



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

Weekly Report - Snowpack / Drought Monitor Update

Date: 22 March 2012

SNOTEL SNOWPACK AND PRECIPITATION SUMMARY

Snow: [Snow Water-Equivalent](#): River basins over the Northern and Central Cascades, the Panhandle of Idaho, and the eastern slope of the Northern Rockies continue to gain SWE this week. Elsewhere, the dry signal of La Niña dominates (Fig. 1). [7-Day Snow Depth Change](#) ending this morning shows increases over much of the western half of the West. Record warmth east of the Continental Divide has greatly reduced snowpack (Fig. 1a).

Temperature: [SNOTEL](#) and ACIS 7-day temperature anomaly showed values well above normal over the eastern slope of the Rockies eastward. Cooler temperatures influenced the West Coast States; especially the Sierra (Fig. 2). ACIS [7-day average temperature anomalies](#) show the greatest positive temperature departures over Northern High Plains ($>+20^{\circ}\text{F}$) and the greatest negative departures over Cascades and Sierra ($<-5^{\circ}\text{F}$). This pattern reflects ridging over the Central US and troughing over the West Coast (Fig. 2a).

Precipitation: [ACIS](#) 7-day average precipitation amounts for the period ending yesterday shows the wettest areas over southwest coastal Oregon and the Northern Sierra (Fig. 3). However, in terms of percent of normal, the western half of the West was very wet. Very dry conditions dominated over the Western High Plains (Fig. 3a). Since the start of the [2012 Water-Year](#) that began on 1 October 2011, the seasonal moisture has favored northern Wyoming and parts of eastern Montana (Fig. 3b). Since the start of [March](#), the resurgence of La Niña is very apparent. Northern States have benefitted with abundant moisture. This late season moisture is not typical of La Niña but then again, no two La Niñas (or El Niños) are necessarily similar (Fig. 3c).

National Summary: Locally heavy rain provided drought relief to the south-central U.S., while a late-season Pacific storm brought beneficial precipitation to much of the west. Unseasonable warmth led to unseasonably high evapotranspiration rates and crop water demands across the Midwest and northern Plains.

Western U.S.: Late-season storminess provided much-needed precipitation to many of the region's primary drought areas. However, the drier-than-normal wet season has left central and southern portions of the region in dire need of additional precipitation to improve bleak spring runoff prospects.

In northern portions of the region, moderate to heavy rain and mountain snow (2-8 inches liquid equivalent) maintained favorable spring runoff prospects from the Klamath Mountains northward into the Cascades. However, the core Moderate Drought (D1) in central Washington received little if any precipitation, with only minor reductions made to this area. In east-central Oregon, precipitation totaled locally more than an inch, resulting in modest reduction of Moderate Drought (D1). Additional snow (0.5-2.5 inches liquid equivalent) boosted snow water equivalents (SWE) in northeastern Washington and led to the removal of Abnormal Dryness (D0) from this portion of the state. Across much of Idaho and southwestern Montana, 1 to 6 inches of rain and snow (liquid equivalent) supported to the removal of most of the lingering D0;

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snow water equivalent in these locales are now mostly above the 40th percentile, with readings generally at or above 80 percent of normal. Severe Drought (D2) was also removed from northeastern Utah due to a fresh snowfall (locally more than 2 inches liquid equivalent) and assessments from the field.

In southern portions of the region, heavy rain and snow in the north contrasted with increasingly dry conditions in the Southwest. A much-needed, late-season boost to Sierra snowpacks was evidenced by precipitation estimates of 6 to 14 inches (liquid equivalent), particularly in northern portions of the range. The resultant snow water equivalent ranking jumped above the 10th percentile, which correlated to 40 to 60 percent of normal. Areas which received the heaviest precipitation were denoted with a 1-category drought improvement, although the region is still well below seasonal norms. In the southern Sierra, precipitation was not as heavy (less than 6 inches) and snow water equivalents remained below the 5th percentile (40 percent of normal or less). In southern California, water-year precipitation has totaled less than 25 percent of normal, resulting in an expansion of D2 (Severe Drought) in the driest areas. While there was no change made to western Arizona's D3 (Extreme Drought), this region will be assessed further and may be primed for drought expansion. In contrast, locally more than 2 inches of precipitation fell in across central Arizona's Mogollon Rim, providing a swath of drought relief (Severe Drought Reduced to D1, or Moderate Drought). Author: Eric Luebehusen, U.S. Department of Agriculture.

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

Drought Impacts Definitions

The possible impacts associated with **D4 (S, L)** drought include widespread crop/pasture losses and shortages of water in reservoirs, streams, and wells creating water emergencies. The possible impacts associated with **D3 (S, L)** drought include major crop/pasture losses and widespread water shortages or restrictions. Possible impacts from **D2 (S, L)** drought are focused on water shortages common and water restrictions imposed and crop or pasture losses likely. The possible impacts associated with **D1 (S, L)** drought are focused on water shortages developing in streams, reservoirs, or wells, and some damage to crops and pastures (Figs. 4 through 4c).

Soil Moisture

Soil moisture (Fig. 5), 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). Another good resource can be found at: <http://www.emc.ncep.noaa.gov/mmb/nldas/drought/>.

Soil Climate Analysis Network (SCAN)

Figure 6 provides supplemental data on soil conditions (moisture and temperatures at various depths from 2 inches to 80 inches. For more information about SCAN see ([brochure](#)).

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

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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://www.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>. Reports from 2007 are available on-line while ones from 2001-2006 can be acquired upon request.

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

/s/

Micheal L. Golden

Acting Deputy Chief, Soil Survey and Resource Assessment

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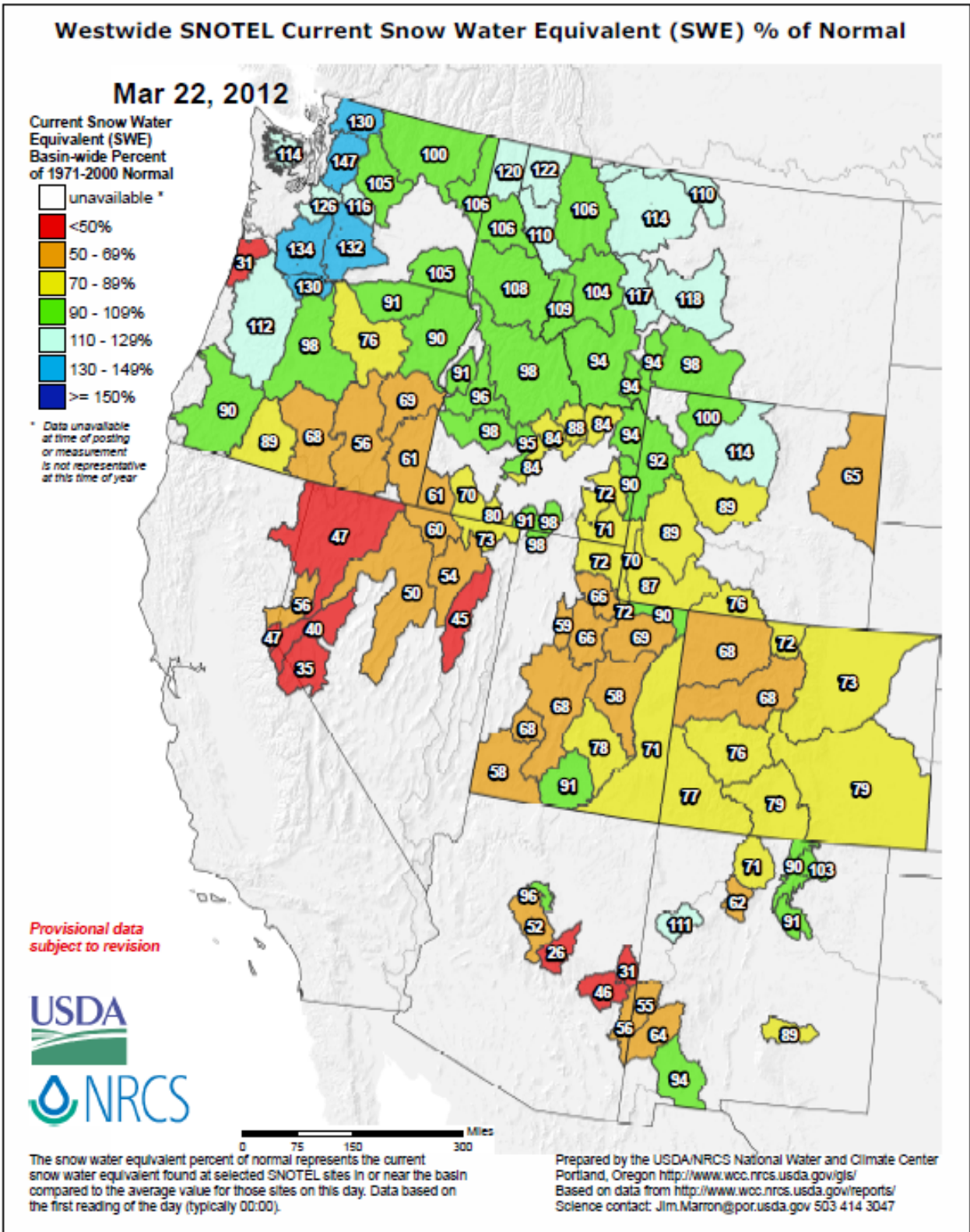


