



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

**Weekly Report - Snowpack / Drought Monitor Update      Date:    28 May 2009**

## **SNOTEL SNOWPACK AND PRECIPITATION SUMMARY**

**Snow:** Snow-water equivalent percent to date shows surplus values over parts of the Northern Cascades and near normal conditions over the Northern Rockies. Elsewhere, values continue to dwindle rapidly (Fig 1).

**Temperature:** SNOTEL and ACIS-day station average temperature anomalies were above average over the Interior West and below average over the Central Rockies, parts of the Wasatch, and Pacific Coast (Fig. 2). ACIS 7-day average temperature anomalies show that the greatest positive temperature departures occurred over areas of northwest Nevada (**>+10F**) and the greatest negative departures occurred over the Central California Coast (**<-4F**) (Fig. 2a).

**Precipitation:** ACIS 7-day average precipitation anomaly for the period ending 27 May shows exceptional moisture falling over the 4-Corner States. The remainder of the West was very dry (Fig. 3). Seasonal precipitation (rain & snow water equivalent) as a percent of normal for the 2009 Water Year that began on October 1, 2008 shows values within a few percentage points of last week's values. It is interesting to note that some river basins over Arizona and New Mexico have increased significantly during the week (Fig 3a).

## **WESTERN DROUGHT STATUS**

**The West:** Low-level moisture and a slow-moving cold front brought unseasonably heavy, widespread showers and thunderstorms to much of the Four Corner States throughout the week, well before the typical onset of the Southwest monsoon ("non-monsoonal rains"). Weekly amounts generally ranged from 0.5 to 2 inches, with 2-4 inches reported in central Arizona, southeast Utah, western and central Colorado, and a few locations in southeastern New Mexico and west Texas. As a result, widespread 1- to occasionally 2-category improvements were made, especially where only short-term drought was previously indicated. This included removing D1(A) in northeastern Arizona and southwestern New Mexico, and splitting the D2(A) in southeast New Mexico in half where 1.5 to 2.5 inches of rain fell. In southwest New Mexico, a 2-category improvement was made as recent rains eliminated short-term deficits and instead created surpluses out to 90-days. In northern Arizona, May 22 rains at Holbrook totaled 3.50 inches breaking Holbrook's previous wettest day (2.87 inches) on July 8, 1914. At Page, 1.84 inches of rain was the third highest daily total in the last half-century. What made these amounts unusual is that May is normally in the middle of Arizona's dry season. Normal ANNUAL rainfall is 6.74 inches at Page and 9.20 inches at Holbrook. Additionally, improvements were made in Utah and Colorado, with only D0(H) remaining in southeast Colorado where D1 had been previously. In contrast, drier weather in northeastern New Mexico (0.1 to 0.4 inches) expanded the D1(A) there. Although the Far West was generally dry and unseasonably warm this week, no degradation was made as the long, normally dry summer season was underway, with plenty of time for additional deterioration. Authors: Anthony Artusa, David Miskus, and Matthew Rosencrans, CPC/NCEP/NWS/NOAA.

## Weekly Snowpack and Drought Monitor Update Report

***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. 5a and 5b), 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 [adjective class rating](#) is a method of normalizing rating classes across different fuel models, indexes, and station locations. It is based on the primary fuel model cataloged for the station, the fire danger index selected to reflect staffing levels, and climatological class breakpoints. This information is provided by local station managers. About 90% use the Burning Index (BI); others use Energy Release Component (ERC). Staffing class breakpoints are set by local managers from historical fire weather climatology (Figs. 6).

Only reporting station locations are indicated with a marker on the maps. Values between stations are estimated with an inverse distance-squared technique on a 10-km grid. This works pretty well in areas of relatively high station density, but has obvious shortcomings in other areas.

### **VEGETATION STRESS** (<http://ivm.cr.usgs.gov/viewer/viewer.htm>)

The greenness maps (Fig. 7) show the health and vigor of the vegetation. Generally healthy vegetation is considered an indicator of favorable climatic and environmental conditions. While poor vegetation condition is indicative of droughts and diminished productivity. The USGS greenness maps can be used to evaluate the vegetation condition of a region. The greenness maps are produced with a spatial resolution of 1-km. At this scale the greenness maps are most useful for countywide, statewide, and regional evaluation of vegetation condition.

One of the most important aspects of the USGS greenness mapping is the more than 20-year history of information. Over the last 20 years, droughts have come and gone, there have been years when the vegetation has been lush from ample rain, and there have been the "normal" years. From all of this information it is possible to determine the departure from normal for vegetation condition, much like is done for precipitation.

As a result, it is possible to compare this week's vegetation condition with normal conditions. An above normal condition could indicate wetter or warmer than normal conditions while a below normal condition could indicate colder or dryer than normal conditions. The interpretation of departure from normal will depend on the season and geography of a region.

