



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

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**Weekly Report - Snowpack / Drought Monitor Update**      **Date: 26 June, 2008**

## **SNOTEL SNOWPACK AND PRECIPITATION SUMMARY**

**Snow:** There are still a few locations across the Northern Rockies and Cascades that have substantial snow cover (based on SNOTEL reports) (Fig. 1). Snow-water equivalent percent for this Water Year as of 26 June continues to show exceptionally late snow melt over the northern states in the West (Fig. 1a).

For the past seven days, average temperature anomalies were generally within 5 degrees F of normal with a few exceptions (Fig. 2). Specifically, the greatest negative temperature departures occurred over western Washington and the Southern Cascades (<-3F) and the greatest positive departures occurred over southern California and southeast Arizona (>+8F) (Fig. 2a).

**Precipitation:** Preliminary precipitation totals for the 7-day period ending 26 June shows areas of heavy precipitation due to scattered thunderstorms over the Rockies and Intermountain West. Otherwise, typical dry conditions prevail over 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 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 (Fig. 3a).

## **WESTERN DROUGHT STATUS**

**The West:** In the West, weekly precipitation above 0.5 inches was limited to local areas of south-central and eastern New Mexico, northeastern Washington, northern Idaho, southern Montana, and eastern Wyoming. Most of the West received no rainfall which is not unusual for this time of year. Locally, exceptional (D4) drought was alleviated to a small extent in northeastern New Mexico.

Fires throughout the West increased dramatically this week, especially in northern California where 800 fires were started over the June 21-22 weekend by dry lightning strikes. As of June 25 there are 33 active wildfires in California which have consumed nearly 190,000 acres. Additional fires in Arizona and New Mexico have consumed another nearly 100,000 acres. According to the National Interagency Fire Center, 2008 has already surpassed the 5 and 10 year averages for acres burned but have done so with fewer fires, indicating larger fires this year, on average. **Author:** Mike Brewer, NOAA/NCDC

***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

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## Weekly Snowpack and Drought Monitor Update Report

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](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/cqibin/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.

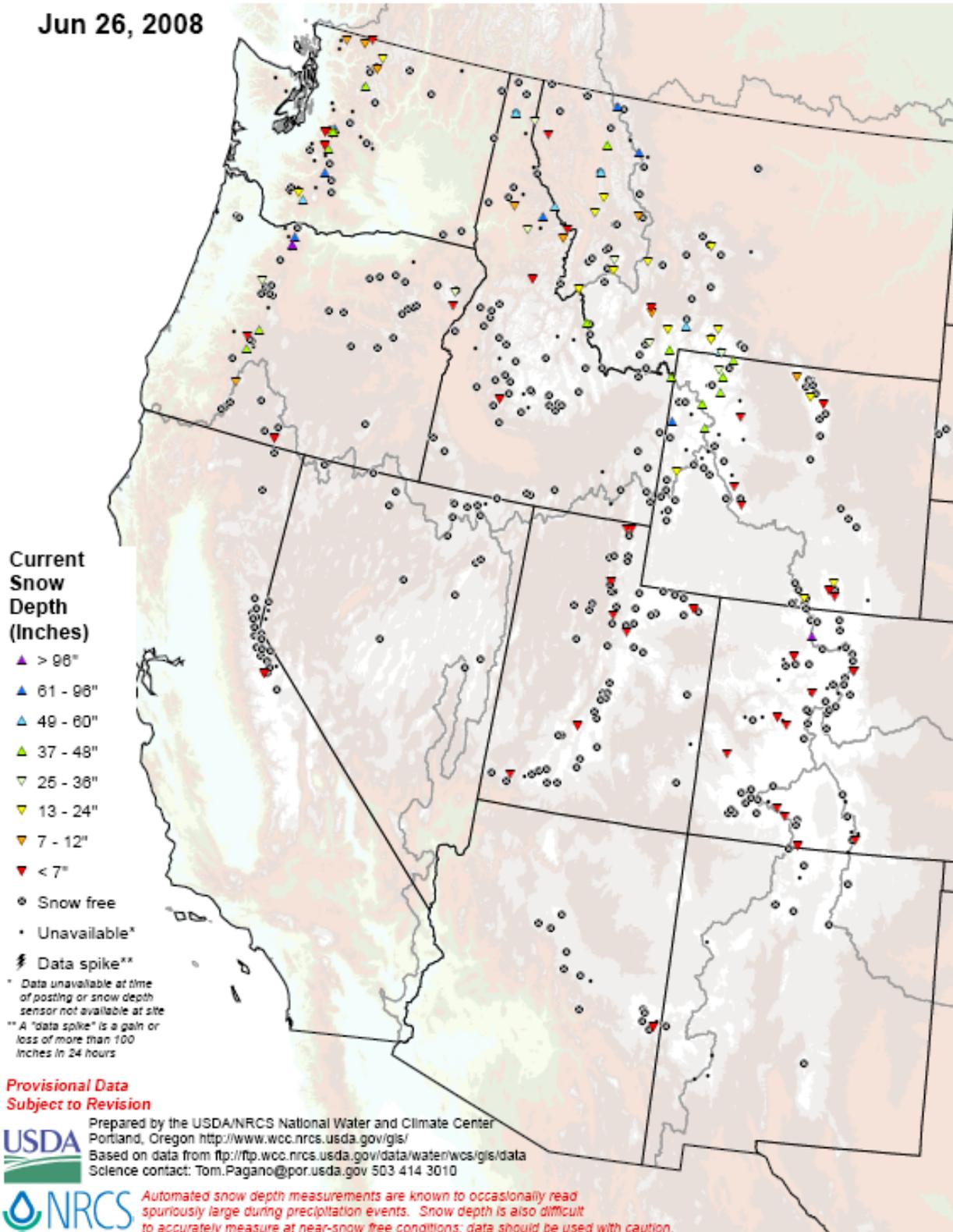
**Weekly Snowpack and Drought Monitor Update Report**

/s/ NOLLER HERBERT  
Director, Conservation Engineering Division

# Weekly Snowpack and Drought Monitor Update Report

## SNOTEL Current Snow Depth (Inches)

Jun 26, 2008



**Fig. 1. For those diehard skiers, there are still a few locations across the Northern Rockies and Cascades that have substantial snow cover (based on SNOTEL reports).**

Ref: [ftp://ftp.wcc.nrcs.usda.gov/data/water/wcs/gis/maps/west\\_snowdepth.pdf](ftp://ftp.wcc.nrcs.usda.gov/data/water/wcs/gis/maps/west_snowdepth.pdf)

