



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

Weekly Report - Snowpack / Drought Monitor Update **Date: September 13, 2007**

SNOTEL SNOWPACK AND PRECIPITATION SUMMARY

Temperature: During the past seven days, mountain SNOTEL sites and lower elevation weather stations recorded temperatures up to 10°F below normal across the Bighorn Mountains of Wyoming and Northern High Plains with temperatures up to 5°F above normal over the Pacific Northwest, Sierra Nevada, and Southern Rockies (Figs. 1 and 1a).

Precipitation: For the past week, scattered thunderstorms dominated over the High Plains and southern New Mexico while little if any rains fell west of 113W (Fig. 2). For the Water Year (began 1 October 2006), very low totals persist over the Sierra Nevada and Arizona mountains. Slightly above normal totals continue to be reflected over the Cascades, Front Range of the southern Rockies, and Bighorn Mountains of Wyoming (Fig. 2a).

WESTERN DROUGHT STATUS

The West: Scattered rainfall and reduced temperatures kept conditions from deteriorating this week, but were not sufficient to provide any widespread relief. As a result, few changes in drought classifications were made from the Rockies westward, although recent precipitation was enough to eliminate the area of D3 conditions in west-central Wyoming, and to eradicate abnormal dryness across interior New Mexico. Author: [Rich Tinker, Climate Prediction Center, NOAA](#)

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).

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).

OBSERVED FIRE DANGER CLASS

The National Interagency Coordination Center provides a variety of products that describe the current wildfire status for the U.S. - <http://www.nifc.gov/information.html>. The latest Observed

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Fire Danger Class is shown in Figs. 5 and 5a shows the current active wildfires across the West - <http://geomac.usgs.gov/>.

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.

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

VEGETATION HEALTH

The images (Fig. 7) are color-coded maps of vegetation condition (health) estimated by the Vegetation and Temperature Condition Index (VT). The VT is a numerical index, which changes from 0 to 100 characterizing change in vegetation conditions from extremely poor (0) to excellent (100). Fair conditions are coded by green color (50), which changes to brown and red when conditions deteriorate and to blue when they improve.

<http://www.orbit.nesdis.noaa.gov/smcd/emb/vci/usa.html>. Associated with vegetation health are pasture and rangeland conditions (Fig. 8) as noted at:

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

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/>

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/ NOLLER HERBERT

Director, Conservation Engineering Division

Weekly Snowpack and Drought Monitor Update Report

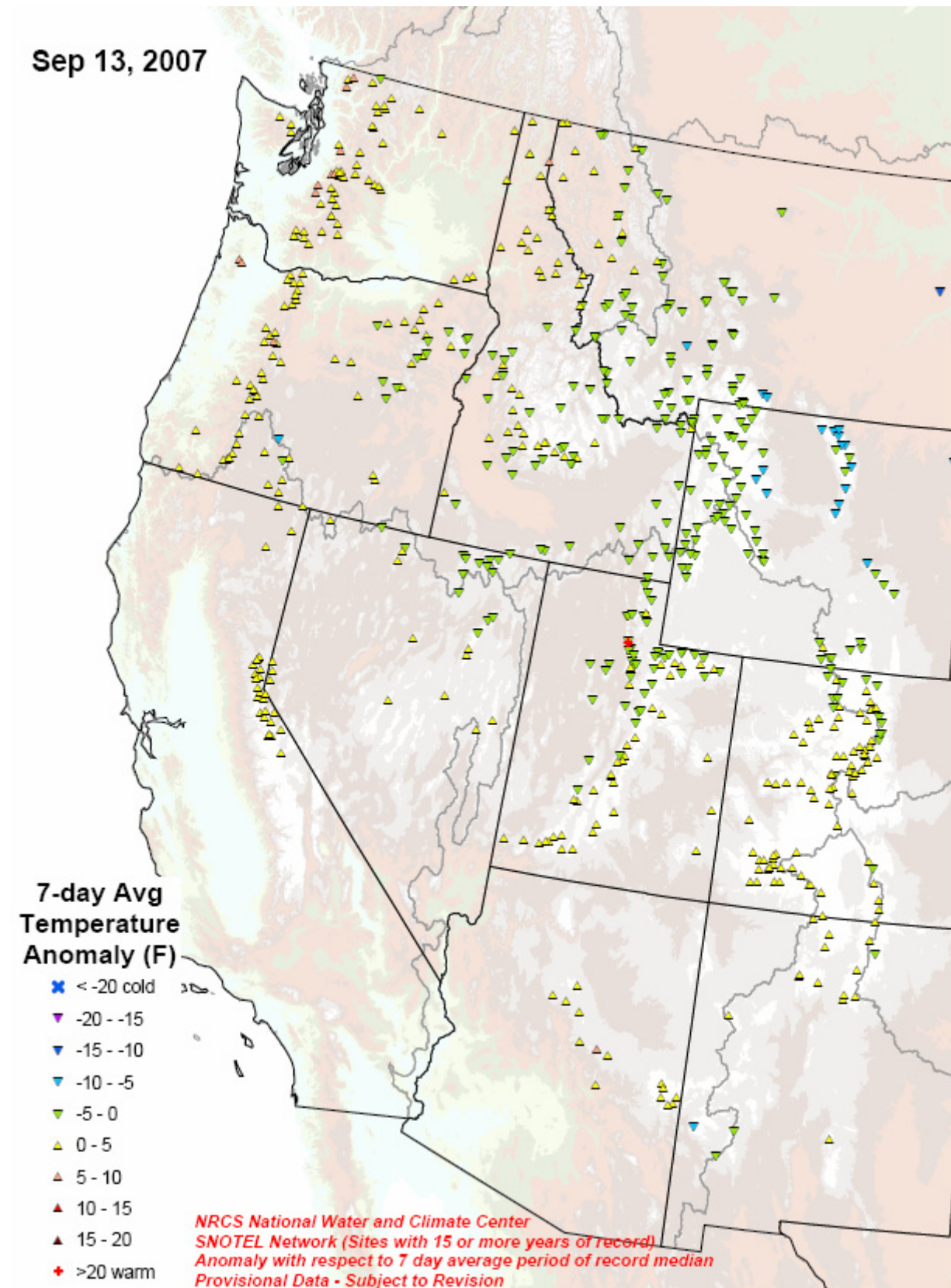
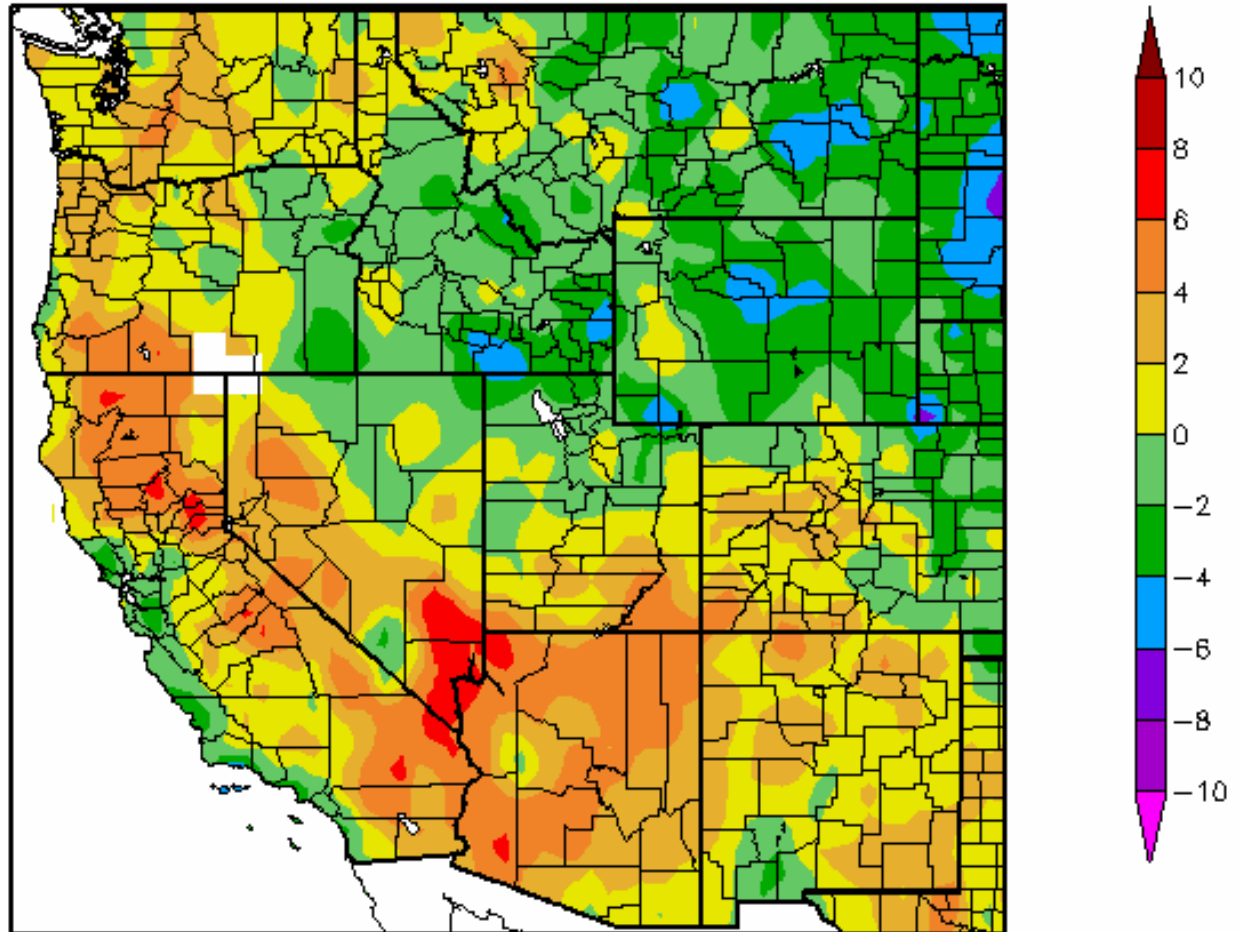


