



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

Weekly Report - Snowpack / Drought Monitor Update

Date: 19 January 2012

SNOTEL SNOWPACK AND PRECIPITATION SUMMARY

Snow: [Snow Water-Equivalent](#): Many Basins over the Pacific NW improved by one bin category this week as a series of winter storms hit the region. However, all regions but the Southwest are experiencing general deficits in SWE since October (Fig. 1). [7-Day Snow Depth Change](#) ending this morning shows the Cascades and Northern Rockies the winners this week as winter returned with conviction. The Northern Wasatch (Little Bear Mountains) and southern half of the Rockies also saw some additional snow (Fig. 1a).

Temperature: [SNOTEL](#) and ACIS 7-day temperature anomaly showed a colder week over the Northern Rockies while the remainder of the West had values within $\pm 5^{\circ}\text{F}$ (Fig. 2). [ACIS](#) 7-day average temperature anomalies show the greatest positive temperature departures over southwest Wyoming ($>+8^{\circ}\text{F}$) and the greatest negative departures over parts of the Pacific Northwest ($<-8^{\circ}\text{F}$) (Fig. 2a).

Precipitation: [ACIS](#) 7-day average precipitation amounts for the period ending yesterday shows the greatest amounts over southwest Washington (Fig. 3). **As of 759 AM PST today, a flood watch is in effect through Friday morning for rivers and creeks in northwest Oregon and southwest Washington.** In terms of percent of normal, only widely scattered areas over the Northern Tier States and Southwest received above normal precipitation for the week (Fig 3a). Since the start of the [2012 Water-Year](#) that began on 1 October 2011, the seasonal moisture has favored the Southwest while the Great Basin, Cascades, and Western Slope of the Rockies have seen significant deficits (Fig. 3b).

Seasonal Outlook: The NOAA CPC has released the [latest forecasts](#) this morning.

Summary: The onset of a wet pattern in the northwestern U.S. is creating a pause in the development of drought in the western states. Much of the northern tier states remained unchanged, while the southeast continues to suffer from mounting deficits of precipitation and severe impacts.

The West: Over most of the western region of the U.S., quiet weather conditions prevailed, but a strong system was beginning to impact the northwest and northern Rockies just as this week's U.S. Drought Monitor was completed. As a result, most of the region remained unchanged from the previous map. Notable exceptions are an expansion of D0, Abnormally Dry, conditions across the remainder of Idaho. Similarly, much of northwestern Colorado is also designated as D0 from Steamboat Springs in the north to Glenwood Springs and Grand Junction in Interstate 70. These were motivated by low snowpack values reported this week, as well as some areas beginning to suffer from lower than normal soil moisture conditions. Water supply reservoirs appear to be at near-normal or above-normal levels, however, with carryover from the previous wet year evident across the region.

Further south in Arizona, a downgrade to D0 is also made in the northwestern counties of Mohave, Coconino and Yavapai due to short term shortage in precipitation this winter season.

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Two areas of improvement are noted in New Mexico, around Las Cruces and west of Albuquerque. Precipitation over the last two to four weeks in these areas was nearly two inches above normal. Author: Laura Edwards, Western Regional Climate Center and South Dakota State University.

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 (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 through 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). 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 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>.

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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

