



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

Weekly Water and Climate Update Thursday, February 19, 2015

Snow	2	Supplemental Drought Information	18
Precipitation.....	3	National Seasonal Drought Outlook	18
Temperature.....	6	2015 USDA Secretarial Drought Designations	19
Weather and Drought Summary	8	National Fire Potential Outlook.....	19
Risk Management Web Resources.....	9	Supplemental Drought-Agriculture News	20
U.S. Population in Drought	12	Tea Cup Reservoir Depictions.....	22
Changes in Drought Monitor Categories	13	California Reservoir Conditions	22
Soil Moisture.....	14	Current Snow Conditions in the High Sierra	23
Soil Climate Analysis Network (SCAN)	14	NEW! Alaska Snow Water Equivalent and Precipitation Conditions.....	23
Streamflow	15	State Activities	24
National Long-Range Outlook.....	15	Persistent weather pattern dominates the U.S.....	24
National Weather Hazards.....	16	More Information.....	25
National Drought Summary for February 17, 2015.....	16		



**NRCS Snow Survey
and Water Supply
Forecasting [Photo
Contest](#)**

Photo: 3rd Place
Abundance Lake
SNOTEL Site, Montana

Pilot: Mark Mamuzich

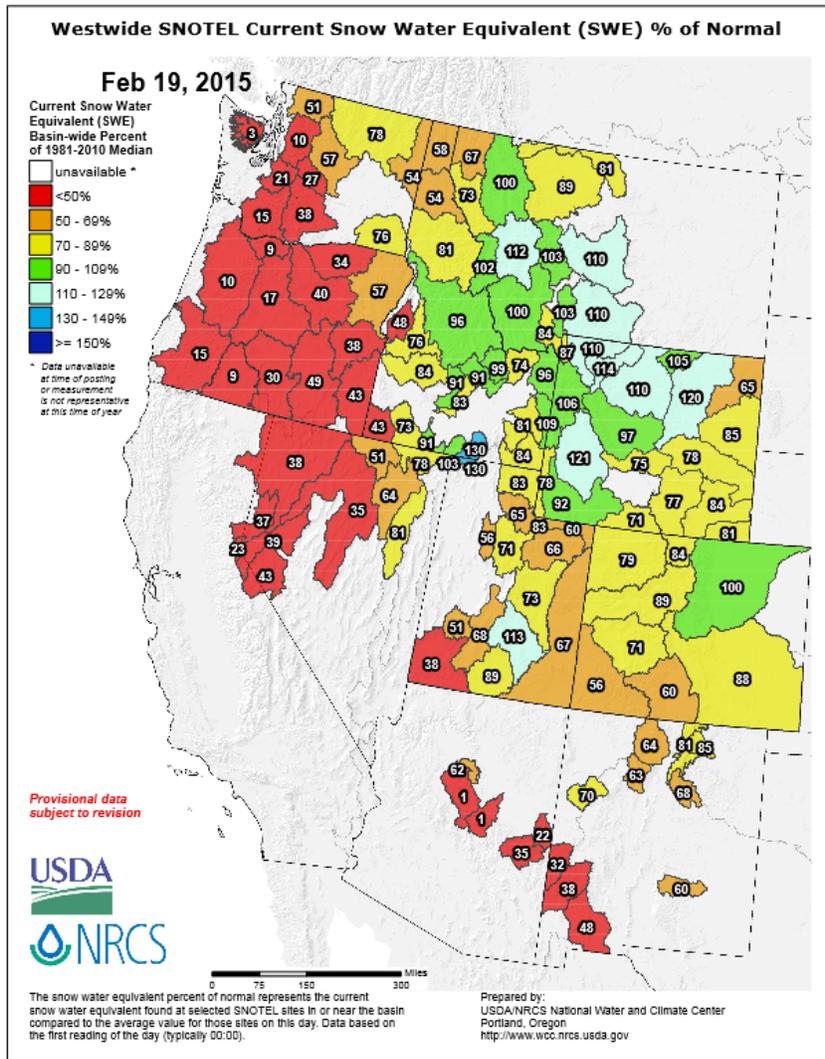
Photographer: Lucas
Zukiewicz

Outlook: “Cold air will continue to pour into the Southeast, including Florida’s citrus belt, where NWS freeze warnings are in effect for Friday morning. Tonight’s temperatures could fall below 30°F as far south as Lake Okeechobee. Gusty, northwesterly winds will accompany the cold snap, limiting the effectiveness of some freeze protection measures—especially with regard to tender vegetables. However, sprinklers should be able to coat crops such as oranges and strawberries in ice, providing some insulation. Farther west, markedly colder air will arrive across the High Plains during the weekend. Meanwhile, cooler air will temporarily overspread the West. Elsewhere, a weekend storm will produce snow in the Rockies and a mix of rain and wintry precipitation in the South, East, and lower Midwest. The NWS 6- to 10-day outlook for February 24-28 calls for a strong likelihood of below normal temperatures across the central and eastern U.S., while warmer-than-normal weather will be confined to the Far West, including California. Meanwhile, near- to above-normal precipitation across the majority of the nation will contrast with drier-than-normal conditions in much of California and a broad area centered on the Midwest.”

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

Snow

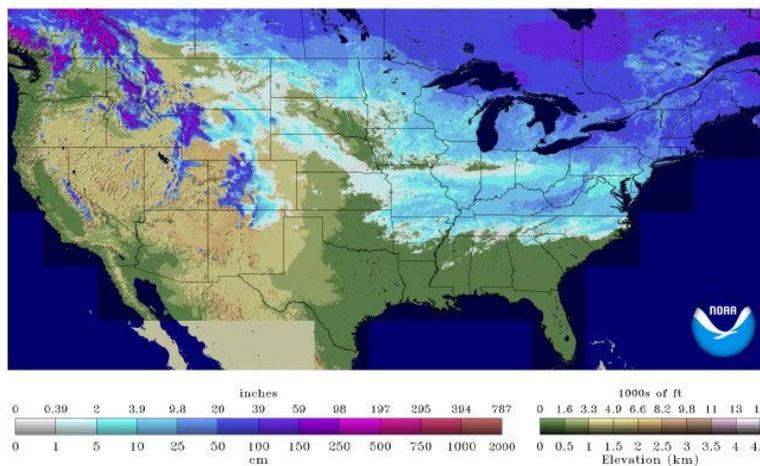


The [Westwide SNOTEL Current Snow Water Equivalent \(SWE\) % of Normal map](#) shows the largest snowpack deficits (red areas) in the Cascades and Olympics of Washington, most of Oregon, the Sierra Nevada in California, as well as much of Nevada, Arizona, southwest New Mexico, and one basin in southwest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

Some basins in Wyoming, Montana, southern Idaho, and Utah have recorded above normal SWE values (blue areas).

National Snow 2014-2015 Analysis

Snow Depth
2015-02-19 06 UTC



The snow depth map for the U.S. as reported from the [NWS NOHRSC](#) for February 19, 2015, shows snow across much of the northern tier states. This includes snow across much of the mountains in the West, the upper Midwest, the northern Great Plains, Northeast, and Mid - Atlantic States. The recent cold has supported snowfall across some parts of the South as well. The snow depth has again increased substantially in the Northeast and parts of the Northwest.

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. In the last several weeks, the precipitation in this same area is near to well above average. The overriding influence in these unusual circumstances is the persistent warm temperatures that have dominated the snowpack processes.

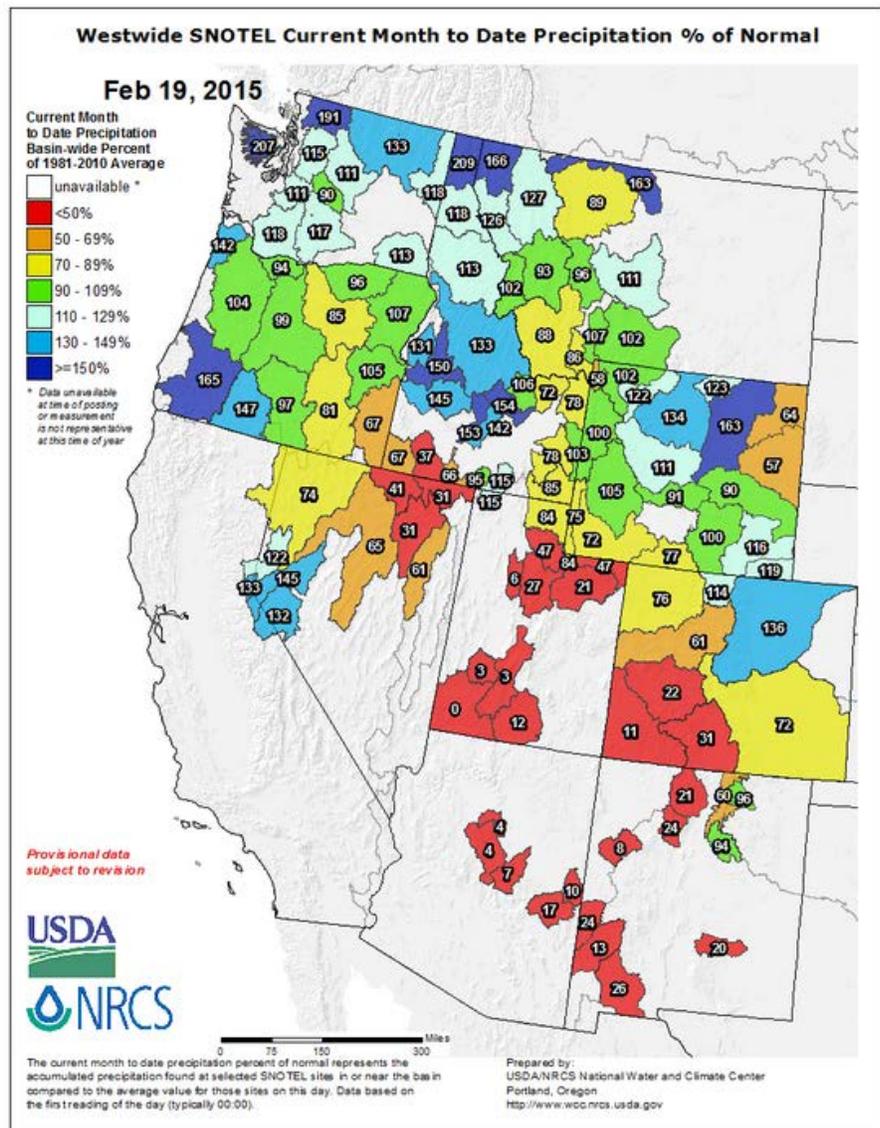
Freezing levels have remained well above the elevation of many SNOTEL sites, and snow has been confined to the highest elevations and in a very small area of the watersheds in the Pacific Northwest and Sierra Nevada. The recent heavy precipitation, especially in the Cascades of Oregon and Washington and down to the northern Sierra and Trinity Alps of California, has helped to alleviate any soil moisture, groundwater, and reservoir deficits. This has 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 for the future.

