



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

Weekly Report - Snowpack / Drought Monitor Update **Date: 3 July, 2008**

SNOTEL SNOWPACK AND PRECIPITATION SUMMARY

Snow: There are still a few locations across the Northern Rockies and Cascades that have snow cover (based on SNOTEL reports). Snow-water equivalent percent for this Water Year as of 3 July shows exceptionally late snow melt over the northern states in the West. Note: Any snow cover that exists this late into the season is rare and thus the reason for the high percentages (Fig. 1).

Temperature: For the past seven days, average temperature anomalies were highest (positive departures) in the Pacific Northwest and lowest (negative departures) over the western High Plains and California coastline (Fig. 2). Specifically, the greatest positive temperature departures occurred over central Washington (<+10F) and greatest negative departures occurred over the central California coast and western South Dakota (<-6F) (Fig. 2a).

Precipitation: Preliminary precipitation totals for the 7-day period ending 2 July shows areas of heavy precipitation due to scattered thunderstorms over the Rockies and isolated elsewhere. Otherwise, typical dry conditions prevail over the West (Fig. 3). For the latest information on the status of the Southwest Monsoon, see: http://www.wrh.noaa.gov/twc/monsoon/monsoon_tracker.php. 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 Colorado, central Arizona, parts of Oregon, and northern Wyoming. Parts of Nevada and southern New Mexico are experiencing significant shortfalls (Fig. 3a).

WESTERN DROUGHT STATUS

The West: Seasonably dry conditions dominated the western states, resulting in little change in the drought status. Author: [Rich Tinker, Climate Prediction Center, 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

The Natural Resources Conservation Service provides leadership in a partnership effort to help people conserve maintain and improve our natural resources and environment

Weekly Snowpack and Drought Monitor Update Report

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.

VEGETATION HEALTH

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>. Remarks: Difference exists in 'condition' categories used by NASS, NOAA, etc., compared to NRCS definitions. The condition in this report only considers present grass growth. NRCS often considers 10 - 17 indicators as appropriate for vegetation health.

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/cgi-bin/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
Director, Conservation Engineering Division

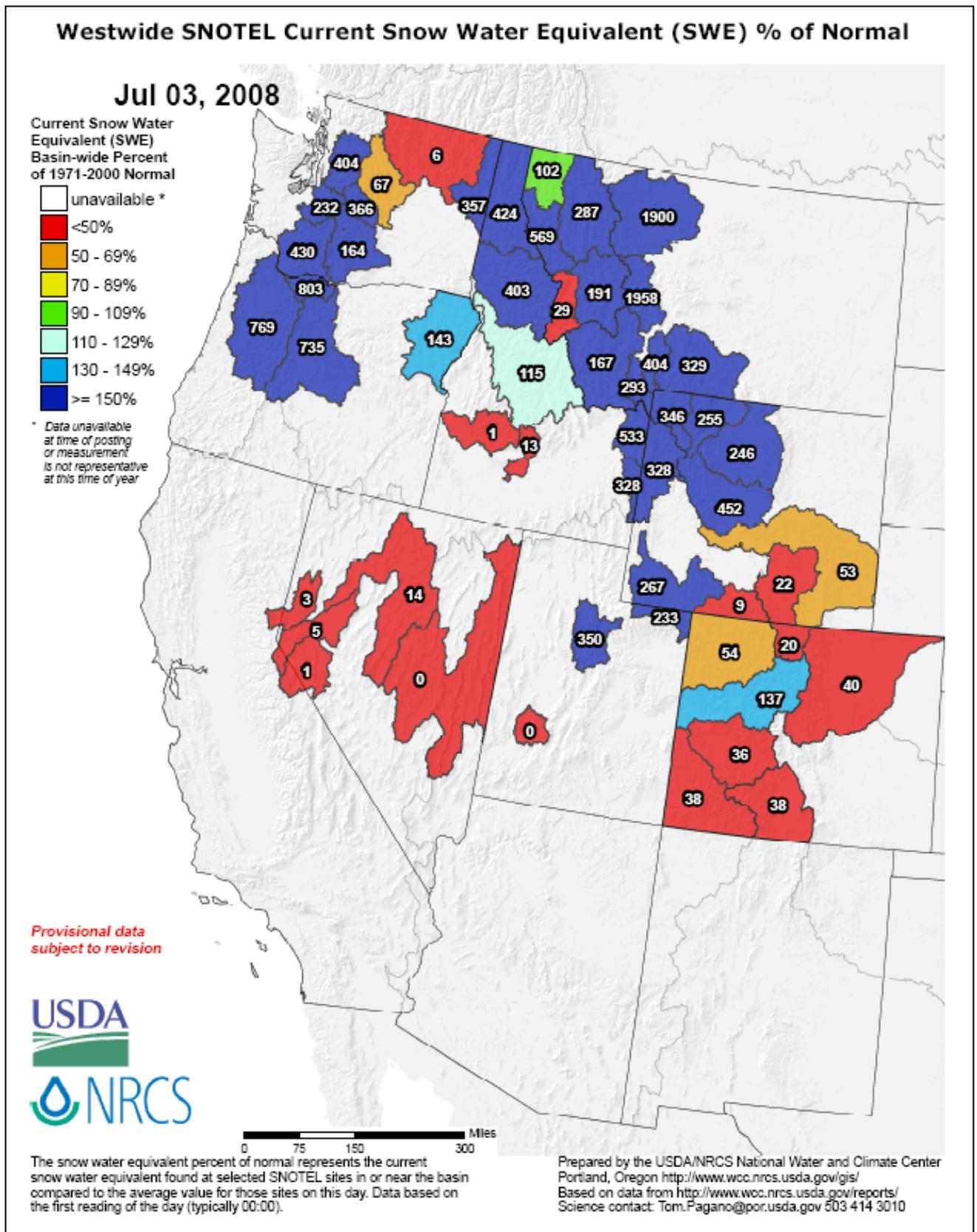


Fig. 1. Snow-water equivalent percent for this Water Year as of 3 July shows exceptionally late snow melt over the northern states in the West. Note: Any snow cover that exists this late into the season is rare and thus the reason for the high percentages.

