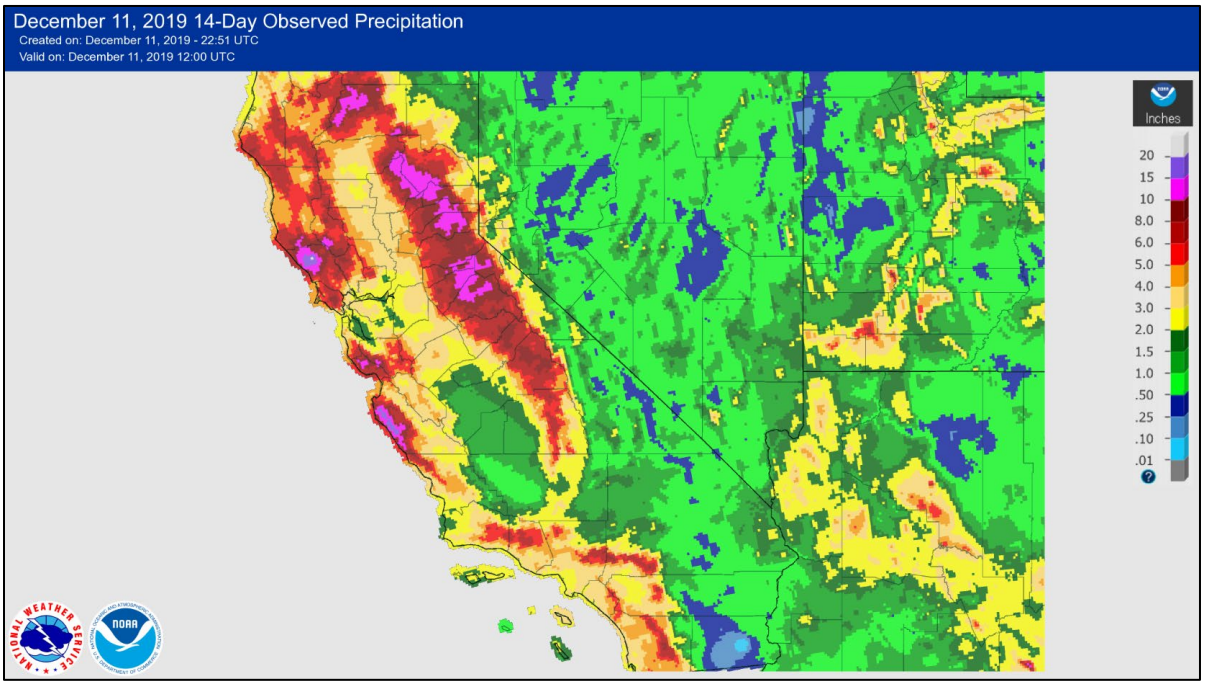
United States Department of Agriculture

Water and Climate Update

December 12, 2019

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.

Heavy precipitation continues to impact California



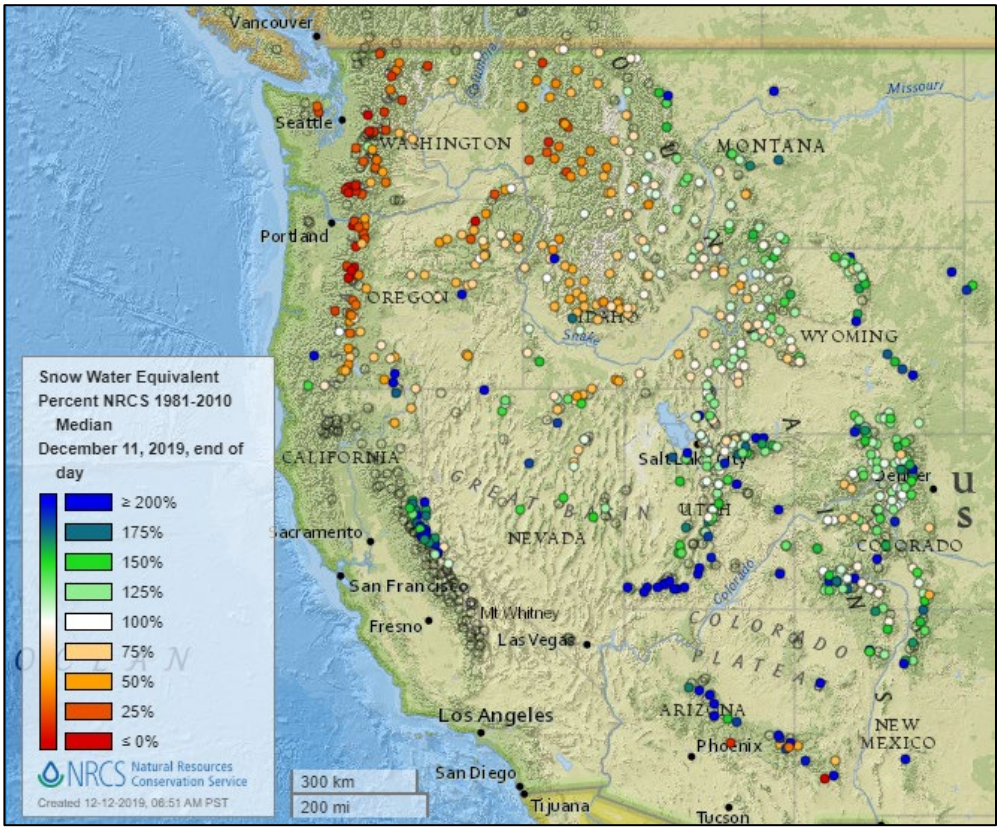
California continues to be pounded by storms with heavy rain and mountain snow. Over the last two weeks precipitation totals topped 10 inches in much of the Sierra Nevada as snow, and over 15 inches in some areas along the coastal mountains. Within the last week rainfall totals in areas of central and northern California have topped 4.5 inches. High wind has caused downed trees, power outages, and flight delays. Flash flood warnings were issued in areas recently burned where heavy rain could trigger mud and debris flows. The snowpack depth at SNOTEL sites at the higher elevations in the Lake Tahoe area is nearly four feet.

Related:

Storm drops heavy rain, snow across Northern California – San Francisco Chronicle (CA)
Rain totals above normal in Southern California and adding up in the north – Los Angeles Times (CA)
Severe storm hits Northern California, causing flooding and rock slides – CBS News
I-5 through Grapevine reopens, Cave fire fizzling out after snow and rain wallop Southern California – San Diego Union-Tribune (CA)
More than 2 feet of Sierra snow and plenty of rain hit Northern California this weekend – Sacramento Bee on MSN.com (CA)

Snow

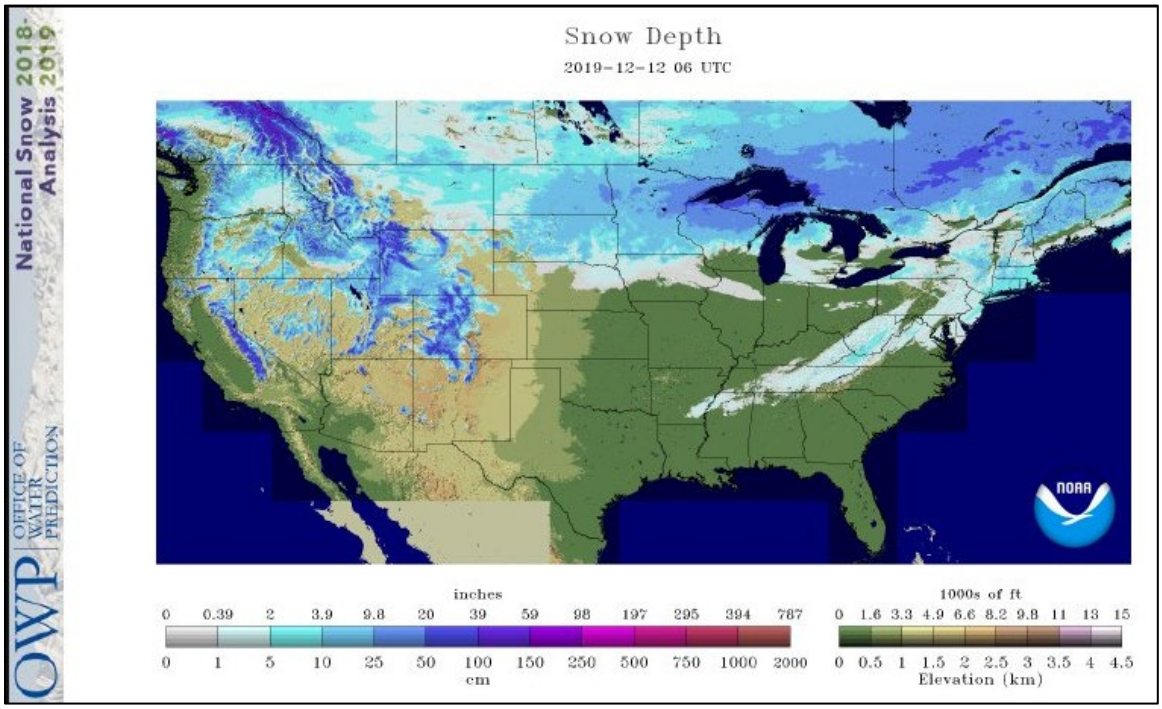
Current Snow Water Equivalent, NRCS SNOTEL Network



[Snow water equivalent percent of median map]

