United States Department of Agriculture

NRCS

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

Weekly Report - Snowpack / Drought Monitor Update Date: May 24, 2007

SNOTEL SNOWPACK AND PRECIPITATION SUMMARY

Snowpack: For the 2007 Water Year, snow water-equivalent (SWE) remains near normal over isolated regions of the Northern Cascades (WA) and along the Front Range of Colorado. Across the West, several more SNOTEL stations have melted out since last week (Fig. 1). During the week, a trough of low pressure transited the West and helped to slow the decrease in SWE over portions of the Rockies and Northern Cascades (Fig. 1a).

Temperature: During the past seven days, temperatures were +/- 5°F of normal across the West (Fig. 2).

Precipitation: During this report period, precipitation (rain and snow) was confined to the Pacific Northwest, Intermountain West, and Northern and Southern Rockies (Fig. 3). For the Water Year, there were no significant changes since last week's report. The Cascades and portions of the Colorado Rockies are still maintaining near to above normal values. Totals over Arizona and the Sierras (CA and NV) are continuing to fall (Fig. 3a).

WESTERN DROUGHT STATUS

The West: High pressure was the dominant feature in the region last week, leading to warm temperatures and very little in the way of precipitation. Temperatures once again ranged from 6 to 10 degrees above normal on the week for all but the coastal reaches. Hot on the heels of last week's downturn in Wyoming's statewide average snow water equivalent levels, they once again saw a large drop of 16%, leaving them at a dismal 28% of average after being at just 69% of average two weeks ago. In California, the drought continues to encroach on more of coastal California with the advancement northward of D2(A) and D3(A) up into the San Francisco Bay region. Pasture and range conditions are exceptionally bad for this time of year with 96% of the state being reported by USDA as poor or very poor. The onset of the dry season doesn't bode well for recovery in these areas and the potential for fires remains high. The Los Angeles vicinity is still on pace to set a record for their driest rain season (Figs. 4, 4a, and 4b).

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. 4, 4a, and 4b).

SOIL MOISTURE
Soil moisture (Fig. 5), 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. 6.

U.S. HISTORICAL STREAMFLOW
This map, (Fig. 7) 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.

PASTURE & RANGE LANDS
These maps (Fig. 8) show good to excellent and poor to very poor grazing lands for various time periods. 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

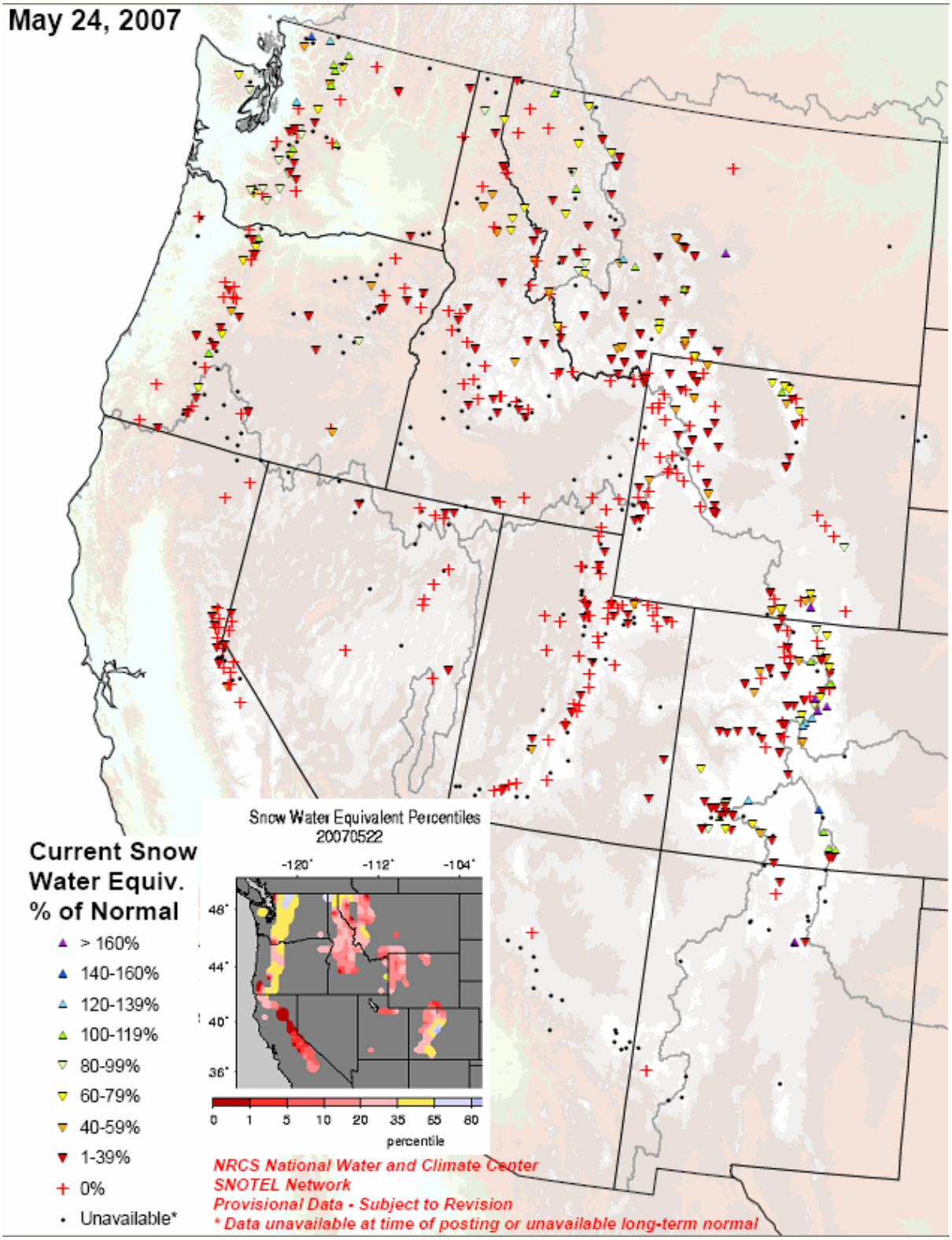


Fig. 1: Snow Water-Equivalent as a percent of normal for Water Year 2007.
Ref: ftp://ftp.wcc.nrcs.usda.gov/data/water/wcs/gis/maps/WestwideSWEPercent.pdf
(insert) http://www.hydro.washington.edu/forecast/monitor/curr/CONUS.swe_qnt.gif

