



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

## Weekly Snowpack / Drought Monitor Update

### July 24, 2014

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## Highlights

### Agricultural Weather Highlights – Thursday - July 24, 2014

- “In the **West**, a plume of tropical moisture stretches from Arizona to Wyoming, generating isolated showers. Cool weather is aiding wildfire containment efforts in the Northwest, but heat stretches from the Four Corners States to Wyoming. An enhanced risk of new wildfire activity has shifted to the northern Intermountain West.
- On the **Plains**, hot weather prevails in most areas. Today’s high temperatures will reach or exceed 100°F in many locations from the central High Plains northward into southeastern Montana. Meanwhile, thunderstorms across the northern Plains are benefiting immature spring wheat and other spring-sown crops, except in a few areas where soils remain excessively wet.
- In the **Corn Belt**, generally cool, dry weather prevails. However, thunderstorms in conjunction with a warm front are overspreading the far upper Midwest, including eastern South Dakota. Conditions overall remain favorable for corn and soybeans, despite some crop developmental delays in the northern Corn Belt.
- In the **South**, showers in the vicinity of a cold front are providing beneficial moisture for pastures and summer crops in the southern Mid-Atlantic States. Cooler air is settling across the northern tier of the region, from Arkansas to Virginia, but hot, humid weather lingers across the Deep South.

### Outlook

A storm system currently developing across the Intermountain West will become the focus for widespread showers and thunderstorms during the next several days. Five-day rainfall totals could reach 1 to 3 inches in several regions, including the central and southern Rockies, Midwest, and Northeast. In addition, showers associated with a weakening cold front could result in an additional 1 to 2 inches of rain in parts of the Southeast. Elsewhere, the Northwest will experience a marked warming trend during the weekend and early next week, while another surge of cool air will arrive across the central and eastern U.S. The NWS 6- to 10-day outlook for July 29 – August 2 calls for below-normal from the central and southern Rockies to the East Coast, while hotter-than-normal conditions will prevail across the northern High Plains and the West. Meanwhile, near- to below-normal rainfall across the majority of the U.S. will contrast with wetter-than-normal weather across the lower Southeast and from the Great Basin to the southern 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>.

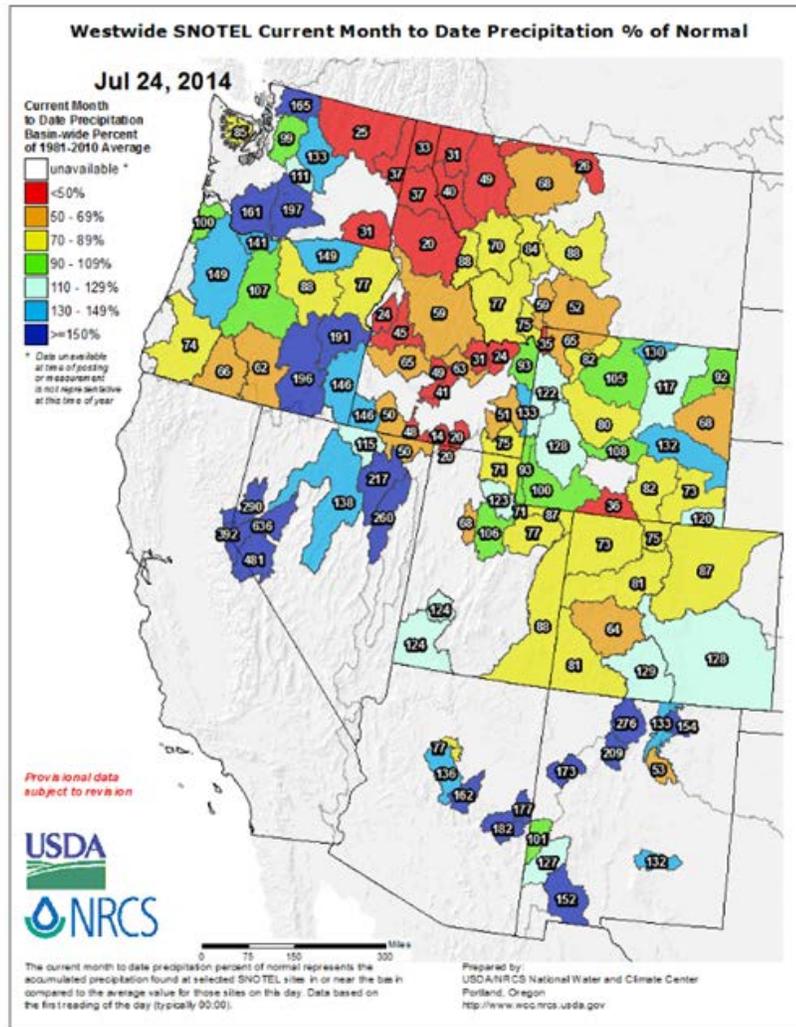
The Natural Resources Conservation Service provides leadership in a partnership effort to help people conserve, maintain, and improve our natural resources and environment

# Weekly Snowpack and Drought Monitor Update Report

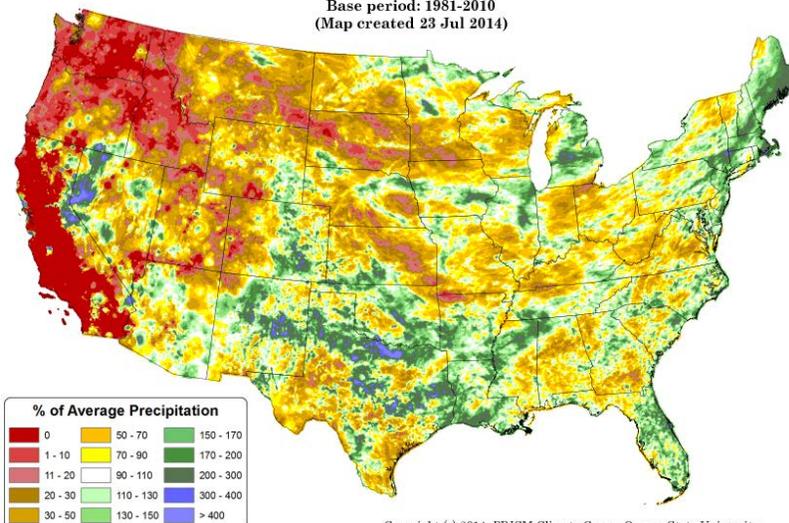
## Precipitation

In the West, the July 1 through 24 [SNOTEL](#) precipitation percent of normal map shows a wide variety of conditions. The percent of normal numbers in the scattered areas may be amplified where normally very little precipitation falls at this time of year.

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



**Total Precipitation Anomaly: 01 July 2014 - 22 July 2014**  
 Period ending 7 AM EST 22 Jul 2014  
 Base period: 1981-2010  
 (Map created 23 Jul 2014)



Copyright (c) 2014, PRISM Climate Group, Oregon State University

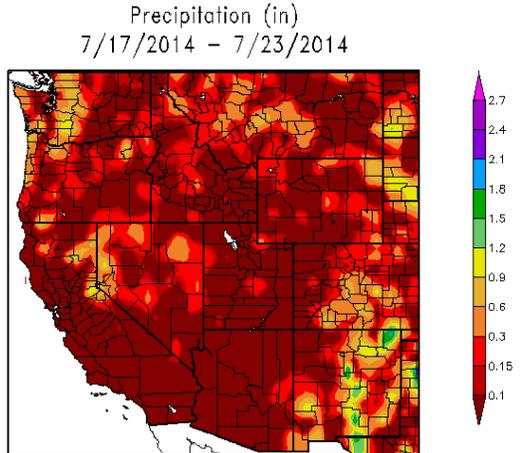
During the first three weeks of July 2014 the national [precipitation anomaly](#) pattern reveals some higher than normal precipitation scattered across the south central part of the nation, the northern Sierra Nevada, the Southwest, and the Northeast. Much of the West has seen little or no precipitation. Parts of the Southwest, Texas, and the Midwest have also recorded drier than normal conditions.

*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.*

# Weekly Snowpack and Drought Monitor Update Report

The [ACIS 7-day](#) total precipitation map for the western U.S. shows mainly dry conditions. Precipitation has fallen primarily in the mountainous areas of the West. Scattered thunderstorms and precipitation occurred in the Cascades, Sierra Nevada, Rocky Mountains, and into the Great Plains.

Little, if any, precipitation occurred over vast areas of the West. This includes southern Idaho, Utah, California, and Arizona.

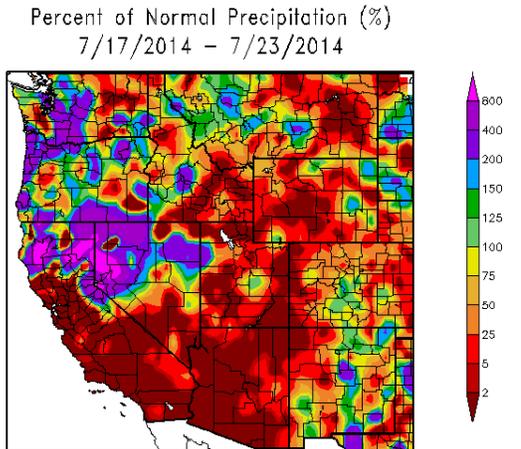


Generated 7/24/2014 at HPRCC using provisional data.

Regional Climate Centers

As would be expected based on the map above, this percent of normal area [map](#) of the West reflects the heaviest scattered precipitation falling across the Cascades, Sierra Nevada, southern Rocky Mountains, and New Mexico, with some scattered precipitation elsewhere in the West.

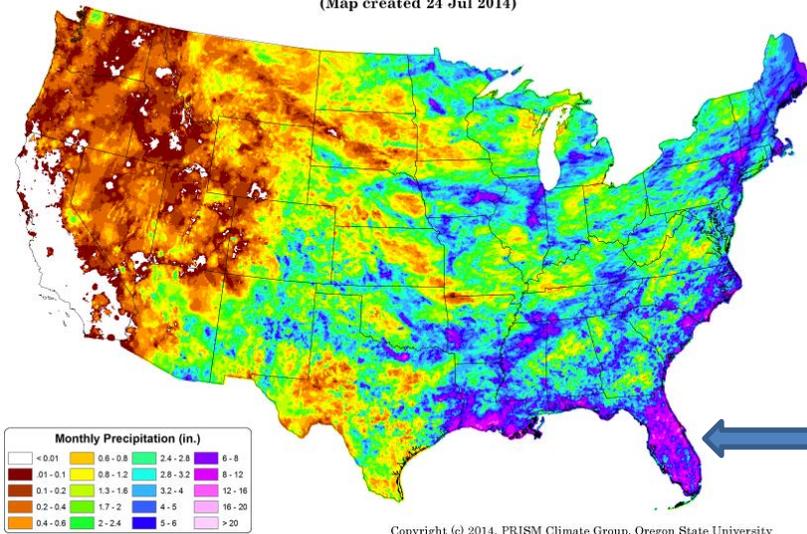
Percent of normal precipitation may be exaggerated in areas where the average for this period is at or near zero.



Generated 7/24/2014 at HPRCC using provisional data.

Regional Climate Centers

Total Precipitation: 01 July 2014 - 23 July 2014  
Period ending 7 AM EST 23 Jul 2014  
(Map created 24 Jul 2014)



Copyright (c) 2014, PRISM Climate Group, Oregon State University

In the first three weeks of July 2014, the total precipitation across the continental U.S. was heaviest along the Gulf Coast, Florida, and along the Atlantic seaboard to the Northeast. The West was mainly dry.