In the West, the [SNOTEL](#) precipitation percent of normal map for the first part of February shows that many of the northern basins in the West have been very wet. Above normal precipitation occurred in Washington, Oregon, northern California and Nevada, Idaho, Montana, Wyoming, northwestern Utah, and northern Colorado (blue areas).

Basins that have less than normal precipitation for the month include central and southern Utah, southern Colorado, Arizona, and New Mexico (orange and red areas). Also lacking in precipitation is an area of northeast Nevada, southern Idaho, and a few basins in Wyoming.

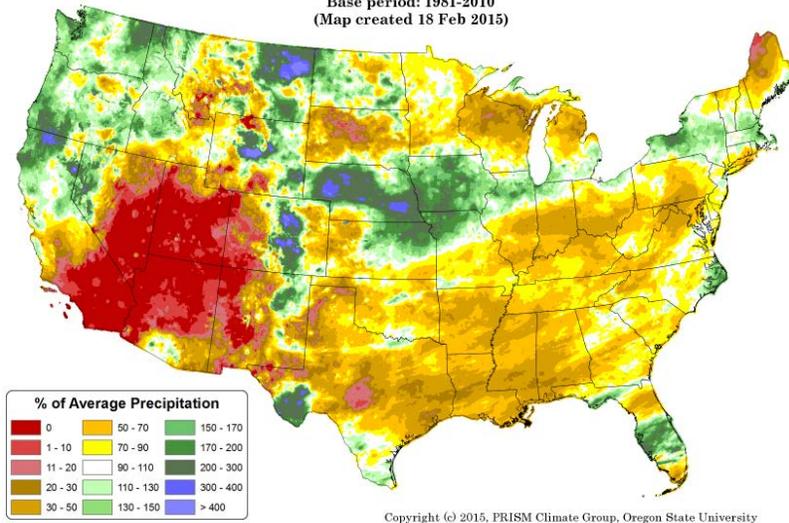
The percent of average may be exaggerated over a short period of time and dependent on normal conditions for this time of year.

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



Weekly Water and Climate Update

Total Precipitation Anomaly: 01 February 2015 - 17 February 2015
 Period ending 7 AM EST 17 Feb 2015
 Base period: 1981-2010
 (Map created 18 Feb 2015)



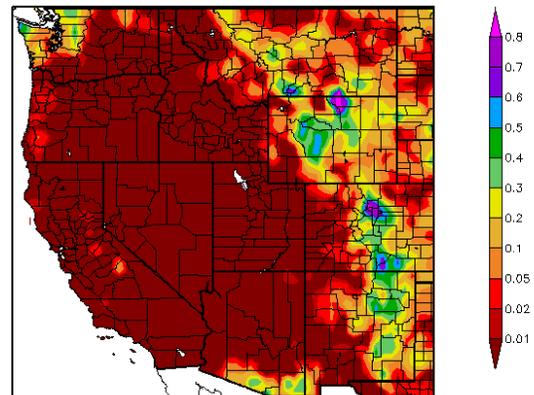
Thus far in February 2015, the national total [precipitation anomaly](#) pattern reveals some higher than normal precipitation, primarily in the central U.S., but also includes some northwestern states, the Northeast, and Florida. There was little or no precipitation in a large area of the Southwest, including southern California, also parts of Montana, Wyoming, South Dakota, Texas, the southern Mississippi Valley, and northern Maine (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 scattered across most of the Rocky Mountains, and the Pacific Northwest. This includes areas in Oregon, Washington, Idaho, Montana, Wyoming, Colorado, and southern Arizona and New Mexico. The highest areas of significant precipitation were in northern Wyoming.

Little to no precipitation fell across most of Idaho, Nevada, Utah, Arizona, and most of California this week (dark red). In addition, scattered basins in eastern Washington, western Montana, western Colorado, and western New Mexico also received little or no precipitation.

Precipitation (in)
2/12/2015 - 2/18/2015



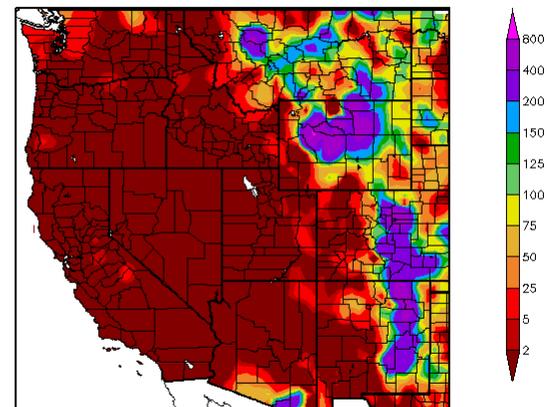
Generated 2/19/2015 at HPRCC using provisional data.

Regional Climate Centers

This ACIS percent of normal [map](#) of the West for the last seven days reflects precipitation scattered across many parts of the region. The heaviest percent of normal precipitation fell in central Wyoming (over 800%). Other significant rainfall was recorded across the Rockies in Montana, Wyoming, Colorado and New Mexico (purple areas). Southern Arizona also had an area of higher than normal precipitation. There was a large area of very dry conditions in California, Nevada, Utah, northern Arizona, Idaho, Washington and Oregon, and a few basins in other states (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 (%)
2/12/2015 - 2/18/2015

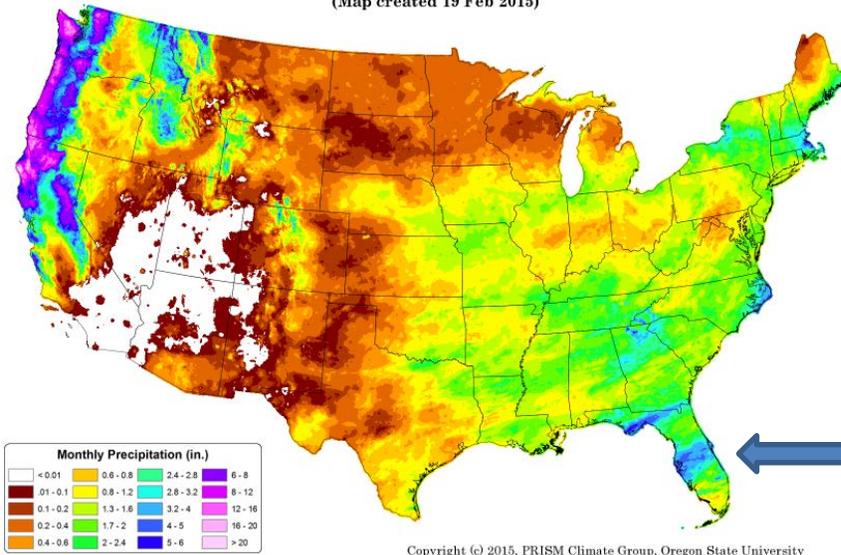


Generated 2/19/2015 at HPRCC using provisional data.

Regional Climate Centers

Weekly Water and Climate Update

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



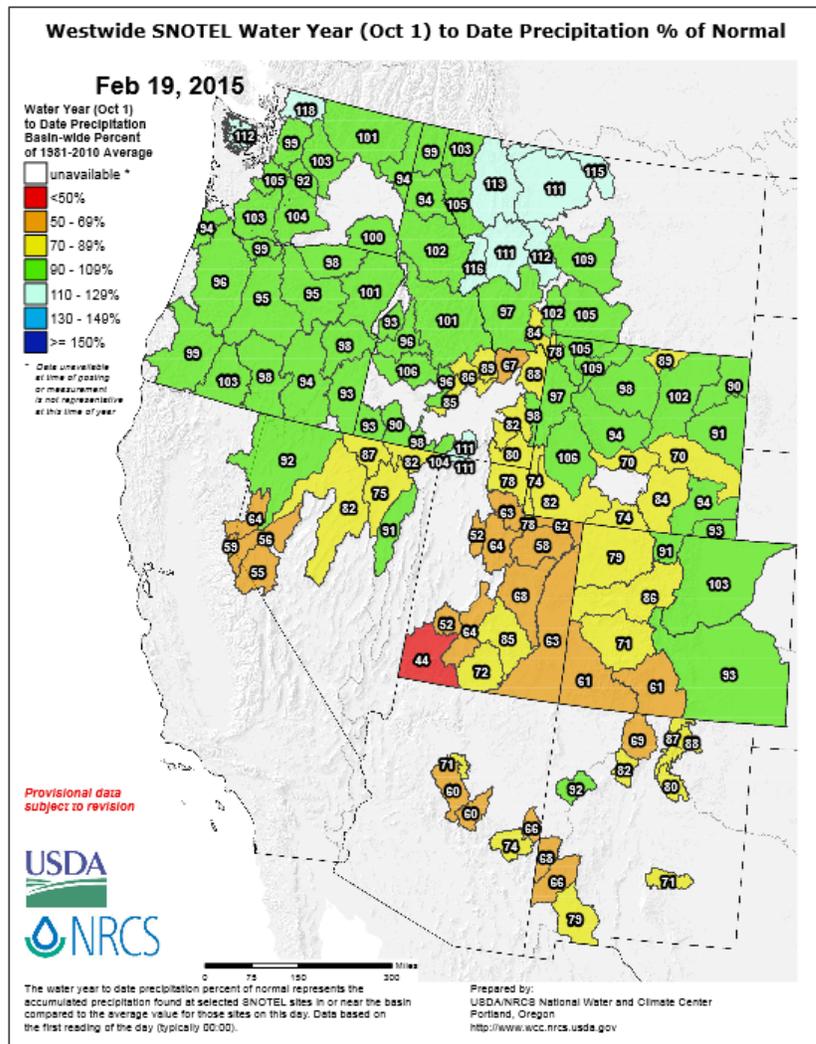
Copyright (c) 2015, PRISM Climate Group, Oregon State University

In the first 18 days of February 2015, the [total precipitation](#) across the continental U.S. was heaviest along the Pacific coast, northern Rockies, Florida, eastern North Carolina, and the Boston area. Precipitation also fell over other parts of the Northwest, northern California, the South, and the Northeast. In contrast, much of southern California, Nevada, Utah, the Southwest, western and northern Great Plains into the upper Midwest, and northern Maine were mainly dry.

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

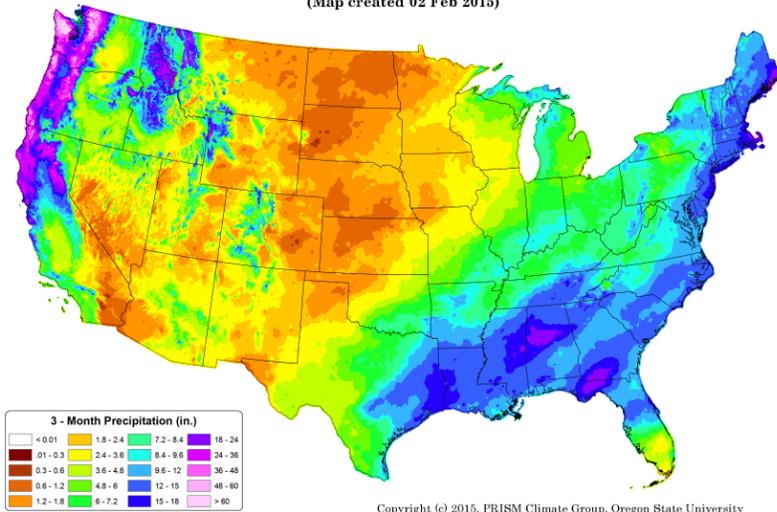
For the [2015 Water Year](#) that began on October 1, 2014, the highest precipitation surpluses in the West are only slightly higher than average. Most of central Montana, two basins in western Wyoming, several basins in southern Idaho, one basin in northwest Utah, and two basins in western Washington are above 110 percent at this time.