Weekly SWE Change

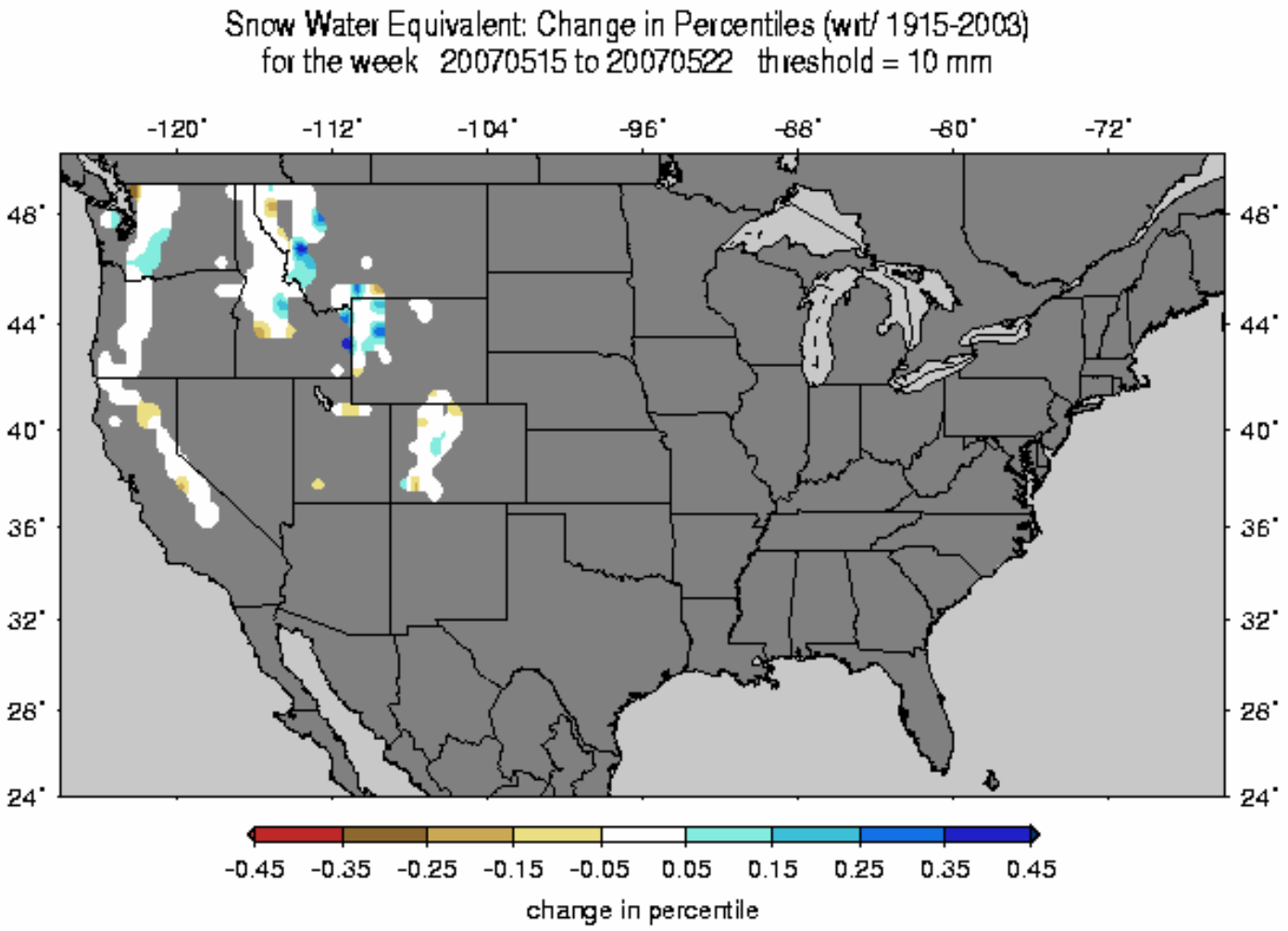


Fig. 1a. Snow Water-Equivalent changes as a percent during the period 15 to 22 May 2007 based on 1915-2003 climatology. Note the spotty increases in SWE over the Rockies and Northern Cascades. Ref: http://www.hydro.washington.edu/forecast/monitor/index.shtml

