



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

Weekly Report - Snowpack / Drought Monitor Update **Date: May 3, 2007**

SNOTEL SNOWPACK AND PRECIPITATION SUMMARY

Snowpack: For the 2007 Water Year, snow water-equivalent (SWE) values are near average over portions of the Cascades (WA) and Colorado Front Range (Fig. 1). Elsewhere, melt out continued and at an accelerated pace as a high pressure ridge brought unwelcomed heat over much of the West (Fig. 1). As a result, for the week, SWE decreased (Fig. 1a) and snow depths responded in kind with many areas losing more than two inches per day (Fig. 1b).

Temperature: During the past seven days, temperatures ranged from 10°F below normal over the Northern Cascades to 15°F above normal over much of the Interior West (Fig. 2). Record heat dominated many SNOTEL sites on the last two days in April (Fig. 2a) and this was reflected when Salt Lake City reached 89°F for a new all-time maximum April temperature.

Precipitation: During this report period, the only significant precipitation (rain) that occurred was confined to extreme northwestern Washington and the eastern slope of the Colorado Rockies (Fig. 3). For the Water Year, extreme deficits persist over much of California, western Nevada, and western Arizona. Surpluses exist over New Mexico, the eastern half of Colorado, and to a lesser extent over Montana (Fig. 3a).

WESTERN DROUGHT STATUS

The West: Dry conditions over much of the western United States this last week have not allowed for any reduction in the drought designations for the region. The rainy season continued to be the driest on record for many locations in southern California, with Los Angeles recording only 3.21 inches of rain, 11.56 inches below normal. With May starting a string of several dry months, the 2006-2007 rainy season could go down as the driest since record keeping began in 1877 for Los Angeles. The dryness in southern California is widespread, with Long Beach, Lancaster, Palmdale, and Camarillo all reporting less than 25 percent of normal precipitation as of April 30th. The only change to the drought designation this week was an expansion of D0 and D1 in eastern Oregon. The deterioration is in response to below-normal precipitation and very dry soils in the southeast portions of Oregon.

In response to the recent wet pattern, improvements were made to the current drought situation in both Nebraska and Wyoming. In Nebraska, D0, D1 and D2 designations were pushed farther to the west. Much of the lingering drought in Nebraska is due to long-term hydrological impacts in the region. The changes made in Wyoming corresponded with several rain and snow events that helped to ease drought conditions in the state. In central Wyoming, the D2 conditions were improved and in eastern Wyoming, almost all the D3 was improved as well. D1 conditions in north-central and southeast Wyoming also were improved (Figs. 4 and 4a).

A comprehensive narrative describing drought conditions for the nation can be found at the end of this document.

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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, and 4a).

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.

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/ DANIEL MEYER

Acting Director, Conservation Engineering Division

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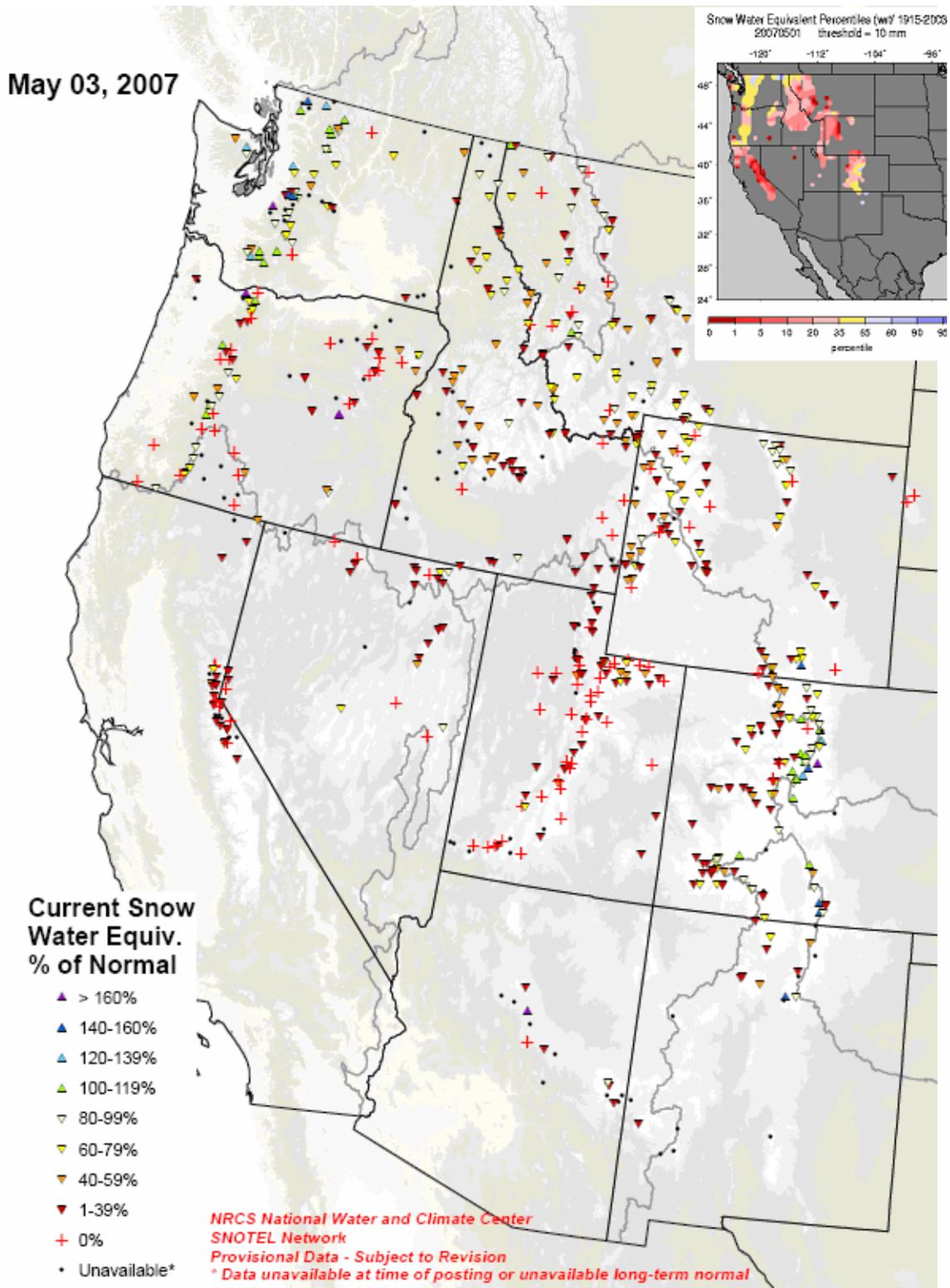


