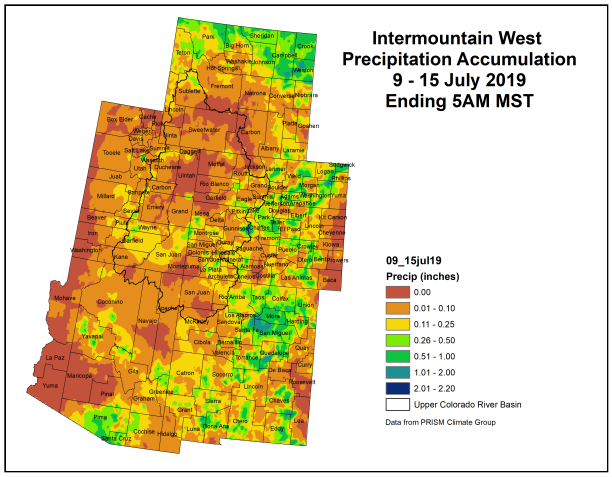
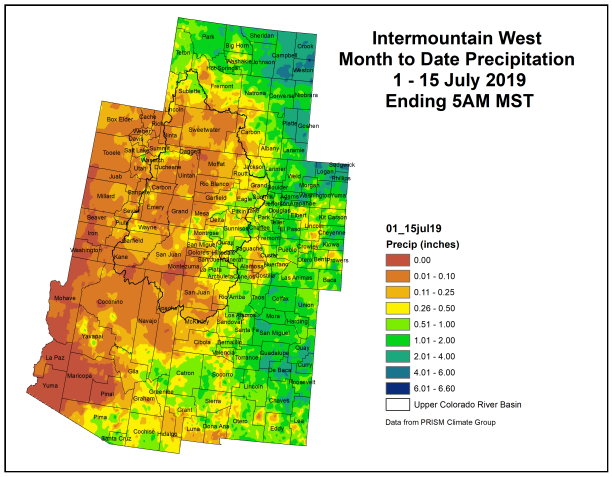
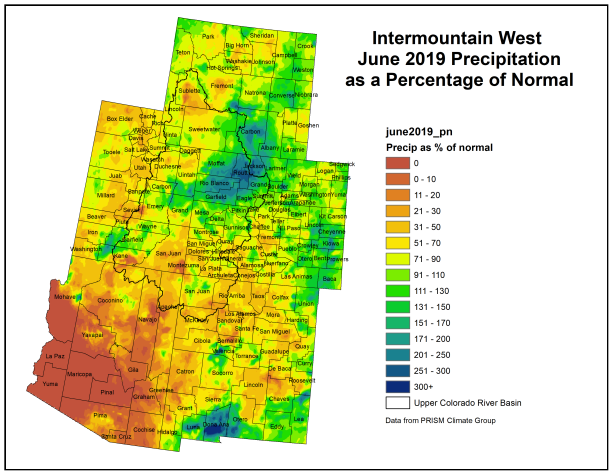
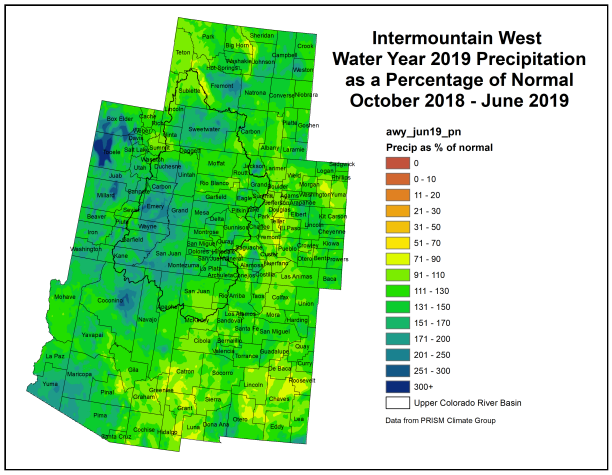
NIDIS Intermountain West
Drought Early Warning System
July 16, 2019