Weekly Snowpack and Drought Monitor Update Report

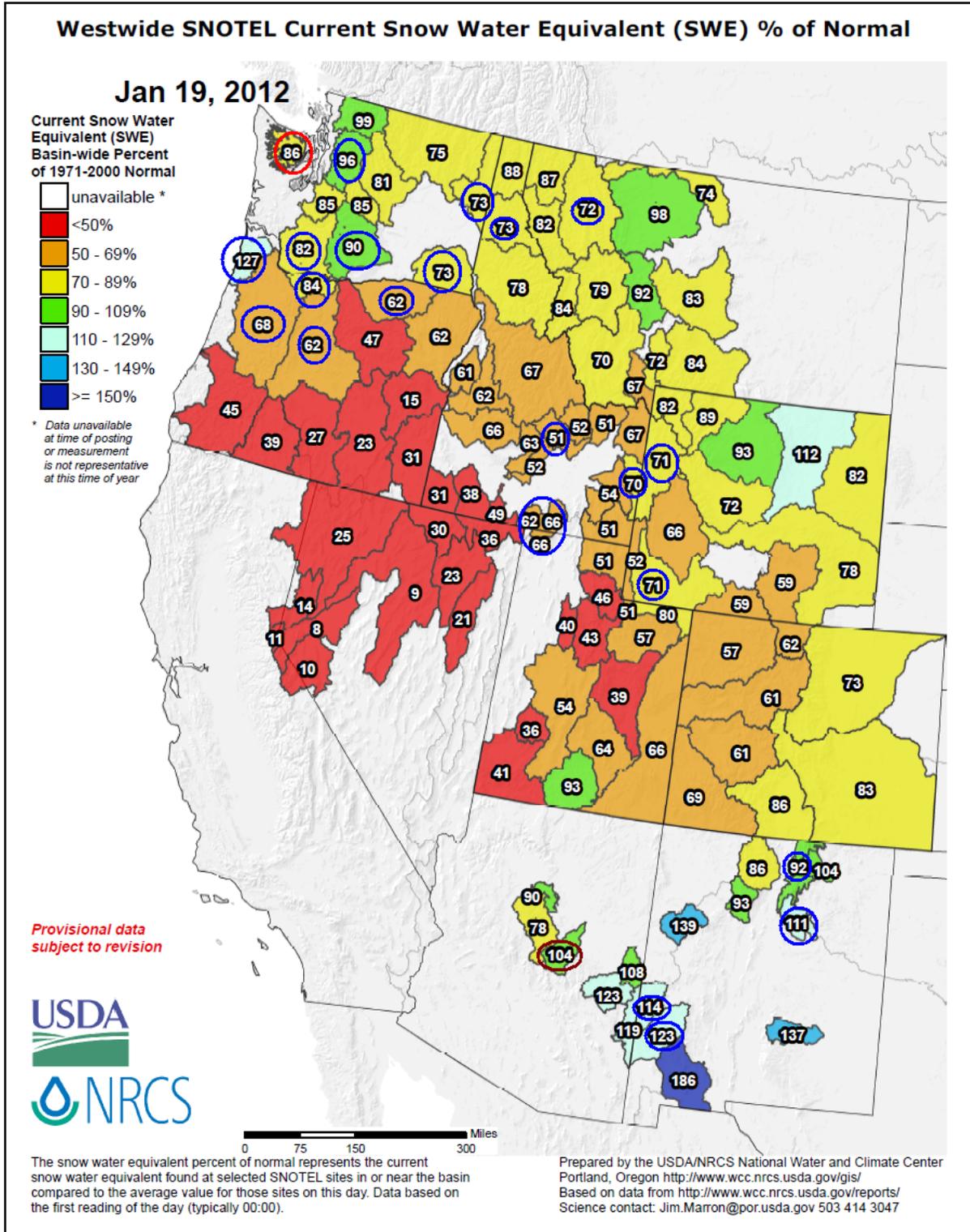


Fig. 1: Snow Water-Equivalent: Many Basins over the Pacific NW improved by one bin category this week as a series of winter storms hit the region (blue circles); red circles reflect one category deterioration. However, all but the Southwest is experiencing general deficits in SWE since October.

Weekly Snowpack and Drought Monitor Update Report

SNOTEL 7-Day Snow Depth Change (Inches)

Jan 19, 2012

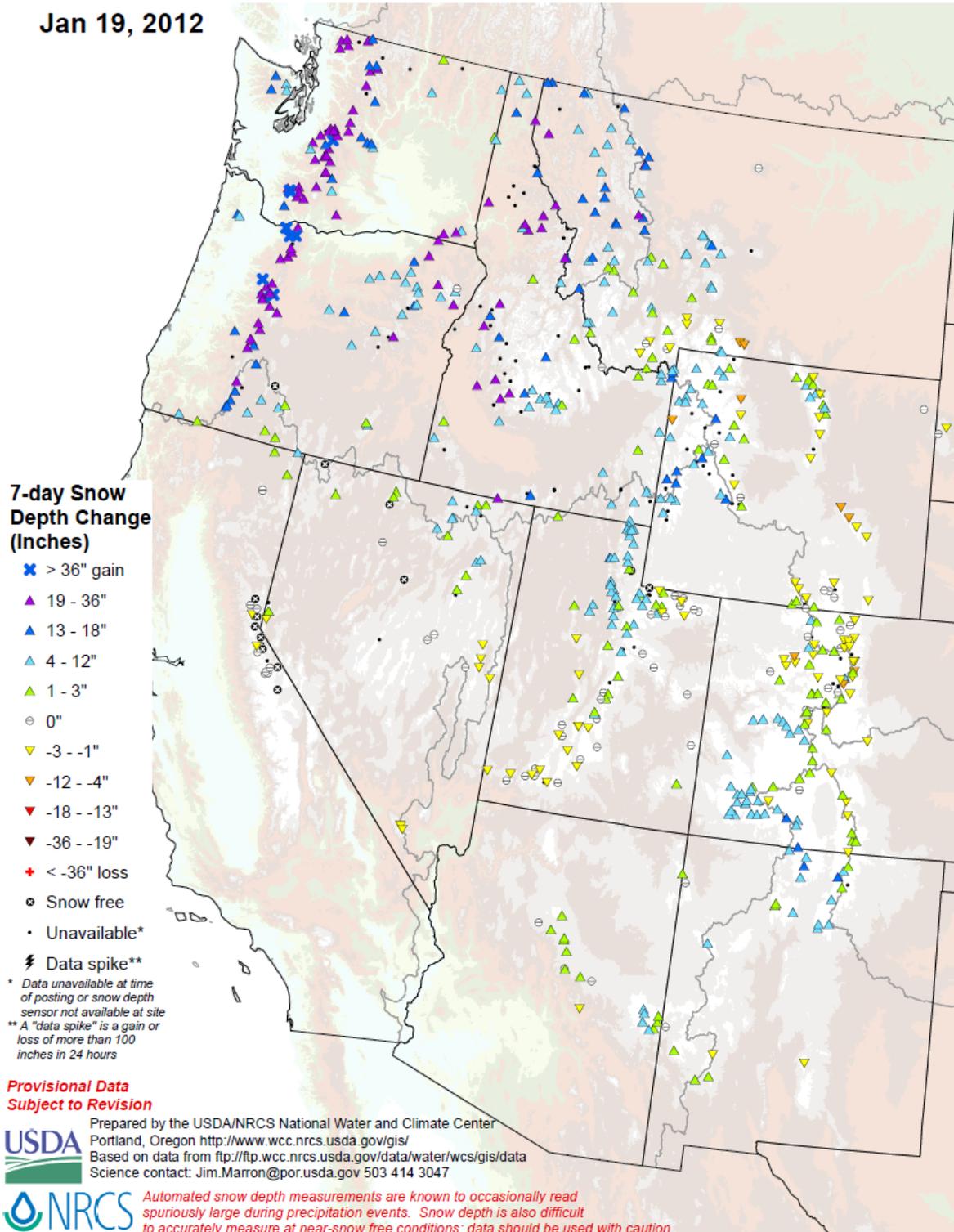


Fig. 1a: 7-Day Snow Depth Change ending this morning shows the Cascades and Northern Rockies the winners this week as winter returned with conviction. The Northern Wasatch (Little Bear Mountains) and southern half of the Rockies also saw some additional snow.

