

Water and Climate Update

January 14, 2016

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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Weekly Highlight: Avalanche in eastern Nevada obliterates SNOTEL site



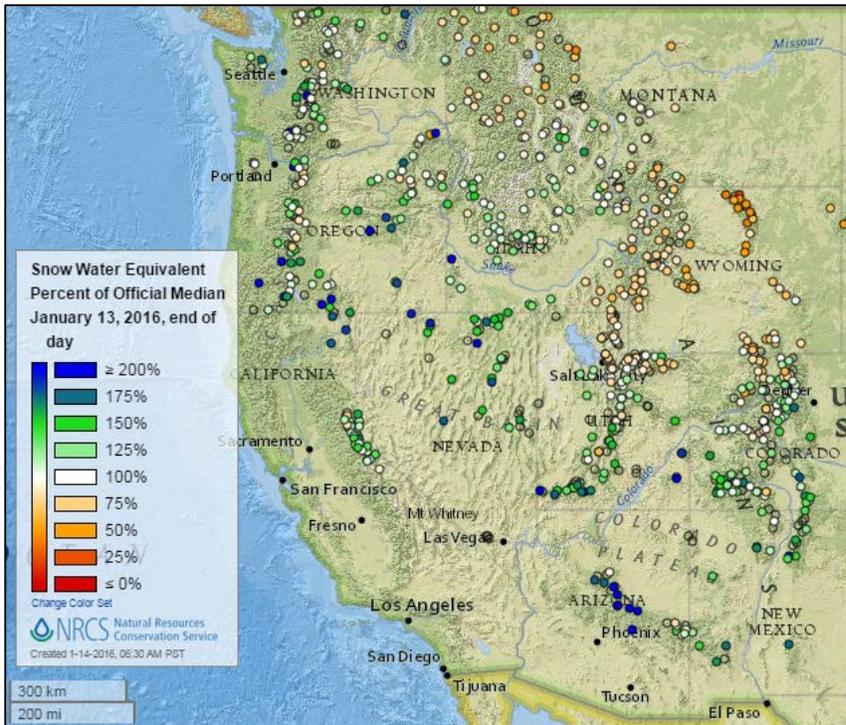
This week, an NRCS snow survey crew from Utah found that the Hole-in-Mountain SNOTEL site in the Ruby Mountains of Nevada was destroyed by an avalanche on December 23, after a series of storms dropped several feet of snow in the area.

Most of the cirque surrounding the site avalanched, moving the shelter 100 meters away and destroying the precipitation gage. The area last experienced a devastating avalanche in 1983, which also destroyed the site. The site was moved to a safer location at that time, and will now be moved to a much safer location.

NRCS snow machine rider in picture: Jeff O'Connell. Photo by Bob Nault, NRCS.

Snow

Current Snow Water Equivalent, NRCS SNOTEL Network

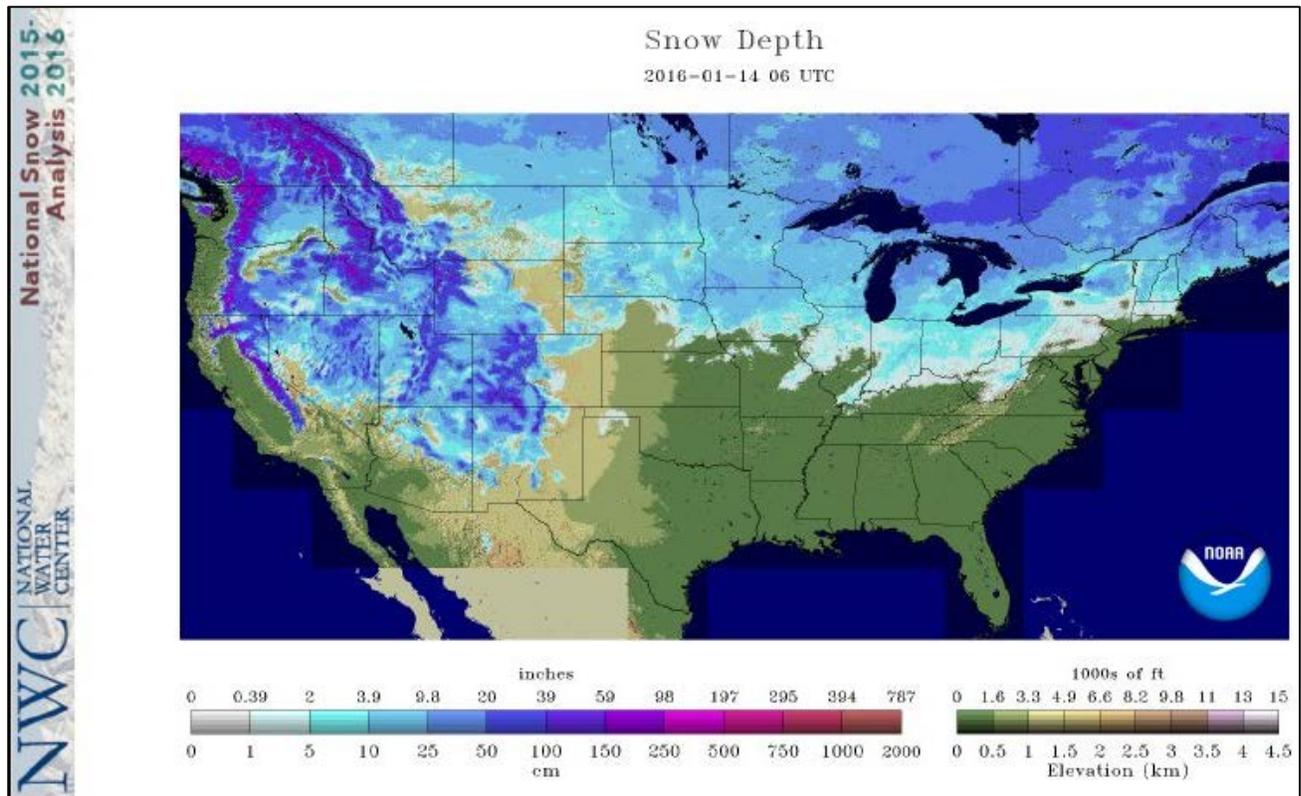


The current [snow water equivalent percent of median](#) map shows that much of the snowpack in the West is at median or above at this time. The Bighorn Mountains of Wyoming and some stations in western Wyoming, northern Idaho, and Montana have below median snowpack at this time.



The current [snow water equivalent percent of median](#) map for Alaska shows a mix of median and above median snowpack in the Interior, and a wider variety from below to above median snowpack along the southern part of the state.

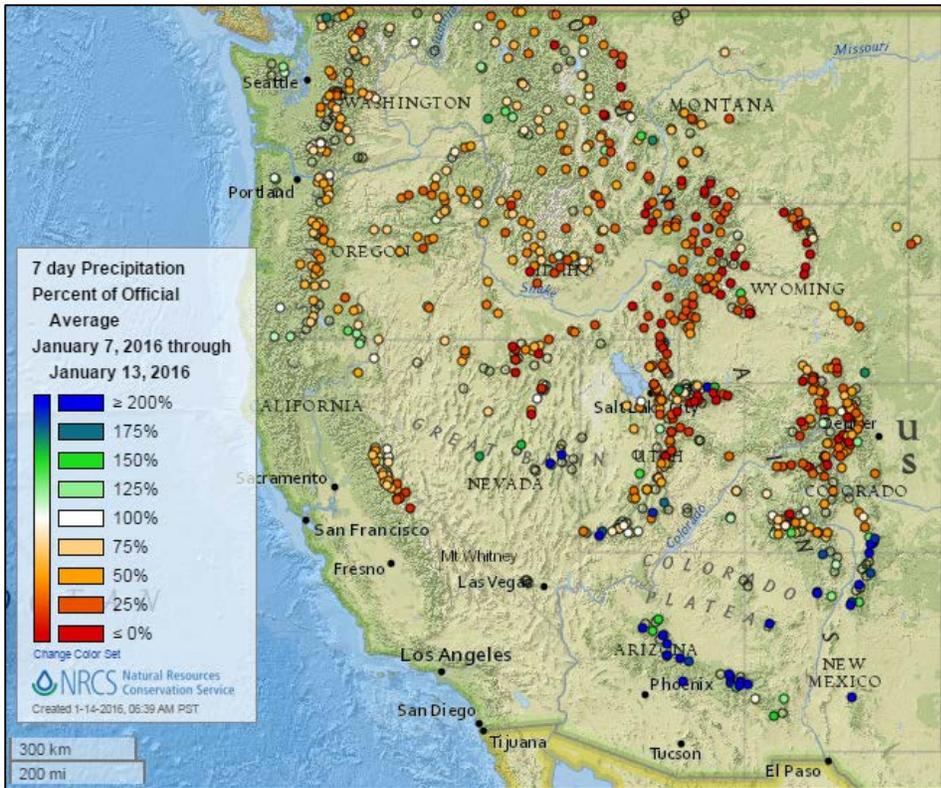
Current Snow Depth, National Weather Service (NWS) Networks



The National Water Center's current [snow depth](#) map for the continental U.S. shows areas of significant snow accumulation across much of the West and from the northern Great Plains to the upper Midwest. There is also an expanding snowpack across the Great Lakes, and the Midwest to New York and New England.

