

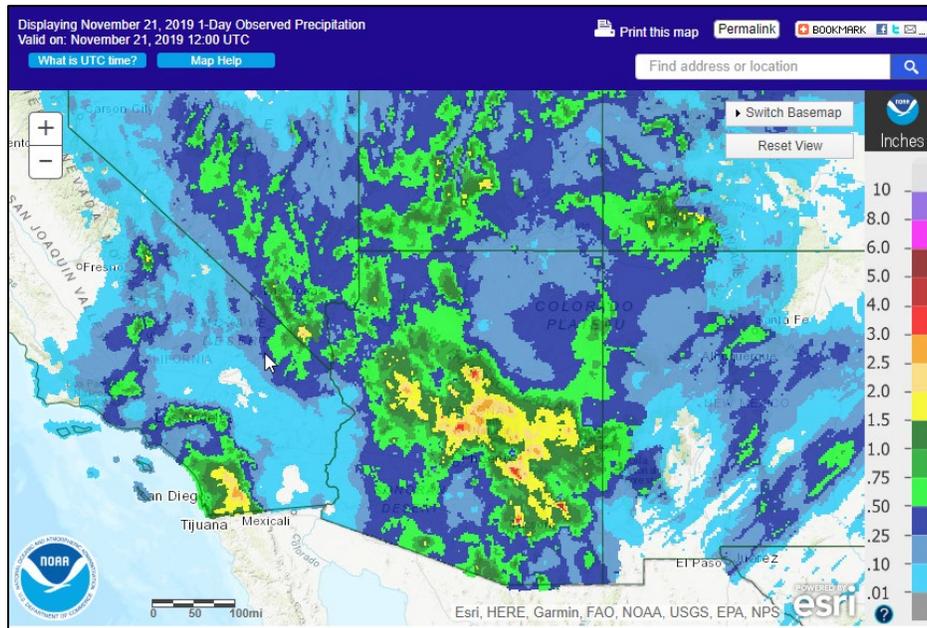
Water and Climate Update

November 21, 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.

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Drought	8		

Heavy rain from remnants of tropical storm soaks the Southwest



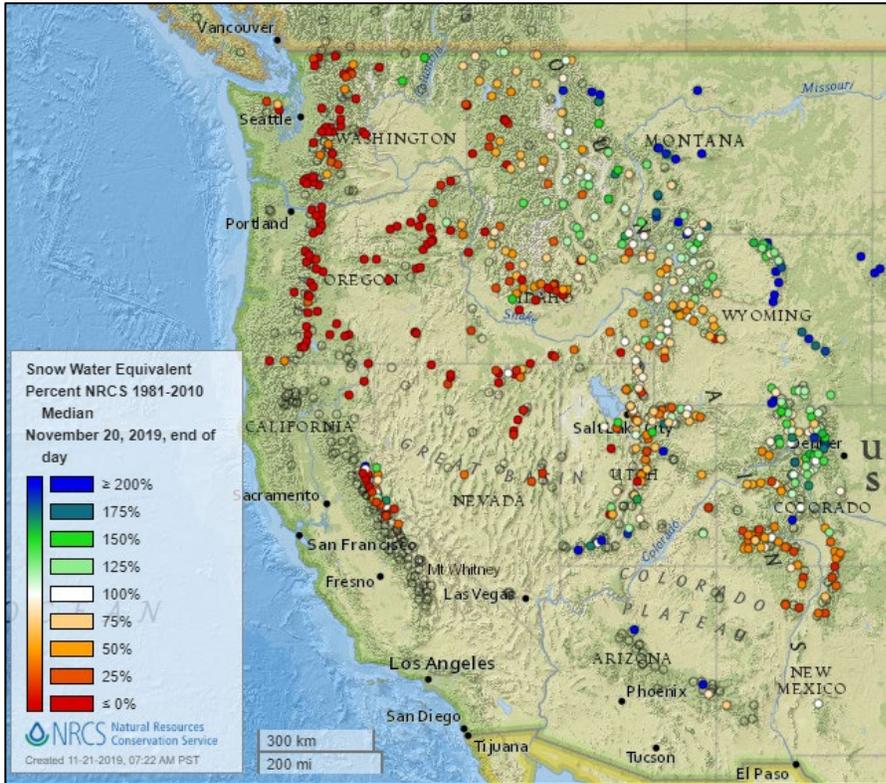
The remnants of two storm systems moved into the Southwest this week bringing strong winds and heavy rain to southern California, Arizona, and the southern Rockies. There was a flash flood advisory in south central Arizona and reports of up to three inches of rainfall with downed trees and power lines. Rare thunderstorms and hail were reported in Los Angeles. Snow fell in the higher mountains of southern California.

Related:

- [Heavy rain and flash flooding threaten the Desert Southwest](#) – MSN
- [Flash Flood Warning Update: More Than 13 Million Under Flood Advisory Across South California, Arizona, Nevada and Utah](#) – Newsweek
- [Rain leads to water rescues, power outages in Las Vegas Valley](#) – Las Vegas Review-Journal
- [Valley rain, mountain snow breaks Utah dry spell as slow storm moves into state](#) – KSL
- [Tropical storm remnants moving across Arizona, bringing heavy rain](#) – The Arizona Republic
- [California finally gets rain, but fire threat is far from over as 350,000 face power outages](#) – USA Today on MSN.com
- [As heavy winds sweep across Northern California, Sierra gets light snowfall](#) – Sacramento Bee

Snow

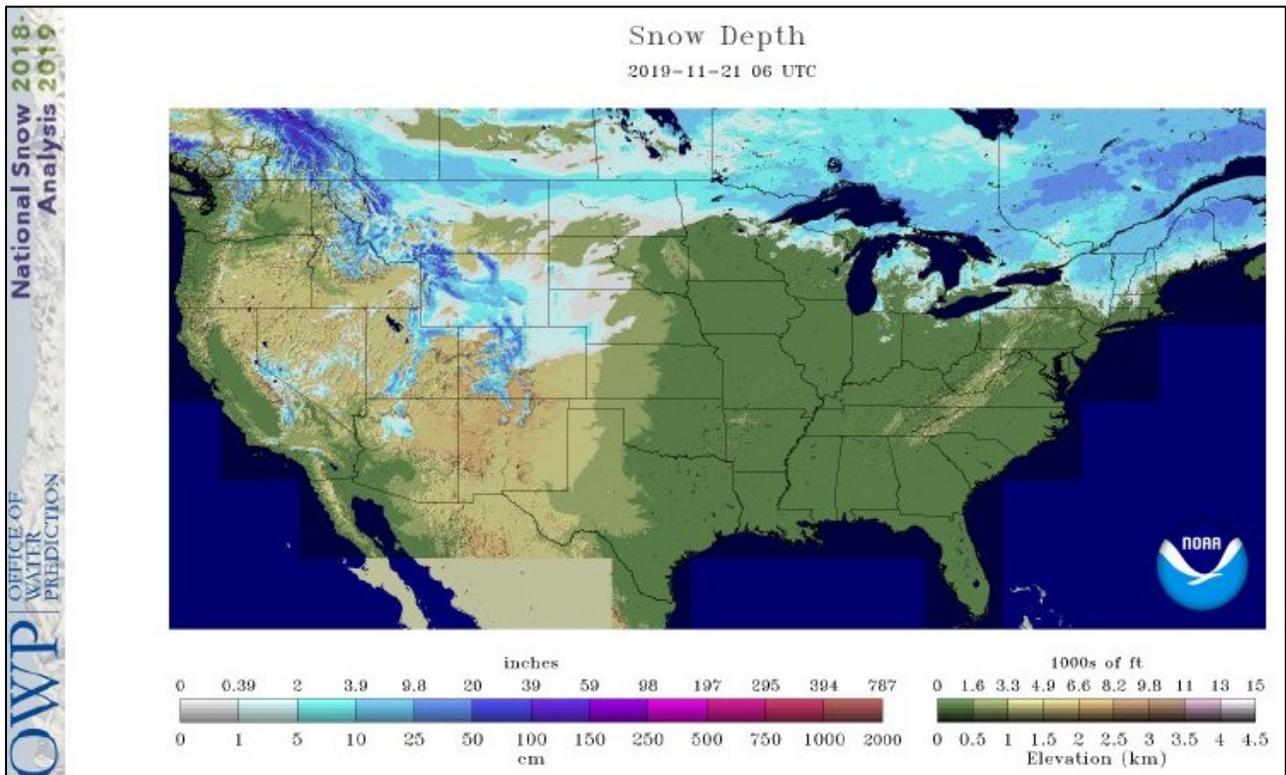
Current Snow Water Equivalent, NRCS SNOTEL Network



