



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

## Weekly Snowpack / Drought Monitor Update

### June 26, 2014

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### Highlights

#### Agricultural Weather Highlights – Thursday, June 26, 2014

- In the West, showers are bringing some relief from dryness to the Pacific Northwest and the northern Rockies. Light rain is passing through central California, otherwise heat and dryness continue to dominate the Southwest, maintaining high irrigation demands and raising the potential for wildfire outbreaks.
- On the Plains, a line of showers and thunderstorms stretches from the Dakotas to Kansas, maintaining abundant to locally excessive levels of moisture for spring wheat in northern production areas. Flash flood watches remain in effect in Montana and western Saskatchewan. Drier weather covers the southern Plains.
- In the Corn Belt, dry weather dominates much of the Midwest, though heavy showers are returning to the upper Mississippi and Missouri Valleys, including previously flooded sections of northwestern Iowa.
- In the South, heavy showers linger along the western Gulf Coast, increasing moisture for rice and other crops. Warm, humid weather continues across the Southeast, and isolated showers are possible throughout the day.

**Outlook:** Stormy conditions are expected to continue until the weekend on the northern and central Plains as a storm system intensifies and slowly moves eastward toward the Midwest. Three-day rainfall totals are expected to exceed 2 inches from North Dakota and Minnesota southward to Kansas, keeping spring wheat and other northern crops unfavorably wet and sustaining concerns for additional flooding. Drier conditions are expected to continue on the southern Plains, with temperatures climbing into the middle 90s °F on the southern High Plains. Heavy rain will linger a few more days in the western Gulf Region, and scattered showers are possible for the remainder of the week in the warm, humid Southeast. Heat and dryness will sustain high irrigation requirements for crops in California and the Southwest for the foreseeable future. The NWS 6- to 10-day outlook for July 1-5 depicts wetter than- normal weather over much of the East, southern Texas, and sections of the 4 Corners Region and southern Plains. Drier conditions are expected from the Northwest Coast to the Dakotas and in western Texas. Above normal temperatures are forecast in the eastern third of the Nation and in much of the West, the exception being the northern Pacific Coast, where cooler weather is expected. Below-normal temperatures are also forecast for the northern Plains and much of Texas.

**Contact:** Mark Brusberg, Agricultural Meteorologist, USDA/OCE/WAOB, Washington, D.C. (202-720-2012). <http://www.usda.gov/oce/weather/pubs/Daily/TODAYSWX.pdf>.

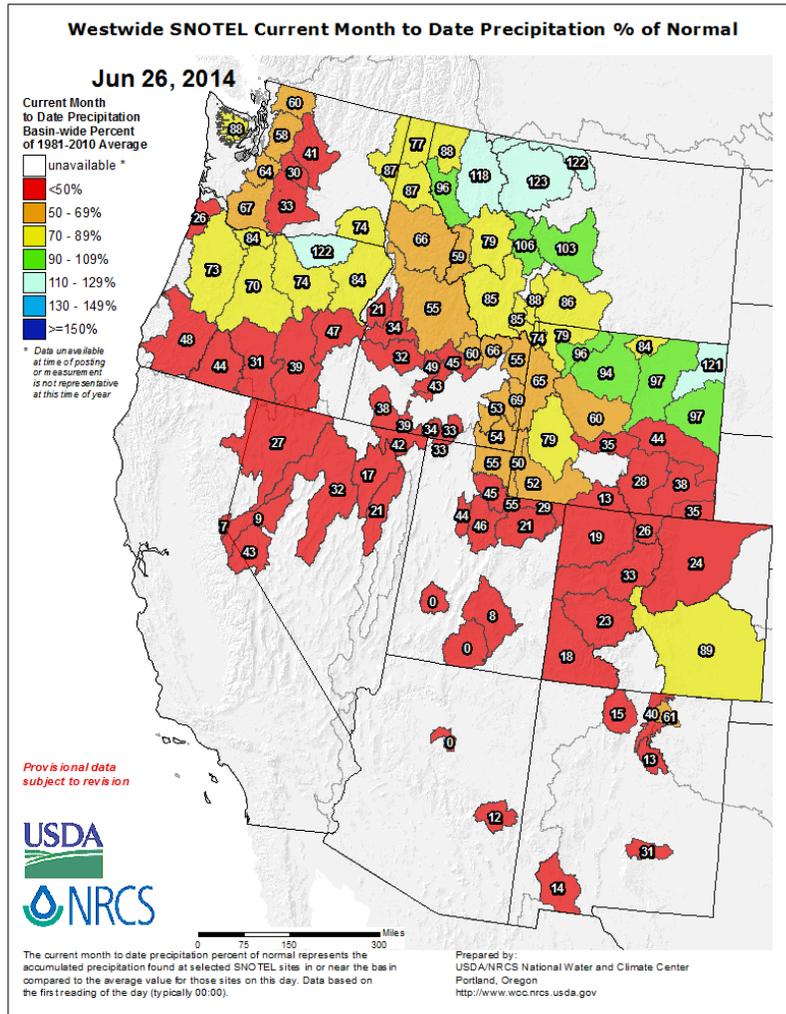
The Natural Resources Conservation Service provides leadership in a partnership effort to help people conserve, maintain, and improve our natural resources and environment

# Weekly Snowpack and Drought Monitor Update Report

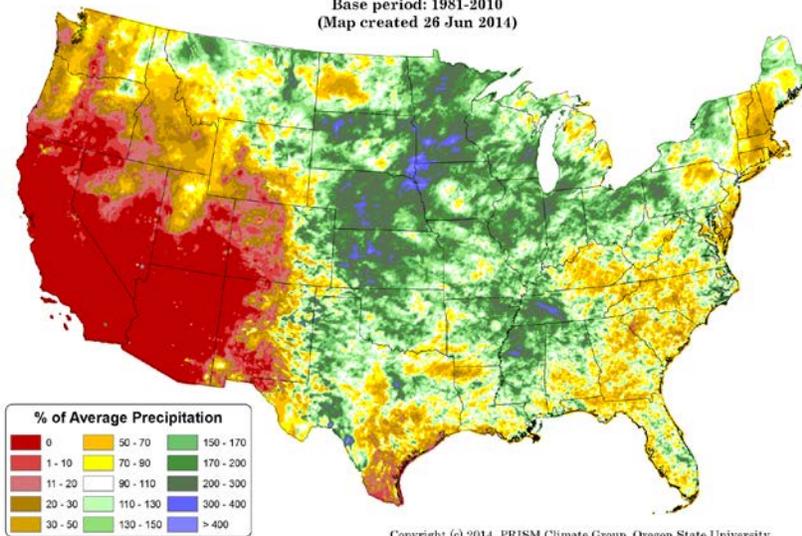
## Precipitation

The June 1 through 26 [SNOTEL](#) precipitation percent of normal map shows predominately deficit conditions over much of the West for the first few days of the month. The areas with near normal conditions are in northern Oregon, northern and eastern Idaho, Montana, and western and northern Wyoming.

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



**Total Precipitation Anomaly: 01 June 2014 - 25 June 2014**  
 Period ending 7 AM EST 25 Jun 2014  
 Base period: 1981-2010  
 (Map created 26 Jun 2014)



During the first 25 days in June 2014, the [precipitation anomaly](#) pattern reveals some very high precipitation scattered across the central part of the nation. Most of the West and southern Texas have seen little or no precipitation. Parts of New England, the central and the southern Atlantic states west to central Tennessee have also recorded drier than normal conditions.

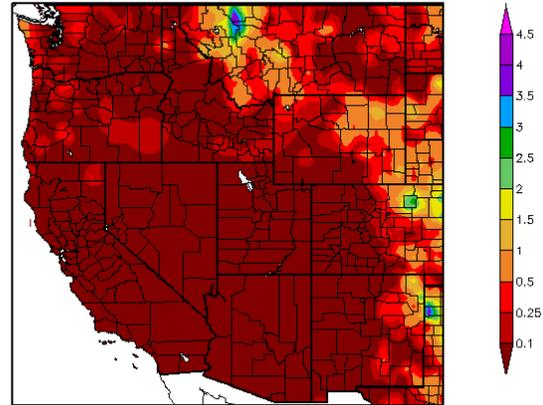
*This preliminary daily PRISM precipitation anomaly map contains all available network data, including SNOTEL data, and is updated periodically as additional data become available and are quality controlled.*

# Weekly Snowpack and Drought Monitor Update Report

The [ACIS 7-day](#) total precipitation map shows mainly dry conditions. Scattered thunderstorms are beginning to pop up in areas along the eastern edge of the western states.

Little, if any, precipitation occurred over vast areas of the West. A small area of heavy precipitation did occur over the northern Rockies, and some in the western Great Plains.

Precipitation (in)  
6/19/2014 - 6/25/2014



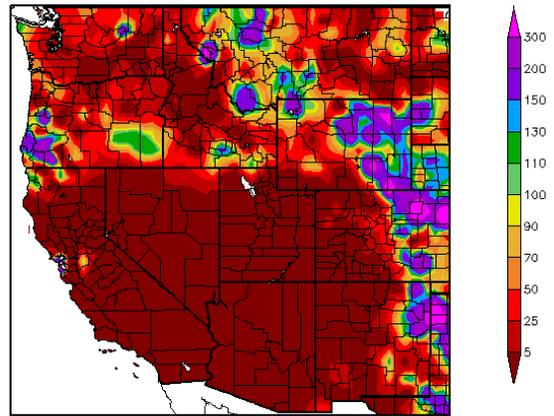
Generated 6/26/2014 at HPRCC using provisional data.

Regional Climate Centers

As would be expected based on the map above, this percent of normal [map](#) reflects the heaviest scattered precipitation falling across the northern Rockies, and the central and southern Great Plains.

