



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

Weekly Report - Snowpack / Drought Monitor Update **Date: May 10, 2007**

SNOTEL SNOWPACK AND PRECIPITATION SUMMARY

Snowpack: For the 2007 Water Year, snow water-equivalent (SWE) remains slightly above normal over isolated regions of the Northern Cascades (WA) and along the Front Range of the Colorado Rockies. Near normal values exist over the remainder of the Cascades, Bighorn Mountain (WY), and Southern Colorado Rockies. Elsewhere, SWE readings are down below the 10 percentile level (e.g., low levels experienced every decade or longer) for this time of year (Fig. 1). If there was a silver lining concerning SWE, last weekend's wet snowfall over Colorado, Wyoming and Idaho occurred (Fig. 1a). However, significant warming returned over the Northern Rockies later in this report period and this resulted in a net weekly snow depth gain only over portions of Wyoming, and Colorado. Where snow cover persists, depths have decreased by a foot in most locations (Fig. 1b).

Temperature: During the past seven days, temperatures increased over the northern half of the West (~5°F) and have decreased over the southern half up to ~10°F in Utah (Fig. 2). However, high pressure and warmth has returned over all but the Pacific Northwest during the last 24 hours (Fig. 2a). This pattern of excessive heat (and dryness) is expected to persist and expand across the entire West for at least the next two weeks.

Precipitation: During this report period, all but Southern California and most of Arizona experienced some precipitation (Fig. 3). For the Water Year, above normal totals exist over the Cascades, Bighorn Mountains, and Colorado-New Mexico Rockies. Closer to normal amounts continue over the Northern Rockies (MT). Much below normal conditions persist over the Arizona Mountains (Fig. 3a).

WESTERN DROUGHT STATUS

The West: Rain was quite common and widespread through much of the West this last week. Almost all regions saw some rain except for southern California, Arizona and southern Nevada. The only change in drought status this week was in Montana, where much of the D0 and D1 in eastern Montana were improved. Reports of impacts related to the drought in California continued to come in as cattlemen were contemplating selling off portions of their herds because of lack of available forage and beekeepers were reporting significant losses in both bees and honey production. The lack of rain has not allowed for the usual green-up of pastures and rangelands utilized by cattlemen, forcing them to make tough business decisions. The lack of flowering plants has hurt bees searching for available food sources. Along with a continued heightened fire danger in California, reports of wildlife moving into residential areas looking for food and water have surfaced as well.

In South Dakota, the following totals were recorded: Epiphany, 10.00 inches, Canova, 9.00 inches, and Aberdeen, 9.00 inches. With widespread rain, improvements were made to the drought status in many locations. In Nebraska, eastern Wyoming and South Dakota the lingering D3 was removed, and D2 was reduced in the west central part of South Dakota. D0 and D1 conditions continued to be shifted to the west in both South Dakota and Nebraska. In

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Wyoming, D0 was removed in the northeast and D1 conditions were pushed farther to the east. D1 conditions were improved in the eastern sections of the state as well (Figs. 4 and 4a).

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, 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.

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/s/ NOLLER HERBERT
Acting Director, Conservation Engineering Division

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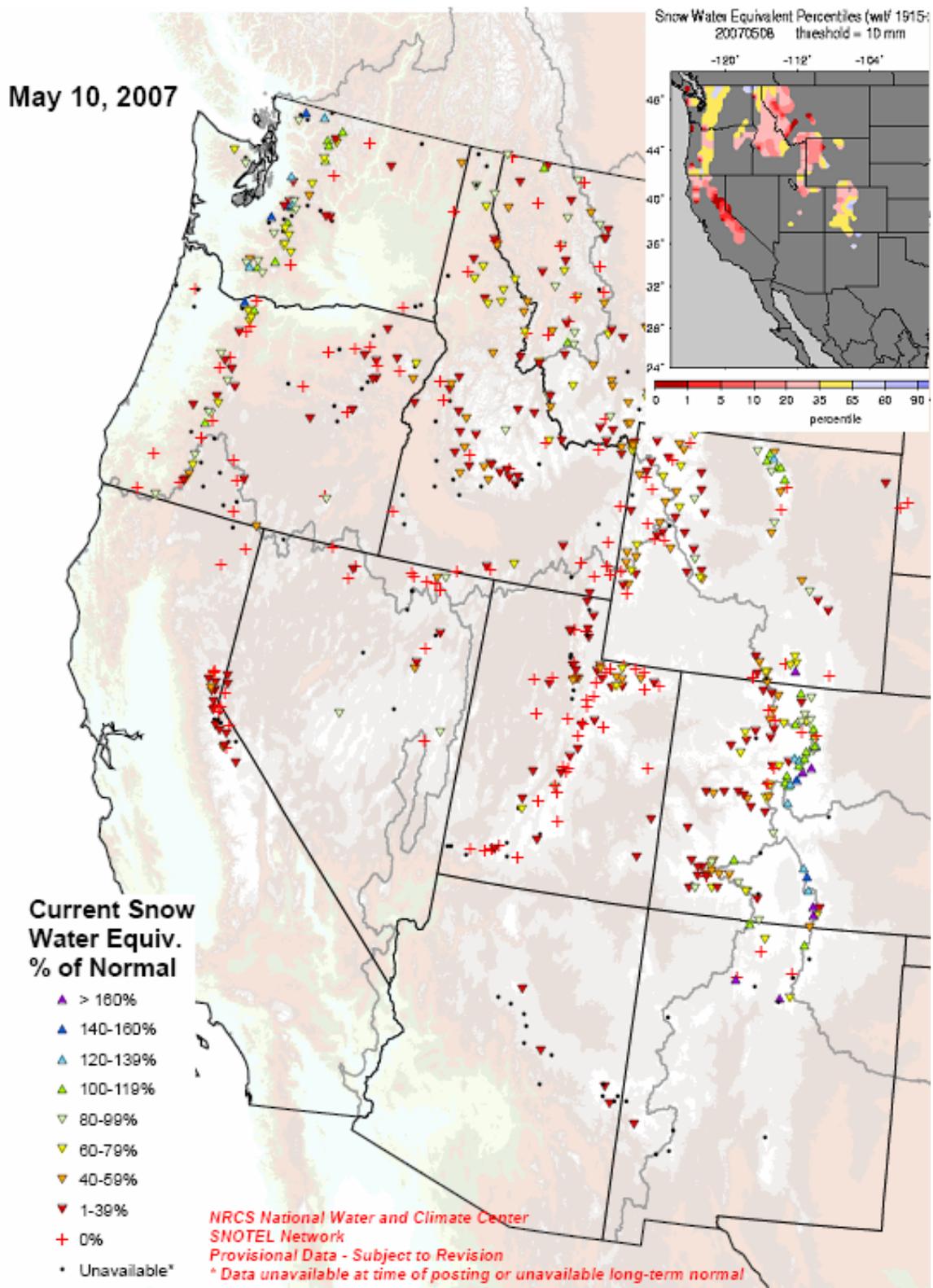


