



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

Weekly Report - Snowpack / Drought Monitor Update **Date: August 30, 2007**

SNOTEL SNOWPACK AND PRECIPITATION SUMMARY

Temperature: During the past seven days, mountain SNOTEL sites and lower elevation weather stations recorded temperatures within 5°F of normal across the West (Figs. 1 and 1a).

Precipitation: For the past week, scattered thunderstorms ranged from the Desert Southwest to the Northern Plain while little if any rain fell over the Pacific Northwest and California (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: The week was again cooler than average across the Pacific Northwest, but warmer than normal over most of the remainder of the West. Light rain fell across western Washington and light to moderate amounts were scattered over the Rockies, but little or no rain fell elsewhere. One exception was the Southwest, where the remains of Hurricane Dean contributed locally heavy showers exceeding one inch in parts of Arizona and southern parts of Nevada and Utah. Eastern Montana and Idaho again received only widely scattered amounts of less than an inch as around two dozen major wildfires remained active. USDA NASS reports indicate that pastures continue to deteriorate with conditions poor to very poor for 67% of Idaho and 37% of Montana. Only slight changes were made in the drought classifications.

Author: [Thomas Heddinghaus, Climate Prediction 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, 3b, and 3c).

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).

Weekly Snowpack and Drought Monitor Update Report

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 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

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Aug 30, 2007

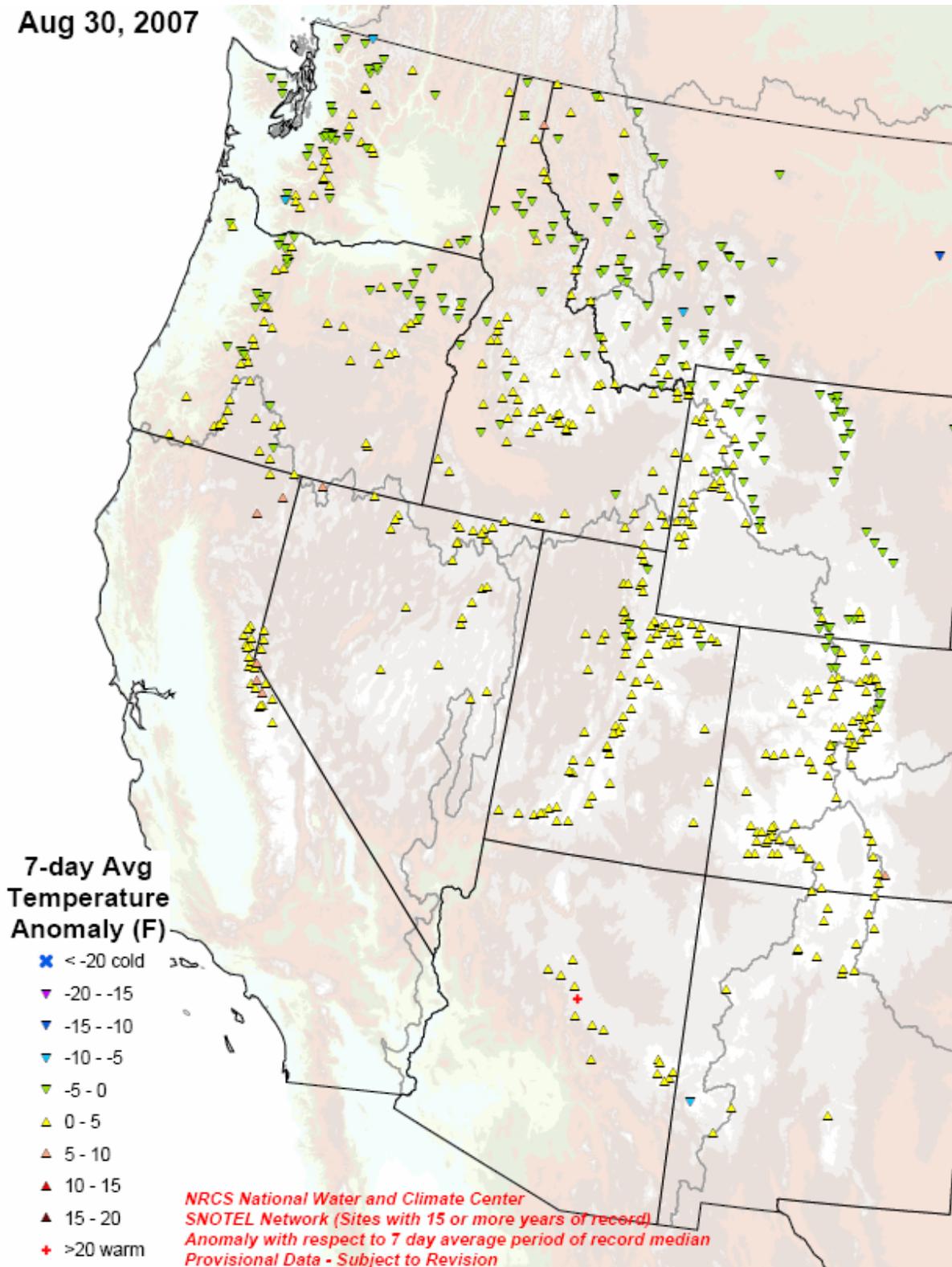
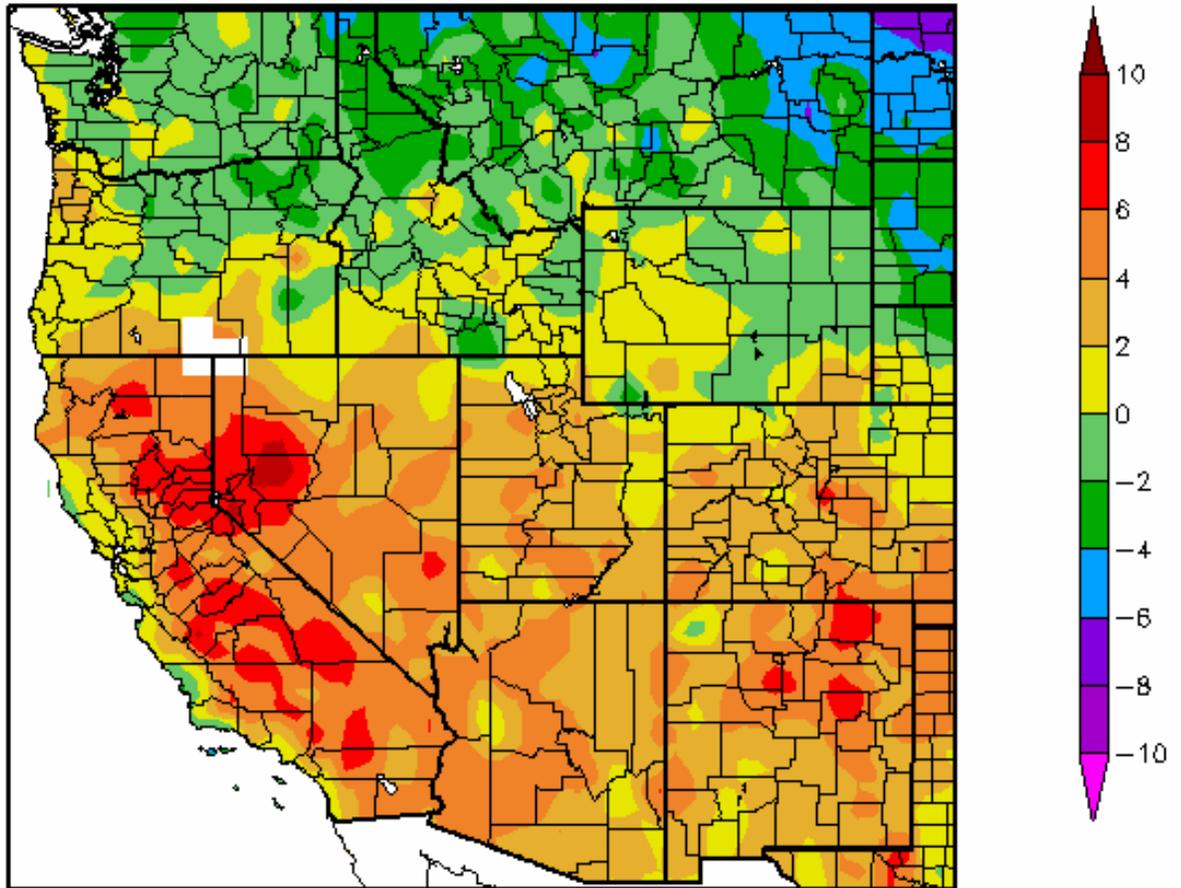


