



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

Weekly Report - Snowpack / Drought Monitor Update

Date: 12 August 2010

SNOTEL SNOWPACK AND PRECIPITATION SUMMARY

Temperature: SNOTEL 7-day average temperature departures from normal map show that temperatures were within 5°F of normal across the West. This is the 3rd week in a row that this overall pattern has occurred (Fig. 1). ACIS 7-day average temperature anomalies show that the greatest positive temperature departure was over northeast New Mexico (>+6°F) and the greatest negative departures occurred over eastern Utah, eastern Arizona, and Coastal California (<-6F) (Fig. 1a).

Precipitation: ACIS 7-day average precipitation amounts for the period ending 11 August shows the bulk of the heaviest precipitation scattered across the High Plains of Colorado and New Mexico (Fig. 2). In terms of percent of normal, scattered thunderstorms throughout all but the Western Great Basin, most of California, western Oregon, and the Washington Cascades resulted in two to four times the normal precipitation this week (Fig. 2a). For the 2010 Water-Year that began on 1 October 2009, Arizona, southern New Mexico, eastern Nevada, southeast & southwest Utah, central Montana, and south-central and eastern Wyoming have the largest surpluses while much of northern Idaho, Upper Snake River, and Northern Wasatch (UT) have the greatest deficits. No significant changes since last week (Fig. 2b).

WESTERN DROUGHT STATUS

The West: D0 was introduced in north central Montana in response to recent dryness and hydrological concerns being felt in the region. Improvements to the D0 in western and southern Montana were made as the abnormally dry conditions have subsided. Improvements were made in Arizona this week; D1 was eliminated from Apache County and categorical improvements were made to the D1 and D2 in Navajo County as the monsoon rains have eased drought related impacts in this part of the state. Author: Brian Fuchs, National Drought Mitigation Center

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

DROUGHT IMPACTS DEFINITIONS (<http://drought.unl.edu/dm/classify.htm>)

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, 3a, and 3b).

Weekly Snowpack and Drought Monitor Update Report

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/>.

U.S. HISTORICAL STREAMFLOW

http://water.usgs.gov/cgi-bin/waterwatch?state=us&map_type=dryw&web_type=map.

This map, (Fig. 5) 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.

RANGELAND CONDITIONS

The maps in Figure 6 show the general (inferred) soil conditions by state over the past one and four weeks.

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://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>

This report uses data and products provided by the Interagency Drought Monitor Consortium members and the National Interagency Fire Center.