Fig. 1: Snow Water-Equivalent as a percent of normal for Water Year 2007.
 Ref: <ftp://ftp.wcc.nrcs.usda.gov/data/water/wcs/gis/maps/WestwideSWEPercent.pdf>
 (insert) http://www.hydro.washington.edu/forecast/monitor/curr/CONUS.swe_qnt.gif

Weekly SWE Change

Snow Water Equivalent: Change in Percentiles (wrt/ 1915-2003)
for the week 20070501 to 20070508 threshold = 10 mm

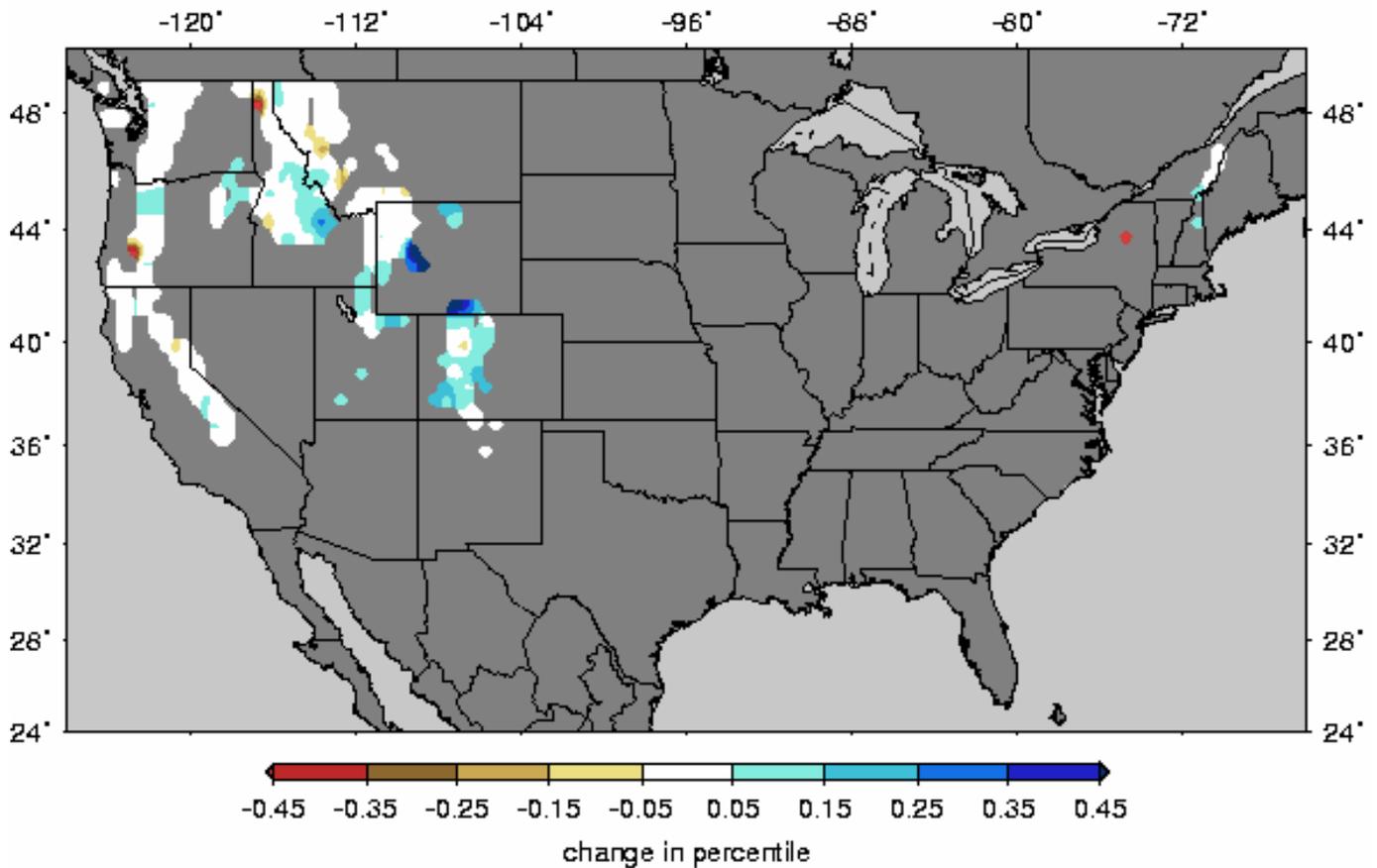


Fig. 1a. Snow Water-Equivalent changes as a percent during the period 1 to 8 May 2007 based on 1915-2003 climatology. Note the increase SWE over Colorado, Wyoming, and Idaho.
Ref: <http://www.hydro.washington.edu/forecast/monitor/index.shtml>

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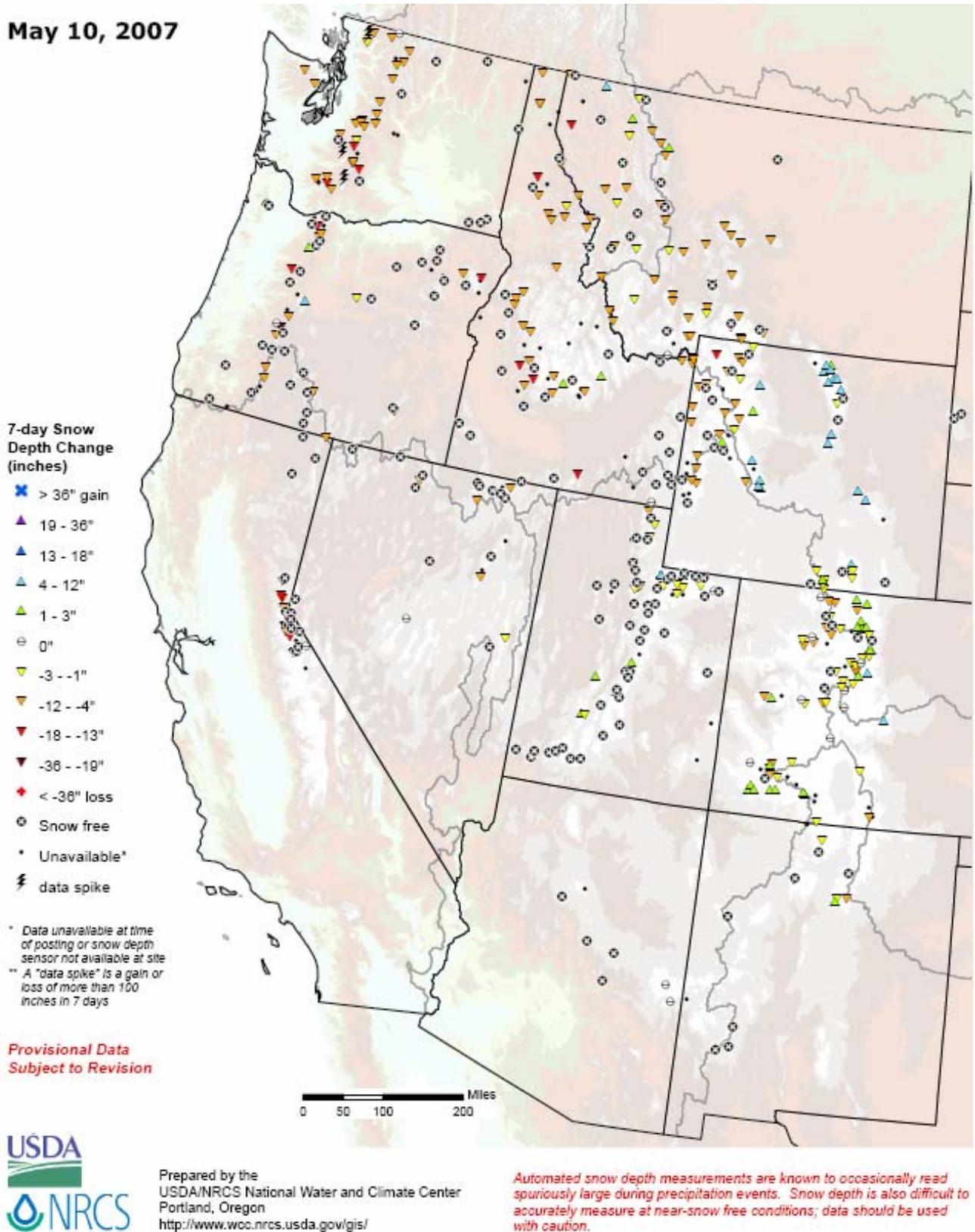