Fig. 1: Snow Water-Equivalent: River basins over the Northern and Central Cascades, the Panhandle of Idaho, and the eastern slope of the Northern Rockies continue to gain SWE this week. Elsewhere, the dry signal of La Niña dominates.

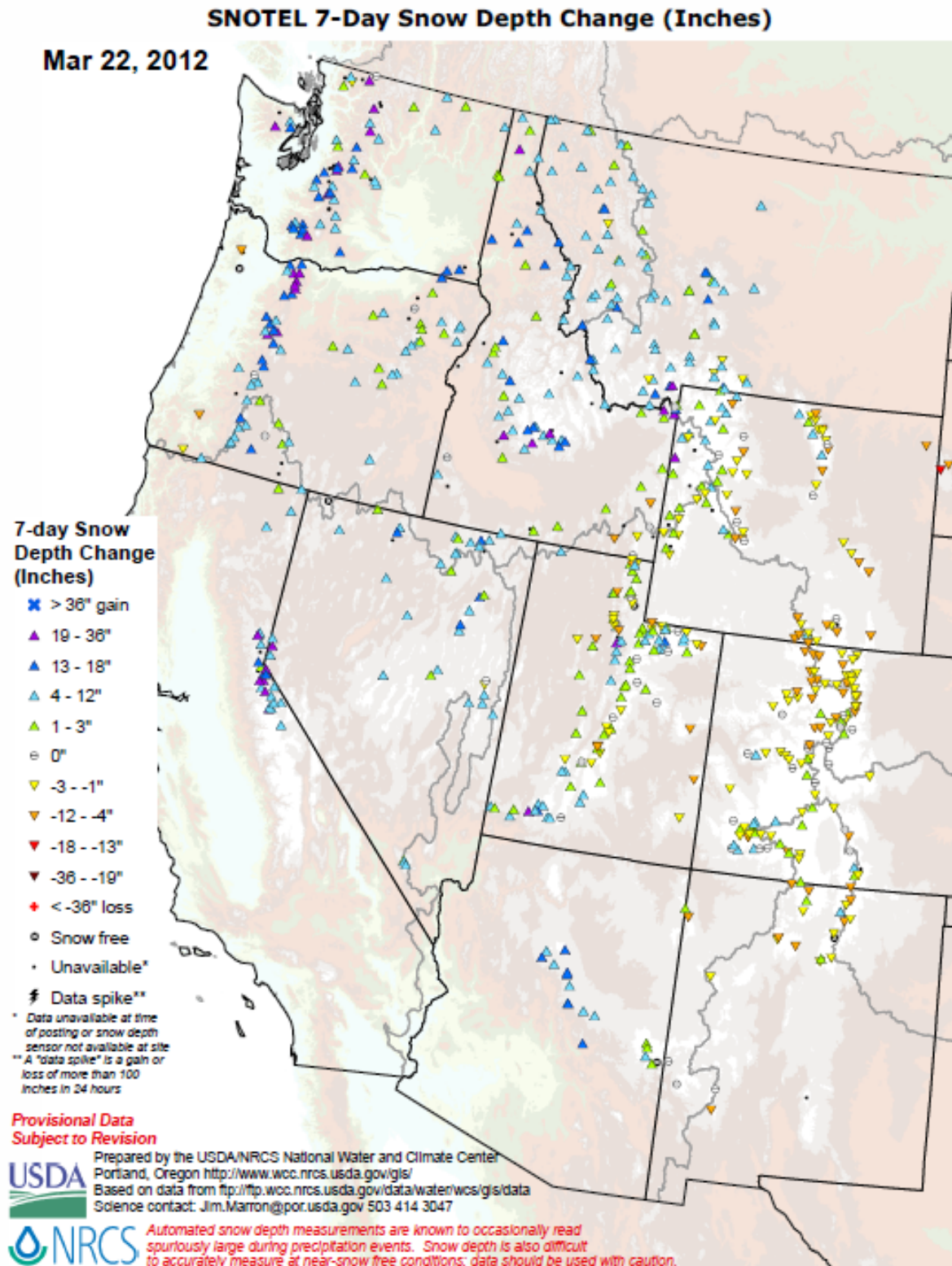


Fig. 1a: 7-Day Snow Depth Change ending this morning shows increases over much of the western half of the West. Record warmth east of the Continental Divide has greatly reduced snowpack.

