



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

Weekly Report - Snowpack / Drought Monitor Update **Date: 24 July, 2008**

SNOTEL SNOWPACK AND PRECIPITATION SUMMARY

Temperature: SNOTEL-day station average temperature anomalies were highest (positive departures) over eastern Colorado and lowest (negative departures) over the Central and Northern Cascades (Fig. 1). Specifically, the greatest positive temperature departures occurred over the High Plains of Colorado (<+5F) and the greatest negative departures occurred over northern coastal California (<-5F) (Fig. 1a).

Precipitation: Preliminary precipitation totals for the 7-day period ending 23 July shows areas of heavy precipitation due to isolated thunderstorms over much of the interior West while the Southwest Monsoon appears to be in force over southern Arizona and western 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. 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 in precipitation has occurred over Arizona and New Mexico as a result of the SW Monsoon (Fig. 2a).

WESTERN DROUGHT STATUS

The West: Once again, little or no rain fell in the West Coast States and the northern Rockies, while locally heavy monsoon showers dotted the Southwest. Further reductions in the coverage and intensity of drought, some significant, were introduced across Arizona and New Mexico. During the first 21 days of July, rainfall totals in southern New Mexico included 6.39 inches in Deming, 4.57 inches in Silver City, and 3.87 in Truth or Consequences. Deming is within reach of its wettest month on record, which occurred in July 1911 when 7.13 inches fell. Farther north, however, dry weather continued to stress some Western pastures, rangeland, and spring-sown crops. In California, 100% of pastures and rangeland remained in very poor to poor condition for the week ending July 20. In Washington, one-quarter of the spring wheat was rated very poor to poor. There was a slight expansion of abnormal dryness (D0) in the Northwest, and a modest increase of moderate to severe drought (D1 to D2) in the Great Basin. In northern California, more than a dozen large wildfires continued to burn, nearly a month after the June 20-21 lightning storms that ignited most of the blazes. By July 22, northern California's year-to-date charred area topped 600,000 acres, with the largest active fire (109,000 acres; 65 percent contained) west of Hayfork in the Shasta-Trinity National Forest. In total, northern California's active wildfires were responsible for the loss of more than 100 structures, including homes, cabins, sheds, and outbuildings. Author: [Brad Rippey, U.S. Department of Agriculture](#).

A comprehensive narrative describing drought conditions for the nation can be found at the end of this document.

Weekly Snowpack and Drought Monitor Update Report

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. 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.

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.