Fig. 1b. SNOTEL 7-day snow depth change reflects the perhaps the last snowfall of the season over Wyoming and for the West.

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

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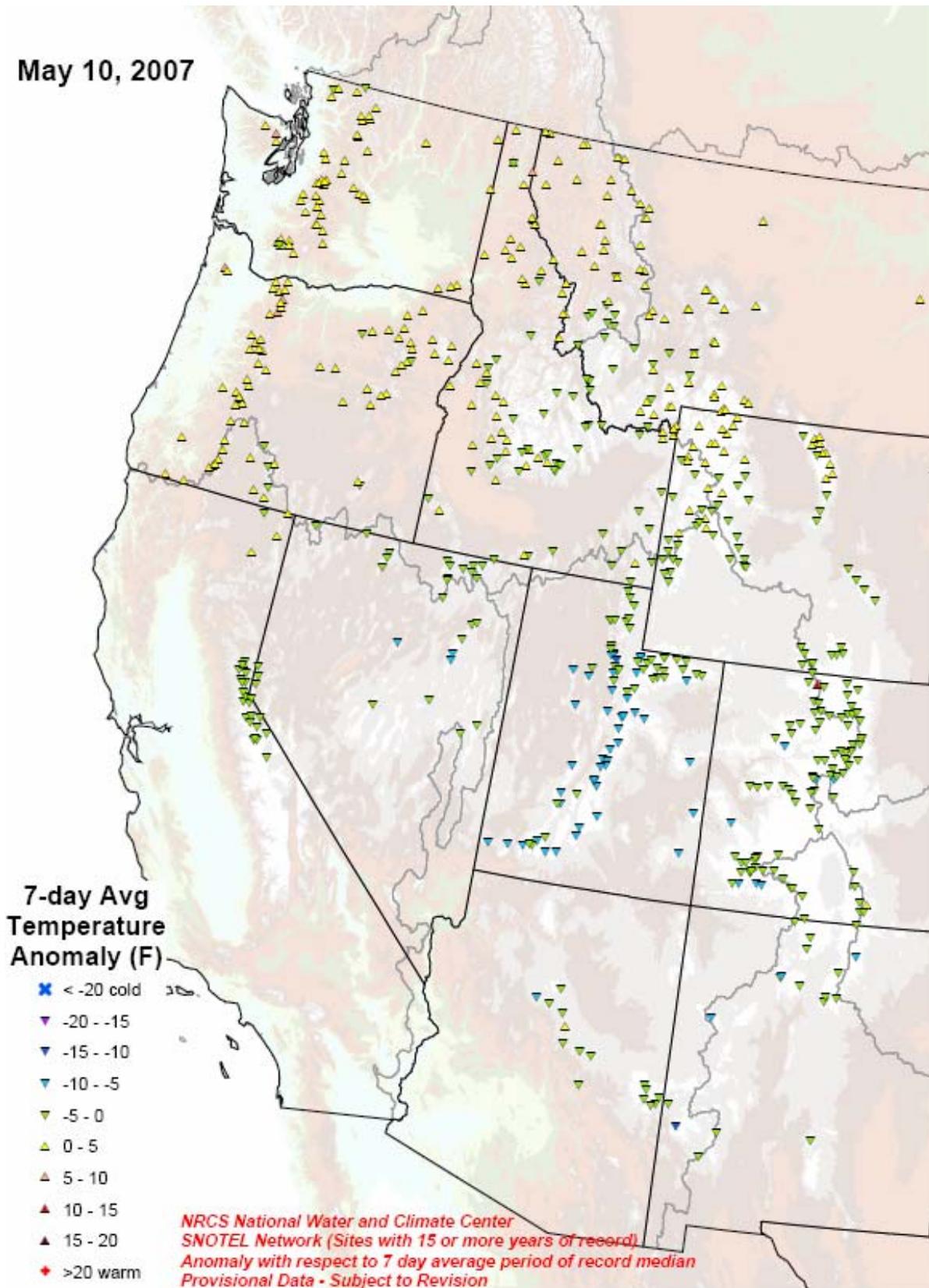


Fig. 2. SNOTEL 7-day average temperature anomaly.

