



Natural Resources Conservation Service
P.O. Box 2890
Washington, D.C. 20013

Weekly Water and Climate Update
Thursday, March 19, 2015

Table listing various topics and their corresponding page numbers, including Snow, Precipitation, National Drought Summary, and Supplemental Drought Information.



Flying over the central Sierra Nevada for snow surveys. Photo is over Crystal Bay, Nevada along the north shore of Lake Tahoe.
March 3, 2015
Photo by Jim Gifford (NRCS, Nevada)

Outlook: "A pair of storms crossing the South will result in widespread precipitation from the southern Rockies eastward. Five-day precipitation totals could reach 1 to 3 inches from southern and eastern Texas into Georgia and parts of the Carolinas. Late-

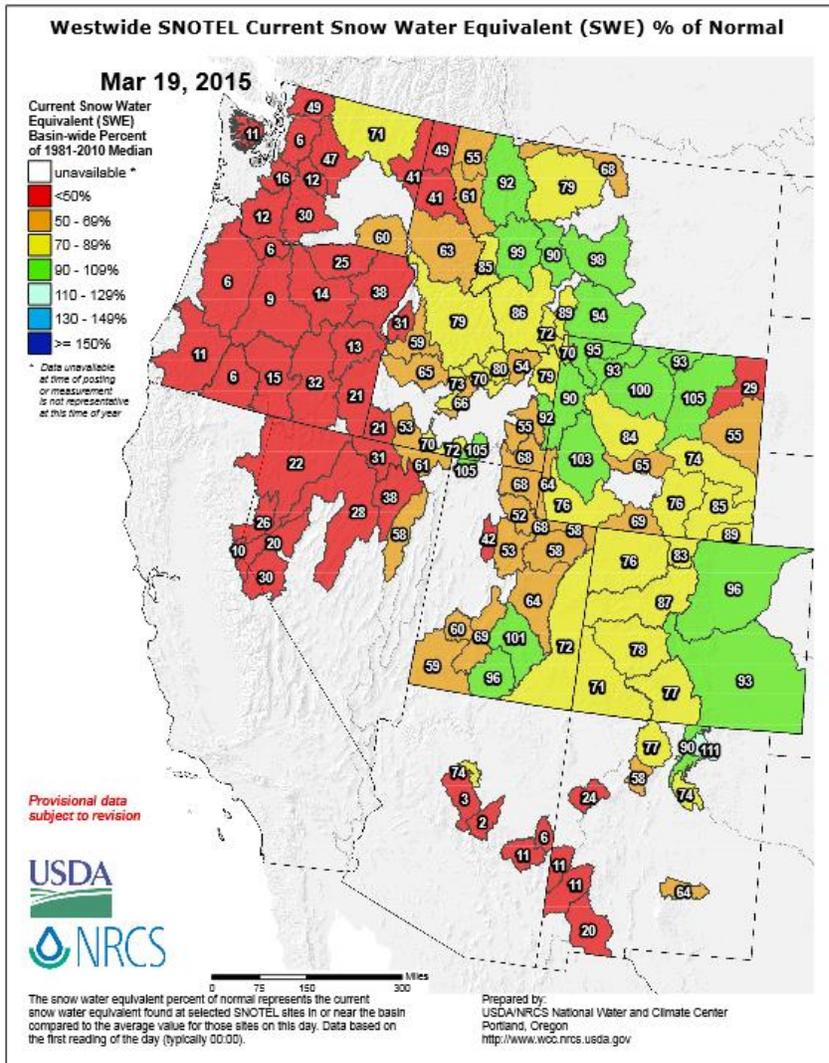
season snow will blanket several areas, including the southern Rockies (mainly today and tonight) and the northern Mid-Atlantic States (on March 20). Meanwhile, several pulses of Pacific storminess will reach the Northwest, barely clipping northern California. Five-day totals of 2 to 4 inches can be expected in the Pacific Northwest. Warmth will continue to dominate the West, often reaching into the nation's mid-section. The NWS 6- to 10-day outlook for March 24 – 28 calls for below-normal temperatures across much of the eastern half of the U.S., while warmer-than-normal weather will prevail across southern Florida and from the Pacific Coast to the Rockies. Meanwhile, near- to above-normal precipitation across the majority of the U.S. will contrast with drier-than-normal conditions from southern California to the western Gulf Coast region."

Contact: Brad Rippey, Agricultural Meteorologist, USDA/OCE/WAOB, Washington, D.C. (202-720-2397)
Website: http://www.usda.gov/oce/weather/pubs/Daily/TODAYSWX.pdf

The Natural Resources Conservation Service provides leadership in a partnership effort to help people conserve, maintain, and improve our natural resources and environment

# Weekly Water and Climate Update

## Snow



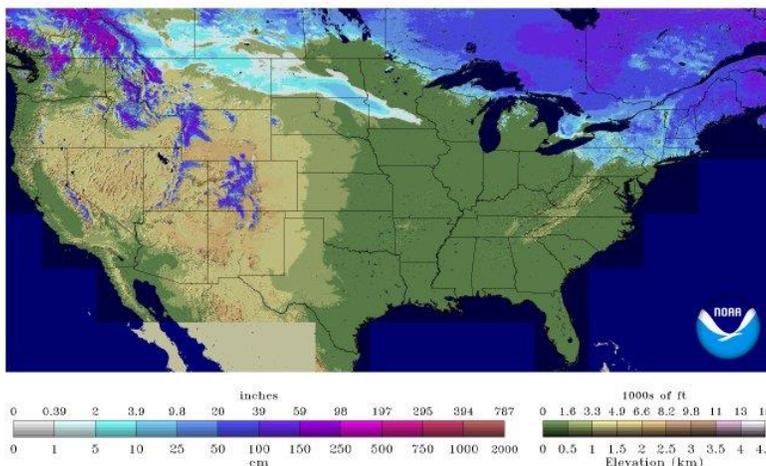
The [Westwide SNOTEL Current Snow Water Equivalent \(SWE\) % of Normal map](#) shows the largest snowpack deficits (red areas) in the Cascades and Olympics and eastern Washington, all of Oregon, the Sierra Nevada in California, as well as most of Nevada, Arizona, southwest New Mexico, four basins in Idaho, one in Wyoming and one in Utah. Still less than normal, but not quite as low, are snowpacks in eastern Washington, Idaho, most of Utah, eastern Nevada, western Colorado, parts of Wyoming, one basin in Arizona, central New Mexico, and a few basins in Montana (orange and yellow areas).

The snowpack in parts of Montana, northwestern Wyoming, eastern Colorado, southeast Utah, and northern New Mexico are near normal.

One basin in northern New Mexico has an above normal snowpack at this time (light blue area).

National Snow 2014-2015 Analysis

**Snow Depth**  
 2015-03-19 06 UTC



The snow depth map as reported from the [NWS NOHRSC](#) for March 19, 2015, shows a large reduction in snow cover from last week. The snow cover is now at 12.8% of the continental U.S. This includes snow across many of the mountains in the West, the northern Plains, and the Northeast. The snow depth has also been reduced in the Northeast and across the northern tier states.

# Weekly Water and Climate Update

## Precipitation

### 2015, an unusual year...

So far this winter, the snowpack in the Cascades and Sierra Nevada are at or near record lows. The precipitation for the water year (Oct. 1 – today) in the Cascades and Sierra Nevada is near to slightly below normal (see map on page 5.). The overriding influence in these unusual circumstances of having a very low snowpack but with near normal precipitation is the persistent warm temperatures that have dominated the snowpack processes.

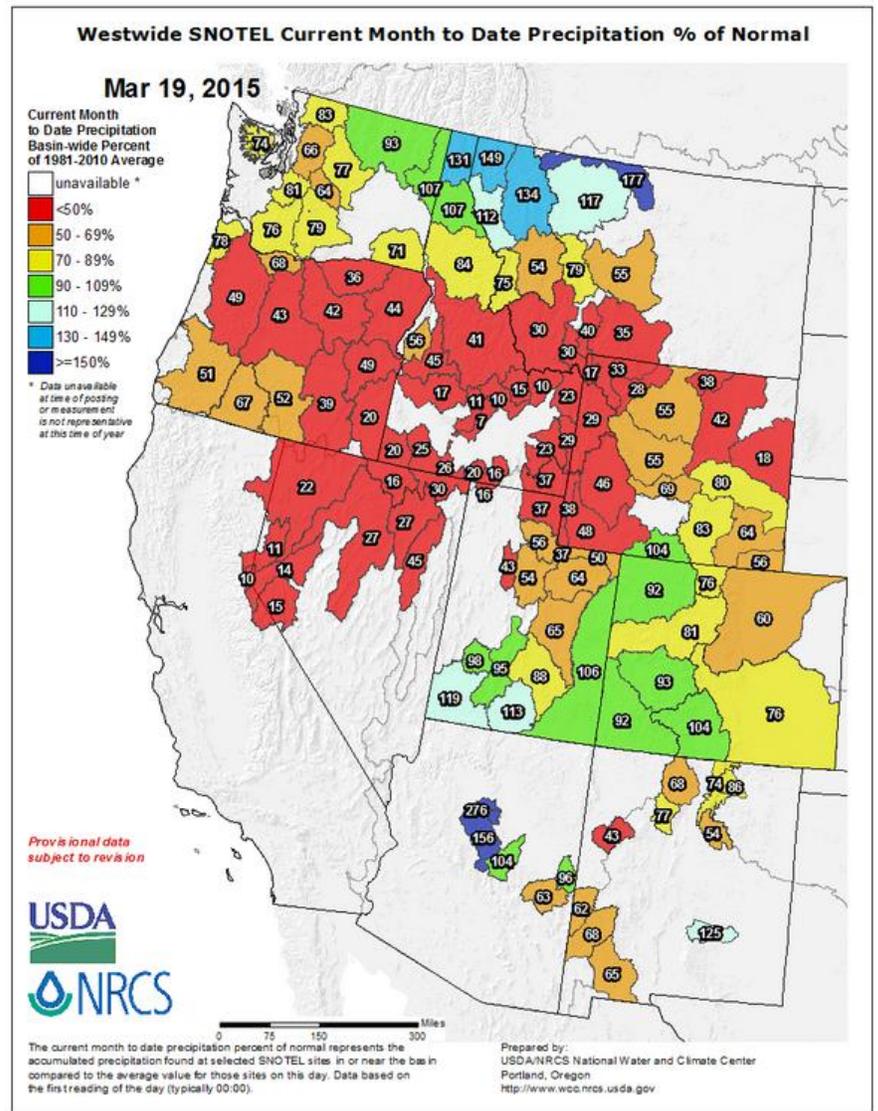
Freezing levels have remained well above the elevation of many SNOTEL sites, and snow has been confined to the highest elevations which are a very small percent of the area of the watersheds in the Pacific Northwest and Sierra Nevada. The average precipitation, especially in the Cascades of Oregon and Washington and down to the northern Sierra and Trinity Alps of California, has helped to improve any soil moisture, groundwater, and reservoir deficits. This has helped to offset the current effects of the low snow conditions that the area has experienced but may provide future deficits in spring and summer streamflow with little to no snow support for normal snowmelt runoff water.

In the West, the [SNOTEL](#) precipitation percent of normal map so far in March shows that the recent weather pattern has produced wet conditions in the north and northwest, and some southern basins in Utah, Arizona and New Mexico. Well above normal precipitation occurred in northern Montana, one basin in northern Idaho, two basins in southern Utah, and one basin in Arizona, (blue areas).

Precipitation in the last week has improved some drier basins in Oregon, Washington, Idaho and Montana from a week ago. Many areas are still well below normal for the month. Basins with much below average conditions were reported in Washington, Oregon, California, Nevada, Idaho, southern Montana, Wyoming, northern Utah, and northeast and southeast New Mexico, and one basin in southeast Arizona (red and orange areas).