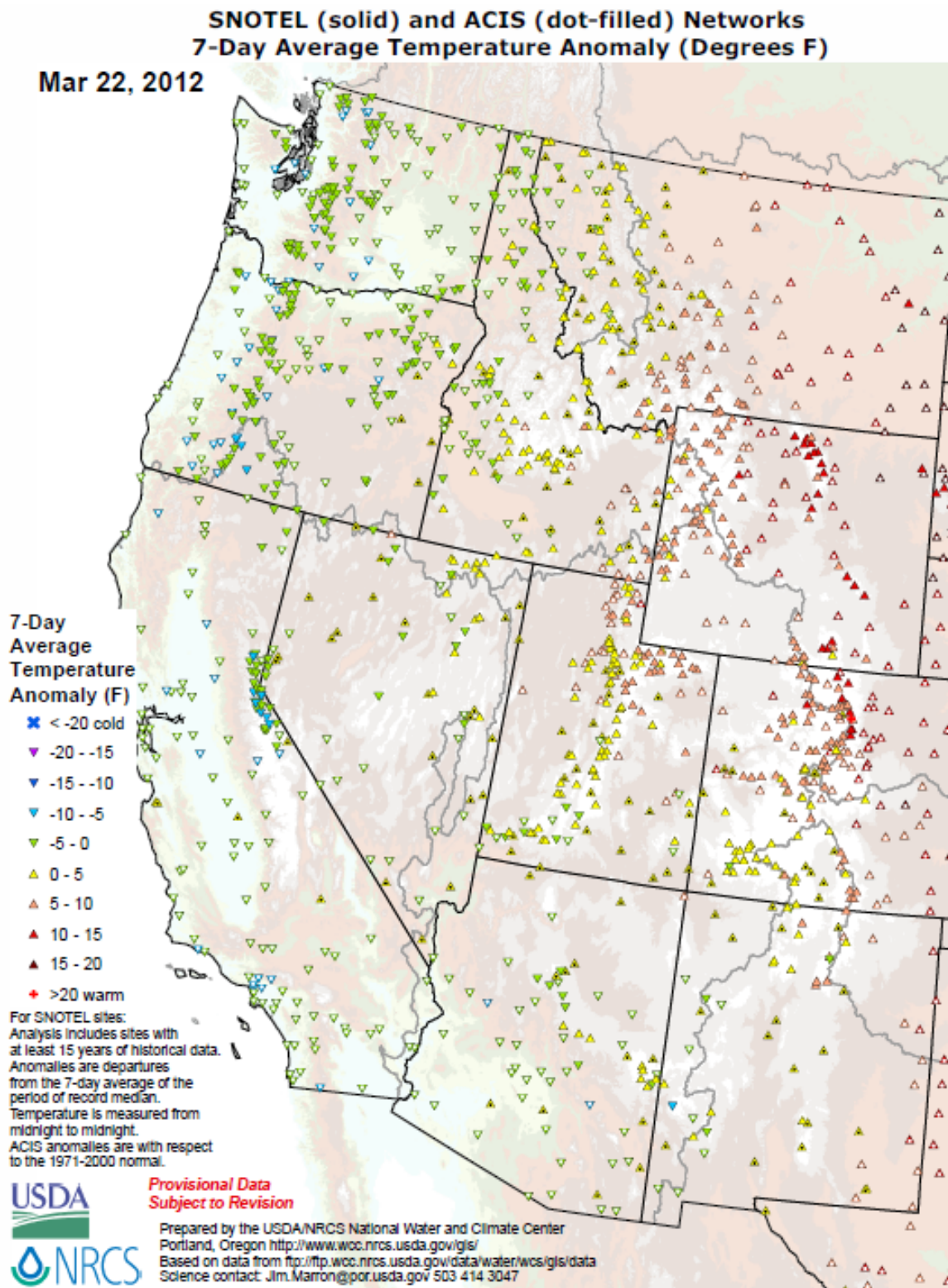
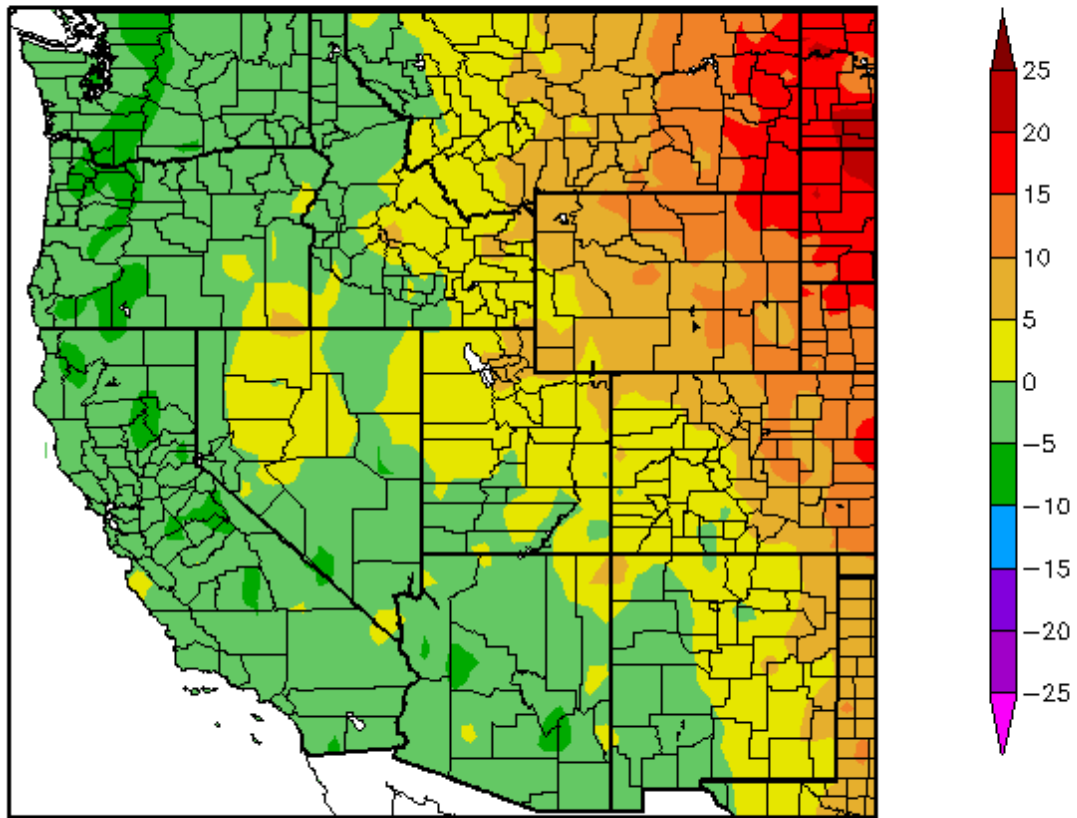


Fig. 2: SNOTEL and ACIS 7-day temperature anomaly showed values well above normal over the eastern slope of the Rockies eastward. Cooler temperatures influenced the West Coast States; especially the Sierra.

Departure from Normal Temperature (F)
3/15/2012 – 3/21/2012



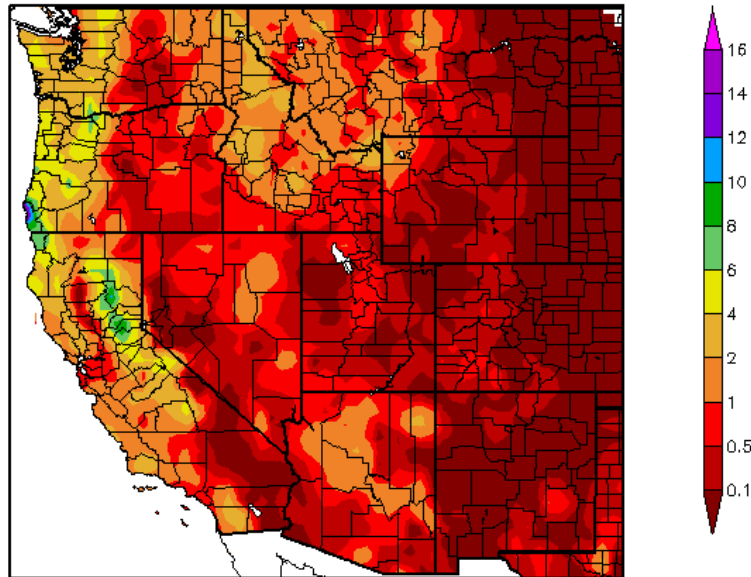
Generated 3/22/2012 at HPRCC using provisional data.

Regional Climate Centers

Fig. 2a: ACIS [7-day average temperature anomalies](#) show the greatest positive temperature departures over Northern High Plains ($>+20^{\circ}\text{F}$) and the greatest negative departures over Cascades and Sierra ($<-5^{\circ}\text{F}$). This pattern reflects ridging over the Central US and troughing over the West Coast.

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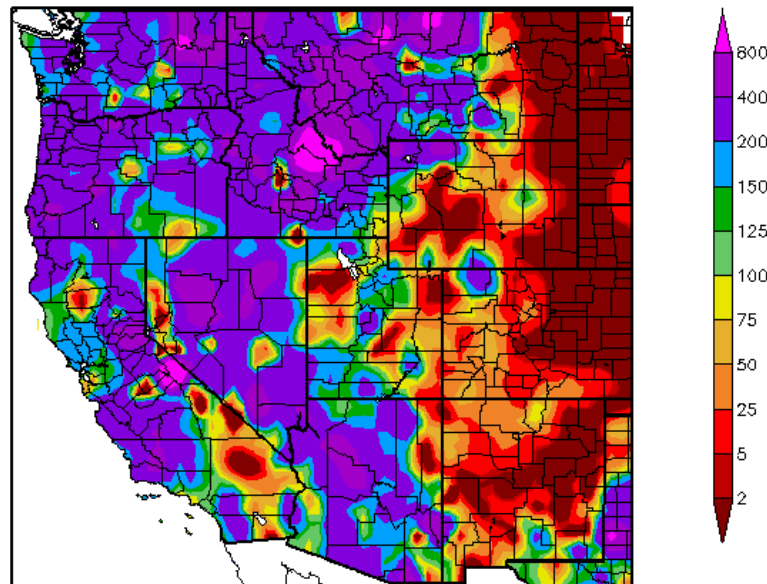
Precipitation (in)
3/15/2012 – 3/21/2012



Generated 3/22/2012 at HPRCC using provisional data.

