



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

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**Weekly Report - Snowpack / Drought Monitor Update**      **Date: June 14, 2007**

## **SNOTEL SNOWPACK AND PRECIPITATION SUMMARY**

**Temperature:** During the past seven days, temperatures were within 5°F of normal across the West with the lowest temperature departures over the southern half (Fig. 1).

**Precipitation:** Early in this report period (June 6<sup>th</sup> and 7<sup>th</sup>), moderate precipitation (rain and snow) fell over the Pacific Northwest, Intermountain West (northern Utah and Idaho), and the Northern Rockies (Montana and Wyoming) (Fig. 2). For the Water Year, total precipitation gains since last week were experienced over Wyoming's Big Horn Mountains and part of the Montana Rockies as a result of a late winter type storm (Fig. 2a). The Colorado and New Mexico Front Ranges and Cascades are still maintaining near normal precipitation. Elsewhere, deficits continue to mount; especially over California and Arizona.

## **WESTERN DROUGHT STATUS**

**The West:** Broad-scale moderate to locally heavy precipitation abetted drought relief in many areas across the northern Intermountain West, the northern Great Basin, the central and northern Rockies, and parts of the northern High Plains. Numerous locations across southern Montana, the lower Idaho Peninsula, adjacent sections of Wyoming and North Dakota, and a few sites near the Great Salt Lake recorded 2 to 4 inches of precipitation, with locally higher amounts. As a result, former D0 to D1 conditions improved across much of the Dakotas, parts of southern Montana, and portions of northern Wyoming. Farther south, only light precipitation fell on the central tier of the West, and little or no rain was reported from the lower elevations of California and central sections of Nevada, Utah, and western Colorado southward to the Mexican border (Figs. 3, 3a, and 3b). Author: Rich Tinker, National Climatic Data 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 (Fig. 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).

## 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 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](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 -

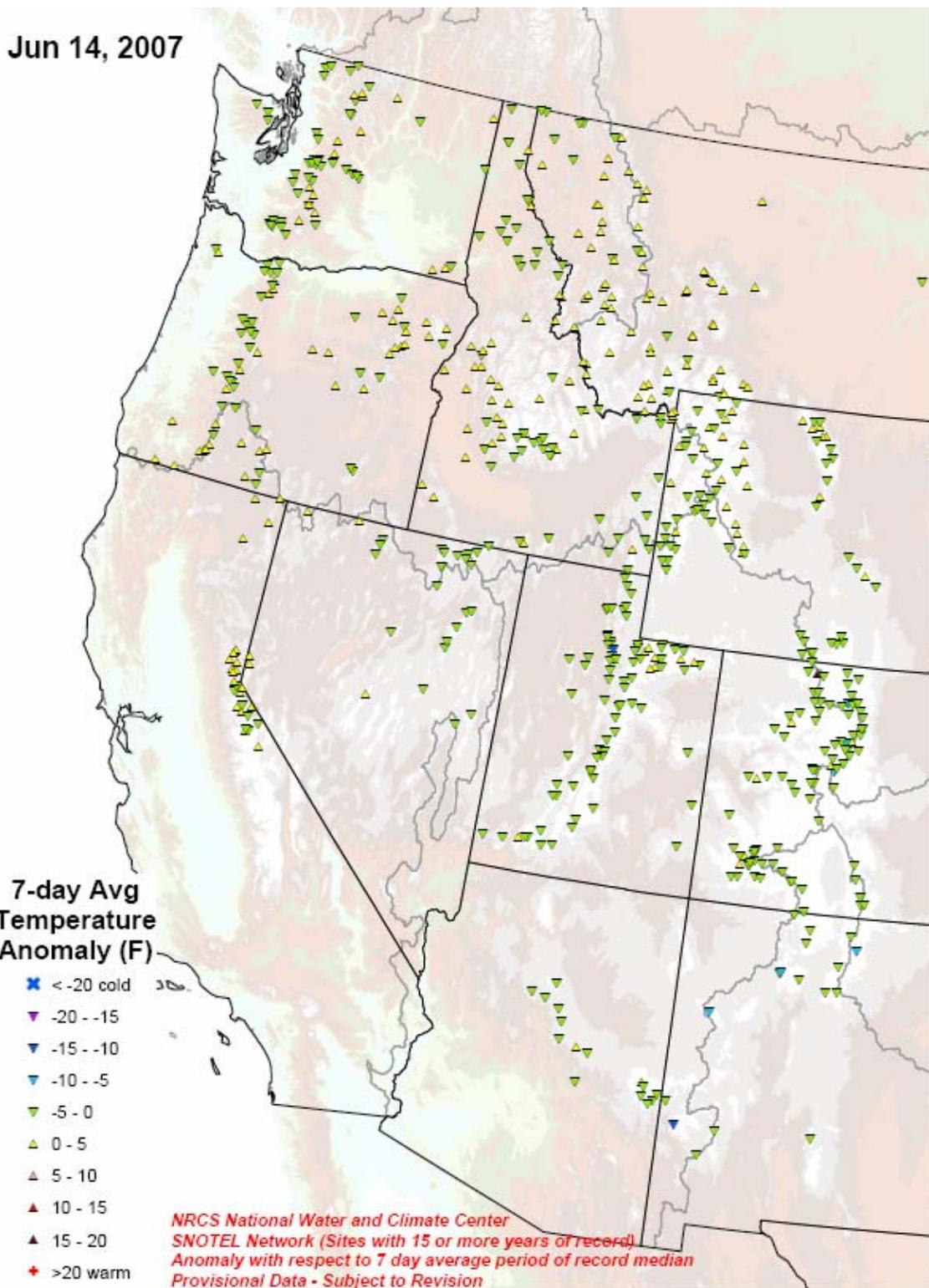
<http://www.wcc.nrcs.usda.gov/water/drought/wdr.pl>

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

/s/ NOLLER HERBERT

Acting Director, Conservation Engineering Division

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**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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June 5, 2007 Drought Monitor  
& Ensuing 7-Day Precipitation (")

