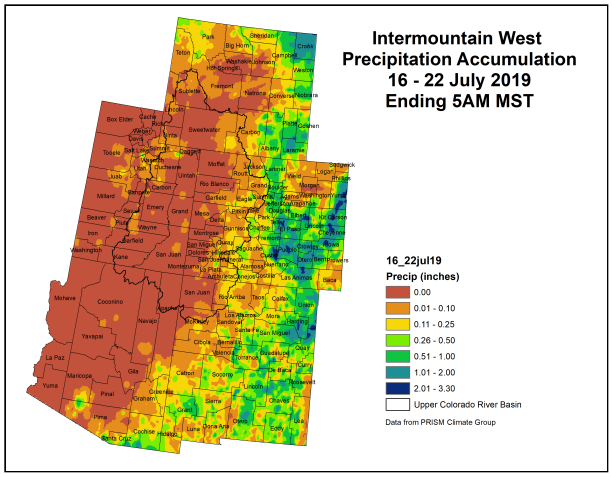
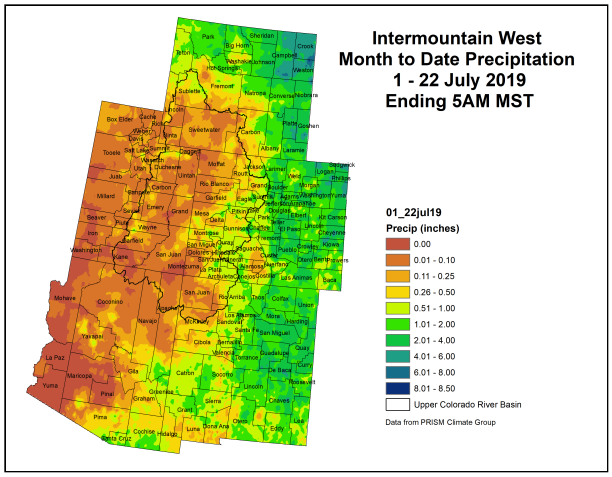
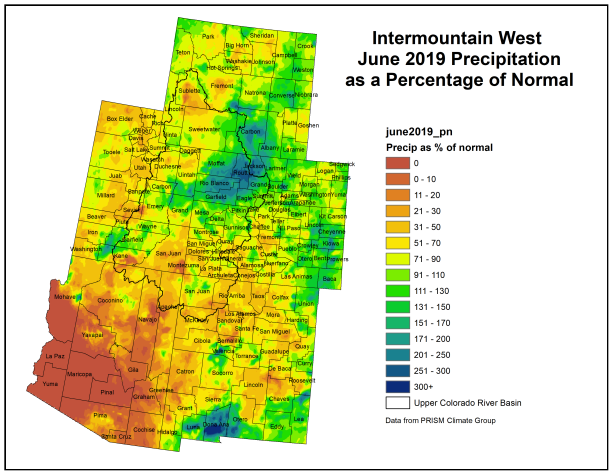
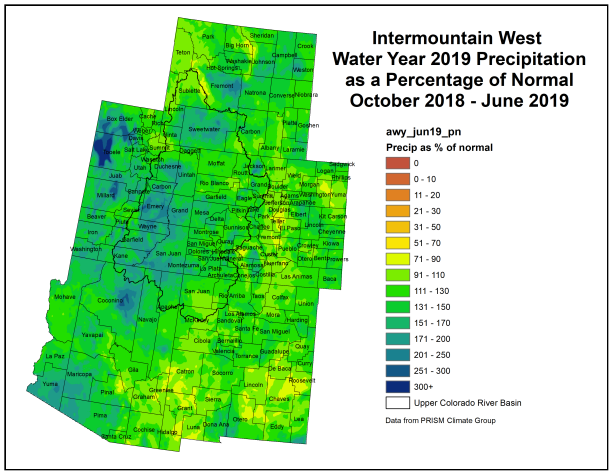
NIDIS Intermountain West
Drought Early Warning System
July 30, 2019

