



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

Weekly Report - Snowpack / Drought Monitor Update

Date: 14 June 2012

SNOTEL SNOWPACK AND PRECIPITATION SUMMARY

Temperature: [SNOTEL](#) and ACIS 7-day temperature anomaly showed values cooler over the Northern Rockies and warmer over the Central Rockies. Otherwise temperatures were within 5 degrees of the long term average (Fig. 1). ACIS [7-day](#) average temperature anomalies show the greatest positive temperature departures over northeastern New Mexico ($>+6^{\circ}\text{F}$) and the greatest negative departures over parts of northeastern Washington ($<-10^{\circ}\text{F}$) (Fig. 1a).

Precipitation: [ACIS](#) 7-day average precipitation amounts for the period ending yesterday shows the wettest areas over the Oregon and Washington Cascades and northern Montana Rockies (Fig. 2). In terms of percent of normal, scattered across much of the Northern Tier and Western High Plains, decent precipitation fell for this time of year (some as a result of thunderstorm activity over the Pacific Northwest) (Fig. 2a). Since the start of the [2012 Water-Year](#) that began on 1 October 2011, the seasonal moisture has continued to favor the Northern Tier States. Over much of the southern half of the West, drier conditions dominate. Near normal values in some New Mexico basins are not significantly impacting the drought over the state (Fig. 2b). Since the start of [June](#), the Cascades, Northern Rockies, and Western Great Basin have been much wetter than the long term average due to a persistent trough over the Eastern Pacific. Elsewhere, very dry conditions dominate (Fig. 2c).

Weather Summary: A stalled frontal across the Gulf Coast and series of Pacific storm systems produced unseasonably heavy rains in the Southeast and Northwest while dry and warm weather in the Nation's midsection accelerated drought conditions from Colorado to Indiana. In the Northwest, more than 2 inches of precipitation fell on the Cascades and northern Rockies as temperatures averaged up to 10 degrees F below normal. In the Southeast, a stalled front along the Gulf produced incredible amounts of rain and severe localized flooding in extreme southern sections of Mississippi and Alabama and the western Florida Panhandle. There were several 24-hour totals of between 8 and 15 inches of rain, with **up to 21.7 inches** on June 9-10 in extreme western Florida Panhandle as reported via CoCoRaHS - a national cooperative precipitation network. The heavy rains gradually crept north and eastward into southern Alabama, Florida, most of Georgia, South Carolina, western North Carolina, and southwestern Virginia. A cold front edging eastward in the Nation's midsection generated severe thunderstorms in parts of the northern and central High Plains (northern Colorado, southeast Wyoming, western Dakotas), as well as a squall line that swept across Missouri and the Tennessee and lower Mississippi Valleys. Southern Oklahoma and northeastern Texas also received additional rains (2 to 4 inches) early in the week. Unfortunately, dry weather continued in the Southwest, central Plains, and parts of the Midwest, with only light amounts in the Northeast. Temperatures averaged slightly below normal in the East and Southeast, well below normal in the West, and above normal in the middle third of the U.S., especially from northern New Mexico northeastward into Minnesota. Dry weather also occurred in Hawaii, Puerto Rico, and northern Alaska, with unsettled weather across the rest of the latter state.

The West: This week saw unseasonably cool conditions (weekly temperatures averaged 4 to 10°F below normal) in the Far West, and unsettled weather in the Northwest (1 to 3 inches

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precipitation in western and northeastern Washington, western and northeastern Oregon, northern and central Idaho, western Montana, northwestern Wyoming). The spring showers in central Washington and central Oregon (0.2 to 1 inch) continued to nibble away at the D0 and D1 areas as Water Year-To-Date (YTD) deficits slowly disappeared. Average basin precipitation since Oct. 1 stood between 106-117 percent in central Washington, and 84-95 percent in southern Oregon. In southwestern Montana and eastern Idaho, 0.5 to 1 inch of rain fell across the northern D0 area, enough to remove it, but less than 0.2 inches fell across southern sections and it remained. In contrast, little or no rain fell across the Southwest (their normal dry season). Temperatures did average above-normal in eastern Arizona, New Mexico, southeastern Utah, Colorado, and eastern Wyoming. The combination of subnormal Water YTD precipitation (50-75 percent of normal) and an early warm spring snow melt has left the area parched and primed for wild fires. In southern New Mexico, 2 major wildfires continued burning (one near Ruidoso, the other in the Gila National Forest), scorching over 316,000 acres, destroying over 240 structures, and forcing the evacuation of at least 1500 residents. In Colorado, the High Park wildfire near Ft. Collins continued to grow. It has encompassed 43,433 acres, caused 1 fatality, destroyed over 100 structures, and was 0 percent contained. In response to the dry and warm weather, some slight deterioration was made in New Mexico, Colorado (see The Plains write-up), and southwestern Wyoming (D2 added) where both short and long term blends were at D4. Hopefully the southwest monsoon season will begin soon as pasture and range conditions (poor or very poor) in AZ and NM stood at 57 and 81 percent. Author: David Miskus, Climate Prediction Center, NCEP/NWS/NOAA

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. 3 through 3d).

Soil Moisture

Soil moisture (Fig. 4), 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 5 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](#)).

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U.S. Historical Streamflow

This map, (Fig. 6) 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.

Fire Conditions

Fig. 7 comes from the [Predictive Services](#) (USFS) facilitates integration of comprehensive climate, weather, situation and fuels information in geospatial format.

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
Deputy Chief, Soil Survey and Resource Assessment

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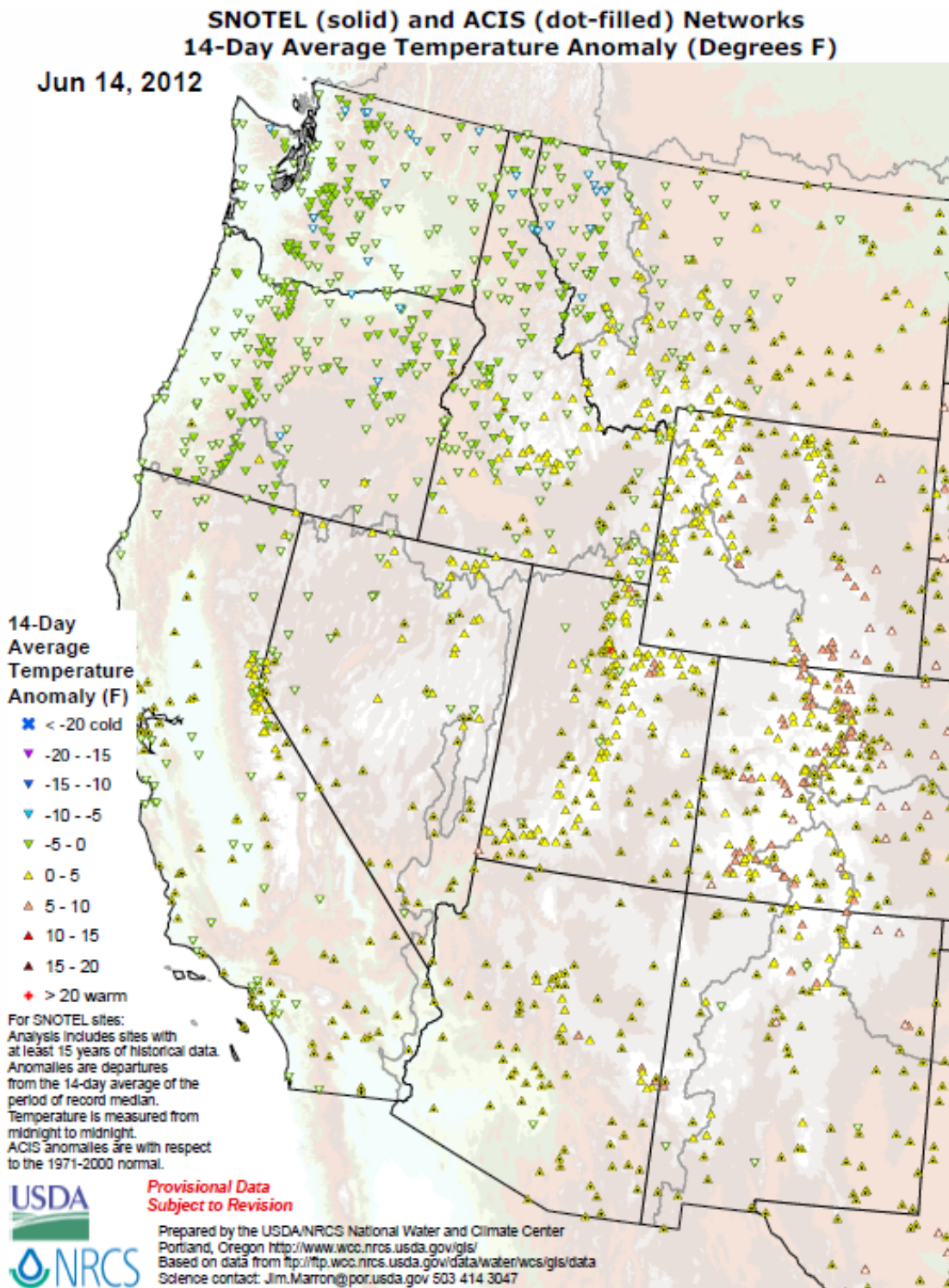
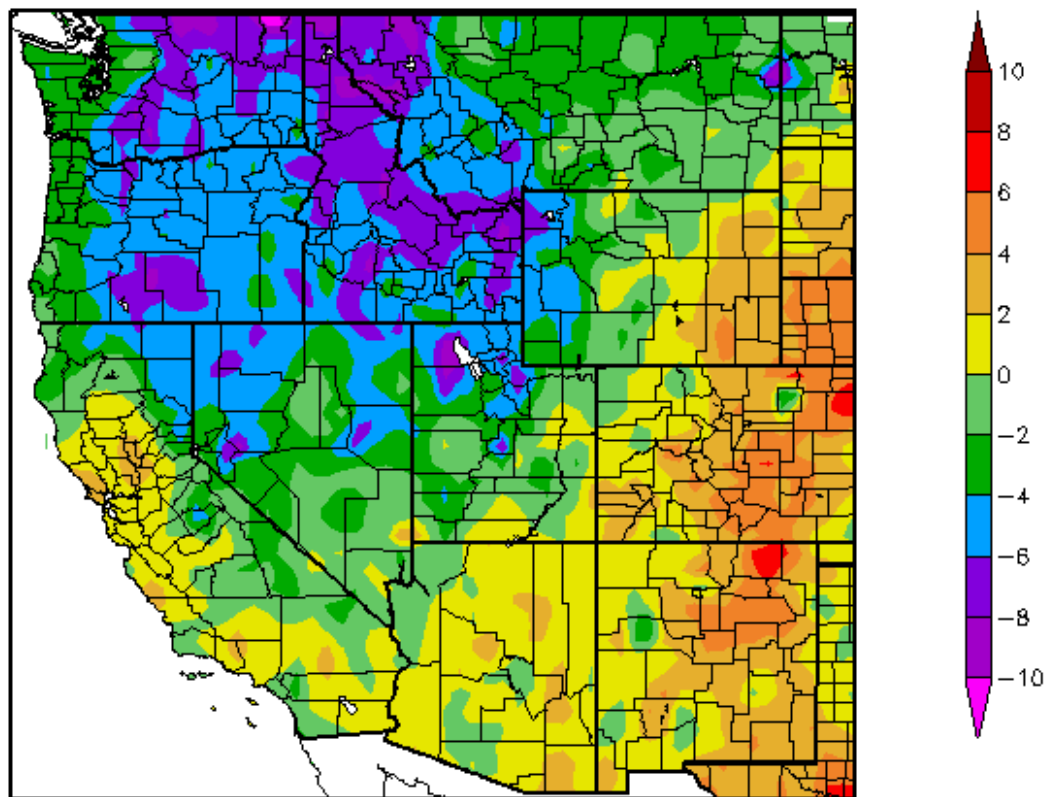