Many basins across the West have near normal conditions for this part of the Water Year (mapped in green). A few areas have less than normal precipitation for the Water Year. These include basins in eastern Idaho, parts of Wyoming, western Colorado, most of Utah, California, parts of Nevada, Arizona, and New Mexico (mapped in yellow and orange). Southwest Utah has one basin with much below normal precipitation (red area).



Weekly Water and Climate Update

Total Precipitation: November 2014 - January 2015
 Period ending 7 AM EST 31 Jan 2015
 (Map created 02 Feb 2015)



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

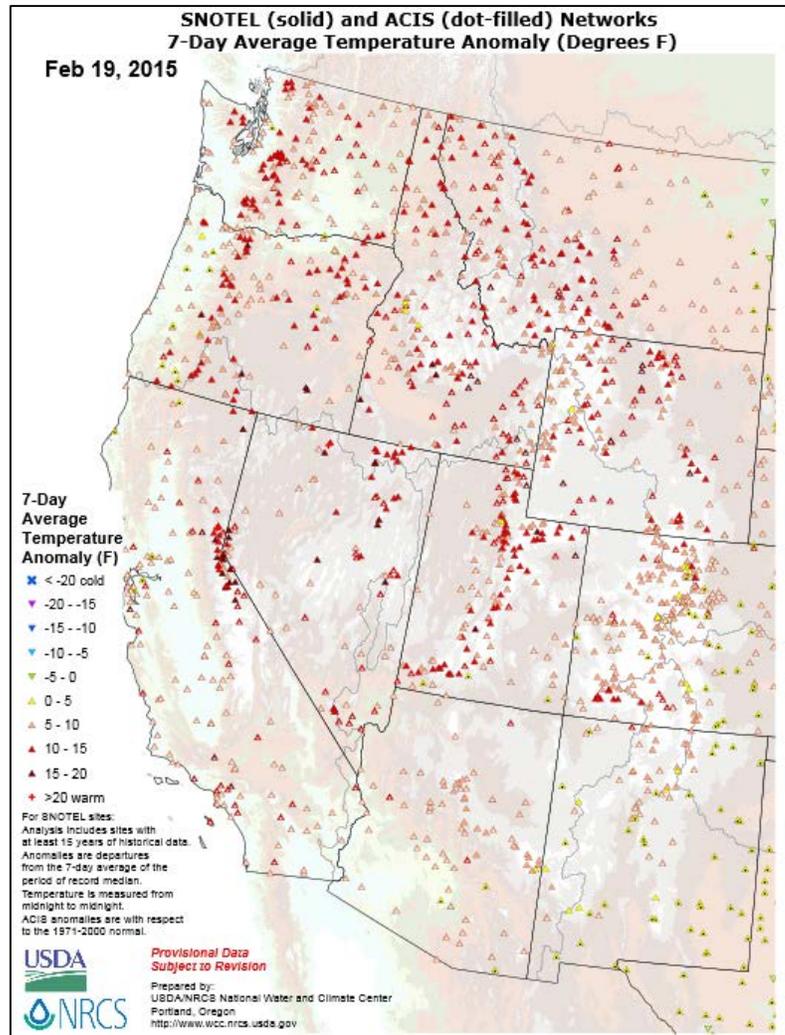
The national map of the [three-month period](#) (November - January) shows that the eastern half of the nation received precipitation in the range from 6 inches to greater than 18 inches. Parts of the West, especially in the mountains, also received significant precipitation. The highest amounts over 48 inches were recorded in 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.

Temperature

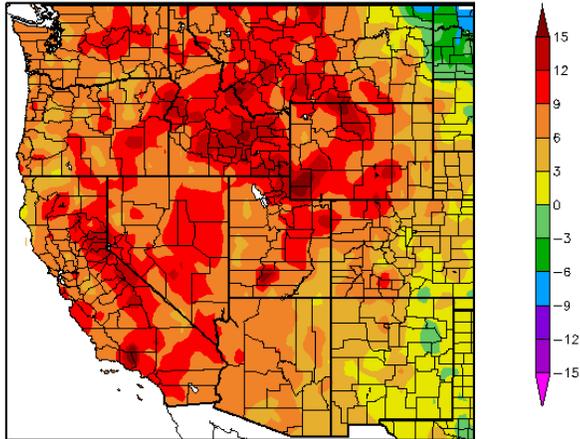
The SNOTEL and ACIS [7-day temperature anomaly](#) map for the western U.S. shows most of the West was much warmer than normal for another week. It was very warm everywhere, with the warmest recorded temperature anomalies scattered across Utah, southern Idaho, eastern and southwest California, Nevada, southern Oregon, southern Idaho, and western Wyoming, where anomalies were 15 - 20 degrees F. The surrounding states had some temperature departures from normal of more than 10 degrees F.

There were a few stations with near normal temperatures in western Oregon, central Idaho, northwestern California, Colorado, southern Arizona, and most of New Mexico. There were a few cool anomalies in the extreme eastern edge of Montana.



Weekly Water and Climate Update

Departure from Normal Temperature (F)
2/12/2015 – 2/18/2015



The [ACIS](#) map of the 7-day average temperature anomalies in the West ending February 18, shows that the West was again warmer than normal across the region. The greatest positive temperature departures occurred in western Wyoming and southern California (>+15°F). Other warm temperatures occurred across the West, including Nevada, Idaho, Oregon, Washington, Montana, Colorado, Arizona, and New Mexico. There was one area in far northeast Montana with negative temperature departures (<-6°F).

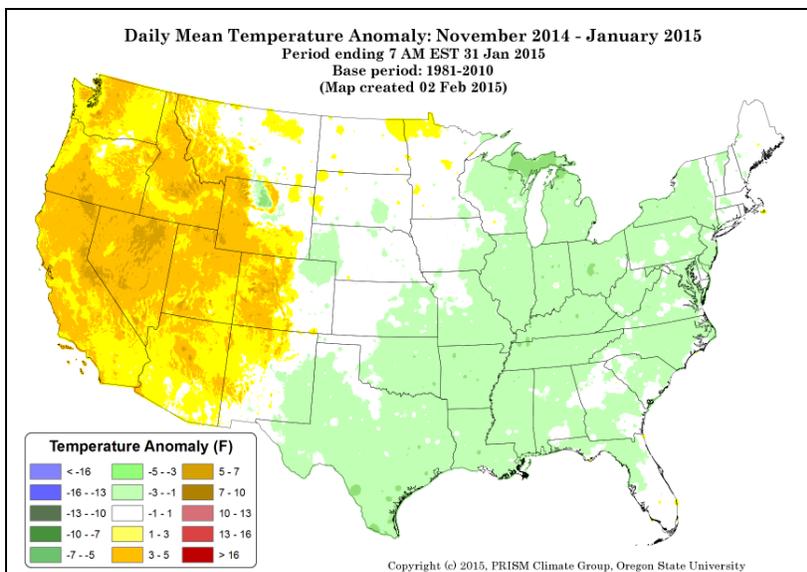
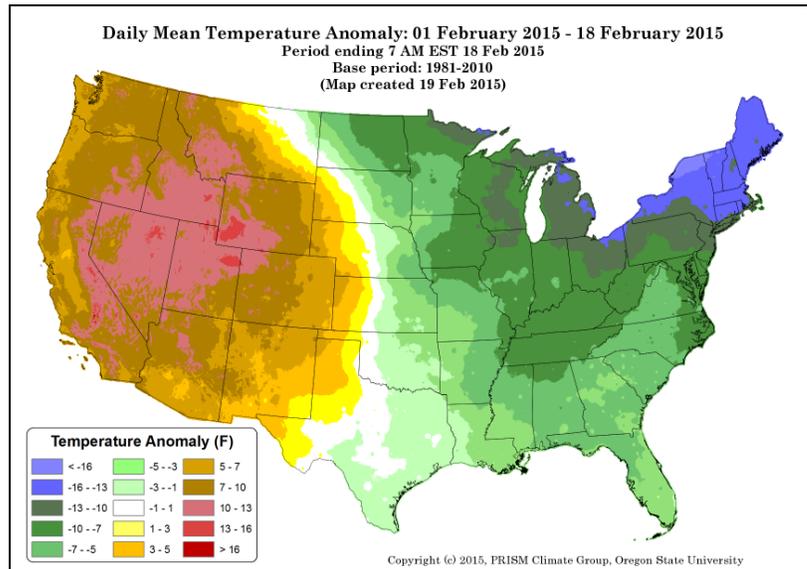
Also, see [Dashboard](#) and the [Westwide Drought Tracker](#)

Generated 2/19/2015 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 February 2015, the national daily mean temperature anomaly [map](#) shows a persistent large, cool region over the eastern half of the country, with the coldest anomaly in northern New York and Vermont (<-16°F). In contrast, above normal temperatures were recorded in all of the West, with the warmest anomalies in northern Utah, eastern Nevada, southern Idaho, western Wyoming, and central California (>+13°F).



The November - January national daily mean temperature anomalies for the U.S. in this [climate map](#) shows the western U.S. had slightly to above normal temperatures (>+5°F). The central and northern Great Plains 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. (<-3°F).

Weekly Water and Climate Update

Weather and Drought Summary

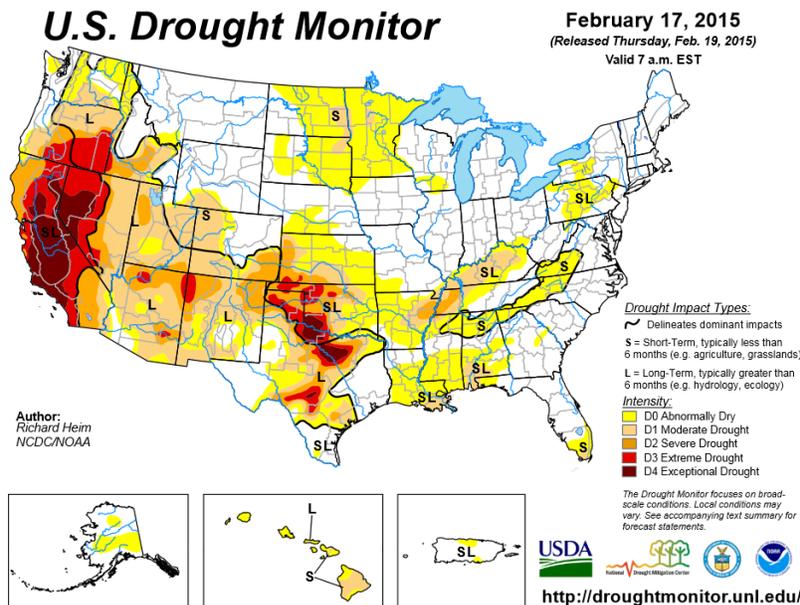
[National Drought Summary](#) – February 17, 2015

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

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

“For the contiguous 48 states, the U.S. Drought Monitor showed 32.13 percent of the area in moderate drought or worse, compared with 29.00 percent a week earlier. Drought now affects 73,544,965 people, compared with 69,224,225 a week earlier.