Precipitation



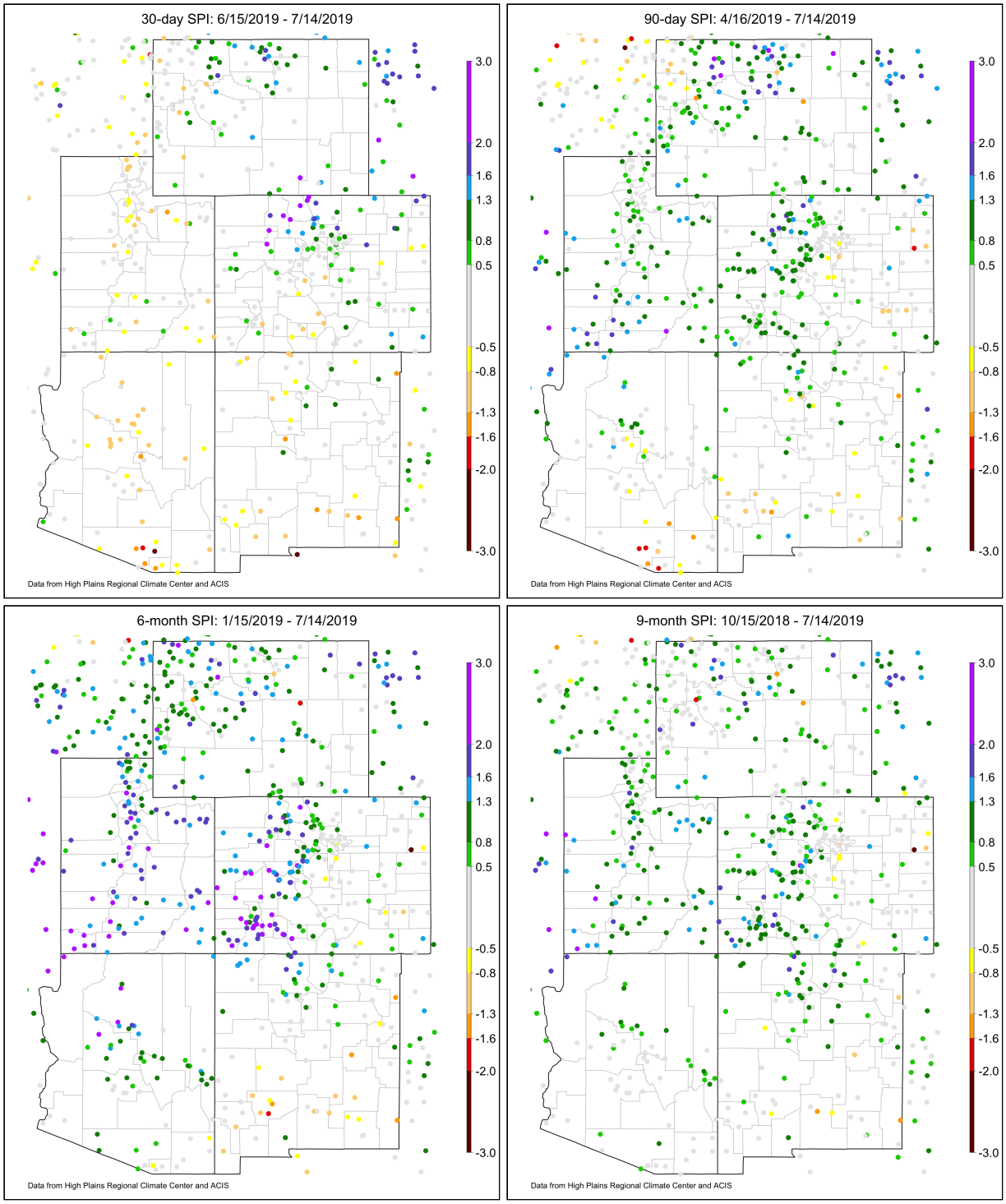






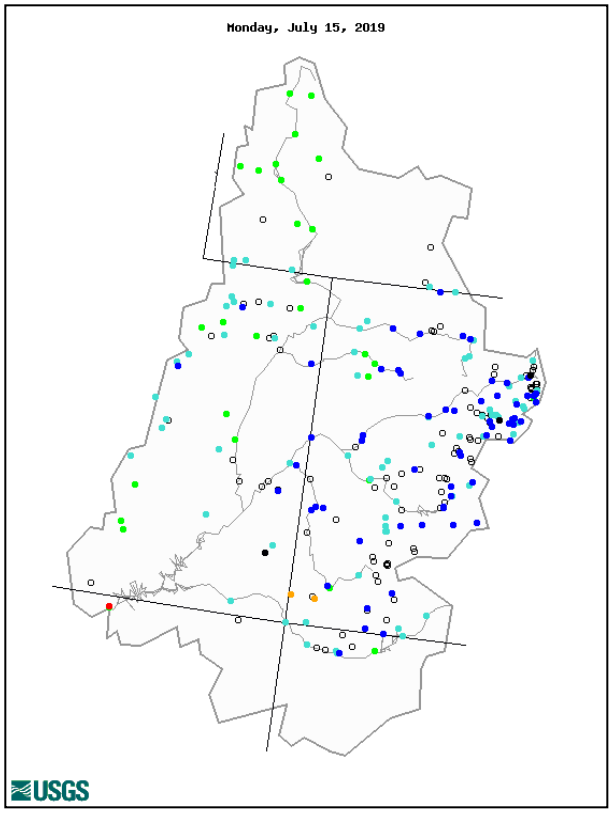
The images above use daily precipitation statistics from NWS COOP, CoCoRaHS, and CoAgMet stations. From top to bottom, and left to right: most recent 7-days of accumulated precipitation in inches; current month-to-date accumulated precipitation in inches; last month's precipitation as a percent of average; water-year-to-date precipitation as a percent of average.

Standardized Precipitation Index

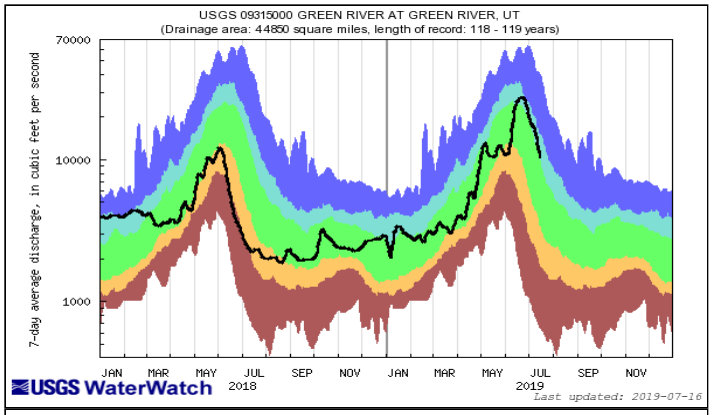


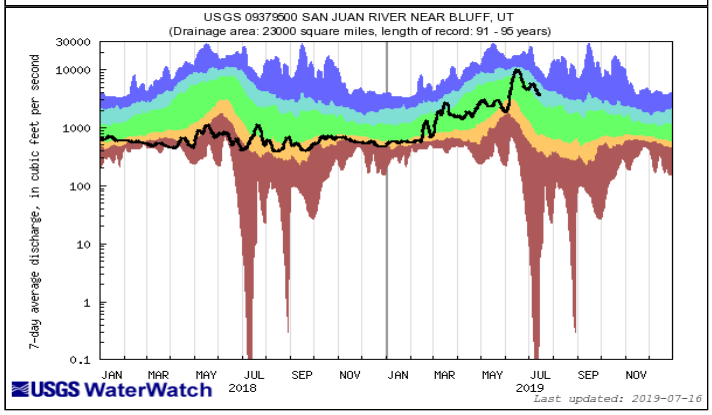
Standardized Precipitation Index standardizes precipitation accumulations for a specified time period into percentile rankings. Colors match the different drought categories with the U.S. Drought Monitor. 30- and 60-day SPIs focus on short-term conditions while 6- and 9-month SPIs focus on long-term conditions. SPI data provided by High Plains Regional Climate Center.

