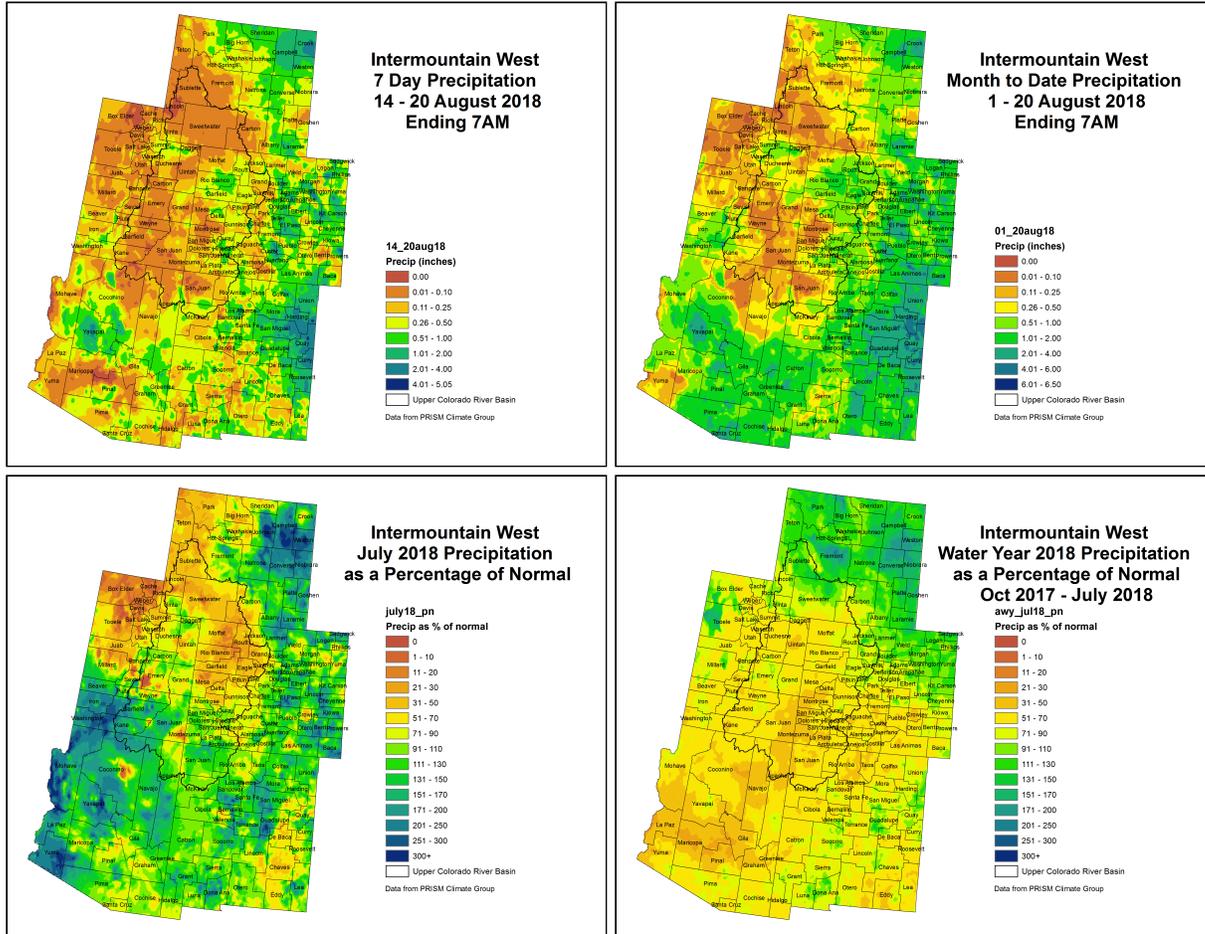


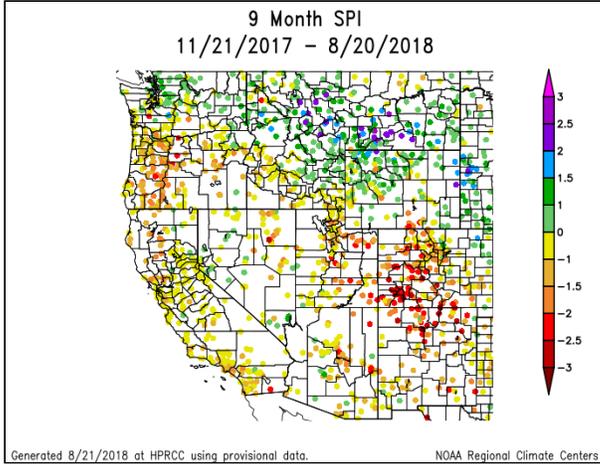
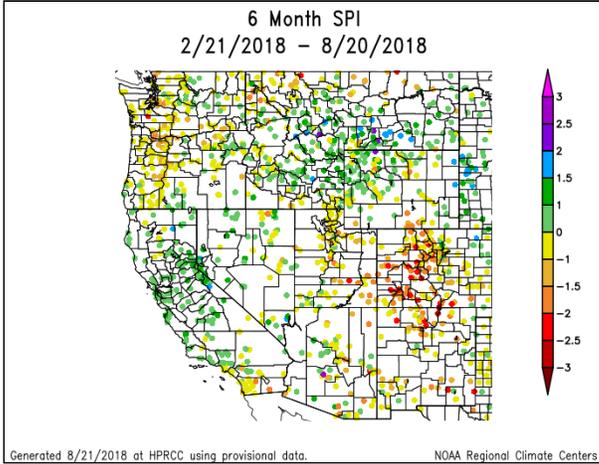
