

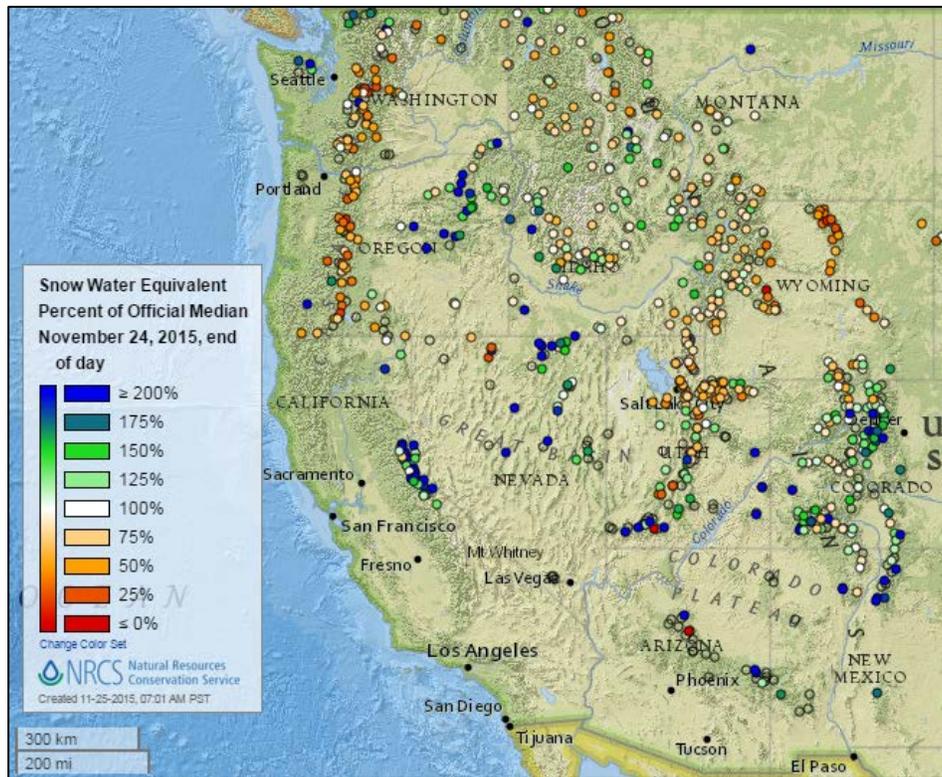
Water and Climate Update

November 25, 2015

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.....	9
Precipitation.....	3	Other Climatic and Water Supply Indicators.....	12
Temperature.....	8	Short- and Long-Range Outlooks.....	15

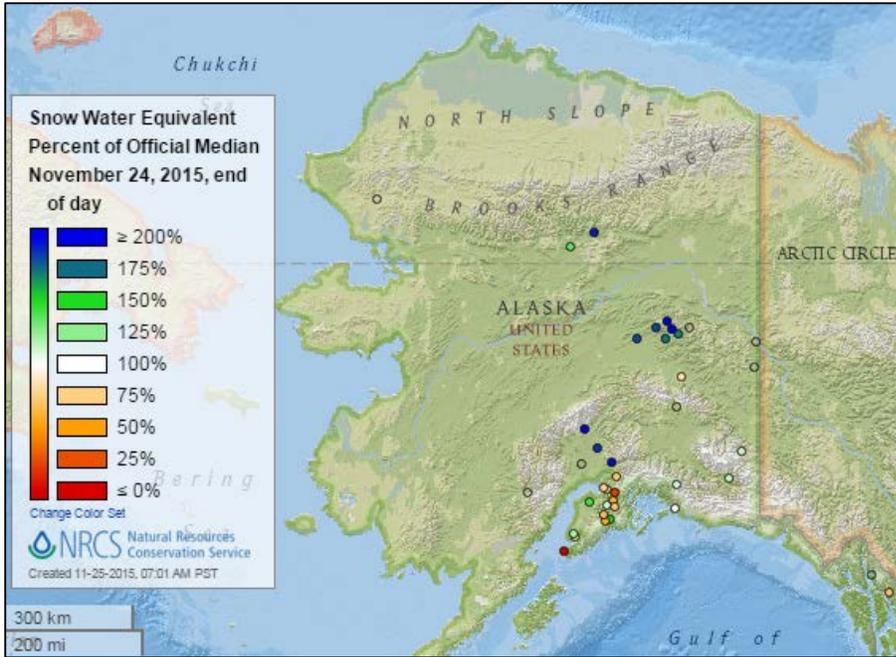
Weekly Highlight: Winter snowpack off to a good start across parts of the West



The current [snow water equivalent percent of median](#) map shows areas with significantly above normal snowpack primarily from northeast Oregon south to California and east to New Mexico and Colorado. Below normal snowpack exists in the Cascades, in the northern Rockies south through Wyoming, and in northern Utah.

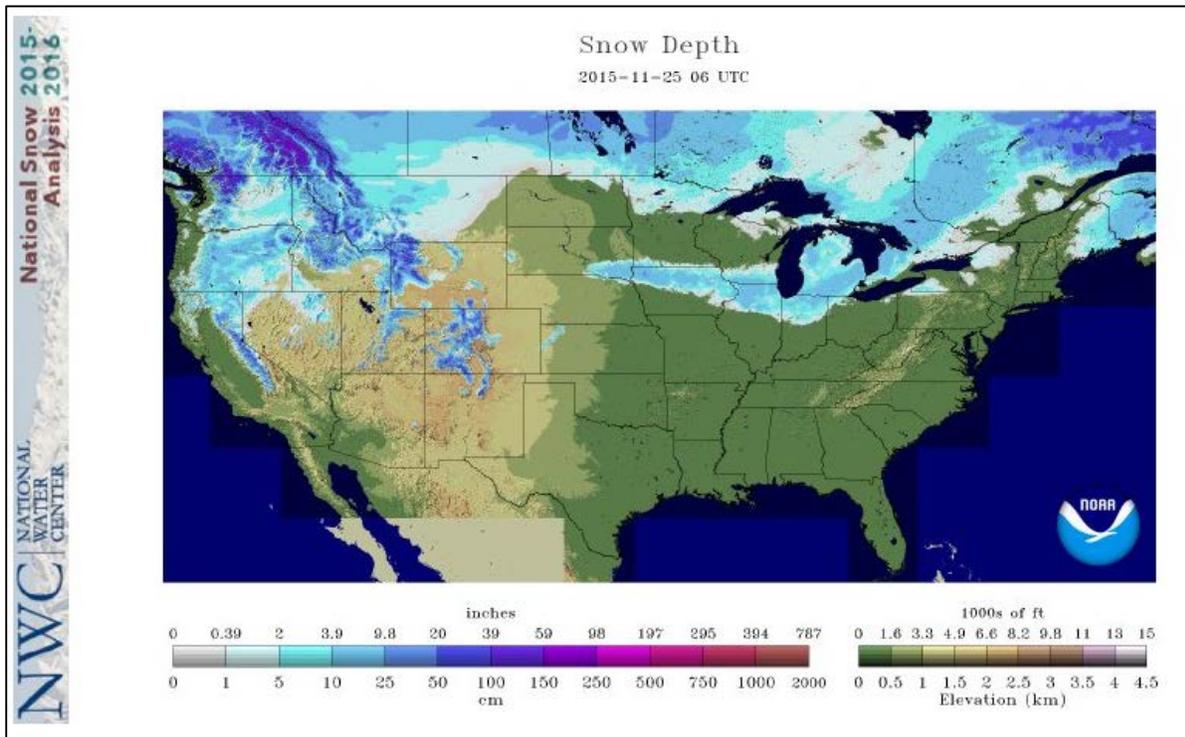
Snow

Current Snow Water Equivalent, NRCS SNOTEL Network



The current [snow water equivalent percent of median](#) map for Alaska shows above normal snowpack in the Interior and below normal in the south.

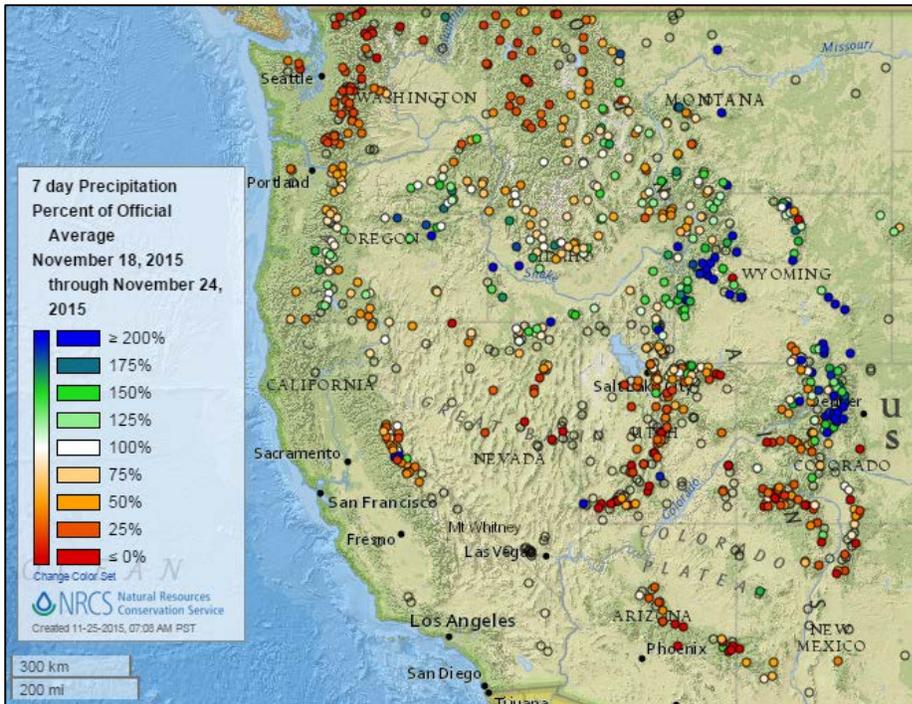
Current Snow Depth, National Weather Service (NWS) Networks



