



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

Weekly Report - Snowpack / Drought Monitor Update Date: March 13, 2008

SNOTEL SNOWPACK AND PRECIPITATION SUMMARY

Snow: During the past week, dry weather resulted in a decrease of snow depth approaching one foot across much of the West (Fig. 1). Since last week, the preliminary April-July streamflow runoff forecast has decreased between 5 and 15 percent over parts of Utah and Colorado but increased up to 10 percent over northern New Mexico. Snow-water equivalent percent as of 12 March shows well above normal values over portions of the Cascades (WA & OR), Coastal Ranges (WA & OR), Southern Rockies (CO & NM), eastern Utah, and the mountains of Arizona. Well below normal values dominate in southern New Mexico (Fig. 1a).

Temperature: For the past seven days, station average temperature anomalies for most locales across the West were warmer than average in the west and cooler in the east (Fig. 2). The greatest negative temperature departures occurred over the Bear River Range (UT), Snowy and Sierra Madre Ranges (WY & CO), and Southern Rockies (<-9F) and the greatest positive departures occurred over northern Montana (>+9F) (Fig. 2a).

Precipitation: Preliminary precipitation totals for the 7-day period ending 12 March shows very little precipitation falling across 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 well above average totals over much of the southern CO, AZ, and northern NM. Only a few river basins are lower than 90% of normal. Values have dropped up to 5 percent over Oregon since last week (Fig. 3a).

WESTERN DROUGHT STATUS

The West: A dry week in the west with cool temperatures allowed for no changes this week. The cool temperatures were welcomed as they allow for maintaining current snowpack levels. Author: Brian Fuchs, National Drought Mitigation 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 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 4b, and 4c).

Weekly Snowpack and Drought Monitor Update Report

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.

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

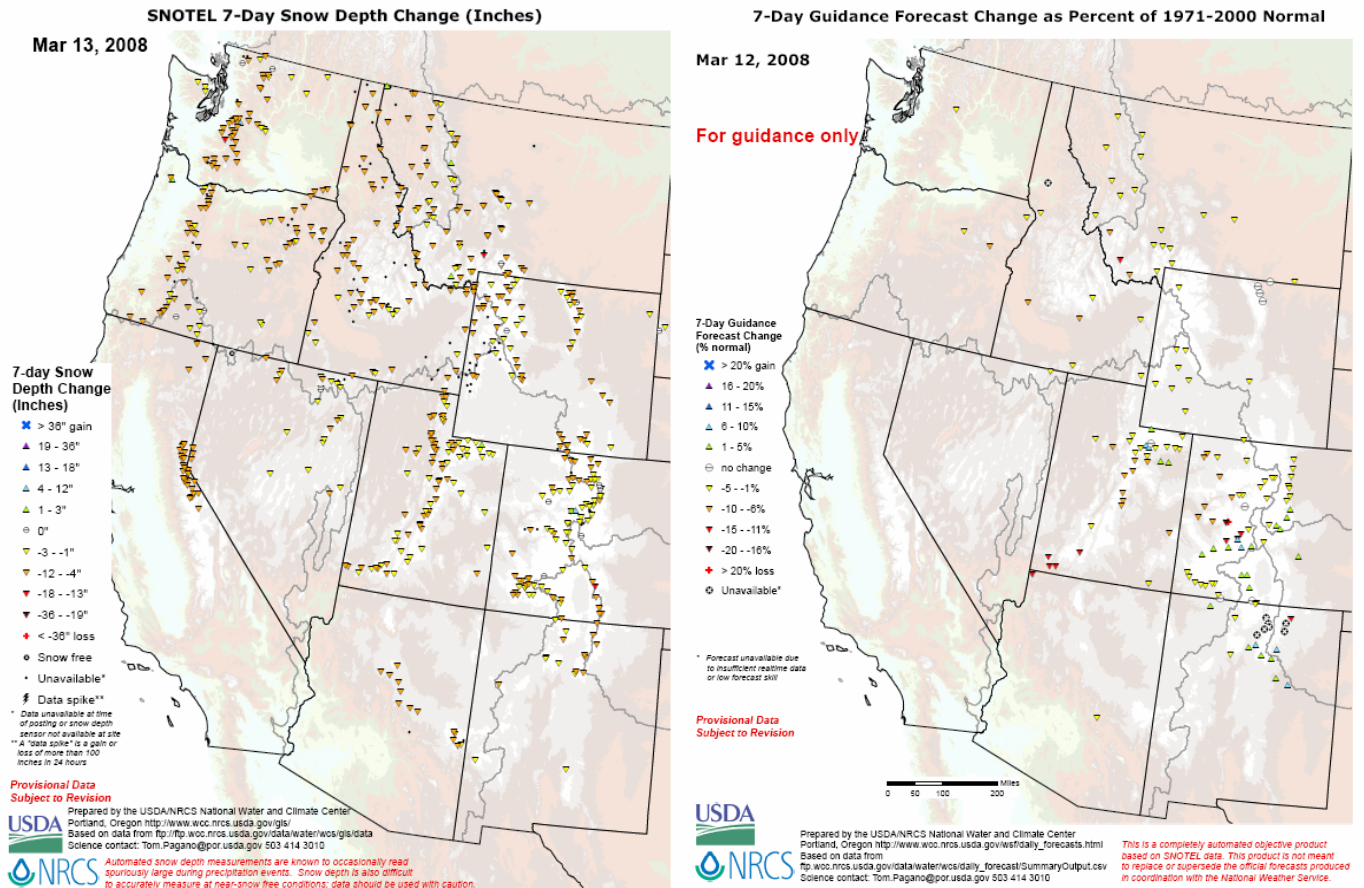


Fig. 1. During the past week, dry weather resulted in a decrease of snow depth approaching one foot across much of the West (left figure). Since last week, the preliminary April-July streamflow runoff forecast has decreased between 5 and 15 percent over parts of Utah and Colorado but increased up to 10 percent over northern New Mexico (right figure). Note: Area basin preliminary forecasts for the Sierra and Cascades are not made.