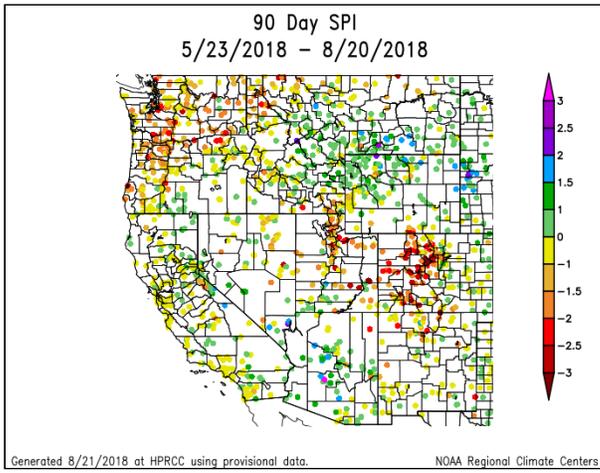
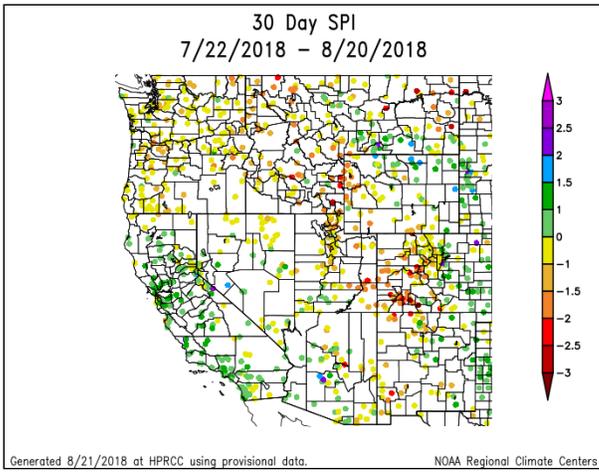
# NIDIS Intermountain West Drought Early Warning System August 21, 2018

