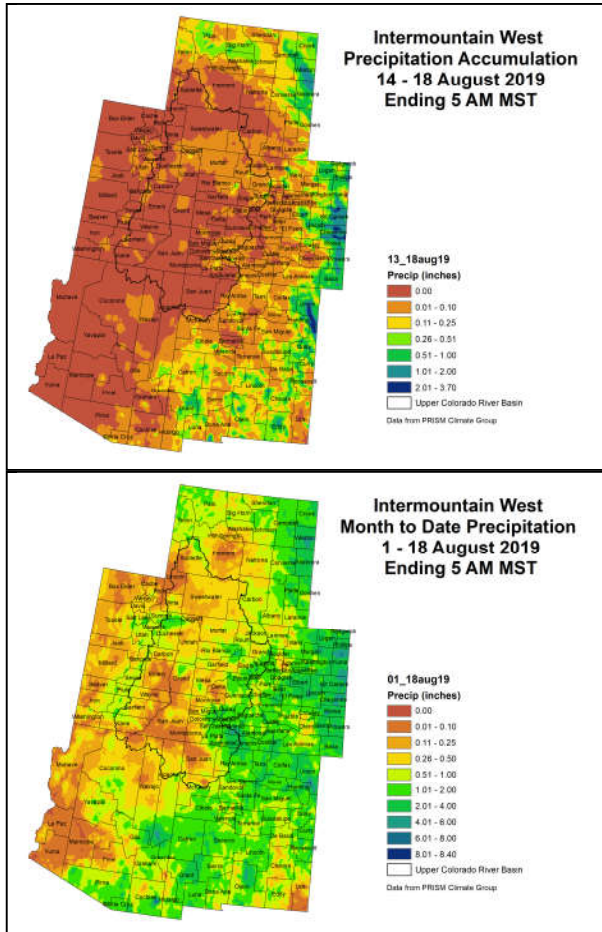
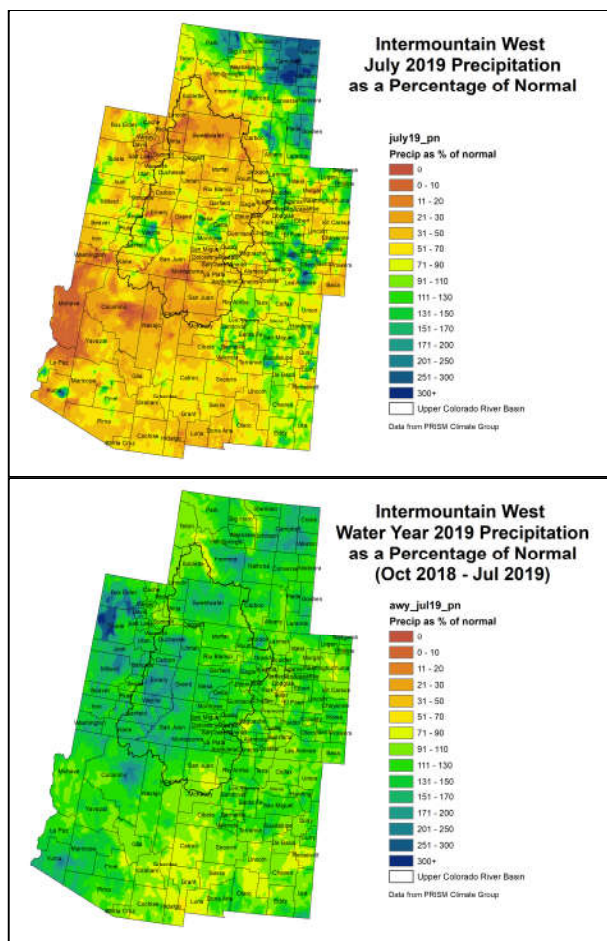