/s/ JEFF GOEBEL
Acting Director, Resource Inventory Division

Weekly Snowpack and Drought Monitor Update Report

**SNOTEL (solid) 7-Day Average Temperature Anomaly (Degrees F)
Aug 12, 2010**

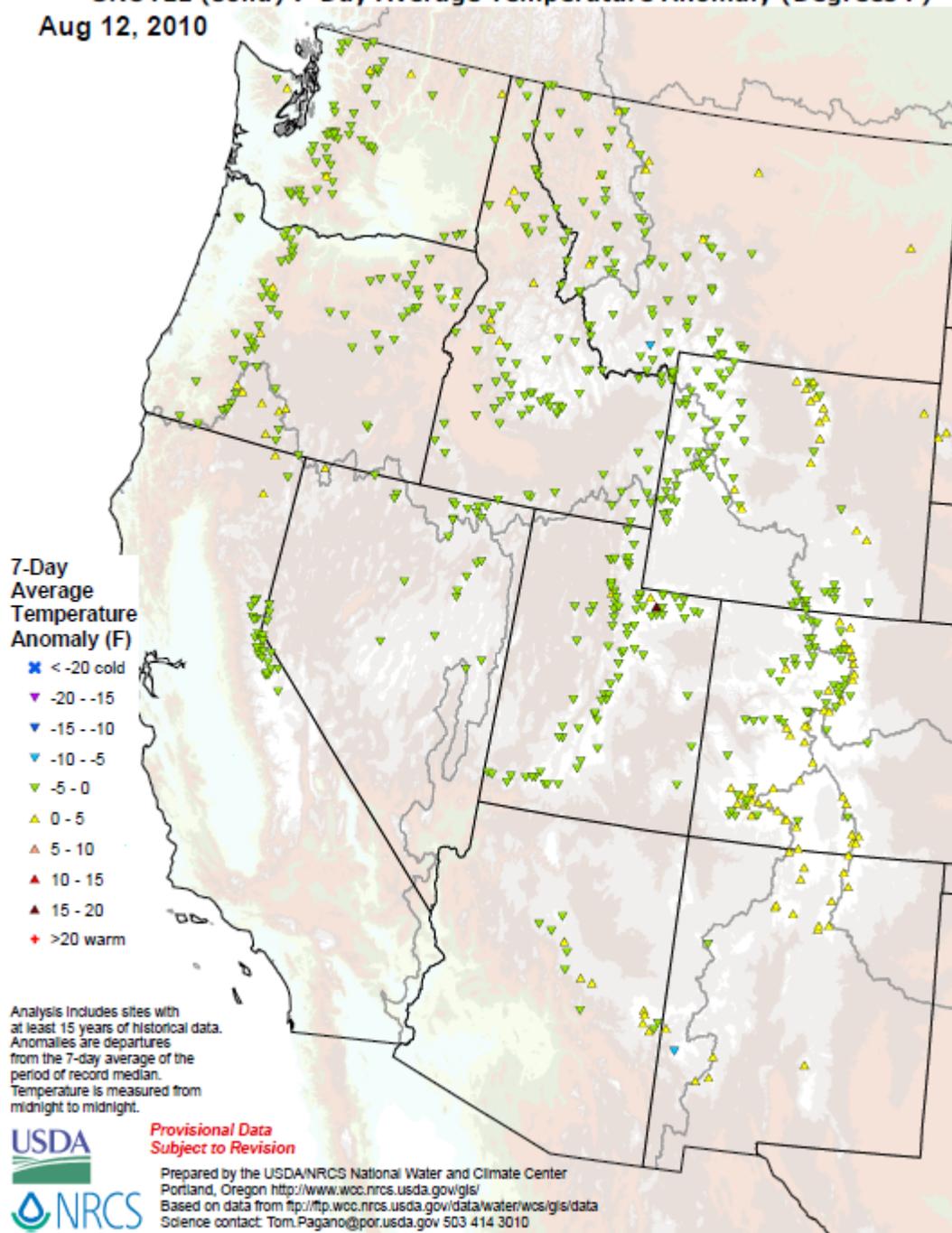
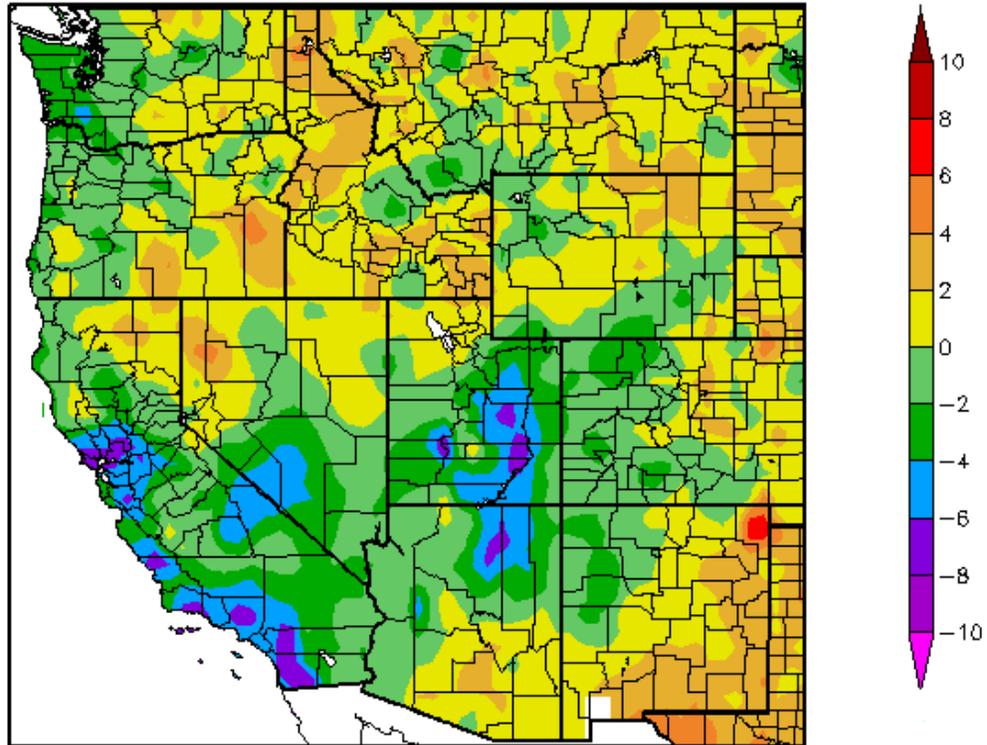


Fig. 1: SNOTEL 7-day average temperature departures from normal map show that temperatures were within 5°F of normal across the West. This is the 3rd week in a row that this overall pattern has occurred.

Ref: <http://www.wcc.nrcs.usda.gov/ftpref/data/water/wcs/gis/maps/WestwideTavg7dAnomaly.pdf>

Weekly Snowpack and Drought Monitor Update Report

Departure from Normal Temperature (F) 8/5/2010 – 8/11/2010



Generated 8/12/2010 at HPRCC using provisional data.

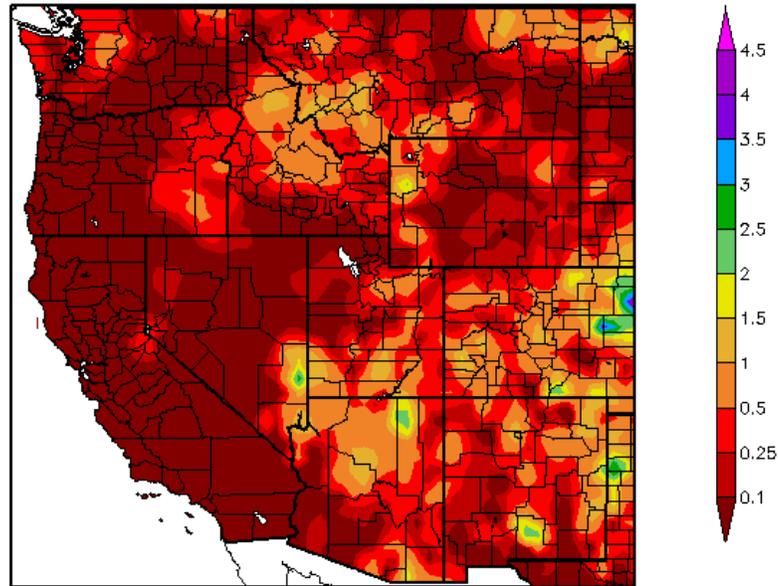
NOAA Regional Climate Centers

Fig. 1a: ACIS 7-day average temperature anomalies show that the greatest positive temperature departure was over northeast New Mexico (>+6°F) and the greatest negative departures occurred over eastern Utah, eastern Arizona, and Coastal California (<-6F).