Fig. 1: **SNOTEL** and ACIS 7-day temperature anomaly showed values cooler over the Northern Rockies and warmer over the Central Rockies. Otherwise temperatures were within 5 degrees of the long term average.

Departure from Normal Temperature (F)
6/7/2012 – 6/13/2012



Generated 6/14/2012 at HPRCC using provisional data.

Regional Climate Centers

Fig. 1a: ACIS 7-day average temperature anomalies show the greatest positive temperature departures over northeastern New Mexico ($>+6^{\circ}\text{F}$) and the greatest negative departures over parts of northeastern Washington ($<-10^{\circ}\text{F}$).

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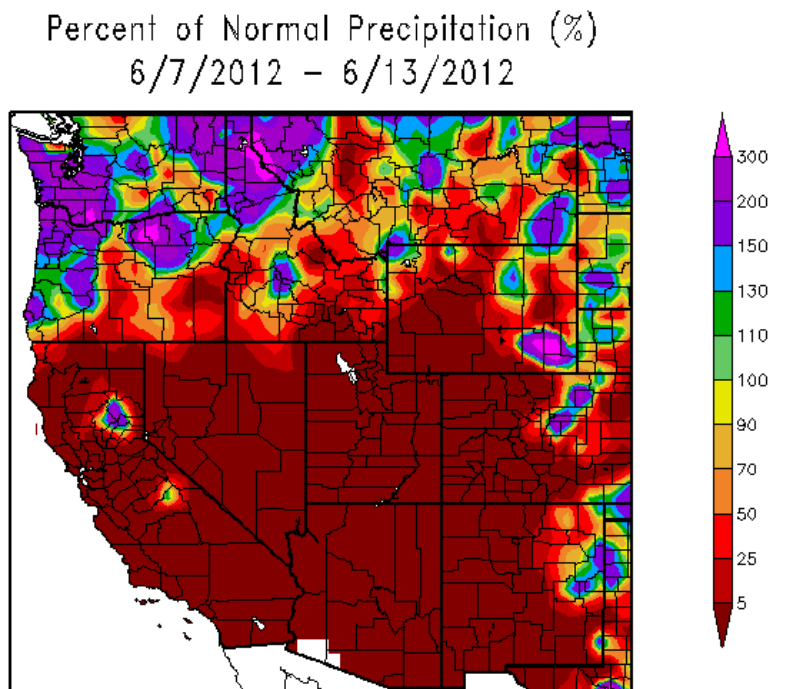
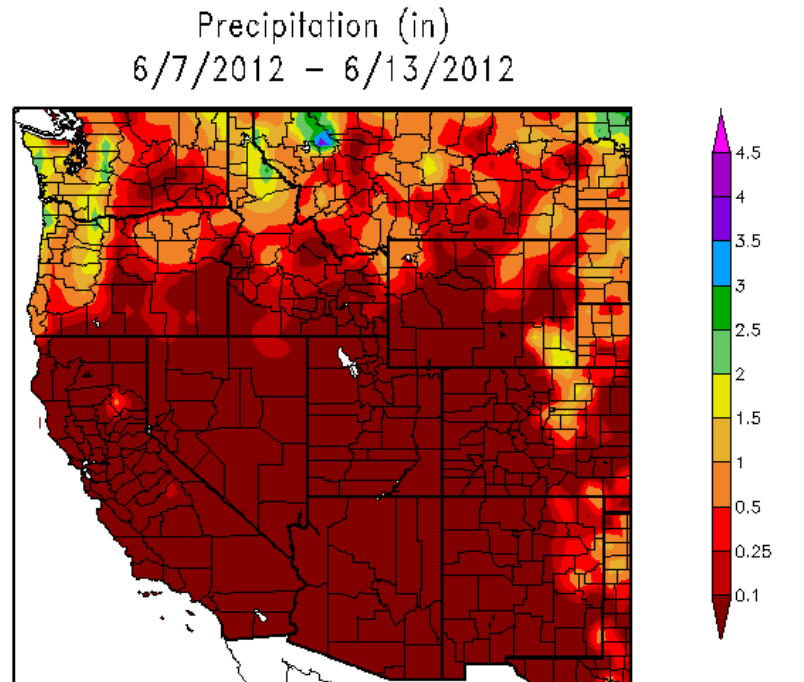


Fig. 2 and 2a: [ACIS](#) 7-day average precipitation amounts for the period ending yesterday shows the wettest areas over the Oregon and Washington Cascades and northern Montana Rockies (top). In terms of percent of normal, scattered across much of the Northern Tier and Western High Plains, decent precipitation fell for this time of year (some as a result of thunderstorm activity over the Pacific Northwest) (bottom).

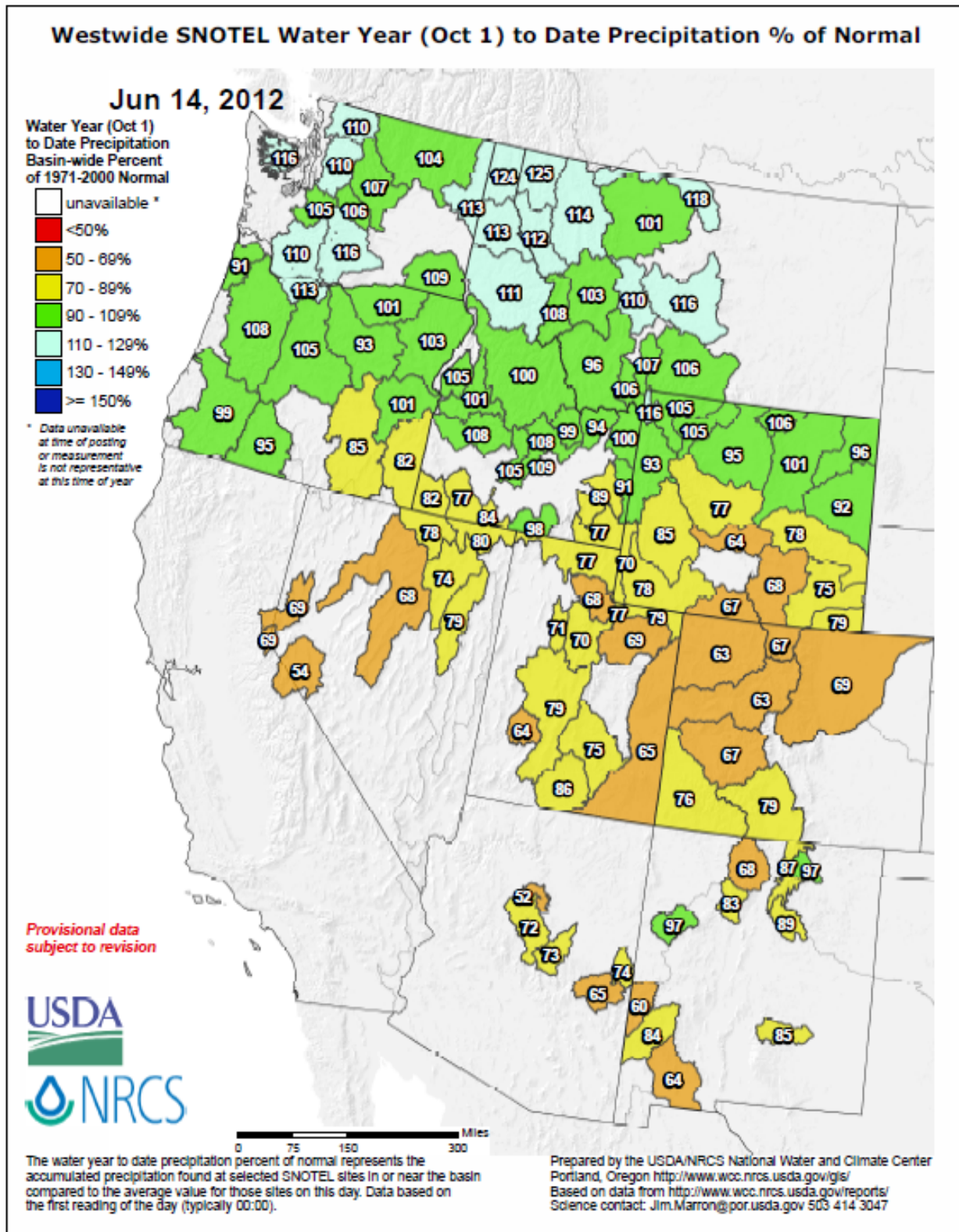


Fig 2b: Since the start of the [2012 Water-Year](#) that began on 1 October 2011, the seasonal moisture has continued to favor the Northern Tier States. Over much of the southern half of the West, drier conditions dominate. Near normal values in some New Mexico basins are not significantly impacting the drought over the state.

