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

Weekly Report - Snowpack / Drought Monitor Update Date: 22 September 2011

SNOTEL SNOWPACK AND PRECIPITATION SUMMARY

Temperature: SNOTEL and ACIS 7-day temperature anomaly shows temperatures within 5°F of average for this time of year (Fig. 1). ACIS 7-day average temperature anomalies show the greatest positive temperature departures over east-central Oregon (>+8°F) and the greatest negative departures along the California coast (<-2°F) (Fig. 1a).

Precipitation: ACIS 7-day average precipitation amounts for the period ending yesterday shows scattered thunderstorms due to the Southwest Monsoon (Fig. 2). In terms of percent of normal, this is also reflected over this same region (Fig 2a). As we wind down the 2011 Water-Year that began on 1 October 2010, the greatest deficits are found over the extreme southern reaches of the Southwest. Areas with the highest values are found over the Great Basin, Cascades, Sierra, and parts of Northern and Central Rockies (Fig. 2b).

The West: The West generally continued to benefit from some above-normal rainfall. In northern and central Colorado beneficial rains improved conditions in the Extreme (D3), Severe (D2), and Moderate (D1) drought areas as well as the Abnormal Dryness (D0). In New Mexico, conditions in the northwest part of the state improved while in Arizona, near-record rainfall around Tucson led to improvements in Extreme Drought (D3) in that area. The Abnormal Dryness (D0) also improved in southern Nevada. 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 (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 3d).

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/.

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

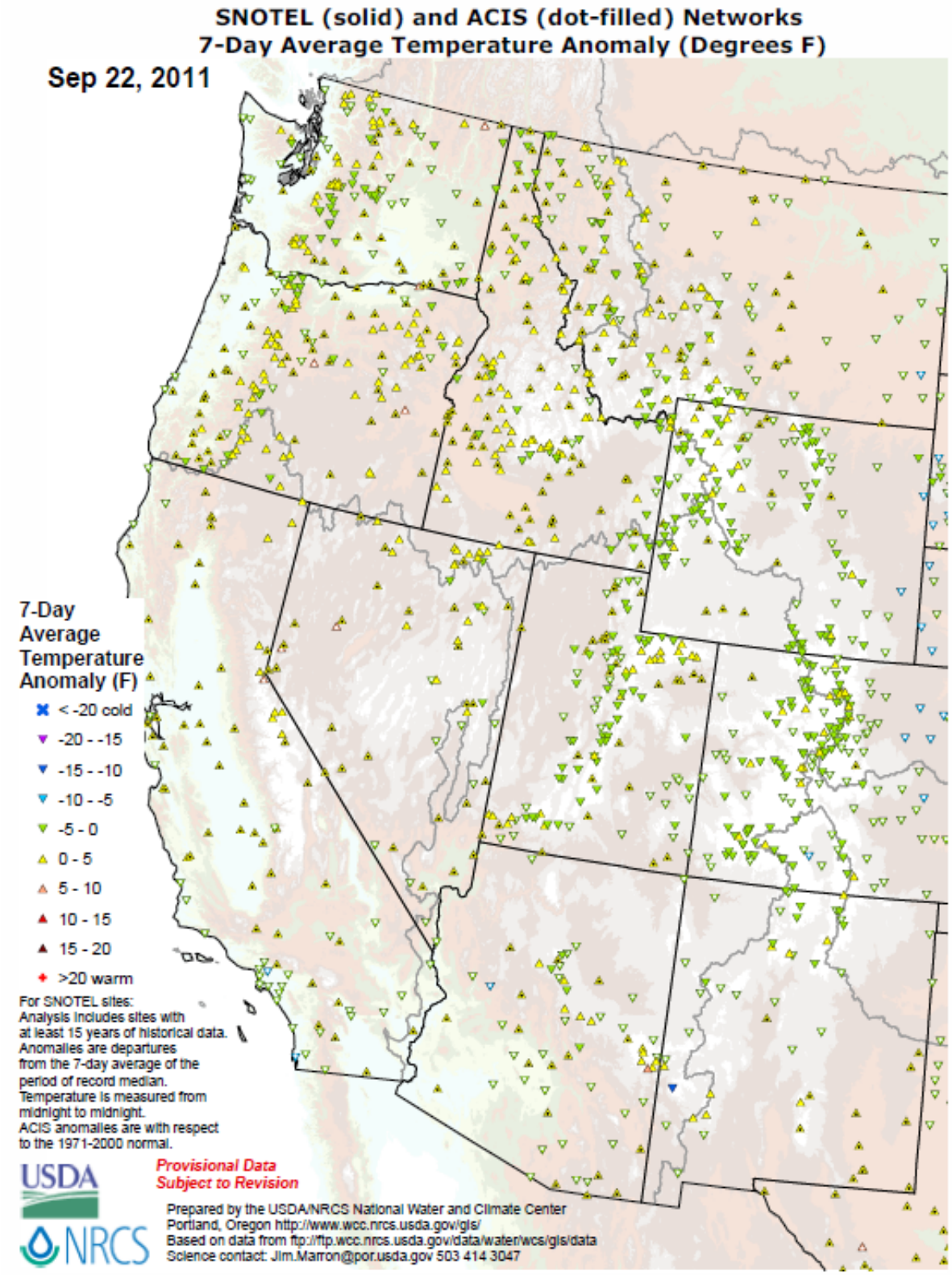


Fig. 1: SNOTEL and ACIS 7-day temperature anomaly shows temperatures within 5°F of average for this time of year.