Ref: http://www.hprcc.unl.edu/maps/current/index.php?action=update_daterange&daterange=7d

Weekly Snowpack and Drought Monitor Update Report

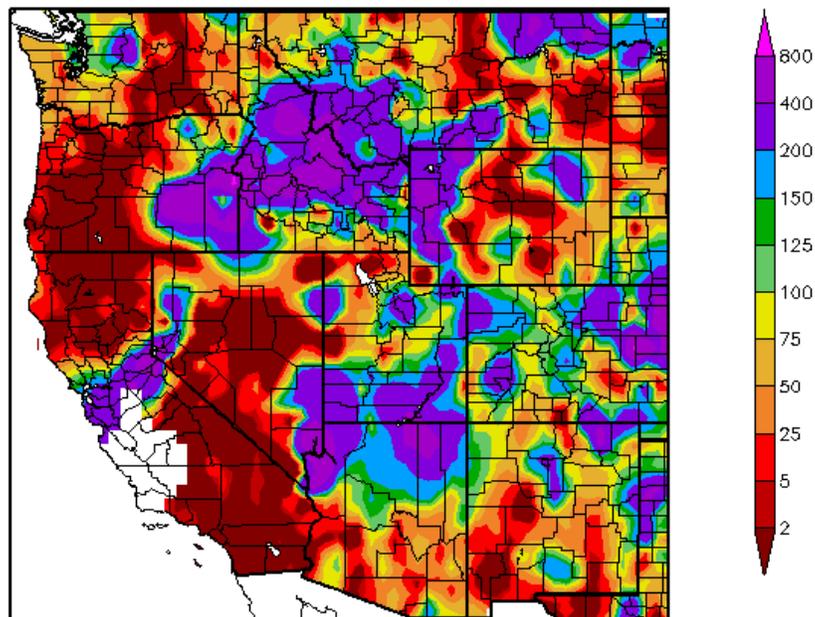
Precipitation (in)
8/5/2010 - 8/11/2010



Generated 8/12/2010 at HPRCC using provisional data.

NOAA Regional Climate Centers

Percent of Normal Precipitation (%)
8/5/2010 - 8/11/2010



Generated 8/12/2010 at HPRCC using provisional data.

NOAA Regional Climate Centers

Fig. 2 and 2a: ACIS 7-day average precipitation amounts for the period ending 11 August shows the bulk of the heaviest precipitation scattered across the High Plains of Colorado and New Mexico (Fig. 2). In terms of percent of normal, scattered thunderstorms throughout all but the Western Great Basin, most of California, western Oregon, and the Washington Cascades resulted in two to four times the normal precipitation this week (Fig. 2a). Ref: <http://www.hprcc.unl.edu/maps/current/>

