



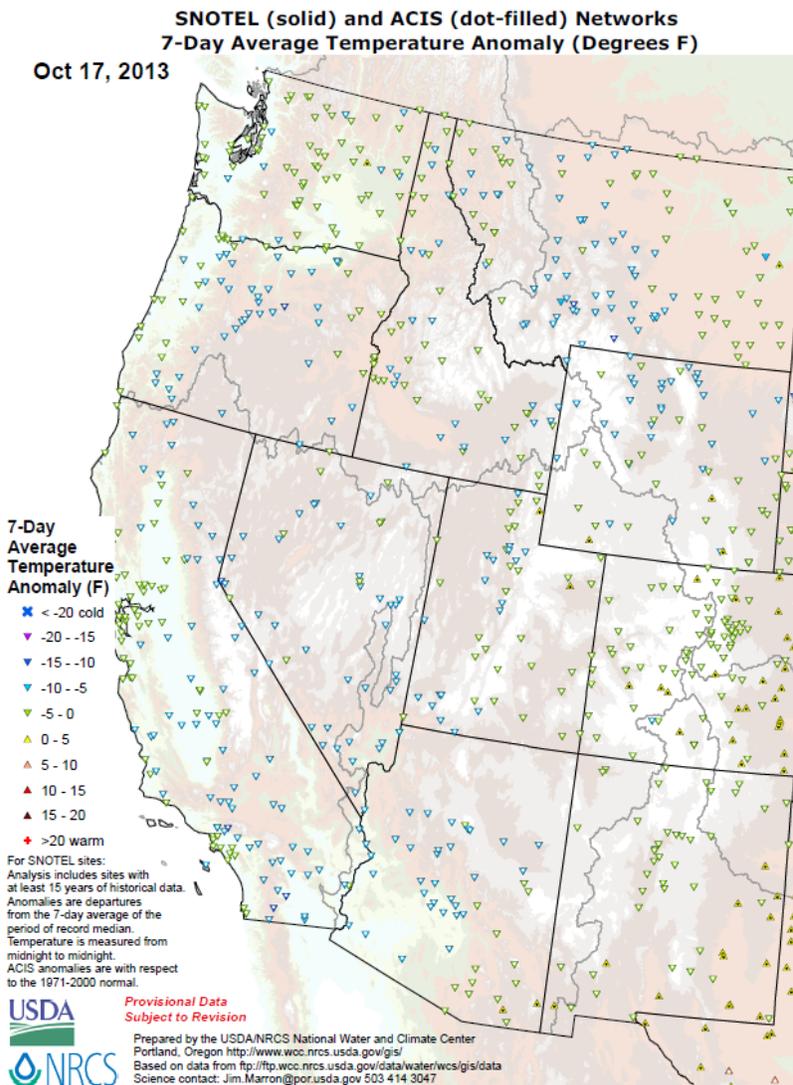
Natural Resources Conservation Service  
 P.O. Box 2890  
 Washington, D.C. 20013

## Weekly Snowpack / Drought Monitor Update

October 17, 2013

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### Temperature



SNOTEL and ACIS [7-day temperature anomaly](#) map shows a cooler than average week across the western states, especially over the Northern Rockies.

*Click on map to see latest available update.*

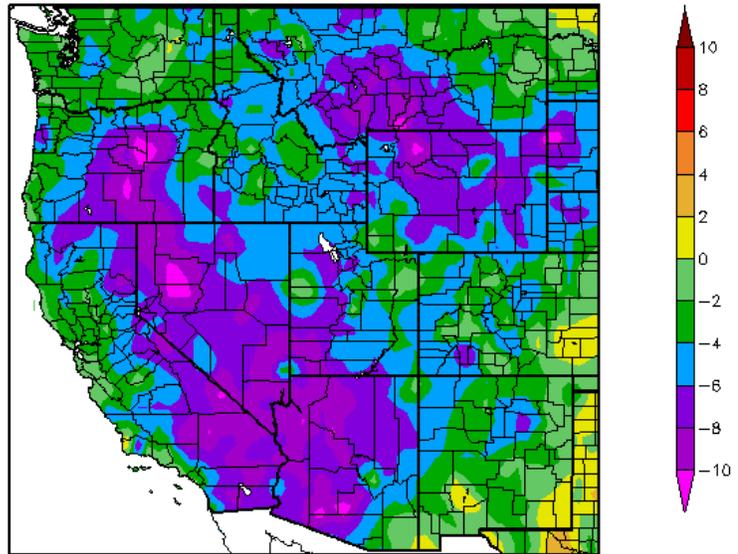
## Weekly Snowpack and Drought Monitor Update Report

[ACIS](#) 7-day average temperature anomalies, ending October 16, show the greatest negative temperature departures confined to the Great Basin and Yellowstone National Park ( $< -10^{\circ}\text{F}$ ). The greatest positive departures occurred over westernmost high plains ( $> +2^{\circ}\text{F}$ ).

*This map currently does not use SNOTEL data, but is expected to later this year.*

For more figures, see the latest Western Water Assessment's Intermountain West Climate [Dashboard](#). See the [Westwide Drought Tracker](#).

