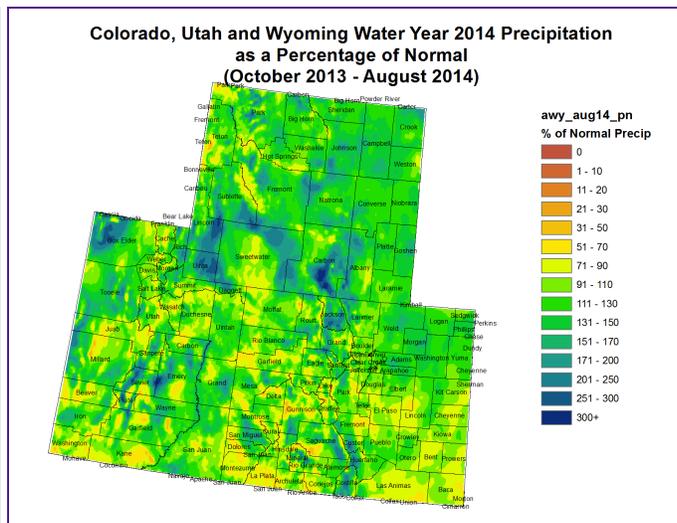
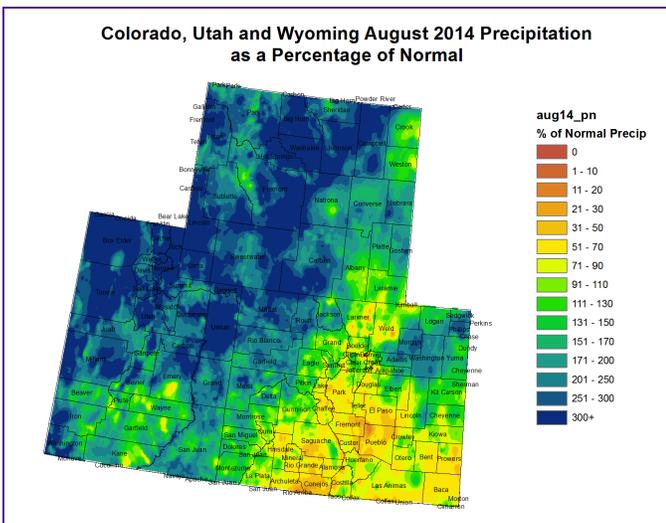
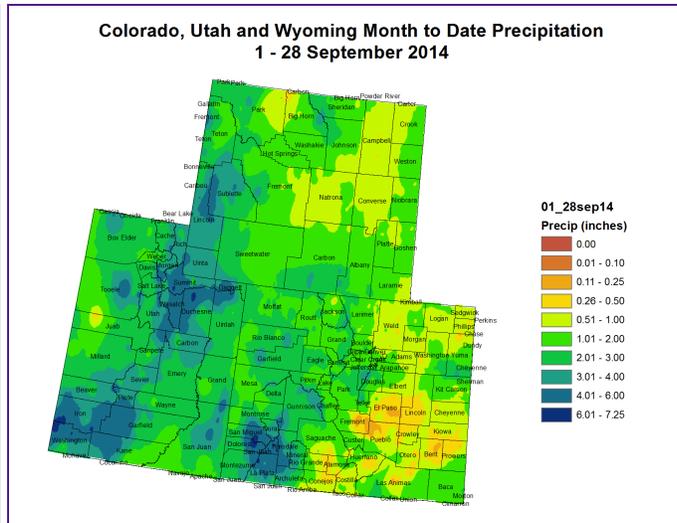
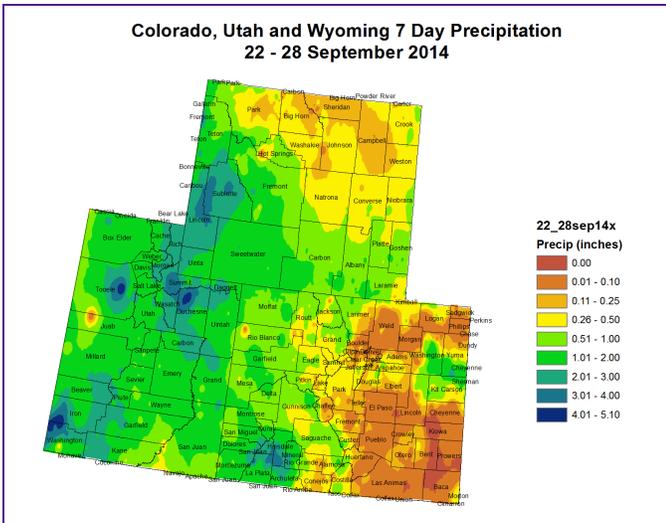


## NIDIS Upper Colorado River Regional Drought Early Warning System September 30, 2014



Precipitation	SPI	Streamflow	Surface Water	ET	Temperature	Outlook	USDM Discussion
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The images above use daily precipitation statistics from NWS COOP, CoCoRaHS, and CoAgMet stations. From top to bottom, and left to right: most recent 7-days of accumulated precipitation in inches; current month-to-date accumulated precipitation in inches; last month's precipitation as a percent of average; water-year-to-date precipitation as a percent of average.

### Last Week Precipitation:

- More beneficial moisture fell over the UCRB over the past week with better than 0.5" of precipitation over much of the basin.
- Sublette and Lincoln Counties in WY received large areas of 2-3" with areas of 3-4". Sweetwater County also picked up 1-2" over the past week.
- In UT, the Wasatch and Uintah ranges also saw 2-3" with Duchesne County receiving 4-5" of precipitation over the last week.
- Farther to the south, the San Juan basin saw another week of above average moisture with greater than 1" over the whole basin and 2-4" over the higher terrain. The Four Corners area also received better than 0.5", with Montezuma County seeing 1-2".

- East of the divide saw a drier week with much of eastern CO receiving less than 0.25". Washington, Yuma, Kit Carson and NE Lincoln counties saw the most beneficial precipitation with 0.5-2" over the last week.
- The western side of the Rio Grande basin saw some of the precipitation that hit the San Juan Mountains, but the rest of the San Luis Valley saw less than 0.5".
- On Monday, after the 7-day and month-to-date maps, eastern CO did received widespread precipitation over 0.25", with parts of northeastern CO seeing over 1" in a 24 hour period.