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

[Current Snow Depth], National Weather Service Snow Analysis

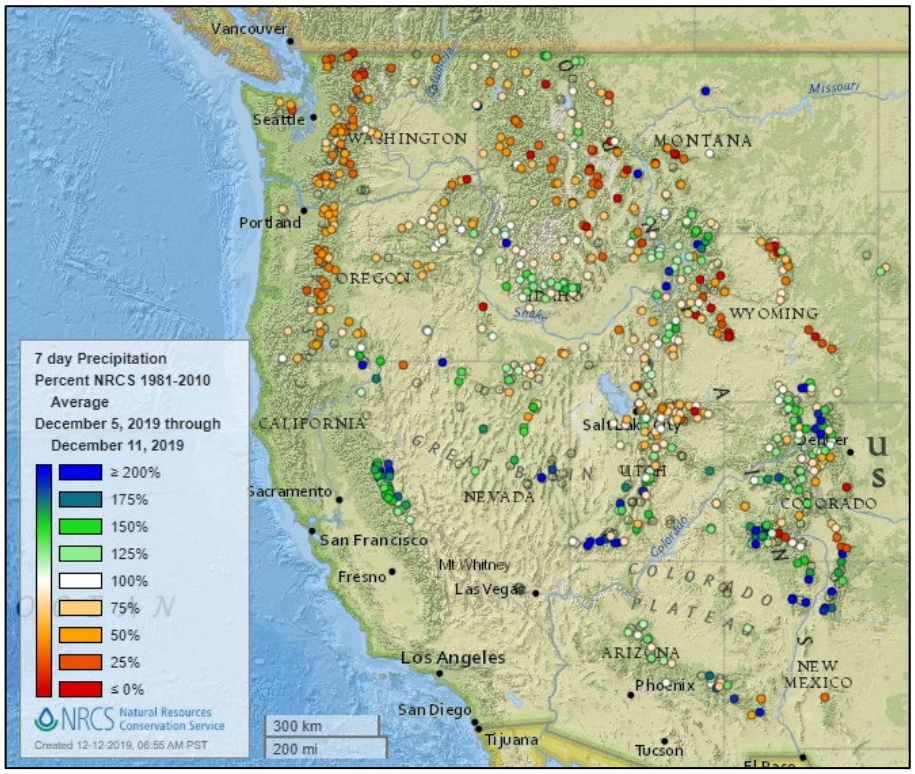


Precipitation

Last 7 Days, NRCS SNOTEL Network

[7-day precipitation percent of average map]

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

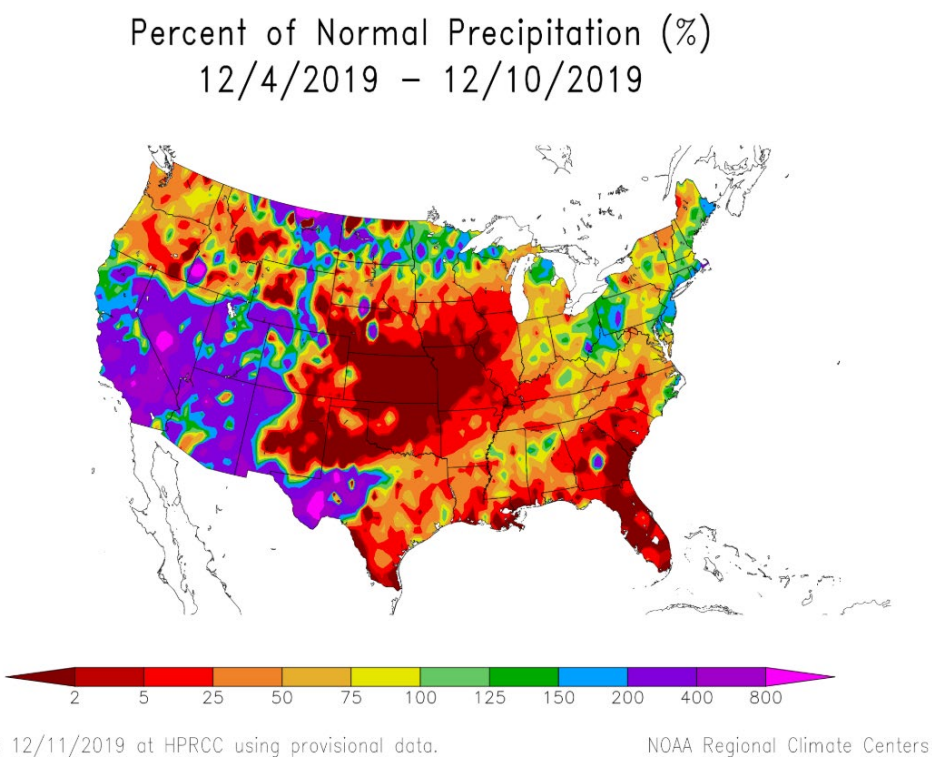


Last 7 Days, National Weather Service (NWS) Networks

Source: Regional Climate Centers

[7-day precipitation percent of normal map] for the continental U.S.

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

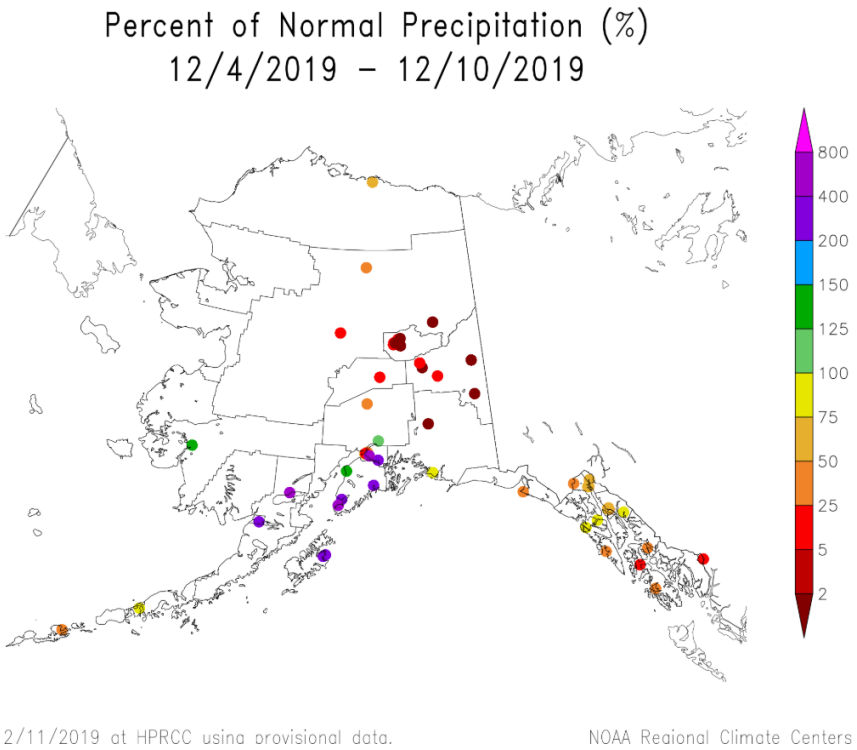


Last 7 Days, National Weather Service (NWS) Networks

Source: Regional Climate Centers

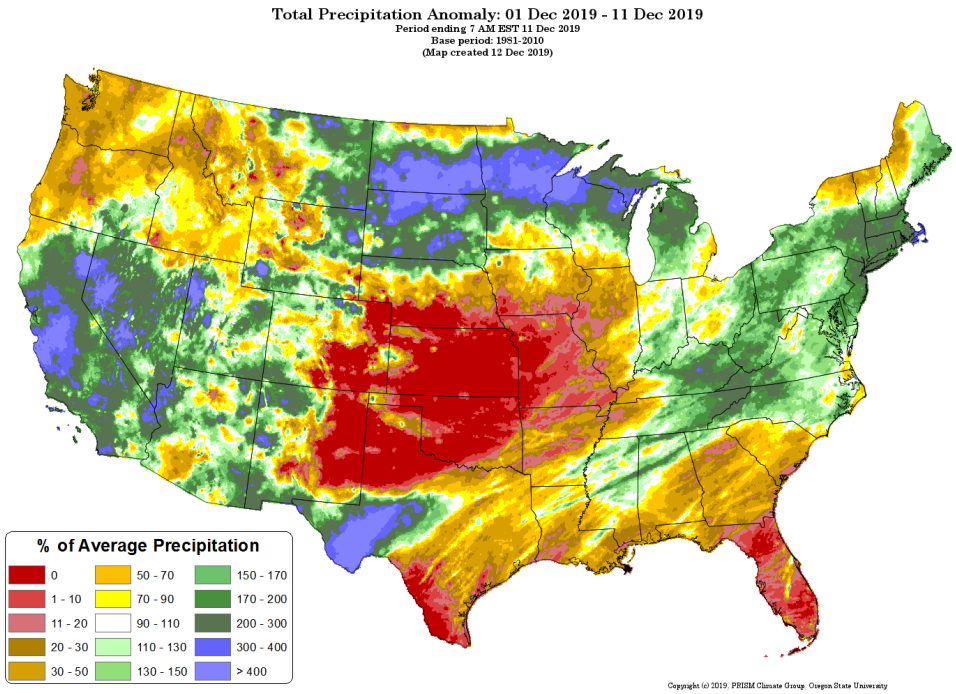
[7-day precipitation anomaly map](#) for Alaska.