/s/ NOLLER HERBERT
Director, Conservation Engineering Division

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

Jul 24, 2008

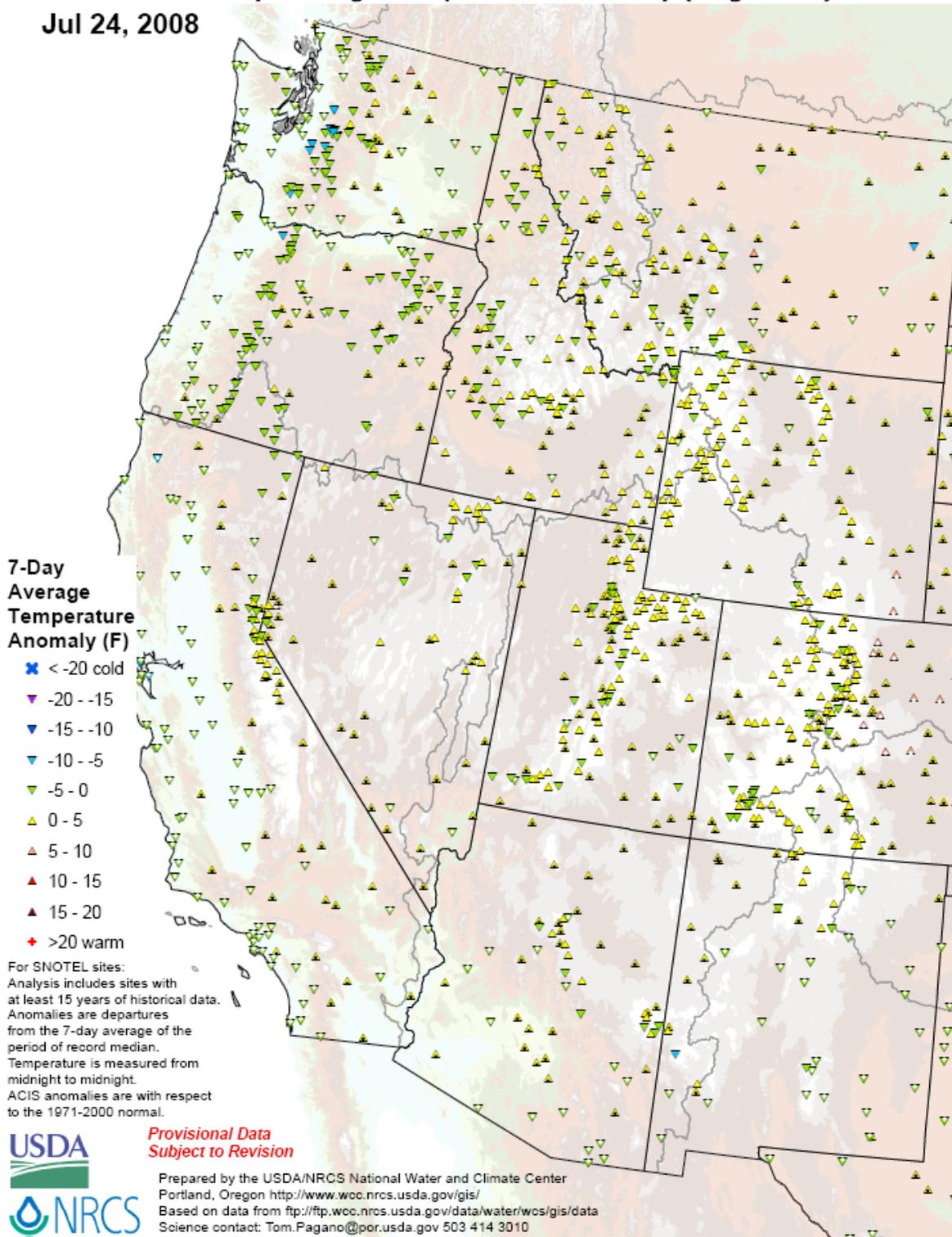
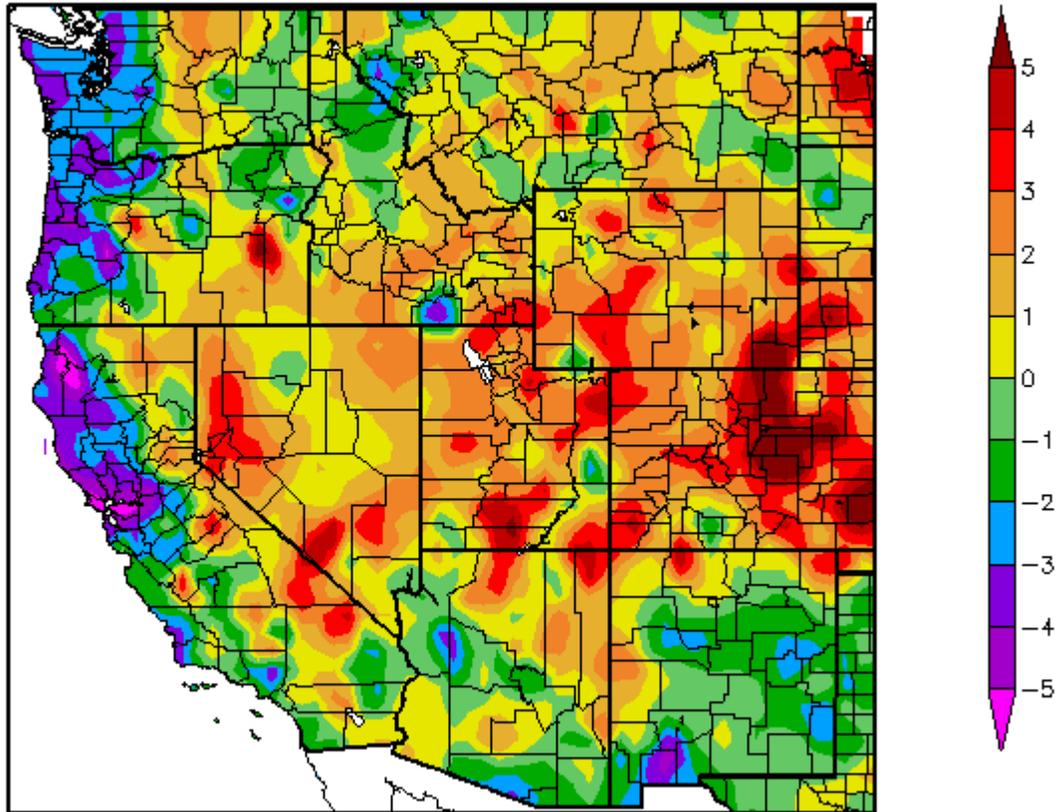


Fig. 1. SNOTEL and ACIS-day station average temperature anomalies were highest (positive departures) over eastern Colorado and lowest (negative departures) over the Central and Northern Cascades.

