



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

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**Weekly Report - Snowpack / Drought Monitor Update**      **Date: 1 August, 2008**

## **SNOTEL SNOWPACK AND PRECIPITATION SUMMARY**

**Temperature:** SNOTEL-day station average temperature anomalies were highest (positive departures) over western Wyoming and lowest (negative departures) over the Central and Southern Cascades (Fig. 1). Specifically, the greatest positive temperature departures occurred over much of the eastern regions of the West (<+6) and greatest negative departures occurred over the Pacific Northwest (<-4F) (Fig. 1a).

**Precipitation:** Preliminary precipitation totals for the 7-day period ending 31 July shows areas of heavy precipitation due to isolated thunderstorms over portions of the West while the Southwest Monsoon appears to be in force over southern New Mexico. Otherwise, typical dry conditions prevail over the West (Fig. 2). For the latest information on the status of the Southwest Monsoon, see: [http://www.wrh.noaa.gov/twc/monsoon/monsoon\\_tracker.php](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 northern Wyoming. Parts of Nevada are experiencing significant shortfalls. Some recovery continues in precipitation has occurred over Arizona and New Mexico as a result of the SW Monsoon (Fig. 2a).

## **WESTERN DROUGHT STATUS**

**The West:** It was another dry week for most of the western United States. In Nevada, D1 was expanded east and north in the eastern part of the state to include the far western reaches of Utah. D2 was also pushed over White Pine County, where hydrological problems exist as well as low soil moisture. In Washington and Oregon, several indicators are showing short-term dryness along the coasts. At this time, D0 was expanded to include just the southwest part of Oregon, but other areas of both states may be prone to deterioration if conditions continue to decline.

D2 with an Agriculture designation was added to portions of northern and central California. Based on various indicators, this was needed and due. Nonirrigated, dryland, and natural vegetations are in very bad shape with no relief in sight in the near term. Lack of rainfall in early spring has severely impacted pasture growth throughout the state, and 8.7 million acres are showing a loss of 58.7 percent (average for the state) of annual forage for the year so far. Several counties are showing forage losses: up to 85 percent in Glenn County, 80 percent in Napa County, and 85 percent in Calaveras County. Supplemental feeding is taking place and many producers are selling off animals already because of lack of forage and rising feed costs.

**Authors:** [Brian Fuchs, National Drought Mitigation Center/](#) [Laura Edwards, Western Regional Climate Center](#)

***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

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## Weekly Snowpack and Drought Monitor Update Report

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. 3, 3a, and 3b).

### SOIL MOISTURE

Soil moisture (Figs. 4 and 4a), 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. 5 shows the current active wildfires across the West - <http://geomac.usgs.gov/>.

### U.S. HISTORICAL STREAMFLOW

This map, (Fig. 6) 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).

### STATE ACTIVITIES

State government drought activities can be tracked at the following URL: <http://drought.unl.edu/mitigate/mitigate.htm>. NRCS SS/WSF State Office personnel are participating in state drought committee meetings and providing the committees and media with appropriate SS/WSF information - <http://www.wcc.nrcs.usda.gov/cgibin/bor.pl>. Additional information describing the products available from the Drought Monitor can be found at the following URL: <http://drought.unl.edu/dm/>

### FOR MORE INFORMATION

The National Water and Climate Center Homepage provide the latest available snowpack and water supply information. Please visit us at <http://www.wcc.nrcs.usda.gov>. This document is available from the following location on the NWCC homepage - <http://www.wcc.nrcs.usda.gov/water/drought/wdr.pl>

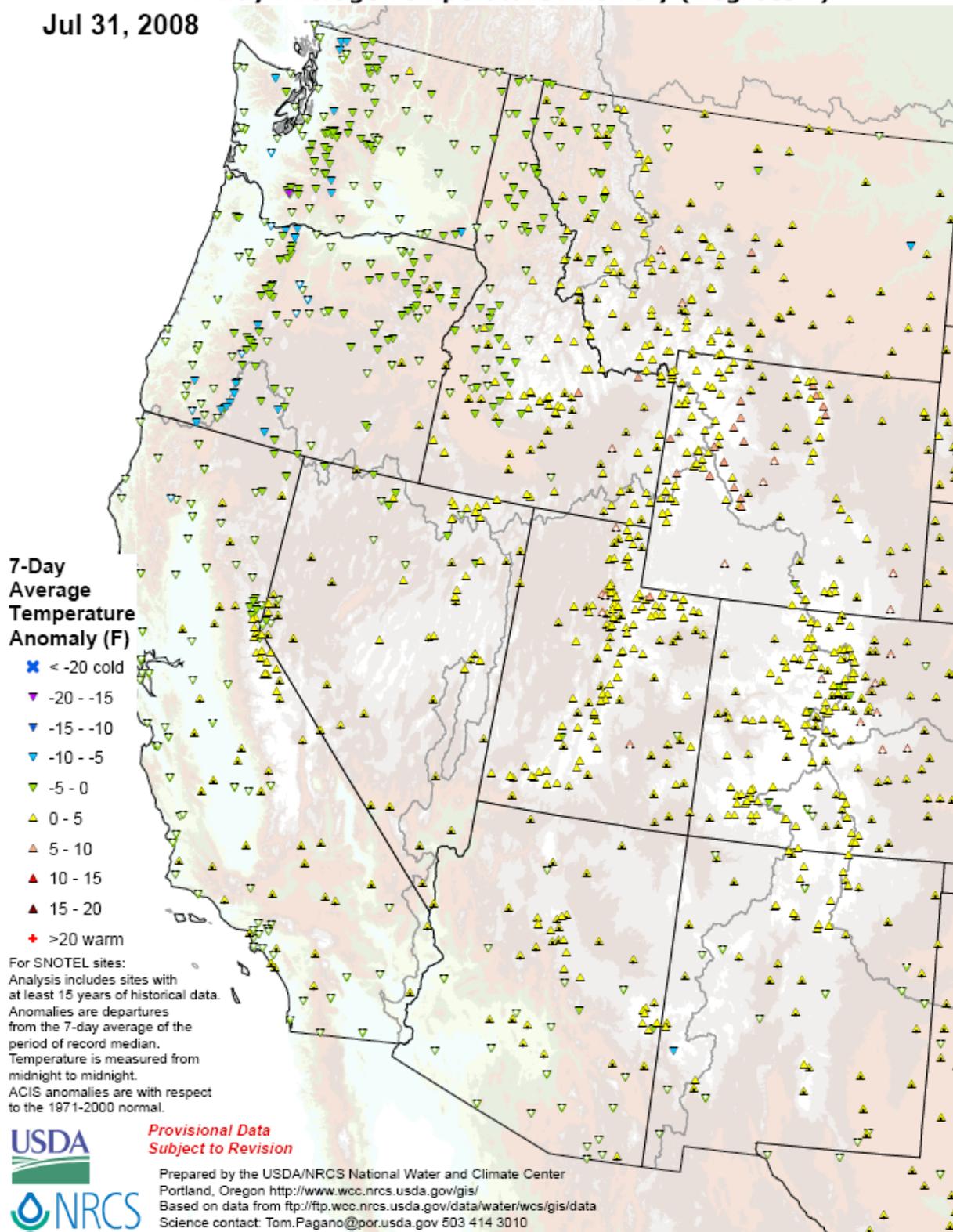
This report uses data and products provided by the Interagency Drought Monitor Consortium members and the National Interagency Fire Center.