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

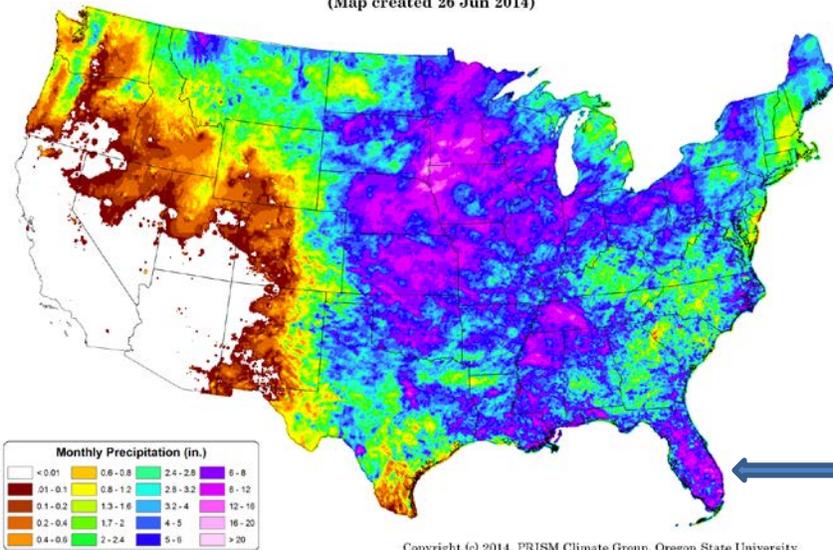
Percent of Normal Precipitation (%)  
6/19/2014 - 6/25/2014



Generated 6/26/2014 at HPRCC using provisional data.

Regional Climate Centers

Total Precipitation: 01 June 2014 - 25 June 2014  
Period ending 7 AM EST 25 Jun 2014  
(Map created 26 Jun 2014)



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

So far for June 2014 the total precipitation was extremely heavy across the Great Plains from Canada to the lower Mississippi River Valley, and in scattered areas of the East, especially in Florida.

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

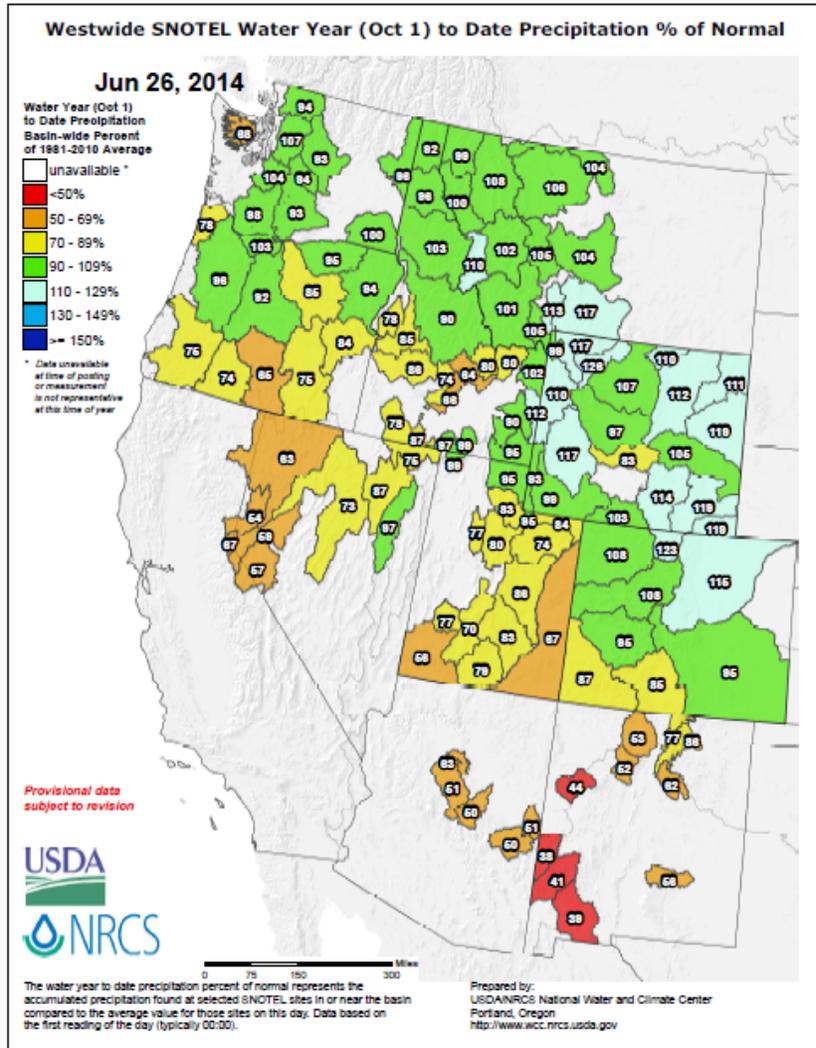
# Weekly Snowpack and Drought Monitor Update Report

For the [2014 Water Year](#) that began on October 1, 2013, central Montana, most of Wyoming, and northern Colorado are experiencing surpluses.

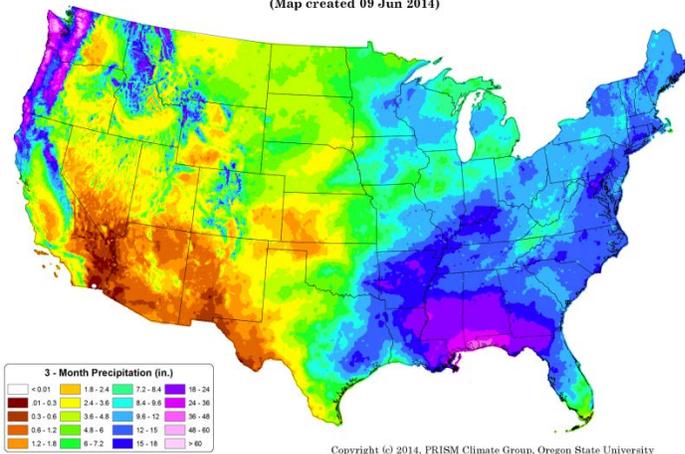
Near average conditions dominated the northern half of the Cascades, the northern half of Idaho, northwestern-most Montana, the Lower Bear River in eastern Utah and southeast Idaho, and parts of the southern half of Colorado.

The largest deficits are centered over southern Oregon, the Sierra Nevada Mountains 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: March 2014 - May 2014  
Period ending 7 AM EST 31 May 2014  
(Map created 09 Jun 2014)



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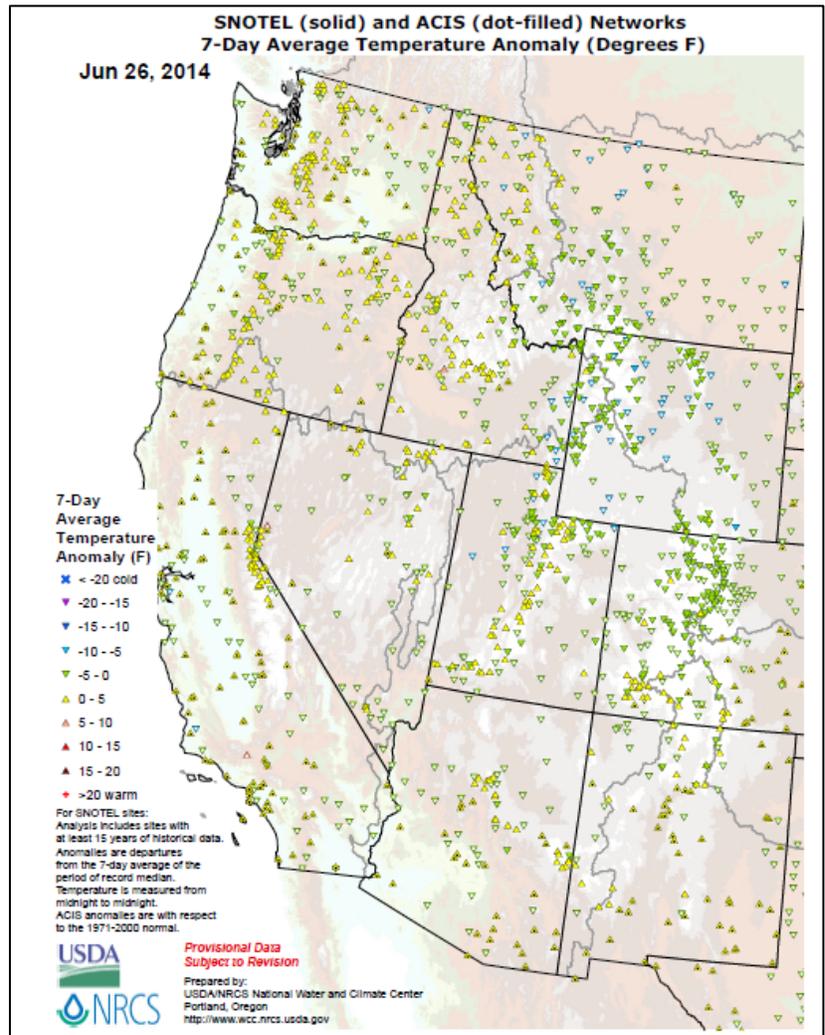
The three-month period (March - May) shows that the eastern half of the nation received precipitation in the range from 5 to greater than 24 inches.

On the other hand, parts of the West received totals less than 3 inches. The exceptions in the West are over the northern Rockies and Cascades, where totals exceeded 24 inches.

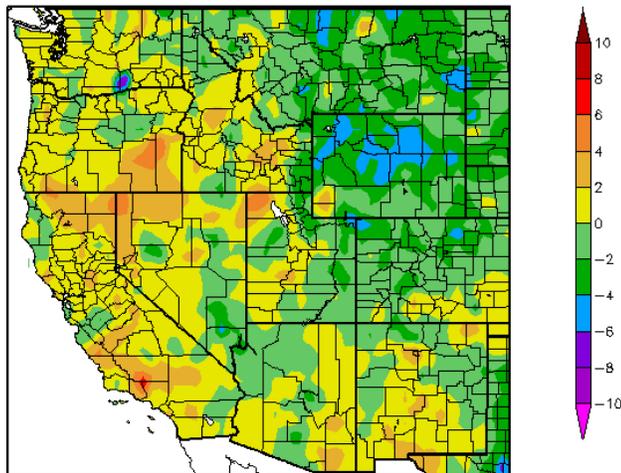
# Weekly Snowpack and Drought Monitor Update Report

## Temperature

[SNOTEL](#) and [ACIS 7-day temperature anomaly](#) shows temperatures near normal west of the Rockies. Cool to near normal temperatures prevailed from the Rockies east over Montana, Wyoming, and Colorado.