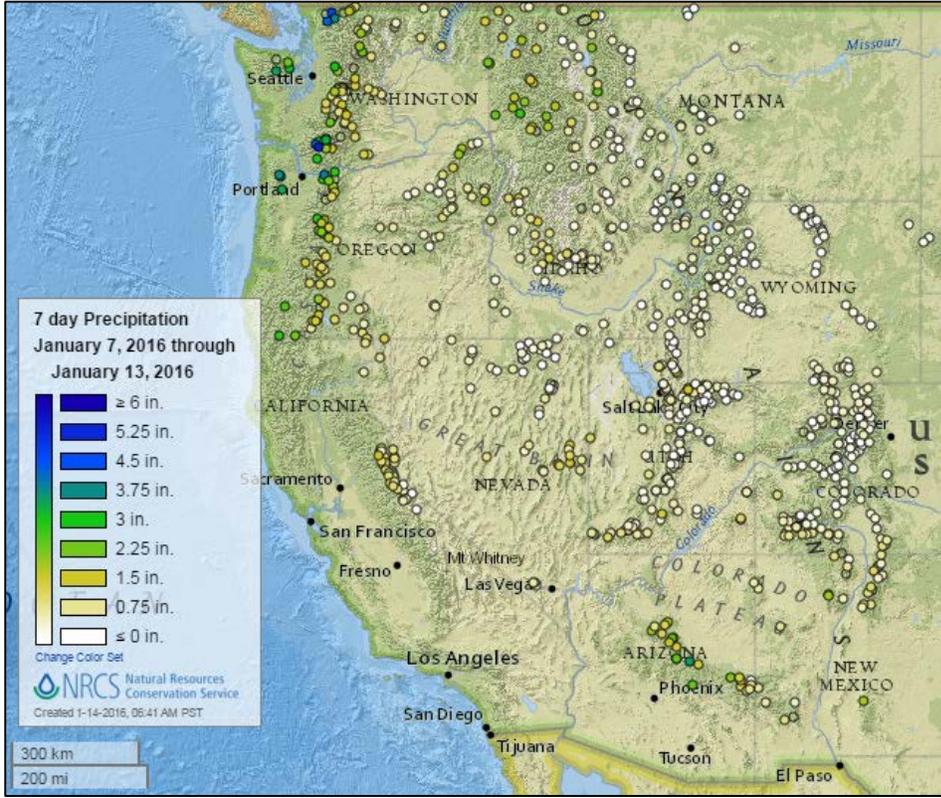
Precipitation

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



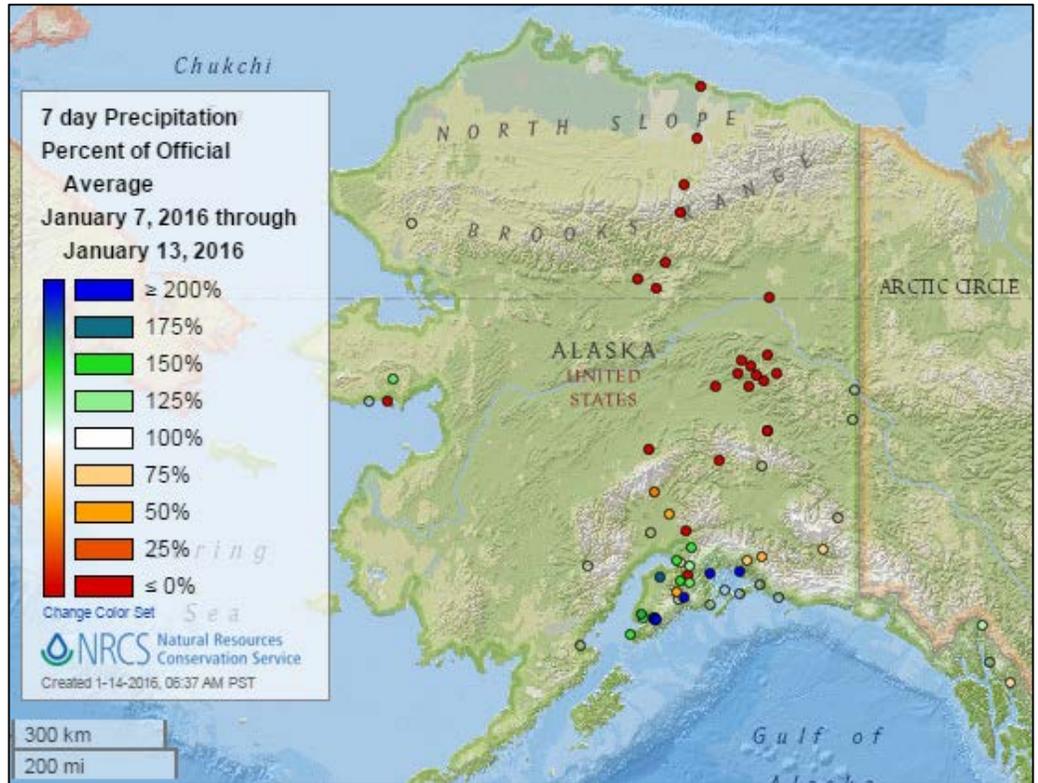
The 7-day [precipitation percent of average](#) map shows that much of the West had many stations with less than average precipitation this week.

A few stations in southern Nevada, southern Utah, southern Colorado, Arizona, and New Mexico reported above average to over 200 percent of average precipitation.



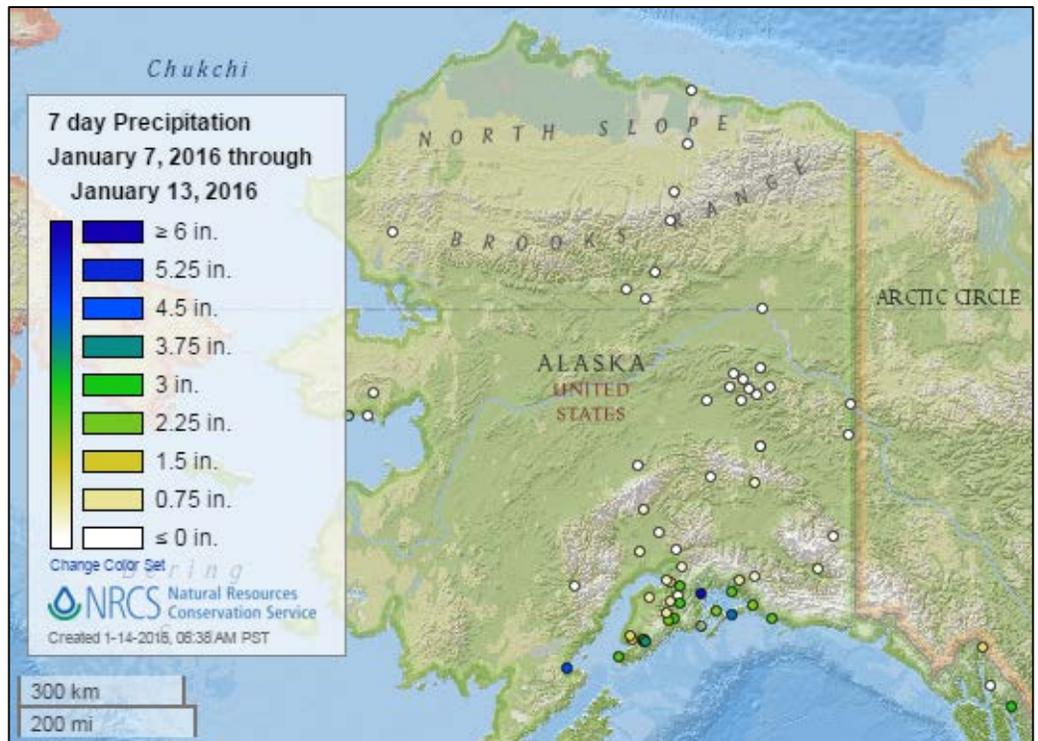
The [total precipitation](#) map shows that much of the West received less than 0.75 inches for the week. There were a few stations in Washington, Oregon, northern Idaho, and Arizona that received over 2.25 inches.

The Alaska [precipitation percent of average](#) map for the last seven days shows much of the Interior was well below average for the week. The south coast and a few other stations had above to well above average precipitation.



The Alaska seven day [total precipitation](#) map shows that little to no precipitation fell in much of the state this week.

In contrast, southern Alaska had a few stations with over 6 inches of precipitation along the coast.