/s/ NOLLER HERBERT  
Director, Conservation Engineering Division

# Weekly Snowpack and Drought Monitor Update Report

## SNOTEL (solid) and ACIS (dot-filled) Networks 7-Day Average Temperature Anomaly (Degrees F)

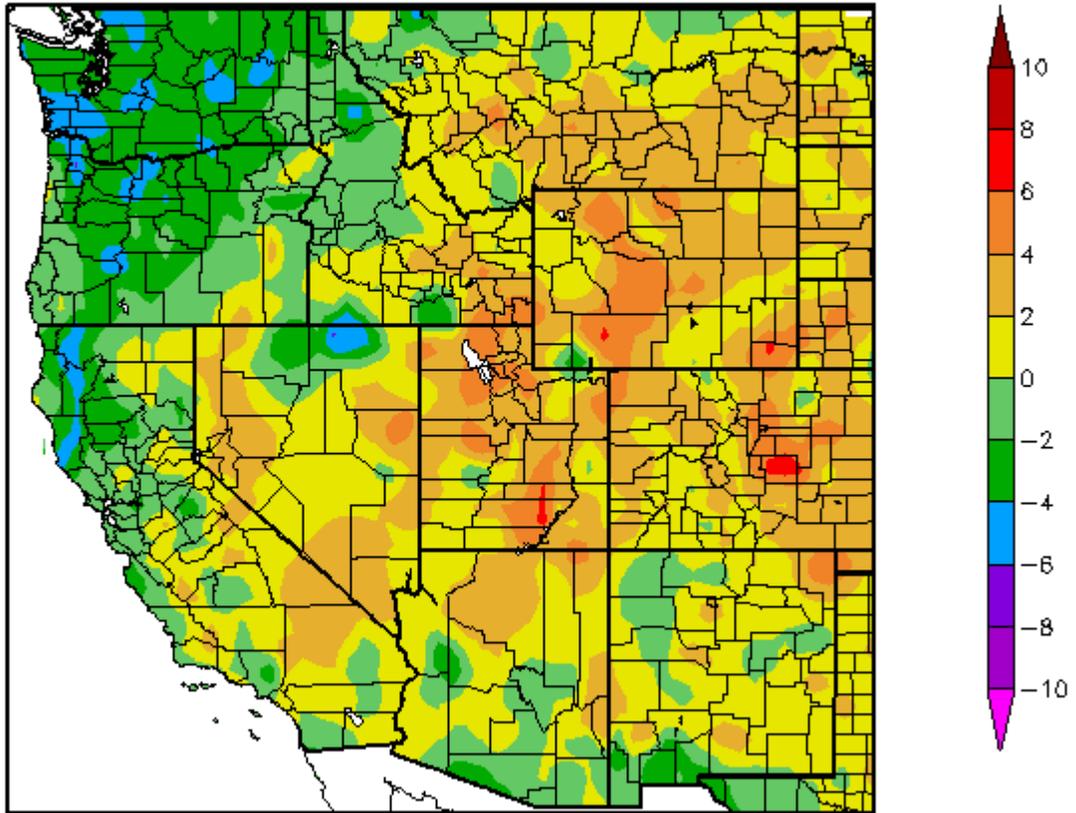
Jul 31, 2008



**Fig. 1. SNOTEL and ACIS-day station average temperature anomalies were highest (positive departures) over western Wyoming and lowest (negative departures) over the Central and Southern Cascades.**