Weekly Snowpack and Drought Monitor Update Report

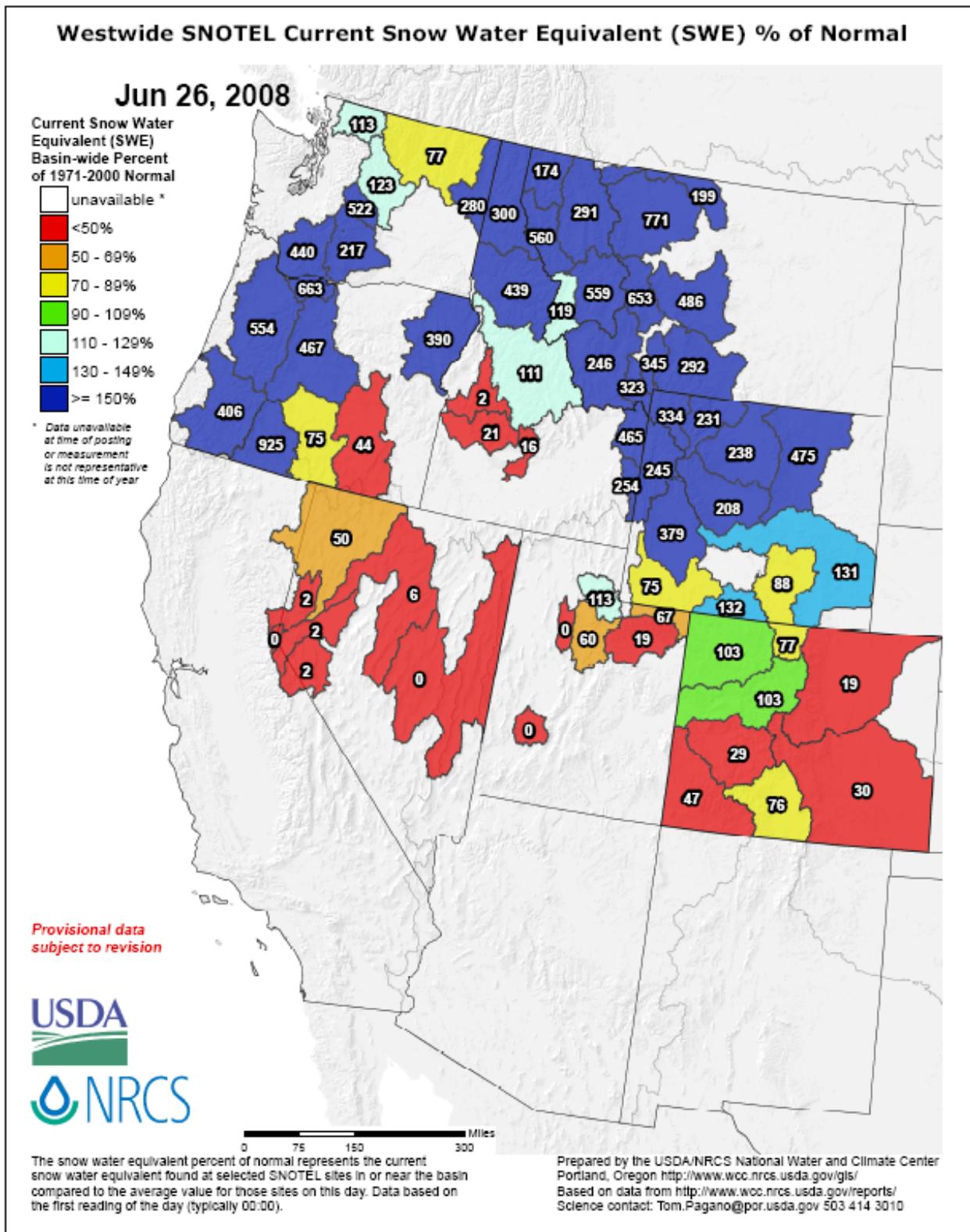


Fig. 1a. Snow-water equivalent percent for this Water Year as of 26 June shows exceptionally late snow melt over the northern states in the West. Remember that any snow cover that exists this late into the season is rare and thus the reason for the high percentages.

Ref: [ftp://ftp.wcc.nrcs.usda.gov/data/water/wcs/gis/maps/west\\_swepctnormal\\_update.pdf](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)

