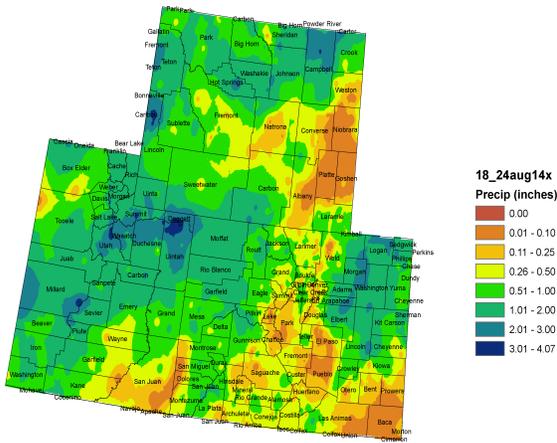
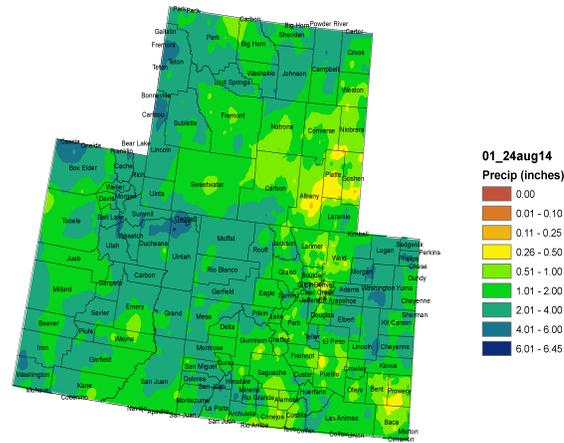


PRECIPITATION

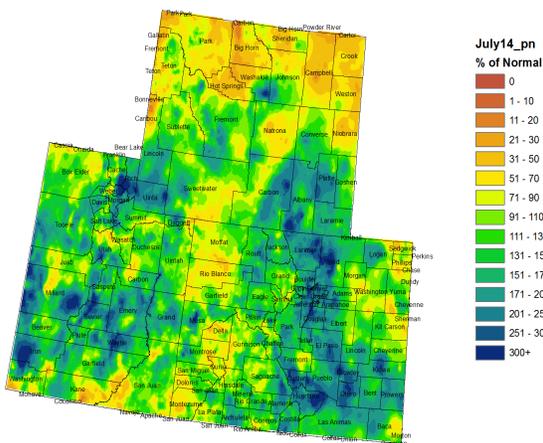
Colorado, Utah and Wyoming 7 Day Precipitation
18 - 24 August 2014



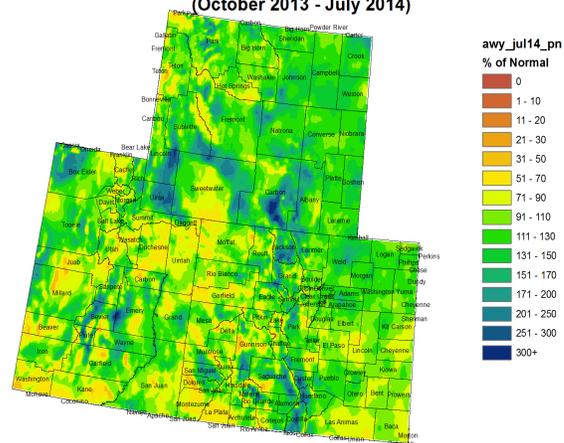
Colorado, Utah and Wyoming 7 Day Precipitation
1 - 24 August 2014



Colorado, Utah and Wyoming July 2014 Precipitation
as a Percentage of Normal



Colorado, Utah and Wyoming Water Year 2014 Precipitation
as a Percentage of Normal
(October 2013 - July 2014)



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:

- A maxima in precipitation occurred over the past week in Daggett and Uintah Counties in Utah where there was more than three inches of precipitation.
- The Majority of the UCRB received over one inch of precipitation in the past week.
- The four corners area was mainly dry relative to its surroundings (under 0.50" of precipitation on average). A swath of higher precipitation hit the area about 50 miles east of the Utah Colorado border that maximized in La Plata and Montezuma Counties of over 1.00" of precipitation.
- It was a mostly dry week across the high country with Summit, Lake, Park and Chaffee Counties showing under half an inch of precipitation.
- The Front Range stayed mostly dry with precipitation readings for the week under 0.50".

- The San Luis Valley was also dry reporting less than 0.50" in most places.
- East of the divide the best moisture fell in Morgan and Washington counties in northeastern CO with over 2.00" of rainfall. This is the second week in a row with a precipitation maxima in this area.
- A large thunderstorm hit Kit Carson County between 7:00 AM MDT on the 25th and 7:00 AM MDT on the 26th dropping over two inches of rainfall in some areas.

July Precipitation :

- July was a well above average month for precipitation across much of the drought monitor region.
- In the UCRB most of Eastern Utah experienced above average precipitation with areas of 300+ percent of average in Wayne and Emery Counties and north of the Salt Lake metro area.
- A little farther to the east, the Western slopes of Colorado extending up into Sweetwater County, WY saw the lowest percents of average precipitation for the month of July. Areas of Moffat and Rio Blanco Counties were as low as 31-50% of average.
- Western Colorado and the headwaters were mostly well above average, which has manifest in increased streamflows over the past few weeks. Most areas are above 110% of average.
- East of the divide, the NE plains of Colorado dried out quite a bit over the month of July with the majority of Sedgwick, Phillips, Yuma, and Kit Carson Counties seeing below average precipitation.
- Further to the south the North American Monsoon was very generous to areas of SE CO that have been in extreme, or even exceptional drought over recent months past. The whole SE portion of the state with a small exception in Baca County received above average precipitation for the month of July. Areas of Otero, Crowley, Kiowa, Huerfano, and Custer Counties received as much as 300+% of average precipitation.
- The Front Range also saw well above average precipitation as a result of the monsoon, but conditions were drier not far to the east.