**NIDIS Intermountain West
Drought Early Warning System
August 20, 2019**

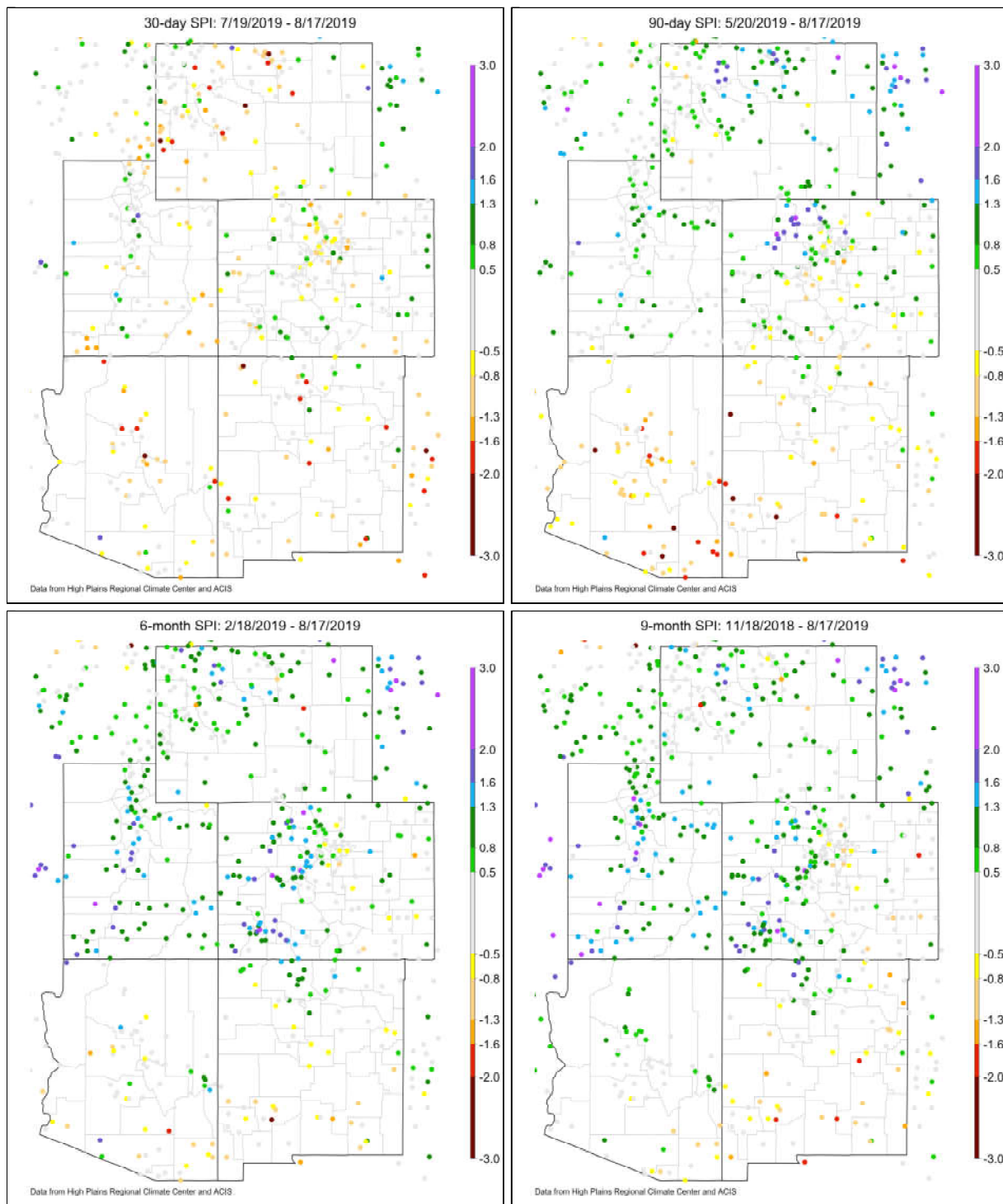
Precipitation





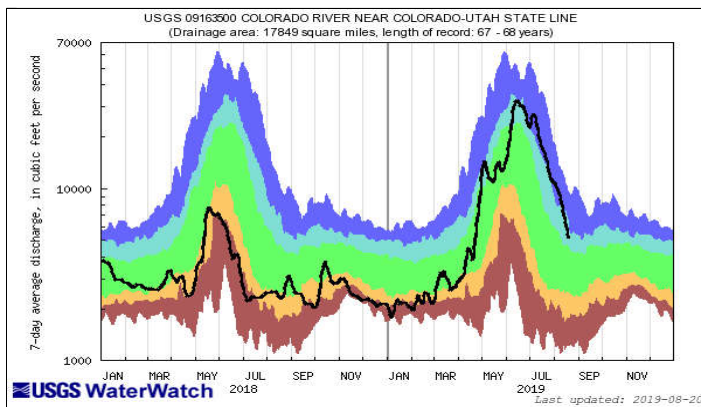
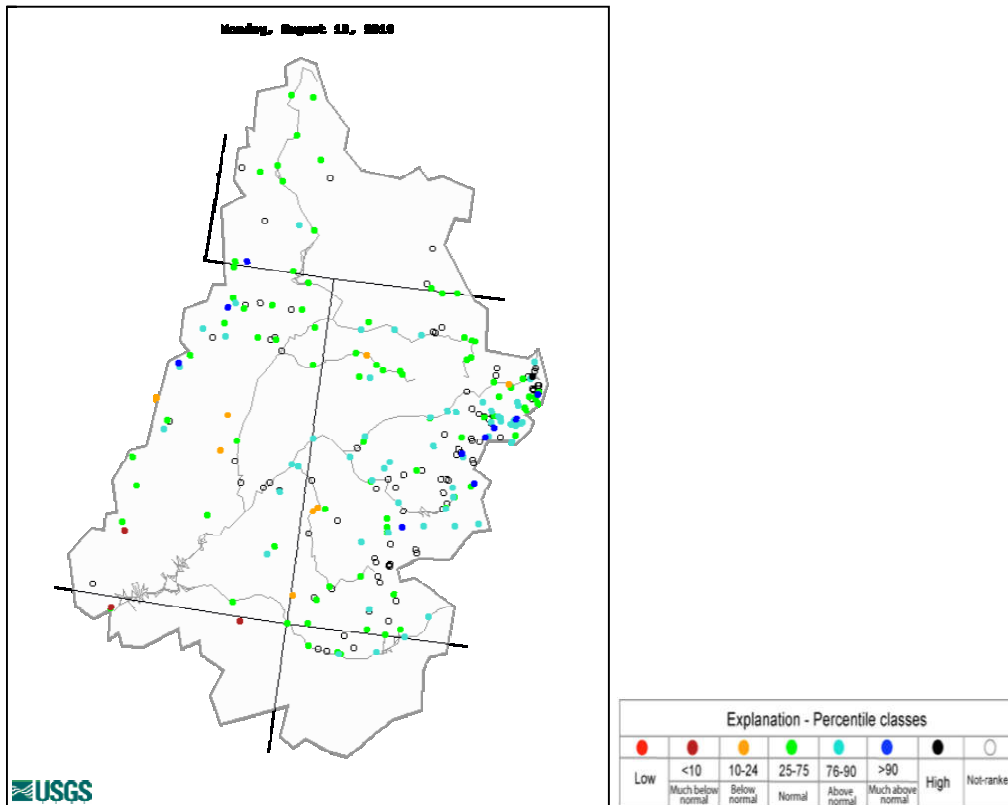
The images above use daily precipitation statistics from NWS COOP, CoCoRaHS, and CoAgMet stations. From top to bottom, and left to right: most recent 7-days of accumulated precipitation in inches; current month-to-date accumulated precipitation in inches; last month's precipitation as a percent of average;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