Fig. 1. SNOTEL 7-day average temperature anomaly.

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

Departure from Normal Temperature (F)
8/23/2007 – 8/29/2007



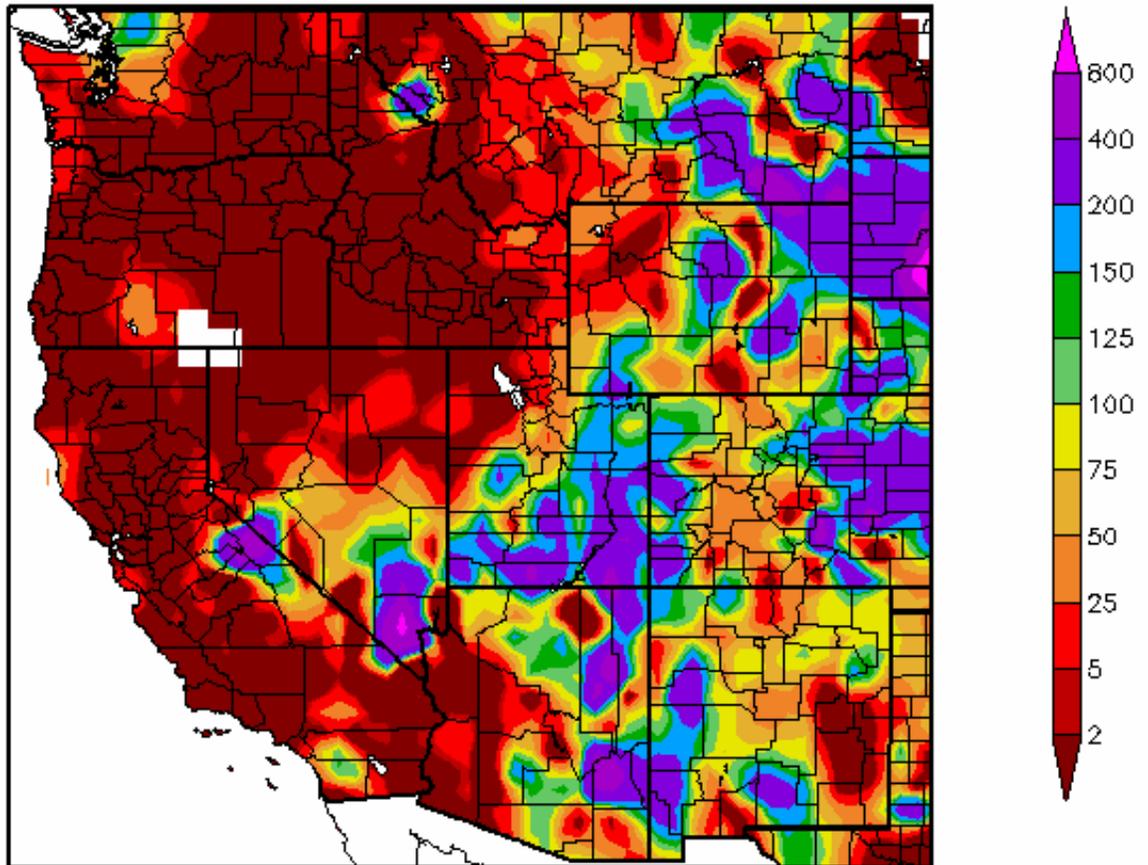
Generated 8/30/2007 at HPRCC using provisional data.

NOAA Regional Climate Centers

Fig. 1a. August 23-29, 2007: Temperature departure from normal show warmer than normal temperatures over the southern half of the Western States with coolest temperatures over the extreme northern region of the High Plains.

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

Percent of Normal Precipitation (%)
8/23/2007 – 8/29/2007



Generated 8/30/2007 at HPRCC using provisional data.

NOAA Regional Climate Centers

Fig. 2. Preliminary precipitation totals for the 7-day period ending 29 August 2007. This week's rain pattern reveals an abundance of rain falling across the 4-Corners region (AZ, NM, UT, CO) northeastward to western South Dakota.