Departure from Normal Temperature (F)  
10/10/2013 – 10/16/2013



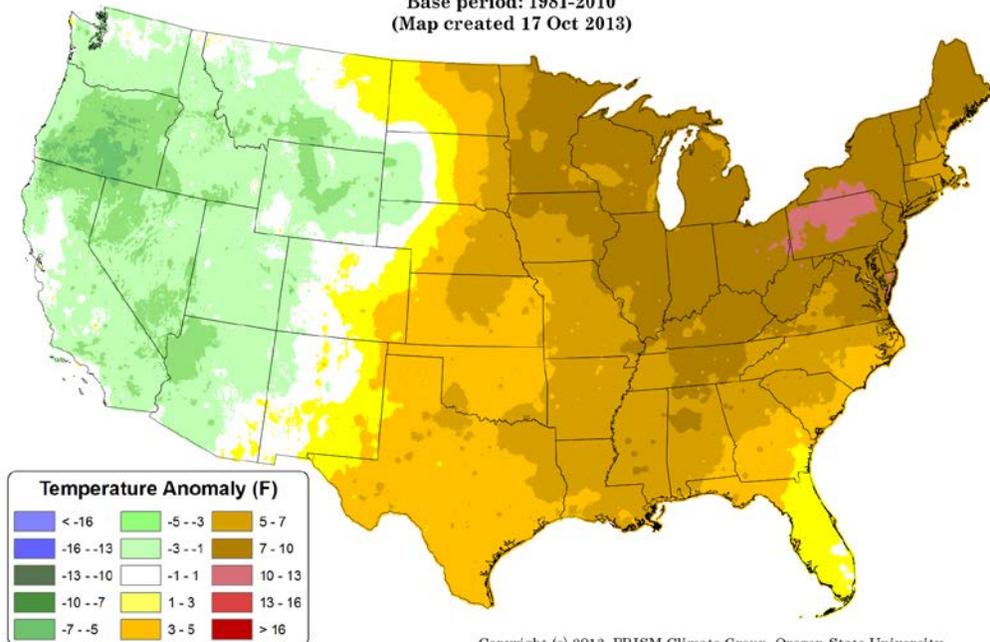
Generated 10/17/2013 at HPRCC using provisional data.

Regional Climate Centers

This preliminary [PRISM](#) temperature map, updated [daily is now available to the public](#).

*The map contains all available network data, including SNOTEL data, and will be updated periodically as additional data become available and are quality controlled.*

**Daily Mean Temperature Anomaly: 01 October 2013 - 16 October 2013**  
Period ending 7 AM EST 16 Oct 2013  
Base period: 1981-2010  
(Map created 17 Oct 2013)



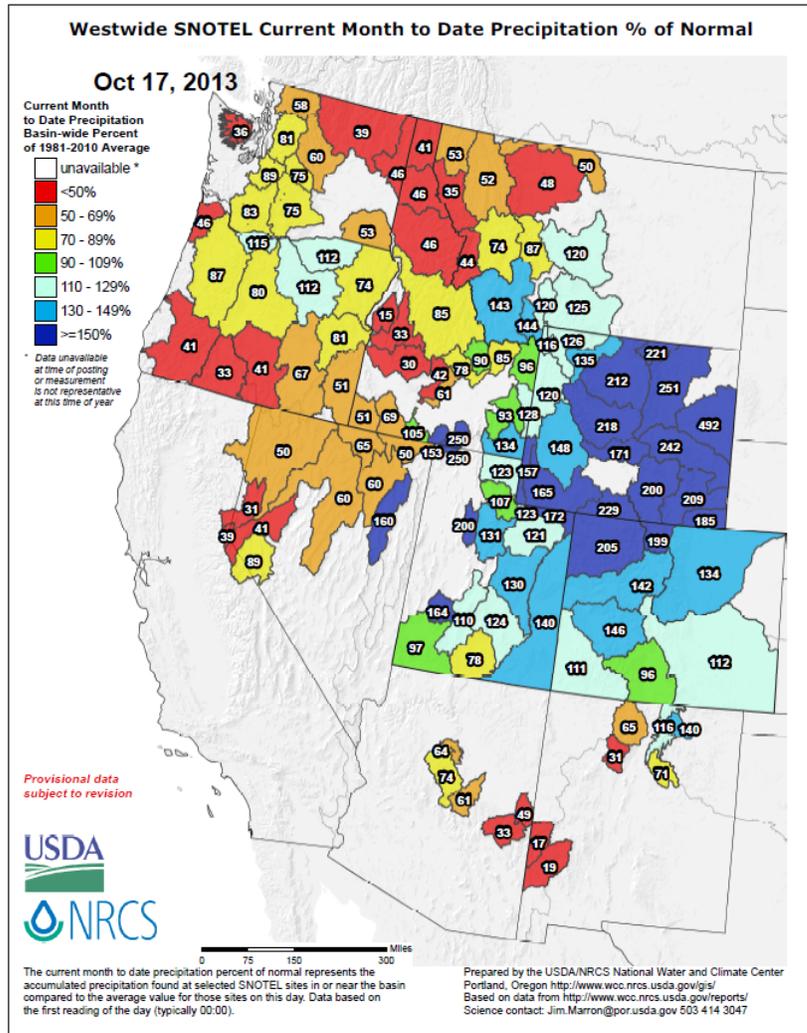
Copyright (c) 2013, PRISM Climate Group, Oregon State University

Thus far for October, temperatures have been considerably warmer than normal over 60 percent of the eastern states; especially over the northern Pennsylvania (e.g.,  $> 10^{\circ}\text{F}$ ). The remainder of the nation has been cooler than normal; especially Oregon (e.g.,  $< -5^{\circ}\text{F}$ ).

# Weekly Snowpack and Drought Monitor Update Report

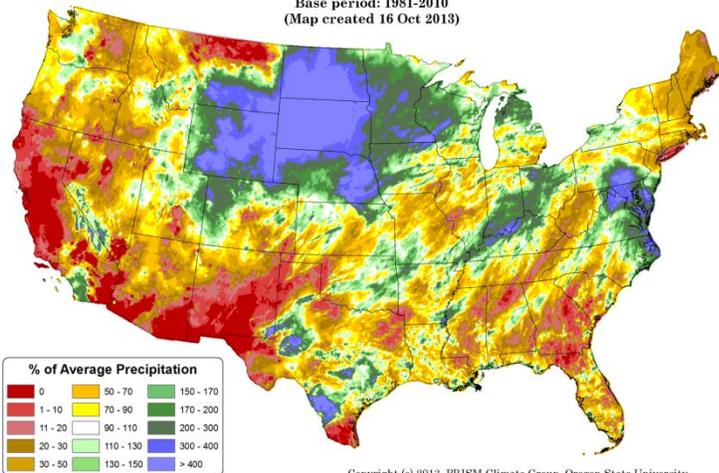
## Precipitation

SNOTEL [month to date](#) precipitation percent of normal map shows a very wet month thus far across southern Montana, Wyoming, Colorado, and much of Utah. Snow accumulation is still a bit early to occur with the exception of the highest peaks across the West.