Precipitation



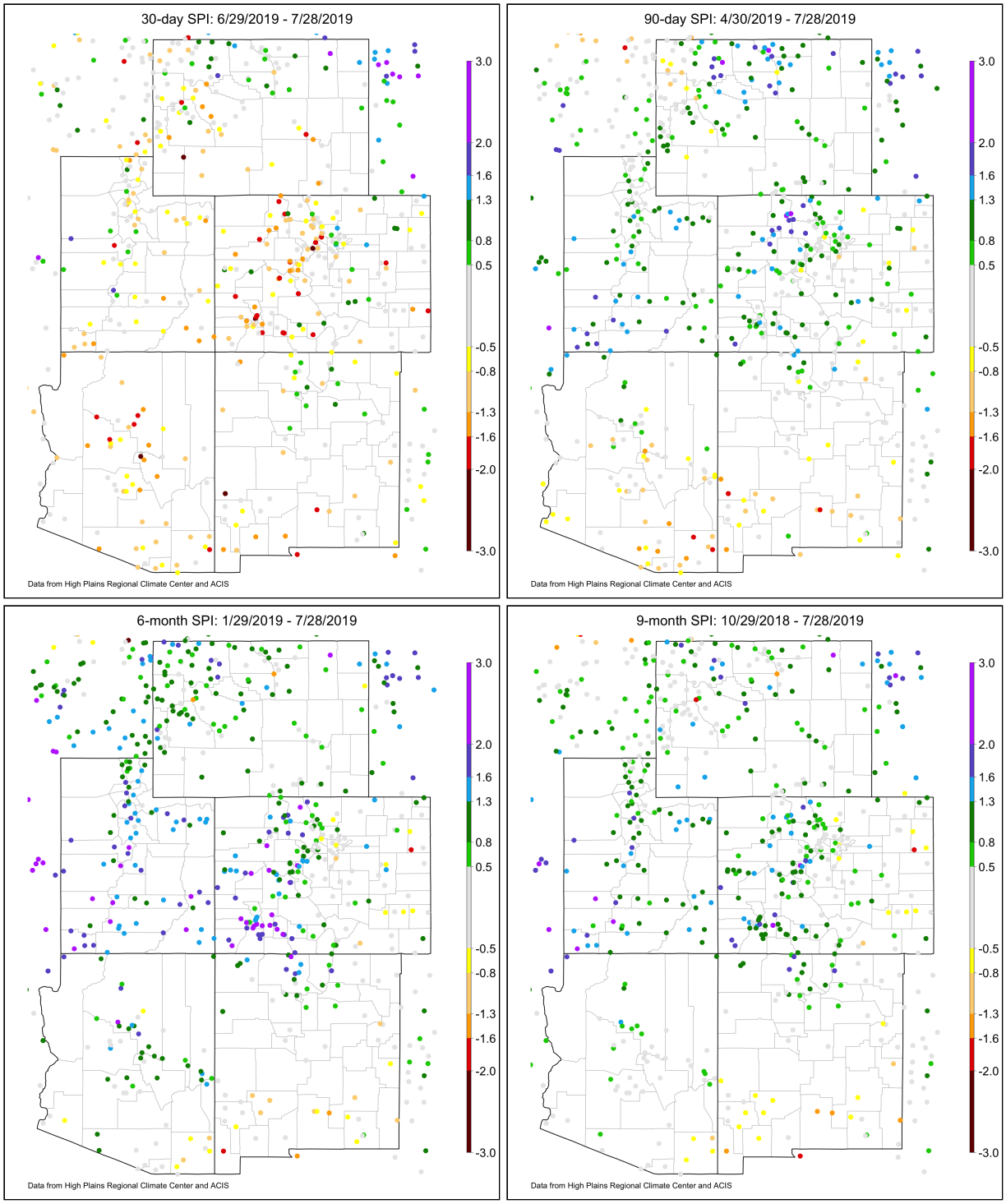






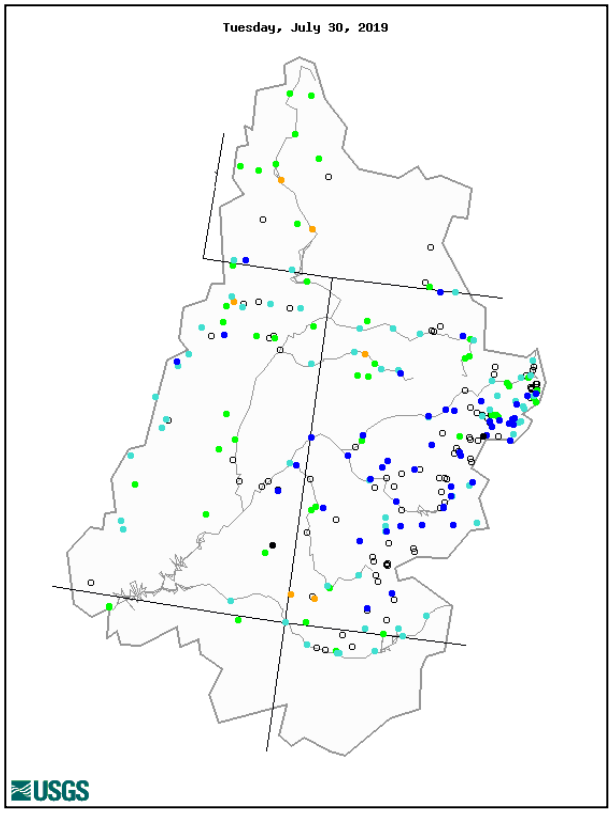
The images above use daily precipitation statistics from NWS COOP, CoCoRaHS, and CoAgMet stations. From top to bottom, and left to right: most recent 7-days of accumulated precipitation in inches; current month-to-date accumulated precipitation in inches; last month's precipitation as a percent of average;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

Standardized Precipitation Index

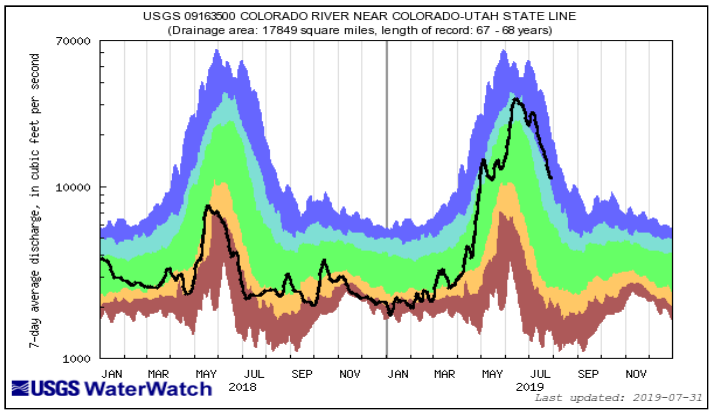


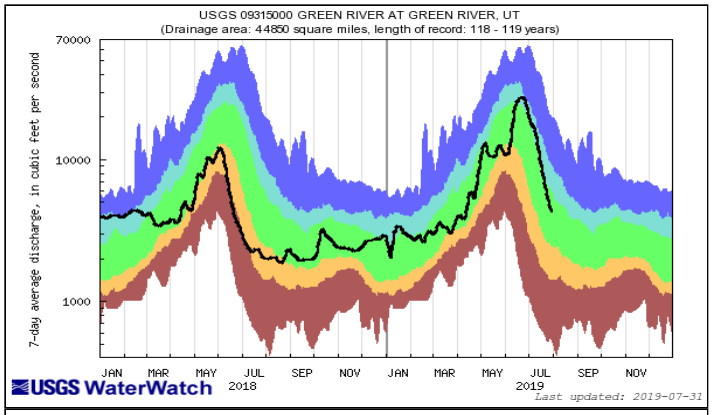
Standardized Precipitation Index standardizes precipitation accumulations for a specified time period into percentile rankings. Colors match the different drought categories with the U.S. Drought Monitor. 30- and 60-day SPIs focus on short-term conditions while 6- and 9-month SPIs focus on long-term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