## Weekly Snowpack and Drought Monitor Update Report

### U.S. HISTORICAL STREAMFLOW

This map, (Fig. 8) 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/>

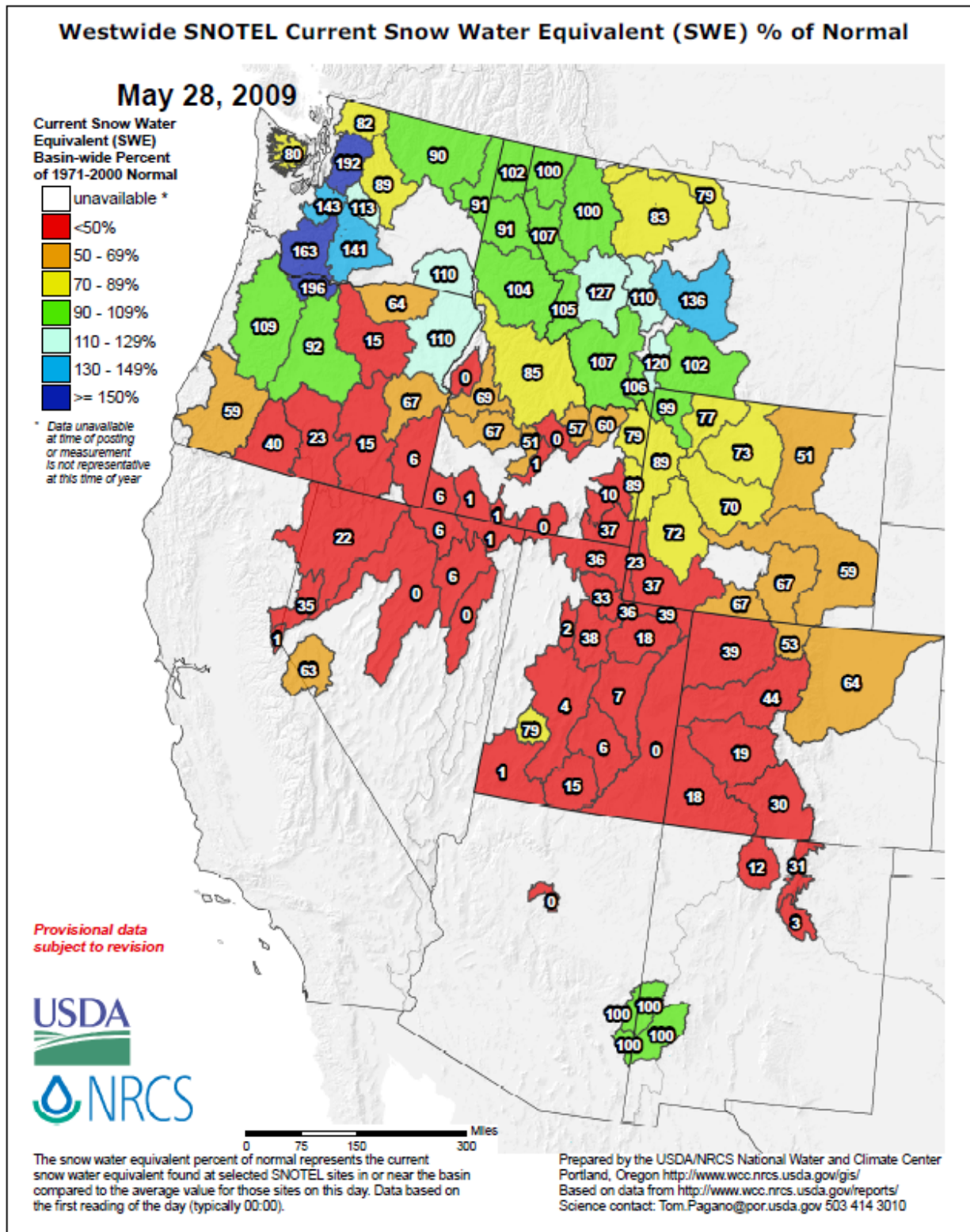
### FOR MORE INFORMATION

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

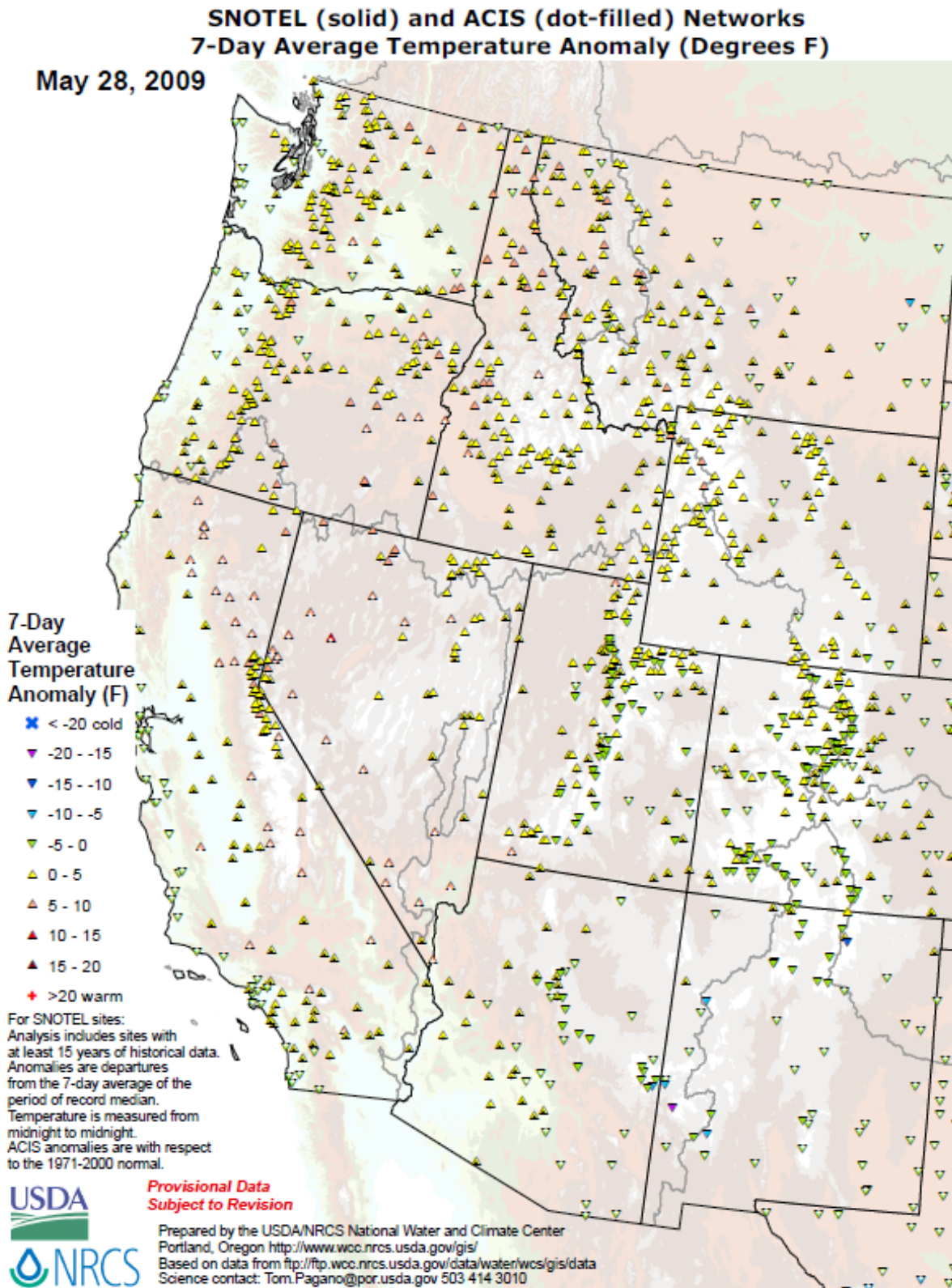
## Weekly Snowpack and Drought Monitor Update Report



**Fig. 1. Snow-water equivalent percent to date shows surplus values over parts of the Northern Cascades and near normal conditions over the Northern Rockies. Elsewhere, values continue to dwindle rapidly.** Ref: [http://ftp.wcc.nrcs.usda.gov/data/water/wcs/gis/maps/west\\_swepctnormal\\_update.pdf](http://ftp.wcc.nrcs.usda.gov/data/water/wcs/gis/maps/west_swepctnormal_update.pdf)