Refs: ftp://ftp.wcc.nrcs.usda.gov/data/water/wcs/gis/maps/west_snowdepth_7ddelta.pdf
ftp://ftp.wcc.nrcs.usda.gov/data/water/wcs/daily_forecast/maps/west_dailyfcst_7daych.pdf

Weekly Snowpack and Drought Monitor Update Report

Westwide SNOTEL Current Snow Water Equivalent (SWE) % of Normal

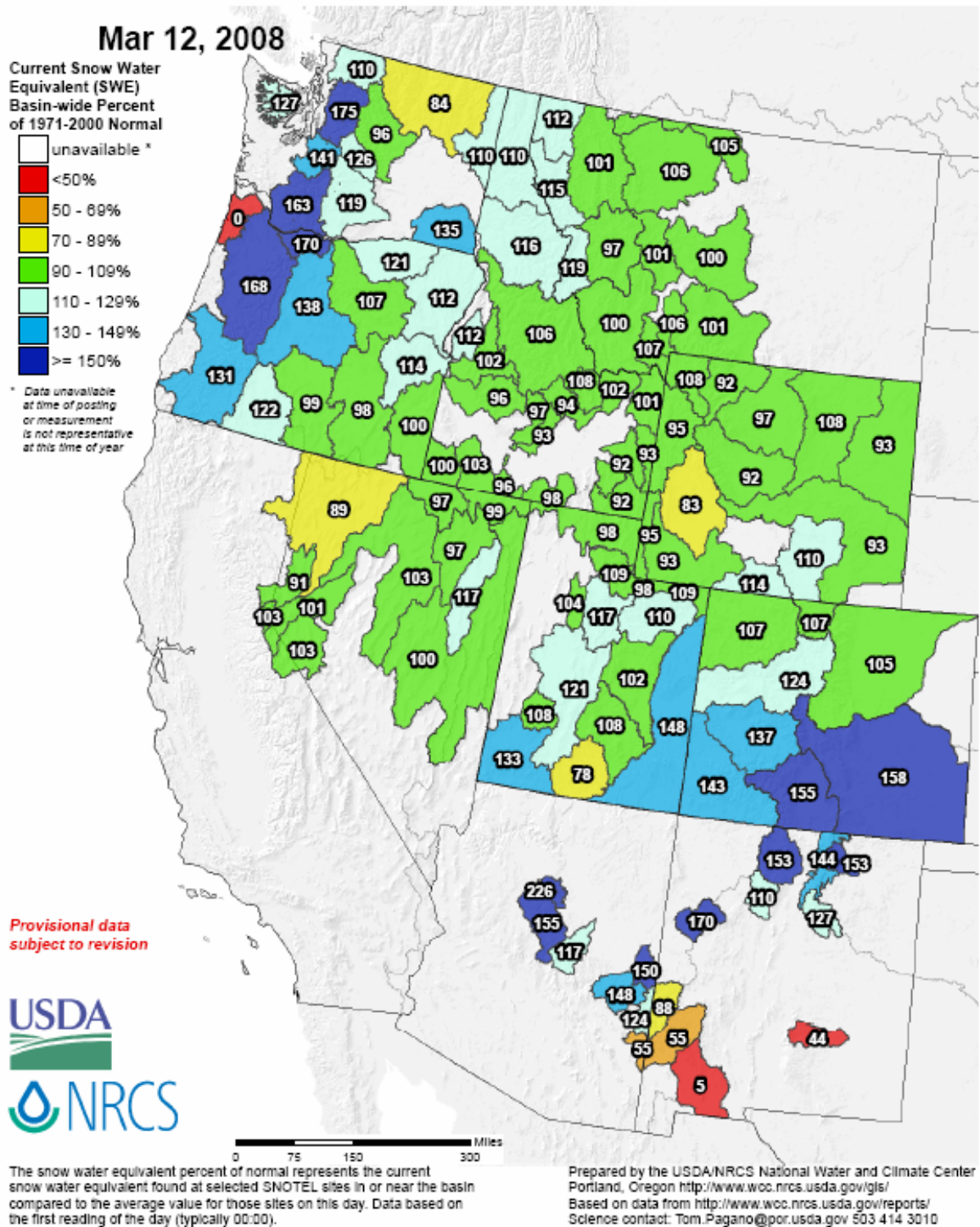


Fig. 1a. Snow-water equivalent percent as of 12 March shows well above normal values over portions of the Cascades (WA & OR), Coastal Ranges (WA & OR), Southern Rockies (CO & NM), eastern Utah, and the mountains of Arizona. Well below normal values dominate in southern New Mexico.