Fig. 1. SNOTEL 7-day average temperature anomaly.

Ref: <ftp://ftp.wcc.nrcs.usda.gov/data/water/wcs/gis/maps/WestwideTavg7dAnomay.pdf>

Departure from Normal Temperature (F) 9/6/2007 – 9/12/2007



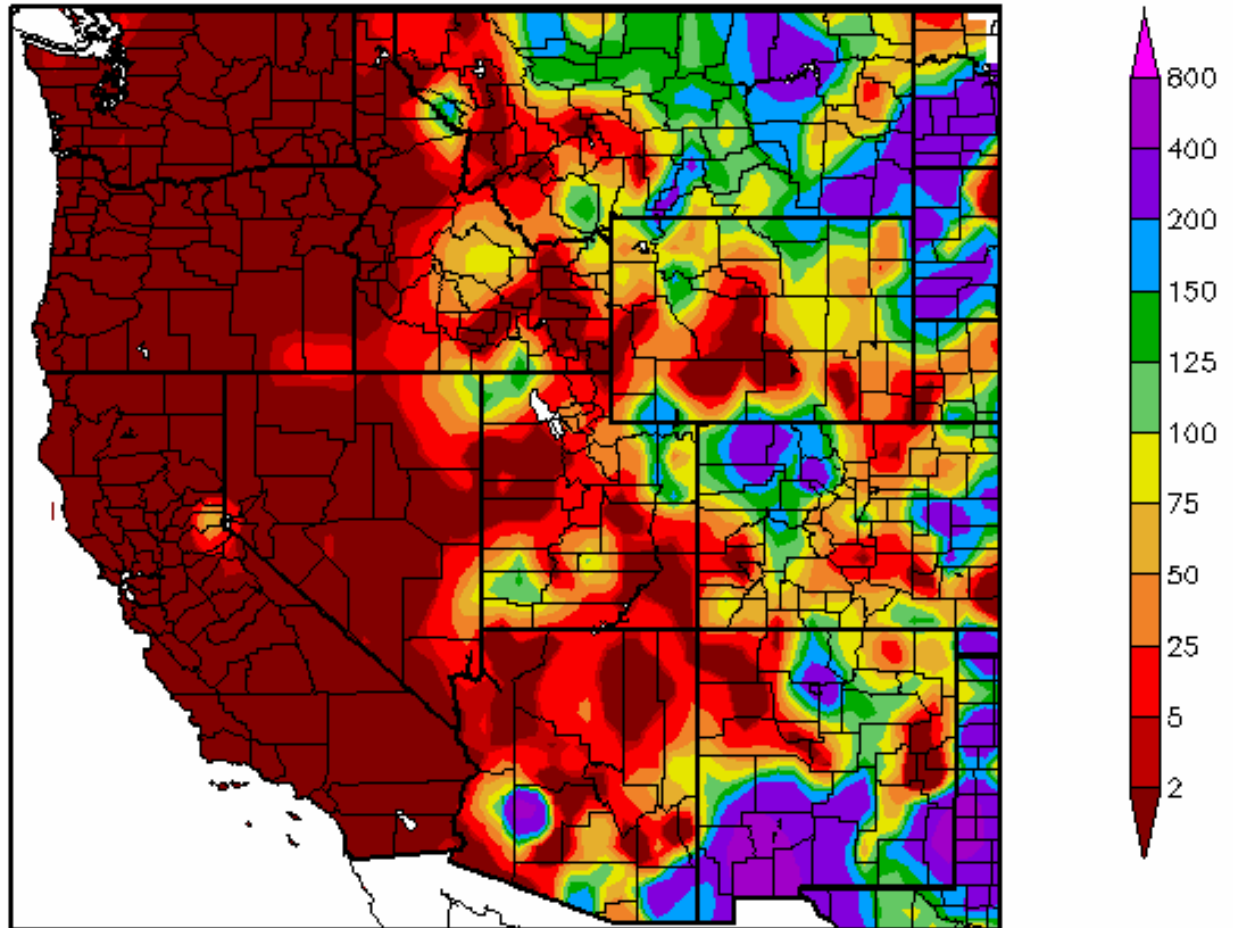
Generated 9/13/2007 at HPRCC using provisional data.

NOAA Regional Climate Centers

Fig. 1a. September 6-12, 2007: Temperature departure from normal show warmer than normal temperatures over the southern third of the Western States with coolest temperatures over the extreme northern region of the High Plains and coastal California.

Ref: http://www.hprcc.unl.edu/maps/index.php?action=update_region®ion=WRCC

Percent of Normal Precipitation (%)
9/6/2007 – 9/12/2007



Generated 9/13/2007 at HPRCC using provisional data.