Ref: http://www.hprcc.unl.edu/maps/index.php?action=update_product&product=PNorm

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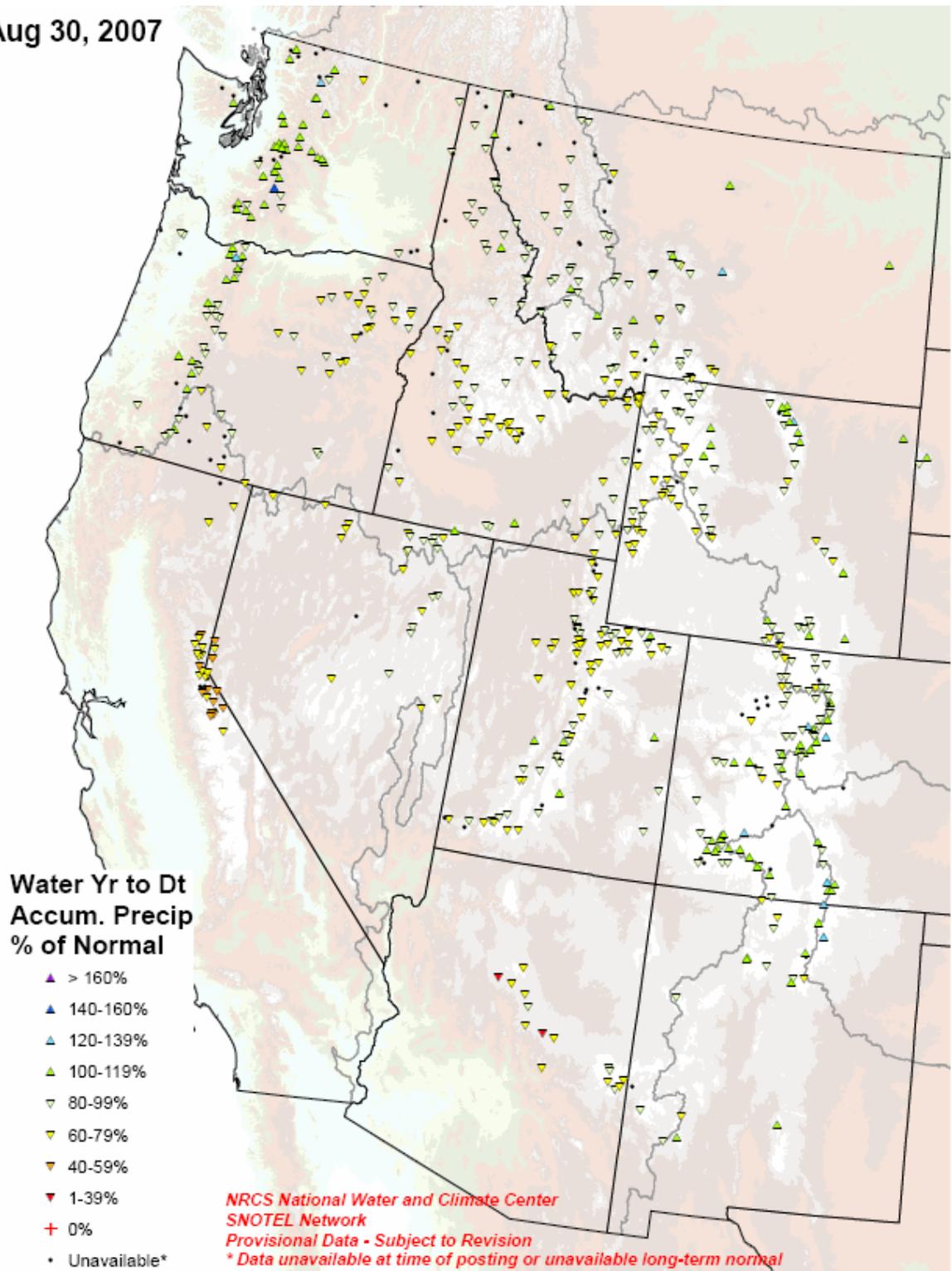


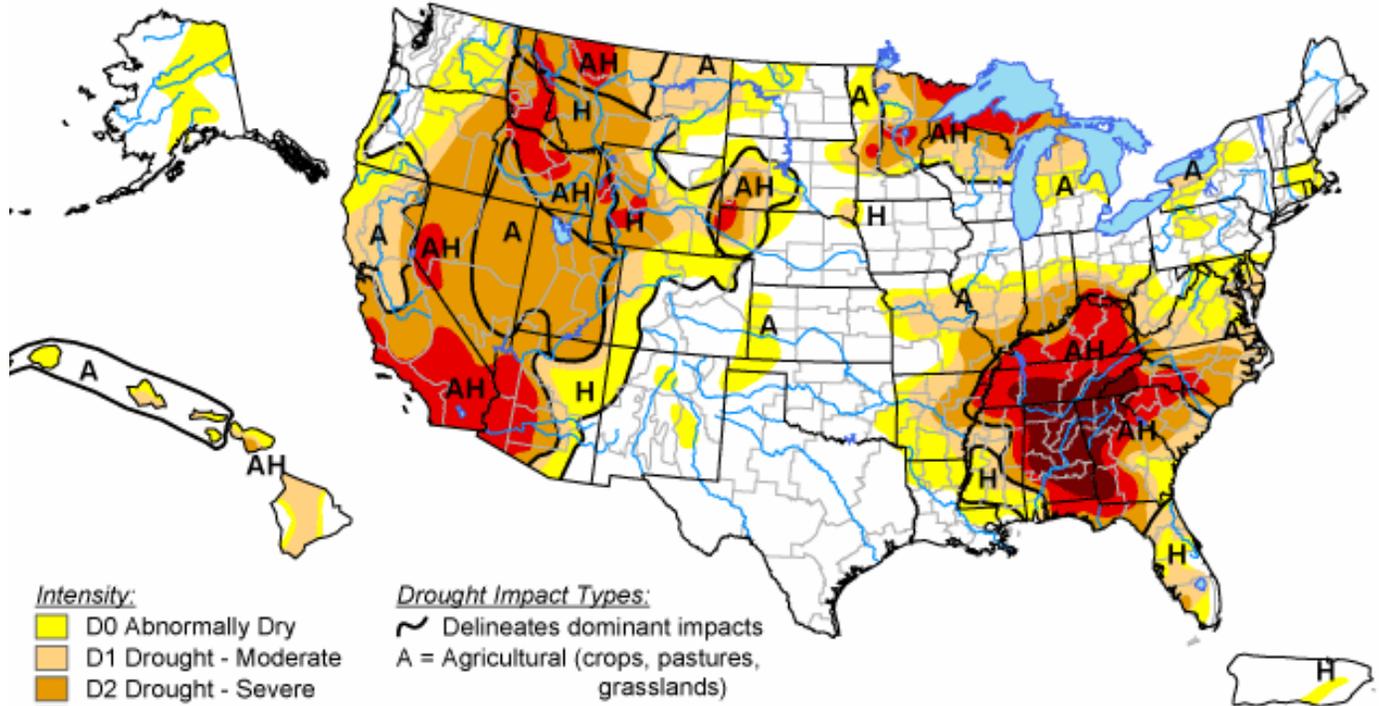
Fig. 2a. SNOTEL station water year (since October 1) precipitation as a percent of normal.

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

August 28, 2007
Valid 8 a.m. EDT



Intensity:

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

Drought Impact Types:

- Delineates dominant impacts
- A = Agricultural (crops, pastures, grasslands)
- H = Hydrological (water)

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 30, 2007
Author: Thomas Heddinghaus, CPC/NOAA

Fig. 3. Current Drought Monitor weekly summary.

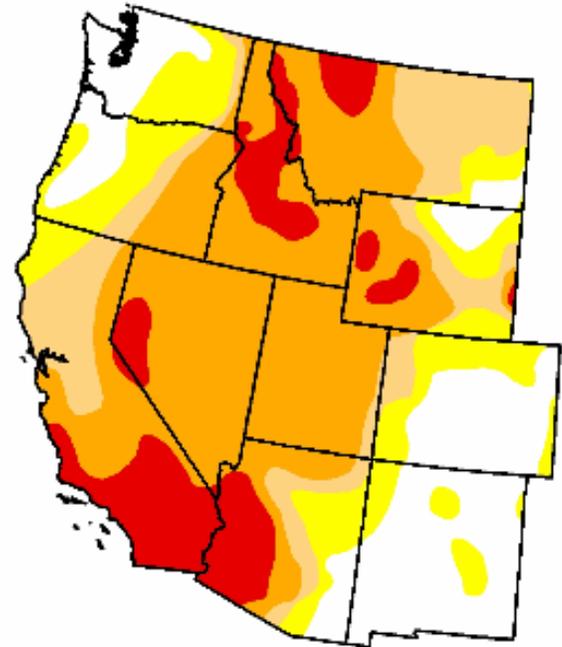
Ref: National Drought Mitigation Center (NDMC) - <http://www.drought.unl.edu/dm/monitor.html>