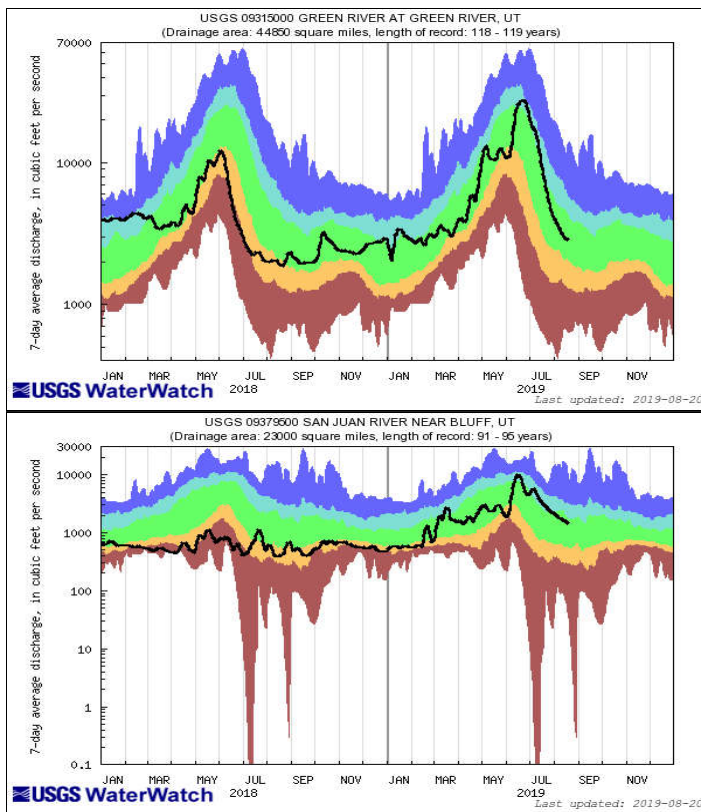
Standardized Precipitation Index



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.

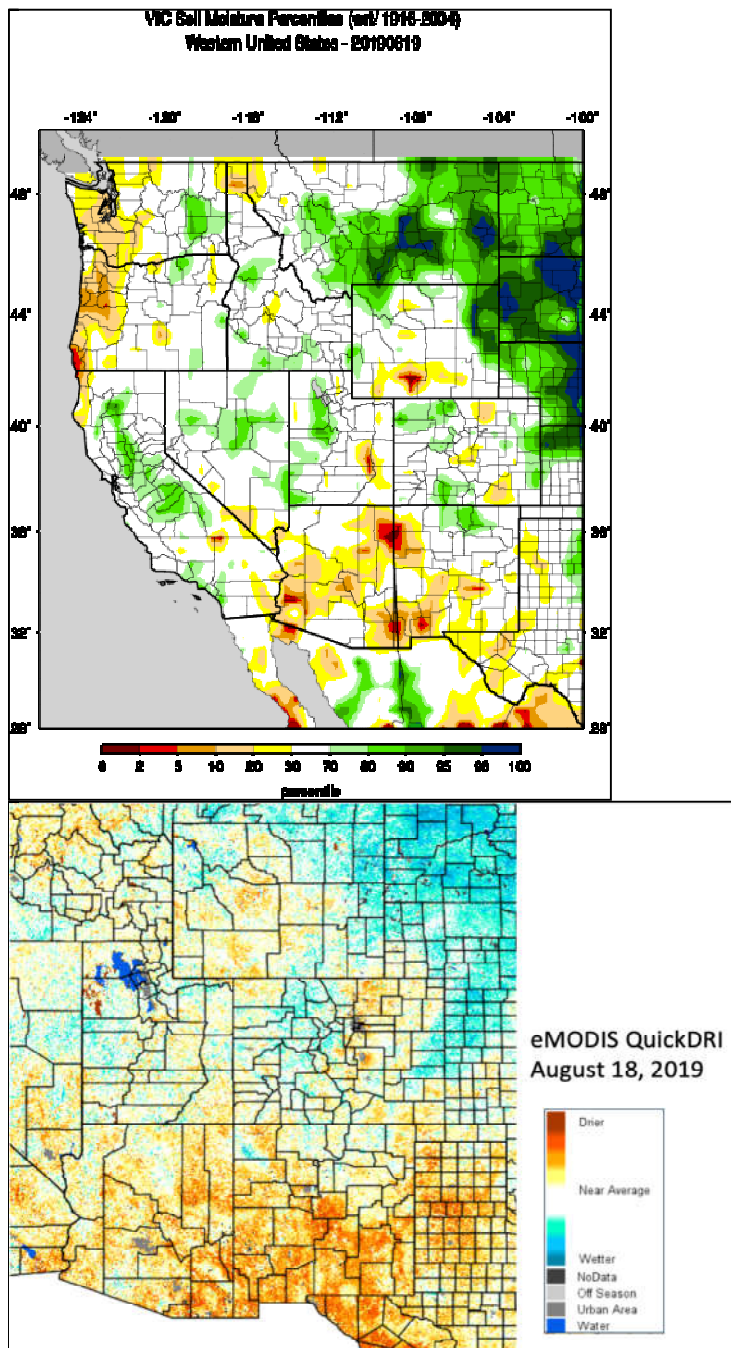
Streamflow





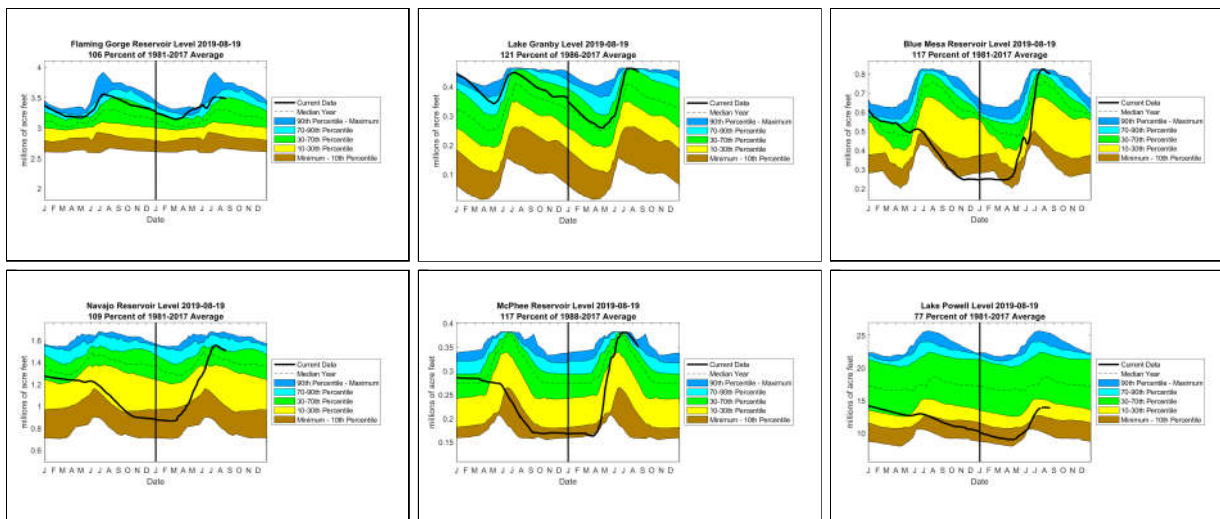
The top left image shows 7-day averaged streamflows as a percentile ranking across the UCRB. The top right image shows 7-day averaged discharge over time at three key sites around the UCRB: The Colorado River at the CO-UT state line; the Green River at Green River, UT; and the San Juan River near Bluff,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