For all 50 U.S. states and Puerto Rico, the U.S. Drought Monitor showed 26.92 percent of the area in moderate drought or worse, compared with 24.31 percent a week earlier. Drought now affects 73,698,639 people, compared with 69,377,898 a week earlier. ”



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

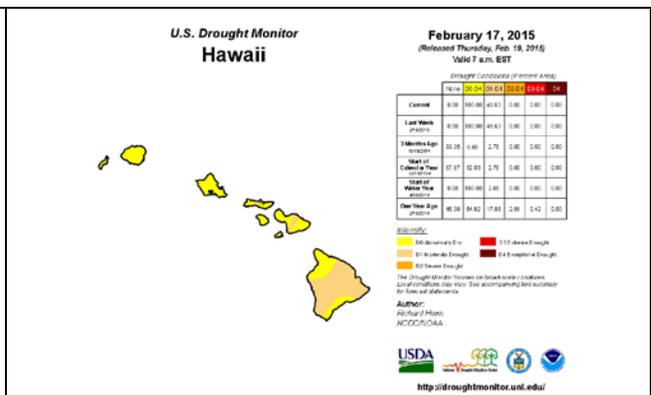
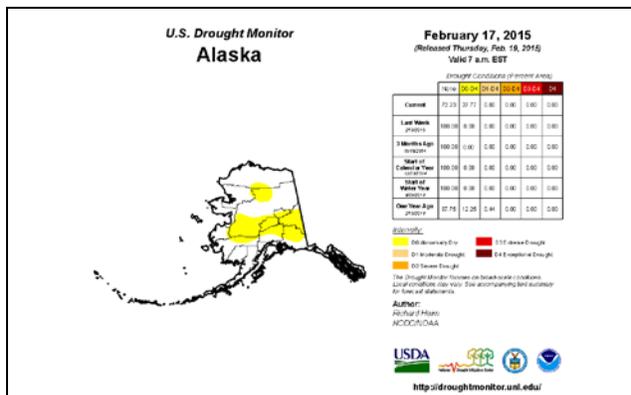
[Current Drought Monitor](#) weekly summary. The exceptional D4 levels of drought are scattered across CA, NV, TX, and OK.

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](#)

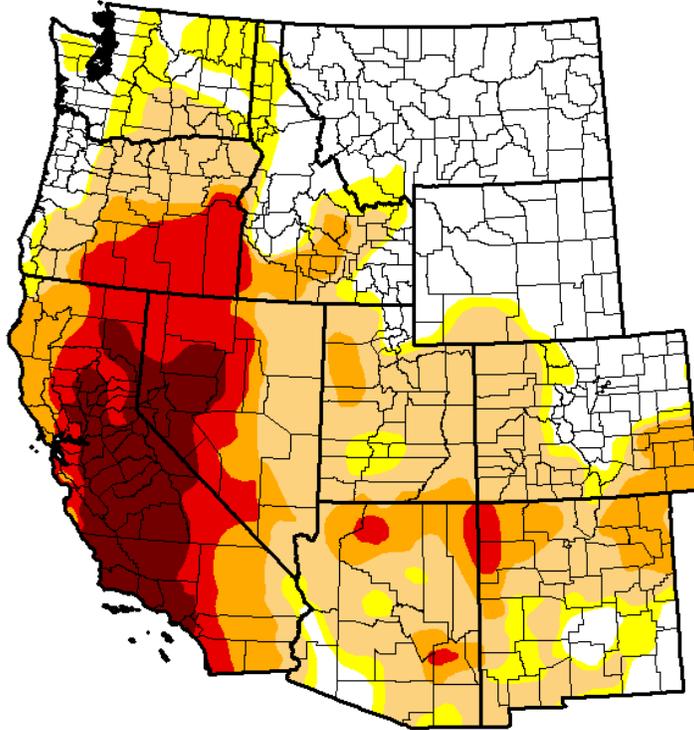


“The [49th](#) and [50th](#) States show normal to moderate drought conditions. No changes were noted for Hawaii this week. Alaska has nearly 28% D0 added this week. A comprehensive narrative describing drought conditions across other parts of the nation can be found toward the end of this document. For drought impacts definitions for the figures that follow, click [here](#).”

Weekly Water and Climate Update

U.S. Drought Monitor West

February 17, 2015
(Released Thursday, Feb. 19, 2015)
Valid 7 a.m. EST



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	31.20	68.80	68.53	30.61	17.23	7.21
Last Week <i>2/10/2015</i>	30.41	69.59	52.65	30.63	17.10	6.96
3 Months Ago <i>11/18/2014</i>	34.66	65.34	54.99	33.88	18.75	8.45
Start of Calendar Year <i>12/31/2014</i>	34.76	65.24	54.48	33.50	18.88	5.40
Start of Water Year <i>9/30/2014</i>	31.48	68.52	55.57	35.65	19.95	8.90
One Year Ago <i>2/18/2014</i>	21.76	78.24	59.88	40.17	14.89	2.58

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:
Richard Heim
NCDC/NOAA



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

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

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:

- WEST - [Study Sees Even Bigger Longer Droughts for Much of US West](#) – Feb 12
- WEST/CA - [Federal government to boost drought funding by \\$50 million](#) – Feb 6
- CO - [In Colorado, spruce bug epidemic eclipses mountain pine beetle blight](#) – Feb 12
- NM - [Ute water project receives \\$700,000](#) – Feb 12
- MO - [Ozarks history: County honor roll sold, featuring World War I war efforts](#) – Feb 8
- CA/WA/ID - [Drought in California Sends Skiers to Idaho, Washington](#) – Feb 9
- KS - [Ogallala levels continue to decline](#) – Feb 10
- AZ - [Tucson's storms aren't helping the Colorado River Basin](#) – Feb 12

Weekly Water and Climate Update

State with D-4 Exceptional Drought

U.S. Drought Monitor California

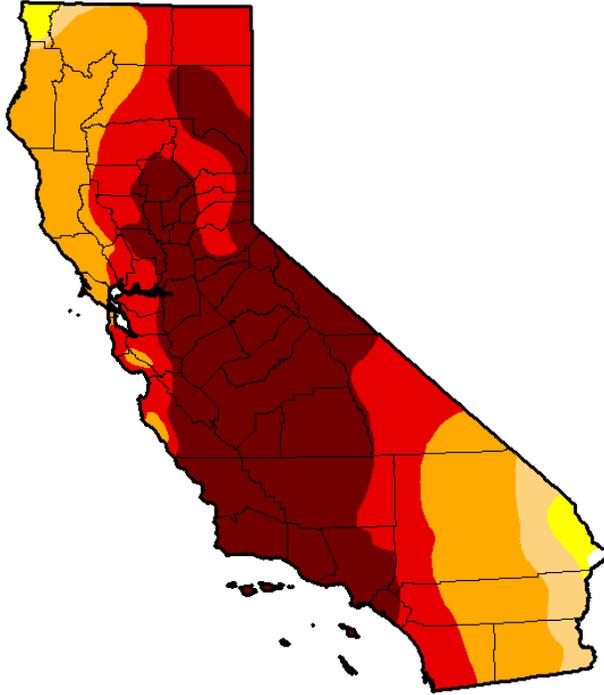
February 17, 2015

(Released Thursday, Feb. 19, 2015)

Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.16	99.84	98.10	93.44	67.46	41.20
Last Week <i>2/10/2015</i>	0.16	99.84	98.10	93.44	67.46	39.99
3 Months Ago <i>11/19/2014</i>	0.00	100.00	99.72	94.42	79.69	55.08
Start of Calendar Year <i>12/02/2014</i>	0.00	100.00	98.12	94.34	77.94	32.21
Start of Water Year <i>9/30/2014</i>	0.00	100.00	100.00	95.04	81.92	58.41
One Year Ago <i>2/18/2014</i>	0.00	100.00	94.54	90.82	68.30	14.62



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:

Richard Heim
NCDC/NOAA



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

There was a slight increase in D4 in California this past week. There was no change in the other categories in California for the week.

[CA Drought Information Resources](#)

[Drought News from California:](#)

[Sierra blaze that burned 40 homes coming under control after rain](#) – Feb 8

[WINCHESTER: Firefighters, Army reservists practice air attack](#) – Feb 10

[California pledges changes to protect drinking water](#) – Feb 9

[Federal government to boost drought funding by \\$50 million](#) – Feb 6

[Jerry Brown 'not ready' for mandatory water restrictions in drought](#) – Feb 6

[Water cutbacks loom but San Diego County agency says it's prepared](#) Feb 10

[Drought in California Sends Skiers to Idaho, Washington](#) – Feb 9

[Family-owned California ski resorts struggle from drought](#) – Feb 13

Weekly Water and Climate Update

Related Area News:

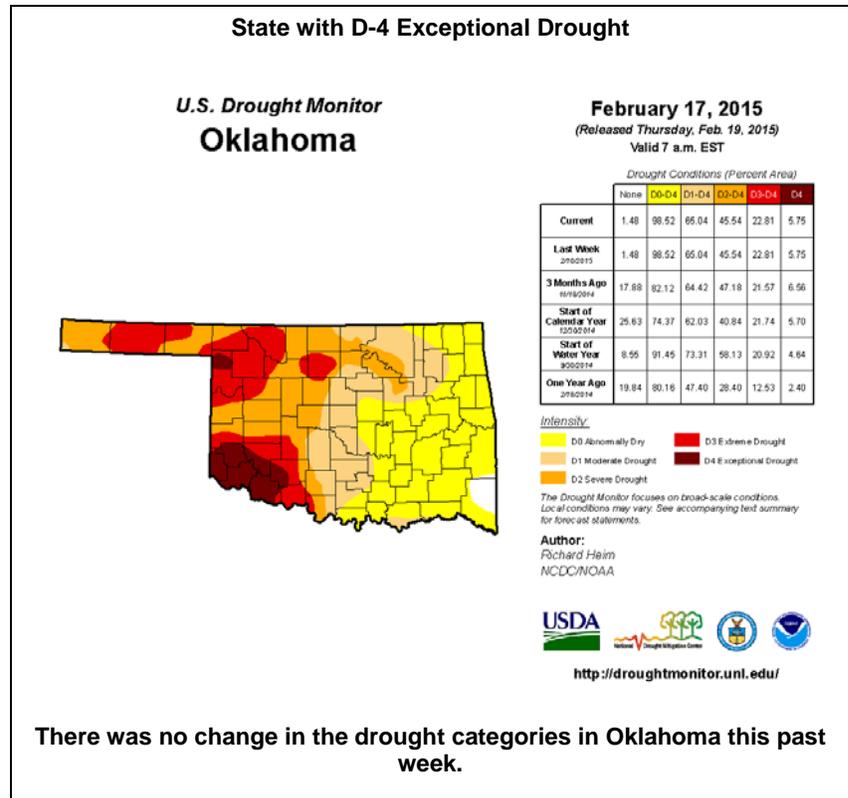
[2014 Kansas Drought Report and Summary](#)

- [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:

[29-mile water pipeline being built to combat drought](#) – Feb 17

[Study: Mega-Droughts Could Become The New Normal](#) – Feb 13



U.S. Population in Drought

Number of people in each drought category in the U.S. for the week ending February 17, 2015

Week	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
2015-02-17	184,241,988	121,155,467	73,544,965	49,122,332	37,776,506	24,342,489
2015-02-10	189,593,730	115,803,725	69,224,225	48,988,937	37,771,526	24,335,429

Population figures affected by drought in the U.S. Drought Monitor website show that, for this week, more than 73,500,000 people in the United States were in a drought-affected area, which is an increase by over 4.3 million people from last week.