U.S. Drought Monitor West

August 28, 2007
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	20.8	79.2	63.9	50.0	12.8	0.0
Last Week (08/21/2007 map)	20.4	79.6	64.0	50.0	12.8	0.0
3 Months Ago (06/05/2007 map)	33.0	67.0	49.6	25.6	7.8	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	West
One Year Ago (08/29/2006 map)	43.9	56.1	36.7	17.8	4.3	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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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

Weekly Snowpack and Drought Monitor Update Report

U.S. Drought Monitor South

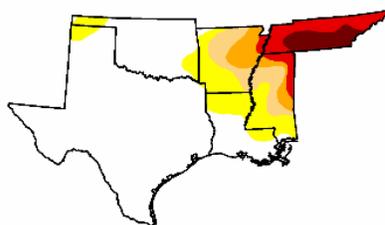
August 28, 2007
Valid 7 a.m. EST

U.S. Drought Monitor Midwest

August 28, 2007
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	67.1	32.9	19.6	13.8	9.8	3.6
Last Week (08/21/2007 map)	69.5	30.5	19.3	13.4	9.8	3.5
3 Months Ago (06/05/2007 map)	63.9	36.1	20.0	12.1	5.8	0.0
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 (08/29/2006 map)	8.5	91.5	73.3	52.7	28.8	8.9



Intensity:



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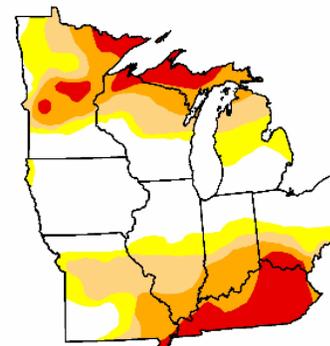
<http://drought.unl.edu/dm>



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Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	39.1	60.9	45.3	28.8	12.4	0.0
Last Week (08/21/2007 map)	27.9	72.1	53.2	27.1	10.3	0.0
3 Months Ago (06/05/2007 map)	59.0	41.0	21.4	4.2	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 (08/29/2006 map)	55.4	44.6	24.1	9.9	5.4	0.0



Intensity:



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



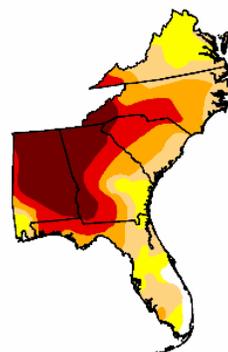
Released Thursday, August 30, 2007
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U.S. Drought Monitor Southeast

August 28, 2007
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	2.7	97.3	82.6	60.0	40.7	22.6
Last Week (08/21/2007 map)	2.4	97.6	86.2	60.5	40.9	23.6
3 Months Ago (06/05/2007 map)	11.2	88.8	68.1	39.9	24.0	3.9
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 (08/29/2006 map)	23.8	76.2	47.6	25.3	1.1	0.0



Intensity:



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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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.

Weekly Snowpack and Drought Monitor Update Report

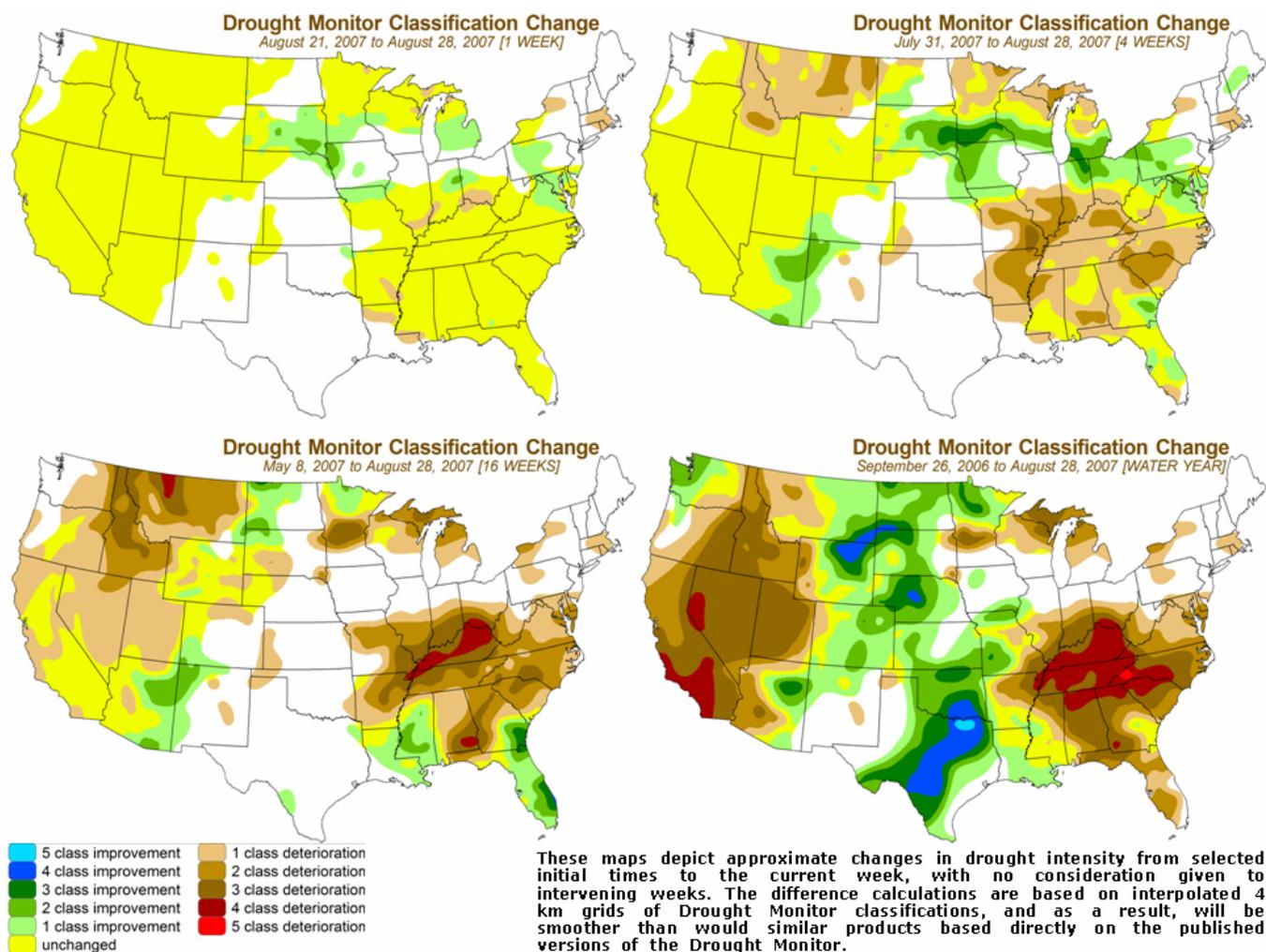


Fig. 3c. Drought Monitor classification changes for various periods during the 2007 Water Year.