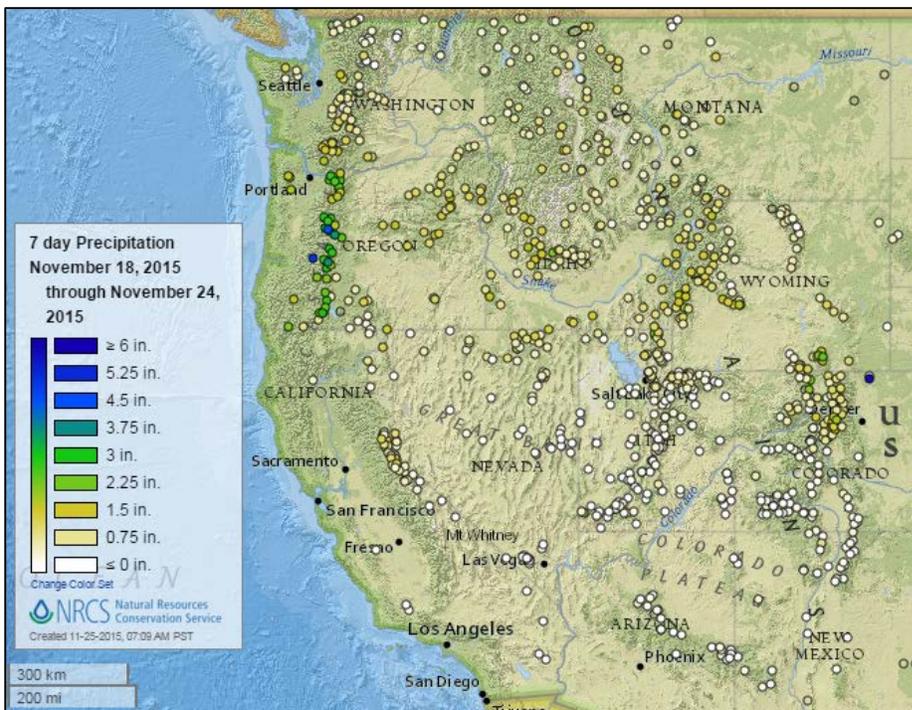
The National Water Center's current [snow depth](#) map for the continental U.S. shows several areas of significant snow accumulation across the Pacific Northwest, Sierra Nevada, and the Rockies. Also prominent is the snow cover in parts of the northern Plains east to the Great Lakes, and in eastern Maine.

Precipitation

Last 7 Days, Western Mountain Sites (NRCS SNOTEL Network)

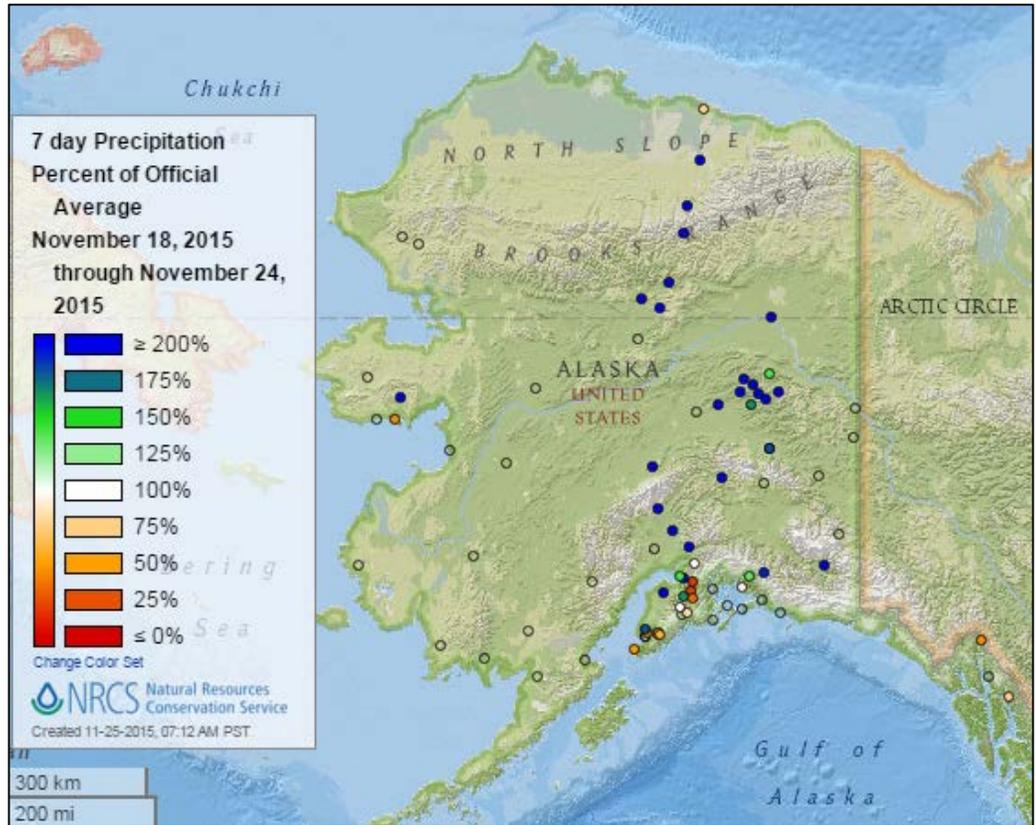


The 7-day [precipitation percent of average](#) map shows primarily below average conditions in much of the West. The areas that received above average precipitation were in eastern Oregon, east through southern Idaho, Wyoming, and northern Colorado. A few other isolated above average precipitation events were reported elsewhere.

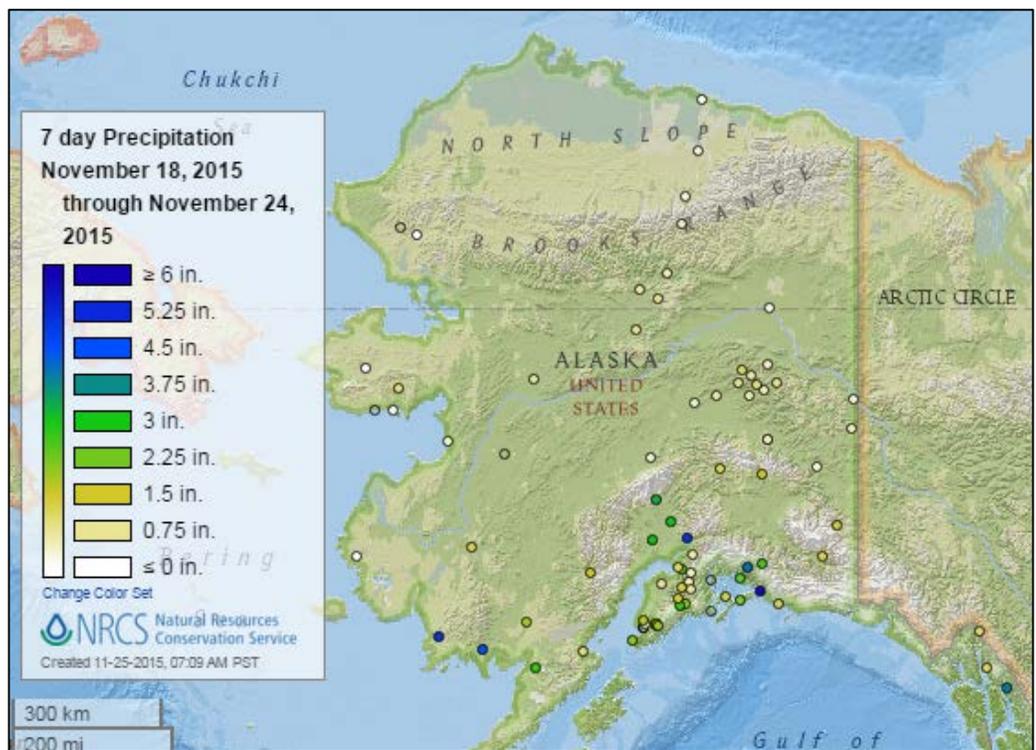


The [total precipitation](#) map shows the largest amount of precipitation was received in the Cascades of Oregon where above 2 inches predominated. Much of the rest of Oregon, southern Idaho, Wyoming, and northern Colorado reported above 1 inch for the week.

The Alaska [precipitation percent of average](#) map for the last seven days shows primarily above average precipitation, with the exception of some stations in the Kenai Peninsula and southeast, which were below average.



The Alaska 7 Day [total precipitation](#) map shows that although precipitation was above average in the Interior, amounts were mostly less than an inch. Several stations across the southern and southeast region of the state received more than 3 inches of precipitation.



