



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

Weekly Report - Snowpack / Drought Monitor Update

Date: 12 May 2011

SNOTEL SNOWPACK AND PRECIPITATION SUMMARY

Snow: SNOTEL Snow-Water Equivalent (SWE) percent of normal values for 12 May 2011 shows increasing values for many SNOTEL sites this week since seasonal snowmelt has been delayed somewhat due to cooler than average temperatures for this time of year and additional snowfall at higher altitudes. Since we are past the peak SWE, values can increase statistically but in most cases the “total” SWE is actually less than the preceding week (Fig. 1). As a result of late season runoff, many SNOTEL sites are at near or record values. For example, over the Lower Colorado River Basin, 72 sites (31 percent of SNOTEL) had their highest ever SWE on 10 May (Fig.1a). Some potential flooding concerns exist over the Colorado River Basin. For the latest outlook, see: <http://www.cbrfc.noaa.gov/fop/fop.cqi>.

Temperature: SNOTEL 7-day average temperature anomalies were within $\pm 5^{\circ}\text{F}$ for most locates. Negative departures were confined to west of the Continental Divide (Fig. 2). ACIS 7-day average temperature anomalies show that the greatest positive temperature departures across the Eastern Plains of Colorado ($>+8^{\circ}\text{F}$) and the greatest negative departures over south-central Idaho ($<-6^{\circ}\text{F}$) (Fig. 2).

Precipitation: ACIS 7-day average precipitation amounts for the period ending 11 May shows the bulk of the heaviest precipitation confined to Montana (Fig. 3). In terms of percent of normal, the precipitation was highest from southern California to Montana (Fig 3a). Note that small amounts of precipitation over the Southern Tier States can often result in large percentages because any precipitation is relatively uncommon for this time of year (e.g. southern California). For the 2011 Water-Year that began on 1 October 2010, the greatest deficits are found over the extreme southern reaches of the Southwest. Areas with the highest values are found over the Great Basin and parts of Northern and Central Rockies (Fig 3b).

The Southwest: Precipitation was negligible to non-existent last week in southwestern Colorado, most of Arizona, and western New Mexico last week; however, normal amounts are quite low this time of year, so the D0 to D3 areas remained unchanged. Author: Rich Tinker, NOAA/NWS/NCEP/CPC

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).

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U.S. HISTORICAL STREAMFLOW

http://water.usgs.gov/cgi-bin/waterwatch?state=us&map_type=dryw&web_type=map.

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.

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/> and <http://drought.gov>.

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/ JEFF GOEBEL
Acting Director, Resource Inventory Division

Weekly Snowpack and Drought Monitor Update Report

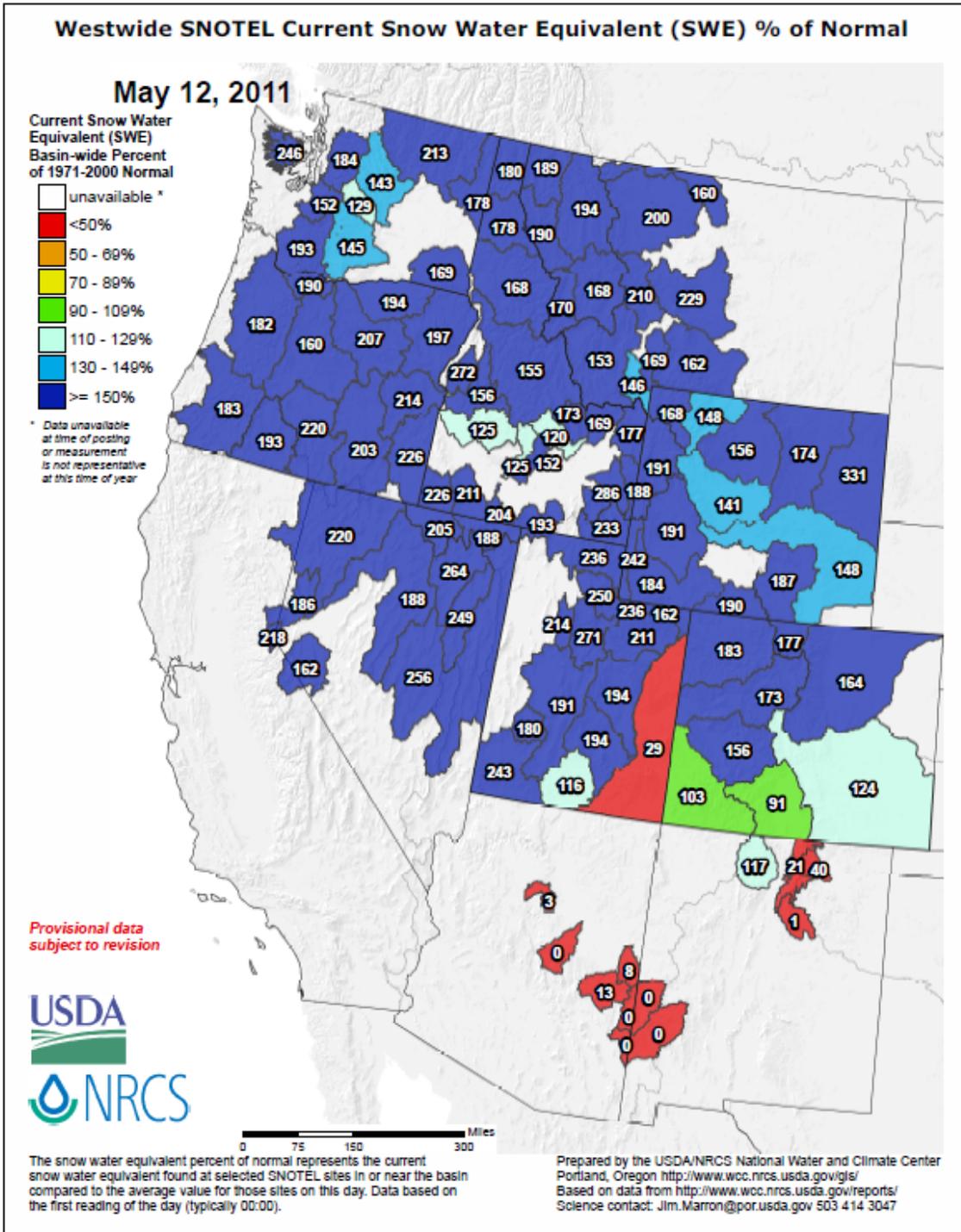


Fig. 1: SNOTEL Snow-Water Equivalent (SWE) percent of normal values for 12 May 2011 shows increasing values for many SNOTEL sites this week since seasonal snowmelt has been delayed somewhat due to cooler than average temperatures for this time of year and additional snowfall at higher altitudes. Since we are past the peak SWE, values can increase statistically but in most cases the “total” SWE is actually less than the preceding week. Ref: http://www.wcc.nrcs.usda.gov/ftpref/data/water/wcs/gis/maps/west_swepctnormal_update.pdf