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

Weekly Snowpack and Drought Monitor Update Report

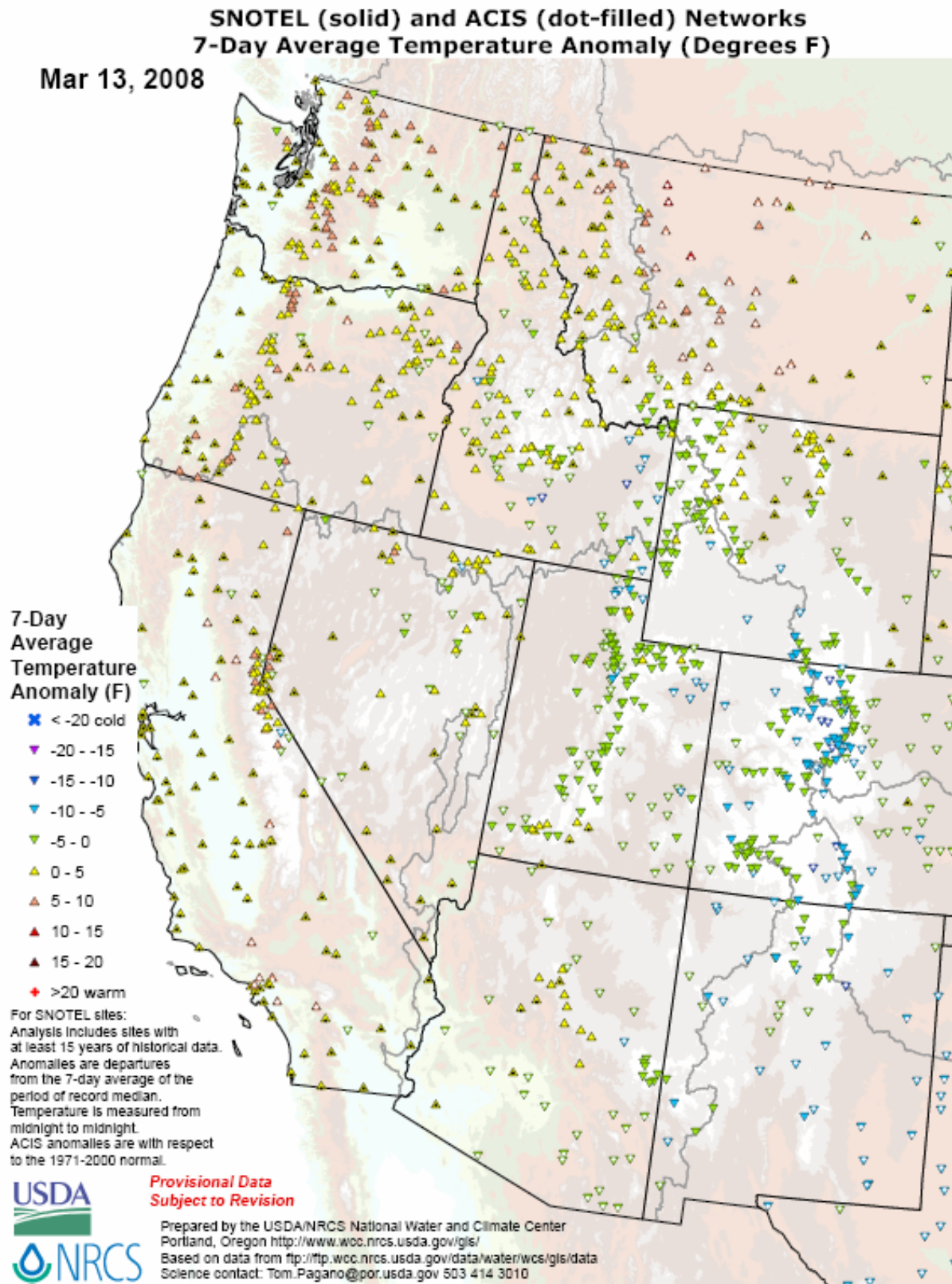
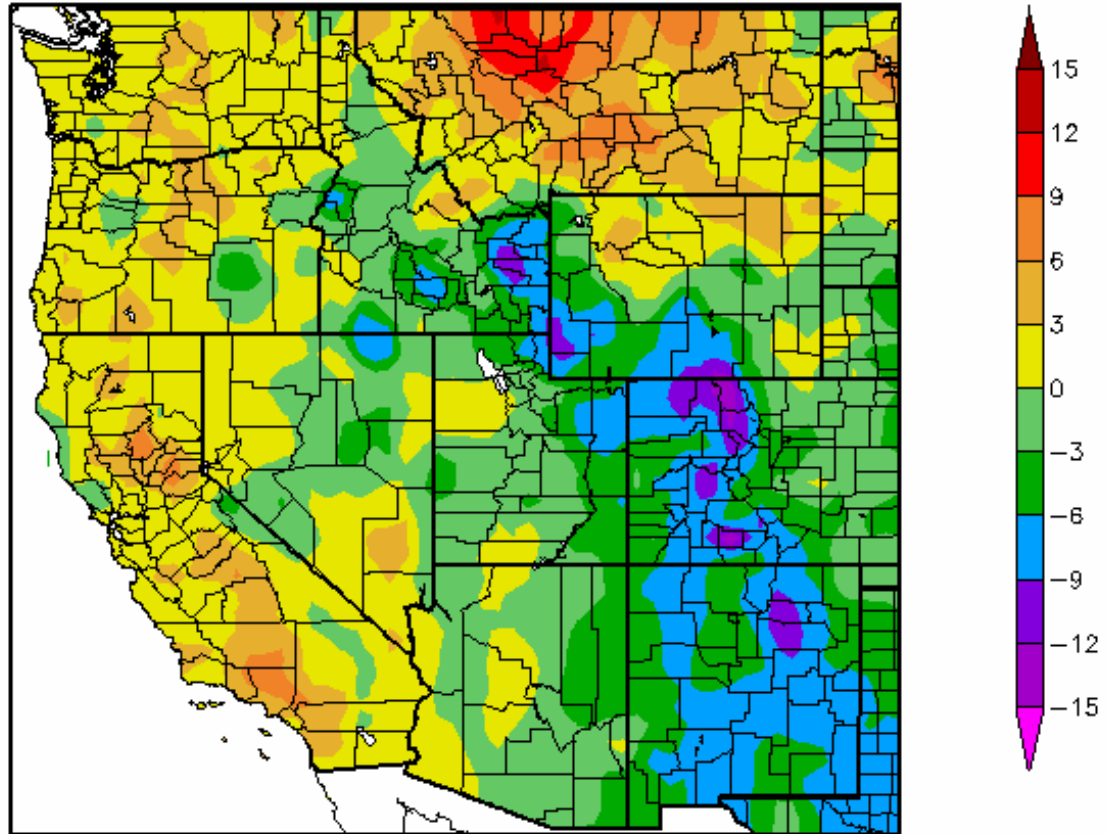


Fig. 2. SNOTEL & ACIS 7-day station average temperature anomalies for most stations in the West were warmer than average in the west and cooler in the east.

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

Departure from Normal Temperature (F)
3/6/2008 – 3/12/2008



Generated 3/13/2008 at HPRCC using provisional data.

NOAA Regional Climate Centers

The Current Climate Summary Maps are produced daily using data from the [Applied Climate Information System \(ACIS\)](#). Stations used are from the National Weather Service Cooperative Observer Network (COOP), and the Automated Weather Data Network (AWDN). All near-real-time data are considered preliminary and should be used responsibly.

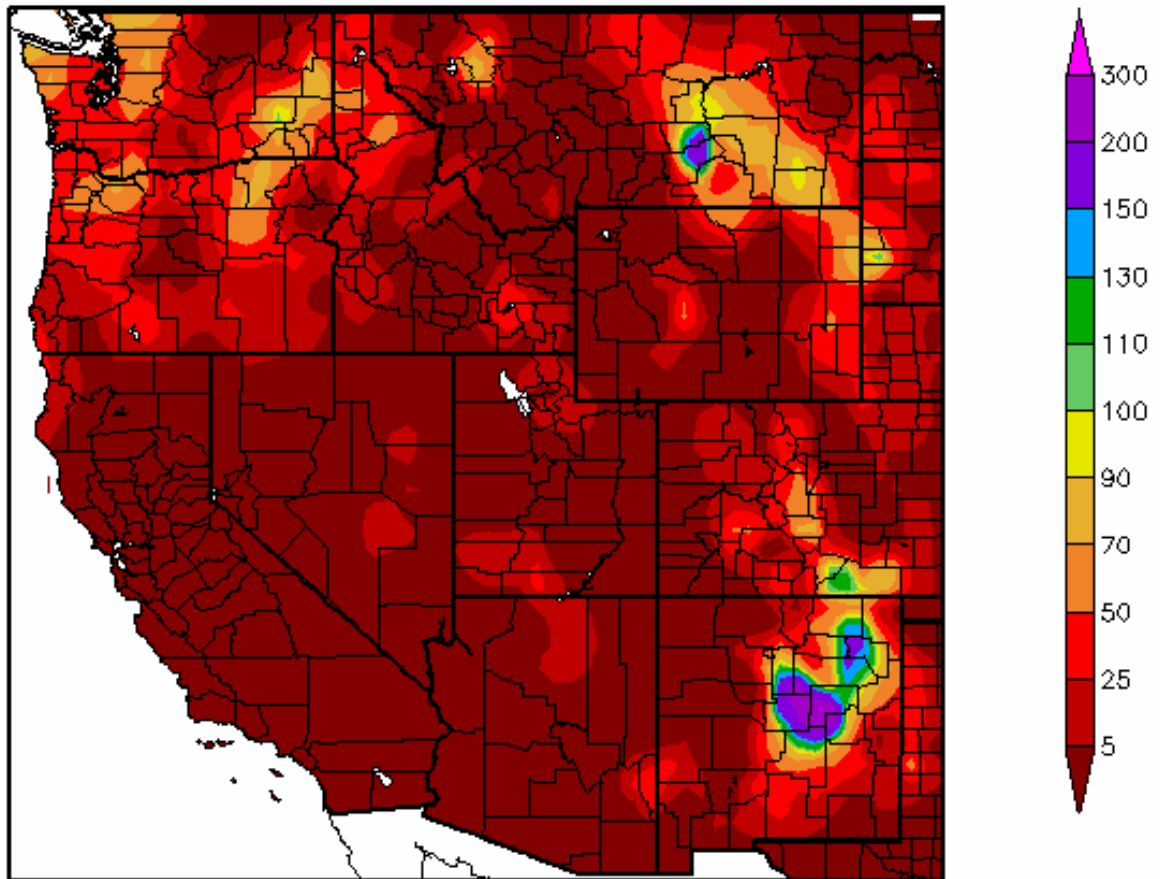
Normal refers to the 1971-2000 Climate Normal for the selected product.