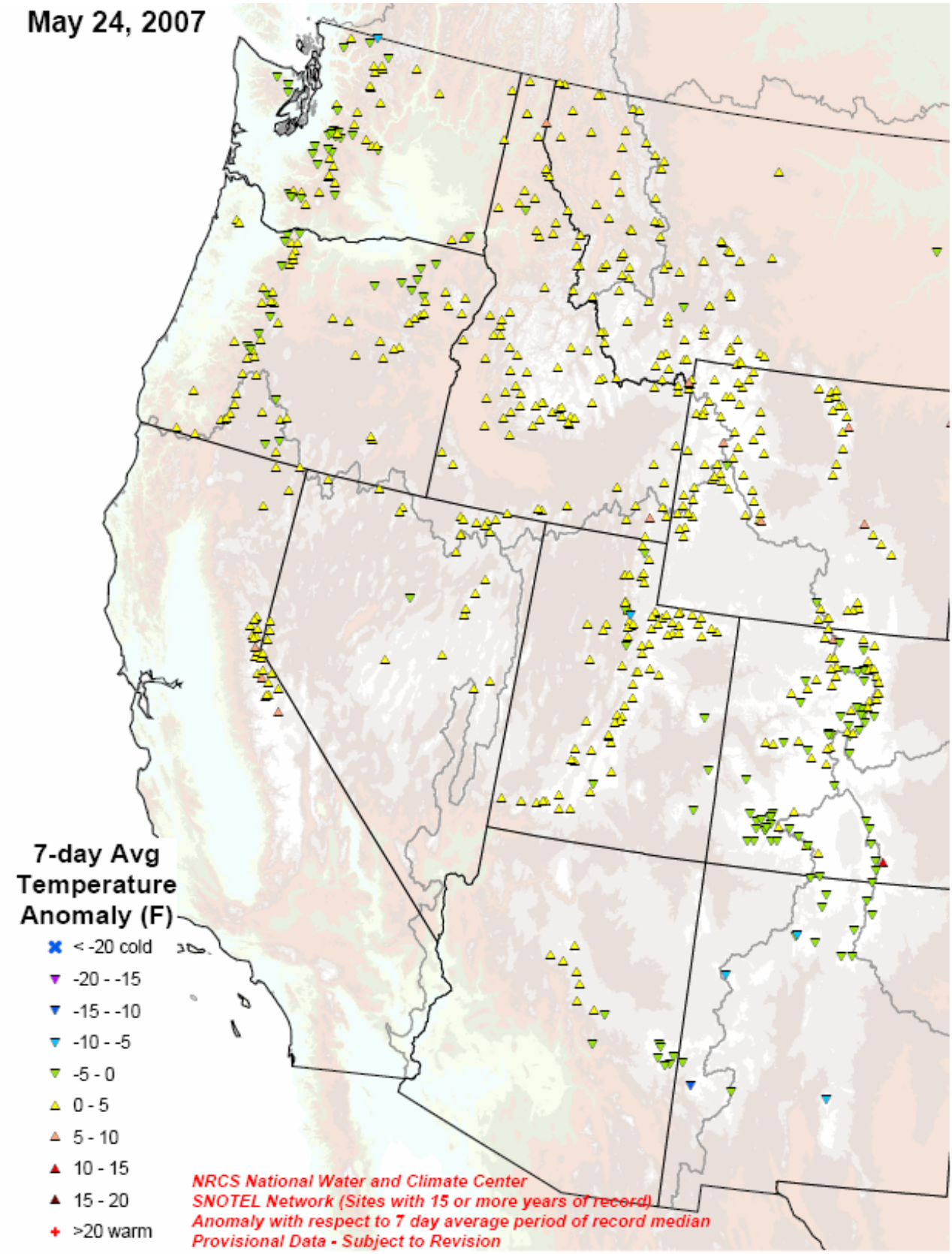


Fig. 2. SNOTEL 7-day average temperature anomaly.
Ref: ftp://ftp.wcc.nrcs.usda.gov/data/water/wcs/gis/maps/WestwideTavg7dAnomaly.pdf

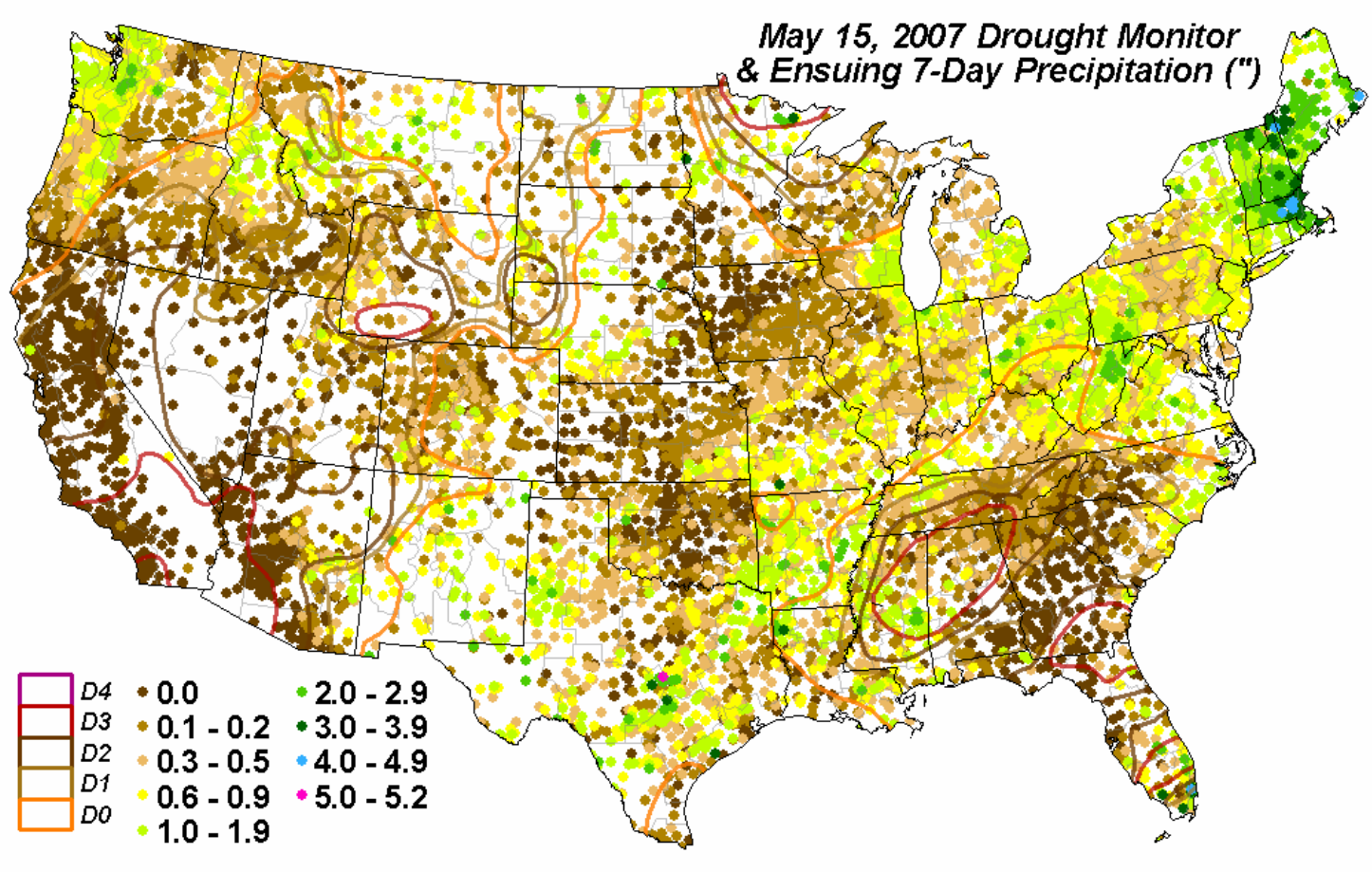


Fig. 3. Preliminary precipitation totals as a percent of normal for the 7-day period ending 21 May 2007.
Ref: http://www.cpc.ncep.noaa.gov/products/predictions/experimental/edb/usdm-precip-overlay.gif