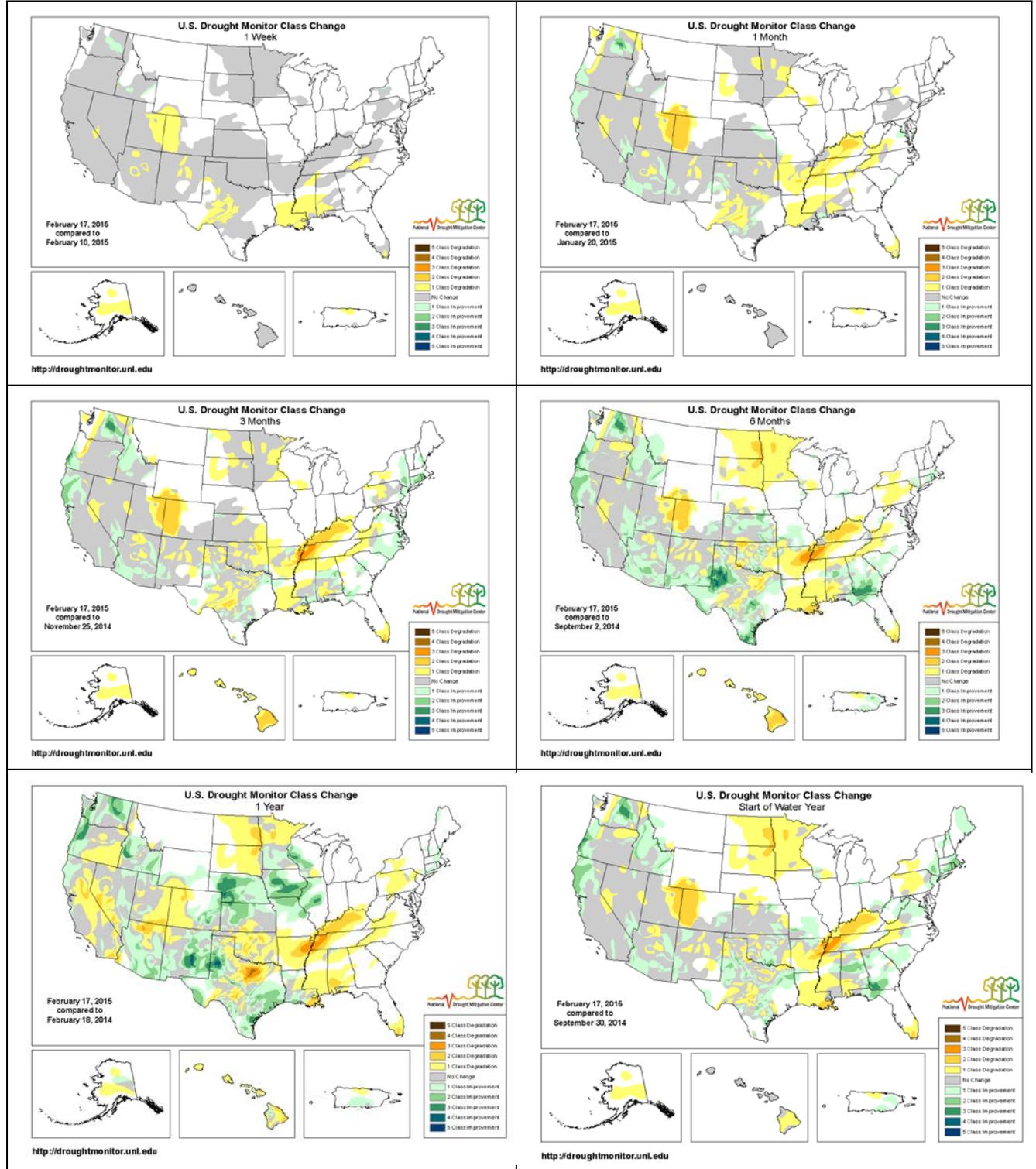
Population Statistics Methodology:

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

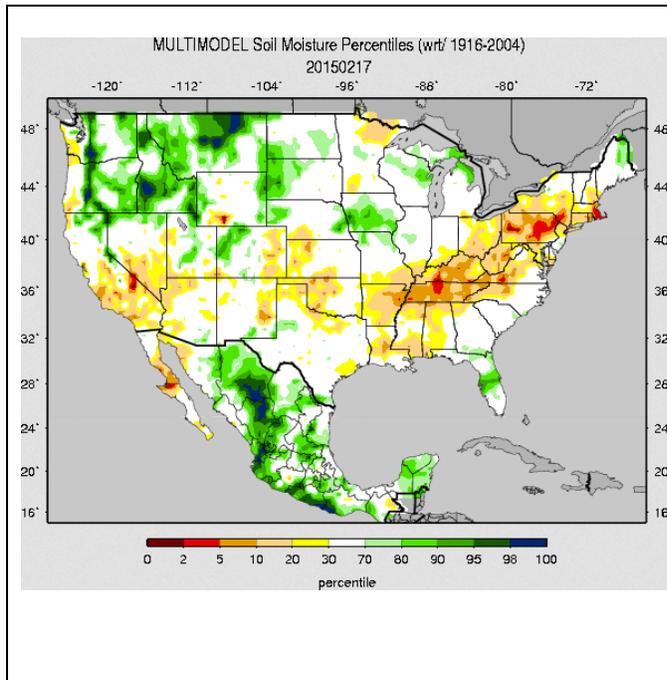
Over Various Time Periods



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

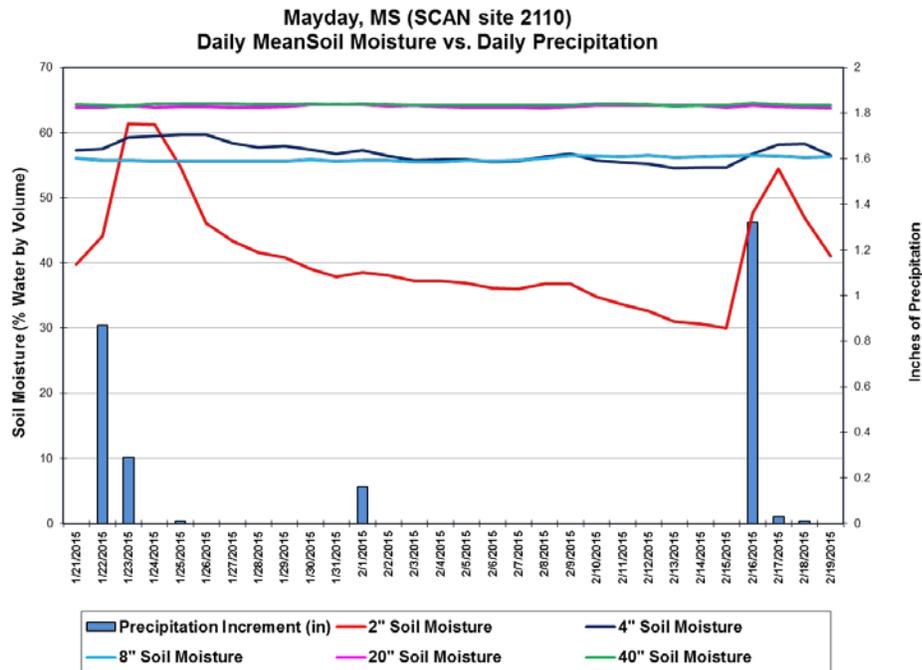
Soil Moisture



The national soil moisture model ranking in [percentile](#) as of February 17, 2015, shows dryness over most of the East, and the south central and southwest U.S. The driest areas are in southern Nevada, central and southern California, eastern New Mexico through central Oklahoma, Nebraska, southern Wyoming, northern Minnesota, and many eastern states. Moist soils dominated north central Montana, in the Cascades of Washington and Oregon, areas of northern California and the northern Sierra Nevada, western South Dakota, Iowa, northern Wisconsin, northern Michigan, Maine, and central Florida. Slightly moist soils were also scattered elsewhere throughout the country. Much of the northeast 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)

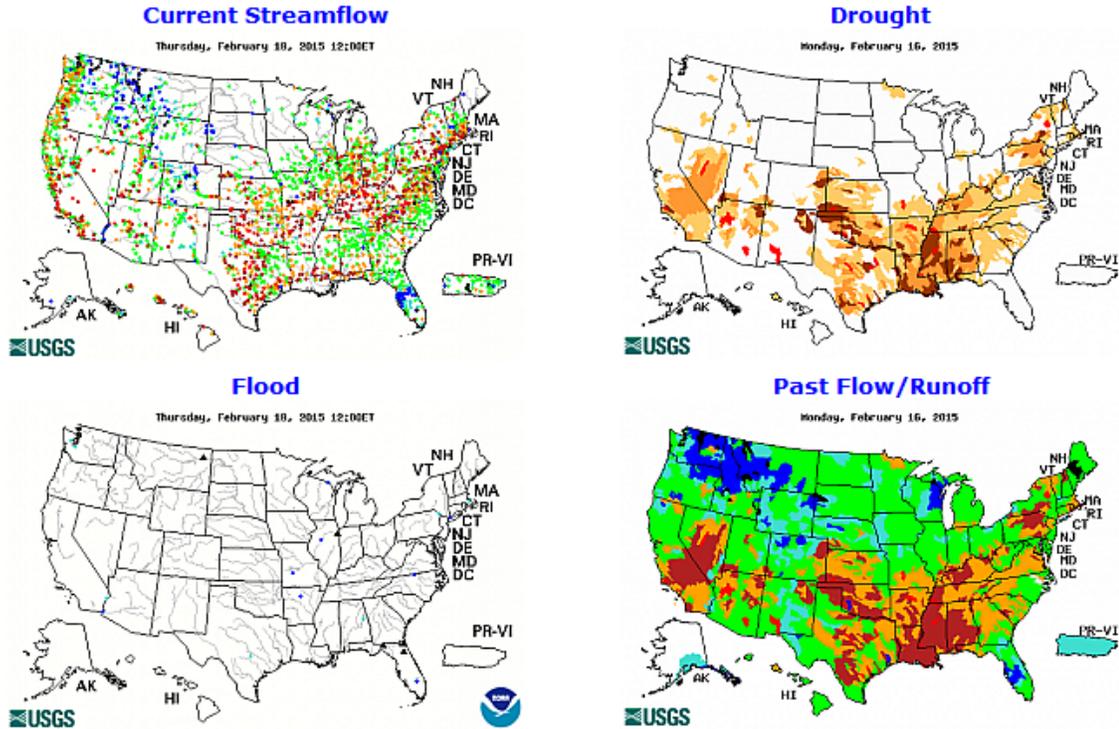


This NRCS resource shows soil moisture data for the last month at [Mayday \(SCAN site # 2110\)](#) in Mississippi. The area had precipitation several times this past month (blue bars). This rainfall resulted in an increase in soil moisture, primarily at the 2- and 4-inch depths. The 8-, 20-, and 40-inch soil moisture depths sensor reported little change from the precipitation events.