### **August Precipitation :**

- In the UCRB most of Western Wyoming and Eastern Utah received above average precipitation for the month of August with areas of 300+ percent of average in southwest Wyoming, the Wasatch Range in UT and Uintah County, UT.
- The rest of eastern UT down into the Four Corners area saw above average precipitation, mostly in the 150% to 250% of average range.
- Most of western Colorado also received above average precipitation for August, ranging from 100% of average in the Four Corners area to 300% of average in Moffat County in northwestern CO.
- Along the Divide in central and southern CO, precipitation was less for August, with Lake Chaffee, Saguache, Hinsdale and the eastern San Juan Mountains receiving between 50% to 90% of average, the lower amounts in the valleys.
- East of the divide saw spottier precipitation for August. Much of the northern Front Range saw near average precipitation, with the southern Front Range from Park County south, seeing below average precipitation in the range of 50% to 90% of average with spotty areas seeing less than 50% of average.
- The northeastern CO counties saw much above average precipitation, mainly 150% to 100% of average precipitation for August.
- Southeastern CO once again saw below average precipitation, in the range of 50% to 90% of average with spotty areas in Crowley, Otero and Las Animas counties seeing near average precipitation.
- Most of the Rio Grande basin also saw lower than average precipitation for the month, with the eastern part of the basin seeing near to slightly above average precipitation.

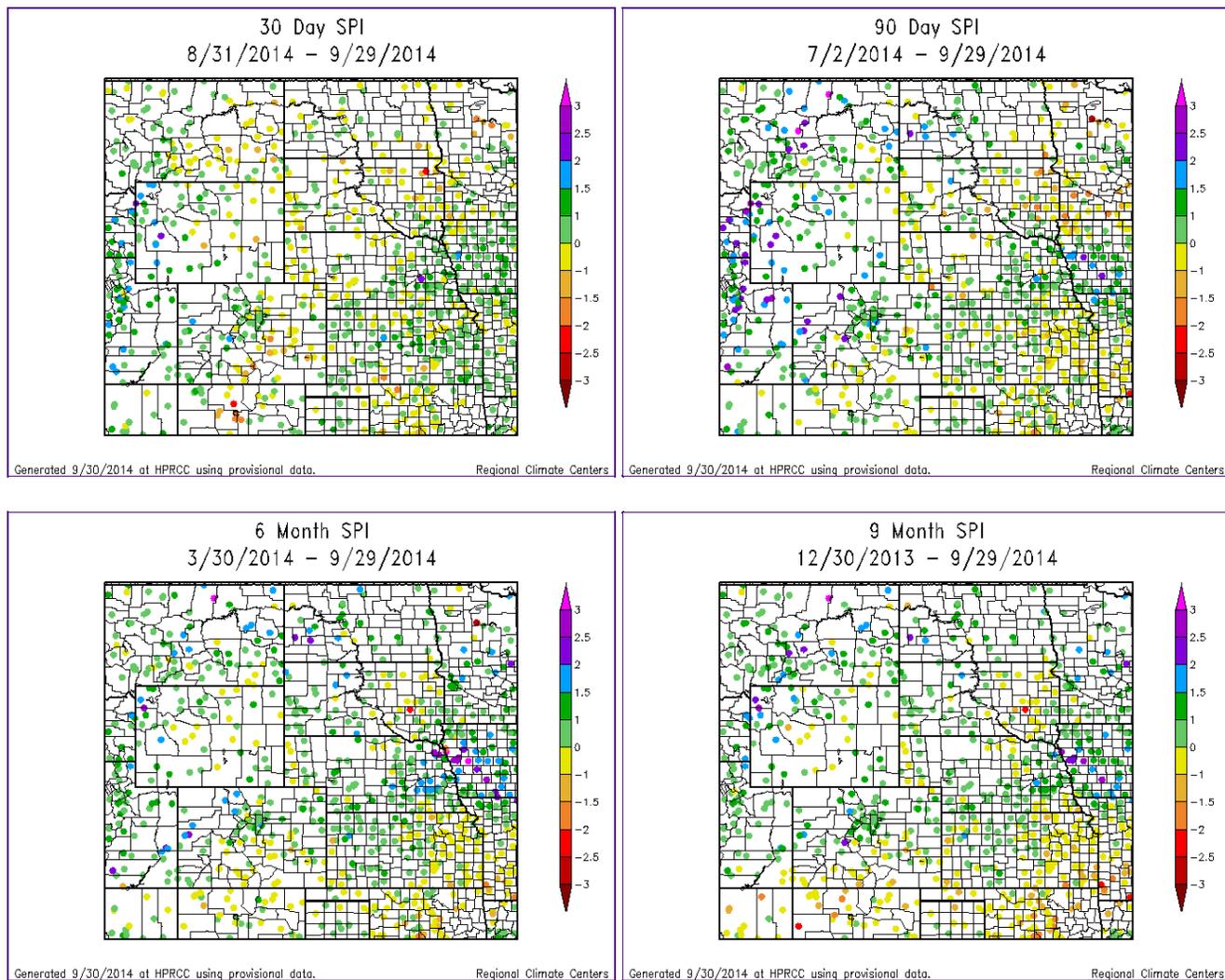
### **Water Year Precipitation (Oct-Aug):**

- Much of the UCRB is now near or above average for the Water Year through August, with spotty areas below average.
- Most of the northern portion of the basin in Wyoming is above average, with portions of Lincoln, Uinta and southern Sublette counties 200% to 300% of average. Central Sweetwater and eastern Sublette counties are 70% to 90% of average.
- Much of eastern UT is now near average, with some areas in the Duchesne River basin a little drier than average of the Water Year (70%-90%).
- Western Colorado is a bit spottier with precipitation, however much of the area is near average for the Water Year. Parts of Moffat, Rio Blanco, Garfield, Delta and Gunnison counties, along with the southern San Juan Mountains in CO are 50%-90% of average.
- The Colorado River headwaters area is still much above average, mainly greater than 150% of average.
- East of the Divide in eastern WY and northeastern CO is mostly above average with percent of average precipitation in the 100-200% range.
- Southeastern CO has improved, seeing near average for the Water Year through August, however large areas in Bent Prowers, Baca and Las Animas counties are still in the 70%-90% of average range.
- The Rio Grande Basin in southern CO has seen above average precipitation in the western and eastern parts of the basin, and below average precipitation in the valley for the Water Year.