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

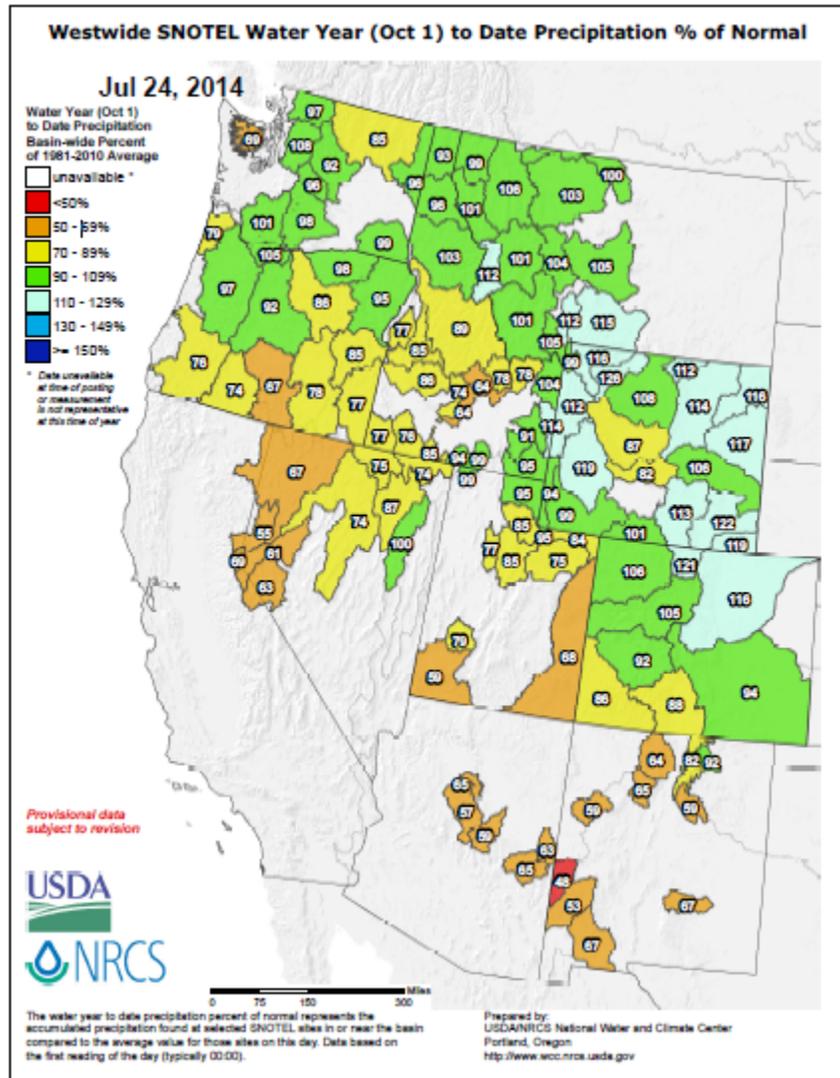
## Weekly Snowpack and Drought Monitor Update Report

For the [2014 Water Year](#) that began on October 1, 2013, surpluses in the western U.S. occurred in central Montana, most of Wyoming, and northern Colorado.

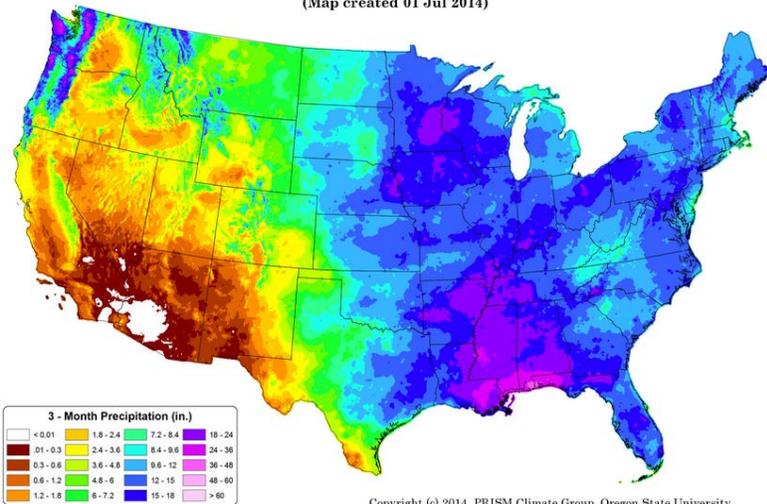
Near average conditions dominated the northern half of the Cascades, the northern half of Idaho, northwestern-most Montana, the Lower Bear River in eastern Utah and southeast Idaho, and parts of the southern half of Colorado.

The largest deficits were centered over southern Oregon, the Sierra Nevada in Nevada and California, southern and eastern Utah, Arizona, and New Mexico.

As the Water Year advances, it becomes more difficult for river basins to change bin categories.



**Total Precipitation: April 2014 - June 2014**  
Period ending 7 AM EST 30 Jun 2014  
(Map created 01 Jul 2014)



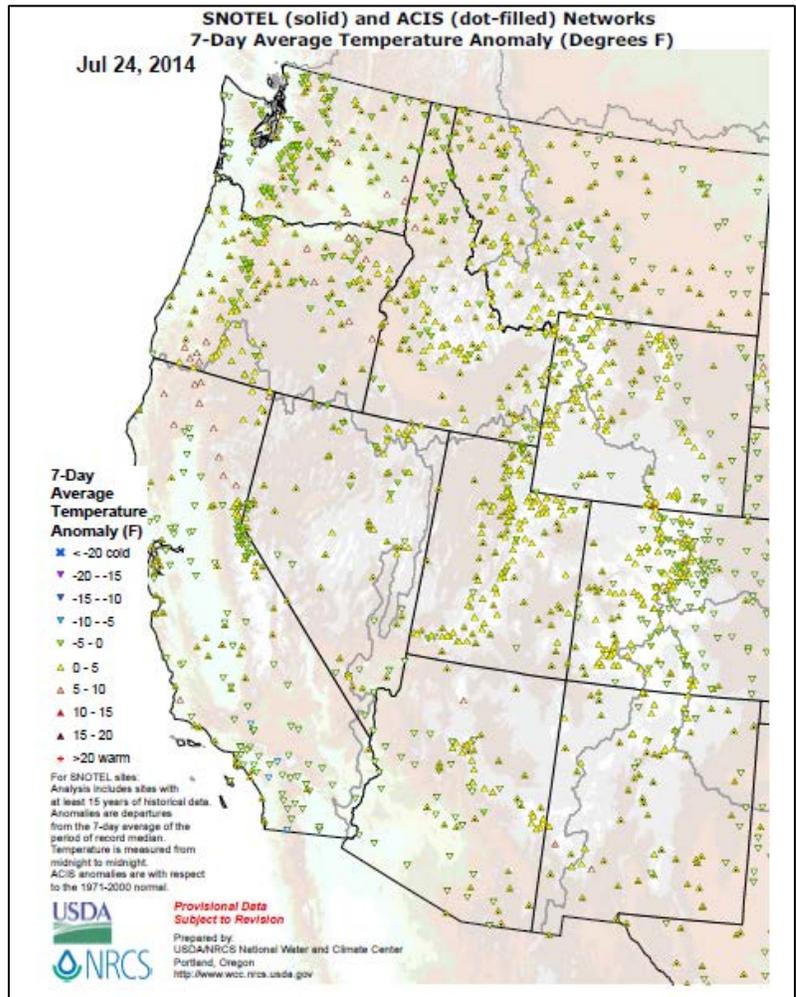
The national map of the [three-month period](#) (April – June) shows that the eastern half of the nation received precipitation in the range from 5 to greater than 36 inches along the gulf coast.

On the other hand, parts of the West received totals of less than 3 inches. The exceptions in the West were over the northern Rockies and Cascades, where totals exceeded 36 inches.

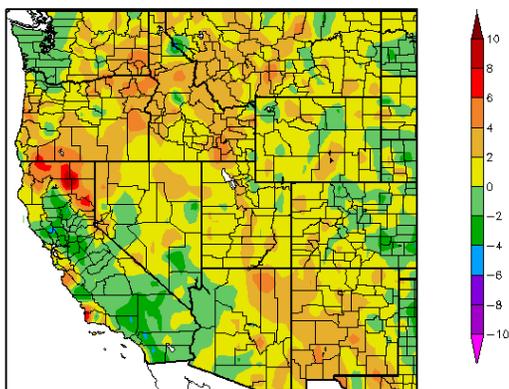
# Weekly Snowpack and Drought Monitor Update Report

## Temperature

The [SNOTEL](#) and ACIS [7-day temperature anomaly](#) map for the western U.S. shows temperatures near normal. A few areas in northern California, Oregon, and Washington had a slightly warmer than normal week. Elsewhere in the West the temperatures were near normal.



Departure from Normal Temperature (F)  
7/17/2014 – 7/23/2014



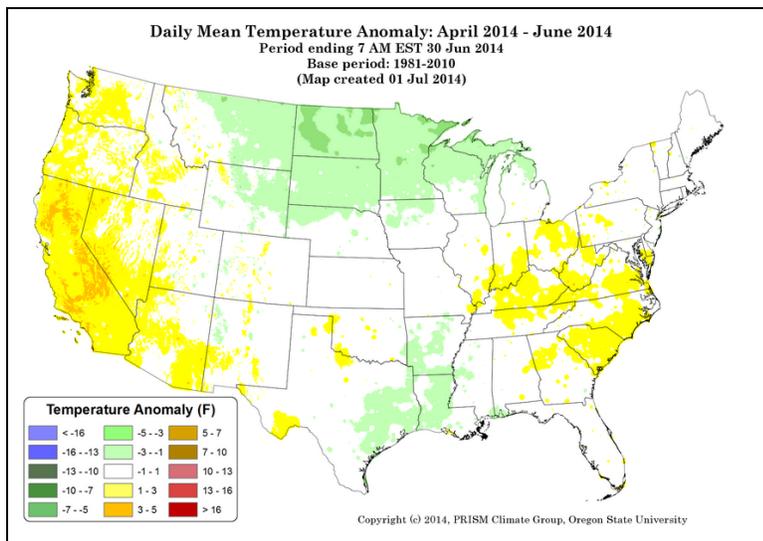
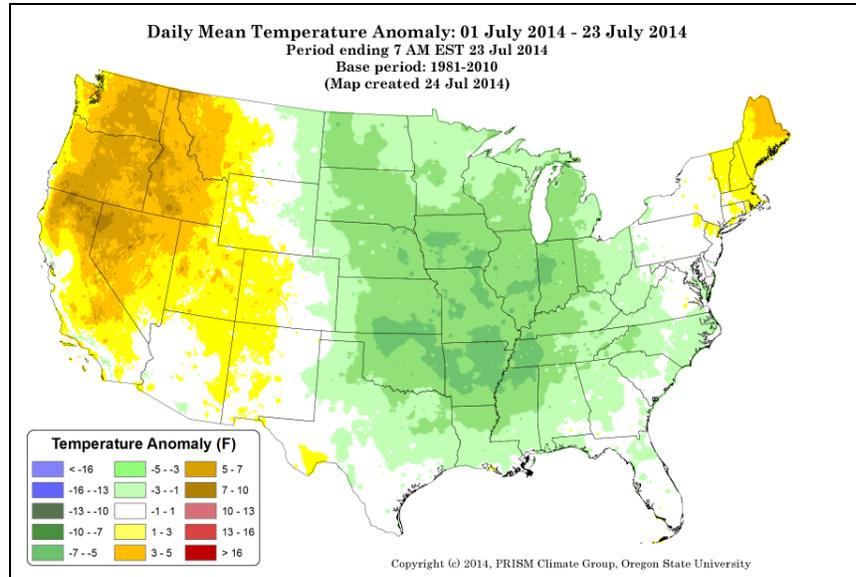
[ACIS](#) map of the 7-day average temperature anomalies in the West ending July 23, show the greatest negative temperature departures scattered over a few spots in southern California and eastern Colorado ( $<-4^{\circ}\text{F}$ ). The greatest positive temperature departures occurred in northern California ( $>+8^{\circ}\text{F}$ ).

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

## Weekly Snowpack and Drought Monitor Update Report

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.

So far during July 2014, the national temperature anomaly [map](#) shows a cold pattern over the Great Plains ( $<-5^{\circ}\text{F}$ ). Above normal temperatures dominated the West, centered in northern California and the Columbia River Basin ( $>+7^{\circ}\text{F}$ ). Northern New England also experienced warm temperatures ( $>+3^{\circ}\text{F}$ ).