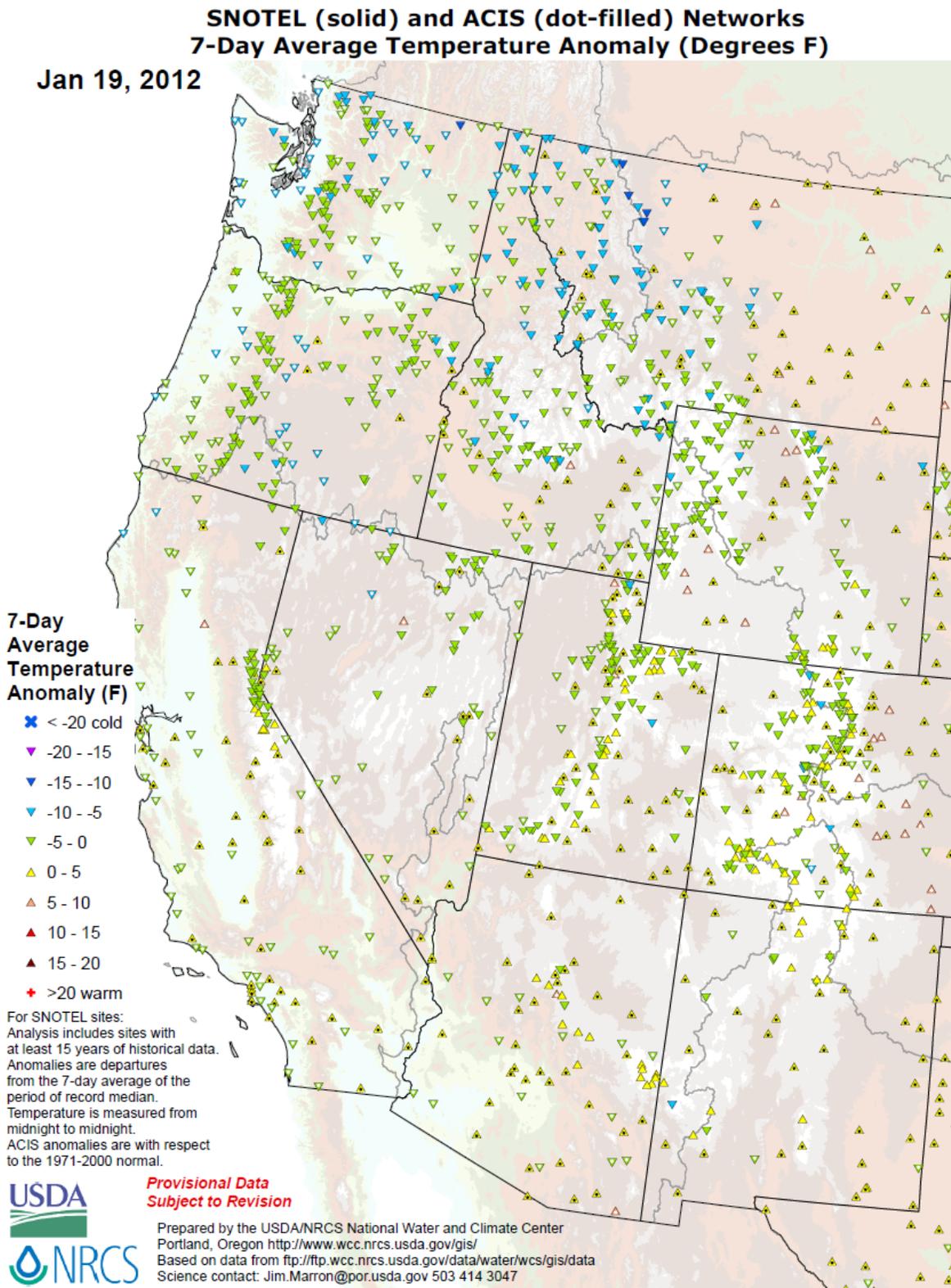
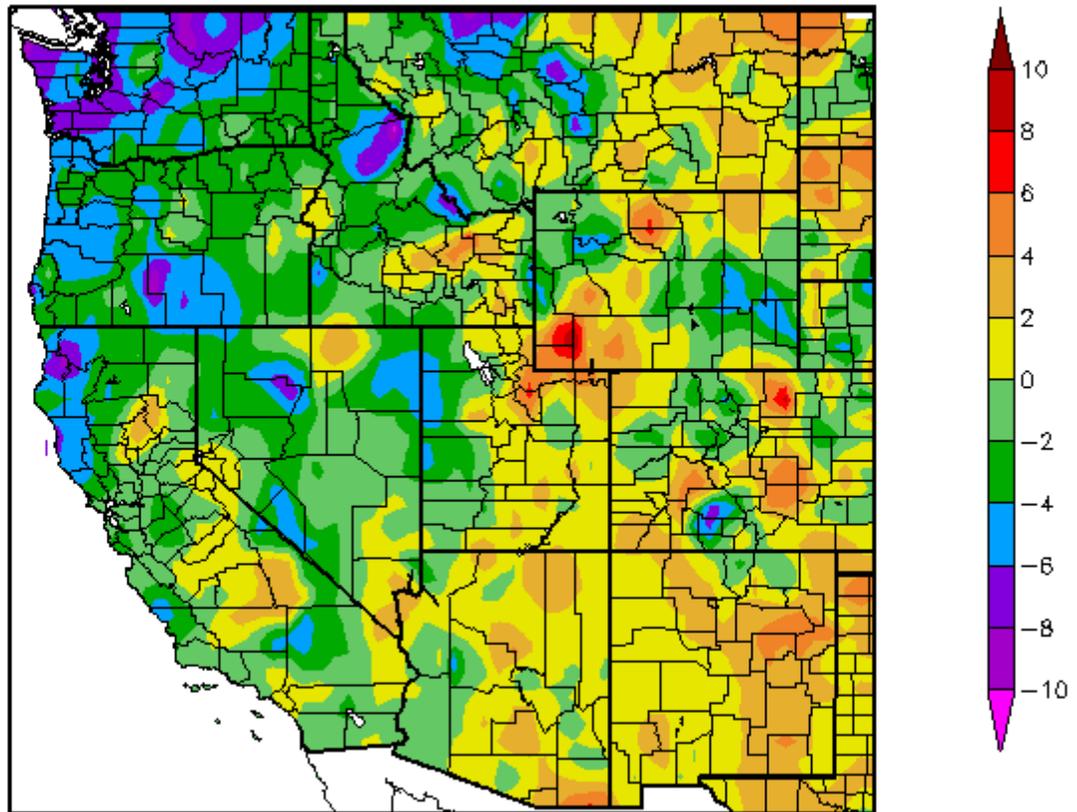