Regional Climate Centers

Percent of Normal Precipitation (%)
3/15/2012 – 3/21/2012



Generated 3/22/2012 at HPRCC using provisional data.

Regional Climate Centers

Fig. 3 and 3a: [ACIS](#) 7-day average precipitation amounts for the period ending yesterday shows the wettest areas over southwest coastal Oregon and the Northern Sierra (top). However, in terms of percent of normal, the western half of the West was very wet (bottom). Very dry conditions dominated over the Western High Plains.

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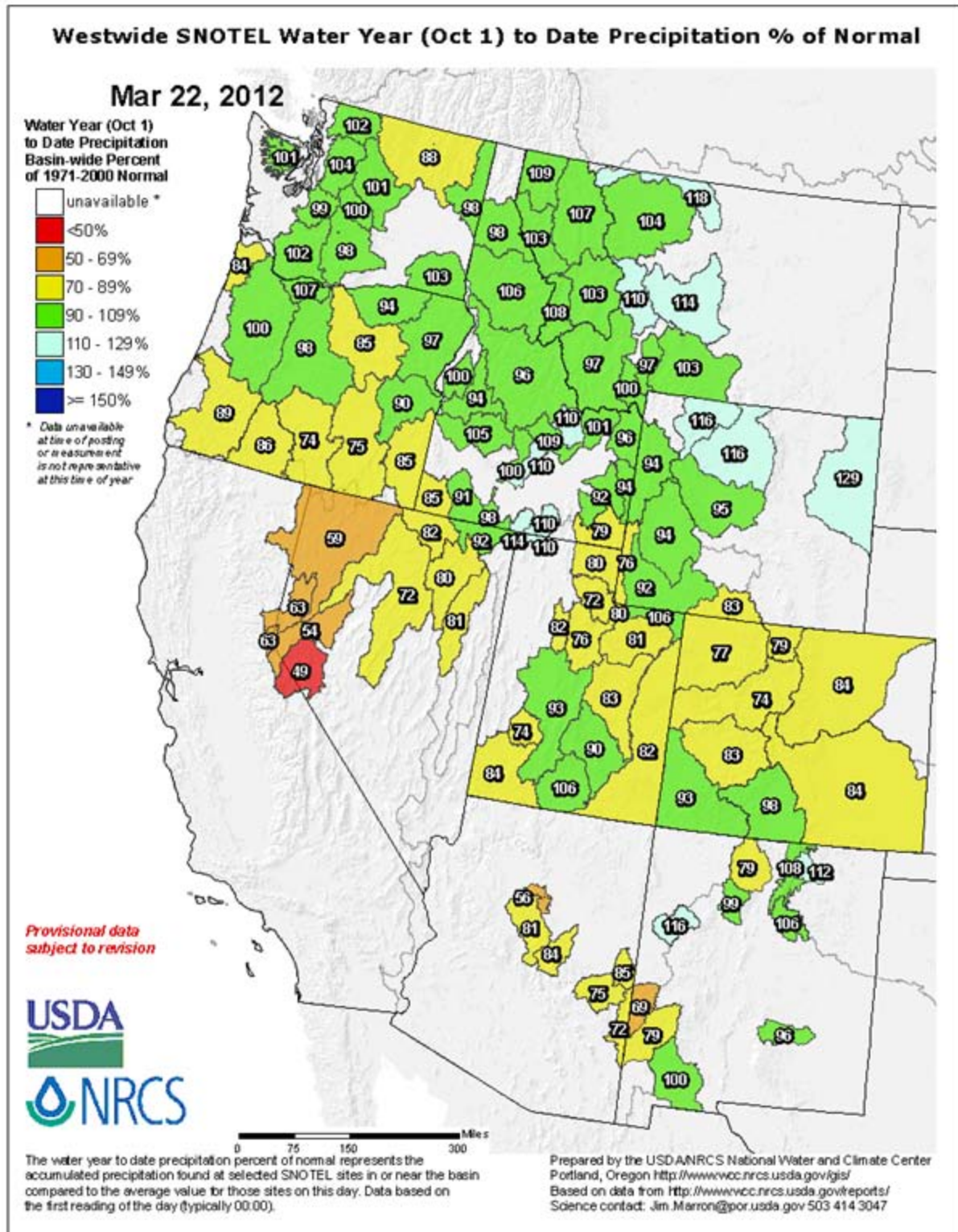


Fig 3b: Since the start of the [2012 Water-Year](#) that began on 1 October 2011, the seasonal moisture has favored northern Wyoming and parts of eastern Montana.

Weekly Snowpack and Drought Monitor Update Report

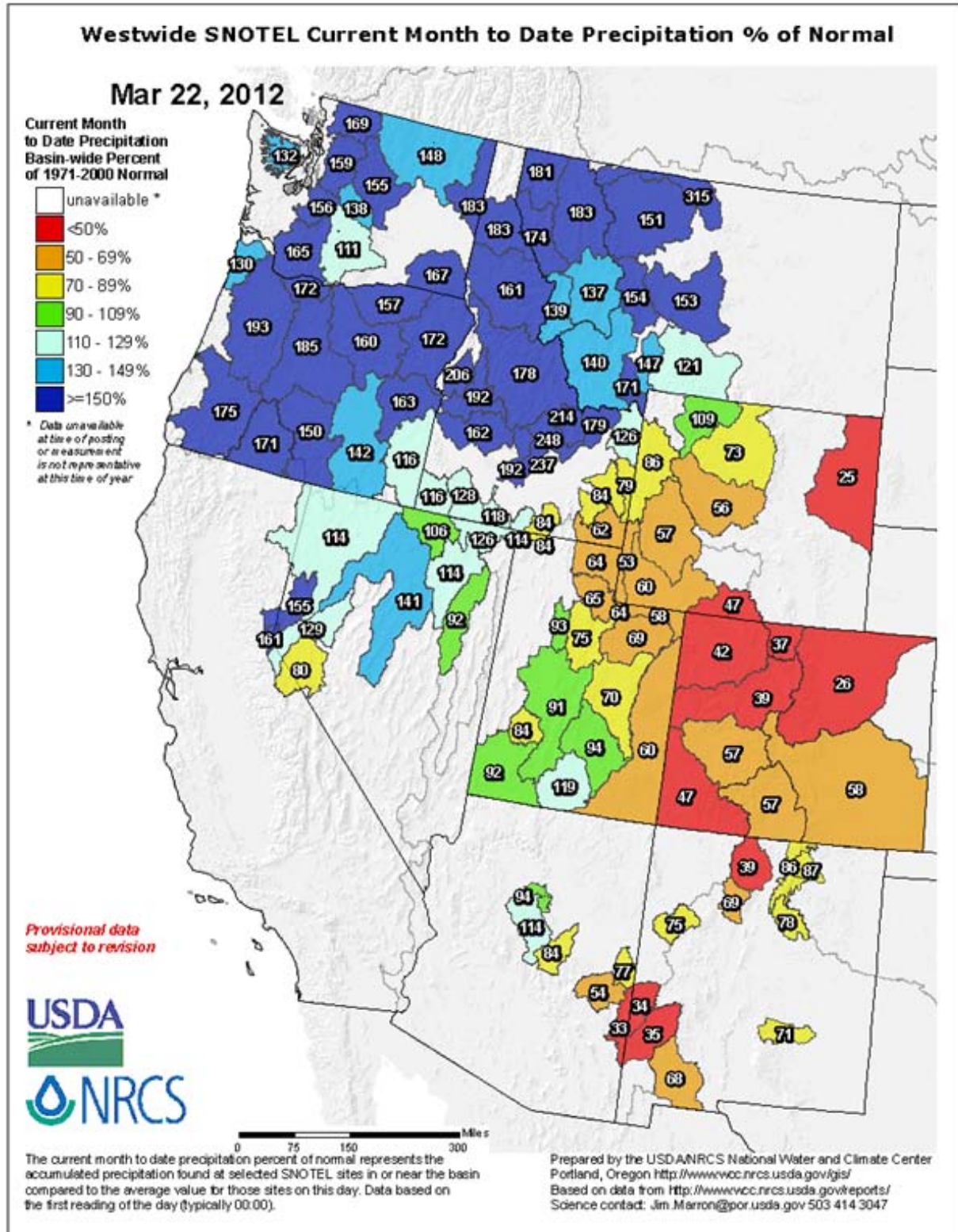


Fig 3c: Since the start of [March](#), the resurgence of La Niña is very apparent. Northern States have benefitted with abundant moisture. This late season moisture is not typical of La Niña but then again, no two La Niñas (or El Niños) are necessarily similar.