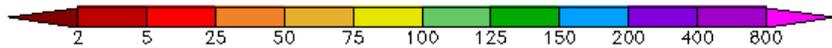
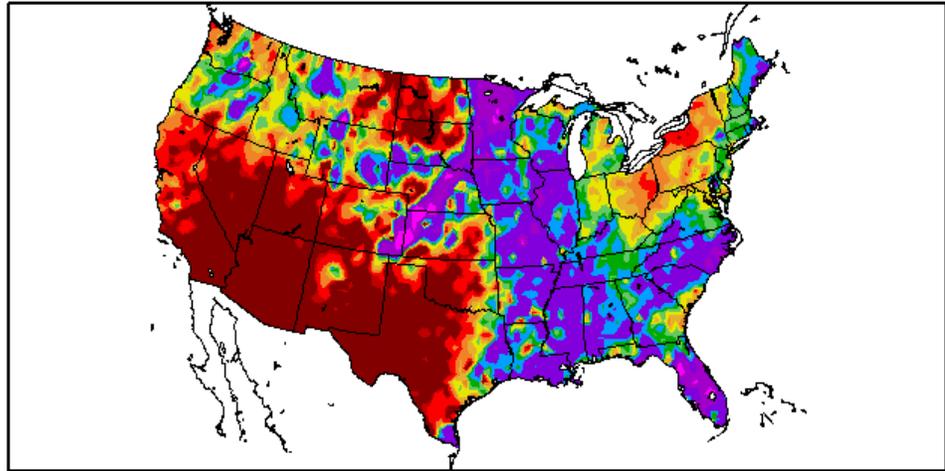
Last 7 Days, National Weather Service (NWS) Networks

Source: Regional Climate Centers

The [percent of normal precipitation](#) map shows well above normal precipitation throughout the entire midsection of the country and the Southeast.

Noticeably dry areas are across the Southwest from California to central Texas, and a smaller area in the northern Plains.

Percent of Normal Precipitation (%)
11/18/2015 – 11/24/2015

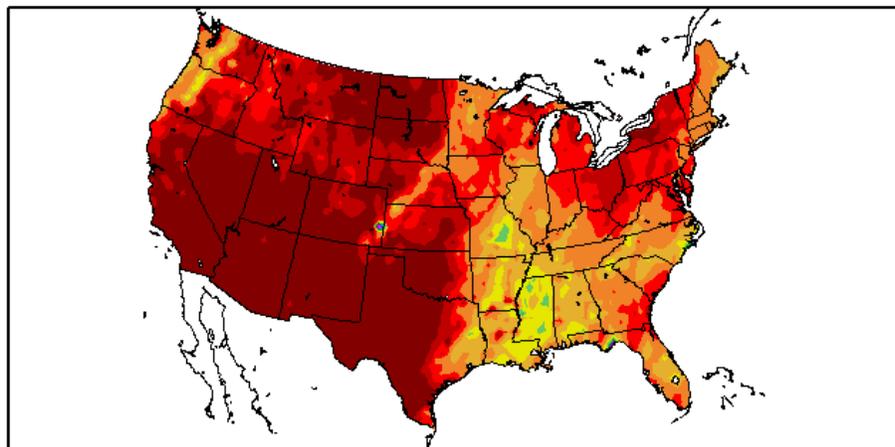


Generated 11/25/2015 at HPRCC using provisional data.

Regional Climate Centers

The [7-day total precipitation](#) map prominently shows the highest amounts of precipitation in the lower Mississippi Valley where some areas reported more than 4 inches of precipitation. Other areas in the Pacific Northwest and East received over 2 inches for the week. Much of the West and Southwest to the middle of the country were primarily dry.

Precipitation (in)
11/18/2015 – 11/24/2015



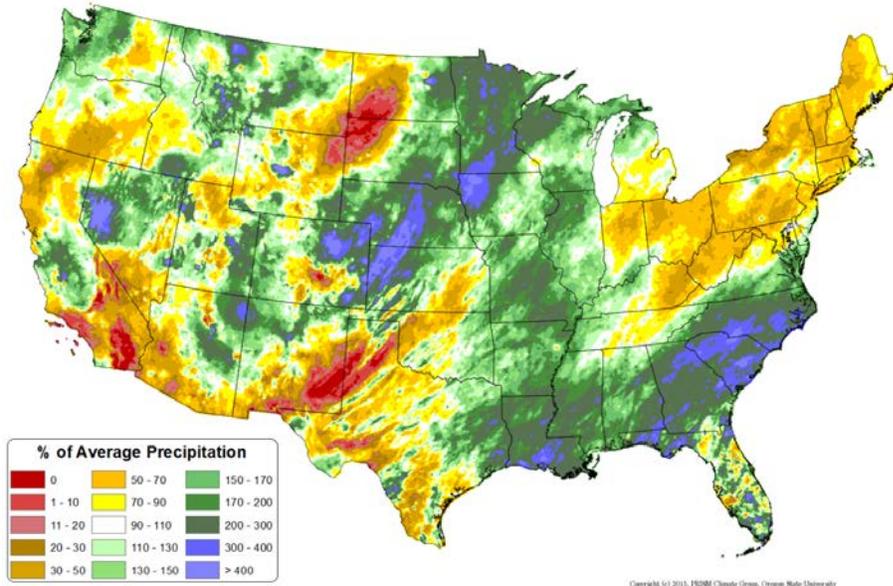
Generated 11/25/2015 at HPRCC using provisional data.

Regional Climate Centers

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

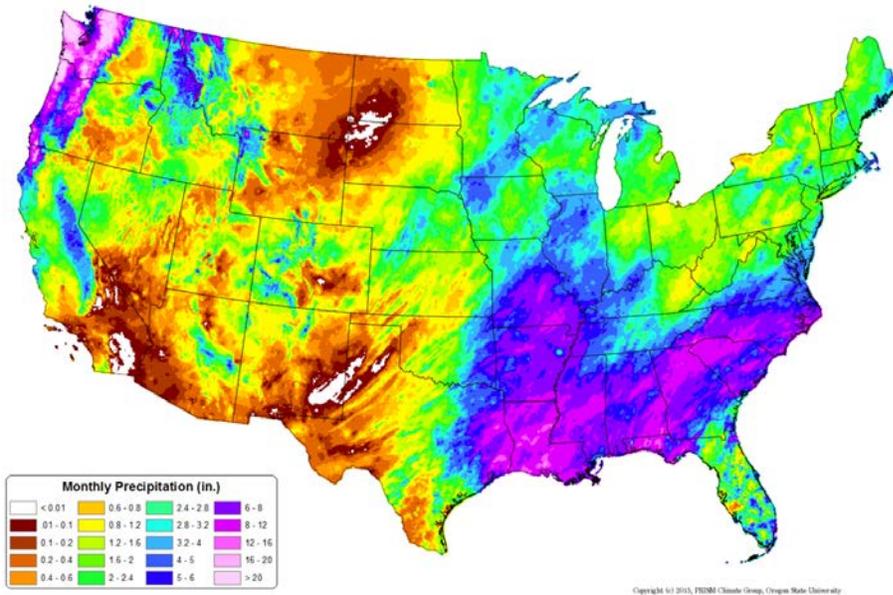
Source: PRISM

Total Precipitation Anomaly: 01 November 2015 - 23 November 2015
 Period ending 7 AM EST 23 Nov 2015
 Base period: 1981-2010
 (Map created 24 Nov 2015)



For the month of November to date, the national [precipitation percent of average](#) map shows patches of well above average precipitation scattered throughout the country, including the Southeast, northern Plains, Great Lakes, and a few smaller areas of the West. Drier than average areas included scattered areas in the West, Southwest, upper Midwest, and the Northeast.

