



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

Weekly Report - Snowpack / Drought Monitor Update **Date: July 5, 2007**

SNOTEL SNOWPACK AND PRECIPITATION SUMMARY

Temperature: During the past seven days, temperatures ranged from 5°F below normal over the Southern Cascades to 10°F above normal over the Central and Northern Rockies (Fig. 1). A strong ridge of high pressure over the Southwest expanded across the West late in this report period and resulted in many SNOTEL high temperature records being broken (Fig. 1a).

Precipitation: For the past week, rain was confined to portions of the Pacific Northwest and scattered across the Central and Southern Rockies (Fig. 2). It should be noted that precipitation amounts this time a year across the West are usually light and large weekly departures from normal are not very significant. For the Water Year (began 1 October 2006), total amounts have not changed appreciably since last week. The Interior West (Great Basin and Intermountains) including the Sierra Nevada and the Arizona ranges continue to show large deficits. The appearance of the Southwest summer monsoon over Arizona appears to be late in its arrival thus far.

WESTERN DROUGHT STATUS

The West and High Plains: Across the interior West, above-normal temperatures and little rain led to persisting drought from the Southwest desert region northward to the northern Rockies and Intermountain region, with D2 and D1 drought expanding northward in eastern Oregon and D1 drought migrating into southern Idaho. Dropping soil moisture levels due to hot, dry weather led to introduction of D3 drought in western Nevada and adjacent areas of the California Sierra. High temperatures also contributed to some expansion of the D0 dry area in northern Colorado and southeastern Wyoming. Triple-digit heat reached from Colorado into Wyoming on July 2. Dry weather and temperatures averaging close to 4 degrees F above normal led to expansion of D0 northward into southwestern North Dakota from western South Dakota. Drought also extended slightly eastward in southwestern South Dakota. Author: Douglas Le Comte, 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 (<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 (Fig. 3, 3a, and 3b).

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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 Fire Danger Class is shown in Fig. 5.

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/cqibin/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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Jul 05, 2007

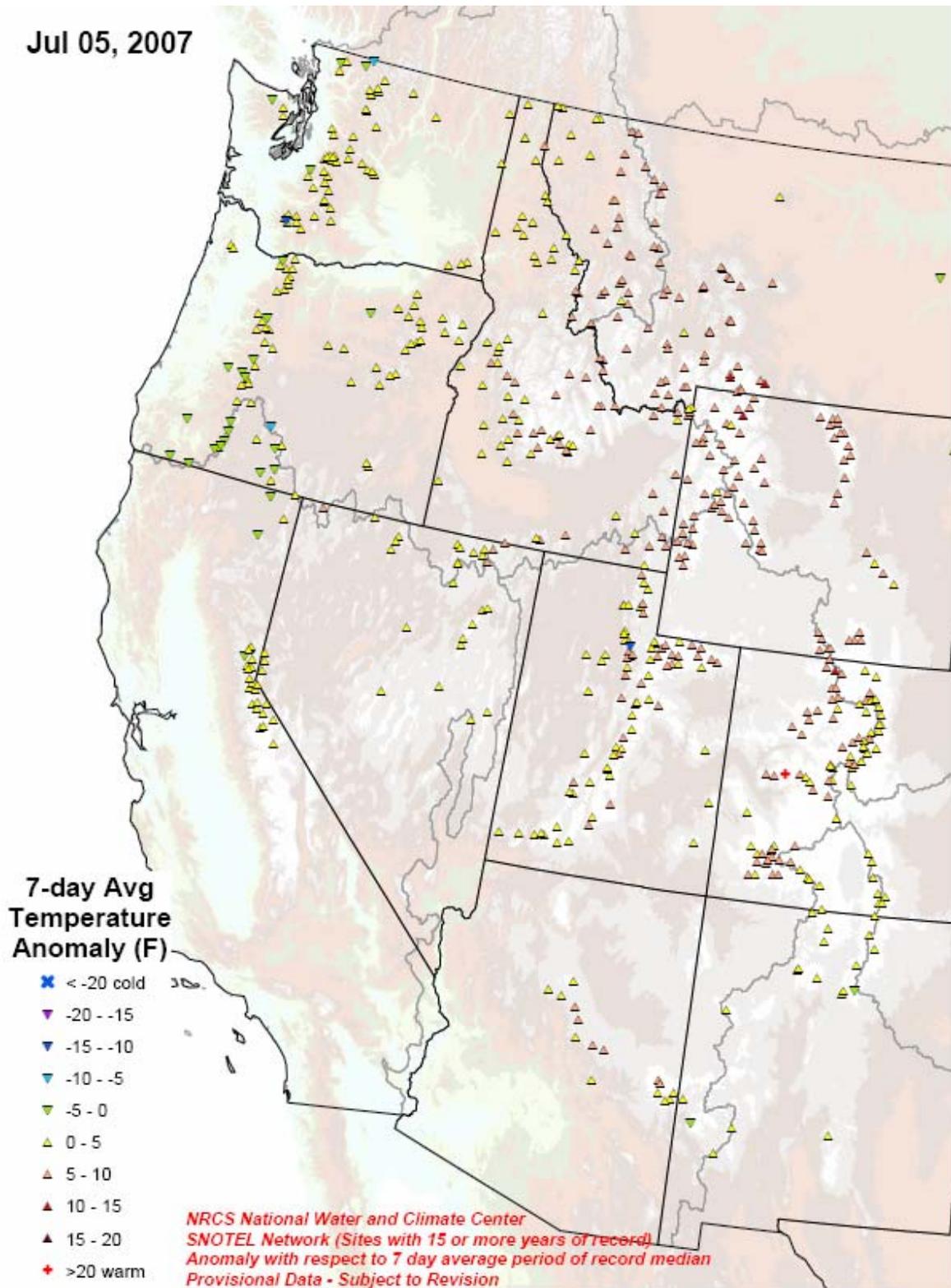


Fig. 1. SNOTEL 7-day average temperature anomaly.