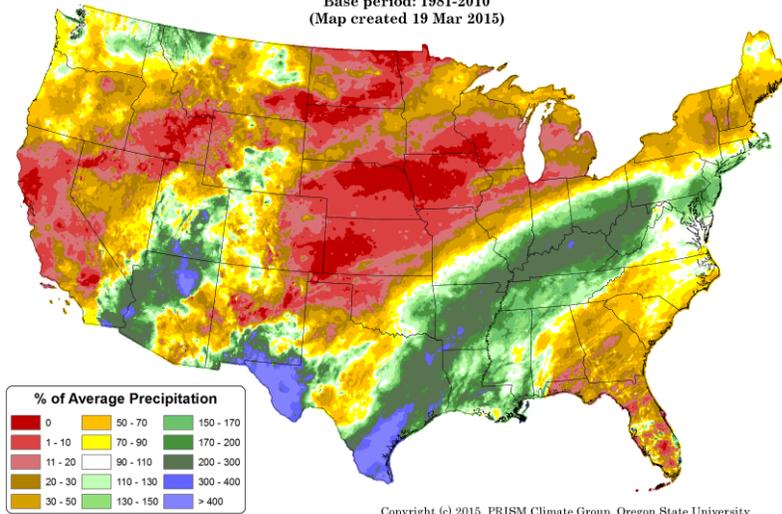
The percent of average may be exaggerated over a short period of time and dependent on normal conditions for this time of year.

*Click on most maps in this report to enlarge and see the latest available update.*



## Weekly Water and Climate Update

**Total Precipitation Anomaly: 01 March 2015 - 18 March 2015**  
 Period ending 7 AM EST 18 Mar 2015  
 Base period: 1981-2010  
 (Map created 19 Mar 2015)



Copyright (c) 2015, PRISM Climate Group, Oregon State University

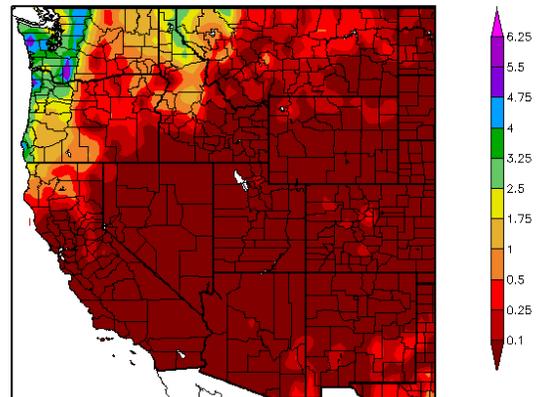
For the first part of March 2015, the national total [precipitation anomaly](#) pattern reveals some higher than normal precipitation, primarily in the Southwest, southeastern California, southern New Mexico, western, southern and eastern Texas, northeast to Kentucky. There was little or no precipitation in many parts of the West, northern and central Plains, the Southeast and northern New England states (red and dark orange areas).

*This preliminary daily PRISM precipitation anomaly map contains all available network data, including SNOTEL data, and is updated periodically as additional data become available and are quality controlled.*

The [ACIS 7-day](#) total precipitation map for the western U.S. shows precipitation in only a few areas of the West. The highest areas of significant precipitation were in western Washington and northeast Oregon. Light and widely scattered precipitation was also reported in Oregon, Washington, northern Idaho, northern California, northern Montana, and a few areas of southeast New Mexico.

Little to no precipitation fell across most of the West this week (dark red).

Precipitation (in)  
 3/12/2015 - 3/18/2015



Generated 3/19/2015 at HPRCC using provisional data.

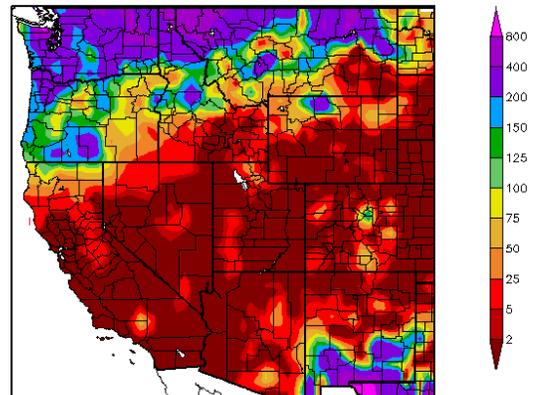
Regional Climate Centers

This ACIS percent of normal [map](#) of the West for the last seven days reflects heavy precipitation along the northern tier states and in southern New Mexico. The heaviest percent of normal precipitation fell in these areas and in the western tip of Texas. (Purple areas).

Very dry conditions for the week were in much of the West, including California, southern Idaho, southeast Montana, southern Wyoming, Utah, Arizona, most of Nevada, most of Colorado, and northern New Mexico (red areas).

Percent of normal precipitation may be exaggerated in areas where the average for this seven-day period is at or near zero.

Percent of Normal Precipitation (%)  
 3/12/2015 - 3/18/2015

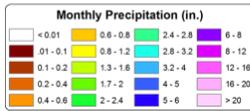
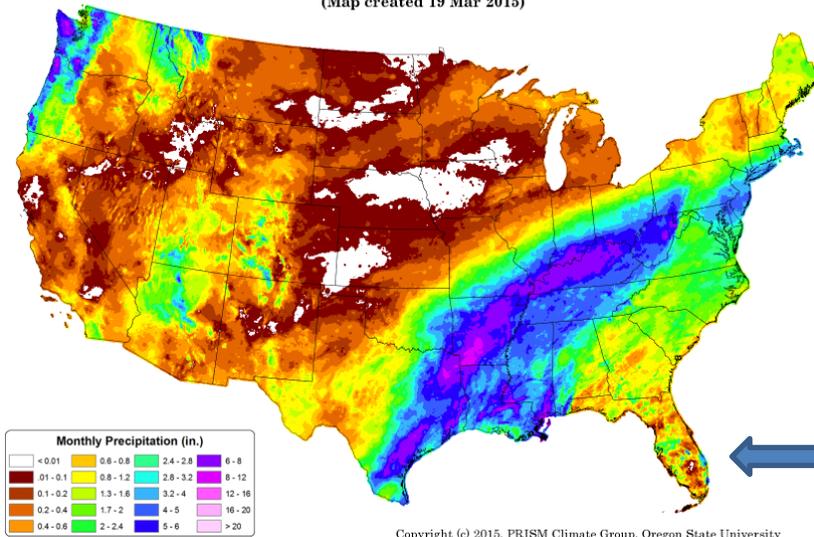


Generated 3/19/2015 at HPRCC using provisional data.

Regional Climate Centers

# Weekly Water and Climate Update

Total Precipitation: 01 March 2015 - 18 March 2015  
 Period ending 7 AM EST 18 Mar 2015  
 (Map created 19 Mar 2015)



Copyright (c) 2015, PRISM Climate Group, Oregon State University

For the first part of March 2015, the [total precipitation](#) across the continental U.S. was heaviest in east Texas, Louisiana, Arkansas, and Kentucky, western Washington and western Oregon. Precipitation also fell over other parts of the Ohio Valley to southern New England, and a few scattered areas in the Southwest and northern Rockies. In contrast, much of California, northern and central Great Plains, upper Midwest, and a few small areas in the Southeast were mainly dry.

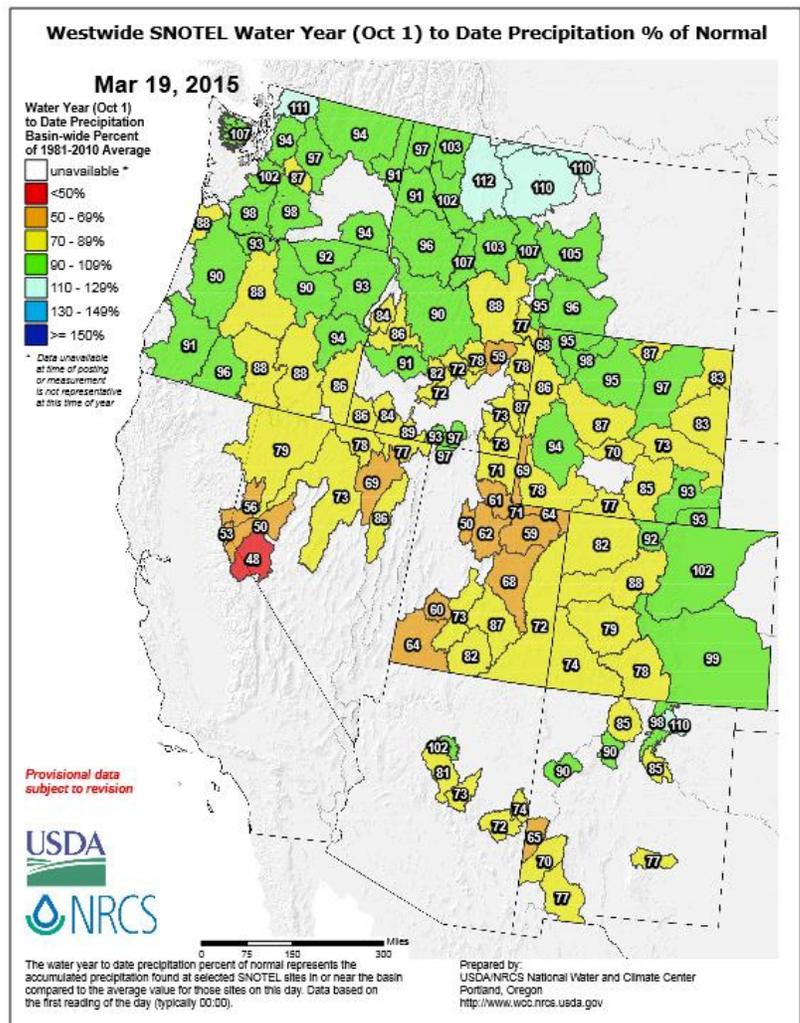
See [Go Hydrology](#) for current and forecast conditions over southern Florida.

For the [2015 Water Year](#) that began on October 1, 2014, there are a few areas of precipitation surplus in the West. Three basins in northern Montana, one basin in northwest Washington, and one basin in northern New Mexico are slightly above average at this time.

Many basins across the West have near normal conditions for this part of the Water Year (mapped in green). These include most of Montana, parts of Wyoming, eastern Colorado, most of Washington, parts of Oregon, northern Idaho, one basin in Arizona, and three basins in northern New Mexico.

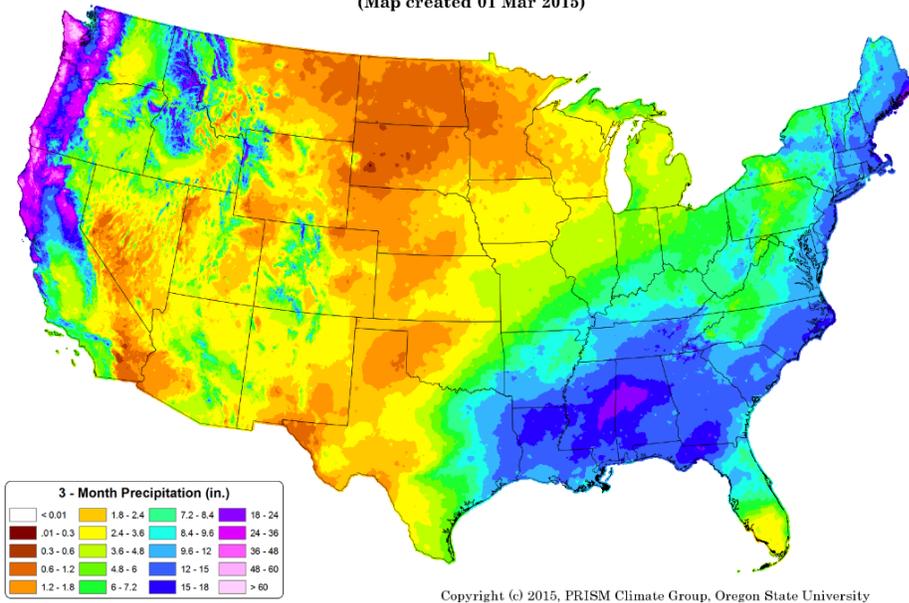
Many areas have less than normal precipitation for the water year. These include basins in southern Idaho, parts of Wyoming, western Colorado, Utah, California, Nevada, most of Arizona, parts of New Mexico, southeast and northwest Oregon, and one basin in Washington and two in Montana (mapped in yellow and orange).

The Walker Basin in the Sierra Nevada of California and Nevada is now less than 50 % of normal precipitation for the water year (red area).