April – June national temperature anomalies for the U.S. in this [climate map](#) show the West had near normal to slightly to above normal temperatures, mainly in California and the mid-Atlantic states ( $>+3^{\circ}\text{F}$ ). Most of the remainder of the country reported normal to cool temperatures this spring, with the coolest temperatures in the upper Midwest ( $<-5^{\circ}\text{F}$ ).

# Weekly Snowpack and Drought Monitor Update Report

## Weather and Drought Summary

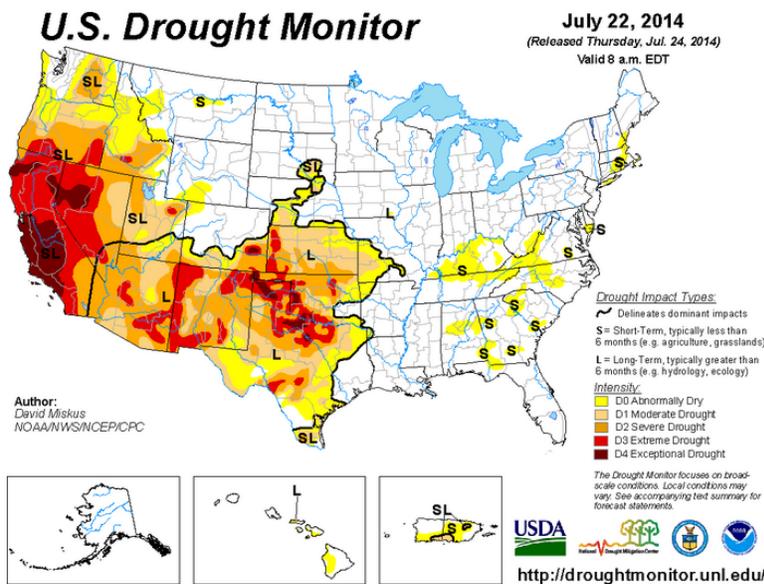
### National Drought Summary – July 24, 2014

The following **Weather and Drought Summary** is provided by this week's NDMC Drought Author, David Miskus, NOAA/NWS/NCEP/CPC

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

“For the contiguous 48 states, the U.S. Drought Monitor showed 33.62 percent of the area in moderate drought or worse, compared with 34.16 percent a week earlier.

For all 50 U.S. states and Puerto Rico, the U.S. Drought Monitor showed 28.10 percent of the area in moderate drought or worse, compared with 28.55 percent a week earlier.”



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

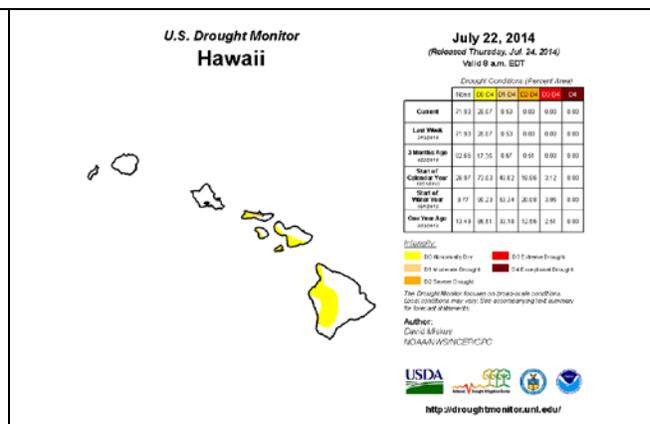
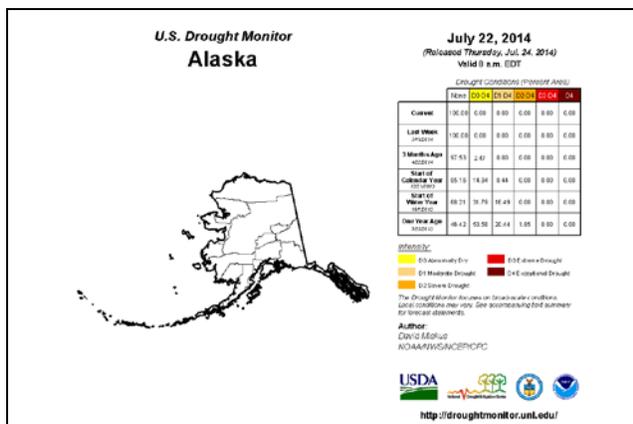
[Current Drought Monitor](#) weekly summary. The exceptional D4 levels of drought are scattered across CA, NV, CO, TX, OK, and NM.

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/weath er/Drought/AgInDrought.pdf>
- ✓ [Watch AgDay TV](#)
- ✓ [Drought Impacts Webinar Series](#)
- ✓ [NIDIS Quarterly Climate Impacts and Outlook](#)
- ✓ [The Spring 2014 edition of DroughtScope](#)



“The [49th](#) and [50th](#) States show relatively benign drought conditions. No changes noted for Alaska and 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 Snowpack and Drought Monitor Update Report

## 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 - Fire season underway, states press for federal funding](#) – July 16

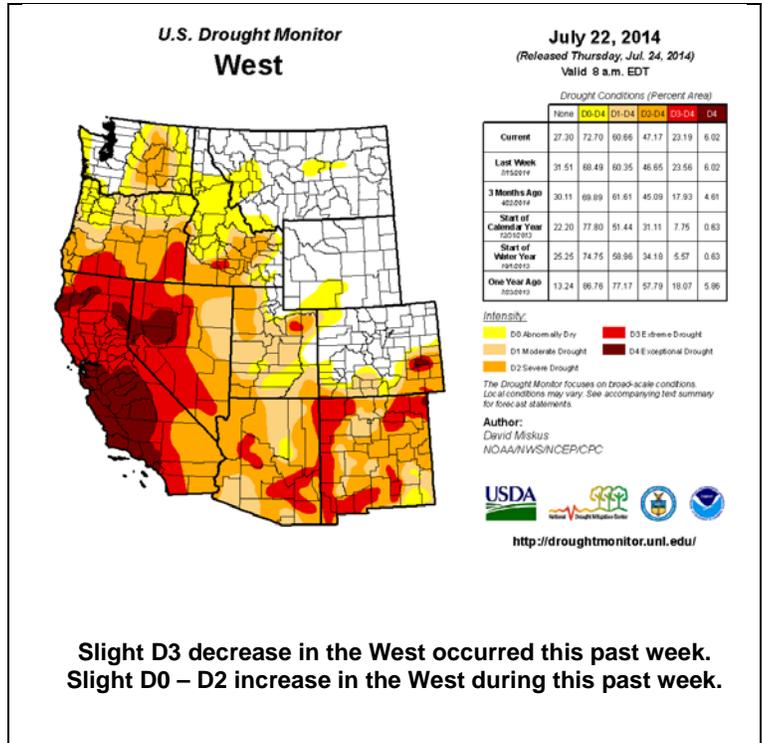
[Firefighters gain ground on massive Washington blaze](#) – July 14

[Deer declining across Colorado and West](#) – July 14

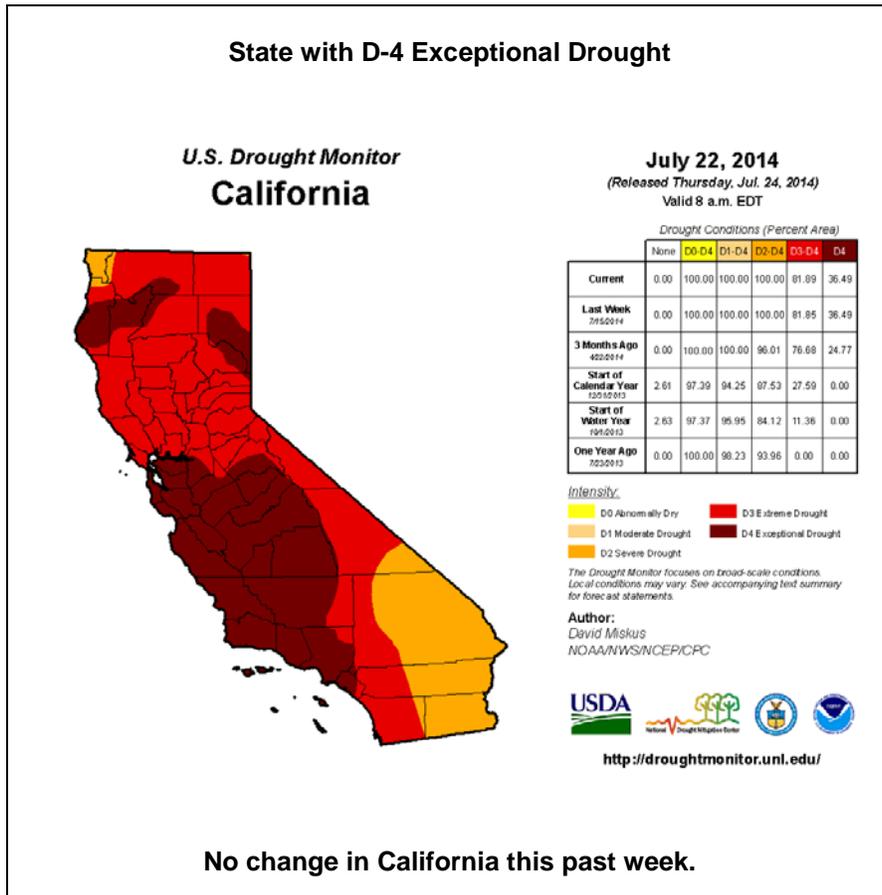
[Montana - Feds and state partnering to reduce effects of drought](#) – July 17

[Utah - Drought leads to water restrictions in S. Utah](#) - July 16

*Click to enlarge maps*



Slight D3 decrease in the West occurred this past week.  
 Slight D0 – D2 increase in the West during this past week.



No change in California this past week.

## [CA Drought Information Resources](#)

### [Drought News from California](#)

[California braces as drought sparks early fire season](#) – July 12

[California Approves Forceful Steps Amid Drought](#) – July 15

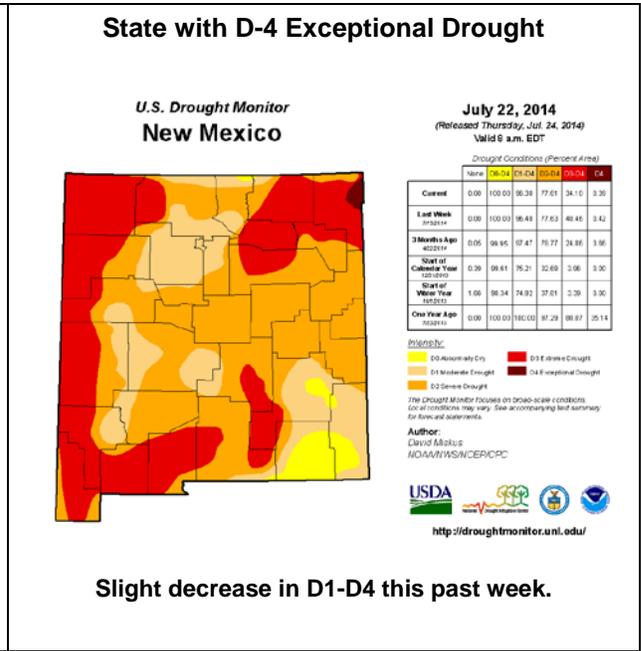
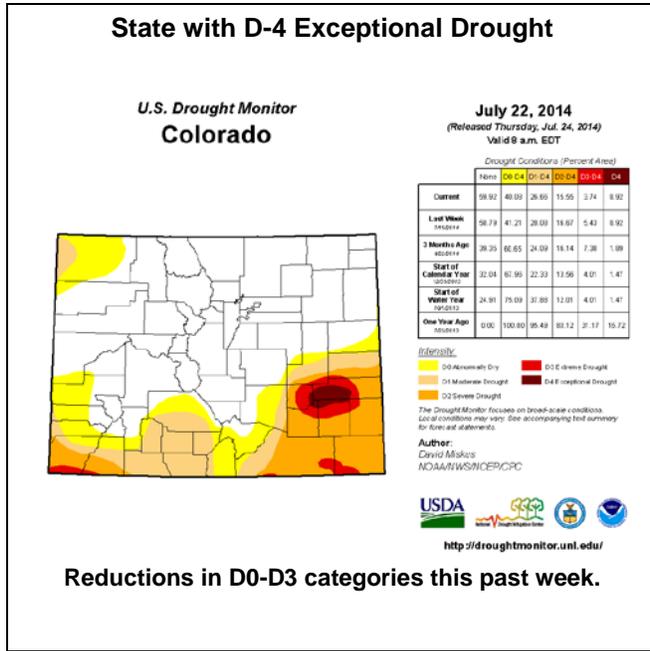
[California drought doesn't end brown lawn warnings](#) – July 18