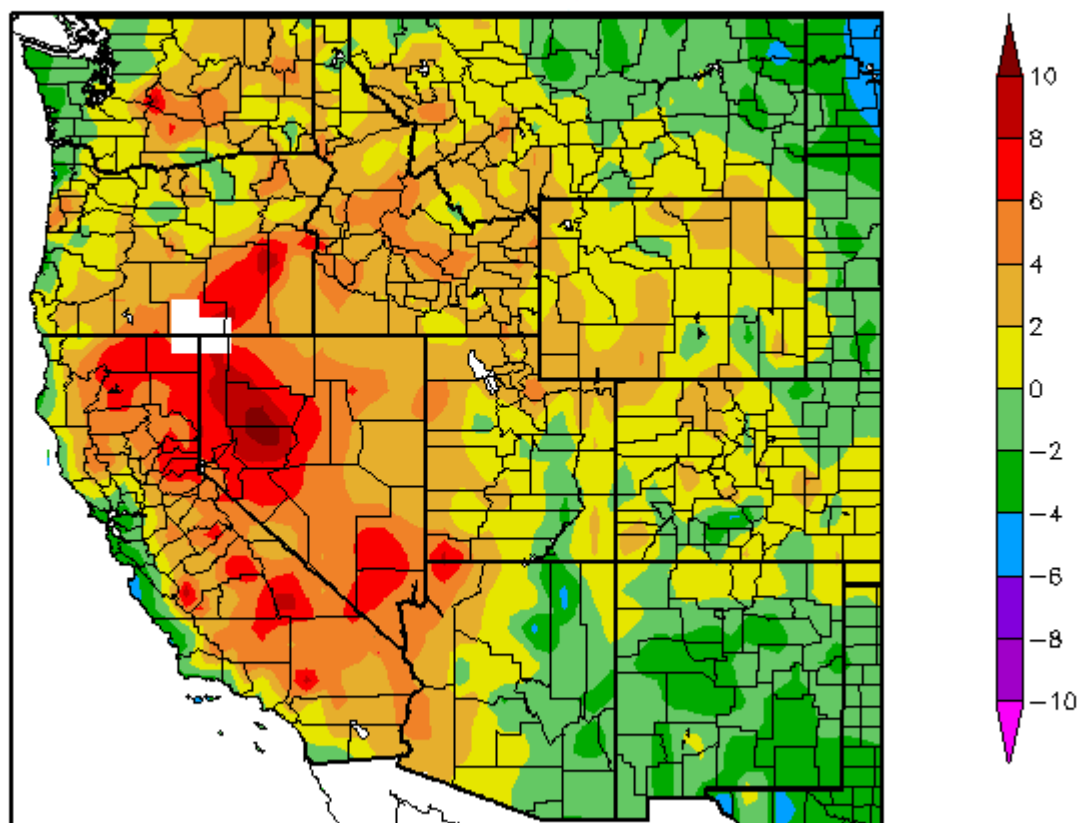
## Weekly Snowpack and Drought Monitor Update Report



**Fig. 2. SNOTEL and ACIS-day station average temperature anomalies were above average over the Interior West and below average the Central Rockies, parts of the Wasatch, and Pacific Coast.**

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

Departure from Normal Temperature (F)  
5/21/2009 – 5/27/2009



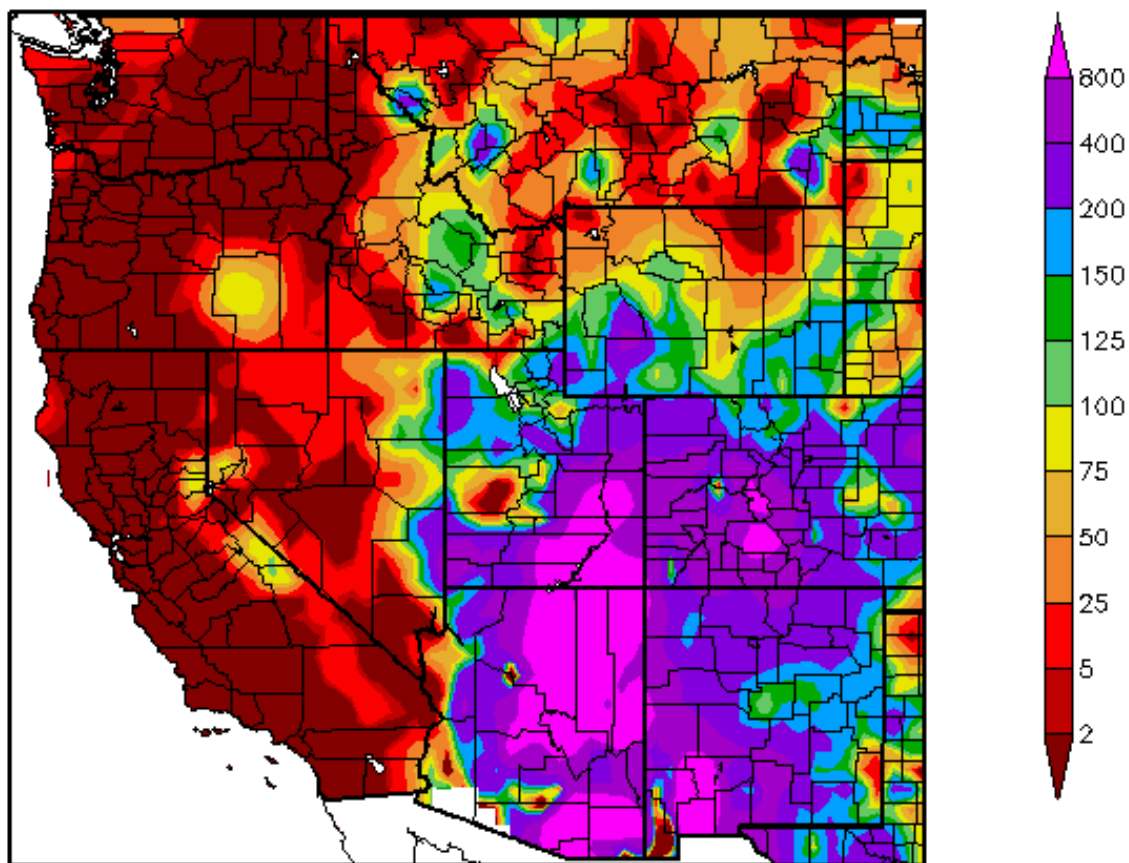
Generated 5/28/2009 at HPRCC using provisional data.

NOAA Regional Climate Centers

**Fig. 2a. ACIS 7-day average temperature anomalies show that the greatest positive temperature departures occurred over areas of northwest Nevada (>+10F) and the greatest negative departures occurred over the Central California Coast (<-4F).**

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

Percent of Normal Precipitation (%)  
5/21/2009 – 5/27/2009



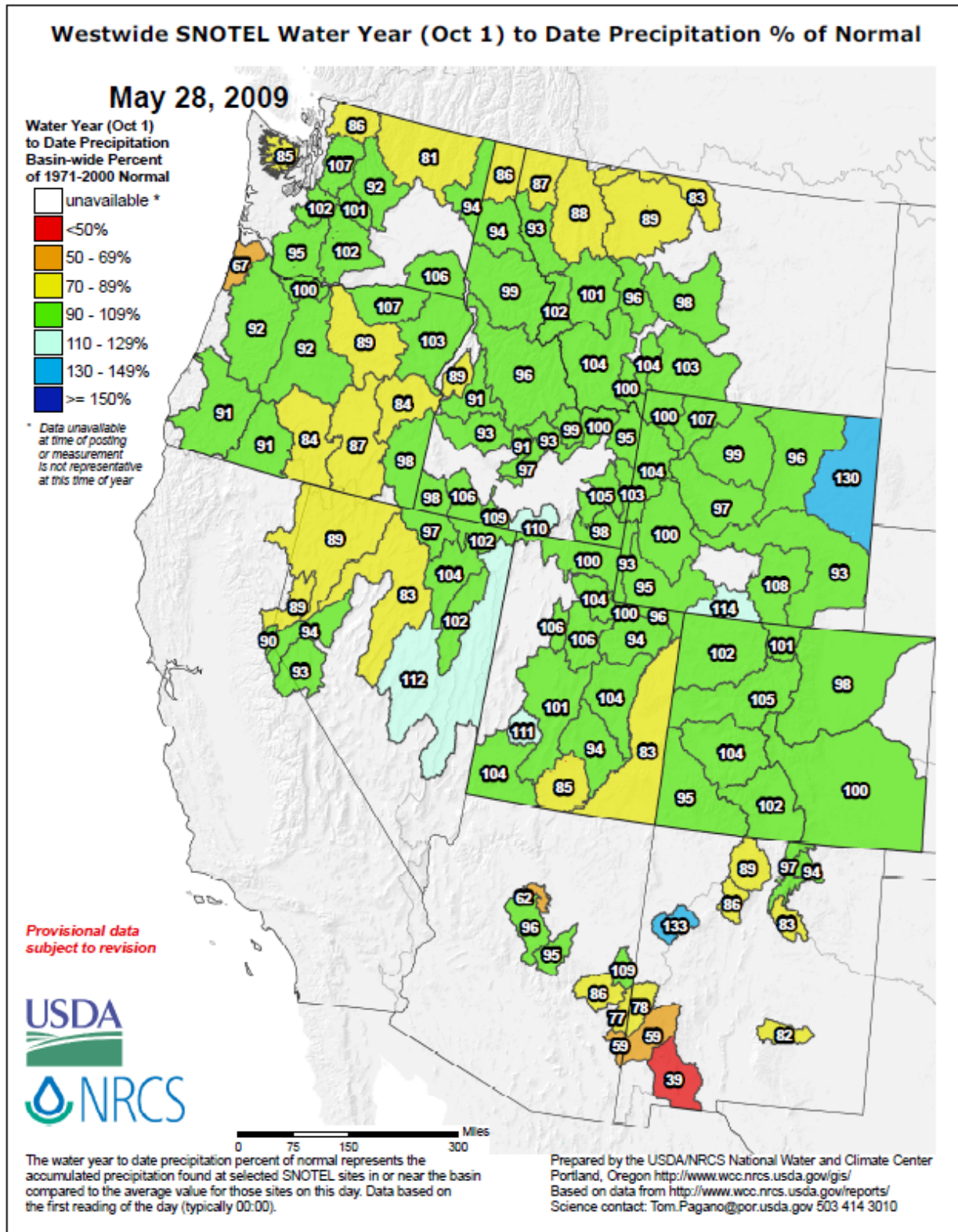
Generated 5/28/2009 at HPRCC using provisional data.