Jun 26, 2008

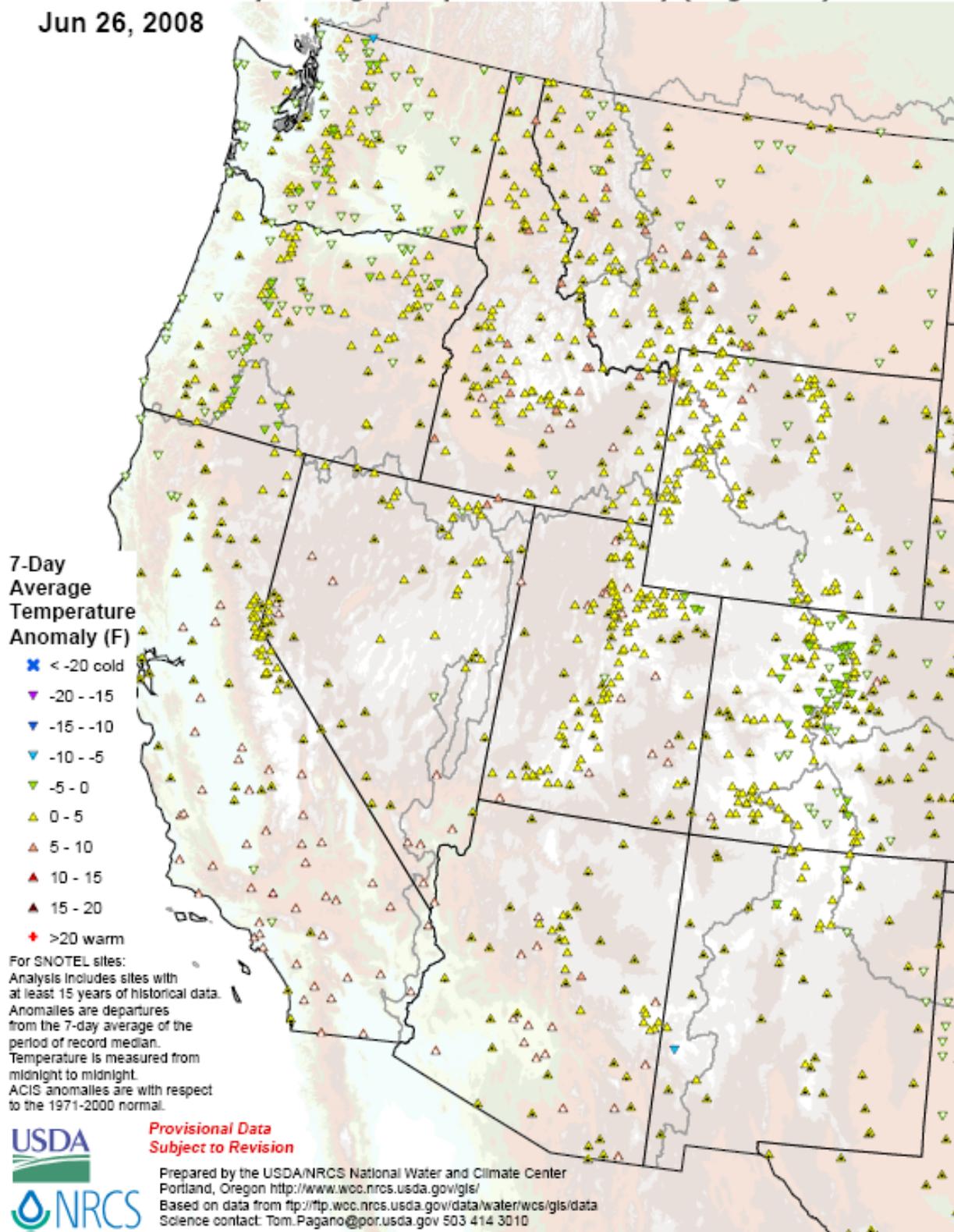
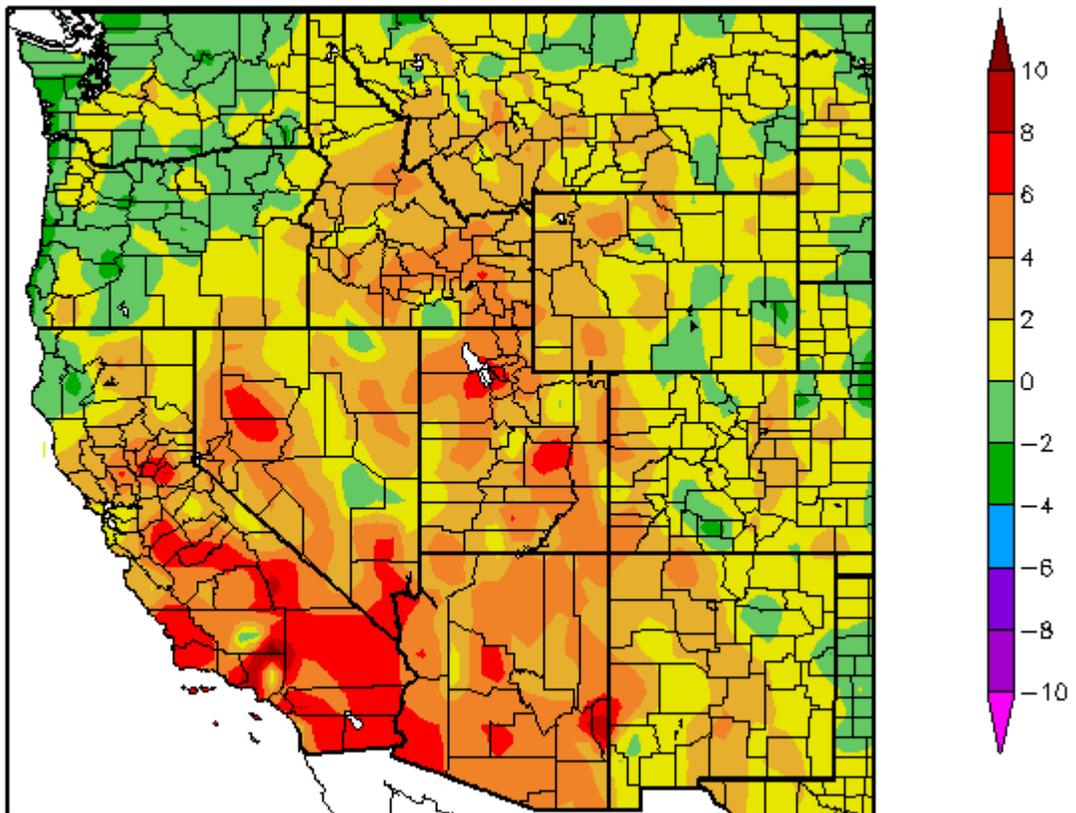


Fig. 2. SNOTEL & ACIS 7-day station average temperature anomalies were generally within 5 degrees F of normal.

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

Departure from Normal Temperature (F)  
6/19/2008 – 6/25/2008



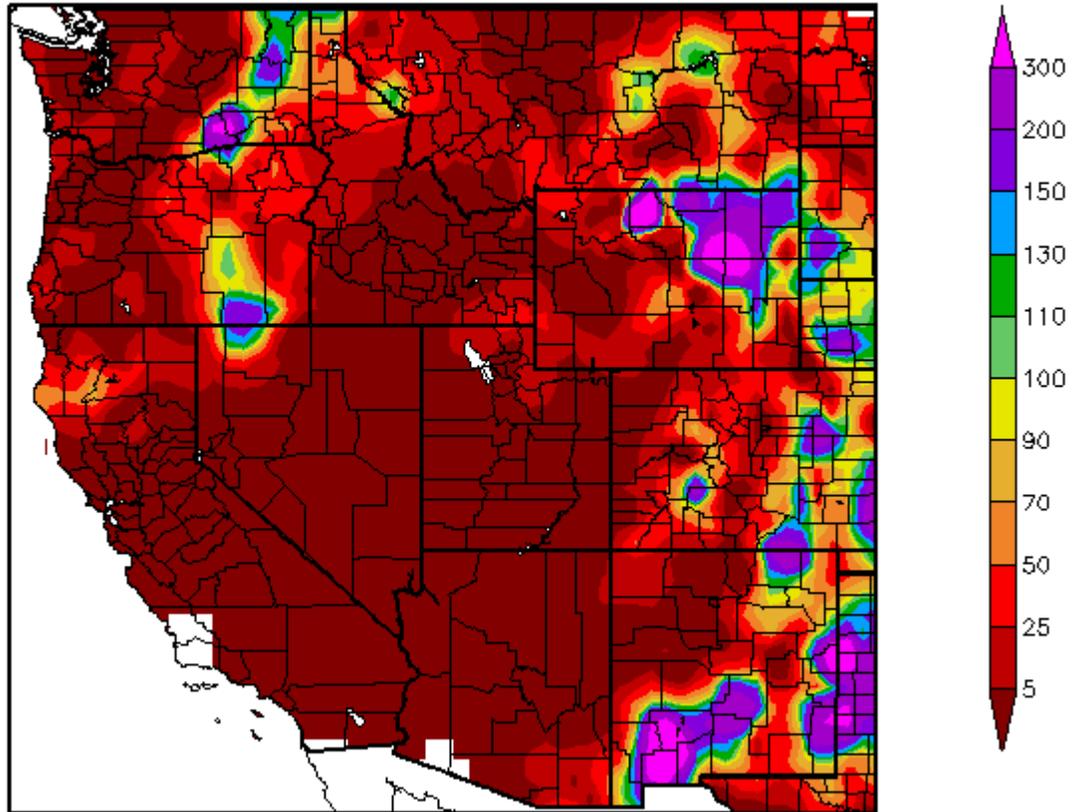
Generated 6/26/2008 at HPRCC using provisional data.