Additional Precipitation Links: (will take you to an outside website)

 [AHPS Precipitation](#)

 [High Plains Regional Climate Center's ACIS Maps](#)



Standardized Precipitation Index standardizes precipitation accumulations for a specified time period into percentile rankings. -1.0 to -1.5 is equivalent to a D1 to D2. -1.5 to -2.0 is equivalent to a D2 to D3. -2.0 and worse is equivalent to a D3 to D4. 30- and 60-day SPIs focus on short-term conditions while 6- and 9-month SPIs focus on long-term conditions. SPI data provided by High Plains Regional Climate Center.

### Short Term (30-day):

- The UCRB is reporting positive SPI's on the short time scale of 30 days.
- Most SPIs in the basin are in the 0 to 1.5 range. Wetter SPIs show up in Sublette County, WY up to 2.5.
- The San Luis valley is one of the drier areas in Colorado, with SPI's down to -2 on the east side of the valley.
- East of the divide, the plains are showing mostly dry SPI. Most SPIs on the plains are showing -1, while some of the southern plains show SPIs down to -1.5. Most SPIs along the Front Range are wetter between 0-1.5.

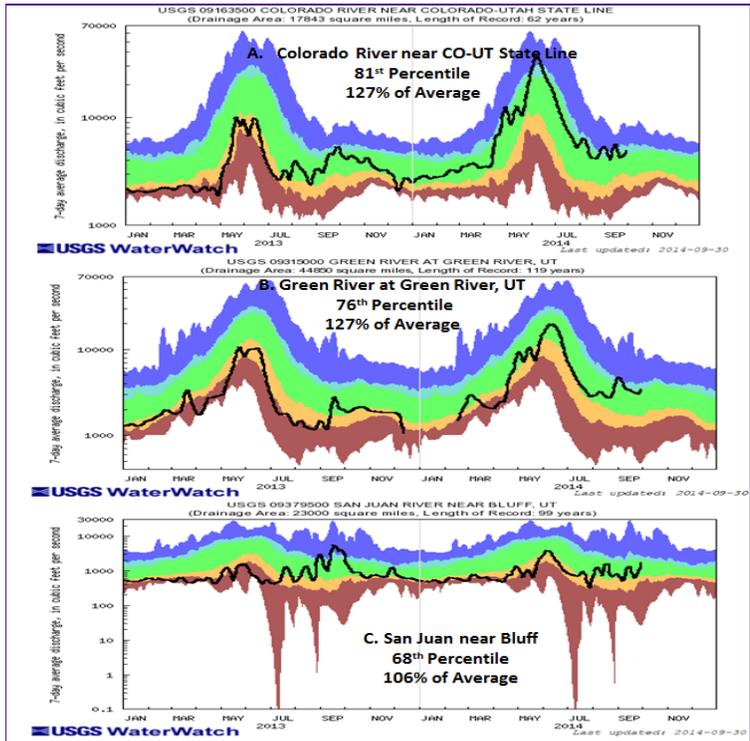
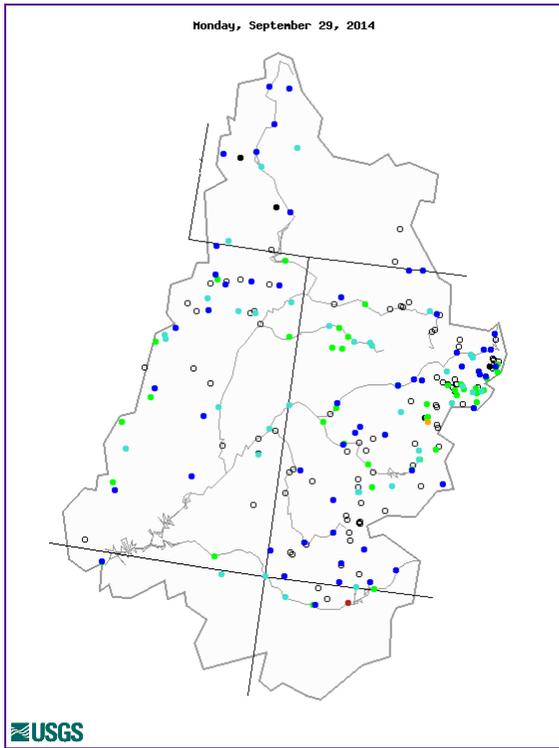
### Long Term (6-month):

- Much of the UCRB is indicating wet SPI's on the 6 month time scale. The driest area is around Gunnison County, CO where SPIs are between +1.5 to -1. There is also a dry SPI near Hermit (Hinsdale County) that dips down to -1 on the longer time scale.
- The San Luis valley is slightly dry on the longer time scale with SPI's between 0 and -1.
- East of the divide, the northern plains are reporting mainly wet SPI's from 0 to +1.5, however farther south is drier. The driest SPI is in Crowley County and dips down to -1.5. The rest of the area is slightly dry to slightly wet with the spotty precipitation the areas has received.