[California: More tufa towers exposed as Mono Lake water level drops](#) – July 18

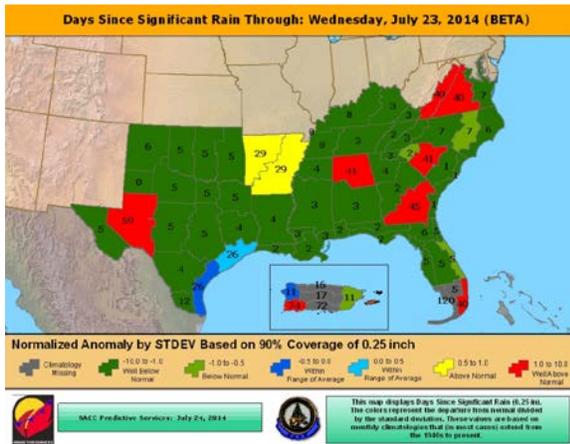
[Drought creates headaches for California recreation](#) – July 11

[Unusual water deals struck in drought-stricken Central Valley ag country](#) – July 12

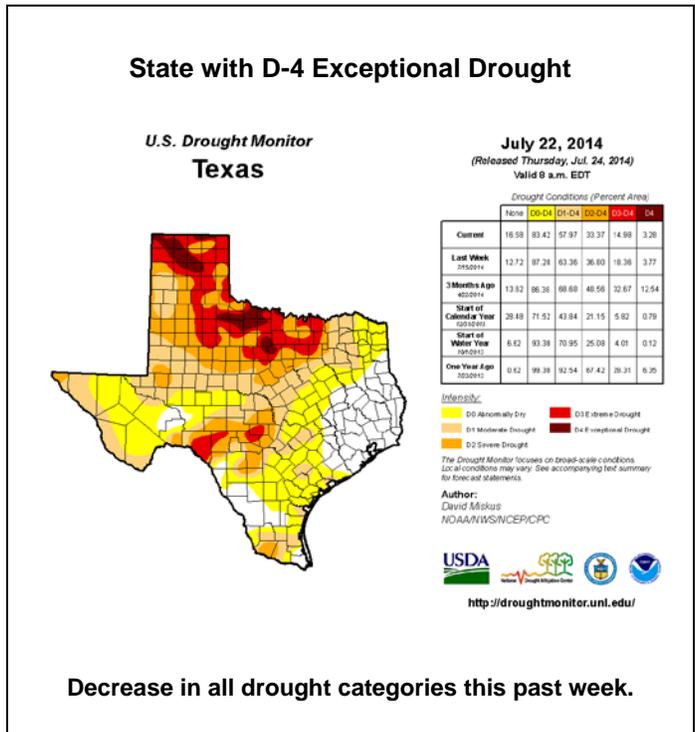
# Weekly Snowpack and Drought Monitor Update Report



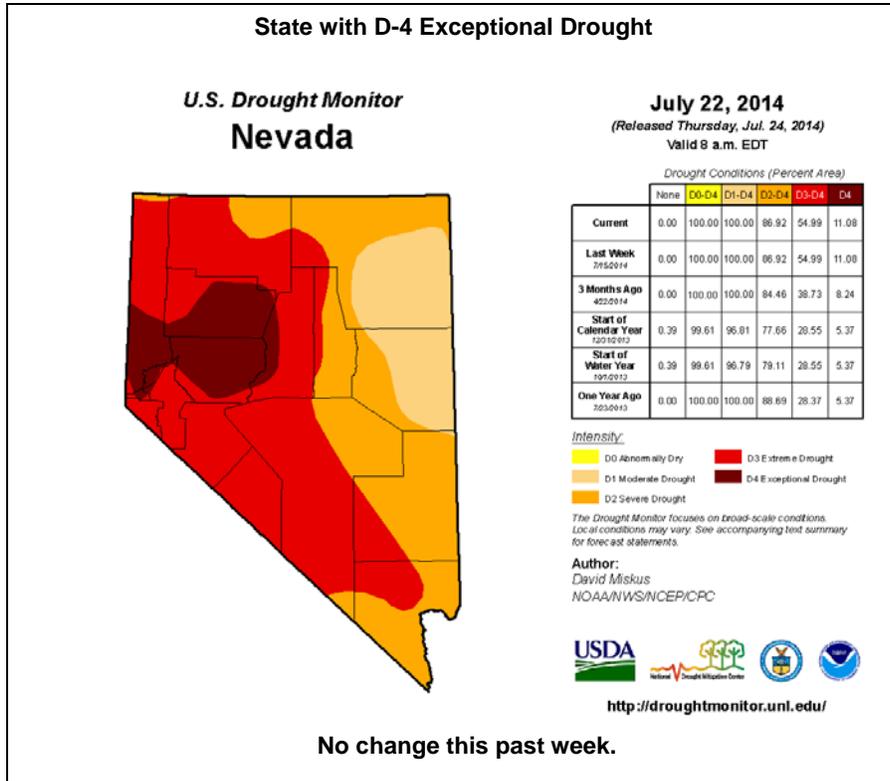
Texas Drought [Website](#).  
 Texas Reservoirs.  
[Texas Drought Monitor Coordination Conference](#)  
**Call:** on Monday's 2:00 PM - 3:00 PM CST



[Days since Significant Rain Summary](#)



# Weekly Snowpack and Drought Monitor Update Report



## Nevada Drought News:

[Drought drawing bears near people at Lake Tahoe](#) – Jul 11

[Progress being made on third straw at Lake Mead](#) – July 17

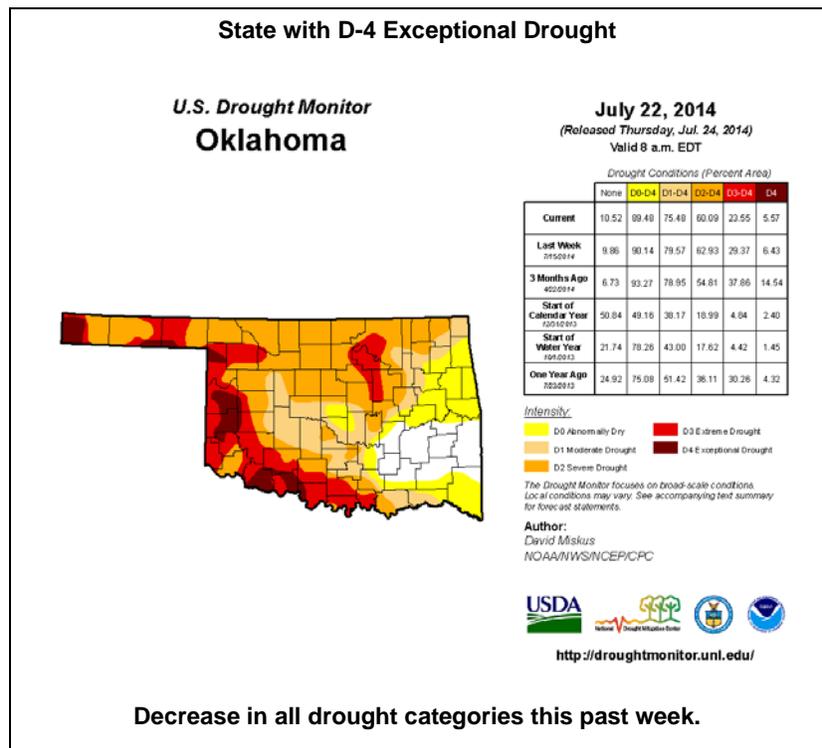
[Lake Mead sinks to a record low](#) – July 11

## 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](#)

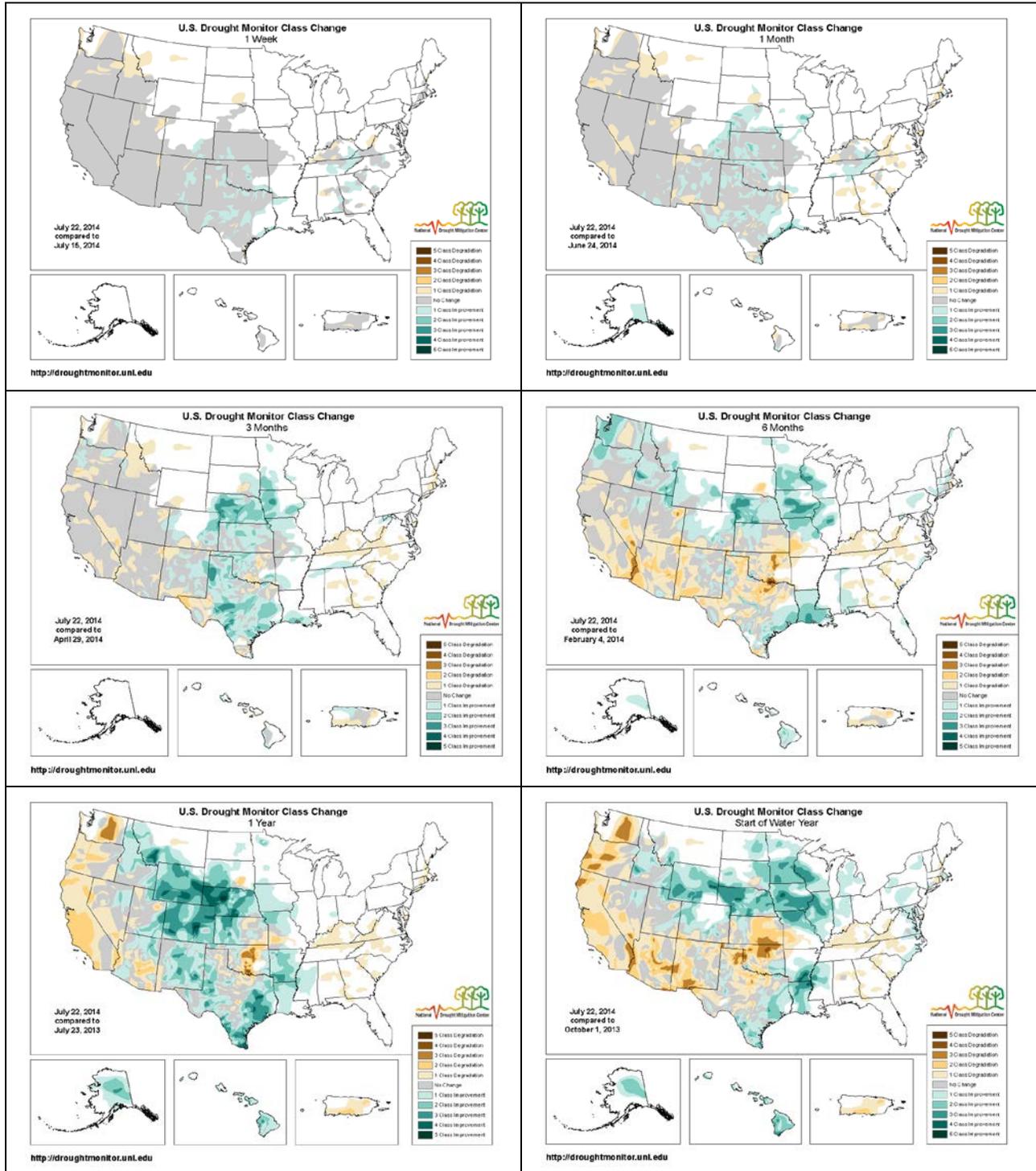
[Chipping away at the drought](#) – July 22