NOAA Regional Climate Centers

**Fig. 2a. ACIS 7-day average temperature anomalies: Greatest negative temperature departures occurred over western Washington and the Southern Cascades (<-3F) and greatest positive departures occurred over southern California and southeast Arizona (>+8F).**

Ref: [http://www.hprcc.unl.edu/maps/current/index.php?action=update\\_product&product=TDdept](http://www.hprcc.unl.edu/maps/current/index.php?action=update_product&product=TDdept)

Percent of Normal Precipitation (%)  
6/19/2008 – 6/25/2008



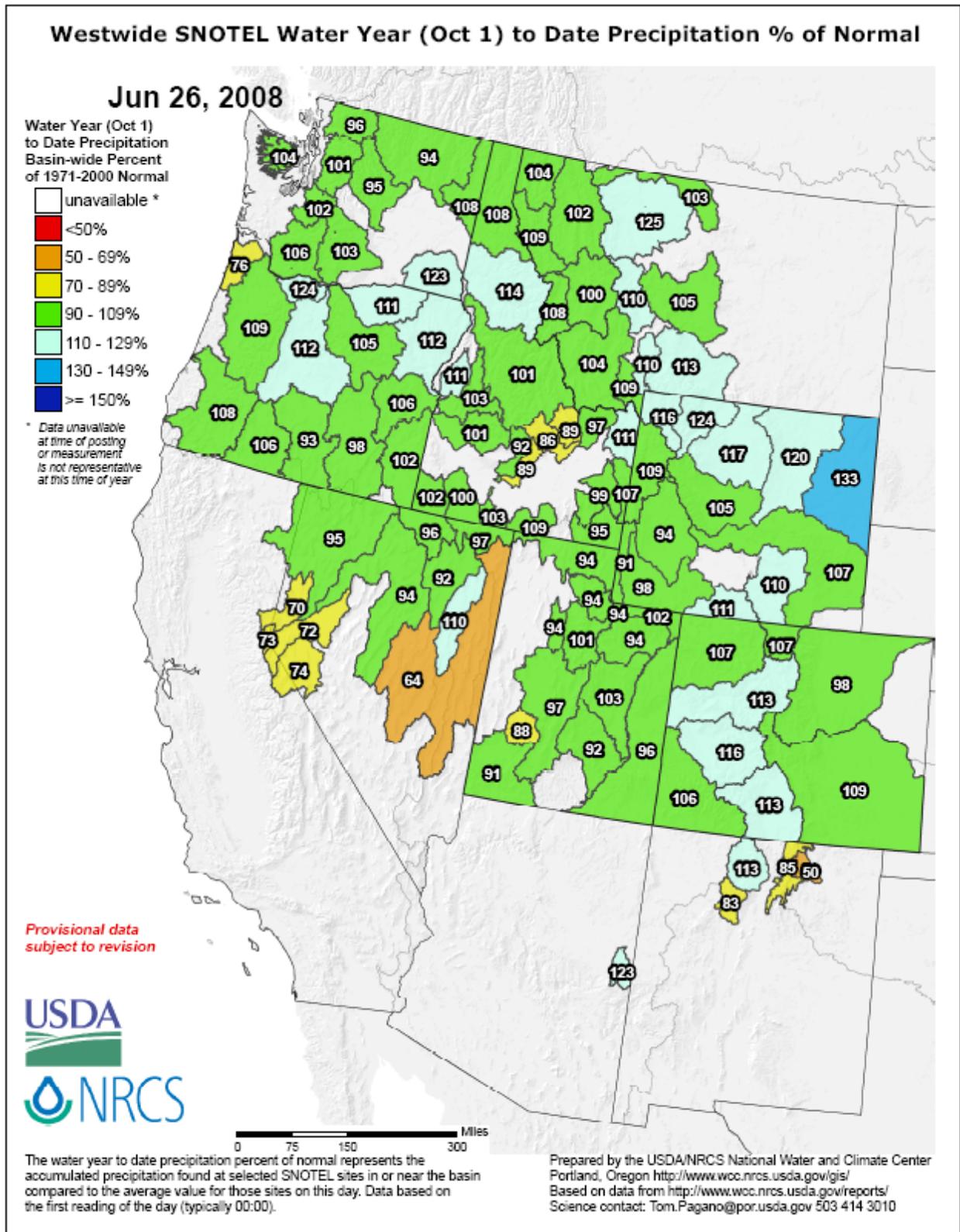
Generated 6/26/2008 at HPRCC using provisional data.

NOAA Regional Climate Centers

**Fig. 3. ACIS 7-day average precipitation anomaly: Preliminary precipitation totals for the 7-day period ending 26 June shows areas of heavy precipitation due to scattered thunderstorms over the Rockies and Intermountain West. Otherwise, typical dry conditions prevail over the West.**

Ref: [http://www.hprcc.unl.edu/maps/index.php?action=update\\_product&product=PNorm](http://www.hprcc.unl.edu/maps/index.php?action=update_product&product=PNorm)

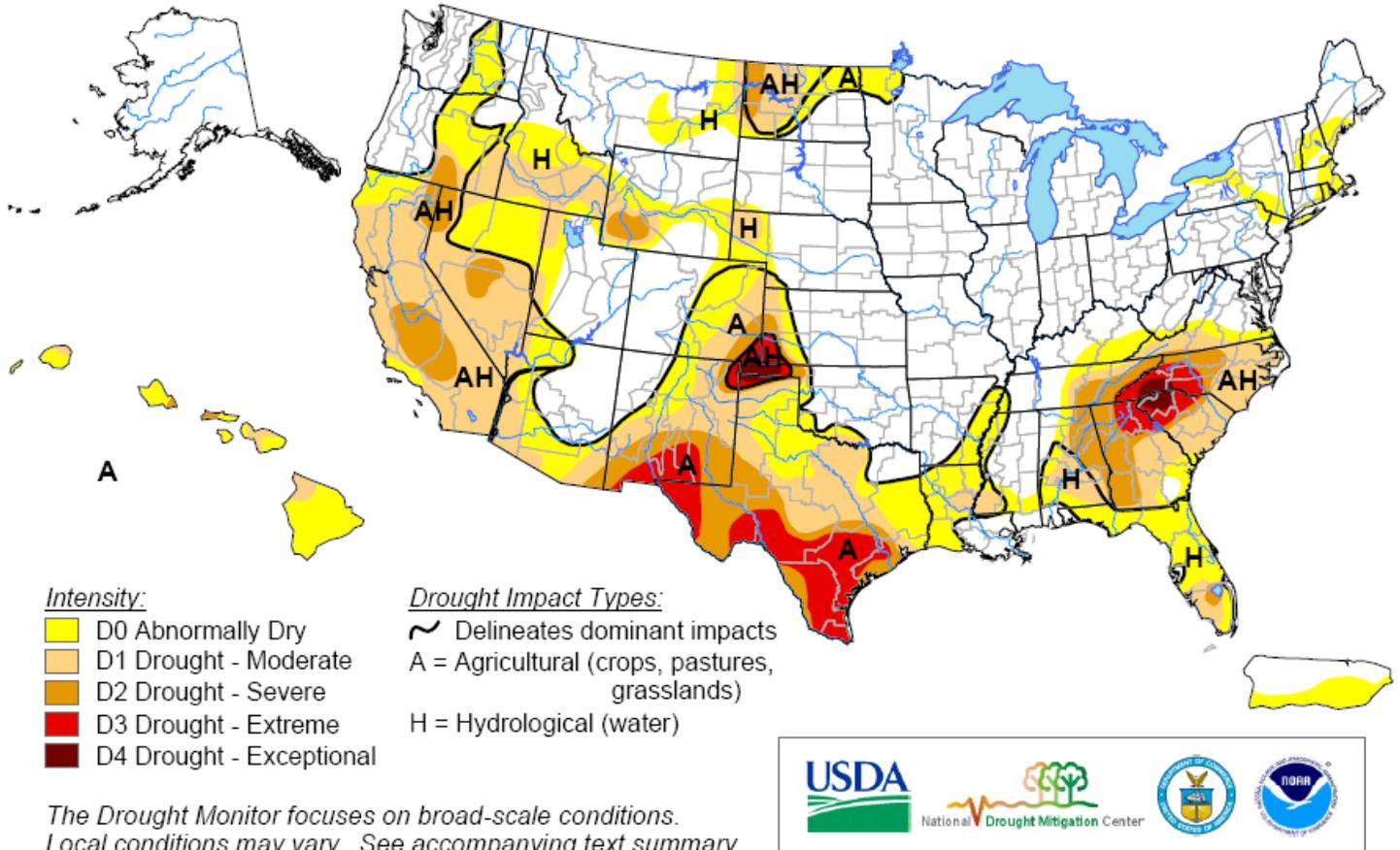
Weekly Snowpack and Drought Monitor Update Report



