

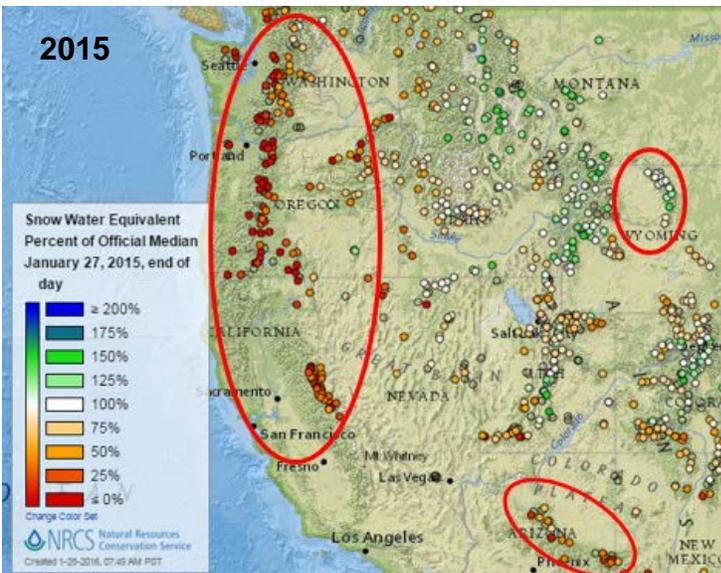
# Water and Climate Update

January 28, 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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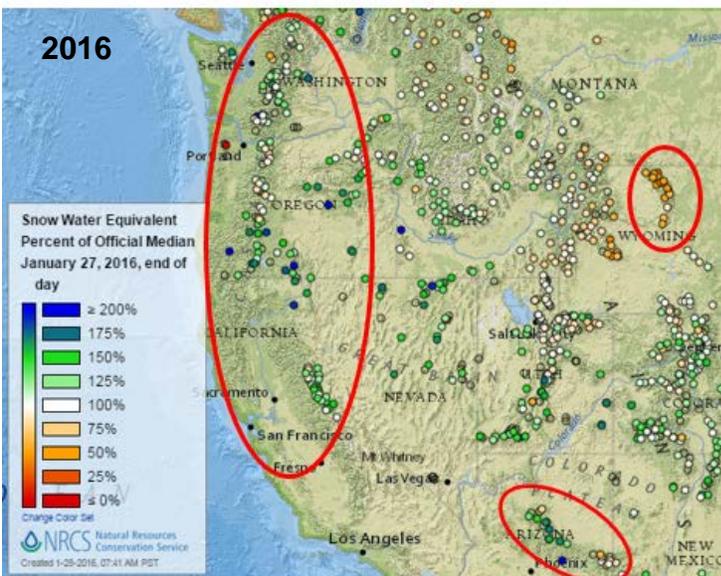
## 2015-2016 snowpack comparison: What a difference a year makes



We are currently about halfway through the snow accumulation season in the West. A comparison of snowpack conditions now versus those of a year ago reveals some significant contrasts. The areas circled in red are particularly notable.

In the Cascades and Sierra, there was virtually little to no snow in 2015, whereas this year, snowpacks are near to above normal.

Similarly, snowpacks were well below normal in the Southwest (including the circled area of Arizona but also parts of Utah and Colorado to the north) in 2015, whereas now they are above normal.



In Wyoming, we see the opposite contrast. Near to above normal snowpacks in 2015 are well below normal this year.

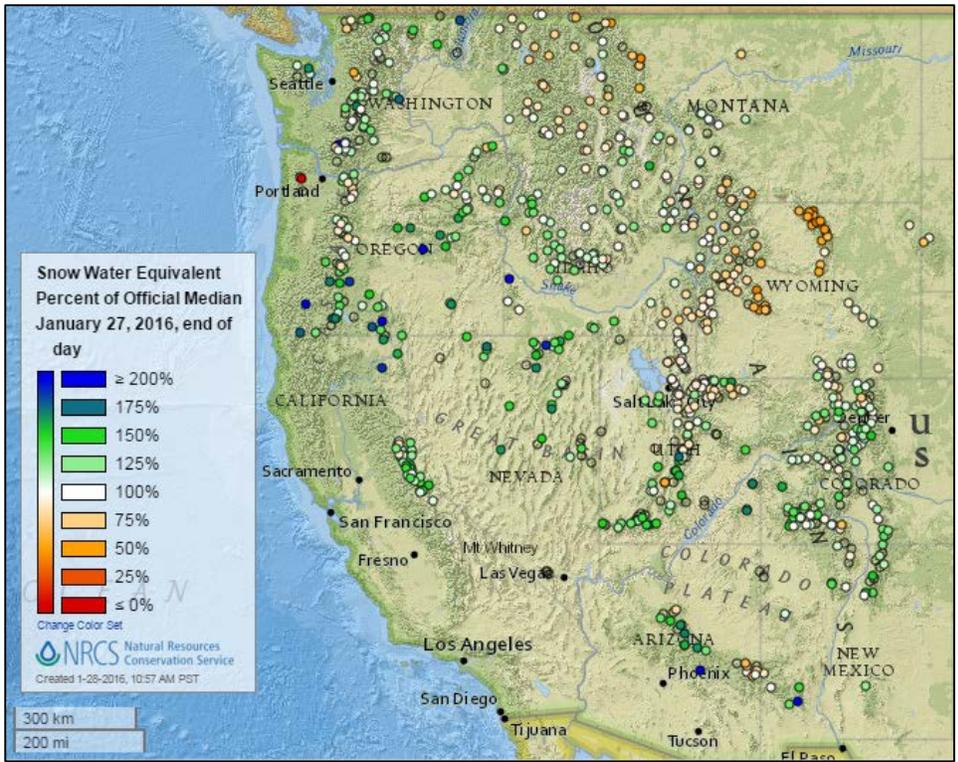
### Related News

[Climate Change and Extreme Snow in the U.S.](#) NOAA

[Snowpack in Drought-Stricken California Hits 5-Year High](#)  
NBC Bay Area

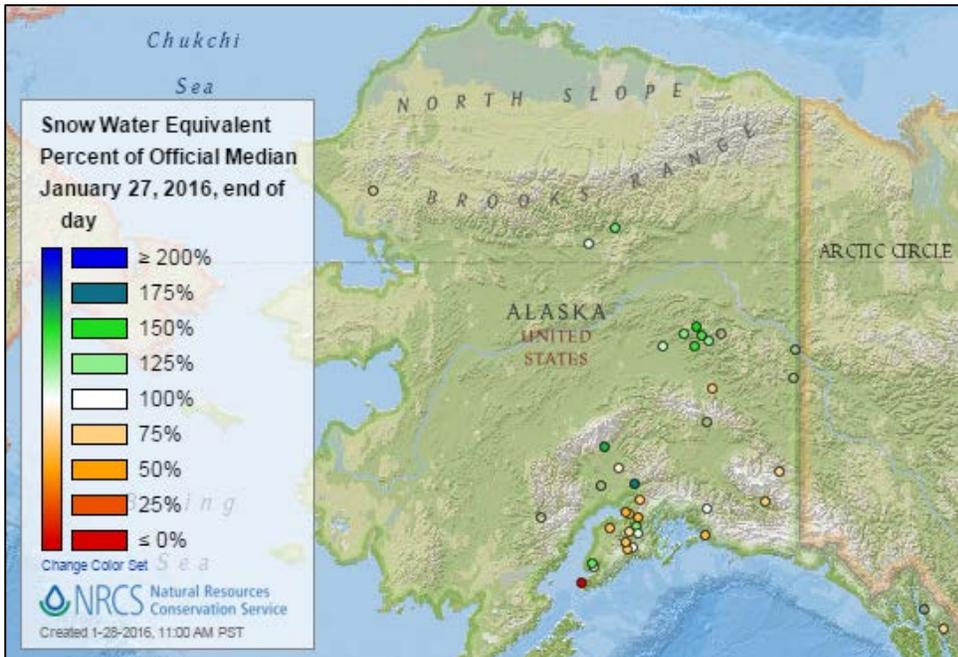
**Snow**

**Current Snow Water Equivalent, NRCS SNOTEL Network**



The current [snow water equivalent percent of median](#) map shows similar spatial patterns as last week, but the percentages have all decreased because the past week's precipitation was low (see map below). Nevertheless, snowpack remains at or above median over most areas of the West, except in Wyoming, northwestern Montana, and northern Idaho, which are below median.