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



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

Source: PRISM

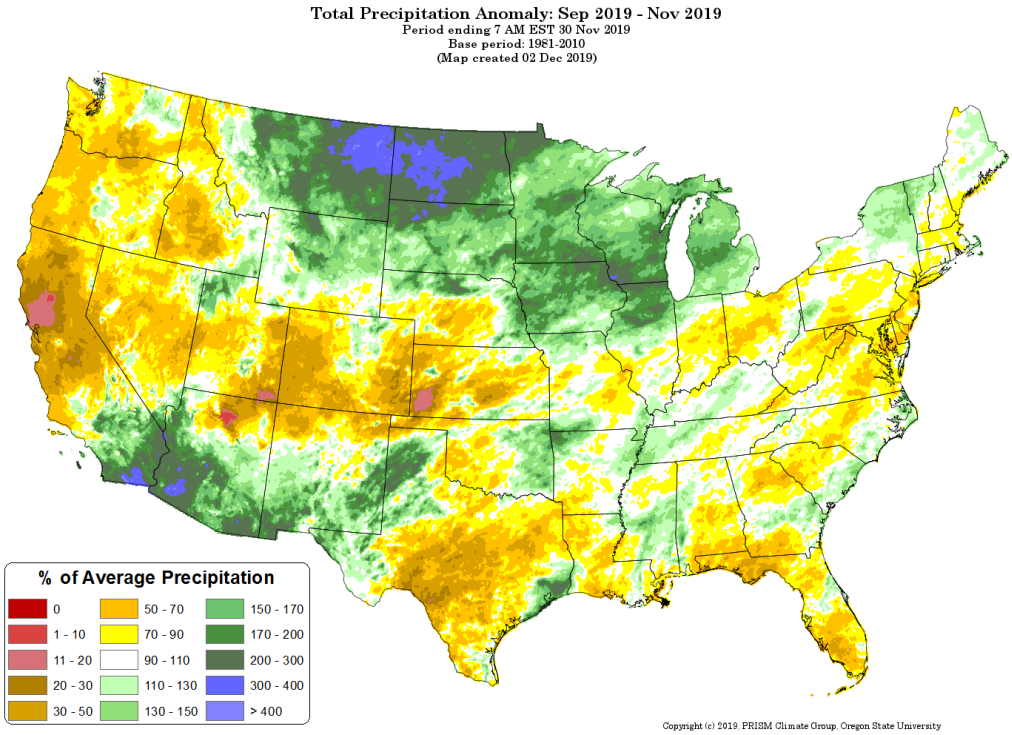


[Month-to-date national total precipitation percent of average map](#)

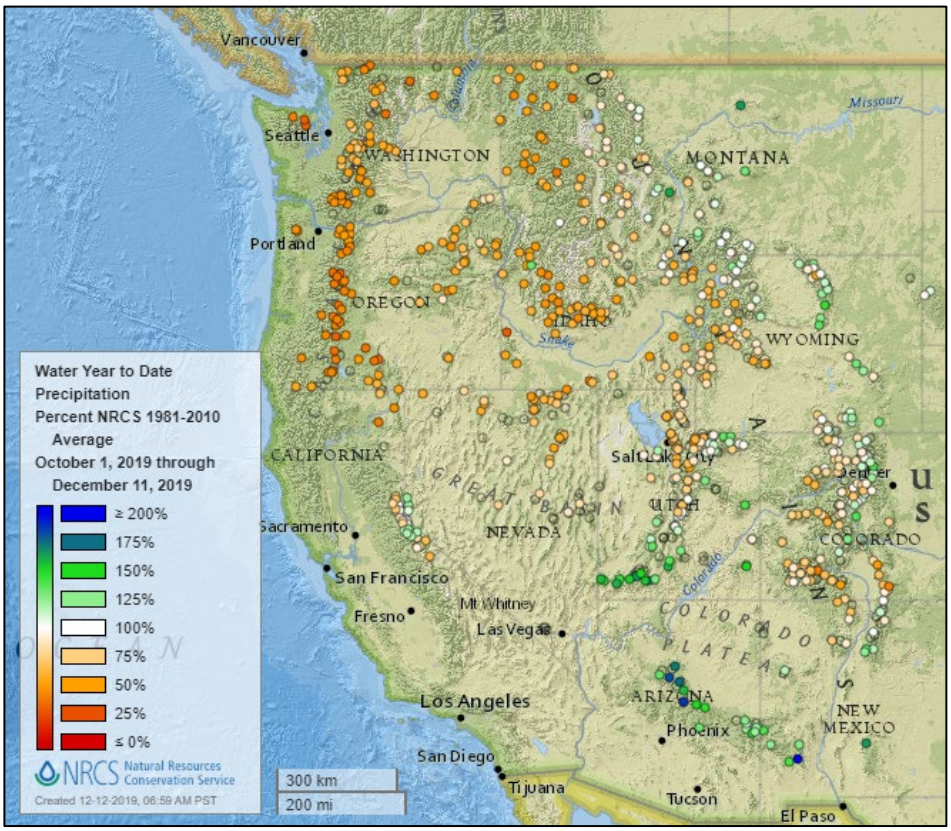
Last 3 Months, All Available Data Including SNOTEL and NWS Networks

Source: PRISM

[September through November 2019 total precipitation percent of average map]



Water Year-to-Date, NRCS SNOTEL Network



[2020 water year-to-date precipitation percent of average map]

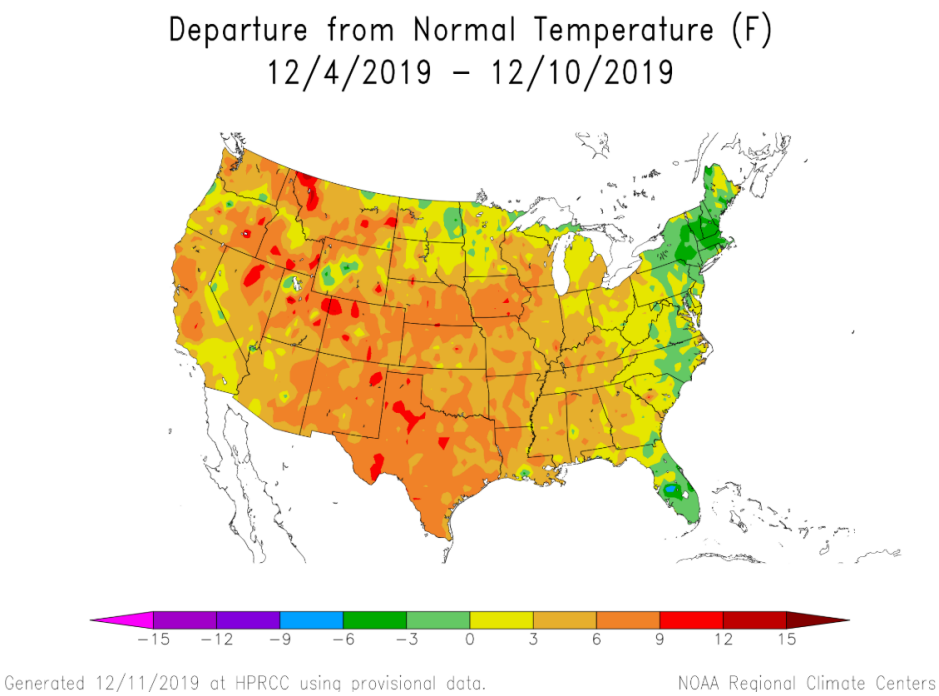
See also:
[2020 water year-to-date precipitation values (inches) map]

Temperature

Last 7 Days, National Weather Service (NWS) Networks
Source: Regional Climate Centers

7-day temperature anomaly map for the contiguous U.S.

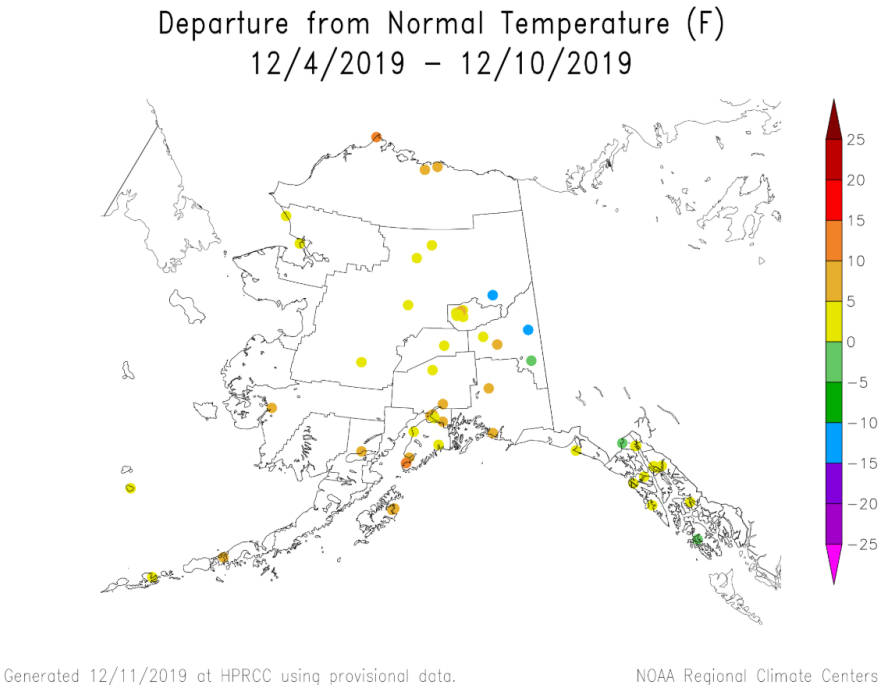
See also: 7-day temperature (° F) map



Last 7 Days, National Weather Service (NWS) Networks
Source: Regional Climate Centers

7-day temperature anomaly map for Alaska.