Fig. 2a. ACIS 7-day average temperature anomalies: Greatest negative temperature departures over the Bear River Range (UT), Snowy and Sierra Madre Ranges (WY & CO), and Southern Rockies (<-9F) and greatest positive departures over northern Montana (>+9F).

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

Percent of Normal Precipitation (%)
3/6/2008 – 3/12/2008



Generated 3/13/2008 at HPRCC using provisional data.

NOAA Regional Climate Centers

The Current Climate Summary Maps are produced daily using data from the [Applied Climate Information System \(ACIS\)](#). Stations used are from the National Weather Service Cooperative Observer Network (COOP), and the Automated Weather Data Network (AWDN). All near-real-time data are considered preliminary and should be used responsibly.



Normal refers to the 1971-2000 Climate Normal for the selected product.

Fig. 3. ACIS 7-day average precipitation anomaly: Preliminary precipitation totals for the 7-day period ending 12 March shows very little precipitation falling across the West.

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

Weekly Snowpack and Drought Monitor Update Report

Westwide SNOTEL Water Year (Oct 1) to Date Precipitation % of Normal

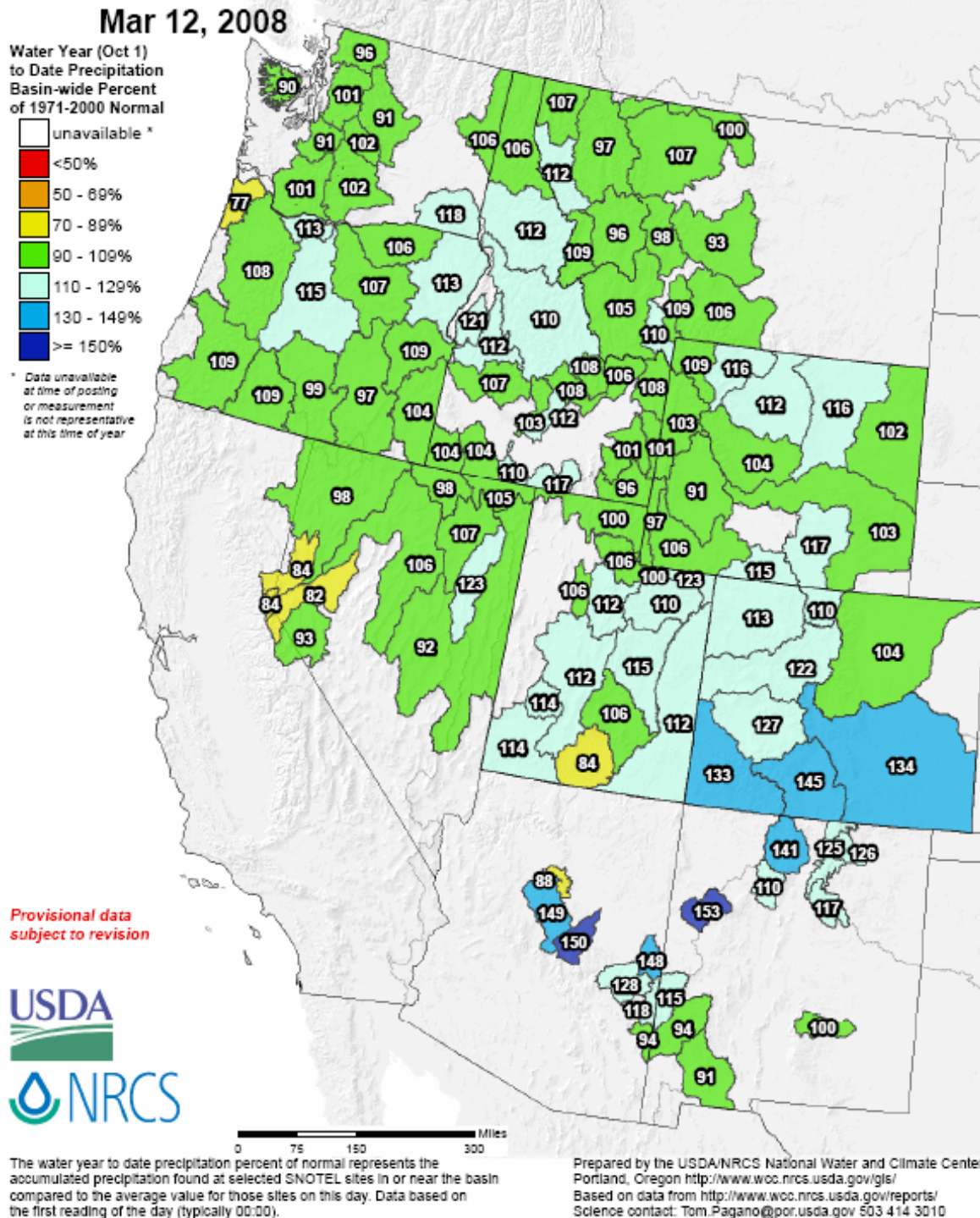


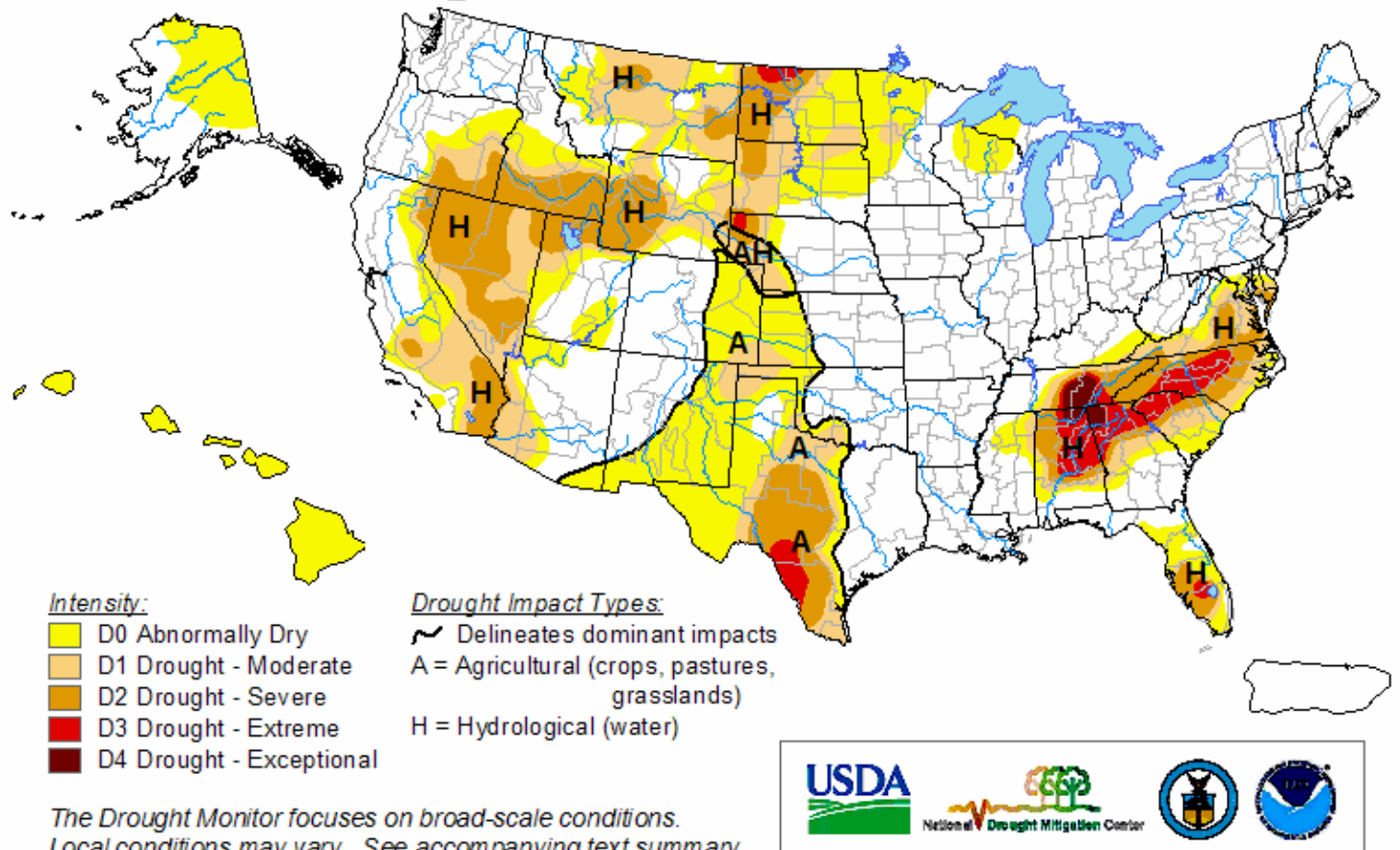
Fig 3a. Seasonal precipitation (rain & snow water equivalent) as a percent of normal for the 2008 Water Year that began on October 1, 2007 shows well above normal totals over much of the southern CO, AZ, and northern NM. Only a few river basins are lower than 90% of normal. Values have dropped up to 5 percent over Oregon since last week.

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

U.S. Drought Monitor

March 11, 2008

Valid 8 a.m. EDT



Released Thursday, March 13, 2008

Author: Brian Fuchs, National Drought Mitigation Center

<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

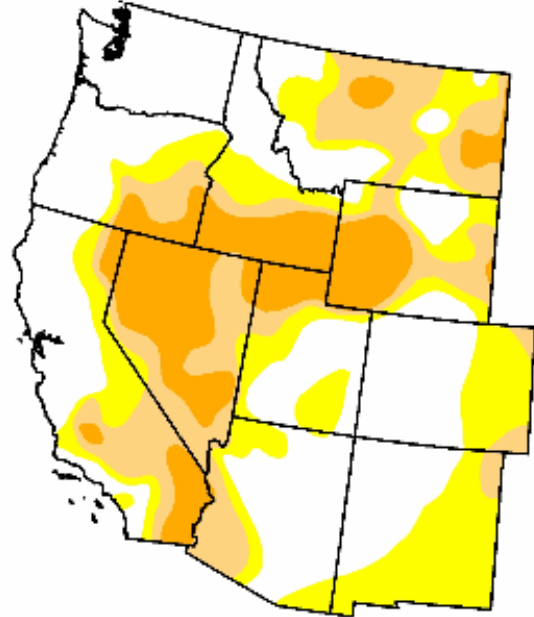
March 11, 2008

Valid 7 a.m. EST

	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	42.3	57.7	34.2	16.0	0.0	0.0
Last Week (03/04/2008 map)	42.3	57.7	34.0	16.0	0.0	0.0
3 Months Ago (12/18/2007 map)	26.3	73.7	54.7	33.1	2.7	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 (03/13/2007 map)	39.1	60.9	34.0	19.2	8.1	0.0

Intensity:

 D0 Abnormally Dry	 D3 Drought - Extreme
 D1 Drought - Moderate	 D4 Drought - Exceptional
 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, March 13, 2008

Author: Brian Fuchs, National Drought Mitigation Center

Fig. 4a. Drought Monitor for the Western States with statistics over various time periods. Note no change since last week.

