



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

Weekly Report - Snowpack / Drought Monitor Update Date: 6 October 2011

SNOTEL SNOWPACK AND PRECIPITATION SUMMARY

Temperature: [SNOTEL](#) and ACIS 7-day temperature anomaly shows the greatest positive departures over the Northern Rockies and Northern Great Plains and closer to normal temperatures over the Cascades (Fig. 1). [ACIS](#) 7-day average temperature anomalies show the greatest positive temperature departures over northeastern Wyoming ($>+15^{\circ}\text{F}$) and the greatest negative departures over north-central California ($<-6^{\circ}\text{F}$) (Fig. 1a). The [first touch of winter](#) weather arrives across much of the higher elevations of the West today.

Precipitation: [ACIS](#) 7-day average precipitation amounts for the period ending yesterday shows abundant moisture over coastal Oregon and northern California (Fig. 2). In terms of percent of normal, most of the West, west of the Continental Divide experienced early seasonal precipitation that helped bump up the weekly percentages (Fig 2a). With the start of the [2012 Water-Year](#) that began on 1 October 2011, any precipitation that falls will skew the statistics since any precipitation that falls is somewhat unusual this time of year over the West. Within the next few weeks, these values will settle down to reflect the typical long-term climatology. Until then, use this product with caution (Fig. 2b).

The West: A re-assessment of rainfall during the past few months led to a reduction from D4 to D3 conditions for a small area in southeast New Mexico, but otherwise, light precipitation at best kept existing dryness and drought intact from the High Plains westward through the Rockies and Intermountain West. Author: Rich Tinker, Climate Prediction Center, NCEP/NWS/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 (H, A)** drought include widespread crop/pasture losses and shortages of water in reservoirs, streams, and wells creating water emergencies. The possible impacts associated with **D3 (H, A)** drought include major crop/pasture losses and widespread water shortages or restrictions. Possible impacts from **D2 (H, A)** drought are focused on water shortages common and water restrictions imposed and crop or pasture losses likely. The possible impacts associated with **D1 (H, A)** drought are focused on water shortages developing in streams, reservoirs, or wells, and some damage to crops and pastures (Figs. 3 through 3c).

Soil Moisture

Soil moisture (Figs. 4a and 4b), 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/>.

Weekly Snowpack and Drought Monitor Update Report

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.

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/

Douglas Lawrence
Deputy Chief, Soil Survey and Resource Assessment

Weekly Snowpack and Drought Monitor Update Report

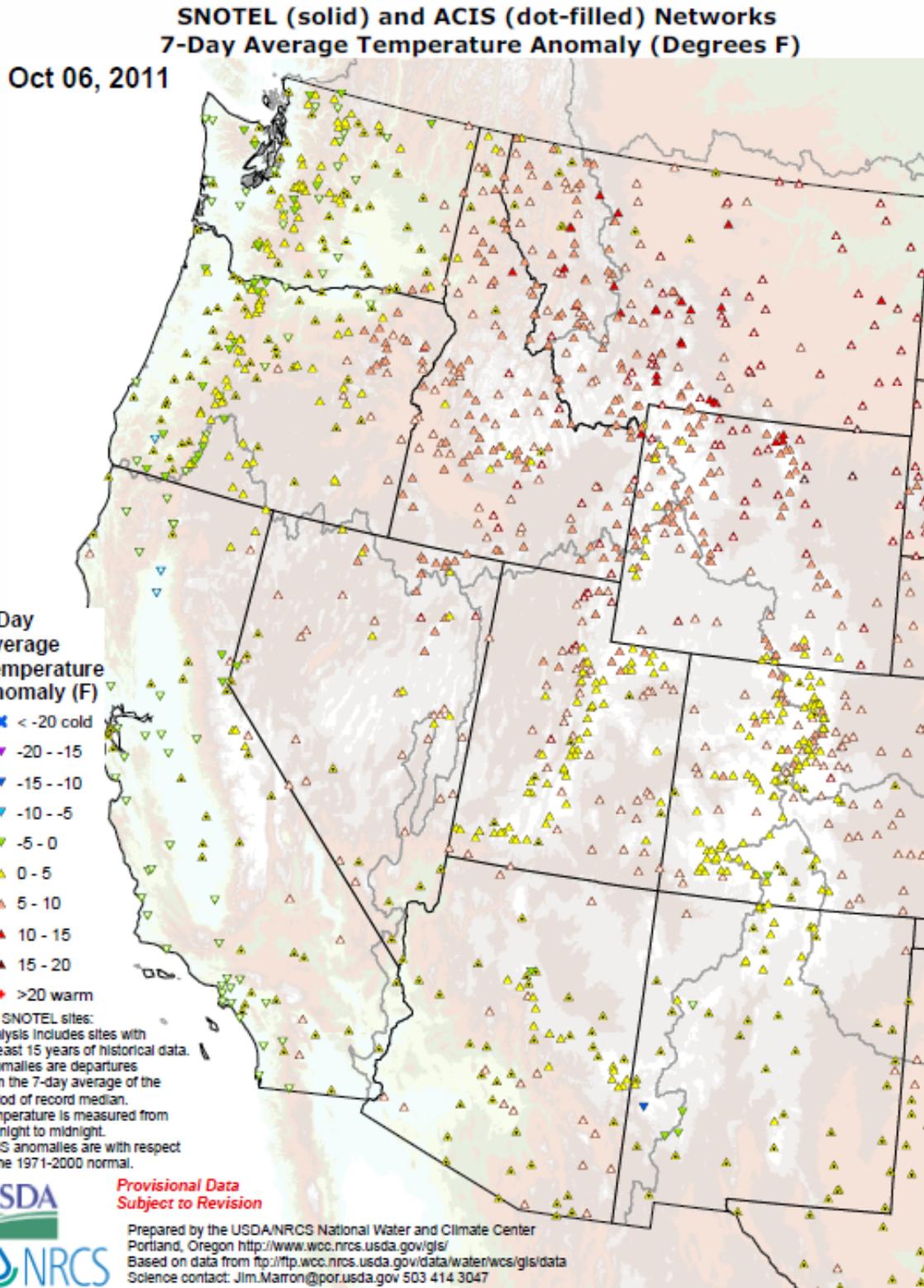
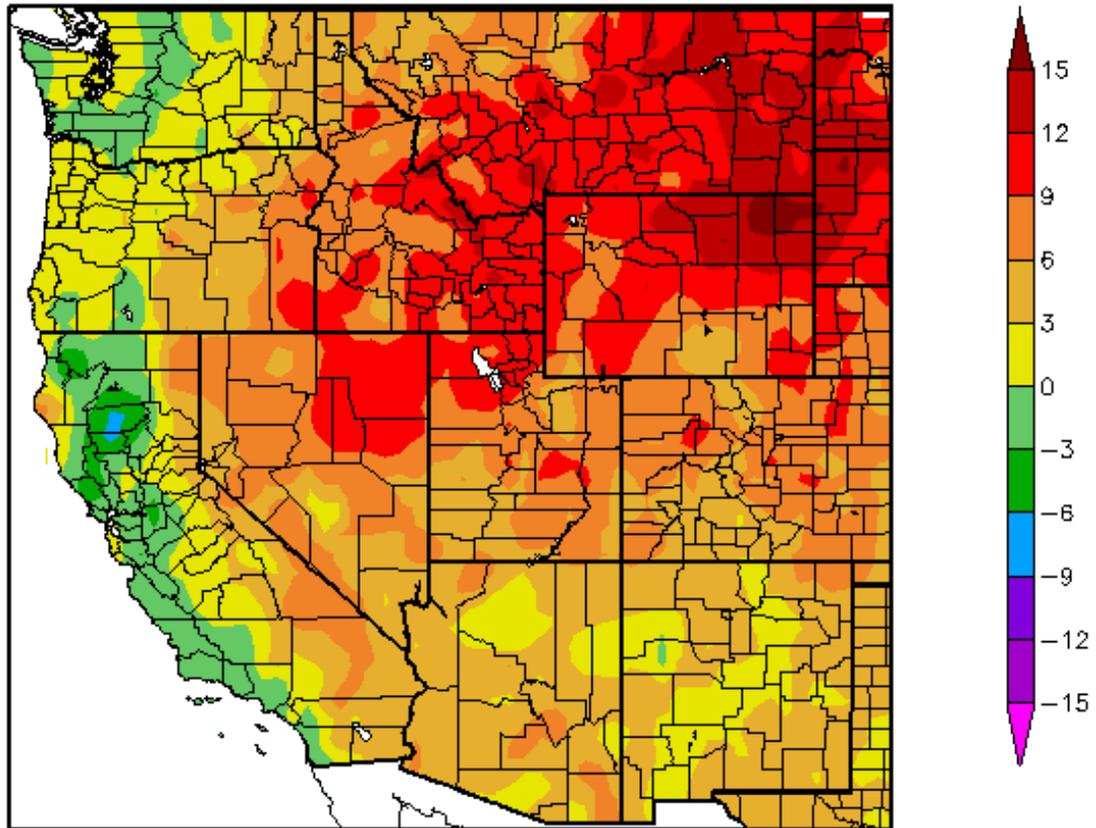


