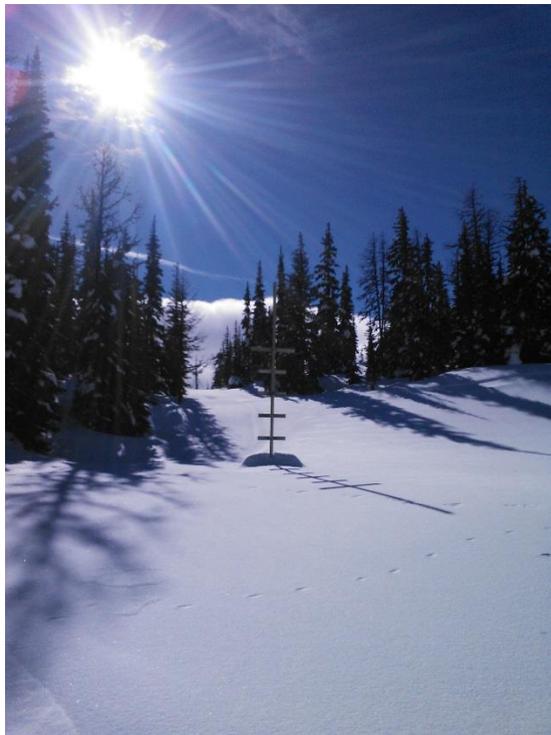




Natural Resources Conservation Service
P.O. Box 2890
Washington, D.C. 20013

Weekly Water and Climate Update
Thursday, March 26, 2015

Table listing various topics and their corresponding page numbers, such as Snow (2), National Weather Hazards (17), and National Drought Summary for March 24, 2015 (17).



Harts Pass Aerial Marker, North Cascades, Washington.

2014 NWCC Photo Contest Scenery Category

Photo submitted by Scott Pattee, NRCS, WA

Outlook: "A strong cold front stretching from the Northeast to the western Gulf Coast region will continue to push eastward, clearing the Atlantic Seaboard on Friday. Storm-total precipitation could locally exceed an inch in the eastern U.S. and along the Gulf Coast, while rain will change to accumulating snow from the lower Great Lakes region to northern New England. In the front's wake, a strong surge of cold air will result in weekend freezes as far south as parts of Alabama and Georgia. In contrast, dry weather will accompany record-setting warmth from California to the central and southern High Plains. The NWS 6- to 10-day outlook for March 31 – April 4 calls for near- to above-normal temperatures nationwide, except for

cooler-than-normal conditions from the Great Lakes region into New England. The most persistent warmth will cover the Southwest, including southern California. Meanwhile, below-normal precipitation from the Pacific Coast to the central and southern High Plains will contrast with wetter-than-normal weather in most of the eastern one-third of the U.S. and across the nation's northern tier from Montana to Maine."

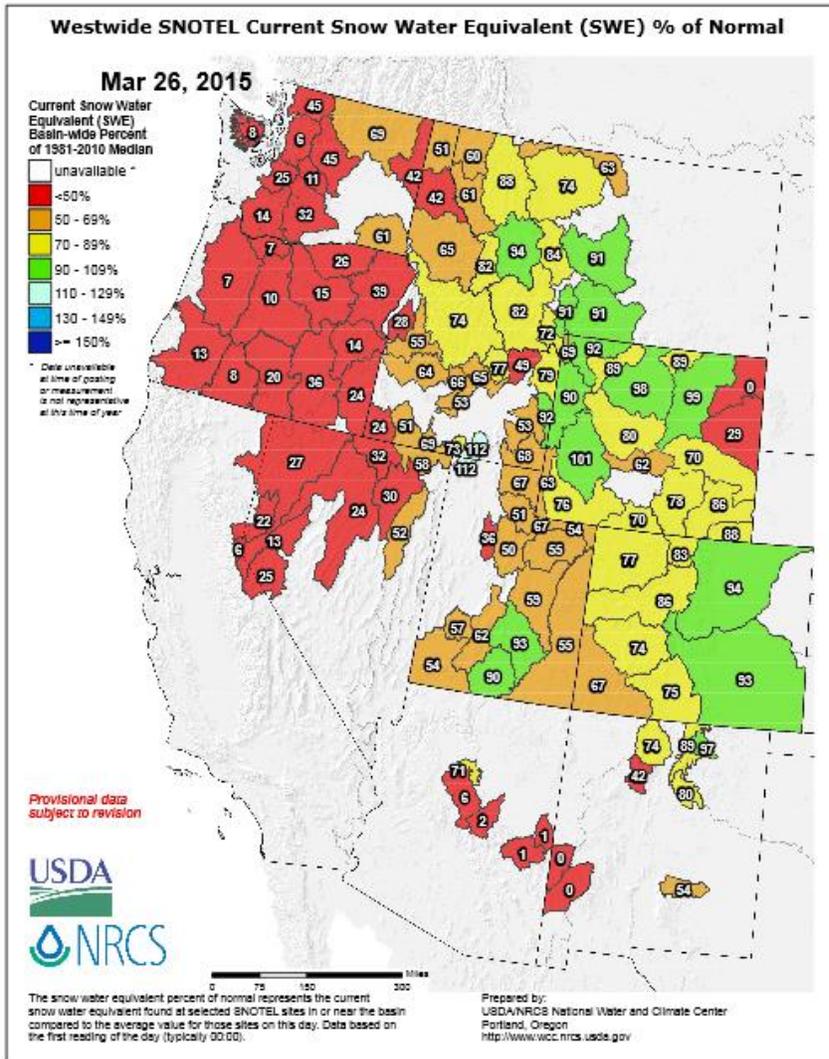
Contact: Brad Rippey, Agricultural Meteorologist, USDA/OCE/WAOB, Washington, D.C. (202-720-2397)

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



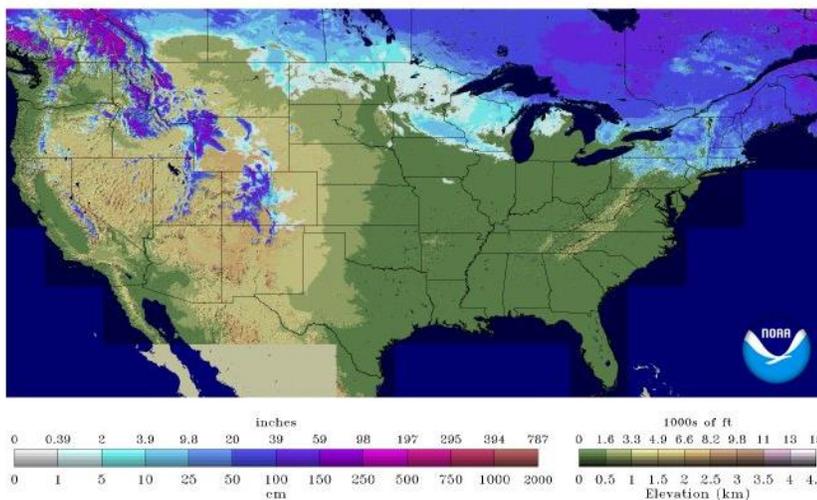
The [Westwide SNOTEL Current Snow Water Equivalent \(SWE\) % of Normal map](#) shows the largest snowpack deficits (red areas) in the Cascades and Olympics in eastern Washington, all of Oregon, the Sierra Nevada in California, as well as most of Nevada, Arizona, parts of New Mexico, four basins in Idaho, two in Wyoming, and one in Utah. Below normal snowpacks (orange and yellow areas) are also located in eastern Washington, Idaho, most of Utah, eastern Nevada, western Colorado, parts of Wyoming, one basin in central New Mexico, and a few basins in Montana.

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

One basin in northwest Utah and southeast Idaho has above normal snowpack at this time (light blue area).

National Snow 2014-2015 Analysis 2015

Snow Depth
 2015-03-26 06 UTC



The snow depth map as reported from the [NWS NOHRSC](#) for March 26, 2015, shows a slight increase in snow cover from last week. Snow now covers 16.5% of the continental U.S. This includes snow across many of the mountains in the West, the northern Plains, and the Northeast.

Weekly Water and Climate Update

Precipitation

2015, an unusually warm year...

So far this winter, temperatures have persistently remained above to much above normal across the West. This has had a dramatic affect on the snowpack. This was well noted in the Cascades and Sierra Nevada where the snowpack was below normal for most of the winter. The precipitation for the water year (Oct. 1 – today) in the Sierra Nevada is also well below normal, and recent cool storms have raised the Cascade Mountain precipitation (see map on page 5) to near normal and improved the snowpack conditions. The overriding influence in these unusual circumstances of having a low snowpack but with near normal precipitation is the persistent warm temperatures that have dominated the snowpack processes.

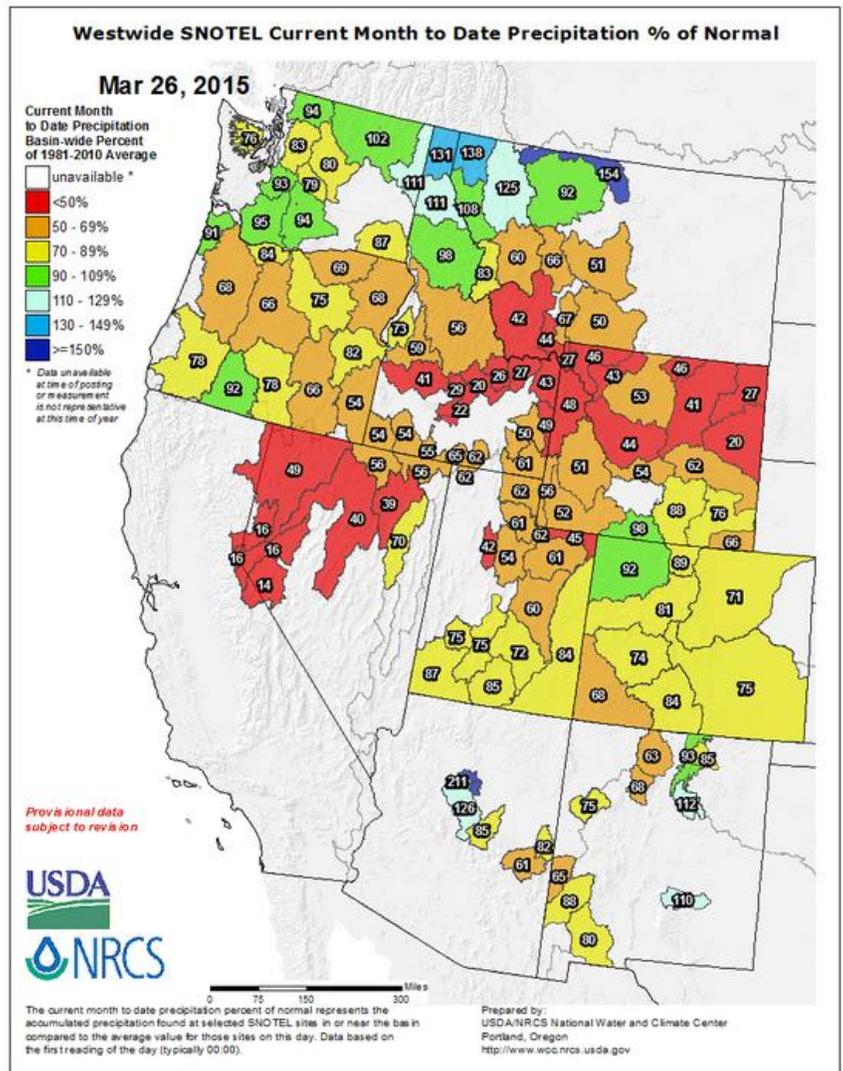
Freezing levels for most storm events have remained well above the elevation of many SNOTEL sites. The near average precipitation (see map on page 5), especially in the Cascades of Oregon and Washington, has helped to improve any soil moisture, groundwater, and reservoir deficits. This has helped to 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 northern Rockies, and precipitation totals in Oregon and Washington. Percent of normal precipitation improvements were also recorded in Arizona and New Mexico. Well above normal precipitation occurred in northern Montana, one basin in eastern Washington, two basins in northern Idaho, two basins in New Mexico, and two basins in Arizona (blue areas).

