



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

Weekly Water and Climate Update
Thursday, April 2, 2015

Table listing various topics and their corresponding page numbers, such as Snow (2), National Weather Hazards (17), and National Drought Summary for March 31, 2015 (17).



NWCC 2014 Photo Contest

Field work, 2nd Place
Zach Wilson Performing Summer
Maintenance, Beartown SNOTEL Site,
Colorado

Photographer: Mike Ardison

Outlook: "A storm system currently centered over the nation's mid-section will remain the focus for heavy rain and locally severe thunderstorms through week's end. The storm will generally move northeastward, crossing the Ohio Valley on Friday and reaching coastal New England on Saturday. Storm-total precipitation could reach 2 to 5 inches in the Ohio Valley and at least 1 to 2 inches in a broad area from the mid-South into the Northeast. Precipitation will end as snow on April 3-4 from the lower Great Lakes region into northern New England. Elsewhere, significant precipitation (1 to 2 inches) will be limited to the Pacific Northwest and portions of the northern and central Rockies. By early next week, another round of cool air will settle across the northern Plains and

much of the West. The NWS 6- to 10-day outlook for April 7 – 11 calls for near- to below-normal temperatures across the northern and western U.S., while warmer-than-normal weather will extend from the central and southern Plains into the Southeast. Meanwhile, above-normal precipitation across the majority of the country will contrast with drier-than-normal conditions in an area stretching from the Southwest to the northern High Plains."

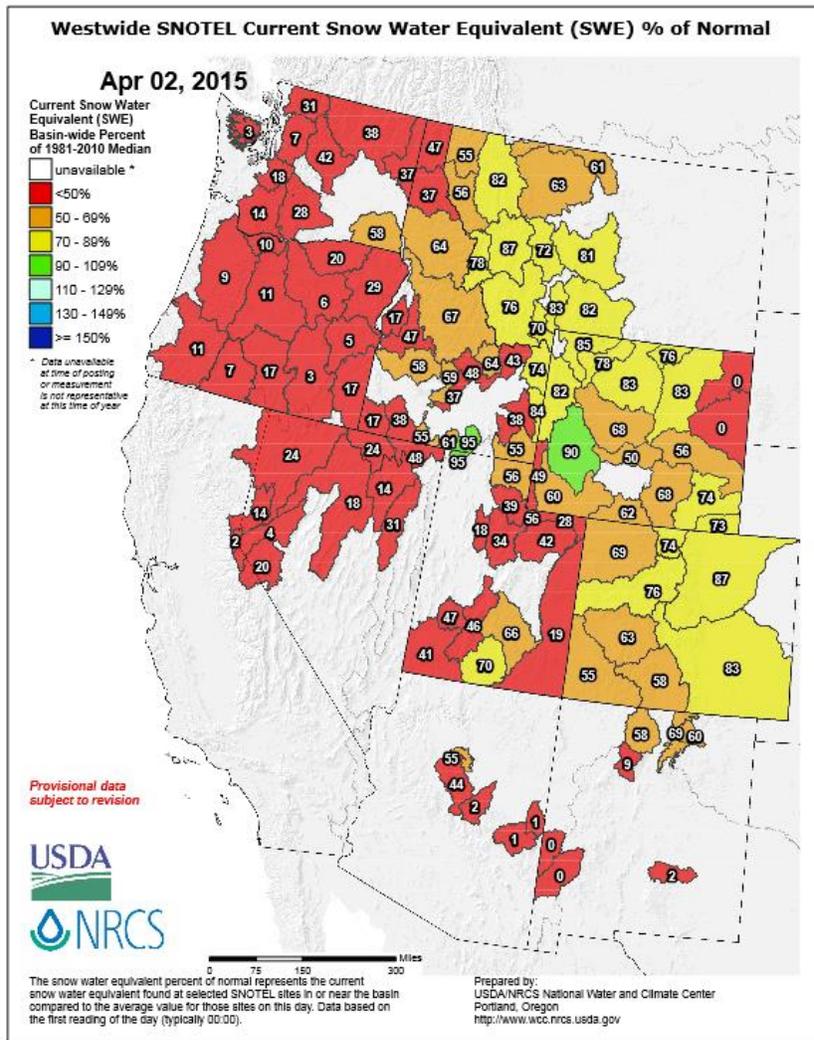
Contact: Brad Rippey, Agricultural Meteorologist, USDA/OCE/WAOB, Washington, D.C. (202-720-2397)

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

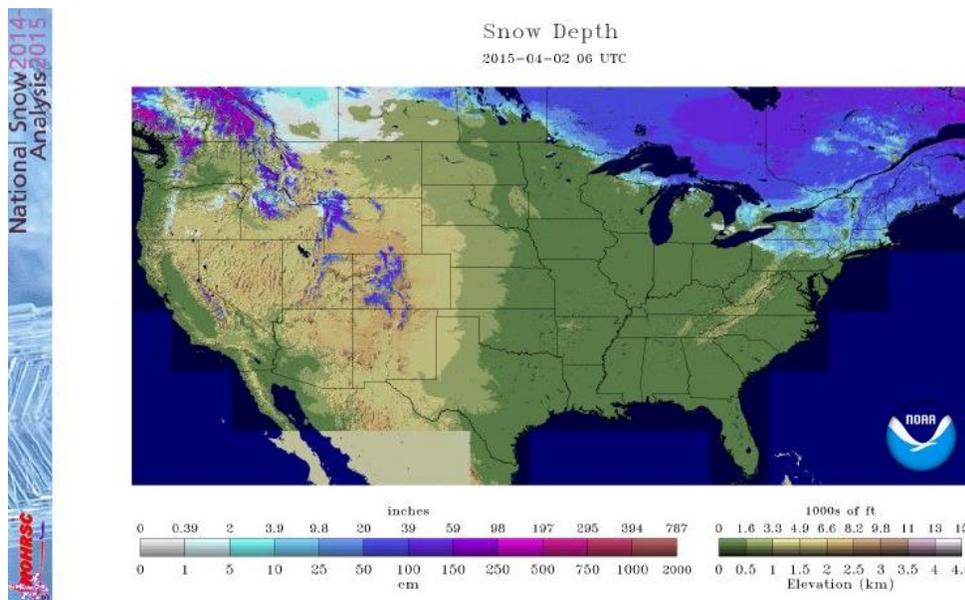
Snow



The [Westwide SNOTEL Current Snow Water Equivalent \(SWE\) % of Normal map](#) shows the largest snowpack deficits are in record territory for many basins in the Cascades and Sierra Nevada where single-digit percent of normal conditions prevail. Very low snowpacks (red areas) are reported in most of Washington, all of Oregon, Nevada, California, parts of Arizona, much of Idaho, parts of New Mexico, three basins in Wyoming, and much of Utah. Below normal snowpacks (orange and yellow areas) are also located in eastern Washington, Idaho, Utah, Colorado, most of Wyoming, Montana, one basin in central Arizona, and northern New Mexico.

The snowpack in one basin in western Wyoming, one in northwest Utah, and one in southeast Idaho are near normal.

There are no basins in the West reporting above average conditions.



The snow depth map as reported from the [NWS NOHRSC](#) for April 2, 2015, shows a decrease in snow cover from last week. Snow now covers 7.7% of the continental U.S. This includes snow across many of the mountains in the West, the far northern Midwest, 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 effect 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 a few 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.

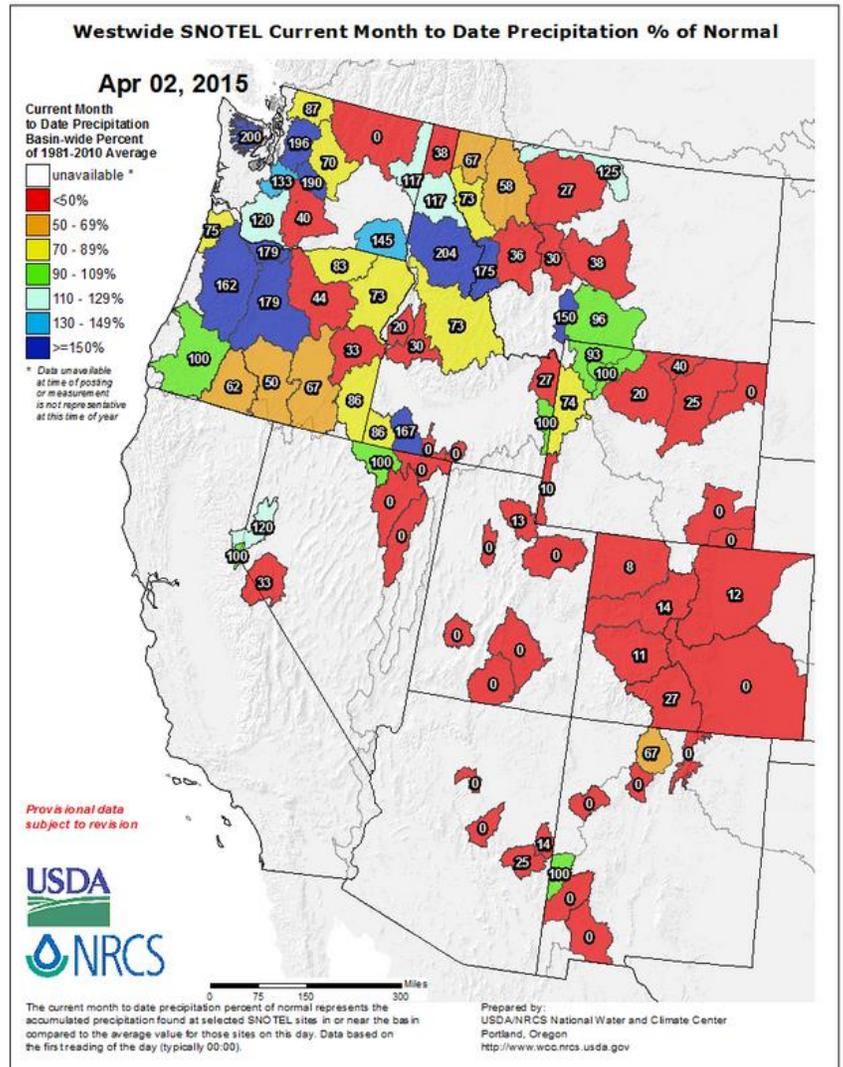
Freezing levels for most storm events have remained well above the elevation of many SNOTEL sites. The near average precipitation (see map on page 5), especially in the Cascades of Oregon and Washington, has helped to improve any soil moisture, groundwater, and reservoir deficits. Warm temperatures and very little precipitation in the Sierra Nevada have provided for an extreme record-breaking snow season. Any precipitation that has fallen across the region has helped to offset the current effects of the low snow conditions that these areas have experienced but may not be enough to offset future deficits in snowmelt runoff for spring and summer streamflow.