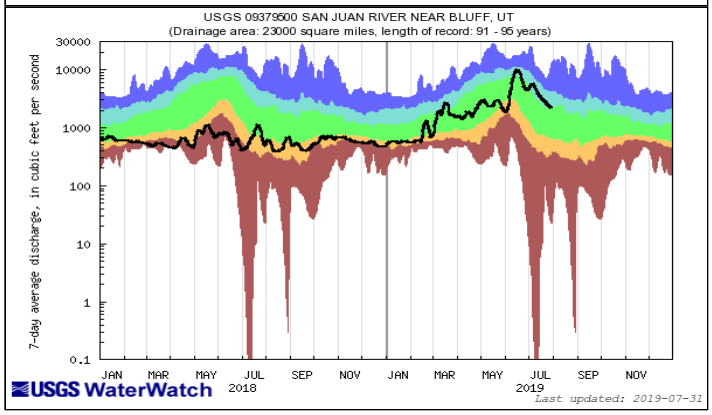
Streamflow



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

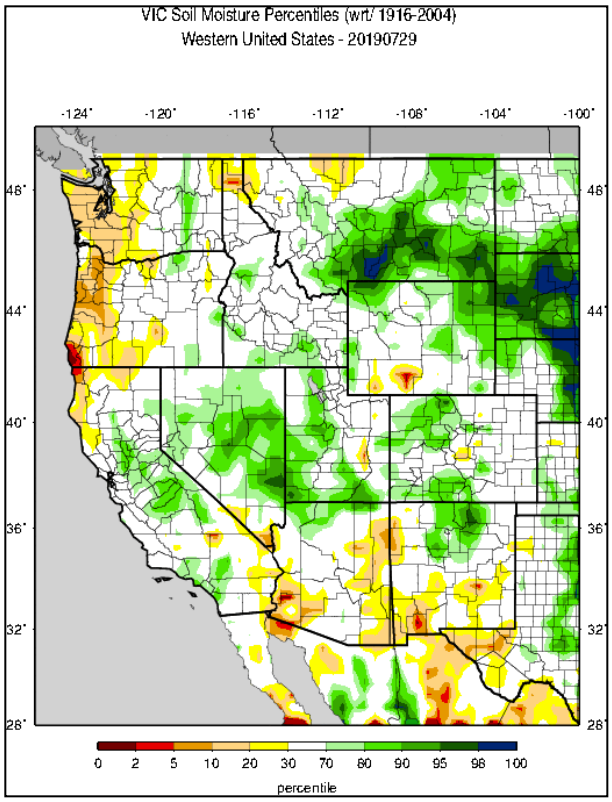


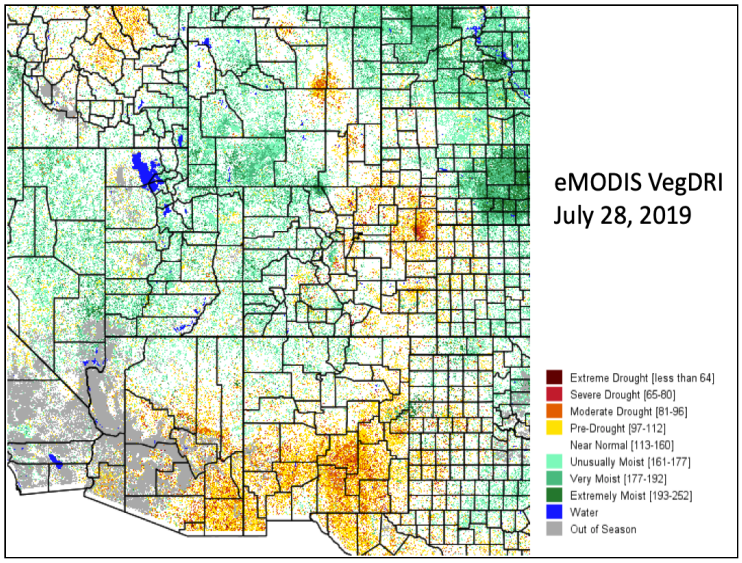




The top left image shows 7-day averaged streamflows as a percentile ranking across the UCRB. The top right image shows 7-day averaged discharge over time at three key sites around the UCRB: The Colorado River at the CO-UT state line; the Green River at Green River, UT; and the San Juan River near Bluff,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