Surface Water

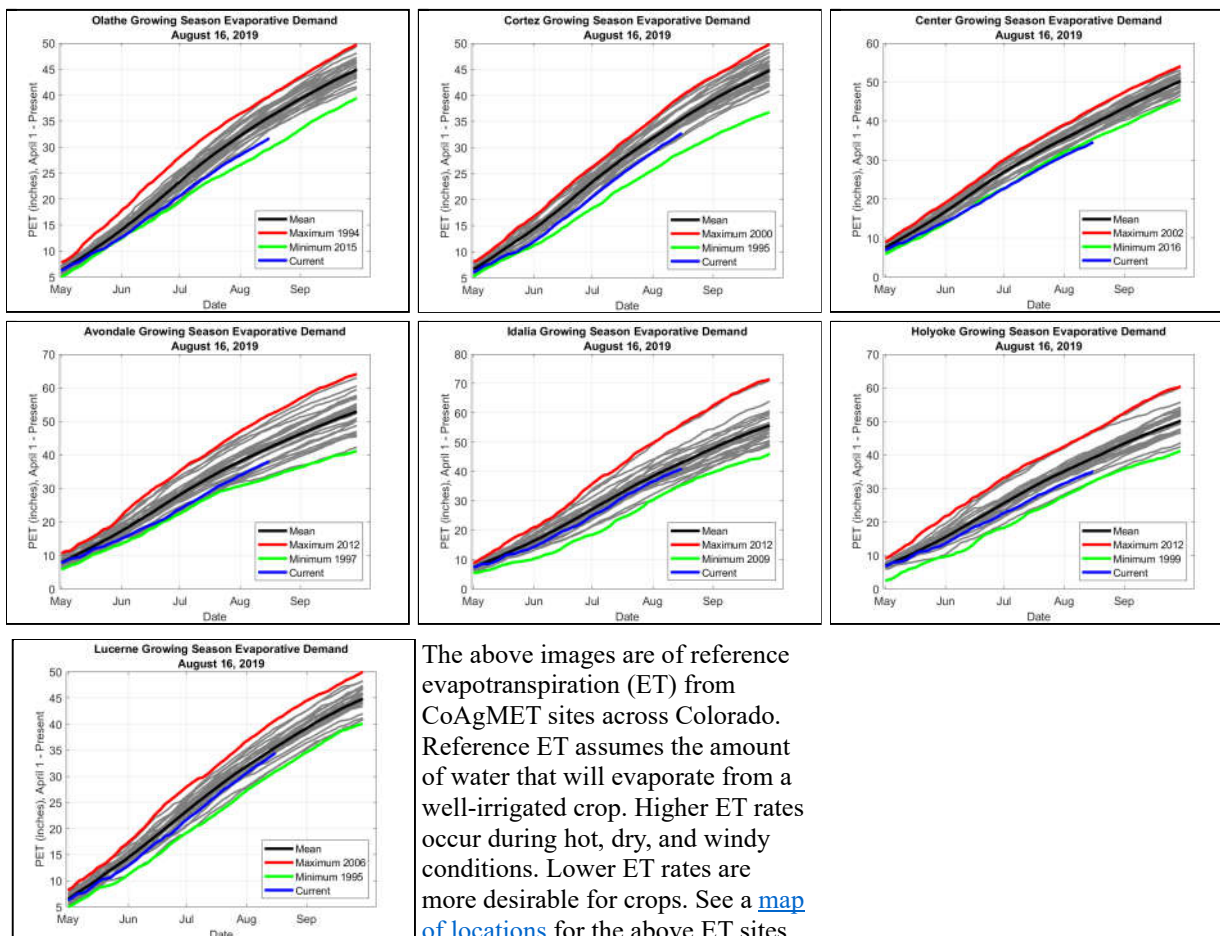


The top left image shows VIC modeled soil moisture as a percentile ranking. The top right image shows satellite-derived vegetation from the VegDRI product (which updates on Mondays).