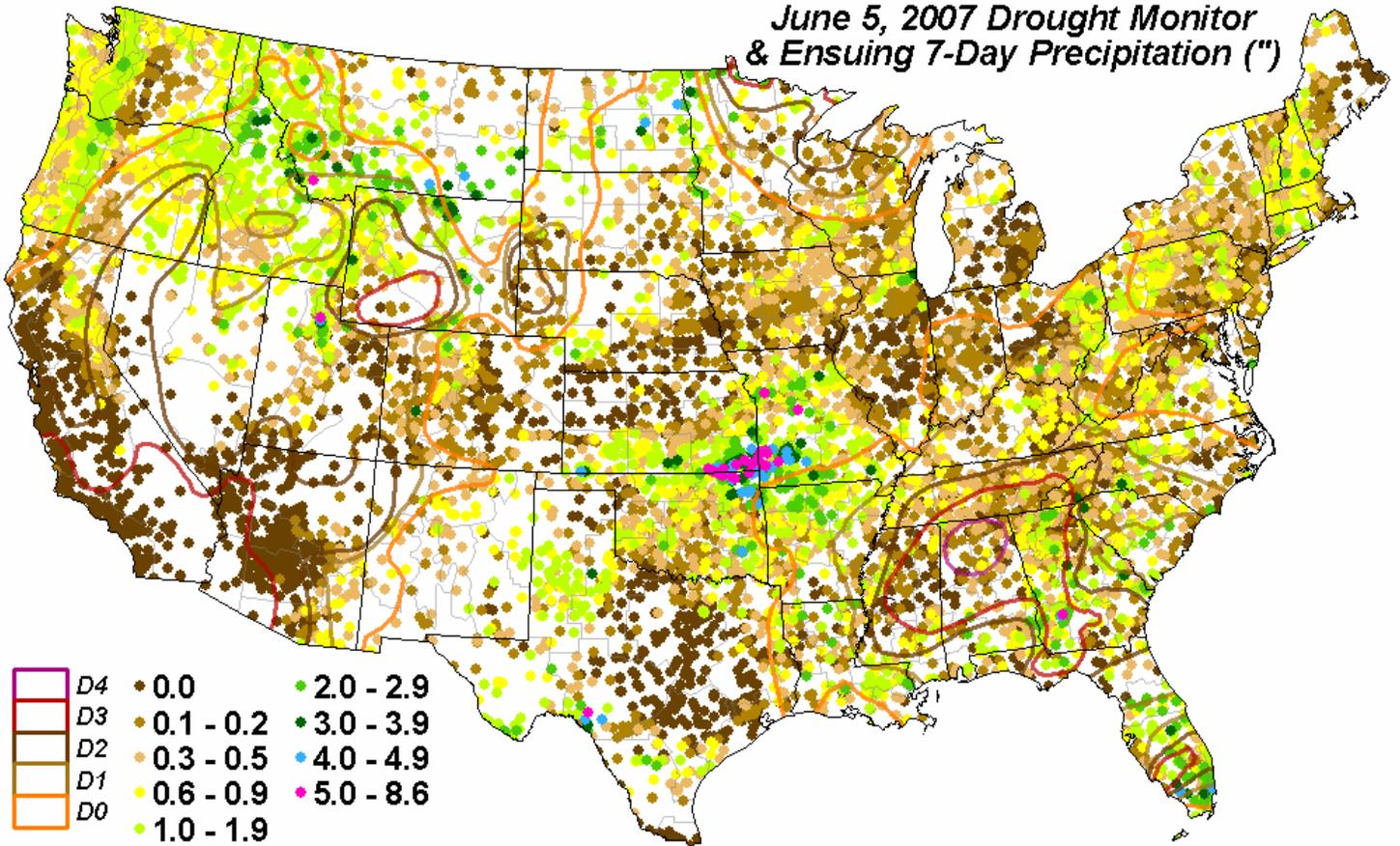


Fig. 2. Preliminary precipitation totals as a percent of normal for the 7-day period ending 12 June 2007.  
Ref: <http://www.cpc.ncep.noaa.gov/products/predictions/experimental/edb/usdm-precip-overlay.gif>