# Weekly Water and Climate Update

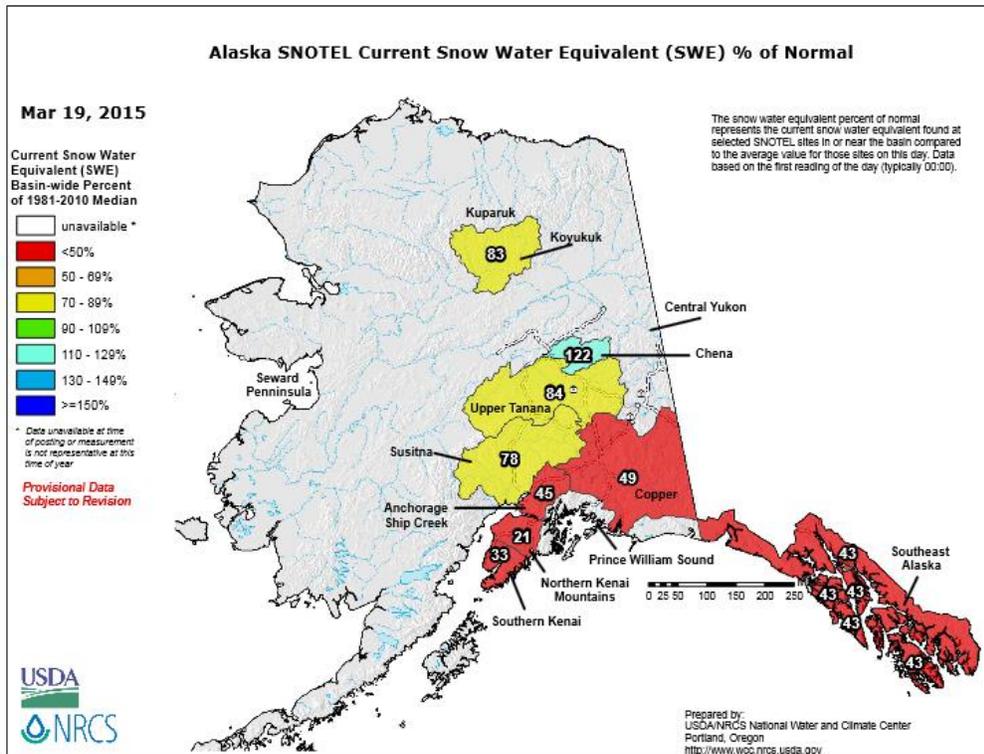
Total Precipitation: December 2014 - February 2015  
 Period ending 7 AM EST 28 Feb 2015  
 (Map created 01 Mar 2015)



The national map of the [three-month period](#) (December - February) shows that the eastern half of the nation received precipitation in the range from 4.8 inches to greater than 18 inches. Parts of the West, especially in the mountains, also received significant precipitation. The highest amounts over 48 inches were recorded in northern California, Oregon and Washington.

In contrast to the eastern U.S. and Pacific coast, parts of the West and much of the Midwest received totals of less than 1.8 inches.

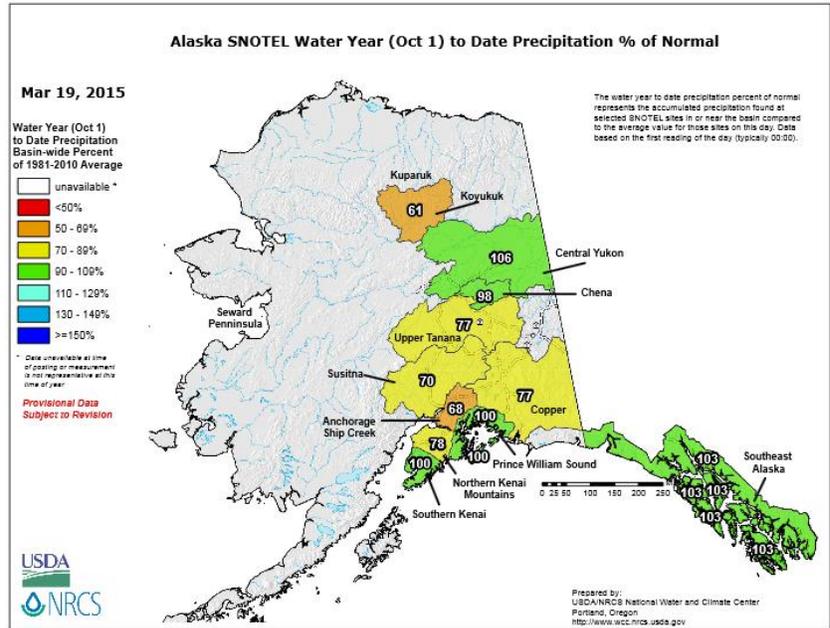
## NEW! Alaska Snow Water Equivalent and Precipitation Conditions



The [Alaska SNOTEL current SWE map](#) shows less than average conditions across most of the state, with the exception of the Chena Basin. The areas with much below normal snowpack are on the Kenai Peninsula, and the Copper and Anchorage/Ship Creek, and Southeast basins. See the [Alaska update report](#) for individual station data.

## Weekly Water and Climate Update

The [Alaska Water Year to Date Precipitation](#) map shows near average conditions for the southern and southeast parts of the state, and parts of interior Alaska. Much of interior Alaska is drier than average. See the [Alaska update report](#) for individual station data.

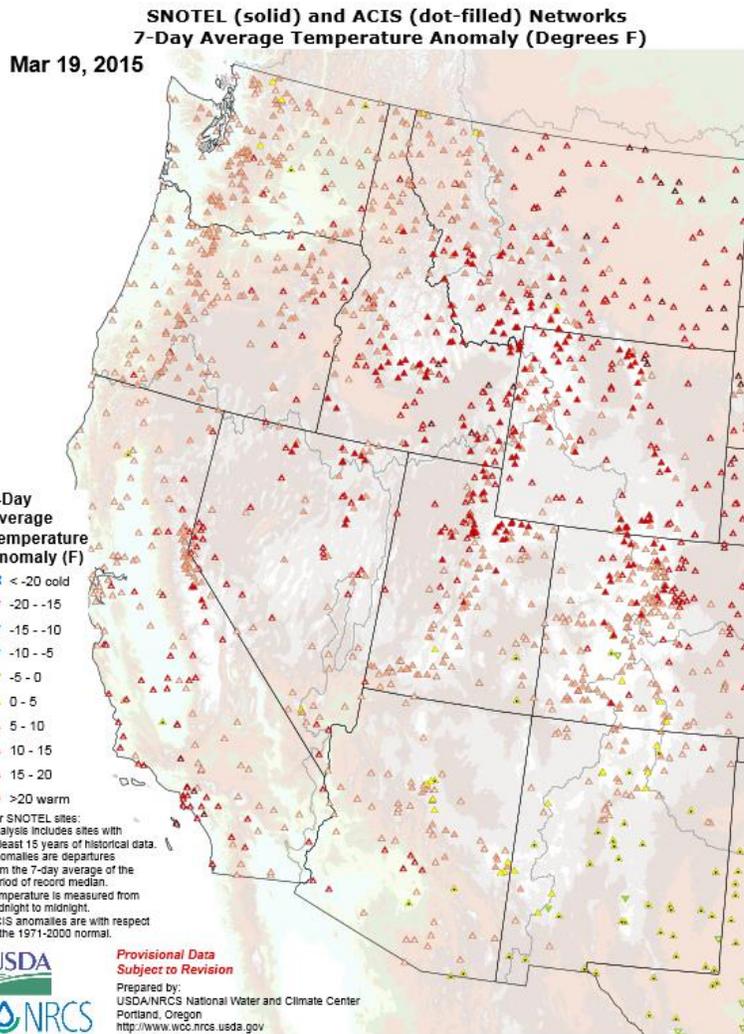


## Temperature

The SNOTEL and ACIS [7-day temperature anomaly](#) map for the western U.S. shows almost all of the West was above normal for the week. The highest anomalies were across many states including Washington, Oregon, Idaho, Montana, California, Nevada, Utah, Wyoming, Colorado, Arizona and northern New Mexico. The highest anomalies, where in eastern Montana, eastern Idaho, and eastern Wyoming where anomalies were **+15-20** degrees F.

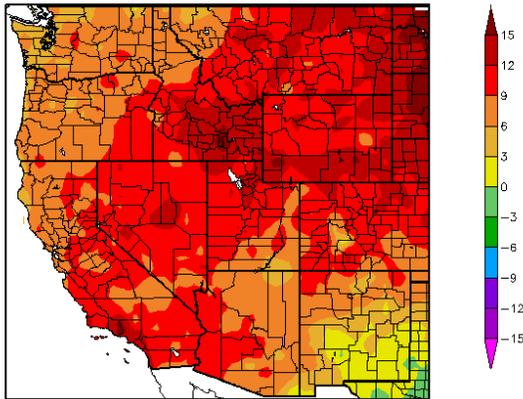
There were a few stations with near normal temperatures across the West. These include stations in north central Washington, northwest Montana, eastern Arizona, southern Colorado, and many stations in New Mexico.

There were no cool anomalies in the West this week.



## Weekly Water and Climate Update

Departure from Normal Temperature (F)  
3/12/2015 – 3/18/2015



The [ACIS](#) map of the 7-day average temperature anomalies in the West ending March 18 shows that the West was above normal in much of the region. The greatest positive temperature departures occurred in central Idaho, southern California (>+15°F). Other warm temperatures were scattered across most of the West. There were no negative temperature departures in the West, but southeast new Mexico was the only area near normal for the week.

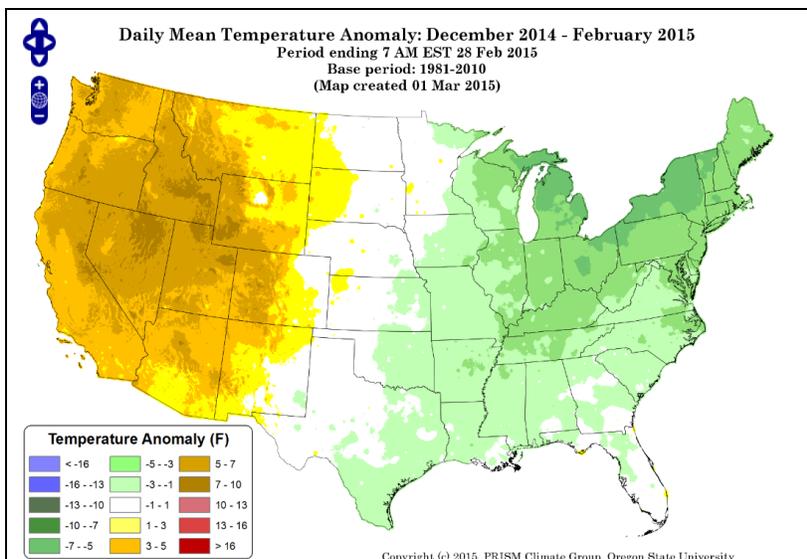
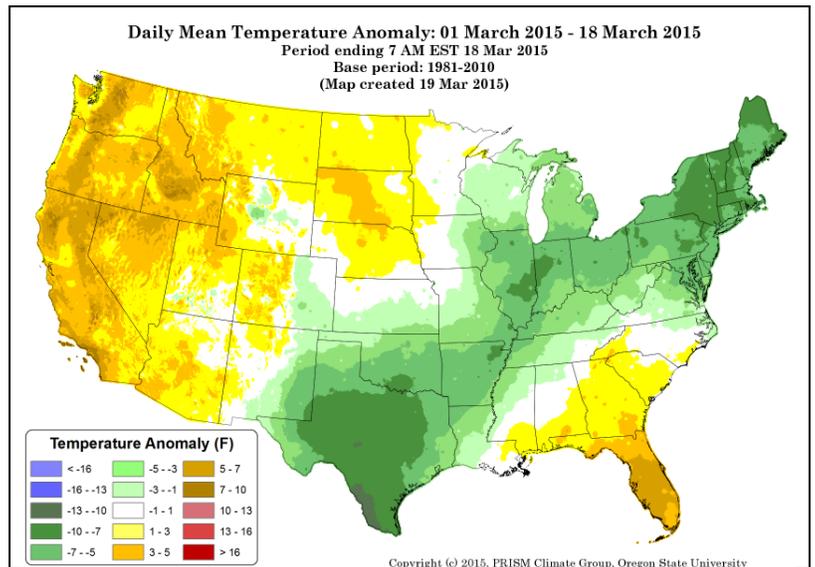
Also, see [Dashboard](#) and the [Westwide Drought Tracker](#)

Generated 3/19/2015 at HPRCC using provisional data.