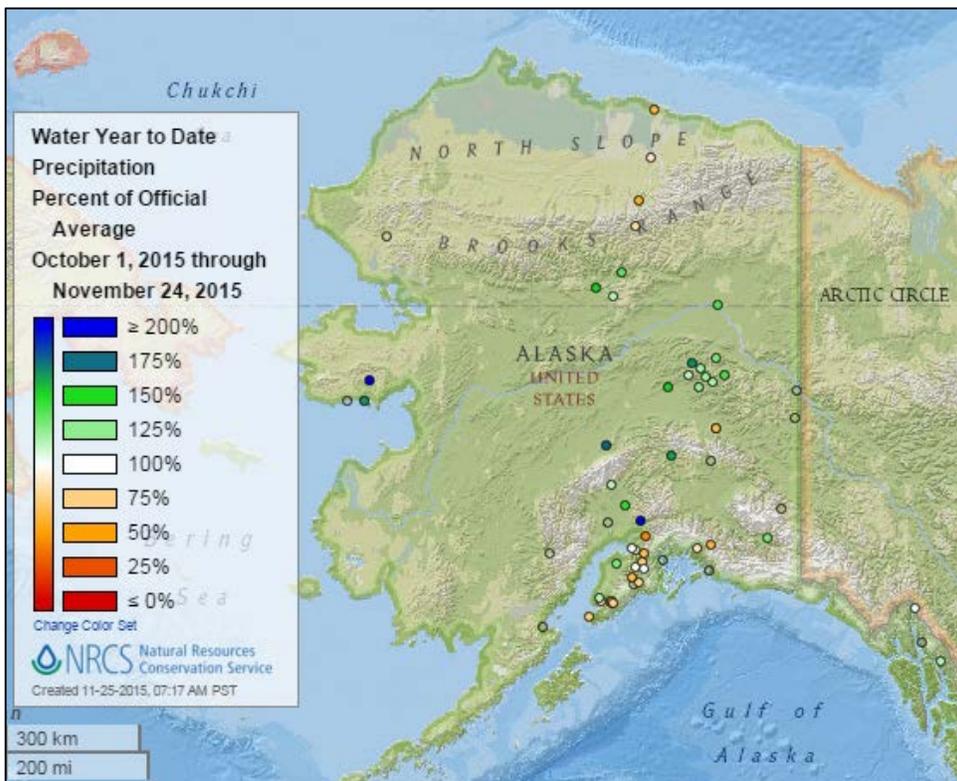
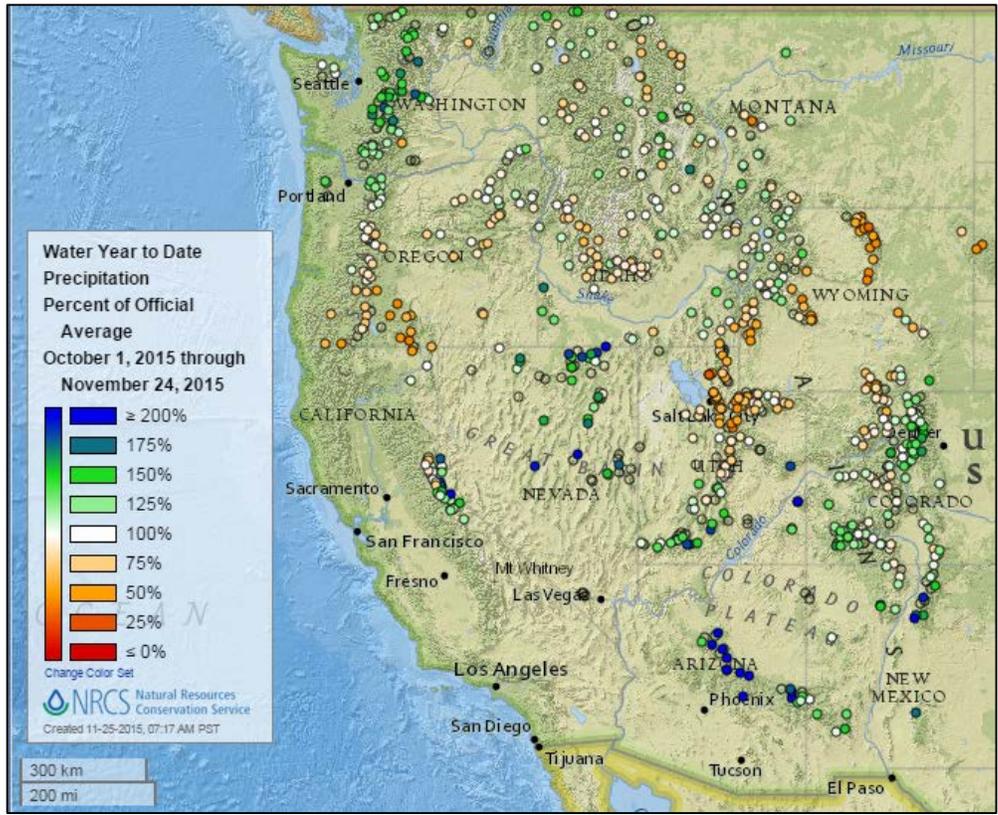
Total Precipitation: 01 November 2015 - 23 November 2015
 Period ending 7 AM EST 23 Nov 2015
 (Map created 24 Nov 2015)



The November month-to-date [total precipitation map](#) highlights heavy precipitation in western Washington and the Southeast, with amounts exceeding 10 inches. Noticeably dry areas include the northern Great Plains, portions of the Southwest, and western Texas.

Water Year-to-Date, Western Mountain Sites (NRCS SNOTEL Network)

For the [2016 Water Year](#) that began on October 1, 2015, the northern and southern areas are prominently above average. In between is a swath of below average areas, going through southern Oregon, southern Idaho, northern Utah, and much of Wyoming.



The Alaska water year-to-date [precipitation percent of average](#) map shows a mix of above, near, and below average sites throughout the state.

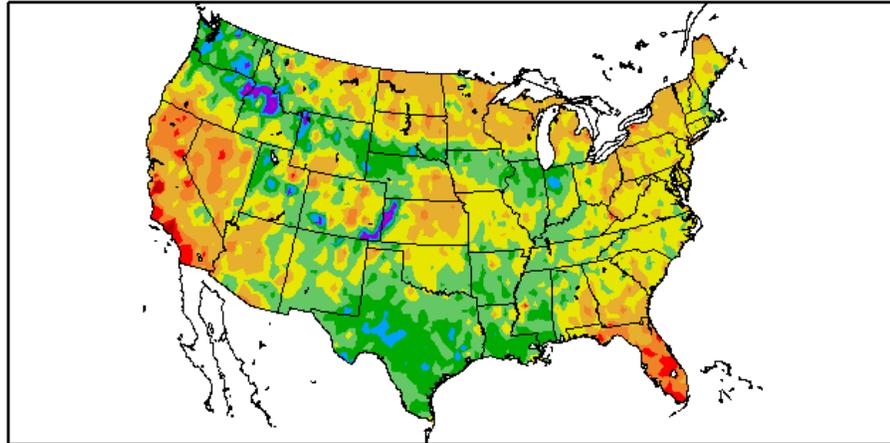
Temperature

Last 7 Days, National Weather Service (NWS) Networks

Source: Regional Climate Centers

Departure from Normal Temperature (F)
11/18/2015 – 11/24/2015

The map of the [average temperature anomalies](#) for the past week shows parts of the Northwest, central and southern Plains, and the Mississippi River basin were cooler than normal. In contrast, areas in California, Florida, and the upper Midwest were warmer than normal.



Generated 11/25/2015 at HPRCC using provisional data.

Regional Climate Centers

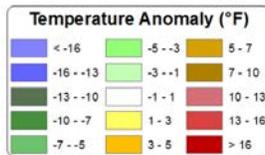
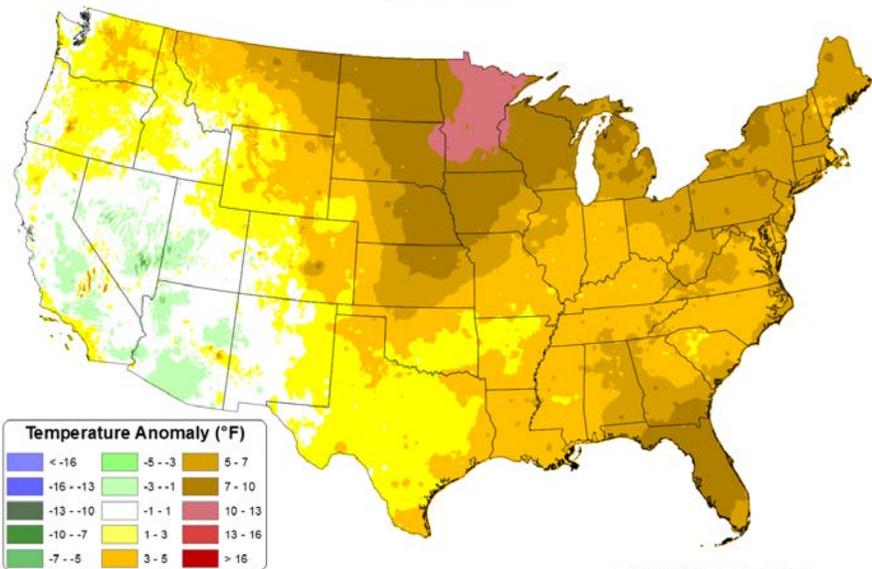
Month-to-Date, All Available Data Including SNOTEL and NWS Networks

Source: PRISM

For November 2015, the national [daily mean temperature anomaly](#) map shows well above normal temperatures in the Northeast, Southeast, upper Midwest, and northern Great Plains. It was especially warm in Minnesota. Most of the remainder of the country was also above normal, to a lesser extent.

The exception to this was in California, Nevada, and Arizona, which have been slightly cooler than normal.

