NIDIS Weekly Climate, Water and Drought Assessment Summary

Upper Colorado River Basin

August 10, 2010

Precipitation and Snowpack

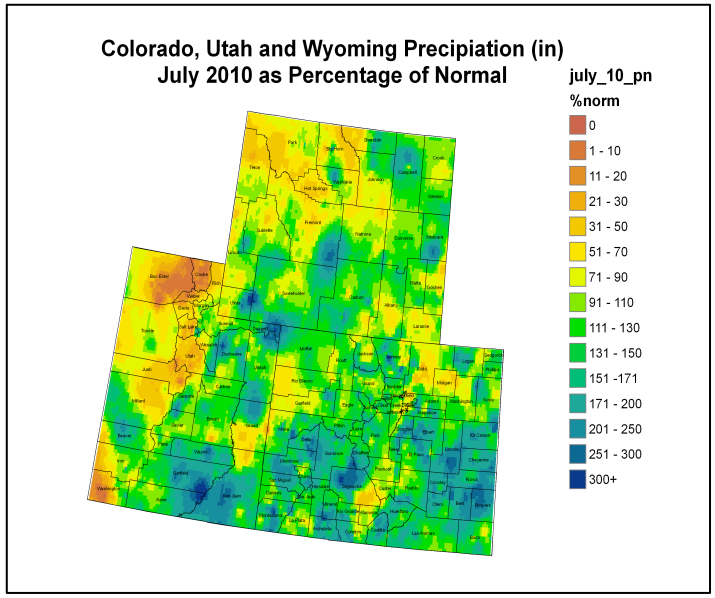


Fig. 1: July precipitation as percent of average

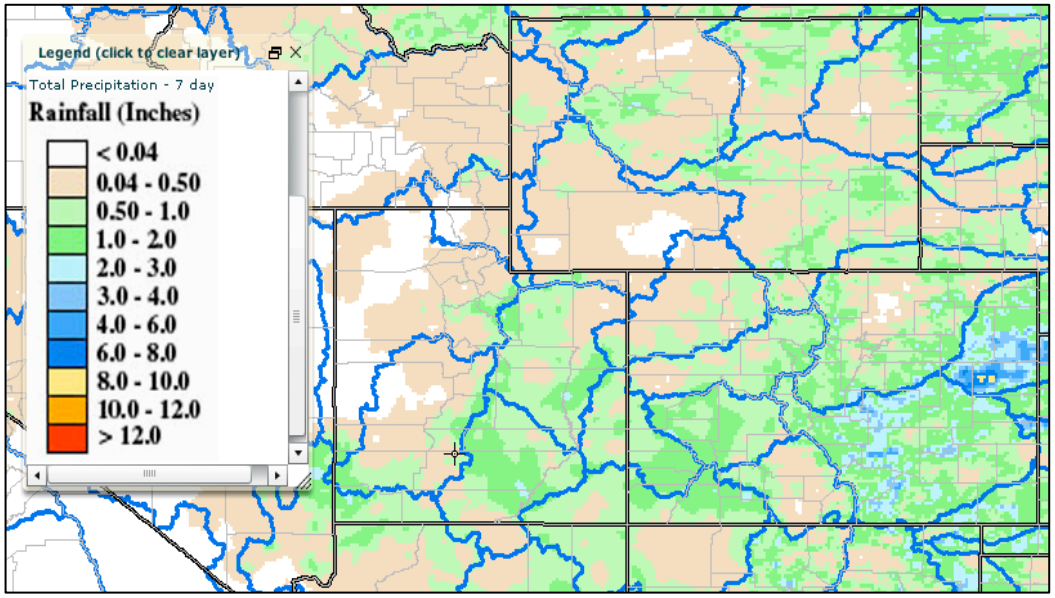


Fig. 2: August 3 – 9 precipitation in inches

For the month of July, the majority of the Upper Colorado River Basin (UCRB) received near normal amounts of precipitation, with higher percents of average in southeastern Utah and in the Upper Green River basin (Fig. 1). The driest region was along the Colorado-Utah border, particularly in Garfield and Rio Blanco counties in CO and Grand County, UT. The southern portion of the UCRB received most of its monthly moisture near the end of the month with the arrival of the monsoon.

Last week, ample amounts of moisture continued to fall over the southern portion of the UCRB (Fig. 2), particularly in the Gunnison, Dolores, and Dirty Devil basins. The Yampa and Upper Green River basins to the north were the driest regions for last week.

