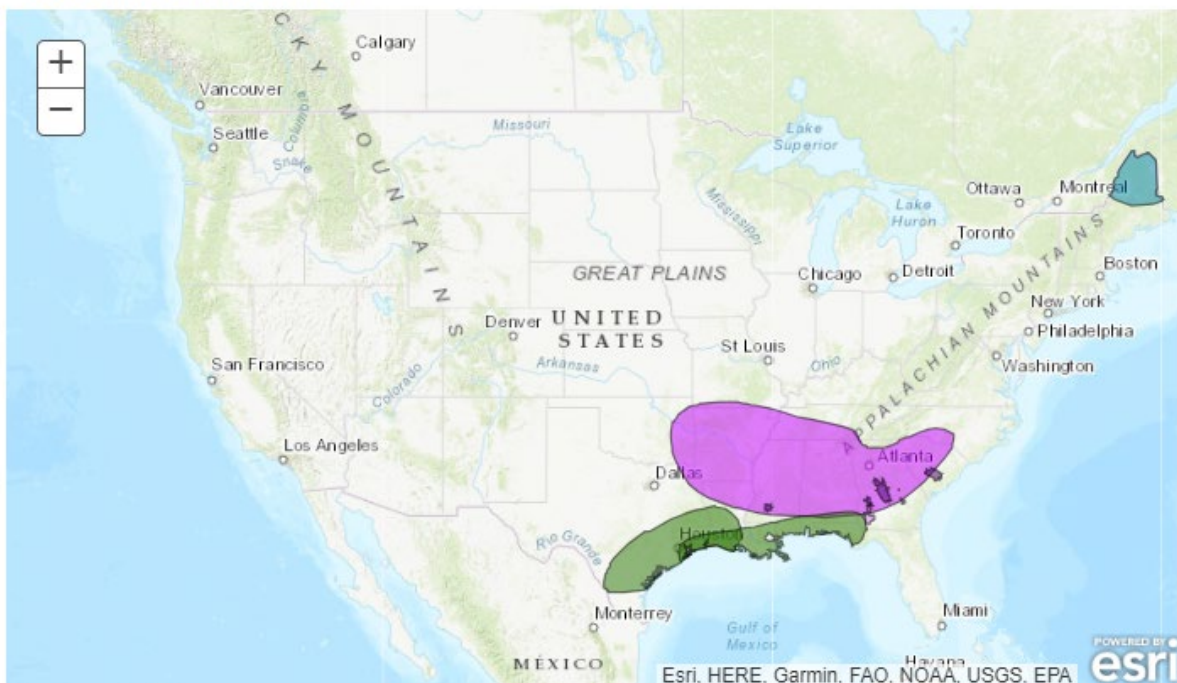
Created March 13, 2024

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 March 16, 2024 - March 20, 2024