## 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.

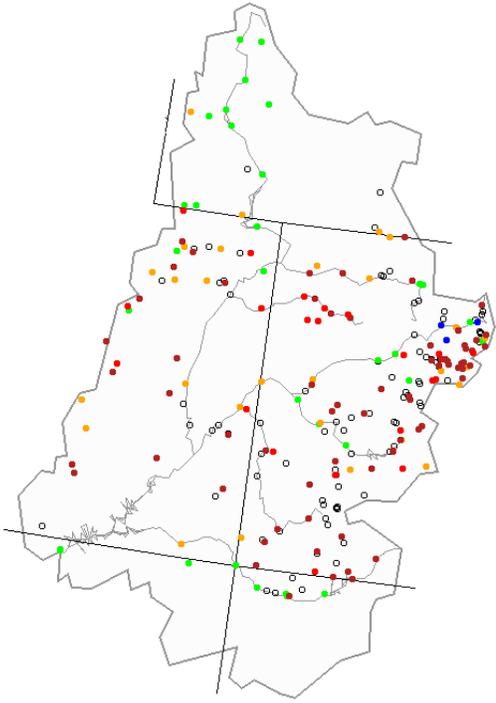
## Standardized Precipitation Index



Standardized Precipitation Index standardizes precipitation accumulations for a specified time period into percentile rankings. -1.0 to -1.5 is equivalent to a D1 to D2. -1.5 to -2.0 is equivalent to a D2 to D3. -2.0 and worse is equivalent to a D3 to D4. 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

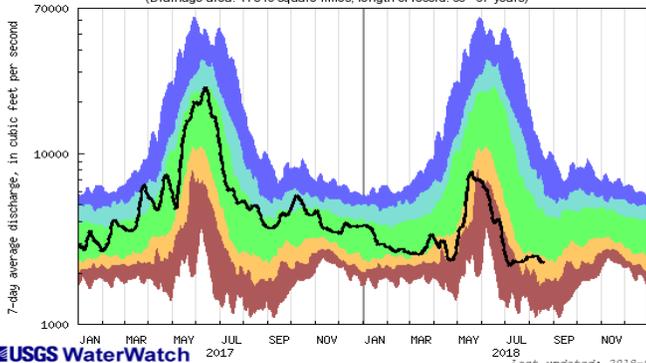
Monday, August 20, 2018



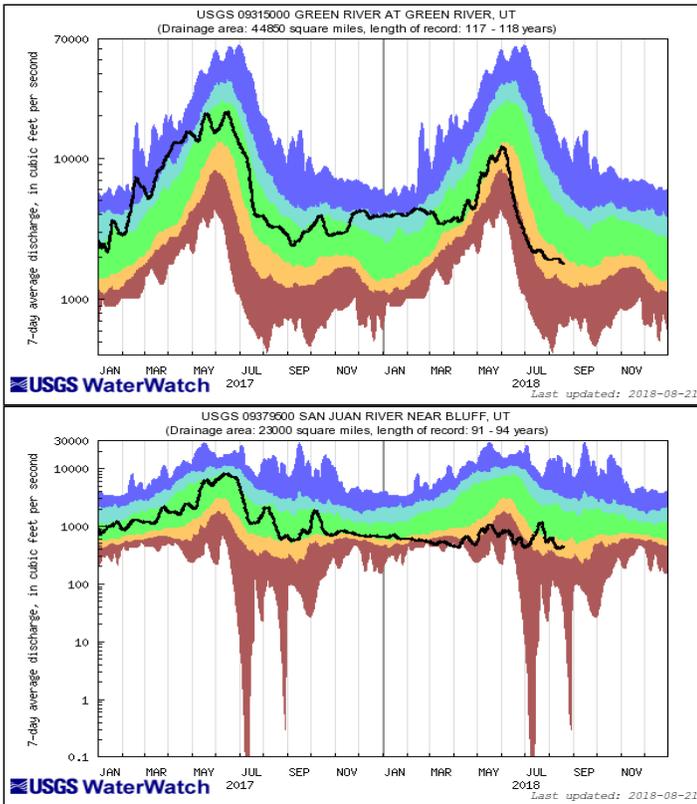
Explanation - Percentile classes							
<span style="color: red;">●</span>	<span style="color: orange;">●</span>	<span style="color: green;">●</span>	<span style="color: cyan;">●</span>	<span style="color: blue;">●</span>	<span style="color: black;">●</span>	<span style="color: black;">○</span>	
Low	<10	10-24	25-75	76-90	>90	High	Not-ranked
	Much below normal	Below normal	Normal	Above normal	Much above normal		



