NIDIS Weekly Climate, Water and Drought Assessment Summary

Upper Colorado River Basin

July 26, 2011

Precipitation and Snowpack

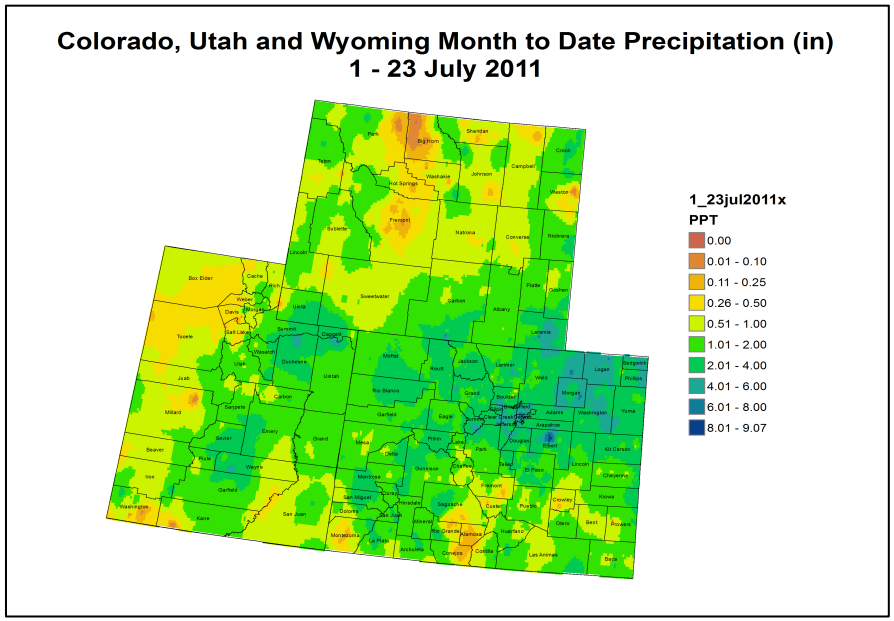


Fig. 1: July month-to-date precipitation in inches.

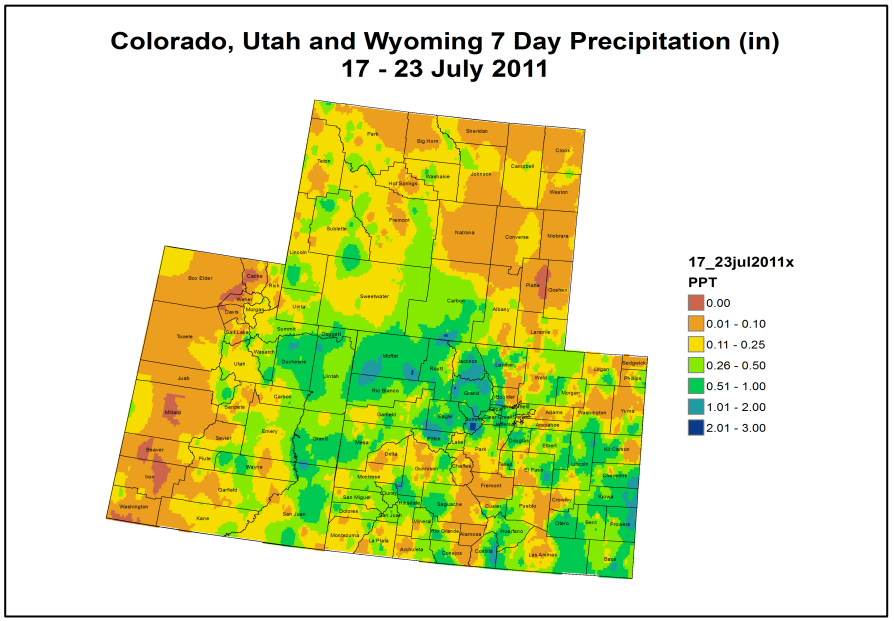


Fig. 2: July 17 – 23 precipitation in inches.