Streamflow



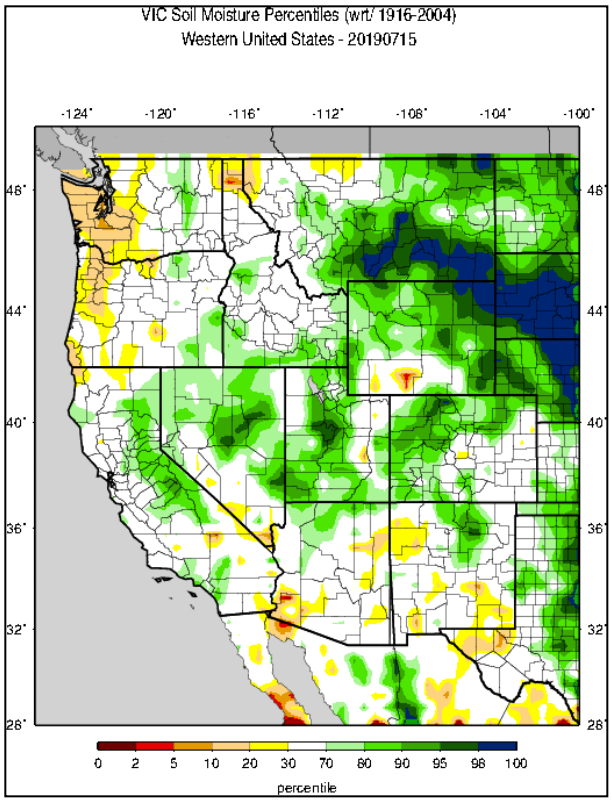
Explanation - Percentile classes							
Low	<10	10-24	25-75	76-90	>90	High	Not-ranked
	Much below normal	Below normal	Normal	Above normal	Much above normal		

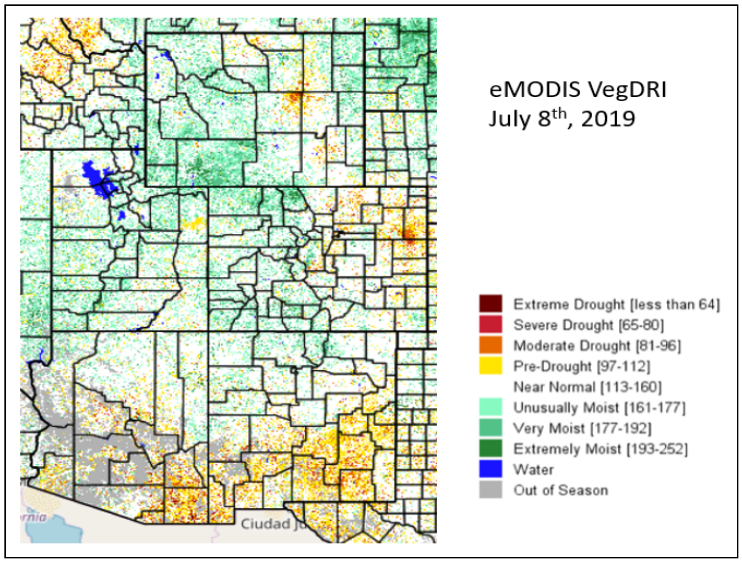




The top left image shows 7-day averaged streamflows as a percentile ranking across the UCRB. The top right image shows 7-day averaged discharge over time at three key sites around the UCRB: The Colorado River at the CO-UT state line; the Green River at Green River, UT; and the San Juan River near Bluff, UT. All streamflow data provided by United States Geological Survey.