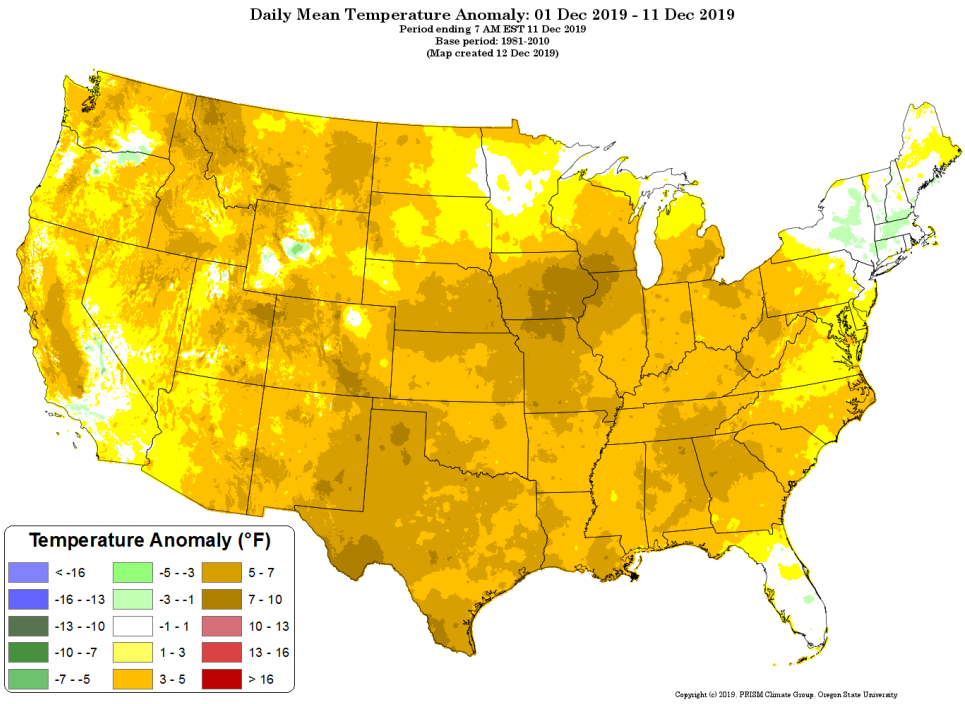
See also: 7-day temperature (° F) map



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

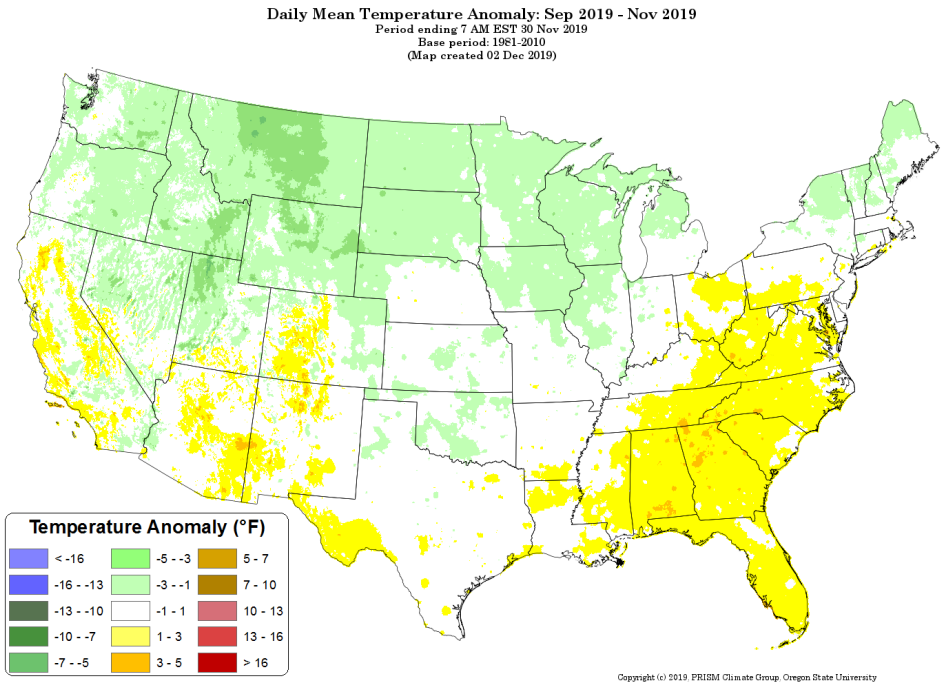
Source: PRISM

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



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

Source: PRISM



[September through November 2019 daily mean temperature anomaly map]

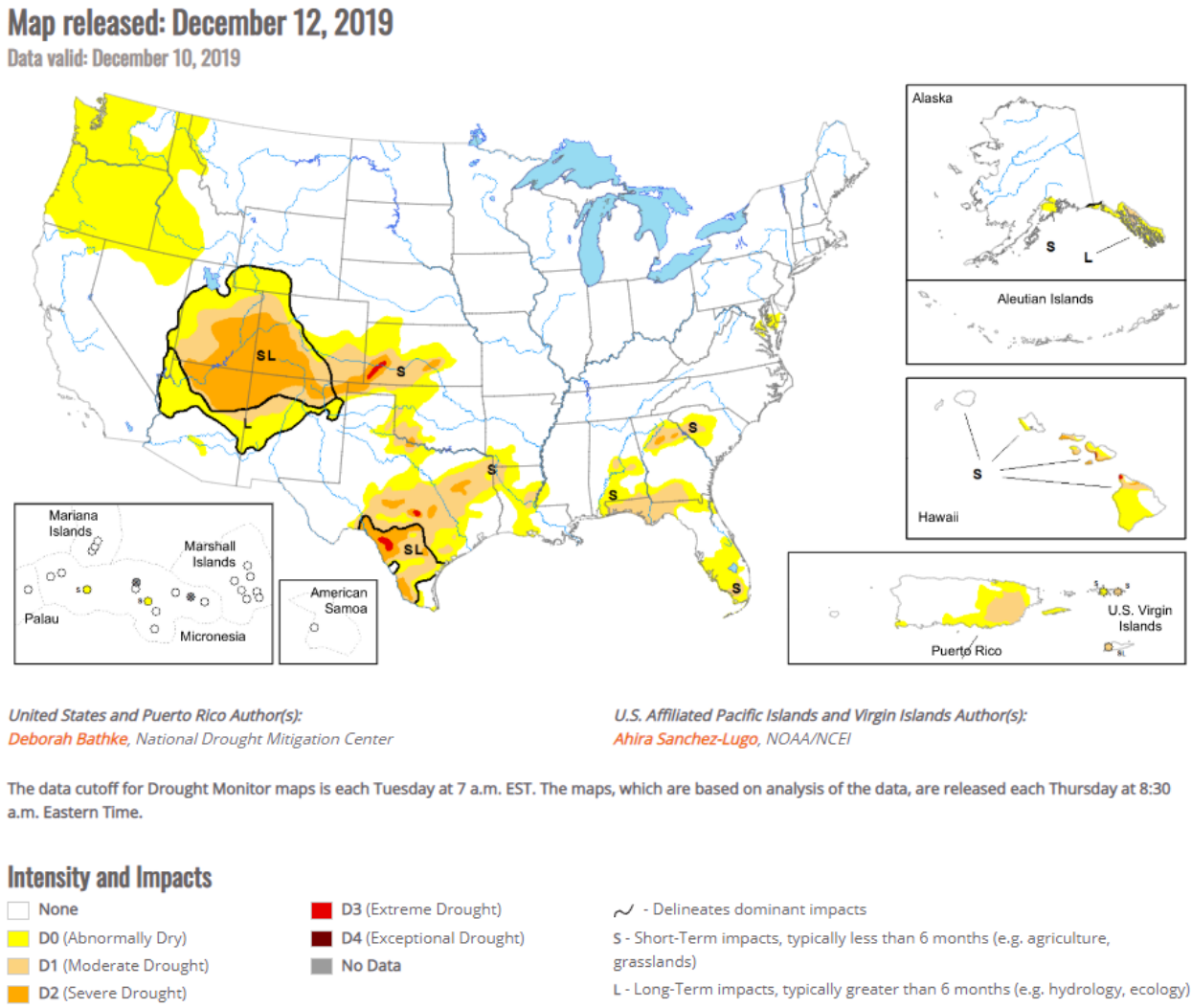
Drought

U.S. Drought Monitor

Source: National Drought Mitigation Center

U.S. Drought Portal

Source: NOAA



Current National Drought Summary, December 12, 2019

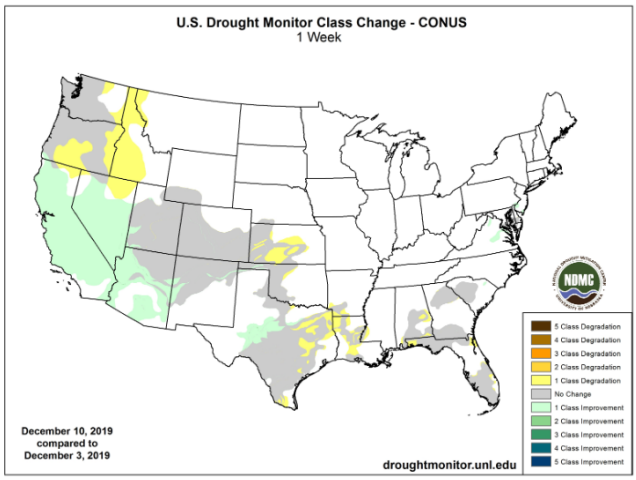
Source: National Drought Mitigation Center

"The U.S. Drought Monitor week saw another round of winter storms, bringing snow to the mountainous areas of the West, northern Plains, upper Midwest, and Northeast while lower elevations of the West and parts of the South, Southeast, lower Midwest, and Mid-Atlantic regions saw rain. This week's precipitation in the Southwest left many areas with accumulations that exceeded 300 percent of normal over the past 14-day period, leading to continued improvements in short-term dryness. Once again, precipitation in the Northwest was below normal. Many locations have received less than 25 percent of normal over the last 14 days, resulting in the expansion of abnormally dry conditions. Meanwhile, another dry week in the Southern Plains and below-normal rainfall in the South and Southeast led to expansions in pockets of abnormal dryness and drought."