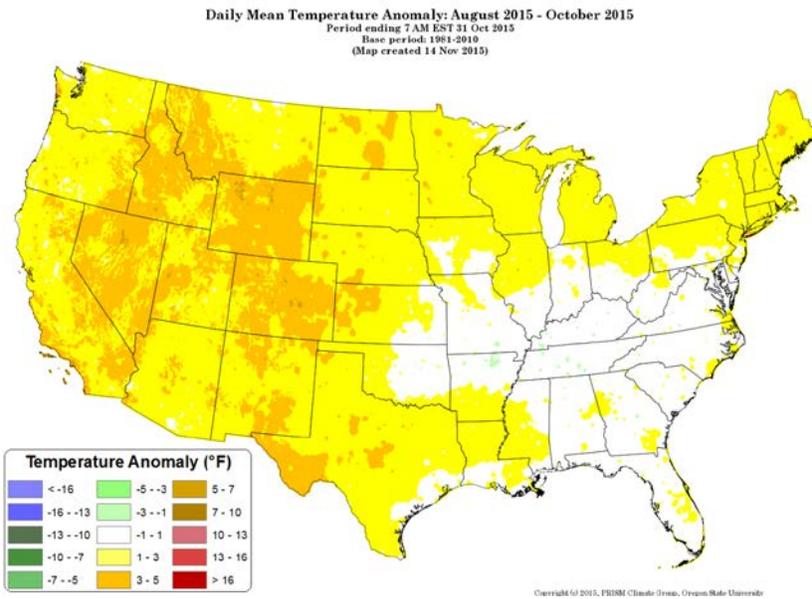
Daily Mean Temperature Anomaly: 01 November 2015 - 23 November 2015
Period ending 7 AM EST 23 Nov 2015
Base period: 1981-2010
(Map created 24 Nov 2015)



Copyright 1/1/2015, PRISM Climate Group, Oregon State University

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

Source: PRISM

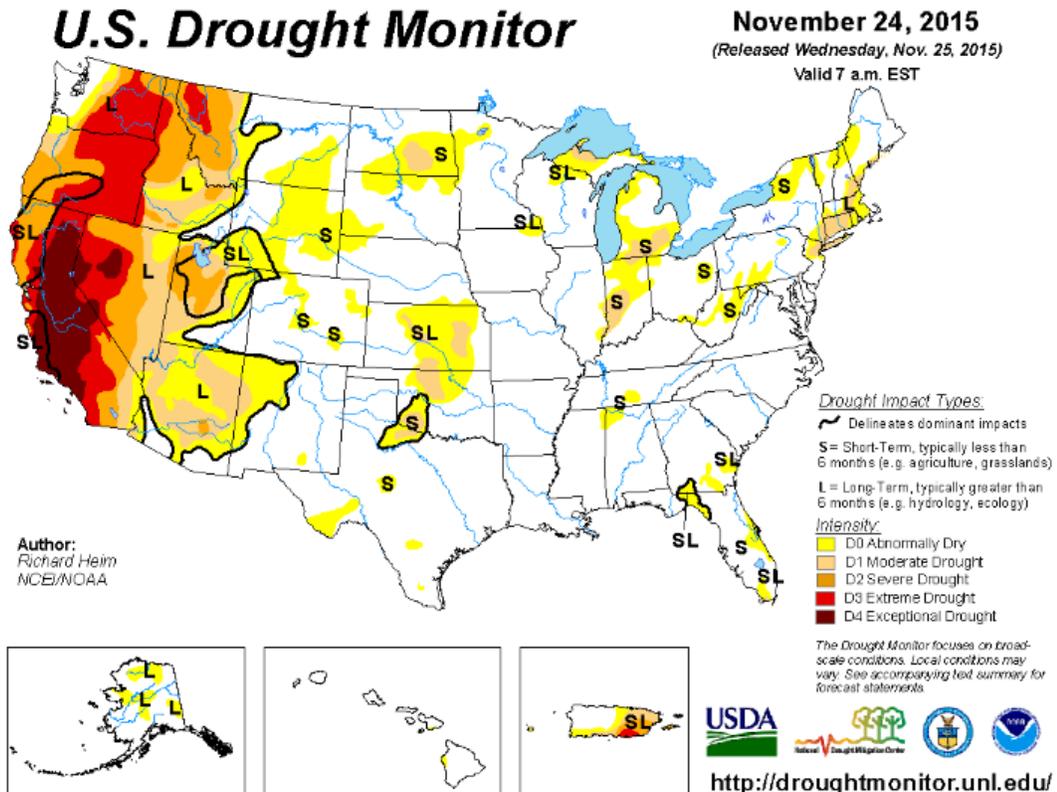


The August through October national **daily mean temperature anomaly** map shows most of the country being above average. The exception was the Southeast, which was near normal.

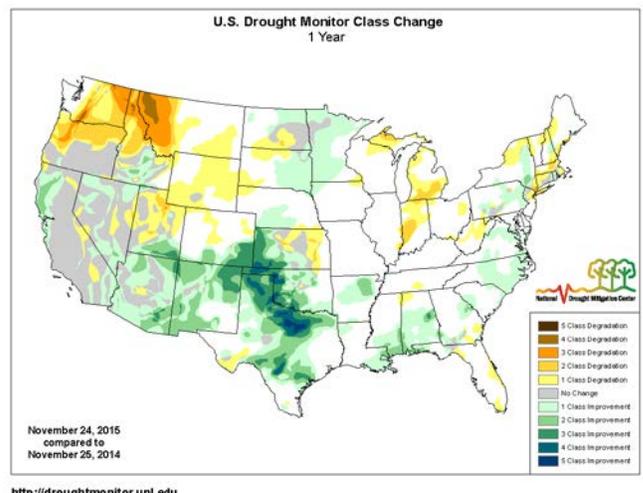
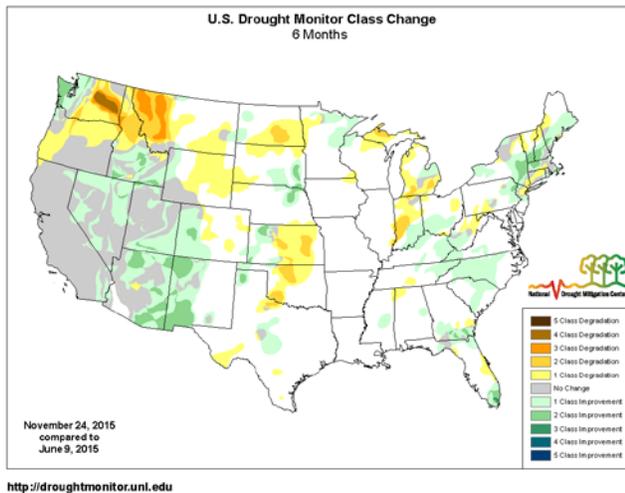
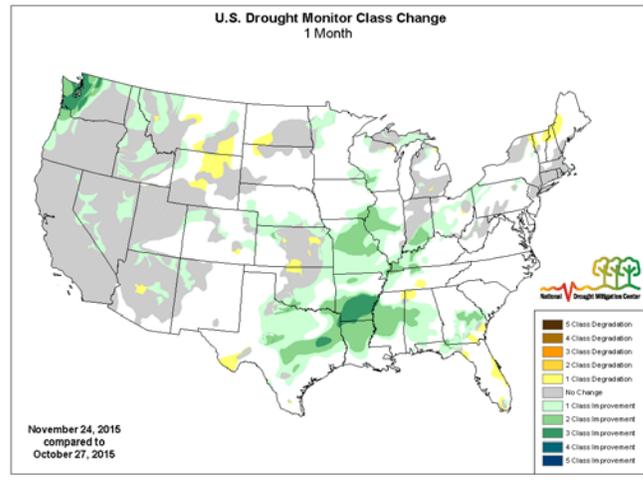
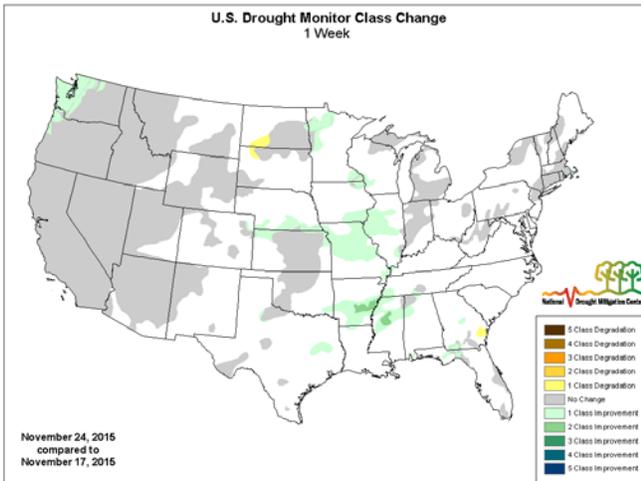
Drought

[U.S. Drought Portal](#) Comprehensive drought resource

[U.S. Drought Monitor](#) See map below. Drought conditions continue in the West Coast states, including the exceptional drought in California and Nevada.



Changes in Drought Monitor Categories over Time



Drought conditions have improved in much of the country, especially in the south-central U.S. The West has shown some recent improvement, but long-term drought persists.