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

Departure from Normal Temperature (F)  
7/25/2008 – 7/31/2008



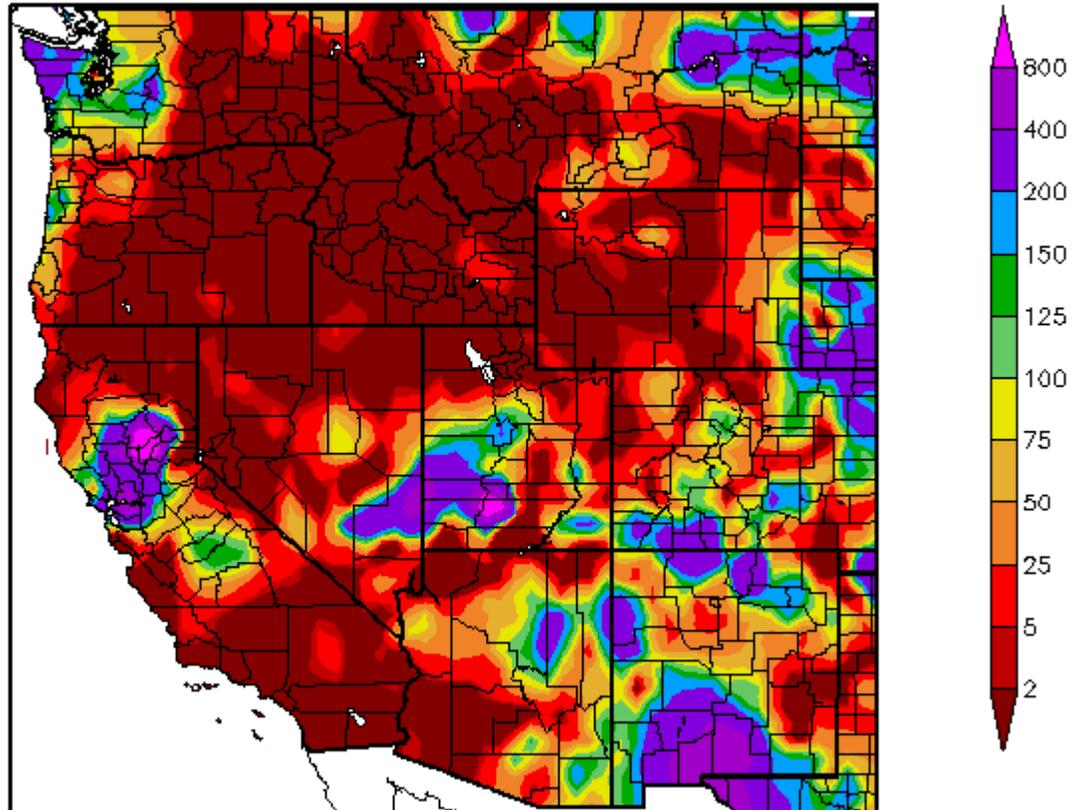
Generated 8/1/2008 at HPRCC using provisional data.

NOAA Regional Climate Centers

**Fig. 1a. ACIS 7-day average temperature anomalies: Greatest positive temperature departures occurred over much of the eastern regions of the West (<+6) and greatest negative departures occurred over Pacific Northwest (<-4F).**

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 (%)  
7/25/2008 – 7/31/2008



Generated 8/1/2008 at HPRCC using provisional data.