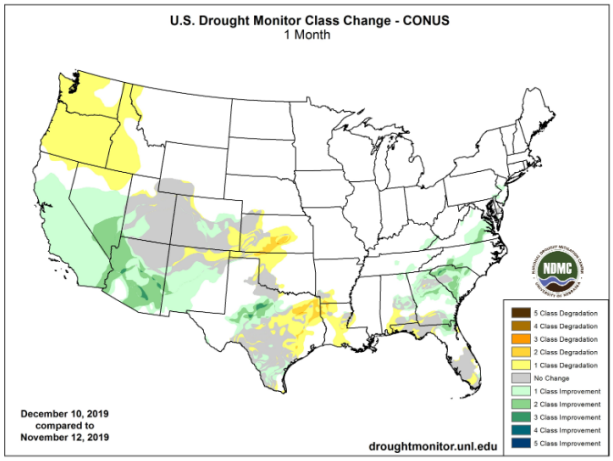
Changes in Drought Monitor Categories over Time

Source: National Drought Mitigation Center

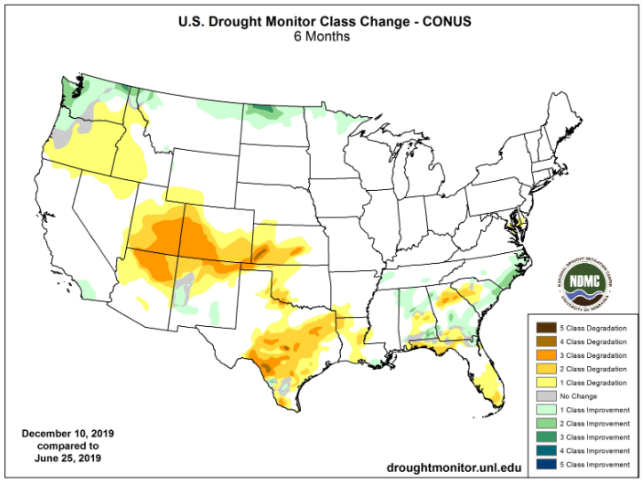
1 Week



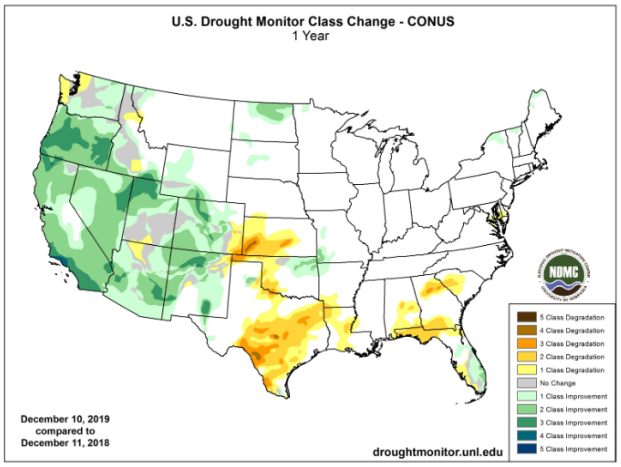
1 Month



6 Months



1 Year



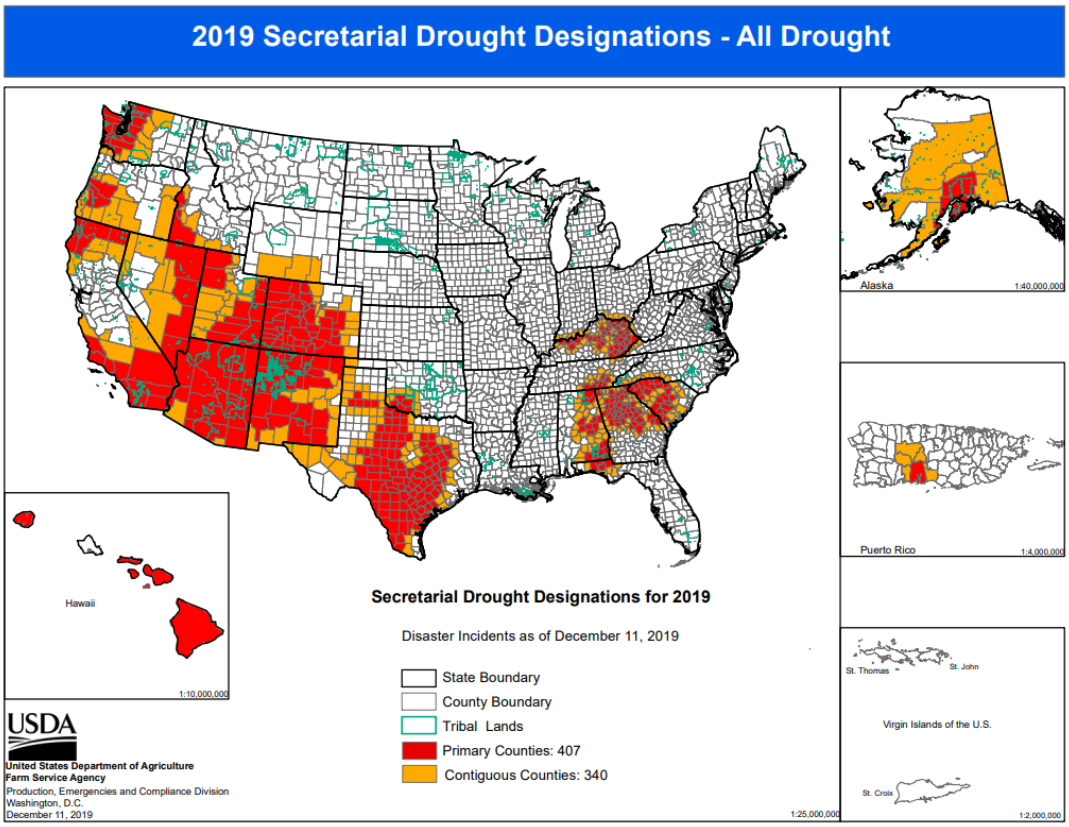
Changes in drought conditions over the last 12 months for the contiguous U.S.

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

Secretarial Drought Designations

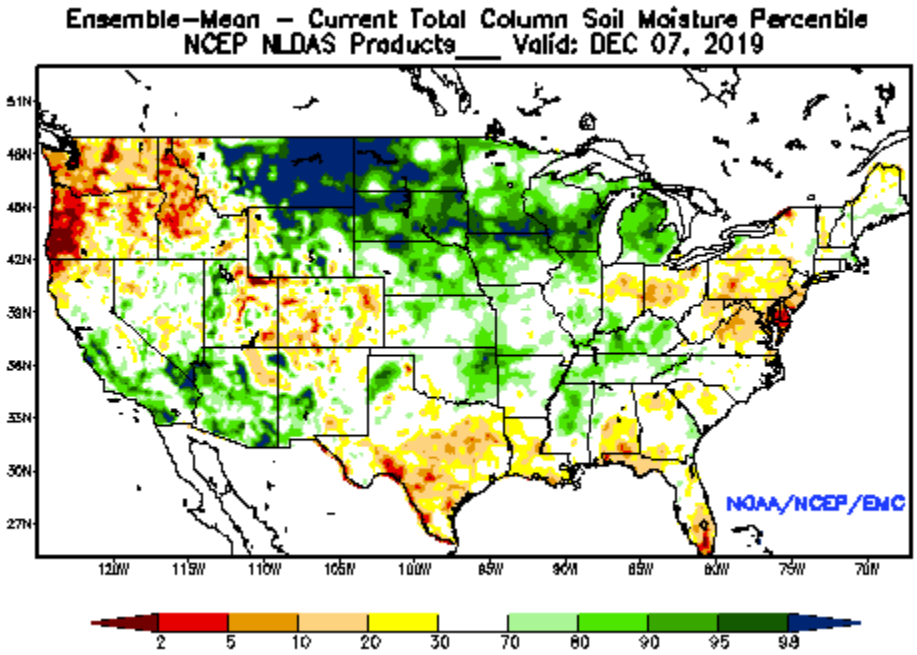
Source: USDA Farm Service Agency



Other Climatic and Water Supply Indicators

Soil Moisture

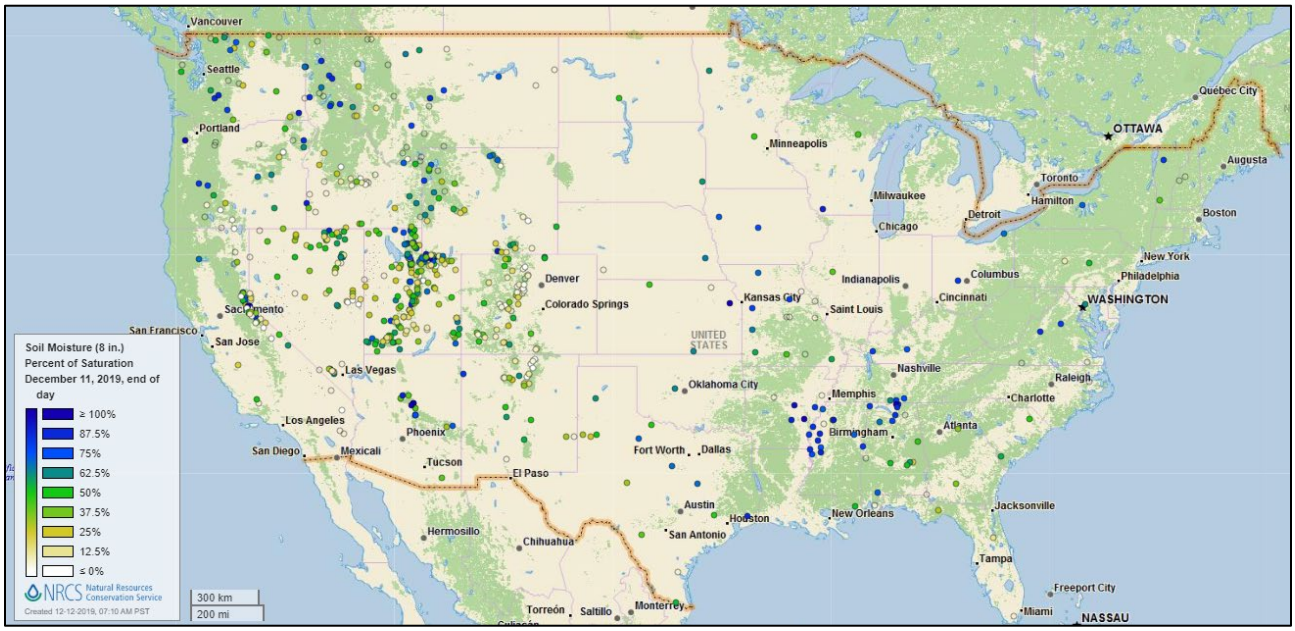
Source: NOAA National Centers for Environmental Prediction