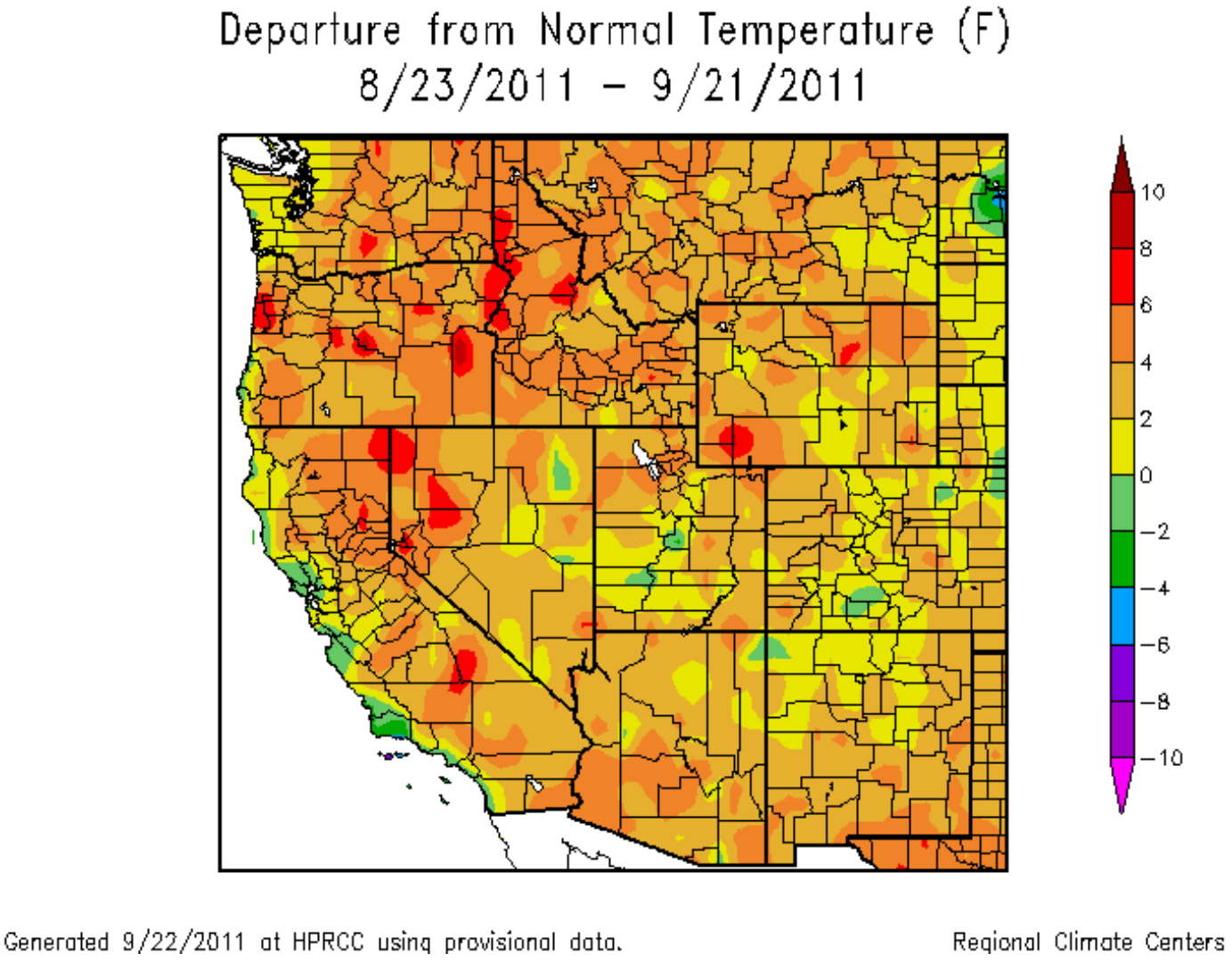
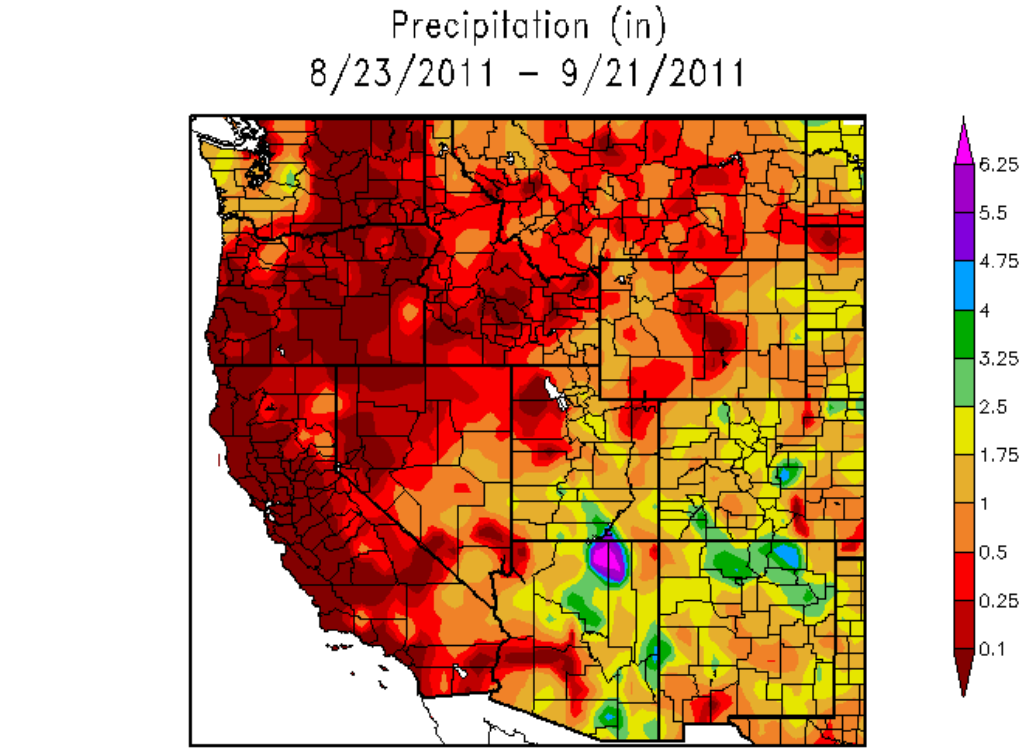


Fig. 1a: ACIS 7-day average temperature anomalies show the greatest positive temperature departures over east-central Oregon (>+8°F) and the greatest negative departures along the California coast (<-2°F).



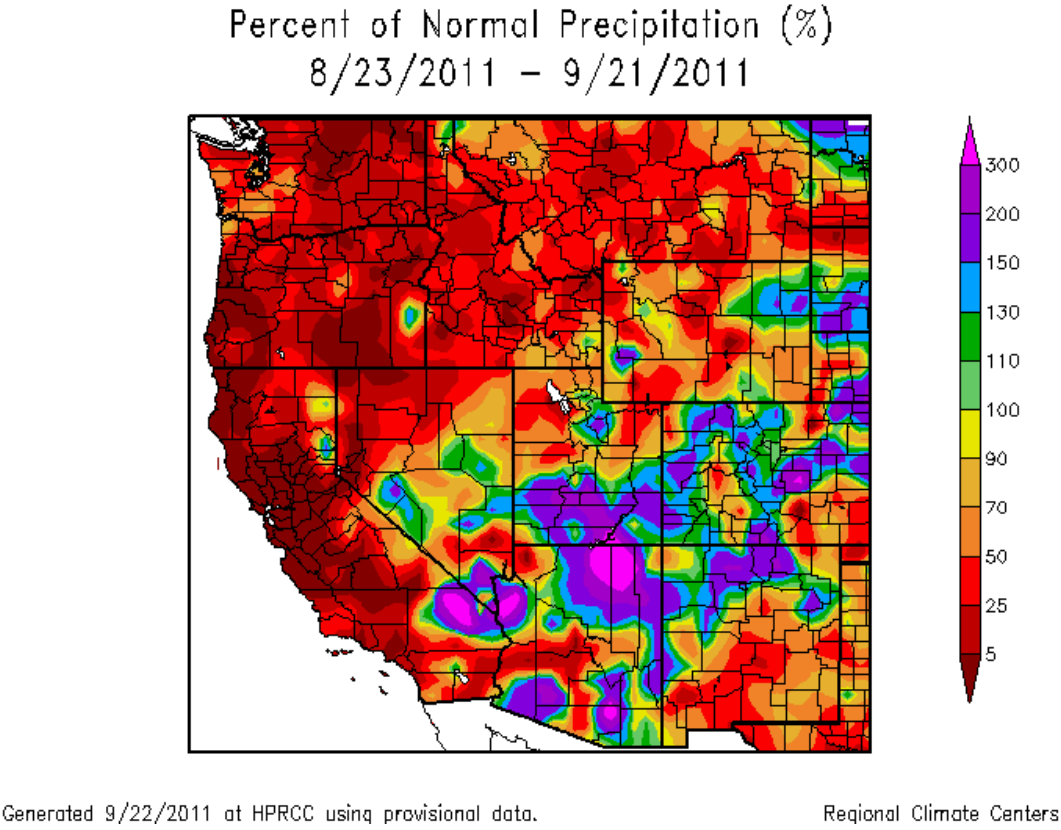


Fig. 2 and 2a: ACIS 7-day average precipitation amounts for the period ending yesterday shows scattered thunderstorms due to the Southwest Monsoon (Fig. 2). In terms of percent of normal, this is also reflected over this same region (Fig 2a).