Departure from Normal Temperature (F)  
6/19/2014 – 6/25/2014



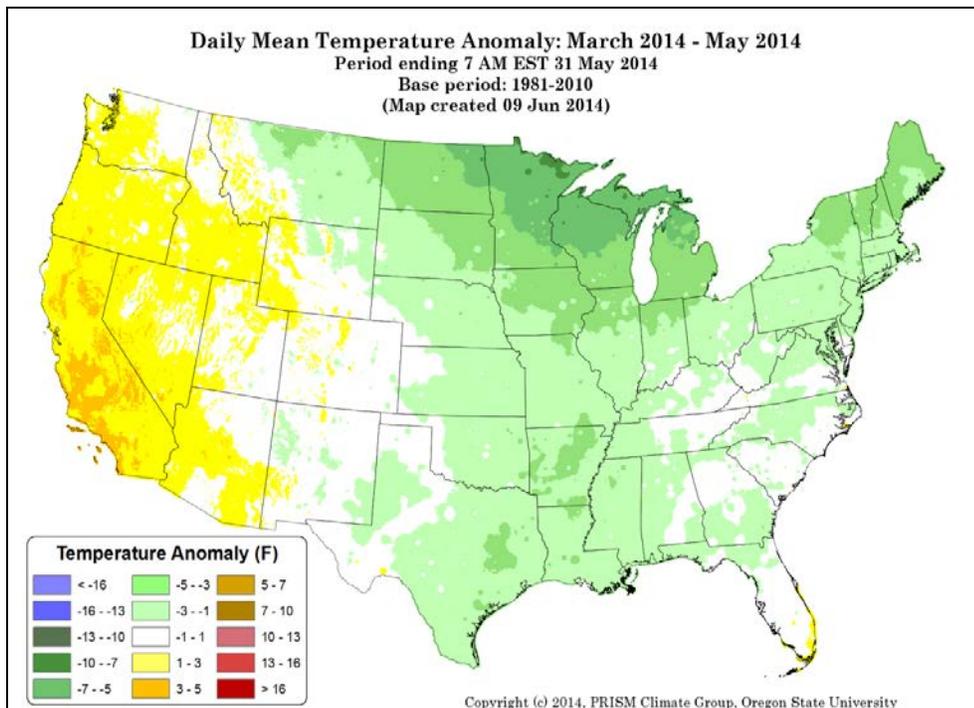
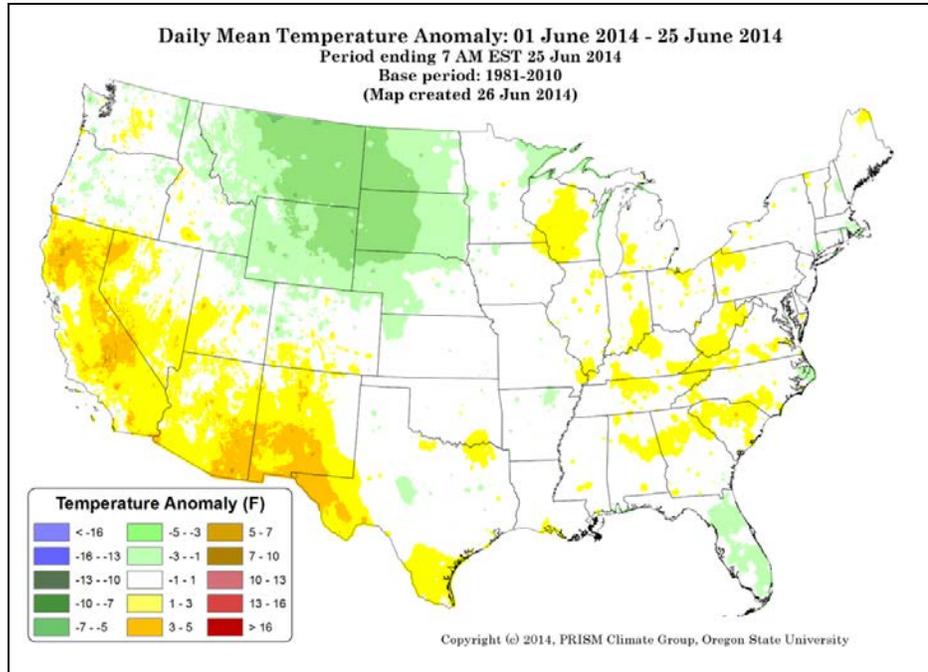
[ACIS](#) 7-day average temperature anomalies, ending June 25, show the greatest negative temperature departures scattered over the Great Plains (<-4°F). The greatest positive temperature departures occurred in southern California (>+6°F).

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.

During June 2014, the temperature anomaly [map](#) shows a cold pattern over the northern Great Plains, centered over eastern Montana and Nevada ( $<-7^{\circ}\text{F}$ ). Above normal temperatures dominated California and the southern parts of New Mexico, Arizona, and southwest Texas ( $>+5^{\circ}\text{F}$ ).



Spring 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 ( $>+3^{\circ}\text{F}$ ). The remainder of the country reported cool temperatures this spring, with the coolest temperatures in the upper Midwest ( $<-7^{\circ}\text{F}$ ).

# Weekly Snowpack and Drought Monitor Update Report

## Weather and Drought Summary

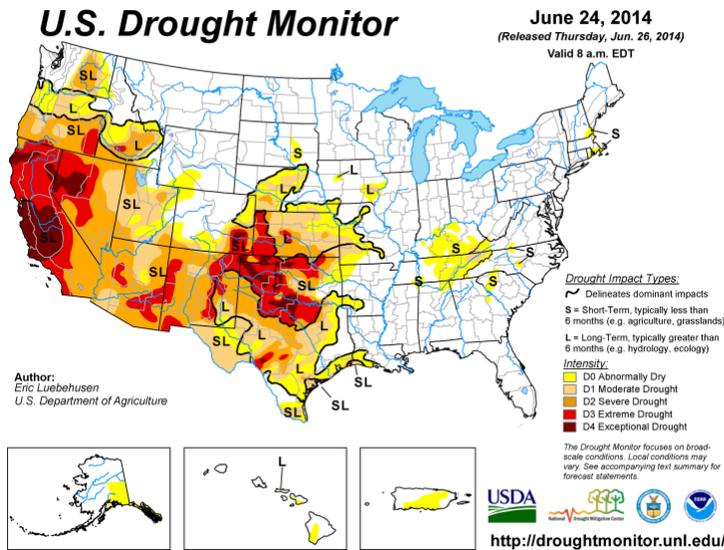
### National Drought Summary – June 24, 2014

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 35.03 percent of the area in moderate drought or worse, compared with 35.55 percent a week earlier.

For all 50 U.S. states and Puerto Rico, the U.S. Drought Monitor showed 29.26 percent of the area in moderate drought or worse, compared with 29.70 percent a week earlier.”



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

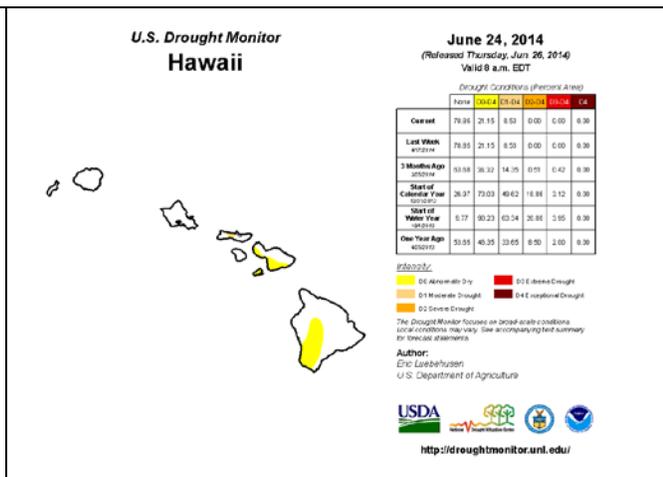
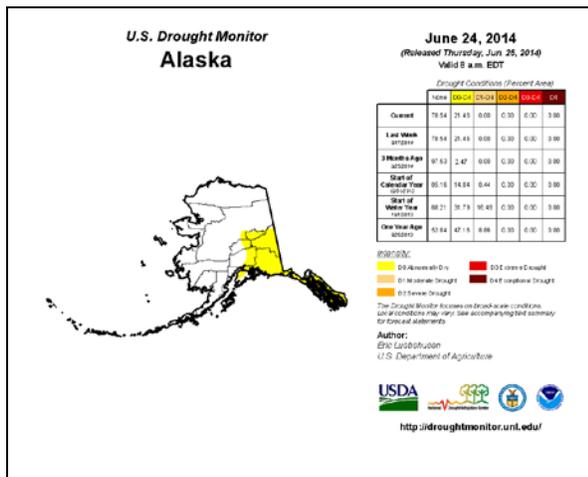
[Current Drought Monitor](#) weekly summary. The exceptional D4 levels of drought are scattered across CA, NV, CO, TX, OK, and NM.