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

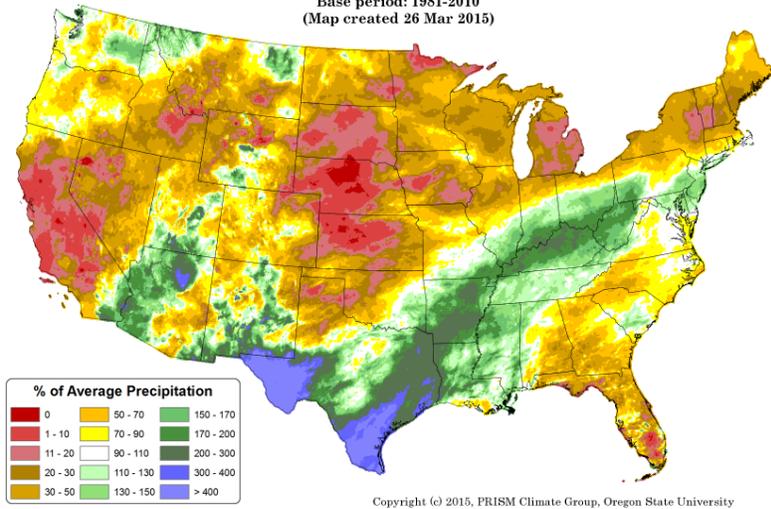
The percent of average may be exaggerated over a short period of time and dependent on normal conditions for this time of year.

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 - 25 March 2015
 Period ending 7 AM EST 25 Mar 2015
 Base period: 1981-2010
 (Map created 26 Mar 2015)



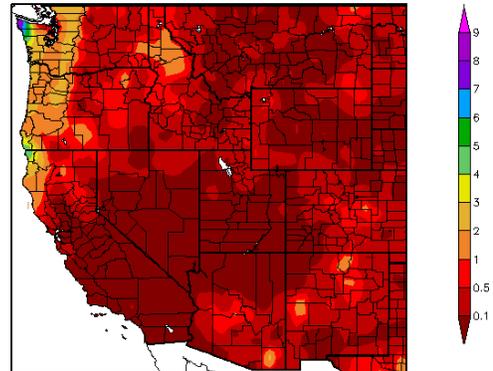
For March 2015, the national total [precipitation anomaly](#) pattern reveals some higher than normal precipitation, primarily in Texas, the Southwest, southeastern California, and in a band from Texas northeast to Kentucky. There was little or no precipitation in many parts of the West, the northern and central Plains, the upper Midwest, the Southeast, and 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 along the Pacific coast from northern California to northern Washington. The highest area of significant precipitation was in the Olympic Peninsula coast of western Washington. Light and widely scattered precipitation was also reported in Oregon, Washington, Idaho, northern California, northern Nevada, Montana, and a few areas of Wyoming, Colorado, southern Arizona, and New Mexico.

Little to no precipitation fell in many areas of the West this week (dark red). The largest contiguous dry area covered a large part of California, Nevada, Utah, northern Arizona, and western Colorado.

Precipitation (in)
 3/19/2015 - 3/25/2015



Generated 3/26/2015 at HPRCC using provisional data.

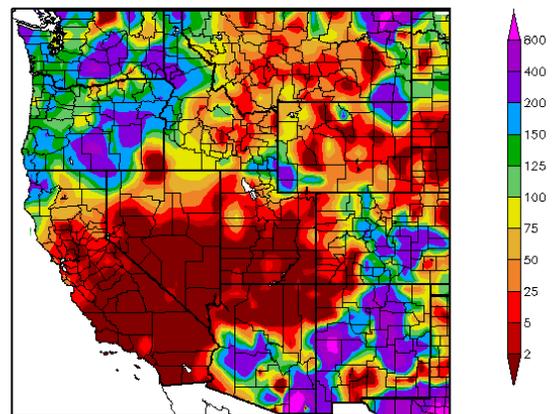
Regional Climate Centers

This ACIS percent of normal [map](#) of the West for the last seven days reflects heavy precipitation in many areas of the West. The heaviest percent of normal precipitation fell in northeast Montana, southeast Arizona, and southwest New Mexico. (Magenta areas).

Very dry conditions for the week were reported in California, Nevada, Utah, northern Arizona, and western Colorado (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 (%)
 3/19/2015 - 3/25/2015

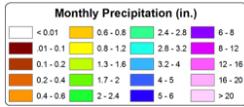
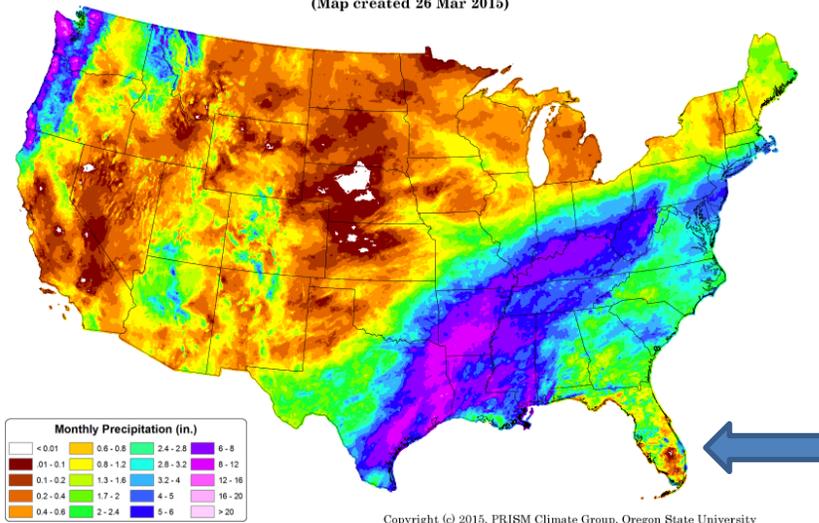


Generated 3/26/2015 at HPRCC using provisional data.

Regional Climate Centers

Weekly Water and Climate Update

Total Precipitation: 01 March 2015 - 25 March 2015
 Period ending 7 AM EST 25 Mar 2015
 (Map created 26 Mar 2015)



Copyright © 2015, PRISM Climate Group, Oregon State University

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

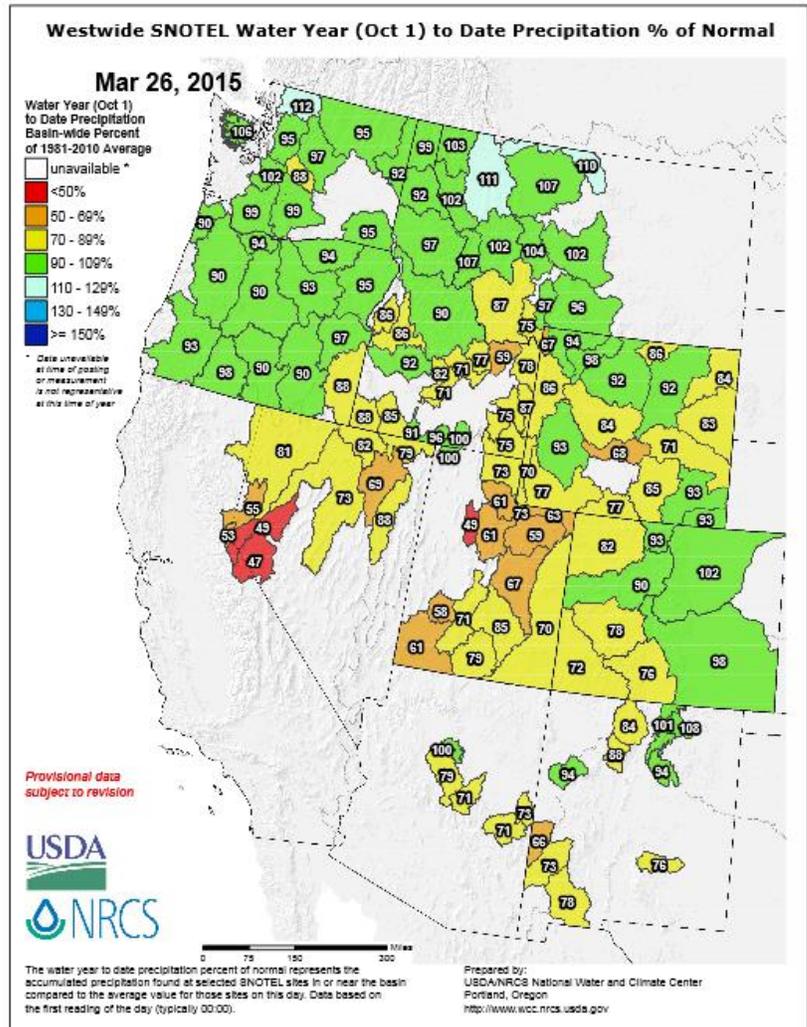
See [Go Hydrology](#) for current and forecast conditions over southern Florida.

For the [2015 Water Year](#) that began on October 1, 2014, there are a few areas of precipitation surplus in the West. Two basins in northern Montana and one basin in northwest Washington are slightly above normal 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, most of Oregon, much of Idaho, one basin in Arizona, one basin in Utah, and four basins in northern New Mexico.

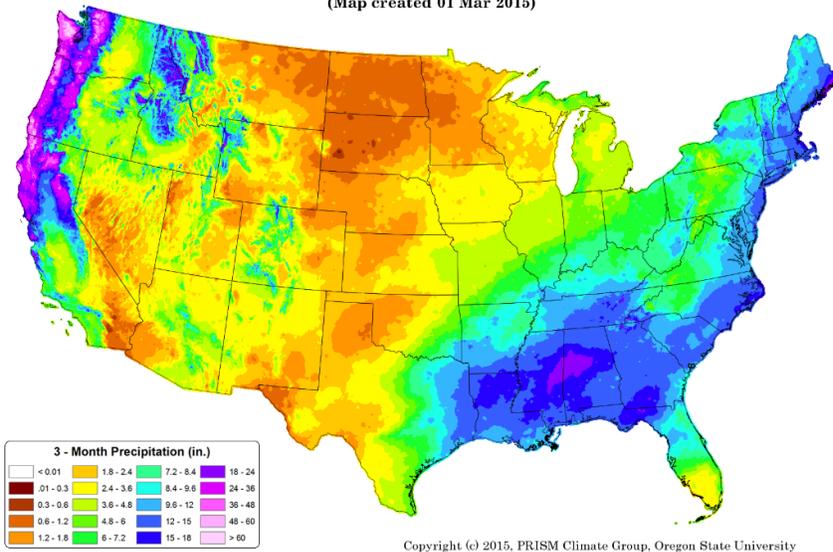
Several areas have less than normal precipitation for the Water Year. These include basins in southern Idaho, parts of Wyoming, western Colorado, Utah, California, Nevada, most of Arizona, parts of New Mexico, southeast Oregon, one basin in Washington, and two basins in Montana (mapped in yellow and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

Two basins that cross the California and Nevada border and one basin in Utah are reporting less than 50% of normal precipitation for the Water Year (red area).



