



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

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**Weekly Report - Snowpack / Drought Monitor Update**

**Date: 16 August 2012**

## **SNOTEL SNOWPACK AND PRECIPITATION SUMMARY**

**Temperature:** [SNOTEL](#) and ACIS 7-day temperature anomaly ending 16 August showed values 5°F to 10°F above normal across the West (Fig. 1). ACIS [7-day](#) average temperature anomalies show the greatest positive temperature departures over the parts of California (>+9°F). The greatest negative departures occurred over eastern Montana and the Black Hills of South Dakota (<-3°F) (Fig. 1a).

**Precipitation:** [ACIS](#) 7-day average precipitation amounts for the period ending this morning shows mostly areas of light precipitation over the Interior West (Fig. 2). In terms of percent of normal, this depiction becomes somewhat distorted due to the fact that any precipitation that falls over California and the Great Basin this time of year is rare. As a result, the percentages skyrocket up (Fig. 2a). Since the start of the [2012 Water-Year](#) that began on 1 October 2011, the seasonal moisture has continued to favor the Northern Tier States. Over much of the southern half of the West, drier conditions dominate. However, values are moderately higher over parts of New Mexico in response to the Summer Monsoon. Values are not expected to change much for the remainder of this Water-Year. With half of [August](#) complete, Utah appears to be making up some lost moisture from earlier this spring and summer. The Southwest Monsoon has been only partially active over the 4-Corners States thus far in August. Another area with fortunate rainfall has been over the westernmost Great Basin near Reno, NV (Fig. 2c).

This U.S. Drought Monitor week saw a few notable improvements and some serious degradation. One storm dumped much needed rain through the Midwest improving the drought conditions there from Iowa through Ohio. Other areas, such as the Southern and Central Plains, were not as lucky and continued to dry out. Another changed that helped alleviate the drought in some locations was the easing of the heat. Many areas from the Midwest to the South saw highs in the 80's F this week instead of the 100's F they had been experiencing. As of last week, 87% of the U.S. corn crop, 85% of soybeans, 63% of hay, and 72% of cattle areas were experiencing drought. Over half of the corn and soybean areas are experiencing Extreme (D3) to Exceptional (D4) Drought. This has led to both reduced yields and earlier harvests.

**The West:** Areas of Exceptional (D4) and Extreme (D3) Drought generally expanded in Colorado where rain showers were largely absent again this week. In Idaho, Moderate Drought (D1) and Abnormal Dryness (D0) expanded and wildfires were on the rise. Other areas of the West remained status quo. **Author:** [Michael Brewer, National Climatic Data Center, NOAA](#)

***A comprehensive narrative describing drought conditions for the nation can be found at the end of this document.***

### **[Drought Impacts Definitions](#)**

The possible impacts associated with **D4 (S, L)** drought include widespread crop/pasture losses and shortages of water in reservoirs, streams, and wells creating water emergencies. The possible impacts associated with **D3 (S, L)** drought include major crop/pasture losses and widespread water shortages or restrictions. Possible impacts from **D2 (S, L)** drought are

## Weekly Snowpack and Drought Monitor Update Report

focused on water shortages common and water restrictions imposed and crop or pasture losses likely. The possible impacts associated with **D1 (S, L)** drought are focused on water shortages developing in streams, reservoirs, or wells, and some damage to crops and pastures (Figs. 3 through 3e).

### Soil Moisture

Soil moisture (Fig. 4), is simulated by the [VIC macroscale hydrologic model](#). The detailed, physically-based VIC model is driven by observed daily precipitation and temperature maxima and minima from approximately 2130 stations, selected for reporting reliably in real-time and for having records of longer than 45 years (and various other criteria). Another good resource can be found at: <http://www.emc.ncep.noaa.gov/mmb/nldas/drought/>.

### Soil Climate Analysis Network (SCAN)

Figure 5 provides supplemental data on soil conditions (moisture and temperatures at various depths from 2 inches to 80 inches. For more information about SCAN see ([brochure](#)).

### U.S. Historical Streamflow

This map, (Fig. 6) shows the 7-day average streamflow conditions in hydrologic units of the United States and Puerto Rico for the day of 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. During winter months, this situation frequently arises due to ice effects. The data used to produce this map are provisional and have not been reviewed or edited. They may be subject to significant change.

### **Fire Conditions**

Fig. 7 comes from the [Predictive Services](#) (USFS) facilitates integration of comprehensive climate, weather, situation and fuels information in geospatial format.

### **State Activities**

State government drought activities can be tracked at the following URL: <http://drought.unl.edu/mitigate/mitigate.htm>. NRCS SS/WSF State Office personnel are participating in state drought committee meetings and providing the committees and media with appropriate SS/WSF information - <http://www.wcc.nrcs.usda.gov/cgibin/bor.pl>. Additional information describing the products available from the Drought Monitor can be found at the following URL: <http://drought.unl.edu/dm/> and <http://www.drought.gov>.

### **For More Information**

The National Water and Climate Center Homepage provide the latest available snowpack and water supply information. Please visit us at <http://www.wcc.nrcs.usda.gov>. This document is available from the following location on the NWCC homepage - <http://www.wcc.nrcs.usda.gov/water/drought/wdr.pl>. Reports from 2007 are available on-line while ones from 2001-2006 can be acquired upon 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 Survey and Resource Assessment

