



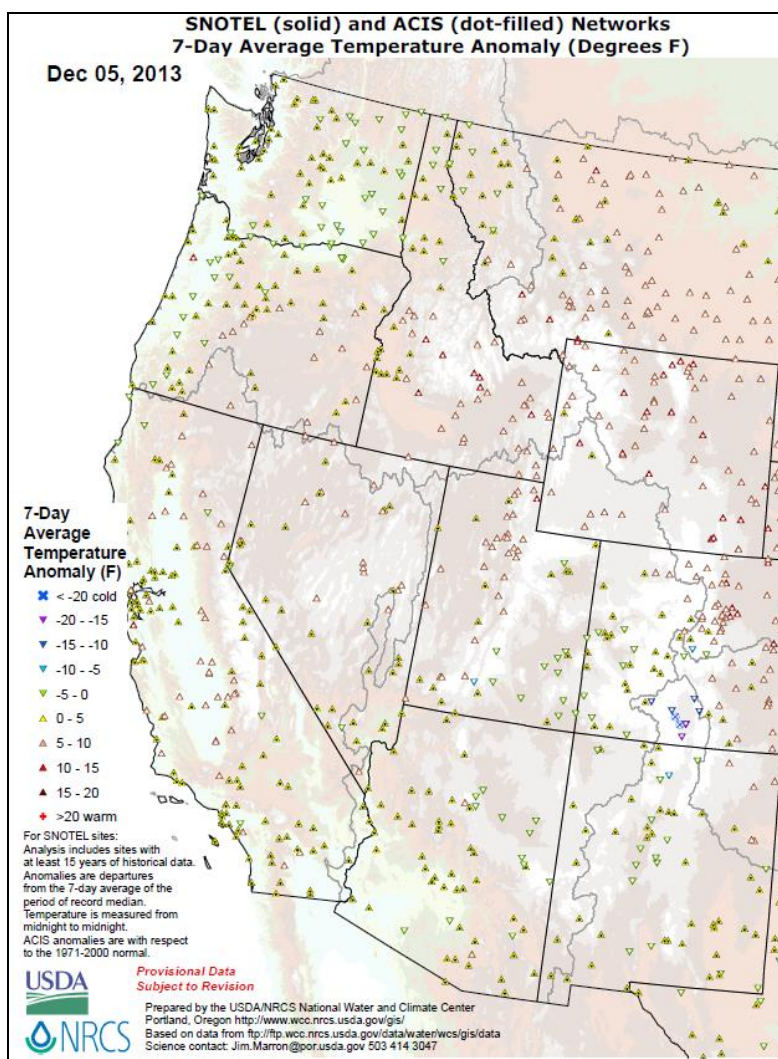
Natural Resources Conservation Service
P.O. Box 2890
Washington, D.C. 20013

Weekly Snowpack / Drought Monitor Update

December 06, 2013

Temperature.....	1	Complete National Drought Summary	12
Precipitation.....	3	More Information.....	13
Snow	6	Drought Outlook.....	13
Weather and Drought Summary	7	Supplemental Drought Information	14
Soil Climate Analysis Network (SCAN)	11		

Temperature



SNOTEL and ACIS [7-day temperature anomaly](#) map shows temperatures well above normal over the interior West and closer to normal over the West Coast states and Southwest.

Click map to enlarge and see latest available update.

The Natural Resources Conservation Service provides leadership in a partnership effort to help people conserve maintain and improve our natural resources and environment

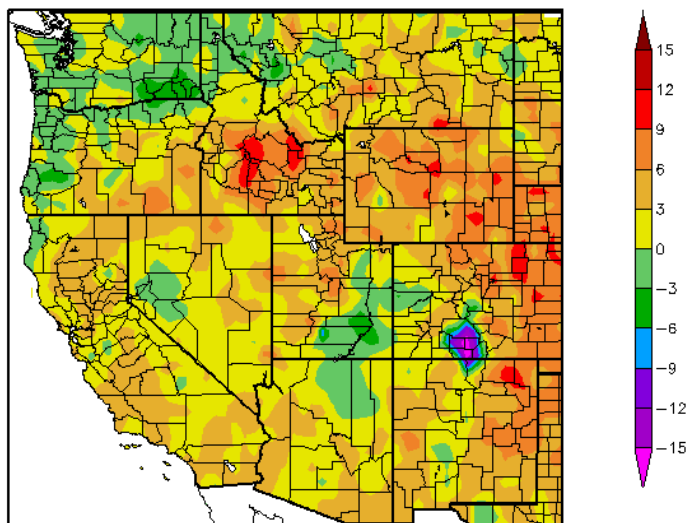
An Equal Opportunity Employer

Weekly Snowpack and Drought Monitor Update Report

[ACIS](#) 7-day average temperature anomalies, ending December 4, show the greatest positive temperature departures occurred over central Idaho and scattered across Wyoming and the western High Plains ($>+9^{\circ}\text{F}$). The greatest negative departures occurred over south-central Colorado as cold air was trapped in high valley drainage areas (e.g., Alamosa) ($>-15^{\circ}\text{F}$).

Also see [Dashboard](#) and the [Westwide Drought Tracker](#).

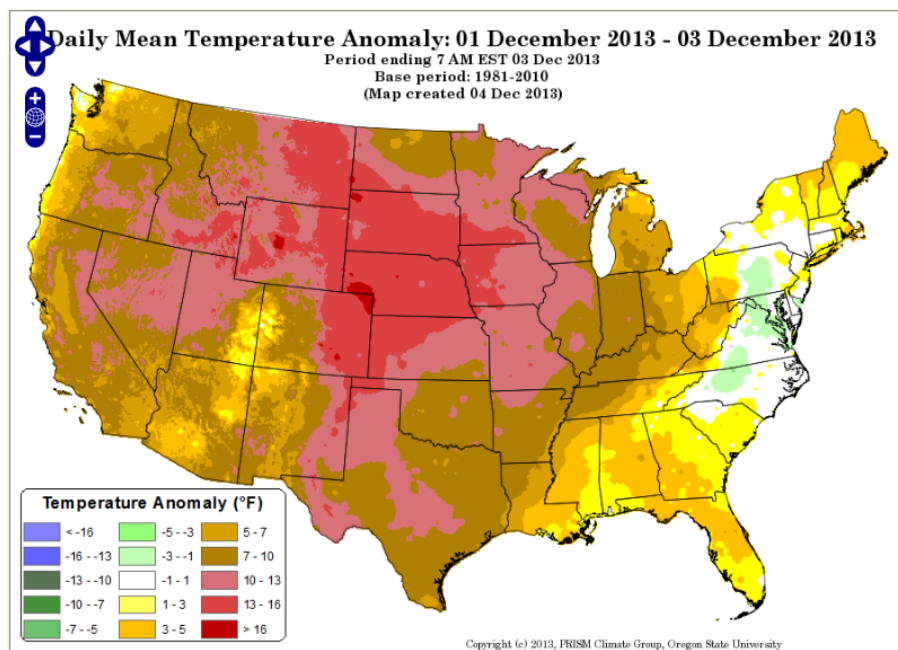
Departure from Normal Temperature ($^{\circ}\text{F}$)
11/28/2013 – 12/4/2013



Generated 12/5/2013 at HPRCC using provisional data.

Regional Climate Centers

This preliminary PRISM temperature map contains all available network data, including SNOTEL data, and will be updated periodically as additional data become available and are quality controlled. See remarks in [blue](#) below for more details.