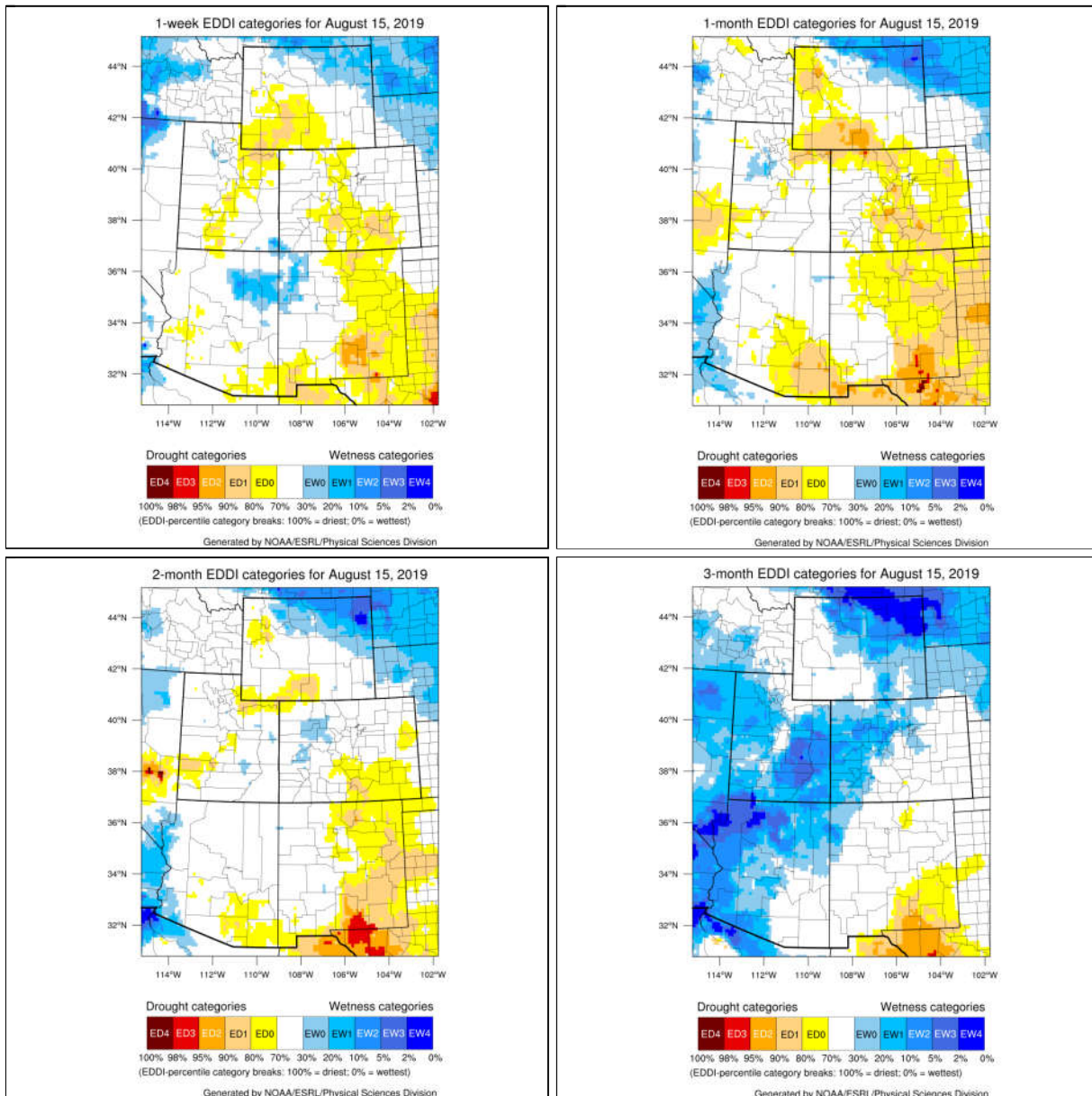
The graphs shown below are plots of reservoir volumes over the past full year and current year to date (black). The dashed line at the top of each graphic indicates the reservoir's capacity, and the background color-coded shading provides context for the range of reservoir levels observed over the past 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

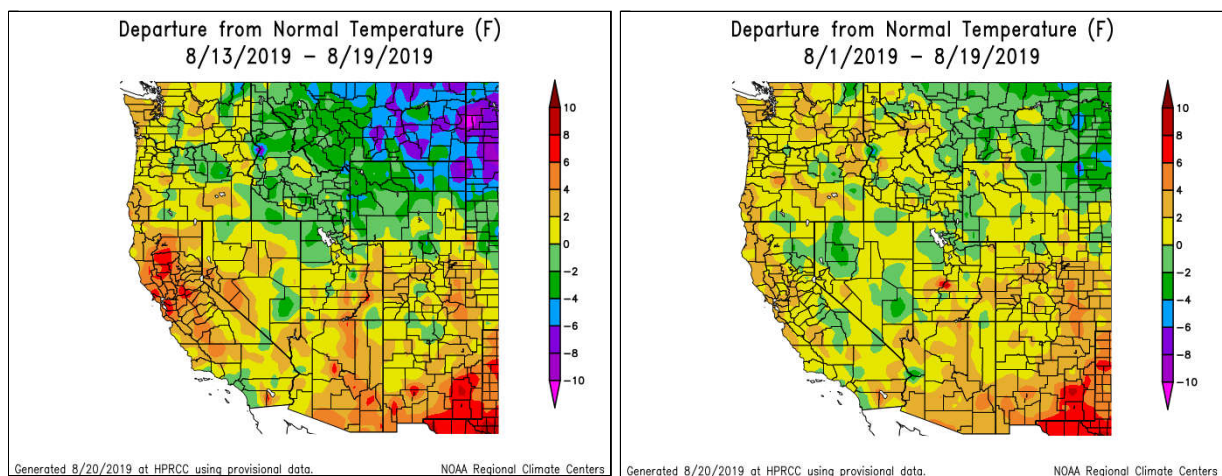


The above images are of reference evapotranspiration (ET) from CoAgMET sites across Colorado. Reference ET assumes the amount of water that will evaporate from a well-irrigated crop. Higher ET rates occur during hot, dry, and windy conditions. Lower ET rates are more desirable for crops. See a [map of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

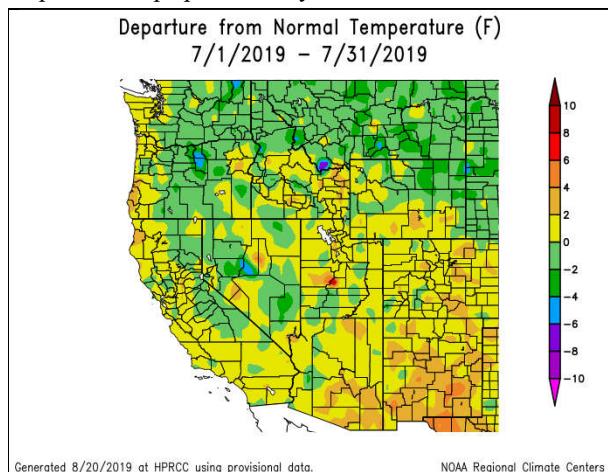


The above images are available courtesy of NOAA's Evaporative Demand Drought Index (EDDI). Drought classification listed is a function of the depth of reference evapotranspiration accumulated over a given period of record with respect to a climatology of 1981-2010. The drought categories displayed are 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.