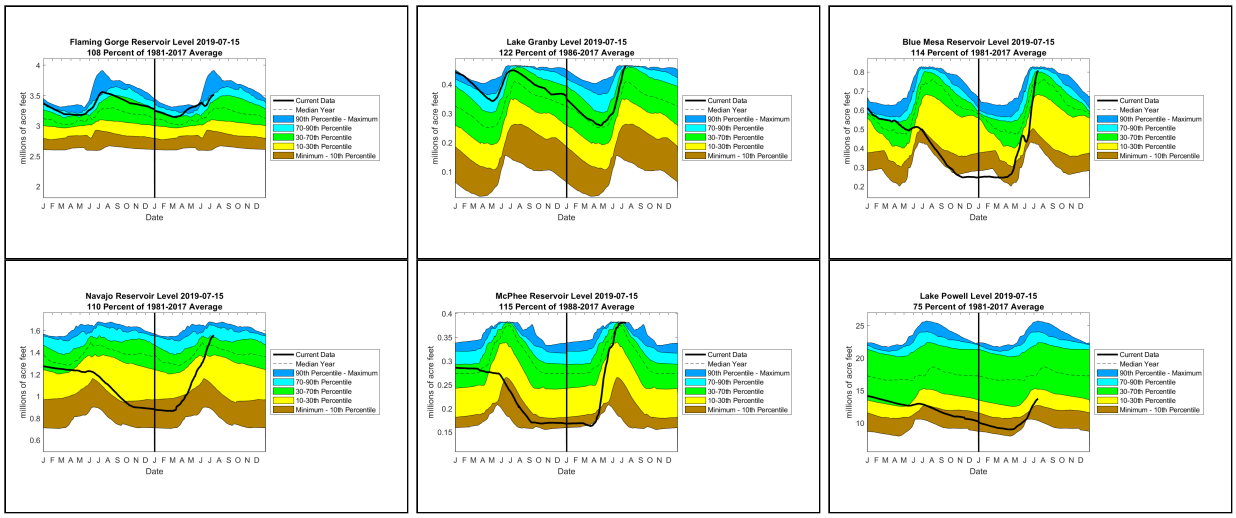
Surface Water



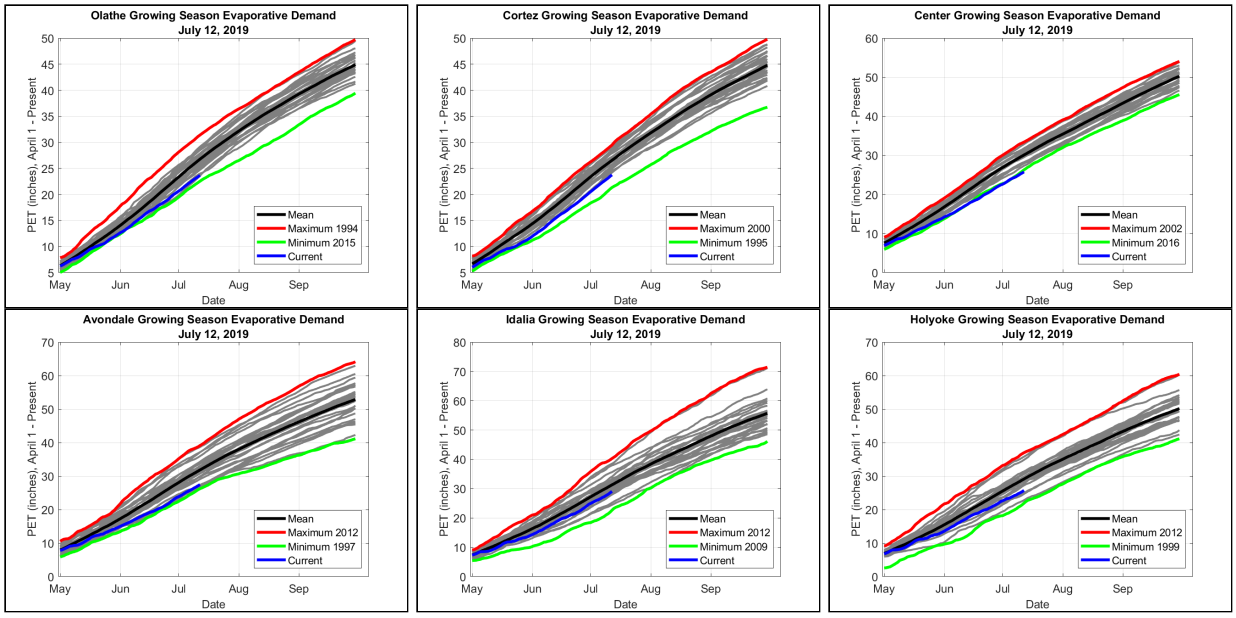


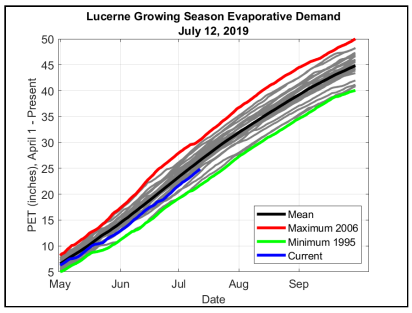
The top left image shows VIC modeled soil moisture as a percentile ranking. The top right image shows satellite-derived vegetation from the VegDRI product (which updates on Mondays).

The graphs shown below are plots of reservoir volumes over the past full year and current year to date (black). The dashed line at the top of each graphic indicates the reservoir's capacity, and the background color-coded shading provides context for the range of reservoir levels observed over the past 30 years. The data are obtained from the Bureau of Reclamation. Some of the reservoir percentiles don't line up at the new year due to differences in reservoir levels at the beginning of 1985 and the end of 2014. Dead storage has been subtracted. Note: Lake Granby data are obtained from the Colorado Division of Water Resources, and only goes back to the year 2000.