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

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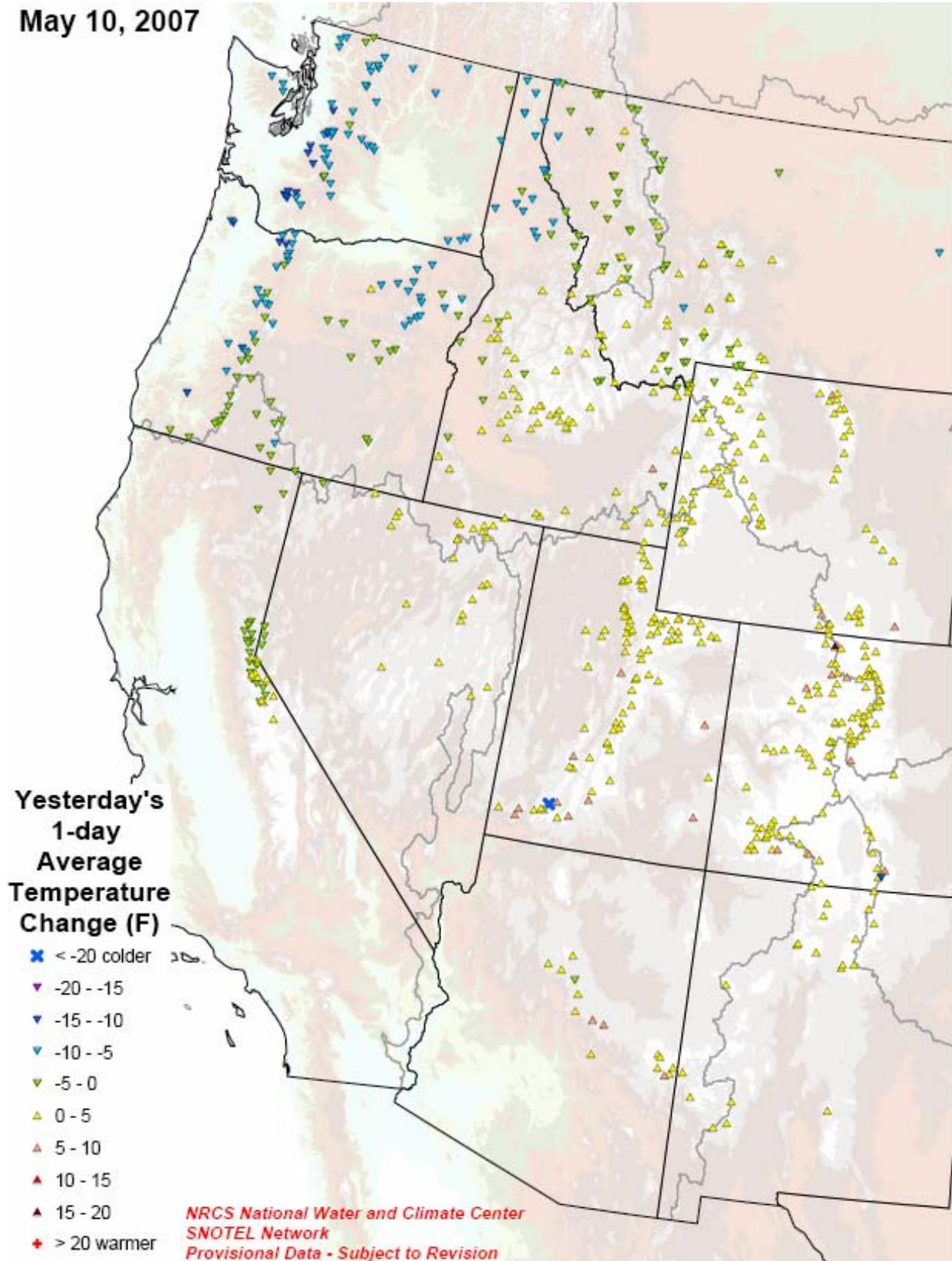


Fig. 2a. SNOTEL temperature change during 24 hours.

Ref: <ftp://ftp.wcc.nrcs.usda.gov/data/water/wcs/gis/maps/WestwideTavg1ddelta.pdf>

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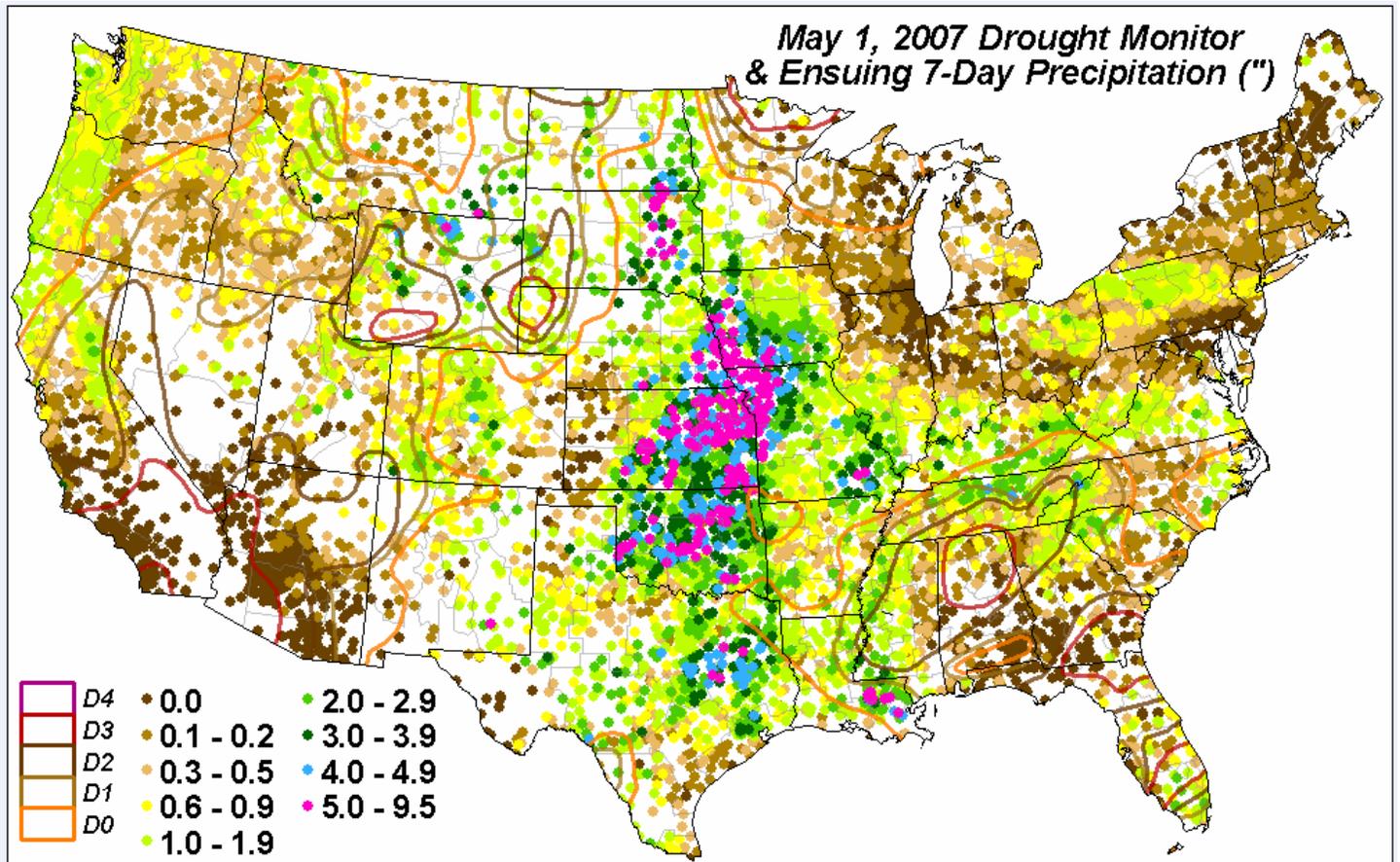


Fig. 3. Preliminary precipitation totals as a percent of normal for the 7-day period ending 8 May 2007. The area of heavy precipitation over the Great Plains was the location of a large tornado outbreak last weekend.