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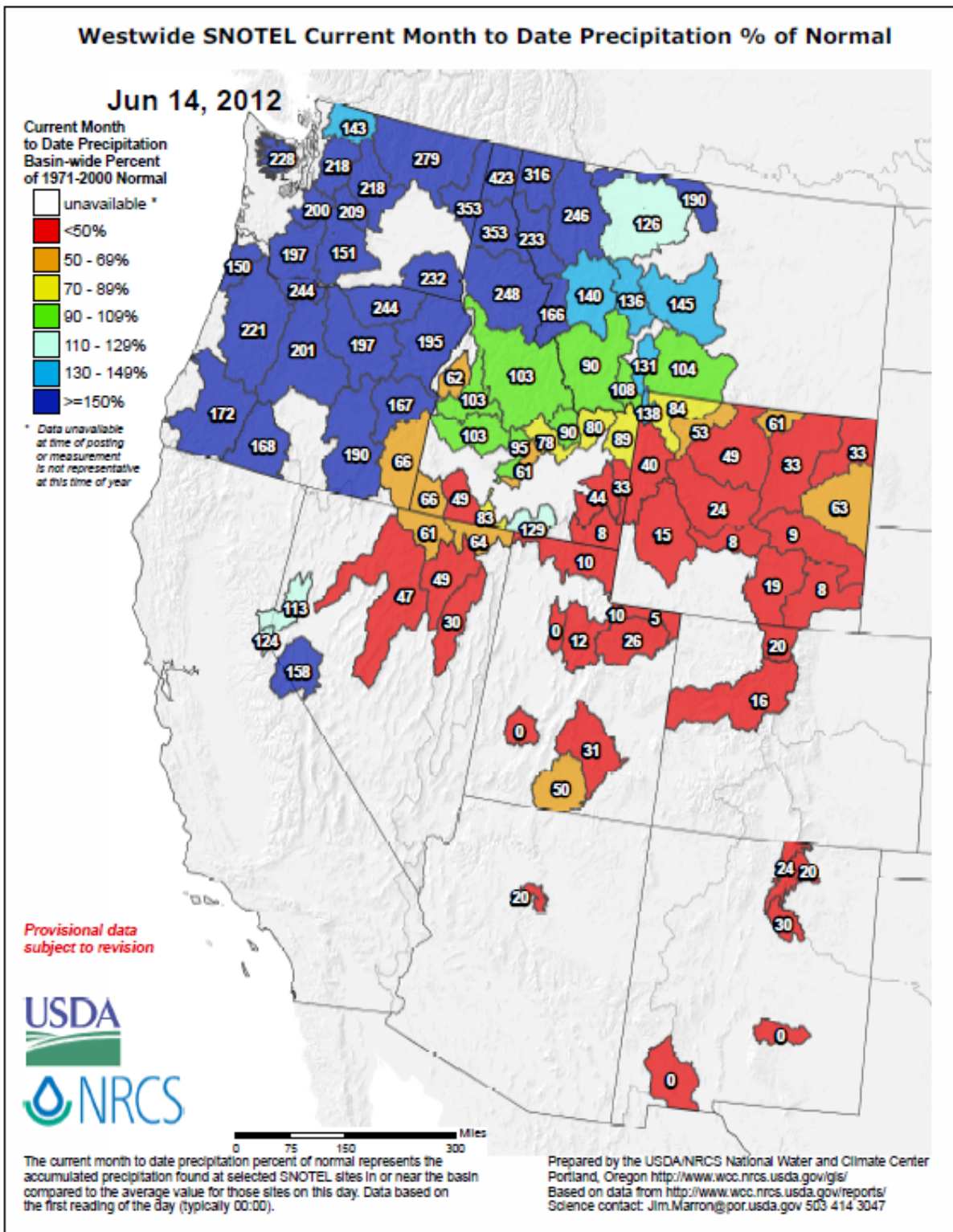


Fig 2c: Since the start of June, the Cascades, Northern Rockies, and Western Great Basin have been much wetter than the long term average due to a persistent trough over the Eastern Pacific. Elsewhere, very dry conditions dominate.

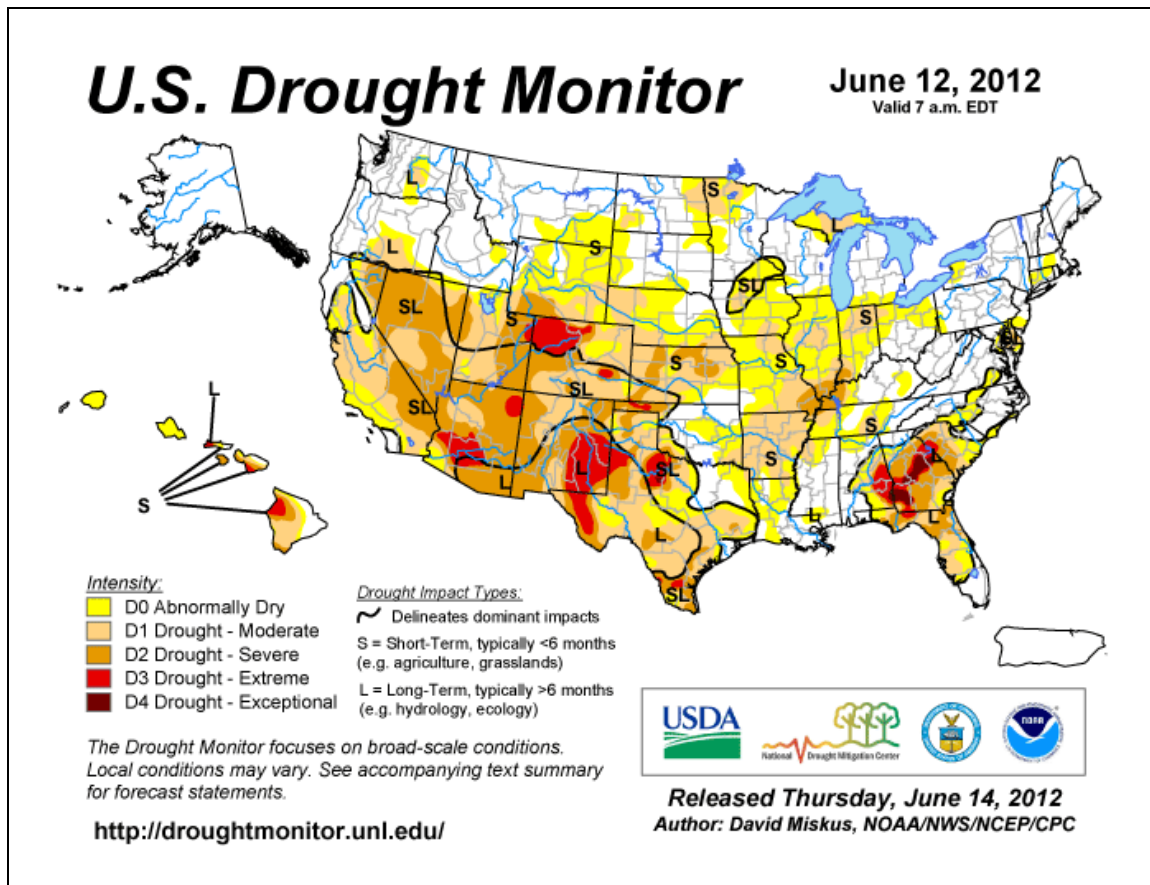


Fig. 3: Current [Drought Monitor](#) weekly summary. The exceptional D4 levels of drought are found over the Southeast US and a single small area over northern Texas. For more drought news, see [Drought Impact Reporter](#). Click for the latest statistics for [California Reservoirs](#). The monthly [drought indicator blend and component percentiles](#) spreadsheet is a great resource for climate division drought statistics. More drought news:

Agriculture

[Drought Causing Panic Among Weld County Farmers](#)

June 7, **Weld County, northeastern Colorado**: Weld County commissioners plan to make a drought disaster declaration on June 11 and ask the governor to do the same for the county. One farmer stated, "If we don't get rain in 10 days, irrigated agriculture in this area will be over for the year. Farmers will then have to decide which crops to sacrifice."

[Drought Worries Beginning To Mount](#)

June 8, U.S: Although the drought situation has improved, particularly in **Texas**, compared to last year, pasture conditions overall are worse than last year.

[Drought's cost Warm and dry spring, Texas drought, affects Estes Park](#)

June 7, **Northern Colorado**: Hay prices were exceptionally high at \$180 to \$200 per ton. Finding water for the cattle was a challenge also.

['I sure wish it would rain': Area farmers, gardeners face 'abnormally dry' conditions](#)

June 5, **Southwestern Illinois**: Corn leaves are rolling and newly planted soybeans may not make it if they have not emerged yet.