Current National [Drought Summary](#), November 24, 2015

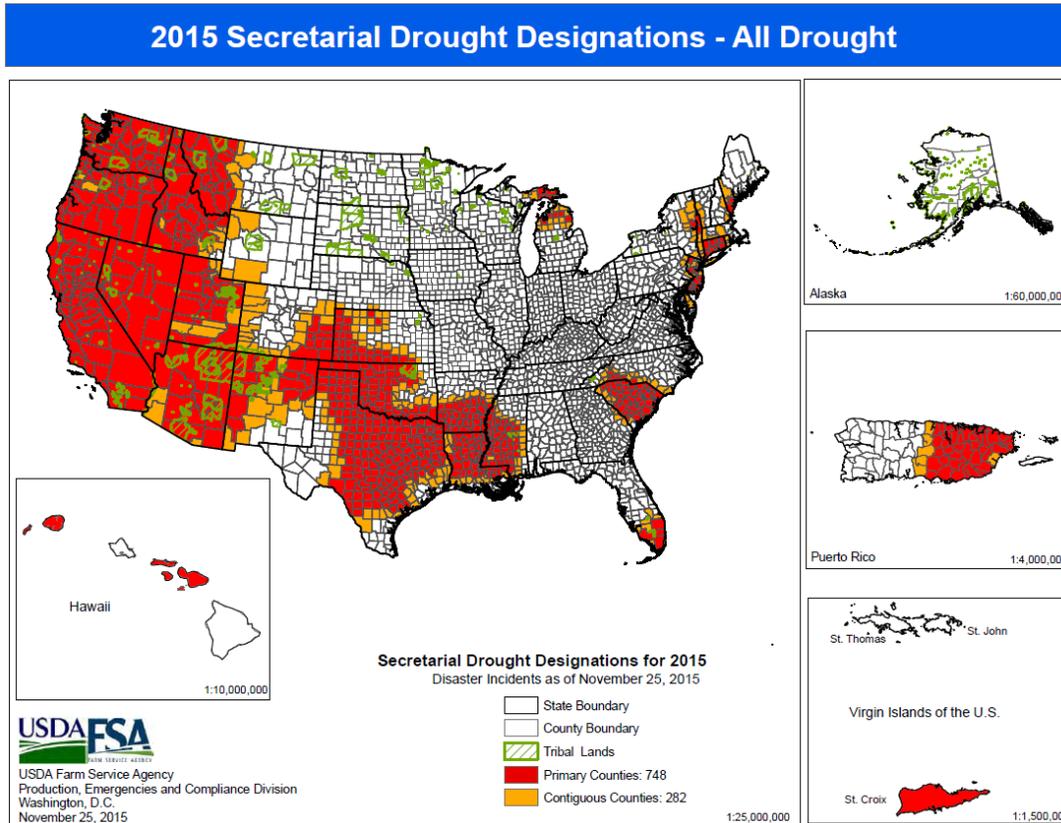
Author: Richard Heim, NOAA/NCEI

“A strong upper-level low pressure system funneled Gulf of Mexico moisture into the central U.S. at the beginning of this USDM week, triggering widespread heavy rains and severe weather. Two to 5 inches of rain fell on November 17 from eastern Texas to Missouri eastward to Mississippi and Illinois. An inch or more of precipitation was observed from northwest Kansas to central Nebraska, across Iowa and Minnesota, and into the western Great Lakes. As the Low and cold front moved eastward on the next day, 1 to locally 3+ inches of precipitation fell across the Southeast, Tennessee Valley, and Upper Mississippi Valley. By the third day, the system had dropped an inch or more of precipitation along the East Coast. Meanwhile, another storm system brought rain and snow to the Pacific Northwest, with 1 to 3+ inches, and locally up to 5 inches, of precipitation measured in Washington and northwest Oregon west of the Cascades. Another system moved from the Pacific Northwest, across the Plains to the southern Great Lakes, leaving a blanket of snow in its wake, up to a foot or more deep in places. As a result, drought and abnormal dryness contracted over large parts of the country. The weather systems missed the Southwest and northern Plains. Virtually no precipitation fell across California to parts of Colorado, New Mexico, and Texas, with a tenth of an inch or less widespread across the

northern Plains. Temperatures averaged warmer than normal across much of the East to northern Plains, and in parts of the central Plains and Far West. Cooler-than-normal temperatures dominated from the Pacific Northwest and Northern Rockies to the southern Plains.”

Detailed regional drought narratives for the week are [here](#).

2015 USDA Drought Designations



[Drought Designations as of November 25, 2015](#)

[USDA Disaster and Drought Information](#)

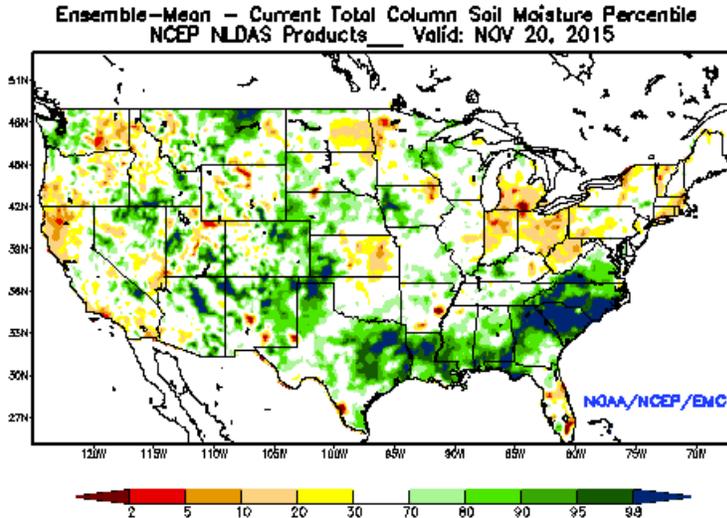
[U.S. Population in Drought, Weekly Comparison](#)

Highlighted Drought Resources

- [Drought Impact Reporter](#)
- [Quarterly Regional Climate Impacts and Outlook](#)
- [U.S. Drought Portal Indicators and Monitoring](#)

Other Climatic and Water Supply Indicators

Soil Moisture



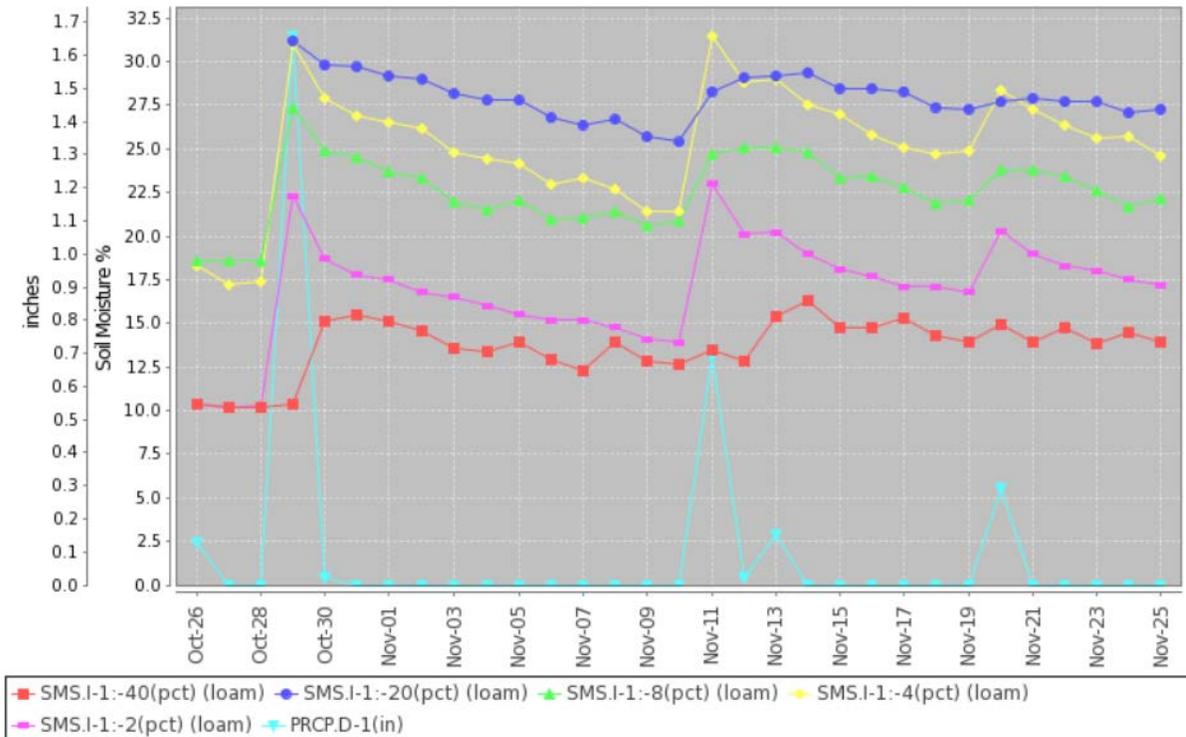
The modeled [soil moisture percentiles](#) as of November 20, 2015 show scattered areas of dryness in the far West, the Midwest, New England, and Florida.

Above average soil moisture was modeled in much of the interior West, Texas, the Gulf Coast, and the Southeast. The area with the wettest conditions was in the Carolinas.

[University of Washington Experimental Modeled Soil Moisture](#)

Soil Moisture Data: NRCS [Soil Climate Analysis Network \(SCAN\)](#)

Station (2028) MONTH=2015-10-26 (Daily) NRCS National Water and Climate Center - Provisional Data - subject to revision
Wed Nov 25 09:42:36 PST 2015



This graph shows soil moisture (at 2-, 4-, 8-, 20-, and 40-inch depths) and precipitation for the last 30 days at the [Mahantango Ck \(2028\)](#) SCAN site in Pennsylvania. Soil moisture response to precipitation events is noticeable at all depths for the larger storm events earlier in the month, whereas only a delayed response occurred at the 40-inch depth. The recent small event on November 20 produced increased soil moisture at the shallow 2-, 4-, and 8-inch depths.