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

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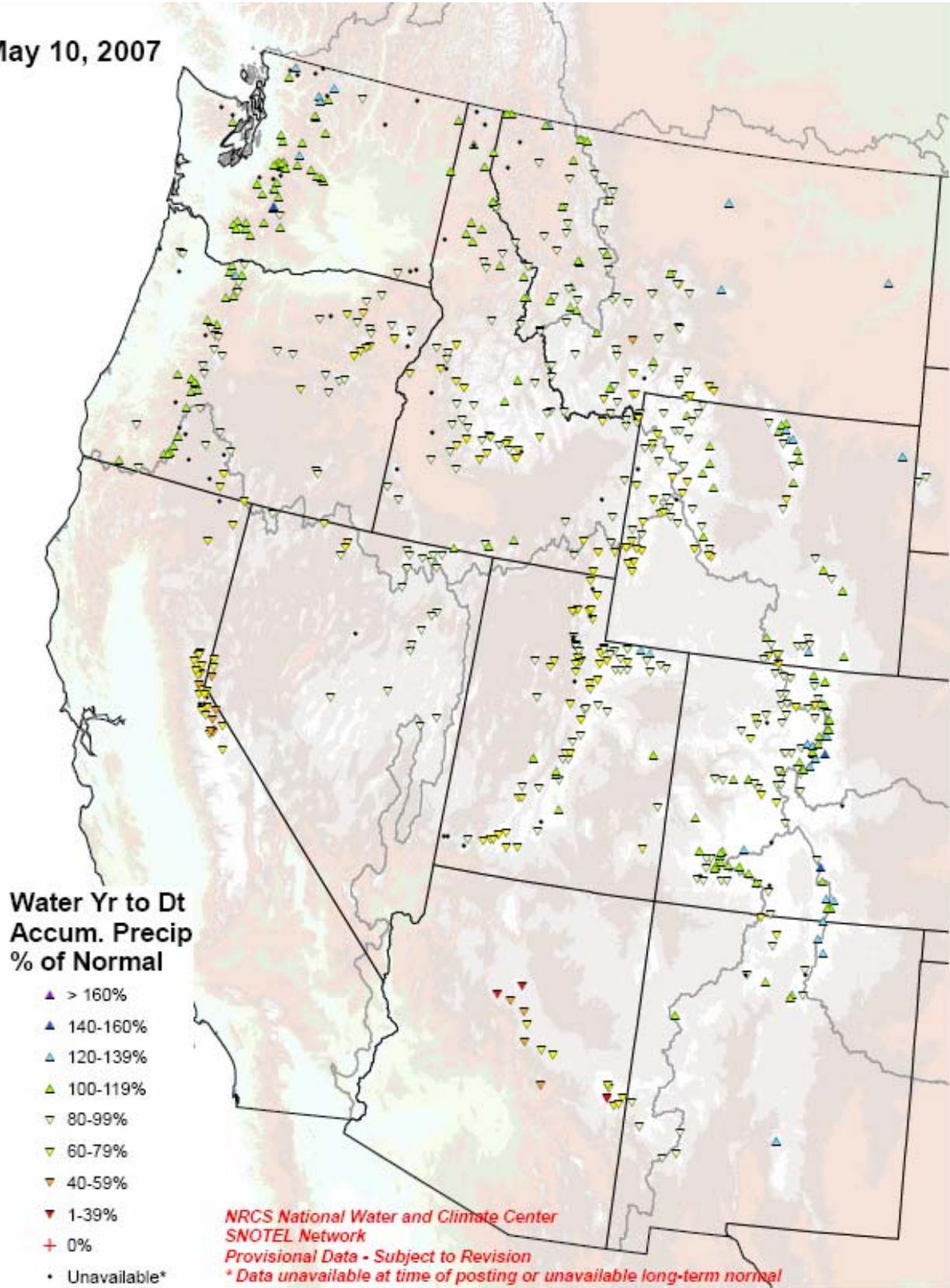
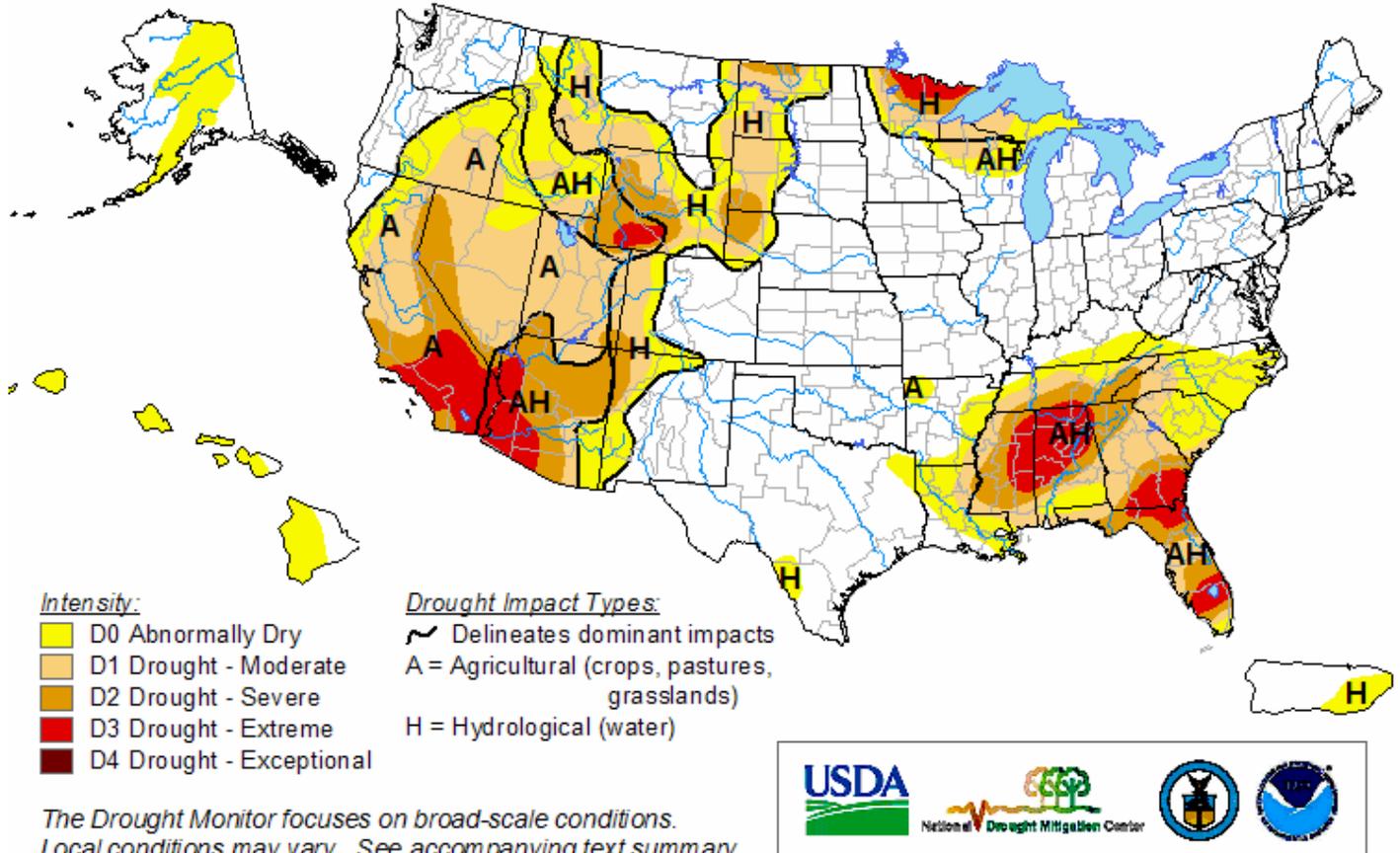