In the West, the [SNOTEL](#) precipitation percent of normal map on the first day of April shows a variety of conditions. Keeping in mind that this map is only for one day, it shows that there were scattered wet conditions in the northern Rockies, and precipitation in some basins in Oregon, Idaho, Washington, Montana, northwest Wyoming, Nevada, California, and New Mexico. (blue areas).

Low to no precipitation for April 1 was reported in some basins in Oregon, Washington, Idaho, Montana, Nevada, Wyoming, Utah, Colorado, Arizona, and New Mexico (red and orange areas).

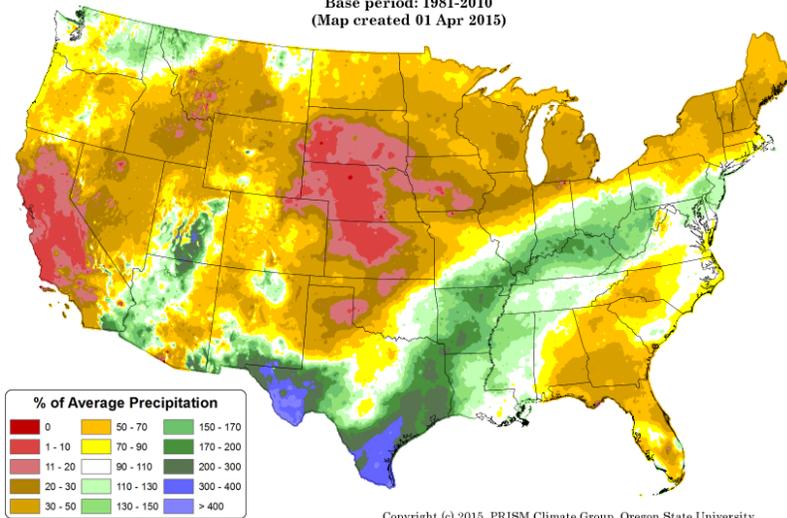
The percent of average is exaggerated over a short period of time (April 1) and dependent on normal conditions for this day.

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



Weekly Water and Climate Update

Total Precipitation Anomaly: March 2015
 Period ending 31 Mar 2015
 Base period: 1981-2010
 (Map created 01 Apr 2015)



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

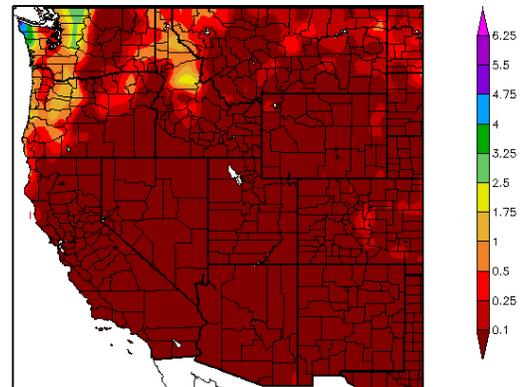
For March 2015, the national total [precipitation anomaly](#) pattern reveals some higher than normal precipitation, primarily in Texas, the Southwest, southeastern California, and in a band from Texas northeast to Kentucky. There was little or no precipitation in many parts of the West, the northern 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, and in the northern Rockies of Idaho and Montana and east along the Montana border. 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, northwest California, Montana, a few areas of Wyoming, and Colorado.

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)
 3/26/2015 - 4/1/2015



Generated 4/2/2015 at HPRCC using provisional data.

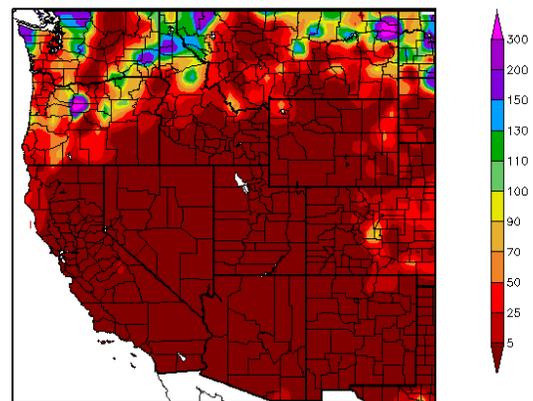
Regional Climate Centers

This ACIS percent of normal [map](#) of the West for the last seven days reflects heavy precipitation along the northern tier states. The heaviest percent of normal precipitation fell in northern Oregon and northern Montana. (magenta areas).

Very dry conditions for the week were reported in California, Nevada, Utah, Arizona, New Mexico, 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 (%)
 3/26/2015 - 4/1/2015

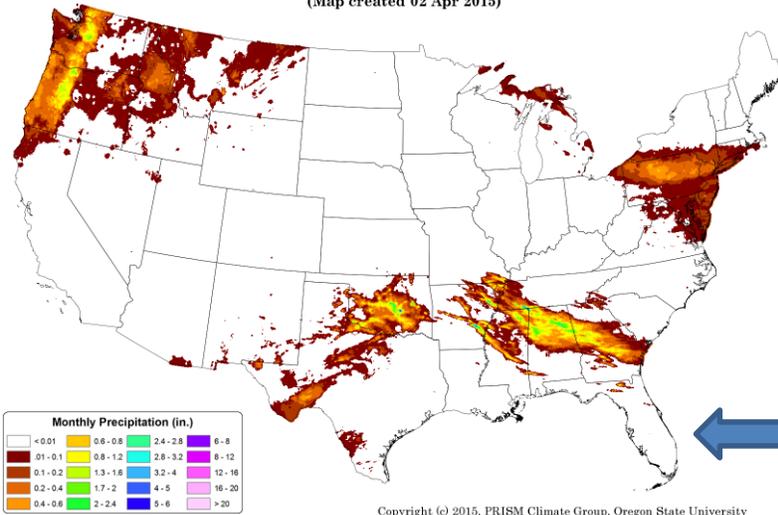


Generated 4/2/2015 at HPRCC using provisional data.

Regional Climate Centers

Weekly Water and Climate Update

Total Precipitation: 01 April 2015 - 01 April 2015
 Period ending 7 AM EST 01 Apr 2015
 (Map created 02 Apr 2015)



For the first day of April 2015, the [total precipitation](#) across the continental U.S. was heaviest in western Washington, western Oregon, and northwest California, and also significant in northern Idaho, northern Montana, northern Texas, Oklahoma, and northern Mississippi to central Alabama. Precipitation also fell over the Mid-Atlantic states and southern New England. In contrast, much of the country was mainly dry.

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

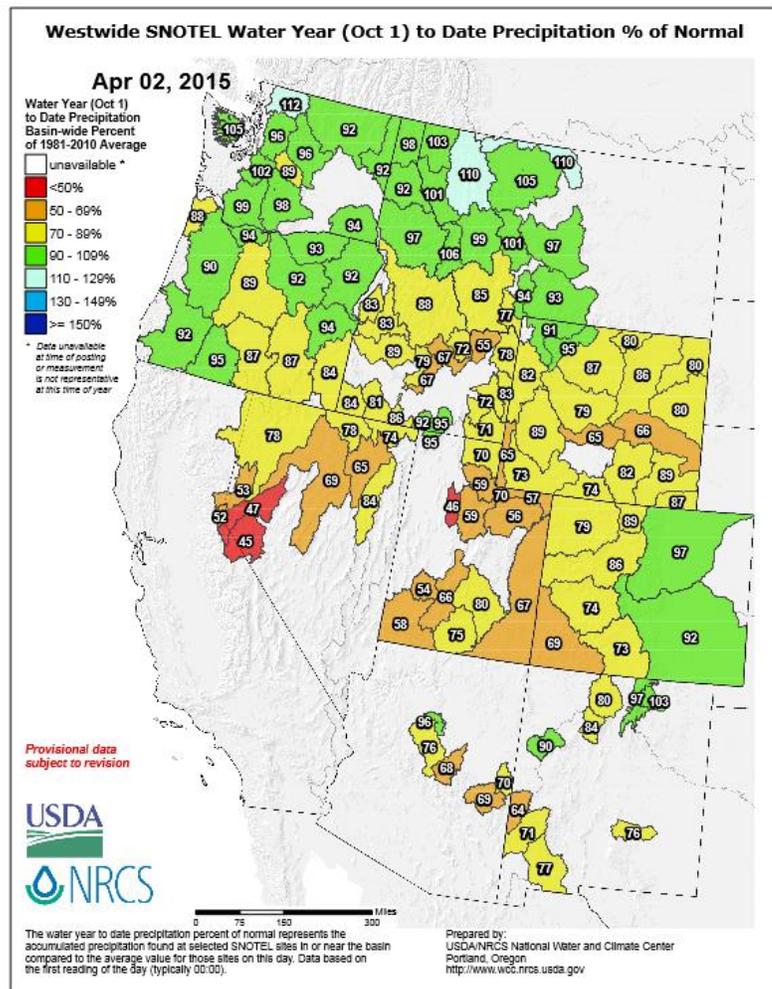
Copyright (c) 2015, PRISM Climate Group, Oregon State University

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, northwest Wyoming, eastern Colorado, most of Washington, much of Oregon, parts of Idaho, one basin in Arizona, one basin in Utah, and three basins in northern New Mexico.

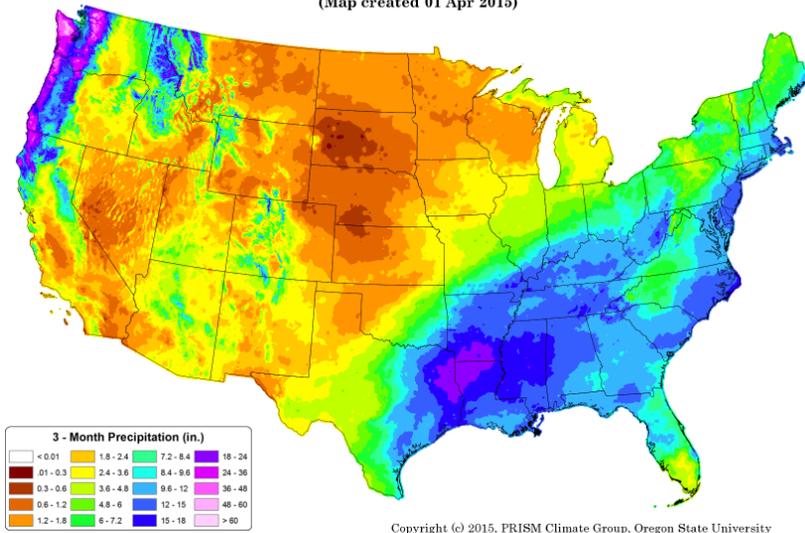
Several areas have less than normal precipitation for the Water Year. These include basins in southern Idaho, parts of Wyoming, western Colorado, Utah, California, Nevada, most of Arizona, parts of New Mexico, southeast Oregon, one basin in Washington, and two basins in Montana (mapped in yellow and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