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

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

Current Snow Depth, National Weather Service Snow Analysis



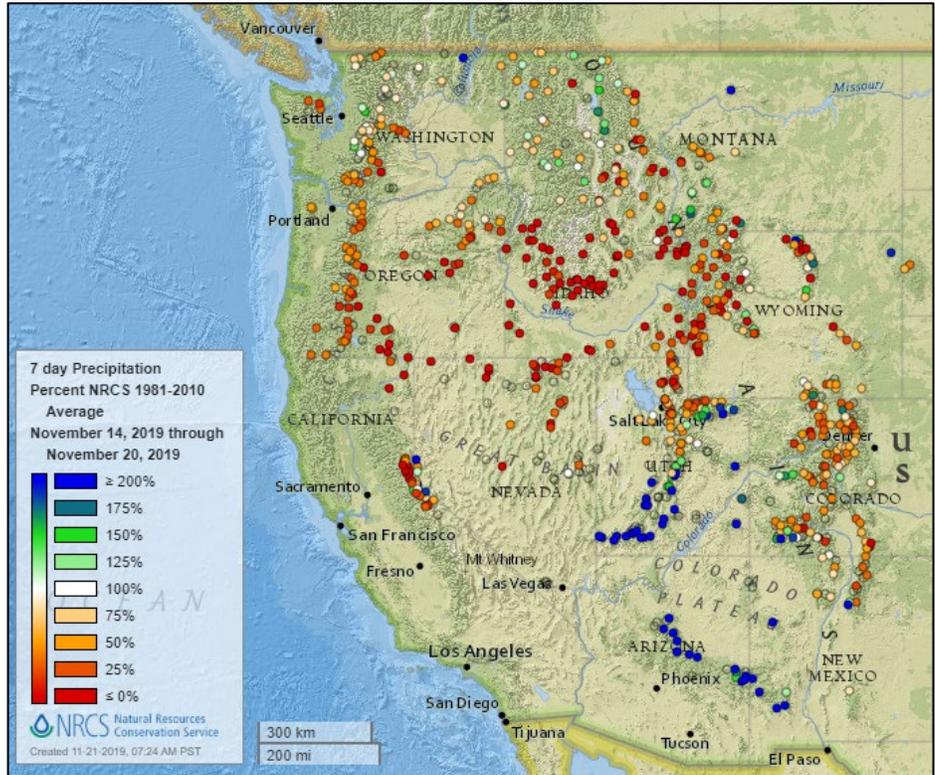
Precipitation

Last 7 Days, NRCS SNOTEL Network

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

See also:

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



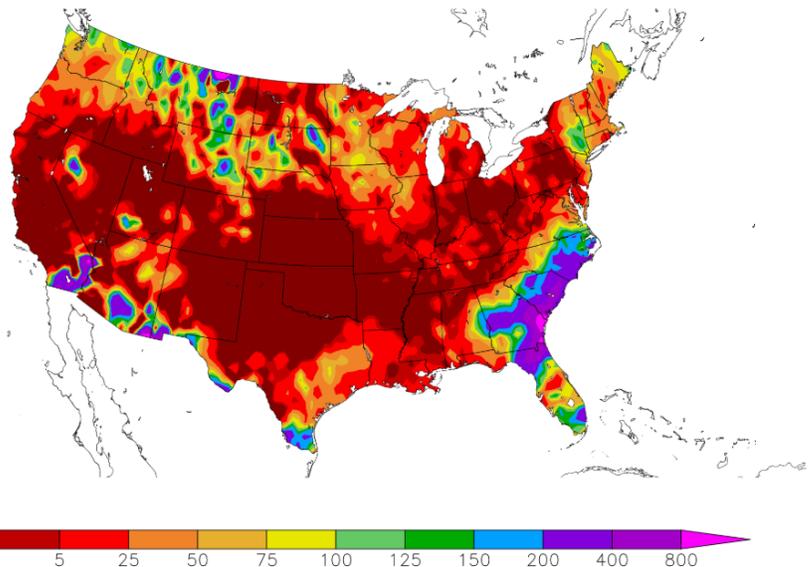
Last 7 Days, National Weather Service (NWS) Networks

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](#)

Percent of Normal Precipitation (%)
11/13/2019 – 11/19/2019



Generated 11/20/2019 at HPRCC using provisional data.

NOAA Regional Climate Centers

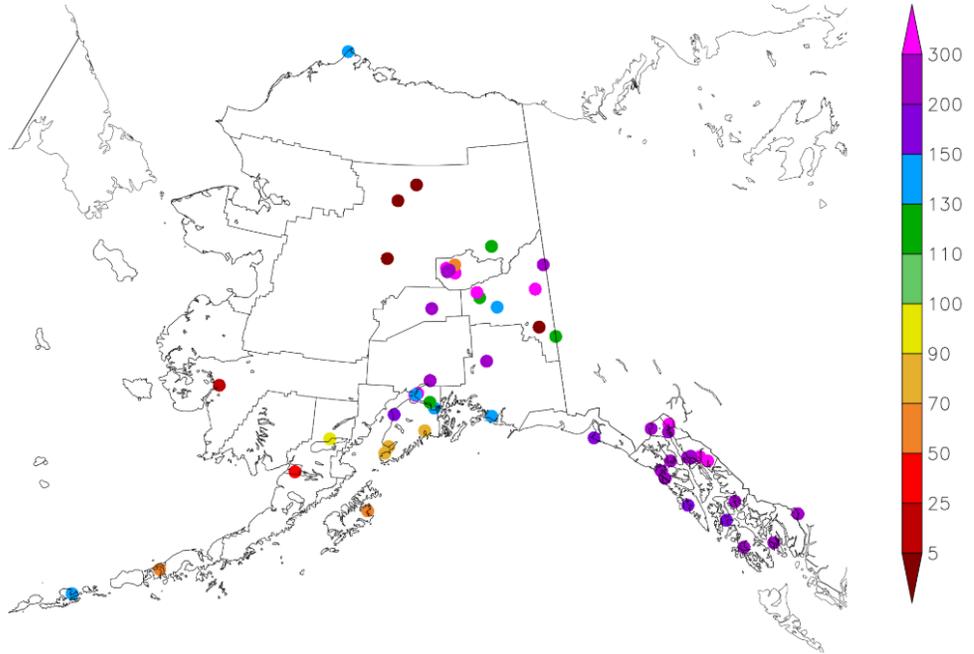
Last 7 Days, National Weather Service (NWS) Networks

Source: Regional Climate Centers

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

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

Percent of Normal Precipitation (%)
11/13/2019 – 11/19/2019



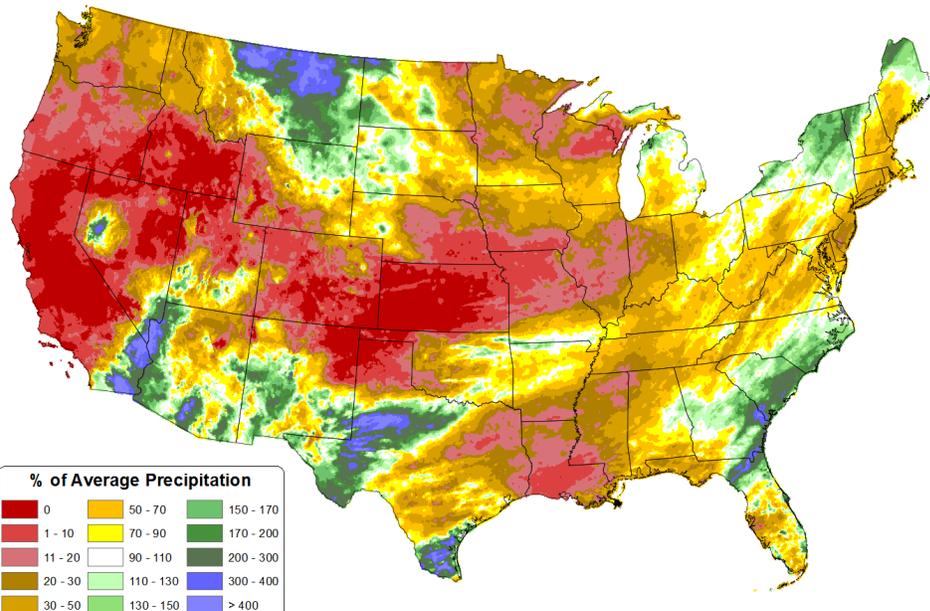
Generated 11/20/2019 at HPRCC using provisional data.

NOAA Regional Climate Centers

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

Source: PRISM

Total Precipitation Anomaly: 01 Nov 2019 - 20 Nov 2019
Period ending 7 AM EST 20 Nov 2019
Base period: 1981-2010
(Map created 21 Nov 2019)



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

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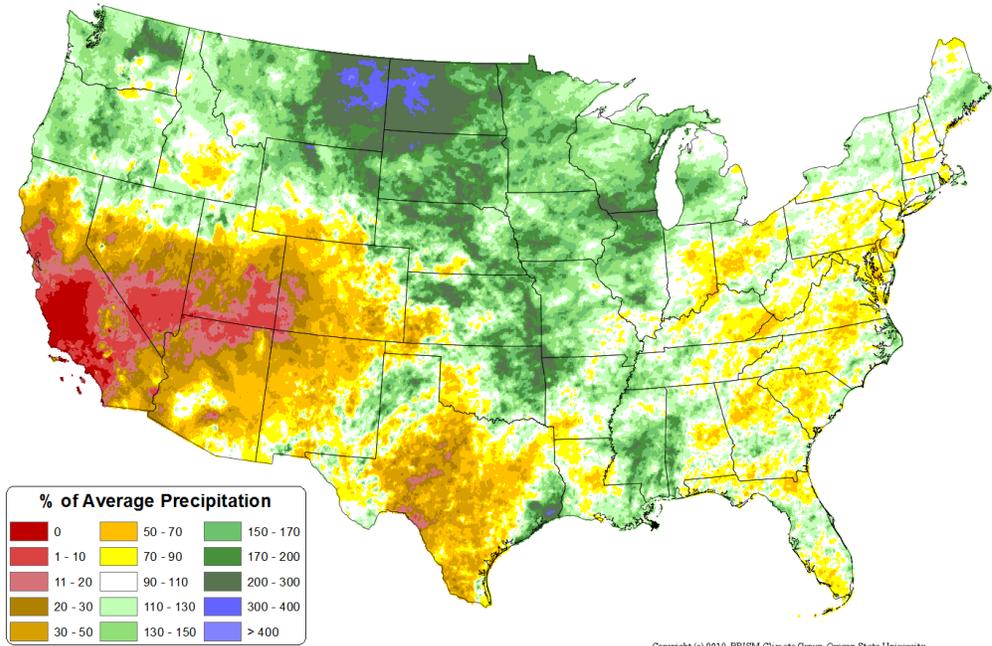
Water and Climate Update