NOAA Regional Climate Centers

**Fig. 3. ACIS 7-day average precipitation anomaly for the period ending 27 May shows exceptional moisture falling over the 4-Corner States. The remainder of the West was very dry.**

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



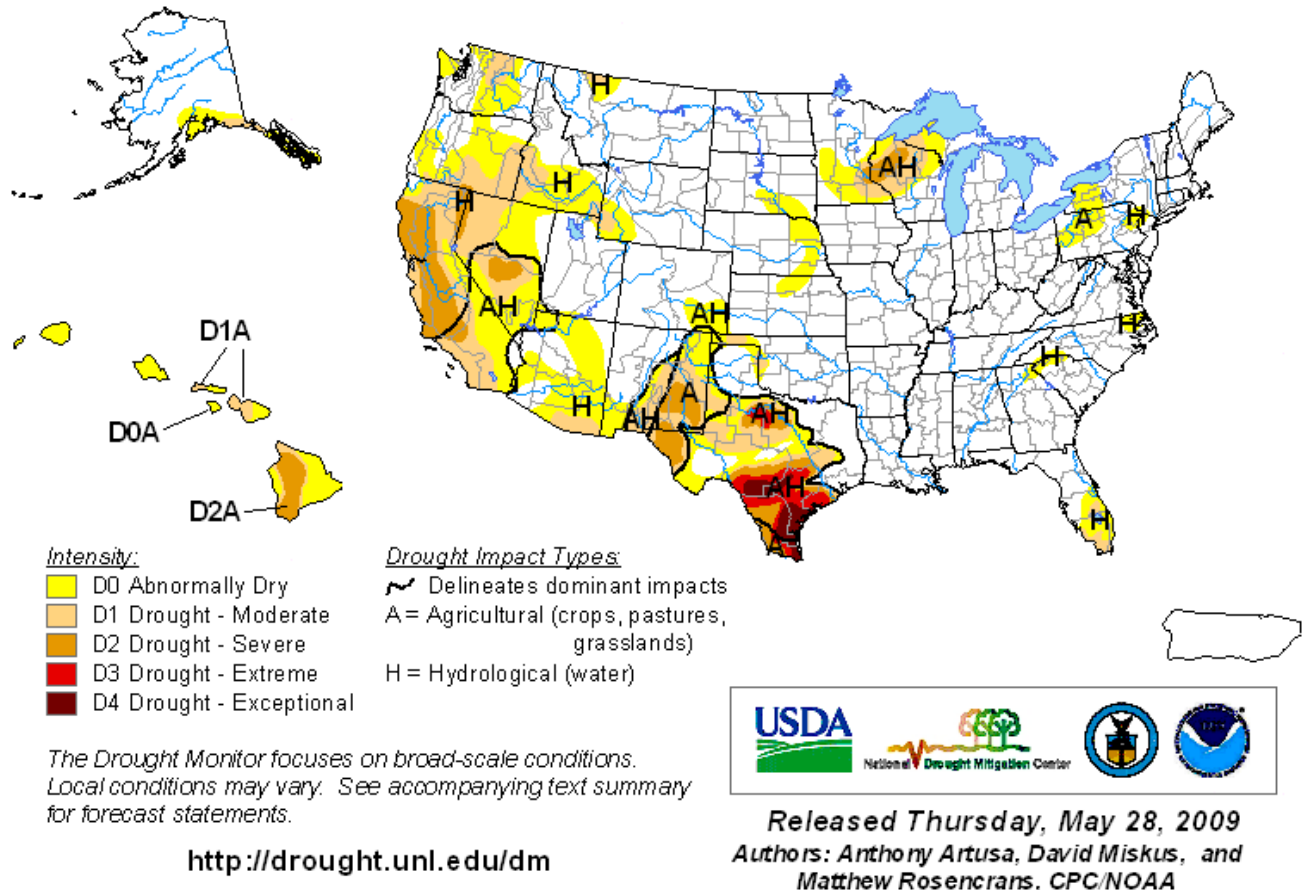
**Fig 3a. Seasonal precipitation (rain & snow water equivalent) as a percent of normal for the 2009 Water Year that began on October 1, 2008 shows values within a few percentage points of last week's values. It is interesting to note that some river basins over Arizona and New Mexico have increased significantly during the week.**

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

May 26, 2009  
Valid 8 a.m. EDT



**Fig. 4. Current Drought Monitor weekly summary.**

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

# U.S. Drought Monitor

## West

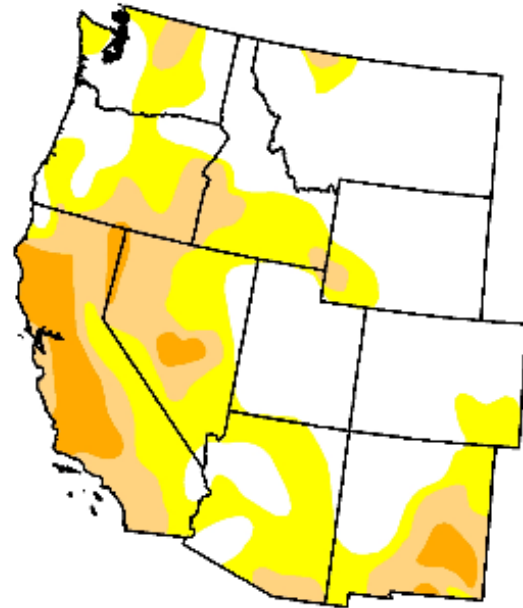
May 26, 2009

Valid 7 a.m. EST

	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	50.7	49.3	22.6	6.6	0.0	0.0
Last Week (05/19/2009 map)	42.8	57.2	27.2	8.2	0.0	0.0
3 Months Ago (03/03/2009 map)	35.1	64.9	28.0	8.0	0.6	0.0
Start of Calendar Year (01/06/2009 map)	37.4	62.6	28.9	8.8	0.4	0.0
Start of Water Year (10/07/2008 map)	41.3	58.7	28.6	10.4	0.1	0.0
One Year Ago (05/27/2008 map)	45.9	54.1	26.2	4.7	0.1	0.0