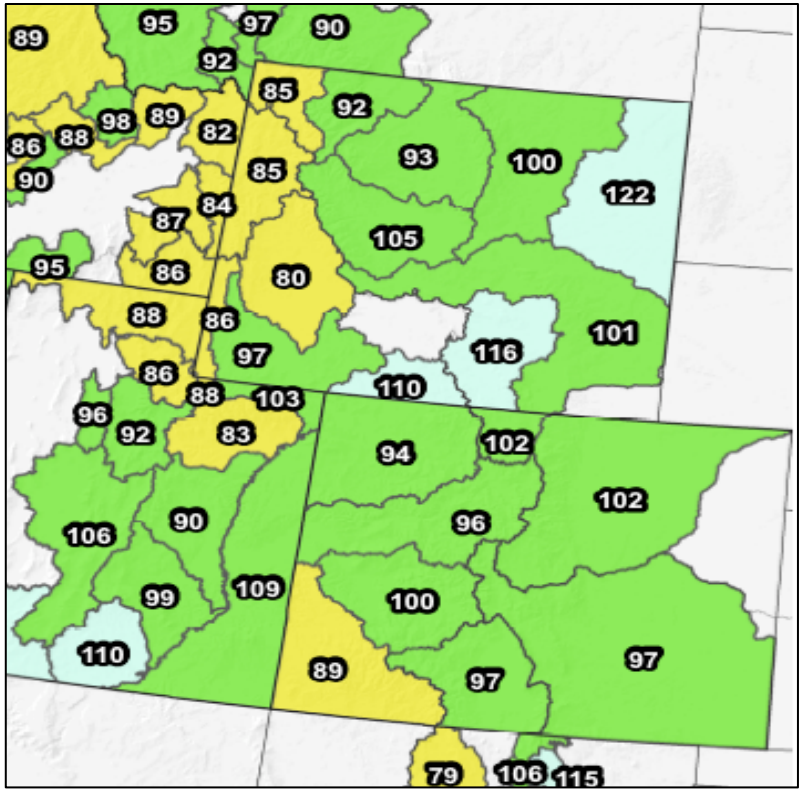


Fig. 3: Snotel basin-wide average of WYTD precipitation percent of normal.

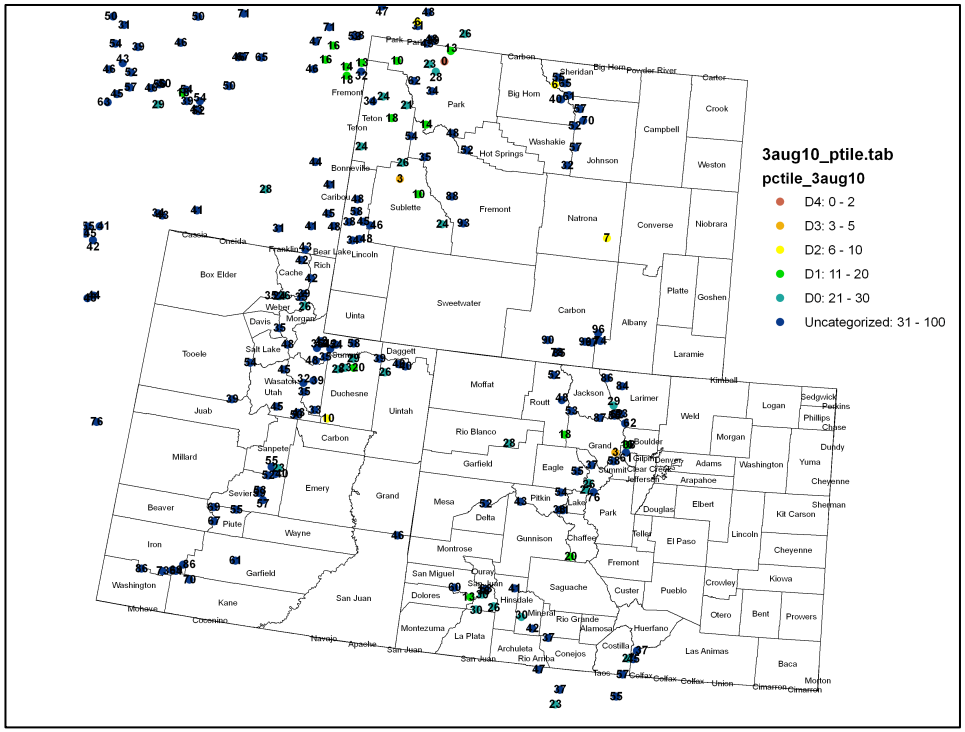


Fig. 4: Snotel WYTD precipitation percentiles (50% is median, 21-30% is Drought Monitor's D0 category).