# Weekly Snowpack and Drought Monitor Update Report

## SNOTEL (solid) and ACIS (dot-filled) Networks 7-Day Average Temperature Anomaly (Degrees F)

Aug 16, 2012

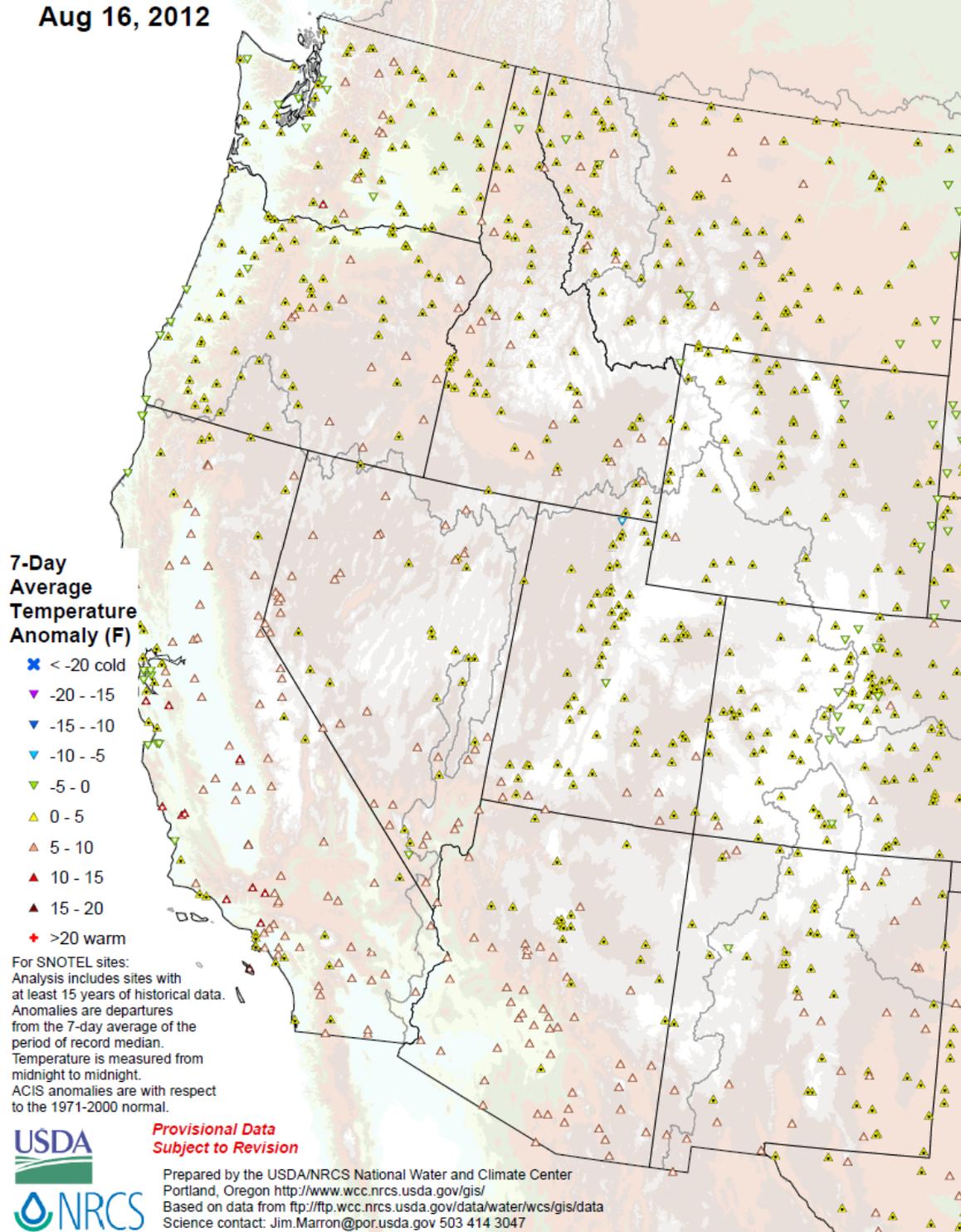
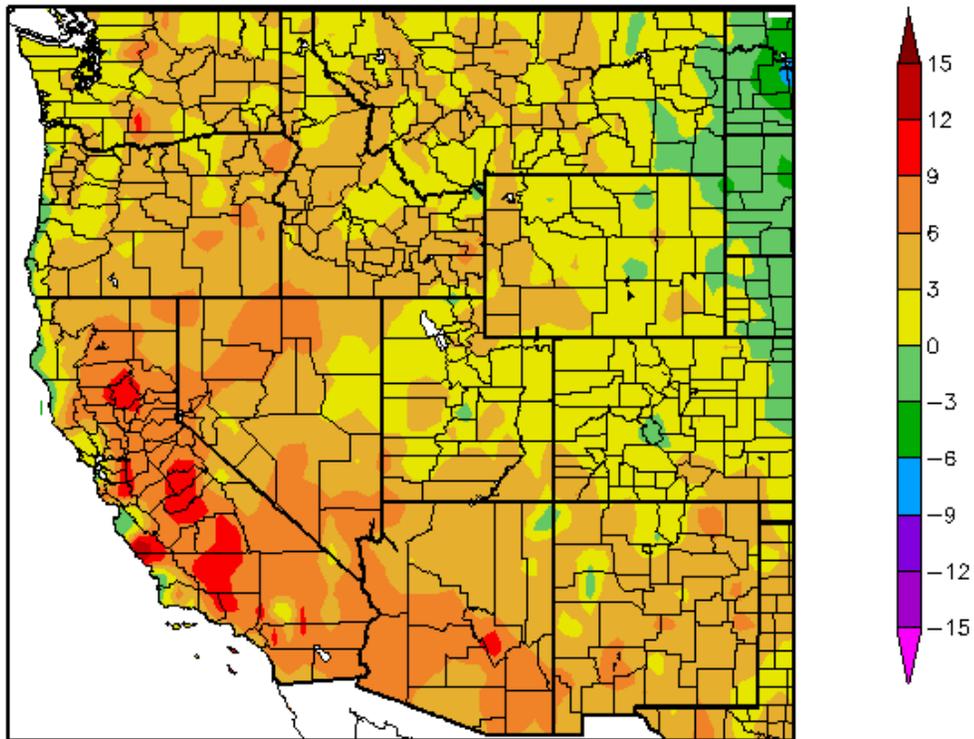


Fig. 1: **SNOTEL** and ACIS 7-day temperature anomaly ending 16 August showed values 5°F to 10°F above normal across the West.

## Weekly Snowpack and Drought Monitor Update Report

Departure from Normal Temperature (F)  
8/9/2012 – 8/15/2012



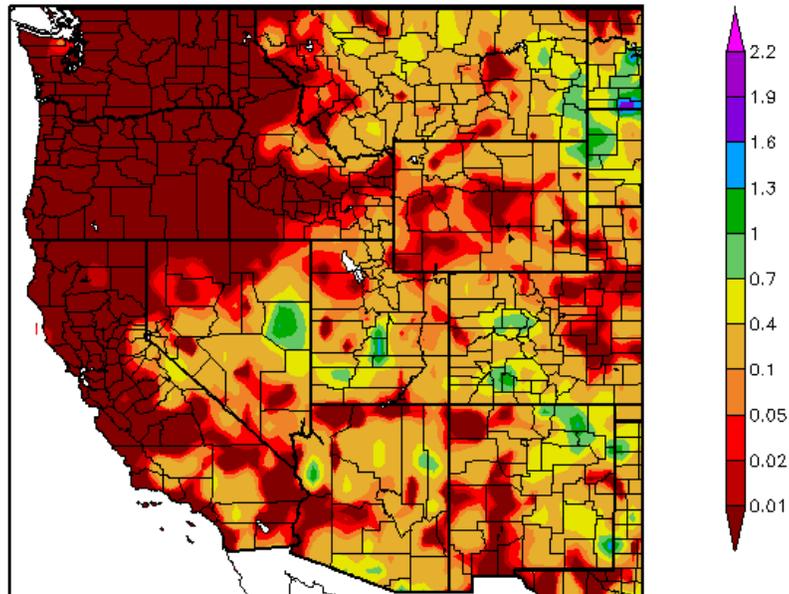
Generated 8/16/2012 at HPRCC using provisional data.

Regional Climate Centers

**Fig. 1a:** ACIS [7-day](#) average temperature anomalies show the greatest positive temperature departures over the parts of California (>+9°F). The greatest negative departures occurred over eastern Montana and the Black Hills of South Dakota (<-3°F).

## Weekly Snowpack and Drought Monitor Update Report

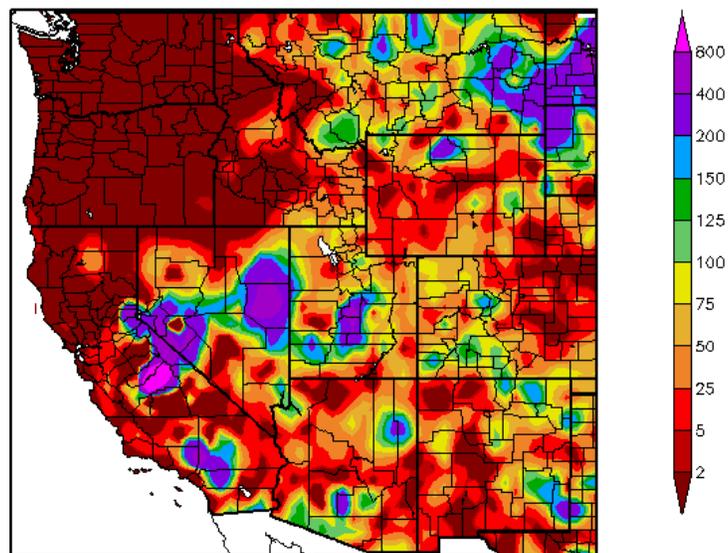
Precipitation (in)  
8/9/2012 - 8/15/2012



Generated 8/16/2012 at HPRCC using provisional data.

Regional Climate Centers

Percent of Normal Precipitation (%)  
8/9/2012 - 8/15/2012



Generated 8/16/2012 at HPRCC using provisional data.

Regional Climate Centers

**Fig. 2 and 2a:** [ACIS](#) 7-day average precipitation amounts for the period ending this morning shows mostly areas of light precipitation over the Interior West (top). In terms of percent of normal, this depiction becomes somewhat distorted due to the fact that any precipitation that falls over California and the Great Basin this time of year is rare. As a result, the percentages skyrocket up (bottom).