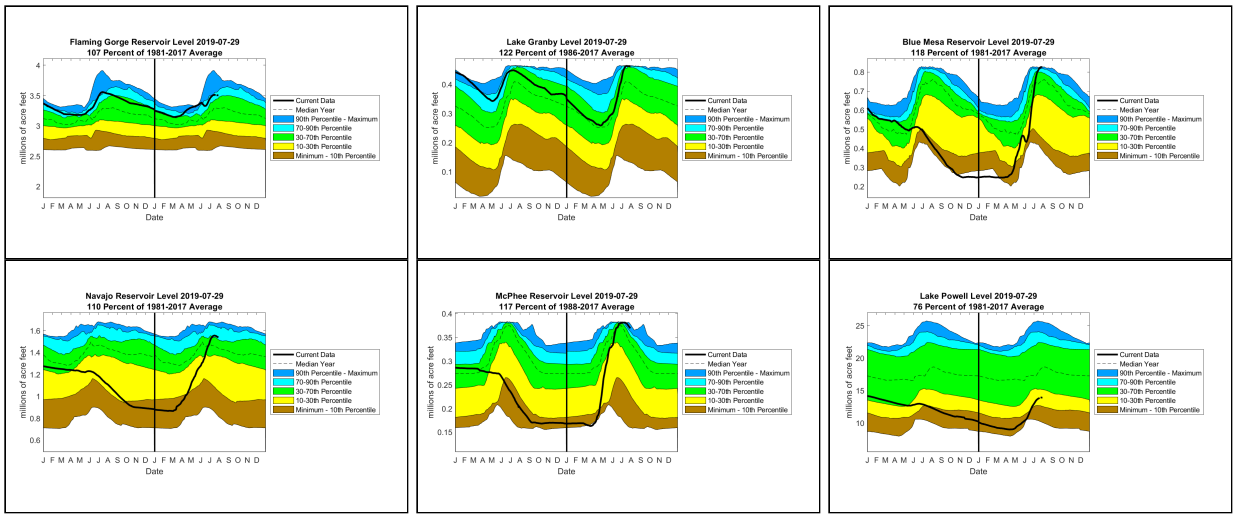
Surface Water



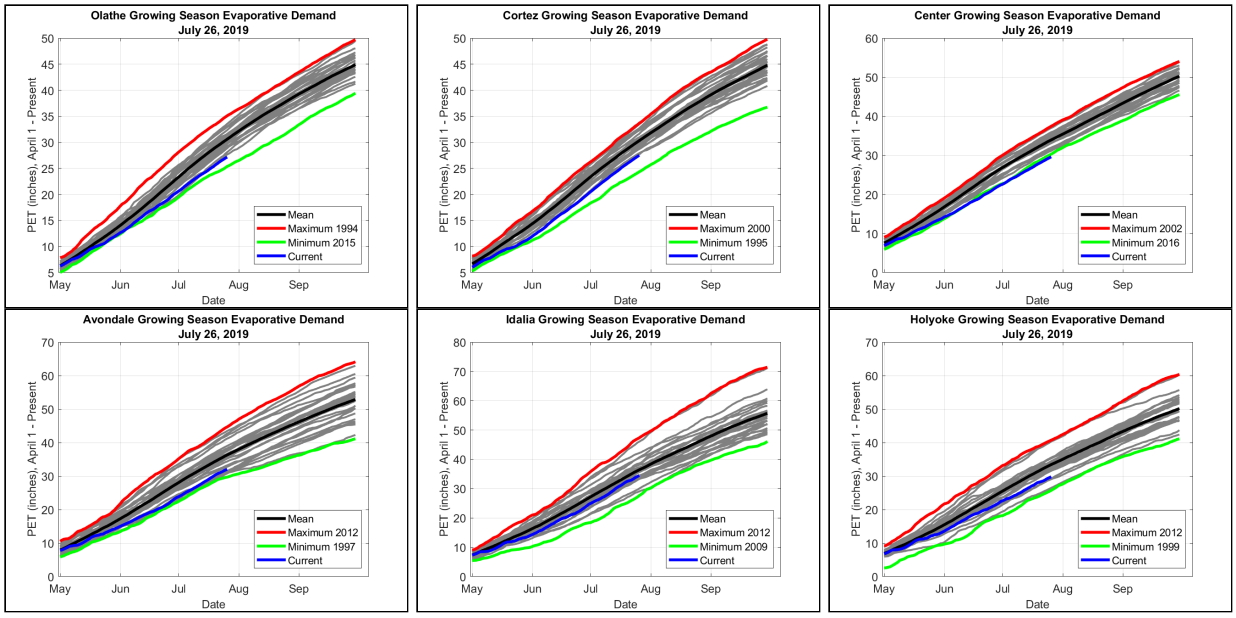


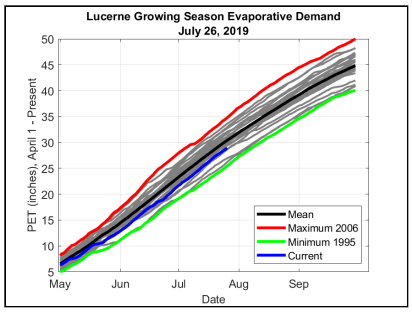
The top left image shows VIC modeled soil moisture as a percentile ranking. The top right image shows satellite-derived vegetation from the VegDRI product (which updates on Mondays).

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.

