



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

Weekly Report - Snowpack / Drought Monitor Update **Date: 8 May, 2008**

SNOTEL SNOWPACK AND PRECIPITATION SUMMARY

Snow: Snow pack has decreased up to 18 inches over the Southern Cascades and up to a foot over the remainder of the West since last week. Snow melts appears to have been delayed 3 to 5 weeks this year due to a very cold April and this has resulted in exceptional snow water equivalent values persisting over much of the Cascades, Northern Rockies, and in Arizona (Fig. 1). Arizona's values which are high are exaggerated due to the fact that any snow cover is very rare for this time of year. Snow water equivalent percent as of 8 May shows well above normal values continuing over the Cascades and to a lesser extent over Colorado, Wyoming, and Montana. There were significant increases over Arizona and northeast Wyoming and a decrease over eastern Utah during this past week as noted in Fig. 1a.

Temperature: For the past seven days, average temperature anomalies were 5 degrees F above average across the Pacific NW and Northern Rockies and were 5 degrees F below average elsewhere (Fig. 2). The greatest negative temperature departures occurred over the Wyoming (<-8F) and the greatest positive departures occurred over northern California (>+8F) (Fig. 2a).

Precipitation: Preliminary precipitation totals for the 7-day period ending 7 May shows an abundant amount of precipitation falling over the Northern High Plains, southeast New Mexico, and scattered across Arizona while very little precipitation fell across the remainder of the West (Fig. 3). Seasonal precipitation (rain & snow water equivalent) as a percent of normal for the 2008 Water Year that began on October 1, 2007 shows above normal totals over much of Colorado, central Arizona, northeast Wyoming, tri-state region of (WA, OR, and ID), and the Central Oregon Cascades. Note significant increases in Wyoming and New Mexico since last week. Elsewhere, little change has occurred (Fig. 3a).

WESTERN DROUGHT STATUS

The West:

Much of the Southwest remained dry during this period, with most of California, Arizona, and the Great Basin reporting little or no precipitation. Light precipitation (0.1 to 0.3 inches) was observed in southeastern Oregon and southwestern Idaho, but an upper-level ridge kept the region rain-free early in the week, offering no drought relief. More significant precipitation (0.3 to 1.5 inches) fell further north on the drought-free Northwest, especially in the Cascades.

After an exceptionally wet start to the 2007-08 water year, precipitation in the West has greatly diminished since early February, especially in the Southwest. Precipitation during the past 90-days was well under 50% of normal for much California, Nevada, Arizona, and western New Mexico. Farther north, precipitation has also been subnormal, but not quite as severe as the Southwest. However, looking back during the past 7 months, the water year to date (WYTD) basin-average precipitation is surprisingly close to normal for much of the West. Fortunately, cold conditions since mid-March have limited snow melt, and along with frequent but weak Pacific storm systems and decreasing normal snow water contents, the observed NRCS basin-averaged snow water content (SWC) across the northern half of the West has remained at or

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above-normal, remaining steady or actually increasing during the past few weeks. In the Cascades, SWC was between 150-285% of normal. Farther south, however, an area of concern was in California's Sierra Nevada, where SWC has declined to between 45-77% of normal, and WYTD precipitation averaged between 72-81% of normal. Author: Michael James/David Miskus, JAWF/CPC/NOAA

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 (Figs. 4, 4a and 4b).

SOIL MOISTURE

Soil moisture (Figs. 5 and 5a), 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 Figs. 6 shows the current active wildfires across the West - <http://geomac.usgs.gov/>.

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/>

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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
Director, Conservation Engineering Division

Weekly Snowpack and Drought Monitor Update Report

SNOTEL Current Snow Water Equivalent (SWE) Ranking Percentile

May 08, 2008

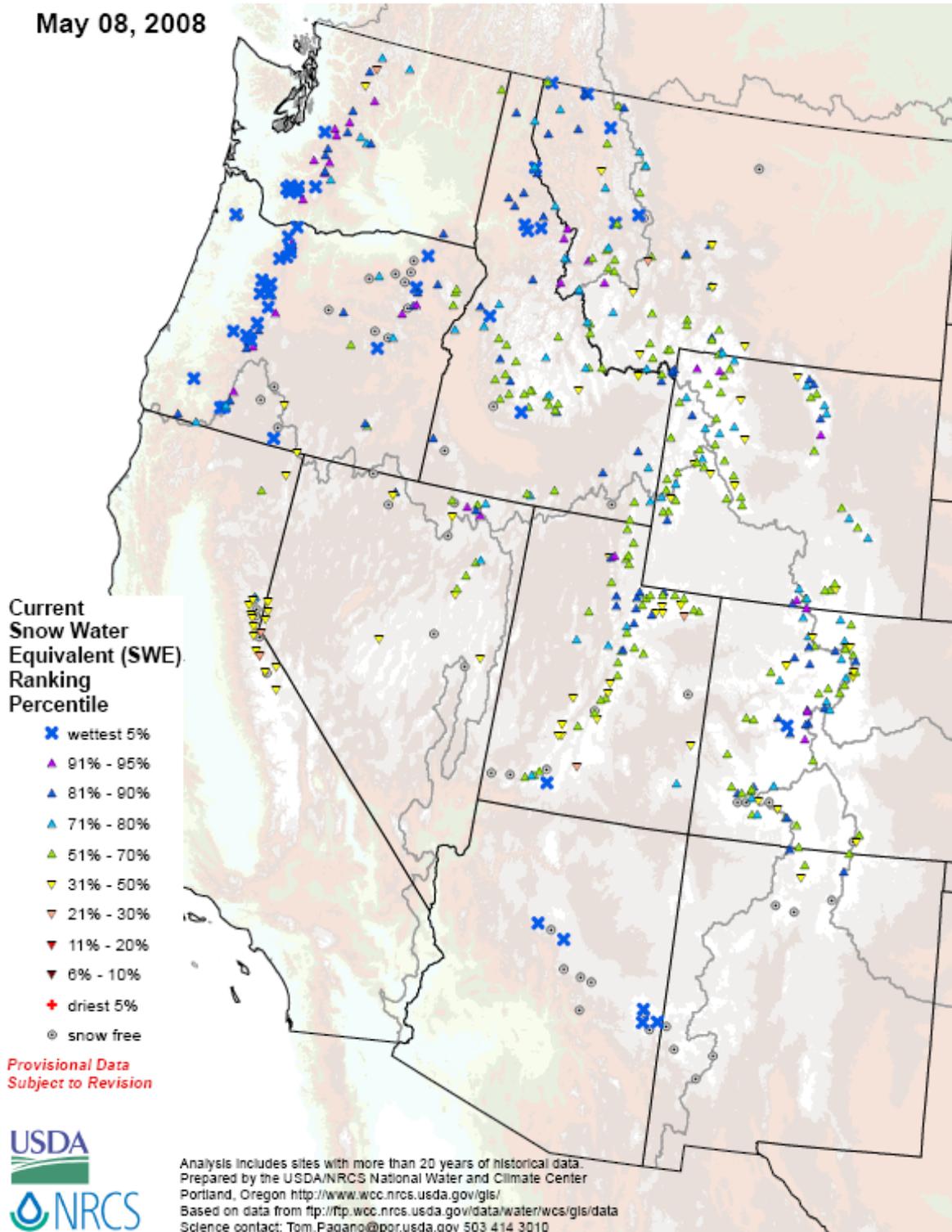


Fig. 1. During the past seven month, the 2008 Water-Year has been the wettest on average across the entire West since 1997. A large number of SNOTEL sites across the West are at or near record snow-water equivalent values. The blue X means that less than 5% of historical years since around 1980 have snowpack greater than what we have now (compared to other May 8), meaning that this year is at least in the top 3 years. Some sites in Arizona and New Mexico still have some snow cover this late into the season. No significant change since last week.