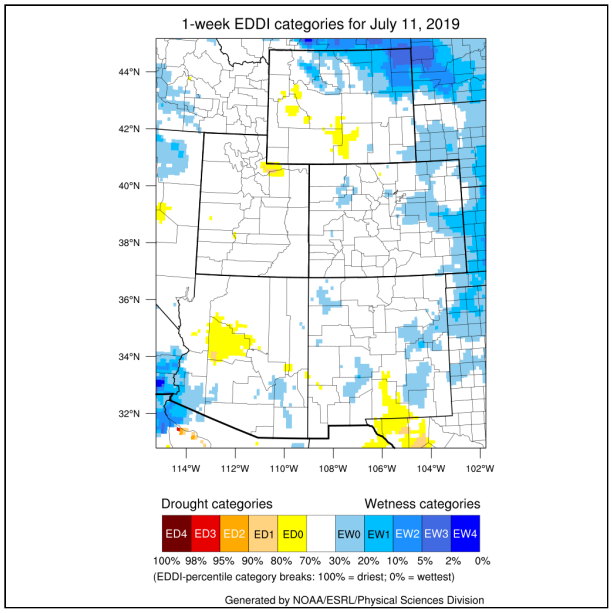


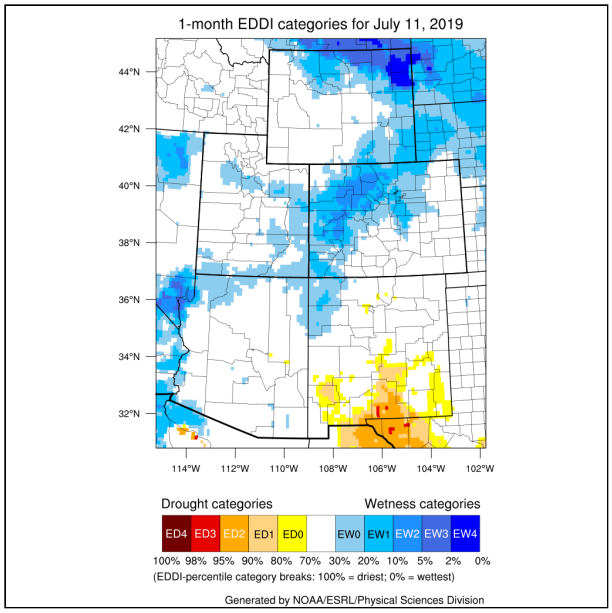
Evaporative Demand

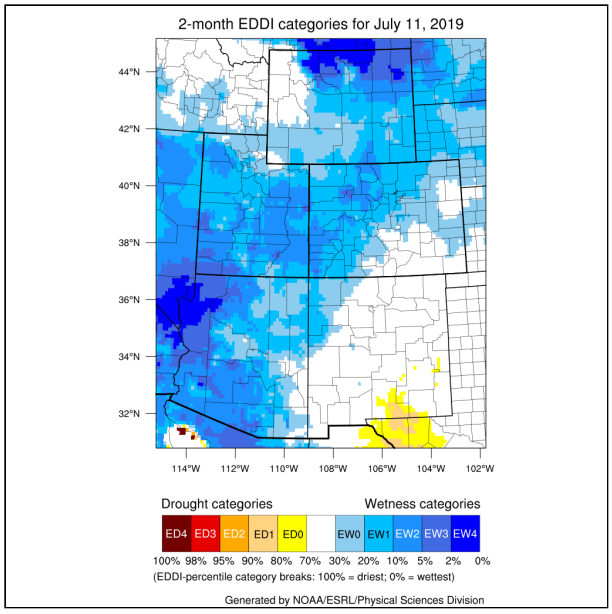


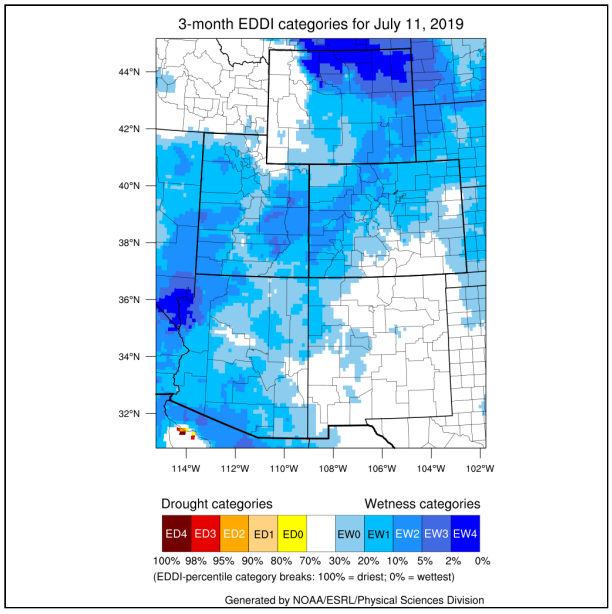


The above images are of reference evapotranspiration (ET) from CoAgMET sites across Colorado. Reference ET assumes the amount of water that will evaporate from a well-irrigated crop. Higher ET rates occur during hot, dry, and windy conditions. Lower ET rates are more desirable for crops. See a map of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



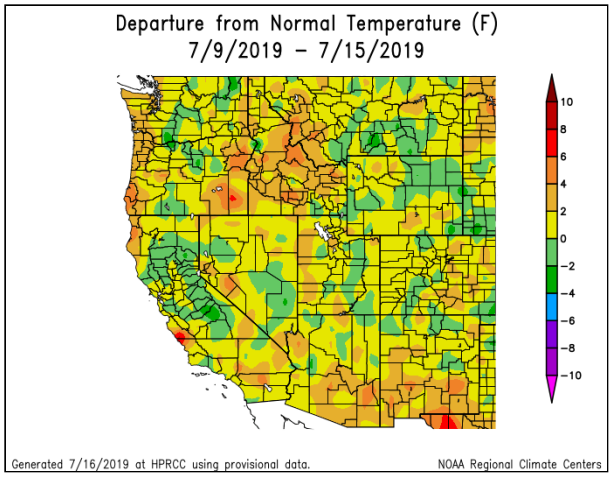


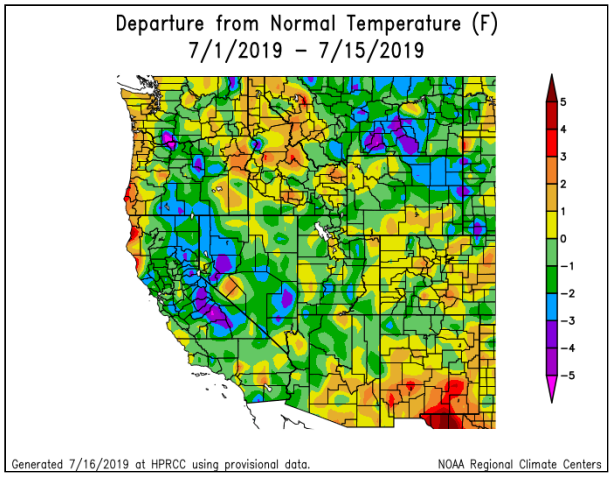




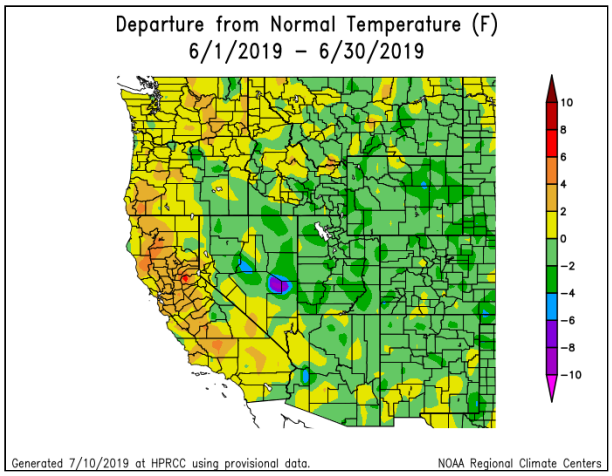
The above images are available courtesy of NOAA's Evaporative Demand Drought Index (EDDI). Drought classification listed is a function of the depth of reference evapotranspiration accumulated over a given period of record with respect to a climatology of 1981-2010. The drought categories displayed are in line with the US Drought Monitor's Percentile Ranking Scheme. Data used to generate these maps come from the North American Land Data Assimilation System Phase-2 (NLDAS-2) project, which assimilates observations of temperature, wind speed, radiation, and vapor pressure deficit. The date indicates the last day of the period of record, and the week number indicates the window size for the period of record.