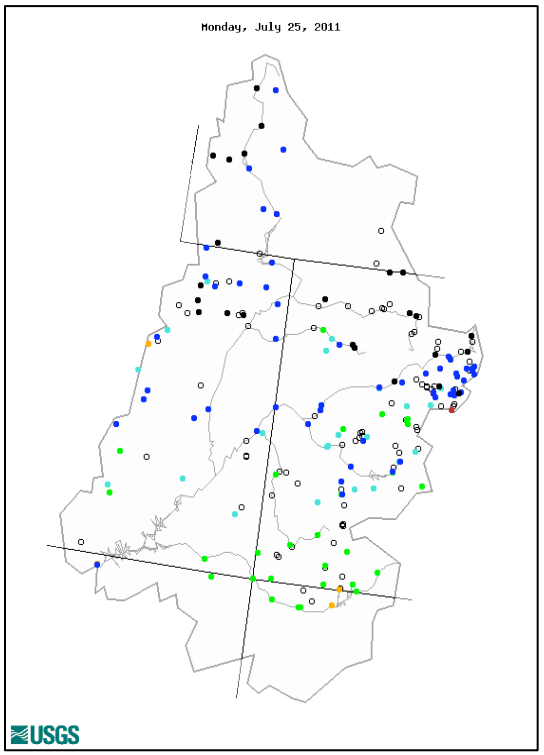
For the month of July so far, most of the Upper Colorado River Basin (UCRB) has seen over an inch of precipitation (Fig. 1). The Four Corners region and portions of the Upper Green River basin have been the driest, receiving between half an inch and an inch of moisture for the month. Northeast Colorado has remained wet, with many areas receiving between 4 and 6 inches of precipitation for the month. Southeast CO has also received some beneficial moisture. The San Luis Valley has remained relatively dry, seeing less than a quarter inch for the month in some spots.

Last week, the heaviest amounts of moisture fell in northwest CO and northeast UT, with accumulations between half an inch to 2 inches (Fig. 2). Southeast CO also received higher amounts in many drought stricken areas of around half an inch to one inch. The San Luis Valley and other portions of southeast CO (particularly around Fremont and Crowley counties) stayed fairly dry, with weekly accumulations of less than a tenth of an inch.

Streamflow and Water Supply

As of July 25th, about 95% of the USGS streamgages in the UCRB recorded normal (25th – 75th percentile) or above normal 7-day average streamflows with 61% of the gages recording flows above the 75th percentile and 30% reporting high flows (Fig. 3). Key gages on the Colorado River near the CO-UT state line and the Green River at Green River, UT have above normal 7-day average streamflow at the 95th and 96th percentiles, respectively (Fig. 4). Streamflow on the San Juan River near Bluff, UT is at the 47th percentile.

Most of the major reservoirs in the UCRB have continued to see large storage volume increases since the beginning of July. Storage volumes at McPhee and Navajo reservoirs have been decreasing. All of the major reservoirs above Lake Powell are currently above their average July levels. Lake Powell's storage has increased 6.8% month-to-date and is currently at 90% of average. Powell's current level is the highest July level it's been since 2001.



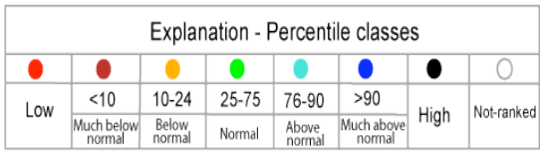


Fig. 3: 7-day average discharge compared to historical discharge for July 25th.