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

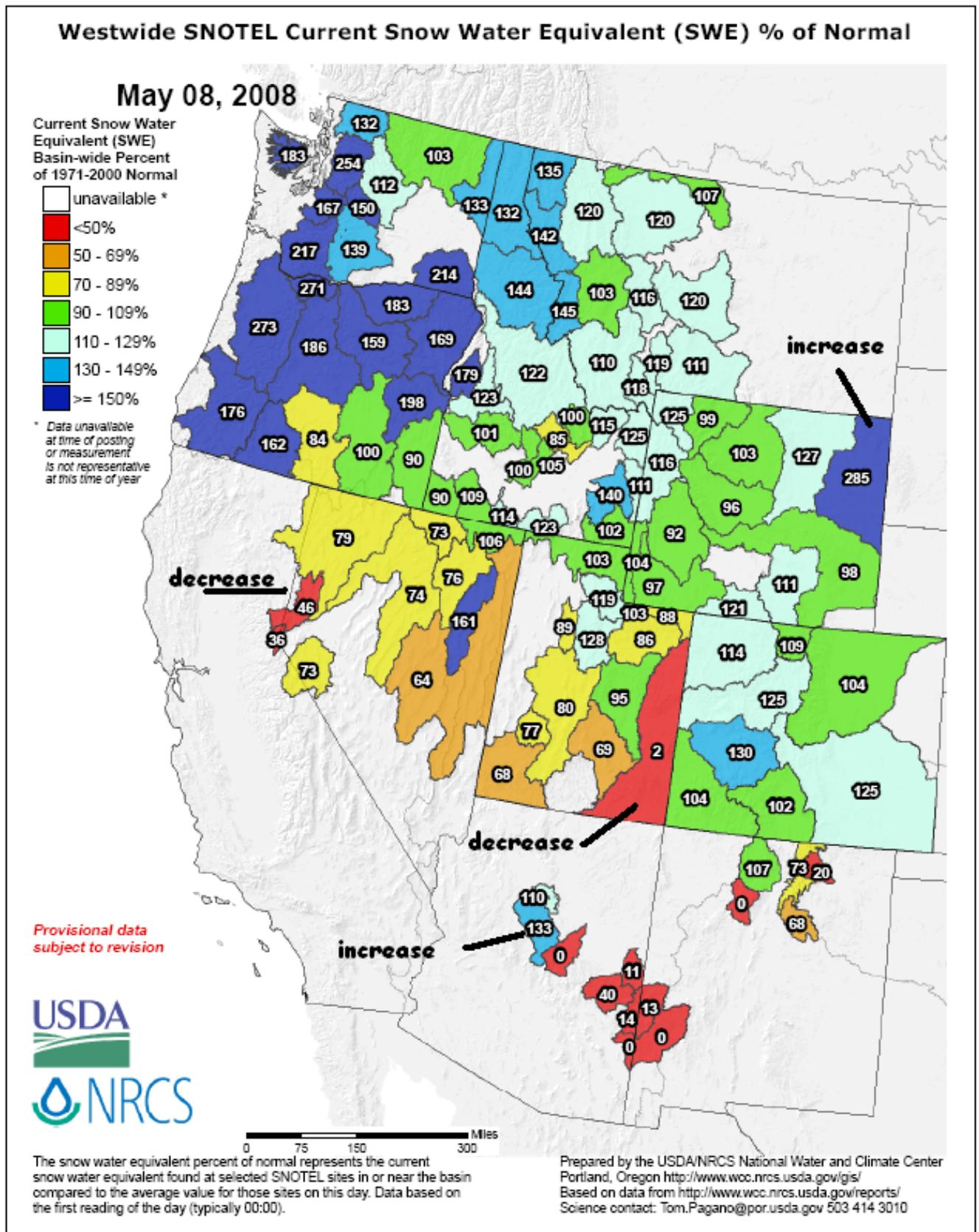


Fig. 1a. Snow-water equivalent percent as of 8 May shows well above normal values continuing over the Cascades and Coastal Ranges (WA & OR) and to a lesser extent over Colorado, Wyoming, and Montana. There were some significant changes this past week across the West as noted. Ref: ftp://ftp.wcc.nrcs.usda.gov/data/water/wcs/gis/maps/west_swepctnormal_update.pdf

Weekly Snowpack and Drought Monitor Update Report
SNOTEL (solid) and ACIS (dot-filled) Networks
7-Day Average Temperature Anomaly (Degrees F)

