

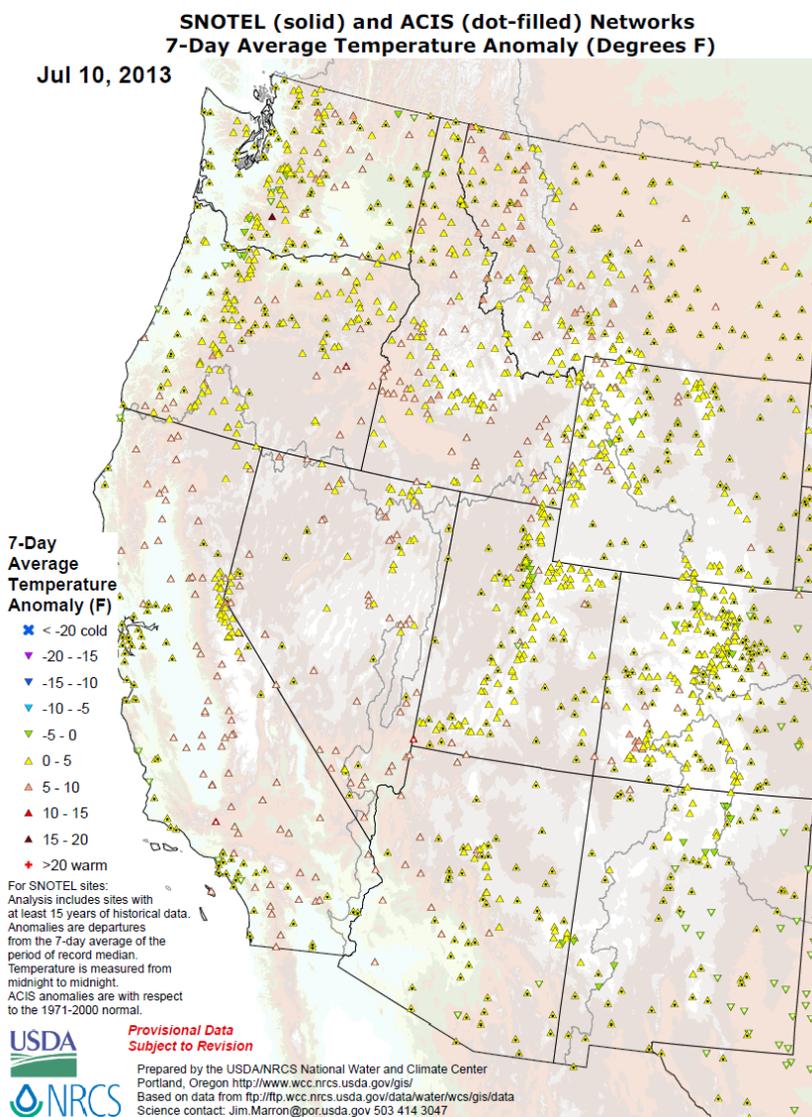


Natural Resources Conservation Service
 P.O. Box 2890
 Washington, D.C. 20013

Weekly Snowpack / Drought Monitor Update 11 July 2013

Temperature.....	1	Complete National Drought Summary	10
Precipitation.....	3	State Activities	11
Weather and Drought Summary	5	For More Information.....	12
Soil Moisture.....	8	Drought Outlook (Forecast for July).....	12
Soil Climate Analysis Network (SCAN)	8	Supplemental Data.....	13
U.S. Historical Streamflow	9	Drought Impacts Update	13

Temperature



SNOTEL and ACIS 7-day temperature anomaly ending yesterday morning reveals above normal values across the West.

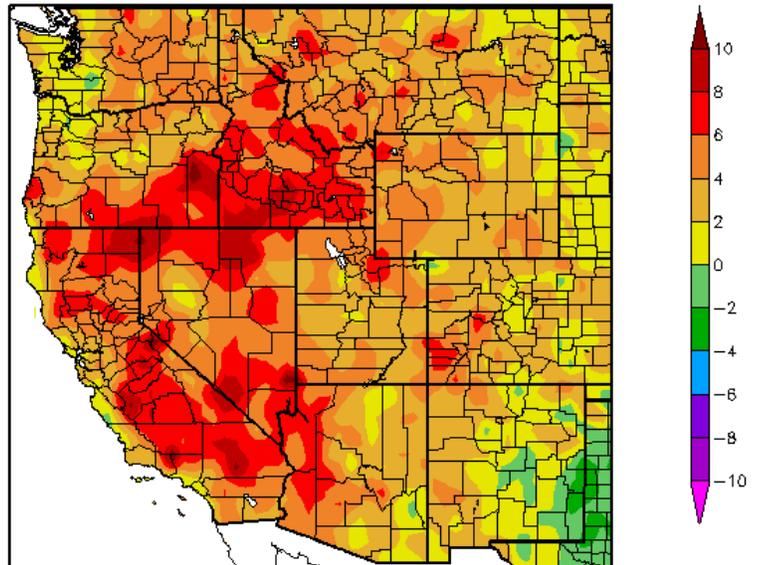
Weekly Snowpack and Drought Monitor Update Report

[ACIS 7-day](#) average temperature anomalies, ending Wednesday morning, show the greatest positive temperature departures scattered across the northern Great Basin and southern California (>+8°F). The greatest negative departures occur over southeast New Mexico (<-2°F).

This map currently does not use SNOTEL data, but is expected to later this summer.

For more figures, see the Western Water Assessment's Intermountain West Climate [Dashboard](#). See the [Westwide Drought Tracker](#) for more maps.