**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.**  
Ref: [http://ftp.wcc.nrcs.usda.gov/data/water/wcs/gis/maps/west\\_wytdprecptnormal\\_update.pdf](http://ftp.wcc.nrcs.usda.gov/data/water/wcs/gis/maps/west_wytdprecptnormal_update.pdf)

# U.S. Drought Monitor

June 24, 2008  
Valid 8 a.m. EDT



**Released Thursday, June 26, 2008**  
 Authors: Michael Brewer/Liz Love-Brotak, NOAA/NESDIS/NCDC  
<http://drought.unl.edu/dm>

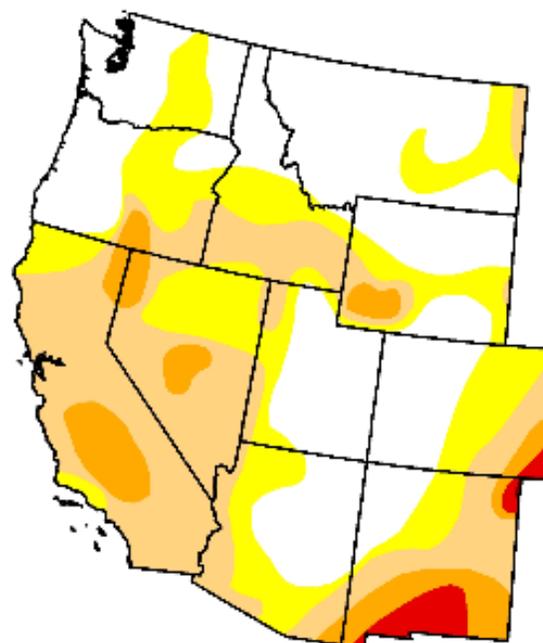
**Fig. 4. Current Drought Monitor weekly summary.**  
 Ref: National Drought Mitigation Center (NDMC) - <http://www.drought.unl.edu/dm/monitor.html>

# U.S. Drought Monitor West

June 24, 2008  
Valid 7 a.m. EST

*Drought Conditions (Percent Area)*

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	40.2	59.8	36.4	9.4	1.8	0.0
Last Week (06/17/2008 map)	40.1	59.9	35.9	9.4	1.8	0.1
3 Months Ago (04/01/2008 map)	40.6	59.4	36.3	7.5	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 (06/26/2007 map)	33.5	66.5	48.7	28.3	7.9	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, June 26, 2008**

Author: M. Brewer/L. Love-Brotak, NOAA/NESDIS/NCDC

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

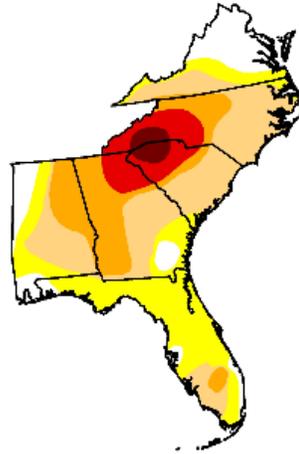
Ref: [http://www.drought.unl.edu/dm/DM\\_west.htm](http://www.drought.unl.edu/dm/DM_west.htm)

# U.S. Drought Monitor

## Southeast

June 24, 2008  
Valid 7 a.m. EST

	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	13.5	86.5	60.6	29.0	11.3	2.4
Last Week (06/17/2008 map)	13.5	86.5	61.8	24.1	10.5	0.9
3 Months Ago (04/01/2008 map)	23.8	76.2	59.4	39.2	17.9	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 (06/26/2007 map)	3.0	97.0	68.4	42.8	26.4	8.1



**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, June 26, 2008

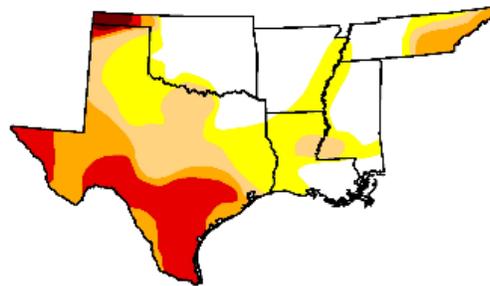
Author: M. Brewer/L. Love-Brotak, NOAA/NESDIS/NCDC

# U.S. Drought Monitor

## South

June 24, 2008  
Valid 7 a.m. EST

	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	32.7	67.3	43.6	27.9	15.0	0.9
Last Week (06/17/2008 map)	36.2	63.8	48.0	28.5	14.0	1.0
3 Months Ago (04/01/2008 map)	51.0	49.0	28.5	8.1	3.2	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 (06/26/2007 map)	72.9	27.1	19.6	13.1	9.3	0.8