Fig. 1: **SNOTEL** and ACIS 7-day temperature anomaly shows the greatest positive departures over the Northern Rockies and Northern Great Plains and closer to normal temperatures over the Cascades.

Departure from Normal Temperature (F)
9/29/2011 - 10/5/2011



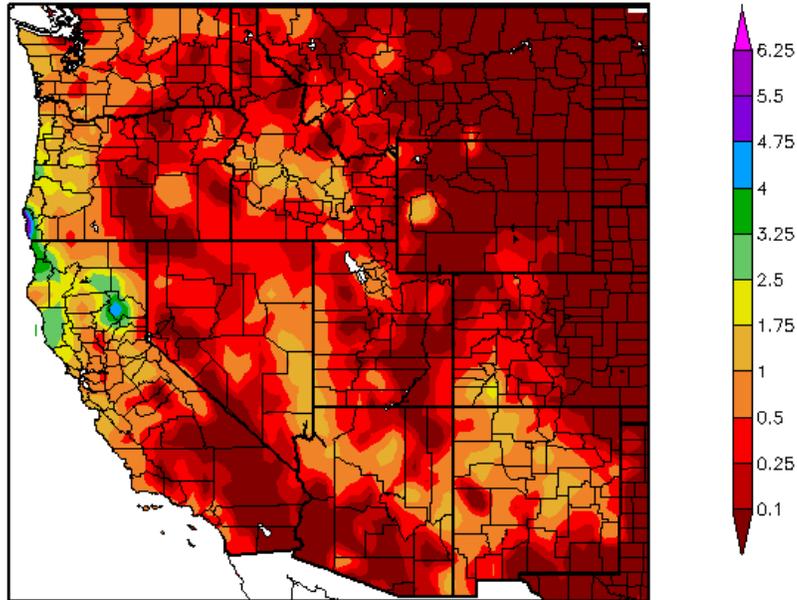
Generated 10/6/2011 at HPRCC using provisional data.

Regional Climate Centers

Fig. 1a: [ACIS](#) 7-day average temperature anomalies show the greatest positive temperature departures over northeastern Wyoming (>+15°F) and the greatest negative departures over north-central California (<-6°F).

Weekly Snowpack and Drought Monitor Update Report

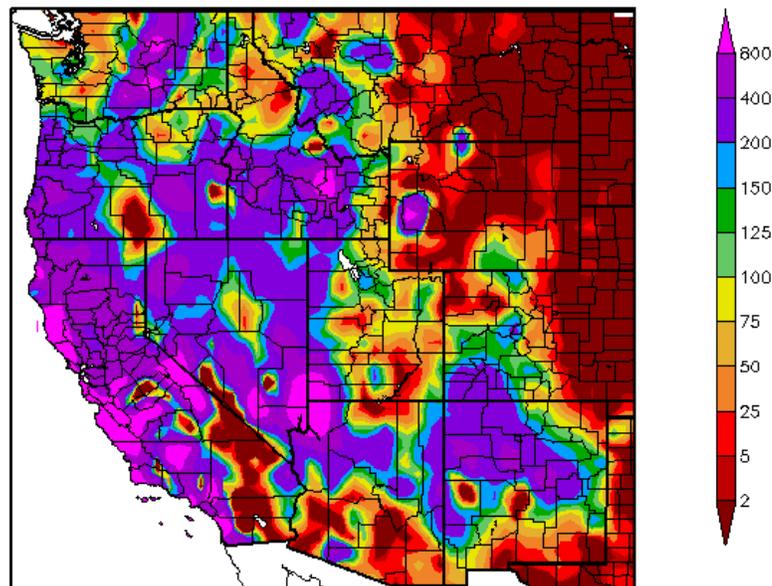
Precipitation (in)
9/29/2011 - 10/5/2011



Generated 10/6/2011 at HPRCC using provisional data.

Regional Climate Centers

Percent of Normal Precipitation (%)
9/29/2011 - 10/5/2011



Generated 10/6/2011 at HPRCC using provisional data.

