



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

Weekly Report - Snowpack / Drought Monitor Update **Date: June 28, 2007**

SNOTEL SNOWPACK AND PRECIPITATION SUMMARY

Temperature: During the past seven days, temperatures ranged from 5°F to 10°F below normal over the Cascades to 5°F to 10°F above normal over the Central Rockies and Utah Ranges (Fig. 1).

Precipitation: For the past week, rain was confined to coastal Washington and the Eastern Plains of Montana and New Mexico (Fig. 2). Because little rain fell over Utah and Oregon, pasture and range land conditions worsened by 7 and 9 percent, respectively (Fig. 8). For the Water Year, serious deficits continue over the Sierra Mountain south of Lake Tahoe and in Arizona (Fig. 2a). Healthier surpluses exist over scattered areas in the Montana Rockies, Wyoming Bighorn Mountains, and Colorado-New Mexico Front Ranges (no change from last week).

WESTERN DROUGHT STATUS

The West and High Plains: Generally dry weather resulted in little change in the drought pattern across the region, although increasing drought impacts resulted in expansion of D3 drought in western Arizona. D3 (extreme) drought continued into southern California, where Los Angeles remained on track to record the driest 12-month July-June period since records began in 1877. Cumulative rainfall since July 1, 2006, totaled just 3.21 inches in downtown L.A., nearly a foot below normal. Windy, dry weather contributed to the wildfire south of Lake Tahoe in California that destroyed 251 structures (see following map).



Temperatures averaging 2-8°F above normal for the interior West this past week aggravated dry conditions. Up to 1 to 2 inches of rain in western Oklahoma and adjacent Kansas removed much of the D0 area introduced last week in that area. Hot, dry weather led to some expansion eastward of D0 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.

Weekly Snowpack and Drought Monitor Update Report

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).

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/>

Weekly Snowpack and Drought Monitor Update Report

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

Weekly Snowpack and Drought Monitor Update Report

Jun 28, 2007

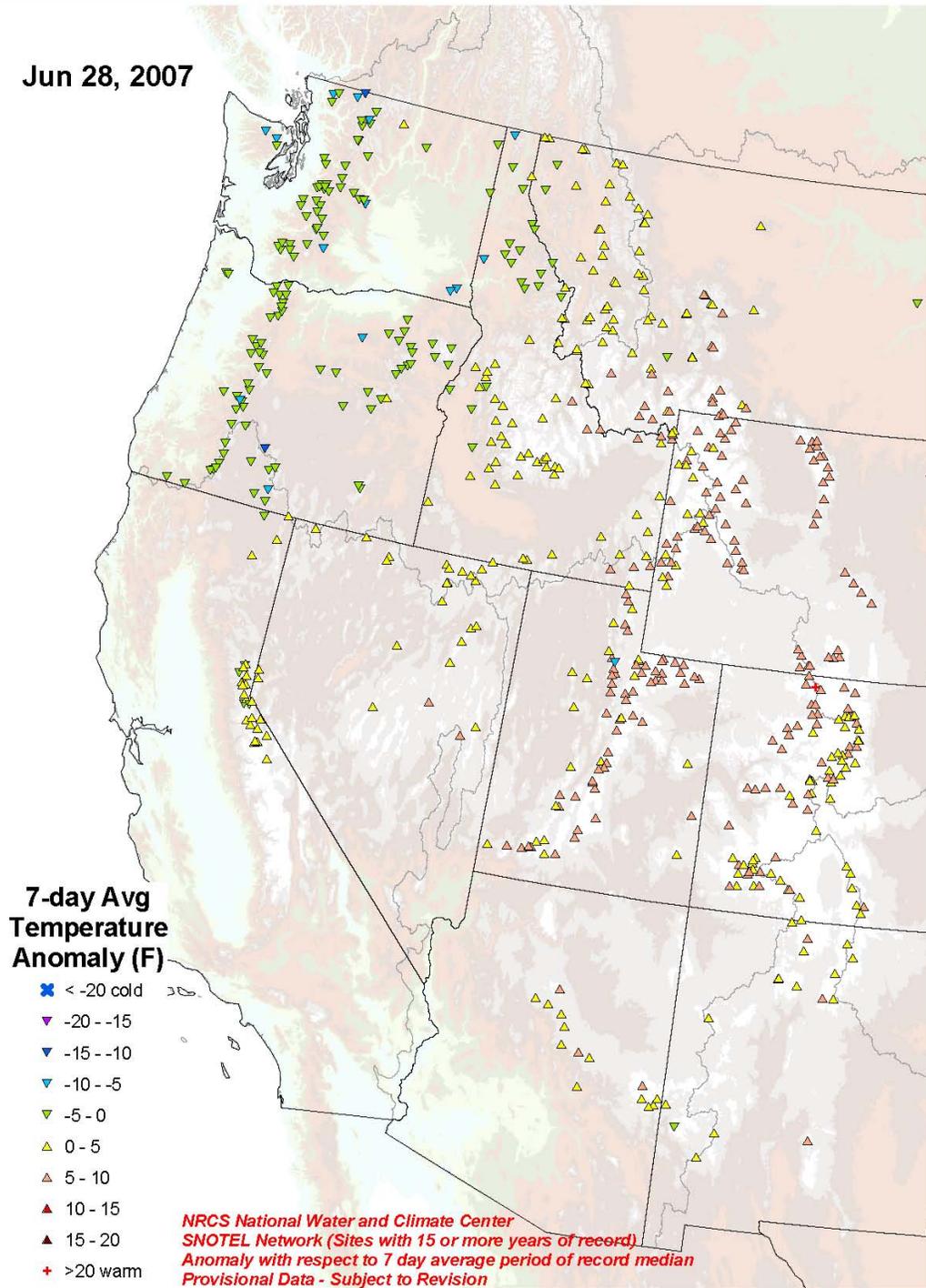


Fig. 1. SNOTEL 7-day average temperature anomaly.