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

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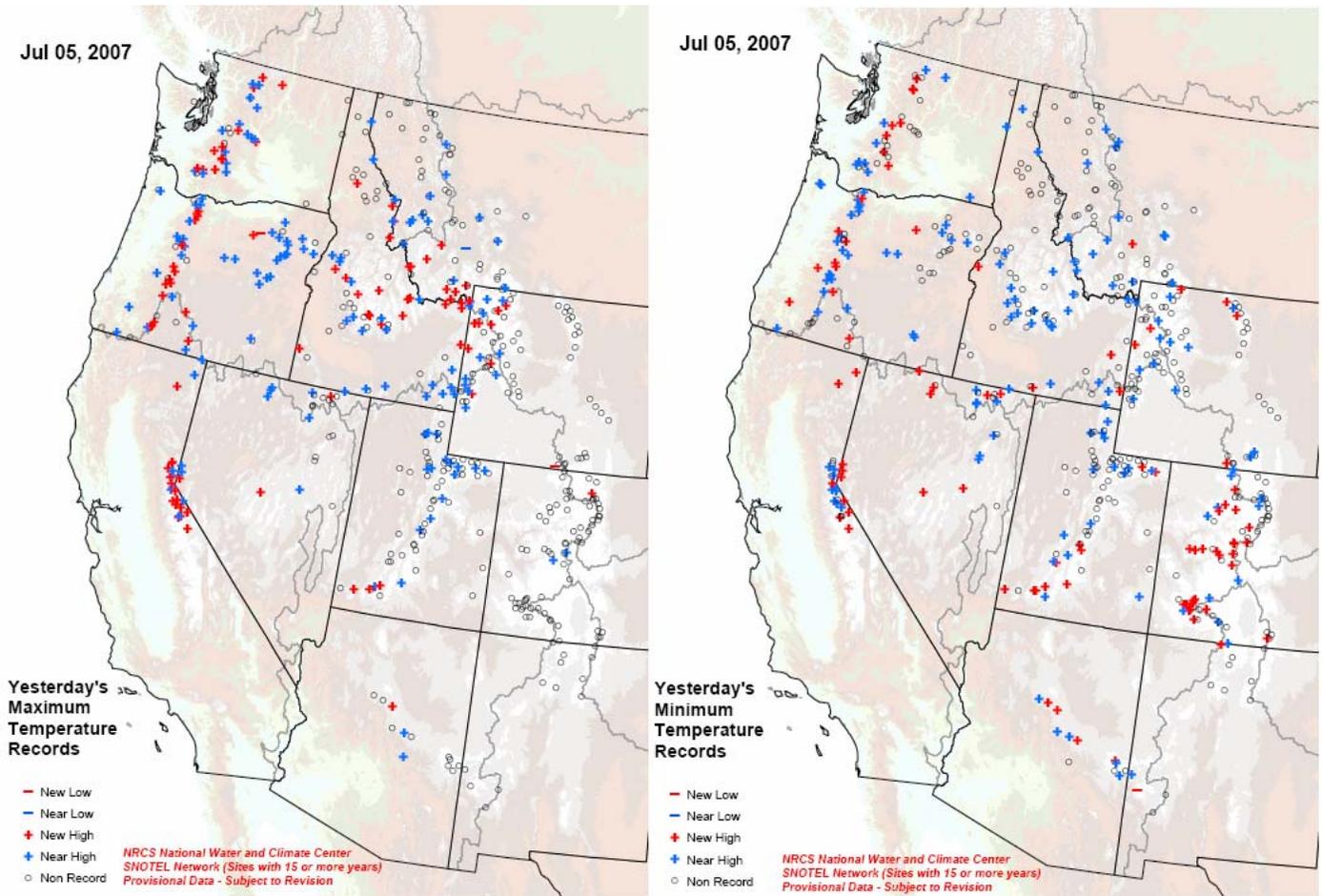
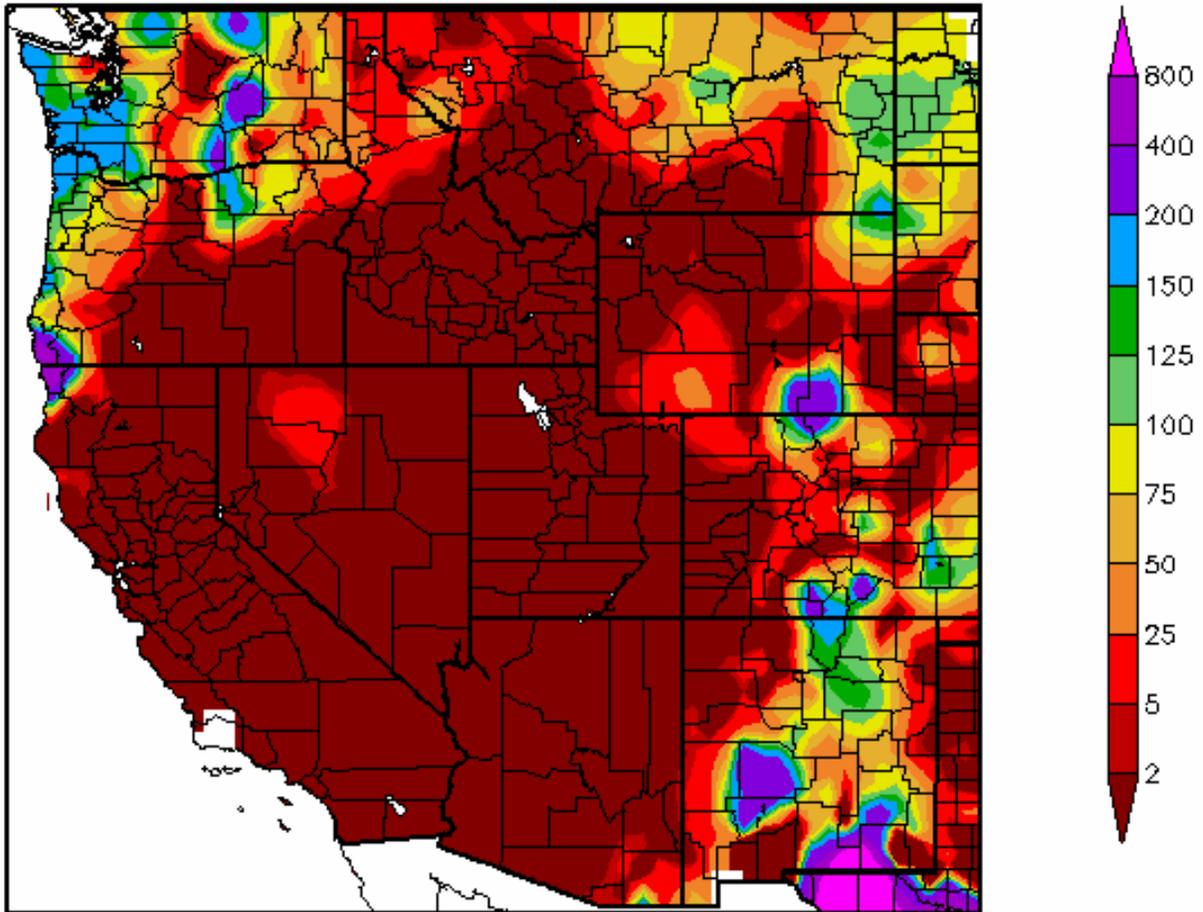