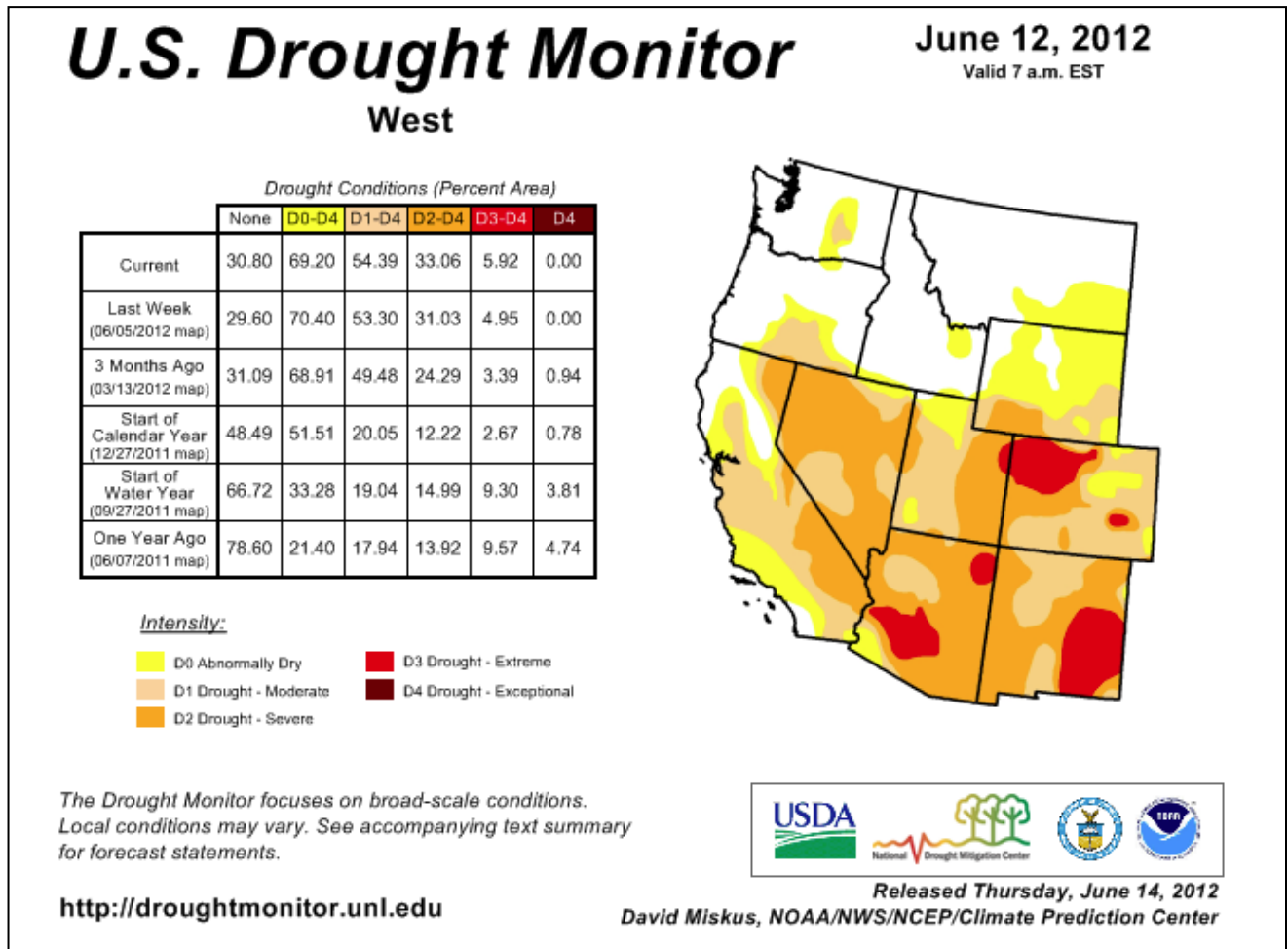


Fig. 3a: Drought Monitor for the [Western States](#) with statistics over various time periods. Note little change has occurred this week (e.g. 1% increase in D4).

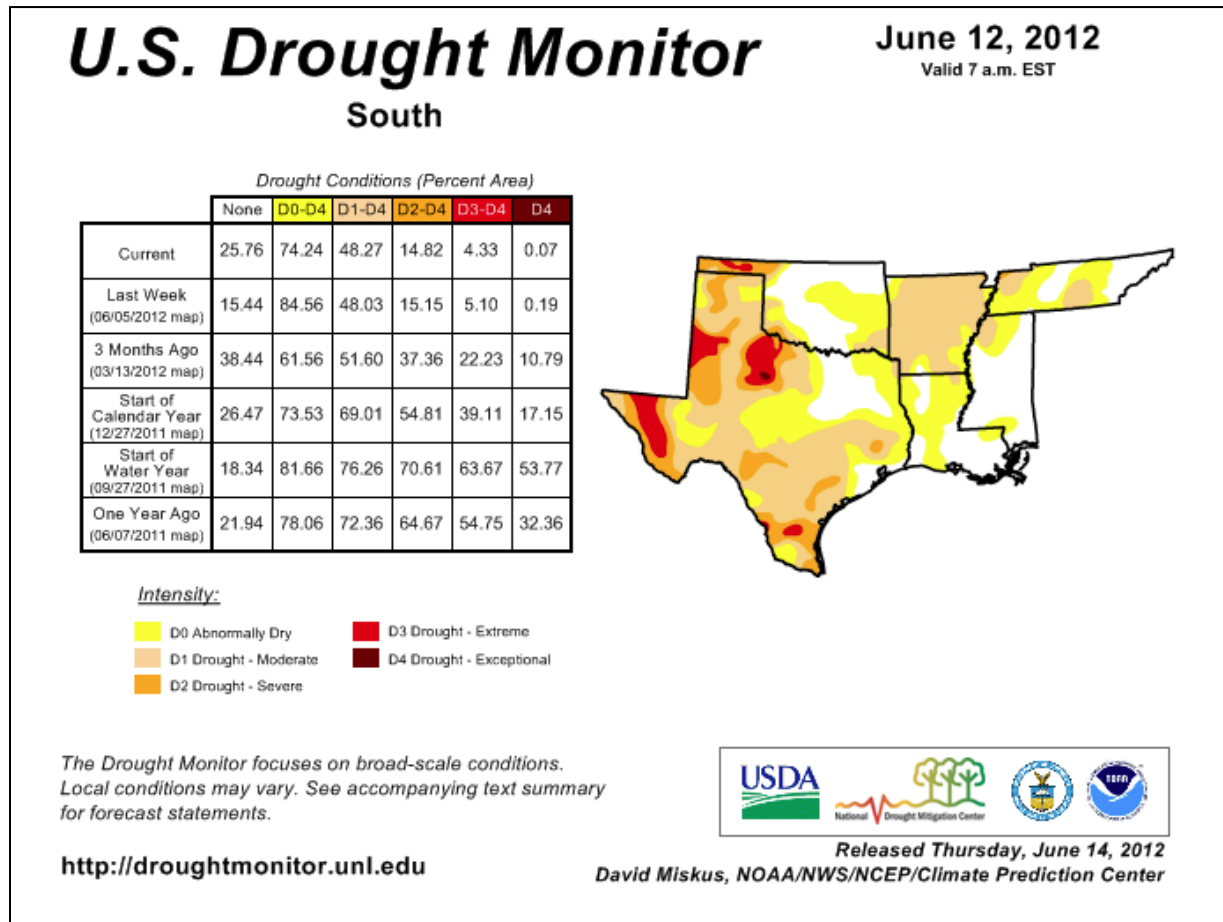


Fig. 3b: Drought Monitor for the [South-Central States](#) with statistics over various time periods. Note overall improvement in the lower D- Categories this week. A small D-4 spot still persists over parts of north-central Texas.

Water Supply & Quality

[Board moves to postpone irrigation](#)

June 6, **Wichita Falls, Texas:** The Wichita County Water Improvement District No. 2 board of directors opted to end the 2012 irrigation season unless rain falls to increase the level of Lake Kemp and improve the water quality.

[Growers warily eye Valley's water situation](#)

June 5, **Rio Grande Valley in southern Texas:** Farmers continue to irrigate and are concerned about the low levels of Lake Amistad and Falcon Lake, which are at 60 percent and 29.1 percent of their conservation capacities.

[Tougher water restrictions to begin](#)

June 5, **Wichita Falls, Texas:** Stage two water restrictions begin in Wichita Falls on June 11 as the combined levels of lakes Arrowhead and Kickapoo drop to about 50 percent of capacity.

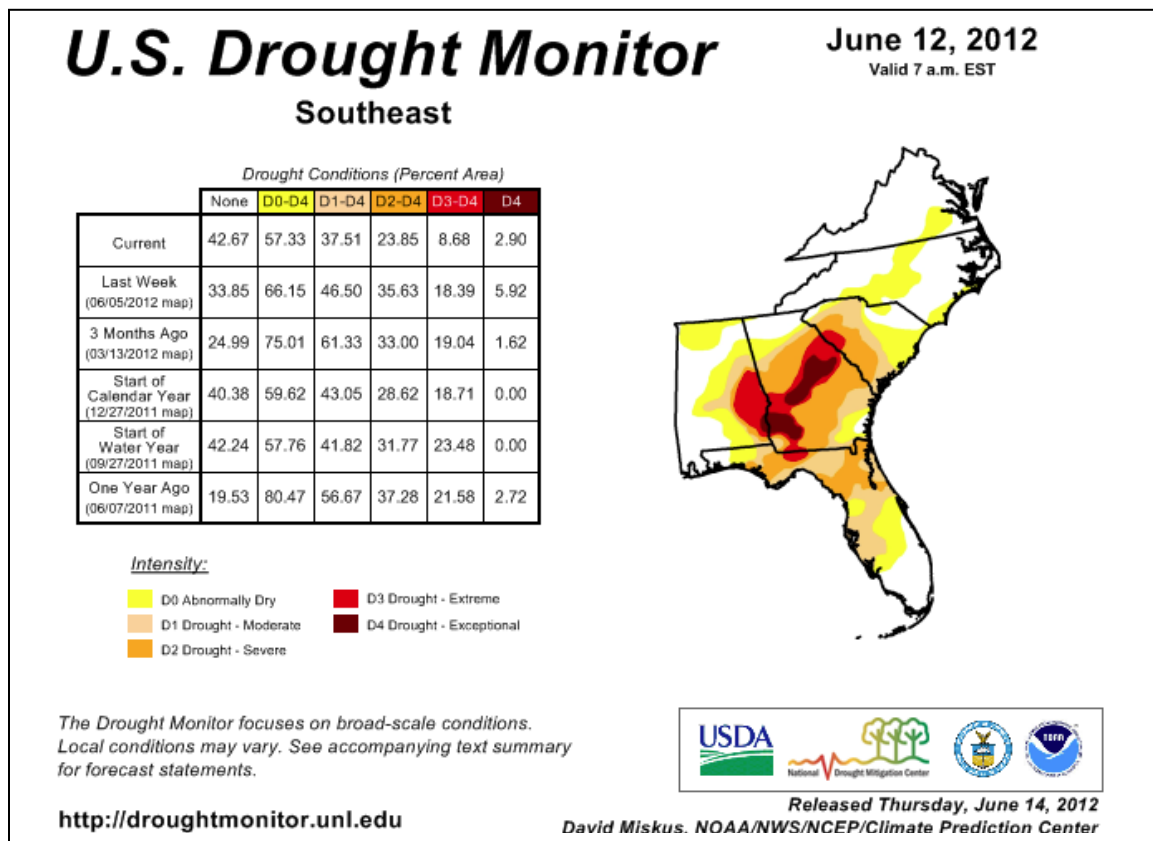


Fig. 3c: Drought Monitor for the [Southeastern States](#) with statistics over various time periods. Note significant improvement in all categories this week due to recent rains.