# Weekly Snowpack and Drought Monitor Update Report

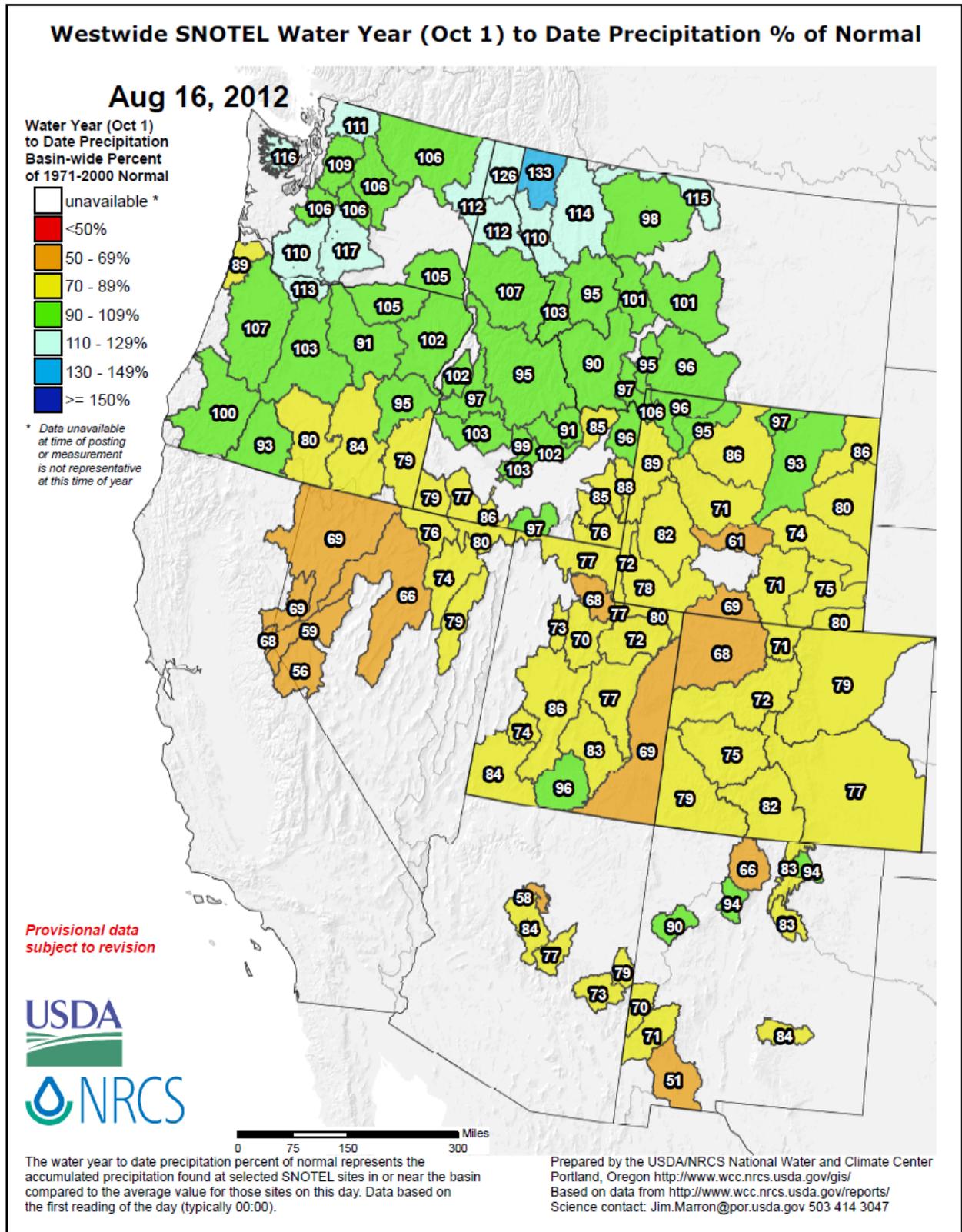
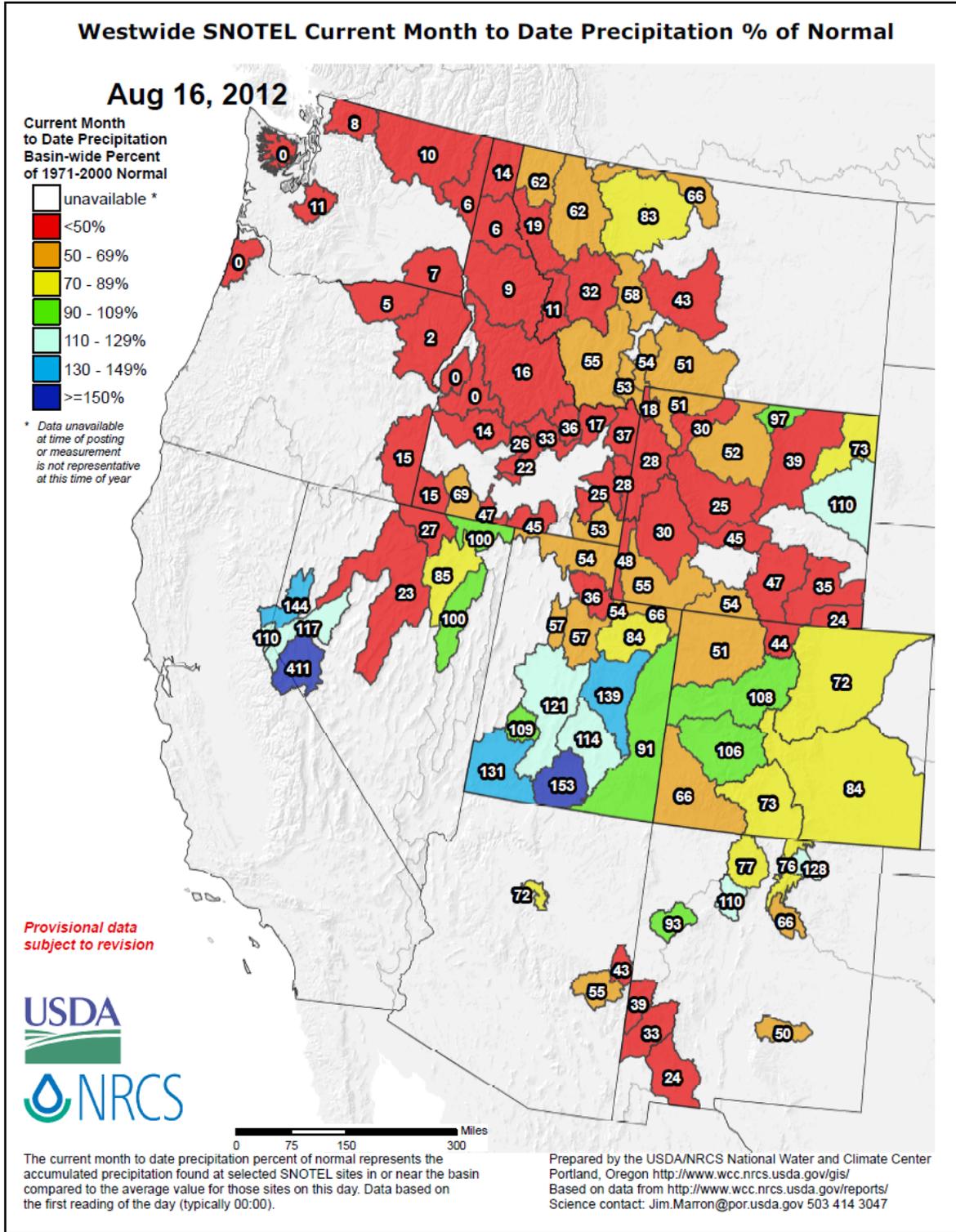


Fig 2b: Since the start of the [2012 Water-Year](#) that began on 1 October 2011, the seasonal moisture has continued to favor the Northern Tier States. Over much of the southern half of the West, drier conditions dominate. However, values are moderately higher over parts of New Mexico in response to the Summer Monsoon. Values are not expected to change much for the remainder of this Water-Year.

# Weekly Snowpack and Drought Monitor Update Report



**Fig. 2c:** With half of **August** complete, Utah appears to be making up some lost moisture from earlier this spring and summer. The Southwest Monsoon has been only partially active over the 4-Corners States thus far in August. Another area with fortunate rainfall has been over the westernmost Great Basin near Reno, NV.