Fig. 3a. SNOTEL station water year (since October 1) precipitation as a percent of normal.
Ref: <ftp://ftp.wcc.nrcs.usda.gov/data/wcs/gis/maps/WestwideWYTDPrecipPercent.pdf>

U.S. Drought Monitor

May 8, 2007
Valid 8 a.m. EDT



Released Thursday, May 10, 2007

Author: Brian Fuchs, National Drought Mitigation Center

Fig. 4. Current Drought Monitor weekly summary.

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

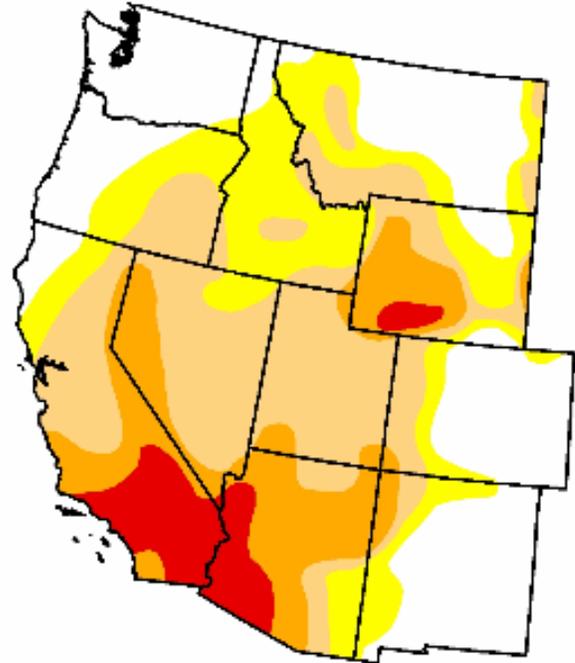
U.S. Drought Monitor

West

May 8, 2007
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	31.1	68.9	49.3	21.2	6.5	0.0
Last Week (05/01/2007 map)	27.9	72.1	51.7	21.7	6.6	0.0
3 Months Ago (02/13/2007 map)	41.7	58.3	33.2	18.9	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 (05/09/2006 map)	61.8	38.2	28.0	18.2	11.2	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 10, 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)
20070508