GA

According to the National Agriculture Statistics Service's Georgia Field Office, there were 4.7 days suitable for fieldwork for the week ending Sunday, June 10, 2012. Statewide topsoil moisture was rated at 5% very short, 17% short, 66% adequate, 12% surplus. Subsoil moisture 11% very short, 32% short, 52% adequate, 5% surplus. Precipitation estimates for the state ranged from 0 inches up to 4.4 inches. Average high temperatures ranged from the mid 70's to the high 80's. Average low temperatures ranged from the mid 50's to the low 70's.

SC

The week ending June 10, 2012 was marked by cooler, wet weather. The second week of rain has slowed field work again. Increased rainfall pushed crop progression ahead of schedule but excess moisture is beginning to be a concern for some growers. Soil moisture conditions were reported as 2% very short, 14% short, 77% adequate and 7% surplus. The State average rainfall for the period was 1.4 inches. The State average temperature for the period was four degrees below normal with 5.6 days suitable for fieldwork.

Drought Monitor Classification Changes for Selected Time Periods

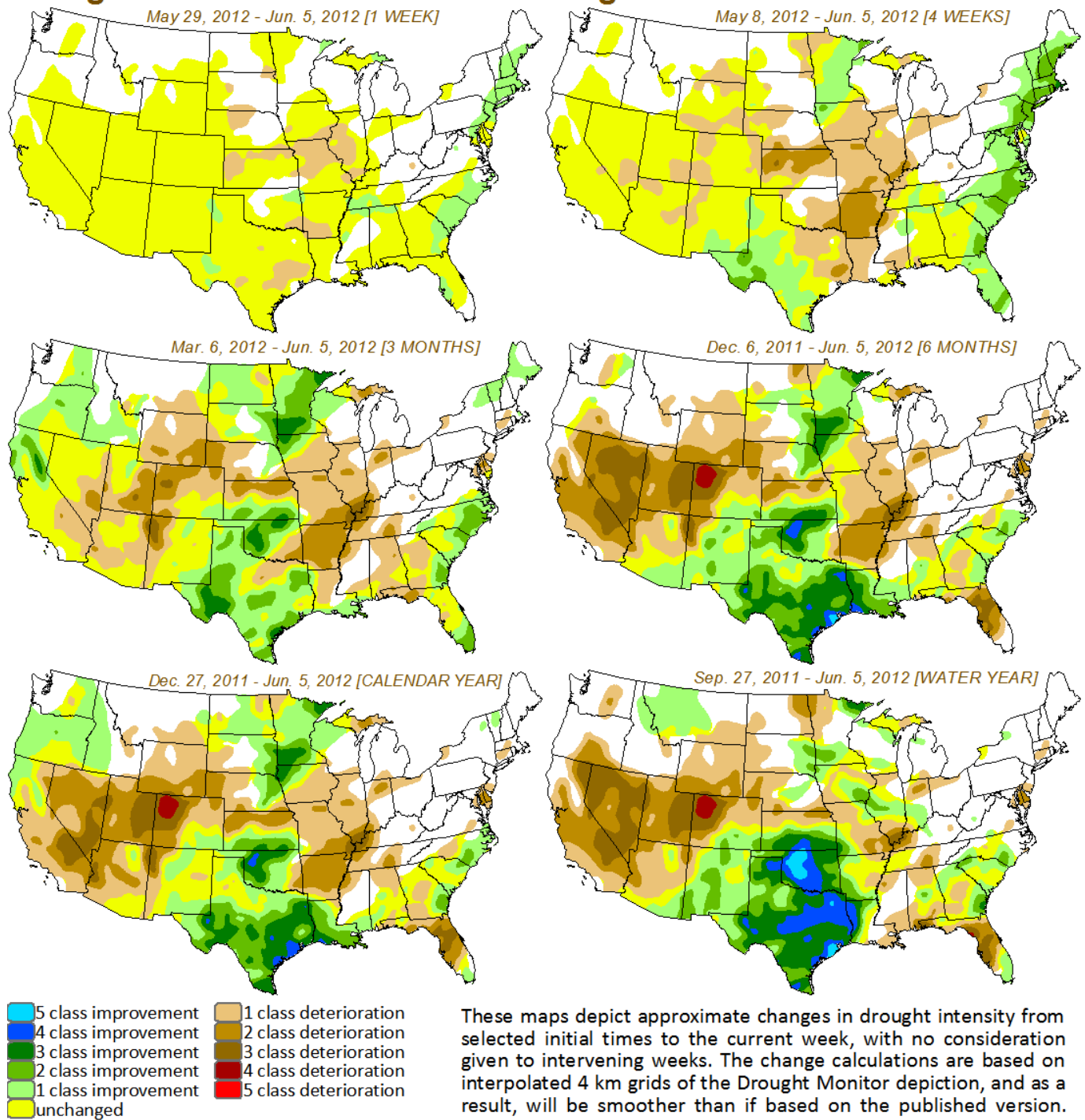
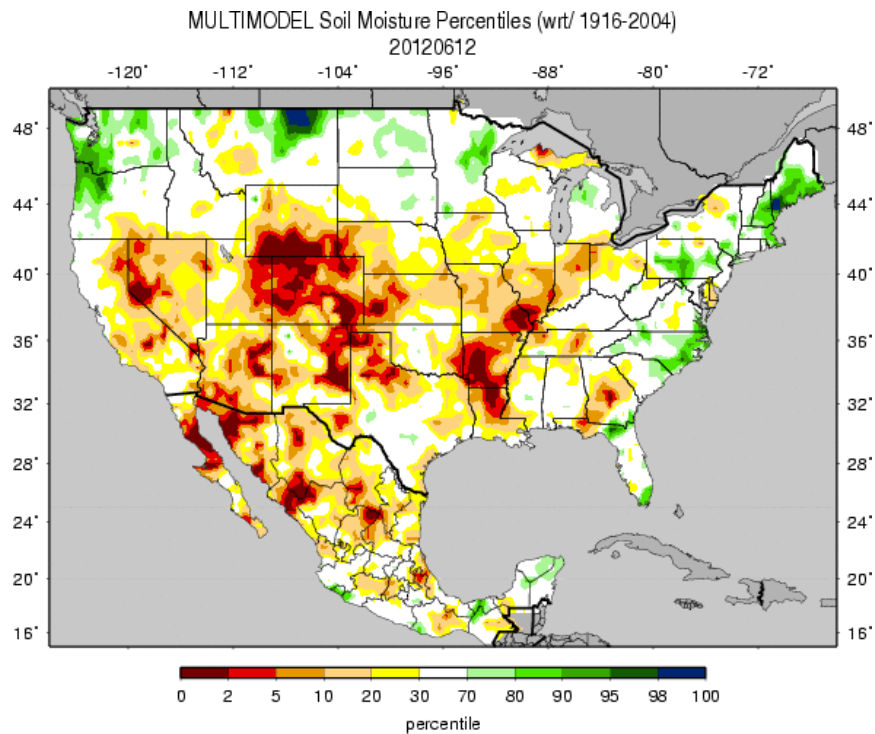


Fig 3d: [DM Classification Changes](#) over various time periods show recent deterioration over much of the Mississippi River Drainage and Central Plains (*Note: Figure does not reflect this week's changes*).

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Figs. 4: Soil Moisture ranking in [percentile](#) as of 12 June shows developing drying over the Lower Mississippi River Basin, Central Rockies, and Western Great Basin.

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

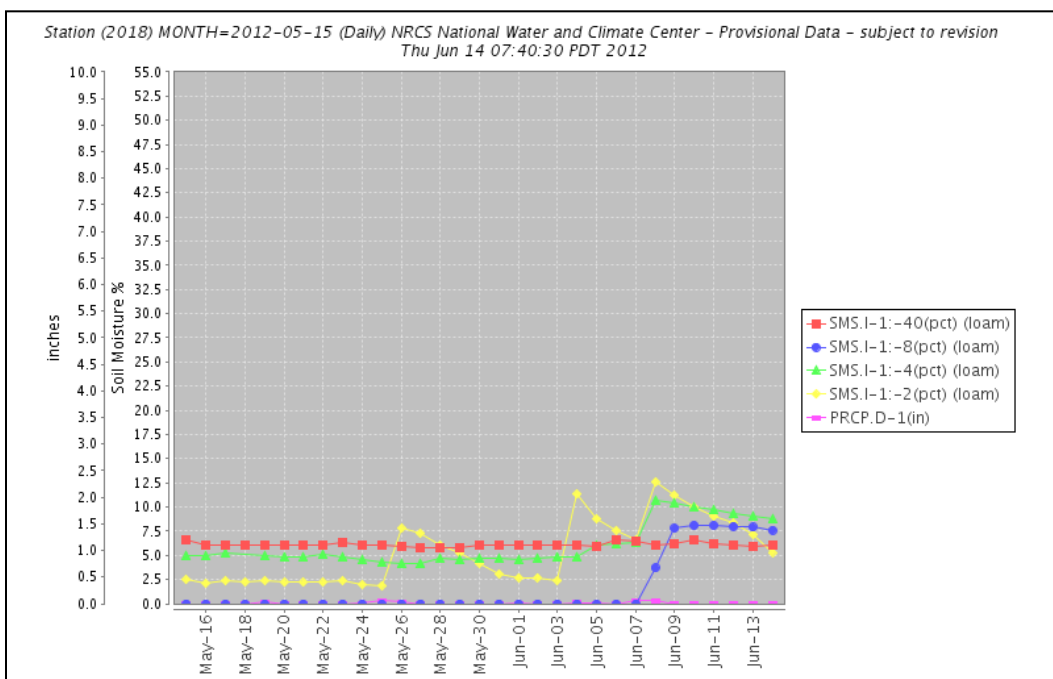


Fig. 5: This NRCS resource shows a site over [southeastern Wyoming](#) with soil moisture nearing bone dry.