NOAA Regional Climate Centers

Fig. 2. Preliminary precipitation totals for the 7-day period ending 12 September 2007 shows scattered heavier rain falling across the High Plains and southern New Mexico. Little if any precipitation fell west of 113W. Ref: http://www.hprcc.unl.edu/maps/index.php?action=update_product&product=PNorm

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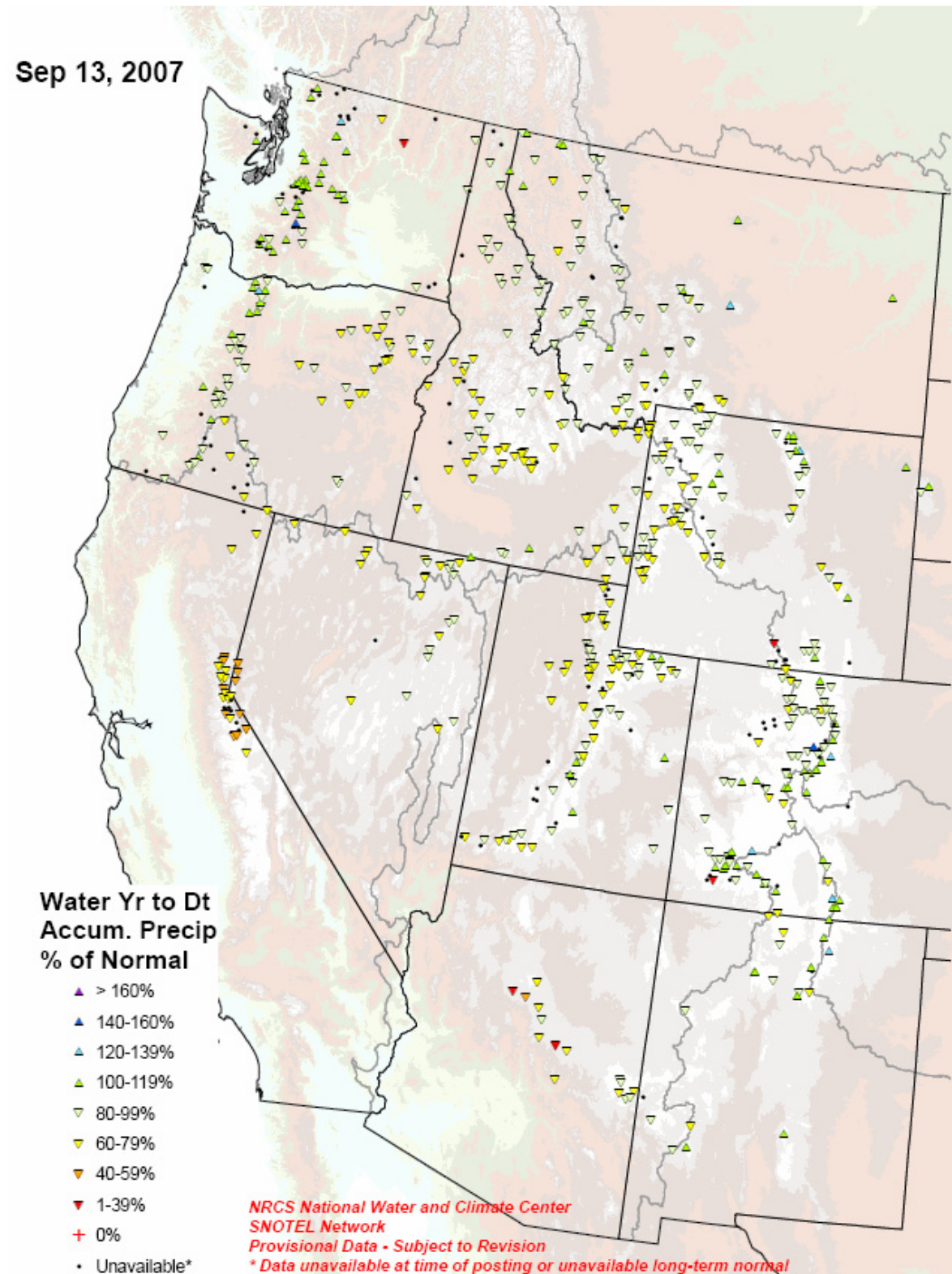


Fig. 2a. SNOTEL station water year (since October 1) precipitation as a percent of normal.

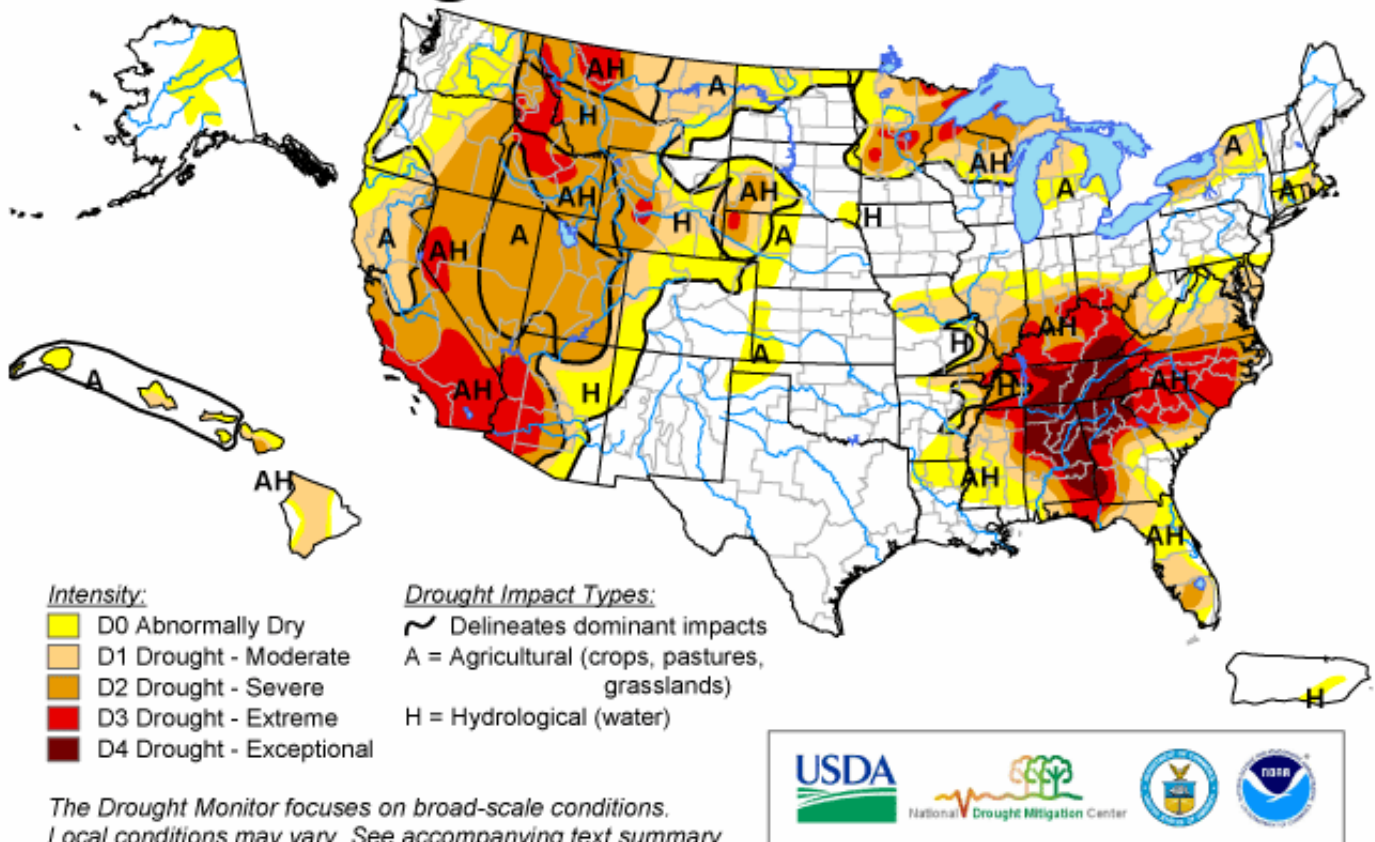
Note: No change from last week's map.