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

Weekly Snowpack and Drought Monitor Update Report

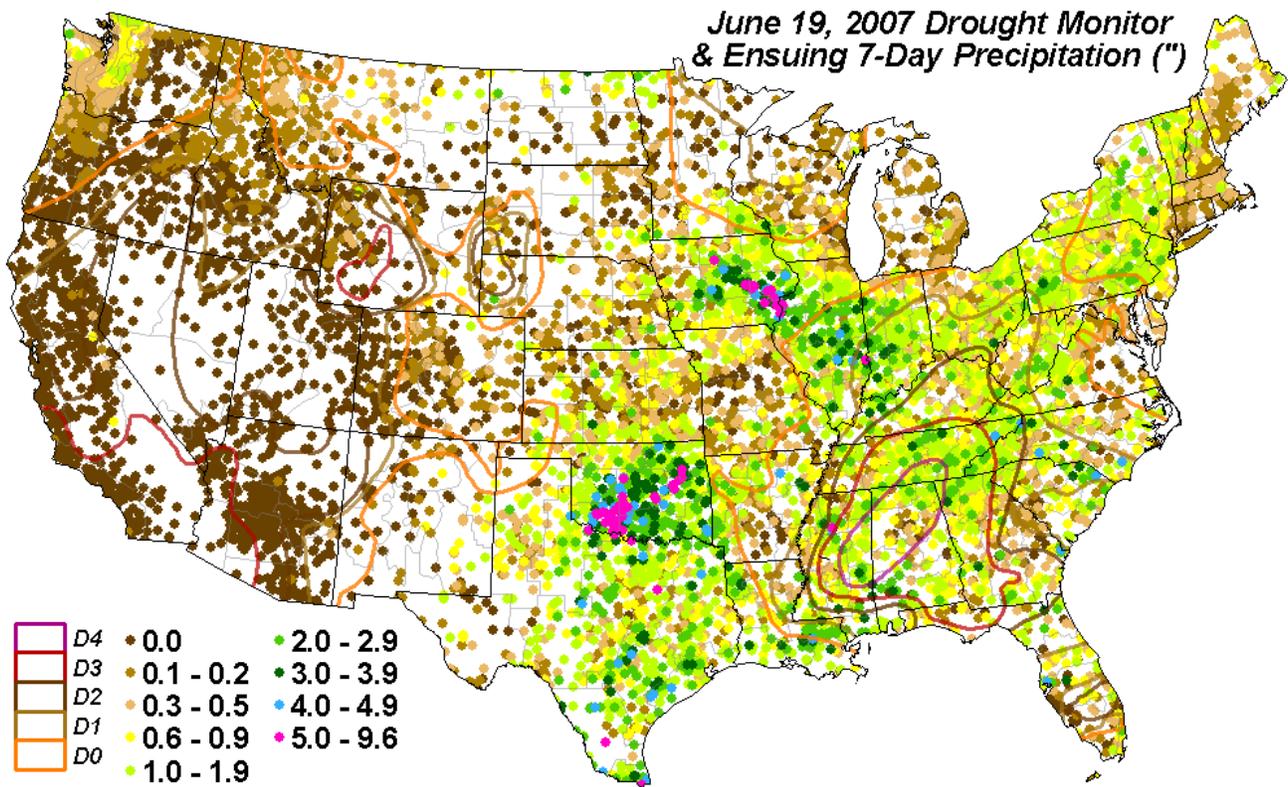


Fig. 2. Preliminary precipitation totals for the 7-day period ending 26 June 2007.

Ref: <http://www.cpc.ncep.noaa.gov/products/predictions/experimental/edb/usdm-precip-overlay.gif>