Temperature

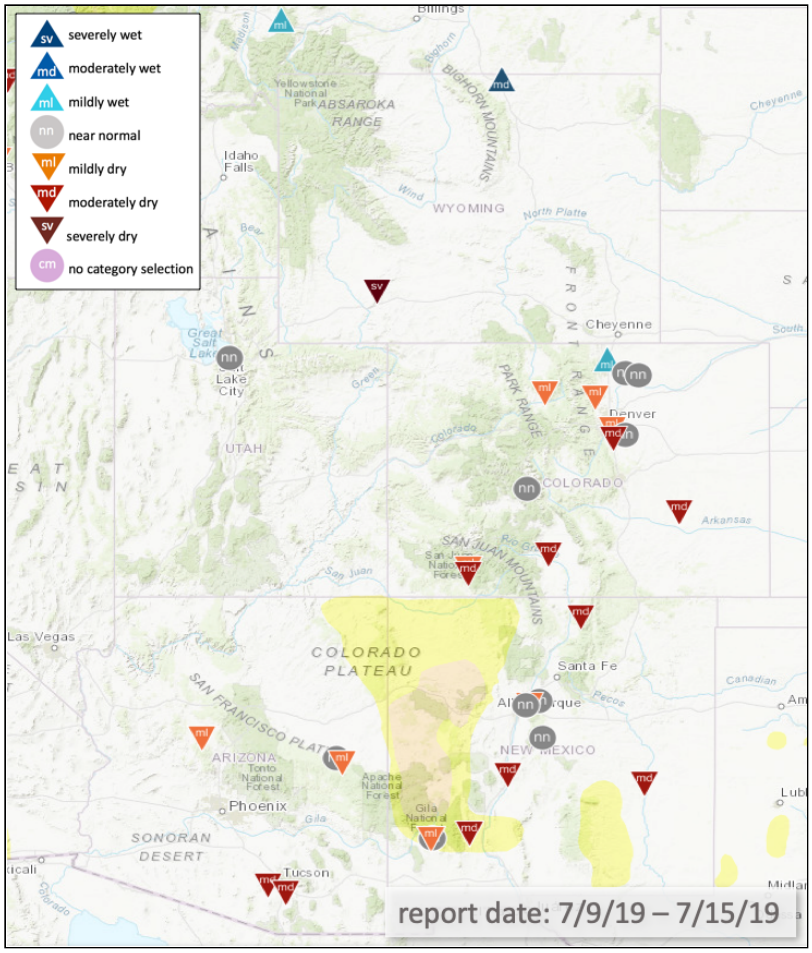




All images show temperature departures from average over different time periods (last 7 days on top left; month-to-date on top right; last full month on bottom). Temperature departure maps provided by HPRCC ACIS.



Condition Monitoring and Impacts

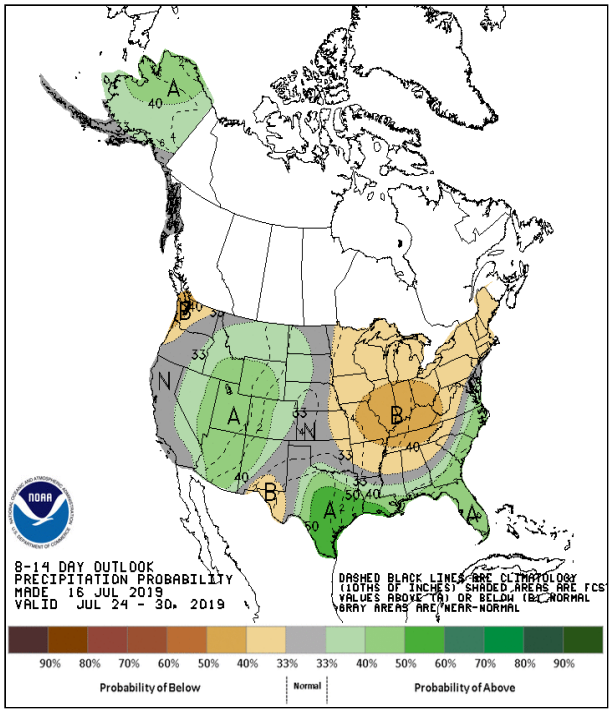


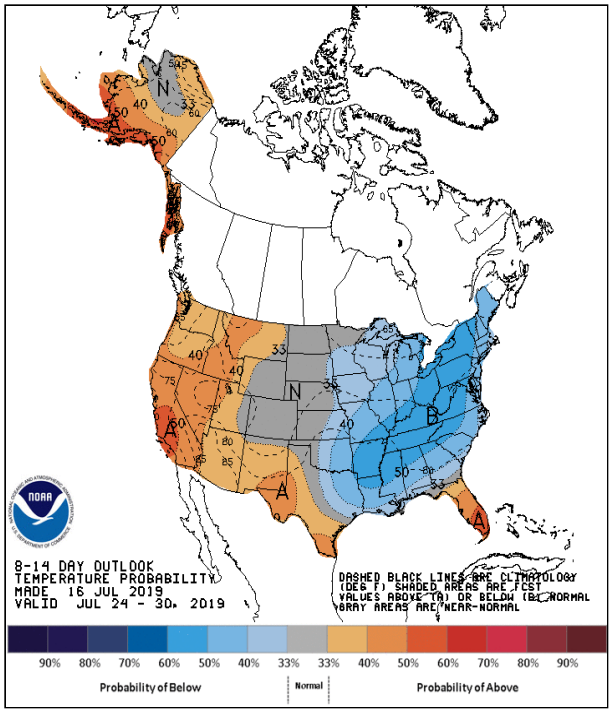
Map of current condition monitoring reports submitted to CoCoRaHS in the last week overlaid on the current U.S. Drought Monitor depiction. Specific impacts reports from local experts listed below.

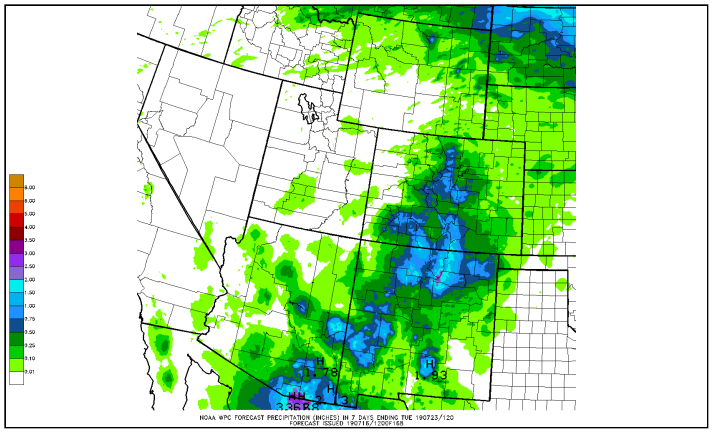
North Eastern Colorado Extension:

Wheat harvest is going on south of Wray (Yuma County). Compared to other areas, this is about 2 weeks ahead of other areas. Some areas in Washington County looked dry. Pastures weren't green but crops don't look horrible.

