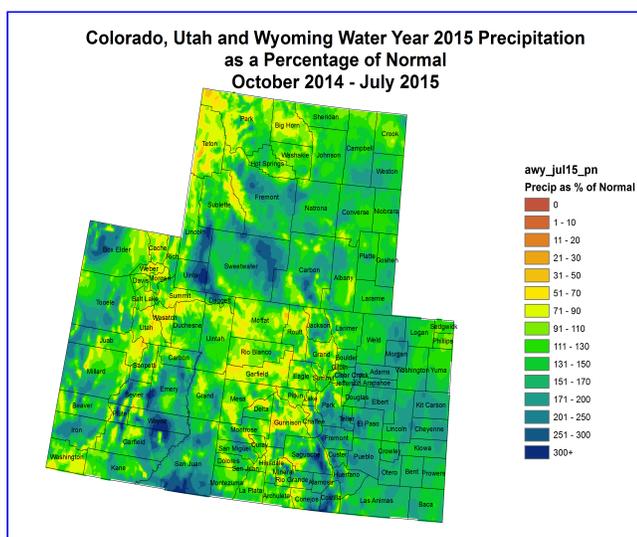
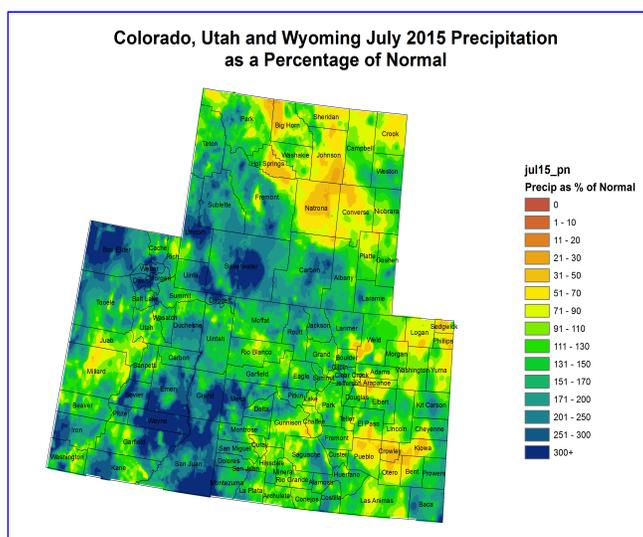
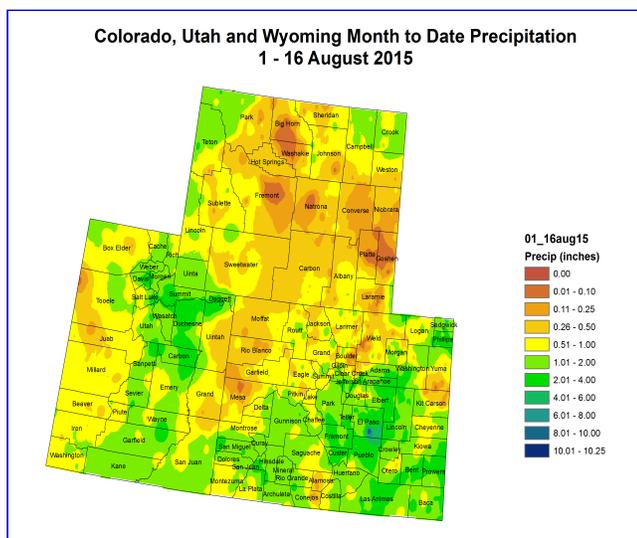
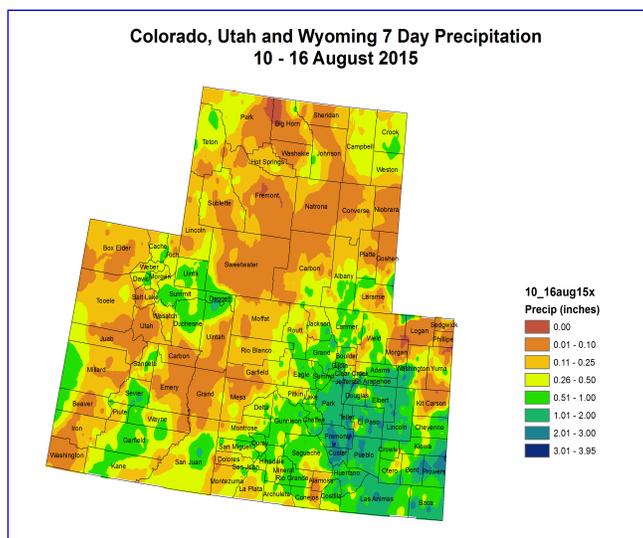


PRECIPITATION



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:

- Most of the Upper Colorado River Basin saw a spotty week last week.
- The Upper Green River Basin was drier, with less than 0.25 inches over much of the northern and eastern part of the basin. The exceptions were Uinta County, WY, Summit, Daggett, Duchesne and northern Uintah County, Utah, seeing between 0.25" to 1.00".
- Southern Uintah County, Carbon, Emery and Grand counties in east-central Utah saw less than 0.25 inches. San Juan County, Utah received between 0.25 to 1.00 inches last week.

- The western counties in Colorado from Moffat down to the Four Corners saw less than 0.25 inches last week. Farther east in the basin saw higher precipitation totals, mainly in Grand, Eagle, Summit, Gunnison counties and in the San Juan Mountains. Precipitation amounts were up to 1.00".
- The Rio Grande Valley saw up to 1.00" in the higher elevations, however was drier through the valley, with less than 0.25 inches.
- East of the Divide saw a week with greater than 0.50 inches over much of eastern Colorado, with the exception of northeast Colorado. Morgan, Logan, Sedgwick, Phillips, Yuma and Kit Carson counties saw less than 0.10 inches last week.
- From the Denver Metro area and south in southeastern Colorado saw 1.00-2.00 inches last week, with a few spotty areas above 2.00 inches. North of the Metro area saw up to 1.00".

July Precipitation:

- July was a wet month for the vast majority of the UCRB. East of the divide conditions were more of a mix with some areas ending the month well on the dry side of average.
- The Upper Green River Basin did very well for moisture with respect to average, but this is a climatologically dry time of year for the area. Well over 80% of the region received over 150% of average July precipitation with large parts of Sweetwater, Uinta, and Lincoln Counties over 300% of average for the month.
- Northeast Utah was primarily in the 100-200% of average range. Some small pockets of northern Uintah and northern Duchesne Counties were below average for the month.
- Southeast Utah saw another wet month, seeing 300+ percent of normal through the area.
- Western Colorado saw a mix of near average to well above average moisture for the month of July. Lower elevation areas seem to be favored slightly for the well above average moisture. From Mesa County south along the Colorado-Utah border most areas picked up over 200% of July average. Southern Gunnison and southwest Chaffee Counties were drier than average, and received only 30-70% of July average rainfall.
- The San Luis Valley was mostly in the 100-200% of average range.
- East of the Divide, July precipitation was above normal in northern Larimer County along the Cheyenne Ridge, from Douglas County east along the Palmer Divide all the way out to Kit Carson County, and for the southeast corner of the state. There were some areas that came out concerningly dry. Southeast Larimer and southwest Weld Counties only received 30-50% of normal July precipitation. Farther south, parts of Pueblo, El Paso, Crowley, Lincoln, Kiowa, Bent, and Otero Counties only received 30-70% of normal July precipitation.