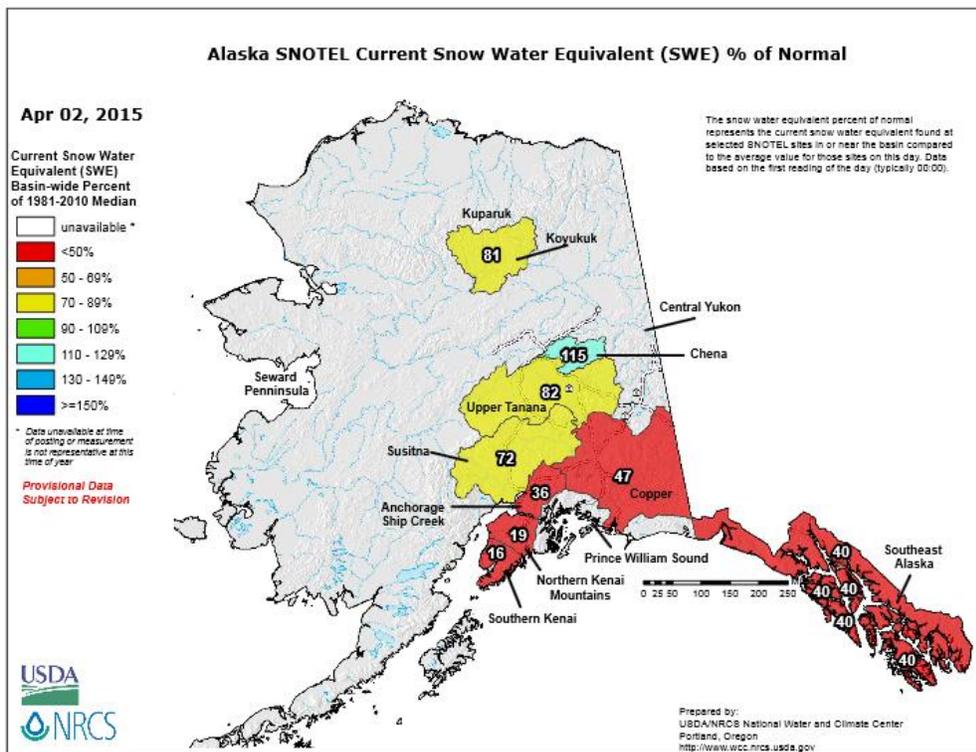
Total Precipitation: January 2015 - March 2015
 Period ending 7 AM EST 31 Mar 2015
 (Map created 01 Apr 2015)



The national map of the [three-month period](#) (January - March) 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.

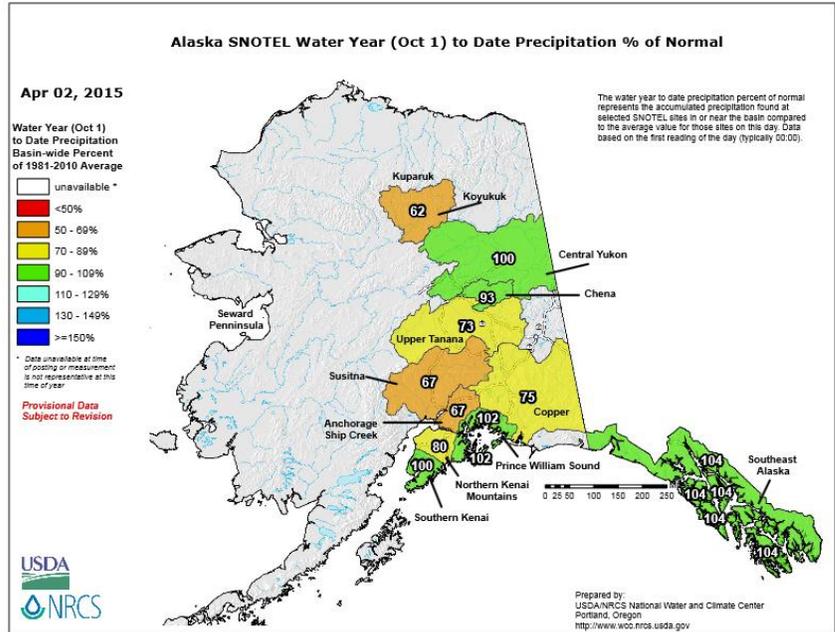
Alaska Snow Water Equivalent & Precipitation Conditions



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.

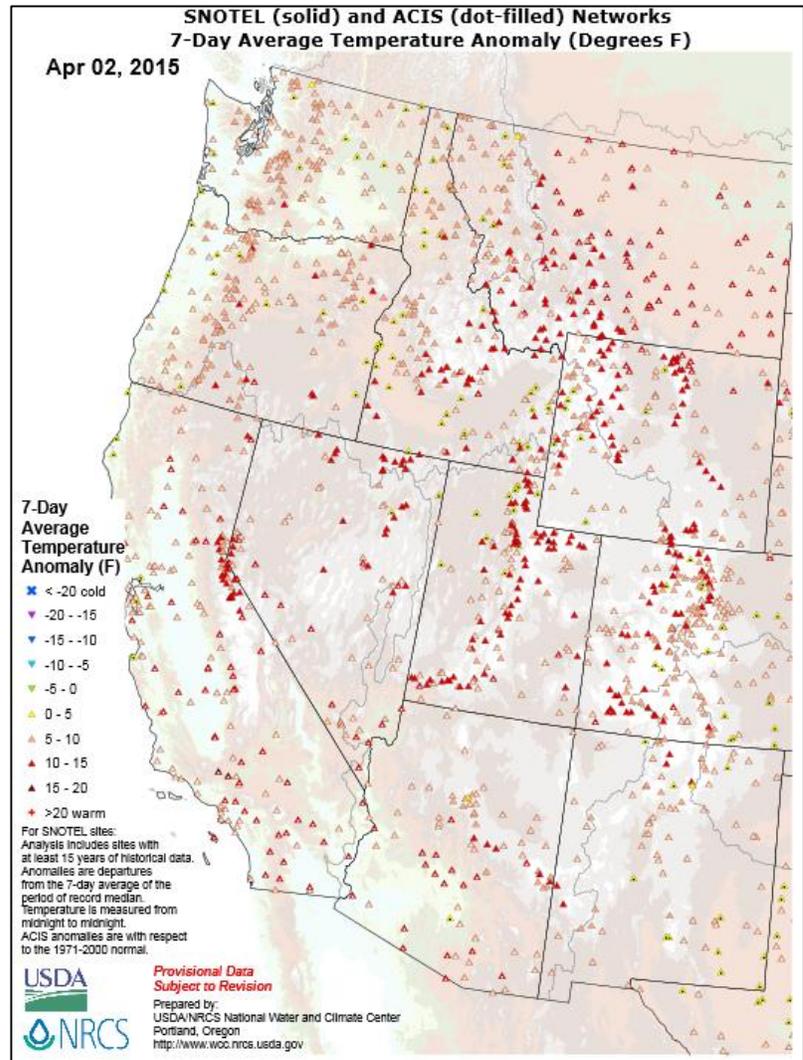


Temperature

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 spread across all the western states. Anomalies across the region were **+10-15** degrees F. Most of the region also reported slightly warm temperatures as well.

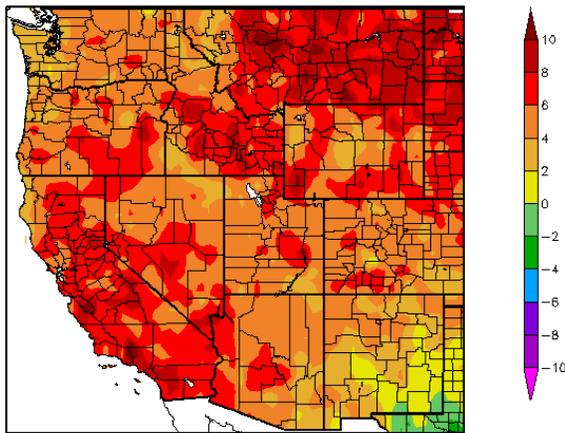
There were many areas that had a few stations with near normal temperatures across the West.

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



Weekly Water and Climate Update

Departure from Normal Temperature (F)
3/3/2015 – 4/1/2015



Generated 4/2/2015 at HPRCC using provisional data.

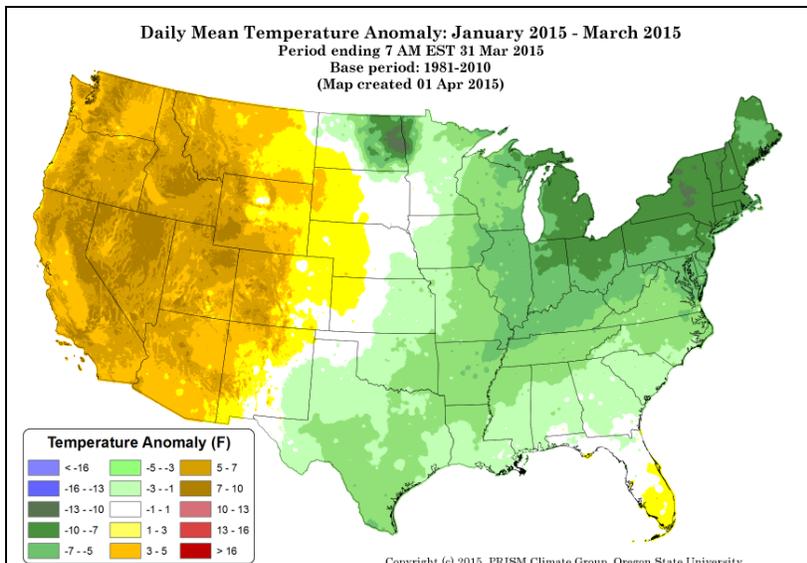
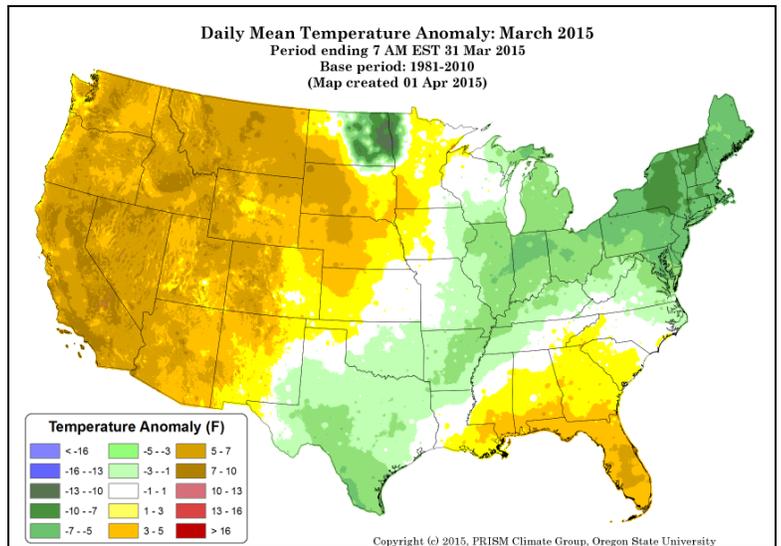
Regional Climate Centers

The [ACIS](#) map of the 7-day average temperature anomalies in the West ending April 1 shows that the region was again above normal. The greatest positive temperature departures occurred in Montana, southern California, and southwest Wyoming (>+10°F). Other warm temperatures covered 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](#)

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.