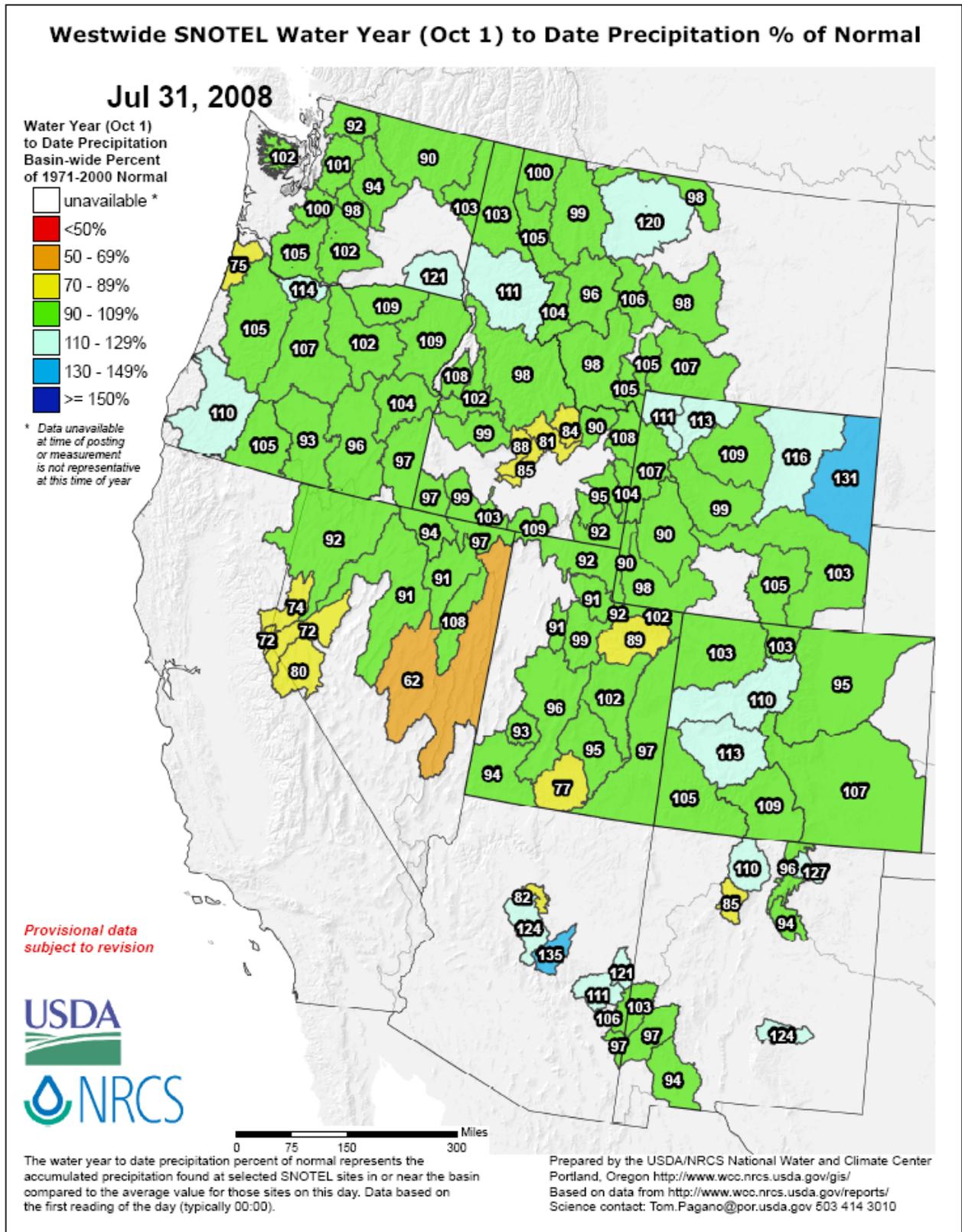
NOAA Regional Climate Centers

**Fig. 2. ACIS 7-day average precipitation anomaly: Preliminary precipitation totals for the 7-day period ending 31 July shows areas of heavy precipitation due to isolated thunderstorms over portions of the West while the Southwest Monsoon appears to be in force over southern New Mexico. 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](http://www.wrh.noaa.gov/twc/monsoon/monsoon_tracker.php)

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)

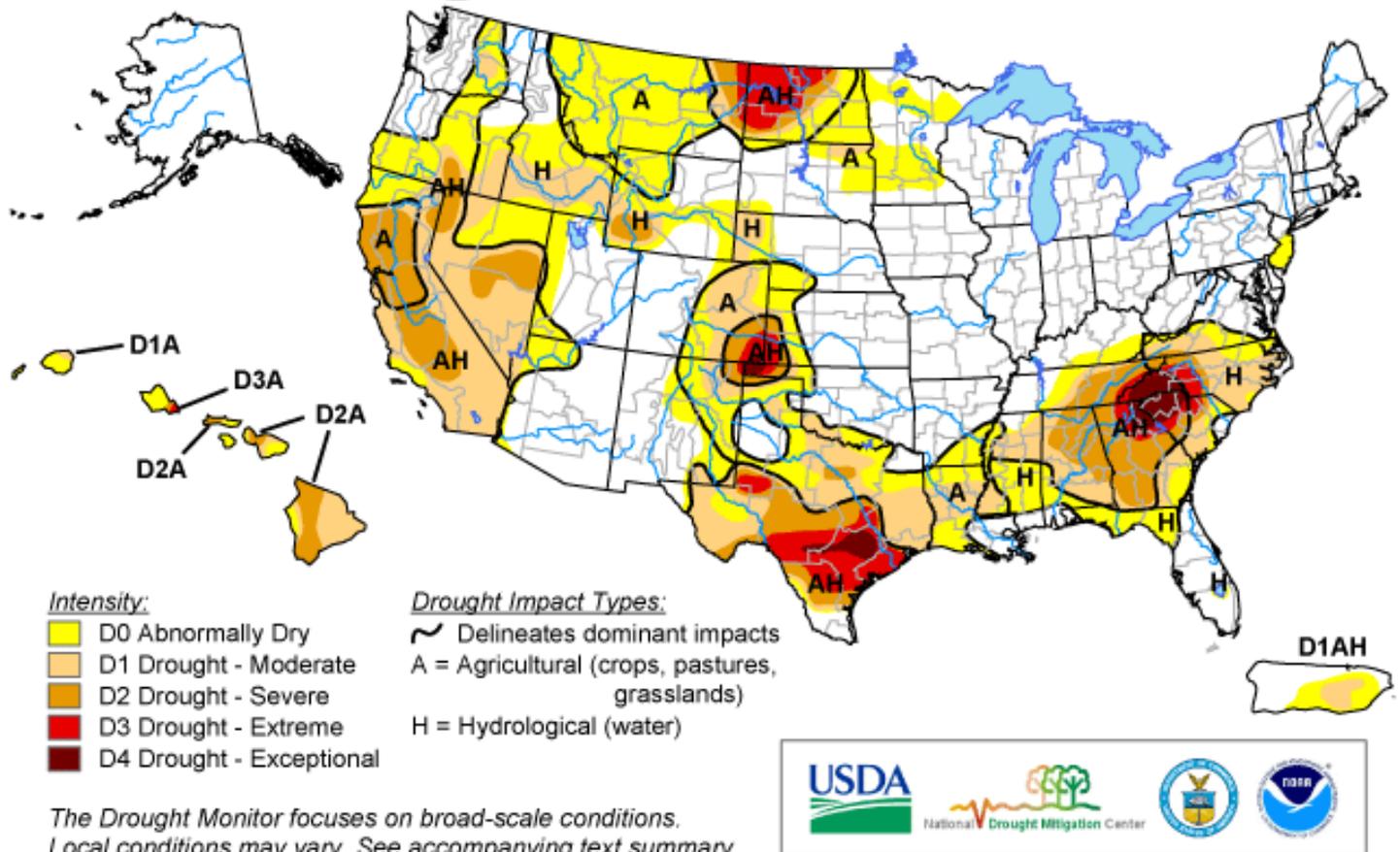
Weekly Snowpack and Drought Monitor Update Report