## Weekly Snowpack and Drought Monitor Update Report

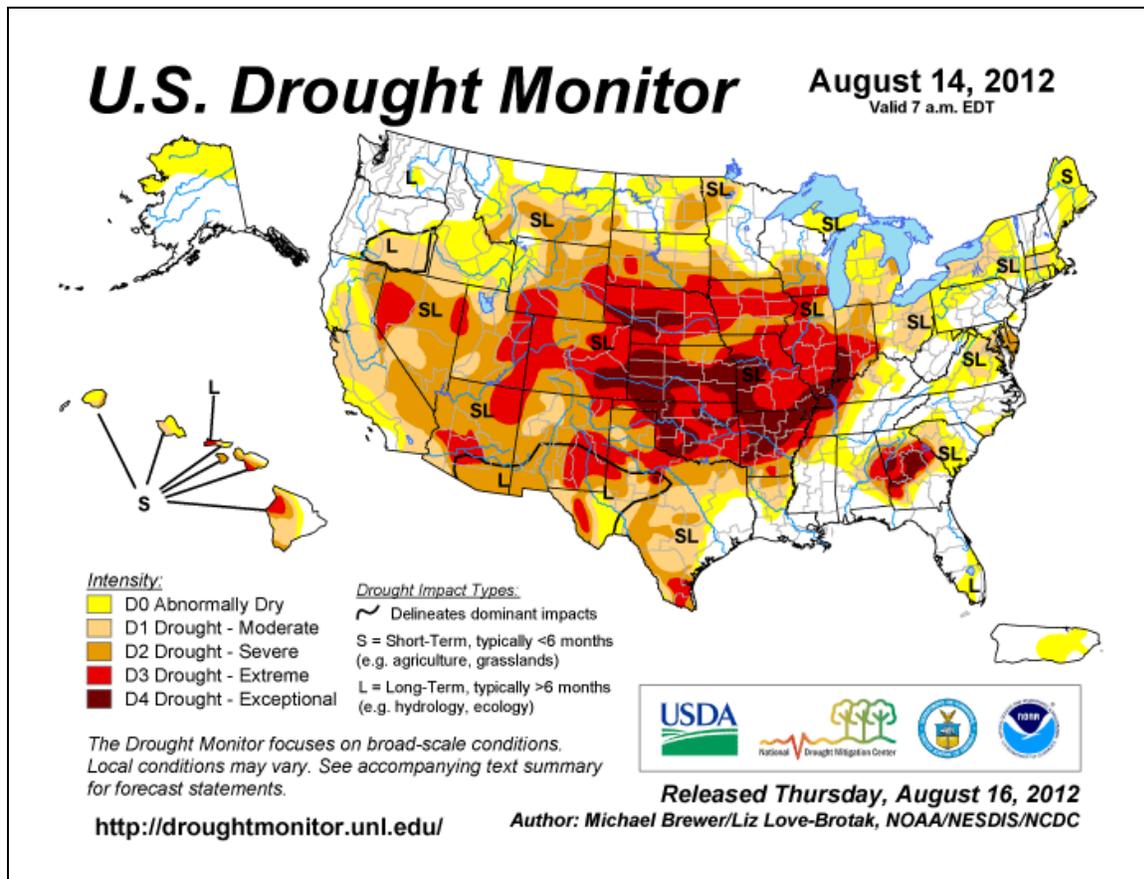


Fig. 3: Current [Drought Monitor](#) weekly summary. The exceptional D4 levels of drought are found over the Southeast and scattered across the corn belt of the Central Plains into Colorado. For more drought news, see [Drought Impact Reporter](#). Click for the latest statistics for [California Reservoirs](#). The monthly [drought indicator blend and component percentiles](#) spreadsheet is a great resource for climate division drought statistics.

### Agriculture

#### [Cattle sales first sign of drought's ripple effects](#)

Aug 5, **Wisconsin**. Livestock sales were 150 percent of normal in Wisconsin during the past week, stated the spokeswoman for a livestock sales association that has 11 auction markets throughout the state.

#### [USDA Cuts Corn Outlook as Drought Takes Toll](#)

Aug 10, **U.S.** The corn and soybean crops continued to deteriorate, leading the USDA to revise the corn and soybean production down by 13 and 12 percent, respectively, compared to 2011.

### Water Supply & Quality

#### [City's water restrictions now mandatory; first time since 2002](#)

#### [Drought reduces amount of water in Missouri River](#)

#### [Dry Platte River threatens Lincoln's water supply](#)

#### [Reservoir water level drops 42 feet during drought](#)

#### [Wells Run Dry As City Cuts Water Sales](#)

#### [With salt water threatening New Orleans area water supplies, Army Corps moves to build barrier](#)

Weekly Snowpack and Drought Monitor Update Report

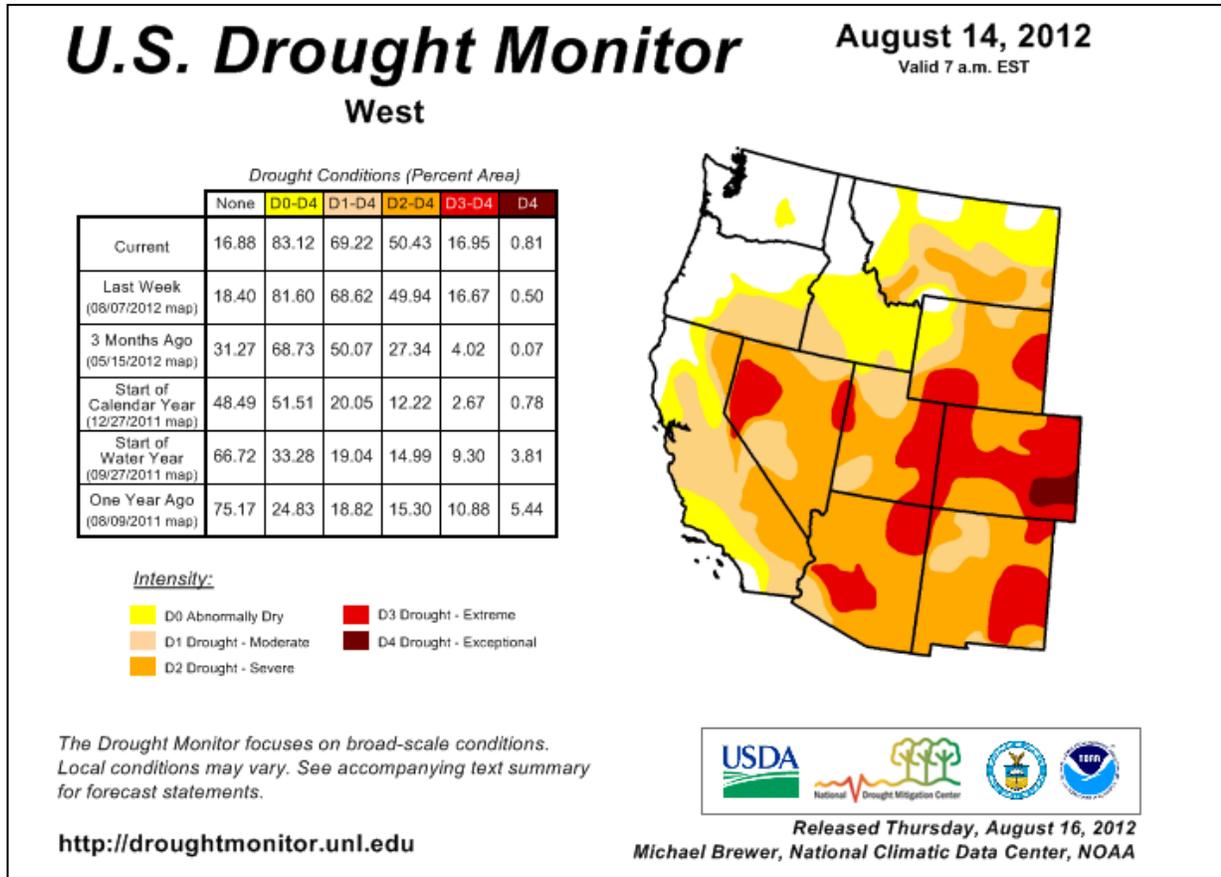


Fig. 3a: Drought Monitor for the [Western States](#) with statistics over various time periods. Slight deterioration in D1 is noted this week.