**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>



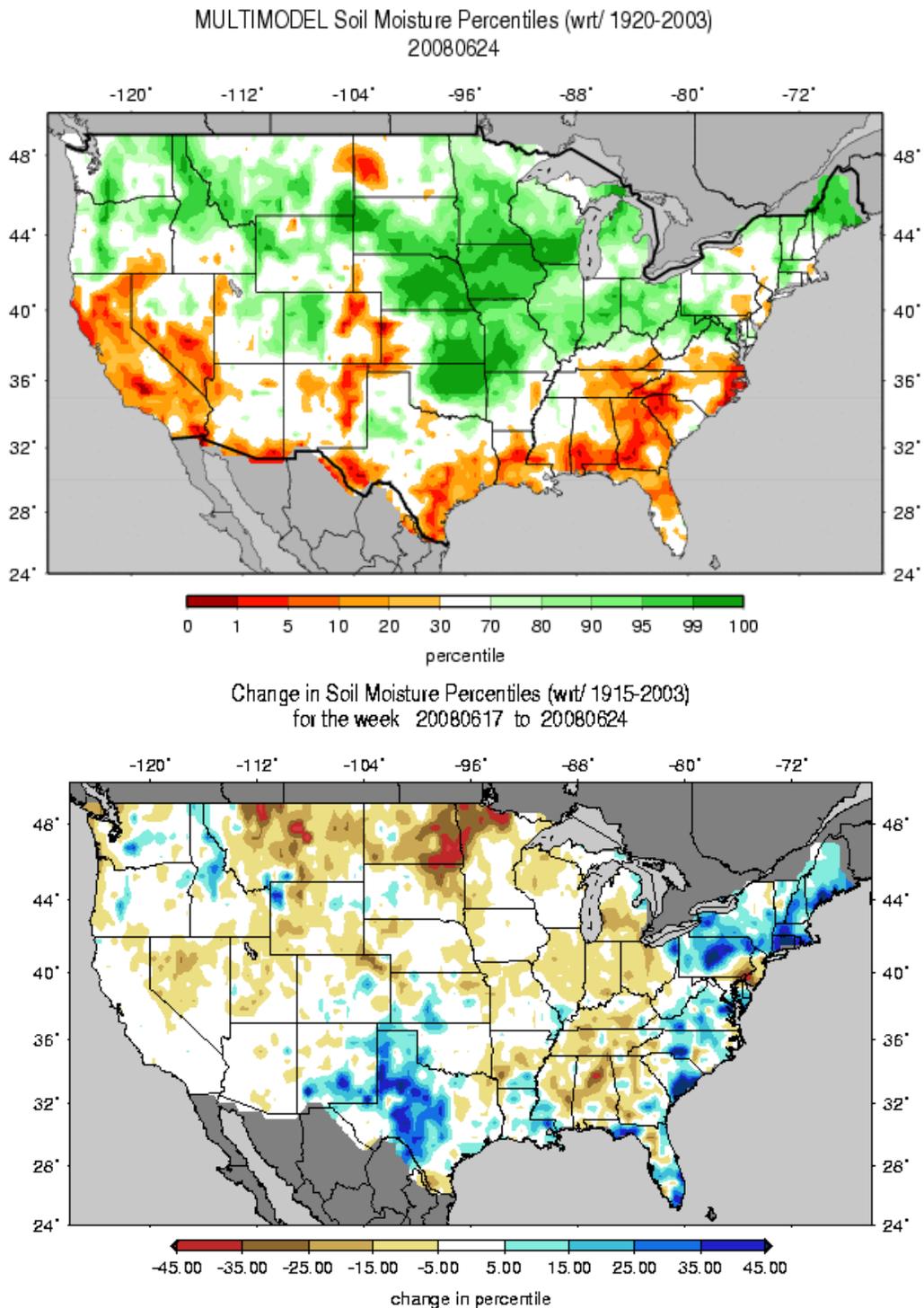
Released Thursday, June 26, 2008

Author: M. Brewer/L. Love-Brotak, NOAA/NESDIS/NCDC

**Fig. 4b: Drought Monitor for the Southeastern and South-Central States shows worsening drought conditions since last week.**

Ref: [http://www.drought.unl.edu/dm/DM\\_southeast.htm](http://www.drought.unl.edu/dm/DM_southeast.htm), [http://www.drought.unl.edu/dm/DM\\_south.htm](http://www.drought.unl.edu/dm/DM_south.htm).

## Weekly Snowpack and Drought Monitor Update Report



**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 Texas and the Eastern Seaboard while much of Montana and the Northern Plains were drying out (Fig. 5a).**

Ref: [http://www.hydro.washington.edu/forecast/monitor/curr/CONUS.multimodel.sm\\_gnt.gif](http://www.hydro.washington.edu/forecast/monitor/curr/CONUS.multimodel.sm_gnt.gif)  
[http://www.hydro.washington.edu/forecast/monitor/curr/CONUS.vic.sm\\_gnt.1wk.gif](http://www.hydro.washington.edu/forecast/monitor/curr/CONUS.vic.sm_gnt.1wk.gif)