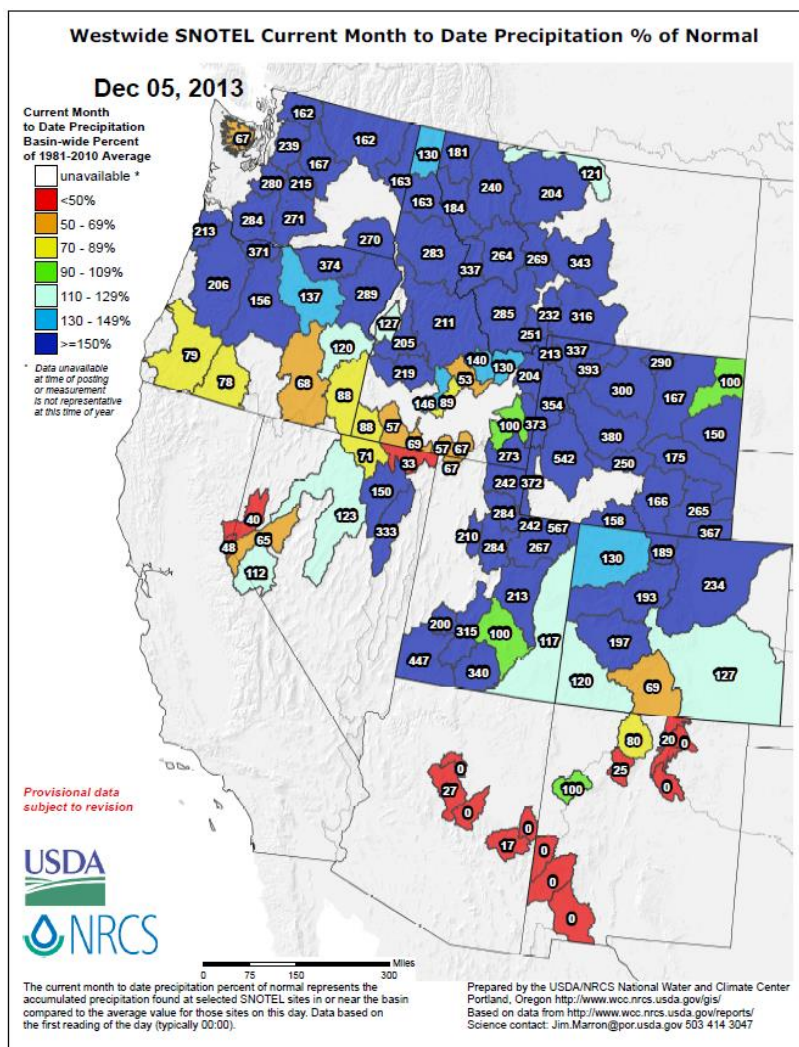
Early December has been warm across much of the U.S. However, things are changing rapidly as the coldest Arctic outbreak for the season is invading much of the U.S. Currently, parts of [Montana](#) are experiencing temperatures below -20°F (see last page for map).

The PRISM anomaly map above is calculated from the entire monthly average. For example, an autumn month would have more positive anomalies in the early part of the month and more negative anomalies in the latter part of the month (as temperatures cool). This may explain differences with ACIS data which use actual daily climatology, whereas PRISM uses the monthly climatology divided by the number of days in the month. This bias reverses in the spring months with warming occurring during the latter part of the month. These differences become less noticeable toward the end of these months.

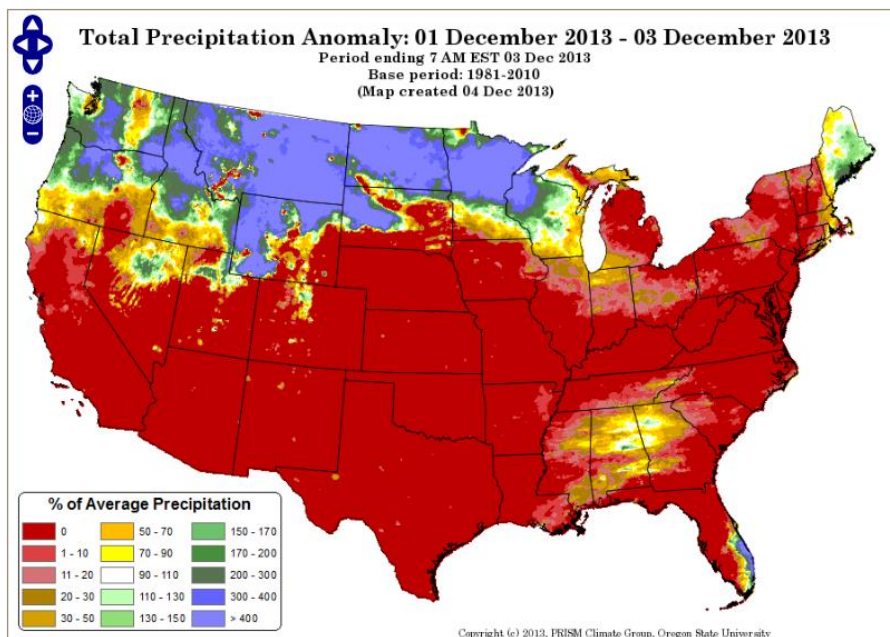
Weekly Snowpack and Drought Monitor Update Report

Precipitation

SNOTEL [month to date](#) precipitation percent of normal (through December 05), shows a very wet start to the month with the exception of the Southwest Mountains of Arizona and New Mexico, the southern Cascades, and northern Sierra.



Click on images to enlarge and get latest available updates



Early December [precipitation](#) has been largely absent across all but the northern tier states west of the Great Lakes.

A rather active weather pattern is expected to spread abundant precipitation across the Pacific Northwest during the next two weeks.

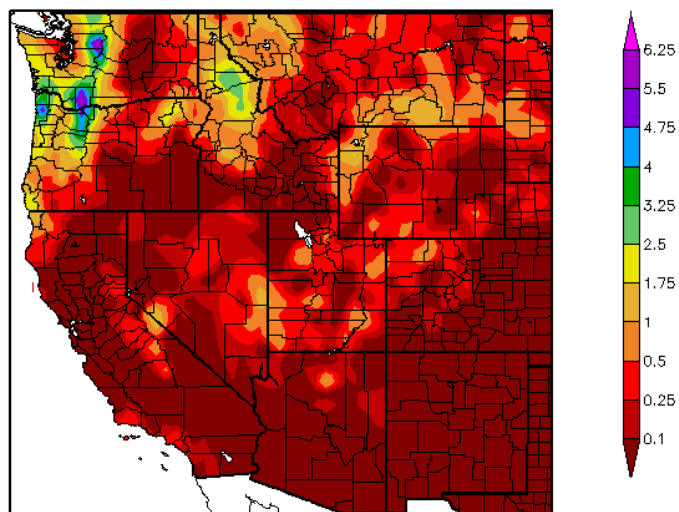
This preliminary daily PRISM precipitation contains all available network data, including SNOTEL data, and is updated periodically as additional data become available and are quality controlled.

Weekly Snowpack and Drought Monitor Update Report

[ACIS 7-day](#) average precipitation amounts for the period ending December 04 show the impact from the first December storm to hit the northern sections of the West. →

As Arctic air invades the western states, upslope moisture (i.e., on the windward side of mountains) should result in additional snowfall.

Precipitation (in)
11/28/2013 – 12/4/2013

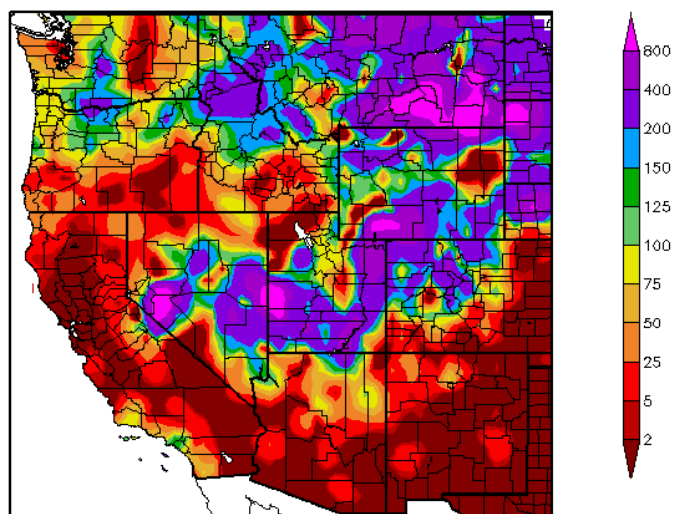


Generated 12/5/2013 at HPRCC using provisional data.