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:

- ✓ [Watch AgDay TV](#)
- ✓ [Drought Impacts Webinar Series](#)
- ✓ [Quarterly Climate Summary and Outlooks for the Great Lakes, Midwest and Missouri Basin States](#)
- ✓ [The Spring 2014 edition of DroughtScope](#)
- ✓ [U.S. drought conditions stable in April; improvements unlikely in western states and much of plains](#)



“The [49<sup>th</sup>](#) and [50<sup>th</sup>](#) 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

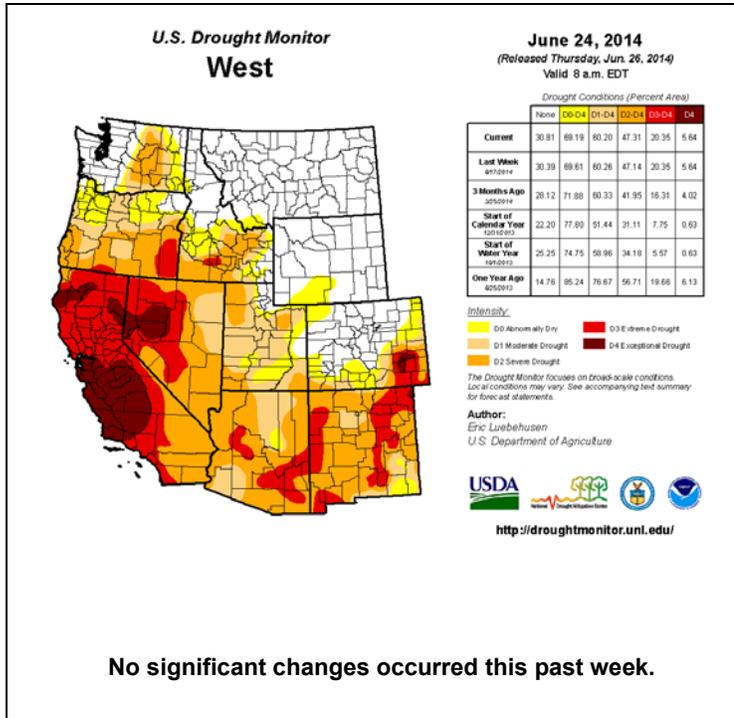
## Risk Management Web Resources

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:

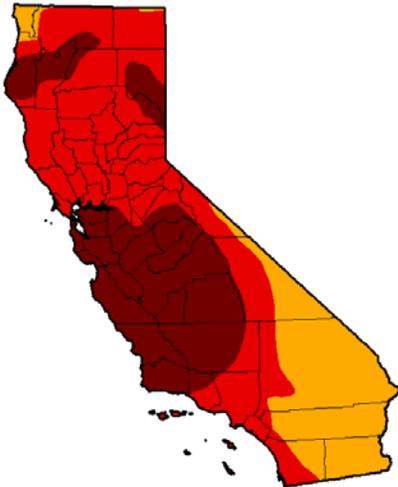
- [Beef prices hit U.S. record and are still rising](#) – June 17
- [Grazing on federal land under threat because of drought](#) - June 15
- [Hillshire takes Tyson deal, drops its own bid for Pinnacle Foods](#) – June 16
- [Oregon - Council mulls options for drought response](#) – June 18
- [Idaho - Water supplies still vary across state](#) - June 18

[Click to enlarge maps](#)



## State with D-4 Exceptional Drought

### U.S. Drought Monitor California



**June 24, 2014**  
(Released Thursday, Jun. 26, 2014)  
Valid 8 a.m. EDT

	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	0.00	100.00	100.00	100.00	76.69	32.98
<b>Last Week</b> 6/16/14	0.00	100.00	100.00	100.00	76.69	32.98
<b>3 Months Ago</b> 3/25/14	0.00	100.00	99.00	95.21	71.70	23.42
<b>Start of Calendar Year</b> 1/1/14	2.61	97.39	94.25	87.53	27.59	0.00
<b>Start of Water Year</b> 9/1/13	2.63	97.37	95.95	84.12	11.36	0.00
<b>One Year Ago</b> 6/25/13	0.00	100.00	98.21	92.61	0.00	0.00

**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

USDA     

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

Two D4 areas were added to northern California this past week, the large central California D4 area was reduced so there was no change in percent of the state in D4.

## CA Drought Information Resources

### Drought News from California

- [Wildfire contained in Big Basin State Park outside Boulder Creek](#) – June 18
- [WILDFIRES: Drought may not mean nasty fire season, UCR expert says](#) – June 19
- [California steaming: State's hot year worsens drought](#) – June 19
- [Fire, drought push wildlife into Sierra town](#) – June 16
- [Fish taken from California hatcheries amid drought](#) – June 17
- [Pleasanton OKs \\$200,000 for PR contact to explain steep drought penalties](#) – June 19
- [Dried up: Poverty in America's drought lands](#) – June 15
- [Drought closes Santa Cruz Mountains campground](#) – June 16
- [Drought is a drain on California lake, reservoir tourism](#) – June 17
- [Amid drought, Bay Area water use down just 2 percent](#) – June 17
- [Water flows boosted in American River to block salty incursion to Delta](#) – June 17

# Weekly Snowpack and Drought Monitor Update Report

## State with D-4 Exceptional Drought

### U.S. Drought Monitor Colorado

**June 24, 2014**  
(Released Thursday, Jun. 26, 2014)  
Valid 8 a.m. EDT

	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	50.84	49.13	26.49	17.30	9.32	1.88
Last Week	50.84	49.13	26.49	17.30	9.32	1.88
3 Months Ago	20.39	61.62	22.92	14.93	6.06	1.47
Start of Calendar Year	10.04	47.94	22.33	13.54	4.51	1.47
Start of Water Year	24.91	75.09	37.88	12.21	4.15	1.47
One Year Ago	0.08	100.00	100.00	79.45	38.21	11.54

**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

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

**No changes have occurred this past week.**

## State with D-4 Exceptional Drought

### U.S. Drought Monitor New Mexico

**June 24, 2014**  
(Released Thursday, Jun. 26, 2014)  
Valid 8 a.m. EDT

	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	96.89	84.50	28.24	0.42
Last Week	0.00	100.00	96.89	84.50	28.24	0.42
3 Months Ago	0.49	98.51	87.43	65.00	24.00	0.00
Start of Calendar Year	0.79	99.81	75.71	52.89	1.96	0.00
Start of Water Year	1.66	90.24	74.82	27.01	3.39	0.00
One Year Ago	0.00	100.00	100.00	89.79	63.40	14.73

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

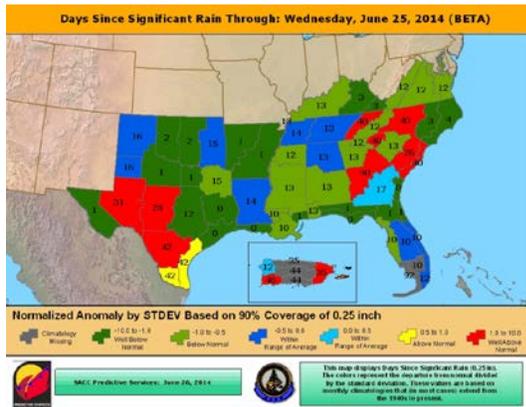
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

**Author:**  
Eric Luebbehusen  
U.S. Department of Agriculture

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

**No changes have occurred this past week.**

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](#)

## State with D-4 Exceptional Drought

### U.S. Drought Monitor Texas

**June 24, 2014**  
(Released Thursday, Jun. 26, 2014)  
Valid 8 a.m. EDT

	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	11.41	88.59	69.00	36.06	19.27	4.95
Last Week	10.45	89.55	70.95	41.30	21.50	6.96
3 Months Ago	14.73	85.27	67.43	41.85	24.97	3.48
Start of Calendar Year	28.48	71.52	43.84	21.15	5.02	0.79
Start of Water Year	6.62	93.38	70.95	25.08	4.01	0.12
One Year Ago	4.99	95.01	84.00	60.59	30.10	11.27

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

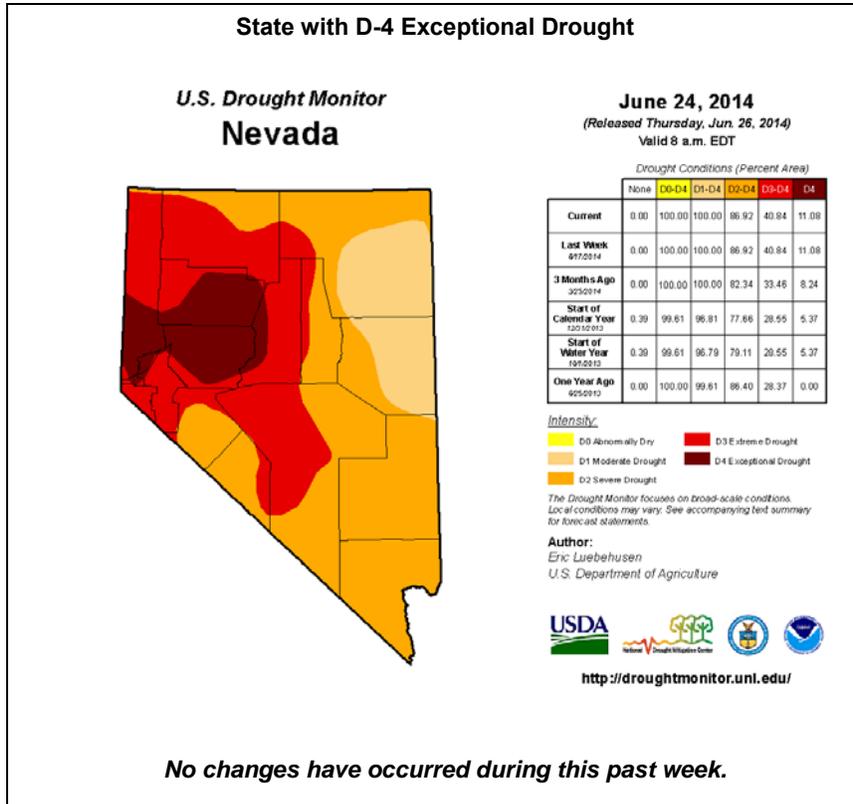
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

**Author:**  
Eric Luebbehusen  
U.S. Department of Agriculture

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

**A slight reduction in most drought categories occurred during the past week.**

# Weekly Snowpack and Drought Monitor Update Report



## Nevada Drought News:

[Deepening Drought threatens Nevada's very way of life](#) – June 22

[Drought: Nevada farmers watching the land die](#) – June 25

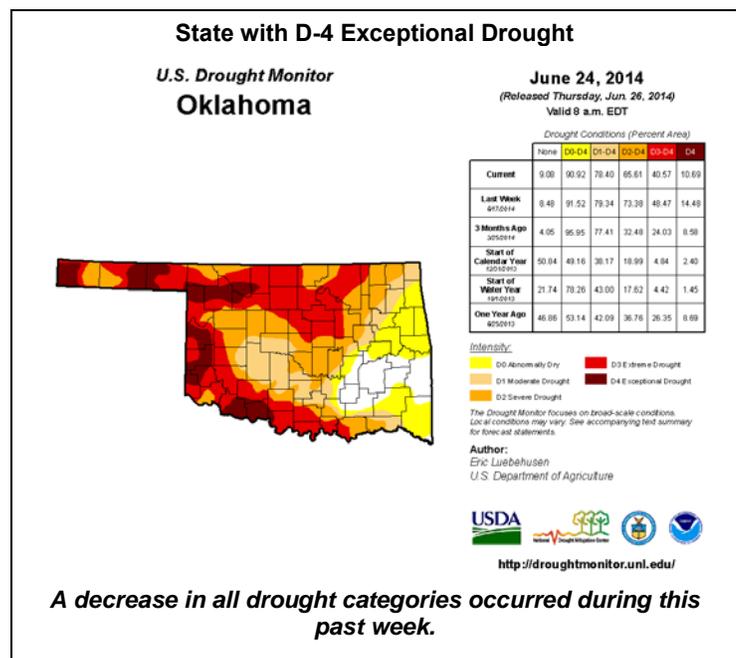
## Related Area News

[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](#)

