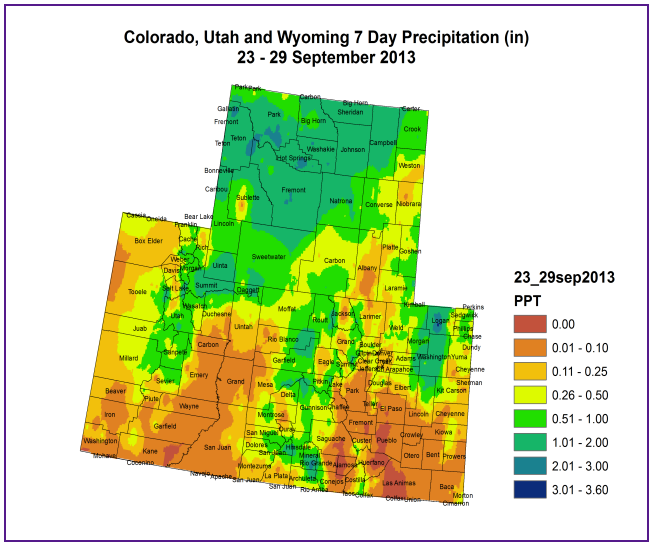
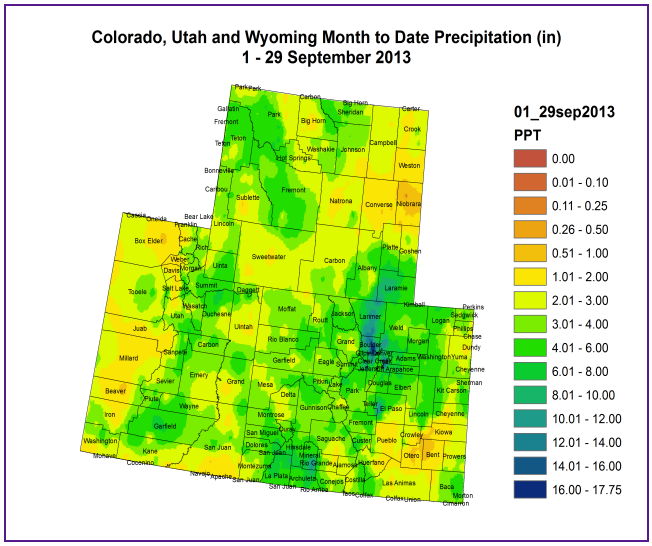
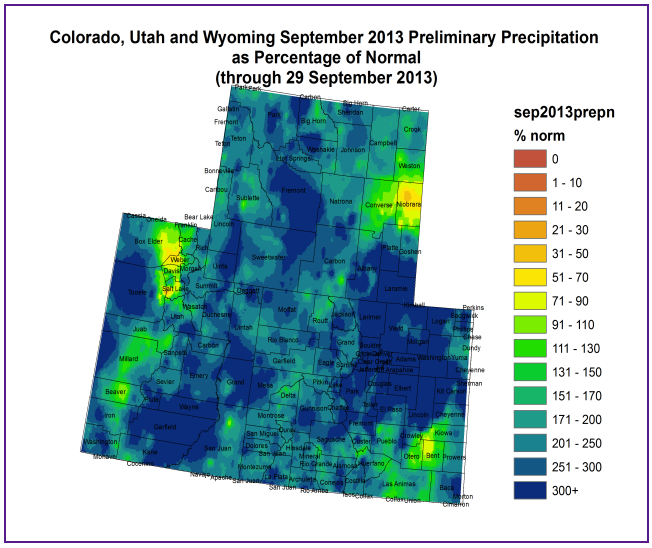
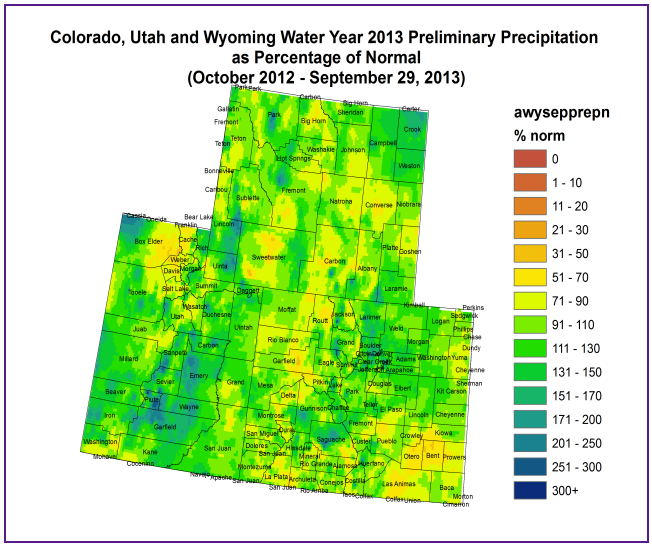
PRECIPITATION









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.

