

NIDIS Weekly Climate, Water and Drought Assessment Summary

Upper Colorado River Basin

June 29, 2010

Precipitation and Snowpack

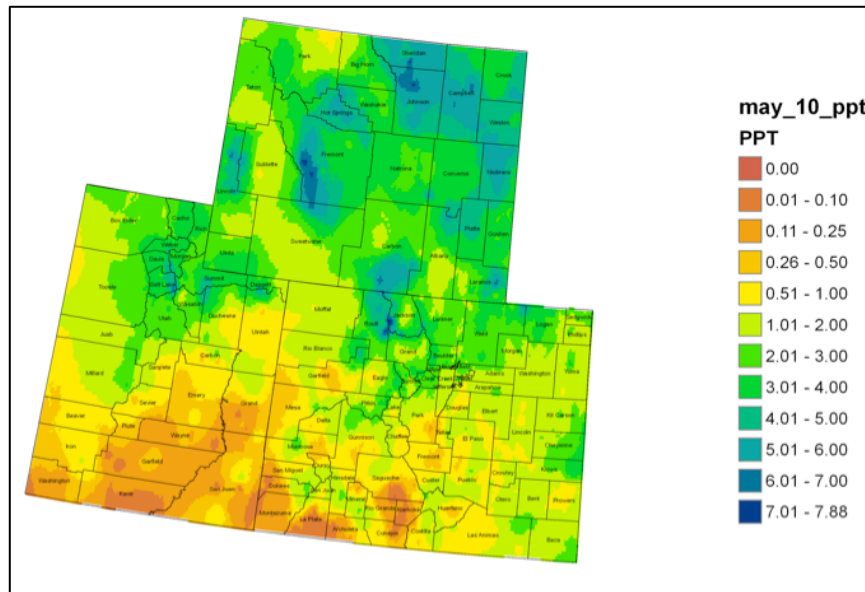


Fig. 1: May precipitation in inches

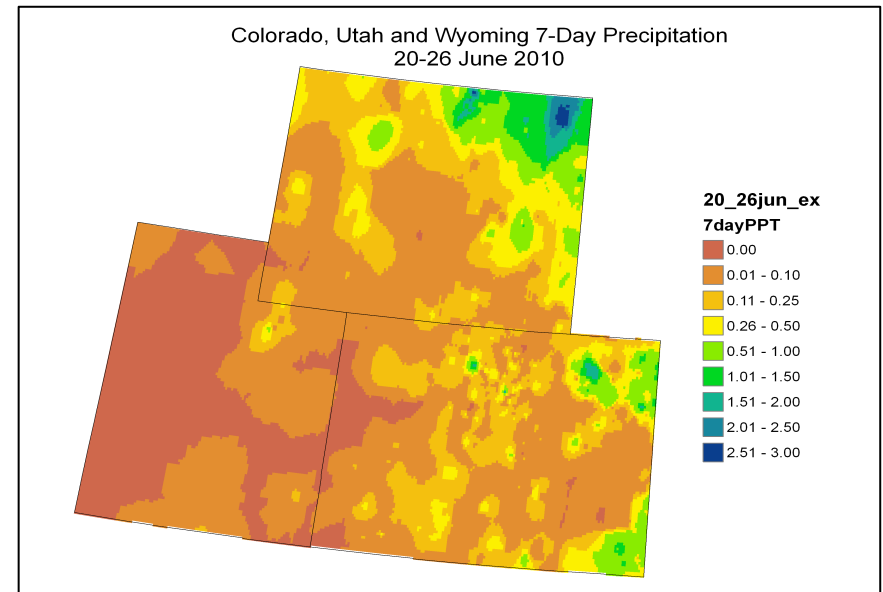


Fig. 2: June 20 – 26 precipitation in inches

Following a fairly wet May and early June in the northern region of the Upper Colorado River Basin (Fig. 1), the latter half of June has been consistently dry throughout the entire region, last week included (Fig. 2) (note that the previous week mentioned runs from Sunday – Saturday). Note that the green bulls-eye in the northern central mountains of Colorado is likely due to bad measurements at the Willow Creek Pass Snotel which has been steadily recording precipitation for every day since June 11th.

The majority of the Snotel stations throughout the basin have seen a complete meltout, which is expected by this time of year. The Upper Green River basin in Wyoming has 5 Snotels still showing some snow on them, and the Colorado basin in Colorado still has 1 Snotel showing snow. Though there is possibly still snow in the Duchesne River basin in Utah, there is no snow at any of the Snotel sites.