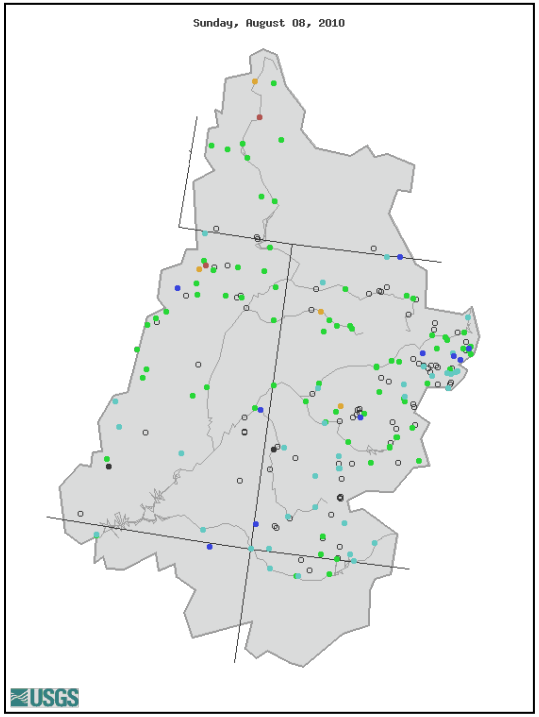
Most of the basins in the UCRB are showing water-year-to-date (WYTD) precipitation percents of average above 90%, with the exception of the San Juan-Dolores basin in CO, portions of the Lower Green basin in UT, and portions of the Upper Green basin in WY (Fig. 3). All three of these basins saw an increase in basin averaged percentages from last week, and no basin (as an average) saw a decrease in WYTD precipitation percent of average from last week.

As of August 3, most Snotel stations were reporting precipitation percent of averages above the 30th percentile (Fig. 4). The only stations showing lower percentiles (worthy of drought designation by the U.S. Drought Monitor) were mainly contained in the three driest basins mentioned above with a few others near the Colorado River Headwaters region.

Streamflow

Over 90% 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 8 (Fig. 5). As a result of monsoonal moisture, most of the southern region of the UCRB and near the Colorado River Headwaters are now seeing above normal streamflows.

The recent surge in moisture can clearly be seen when looking at hydrographs from several different streamgages in the basin (Fig. 6). Flows at the Colorado River near the CO-UT border and the San Juan River near Bluff, UT are well above normal (121% and 220% of normal respectively). Streamflow at the San Juan River near Bluff, UT currently exceeds flow measured during snowmelt runoff in June. Below normal streamflow persists throughout much of the Green River basin. The 7-day average flow at Green River at Green River, UT is 80% of normal.



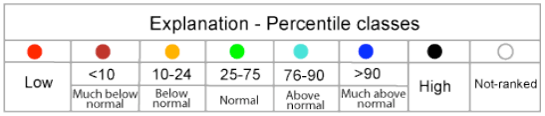


Fig. 5: USGS 7-day average streamflow compared to historical streamflow for August 8th in the UCRB.

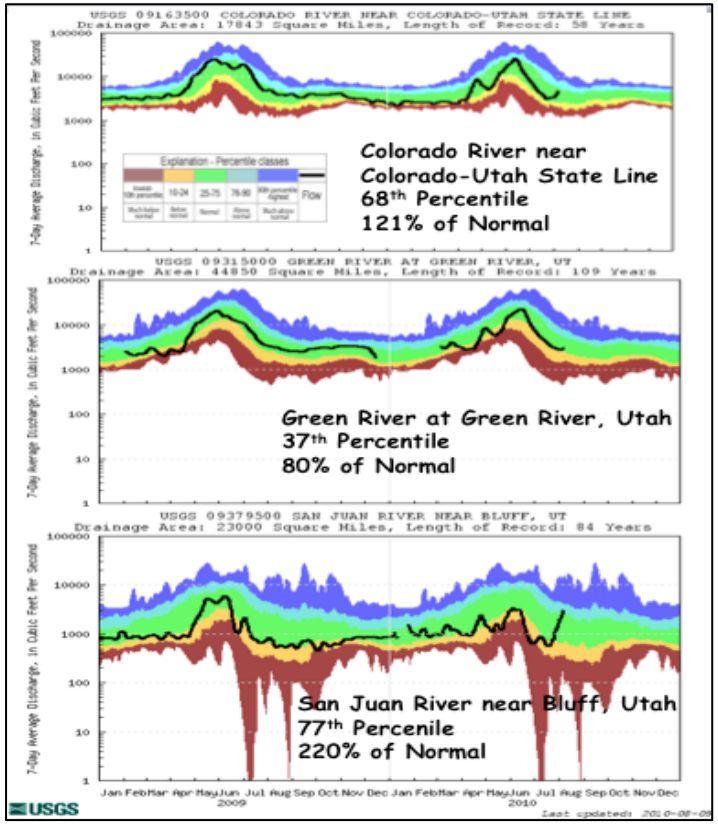


Fig. 6: USGS 7-day average discharge over time at the CO-UT state line (top), Green River, UT (middle), and Bluff, UT (bottom).