Intensity:

<span style="background-color: yellow; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> D0 Abnormally Dry	<span style="background-color: red; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> D3 Drought - Extreme
<span style="background-color: orange; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> D1 Drought - Moderate	<span style="background-color: darkred; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> D4 Drought - Exceptional
<span style="background-color: darkorange; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> D2 Drought - Severe	



The Drought Monitor focuses on broad-scale conditions.  
Local conditions may vary. See accompanying text summary  
for forecast statements

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



Released Thursday, May 28, 2009

Author: A. Artusa/D. Miskus/M. Rosencrans, CPC/NOAA

Fig. 4a. Drought Monitor for the Western States with statistics over various time periods. Regionally, conditions have improved as a result of heavy rains over the Southwest during the past week. Ref: [http://www.drought.unl.edu/dm/DM\\_west.htm](http://www.drought.unl.edu/dm/DM_west.htm)

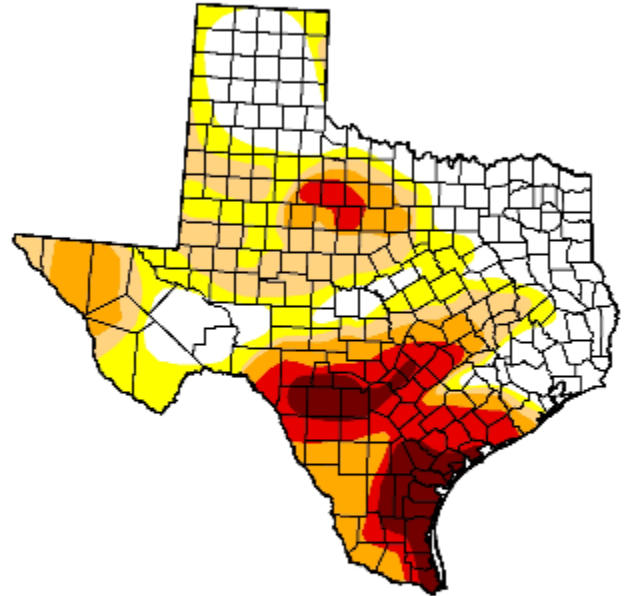
# U.S. Drought Monitor

## Texas

May 26, 2009

Valid 7 a.m. EST

	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	32.9	67.1	47.8	31.6	17.4	6.7
Last Week (05/19/2009 map)	31.9	68.1	51.9	36.3	20.5	8.5
3 Months Ago (03/03/2009 map)	0.0	100.0	74.6	44.4	21.7	9.6
Start of Calendar Year (01/06/2009 map)	41.7	58.3	24.5	15.0	9.1	4.2
Start of Water Year (10/07/2008 map)	67.2	32.8	20.5	11.0	3.6	0.0
One Year Ago (05/27/2008 map)	41.2	58.8	44.1	24.0	1.5	0.0

Intensity:

The Drought Monitor focuses on broad-scale conditions.  
Local conditions may vary. See accompanying text summary  
for forecast statements

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

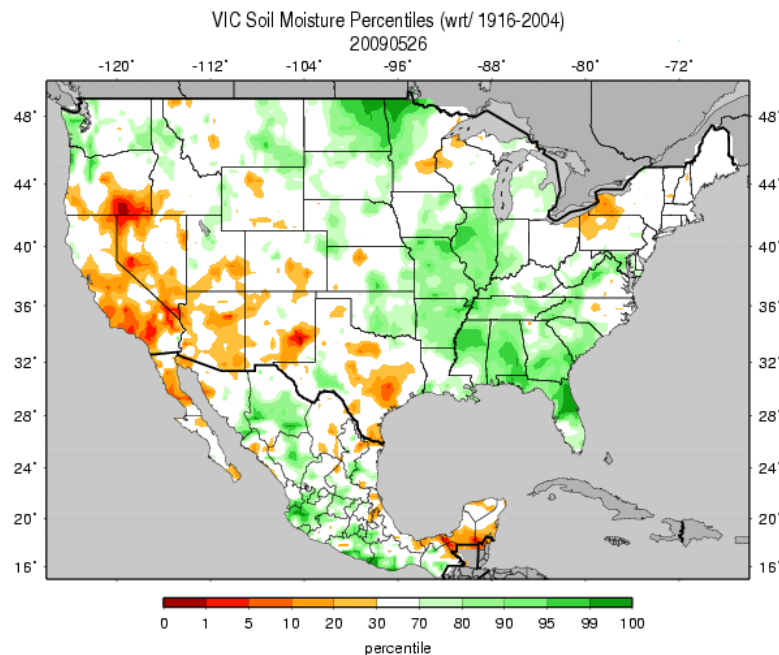


Released Thursday, May 28, 2009

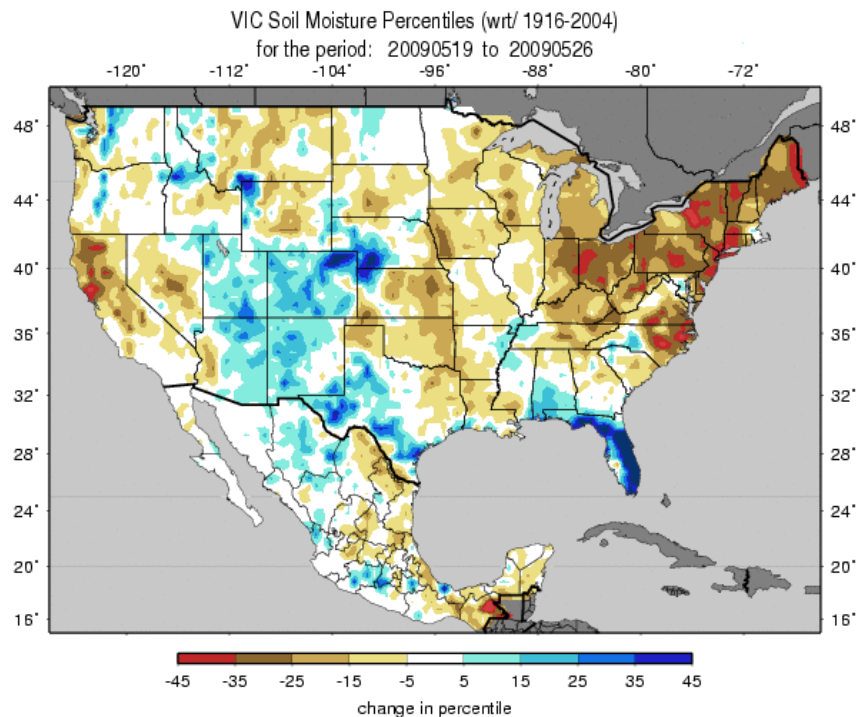
Author: A. Artusa/D. Miskus/M. Rosencrans, CPC/NOAA