Fig. 1a Record and near record SNOTEL maximum and minimum temperatures on 4 July 2007.
Ref: <ftp://ftp.wccnrcs.usda.gov/data/water/wcs/gis/maps/WestwideTmaxRecord.pdf>
<ftp://ftp.wcc.nrcs.usda.gov/data/water/wcs/gis/maps/WestwideTminRecord.pdf>

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Percent of Normal Precipitation (%)
6/28/2007 – 7/4/2007



Generated 7/5/2007 at HPRCC using provisional data.

Updated Daily

NOAA Regional Climate Centers

Fig. 2. Preliminary precipitation percent of normal for the 7-day period ending 4 July 2007.

Ref: <http://www.hprcc.unl.edu/products/current.php>

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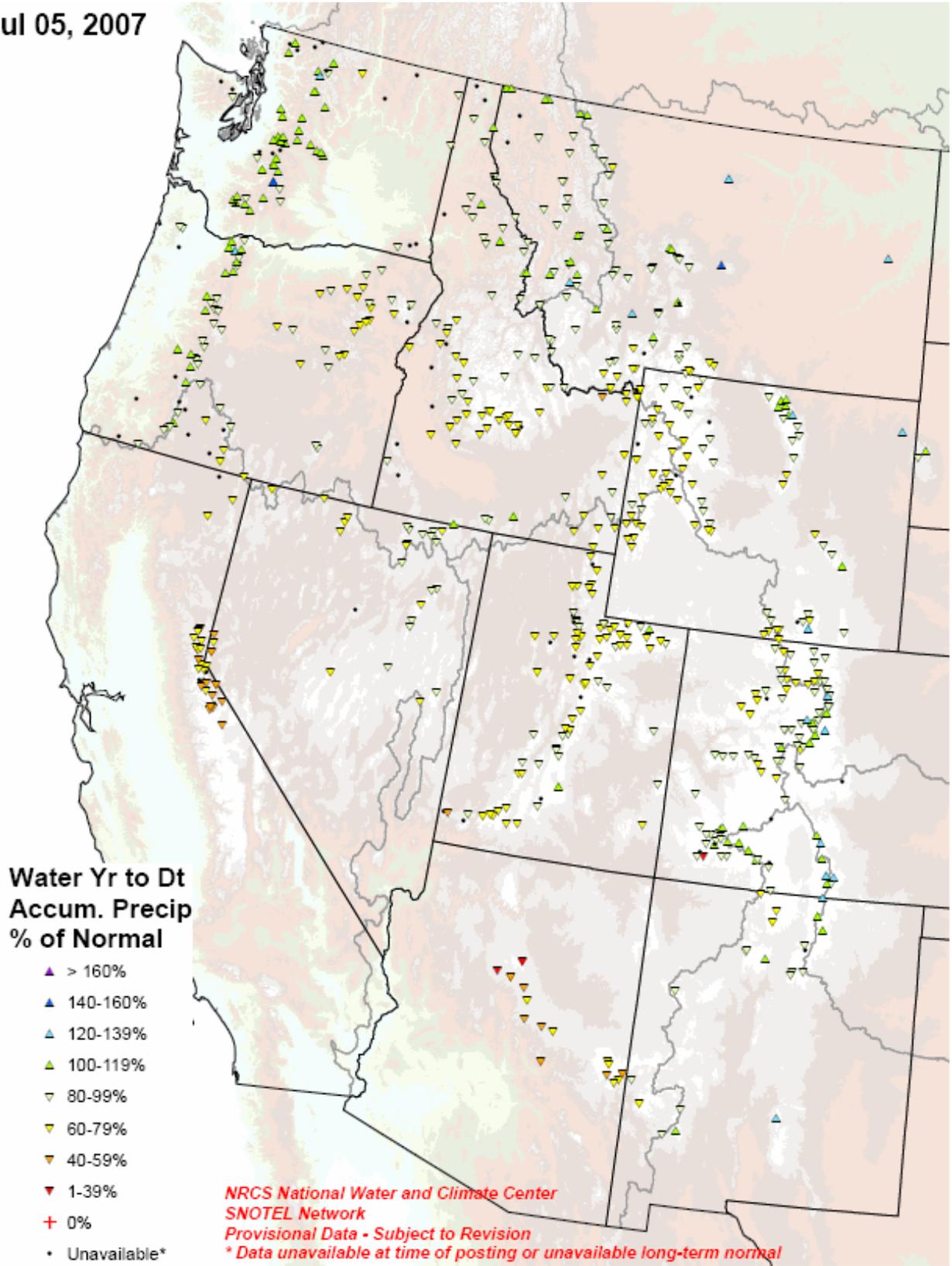


Fig. 2a. SNOTEL station water year (since October 1) precipitation as a percent of normal.
Ref: <ftp://ftp.wcc.nrcs.usda.gov/data/water/wcs/gis/maps/WestwideWYTDPrecipPercent.pdf>