Kansas News:

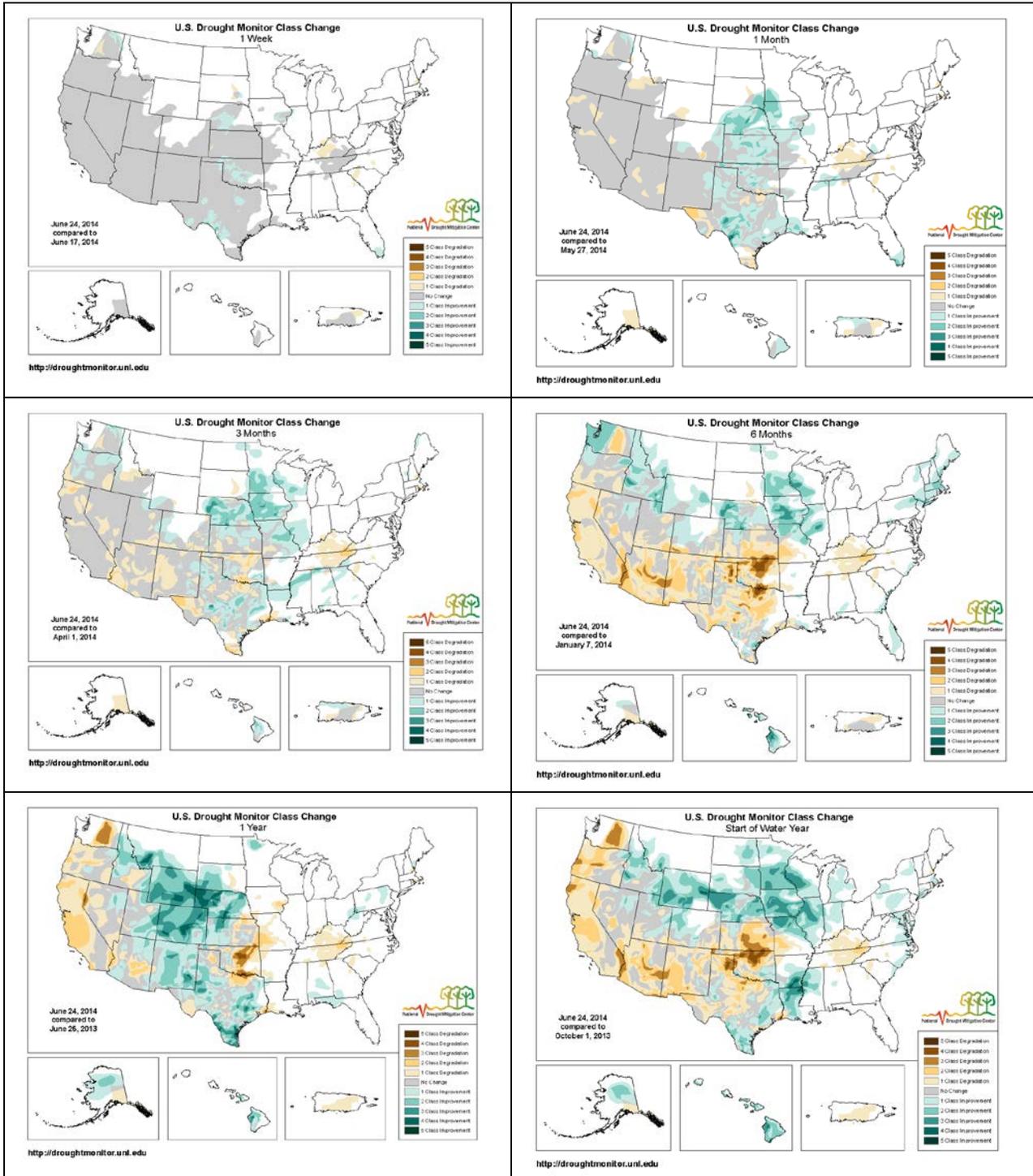
[Irony: Wet fields slow harvest of drought-ravaged wheat](#) - June 19



# Weekly Snowpack and Drought Monitor Update Report

## Changes in Drought Monitor Categories

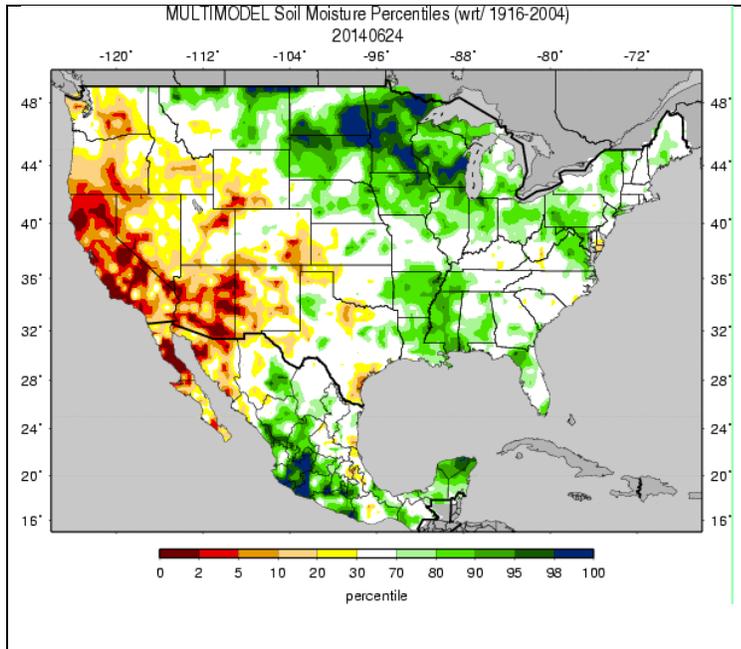
### Over Various Time Periods



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 have deteriorated significantly (lower right map).

# Weekly Snowpack and Drought Monitor Update Report

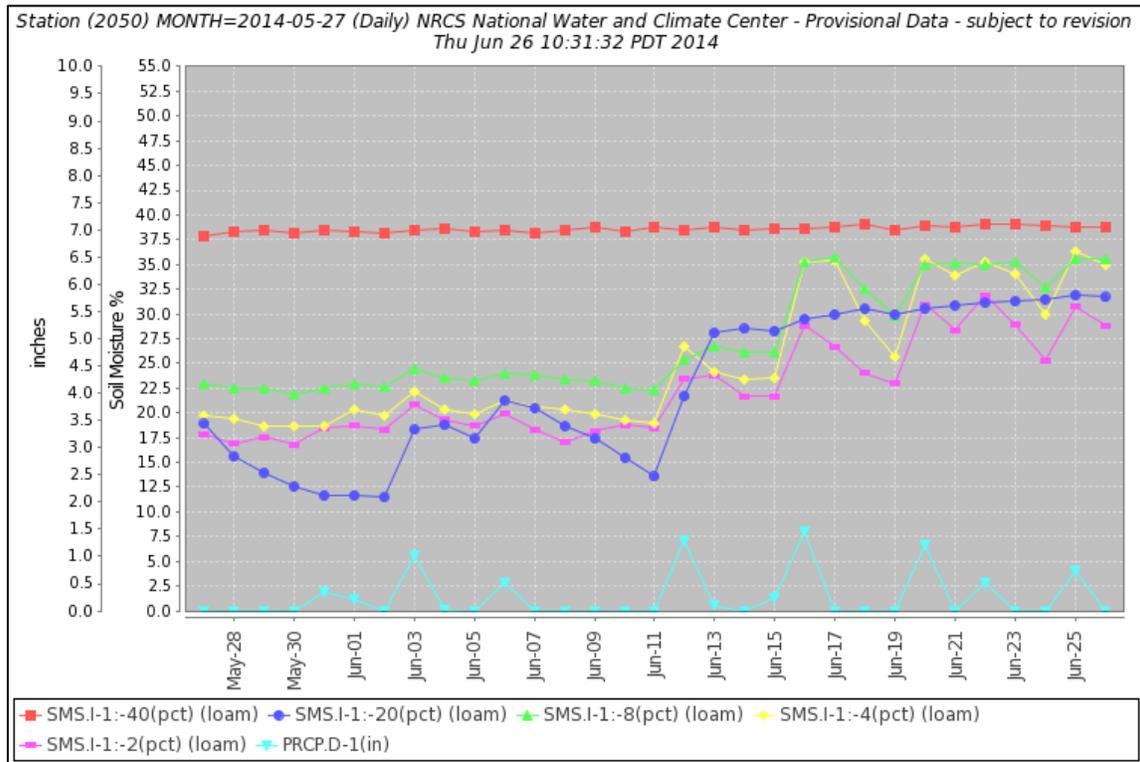
## Soil Moisture



Soil moisture ranking in [percentile](#) as of June 10 shows dryness over California, Arizona, New Mexico, and parts of Washington, Oregon, and Idaho. Scattered dryness is 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 and parts of the mid-Atlantic 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)

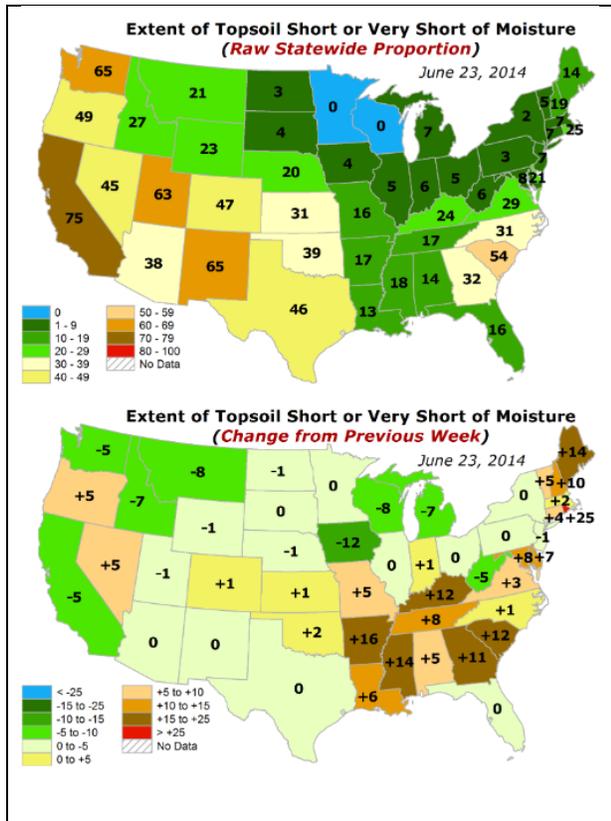


This NRCS resource shows soil moisture data at the [Glacial Ridge SCAN station](#) located in northern Minnesota. Note the increases in soil moisture trend as a result of recent heavy rainfall (precipitation trace in light blue). The deeper soil sensor at 20 inches depth also shows an increase in soil moisture from the heavy rain, though the 40 inch depth has yet to respond.