Fig. 1: Snow Water-Equivalent as a percent of normal for Water Year 2007.
 Ref: <ftp://ftp.wcc.nrcs.usda.gov/data/water/wcs/gis/maps/WestwideSWEPercent.pdf>
http://www.hydro.washington.edu/forecast/monitor/curr/CONUS.swe_gnt.gif

Weekly SWE Change

Snow Water Equivalent: Change in Percentiles (wrt/ 1915-2003)
for the week 20070424 to 20070501 threshold = 10 mm

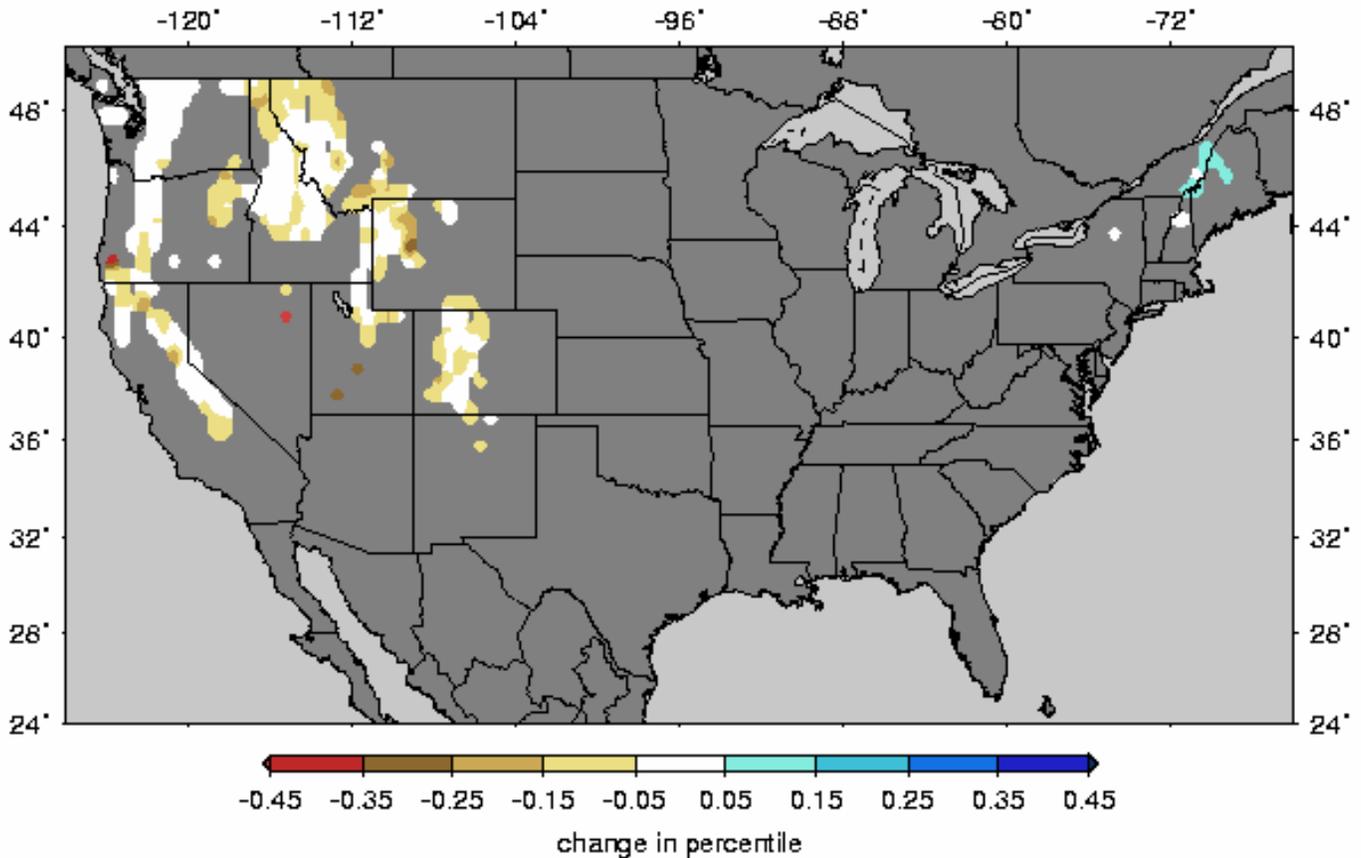


Fig. 1a. Snow Water-Equivalent changes as a percent during the period 24 April to 1 May 2007 based on 1915-2003 climatology. Note the decreased SWE over much of the West.

Ref: <http://www.hydro.washington.edu/forecast/monitor/index.shtml>

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May 03, 2007

7-day Snow Depth Change (inches)

- ✕ > 36" gain
- ▲ 19 - 36"
- ▲ 13 - 18"
- ▲ 4 - 12"
- ▲ 1 - 3"
- ⊖ 0"
- ▼ -3 - -1"
- ▼ -12 - -4"
- ▼ -18 - -13"
- ▼ -36 - -19"
- ◆ < -36" loss
- ⊙ Snow free
- Unavailable*
- ⚡ data spike

* Data unavailable at time of posting or snow depth sensor not available at site
 ** A "data spike" is a gain or loss of more than 100 inches in 7 days

*Provisional Data
 Subject to Revision*

0 50 100 200 Miles



Prepared by the
 USDA/NRCS National Water and Climate Center
 Portland, Oregon
<http://www.wcc.nrcs.usda.gov/gis/>

Automated snow depth measurements are known to occasionally read spuriously large during precipitation events. Snow depth is also difficult to accurately measure at near-snow free conditions; data should be used with caution.

Fig. 1b. SNOTEL 7-day snow depth change reflects recent heat wave over the Rocky Mountains.