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

Departure from Normal Temperature (F)
7/17/2008 – 7/23/2008



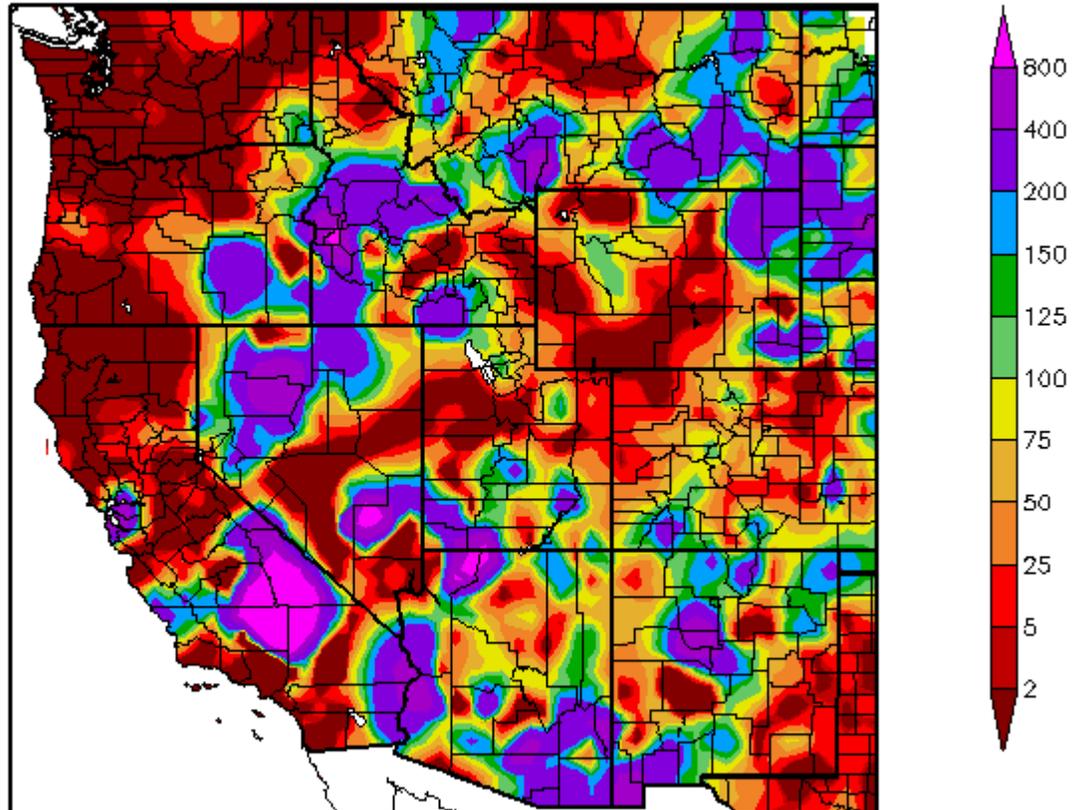
Generated 7/24/2008 at HPRCC using provisional data.

NOAA Regional Climate Centers

Fig. 1a. ACIS 7-day average temperature anomalies: Greatest positive temperature departures occurred over the High Plains of Colorado (<+5F) and greatest negative departures occurred over northern coastal California (<-5F).

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

Percent of Normal Precipitation (%)
7/17/2008 – 7/23/2008



Generated 7/24/2008 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 23 July shows areas of heavy precipitation due to isolated thunderstorms over much of the interior West while the Southwest Monsoon appears to be in force over southern Arizona and western 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