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](#).

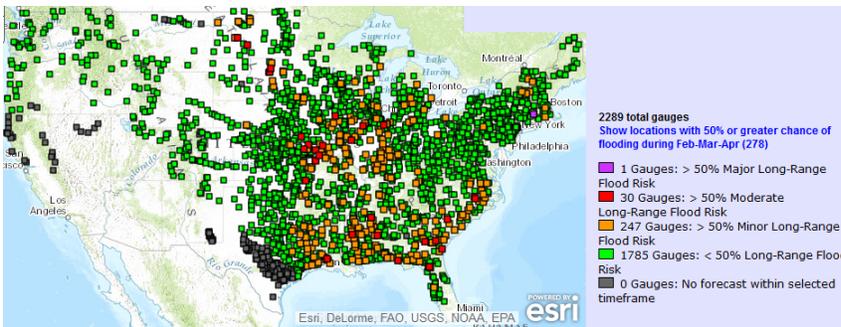
Weekly Water and Climate Update

Streamflow



Gages in parts of the U.S. are reporting much above normal streamflow. Many streams in Washington, western Montana, northern Idaho, and Florida are flowing high due to recent heavy rain. Some gages in the northern states are now frozen, so may not relate to the precipitation and snow conditions in that area. The rivers above flood stage are the Poplar River near Poplar, MT, Kankakee River at Momence, IL, St. Johns River at Jacksonville, FL, , Dunns Creek near Satsuma, FL, St. Johns River near Satsuma, FL, and the Aucilla River at Lamont, FL.

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).

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, **1** gauge has a greater than 50% chance to experience major flooding; **30** gauges for moderate flooding; and **247** gauges for minor flooding.

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

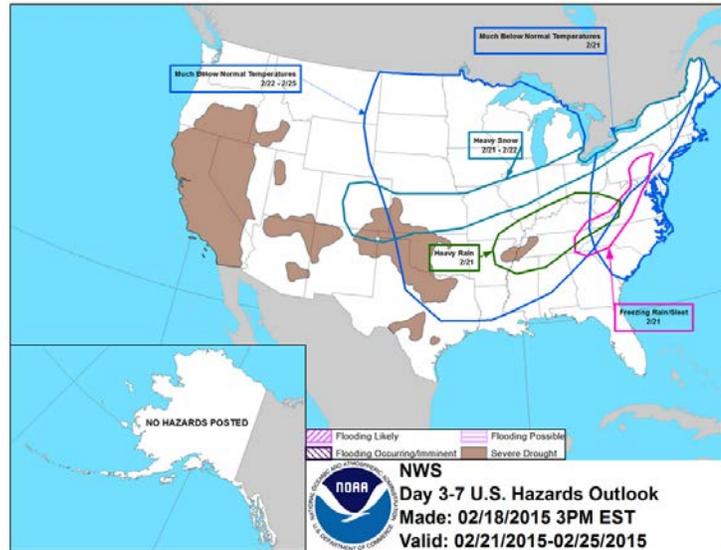
Weekly Water and Climate Update

National [Weather Hazards](#)

Heavy snow is expected in a long, narrow area from central Colorado to Maine (2/21-22) (medium blue). Freezing rain/sleet is expected in the Appalachian Mountains (2/21). Heavy rain is expected west of the freezing rain in the Ohio River Valley (2/21). A large area of the eastern U.S. is expected to have a sustained period of much below normal temperatures, as well (2/21-25).

In Alaska, no hazards are posted for this week.

Severe drought remains a large issue in much of the south central and western U.S.



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

Prepared by the Drought Monitor Author: Richard Heim, NOAA/NCDC.

Summary

"The upper-level circulation pattern during this U.S. Drought Monitor (USDM) week consisted of a persistent ridge over the western CONUS (contiguous United States) and trough in the east. The ridge kept temperatures warmer than normal and blocked significant precipitation, while the trough funneled cold and dry air masses across the CONUS east of the Rockies and well into the Caribbean. Weather systems moving in the upper-level flow brought above-normal precipitation to parts of the Rockies and adjacent High Plains and Upper Mississippi Valley. A large weather system at the end of the week brushed the Ohio Valley as it moved out of the Southern Plains and across the Southeast to Mid-Atlantic coast. It brought rain, snow, sleet, and freezing rain to these areas, but precipitation amounts were mostly below normal for the week.

Hawaii, Alaska, and Puerto Rico

North central Puerto Rico has experienced persistently below-normal precipitation, with rainfall deficits exceeding 6 inches over the last 90 days. An area of D0 was added to reflect the precipitation shortages and decreasing streamflow. Warmer- and drier-than-normal weather in Alaska during the last several months has reduced the winter snowpack snow water content percentile, while melting snow has increased the streamflow. Areas of D0 were introduced to the interior regions where precipitation deficits, low snow water content, and modeled soil moisture deficits overlapped. A cold front over the weekend brought rain showers to Hawaii. While not enough to improve the drought and abnormally dry conditions, they prevented further deterioration in the Aloha State this week.

The Northeast and Mid-Atlantic

The Northeast and much of the Mid-Atlantic region were locked in a snowy deep freeze this week. Frozen rivers lowered streamflow measurements in some areas. Above-normal precipitation fell in and around Wayne County in New York. This area measured above-normal precipitation for all time scales from the last 7 days to last 12 months, so D0 was contracted in Wayne County. But no change was made to the D0 in the rest of this region.

The Plains and Midwest

Portions of the Northern Plains and Upper Midwest received half an inch or less of precipitation this week, but this registered as above-normal due to normal being low during the winter dry season. A handful of stations in Upper Michigan reported more than half an inch of precipitation. Much of the Central Plains to Lower Great Lakes reported little to no precipitation. Precipitation was below normal (half an inch or less) across most of the Great Plains, except portions of Texas and southeast Oklahoma which received an inch or more of precipitation. Although streamflow levels were significantly low, much of Kentucky was buried in 8 to 16 inches of snow this

Weekly Water and Climate Update

week, with liquid equivalents of an inch or more of precipitation, so no change was made to the depiction over the Bluegrass State. D0-D3 expanded in southwest Texas to the Texas panhandle due to re-evaluation of data.

The Southeast and Lower Mississippi Valley

Much of the Southeast has been in a dry pattern for the last 30 to 90 days, with streamflow decreasing and soils drying out. The coastal areas have been wetter than interior regions, but even the coastal areas have been drier than normal for the last month. A winter storm system moving through the Southeast at the end of this USDM week dropped rain in the southern portions and a wintry mix further north. The national snow cover area increased from 25.6 percent of the CONUS covered in snow on February 15 to 48.9 percent two days later, according to the NOAA National Operational Hydrologic Remote Sensing Center. But the storm's precipitation totals for the week were still well below normal in most areas of the Southeast. One to 2 inches of precipitation was the most reported ... in a band from northern Louisiana to northern Georgia and southeast Tennessee, with lesser amounts to the south. D1 expanded in southwest Alabama and southeast Louisiana to reflect 90-day precipitation deficits. D0 expanded in Louisiana, Mississippi, and southern Alabama where weekly precipitation totals were below normal, as well as in western North Carolina and northeast Mississippi, northwest Alabama, and adjacent Tennessee. The expansion of Abnormally Dry (D0) conditions resulted in the joining of some short- and long-term impact areas, so an S impact boundary from southwest Virginia to northeast Mississippi was drawn in to separate the S and SL regions. Severe precipitation shortages were evident in extreme southern Florida for the last week to 4 months, and even extending back over the last 12 months, with several locations having the tenth driest, or drier, winter season (dry season) to date and increasing fire risk. This resulted in an area of D1 being introduced to parts of Monroe and Miami-Dade Counties.

The West

Half an inch to an inch of precipitation was reported in a few parts of the West, mainly northwest Washington and portions of the Rockies. Half an inch or less was received in other parts of the Pacific Northwest and Rockies and southeast Arizona, but most of the West received little to no precipitation this week. While storm systems during December and early February helped replenish some reservoirs, the precipitation fell mostly as rain instead of snow, so the mountain snowpack in the coastal ranges remained dismally below normal, severely impacting the ski industry. According to the National Resource Conservation Service (NRCS) SNOTEL network, mid-February snowpack snow water content ranked in the lowest 5 percent of the historical record at many stations throughout Washington, Oregon, California, and Utah, and, in fact, in most western states. Persistent well-above-normal temperatures continued to melt the snowpack, with snow depth decreasing as much as 4 to 12 inches in the last 7 days at many SNOTEL stations in the Pacific Northwest and Rockies. The University of California estimated statewide forage production decreased during January due to the month's very dry conditions, and the Almond Board of California reported a decrease in almond shipments of about 28 percent in January 2015 compared to January 2014.

D0 was pulled back in eastern Washington, and D1 pulled back in Washington's Lower Columbia Basin, to better reflect water-year-to-date precipitation conditions and soil moisture combined with the low snowpack water equivalent. In Idaho, the south central D3 was eliminated, D0-D2 was pulled back in the southwest and southeast areas, and D3 was expanded in the southwest to better reflect impact conditions and a tighter moisture gradient. D1 expanded in western Colorado, northeast Utah, and southwest Wyoming to better reflect low mountain snow water content and above-normal evapotranspiration due to persistently above-normal temperatures. The impact boundary was adjusted in this area to reflect short-term impacts.

In the Southwest, an area of D3 was added to northwest Arizona to reflect long-term (24-36 month) dryness. The D0 donut holes along Arizona's Mongollon Rim were reduced in size, and the D0 in north central towards central New Mexico was filled in with D1, to reflect the low SNOTEL snowpack and reservoir situation. D4 was expanded in Mono and Inyo Counties in California and Esmeralda County in Nevada to reflect dryness in the short term (last 7 days to 6 months) and long term (last 48-72 months).

Looking Ahead

The upper-level circulation pattern (of ridge west/trough east) will continue. Above-normal temperatures are expected over the western CONUS and below-normal temperatures east of the Rockies, with weekly temperature anomalies as much as 20 degrees below normal during the next 7 days. Another storm system will develop in the east, bringing an inch or more of precipitation to the Mid-Mississippi and Ohio Valleys and coastal Mid-Atlantic to Northeast. The NWS HPC 7-Day Quantitative Precipitation Forecast (QPF) also calls for half an inch or more of precipitation for February 19-25 across parts of the Rockies and central Plains, eastern portions of the Southern Plains, and most of the country east of the Mississippi River, while half an inch to no precipitation is forecast for the West.