Additional SPI Links: (will take you to an outside website)

[WestWide Drought Tracker SPI Maps](#)

[HPRCC's SPI Maps](#)



Explanation - Percentile classes							
Low	<10	10-24	25-75	76-90	>90	High	Not-ranked
	Much below normal	Below normal	Normal	Above normal	Much above normal		

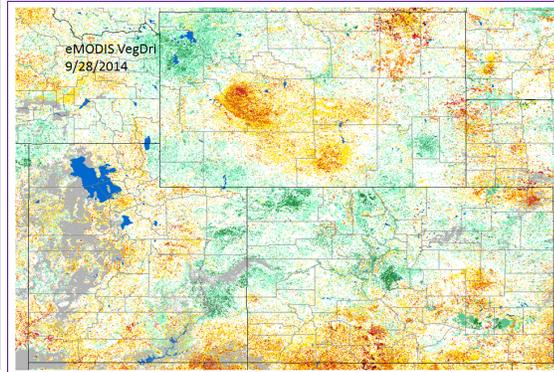
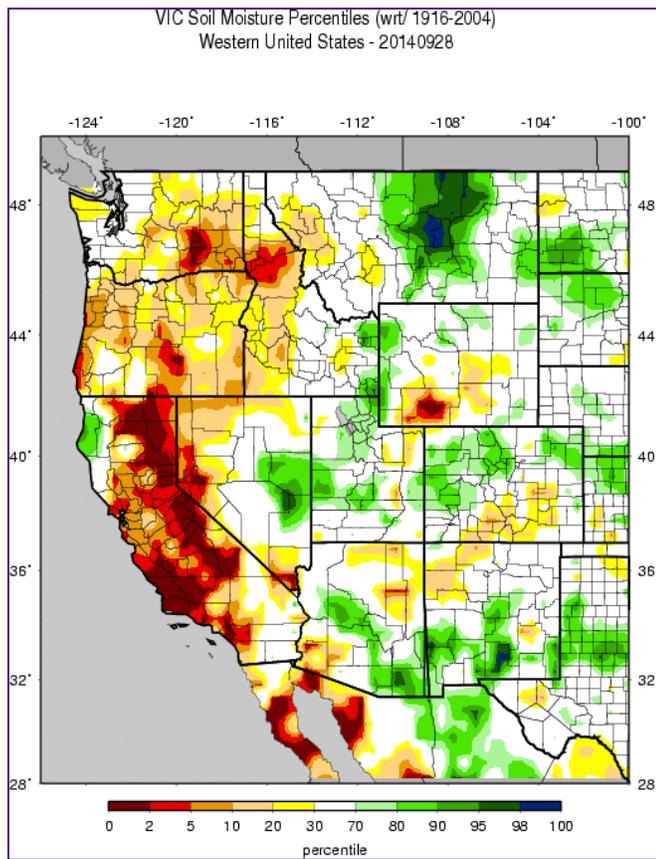
The top left image shows 7-day averaged streamflows as a percentile ranking across the UCRB. The top right image shows 7-day averaged discharge over time at three key sites around the UCRB: The Colorado River at the CO-UT state line; the Green River at Green River, UT; and the San Juan River near Bluff, UT. All streamflow data provided by United States Geological Survey.

**Streamflow Statistics:**

- 99% of the gages in the UCRB are reporting above the 25th percentile for the 7-day average streamflow.
- 34% of the gages are reporting much above normal (90th and greater percentile), with 1% reporting highest 7-day average for this period.
- 1% of the gages are reporting in the below normal (10th-24th percentile) range.
- The highest streamflows are scattered through the entire UCRB.
- Streamflow on the Colorado River near the CO-UT state line is well above average, reporting in the 81st percentile (127% of average).
- The Green River at Green River, UT is reporting in the 76th percentile (127% of average).
- The San Juan River near Bluff, UT has increased after the precipitation this week and is in the 68th percentile at 106% of average.

Additional Streamflow and River Links: (will take you to an outside website)

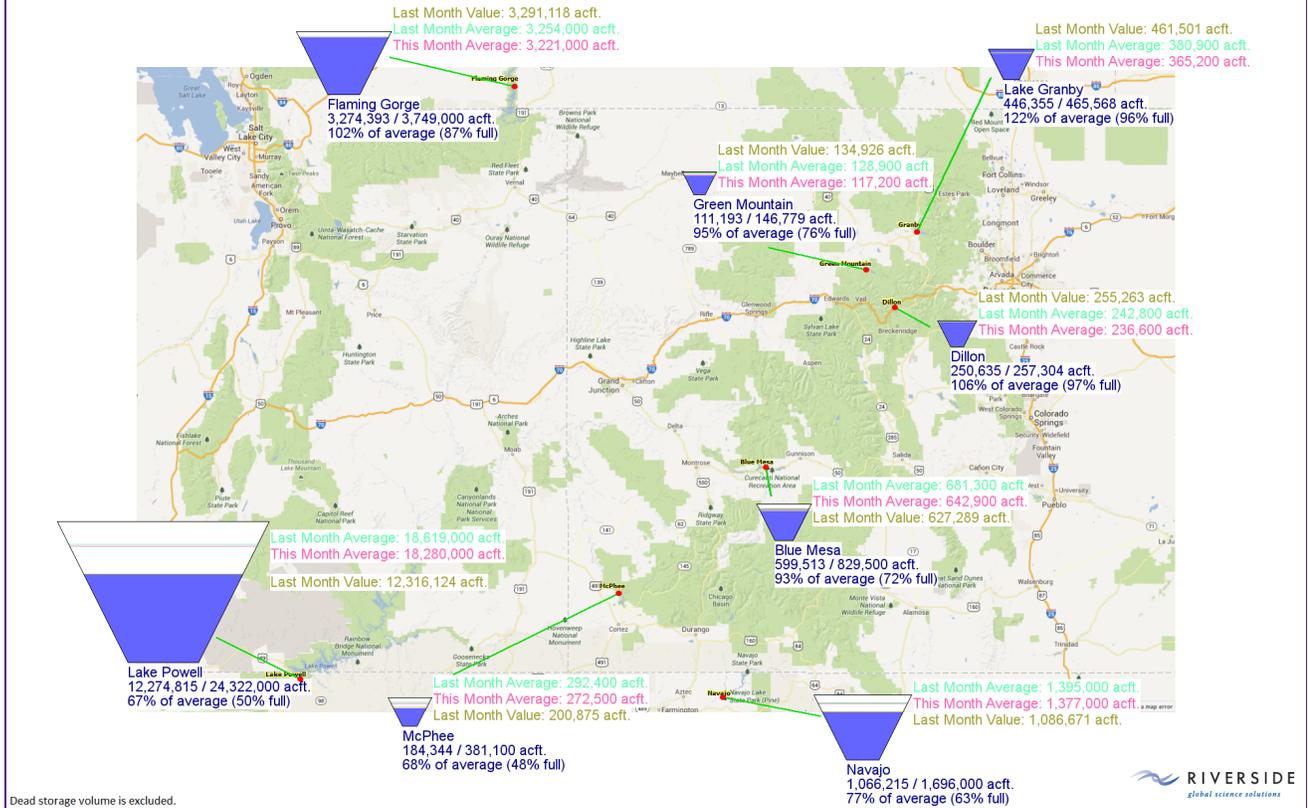
- [USGS Streamflow Drought](#)
- [CBRFC Peak Flow Forecast Conditions Map](#)