Ref: <http://ftp.wcc.nrcs.usda.gov/data/water/wcs/gis/maps/WestwideTavg7dAnomaly.pdf>

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May 03, 2007

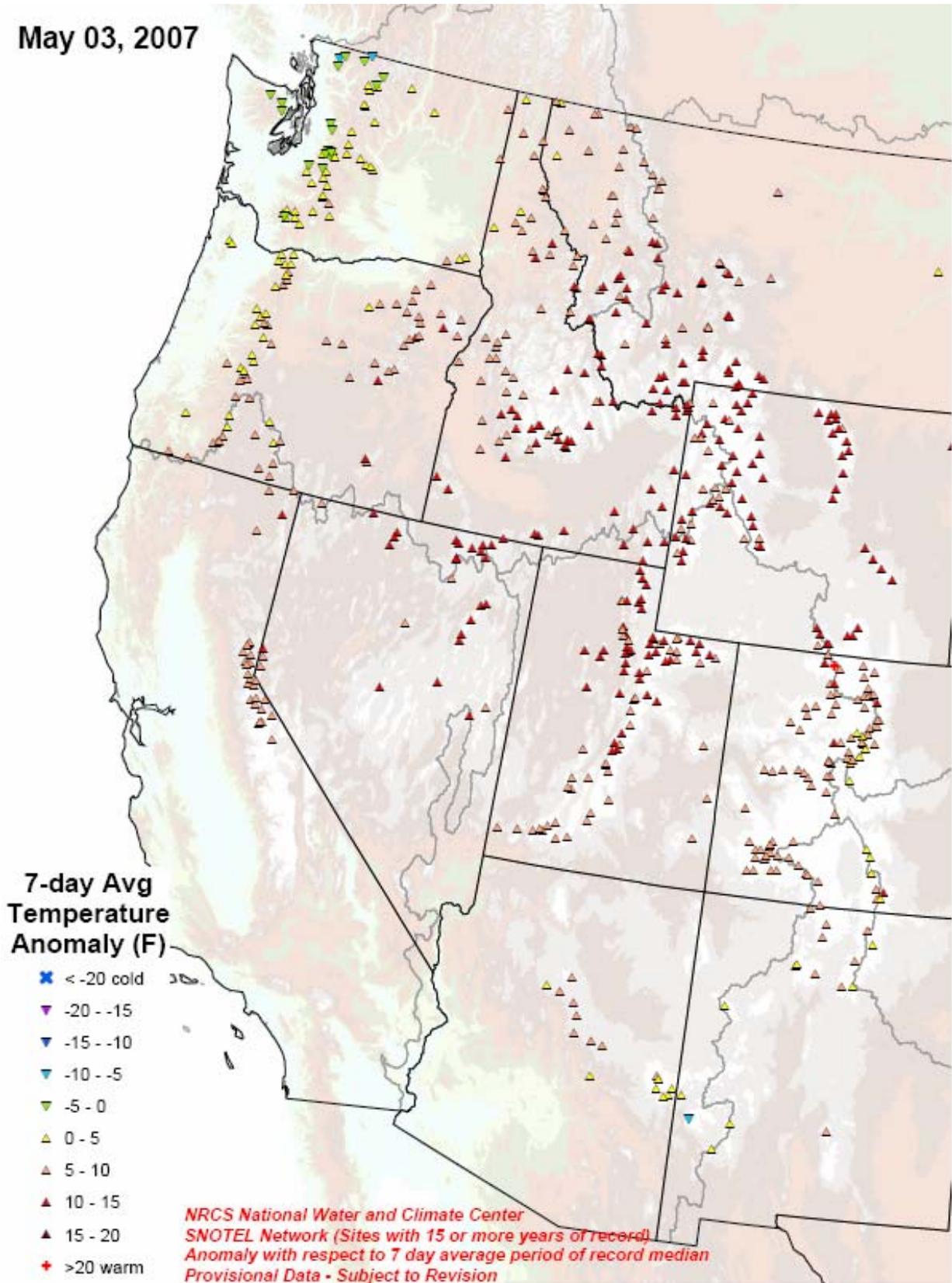


Fig. 2. SNOTEL 7-day average temperature anomaly.

Ref: <ftp://ftp.wcc.nrcs.usda.gov/data/water/wcs/gis/maps/WestwideTavg7dAnomaly.pdf>