# Weekly Snowpack and Drought Monitor Update Report

Jun 14, 2007

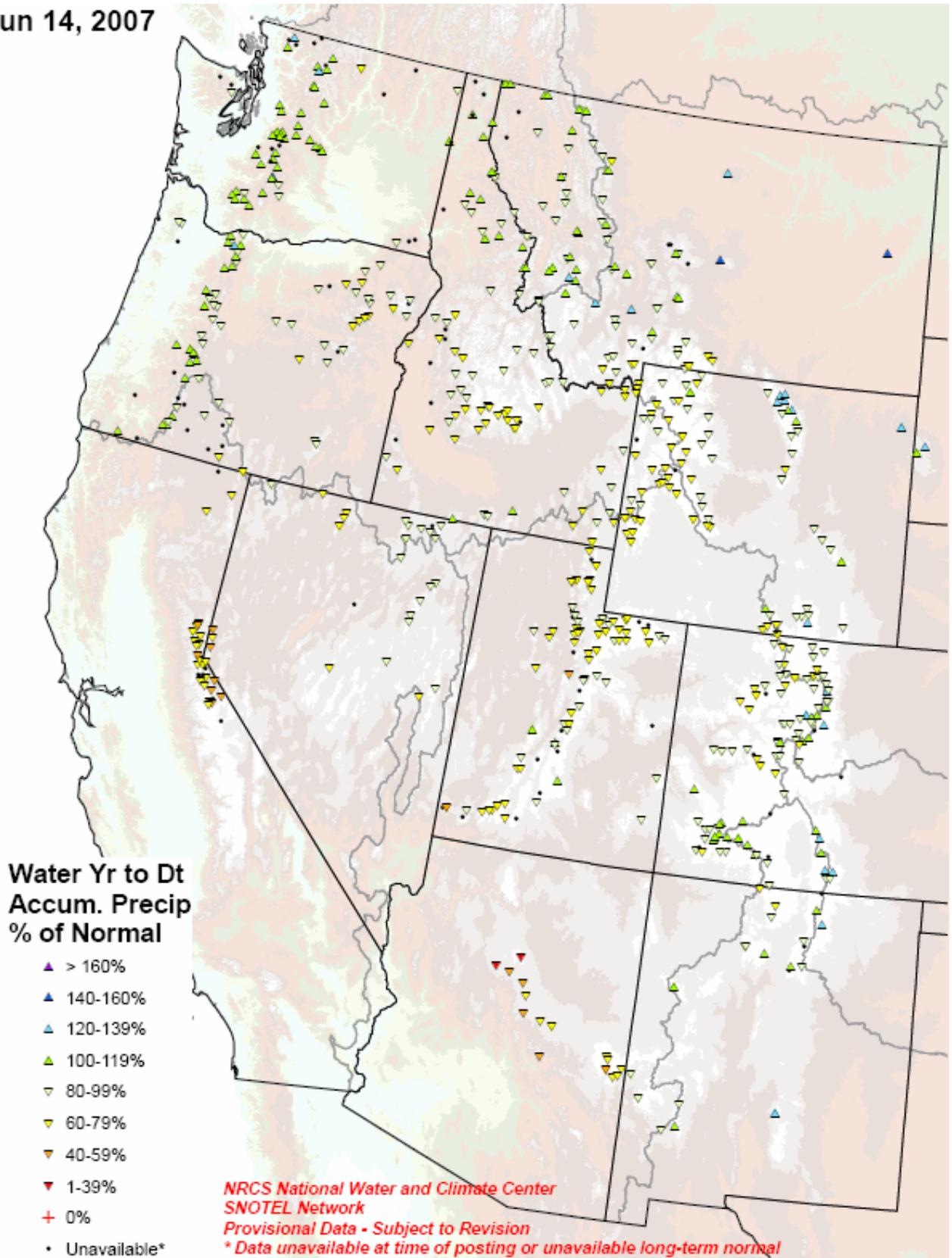


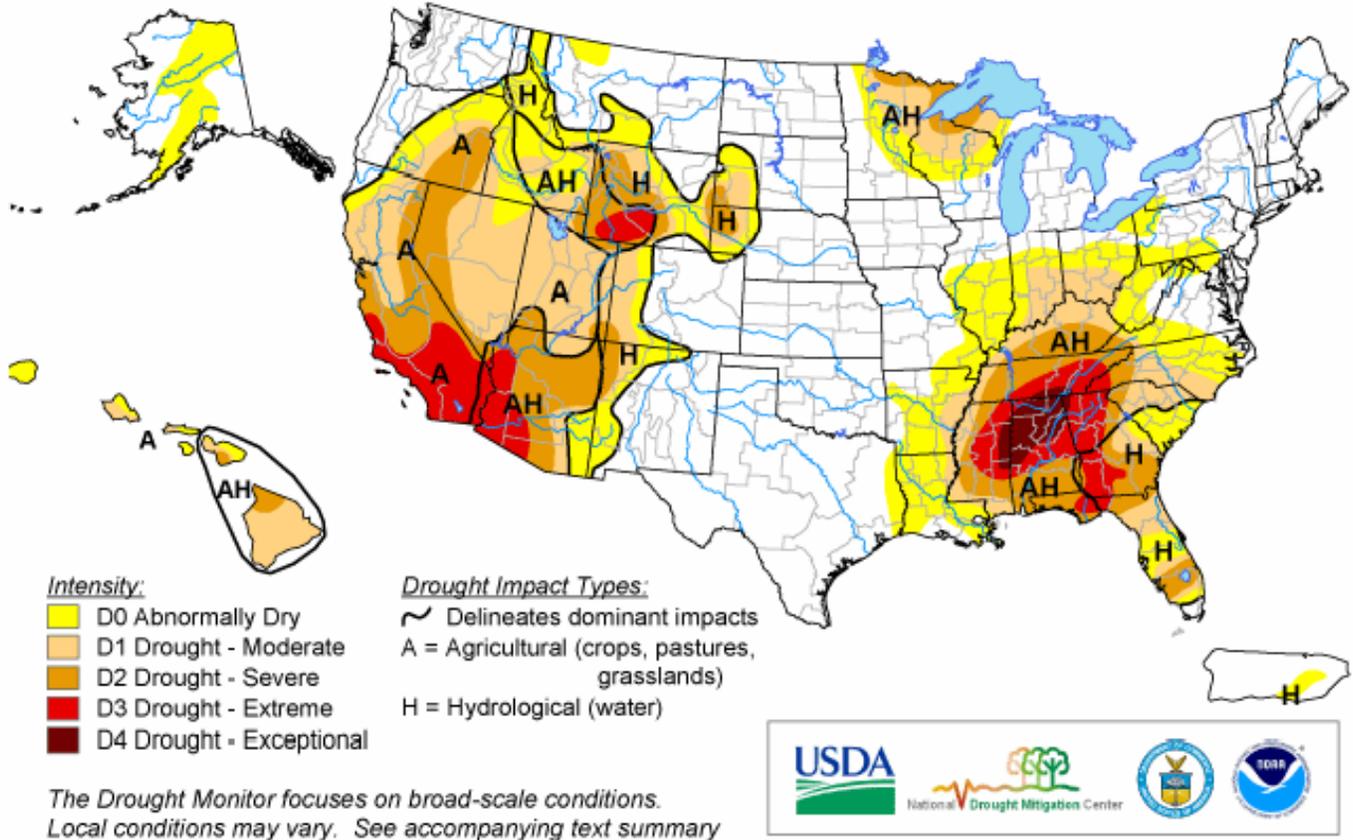
Fig. 2a. SNOTEL station water year (since October 1) precipitation as a percent of normal.