Fig. 2: **SNOTEL** and ACIS 7-day temperature anomaly showed a colder week over the Northern Rockies while the remainder of the West had values within $\pm 5^{\circ}\text{F}$.

Departure from Normal Temperature (F)
1/12/2012 – 1/18/2012



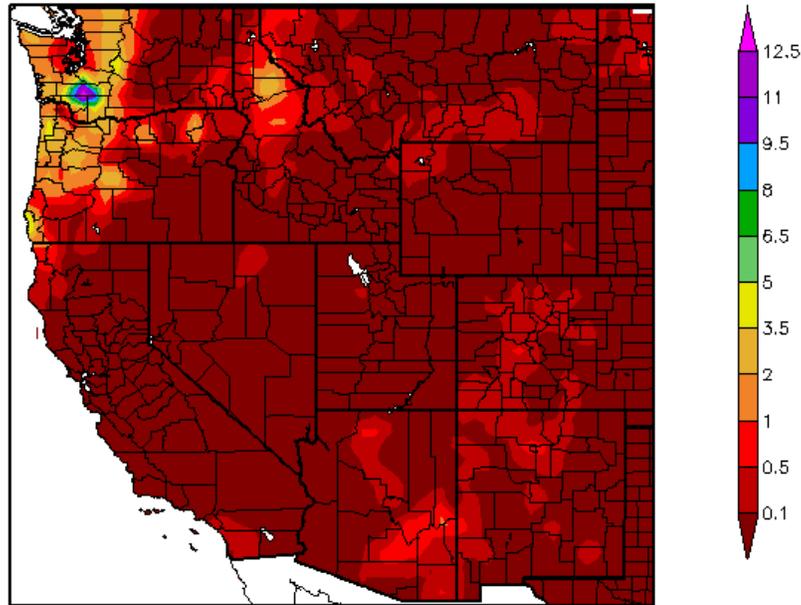
Generated 1/19/2012 at HPRCC using provisional data.

Regional Climate Centers

Fig. 2a: [ACIS](#) 7-day average temperature anomalies show the greatest positive temperature departures over southwest Wyoming ($>+8^{\circ}\text{F}$) and the greatest negative departures over parts of the Pacific Northwest ($<-8^{\circ}\text{F}$).

Weekly Snowpack and Drought Monitor Update Report

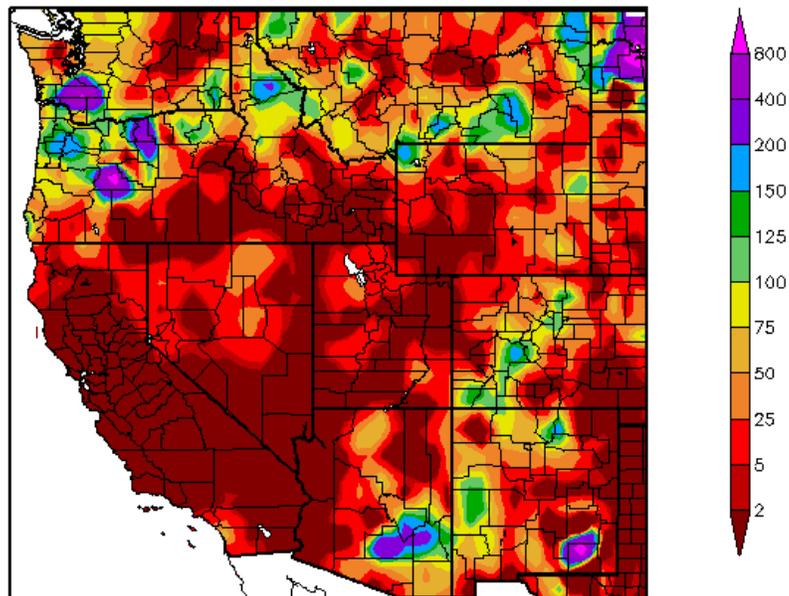
Precipitation (in)
1/12/2012 - 1/18/2012



Generated 1/19/2012 at HPRCC using provisional data.

Regional Climate Centers

Percent of Normal Precipitation (%)
1/12/2012 - 1/18/2012



Generated 1/19/2012 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 greatest amounts over southwest Washington (Fig. 3). As of 759 AM PST today, a flood watch is in effect through Friday morning for rivers and creeks in northwest Oregon and southwest Washington. In terms of percent of normal, only widely scattered areas over the Northern Tier States and Southwest received above normal precipitation for the week (Fig 3a).