Weekly Snowpack and Drought Monitor Update Report

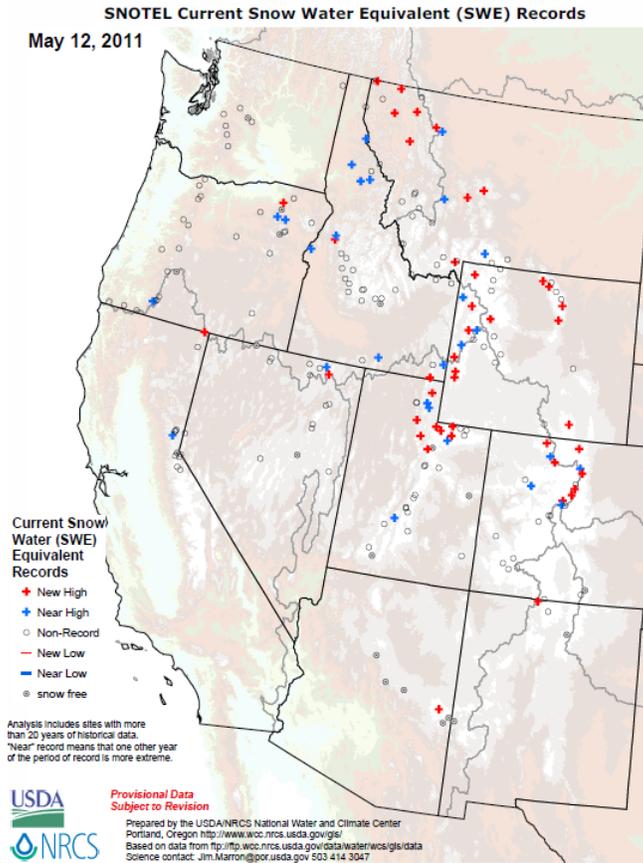
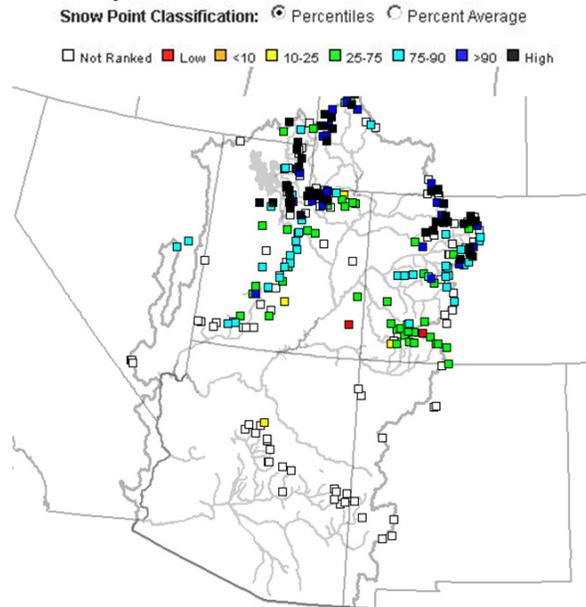


Fig. 1a: As a result of late season runoff, many SNOTEL sites are at near or record values. For example, over the Lower Colorado River Basin:



72 sites showing highest value for May 10th (31% of SNOTEL Sites)

<http://www.cbrfc.noaa.gov/fop/fop.cgi>. Ref:
http://www.wcc.nrcs.usda.gov/ftpref/data/water/wcs/gis/maps/west_snowdensity.pdf

Weekly Snowpack and Drought Monitor Update Report

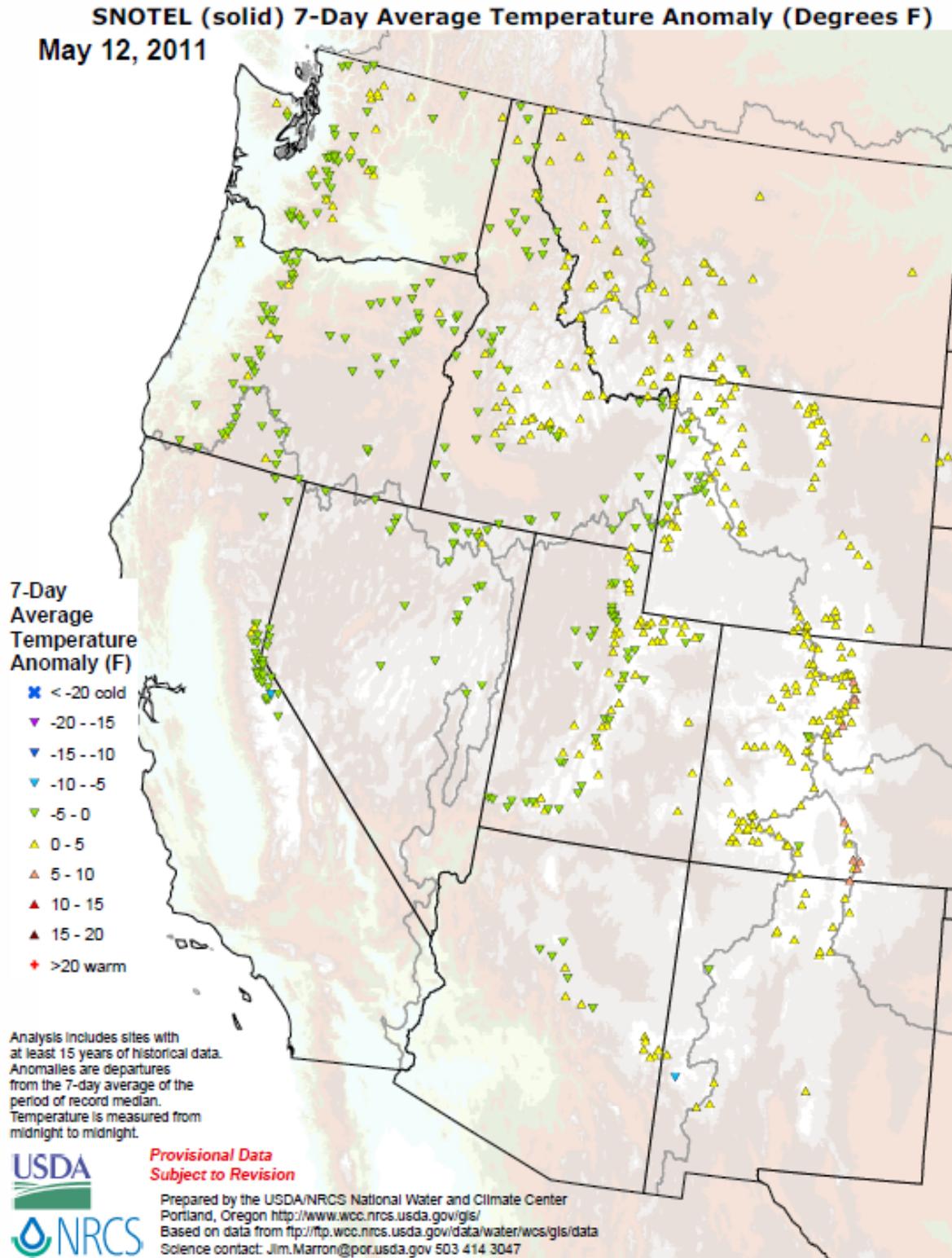
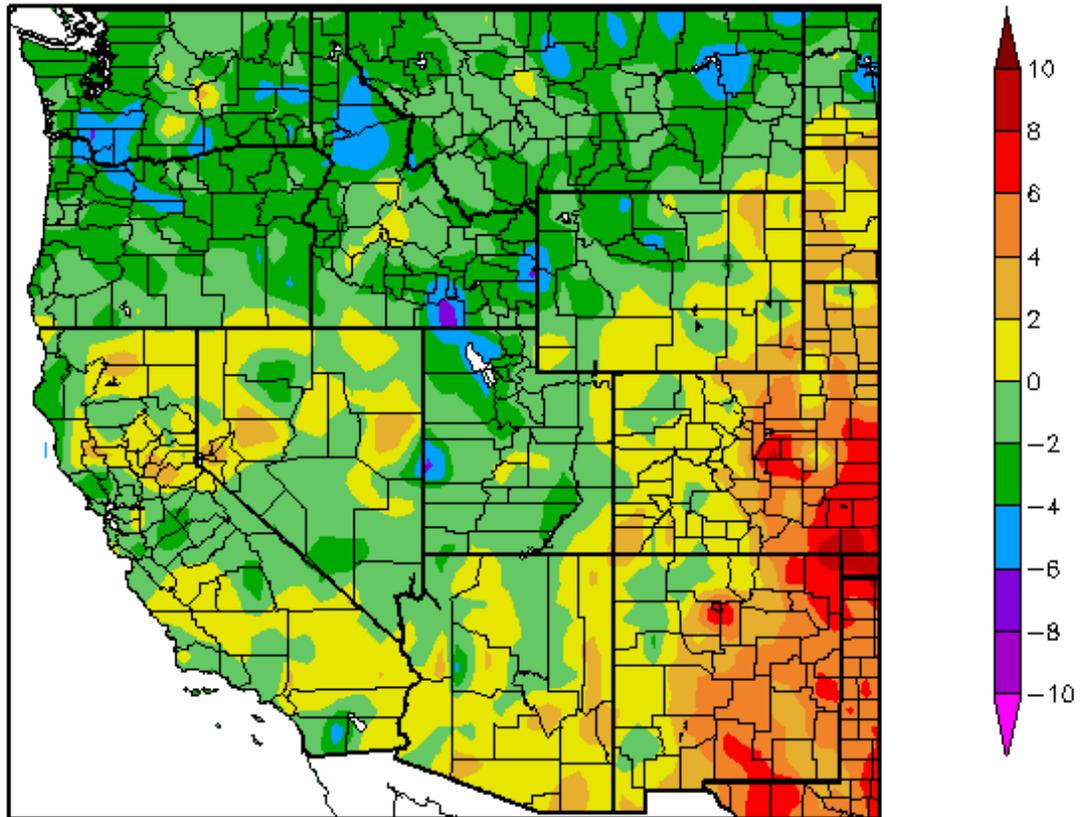