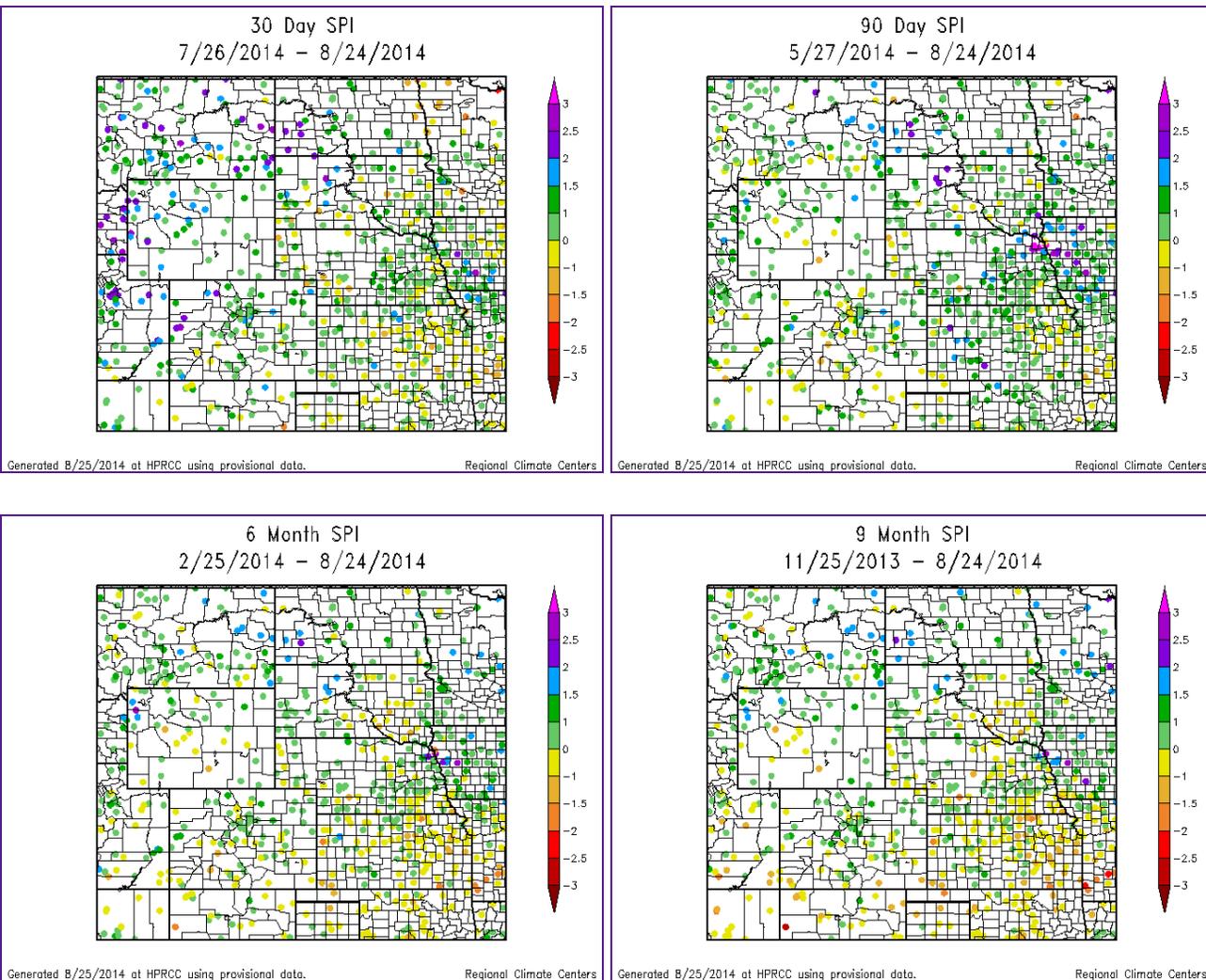
Water Year Precipitation (Oct-June):

- For the water year, fairly equal portions of the UCRB show above and below average precipitation. The parts of the UCRB that have been most above normal are near the headwaters in Uinta and Lincoln County, WY as well as Emery County, UT. Duchesne, Uintah, and Sweetwater Counties have been dry.
- The Four Corners area is still showing up below average for the water year. Parts of Dolores County have only seen 31-50% of their average precipitation by this point in the water year with surrounding areas in Montezuma, and La Plata Counties also below average.
- Some areas in the southern portion of CO west of the I25 corridor have been well above average. Custer, Huerfano, and Costilla County are all above normal for the water year, in some areas receiving as much as 200% of average precipitation.
- East of the divide, the NE plains are reporting above average moisture for the water year while the SE plains remain dry at the longer time scale. Most of SE

CO has recovered to at least 70% of average for the water year with the Pueblo, Otero, and Crowley County area back to normal.

- Most of the Front Range has had 110-150% of average precipitation for the water year.