Weekly Snowpack and Drought Monitor Update Report

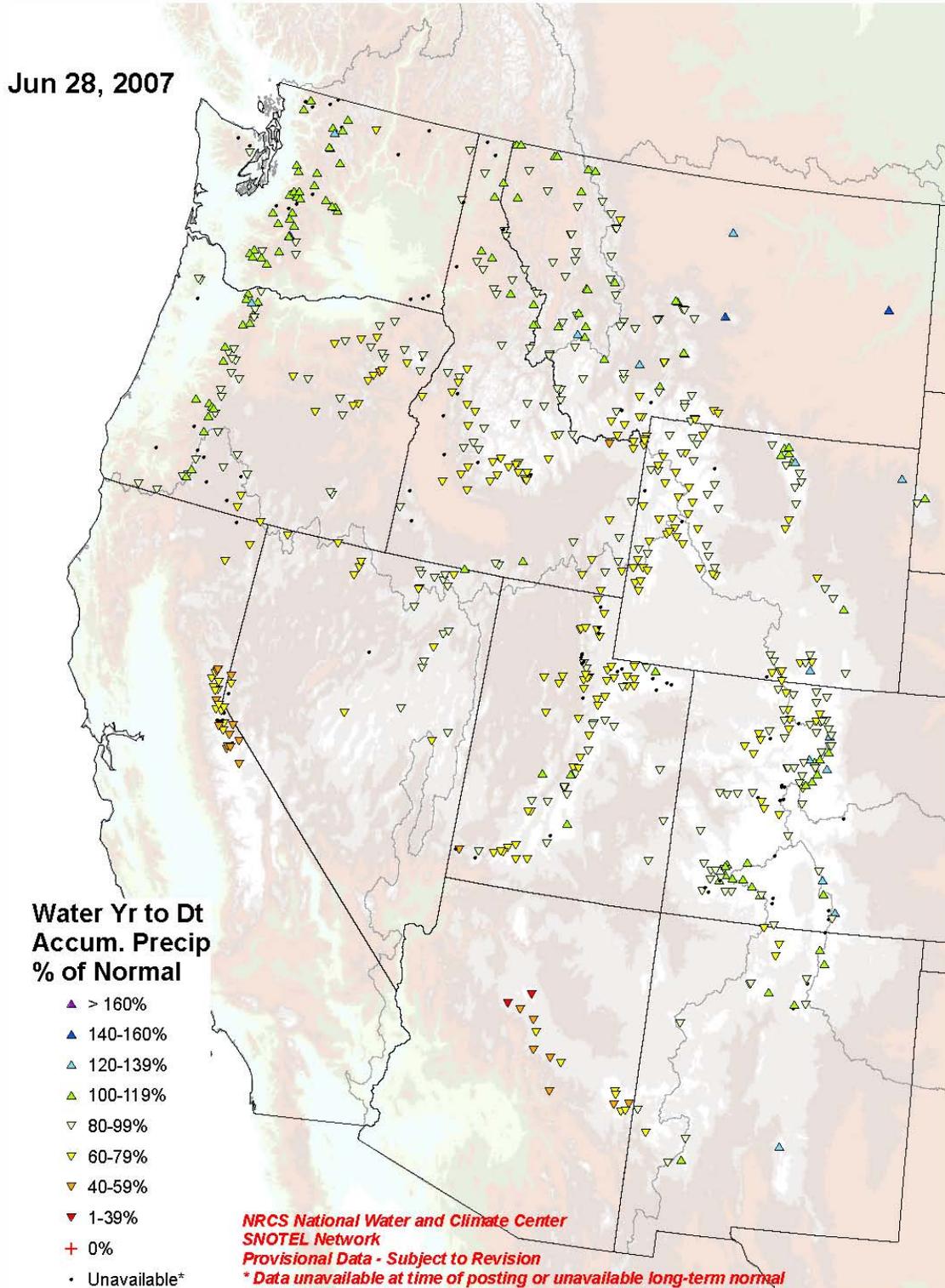


Fig. 2a. SNOTEL station water year (since October 1) precipitation as a percent of normal.
Ref: <ftp://ftp.wcc.nrcs.usda.gov/data/water/wcs/gis/maps/WestwideWYTDPrecipPercent.pdf>

U.S. Drought Monitor

June 26, 2007
Valid 8 a.m. EDT

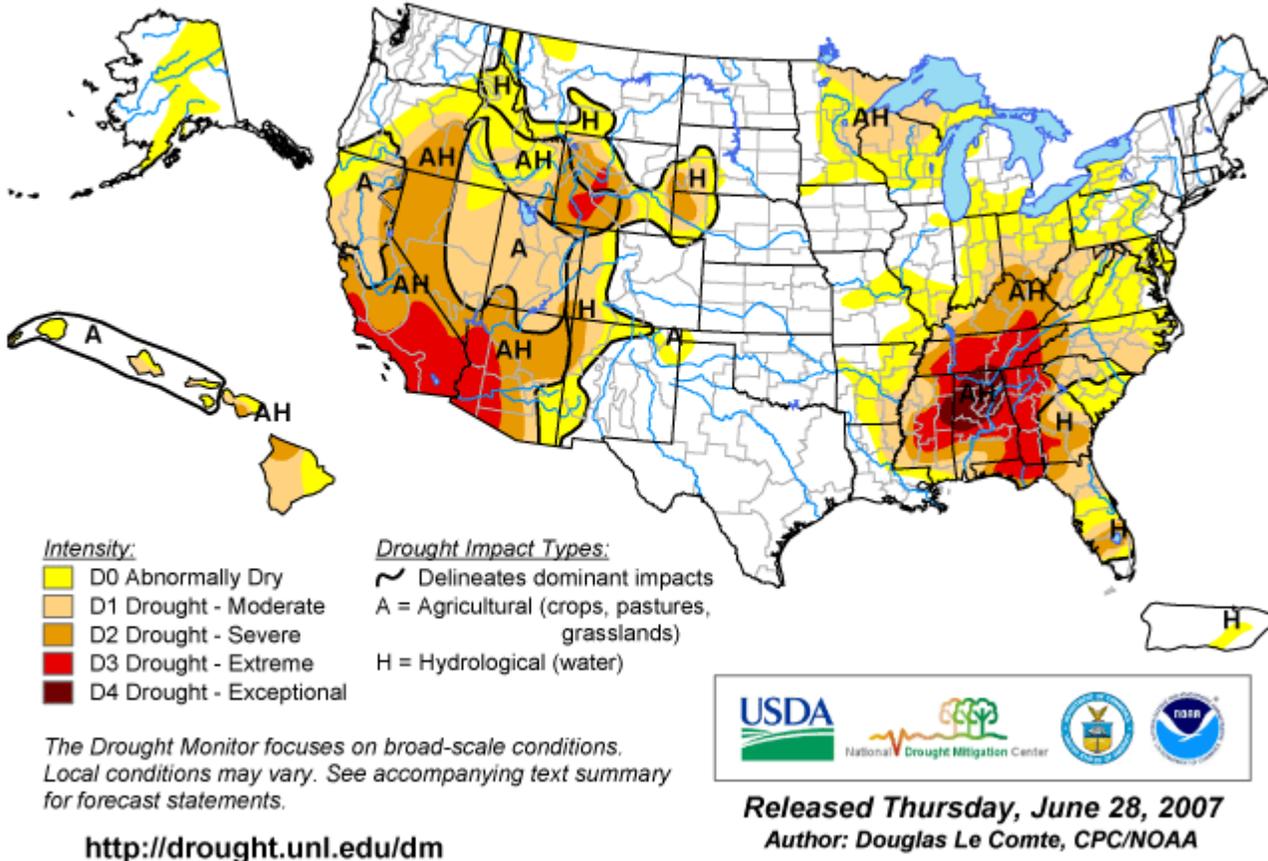


Fig. 3. Current Drought Monitor weekly summary.