Water Year Precipitation (Preliminary through September 29th):

- Much of northeastern UT and western WY have seen near average to slightly above average precipitation for the water year with some drier areas in the Wasatch mountains and in Sweetwater County, WY
- Most areas of eastern UT and western CO have received between 90% and 1300% of average precipitation for the water year, with some spotty areas less than 70% of average
- The Four Corners region ranges from 50% to 110% of average with areas up to 150% of average
- The northern and central CO mountains are mostly above average for

the water year
- Most of northeast CO is 70% to 130% of average, with areas in the foothills up to 200%
- Most areas of southeast CO are below average, with some regions around the Arkansas River valley between 30% and 50% of average

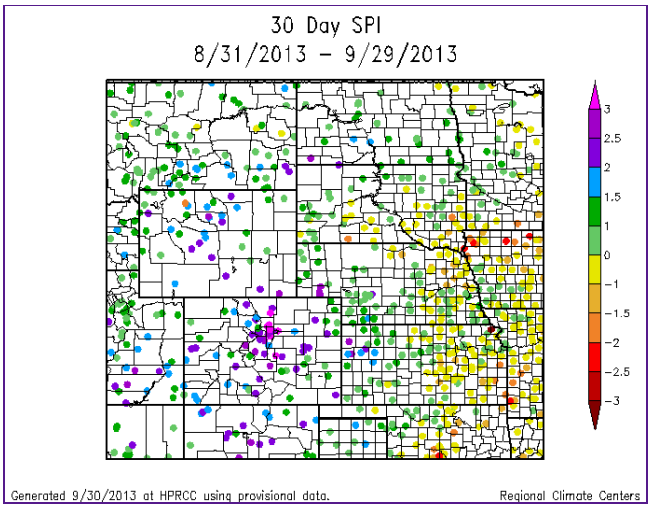
September Preliminary Precipitation (through September 29th):

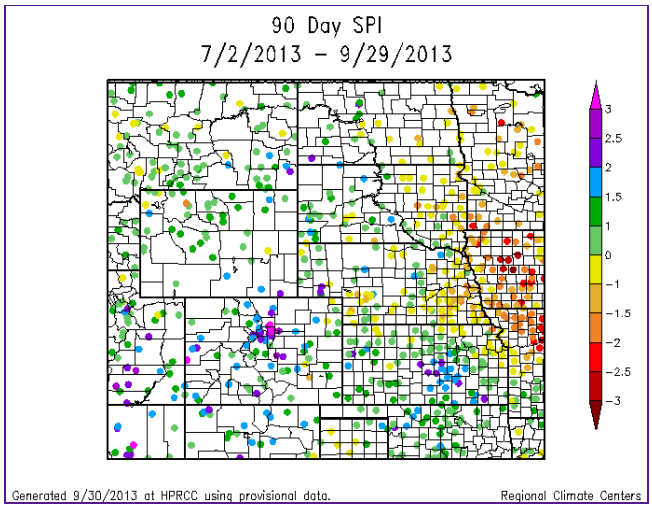
- Most of the UCRB saw much above average precipitation for September, with a majority of the basin greater than 150% of average
- A few spotty areas in the basin were closer to average
- The Wasatch mountains in northern UT were down to 70% above average
- Thanks to heavy rains most areas of eastern CO and southeastern WY received greater than 300% of average
- Southeastern CO saw less precipitation, especially in Otero, Bent, Kiowa and Prowers counties, between 70% to 130% of average

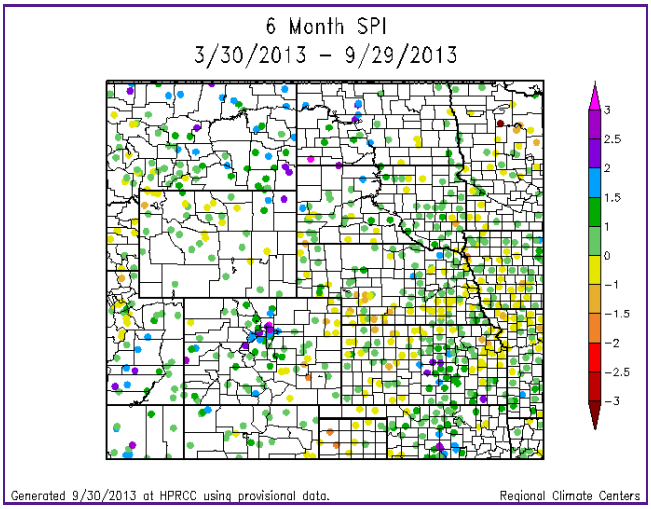
Last Week Precipitation:

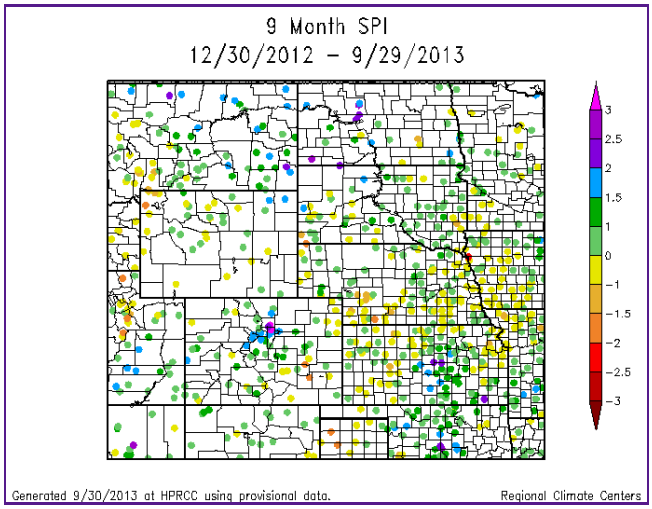
- The northern portion of the UCRB, in southwest WY and northeast UT, saw precipitation amounts between 0.5" and 1.00" with up to 2" in Uinta County, WY and Summit County, UT.
- Eastern UT mostly saw less than 0.10" with some areas up to 0.25".
- The portion of the basin in Western CO saw slightly more precipitation up to 1.00" in some areas.
- East of the basin, the Rio Grande mountains in southern CO saw an area with precipitation amounts up to 3"
- Northeast CO saw a thin area of precipitation in Logan, Washington, Morgan and northeast Weld Counties between 0.5" to 2.00", with a small area in Logan County up to 3.6".
- The rest of eastern CO only received up to 0.25", with a few areas up to 0.5".