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

U.S. Drought Monitor

Southeast

March 11, 2008

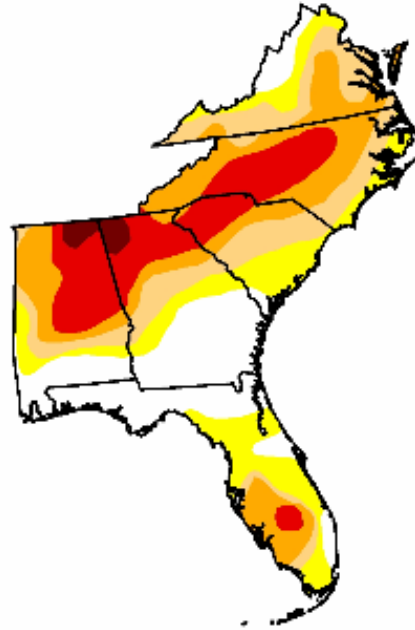
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	23.8	76.2	58.0	40.3	18.8	1.6
Last Week (03/04/2008 map)	18.1	81.9	66.5	48.6	25.8	6.9
3 Months Ago (12/18/2007 map)	9.1	90.9	78.3	63.0	47.9	36.2
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 (03/13/2007 map)	24.9	75.1	24.8	1.8	0.0	0.0

Intensity:

 D0 Abnormally Dry	 D3 Drought - Extreme
 D1 Drought - Moderate	 D4 Drought - Exceptional
 D2 Drought - Severe	



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



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Fig. 4b: Drought Monitor for the Southeastern States with statistics over various time periods. Note the significant improvement in all categories since last week.

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

Weekly Snowpack and Drought Monitor Update Report

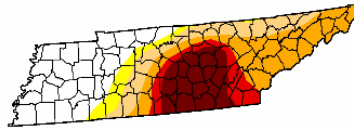
U.S. Drought Monitor Tennessee

March 11, 2008
Valid 7 a.m. EST

	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	33.2	66.8	61.1	47.3	23.9	15.9
Last Week (03/04/2008 map)	31.6	68.4	61.3	49.4	32.9	16.7
3 Months Ago (12/18/2007 map)	27.4	72.6	60.8	53.8	46.8	20.7
Start of Calendar Year (01/01/2008 map)	27.4	72.6	60.8	53.8	46.8	19.9
Start of Water Year (10/01/2007 map)	0.0	100.0	100.0	100.0	85.7	61.3
One Year Ago (03/13/2007 map)	12.2	87.8	51.0	4.5	0.0	0.0

Intensity:

D0 Abnormally Dry D3 Drought - Extreme
D1 Drought - Moderate D4 Drought - Exceptional
D2 Drought - Severe



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



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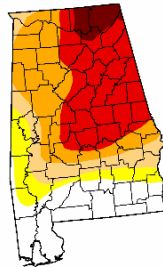
U.S. Drought Monitor Alabama

March 11, 2008
Valid 7 a.m. EST

	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	21.3	78.7	69.0	57.2	34.1	4.2
Last Week (03/04/2008 map)	20.2	79.8	69.6	57.3	34.1	4.2
3 Months Ago (12/18/2007 map)	6.0	94.0	85.8	72.0	60.8	49.2
Start of Calendar Year (01/01/2008 map)	9.5	90.5	80.8	66.9	56.5	38.9
Start of Water Year (10/01/2007 map)	0.0	100.0	95.4	83.7	76.1	52.0
One Year Ago (03/13/2007 map)	5.8	94.2	60.7	7.0	0.0	0.0

Intensity:

D0 Abnormally Dry D3 Drought - Extreme
D1 Drought - Moderate D4 Drought - Exceptional
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, March 13, 2008
Author: Brian Fuchs, National Drought Mitigation Center

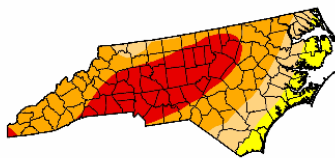
U.S. Drought Monitor North Carolina

March 11, 2008
Valid 7 a.m. EST

	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.0	100.0	89.8	73.0	31.1	0.0
Last Week (03/04/2008 map)	0.0	100.0	98.8	87.7	61.3	26.3
3 Months Ago (12/18/2007 map)	0.0	100.0	100.0	100.0	84.0	66.2
Start of Calendar Year (01/01/2008 map)	0.0	100.0	100.0	100.0	83.7	51.3
Start of Water Year (10/01/2007 map)	0.0	100.0	100.0	92.8	79.4	37.7
One Year Ago (03/13/2007 map)	9.0	91.0	11.6	0.0	0.0	0.0

Intensity:

D0 Abnormally Dry D3 Drought - Extreme
D1 Drought - Moderate D4 Drought - Exceptional
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>