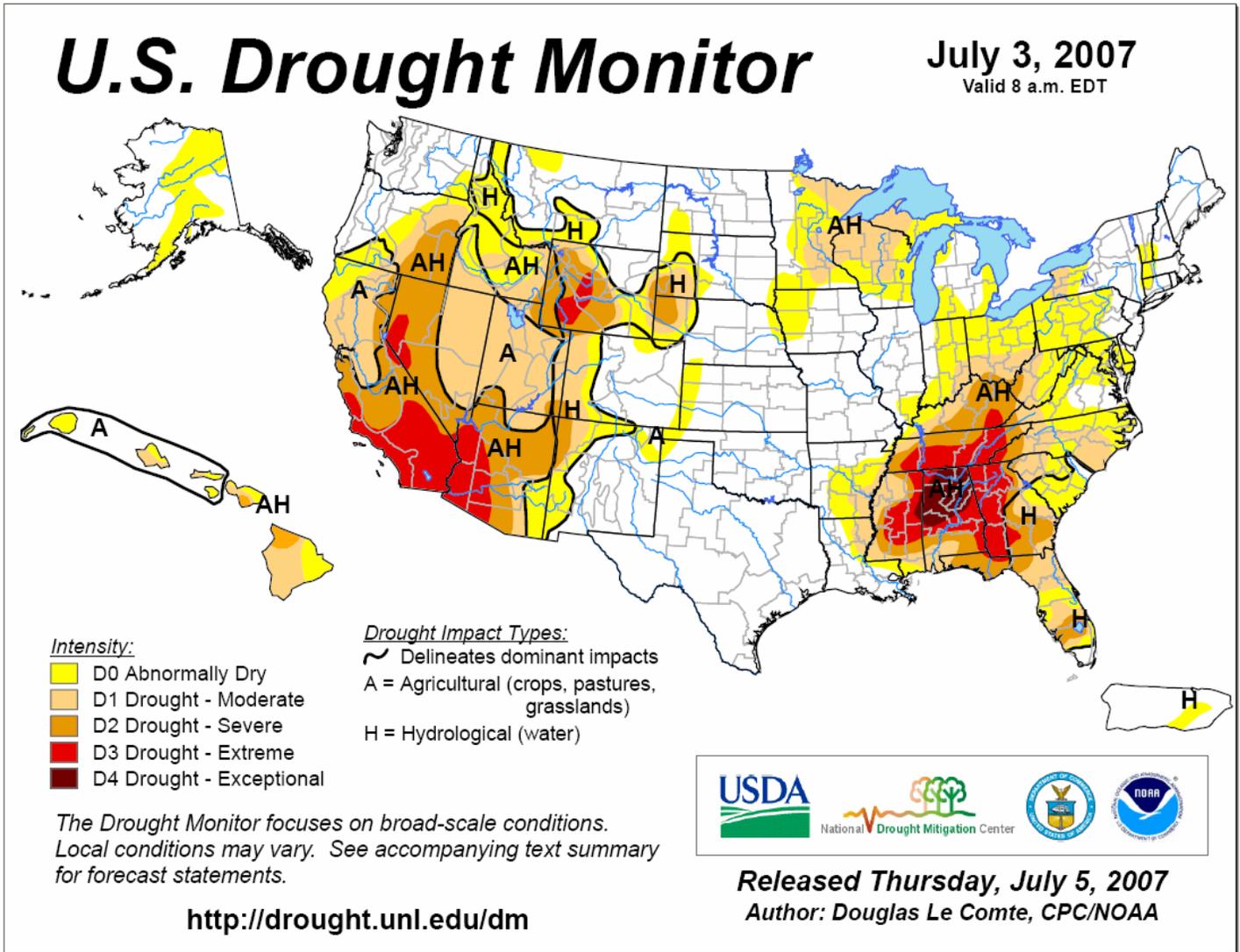


Fig. 3. Current Drought Monitor weekly summary.

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

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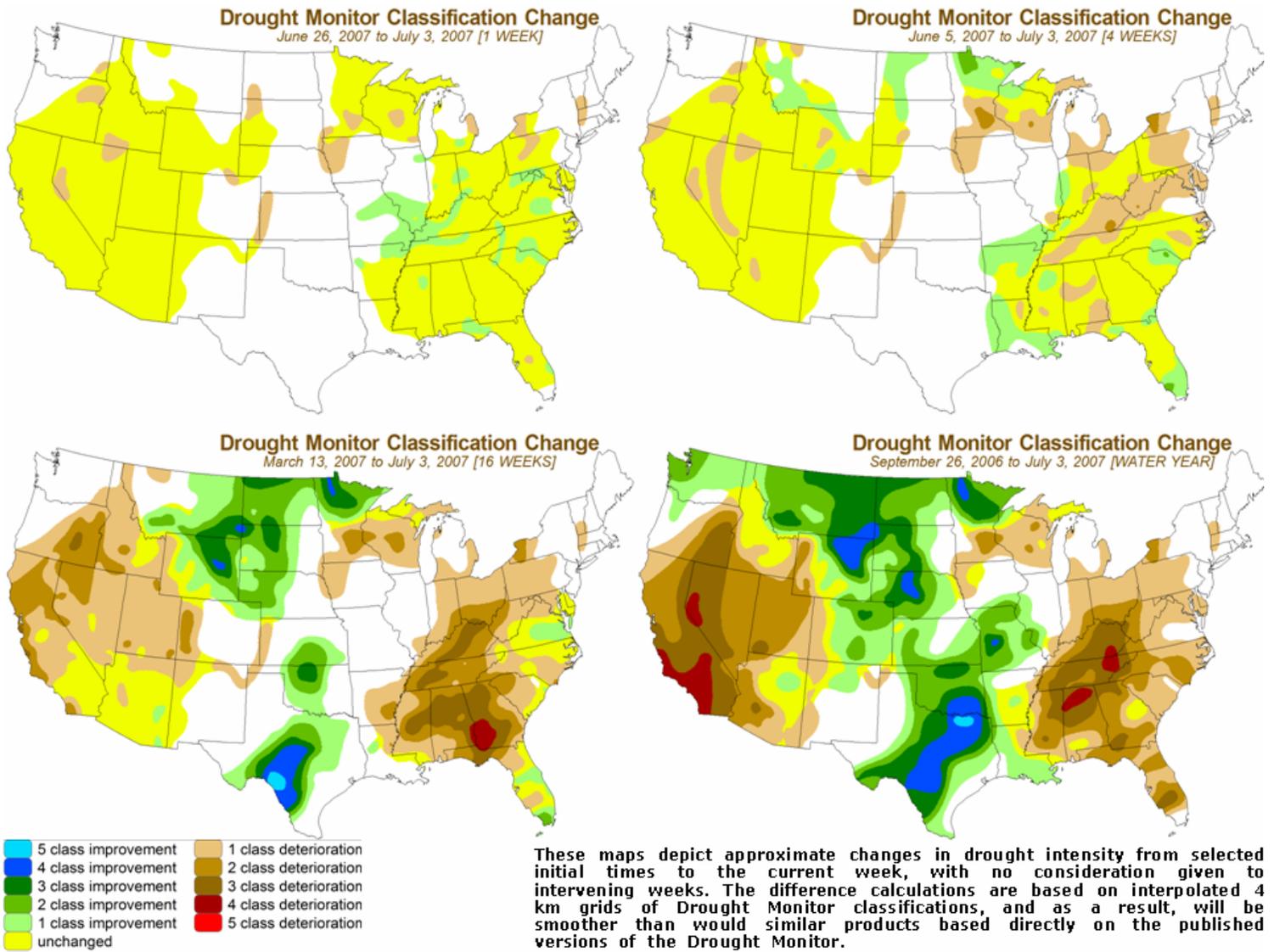


Fig. 3a. Drought Monitor classification changes over various time periods.