Regional Climate Centers

This preliminary [PRISM](#) temperature map contains all available network data, including SNOTEL data, and will be updated periodically as additional data become available and are quality controlled.

Thus far in March 2015, the national daily mean temperature anomaly [map](#) shows a persistent large, cool region over the south central and northeastern part of the country, with the coolest anomalies in central and southern Texas (<-10°F). In contrast, above normal temperatures were recorded in most of the West and in the Southeast. Oregon, Washington, California, Idaho and northern Nevada had the highest anomalies (>+7°F).



The December - February national daily mean temperature anomalies for the U.S. in this [climate map](#) shows the western U.S. had slightly to above normal temperatures (>+7°F). The central and southeast sections of the country reported normal to slightly cooler than normal temperatures for this period, with the coolest temperatures in a large area covering most of the Midwest and eastern U.S. The coolest anomalies were in the Northeast and north central states, primarily along the Canadian border (<-5°F).

# Weekly Water and Climate Update

## Weather and Drought Summary

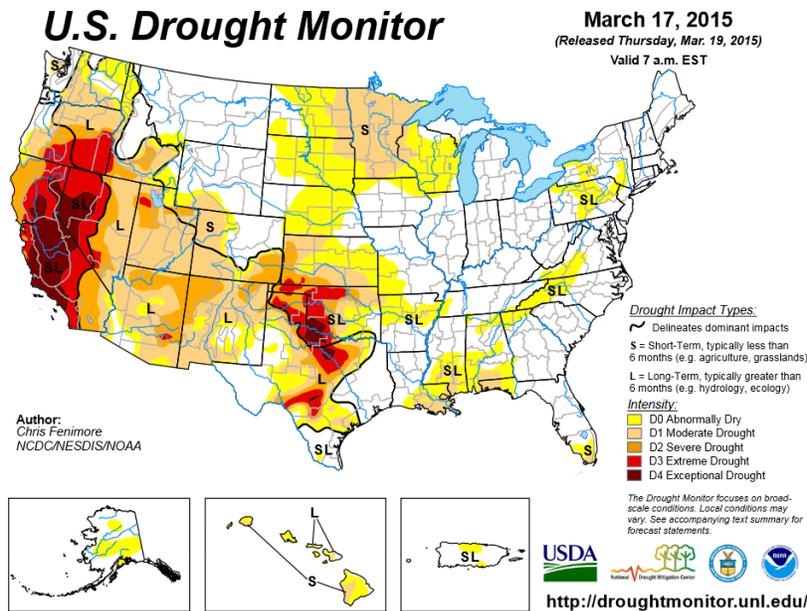
### [National Drought Summary](#) – March 17, 2015

The following **Weather and Drought Summary** is provided by this week's NDMC Drought Author, Chris Fenimore, NOAA/NESDIS/NCDC.

USDM Map Services: contains [archived maps](#)

“For the contiguous 48 states, the U.S. Drought Monitor showed 34.73 percent of the area in moderate drought or worse, compared with 31.60 percent a week earlier. Drought now affects 75,980,614 people, compared with 71,090,448 a week earlier.

For all 50 U.S. states and Puerto Rico, the U.S. Drought Monitor showed 29.06 percent of the area in moderate drought or worse, compared with 26.45 percent a week earlier. Drought now affects 76,337,514 people, compared with 71,447,348 a week earlier.”



See: Latest Drought [Impacts](#) during the past week.

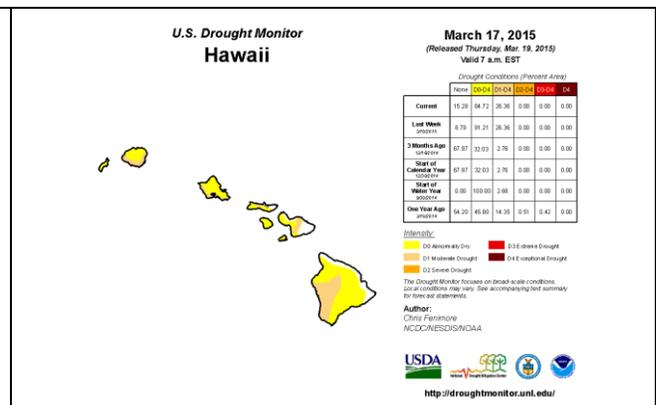
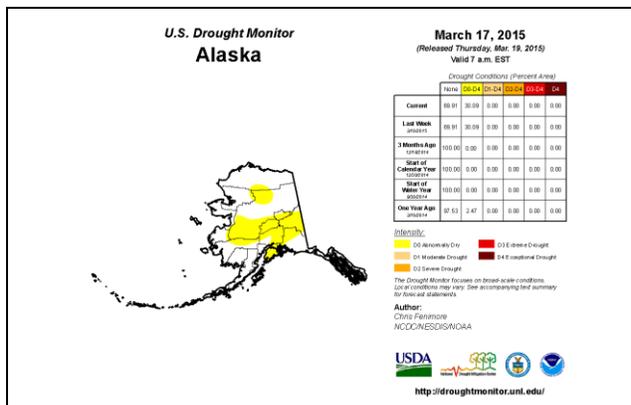
[Current Drought Monitor](#) weekly summary. The exceptional D4 levels of drought are scattered across CA, NV, TX, and OK.

The latest [drought indicator blend and component percentiles](#) spreadsheet is a great resource for climate division drought statistics. This link is for the latest [Drought Outlook](#) (forecast). See [climatological rankings](#).

For more drought news, see [Drought Impact Reporter](#).  
New: [ENSO Blog](#).

### Drought Management Resources:

- ✓ <http://www.usda.gov/oce/weather/Drought/AgInDrought.pdf>
- ✓ [Watch AgDay TV](#)
- ✓ [Drought Impacts Webinar Series](#)
- ✓ [NIDIS Quarterly Climate Impacts and Outlook](#)
- ✓ [The Spring 2014 edition of DroughtScope](#)
- ✓ [U.S. Crops in Drought](#)



“The [49th](#) and [50th](#) States show normal to moderate drought conditions. There was no change in Alaska this week. D0 decreased and the drought free area increased in Hawaii this week. A comprehensive narrative describing drought conditions across other parts of the nation can be found toward the end of this document. For drought impacts definitions for the figures that follow, click [here](#).”

## Weekly Water and Climate Update

### U.S. Drought Monitor West

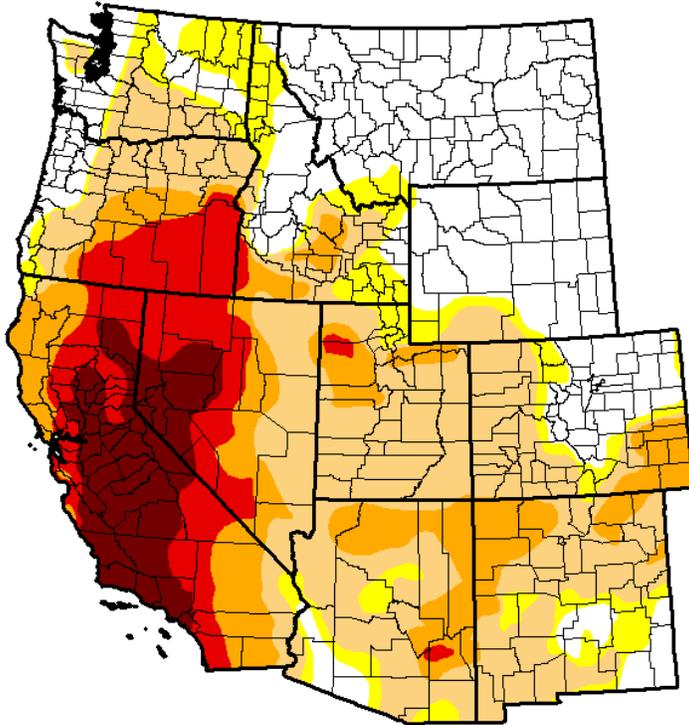
**March 17, 2015**

(Released Thursday, Mar. 19, 2015)

Valid 7 a.m. EST

*Drought Conditions (Percent Area)*

|  | None  | D0-D4 | D1-D4 | D2-D4 | D3-D4 | D4   |
|--|-------|-------|-------|-------|-------|------|
| <b>Current</b>                                     | 29.93 | 70.07 | 60.29 | 31.01 | 16.62 | 7.04 |
| <b>Last Week</b><br><i>3/10/2015</i>               | 29.72 | 70.28 | 59.80 | 29.93 | 16.62 | 7.04 |
| <b>3 Months Ago</b><br><i>12/16/2014</i>           | 34.51 | 65.49 | 54.85 | 33.90 | 18.75 | 5.40 |
| <b>Start of Calendar Year</b><br><i>12/01/2014</i> | 34.76 | 65.24 | 54.48 | 33.50 | 18.68 | 5.40 |
| <b>Start of Water Year</b><br><i>9/30/2014</i>     | 31.48 | 68.52 | 55.57 | 35.65 | 19.95 | 8.90 |
| <b>One Year Ago</b><br><i>3/18/2014</i>            | 28.49 | 71.51 | 60.44 | 41.95 | 16.19 | 3.61 |



*Intensity:*



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

**Author:**

Chris Fenimore  
NCDC/NESDIS/NOAA



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

There was a slight decrease in D1 and the drought-free area for the week. The D0 and D2 categories slightly increased in the West this week. D3 and D4 remained unchanged.