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.

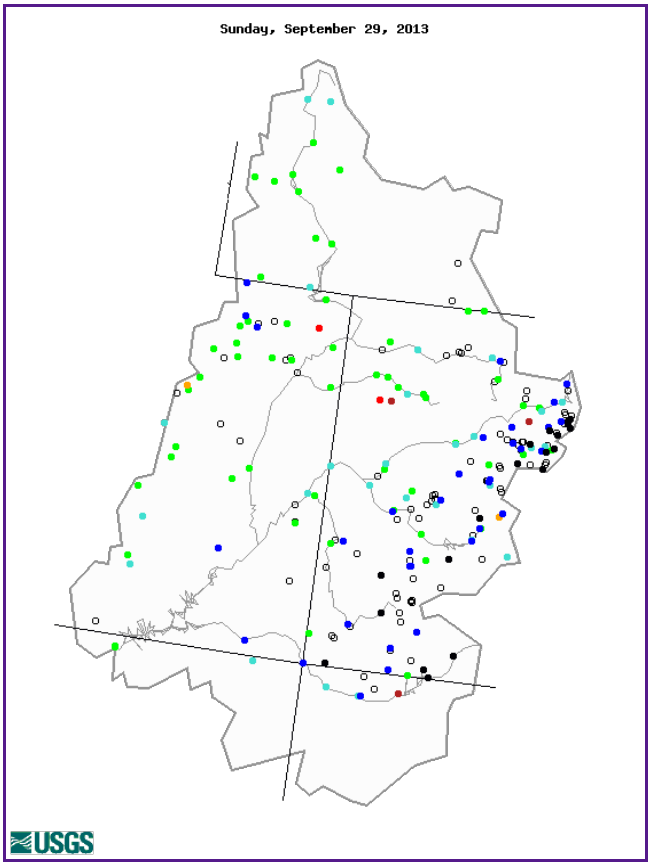
Short Term (30-day):

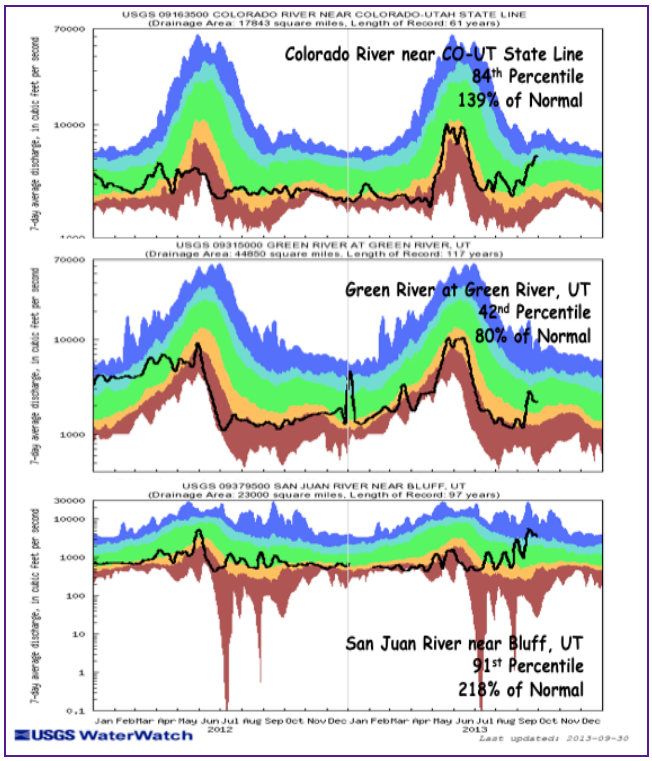
- All of the basin is showing wet indicators on the 30-day timescale
- Areas around the Colorado River valley in southeast UT are in the +2 to +3 range
- SPIs throughout much of western CO and the northern part of the basin are between 0 and +1.5
- SPIs are between +1.5 and +2.5 around the Colorado Headwaters
- SPIs east of the basin are also positive with extremely wet indicators along the Front Range (+2 to +3) and ranges between 0 and +2 along the CO eastern plains

Long Term (6-month):

- Most SPIs in the basin show near normal to wet SPIs
- Northern UT has some slightly drier SPIs
- Wet SPIs in the range of 0 to +1.5 around the Four Corners
- Wettest SPIs are along the Colorado River valley in southeast UT and the Colorado River mainstem
- The northern CO Front Range shows very wet SPIs
- Drier SPIs show up in northeast CO (0 to -1) and in the Arkansas valley (0 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:

- 96% of gages recording normal to above normal 7-day average streamflows
- 13% of the gages recording high flows (highest recorded streamflow for that day of year)
- 4% of the gages are recording below normal 7-day average streamflows and only 3% are recording much below normal flows or lowest flows
- Large overall increase in streamflow across the entire basin
- Highest flows concentrated around the Colorado River mainstem
- Three key gages around the basin all show increases in streamflow over the past couple of weeks
- The Colorado River near the CO-UT state line currently recording above normal flows at the 84th percentile
- The Green River at Green River, UT saw a slight decrease in the past couple of days, but still recording flows in the near normal range at the 42nd percentile
- Flows on the San Juan River near Bluff, UT are in the much above normal range, at the 91st percentile, and 218% of normal. These flows are as high as they would normally be during peak runoff season and have really helped make up some of the deficit from earlier this spring