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

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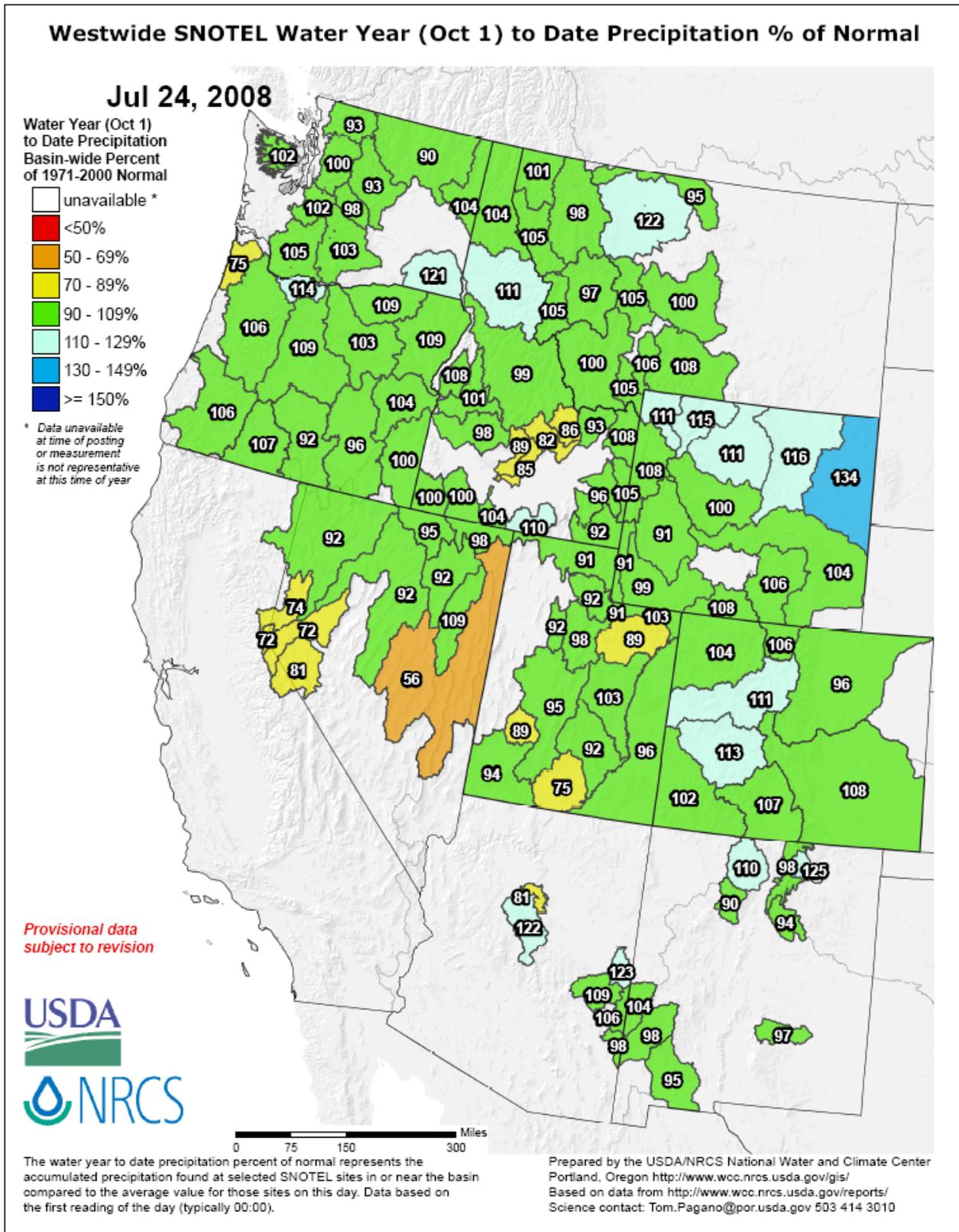
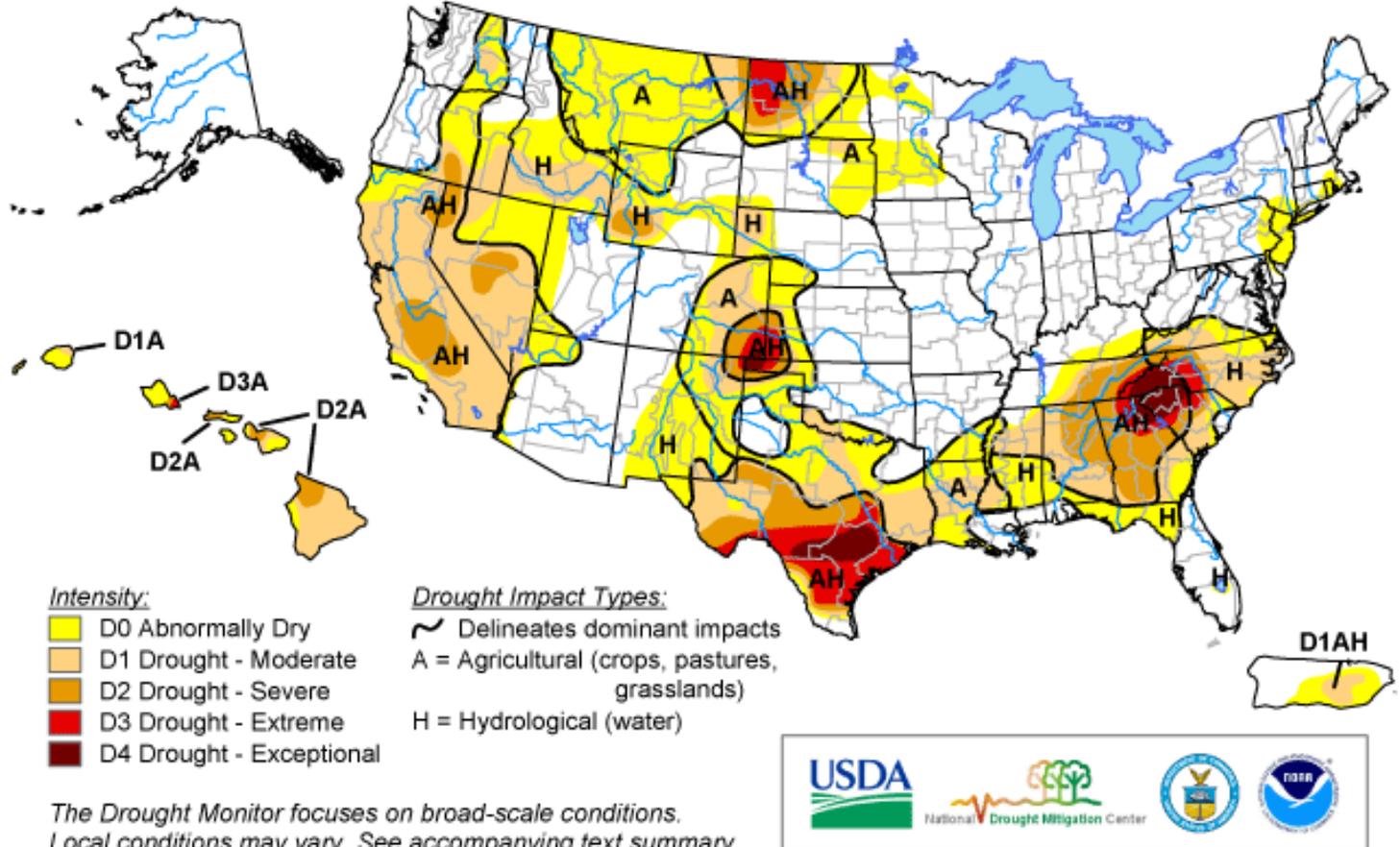


Fig 2a. Seasonal precipitation (rain & snow water equivalent) as a percent of normal for the 2008 Water Year that began on October 1, 2007 shows above normal totals over northern Wyoming. Parts of Nevada are experiencing significant shortfalls. Some recovery in precipitation has occurred over Arizona and New Mexico as a result of the SW Monsoon.

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

U.S. Drought Monitor

July 22, 2008
Valid 8 a.m. EDT



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

Released Thursday, July 24, 2008
Author: Brad Rippey, U.S. Department of Agriculture

Fig. 3. Current Drought Monitor weekly summary.