In March 2015, the national daily mean temperature anomaly [map](#) shows a persistent large, cool region over the southcentral to the northeastern parts of the country, and north central Plains (<-10°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°F).



The January - March national daily mean temperature anomalies for the U.S. in this [climate map](#) shows the western U.S. had above normal temperatures (>+7°F). The central and southeast sections of the country reported normal to slightly cooler than normal temperatures for this period, with the coolest temperatures in a large area covering most of the Midwest and eastern U.S. The coolest anomalies were in New York, Vermont, and North Dakota. (<-10°F).

Weather and Drought Summary

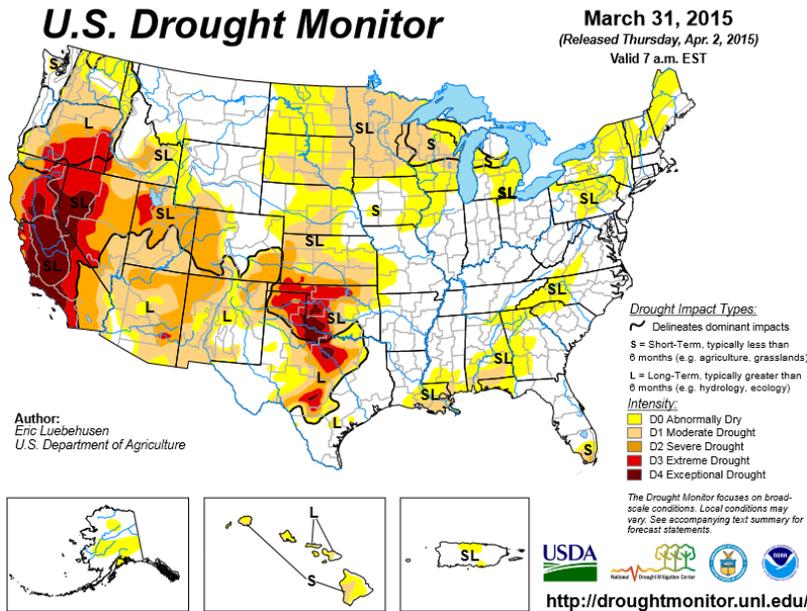
National Drought Summary – March 31, 2015

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 36.84 percent of the area in moderate drought or worse, compared with 34.57 percent a week earlier. Drought now affects 77,956,706 people, compared with 77,151,734 a week earlier.

For all 50 U.S. states and Puerto Rico, the U.S. Drought Monitor showed 30.82 percent of the area in moderate drought or worse, compared with 28.93 percent a week earlier. Drought now affects 78,313,606 people, compared with 77,508,634 a week earlier.”



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

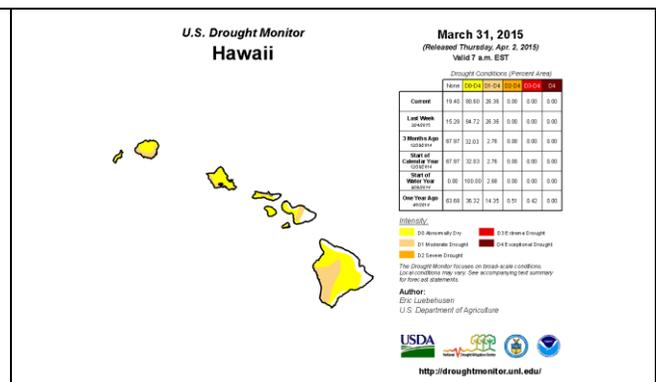
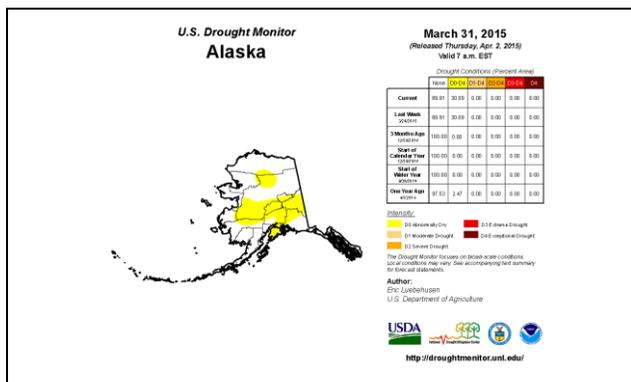
[Current Drought Monitor](#) weekly summary. The exceptional D4 levels of drought are scattered across CA, NV, TX, and OK.

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 increased and the drought free area decreased in Hawaii this week. A comprehensive narrative describing drought conditions across other parts of the nation can be found toward the end of this document. For drought impacts definitions for the figures that follow, click [here](#).”

Weekly Water and Climate Update

U.S. Drought Monitor West

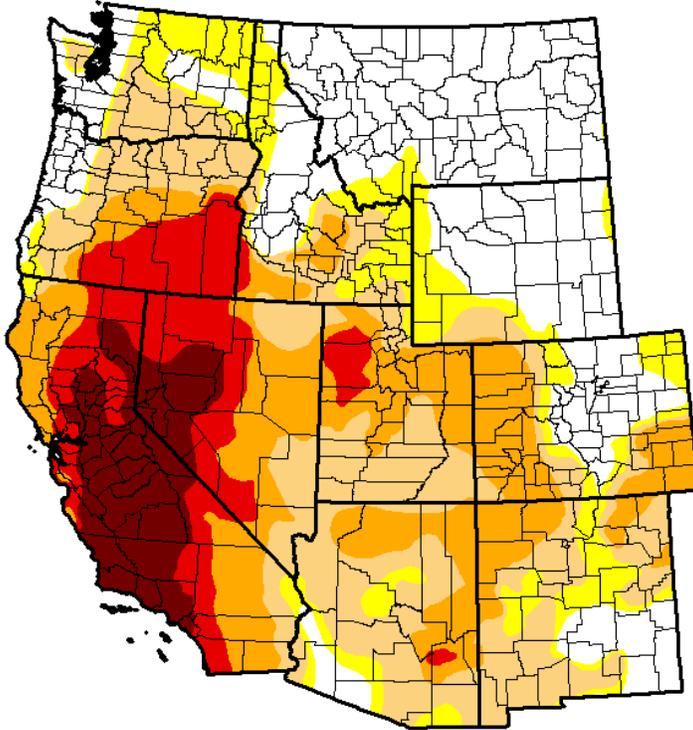
March 31, 2015

(Released Thursday, Apr. 2, 2015)

Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	28.49	71.51	59.80	36.89	17.04	7.23
Last Week <i>3/24/2015</i>	28.74	71.26	59.79	32.85	17.04	7.23
3 Months Ago <i>12/02/2014</i>	34.76	65.24	54.48	33.50	18.68	5.40
Start of Calendar Year <i>12/31/2014</i>	34.76	65.24	54.48	33.50	18.68	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>4/1/2014</i>	28.11	71.89	60.21	41.95	16.03	4.03



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 an increase in D0 – D2 areas in the West this past week. The drought-free area slightly decreased and there was no change in D3-D4.

Click to enlarge maps

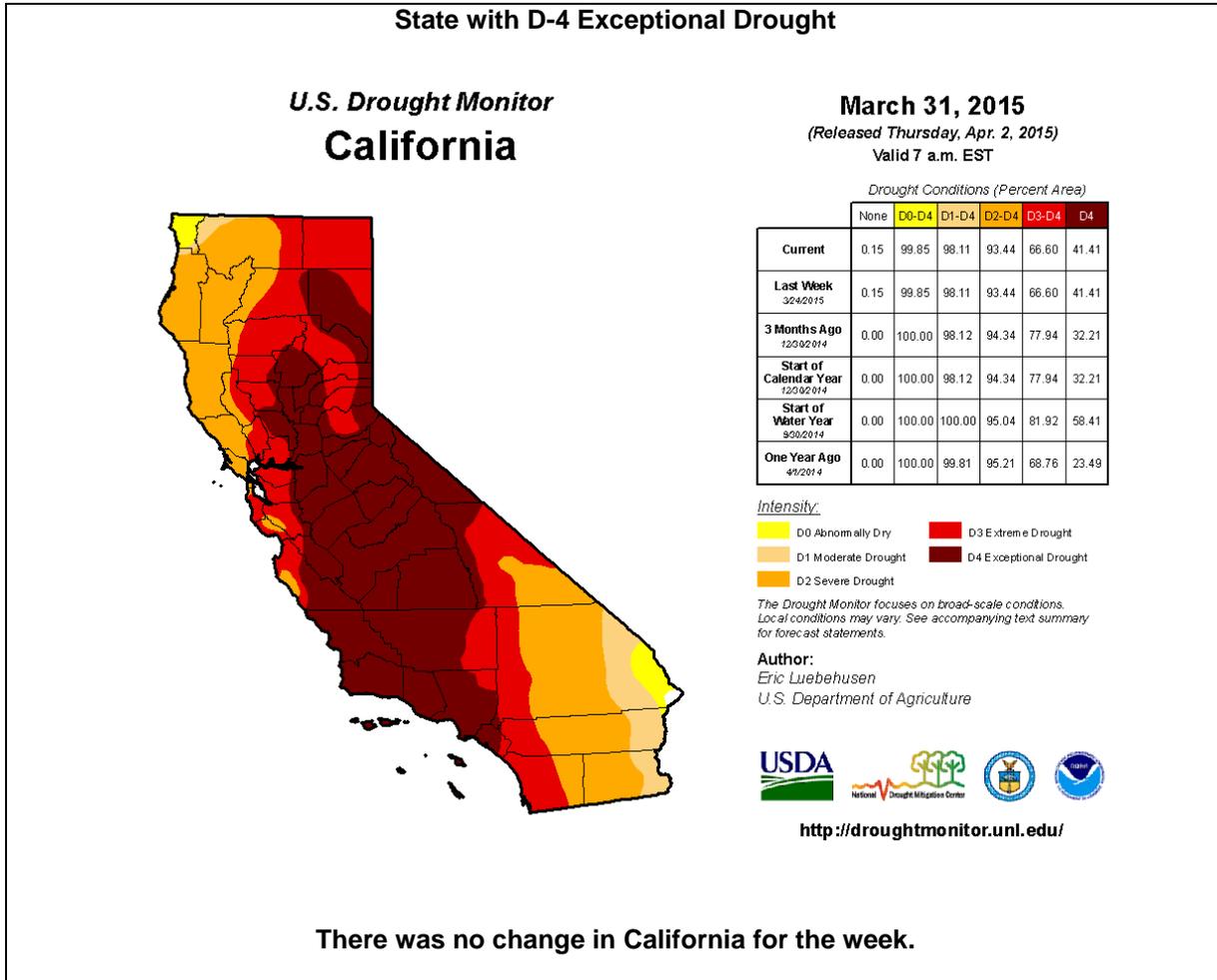
Risk Management Web Resources

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:

