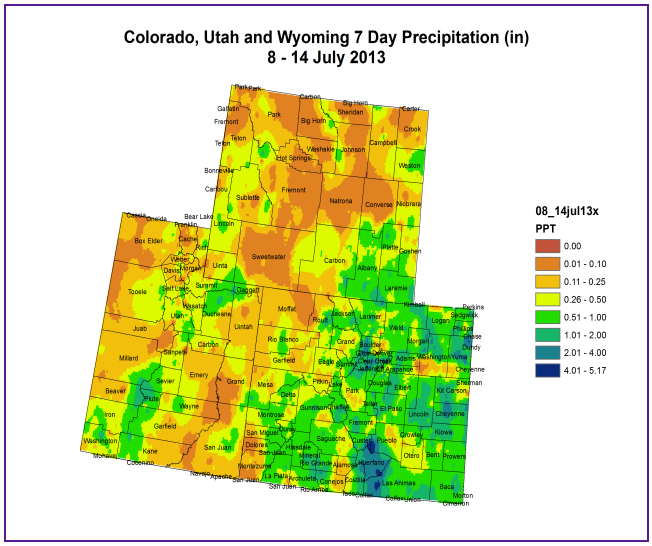
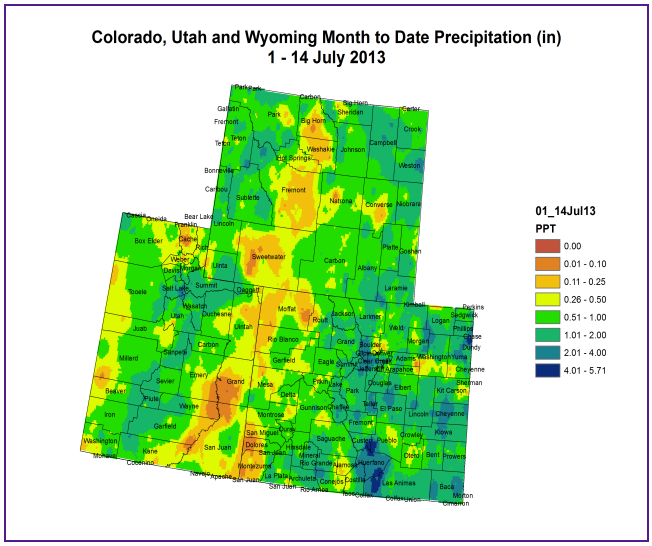
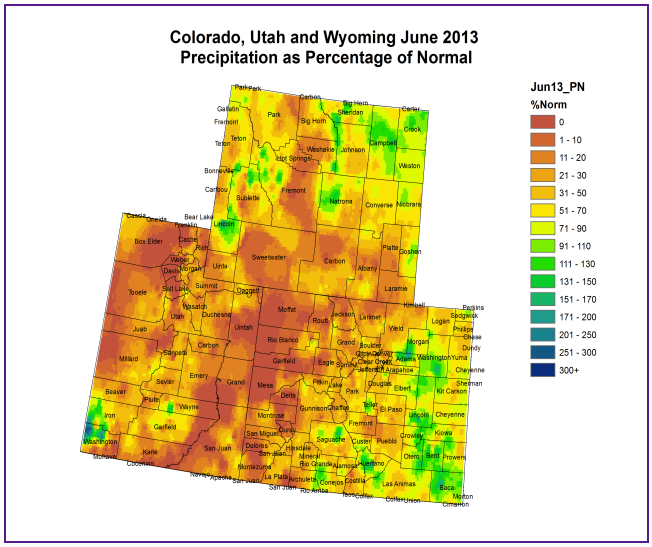
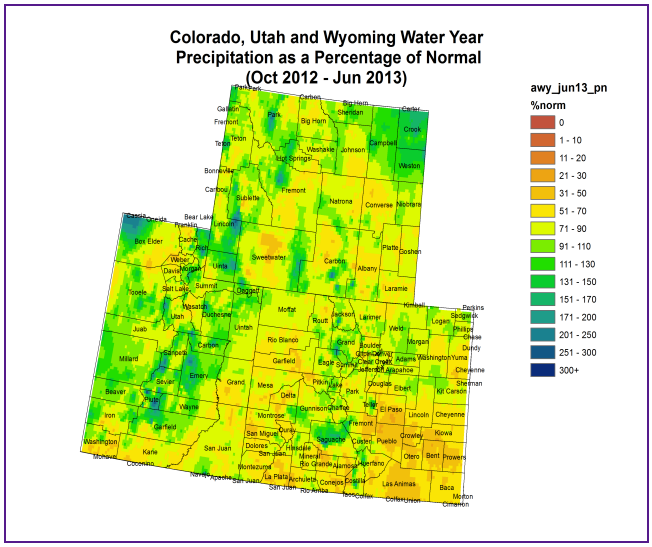
PRECIPITATION









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.