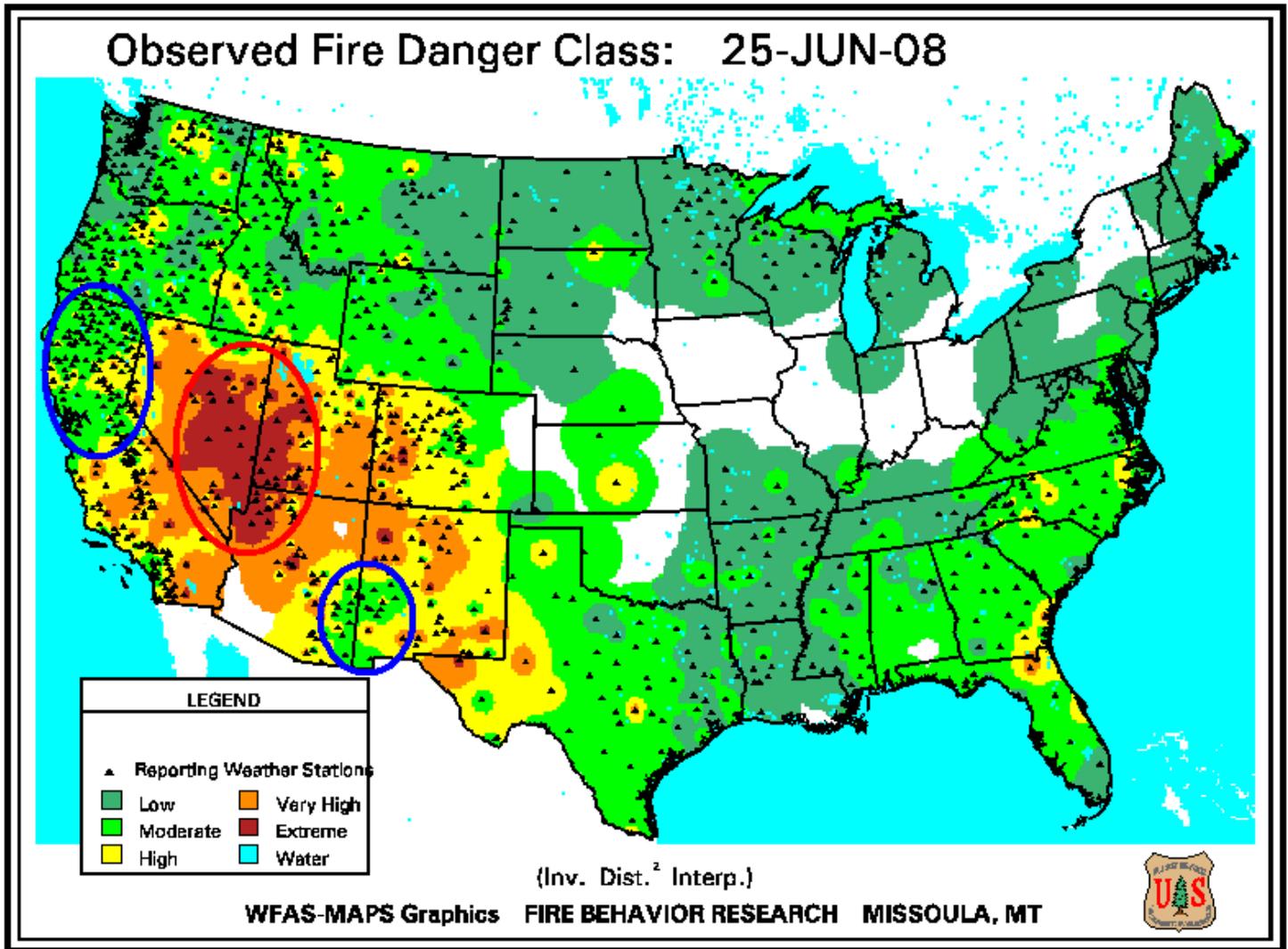
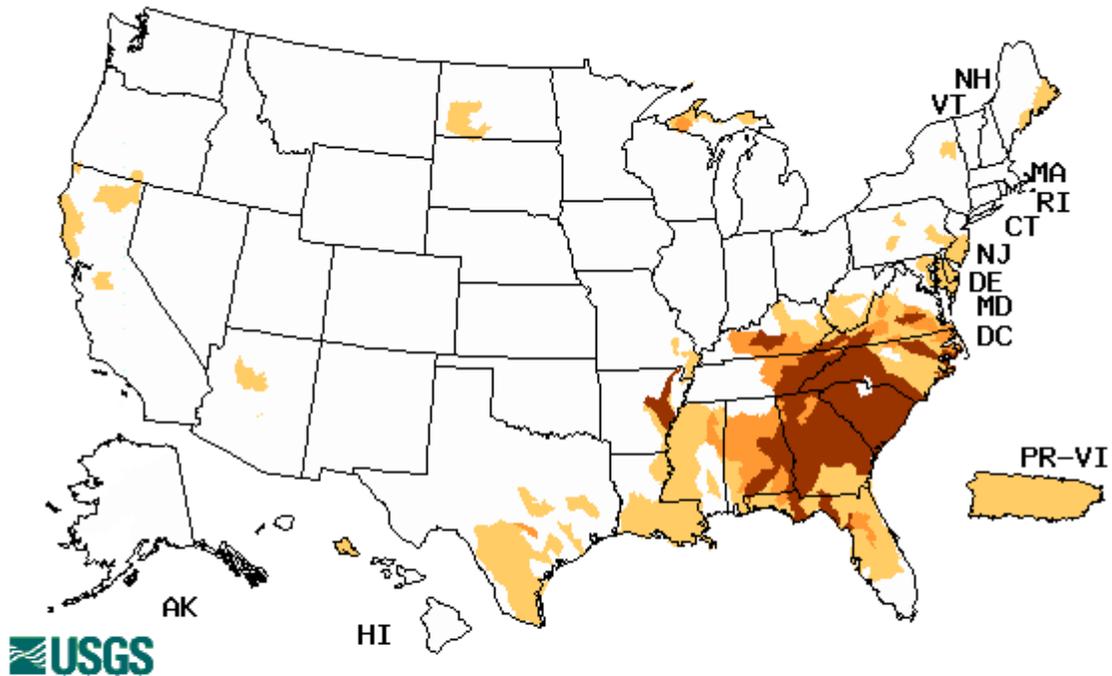


Fig. 6. Observed Fire Danger Class. Note extreme fire danger over the Great Basin. Conditions have rapidly worsened over Nevada (red circle) and have improved over northern California and southern Arizona and New Mexico (blue circles) since last week. Source: Forest Service Fire Behavior Research – Missoula, MT. Ref: [http://www.fs.fed.us/land/wfas/fd\\_class.gif](http://www.fs.fed.us/land/wfas/fd_class.gif)