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](#).

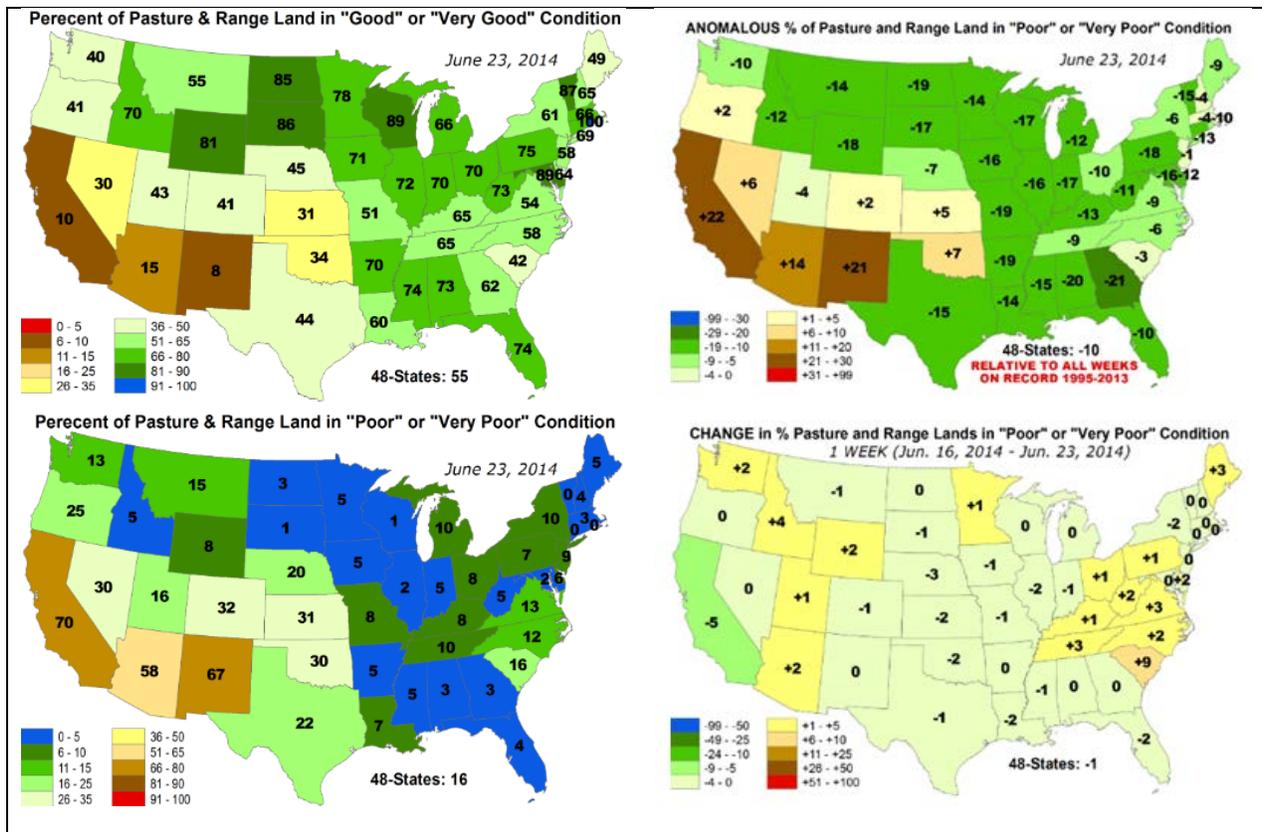
# Weekly Snowpack and Drought Monitor Update Report

## Topsoil and Pasture & Rangeland Conditions



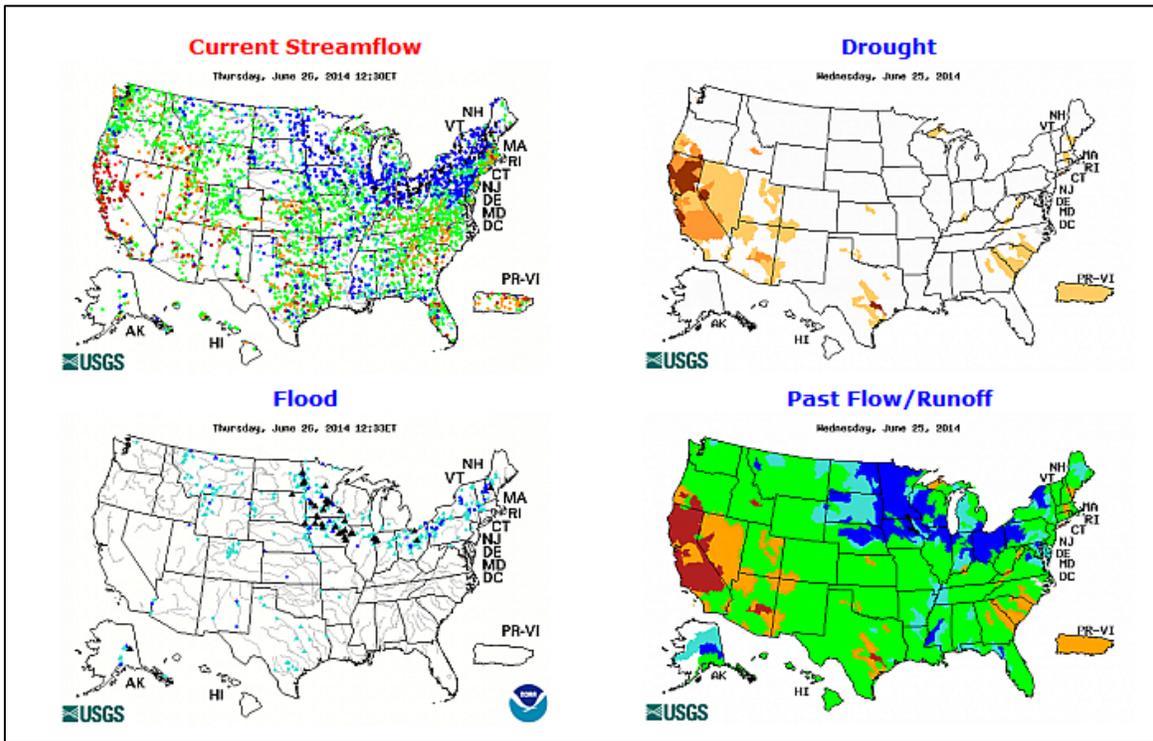
↪ Topsoils are exceptionally poor (top) over New Mexico, California, Utah, and Washington with values representing more than 60 percent worse conditions than the median for this time of year (bottom panel). Locations in the northern Great Plains across to New England, and along the Mississippi River 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, the Southwest, and the southern half of the Great Plains. Conditions have remained about the same over this past week.



# Weekly Snowpack and Drought Monitor Update Report

## Streamflow



Streams are high over much of the Mississippi River basin, and the upper Ohio Valley and east to New England (left maps). Flooding is occurring in many areas of the upper Mississippi River, the Red River of the North in North Dakota, Minnesota, Iowa, northern Illinois, and scattered flooding to the northeast (lower left map).

## National Long-Range Outlook



Click maps to enlarge and update

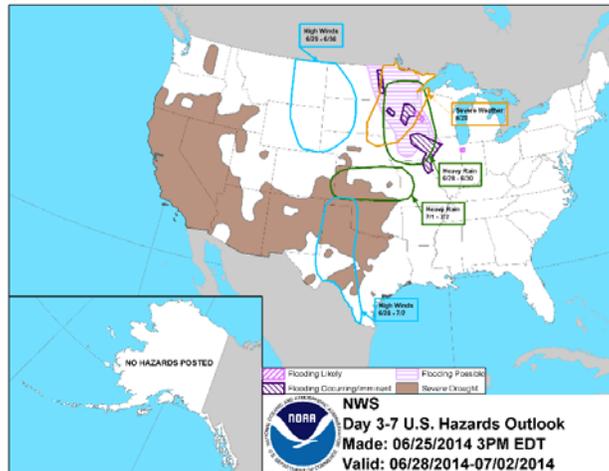
During the next three months, there is a risk of flooding in a few places over the Red River of the North in North Dakota, the upper Midwest, the middle Mississippi River Valley and west-central Florida. Currently, **2** gauges have a greater than 50% chance to experience major flooding; **12** gauges for moderate flooding; **29** gauges for minor flooding.

These numbers represent little change since last week.

## Weekly Snowpack and Drought Monitor Update Report

### Weather hazards

Heavy rains are expected over the Kansas. Flooding is widespread across Minnesota, Iowa and the eastern edges of the Dakotas during the next several days.



### National Drought Summary for June 24, 2014

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

#### **“Summary**

For the second consecutive week, moderate to heavy rainfall brought additional drought relief from the Midwest southward across the central Plains into Texas. Meanwhile, drought conditions prevailed from California into the central and southern Rockies.