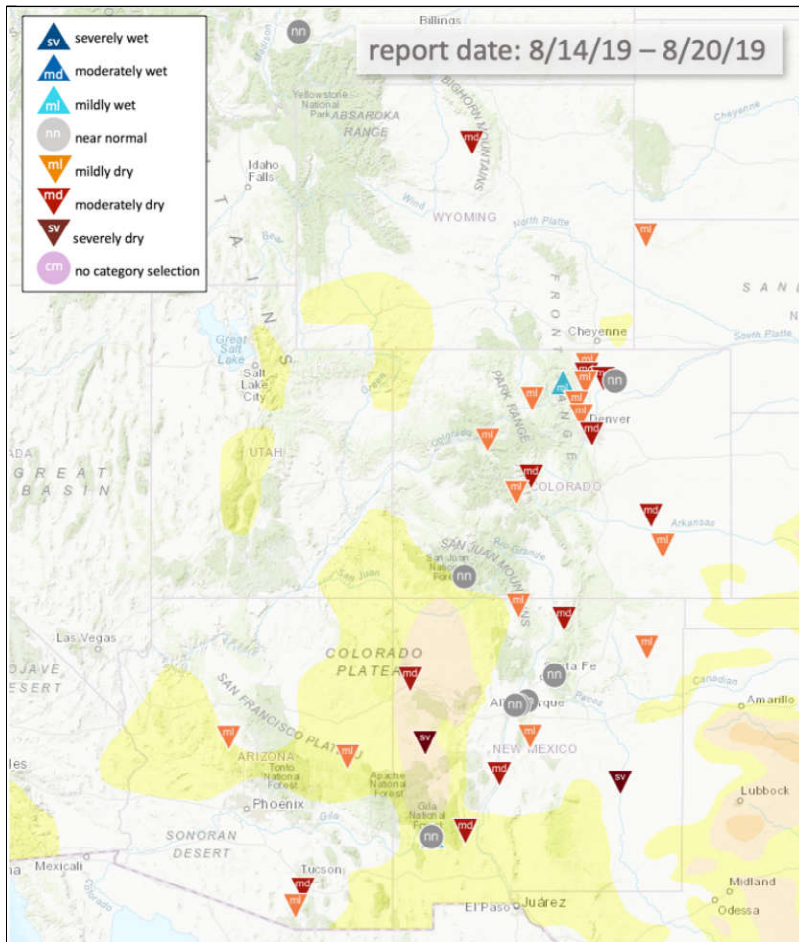
Temperature



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.