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)

Jul 03, 2008

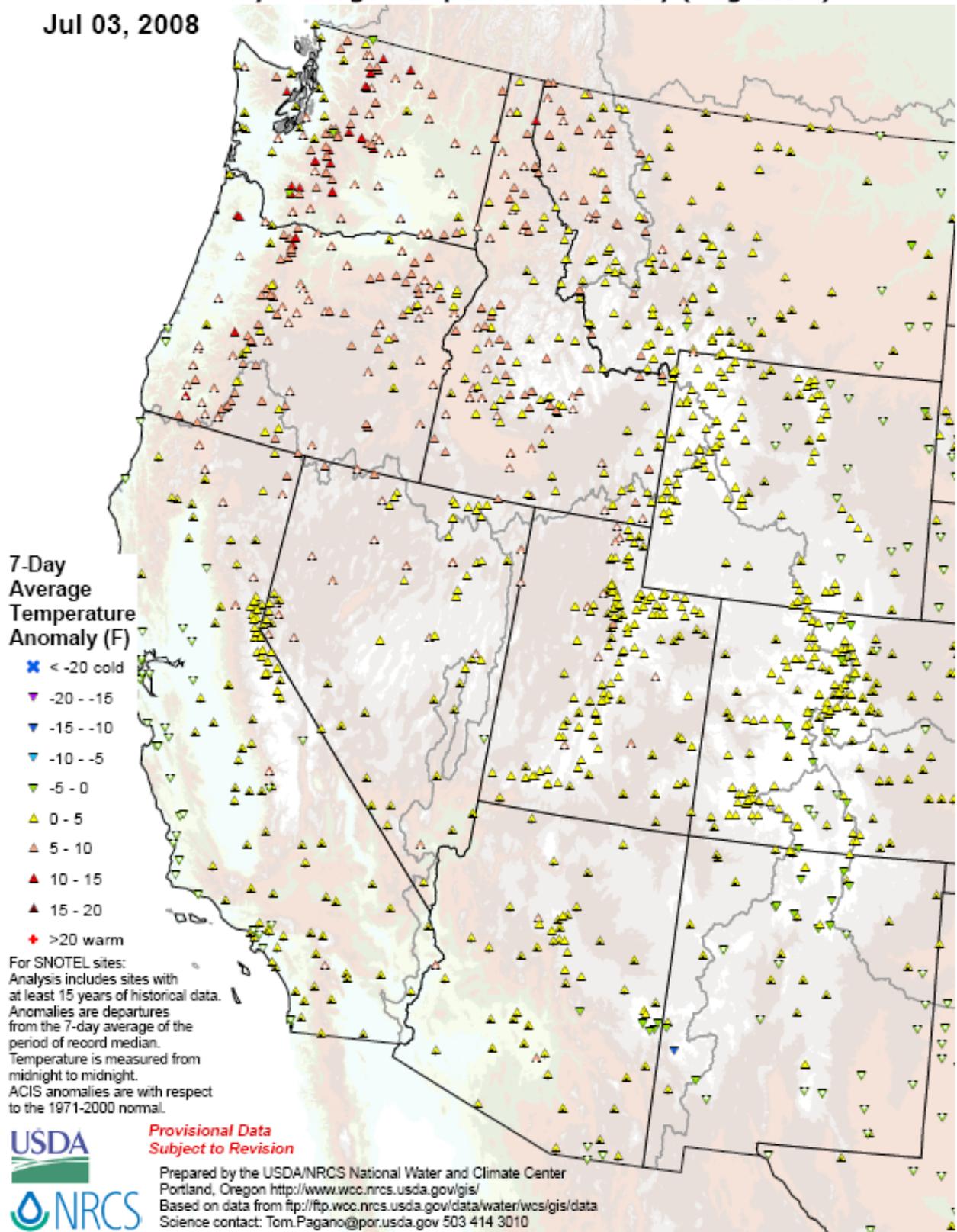
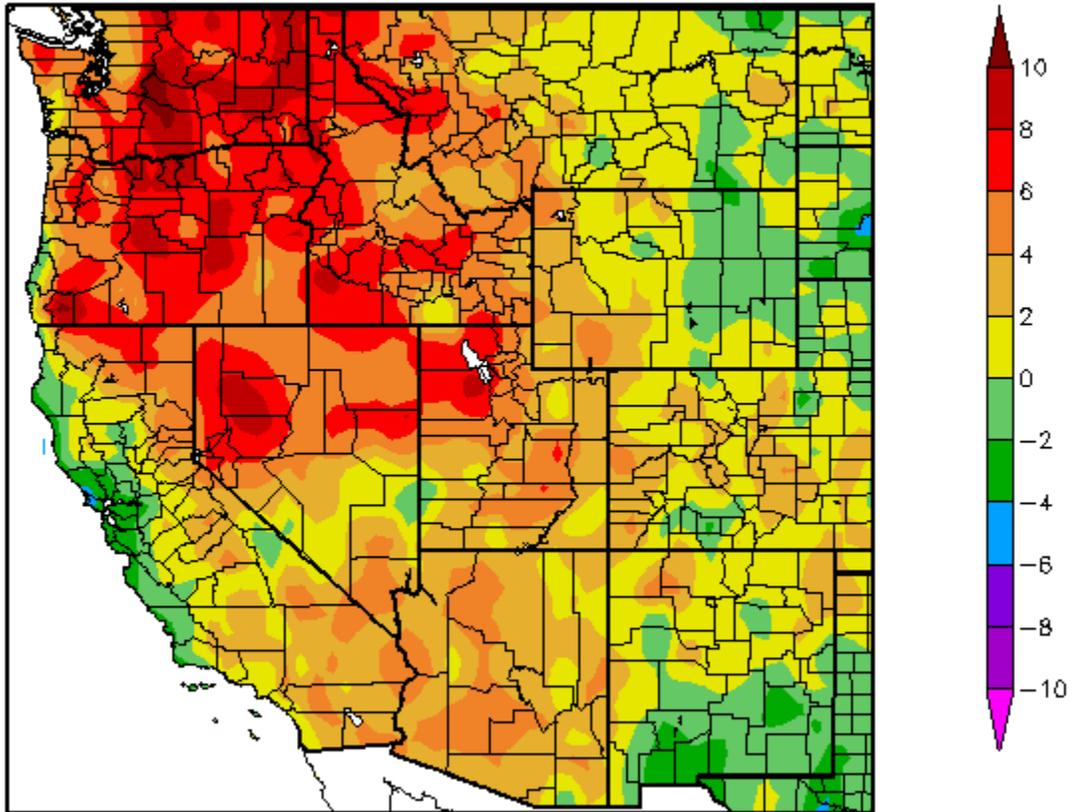


Fig. 2. SNOTEL & ACIS 7-day station average temperature anomalies were highest (positive departures) in the Pacific Northwest and lowest (negative departures) over the western High Plains and California coastline.