Fig. 2: SNOTEL 7-day average temperature anomalies were within $\pm 5^\circ\text{F}$ for most locates. Negative departures were confined to west of the Continental Divide.

Ref: <http://www.wcc.nrcs.usda.gov/ftpref/data/water/wcs/gis/maps/WestwideTavg7dAnomaly.pdf>

Departure from Normal Temperature (F)
5/5/2011 – 5/11/2011



Generated 5/12/2011 at HPRCC using provisional data.

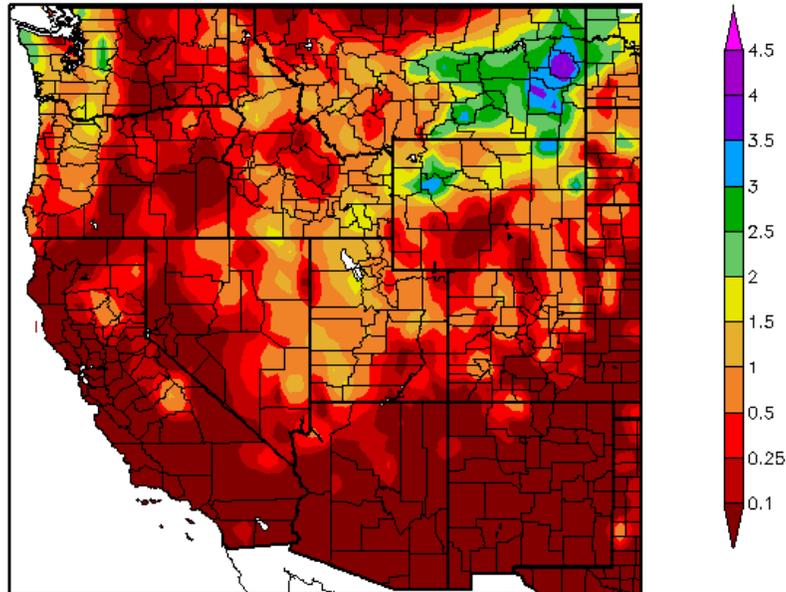
Regional Climate Centers

Fig. 2a: ACIS 7-day average temperature anomalies show that the greatest positive temperature departures across the Eastern Plains of Colorado (>+8°F) and the greatest negative departures over south-central Idaho (<-6°F).

Ref: http://www.hprcc.unl.edu/maps/current/index.php?action=update_daterange&daterange=7d

Weekly Snowpack and Drought Monitor Update Report

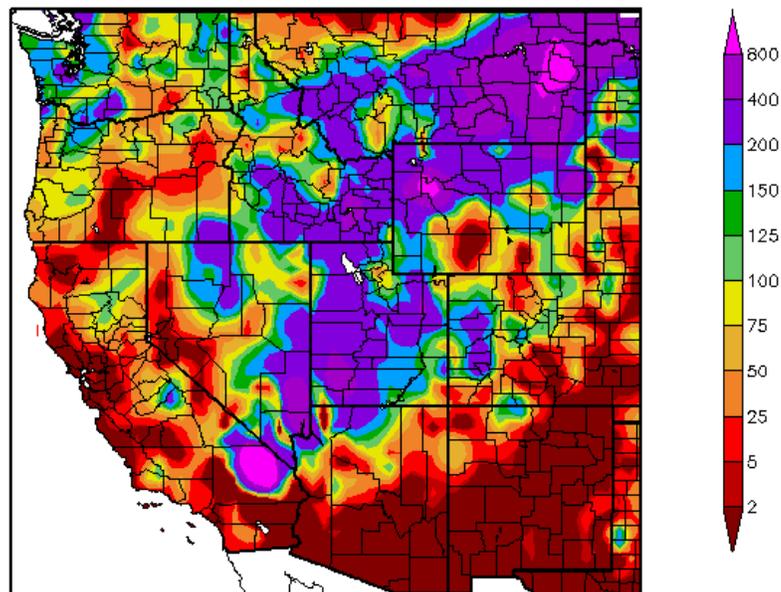
Precipitation (in)
5/5/2011 – 5/11/2011



Generated 5/12/2011 at HPRCC using provisional data.

Regional Climate Centers

Percent of Normal Precipitation (%)
5/5/2011 – 5/11/2011



Generated 5/12/2011 at HPRCC using provisional data.

Regional Climate Centers

Fig. 3 and 3a: ACIS 7-day average precipitation amounts for the period ending 11 May shows the bulk of the heaviest precipitation confined to Montana (Fig. 3). In terms of percent of normal, the precipitation was highest from southern California to Montana (Fig 3a). Note that small amounts of precipitation over the Southern Tier States can often result in large percentages because any precipitation is relatively uncommon for this time of year (e.g. southern California).