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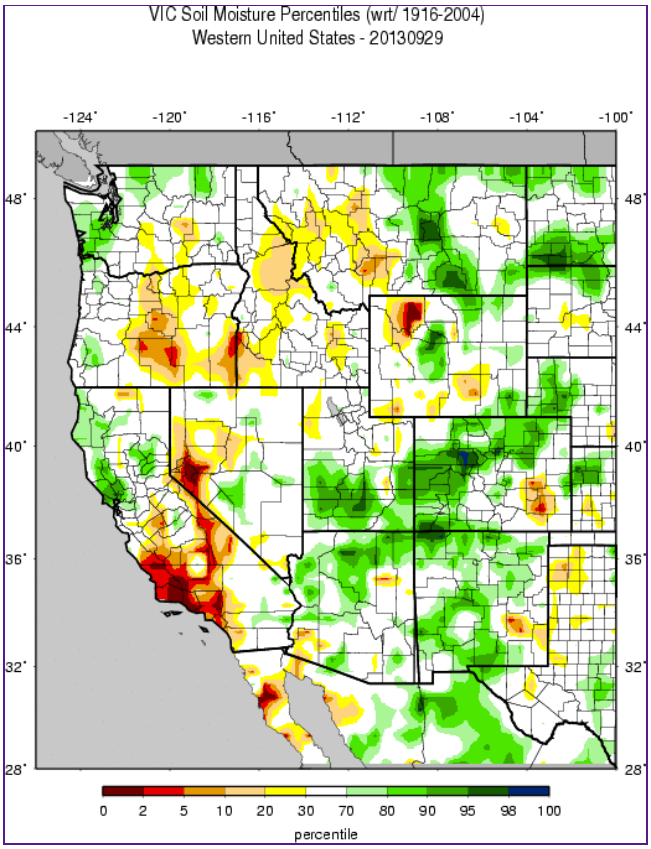
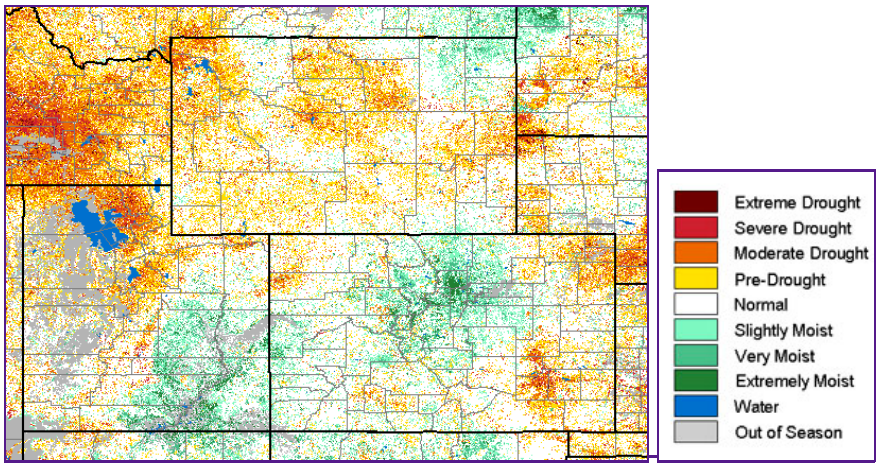
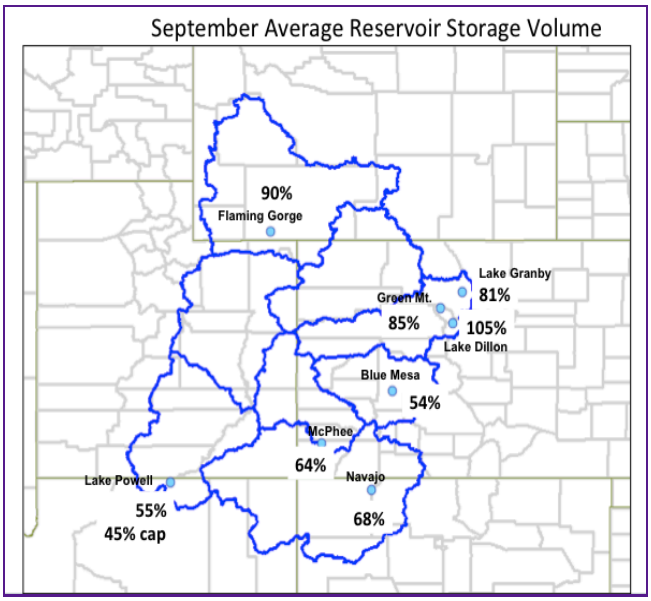
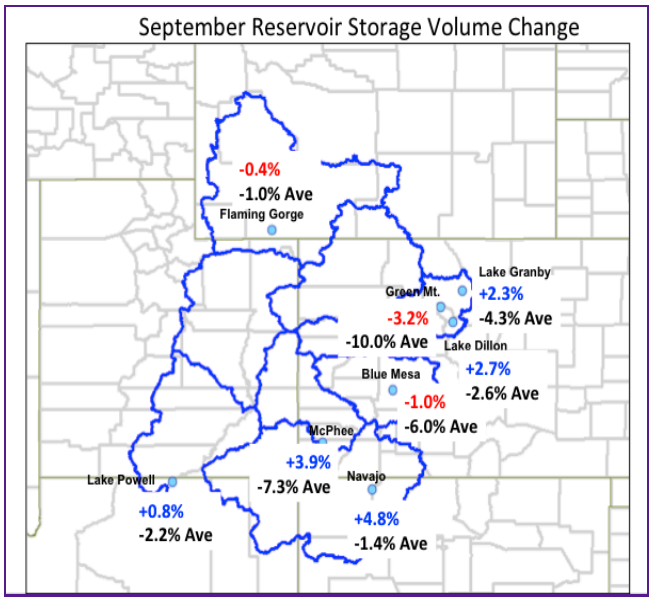
SURFACE WATER