- Extreme Drought
- Severe Drought
- Moderate Drought
- Pre-Drought
- Normal
- Slightly Moist
- Very Moist
- Extremely Moist
- Water
- Out of Season

The top left image shows VIC modeled soil moisture as a percentile ranking. The top right image shows VIC modeled soil moisture combined with SWE as a percentile ranking.

2014/09/29



The above image shows last month's and this month's current volumes of the major reservoirs in the UCRB, with percent of average and percent of capacity.

## VIC:

- There is a large gradient in VIC modeled soil moisture in the headwaters of the Green River. Sweetwater County, WY is still showing soil moisture totals generally between the 0th and 30th percentile. Only about 50 miles to the west near the UT, WY state line soil moisture ranges from the 70th to the 95th percentile. It should be noted that Sweetwater county is often depicted very dry on this modeled soil moisture product.
- Along the UT/CO border, soils are wet and reporting in the 70th to 90th percentile. Surrounding areas are showing normal soil moisture conditions.
- The San Luis valley is showing dry soils, ranging from the 5th to 30th percentiles.
- East of the divide on the plains, a north-south gradient exists. The northern plains are showing moist soil conditions from the 30th to 90th percentile. The southern plains are drier and reporting soil moisture in the 10th to 30th percentiles over Lincoln, El Paso, Pueblo, Crowley and Otero counties.

## VegDRI:

- The VegDRI is showing healthy vegetation over southern Wyoming, Eastern Utah and NW Colorado over the past few weeks. Parts of Sweetwater and Sublette counties are showing poorer vegetation in the pre to moderate drought condition category.
- The Four Corners area is still indicating dry vegetation conditions from San Juan county, UT east into the San Luis valley. These areas are mainly in the pre- to moderate drought category.
- The San Luis Valley is indicating drier conditions than areas farther west. This index gets down into the severe drought classification in the valley.
- Again, east of the divide there is a north-south gradient. The northern plains are doing great in terms of vegetation health and the dry area in Sedgwick county is likely not valid based on ground reports.
- Farther south on the eastern plains is showing a mixed bag of conditions. Irrigated areas along the Arkansas basin are showing wet conditions while the surrounding areas are mainly reporting in the pre- to moderate drought classification.

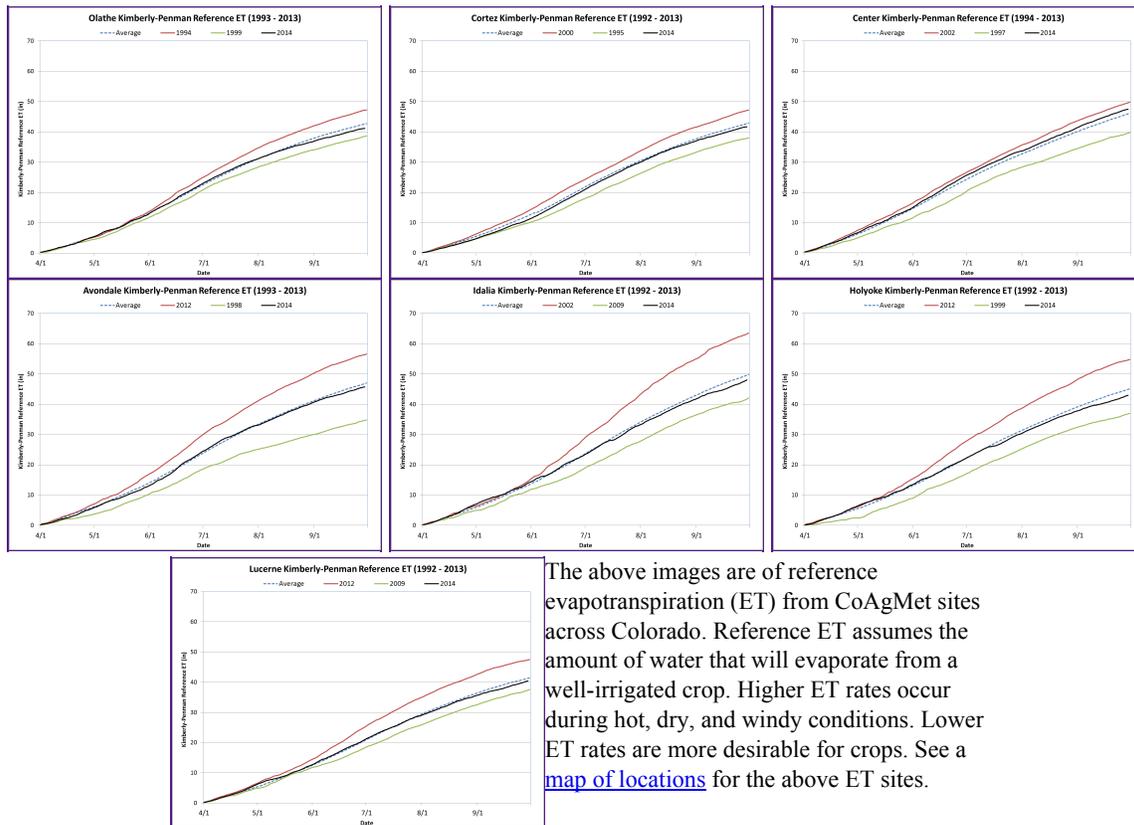
## Reservoirs:

- The reservoirs in the drought monitor region are showing volume decreases, which is normal for this time of year.
- Flaming Gorge is 102% of the September average.
- Green Mtn is 95% of September average.
- Lake Granby is 122% of September average.
- Lake Dillon is at 106% of the September average, the first decrease this month after the volume increased much of the month.
- Blue Mesa is 93% of the September average.
- Navajo is 77% of the September average and saw a very slight increase after the precipitation in the area the past week.
- McPhee is 68% of the September average.
- Lake Powell is 67% of average and 50% full.