*Click to enlarge maps*

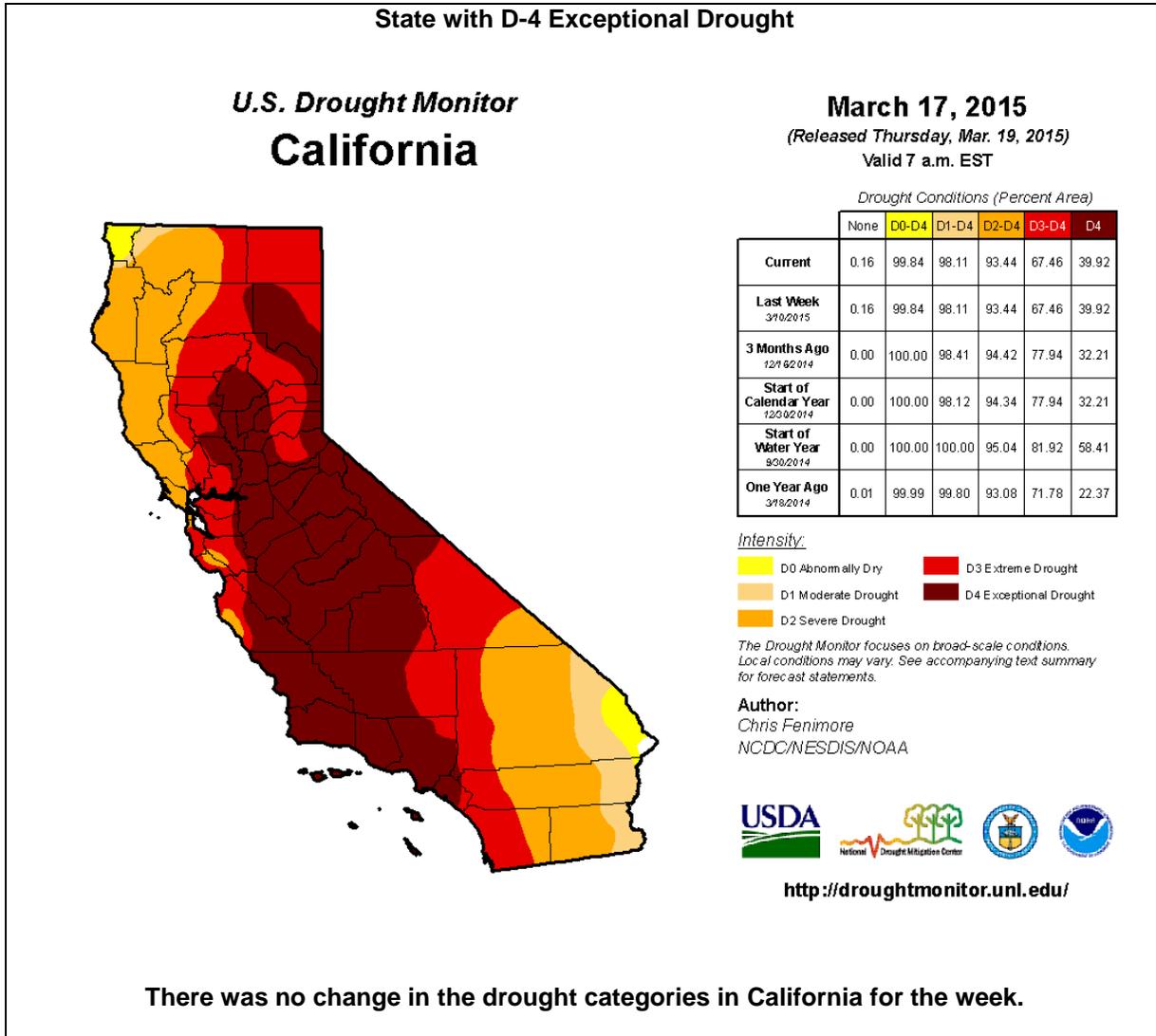
### Risk Management Web Resources

Drought Monitor for the [Western States](#). Drought Impact Reporter for [New Mexico](#), [California Data Exchange Center](#) & [Flood Management Intermountain West Climate Dashboard](#)  
[California Sierra Nevada-related snow pack](#)

#### U.S. [Impacts](#) during the past week:

- NM - [Amount of chile produced in New Mexico continues to drop](#) – Mar 7
- U.S. - [CO2 increase can intensify future droughts in tropics, study suggests](#) – Mar 9
- WA - [Governor declares drought emergency in some parts of state](#) – Mar 13
- WA - [State officials ask lawmakers for \\$9M in case of drought](#) – Mar 9

## Weekly Water and Climate Update



[CA Drought Information Resources](#)

[Drought News from California:](#)

[CalFire Prepares For Early Wildfire 'Season' – Mar 9](#)

[California senators focus on oil industry, drinking water – Mar 10](#)

[Food prices predicted to remain stable through 2015, with a couple of big ifs – Mar 12](#)

[California drought: Big water rate hikes considered by Bay Area agencies- Mar 7](#)

[Big water rate hike plan reduced by Santa Clara Valley Water District – Mar 11](#)

[City sends out drinking water alerts – Mar 6](#)

[DSRSD securing supplemental water supplies – Mar 13](#)

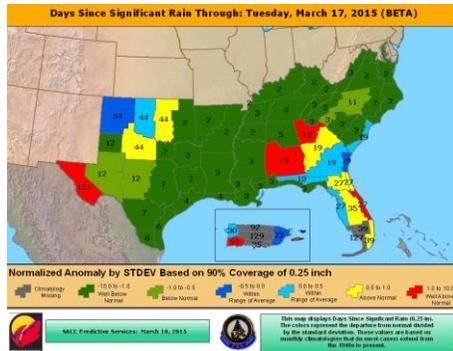
[Reservoirs for East Bay water users near 38-year lows – Mar 10](#)

# Weekly Water and Climate Update

Texas Drought [Website](#).  
 Texas [Reservoirs](#).  
 Texas [Drought Monitor Coordination Conference Call](#): on Monday's 2:00 PM - 3:00 PM CST

Texas Drought News:

[How Drought Is Producing Tensions in Texas – Mar 13](#)  
[Area lakes rise, but drought is still a worry – Mar 13](#)

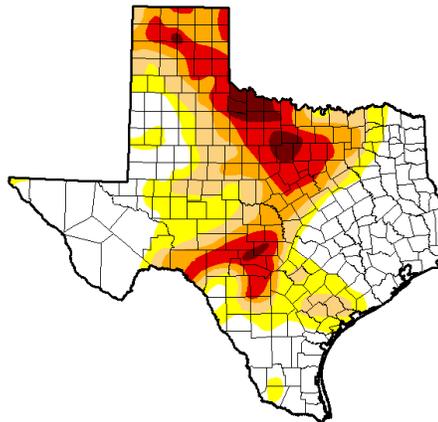


[Days since Significant Rain Summary](#)

## State with D-4 Exceptional Drought

### U.S. Drought Monitor Texas

March 17, 2015  
 (Released Thursday, Mar. 19, 2015)  
 Valid 7 a.m. EST



Drought Conditions (Percent Area)

|                                      | None  | D0-D4 | D1-D4 | D2-D4 | D3-D4 | D4   |
|--------------------------------------|-------|-------|-------|-------|-------|------|
| Current                              | 43.46 | 56.54 | 39.93 | 27.12 | 14.48 | 2.97 |
| Last Week<br>3/16/2015               | 42.15 | 57.85 | 41.05 | 25.89 | 12.76 | 2.97 |
| 3 Months Ago<br>12/16/2014           | 33.17 | 66.83 | 43.91 | 23.41 | 10.05 | 2.57 |
| Start of Calendar Year<br>12/02/2014 | 34.37 | 65.63 | 44.68 | 25.73 | 11.70 | 3.17 |
| Start of Water Year<br>8/02/2014     | 28.92 | 71.08 | 48.95 | 29.54 | 11.26 | 2.69 |
| One Year Ago<br>3/18/2014            | 15.24 | 84.76 | 64.20 | 33.18 | 14.08 | 1.41 |

Intensity:

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

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

Author:  
 Chris Fenimore  
 NCEP/NESDIS/NOAA



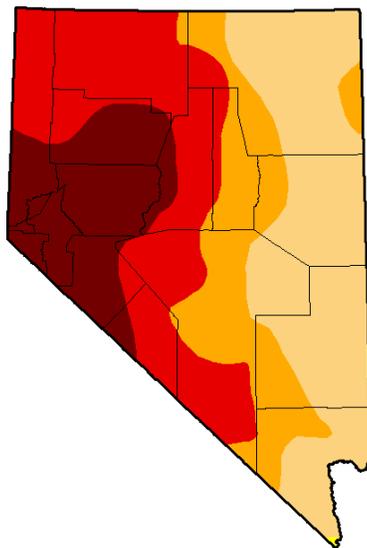
<http://droughtmonitor.unl.edu/>

There was a decrease in D0-D1 drought categories in Texas this past week. The drought free areas, D2 and D3 Categories increased for the week. The D4 drought category remained unchanged.

## State with D-4 Exceptional Drought

### U.S. Drought Monitor Nevada

March 17, 2015  
 (Released Thursday, Mar. 19, 2015)  
 Valid 7 a.m. EST



Drought Conditions (Percent Area)

|                                      | None | D0-D4  | D1-D4  | D2-D4 | D3-D4 | D4    |
|--------------------------------------|------|--------|--------|-------|-------|-------|
| Current                              | 0.00 | 100.00 | 99.93  | 67.23 | 47.96 | 18.38 |
| Last Week<br>3/16/2015               | 0.00 | 100.00 | 99.93  | 67.23 | 47.96 | 18.38 |
| 3 Months Ago<br>12/16/2014           | 0.00 | 100.00 | 96.98  | 68.25 | 48.38 | 11.89 |
| Start of Calendar Year<br>12/02/2014 | 0.00 | 100.00 | 96.98  | 68.25 | 48.38 | 11.89 |
| Start of Water Year<br>8/02/2014     | 0.00 | 100.00 | 97.04  | 69.89 | 48.38 | 11.89 |
| One Year Ago<br>3/18/2014            | 0.00 | 100.00 | 100.00 | 82.34 | 33.46 | 5.37  |

Intensity:

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

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

Author:  
 Chris Fenimore  
 NCEP/NESDIS/NOAA



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

There was no change in Nevada for the week.

## Nevada Drought News:

[Sierra resort closes due to warm weather, low snow – Mar 16](#)

# Weekly Water and Climate Update

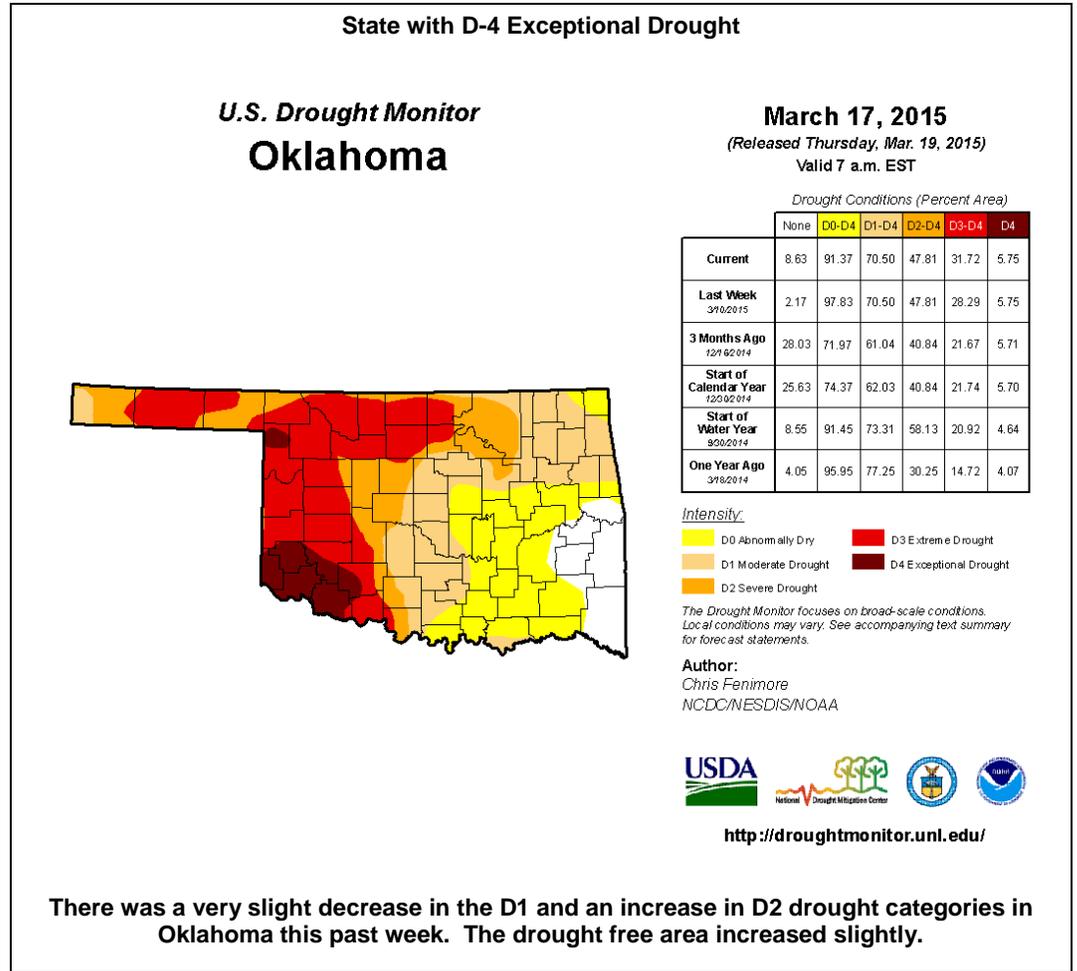
## Related Area News:

[2014 Kansas Drought Report and Summary](#)

- [Past 30 days precipitation totals](#)
- [Past 30 days precipitation percent of normal](#)
- [Calendar Year precipitation totals](#)
- [Calendar Year Precip percent of normal](#)
- [Short Crop ET](#)

## Oklahoma Drought News:

[Where eagles fly Drought affecting Salt Plains, but birds still are coming back – Mar 9](#)



## U.S. Population in Drought

Number of people in each drought category in the U.S. for the week ending March 10, 2015

| Week       | None        | D0-D4       | D1-D4      | D2-D4      | D3-D4      | D4         |
|------------|-------------|-------------|------------|------------|------------|------------|
| 2015-03-17 | 192,790,849 | 112,606,606 | 75,980,614 | 47,769,550 | 35,489,128 | 20,402,987 |
| 2015-03-10 | 192,930,796 | 112,466,659 | 71,090,448 | 47,361,278 | 35,318,538 | 20,402,987 |

Population figures affected by drought in the U.S. Drought Monitor website show that, for this week, more than 75,000,000 people in the United States were in a drought-affected area, which is an increase by over 4.8 million people from last week.