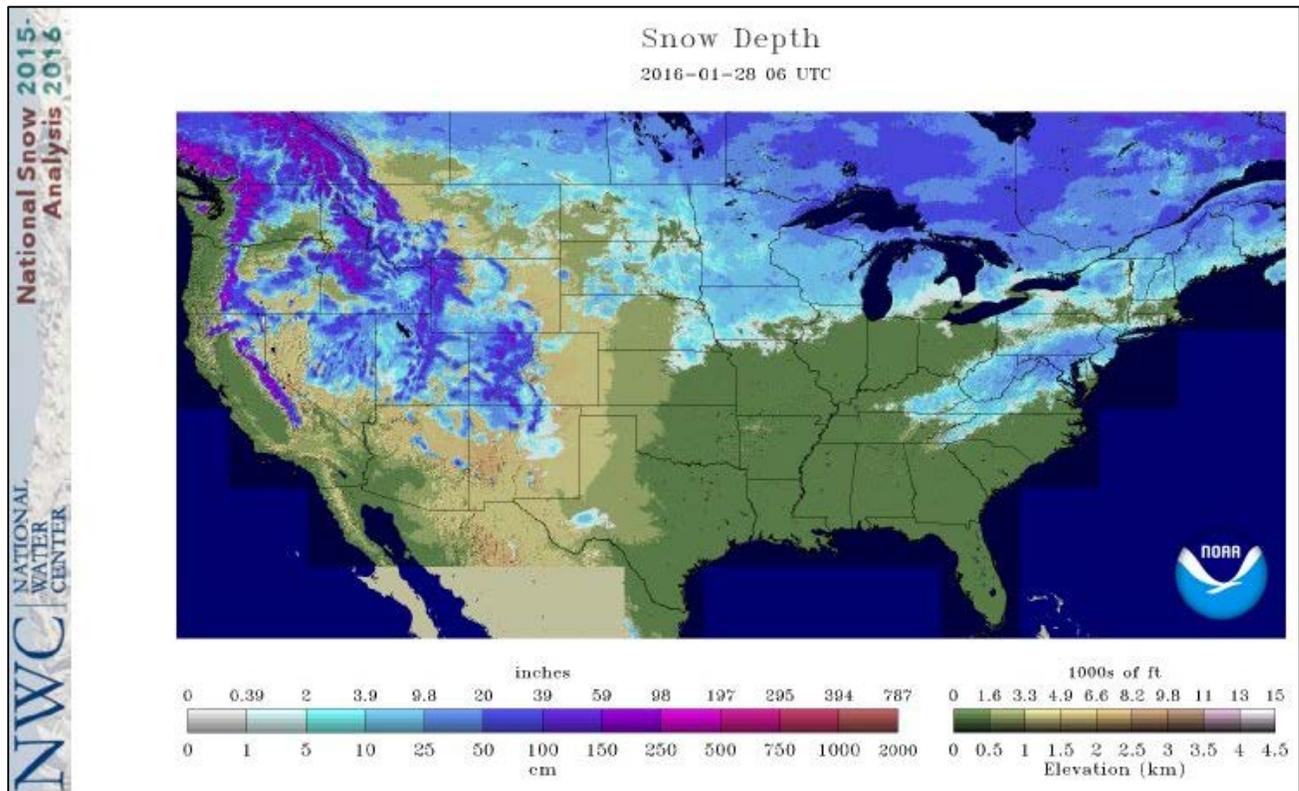
[Current snow water equivalent map](#)



The current [snow water equivalent percent of median](#) map for Alaska shows very similar patterns to last week, with snowpacks near or above median in the Interior and below median in the south.

[Alaska current snow water equivalent map](#)

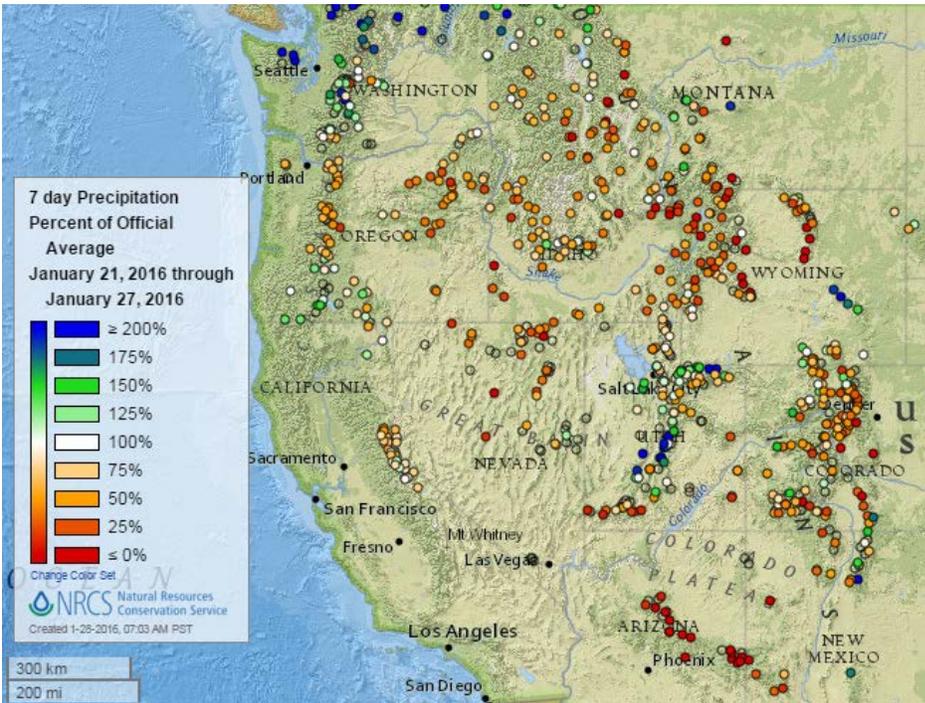
Current Snow Depth, National Weather Service (NWS) Networks



The NOAA National Water Center's current [snow depth](#) map shows a large accumulation of snow in the Mid-Atlantic states and Washington, D.C. There was a significant retreat of snow-covered area since last week throughout the continental U.S., especially in the Great Plains and the Midwest.