**Fig 2a. 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 northern Wyoming. Parts of Nevada are experiencing significant shortfalls. Some recovery continues in precipitation has occurred over Arizona and New Mexico as a result of the SW Monsoon.** Ref: [http://ftp.wcc.nrcs.usda.gov/data/water/wcs/gis/maps/west\\_wytdprecpcnormal\\_update.pdf](http://ftp.wcc.nrcs.usda.gov/data/water/wcs/gis/maps/west_wytdprecpcnormal_update.pdf)

# U.S. Drought Monitor

July 29, 2008  
Valid 8 a.m. EDT



**Released Thursday, July 31, 2008**  
Authors: Brian Fuchs, NDMC/Laura Edwards, WRCC

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

**Fig. 3. Current Drought Monitor weekly summary.**

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

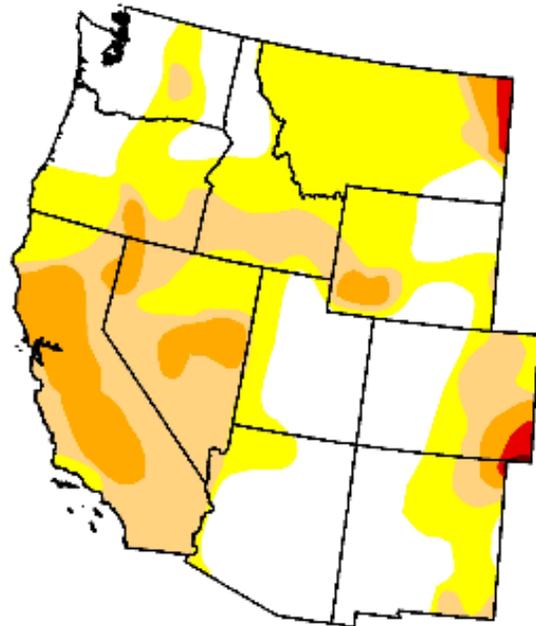
# U.S. Drought Monitor

## West

July 29, 2008  
Valid 7 a.m. EST

*Drought Conditions (Percent Area)*

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	35.5	64.5	31.2	10.2	0.8	0.1
Last Week (07/22/2008 map)	34.0	66.0	30.2	6.0	0.4	0.1
3 Months Ago (05/06/2008 map)	33.3	66.7	36.3	6.2	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 (07/31/2007 map)	21.1	78.9	63.2	47.9	9.5	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, July 31, 2008**  
Author: B. Fuchs, NDMC, and L. Edwards, WRCC

**Fig. 3a. Drought Monitor for the Western States with statistics over various time periods. Note some worsening 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)

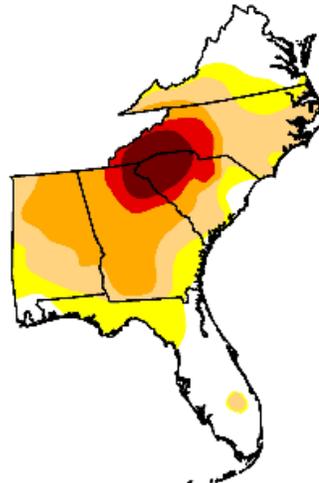
# U.S. Drought Monitor

## Southeast

July 29, 2008  
Valid 7 a.m. EST

*Drought Conditions (Percent Area)*

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	23.0	77.0	58.7	34.4	12.2	6.3
Last Week (07/22/2008 map)	23.0	77.0	58.7	33.2	12.2	6.3
3 Months Ago (05/06/2008 map)	26.4	73.6	43.6	23.2	8.9	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 (07/31/2007 map)	2.5	97.5	80.4	43.3	21.8	6.0



**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, July 31, 2008

Author: B. Fuchs, NDMC, and L. Edwards, WRCC

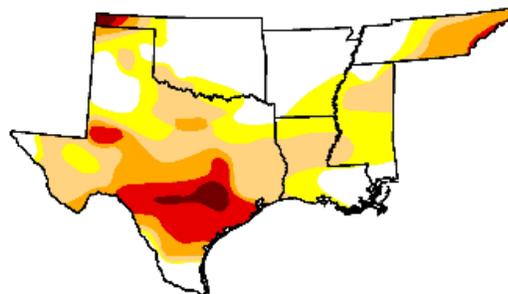
# U.S. Drought Monitor

## South

July 29, 2008  
Valid 7 a.m. EST

*Drought Conditions (Percent Area)*

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	31.8	68.2	46.3	22.4	10.8	1.9
Last Week (07/22/2008 map)	31.4	68.6	45.0	23.8	12.1	3.4
3 Months Ago (05/06/2008 map)	54.5	45.5	25.8	14.7	3.5	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 (07/31/2007 map)	82.0	18.0	12.4	9.0	5.3	0.5