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Apr 30, 2007

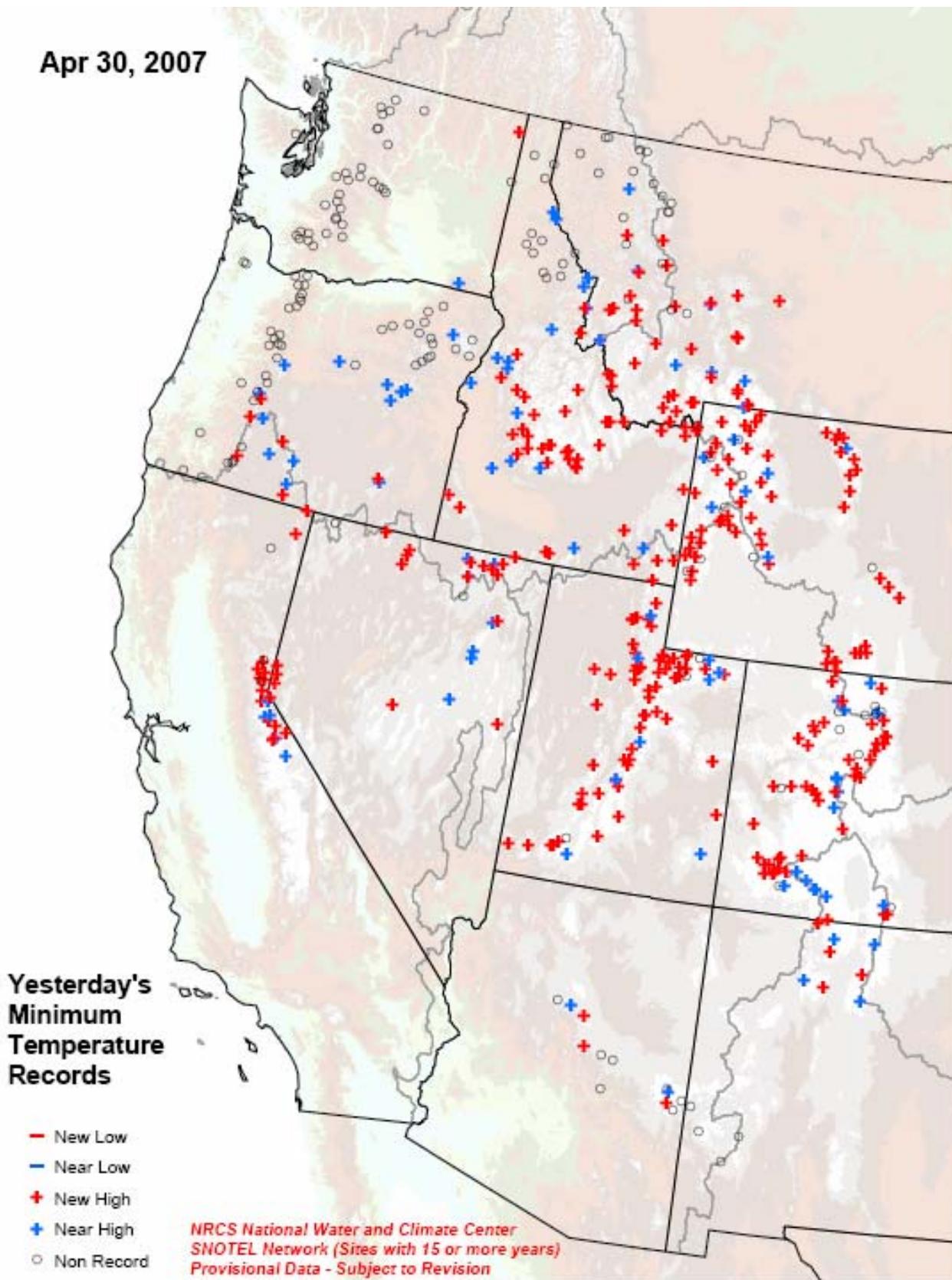


Fig. 2a. SNOTEL record and near record high minimum temperatures on 29 April 2007.

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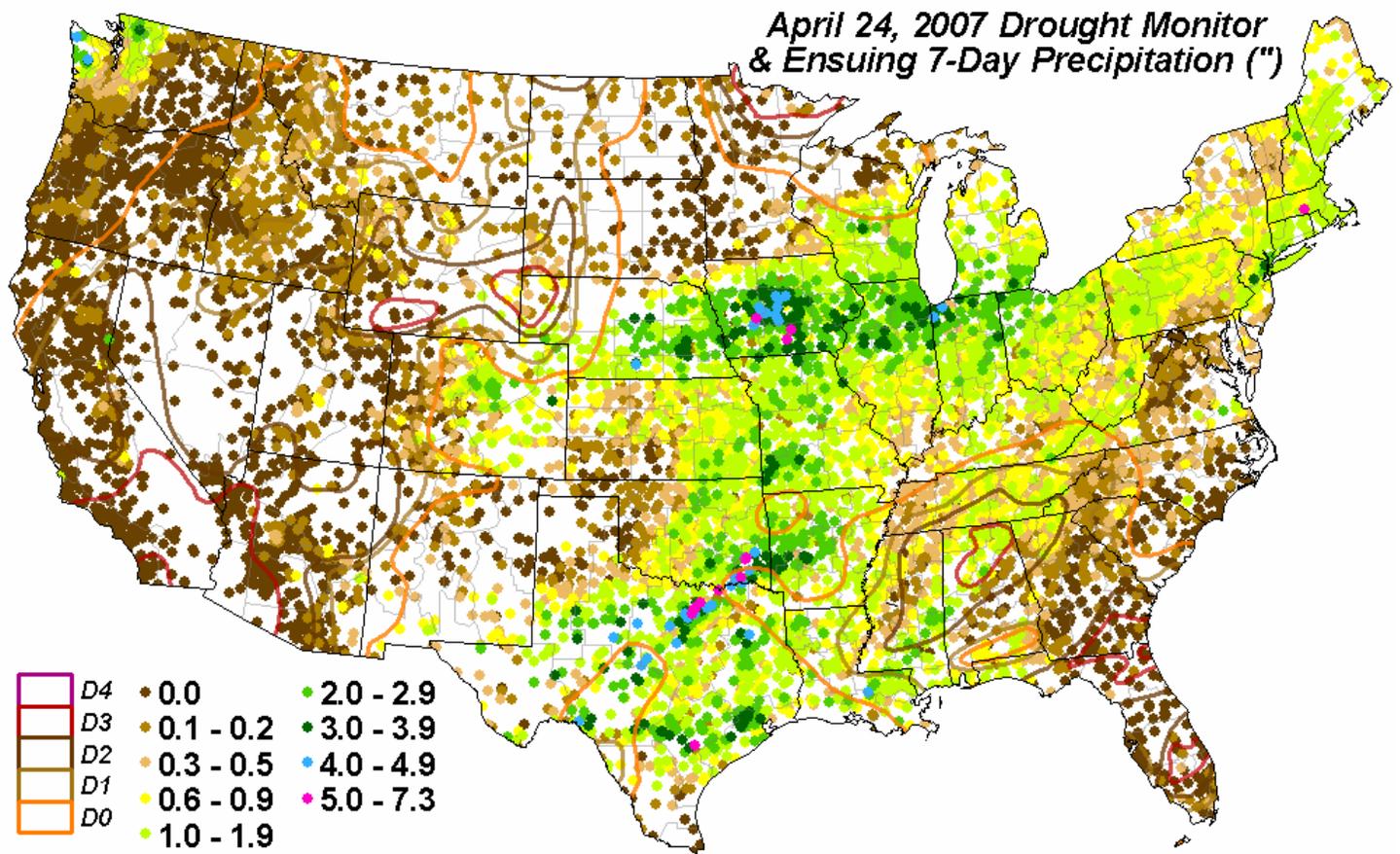


Fig. 3. Preliminary precipitation totals as a percent of normal for the 7-day period ending 1 May 2007.
Ref: <http://www.cpc.ncep.noaa.gov/products/predictions/experimental/edb/usdm-precip-overlay.gif>