## Precipitation

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

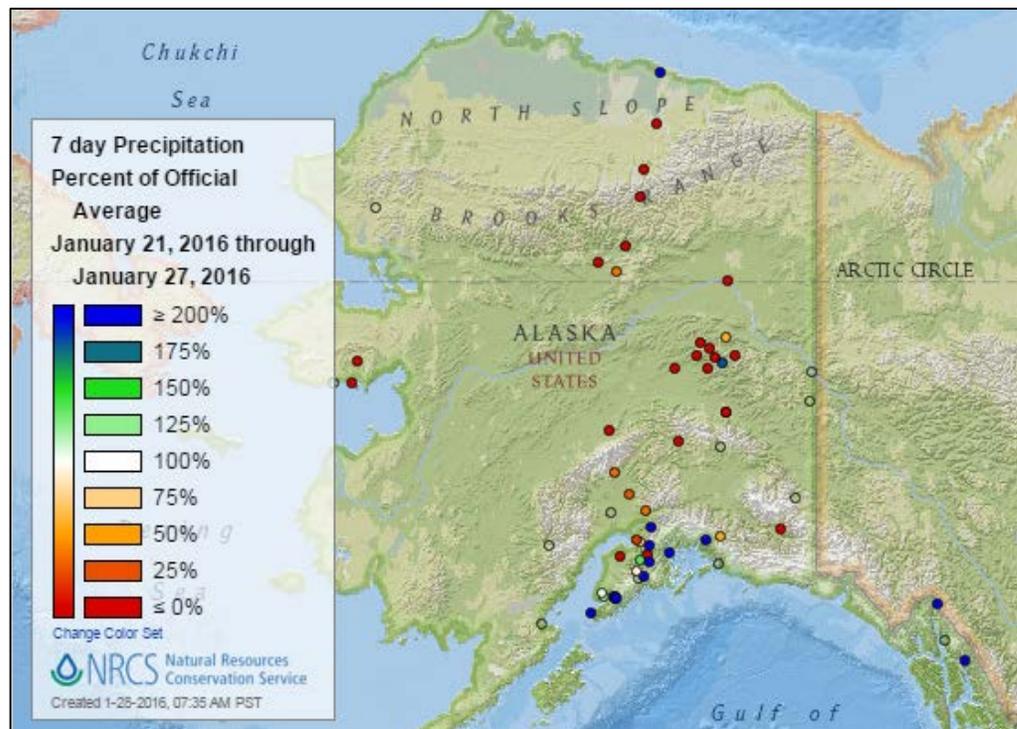


The [7-day precipitation percent of average](#) map shows that last week was predominantly dry over the West. The main exceptions to this pattern were wet conditions in northern Washington and central Utah.

[7-day total precipitation map](#)

The [Alaska 7-day precipitation percent of average](#) map shows a stark contrast between the Interior, with quite dry conditions, and the southern coastal areas, with quite wet conditions.

[Alaska 7-day total precipitation map](#)

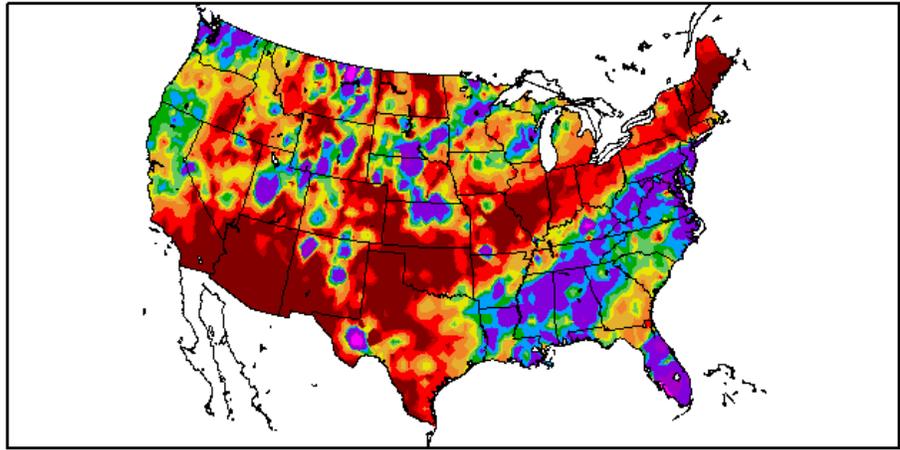


Last 7 Days, National Weather Service (NWS) Networks

Source: Regional Climate Centers

The [7-day percent of normal precipitation](#) map for the continental U.S. shows well above average precipitation in Washington, some spots in the upper Midwest, and a broad band stretching across the Southeast up to the mid-Atlantic area. Notable dry areas include the Southwest and a band ranging from Texas to the Northeast.

Percent of Normal Precipitation (%)  
1/21/2016 – 1/27/2016



Generated 1/28/2016 at HPRCC using provisional data.

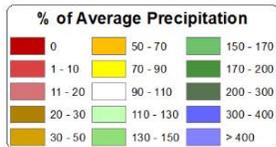
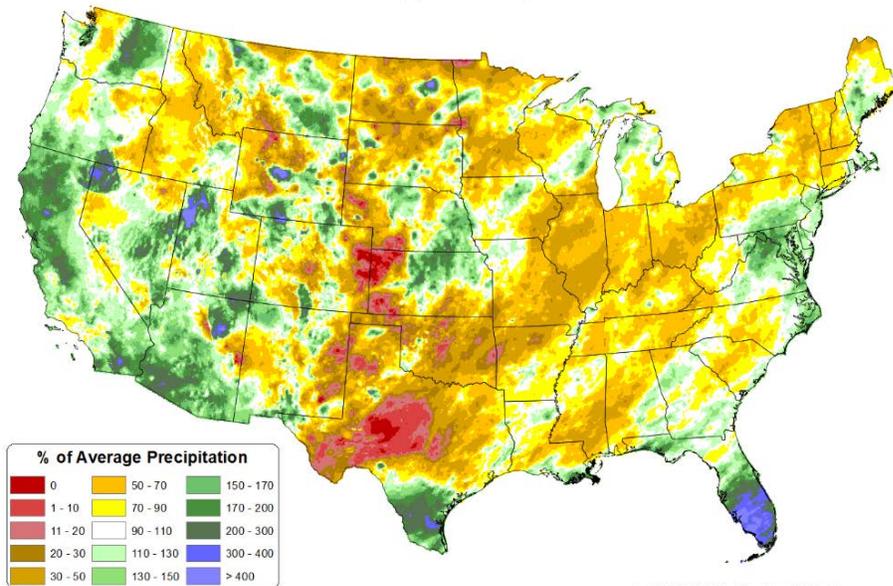
Regional Climate Centers

[7-day total precipitation map](#)

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

Source: PRISM

Total Precipitation Anomaly: 01 January 2016 - 26 January 2016  
Period ending 7 AM EST 26 Jan 2016  
Base period: 1981-2010  
(Map created 27 Jan 2016)