**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>

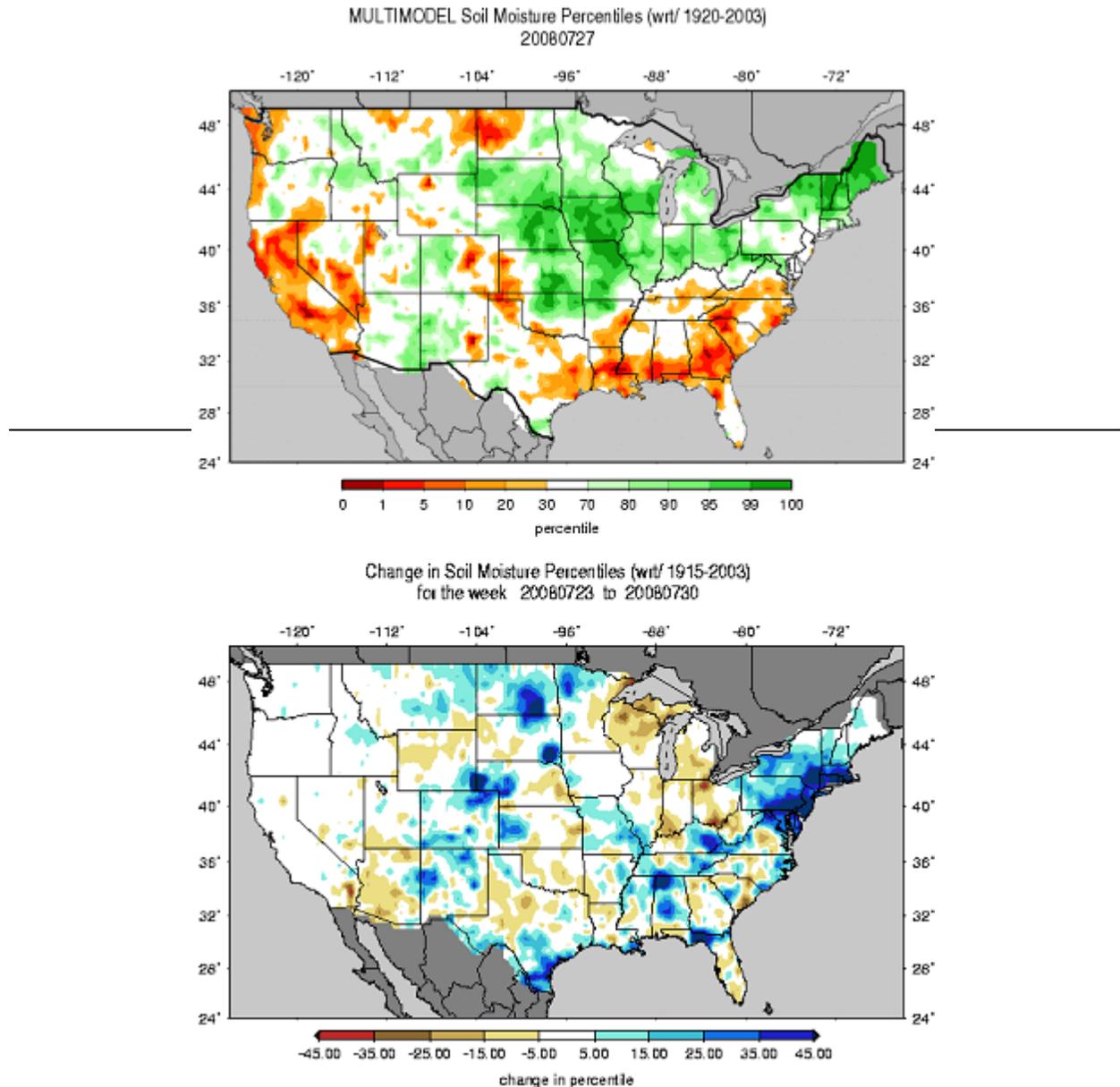


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Fig. 3b: Drought Monitor for the Southeastern and South-Central States shows little change to slight improvement since last week. Ref: [http://www.drought.unl.edu/dm/DM\\_southeast.htm](http://www.drought.unl.edu/dm/DM_southeast.htm), [http://www.drought.unl.edu/dm/DM\\_south.htm](http://www.drought.unl.edu/dm/DM_south.htm),

## Weekly Snowpack and Drought Monitor Update Report



**Figs. 4 & 4a: 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 and New England but dryness persisted across the Southeast, Gulf Coast, Northern High Plains, and much of California and southern Nevada (Fig. 5). Last week saw a significant increase in soil moisture over North Dakota, New York and vicinity, and worsening conditions over Ohio and Wisconsin (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.multimodel.sm_qnt.gif)  
[http://www.hydro.washington.edu/forecast/monitor/curr/CONUS.vic.sm\\_qnt.1wk.gif](http://www.hydro.washington.edu/forecast/monitor/curr/CONUS.vic.sm_qnt.1wk.gif)