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May 03, 2007

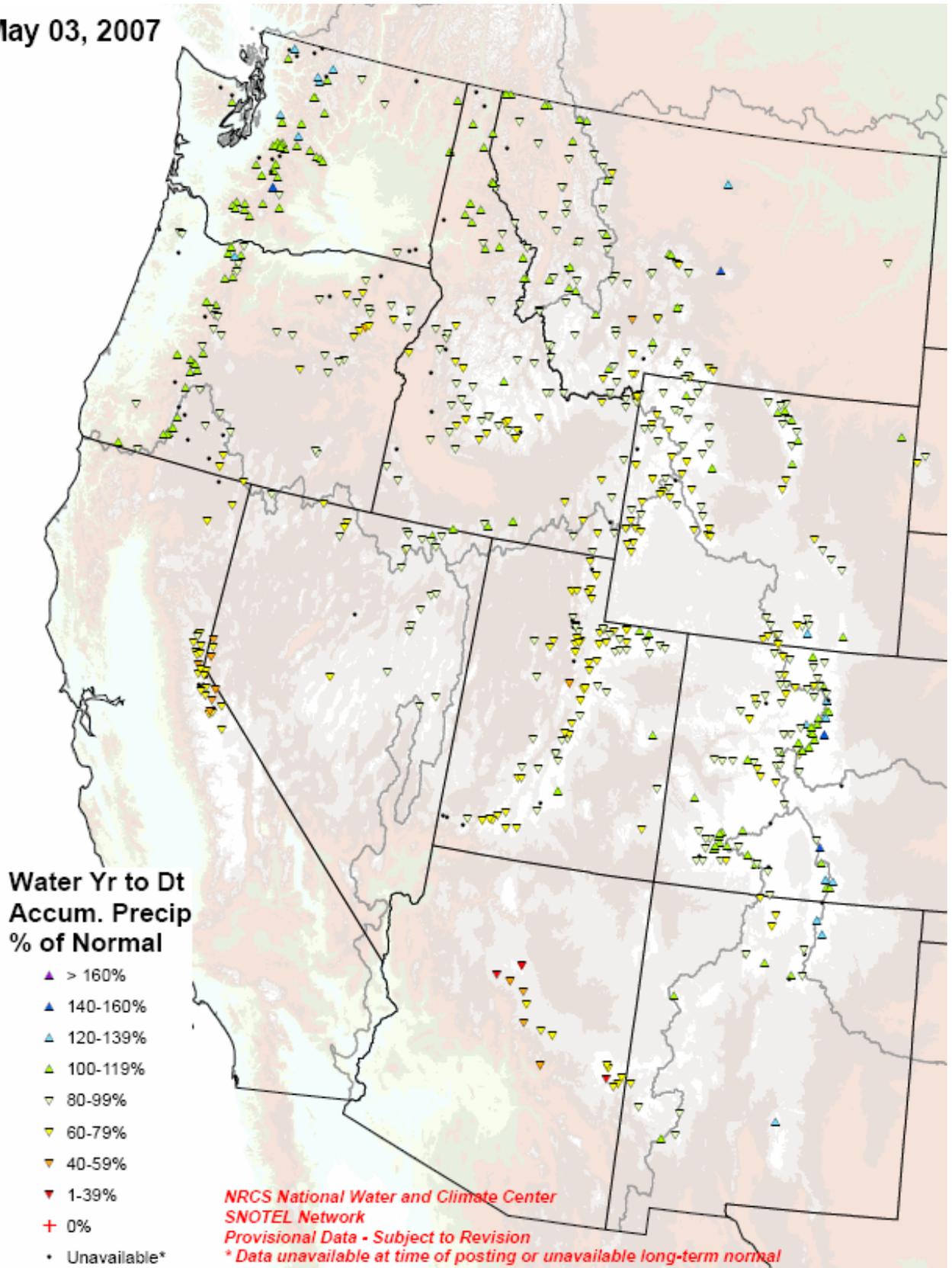


Fig. 3a. SNOTEL station water year (since October 1) precipitation as a percent of normal.
Ref: <ftp://ftp.wcc.nrcs.usda.gov/data/wcs/gis/maps/WestwideWYTDPPrecipPercent.pdf>

U.S. Drought Monitor

May 1, 2007
Valid 8 a.m. EDT

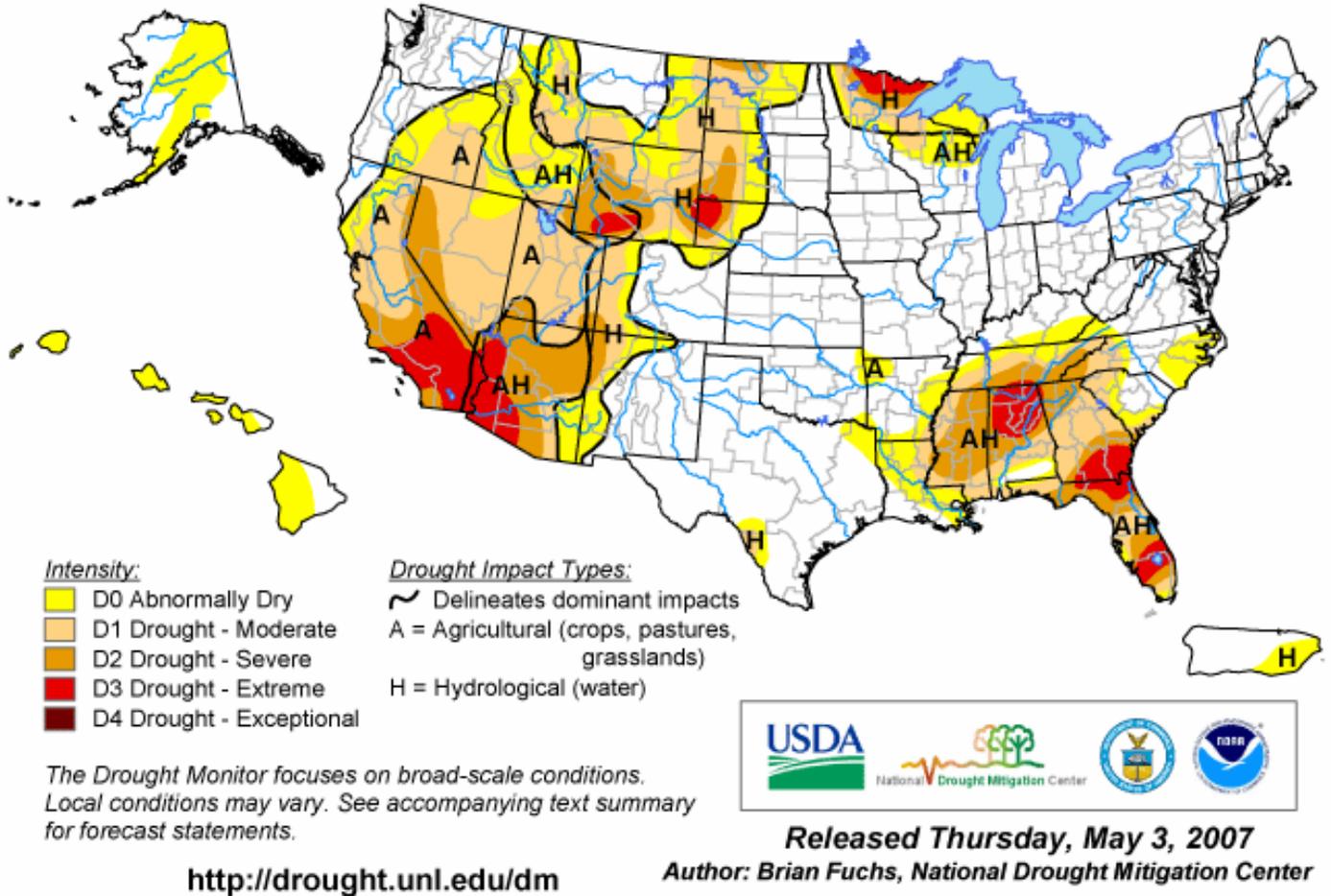


Fig. 4. Current Drought Monitor weekly summary.