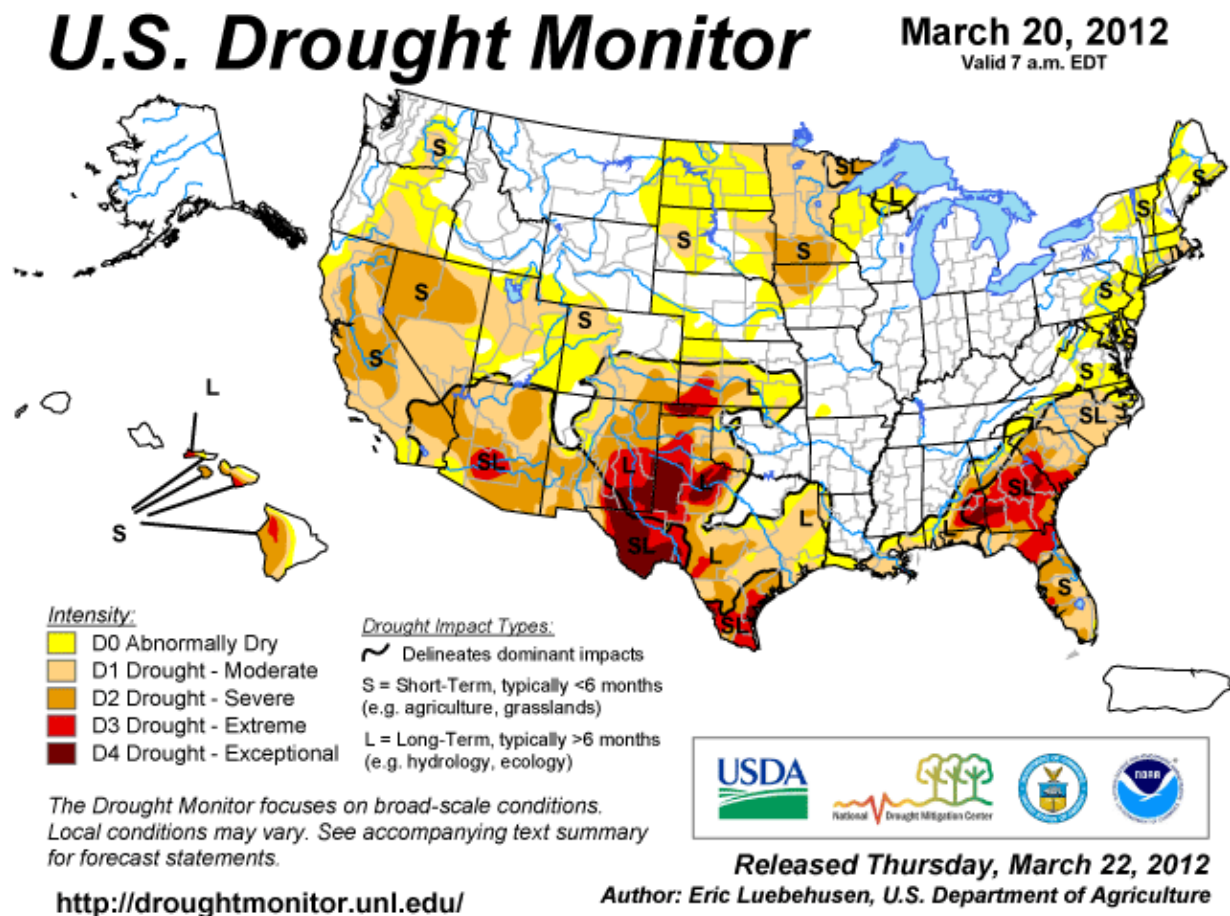


Fig. 4: Current [Drought Monitor](#) weekly summary. The exceptional D4 levels of drought are found over southeastern New Mexico, much of western Texas, the Panhandle of Oklahoma, and to a lesser extent over Georgia and southeast Alabama. For more drought news, see [Drought Impact Reporter](#).

Agriculture

[Drought limits farm gains](#)

March 8, **Colorado**. Drought cut into agricultural production in Colorado in 2011 as drought affected the southeastern part of the state. There were 152,000 acres of cotton planted, but only 60 percent of that was harvestable with an average yield of 136 bushels per acre, the lowest yield in the last four years. There were 375,000 acres of wheat planted, but just 296,000 acres were harvested. The average wheat yield was 26 bushels per acre.

[Last year's drought keeps breaking its own records](#)

March 17, **Texas, Oklahoma and New Mexico**. Approximately 57 percent of the crops planted in Texas, 68 percent of the crops planted in Oklahoma and less than 60 percent of the crops planted in New Mexico during 2011 were harvested, according to a crop production summary by the U.S. Department of Agriculture.

Water Supply

[Despite Increased Restrictions, Urban Water Use Climbs](#)
[Push Comes to Shove Over Water Restrictions](#)
[Texas oyster forecast improves](#)
[Wells offer chance to keep plants alive](#)

U.S. Drought Monitor

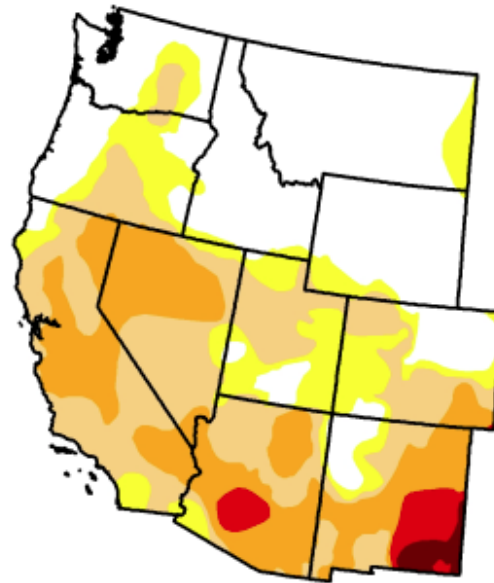
West

March 20, 2012
Valid 7 a.m. EST

	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	38.04	61.96	47.33	22.70	3.39	0.94
Last Week (03/13/2012 map)	31.09	68.91	49.48	24.29	3.39	0.94
3 Months Ago (12/20/2011 map)	66.71	33.29	17.00	12.22	4.16	1.82
Start of Calendar Year (12/27/2011 map)	48.49	51.51	20.05	12.22	2.67	0.78
Start of Water Year (09/27/2011 map)	66.72	33.28	19.04	14.99	9.30	3.81
One Year Ago (03/15/2011 map)	74.39	25.61	17.06	7.78	1.52	0.00

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://droughtmonitor.unl.edu>



Released Thursday, March 22, 2012
Eric Luebehusen, USDA

Fig. 4a: Drought Monitor for the [Western States](#) with statistics over various time periods. Note some improvement especially in the D0 and D1 categories this week. For more info about conditions over Arizona and New Mexico, see [Southwest Climate Outlook](#).