Regional Climate Centers

This [map](#) shows that the bulk of precipitation by percent of normal fell over the northern Rockies, northern High Plains, the northern Cascades, Great Basin, and along the Green and Colorado River drainages. Elsewhere across the West, conditions were considerably drier. →

Percent of Normal Precipitation (%)
11/28/2013 – 12/4/2013



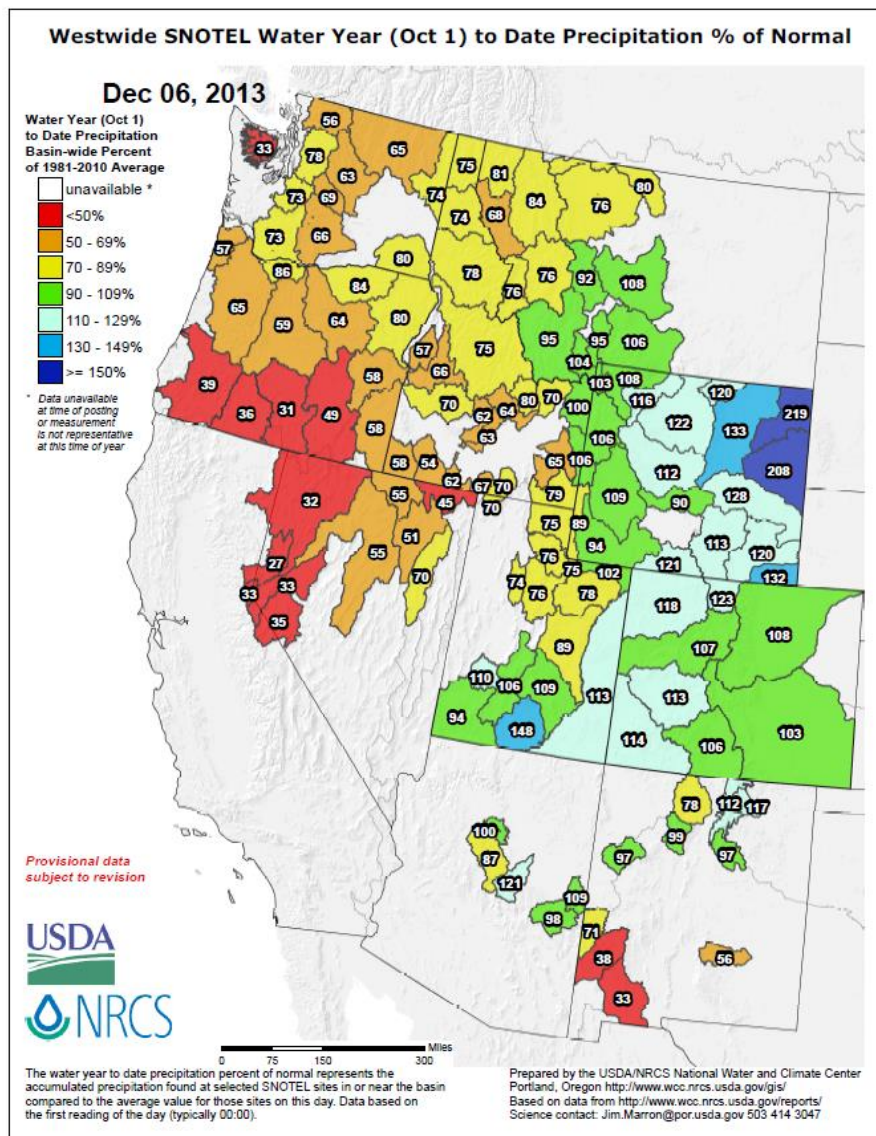
Generated 12/5/2013 at HPRCC using provisional data.

Regional Climate Centers

Weekly Snowpack and Drought Monitor Update Report

For the [2014 Water Year](#) that began on October 1, 2013, the ENSO pattern thus far is starting to look like El Niño (e.g., drier northern tier and wetter southern tier of the West). However, [long range weather forecasts](#) are suggesting somewhat drier conditions over the southern tier states of the West and wetter conditions over the northern tier states.

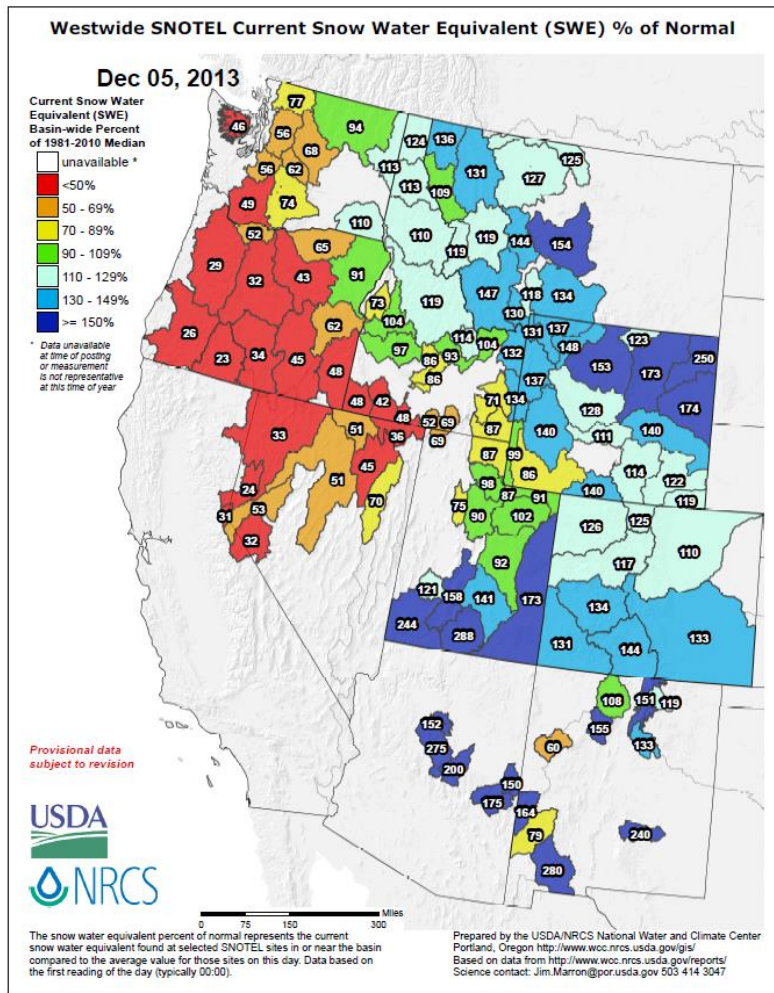
An active weather pattern is suggested in [recent weather forecasts](#), so the distribution of precipitation surpluses and deficits on this map are expected to change over the next few weeks.



Click image for latest available update

Weekly Snowpack and Drought Monitor Update Report

Snow

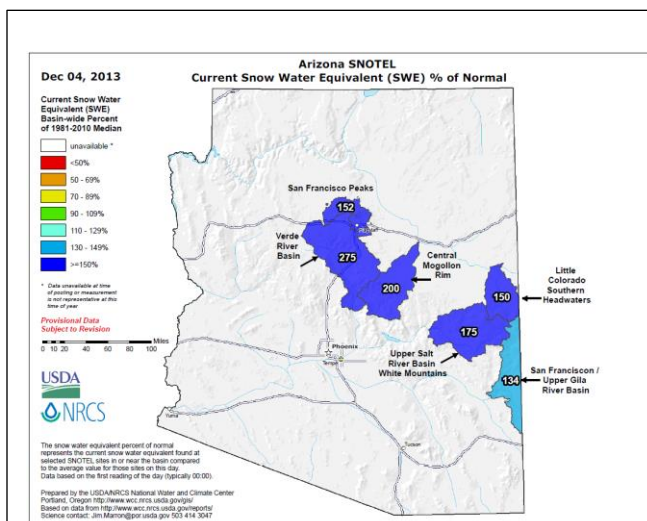


Snow Water Equivalent (SWE) values are off to a good start over much of the western states with the exception of the Cascades, Sierra, and Great Basin mountains.

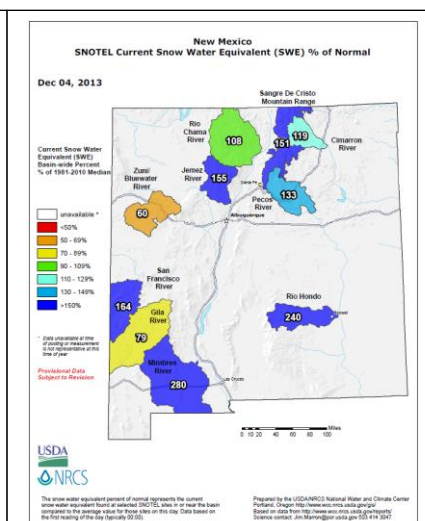
Conditions over the Pacific Northwest are expected to improve during the next two weeks as an active weather pattern develops over the region.