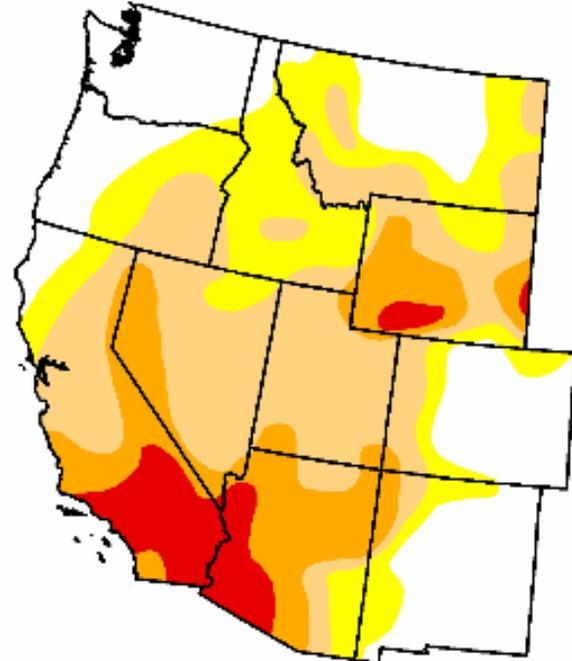
Ref: National Drought Mitigation Center (NDMC) - <http://www.drought.unl.edu/dm/monitor.html>

U.S. Drought Monitor West

May 1, 2007
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	27.9	72.1	51.7	21.7	6.6	0.0
Last Week (04/24/2007 map)	28.5	71.5	51.5	22.1	6.8	0.0
3 Months Ago (02/06/2007 map)	40.5	59.5	32.6	18.2	5.0	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 (05/02/2006 map)	62.2	37.8	27.1	17.7	6.4	1.5



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 3, 2007

Author: Brian Fuchs, National Drought Mitigation Center

Fig 4a. 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)
20070501

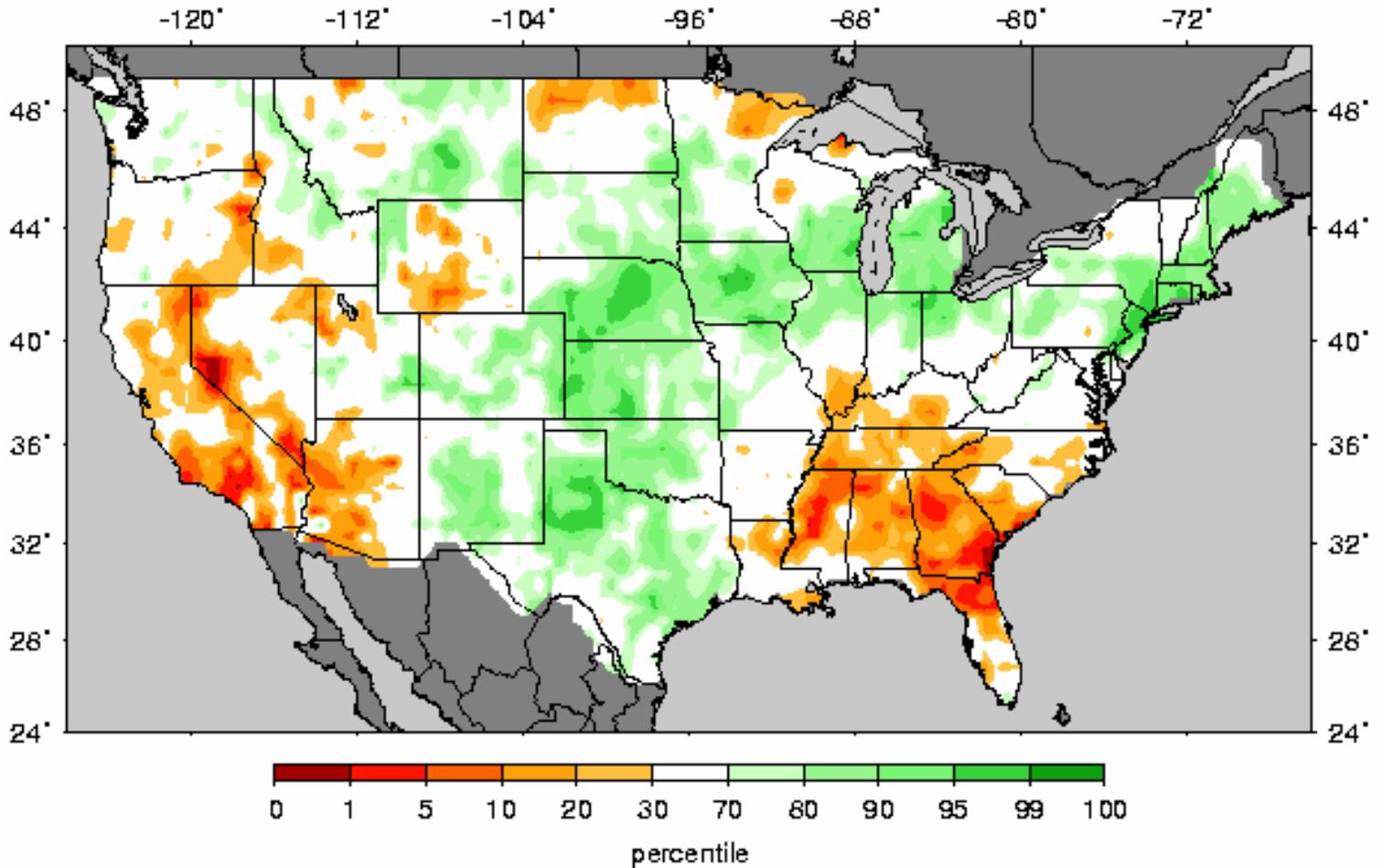


Fig. 5: Soil Moisture Ranking Percentile based on 1915-2003 climatology. (source: Univ. of Washington). Ref: http://www.hydro.washington.edu/forecast/monitor/curr/CONUS.sm_qnt.gif