Weekly Water and Climate Update

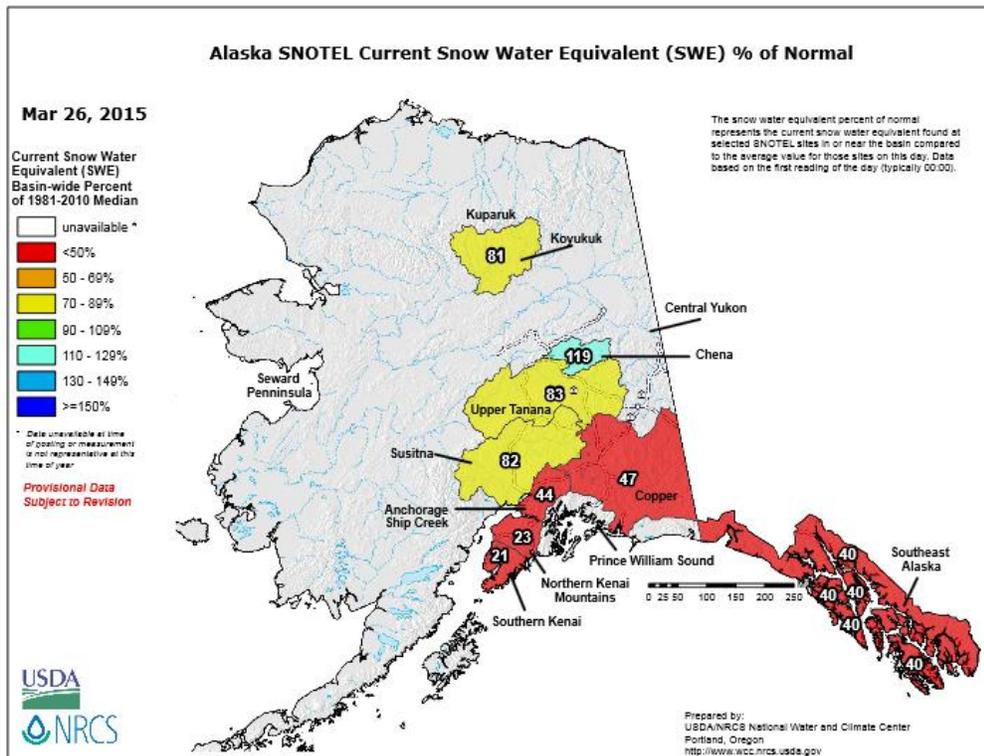
Total Precipitation: December 2014 - February 2015
 Period ending 7 AM EST 28 Feb 2015
 (Map created 01 Mar 2015)



The national map of the [three-month period](#) (December - February) shows that the south central to the northeast region of the nation received precipitation from 2.4 inches to greater than 18 inches. Parts of the West, especially in the mountains, also received significant precipitation. The highest amounts over 60 inches were recorded in northern California, Oregon, and Washington mountains.

In contrast to the eastern U.S. and Pacific coast, parts of the West, the Plains and much of the Midwest received totals of less than 2.4 inches.

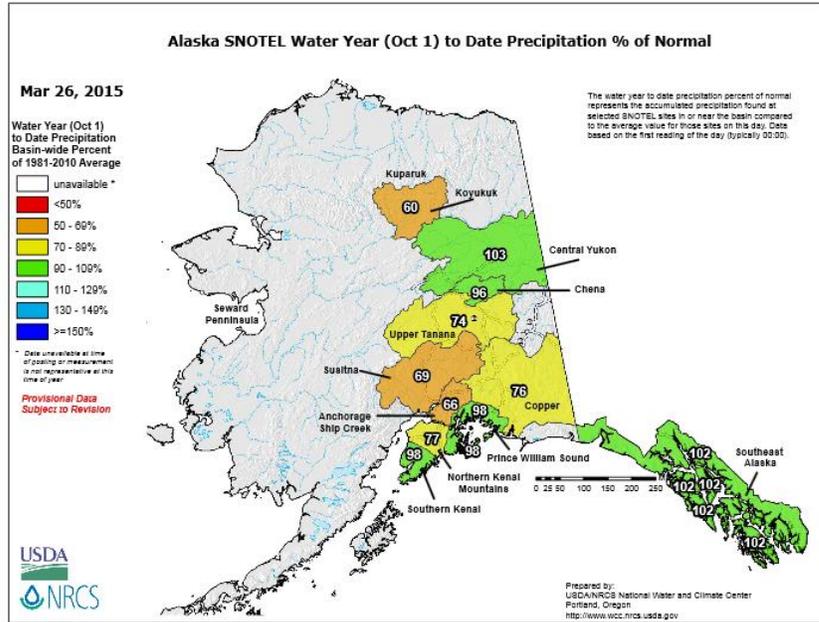
Alaska Snow Water Equivalent and Precipitation Conditions



The [Alaska SNOTEL current SWE map](#) shows less than normal 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, 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 normal conditions for the southern and southeast parts of the state, and for two basins in interior Alaska. Much of the remainder of interior Alaska is reporting drier than normal conditions. See the [Alaska update report](#) for individual station data.

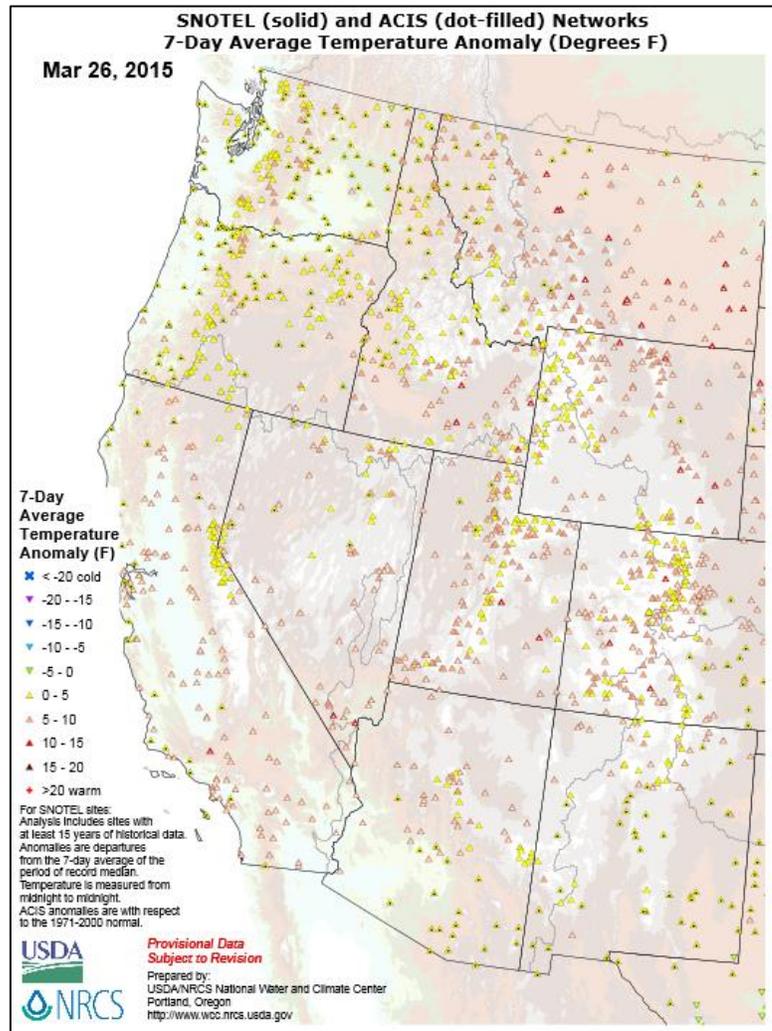


Temperature

The SNOTEL and ACIS [7-day temperature anomaly](#) map for the western U.S. shows much of the West was above normal again for the week. The highest anomalies were across many states including Idaho, Montana, California, Nevada, Utah, and Colorado. The largest areas of high anomalies were in eastern Montana and eastern Wyoming, where anomalies were **+10-15** degrees F.

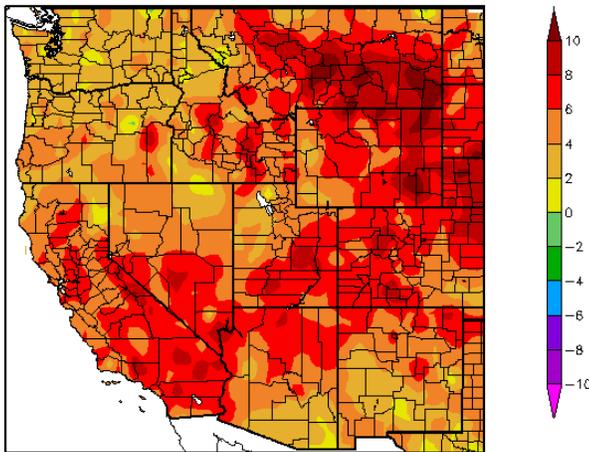
There were many areas with near normal temperatures across the West. These include stations in Washington, Oregon, California, and Idaho, scattered in with slightly warm anomalies elsewhere.

There were no cool anomalies in the West again this week.



Weekly Water and Climate Update

Departure from Normal Temperature (F)
3/19/2015 – 3/25/2015



The [ACIS](#) map of the 7-day average temperature anomalies in the West ending March 25 shows that the region was above normal. The greatest positive temperature departures occurred in eastern Montana and eastern Wyoming ($>+10^{\circ}\text{F}$). Other warm temperatures were scattered across most of the West. There were no negative temperature departures in the West, but there were a few scattered areas that were near normal for the week.

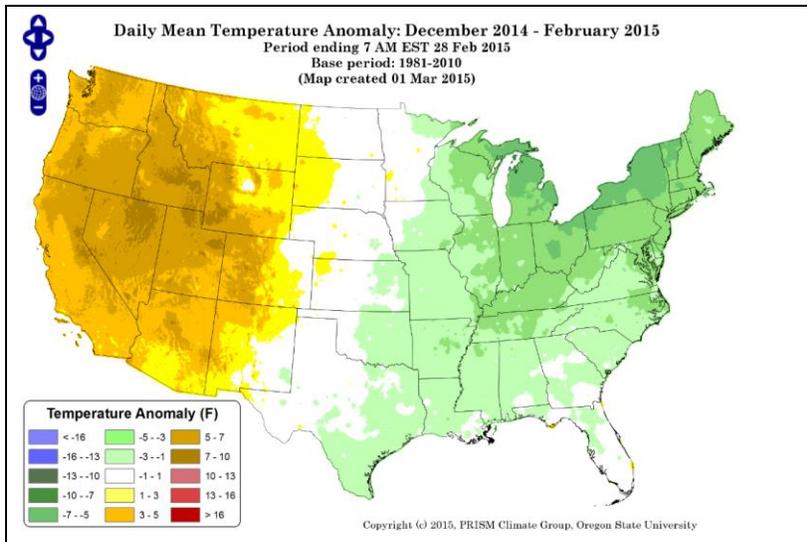
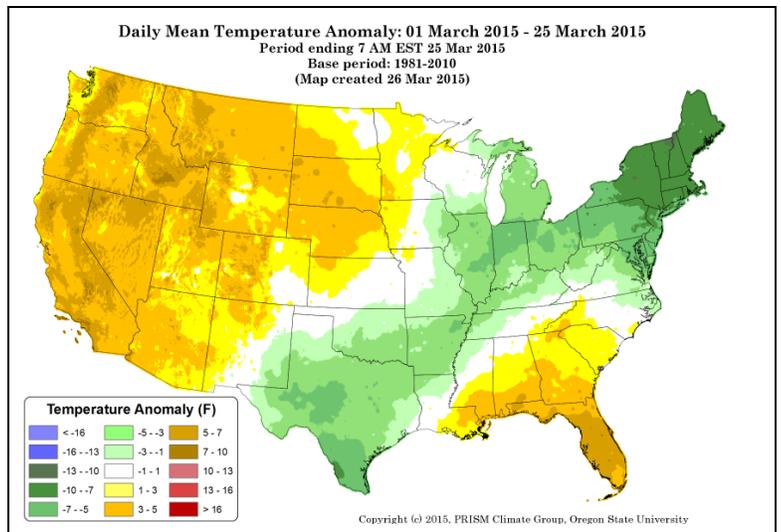
Also, see [Dashboard](#) and the [Westwide Drought Tracker](#)

Generated 3/26/2015 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 southcentral and northeastern parts of the country, with the coolest anomalies in northern New Hampshire and Vermont ($<-10^{\circ}\text{F}$). In contrast, above normal temperatures were recorded in most of the West and in the Southeast. Scattered areas in Oregon, Washington, California, central Idaho, northwest Nevada, and Florida had the highest warm anomalies ($>+7^{\circ}\text{F}$).