Water Year 2015 Precipitation (Oct-July):

- Except for some higher elevation areas, the UCRB and Colorado

east of the divide are above average for the water year through the end of July.

- The Upper Green river basin is at or above normal. Eastern Uinta and Lincoln Counties have received over 300% of their normal water year to date precipitation. Eastern Sweetwater County has seen up to 250% of the normal water year precipitation through July. Sublette and central Sweetwater counties have seen at or slightly above normal precipitation.
 - Northeastern Utah has seen a mix of above and below normal precipitation. The higher elevations of the Wasatch and Uintah ranges have seen below normal precipitation, mainly between 50-90% of normal. The lower elevations, especially in Duchesne, Uintah and Carbon counties, have seen up to 150% of normal.
 - Southeastern Utah is now showing well above average precipitation for the water year through July. Parts of Wayne and San Juan Counties are at 300+% of normal.
 - Despite drought in the Winter and very heavy rains in the late Spring, things have balanced out such that western Colorado is having a pretty average water year through July. Most of the area is between 70 and 150% of normal. There's a bias towards lower elevations being a little wetter.
 - The Rio Grande Basin is now showing at or above normal precipitation for the water year through July. Costilla County is mostly over 200% of average.
 - Eastern Colorado is above average for the water year to date almost all the way across the board. Parts of Phillips and Sedgwick Counties are only in the 90-110% of average range. Areas of Morgan, El Paso, and Pueblo Counties are still at over 200% of average for the water year to date.
-

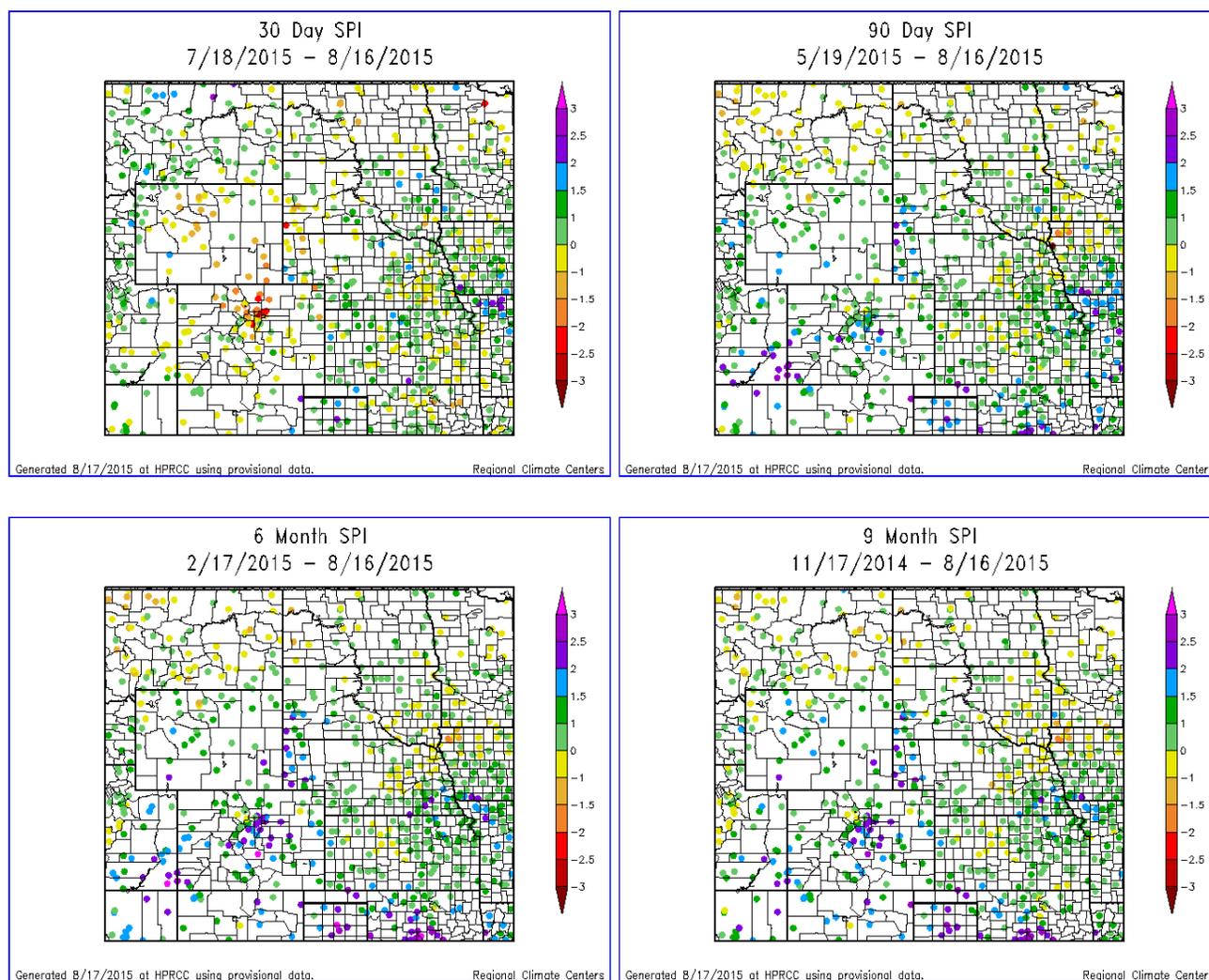
SNOTEL Precipitation Percentiles:

- SNOTEL year to date percentiles across much of the UCRB saw quite a rebound this last week.
- In the Upper Green the percentiles are mostly in the median range between the 32nd to the 59th. Some Snotel sites in eastern Sublette County area a bit lower, down to the 22nd.
- The Wasatch and Uintahs are still showing drier percentiles ranging from the 0 to 63rd, but mostly in the 0-20 range. Many of the percentiles that were the 0th are now in the single digits and teens.
- The northern mountains in Colorado west of the Continental Divide are showing percentiles between the 11th and the 53rd. The Percentiles in the teens and 20s are mainly in eastern Rio Blanco, Garfield and Routt counties.
- The lower elevations of the Colorado and Gunnison are still seeing percentiles below the 39th percentile, however sites along the divide are in the normal range.
- The San Juans are reporting mostly below the 40th percentile, with a number of Snotel sites in the northern San Juans above the 50th percentile.
- The Sangre de Cristo mountains in SE Colorado are near average with percentiles ranging from 35th to 69th.
- The South Platte stations are all mainly at or above the median.

SWE Timeseries Graphs:

- All sub-basins are well into the melt season.
- The peak snowpack was 85% of normal.
- The peak snowpack was 63% of normal.
- The peak snowpack was 68% of normal.
- The peak snowpack was 79% of normal.
- The peak snowpack was 70% of normal.
- The peak snowpack was 67% of normal.