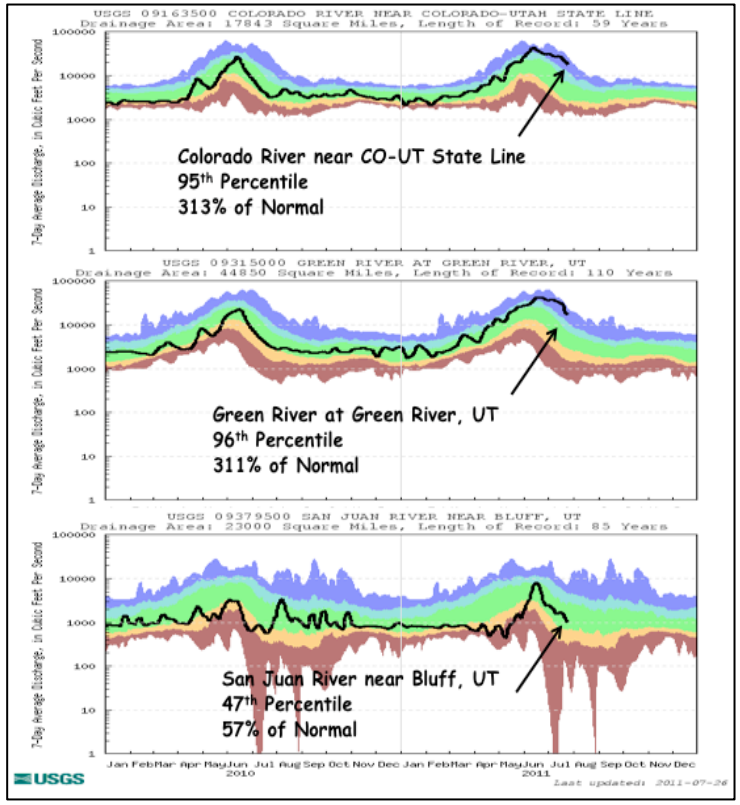


Fig. 4: USGS 7-day average discharge over time at the CO-UT stateline (top), Green River, UT (middle) and Bluff, UT (bottom).

Water Demand

This month so far, near average temperatures have been seen across most of the UCRB. Warmer than average temperatures have dominated over the Four Corners region and east of the UCRB. The warmer temperatures have contributed to higher potential evapotranspiration (PET) in drought stricken areas. In the Four Corners, PET is currently just above average, on track with the drier years. In the San Luis Valley and in the Arkansas basin, PET is currently tracking above the highest ET year, during the drought of 2002 (Fig. 5). This means that any precipitation that does fall in the area will quickly be lost again to the atmosphere and will be of little benefit in alleviating current drought impacts. However, with recent rains, a little relief has been seen with PET rates declining slightly last week.

Soil moisture conditions remain poor for the San Luis Valley and southeast CO. Soil moisture is above average throughout much of UT and throughout northern CO. Satellite imagery of vegetation conditions show very dry vegetation with little growth around the Four Corners, the San Luis Valley, and southeast CO (Fig. 6). Vegetations conditions are moist for the northern portion of the UCRB and are near average for northeast CO.

Precipitation Forecast

A persistant dome of high pressure over the central U.S. will continue to transport subtropical moisture over the UCRB and will fuel numerous thundershowers across the Four Corners, western CO and south central WY. Weak upper level disturbances in the moisture plume will help trigger thunderstorms, some of which could be heavy rain producers. Exact rainfall amounts will vary greatly depending on the position of these heavy showers, but isolated amounts of 1 inch will be possible. Drought affected areas in southeast CO also have the potential to receive measurable rainfall during this period. Shower activity is expected to decrease slightly Thursday through Friday as drier air tries to move over the basin from the northwest. Thunderstorms are still expected to pop up over the higher terrain, but widespread coverage will remain confined to the Four Corners region. By Saturday monsoonal moisture will again surge northward, bringing a return to scattered showers across the UCRB and eastern plains of CO through this weekend and into next week.