Ref: <http://www.hprcc.unl.edu/maps/current/>

Weekly Snowpack and Drought Monitor Update Report

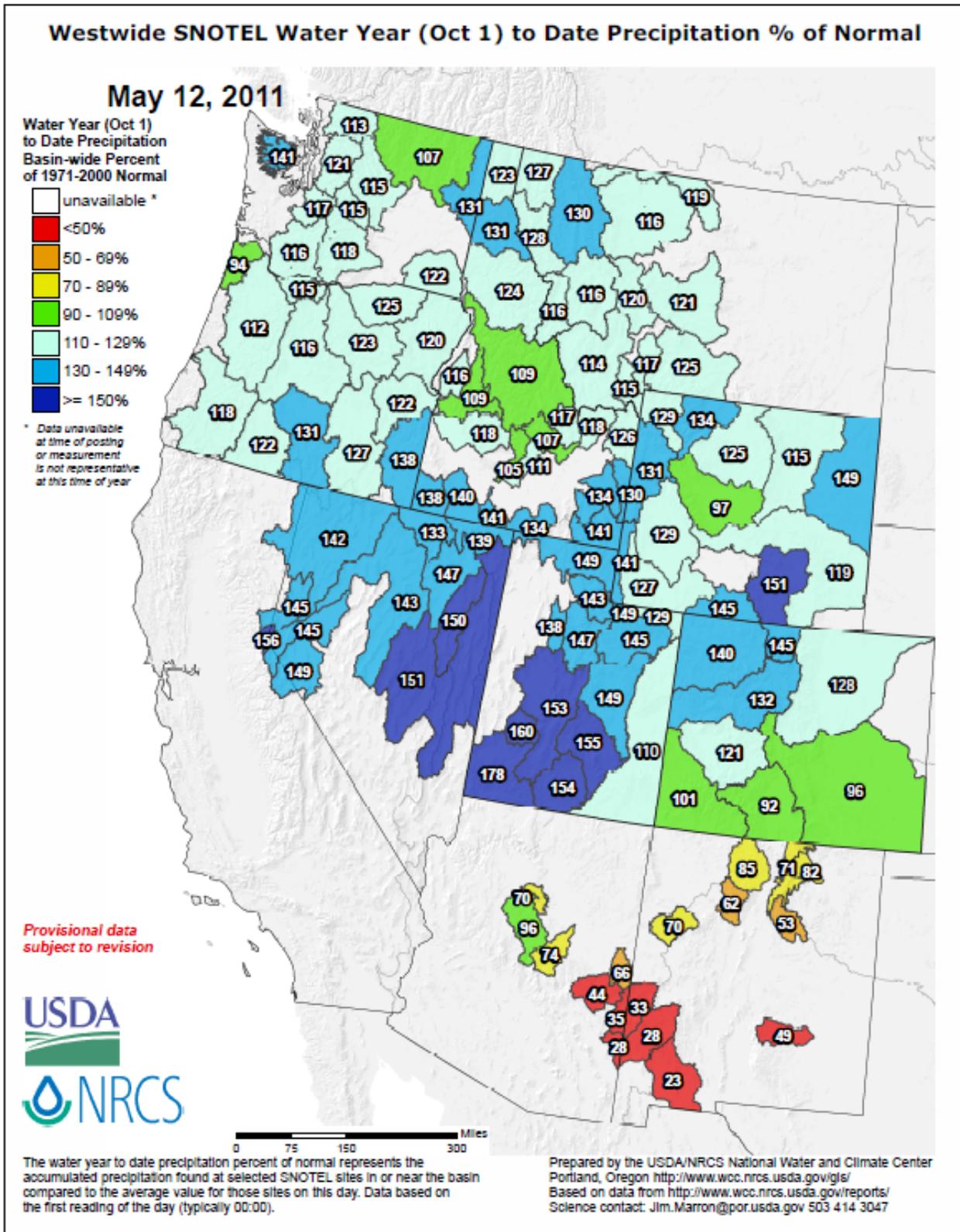


Fig 3b: For the 2011 Water-Year that began on 1 October 2010, the greatest deficits are found over the extreme southern reaches of the Southwest. Areas with the highest values are found over the Great Basin and parts of Northern and Central Rockies.

Ref: http://www.wcc.nrcs.usda.gov/ftpref/data/water/wcs/gis/maps/west_wytdprecptnormal_update.pdf

U.S. Drought Monitor

May 10, 2011
Valid 8 a.m. EDT

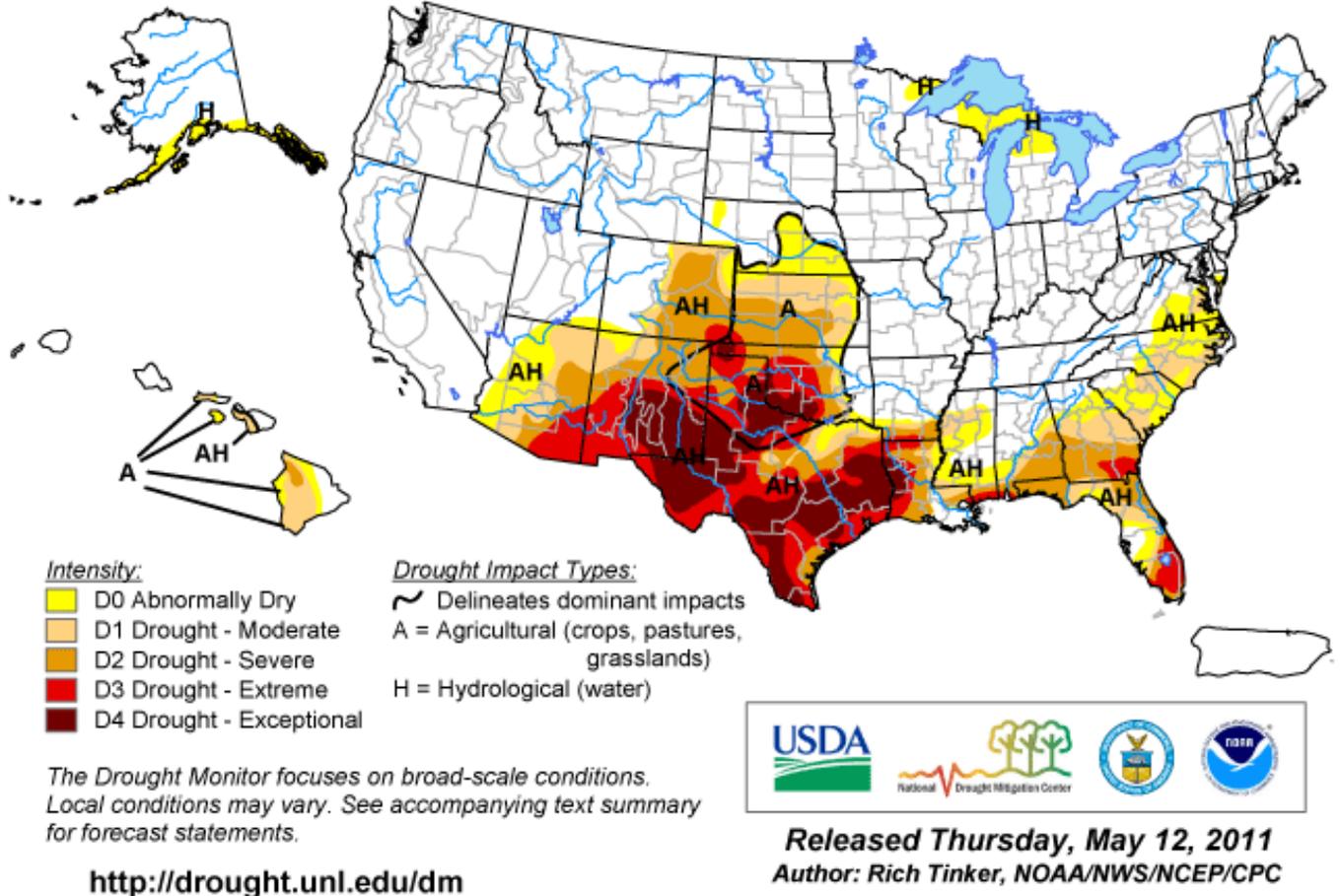


Fig. 4: Current Drought Monitor weekly summary. The exceptional D4 levels of drought are found over New Mexico, Texas, Oklahoma, and Louisiana. Ref: <http://www.drought.unl.edu/dm/monitor.html>