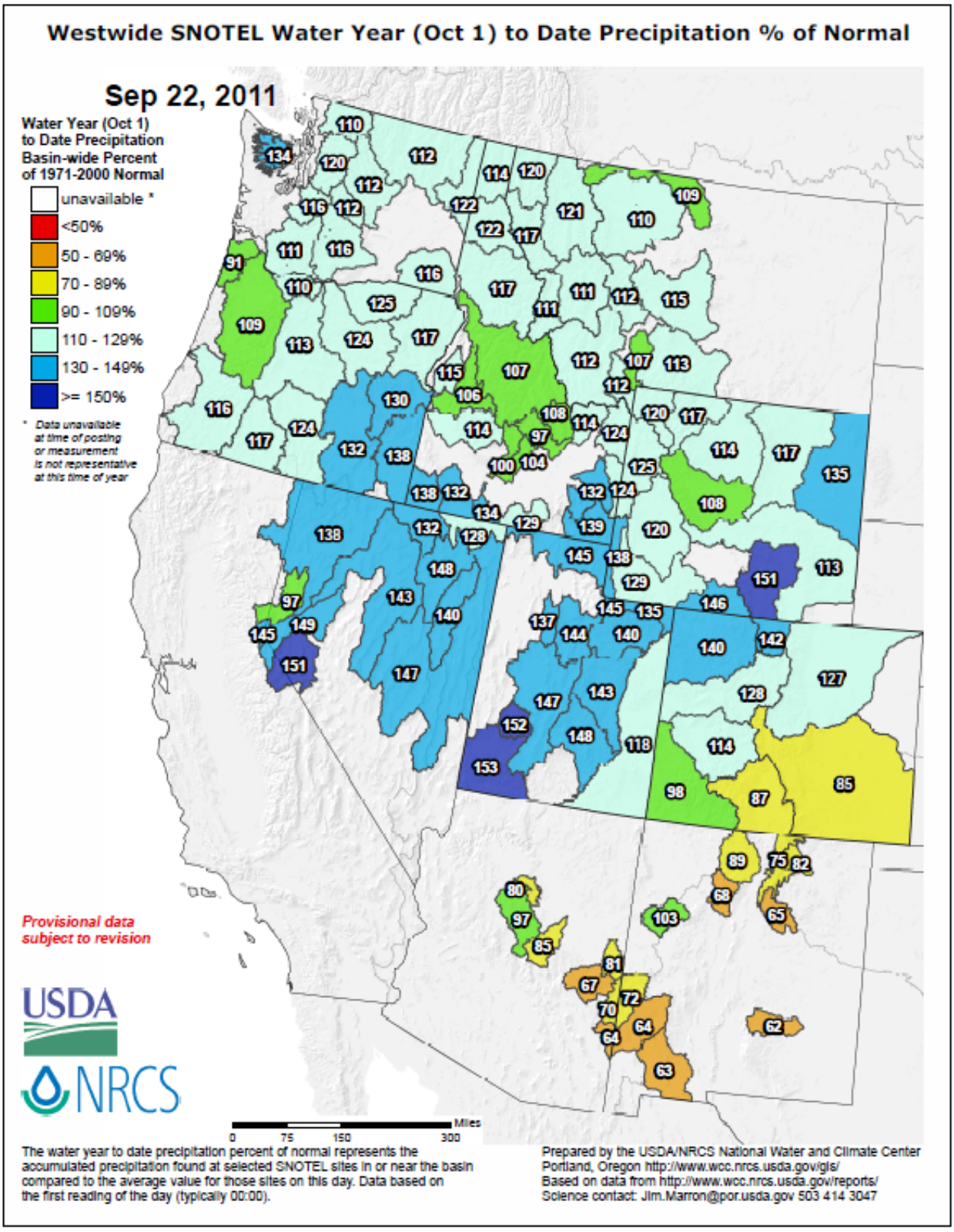


Fig 2b: As we wind down to the end of the 2011 Water-Year that began on 1 October 2010, the greatest deficits are found over the extreme southern reaches of the Southwest. Areas with the highest values are found over the Great Basin, Cascades, Sierra, and parts of Northern and Central Rockies.

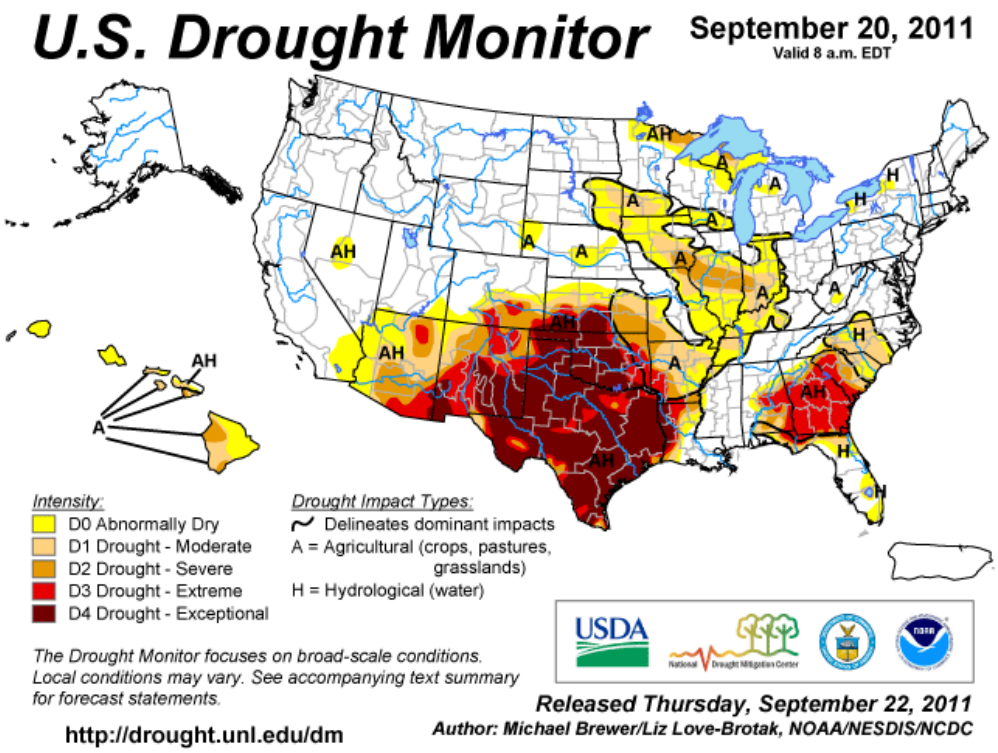


Fig. 3: Current Drought Monitor weekly summary. The exceptional D4 levels of drought are found over extreme southeast Arizona, New Mexico, Texas, Oklahoma, and western Louisiana.

Headline Agriculture News

Sept 14, Iowa. Drought since July has hurt the corn yield in southeastern Iowa.

Sept 14, Kansas. The $1.7 billion includes $285.8 million in damage to the wheat crop, $965.7 million in corn losses, $213.7 million in sorghum losses and $309.8 million in soybean losses.

Sept 15, Texas. Some Texas ranchers held on to their cattle as long as possible, but finally sold. Some of the cattle were being transported to new homes in Iowa and other northern states.

Sept 13, Texas. Ranchers were still culling since they have few other options.

Sept 13, Wisconsin. The USDA rated 52 percent of the corn crop as being in good or excellent condition, down 10 percent from last month's assessment, as August's heat and insufficient rainfall in many locales hurt the corn crop.

Sept 13, Kansas. Many farmers in Kansas need a good wheat crop to compensate for crop losses caused by drought over the past year. High wheat prices will also encourage more planting.

Sept 12, South central Kansas. Farmers planted more corn than last year, but drought and heat whittled expectations for the harvest in south central Kansas by 40 percent and for the state by 19 percent.

Sept 14, Oklahoma. The article breaks the conservative figure of $1.6 billion into losses to general crops, specialty crops, horticultural crops and livestock.

Sept 15, Weatherford, Texas. Pecan producers in the Texas Pecan Growers' Association anticipate a 40 to 50 drop in production thanks to freezing temperatures last winter and drought.

Sept 13, Indiana. Yields are anticipated to be roughly 20 bushels per acre below average or 145 bushels per acre. The August prediction was 5 bushels per acre higher.