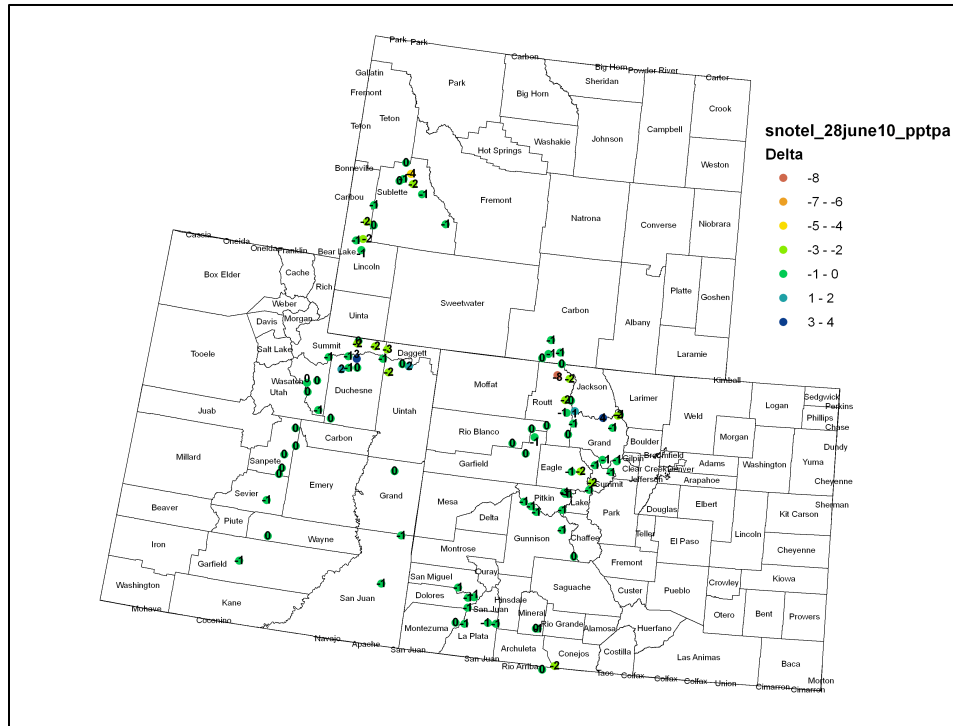


Fig. 3: Snotel WYTD precipitation percent of average change from last week

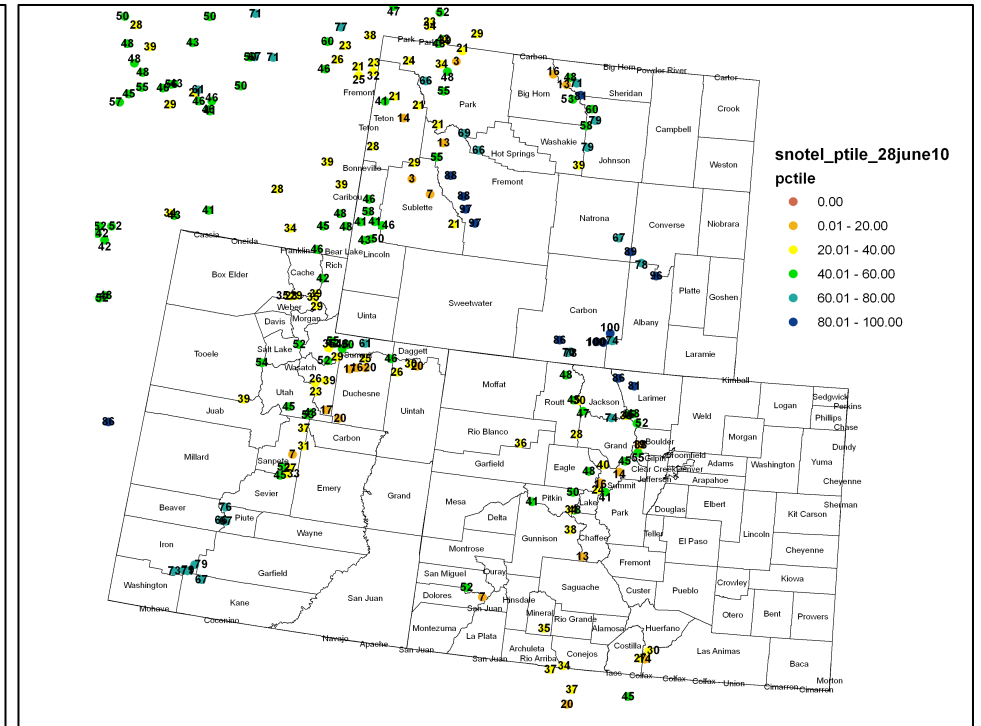


Fig. 4: Snotel WYTD precipitation percentiles (50% is median, 21-30% is Drought Monitor's D0 category).