**Fig. 4b: Texas is the only state with D4 drought condition in the US. Note some improvement in D2-D4 since last week.** Ref: [http://www.drought.unl.edu/dm/DM\\_state.htm?TX,S](http://www.drought.unl.edu/dm/DM_state.htm?TX,S)

## Weekly Snowpack and Drought Monitor Update Report



**Figs. 5a: Soil Moisture ranking in percentile based on 1916-2004 climatology as of 26 May. Near saturation exists over the extreme Northern Plain and much of the mid-West into Florida while excessive dryness is scattered across the West from Texas to Oregon.** Ref: [http://www.hydro.washington.edu/forecast/monitor/curr/conus.mexico/CONUS.MEXICO.vic.sm\\_gnt.gif](http://www.hydro.washington.edu/forecast/monitor/curr/conus.mexico/CONUS.MEXICO.vic.sm_gnt.gif)



**Figs. 5b: Soil Moisture change in percentile based on 1916-2004 climatology for this past week. There was significant drying over the East Coast, Central Great Lake States, Central Plains, and northern California. Excessive moistening is noted over the Central High Plains, Yellowstone Nat'l Park, and especially over Florida.** Ref: [http://www.hydro.washington.edu/forecast/monitor/curr/conus.mexico/CONUS.MEXICO.vic.sm\\_gnt.1wk.gif](http://www.hydro.washington.edu/forecast/monitor/curr/conus.mexico/CONUS.MEXICO.vic.sm_gnt.1wk.gif)



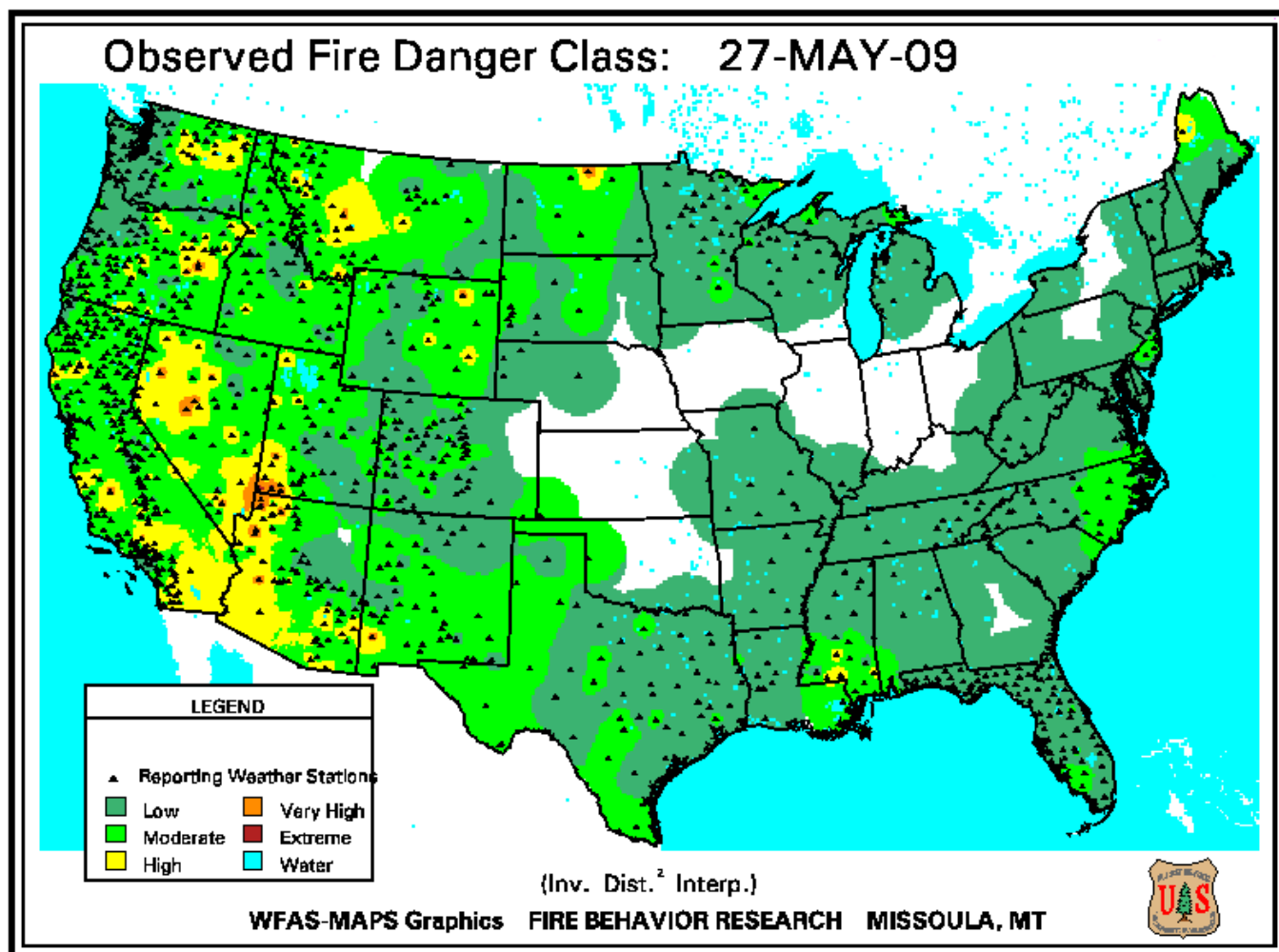


Fig. 6. Observed Fire Danger Class.

Ref: [http://www.wfas.net/images/firedanger/fd\\_class.gif](http://www.wfas.net/images/firedanger/fd_class.gif)