# Weekly Snowpack and Drought Monitor Update Report

## Changes in Drought Monitor Categories

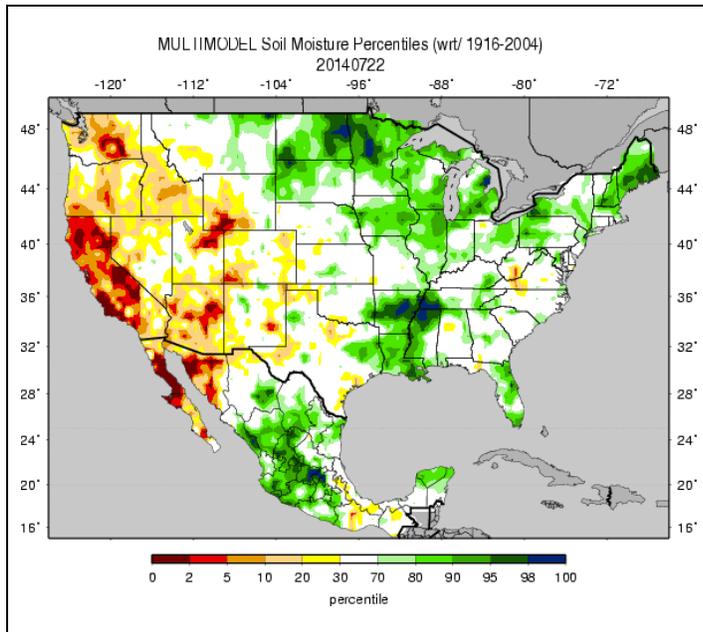
### Over Various Time Periods



Click on any of these maps to enlarge. Note how the conditions over the Rockies and northern Great Plains have improved between 6 to 12 months (middle right to lower left maps). However, also note that since the start of the 2014 Water Year last October, conditions over the middle and southern Great Plains and the Pacific coastal states have deteriorated significantly (lower right map).

# Weekly Snowpack and Drought Monitor Update Report

## Soil Moisture

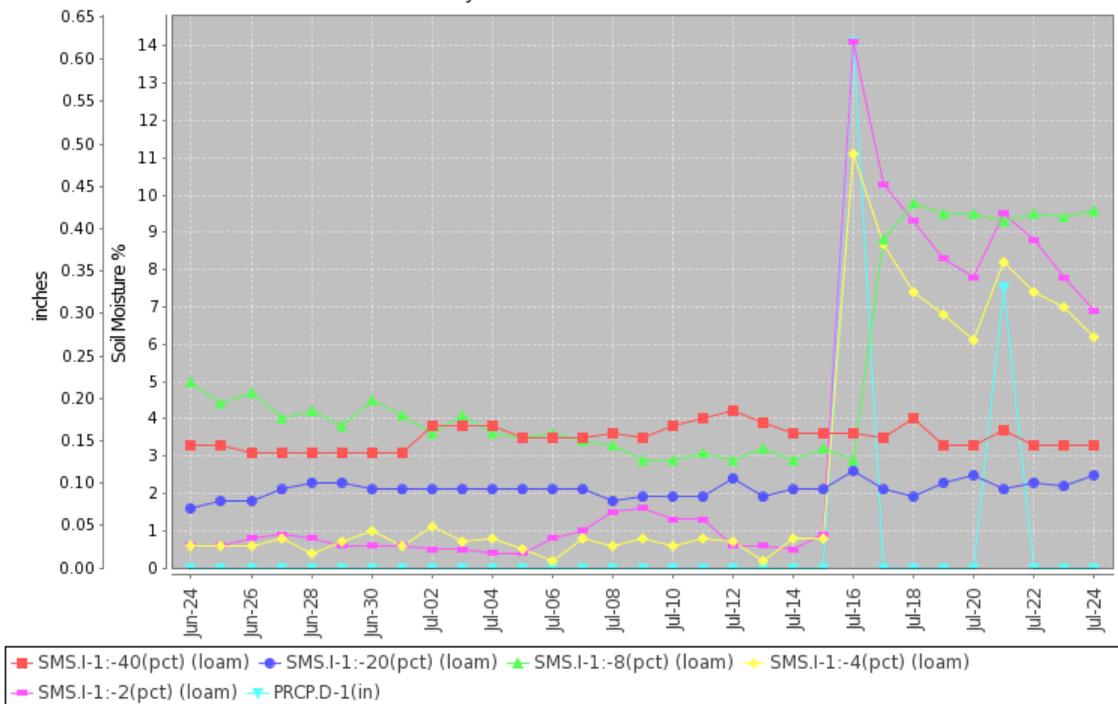


The national soil moisture model ranking in [percentile](#) as of July 22 shows dryness over California, Arizona, New Mexico, and parts of Washington, Oregon, Idaho, northeast Utah, and southwest Wyoming. Scattered dryness was also reported in other areas west of the Rockies. Very moist soils dominated eastern Montana to the Great Lakes, where the wettest locations were centered in Minnesota, and parts of the Dakotas, Wisconsin, and Iowa. The soils in the lower Mississippi River Basin and parts of the New England states also had high moisture content.

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)

Station (2149) MONTH=2014-06-24 (Daily) NRCS National Water and Climate Center - Provisional Data - subject to revision  
Thu Jul 24 08:31:55 PDT 2014

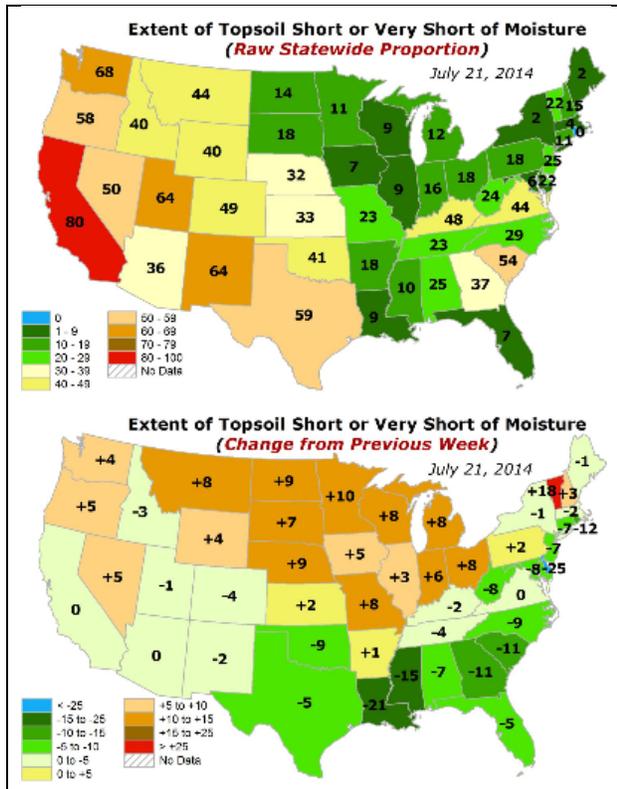


This NRCS resource shows soil moisture data at the [Marble Creek \(2149\) SCAN](#) station located in eastern California. Note the rapid increase in soil moisture as a result of the first precipitation in the area since mid-May (precipitation trace in light blue). The deeper soil sensors at 20 and 40 inches depth also show a slight increase from the recent precipitation.

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](#).

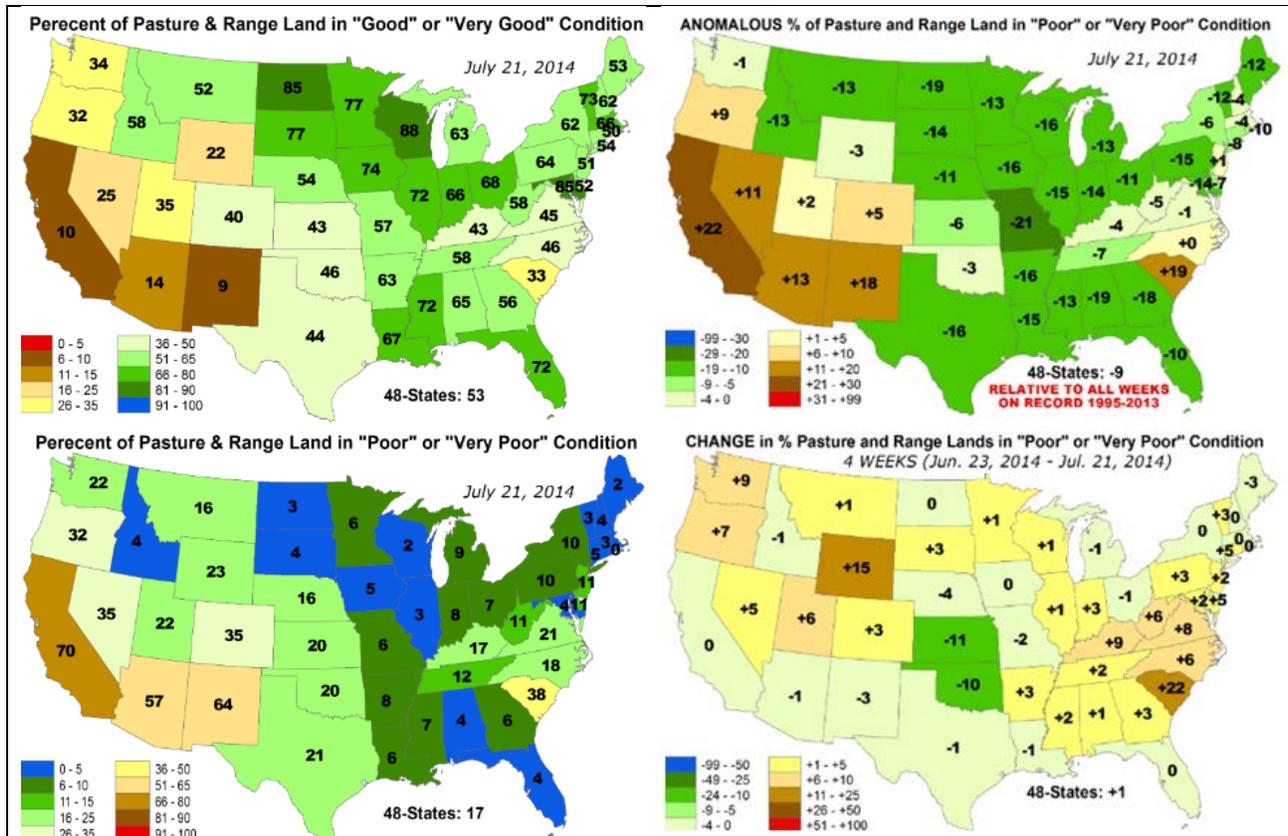
# Weekly Snowpack and Drought Monitor Update Report

