

NIDIS Weekly Climate, Water and Drought Assessment Summary

Upper Colorado River Basin

August 31, 2010

Precipitation and Snowpack

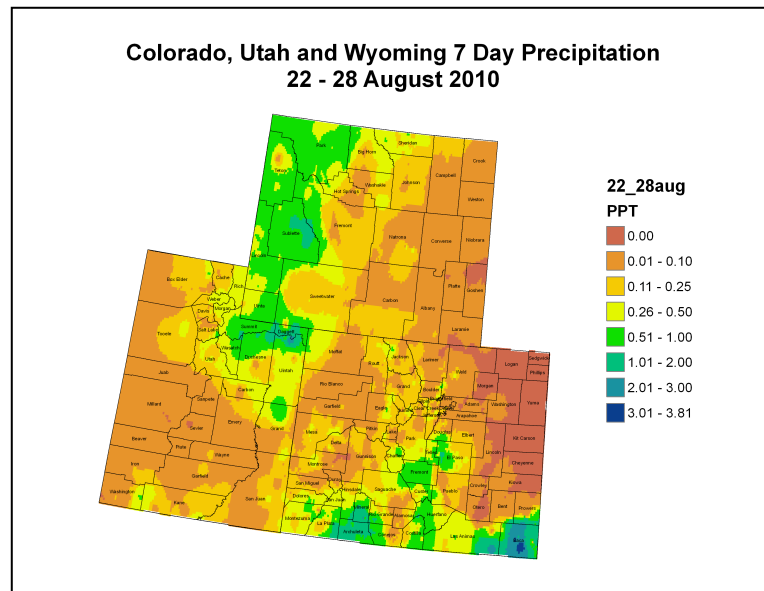


Fig. 1: August 22 – 28 precipitation in inches

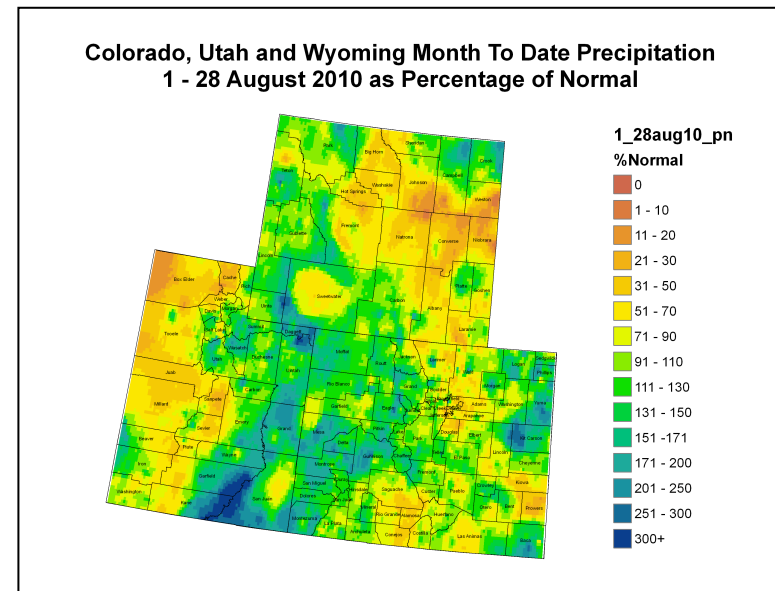


Fig. 2: August month-to-date precip as percent of average

Over the past week, the northern portion of the Upper Colorado River Basin (UCRB) received the most moisture, with some areas in northeastern Utah receiving over an inch of precipitation (Fig. 1). Archuleta County, CO in the San Juan basin also experienced between one and two inches of precipitation last week. Most of the rest of the basin saw only minor amounts of rain, while the eastern plains (which depends on western slope water supplies) received little to no moisture.

For the month of August, the majority of the UCRB has seen near average or above average amounts of precipitation (Fig. 2). The driest areas for the month have been in Sweetwater County, WY, San Juan County, UT, and Garfield County, CO—all of which are currently in D0 (abnormally dry conditions) on the U.S. Drought Monitor map.