### Integrated Vegetation Mapping Viewer

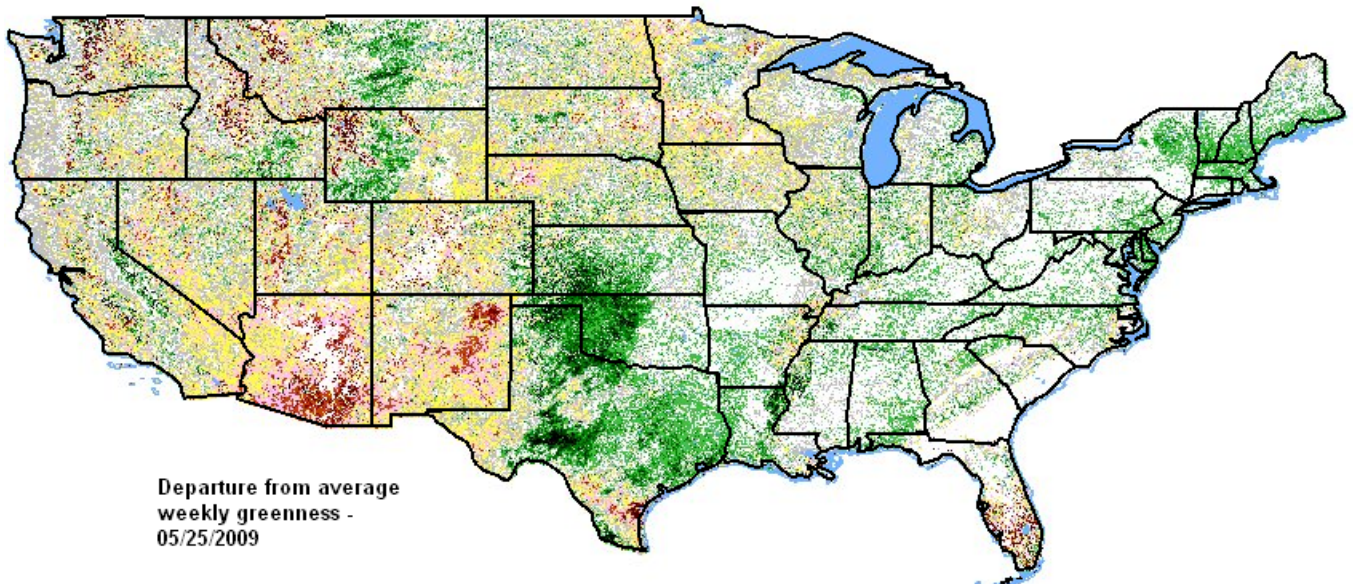
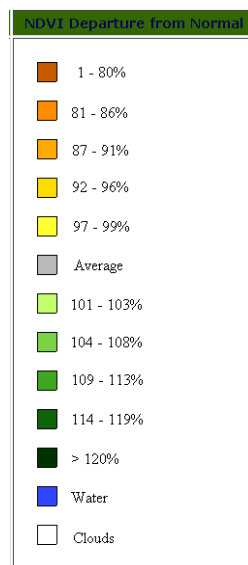
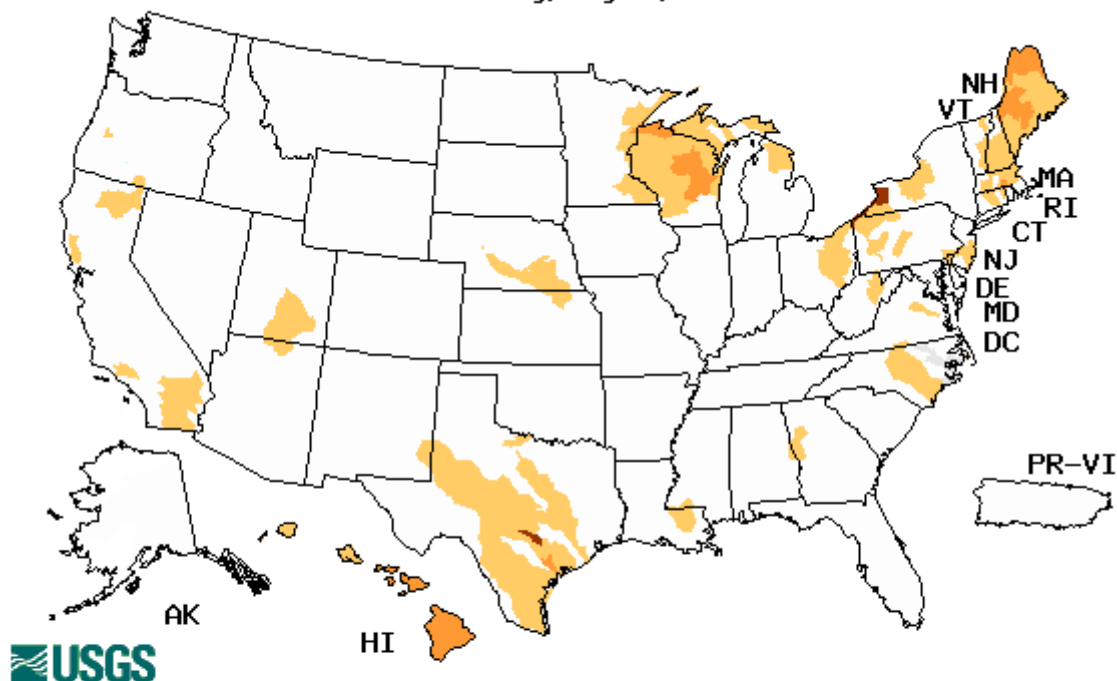


Fig. 7. Map suggests vegetation is being stressed (browner colors- <http://ivm.cr.usgs.gov/helppage.php>) due to excessive heat and/or lack of soil moisture over southern Arizona, and parts of eastern New Mexico. Over other higher elevations of the West, late season snow cover is inhibiting plant growth. Ref: <http://ivm.cr.usgs.gov/>



# Weekly Snowpack and Drought Monitor Update Report

Wednesday, May 27, 2009



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

**Fig. 8.** Map of below normal 7-day average streamflow compared to historical streamflow for the day of year. Conditions are lower than average over New England, parts of Texas, and over much of Wisconsin during the past week. Ref: <http://water.usgs.gov/waterwatch/?m=dryw&w=map&r=us>

## Weekly Snowpack and Drought Monitor Update Report

### National Drought Summary – May 26, 2009

*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/>.

During May 19-25, a slow-moving, low pressure center continued to bring very heavy rains (weekly amounts up to 12 inches, and storm totals to 25 inches) that produced localized flooding, effectively putting a huge dent into the drought. By the weekend, the low finally tracked northwestward, moving into the central Gulf coast and later into the northern Delta. Even after the low moved away, scattered showers and thunderstorms continued across Florida. In the Four Corners region, unseasonably heavy rains during the pre-monsoonal dry season fell across Arizona, New Mexico, Utah and Colorado. Rains started early in the period and continued in earnest, with a slow northeastward movement. Scattered showers and thunderstorms fell on the Great Plains, but drier and warmer weather prevailed across the Great Lakes region and New England. In the Far West, hot and dry weather was observed.

**Northeast and Mid-Atlantic, and Carolinas:** In the eastern Great Lakes region, D0(A) was expanded northward and westward to Lakes Erie and Ontario due to a lack of rainfall (nine consecutive sunny and warm days) and minimal precipitation earlier in the month. Most of western New York has recorded under an inch of rain for May, and USGS average stream flows (1-, 7-, 14-, and 28-days) are in the lower twentieth percentile. Farther east, light scattered showers (0.5 to 1 inch, locally up to 2 inches) fell on northeastern Pennsylvania and northwestern New Jersey, but long-term deficits (4 to 8 inches at 6 months) still remained, therefore so did D0(H). In North Carolina, little or no rain fell on the northeast portion of the state maintaining D0(H). In contrast, 2 to 3 inches of rain fell on the southern Appalachians (from northeastern Georgia to northwestern North Carolina) providing additional relief from abnormal dryness in that region. Some D0(H) remained due to below normal lake levels in northeast Georgia and the western Carolinas.

**Florida:** A rare, slow-moving, May storm dumped widespread copious amounts of rainfall, especially on northeastern sections, dramatically eased the drought across the state. Most of Florida received heavy rains (more than 4 inches) with locally up to 2 feet (25.49 inches at Ormond Beach, 23.75 inches at the Flagler County State Fairgrounds, and more than 21 inches at Daytona Beach) and a prolonged period of strong onshore winds. Prior to this storm, south Florida had experienced one of its driest dry seasons (November 1-April 30) on record. The South Florida Water Management District reported the driest 6-month period since records began in 1932. West-central Florida was also gripped in drought and had enacted some of the tightest water restrictions in recent memory. The fire danger, which had been extremely high across central and southern Florida (KBDI 600-750, corresponding to extreme dryness) has greatly diminished (most locations now less than 100). Soils are completely saturated across northern and central Florida, and the widespread rainfall has sufficiently moistened soils and greened-up vegetation (courtesy of Florida State climatologist David Zierden). Average stream flows, at record low levels two weeks ago, have undergone a major reversal with many now at record high levels. As of May 26, Lake Okeechobee was at 10.87 feet, up from 10.55 feet eight days ago, and still rising as swollen rivers over the Kissimmee River basin drain southward into it. As a result, widespread 1 to 2 category improvement was made throughout Florida. Exceptions included lingering D1(H) northwest of Lake Okeechobee where rainfall was at a



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minimum (2 to 3 inches) compared to surrounding areas, and extreme southern Florida where southern Miami-Dade County wells were still in the lowest tenth percentile and had yet to show significant recovery. After the data cutoff period, however, some wells had begun to quickly rebound.