*Click images for enlarged latest available update*

**Total Precipitation Anomaly: 01 October 2013 - 15 October 2013**  
 Period ending 7 AM EST 15 Oct 2013  
 Base period: 1981-2010  
 (Map created 16 Oct 2013)



September accumulated total precipitation through 7 a.m. on October 15 shows a rainfall pattern that has favored parts of the northern plains and mid-Atlantic Coast. Drier conditions dominate over the remainder of the U.S.

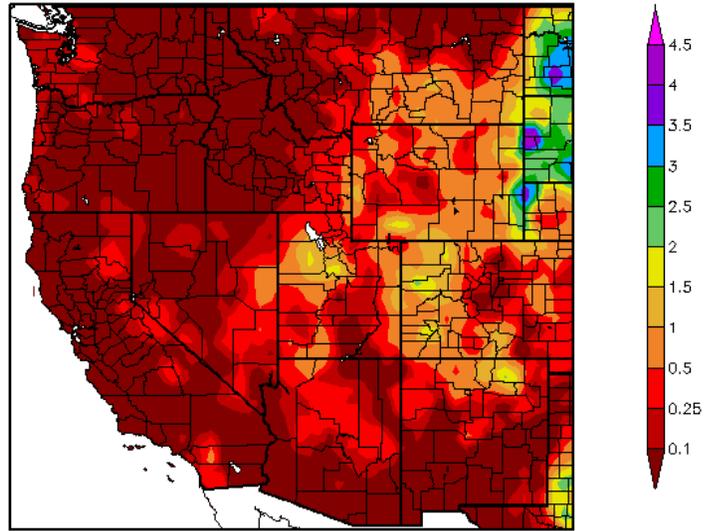
This preliminary [PRISM](#) precipitation map is **now available to the public**. It contains all available network data, including SNOTEL data, and will be updated periodically as additional data become available and are quality controlled.

## Weekly Snowpack and Drought Monitor Update Report

[ACIS 7-day](#) average precipitation amounts for the period ending October 16 show unusually heavy rains impacted the northwestern-most high plains. The remainder of the West experienced scattered rains, with the eastern half of the western states experiencing the largest amounts.

*This map currently does not incorporate SNOTEL data, but is expected to later this year.*

Precipitation (in)  
10/10/2013 – 10/16/2013



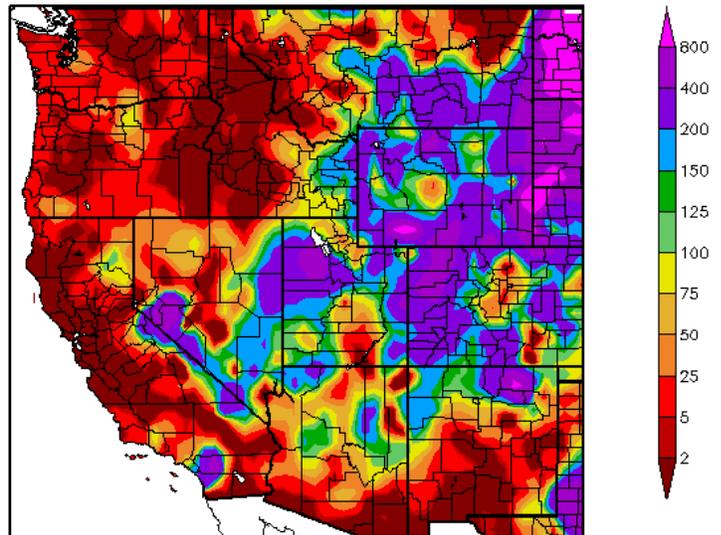
Generated 10/17/2013 at HPRCC using provisional data.

Regional Climate Centers

This [map](#) shows that any rains that fall in normally dry regions for this time of year result in very high percentages of normal; easily exceeding four to eight times the expected (average) weekly amounts.

*This map currently does not use SNOTEL data, but is expected to later this year.*

Percent of Normal Precipitation (%)  
10/10/2013 – 10/16/2013



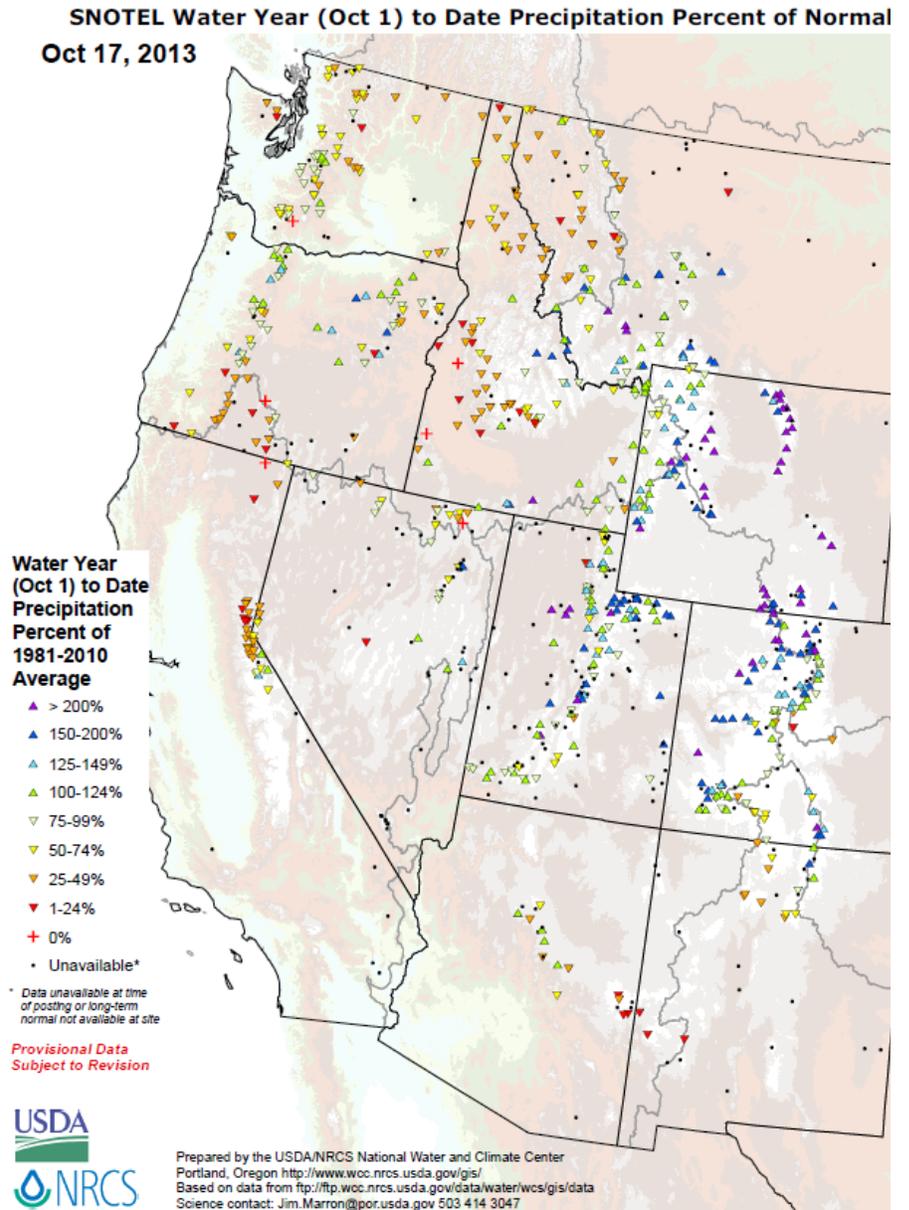
Generated 10/17/2013 at HPRCC using provisional data.