The all-important April 1 SWE date will best determine the water supply forecasts issued by the [National Water and Climate Center](#).

See latest [National Snow Analysis](#).



[Arizona](#) SWE map



[New Mexico](#) SWE map

SWE surpluses (as of December 4) persist over the Southwest. More snow is expected today and during the weekend.

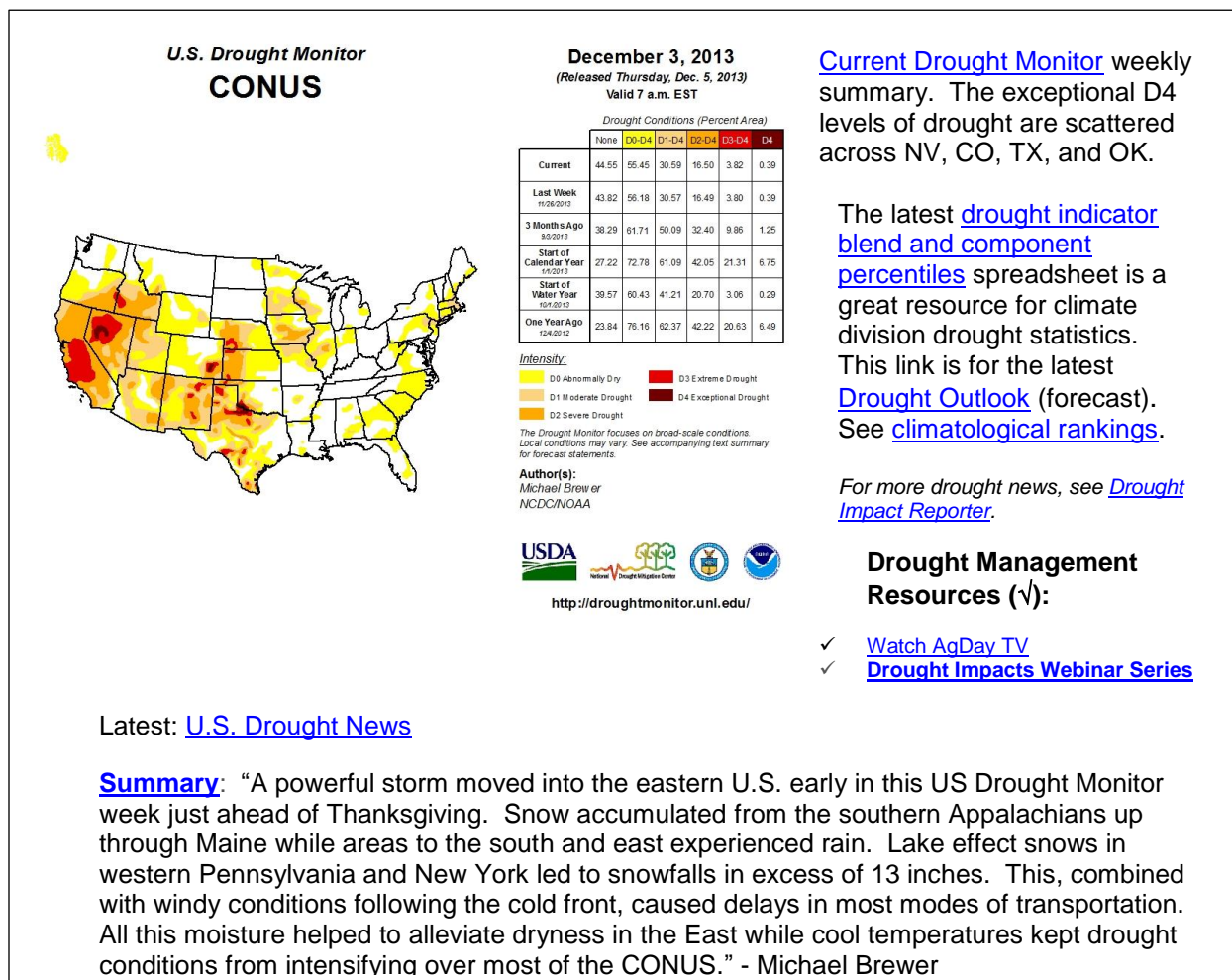
Weekly Snowpack and Drought Monitor Update Report

Weather and Drought Summary

National Drought Summary – December 05, 2013

The following **Weather and Drought Summary** is provided by this week's NDMC Drought Author, Richard Heim, NCDC/NOAA.

[USDM Map Services](#): (contains archived maps)



A comprehensive narrative describing drought conditions across other parts of the nation can be found toward the end of this document. For drought impacts definitions for the figures below, click [here](#).

“During the past week, SNOTEL [temperatures](#) were well above normal over the interior West and closer to normal over the West Coast States and Southwest. [Snowfall depths](#) increased considerably in recent days. For the 2014 Water Year SNOTEL [precipitation](#) deficits exist generally west of the Continental Divide. The Southwest Mountains of Arizona and New Mexico also have surpluses due to the increased amounts of moisture continuing today and into the weekend.” – Jan Curtis, NRCS

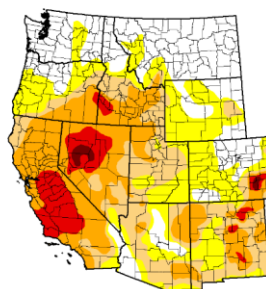
Weekly Snowpack and Drought Monitor Update Report

- ✓ Drought Monitor for the [Western States](#)
- ✓ Drought Impact Reporter for [New Mexico](#)
- ✓ [California Data Exchange Center](#) & [Flood Management](#)
- ✓ NIDIS [Upper Colorado River Regional Drought Earlier Warning System](#)
- ✓ [Intermountain West Climate Dashboard](#)
- ✓ [Great Basin Dashboard](#)

Western Drought News

The West: "Abnormal Dryness (D0) expanded in the northern Cascade Mountains in Oregon and Washington as well as on the Oregon Coast. These areas have missed most of the recent precipitation that has fallen around the Northwest and have significant deficits for the year. The rest of the West remains unchanged this week." - Michael Brewer, National Climatic Data Center, NOAA

U.S. Drought Monitor West



December 3, 2013
(Released Thursday December 5, 2013)
Valid 7 a.m. Eastern

Statistics type: Traditional (D0-D4, D1-D4, etc.) Categorical (D0, D1, etc.)
Drought Condition (Percent Area)

Week	Date	Nothing	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	12/3/2013	25.84	73.16	49.99	30.86	7.56	0.63
Last Week	11/26/2013	29.00	71.00	40.99	30.86	7.56	0.63
3 Months Ago	9/3/2013	14.19	85.81	76.15	53.28	16.40	1.83
Start of Calendar Year	1/1/2013	24.39	75.61	69.31	45.04	18.01	2.15
Start of Water Year	10/1/2013	25.25	74.75	58.96	34.18	5.57	0.63
One Year Ago	12/4/2012	22.41	77.59	70.26	46.06	17.85	2.12

[View More Statistics](#)

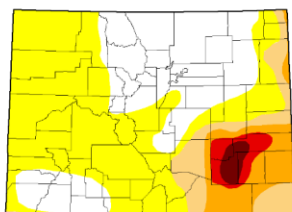
Intensity:
■ D0 - Abnormally Dry
■ D1 - Moderate Drought
■ D2 - Severe Drought
■ D3 - Extreme Drought
■ D4 - Exceptional Drought

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

Author(s):
Michael Brewer, NOAA/NCEC

Note that there were no changes this week.