Regional Climate Centers

Fig. 2 and 2a: [ACIS](#) 7-day average precipitation amounts for the period ending yesterday shows abundant moisture over coastal Oregon and northern California (Fig. 2). In terms of percent of normal, most of the West, west of the Continental Divide experienced early seasonal precipitation that helped bump up the weekly percentages (Fig 2a).

Weekly Snowpack and Drought Monitor Update Report

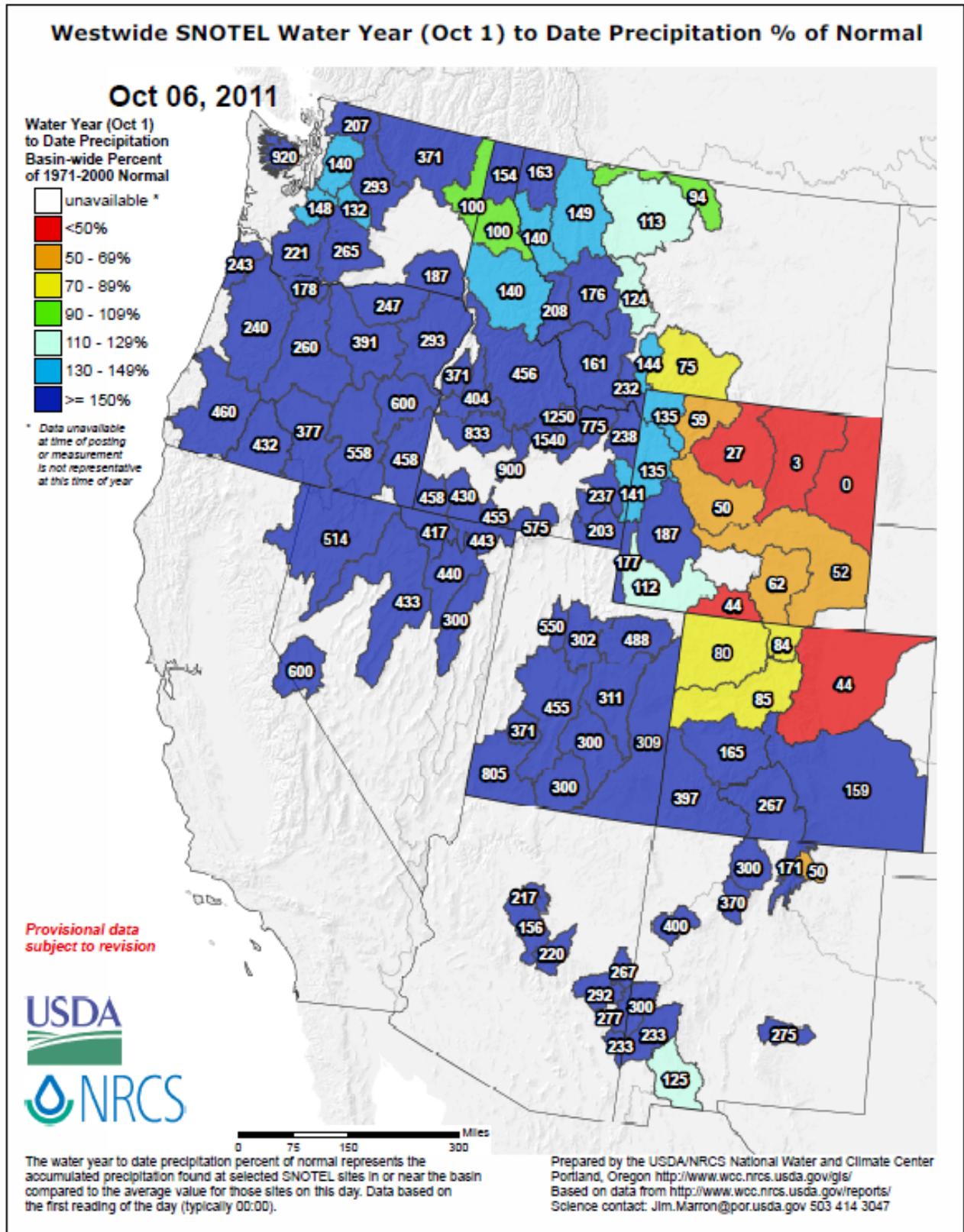


Fig 2b: With the start of the [2012 Water-Year](#) that began on 1 October 2011, any precipitation that falls will skew the statistics since any precipitation that falls is somewhat unusual this time of year over the West. Within the next few weeks, these values will settle down to reflect the typical long-term climatology. Until then, use this product with caution.