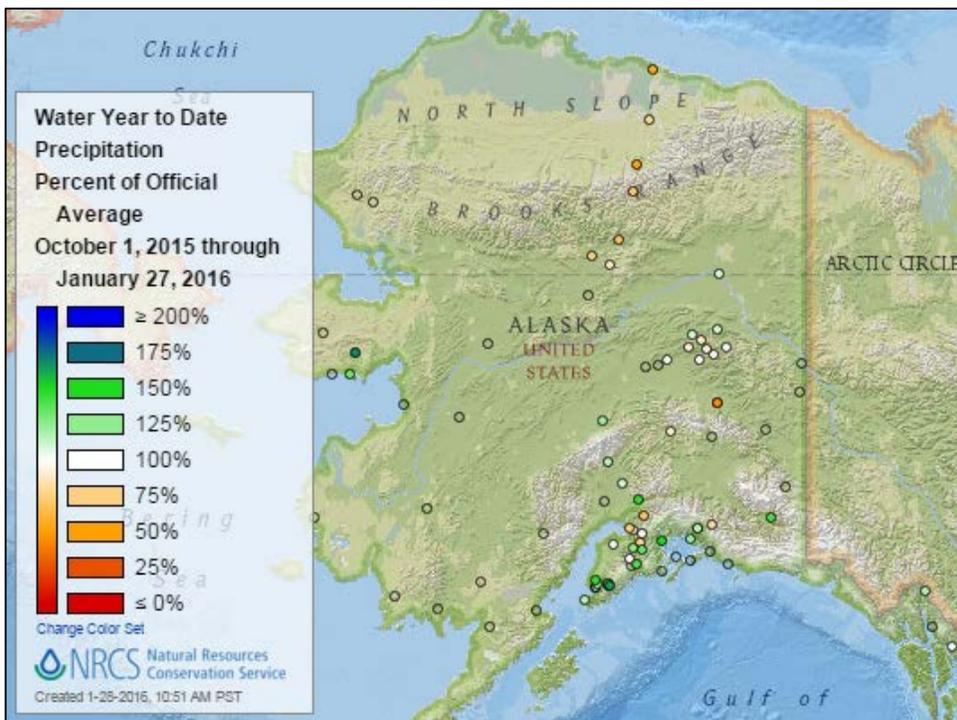
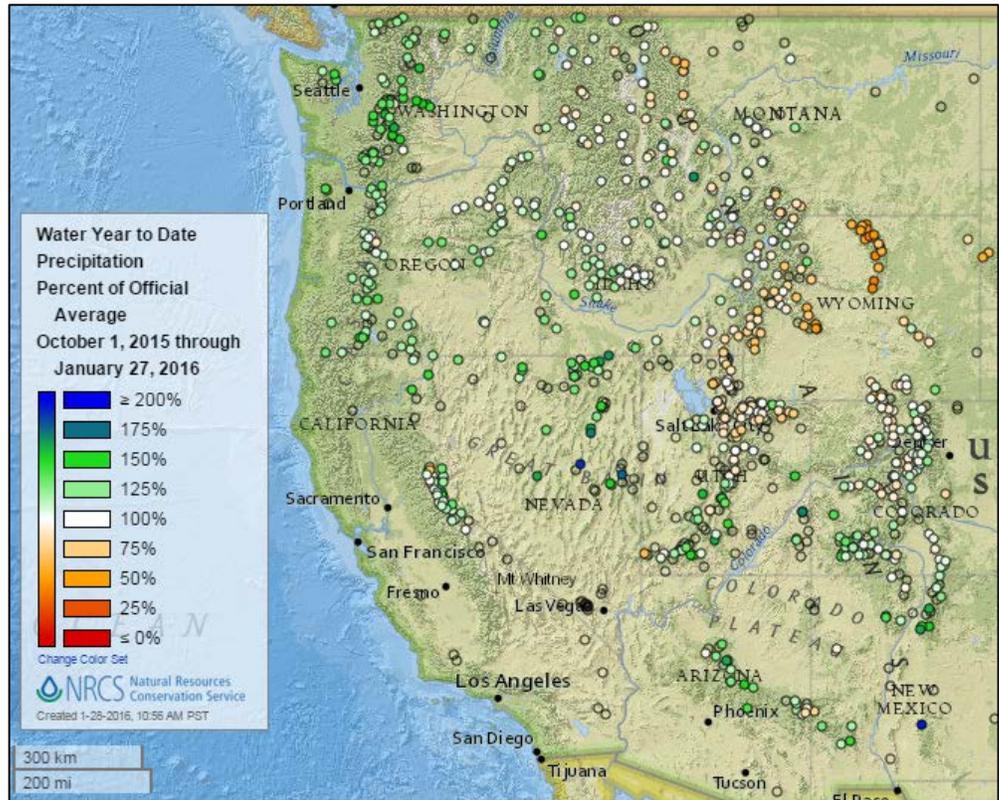
The national [month-to-date precipitation percent of average](#) map shows large areas of below normal precipitation in much of the country. The main exceptions, with above normal precipitation, are a patchy distribution of areas including parts of the East Coast, southern Florida, the southern tip of Texas, Arizona, and northern California.

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

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

The [2016 water year-to-date precipitation percent of average](#) map retains the same general pattern as last week, with most of the West having average or above average precipitation. Wyoming, northern Utah, and a small zone in northwestern Montana remain the only dry areas.

[2016 water year-to-date total precipitation map](#)



The [Alaska 2016 water year-to-date precipitation percent of average](#) map shows generally near or below average in the Interior and north, and above average precipitation in the south.

[Alaska 2016 water year-to-date total precipitation map](#)

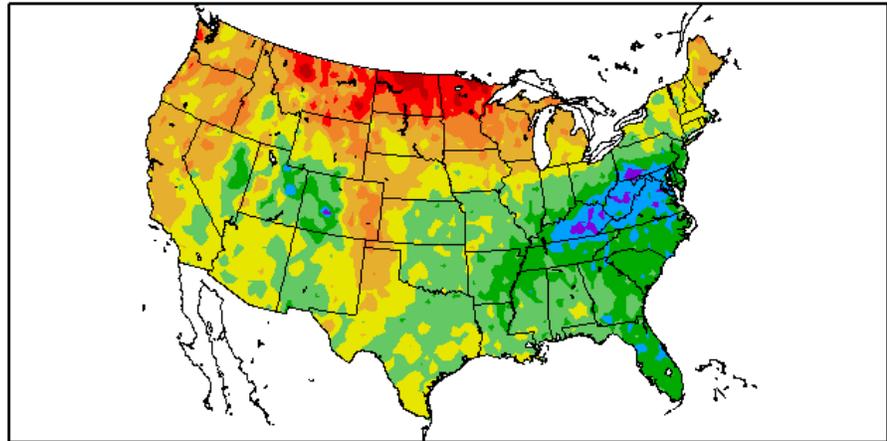
## Temperature

### Last 7 Days, National Weather Service (NWS) Networks

Source: Regional Climate Centers

The [7-day temperature anomalies](#) map shows warmer than normal temperatures along the West Coast and in the northern tier of states. Cooler than normal temperatures were widespread in the southeast quadrant of the country with especially cold temperatures in Kentucky, West Virginia, and Virginia.

Departure from Normal Temperature (F)  
1/21/2016 – 1/27/2016



Generated 1/28/2016 at HPRCC using provisional data.

Regional Climate Centers

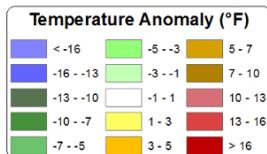
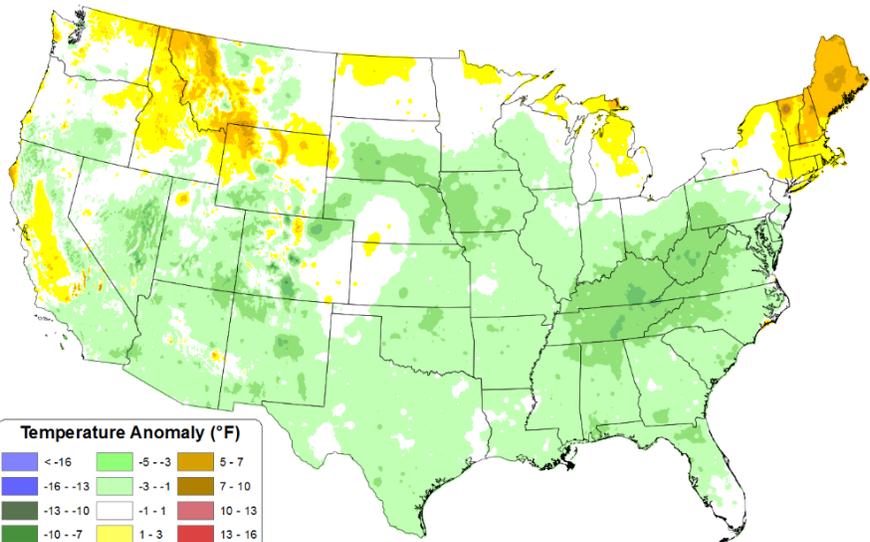
[7-day temperature map](#)

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

Source: PRISM

The [month-to-date daily mean temperature anomaly](#) map for the continental U.S. shows cooler than normal temperatures over much of the country. Warmer than normal temperatures are found in only a few scattered areas, primarily in the northern Rocky Mountains in Montana, Idaho, and Wyoming, and in the Northeast.