USGS 09163500 COLORADO RIVER NEAR COLORADO-UTAH STATE LINE  
(Drainage area: 17849 square miles, length of record: 66 - 67 years)

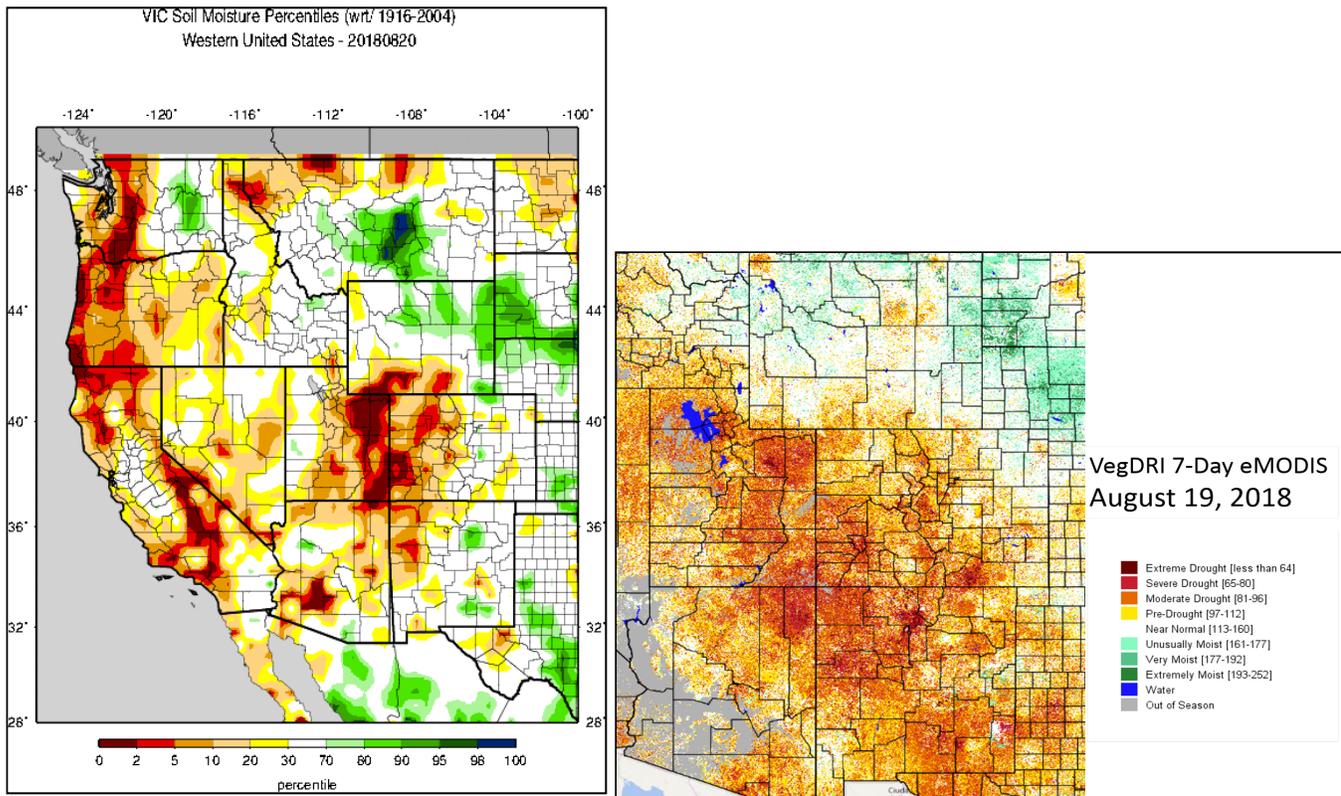


Last updated: 2018-08-21



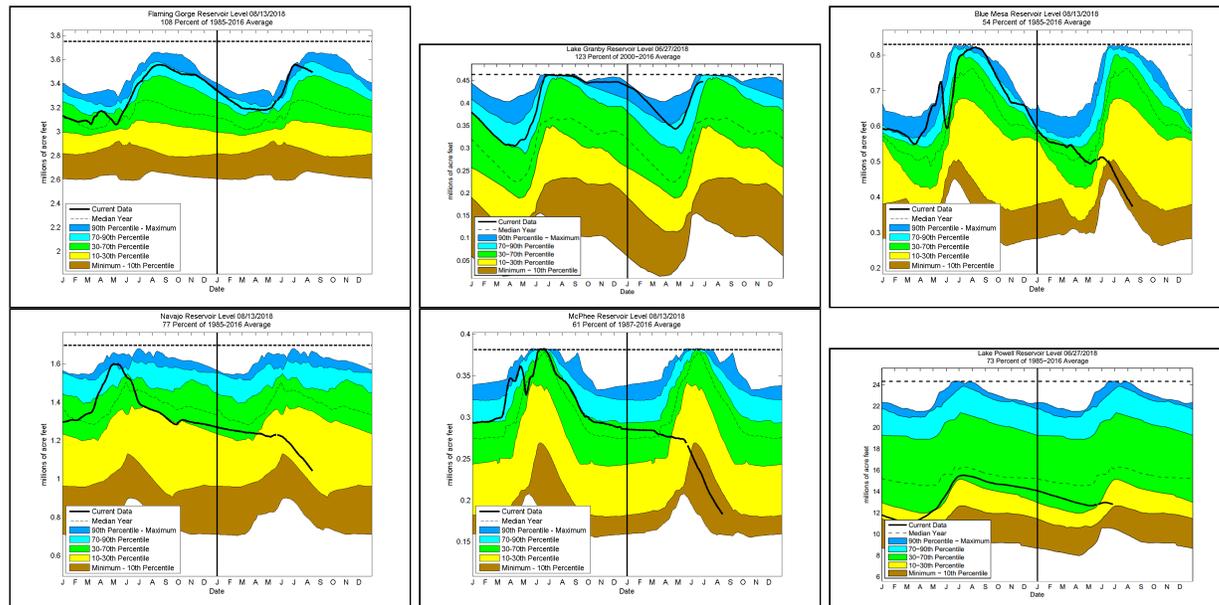
The top left image shows 7-day averaged streamflows as a percentile ranking across the UCRB. The top right image shows 7-day averaged discharge over time at three key sites around the UCRB: The Colorado River at the CO-UT state line; the Green River at Green River, UT; and the San Juan River near Bluff,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