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 ($>+7^{\circ}\text{F}$). 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 northcentral states, primarily along the Canadian border ($<-5^{\circ}\text{F}$).

Weather and Drought Summary

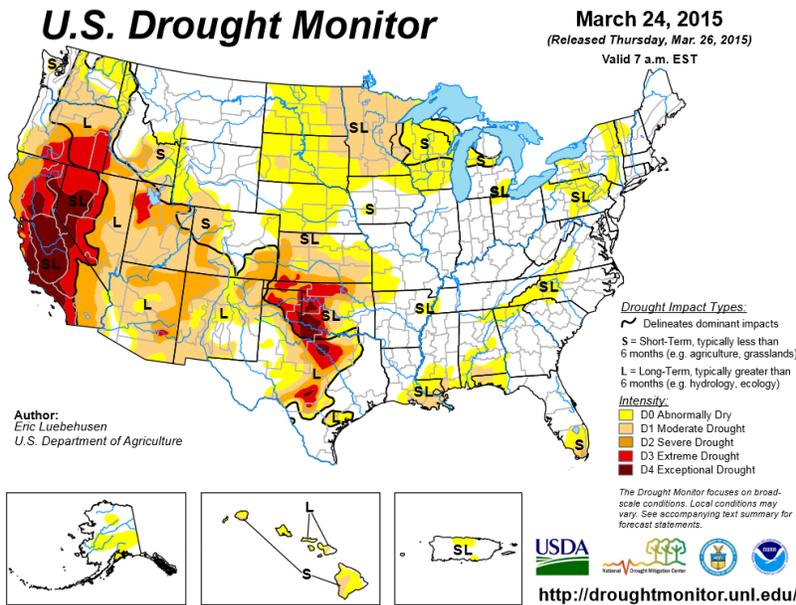
National Drought Summary – March 24, 2015

The following **Weather and Drought Summary** is provided by this week’s NDMC Drought Author, Eric Luebehusen, U.S. Department of Agriculture.

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

“For the contiguous 48 states, the U.S. Drought Monitor showed 34.57 percent of the area in moderate drought or worse, compared with 34.73 percent a week earlier. Drought now affects 77,151,734 people, compared with 75,980,614 a week earlier.

For all 50 U.S. states and Puerto Rico, the U.S. Drought Monitor showed 28.93 percent of the area in moderate drought or worse, compared with 29.06 percent a week earlier. Drought now affects 77,508,634 people, compared with 76,337,514 a week earlier.”



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

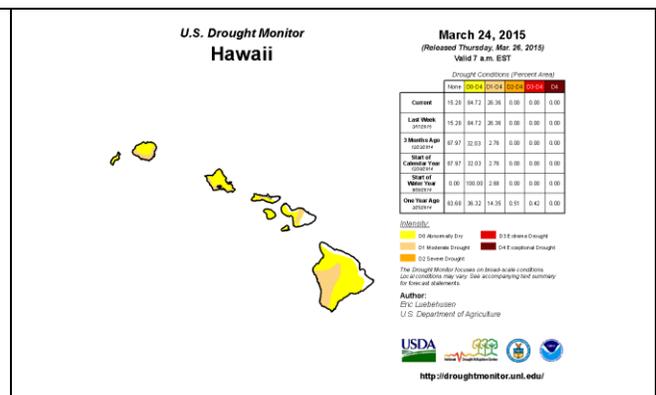
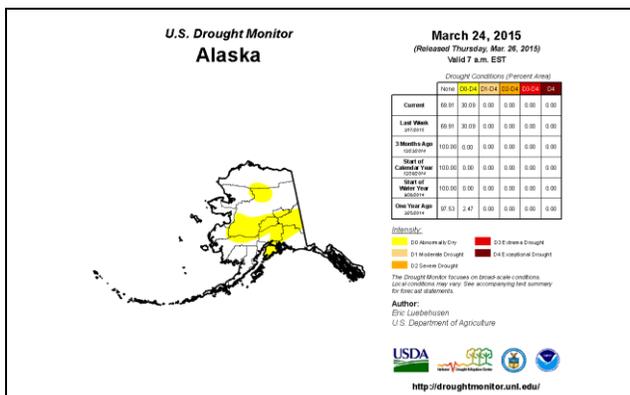
[Current Drought Monitor](#) weekly summary. The exceptional D4 levels of drought are scattered across CA, NV, TX, and OK.

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:

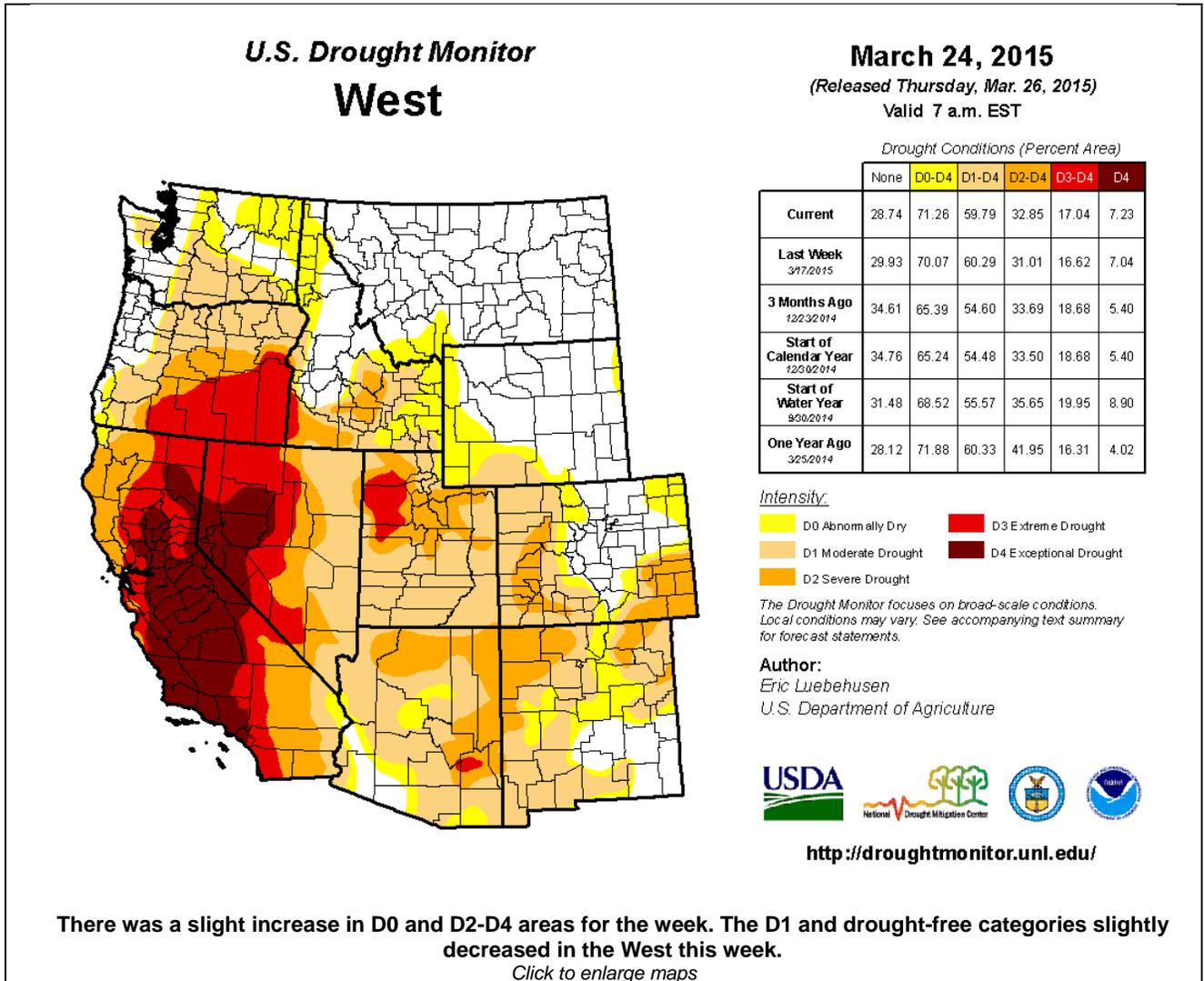
- ✓ <http://www.usda.gov/oce/weather/Drought/AgInDrought.pdf>
- ✓ [Watch AgDay TV](#)
- ✓ [Drought Impacts Webinar Series](#)
- ✓ [NIDIS Quarterly Climate Impacts and Outlook](#)
- ✓ [The Spring 2014 edition of DroughtScope](#)
- ✓ [U.S.Crops in Drought](#)



“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

Weekly Water and Climate Update

definitions for the figures that follow, click [here](#).”