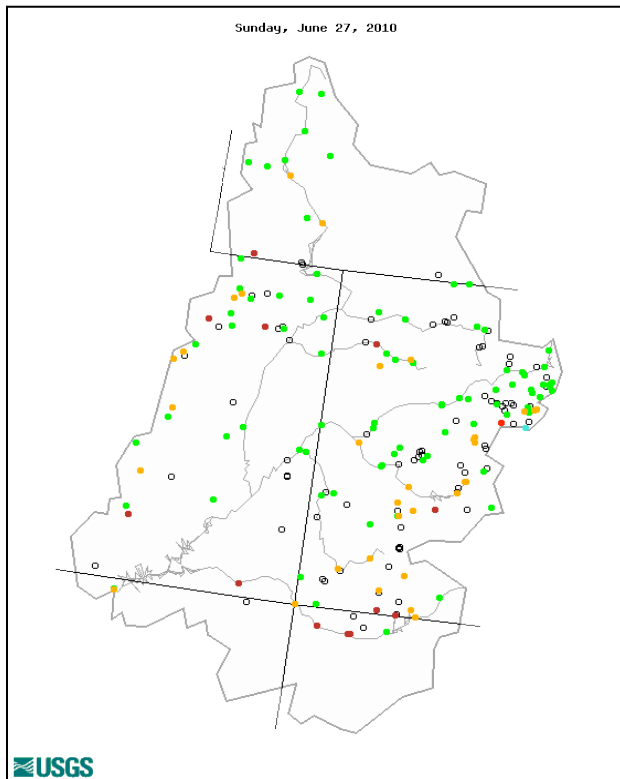
Due to lack of precipitation, many of the sites in the UCRB recorded 1 – 2% decreases in water-year-to-date (WYTD) precipitation percent of averages from last week (Fig. 3). Along the western border of the basin (in Utah) many sites showed no change in percent of average from last week. Only 4 stations (out of nearly 90) in the UCRB showed increases from last week.

The driest regions according to the WYTD precipitation percentiles are around Duchesne County, UT and Sublette County, WY (Fig. 4), with several sites showing values less than 20% (or in the D1, moderate drought category).

Streamflow

Peak snowmelt flows have occurred and streamflows are now declining in most river basins, as is normal for this time of year. The majority of stations are showing near normal 7-day average flows (with only 1 station recording above normal flows) as of June 27th. Around 35% of the USGS stream gages are showing below normal 7-day average flows, with many sites along the Gunnison River and in southwest Colorado now recording below normal flows (Fig. 5).

Figure 6 shows stations reaching their peak flows in mid-June, with most peak flows in the near normal range. The sites at the Colorado-Utah state line and at Green River are still near normal, though many other stations have dropped back to below normal.



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		

Fig. 5: USGS 7-day average streamflow compared to historical streamflow for June 27th in the UCRB.

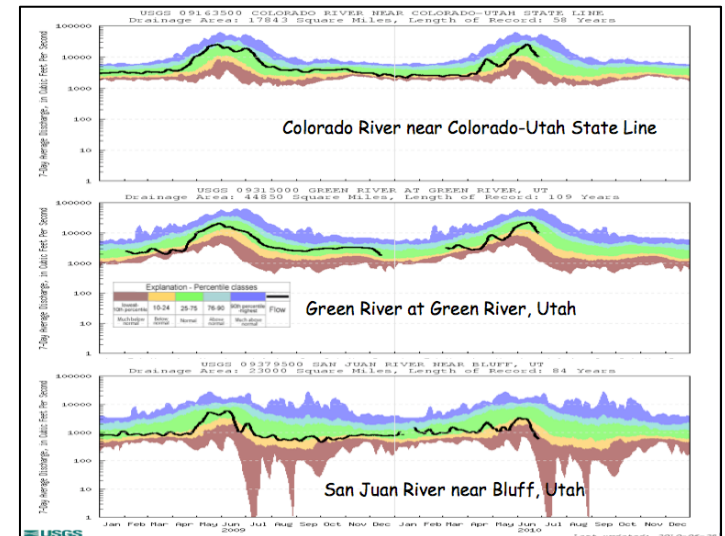


Fig. 6: USGS 7-day average discharge over time at the CO-UT state line (top), Green River, UT (middle), and Bluff, UT (bottom).