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

Weekly Snowpack and Drought Monitor Update Report

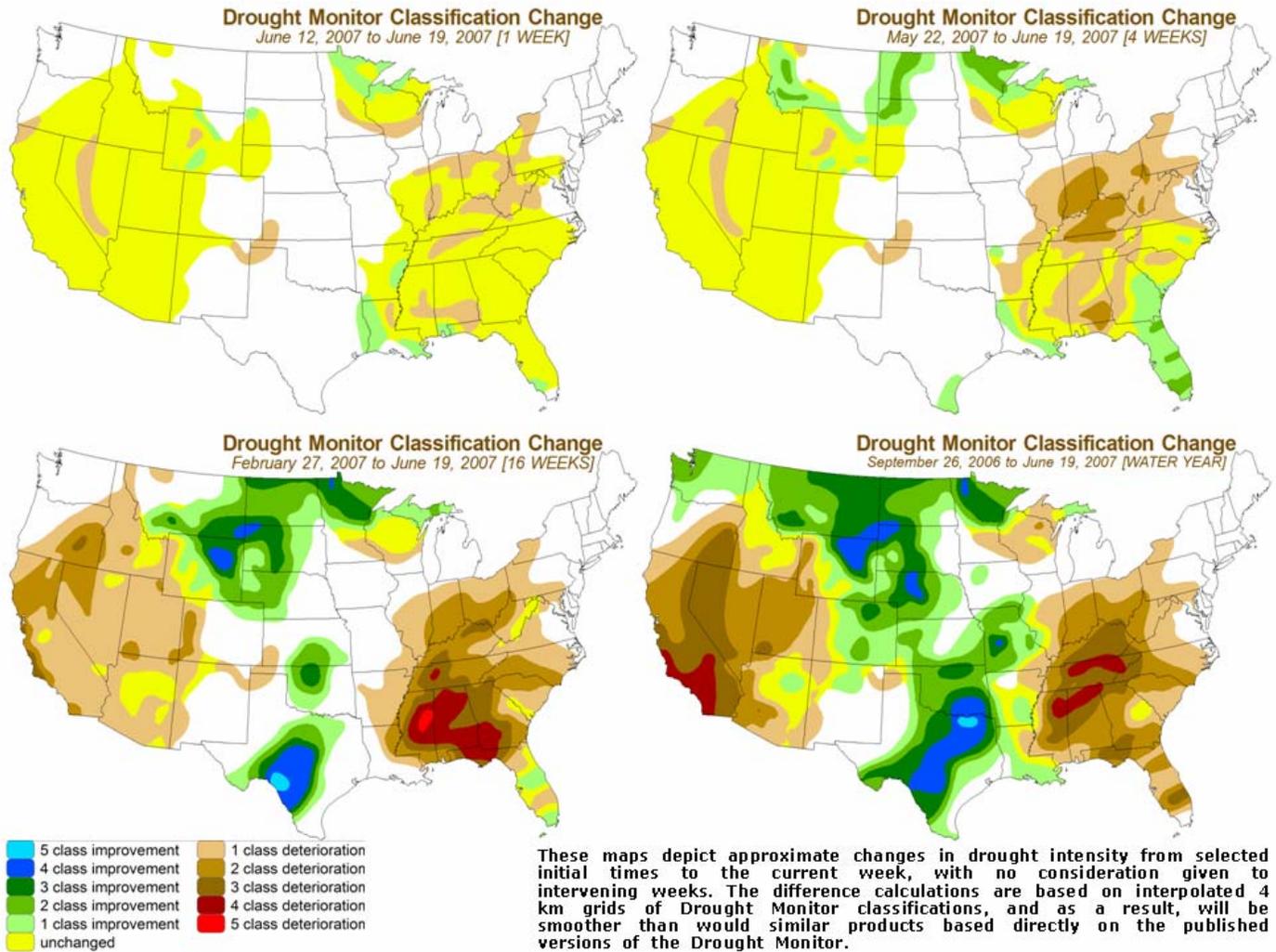


Fig. 3a. Drought Monitor classification changes over various time periods.

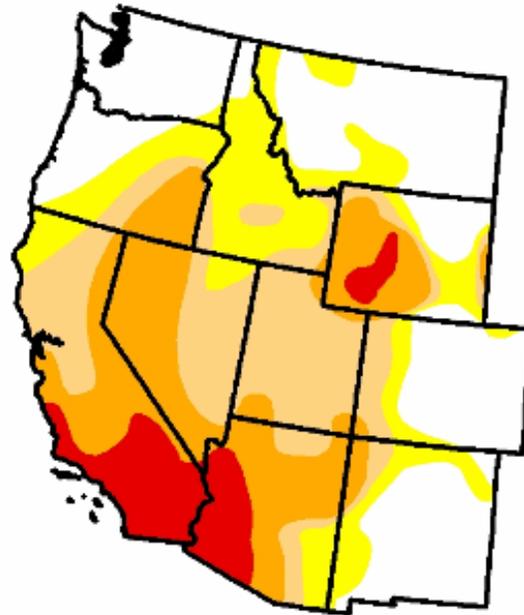
Ref: <http://www.cpc.ncep.noaa.gov/products/predictions/experimental/edb/dm-change-4maps.png>

U.S. Drought Monitor West

June 26, 2007
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	33.5	66.5	48.7	28.3	7.9	0.0
Last Week (06/19/2007 map)	33.5	66.5	48.7	28.3	7.5	0.0
3 Months Ago (04/03/2007 map)	33.3	66.7	49.7	17.5	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 (06/27/2006 map)	59.3	40.7	34.7	23.6	12.7	1.9