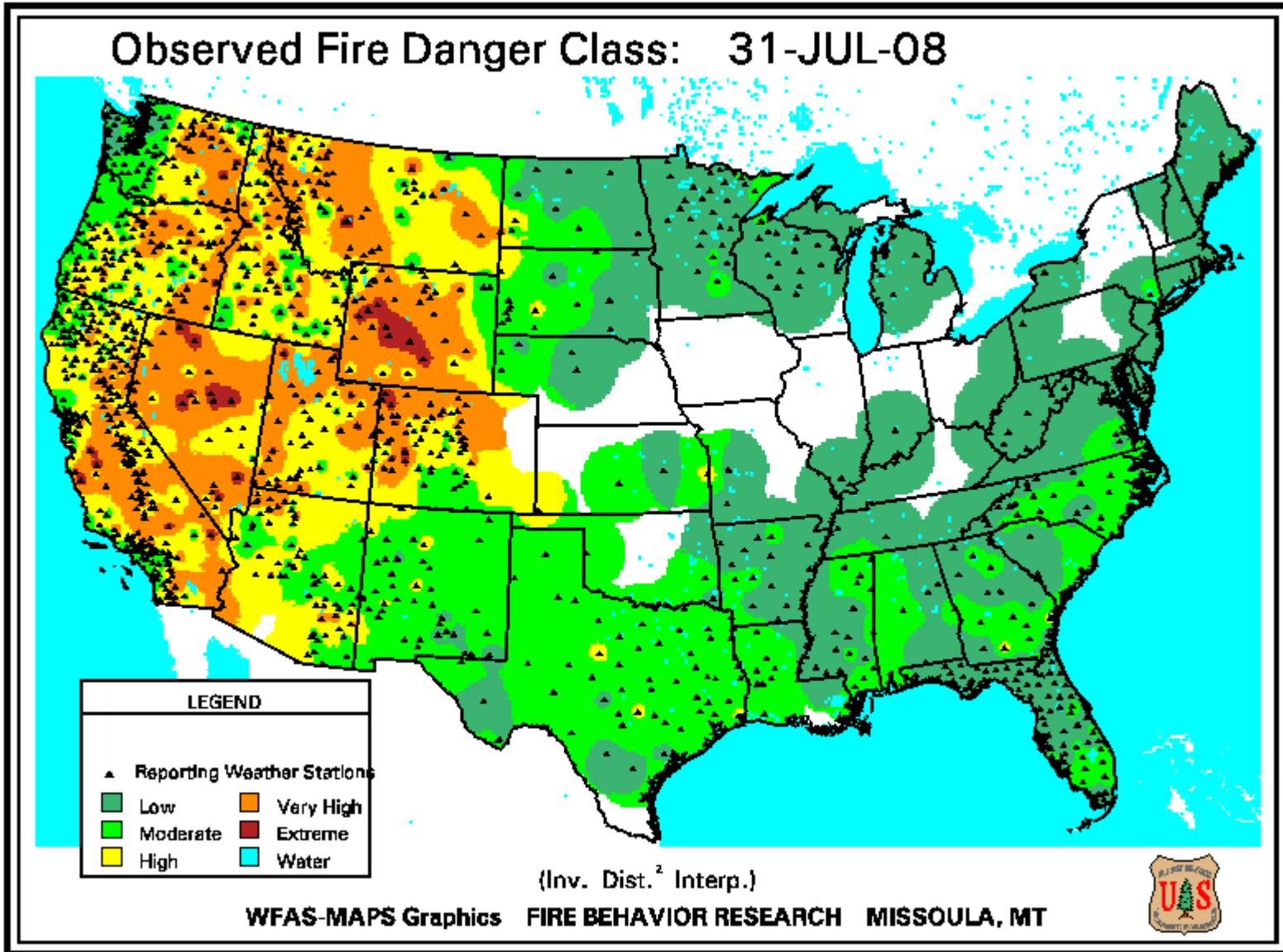
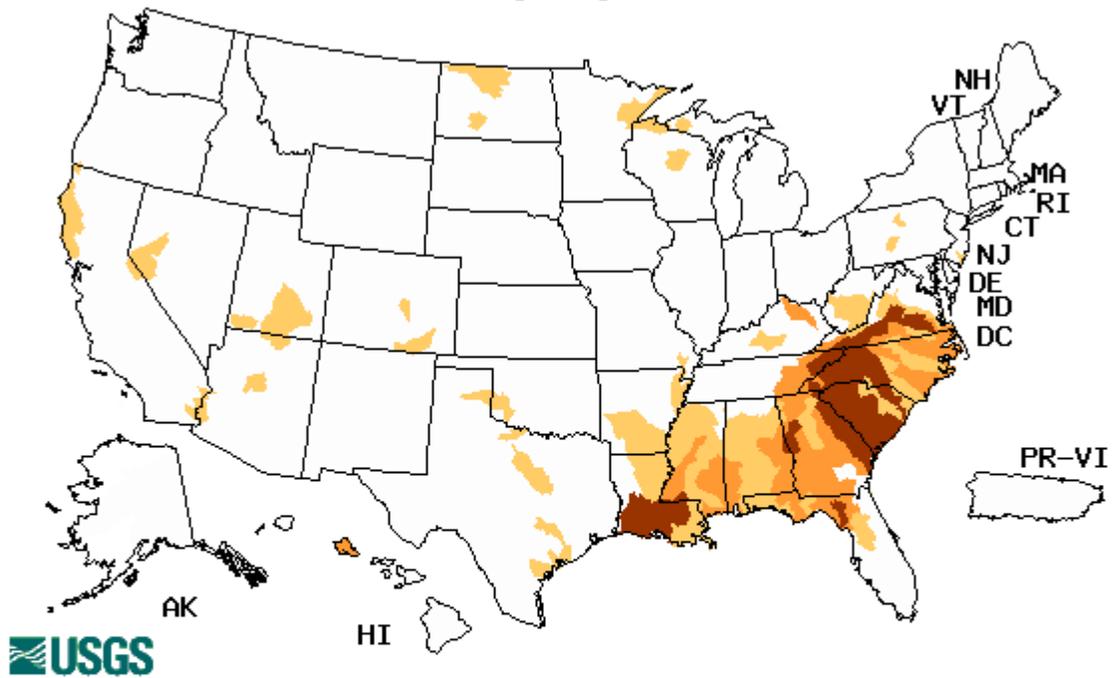