# Weekly Snowpack and Drought Monitor Update Report

Wednesday, June 25, 2008

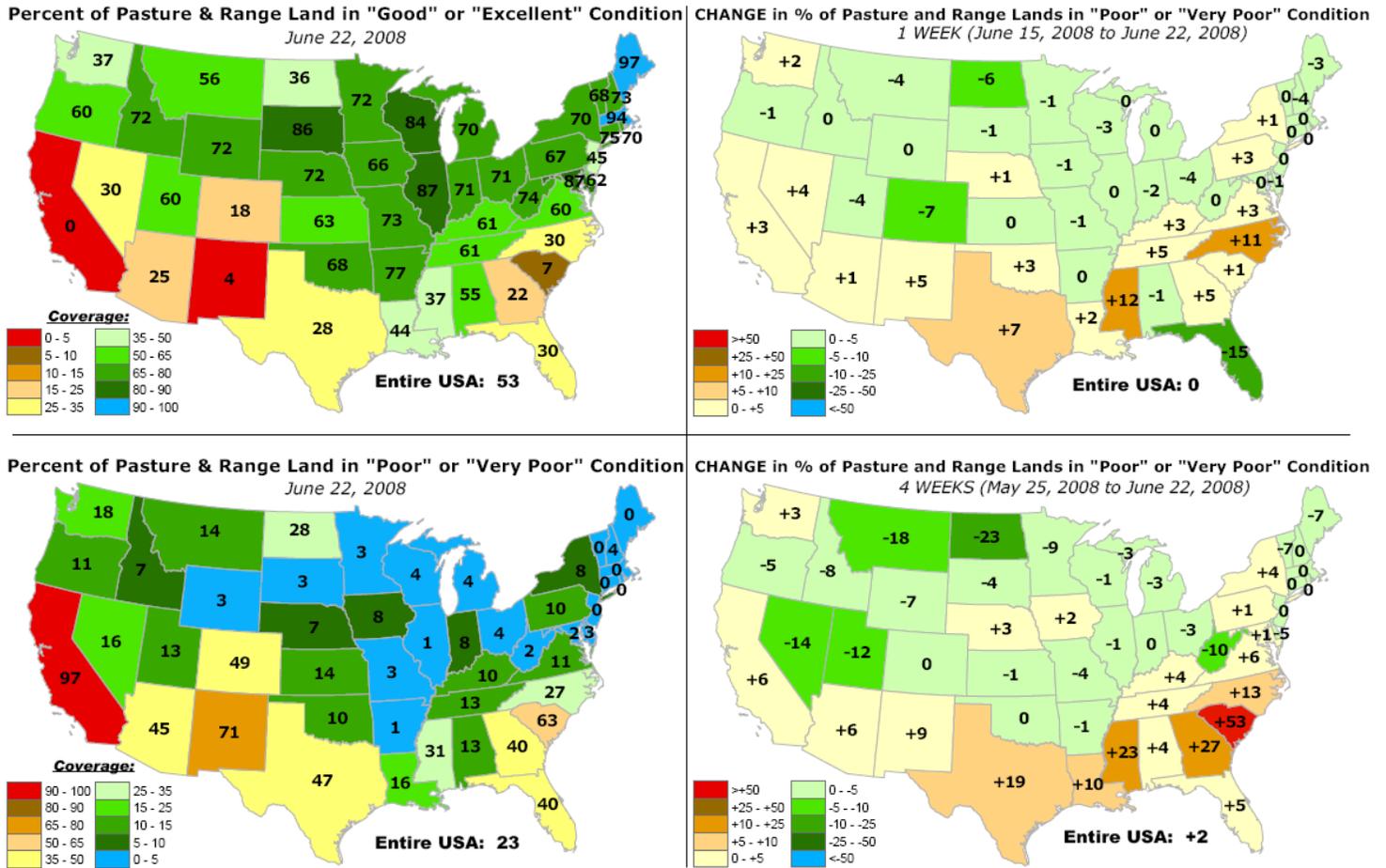


Explanation - Percentile classes				
Low	<=5	6-9	10-24	Insufficient data for a hydrologic region
Extreme hydrologic drought	Severe hydrologic drought	Moderate hydrologic drought	Below normal	

**Fig. 7. This week's map shows continued low stream flow over parts of the Southeast. No significant change since last week.**

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

# Weekly Snowpack and Drought Monitor Update Report



**Fig. 8: Pasture and rangeland conditions and changes for various periods. Note significant worsening over North Carolina and Mississippi and significant improvement over Florida since last week (top right).**

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

## Weekly Snowpack and Drought Monitor Update Report

### National Drought Summary -- June 24, 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:** Cool temperatures dominated the Northeast this week. These temperatures, combined with locally intense precipitation from Maine (over 4.5 inches in places) to Long Island Sound (up to 2.5 inches), led to the issuance of flood advisories. The sporadic precipitation contributed to a reduction in areas of abnormal dryness in the region, however, longer term impacts are still being felt in streamflow and groundwater.

**Mid-Atlantic and Southeast:** Summer heat was largely absent this week with almost all Mid-Atlantic and Southeast temperatures falling below normal. Much of the Tennessee and Ohio Valleys were at least 4 degrees Fahrenheit cooler than normal. Coastal Georgia and northeast Florida were the exception to this rule with temperatures just slightly above normal. Precipitation was primarily associated with scattered to isolated showers and thunderstorms again this week. Rainfall totals varied widely with the southern Atlantic coast of North Carolina, much of the South Carolina coast, and most of southern Florida receiving two to three times their normal precipitation. Miami received over seven inches of rain in the last week. This moisture helped abate the drought in southern and southwest Florida with decreases in both the moderate (D1) and severe (D2) conditions there. Long-term ground water levels are still low throughout the state. Conversely, conditions in North and South Carolina, throughout Georgia, and into Alabama continue to decline. Areas of moderate (D1), severe (D2), extreme (D3), and exceptional (D4) drought expanded last week. Most of Georgia is now covered by severe drought or worse.

**The Plains and Upper Midwest:** Heavy rains, severe weather, and flooding again were present throughout Plains and upper Midwest. Hail, wind, or tornadoes were reported in every state in the area. Beneficial rains again fell in western North Dakota, reducing the areas of moderate (D1) and severe (D2) drought there. Additional beneficial rains fell in north central Texas and southwest Oklahoma reducing areas of moderate (D1) drought and abnormal dryness (D0).

Rainfall largely evaded the Oklahoma panhandle again this week leaving exceptional (D4) drought in place. Conditions worsened along the Texas coast south of Houston. Extreme (D3) drought expanded there as well as in a few counties west of the area. Likewise this week, Arkansas began to see abnormally dry conditions (D0) along its eastern border.

Impacts of drought are evident in Texas agricultural conditions. The percentage of Texas corn in poor to very poor condition increased from 20% last week to 27% this week. Conditions also

## Weekly Snowpack and Drought Monitor Update Report

degraded for sorghum (26% rated poor to very poor this week versus 23% last week), cotton (38% versus 35% last week), winter wheat (54% versus 47% last week), and rangelands (47% versus 40% last week). Conversely, increased rainfall likely improved conditions for peanuts (10% rated poor to very poor versus 18% last week) and oats (22% this week versus 25% last week).

**The West:** In the West, weekly precipitation above 0.5 inches was limited to local areas of south-central and eastern New Mexico, northeastern Washington, northern Idaho, southern Montana, and eastern Wyoming. Most of the West received no rainfall which is not unusual for this time of year. Locally, exceptional (D4) drought was alleviated to a small extent in northeastern New Mexico.

Fires throughout the West increased dramatically this week, especially in northern California where 800 fires were started over the June 21-22 weekend by dry lightning strikes. As of June 25 there are 33 active wildfires in California which have consumed nearly 190,000 acres. Additional fires in Arizona and New Mexico have consumed another nearly 100,000 acres. According to the National Interagency Fire Center, 2008 has already surpassed the 5 and 10 year averages for acres burned but have done so with fewer fires, indicating larger fires this year, on average.

**Hawaii, Alaska and Puerto Rico:** Below normal precipitation continued across much of Hawaii this week. Likewise, temperatures were mostly cooler than normal. Drought conditions remain unchanged from last week.

Across Alaska, precipitation was near or slightly below normal. Drought conditions remain unchanged.

Rainfall fell over most of Puerto Rico this week. Precipitation varied from intense in the northwest part of the island to light along much of the south and interior. Rainfall amounts were generally well below normal however, longer term precipitation totals are near normal. Areas of drought remained unchanged.

**Looking Ahead:** June 26–30, 2008, heat continues to build in the West as temperatures near or warmer than normal are expected from the Mississippi River to the Pacific with the exception of the California coast. The Mid-Atlantic is also expected to see above normal temperatures. Below normal temperatures are forecast for areas near the western Great Lakes and along the Gulf of Mexico. Moderate to heavy precipitation (0.5 to 2+ inches) is forecast from the northern High Plains through the upper Mississippi and Ohio Valleys and into New England, as well as along the Gulf of Mexico. Light precipitation is again forecast west of the Rockies.

For the ensuing 5 days (July 1-5, 2008), the odds favor continued above-normal temperatures across most of the West (with the exception of the extreme Southwest), the western Plains, the upper Mississippi Valley, and along the Mid-Atlantic coast from southern New Jersey to northern Georgia. Below normal temperatures are favored around the lower Great Lakes and throughout most of southern Alaska. The odds also favor above normal precipitation along the Atlantic seaboard and the Gulf of Mexico. Additional smaller areas of above normal rainfall are expected in Colorado, New Mexico, and southeastern Alaska. Below normal precipitation is forecast for the northern Plains, the upper Mississippi Valley, and in northeast Alaska.

**Author:** Mike Brewer, NOAA/NCDC

## Weekly Snowpack and Drought Monitor Update Report

### 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 June 25, 2008