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 28, 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

Weekly Snowpack and Drought Monitor Update Report

Soil Moisture Percentiles (wrt/ 1915-2003)
20070627

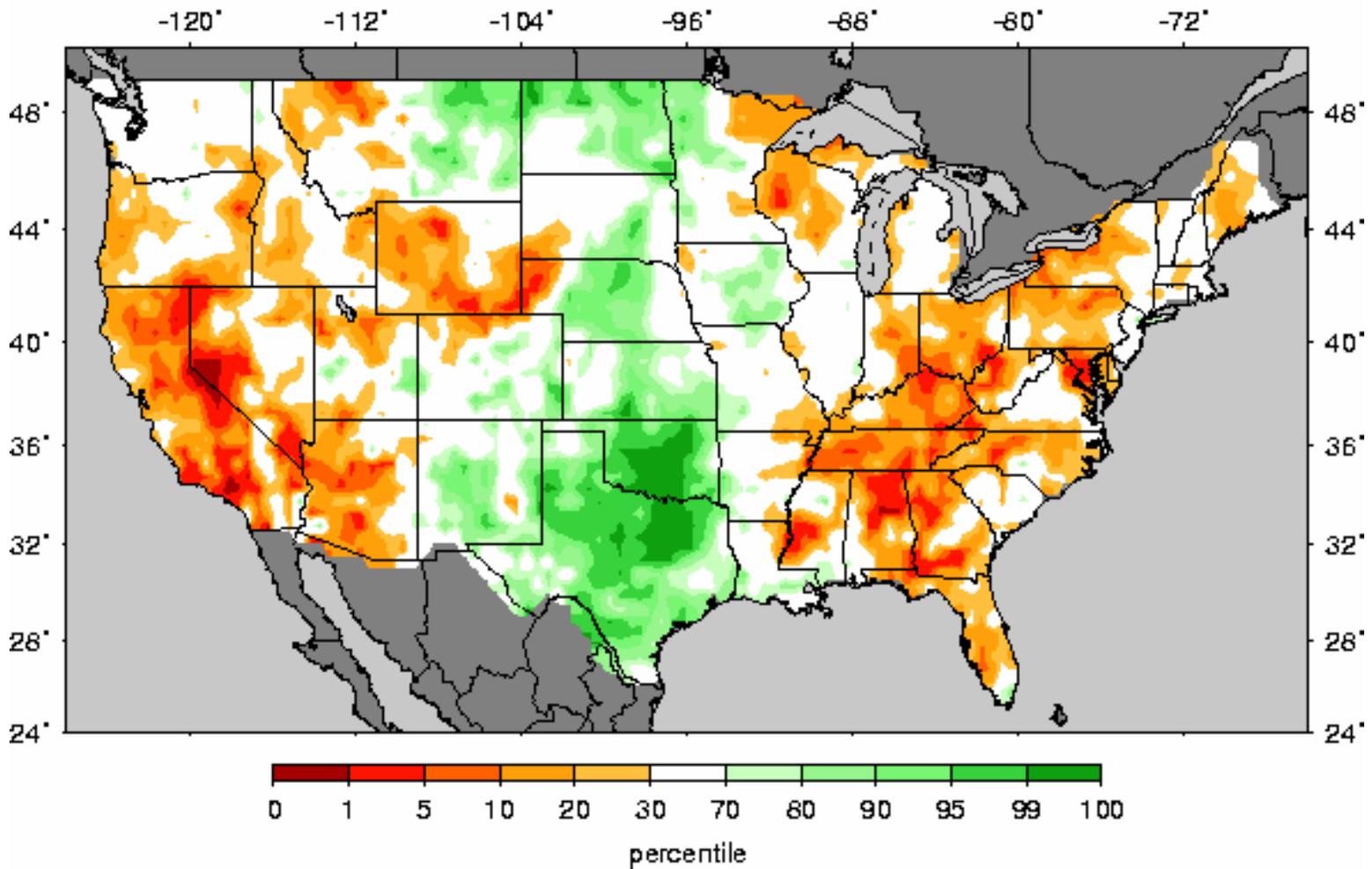


Fig. 4: Soil Moisture Ranking Percentile based on 1915-2003 climatology. (source: Univ. of Washington). Ref: http://www.hydro.washington.edu/forecast/monitor/curr/CONUS.sm_ant.gif