#### **Alaska, Hawaii, and Puerto Rico**

There were no changes made to the drought depiction in Alaska and Hawaii this week. In Alaska, cool weather and locally heavy showers were noted across much of the state, with streamflows in the northern Abnormal Dryness (D0) areas exhibiting some recovery. Additional rainfall over the ensuing weeks would likely warrant some D0 reduction. In Hawaii, some areas of leeward dryness are developing but remained fairly localized. In Puerto Rico, D0 was expanded into the northeastern quarter of the island where 90-day rainfall deficits (50 to 70 percent of normal) has resulted in streamflows drooping locally below the 10th percentile.

#### **Central Plains**

Conditions remained largely unchanged on the central High Plains during the monitoring period, as hot weather (readings as high as 100°F) offset the light to moderate showers (0.1 to 1 inch) which dotted western portions of the region. A small expansion of Extreme Drought (D3) in southwestern Kansas reflected increasingly poor vegetation health as indicated by satellite, with potential for additional degradations in this area if rain fails to materialize soon. Farther east, however, locally heavy downpours — with totals averaging 2 to locally more than 4 inches — resulted in some removal of Moderate (D1) and Severe (D2) Drought in central and southwestern Nebraska. In these areas, precipitation over the past 30 days has averaged 150 to 260 percent of normal. In Kansas, showers were mostly too light to warrant any additional improvement on top of last week’s drought reduction, though locally heavy downpours (2 to 4 inches) allowed for minor decrease of Extreme Drought (D3) in southern portions of the state.

#### **Delta**

After last week’s beneficial showers, mostly dry, warm weather prevailed in the Moderate (D1) and Severe (D2) Drought areas of southwestern Louisiana. Soil moisture remains limited in these locales due to pronounced dryness over the past 90 days (locally less than 50 percent of normal). The rest of the Delta remained free of drought. NOTE: At the end of the period, locally heavy showers and thunderstorms developed over the Delta’s drought areas, and the resultant benefit —if any — will be addressed in next week’s U.S. Drought Monitor.

#### **Mid-Atlantic and Northeast**

Drier-than-normal conditions prevailed over eastern portions of the region during the monitoring period, which coupled with declining streamflows led to an expansion of Abnormal Dryness (D0) in southeastern

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New Hampshire and neighboring locales. Precipitation over the past 60 days has totaled 50 to 70 percent of normal in the D0 areas, and streamflows have likewise dipped below the 20th percentile. In contrast, showers dotted the Mid-Atlantic region, with locally more than 2 inches of rain bordering areas with little — if any — rainfall. Overall, soil moisture remained adequate to abundant for pastures and summer crops.

### Midwest

Moderate to heavy rainfall further reduced or eradicated drought but submerged low-lying fields and caused additional river flooding in western and central portions of the region. Persistent showers and thunderstorms doused areas from central Nebraska into Iowa and northern Illinois with 2 to 4 inches of rainfall, with locally higher amounts. The rain was more than sufficient to warrant additional 1-category improvements over the western half of the Corn Belt. Despite the additional heavy downpours, long-term precipitation deficits linger (less than 70 percent of normal over the past 12 months) in west-central and southeastern Iowa; consequently, a small area of Moderate Drought (with a Long Term, or “L”, designation) remained where shortfalls are most pronounced. In contrast, short-term dryness (90-day rainfall averaging 50 to 70 percent of normal) led to a small increase of Abnormal Dryness (D0) in southeastern South Dakota.

### Ohio Valley and Southeast

Pronounced short-term rainfall deficits and above-normal temperatures led to an expansion of Abnormal Dryness (D0) in Kentucky and along the Ohio River. In the expanded D0 area, 30-day rainfall has totaled locally less one-third of normal, which coupled with temperatures up to 7°F above normal caused a rapid decline in soil moisture and streamflows. Farther south, locally dry conditions from east-central Georgia northward into western South Carolina warranted D0 expansion, with precipitation over the past 60 days tallying 35 to 60 percent of normal. Localized dryness and declining streamflows also led to the introduction of a small D0 area south of Asheville, NC, where streamflows have dropped below the 10th percentile. In Florida, another round of locally heavy showers and thunderstorms (generally 1 to 4 inches, with some reports as high as 7 inches) facilitated the removal of the remaining D0 in southern-most portion of the state. The rest of the southeastern quarter of the nation saw scattered showers and thunderstorms, which were sufficient to prevent any introduction or expansion of D0.

### Southern Plains and Texas

Despite temperatures in the 90s, rainfall during the week was sufficient to warrant modest to significant reductions in drought from northern and central Oklahoma southward into Texas. Showers and thunderstorms dropped 2 to locally more than 4 inches of rain from the eastern Oklahoma panhandle southeastward into central Oklahoma and east-central Texas. In particular, there were numerous reports of more than 3 inches west of Oklahoma City, and several totals in excess of 7 inches southwest of Dallas-Fort Worth. Consequently, drought intensity declined in areas where the heaviest rain fell, although long-term impacts continue (i.e. reservoir storage and ground water supplies). Farther south, a slow-moving disturbance drifted north from northeastern Mexico along the Rio Grande River Valley, dropping moderate to excessive rainfall (2 to 5 inches, with localized amounts in excess of 8 inches) from Laredo to the western Edwards Plateau. Likewise, a separate area of showers and thunderstorms (1 to 3 inches) swept across Texas' Trans-Pecos region later in the week. These two areas of rain resulted in notable decreases in drought intensity and coverage across southern and western Texas.

### Western U.S.

Variable conditions in the north contrasted with ongoing drought elsewhere. In addition, the return of hot weather in California and the Southwest accelerated moisture losses and increased irrigation requirements.

In northern portions of the region, a slow-moving Pacific storm generated locally heavy rain and mountain snow across the northern Rockies, with showers from this system (locally more than inch) spilling into northeastern drought areas of Washington. Consequently, modest reductions were made to drought intensity and coverage in the mountains and foothills of northeast Washington, where Water Year precipitation was mostly near normal (80-95 percent of normal). Appreciable rainfall bypassed southwestern portions of Columbia River Valley, where Moderate (D1) and Severe (D2) Drought were expanded to reflect poor crop conditions and much-below-normal Water Year precipitation (40-50 percent of normal). To further illustrate the drought's impacts, the USDA-NASS reported Washington's winter wheat slipped 1 percentage point to 27 percent poor to very poor as of June 22, with only 30 percent rated good to excellent.

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Farther south, California and the Great Basin will most likely have to wait until the 2014-15 Water Year for drought relief. In northern and central California, Exceptional Drought (D4) reflected abysmal 2013-14 Water Year precipitation totals; from northern portions of the Coastal Range to Mt. Shasta, precipitation since October 1 totaled 30 to 50 percent of normal (deficits of 16 to 32 inches). The corresponding Standardized Precipitation Indices (SPI), which helps quantify precipitation in terms of drought and historical probability, are well into the Extreme (D3) to Exceptional (D4) categories. Similar precipitation rankings (D3 or D4 equivalent) are prominent for the past Water Year from San Francisco south to Santa Barbara and east to the Sierra Nevada, including most of the San Joaquin Valley.

In the central Rockies and Four Corners, there were no changes to this week's drought depiction. Extreme Drought (D3) remains entrenched across west-central Arizona and along the Arizona-New Mexico border, with Water-Year precipitation in these locales totaling less than half of normal (locally below 30 percent of normal) .

### **Looking Ahead**

*Warm, humid, and unsettled conditions will persist from the central and southern Plains to the Mid-Atlantic and Southeast Coast. Embedded within this large area of unsettled weather, the greatest potential for heavy rain will be over the Upper Midwest and northern Plains as well as the central and western Gulf Coast region. Showers are also expected across the Northwest — though the rain is expected to once again bypass primary Northwestern drought areas — and in the Northeast. The NWS 6-10 day outlook for July 1-5 calls for wetter-than-normal conditions east of the Mississippi and from the Four Corners into the central Plains as well as southern Texas. Conversely, drier-than-normal weather is expected from the Northwest east to the northern Plains. Above-normal temperatures are anticipated across much of the nation, with cooler-than-normal conditions confined to the Upper Midwest, Texas, and the coastal Pacific Northwest.”*

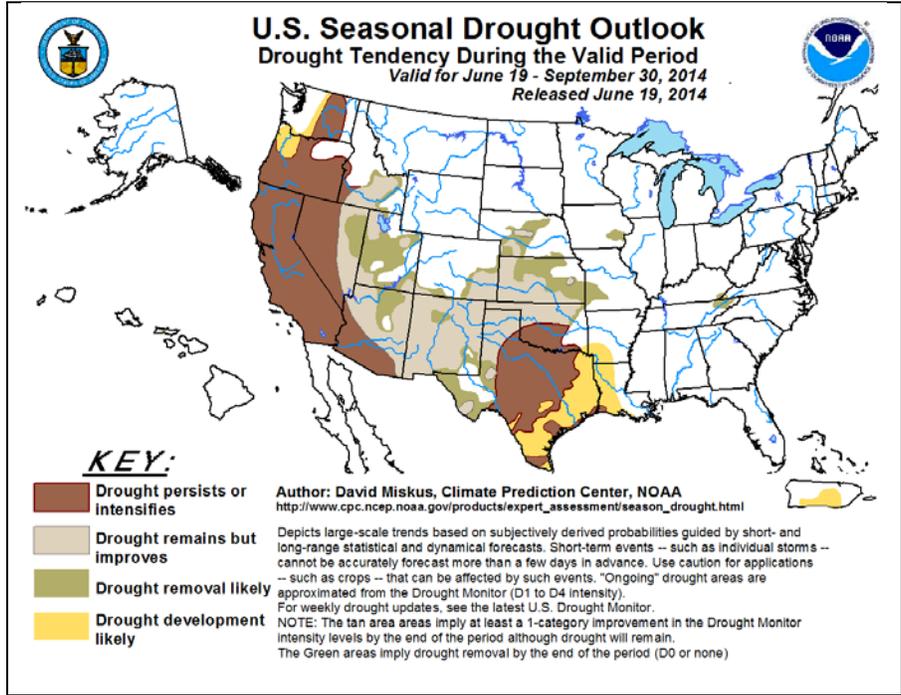
# Weekly Snowpack and Drought Monitor Update Report