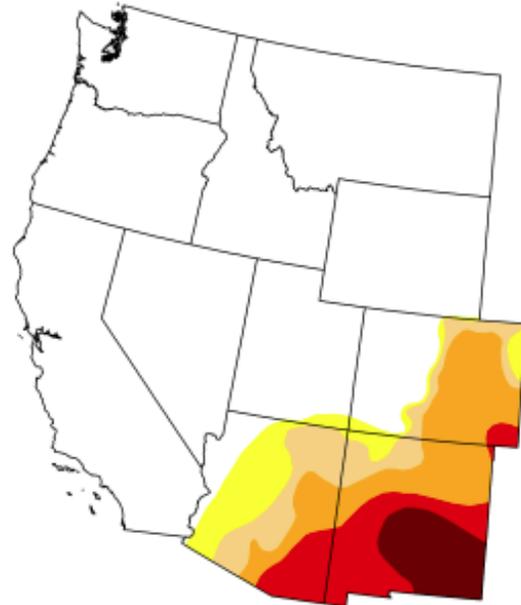
U.S. Drought Monitor

West

May 10, 2011
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	75.89	24.11	20.08	15.56	8.04	3.09
Last Week (05/03/2011 map)	75.92	24.08	20.07	15.56	8.04	1.40
3 Months Ago (02/08/2011 map)	72.75	27.25	13.79	4.44	0.00	0.00
Start of Calendar Year (12/28/2010 map)	73.26	26.74	11.98	0.89	0.00	0.00
Start of Water Year (09/28/2010 map)	62.50	37.50	8.14	0.56	0.00	0.00
One Year Ago (05/04/2010 map)	47.49	52.51	19.44	4.92	0.00	0.00



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.



Released Thursday, May 12, 2011
Rich Tinker, NOAA/NWS/NCEP/CPC

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

Fig. 4a: Drought Monitor for the Western States with statistics over various time periods. Regionally there was no significant change during the past week.

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

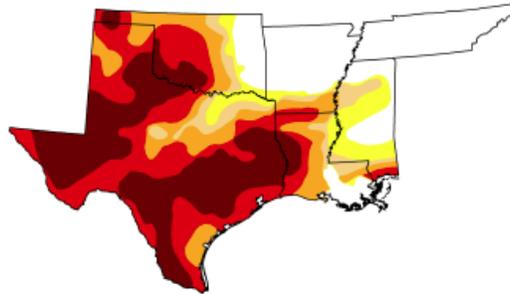
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U.S. Drought Monitor South

May 10, 2011
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	24.26	75.74	68.94	62.96	50.20	27.03
Last Week (05/03/2011 map)	22.71	77.29	71.52	64.13	46.58	14.68
3 Months Ago (02/08/2011 map)	13.83	86.17	60.02	31.17	6.39	0.00
Start of Calendar Year (12/28/2010 map)	8.86	91.14	67.65	35.21	10.17	0.00
Start of Water Year (09/28/2010 map)	54.23	45.77	20.04	6.79	0.83	0.00
One Year Ago (05/04/2010 map)	80.70	19.30	3.33	0.00	0.00	0.00



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, May 12, 2011
Rich Tinker, NOAA/NWS/NCEP/CPC

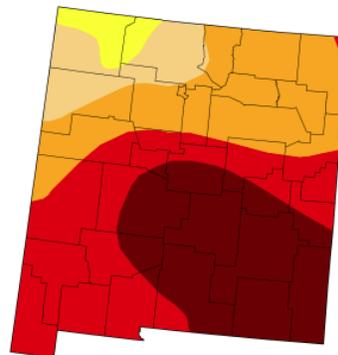
Fig. 4b: Drought Monitor for the South-Central States with statistics over various time periods. This region has shown some increases in the D3-D4 drought categories over the past week. Ref: http://www.drought.unl.edu/dm/DM_south.htm

U.S. Drought Monitor New Mexico

May 10, 2011
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	96.59	87.36	61.02	30.14
Last Week (05/03/2011 map)	0.00	100.00	96.54	87.36	61.02	13.63
3 Months Ago (02/08/2011 map)	8.22	91.78	52.89	22.86	0.00	0.00
Start of Calendar Year (12/28/2010 map)	6.16	93.84	40.40	0.00	0.00	0.00
Start of Water Year (09/28/2010 map)	76.66	23.34	0.00	0.00	0.00	0.00
One Year Ago (05/04/2010 map)	79.21	20.79	0.02	0.00	0.00	0.00



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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Rich Tinker, NOAA/NWS/NCEP/CPC

Fig. 4c: Drought Monitor for New Mexico with statistics over various time periods. All but 3.5% of the state is in some sort of drought.