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

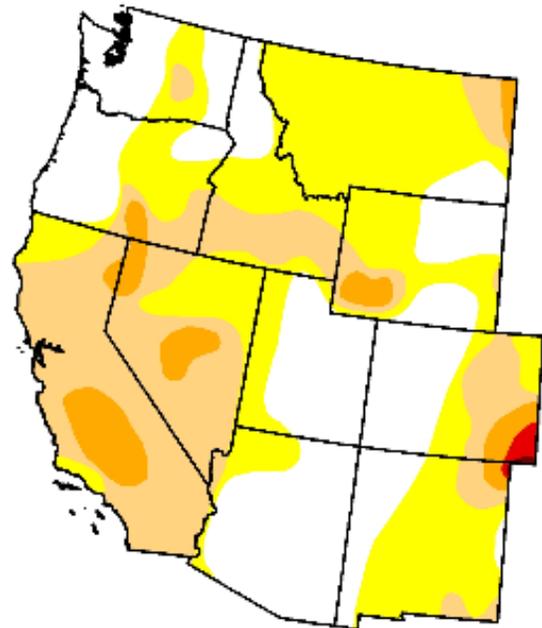
U.S. Drought Monitor

West

July 22, 2008
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	34.0	66.0	30.2	6.0	0.4	0.1
Last Week (07/15/2008 map)	41.1	58.9	33.3	7.3	0.4	0.1
3 Months Ago (04/29/2008 map)	32.9	67.1	36.6	8.7	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 (07/24/2007 map)	21.2	78.8	61.4	43.0	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 24, 2008
Author: Brad Rippey, U.S. Department of Agriculture

Fig. 3a. 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

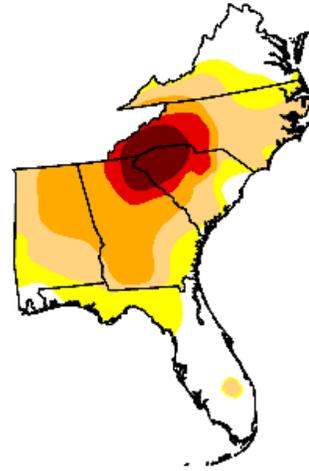
U.S. Drought Monitor

Southeast

July 22, 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	33.2	12.2	6.3
Last Week (07/15/2008 map)	18.3	81.7	54.3	29.4	12.1	2.8
3 Months Ago (04/29/2008 map)	27.3	72.7	42.9	22.1	8.6	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 (07/24/2007 map)	2.5	97.5	77.8	39.9	17.7	3.4



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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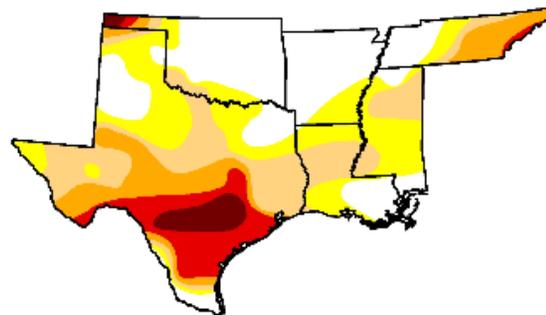
U.S. Drought Monitor

South

July 22, 2008
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	31.4	68.6	45.0	23.8	12.1	3.4
Last Week (07/15/2008 map)	31.8	68.2	40.2	23.8	11.6	2.8
3 Months Ago (04/29/2008 map)	51.8	48.2	29.7	18.6	5.3	1.7
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 (07/24/2007 map)	82.5	17.5	11.7	8.4	4.5	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