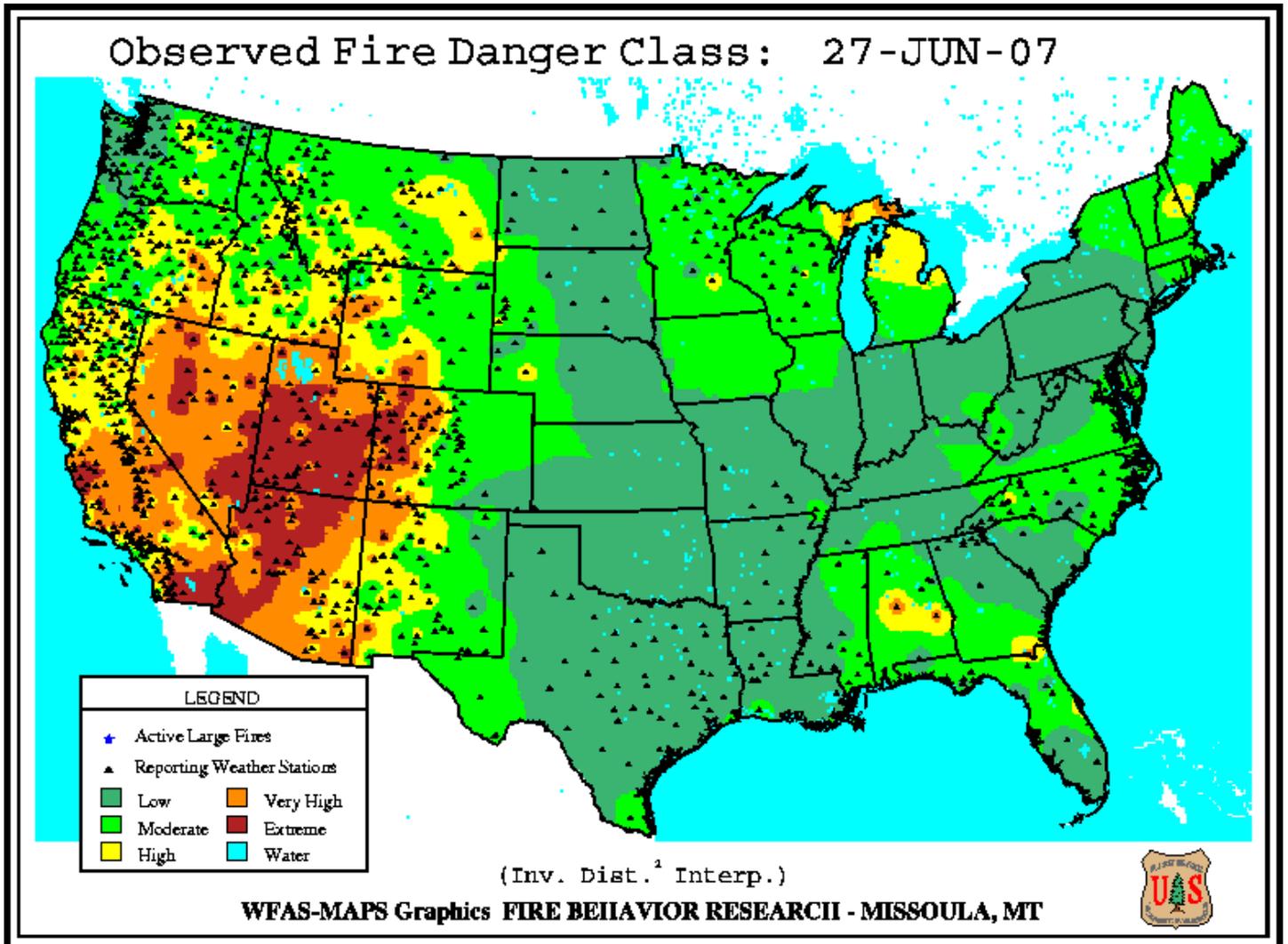


Fig. 5. Observed Fire Danger Class. Source: Forest Service Fire Behavior Research – Missoula, MT Note continued extreme fire conditions over southern California, eastern Nevada, and most of Utah.

Ref: http://www.fs.fed.us/land/wfas/fd_class.gif

Map of below normal 7-day average streamflow compared to historical streamflow for the day of year (United States)

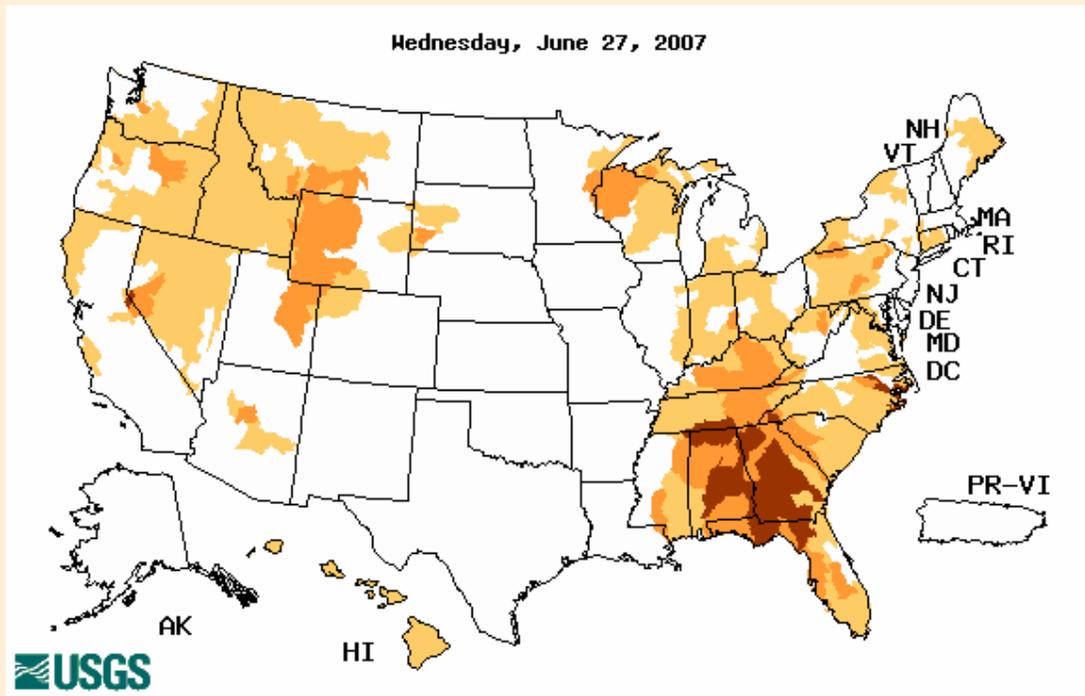


Fig. 6. Map of below normal 7-day average streamflow compared to historical stream flow for the day of the year. Note continued extreme low streamflows over the Southeast.