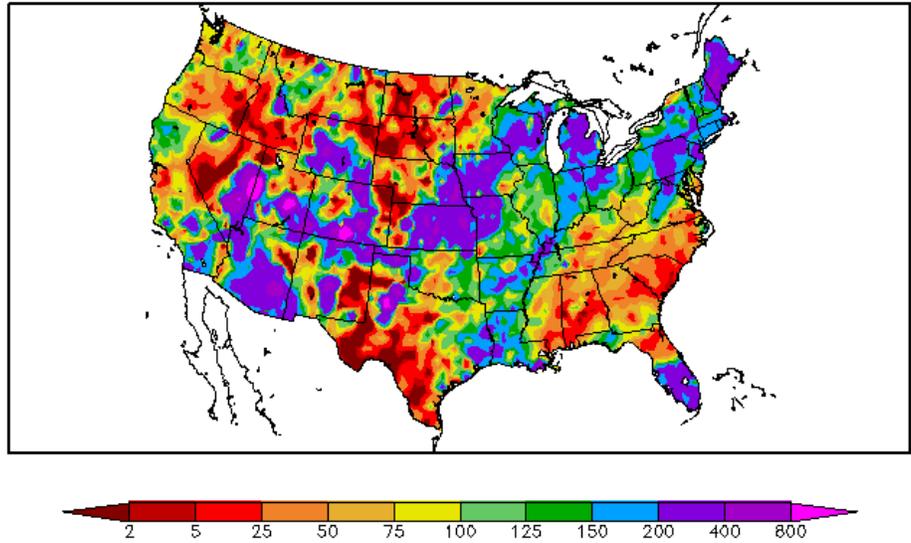
Last 7 Days, National Weather Service (NWS) Networks

Source: Regional Climate Centers

Percent of Normal Precipitation (%)
1/7/2016 – 1/13/2016

The [percent of normal precipitation](#) map shows well above normal precipitation in several widely scattered areas. This includes the highest percent of averages reported in eastern Nevada, Utah, southern Colorado, and Texas, in excess of 800% of normal.

Very dry conditions were reported in other areas of the West, northern Plains, southwest Texas, and the Southeast this past week.



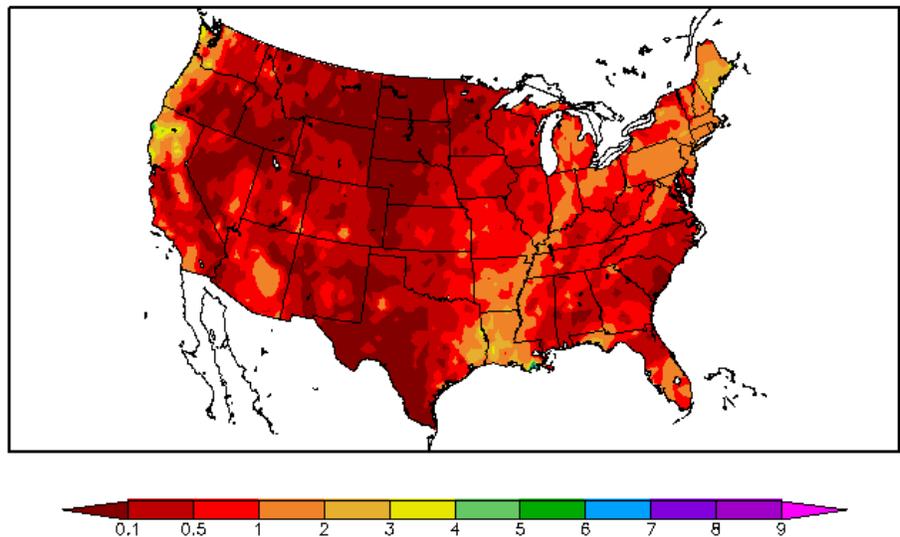
Generated 1/14/2016 at HPRCC using provisional data.

Regional Climate Centers

Precipitation (in)
1/7/2016 – 1/13/2016

The [7-day total precipitation](#) map shows the highest amounts of precipitation, over 2 inches, fell in northern California, coastal Oregon, Washington, Maine, eastern Texas, and Louisiana.

Much of the remainder of the country had less than 1 inch of precipitation or was dry for the week.



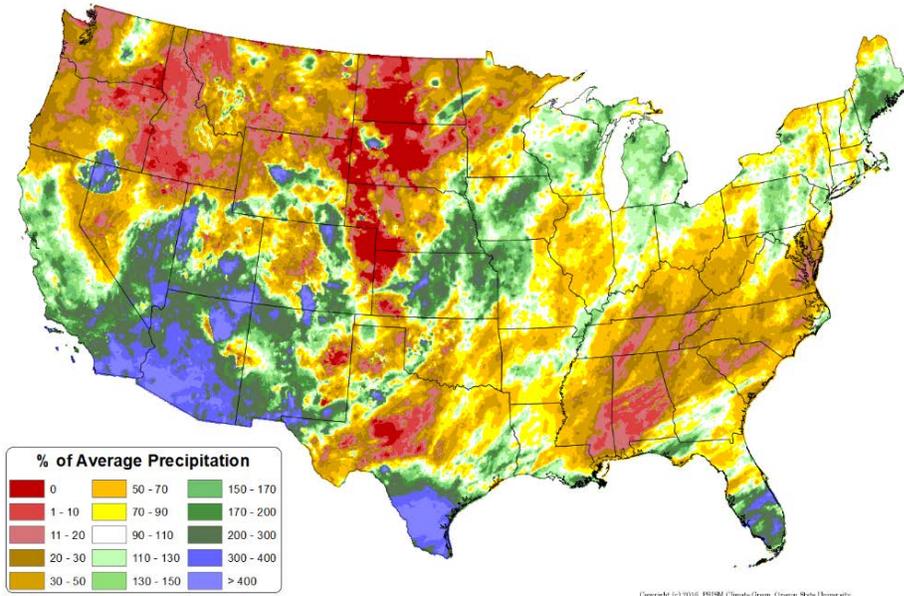
Generated 1/14/2016 at HPRCC using provisional data.

Regional Climate Centers

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

Source: PRISM

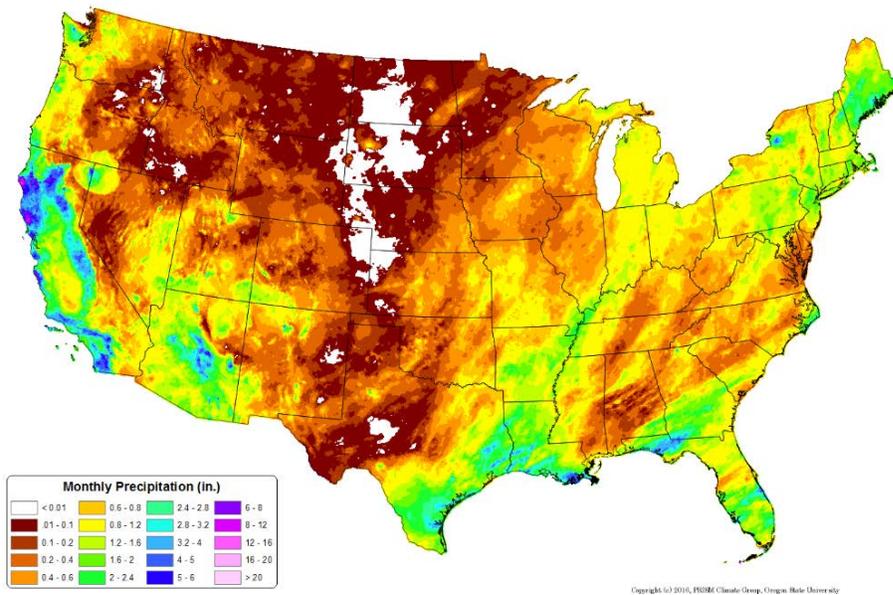
Total Precipitation Anomaly: 01 January 2016 - 12 January 2016
 Period ending 7 AM EST 12 Jan 2016
 Base period: 1981-2010
 (Map created 13 Jan 2016)



For January to date, the national [precipitation percent of average](#) map shows the largest area of well above average precipitation occurred in the Southwest, southern Florida, and southern Texas.

Drier than average regions include several areas in the Pacific Northwest, the northern and central Plains, central Texas and the Southeast.