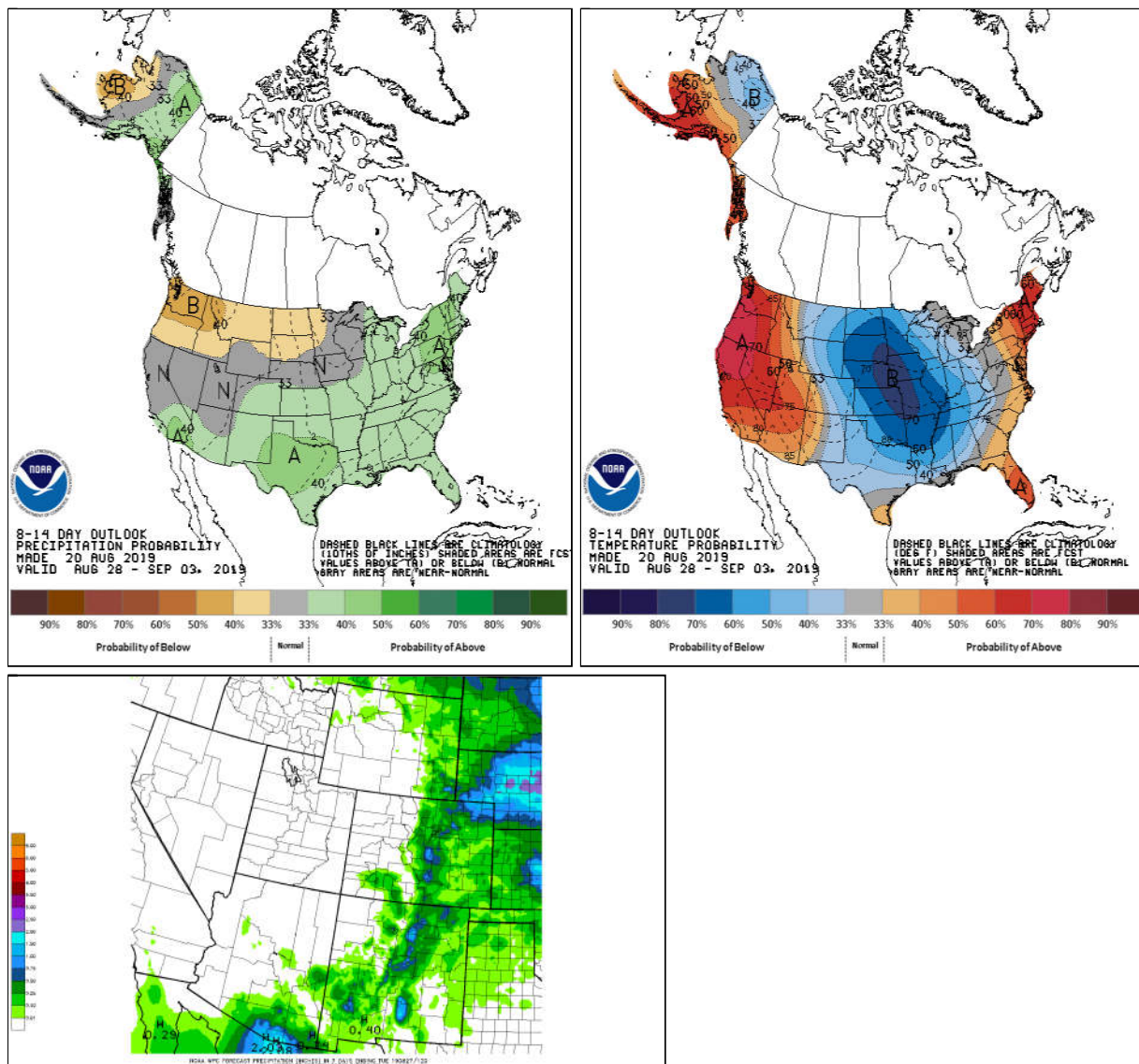
Condition Monitoring and Impacts



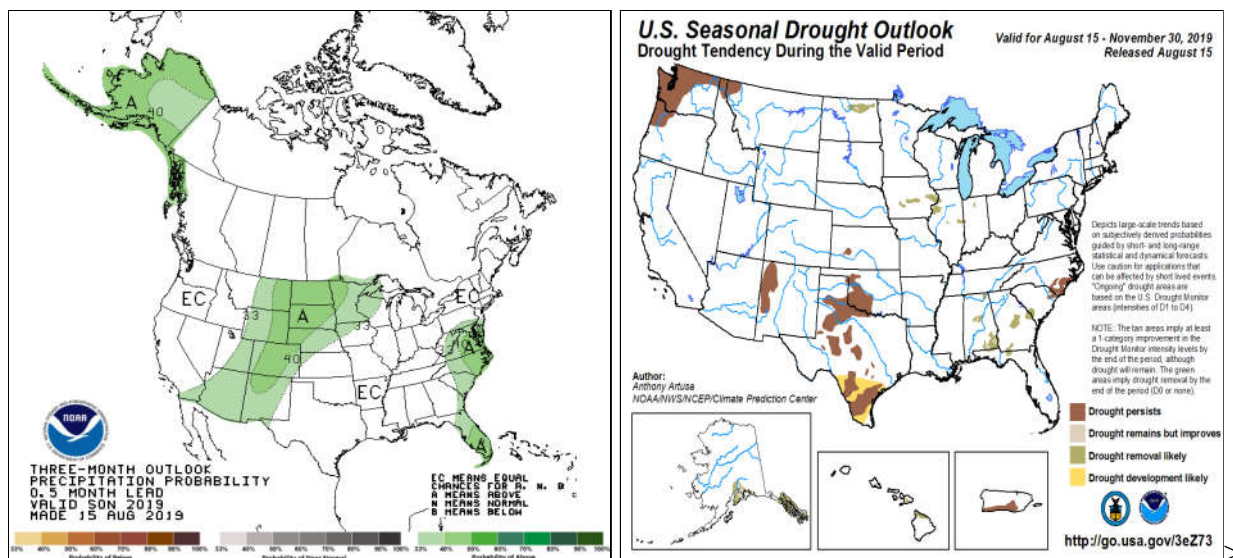
Map of current condition monitoring reports submitted to CoCoRaHS in the last week overlaid on the current U.S. Drought Monitor depiction. Specific impacts reports from local experts listed below.

Weld County: Driving through central Weld County, the native grasses are looking good with a lot of green showing up. The crops are looking great and most of the hay has just been cut.