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:

- Vast improvements to the VIC soil moisture product over the past couple weeks with recent widespread heavy rains.
- Southern WY still shows small areas of drier soil moisture percentiles less than the 30th percentile for the southern portion of the state, however this area is much smaller than a few weeks ago
- In southeast CO, the southern Lincoln, Crowley, Otero, Bent and Prowers counties continue to report soil moisture percentiles below the 20th percentile, with the rest of southeast CO showing near normal soil moisture
- Most of the southern portion of the UCRB showing wet soil moisture conditions
- Most of northern CO showing wet soil moisture conditions

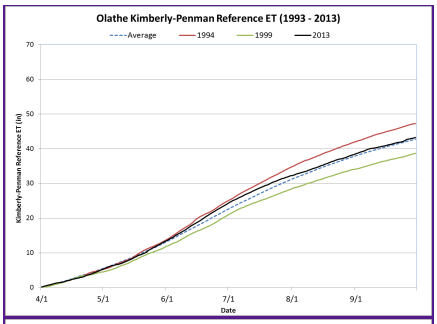
VegDRI:

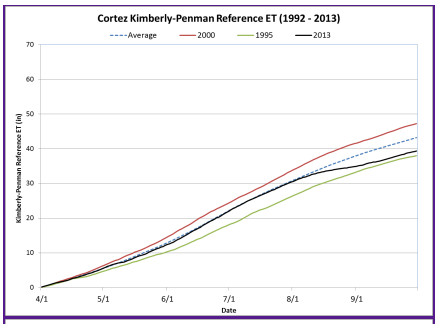
- The northern portion of the UCRB continues to show dry vegetation conditions through the Green, Wasatch, Uintas, Yampa and White basins.
- The Colorado River valley showing wet vegetation with near normal vegetation conditions in southwest CO
- Wet vegetation showing up around the Colorado mainstem, across the Continental Divide and across the northern CO Front Range
- Near normal vegetation showing up in southern CO with drier vegetation conditions in northeast CO and in parts of the Arkansas valley

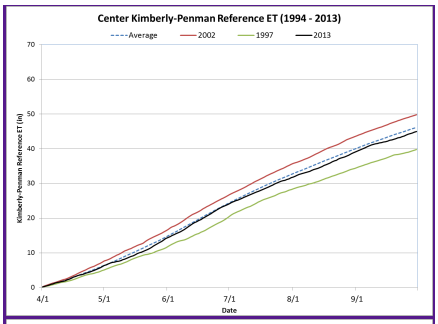
Reservoirs:

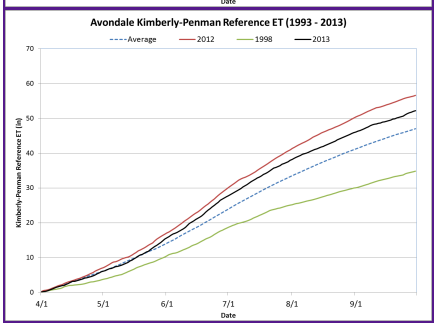
- Lake Dillon currently above average for September
- Flaming Gorge, Green Mountain and Lake Granby are in the 80% to 90% of average range
- The southern reservoirs are a bit lower, ranging from 54% of average (Blue Mesa) to 68% of average (Navajo)
- Many of the reservoirs have seen an increase in volume since the beginning of September, which is not normal for this time of year. Many have seen around a 2% increase, and Lake Powell has seen a 0.8% increase, when it normally decreases by 2% in September
- Flaming Gorge, Green Mountain, and Blue Mesa have all decreased since the beginning of the month, however they all saw some increase in volume during mid-September
- Overall, an improvement in water supply during September