Modeled soil moisture percentiles as of December 7, 2019

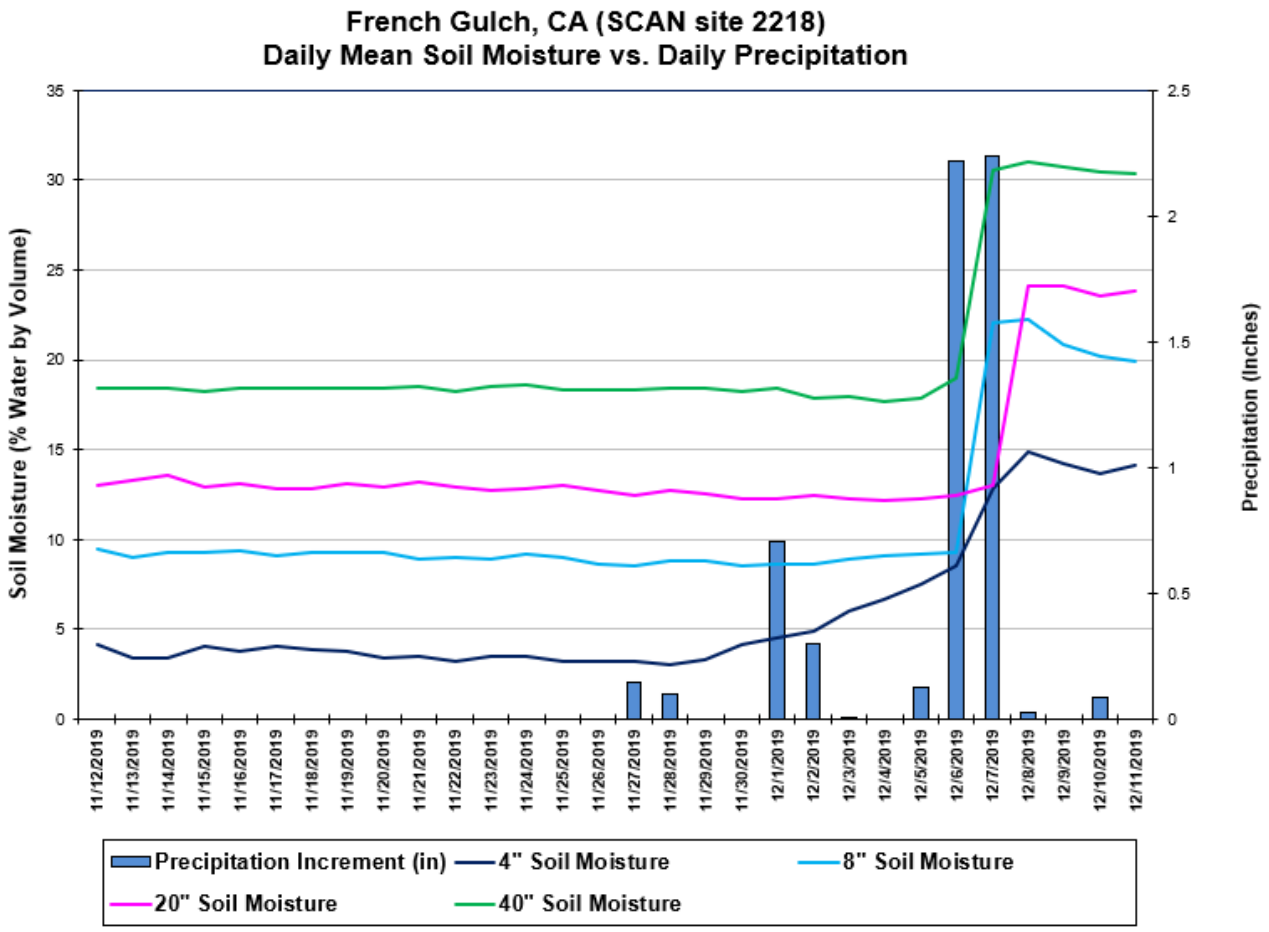
Soil Moisture Percent of Saturation

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



Soil Moisture Data

Source: NRCS Soil Climate Analysis Network (SCAN)



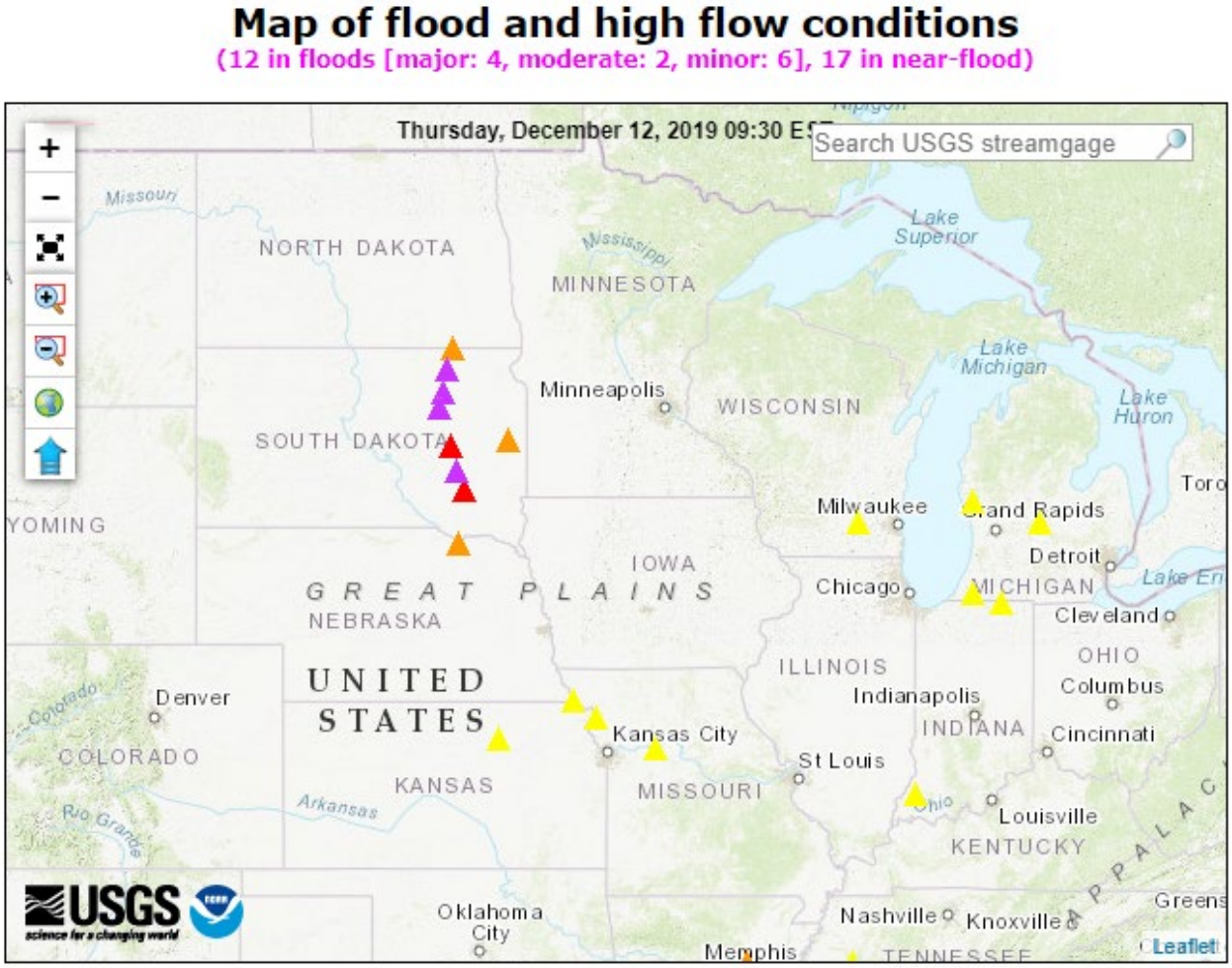
This chart shows the soil moisture and precipitation for the last 30 days at the French Gulch SCAN site in northern California. Accumulated precipitation of 4.46 inches from the two rainfall events on December 6 and 7 increased the soil moisture at all sensor levels.

Soil Moisture Data Portals

- CRN Soil Moisture
- Texas A&M University North American Soil Moisture Database
- University of Washington Experimental Modeled Soil Moisture