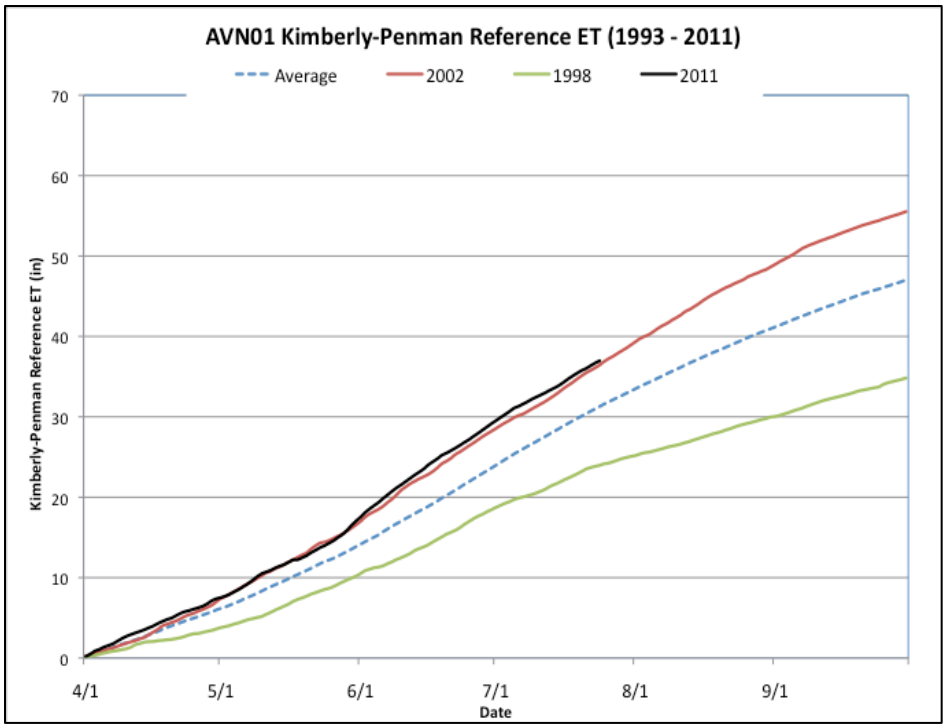


Fig. 5: Reference evapotranspiration since April 1st at Avondale, CO in the San Luis Valley.