Ref: <ftp://ftp.wcc.nrcs.usda.gov/data/water/wcs/gis/maps/WestwideTavg7dAnomalyAcis.pdf>

Departure from Normal Temperature (F)
6/26/2008 – 7/2/2008



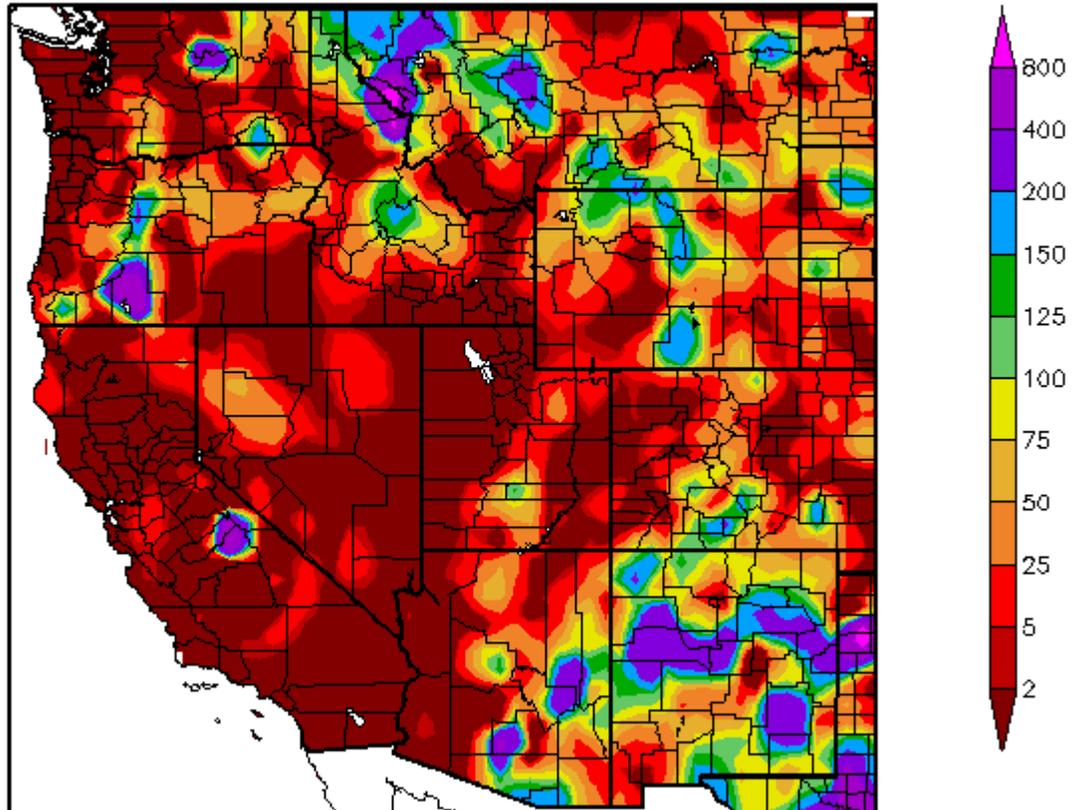
Generated 7/3/2008 at HPRCC using provisional data.

NOAA Regional Climate Centers

Fig. 2a. ACIS 7-day average temperature anomalies: Greatest positive temperature departures occurred over central Washington (<+10F) and greatest negative departures occurred over the central California coast and western South Dakota (<-6F).

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

Percent of Normal Precipitation (%)
6/26/2008 – 7/2/2008



Generated 7/3/2008 at HPRCC using provisional data.

NOAA Regional Climate Centers

Fig. 3. ACIS 7-day average precipitation anomaly: Preliminary precipitation totals for the 7-day period ending 2 July shows areas of heavy precipitation due to scattered thunderstorms over the Rockies and isolated elsewhere. Otherwise, typical dry conditions prevail over the West.

For information on the status of the Southwest Monsoon, see:

http://www.wrh.noaa.gov/twc/monsoon/monsoon_tracker.php

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

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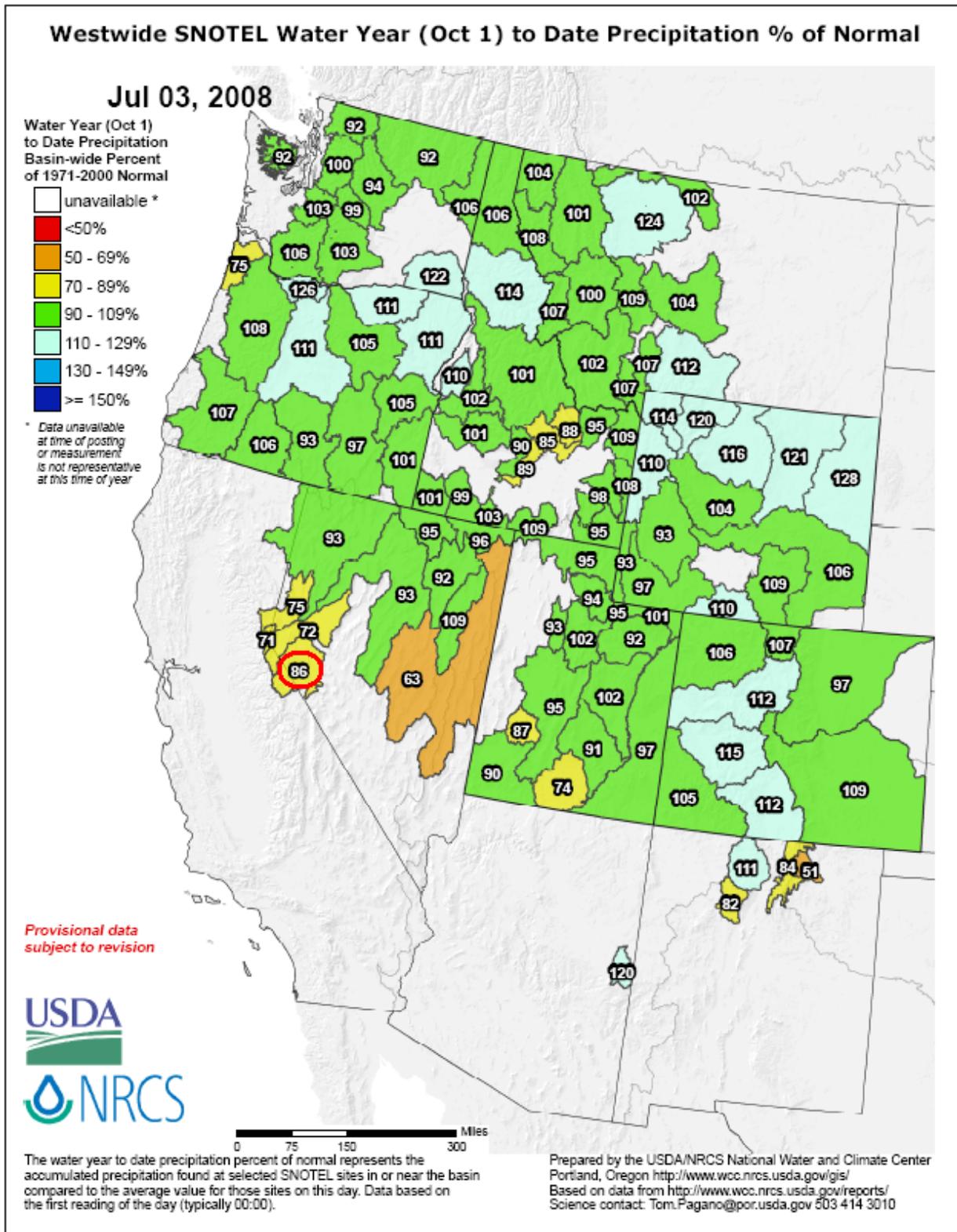
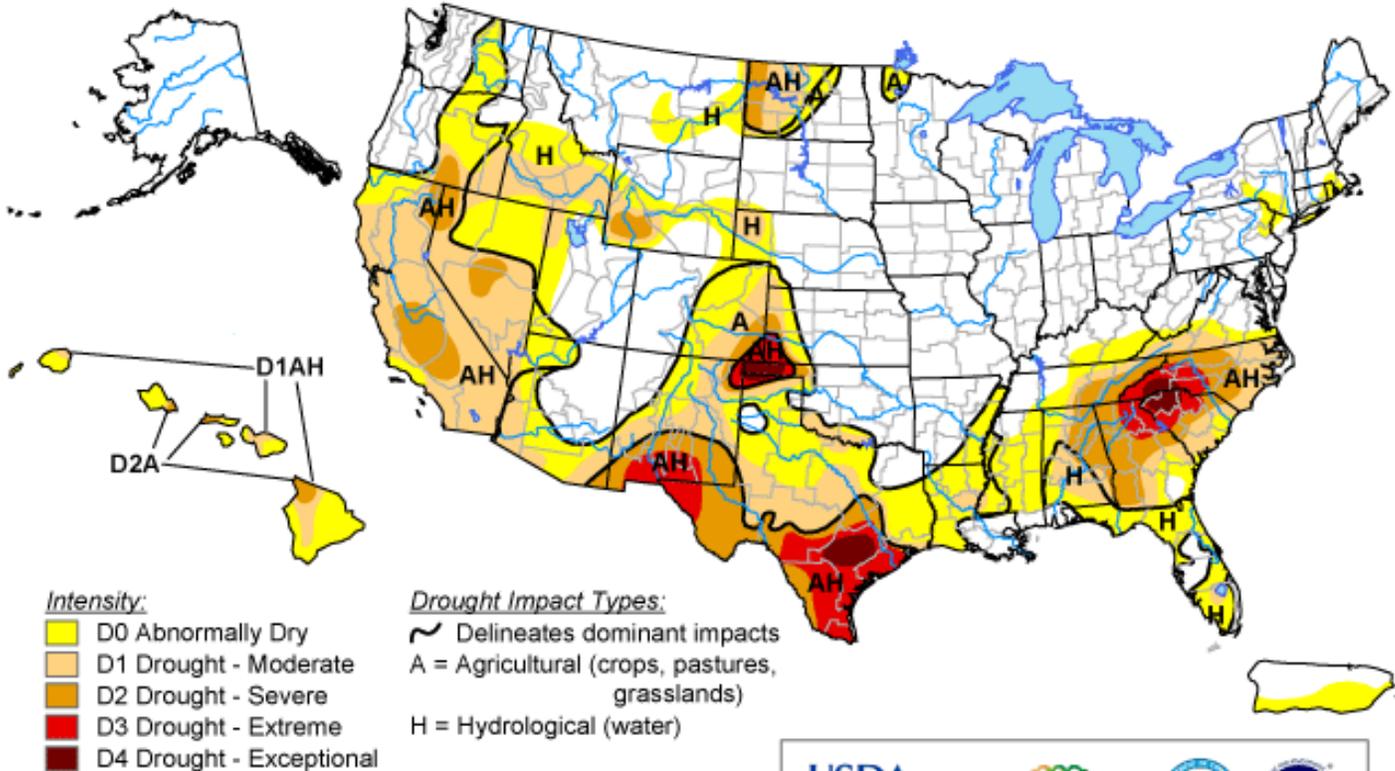


Fig 3a. Seasonal precipitation (rain & snow water equivalent) as a percent of normal for the 2008 Water Year that began on October 1, 2007 shows above normal totals over Colorado, central Arizona, parts of Oregon, and northern Wyoming. Parts of Nevada and southern New Mexico are experiencing significant shortfalls. No significant change since last week except as indicated by red circle - improvement.

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

U.S. Drought Monitor

July 1, 2008
Valid 8 a.m. EDT



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, July 3, 2008

Author: Rich Tinker, Climate Prediction Center/NOAA

Fig. 4. Current Drought Monitor weekly summary.