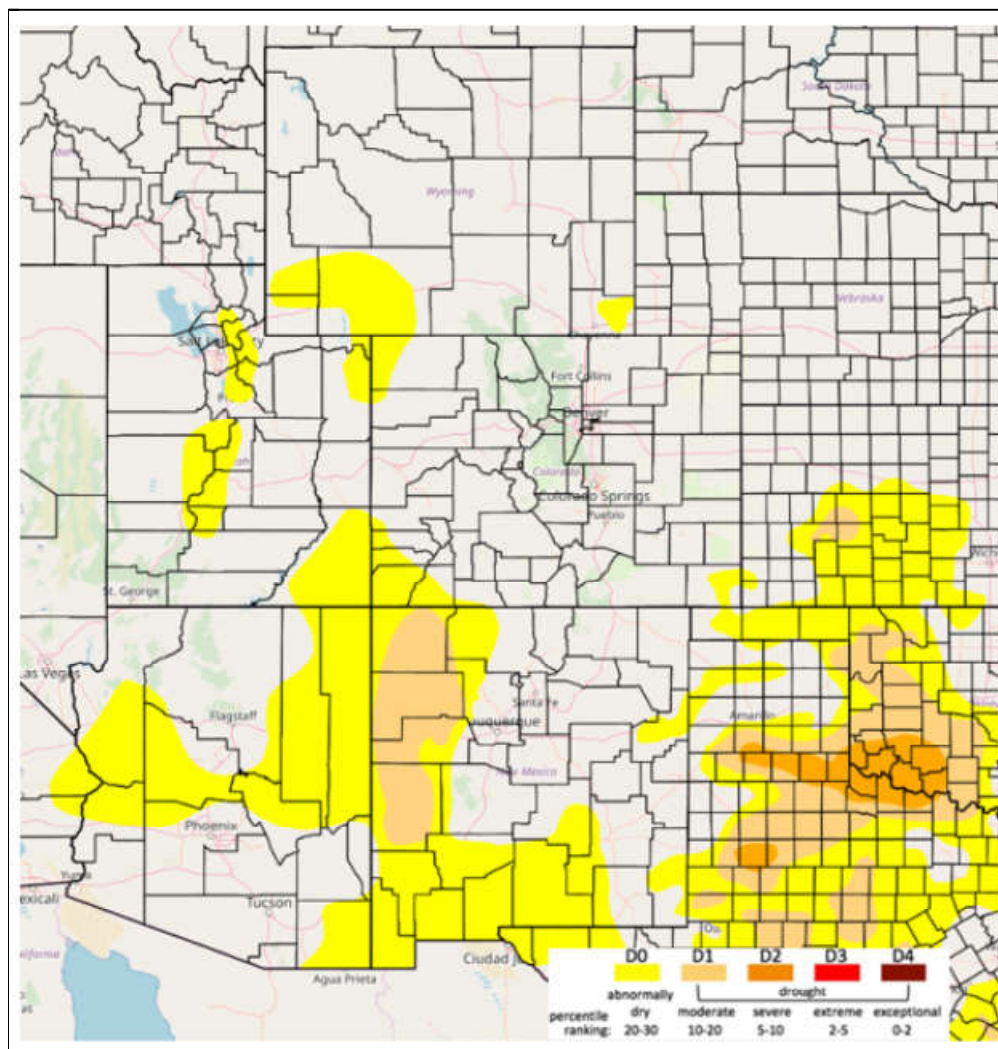
Outlook



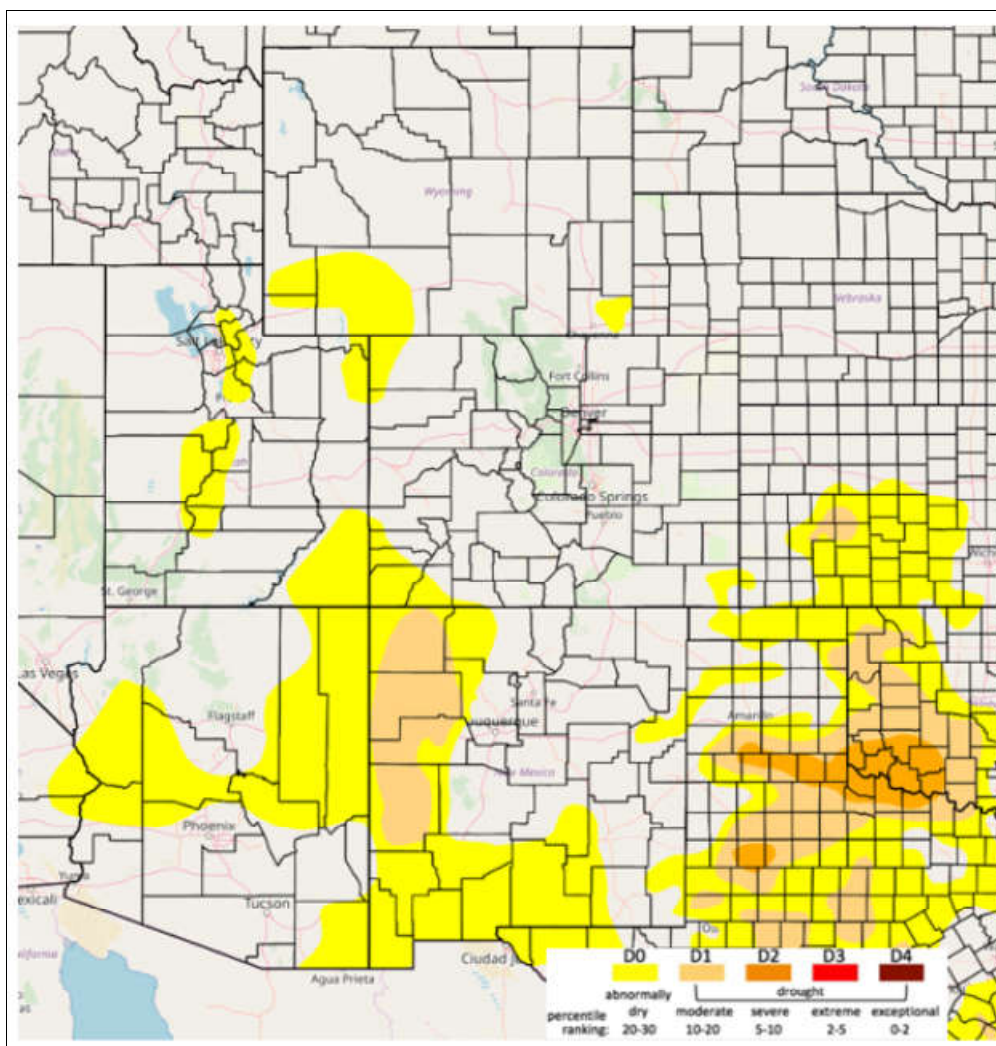
The top two images show Climate Prediction Center's Precipitation and Temperature outlooks for 8 - 14 days. The middle image shows the Weather Prediction Center's Quantitative Precipitation Forecast accumulation for seven days. The bottom left image shows the 3-month precipitation outlook from Climate 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: August 20, 2019

A large high pressure ridge is setting up across the western US. This has kept the Intermountain West largely dry over the past week, blocking the development of monsoonal moisture. East of the Continental Divide, some thunderstorms have been able to develop as this area has seen some moist air flow into the region from the Central Plains.

The second half of summer has generally been much warmer and drier than early summer. With the exception of northeast Wyoming, the Intermountain West has seen above average temperatures in July and August. 30 and 60-day SPIs are mostly on the lower side as well. Even so, the influence of the late spring and early summer has kept growing season evaporative demand and aridity below normal.

As is normal for this time of year, streamflows and reservoir storage are declining. However, with the giant exception of Lake Powell, water storage in the Upper Basin is above normal. This includes major reservoirs such as Navajo, Blue Mesa, and Flaming Gorge. Streamflows, though declining, are still above normal throughout the Upper Colorado River Basin and eastern Colorado. Further south this is

not the case. The Lower Colorado combined streamflow index is below normal and trending lower still.

Short-term dryness is having an influence on vegetation and soil moisture. The VegDRI and QuickDRI models are showing widespread above normal vegetation stress in southern Arizona and New Mexico. Isolated pockets of the stressed vegetation also exist in Utah, Colorado, and Wyoming. Two of the more notable among these are in eastern Colorado: Weld and Morgan Counties in northeast Colorado, and Las Animas and Otero Counties in southeast Colorado.

A temperature and precipitation pattern similar to last week is likely to continue for the next week, and perhaps beyond. Moisture will be suppressed by high pressure, and temperatures will be high for the western portion of the region. Temperatures east of the Continental Divide will still be above average at times, but will be clipped by several cool fronts diving out of the north-northwest. Scattered thunderstorms will be likely across eastern Colorado and parts of Wyoming and New Mexico over the next three days.

Recommendations:

UCRB: Status quo. Short-term dry conditions continue to emerge in eastern Utah and western Colorado, but are still, for the most part, outweighed by the wet winter and spring. Streamflows and reservoir storage remains well above average.

Eastern CO: Status quo. We are keeping an eye on several places on the eastern plains that have been drying. These areas include Weld and Morgan Counties in northeast Colorado, and Las Animas, Otero, Huerfano, and Crowley Counties in southeast Colorado. 30-day SPIs are generally D1-level or lower in these areas. This is particularly concerning since late July/early August is important to the area's overall precipitation contribution. VegDRI and QuickDRI products show more stressed than normal vegetation in these areas. However, impact reports have remained positive or absent. We'll continue to watch these areas, but hold off on any D0 introduction.