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):

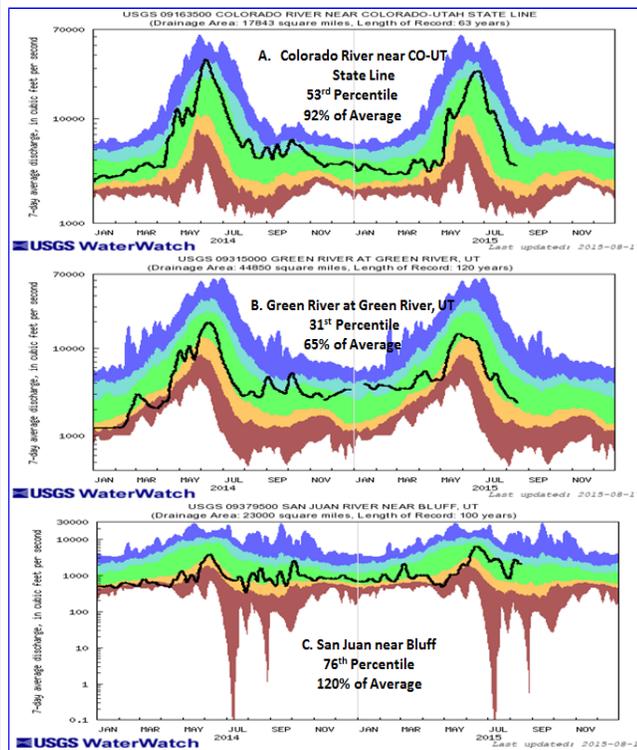
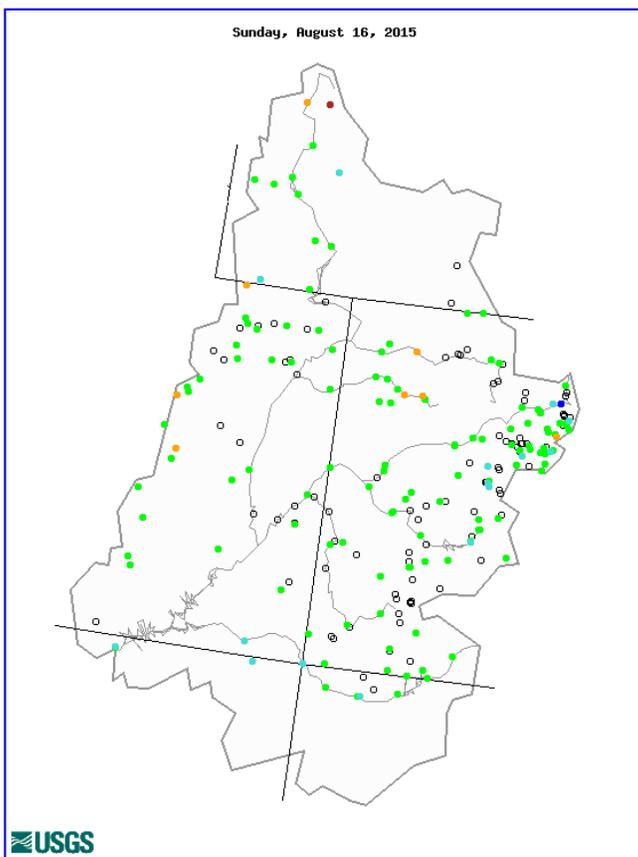
- 30-day SPIs have started to drop into the dry side of the SPI scale over much of the UCRB.
- The Upper Green River basin is showing SPIs below normal between 0 and -1. One SPI in northern Sweetwater County is wet,

- up to +2.
- In northeast Utah most SPIs are between 0 and +1.5 with one SPI in central Duchesne County up to +2.
- Southeast Utah is showing drying SPIs in the 0 to -1 range. A couple SPIs in San Juan County are between 0 and +1.5.
- Northwest Colorado is showing SPIs mainly between -1.5 and +1. Grand and Jackson Counties have been particularly dry, and are showing SPIs between -2 and -1.
- SPIs in southwest Colorado are between -1 and +1.
- The Central Rockies have been dry recently, and are showing SPIs between -2 and +1.
- The northern Front Range has been very dry the last 30 days, and is showing SPIs between -2.5 and 0.
- Most of the 30-day SPIs in northeast Colorado are between -1.5 and +1.
- SPIs in southeast Colorado have dropped into the dry side between 0 and -1. SPIs in Pueblo and Baca Counties are in the 0 to -1.5 range.

Long Term (6-month):

- On the 6-month timescale, SPIs are wet for the UCRB with the exception of the far western border of the basin in central Utah and in Grand County.
- The Upper Green has SPIs ranging from +1 to +2.5.
- NE Utah shows most SPIs on the wet side, between 0 and +2. The southern portion of the Wasatch Range in central Utah is a bit drier showing SPIs between 0 and -1.
- Southeast Utah is wet with SPIs between +1.5 and +3<.
- Western Colorado is showing SPIs mostly between 0 and +2. Mesa County is between +1.5 and +2. Grand County is showing two SPIs in the 0 to -1 range at the 6-month timescale.
- SPIs near the headwaters of the Arkansas and the South Platte are exceptionally wet on the 6-month timescale. Most SPIs are in the +1.5 to +3< range.
- In eastern Colorado, almost all SPIs are still wet on the 6-month timescale. They range from 0 to +2.5. There is one SPI below 0 in northern Washington County.
- The Rio Grande basin is wet at the 6-month timescale with SPIs from +1 to +2.

STREAMFLOW



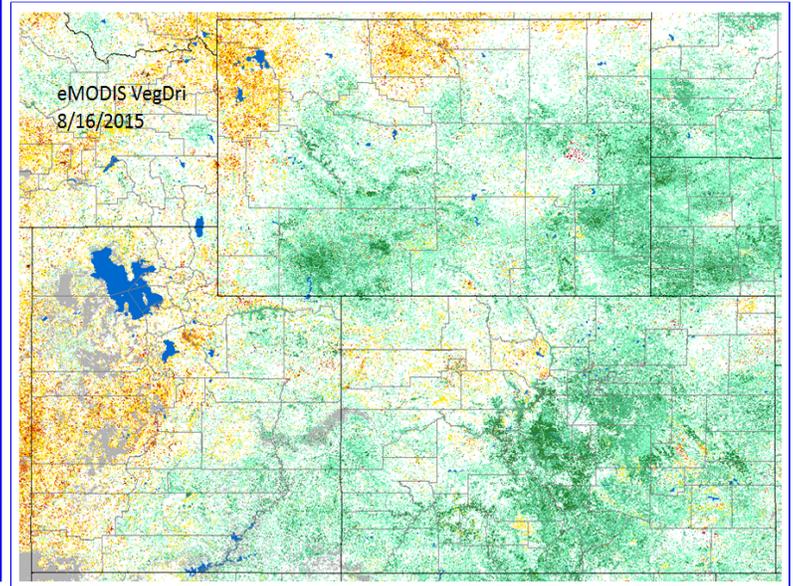
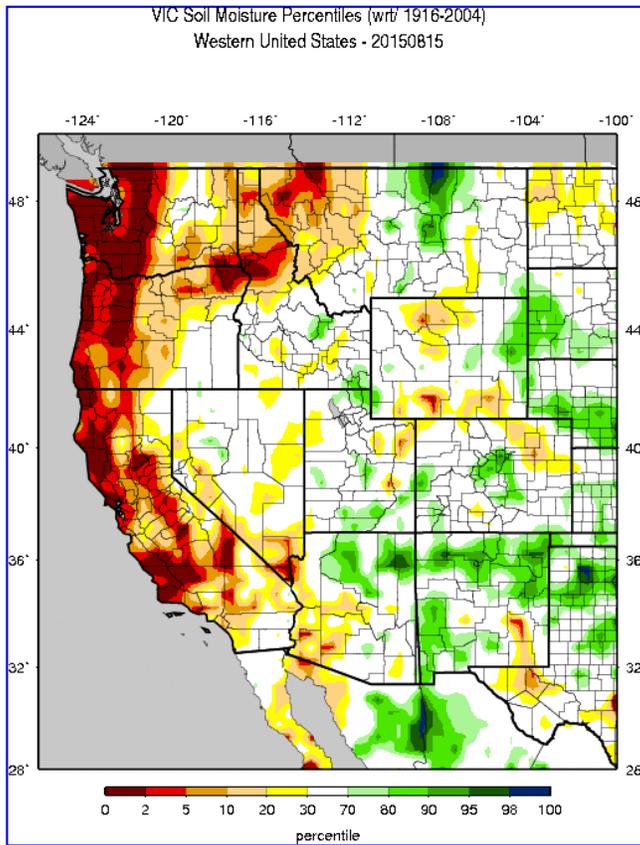
| Explanation - Percentile classes | | | | | | | |
|----------------------------------|-------------------|--------------|--------|--------------|-------------------|------|------------|
| | | | | | | | |
| Low | <10 | 10-24 | 25-75 | 76-90 | >90 | High | Not-ranked |
| | Much below normal | Below normal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