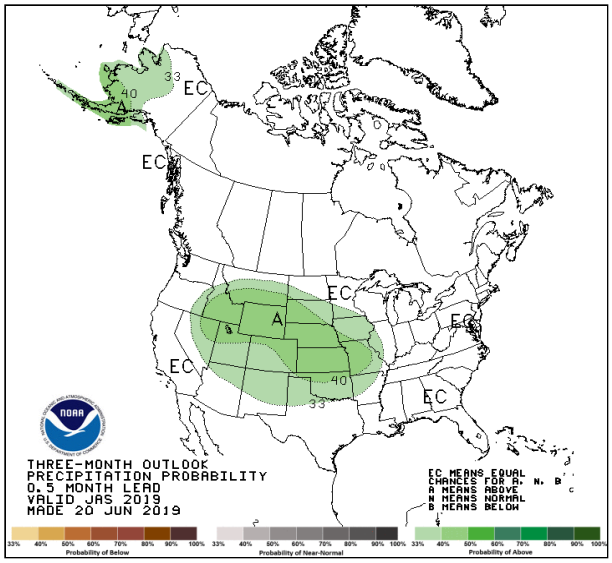
Outlook

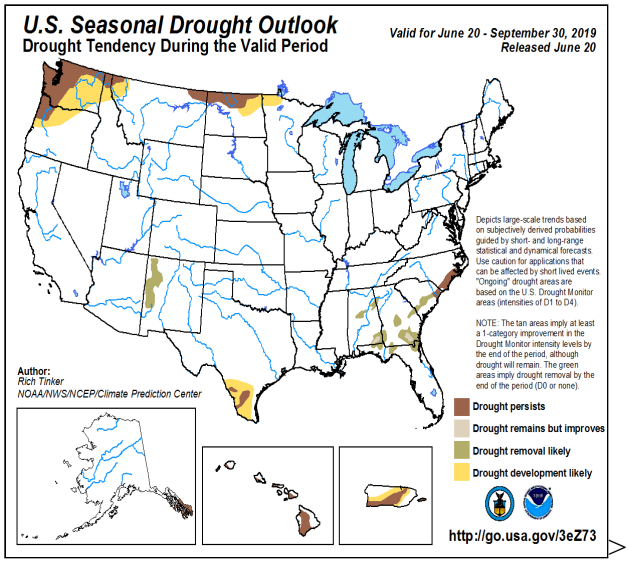




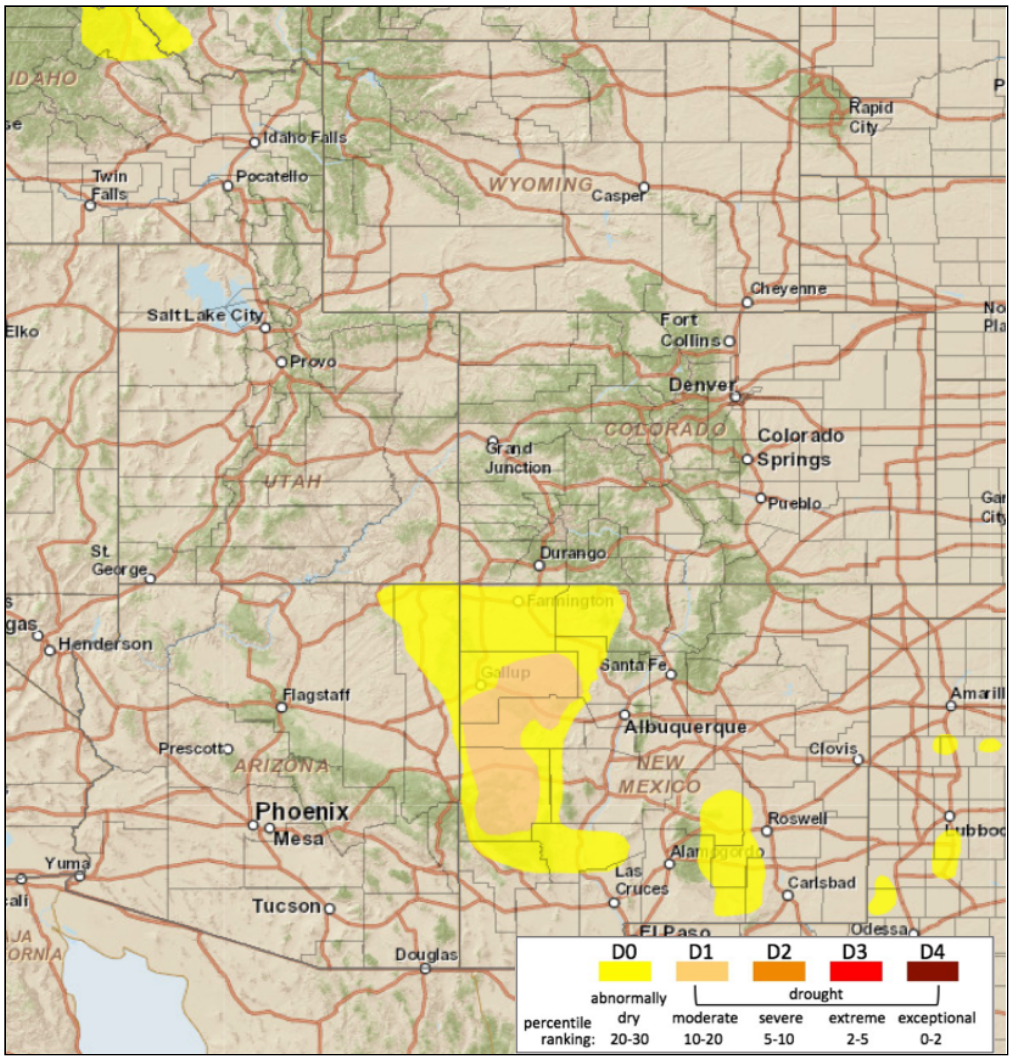


The top two images show Climate Prediction Center's Precipitation and Temperature outlooks for 8 - 14 days. The middle image shows the Weather Prediction Center's Quantitative Precipitation Forecast accumulation for seven days. The bottom left image shows the 3-month precipitation outlook from Climate Prediction Center, and the bottom right image shows the Climate Prediction Center's most recent release of the U.S. Seasonal Drought Outlook.