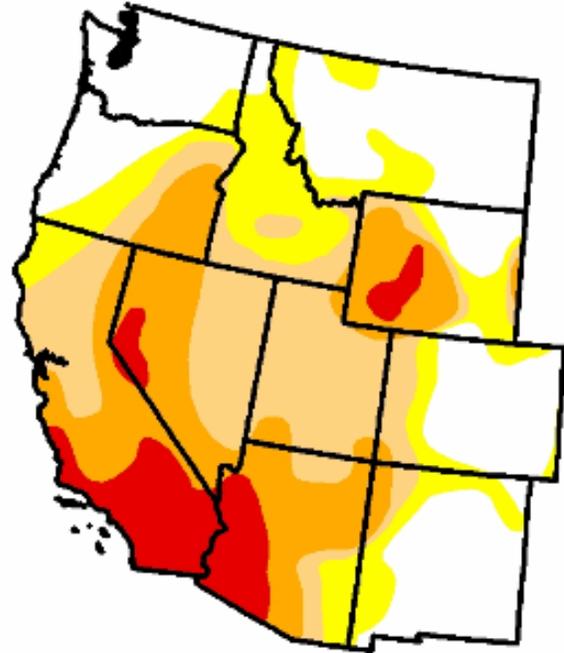
Ref: <http://www.cpc.ncep.noaa.gov/products/predictions/experimental/edb/dm-change-4maps.png>

U.S. Drought Monitor West

July 3, 2007
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	32.7	67.3	50.5	28.6	8.7	0.0
Last Week (06/26/2007 map)	33.5	66.5	48.7	28.3	7.9	0.0
3 Months Ago (04/10/2007 map)	30.8	69.2	51.7	19.1	5.6	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 (07/04/2006 map)	59.1	40.9	34.5	23.6	11.6	1.6



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, July 5, 2007
Author: Douglas Le Comte, CPC/NOAA

Fig 3b. Drought Monitor for the Western States with statistics over various time periods.
Ref: http://www.drought.unl.edu/dm/DM_west.htm

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Soil Moisture Percentiles (wrt/ 1915-2003)
20070703

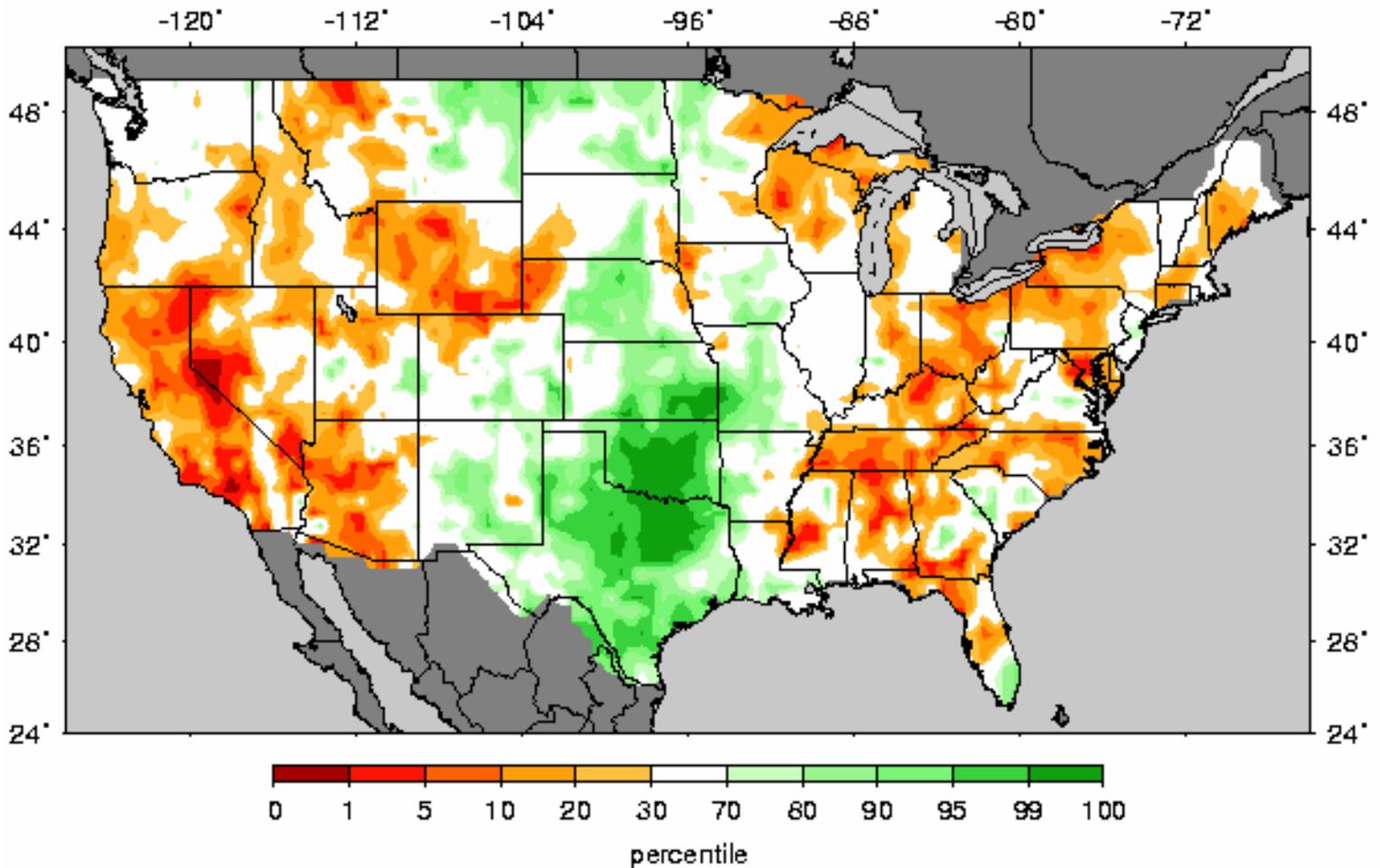


Fig. 4: Soil Moisture Ranking Percentile based on 1915-2003 climatology. (source: Univ. of Washington). Ref: http://www.hydro.washington.edu/forecast/monitor/curr/CONUS.sm_qnt.gif