Regional Climate Centers

## Weekly Snowpack and Drought Monitor Update Report

For the [2014 Water Year](#) that began on October 1, 2013, the early season pattern has thus far favored the central Rockies and Wasatch and Uintah Ranges in Utah.

For additional information, daily reports by SNOTEL site are available [here](#).



*Click image for latest available update*

# Weekly Snowpack and Drought Monitor Update Report

## Weather and Drought Summary

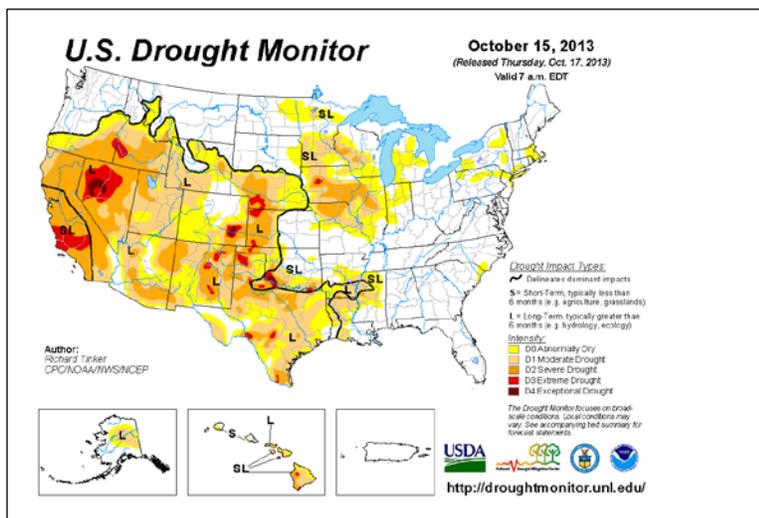
**National Drought Summary – October 15, 2013.** The following **Weather and Drought Summary** is provided by this week's NDMC.

**The Rockies Westward to The Pacific Coast:** The wet week that affected much of Wyoming, Colorado, and adjacent areas continued a generally wet pattern dating back several weeks. Since mid-August, large swaths across south-central Montana, northern and central Wyoming, southeastern Wyoming, and much of northeastern Colorado have received 2 to locally 5 times their normal amount of precipitation. As a result, additional improvements were made in central and eastern portions of both states. Through the rest of the dry areas in the West, only light precipitation fell, if any, keeping dryness and drought unchanged from last week. So far this year, less than half of normal precipitation has been reported in the southwestern half of Nevada and all but the southern and northern extremes of California, along with isolated sections of the Intermountain West. Only about 25% of normal has been reported for the last 9 1/2 months in much of central and western California. Elsewhere,

It was another wet week across the northern half of the Plains. At least an inch fell on a broad area from most of Nebraska (except interior western sections), easternmost Wyoming and adjacent Nebraska, the Dakotas, much of central and western Minnesota, and northwestern Iowa. Many of these areas recorded 2 to 4 inches of precipitation, with isolated totals of up to 6 inches recorded in parts of the Dakotas. In the past 30 days, over 4 inches of precipitation has fallen on the central and southern Dakotas, near the Nebraska/Wyoming border, in eastern Nebraska, and in a more broken pattern across Minnesota and Wisconsin. Excessive amounts of 6 to 10 inches were fairly widespread across and adjacent to the central and southern Dakotas, eastern Nebraska, and along the Nebraska/Wyoming border.

Scattered moderate to heavy precipitation also fell on some of the higher elevations in the central Rockies and Hawaii while light to locally moderate amounts were measured in other areas of dryness and drought across the country.

For drought impacts definitions for the figures below, click [here](#).



Current [Drought Monitor](#) weekly summary. The exceptional D4 levels of drought are isolated across the southeastern Colorado and northwestern Nevada.

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](#).

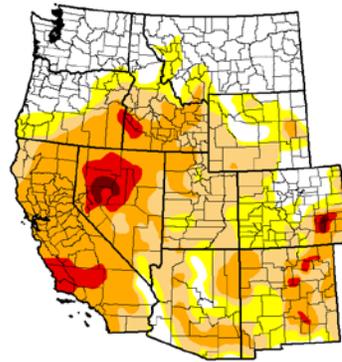
For more drought news, see [Drought Impact Reporter](#).