Daily Mean Temperature Anomaly: 01 January 2016 - 26 January 2016  
Period ending 7 AM EST 26 Jan 2016  
Base period: 1981-2010  
(Map created 27 Jan 2016)

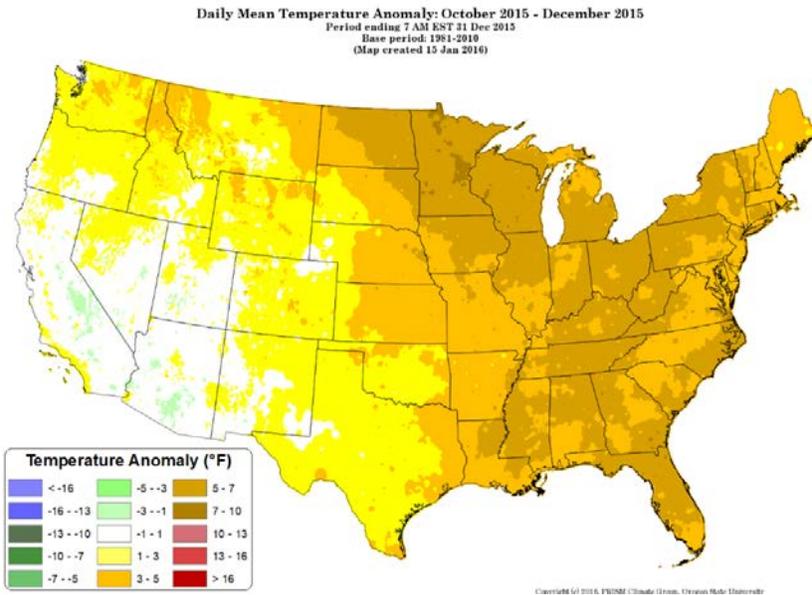


Copyright © 2016, PRISM Climate Group, Oregon State University

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

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

Source: PRISM

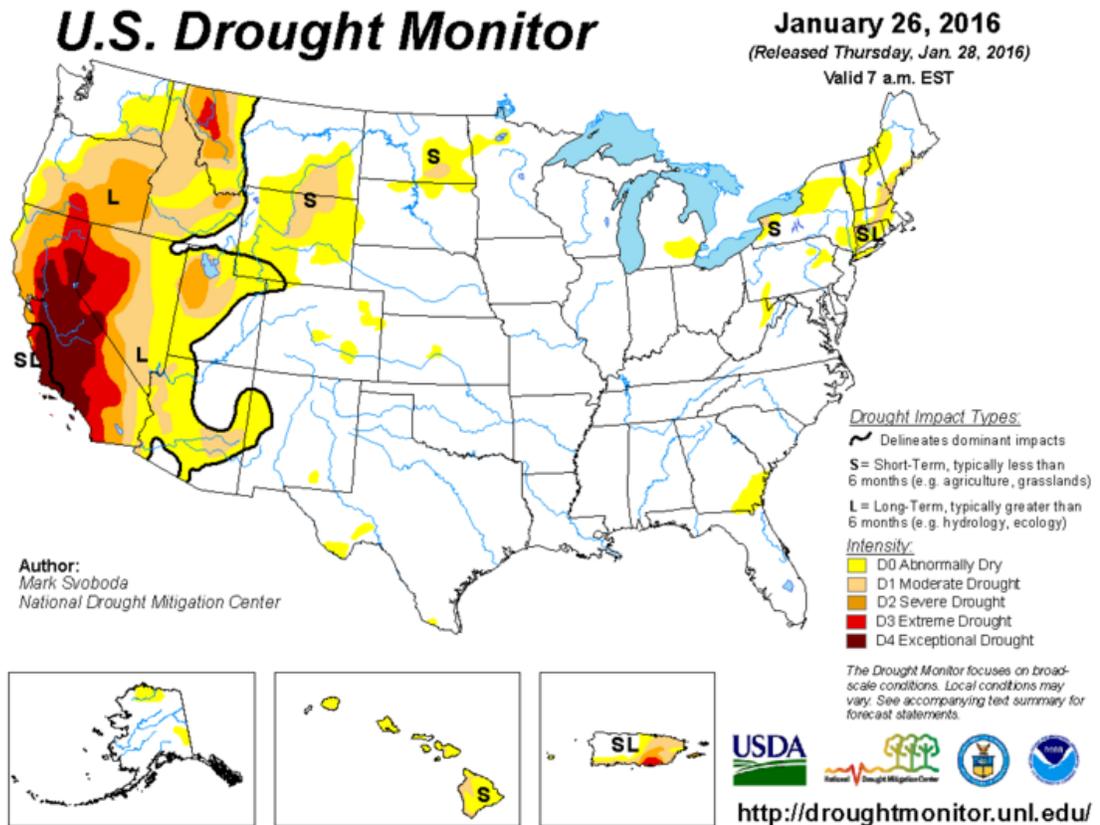


The October through December national [daily mean temperature anomaly](#) map shows most of the country being warmer than normal, with the southwestern part of the country being near normal. There was almost no area cooler than normal for the 3-month period.

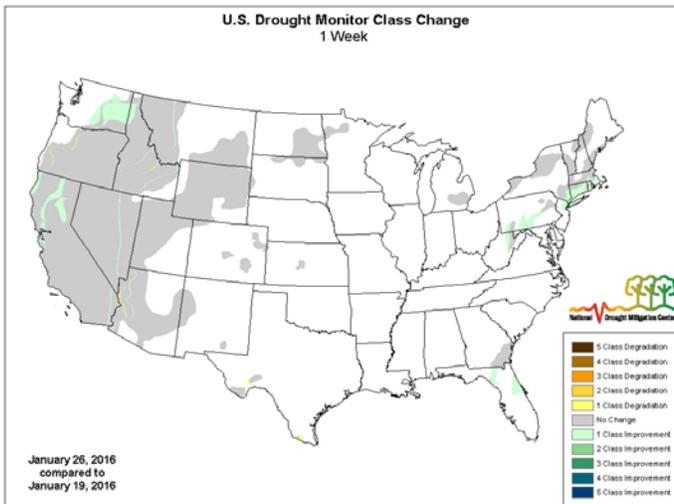
Drought

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

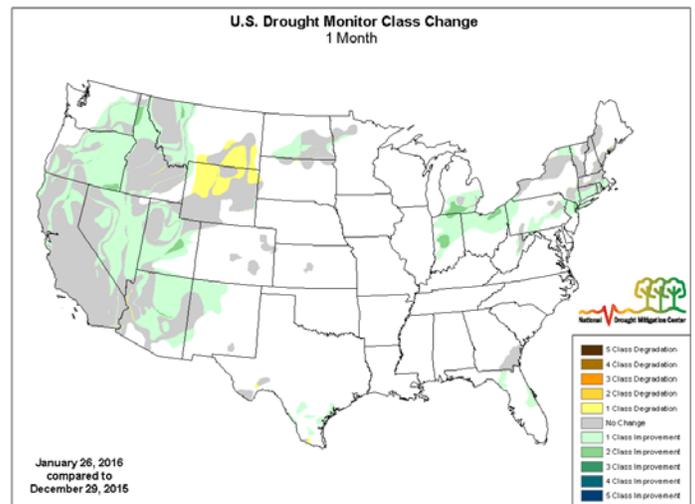
[U.S. Drought Monitor](#) See map below. Drought conditions continue in the western states, including the exceptional drought in California and Nevada.