U.S. Drought Monitor

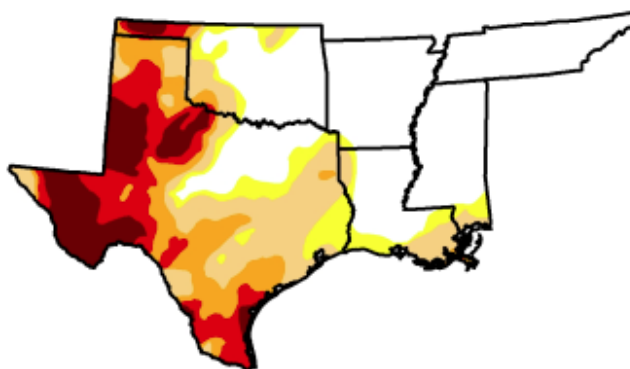
March 20, 2012

Valid 7 a.m. EST

South

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	44.96	55.04	46.94	30.12	19.46	9.47
Last Week (03/13/2012 map)	38.44	61.56	51.60	37.36	22.23	10.79
3 Months Ago (12/20/2011 map)	23.06	76.94	69.97	55.58	41.67	20.73
Start of Calendar Year (12/27/2011 map)	26.47	73.53	69.01	54.81	39.11	17.15
Start of Water Year (09/27/2011 map)	18.34	81.66	76.26	70.61	63.67	53.77
One Year Ago (03/15/2011 map)	9.54	90.46	72.50	44.16	13.23	0.00

**Intensity:**

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

The Drought Monitor focuses on broad-scale conditions.
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Fig. 4b: Drought Monitor for the [South-Central States](#) with statistics over various time periods. Significant Improvements are noted in all categories this week.

U.S. Drought Monitor

Southeast

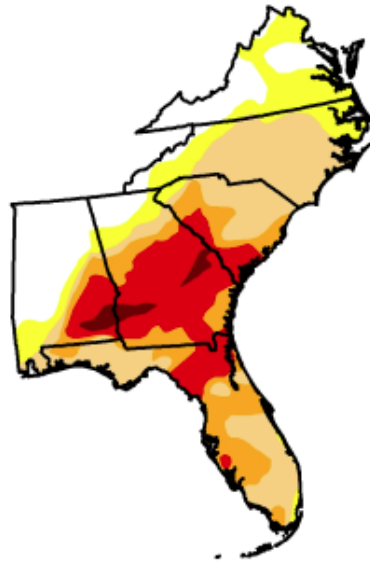
March 20, 2012

Valid 7 a.m. EST

	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	20.03	79.97	63.93	35.95	19.95	1.86
Last Week (03/13/2012 map)	24.99	75.01	61.33	33.00	19.04	1.62
3 Months Ago (12/20/2011 map)	40.68	59.32	43.41	30.96	19.95	0.00
Start of Calendar Year (12/27/2011 map)	40.38	59.62	43.05	28.62	18.71	0.00
Start of Water Year (09/27/2011 map)	42.24	57.76	41.82	31.77	23.48	0.00
One Year Ago (03/15/2011 map)	14.36	85.64	57.95	22.18	4.64	0.00

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://droughtmonitor.unl.edu>



Released Thursday, March 22, 2012
Eric Luebehusen, USDA

Fig. 4c: Drought Monitor for the [Southeastern States](#) with statistics over various time periods. Note slight improvements in all categories this week.

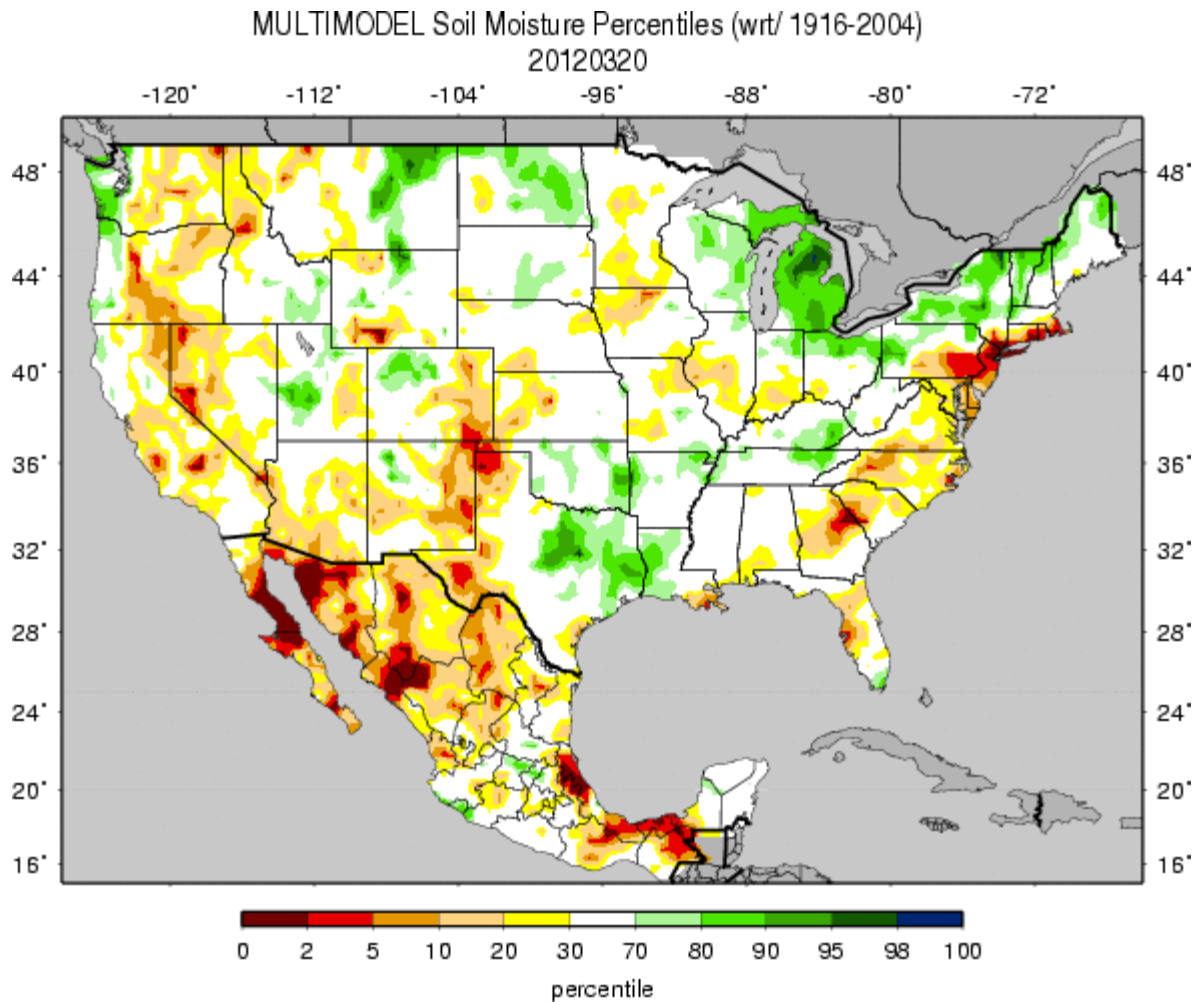
GA

General: According to the National Agriculture Statistics Service's Georgia Field Office, there were 5.8 days suitable for fieldwork for the week ending Sunday, March 18, 2012. Statewide topsoil moisture was rated at 6% very short, 26% short, 62% adequate, and 6% surplus. Subsoil moisture for the State was 12% very short, 34% short, 50% adequate, and 4% surplus. Precipitation estimates for the week in Georgia ranged from no rain up to 2 inches. The week's average temperature ranged from the mid 50s to the mid 70s.

SC

South Carolina observed unusually warm temperatures for this time of year. Some precipitation was observed, but mostly dry conditions allowed many farmers to begin planting or continue field preparations. Soil moisture conditions were 1% very short, 27% short, 71% adequate, and 1% surplus. There were 6.4 days that were suitable for fieldwork.

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Figs. 5: Soil Moisture ranking in [percentile](#) as of 20 March shows conditions severe over northern New Jersey and Long Island, NY. Note: Soil moisture this time of year is often unreliable due to frozen ground over the Northern Tier States. For example, conditions over the Washington Cascades and Panhandle of Idaho no doubt improved this week due to recent snowfall.