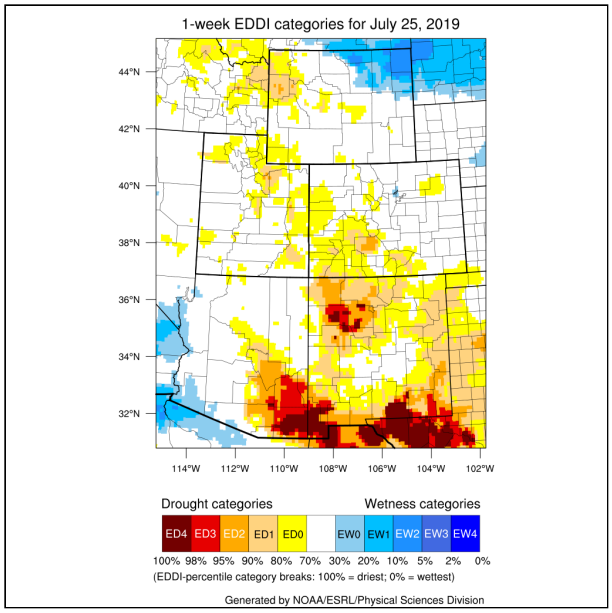


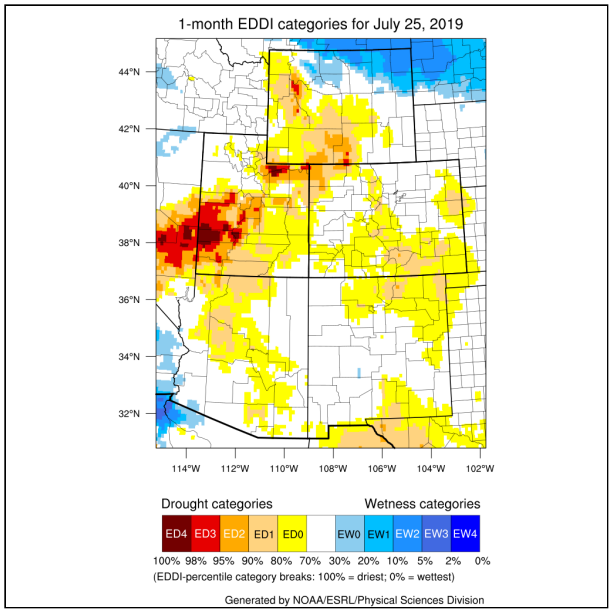
Evaporative Demand

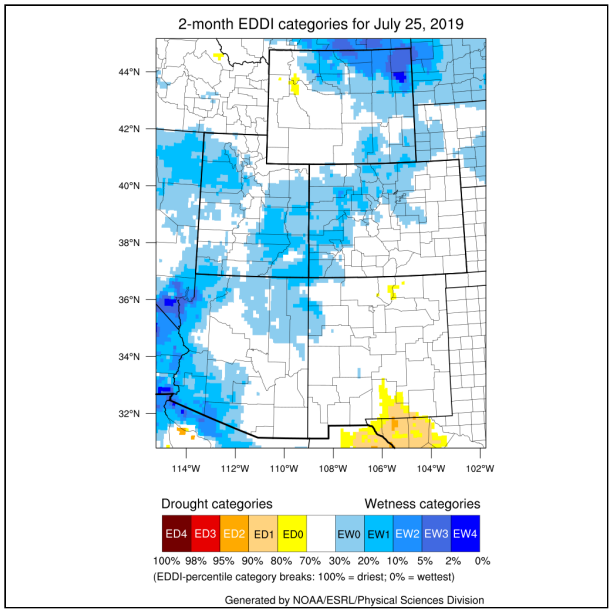


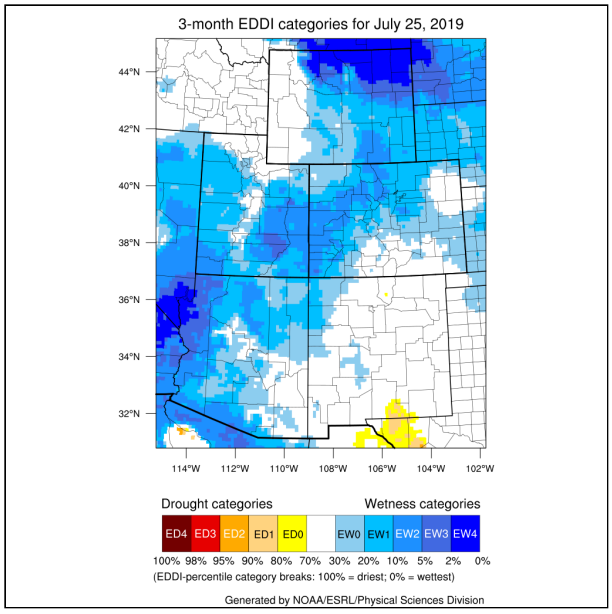


The above images are of reference evapotranspiration (ET) from CoAgMET sites across Colorado. Reference ET assumes the amount of water that will evaporate from a well-irrigated crop. Higher ET rates occur during hot, dry, and windy conditions. Lower ET rates are more desirable for crops. See a map of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



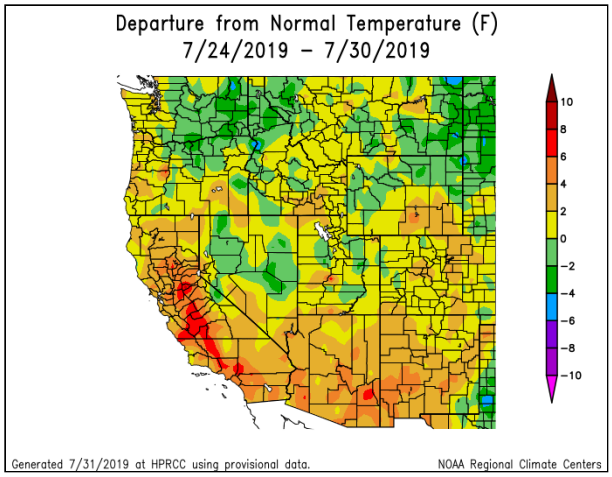


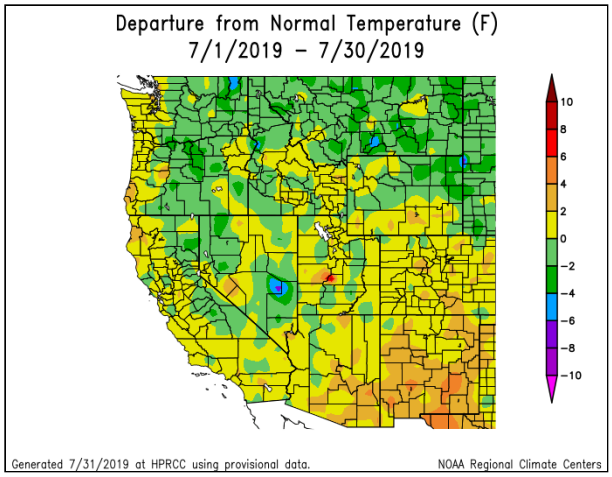




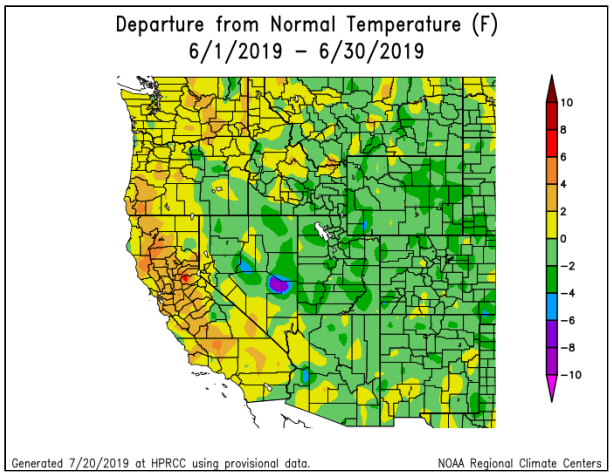
The above images are available courtesy of NOAA's Evaporative Demand Drought Index (EDDI). Drought classification listed is a function of the depth of reference evapotranspiration accumulated over a given period of record with respect to a climatology of 1981-2010. The drought categories displayed are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