Departure from Normal Temperature (F)
7/3/2013 – 7/9/2013



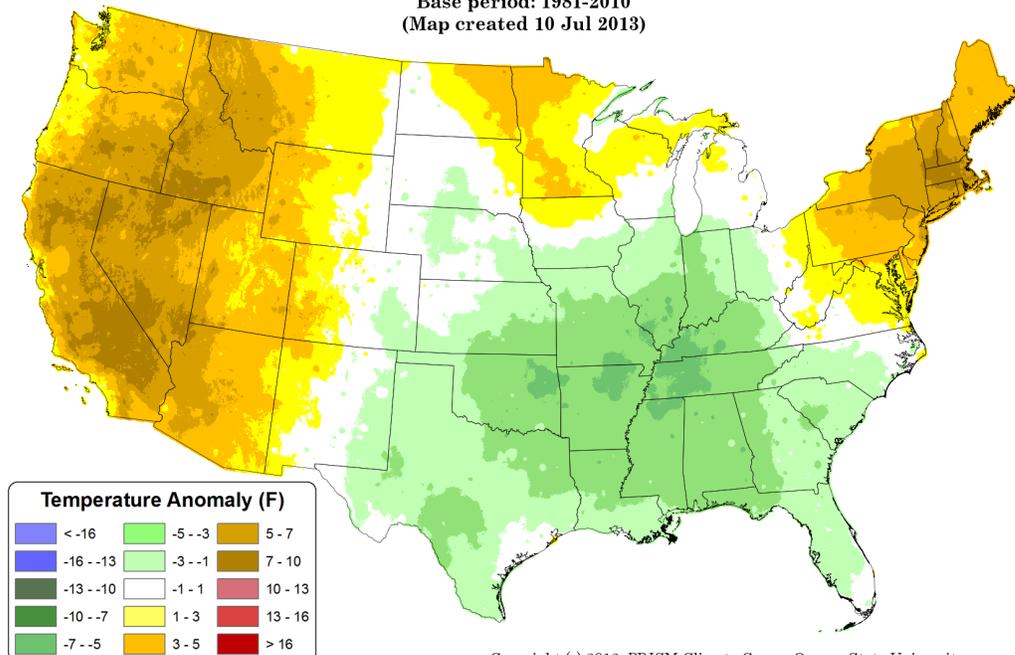
Generated 7/10/2013 at HPRCC using provisional data.

Regional Climate Centers

Daily Mean Temperature Anomaly: 01 July 2013 - 09 July 2013
Period ending 7 AM EST 09 Jul 2013
Base period: 1981-2010
(Map created 10 Jul 2013)

This preliminary [PRISM](#) temperature map, updated daily, will be available to the public by early fall.

The map contains all available network data, including SNOTEL data, and will be updated periodically as additional data become available and are quality controlled.



Copyright (c) 2013, PRISM Climate Group, Oregon State University

In this preliminary map, the first third of July has been warmer than normal across the western third of the country, the northeast High Plains, and New England. The southern plains, mid-Mississippi River Valley, and Southeast have been cooler than normal.

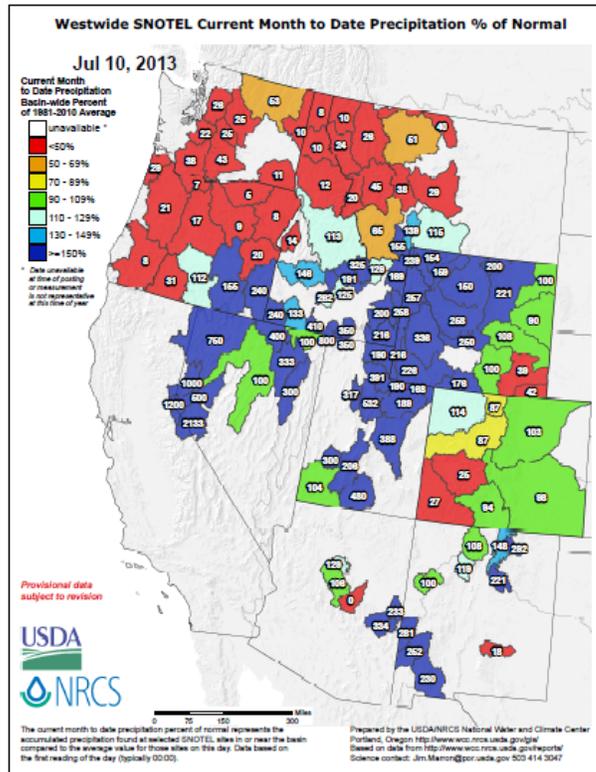
Weekly Snowpack and Drought Monitor Update Report

Precipitation

SNOTEL [month to date](#) (early July) precipitation percent of normal pattern shows scattered moisture has fallen across much of the middle and southern regions of the West.

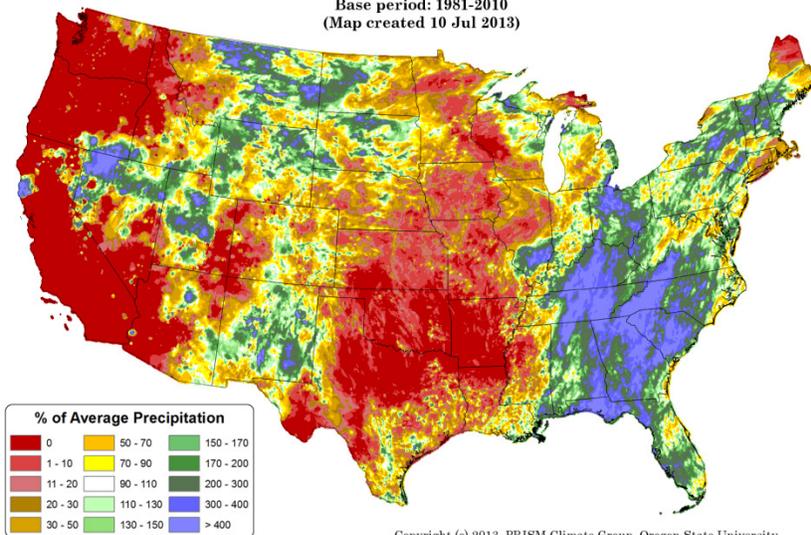
Some of this moisture reflects the start of the Southwest Monsoon and enhanced thunderstorm activity.

The typically dry Pacific Northwest has experienced significantly lesser amounts.



Click image for enlarged version

Total Precipitation Anomaly: 01 July 2013 - 09 July 2013
Period ending 7 AM EST 09 Jul 2013
Base period: 1981-2010
(Map created 10 Jul 2013)



This preliminary [PRISM](#) precipitation map, updated daily, will be available to the public by early fall. It contains all available network data, including SNOTEL data, and will be updated periodically as additional data become available and are quality controlled.

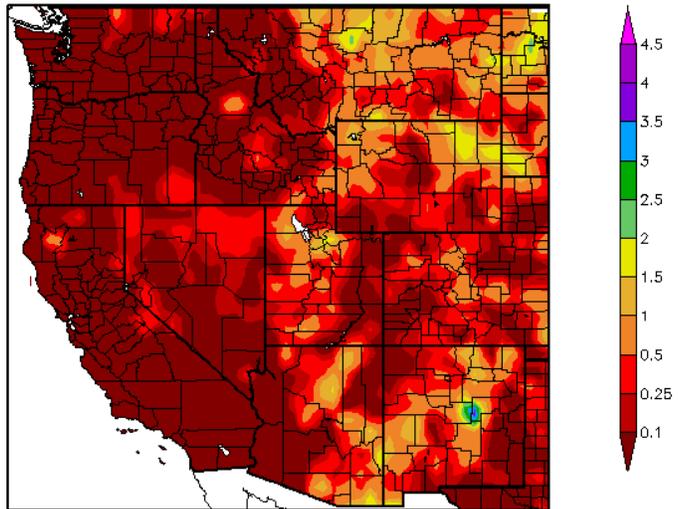
For July, the precipitation pattern has been one that has favored parts of the Interior West, Southwest, northern Rockies, and especially the eastern third of the nation. Drier conditions dominated the southern through northeastern plains, with extreme lack of moisture over much of the west coast states.