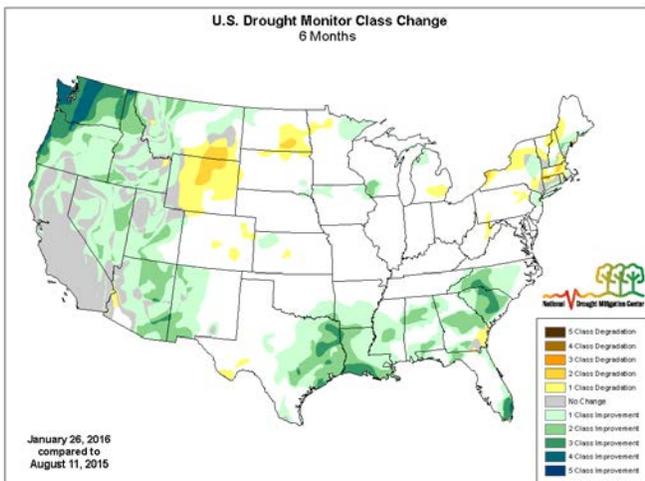
## Changes in Drought Monitor Categories over Time



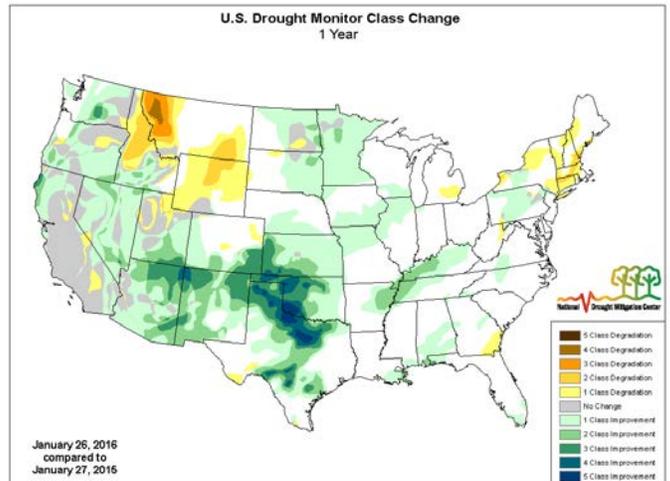
<http://droughtmonitor.unl.edu>



<http://droughtmonitor.unl.edu>



<http://droughtmonitor.unl.edu>



<http://droughtmonitor.unl.edu>

**Drought conditions** remain essentially the same as last week. Over the past 6-12 months, 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 in California.

### Current National [Drought Summary](#), January 26, 2016

Author: Mark Svoboda, National Drought Mitigation Center

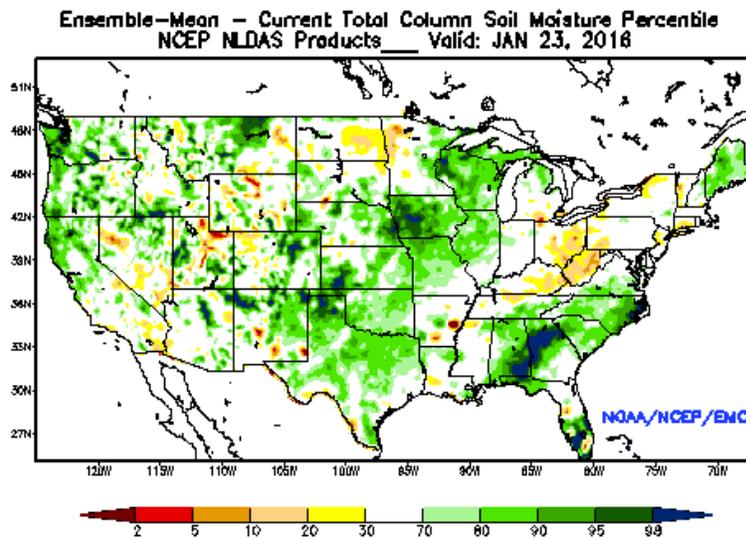
“The big story last week and this is Winter Storm Jonas as the resultant recovery continues across a good portion of the Atlantic Seaboard. Another round of good precipitation fell across the west coast as well, keeping the El Niño moisture train rolling from northern California up to Washington. Resultant improvements are noted along both coasts on this week’s map. Once again, conditions continue to worsen across most of Hawaii this week, noted by the expansion of both D0 and D1 on several islands.”

## 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](#)

## Other Climatic and Water Supply Indicators

### Soil Moisture

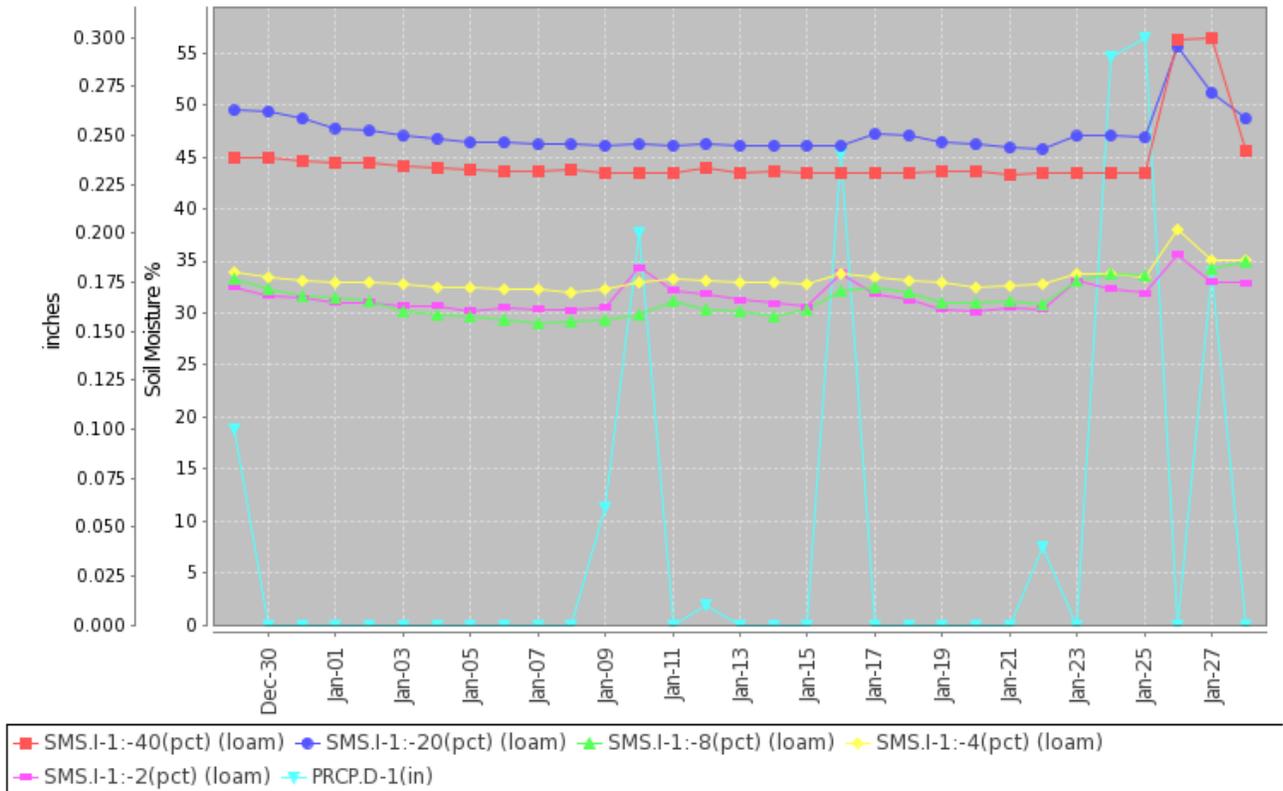


The modeled [soil moisture percentiles](#) as of January 23, 2016 show primarily above average conditions throughout the country. There are only a few scattered areas of dryness, primarily in parts of the West, the northern Great Plains, and in Ohio, Kentucky, and West Virginia.