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

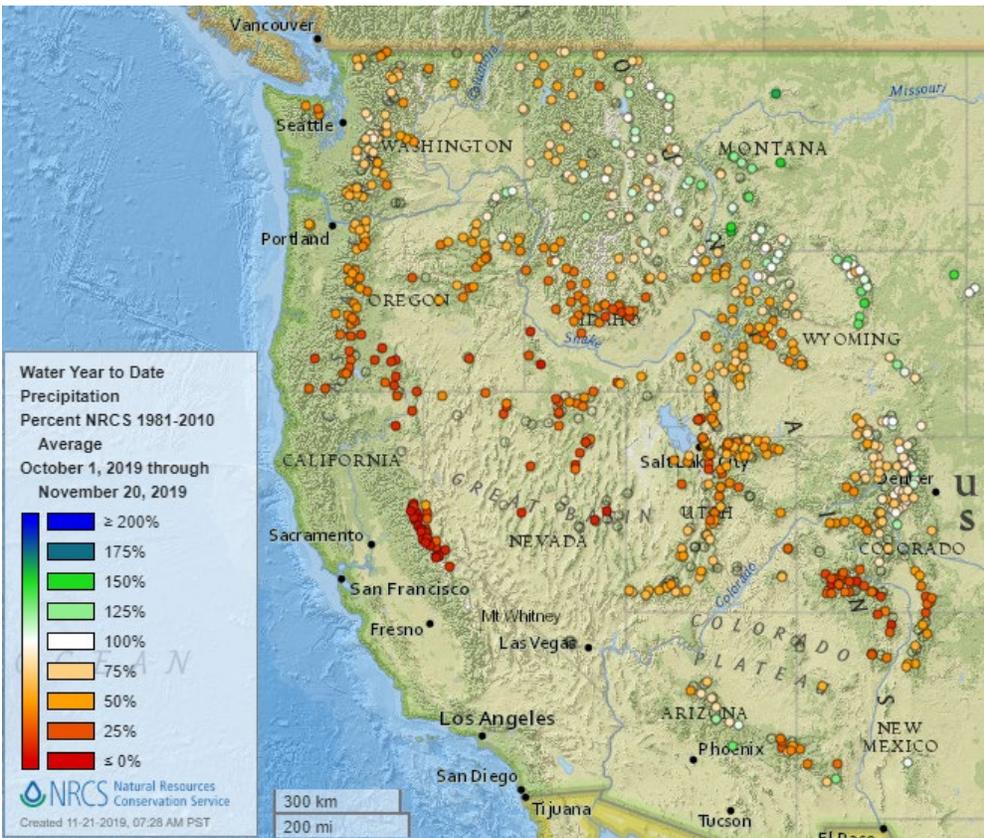
Source: PRISM

[August through October 2019 total precipitation percent of average map](#)

Total Precipitation Anomaly: Aug 2019 - Oct 2019
Period ending 7 AM EST 31 Oct 2019
Base period: 1981-2010
(Map created 02 Nov 2019)



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

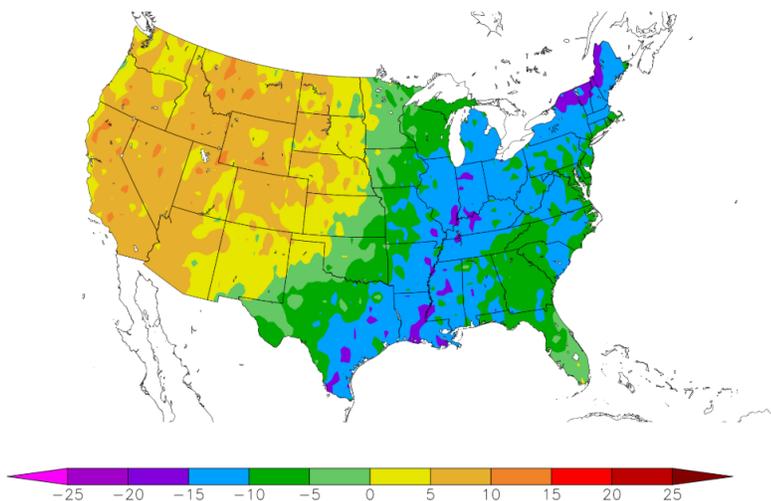
Last 7 Days, National Weather Service (NWS) Networks

Source: Regional Climate Centers

[7-day temperature anomaly map](#) for the contiguous U.S.

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

Departure from Normal Temperature (F)
11/13/2019 – 11/19/2019



Generated 11/20/2019 at HPRCC using provisional data.

NOAA Regional Climate Centers

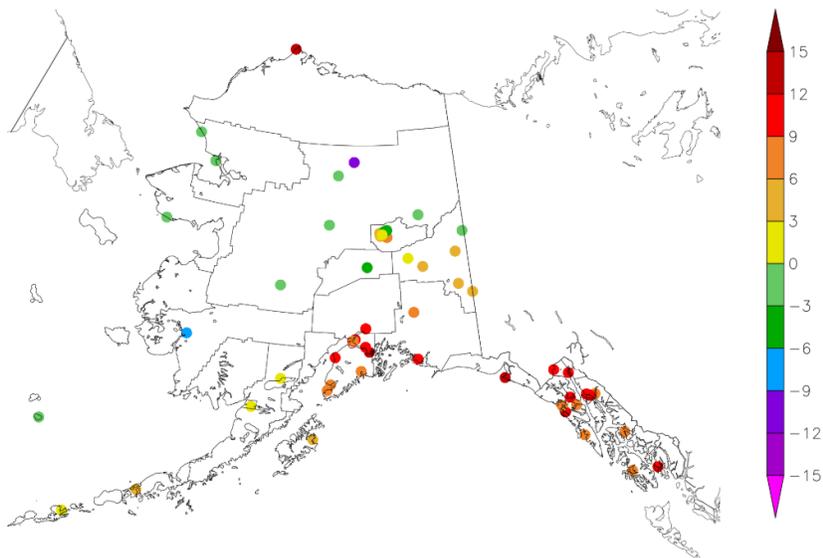
Last 7 Days, National Weather Service (NWS) Networks

Source: Regional Climate Centers

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

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

Departure from Normal Temperature (F)
11/13/2019 – 11/19/2019



Generated 11/20/2019 at HPRCC using provisional data.

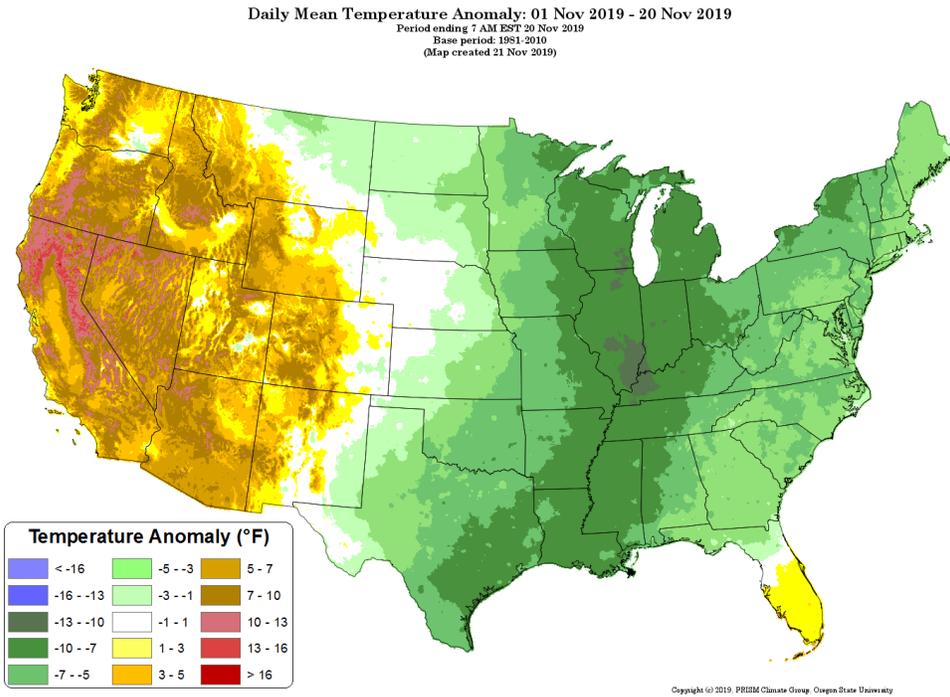
NOAA Regional Climate Centers

Water and Climate Update

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

Source: PRISM

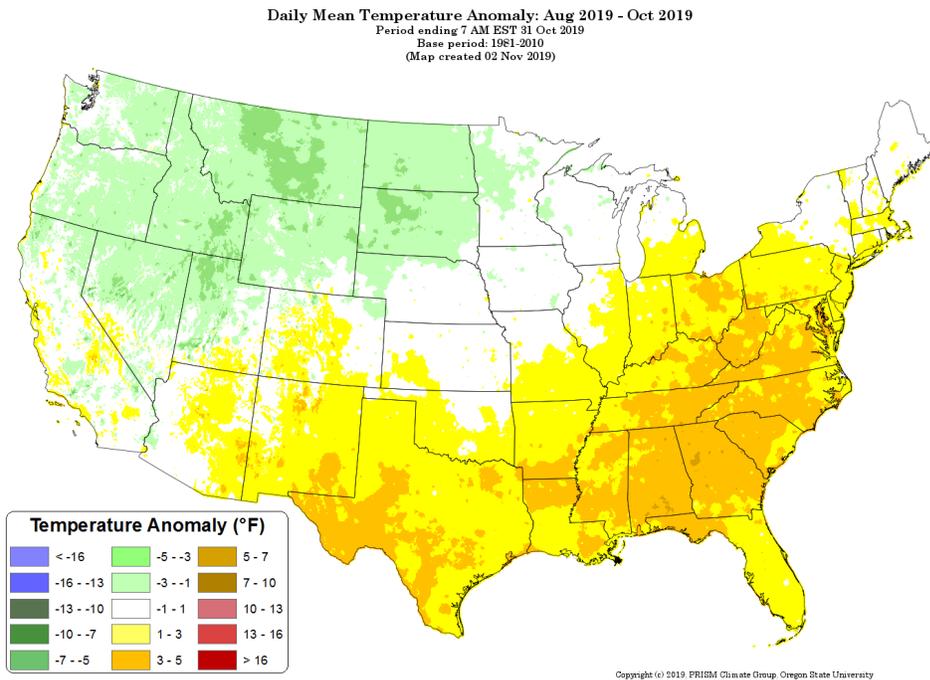
[Month-to-date national daily mean temperature anomaly map](#)