Weekly Snowpack and Drought Monitor Update Report

[ACIS](#) 7-day average precipitation amounts for the period ending July 9 show scattered precipitation confined to the eastern half of the West. Elsewhere, rainfall was negligible or not substantial for ending the existing drought.

This map currently does not use SNOTEL data, but is expected to later this summer.

Precipitation (in)
7/3/2013 – 7/9/2013



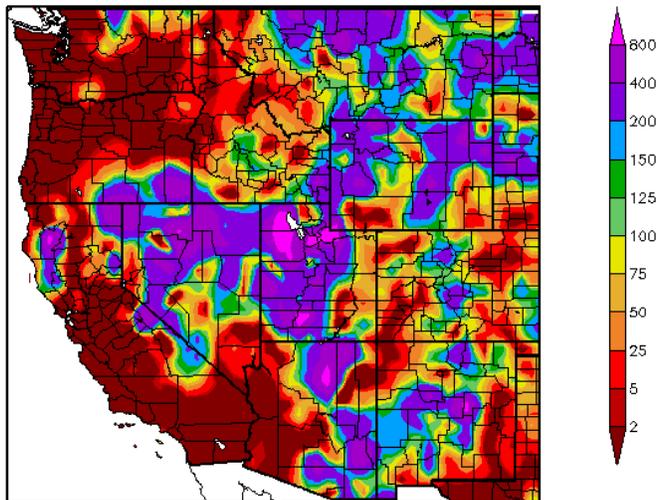
Generated 7/10/2013 at HPRCC using provisional data.

Regional Climate Centers

In this [map](#), the same regions have high percent of normal as the above map, but areas that did not normally receive much precipitation show very high percentages (e.g., northern California and southwestern Nevada). The impact of the Southwest Monsoon is apparent over much of the Four Corner States.

This map currently does not use SNOTEL data, but is expected to later this summer.

Percent of Normal Precipitation (%)
7/3/2013 – 7/9/2013



Generated 7/10/2013 at HPRCC using provisional data.

Regional Climate Centers

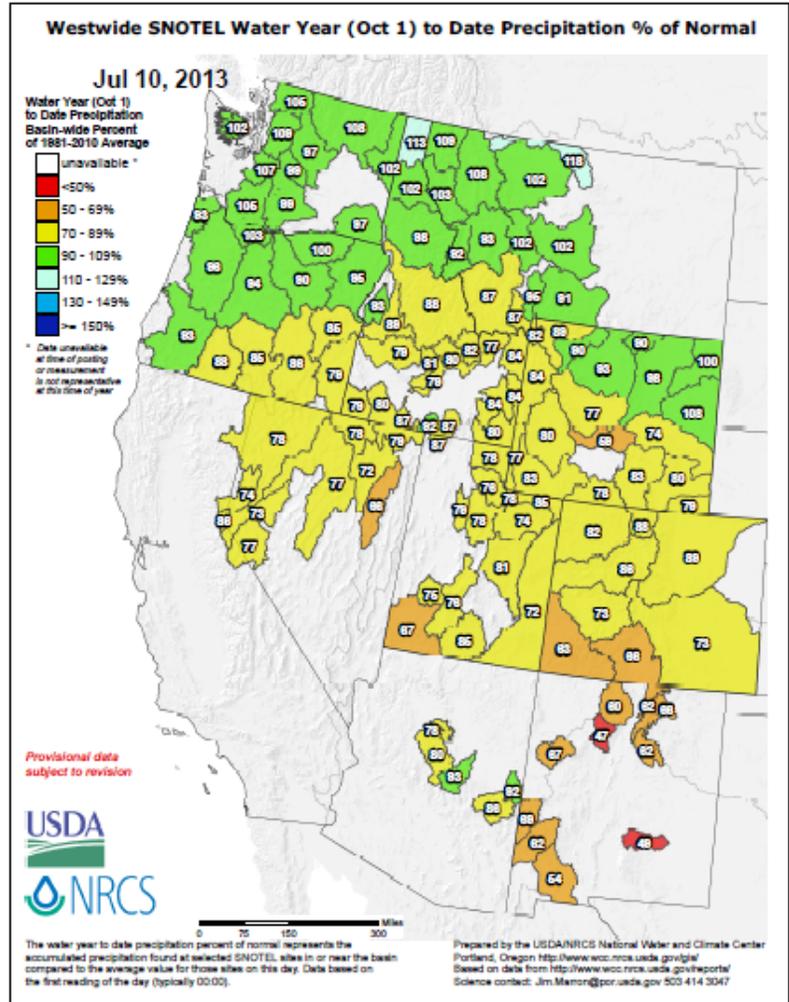
Weekly Snowpack and Drought Monitor Update Report

For the [2013 Water Year](#) that began on 1 October 2012, the pattern continues to resemble La Niña (i.e., wetter northern tier).

Southeastern Oregon, southern Idaho, and northern Nevada have bucked this tendency over the northern tier states with less precipitation. Southwestern Utah and southwestern Colorado, along with all of New Mexico, are experiencing considerable deficits.

For the remainder of this water year, values should not change significantly from the depiction to the right.

For additional information, daily reports by SNOTEL sites are available [here](#).



Click image for larger version

Weather and Drought Summary

Western Drought Summary – July 9, 2013

The following **Weather and Drought Summary** is provided by this week's NDMC Author: [Matthew Rosencrans, NOAA/NWS/NCEP/Climate Prediction Center](#).