WYTD Precipitation:

- Much of northeastern UT and western WY have seen near average precipitation for the water year with some drier areas in the Wasatch mountains and in Sweetwater County, WY
- Eastern UT and western CO have received between 50% and 90% of average precipitation for the water year, with slightly drier conditions in southwest CO
- The northern and central CO mountains are near average
- Northeast CO is near to slightly below average with some drier patches around Washington and Yuma counties

- Southeast CO and the San Luis Valley are below 70% of average with many areas lower than 50% of average

June Precipitation:

- Most of the UCRB received less than 20% of average precipitation for the month of June
- A couple of isolated areas in the San Juans in southern CO and the higher elevations in western WY received more than 50% up to near average moisture for the month
- Much of northern CO and southern WY were very dry, receiving less than 50% of average precipitation
- Many parts of eastern CO received near average moisture for the month, though some spots (the Front Range mountains in Fremont and Pueblo counties, many parts of the Urban Corridor, and the San Luis Valley) were much drier than average

Last Week Precipitation:

- Much of the UCRB was dry, with many areas receiving less than .25 inches for the week. Some spotty areas received between .50 to 1 inch of moisture
- The San Juan mountains fared the best in the basin, with widespread accumulations between .50 and 1 inch and some local totals between 1 and 2 inches
- Southeast WY and eastern CO received good amounts of precipitation last week, with widespread totals between .50 and 1 inch
- Some spots (the foothills west of Denver, some spots along the eastern plains, and in southern CO, particularly Huerfano County) received between 1 and 4 inches of rain

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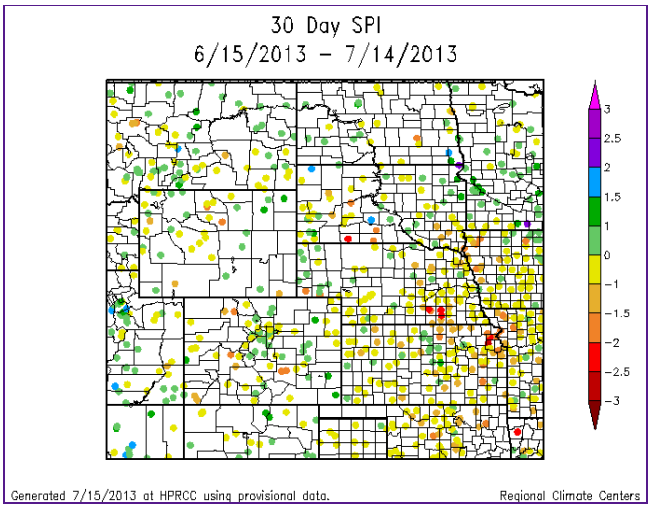
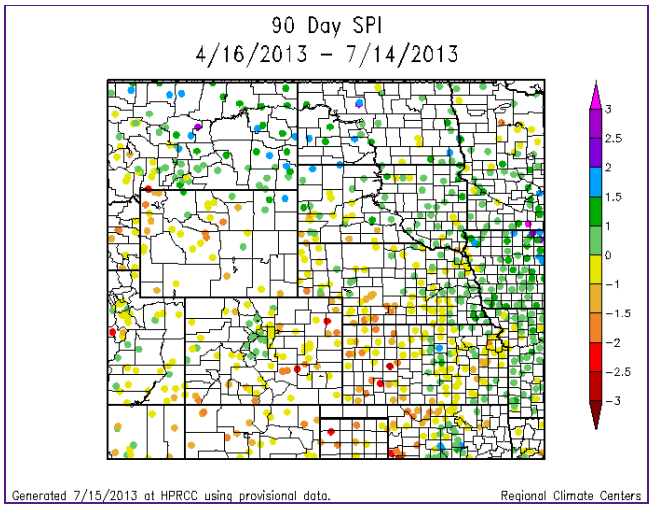
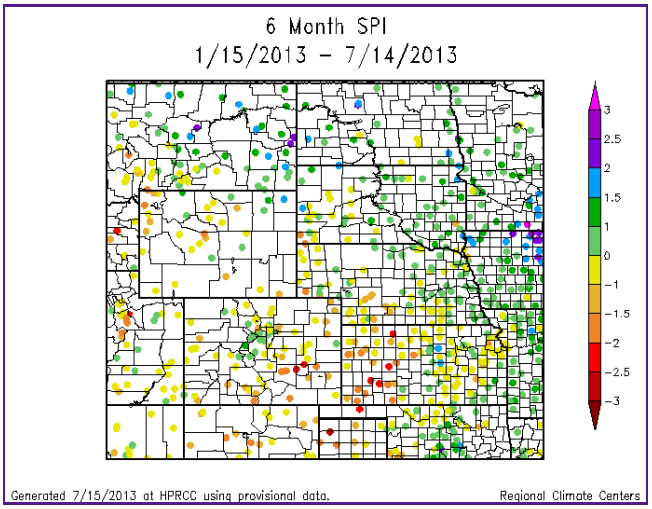
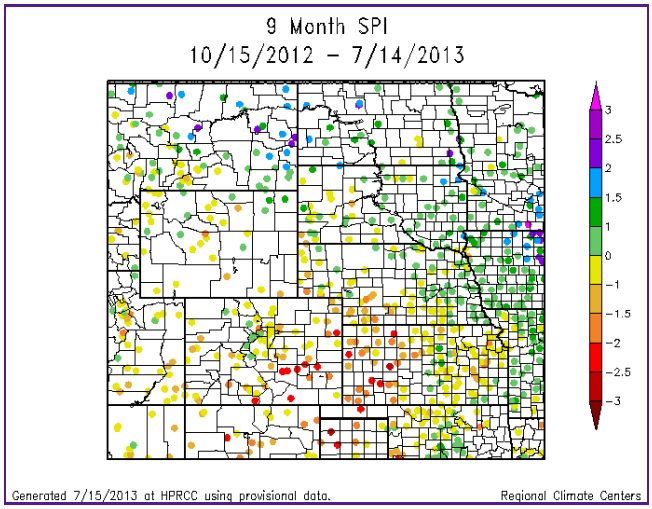
STANDARDIZED PRECIPITATION INDEX