**Upper Midwest:** Dry and warm weather prevailed across southern and central Minnesota, and temperatures averaged 3-6 degrees F above normal as highs reached into the upper 90's. Evaporative rates were also quite high as St. Paul Campus Observatory in Ramsey County recorded its third highest single day pan evaporation (0.63 inches on May 20) since records began in 1972. Accordingly, the dryness (D0 to D2) was expanded westward into south-central Minnesota, with D2 covering Anoka, Ramsey, Dakota and Washington Counties. There is a benchmark lake (White Bear) in Washington County that is within 11 inches of its all-time record low from the drought of 1988. According to NASS/USDA, Minnesota top-soil moisture was 38 percent short or very short, good for farmers to make significant progress on corn and soybean plantings, but eventually becoming detrimental as the crops emerge and grow. In contrast, light to moderate (0.5 to 1.5 inches) rains fell further west and south, keeping abnormal dryness at bay in northern Iowa, southwestern Minnesota, and eastern South Dakota. In northern Wisconsin and the western Upper Peninsula of Michigan, little or no precipitation fell again, slightly increasing D1-D2 across the region. In addition to USGS stream flows in the lower twenty-fifth percentile, a May 23 article in the Milwaukee Sentinel Journal stated that some lake levels in northern Wisconsin have fallen by as much as 8 feet from their highs, while others dropped to their lowest point in 70 years.

**The Plains:** In the north-central Great Plains, scattered showers and thunderstorms dropped 1 to 3 inches of rain on parts of southern and central Nebraska and eastern South Dakota, effectively removing the abnormal dryness in east-central and northeastern Nebraska. This also prevented further northward and eastward expansion of D0 into eastern South Dakota and southwestern Minnesota. In contrast, drier conditions (rain totals 0.1 to 0.4 inches) allowed for an increase in D0 into extreme eastern Nebraska and south-central South Dakota (Lyman and Jones counties). No impacts were designated in this region as rapid progress of crop plantings occurred, but rainfall will be needed soon for emergence and crop establishment before topsoil moisture becomes critically deficient.

Farther south, continued hit-and-miss showers and thunderstorms occurred across the southern Plains, with the heaviest rainfall amounts (1.5 to 3.5 inches) falling on parts of north-central, south-central, and extreme southern and southwestern Texas, and in southern Oklahoma. Accordingly, 1- to 2-category improvements (via Texas A&M SPI blend synthesis) were made in southwestern Texas (Reeves, Loving, Jeff Davis, Ward, and Winkler counties) and around the El Paso area; in central Texas, a 1-category improvement to D1 was made in Nolan, Taylor, Callahan, Coke, and Runnels counties; and in extreme southern Texas, an upgrade from D3 to D2 was made in Zapata, Starr, and Hidalgo counties.

In northern Texas and the Oklahoma Panhandle, however, less than 0.5 inches fell, and combined with above-normal temperatures, conditions deteriorated. In the southern Texas Panhandle, degradation to D1 occurred in Hockley, Lubbock, Crosby, Lynn, and Garza counties, while D1 was added to Oklahoma's Texas County where another dry week occurred on top of a very dry season (less than 20 percent of normal past 30 days, and 60 percent of normal the last 90 days). A slight expansion of D0 was also made across the Oklahoma Panhandle which has missed the heavy rains experienced by the rest of the State.

**The West:** Low-level moisture and a slow-moving cold front brought unseasonably heavy, widespread showers and thunderstorms to much of the Four Corner States throughout the week, well before the typical onset of the Southwest monsoon ("non-monsoonal rains"). Weekly amounts generally ranged from 0.5 to 2 inches, with 2-4 inches reported in central Arizona,

## Weekly Snowpack and Drought Monitor Update Report

southeast Utah, western and central Colorado, and a few locations in southeastern New Mexico and west Texas. As a result, widespread 1- to occasionally 2-category improvements were made, especially where only short-term drought was previously indicated. This included removing D1(A) in northeastern Arizona and southwestern New Mexico, and splitting the D2(A) in southeast New Mexico in half where 1.5 to 2.5 inches of rain fell. In southwest New Mexico, a 2-category improvement was made as recent rains eliminated short-term deficits and instead created surpluses out to 90-days. In northern Arizona, May 22 rains at Holbrook totaled 3.50 inches breaking Holbrook's previous wettest day (2.87 inches) on July 8, 1914. At Page, 1.84 inches of rain was the third highest daily total in the last half-century. What made these amounts unusual is that May is normally in the middle of Arizona's dry season. Normal ANNUAL rainfall is 6.74 inches at Page and 9.20 inches at Holbrook. Additionally, improvements were made in Utah and Colorado, with only D0(H) remaining in southeast Colorado where D1 had been previously. In contrast, drier weather in northeastern New Mexico (0.1 to 0.4 inches) expanded the D1(A) there. Although the Far West was generally dry and unseasonably warm this week, no degradation was made as the long, normally dry summer season was underway, with plenty of time for additional deterioration.

**Alaska and Hawaii:** In Alaska, although stream flow levels are at near-record high levels due to rapid snowmelt and ice jams, precipitation has been lacking since April 1. During the past 60 days, precipitation deficits of 8 to 14 inches have accumulated along the southern Alaska coast from Cordova to Yakutat, and D1 was introduced.

In Hawaii, another week with little or no rain on both the windward and leeward sides of the Islands promoted all former non-dry areas (leeward sides of Oahu, Molokai, Maui and the Big Island) to D0.

**Looking Ahead:** During the next 5 days (May 28 – June 1) heavy rain (1 to 2 inches) is expected for southern Texas and most of Florida, with moderate rains predicted in the southern and central Rockies. Light to moderate rains may fall across the Upper Midwest drought areas, with more significant rains (1-3 inches) forecast in the eastern Great Lakes region and Northeast. Unseasonably heavy rains (up to 0.5 inches) are anticipated in the D2 area of northeast California and northwest Nevada. Elsewhere, little or no rain is expected in the remainder of the West and northern and central Plains. Well above normal temperatures are predicted for the Northwest, with cooler than normal conditions across the Upper Midwest, Great Lakes region, and New England.

The Climate Prediction Center 6-10 day forecast (June 2-6) indicates warmer than normal conditions in the Four Corner states, southern Plains, Washington state, and Alaska. Subnormal temperatures are predicted for the eastern third of the Nation. Above normal precipitation is forecast for the Northwest and Southeast, with drier than normal weather expected in the Southwest, southern Plains, and eastern half of Alaska.

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### **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

## **Weekly Snowpack and Drought Monitor Update Report**

### **Drought or Dryness Types**

A...Agricultural

H...Hydrological

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