Streamflow, Drought, Flood, and Runoff

Source: U.S. Geological Survey

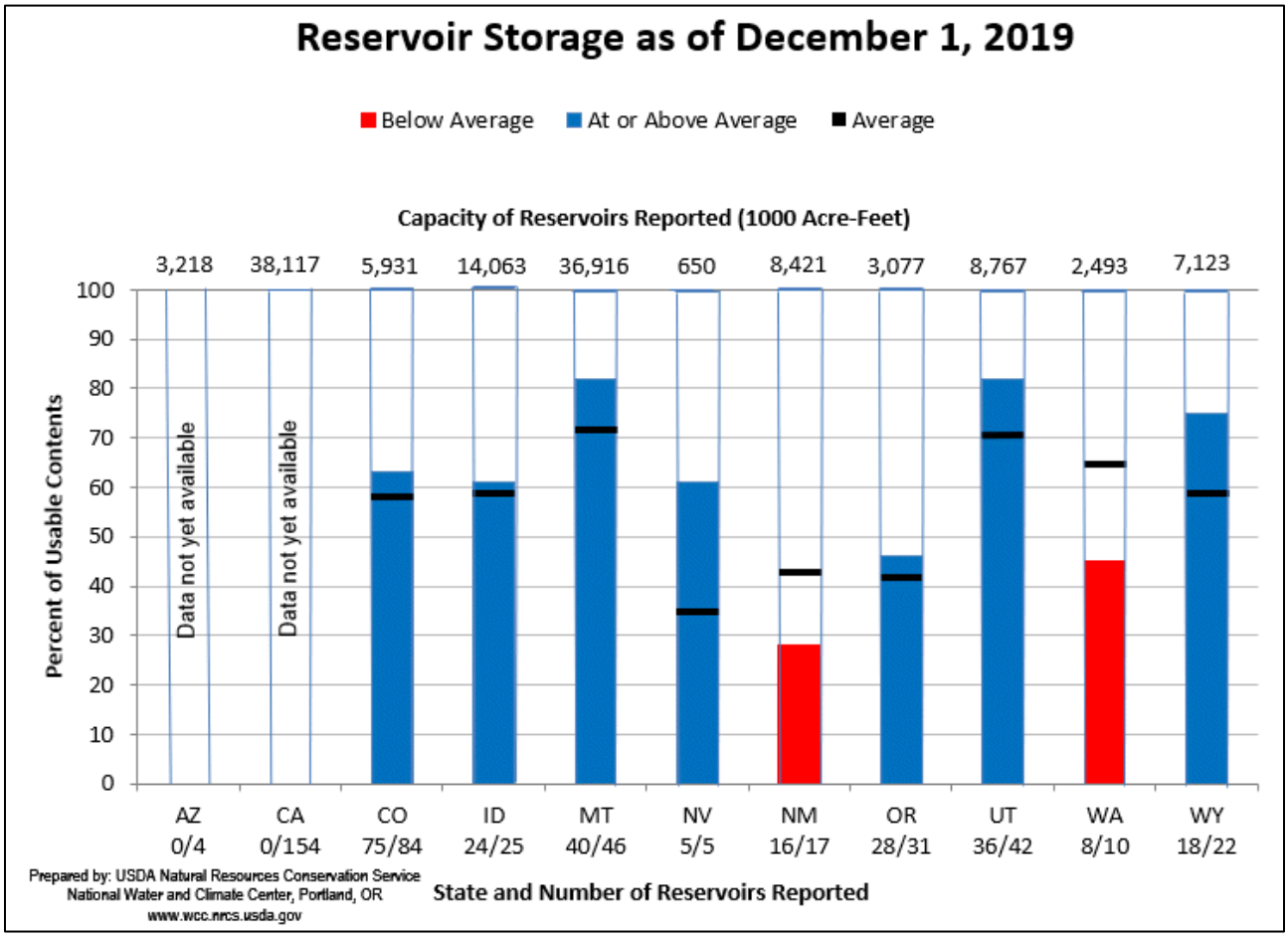


Explanation - Percentile classes						
<95	95-98	>= 99	Above action stage	Above flood stage	Above moderate flood stage	Above major flood stage
△ Streamgage with flood stage ○ Streamgage without flood stage						