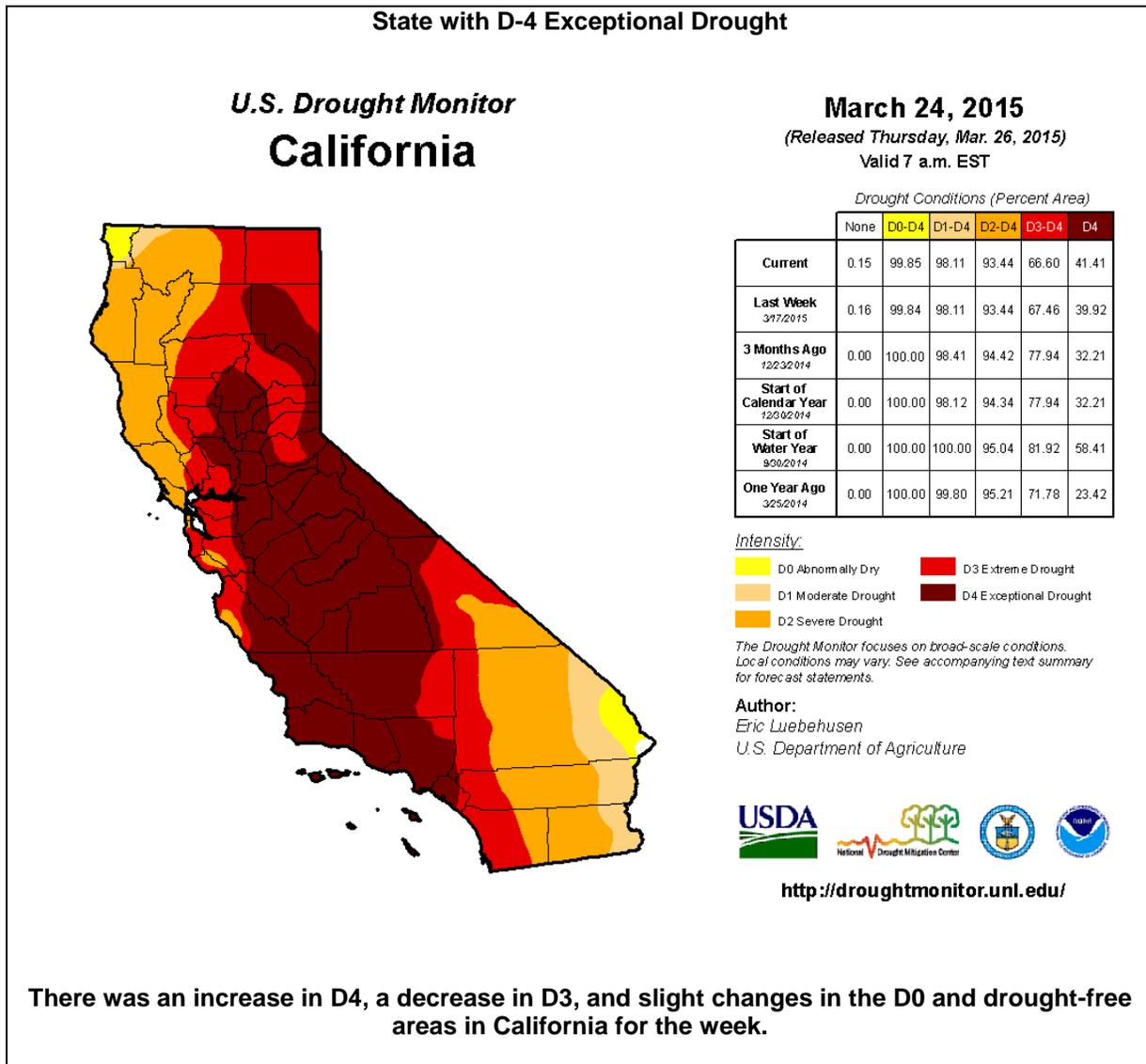
Risk Management Web Resources

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:

- CA- [Intensifying Calif. drought sets off alarms](#) – Mar 18
- NM - [New Mexicans with senior water rights look to bill to ensure supply](#) – Mar 15
- OR - [Two Oregon counties in drought emergency](#) – Mar 17
- WA - [First a snowpack drought, now haboobs](#) – Mar 18
- UT - [Warm and dry conditions greet those trying to solve Utah's water woes](#) – Mar 16

Weekly Water and Climate Update



[CA Drought Information Resources](#)

[Drought News from California:](#)

[California drought making wildfires a year-round threat](#) – Mar 17

[California has about one year of water left. Will you ration now?](#) – Mar 13

[Intensifying Calif. drought sets off alarms](#) – Mar 17

[Fate of Delta smelt sinks as numbers drop](#) – Mar 17

[A look at California's emergency drought water restrictions](#) – Mar 17

[Gov. Brown, legislators to propose \\$1 billion drought-relief plan](#) – Mar 19

[Judge: CVWD doesn't need to ID heavy water users](#) – Mar 19

[Air quality suffers as fewer winter storms wash away smog, pollution](#) – Mar 17

[Something to sneeze at: Drought ushers in early allergy season](#) – Mar 19

[HEMET: Private boat launches to stop at Diamond Valley Lake](#) – Mar 18

[As California Drought Enters 4th Year, Conservation Efforts and Worries Increase](#) – Mar 17

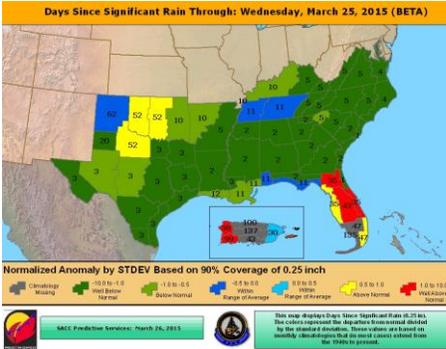
[Hesperia to purchase \\$2.5 million in water rights](#) – Mar 16

[Southland's Largest Water Wholesaler Expects to Cut Allocations](#) – Mar 13

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:
[Wet weather pumps up Dallas-Fort Worth lakes, but drought fears remain](#)
 – Mar 13

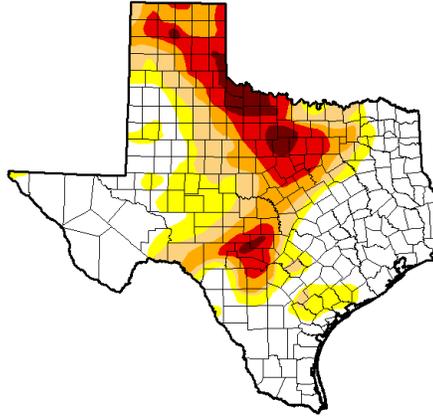


[Days since Significant Rain Summary](#)

State with D-4 Exceptional Drought

U.S. Drought Monitor Texas

March 24, 2015
 (Released Thursday, Mar. 26, 2015)
 Valid 7 a.m. EST



	Drought Conditions (Percent Area)					
	None	D0-D1	D1-D2	D2-D3	D3-D4	D4
Current	49.50	50.50	36.35	24.92	13.87	3.31
Last Week 3/17/2015	43.46	56.54	39.93	27.12	14.48	2.97
3 Months Ago 12/23/2014	34.32	65.68	43.42	23.35	10.36	2.97
Start of Calendar Year 12/01/2014	34.37	65.63	44.68	25.73	11.70	3.17
Start of Water Year 9/01/2014	28.92	71.08	48.95	29.54	11.26	2.69
One Year Ago 3/25/2014	14.73	85.27	67.43	41.85	24.97	3.48

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

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

Author:
 Eric Luebbehusen
 U.S. Department of Agriculture



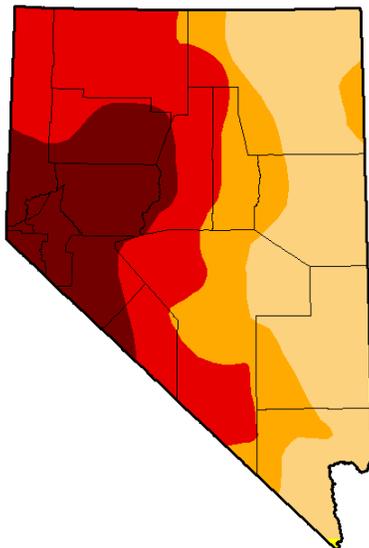
<http://droughtmonitor.unl.edu/>

There was a decrease in D0-D3 drought categories in Texas this past week. The drought-free areas and D4 categories increased for the week.

State with D-4 Exceptional Drought

U.S. Drought Monitor Nevada

March 24, 2015
 (Released Thursday, Mar. 26, 2015)
 Valid 7 a.m. EST



	Drought Conditions (Percent Area)					
	None	D0-D1	D1-D2	D2-D3	D3-D4	D4
Current	0.00	100.00	99.93	67.32	47.96	18.38
Last Week 3/17/2015	0.00	100.00	99.93	67.23	47.96	18.38
3 Months Ago 12/23/2014	0.00	100.00	96.98	68.25	48.38	11.89
Start of Calendar Year 12/01/2014	0.00	100.00	96.98	68.25	48.38	11.89
Start of Water Year 9/01/2014	0.00	100.00	97.04	69.89	48.38	11.89
One Year Ago 3/25/2014	0.00	100.00	100.00	82.34	33.46	8.24

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

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

Author:
 Eric Luebbehusen
 U.S. Department of Agriculture



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

There was a slight increase in D2 in Nevada for the week.

Nevada Drought News:

[Cut water use in Reno-Sparks now, TMWA says](#) – Mar 19

[Nevada Farmers Fight Water Restrictions](#) – Mar 16

Weekly Water and Climate Update

Related Area News:

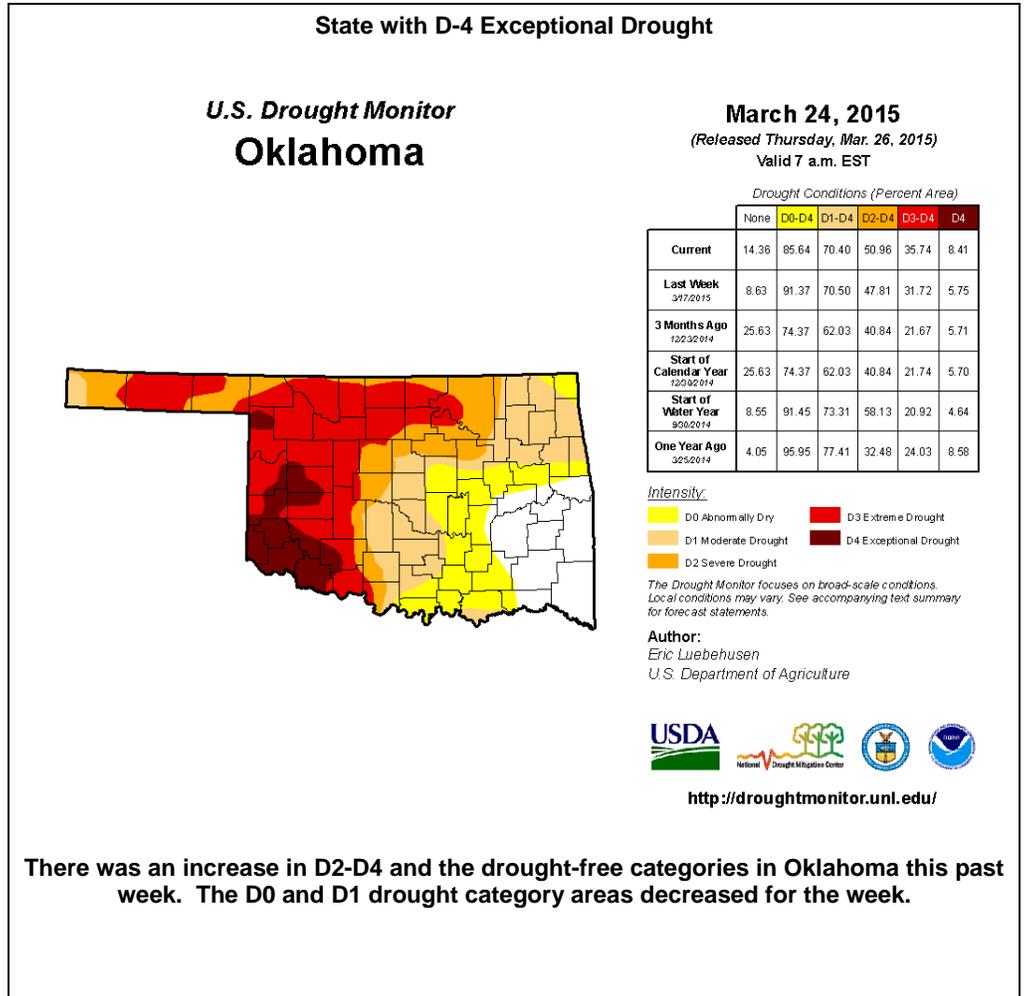
[2014 Kansas Drought Report and Summary](#)

- [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:

[Oklahoma Senate OKs Measure To Create Drought Relief Panel](#) – Mar 12

[March rain misses drought-stricken part of Oklahoma](#) – Mar 13



U.S. Population in Drought

Number of people in each drought category in the U.S. for the week ending March 24, 2015