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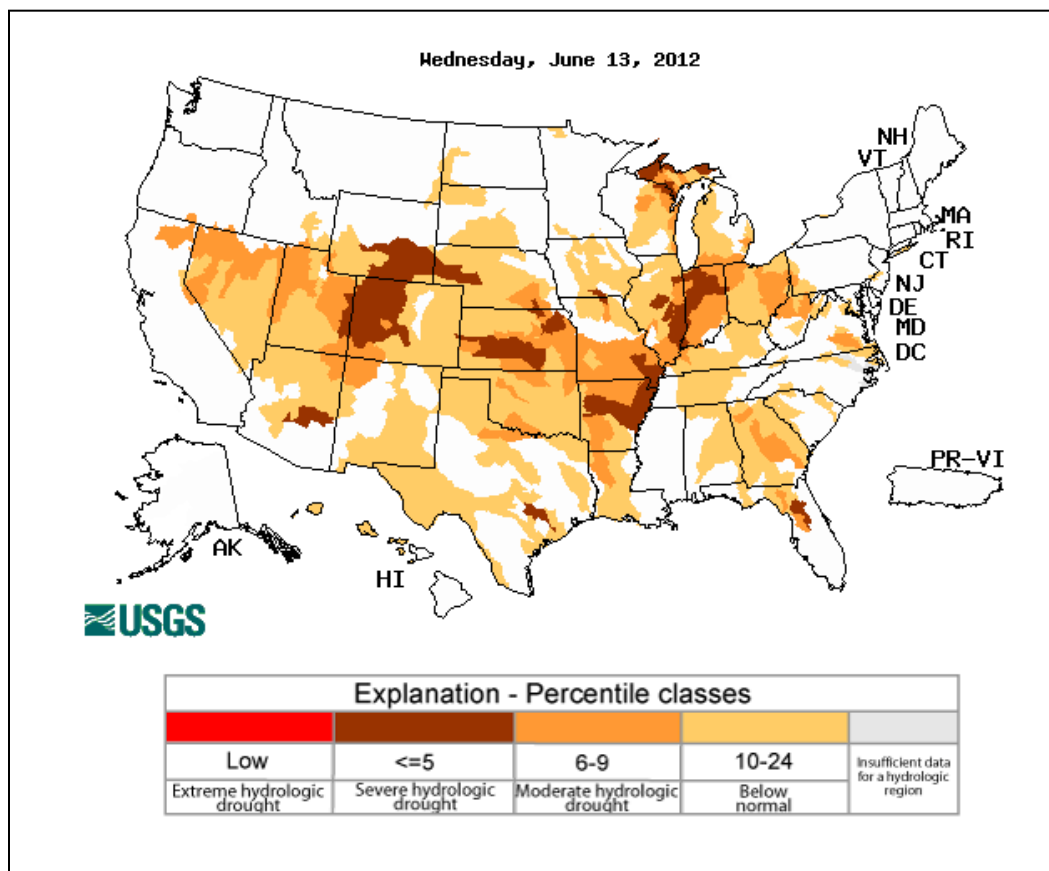


Fig. 6: Map of below normal 7-day average [streamflow](#) compared to historical streamflow for the day of year. **Severe** conditions are scattered from Utah the Mississippi River and north-central Florida.

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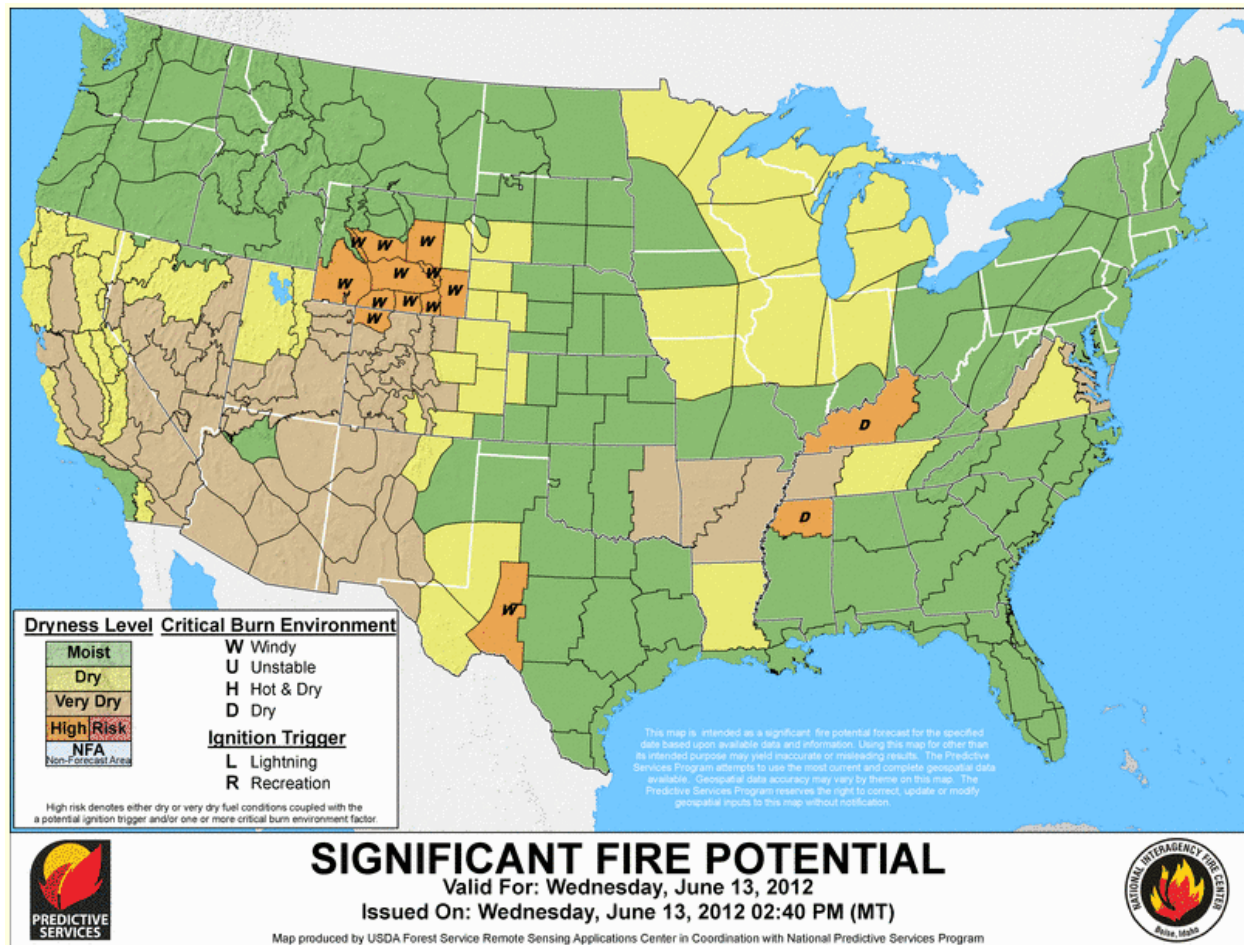


Fig. 7: [Significant fire potential](#) from yesterday. This resource also provides forecasts out to 7 days. Also check out: [NOAA's Fire Server](#). Risk has increased over Wyoming during the past several days.