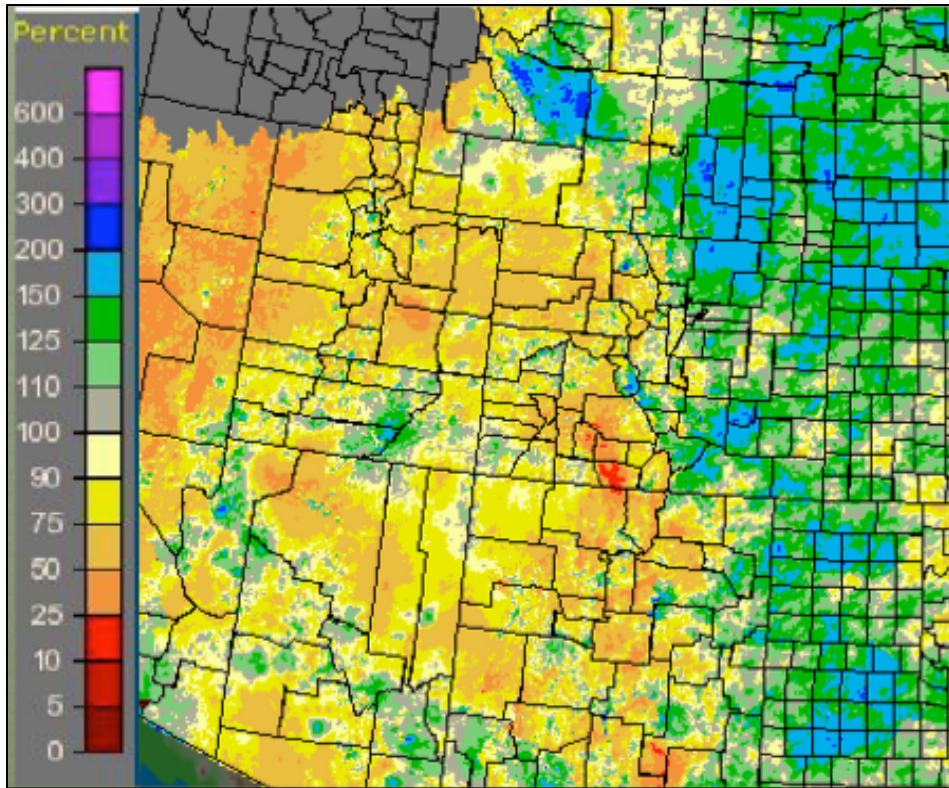


Fig. 3: NWS AHPS water-year-to-date precipitation percent of average as of August 31st.

For the water year (beginning October 1, 2009), most of the UCRB has seen a deficit in precipitation (Fig. 3). Throughout the basin, precipitation for the water year currently ranges from 50% - 90%, with scattered areas receiving near average precipitation and east of the UCRB receiving above average precipitation.