Ref: <ftp://ftp.wcc.nrcs.usda.gov/data/water/wcs/gis/maps/WestwideWYTDPrecipPercent.pdf>

U.S. Drought Monitor

September 11, 2007

Valid 8 a.m. EDT



Released Thursday, September 13, 2007

Author: Rich Tinker, Climate Prediction Center, NOAA

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

Fig. 3. Current Drought Monitor weekly summary.

Ref: National Drought Mitigation Center (NDMC) - <http://www.drought.unl.edu/dm/monitor.html>

U.S. Drought Monitor

West

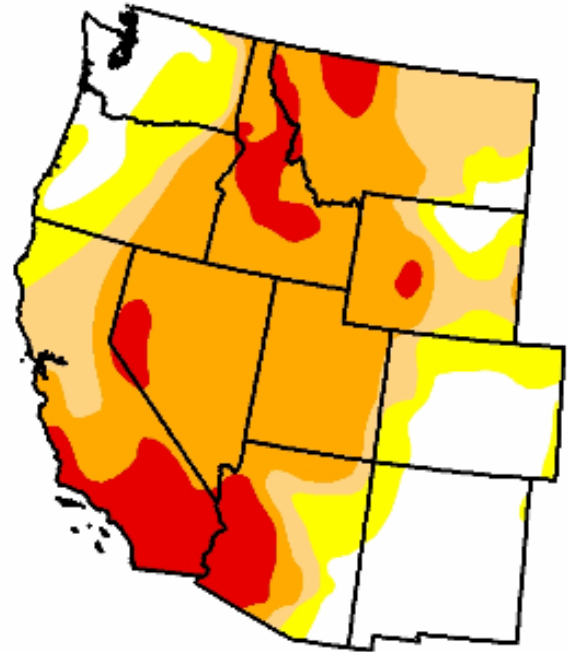
September 11, 2007

Valid 7 a.m. EST

	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	21.4	78.6	63.9	49.4	12.2	0.0
Last Week (09/04/2007 map)	21.1	78.9	63.9	49.4	12.5	0.0
3 Months Ago (06/19/2007 map)	33.5	66.5	48.7	28.3	7.5	0.0
Start of Calendar Year (01/02/2007 map)	51.2	48.8	25.8	9.4	4.0	0.0
Start of Water Year (10/03/2006 map)	43.5	56.5	33.5	16.9	5.2	0.0
One Year Ago (09/12/2006 map)	43.1	56.9	36.9	16.6	6.6	0.0

Intensity:

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



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 13, 2007

Author: Rich Tinker, CPC/NOAA

Fig. 3a. Drought Monitor for the Western States with statistics over various time periods. No significant change since last week's map. Ref: http://www.drought.unl.edu/dm/DM_west.htm

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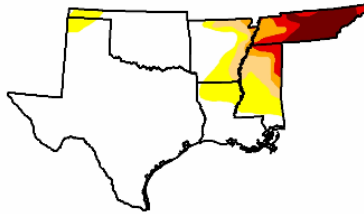
U.S. Drought Monitor South

September 11, 2007
Valid 7 a.m. EST

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	75.1	24.9	15.0	10.6	8.0	4.7
Last Week (09/04/2007 map)	69.2	30.8	18.7	12.9	9.5	5.1
3 Months Ago (06/19/2007 map)	70.5	29.5	18.6	13.5	9.7	2.5
Start of Calendar Year (01/02/2007 map)	39.8	60.2	33.3	22.3	12.1	1.9
Start of Water Year (10/03/2006 map)	22.6	77.4	48.4	28.6	13.0	0.8
One Year Ago (09/12/2006 map)	18.0	82.0	64.4	43.4	25.3	8.3

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>

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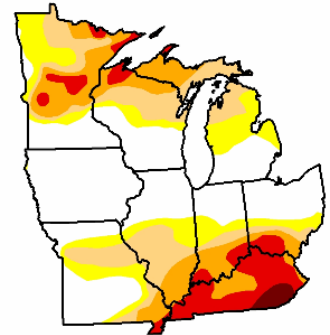
U.S. Drought Monitor Midwest

September 11, 2007
Valid 7 a.m. EST

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	43.1	56.9	41.8	25.2	10.7	1.1
Last Week (09/04/2007 map)	39.5	60.5	45.2	28.7	13.3	0.1
3 Months Ago (06/19/2007 map)	45.6	54.4	25.0	6.2	0.4	0.0
Start of Calendar Year (01/02/2007 map)	57.8	42.2	18.0	11.1	7.1	0.0
Start of Water Year (10/03/2006 map)	63.5	36.5	21.9	10.3	7.7	0.0
One Year Ago (09/12/2006 map)	62.4	37.6	22.1	10.1	5.9	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>

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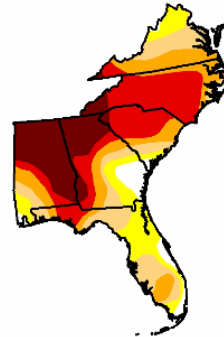
U.S. Drought Monitor Southeast

September 11, 2007
Valid 7 a.m. EST

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	5.7	94.3	80.6	62.7	44.7	19.2
Last Week (09/04/2007 map)	6.1	93.9	75.9	54.5	34.7	15.8
3 Months Ago (06/19/2007 map)	8.3	91.7	66.8	45.0	29.5	8.0
Start of Calendar Year (01/02/2007 map)	52.2	47.8	10.2	1.5	0.0	0.0
Start of Water Year (10/03/2006 map)	47.0	53.0	33.2	0.0	0.0	0.0
One Year Ago (09/12/2006 map)	42.3	57.7	34.0	24.2	1.1	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

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National Drought Mitigation Center

Fig. 3b. Drought Monitor for the South, Midwest and Southeastern States with statistics over various time periods shows some of the severest drought conditions in the US.