May 08, 2008

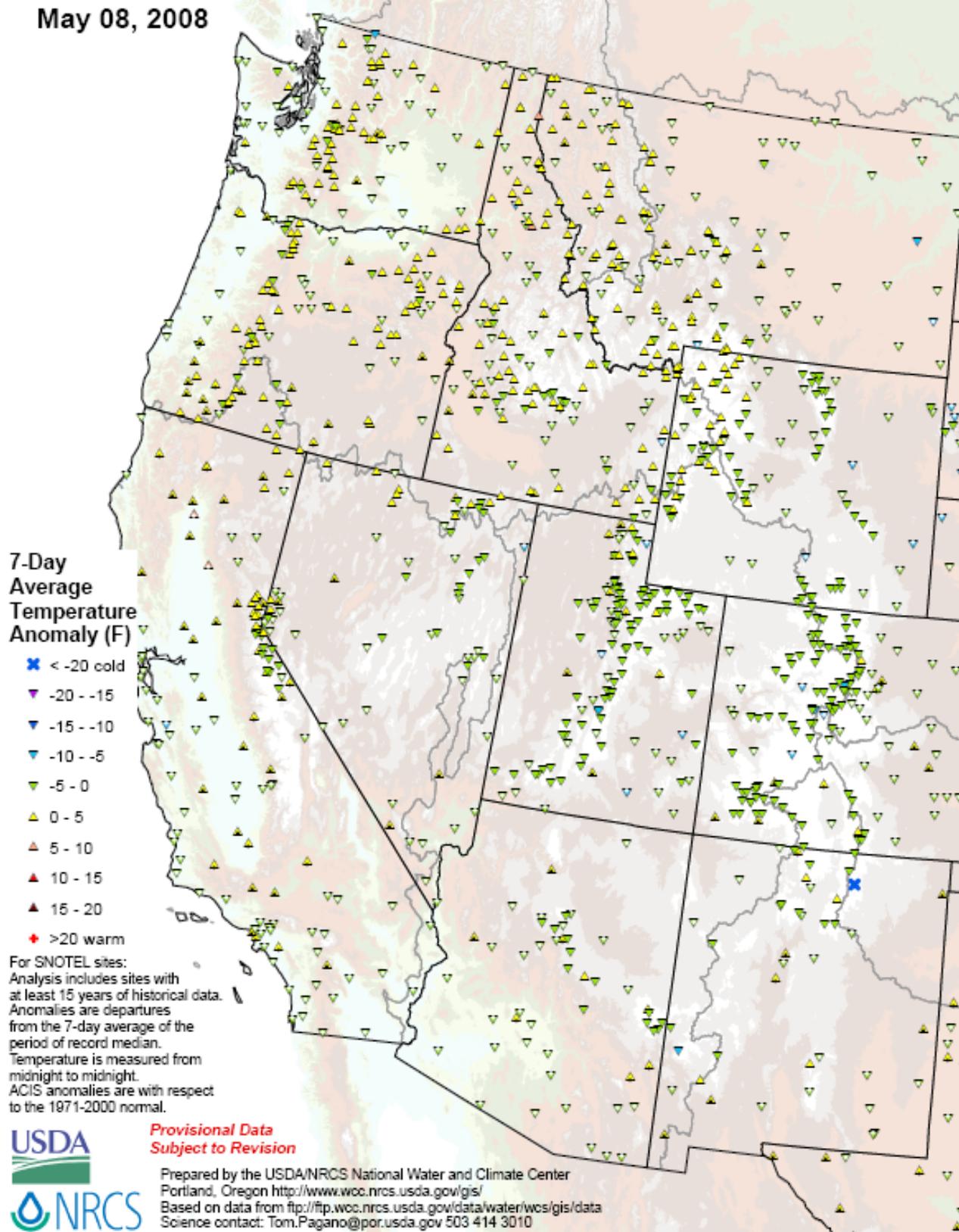
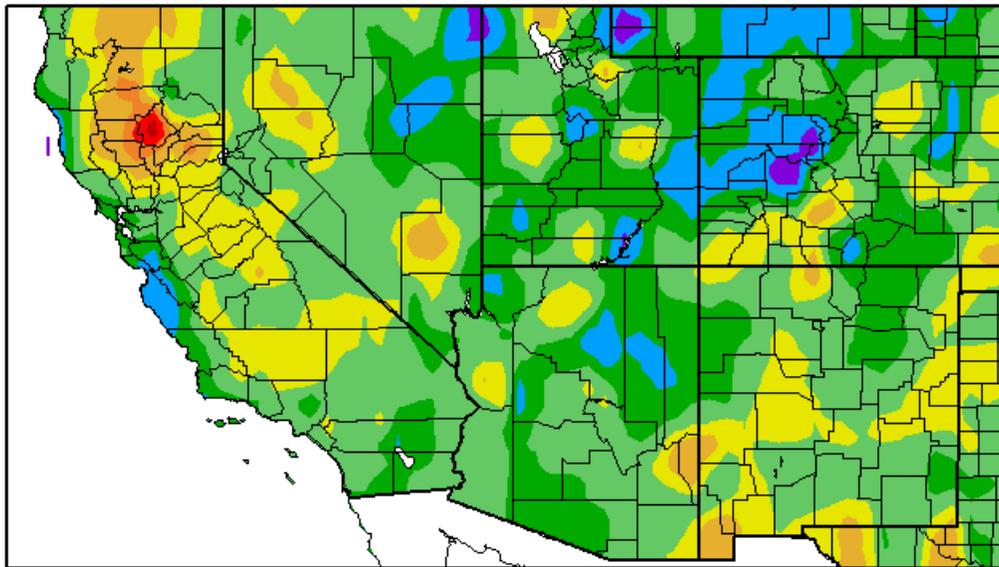
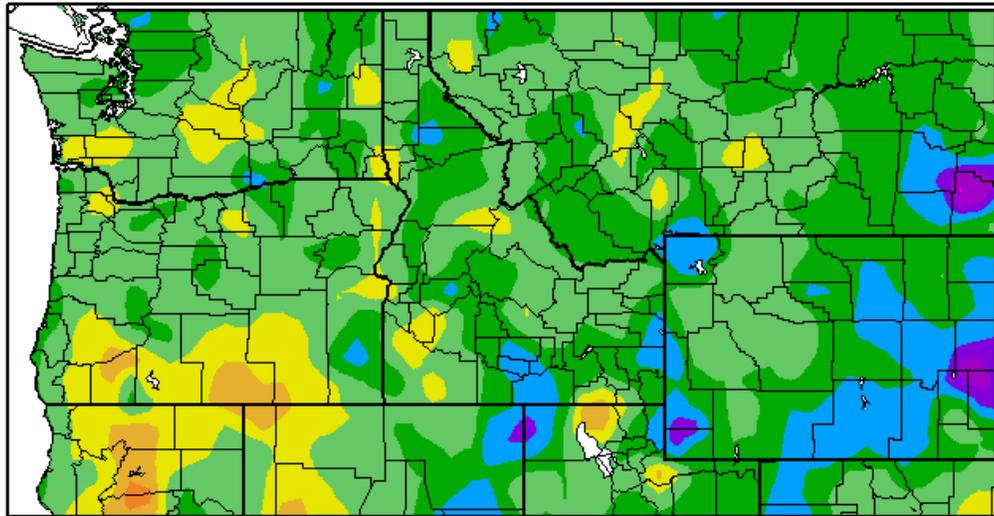


Fig. 2. SNOTEL & ACIS 7-day station average temperature anomalies were 5 degs F above average across the Pacific NW and Northern Rockies and were 5 degs F below average elsewhere.
 Ref: <http://ftp.wcc.nrcs.usda.gov/data/water/wcs/gis/maps/WestwideTavg7dAnomalyAcis.pdf>

Weekly Snowpack and Drought Monitor Update Report

Departure from Normal Temperature (F) 5/1/2008 - 5/7/2008



Generated 5/8/2008 at HPRCC using provisional data. NOAA Regional Climate Centers
The Current Climate Summary Maps are produced daily using data from the Applied Climate Information System (ACIS). Stations used are from the National Weather Service Cooperative Observer Network (COOP), and the Automated Weather Data Network (AWDN). All near-real-time data are considered preliminary and should be used responsibly.
Normal refers to the 1971-2000 Climate Normal for the selected product.

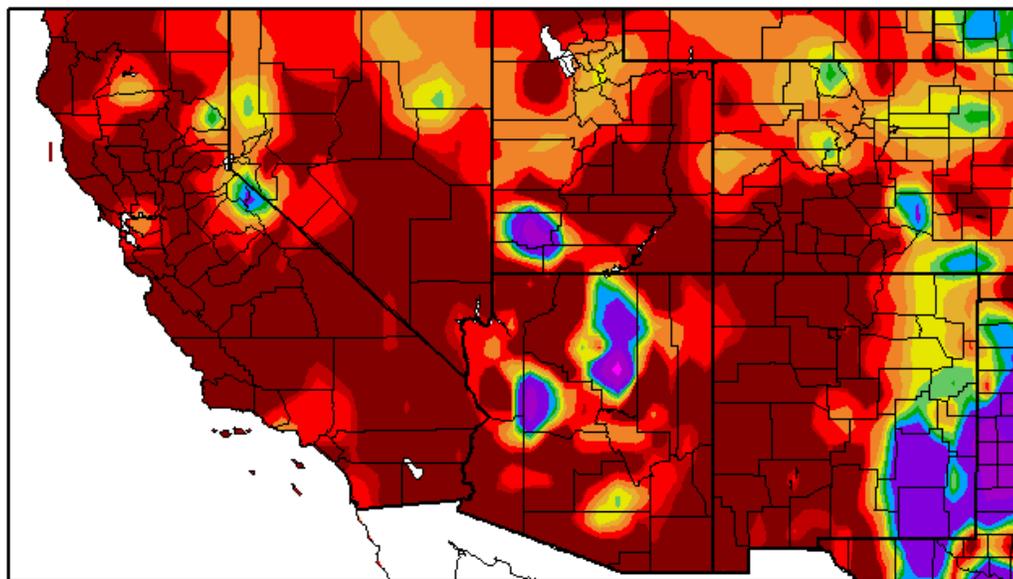
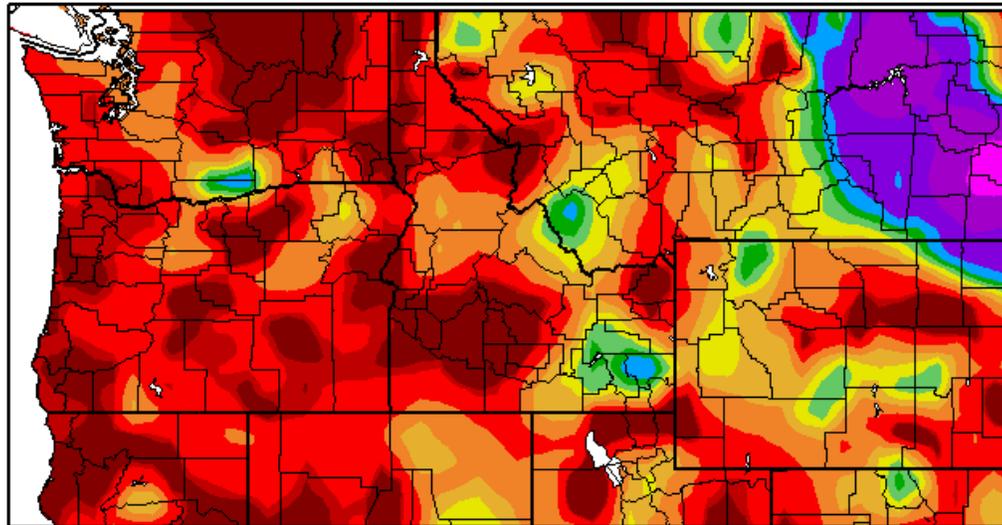