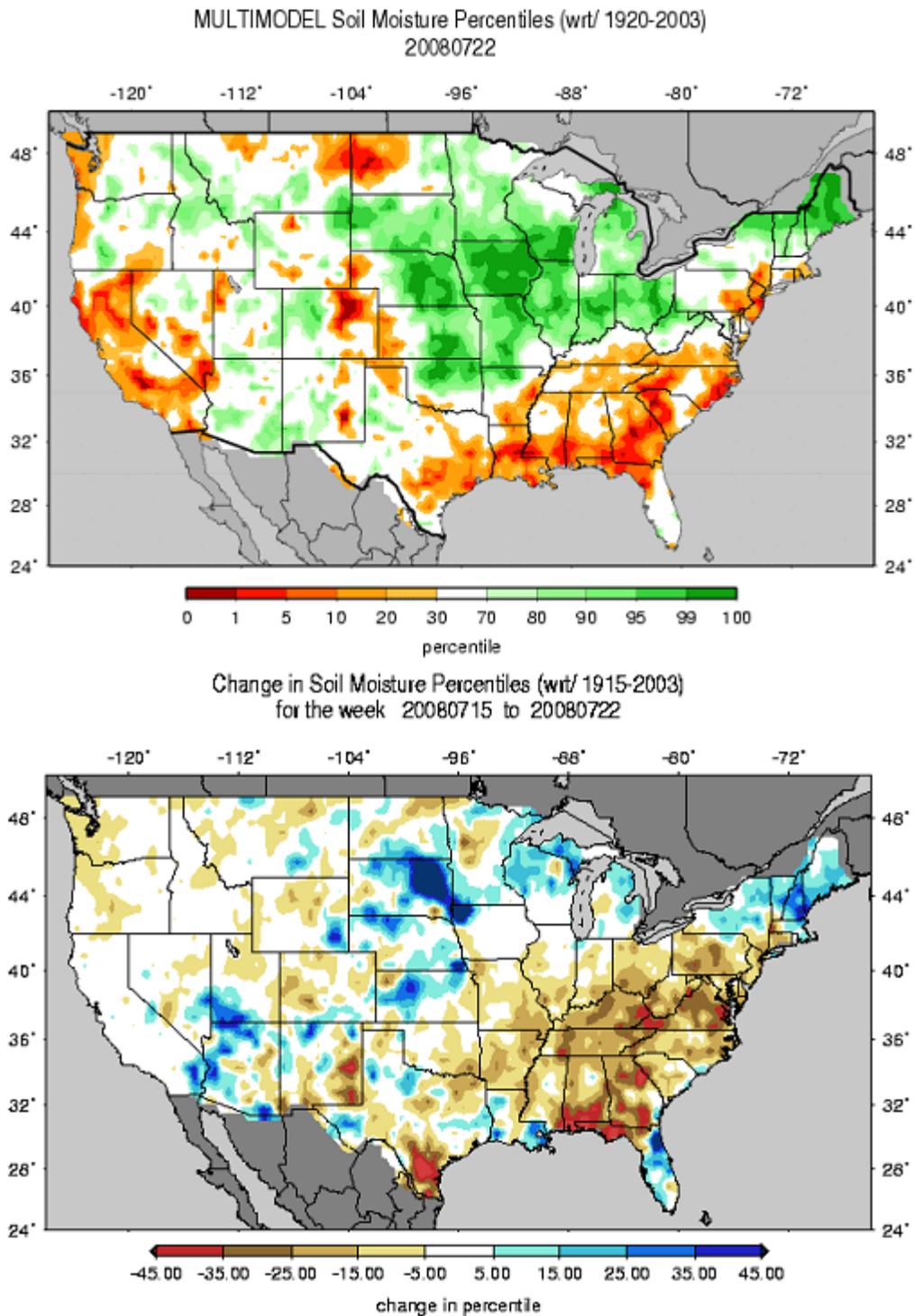
<http://drought.unl.edu/dm>



Released Thursday, July 24, 2008
Author: Brad Rippey, U.S. Department of Agriculture

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,

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 but dryness persisted across the Southeast, Gulf Coast, High Plains, and much of California and southern Nevada (Fig. 5). Last week saw a significant increase in soil moisture over South Dakota, New England, and Grand Canyon Country and worsening conditions over Southeast, extreme southern Texas, and the Mid-Atlantic States (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.vic.sm_gnt.1wk.gif

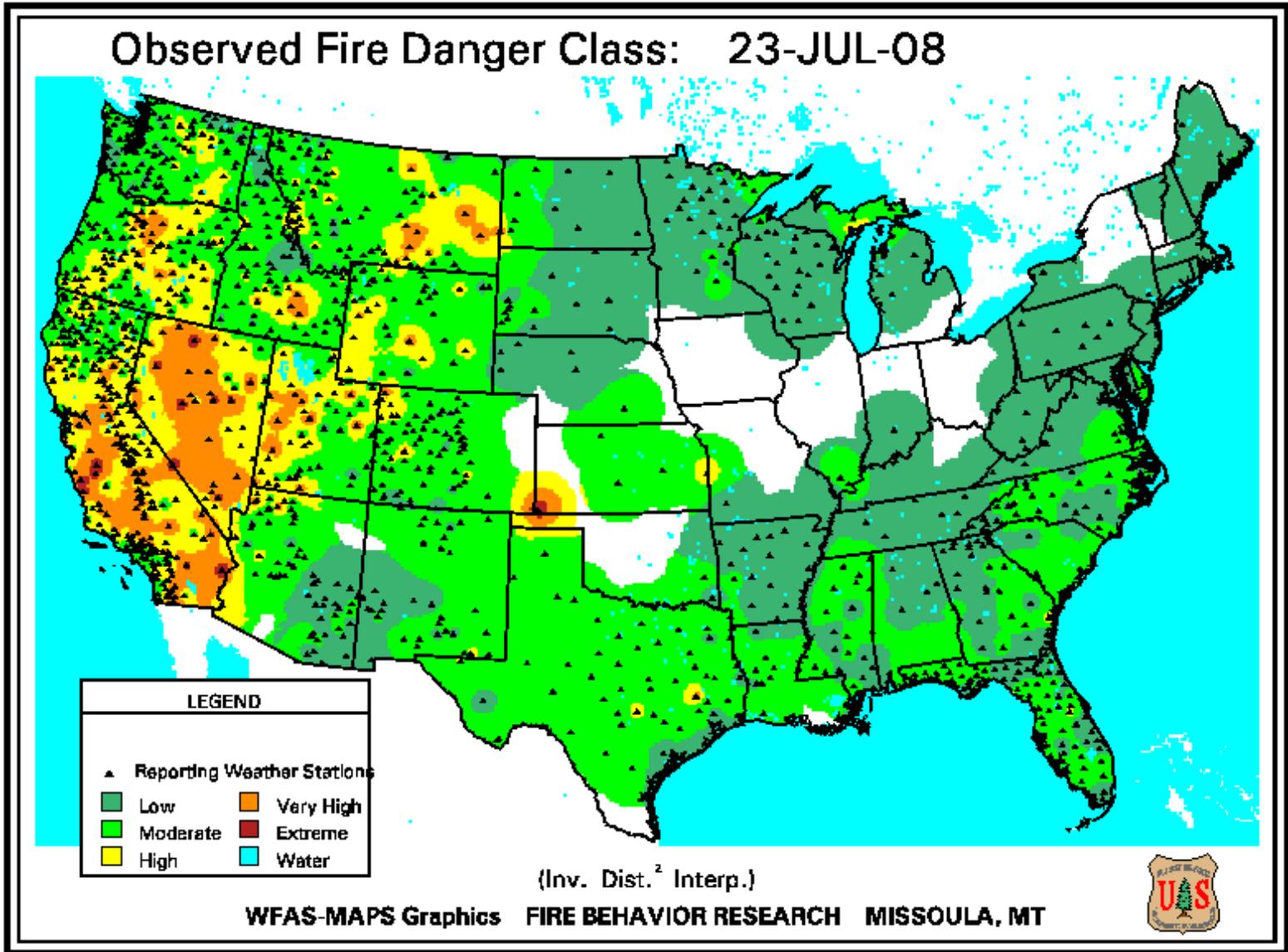
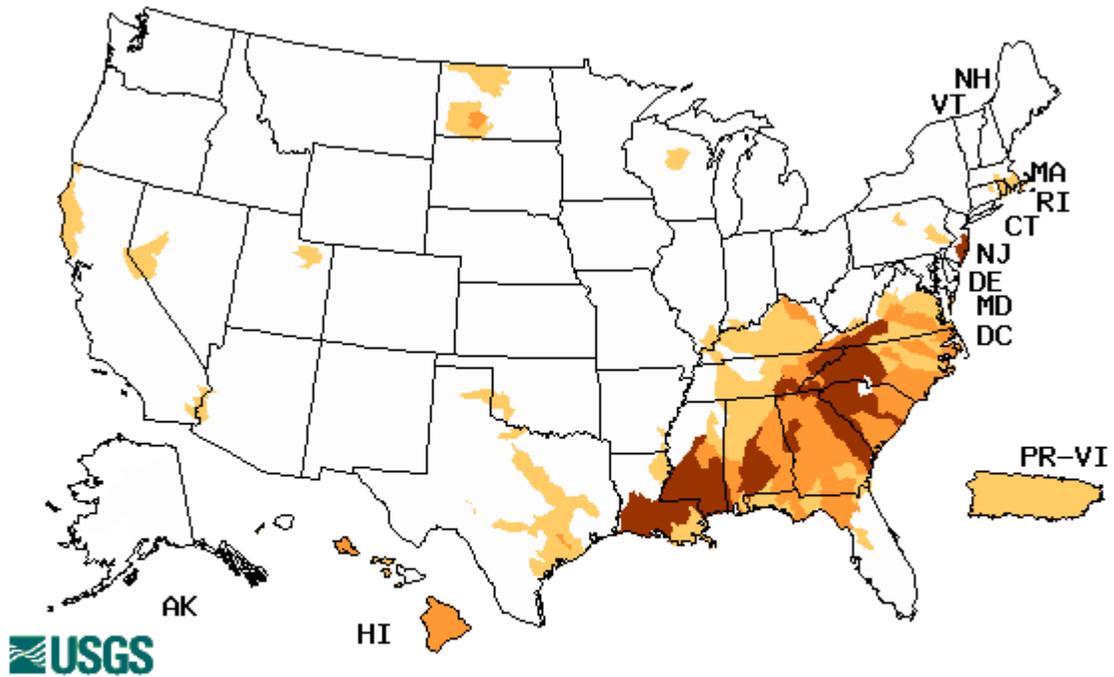