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Soil Moisture Percentiles (wrt/ 1915-2003)
20070911

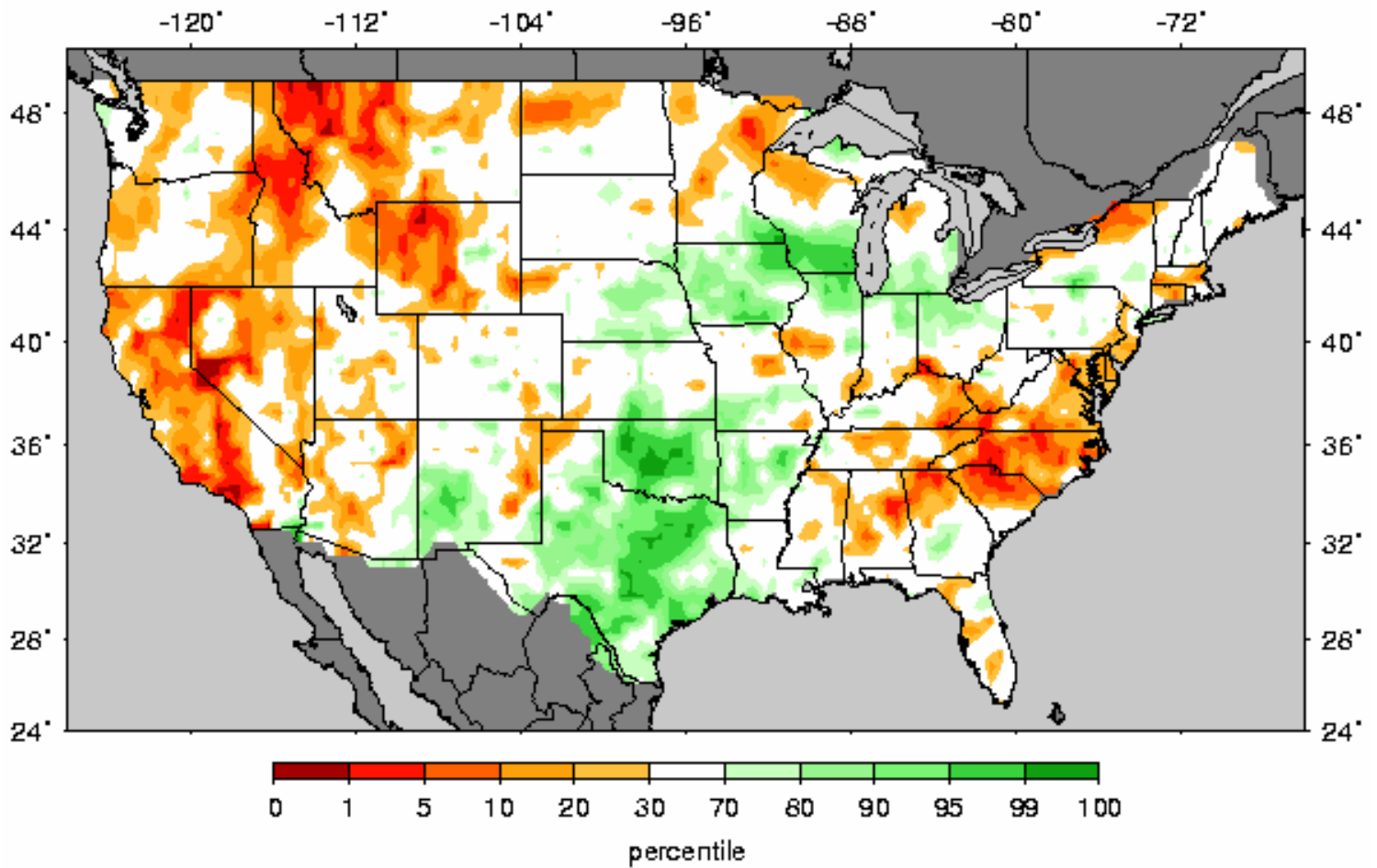


Fig. 4: Soil Moisture Ranking Percentile based on 1915-2003 climatology. Note some improvement over SW Wyoming, northern Utah and southern New Mexico.

Ref: http://www.hydro.washington.edu/forecast/monitor/curr/CONUS.sm_gnt.gif

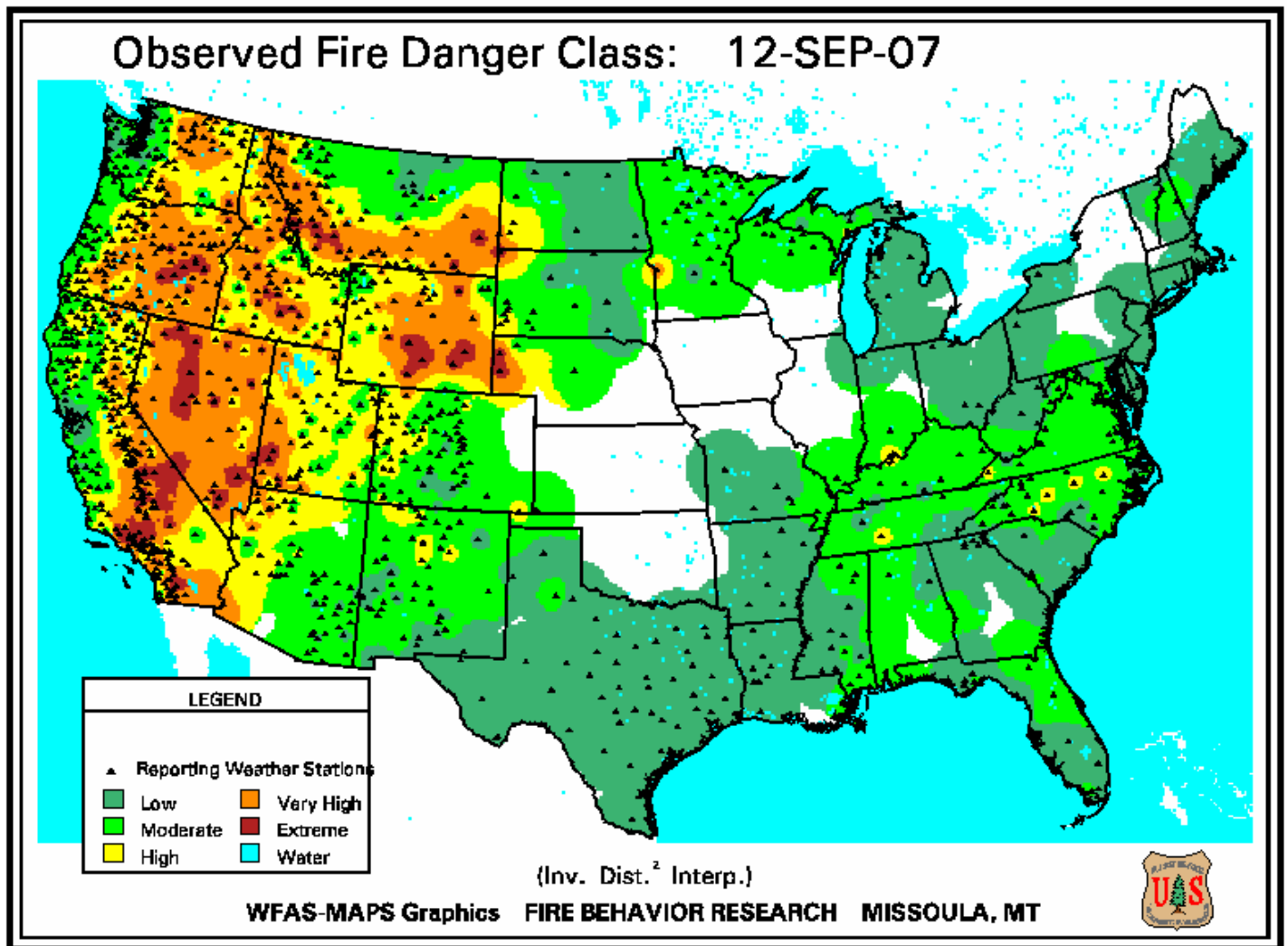


Fig. 5. Observed Fire Danger Class. Fire threat is still high over much of the Interior West. Source: Forest Service Fire Behavior Research – Missoula, MT. Ref: http://www.fs.fed.us/land/wfas/fd_class.gif