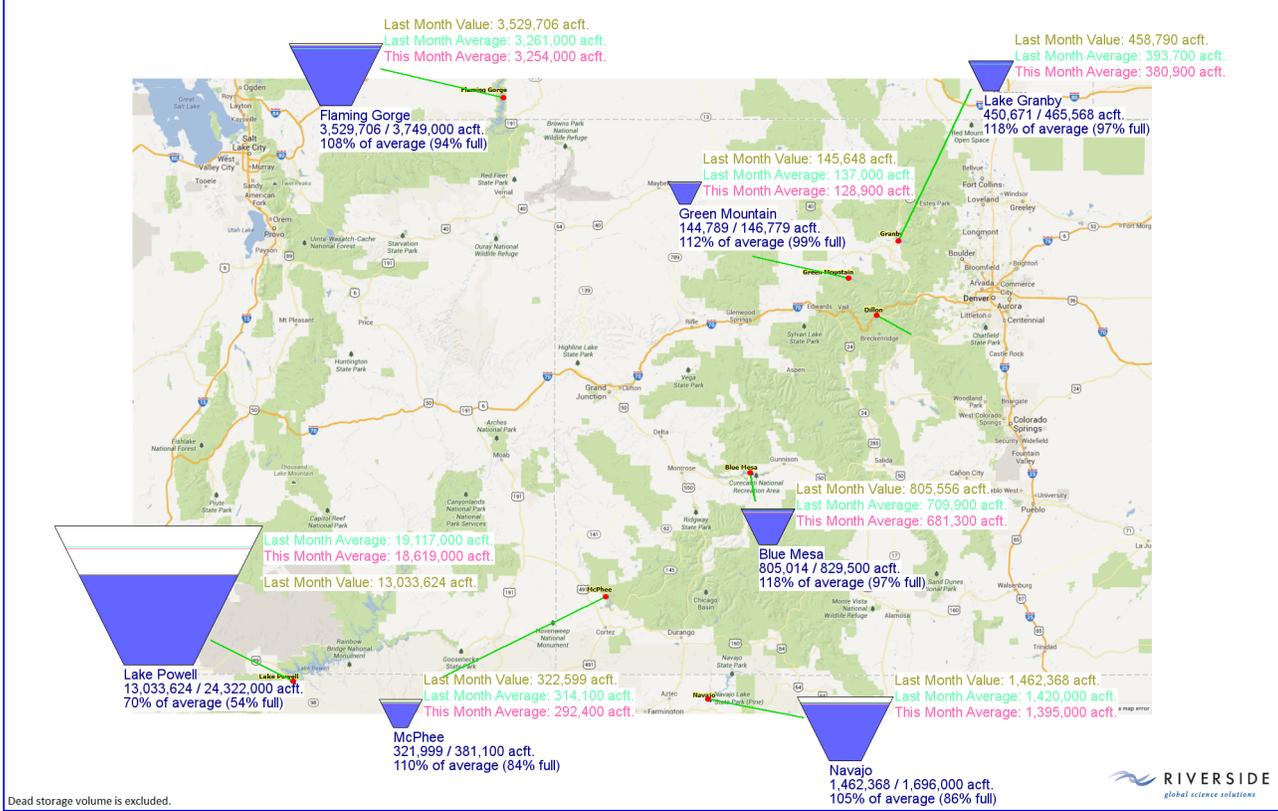
- 81% of the gages in the UCRB are reporting in the normal range for 7-day average streamflow. 11% of gages are reporting above to much above normal. There are no gages recording record high flows.
- Only 7% of the gages are recording below normal to much below normal for 7-day average streamflow.
- Streamflow on the Colorado River near the CO-UT state line is at the 53rd percentile, 92% of average.
- The Green River at Green River, UT has dropped to the 31st percentile, 65% of average.
- Streamflow at the San Juan near Bluff, UT is down to the 76th percentile, 120% 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).