U.S. Drought Monitor

October 4, 2011
Valid 8 a.m. EDT

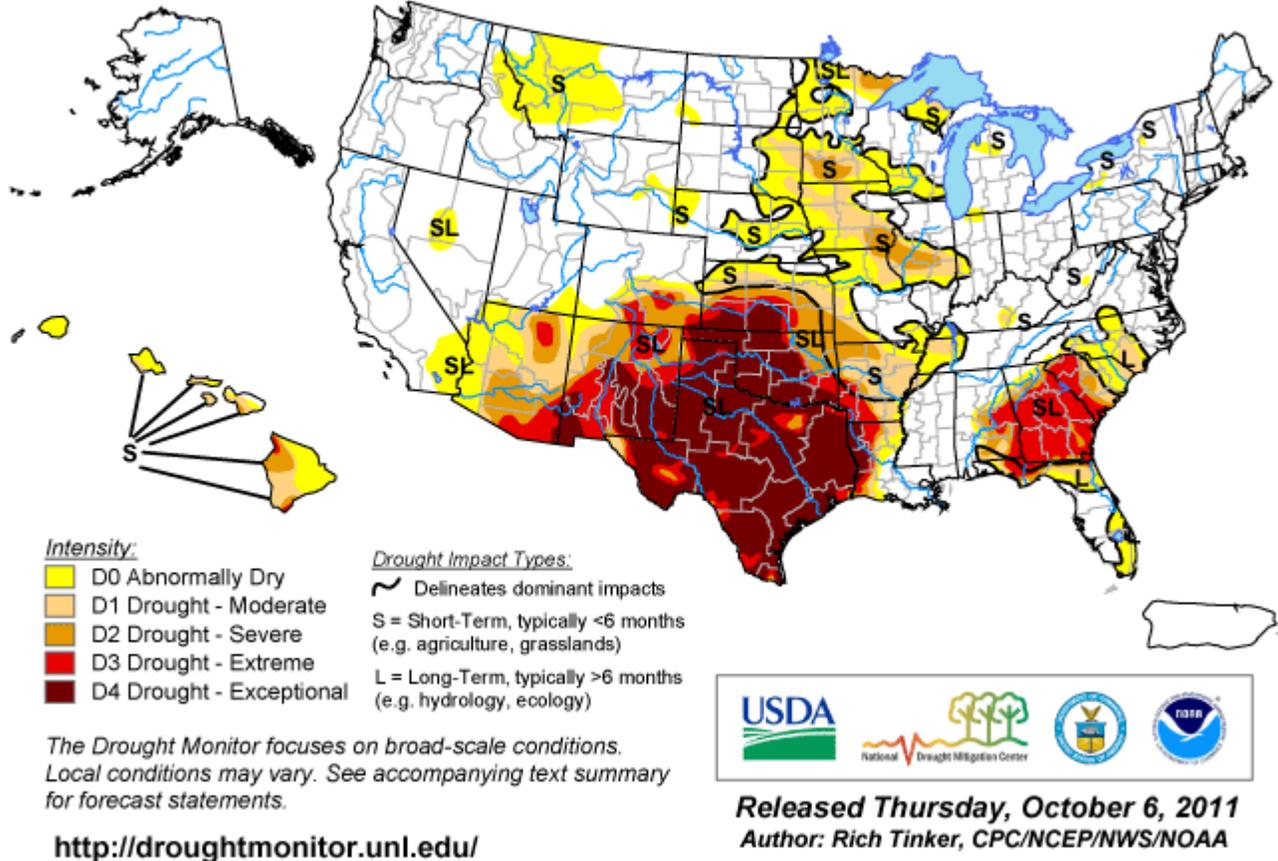


Fig. 3: Current [Drought Monitor](#) weekly summary. The exceptional D4 levels of drought are found over extreme southeast Arizona, New Mexico, Texas, Oklahoma, Kansas, and western Louisiana.

Drought Impact Reporter

[\\$152 million in ag losses to Texas wildfires](#)

Sept 28, Texas. The major components of the \$152 million include burnt fencing, lost infrastructure and burned pastures.

[Drought hurts county pumpkin production](#)

Sept 28, Southeastern North Carolina. Dry conditions this summer led to smaller pumpkins and later maturation this fall.

[Drought lingers in Southern Colorado](#)

Sept 28, Southeastern Colorado. Drought persists, resulting in crop failure on at least 226,000 acres of winter wheat for the most part. An additional 100,000 acres were left fallow, due to drought.

[Drought takes toll on Texas pumpkin patches](#)

Sept 29, West Texas. The pumpkin crop will be smaller than usual in size and quantity.

[Take care buying drought cattle](#)

Sept 28, Nebraska. Livestock producers were cautioned to make sure incoming livestock did not carry diseases, such as trichomoniasis, a sexually transmitted disease that is more prevalent among livestock in Oklahoma and Texas than elsewhere. The disease can cause infertility and abortions.

[Deluge of rain doesn't send drought away](#)

Sept 29, Wisconsin. The Wausau area has had below normal rainfall for the last eight years for a deficit of 24.7 inches since 2003.

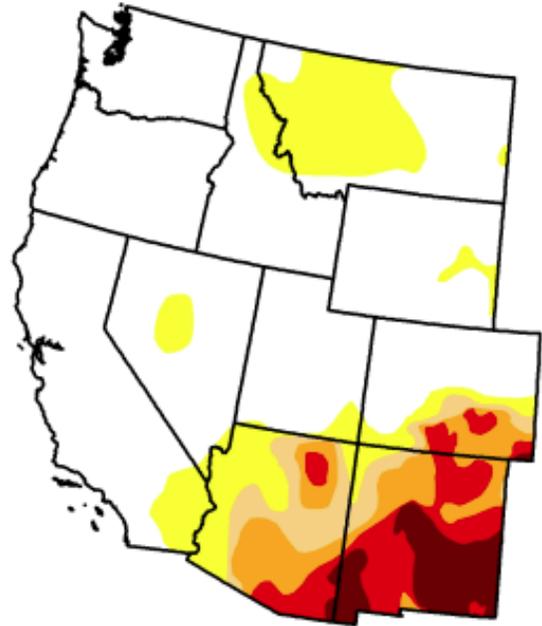
U.S. Drought Monitor

West

October 4, 2011
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	66.39	33.61	19.04	14.99	9.30	3.91
Last Week (09/27/2011 map)	66.72	33.28	19.04	14.99	9.30	3.81
3 Months Ago (07/05/2011 map)	73.58	26.42	19.36	16.03	11.35	5.71
Start of Calendar Year (12/28/2010 map)	73.26	26.74	11.98	0.89	0.00	0.00
Start of Water Year (09/27/2011 map)	66.72	33.28	19.04	14.99	9.30	3.81
One Year Ago (09/28/2010 map)	62.50	37.50	8.14	0.56	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, October 6, 2011
Rich Tinker, Climate Prediction Center/NOAA

Fig. 3a: Drought Monitor for the [Western States](#) with statistics over various time periods. Regionally there was no change in drought condition this week.

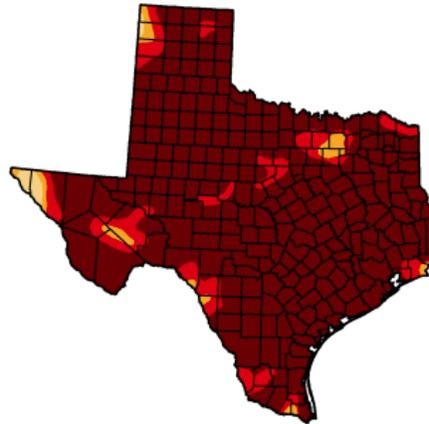
Weekly Snowpack and Drought Monitor Update Report

U.S. Drought Monitor

Texas

October 4, 2011
Valid 7 a.m. EST

	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	100.00	99.16	96.99	87.98
Last Week (09/27/2011 map)	0.00	100.00	100.00	99.16	96.65	85.75
3 Months Ago (07/05/2011 map)	2.41	97.59	95.73	94.39	90.21	71.30
Start of Calendar Year (12/28/2010 map)	7.89	92.11	69.43	37.46	9.59	0.00
Start of Water Year (09/27/2011 map)	0.00	100.00	100.00	99.16	96.65	85.75
One Year Ago (09/28/2010 map)	75.57	24.43	2.43	0.99	0.00	0.00



Intensity:

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

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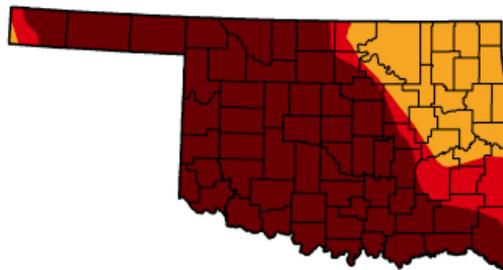
Fig. 3b(1): Currently, 88% of [Texas](#) is experiencing “Exceptional” D4 drought. 97% of the state is in D3 and D4 drought!