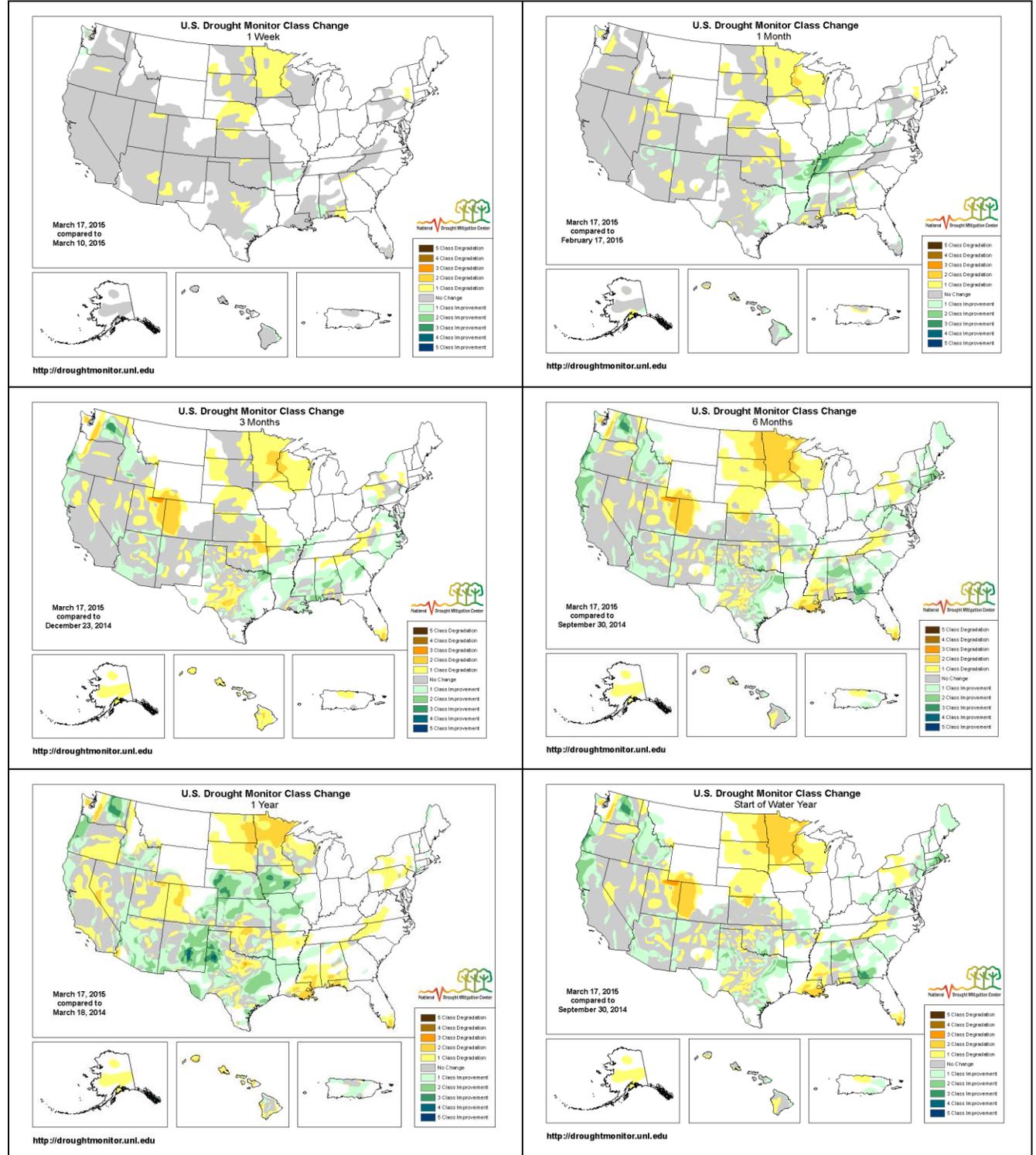
### Population Statistics Methodology:

The U.S. Drought Monitor population statistics are calculated at the county level, and aggregated to the state, regional, and national levels. The population densities have been calculated for each county. The proportion of the physical area of the county that is in drought is multiplied by the uniform population density in order to obtain a number for each county. The county values are then summed at the state, regional, and national level.

# Weekly Water and Climate Update

## Changes in Drought Monitor Categories

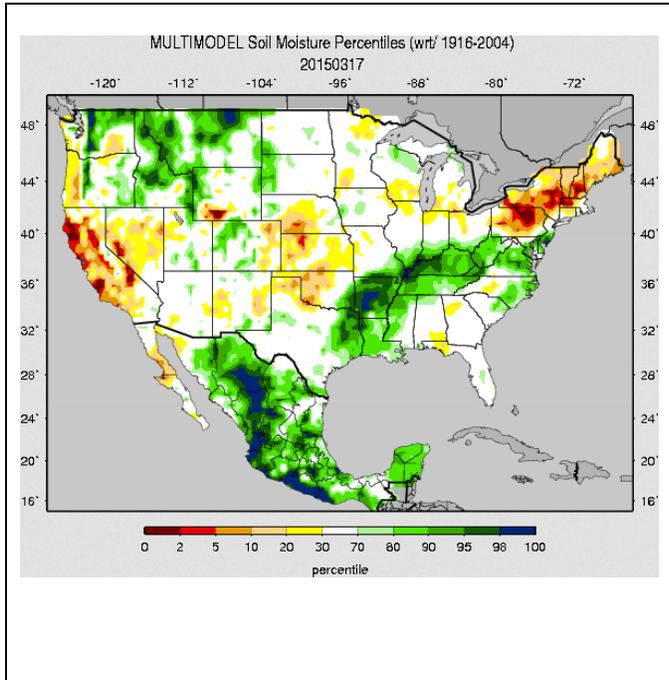
### Over Various Time Periods



Click on any of these maps to enlarge. Note how the conditions over the upper Great Plains and Ohio Valley have degraded between 6 to 12 months (middle right to lower left maps). However, also note that since a year ago, conditions over parts of the Northeast, the South, parts of the southern Great Plains and the Pacific coast states have improved (lower left map).

# Weekly Water and Climate Update

## Soil Moisture

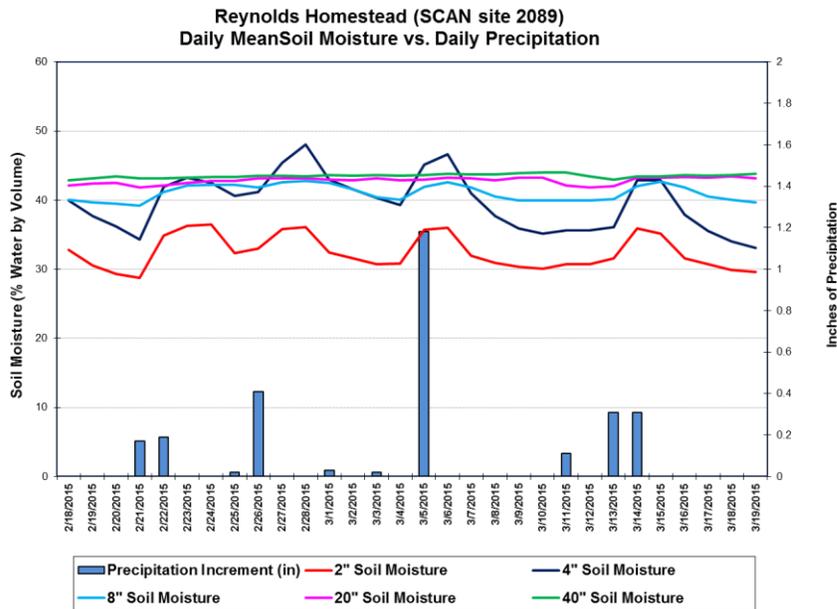


The national soil moisture model ranking in [percentile](#) as of March 17, 2015, shows dryness over most of the Northeast and along the West coast. The driest areas are in Nevada, California, southern Wyoming, Nebraska, Kansas, Pennsylvania, New York, Connecticut, Massachusetts, Vermont, Maine, and New Hampshire. Moist soils dominated Montana, the cascades mountains of Oregon and Washington, and into eastern Washington, Idaho, east Texas, Louisiana, Arkansas, northern Mississippi, Kentucky, and into west Tennessee. Slightly moist soils were also scattered elsewhere throughout the South, Southeast, Mid-Atlantic and Plains regions.

Much of the country has frozen conditions, so soil moisture conditions may not be representative.

Useful Hydrological Links: [Crop Moisture Index](#); [Palmer Drought Severity Index](#); [Standardized Precipitation Index](#); [Surface Water Supply Index](#); [Weekly supplemental maps](#); [Minnesota Climate Working Group](#); [Experimental High Resolution Drought Trigger Tool](#); [NLDAS Drought Monitor](#); [Soil Moisture](#)

## Soil Climate Analysis Network (SCAN)

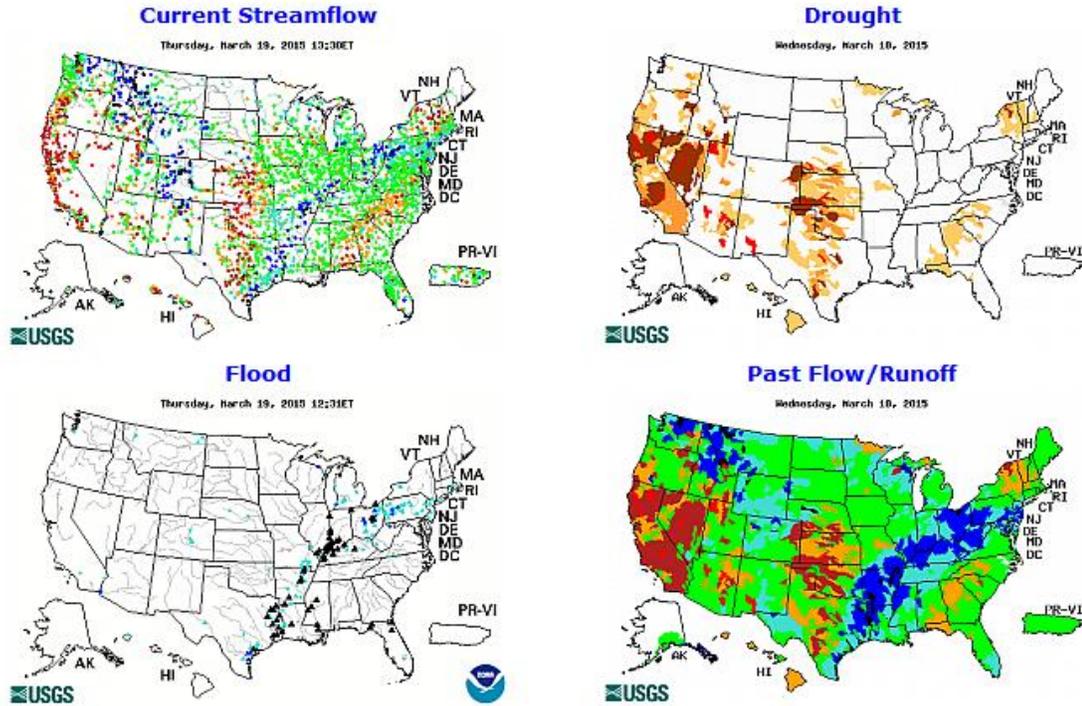


This NRCS resource shows soil moisture data for the last month at [Reynolds Homestead \(SCAN site 2089\)](#) in Virginia. The area had precipitation many times late in the past month (blue bars). This rainfall resulted in an increase in soil moisture at the 2- and 4- inch sensor, with less change at the deeper soil sensors from the precipitation events, and has kept the 20 and 40 inch soil moisture sensors in a fairly steady state.