STANDARDIZED PRECIPITATION INDEX



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 wet week across the UCRB due to monsoonal flow is very evident in the 30-day SPI. Duchesne County, which has been very dry, is showing a 30-day SPI of 2+ following a very wet week.
- Short term SPIs in the headwater regions of the Colorado and Green Rivers are generally in the 0 to 2.5 range.
- In the upper San Juan and Rio Grande River basins short term SPIs are near normal showing -1 to 1.
- The drier SPIs show up near the divide in Grand, Gunnison and Hinsdale

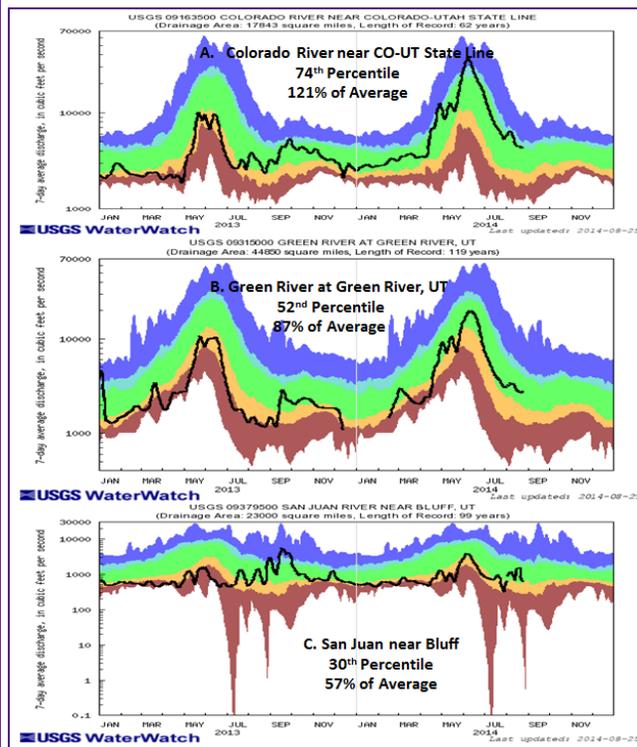
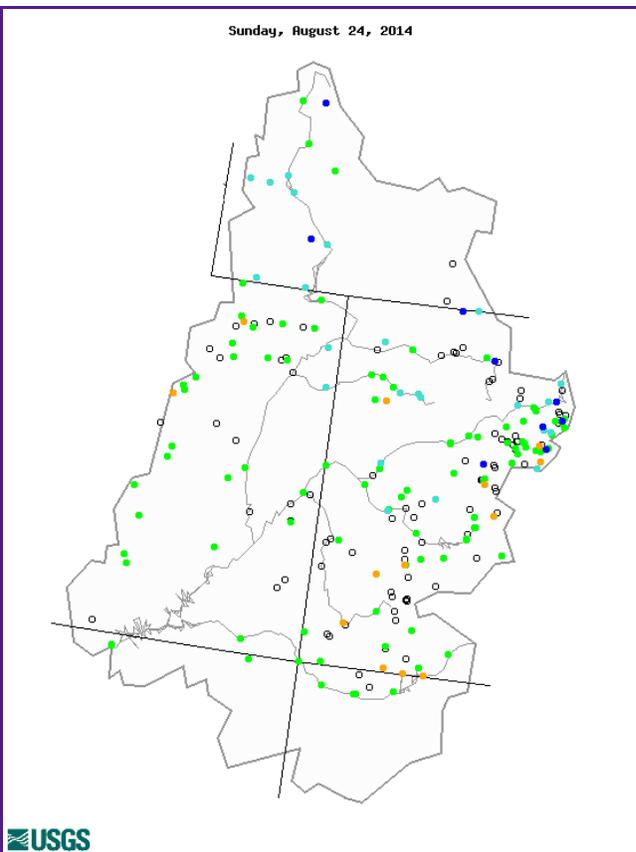
counties in CO.

- The Front Range and foothills are also reporting wet SPI's on the short time scale between 0 to +1.5.
- Farther east on the plains of Colorado is more variable with SPI's ranging from -2 to +2. Strangely the extremes here are right next to each other with Phillips County showing a SPI of +2 and Sedgewick County showing a SPI of -2. We suspect some data errors in Sedgewick County.
- Farther south on the plains SPIs are in the normal range between -1 and +1.

Long Term (6-month):

- The longer time scale is drier for the UCRB. The Green River basin is reporting SPIs between +1 to -1.5 on the 6 month time scale.
- Eastern Utah also indicated drier conditions with SPIs between +1.5 to -1. The Duchesne River Basin has returned to normal on the 6 month SPI timescale, but this rain mostly came in a short amount of time over the past week.
- The headwaters of the UCRB in Colorado are mainly wet with SPI's reporting from +1.5 to -1. The drier areas are in Grand and Gunnison counties.
- The 4 corners is also drier with SPI's ranging from 0 to -2. The driest SPIs show up in Park and Mineral Counties.
- The Rio Grande basin is showing 6-month SPIs in the normal range between -1 and 1.
- East of the divide most all stations reporting have surprisingly converged into the normal range. Most all stations are showing 6-month SPIs between -1 and +1 with a couple stations in the 1 to 1.5 range.