U.S. Drought Monitor Colorado



December 3, 2013
(Released Thursday December 5, 2013)
Valid 7 a.m. Eastern

Statistics type: Traditional (D0-D4, D1-D4, etc.) Categorical (D0, D1, etc.)
Drought Condition (Percent Area)

Week	Date	Nothing	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	12/3/2013	32.04	67.96	20.95	12.01	4.01	1.47
Last Week	11/26/2013	32.04	67.96	20.95	12.01	4.01	1.47
3 Months Ago	9/3/2013	1.91	98.09	93.75	59.65	21.67	3.01
Start of Calendar Year	1/1/2013	0.00	100.00	100.00	95.06	53.47	13.48
Start of Water Year	10/1/2013	24.91	75.09	37.88	12.01	4.01	1.47
One Year Ago	12/4/2012	0.00	100.00	100.00	95.06	53.43	13.48

[View More Statistics](#)

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

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

Author(s):
Michael Brewer, NOAA/NCEC

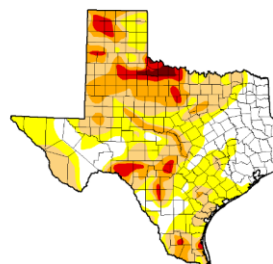
No changes have occurred during the past week.

State with D-4 Exceptional Drought

State with D-4 Exceptional Drought

- ✓ Texas Drought [Website](#).
- ✓ [Texas Reservoirs](#).

U.S. Drought Monitor Texas



December 3, 2013
(Released Thursday December 5, 2013)
Valid 7 a.m. Eastern

Statistics type: Traditional (D0-D4, D1-D4, etc.) Categorical (D0, D1, etc.)
Drought Condition (Percent Area)

Week	Date	Nothing	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	12/3/2013	24.58	75.42	47.39	21.29	5.84	0.96
Last Week	11/26/2013	23.81	76.19	47.17	21.23	5.66	0.96
3 Months Ago	9/3/2013	4.14	95.86	87.09	64.63	18.74	2.94
Start of Calendar Year	1/1/2013	3.04	96.96	87.00	65.39	35.03	11.96
Start of Water Year	10/1/2013	6.62	93.38	79.95	25.08	4.01	0.12
One Year Ago	12/4/2012	6.16	93.84	82.20	59.27	27.40	8.45

[View More Statistics](#)

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

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

Author(s):
Michael Brewer, NOAA/NCEC

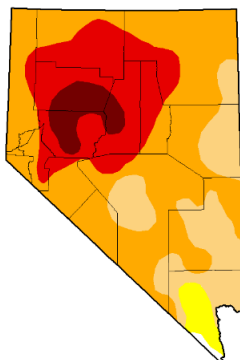
Note slight improvement in D2 to D3 categories during the past week.

Weekly Snowpack and Drought Monitor Update Report

State with D-4 Exceptional Drought

U.S. Drought Monitor

Nevada



December 3, 2013

(Released Thursday December 5, 2013)
Valid 7 a.m. Eastern

Statistics type: Traditional (D0-D4, D1-D4, etc.) Categorical (D0, D1, etc.)

Drought Condition (Percent Area)

Week	Date	Nothing	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	12/3/2013	0.39	99.61	96.81	77.66	28.55	5.37
Last Week	11/26/2013	0.39	99.61	96.81	77.66	28.55	5.37
3 Months Ago	9/3/2013	0.00	100.00	99.57	82.82	36.00	5.37
Start of Calendar Year	1/1/2013	0.00	100.00	94.13	62.22	16.46	0.00
Start of Water Year	10/1/2013	0.39	99.61	96.79	79.11	28.55	5.37
One Year Ago	12/4/2012	0.00	100.00	94.18	64.00	30.19	0.00

[View More Statistics](#)

Intensity:

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

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

Author(s):

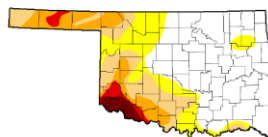
Michael Brewer, NOAA/NCDC

Note no changes occurred this past week.

State with D-4 Exceptional Drought

U.S. Drought Monitor

Oklahoma



Note no changes occurred this past week.

December 3, 2013

(Released Thursday December 5, 2013)
Valid 7 a.m. Eastern

Statistics type: Traditional (D0-D4, D1-D4, etc.) Categorical (D0, D1, etc.)

Drought Condition (Percent Area)

Week	Date	Nothing	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	12/3/2013	52.66	47.34	30.90	15.93	4.92	2.40
Last Week	11/26/2013	52.66	47.34	30.90	15.93	4.92	2.40
3 Months Ago	9/3/2013	26.20	73.80	44.64	26.25	9.89	0.54
Start of Calendar Year	1/1/2013	0.00	100.00	100.00	100.00	94.89	37.06
Start of Water Year	10/1/2013	21.74	78.26	43.00	17.62	4.42	1.45
One Year Ago	12/4/2012	0.00	100.00	100.00	99.64	90.56	34.56

[View More Statistics](#)

Intensity:

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

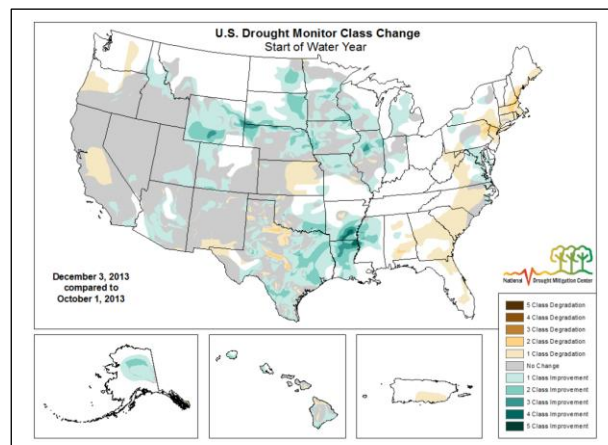
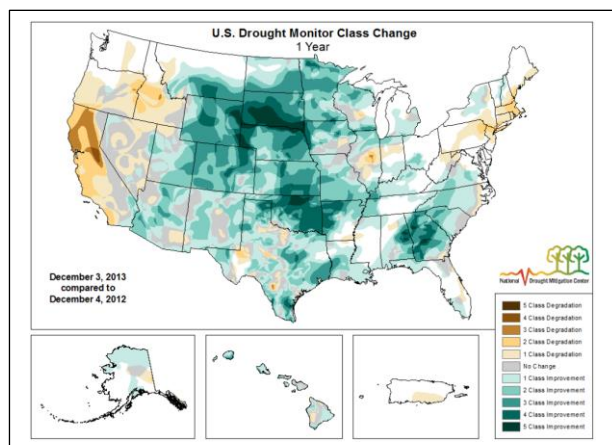
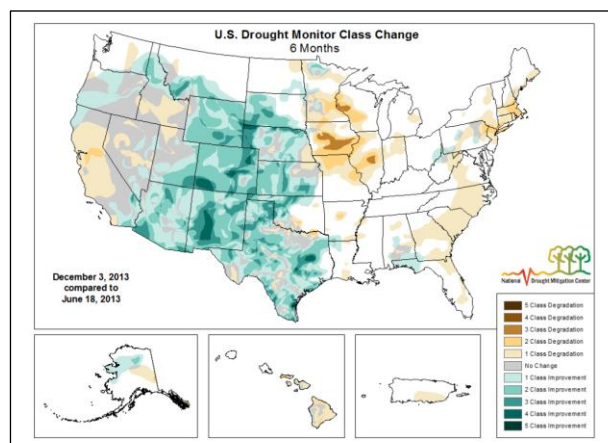
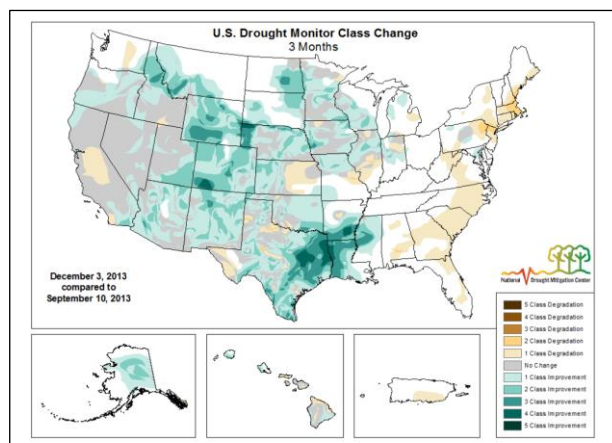
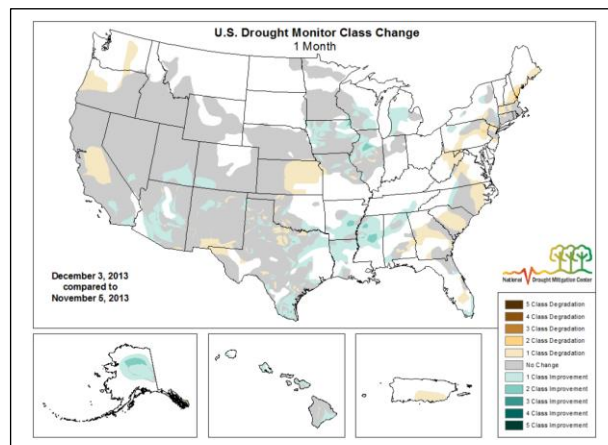
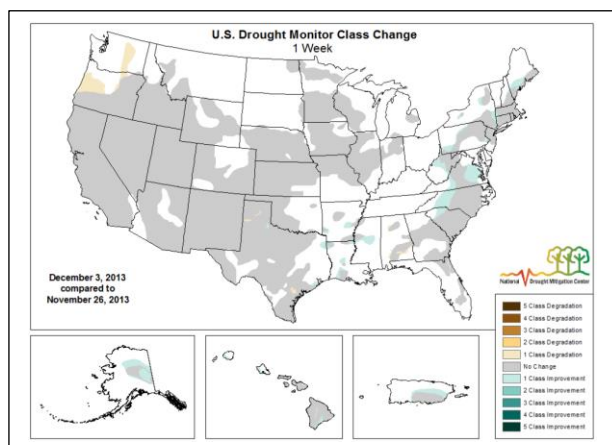
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying [text summary](#) for forecast statements.