Ref: http://www.drought.unl.edu/dm/DM_state.htm?NM,W

Drought Monitor Classification Changes for Selected Time Periods

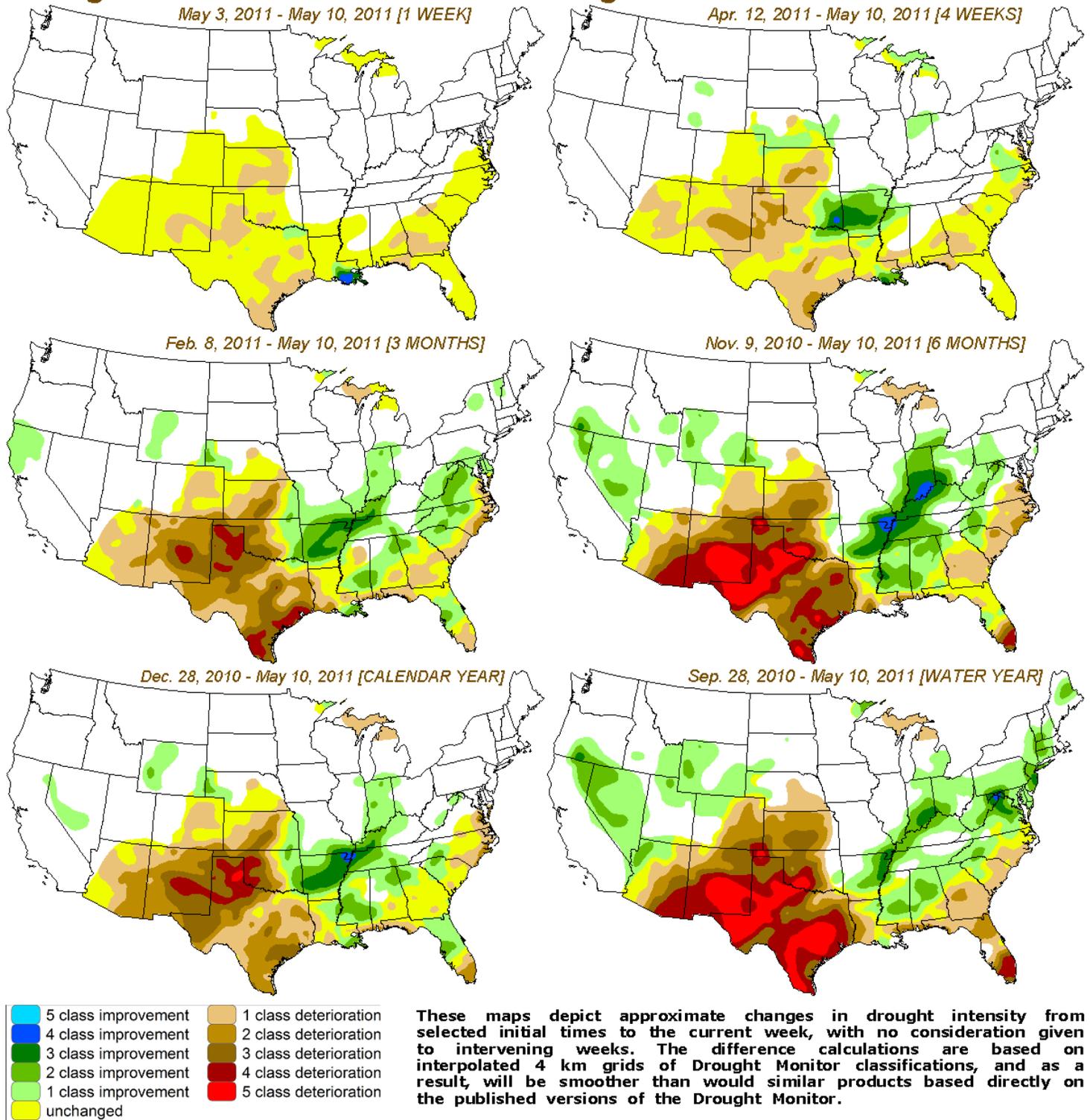
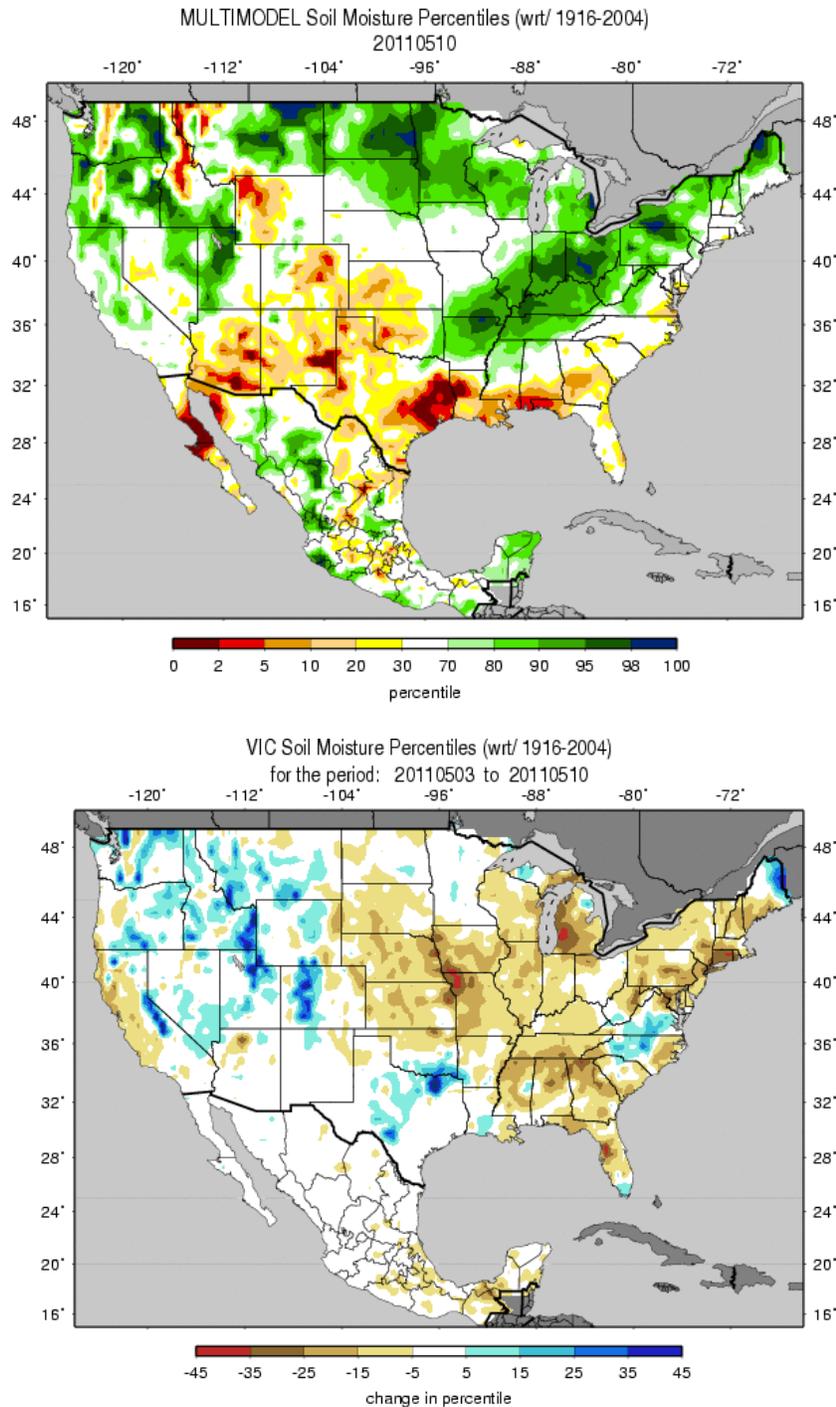


Fig. 4d: Drought Monitor classification changes for selected time periods shows expanding drought over the South-Central States.

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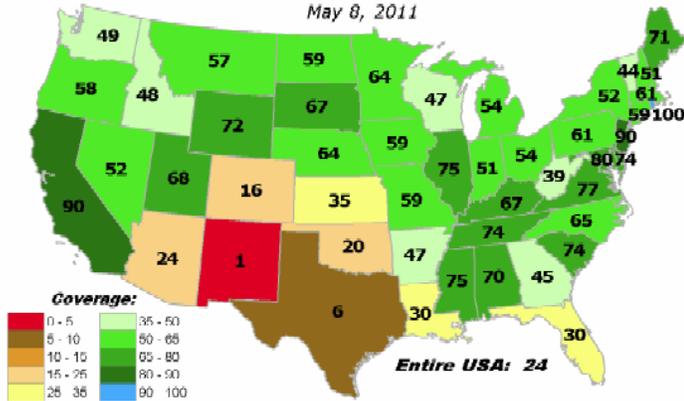
Figs. 5a and 5b: Soil Moisture ranking in percentile as of 10 May (top) shows moist conditions over much of the Northern Tier States (with the exception of western Montana) and the Appalachians with dryness over Arizona and across to the extreme Lower Mississippi River (top). For the past week, the Central and Northern Rockies, Sierra, northeast Texas, and eastern Maine experienced the greatest increases in soil moisture while much of the eastern half of the nation and High Plains have dried out.