## Topsoil and Pasture & Rangeland National Conditions



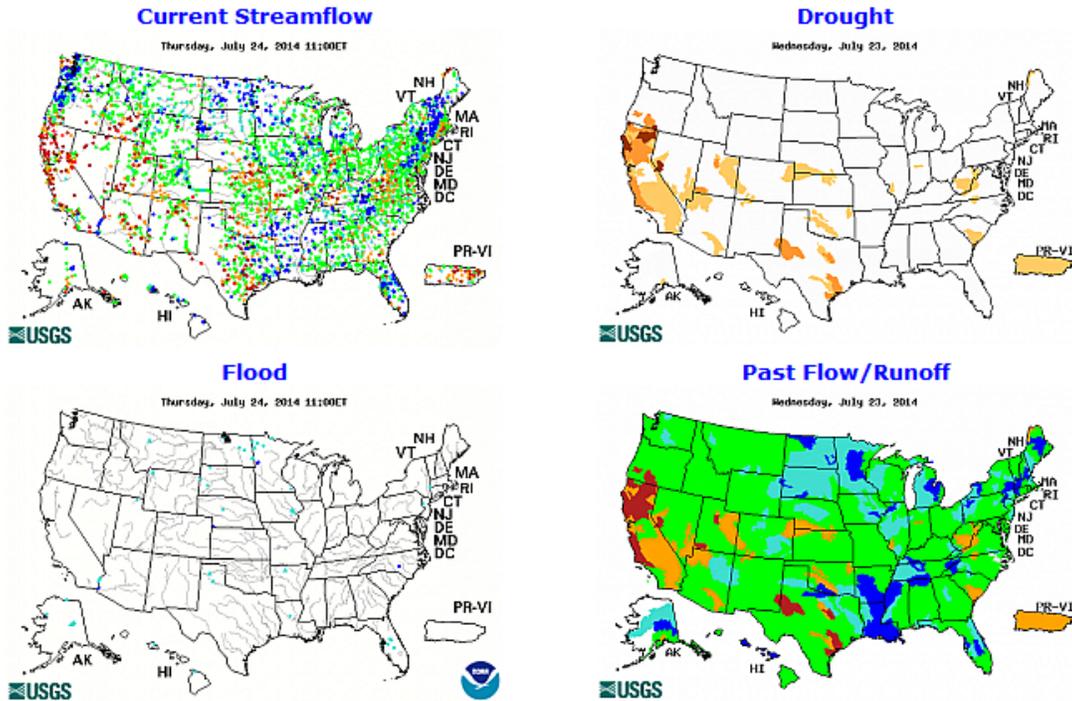
↳ Topsoils are exceptionally poor (top) over New Mexico, California, Utah, Texas, and South Carolina with values representing more than 60 percent poorer conditions than the median for this time of year (bottom panel). Locations in the northern Great Plains across to New England, and along the Mississippi River have good soil moisture conditions.

↳ Many of the states east of the Mississippi River are doing well, as noted below. These conditions also extend across the northern Great Plains and northern Rockies. Pasture and rangelands are stressed over California, the Great Basin, and the Southwest. Conditions have remained about the same over this past week.



# Weekly Snowpack and Drought Monitor Update Report

## Streamflow



The streams are high over much of the Mississippi River Basin, the Pacific Northwest, Florida, and the Northeast due to recent precipitation (left maps). Alaska and Hawaii are also reporting some high streamflow. Flooding is occurring along the Souris River in North Dakota, where the river is above flood stage (lower left map).

## National Long-Range Outlook



Click maps 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 a many areas of the upper Mississippi and Missouri Rivers, west-central Florida, and the Connecticut River. Currently, **1** gage has a greater than 50% chance to experience major flooding; **3** gages for moderate flooding; and **19** gages for minor flooding.

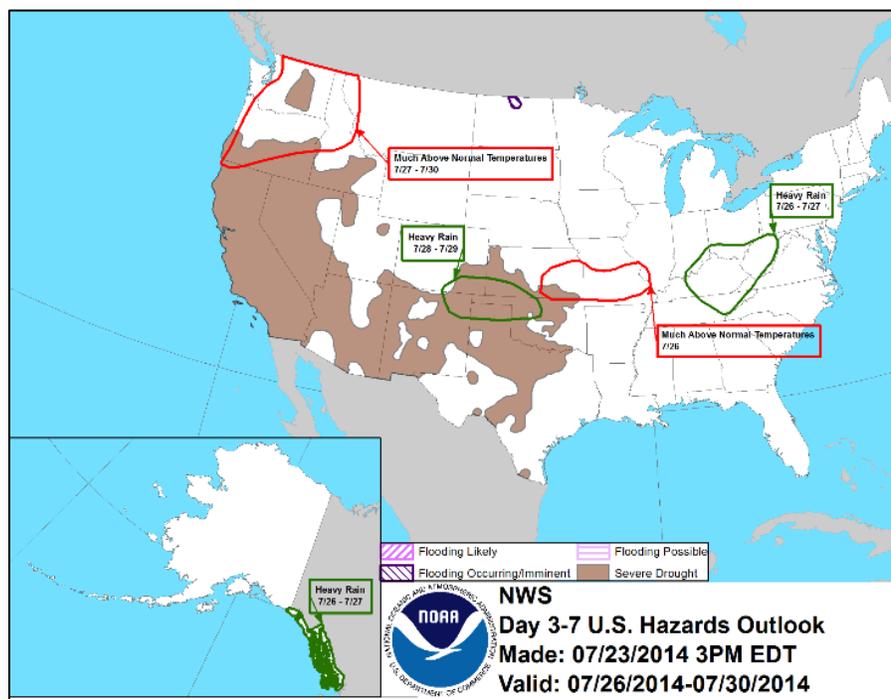
These numbers represent no change in the number of gages since last week.

## Weekly Snowpack and Drought Monitor Update Report

### National [Weather hazards](#)

Heavy Rain is expected in the coming week in northeast New Mexico, Southeast Colorado, Northern Texas, western Oklahoma, and southern Kansas. Other areas of heavy rain are expected over the Ohio Valley and southeast Alaska.

There is also a hazard of much above normal temperatures in the Pacific Northwest, eastern Kansas, and southern Missouri.



### [National Drought Summary for July 22, 2014](#)

Prepared by the Drought Monitor Author: David Miskus, NOAA/NWS/NCEP/CPC

#### Summary

“Early in the period, a strong cold front brought unseasonably cool air (and dozens of daily record or near-record minimums and low maximums) to the eastern two-thirds of the Nation while also triggering numerous showers and thunderstorms across the southern and central Plains, lower Mississippi Valley, Southeast, mid-Atlantic, and coastal New England. Lows dropped into the forties as far south as Kansas, and 7-day temperatures averaged more than 12oF below normal in Oklahoma and Arkansas. Another cold front late in the week dropped heavy rain on northern sections of North Dakota and Minnesota. In contrast, a ridge of high pressure over the West kept the weather hot and mostly dry. Weekly temperatures averaged 4 to 8oF above normal in the Northwest and Great Basin, with highs reaching triple-digits in many locations. Numerous large active wild fires were reported in the Far West, particularly in Washington and Oregon. Wetter weather was reported in both Hawaii and Puerto Rico, but the heaviest rains fell on areas without D0 or D1.

#### Hawaii and Puerto Rico

In Hawaii, very heavy showers fell on the windward sides of Oahu, Maui, and the Big Island, including 24-hour totals (8am Saturday-8am Sunday HST) exceeding a foot on eastern Oahu (Punaluu Stream - 13.20”; Kahana - 13.85”; Hakipuu Mauka – 13.39”; Oahu Forest NWR – 13.70”; and Poamoho RG 1 – 12.02”). Unfortunately, much smaller totals (0.2-1 inches) were recorded on the leeward sides of Molokai, Maui, and the Big Island where D0 and D1 were located. The light showers prevented worsening of conditions, but were not enough for any improvement.

In Puerto Rico, scattered light to moderate showers (0.5 to 2 inches) fell on western and eastern sections of the island, keeping conditions status-quo there. In central sections, however, subnormal rainfall and a reservoir with low water levels justified extending D1 northeastward into Coamo and Villaba Municipalities.

## Weekly Snowpack and Drought Monitor Update Report

### Middle and Lower Missouri Valley

Unseasonably cool weather (temperatures averaged 4 to 8°F below normal, lows dipped into the forties) prevailed in the Missouri Valley as little or no rain fell on the existing drought areas. Last week's light to moderate rainfall plus this week's low readings prevented further degradation or expansion. Not surprisingly, crops and pastures in nearly all Midwestern and northern Plain states were in good conditions according to NASS/USDA (as of July 20) as favorable weather continued this growing season. One small exception was found in southern South Dakota where the rains have missed in both the short and medium-term. Based on local reports of agricultural impacts from dryness, D1 was added from Sanborn to Charles Mix counties, and D0 was expanded to join the D0(L) in northern Nebraska.

### New England and mid-Atlantic

Scattered showers and thunderstorms, some with locally heavy rains (>2 inches), fell along eastern New England and on most of the mid-Atlantic, central Appalachians, and Carolinas. Unfortunately, the heaviest rains missed the D0 areas of New England, eastern Maryland, and southeastern Virginia (generally 0.5-1.5 inches fell). Although the rains prevented expansion of D0, the precipitation was not enough to make a serious dent in the short-term deficiencies (60-days 1-3 inches; 90-days 2-4 inches), except where 3 inches fell in Bristol and Plymouth counties of MA. In contrast, drier weather (<0.5 inches) in southeastern West Virginia and southwestern Virginia expanded abnormal dryness northward to Pendleton County, WV and Highland County, VA, as 30- and 60-day precipitation ranged between 50-75%, and with deficits of 2-4 and 3-6 inches, respectively. Several USGS 7-, 14-, and 28-day averaged stream flow sites in this area have fallen into the below-normal (10-24th percentile) and much below normal (<10th percentile) categories. In the Northeast, however, the rains increased the region's stream flow levels to normal levels (25-75th percentile). More widespread and heavier rains to the south and west of southwestern Virginia eased dryness, and this will be discussed in detail in the following two regional summaries.

### Ohio and Tennessee Valleys

Moderate rain (1-2 inches), on top of last week's heavier rains (2-4 inches), was enough to make a broad 1-category improvement in southeastern Kentucky, while 2-3 inches across south-central and eastern Tennessee removed 60- and most 90-day deficits there, along with last week's D0 and D1 areas. 7-, 14-, and 28-day average stream flows also responded, with many sites now in the above normal (76-90th percentile) category. The 1-category improvement also extended eastward into extreme southwestern Virginia which had similar 2-week rainfall amounts. In contrast, little or no rain fell on northern and western sections of Kentucky and Tennessee, maintaining abnormal dryness and slightly expanding D0 into western and northern Kentucky. This dryness was most pronounced at 30, 60, and 90-days, producing shortages of 2-6 inches. With this short-term dryness, USDA/NASS reported on July 20 that 48% of the state's topsoil moisture was very short to short. Fortunately, subnormal weekly temperatures (5 to 9°F) tempered the effects of the dry weather, with most crops and pastures in fair to good condition.

### Pacific Northwest

A second consecutive week of hot (temperatures averaged 4 to 8°F above normal, triple-digit highs) and mostly dry weather greatly increased moisture demand across the region. Numerous large active wild fires, many triggered by lightning strikes from dry thunderstorms, were reported in the West. As of July 23, Oregon had 13 active large wildfires totaling more than 578,000 acres, while Washington had 5 large active fires affecting almost 300,000 acres, according to NIFC. Although July precipitation is normally low, the combination of hot weather and no rain has exacerbated conditions, resulting in the expansion of D0 along the Washington coast, just east of the Washington Cascades, across north-central Idaho, and into parts of western and central Montana based upon 30- and 60-day shortages. In the latter state, recent heat, spotty rains, and windy conditions have quickly decreased moisture conditions from June into July. In southeastern Oregon, light rain (0.1-0.4 inches) on day 7 of the period in Malheur and Harney counties helped wet one of the largest fires (Buzzard Complex), but dry and hot weather in southwestern (Jackson County) and central Oregon (Deschutes, Crook, and Grant counties) expanded D3 and D2, respectively. In Idaho, irrigation water was shut off this week for Magic Reservoir and Salmon Falls water users, while Little Wood Reservoir irrigators will be out of water soon - earlier than last year. Owyhee Reservoir is nearly empty, and ran out of available water much earlier than last year.

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### **Southeast**

Widespread, moderate to heavy showers and thunderstorms and cool air (e.g. high of only 70oF at Huntsville, AL, on July 18, second lowest July maximum on record) enveloped much of the Southeast this week as the initial cold front stalled in the northern Gulf of Mexico and slowly tracked northward, generating additional showers and thunderstorms in the region. Greatest weekly totals (>2 inches) fell along the Gulf and southern Atlantic Coasts, from southeastern Alabama northeastward into western North Carolina, in northern Mississippi and Alabama, most of Florida and South Carolina, and in southern and central North Carolina. With such widespread moderate to heavy amounts, most D0 areas were reduced or broken into pieces as short-term (60- to 90-days) deficits were greatly eased or alleviated. The exceptions to this included small D0 expansion in central Alabama and southern Georgia where totals were less than 0.5 inches and short-term deficiencies (2-4 inches at 60-days) grew.