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):

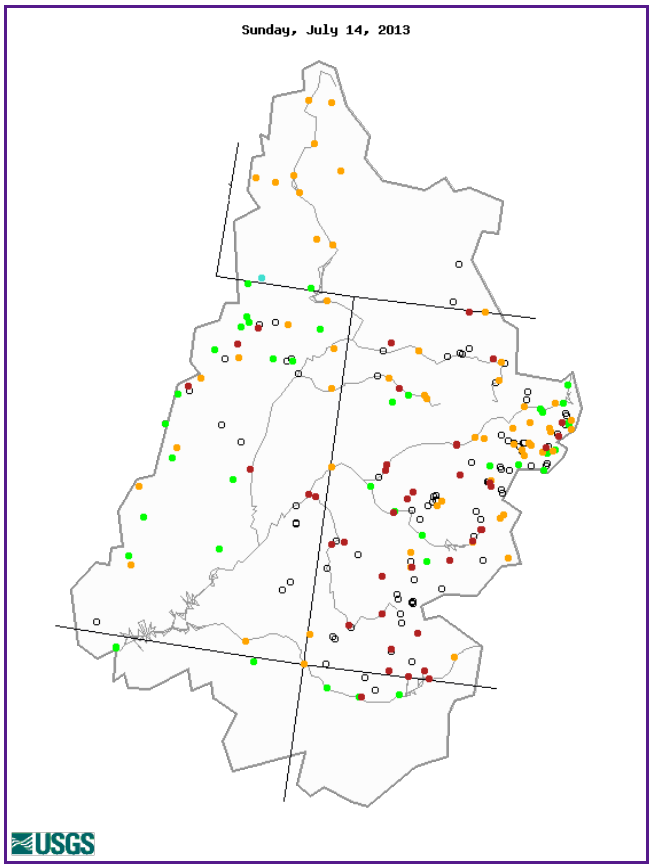
- The UCRB is showing a mixed bag of slightly positive and slightly negative SPIs
- Some drier SPIs between -1 and -2 scattered across western CO
- Overall wetter SPIs throughout UT
- SPIs between -1 and +1 for the northern and central CO mountains and extending out to the eastern plains
- Pueblo County in the Arkansas basin still showing dry SPIs, -1.5 to -2

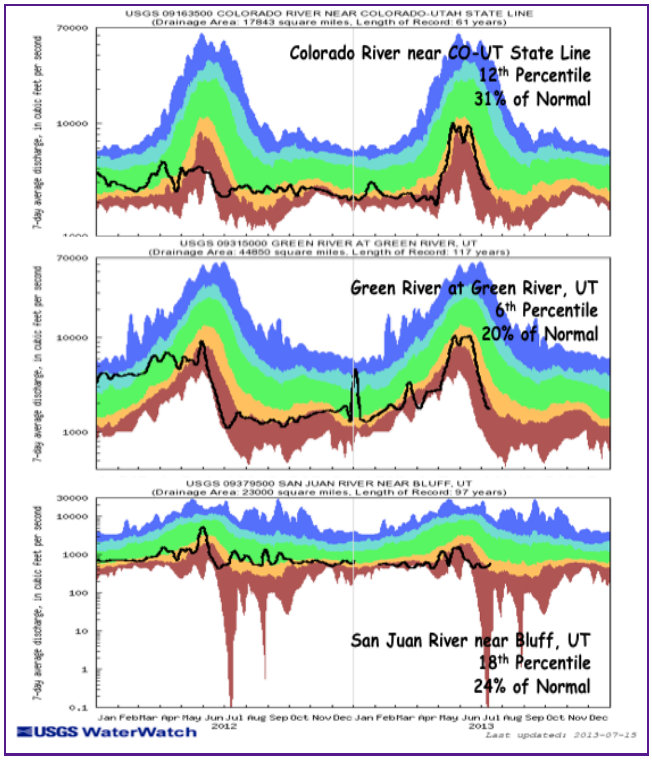
Long Term (6-month):

- Most SPIs between 0 and -1 for the majority of the UCRB
- Wetter SPIs around the northern and central CO mountains and drier

SPIs in northern UT
- SPIs between 0 and -1 for the Colorado Front Range
- Drier SPIs between -1 and -2 in southeast CO and southern CO
- Northeast CO seeing SPIs between 0 and -1.5