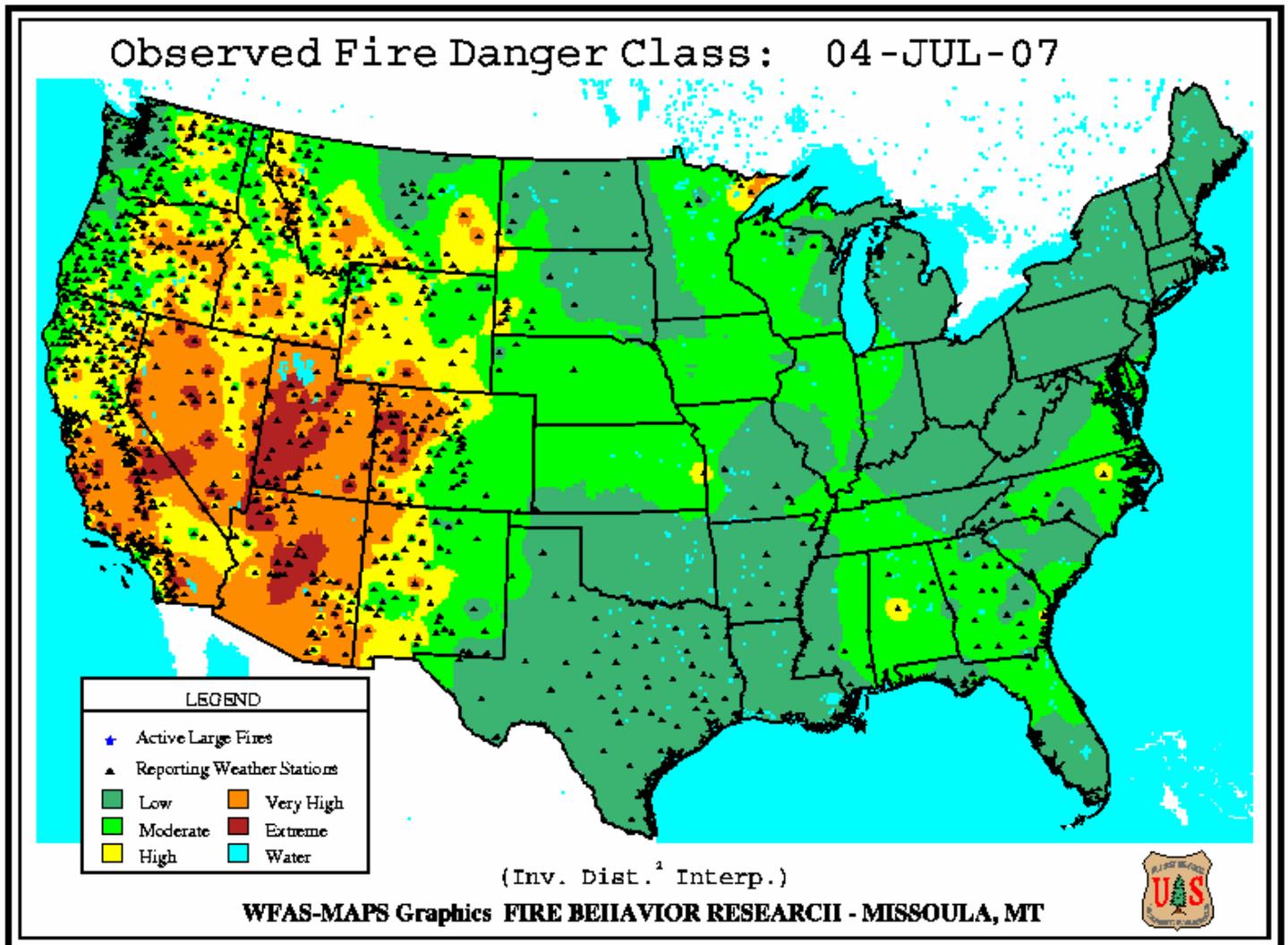
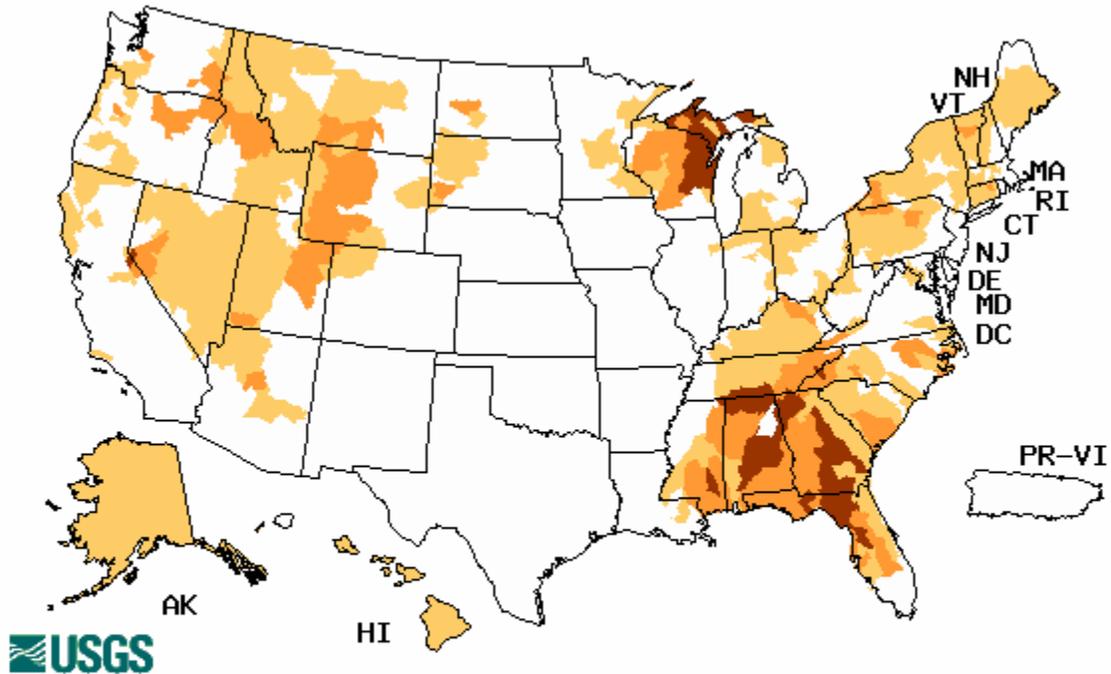