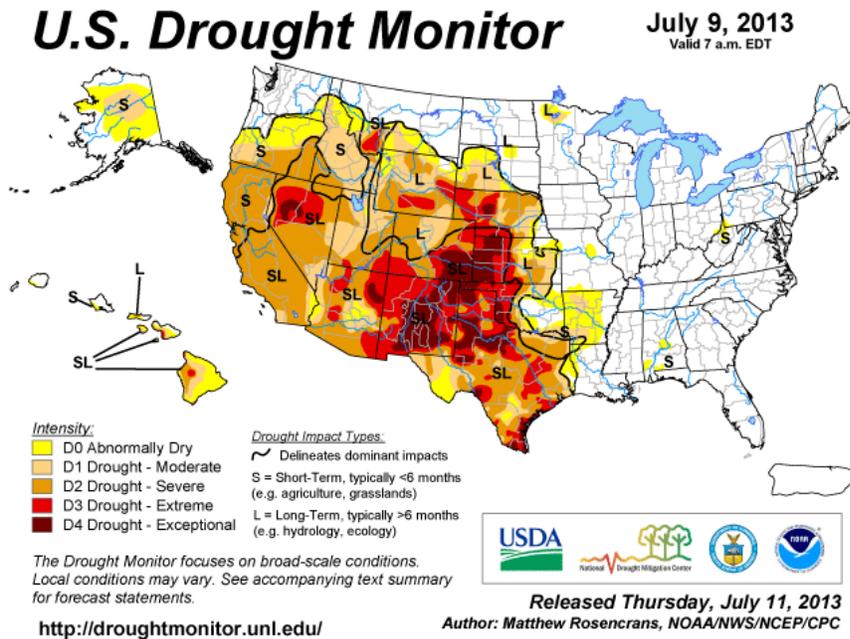
Weather Summary: “During the past week, a strong and persistent area of high pressure dominated the circulation over the western half of the lower 48 states, with some monsoon moisture bringing isolated rains (0.5 0 - 2.8 inches) to the southwest. Southerly flow around the Bermuda High supplied ample moisture and an upper-level trough provided the energy for widespread heavy rains (1.0 – 10.4 inches) across the southeast, triggering flooding from the Gulf Coast to the Great Lakes. As the moisture thinned out, rains across the northeast were sparser with isolated heavy rains across New York and Vermont. Dry conditions continued across the Pacific Northwest.”

Southwest and West: “Some monsoon moisture streamed northward over the Southwest, making it as far north as the Great Salt Lake, bringing isolated rains to Utah, Colorado, Arizona, and New Mexico. The heaviest rains (1.0 – 2.6 inches) were confined to southeastern Arizona and the highest of terrain in central New Mexico, therefore the rains had little impact on the drought in New Mexico. Some small reductions in drought intensity were noted in Arizona where SPI values rebounded slightly in response to the

Weekly Snowpack and Drought Monitor Update Report

rains. Likewise, the same plume of moisture brought rains to the Salt Lake City area, prompting the removal of some moderate drought (D1) from that region.”

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



Current [Drought Monitor](#) weekly summary. The exceptional D4 levels of drought are scattered across the western Corn Belt of the Plains into southeastern Colorado and much of New Mexico. For more drought news, see [Drought Impact Reporter](#).

The latest [drought indicator blend and component percentiles](#) spreadsheet is a great resource for climate division drought statistics. This link is for the latest [Drought Outlook](#) (forecast).

- [U.S. drought expands for 3rd straight week- US drought monitor](#) – 7/3 US
- [The Water's Fine](#) – 6/27 US

Weekly Snowpack and Drought Monitor Update Report

See:

Drought Monitor for the [Western States](#)
Drought Impact Reporter for [New Mexico](#)
[California Data Exchange Center](#) & [Flood Management](#)

News Stories:

- [Committee advances water-supply development bill](#)
- [Tehama County drought finding sought – 7/3 CA](#)
- [19 firefighters die in Ariz. Blaze – 7/1 AZ](#)
- [Feds approve N.M. horse slaughterhouse – 6/29 NM](#)
- [Navajo Nation declares drought emergency – 7/3 4-Corners](#)
- [Cloudcroft Declares Water Emergency - 7/3 NM](#)
- [Crater Lake park to truck in water during shut-off – 7/1 OR](#)
- [Irrigation water runs out for local farmers – 7/1 NM](#)

U.S. Drought Monitor

July 9, 2013
Valid 7 a.m. EST

West

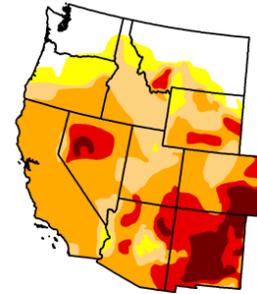
	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	15.20	84.80	76.41	57.10	20.01	6.68
Last Week (07/02/2013 miss)	14.95	85.05	76.67	57.09	20.18	6.72
3 Months Ago (04/09/2013 miss)	19.71	80.29	63.56	41.59	16.73	2.41
Start of Calendar Year (01/01/2013 miss)	24.39	75.61	69.31	45.04	18.01	2.15
Start of Water Year (09/25/2012 miss)	15.12	84.88	77.15	43.65	16.85	1.77
One Year Ago (07/03/2012 miss)	22.87	77.13	64.15	46.88	14.70	0.48

Intensity:



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, July 11, 2013
National Drought Mitigation Center.

Note that there was little change in drought conditions this past week.

NIDIS [Upper Colorado River Regional Drought Earlier Warning System](#)

[July Southwest Climate Podcast: The Monsoon Amplified Recent Fire Risk](#)

U.S. Drought Monitor

July 9, 2013
Valid 7 a.m. EST

High Plains

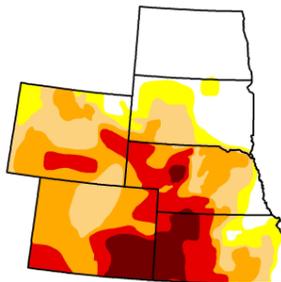
	Drought Conditions (Percent Area)						
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4	
Current	24.14	75.86	66.22	47.62	23.36	8.03	
Last Week (07/02/2013 miss)	24.52	75.48	66.68	46.80	22.98	8.03	
3 Months Ago (04/09/2013 miss)	4.96	95.04	91.67	80.57	53.33	11.70	
Start of Calendar Year (01/01/2013 miss)	1.54	98.46	93.01	86.20	60.25	26.99	
Start of Water Year (09/25/2012 miss)	0.00	100.00	98.91	83.80	61.28	24.35	
One Year Ago (07/03/2012 miss)	8.72	91.28	73.87	49.96	20.25	1.13	

Intensity:



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, July 11, 2013
National Drought Mitigation Center.

No significant changes during this past week.

Region with D-4 Exceptional Drought

See [Kansas Drought Update](#).

- [Is the Recent Drought Over in Nebraska? – 7/2 NE](#)
- [Crowds flock to KOTA Territory reservoir despite low water levels – 7/3 SD](#)

Region with D-4 Exceptional Drought

Check out the Texas Drought [Website](#). See [Texas Reservoirs](#).