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		

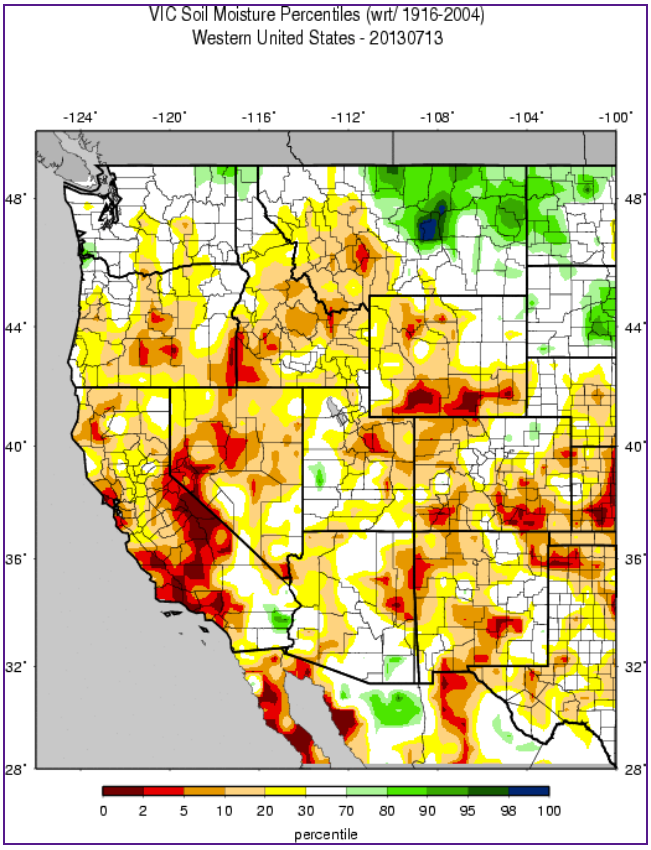
The top left image shows 7-day averaged streamflows as a percentile ranking across the UCRB. The top right image shows 7-day averaged discharge over time at three key sites around the UCRB: The Colorado River at the CO-UT state line; the Green River at Green River, UT; and the San Juan River near Bluff,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

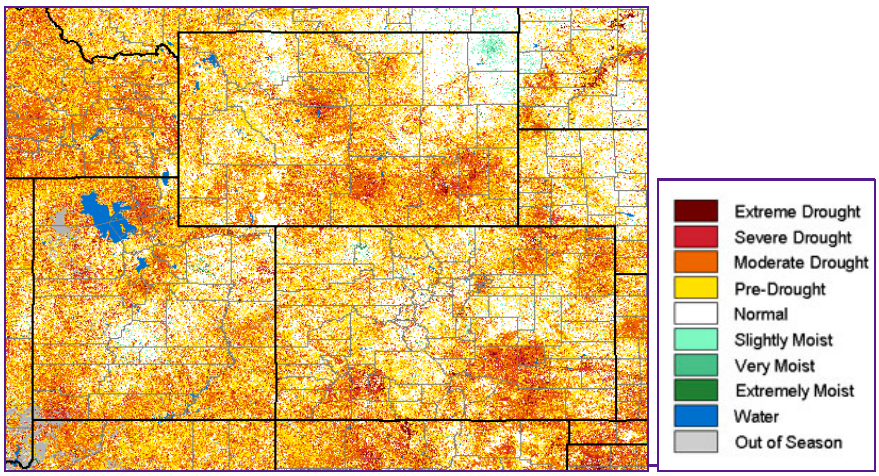
Streamflow Statistics:

- 31% of gages recording normal to above normal 7-day average

streamflows
- 29% of gages recording much below normal 7-day average streamflows
- No record low streamflows (the first time since early June)
- Overall, an increase in streamflows across the basin last week (or a slowing of the return to baseflows) mostly due to increased widespread precipitation
- Much lower flows along the Gunnison, and Dolores rivers
- The San Juan River is showing vast improvement, partly due to precipitation, but also partly due to releases from Navajo Reservoir
- Three key gages around the basin all showed improvement since last week
- Flows on the Colorado River near the CO-UT state line and the Green River at Green River, UT are still decreasing, but the decline has slowed, resulting in a bump in percentiles, 12th and 6th, respectively
- Streamflow on the San Juan River near Bluff, UT has seen a large increase over the past week, and is currently reporting below normal flows (at the 18th percentile)

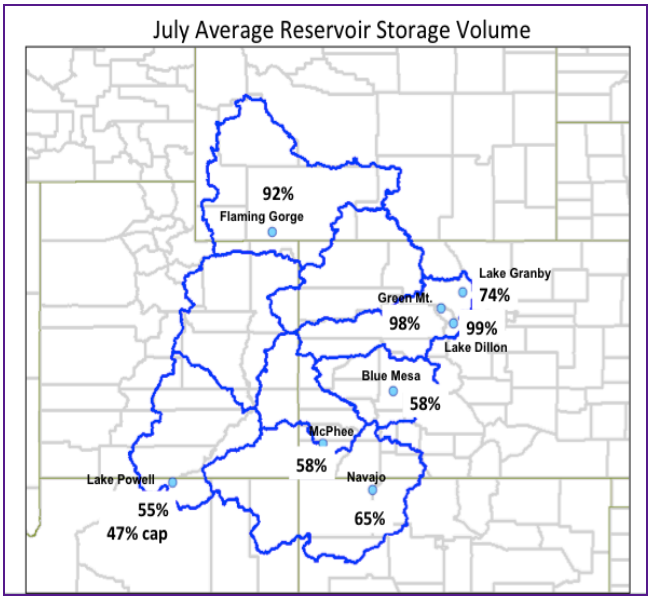
SURFACE WATER

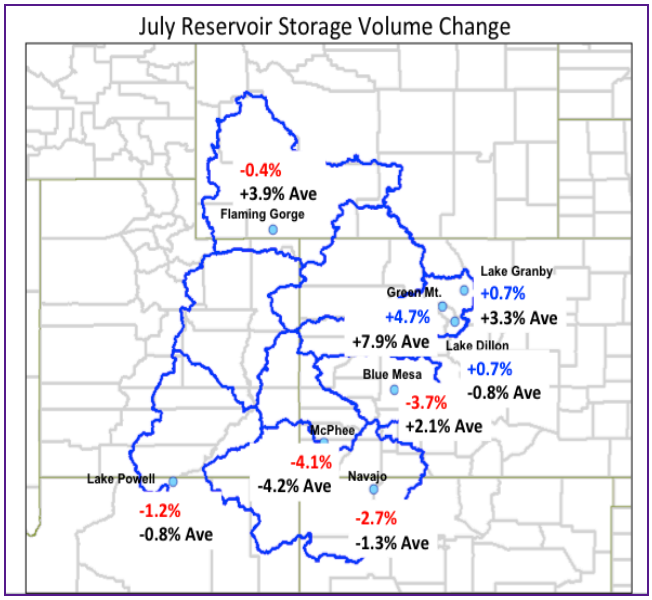




The top left image shows VIC modeled soil moisture as a percentile ranking. The top right