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

Source: PRISM

[August through October 2019 daily mean temperature anomaly map](#)



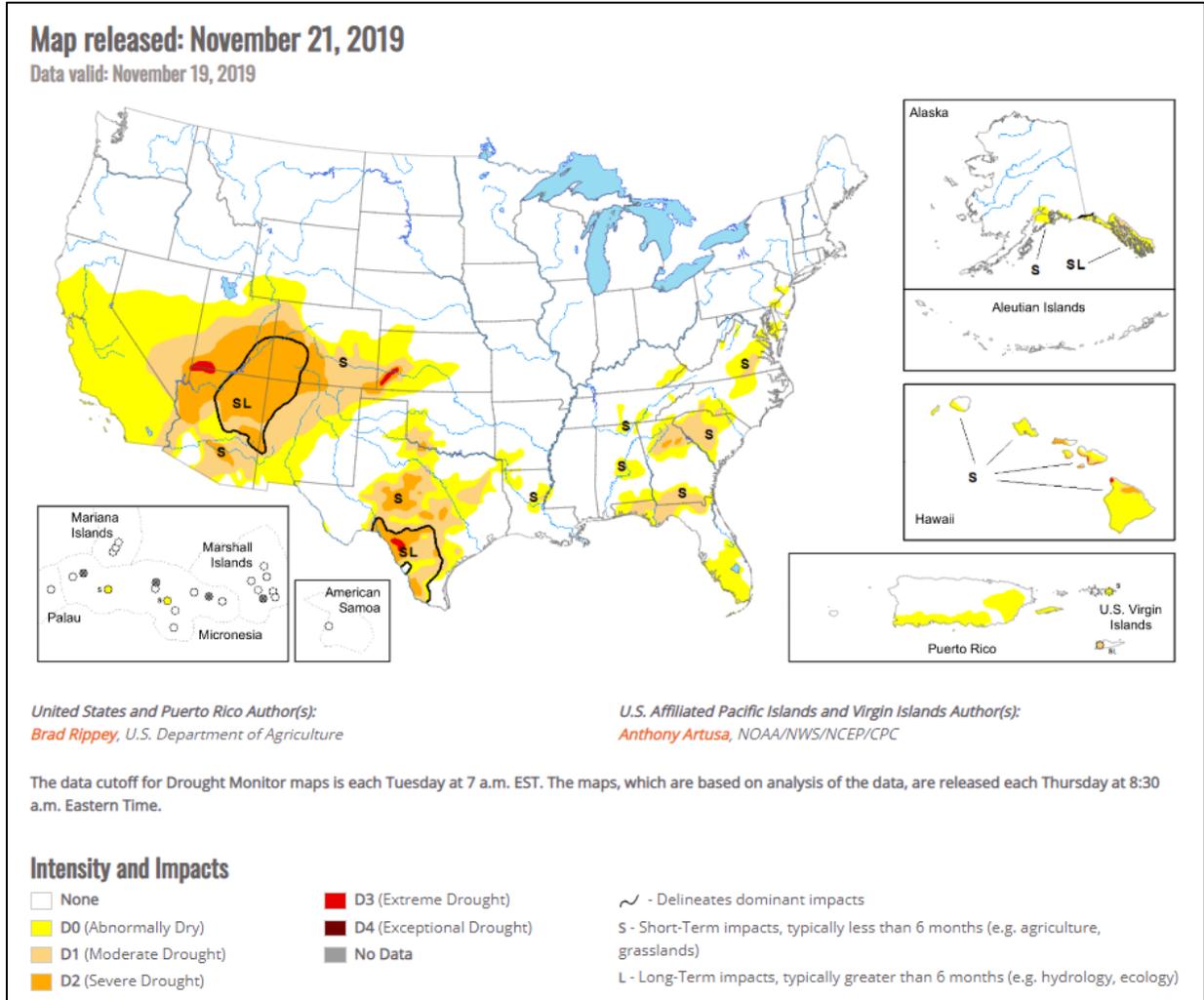
Drought

[U.S. Drought Monitor](#)

Source: National Drought Mitigation Center

[U.S. Drought Portal](#)

Source: NOAA



Current [National Drought Summary](#), November 21, 2019

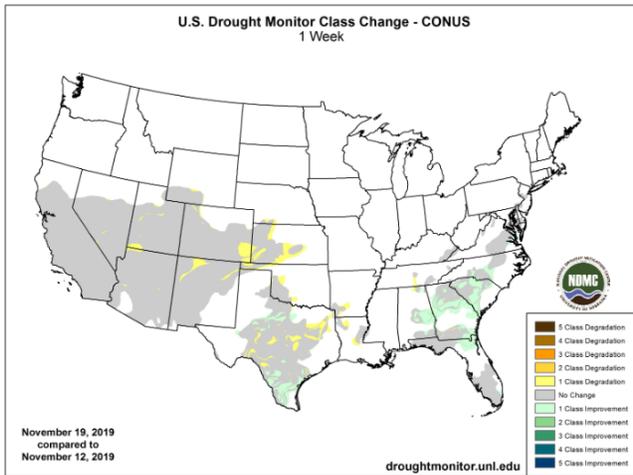
Source: National Drought Mitigation Center

“Following a harsh, early-season cold outbreak, which peaked from November 11-14 across the central and eastern United States, temperatures began to rebound. Although cool conditions lingered for several days in the East, above-normal temperatures quickly returned across the nation’s mid-section. In the days following the cold snap, significant precipitation was limited to areas from southern Texas into parts of the Southeast. The rain further eased Southeastern drought that had peaked in coverage and intensity during the first half of October. Meanwhile, patchy, generally light precipitation stretched across the northern U.S., including the Midwest. Higher totals were observed in a few spots, including western Washington and northern New England. Dry weather covered other parts of the country, stretching from California to the central and southern Plains, leading to further development, expansion, and intensification of dryness (D0) and moderate to extreme drought (D1 to D3). In Western drought areas, warm weather aggravated the effects of ongoing dryness. As the drought-monitoring period came to an end, an approaching storm system brought the promise of Southwestern rain and snow—precipitation that will be evaluated for next week’s Drought Monitor.”

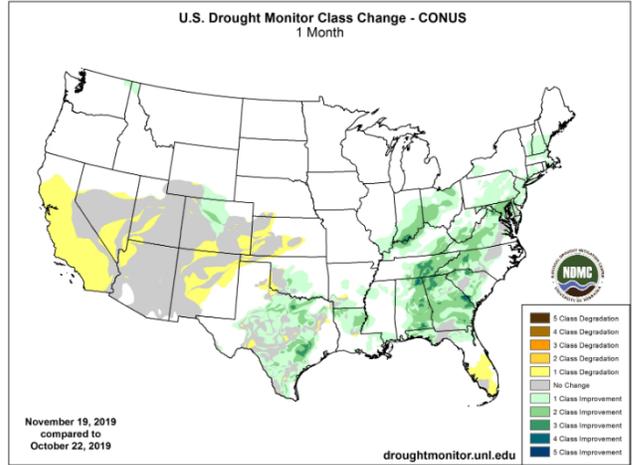
Changes in Drought Monitor Categories over Time