- UT - [Fire season off to early, strong start in areas of Utah](#) – Mar 20
- OR - [Oregon State Wildfire Insurance In Jeopardy](#) – Mar 25
- OR - [Warm, dry conditions spark grass fires](#) – Mar 25
- GA - [U.N. warns of water shortage by 2030](#) – Mar 22
- OR - [Feds declare drought emergency in 13 Oregon counties, releasing aid money](#) – Mar 20

Weekly Water and Climate Update



[CA Drought Information Resources](#)

[Drought News from California:](#)

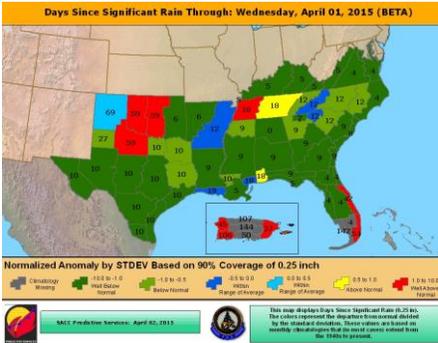
- [Summit examines pain in oil, ag, related industries](#) – Mar 25
- [California first to feel hydro-power crunch of drought](#) – Mar 21
- [\\$1 billion water spending plan heads to California governor](#) – Mar 26
- [California drought: Most say neighbors could do more to conserve](#) – Mar 25
- [Fleas abound, medicine runs low during drought](#) – Mar 25
- [The Salton Sea: a time-bomb amid California drought](#) – Mar 26
- [California drought: Photos show skiers on more dirt than snow at Squaw Valley](#) – Mar 24
- [Drought alters the face of Tahoe tourism](#) – Mar 21
- [City of Huron Faces Possibility of Running Out of Water By July](#) – Mar 20
- [Hemet-area water agencies boosting prices amid drought](#) – Mar 24
- [Santa Clara Valley Water District approves more aggressive water conservation goals](#) – Mar 25
- [Steep water rate increases eyed for EBMUD customers](#) – Mar 24

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:
[Will wet weather help North Texas ranchers beef up herds?](#) – Mar 25

[National Park Service to halt Lake Meredith boat launch fees, permits](#) - Mar 23



[Days since Significant Rain Summary](#)

State with D-4 Exceptional Drought

U.S. Drought Monitor Texas

March 31, 2015
(Released Thursday, Apr. 2, 2015)
Valid 7 a.m. EST

	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	50.74	49.26	36.62	25.44	15.10	3.31
Last Week 3/24/2015	49.50	50.50	36.35	24.92	13.67	3.31
3 Months Ago 12/30/2014	34.37	65.63	44.68	25.73	11.70	3.17
Start of Calendar Year 1/20/2015	34.37	65.63	44.68	25.73	11.70	3.17
Start of Water Year 9/30/2014	28.92	71.08	48.95	29.54	11.26	2.69
One Year Ago 4/2/2014	15.40	84.60	66.80	42.06	27.36	4.42

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:
Eric Luebbehusen
U.S. Department of Agriculture

USDA National Drought Mitigation Center

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

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

State with D-4 Exceptional Drought

U.S. Drought Monitor Nevada

March 31, 2015
(Released Thursday, Apr. 2, 2015)
Valid 7 a.m. EST

	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	99.93	79.50	47.96	18.38
Last Week 3/24/2015	0.00	100.00	99.93	67.32	47.96	18.38
3 Months Ago 12/30/2014	0.00	100.00	96.98	68.25	46.38	11.89
Start of Calendar Year 1/20/2015	0.00	100.00	96.98	68.25	46.38	11.89
Start of Water Year 9/30/2014	0.00	100.00	97.04	69.89	46.38	11.89
One Year Ago 4/2/2014	0.00	100.00	100.00	82.21	33.54	8.24

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:
Eric Luebbehusen
U.S. Department of Agriculture

USDA National Drought Mitigation Center

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

There was an increase in D2 in Nevada for the week.

Nevada Drought News:

[Can California take Nevada water in drought emergency?](#)
 – Mar 24

[Reno must start 10% water cut now, TMWA says](#) – Mar 31

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](#)

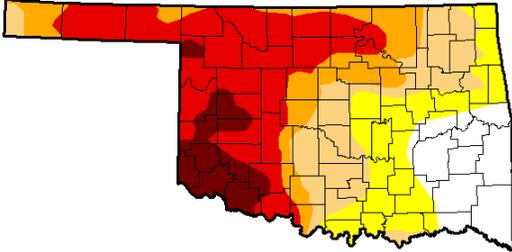
Oklahoma Drought News:

[Wheat crop thriving despite drought](#) – Mar 24

State with D-4 Exceptional Drought

U.S. Drought Monitor Oklahoma

March 31, 2015
(Released Thursday, Apr. 2, 2015)
Valid 7 a.m. EST



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	14.36	85.64	68.62	50.68	37.38	8.41
Last Week 3/24/2015	14.36	85.64	70.40	50.96	35.74	8.41
3 Months Ago 12/30/2014	25.63	74.37	62.03	40.84	21.74	5.70
Start of Calendar Year 12/02/2014	25.63	74.37	62.03	40.84	21.74	5.70
Start of Water Year 9/08/2014	8.55	91.45	73.31	58.13	20.92	4.64
One Year Ago 4/2/2014	4.05	95.95	77.48	50.67	24.03	8.61

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 an increase in D3 in Oklahoma this past week. The D1 – D2 drought category areas decreased for the week. D0, D4 and the drought-free area remained unchanged.

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
2015-03-31	171,628,060	133,769,394	77,956,706	50,027,446	35,620,981	20,578,448
2015-03-24	183,700,030	121,697,425	77,151,734	49,798,848	35,583,386	20,578,448

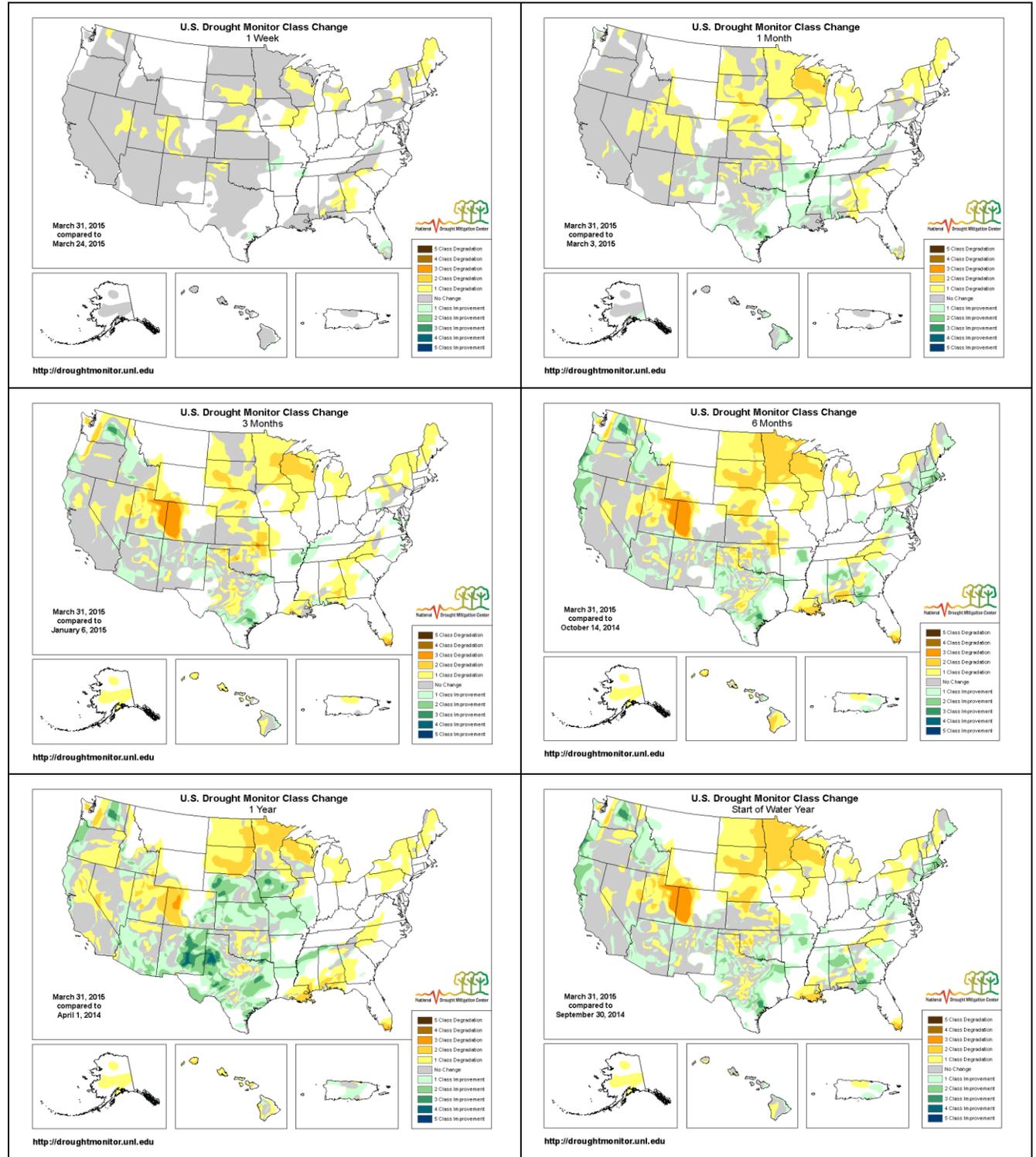
Population figures affected by drought in the U.S. Drought Monitor website show that, for this week, more than 77,000,000 people in the United States were in a drought-affected area, which is an increase by over 800,000 people from last week.