[Grasshoppers break out — but not as copiously as in 2011](#) – 6/29 TX

U.S. Drought Monitor

July 9, 2013
Valid 7 a.m. EST

South

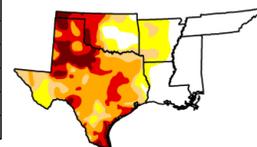
	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	31.12	68.88	54.97	42.91	21.56	7.32
Last Week (07/02/2013 miss)	30.80	69.20	49.62	39.59	20.00	7.32
3 Months Ago (04/09/2013 miss)	29.39	70.61	57.93	43.15	19.96	6.98
Start of Calendar Year (01/01/2013 miss)	21.18	78.82	63.69	50.50	32.80	10.98
Start of Water Year (09/25/2012 miss)	24.13	75.87	66.61	51.50	29.86	9.11
One Year Ago (07/03/2012 miss)	8.29	91.71	88.39	96.08	8.80	0.00

Intensity:



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

<http://droughtmonitor.unl.edu>

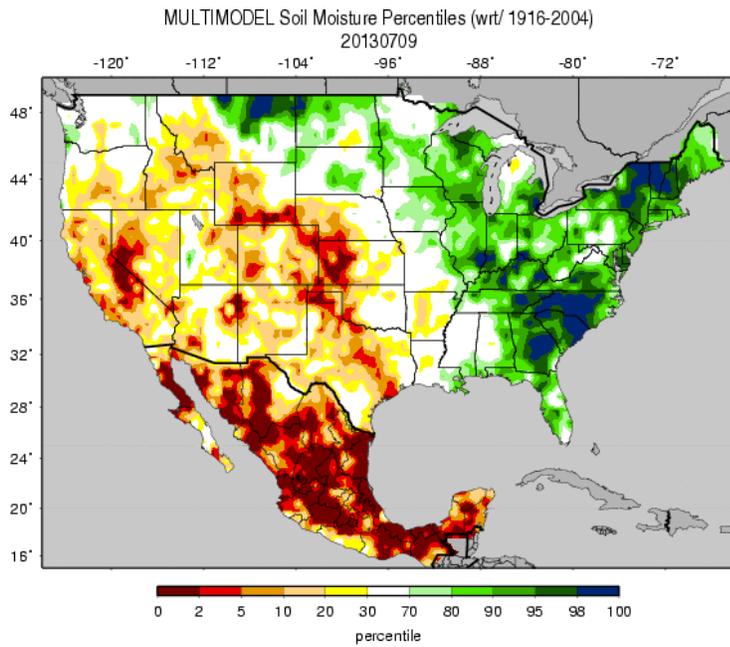


Released Thursday, July 11, 2013
National Drought Mitigation Center.

Note some deterioration during this past week.

Weekly Snowpack and Drought Monitor Update Report

Soil Moisture

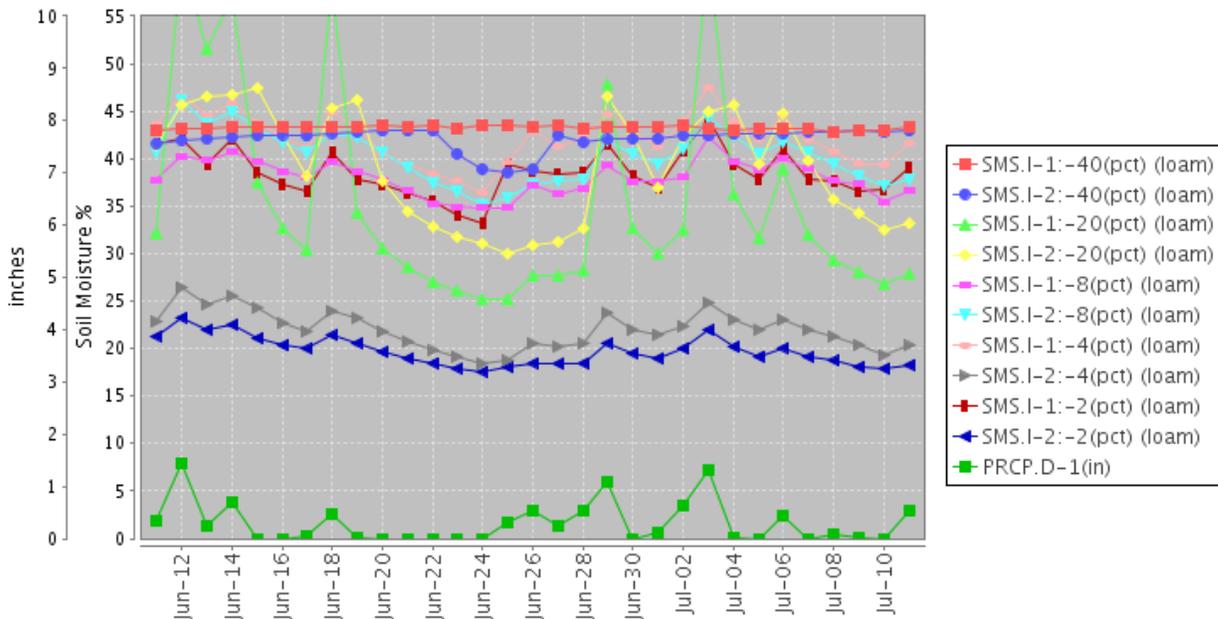


Soil moisture ranking in [percentile](#) as of July 9 shows significant dryness over the western Great Basin, eastern California, eastern Arizona, central Rockies, and the southern plains. Excess moisture is noted over northern Montana and much of the eastern seaboard.

Useful Hydrological Links: [Crop Moisture Index](#); [Palmer Drought Severity Index](#); [Standardized Precipitation Index](#); [Surface Water Supply Index](#); [Weekly supplemental maps](#), [Minnesota Climate Working Group](#).

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

Station (2042) MONTH=2013-06-11 (Daily) NRCS National Water and Climate Center - Provisional Data - subject to revision as of Thu Jul 11 04:25:39 PDT 2013



This NRCS resource shows a site in southern Vermont. Note soil moisture responding to recent rains. Soils are near saturation at all levels.

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](#).