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

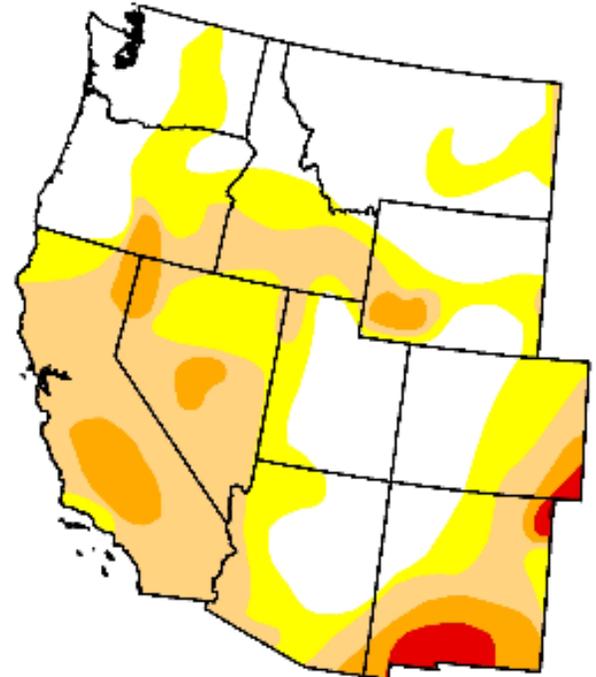
U.S. Drought Monitor

West

July 1, 2008
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	40.6	59.4	35.2	9.2	1.7	0.0
Last Week (06/24/2008 map)	40.2	59.8	36.4	9.4	1.8	0.0
3 Months Ago (04/08/2008 map)	42.4	57.6	33.7	5.4	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 (07/03/2007 map)	32.7	67.3	50.5	28.6	8.7	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



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

Fig. 4a. Drought Monitor for the Western States with statistics over various time periods. Note no significant changes in drought conditions since last week.

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

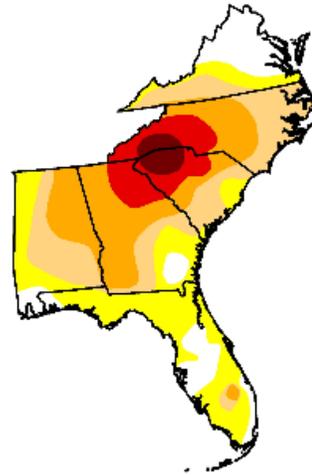
U.S. Drought Monitor

Southeast

July 1, 2008
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	14.3	85.7	58.6	35.0	12.3	2.8
Last Week (06/24/2008 map)	13.5	86.5	60.6	29.0	11.3	2.4
3 Months Ago (04/08/2008 map)	29.6	70.4	50.3	29.3	11.5	0.0
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 (07/03/2007 map)	7.1	92.9	65.5	40.1	23.1	7.5



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>



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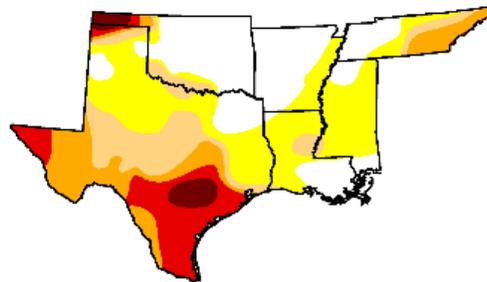
U.S. Drought Monitor

South

July 1, 2008
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	29.8	70.2	40.1	26.1	13.6	2.8
Last Week (06/24/2008 map)	32.7	67.3	43.6	27.9	15.0	0.9
3 Months Ago (04/08/2008 map)	49.4	50.6	28.7	8.9	5.4	0.0
Start of Calendar Year (01/01/2008 map)	57.5	42.5	12.9	4.3	3.8	1.6
Start of Water Year (10/02/2007 map)	77.6	22.4	12.6	10.2	7.5	4.9
One Year Ago (07/03/2007 map)	74.5	25.5	19.1	12.5	7.9	0.3