U.S. Drought Monitor

Oklahoma

October 4, 2011
Valid 7 a.m. EST

	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	100.00	100.00	78.97	69.67
Last Week (09/27/2011 map)	0.00	100.00	100.00	100.00	78.97	66.42
3 Months Ago (07/05/2011 map)	0.00	100.00	93.77	60.75	44.18	32.78
Start of Calendar Year (12/28/2010 map)	13.82	86.18	47.90	1.50	0.00	0.00
Start of Water Year (09/27/2011 map)	0.00	100.00	100.00	100.00	78.97	66.42
One Year Ago (09/28/2010 map)	66.28	33.72	4.21	0.00	0.00	0.00



Intensity:

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

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<http://droughtmonitor.unl.edu>



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Fig. 3b(2) Currently, over 69% of [Oklahoma](#) is experiencing “Exceptional” D4 drought. Over 79% of the state is in D3 and D4 drought!

Weekly Snowpack and Drought Monitor Update Report

U.S. Drought Monitor

New Mexico

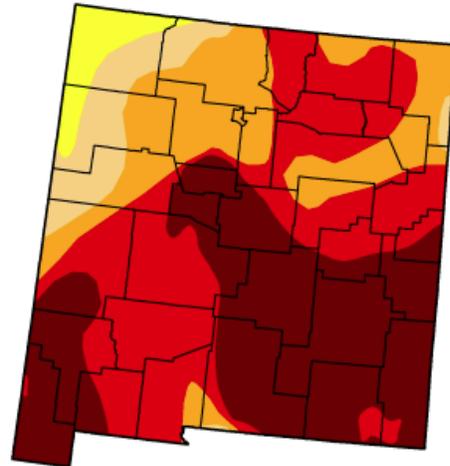
October 4, 2011
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	96.40	88.99	69.61	36.07
Last Week (09/27/2011 map)	0.00	100.00	96.40	88.99	69.61	35.13
3 Months Ago (07/05/2011 map)	0.00	100.00	100.00	93.96	79.34	49.09
Start of Calendar Year (12/28/2010 map)	6.16	93.84	40.40	0.00	0.00	0.00
Start of Water Year (09/27/2011 map)	0.00	100.00	96.40	88.99	69.61	35.13
One Year Ago (09/28/2010 map)	76.66	23.34	0.00	0.00	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, October 6, 2011
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Fig. 3b(3): Currently, 36% of **New Mexico** is experiencing “Exceptional” D4 drought. Over ~70% of the state is in D3 and D4 drought. This represents no change this week.

U.S. Drought Monitor

Kansas

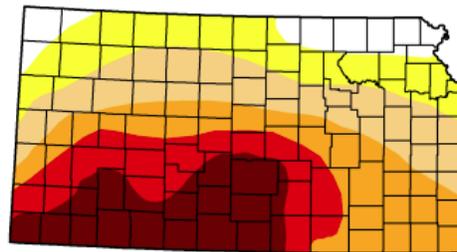
October 4, 2011
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	7.42	92.58	75.02	53.96	32.83	17.64
Last Week (09/27/2011 map)	16.39	83.61	66.03	48.78	28.54	17.63
3 Months Ago (07/05/2011 map)	14.53	85.47	52.41	33.87	13.75	1.95
Start of Calendar Year (12/28/2010 map)	17.82	82.18	43.85	3.48	0.00	0.00
Start of Water Year (09/27/2011 map)	16.39	83.61	66.03	48.78	28.54	17.63
One Year Ago (09/28/2010 map)	83.23	16.77	0.00	0.00	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.