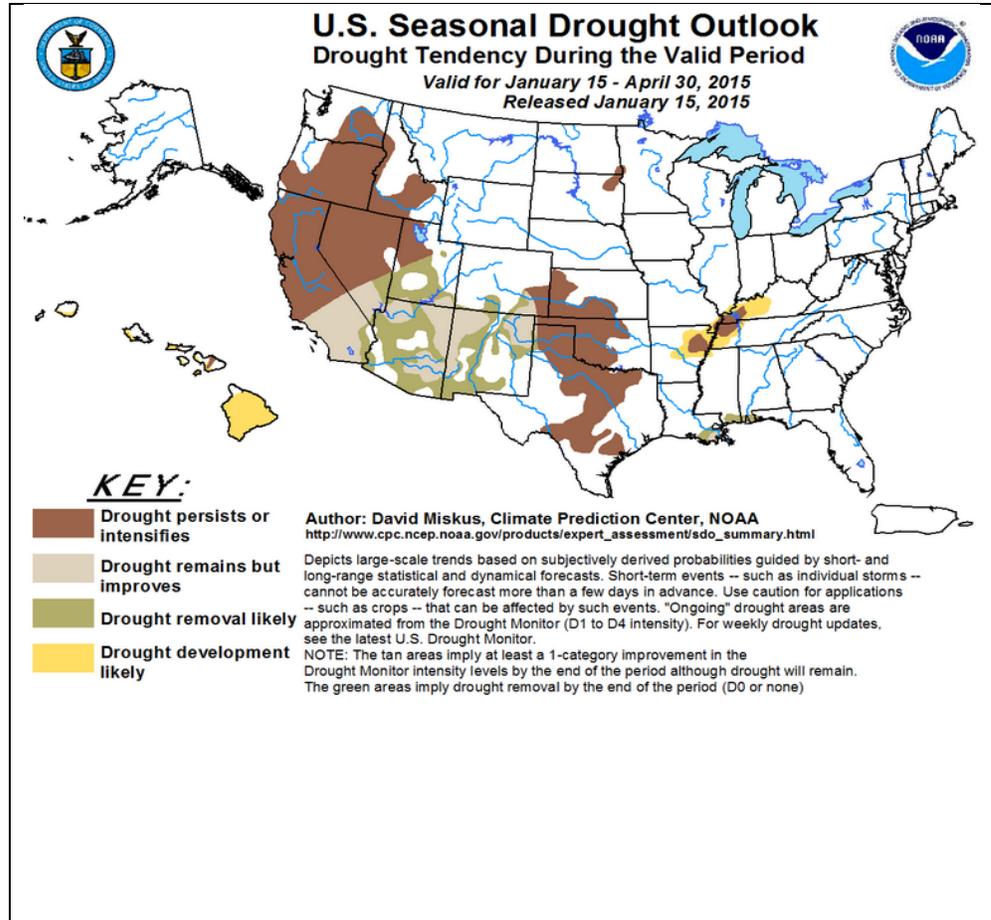
Weekly Water and Climate Update

The 6-10 day and 8-14 day outlooks expand the area of below-normal temperatures across the eastern CONUS to the Rockies, while above-normal temperatures should continue along the West Coast to Alaska. Drier-than-normal weather is expected for February 24-March 4 from the northern Plains to western Great Lakes and southwest Alaska, while precipitation should be above normal from parts of the southern Plains, across the Southeast, to the coastal Northeast. Pacific weather systems undercutting the ridge should bring above-normal precipitation to the West late in the period.”

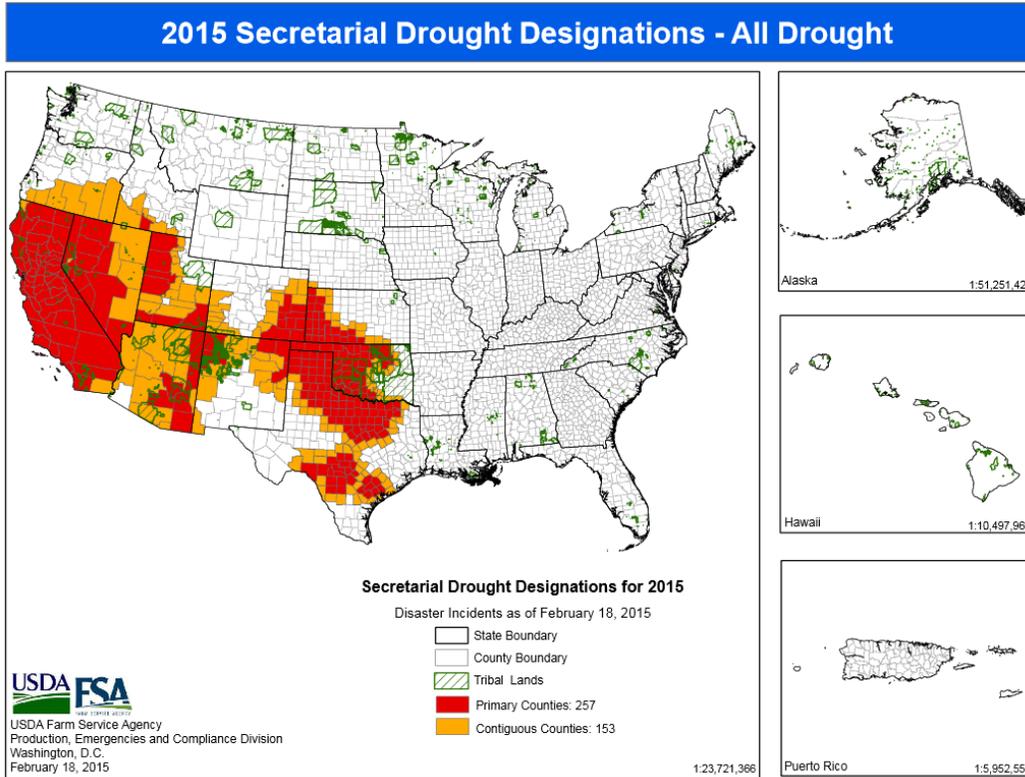
Supplemental Drought Information

National Seasonal Drought Outlook

Nationally, [drought](#) is expected to persist or intensify over much of the West and south central U.S., including Nevada, Oregon, Washington, Idaho, Utah, Arizona, New Mexico, Texas, Oklahoma, Nebraska, and Colorado. Improvements are expected in southern California and in parts of the Southwest and Texas. The areas of drought in Arkansas, Tennessee, and Kentucky are likely to develop further. Hawaii drought development is also likely.



2015 USDA Secretarial Drought Designations

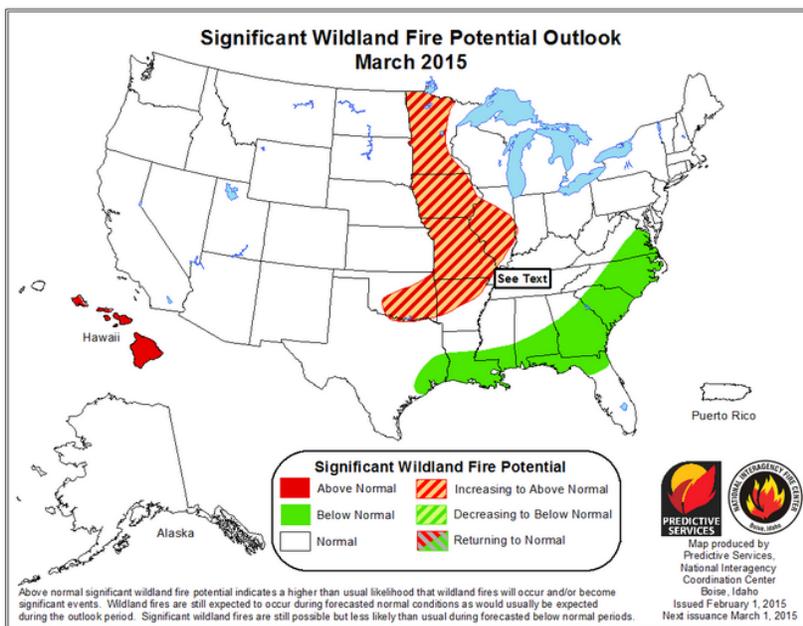


Refer to the USDA Drought Assistance [website](#) and [National Sustainable Agriculture Information Service](#).

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

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

National Fire Potential Outlook



March Fire Forecast

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

The central U.S. has increasing to above normal fire potential for March. Below normal fire potential area for March 2015 (in green on the map) is forecast for Texas and the Southeast to the mid-Atlantic states.

Hawaii has above normal fire potential on most of the islands.

Weekly Water and Climate Update

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, and National Drought Mitigation Center.

"\$50 million in federal aid on the way for drought-stricken Western states

Fifty million in drought relief funds became available for Western states struggling with years of drought. California is designated to receive most of the aid, with the Central Valley Water Project getting \$20 million for water transfers, diversifying water supplies and other activities.

Immense droughts on the horizon for Southwest, Central Plains

Climate change may bring intense megadroughts to the Southwest and Central Plains, said lead author Benjamin Cook, a NASA atmospheric scientist. These droughts, projected to take place beyond 2050, are expected to be more severe than previously predicted.

California

Increased drinking water protections

California could see new changes in the protection of underground water supplies from oil and gas operations if the U.S. Environmental Protection Agency approves the plan. The aim is to return the state to compliance with federal safe-drinking water laws.

No mandatory water restrictions yet

Despite California entering its fourth year of drought, Gov. Jerry Brown did not feel that mandatory water restrictions were needed since the public was conserving water.

Metropolitan Water District of Southern California warning customers of cutbacks

The Metropolitan Water District of Southern California informed its customers that water cutbacks of 5 to 10 percent could be in the offing this summer, barring significant precipitation. The MWD may have to make sizeable withdrawals from its half-depleted reservoirs if the next few months remain dry.

Skiing better in Idaho, Washington than California

Thin snowpack in Sierra Nevada has driven downhill and Nordic skiers to snowier areas, such as Sun Valley in Idaho and Methow Valley in north central Washington, until the California mountains get more snow. The snow drought has hurt resorts of all sizes as warm temperatures led to rain rather than coveted snow.

Southern Californians preparing for the fire season

Army helicopters practiced water drops ahead of the firefighting season in southern California. Meager rainfall and limited water supplies led the Army reservists to return water to a reclaimed water storage pond after use to avoid wasting the precious liquid.

Outside of California

Call for more restrictions on Nevada water use

Nevada water officials feel that restrictions on water waste and underground water use are needed as drought persists in the state and presented the matter to the Senate Government Affairs Committee on Feb. 11.

Weekly Water and Climate Update

Early stocking of Nevada fish

Low water in the Truckee River prompted the Nevada Department of Wildlife to stock the river earlier than normal while there is still enough water in the river to support the fish. Trout were also stocked in February last year—the earliest in 20 years—due to drought and low river flows.