Fig. 2a. ACIS 7-day average temperature anomalies: Greatest negative temperature departures over the Wyoming (<-8F) and greatest positive departures over northern California (>+8F).

Ref: http://www.hprcc.unl.edu/maps/current/index.php?action=update_product&product=TDept

Weekly Snowpack and Drought Monitor Update Report

Percent of Normal Precipitation (%)
5/1/2008 – 5/7/2008



Generated 5/8/2008 at HPRCC using provisional data.

NOAA Regional Climate Centers

The Current Climate Summary Maps are produced daily using data from the Applied Climate Information System (ACIS). Stations used are from the National Weather Service Cooperative Observer Network (COOP), and the Automated Weather Data Network (AWDN). All near-real-time data are considered preliminary and should be used responsibly.



Normal refers to the 1971-2000 Climate Normal for the selected product.

Fig. 3. ACIS 7-day average precipitation anomaly: Preliminary precipitation totals for the 7-day period ending 7 May shows an abundant amount of precipitation falling over the Northern High Plains, southeast New Mexico, and scattered across Arizona while very little precipitation fell across the remainder of the West.

Ref: http://www.hprcc.unl.edu/maps/index.php?action=update_product&product=PNorm

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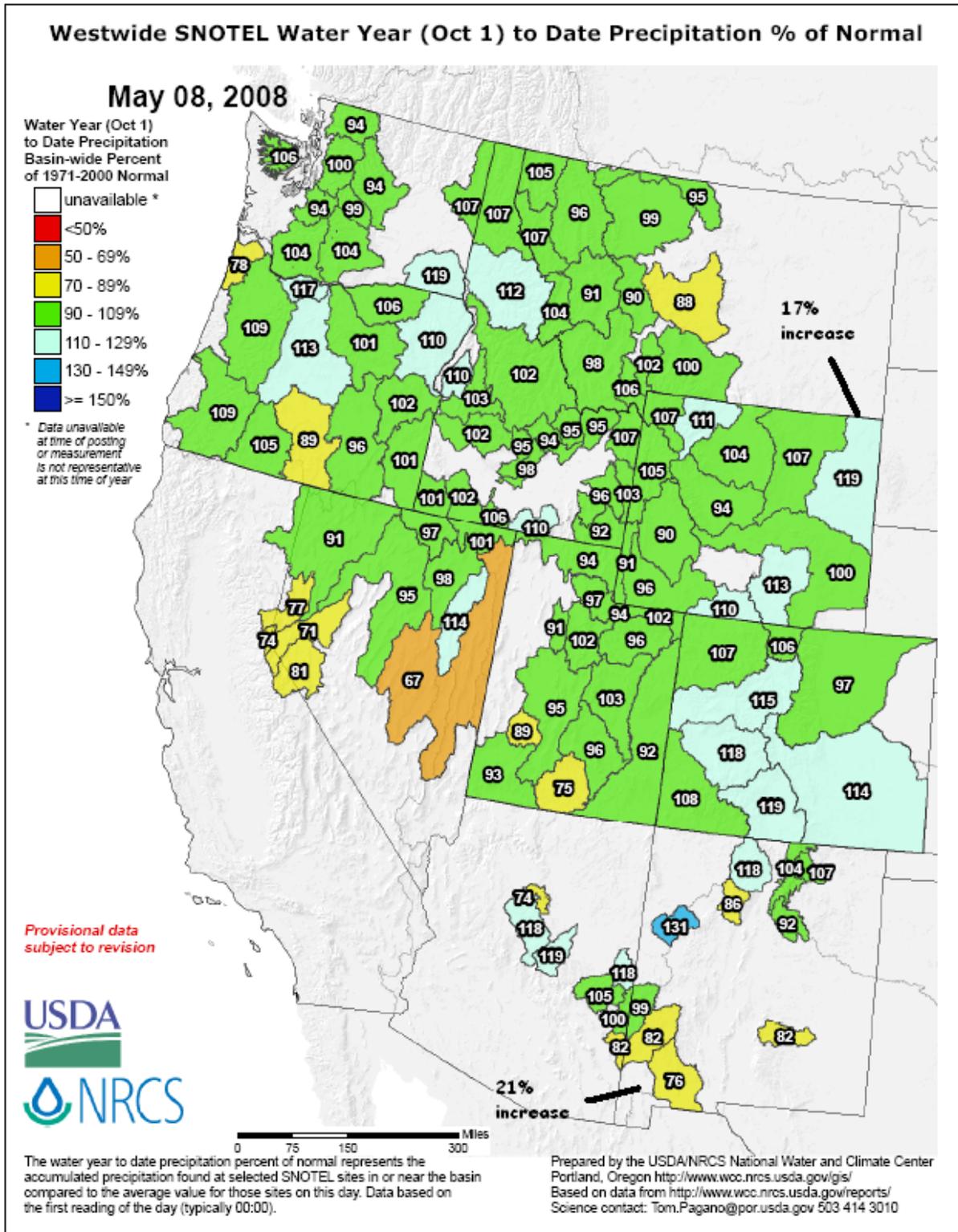


Fig 3a. Seasonal precipitation (rain & snow water equivalent) as a percent of normal for the 2008 Water Year that began on October 1, 2007 shows above normal totals over much of Colorado, central Arizona, northeast Wyoming, tri-state region of (WA, OR, and ID), and the Central Oregon Cascades. Note significant increases in Wyoming and New Mexico since last week. Elsewhere, little change has occurred.