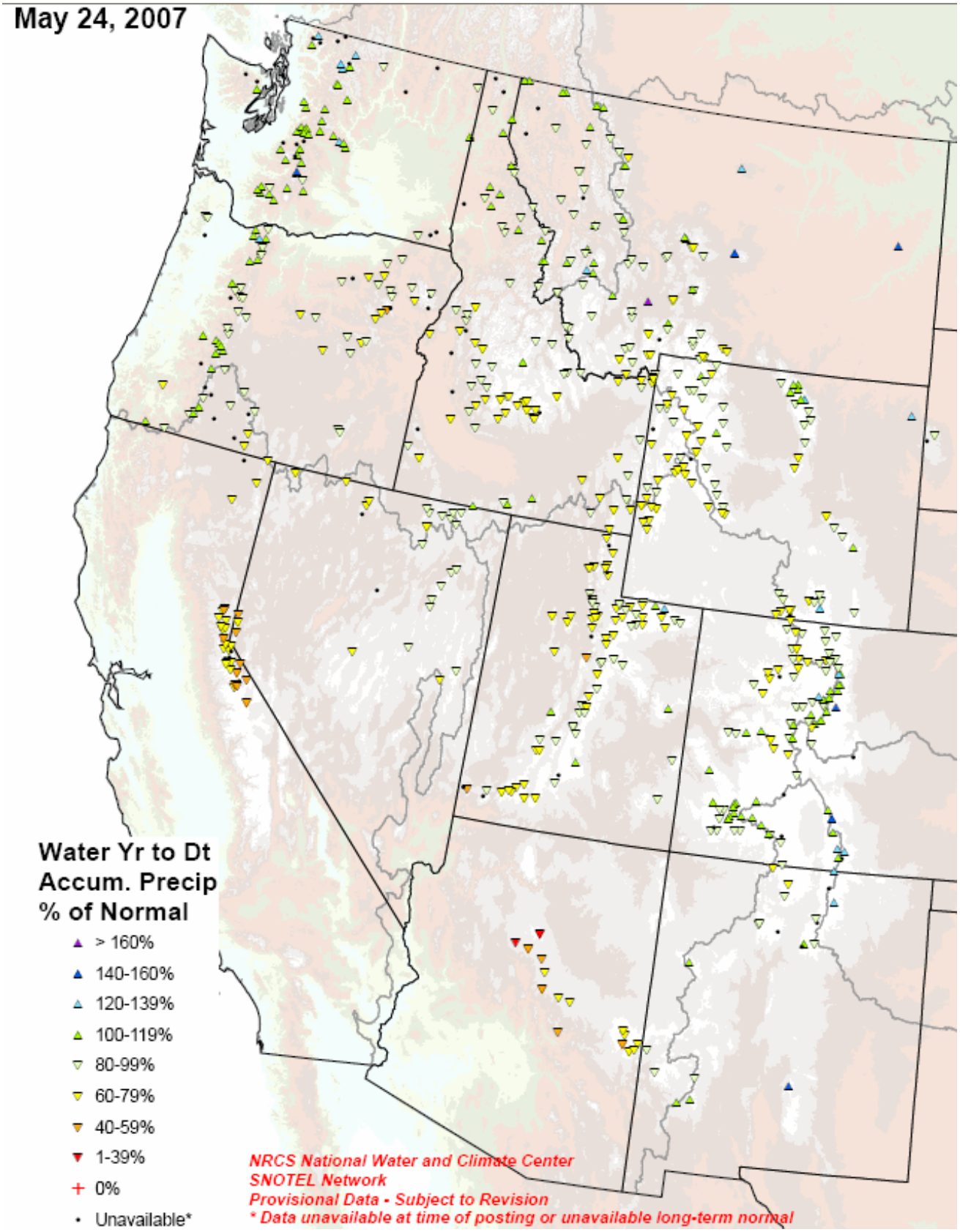


Fig. 3a. SNOTEL station water year (since October 1) precipitation as a percent of normal.
Ref: ftp://ftp.wcc.nrcs.usda.gov/data/water/wcs/gis/maps/WestwideWYTDPrecipPercent.pdf

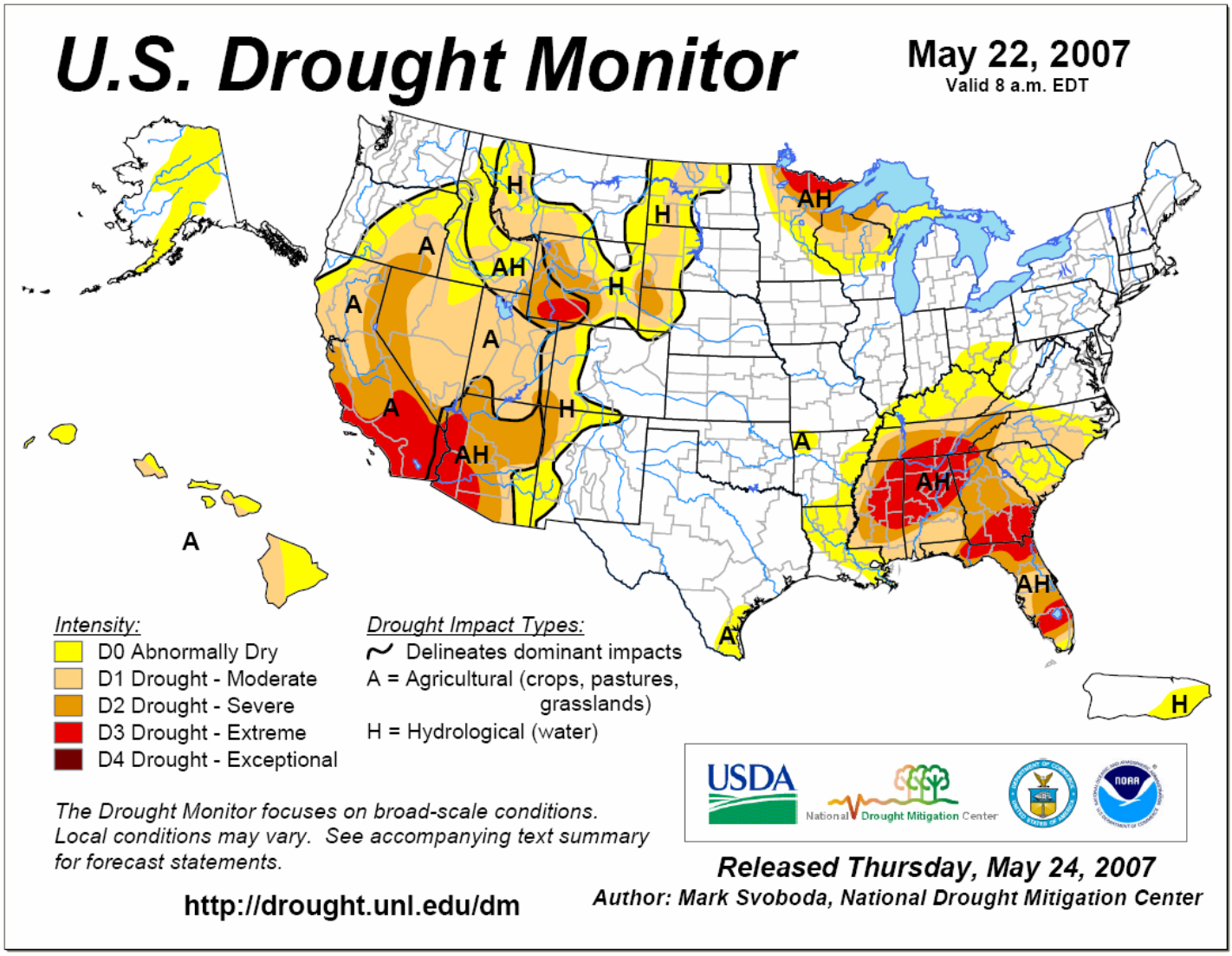


Fig. 4. Current Drought Monitor weekly summary.
Ref: ***National Drought Mitigation Center (NDMC) -*** http://www.drought.unl.edu/dm/monitor.html