Spruce beetles ravaging more Colorado forests

The spatial extent of Colorado forests afflicted with the spruce beetle increased from 625 square miles in 2013 to 760 square miles in 2014, according to an annual aerial survey seeking to measure the area of insect- or disease-killed trees in nearly 44,000 square miles of forest. The most rapid expansion of spruce beetle activity occurred in southwestern Colorado.

Western Kansas groundwater levels continuing their slide

A well water level survey in western Kansas showed ongoing decreases as intensive irrigation and drought drew down the Ogallala Aquifer from 2000 to the present. The largest drops were in southwest Kansas with average water levels falling 1.92 feet annually.

Historical impact in southwestern Missouri

February 1981: Appleton was very low on water because the town's reservoir was blocked with debris and had been exhausted during drought. Forty-five million gallons of water from coal strip pits were used in the interim until a more reliable water source could be found, but the pit water was not of the highest quality. The water contained high levels of hydrogen sulfate, which had a laxative effect, prompting the mayor to caution residents about consuming the town's water.

"The new water takes a little getting used to," quipped the mayor.

The water from the coal strip pits was heavily laden with minerals, preventing soap from making suds and unable to dissolve non-dairy powdered creamer."

[Drought Impact Reporter](#)



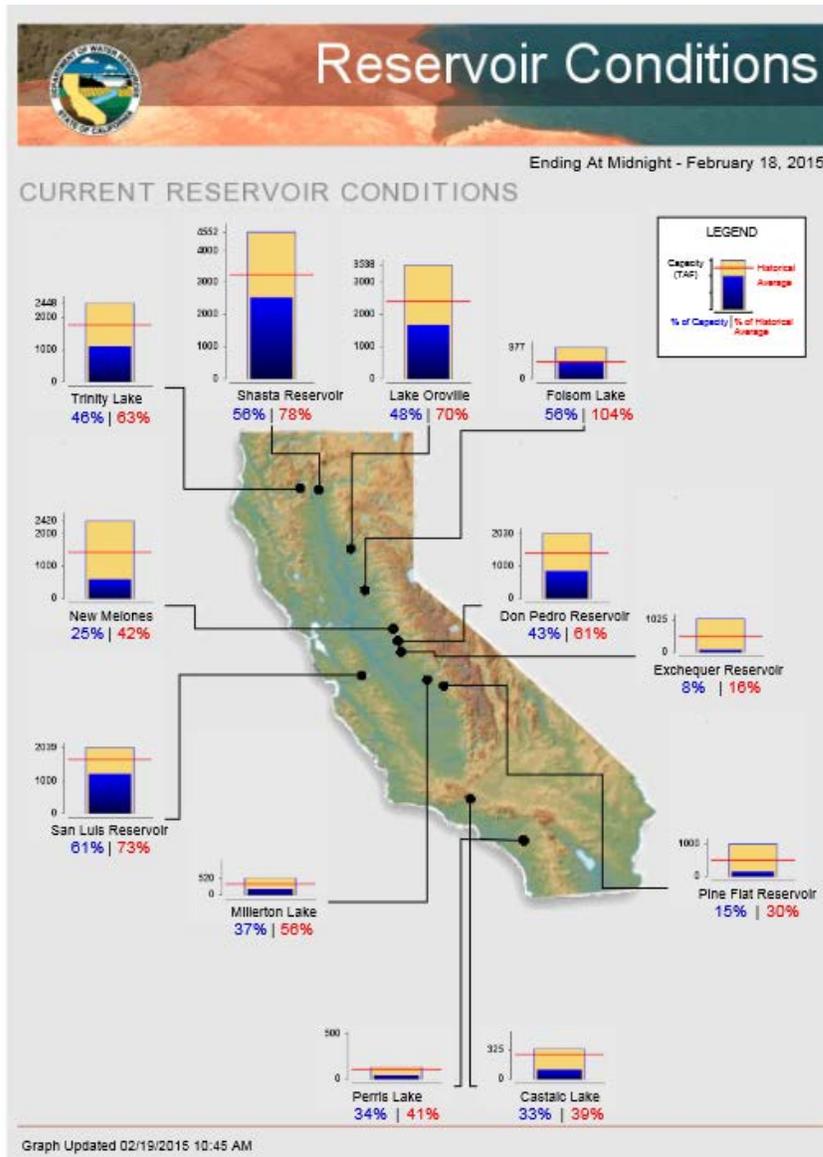
Weekly Water and Climate Update

Tea Cup Reservoir Depictions

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

California Reservoir Conditions

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

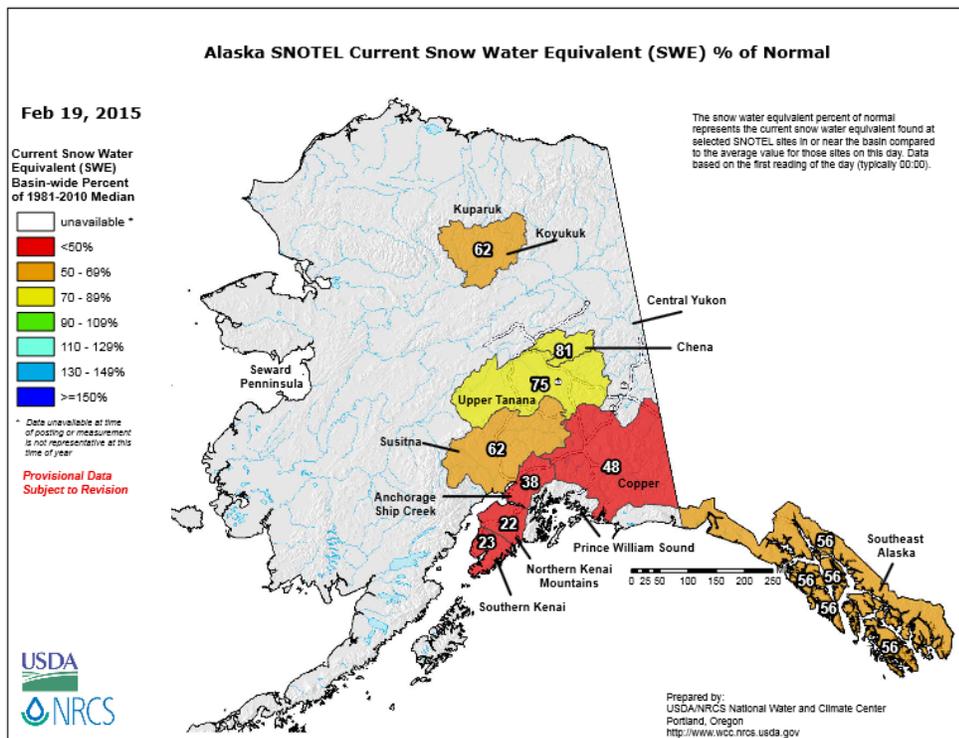


Weekly Water and Climate Update

Current Snow Conditions in the High Sierra



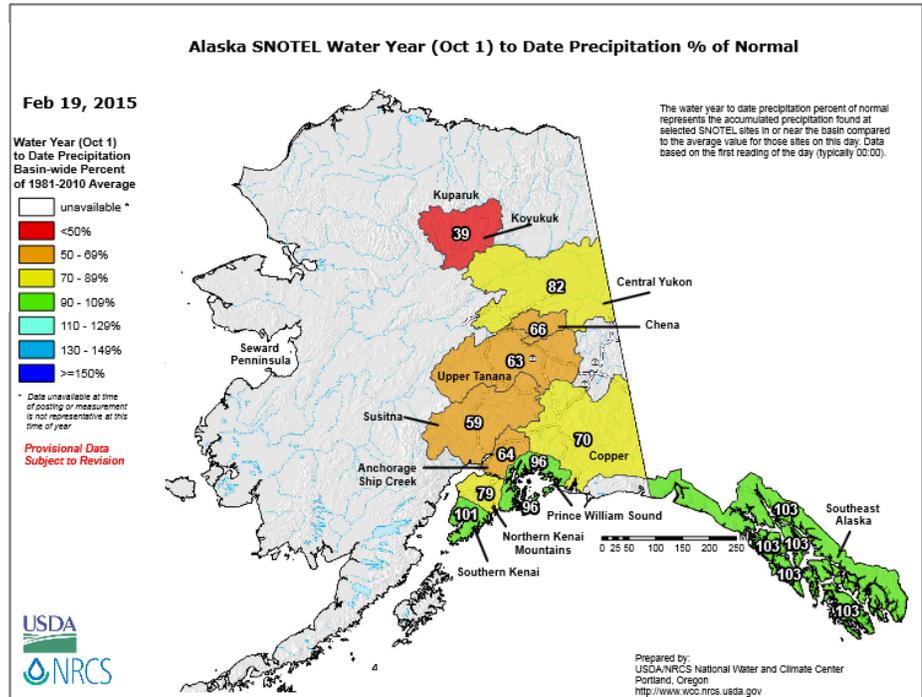
NEW! Alaska Snow Water Equivalent and Precipitation Conditions



The [Alaska SNOTEL current SWE map](#) shows less than average conditions across the state. The lowest snowpack as a percent of normal is on the Kenai Peninsula, and the Copper and Anchorage/Ship Creek basins.

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, whereas interior Alaska is drier than average.

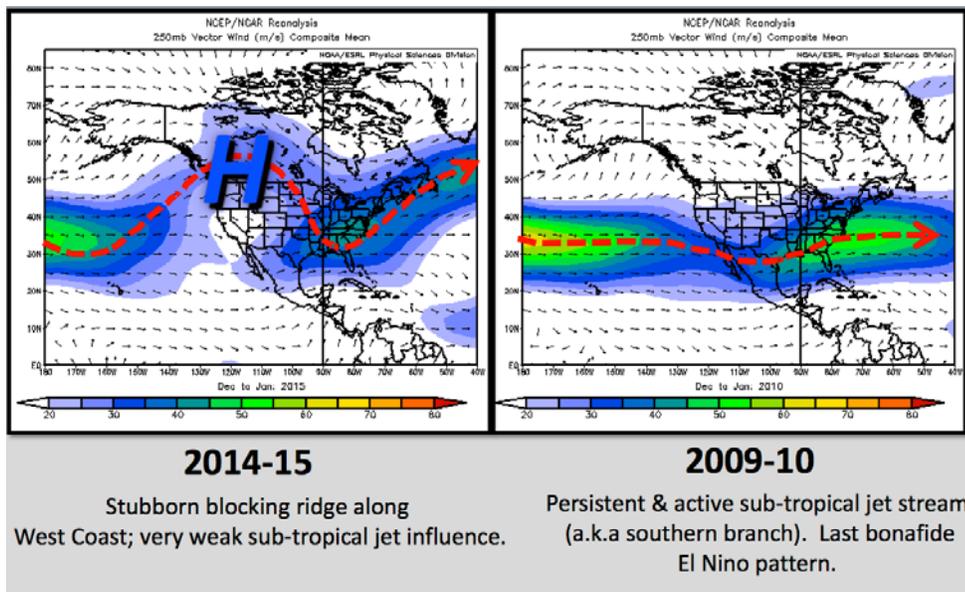


State Activities

[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](#).

Persistent weather pattern dominates the U.S.

Here is a graphic from the NWS 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.



Weekly Water and Climate Update

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