Fig. 5. Observed Fire Danger Class. Note very high fire danger over the Great Basin and much of California. Source: Forest Service Fire Behavior Research – Missoula, MT. Ref: http://www.fs.fed.us/land/wfas/fd_class.gif

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Wednesday, July 23, 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. 6. This week's map shows continued low stream flow over parts of the Southeast. No significant change since last week.

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

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National Drought Summary -- July 22, 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: Locally heavy showers swept across interior sections of the Northeast, but largely bypassed areas closer to the Atlantic Coast. As a result, abnormal dryness (D0) expanded into a continuous region stretching from Delaware to southern New England. For the week ending July 20, USDA rated 30% of Rhode Island's pastures were rated in poor condition.

The Southeast: From July 15-21, much of the Southeast turned hot and dry. As a result, there were several expansions of dryness (D0) and various drought intensities (D1 to D4). Hydrological and agricultural impacts remained widespread in the Southeast and became more apparent in the western and central Gulf Coast States and the lower Mississippi Valley. By July 20, according to USDA, 31% of the cotton in South Carolina was rated in very poor to poor condition. The portion of rangeland and pastures rated very poor to poor included 56% in South Carolina, 42% in North Carolina, 36% in Georgia, 33% in Mississippi, and 30% in Alabama. In contrast, heavy rain continued for several more days across Florida's peninsula, eliminating much of the remaining dryness (D0). Vero Beach (2.99 inches), netted a daily-record total for July 15, followed two days later by a daily record of 2.63 inches in Daytona Beach. On July 19, Tropical Storm Cristobal formed about 100 miles east of Charleston, South Carolina. The following day, Cristobal moved parallel to the North Carolina coast, with the center passing a few miles offshore from Cape Lookout and Cape Hatteras. Most of the heavy rain and gusty winds associated with Cristobal stayed offshore, although Wilmington, North Carolina (3.43 inches), measured a daily-record rainfall for July 19. On the morning of July 20, a wind gust to 45 mph was clocked on Wrightsville Beach, North Carolina.