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

Soil Moisture Percentiles (wrt/ 1915-2003)
20070828

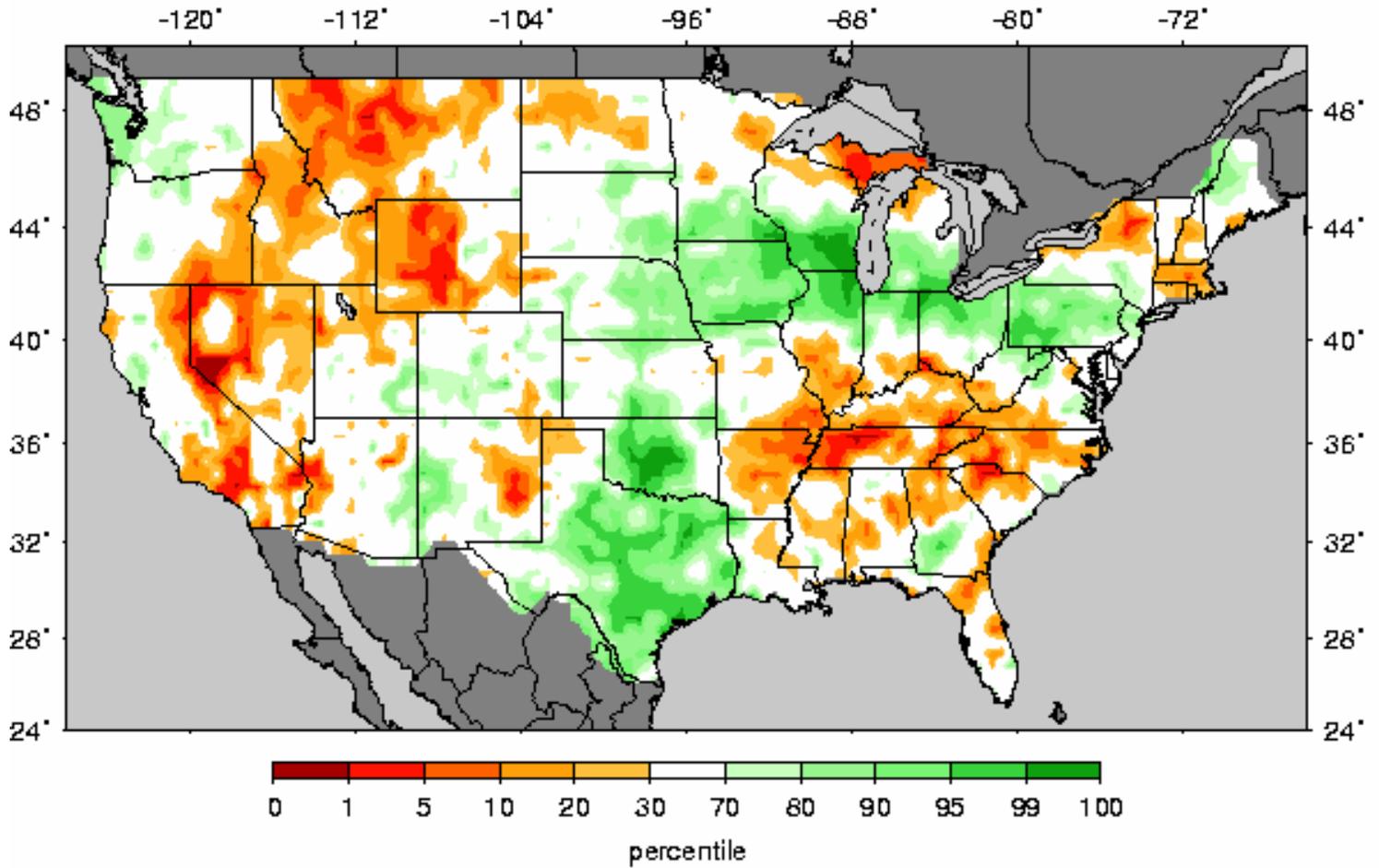


Fig. 4: Soil Moisture Ranking Percentile based on 1915-2003 climatology. Note no significant change from last week's map. (Source: Univ. of Washington)

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

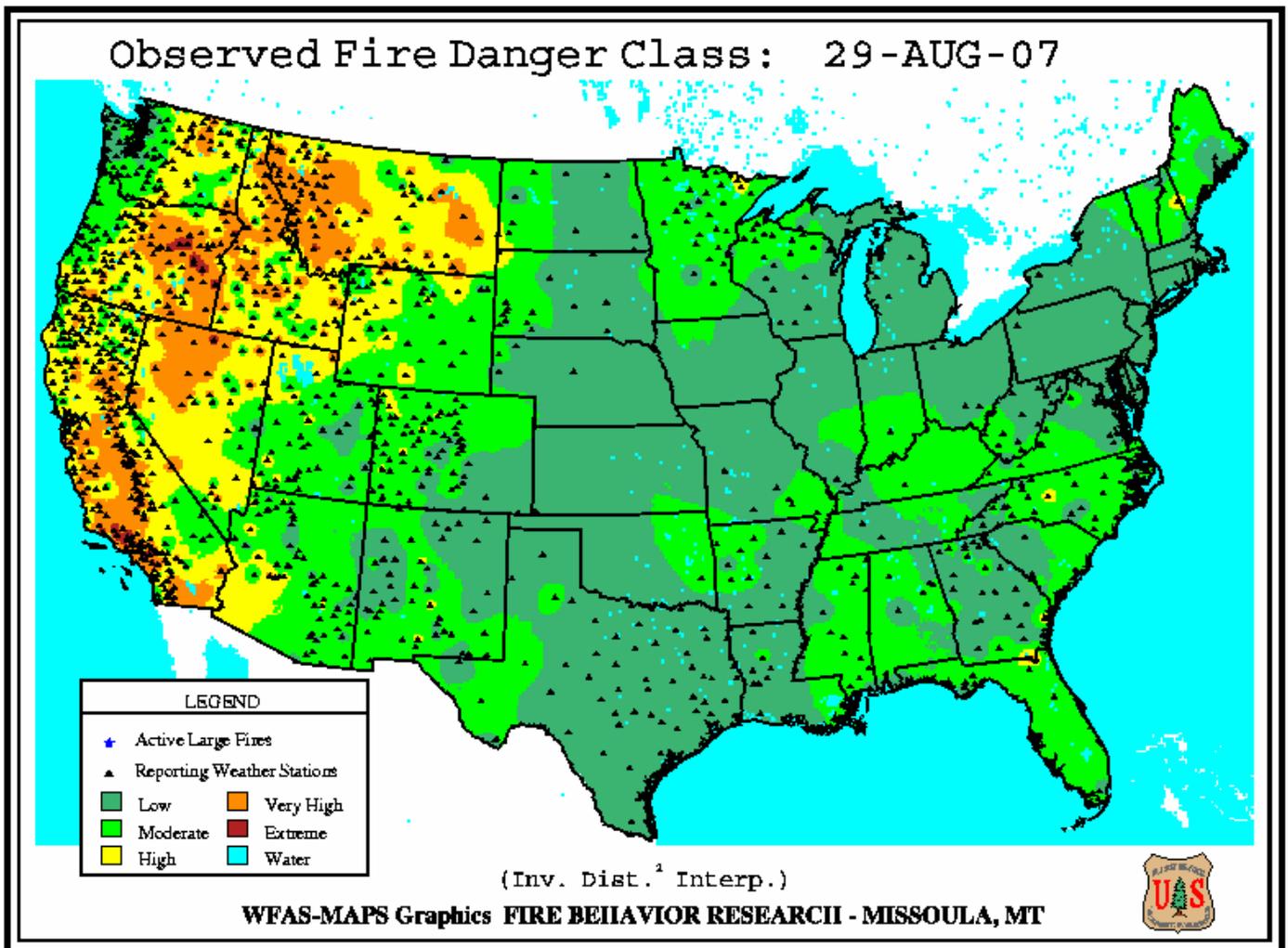


Fig. 5. Observed Fire Danger Class. Source: Forest Service Fire Behavior Research – Missoula, MT.
Ref: http://www.fs.fed.us/land/wfas/fd_class.qif