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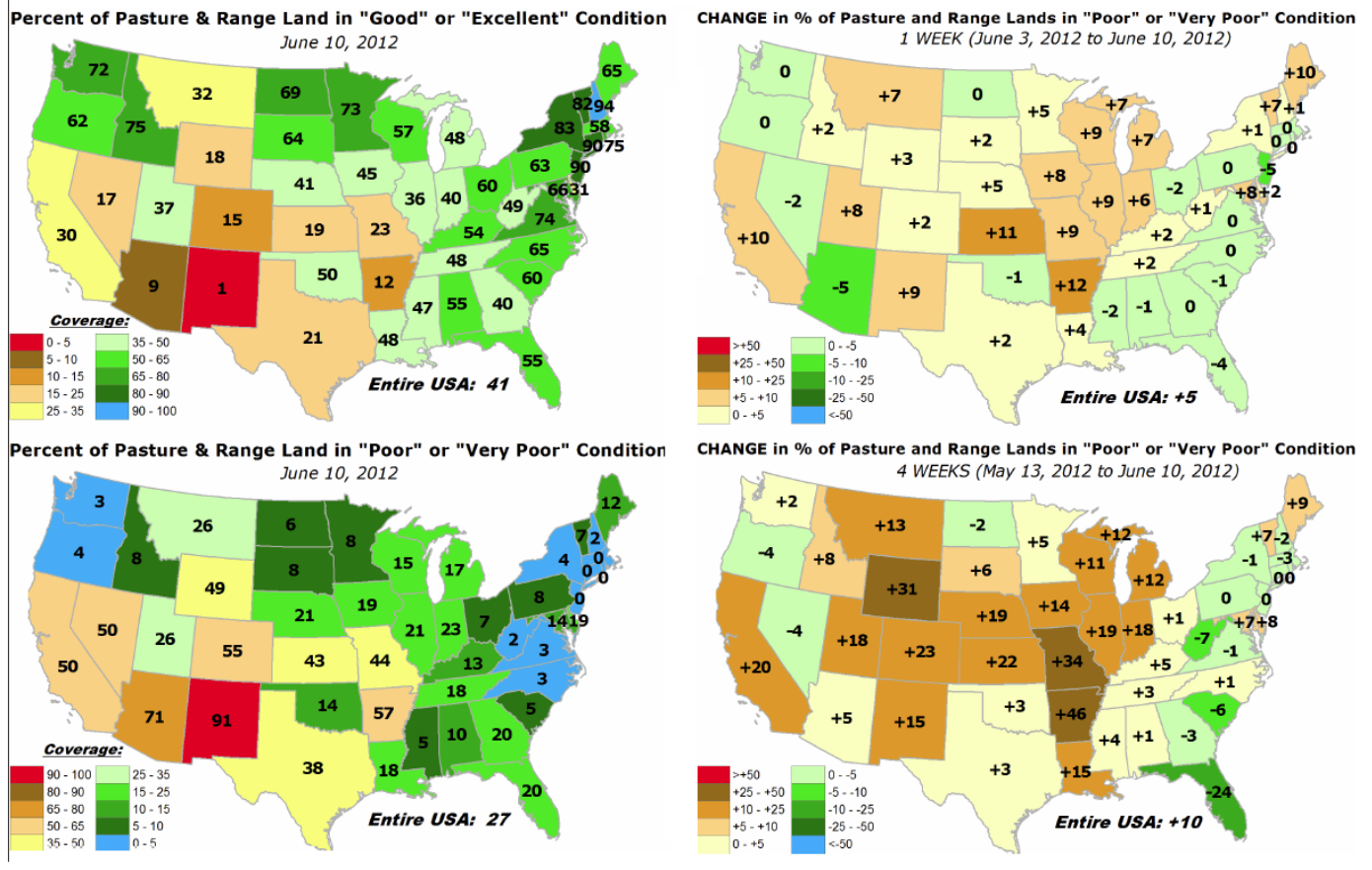


Fig. 8: [Pasture and range land conditions](#) and changes during the past week. New Mexico has the most poor or very poor conditions (lower left panel) and California, Utah, and New Mexico have experienced the worst declines this week (upper right panel).

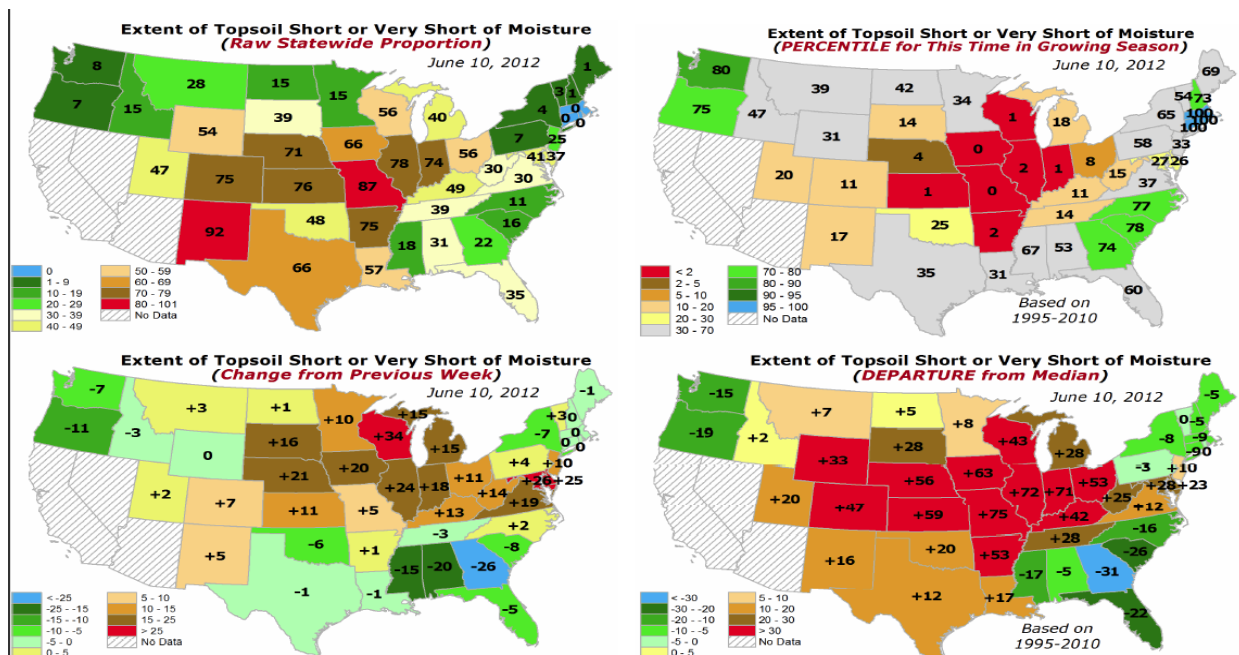


Fig. 9: [Topsoil](#) statistics shows a significant amount of dryness over the Mid-West and Central Great Plains.

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National Drought Summary -- June 12, 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/>.

Weather Summary: A stalled frontal across the Gulf Coast and series of Pacific storm systems produced unseasonably heavy rains in the Southeast and Northwest while dry and warm weather in the Nation's midsection accelerated drought conditions from Colorado to Indiana. In the Northwest, more than 2 inches of precipitation fell on the Cascades and northern Rockies as temperatures averaged up to 10 degrees F below normal. In the Southeast, a stalled front along the Gulf produced incredible amounts of rain and severe localized flooding in extreme southern sections of Mississippi and Alabama and the western Florida Panhandle. There were several 24-hour totals of between 8 and 15 inches of rain, with up to 21.7 inches on June 9-10 in extreme western Florida Panhandle as reported via CoCoRAHs - a national cooperative precipitation network. The heavy rains gradually crept north and eastward into southern Alabama, Florida, most of Georgia, South Carolina, western North Carolina, and southwestern Virginia. A cold front edging eastward in the Nation's midsection generated severe thunderstorms in parts of the northern and central High Plains (northern Colorado, southeast Wyoming, western Dakotas), as well as a squall line that swept across Missouri and the Tennessee and lower Mississippi Valleys. Southern Oklahoma and northeastern Texas also received additional rains (2 to 4 inches) early in the week. Unfortunately, dry weather continued in the Southwest, central Plains, and parts of the Midwest, with only light amounts in the Northeast. Temperatures averaged slightly below normal in the East and Southeast, well below normal in the West, and above normal in the middle third of the U.S., especially from northern New Mexico northeastward into Minnesota. Dry weather also occurred in Hawaii, Puerto Rico, and northern Alaska, with unsettled weather across the rest of the latter state.

The East: After last week's wet weather along the entire Atlantic Seaboard (Florida to Maine), rainfall diminished from North Carolina to Maine, but dramatically increased across Florida, Georgia, South Carolina, western North Carolina, and southwestern Virginia. The combination of tropical Gulf moisture and a stalled front with waves of low pressure along it produced widespread showers and thunderstorms that dumped heavy to copious amounts of rain along the central and eastern Gulf and southern Atlantic Coasts, generating severe flash flooding. Up to 21.7 inches of rain fell within 24-hours (ending 7am EDT June 10) in southern Escambia County, FL (extreme western Panhandle), according to a CoCoRAHs cooperative observer, with other nearby spotters reporting 13-15 inches. Around 10 inches fell a day earlier in southern Mississippi (Mobile County), with yet another 5 inches falling 2 days later (ending at 7am EDT June 11). In Florida, moderate to heavy rains soaked much of the state during the week, with the greatest totals (4 to 10 inches) falling on the state's D2-D3 areas. Both Georgia and South Carolina received decent rains early and late in the week, with more than 4 inches falling on the southern and eastern third of the state, and 2 to 4 inches elsewhere. Two to three inches was also measured farther north into western North Carolina and southwestern Virginia, drought-less areas that had been drying out recently. And from eastern North Carolina northward to Maine (areas that had seen a 1-category improvement last week), mostly light rain (0.1 to 0.5 inches)

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fell, with some northern Pennsylvania, southern New York, and New England locales observing 0.5 to 1 inch. Conditions were kept status-quo here.

With increased rainfall since late April and early May along the East, this week's deluge in the southern Atlantic Coast States continued to ease or erase any short, medium, and long term deficits, and a general 1-category improvement was made to most areas in southern Louisiana, southern Mississippi, Alabama, Florida, Georgia, and South Carolina. A few D3 and D4 areas in Alabama and Georgia still remained, however, as this week's rain were not large enough (generally 1 to 3 inches) to completely erase the medium and long term deficits. Although nearly all 30-day shortages were alleviated in Georgia, South Carolina, and Florida, 60- and 90-day and longer shortages remained, including the core D3-D4 areas of east-central Alabama and central Georgia. At 12-months, less than 80 percent of normal precipitation was observed from the Florida Panhandle northeastward into South Carolina, with deficits of 12 to 20 inches. Not surprisingly, the Impact Type was changed to all L (long-term) as the short-term impacts were negligible. The 7-day average USGS stream flows ending June 12 showed a large rebound in the volume, with most gauges in Florida, eastern Georgia, and eastern South Carolina at or above normal levels, while the 1-day (June 12) average flow was even better for all 3 states.