[Watch AgDay TV](#)

# Weekly Snowpack and Drought Monitor Update Report

- ✓ Drought Monitor for the [Western States](#)
- ✓ Drought Impact Reporter for [New Mexico](#)
- ✓ [California Data Exchange Center & Flood Management](#)
- ✓ [NIDIS Upper Colorado River Regional Drought Earlier Warning System](#)
- ✓ [Intermountain West Climate Dashboard](#)
- ✓ [Great Basin Dashboard](#)

## U.S. Drought Monitor West



October 15, 2013  
(Released Thursday, Oct. 17, 2013)  
Valid 7 a.m. EDT

	Drought Conditions (Percent Area)					
	None	D0-D1	D2-D3	D3-D4	D4	D4+
Current	27.53	72.47	56.15	32.44	5.34	0.63
Last Week (10/08/13)	27.44	72.56	56.06	32.09	5.34	0.63
3 Months Ago (7/15/13)	11.44	66.56	76.94	59.31	18.96	6.16
Start of Calendar Year (1/01/13)	24.39	75.61	69.31	45.04	18.51	2.15
Start of Water Year (10/01/12)	25.25	74.75	59.96	34.10	5.97	0.63
One Year Ago (10/15/12)	15.08	64.94	64.65	34.31	15.50	0.28

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

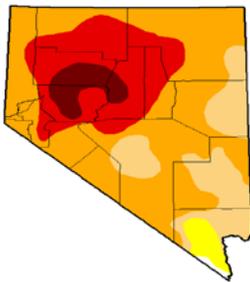
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.  
 Author: Richard Tinker  
 CPC/NOA/NWS/NCEP

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

Note that there was no significant change this week.

## States with some D-4 Drought

### U.S. Drought Monitor Nevada



October 15, 2013  
(Released Thursday, Oct. 17, 2013)  
Valid 7 a.m. EDT

	Drought Conditions (Percent Area)					
	None	D0-D1	D2-D3	D3-D4	D4	D4+
Current	6.43	86.54	90.61	79.11	26.55	5.37
Last Week (10/08/13)	6.43	86.52	90.79	79.11	26.55	5.37
3 Months Ago (7/15/13)	0.00	100.00	100.00	80.69	29.37	5.37
Start of Calendar Year (1/01/13)	0.00	100.00	54.13	62.77	18.43	0.06
Start of Water Year (10/01/12)	0.00	89.61	90.79	79.11	26.55	5.37
One Year Ago (10/15/12)	0.00	100.00	54.24	65.43	17.44	0.00

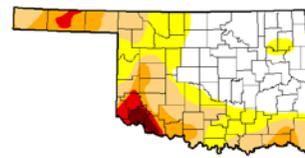
**Intensity:**  
 D0 Abnormally Dry      D3 D3 Severe Drought  
 D1 Moderate Drought      D4 D4 Exceptional Drought  
 D2 Severe Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.  
 Author: Richard Tinker  
 CPC/NOA/NWS/NCEP

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

Click on images to enlarge

### U.S. Drought Monitor Oklahoma



October 15, 2013  
(Released Thursday, Oct. 17, 2013)  
Valid 7 a.m. EDT

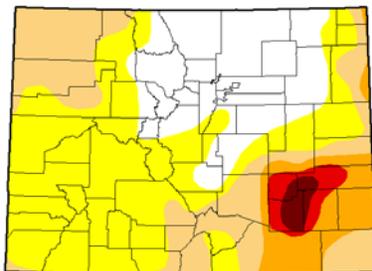
	Drought Conditions (Percent Area)					
	None	D0-D1	D2-D3	D3-D4	D4	D4+
Current	61.63	39.17	26.69	14.93	4.42	1.45
Last Week (10/08/13)	22.70	77.30	42.61	16.12	4.42	1.45
3 Months Ago (7/15/13)	24.52	75.69	59.65	26.13	20.29	4.32
Start of Calendar Year (1/01/13)	0.00	100.00	100.00	100.00	54.99	37.06
Start of Water Year (10/01/12)	31.74	73.26	43.60	17.82	4.42	1.45
One Year Ago (10/15/12)	0.00	100.00	100.00	66.83	69.75	25.11

**Intensity:**  
 D0 Abnormally Dry      D3 D3 Severe Drought  
 D1 Moderate Drought      D4 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: Richard Tinker  
 CPC/NOA/NWS/NCEP

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

### U.S. Drought Monitor Colorado



October 15, 2013  
(Released Thursday, Oct. 17, 2013)  
Valid 7 a.m. EDT

	Drought Conditions (Percent Area)					
	None	D0-D1	D2-D3	D3-D4	D4	D4+
Current	24.72	75.28	33.43	12.01	4.01	1.47
Last Week (10/08/13)	24.69	75.11	38.25	12.01	4.01	1.47
3 Months Ago (7/15/13)	0.00	100.00	98.12	83.12	33.91	16.72
Start of Calendar Year (1/01/13)	0.00	100.00	100.00	95.06	53.47	13.48
Start of Water Year (10/01/12)	24.91	75.09	37.88	12.01	4.01	1.47
One Year Ago (10/15/12)	0.00	100.00	100.00	91.36	51.05	14.01

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

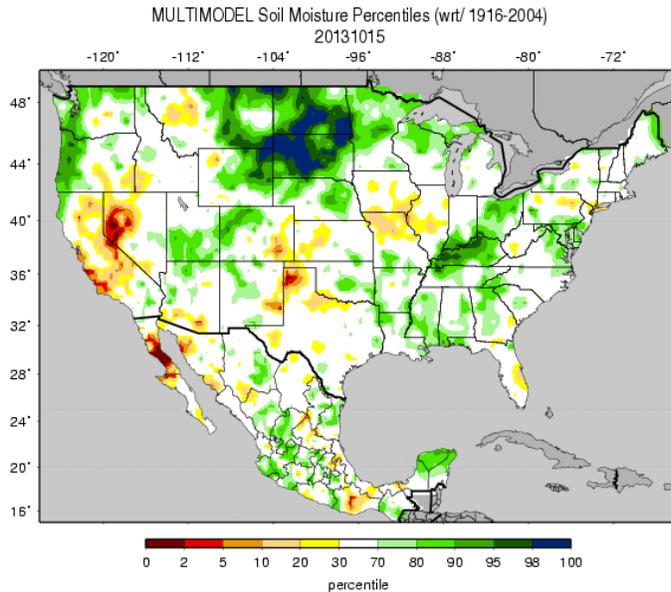
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.  
 Author: Richard Tinker  
 CPC/NOA/NWS/NCEP