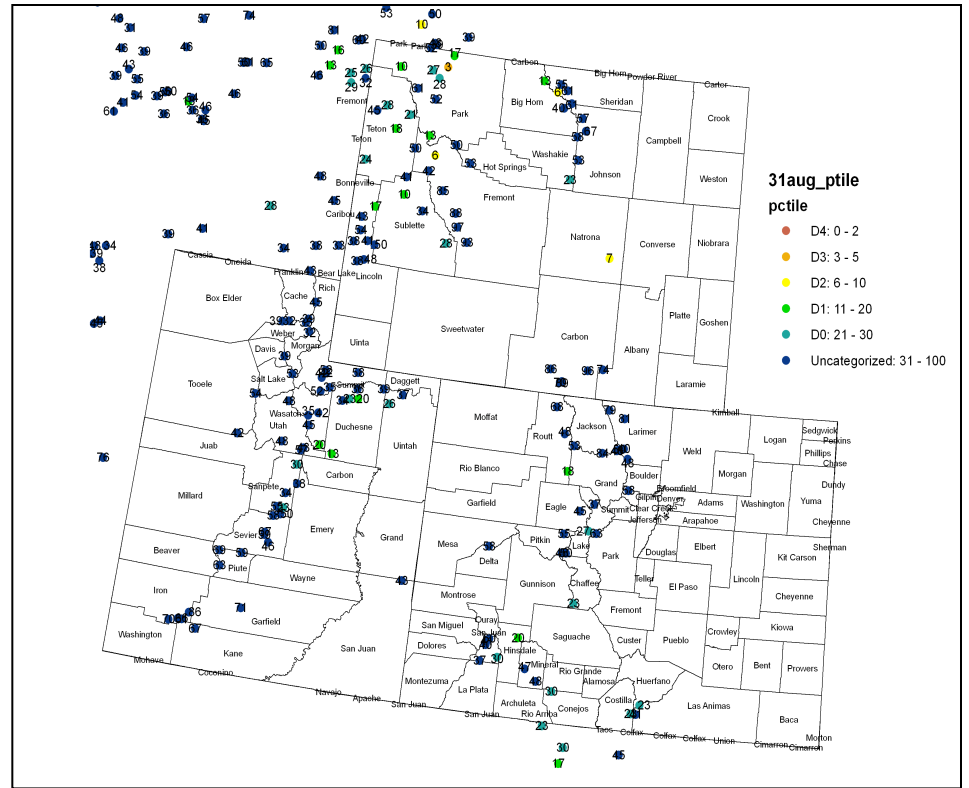


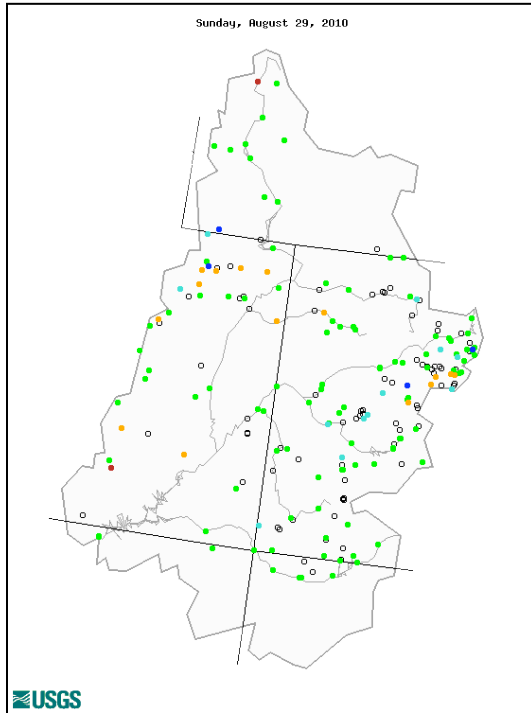
Fig. 4: Snotel WYTD precipitation percentiles (50% median, 21-30% is Drought Monitor's D0 category).

Water-year-to-date (WYTD) percentiles for the Snotel sites in the UCRB show the lowest values corresponding with the locations of current abnormal dryness (D0 or below the 30th percentile) on the U.S. Drought Monitor map—in the Rio Grande basin to the south, the Upper and Lower Green River basins and near the Colorado headwaters region (Fig. 4). The remaining Snotel sites show percentiles high enough to not be considered for drought designations.

Streamflow

89% of the USGS streamgages in the UCRB are reporting normal (in the 25 – 75th percentile range) or above 7-day average flows as of August 29th (Fig. 5). The highest concentration of streamgages reporting below normal flows are found in the Lower Green River basin in Utah, with below normal flows also showing up in the Colorado River basin in Colorado.

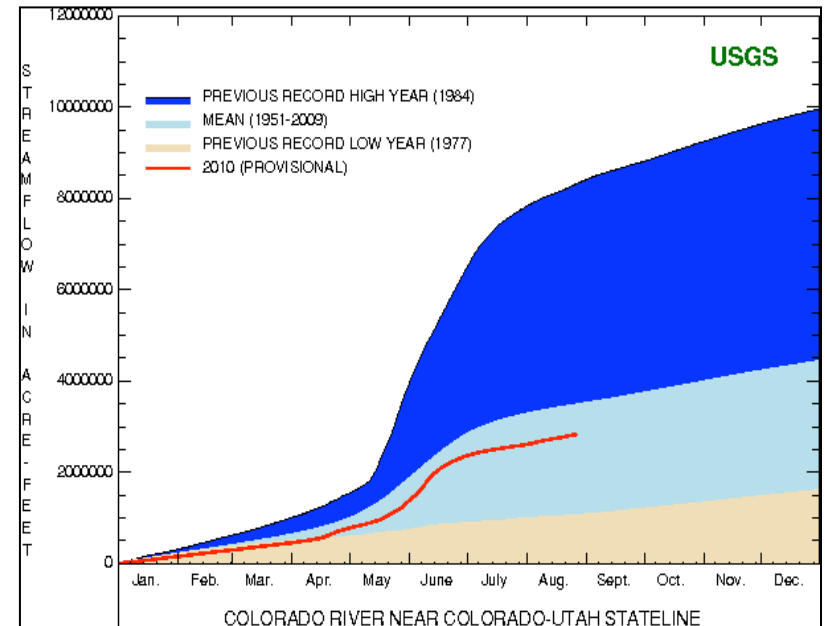
Cumulative runoff on the Colorado River at the Colorado-Utah state line is still lagging (currently at 82% of normal) due to low discharge during the winter and most of spring, when accumulations are usually at their maximum (Fig. 6). However, when looking at current 7-day average flows across the basin, conditions are better than they’ve been when comparing to the last 8 years, mostly as a result of a strong monsoon season.