image shows satellite-derived vegetation from the VegDRI product (which updates on Mondays).





The above left image shows the percent of average volumes of the major reservoirs in the UCRB. The above right image shows the percent change in volume over a specific time period for the reservoirs.

VIC:

- Some improvement in modeled soil moisture in the northern part of the basin
- Soil moisture ranges from near normal to the 10th percentile of dryness in southwest WY with very dry soil moisture conditions across most of southern WY
- Most of northeast UT and northwest CO below the 20th percentile, with many spots below the 10th percentile
- Four Corners shows near normal soils on the west side, decreasing to below the 5th percentile in southwest CO
- Improved soil moisture conditions showing up over northeast CO
- Southeast CO still showing drier soils, with widespread areas below the 10th and 5th percentiles

VegDRI:

- Ver dry vegetation showing up along the Wasatch Range and northern UT with slightly better (but still dry) vegetation conditions along the Uintahs
- Most of the basin showing vegetation conditions in the pre-drought to moderate drought categories, with worse conditions in the San Juans in southwest CO
- Southeast WY showing very dry vegetation conditions with much improved vegetation over northeast WY

- Very dry vegeation over northeast and southeast CO

Reservoirs:

- Flaming Gorge, Blue Mesa, McPhee, Navajo, and Lake Powell have been decreasing in volume since the beginning of July. This is normal for the southern reservoirs, though decreases are still larger than average
- Green Mountain, Granby, and Dillon continue to increase in volume, which is normal for July
- Green Mountain and Dillon are very close to their July averages
- Flaming Gorge is 92% of average, and the rest of the reservoirs range from 55% (Lake Powell) to 74% (Granby)
- Lake Powell is currently at 47% of capacity and is seeing much below average daily inflows into the reservoir

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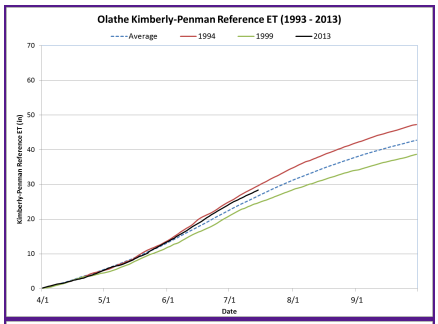
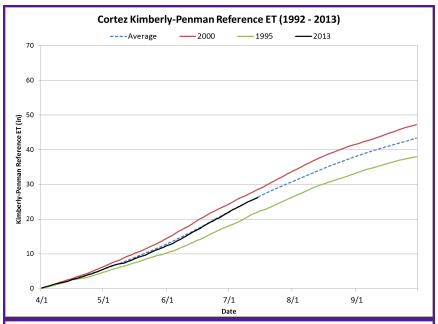
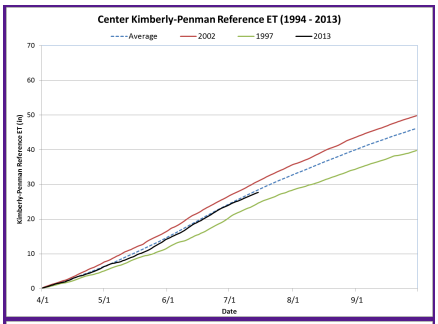
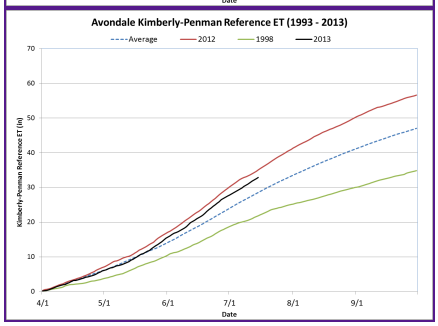
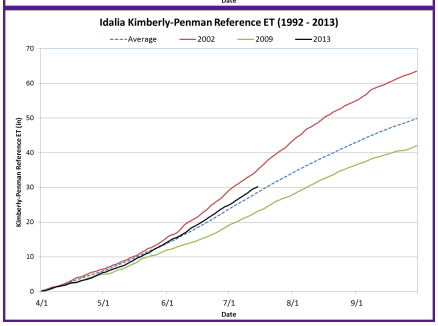
EVAPOTRANSPIRATION