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>

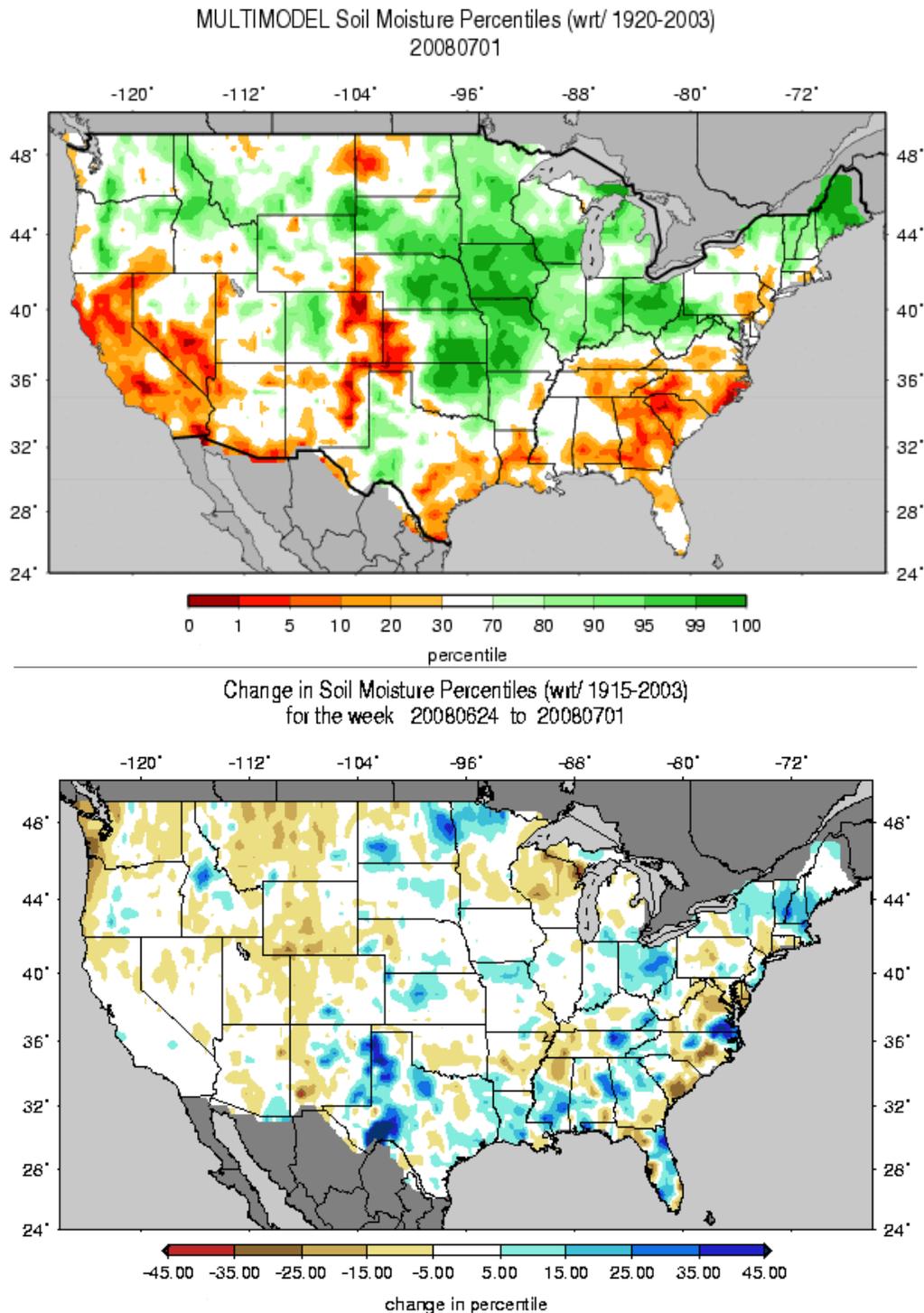


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Fig. 4b: Drought Monitor for the Southeastern and South-Central States shows some worsening drought conditions of the Southeast and little change over the South-Central States since last week.

Ref: http://www.drought.unl.edu/dm/DM_southeast.htm, http://www.drought.unl.edu/dm/DM_south.htm,

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Figs. 5 & 5a: Soil Moisture Ranking and change in percentile based on 1915-2003 climatology for this past week. Excessive moisture dominates the mid section of the nation but dryness persisted across the Southeast, Gulf Coast, eastern slope of the Central and Southern Rockies and much of California and southern Nevada (Fig. 5). Last week saw a significant increase in soil moisture over New England, the Northern Plains, and western Texas and worsening conditions over South Carolina and coastal Washington (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.vic.sm_qnt.1wk.gif

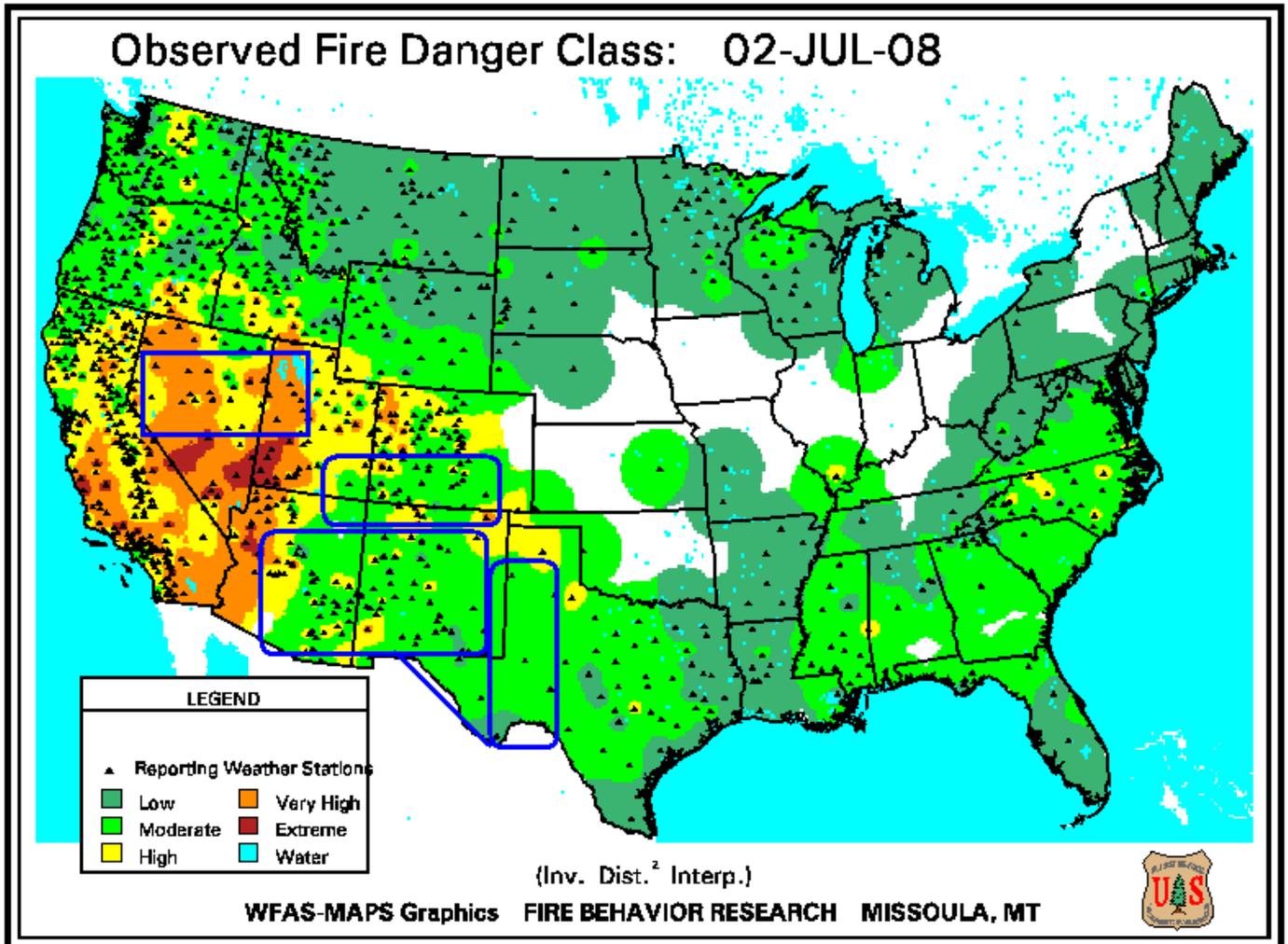
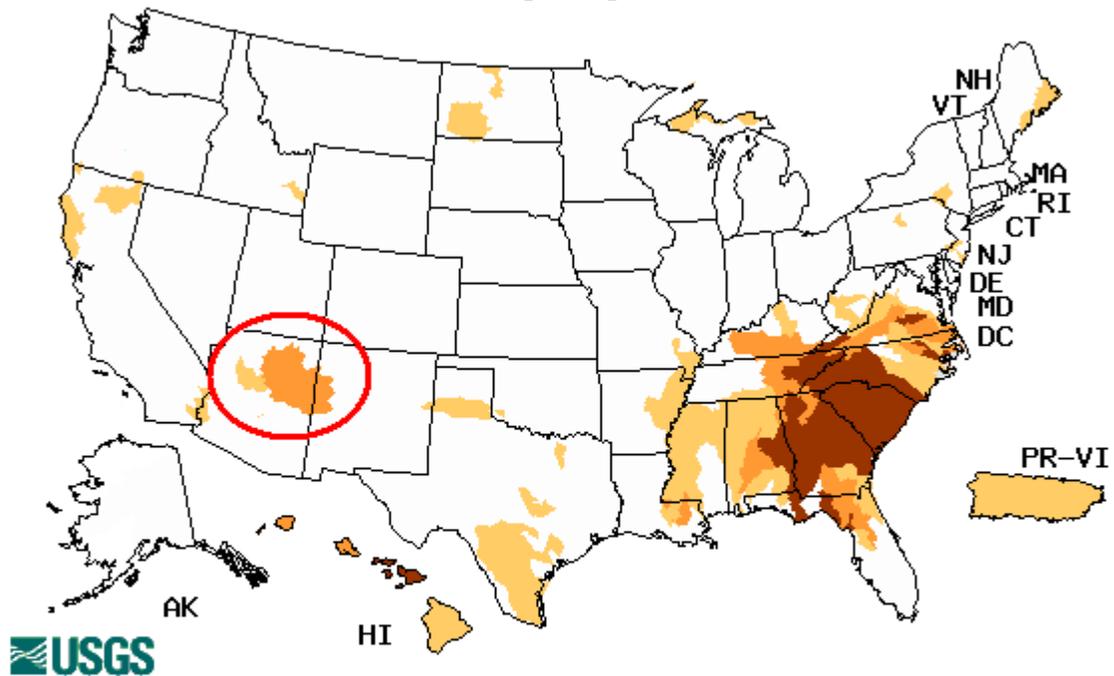