Source: National Drought Mitigation Center

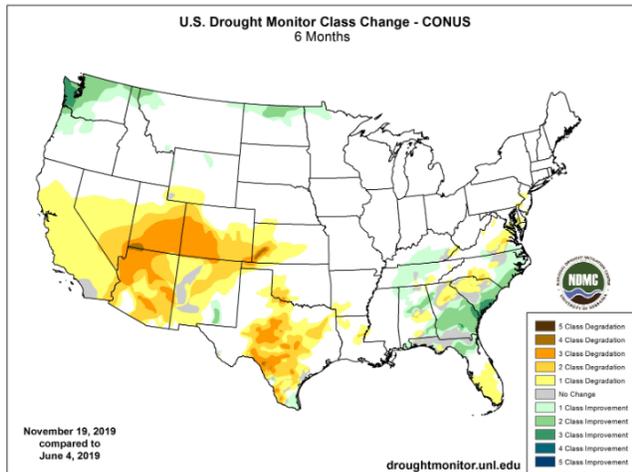
1 Week



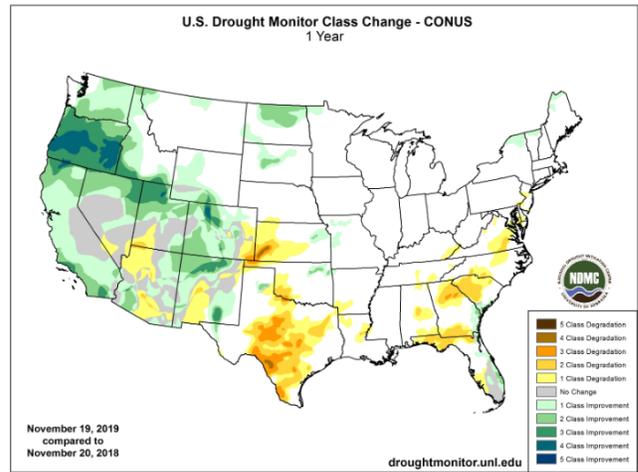
1 Month



6 Months



1 Year



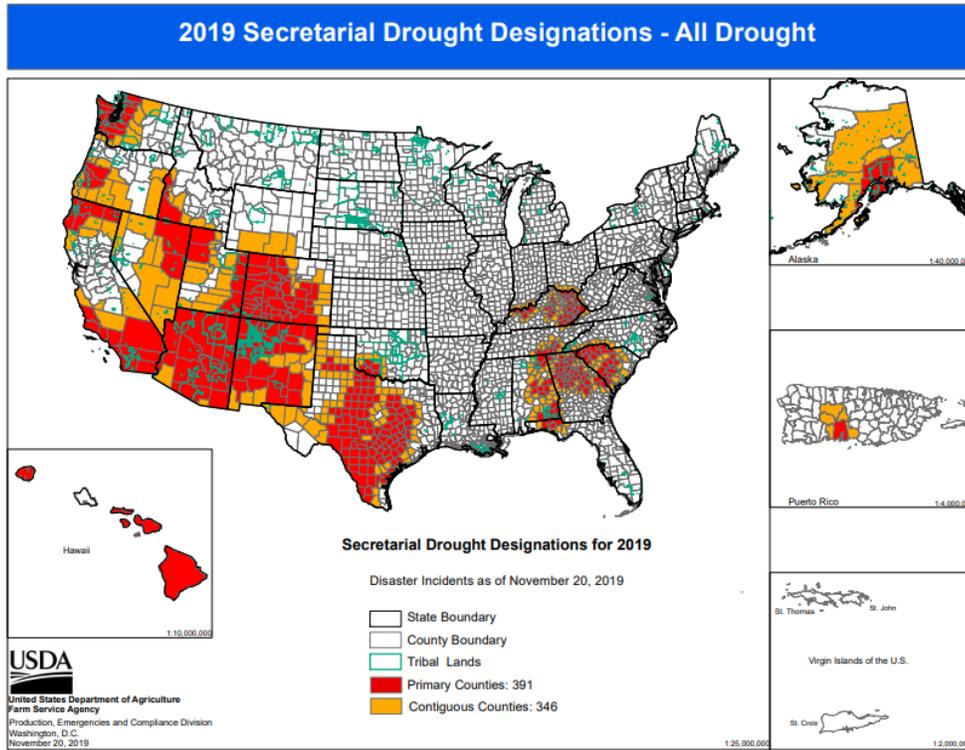
[Changes in drought conditions over the last 12 months for the contiguous U.S.](#)

Highlighted Drought Resources

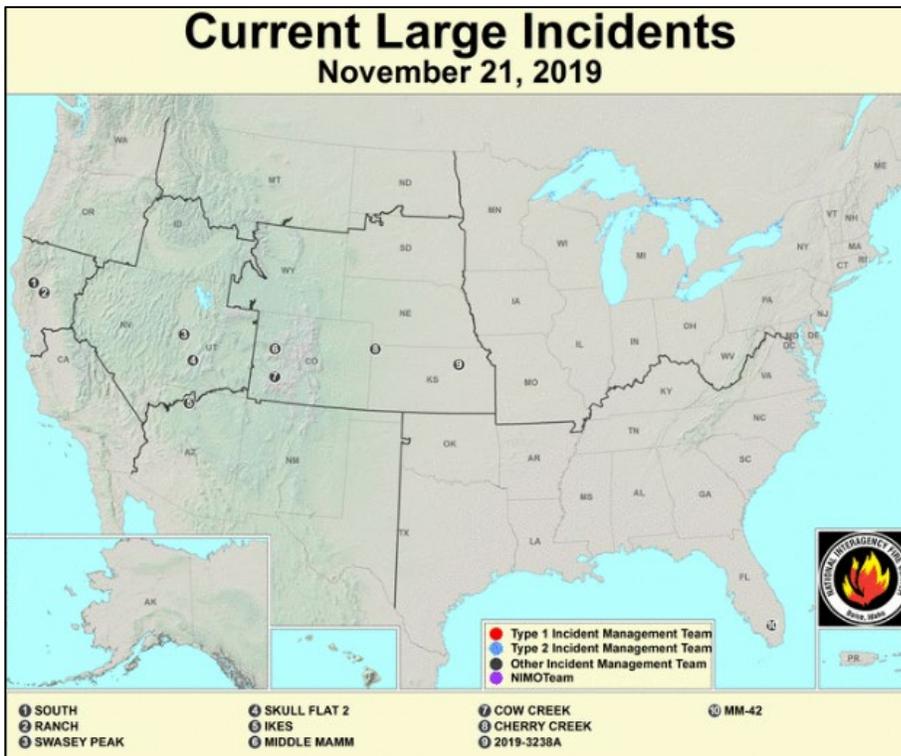
- [Drought Impact Reporter](#)
- [Quarterly Regional Climate Impacts and Outlook](#)
- [U.S. Drought Portal Indicators and Monitoring](#)
- [U.S. Population in Drought, Weekly Comparison](#)
- [USDA Disaster and Drought Information](#)

Secretarial Drought Designations

Source: USDA Farm Service Agency



Wildfires: USDA Forest Service Active Fire Mapping



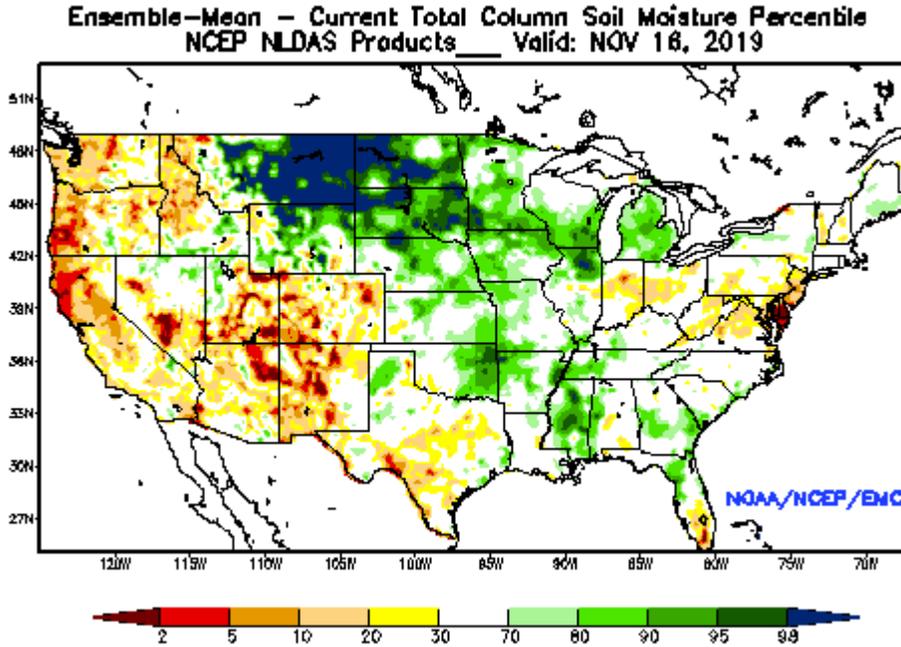
Highlighted Wildfire Resources

- [National Interagency Fire Center](#)
- [InciWeb Incident Information System](#)
- [Significant Wildland Fire Potential Outlook](#)

Other Climatic and Water Supply Indicators

Soil Moisture

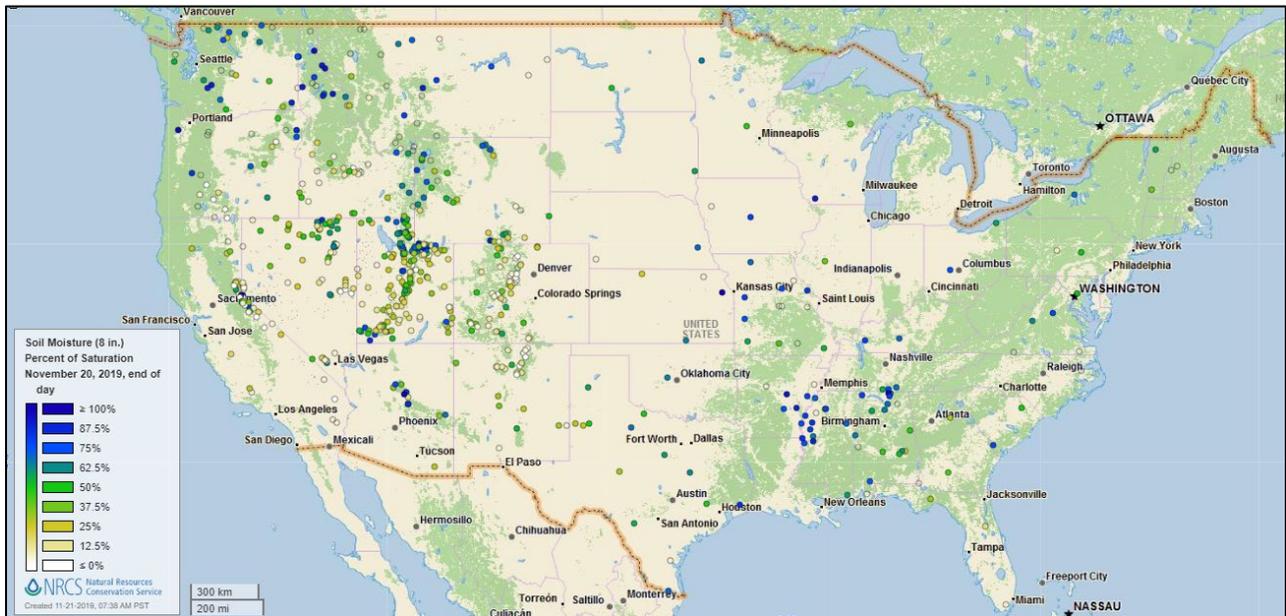
Source: NOAA National Centers for Environmental Prediction