STREAMFLOW



Explanation - Percentile classes

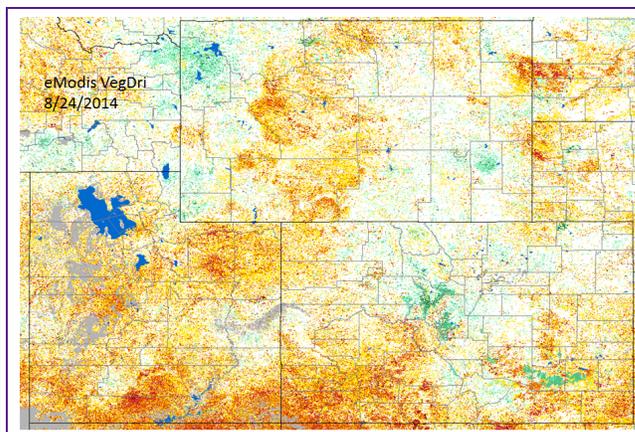
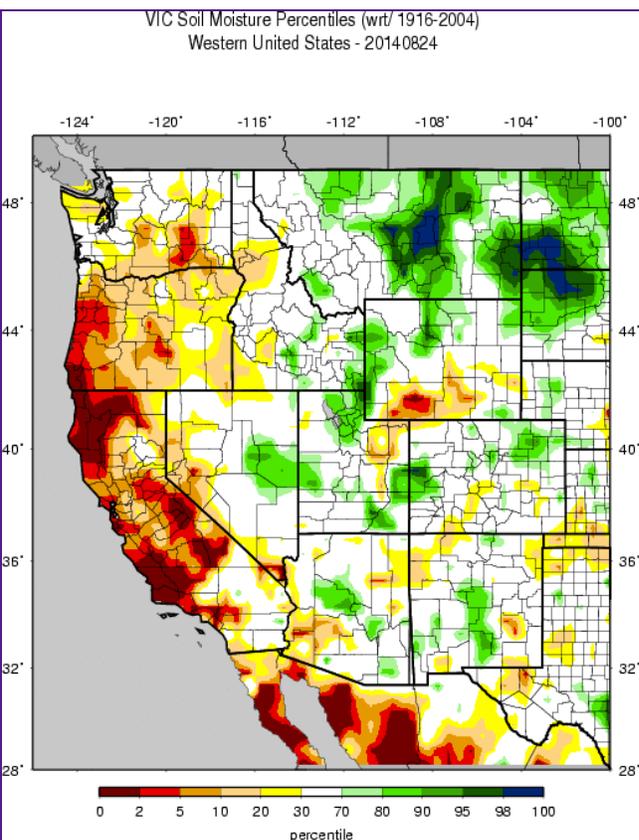
Low	<10	10-24	25-75	76-90	>90	High	Not-ranked
	Much below normal	Below normal	Normal	Above normal	Much above normal		

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.

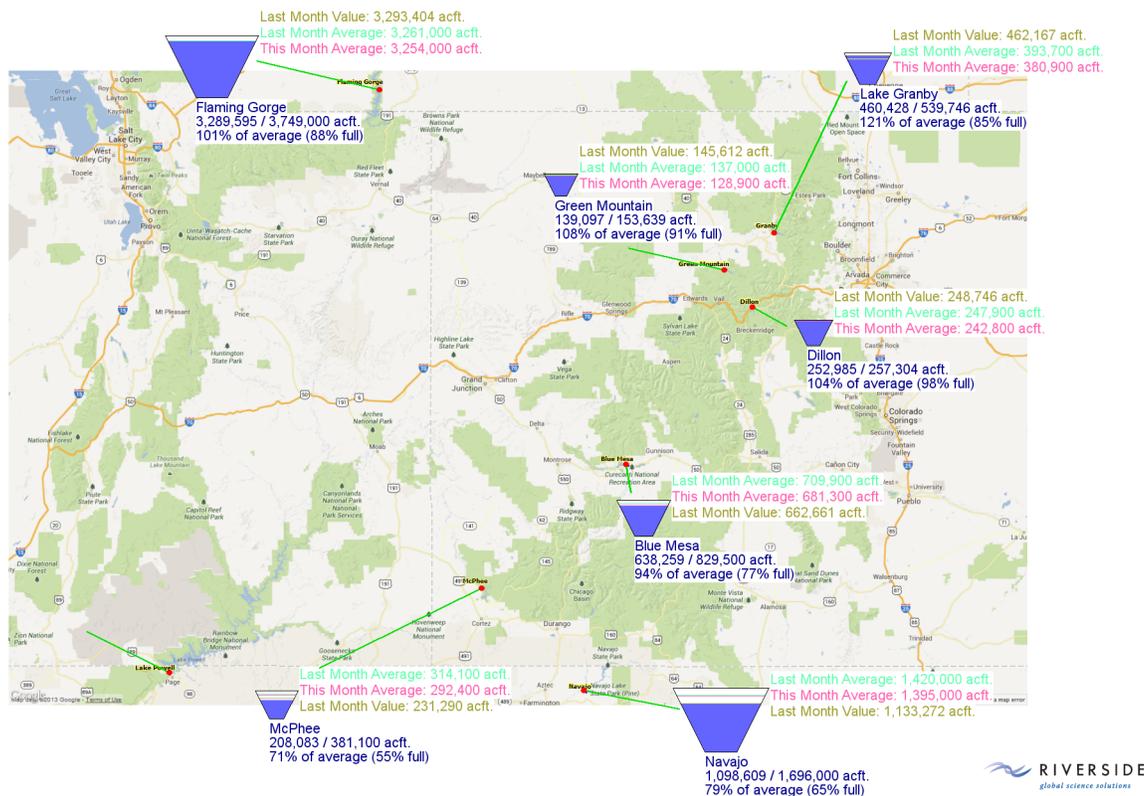
Streamflow Statistics:

- 91% of the gages in the UCRB are reporting above the 25th percentile (normal and above) for 7-day average streamflow.
- 9% of the gages are reporting in the below normal (10th-25th percentile) range with no gages below the 10th percentile.
- Streamflow on the Colorado River near the CO-UT state line is in the average range, reporting in the 74th percentile (121% of average).
- The Green River at Green River, UT is reporting in the 52nd percentile (87% of average).
- The San Juan River near Bluff, UT has dropped off again after having rebounded just recently. Flows are now in the 30th percentile at 57% of average.

SURFACE WATER



The top left image shows VIC modeled soil moisture as a percentile ranking. The top right image shows satellite-derived vegetation from the VegDRI product (which updates on Mondays).