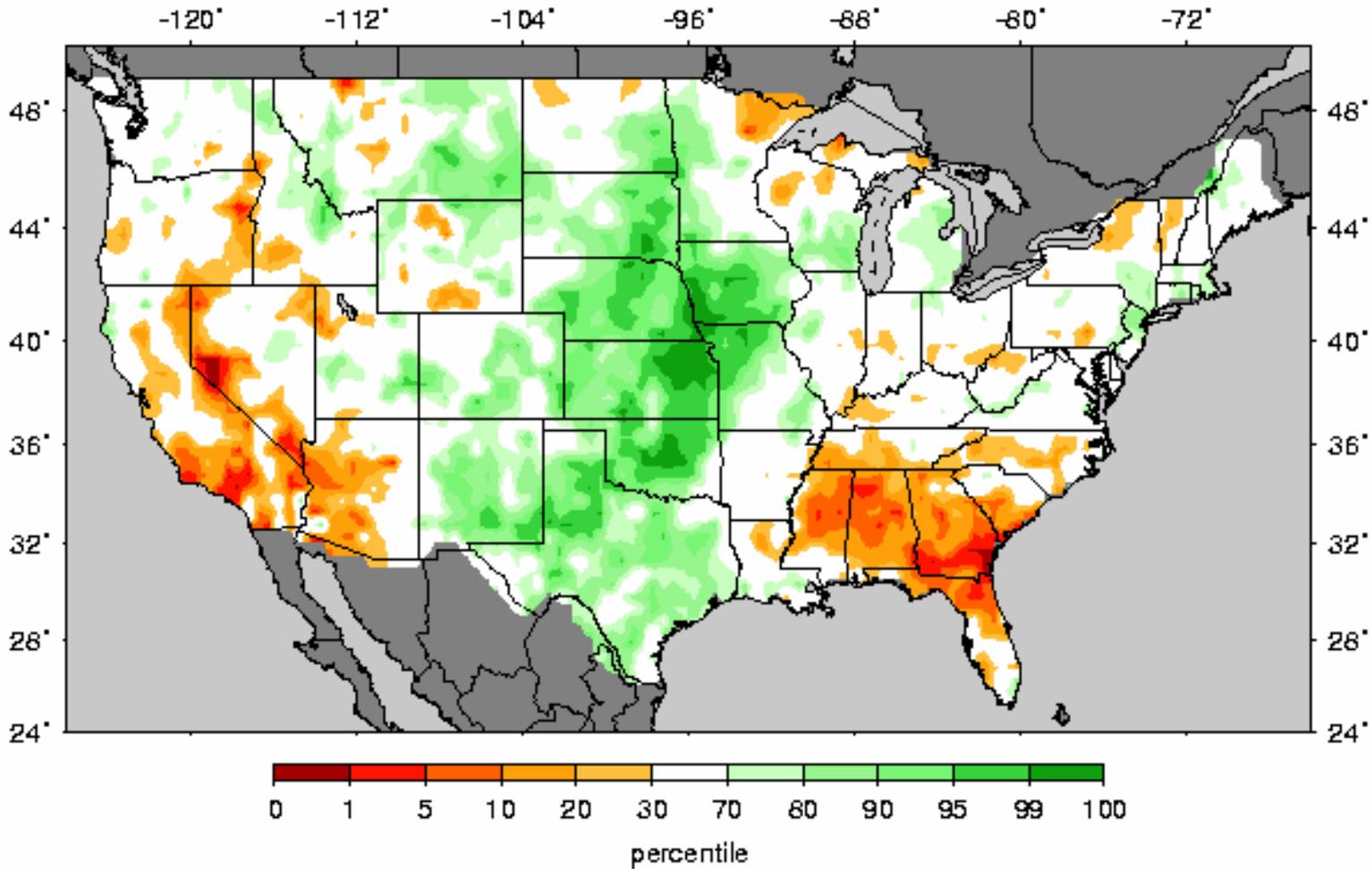


Fig. 5: Soil Moisture Ranking Percentile based on 1915-2003 climatology. (source: Univ. of Washington). Ref: http://www.hydro.washington.edu/forecast/monitor/curr/CONUS.sm_qnt.gif

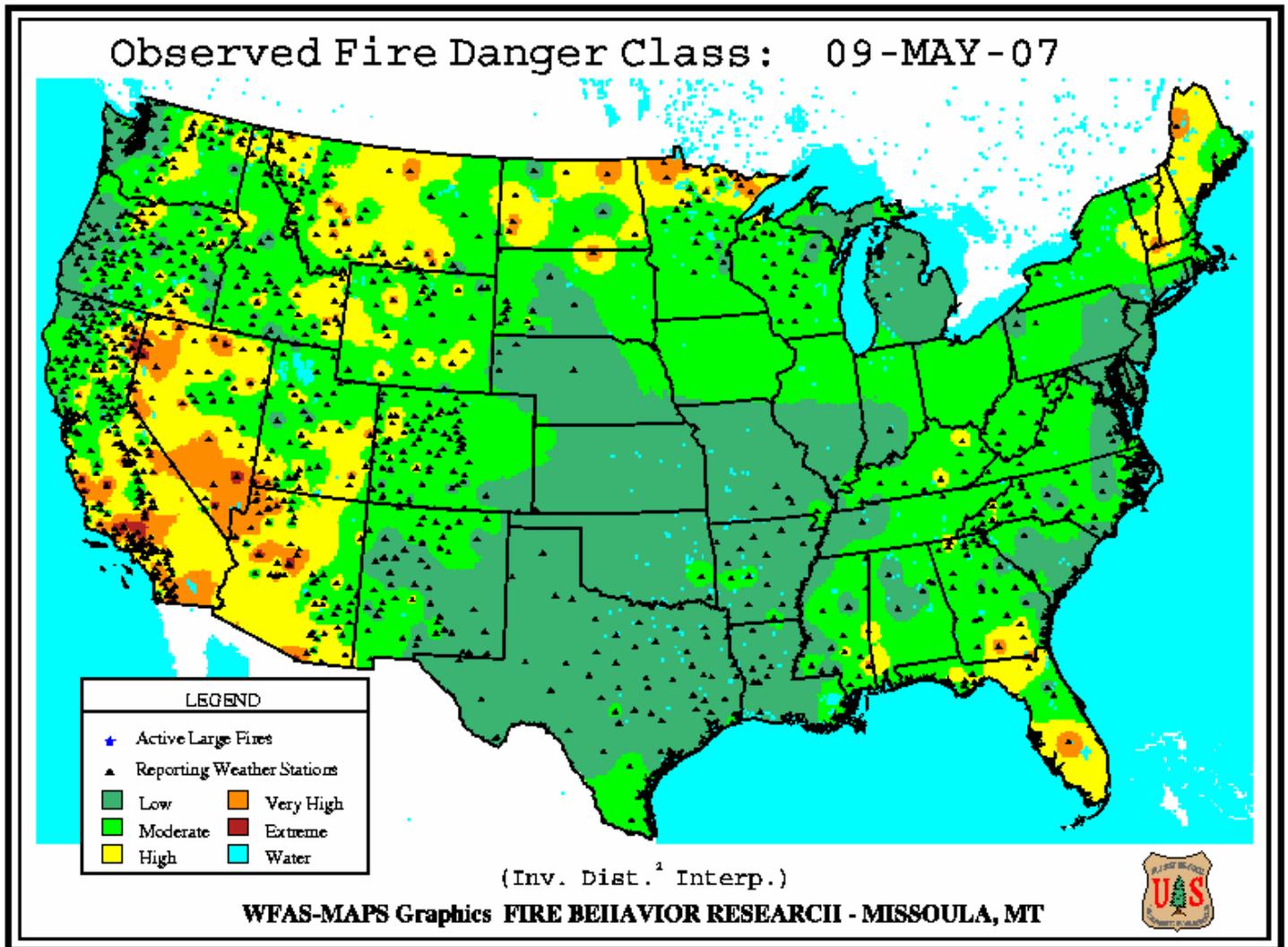


Fig. 6. Observed Fire Danger Class. Source: Forest Service Fire Behavior Research – Missoula, MT
Ref: http://www.fs.fed.us/land/wfas/fd_class.gif