WaterWatch: Streamflow, drought, flood, and runoff conditions

Reservoir Storage

Western States Reservoir Storage
Source: NRCS National Water and Climate Center

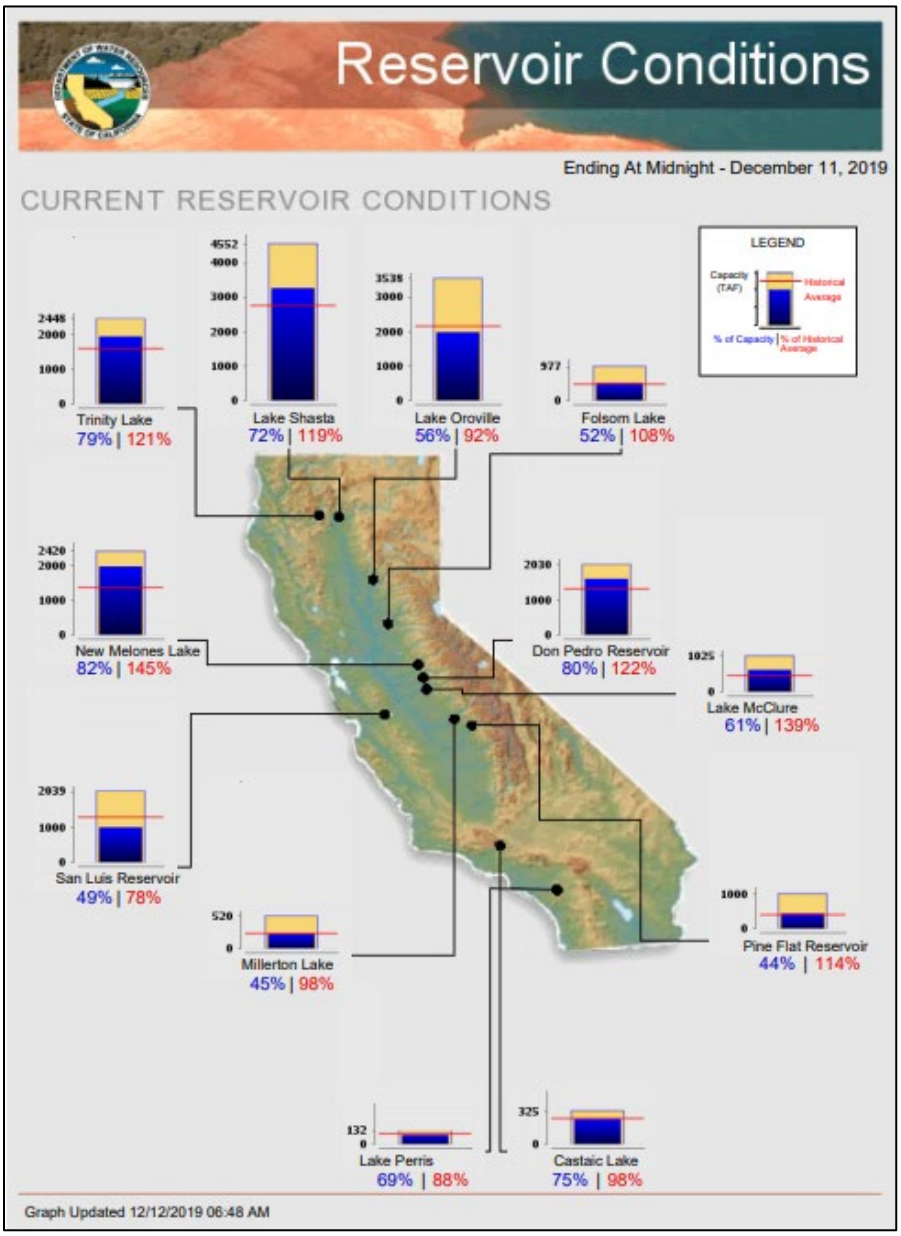


December 1, 2019 Reservoir Storage: Chart | Dataset

Hydromet Tea Cup 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

Short- and Long-Range Outlooks

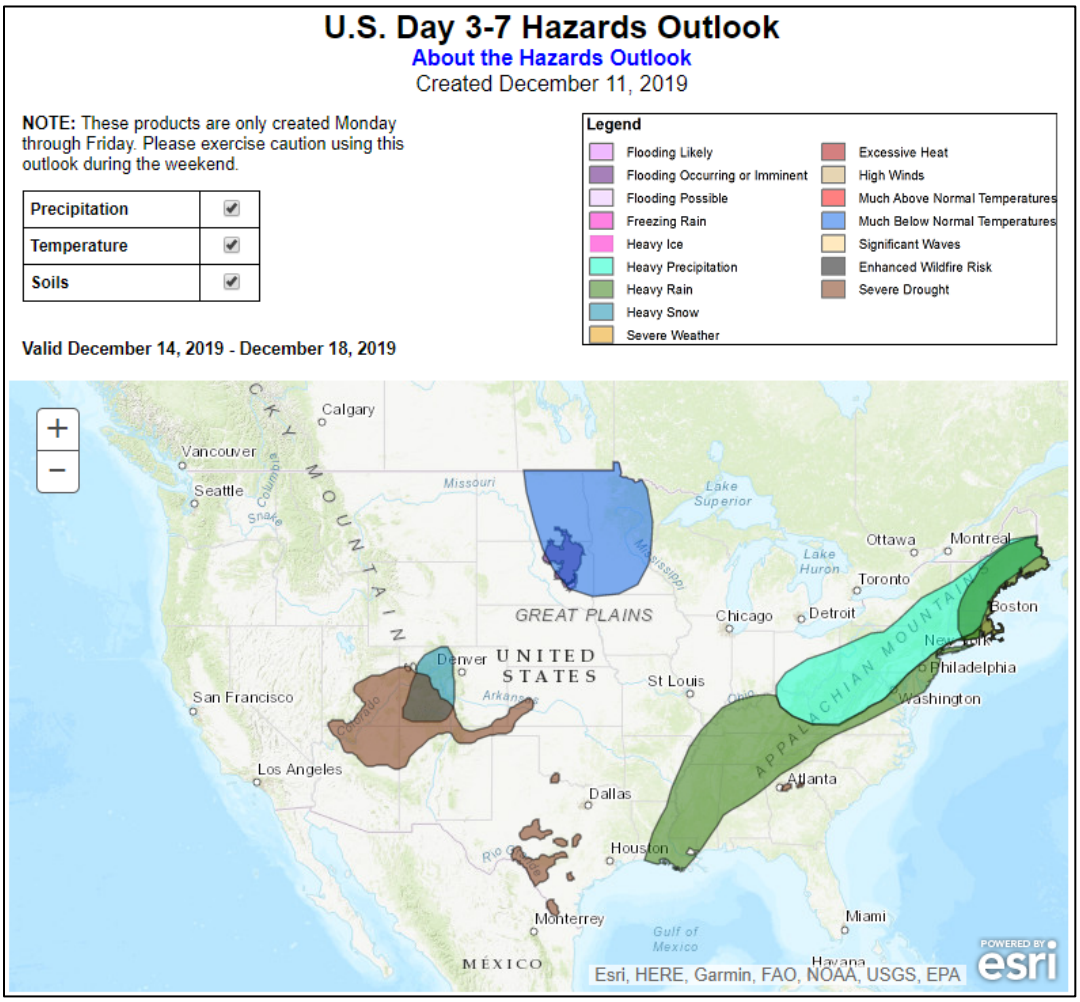
Agricultural Weather Highlights

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

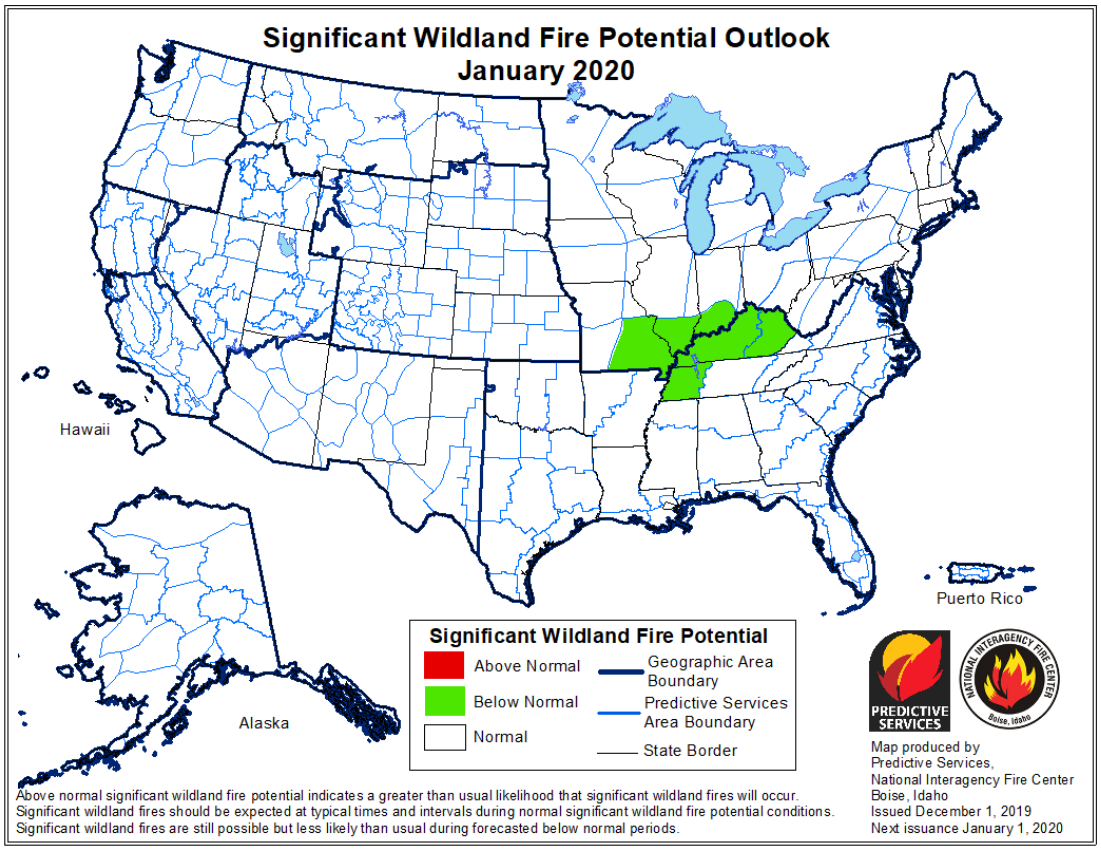
National Outlook, Thursday, December 12, 2019: "Frigid air, initially confined to parts of the northern Plains and upper Midwest, will expand during the weekend to cover the Corn Belt, as well as northern and central sections of the Rockies and Plains. By early next week, below-normal temperatures will encompass nearly all areas from the Mississippi Valley westward. In advance of the surge of cold air, a weekend storm system moving northward across the eastern U.S. will produce heavy precipitation—mostly rain—from the Appalachians to the Atlantic Seaboard. Subsequently, another storm system early next week could deliver additional precipitation, including the possibility of accumulating snow, from central portions of the Rockies and Plains into the middle Mississippi Valley, the lower Great Lakes region, and the Northeast. Elsewhere, periods of precipitation can also be expected across the northern two-thirds of the western U.S., with dry weather confined to areas from southern California to western and central Texas. The NWS 6- to 10-day outlook for December 17 – 21 calls for the likelihood of near- or below-normal temperatures in the western Gulf Coast region and from the Mississippi Valley eastward, while warmer-than-normal weather should prevail from the Pacific Coast to the Plains. Meanwhile, below-normal precipitation across the nation's mid-section, including the Plains, Midwest, and mid-South, should contrast with wetter-than-normal conditions in the Far West and the Atlantic Coast States from Florida to Massachusetts."

Weather Hazards Outlook: December 14 – December 18, 2019

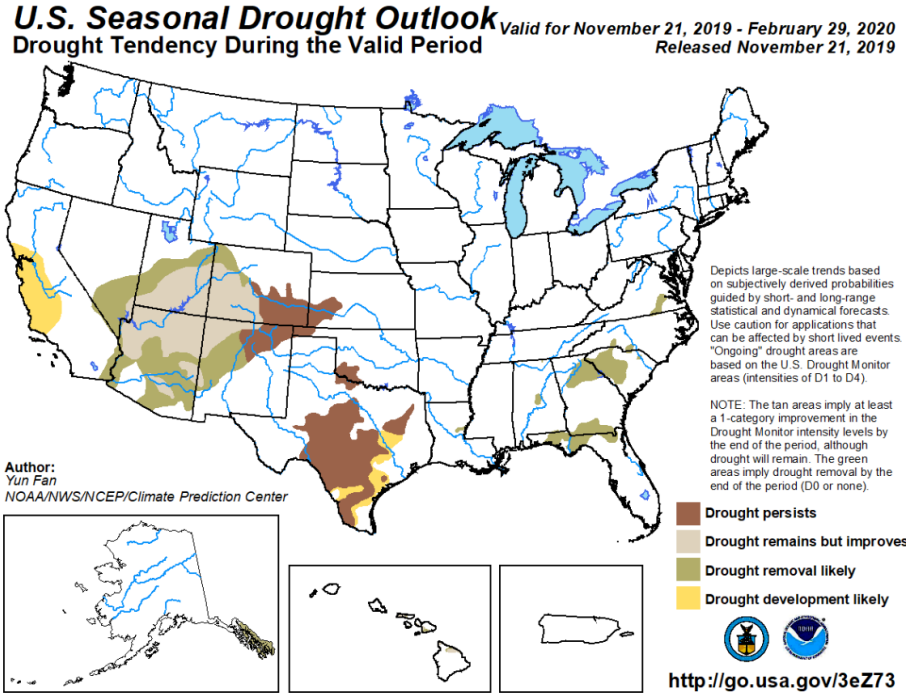
Source: NOAA Climate Prediction Center



Significant Wildland Fire Potential Outlook
Source: National Interagency Fire Center



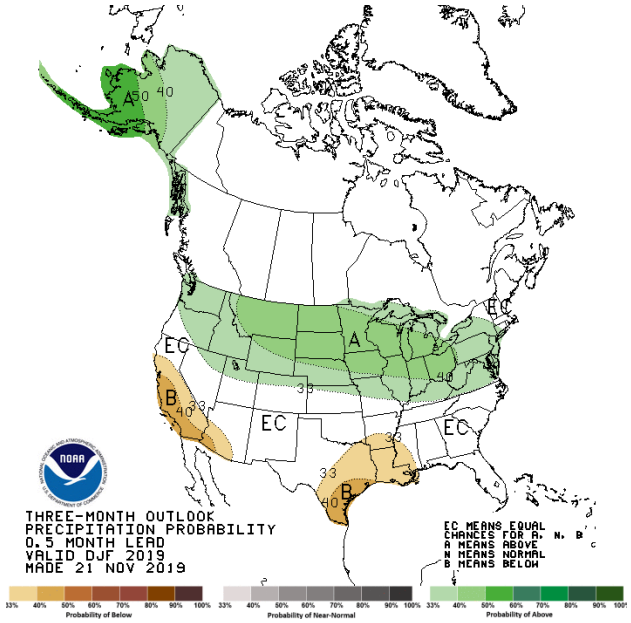
Seasonal Drought Outlook: November 21, 2019 – February 29, 2020
Source: National Weather Service



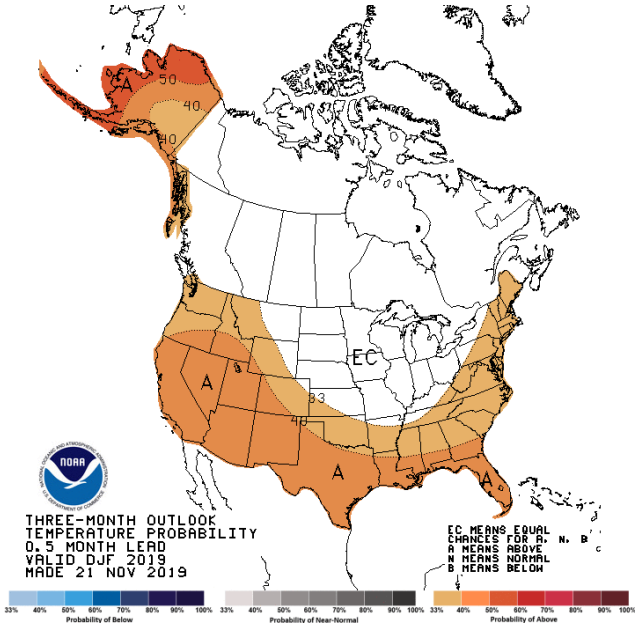
Climate Prediction Center 3-Month Outlook

Source: National Weather Service

Precipitation



Temperature



December-January-February (DJF) 2019/2020 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.