[Modeled soil moisture percentiles](#) as of November 16, 2019

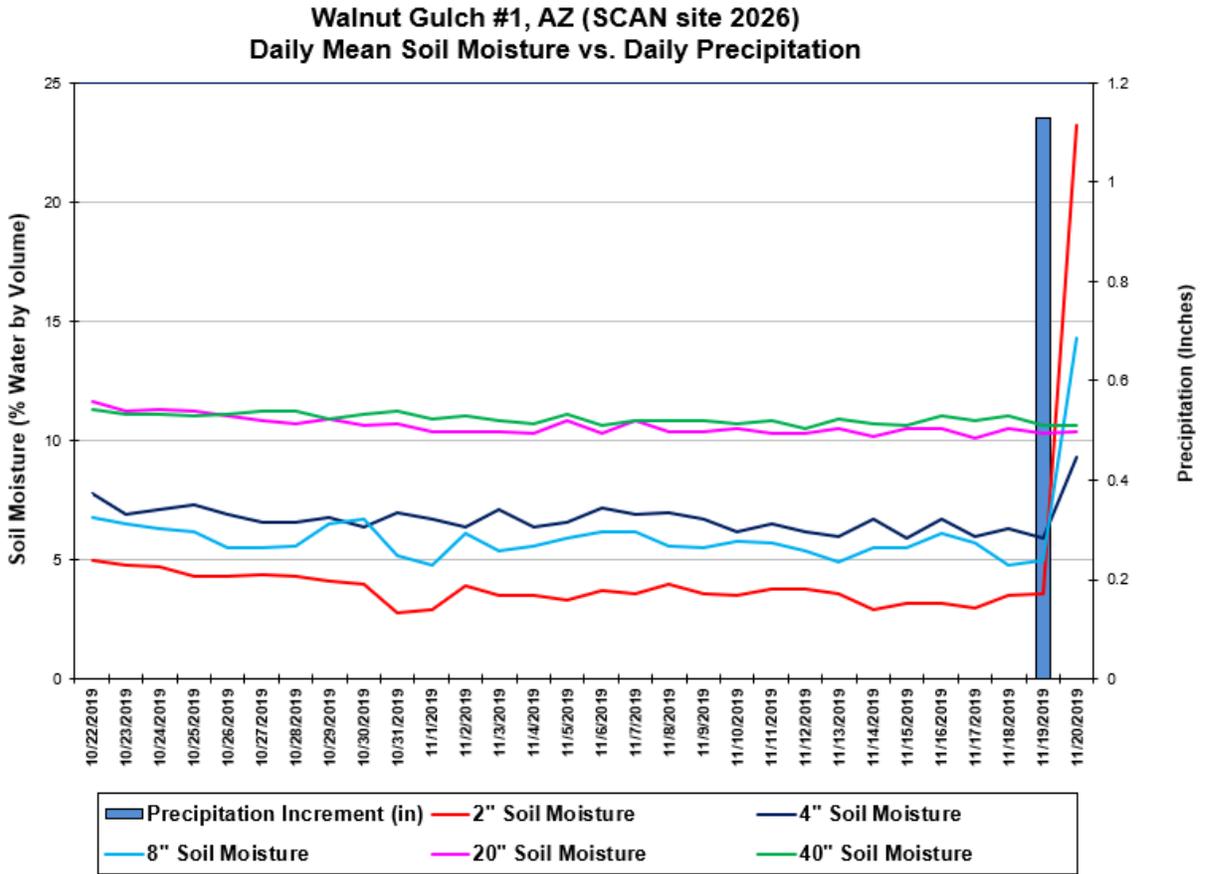
Soil Moisture Percent of Saturation

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 [Walnut Gulch #1 SCAN site](#) in southern Arizona. 1.13 inches of precipitation on November 19 resulted in a dramatic increase in soil moisture at the -2", -4", and -8" sensor depths. The -20" and -40" sensors did not immediately respond to the precipitation event.

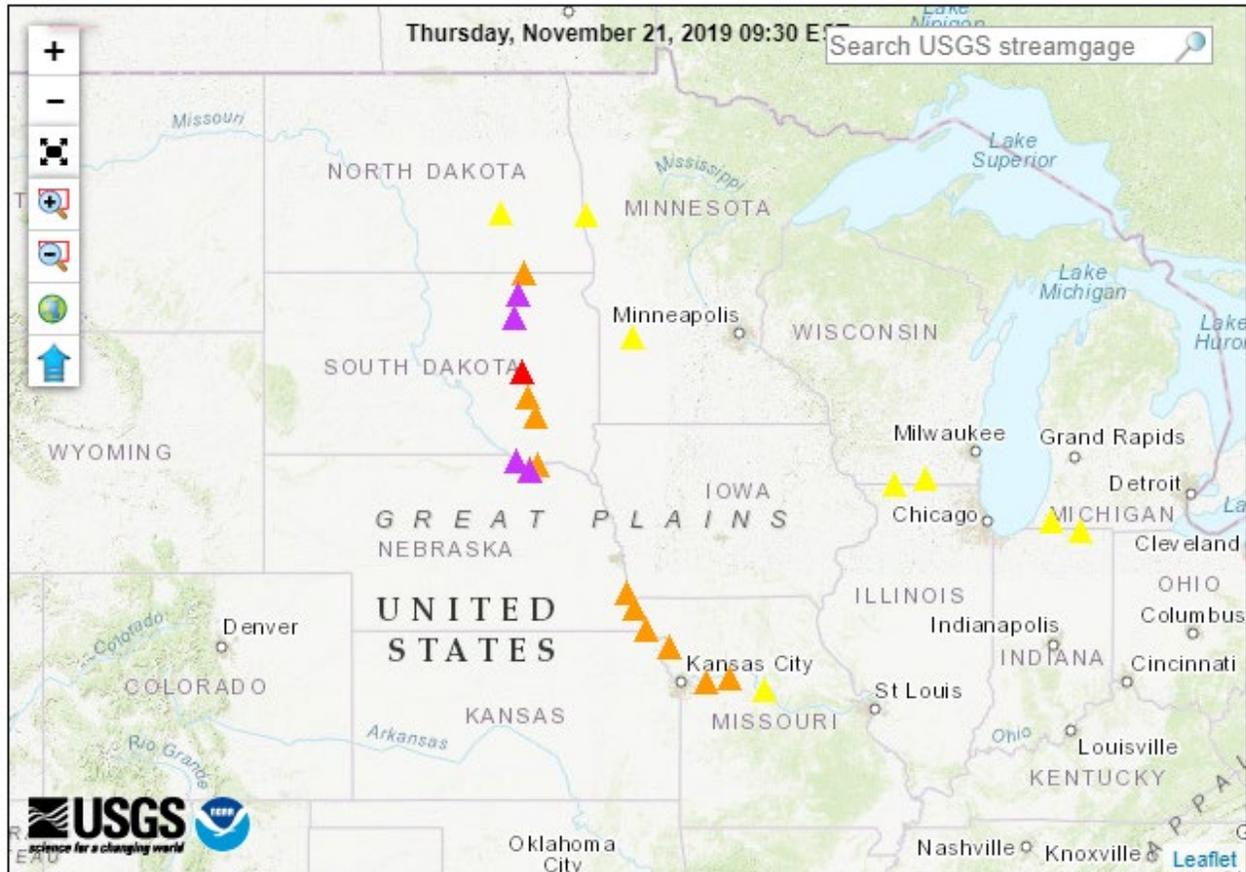
Soil Moisture Data Portals

- [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

Map of flood and high flow conditions
 (17 in floods [major: 4, moderate: 1, minor: 12], 9 in near-flood)