Water Supply and Demand

Near normal temperatures were seen across much of the UCRB basin with below normal temperatures in eastern UT. Without the unusually hot temperatures and almost daily scattered thunderstorms across the basin and eastern plains, demand could have been reduced over the past week.

Flaming Gorge, Blue Mesa, McPhee and Lake Powell all saw only slight decreases in levels over the past week. Flaming Gorge Reservoir is at the highest its been in the last 10 years for this time of year. Lake Powell is below average for this time of year (around 75% of average) and was at about 64% of capacity at the end of July. Dillon, Granby, and Green Mountain saw variable levels this past week, with overall values slightly higher than they were one week ago—these three remain above average for this time of year with Dillon and Granby still operating near capacity.

Precipitation Forecast

A pattern change will begin today with the loss of monsoonal moisture flowing from the south. This will end precipitation chances across the area until Thursday, when then arrival of a trough from the pacific northwest will usher in a more fall-like pattern for late in the week. This feature looks like it will have some decent cold air associated with it and should bring a return of scattered precipitation for Thursday evening, though amounts may be minor. Latest 5 day QPF shows accumulations around 0.5 inches favoring the western slopes of Colorado. Long term solutions continue to indicate a persistent west/northwesterly flow with limited moisture available following the passage of the trough into the weekend. It is worth noting that decent up-slope flow east of the divide could provide better chances for precipitation on the plains into early next week.

Drought and Water Discussion

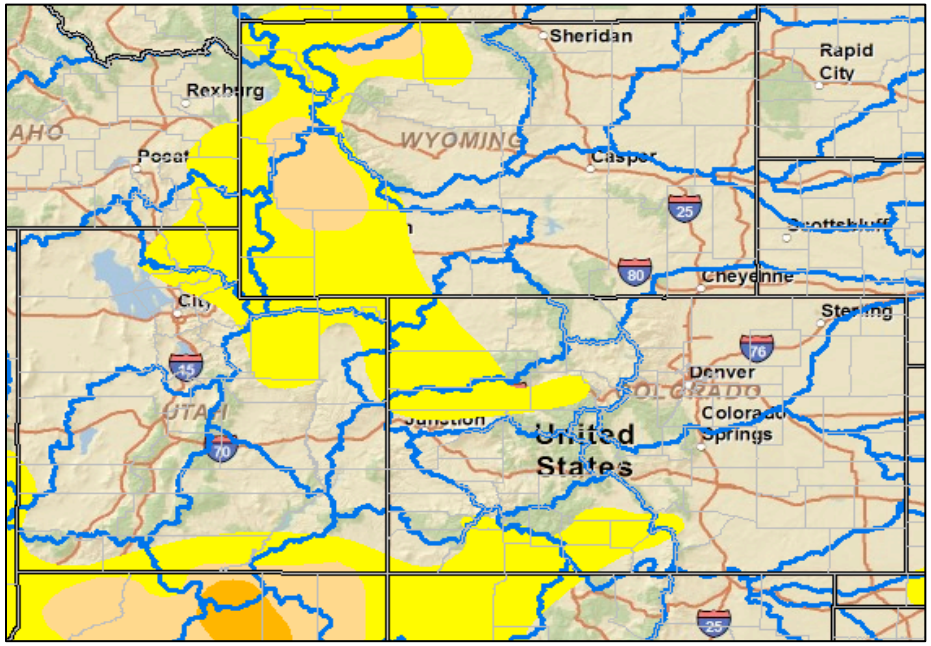
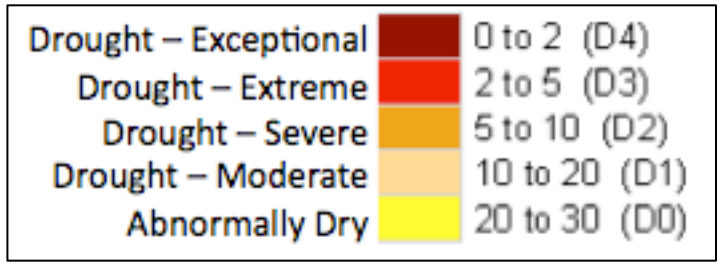


Fig. 7: August 3 release of U.S. Drought Monitor for the UCRB



Drought categories and
their associated percentiles

One local expert has suggested the removal of D0 from Huerfano County as the area has seen anywhere from 3 – 5 inches of moisture since the Medano Fire in late June. Status quo was also suggested for the rest of southwestern Colorado—though the area has seen good amounts of precipitation over the past few weeks, it still may not have been enough to alleviate the effects of longer-term drought. No recommendations have been made for any other region of the UCRB.

Also of note was the removal of D0 from Grand and Summit counties last week (Fig. 7), since streamflows are in good condition and the area has seen above normal precipitation over the past month.