Weekly Snowpack and Drought Monitor Update Report

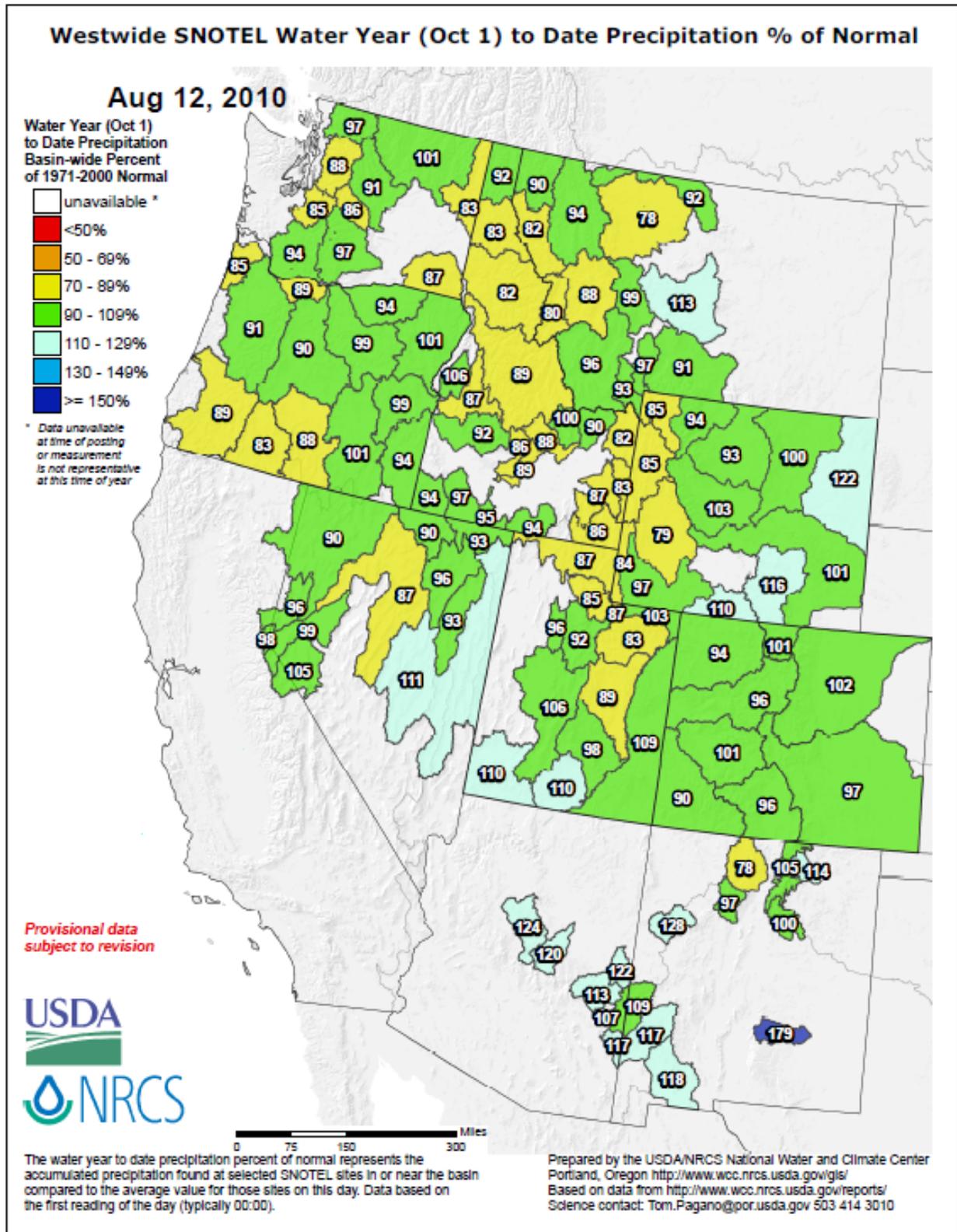
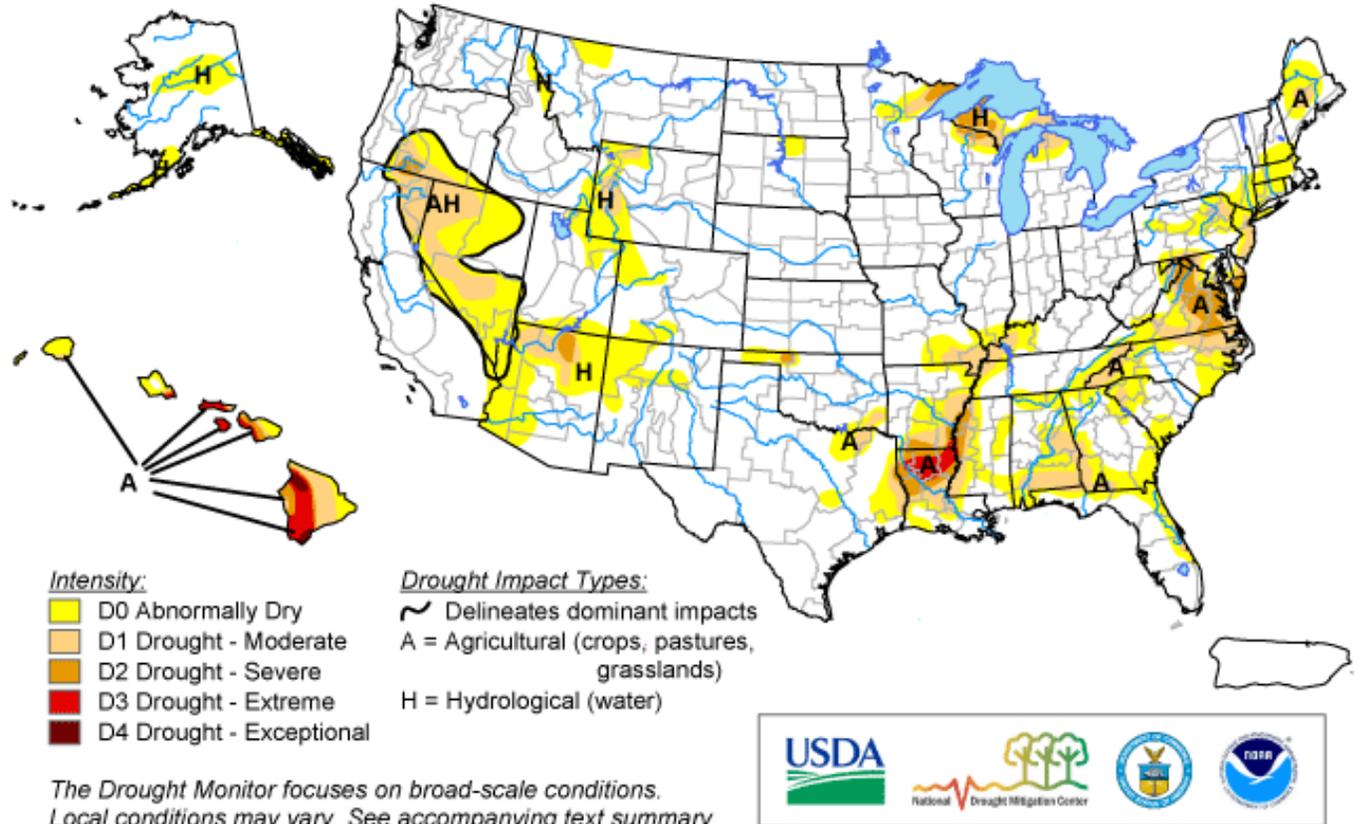


Fig 2b: For the 2010 Water-Year that began on 1 October 2009, Arizona, southern New Mexico, eastern Nevada, southeast & southwest Utah, central Montana, and south-central and eastern Wyoming have the largest surpluses while much of northern Idaho, Upper Snake River, and Northern Wasatch (UT) have the greatest deficits. No significant changes since last week. Ref: ftp://ftp.wcc.nrcs.usda.gov/data/water/wcs/gis/maps/west_wytdprecptnormal_update.pdf

U.S. Drought Monitor

August 10, 2010
Valid 8 a.m. EDT



Released Thursday, August 12, 2010

Author: Brian Fuchs, National Drought Mitigation Center

<http://drought.unl.edu/dm>

Fig. 3: Current Drought Monitor weekly summary. Hawaii is only state that has a D4 drought level. D3 levels dominate northern Louisiana. No significant change since last week.