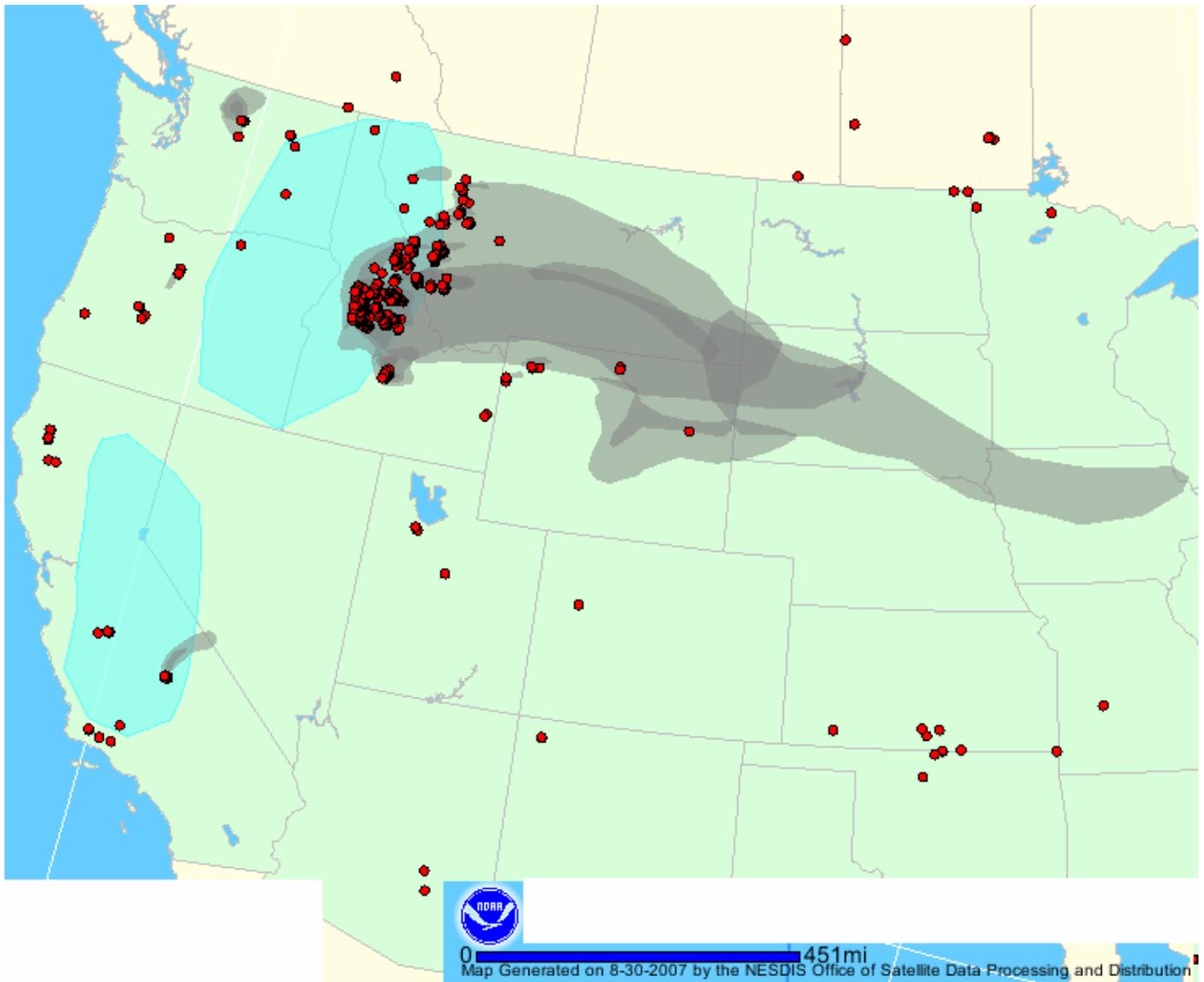
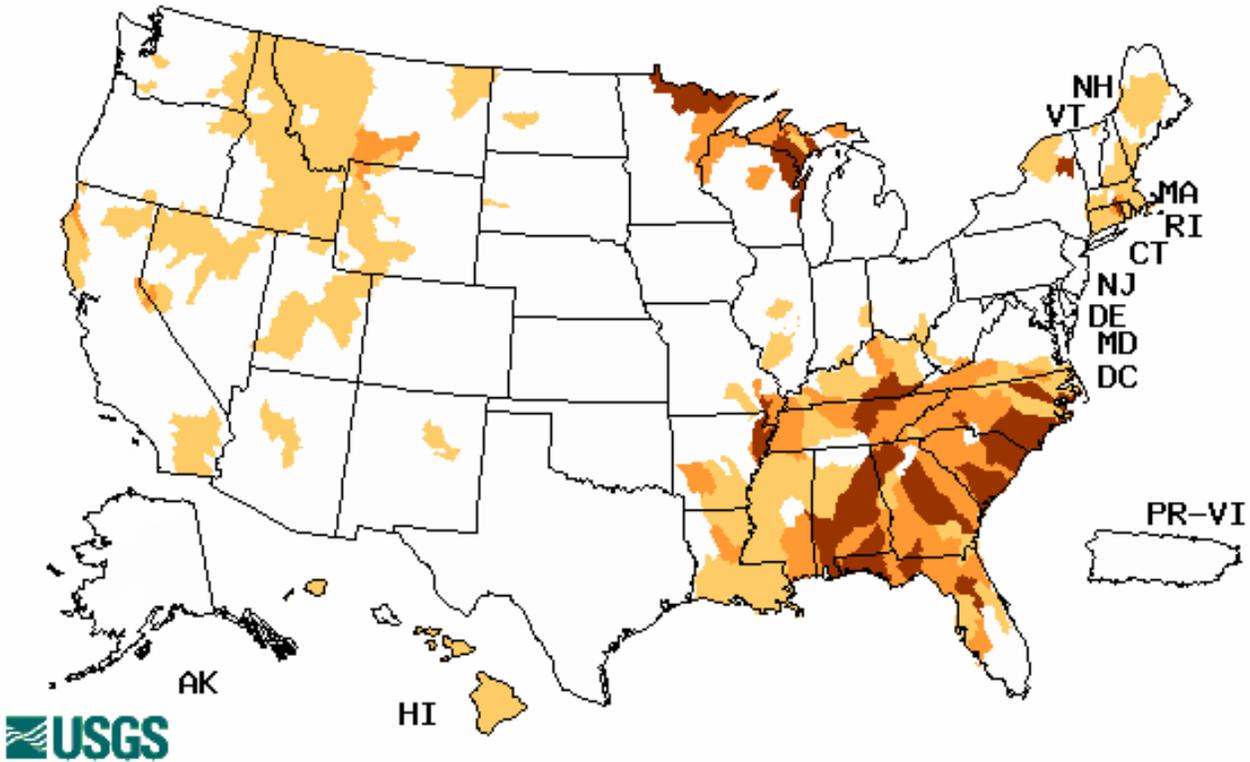