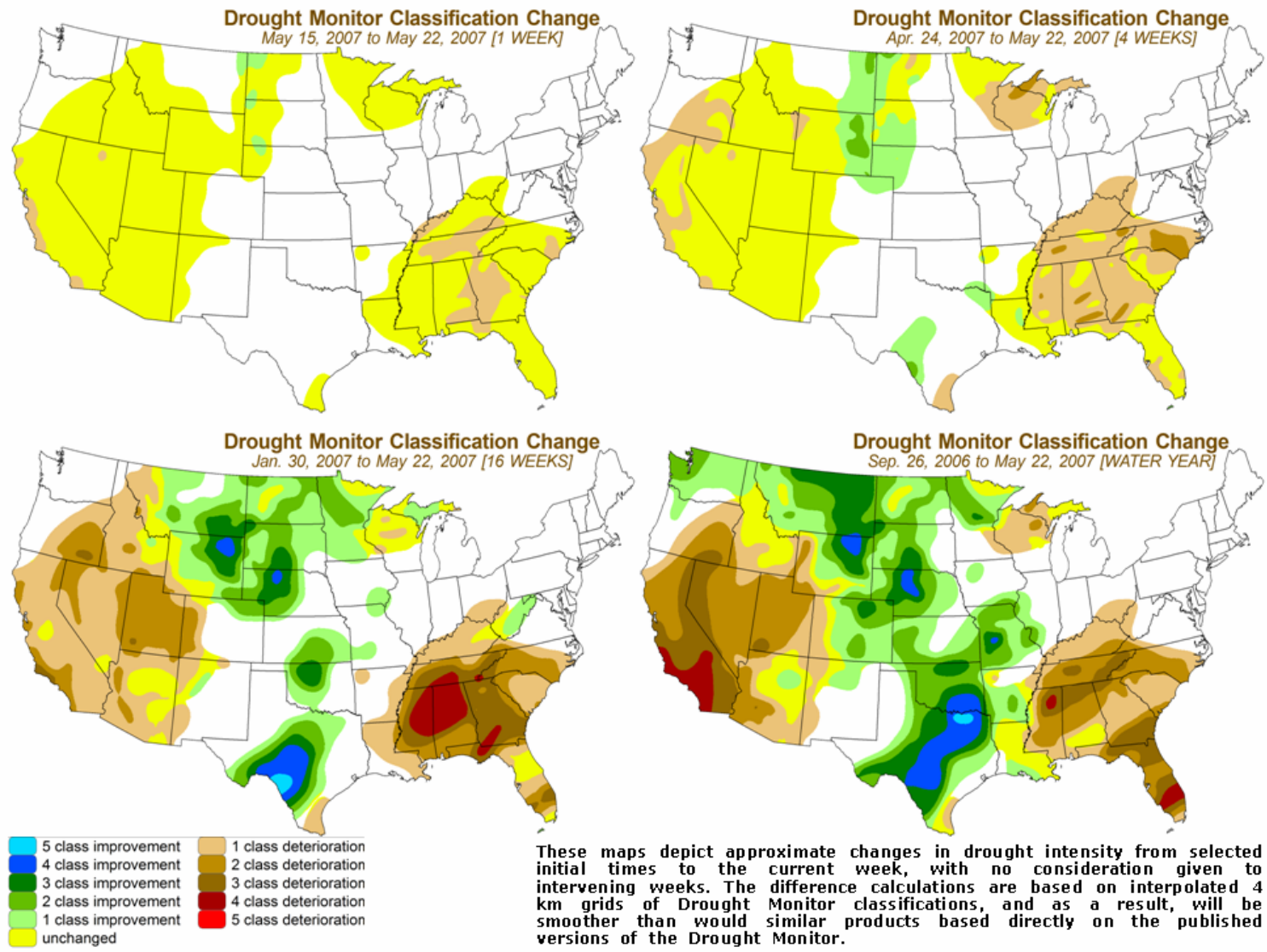


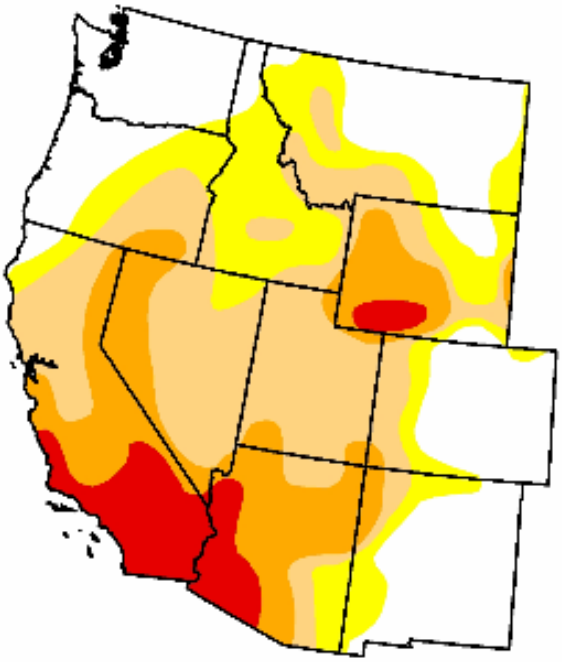
Fig. 4a. Drought Monitor classification changes over various time periods.
Ref: http://www.cpc.ncep.noaa.gov/products/predictions/experimental/edb/dm-change-4maps.png

U.S. Drought Monitor
West

May 22, 2007
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	30.9	69.1	51.2	24.4	7.5	0.0
Last Week (05/15/2007 map)	30.5	69.5	50.5	23.7	6.7	0.0
3 Months Ago (02/27/2007 map)	41.9	58.1	31.4	17.7	4.0	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 (05/23/2006 map)	61.5	38.5	28.9	19.0	11.9	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, May 24, 2007
Author: Mark Svoboda, National Drought Mitigation Center

Fig 4b. Drought Monitor for the Western States with statistics over various time periods.
Ref: ***http://www.drought.unl.edu/dm/DM_west.htm***