Water Supply and Demand

After a rapid rise in reservoir levels the previous week, Flaming Gorge has seen fairly consistent levels over the past week. Reservoir levels at Lake Granby and Blue Mesa continue to rise, while levels at Green Mountain and Lake Dillon have slowly begun to decline over the last week. Inflows into Lake Powell peaked on June 12th and have been decreasing ever since. Inflow for the month of June was 88% of average, which was more than what had been projected.

The Colorado portion of the basin experienced above average temperatures for the last week, while WY and UT saw near normal temperatures. Soil moisture looks very similar to last week, with wet soils along the plains and slightly drier soils near the headwaters of the Colorado River. As we near the peak time for water demand (coupled with warm and dry conditions over the past week) water supply levels should be closely monitored, though overall surface water supplies remain in good condition.

Precipitation Forecast

As a trough moves in from the west coast, bringing more upper-level southerly flow and moisture into the region, chances for precipitation in the southern mountains could be increased. This, combined with the possibility of moisture from Tropical Storm Alex, could lead to the possibility of more storms in the next week for much of the region.

Drought and Water Discussion

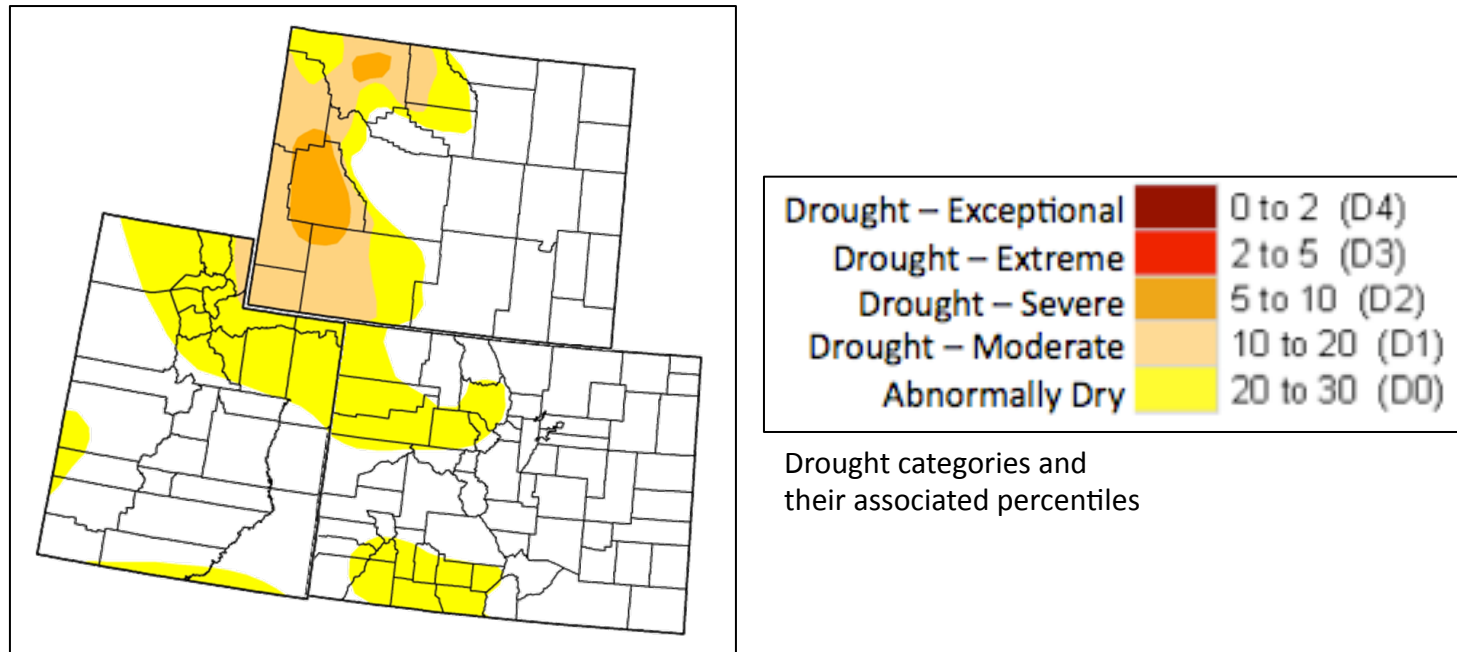


Fig. 6: June 22 release of U.S. Drought Monitor

No drought category changes have been suggested by any local experts, nor by this week's Drought Monitor author. While there was very little precipitation this past week over much of the UCRB, this is not unusual as late June is often the driest time of year over the southern and central Rocky Mountain region. With very little changes (positive or negative) in WYTD precipitation and water supply over the past week, and streamflows returning to near normal/below normal flows following the peak flows, status quo seems most appropriate for the next week's U.S. Drought Monitor map.