## Weekly Snowpack and Drought Monitor Update Report

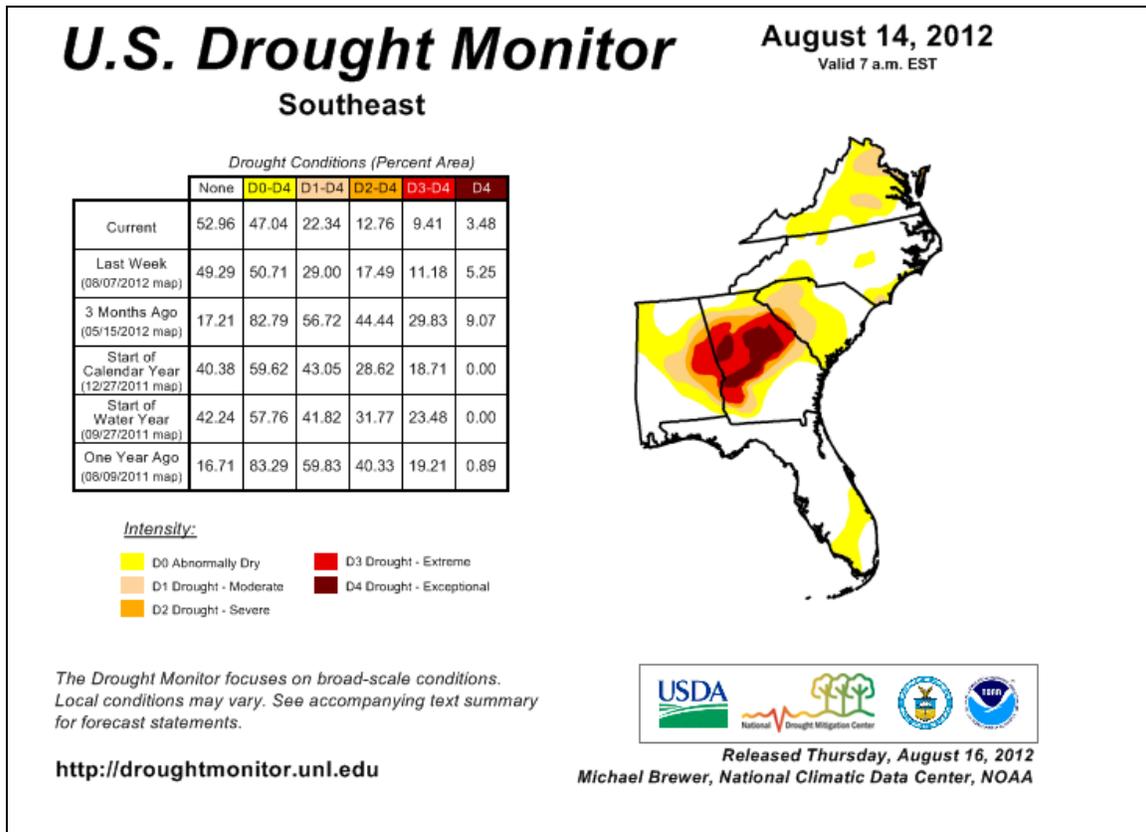


Fig. 3b: Drought Monitor for the [Southeastern States](#) with statistics over various time periods. Note significant improvement across all categories this week.

### GA

According to the National Agriculture Statistics Service's Georgia Field Office, there were 4.5 days suitable for fieldwork for the week ending Sunday, August 12, 2012.

Statewide topsoil moisture was rated at 5% very short, 23% short, 63% adequate, 9% surplus. Subsoil moisture 11% very short, 39% short, 48% adequate, 2% surplus. Precipitation estimates for the state ranged from no rain up to 8.3 inches. Average high temperatures ranged from the high 70's to the low 90's. Average low temperatures ranged from the low 60's to the mid 70's.

### SC

Steady storms brought much needed rainfall to South Carolina during the week ending August 12, 2012. Multiple inches of rain fell across the State starting Monday and continued through Friday. Scattered storms were observed during the weekend but mainly sunny skies and warmer temperatures were present on Saturday and Sunday.

Soil moisture conditions were greatly improved to 1% very short, 17% short, 75% adequate and 7% surplus.

Field crops and livestock conditions improved due to the lower temperatures and increase in rainfall.

The State average rainfall for the period was 3.2 inches. The State average temperature for the period was one degree below normal with 4.9 days suitable for fieldwork. - Greg Lamberty

# Weekly Snowpack and Drought Monitor Update Report

## U.S. Drought Monitor

August 14, 2012  
Valid 7 a.m. EST

### Midwest

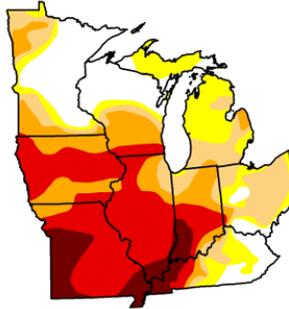
	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	19.25	80.75	66.42	51.46	35.43	8.17
Last Week (08/07/2012 map)	18.58	81.42	69.11	55.13	38.19	5.78
3 Months Ago (05/15/2012 map)	67.65	32.35	6.91	0.65	0.00	0.00
Start of Calendar Year (12/27/2011 map)	71.84	28.16	13.42	6.80	0.00	0.00
Start of Water Year (09/27/2011 map)	58.85	41.15	14.01	6.03	0.00	0.00
One Year Ago (08/09/2011 map)	62.00	38.00	10.05	0.52	0.00	0.00

**Intensity:**

- D0 Abnormally Dry
- D1 Drought - Moderate
- D2 Drought - Severe
- D3 Drought - Extreme
- D4 Drought - Exceptional

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

<http://droughtmonitor.unl.edu>



Released Thursday, August 16, 2012  
Michael Brewer, National Climatic Data Center, NOAA

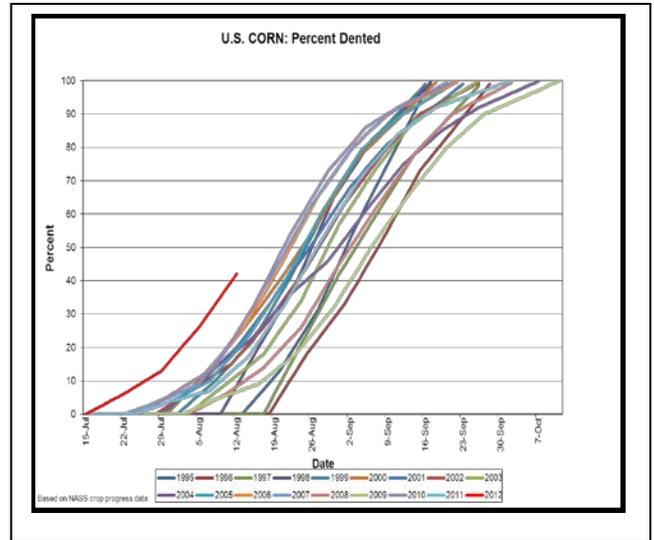


Fig. 3c: Drought Monitor for the **Mid-West** with statistics over various time periods. Note some deterioration in D4 this week. U.S. corn is denting at a record-setting pace (POR, 1995-2012; above)—42% dented by August 12. No other recent year is even close. U.S. corn is already 10% fully mature, also a record. - Brad Rippey, USDA

## U.S. Drought Monitor

August 14, 2012  
Valid 7 a.m. EST

### High Plains

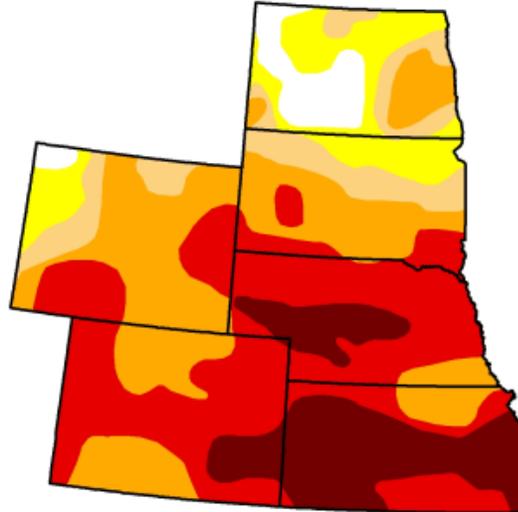
	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	4.48	95.52	86.05	76.97	49.64	15.52
Last Week (08/07/2012 map)	2.36	97.64	87.16	77.20	49.30	7.92
3 Months Ago (05/15/2012 map)	49.95	50.05	18.61	6.22	0.00	0.00
Start of Calendar Year (12/27/2011 map)	61.66	38.34	18.12	7.22	2.07	0.04
Start of Water Year (09/27/2011 map)	70.09	29.91	17.44	11.97	6.22	2.96
One Year Ago (08/09/2011 map)	78.06	21.94	16.71	12.32	7.42	2.65

**Intensity:**

- D0 Abnormally Dry
- D1 Drought - Moderate
- D2 Drought - Severe
- D3 Drought - Extreme
- D4 Drought - Exceptional

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

<http://droughtmonitor.unl.edu>



Released Thursday, August 16, 2012  
Michael Brewer, National Climatic Data Center, NOAA

Fig. 3d: Drought Monitor for the **High Plains** with statistics over various time periods. Note significant increase in D4 this week. See the latest [Kansas Drought Report](#).