Weekly Snowpack and Drought Monitor Update Report

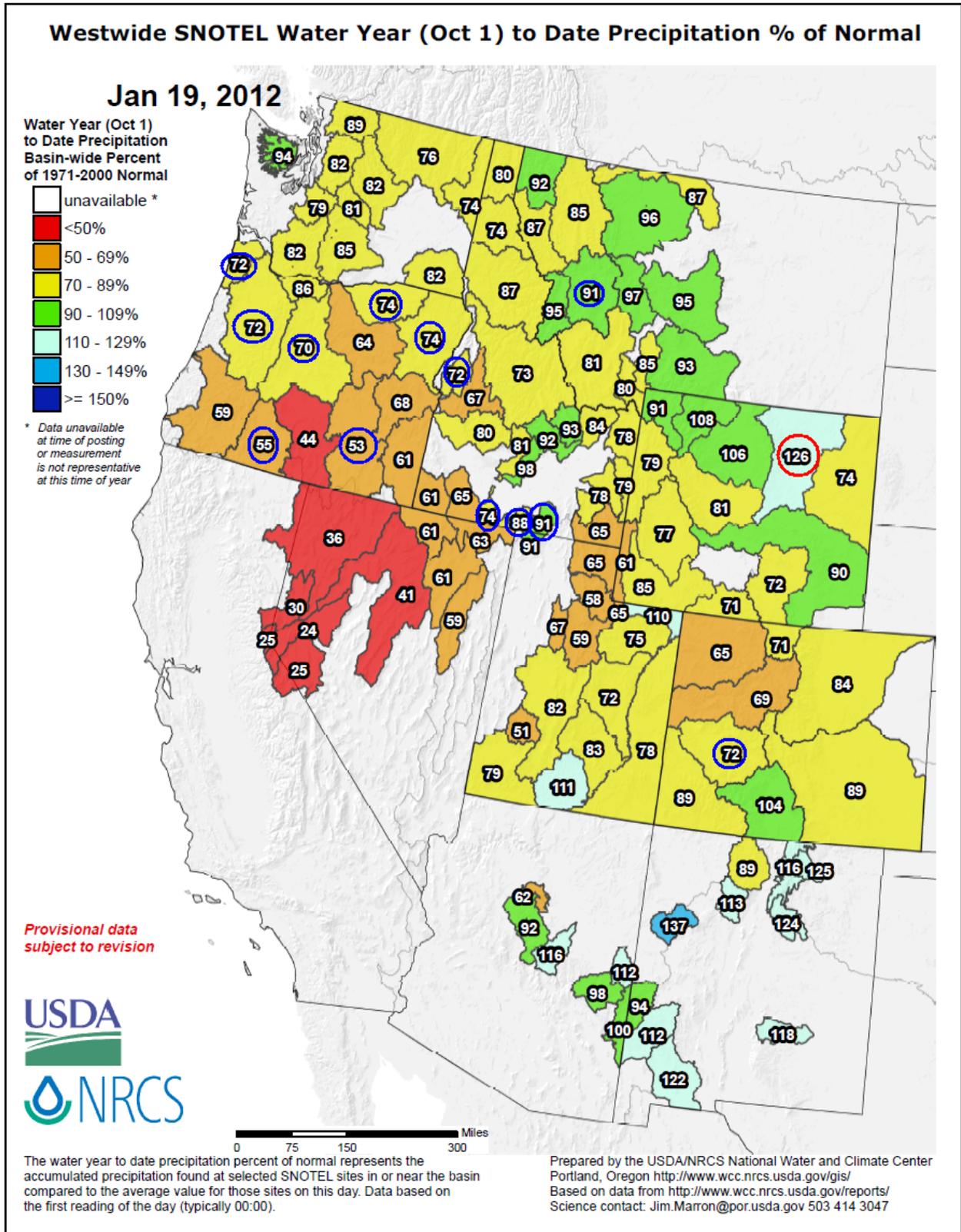


Fig 3b: Since the start of the **2012 Water-Year** that began on 1 October 2011, the seasonal moisture has favored the Southwest while the Great Basin, Cascades, and Western Slope of the Rockies have seen significant deficits. However, surplus moisture over the Southwest is holding steady. One week bin category changes are denoted by blue (increase) and red (decrease) circles.