## Surface Water

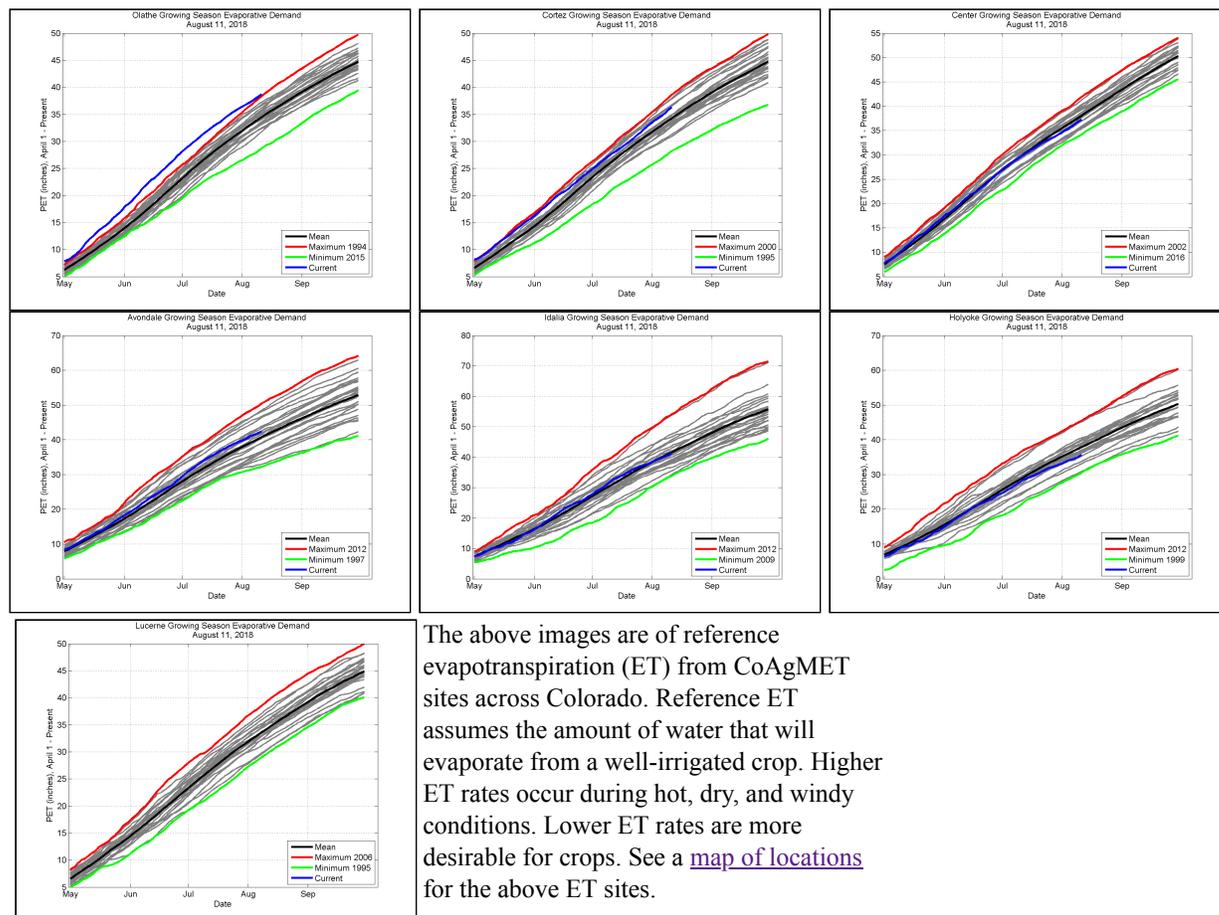


The top left image shows VIC modeled soil moisture as a percentile ranking. The top right image shows satellite-derived vegetation from the VegDRI product (which updates on Mondays).