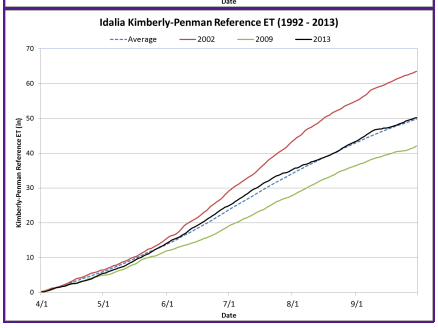
EVAPOTRANSPIRATION

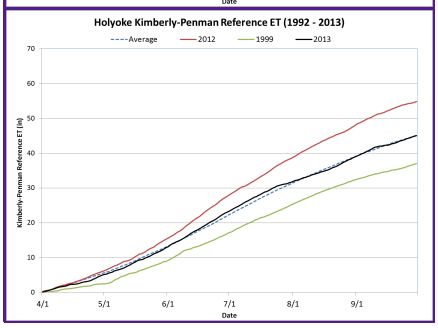


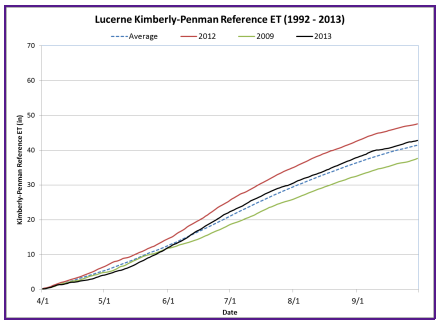










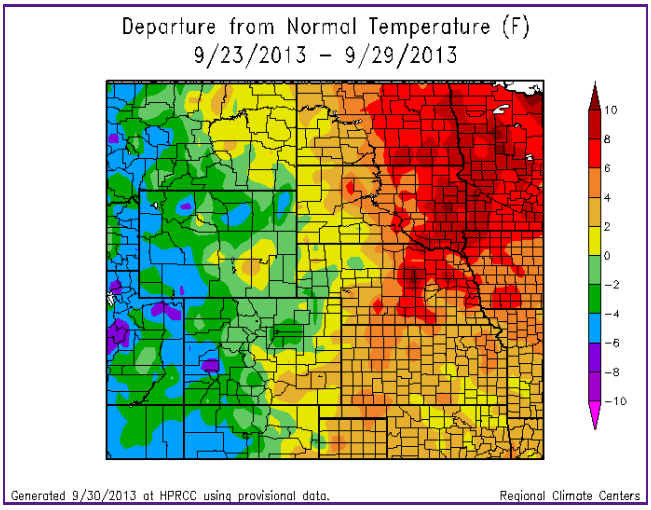


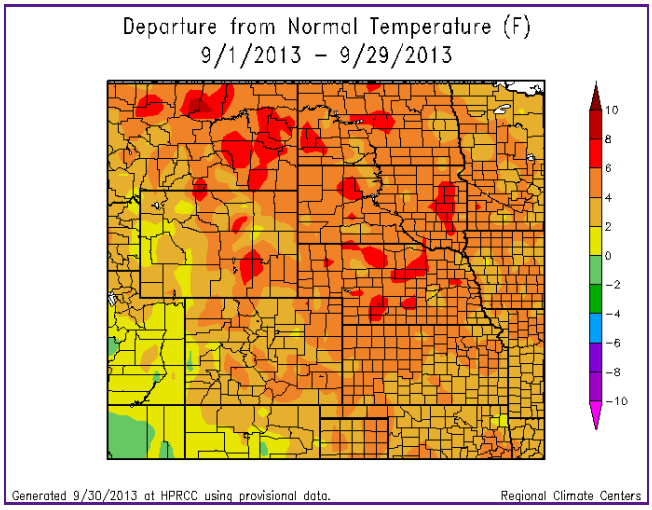
The above images are of reference evapotranspiration (ET) from CoAgMet sites across Colorado. Reference ET assumes the amount of water that will evaporate from a well-irrigated crop. Higher ET rates occur during hot, dry, and windy conditions. Lower ET rates are more desirable for crops. See a map of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

Reference ET:

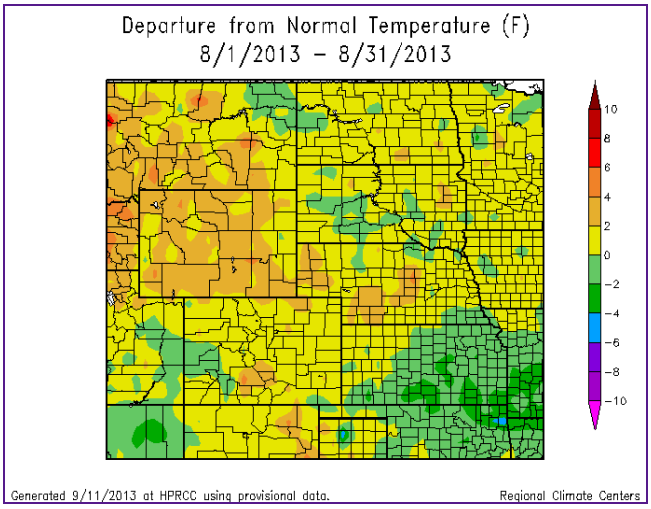
- Olathe: ET has dropped over the past couple weeks and is now very near normal for the growing season to date.
- Cortez: ET was near average for July. Slower ET rates have helped lower that to below average for most of August, currently much lower than average and approaching the low year of 1995.
- Center: ET has been slightly below average since the beginning of July.
- Avondale: ET rates have been well above average for most of the growing season, though still below the record ET year of 2012. ET rates have slowed somewhat since late July but are still above average for the growing season.
- Idalia: ET was above average for July. ET rates slowed and ET have been close to average for the past few weeks and is now just slighly above normal for the growing season.
- Holyoke: ET rates dropped to slightly below average after being slightly above average for July. ET has been near average for the past couple of weeks
- Lucerne:ET has been slightly above average since late June.

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.



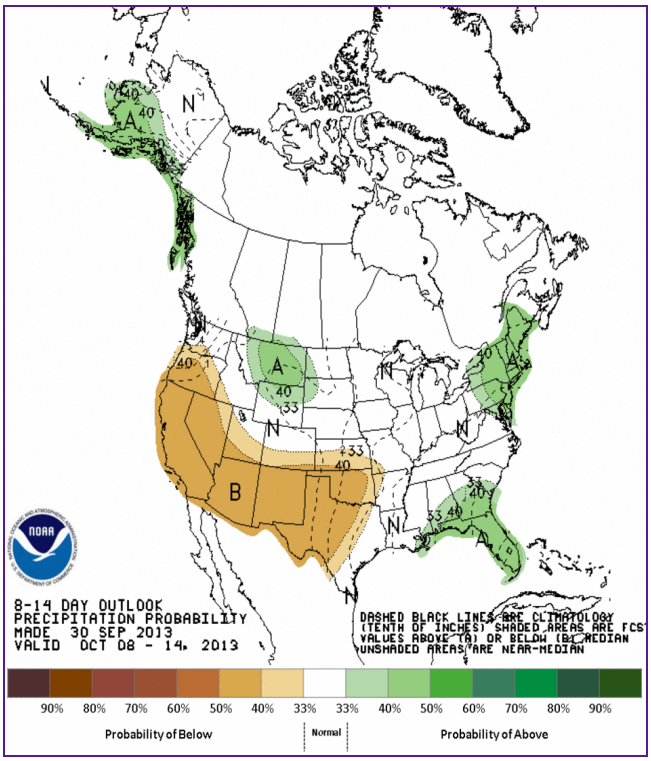
Last Week Temperatures:

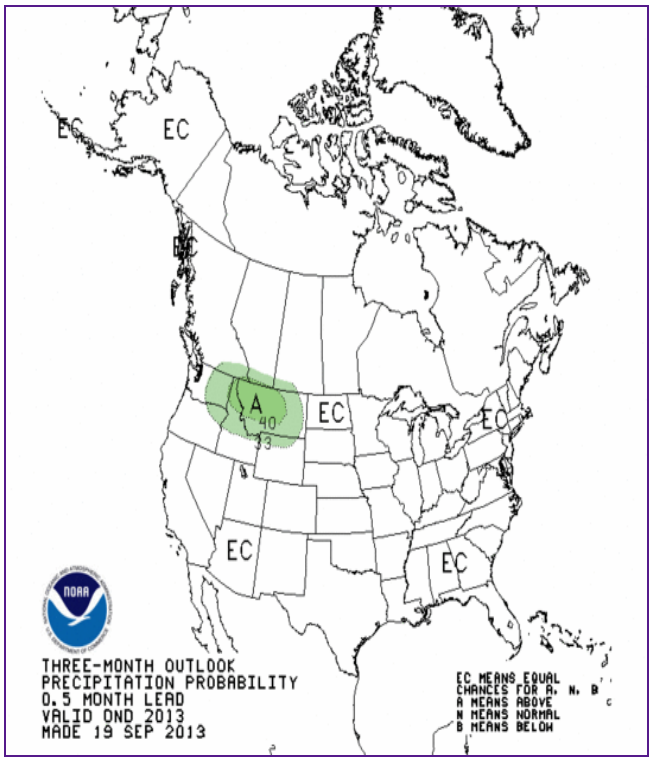
- All of the basin saw cooler than average temperatures last week
- The eastern portion of the basin saw temperatures down to 4 degrees below average, while the western and northern portions saw temps down to 6 degrees below average, with some spotty areas in northern UT 8 degrees below average.
- Eastern WY saw temperatures 0 to 4 degrees warmer than average
- Most of northeastern CO saw temperatures 0 to 4 degrees below average for the week, while southwest CO was warmer than average by 0 to 4 degrees.

Last Month Temperatures:

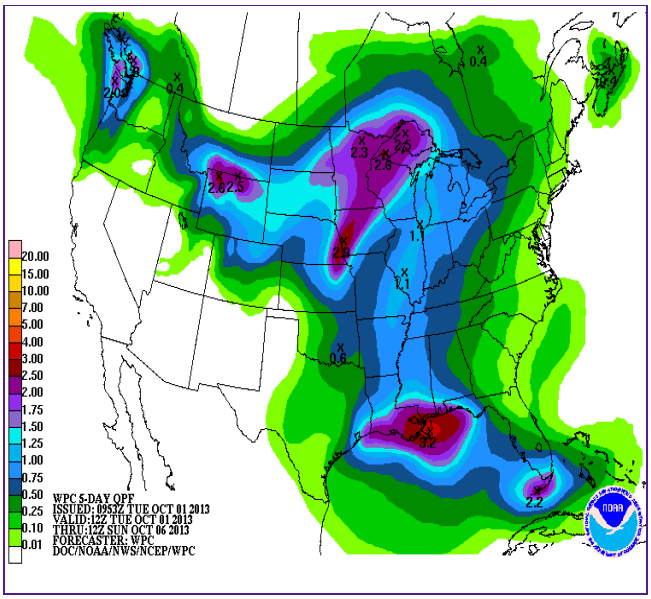
- The northern portion of the basin saw warmer than average temperatures, ranging between 0 and 4 degrees above average
- The southern portion of the basin was closer to average, with temperatures -1 below average to +1 above average
- Most of WY was much warmer than average
- Eastern CO was mostly 0 to 2 degrees warmer than average

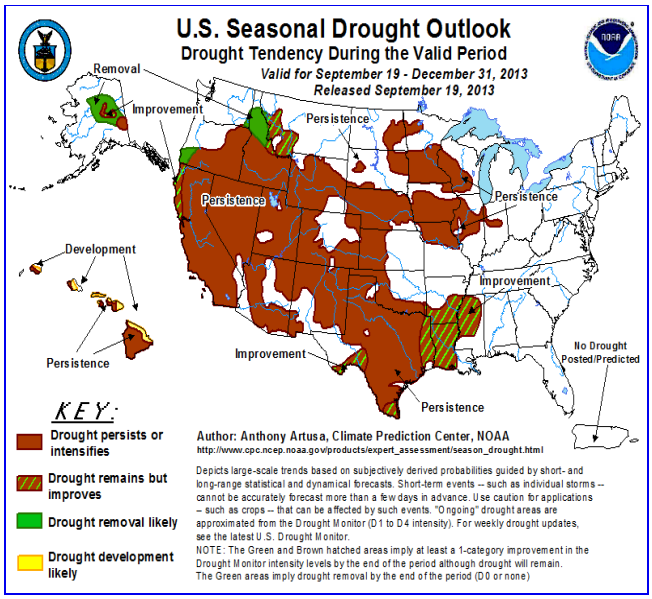
FORECAST AND OUTLOOK





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:

- Dry and mild conditions will continue through Wednesday ahead of the next system
- A strong cold front through the region late Thursday afternoon into Friday morning producing a 12 to 18 hour window of rain and snow down to around 6000 feet with much colder temperatures behind the front.
- Heaviest accumulations are forecast for the Upper Green basin in WY with precipitation forecast for most of Colorado
- Following this system the weekend will return to the dry mild conditions.