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Soil Climate Analysis Network ([SCAN](#))

Station (2013) MONTH=2012-02-21 (Daily) NRCS National Water and Climate Center - Provisional Data - subject to revision
Thu Mar 22 08:46:24 PDT 2012

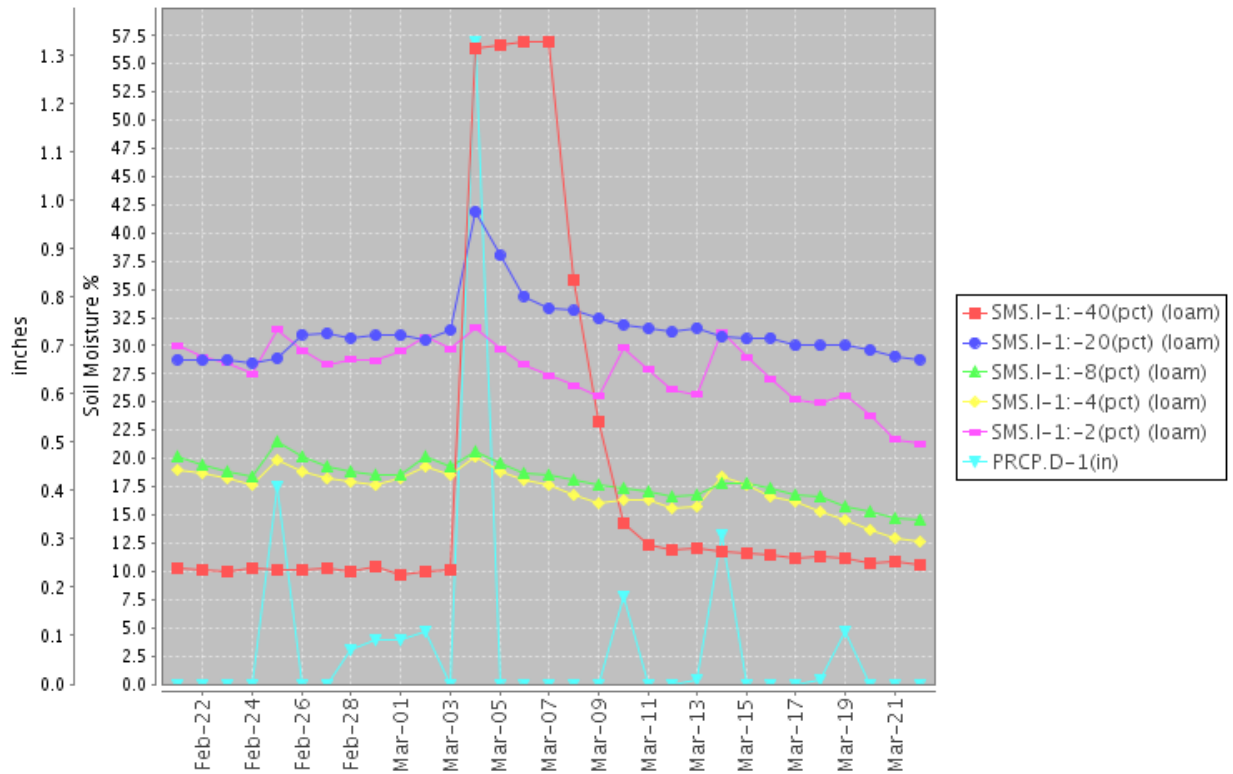
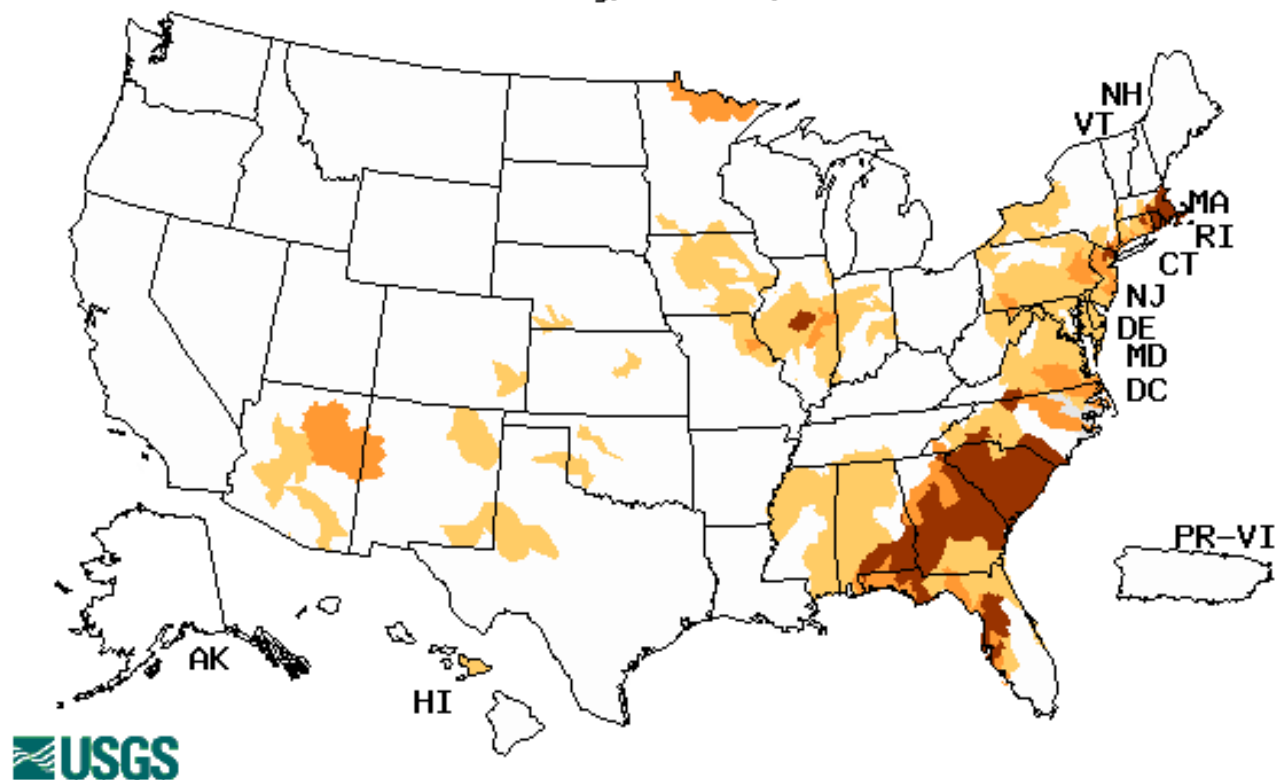


Fig. 6: This NRCS resource shows a site over [north-central Georgia](#) with soil moisture responding to recent rains even at depth.

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Wednesday, March 21, 2012



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. The Southeast States showed severe conditions this week.

Weekly Snowpack and Drought Monitor Update Report

National Drought Summary -- March 20, 2012

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/>.

Locally heavy rain provided drought relief to the south-central U.S., while a late-season Pacific storm brought beneficial precipitation to much of the west. Unseasonable warmth led to unseasonably high evapotranspiration rates and crop water demands across the Midwest and northern Plains.

Mid-Atlantic and Northeast: Mostly dry, warm weather prevailed, with shower activity confined to northern-most portions of the region. In southern New England, Moderate Drought (D1) was introduced to account for 90-day precipitation deficits of 4 to locally more than 6 inches (less than 50 percent of normal). Streamflows and well-water levels have likewise declined, and are in the lowest 2nd and 5th, respectively, in this region. Abnormal Dryness (D0) was introduced from southern New York into much of Maryland and Virginia, with 60-day rainfall averaging less than 60 percent of normal (deficits of 3 to 5 inches). Streamflows have dropped below the 10th percentile in east-central Pennsylvania and much of New Jersey, and have slipped below the 30th percentile across Maryland, Virginia, and eastern West Virginia. A small section of southern Virginia was left out of the new D0, where a pair of late-season snow storms contributed to near- to above-normal precipitation over the past 60 days.