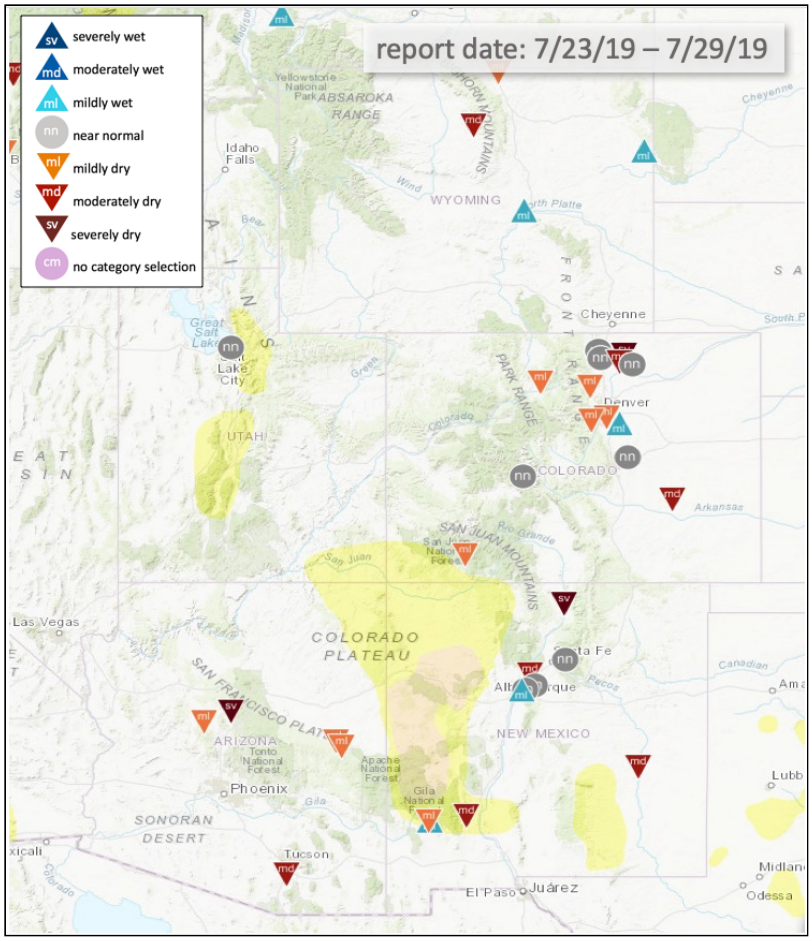




All images show temperature departures from average over different time periods (last 7 days on top left; month-to-date on top right; last full month on bottom). Temperature departure maps provided by HPRCC ACIS.



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.

Montezuma County Extension

Although June is normally a dry month, there's been virtually no precipitation since early June. People are anxiously awaiting the start of the monsoon. But even with monsoon, rains could be spotty and bring the risk of lightning. Current lack of moisture leads to an impact of people requiring supplemental water for irrigating. Irrigated crops are still looking really good and the first cutting of alfalfa was really good. Due to winter snowpack and spring moisture, weeds and dryland grasses have grown like crazy. Extra growth of cheatgrass and recent dryness increases fire concerns. There has been some prescribed burning, and so far there are no fire bans in the county.

Overall the short term dryness and lack of monsoon moisture to this point is a concern. Things in this area can get bad very quickly, despite excellent spring moisture.

Central Utah FSA

Streamflows and soil moisture are still pretty good, but July has been very dry. With spring moisture leading to significant vegetation growth, fire officials are warning public land users of fire danger. While this can be a typically dry time of year, there is concern with the delay in monsoon moisture. Most are hopeful that it will still come. Areas with limited water storage are running below capacity and soil moisture is drying out and in need of monsoon moisture.

July 16, 2019 Webinar:

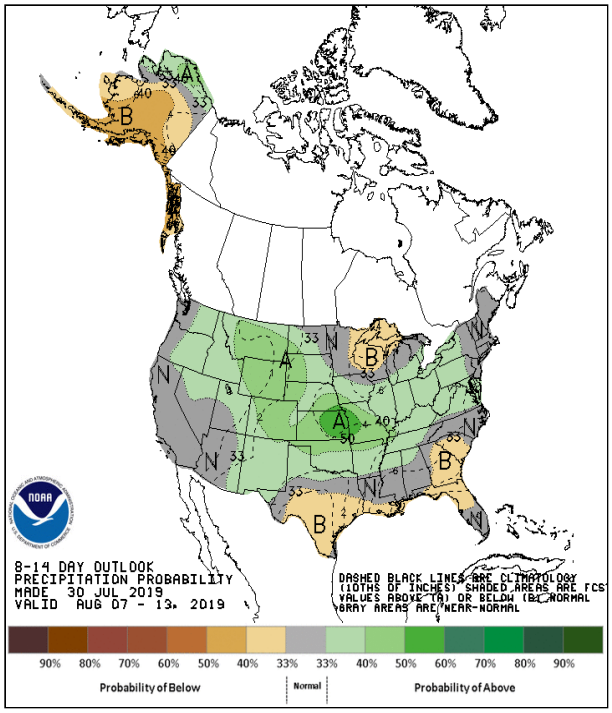
Walsenburg, southern CO

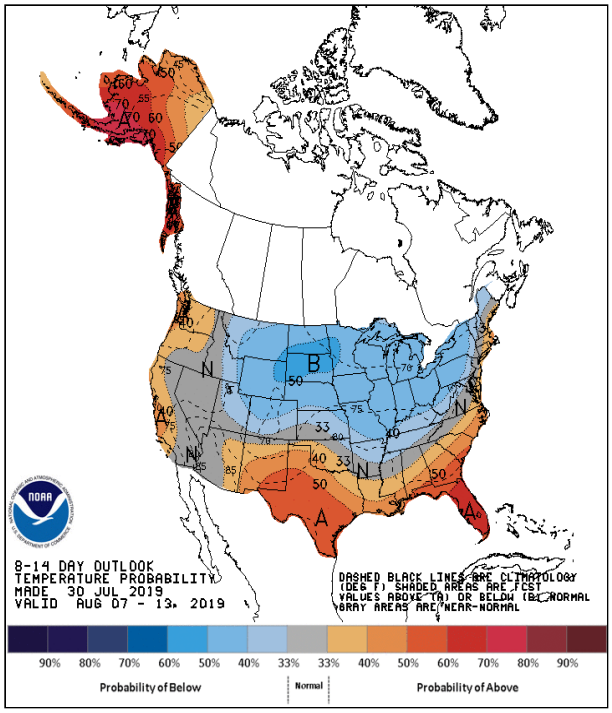
Conditions have become "pretty crunchy" over the last 10-14 days. It's been dry, windy, and hot from central Las Animas County and north toward Walsenburg (and to the foothills). There's been movement in grazing because growth has stopped, and some people have begun hauling water for the livestock. Something to keep an eye on.