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

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

Station (2079) MONTH=2015-12-29 (Daily) NRCS National Water and Climate Center - Provisional Data - subject to revision  
Thu Jan 28 08:22:15 GMT-08:00 2016



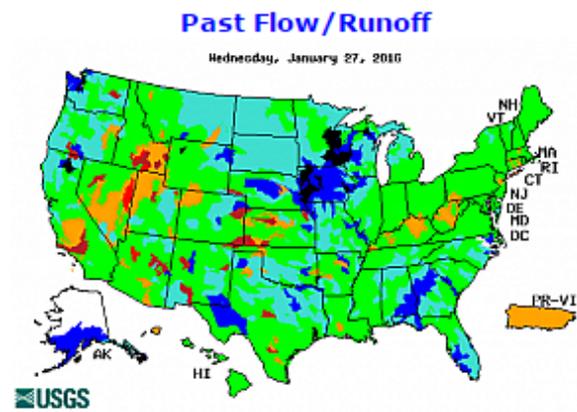
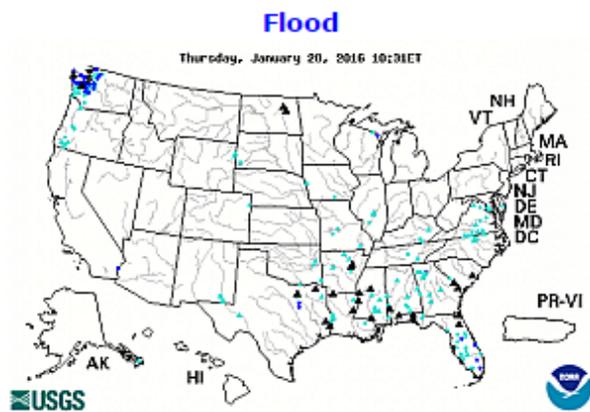
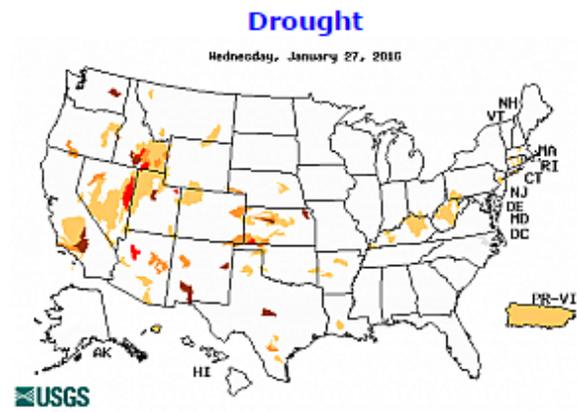
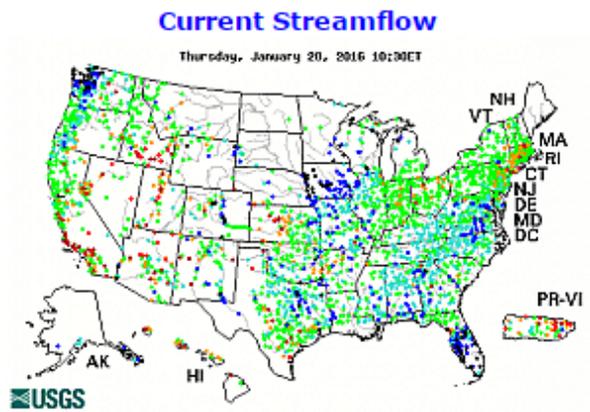
This graph shows soil moisture (at 2-, 4-, 8-, 20-, and 40-inch depths) and precipitation for the past 30 days at the [Mammoth Cave SCAN site #2079](#) in Kentucky. Most noticeable is the soil moisture response to the precipitation on the 24th and 25th. The temperature at the site (not shown) was below freezing during the precipitation, so this fell as snow. The temperature on the 26th and afterward was above freezing, so this increase in soil moisture is a response to water input due to snowmelt.

Soil Moisture Data Portals

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

Streamflow

Source: USGS



[Streamflow](#) is currently high in Washington and several areas in the central and eastern parts of the country.

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](#)