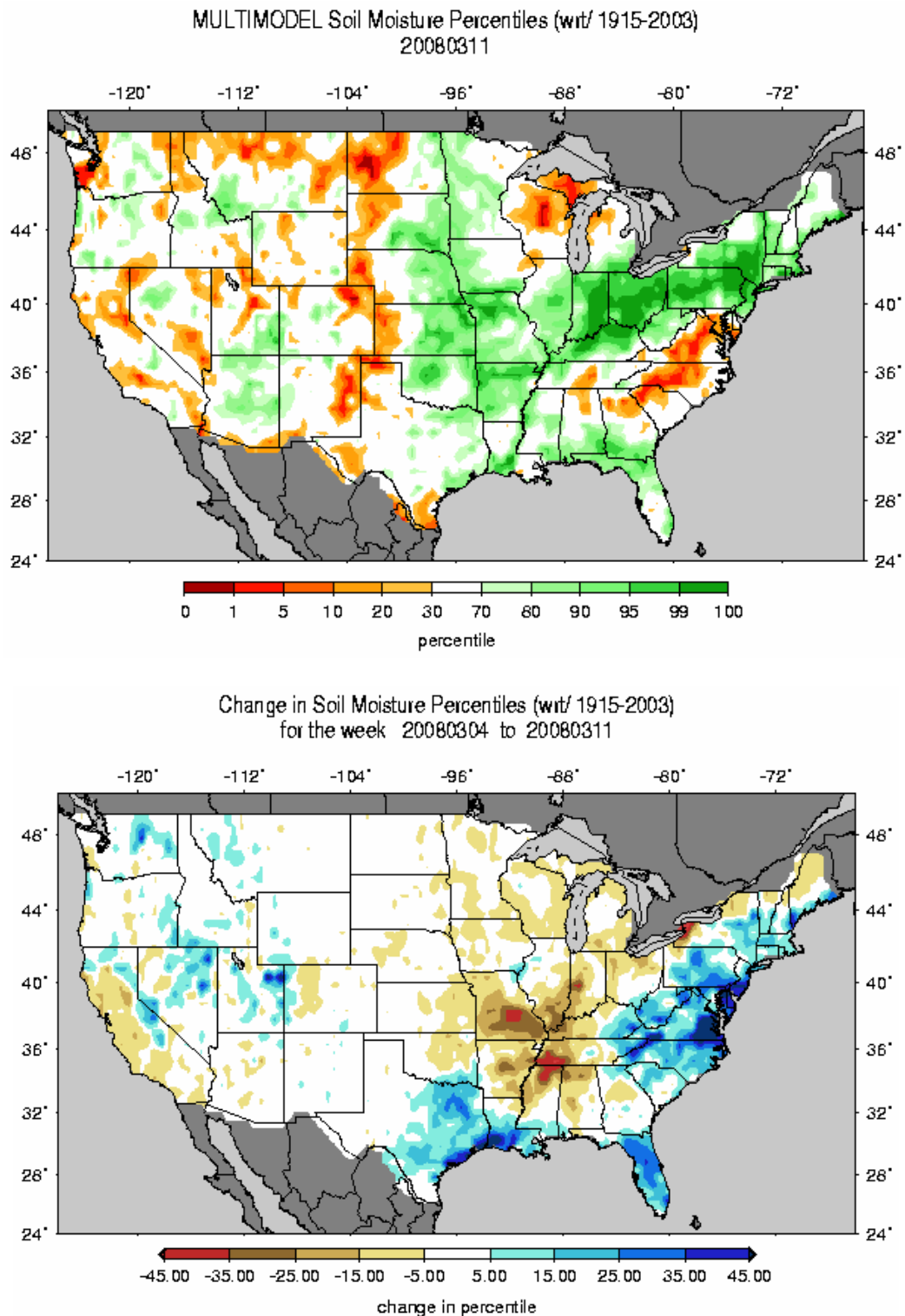


Released Thursday, March 13, 2008
Author: Brian Fuchs, National Drought Mitigation Center

Fig. 4c. Drought Monitor for Tennessee, Alabama, and North Carolina with statistics over various time periods shows some of the severest drought conditions in the US. Note significant improvements for Tennessee (D3-D4), no real change in Alabama, and major improvement in North Carolina (D2-D4) since last week.

Ref: http://www.drought.unl.edu/dm/DM_state.htm?TN,S
http://www.drought.unl.edu/dm/DM_state.htm?AL,SE
http://www.drought.unl.edu/dm/DM_state.htm?NC,SE