Total Precipitation: 01 January 2016 - 12 January 2016
 Period ending 7 AM EST 12 Jan 2016
 (Map created 13 Jan 2016)



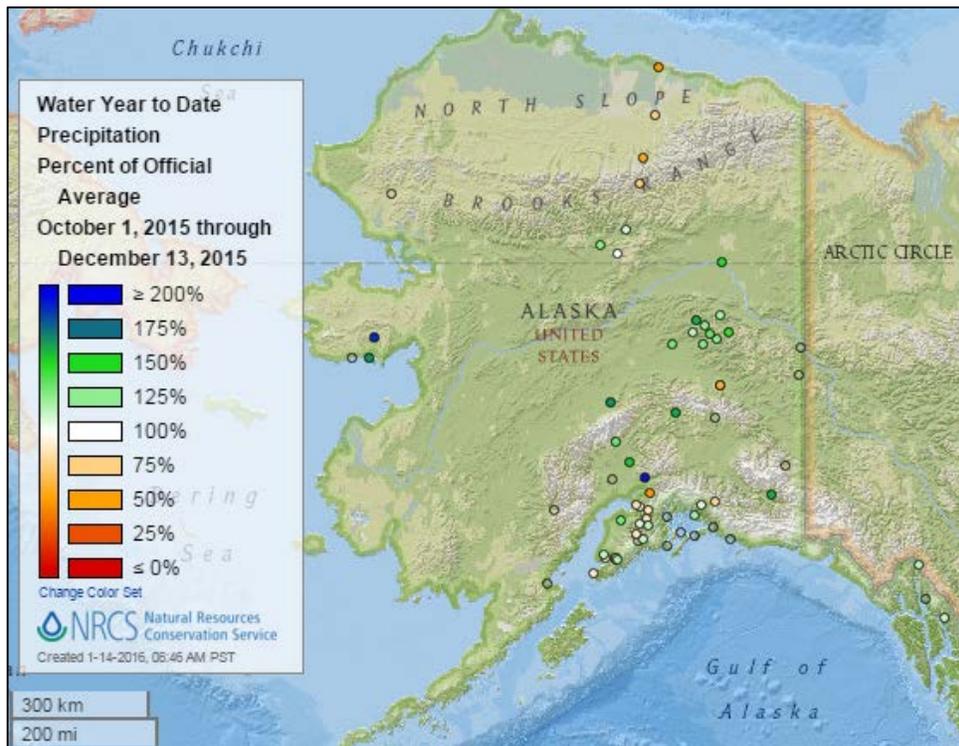
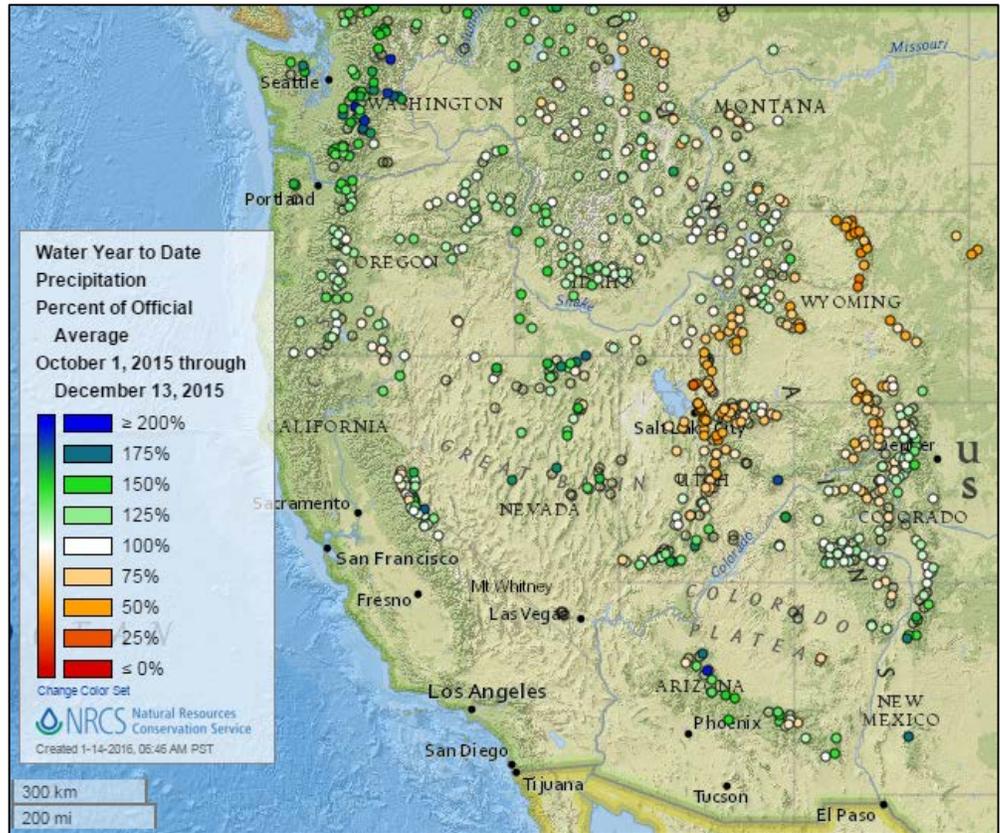
The January month-to-date [total precipitation](#) map highlights the precipitation around the edge of the country. Precipitation fell in coastal California, Arizona, southern Texas, and across the Gulf Coast, and in New England and New York.

Noticeably dry areas cover a majority of the Plains and areas in the Northwest.

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

The [2016 water year to date precipitation percent of average](#) map shows that much of the West reported average to above average precipitation. Washington is above to well above average for the period.

Below average areas included much of Wyoming, northern Utah, and northern Colorado.



The Alaska [water year to date precipitation percent of average](#) map shows a mix of above, near, and below average sites throughout the state, although it is generally drier in the north and wetter in the central, western and southern part of the state.

Temperature

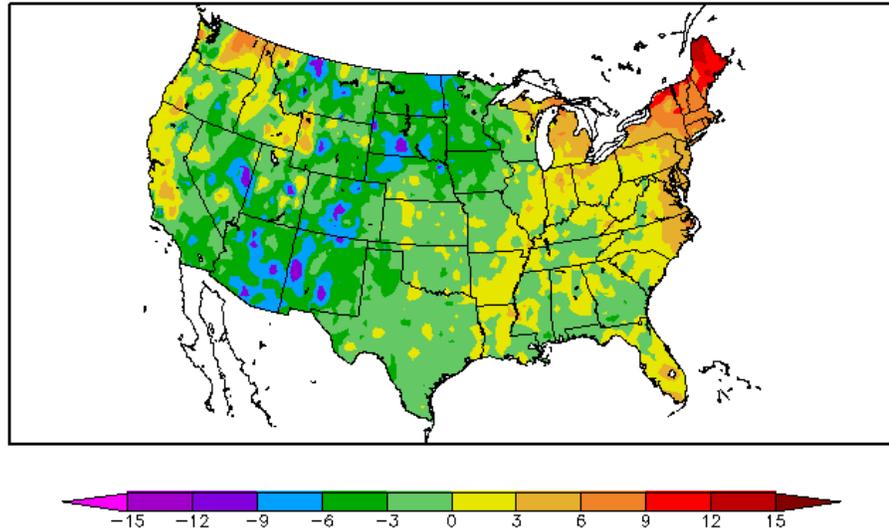
Last 7 Days, National Weather Service (NWS) Networks

Source: Regional Climate Centers

The map of the [average temperature anomalies](#) for the past week shows the East and north central U.S. was warmer than normal for the week, with northern Maine the warmest anomaly.

The central U.S. and the West reported temperatures near or below normal. The coolest areas of the country were in scattered areas in the Rocky Mountains, the Southwest, and the northern Plains.

Departure from Normal Temperature (F)
1/7/2016 – 1/13/2016



Generated 1/14/2016 at HPRCC using provisional data.

Regional Climate Centers

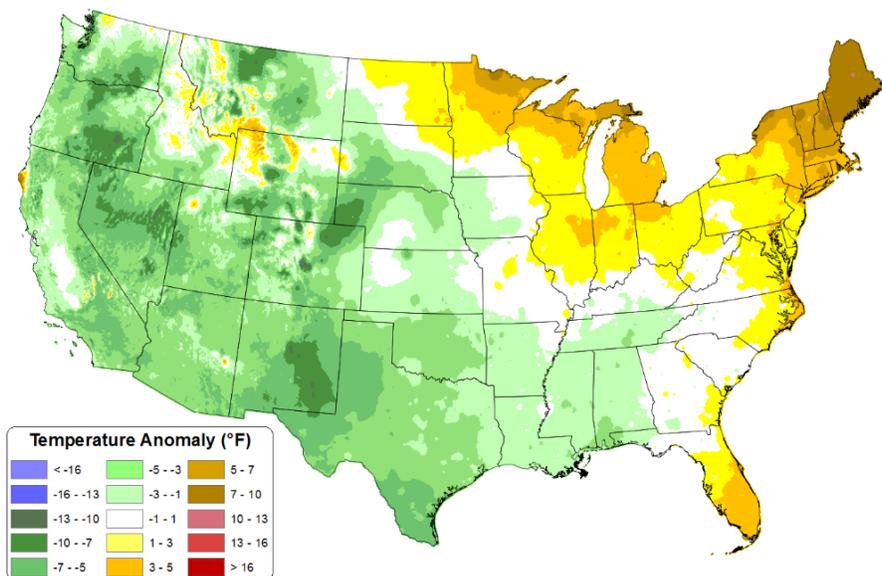
Month-to-Date, All Available Data Including SNOTEL and NWS Networks

Source: PRISM

For January 2016 to date, the national [daily mean temperature anomaly](#) map shows well above normal temperatures in the north central U.S and along the east coast. The warmest anomaly was in northern Minnesota, the Upper Peninsula of Michigan, northern New York, and New England.

The majority of the country was below normal, with the coldest areas in widely scattered areas of the West and Plains.