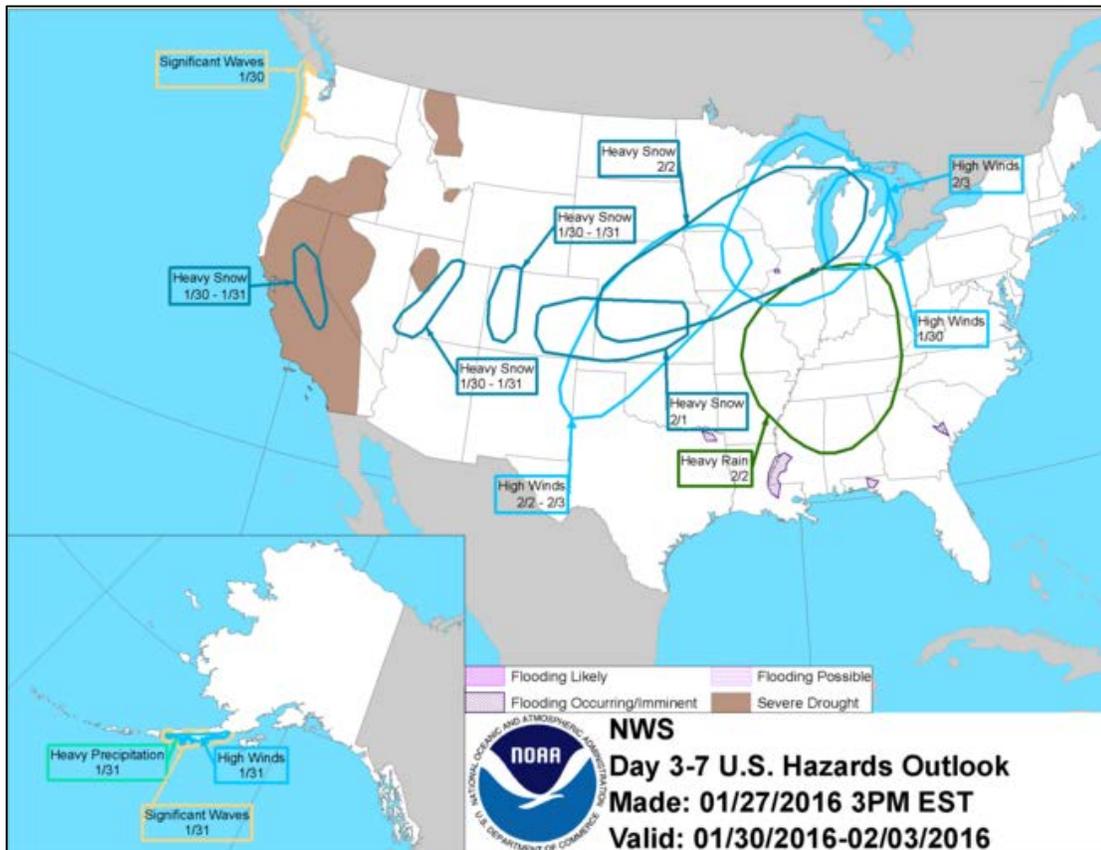
## Short- and Long-Range Outlooks

### Agricultural Weather Highlights

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

**National Outlook, January 28, 2016:** “Locally heavy showers will continue today across the lower Southeast, followed by a return to dry weather. Meanwhile, three Pacific storms will arrive along the West Coast during the next 5 days, with each system moving ashore farther south than the previous one. As a result, 5-day precipitation totals could reach 4 to 8 inches in northern California and the Pacific Northwest, while widespread 1- to 3-inch amounts (in the form of heavy snow) can be expected across the Rockies and higher elevations of the Southwest and Intermountain West. The first two Western storms will have only minor impacts east of the Rockies, but the third system will emerge across the central Plains early next week as a formidable winter storm. By early next week, wind-driven snow will be a major concern from the central Plains into the upper Midwest, while showers and thunderstorms will spread eastward from the lower and middle Mississippi Valley. Sharply colder weather will trail the third storm system into the western and central U.S. The NWS 6- to 10-day outlook for February 2 – 6 calls for the likelihood of below-normal temperatures across the western and central U.S. Warmer-than-normal weather will be limited to the eastern U.S. and areas along the Pacific Coast. Meanwhile, above-normal precipitation across most of the country will contrast with drier than-normal conditions from southern California to the Mississippi Delta.”

### National Weather Hazards



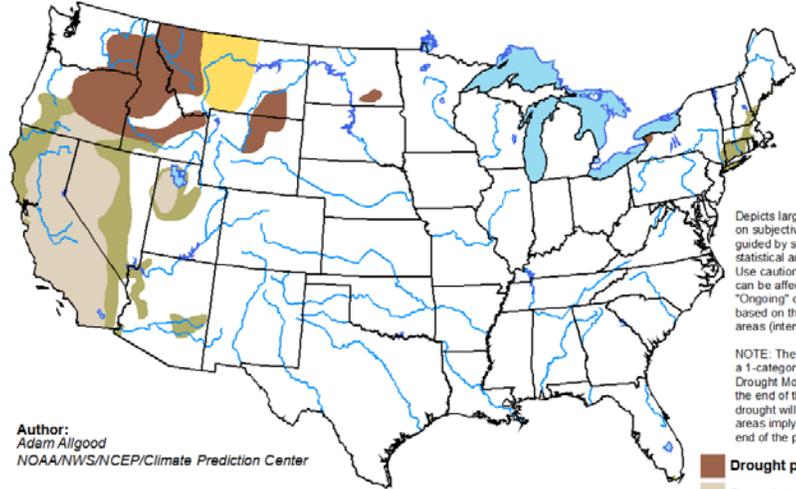
The outlook for [weather hazards](#) over the next week indicates several areas of heavy snow or rain in the West and central parts of the country.

**Seasonal Drought Outlook**

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

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

Valid for January 21 - April 30, 2016  
Released January 21, 2016



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:  
Adam Allgood  
NOAA/NWS/NCEP/Climate Prediction Center

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

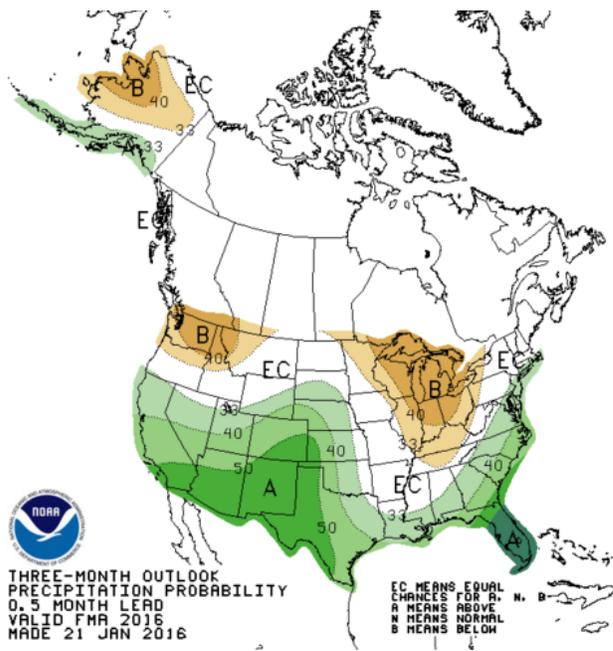


<http://go.usa.gov/3eZ73>



**NWS Climate Prediction Center 3-Month Outlook**

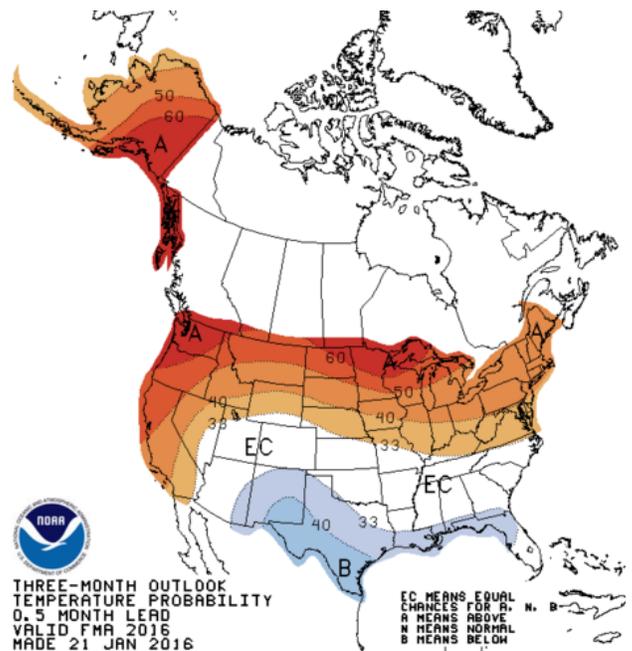
Precipitation



THREE-MONTH OUTLOOK  
PRECIPITATION PROBABILITY  
0.5 MONTH LEAD  
VALID FMA 2016  
MADE 21 JAN 2016

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 FMA 2016  
MADE 21 JAN 2016

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

### Outlook Summary

NWS Climate Prediction Center:

[The February-March-April \(FMA\) 2016 precipitation outlook:](#) “The FMA 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 60 percent) for above-median precipitation are forecast across the Florida peninsula for FMA 2016 which typically has the strongest wet signal during El Niño. Compared to last month’s outlook for FMA 2016, odds for above-median precipitation are slightly decreased over northern California and slightly increased over the central plains and Florida, where model guidance has the strongest signal and where the response to El Niño is the strongest. 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 in the Ohio Valley is slightly reduced in coverage due to the record tying strength of the ongoing El Niño event. This dry signal slowly weakens with time through late spring and early summer.”

[The February-March-April \(FMA\) 2016 temperature outlook:](#) “The early lead (FMA through AMJ) temperature outlooks are changed very little as they rely heavily on 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 is warmer across much of North America when compared to last month. 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](#).