Additional Surface Water Links: (will take you to an outside website)

[NLDAS Drought Monitor](#)

[Bureau of Reclamation Upper Colorado River Basin Teacup Diagrams](#)

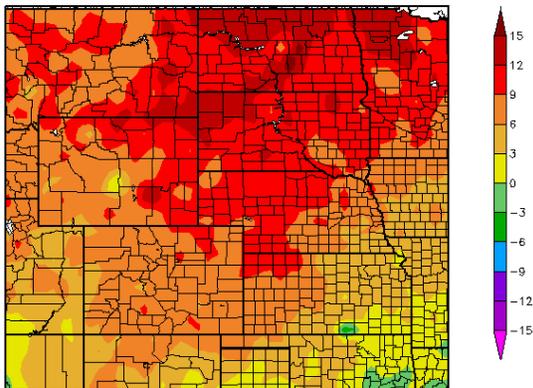


The above images are of reference evapotranspiration (ET) from CoAgMet sites across Colorado. Reference ET assumes the amount of water that will evaporate from a well-irrigated crop. Higher ET rates occur during hot, dry, and windy conditions. Lower ET rates are more desirable for crops. See a [map of locations](#) for the above ET sites.

### Reference Evapotranspiration:

- Olathe: ET has dropped off since the middle of August and is now tracking below average for the growing season to date.
- Cortez: ET is tracking slightly below normal for the growing season, and has been doing so since the middle of August.
- Center: ET has continued to track above normal since early June, but is still much lower than the highest year of 2002.
- Avondale: ET is tracking just slightly below the growing season average, and has dropped farther below normal since the start of September.
- Idalia: ET dropped in mid-July with monsoonal moisture coming into the area. Since the start of September, seasonal ET has fallen even farther below the normal.
- Holyoke: ET dropped off in mid-July and continues to track below average for the growing season.
- Lucerne: ET rates are tracking slightly below average for the growing season since the end of July, and have been slowly departing further from normal since the start of September.

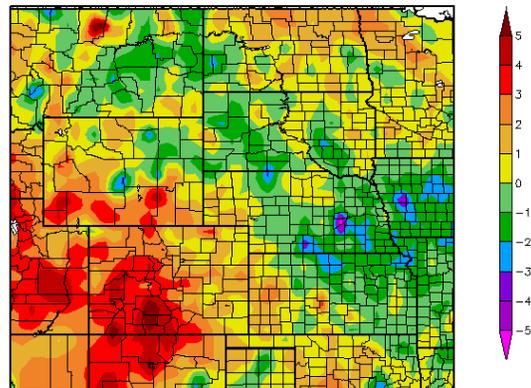
Departure from Normal Temperature (F)  
9/23/2014 - 9/29/2014



Generated 9/30/2014 at HPRCC using provisional data.

Regional Climate Centers

Departure from Normal Temperature (F)  
9/1/2014 - 9/29/2014

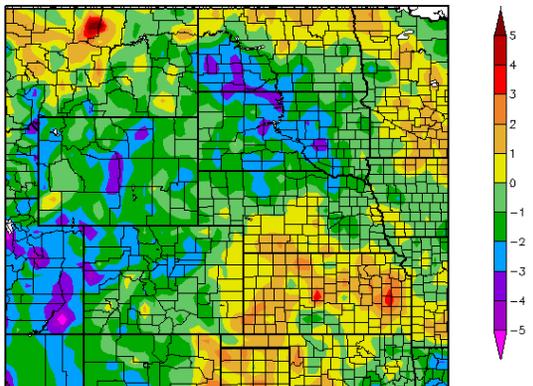


Generated 9/30/2014 at HPRCC using provisional data.

Regional Climate Centers

All images show temperature departures from average over different time periods (last 7 days on top left; month-to-date on top right; last full month on bottom). Temperature departure maps provided by HPRCC ACIS.

Departure from Normal Temperature (F)  
8/1/2014 - 8/31/2014



Generated 9/11/2014 at HPRCC using provisional data.

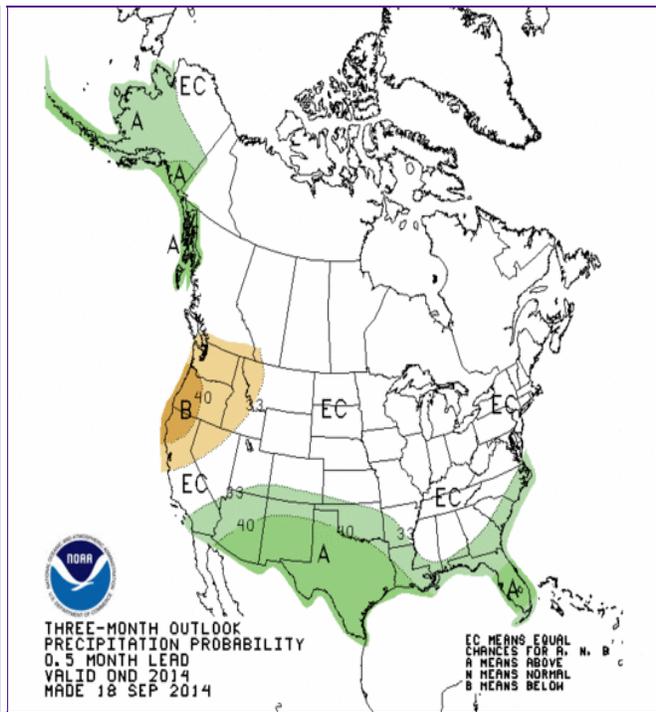
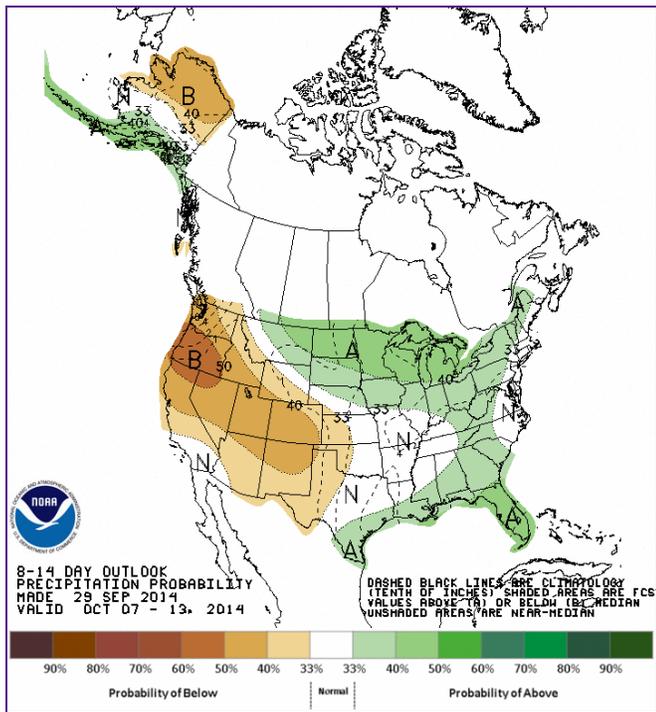
Regional Climate Centers