Ref: ftp://ftp.wcc.nrcs.usda.gov/data/water/wcs/gis/maps/west_wytdprecptnormal_update.pdf

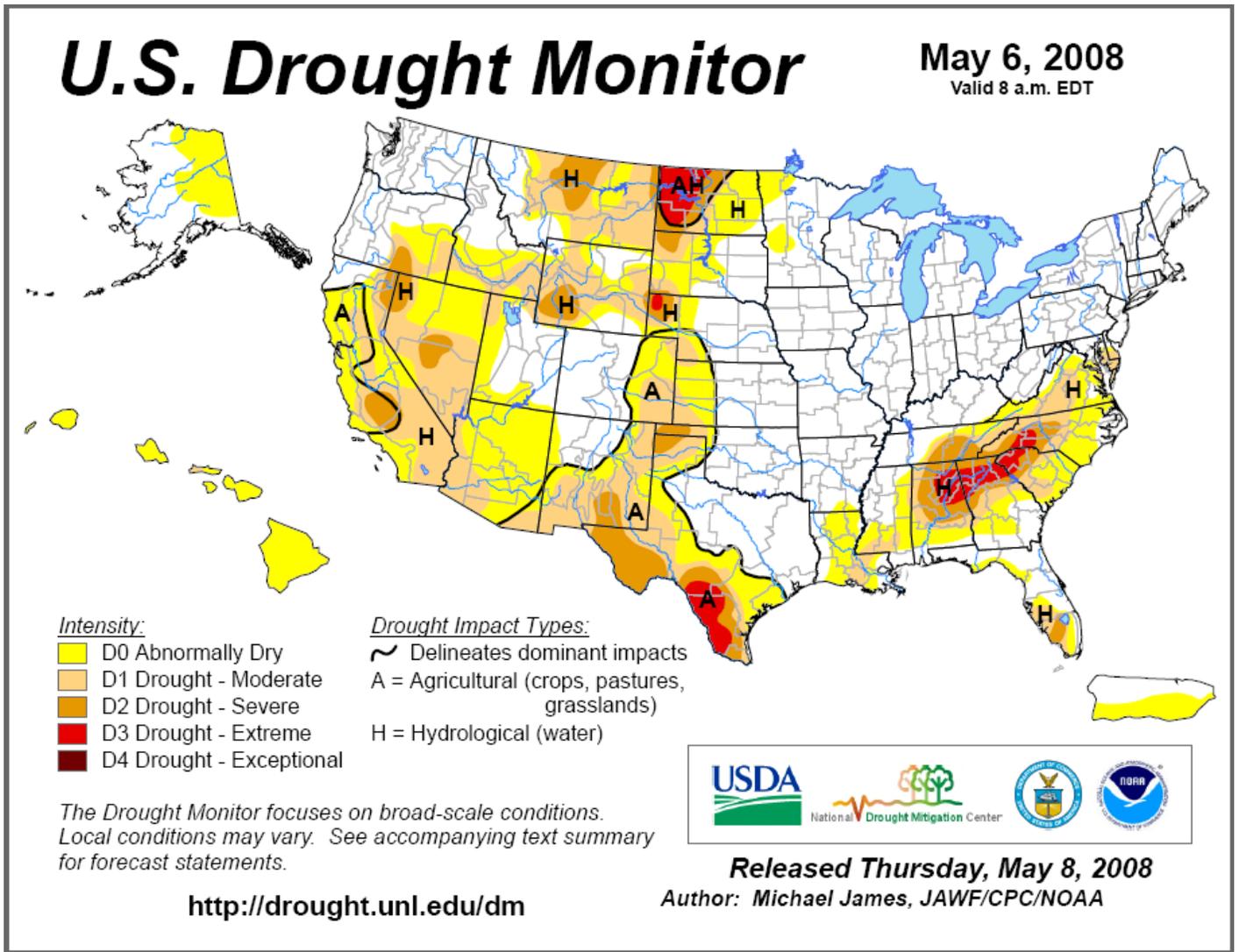


Fig. 4. Current Drought Monitor weekly summary.

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

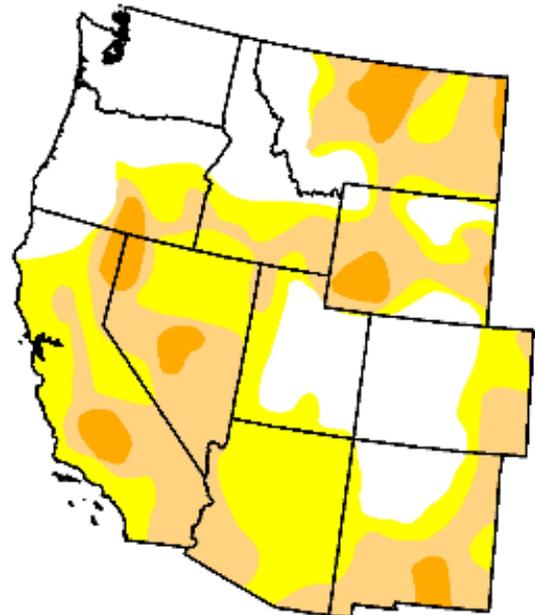
U.S. Drought Monitor

West

May 6, 2008
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	33.3	66.7	36.3	6.2	0.0	0.0
Last Week (04/29/2008 map)	32.9	67.1	36.6	8.7	0.0	0.0
3 Months Ago (02/12/2008 map)	33.2	66.8	37.7	16.9	0.0	0.0
Start of Calendar Year (01/01/2008 map)	26.3	73.7	54.7	33.1	2.7	0.0
Start of Water Year (10/02/2007 map)	22.0	78.0	62.3	44.7	12.4	0.0
One Year Ago (05/08/2007 map)	31.1	68.9	49.3	21.2	6.5	0.0



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 8, 2008
Author: Michael James, JAWF/CPC/NOAA

Fig. 4a. Drought Monitor for the Western States with statistics over various time periods. Note a slight improvement in drought conditions (D2-D4) since last week.

Ref: http://www.drought.unl.edu/dm/DM_west.htm

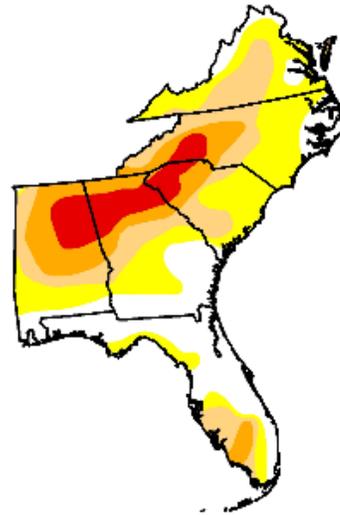
U.S. Drought Monitor

Southeast

May 6, 2008
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	26.4	73.6	43.6	23.2	8.9	0.0
Last Week (04/29/2008 map)	27.3	72.7	42.9	22.1	8.6	0.0
3 Months Ago (02/12/2008 map)	8.0	92.0	73.2	54.8	36.3	19.8
Start of Calendar Year (01/01/2008 map)	9.6	90.4	74.3	58.5	41.0	22.0
Start of Water Year (10/02/2007 map)	10.1	89.9	77.9	63.8	45.2	24.0
One Year Ago (05/08/2007 map)	13.5	86.5	60.5	36.2	18.7	0.0



Intensity:

- D0 Abnormally Dry
- D1 Drought - Moderate
- D2 Drought - Severe
- D3 Drought - Extreme
- D4 Drought - Exceptional

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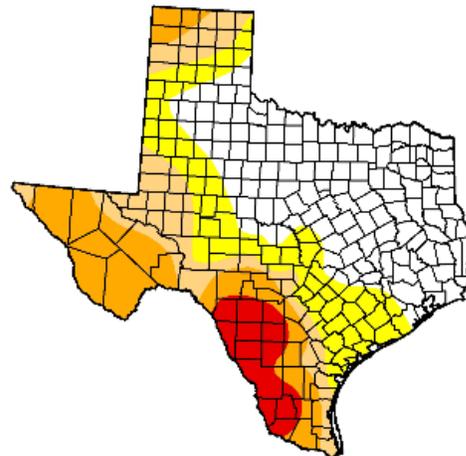
U.S. Drought Monitor