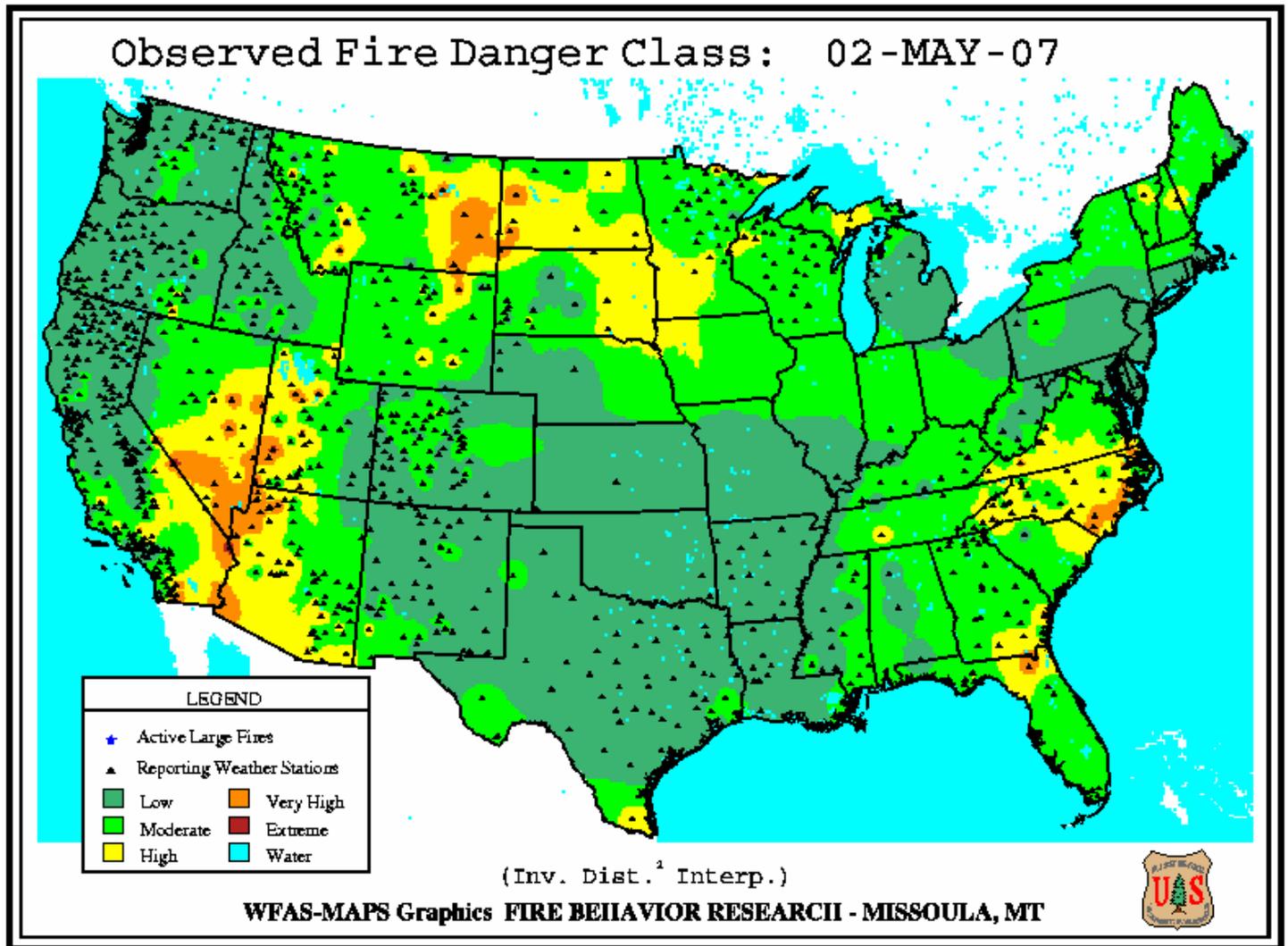
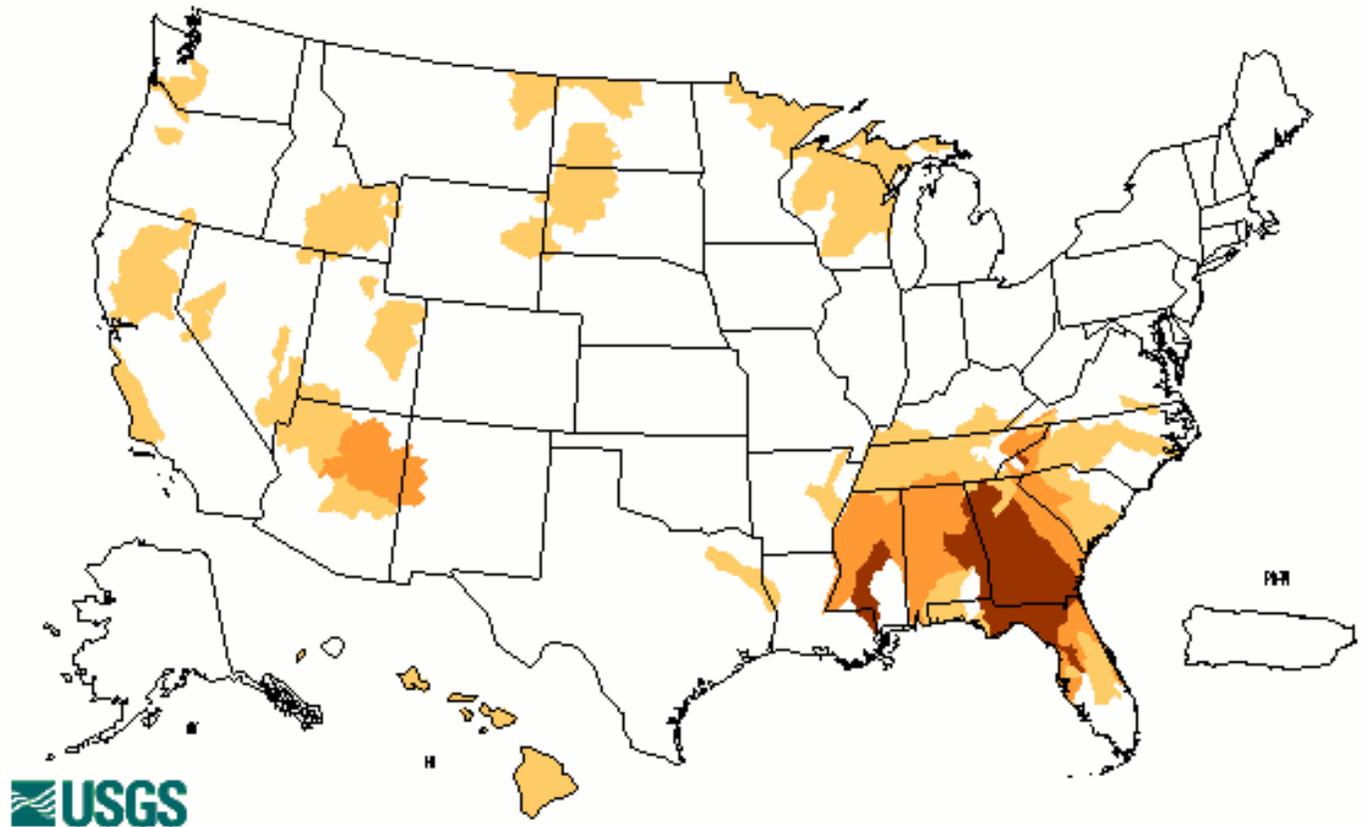