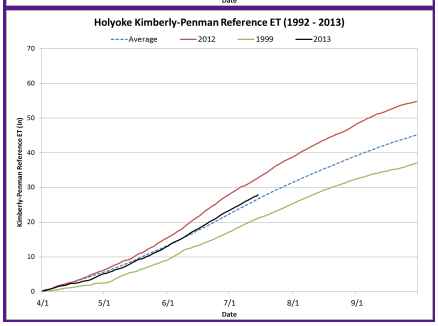


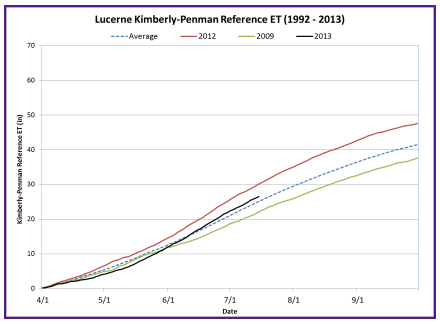












The above images are of reference evapotranspiration (ET) from CoAgMet sites across Colorado. Reference ET assumes the amount of water that will evaporate from a well-irrigated crop. Higher ET rates occur during hot, dry, and windy conditions. Lower ET rates are more desirable for crops. See a map of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

Reference ET:

- Olathe: Above average ET since the beginning of the growing season,

approaching the high year.

- Cortez: Near normal growing season ET to date
- Center: ET was below average for most of May, but has seen an increase in ET and is now closer to average
- Avondale: For most of May, ET was near average but recent warm temperatures, low dew points and winds have increased ET above normal, but still lower than the maximum year of 2012.
- Idalia: Below average ET for most of April and May, increased and is now showing above average ET rates
- Holyoke: ET was slightly below average for April but has been above average since early June
- Lucerne: ET has been lower than the previous minimum year of 2009 for much of April and May but has ramped up, and is now above average
- Daily ET rates for most of eastern CO are between .25 and .40 inches

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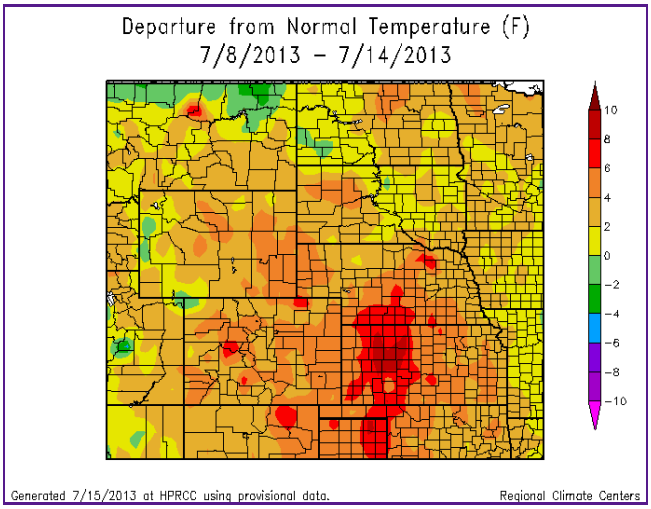
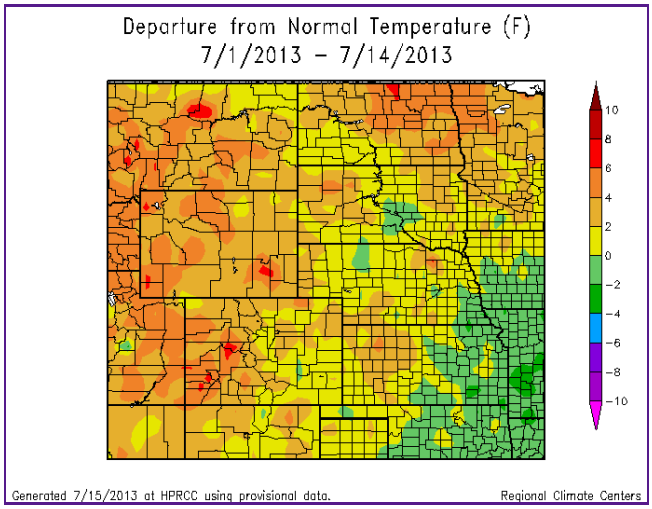
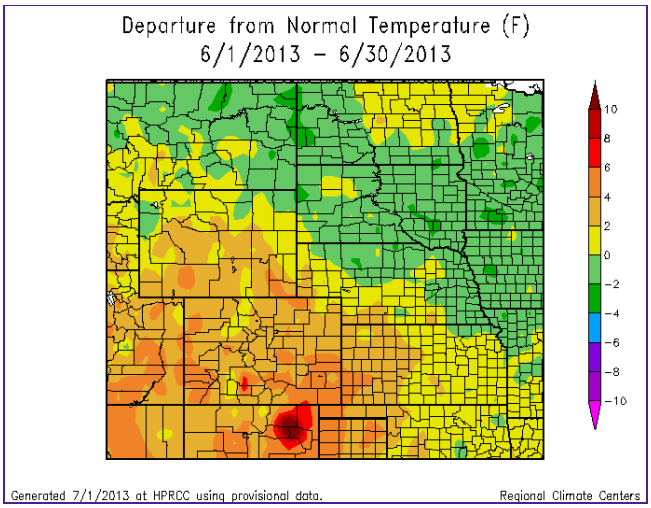
TEMPERATURE





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:

- Temperatures were close to average for some areas in the northern part of the basin
- Most of the basin saw temperatures 2 to 6 degrees warmer than average
- Eastern CO and eastern WY saw temperatures 2 to 6 degrees above average as well

Last Month Temperatures:

- Most of the basin saw temperatures 2 to 6 degrees warmer than average for the month of June
- Southeast WY, northeast CO, and the Front Range urban corridor experienced temperatures 2 to 4 degrees above average
- Southeast CO was warmer, seeing temperatures 4 to 6 degrees above average