### **Southern and Central Plains**

Widespread moderate to heavy showers and thunderstorms, plus unseasonably cool air, highlighted a very beneficial and welcome weather week for much of the region. Southeastward tracking thunderstorms dropped swaths of ample rain (>2 inches) on southwestern Kansas, central and southeastern Oklahoma, southwestern Arkansas, eastern Texas, and most of Louisiana. Additional heavy rains fell on southeastern Colorado, the Texas Panhandle, along the Red River Valley, and on central and southwestern Texas. Even after a dry 7-day period in much of Texas last week, 60-day precipitation is generally at or above normal in most of the state, along with Oklahoma, Kansas, New Mexico, and eastern Colorado. The issue, however, is to balance the short-term wetness with the long-term (multi-year) drought which has impacted hydrological interests. Taking this into consideration, 1-category improvements were made in most areas where this week's rainfall exceeded 2 inches. A 2-category improvement (D1 to nothing) was made in extreme southeastern Texas (Jefferson County) where 8-10 inches fell. A few areas were slightly degraded as the rains missed the extreme southern Texas coast and parts of the west Texas. The July 20 NASS/USDA state summaries mentioned that pastures were greening up across much of Texas and Oklahoma with the recent rains and lower temperatures, and most crops benefited from the moisture and lack of excessive heat. 28-day average USGS stream flows were spotty in Texas, but most sites in Texas, Oklahoma, and Kansas were in the normal (25-75th percentile) category, including several stations in northern Texas in the above to much-above normal categories.

### **Southwest and Great Basin**

Somewhat similar to the southern Plains, abundant moisture triggered scattered moderate to heavy showers and thunderstorms in parts of New Mexico and southeastern Colorado, but totals quickly dropped to zero in western sections (e.g. most of Arizona, Utah, western Colorado, southeastern California). And like the southern Plains, the balancing of short-term wetness and long-term drought tempered the potential improvements in New Mexico and southeastern Colorado. Nevertheless, where decent rains (more than an inch) fell this week and Water Year-to-date surpluses existed, a 1-category improvement was made, namely in central New Mexico (north to south) – D3 to D2, and in southeastern Colorado. D3 was slightly expanded to reflect similar conditions at various time scales in north-central New Mexico and northeastern Arizona. In northeastern Utah, hot and dry conditions justified a general 1-category downgrade to reflect poor soil and vegetative health models. Monsoonal moisture made it north and west into the central Sierra Nevada and Lake Tahoe area, producing showers and thunderstorms that dropped 0.3-1 inches, locally to 3 inches, but these totals weren't even close to making a dent in the long-term drought. In California, the June 30 reservoir update (based upon 154 intrastate reservoirs) had storage at 60% of average – better than this time in 1977 where storage was at a record low of 41%. Storage totaled 17.25 million acre feet (maf), and a typical seasonal withdrawal is 8.24 maf. The last two years (2012 and 2013), withdrawal has topped 11 maf. Due to early melting of this year's meager snowpack, withdrawal through June 30 was already at 2.1 maf (versus average withdrawal through June 30 of less than 0.6 maf).

### **Looking Ahead**

*During July 24-28, wet weather is forecast for the eastern third of the Nation, Pacific Northwest, and parts of the northern and south-central Plains. Later in the period, some monsoonal moisture is expected to trek northward into Arizona, New Mexico, and Colorado and trigger scattered light to moderate showers. Little or no precipitation for the 5-day period is expected in California and the Great Basin, north-central Rockies, southern Plains, and central Great Plains. Temperatures should average below normal across the northern*

## Weekly Snowpack and Drought Monitor Update Report

tier of States and above normal across the southern third of the U.S., with the greatest positive departures in the Southwest.

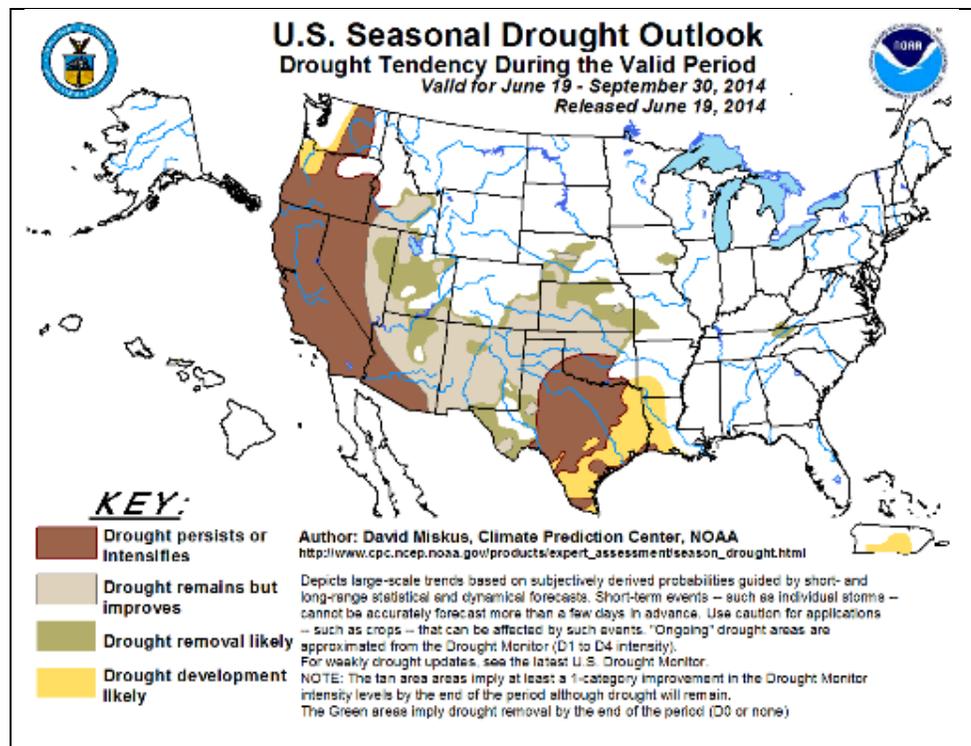
For the ensuing 5-day period, July 29-August 2, the odds favor above median precipitation from the eastern Great Basin and Arizona southeastward along the Gulf Coast and northeastward along the southern and middle Atlantic Coast. Sub-median precipitation is likely in the Pacific Northwest, and from the northern Plains and upper Midwest southeastward into the Tennessee Valley. Western Alaska is expected to observe below median rainfall, with the opposite forecast in the southeastern Panhandle. An expected strong ridge of high pressure over the Far West and a deep trough over the eastern U.S. will favor strong chances of above-median temperatures in the West and below-median readings in the eastern half of the U.S.”

## Supplemental Drought Information

### National Seasonal Drought Outlook

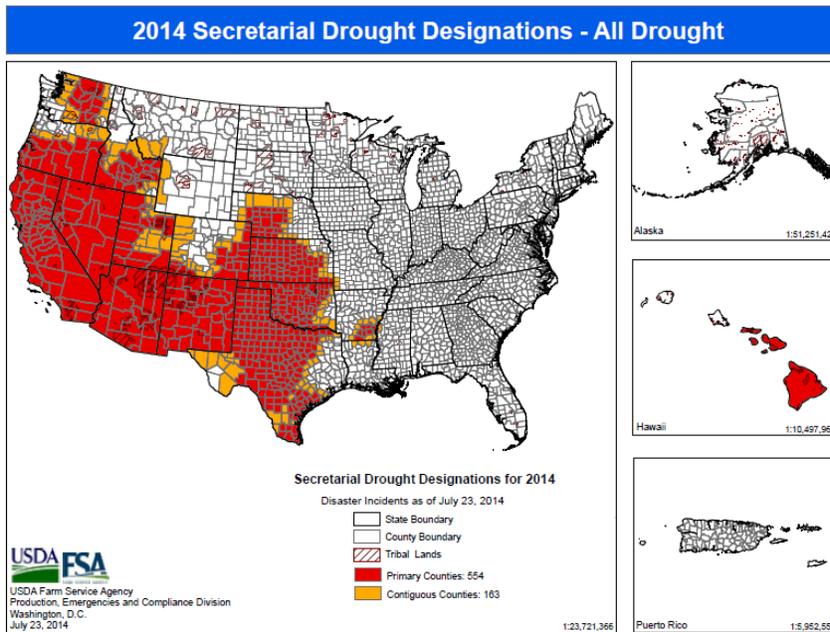
[Drought](#) is expected to persist over much of the West and the southern Great Plains. Improvements are expected from the Southwest to the central Great Plains.

Also see: [National Significant Wildland Fire Potential Outlook](#) (updated on the **first** of each month) contains a content summary of the previous month's conditions.



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## 2014 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](#).

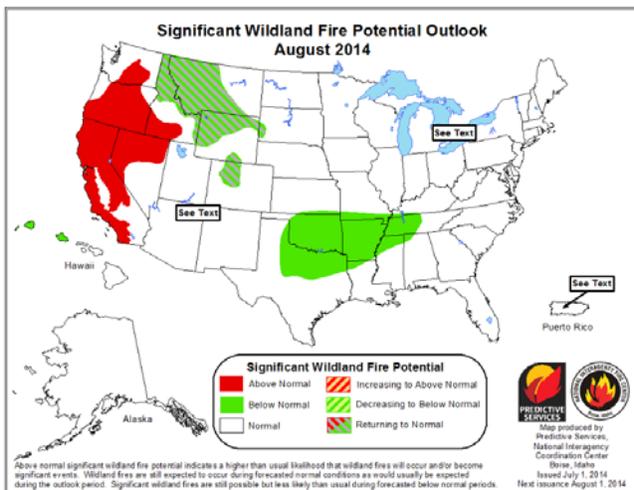
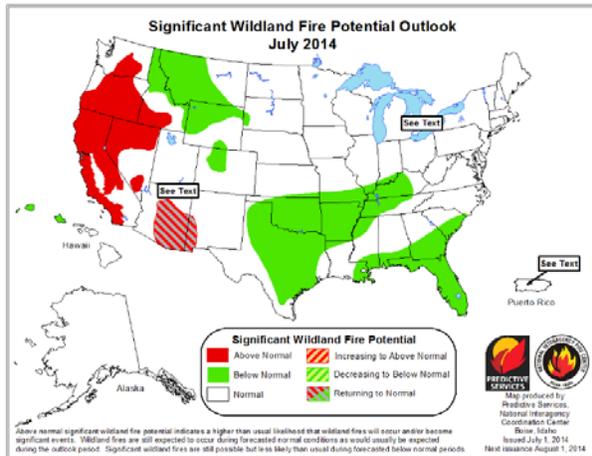
New useful resource: [NASS Quick Stats](#)

## National Fire Potential Outlook

### July Forecast

Above normal [fire potential](#) will expand to include northern California, Nevada, Oregon, eastern Washington, and southern Idaho.

Below normal fire potential will continue over the northern Rockies, the lower- and mid-Mississippi River, Texas, Florida, and along the Gulf Coast.



### August Forecast

Above normal [fire potential](#) continues in California, Nevada, Oregon, Washington, and Idaho. Fire potential is returning to normal in the northern Rockies of Idaho, Montana, Wyoming, and Colorado.

The below normal fire potential area in the lower Mississippi River Basin is reduced in size.

Florida and the Southeast have returned to normal fire potential.