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

Fig. 5: USGS 7-day average streamflow compared to historical streamflow for August 29th in the UCRB.

Fig. 6: USGS cumulative runoff for the 2010 calendar year on the Colorado River at the CO-UT state line as of August 30th.



Water Supply and Demand

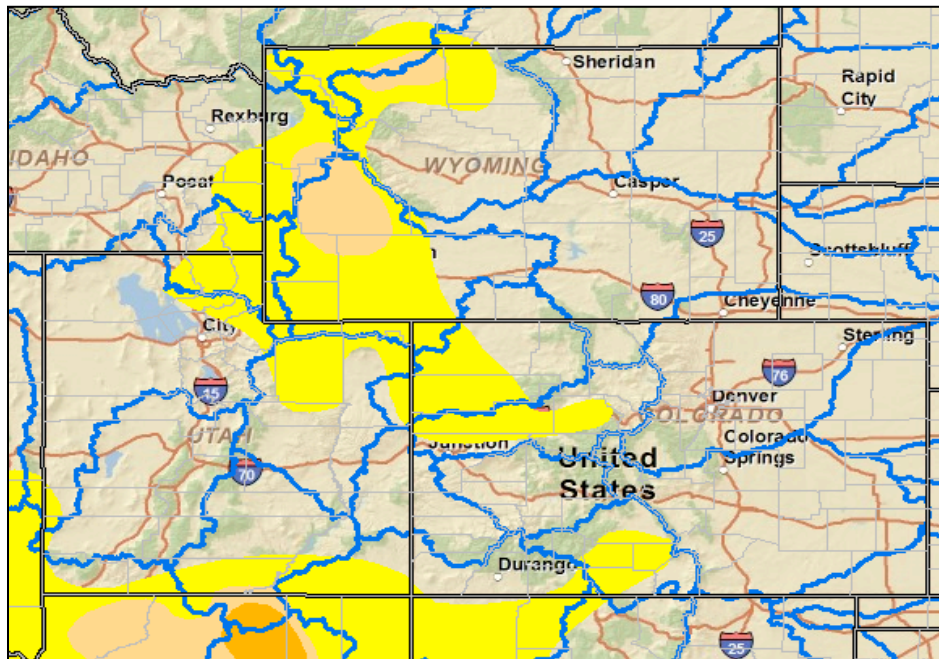
Warmer than average temperatures prevailed over the eastern plains with near average temperatures in the UCRB for the month of August. Soil moisture remains in very good condition in the four-corners region and along the plains, with deteriorating soil conditions over the past week in northern Colorado around the North Platte and Yampa-White basins.

All of the major reservoirs in the UCRB continued to see decreases in lake levels for the last week of August. Both Lakes Granby and Dillon are still operating near capacity with only slight decreases in storage. Flaming Gorge, Blue Mesa, and Navajo Reservoirs all remain above average levels for this time of year. Lake Powell saw a decrease of 100 thousand acre feet over the past week, with releases dependent on demand for power generation. Levels at Lake Powell are currently around 75% of average and about 63% of maximum capacity.

Precipitation Forecast

Conditions across the UCRB could be dry for the next week, with only spotty showers in the forecast for the southern mountains and northeastern Colorado over the next few days showing up on the QPF fields from the Hydrologic Prediction Center (HPC). With the end of the monsoonal pattern and the absence of larger synoptic scale events passing through, the dryness could persist. This weekend, a trough is expected to develop in the west and bring chances for small amounts of precipitation to the southern and central mountains and possibly into eastern Utah. Next week, the UCRB will see a return to drier conditions.

Drought and Water Discussion



Drought – Exceptional	0 to 2 (D4)
Drought – Extreme	2 to 5 (D3)
Drought – Severe	5 to 10 (D2)
Drought – Moderate	10 to 20 (D1)
Abnormally Dry	20 to 30 (D0)

Drought categories and their associated percentiles

Fig. 7: August 17 release of U.S. Drought Monitor for the UCRB

No local experts have given any suggestions for changes to the current U.S. Drought Monitor map (Fig. 7). The D0 currently seen in the UCRB is correlated with the locations of the Snotel sites with the lowest WYTD precipitation percentiles. None of the UCRB shows any short-term indicators of dryness according to the SPI, though most of the areas in D0 do show lower SPI values when evaluating longer-term (e.g. 12 – 24 month). The D0 areas in Wyoming and Utah are also correlated with lower streamflows, and drier conditions on the most recent VegDRI map match well with all of the D0 areas in the UCRB.

During the weekly webinar conference call on Tuesday morning (10 am MDT), status quo was recommended for the UCRB, without any objections.