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

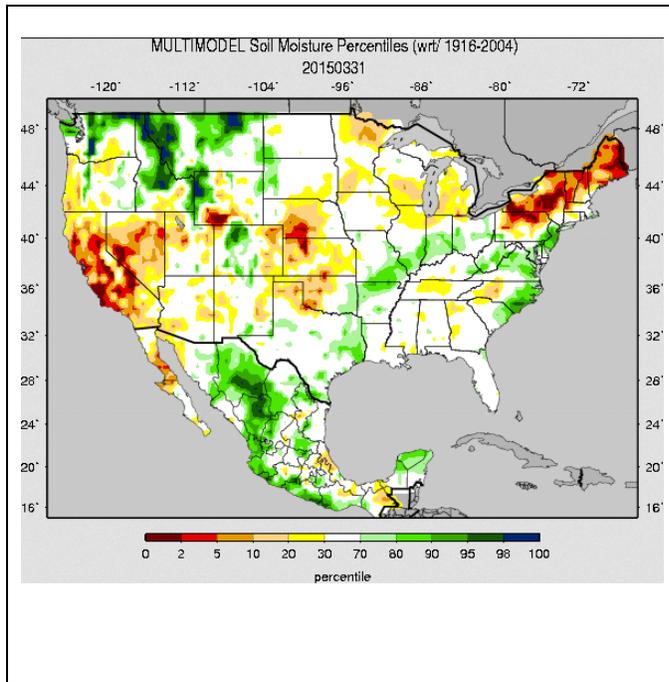
Over Various Time Periods



Click on any of these maps to enlarge. Note how the conditions over the upper Great Plains, central Rockies 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

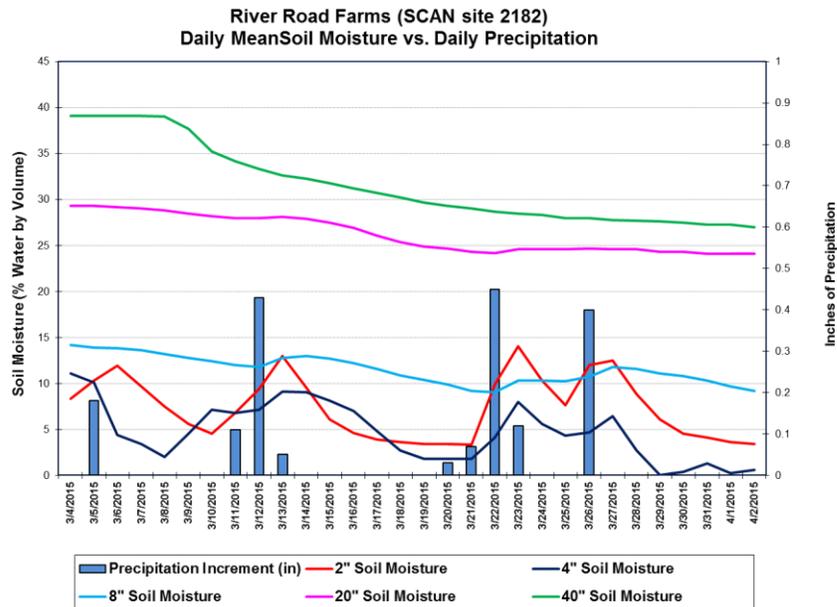


The national soil moisture model ranking in [percentile](#) as of March 31, 2015, shows dryness over most of the Northeast, Southwest, and Great Plains. The driest areas were in Nevada, California, southern Wyoming, Nebraska, Kansas, Oklahoma, Pennsylvania, New York, Connecticut, Massachusetts, Vermont, Maine, and New Hampshire. Moist soils dominated Montana, Idaho, the Cascades of Oregon and Washington, east Texas, Arkansas, Missouri, eastern North Carolina, 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)

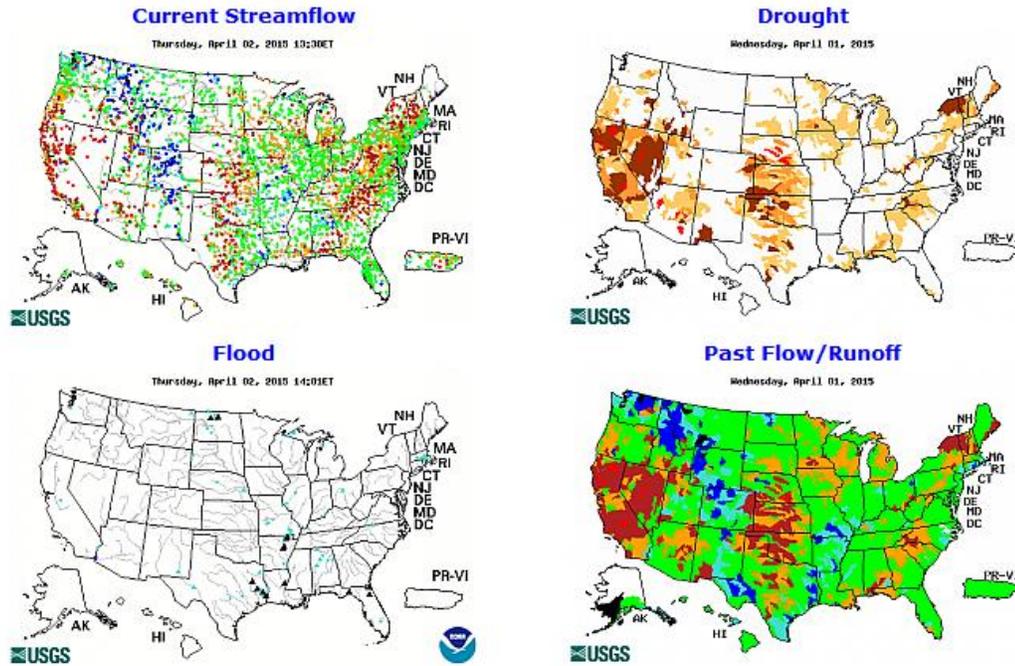


This NRCS resource shows soil moisture data for the last month at the [River Road Farms \(SCAN station 2182\)](#) in Alabama. The area had several small precipitation events in the past 30 days (blue bars). This rainfall resulted in an increase in soil moisture at the 2- and 4-inch depths, and smaller increases at the 8-inch depth. The deeper soil moisture sensors are decreasing, and a larger storm is needed to provide 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 frozen, so may not relate to the precipitation and snow conditions in that area. There are fewer gages at flood stage than a week ago. These include 2 rivers in North Dakota, 4 in eastern Texas, 1 in Louisiana, 2 in Arkansas, and 3 in 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 gages with a slight to higher risk of flooding. Currently, **0** gages have a greater than 50% chance to experience major flooding; **15** gages for moderate flooding; and **136** gages for minor flooding.

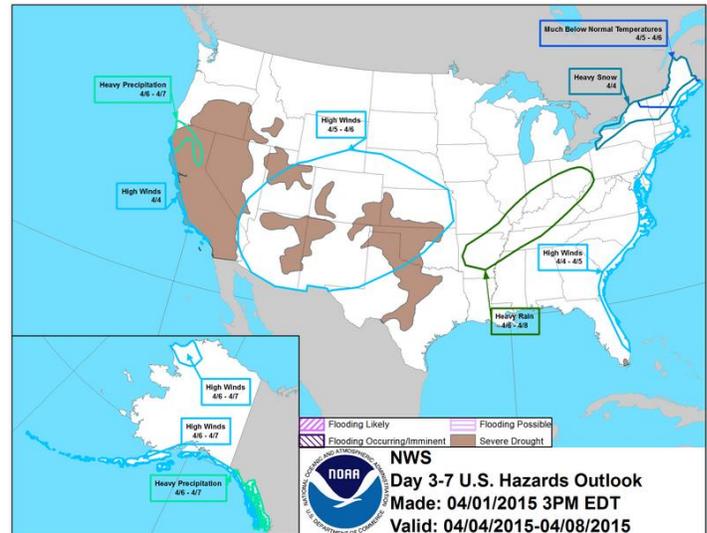
These numbers represent a **100** gage decrease in the greater than 50 percent chance of minor flooding category since last week.

Weekly Water and Climate Update

National [Weather Hazards](#)

The National Weather Service map of national weather hazards for the next 3 – 7 days forecasts heavy precipitation in northern California (4/6-7), and in the Ohio Valley (4/6-8). Much below normal temperatures (4/5-6) and heavy snow (4/4) are expected in northern New England. High winds are forecast in a large area of the Southwest to the Plains (4/5-6) and along the entire Atlantic coast (4/4-5) and California coast (4/4).

In Alaska, high winds are expected along the entire southern coast and northwest (4/6-7). Heavy precipitation is expected in Southeast (4/6-7). Severe drought remains a large issue in much of the southcentral and western U.S.



[National Drought Summary for March 31, 2015](#)

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

Summary

“Rain was heaviest across the nation’s mid-section as well as parts of the Northwest and eastern U.S., while intensifying dryness was noted in the Southeast and from the northern Great Lakes and Upper Midwest to the central and southern Pacific Coast, including the Great Plains. Much-above-normal temperatures accelerated crop-water demands on the Plains and further reduced already-dire mountain snowpacks over much of the West. Dryness also increased in the Northeast, though lingering cold mitigated the impacts of the precipitation deficits somewhat.

Alaska, Hawaii, and Puerto Rico

There were no changes made to the drought depiction in Alaska and Puerto Rico this week, and only minor adjustments in Hawaii. In Alaska, much-above-normal temperatures (10-15°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, a small reduction of Abnormal Dryness (D0) was made on the Big Island due to reported improved conditions at farms in these areas. In Puerto Rico, scattered light to moderate showers (mostly less than 2 inches) fell outside of the island’s remaining D0, where streamflows still remained below the 20th percentile.

Central Plains

Dry, unseasonably warm weather maintained or worsened drought over the central Plains for a second consecutive week. With sunny skies and temperatures approaching or topping 80°F from southeastern Colorado into Kansas and central Nebraska, drought conditions remained or intensified. In particular, pronounced dryness over the past 6 months (30-50 percent of normal) across south-central and northern Nebraska supported the expansion of Moderate (D1); the Standardized Precipitation Index (SPI, a station-based drought indicator) over the same time period in these locales averaged -1.0 to -1.7 (D1-D3 equivalent) indicating conditions may rapidly deteriorate if rain fails to materialize soon. Elsewhere, light showers (generally less than half an inch) in eastern portion of the region afforded little – if any – drought relief.

Mid-Atlantic and Northeast

Chilly conditions were accompanied by highly variable rainfall, with locally heavy showers in southern portions of the region contrasting with increasing short-term dryness over New England. Abnormal Dryness (D0) expanded northward over much of New York and encompassed significant portions of Vermont, New Hampshire, and Maine. Despite light showers (generally less than half an inch) during the period, precipitation over the past 60 days has tallied locally less than 50 percent of normal. Even with melting snow, streamflows in many of the newly-expanded D0 areas were in the 10th percentile or lower, and soil moisture for warm-season growth continued to decline. In contrast, locally more than an inch of rain further eased D0 in southwestern Virginia.

Weekly Water and Climate Update

Midwest

Chilly weather prevailed, with moderate to heavy showers in southern portions of the region contrasting with increasingly dry conditions elsewhere. Rain totaled more than an inch from southeastern Nebraska into central and western Ohio, while totals farther north were generally less than half an inch. Widespread pronounced precipitation deficits (15-50 percent of normal) are noted over most of the Midwest during the past 90 days, while 6-month precipitation stood at a meager 35 to 70 percent of normal from the Dakotas and parts of Nebraska into the central Great Lakes region. Likewise, declining soil moisture and streamflow percentile rankings indicated rapidly worsening conditions over the Midwest's newly-expanded Abnormal Dryness (D0) and Moderate Drought (D1) areas. In addition, the Standardized Precipitation Index (a station-based drought indicator) depicted D1 or worse conditions from the Dakotas into southeastern Michigan and northwestern Ohio, though lingering below-normal temperatures have mitigated the impacts of the dryness somewhat.