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:

- The VIC soil moisture model has drastically reduced the soil moisture minima in Duchesne and Uintah Counties following the last week's precipitation. Soils are now showing at least the 5th percentile in this area with most of the region above the 10th percentile. While this is still low, conditions have improved.
- Sweetwater County in Southwest Wyoming is very dry. A large part of this area is below the 5th percentile in soil moisture.
- Wetter soils (70th percentile +) are being shown just west of the Four Corners and in the tri-state area of Idaho, Utah, and Wyoming.
- Most of the state of Colorado is now showing up above the 30th percentile in soil moisture. A small swath in the Rio Grande and Arkansas River headwaters is showing up between the 10th and 30th percentile. Parts of Lincoln and Bent Counties are between the 20th and 30th percentile.
- East of the divide shows wet soils on the NE plains and near normal soil moisture farther to the south. Parts of Morgan and Washington Counties are above the 90th percentile.

VegDRI:

- The VegDRI product in general is depicting much poorer conditions than the VIC soil moisture product. I have not seen this much disagreement between these two products before.
- The Four Corners area is very dry and reporting vegetation conditions in the moderate to severe drought categories.
- Duchesne and Summit Counties in Utah as well as Sweetwater County in

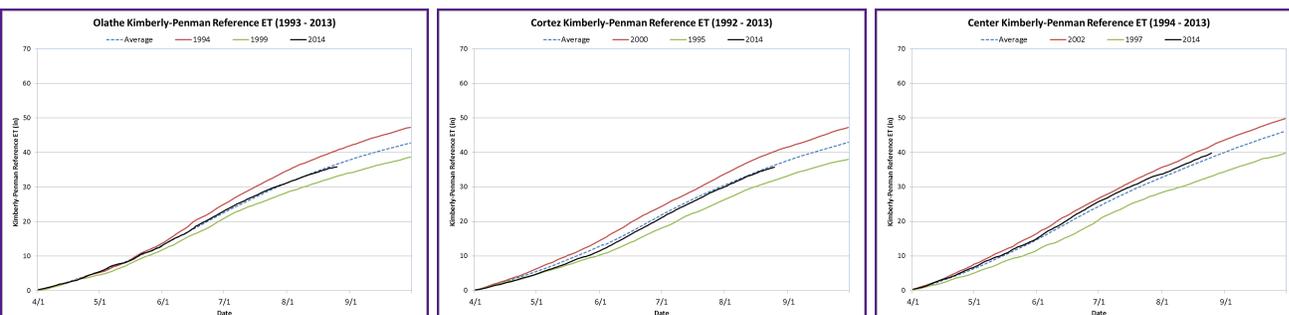
Wyoming are depicting moderate drought.

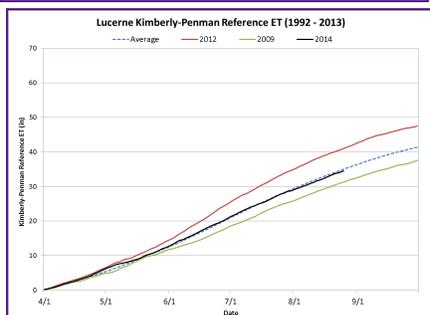
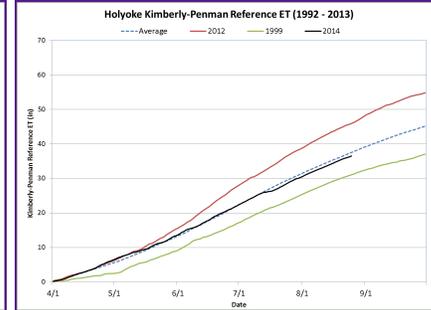
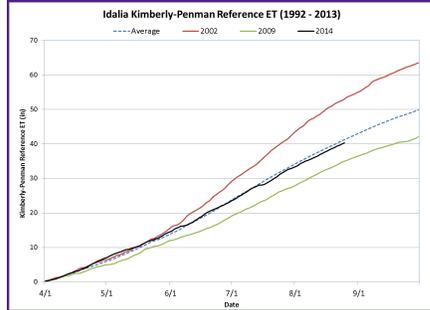
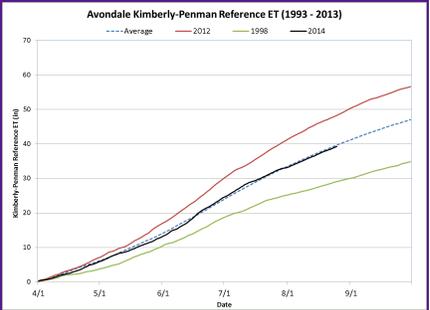
- Much of the high country in Colorado is showing near normal or above normal vegetation conditions. The most moist conditions according to VegDRI are in Summit, Lake, and Clear Creek Counties.
- The east side of the Rio Grande basin is showing moist vegetation conditions, but that dries out rapidly on the west side fo the basin.
- East of the divide shows slightly above normal conditions along the Front Range. Farther East along the Northern Plains conditions stay normal or slightly above normal.
- Baca and Las Animas Counties show pre to moderate drought conditions.
- Central Kiowa County now shows some areas of above average vegetative health.
- Sedgwick County is indicating moderate drought conditions, however this is not really in agreement with ground reports in the area and high wheat yields.
- A swath of moist conditions is present in Otero and Bent Counties.

Reservoirs:

- Most of the reservoirs have seen decreasing volumes, which is normal to see this time of year.
- Flaming Gorge is 101% of the August average.
- Green Mtn is 108% of August average.
- Lake Granby is 121% of August average.
- Lake Dillon is 104% of August average and has still seen a slight volume increase.
- Blue Mesa is 94% of the August average.
- Navajo is 79% of the August average.
- McPhee is 71% of the August average.
- Lake Powell (not reporting on graphic) is currently reporting 84% of average and is 94 feet below full pool.