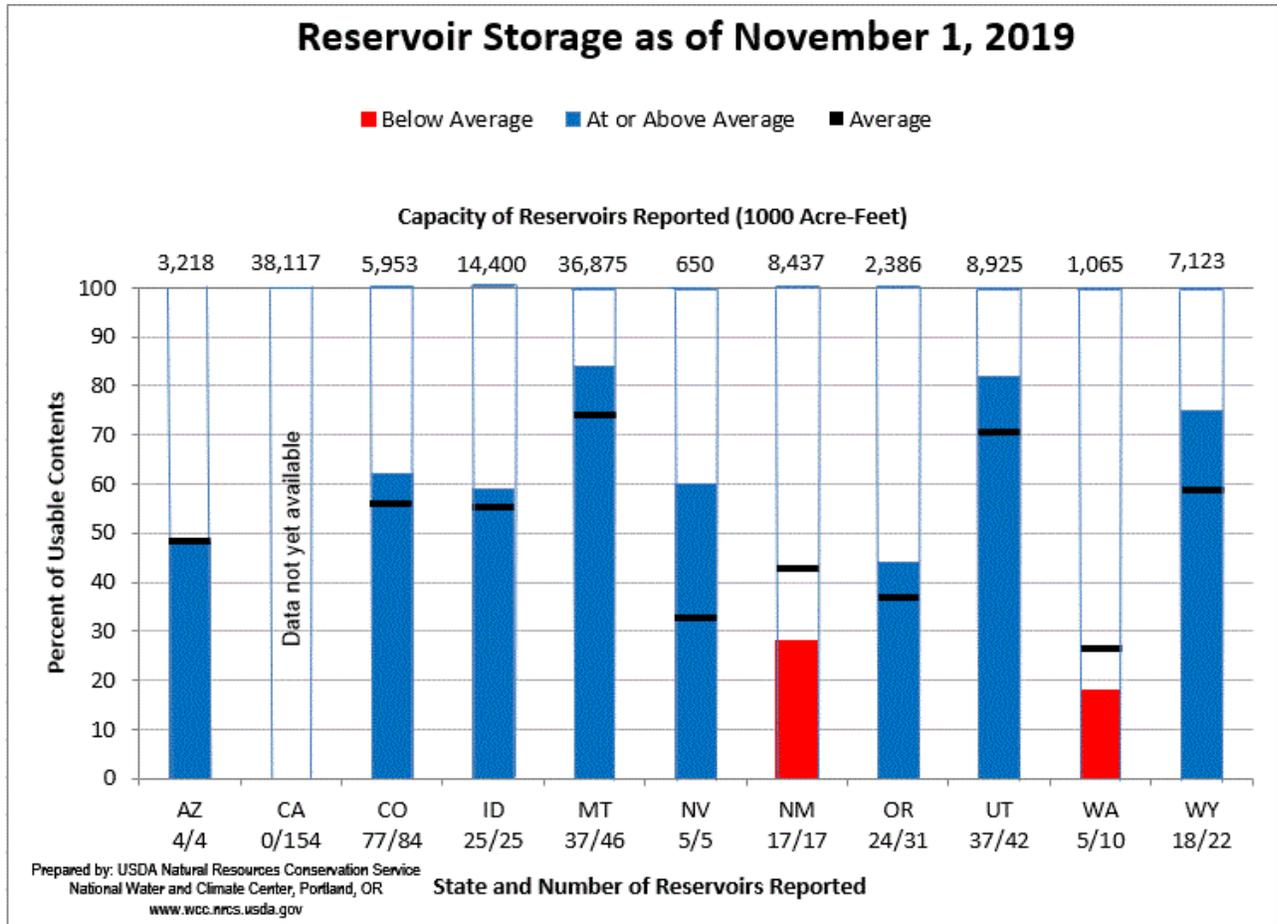
Explanation - Percentile classes						
<95	95-98	>= 99	Above action stage	Above flood stage	Above moderate flood stage	Above major flood stage
			△ Streamgage with flood stage	○ Streamgage without flood stage		

[WaterWatch: Streamflow, drought, flood, and runoff conditions](#)

Reservoir Storage

Western States Reservoir Storage

Source: NRCS National Water and Climate Center



November 1, 2019 Reservoir Storage: [Chart](#) | [Dataset](#)