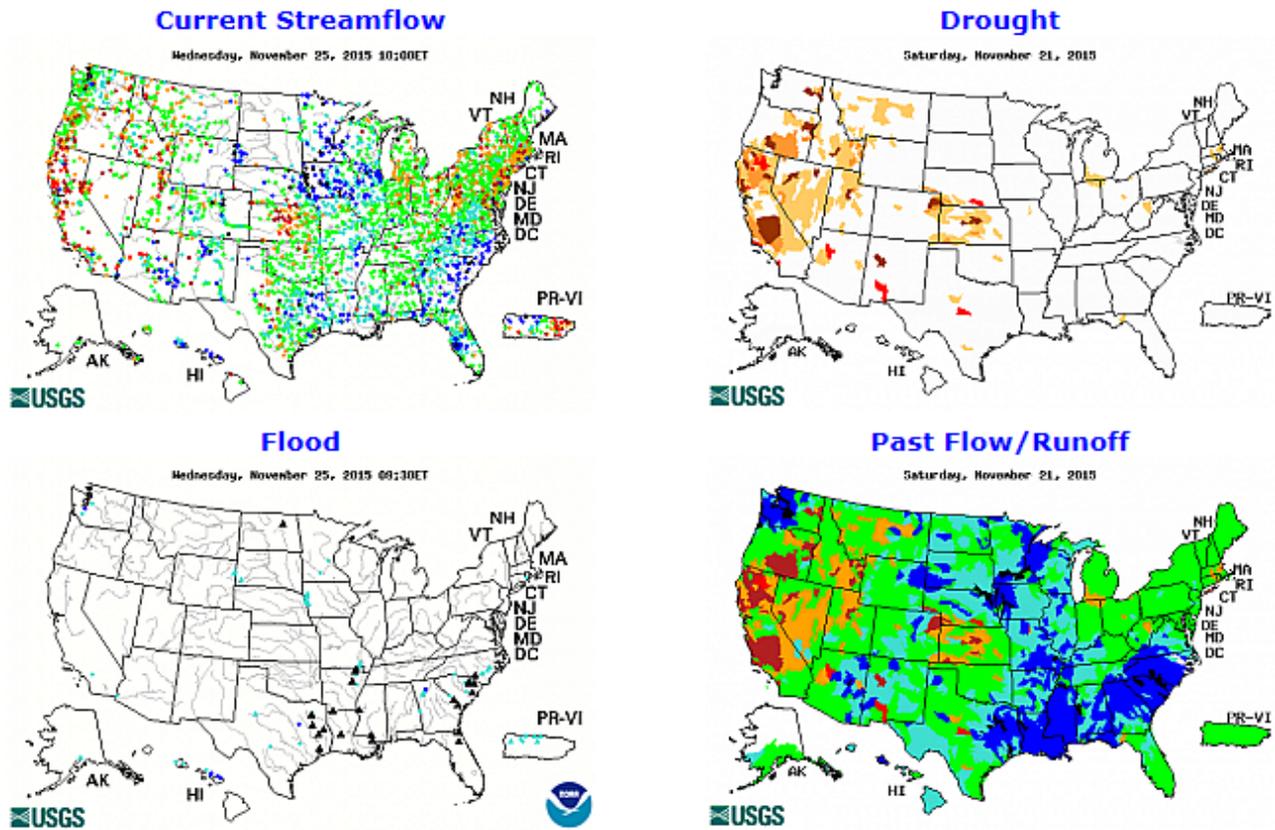
Soil Moisture Data Portals

[CRN Soil Moisture](#)

[Texas A&M University North American Soil Moisture Database](#)

Streamflow

Source: USGS



Streamflow is notably high in the upper Midwest, lower Mississippi River Valley, and the Southeast. Flooding is continuing to occur from Texas to the Carolinas.

Select any individual map to enlarge and display a legend.

Current Reservoir Storage

[National Water and Climate Center Reservoir Data](#)

U.S. Bureau of Reclamation Hydromet Tea Cup Reservoir Depictions:

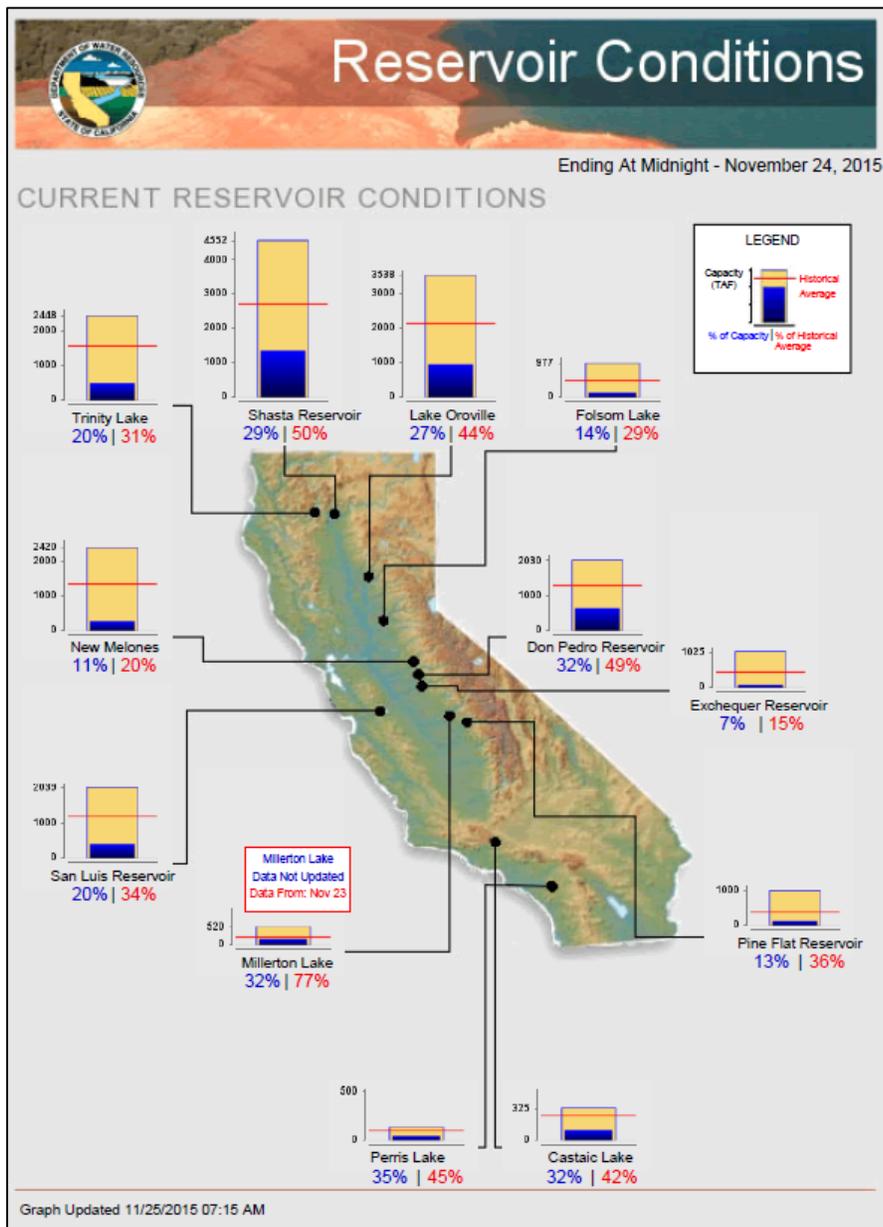
[Upper Colorado](#)

[Pacific Northwest/Snake/Columbia](#)

[Sevier River Water, Utah](#)

[Upper Missouri, Kansas, Oklahoma, Texas](#)

[California Reservoir Conditions](#)