Sept 14, West Texas. "It's an unmitigated disaster," says Darren Hudson, director of the Cotton Economics Research Institute at Texas Tech University in Lubbock. He stated that cotton production in West Texas may fall to one-third of the 10-year average. Note the comparison between bale contracts and acre contracts toward the end of the article.

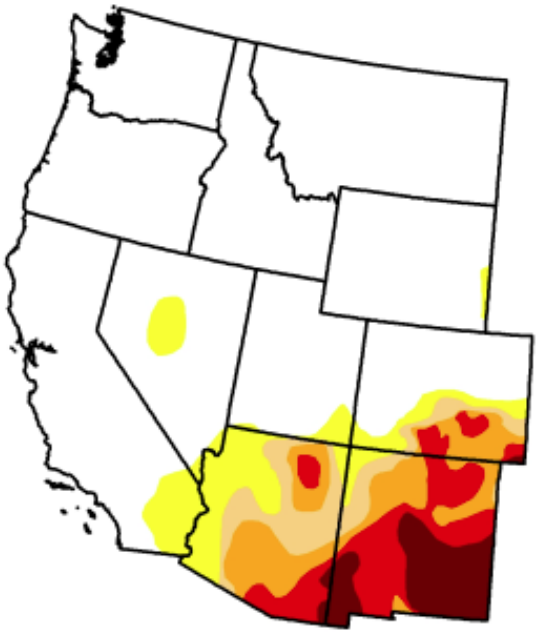
U.S. Drought Monitor

September 20, 2011
Valid 7 a.m. EST

West

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	73.65	26.35	19.04	14.99	9.30	3.81
Last Week (09/13/2011 map)	69.61	30.39	19.84	15.58	10.00	4.13
3 Months Ago (06/21/2011 map)	78.53	21.47	17.90	13.98	10.10	5.65
Start of Calendar Year (12/28/2010 map)	73.26	26.74	11.98	0.89	0.00	0.00
Start of Water Year (09/28/2010 map)	62.50	37.50	8.14	0.56	0.00	0.00
One Year Ago (09/14/2010 map)	72.79	27.21	6.92	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://drought.unl.edu/dm

USDA National Drought Mitigation Center

Released Thursday, September 22, 2011
Michael Brewer, National Climatic Data Center/NOAA

Fig. 3a: Drought Monitor for the Western States with statistics over various time periods. Regionally there was a slight improvement in drought condition this week.

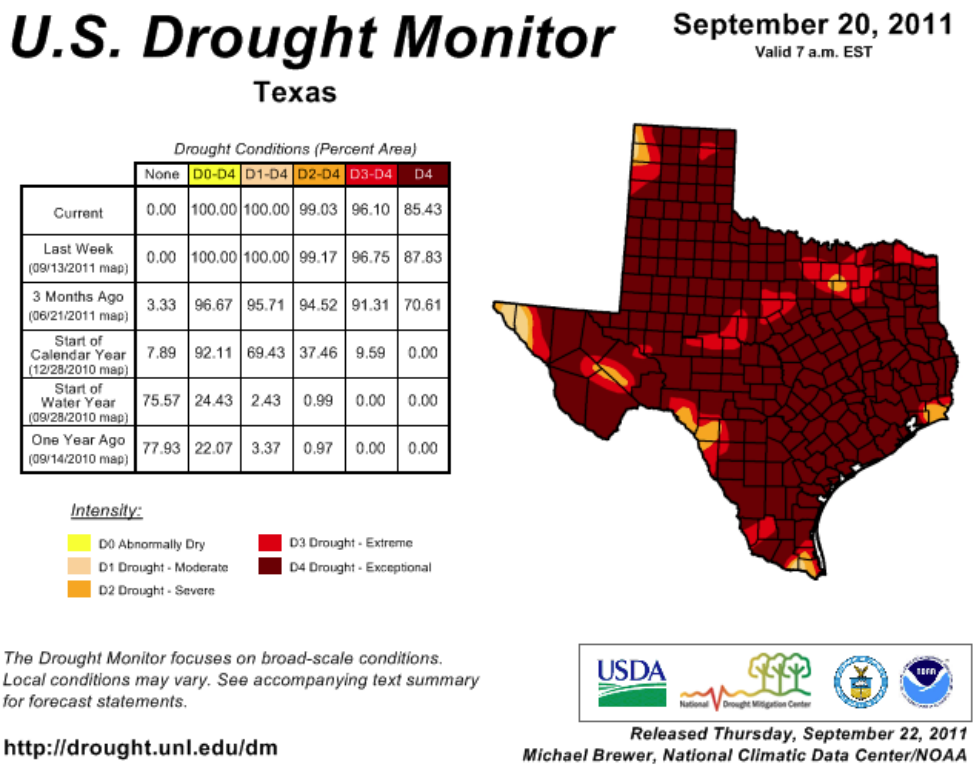


Fig. 3b(1): Currently, 85% of Texas is experiencing "Exceptional" D4 drought. Over 96% of the state is in D3 and D4 drought!

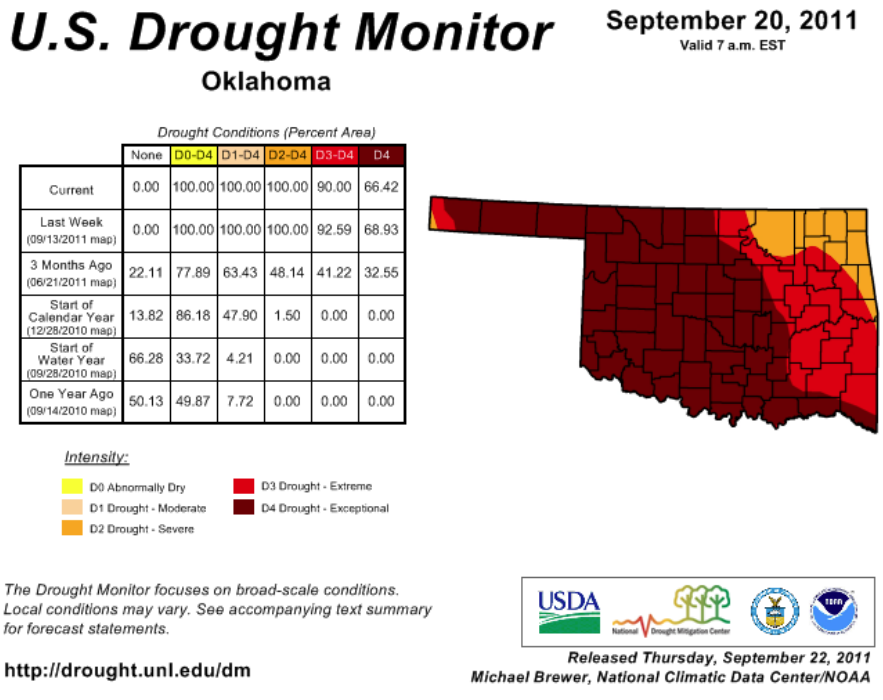


Fig. 3b(2) Currently, 66% of Oklahoma is experiencing "Exceptional" D4 drought. Over 90% of the state is in D3 and D4 drought!

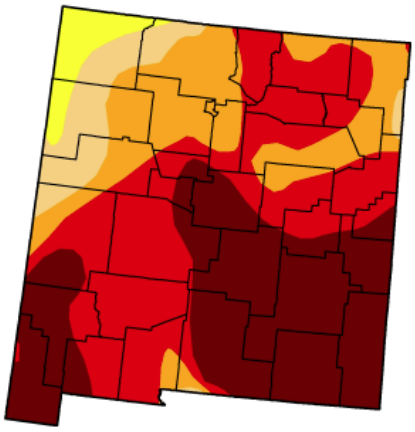
U.S. Drought Monitor

New Mexico

September 20, 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	35.13
Last Week (09/13/2011 map)	0.00	100.00	100.00	89.33	72.20	38.22
3 Months Ago (06/21/2011 map)	0.00	100.00	93.98	87.35	71.18	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 (09/28/2010 map)	76.66	23.34	0.00	0.00	0.00	0.00
One Year Ago (09/14/2010 map)	79.95	20.05	0.00	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://drought.unl.edu/dm

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Fig. 3b(3): Currently, 35% of New Mexico is experiencing "Exceptional" D4 drought. Over ~70% of the state is in D3 and D4 drought. This represents a slight improvement this week.