The Northern Plains and Upper Midwest: Conditions were mixed across the northern Plains and the upper Midwest, with some areas seeing expansion of dryness or drought and other areas experiencing significant rainfall. Short-term dryness (D0) expanded to include much of Montana, while areas of abnormal dryness in the Dakotas and Minnesota were joined into one area. The percentage of Montana's spring wheat rated in good to excellent condition stood at 53% good to excellent on July 20, down from 70% at the end of June. There was a general expansion of dryness and drought in North Dakota, with D3 (extreme drought) returning to the state for the first time since June 10. North Dakota's rangeland and pastures were rated 38% very poor to poor for the week ending July 20.

The Central and Southern Plains: Dolly made landfall on South Padre Island, Texas, during the early afternoon of July 23 as a low-end Category 2 hurricane with maximum sustained winds near 100 m.p.h. Dolly was the strongest hurricane to strike the U.S. since Category 3 Wilma tore across southern Florida on October 24, 2005. By 4 a.m. CDT on July 24, Dolly was an inland tropical storm, centered about 95 miles northwest of Brownsville, Texas. As with many landfalling tropical storms, Dolly's passage across Deep South Texas has been accompanied by both drought relief and significant flooding. More details on Dolly's rainfall will be provided in next week's summary. Meanwhile, there was limited relief from severe to exceptional drought

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(D2 to D4) in the region centered on the Oklahoma panhandle, and some modest increase in moderate to severe (D1 to D2) drought coverage on the central High Plains, including eastern Colorado and western Nebraska. On July 20, Colorado's rangeland and pastures were rated 52% very poor to poor. Although highly variable conditions existed in Texas, with a range from no drought to exceptional drought (D4) across the Lone Star State, rangeland and pastures were rated 48% very poor to poor.

The West: Once again, little or no rain fell in the West Coast States and the northern Rockies, while locally heavy monsoon showers dotted the Southwest. Further reductions in the coverage and intensity of drought, some significant, were introduced across Arizona and New Mexico. During the first 21 days of July, rainfall totals in southern New Mexico included 6.39 inches in Deming, 4.57 inches in Silver City, and 3.87 in Truth or Consequences. Deming is within reach of its wettest month on record, which occurred in July 1911 when 7.13 inches fell. Farther north, however, dry weather continued to stress some Western pastures, rangeland, and spring-sown crops. In California, 100% of pastures and rangeland remained in very poor to poor condition for the week ending July 20. In Washington, one-quarter of the spring wheat was rated very poor to poor. There was a slight expansion of abnormal dryness (D0) in the Northwest, and a modest increase of moderate to severe drought (D1 to D2) in the Great Basin. In northern California, more than a dozen large wildfires continued to burn, nearly a month after the June 20-21 lightning storms that ignited most of the blazes. By July 22, northern California's year-to-date charred area topped 600,000 acres, with the largest active fire (109,000 acres; 65 percent contained) west of Hayfork in the Shasta-Trinity National Forest. In total, northern California's active wildfires were responsible for the loss of more than 100 structures, including homes, cabins, sheds, and outbuildings.

Hawaii: Drought persisted in more than two-thirds of Hawaii, despite a few showers. Through July 22, year-to-date rainfall totals stood at just 2.86 inches (30% of normal) in Honolulu, Oahu; 2.98 inches (26%) in Kahului, Maui; and 8.22 inches (40%) in Lihue, Kauai. On the Big Island, Hilo's January 1 – July 22 rainfall totaled 74.66 inches (109% of normal), although more than half (39.08 inches) of that amount fell during the first half of February. According to the latest agricultural report from USDA, drought on parts of the Big Island has dried up stock water ponds normally supplied by runoff. Despite some beneficial showers on Maui, all previously issued water conservation notices, both voluntary and mandatory, remained in effect. On Oahu, the mandatory 30% reduction in water use remained in effect for the Waimanalo irrigation system users.

Puerto Rico: On time scales ranging from 1 to 6 months, a similar pattern of below-normal rainfall has prevailed across the southern and eastern portions of the island. Moderate drought (D1) persisted and expanded slightly across interior eastern southeastern Puerto Rico, where only light rain fell during the past week.

Looking Ahead: During the next 5 days (July 24-28), rain will fall in several areas experiencing dryness or drought. The remnants of Hurricane Dolly will continue to produce torrential rainfall across southern Texas, where storm-total rainfall could reach 8 to 12 inches. Isolated amounts near 20 inches may occur. It is possible that Dolly's rainfall could further tighten the gradient between no drought in Deep South Texas and extreme to exceptional drought (D3 to D4) in south-central Texas. Toward week's end, remnant moisture associated with Dolly's remnants may become embedded in the monsoon circulation, which could boost rainfall totals in parts of the central and southern Rockies and the Southwest. Meanwhile, locally heavy showers will linger through July 24 in abnormally dry areas of the Northeast. Farther west, a cold front will produce scattered showers in the north-central U.S., including the Dakotas. Beneficial showers will also return to the lower Southeast, including parts of Florida. Elsewhere, mostly dry weather

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will prevail into early next week in the West, excluding the Four Corners States. The NWS 6- to 10-day outlook for July 29 – August 2 calls for above-normal rainfall across the lower Southeast, the Atlantic coastal plain, the southern Rockies, and the upper Midwest, while drier-than-normal conditions will prevail from the southern Plains to the Great Lakes region and in most areas west of the Rockies. Meanwhile, below-normal temperatures in the Southeastern and Mid-Atlantic States will contrast with near- to above-normal readings elsewhere.

Author: [Brad Rippey, U.S. Department of Agriculture](#)

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 24, 2008