U.S. Drought Monitor

January 17, 2012
Valid 7 a.m. EST

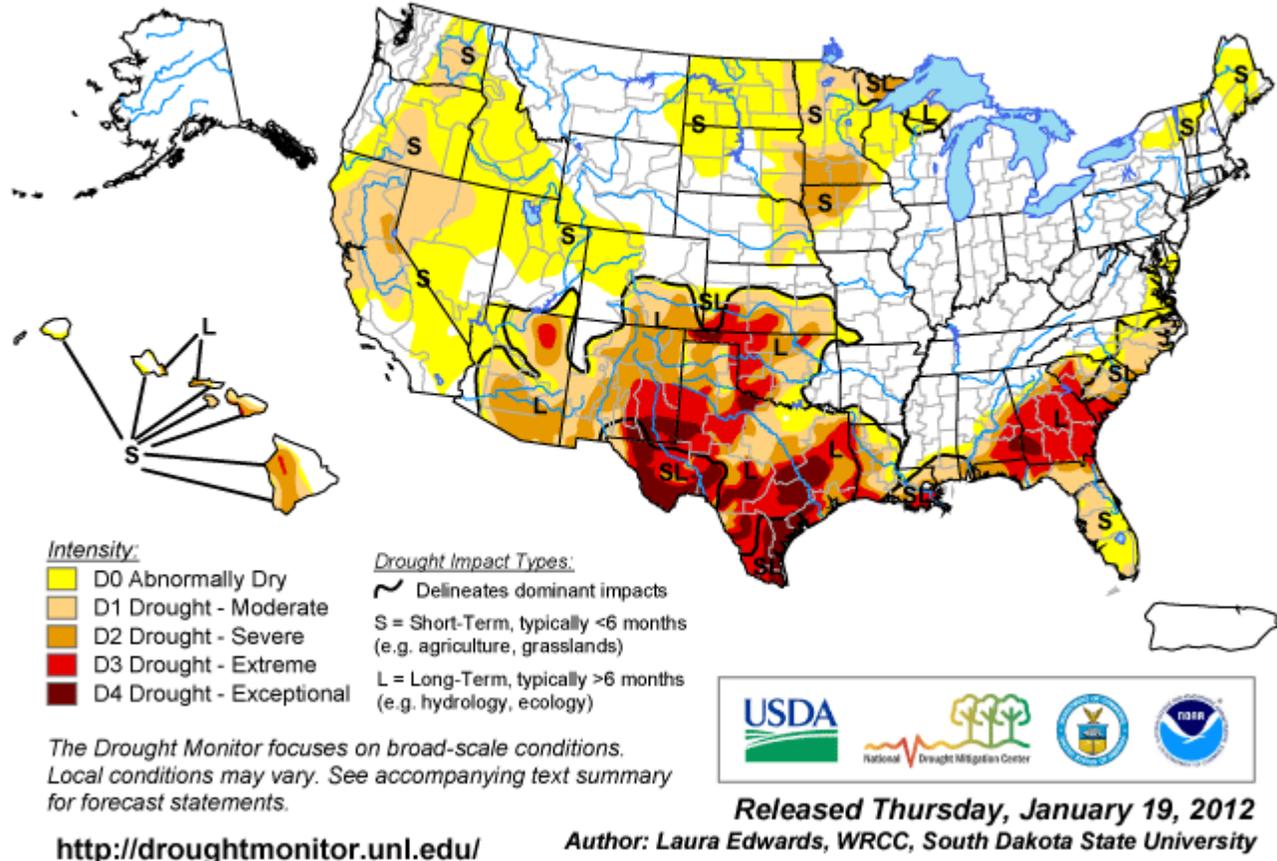


Fig. 4: Current [Drought Monitor](#) weekly summary. The exceptional D4 levels of drought are found over southeastern New Mexico, mostly southern Texas, the Panhandle of Oklahoma, and now over southwest Georgia-southeast Alabama. For more drought news, see [Drought Impact Reporter](#). For additional drought summaries, see [DroughtScapes Newsletter](#).

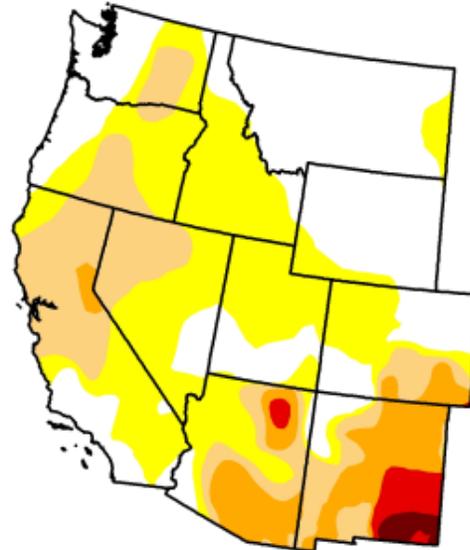
U.S. Drought Monitor

West

January 17, 2012
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	36.17	63.83	29.46	11.40	2.68	0.77
Last Week (01/10/2012 map)	41.89	58.11	29.50	12.26	2.67	0.77
3 Months Ago (10/18/2011 map)	74.71	25.29	18.32	14.67	8.48	2.87
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 (01/11/2011 map)	76.92	23.08	11.88	0.89	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, January 19, 2012

Laura Edwards, Western Regional Climate Center and South Dakota S

<http://droughtmonitor.unl.edu>

Fig. 4a: Drought Monitor for the [Western States](#) with statistics over various time periods. Note a general increase in D0 this week.

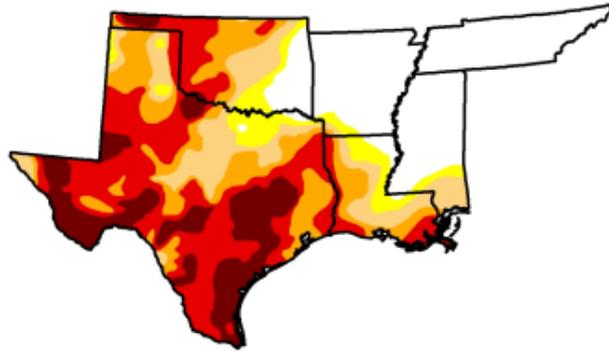
U.S. Drought Monitor

South

January 17, 2012
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	28.56	71.44	65.03	52.77	37.37	13.27
Last Week (01/10/2012 map)	27.24	72.76	66.99	53.30	37.37	13.27
3 Months Ago (10/18/2011 map)	14.13	85.87	78.18	71.28	63.72	47.94
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 (01/11/2011 map)	15.61	84.39	60.94	26.25	9.57	0.00



Intensity:

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

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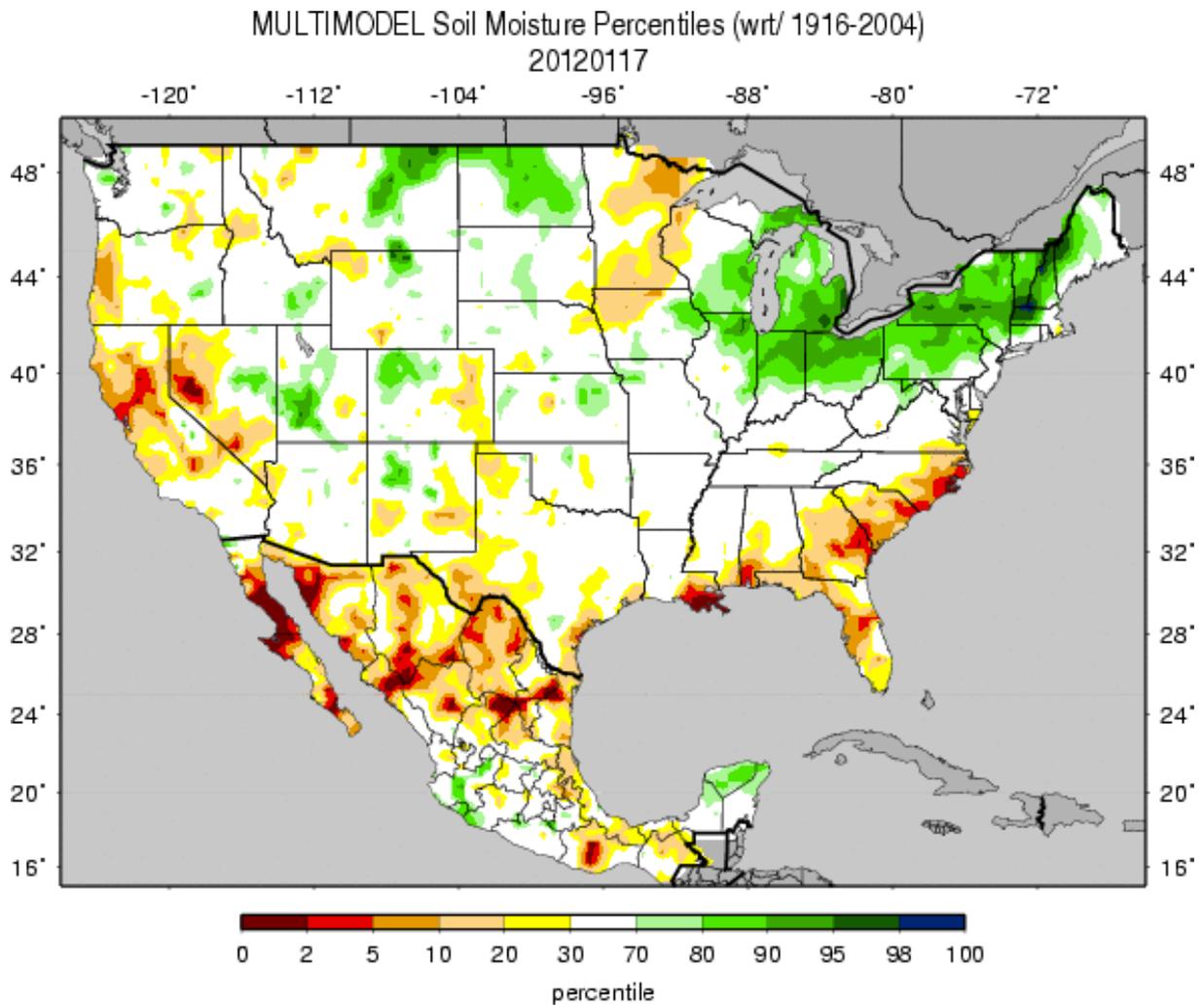
Released Thursday, January 19, 2012

<http://droughtmonitor.unl.edu>

Laura Edwards, Western Regional Climate Center and South Dakota S

Fig. 4b: Drought Monitor for the [South-Central States](#) with statistics over various time periods. Note no change this week.

Weekly Snowpack and Drought Monitor Update Report



Figs. 5: Soil Moisture ranking in [percentile](#) as of 17 January (top) shows a wet Ohio Valley to New England pattern continuing. Dryness is noted northern California and western Nevada.

Weekly Snowpack and Drought Monitor Update Report

Soil Climate Analysis Network (SCAN)

Station (2042) MONTH=2011-12-20 (Daily) NRCS National Water and Climate Center - Provisional Data - subject to revision
Thu Jan 19 08:42:00 PST 2012