Fig. 5a. Location of active wildfires as detected from satellite across the West as of 30 August 2007. Gray areas depict smoke and blue areas depict fire potential.
Ref: <http://www.firedetect.noaa.gov/viewer.htm>

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Wednesday, August 29, 2007



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. This week's map shows little change since last week over the West.
 Ref: USGS <http://water.usgs.gov/waterwatch/?m=dryw&w=map&r=us>

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

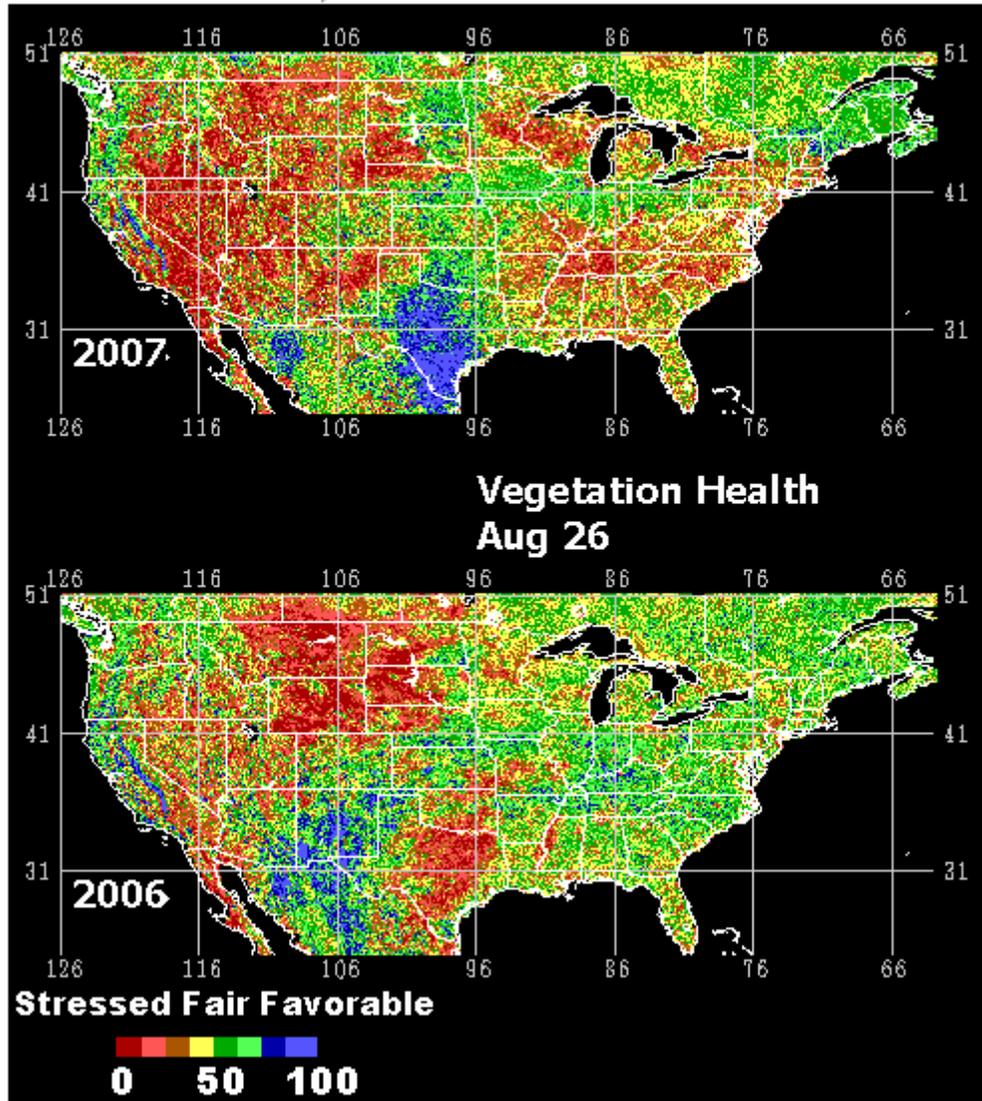


Fig. 7: This remote satellite AVHRR map shows stressed vegetation as compared to last year. Ref: <http://www.orbit.nesdis.noaa.gov/smcd/emb/vci/usa.html>.