EVAPOTRANSPIRATION



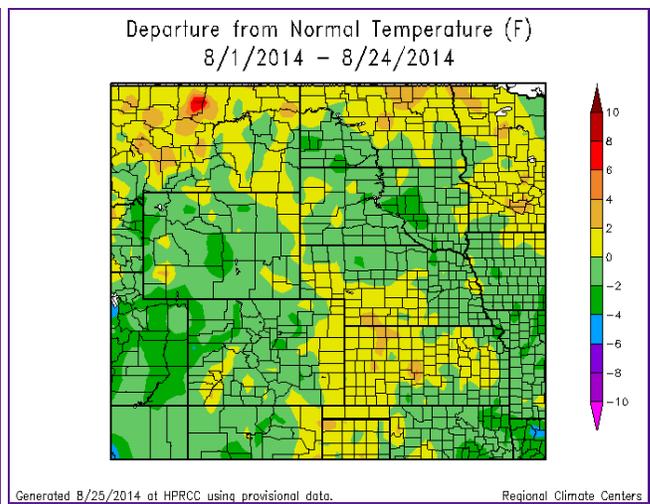
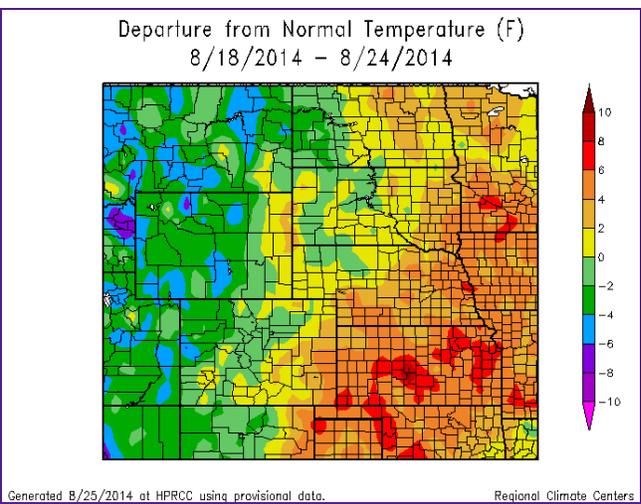


The above images are of reference evapotranspiration (ET) from CoAgMet sites across Colorado. Reference ET assumes the amount of water that will evaporate from a well-irrigated crop. Higher ET rates occur during hot, dry, and windy conditions. Lower ET rates are more desirable for crops. See a [map of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

Reference Evapotranspiration:

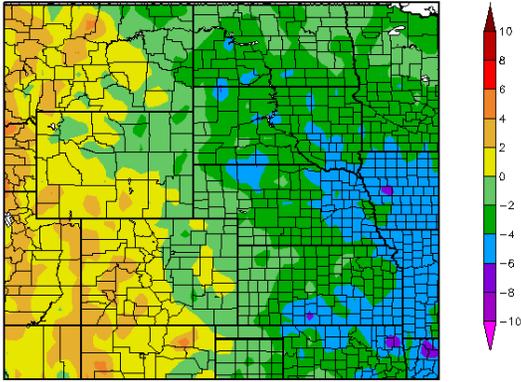
- Olathe: ET is tracking below normal for the growing season after experiencing very low ET over the past week.
- Cortez: ET is tracking slightly below normal for the growing season after a slow week of ET.
- Center: ET has continued to track above normal since early June.
- Avondale: ET is tracking just slightly below the growing season average.
- Idalia: ET dropped in mid-July with monsoonal moisture coming into the area. ET has tracked slightly below the normal since then.
- Holyoke: Similar to Idalia, 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.

TEMPERATURE



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)
7/1/2014 - 7/31/2014



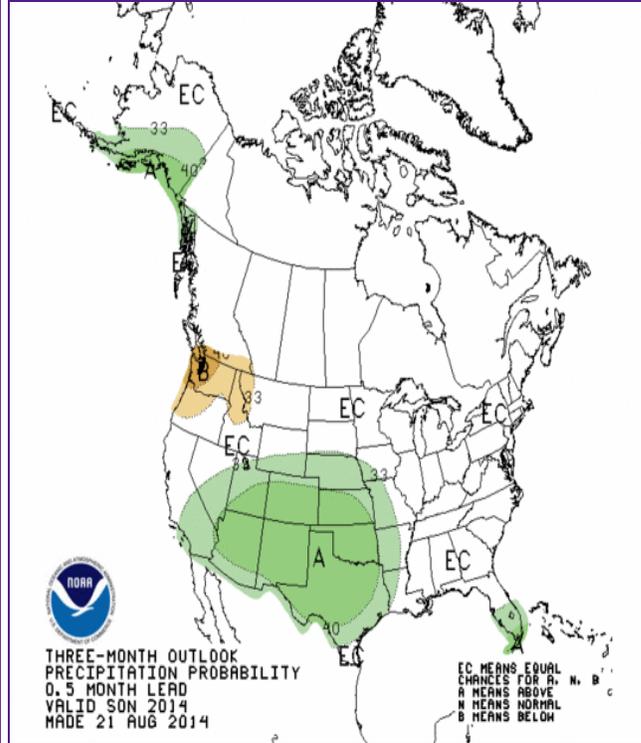
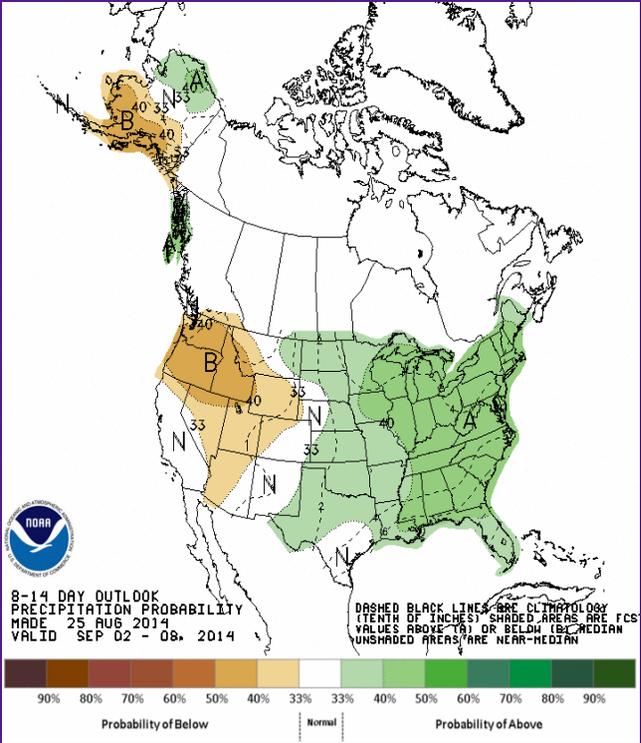
Last Week Temperatures:

- The UCRB saw almost exclusively below average temperatures over the past week. Most areas were between 2 and 4 degrees below normal with some pockets of 4 to 6 degrees below normal.
- Southwest WY and Northwest CO fall in line with what was generally shown in the UCRB with last week's temps between 2 and 6 degrees below normal.
- In the Four Corners area, southwestern CO was mainly 0 to 2 degrees above normal.
- The San Luis Valley was also in the 0 to 2 degrees above normal range.
- East of the divide was mostly above normal for the past week. The Front Range and Southern Colorado near the Raton Mesa were in the normal range at between 2 degrees above and below normal.
- The Eastern Plains were 0 to 6 degrees above normal over the past week with the warmest areas showing up in extreme SE CO.

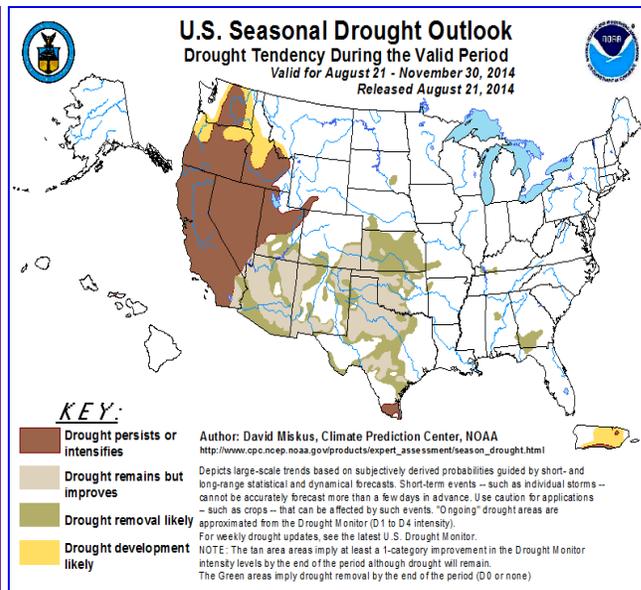
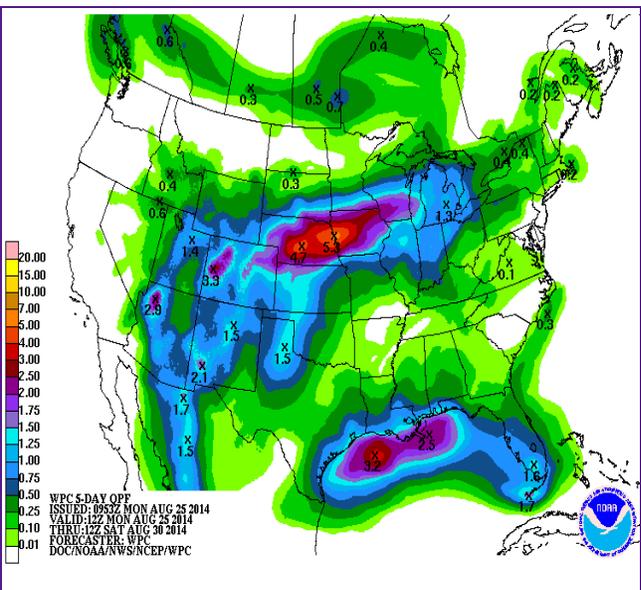
Last Month Temperatures:

- July temperatures in the UCRB were unanimously above normal despite a cool last week to the month. The entire UCRB ranged from 0-4 degrees above normal.
- Areas that were warmer (2-4 degrees above normal) included Uintah County, UT, and Montezuma, San Miguel, Dolores, and Montrose Counties in CO.
- East of the divide temperatures were generally slightly below average. Most of the Front Range was between 0 and 2 degrees below average for July.
- Most of the eastern plains were also 0 to 2 degrees below normal, but some regions were 0 to 2 degrees above. This includes most of Lincoln County, central Kiowa County, and western Cheyenne County.