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

Weekly Snowpack and Drought Monitor Update Report

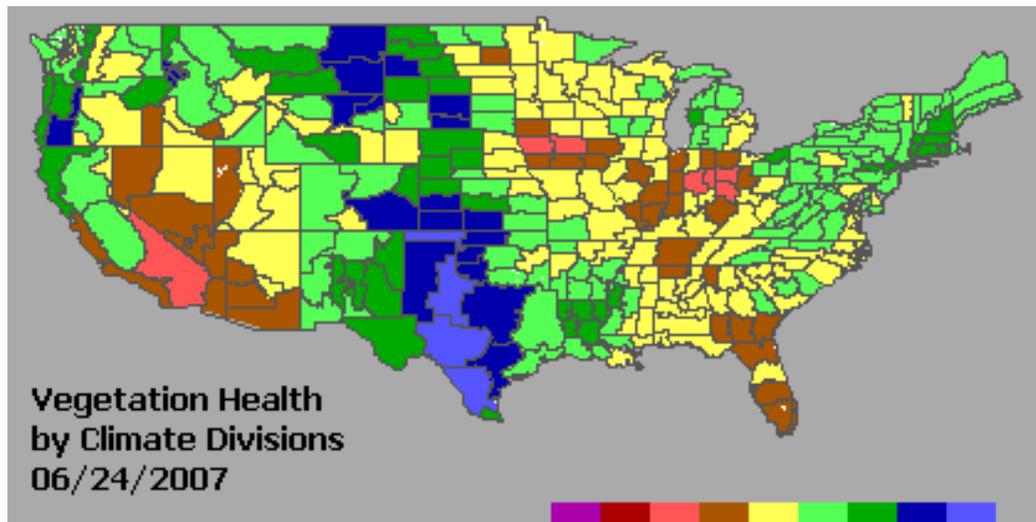
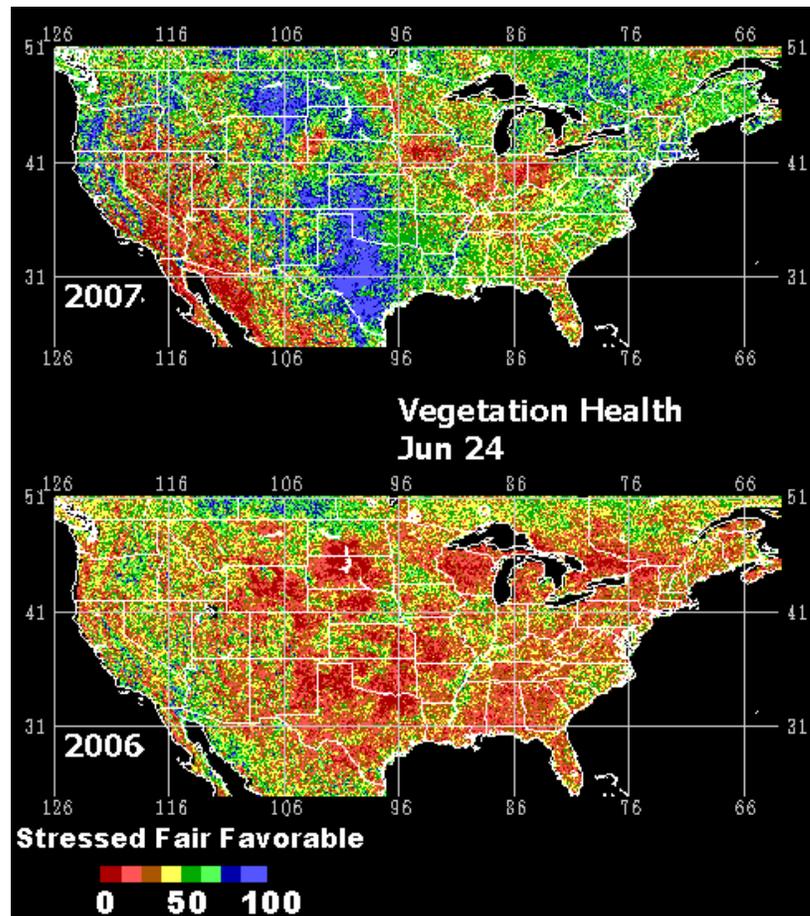


Fig. 7: Year to year comparison of vegetation health across the U.S. Note the vast improvement of vegetation from Texas to Montana and over Oregon and northern California over June 24, 2006.