2015/08/17

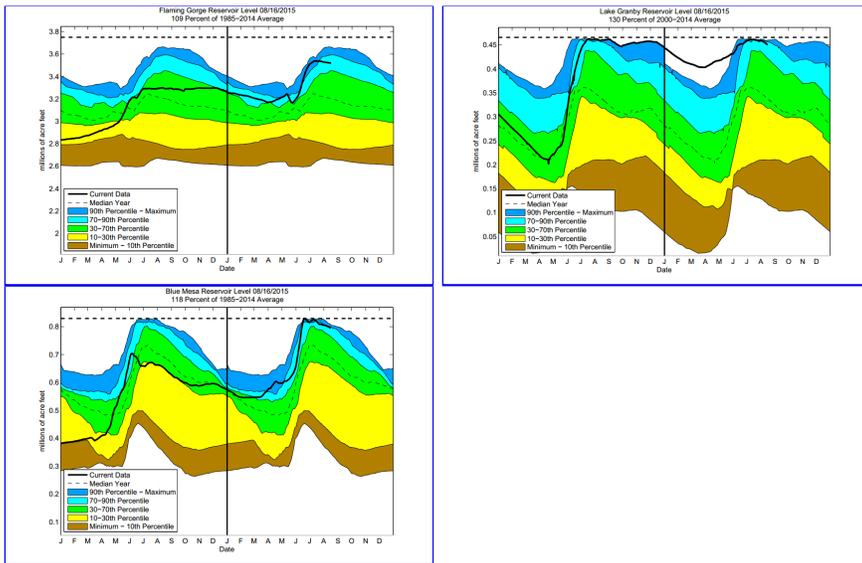


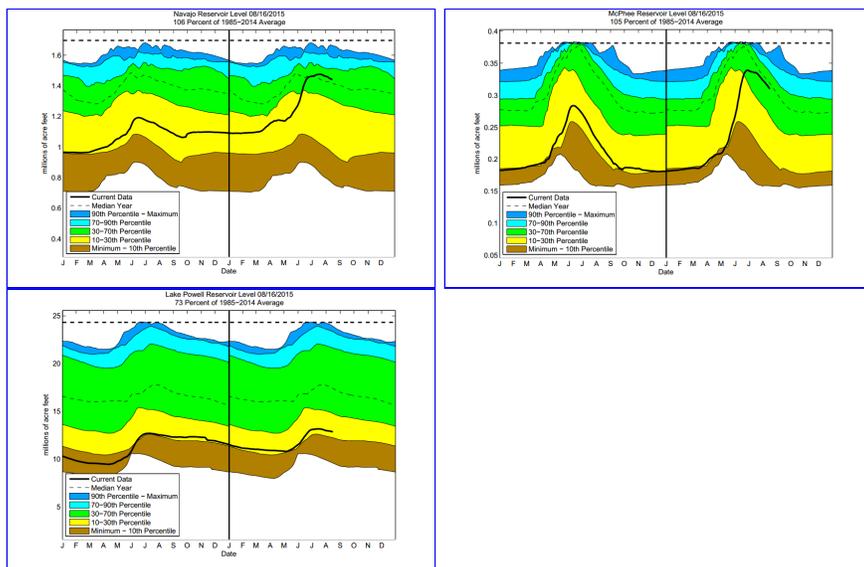
Dead storage volume is excluded.



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.

The graphs shown below are plots of reservoir volumes over the past full year and current year to date (black). The dashed line at the top of each graphic indicates the reservoir's capacity, and the background color-coded shading provides context for the range of reservoir levels observed over the past 30 years. The data are obtained from the Bureau of Reclamation. Some of the reservoir percentiles don't line up at the new year due to differences in reservoir levels at the beginning of 1985 and the end of 2014. Dead storage has been subtracted. Note: Lake Granby data are obtained from the Colorado Division of Water Resources, and only goes back to the year 2000.





VIC:

- Soils are mostly in the average range in the Upper Green River Basin. The southeast portion of Sweetwater County is in the 2-30th percentile range. Far west Uinta and Lincoln Counties are above the 70th percentile.
- Much of central Uintah County is in the 2-30th percentile range, and western Duchesne County is between the 10th and 30th percentile, but the rest of the area is in the normal range.
- Southeast Utah is also showing soil moisture mostly in the normal range. Southeast Emery County is showing a dry patch between the 5th and 30th percentile. Northeast San Juan and eastern Grand Counties are above the 70th percentile.
- Western CO soils are in the normal to above normal range. Parts of Mesa, Garfield and Montrose Counties are above the 70th percentile.
- The San Juans are in the normal to slightly above normal range.
- The San Luis Valley is mostly showing soils mostly in the normal range.
- The Upper Arkansas River Basin is holding onto some wet soils. Much of Chaffee, Park, Lake, Fremont, and Custer Counties are showing soil moisture above the 70th percentile.
- The south and central Front Range are showing soils between the 70th and 90th percentile, but the northern Front Range is in the normal range.
- Following a dry mid-summer, northeast Colorado has lapsed back into the below normal soil moisture range. Weld, Morgan, Adams, and Washington County area are between the 10th and 30th percentile.
- Root zone soils in southeast Colorado are in the normal, or slightly above normal.

VegDri:

- The VegDri is showing mostly very healthy conditions across the

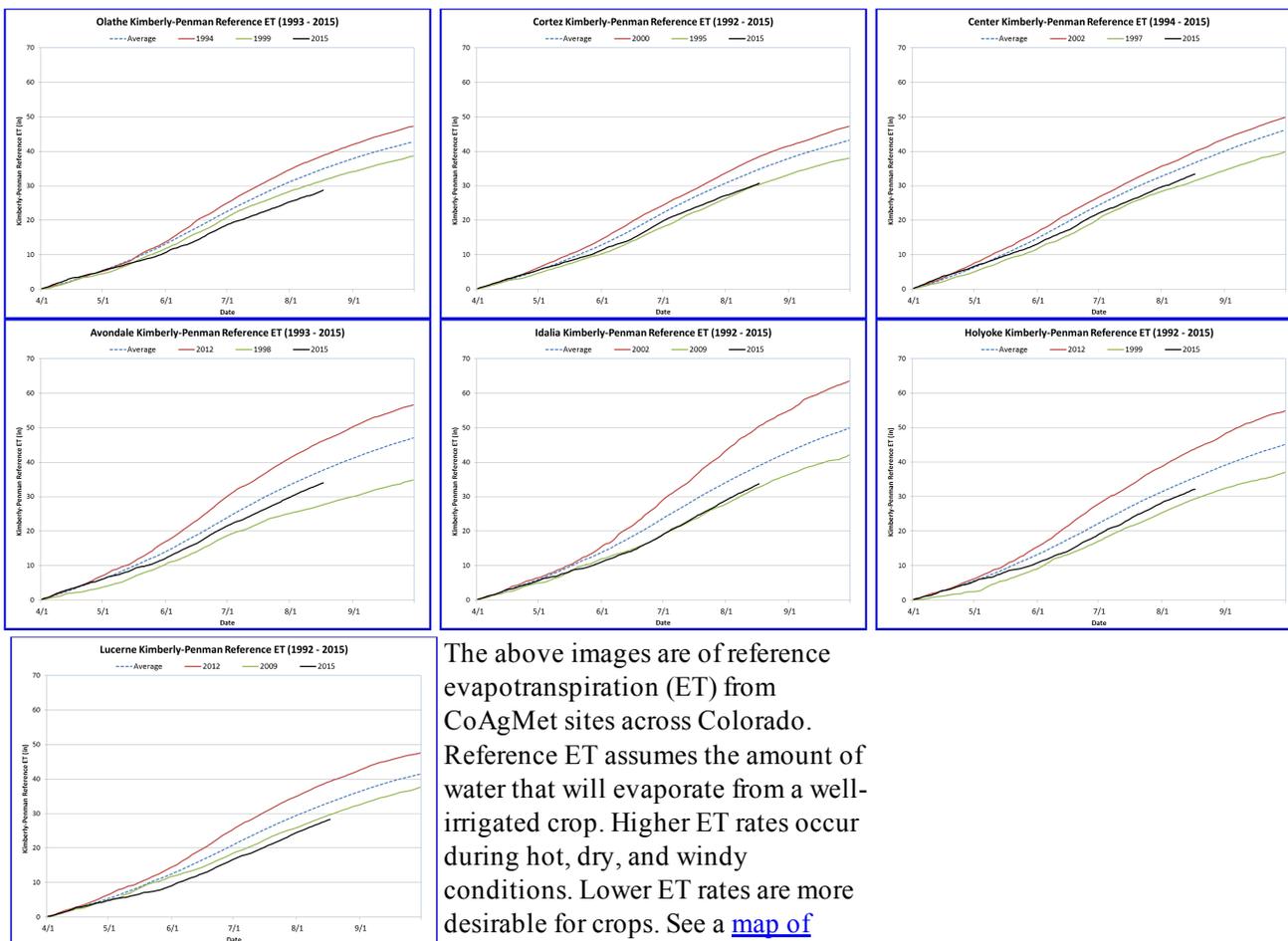
UCRB and eastern Colorado. The Wasatch Range is still in the worst shape.