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. Note significant moistening over the Mid-Atlantic States, Florida, and the western Gulf but drying over the mid-Mississippi River Valley and in portions of northern California. Remark: In colder regions of the West, frozen ground suggests incorrect values or missing data.

Ref: http://www.hydro.washington.edu/forecast/monitor/curr/CONUS.multimodel.sm_qnt.gif
http://www.hydro.washington.edu/forecast/monitor/curr/CONUS.sm_qnt.1wk.gif

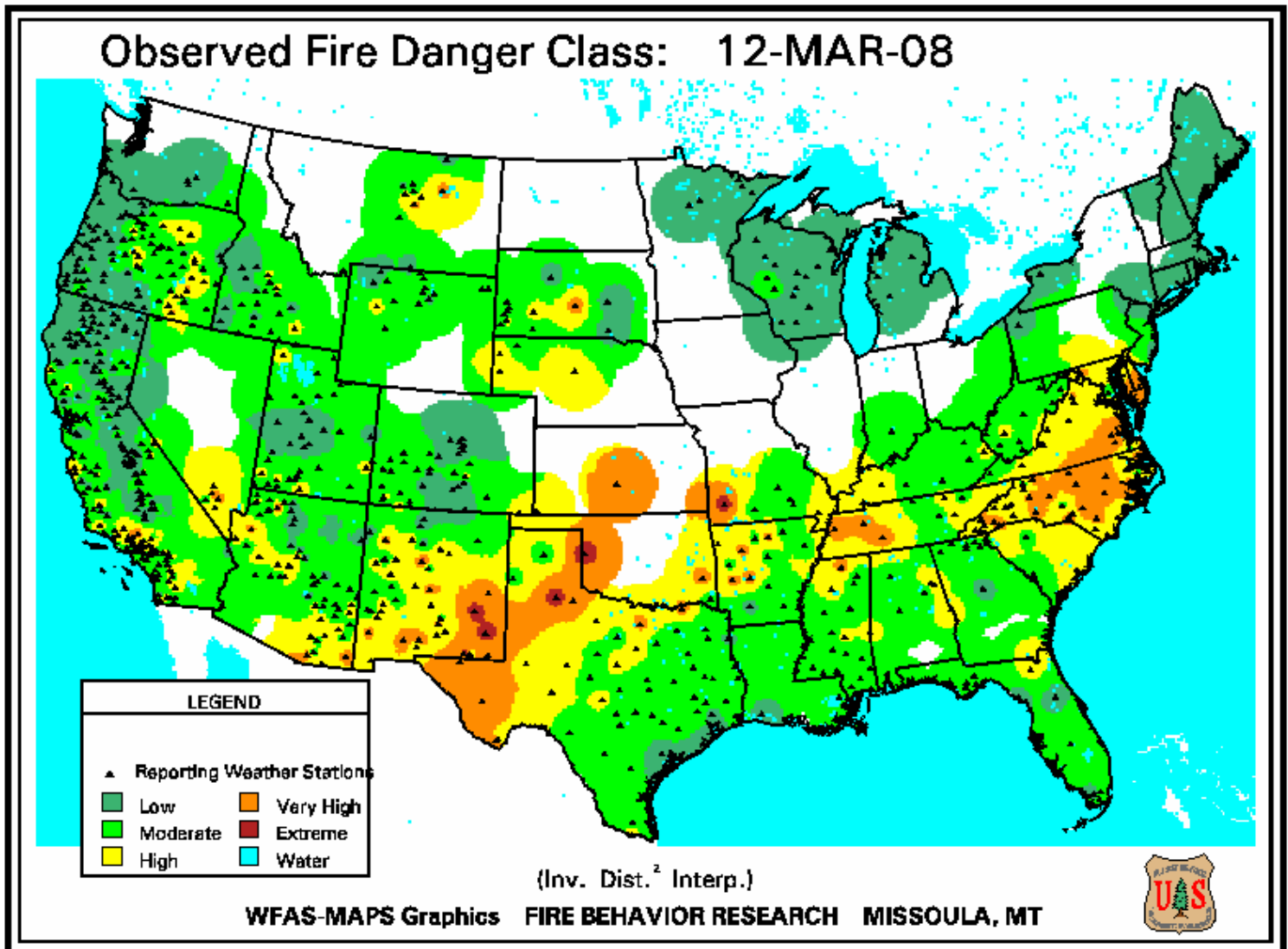
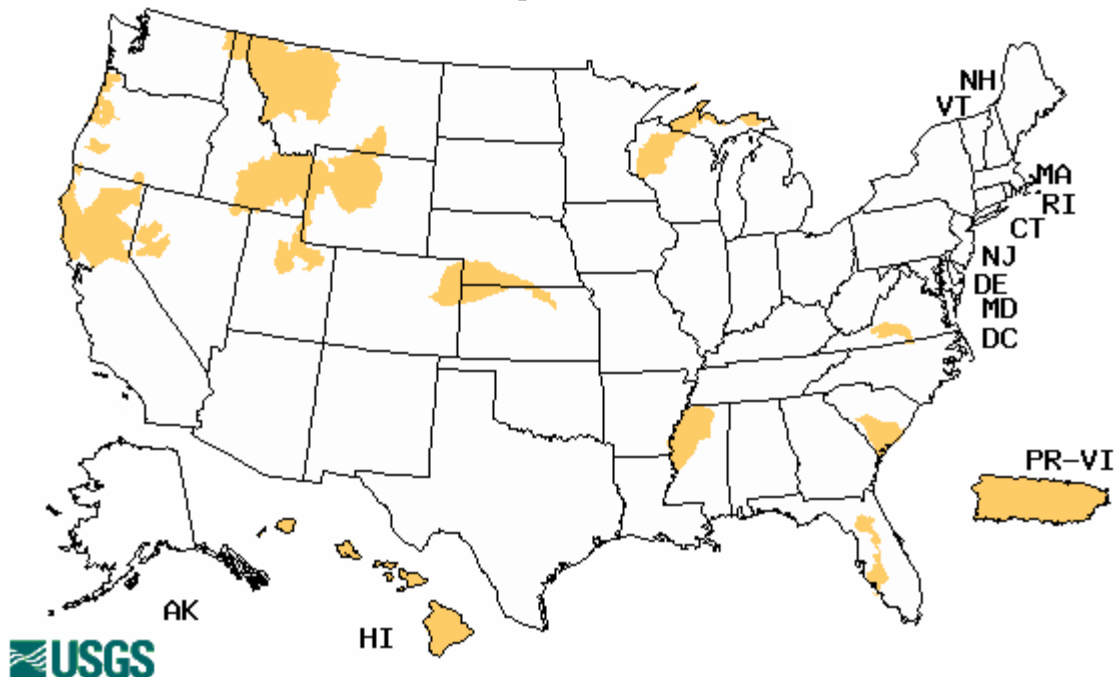