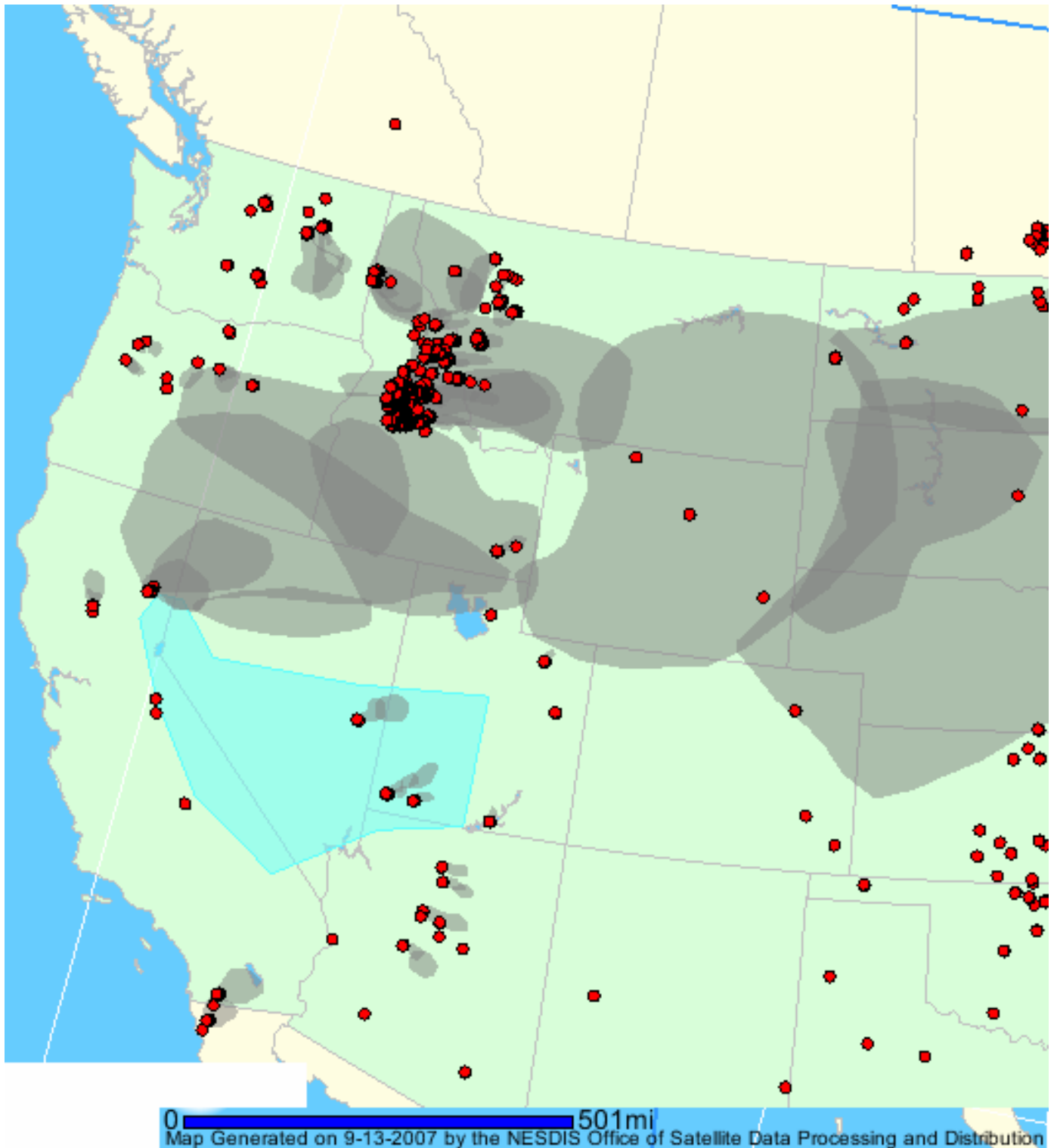


Fig. 5a. Location of active wildfires as detected from satellite across the West as of 13 September 2007. Gray areas depict smoke and blue areas depict fire potential.

Ref: <http://www.firedetect.noaa.gov/viewer.htm>

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Wednesday, September 12, 2007

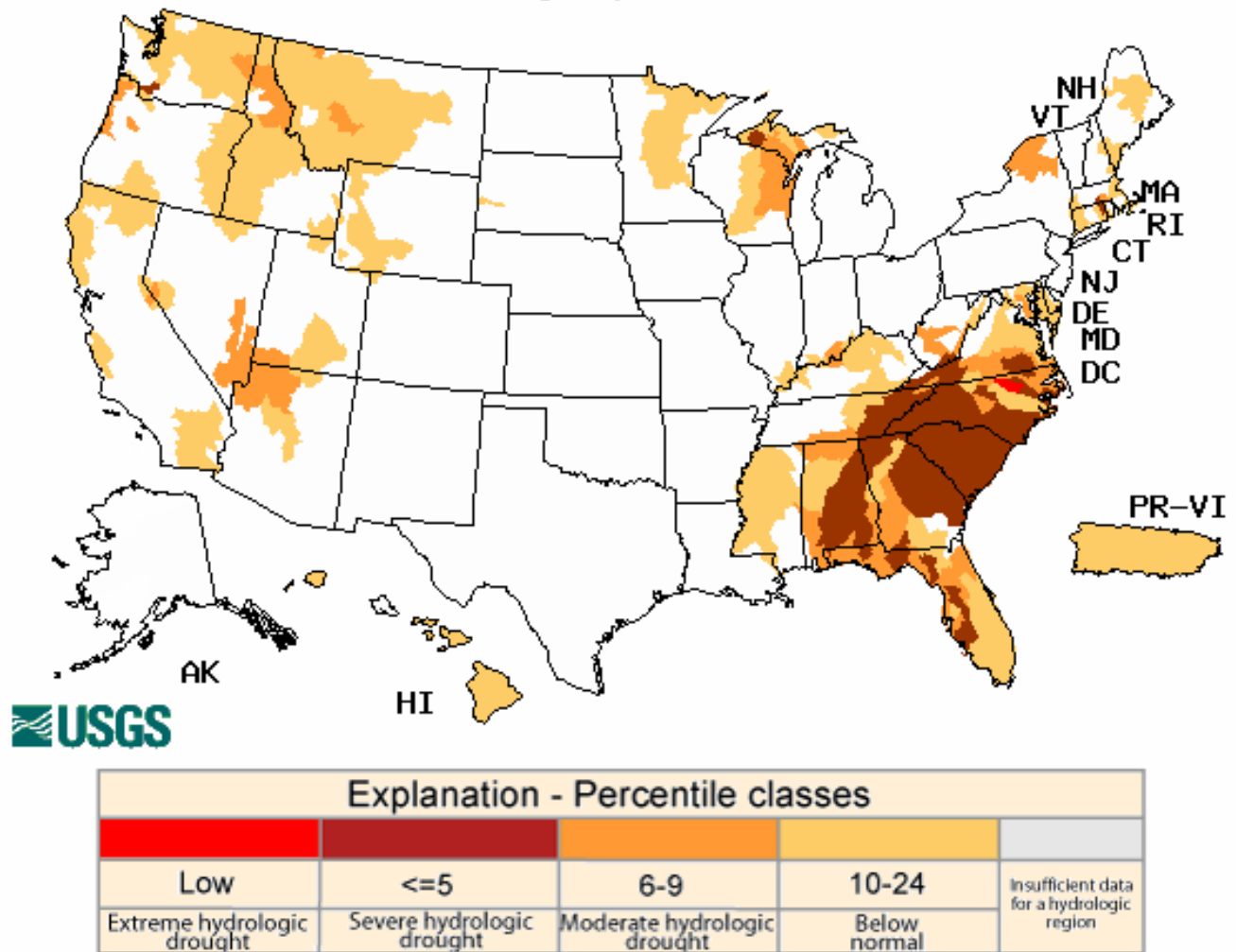


Fig. 6. This week's map shows some worsening stream flows over southern Nevada and northwestern Arizona since last week. Severe conditions persist over the Southeastern States. Ref: USGS <http://water.usgs.gov/waterwatch/?m=dryw&w=map&r=us>