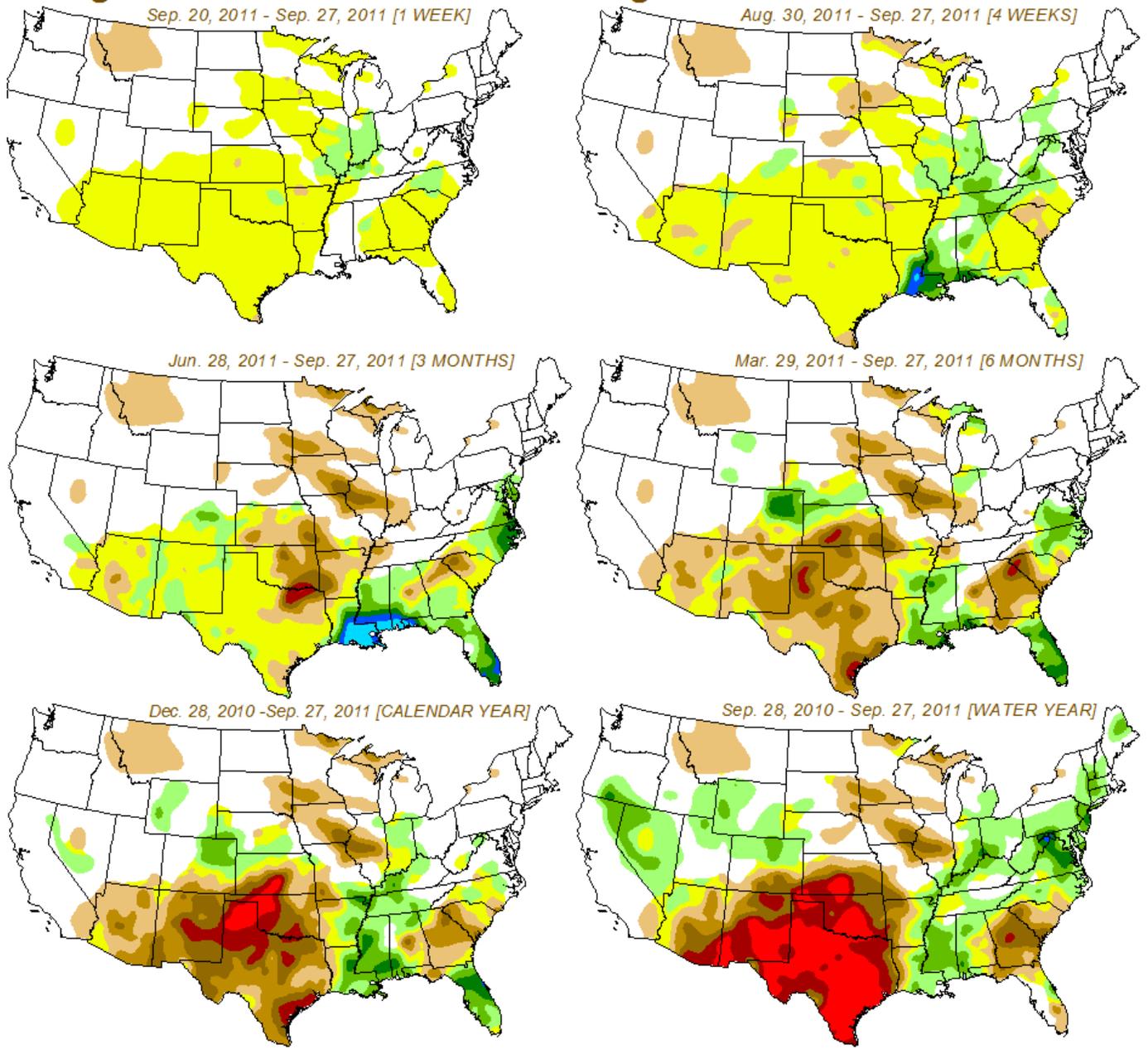
<http://droughtmonitor.unl.edu>



Released Thursday, October 6, 2011
Rich Tinker, Climate Prediction Center/NOAA

Fig. 3b(4): Currently, 17% of **Kansas** is experiencing “Exceptional” D4 drought ~33% of the state is in D3 and D4 drought. Slight deterioration in D3 noted this week.

Drought Monitor Classification Changes for Selected Time Periods

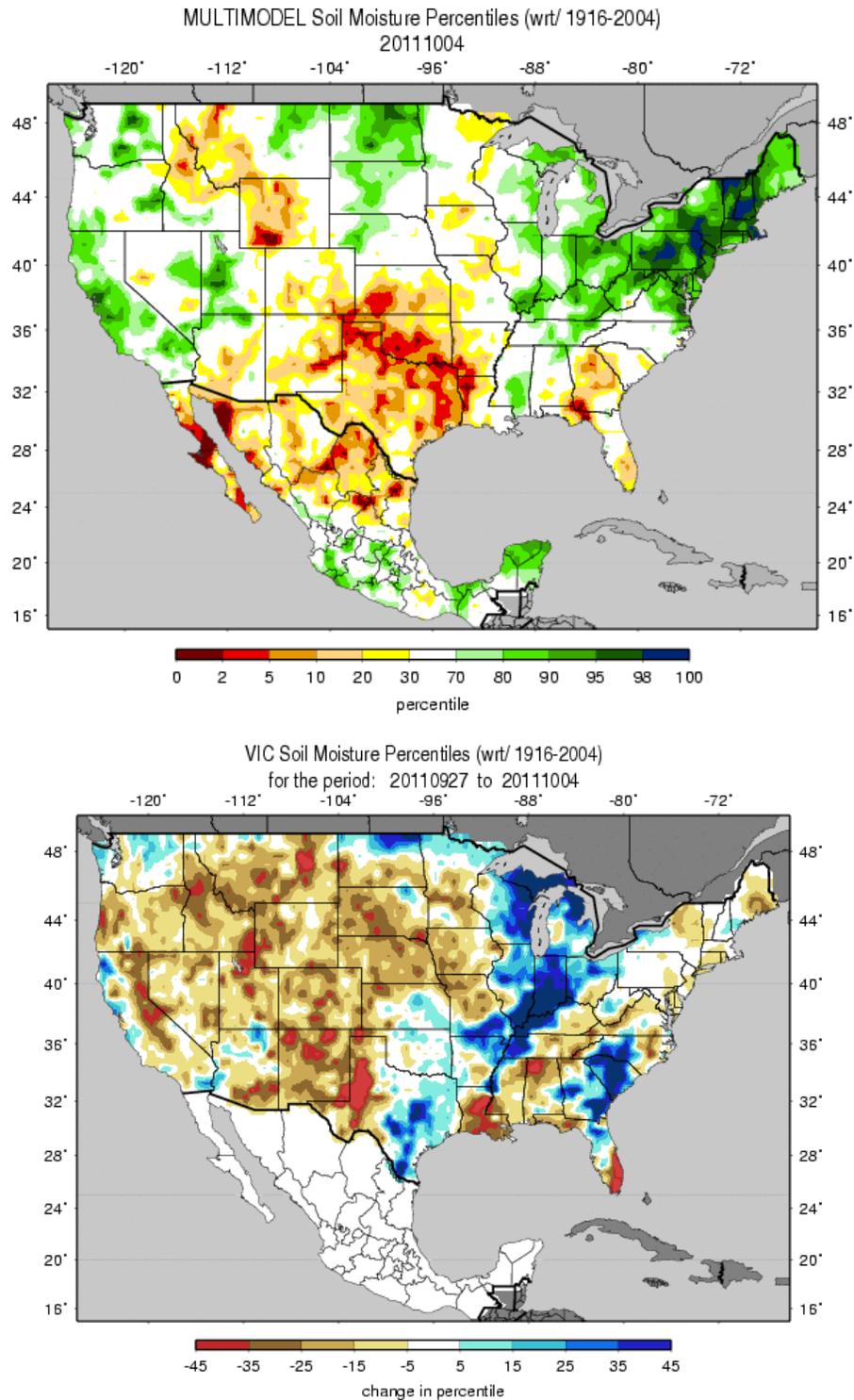


■ 5 class improvement ■ 1 class deterioration
■ 4 class improvement ■ 2 class deterioration
■ 3 class improvement ■ 3 class deterioration
■ 2 class improvement ■ 4 class deterioration
■ 1 class improvement ■ 5 class deterioration
■ unchanged

These maps depict approximate changes in drought intensity from selected initial times to the current week, with no consideration given to intervening weeks. The difference calculations are based on interpolated 4 km grids of Drought Monitor classifications, and as a result, will be smoother than would similar products based directly on the published versions of the Drought Monitor.

Fig. 3c: Drought Monitor Classification changes over various time periods.

Weekly Snowpack and Drought Monitor Update Report



Figs. 4a and 4b: Soil Moisture ranking in [percentile](#) as of 4 October (top) shows accumulated moist conditions still over of New England due to Tropical Storm Irene and Tropical Depression Lee. [During the week](#), significant increases in moisture are noted over the Great Lakes, Southeast, and Midwest. Dryness increased over the Western States due to unseasonable warm conditions.