http://www.hydro.washington.edu/forecast/monitor/curr/conus.mexico/CONUS.MEXICO.multimodel.sm_qnt.gif
http://www.hydro.washington.edu/forecast/monitor/curr/conus.mexico/CONUS.MEXICO.vic.sm_qnt.1wk.gif

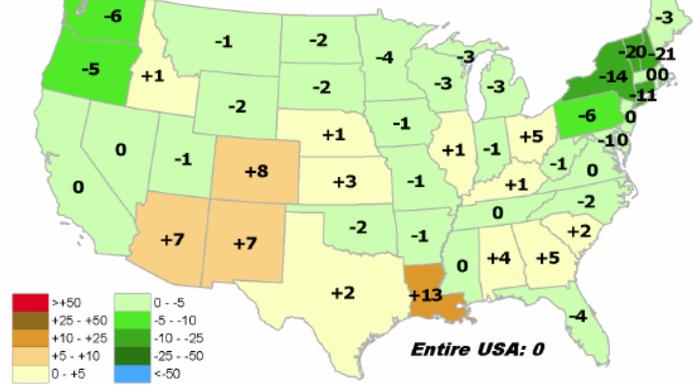
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Percent of Pasture & Range Land in "Good" or "Excellent" Condition

May 8, 2011



CHANGE in % of Pasture and Range Lands in "Poor" or "Very Poor" Condition
1 WEEK (May 1, 2011 to May 8, 2011)



Percent of Pasture & Range Land in "Poor" or "Very Poor" Condition

May 8, 2011

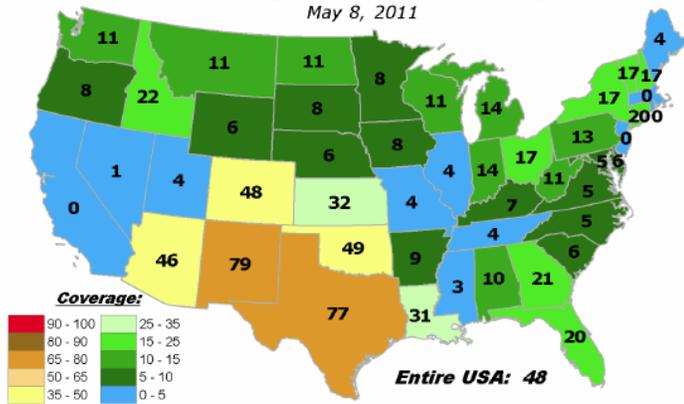
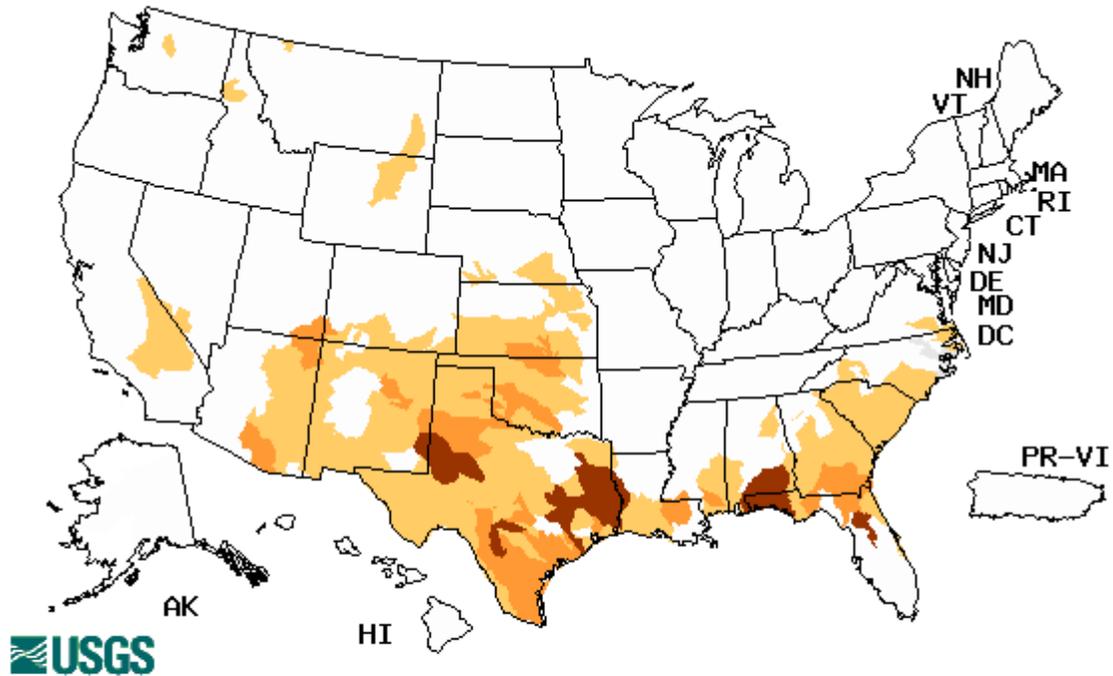


Fig. 6a: Pasture land conditions mirror topsoil conditions across the West. Conditions are improving over Washington and Oregon but are worsening over Arizona, New Mexico, and Colorado during the past week.

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Wednesday, May 11, 2011

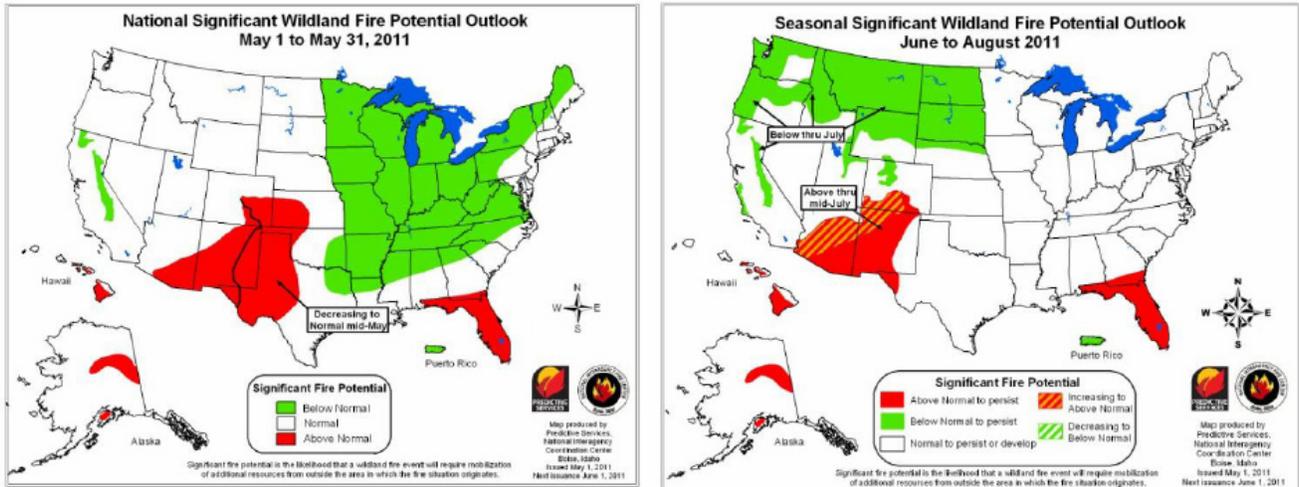


Explanation - Percentile classes				
Low	≤5	6-9	10-24	Insufficient data for a hydrologic region
Extreme hydrologic drought	Severe hydrologic drought	Moderate hydrologic drought	Below normal	

Fig. 7: Map of below normal 7-day average streamflow compared to historical streamflow for the day of year. Portions of the Texas, western Louisiana, southern Alabama, and the north-central Florida are indicating severe conditions. Note: northern-most gauges are becoming more reliable as rivers and streams start to thaw.