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

Click on image to enlarge

# Weekly Snowpack and Drought Monitor Update Report

## Soil Moisture



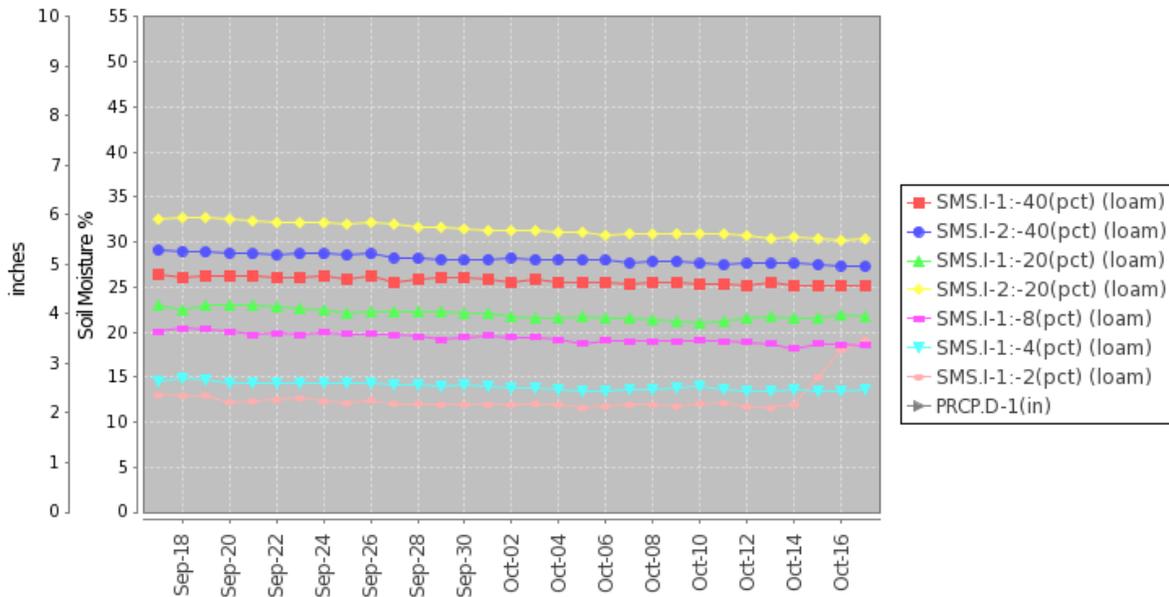
Soil moisture ranking in [percentile](#) as of October 15 shows considerable moisture over the Rockies, western Nevada, and much of the northern high plains. Excessive dryness exists over northern Texas, western Nevada, and central coastal California.

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 Health-unlock your farm's potential](#)

## Soil Climate Analysis Network ([SCAN](#))

Station (2120) MONTH=2013-09-17 (Daily) NRCS National Water and Climate Center - Provisional Data - subject to revision as of Thu Oct 17 10:58:02 PDT 2013



This NRCS resource shows a site over eastern Montana. Soil conditions are relatively moist at mid to deep levels.

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

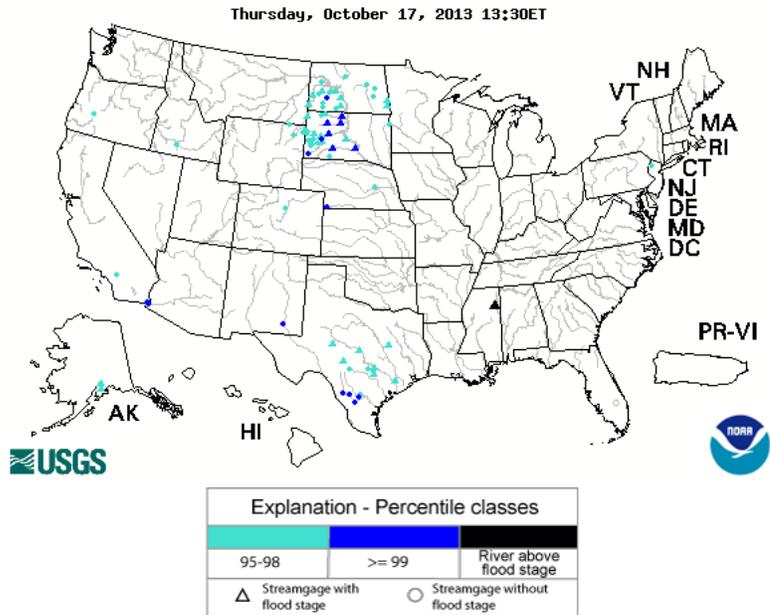
## U.S. Historical Streamflow

Flood and high water conditions as of October 17 show increased river flows over parts of upper Missouri River in South Dakota.

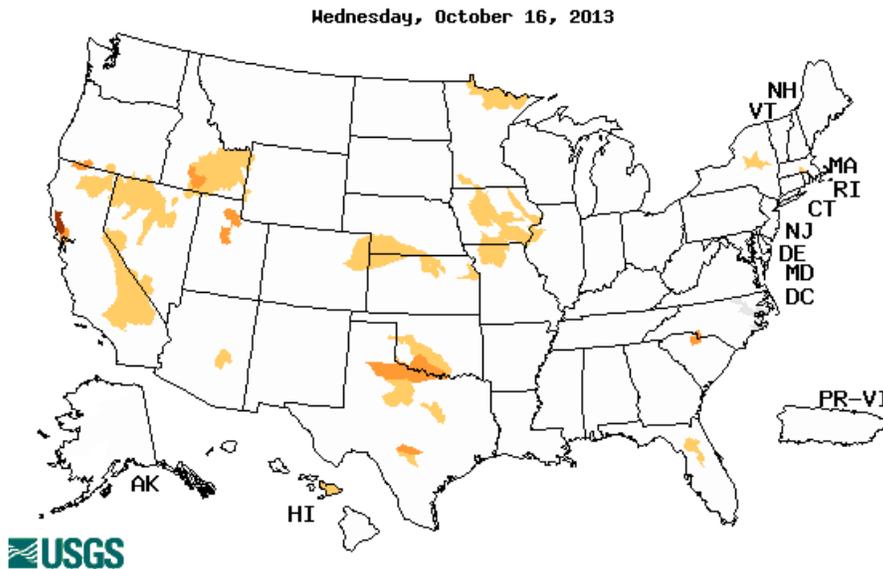
See the [USGS National Water Information System Mapper](#).