Texas

May 6, 2008
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	41.4	58.6	38.7	24.3	6.9	0.0
Last Week (04/29/2008 map)	37.6	62.4	45.2	31.8	10.5	3.3
3 Months Ago (02/12/2008 map)	14.7	85.3	39.7	11.9	0.0	0.0
Start of Calendar Year (01/01/2008 map)	52.0	48.0	11.6	0.0	0.0	0.0
Start of Water Year (10/02/2007 map)	97.9	2.1	0.0	0.0	0.0	0.0
One Year Ago (05/08/2007 map)	95.8	4.2	0.0	0.0	0.0	0.0



Intensity:

- D0 Abnormally Dry
- D1 Drought - Moderate
- D2 Drought - Severe
- D3 Drought - Extreme
- D4 Drought - Exceptional

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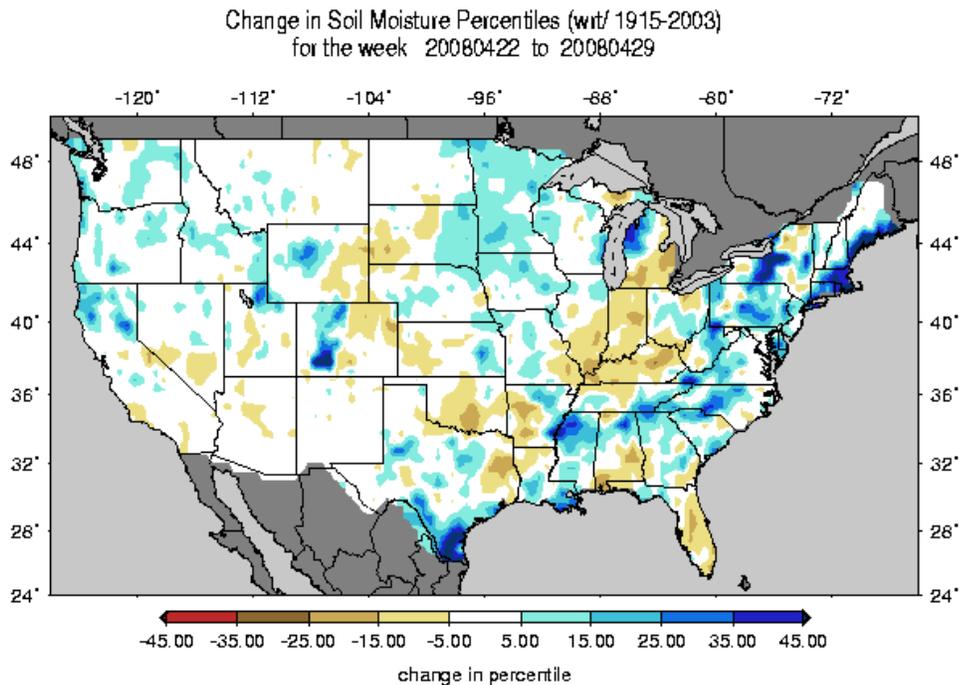
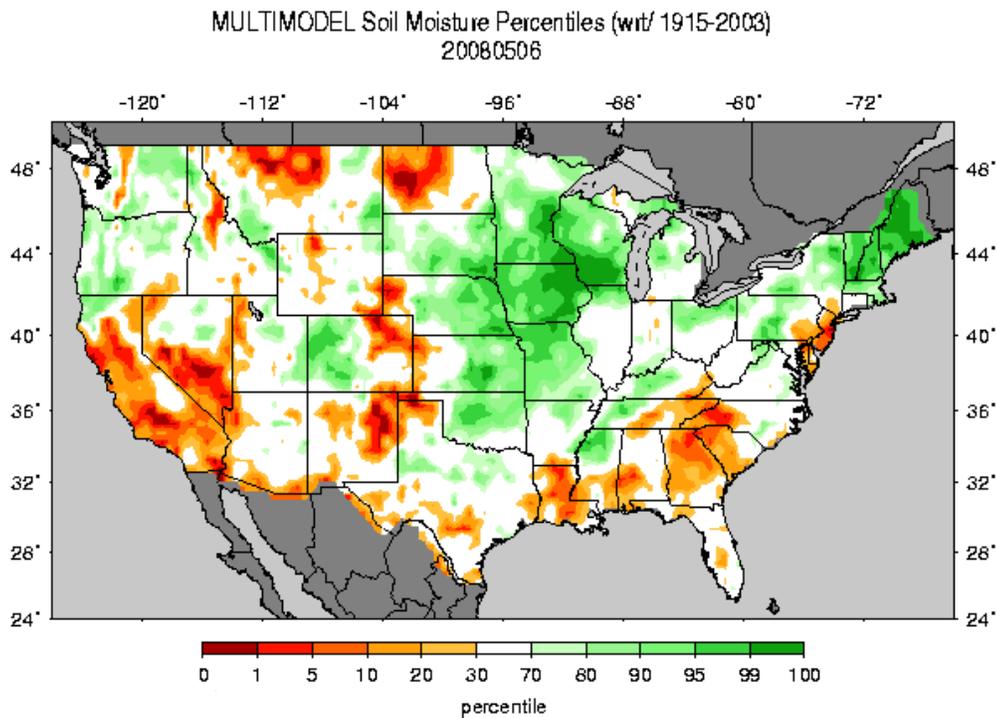
<http://drought.unl.edu/dm>



Released Thursday, May 8, 2008
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Fig. 4b: Drought Monitor for the Southeastern States and Texas with statistics over various time periods. Note significant improvement over Texas since last week while the Southeast had little change. Ref: http://www.drought.unl.edu/dm/DM_southeast.htm

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Figs. 5 & 5a: Soil Moisture Ranking and change in percentile based on 1915-2003 climatology for this past week. The moist mid-West continues to dominate although some additional worsening has occurred over New Jersey (Fig. 5). Last week saw a significant increase in soil moisture over the Northern High Plains and portions of the Ohio Valley and in Kentucky but significant drying over West Virginia and much of the mid Atlantic States as noted in Fig. 5a.

Ref: http://www.hydro.washington.edu/forecast/monitor/curr/CONUS.multimodel.sm_qnt.gif
http://www.hydro.washington.edu/forecast/monitor/curr/CONUS.sm_qnt.1wk.gif