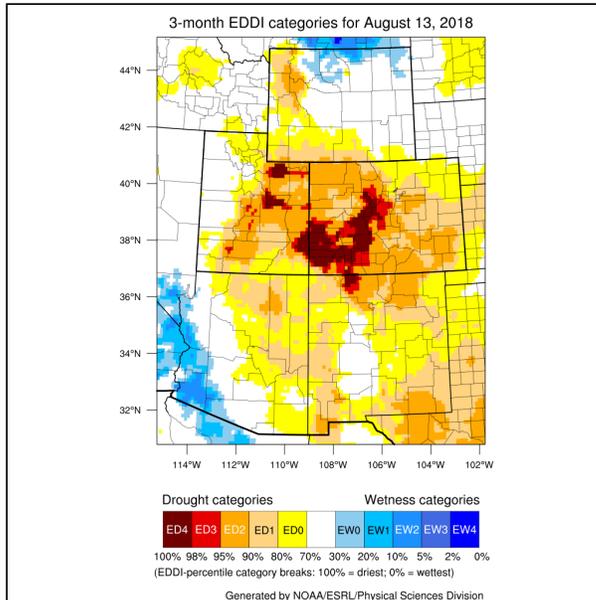
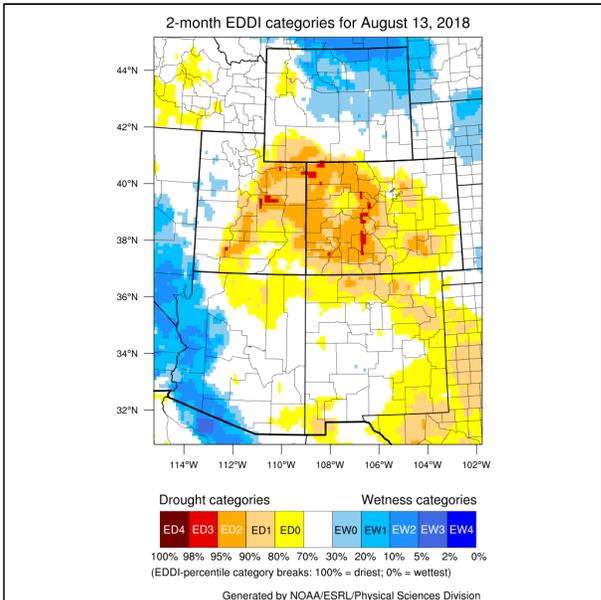
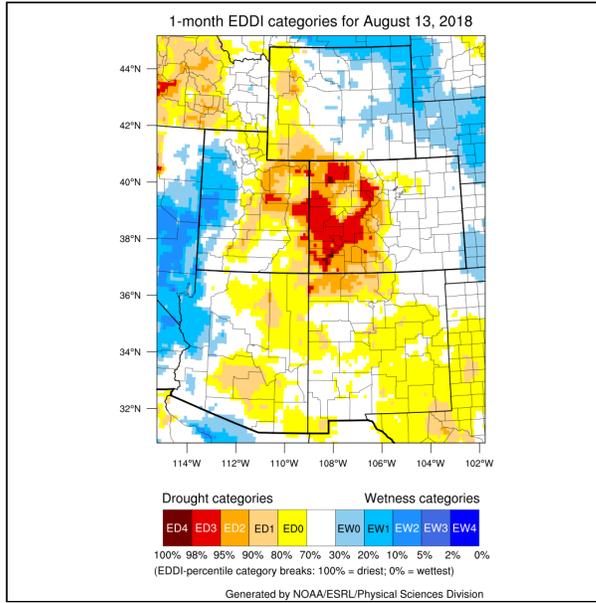
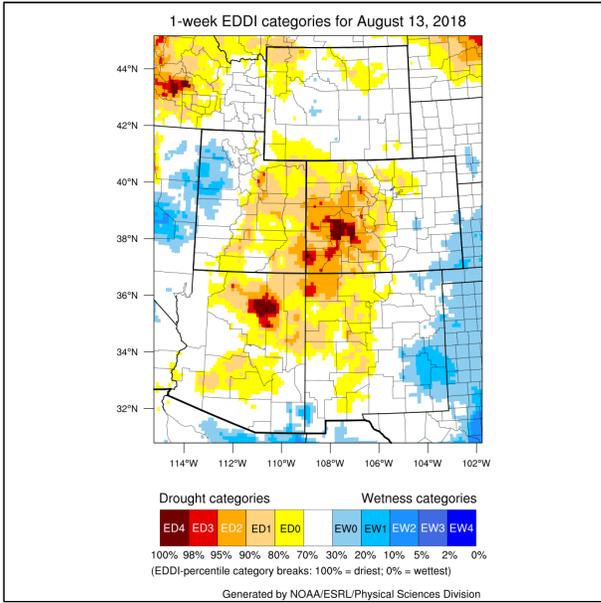
The graphs shown below are plots of reservoir volumes over the past full year and current year date (black). The dashed line at the top of each graphic indicates the reservoir's capacity, and the background color-coded shading provides context for the range of reservoir levels observed over the past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