Author(s):

Michael Brewer, NOAA/NCDC

Weekly Snowpack and Drought Monitor Update Report

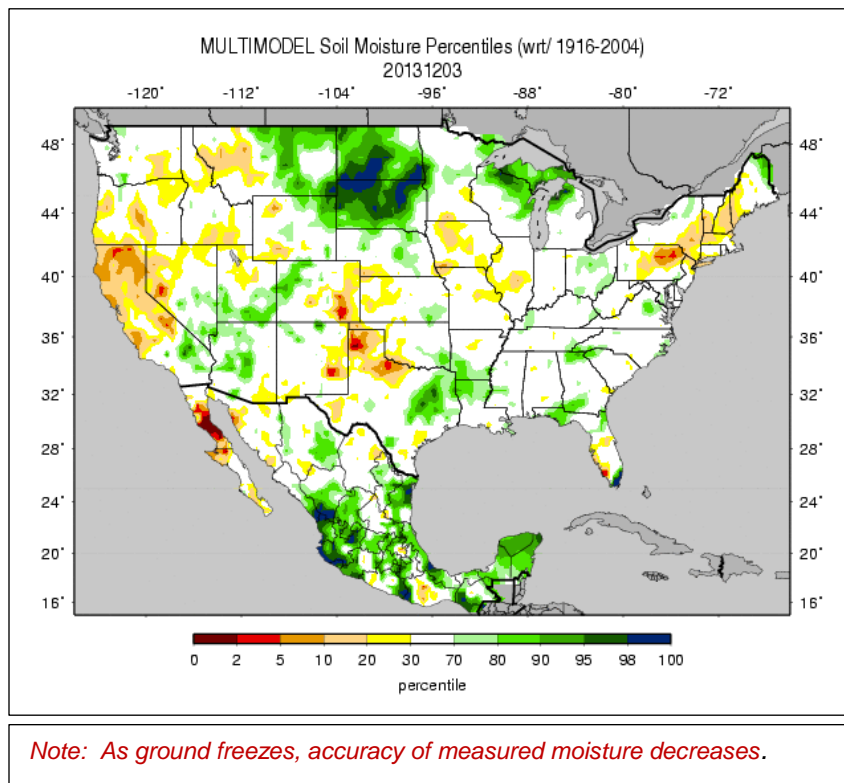
New Feature: [Changes in Drought Monitor Categories](#) (over various time periods)



Typical winter time changes to the drought monitor are usually minimal. However, over the past several months, drought conditions have improved significantly over a vast portion of the western half of the U.S.

Weekly Snowpack and Drought Monitor Update Report

Soil Moisture



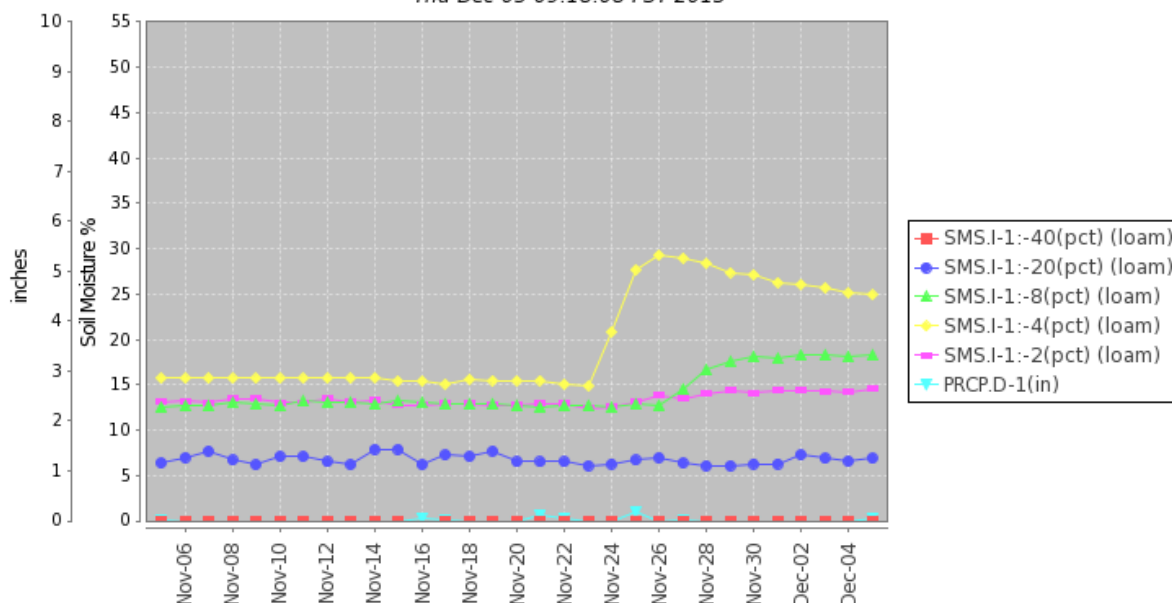
Soil moisture ranking in [percentile](#) as of December 03 shows considerable moisture over the northern Great Plains and northern Great Lakes. Dryness is noted over the panhandle of Texas, southeast Colorado, and southern New England.

Useful Hydrological Links: [Crop Moisture Index](#); [Palmer Drought Severity Index](#); [Standardized Precipitation Index](#); [Surface Water Supply Index](#); [Weekly supplemental maps](#); [Minnesota Climate Working Group](#); [Experimental High Resolution Drought Trigger Tool](#); [NLDAS Drought Monitor](#); [Soil Moisture](#).

[Soil Health-unlock your farm's potential](#)

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

Station (2137) MONTH=2013-11-05 (Daily) NRCS National Water and Climate Center - Provisional Data - subject to revision
Thu Dec 05 09:18:08 PST 2013



This NRCS resource shows a site over central Utah. [Soil](#) conditions vary considerably with depth.

Useful Agriculture Links: [Vegetation Drought Response Index](#); [Evaporative Stress Index](#); [Vegetation Health Index](#); [NDVI Greenness Map](#); [GRACE-Based Surface Soil Moisture](#); [North American Soil Moisture Network](#); [Monthly Wild Fire Forecast Report](#).

Weekly Snowpack and Drought Monitor Update Report

Complete National Drought Summary

The following complete **Drought Summary** is provided by this week's NDMC Author: [Michael Brewer, National Climatic Data Center, NOAA](#)

The East: "The intense storm that moved through the East just before Thanksgiving provided some needed relief for dryness in the region. Areas of abnormal dryness (D0) in Alabama, Georgia, North and South Carolina, Virginia, Pennsylvania, New York, New Hampshire, Connecticut, Massachusetts, and Maine were reduced as was Moderate Drought (D1) in Maine. Conversely, Moderate Drought (D1) in southern Alabama expanded slightly in the area that missed most of the precipitation.