### Last Week Temperatures:

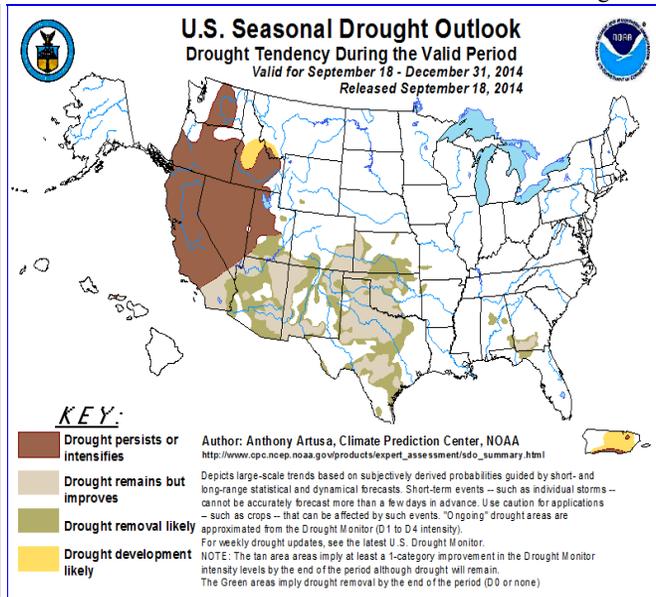
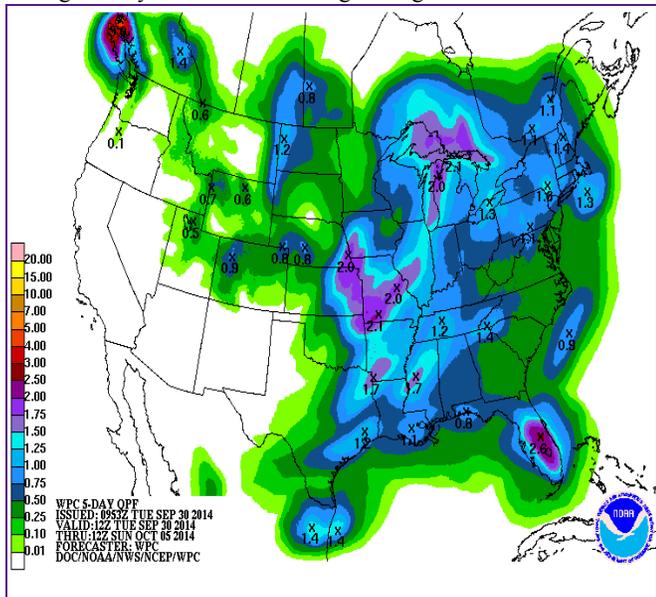
- The UCRB saw above average temperatures last week. Southwest WY and western CO saw temperatures 6-9 degrees above average. Eastern UT was not as warm, only seeing 3-6 degrees above average.
- East of the Divide, the rest of Colorado saw 6-9 degrees above average and southeastern WY was 9-12 degrees above average.

### Last Month Temperatures:

- August temperatures in the UCRB, Wyoming and much of Colorado were mostly below average.
- The Upper Green River basin in WY were mostly 0 to 2 degrees below average.
- Eastern and northern UT saw temperatures mainly 3 degrees below average with a few areas 4 degrees cooler than average.
- Western CO also saw temperatures below average. The far western counties saw temperatures 3 degrees below average, while the rest of the Colorado River Basin area in CO saw 2 degrees below average for August.
- East of the divide most of the Front Range was between 0 and 2 degrees below average for August with a few areas 3 degrees below average.
- The eastern plains were a mix of near normal temperatures. Most of the counties along the CO/KS border were 0 to 1 degree above average for the month, while counties further west were slightly cooler than average.
- Crowley and Otero Counties saw temperatures down to 3 degrees below average.



The top two images show Climate Prediction Center's Precipitation outlooks for 8 - 14 days (top left) and 3 months (top right). The bottom left image shows the Hydrologic Prediction Center's Quantitative Precipitation Forecast accumulation for the five days between Tuesday 12Z and ending Sunday 12Z. The bottom right image shows the Climate Prediction Center's most recent release of the U.S. Seasonal Drought Outlook.