Daily Mean Temperature Anomaly: 01 January 2016 - 12 January 2016
Period ending 7 AM EST 12 Jan 2016
Base period: 1961-2010
(Map created 13 Jan 2016)

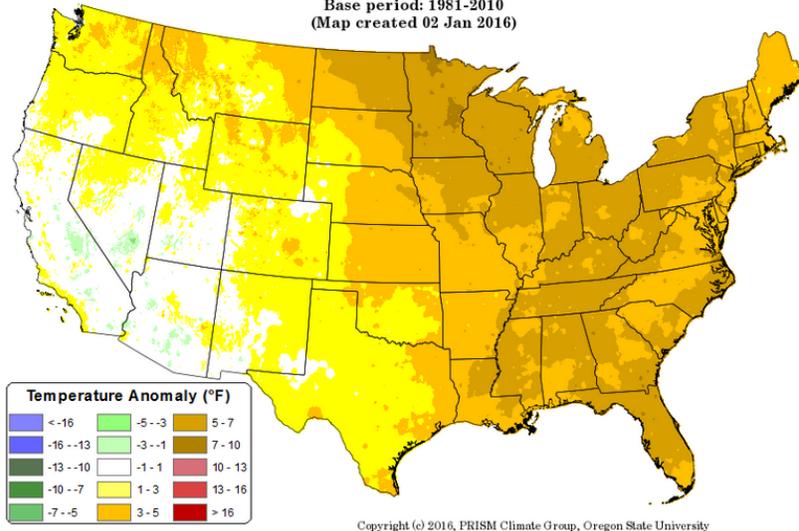


Copyright © 2016, PRISM Climate Group, Oregon State University

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

Source: PRISM

Daily Mean Temperature Anomaly: October 2015 - December 2015
 Period ending 7 AM EST 31 Dec 2015
 Base period: 1981-2010
 (Map created 02 Jan 2016)



The October through December national **daily mean temperature anomaly** map shows most of the country reporting conditions above average. The largest warm anomaly for the past three months was in the upper Midwest, centered in Minnesota.

The southwestern part of the country and most of the West was near normal for this time.

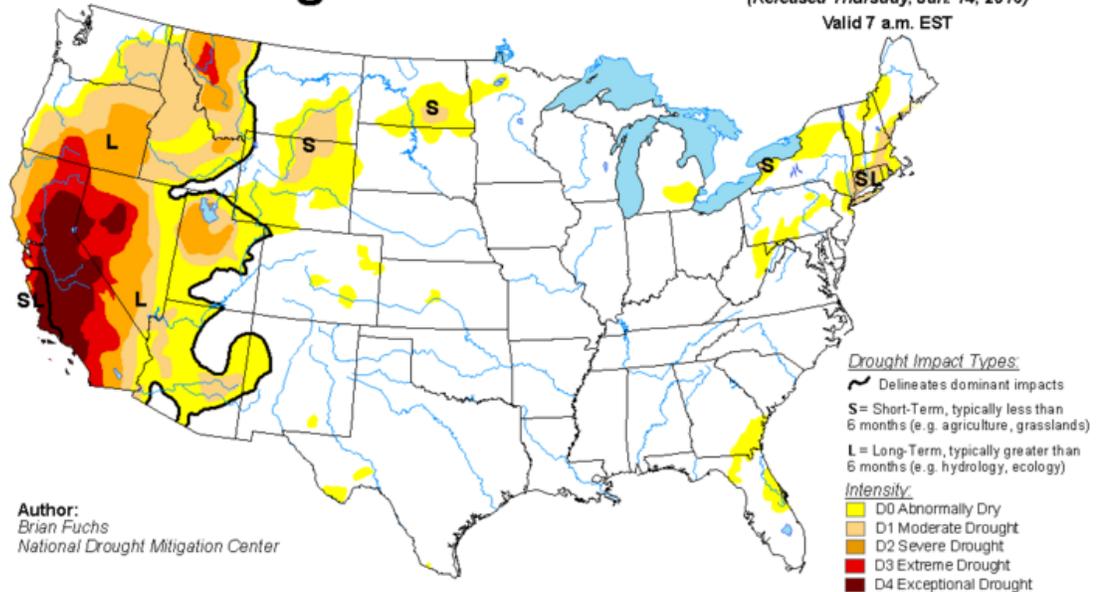
Drought

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

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

U.S. Drought Monitor

January 12, 2016
 (Released Thursday, Jan. 14, 2016)
 Valid 7 a.m. EST



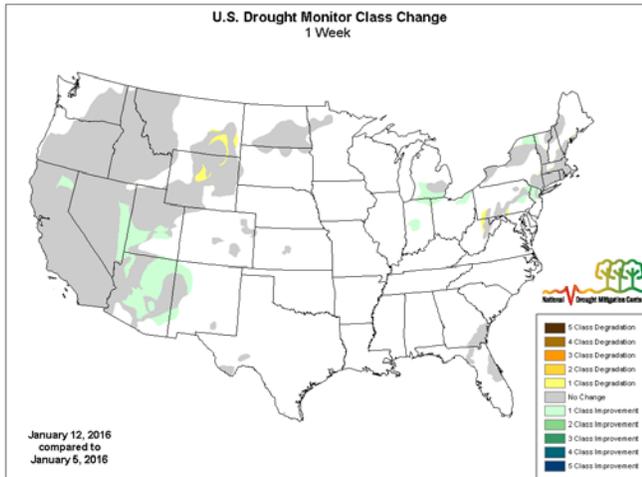
Author:
 Brian Fuchs
 National Drought Mitigation Center

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

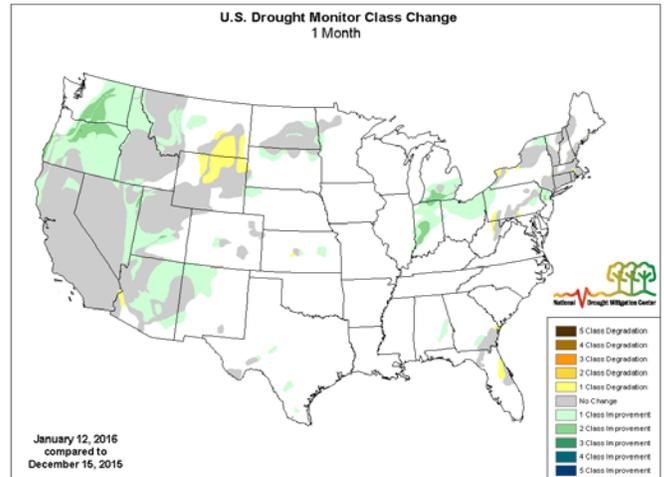


<http://droughtmonitor.unl.edu/>

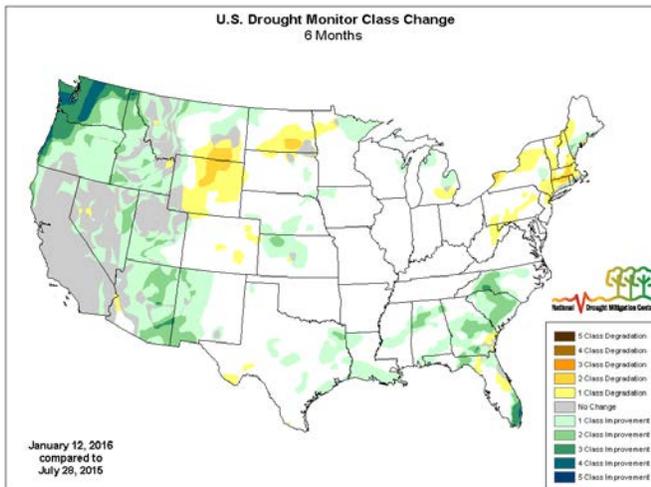
Changes in Drought Monitor Categories over Time