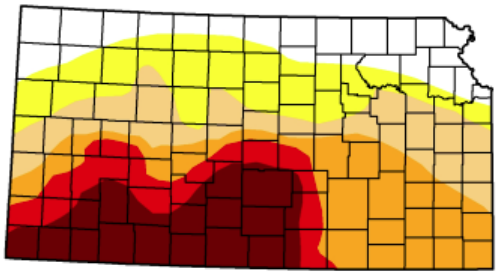
U.S. Drought Monitor

Kansas

September 20, 2011
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	16.39	83.61	64.95	47.87	27.24	17.63
Last Week (09/13/2011 map)	19.89	80.11	63.29	49.90	32.26	17.63
3 Months Ago (06/21/2011 map)	27.96	72.04	50.70	33.48	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 (09/28/2010 map)	83.23	16.77	0.00	0.00	0.00	0.00
One Year Ago (09/14/2010 map)	97.58	2.42	0.00	0.00	0.00	0.00



Intensity:

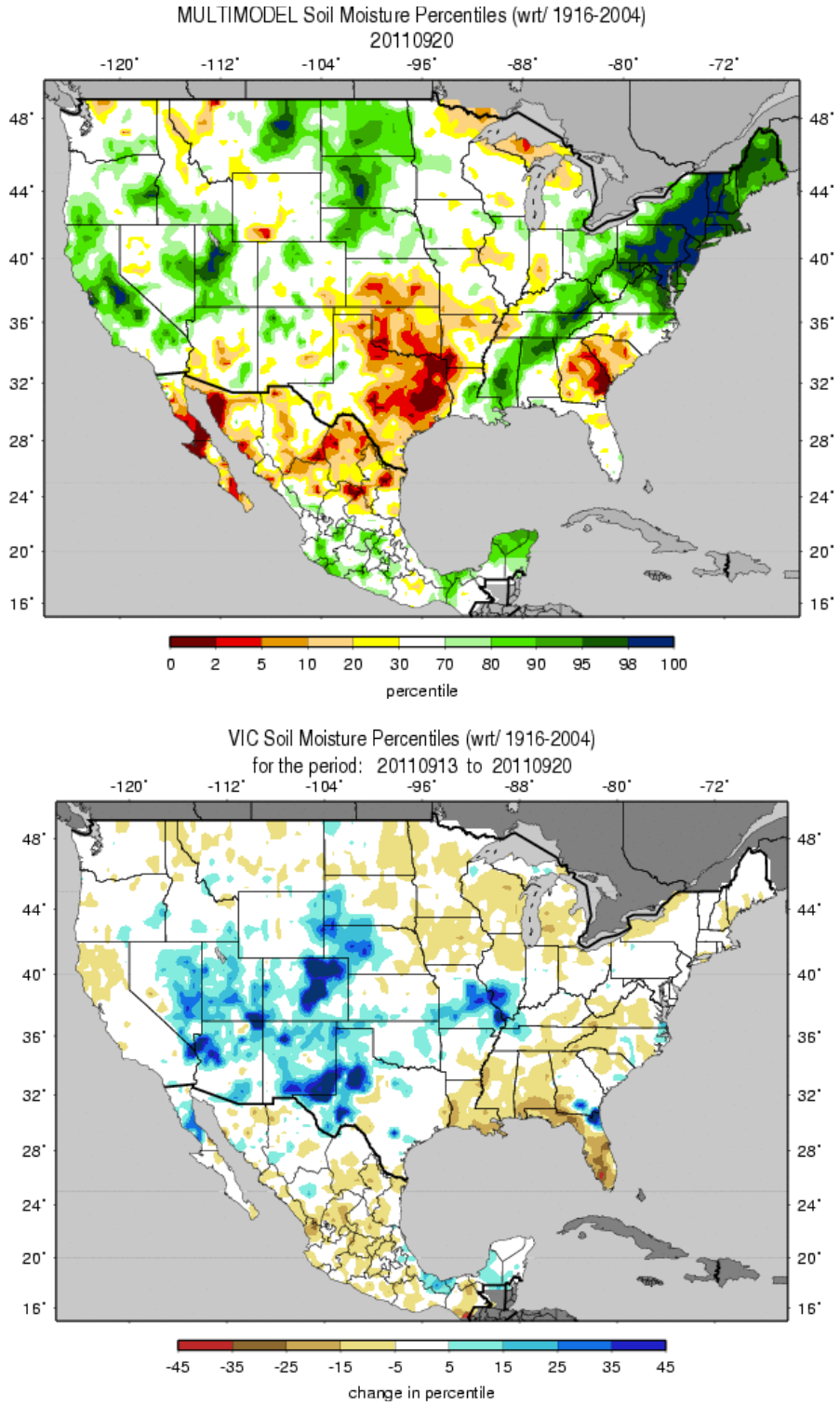
- D0 Abnormally Dry
- D1 Drought - Moderate
- D2 Drought - Severe
- D3 Drought - Extreme
- D4 Drought - Exceptional

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

http://drought.unl.edu/dm

Released Thursday, September 22, 2011
Michael Brewer, National Climatic Data Center/NOAA

Fig. 3b(4): Currently, 17% of Kansas is experiencing "Exceptional" D4 drought. 27% of the state is in D3 and D4 drought. Slight improvement in D3 noted this week.



Figs. 4a and 4b: Soil Moisture ranking in percentile as of 20 September (top) shows accumulated moist conditions over of New England due to Tropical Storm Irene and Tropical Depression Lee. During the week, the impacts from Tropical Depression Lee are obvious over the Appalachians. A significant drying trend is noted over the eastern half of the Gulf Coast while moisture dominates the Southwest and southern half of the Rockies.

Soil Climate Analysis Network (SCAN)

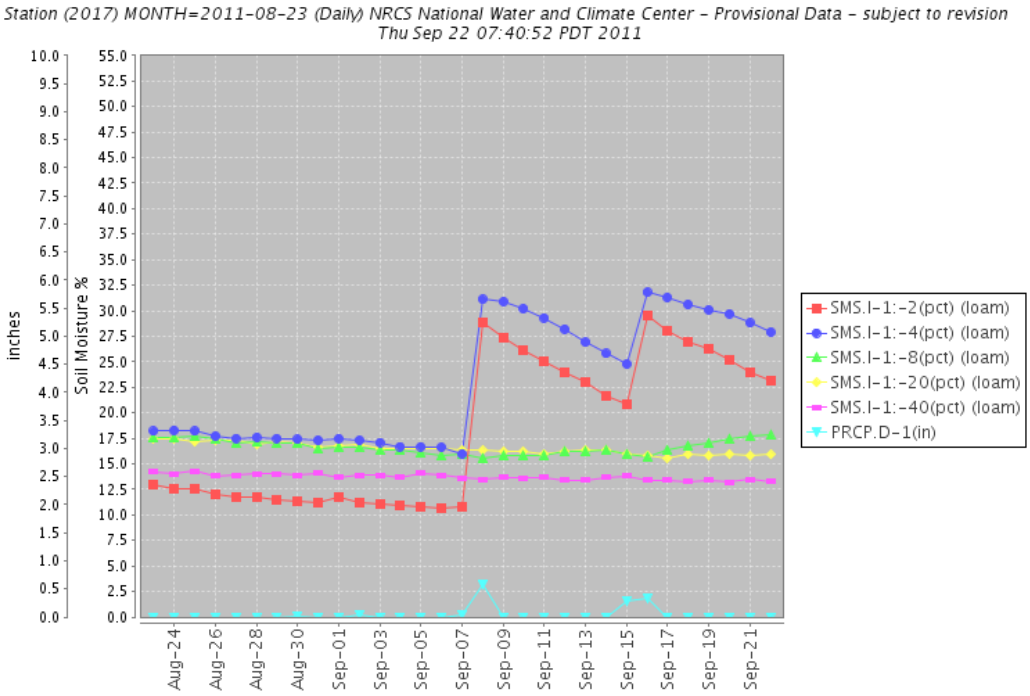


Fig. 5a: This NRCS resource shows a site in northern Colorado with moistening soil at the top levels as a result of light Southwest Monsoon rains.