The "Flood and high flow" map shows the location of stream gages where the water level is currently at or above flood stage (depicted as a black triangle) or at high flow (depicted as blue circles). The high flow conditions are expressed as **percentiles** that compare the current (i.e., within the past several hours) instantaneous flow value to historical daily mean flow values for **all** days of the year. Please note that flood conditions may be more extensive than shown on the map because the National Weather Service (NWS) has not identified a flood stage (for flood forecasting purposes) at all USGS stream gages. Also, the NWS has determined flood stages for some non-USGS stream gages, which are not shown on the map. The most complete depiction of stream gages at or above flood stage is on the [NWS River Conditions Map](#).

## Map of flood and high flow condition (United States)



## Map of below normal 7-day average streamflow compared to historical streamflow for the day of year (United States)



This map shows [the 7-day average streamflow conditions in hydrologic units](#) of the United States and Puerto Rico for the day of the year. The colors represent 7-day average streamflow **percentiles** based on historical streamflow for the day of the year. Thus, the map shows conditions adjusted for this time of the year. Only stations having at least 30 years of record are used. Sub regions shaded gray indicate that insufficient data were available to compute a reliable 7-day average streamflow value.

East-central Texas and southern Louisiana are the only states experiencing severe hydrological drought this week.

Lowest stream flows are currently occurring over the northern California Coast.

# 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](#).

## For 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.

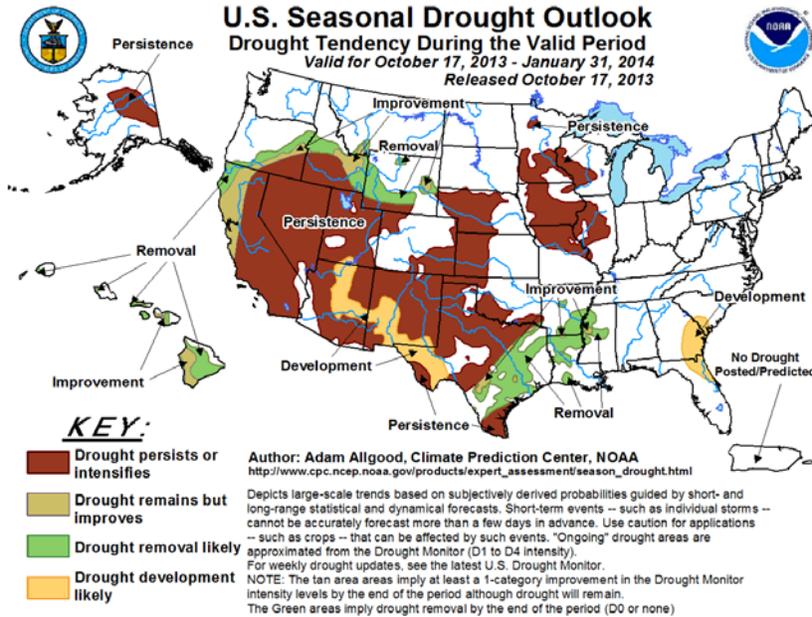
/s/

Micheal L. Golden  
Deputy Chief, Soil Science and Resource Assessment

\*\*\*\*\*

# Weekly Snowpack and Drought Monitor Update Report

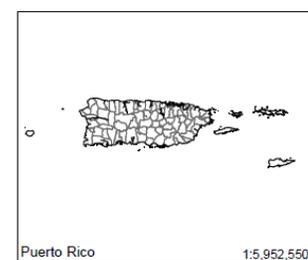
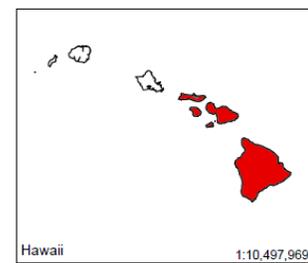
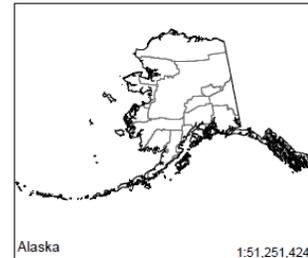
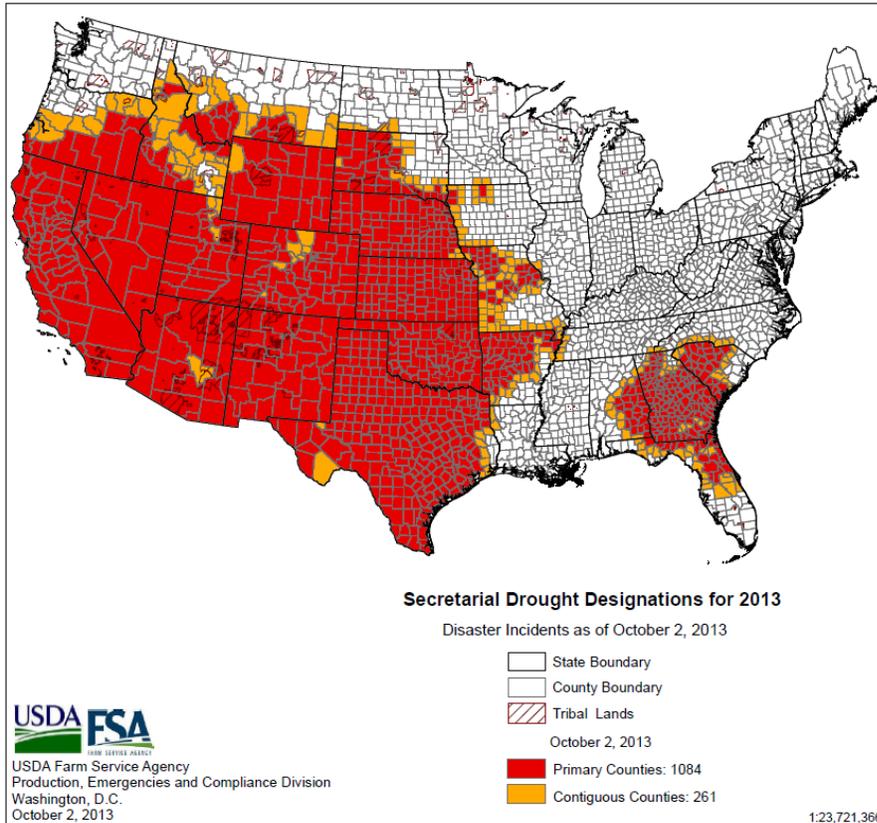
## Drought Outlook (Forecast through November)



U.S. Seasonal Drought Outlook for November shows:

- Expect developing drought over parts of Arizona, New Mexico, and southwest Texas.
- Drought is expected to improve over parts of eastern Texas, the Lower-Mississippi River Valley, and southern Wyoming.
- A new area of drought development is expected over the southeast coastal states.