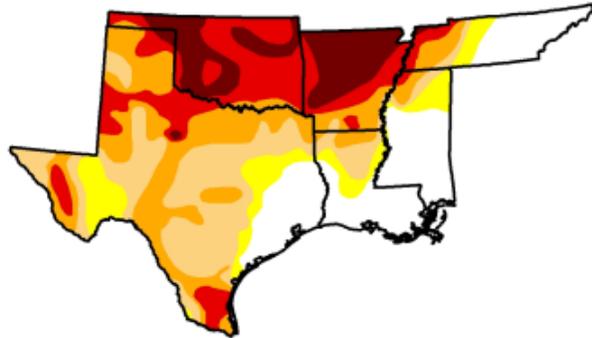
# U.S. Drought Monitor

## South

August 14, 2012  
Valid 7 a.m. EST

*Drought Conditions (Percent Area)*

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	21.47	78.53	69.54	49.01	28.32	11.16
Last Week (08/07/2012 map)	21.49	78.51	67.54	46.51	27.75	8.05
3 Months Ago (05/15/2012 map)	45.42	54.58	32.31	18.21	7.31	0.71
Start of Calendar Year (12/27/2011 map)	26.47	73.53	69.01	54.81	39.11	17.15
Start of Water Year (09/27/2011 map)	18.34	81.66	76.26	70.61	63.67	53.77
One Year Ago (08/09/2011 map)	9.69	90.31	83.96	77.45	67.21	50.63



**Intensity:**

- D0 Abnormally Dry
- D1 Drought - Moderate
- D2 Drought - Severe
- D3 Drought - Extreme
- D4 Drought - Exceptional

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

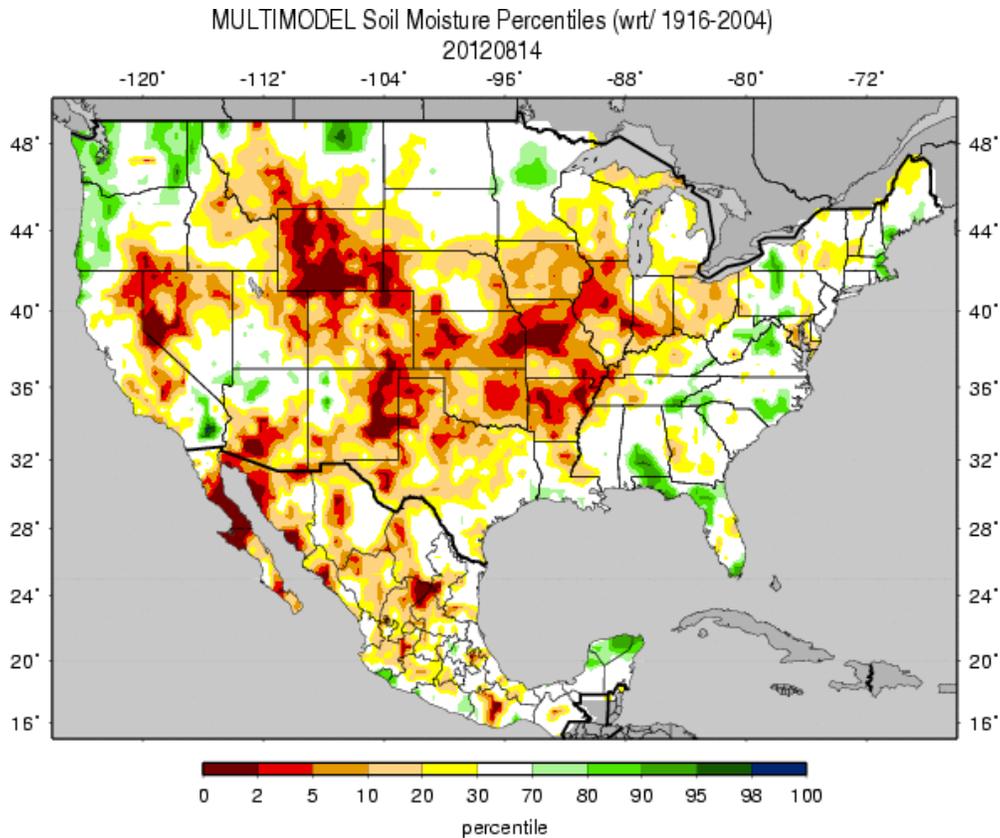
<http://droughtmonitor.unl.edu>



Released Thursday, August 16, 2012  
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Fig. 3e: Drought Monitor for the [South-Central Region](#) with statistics over various time periods. Note significant increase in D4 this week.

## Weekly Snowpack and Drought Monitor Update Report



Figs. 4: Soil Moisture ranking in [percentile](#) as of 14 August shows dryness over much of the Interior US. Exceptions include the Coastal Region of Oregon & Washington and eastern Washington and Montana.

### *Useful Hydrological Links:*

USDA western U.S. mountain snow water content anomaly map.

USGS (U.S. Geological Service) [observed streamflow](#);

NOAA Climate Prediction Center (CPC) modeled runoff [anomalies](#) and [percentiles](#);

VIC (University of Washington Variable Infiltration Capacity macro scale hydrologic model) [1-](#), [2-](#), [3-](#), and [6-](#)month and [water year-to-date](#) runoff percentiles;

NLDAS (North American Land Data Assimilation System) modeled streamflow [anomalies](#) and [percentiles](#);

NLDAS model runoff [anomalies](#) and [percentiles](#);

USGS groundwater observations ([real-time network](#), [climate response network](#), [total active network](#));

USDA snow water content observations for the West (SNOTEL station [percentiles](#) and [percent of normal](#), SNOTEL basin [percent of normal](#) and [percent of average](#)) and Alaska ([SNOTEL station percent of normal](#), [SNOTEL basin percent of normal](#));

USDA reservoir storage as [percent of capacity](#).

## Weekly Snowpack and Drought Monitor Update Report

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

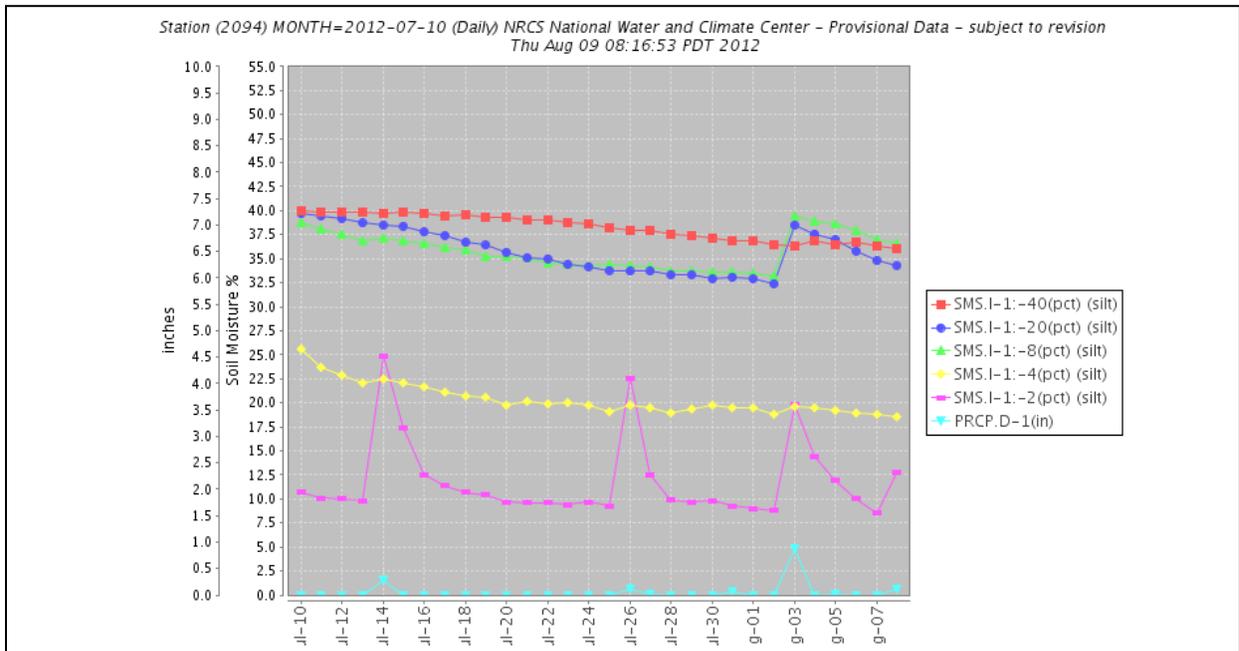


Fig. 5: This NRCS resource shows a site over [northeast Kansas](#) declining soil moisture with brief upticks near the surface when it rains.