Useful Agriculture Links: [Vegetation Drought Response Index](#); [Evaporative Stress Index](#); [Vegetation Health Index](#); [NDVI Greenness Map](#); [GRACE-Based Surface Soil Moisture](#); [North American Soil Moisture Network](#). [Monthly Wild Fire Forecast Report](#).

# Weekly Water and Climate Update

## Streamflow



Gages in several regions of the U.S. are reporting much above normal streamflow. Some gages in the northern states are now frozen, so may not relate to the precipitation and snow conditions in that area. There are a vast number of rivers above flood stage at this time. These include rivers in eastern Texas, Louisiana, Mississippi, Arkansas, Tennessee, Kentucky, Illinois, Indiana, Ohio, and Florida.

## National Long-Range Outlook



*Click map to enlarge and update*

*Currently the Upper Midwest part of the map has not been calculated for the long range flood outlook (dark gray dots).*

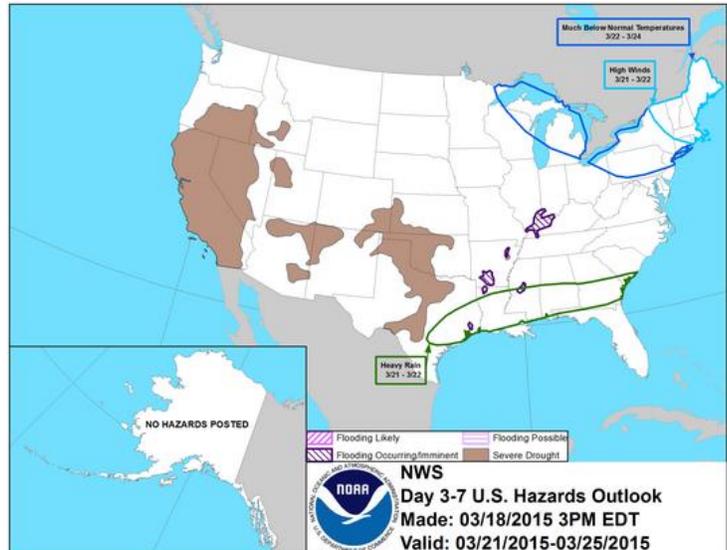
According to the National Weather Service, during the next three months, there is a risk of flooding in much of the eastern U.S. The Southeast and the Midwest have gauges with a slight to higher risk of flooding. Currently, **2** gauges have a greater than 50% chance to experience major flooding; **32** gauges for moderate flooding; and **229** gauges for minor flooding.

These numbers represent a **12** gage decrease in the greater than 50 percent chance of minor flooding category since last week.

## Weekly Water and Climate Update

### National [Weather Hazards](#)

The National Weather Service map of national weather hazards for the next 3 – 7 days forecasts heavy rain along the Gulf Coast to South Carolina (3/21-22). Flooding is occurring in southern Illinois, southern Indiana, western Kentucky, Arkansas, Louisiana, east Texas, and in central Mississippi. High winds are forecast in all of New England and into central upstate New York (3/21-22). Much Below normal temperatures are expected throughout New England and throughout the Great Lakes to Minnesota, and south to most of Pennsylvania (3/22-24). In Alaska, no hazards were posted. Severe drought remains a large issue in much of the south-central and western U.S.



### [National Drought Summary for March 17, 2015](#)

Prepared by the Drought Monitor Author: Chris Fenimore, NOAA/NESDIS/NCDC.

#### Summary

“The week was characterized by drier than normal conditions across much of the Lower-48. However, there was a system that brought significant precipitation to the south and eastern part of the country. A wide swath of 2-5 inch precipitation fell in the lower Mississippi and Ohio Valleys. Across the country, temperatures for the most part were above average, as record high temperatures stretched from California eastward to the north-central U.S. In the northern Plains, departures were 20 degrees above normal. These warm temperatures began the melt season from the Great Lakes eastward into New England. Only the Deep South and extreme Northeast saw cooler than normal temperatures. Light precipitation fell in and around the Northwest, but snowpack levels remain low. Snowpack deficiencies are an even larger concern in the Sierra Nevada and Southwest mountains where the snow water content values are record or near record low levels.

#### Hawaii, Alaska, and Puerto Rico

No changes were made in Alaska or Puerto Rico this week. Above normal rainfall during the start of March across Hawaii led to a reduction in drought and dryness. The rains have reduced the drought footprint along the northeast-facing slopes and lower elevations of the east on the Big Island. Below normal temperatures affected Alaska during the past week.

#### Mid Atlantic and Northeast

Precipitation was below normal while temperatures were above normal for much of the area during the past week. Only the eastern sections of the Carolinas saw precipitation totals that exceeded their normal for the period. Precipitation in Florida and south Alabama measured less than 50 percent of the normal for the period. This exacerbated the long term dryness, resulting in an expansion of D0 in some areas.

#### Plains and Upper Midwest

Recent and long term dryness coupled with much above normal temperatures expanded D0 conditions in much of the Upper Plains. D1 conditions also expanded, occupying most of Minnesota. In Minnesota, record temperatures sped up the drying process and precipitation is 2.5 to 3.5 inches short since October 1. In the Dakotas and Minnesota, temperatures were 18-24 degrees above normal this past week. Similar anomalous conditions also led to the expansion of D0 in Nebraska. Precipitation deficits there are below the 75th percentile in most of the area. Soil moisture values in Nebraska are 2-3 inches behind normal. It was also noted that wheat broke dormancy in the McCook, Nebraska area during late February to early March. About 100 miles further east, wheat was just beginning to green up.

## Weekly Water and Climate Update

### **South and Southwest**

Drought conditions in Texas were reduced in some areas, while other areas saw intensification this week. D0 and D1 conditions were trimmed back in the Coastal Bend and east Texas. Meanwhile, D2 and D3 conditions were expanded towards the south in central Texas due to the below normal reservoir levels which are less than 70 percent full in those areas.

In southwest New Mexico, the snowpack is sitting at zero percent snow water equivalent (SWE) in the Mimbres Basin, and 23 percent SWE in the Gila River Basin and 26 percent SWE in the San Francisco Basin. Based on this data, D1 was extended to the north. Across the border, D2 was extended in the Eastern Mogollon Rim and White Mountains. Further to the north in central Arizona, the snowpack melt is about 1-2 weeks ahead of schedule but Lake Mary, near Flagstaff, is at or above normal for this time of year – its highest level since 2011.

### **Southeast**

Precipitation was below normal while temperatures were above normal for much of the area during the past week. Only the eastern sections of the Carolinas saw precipitation totals that exceeded their normal for the period. Precipitation in Florida and south Alabama measured less than 50 percent of the normal for the period. This exacerbated the long term dryness, resulting in an expansion of D0 in some areas.

### **West, Northwest and Southwest**

Precipitation did fall along the northern tier of the region during the week; however, aside from the highest elevations, temperatures were too warm to support much-needed snowfall. Degradation was made in Oregon and Utah due to low snowpack amounts that have plagued the west coast this past winter. Mountain snowpack across the Olympic, Cascade, Coastal Range, and Sierra Nevada is at least 25 percent below the 30-year normal. In the Sierra Nevada, precipitation amounts for the water year are 10 inches or more below normal. To exacerbate matters, average temperatures were well above normal. Temperatures in Los Angeles reached 90 degrees F for a March record four consecutive days. This just after California besting their winter (Dec-Feb) average temperature, set just last year (2013/14), by 1.5 degrees F. Washington State also had one of their warmest winters on record with an anomaly 6.0F above the 20th century average. The average temperature in Nevada, Utah, and Arizona was also record warm this past winter.

### **Looking Ahead**

Through March 24, two low-pressure systems will track their way across the Deep South. The first system may bring upwards of 2 inches in the Southeast. The second system may bring 2 or more inches to eastern Texas and, depending on the track of the low, the Carolina Coast. To the north, more snow is expected in the Northeast as a clipper system interacts with a costal low. The heaviest snows may fall in Upstate New York and along the New England coastline. Elsewhere, two small Pacific storms will affect the Northwest during this period. For temperatures, the highest probabilities of below and above normal values are in the Northeast and Southwest, respectively.

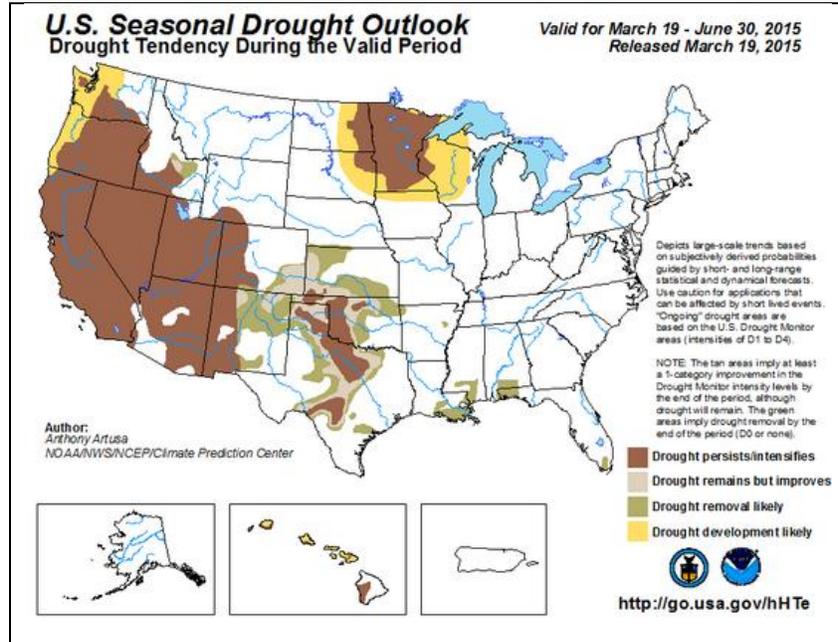
Looking further out through the end of the month, warmer than normal temperatures continue their dominance in the West, while a series of short-wave impulses support cooler than normal temperatures in the Northeast. The Climate Prediction Center precipitation probabilities are below average for the West, Southwest and Deep South. Above average probabilities are forecasted for the Northwest, Upper Plains and East Coast.”

# Weekly Water and Climate Update

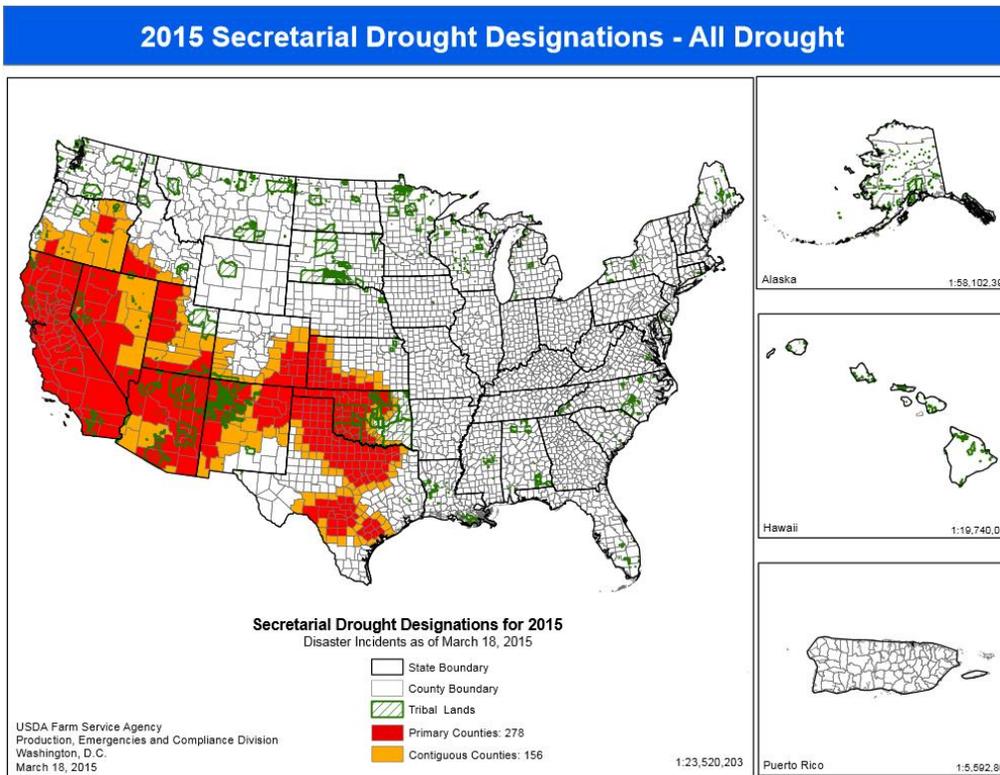
## Supplemental Drought Information

### National Seasonal Drought Outlook

Nationally, [drought](#) is expected to persist or intensify over much of the West and south-central U.S., including California, Nevada, Oregon, Washington, Idaho, Utah, Arizona, New Mexico, Texas, Oklahoma, Minnesota, North Dakota, South Dakota, Colorado, and Hawaii. Improvements are expected in parts of Colorado, New Mexico, Texas, Oklahoma, Nebraska, Louisiana, Mississippi, and Florida. The areas of drought that are likely to develop further are in the upper Midwest, the Pacific Northwest, and parts of Hawaii.