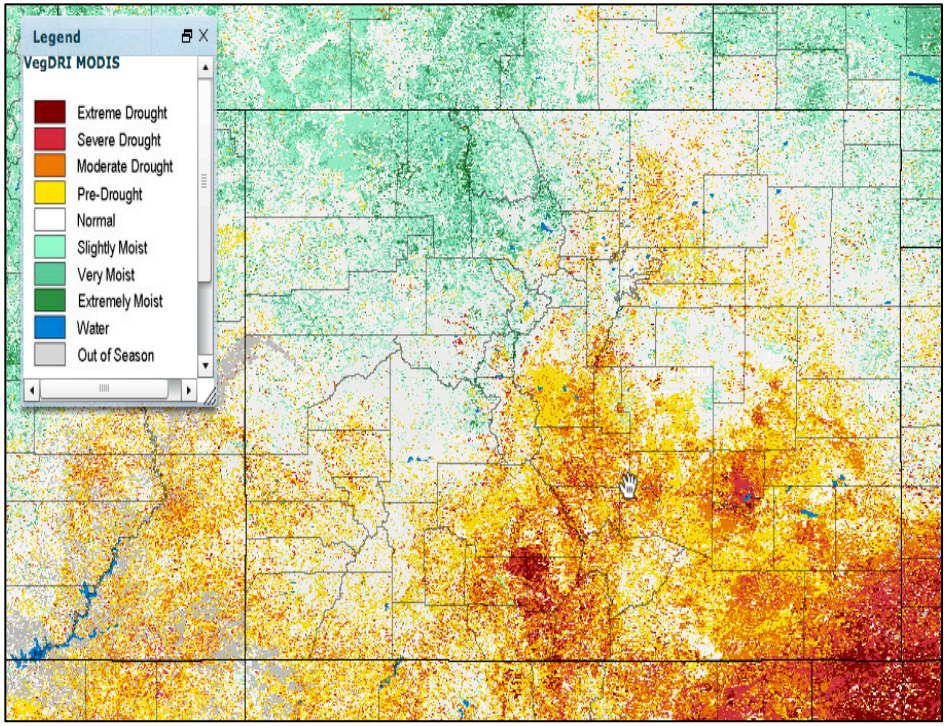
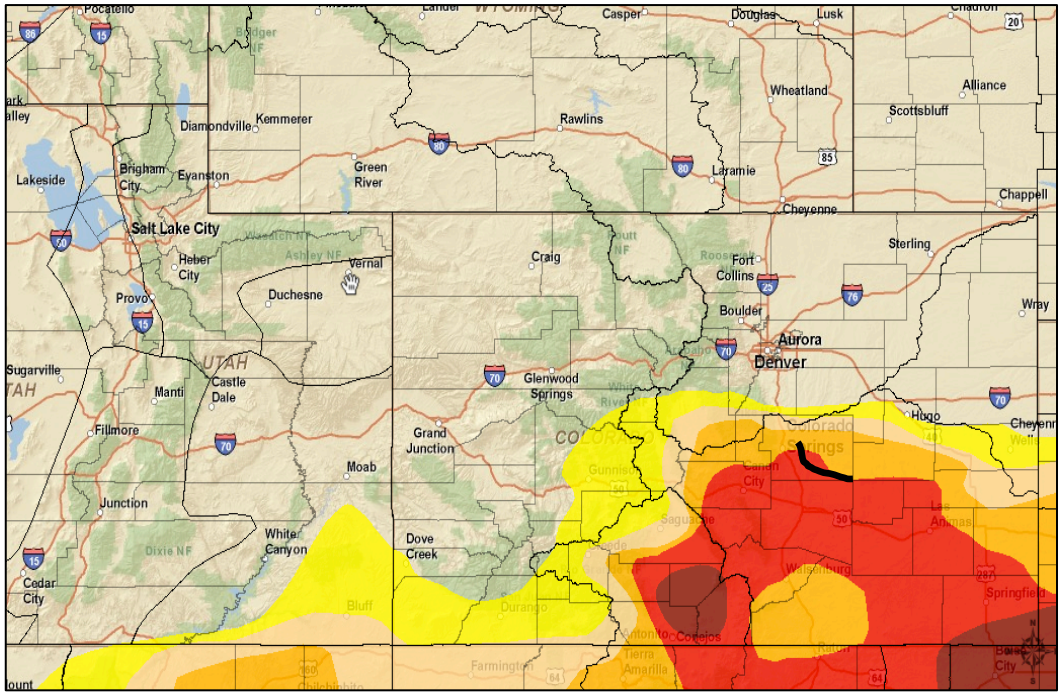
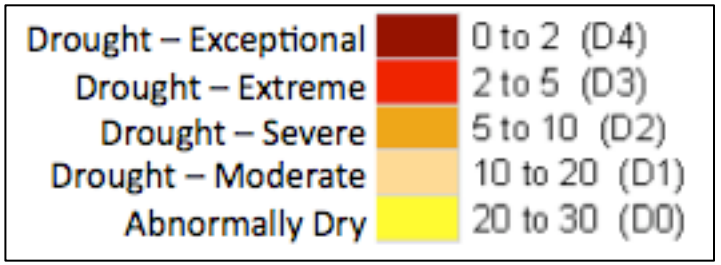


Fig. 6: July 25th VegDRI map, based on satellite-derived observations of vegetation.

Drought and Water Discussion





Drought categories and their associated percentiles

Fig. 7: July 19th release of U.S. Drought Monitor for the UCRB

Status quo is recommended in the UCRB for the current U.S. Drought Monitor (USDM) map (Fig. 7).

Beneficial rains have begun falling over southeast CO. This has resulted in the greening of the grasses. However, growth has not begun and there is still no grazing. Drought impacts and very dry conditions are still evident throughout Crowley, Kiowa, Otero, and Las Animas counties. Therefore, it is recommended that no category improvements be made to the region at this time.

With larger precipitation accumulations over El Paso County for the past couple of weeks, a slight trimming of the D3 line in that area is recommended (Fig. 7, black line). Improvements in this area are limited since precipitation amounts were spotty and conditions are still fairly dry.