Southeast: Drier- and warmer-than-normal weather prevailed, with only isolated showers reported. Precipitation was hit and miss, and tallied less than 0.5 inch across the region's primary drought areas. Moderate Drought (D1) was expanded in western North Carolina and adjacent portions of South Carolina, with 60-day precipitation deficits averaging 3 to 5 inches (less than 50 percent of normal). Streamflows across most of the Carolina drought region were in the lowest 10th percentile, with many locales reporting values in the lowest 5th percentile. In northern Georgia and east-central Alabama, 60-day rainfall has tallied 2 to 5 inches below seasonal norms (50-70 percent of normal), which coupled with above-normal temperatures (10-15°F above normal) led to an increase in drought designation. Streamflows in southeastern Alabama are near historic lows, and have dropped to the lowest 20th percentile in the newly expanded Abnormally Dry (D0) areas of northern Georgia. The ongoing dryness has also been accompanied by daytime highs approaching 90°F, which has increased water demands for crops and pastures. Likewise, long-term drought is evidenced by record- or near-record low ground water levels across much of southern Georgia and southeastern Alabama. In addition, both the 9 and 12-month Standardized Precipitation Index (SPI) indicated ongoing Exceptional Drought (D4) from east-central Georgia into southeastern Alabama. In Florida, dry, warm conditions prevailed, with only isolated 1-inch rainfall totals reported in the central Panhandle and along the far southeastern coast. Severe Drought (D2) was expanded across the northwestern shores of Lake Okeechobee, where 90-day precipitation deficits averaged 4 to 6 inches. D2 was also expanded northward from Tampa northward toward Ocala; with 3-month rainfall in these locales more than 6 inches shy of normal (less than 50 percent of normal). In

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addition, Severe Drought was introduced to the southwestern peninsula, where 90-day rainfall has averaged 25 to 50 percent of normal.

Delta: No changes were made to the Delta's drought designation on the heels of a dry, warm week. However, locally heavy rain overspread the Delta shortly after the Tuesday data cutoff for this week's drought depiction, which will lead to considerable drought reduction (improvement) in next week's US Drought Monitor. Early precipitation estimates since 12z Tuesday (7 am, CDT) are as high as 6 to 12 inches in western portions of Louisiana.

South-Central U.S.: Locally heavy rain across central and eastern drought areas contrasted with unfavorably dry, warm weather in southern- and western-most portions of the region. Heavy rain (2-6 inches, locally more) fell from south-central Texas (San Antonio and surrounding environs) north and eastward across Dallas-Fort Worth into southeastern Oklahoma. A second band of equally heavy rain developed from Norman, Oklahoma, into southeastern Kansas. Outside the heaviest rain areas, a soaking 1 to 2 inches of rain was reported, particularly from the eastern Texas Panhandle northeastward to Wichita, Kansas. The rain resulted in widespread drought reduction, with most of central and eastern Oklahoma as well as central and northeastern Texas reporting precipitation surpluses of 2 to 8 inches (locally more) over the past 6 months. In contrast, warm, dry conditions persisted in southern Texas (highs eclipsing 90°F) and from the western Edwards Plateau northward into southeastern Colorado and western portions of Kansas and Oklahoma. Over the past 6 months, much of southern Texas has reported less than 60 percent of normal rainfall, with some areas below 50 percent; coupled with additional assessment from the field, Severe Drought (D3) was expanded across this portion of the state. Farther north, there were no changes made to the current drought depiction in northern Texas and western Oklahoma as rain was overspreading the area as of mid-week.

Central and Northern Plains: Unseasonably warm, dry conditions prevailed, with temperatures averaging 20 to 25°F above normal across most of the region. Drought relief was noted in southeastern Kansas, where 1 to more than 3 inches of rain fell. In western and northern portions of Kansas, where 90-day rainfall has totaled less than 50 percent of normal, small increases in drought were made to reflect the impacts of the warmth and dryness. Farther north, the latest 3- and 6-month Standardized Precipitation Indices (SPI) as well as input from the field supported the introduction of Moderate Drought (D1) in southwestern South Dakota. Likewise, additional assessment led to a small reduction of Abnormal Dryness (D0) in southern portions of the state. Elsewhere, no changes were made to the region's drought designation, although the unseasonable warmth has led to early crop development and increased water demands.

Midwest: Drought areas of the Midwest—which extend from northwestern Iowa into northern portions of Minnesota and Michigan's Upper Peninsula—reported record-setting warmth (temperatures 25 to 30°F, or more, above normal) during the past week. Showers were mainly light (0.5 inch or less, although up to an inch fell in central Wisconsin) and offered little if any drought relief. Although no changes were made to the drought designation in the Midwest this week, the ongoing unseasonable warmth has highlighted the need for rain over the upcoming weeks to prevent drought intensification or expansion.

Western U.S.: Late-season storminess provided much-needed precipitation to many of the region's primary drought areas. However, the drier-than-normal wet season has left central and

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southern portions of the region in dire need of additional precipitation to improve bleak spring runoff prospects.

In northern portions of the region, moderate to heavy rain and mountain snow (2-8 inches liquid equivalent) maintained favorable spring runoff prospects from the Klamath Mountains northward into the Cascades. However, the core Moderate Drought (D1) in central Washington received little if any precipitation, with only minor reductions made to this area. In east-central Oregon, precipitation totaled locally more than an inch, resulting in modest reduction of Moderate Drought (D1). Additional snow (0.5-2.5 inches liquid equivalent) boosted snow water equivalents (SWE) in northeastern Washington and led to the removal of Abnormal Dryness (D0) from this portion of the state. Across much of Idaho and southwestern Montana, 1 to 6 inches of rain and snow (liquid equivalent) supported to the removal of most of the lingering D0; snow water equivalent in these locales are now mostly above the 40th percentile, with readings generally at or above 80 percent of normal. Severe Drought (D2) was also removed from northeastern Utah due to a fresh snowfall (locally more than 2 inches liquid equivalent) and assessments from the field.

In southern portions of the region, heavy rain and snow in the north contrasted with increasingly dry conditions in the Southwest. A much-needed, late-season boost to Sierra snowpacks was evidenced by precipitation estimates of 6 to 14 inches (liquid equivalent), particularly in northern portions of the range. The resultant snow water equivalent ranking jumped above the 10th percentile, which correlated to 40 to 60 percent of normal. Areas which received the heaviest precipitation were denoted with a 1-category drought improvement, although the region is still well below seasonal norms. In the southern Sierra, precipitation was not as heavy (less than 6 inches) and snow water equivalents remained below the 5th percentile (40 percent of normal or less). In southern California, water-year precipitation has totaled less than 25 percent of normal, resulting in an expansion of D2 (Severe Drought) in the driest areas. While there was no change made to western Arizona's D3 (Extreme Drought), this region will be assessed further and may be primed for drought expansion. In contrast, locally more than 2 inches of precipitation fell in across central Arizona's Mogollon Rim, providing a swath of drought relief (Severe Drought Reduced to D1, or Moderate Drought).

Alaska, Hawaii, and Puerto Rico: In Alaska, cold conditions continued, with temperatures averaging 10 to 20°F below normal. Dry weather prevailed, although the state's snowpacks remained at or above seasonal norms. In Hawaii, D0 (Abnormal Dryness) was removed from east Oahu, where the water level in Waimanalo Reservoir continued to increase and is currently at a pre-drought level. There were no concerns for drought on Puerto Rico, with moderate to heavy rain (locally more than 6 inches) reported across the western half of the island.

Looking Ahead: A slow-moving disturbance will produce locally heavy rain across the Mississippi River Valley, while light to moderate showers over the south-central Plains gradually diminish. As the system tracks east, beneficial rain will break out across the Southeast and southern Mid-Atlantic, although mostly dry conditions will prevail in Florida and the Northeast. Meanwhile, another round of rain and mountain snow is expected from southern California northward into the Northwest and northern Rockies. Some precipitation may reach the central Great Basin, although amounts are expected to be light. Mostly dry conditions will persist in the Four Corners Region. The CPC 6-10 day forecast for March 27-31 calls for above-normal temperatures across most of the nation, with cooler-than-normal conditions confined to the Pacific Coast states. Below-normal precipitation is anticipated from the Mid-Atlantic to the eastern Gulf Coast, and from the central Rockies into the Southwest. Conversely, wetter-than-

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normal weather is expected from southern Texas into the Great Lakes and northern New England and across the Northwest.

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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

Drought or Dryness Types

S ... Short-Term, typically <6 months (e.g. agricultural, grasslands)

L ... Long-Term, typically >6 months (e.g. hydrology, ecology)

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