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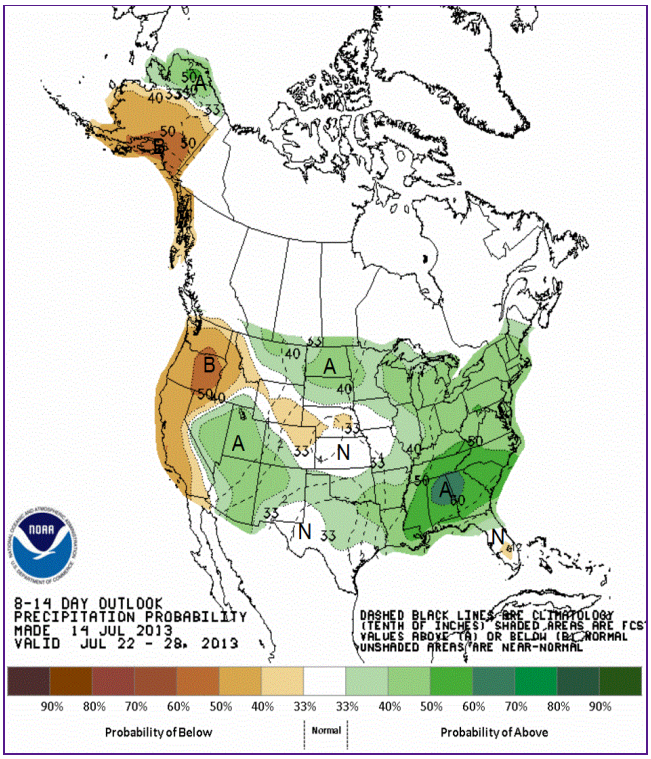
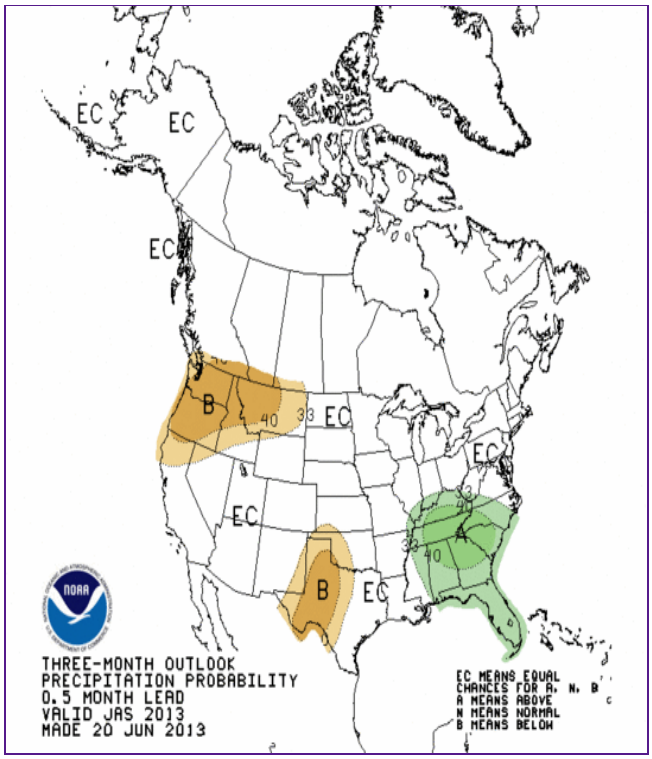
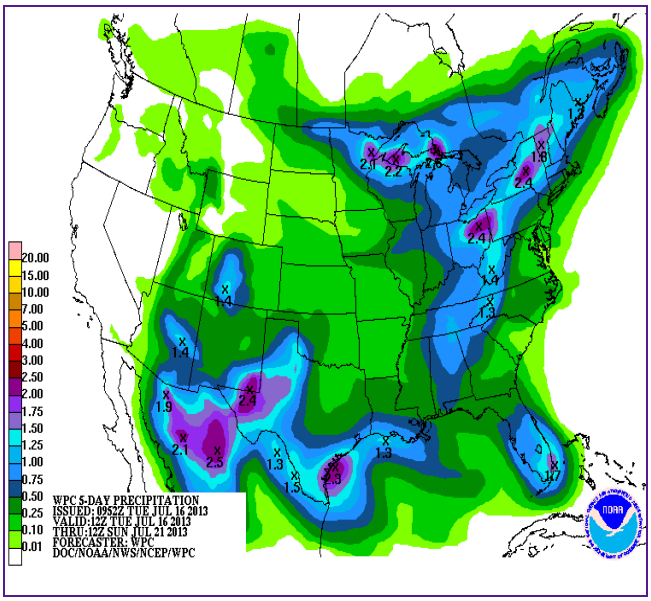
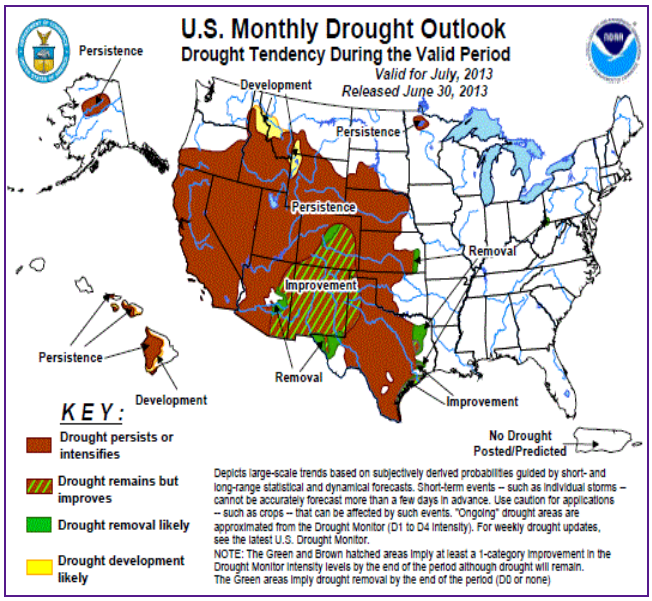
FORECAST AND OUTLOOK





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.