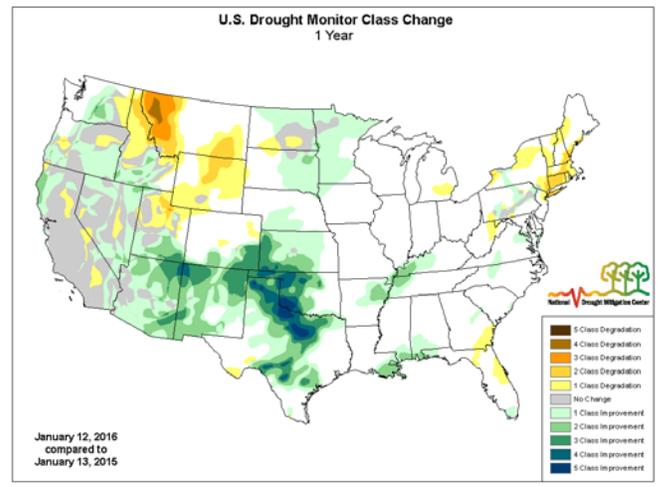
<http://droughtmonitor.unl.edu>



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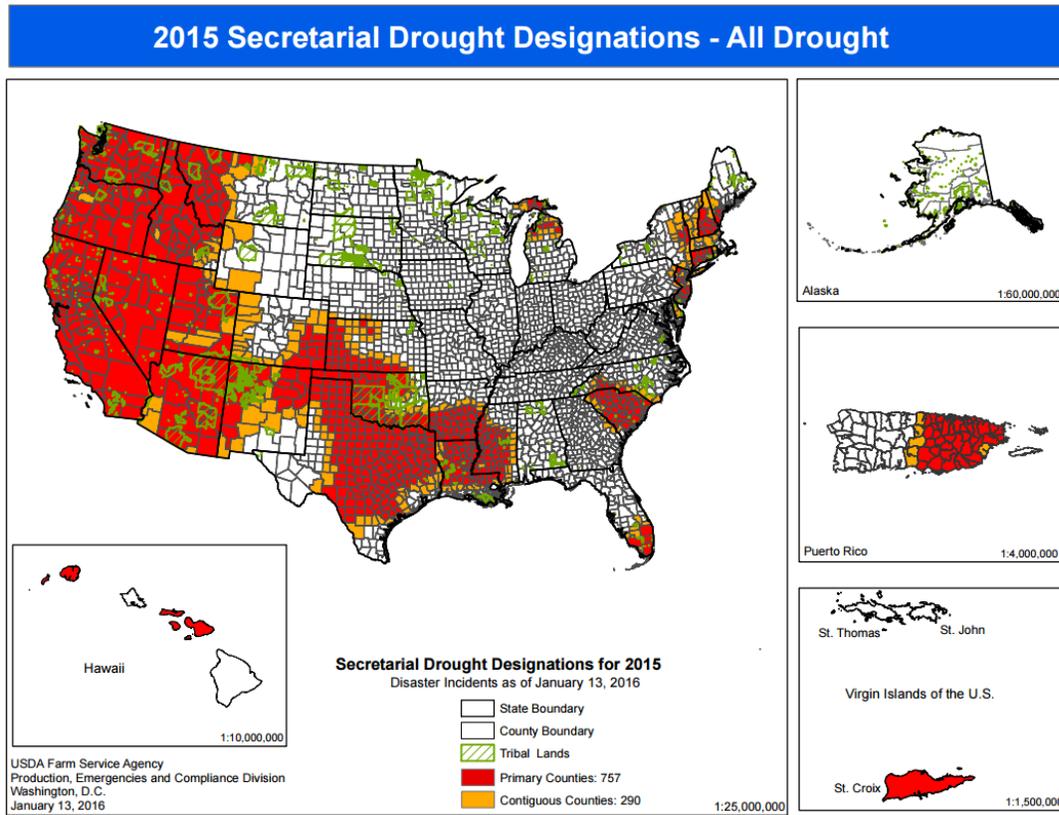
Drought conditions have improved in much of the country, especially in the south central U.S. and the Pacific Northwest. The remainder of the West has shown improvement, but long-term drought persists.

Current National [Drought Summary](#), January 12, 2016

Author: Brian Fuchs, National Drought Mitigation Center

“Much of the Midwest continued to be 6-9 degrees warmer than normal in the past week. New England was warm, too, with Maine and northern New York as much as 9-12 degrees warmer than usual. Areas in northern Washington, Idaho, western Wyoming and much of California were 3-6 degrees warmer than usual, as were the coastal areas of the Mid-Atlantic and much of Florida. For areas west of the Missouri River, temperatures were generally cooler than normal, by as much as 9-12 degrees in parts of Arizona, New Mexico, Montana and South Dakota. On the wet end of the spectrum, much of southern California, southern Nevada, Arizona, southern Utah, southern Colorado, Kansas, northwest Missouri, southeast Nebraska, western Iowa, southern Florida, eastern Pennsylvania, and Maine recorded more than 200 percent of normal precipitation, with multiple storm events in the West. But the Pacific Northwest, northern Great Plains, south Texas, and the Southeast all had below-normal precipitation for the week.”

2015 USDA Drought Designations



[Drought Designations as of January 13, 2016](#)

[USDA Disaster and Drought Information](#)

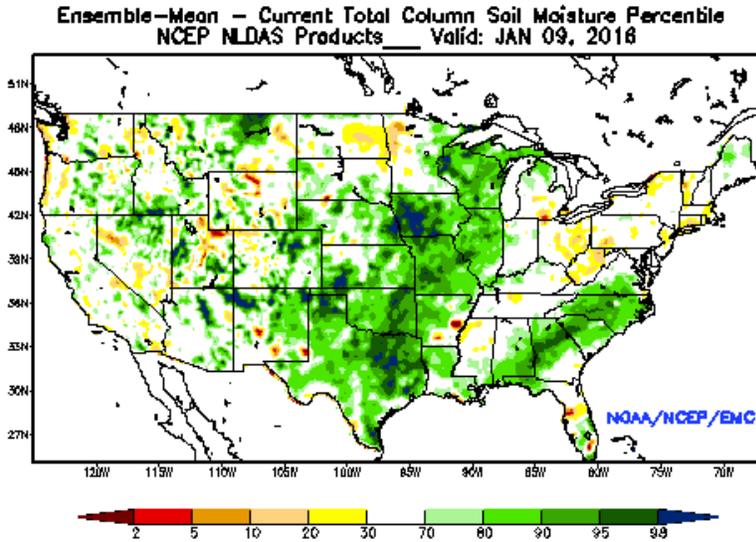
[U.S. Population in Drought, Weekly Comparison](#)

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



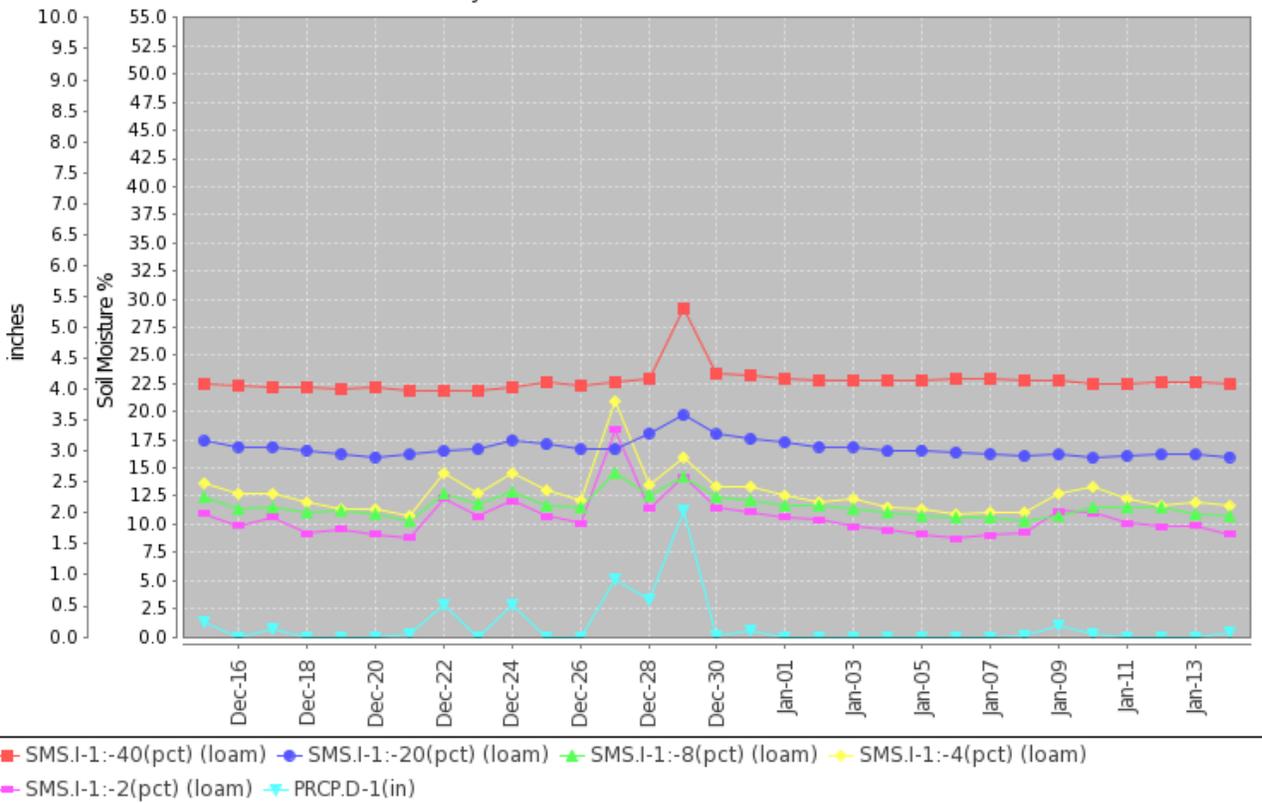
The modeled [soil moisture percentiles](#) as of January 9, 2016 show a few scattered areas of dryness in the West, the Midwest, Florida, and the Northeast.

Above average soil moisture was modeled in much of the central U.S., scattered areas across the West, and a large area in the Southeast.