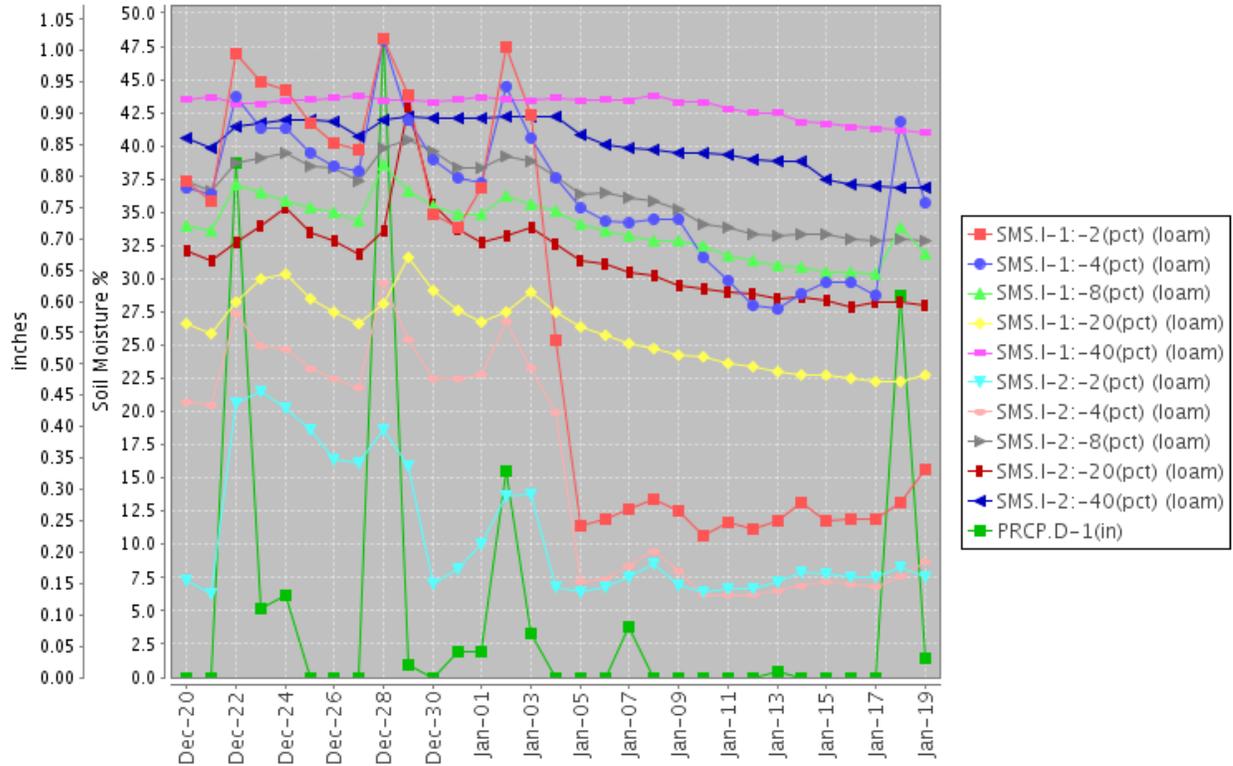


Fig. 6: This NRCS resource shows a site over [Southern Vermont](#) moist conditions responding to recent precipitation events.

Weekly Snowpack and Drought Monitor Update Report

National Drought Summary -- January 17, 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/>.

The onset of a wet pattern in the northwestern U.S. is creating a pause in the development of drought in the western states. Much of the northern tier states remained unchanged, while the southeast continues to suffer from mounting deficits of precipitation and severe impacts.

The West: Over most of the western region of the U.S., quiet weather conditions prevailed, but a strong system was beginning to impact the northwest and northern Rockies just as this week's U.S. Drought Monitor was completed. As a result, most of the region remained unchanged from the previous map. Notable exceptions are an expansion of D0, Abnormally Dry, conditions across the remainder of Idaho. Similarly, much of northwestern Colorado is also designated as D0 from Steamboat Springs in the north to Glenwood Springs and Grand Junction in Interstate 70. These were motivated by low snowpack values reported this week, as well as some areas beginning to suffer from lower than normal soil moisture conditions. Water supply reservoirs appear to be at near-normal or above-normal levels, however, with carryover from the previous wet year evident across the region.

Further south in Arizona, a downgrade to D0 is also made in the northwestern counties of Mohave, Coconino and Yavapai due to short term shortage in precipitation this winter season. Two areas of improvement are noted in New Mexico, around Las Cruces and west of Albuquerque. Precipitation over the last two to four weeks in these areas was nearly two inches above normal.

Northern Plains and Midwest: No changes were made this week to this northern tier of states from Montana to Pennsylvania. Temperatures during this U.S. Drought Monitor period remained above the seasonal average. Scattered light precipitation across the region staved off any further degradation. A strong system moved through the Ohio River Valley, but as this region was already drought-free on the map, no changes were warranted. As much as two to three inches of precipitation was reported for the week in parts of central and southern Indiana.

Southern and Central Plains: A welcome sign of drought relief came in the form of rain to parts of eastern Oklahoma. A one-category improvement was made along the Canadian River and south to the Texas border. Other areas warranted changes in southern Arkansas and northern Louisiana, after a review of the last 30 to 45 days of above normal precipitation. This area is now mostly in D0, Abnormally Dry, conditions. A small area of southwestern Kansas is degraded this week to D3, Extreme Drought. Ongoing precipitation deficits and declining vegetation health were motivation for this one-category change. D0 is also expanded in western Kansas to include Greeley and Wichita counties, and areas just north of there, to account for short-term rainfall deficits.

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The Southeast and Mid-Atlantic: The Southeastern U.S. continues to suffer from shortages of precipitation, extremely low streamflow in area rivers and streams, and increased wildland fire danger. Despite a small reprieve in northwestern Alabama during this U.S. Drought Monitor period, much of the area is experiencing degrading conditions. A new area of Exceptional Drought, D4, is introduced to the Alabama-Georgia border to reflect the record low precipitation, streamflow, and other forage impacts. A one-category downgrade is made across Florida's northern border and the nearby states of Alabama and Georgia, as deficits and impact reports mount. Moderate Drought, D1, is expanded from Sarasota to Daytona Beach, Florida. A new D1 area is introduced in southern Florida counties of Monroe and Miami-Dade as well.

The Northeast: Abnormally Dry designation is expanded to include northeastern New York and northern Vermont to reflect lack of snowfall in the region. A large area of D0 is also introduced to most of Maine as a result of short term below-normal precipitation over the last 30 to 90 days.

Alaska, Hawaii and Puerto Rico: Alaska is one state that has no drought at this time as many locations continue to report record snowfall. Cities such as Valdez, Anchorage, Juneau, and up into central Alaska have had two to three times their normal snowfall this season, with below average temperatures the last couple of weeks.

The western slopes of Maui in the state of Hawaii are being affected by reduced rangeland quality and is now in D3, Extreme Drought, up the coast to Lahaina.

No changes are made to the depiction in Puerto Rico this week.

Looking Ahead: The outlook is encouraging for snow seekers as a large-scale pattern has finally shifted into a wetter regime for many states over the next several days. Forecasts are projecting 10-15 inches of rain over the next five days along the Pacific coast of northern California and Oregon. At least a few feet of snow is possible in the mountain ranges of the northwest states to include the Cascades, Rockies and Sierra Nevada. Lesser amounts of snow and rain are projected across the eastern half of the Lower 48. Widespread totals over the five day period could amount to about an inch, with localized areas possibly reporting more than two inches in the southern Appalachians. Colder than normal temperatures will continue to hold on to Alaska, while warmer than normal temperatures may build over much of the contiguous U.S. by the end of the next U.S. Drought Monitor period. After a frontal system just affected Hawaii over the last day or so, it appears as if it will be set into a drier trend for the next couple of days, before the next system passes through.

Author: [Laura Edwards, Western Regional Climate Center and South Dakota State University](#)

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

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

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

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