Fig. 6. Observed Fire Danger Class. Note extreme fire danger over the Great Basin. Conditions have improved over portions of the Great Basin and Southwest, including western Texas (blue circles) since last week. Source: Forest Service Fire Behavior Research – Missoula, MT. Ref: http://www.fs.fed.us/land/wfas/fd_class.gif

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Wednesday, July 02, 2008



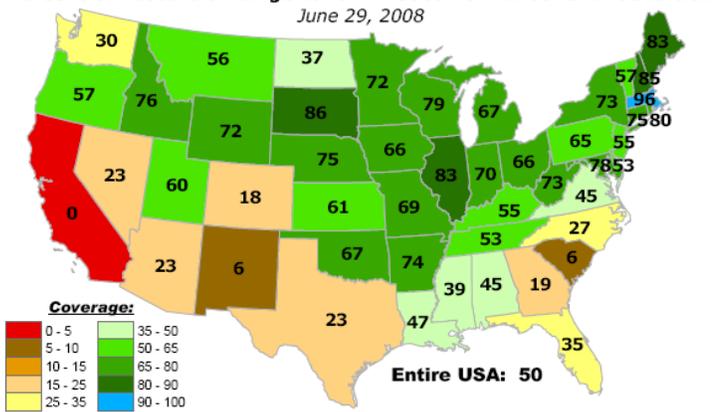
Explanation - Percentile classes				
Low	<=5	6-9	10-24	Insufficient data for a hydrologic region
Extreme hydrologic drought	Severe hydrologic drought	Moderate hydrologic drought	Below normal	

Fig. 7. This week's map shows continued low stream flow over parts of the Southeast. No significant change since last week except as noted by red circle - worsening.

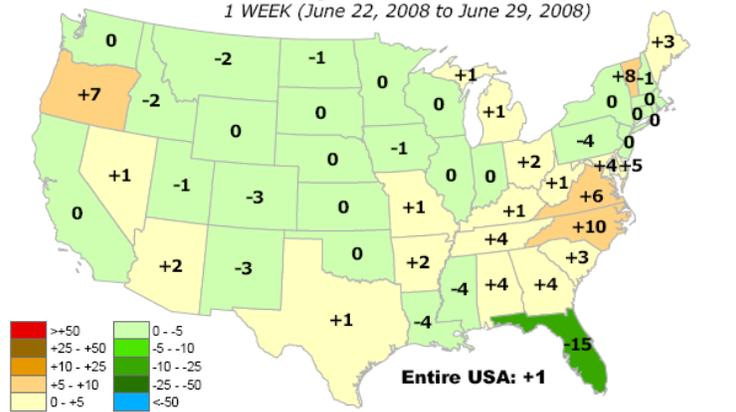
Ref: <http://water.usgs.gov/waterwatch/?m=dryw&w=map&r=us>

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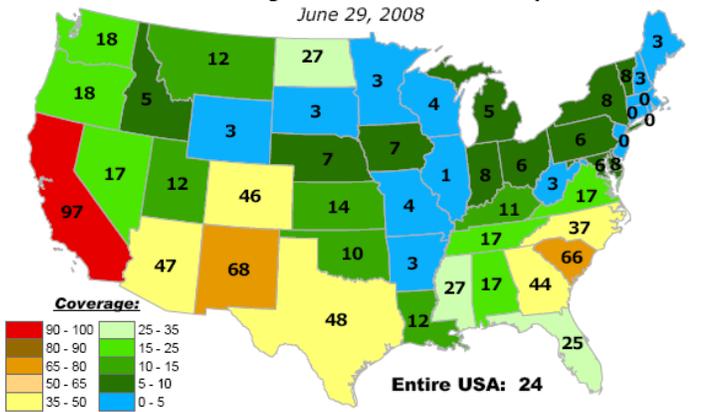
Percent of Pasture & Range Land in "Good" or "Excellent" Condition
June 29, 2008



CHANGE in % of Pasture and Range Lands in "Poor" or "Very Poor" Condition
1 WEEK (June 22, 2008 to June 29, 2008)