**Vegetation Health: Red - stressed, Green - fair,
Blue - favorable, White - Cold Surface**

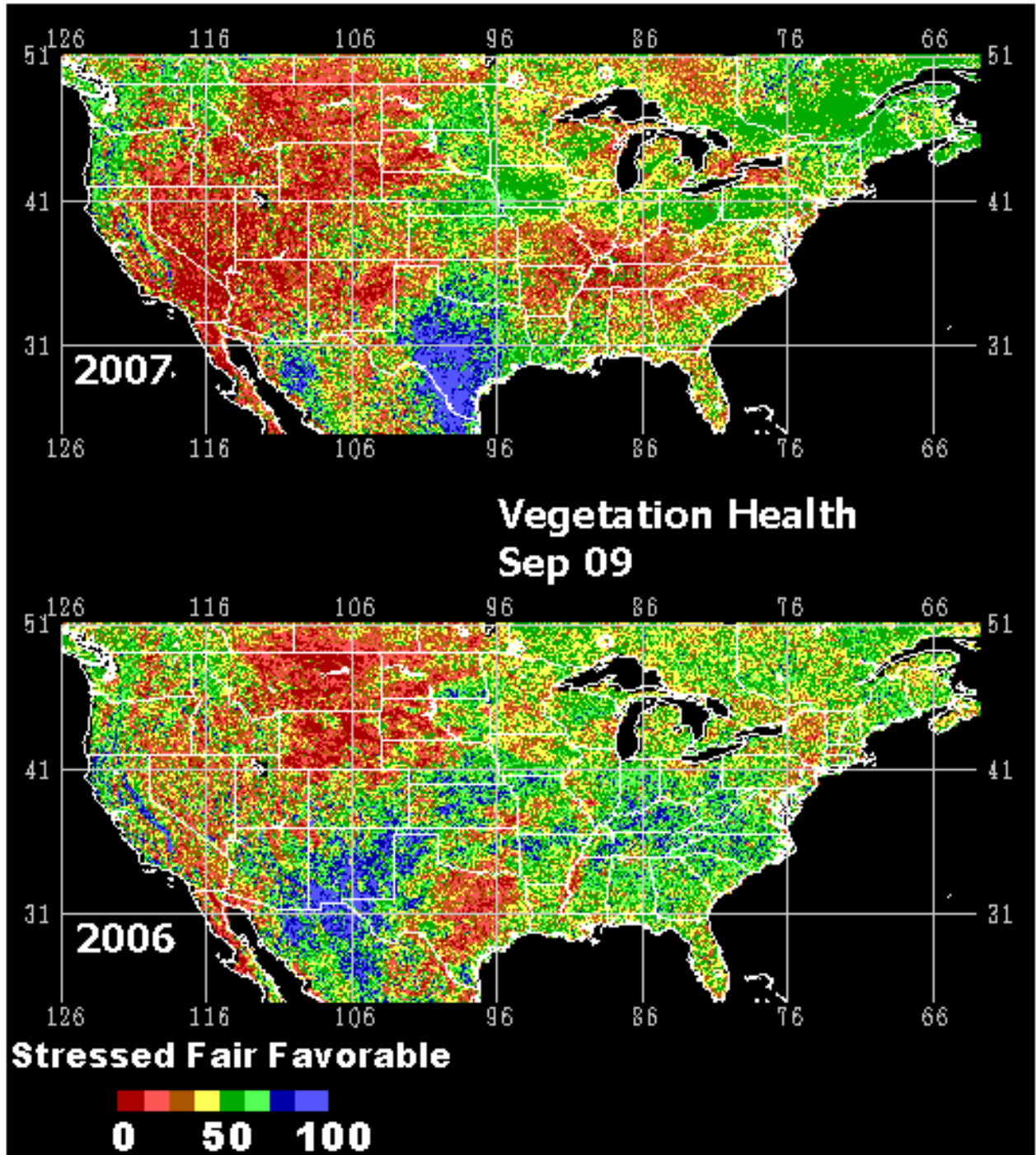


Fig. 7: This remote satellite AVHRR map shows stressed vegetation as compared to last year. Much of Texas continues to show the greatest improvement since last September. Ref: <http://www.orbit.nesdis.noaa.gov/smcd/emb/vci/usa.html>).