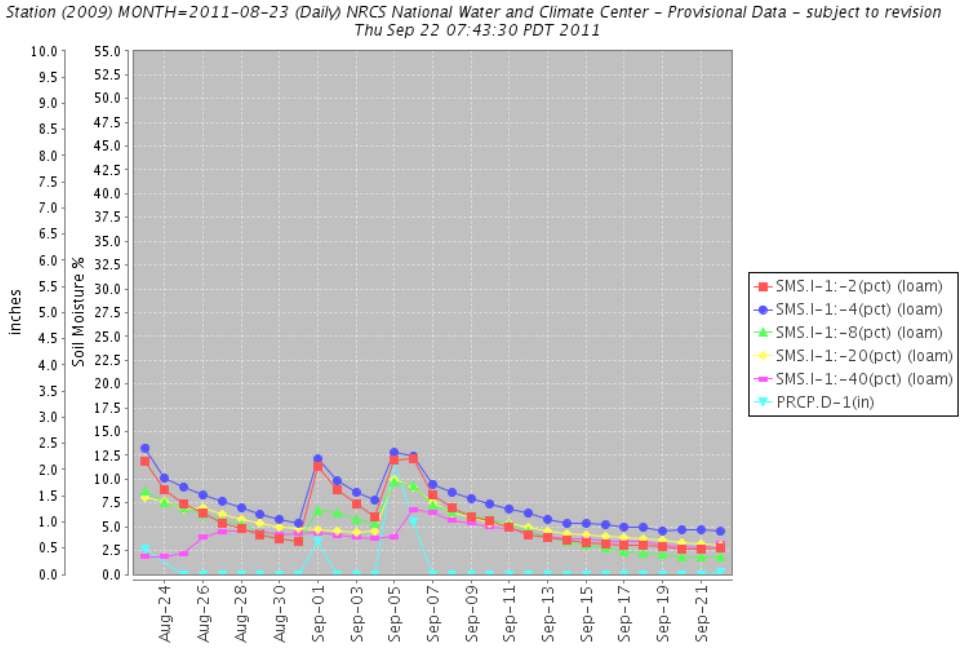


Fig. 5b: This SCAN station is located in the Panhandle of Florida shows drying soil since early September.

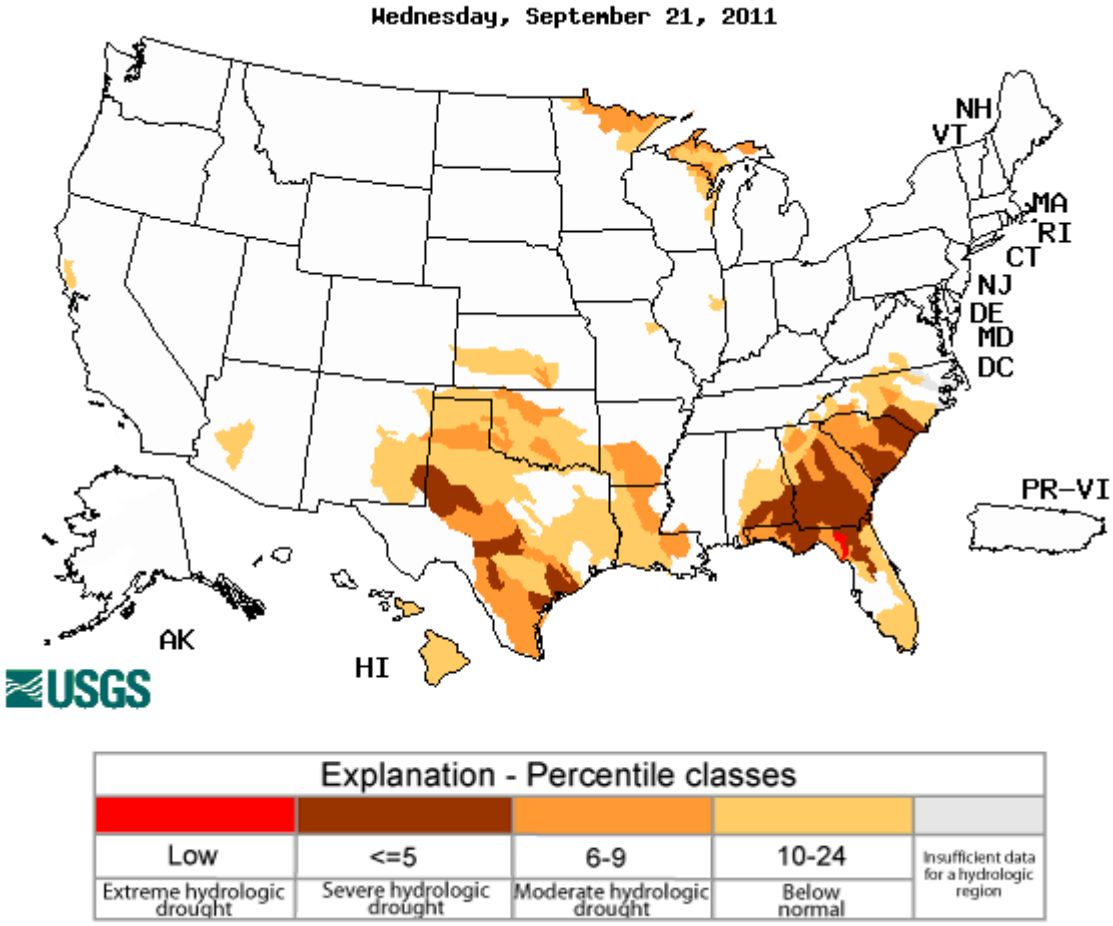


Fig. 6: Map of below normal 7-day average streamflow compared to historical streamflow for the day of year. Extreme conditions have developed over parts of northern Florida.