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

# U.S. Drought Monitor

June 12, 2007

Valid 8 a.m. EDT



Released Thursday, June 14, 2007

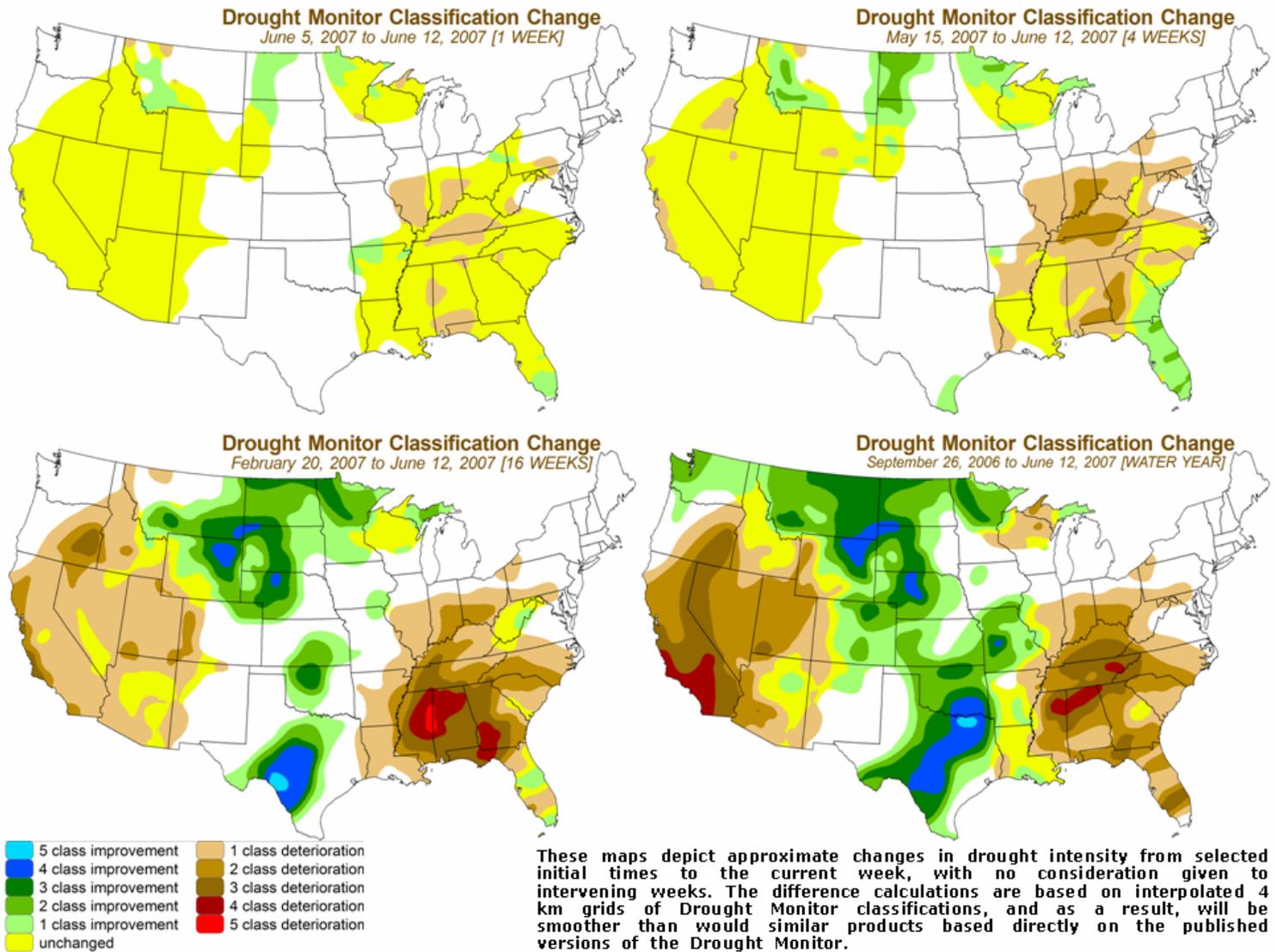
<http://drought.unl.edu/dm>

Author: Rich Tinker, Climate Prediction Center, NCEP/NWS/NOAA

Fig. 3. Current Drought Monitor weekly summary.

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

## Weekly Snowpack and Drought Monitor Update Report



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

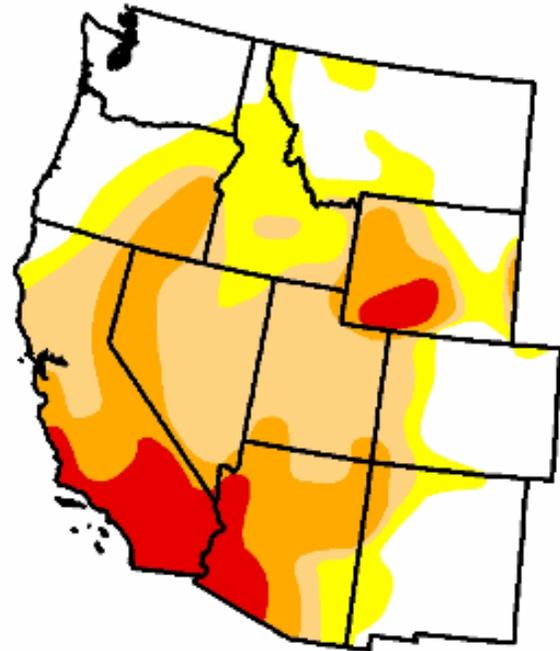
Ref: <http://www.cpc.ncep.noaa.gov/products/predictions/experimental/edb/dm-change-4maps.png>

# U.S. Drought Monitor West

June 12, 2007  
Valid 7 a.m. EST

*Drought Conditions (Percent Area)*

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	34.2	65.8	48.9	25.5	7.8	0.0
Last Week (06/05/2007 map)	33.0	67.0	49.6	25.6	7.8	0.0
3 Months Ago (03/20/2007 map)	36.7	63.3	34.7	19.7	8.1	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 (06/13/2006 map)	59.7	40.3	32.8	23.1	13.4	1.7



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, June 14, 2007**  
Author: Rich Tinker, CPC/NCEP/NWS/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](http://www.drought.unl.edu/dm/DM_west.htm)

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Soil Moisture Percentiles (wrt/ 1915-2003)  
20070612