Ref: <http://www.drought.unl.edu/dm/monitor.html>

U.S. Drought Monitor

West

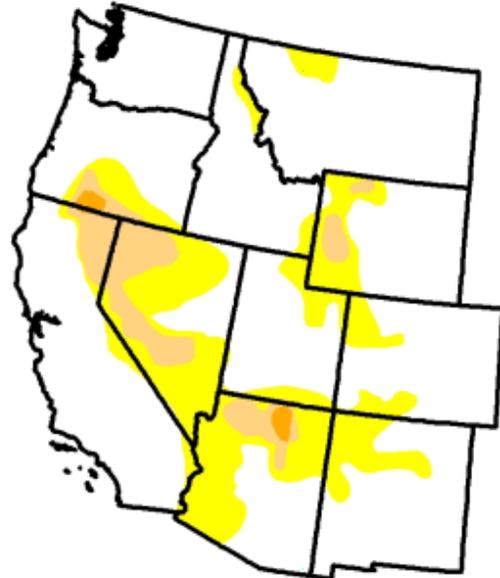
August 10, 2010
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	73.9	26.1	6.4	0.5	0.0	0.0
Last Week (08/03/2010 map)	73.8	26.2	7.3	0.6	0.0	0.0
3 Months Ago (05/18/2010 map)	56.8	43.2	17.7	4.8	0.0	0.0
Start of Calendar Year (01/05/2010 map)	40.1	59.9	30.6	9.9	0.5	0.0
Start of Water Year (10/06/2009 map)	42.1	57.9	25.4	8.5	0.0	0.0
One Year Ago (08/11/2009 map)	53.6	46.4	16.8	7.1	0.0	0.0

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, August 12, 2010

Author: Brian Fuchs, National Drought Mitigation Center

Fig. 3a: Drought Monitor for the Western States with statistics over various time periods. Regionally there was little change since this week.

Ref: http://www.drought.unl.edu/dm/DM_west.htm

Drought Monitor Classification Changes for Selected Time Periods

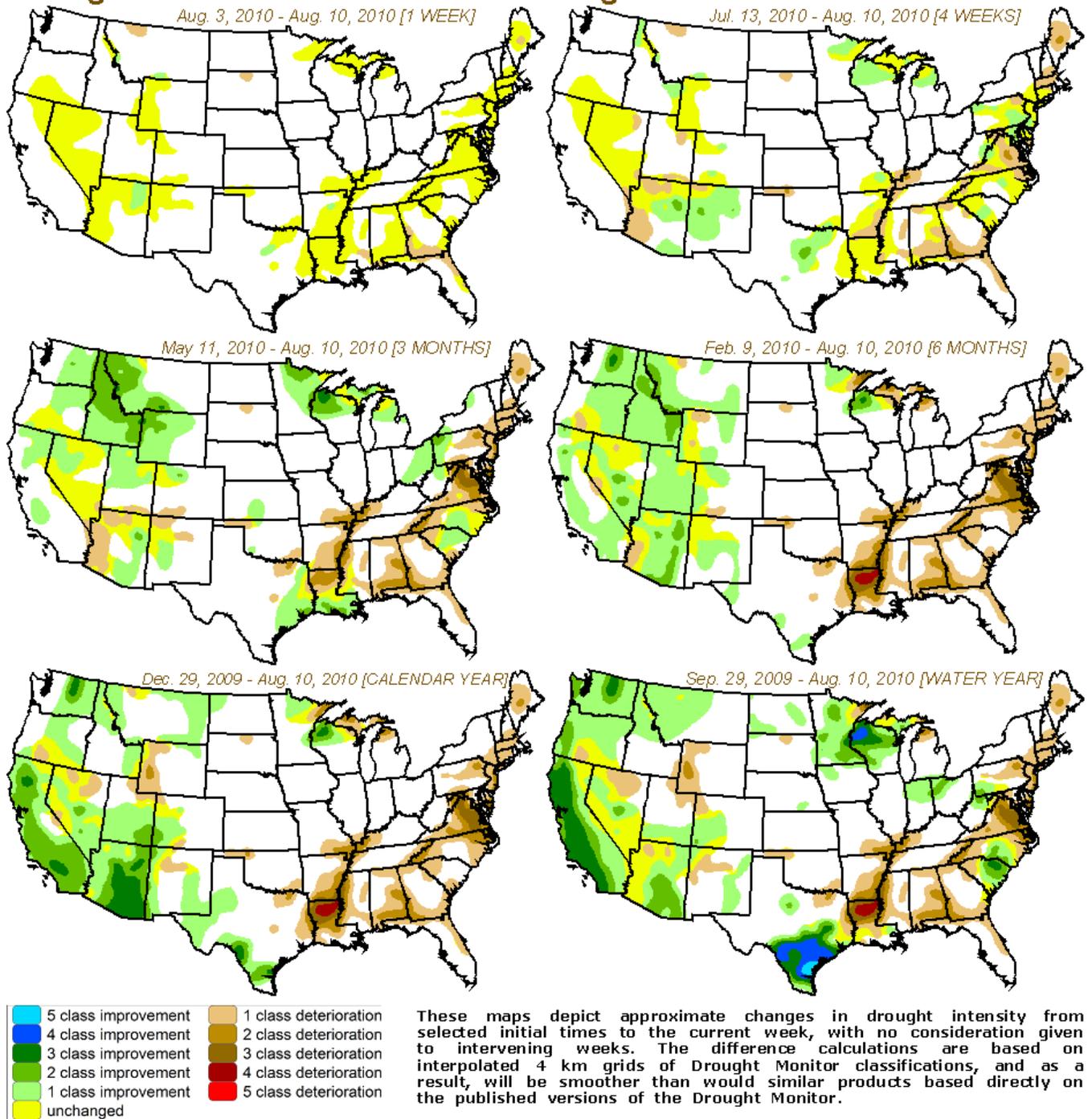
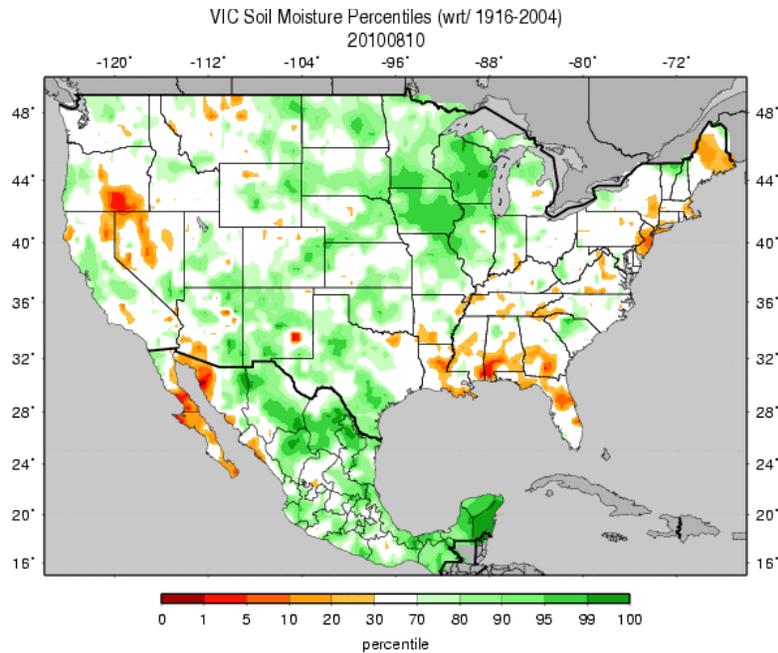