Fig. 6. Observed Fire Danger Class. Source: Forest Service Fire Behavior Research – Missoula, MT
Ref: http://www.fs.fed.us/land/wfas/fd_class.gif

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Wednesday, May 02, 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. 7. Map of below normal 7-day average streamflow compared to historical stream flow for the day of the year. Ref: USGS <http://water.usgs.gov/waterwatch/?m=dryw&w=map&r=us>

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National Drought Summary -- May 1, 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: Dry conditions over much of the western United States this last week have not allowed for any reduction in the drought designations for the region. The rainy season continued to be the driest on record for many locations in southern California, with Los Angeles recording only 3.21 inches of rain, 11.56 inches below normal. With May starting a string of several dry months, the 2006-2007 rainy season could go down as the driest since record keeping began in 1877 for Los Angeles. The dryness in southern California is widespread, with Long Beach, Lancaster, Palmdale, and Camarillo all reporting less than 25 percent of normal precipitation as of April 30th. The only change to the drought designation this week was an expansion of D0 and D1 in eastern Oregon. The deterioration is in response to below-normal precipitation and very dry soils in the southeast portions of Oregon.

The Plains and Upper Midwest: Another wet week over much of the central Plains and Midwest this week. Many locations received in excess of 2 inches of rain this week, with some lowland flooding taking place as well. In response to the recent wet pattern, improvements were made to the current drought situation in both Nebraska and Wyoming. In Nebraska, D0, D1 and D2 designations were pushed farther to the west. Much of the lingering drought in Nebraska is due to long-term hydrological impacts in the region. The changes made in Wyoming corresponded with several rain and snow events that helped to ease drought conditions in the state. In central Wyoming, the D2 conditions were improved and in eastern Wyoming, almost all the D3 was improved as well. D1 conditions in north-central and southeast Wyoming also were improved. Conditions in North Dakota continued to be dry throughout the state, which has allowed for the expansion of all drought designations to the east to include more of the northern portions of the state. Most of the rains also missed the drought areas in Minnesota and Wisconsin. D0 and D1 designations were expanded in northwest Wisconsin in response to the dry conditions.

Conditions were improved over southern Texas, where D0 was reduced over the region in response to recent rains. D0 was also improved along the Oklahoma/Texas border, where the western edge of the D0 was reduced. D0 was expanded in northeast Oklahoma to the north, which has missed out on most of the recent rains.

The Delta and Southeast: Drought conditions continued to worsen over the region this week. Much of the Southeast was dry, with normal precipitation falling in parts of Mississippi, Alabama and Tennessee. This rain made little impact on the drought conditions, with further deterioration being depicted for the region. Fires continue to be a problem in much of the Southeast, and Georgia and Florida have reported numerous wildfires. In Florida, since January 1st, there have been 1,859 fires which have burned 159,407 acres in the state. Conditions are similar to those observed in 1998, when more than 300 homes and businesses burned to the ground across the state. Lake Okeechobee continues to draw near-record low elevations. Currently, Lake Okeechobee is at 9.66 feet, which is less than one foot from the record low elevation of 8.97

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feet recorded in May 2001. Water restrictions are spreading across much of central and south Florida in an effort to conserve as much water as possible. Drought designations were expanded in Florida this week. D3 was expanded west to the coast while D2 conditions expanded to the north and west for southern Florida. Farther to the north, D3 was also expanded to cover more of the north-central portion of the state.

Conditions in Alabama continued to worsen. Many locations have precipitation deficits greater than 10 inches for the year, and approaching 20 inches over the last 14 months. D3 conditions were expanded to include much of the northern half of Alabama, while D2 conditions migrated farther to the south as well. D2 conditions were introduced into eastern Tennessee and western North Carolina and more of eastern Mississippi. Low streamflow conditions and low soil moisture levels were evident through much of these regions. In eastern North Carolina, D0 was introduced along the coastal plain, as drying soils and a high fire danger are being reported from this region.

Looking Ahead: During the next 5 days (May 3-7) temperatures should be warmer than normal over much of the Midwest and Plains. With a southerly wind component, ample moisture will also push into the region. The heaviest rains are expected over much of the northern Plains and Midwest, with the greatest amounts forecasted over the Dakotas, Wyoming, Texas, and the Mississippi Valley. Temperatures should remain cool over the West and along the East Coast. New England looks to remain dry during this time, with the Pacific Northwest, northern Rocky Mountains and Southeast seeing some rain during this time as well.

The 6-10 day outlook (May 8-12) does not change much from the 5-day outlook. Temperatures continue to be warm over much of the United States, with average temperatures expected to be well above normal over the Great Lakes region. Below-normal temperatures may be observed over southern Florida, the Pacific Northwest, and northern Alaska. The midsection of the country will be the center for above-normal precipitation as the south and southeast regions should continue to be below normal. The best chances for above-normal precipitation appear to be over the eastern Dakotas, Minnesota, Wisconsin and Iowa. Several areas are showing a strong probability for below-normal precipitation, including Alaska, New England, southern Florida, south Texas and portions of the Southeast.

Author: [Brian Fuchs, 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

H ... Hydrological

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Updated May 2, 2007