Northern Plains

Light to moderate rainfall on the northern-most Plains was in sharp contrast to increasing dryness and drought farther south. Locally more than an inch of rain in North Dakota was sufficient to prevent further expansion of Abnormal Dryness (D0) or Moderate Drought (D1), though precipitation over the past 6 months remained well short of normal (30-60 percent of normal). Farther south, above-normal temperatures (daytime readings in excess of 80°F) and a lack of much-needed rain resulted in expansion of D1 in southern South Dakota; precipitation in South Dakota's new D1 area averaged 25 to 50 percent of normal over the past 6 months, which equated to a Standardized Precipitation Index (SPI, a station-based drought indicator) equivalent over the same time period of D1. Likewise, soil moisture rankings remained unfavorably low over much of southern and eastern South Dakota, and streamflows – which benefited from recent snow melt – have begun to drop rapidly.

Southeast and Delta

Mostly dry, mild weather overspread much of the region, resulting in an eastward expansion of Abnormal Dryness (D0). Pronounced short-term dryness caused D0 to increase from southern North Carolina into South Carolina and Georgia, where precipitation over the past 90 days has totaled 60 to 75 percent of normal. Streamflows in the expanded D0 areas were generally at or below the 30th percentile (D0 equivalent), and were below the 10th percentile from northern Georgia into western North Carolina. Moderate Drought (D1) likewise increased across southern Alabama, coinciding with 90-day rainfall averaging 25 to 60 percent of normal; the Standardized Precipitation Index (SPI – a drought intensity indicator) depicted D1 (or worse) over the past 3 to 6 months in this region. In Florida, seasonably heavy showers eased D0 and D1 near Lake Okeechobee, while protracted short-term rainfall deficits and above-normal temperatures maintained low water levels and high salinity in the Everglades' Severe Drought (D2) area. Farther west, locally heavy showers (1-3 inches) eased D0 and D1 in the northwestern Delta, while near- to above-normal streamflows and soil moisture supported the removal of D0 in eastern Arkansas and western Tennessee, though drier-than-normal conditions are still apparent over the longer term.

Southern Plains and Texas

Worsening drought in the north contrasted with heavy rain and drought reduction in the south and east. Across western Oklahoma and northern Texas, sunny skies, daytime highs approaching or topping 90°F, and occasionally gusty winds caused Moderate (D1) to Extreme (D3) Drought to intensify. Soil moisture and streamflow rankings remained at or below the 5th percentile in the southern Plain's core drought areas, while the satellite-derived Vegetation Health Index indicated rapidly declining conditions from the Texas Panhandle into northern Oklahoma. Farther east, locally more than an inch of rain afforded some relief from drought in northeastern Oklahoma. Farther south, additional assessment from the field indicated some reduction of Abnormal Dryness (D0) was warranted near Victoria, Texas, while drought coverage and intensity remained unchanged northwest of Austin as reservoir levels struggled to rebound due to a pronounced long-term drought impacts.

Western U.S.

The overall trend toward drought persistence continued, with drought intensification noted over the eastern Great Basin and central Rockies. 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, additional Pacific moisture and weekly average temperatures up to 10°F above normal resulted in moderate to heavy showers (1-4 inches, locally more) in orographically favored portions of the Cascades and northern Rockies. However, plentiful water-year precipitation (since October 1) in the Northwest remained 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

Weekly Water and Climate Update

of snow maintained concerns for spring and summer water supplies despite the generally favorable 2014-15 water year.

Across the Great Basin and Four Corners States, drought intensified in northern portion of the region but remained unchanged elsewhere. In particular, Severe Drought (D2) expanded over northeastern Nevada, where water-year precipitation (since October 1) has averaged less than 50 percent of normal the northwest; the Standardized Precipitation Index (SPI, a station-based drought indicator) over the same time period in this location averaged -1.3 to -2.0 (D2-D4 equivalent) indicating conditions will likely deteriorate further if rain and mountain snow fail to materialize soon. In Colorado, D2 was increased as low SNOTEL percentiles, low snowpack, and high temperatures are having an impact in the state; snow-water equivalent (SWE) in the state's D2 areas are now consistently at or below the 10th percentile, and locally below the 5th percentile. Meanwhile, conditions remained unchanged in the southern Four Corners Region, where Water Year precipitation has been generally higher than locales farther north.

In California, there were no changes to this week's depiction as the state entered a fourth consecutive year of drought. With temperatures averaging more than 10°F above normal for the week, snowpacks continued to dwindle; as of April 1, the state's total snowpack stood at a meager 5 percent of average. Indicative of the virtually non-existent snowpack, streamflows have dropped into the 5th percentile or lower over much of California. In addition, the 2014-15 Water Year has ended on an abysmal note, with precipitation over the past 30 days totaling a mere 10 percent of normal or less from Redding southward. Even with some precipitation in the forecast across central and northern California, any rain and mountain snow – while welcomed – would likely do little to improve the state's dire drought prospects.

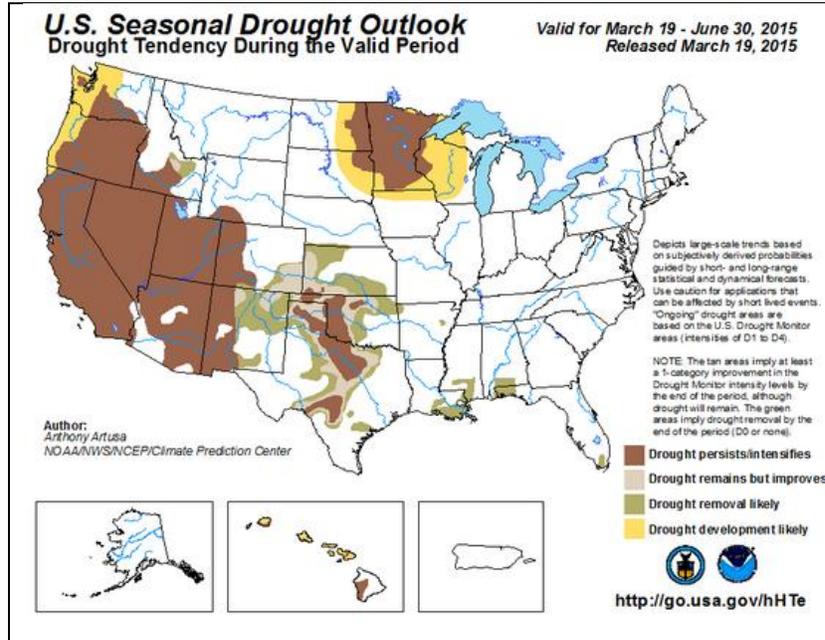
Looking Ahead

Rain from the lower and middle Mississippi Valley into New England will contrast with mostly dry conditions across the Southeast and Gulf Coast as well as from the Plains into the Southwest. A strong cold front will bring temporary relief from unseasonable warmth over the Plains, though above-normal temperatures will return by the weekend. Rainfall associated with the front will be light on the Plains, and generally confined to central and northern-most portions of the region. However, rain will intensify as the cold front marches east, with 5-day totals of 1 to 3 inches possible from the northern Delta into the Ohio Valley and Northeast. In contrast, dry conditions are expected from the Carolinas to the immediate Gulf Coast. Out west, some showers and high-elevation snow will overspread the Northwest during the weekend, while the Southwest and Four Corners Region remain dry. The NWS 6- to 10-day outlook for April 7–11 calls favorably cooler- and wetter-than-normal weather from the Pacific Coast into the Great Basin, including California. Likewise, wetter-than-normal weather is also expected from the Mississippi Valley and Gulf Coast States into the Northeast. In contrast, drier-than-normal conditions will prevail across the Rockies and Great Plains. East of the Rockies, abnormal warmth over southern portions of the Corn Belt and Mid-Atlantic States will contrast from cooler-than-normal weather across the northern Great Lakes and New England.”

Supplemental Drought Information

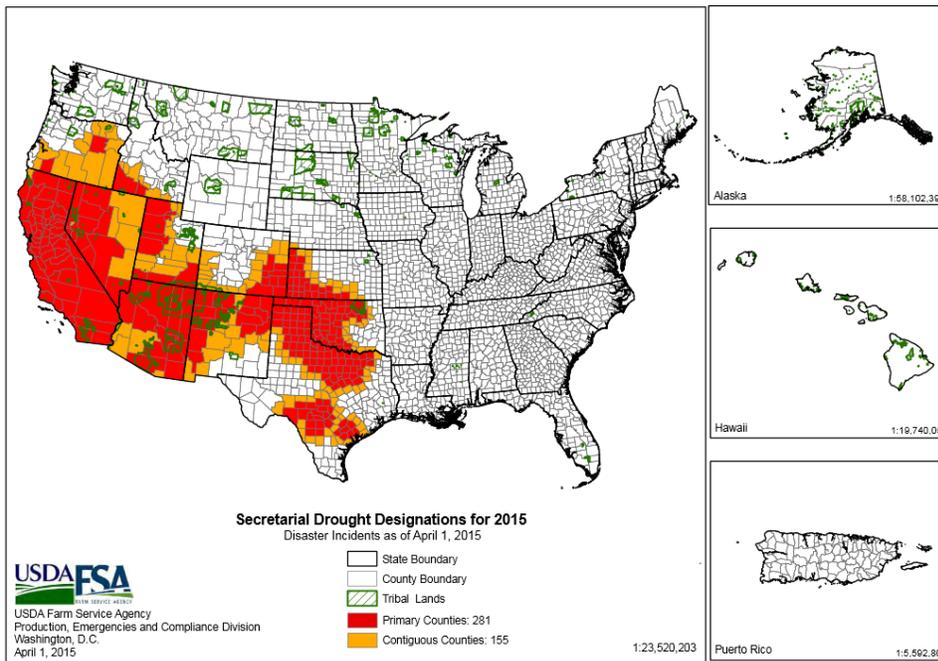
National Seasonal Drought Outlook

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



2015 USDA Secretarial Drought Designations

2015 Secretarial Drought Designations - All Drought

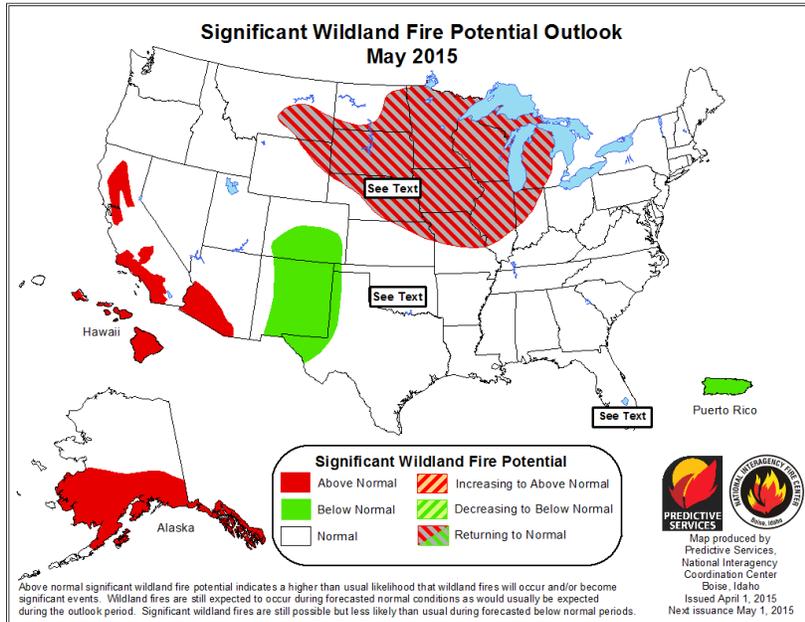


Refer to the USDA Drought Assistance [website](#) and [National Sustainable Agriculture Information Service](#).