Fig. 3b: Drought Monitor classification changes for various time periods show little change during the past week.

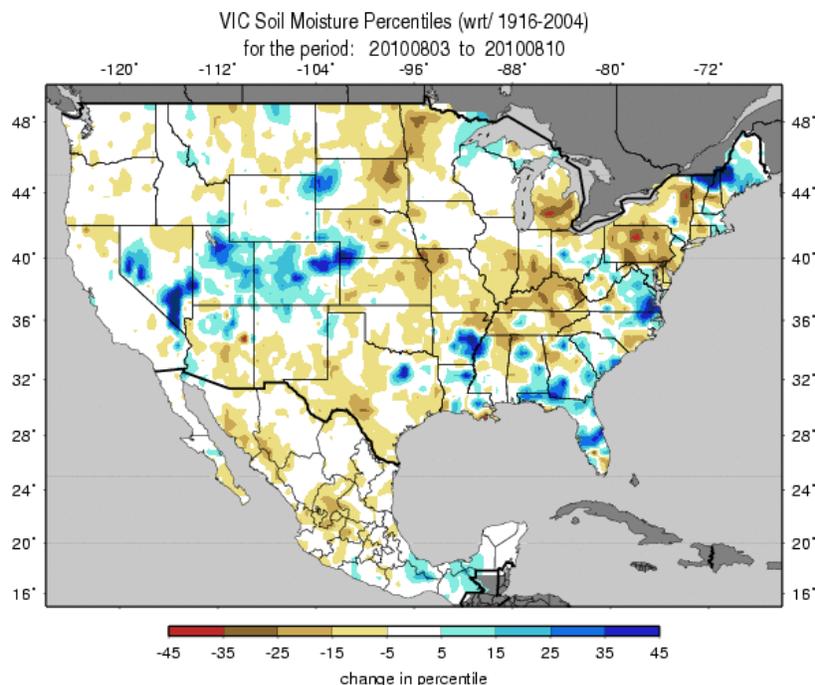
Ref: <http://www.cpc.ncep.noaa.gov/products/predictions/experimental/edb/dm-change-4maps.png>

Weekly Snowpack and Drought Monitor Update Report



Figs. 4a: Soil Moisture ranking in percentile based on 1916-2004 climatology as of 10 August. Excessive moisture dominates over the western Great Lakes. Dry soils are scattered across the eastern Gulf Coast, New Jersey, and the upper Great Basin.

Ref: http://www.hydro.washington.edu/forecast/monitor/curr/conus.mexico/CONUS.MEXICO.vic.sm_qnt.gif



Figs. 4b: Soil Moisture change in percentile based on 1916-2004 climatology for the week shows significant moistening from Nevada to western Nebraska, Northern New England, and scattered across the Southeast. Some drying is noted over Pennsylvania, Michigan, and the Mid-West.