Longer Term:

- The 8-14 day outlook shows a good chance of lower than normal temperatures across the northern portion of the region with the possibility of normal temperatures in the southern portion.
- Average precipitation is expected for the northern portion of the region with a chance of below normal in the southern portion.
- The three month outlook shows equal chances for wet, dry, or normal conditions for the region
- The drought outlook shows drought persistence across the entire region for the fall

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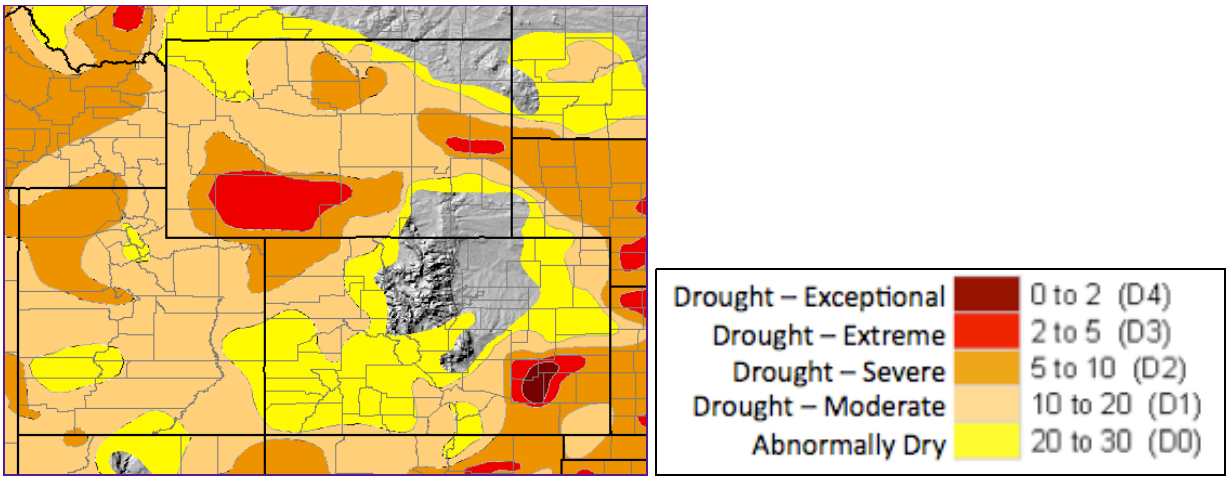
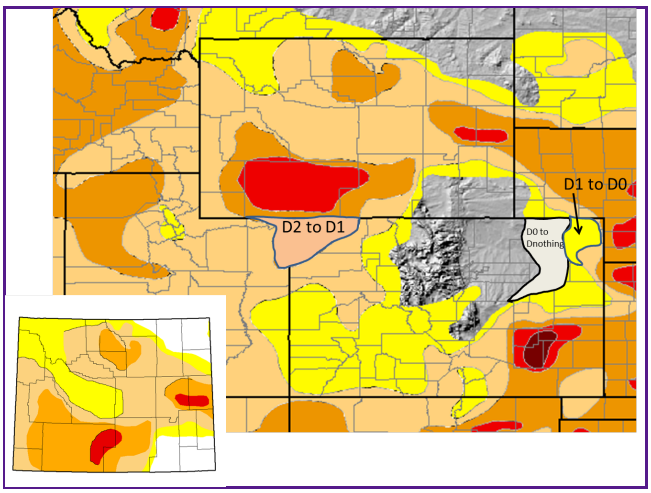
U.S. DROUGHT MONITOR



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: October 1, 2013

This last week saw less precipitation through the UCRB, however the northern portion of the basin that received beneficial precipitation. Higher elevations have received snow the past few weeks, as well. East of the basin, little precipitation fell in eastern CO; however there was beneficial precipitation that fell in northeast CO.

Preliminary results of the 2013 Water Year show mixed results in the UCRB. Most areas are near normal for the water year, 90% to 110% of average. Areas in the central portion of the basin (western Garfield, Rio Blanco, Moffat and Routt Counties in CO) are showing below average precipitation for the water year, 50% to 90% of average. Northeast CO ended up near to above average, thanks to the large precipitation in September (greater than 300% in most areas). Southeast CO remained dry in areas that have seen a long term drought.

Recommendations**

UCRB:

Beneficial precipitation in September and the last week has led to a recommendation to improve the D2 to D1 in Moffat County, CO. Although some areas still have stressed vegetation, the area seems to be greener than normal for this time of year, so moderate drought seems to be an appropriate category considering the long term dryness.

Wyoming: See map insert for Wyoming recommendations,per Tony Bergantino. The D3 in southwest WY is being greatly decreased thanks to beneficial precipitation. Other recommended changes include expanding D0 in Freemont and Teton Counties, improving the D1 to D0 in northern Park and Big Horn Counties, improving the D2 area to D1 in Hot Springs and Washakie counties and improving the D2 to D1 in northern Converse and southern Campbell Counties.

Eastern Colorado:

Beneficial rains fell in eastern Weld, Morgan, Logan, Washington and Northern Lincoln counties calling for a recommended removal of D0 to D-nothing for this area.

D1 to D0 improvement in Sedgwick, Phillips and northern Yuma counties is also recommended. This area did not receive as much precipitation, however there was beneficial precipitation the last week, and this area is 90% to 100% or normal for the water year.