Fig. 6. Observed Fire Danger Class. Note increase risk of fire from southern New Mexico, southwestern- northern Texas and western Oklahoma. Conditions have improved over northern California since last week. Source: Forest Service Fire Behavior Research – Missoula, MT.
Ref: http://www.fs.fed.us/land/wfas/fd_class.gif

Weekly Snowpack and Drought Monitor Update Report

Wednesday, March 12, 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 major improvement the Mid-Atlantic States since last week. Values over the colder regions of the West and northern states are probably missing or are in error due to river icing and freeze-up.

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

Weekly Snowpack and Drought Monitor Update Report

National Drought Summary March 11, 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 Southeastern and Mid-Atlantic States: Several rain events brought welcomed relief to the region. Several inches of rain and even snow in higher elevations allowed for widespread improvement to the drought status this week. The heaviest rains were recorded in a band from northeast Georgia into western North Carolina. Bryson City, NC, recorded 3.92 inches of precipitation, Buck Forest 3.32 inches, Bent Creek 3.18 inches, Enka 3.45 inches, Hendersonville 4.22 inches, Robinsville 3.23 inches, and Waynesville 3.13 inches. The precipitation allowed for a categorical improvement of all drought categories in North Carolina, and with the removal of D4 from the state, this is the first time since August 2007 that there is no D4 in North Carolina. In Georgia, D3 was improved in the northeast corner of the state and D4 was improved in the northwest. The drought categories in central Georgia were all shifted to the north in response to continuing improvements there. Northern portions of Florida continued to see precipitation, allowing for the removal of D1 in the area and a reduction of D0 conditions as well. In southern Florida, conditions along the Kissimmee River were improved to D0 following seasonal changes in regulation levels and consistent rains over the last few weeks.

Tennessee saw the removal of D3 status in the eastern portions of the state. Even with the improved conditions in eastern Tennessee, long-term hydrological problems still linger. In Kentucky, D1 conditions were pushed south, almost completely out of the state, while some improvements were also made to the northern extent of the drought status in Virginia. In Maryland, several inches of rain pushed the D0 and D1 conditions to the south, leaving much of northern Maryland drought free. Dalecarlia Reservoir in Maryland recorded 3.03 inches, Stevensville 2.17 inches, Smithburg 2.72 inches, and Williamsport 2.92 inches of rain.

The Plains: Another dry week for the region, except for portions of Oklahoma and Texas. With the continuing dry winter, D1 conditions were expanded to the southeast in Nebraska and now include extreme northeast Colorado as well as the southwestern portions of Nebraska. This area was labeled AH in response to the problems with low flows as well as impending dryness for agricultural producers in both the Republican and Platter River valleys. Texas continues to have a clear delineation line showing where precipitation events have and have not taken place. Roughly, areas west of Interstate 35 are where dryness continues. D3 conditions in south Texas were expanded to the southwest this week, with a slight expansion of D2 as well. The drought status gradient was tightened and shifted to the west as some areas did receive several inches of rain in south central Texas. Cedar Creek, Texas, recorded 2.54 inches of rain, Somerville Dam 2.59 inches, Refugio 2.30 inches, Coletto Creek Reservoir 2.21 inches, Danevang 3.05 inches, Edna 3.21 inches, Victoria 3.85 inches, and West Columbia 3.24 inches.

The West: A dry week in the west with cool temperatures allowed for no changes this week. The cool temperatures were welcomed as they allow for maintaining current snowpack levels.

Weekly Snowpack and Drought Monitor Update Report

Hawaii: D0 was expanded to include all of the Hawaiian Islands this week. Continued short-term dryness plagues the entire island chain.

Looking Ahead: During the next 5 days (through March 17), an active weather pattern is taking shape for most of the United States, with models in disagreement on exact storm tracks. Temperatures look to be 3 to 6 degrees Fahrenheit below normal for much of the country except Texas and the Gulf Coast, where temperatures should be 3 to 6 degrees Fahrenheit above normal. Precipitation looks to be shifting to the north a bit, with storm tracks through the central Plains and Midwest. Maxima for precipitation during this time are expected over the Pacific Northwest, through Nebraska and Kansas and into Missouri and Kentucky.

The NWS 6 to 10 day outlook for March 18-22 shows below normal temperatures over Alaska, Great Plains, and into the Great Lakes region. Above normal temperature should be expected over the Southeast. Below normal precipitation over Alaska and the High Plains as well as southern Florida should not improve drought status in those regions. Above normal precipitation over Great Lakes, New England and Ohio River Valley should be observed. Models at this time are not in good agreement with differences in several large scale features.

Author: Brian Fuchs, National Drought Mitigation 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 March 12, 2008