### 2015 USDA Secretarial Drought Designations



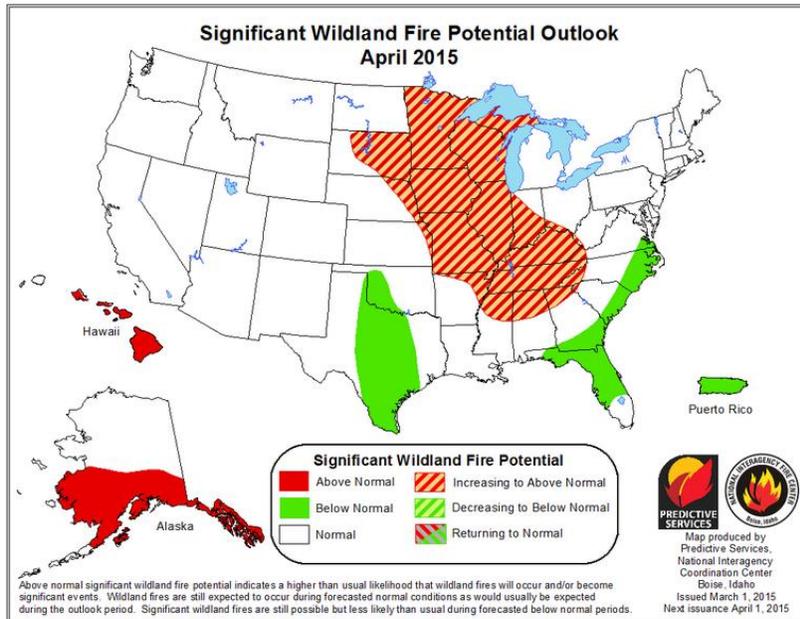
Refer to the USDA Drought Assistance [website](#) and [National Sustainable Agriculture Information Service](#).

Read about the new [USDA Regional Climate Hubs](#).

[New useful resource: NASS Quick Stats](#)

## Weekly Water and Climate Update

### National Fire Potential Outlook



#### April Fire Forecast

In April, much of the U.S. has normal [fire potential](#).

A large area of the central U.S. has increasing to above normal fire potential for April. Below normal fire potential for March 2015 (in green on the map) is forecast for Texas and the Southeast to the Mid-Atlantic States, and in Puerto Rico.

The southern half of Alaska and most of the Hawaiian Islands have above normal fire potential.

### Additional Maps

U.S. Maps PowerPoint presentation: <http://dmcommunity.unl.edu/maps/US-Maps.ppt>.

Regional zooms of ACIS station data percent-of-normal precipitation: <http://dmcommunity.unl.edu/maps/All-CONUS-ACIS-PNP.pptx>.

National Water and Climate Center (NWCC) Surface Water Supply Index (SWSI) maps: <http://www.wcc.nrcs.usda.gov/wsf/swsi.html>

### Supplemental Drought-Agriculture News

Download [archived](#) "U.S. Crops in Drought" files.

The following is a collection of drought-related news stories from the past seven days or so. Impact information from these articles is entered into the [Drought Impact Reporter](#). A number of these articles will also be posted on the [Drought Headlines](#) page at the NDMC website. The list is compiled by Denise D. Gutzmer, Drought Impact Specialist, at the National Drought Mitigation Center.

#### "Beef prices

In 2014, the cost of beef rose 23.6 percent as the lingering effects of the Midwestern drought kept prices high. Beef prices are expected to continue climbing another 5 to 6 percent in 2015.

#### California senators see need for better oversight of wastewater disposal

Members of the California Senate committees on environmental quality and natural resources met after critical state and federal reviews of the oil and gas industry's wastewater disposal activities. Loose enforcement of regulations and errors in record-keeping have endangered federally protected water sources for drinking and irrigation.

#### Cal Fire preparing for early wildfires

Cal Fire hired seasonal firefighters ahead of schedule to prepare for any wildfires that might arise early, given that the state was entering its fourth year of drought. In SoCal, the fire season goes year-round, while in Northern California, exceedingly dry vegetation and warm temperatures have elevated the fire danger.

## Weekly Water and Climate Update

### Metropolitan Water District of Southern California bought Northern California water

Some SoCal water districts, including the Metropolitan Water District, have purchased 115,000 acre-feet of water from rice farmers in the Sacramento Valley at a cost of \$71 million. Some of the farmers find selling the water to be more lucrative than growing rice, but rice production was already down 25 percent in 2014 for lack of water. This water transaction and others are indicative of the market forces shifting water allocations in California.

### Water rate hikes necessary, but unpopular

Three large Bay Area water providers—the Santa Clara Valley Water District, the East Bay Municipal Utility District and the San Francisco Public Utilities Commission—are considering raising water rates by as much as 30 percent to compensate for reduced revenue. The public backlash caused the Santa Clara Valley Water District to revise its rate hike estimate from 31 percent to 19 percent.

### Drought emergency in parts of Washington

Gov. Inslee of Washington declared a drought emergency on March 13 for the Olympic Peninsula, east side of the central Cascades including Yakima and Wenatchee, and the Walla Walla region. Precipitation has been about average in parts of the state, but came as rain rather than snow.

### New Mexico chile

Dry weather and low irrigation allotments, stemming from drought, have New Mexico chile farmers producing less than previous years. In 2014, 7,700 acres of chile were harvested, a 10 percent drop from 2013.

### Shrunken marshland at north central Oklahoma wildlife refuge

Marshes in the Salt Plains National Wildlife Refuge have shrunk from 465 acres down to just 28 acres, as drought dries up the marshland. Fewer birds were stopping at the refuge since it held little water with the most recent count of sand hill cranes numbering 22,000 birds, down from the record high count of 62,000 birds.

### Not enough pasture grass for Southern Florida livestock

A CoCoRaHS observer in Hendry County, Florida noted, "We have not had enough rain to grow grass in the pasture, I am feeding hay to my cattle." March 12, 2015"

### [The Drought Impact Reporter](#)



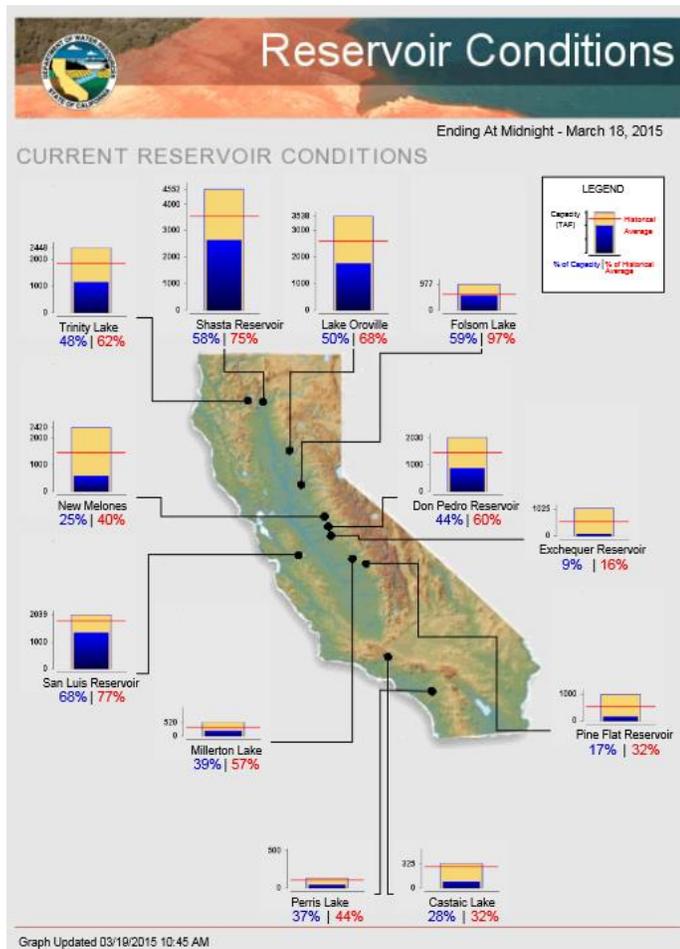
# Weekly Water and Climate Update

## Tea Cup Reservoir Depictions

- <http://www.usbr.gov/uc/water/basin/> ← Upper Colorado
- [http://www.usbr.gov/uc/wcao/water/basin/tc\\_gr.html](http://www.usbr.gov/uc/wcao/water/basin/tc_gr.html); ← Upper Snake
- <http://www.usbr.gov/pn/hydromet/burtea.html> ← Upper Colorado
- [http://www.usbr.gov/uc/water/basin/tc\\_cr.html](http://www.usbr.gov/uc/water/basin/tc_cr.html) ← Upper Colorado
- <http://www.usbr.gov/pn/hydromet/select.html> ← Pacific Northwest
- <http://www.sevierriver.org/reservoirs/teacup-diagram-of-reservoirs/> ← Sevier River Water (UT)

## California Reservoir Conditions

[California Major Reservoir conditions from the CA Department of Water Resources](#)



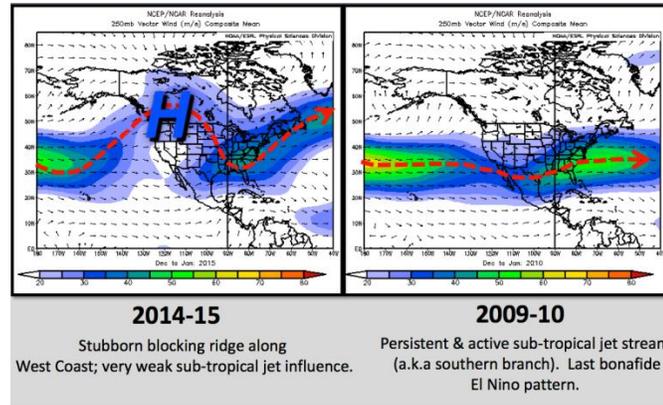
## State Activities

[State government drought activities](#) can be tracked through their drought plans. NRCS Snow Survey and Water Supply Forecasting (SSWSF) Program State Office personnel are participating in state drought committee meetings and providing the committees and media with appropriate SSWSF information. Additional information describing the [tools](#) available from the Drought Monitor can also be found at the [U.S. Drought Portal](#).

## Weekly Water and Climate Update

### Persistent weather pattern dominates the U.S.

Here is a graphic from the National Weather Service on the persistent weather pattern and mean jet stream position that has affected the U.S. for much of this winter. The current year was originally forecast to be in an El Niño pattern, which hasn't occurred. The current year's weather pattern on the left is in contrast to the normal El Niño pattern on the right that occurred in 2009- 2010.



### More Information

The National Water and Climate Center (NWCC) [Homepage](#) provides the latest available snowpack and water supply information. This document is available [weekly](#). CONUS Water and Climate Updates from 2007 are available online. Reports from 2001-2006 are available on request.

This report uses data and products provided by the Interagency Drought Monitor Consortium members and the National Interagency Fire Center.

/s/

David W. Smith

Deputy Chief, Soil Science and Resource Assessment