Week	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
2015-03-24	183,700,030	121,697,425	77,151,734	49,798,848	35,583,386	20,578,448
2015-03-17	192,790,849	112,606,606	75,980,614	47,769,550	35,489,128	20,402,987

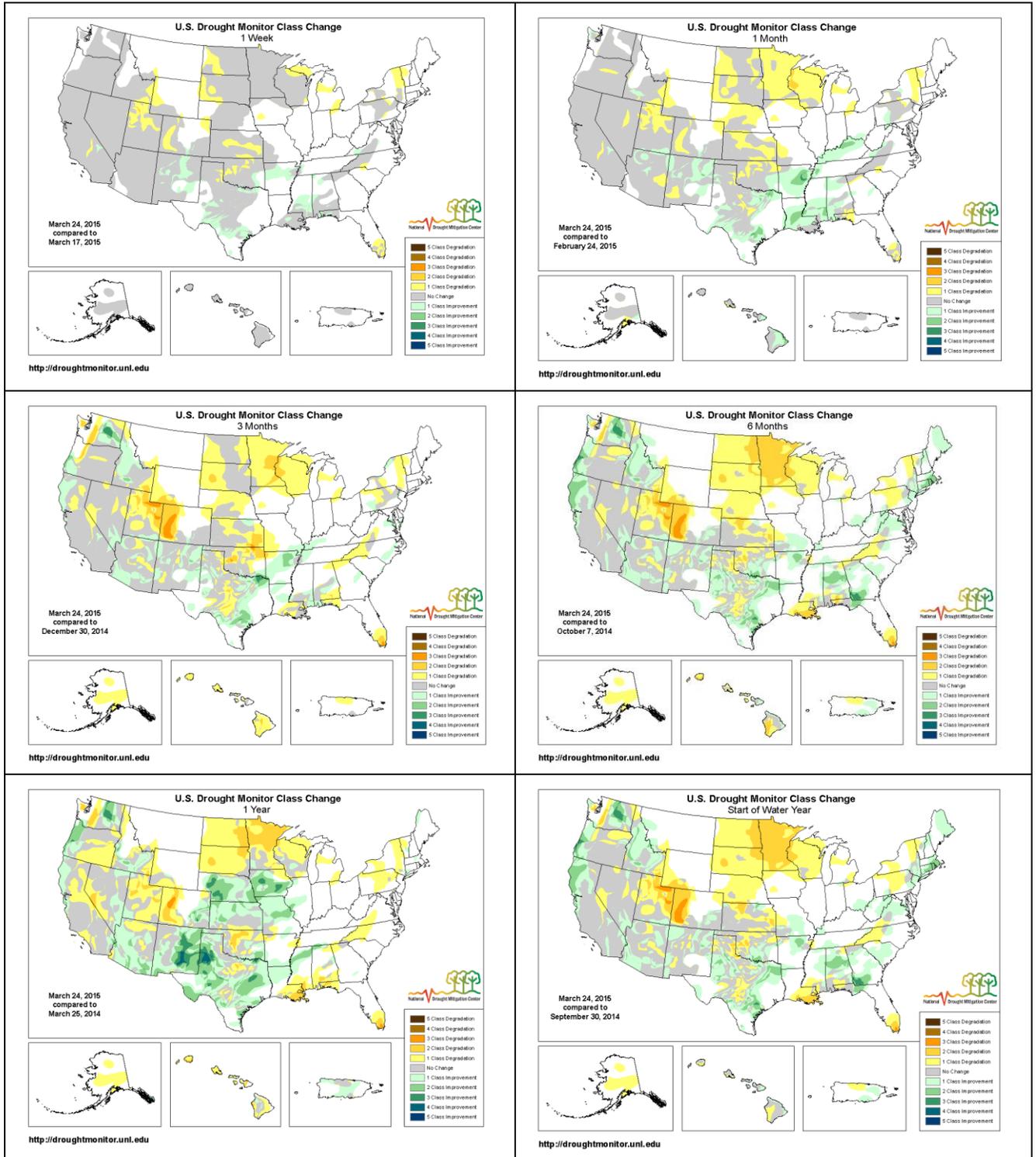
Population figures affected by drought in the U.S. Drought Monitor website show that, for this week, more than 77,000,000 people in the United States were in a drought-affected area, which is an increase by over 1.1 million people from last week.

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

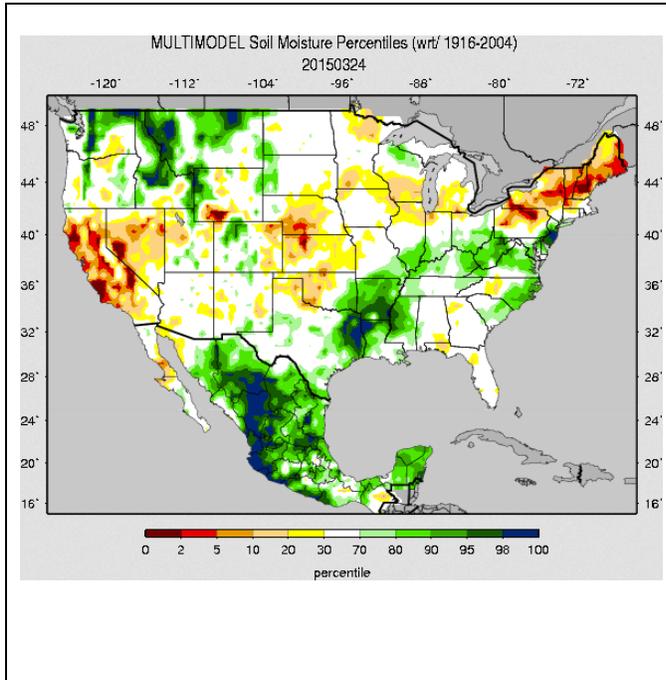
Over Various Time Periods



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

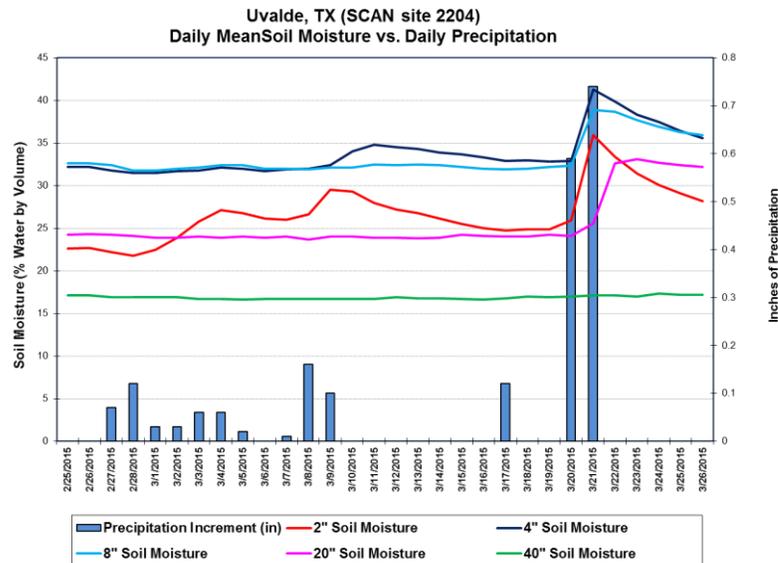


The national soil moisture model ranking in [percentile](#) as of March 24, 2015, shows dryness over most of the Northeast, Southwest, and Great Plains. The driest areas were in Nevada, California, southern Wyoming, Nebraska, Kansas, Oklahoma, Pennsylvania, New York, Connecticut, Massachusetts, Vermont, Maine, and New Hampshire. Moist soils dominated Montana, Idaho, the Cascades of Oregon and Washington, east Texas, Louisiana, Arkansas, western Mississippi, West Virginia, and New Jersey. Slightly moist soils were also scattered elsewhere throughout the South, Southeast, Mid-Atlantic and Great 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)

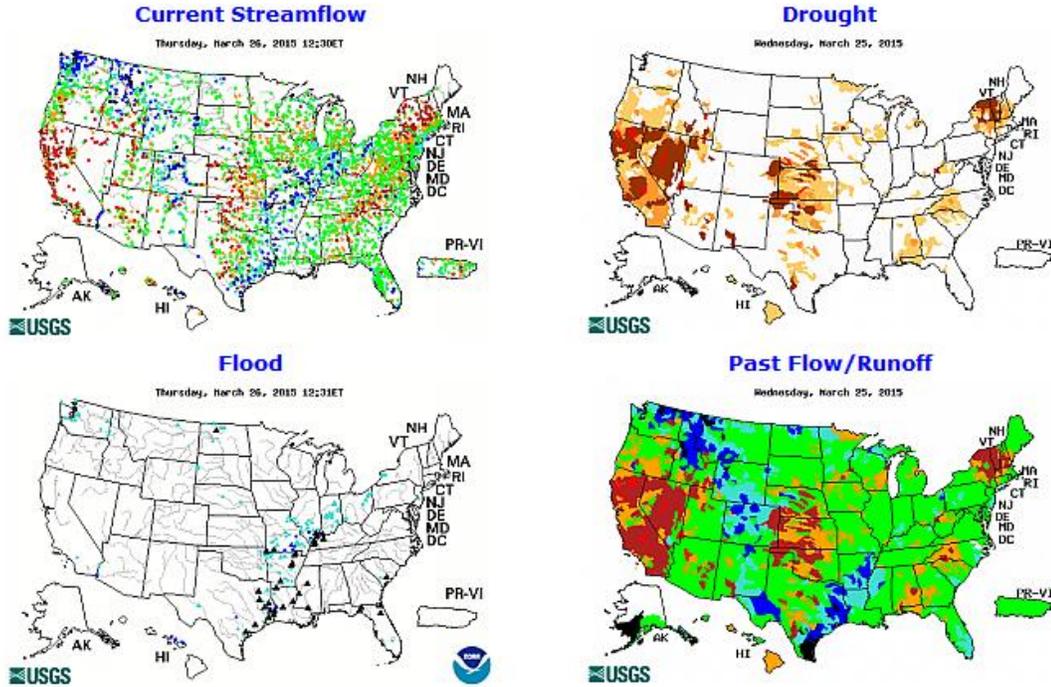


This NRCS resource shows soil moisture data for the last month at the [Uvalde SCAN \(site #2204\)](#) station in Texas. The area had a large precipitation event in the past few days (blue bars). This rainfall resulted in an increase in soil moisture at all depths, with the exception of the 40-inch depth sensor. It is interesting to note that smaller precipitation events earlier in the month had little to no effect on the 20- and 8-inch sensors, and that the larger storm provided enough moisture to affect these soil depths.

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 many rivers above flood stage at this time. These include rivers in North Dakota, eastern Texas, Louisiana, Mississippi, Arkansas, Missouri, western Kentucky, southern Illinois, South Carolina, 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; **33** gauges for moderate flooding; and **226** gauges for minor flooding.