Fig. 5. Observed Fire Danger Class. Note very high fire danger over much of the West (except New Mexico). Source: Forest Service Fire Behavior Research – Missoula, MT. Ref: [http://www.fs.fed.us/land/wfas/fd\\_class.gif](http://www.fs.fed.us/land/wfas/fd_class.gif)

# Weekly Snowpack and Drought Monitor Update Report

Thursday, July 31, 2008



Choose a data retrieval option and select a state on the map

State DroughtWatch,  State map

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. 6. This week's map shows continued low stream flow over parts of the Southeast and Gulf Coast States.**

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

## Weekly Snowpack and Drought Monitor Update Report

### National Drought Summary -- July 29, 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/>.*

**The Northeast:** With a continued wet pattern, the remaining D0 in the region was improved this week except for southern New Jersey. There are concerns yet with groundwater and river flows in this part of the state as some of these conditions have not truly recovered from last summer. Several inches of rain fell through much of New England and the short-term dryness was relieved.

**The Southeast:** Seasonal rains through the region did not help to improve the long-term problems that are still being observed in the region. Streamflows and deep soil moisture are lower than they were last year at this time, even with more precipitation being recorded. D2 was expanded in the northwest and southeast portions of Alabama this week because of continued record or near record low streamflows.

**The Plains and Midwest:** Some precipitation across the northern Plains did not bring relief from the ongoing drought, and the drought intensity actually worsened this week. D3 was expanded out of North Dakota and into eastern Montana and was also expanded to the east to include more of north central North Dakota. Severe agricultural impacts are being reported in this region, with some producers suffering a 75 percent loss of hay this year. With crops just entering a time of high water usage, the conditions across North Dakota are not looking favorable. D0 was also expanded to the Minnesota state line in the Red River valley. In South Dakota, the D0 conditions were improved out of the southeast portion of the state because of recent rainfall events. D1 was expanded slightly eastward in northeast South Dakota and into Minnesota as this region continues to miss out on precipitation. In northern Minnesota, D0 was expanded to Lake Superior, encompassing the region where less than 50 percent of normal precipitation has been recorded since mid June.

Texas saw both intensification and improvement this week. With the full assessment of tropical storm Dolly available, conditions were improved over the regions that received the most rain from this event. Improvement was made to the drought intensity in south Texas, expanding the drought-free region northward. D4 was also improved along the southern/southwestern edge of the exceptional drought region. In the Big Bend region, a categorical improvement was made where the D3 was eliminated and the D2 was shifted to the south. D0 was also eliminated in far west Texas and into southern New Mexico as monsoonal moisture along with the remnants of Dolly helped to improve conditions and even brought flooding in this region. In north central Texas, D2 was introduced and D1 was expanded to the west and east, as this area is close to 7.50 inches below normal precipitation since May 1. D0 was expanded in northeast Texas and D1 was also introduced into the Panhandle region. D2 was expanded and D3 introduced in the Pecos region, as this area has not benefited from the most recent rains. Midland Airpark has received only 0.76 inches of precipitation since May 1, which is close to 15 percent of normal for what should be the wettest time of year in this area.

**The West:** It was another dry week for most of the western United States. In Nevada, D1 was expanded east and north in the eastern part of the state to include the far western reaches of Utah. D2

## Weekly Snowpack and Drought Monitor Update Report

was also pushed over White Pine County, where hydrological problems exist as well as low soil moisture. In Washington and Oregon, several indicators are showing short-term dryness along the coasts. At this time, D0 was expanded to include just the southwest part of Oregon, but other areas of both states may be prone to deterioration if conditions continue to decline.

D2 with an Agriculture designation was added to portions of northern and central California, Based on various indicators, this was needed and due. Nonirrigated, dryland, and natural vegetations are in very bad shape with no relief in sight in the near term. Lack of rainfall in early spring has severely impacted pasture growth throughout the state, and 8.7 million acres are showing a loss of 58.7 percent (average for the state) of annual forage for the year so far. Several counties are showing forage losses: up to 85 percent in Glenn County, 80 percent in Napa County, and 85 percent in Calaveras County. Supplemental feeding is taking place and many producers are selling off animals already because of lack of forage and rising feed costs.

**Hawaii:** D2 was expanded on the Big Island as reports of poor pasture and rangeland conditions have spread to the southern portions of the Island. Trade wind showers have returned to help stabilize drought conditions along the windward sides.

**Puerto Rico and Alaska:** No changes were made this week to either location.

**Looking Ahead:** During the next 5 days, (July 31-August 4) much of the eastern portions of the United States are expected to receive precipitation. Maximal amounts are projected over the upper Midwest, Maine, the Gulf Coast of Florida and the Ohio River valley. Warm conditions should dominate the country as much of the United States is expected to be above normal. The warmest temperatures are setting up to be along the Rocky Mountains and eastward across the High Plains. The NWS 6- to 10-day outlook for August 5-9 shows a ridge continuing to build over the central United States with temperatures forecasted to be above normal. During this time, the central and Mid- Atlantic states may see temperatures well above normal. Below normal precipitation is expected throughout most of Alaska and the Great Basin, as well as in portions of the southern tier states. Above normal precipitation over the High Plains and New England is projected at this time.

**Authors:** [Brian Fuchs, National Drought Mitigation Center/](#) [Laura Edwards, Western Regional Climate 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 July 31, 2008

# Weekly Snowpack and Drought Monitor Update Report

## [Drought Monitor](#)

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