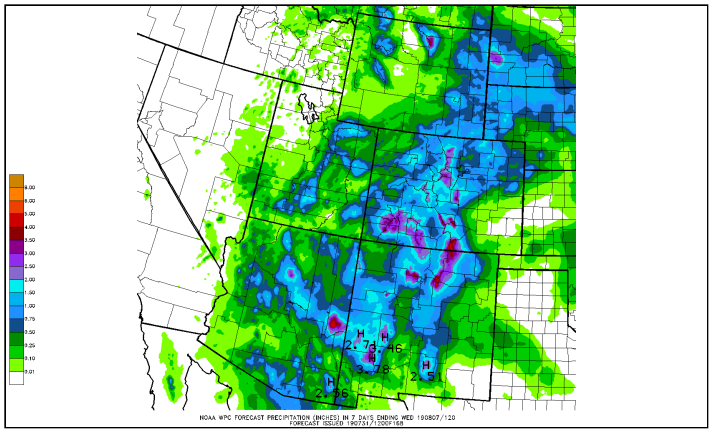
Kiowa County, CO FSA

Conditions lately have been drying out, but Eads did get about .2" last Monday night. The western half of Kiowa County is drier. Wheat harvest is in full swing and wheat yields are looking very good, with yield reports well above average this year.

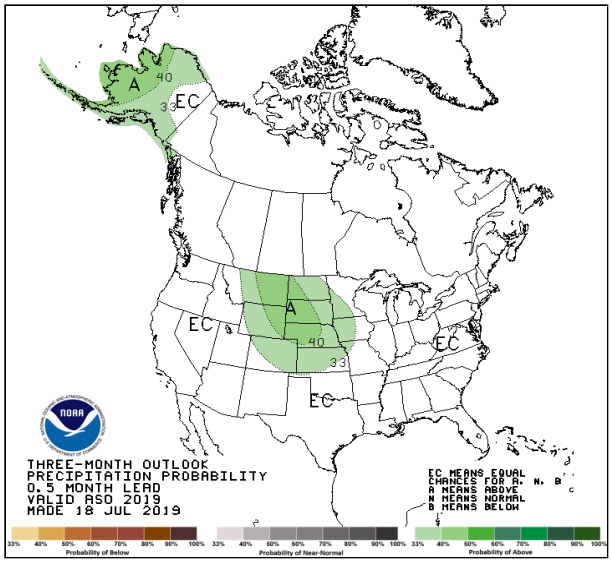
Outlook

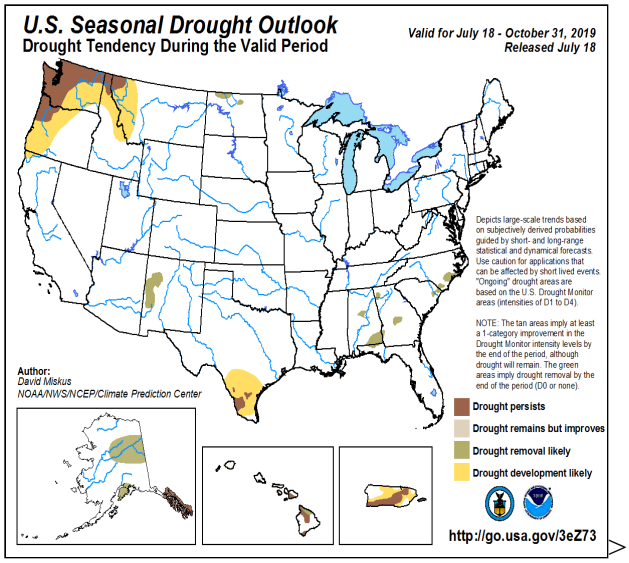




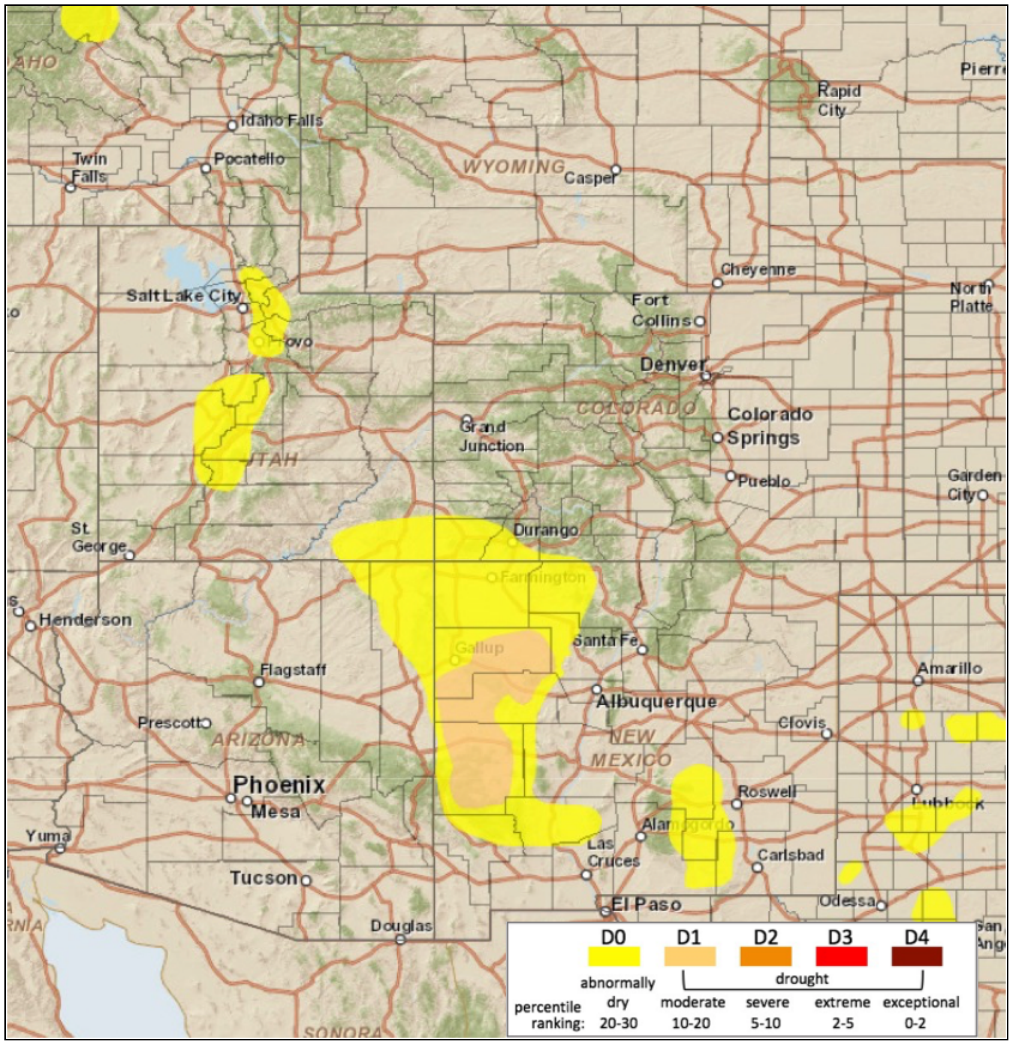


The top two images show Climate Prediction Center's Precipitation and Temperature outlooks for 8 - 14 days. The middle image shows the Weather Prediction Center's Quantitative Precipitation Forecast accumulation for seven days. The bottom left image shows the 3-month precipitation outlook from Climate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