The Mid-South: As previously mentioned in The East narrative, central Gulf Coast locations (southern Louisiana, southern Mississippi, southern Alabama) received copious amounts of rain (more than 4 inches; locally 15-20 inches in southern Alabama), alleviating most short- and medium-term deficiencies (out to 90- and 180-days). An exception was in extreme northeastern Louisiana and extreme southwestern Mississippi where rainfall was lighter (less than 1.5 inches), and 90-day percent of normal precipitation was between 50-70 percent, accumulating deficits of 3 to 6 inches. In northern Alabama, a band of heavy rain (2 to 3.5 inches) was enough to cut the D0 area into two and remove the D1 in Alabama as short- to medium-term deficiencies were greatly reduced or eliminated. June 12 USGS stream flows responded to the rains, with values well-above normal (more than 90th percentile) in these wet locations. Farther north and west, conditions were not looking too favorable through Day 6 as little or no rain had fallen on northern Louisiana, Arkansas, Missouri, northern Mississippi, western Kentucky, and western Tennessee, and conditions had deteriorated. Fortunately, a cold front brought welcome rains on Day 7, some locally heavy, to much of this region, keeping these states at status-quo. An exception was in eastern Kentucky where less than 0.2 inches fell, and D0 was expanded. Where heavier rains fell (2 to 4.5 inches), a slight improvement was made (northern Louisiana, southern and southeastern Arkansas, and northwestern Mississippi). As of June 10 (before the rain fell), the USDA/NASS statewide average topsoil moisture short or very short was at 57, 75, 87, 49, 39, and 31 percent in LA, AR, MO, KY, TN, and AL, respectively, but should improve somewhat after the June 11-12 rains are added. Missouri corn and soybean conditions rated poor or very poor as of June 10 were at 18 and 27 percent, respectively. Pasture conditions rated poor or very poor were the worst in Arkansas and Missouri (57 and 44 percent). June 12 stream flows were still way down, with many sites at near- to record low levels in western Arkansas and southeastern Missouri at 7-, 14-, and 28-days.

The Midwest: Warmer weather pushed into the Midwest after last week's brief cool down as temperatures averaged near to slightly above normal (0 to 3 degF) in the central and eastern Corn Belt (Illinois, Indiana, Ohio), and above-normal in the western Corn Belt and upper Midwest (3 to 7 degF). This came after near-record May warmth as monthly temperatures averaged 5 to 6 degF above normal in the Corn Belt. Highs reached into the upper 80s in the east, and low 90s in the west. Rainfall was lacking during the first 5 days of the week, but a cold front late in the week finally triggered showers and thunderstorms across much of the Midwest. Light to moderate amounts (0.5 to 1 inch) fell on most of Minnesota, western Wisconsin, UP of

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Michigan, western Iowa, most of Missouri, and southern Illinois, with locally heavy rains (more than 2 inches) in extreme northwestern Minnesota, UP of Michigan, southwestern Iowa, and southwestern Missouri. Farther east, however, little or no rain fell on Lower Michigan, eastern Wisconsin, northern and eastern Illinois, Indiana, Ohio, southeastern Iowa, and east-central Missouri. Even with the end of week rainfall, widespread deterioration occurred due to the continued subnormal precipitation, increased temperatures, and high moisture demand for the emerging crops. Accordingly, D0 was expanded to cover the rest of Illinois, northwestern and most of central and southern Indiana, southern Michigan, and northern Ohio as the past 30-days have only brought 25-50 percent of normal rainfall and 2 to 6 inch deficits. In addition, D1 was increased in southeastern Iowa and northeastern Missouri, southeastern Missouri, central and southern Illinois, northeastern and southwestern Indiana, and northwestern Ohio where 60-day precipitation was 40-60 percent of normal with shortages of 4 to 8 inches. D2 was slightly widened in southeastern Illinois and southwestern Indiana as the rains missed these areas. 90-day precipitation was less than 50 percent, and deficiencies were between 8 and 12 inches. Several USGS sites in northern and central Indiana, central and southern Illinois, and northwestern Ohio were at near- (less than tenth percentile) or record low (less than two percentile) stream flows at 1- and 7-days. According to USDA/NASS, statewide topsoil moisture (June 10) rated short or very short stood at 78, 74, 66, 56, 56, and 40 percent in IL, IN, IA, WI, OH, and MI. Corn conditions rated poor or very poor increased from last week to: 10, 15, 8, 5, 7, and 8 percent in IL, IN, IA, MI, OH, and WI, respectively, while similar conditions for soybeans were at 12, 16, 10, 8, 10, and 9 percent. 23 and 21 percent of Indiana and Illinois pastures were rated poor or very poor. Unfortunately, this region needs timely rains and seasonable temperatures very soon in order to ensure that emerging corn and soybean develop properly and halt further declines in their condition.

The Plains: Early in the week, scattered showers and thunderstorms dropped decent rainfall (more than 2 inches) in the north on southeastern Wyoming, western South Dakota, and northeastern North Dakota, and in the south on southern Oklahoma, central, northeastern, and southeastern Texas, and Texas Panhandle (around Lubbock). After a dry April (Texas) and May (Oklahoma and northern Texas), abnormal dryness and drought had crept back into most of central Oklahoma and eastern Texas, but recent rains have made this area drought-free again. In southern Texas, however, another mostly dry week called for some expansion of D2. The heavy rains in southeastern Wyoming, northwestern Nebraska, southwestern South Dakota, and northeastern North Dakota were enough to diminish D1 and erase D0 there. In the central Plains, however, little or no rain, unseasonable prolonged warmth (since March), windy weather, and increased water demand by crops and pastures have rapidly deteriorated conditions to where impacts are worse than what would be expected. In Colorado, much of the state saw a 1-category deterioration, with D3 expanding in the northwest, D2 in the southwest and central, and D1 across most of the east. USGS stream flows in the west are in the lower fifth percentile and many station's Standardized Precipitation Indices (SPI) are less than -2 on the 6-month time scale. In Nebraska, little or no rain in the eastern two-thirds of the state, coupled with warm (temperature anomalies 4 to 8 degF), windy weather and thirsty crops, pushed D0 and D1 northward from the Kansas-Nebraska border. Similar to Nebraska, Kansas also saw little or no rain except in the extreme northeastern portion (0.5 to 1.5 inches), and weekly temperatures averaged 3 to 5 degF above normal. Much of the state has recorded under 25 percent of normal precipitation the past 30 days and less than 50 percent during the past 60-days. In the driest areas, D1 and D2 were added. According to USDA/NASS, statewide topsoil moisture short or very short stood at 76, 75, and 71 percent in KS, NE, and CO, respectively. In CO and KS, 28 and 24 percent of the winter wheat was rated poor or very poor, while CO, WY, KS, and TX pastures and ranges in poor or very poor conditions were at 55, 49, 41, and 38 percent. Similar

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to the Midwest, the central Plains will need timely rains and seasonable temperatures very soon to ensure adequate crop (corn, soy, sorghum, sunflowers) and pasture and range growth.

The West: This week saw unseasonably cool conditions (weekly temperatures averaged 4 to 10 degF below normal) in the Far West, and unsettled weather in the Northwest (1 to 3 inches precipitation in western and northeastern Washington, western and northeastern Oregon, northern and central Idaho, western Montana, northwestern Wyoming). The spring showers in central Washington and central Oregon (0.2 to 1 inch) continued to nibble away at the D0 and D1 areas as Water Year-To-Date (YTD) deficits slowly disappeared. Average basin precipitation since Oct. 1 stood between 106-117 percent in central Washington, and 84-95 percent in southern Oregon. In southwestern Montana and eastern Idaho, 0.5 to 1 inch of rain fell across the northern D0 area, enough to remove it, but less than 0.2 inches fell across southern sections and it remained. In contrast, little or no rain fell across the Southwest (their normal dry season). Temperatures did average above-normal in eastern Arizona, New Mexico, southeastern Utah, Colorado, and eastern Wyoming. The combination of subnormal Water YTD precipitation (50-75 percent of normal) and an early warm spring snow melt has left the area parched and primed for wild fires. In southern New Mexico, 2 major wildfires continued burning (one near Ruidoso, the other in the Gila National Forest), scorching over 316,000 acres, destroying over 240 structures, and forcing the evacuation of at least 1500 residents. In Colorado, the High Park wildfire near Ft. Collins continued to grow. It has encompassed 43,433 acres, caused 1 fatality, destroyed over 100 structures, and was 0 percent contained. In response to the dry and warm weather, some slight deterioration was made in New Mexico, Colorado (see The Plains write-up), and southwestern Wyoming (D2 added) where both short and long term blends were at D4. Hopefully the southwest monsoon season will begin soon as pasture and range conditions (poor or very poor) in AZ and NM stood at 57 and 81 percent.

Hawaii, Alaska and Puerto Rico: Occasional widely-scattered light showers (less than 0.25 inches) fell on the windward sides of Kauai, Oahu, Maui, and the Big Island (now in their dry season), but not enough to improve the drought. Meanwhile on the leeward locations, little or no rain fell, and conditions remained status-quo. In contrast, according to the Hawaii FSA, the Kona Belt (coffee belt region) on the Big Island (southwestern side) has greened up with increased shower activity, but conditions below 500 feet are very dry while above 2000 feet the vegetation also starts to dry out. As a result, a small improvement band of D0 was added along the Kona slopes of the Big Island. There was no drought in Alaska or Puerto Rico.

Looking Ahead: During the next 5 days (June 14-18), a mostly tranquil weather pattern will envelope the lower 48 States, with storm systems tracking along the U.S.-Canada border and across Canada. In the upper Midwest, western Corn Belt, and northern Plains, however, stalled frontal systems are forecast to drop moderate to heavy rains (1 to 3 inches) on most of Nebraska, Iowa, eastern Minnesota, and western Wisconsin. Scattered light showers may fall along the Gulf and southern Atlantic Coasts, including Florida, and in northern New England. Most of the West, Southwest, Southeast, and East will be dry. Temperatures should average above-normal from northern California into the central Rockies and Plains and northeastward into the Great Lakes region. Subnormal readings are expected in the Northwest, southern California, and along the East Coast.

The NWS 6- to 10-day outlook for June 19-23 calls for increased odds of above-normal precipitation in the Great Lakes region, Florida, and eastern Alaska, while the best chances for subnormal rainfall was over the southern Plains and western Alaska. The remainder of the lower 48 States had no precipitation tilt either way. Above-normal temperatures are expected in the

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northeastern quarter of the Nation and eastern Alaska. Subnormal readings should be limited to the West Coast and northern tier of States, from Washington to North Dakota, and in western Alaska.

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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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