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

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

National Fire Potential Outlook



May Fire Forecast

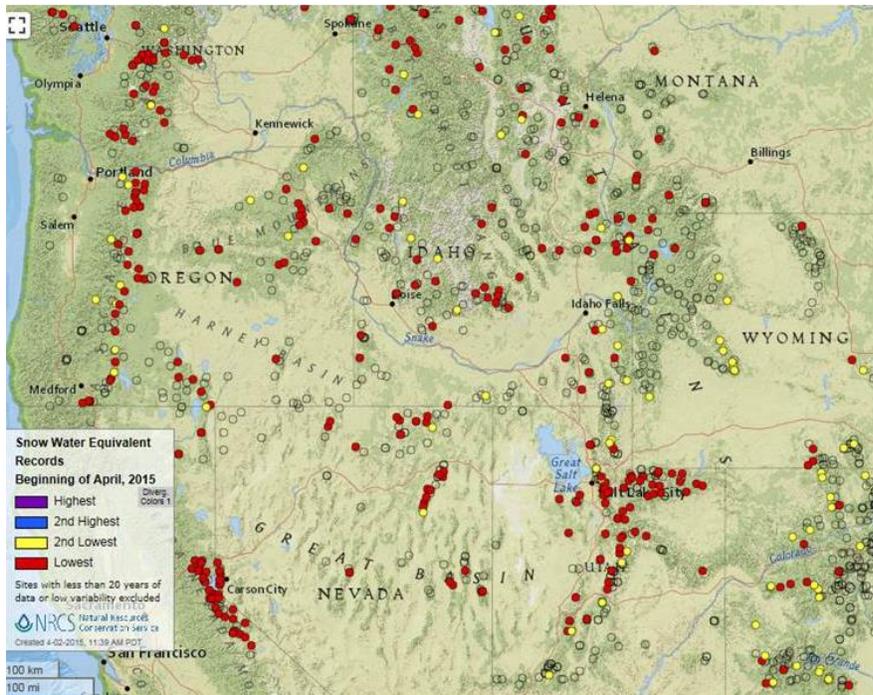
In May, much of the U.S. is forecast to have normal [fire potential](#).

A large area of the central U.S. will return to normal fire potential for May. Below normal fire potential for March 2015 (in green on the map) is forecast for New Mexico, southern Colorado, western Texas, and in Puerto Rico. Parts of Arizona, California, the southern half of Alaska, and most of the Hawaiian Islands have above normal fire potential.

Additional Maps

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

Regional zooms of ACIS station data percent-of-normal precipitation: <http://dmcommunity.unl.edu/maps/All-CONUS-ACIS-PNP.pptx>. National Water and Climate Center (NWCC) Surface Water Supply Index (SWSI) maps: <http://www.wcc.nrcs.usda.gov/wsf/swsi.html>



A new map product is being introduced by the National Water and Climate Center depicting NRCS SNOTEL and Snow Course sites with new record low or near record low snow water equivalent (SWE) for April 2. Stations colored red are in record territory, while yellow shows stations at their second lowest record for the day.

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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.

"California's \$1 billion plan for drought relief, flood protection

Two bills hastening the spending of more than \$1 billion in drought relief funds were expected to be signed into effect by Gov. Brown. The bills would include \$267 million for safe drinking water and water recycling projects and \$75 million for aid to communities with dry wells, fish in drying streams and other needs. The proposal also contains \$660 million in spending for flood protection rather than drought.

California's hydropower production continued its decline

During the past three years, declining hydropower production in California cost utility customers \$1.4 billion as power from alternate sources, such as natural gas-fired plants, was purchased to compensate for reduced hydroelectric production. The use of more fossil fuels also drove California carbon dioxide emissions up 8 percent.

Most Californians think fellow citizens could save more water

Sixty-six percent of Californians feel that their neighbors could save more water and that local water supplies would be very inadequate or somewhat inadequate in a decade, according to a survey by the Public Policy Institute of California.

Economy crimped by high water prices, reduced ag production in Kern County, California

Drought and unusually low oil prices have taken a toll on Kern County's economy, with agricultural output and oil profits falling. An economist from Cal State Bakersfield stated that the county could lose 7,000 jobs in oil, agriculture and related industries. Local water experts feared that the amount of land in agricultural production could drop by one-fifth as the cost of water rises, due to scarcity, and could result in the loss of 12,400 farm jobs and \$631 million annually in income to farmers.

Fewer winter visitors to California ski resorts during recent winters

The snow droughts of recent years have cut winter visitation to California ski resorts by about 30 percent during the last four years. Resorts averaged about 7.4 million visitors during the 2010-2011 winter ski season, but have seen about 5.2 to 5.3 million visitors in subsequent years.

Oregon's wildfire insurance

Oregon officials fear that the wildfire insurance deductible may skyrocket or be denied them amid drought and recent years of intense, large wildfires.

North Texas ranchers not ready to rebuild cattle herds

Some North Texas ranchers remained wary of rebuilding their cattle herds as drought and low water supplies persisted and the price of cattle continued to be prohibitive. Before the drought, which began about four years ago, live cattle traded for \$0.95 per pound, but at present were selling for \$1.62 per pound.

*With the mention of the Pennsylvania drought watch earlier this week, I'll consider that topic covered.

The [Drought Impact Reporter](#) continued to show California as having the most impacts and Texas in second place with 13 impacts."

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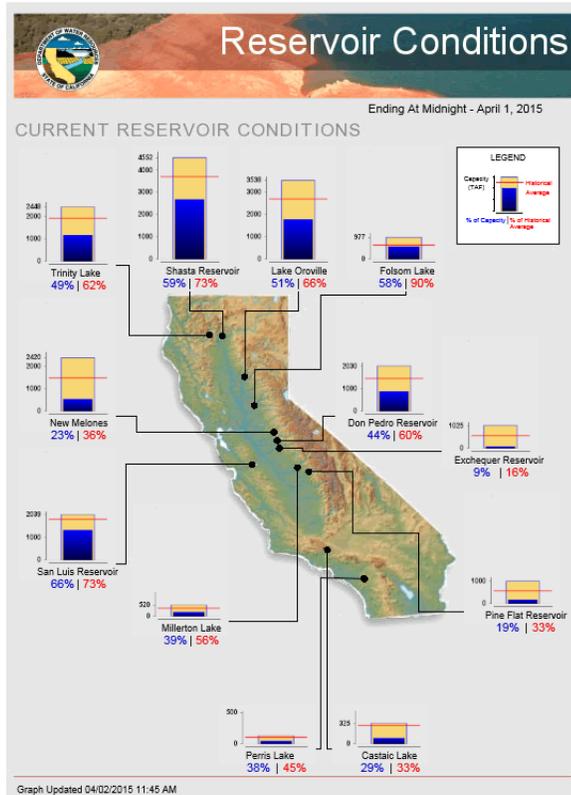


Tea Cup Reservoir Depictions

- <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](#)

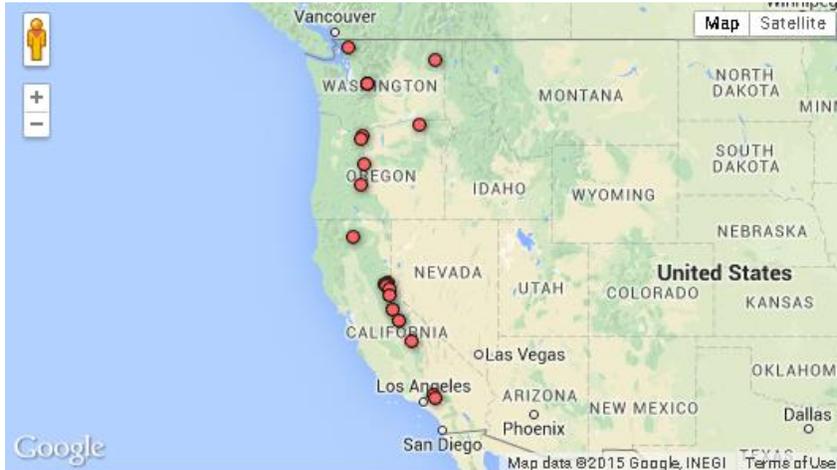


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West Wide Drought News: [Drought alters the face of Tahoe tourism](#)

The Sacramento Bee: March 21, **West Coast**. As the snow drought drove numerous West Coast resorts to close early, many Sierra Nevada resorts were adapting by offering more warm weather activities and events to keep visitors entertained while visiting the resorts year round. Some Sierra Nevada resorts were constructing zip lines, mountain bike trails and wedding venues to adapt to less snowy winters.

Map at end of article shows West Coast resorts forced to close early. Twelve California, five Oregon and three Washington resorts are shown on the map.

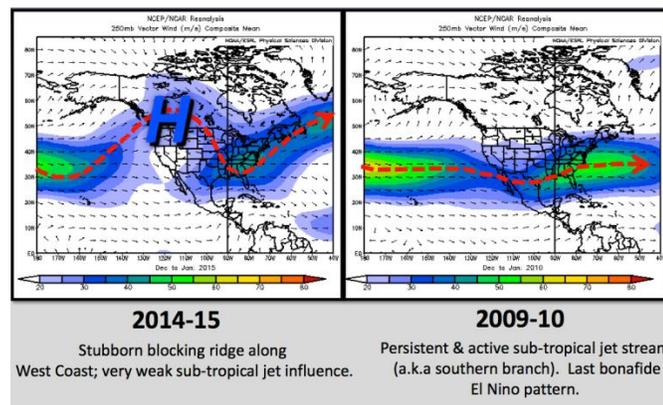


State Activities

[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 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.



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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