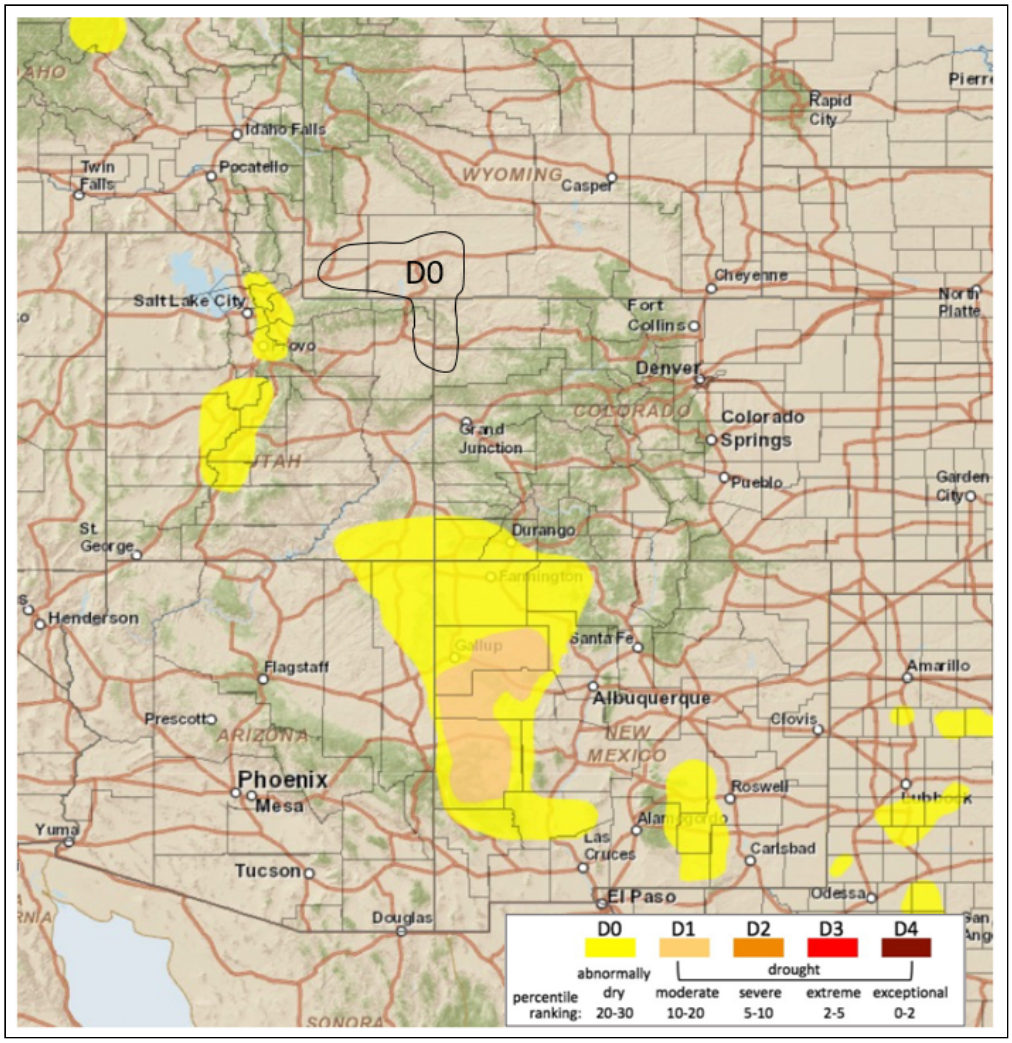




Summary and Recommendations



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 30, 2019

Much of the Intermountain West (IMW) has experienced a mid-summer lull in precipitation. July in the IMW has also mostly been on the hotter side of normal. This heat has increased evaporative demand and plant stress. Conditions have also been particularly dry through July west of the Continental Divide. The one-month Evaporative Demand Drought Index is showing drying in southern Utah and parts of western Colorado. However, streamflows, water storage, and soil moisture continue to be better than normal in most areas thanks to winter and spring. Thus, we are weighing short-term conditions vs long-term conditions.

It is also worth noting that relief may be on its way. The monsoon appears to be kicking into gear as moist air is being advected from the tropical Pacific into the IMW. Dewpoints in Phoenix are forecast to reach into the upper 60's, possibly lower 70's the later half of this week. This moisture should spread across a good chunk of the IMW. 7-day forecast calls for a slightly cooler temperature pattern with at least a half inch of precipitation likely across the high elevations of Arizona, Colorado and Utah. The San Juans and Sangre de Cristos are likely to see areas of 2.00+" of rainfall. East of the Rockies, there will also be a number of days with potential for scattered thunderstorms. The Climate Prediction Center is suggesting an increased likelihood of above normal precipitation over the IMW during the 8-14-day time frame. Cooler than average temperatures are more likely than normal for the northern half of the IMW over this same time frame.

Recommendations:

Eastern CO: Status quo is recommended. There are a few dry patches here. 90-day SPIs are showing some bottom 30th percentile conditions in Yuma County and Bent County. Crop impact reports have remained largely positive. Corn is still behind by several weeks due to planting delays from our cold, wet May. Other crops are coming up nicely.

UCRB: An expansion of D0 is recommended for northern Utah, extreme northwest Colorado, and southwest Wyoming. We are recommending these changes for areas where one month EDDI is high, three month EDDI is no lower than 20th percentile, and where 60-day SPIs are bottom 30th percentile. We are keeping this expansion off of the high terrain for now. These areas receive more of their normal precipitation allotments in winter, which was excellent. Rangeland grazing conditions are likely to be impacted by the recent hot, dry conditions.