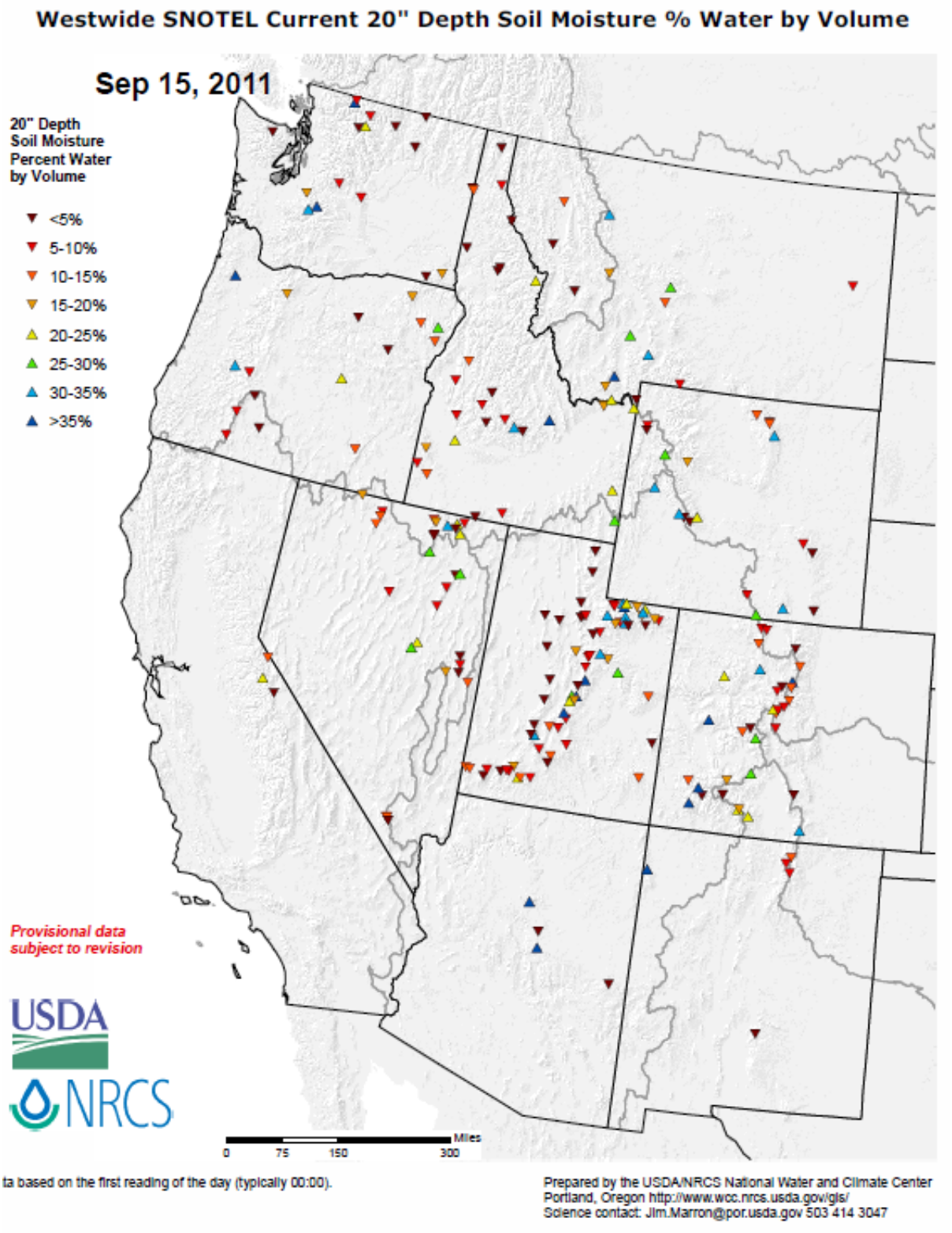


Fig. 7: SNOTEL Soil Moisture at a depth of 20" reveals many sites have below average moisture.

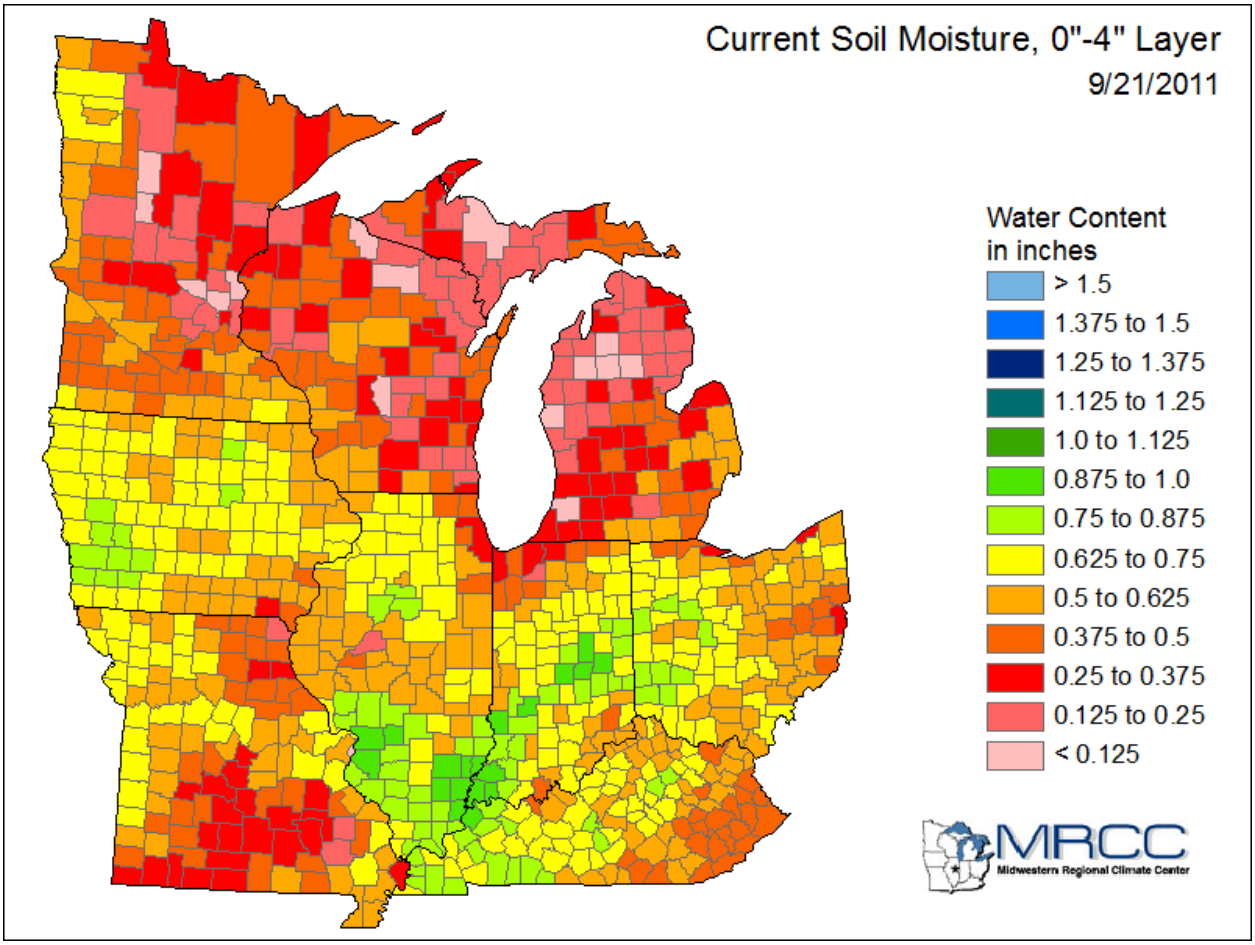


Fig. 7a: Current Midwest top soil condition as of yesterday.

SC
Soil moisture levels dropped considerably during the week ending September 18th, 2011. Hot, dry weather was present through Thursday over most of the State with highs reaching the mid-nineties. Scattered showers fell around the State but no significant rainfall was recorded.
A cold front entered the State on Thursday bringing temperatures in the sixties, a welcome change from the heat that had plagued the State for months. Cloudy, cool weather persisted through the weekend with highs in the seventies and very light rainfall. Soil moisture levels fell to 42% very short, 35% short and 23% adequate. The State average temperature was one degree below normal with 6.6 days suitable for fieldwork. The State average rainfall for the period was 0.1 inches.

GA
According to the National Agriculture Statistics Service's Georgia Field Office, there were 6.6 days suitable for fieldwork for the week ending Sunday, September 18, 2011. Statewide topsoil moisture was rated at 38% very short, 41% short, 21% adequate, and 0% surplus. Subsoil moisture for the State was 42% very short, 40% short, 18% adequate, and 0% surplus. Precipitation estimates for the week in Georgia ranged from no rain up to 2 inches. The week's average temperature ranged from the mid 60s to the upper 70s.