FORECAST AND OUTLOOK



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:

- Above average moisture can be expected this week for nearly the whole of Colorado and the UCRB with southerly monsoonal flow pulling in some remnant tropical moisture. Most of the moisture this next week is expected for Tuesday through Thursday with conditions drying out considerably by Friday.
- Most of the UCRB should see at least 0.25" over the next week. Areas of over an inch of precipitation, especially on the windward side of mountains, is possible.
- East of the divide, the monsoonal moisture looks to combine with frontal lift to

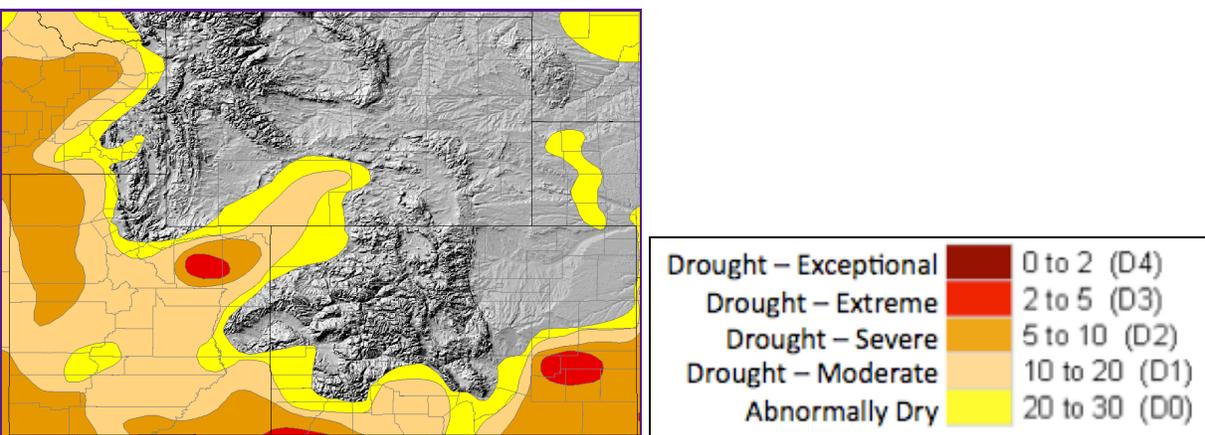
bring totals of over an inch and a half to the Front Range and Eastern Plains.

- A moisture gradient is forecast to set up with SE Colorado receiving less moisture than locations further north, but still at least 0.50".

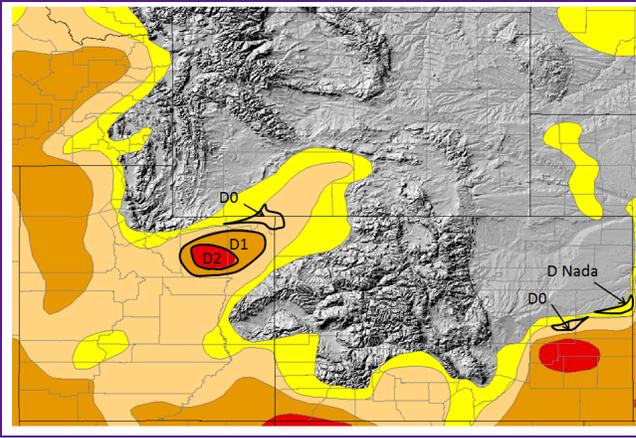
Longer Term:

- The 8-14 day precipitation outlook shows increased chances for below normal precipitation over the UCRB and the northern Rockies. Average precipitation is expected for south and east Colorado.
- The 8-14 day temperature outlook (not pictured) shows equal chances for above and below average temperatures over Colorado and the UCRB. Areas in southern Colorado and Utah should expect slightly higher chances of above average temperatures. The headwaters of the UCRB in western Wyoming are more likely to see below average temperatures.
- The CPC 3-month outlook shows higher chances for wetter than normal conditions over the UCRB in Utah, Colorado, and Wyoming for the late August-mid November time period.
- The seasonal drought outlook indicates that drought is expected to persist or intensify across 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.

U.S. DROUGHT MONITOR



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 August 26, 2014:

The North American Monsoon continues to perform above average for the drought monitor region this year and seems to be bringing some much-needed relief to one area or another every week. This week the main beneficiary has been the north fork of the UCRB. Duchesne and Uintah Counties experienced a substantial drought-lessening week with precipitation totals over 3" and temperatures 2-6 degrees F below normal. Even with the moisture in the Four Corners area, precipitation totals are still below normal.

Parts of the San Juan headwaters received above average moisture over the past week as well. The Four Corners and the San Luis Valley still had a fairly dry week.

East of the divide conditions were mostly dry with near normal temperatures for the Front Range and most of Southeast Colorado. Parts of Baca County and much of the Eastern Plains experienced over an inch of moisture over the past week. Some of the heaviest hit areas include Kit Carson County, Morgan County, Eastern Arapahoe County, and Western Washington County.

Recommendations

UCRB:

Based on improving streamflow and surface water conditions in tandem with very wet short-term SPIs and average longer-term SPIs a one-category improvement appears to be merited for the D2 and D3 areas of Duchesne and Uintah Counties in Northeast Utah. The removal of D0 or D1 appears premature based on surface responses to the recent heavy rainfall. Good moisture over the last week on both sides of the Uintah mountains seems to justify trimming the D1 area in Dagget County extending into Moffat County as well.

Eastern Plains:

Indicators of 6 months or fewer are continuing to fall further out of line with D3 and D2 classifications in Southeast Colorado, but for now status quo is recommended based primarily on Agricultural ground reports and indices going back over 9 months. This situation will be closely-monitored, but status quo is recommended for now.

Southeast Lincoln County experienced over 2" of precipitation over the past week. This appears to be enough justification to trim back the D1 in the area to D0.

Based on recent storms the gradient could be tightened between D1 and D Nada from Northern Cheyenne County up into Kit Carson County, but conditions from last week do not justify trimming the border of D1 in Cheyenne County.