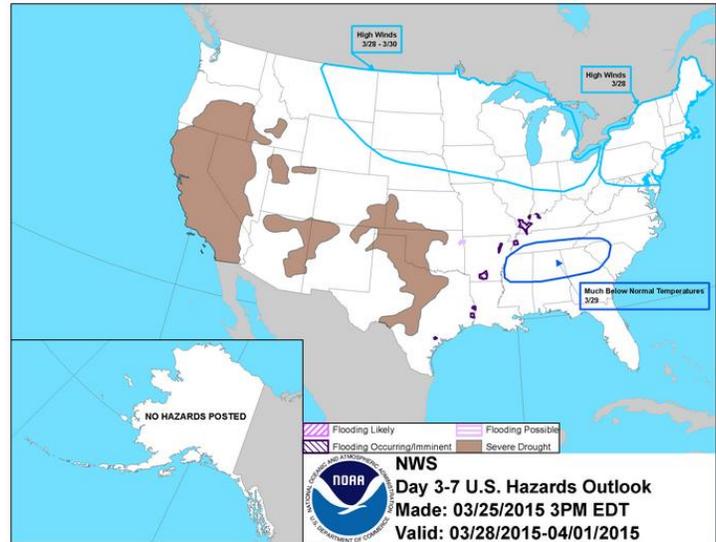
These numbers represent a **2** gage decrease in the greater than 50 percent chance of minor flooding category since last week.

Weekly Water and Climate Update

National [Weather Hazards](#)

The National Weather Service map of national weather hazards for the next 3 – 7 days forecasts much below normal temperatures in the Southeast (3/29) (blue area). Flooding is occurring in southern Illinois, western Kentucky, western Tennessee, Arkansas, Louisiana, and east Texas. High winds are forecast in a large area of the northern Plains to the Great lakes region and in the Northeast (3/28-30).

In Alaska, no hazards were posted. Severe drought remains a large issue in much of the southcentral and western U.S.



[National Drought Summary for March 24, 2015](#)

Prepared by the Drought Monitor Author: Eric Luebehusen, U.S. Department of Agriculture.

Summary

“Rain across southern-most portions of the nation provided drought relief, while dry weather maintained or worsened drought from California into portions of the Rockies, Plains, and Upper Midwest. In addition, above-normal temperatures further reduced already-dire mountain snowpacks over much of the West and accelerated pasture and crop-water demands in the nation’s mid-section. Dryness also increased in the Northeast, though below-normal temperatures mitigated the impacts of the precipitation deficits.

Alaska, Hawaii, and Puerto Rico

There were no changes made to the drought depiction in Alaska, Hawaii, and Puerto Rico this week. In Alaska, persistent warmth (5-10°F above normal) maintained concerns over dwindling mountain snowpacks; these will need to be monitored closely over the upcoming weeks as the region heads into the warmer months. In Hawaii, scattered light showers (mostly less than half an inch) afforded little if any relief to the state’s Moderate Drought (D1) areas. In Puerto Rico, the heaviest rain (greater than 2 inches) fell west of the island’s remaining D0, where streamflows still remain below the 20th percentile.

Central Plains

Dry, unseasonably warm weather maintained or worsened drought over the central Plains. With temperatures approaching or topping 80°F from southeastern Colorado into Kansas as well as little if any rain, drought conditions remained or intensified. In particular, pronounced short-term dryness (25 to 50 percent of normal over the past 90 days) across central and southern portions of Kansas supported the expansion of Moderate (D1) to Severe Drought (D2). Soil moisture continued to decline, and many streamflows were in the 10th percentile or lower.

Mid-Atlantic and Northeast

Cold, mostly dry conditions were observed across the region, with Abnormal Dryness (D0) expanded northward across eastern New York and western Vermont, where precipitation over the past 60 days has tallied locally less than 50 percent of normal. Despite the dryness, temperatures averaging more than 10°F below normal have resulted in little – if any – impacts from the dry conditions, as many surface water features remain frozen. In contrast, near- to above-normal precipitation continued over the southern Mid-Atlantic, easing D0 in southwestern Virginia.

Midwest

Chilly but dry conditions in eastern portions of the Midwest contrasted with warm weather and areas of light rain in western portions of the region. In the Great Lakes, Abnormal Dryness (D0) was introduced in southeastern Michigan and northwestern Ohio as well as central and northern portions of Michigan and Wisconsin.

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Precipitation in these locales has totaled locally less than 50 percent of normal over the past 90 days, reducing soil moisture for spring growth.

Northern Plains

Despite pockets of light rain, unseasonable warmth (up to 10°F above normal) coupled with increasingly dry conditions over the past 90 days led to the expansion of Abnormal Dryness (D0) and Moderate Drought (D1) in the western Dakotas. Over the past 90 days, precipitation has totaled 60 to 75 percent of normal (locally less) in the newly-expanded D0 areas of the northern Plains, while the D1 area of South Dakota has received less than 50 percent of normal precipitation. The dryness coupled with rapid snow melt and temperatures well into the 70s in South Dakota have accelerated water demands for emerging pastures and greening winter crops. In addition, reports from the field indicate dry soils are becoming an underlying issue.

Southeast and Delta

Locally heavy rainfall led to reductions in drought coverage and intensity in the mid-South, while mostly dry, warm weather caused a minor increase in Abnormal Dryness (D0) in the Carolinas and the introduction of Severe Drought (D2) in southern Florida. Moderate to heavy rain (1 to 3 inches) fell across the Gulf Coast States, though the immediate Gulf Coast remained dry except in far western Florida. Consequently, D1 (Moderate Drought) and D0 were reduced from the central and northern Delta into the Florida Panhandle. In contrast, the South's soaking rainfall bypassed south-central North Carolina, where D0 was expanded to reflect short-term dryness and streamflows locally below the 10th percentile. Likewise, protracted short-term dryness and above-normal temperatures have caused low water levels and high salinity in the Everglades, where D2 was added.

Southern Plains and Texas

Worsening drought in the north contrasted with heavy rain and drought reduction in the south. Across Oklahoma and northern Texas, most areas received less than 0.5 inch of rain during the monitoring period, which coupled with daytime highs in the upper 70s and lower 80s (degrees F) afforded no relief from drought. In areas where rain was sparse or non-existent, Severe to Exceptional Drought (D2-D4) expanded as streamflows continued to decline well below the 10th percentile. Soil moisture likewise rapidly diminished as the unseasonable warmth increased crop- and pasture-water demands. Meanwhile, moderate to heavy rain (1 to 4 inches) from southern Oklahoma into central and southern Texas reduced drought coverage and intensity, with the most notable improvements occurring between San Antonio, Texas, and the Big Bend. Despite the soaking rainfall, little change was made to the drought coverage and intensity northwest of Austin, where reservoirs levels struggled to rebound due to a persistent, pronounced long-term drought.

Western U.S.

The overall trend toward drought persistence or intensification prevailed, with relief confined to a few scattered locales in the Four Corners Region and southeastern California. The west continued to cope with much-above-normal temperatures, further depleting already-dire snowpacks and reducing spring runoff prospects over much of the region.

In the north, a steady influx of Pacific moisture and weekly average temperatures up to 7°F above normal resulted in moderate to heavy showers from the Cascades into the northern Rockies. However, plentiful water-year precipitation (since October 1) in the Northwest was in sharp contrast to virtually non-existent snowpacks, with the snow-water equivalents less than 25 percent of normal (locally less than 10 percent) across Oregon as well as southern and northwestern Washington. The lack of snow maintained concerns for spring and summer water supplies despite the generally favorable 2014-15 water year.

In the Four Corners, drought worsened in the northwest while conditions improved somewhat in southeastern portions of the region. In particular, Severe to Extreme Drought (D2-D3) expanded over northern Utah to account for water-year precipitation averaging 30 to 45 percent of normal; the Standardized Precipitation Index (SPI) – a measure of drought severity – depicted values at or below -1.75 (D3 equivalent) in this same area. In addition, snow-water equivalents southeast of the Great Salt Lake were near or below 50 percent of normal (3-10th percentile). In New Mexico, however, improving conditions were noted in the southern Rockies, where locally more than an inch of rain and high-elevation snow afforded relief from Moderate Drought (D1).

In California, changes to this week's depiction were generally minor as the state entered a fourth consecutive year of drought. Locally more than an inch of rain was noted in the Cascades and in the Coastal Range, but the moisture fell well short of supplying drought relief. Even with this week's rain, precipitation deficits over the past

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two weeks exceeded 2 inches in these same locales. In the D4 areas of the Cascades and southern San Joaquin Valley, water-year precipitation has averaged 30 to 50 percent of normal, and locally less than 50 percent of normal over the past 3 years. Short-term moisture has been somewhat more plentiful in northern California, though even areas north of Sacramento are dealing with significant long-term precipitation deficits (70-75 percent of normal over the past three years) that will take considerable time to erase. Despite the generally worsening conditions, a small reduction in Extreme Drought (D3) was made in southeastern California's Mojave Desert, where the wildflower bloom has responded favorably to showers.

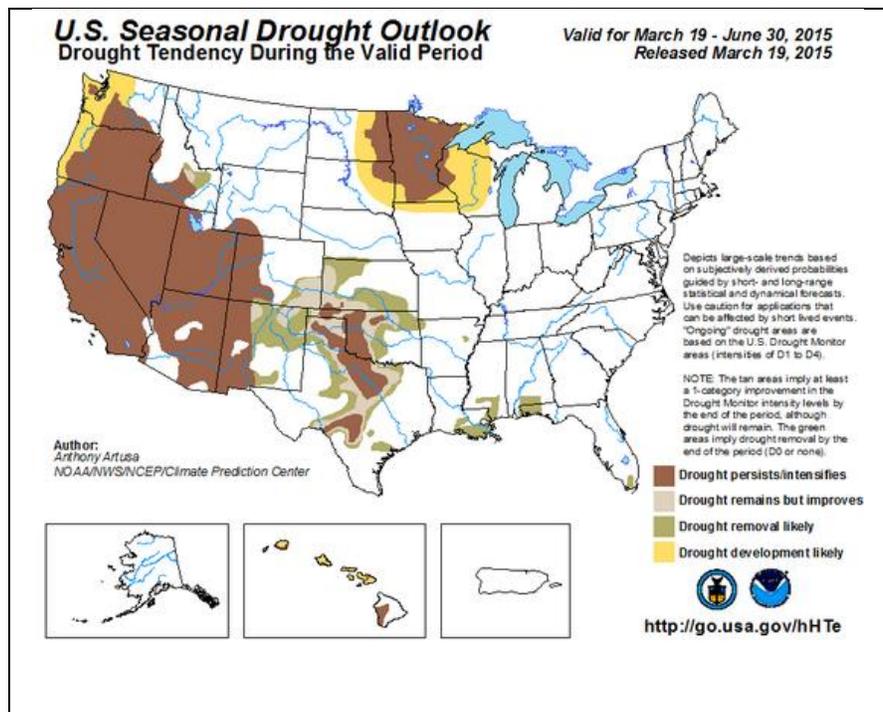
Looking Ahead

Warm, mostly dry weather over the west will contrast with chilly, wet conditions east of the Mississippi Valley. The greatest likelihood for drought-easing rainfall will be from Texas and the northern Delta into the Northeast. Spotty showers are expected over the Rockies and Northwest, though the light rain coupled with persistent warmth will not ease drought or aid spring runoff prospects. Mostly dry, warm weather is expected over California and the Southwest. The NWS 6- to 10-day outlook for March 3 – April 4 calls for near- to above-normal temperatures nationwide, except for colder-than-normal conditions across the nation's northeastern quadrant. Meanwhile, above-normal precipitation from the northern Plains and Upper Midwest into the Great Lakes and Northeast will contrast with drier-than-normal conditions in the south, particularly from California into the Four Corners and southern Plains.”