This Week:

- Scattered showers are expected over the mountains throughout the week
- The plains will be drier, mid-week, but should see an increased chance

of showers into the weekend
- The HPC QPF shows the best chances of larger accumulations throughout western CO, with lesser amounts throughout the rest of the basin and eastern plains

Longer Term:

- The 8-14 day outlook suggests that the monsoon pattern will continue through next week
- The three month outlook shows equal chances for wet, dry, or normal conditions for the region
- The drought outlook shows the possiblity for some drought improvement in southern CO with drought persistence throughout the rest of the region

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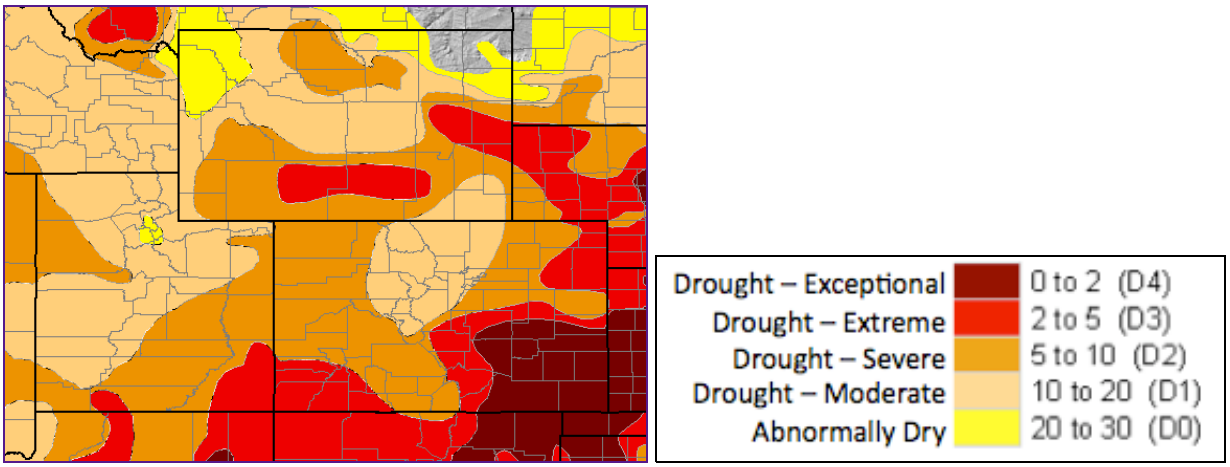
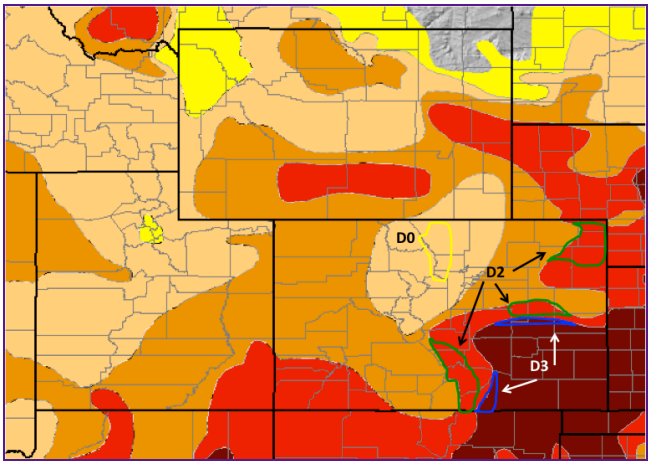
U.S. DROUGHT MONITOR



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: July 16, 2013

Monsoonal moisture has brought widespread precipitation to most of Colorado, though much of the Upper Colorado River Basin remained drier for the week (with some spotty exceptions, including the San Juan Mountains). The monsoon pattern is expected to continue to bring increased chances of showers over much of the higher elevations in the basin (throughout the week), and for the eastern CO plains (later in the week). Streamflows have responded well to this increased precipitation, but water supply is still well below average, and on-the-ground reports are that soil moisture is not responding as well to the rains.

Recommendations**

UCRB: Status quo is recommended for the UCRB.

Eastern CO: Due to large rain accumulations and widespread moisture throughout eastern CO, several areas of improvement are recommended. D4 reductions are outlined in blue, D3 reductions are outlined in green, and an area of D0 is recommended for the northern mountains/foothills area. At this time, improvements cannot be more widespread - although benificial precipitation has fallen, severe impacts (mainly agricultural) are still being reported, and much of the rain is running off without much benefit to the soils. Additionally, the precipitation is likely not as widespread as the "contour" maps would indicate; storms were much more spotty and convective in nature, hitting some areas and missing others.