Special Report

What it would take to end the current drought by the end of the year.

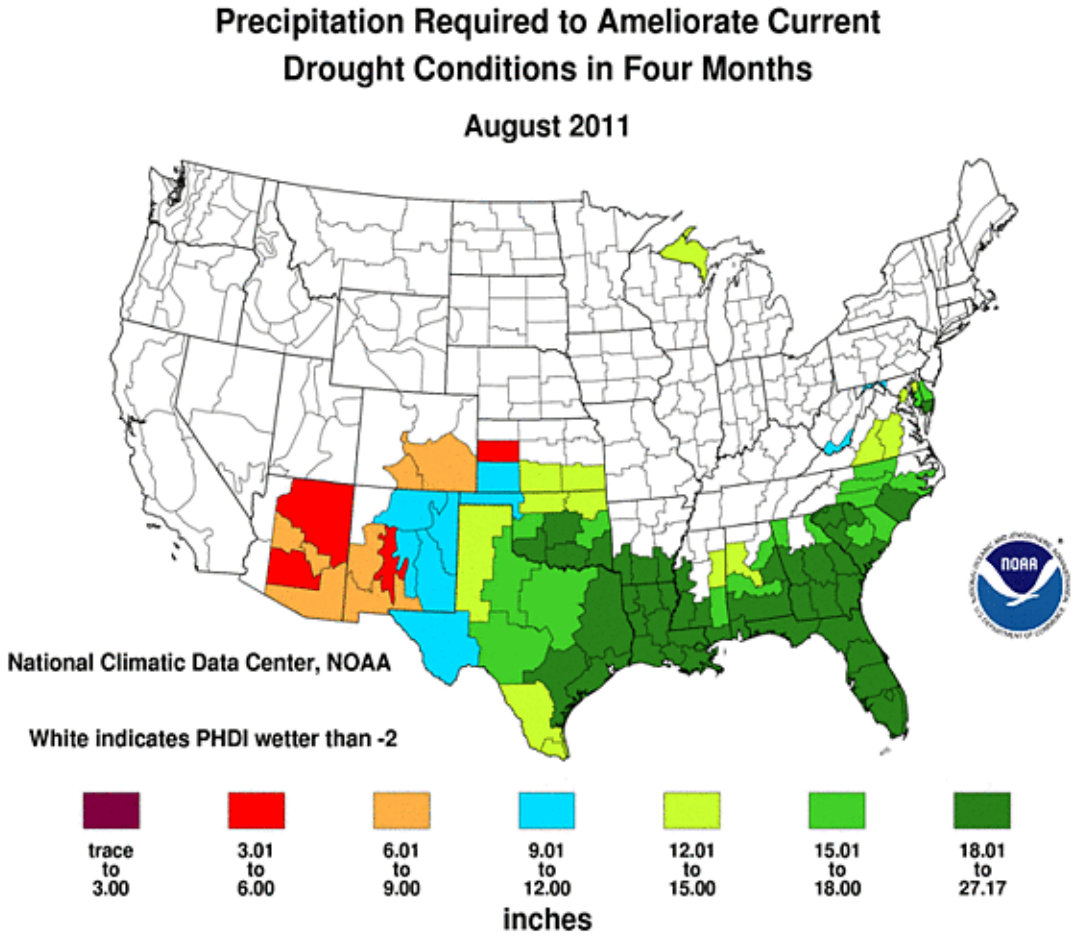


Fig. 8: The severity of the drought over the Southern Tier States is so great that it would take nearly 2 feet of rainfall to occur over the remainder of 2011 to end the drought.

National Drought Summary -- September 20, 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/.

A number of fronts moved across the country during this Drought Monitor week. They brought some much-needed rain to areas of the South, the Plains, the Midwest and into the Northeast. In the most severe areas of drought, the totals were not sufficient mitigate the impacts of the long-term lack of water.

The Southeast: Sporadic rains fell across the area but mostly stayed north of the drought areas. Southern Georgia saw a minor improvement in Extreme Drought conditions (D3) while southwestern Alabama saw degradation of Abnormal Dryness (D0) and Moderate Drought (D1). The Carolinas saw an increase in the extent of Moderate Drought (D1), mainly around the Charlotte area, along with a small increase in the extent of Severe Drought (D2) in the southwestern part of North Carolina. Conditions generally improved in Kentucky with this week's rainfall.

The Northeast and Mid-Atlantic: Adequate rains fell this week the Mid-Atlantic and Northeast. With some areas still drying out from tropical storms, the merely adequate precipitation was welcome. No changes were made in the drought status in this area.

The South: Hit and miss precipitation fell across the south this week. Localized areas of improvement in Exceptional (D4) and Extreme (D3) Drought were experienced in Texas and Oklahoma. Conditions in Kansas improved slightly in the east and degraded in the central and western part of the state. The area is still in the midst of a record-setting or near record-setting drought. In Texas, this year has been characterized and the worst 1-year drought on record by the State Climatologist. Recent estimates of state-wide agricultural impact from drought and wildfires are now at $5.4 billion. In Texas, 98% of the Pasture and Range land is considered to be in Poor or Very Poor condition. In Oklahoma, the total is 94%. New Mexico follows a close third at 92%.

The Plains and Midwest: Conditions in the Northern Plains deteriorated some this week while in the Midwest, conditions improved slightly. Minnesota saw expansion of Moderate Drought (D1) and Abnormal Dryness (D0) in the southern part of the state while Severe Drought (D2) expanded in the Upper Peninsula of Michigan. South Dakota likewise saw expansion of Moderate Drought (D1) and Abnormal Dryness (D0) in the east but a welcome contraction of Abnormal Dryness (D0) in the Black Hills in the southwestern part of the state. Abnormal Dryness (D0) was likewise reduced in Nebraska due to ample precipitation. Additional beneficial precipitation fell throughout southern Illinois and Indiana alleviating some Severe (D2) and Moderate Drought (D1) there.

The West: The West generally continued to benefit from some above-normal rainfall. In northern and central Colorado beneficial rains improved conditions in the Extreme (D3), Severe

(D2), and Moderate (D1) drought areas as well as the Abnormal Dryness (D0). In New Mexico, conditions in the northwest part of the state improved while in Arizona, near-record rainfall around Tucson led to improvements in Extreme Drought (D3) in that area. The Abnormal Dryness (D0) also improved in southern Nevada.

Hawaii, Alaska and Puerto Rico: Drought conditions remained unchanged Hawaii and Puerto Rico this week. In Alaska, the abnormal dryness (D0) was removed based largely on precipitation in the south and normal or above streamflow throughout most of the state.

Looking Ahead: During the September 21 – September 26, 2011 time period, there is an enhanced probability of precipitation extending along the East Coast and into the Ohio Valley. Most of the interior of the country and the West are expected to see a suppressed chance of precipitation. Temperatures are generally forecast to be normal to above normal throughout the Plains and throughout the entire West, with the exception of isolated West coastal locations. Below-normal temperatures are generally expected from the Midwest through the Mid-Atlantic and down through the Southeast.

For the ensuing 5 days (September 27 - October 1, 2011), the odds favor normal to cooler-than-normal conditions over much of the Southeast, South, and Mid-Atlantic. Warmer-than-normal conditions are expected from the Upper Midwest, through the High Plains and throughout the West. The odds of above-normal precipitation are limited to the extreme Southeast, the Atlantic Seaboard into southern New England, and the Northwest. In Alaska, the odds favor normal to below-normal precipitation across the western part of the state and the Aleutian Islands. Above-normal precipitation is also expected in the Southeast part of the state. Below–normal temperatures are expected throughout the western and central part of the state. The southeast portion of the state is expecting above-normal temperatures.

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
A ... Agricultural
H ... Hydrological

Updated September 21, 2011