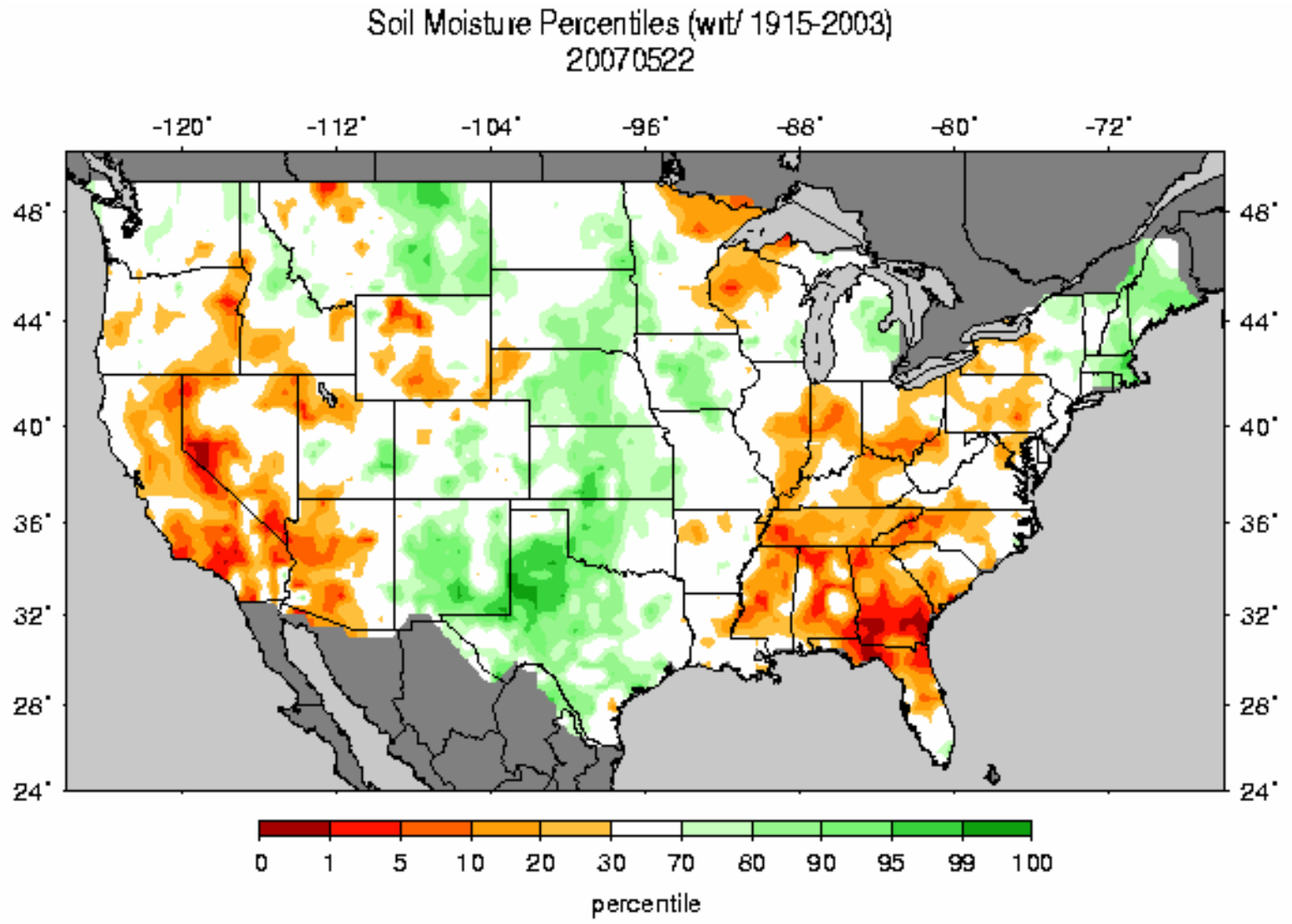


Fig. 5: Soil Moisture Ranking Percentile based on 1915-2003 climatology. (source: Univ. of Washington). **Ref:** http://www.hydro.washington.edu/forecast/monitor/curr/CONUS.sm_qnt.gif

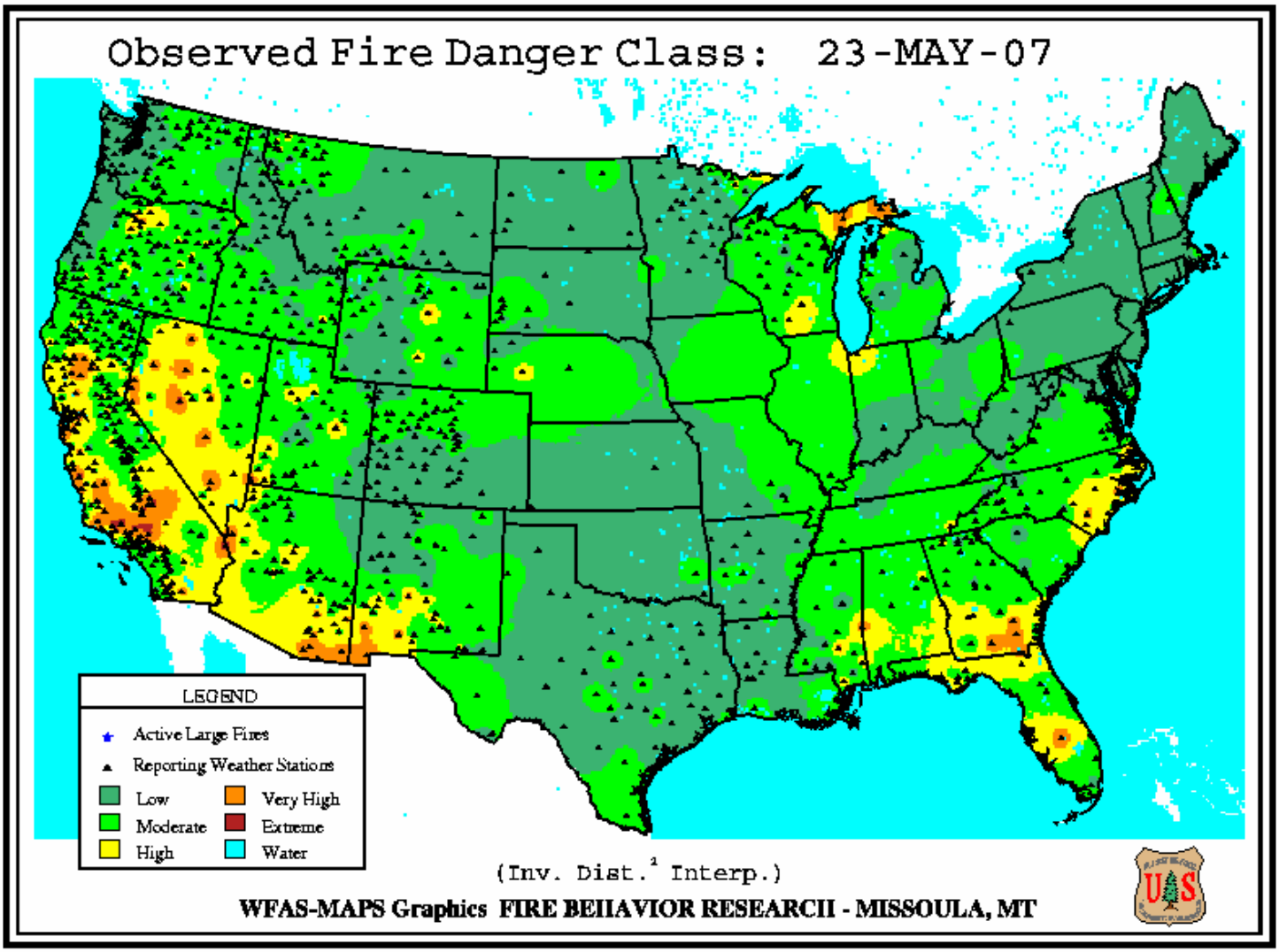


Fig. 6. Observed Fire Danger Class. Source: Forest Service Fire Behavior Research – Missoula, MT
Ref: http://www.fs.fed.us/land/wfas/fd_class.gif