#### Useful Agriculture Links:

- USDA (U.S. Department of Agriculture) [observed soil moisture conditions, departures and percentiles](#), and comparison to [5-year average](#) and [10-year average](#);
- the Palmer [Crop Moisture Index \(CMI\)](#), which intensified during the month in the West and Lower to Mid-Mississippi Valley (weeks [1](#), [2](#), [3](#), [4](#), [5](#));
- CPC modeled soil moisture [anomalies](#) and [percentiles](#) for end of May, and [soil moisture anomaly change](#) compared to previous month;
- CPC's Leaky Bucket model [soil moisture percentiles](#);
- NLDAS modeled soil moisture percentiles for the [top soil layer](#) and [total soil layer](#);
- VIC modeled [soil moisture percentiles](#), and [soil moisture percentile change](#) compared to previous month;
- USDA observed [pasture and rangeland conditions](#);
- [Vegetation Drought Response Index \(VegDRI\)](#);
- the NOAA/NESDIS satellite-based [Vegetation Health Index \(VHI\)](#);
- the USGS agro-hydrologic model ([Soil Water Index](#), [Water Requirement Satisfaction Index](#));
- Selected SNOTEL Sites (measured [2"](#), [4"](#), [8"](#), [20"](#), and [40"](#) soil moisture depths);

## Weekly Snowpack and Drought Monitor Update Report

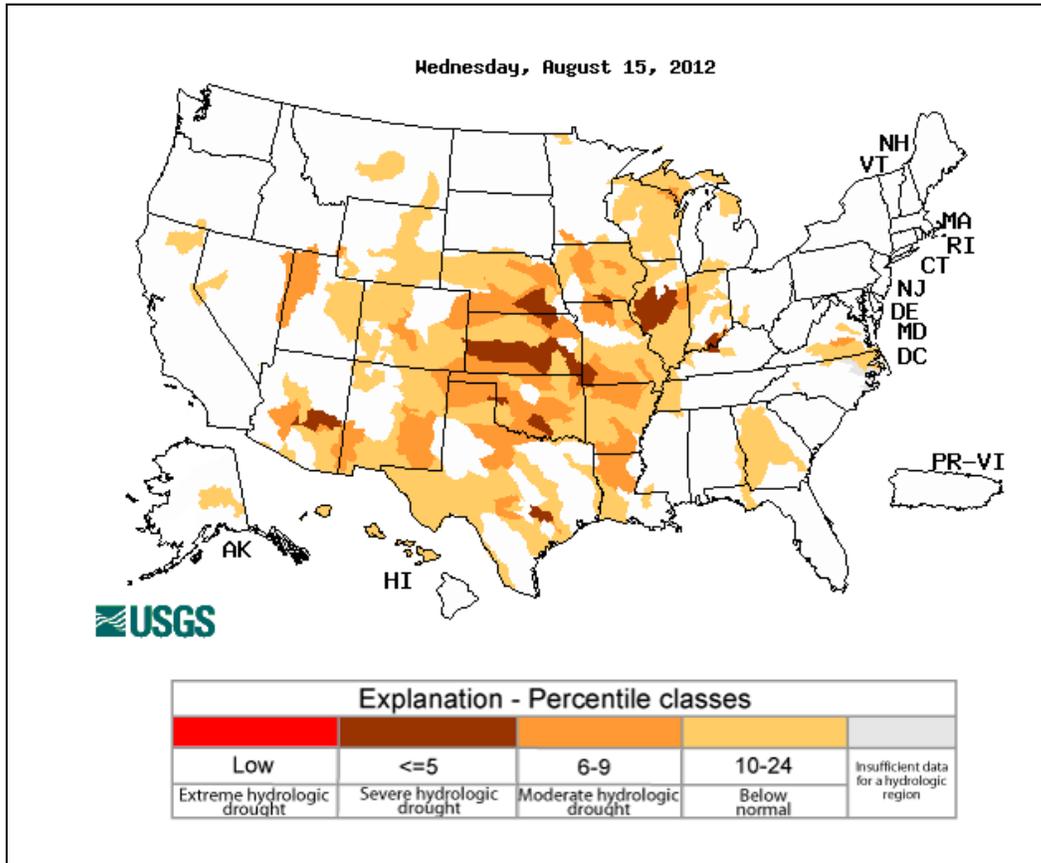


Fig. 6: Map of below normal 7-day average [streamflow](#) compared to historical streamflow for the day of year. **Severe** conditions exist over parts of Arizona, Kansas, southwest Missouri, Oklahoma, Texas, Illinois, southern Indiana, and north-central Kentucky.

## Weekly Snowpack and Drought Monitor Update Report

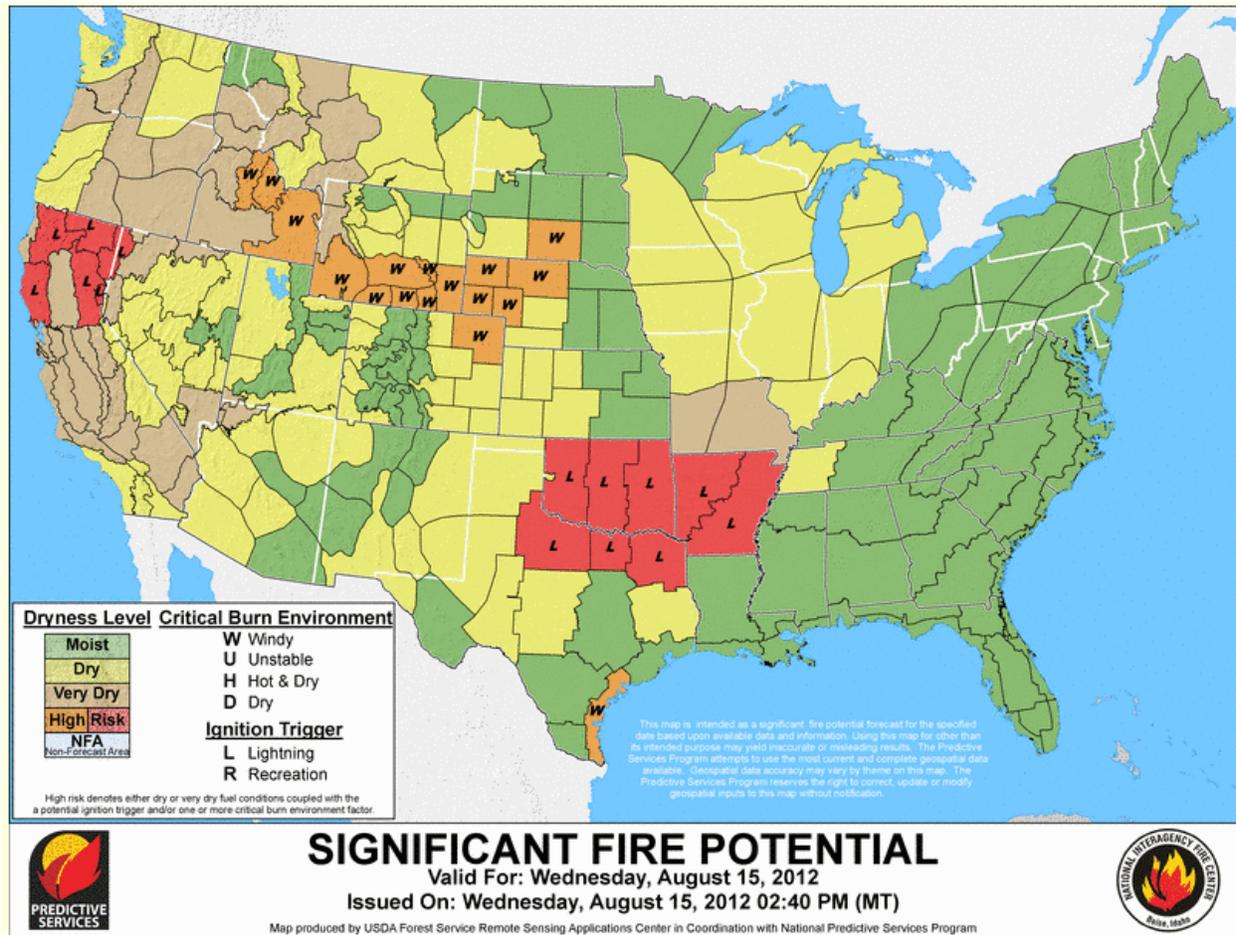


Fig. 7: [Significant fire potential](#) for yesterday. This resource also provides forecasts out to 7 days. Also check out: [NOAA's Fire Server](#). Risk has increased over northern California and the Central Plains during the past several days. Also see: [Experimental Southwest area wildland fire smoke impact awareness page](#) and the latest, [National Interagency Fire Agency Report](#).