Ref: <http://www.emc.ncep.noaa.gov/mmb/nldas/drought/> (very useful resource) and http://www.hydro.washington.edu/forecast/monitor/curr/conus.mexico/CONUS.MEXICO.vic.sm_qnt.1wk.gif

Weekly Snowpack and Drought Monitor Update Report

Wednesday, August 11, 2010

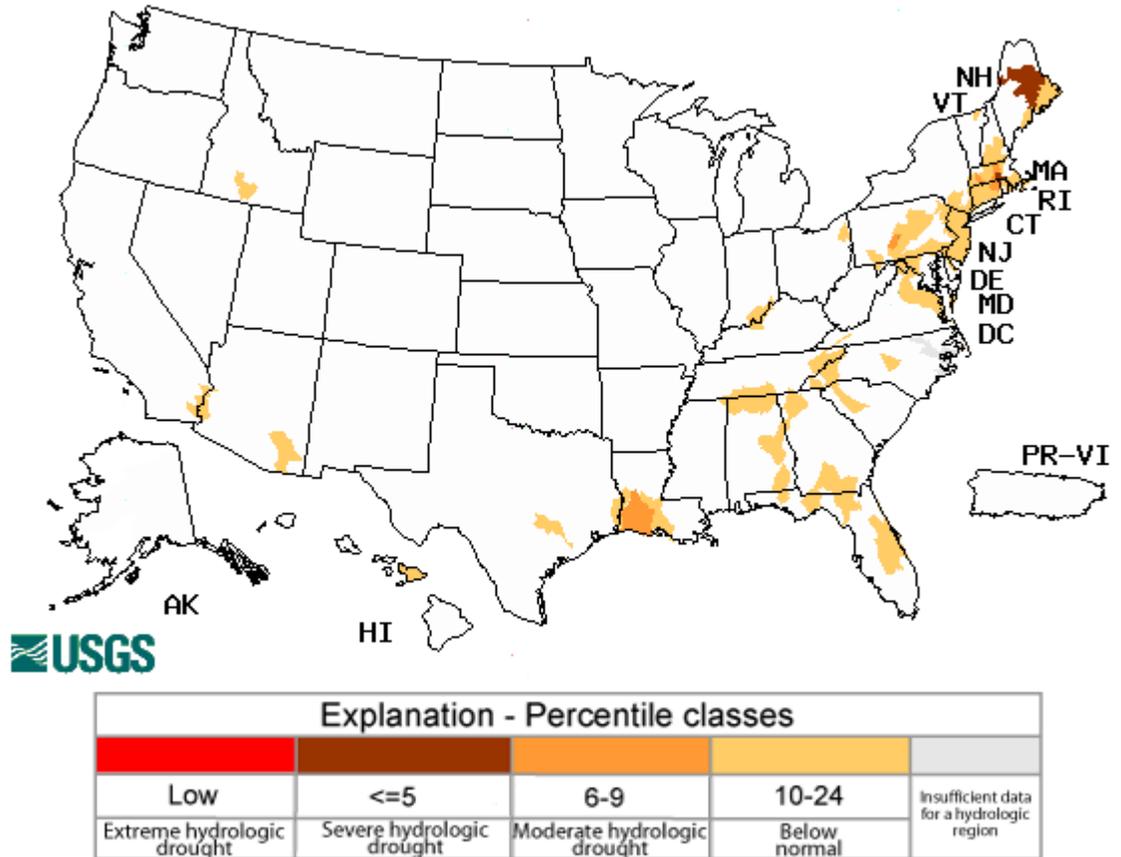


Fig. 5: Map of below normal 7-day average streamflow compared to historical streamflow for the day of year. Very few regions are showing below normal flows. Maine has the largest stream flow deficits this week. Ref: <http://waterwatch.usgs.gov/?m=dryw&r>