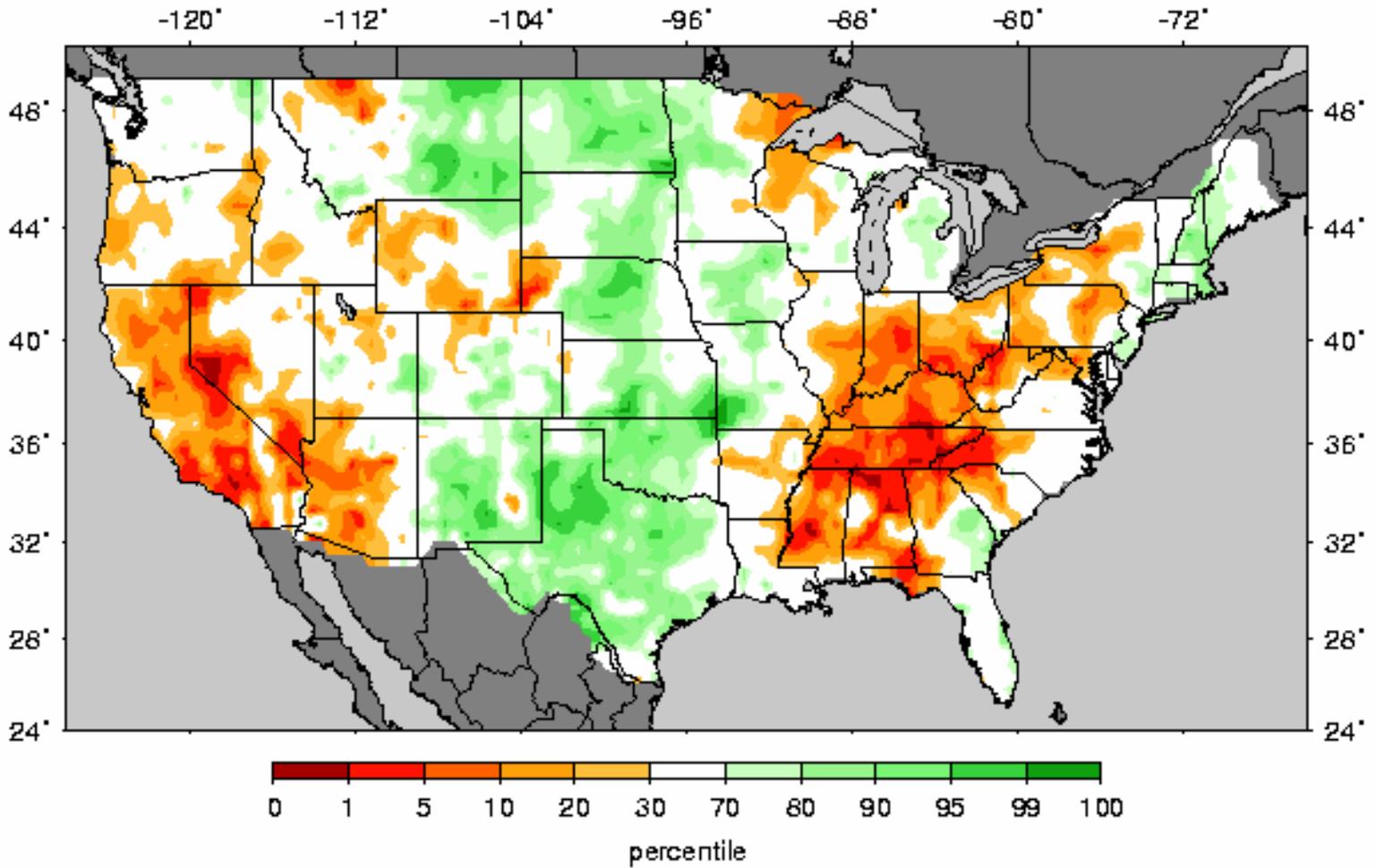


Fig. 4: Soil Moisture Ranking Percentile based on 1915-2003 climatology. (source: Univ. of Washington). Ref: [http://www.hydro.washington.edu/forecast/monitor/curr/CONUS.sm\\_qnt.gif](http://www.hydro.washington.edu/forecast/monitor/curr/CONUS.sm_qnt.gif)