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Soil Climate Analysis Network (SCAN)

Station (205) MONTH=2011-09-06 (Daily) NRCS National Water and Climate Center - Provisional Data - subject to revision
Thu Oct 06 07:46:06 PDT 2011

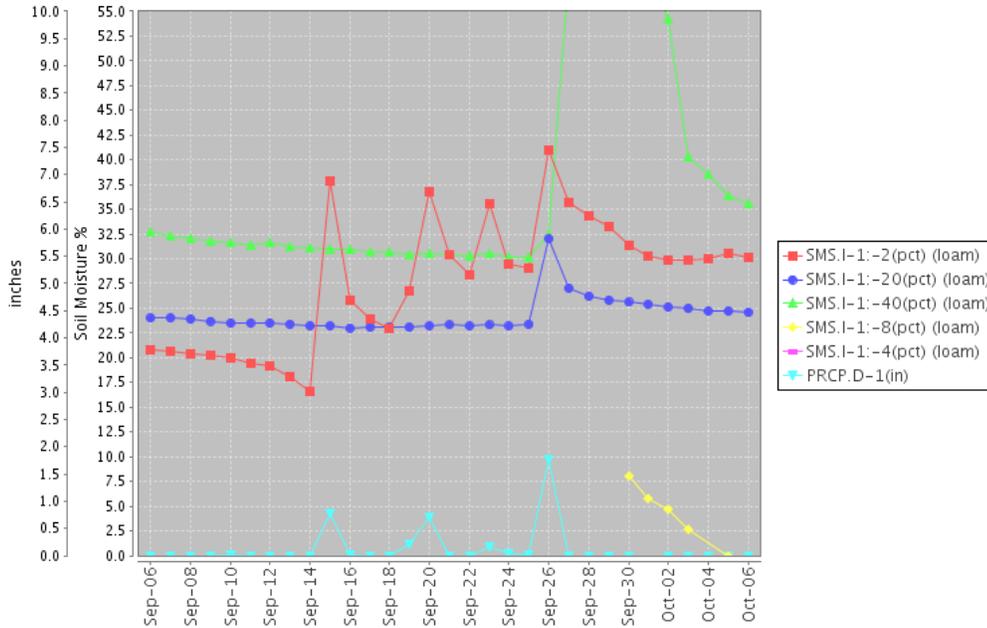


Fig. 5a: This NRCS resource shows a site in [western Kentucky](#) with moistening soil due to recent rains.

Station (2105) MONTH=2011-09-06 (Daily) NRCS National Water and Climate Center - Provisional Data - subject to revision
Thu Oct 06 07:48:15 PDT 2011

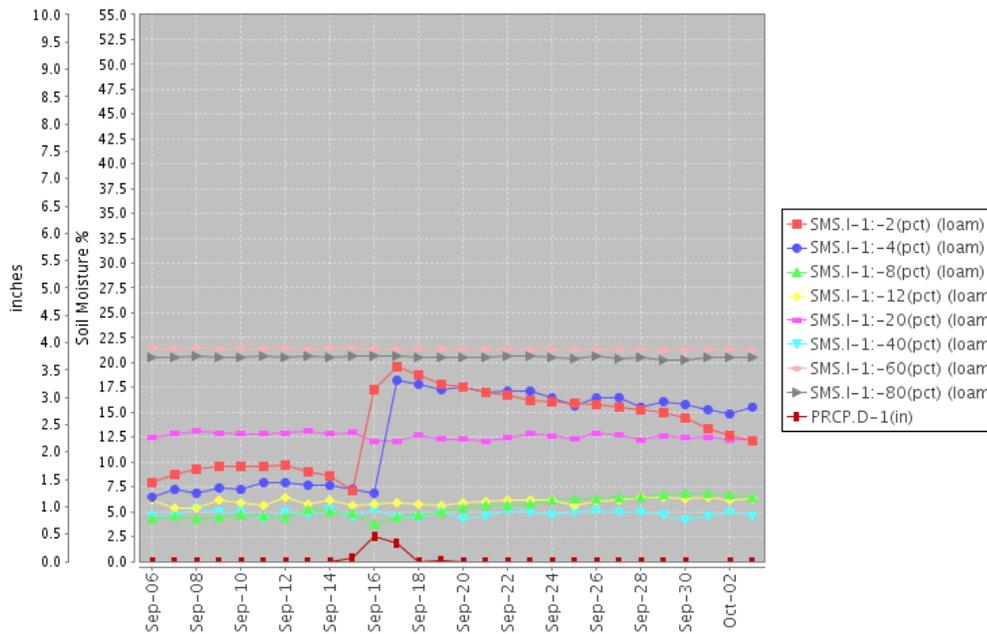
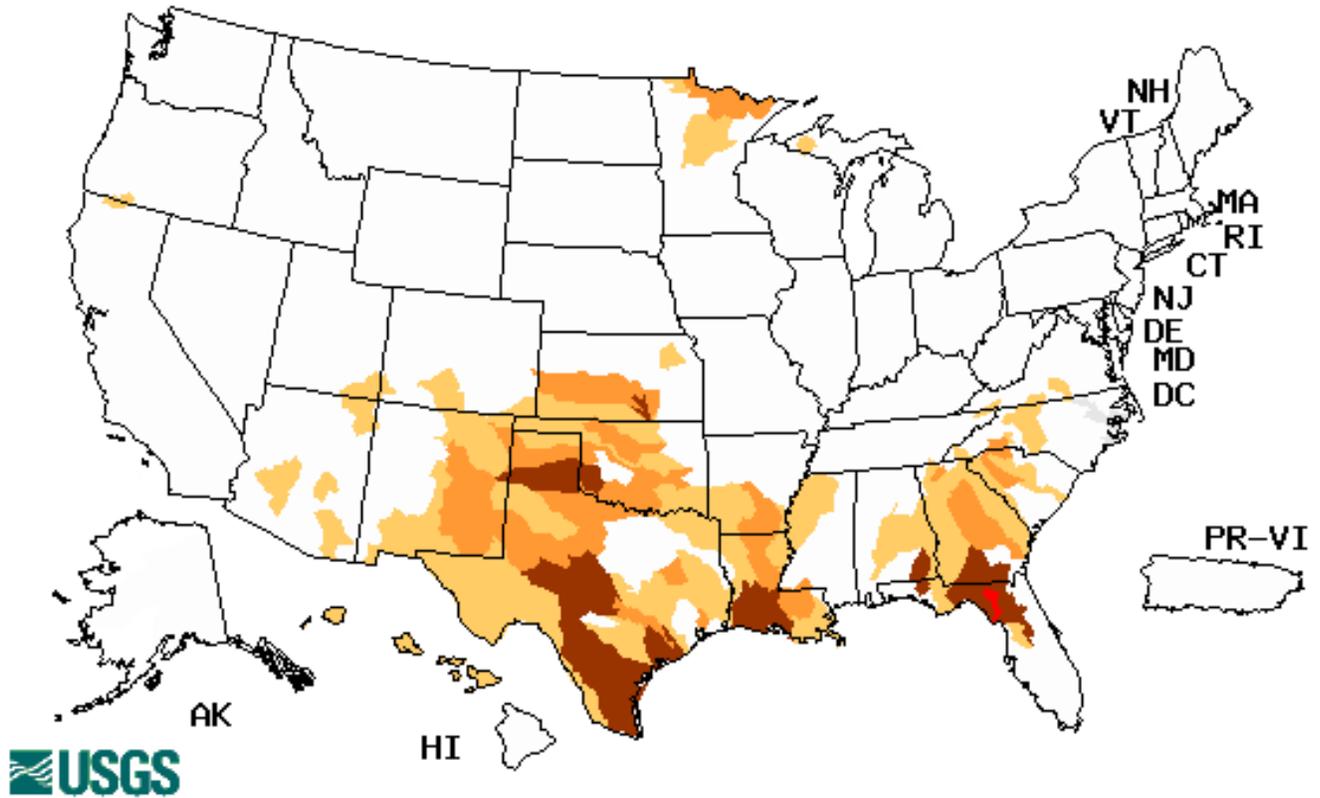