- The Upper Green River Basin shows mostly moist vegetative health conditions with some areas of pre to moderate drought along the northwest flank of the basin in Lincoln and Uinta Counties.
- The Wasatch Mountains are showing pre to moderate drought, which looks a little better than a month ago. The Uintah Mountains are still holding on to a fair amount of pre-drought, especially in the western portion of the range, but starting to show some wet conditions in the southern portion of the range.
- Conditions in the Duchesne River Basin are now showing mostly wet vegetative health.
- In southeast Utah vegetative health is mostly normal or slightly moist.
- Most of western Colorado is in the normal to slightly moist range. Pre-drought still prevails in western Moffat and Rio Blanco Counties. Parts of Grand and Summit Counties are showing some pre-drought. Coverage of pre and moderate drought in northwest Colorado is on the rise.
- The San Luis Valley is showing moist vegetative health conditions.
- The Upper Arkansas and Upper South Platte Basins are showing extremely moist vegetation conditions. This includes Chaffee, Park, Teller, Fremont, and Custer Counties. This area of very moist vegetation extends onto the Front Range and into El Paso, Elbert, Douglas, Jefferson, Adams, and Arapahoe Counties. This has been the case for over a month.
- Northeastern Colorado is holding on to moist conditions near the Front Range, but conditions closer to normal prevail farther east. There's is pre-drought in Sedgewick, Phillips, Logan, Yuma, and Washington Counties.
- Southeast Colorado conditions are now mostly moist. Very isolated pre and moderate drought still is depicted in the far southeast corner of the state. Pre and moderate drought has now also popped up in central Lincoln County.

Reservoirs:

- Flaming Gorge is at 108% of its August average.
- Green Mtn is 112% of its August average and is 99% full.
- Lake Granby is at 118% of its August average and 97% full.
- Blue Mesa is 118% of the August average, 97% full.
- Navajo is 105% of its August average.
- McPhee is now at 110% of its August average.
- Lake Powell is now at 70% of the August average, 54% full.

EVAPOTRANSPIRATION

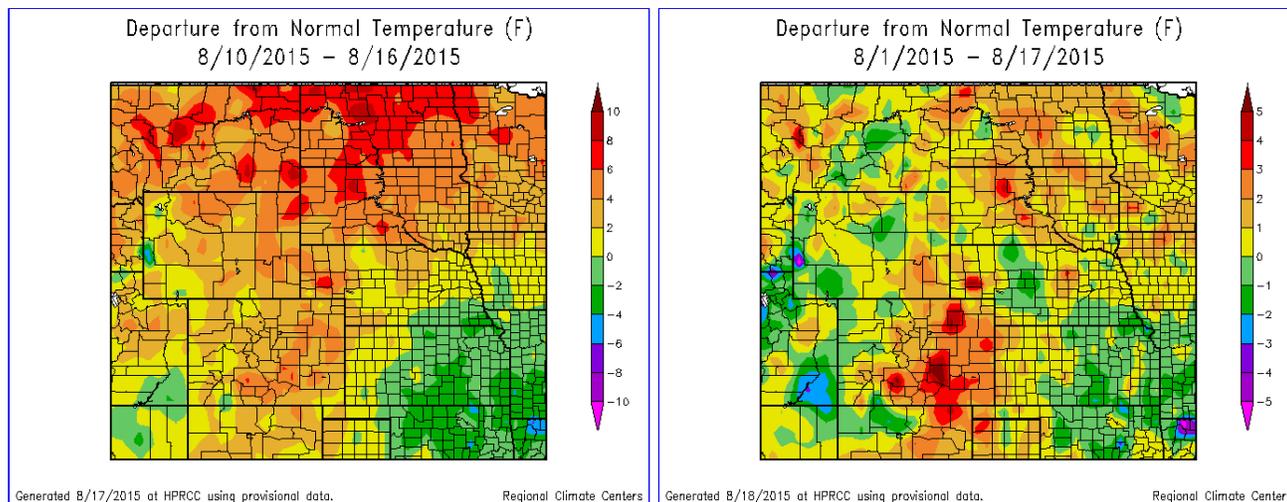


The above images are of reference evapotranspiration (ET) from CoAgMet sites across Colorado. Reference ET assumes the amount of water that will evaporate from a well-irrigated crop. Higher ET rates occur during hot, dry, and windy conditions. Lower ET rates are more desirable for crops. See a [map of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

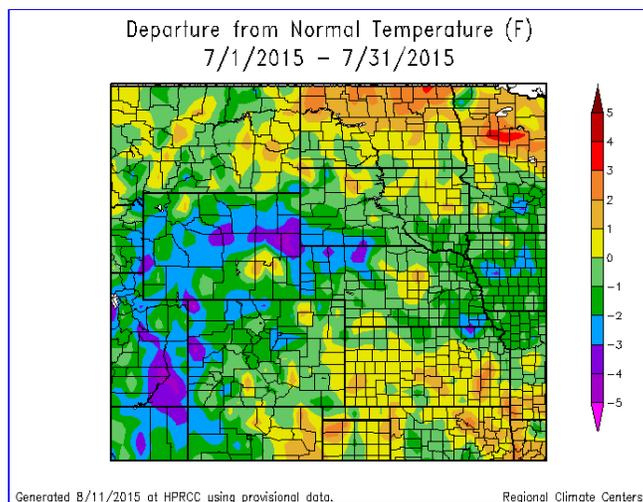
Reference Evapotranspiration:

- Olathe: ET started the growing season at higher than average ET rates and since mid-May has been tracking below the lowest reference ET year of 1999.
- Cortez: ET began a little above normal, but has been tracking below normal since early May. Since the start of July, Reference ET has been nearing the lowest year of 1995.
- Center: Early season ET was higher than the track taken during the record year, but has slowed considerably with respect to the seasonal average, and is now tracking below average.
- Avondale: ET began just above average, but has slowed to below normal.
- Idalia: ET started near average, then tracked side-by-side with the low year of 2009 from mid-May to late July, and is now tracking a little bit higher but still much below average.
- Holyoke: ET started around normal and has dropped below normal since the second week of May. It has followed a fairly normal track for the past month or so.
- Lucerne: ET has been tracking lower than the previous record low year in 2009 since the second week of May. It has gained some ground on the low year's track in the past three weeks.

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.