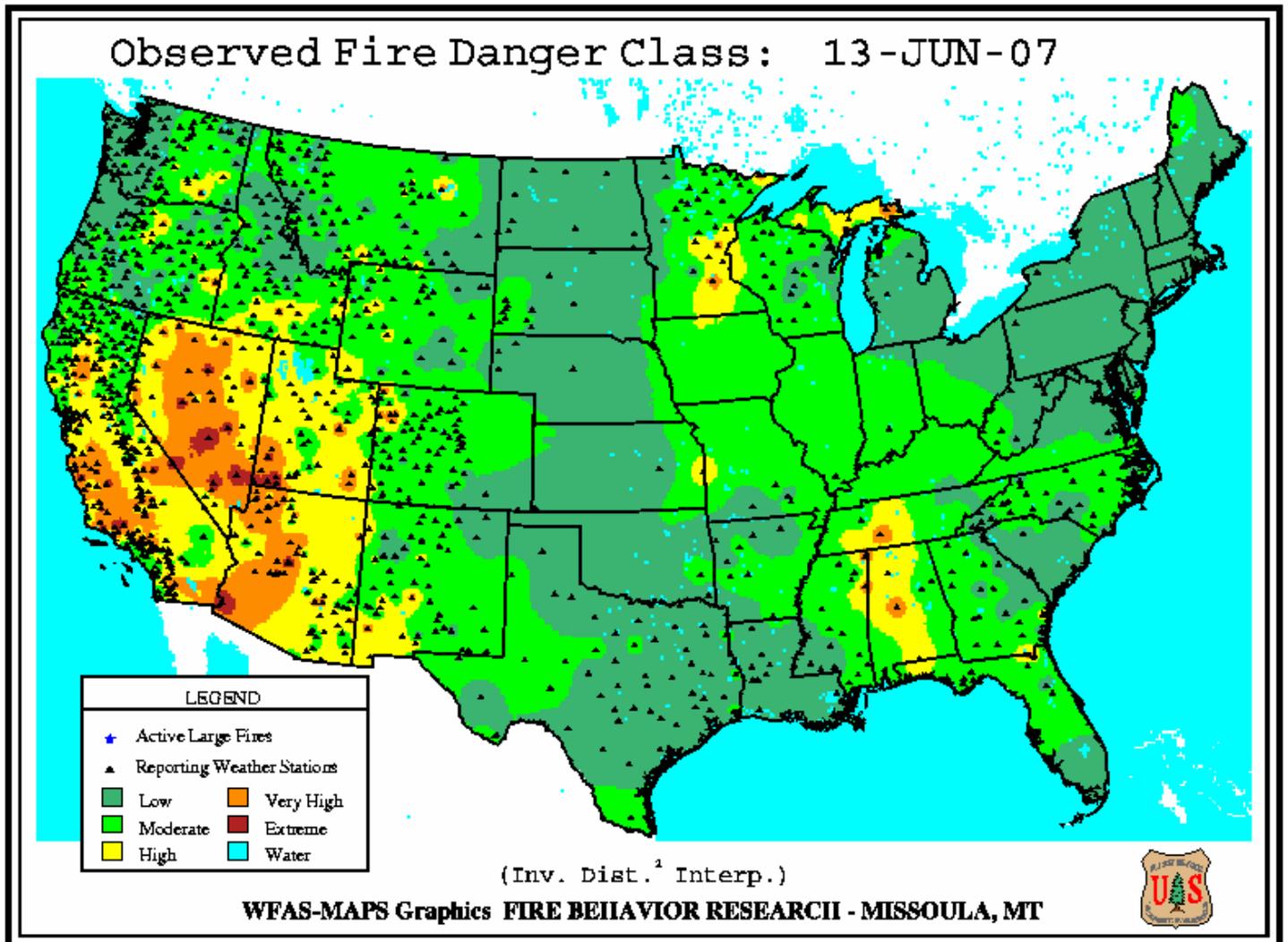
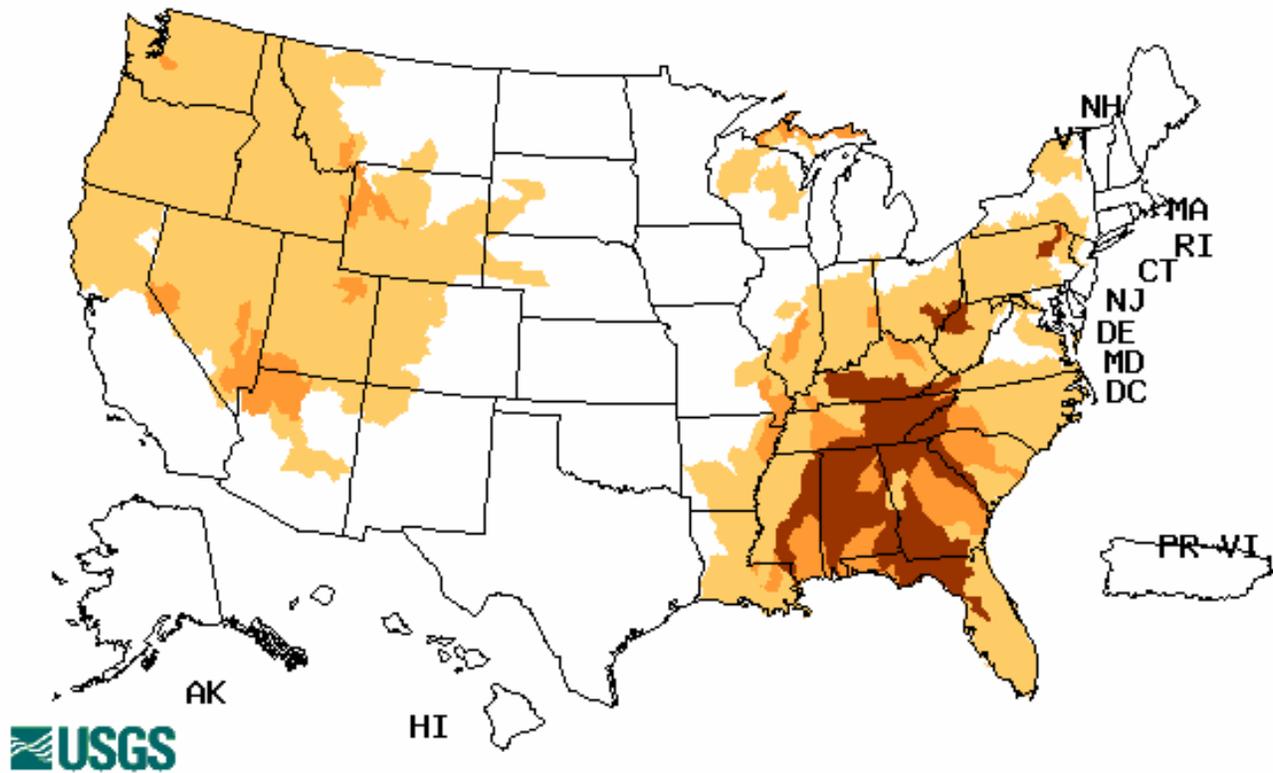


Fig. 5. Observed Fire Danger Class. Source: Forest Service Fire Behavior Research – Missoula, MT  
Note vast improvement over the Southeastern States since last week.  
Ref: [http://www.fs.fed.us/land/wfas/fd\\_class.gif](http://www.fs.fed.us/land/wfas/fd_class.gif)