Fig. 5b: This SCAN station is located in the [Panhandle of Texas](#) shows drying soil in the top layers since mid September.

Weekly Snowpack and Drought Monitor Update Report

Wednesday, October 05, 2011



Explanation - Percentile classes				
Low	<=5	6-9	10-24	Insufficient data for a hydrologic region
Extreme hydrologic drought	Severe hydrologic drought	Moderate hydrologic drought	Below normal	

Fig. 6: Map of below normal 7-day average [streamflow](#) compared to historical streamflow for the day of year. Extreme conditions continue over parts of northern Florida.

Weekly Snowpack and Drought Monitor Update Report

National Drought Summary – October 5, 2011

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/>.

The Southeast: Areas of heavy rain again affected parts of this area, leading to some drought/dryness reductions in the central Carolinas and finally slicing a hole in the large D3 area centered on Georgia, in particular across the interior southeast, where totals of 4 to 8 inches fell during the last 2 weeks. Similar rainfall during this period in central and west-central Georgia was not quite adequate to bring a classification improvement, but was sufficient to justify scaling back the dryness and drought in southwestern Alabama. Light precipitation led to expansion of D0 to D3 conditions in western South Carolina and adjacent North Carolina, where about half of normal rainfall was observed over the last 30 days.

South of these areas, D0 to D3 areas expanded southward in the central Panhandle and in parts of the northern Peninsula. Six-month deficits exceed one foot now in parts of the central Peninsula. Across southern Florida, rain has been spotty but locally heavy recently, and quite a few minor adjustments to the region's D0 to D2 areas were made this week.

The Northeast and Mid-Atlantic: Hit-and-miss light rainfall continued again in and near the areas of dryness in New York and West Virginia. As a result, the D0 areas were reconfigured a bit but their intensity remained unchanged.

The South: Over 4 inches of rain soaked part of the central Lower Mississippi Valley, allowing D0 to D3 conditions to be scaled back to the west. Elsewhere, moderate to locally heavy rains fell on northeast Oklahoma and southern Missouri, but appeared insufficient to substantially change drought conditions there. In the rest of the region, the theme of the last year was again played out: Little or no precipitation, and increasing moisture deficits except in small isolated areas. Several small adjustments were made in parts of the region, but of course the sprawling D4 area centered on Texas can't be depicted any more seriously than it already was. Some larger-scale changes included expansion of D4 with growing shorter-term deficits in southeast Oklahoma, a westward expansion of D0 to D3 conditions along the immediate southwestern Louisiana coast, and the extension of D1 conditions eastward to cover most of Arkansas. Several reports of dry pastures affecting livestock were noted, and despite recent near-normal precipitation, water supplies remain a concern in northwest Arkansas as well as throughout the large area of exceptional drought.

The Ohio Valley: A swath of heavy rain (generally 4 to locally 8 inches) wiped out dryness in southern Indiana and adjacent areas, but in other sections, specifically south-central Kentucky and areas from west-central Indiana westward, dryness and drought persisted.

The Plains and Midwest: Several inches of rain eased dryness and drought in the upper Peninsula of Michigan, and more moderate rains kept drought depictions unchanged in the remainder of the Great Lakes region. Farther west and south, in areas from central Kansas to

Weekly Snowpack and Drought Monitor Update Report

northern Missouri and northward through the eastern Dakotas and Minnesota, short-term but intense dryness has led to the rapid development and expansion of dryness and drought. Many areas have received less than one-quarter of normal precipitation in the last 30 to 60 days, along with above normal temperatures. The rapid development of dryness quickly depleted topsoils, even leading to fires in some brush and even crop areas. Drought now covers areas from southeast Iowa to eastern South Dakota, with severe drought now observed in southern Minnesota.

The West: A re-assessment of rainfall during the past few months led to a reduction from D4 to D3 conditions for a small area in southeast New Mexico, but otherwise, light precipitation at best kept existing dryness and drought intact from the High Plains westward through the Rockies and Intermountain West.

Hawaii, Alaska and Puerto Rico: Drought conditions remained unchanged in Alaska and Puerto Rico this week. In Hawaii, further degradation was noted D1 to D3 conditions expanded in northeastern sections of the Big Island. Farther south, D3 was introduced along part of the southern Big Island coastal areas.

Looking Ahead: During October 5 – 10, 2011, a dramatic and long-overdue swath of moisture should push into the central and western Plains states, dropping over an inch of rain on a broad area from the northwestern half of Texas (except the Big Bend) northward through Nebraska and the adjacent Dakotas and Minnesota. Totals may reach 3.5 to 5.5 inches in central Nebraska and also southeastern parts of the Texas Panhandle. Farther east, a tropical system should spread heavy rains across Florida, southeastern Georgia, and adjacent South Carolina. Over 1.5 inch is expected through this region, with as much as 8 inches possible along the southeast Florida coast. Elsewhere, anywhere from a few tenths of an inch to a couple of inches of precipitation should fall on parts of the Rockies, with light rain at best in other areas of dryness and drought.

For the ensuing 5 days (October 11 – 15, 2011), odds favor a return to dryness from the central and southern Intermountain West eastward through the southern Plains and middle Mississippi Valley, including most of Texas. In contrast, wet weather is favored in the northern Rockies and in the dry areas of the Southeast. **Author:** [Rich Tinker, Climate Prediction Center, NCEP/NWS/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 October 5, 2011