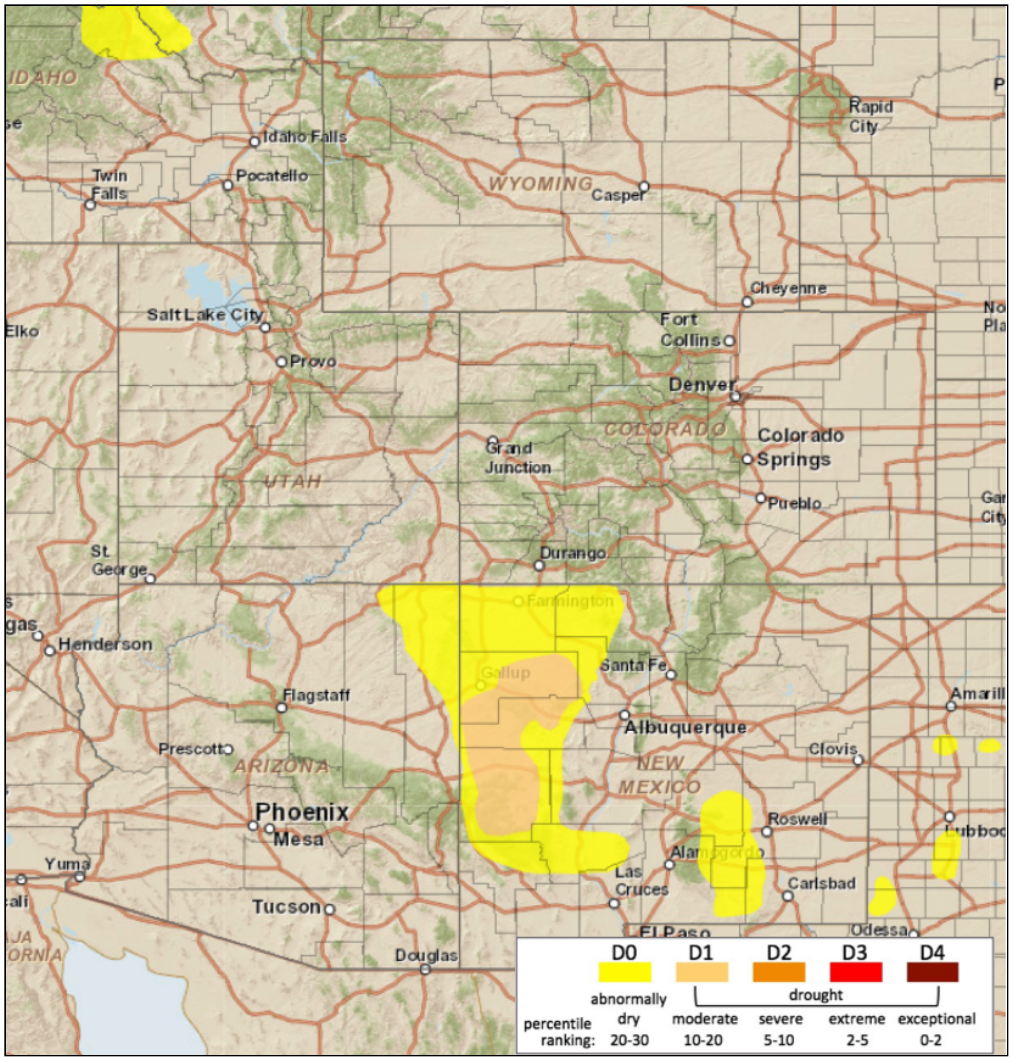




Summary and Recommendations



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: July 16, 2019

Weather has been seasonally normal over the Intermountain West over the last week. Temperatures were largely within 3 degrees of normal, and precipitation came in the form of spotty thunderstorms, primarily east of the Continental Divide. There are some dry pockets in the Upper Colorado River Basin and eastern Colorado to watch, but for the most part, we are still coasting on the high snowpack last winter, and the cool, wet May and start to June.

We can now say with some degree of confidence that streamflows have peaked for the season following peak snowmelt, and are winding down in the direction of base flows. Flash flooding later in the summer could set a higher peak for certain gauges or tributaries, but won't deliver as much water over such a broad area. Reservoirs continue to soak in above average streamflows. Lake Powell has amassed roughly 4 million acre feet over the last four months, and continues to rise. Lake Granby, and McPhee in Colorado are full. Blue Mesa Reservoir will likely fill in the next two weeks. Navajo and Flaming Gorge Reservoirs are also above 70th percentile storage, and still filling.

More flashy drought conditions have been observed across the IMW with grasses drying out due to hotter temperatures and lower precipitation. This is normal for steppe climates. However, Quickdri shows some areas where drying has been greater than normal. Washington, Yuma, Lincoln, and Kit Carson Counties in eastern Colorado are showing moderate drought from Quickdri.

Similarly, northern Utah and southwest Wyoming are on the dry side according to Quickdri.

The remainder of the week is expected to be quite hot for the majority of the IMW. Fire danger will be elevated for Utah and western Colorado with warm, dry air aloft Wednesday through Friday. This weekend, temperatures should cool down again at least marginally as cooler air pushes into the northern portion of the region.

The 8-14 day outlook shows increased chances of above average precipitation over the Four Corners and surrounding areas. The monsoon looks to extend northward into Utah and Colorado over this time frame.

Recommendations:

UCRB: Status Quo

We're starting to keep a closer watch on southwest Wyoming and northern Utah. Winter was excellent, and water supplies are still in good shape. However recent dryness is evident in SPIs, Quickdri, and impact reports. If this dryness continues, it will be detrimental to rangeland, and make hot weeks more dangerous from a fire standpoint.

Southern New Mexico and Arizona have been drier than normal over the past 120 days, and are eagerly awaiting the arrival of monsoonal moisture. We'll defer to other more local experts on recommendations here.

Eastern CO: Status Quo

Pockets of northeast and southeast Colorado were a little on the dry side this winter and spring. Over the last several weeks, just enough moisture has rolled through to avoid any official recommendations. We are keeping our eyes on Washington and Yuma Counties in northeast Colorado, where water year to date totals are below normal. We are also beginning to watch Huerfano and Las Animas Counties more closely. July is typically one of the rainiest months of the year for the low elevations of southeast and south-central Colorado. To this point, rains have under-delivered in central Las Animas and eastern Huerfano Counties.