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

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

Station (2004) MONTH=2015-12-15 (Daily) NRCS National Water and Climate Center - Provisional Data - subject to revision
Thu Jan 14 07:09:28 GMT-08:00 2016



This graph shows soil moisture (at 2-, 4-, 8-, 20-, and 40-inch depths) and precipitation for the last 30 days at the [Mason #1 SCAN site #2004](#) in Illinois. Soil moisture responded at all depths from the precipitation in late December, and recent events show soil moisture increases at the 2-, 4-, and 8-inch depths.

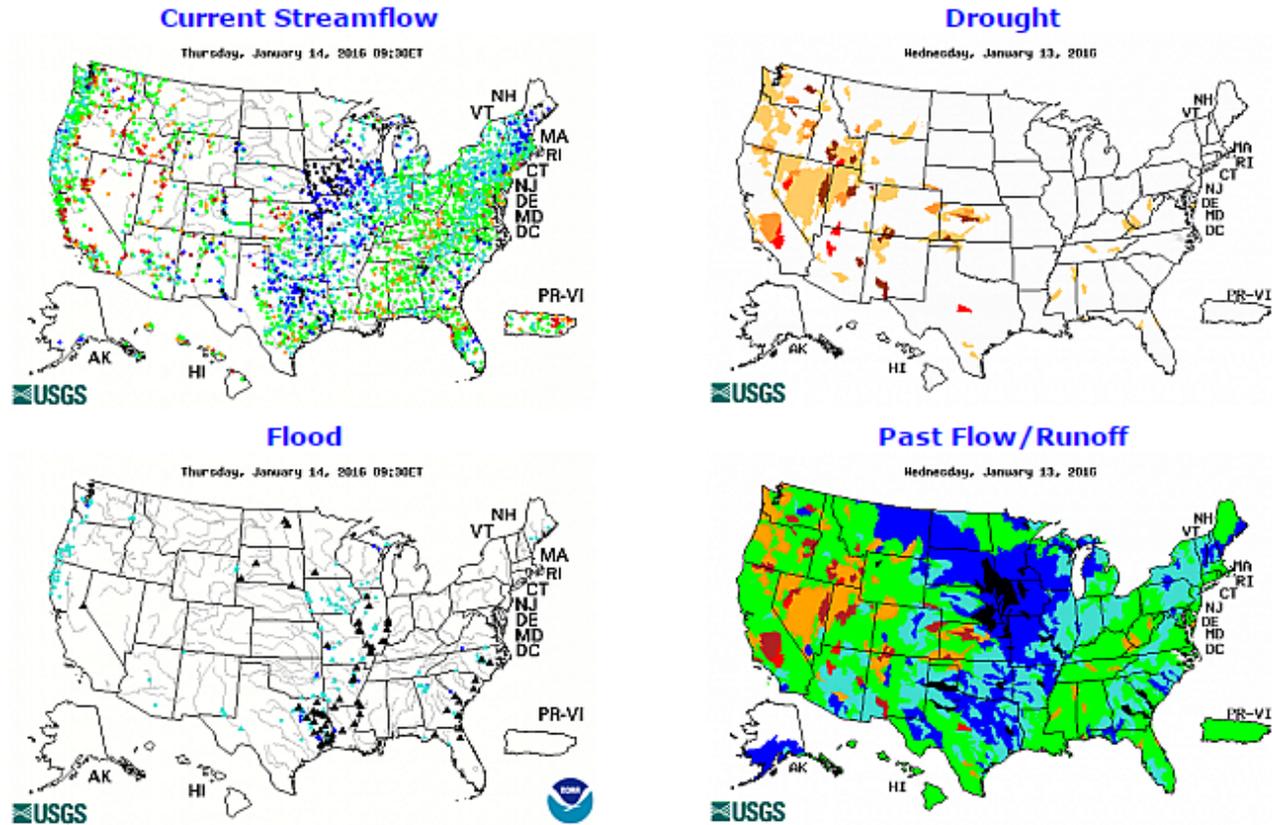
Soil Moisture Data Portals

[CRN Soil Moisture](#)

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

Streamflow

Source: USGS



Streamflow is notably high in the Midwest, the lower Mississippi River Valley, and the Southeast. A large number of rivers in the central U.S., eastern Texas, along the Mississippi River, and in the Southeast are above flood stage.

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:

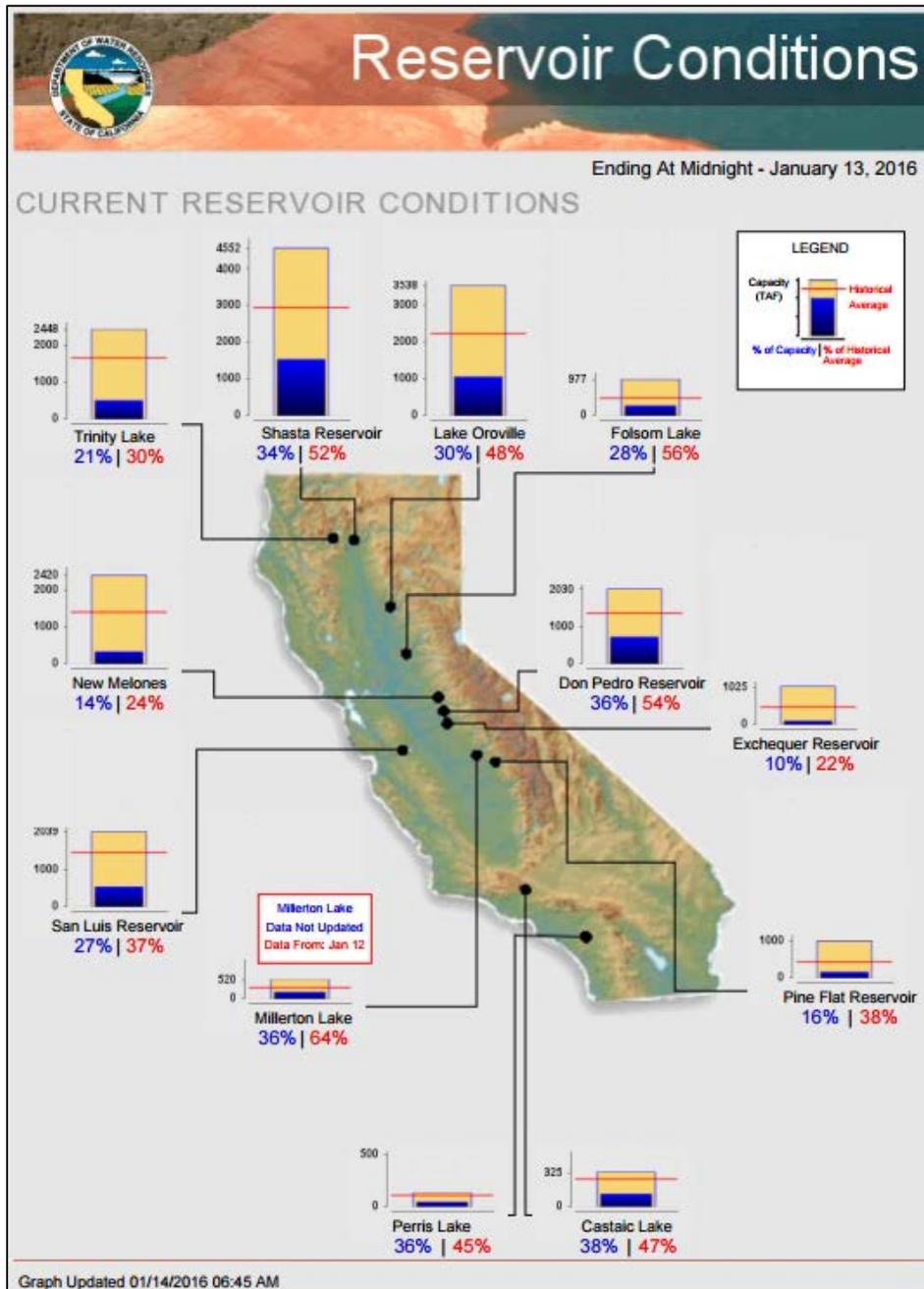
[Upper Colorado](#)

[Pacific Northwest/Snake/Columbia](#)

[Sevier River Water, Utah](#)