## Supplemental Drought Information

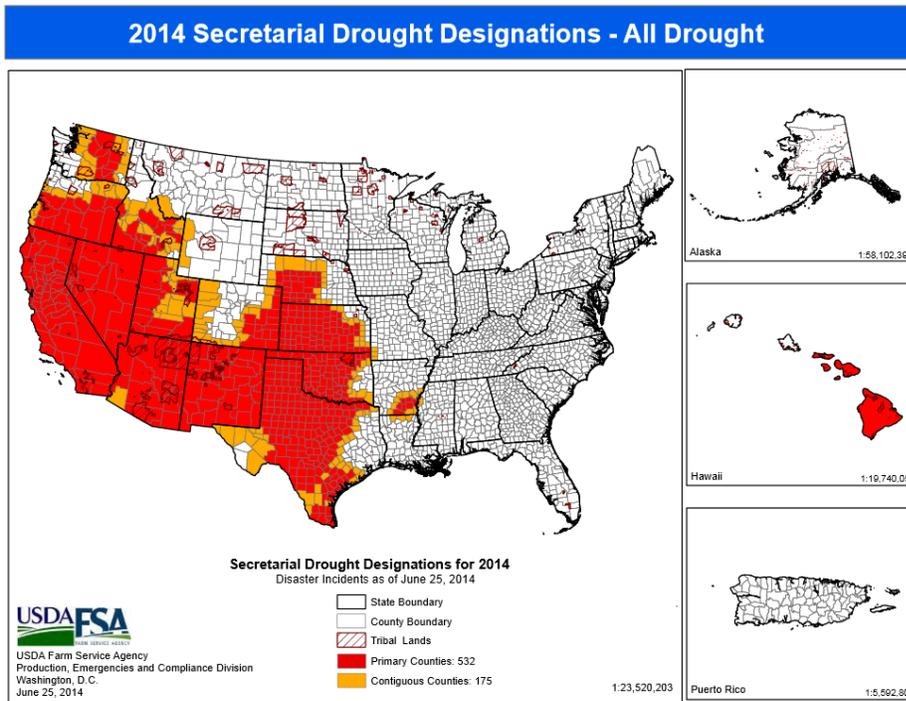
### Seasonal Drought Outlook

[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.



## 2014 Secretarial Drought Designations



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

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

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

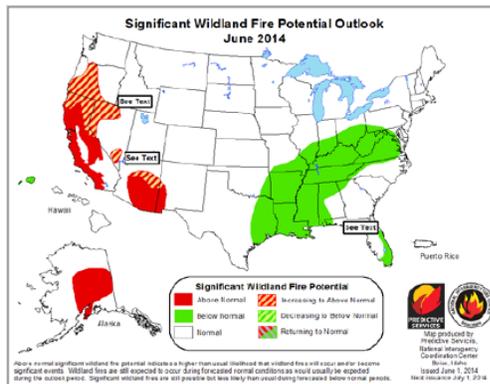
# Weekly Snowpack and Drought Monitor Update Report

## Fire Potential Outlook

### June Forecast

Above normal fire potential will expand to include northern California, Nevada, and much of Oregon. Most of Alaska will continue to see above normal significant fire potential.

Below normal fire potential will continue over the lower and mid-Mississippi, Tennessee, and Ohio Valleys.



## 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.

### Drought, climate change threatening grazing on federal lands in western U.S.

Public lands ranchers in the Snake River Plain in Idaho and other parts of the western U.S. are finding it increasingly difficult to maintain their herds because drought, sparse vegetation, shorter grazing periods, climate change and related vegetation changes were resulting in less forage. The U.S. Bureau of Land Management sent letters to ranchers, warning them that the range in Idaho cannot support livestock. Ranchers were told to cut herd numbers by 30 percent for the spring turnout.

### Kansas wheat

Kansas wheat yields were disappointing so far, say industry experts, and recent rains have made fields muddy. Yields in Sumner County in south central Kansas have averaged in the range of 30-plus bushel per acre, although the normal yield ranges from 40 to 45 bpa. Average yields around Medicine Lodge, roughly 60 miles to the west, ranged from 7 to 17 bpa, with an average of 10 to 13 bpa. The quality has been fairly good, but the quantity was poor. Wheat from southern and central Kansas has had a higher protein content, but lower than normal yields.

### Food companies trying to gain edge during drought, other challenges

Large food companies were buying up smaller ones in an effort to remain competitive as drought, disease and food recalls challenge profitability. Meat company mergers were an especially strategic move as prices for pork, beef and chicken climb. Beef prices were at record highs, and demand for chicken was at its highest in three years.

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### **Coffee prices rising due to drought in Brazil**

Starbucks is the latest company to raise prices on its packaged coffee after drought hurt the coffee crop in Brazil. J.M. Smucker raised prices on its Folgers and Dunkin' Donuts coffees weeks ago.

### **Fire restrictions in California**

Cal Fire issued a backyard burn ban for 31 million acres of land under their jurisdiction.

"The increase in fire activity this year, coupled with record-setting drought conditions, requires us to take every step possible to prevent new wildfires from starting," said Cal Fire Director Ken Pimlott.

Since the start of the year, Cal Fire has responded to 2,118 fires, nearly 70 percent more than in recent years.

### **Fish moved from American River hatchery in California**

The California Department of Fish and Wildlife moved rainbow trout from a hatchery on the American River and fingerling steelhead from a nearby hatchery because it was feared that water temperatures may be too high in a few weeks for the fish to survive. The fish were being released months ahead of schedule and were smaller than they would normally be when released, which likely means that fewer fish will survive.

In such situations when water temperatures are too warm, state officials would usually ask the federal Bureau of Reclamation to release some water from Folsom Lake, but the lake water was too warm to be of use.

### **River flows boosted to keep salty water out of Sacramento-San Joaquin Delta**

The U.S. Bureau of Reclamation began releasing more water from Nimbus Dam to push salty water from the San Francisco Bay out of the Sacramento-San Joaquin Delta since the Delta provides water to 23 million Californians and 3 million acres of cultivated land. The flow was increased from 2,000 cubic feet per second to 2,500 cfs. Unusually high tides in the forecast will increase the likelihood of salinity intrusion.

Keeping salinity within acceptable standards in the Delta is urgent because it takes weeks to months to flush the salt out and return the salinity to acceptable levels. State law also requires that salinity be controlled for the benefit of water users who take water straight from the Delta.

The California Department of Water Resources began releasing more water from Oroville Reservoir on the Feather River late in the week of June 9 to lower the salinity. The U.S. Bureau of Reclamation increased releases from Keswick Reservoir on the Sacramento River also to bring the Delta salinity down.

For more detailed impact information, see the [Drought Impact Reporter](#).

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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](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)

### Supplemental Information for the Week

**The combined Ocean and Land Global temperatures for May 2014 were the highest in the record going back to 1880.**

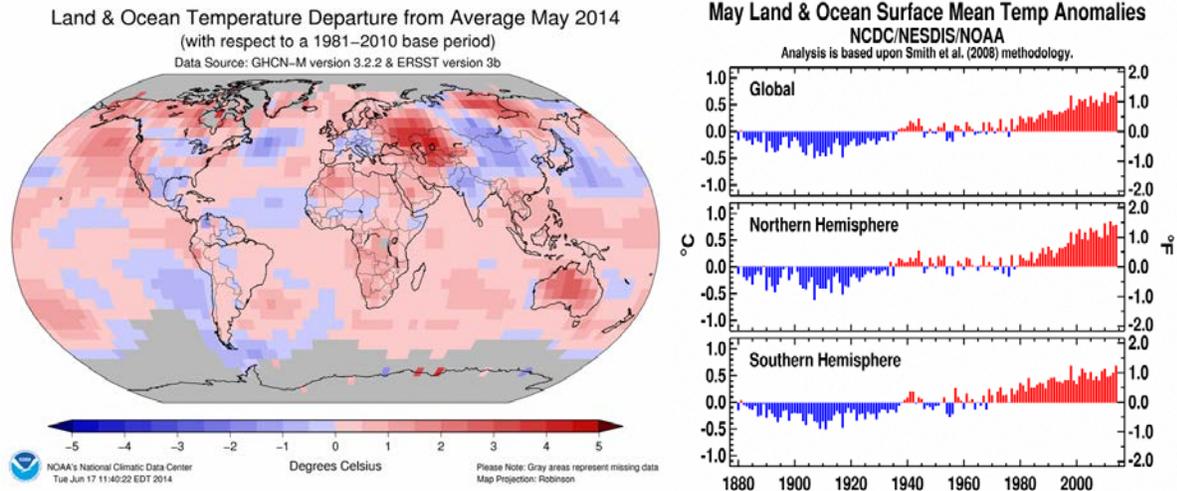
NOAA National Climatic Data Center, State of the Climate: Global Analysis for May 2014, published online June 2014, retrieved on June 25, 2014 from <http://www.ncdc.noaa.gov/sotc/global/>.

“With records dating back to 1880, the combined average temperature over global land and ocean surfaces reached a record high for May, at 0.74°C (1.33°F) higher than the 20<sup>th</sup> century average. This surpassed the previous record high anomaly of 0.72°C (1.30°F) set in 2010. Four of the five warmest Mays on record have occurred in the past five years: 2010 (second warmest), 2012 (third warmest), 2013 (fifth warmest), and 2014 (warmest); currently, 1998 has the fourth warmest May on record. Additionally, May 2014 marked the 39<sup>th</sup> consecutive May and 351<sup>st</sup> consecutive month (more than 29 years) with a global temperature above the 20<sup>th</sup> century average. The last below-average global temperature for May occurred in 1976 and the last below-average temperature for any month occurred in February 1985.

The average land surface temperature for the globe was the fourth highest for May in the 135-year period of record, at 1.13°C (2.03°F) higher than average. The seven warmest Mays over land have all been observed during the 21<sup>st</sup> century, with the four warmest occurring since 2010. At the hemispheric scale, while the Northern Hemisphere land areas were sixth warmest for that particular region of the globe, the

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Southern Hemisphere land was record warm for May, surpassing the previous highest May temperature (set in 2002) by 0.17°C (0.31°F).”



### 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

Acting Deputy Chief, Soil Science and Resource Assessment