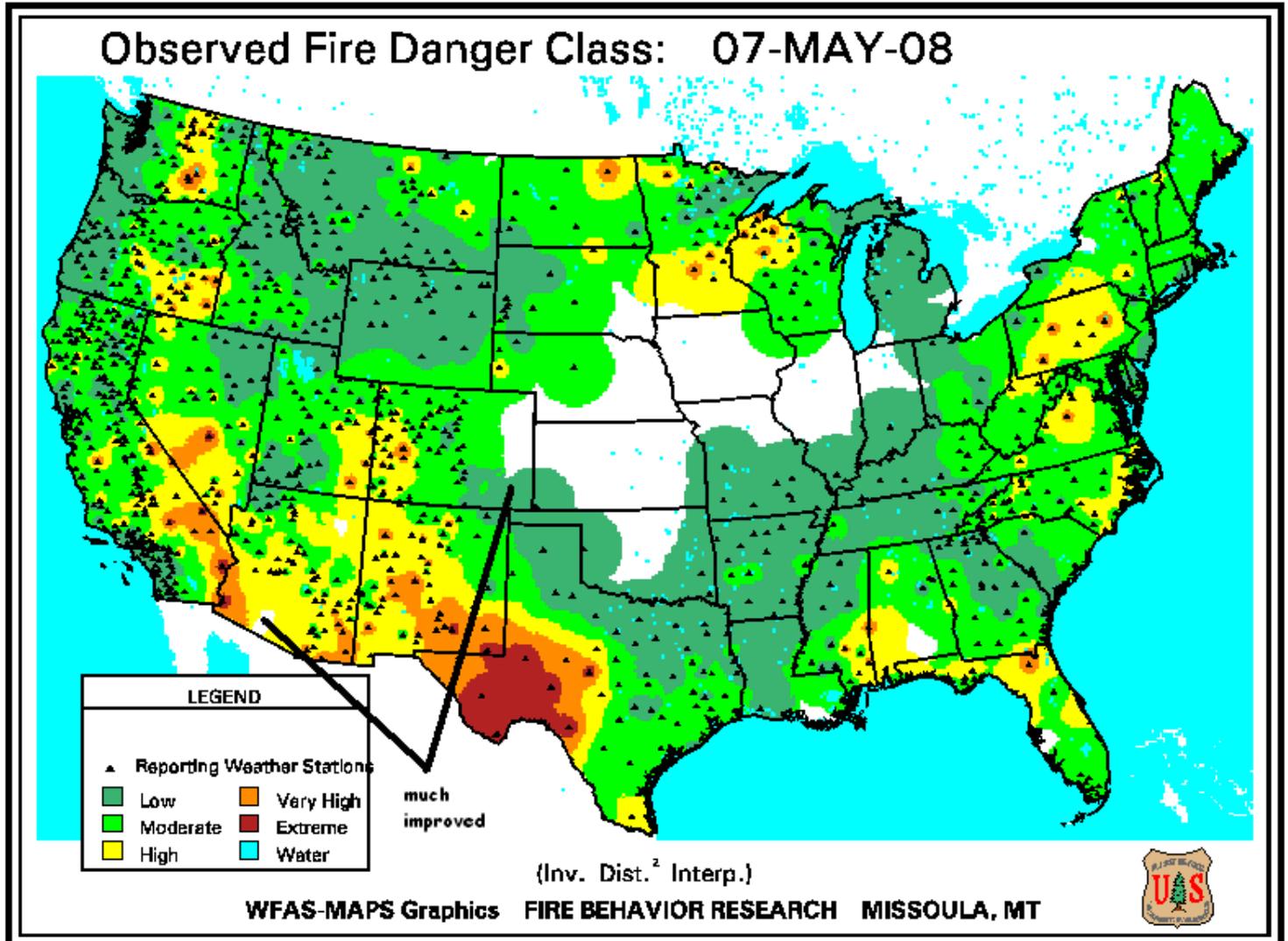


Fig. 6. Observed Fire Danger Class. Note extreme fire danger over the Southwest Texas but conditions have improved greatly over much of the Southwest since last week. Source: Forest Service Fire Behavior Research – Missoula, MT. Ref: http://www.fs.fed.us/land/wfas/fd_class.gif

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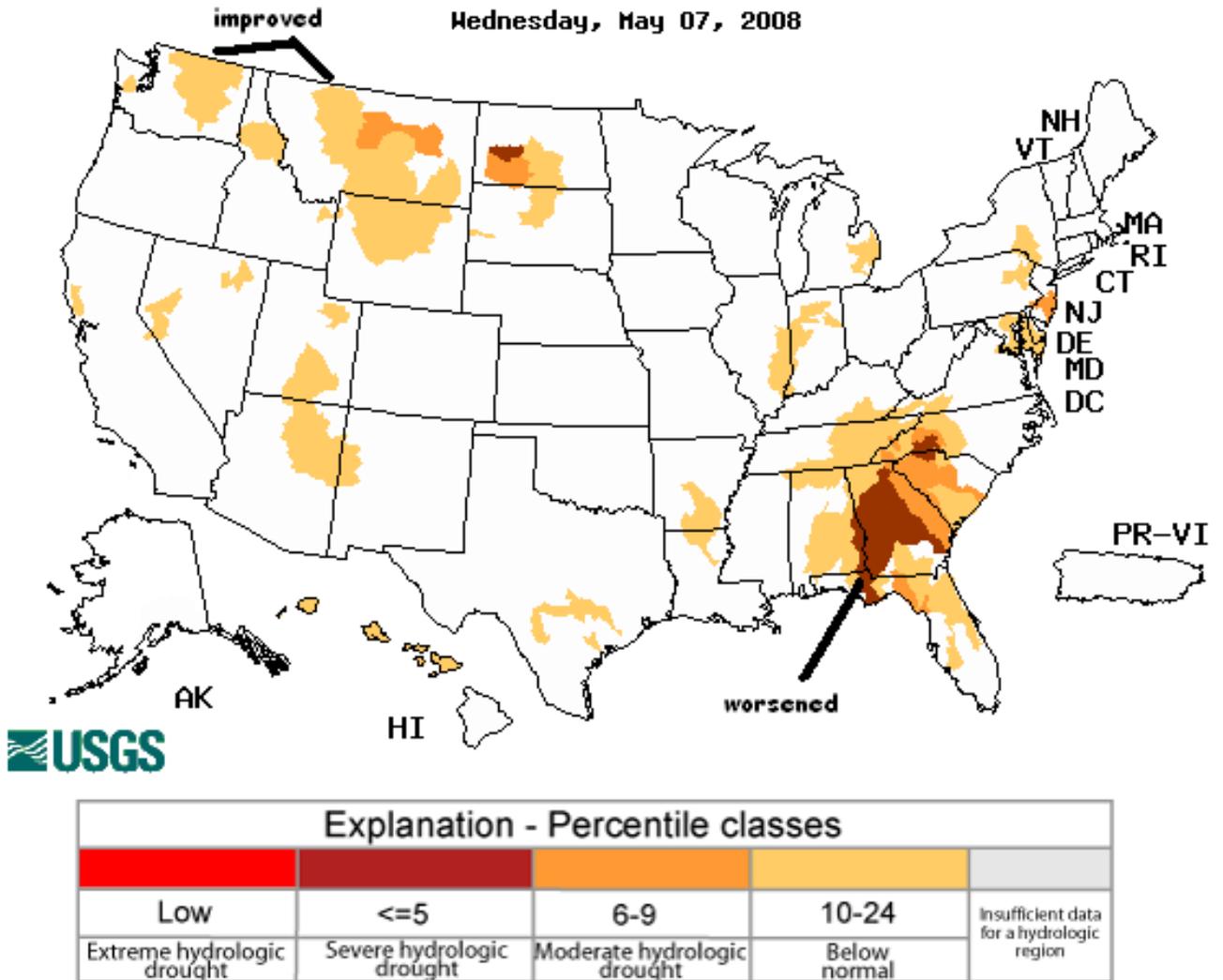


Fig. 7. This week's map shows significant improvement over the Northwest and worsening over Georgia since last week. Ref: USGS <http://water.usgs.gov/waterwatch/?m=dryw&w=map&r=us>

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National Drought Summary - May 6, 2008

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/>.