# Weekly Snowpack and Drought Monitor Update Report

Wednesday, June 13, 2007



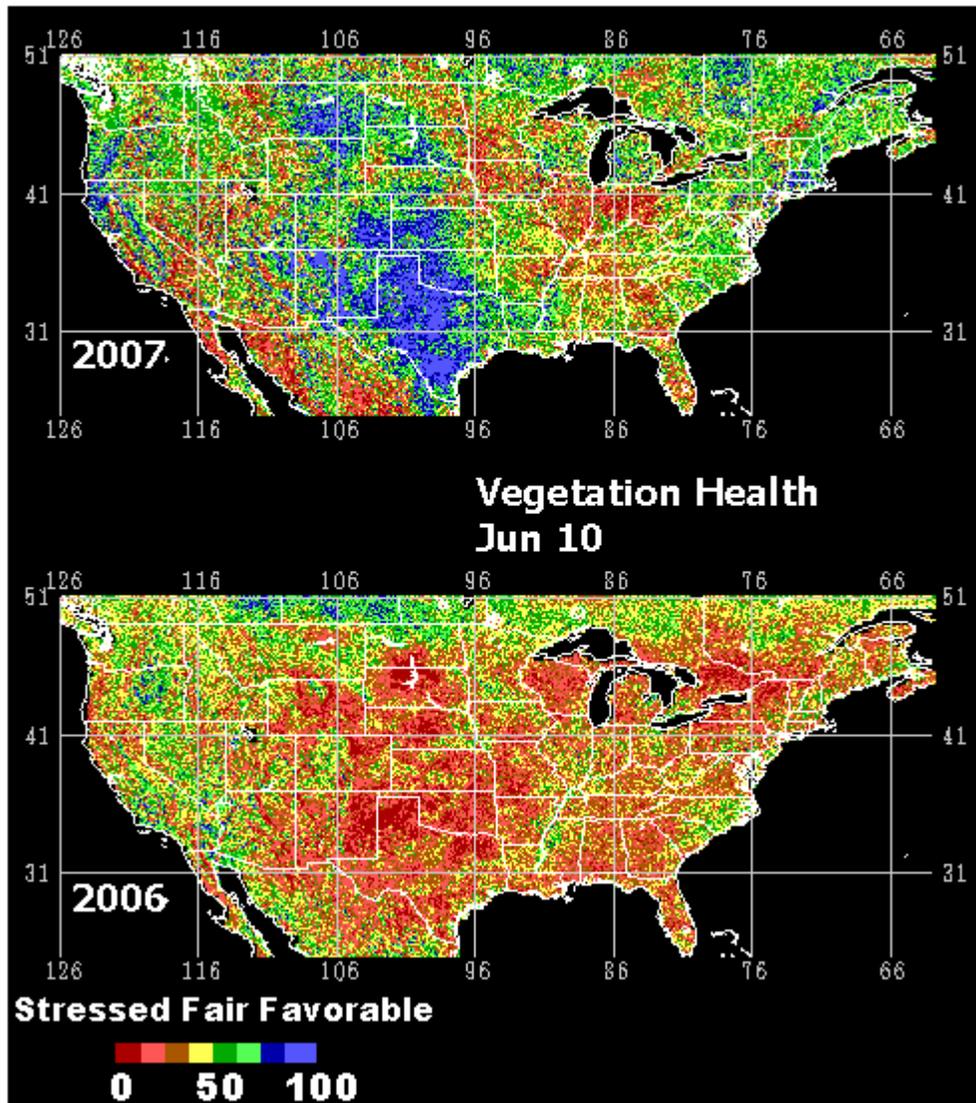
Explanation - Percentile classes				
Low	<=5	6-9	10-24	Insufficient data for a hydrologic region
Extreme hydrologic drought	Severe hydrologic drought	Moderate hydrologic drought	Below normal	

Fig. 6. Map of below normal 7-day average streamflow compared to historical stream flow for the day of the year. Note the extremely low streamflows over the Southeast.

Ref: USGS <http://water.usgs.gov/waterwatch/?m=dryw&w=map&r=us>

## Weekly Snowpack and Drought Monitor Update Report

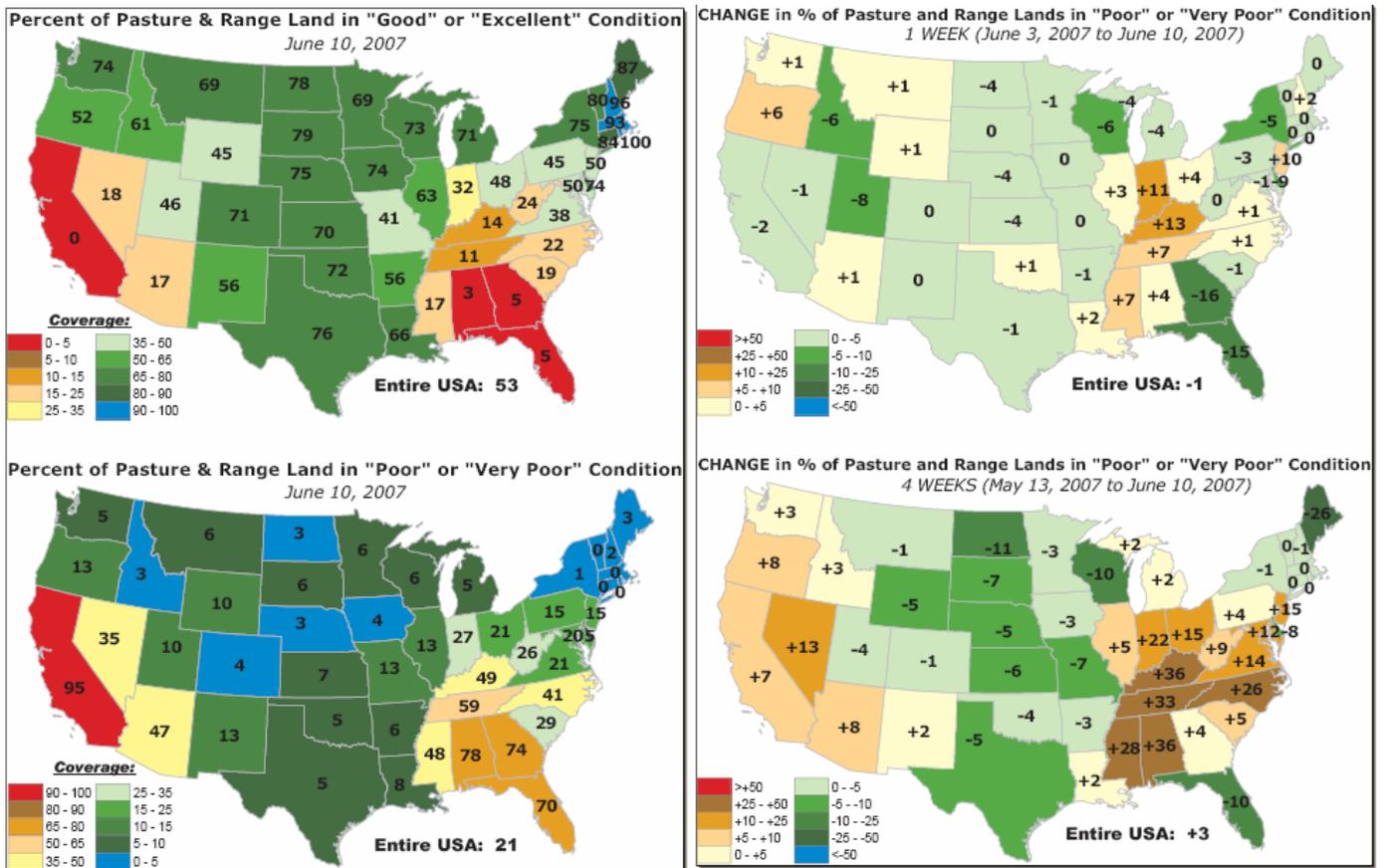
**Vegetation Health: Red - stressed, Green - fair, Blue - favorable, White - Cold Surface**