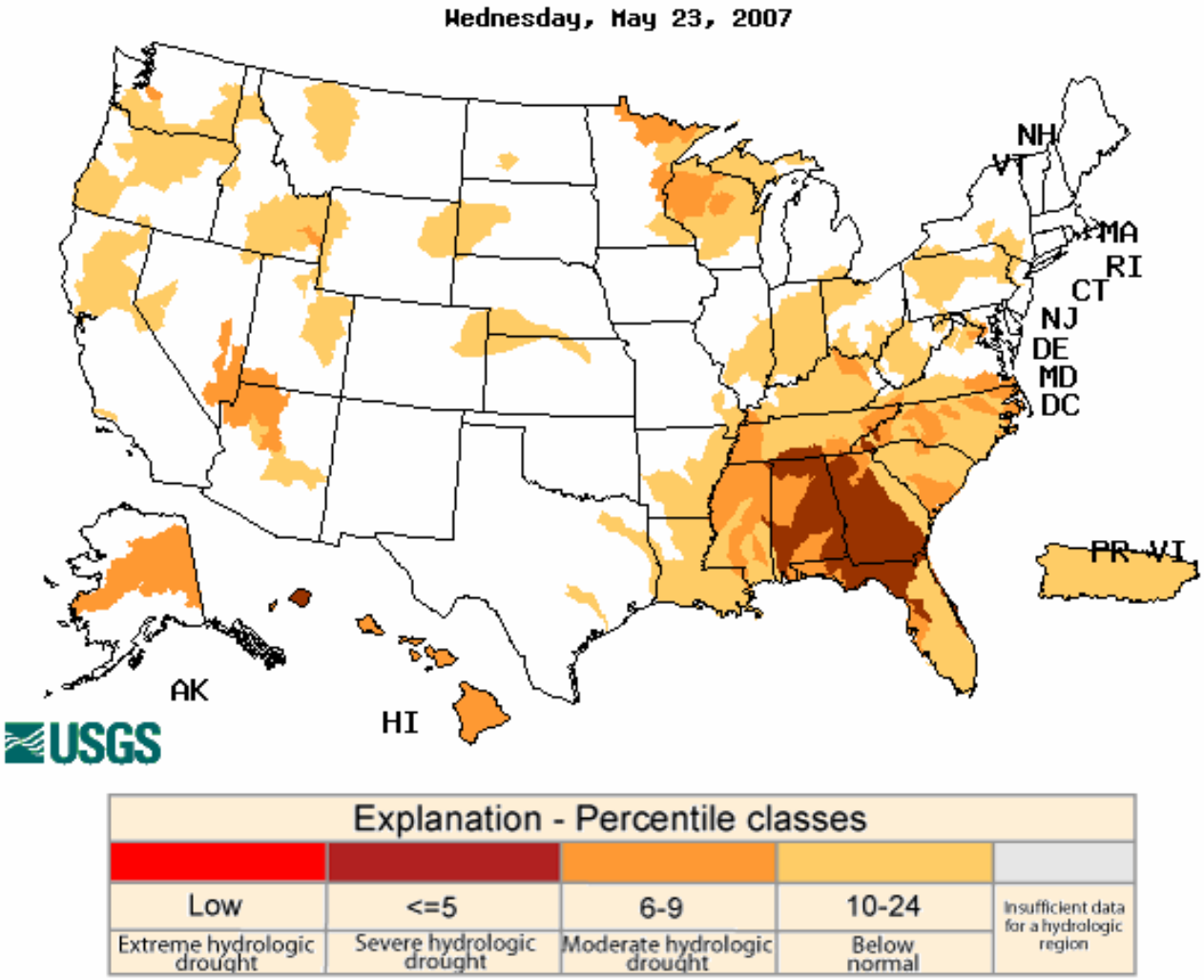


Fig. 7. Map of below normal 7-day average streamflow compared to historical stream flow for the day of the year. Note the extremely low streamflows over the Southeast.
Ref: USGS http://water.usgs.gov/waterwatch/?m=dryw&w=map&r=us