An intense, late-spring storm at the beginning of the period dumped heavy snow and rain on the north-central High Plains, easing drought concerns in southeastern Montana, northeastern Wyoming, and western South Dakota. Later in the period, an upper-level low tracked from the Southwest into the central and southern Plains, triggering scattered showers and thunderstorms and reducing drought conditions in western Texas and southeast New Mexico. Dryness persisted for the eastern Gulf and southern Atlantic Coasts, while light to moderate rains in the Northeast maintained favorable to abundant moisture conditions. Light precipitation fell on the Northwest for the 8th consecutive week, and the Southwest remained dry. Temperatures across much of the lower 48 States averaged below normal, with the greatest departures (less than -4°F) in the Great Basin, central Plains, upper Midwest, and Northeast.

The Southeast and mid-Atlantic:

Unfortunately, D2-D3 areas of eastern Tennessee and northern Alabama missed out on the heaviest rain this week when a powerful storm system dumped 2 to 7 inches of rain on the Delta and the western Tennessee and southwestern Ohio Valleys. Weekly totals below 0.5 inches were observed across the D2 areas in southeastern Tennessee and northern Alabama and Georgia, where short-term (30- and 60-days) deficits persisted, ranging from 3-6 inches, and longer-term deficiencies (6- and 12-months) remained between 10-25 inches.

A strong line of thunderstorms moved through the Gulf Coast region early on Saturday morning, bringing 1-2 inches of rain to southern Louisiana, Mississippi, and Alabama, while 4 to 8 inches inundated southeastern Louisiana. Consequently, the D0 and D1 areas were alleviated to the north and west of Lake Pontchartrain, where 30-day deficits (1-3 inches) and 90-day shortages (2 to 6 inches) were erased. The D2H and D3H regions of central and northern Alabama benefited from 0.5 to 1.5 inches of rain during the week (topsoil moisture), but long-term precipitation deficits and very low stream flow levels suggested that improvements to this area were not warranted yet. Though eastern D0 areas along the southern Atlantic Coast did receive rainfall exceeding one inch, the drought-stricken western regions of North Carolina, South Carolina and northern Georgia received little or no precipitation, and D3 was expanded slightly into the western counties of South Carolina due to persistently low USGS 7-day averaged stream flow percentiles (2-10th percentile).

South Florida D0 and D1 coverage was expanded eastward across Palm Beach, Broward and Miami-Dade counties due to the third consecutive dry week, and D2 was introduced into Glades, Hendry and Collier counties owing to decreasing soil moisture percentiles across interior portions of southern Florida.

The Plains and Midwest:

A late spring snowstorm brought blizzard conditions and heavy snow to the north-central High Plains, with liquid equivalent precipitation totals as high as 4.5 inches in southeast Montana, and between 2 and 3 inches in western South Dakota. A general one-category improvement was made in this area. The D2 coverage in southeastern Montana was reduced

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into western North Dakota, where surpluses now exist in both the short and medium-term. In western and northern South Dakota, D0 and D1 coverage was trimmed back as well, and D1 was reduced to D0 in far western parts of the state, along with D0 being cut back in northeast Wyoming.

While this heavy precipitation brought relief to the north-central High Plains, rainfall amounts between 0.5 and 1.2 inches in the Nebraska Panhandle did little to ease long-term dryness, precluding any changes to the D2H and D3H coverage this week. Drought blends do show a slight improvement this week, but 30-, 60-, and 90-day precipitation remained below 50% of normal, and Box Butte Reservoir was reported to be at 27% of capacity (49% of normal capacity), though slowly increasing which is expected at this time of year.

Further south, heavy showers and slow-moving thunderstorms dumped over 2 inches of rain on southwestern Kansas (across the D1A and D2A areas of Seward, Meade, and Clark counties), replenishing topsoil moisture and prompting a reduction in drought coverage in a localized area of southwest Kansas. Additional storms in western Texas and eastern New Mexico late in the period brought over 2 inches of rain to western areas of the Brazos and Red River Valleys, with much of the D2A in southeastern New Mexico reduced to D1, and the D1 boundary reduced westward into New Mexico. Areas of northwestern Texas and the Oklahoma Panhandle, however, missed out on this rainfall, and no adjustments were made to the D2A coverage.

East of the Big Bend and along the Rio Grande Valley, moderate rains over the past two weeks, combined with recent heavy rainfall from thunderstorms, eliminated the exceptional drought (D4) area encompassing Maverick, Dimmitt, and Webb counties.

The West:

Much of the Southwest remained dry during this period, with most of California, Arizona, and the Great Basin reporting little or no precipitation. Light precipitation (0.1 to 0.3 inches) was observed in southeastern Oregon and southwestern Idaho, but an upper-level ridge kept the region rain-free early in the week, offering no drought relief. More significant precipitation (0.3 to 1.5 inches) fell further north on the drought-free Northwest, especially in the Cascades.

After an exceptionally wet start to the 2007-08 water year, precipitation in the West has greatly diminished since early February, especially in the Southwest. Precipitation during the past 90-days was well under 50% of normal for much California, Nevada, Arizona, and western New Mexico. Farther north, precipitation has also been subnormal, but not quite as severe as the Southwest. However, looking back during the past 7 months, the water year to date (WYTD) basin-average precipitation is surprisingly close to normal for much of the West. Fortunately, cold conditions since mid-March have limited snow melt, and along with frequent but weak Pacific storm systems and decreasing normal snow water contents, the observed NRCS basin-averaged snow water content (SWC) across the northern half of the West has remained at or above-normal, remaining steady or actually increasing during the past few weeks. In the Cascades, SWC was between 150-285% of normal. Farther south, however, an area of concern was in California's Sierra Nevada, where SWC has declined to between 45-77% of normal, and WYTD precipitation averaged between 72-81% of normal.

Hawaii, Alaska, and Puerto Rico:

Weekly rainfall totals remained low across much of Hawaii, with just 0.5 to 1 inch reported on Maui, and between 0.5 and 4 inches reported on the eastern slopes of Big Island, keeping D0 and D1 conditions status-quo.

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Drought-afflicted areas of central and eastern Alaska also remained unchanged, due to rainfall amounts generally below 0.5 inches, while much of interior and western Alaska received close to zero precipitation.

Some improvement was made in D0 coverage across western Puerto Rico after a second wet week brought over 5 inches of rain to the northern and western slopes of the island, eliminating abnormal dryness across the northern two-thirds of the island.

Looking Ahead:

During the next 5 days, an upper-level low moving through the southwestern United States will trigger thunderstorms clusters across the southern and central Plains and Delta on Wednesday, May 7, with additional rain and storms moving into the southeast on Thursday. Rainfall in excess of 4 inches is forecast for the parts of eastern Kansas and central Missouri on Wednesday, with rain transitioning eastward into the Ohio River Valley and Mid-Atlantic by the end of the week. Scattered precipitation is also expected for the northern High Plains, where drought-affected areas of South Dakota, Montana and Nebraska could benefit from 1-2 inches of rainfall by Friday. An optimistic forecast for the southeast has rainfall in excess of 2 inches overspreading drought-stricken areas of eastern Tennessee and northern Georgia over the weekend. Out west, dry conditions are expected to continue for much of California, Arizona and New Mexico, while northern areas of the Great Basin should see light amounts of precipitation (under 1 inch) over the next five days.

For the ensuing 6- to 10-days (May 12-20), cool, wet conditions are expected for the eastern half of the Nation, with drier than normal conditions forecast for much of the west, along with temperatures much warmer than normal. South Florida should see continued warm, dry conditions during this period, and southern and eastern parts of Alaska may see above normal precipitation through May 20, while southern Texas is expected to see increased wetness develop by May 14, after an initial dry period over the next 7 days.

Author: Michael James/David Miskus, JAWF/CPC/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 May 7, 2008