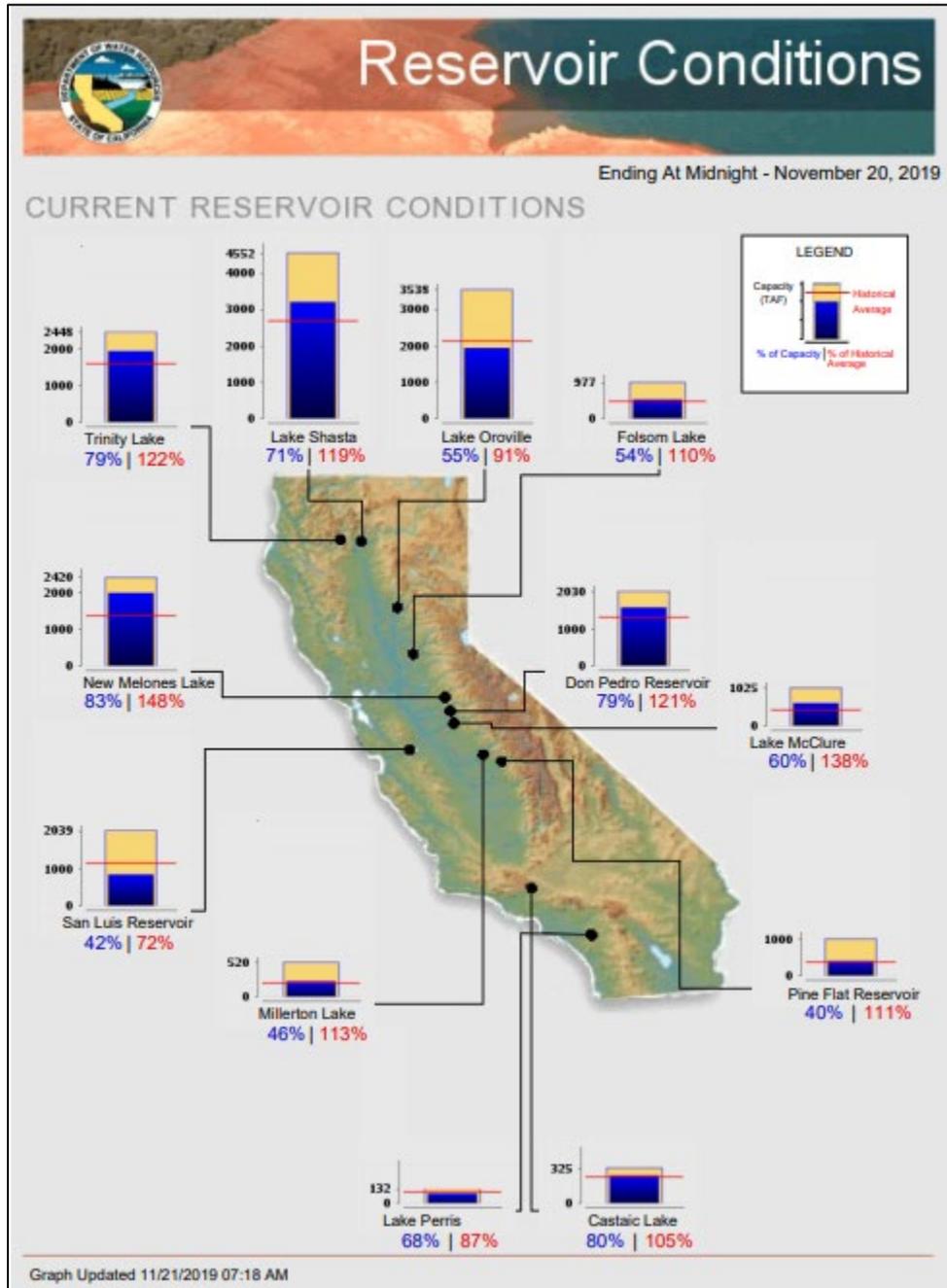
Hydromet Tea Cup Reservoir Depictions

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

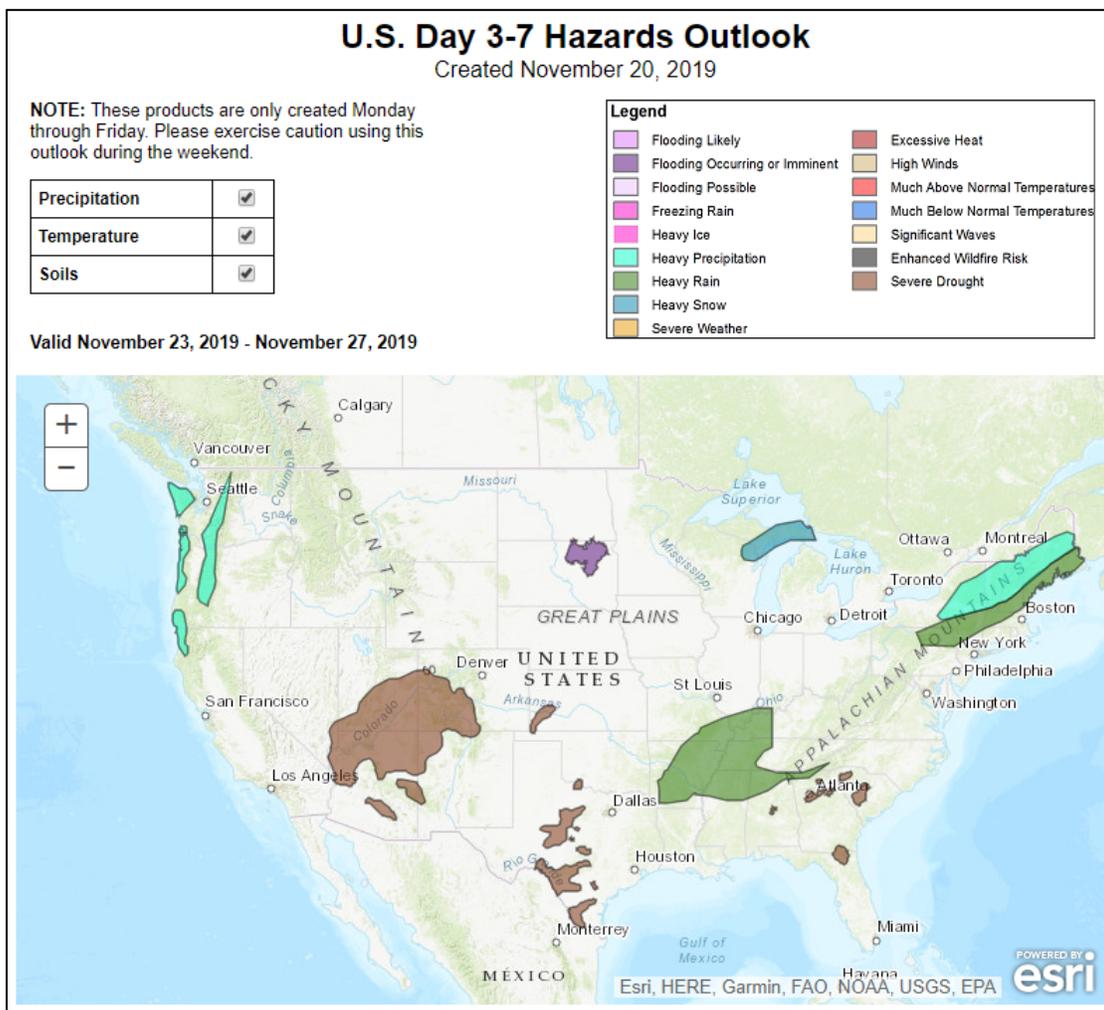
Agricultural Weather Highlights

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

National Outlook, Thursday, November 21, 2019: “Fast-moving storms will maintain showery weather across large sections of the country. The storm system currently crossing the Midwest will move northeastward, reaching the Canadian Maritimes by Saturday. Meanwhile, the weather system affecting the Southwest will traverse the Ohio Valley on Saturday and reach the northern Atlantic Coast by Sunday night. Five-day precipitation totals could reach 1 to 2 inches or more from the southeastern Plains to the southern Appalachians. In contrast, mostly dry weather will prevail in the lower Rio Grande Valley, southern Florida, and northern California. In the Northwest, rain and snow showers will arrive during the weekend in conjunction with a new Pacific storm system. The NWS 6- to 10-day outlook for November 25 – 29 calls for the likelihood of colder-than-normal conditions across the western half of the country, while above-normal temperatures will cover the East and areas along the Gulf Coast. Meanwhile, wetter-than-normal weather across most of the nation should contrast with below-normal rainfall in central and southern Texas.”

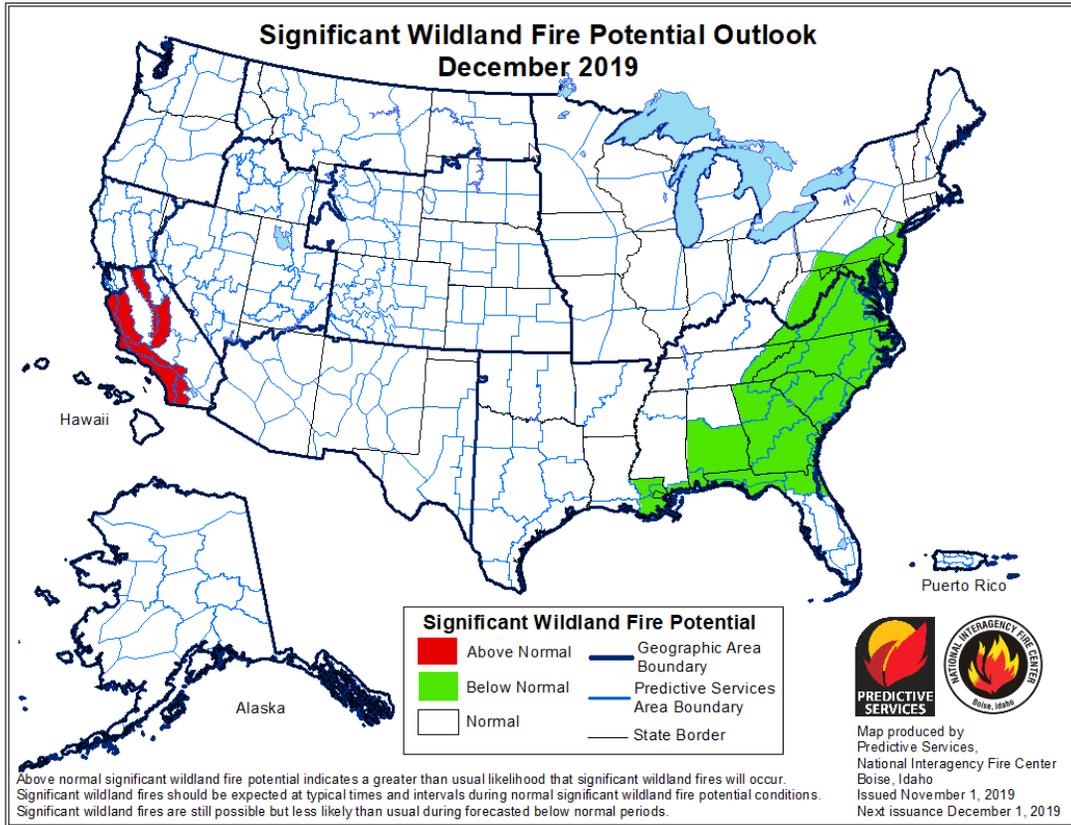
Weather Hazards Outlook: [November 23 - 27, 2019](#)

Source: NOAA Climate Prediction Center



Significant Wildland Fire Potential Outlook

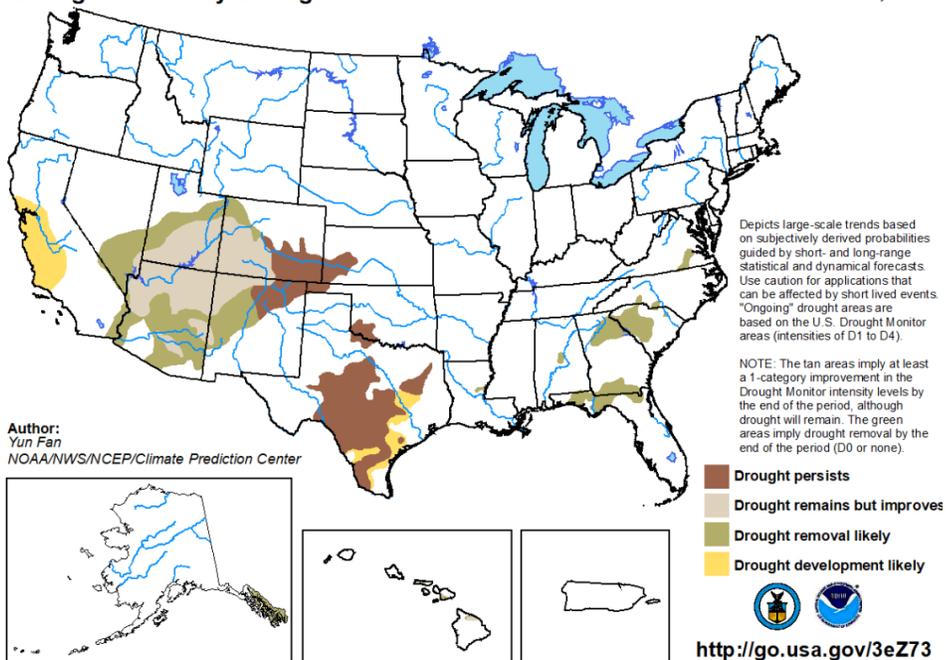
Source: National Interagency Fire Center



Seasonal Drought Outlook: November 21, 2019 – February 29, 2020

Source: National Weather Service

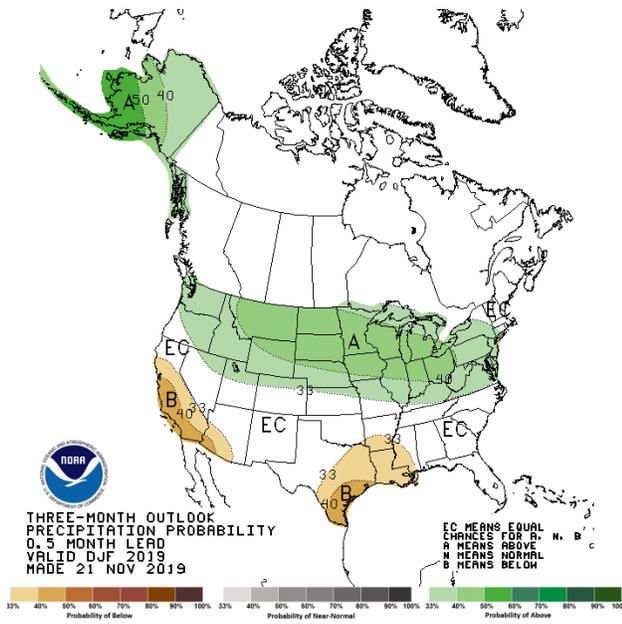
U.S. Seasonal Drought Outlook *Valid for November 21, 2019 - February 29, 2020*
Drought Tendency During the Valid Period *Released November 21, 2019*



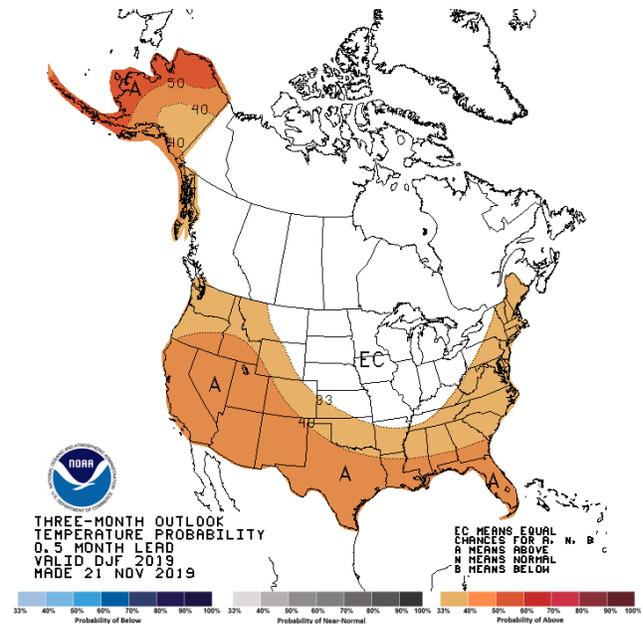
Climate Prediction Center 3-Month Outlook

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](#).