The South and Southern Plains: Beneficial rains fell from eastern Texas, through southern Louisiana, and into Mississippi. Areas of Abnormal Dryness (D0) were alleviated in those areas. The lack of precipitation in other parts of Texas led to an expansion of Extreme (D3) and Severe Drought (D2) in the Panhandle and Severe (D2) and moderate Drought (D1) in the southern part of the state. Despite other parts of the region receiving little precipitation, drought status did not change. Cool temperatures helped mitigate impacts from the lack of precipitation.

The Central and Northern Plains and Midwest: This area remained status quo for the week. Moderate to cool temperatures and areas of frozen soil led to no change in the drought depiction in the region.

Hawaii, Alaska and Puerto Rico: A heavy rain event over Kauai and Oahu, in combination with several other similar events in the past month, led to improvements on those islands. Moderate Drought (D1) was eliminated and areas of Abnormal Dryness (D0) were reduced. On the Big Island of Hawaii, dry conditions continue in the central part of the island. Coincidentally, Severe (D2) and Moderate Drought (D1) expanded in the area. Elsewhere in the Big Island, recent rainfall led to improvements to Severe Drought (D2) in the south and Moderate Drought (D1) was abated in the east. On Puerto Rico, heavy rainfall was experienced this week including a record rainfall report for San Juan on December 1. Abnormal Dryness (D0) was scaled back as a result. In Alaska, areas of Moderate Drought (D1) and Abnormal Dryness (D0) were reduced in the interior of the state, consistent with above normal precipitation for the last few weeks abating drought impacts there.

Looking Ahead: During the December 5-9, 2013 time period, precipitation is forecast along much of the eastern U.S., from the Southern Plains extending into New England. An above normal chance of precipitation is also present across areas of the West, particularly in the Southwest. Temperatures are expected to be below-normal across the country, with the exception of the East Coast during this time.

For the ensuing 5 days (December 10-14, 2013), the odds favor above-normal temperatures in the Southeast and in northern Alaska. Normal to below-normal temperatures are favored across the rest of the CONUS and in southern and central Alaska. Above normal-precipitation is likely across most of the eastern third of the country, in northern Alaska, and from the Pacific coast, through the Rockies and into the northern Plains. The eastern Southwest and the Central and Southern Plains, as well as the southwestern Midwest and southern Alaska are likely to see below-normal precipitation."

State Activities

[State government drought activities](#) can be tracked through their drought plans. NRCS Snow Survey and Water Supply Forecasting (SSWSF) Program State Office personnel are participating in state drought committee meetings and providing the committees and media with appropriate [SSWSF information](#). Additional information describing the [tools](#) available from the Drought Monitor can also be found at the [U.S. Drought Portal](#).

Weekly Snowpack and Drought Monitor Update Report

More Information

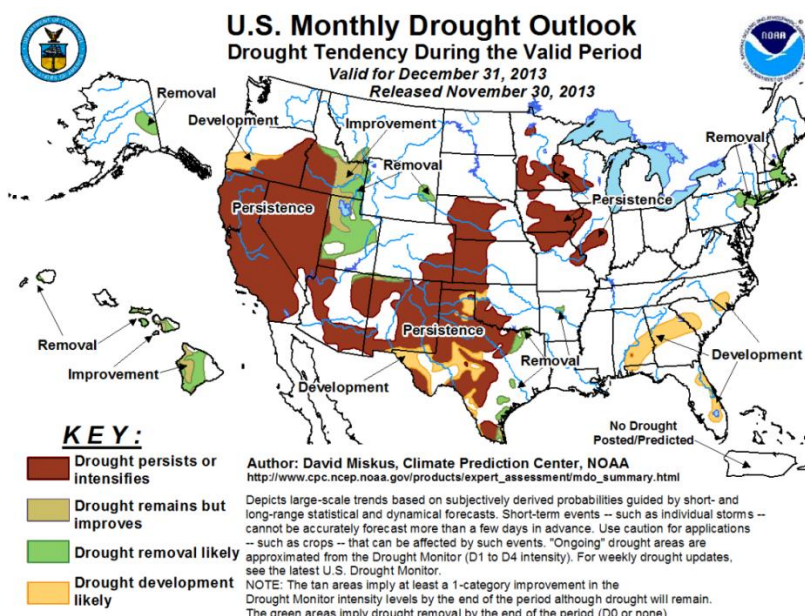
The National Water and Climate Center (NWCC) [Homepage](#) provides the latest available snowpack and water supply information. This document is available [weekly](#). CONUS Snowpack and Drought Reports from 2007 are available online. Reports from 2001-2006 are available on request.

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

/s/

Micheal L. Golden
Deputy Chief, Soil Science and Resource Assessment

Drought Outlook

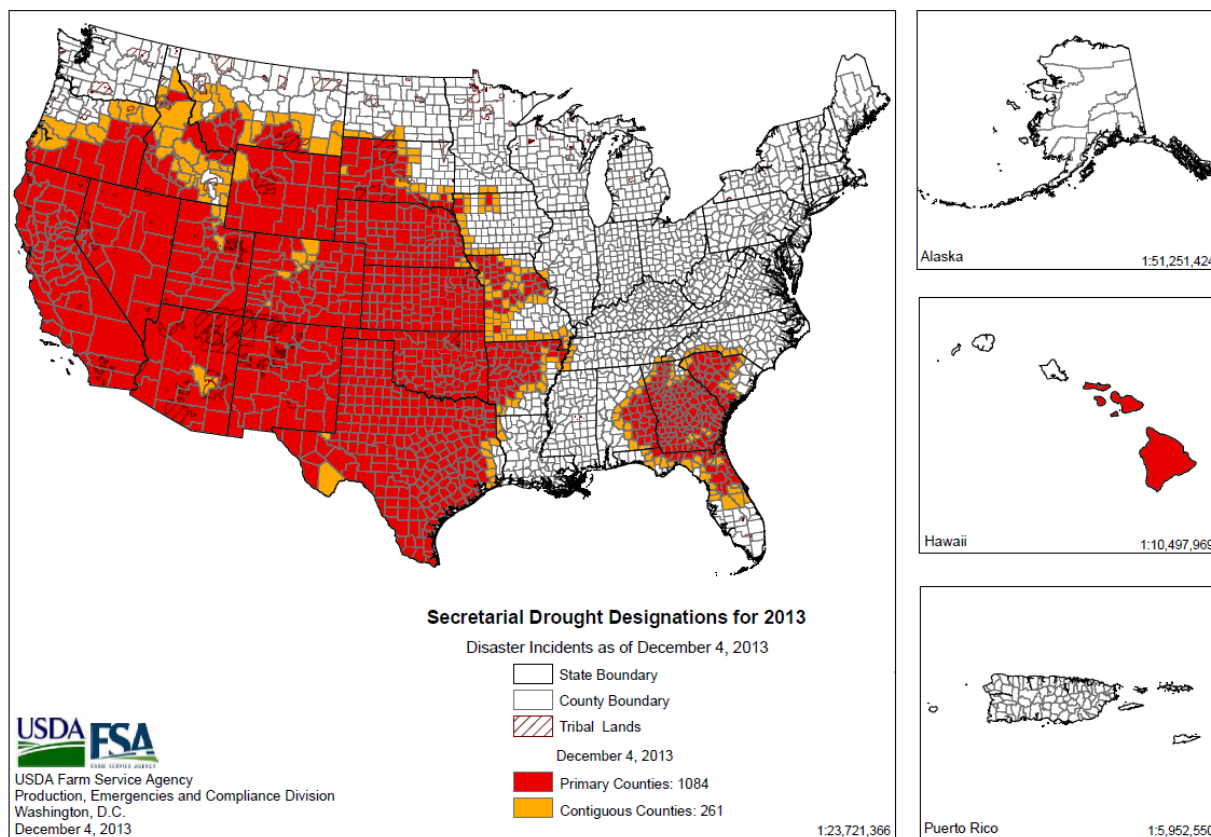


U.S. Seasonal Drought Outlook for December shows:

- Drought is expected to improve over parts of southeastern Idaho, northern and central Utah, eastern Texas, and southern New England. Elsewhere, drought is expected to persist over much of the Great Basin, Southwest, southern Rockies, the Upper Mississippi River Valley, and south-central Plains. Drought is expected to develop over part of the southeastern states.