Short- and Long-Range Outlooks

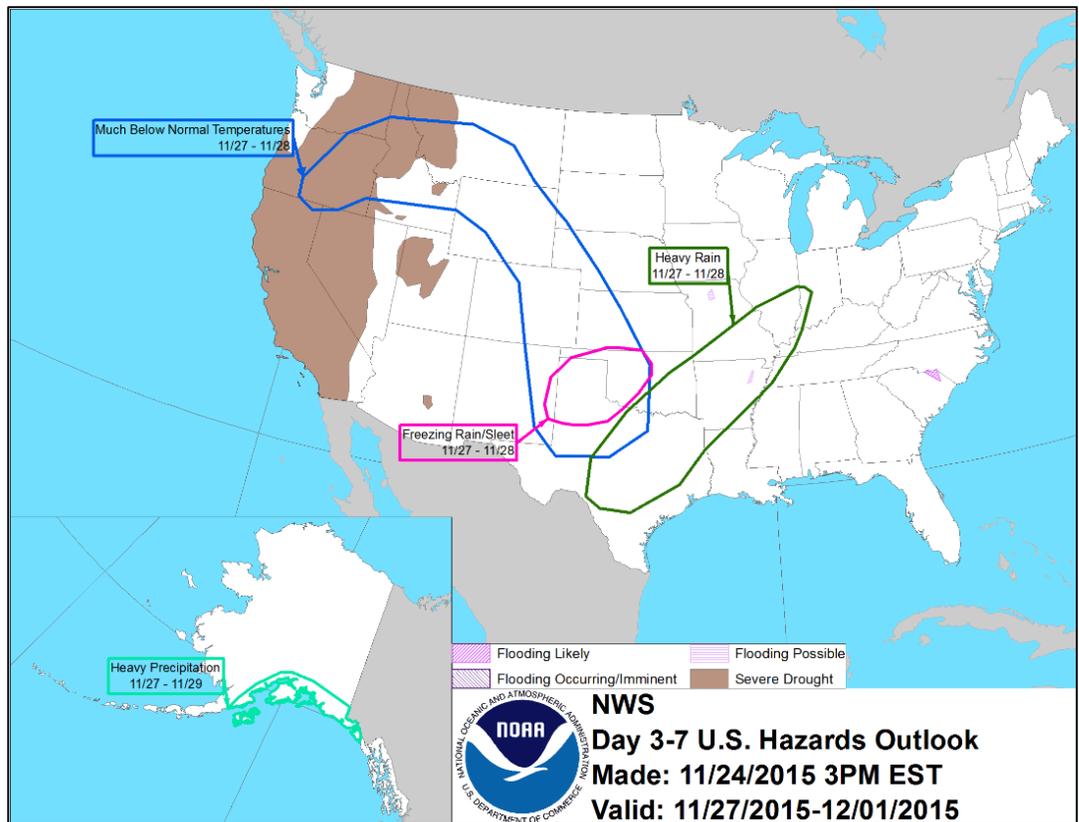
Agricultural Weather Highlights

Author: Eric Luebehusen, Agricultural Meteorologist, USDA/OCE/WAOB

National Outlook, November 25, 2015: “High pressure will maintain dry, increasingly warm weather over the eastern third of the nation through the Thanksgiving holiday. Meanwhile, a slow-moving cold front located this morning over the northern Plains will begin to interact with an upper-air disturbance currently producing rain and mountain snow over the west, leading to heavy precipitation (2 to 8 inches liquid equivalent, locally more) from central Texas into the Corn Belt by week’s end. Sharply colder air behind the front will increase the risk for damaging freezing rain from central and northern Texas into Iowa, while sleet and snow fall on the northern periphery of the precipitation shield from the southern High Plains into the upper Midwest. The NWS 6- to 10-day outlook for November 30 – December 4 depicts above normal temperatures in southern California and across much of the northern and eastern U.S., while colder-than normal conditions are expected from the Intermountain West to the central and southern Plains. Meanwhile, below-normal precipitation across the Intermountain West and the High Plains will contrast with wetter-than normal weather across the eastern half of the U.S. and along the Pacific Coast as far south as central California...”

National Weather Hazards

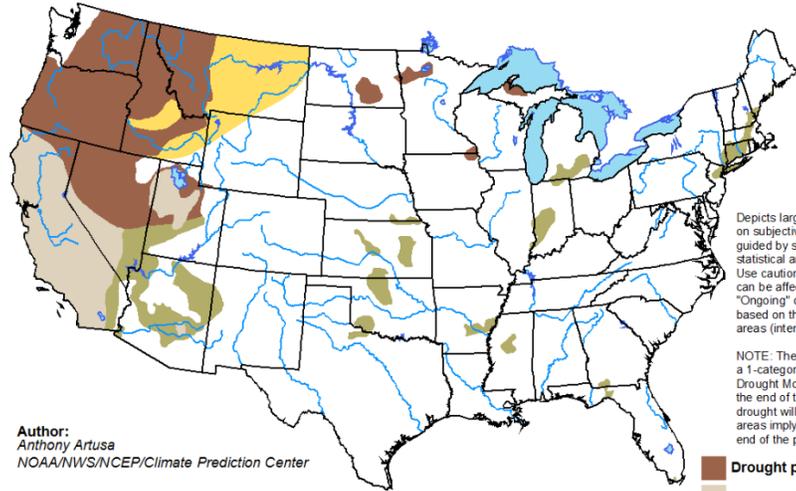
The outlook for [weather hazards](#) over the next week includes heavy rain in the south-central part of the country. Much below normal temperatures are expected from the Pacific Northwest to Texas. Freezing rain is expected in northern Texas and western Oklahoma. In Alaska, heavy precipitation is expected along the southern coastal areas.



Seasonal Drought Outlook

During the next three months, **drought** will persist in the Northwest and may develop in eastern Montana and Hawaii. Elsewhere, most drought designations are expected to improve.

U.S. Seasonal Drought Outlook Valid for November 19 - February 29, 2016
Drought Tendency During the Valid Period
Released November 19, 2015



Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Use caution for applications that can be affected by short-lived events. "Ongoing" drought areas are based on the U.S. Drought Monitor areas (intensities of D1 to D4).

NOTE: The tan areas imply at least a 1-category improvement in the Drought Monitor intensity levels by the end of the period, although drought will remain. The green areas imply drought removal by the end of the period (D0 or none).

Author:
Anthony Artusa
NOAA/NWS/NCEP/Climate Prediction Center

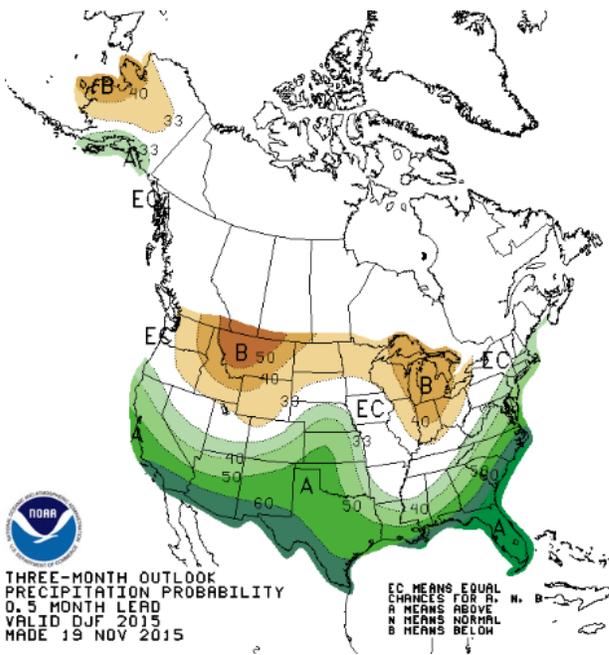
- Drought persists
- Drought remains but improves
- Drought removal likely
- Drought development likely



<http://go.usa.gov/3eZ73>

NWS Climate Prediction Center 3-Month Outlook

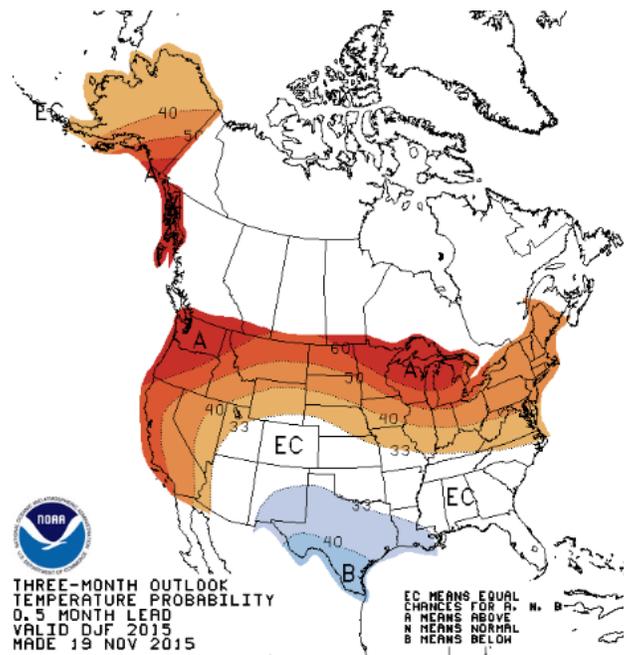
Precipitation



THREE-MONTH OUTLOOK
PRECIPITATION PROBABILITY
0.5 MONTH LEAD
VALID DJF 2015
MADE 19 NOV 2015

EC MEANS EQUAL CHANCES FOR A, N, B
A MEANS ABOVE
N MEANS NORMAL
B MEANS BELOW

Temperature



THREE-MONTH OUTLOOK
TEMPERATURE PROBABILITY
0.5 MONTH LEAD
VALID DJF 2015
MADE 19 NOV 2015

EC MEANS EQUAL CHANCES FOR A, N, B
A MEANS ABOVE
N MEANS NORMAL
B MEANS BELOW

Outlook Summary

NWS Climate Prediction Center:

“[The December-January-February \(DJF\) 2015-2016 precipitation outlook](#) through the early spring continues to favor a pattern that is typically associated with El Niño. Enhanced odds for above-median precipitation are forecast across California, the Southeast, central/southern Plains, Gulf Coast states, and parts of the east coast. Higher probabilities (above 50 percent) are shifted north across California from the previous outlook due to the strength of the ongoing El Niño. The highest probabilities (above 70 percent) for above-median precipitation are forecast across the Florida peninsula and DJF 2015-16 through JFM 2016 which typically has the strongest wet signal during El Niño. Below-median precipitation is favored through the early spring across the northern Rockies, parts of the northern Great Plains, Great Lakes, and the Ohio Valley. The dry signal across the Ohio Valley typically peaks during the JFM 2016 season during El Niño.”

“[The December-January-February \(DJF\) 2015-2016 temperature outlook](#). The largest change in the temperature outlook from the previous one released on October 15 is the expectation that below-normal temperatures are slightly less likely for the Southeast from DJF 2015-16 through MAM 2016. Although statistical models such as the CA, CCA, and SMLR continue to favor below-normal temperatures across the Southeast, especially during JFM 2016, the latest dynamical models have a notable warming trend since last month across the Southeast. The NMME temperature forecast is a good compromise and the official outlook for DJF 2015-16 and JFM 2016 is generally similar to its guidance across the southern tier of the continental U.S. Due to the strength of the current El Niño, above-normal temperatures are no longer favored for the Aleutians during DJF 2015-16 and JFM 2016. All temperature tools continue to strongly favor above-normal temperatures across the northern half of the continental U.S. through the early spring which is consistent with a strong El Niño. Also, above-normal SSTs along the west coast contribute to the enhanced odds for above-normal temperatures during DJF 2015-16. Below-normal temperatures favored for the southern high plains during the 2016 spring are partly related to the expectation of abnormally moist topsoil at that lead time.”

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](#).