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

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Note: Significant fire potential is defined as the likelihood that a wildland fire event will require mobilization of additional resources from outside the area in which the fire situation originates.

Fig. 8: Wildland fire threat reveals high rise over Florida and the Southwest.

Ref: http://www.predictiveservices.nifc.gov/outlooks/monthly_seasonal_outlook.pdf

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National Drought Summary -- May 10, 2011

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/>.

South Atlantic Seaboard and Eastern Gulf Coast States: Many locations from central South Carolina northward through south-central Virginia recorded 0.5 to 2.0 inches of rain last week, as did parts of west-central and southeast Florida. This precipitation was of some limited benefit, and resulted in no improvement in Drought Monitor classifications.

Through the remainder of the region from Virginia southward through Florida and southwestward through Mississippi, only light precipitation was observed, if any. As a result, the Drought Monitor classifications deteriorated, particularly along and near the Gulf Coast, where surface moisture declined markedly. Extreme drought (D3) was introduced in part of southeastern Georgia, and extended slightly southward along the southeastern coast of Florida. Severe drought was expanded to include southeastern Alabama, the western Florida panhandle, most of the southern half of Georgia, and coastal east-central Florida. In addition, abnormally dry conditions expanded northwestward in northeast Georgia and western South Carolina. For the last 3 months, rainfall was 8 to locally more than 12 inches below normal across southern sections of Mississippi and Alabama, and through the western Florida panhandle.

Lower Mississippi Valley: Although little or no precipitation fell across this region, a review of current and forthcoming conditions led to drastic improvements in parts of Louisiana. Rainfall has been markedly below normal throughout the southern half of the state on time scales ranging from 3 to 12 months or more; however, any effects from these deficits are quickly fading along the Mississippi and Atchafalaya Rivers as well as the wetlands that cover much of the southeastern parts of the state, where major to historic flooding is anticipated in some areas. Water levels were rising as of this writing in a large swath covering areas from the Atchafalaya River Basin eastward through areas immediately adjacent to the Mississippi River, and major to historic floodwaters will encroach on these areas through the next 7 days or more. Also, increasing water levels through most of southeastern Louisiana to the west and south of Lake Pontchartrain have relieved or soon will relieve any drought effects that had been felt there.

Meanwhile, a sharp gradient exists between these areas of flooding or wetland and lands that are typically dry to the west, north, and east. From these parts of Louisiana through most of the rest of the state, drought remains a serious issue, and conditions persisted or worsened last week. D1 to D4 conditions prevailed, with the most serious drought covering west-central Louisiana, where large moisture shortfalls date back well over a year. Generally 10 to 15 inches of rain fell during the last six months, which was 12 to locally 20 inches below normal. The D4 area expanded slightly eastward last week, and D3 conditions pushed into southwestern Louisiana; otherwise, drought severity was essentially unchanged.

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Central and Southern Plains: Only a few isolated sites in this region recorded any measurable rainfall last week as drought intensified in many areas. Some improvement was introduced in northeastern Texas and immediately adjacent sections of Oklahoma and Louisiana based on a re-assessment of the effects of the prior week's rainfall. Throughout the rest of the region, large areas of drought intensification were introduced as a result of another dry week. D1 to D2 conditions expanded northward and eastward in Kansas, but conditions were much worse farther south, where D4 conditions dramatically expanded across southwestern Oklahoma, large parts of Texas, and southeastern New Mexico. Precipitation over the last 90 days was 8 to 12 inches below normal throughout southeastern and east-central Texas, and in parts of southeastern New Mexico, no measurable precipitation has been recorded for the last 3 to (in a few isolated spots) 6 months.

The drought has brought a variety of serious impacts to much of the region. Water supplies are declining, and in a few areas water restrictions have been imposed, across the southwestern half of Texas and southeastern Oklahoma. Fire danger has been extremely high for repeated and extended periods in areas from south-central New Mexico and the Big Bend of Texas northeastward, occasionally reaching as far as southwestern Kansas, adjacent Colorado, and the western Oklahoma Panhandle. So far this year, wildfires have consumed more than 2 million acres in Texas alone.

In addition, agriculture has been seriously affected. In Texas, 76 percent of the winter wheat crop was in poor or very poor condition in Texas, according to the National Agricultural Statistics Service, as was 50 percent of the crop in Colorado and 41 percent in Kansas. Pastures and rangelands have also experienced serious impacts because of the drought. About 79 percent of such areas were in poor or very poor condition across New Mexico, as were 77 percent in Texas, 49 percent in Oklahoma, and 48 percent in Colorado.

The Southwest: Precipitation was negligible to non-existent last week in southwestern Colorado, most of Arizona, and western New Mexico last week; however, normal amounts are quite low this time of year, so the D0 to D3 areas remained unchanged.

Hawaii, Alaska, and Puerto Rico: Several inches of precipitation fell on the Alaskan panhandle last week, with more modest totals, generally less than an inch, reported in the remainder of the abnormally dry region. D0 conditions remained unchanged from last week.

Heavy precipitation, exceeding 5 inches in a few spots, fell on portions of the Big Island last week. This precipitation, considered in conjunction with the substantial rainfall observed in many areas during prior weeks, led to a reduction in extent and severity of the D0 to D3 conditions that had enveloped central and western sections of the island. D3 conditions were eliminated in the northern reaches, and significant reductions in the coverage of D0 to D2 conditions occurred in northern and eastern parts of the dry regions. The only exception was in the northeastern parts of the island, where slowly increasing moisture shortfalls led to the development of abnormally dry conditions.

Farther northwest through the islands in the central part of the state, only light precipitation was observed, and areas of dryness and drought remained unchanged.

Looking Ahead: During May 12 - 16, 2011, moderate to locally heavy rains will fall on some currently-dry parts of the country. The heaviest amounts, 1 to 2 inches, are forecast for central and northeastern Colorado and much of Nebraska. In addition, beneficial rains of 0.5 to 1.5

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inches are expected away from the coast in eastern Texas and across northern and western Louisiana. Generally 0.5 to 1.0 inches are anticipated in the dry areas along the Atlantic Seaboard, though less is expected in most of Florida. Other areas shouldn't expect much in the way of relief. Less than 0.5 inch is expected along the Gulf Coast, and at most one-quarter of an inch is forecast from roughly the western halves of Kansas, Oklahoma, and Texas westward through New Mexico and Arizona.

The outlook for May 17 - 21, 2011 brings enhanced chances for above-normal precipitation the dry areas in the Carolinas and Virginia, across southern Florida, and in the Great Plains from central Texas northward through eastern Colorado and Nebraska. In contrast, the odds favor below-median precipitation along the central Gulf Coast, and from the southwestern and western tiers of Texas westward through most of New Mexico. In addition, the entire state of Alaska has enhanced chances for sub-median precipitation. In other currently-dry sections of the country, neither abnormally wet nor abnormally dry conditions are favored, and essentially no forecast is made for these areas.

Author: [Rich Tinker, NOAA/NWS/NCEP/CPC](#)

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 May 11, 2011