## Weekly Snowpack and Drought Monitor Update Report

### National Drought Summary – August 14, 2012

*The discussion in the Looking Ahead section is simply a description of what the official national guidance from the National Weather Service (NWS) National Centers for Environmental Prediction is depicting for current areas of dryness and drought. The NWS forecast products utilized include the HPC 5-day QPF and 5-day Mean Temperature progs, the 6-10 Day Outlooks of Temperature and Precipitation Probability, and the 8-14 Day Outlooks of Temperature and Precipitation Probability, valid as of late Wednesday afternoon of the USDM release week. The NWS forecast web page used for this section is: <http://www.cpc.ncep.noaa.gov/products/forecasts/>.*

This U.S. Drought Monitor week saw a few notable improvements and some serious degradation. One storm dumped much needed rain through the Midwest improving the drought conditions there from Iowa through Ohio. Other areas, such as the Southern and Central Plains, were not as lucky and continued to dry out. Another changed that helped alleviate the drought in some locations was the easing of the heat. Many areas from the Midwest to the South saw highs in the 80's F this week instead of the 100's F they had been experiencing. As of last week, 87% of the U.S. corn crop, 85% of soybeans, 63% of hay, and 72% of cattle areas were experiencing drought. Over half of the corn and soybean areas are experiencing Extreme (D3) to Exceptional (D4) Drought. This has led to both reduced yields and earlier harvests.

**The Southeast:** Rains in the Southeast this helped to improve drought conditions through Alabama, Georgia, and South Carolina. Exceptional Drought (D4) was eradicated in Alabama and reduced in Georgia while Extreme (D3), Severe (D2), and Moderate (D1) Drought were all reduced, as was Abnormal Dryness (D0). In South Carolina, improvements in areas of Extreme (D3), Severe (D2), Moderate (D1) Drought and Abnormal Dryness (D0) were experienced. Minor changes were made improving Abnormal Dryness (D0) in parts of the south, and expanding Abnormal Dryness (D0) in the north of North Carolina.

**The Northeast and Mid-Atlantic:** Most of this area received enough precipitation that drought conditions held status quo with minor reductions in Abnormal Dryness (D0) in Maine.

**The South and Southern Plains:** In Oklahoma, large swaths of Exceptional Drought (D4) were introduced as the impact of the lack of rain and hot temperatures parched the state's soil moisture. Texas also saw minor deterioration of conditions with the expansion of Extreme Drought (D3) in the south, Severe Drought (D2) in areas of the center and north, and in Moderate Drought (D1) in the west. In Louisiana, Severe Drought (D3) expanded in the north.

**The Central and Northern Plains and Midwest:** Widespread rains in the Midwest alleviated some D1-D4 Drought as well as Abnormal Dryness (D0) in a swath from central Iowa, across northern and central Illinois and Indiana, and into western Ohio and southern Michigan. North and South Dakota also experienced beneficial precipitation, alleviating Abnormal Dryness (D0). Exceptional Drought (D4) expanded in the western and central parts of Nebraska and through central and eastern Kansas and into western and central Missouri.

**The West:** Areas of Exceptional (D4) and Extreme (D3) Drought generally expanded in Colorado where rain showers were largely absent again this week. In Idaho, Moderate Drought (D1) and Abnormal Dryness (D0) expanded and wildfires were on the rise. Other areas of the West remained status quo.

**Hawaii, Alaska and Puerto Rico:** Drought conditions remained unchanged in Alaska and Puerto Rico and Hawaii this week.

**Looking Ahead:** During the August 16 - 20, 2012 time period, there is an enhanced probability of precipitation from the extreme South, through the Southeast and mid-Atlantic and through New England. From the West through the Great Lakes, there is a suppressed chance of precipitation. Below normal

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temperatures are expected from the center of the country eastward. The West is expected to see above normal temperatures.

For the ensuing 5 days (August 21 - 25, 2012), the odds favor normal to below normal temperatures from just east of the Rockies to the east coast and also along the Pacific Coast. In a narrow band along the Rockies and in New England, the odds favor warmer than normal temperatures. Above normal precipitation is expected from New England, through the South and into the extreme Southern Plains. Normal to below normal precipitation is expected over the rest of the lower 48 states. In Alaska, temperatures are expected to be below normal in the south and above normal along the Arctic Ocean while precipitation is expected to be above normal in the south and below normal along the Arctic Ocean.

**Author:** [Michael Brewer, National Climatic Data Center, NOAA](#)

### **Dryness Categories**

D0 ... Abnormally Dry ... used for areas showing dryness but not yet in drought, or for areas recovering from drought.

### **Drought Intensity Categories**

D1 ... Moderate Drought

D2 ... Severe Drought

D3 ... Extreme Drought

D4 ... Exceptional Drought

### **Drought or Dryness Types**

S ... Short-Term, typically <6 months (e.g. agricultural, grasslands)

L ... Long-Term, typically >6 months (e.g. hydrology, ecology)

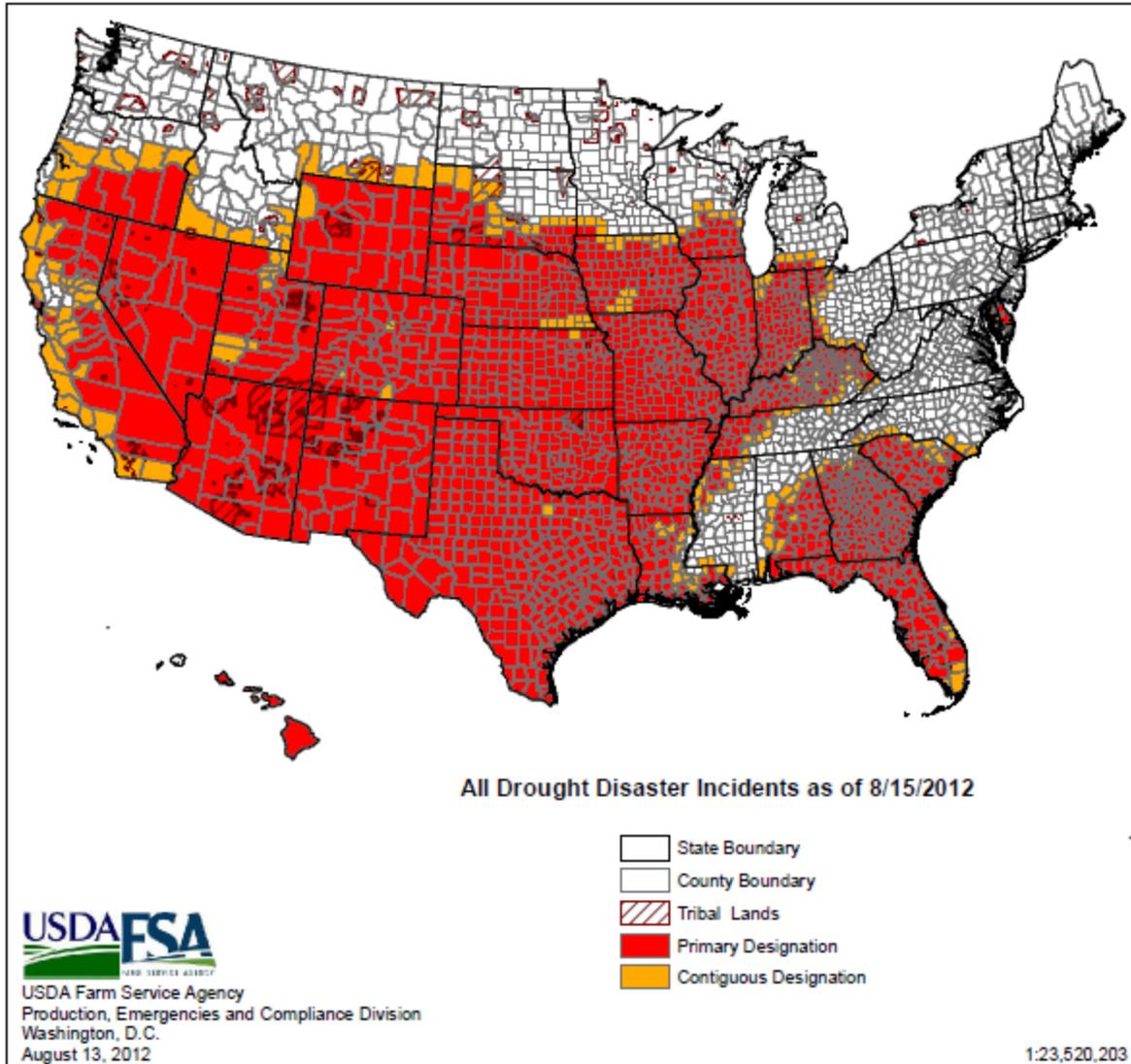
*Updated August 15, 2012*

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## **Special Drought Update**

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## Weekly Snowpack and Drought Monitor Update Report



### US Drought and Your Food Costs

This infographic demonstrates how the current drought, or any event that affects prices for raw farm commodities, ultimately has a marginal effect on what we pay at the grocery or restaurant.

[Download the infographic.](#)

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