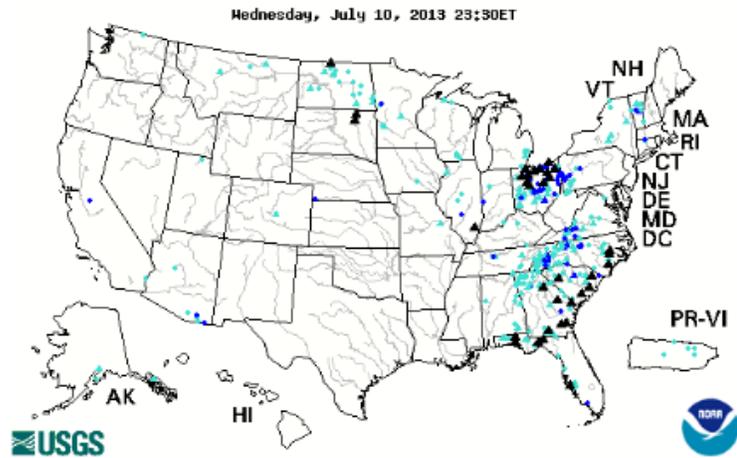
Weekly Snowpack and Drought Monitor Update Report

U.S. Historical Streamflow

Flooding has increased significantly over northern Ohio and along the southeast coastal regions (e.g., NC, SC, GA, and n. FL).

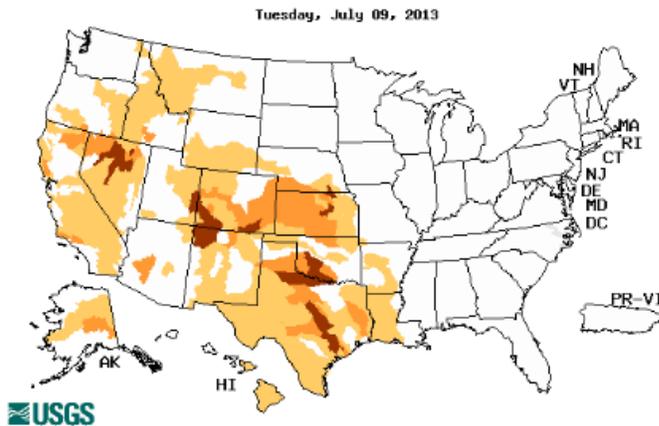
See the USGS [National Water Information System Mapper](#).

Map of flood and high flow condition (United States)



Explanation - Percentile classes		
95-98	>= 99	River above flood stage
△ Streamgage with flood stage	○ Streamgage without flood stage	

Map of below normal 7-day average streamflow compared to historical streamflow for the day of year (United States)



Severe conditions exist over southeastern and northern Texas, southwestern Oklahoma, the Four Corners, and north-central Nevada.

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	

Weekly Snowpack and Drought Monitor Update Report

Complete National Drought Summary

The following complete **Weather and Drought Summary** is provided by this week's NDMC **Author**: [Matthew Rosencrans, NOAA/NWS/NCEP/Climate Prediction Center](#)

National Drought Summary -- July 9, 2013

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/>.

Weather Summary: “During the past week, a strong and persistent area of high pressure dominated the circulation over the western half of the lower 48 states, with some monsoon moisture bringing isolated rains (0.5 - 2.8 inches) to the southwest. Southerly flow around the Bermuda High supplied ample moisture and an upper-level trough provided the energy for widespread heavy rains (1.0 – 10.4 inches) across the southeast, triggering flooding from the Gulf Coast to the Great Lakes. As the moisture thinned out, rains across the northeast were sparser with isolated heavy rains across New York and Vermont. Dry conditions continued across the Pacific Northwest.

New England and mid-Atlantic: Deep, southerly flow brought significant moisture northward from the Gulf of Mexico to the Great Lakes and Northeast. Significant rains (0.5 – 4.4 inches fell) across New England, with lower amounts over most of the Mid-Atlantic, except western Virginia where rainfall totals exceeded 2.0 inches. The rains that fell across southwestern Pennsylvania prompted the removal of some abnormal dryness (D0) from that region.

Southeast: Moderate to very heavy rains (1.0 – 10.4 inches) fell on most of the remaining D0 over northern Florida and southern Alabama. Therefore, the remaining area of abnormal dryness (D0) was trimmed considerably across Alabama and Florida. Streamflows across southern Alabama have responded to where no areas of dryness were evident when considering streamflow values. The remaining D0 areas are based in medium term deficits at 30 and 60 days (3.5 and 5.0 inches, respectively).

The Midwest and Northern Plains: Some rains (0.5 – 1.7 inches) fell on the drought area in Minnesota, so some minor adjustments were made to the drought depiction there, with D1 being trimmed slightly where the heaviest rains fell. The rains that swept across South Dakota were not enough in amount or in coverage to drive a change in conditions.

The Central and Southern Plains, and Lower Mississippi River Valley: Dry conditions persisted across most of the southern Great Plains and Lower Mississippi River Valley. The temperatures were generally below normal (1 – 4 deg F) for the week, which still means warm across that portion of the lower 48 states. Accordingly, the coverage of drought conditions was increased across the Southern Great Plains.

D0 was expanded to cover much of Arkansas and northwestern Louisiana, supported by SPI-3 (Standardized Precipitation Index over 3 months) values. In a reassessment of conditions over Arkansas, a 2-category degradation (introduction of D1, moderate drought, where no drought was indicated in the previous map) was included as SPI-3, SPI6, and USGS (United States Geological Survey) real-time, 7-, and 14-day stream flows all indicated a rapid drying of the area.

Much of the same conditions were present across Oklahoma and Texas, so drought conditions intensified over those two states. Accordingly, D2 (severe drought), D1 (moderate drought) and D0 (abnormal dryness) were expanded across much of eastern Texas. The impacts from the ongoing drought are

Weekly Snowpack and Drought Monitor Update Report

becoming more intense as the drought lingers. For instance, the Brazosport Water Authority implemented Stage 3 of its Drought Contingency Plan. Inflows into the Lower Colorado River have trickled down to 10 cfs (from the Llano River) with Lake Travis and Lake Buchanan at 35 and 37 percent of capacity, respectively. Medina Lake, near San Antonio is down to 5 percent capacity. Farther north and west, across Oklahoma and southeastern Colorado, reports indicate sage brush and large trees dying and even some cacti turning brown. These reports come from the areas that have been in D4 (exceptional drought) for quite some time. The percent of topsoil reports as short or very short from the USDA National Agricultural Statistical Service (NASS) across Texas increased by 13 percentage point, while it increased by 25 percentage points across Oklahoma.

Some drought expansion was also introduced across Kansas, where topsoil moisture reports indicated an increase of 38 percentage points for the portion of reports indicating short or very short moisture amounts.

Southwest and West: Some monsoon moisture streamed northward over the Southwest, making it as far north as the Great Salt Lake, bringing isolated rains to Utah, Colorado, Arizona, and New Mexico. The heaviest rains (1.0 – 2.6 inches) were confined to southeastern Arizona and the highest of terrain in central New Mexico, therefore the rains had little impact on the drought in New Mexico. Some small reductions in drought intensity were noted in Arizona where SPI values rebounded slightly in response to the rains. Likewise, the same plume of moisture brought rains to the Salt Lake City area, prompting the removal of some moderate drought (D1) from that region.