**Fig. 7: Year to year comparison of vegetation health across the U.S. Note the vast improvement of vegetation from Texas to Montana over June 10, 2006.**

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

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**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>

## Weekly Snowpack and Drought Monitor Update Report

### National Drought Summary -- June 12, 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:** Broad-scale moderate to locally heavy precipitation abetted drought relief in many areas across the northern Intermountain West, the northern Great Basin, the central and northern Rockies, and parts of the northern High Plains. Numerous locations across southern Montana, the lower Idaho Peninsula, adjacent sections of Wyoming and North Dakota, and a few sites near the Great Salt Lake recorded 2 to 4 inches of precipitation, with locally higher amounts. As a result, former D0 to D1 conditions improved across much of the Dakotas, parts of southern Montana, and portions of northern Wyoming. Farther south, only light precipitation fell on the central tier of the West, and little or no rain was reported from the lower elevations of California and central sections of Nevada, Utah, and western Colorado southward to the Mexican border.

**The Western Great Lakes:** Scattered moderate to locally heavy precipitation fell primarily on northwestern parts of the region while most sites received only light amounts. Declining drought-related impacts brought on by recent precipitation led to the elimination of D3 conditions in extreme northern Minnesota, improvements from D2 to D1 conditions across interior northeastern Minnesota and northwestern Wisconsin, and generalized 1-category improvements to the D0 to D2 conditions in northwestern Minnesota. In contrast, drought classifications persisted or worsened farther to the south and east, with D0 conditions encompassing the Twin Cities area, and conditions on the Keweenaw Peninsula in northwestern Michigan deteriorated to D2.

**The Southern and Eastern United States:** In the broad area of dryness and drought that has come to encompass a large section of the southern and eastern United States, heavy rains brought relief to some areas on the western, northern, and southeastern fringes of the area (across western Arkansas, eastern Oklahoma, southern Missouri, parts of northeastern Ohio and west-central Pennsylvania, and the Florida Peninsula) but conditions persisted or intensified elsewhere. Moderate to heavy rains fell on scattered sections of southwestern Georgia, southeastern Alabama, and Louisiana as well as isolated sites elsewhere (primarily from the Appalachians eastward), but only light rain was reported across the vast majority of the region. As a result, D0 expanded northward to include central and southern Illinois, and the coverage of each drought intensity level from D1 through D4 expanded (primarily northward and southward) from the central Gulf Coast northward through most of the Ohio Valley. With the last two months being the driest such period since 1988 in many areas, reports of water restrictions and crop stress are reaching northward past the Ohio River as far as central Indiana. Farther south, dry conditions date back much longer and as a result, agricultural impacts and water supply concerns are more common. According to the U.S. Department of Agriculture, corn and soybeans have yet to be severely affected throughout any given state, although almost one-quarter of Tennessee corn is in poor or very poor condition; however, some other crops, pasture conditions, and streamflows all reflect serious regional drought impacts. In Alabama, 68 percent of the cotton crop, 48 percent of peanuts, and 78 percent of pastures are in poor or very poor condition, as are 60 percent of Florida peanuts and 35 percent of Georgia cotton. The

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proportion of pastures in poor or very poor condition ranges from almost half to more than three-quarters in six southeastern states (MS, KY, TN, FL, GA, and AL) while four additional adjacent states (WV, IN, SC, and NC) report at least one-quarter of pastures in poor or very poor condition.

**Alaska and Puerto Rico:** Generally 1 to 3 inches of precipitation ended D0 conditions in east-central Alaska and northeastern Puerto Rico, but lesser precipitation amounts elsewhere allowed D0 conditions from last week to persist.

**Hawaii:** Continued below-normal precipitation and increasing water supply concerns prompted the introduction of D2 conditions in parts of southern Maui and northern sections of the Big Island while D1 was expanded to cover the remainder of the Big Island, more of central Maui, and western Molokai. D0 to D1 conditions persisted across the rest of the state.

**Looking Ahead:** During the next 5 days (June 13-17), moderate to locally heavy rains are expected in most areas from southern Florida northward to the central Appalachians and Piedmont, across the northwestern Great Lakes region and adjacent Plains, and along part of the central Gulf Coast. Normal precipitation, at best, is expected in other areas of dryness and drought across the lower 48 states, with little or no precipitation anticipated in most of the dry areas from the Rockies westward, and in the dry areas across much of the upper South, Tennessee Valley, middle and lower Ohio Valley, and adjacent Midwest.

For the ensuing 5 days (June 18-22), the odds favor surplus precipitation in the Great Lakes region, along the central Gulf Coast, and in the lower Mississippi Valley while below-normal precipitation seems more likely in central and southwestern sections of Alaska. In other parts of the nation, the outlook for this period is uncertain, with neither wetter nor drier than normal conditions favored.

**Author:** [Rich Tinker, Climate Prediction Center NCEP/NWS/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 June 13, 2007