## 2013 Secretarial Drought Designations - All Drought

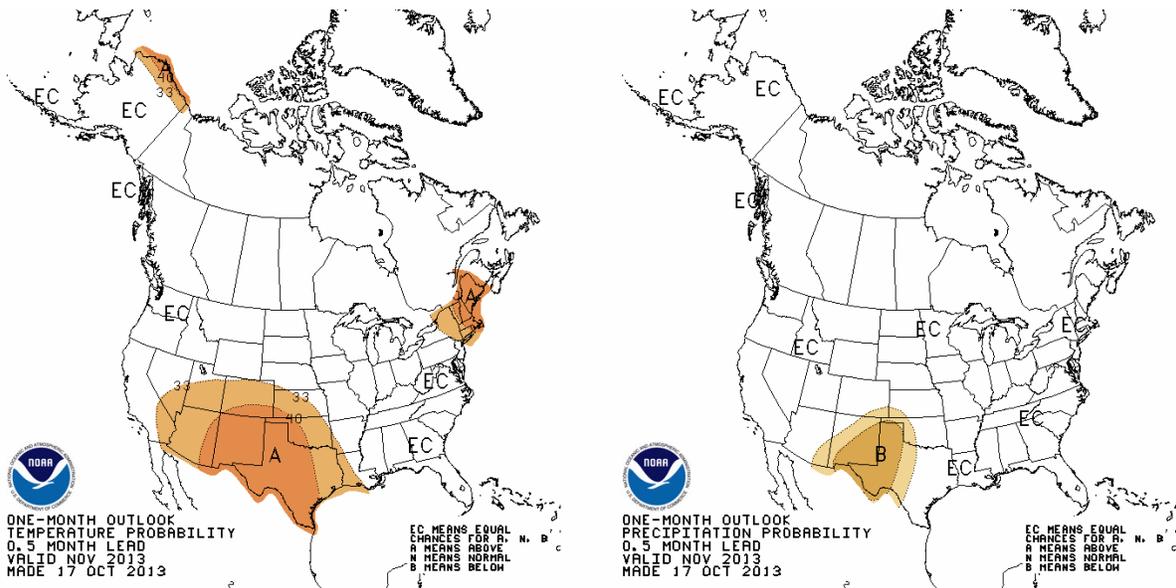


Data through October 2. Refer to the USDA Drought Assistance [website](#) and [National Sustainable Agriculture Information Service](#). Read about the new [USDA Regional Climate Hubs](#).

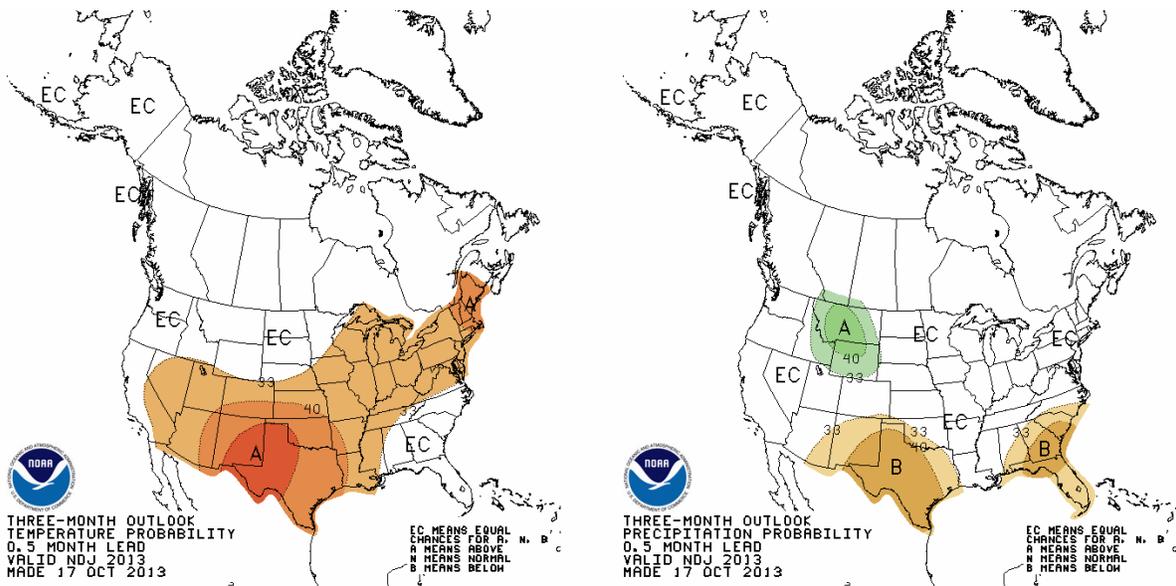
Supplemental Drought Information

[Exceedance Probability Analysis for the Colorado Flood Event, 9 - 16 September 2013](#)

The Hydrometeorological Design Studies Center within the NWS Office of Hydrologic Development has released an analysis of the rainfall for the September 9-16 event in Colorado. It shows that this was indeed a very rare event with annual exceedance probabilities likely more rare than 1/1,000 spread over unusually large areas.



November 2013 Climate Prediction Center Outlook (released today) for temperature and precipitation departures from the long-term average shows expected warmer conditions of the south-center US and somewhat drier conditions over western Texas and southeast New Mexico.



The November through January departure maps suggest a weaker La Nina weather pattern.