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

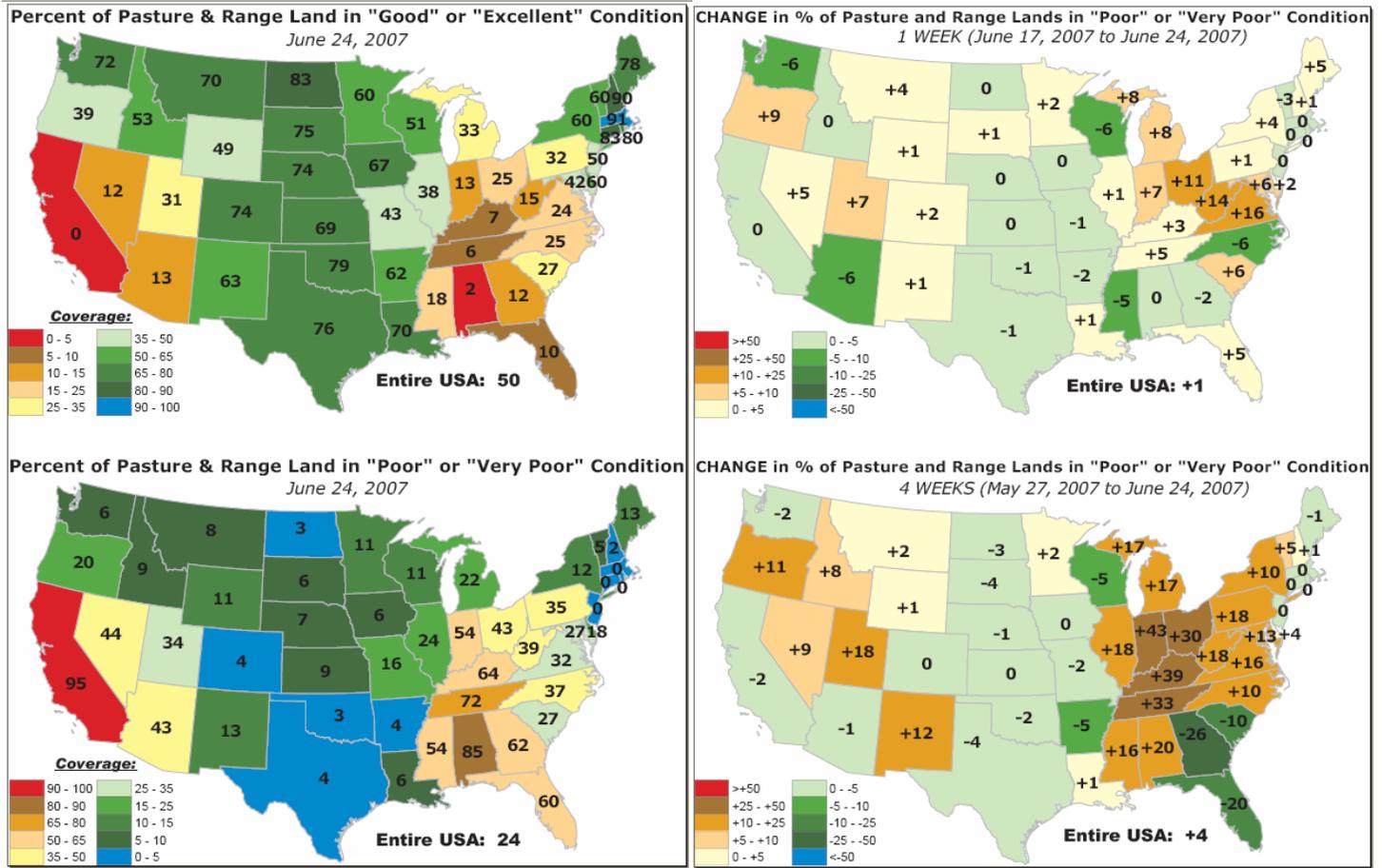


Fig. 8: Pasture and rangeland conditions for various periods.

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

Weekly Snowpack and Drought Monitor Update Report

National Drought Summary -- June 26, 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 and High Plains: Generally dry weather resulted in little change in the drought pattern across the region, although increasing drought impacts resulted in expansion of D3 drought in western Arizona. D3 (extreme) drought continued into southern California, where Los Angeles remained on track to record the driest 12-month July-June period since records began in 1877. Cumulative rainfall since July 1, 2006, totaled just 3.21 inches in downtown L.A., nearly a foot below normal. Windy, dry weather contributed to the wildfire south of Lake Tahoe in California that destroyed 251 structures. Temperatures averaging 2-8°F above normal for the interior West this past week aggravated dry conditions. Up to 1 to 2 inches of rain in western Oklahoma and adjacent Kansas removed much of the D0 area introduced last week in that area. Hot, dry weather led to some expansion eastward of D0 in southwestern South Dakota.

The Western Great Lakes: Warm, dry weather led to expansion of D0 into southern Minnesota and extreme northwestern Iowa, while D1 drought extended from northern Wisconsin into east-central Minnesota. D0 dryness expanded eastward across the Upper Peninsula of Michigan.

The Southern and Eastern United States: Showers brought spotty improvement to the southern drought, with widespread rains on June 19 bringing at least short-term relief to many parts of Alabama, Georgia, Mississippi, and the Tennessee Valley. Heavy, flooding rains of 6 to 11 inches hit northwest Mississippi on June 18, resulting in pullback of the D2 and D3 area there. Elsewhere, weekly totals of 1-3 inches benefited much of the extreme drought area, but rainfall amounts were generally not enough to lift drought categories, except in southern Alabama, where D3 improved to D2. In Georgia, despite getting some welcomed rains this period, Atlanta is experiencing its second-driest year on record, with year-to-date totals 13 inches below normal. In Alabama, the drought has been having major impacts on farming. USDA reported that both the soybean and corn crops were rated at 88 percent poor to very poor. To the north, heavy rains ranging up to 4 inches and higher eliminated dryness in central Illinois and adjacent Indiana and removed D1 drought in western Indiana. In contrast, dry weather led to some expansion of D0 in southern Michigan and parts of northeastern Illinois. Dry weather also brought D0 dryness to most of Virginia and D1 drought across northern West Virginia into western Maryland and extreme northern Virginia. D0 dryness spread into northeastern Pennsylvania, where wells have been running low.

Puerto Rico: D0H conditions persisted as rainfall totals were light to moderate on the lingering area of hydrologic dryness in southeastern Puerto Rico.

Alaska: Above-normal temperatures and generally light rainfall led to some eastward migration of the D0 area. D0 expanded to the western Kenai Peninsula, where the Caribou Hills fire had scorched 55,000 acres and burned 197 structures.

Hawaii: Some heavy showers led to retreat of the D1 in the windward area of The Big Island.

Weekly Snowpack and Drought Monitor Update Report

Looking Ahead: Weather that could have an impact on dry areas in the next 2 weeks: 1) a cold front tracking eastward and southward during June 28 to July 2 should bring over an inch of rain to many locations in the Ohio Valley and mid and south Atlantic states, but less than 1 inch in most of the D4 drought area in the South; 2) temperatures should remain above normal with little or no rain across the West in the next 2 weeks; 3) rainfall is forecast to be normal to above normal along the Gulf Coast on the 6-10 day and 8-14 day forecasts but below normal over the Tennessee Valley and South Atlantic Coast during days 6-10.

Author: [Douglas Le Comte, 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 28, 2007