# Weekly Snowpack and Drought Monitor Update Report

## 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>

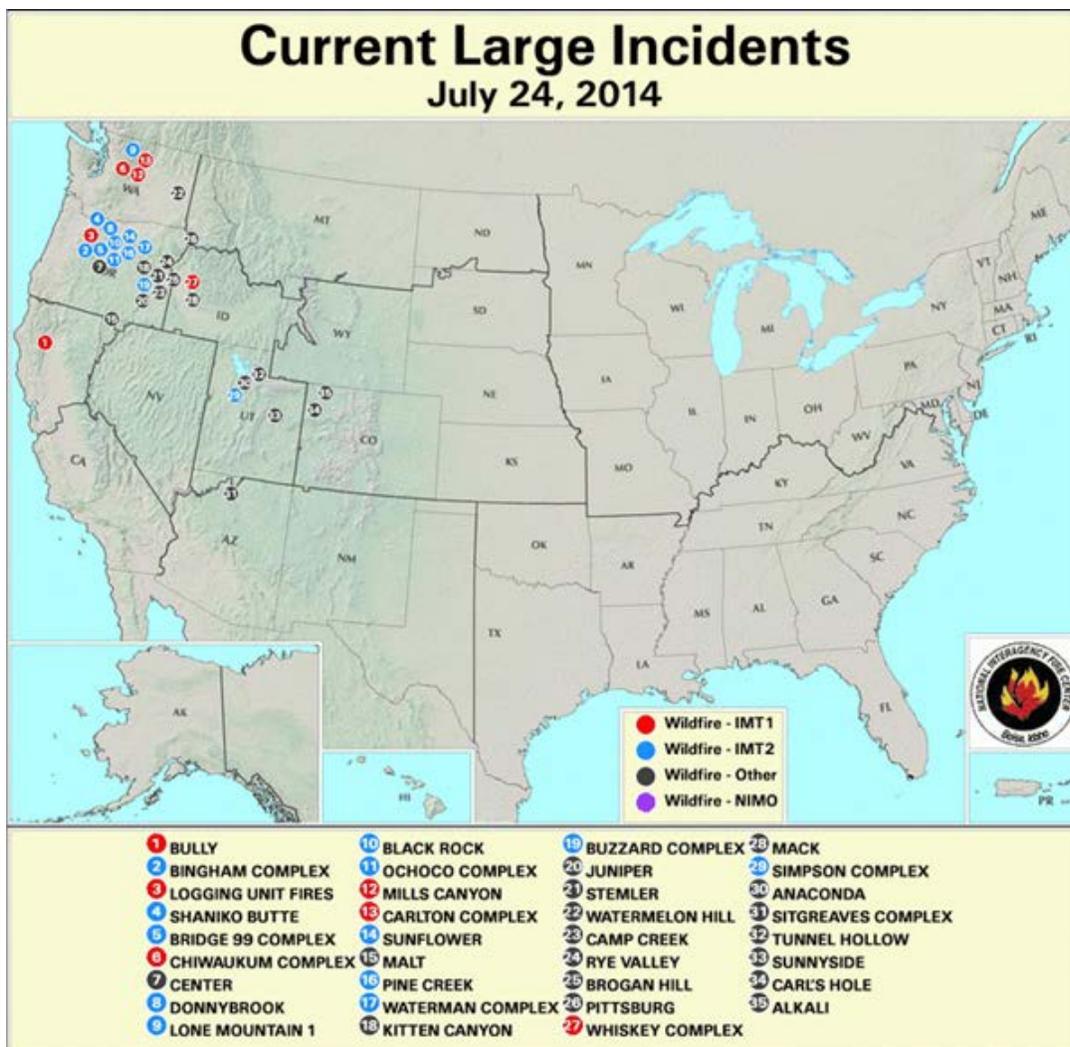
## Supplemental Drought-Agriculture News

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.

"The map of the wildfires in the U.S. and a look at the upper air maps explain the orangeish-pinkish sunlight in the mornings and evenings recently.

The [Active Fire Mapping Program](#) shows 33 large wildfires burning mostly in the Northwest.



## Weekly Snowpack and Drought Monitor Update Report

### Stricter water conservation measures in California

Lackluster water conservation efforts led California officials to adopt more severe water conservation measures prohibiting outdoor watering, except for two days per week, car washing without a shutoff nozzle and pavement washing. Violators may be fined up to \$500 per day. These new measures were needed because water conservation did not reach 20 percent, as the governor requested, and during May, Californians used 1 percent more water than usual. Most of the state's 10 hydraulic regions curbed their water use by 5 percent in May, but residents of the South Coast region, including Los Angeles, San Diego and Orange County, used 8 percent more water than normal. The new water restrictions will take effect sometime around Aug. 1.

### Drought's effects on farm production in the Central Valley

A study of drought's effects on farm production in the Central Valley, conducted by the University of California, Davis, Center for Watershed Sciences, found that drought cut the amount of river water to the Central Valley by one-third, making this the greatest water loss ever experienced by California agriculture. Farmers were compensating for the loss by increasing groundwater pumping, and in some areas, pumping more than twice as much water as last year. Groundwater has been essential in helping the state get through this drought without larger economic losses.

The California Department of Food and Agriculture's Office of Public Relations summarized the study's findings as follows:

- Direct costs to agriculture total \$1.5 billion (revenue losses of \$1 billion and \$0.5 billion in additional pumping costs). This net revenue loss is about 3 percent of the state's total agricultural value.
- The total statewide economic cost of the 2014 drought is \$2.2 billion.
- The loss of 17,100 seasonal and part-time jobs related to agriculture represents 3.8 percent of farm unemployment.
- 428,000 acres, or 5 percent, of irrigated cropland is going out of production in the Central Valley, Central Coast and Southern California due to the drought.
- The Central Valley is hardest hit, particularly the Tulare Basin, with projected losses of \$810 million, or 2.3 percent, in crop revenue; \$203 million in dairy and livestock value; and \$453 million in additional well-pumping costs.
- Agriculture on the Central Coast and in Southern California will be less affected by this year's drought, with about 19,150 acres fallowed, \$10 million in lost crop revenue and \$6.3 million in additional pumping costs.
- Overdraft of groundwater is expected to cause additional wells in the Tulare Basin to run dry if the drought continues.
- The drought is likely to continue through 2015, regardless of El Niño conditions.
- Consumer food prices will be largely unaffected. Higher prices at the grocery store of high-value California crops like nuts, wine grapes and dairy foods are driven more by market demand than by the drought.

### Compassionate water deal

Although California water has been selling for exceptionally high prices of more than \$2,000 per acre-foot, west Valley farmers with senior water rights to the San Joaquin River have water to sell at a reasonable price to east-side districts in the Friant Water Authority, including Terra Bella, Lindmore, Kern Tulare, Stone Corral and Orange Cove. East side farmers received an allocation of zero percent from the federal Central Valley Project. The 13,500 acre-feet of water sold for a mere \$250 per acre-foot. This was a very generous water deal, which could have made the sellers \$27 million, rather than \$3.375 million.

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### Drought among factors driving down mule deer population in Western U.S.

The deer population shrank throughout the Western U.S. as drought and a multitude of other factors reduced deer numbers. In northwestern Colorado over the last ten years, the country's largest mule deer herd plummeted from 105,900 in 2005 to an estimated 32,000 at present. The entire Colorado deer population dwindled by 36 percent during the past decade, according to Colorado Parks and Wildlife, and across the West, the trend was similar with a population decrease of at least 10 percent.

### Oklahoma wheat production

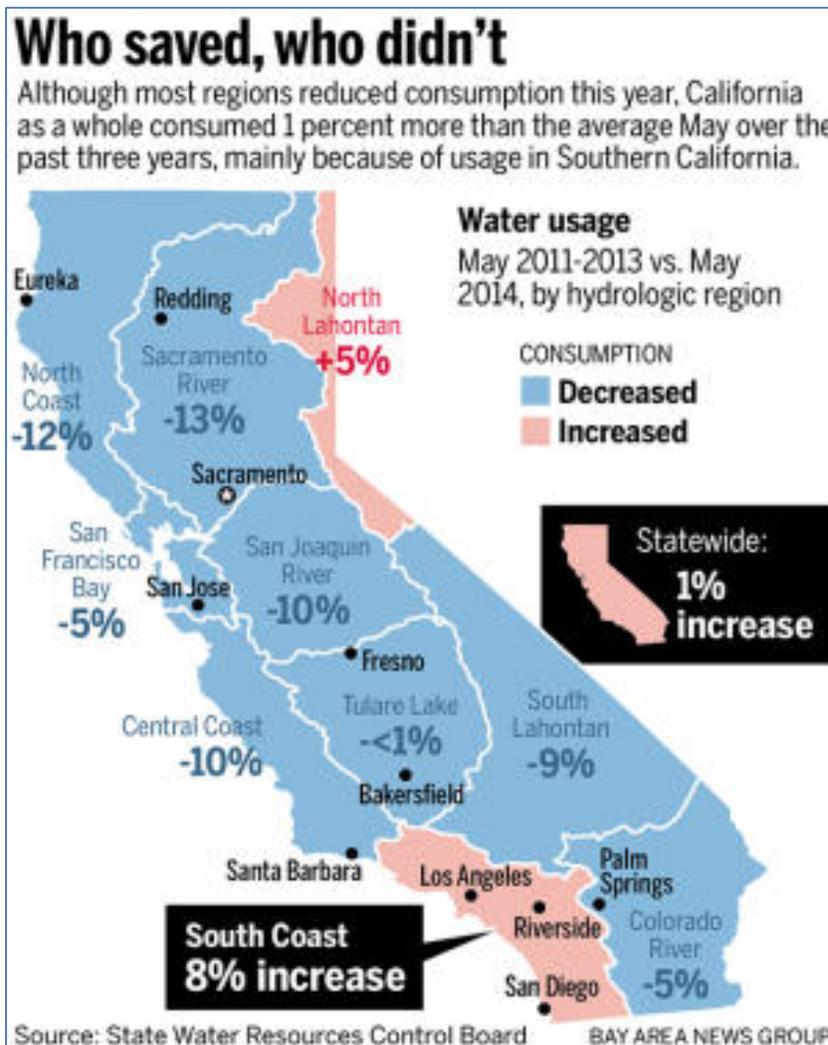
The Oklahoma wheat crop amounted to an estimated 51 million bushels, the least amount since 1957, when the harvest was 43 million bushels, according to the Oklahoma Wheat Commission. Persistent drought, a late spring freeze and poorly-timed spring rains contributed to the small harvest.

### California Special Graphics of the week:

#### California drought: Blame L.A.? Not so fast, Southern California water officials say

[http://www.mercurynews.com/ci\\_26162697/california-drought-blame-la-not-so-fast-socal](http://www.mercurynews.com/ci_26162697/california-drought-blame-la-not-so-fast-socal)

July 16, **California.** See the graphic below for statistics on water use during May. Two parts of the state used more water, while the rest of the state used less.



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### Earth Log: Rural San Joaquin Valley reeling from drought

<http://www.fresnobee.com/2014/07/14/4024148/rural-san-joaquin-valley-reeling.html?sp=/99/406/>

July 14, **San Joaquin Valley in California.** Low groundwater levels and drought were intensifying water problems in the San Joaquin Valley, causing wells to run dry and leaving communities in a very tight spot when a well breaks down.

In Stratford in Kings County, the water table around the community's well fell 100 feet during the last two years, according to data uncovered by Fresno Bee reporter, Lewis Griswold. Excessive groundwater pumping was responsible for the land subsidence in the region, amounting to a drop of nearly 30 feet between 1925 and 1977 and another 10 feet since 1977. With the water table falling, it becomes more expensive and difficult to reach down deeper for water.



Joseph Poland of the U.S. Geological Survey stands next to a utility pole near Mendota in 1977. Poland determined the ground had sunk almost 30 feet between 1925 and 1977. The signs tacked on the pole show where the ground level was at various times during the 52-year period. The pole has been replaced, and there are no signs. Scientists believe the ground has sunk another 10 feet since 1977.

**U.S. GEOLOGICAL SURVEY — USGS”**

### Tea Cup Reservoir Depictions

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

## Weekly Snowpack and Drought Monitor Update Report

### 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](#).

### 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 Snowpack and Drought Reports 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