Weekly Snowpack and Drought Monitor Update Report

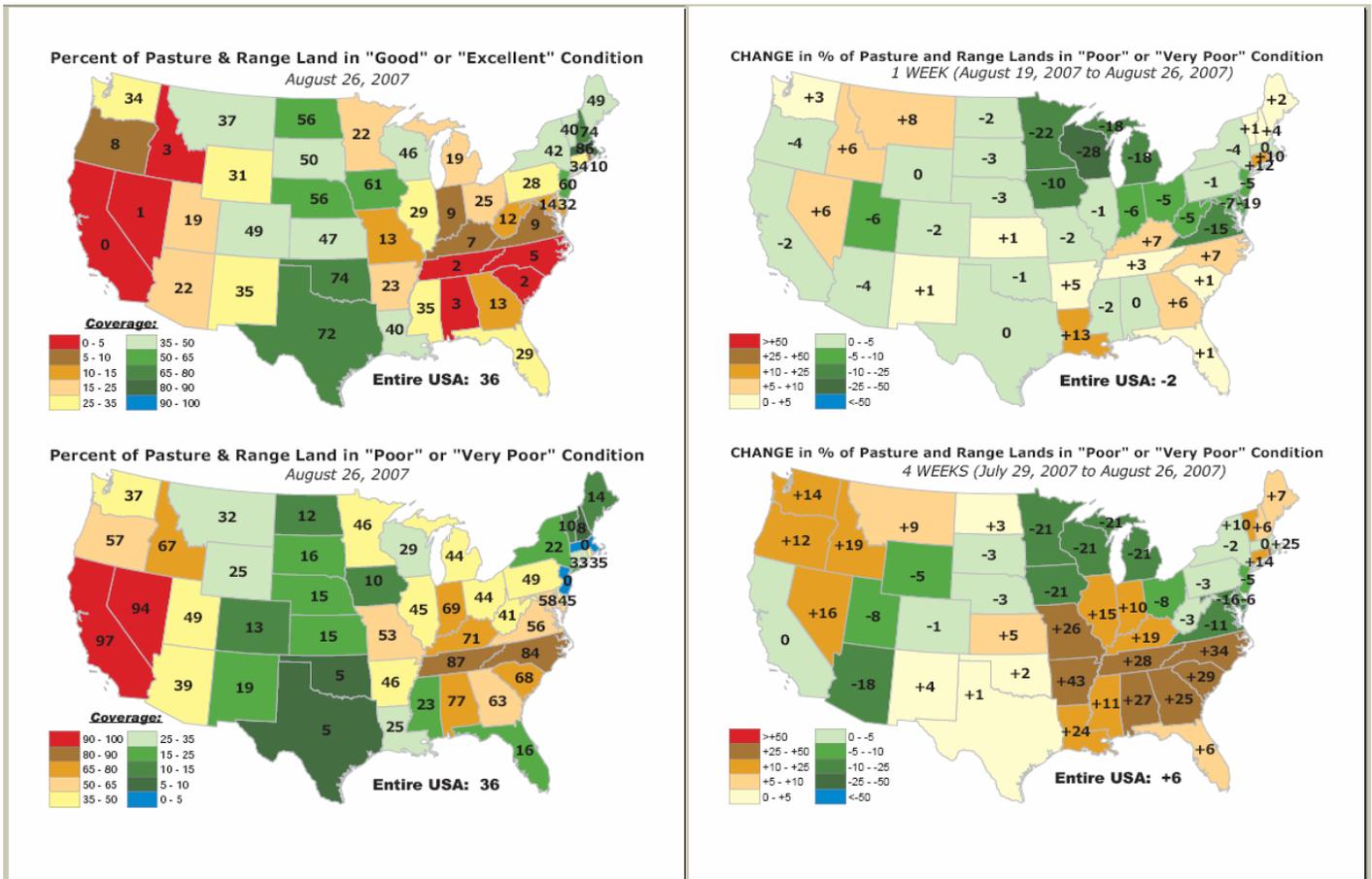


Fig. 8. Pasture and rangeland conditions for various periods shows some worsening to the poorest pasture lands have occurred Montana, Idaho, and Nevada during the past week (top right panel). Nevada and Idaho show the largest increase in poor to very poor conditions during the past four weeks for the Western States with Arizona and Utah showing the greatest improvement (bottom right panel).

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 28, 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/>.

Slow-moving storms dumped heavy rain over the eastern central Plains eastward to the mid-Atlantic coast. Rainfall totals (including rains reported on the 21st) of greater than 3 inches with local amounts of more than 10 inches deluged eastern Nebraska, Iowa, southern Wisconsin and Michigan, and the northern portions of Illinois, Indiana, and Ohio. Both north-central Ohio and southwestern Wisconsin were declared disaster areas due to severe flooding as up to eighteen deaths resulted. Extreme temperatures, averaging 4 to 10 degrees F above normal, exacerbated drought in the southern Ohio and Tennessee Valley and the Southeast. Scattered showers and thunderstorms provided some local relief to the region, however.

The West: The week was again cooler than average across the Pacific Northwest, but warmer than normal over most of the remainder of the West. Light rain fell across western Washington and light to moderate amounts were scattered over the Rockies, but little or no rain fell elsewhere. One exception was the Southwest, where the remains of Hurricane Dean contributed locally heavy showers exceeding one inch in parts of Arizona and southern parts of Nevada and Utah. Eastern Montana and Idaho again received only widely scattered amounts of less than an inch as around two dozen major wildfires remained active. USDA NASS reports indicate that pastures continue to deteriorate with conditions poor to very poor for 67% of Idaho and 37% of Montana. Only slight changes were made in the drought classifications.

The Plains and Midwest: Showers and thunderstorms brought moderate to heavy rains (1 to over 5 inches) to much of the central Plains with lighter amounts reported in parts of the northern Plains. In the southern Plains, south central Oklahoma and much of Texas (except for the rains in the panhandle and southern portions of the state) were dry. The rains in the northern two-thirds of the Plains eliminated or trimmed back drought categories in the Dakotas and Nebraska.

Dry conditions again prevailed in the upper Great Lakes, resulting in little change in the drought classifications. D3 was edged eastward into the upper peninsula of Michigan. At the end of the period, showers and thunderstorms brought some relief to the dryness.

The heavy rains in the upper Midwest eliminated most of the drought in eastern Nebraska and Iowa, pushed the D0 and D1 northward across the southern portions of Minnesota, Wisconsin, and Michigan, and edged southward the D0, D1, and some D2 in northern Missouri, Illinois, Indiana, and Ohio. Southern portions of the Midwest from southeastern Missouri and northeastern Arkansas northeastward across southern Indiana, however, remained hot and dry. Crops in parts of southeastern Missouri were reported to be dead or at best stunted. Many corn fields in southern Illinois were reported to be prematurely dead. D2 was edged northward in southern Illinois and southern Indiana and D3 moved into the Boothill of Missouri.

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The East and Southeast: Frontal rains brought relief to the drought areas in Pennsylvania, northern Virginia, Maryland, and Delaware. D1 was deleted in Pennsylvania and scaled back in Virginia, Maryland and Delaware. D0 was also trimmed back in the four states.

In the Northeast, however, D0 was expanded into northern New York and created in southern New England. Many streams in these two areas are in the lower 10 percentile as reported by the USGS.

Despite scattered rains of 4 inches or more, much of the Southeast remained hot and dry and crops and pastureland continued to deteriorate. Topsoil was rated dry to very dry for 92% or more of Alabama, Kentucky, and Tennessee, 85% or more of the Carolinas and Arkansas, and 75% of Georgia. For crops, 53% or more of the corn was rated poor to very poor in Tennessee and North Carolina, and cotton was 58% or more poor to very poor in Alabama and Tennessee. Many streams in the Southeast were in the lower 25 percentile. On the U.S. Drought Monitor map, little change was made to the region. Exceptional drought (D4) was trimmed to the northwest in southwestern Georgia while D0 expanded southward into northern and eastern Louisiana and D1 and D2 southward into southeastern Arkansas.

Daily maximum temperatures did drop from the century mark after August 24 across the Southeast, providing some respite from August's persistent extreme heat. Numerous temperature records will be broken when the final August numbers are tallied. Birmingham, Alabama, for example, which endured 14 days with triple digit heat this month, is likely to end up with the hottest month on record. Oak trees on ridges are reportedly dying in the state, and 30 percent of long-term stream gauges were at all-time lows.

Alaska, Hawaii, and Puerto Rico: Little or no rain fell in Alaska's abnormally dry area except along the south central coast where 0.5 to 2 inches was reported. This resulted in only a small reduction in the southern portion of the D0 area. In Hawaii, summer rains have been near to above normal on the west side of the Big Island. As a result, the D1 was removed in the north and D0 along the west central coast. The County of Hawaii Dept. of Water Supply eased restrictions from a mandatory 25% cut to a voluntary 10% reduction request. All other islands remained unchanged. Puerto Rico received light to moderate showers but long-term deficits remained for year-to-date, so the abnormally dry (D0H) area was kept with slight modification.

Looking Ahead: Weather that could have an impact on dry areas in the next 2 weeks: 1) moist flow from the Gulf will bring normal to above-normal rainfall from Louisiana to Alabama for the next 2 weeks, while normal rainfall should cover the area from Tennessee and western Kentucky into Missouri and Arkansas during days 6-10, September 4-8, with normal rainfall expected across the region from the Carolinas to Missouri during week 2, September 6-12; 2) above-normal rains should affect the Arizona area during days 6-10 and 8-14; 3) mostly dry weather and above-normal temperatures through September 3 will cover the drought area that extends from southern Ohio to Missouri and Arkansas; 4) above-normal temperatures will affect much of the Great Basin and Intermountain region into Montana and Wyoming through September 5.

Author: [Thomas Heddinghaus, Climate Prediction Center](#)

Weekly Snowpack and Drought Monitor Update Report

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 29, 2007