Fig. 5. Observed Fire Danger Class. Source: Forest Service Fire Behavior Research – Missoula, MT
Note continued extreme fire conditions over portions of Nevada, California, Arizona, and most of Utah. Ref: http://www.fs.fed.us/land/wfas/fd_class.gif

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Wednesday, July 04, 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. Map of below normal 7-day average streamflow compared to historical stream flow for the day of the year. Note continued extreme low streamflows over the Southeast.
 Ref: USGS <http://water.usgs.gov/waterwatch/?m=dryw&w=map&r=us>

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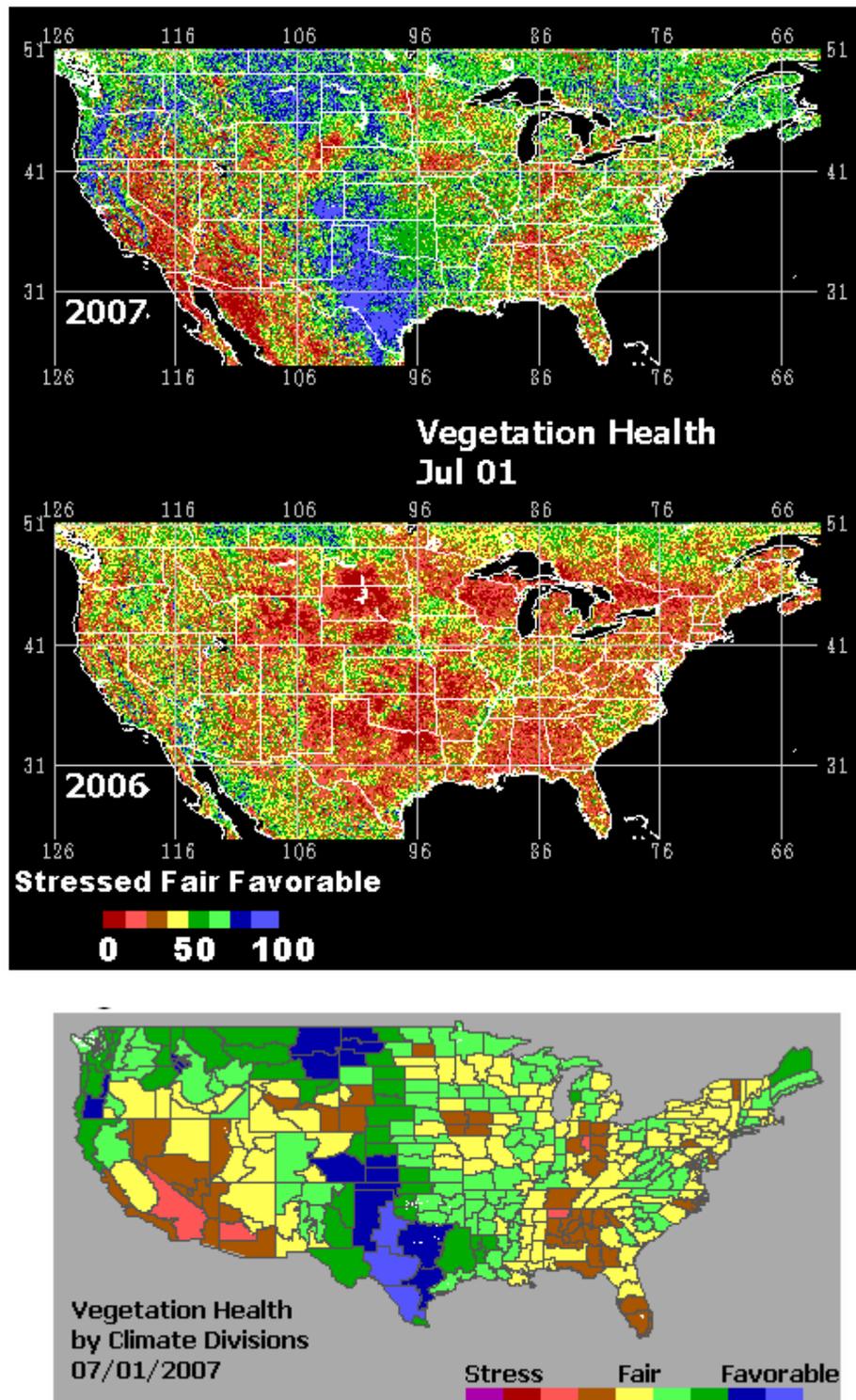


Fig. 7: Year to year comparison of vegetation health across the U.S. Note the vast improvement of vegetation over the Eastern High Plains and over the Pacific Northwest since July 1, 2006.

Refs: <http://www.orbit.nesdis.noaa.gov/smcd/emb/vci/usa.html>,
<http://www.orbit.nesdis.noaa.gov/smcd/emb/vci/usavhcd.html>