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Wednesday, May 09, 2007

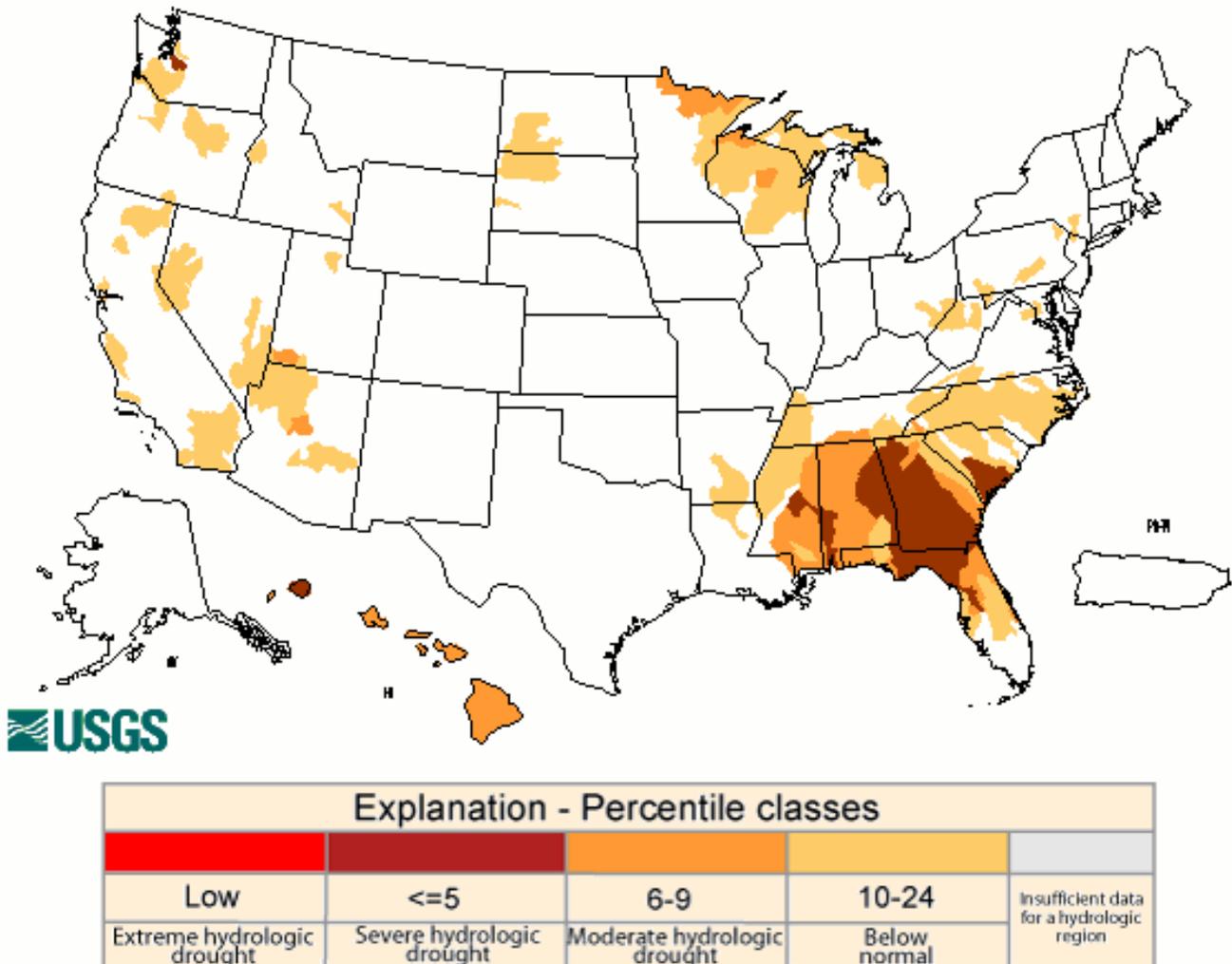


Fig. 7. Map of below normal 7-day average streamflow compared to historical stream flow for the day of the year. Ref: USGS <http://water.usgs.gov/waterwatch/?m=dryw&w=map&r=us>

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National Drought Summary -- May 8, 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: Rain was quite common and widespread through much of the West this last week. Almost all regions saw some rain except for southern California, Arizona and southern Nevada. The only change in drought status this week was in Montana, where much of the D0 and D1 in eastern Montana were improved. Reports of impacts related to the drought in California continued to come in as cattlemen were contemplating selling off portions of their herds because of lack of available forage and beekeepers were reporting significant losses in both bees and honey production. The lack of rain has not allowed for the usual green-up of pastures and rangelands utilized by cattlemen, forcing them to make tough business decisions. The lack of flowering plants has hurt bees searching for available food sources. Along with a continued heightened fire danger in California, reports of wildlife moving into residential areas looking for food and water have surfaced as well.

The Plains and Upper Midwest: Flooding rains in South Dakota, Nebraska and parts of Iowa were all part of a strong storm system that affected the High Plains last week, bringing with it relief to many locations affected by long-term drought conditions. Four-day rain totals were impressive for the region, with Omaha, Nebraska, recording 7.46 inches; Falls City, Nebraska, recording 7.15 inches; Logan, Iowa, recording 7.98 inches; and Shenandoah, Iowa, recording 7.52 inches. In South Dakota, the following totals were recorded: Epiphany, 10.00 inches, Canova, 9.00 inches, and Aberdeen, 9.00 inches. With widespread rain, improvements were made to the drought status in many locations. In Nebraska, eastern Wyoming and South Dakota the lingering D3 was removed, and D2 was reduced in the west central part of South Dakota. D0 and D1 conditions continued to be shifted to the west in both South Dakota and Nebraska. In Wyoming, D0 was removed in the northeast and D1 conditions were pushed farther to the east. D1 conditions were improved in the eastern sections of the state as well.

Strong thunderstorms in Oklahoma and Texas toward the end of the current Drought Monitor period allowed for the improvement of the D0 and D1 conditions in south Texas, and the D0 was eliminated in Oklahoma. The current wet pattern has allowed a full recovery in the state of Oklahoma where soils are saturated and lakes and reservoirs are filling up.

The drought depiction for northern Wisconsin and the Upper Peninsula of Michigan also was downgraded this week. Much of the recent rains have not developed in this region, and the area is showing signs of impacts, mainly related to low lake levels, dry soils, and fire dangers. Several forest fires have been reported in Minnesota, and fishing tournaments in the state have been cancelled because of low lake levels.

The Delta and Southeast: Rains over the southeast did not improve the drought status for any portion of the region. In fact, the rains were below average for this time of year and allowed for further expansion of the drought depiction. In the Carolinas, D0 was expanded to include most of North Carolina and the remaining drought-free areas of South Carolina. Agricultural concerns

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over dry soils and fire danger were the impacts prompting the expansion of D0. In Alabama, the remaining drought-free area was filled in with D0, while the D2 conditions were pushed to the south. D3 conditions also expanded to the south and west to include portions of eastern Mississippi as well. Florida saw some rain in the southern part of the state, but with more water restrictions in the area, a continued high fire danger, and Lake Okeechobee continuing to drop, no improvements were made this week. The D0 area around Tampa was changed to D1, as the dryness continues to spread through the state.

Looking Ahead: During the next 5 days (May 10-14) temperatures look to be above normal for almost the entire United States. Average temperatures are expected to be 3-5°F above normal for the eastern half of the country and in the west, 5-15°F above normal. Precipitation should be focused along the southern Plains, with Oklahoma and Texas showing maximum amounts. The northern High Plains, northern Rocky Mountains, and upper Midwest also should receive decent rains as well. The first named tropical storm of the year, Andrea, is likely to impact the coasts of Georgia, South Carolina and maybe Florida and North Carolina. Rains from this system could impact the current drought depiction in a very positive manner.

The 6-10 day outlook (May 15-19) focuses on a ridge centered over the western United States and a trough over the North Atlantic influencing the weather on the East Coast. Temperatures look to be warmer than normal over the West and High Plains and also into the Southeast. Cooler- than- normal temperatures should be expected over New England and southern Texas. Temperatures in Alaska look to be cooler in the northern extents of the state and warmer in the south. Precipitation in Alaska is forecasted to be above normal in the south and below normal in the northwest portions of the state. Precipitation should be above normal for the central Plains and into the Ohio River Valley to the East Coast. Below- normal precipitation in the Pacific Northwest should be expected as well.

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

Updated May 9, 2007