Hawaii, Alaska, and Puerto Rico: Over Hawaii, minimal rains were reported. D0 (abnormal dryness) was introduced to the slopes of Kauai and Oahu, where the lower elevations of the leeward slopes were drier than normal for both islands. On the Big Island daily rainfall frequency was near normal on the east-facing slopes but the average rainfall per day was well below average, so D0 was expanded. Additional intensification was pursued as June rainfall totals were well below normal over the higher terrain and the leeward portions of the Big Island. USDA Farm Service Agency reported that farmers destocked pastures in the existing D3 area in the northwest corner of the Big Island, consistent with the current depiction.

Some rains (0.5 – 1.7 inches) fell across southwest Alaska, prompting the removal of D0. Those rains contrasted with the continued dry conditions across interior Alaska where fires have been threatening towns. The Stuart Creek 2 Fire, east of Fairbanks, resulted in an evacuation order being issued Sunday for hundreds of residents in the area just north of the fire. Accordingly, D1 was expanded where the continued dryness corresponded with low streamflows.

Widespread rains fell over most of Puerto Rico with some stations reporting over 3.0 inches of rain for the week. No drought or dryness is currently indicated for Puerto Rico, although south-central Puerto Rico has been drier than normal during the past 30 days. This area will be watched for future drought development.

Looking Ahead: The next 6 days (July 10-15) favor wet weather across most of the eastern half of the Nation, east of the Ohio and Mississippi Rivers, with heavy rains forecast from the Gulf Coast to the Mid-Atlantic. Some rains associated with the North American Monsoon are also likely during the next 5 days across Arizona and Colorado, largely bypassing New Mexico. Generally, less than 1.0 inches of rain is forecast across the area from Texas to Illinois, California, and the Pacific Northwest.

For the ensuing 5 days (July 16-20), the odds favor above-median precipitation over western Alaska, the southern Rockies, the Northern Great Plains, Western and Central Gulf Coasts, and from the Great Lakes to the Mid-Atlantic. Dry conditions are likely across the Pacific Northwest, eastern Alaska, and the Central Great Plains. Temperatures are likely to be above normal west of the continental divide, and from the Midwest to the Northeast, with below-normal temperatures favored over New Mexico and the Southeast.”

State Activities

State government drought activities can be tracked at the following URL: <http://drought.unl.edu/mitigate/mitigate.htm>. 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 - <http://www.wcc.nrcs.usda.gov/cgi-bin/bor.pl>.

Weekly Snowpack and Drought Monitor Update Report

Additional information describing the products available from the Drought Monitor can be found at the following URLs: <http://drought.unl.edu/dm/> and <http://www.drought.gov>.

For More Information

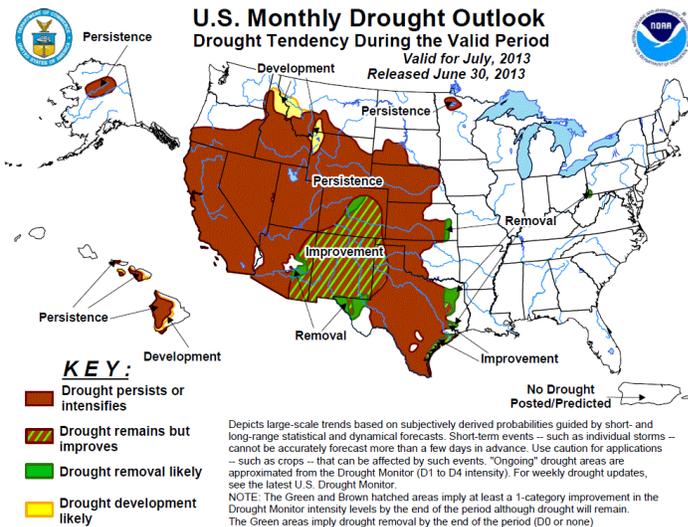
The National Water and Climate Center (NWCC) Homepage provides the latest available snowpack and water supply information. Please visit us at <http://www.wcc.nrcs.usda.gov>. This document is available from the following location on the NWCC homepage - <http://www.wcc.nrcs.usda.gov/water/drought/wdr.pl>. Reports from 2007 are available 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.

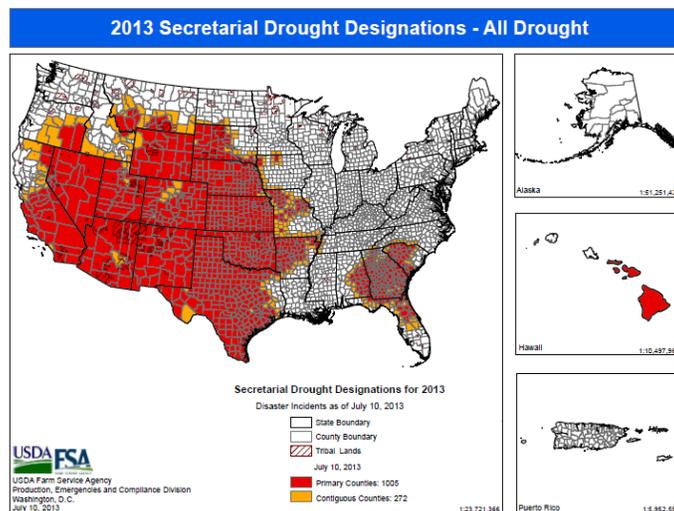
/s/

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

Drought Outlook (Forecast for July)



New U.S.
[Monthly Drought Outlook](#) as of 30 June.



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

Weekly Snowpack and Drought Monitor Update Report

Supplemental Data

The “Ag in Drought” file that had been previously posted each week by NDMC’s Brian Fuchs is now available at:

<http://www.usda.gov/oce/weather/Drought/AgInDrought.pdf>

For more data on plant health: [VegDRI](#), [Evaporative Stress Index](#), [Vegetation Health Indices](#), [NVDI Greenness Maps](#), [NWS Precipitation Analysis](#), [GRACE Groundwater and Soil Moisture](#).