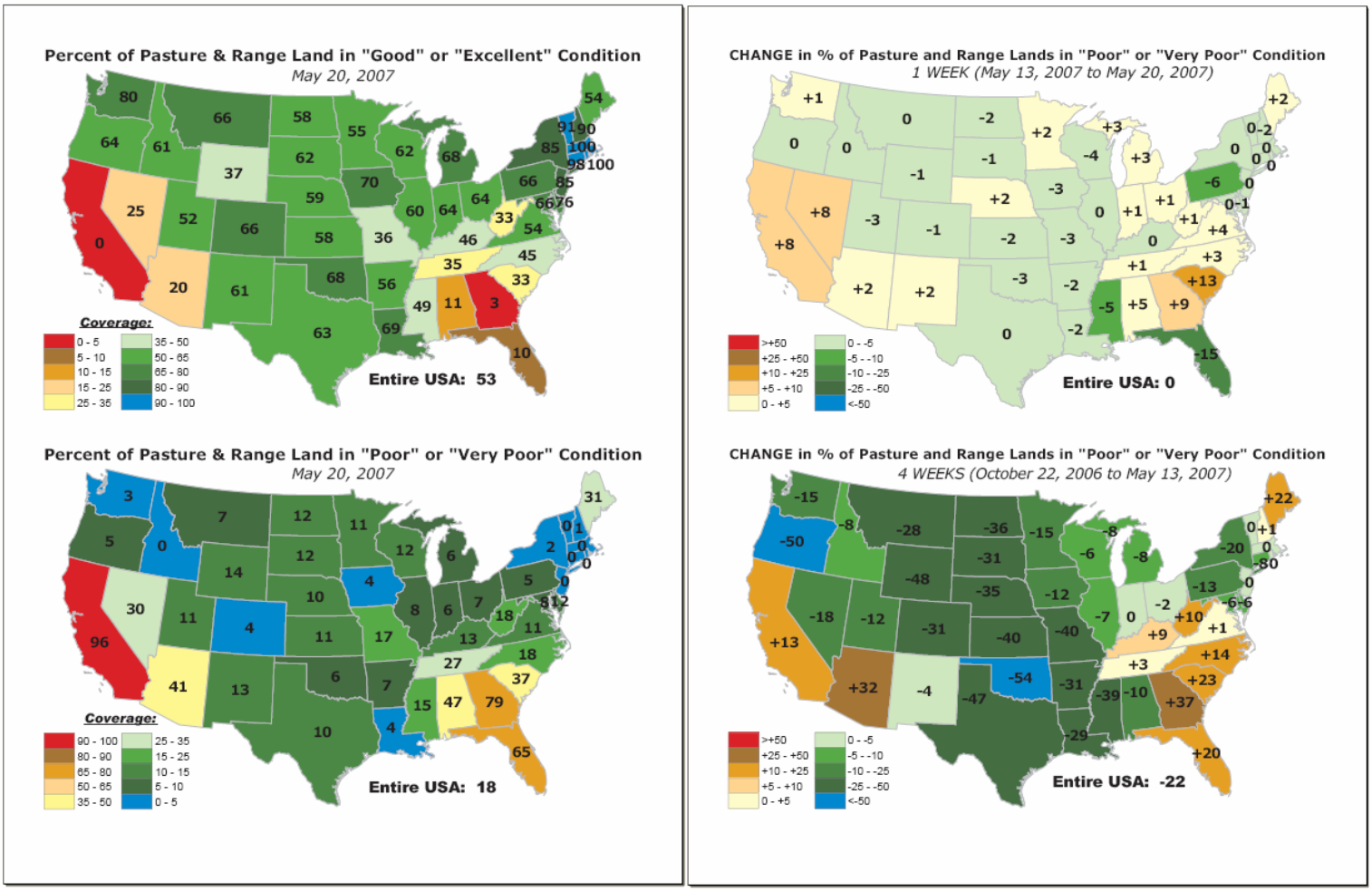


Fig. 8. Pasture and range land conditions for various time periods. Note worsening pasture in California and Nevada by 8% for the past week (upper right map) and 32% worsening for Arizona during the past four weeks (lower right map).
Ref: http://www.cpc.ncep.noaa.gov/products/predictions/experimental/edb/pasture-range-statewide-conditions.pdf

National Drought Summary May 22 2007

The West: High pressure was the dominant feature in the region last week, leading to warm temperatures and very little in the way of precipitation. Temperatures once again ranged from 6 to 10 degrees above normal on the week for all but the coastal reaches. Hot on the heels of last week's downturn in Wyoming's statewide average snow water equivalent levels, they once again saw a large drop of 16%, leaving them at a dismal 28% of average after being at just 69% of average two weeks ago. In California, the drought continues to encroach on more of coastal California with the advancement northward of D2(A) and D3(A) up into the San Francisco Bay region. Pasture and range conditions are exceptionally bad for this time of year with 96% of the state being reported by USDA as poor or very poor. The onset of the dry season doesn't bode well for recovery in these areas and the potential for fires remains high. The Los Angeles vicinity is still on pace to set a record for their driest rain season.

The Plains and Upper Midwest: Finally, there was a bit of a breather last week, allowing most of the Plains an opportunity to dry out some after some recent heavy soakings. Soil moisture reserves are in great shape heading into the summer. Some late- period thunderstorms did rumble out onto the High Plains Monday (5/21) night and this recent rain, coupled with above-normal wetness at longer periods back to the beginning of the year or back to October of last year, has led to some slight improvement of the D0, D1, and D2 areas found in western North Dakota, South Dakota, and Nebraska.

The situation in the Midwest and Great Lakes region remains unchanged this week after last week's deterioration.

The Southeast and Mid-Atlantic: The cooler temperatures last week helped, but essentially all of these two regions were bone dry (except for the southern tip of FL), again with the only significant rains being confined to the southern tip of Florida. This is simply not enough to stave off, or reverse, the persistent drought that is now taking hold on the region as summer approaches. This has led to the slow but steady expansion of D1, D2 and D3 into more of central Tennessee and D1 pushing into southeastern Kentucky. In North Carolina, D1 has spread east to the coast as recent rains haven't been enough to overcome the dryness and deficits that now extend back to the start of the year. All of Alabama is now in at least D1 this week and D2/D3 is spreading over more of the Florida Panhandle. Many locales in northern Florida are running precipitation deficits on the year between 8 to 10 inches or more, which is only 40-60% of normal. Fire danger remains very high over most of the region.

In Georgia, the drought situation continues to worsen quickly as well with all of the state in D2 except for the border counties between Georgia and South Carolina. In addition, D3 has spread across most of the northwestern and southern reaches of the state. Soil moisture reserves are hurting badly at most depths for most areas. According to a drought statement issued by the Georgia State Climate Office this week, all but six counties are in severe or extreme drought and record to near-record low stream flows are being reported all over the state with groundwater levels already falling to levels normally seen in the dry fall season. USDA this week shows 79% of pasture and range land across the state being in poor or very poor condition. The fire danger is very high across the state as well.

Alaska, Hawaii, and Puerto Rico: Significant changes are noted this week in Hawaii where the recent dry weather has led to a deterioration of this week's map. Impacts are starting to pop up on the leeward areas of Oahu, Maui, and the Big Island, so these areas have been downgraded to D1(A). Voluntary water conservation notices and poor forage conditions are being reported in these locales. Conditions remain unchanged over Alaska and Puerto Rico this week.

Looking Ahead: During the next 5 days (May 24-28), another round of active weather is expected across the country's midsection, with cooler temperatures expected to be associated with the potential for heavy rains in the Plains. The Dakotas and drought regions of Minnesota and Wisconsin could see some beneficial rains out of this. In the West, only Wyoming and Montana look to have a shot at needed precipitation. The rest of the West and most of the Southeast (except for some coastal areas along the Gulf and Atlantic) should see a combination of above-normal temperatures and below-normal precipitation as well. Not the best of news for either region. On the brighter side, extreme southern Florida (below Lake Okeechobee) may see some good precipitation in this period.

The 6-10 day outlook (May 29-June 2) is calling for better odds of warmer temperatures across all of the United States except for the southern Plains and Gulf Coast region down into Florida, which are expected to be normal or below-normal. Precipitation prospects don't appear good in Alaska, the West, or the Upper Midwest and western Great Lakes regions. The likelihood of above-normal precipitation is better across the southern Plains, Southeast, and East.

Author: Mark Svoboda, National Drought Mitigation Center

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

Updated May 16, 2007
H ... Hydrological