Supplemental Drought Information

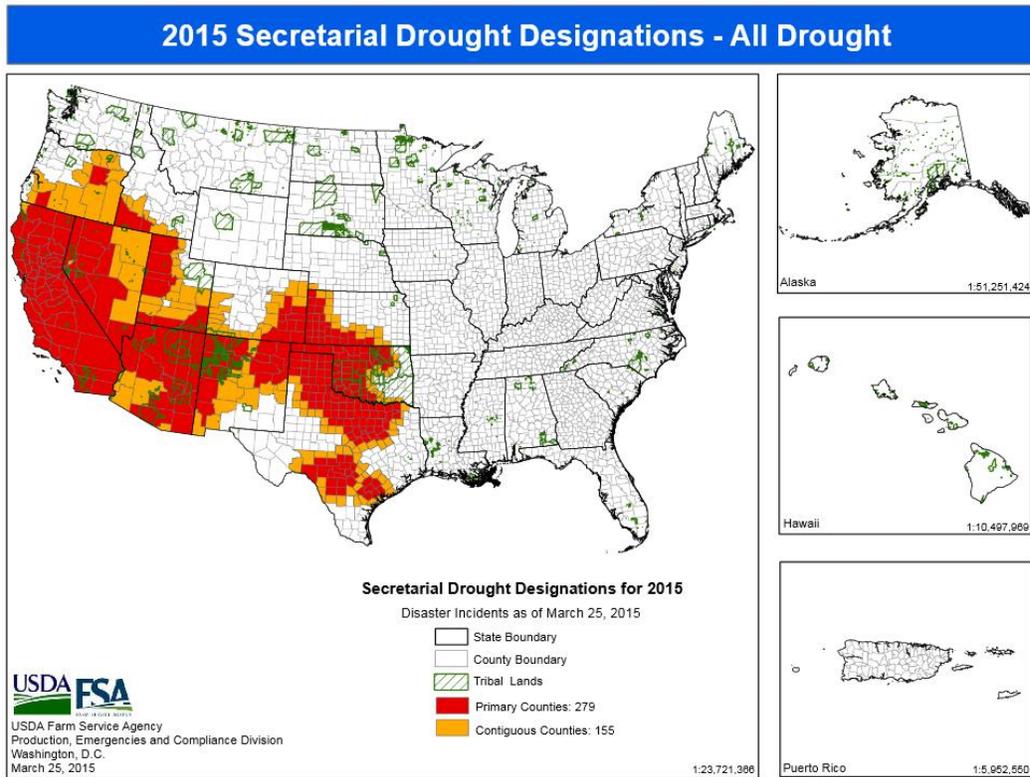
National Seasonal Drought Outlook

Nationally, [drought](#) is expected to persist or intensify over much of the West and southcentral 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.



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2015 USDA Secretarial Drought Designations

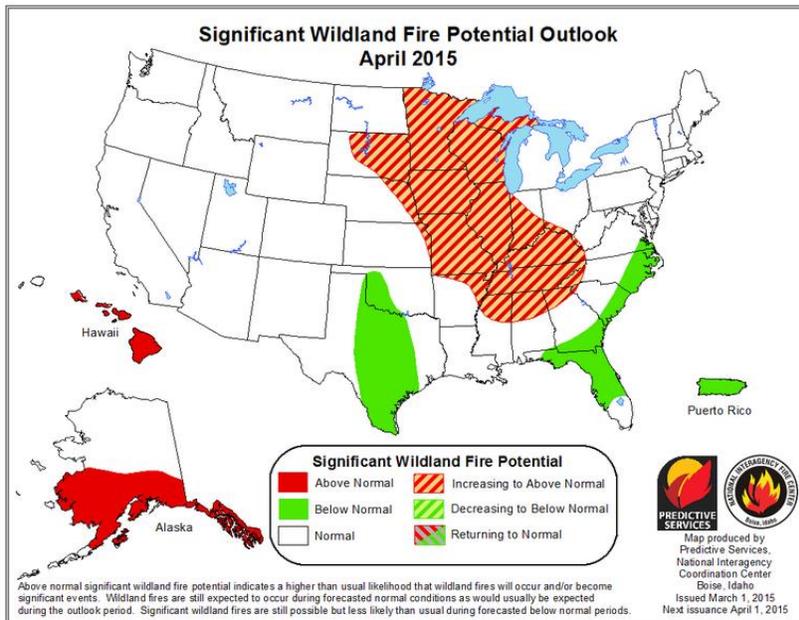


Refer to the USDA Drought Assistance [website](#) and [National Sustainable Agriculture Information Service](#).

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

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

National Fire Potential Outlook



April Fire Forecast

In April, much of the U.S. is forecast to have 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.

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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.

“Cost of drought in Western U.S. nearly \$60B

Five years of drought and heat have cost the Western U.S. nearly \$60 billion since 2010, stated a meteorologist with Aon Benfield, a global reinsurance firm. In California alone, losses amount to roughly \$5 billion.

New water restrictions in California

The California State Water Resources Control Board tightened water restrictions to prolong water supplies as the state entered its fourth year of drought. Among the new water-conserving mandates, taking effect on April 15:

- Restaurant patrons must request water, not be served water automatically.
- Hotel guests must be given the option of reusing towels and sheets.
- Local water departments must limit days of permitted lawn watering. Homeowners may not irrigate yards during or within two days of rainfall.
- Local water departments must alert customers of leaks.
- Water restrictions instituted in July 2014 remain in effect.
- Local water departments must report how they enforce the new rules.

Proposed drought bill

California’s Gov. Brown and leading legislators proposed two bills to hasten the spending of more than \$1 billion in drought relief funds. The legislation would offer funding for immediate assistance to communities dealing with water shortages and unemployment.

Fire season ramping up

Since the start of 2015, California wildfires scorched 3,203 acres, in comparison with the 5-year average of 793 acres, but the number of fires was nearly the same. The California Department of Forestry and Fire Protection stayed at its highest level ever of statewide readiness through the winter and plans to boost manpower four to six weeks ahead of schedule.

Sierra Nevada ski resorts close early

Sugar Bowl Ski Resort has surrendered to the dry winter, making it the sixth ski resort to close early. Other closed resorts include Donner Summit, Sierra-at-Tahoe, Donner Ski Ranch, Homewood, Soda Springs and Tahoe Donner.

The thin snowpack in the Sierra Nevada has Tahoe-area hotels seeing fewer guests. Bookings were good at the start of the season, but the poor snow condition led to fewer bookings than usual since February.

Drought lowered South Coast air quality

The South Coast Air Quality Management District saw 25 no-burn days this winter season as the air quality deteriorated, due to drought and few rainfall events. There were 16 such days during the 2013-2014 winter.

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Delta smelt population drops

A March survey of Delta smelt found just six fish, the smallest March count ever recorded. Drought and delta water diversion were blamed for the population collapse, which may lead to extinction of the species.

Reno and Sparks, Nevada water conservation request

The Truckee Meadows Water Authority asked its customers to voluntarily curb water use by a minimum of 10 percent from last year's level. The TMWA expects to begin using backup drought supplies and increase groundwater pumping to satisfy summer water needs. In August 2014, the TMWA dipped into drought reserves for the first time in 20 years.

Oregon drought emergencies

Klamath and Malheur counties in Oregon were in drought emergencies, while Crook, Harney and Lake were awaiting decisions on their request for drought declarations.

Of the 82 automated snow sites maintained by the Natural Resources Conservation Service in Oregon, 75 percent registered no snow on March 19.

Washington

The lack of snow and warmer than normal temperatures have the Washington Ecology Department warning residents of Central and Eastern Washington to carry dust masks, due to the likelihood of dust storms. Strong winds, combined with drying fields and forest beds, could cause dust storms and respiratory problems the very young and people with asthma.

Most of California's impacts are related to water supply and quality in the [Drought Impact Reporter](#).



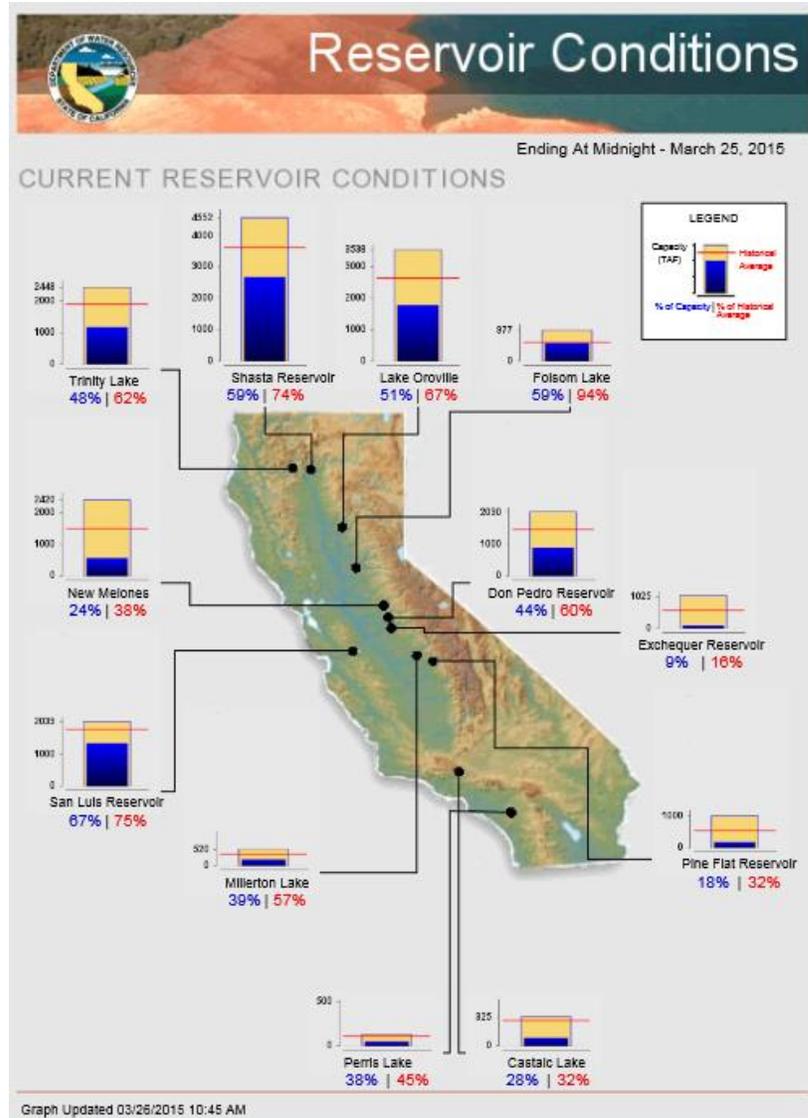
Tea Cup Reservoir Depictions

- <http://www.usbr.gov/uc/water/basin/> ← Upper Colorado
- 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 ← 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)

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California Reservoir Conditions

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



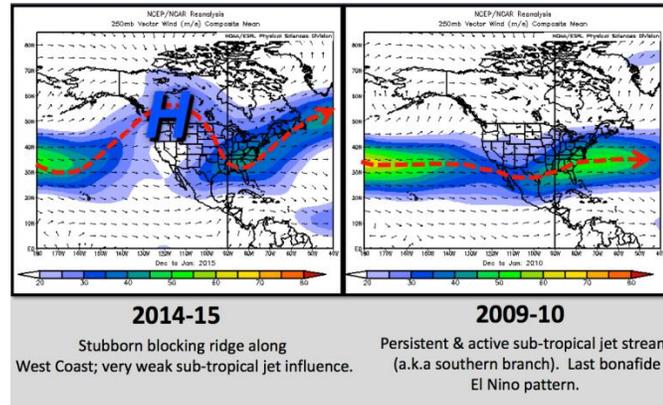
State Activities

[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](#).

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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