Percent of Pasture & Range Land in "Poor" or "Very Poor" Condition
June 29, 2008



CHANGE in % of Pasture and Range Lands in "Poor" or "Very Poor" Condition
4 WEEKS (June 1, 2008 to June 29, 2008)

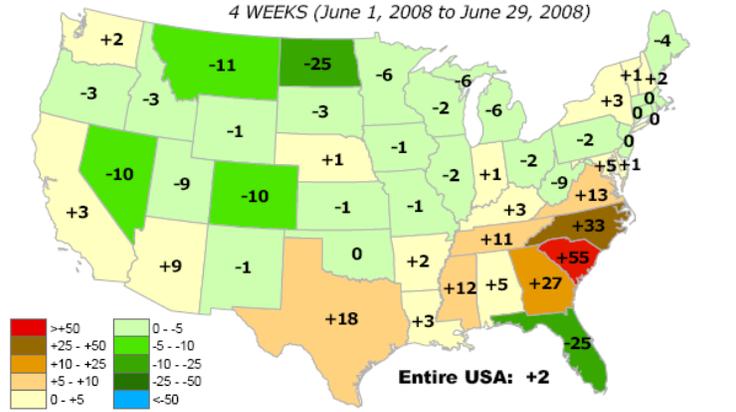


Fig. 8: Pasture and rangeland conditions and changes for various periods. Note significant worsening over North Carolina, Vermont, and Oregon, and, significant improvement over Florida since last week (top right). The nation's worse decrease during the past 4 weeks is in South Carolina (lower right).

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

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National Drought Summary -- July 1, 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 upper atmospheric high pressure center persisted over southern Arizona and New Mexico during this U.S. Drought Monitor (USDM) period. This resulted in a dry week throughout most of the West. Rain throughout the country's mid section moved south out of Iowa, bringing some much needed relief to areas of the central and southern Great Plains. Areas of the east coast saw sporadic rainfall with the exception of southern Florida where above normal rainfall persisted for a second week.

The Northeast: Moderate rainfall (0.5 to 2.0 inches) was fairly widespread across the abnormally dry areas of the Northeast, alleviating dryness where the heavier precipitation fell and reducing the extent of D0 conditions elsewhere. Pockets of abnormal dryness persisted in parts of interior southeastern New York, northeastern Pennsylvania and adjacent New Jersey, and the southernmost reaches of New England.

The Southeast: Although moderate rainfall was fairly common across the area afflicted by dryness and drought, the scattered nature of the precipitation, in conjunction with the long-term nature of the precipitation shortages across the region, led to little discernable relief from the protracted dry spell. In fact, an increase in the coverage was noted in the D1 to D3 areas that recorded less rainfall than most other parts of the region. Exceptional drought (D4) conditions expanded southeastward to cover a bit more of central South Carolina, and D1 to D3 conditions expanded eastward to cover increased areas along the south Atlantic Seaboard, especially across North Carolina. Farther west, D0 to D2 conditions expanded to cover much of Mississippi, all of western Alabama, and some of the central sections of Tennessee and Kentucky.

Farther south, the rainy season seems to have gotten underway in earnest across central and southern Florida. Drought conditions (D1 to D2) are now constricted to areas around and near Lake Okeechobee, and abnormally dry (D0) conditions pulled out of a significant section of central Florida.

The Central Plains and Upper Midwest: While severe weather and flooding rainfall continued to pound already-water-logged sections of the middle Mississippi Valley, precipitation remained elusive across the central High Plains. However, enough fell to remove D0 conditions from northeastern North Dakota, and to reduce the extent of D0 to D2 conditions from extreme eastern Montana eastward through the central Dakotas. Farther south, less robust precipitation fell from western North Dakota southward to the northern Texas Panhandle, keeping last week's D0 to D4 conditions intact, with the most severe conditions impacting areas across and adjacent to the Oklahoma Panhandle.

Texas and New Mexico: This was one of the few areas of dryness and drought that received substantial, drought-easing precipitation last week, though there were a few notable exceptions. Anywhere from 1 to several inches of precipitation induced 1-classification improvements for sizeable portions of Texas and eastern New Mexico. Amounts were quite heavy in a few isolated

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areas, most notably across inland areas near the far southeastern Texas coast, and at a few sites along the Rio Grande River in and near Val Verde County. In most areas, however, precipitation totals were less impressive (between 0.5 and 2.0 inches), and most of south-central and far southern Texas recorded little or no rainfall.

The resulting improvement from last week's Drought Monitor depiction was substantial and quite widespread, but there were no large-scale areas of dramatic improvement. Two-classification improvements were restricted to fairly small areas in eastern Pecos, Crockett, and the western portions of Schleicher and Sutton counties.

In stark contrast, another dry week across south-central and far southern Texas continued the trend observed in this region for approximately the last half of the year. Though dryness has not been exceptionally long-lived, the exceptional lack of precipitation during this period led to widespread D3 conditions throughout the area, with a new area of exceptional drought (D4) introduced in upper southern Texas, covering most or all of the counties of Bexar, Wilson, Guadalupe, Comal, Hayes, Caldwell, Gonzales, northern sections of Karnes and DeWitt, Bastrop, the southern reaches of Lee and Travis, Fayette, Lavaca, and Colorado.

The West: Seasonably dry conditions dominated the western states, resulting in little change in the drought status.

Hawaii, Alaska and Puerto Rico: Both Hawaii and Puerto Rico received at least light rain last week, enough to keep dryness and drought essentially intact. One exception came on the Big Island of Hawaii, where D2 conditions were assessed this week in the northern reaches, with D1 extending southward into the interior southern sections of the Island.

Looking Ahead: During July 3 – 8, heavy precipitation is forecast to bring some degree of drought relief to southern Texas and much of Peninsular Florida. Meanwhile, moderate rain should bring more limited relief to much of the Southeastern drought region, and to parts of the west-central Plains. Only light precipitation, if any, is anticipated in other area of dryness and drought across the contiguous 48 states. The ensuing five days look to be warmer than normal across almost the entire 48 contiguous states. The odds favor wetness in the southeastern half of Texas, the Gulf Coast states, much of New England, and New Mexico and adjacent locales. Farther west, seasonably dry conditions are expected to prevail.

Author: [Rich Tinker, Climate Prediction Center, 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 July 3, 2008