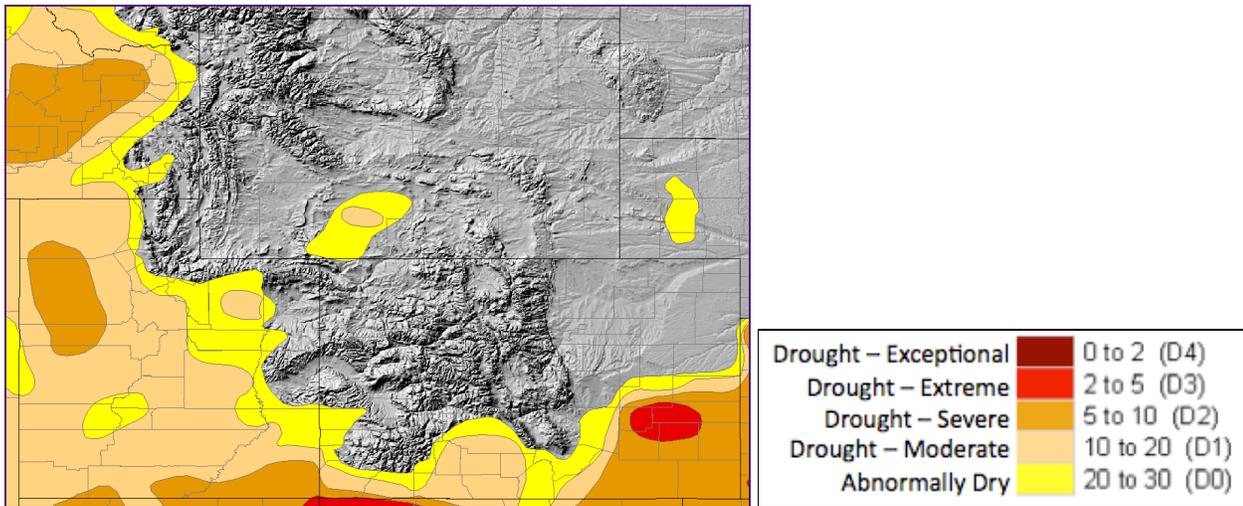
**Short Term:**

- Through Wednesday a low pressure system will bring showers and storms to the area with a chance of brief heavy rain, some hail and gusty winds. Snow is expected in the mountains with a few inches possible.
- Thursday through the weekend will bring a warming and drying trend with near to slight above average temperatures.

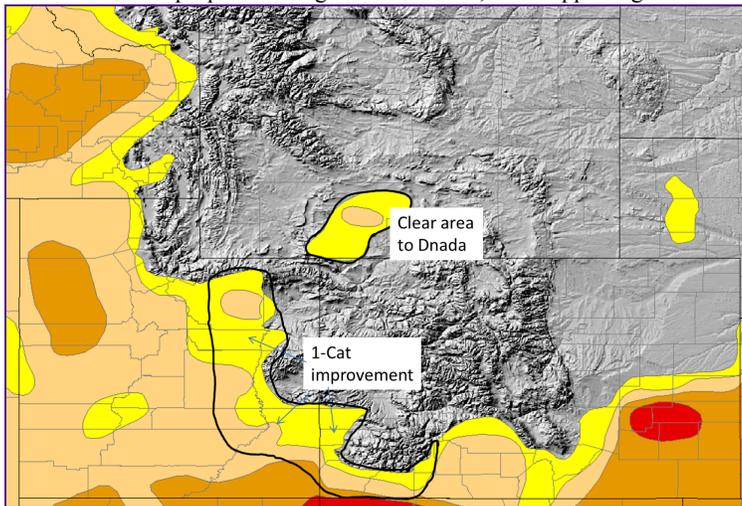
**Longer Term:**

- The 8-14 day precipitation outlook shows increased chances for below normal precipitation over much of Wyoming, Utah and Colorado.
- The 8-14 day temperature outlook (not pictured) shows chances for above normal temperatures over much of the UCRB and eastern Colorado.
- The CPC 3-month outlook shows equal chances for wetter or drier than normal conditions over the UCRB in Utah, Colorado, and Wyoming, with chances of above average precipitation over southern UT and CO.

- The seasonal drought outlook indicates that drought is expected to stay away or be removed northeast Utah and southwest Wyoming.
- Drought in the Four Corners region is anticipated to continue, but improve with some removal likely.
- Drought in the southeast CO is anticipated to continue, but improve. Little to no removal is likely.



Above is the most recent release of the U.S. Drought Monitor map for the UCRB region. Below shows the proposed changes for this week, with supporting text.



**Summary for September 30, 2014:**

The UCRB saw another week of widespread beneficial moisture, with more in the forecast for the middle part of the week.

The Eastern Plains were dry until Monday, when widespread precipitation of over 0.25" fell over much of eastern Colorado, with higher totals in northeastern CO. The San Luis Valley continues to dry out, not dry enough to introduce D2, however if conditions continue to dry out, degradations will be needed.

**Recommendations:**

**UCRB:**

With the moisture over the eastern Utah and southwestern Colorado a one category improvement is recommended. This area saw widespread precipitation over 1" with a small area in San Miguel and Montrose counties seeing between 0.5-1" of precipitation. Along with the precipitation last week, SPI out to 6 months are all positive in the area.

It is also recommended the drought in southwestern WY be removed. This would be a 2-category improvement for

central Sweetwater County, if this is not possible, we will be fine with removing the D0 and improving the D1 to D0. This recommendation is based on the much above normal 7-day precipitation for this area and the time of year.

### Eastern CO:

Status quo for Eastern CO. As mentioned the San Louis Valley may need degradations soon, however we will hold off on any recommendations at this time.

**\*\*Disclaimer:** The above recommendations are **recommendations only**, based on data, impacts, and input from local experts. These recommendations are sent to the U.S. Drought Monitor author on Tuesdays. The USDM author has sole discretion on final changes made in the region and can accept, reject, or modify the above recommendations and may have additional modifications. Additionally, any recommendations discussed during the NIDIS webinars that are agreed upon by the local experts and USDM author are **still subject to change**. Changes are final and official as of Thursday morning, and can be viewed on the official [U.S. Drought Monitor](http://www.drought.gov) website.

Additional Drought Index Links: (will take you to an outside website)

-  [Palmer Drought Severity Index for Climate Divisions Updated Weekly](#)
-  [WestWide Drought Tracker's PDSI Updated Monthly](#)
-  [Surface Water Supply Index](#)

 When available, maps and text are updated Tuesday afternoons.

 [View Printer Friendly Version](#) of current Drought and Water Assessment

 [View PDF](#) of current Drought and Water Assessment

 [Summary Archive](#)