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

California Reservoir Conditions



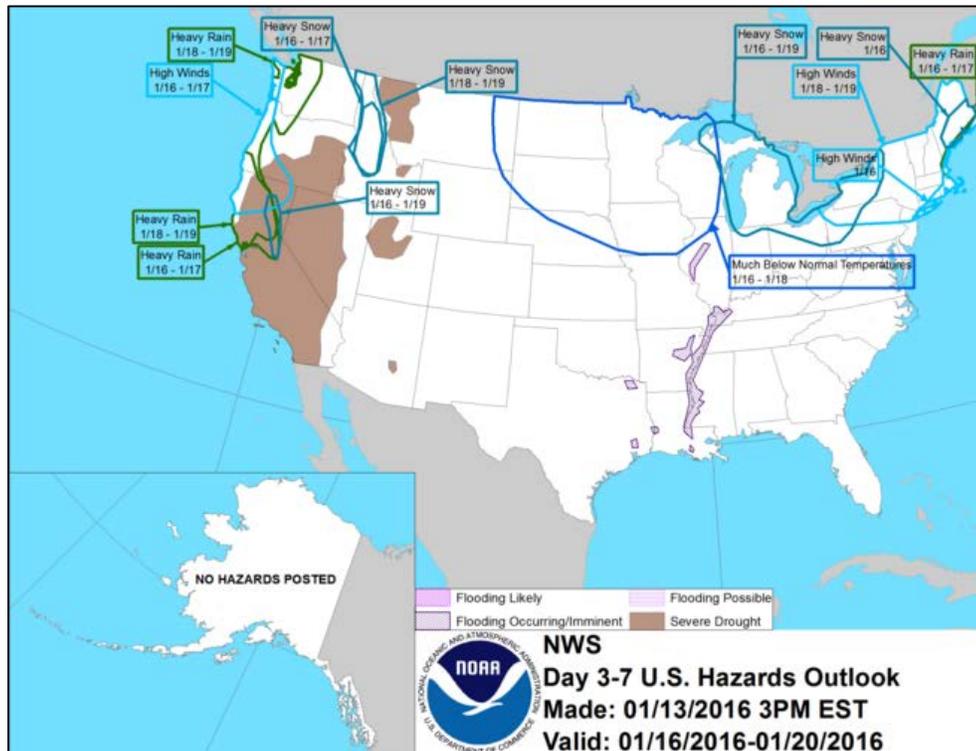
Short- and Long-Range Outlooks

Agricultural Weather Highlights

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

National Outlook, January 14, 2016: “Storms will continue to arrive along the Pacific Coast at regular intervals, with the next three systems due to move ashore on January 14, 16, and 17, respectively. As a result, 5-day precipitation totals could reach 4 to 8 inches or more in parts of northern California and 2 to 5 inches in the Pacific Northwest. Totals of 1 to 3 inches can be expected across portions of the northern Rockies and northern Intermountain West. Meanwhile, wet weather will return to the lower Southeast, where some locations could receive 1- to 3-inch rainfall totals during the next 5 days. Only light precipitation can be expected elsewhere, except for locally heavy snow squalls downwind of the Great Lakes. Following a brief spell of mild weather, very cold weather will return to most areas east of the Rockies during the weekend. By early next week, sub-zero temperatures may occur as far south as the middle Mississippi Valley. The NWS 6- to 10-day outlook for January 19 – 23 calls for the likelihood of below-normal temperatures in the Atlantic Coast States, while warmer-than-normal weather can be expected from the Pacific Coast to the High Plains. Meanwhile, near- to above-normal precipitation nearly nationwide will contrast with drier-than-normal conditions in the Rio Grande Valley and from the Great Lakes region into northern New England. Northern and central California and the Great Basin will experienced the greatest likelihood of wet weather.”

National Weather Hazards



The outlook for [weather hazards](#) over the next week shows heavy rain is expected in coastal Maine, and from the northern California coast to northwest Washington. Heavy snow is expected in the northern Rockies, central Sierra, Great Lakes, and in central Maine. High winds are expected in some of the same areas of snow and rain forecast for the west coast and the Northeast. Much below normal temperatures are expected in the upper Midwest. High winds are expected in much of the upper Midwest. Heavy snow is forecast from the Great Lakes east through northern New England. Much below normal temperatures are expected across most of the Plains.

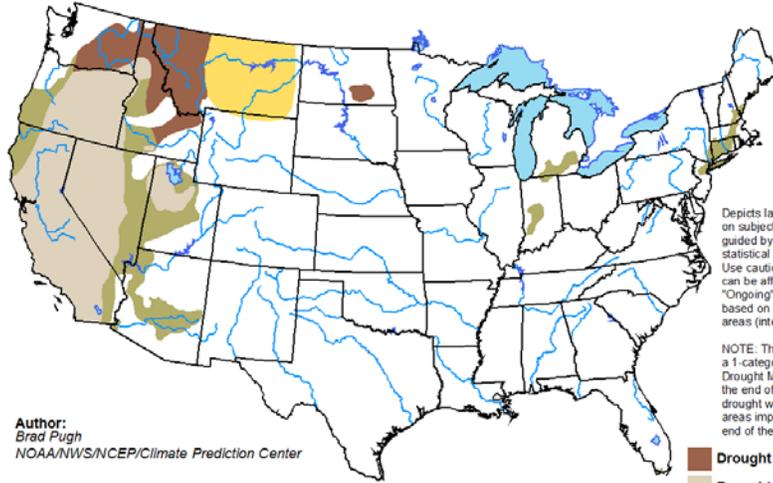
Severe drought covers a large area of the West. Continued widespread flooding is forecast in most of the middle and lower Mississippi River Basin, and eastern Texas.

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
Drought Tendency During the Valid Period

Valid for December 17 - March 31, 2016
Released December 17, 2015



Author:
Brad Pugh
NOAA/NWS/NCEP/Climate Prediction Center

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).

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



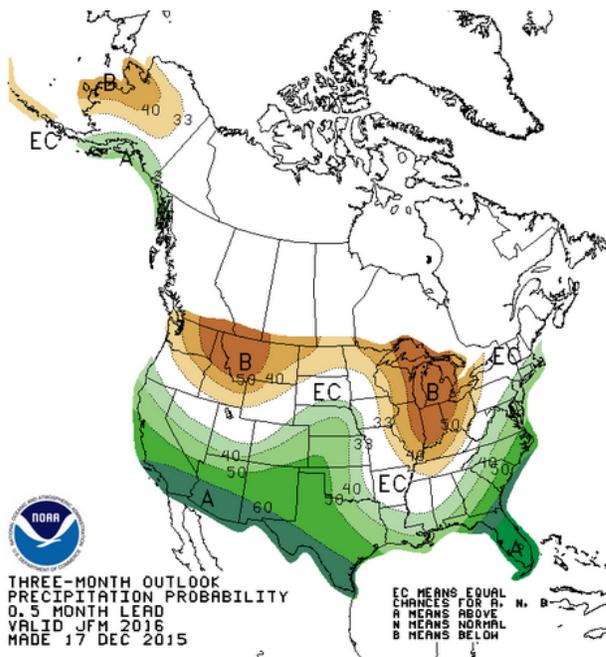
<http://go.usa.gov/3eZ73>



NWS Climate Prediction Center 3-Month Outlook

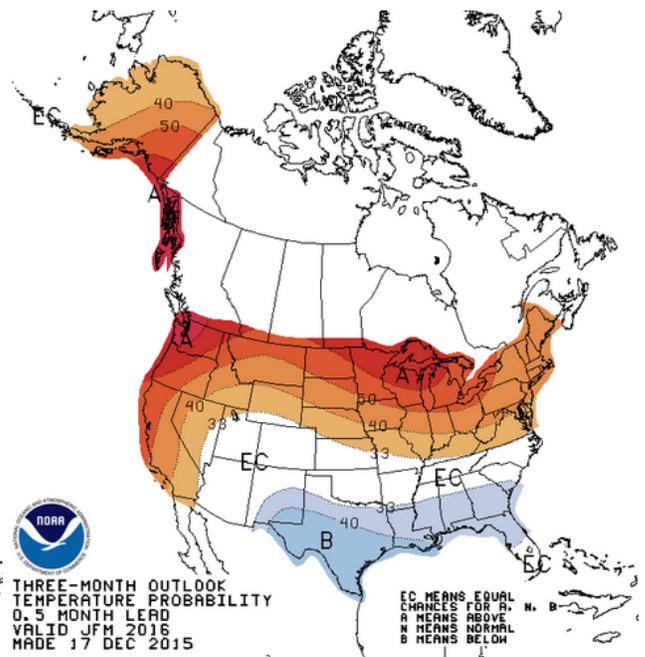
Precipitation

Temperature



THREE-MONTH OUTLOOK
PRECIPITATION PROBABILITY
0.5 MONTH LEAD
VALID JFM 2016
MADE 17 DEC 2015

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



THREE-MONTH OUTLOOK
TEMPERATURE PROBABILITY
0.5 MONTH LEAD
VALID JFM 2016
MADE 17 DEC 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 January-February-March \(JFM\) 2016 precipitation outlook](#) The JFM 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 Southwest, central/southern Great Plains, gulf coast states, and parts of the east coast. The highest probabilities (above 70 percent) for above-median precipitation are forecast across the Florida peninsula for 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 peaks during the JFM 2016 season during El Niño. This dry signal slowly weakens with time through late spring and early summer.”

[“The January-February-March \(JFM\) 2016 temperature outlook](#) There are very few changes to the early lead temperature outlooks, which largely harvest the low-frequency Enso response, evident among all the current dynamical and statistical guidance. Statistical guidance is generally colder than the dynamical guidance across the southeast, where a very slight shift toward colder temperatures is indicated near the Gulf Coast. Dynamical guidance indicates a slight cooling trend over that region compared to last month. In spite of the near-record warm December underway across much of the eastern two-third of the CONUS, the low-frequency climate signals still point toward a colder solution for the far southeastern CONUS. 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 in early leads. 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](#).