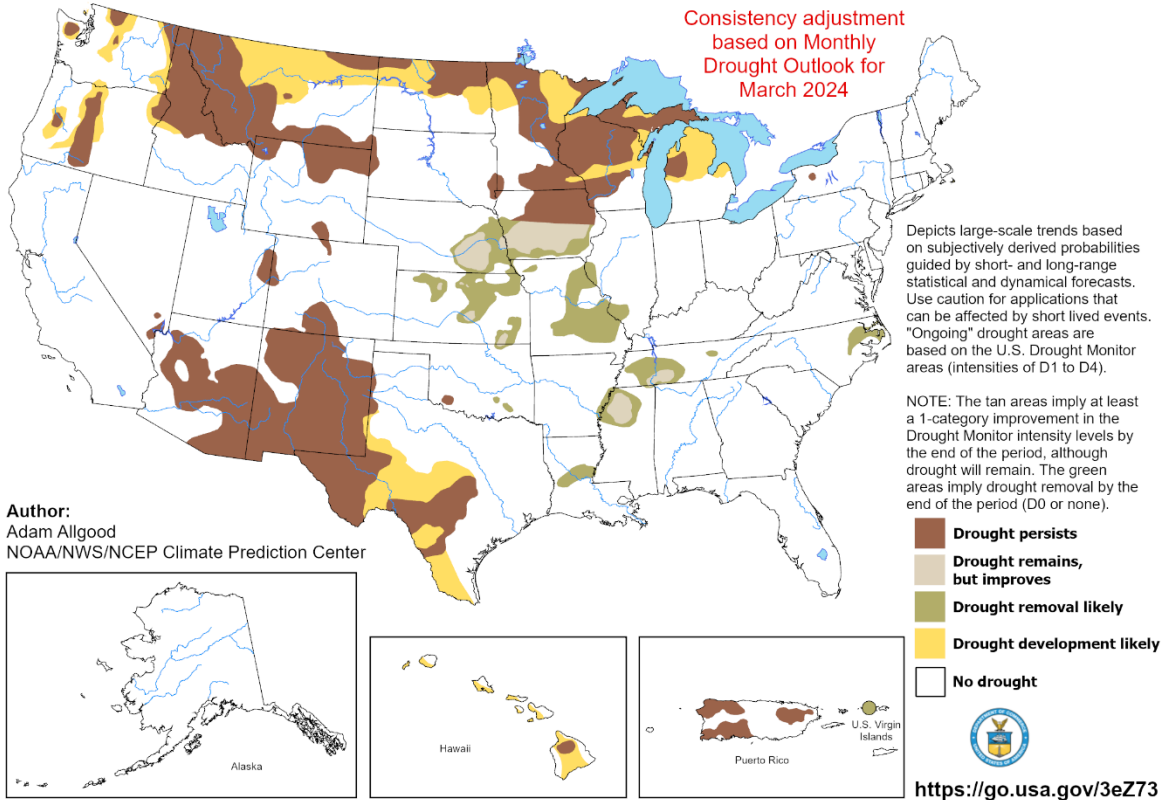


Seasonal Drought Outlook: [March 01 – May 31, 2024](#)

Source: National Weather Service

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

Valid for March 1 - May 31, 2024
Released February 29, 2024

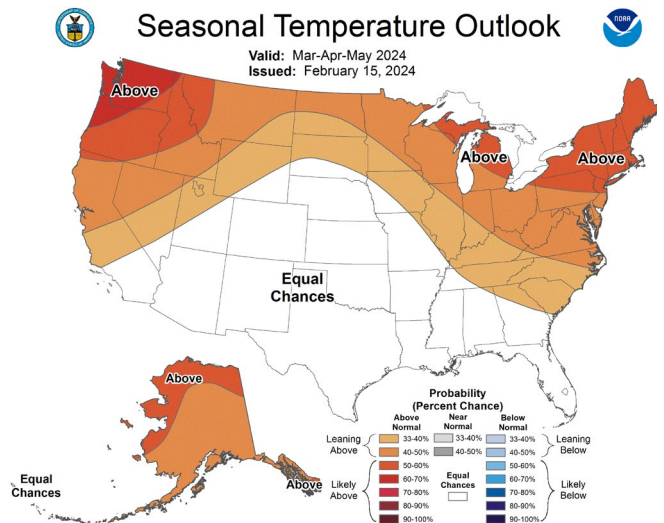
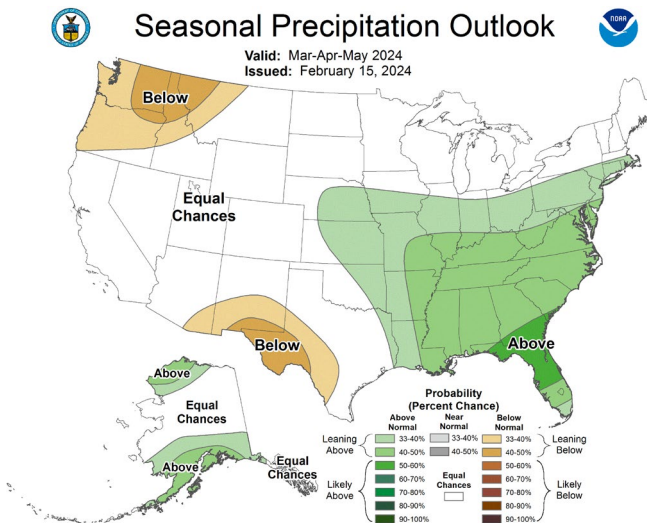


Climate Prediction Center Three-month Outlook

Source: National Weather Service

[Precipitation](#)

[Temperature](#)



[March-April-May 2024 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](#).