Last Week Temperatures:

- The UCRB and eastern Colorado saw above average temperatures for the past week.
- The Upper Green Basin was 0-4 degrees above average. Sublette, Uinta and southern Lincoln Counties were 2-4 degrees above normal, while Sweetwater was 0-2 degrees above normal.
- Northeastern Utah was 2-4 degrees above normal, with a hole in western Summit County 0-2 degrees above normal.
- Southwestern Utah was cooler, with San Juan County seeing 0 to 2 degrees below normal temperatures.
- Northwest Colorado was 2-4 degrees above normal, with a few areas 0 to 2 degrees above normal over the past week.
- Southwest Colorado was 0-2 degrees above normal, with some areas warmer at 2 to 4 degrees warmer.
- The San Luis Valley was 4 to 6 degrees warmer than normal over

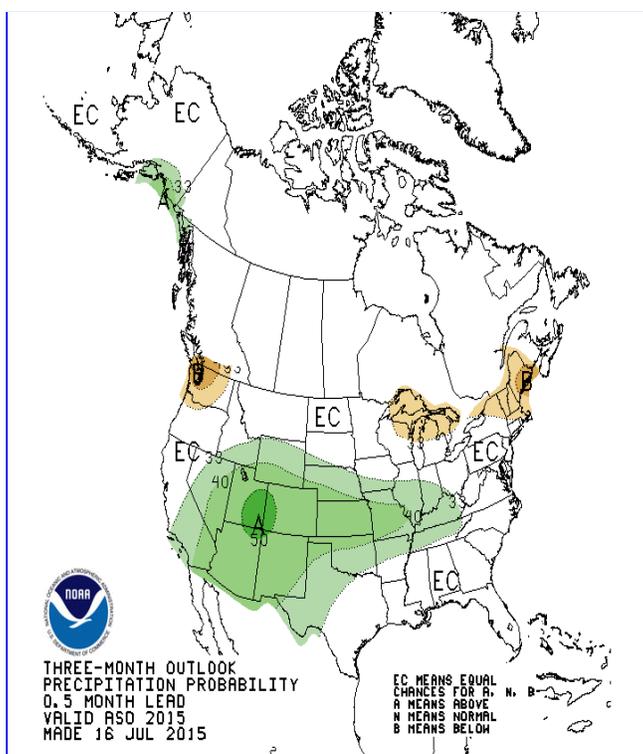
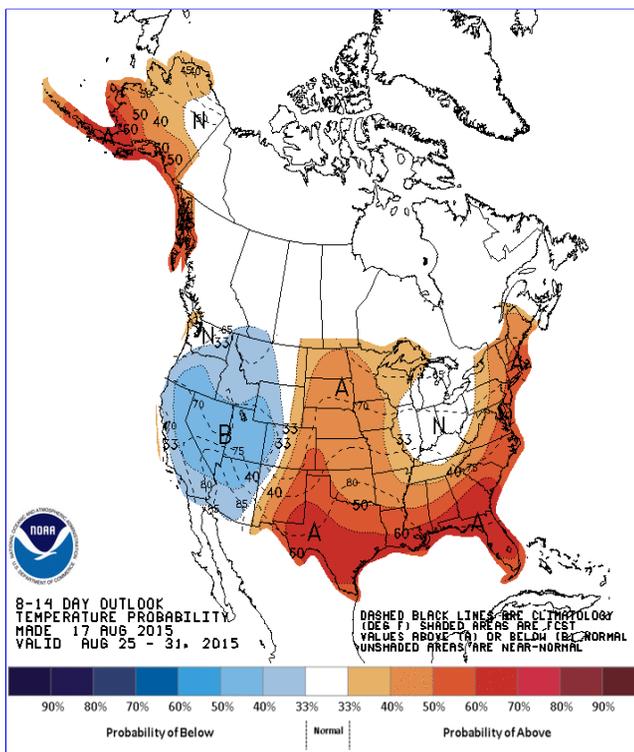
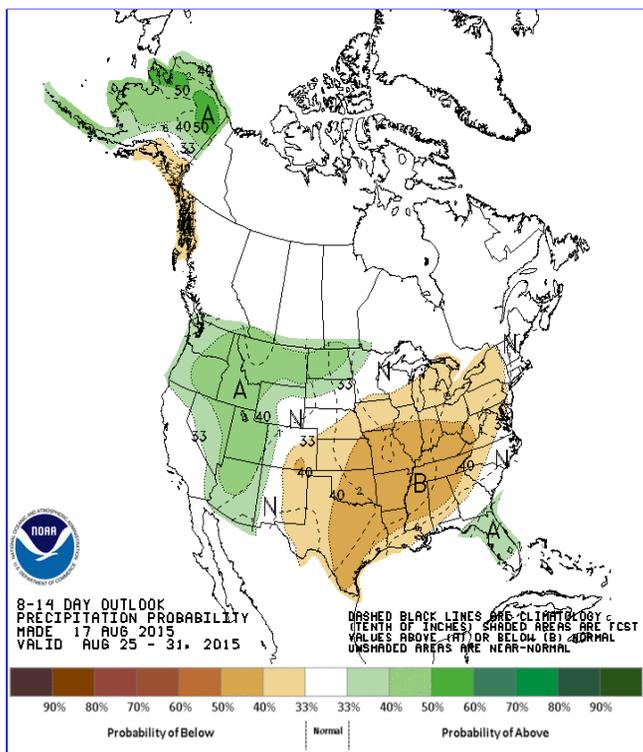
the past week.

- East of the divide, temperatures were mostly 2-4 degrees warmer than normal. A ribbon of 4 to 6 degrees warmer than normal temperatures extended from Huerfano, through Pueblo, El Paso, Elbert and into Washington counties. Baca County was 0 to 2 degrees warmer than normal.

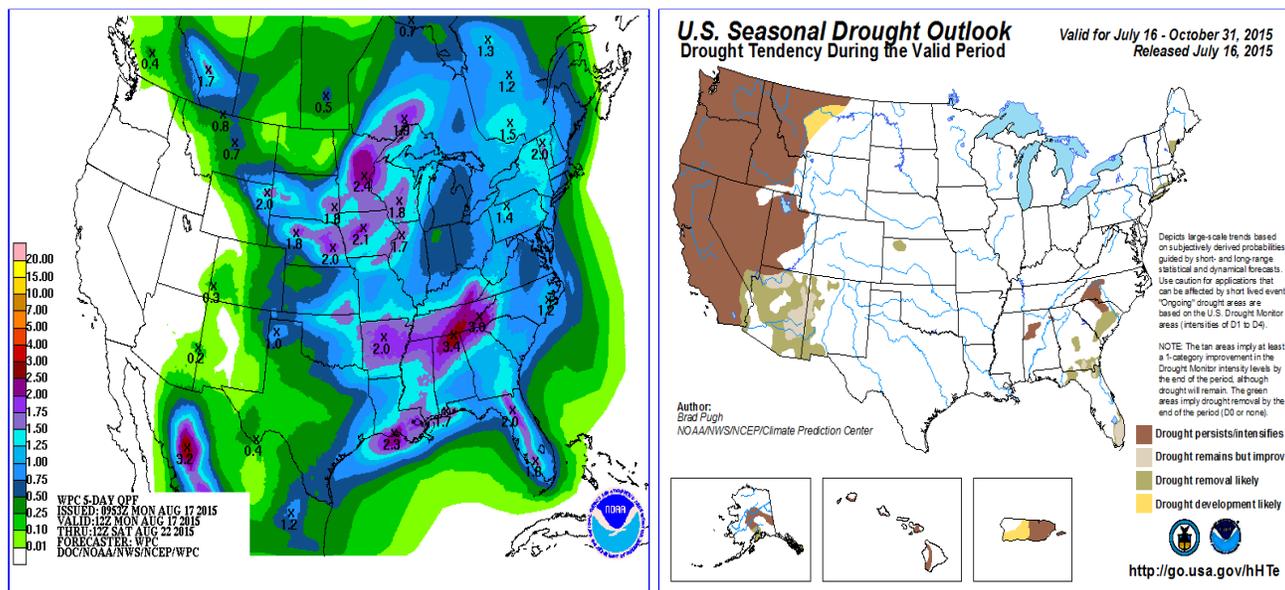
July Temperatures:

- July was a cooler than average month nearly across the board for the UCRB and Colorado east of the divide. There were a few bright spots with above average temperatures.
 - The Upper Green River Basin experienced temperatures mostly between 1 and 3 degrees below normal for the month of July.
 - Likewise, temperatures in northeast Utah averaged out to 1-3 degrees below normal most of the way across the board for the month of July. Southern Duchesne County was only 0-1 degrees below normal.
 - Temperature anomalies were even greater in southeast Utah, and were in the 2-5 degrees below normal range. Northwest San Juan County, and eastern Wayne County show some of the lowest temperature anomalies on the map.
 - Southwest Colorado experienced a July 0-2 degrees below average on the Fahrenheit scale in most areas. Southern Saguache and northern Rio Grande Counties were slightly above average for the month (0-2 degrees).
 - Northwest Colorado was 1-3 degrees cooler than average for the month of July.
 - East of the Divide temperatures for the month of July were mostly 0-2 degrees below normal. The largest above normal area in the region was right along the Kansas border where temperatures were 0-1 degrees above normal. Some other spots slightly above normal include Morgan County and eastern Weld County, and eastern Pueblo County.
-

FORECAST AND OUTLOOK



The top two images show Climate Prediction Center's Precipitation and Temperature outlooks for 8 - 14 days. The middle image shows the 3 months Precipitation outlook. 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: (8/18)

- A fairly dry week appears to be on tap for the Upper Colorado River Basin and Colorado east of the Continental Divide. Light to moderate thunderstorm activity is expected to spill into eastern Colorado this evening from the north. This will not be a big rain-maker. Some severe storms may be possible over the southeast corner of the state by late night tonight.
- Wednesday and Thursday look dry and cooler than average for the basin.
- By Friday more seasonal temperatures return, but this should also allow for some convection to fire off the high terrain. This is unlikely to grow up-scale onto the plains.
- Saturday night will be the other big chance for rain in the coming week as an upper-level low skirts the north end of the basin. Western Colorado is expected to be the main beneficiary of this system, but totals will likely be below a quarter of an inch.
- Sunday into Monday hot and dry weather is expected to make a return into the UCRB and eastern Colorado. Some light rainfall is possible for the southern end of the basin over this time frame. Once again, totals are likely to be less than a quarter of an inch.

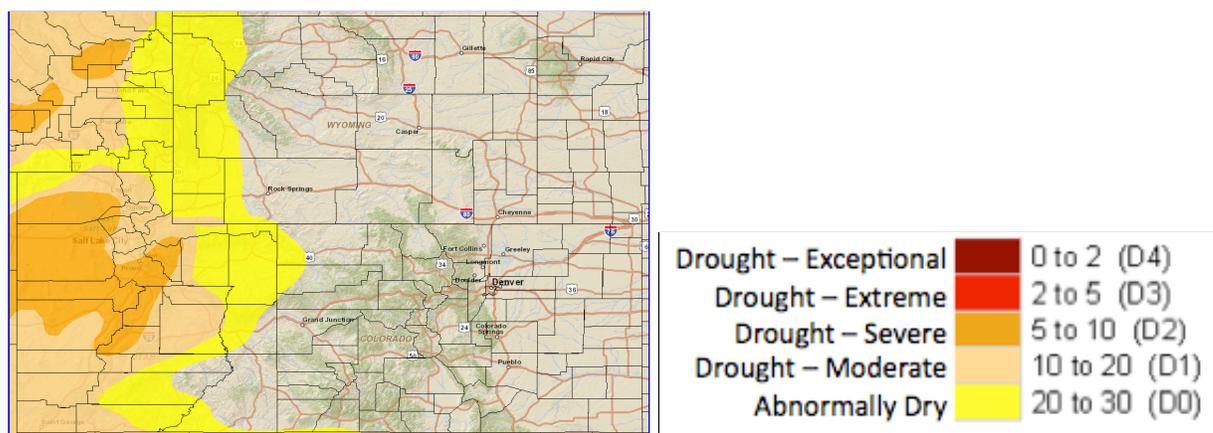
Longer Term:

- The 8-14 day precipitation outlook shows increased chances for above normal precipitation for the western portion of the UCRB and increased chances of below normal precipitation for southeast Colorado.
- The 8-14 day temperature outlook shows increased chances for below normal temperatures for the majority of the UCRB. The far east portion is calling for equal chances of above and below normal temperatures, or a slight enhancement of chance for above average temperature. East of the divide, the 8-14 day temperature outlook is showing increased chances of below average temperatures. These

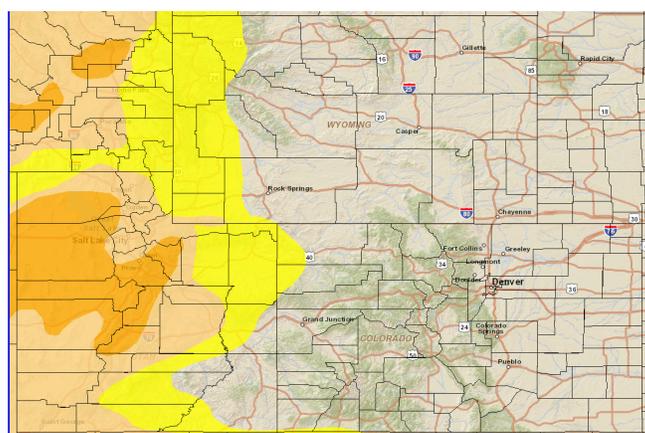
chances are strongest in the southeast corner of the state.

- The Climate Prediction Center August through October precipitation outlook shows increased chances for above average precipitation across the entirety of the UCRB and Colorado east of the divide. These chances are maximized at low elevations in the southern portion of the basin.
- The seasonal drought outlook indicates that drought is expected to persist or intensify in the western portion of the UCRB through the end of October, but drought development is not likely for the eastern portion of the basin, nor for Colorado east of the divide.

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 18, 2015:

August so far in the Upper Colorado Basin has seen cooler than average temperatures, with the last week slightly warmer than normal. Precipitation has been split in the Basin this month, with the western and southern portions of the basin seeing the best precipitation of over 1.00 inch, allowing improvements last week in Utah. The northern and eastern portions of the basin have seen less than 1.00 inch, and a wide band of less than 0.50 inches. 30-day SPIs are starting to dry out, although, 90-

day and longer SPIs are still wet. Streamflows are now coming down a bit, but are still in the normal streamflow category. This bodes well for status quo for the U.S. Drought Monitor.

Eastern Colorado, especially northeastern Colorado, has started to dry out on the shorter timescale (30-day). The wet spring and early summer moisture is still keeping conditions in the area looking good. The last week was dry for northeastern Colorado until storms Monday brought spotty, but beneficial rains, with storms totals above 0.25 inches. Even though eastern Colorado has started to dry out, we feel the spring moisture continues to hold on. With cooler than normal temperatures for the summer until recently, evaporative demand has been lower than average, allowing the soil to retain the moisture and prevent degradation. With these conditions, we are calling for status quo for another week.

Recommendations:

UCRB: Status quo.

Eastern CO: Status quo