Weekly Snowpack and Drought Monitor Update Report

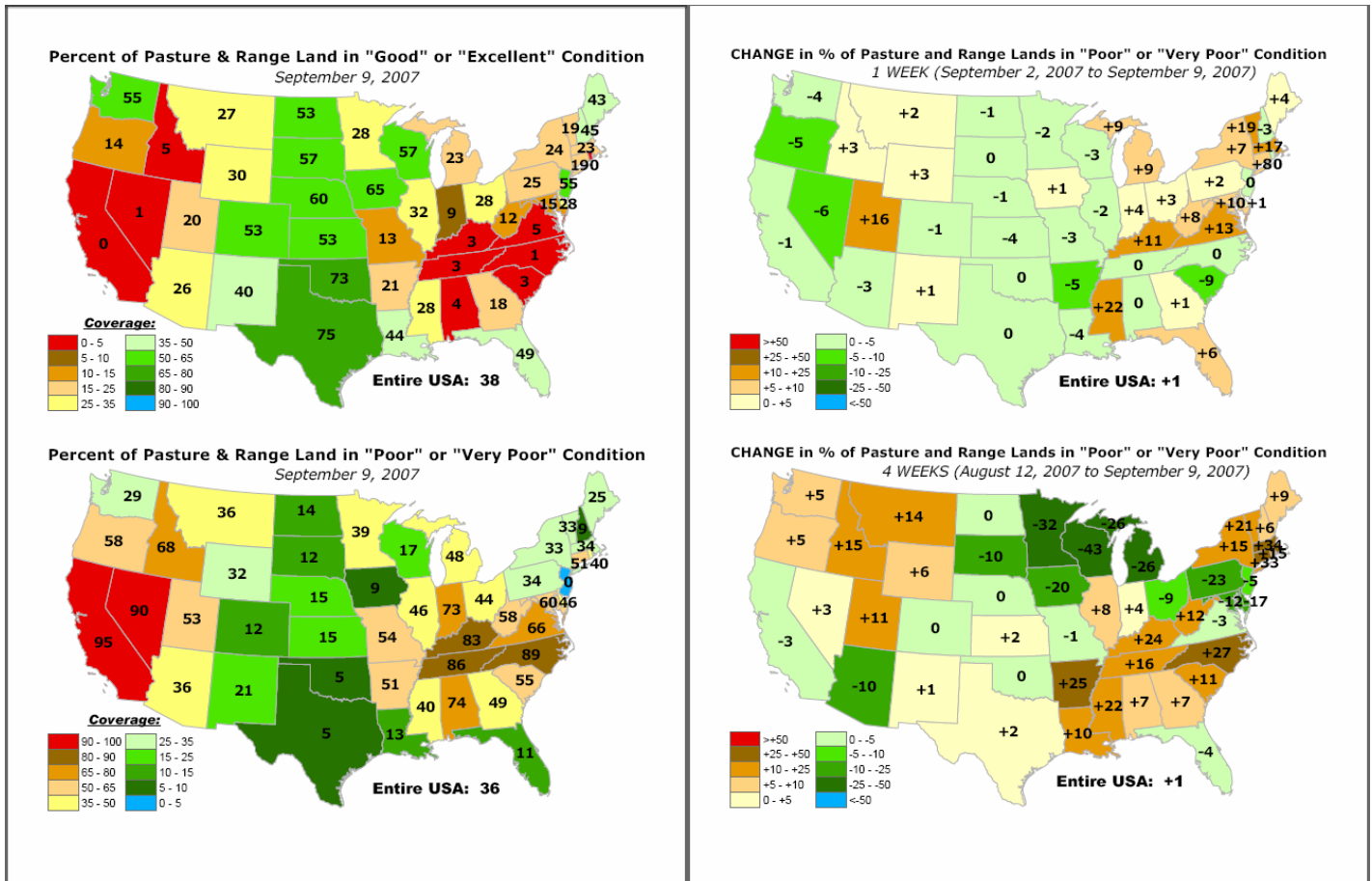


Fig. 8. Pasture and rangeland conditions for various time periods are shown above. The worst conditions exist over California, Idaho, and Nevada (lower left panel). During the past week, Utah shows the greatest worsening (top right panel) while Montana, Idaho, and Utah show the largest increase in poor to very poor conditions during the past four weeks (bottom right panel). Ref: <http://www.cpc.ncep.noaa.gov/products/predictions/experimental/edb/pasture-range-statewide-conditions.pdf>

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National Drought Summary -- September 11, 2007

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 West: Scattered rainfall and reduced temperatures kept conditions from deteriorating this week, but were not sufficient to provide any widespread relief. As a result, few changes in drought classifications were made from the Rockies westward, although recent precipitation was enough to eliminate the area of D3 conditions in west-central Wyoming, and to eradicate abnormal dryness across interior New Mexico.

The Plains: Moderate rainfall (0.5 to 2.0 inches) allowed for some retraction of D0 to D2 conditions in portions of the western Dakotas, but below-normal precipitation for the past several weeks led to the expansion of D0A conditions into central and southwestern Nebraska, adjacent Colorado, and northeastern North Dakota. Meanwhile, D1A conditions were introduced for a small area in north-central North Dakota. Farther south, moderate rains also led to the removal of D0A conditions from part of northwestern Kansas.

The Upper Mississippi Valley and Great Lakes Region: Wet weather brought drought improvement to parts of northern Minnesota, the northern and eastern Upper Peninsula of Michigan, and a few sections of southern Minnesota; however, only scattered light to moderate precipitation fell elsewhere, allowing dryness to persist or locally intensify. Record daily rainfall totals late in the period led to weekly amounts of 4 to 8 inches for a small part of the western Minnesota Arrowhead, where conditions improved from D3AH to D1AH. Farther east, much of the D3AH in Michigan's Upper Peninsula improved 1 category due to heavy rains in the last couple of weeks, but patches of D3AH persisted within a larger D2AH region stretching from west-central Minnesota northeastward through most of the Minnesota Arrowhead and the western half of the Upper Peninsula.

The Southeast: In the broad area of dryness that covered areas from the middle and lower Mississippi Valley eastward through the Ohio Valley, the Southeast, and the southern Atlantic states, hot weather and little or no rainfall allowed conditions to persist or worsen from the Florida Panhandle and Georgia northward through Alabama, eastern Tennessee, most of the Carolinas (except the small area in eastern North Carolina soaked by Tropical Storm Gabrielle), the southern Virginias, southeastern Kentucky, and the mid-Atlantic Coastal Plain. As a result, D4AH expanded into central and northeastern Georgia, the western Carolinas, northeastern Tennessee, and southeastern Kentucky while D1AH to D3AH areas broadened in adjacent areas, most notably southern Virginia and the Carolinas. Farther south, a dry start to September across interior southern Florida induced an eastward expansion of D0 to D2 conditions, with the D2 area stretched to include Lake Okeechobee, which is at exceptionally low levels for this time of year.

In sharp contrast, heavy to excessive rainfall brought substantial drought relief too much of Arkansas, the southern half of Missouri, parts of western Tennessee, and the northern Ohio Valley. Between 5 and 9 inches of rain drenched parts of the states adjacent to the Mississippi River, and fairly widespread 2 to 5 inch totals were observed in other parts of the

Weekly Snowpack and Drought Monitor Update Report

aforementioned regions. These downpours led to broad reductions in assessed drought severity across central and northeastern Arkansas and much of southern Missouri, in several areas by more than 1 category. Farther north and east, the rains eroded the western extent of D3AH and D4AH conditions in central and western Tennessee, and led generally to 1-category reductions in central and southern sections of Ohio and Indiana, except immediately adjacent to the Ohio River, where lesser rainfall totals were reported.

The Northeast: One to locally four inches of precipitation reduced the southward extent of D0A and D1A conditions in western New York last week, and the northwestward extent of D0A conditions in western Massachusetts. Otherwise, light to moderate rainfall in other parts of last week's dry areas kept conditions intact, with some expansion of D1A conditions in northern New York.

Alaska, Hawaii, and Puerto Rico: Increased rainfall during the past several weeks led to the elimination of D0 conditions in parts of interior southern Alaska. Meanwhile, light precipitation at best kept D0 to D2 conditions as they were last week across southeastern Puerto Rico and parts of Hawaii. The persistent dryness in eastern Oahu led to the introduction of mandatory irrigation water restrictions in the Waimanalo area.

Looking Ahead: Moderate to heavy rains may fall on some of the areas of dryness and drought affecting the Southeast during the next 5 days (through September 17), with amounts approaching or exceeding an inch forecast for a swath from eastern North Carolina southward and southwestward through much of South Carolina, Georgia, Florida, central and southern Alabama, and southern Mississippi. The remnants of Tropical Storm Humberto, making landfall just west of the Louisiana border in Texas late Wednesday, may fuel locally higher amounts in the states adjacent to the lower Mississippi River through the end of the workweek, and possibly farther east thereafter. In contrast, only isolated amounts exceeding 0.5 inch are forecast for the rest of the country's dry areas. For the ensuing 5 days (September 18 – 22), the odds favor above-normal precipitation for the northern half of the Intermountain West and the Great Lakes region while drier-than-normal conditions are expected to return to the middle and lower Mississippi Valley, the southern Ohio Valley, the Deep South, the central and southern Appalachians, and much of the southern Atlantic states.

Author: [Rich Tinker, Climate Prediction 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 12, 2007