Drought Impacts Update

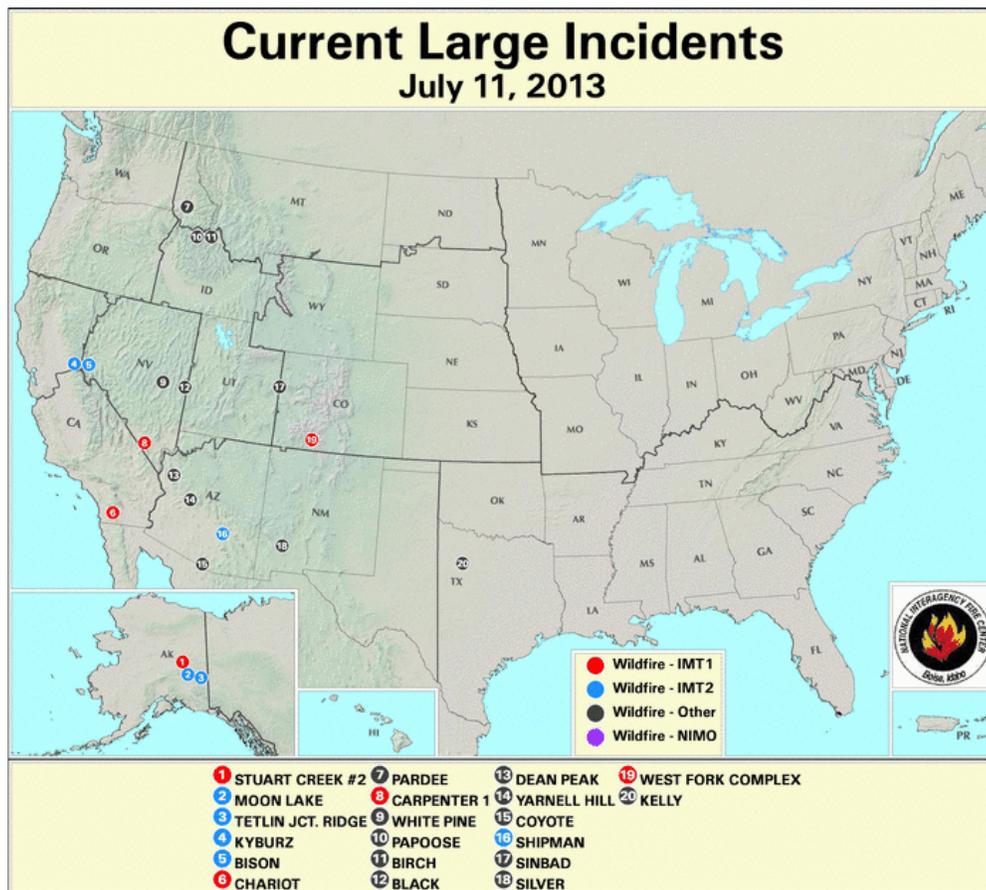
This is a collection of drought-related news stories from the past seven days or so. Impact information from these articles is entered into the [Drought Impact Reporter](#). A number of these articles will also be posted on the [Drought Headlines](#) page at the NDMC website.

– Courtesy of **Denice Gutzmer**, Drought Impact Specialist, National Drought Mitigation Center

Noteworthy topics in the news this week:

Wildfires

- Wildfires continue to rage in the western U.S. with the Yarnell Hill Fire in Arizona taking the lives of 19 hotshot firefighters.
- More fire restrictions are taking effect throughout the western U.S. as the number of active wildfires continues to climb.

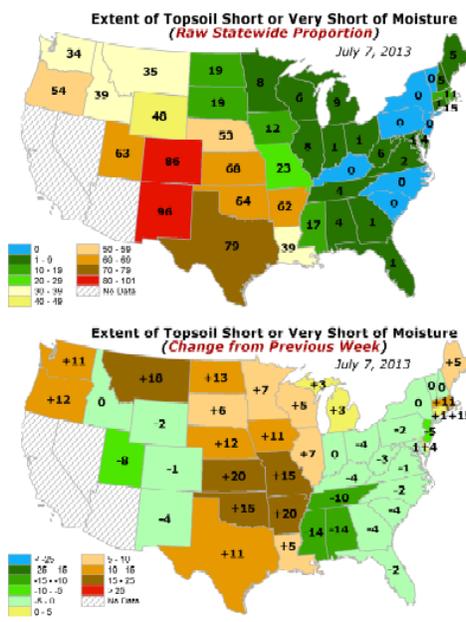


USDA Forest Service Active Fire Mapping Program

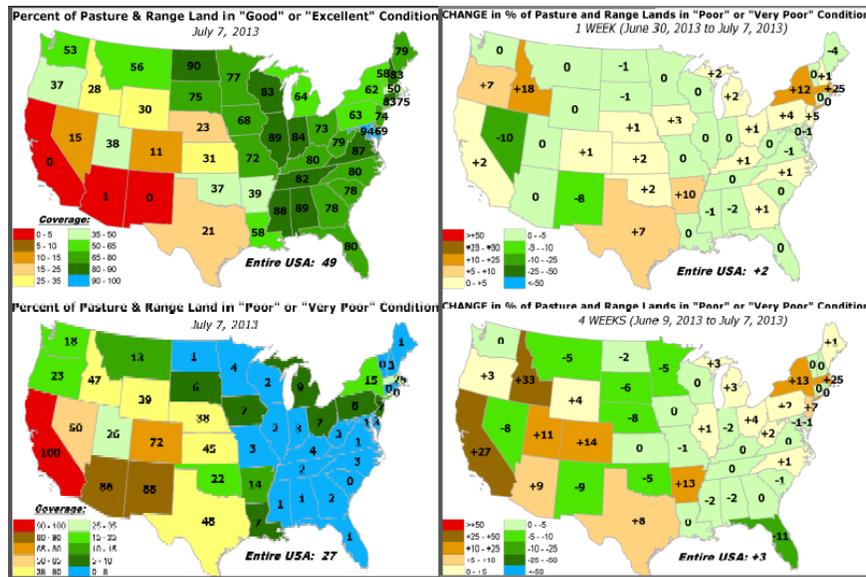
Weekly Snowpack and Drought Monitor Update Report

Water

- Water supplies are running low, leading to emergency declarations in Cloudcroft in southern New Mexico and the Navajo Nation in New Mexico, Arizona and Utah.
- Meanwhile, irrigation supplies are exhausted for the Middle Rio Grande Conservancy District in New Mexico.
- Nitrate levels have remained high for an unusually long time in much of Iowa, costing Des Moines \$500,000 to treat the water. Spring rains washed unused fertilizer from the 2012 drought into rivers and streams, driving up nitrate levels.



[Topsoil conditions](#) reveal California, New Mexico, and Arizona with extremely low moisture content. Maryland is experiencing near saturated conditions (upper level panel). Also note that Idaho and New York are experiencing the greatest decrease in moisture from the previous week (upper right panel).



[Pasture and Rangelands](#) maps show that the eastern half of the nation has abundant, healthy conditions, whereas the opposite holds for the Western States; especially over New Mexico, Arizona, and California.