- ✓ Also see: [National Significant Wildland Fire Potential Outlook](#) (updated on the 1st of each month) and contains a nice content summary of the previous month's conditions.

2013 Secretarial Drought Designations - All Drought



Refer to the USDA Drought Assistance [website](#) and [National Sustainable Agriculture Information Service](#). Read about the new [USDA Regional Climate Hubs](#).

Supplemental Drought Information

The “Ag in Drought” file that had been previously posted each week by NDMC’s Brian Fuchs is now [available](#). Archived files are also [available](#).

- “There was negligible change in U.S. drought coverage during the seven-day drought-monitoring period, as tranquil weather prevailed in the wake of a pre-Thanksgiving storm across the South and East. On December 3, drought coverage stood at 30.59% of the Lower 48 States. This is an increase of two one-hundredths of a percentage point from a week ago. There was improvement, however, in the Northeast region, with drought coverage declining in that twelve-state area from 7.79 to 7.50% on the strength of heavy precipitation on November 26-27.

- Parts of the six-state Southeast region also experienced a beneficial boost in soil moisture from the pre-Thanksgiving storm. As a result, Southeastern coverage of abnormal dryness (D0) dipped to 42.99% on December 3, down from 56.87% two weeks ago. According to USDA, topsoil moisture rated very short to short improved from 37 to 15% in North Carolina and from 51 to 36% in Florida during the week ending December 1.

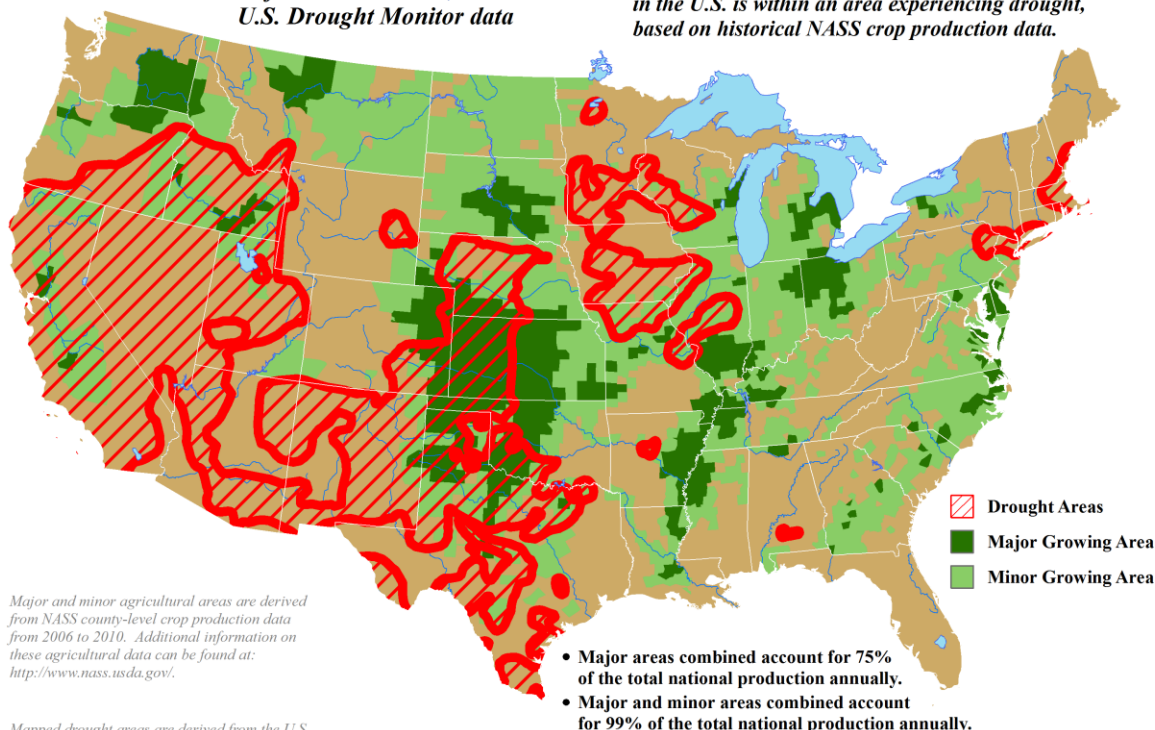
- Since the current drought-monitoring period ended (7 a.m. EST on December 3), a new winter storm has begun to unfold across the U.S. Improvements related to this storm will be reflected in next week’s U.S. Drought Monitor, to be released on December 12.

- Hay in drought (21% of the production area), winter wheat in drought (30% of the production area), and cattle in drought (34% of the U.S. inventory) were unchanged from week ago.

U.S. Winter Wheat Areas Experiencing Drought

Reflects December 3, 2013
U.S. Drought Monitor data

Approximately 30% of the winter wheat grown
in the U.S. is within an area experiencing drought,
based on historical NASS crop production data.



USDA Agricultural Weather Assessments
World Agricultural Outlook Board

- Weather outlook: During the next two days, accumulating snow will spread from Oklahoma to southern New England, while a disruptive ice storm will occur from central Texas into the Ohio Valley. Meanwhile, a southbound storm along the Pacific Coast will produce snow in parts of Oregon, California, and the Intermountain West on December 6-7. That storm will eventually result in another round of wintry precipitation, primarily on December 8, in the Mid-Atlantic States. Five-day precipitation totals of two to six inches can be expected from the Mid-South into the northern Mid-Atlantic States. Elsewhere, very cold conditions will persist at least into early next week from the Pacific Coast to the Mississippi Valley, with additional freezes expected in California's winter agricultural areas."

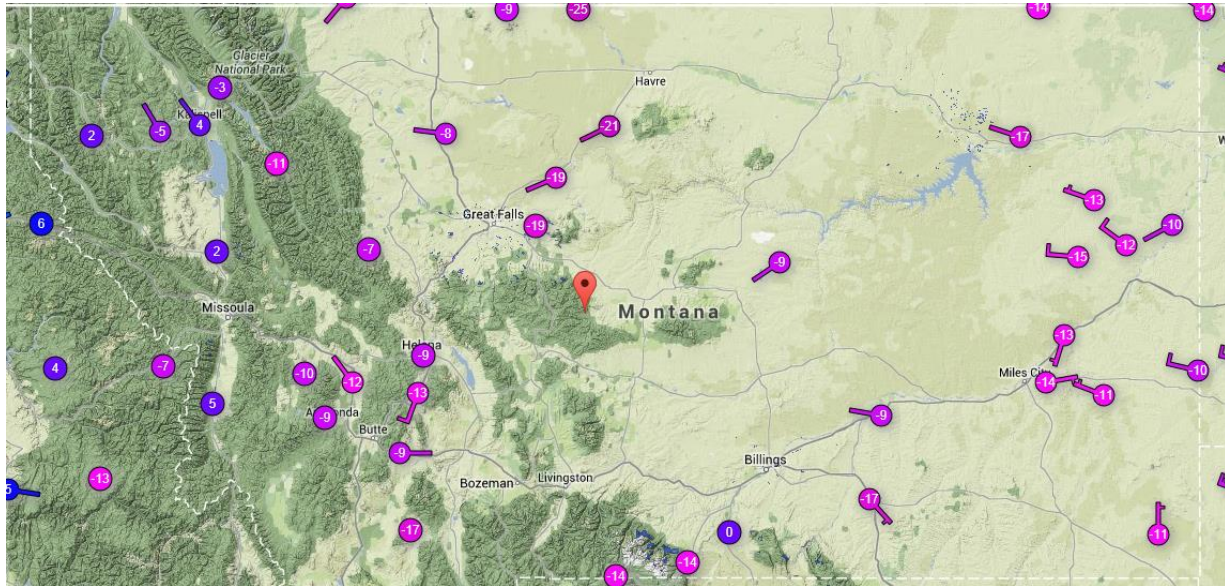
.- Provide by Brad Rippey, USDA

Snow over New Mexico this morning



[Click to view live](#)

Weekly Snowpack and Drought Monitor Update Report



A cold morning over Montana