Weekly Snowpack and Drought Monitor Update Report

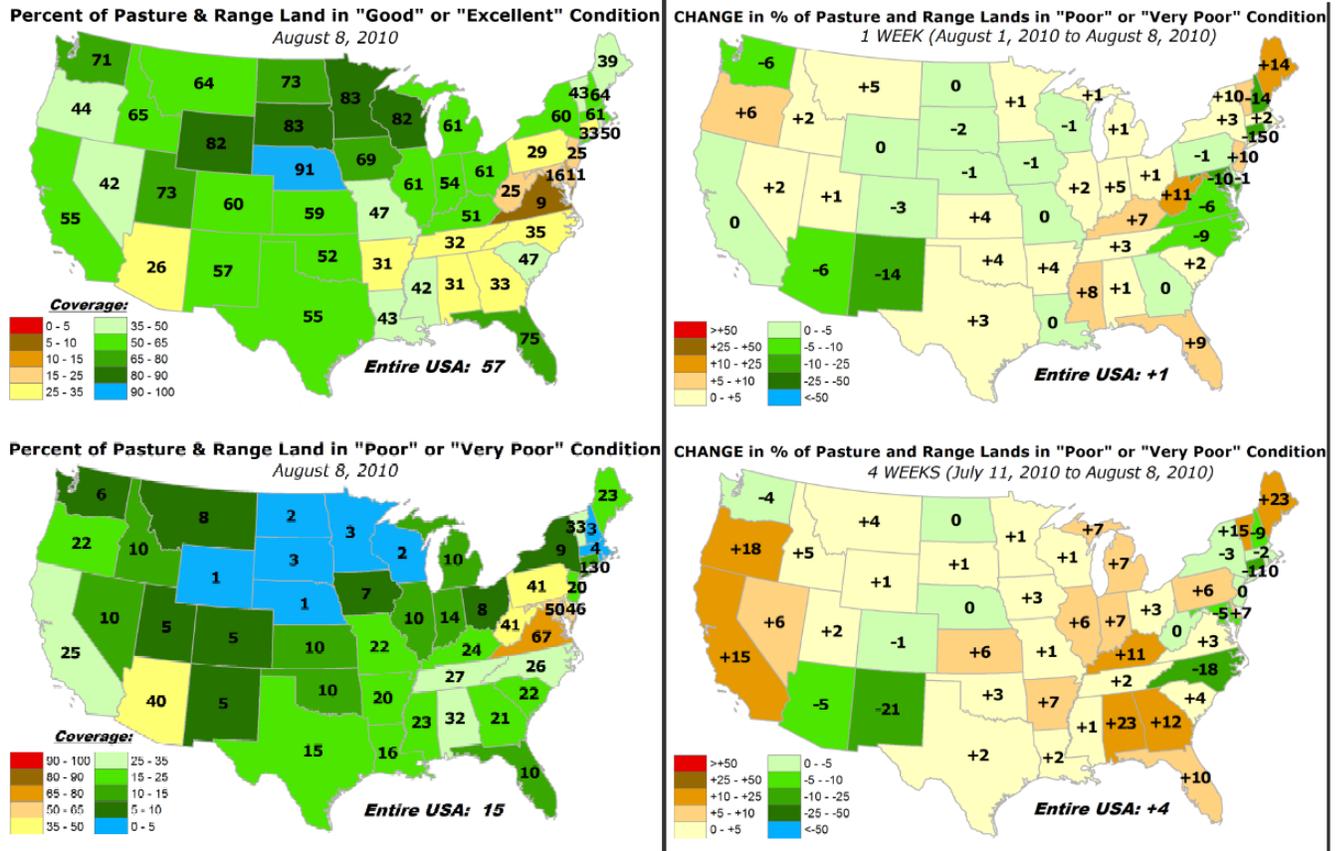


Fig. 6: These maps show the overall pasture and rangeland conditions by state. Note that Arizona has the least amount of good or excellent condition (upper left panel) in the West. However, during the past week (upper right panel), conditions improved the greatest over New Mexico and worsened the most over Oregon.

Ref: <http://www.cpc.ncep.noaa.gov/products/predictions/experimental/edb/pasture-range-statewide-conditions.pdf>

Weekly Snowpack and Drought Monitor Update Report

National Drought Summary -- August 10, 2010

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 Northeast: Scattered precipitation helped keep drought from intensifying in the region. Some degradation did take place, as D1 was introduced in Maine because soil moisture and streamflow indicators are in the lower percentiles. In northeast Pennsylvania, D0 and D1 were extended to the north, with D0 reaching into southern New York as this area remained dry. Temperatures that are well above normal are rapidly changing conditions in the region, and without rain, the drought is going to persist and maybe intensify.

Southern Plains and Gulf Coast: Temperatures remained well above normal throughout the region and most places were dry over the last week. In Alabama, D0 and D1 were extended in the southern portion of the state, bringing D0 all the way to the southern coast. D0 was extended in Mississippi, bridging the two previous D0 areas in Alabama and western Mississippi. For Texas, D0 was improved in northeast Texas in response to rains over the last several weeks and D0 was extended to the southwest in the eastern portions of Texas as this area continued to miss out on the rains while observing significant heat.

Southeast: North Carolina had a mix of areas with significant rainfall and those who missed out completely or were below normal this week. The northern coastal plain of North Carolina had D1 shift to the east, all the way to the coast, while D0 was extended south along the coast and into South Carolina. Georgia had the area of D1 in the western portions of the state extend into Alabama and join the D1 in southern Alabama. Also in Georgia, D0 and D1 were extended across the southern part of the state and into northern Florida. The D0 in southeast Georgia was connected to the D0 along the Atlantic coast in Florida and the D1 was also extended along the Florida coast.

High Plains: In response to the heat and dryness over the last few weeks, an area of D0 was introduced into north central South Dakota as local reports of stressed crops with yield losses are becoming abundant in this area. Many areas in Nebraska and South Dakota are being impacted by the heat and dryness over the last 2-4 weeks and some areas are seeing agricultural impacts developing rapidly.

The West: D0 was introduced in north central Montana in response to recent dryness and hydrological concerns being felt in the region. Improvements to the D0 in western and southern Montana were made as the abnormally dry conditions have subsided. Improvements were made in Arizona this week; D1 was eliminated from Apache County and categorical improvements were made to the D1 and D2 in Navajo County as the monsoon rains have eased drought related impacts in this part of the state.

Weekly Snowpack and Drought Monitor Update Report

Hawaii, Alaska and Puerto Rico: No changes were made in any of these regions this week, but conditions in Hawaii were not improving and drought related impacts are being felt over many of the Islands.

Looking Ahead: Over the next 5 days (August 12-16) above normal temperatures will continue to dominate most of the country in a typical August weather pattern. The warmest temperatures are expected over the Ohio River valley and in the Pacific Northwest, with departures from 9 to 12 degrees Fahrenheit above normal. Cool conditions will continue along the Pacific coast of California and in the upper High Plains states. A tropical depression is projected to arrive along the Gulf Coast and move inland over Mississippi, bringing with it significant amounts of rain. Much of the High Plains and eastern United States are looking at widespread precipitation over the period, with the greatest amounts over Iowa and Minnesota, Kansas and Kentucky.

The CPC 6-10 day forecast (August 17-21) shows a cool down over the central plains, and below normal temperature expected to continue over the California coast and western Alaska. Temperatures are showing the best chances to be above normal over the Great Basin, East Coast and Gulf Coast regions. The best chances for above normal precipitation are projected to be over the East Coast and western Alaska and below normal over the Great Basin.

Author: [Brian Fuchs, National Drought Mitigation Center](#)

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 August 11, 2010