Weekly Snowpack and Drought Monitor Update Report

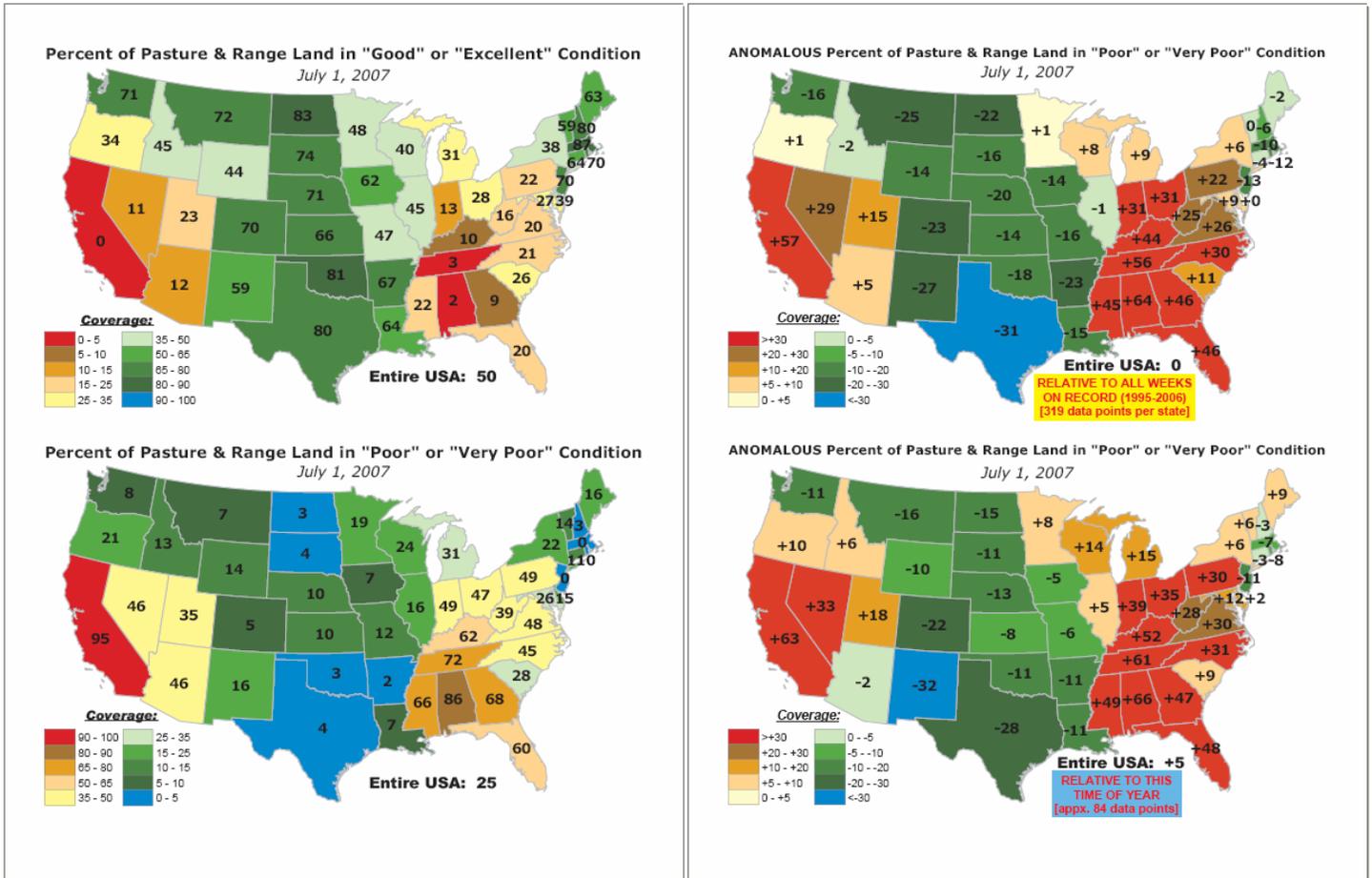


Fig. 8: Pasture and rangeland conditions for various periods.

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

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National Drought Summary July 3, 2007

The South: A cold front that swept across the region during this period led to helpful showers across the southern drought area, although much more rain is needed. The core of the drought remains in northern Alabama, which still stays at D4 status. But the recent rains, which reached 2 to 5 inches locally in Alabama, have begun to eat away at the drought area, and resulted in a slight shrinking of the D4. The moisture even brought some streams up to normal levels in northeastern Alabama, at least temporarily. The impact of the drought on farmers remains extremely serious, with Alabama corn still rated 88 percent poor to very poor, and soybeans at 85 percent poor or worse. Heavy rains reduced the D3 in northern Tennessee and also D2 and D1 in western Kentucky. The scattered showers scaled back slightly the D3 in parts of Georgia and the D2 in western South Carolina, with rainfall totals up to 4 inches pulling back the D1 in central South Carolina. The rains also reduced D1 in south-central North Carolina and the D0 in central Virginia. Heavy rains along the Florida southeast coast removed the D2 and D1 from the coast. West Palm Beach has recorded 14.85 inches of rain since June 1. To the west, however, D2 severe drought remained entrenched over Lake Okeechobee, which dropped to record lows this period. The depiction was re-analyzed this week to reflect the deficient river flows coming into the lake from the north, D1 now extending northward into interior central Peninsular Florida.

The Midwest: Frontal passage on Friday, June 29 brought beneficial rains to the Midwest and Ohio Valley. The moisture removed most of the D0 in Illinois and further reduced D0 in western Indiana. D1 retreated southward in eastern Indiana but persisted in southern Ohio. In contrast, dry weather led to expansion of D1 in central and southern Minnesota and D0 across western Iowa and parts of eastern Nebraska and southeastern South Dakota. Rainfall has been under 40 percent of normal in this region during the past 30 days, leading to rapid drying of soil moisture.

The Northeast: Continued below-normal rains and low streamflows led to the introduction of D1 in western New York. Very low streamflows and low farm pond levels led to D0 development in western New England.

The West and High Plains: Across the interior West, above-normal temperatures and little rain led to persisting drought from the Southwest desert region northward to the northern Rockies and Intermountain region, with D2 and D1 drought expanding northward in eastern Oregon and D1 drought migrating into southern Idaho. Dropping soil moisture levels due to hot, dry weather led to introduction of D3 drought in western Nevada and adjacent areas of the California Sierra. High temperatures also contributed to some expansion of the D0 dry area in northern Colorado and southeastern Wyoming. Triple-digit heat reached from Colorado into Wyoming on July 2. Dry weather and temperatures averaging close to 4 degrees F above normal led to expansion of D0 northward into southwestern North Dakota from western South Dakota. Drought also extended slightly eastward in southwestern South Dakota. Thirty-day rainfall less than one-half of normal led to D0 in far western Kansas. Flooding rains hit eastern Kansas and Oklahoma and Texas.

Puerto Rico: Light rainfall resulted in continued D0H conditions in southeastern Puerto Rico.

Alaska: Moderate to heavy rains in the eastern interior basin fell mostly outside of the D0 area, resulting in no change to the depiction of abnormal dryness.

Hawaii: Generally light showers fell in the drought areas, resulting in no change to the depiction.

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Looking Ahead: *Weather that could have an impact on dry areas in the next 2 weeks: 1) Maximum daily temperatures averaging as much as 12 degrees F above normal during July 3-8 over the interior West followed by continued above-normal heat through week 2 and minimal rainfall; 2) normal to above-normal rainfall the next 2 weeks over the Midwest, Northeast, and South.*

Author: Douglas Le Comte, Climate Prediction Center NCEP/NWS/NOAA