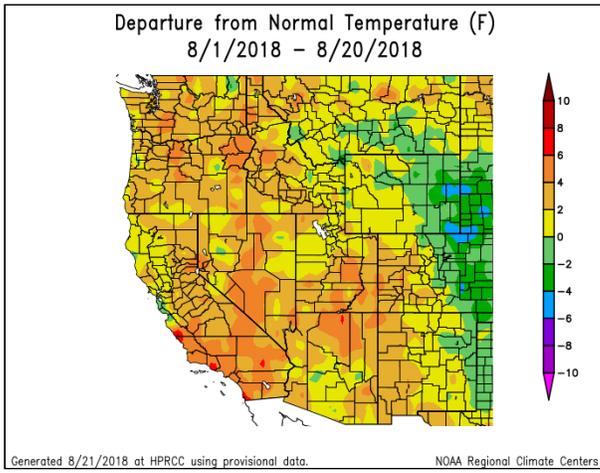
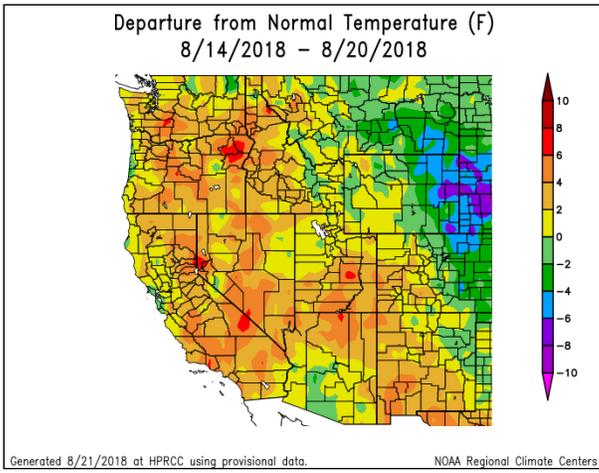


The above images are of reference evapotranspiration (ET) from CoAgMET sites across Colorado. Reference ET assumes the amount of water that will evaporate from a well-irrigated crop. Higher ET rates occur during hot, dry, and windy conditions. Lower ET rates are more desirable for crops. See a [map of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

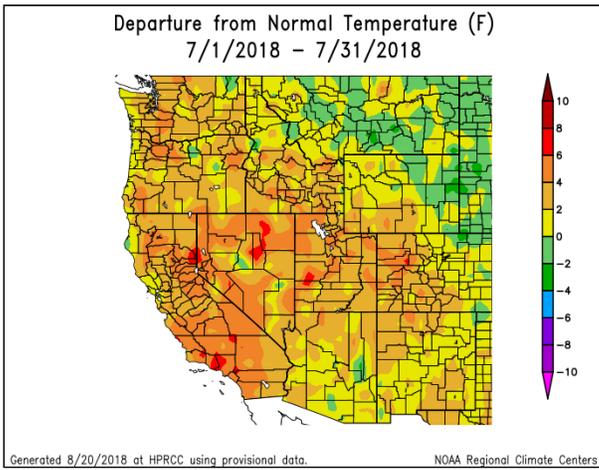


The above images are available courtesy of NOAA's Evaporative Demand Drought Index (EDDI). Drought classification listed is a function of the depth of reference evapotranspiration accumulated over a given period of record with respect to a climatology of 1981-2010. The drought categories displayed are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

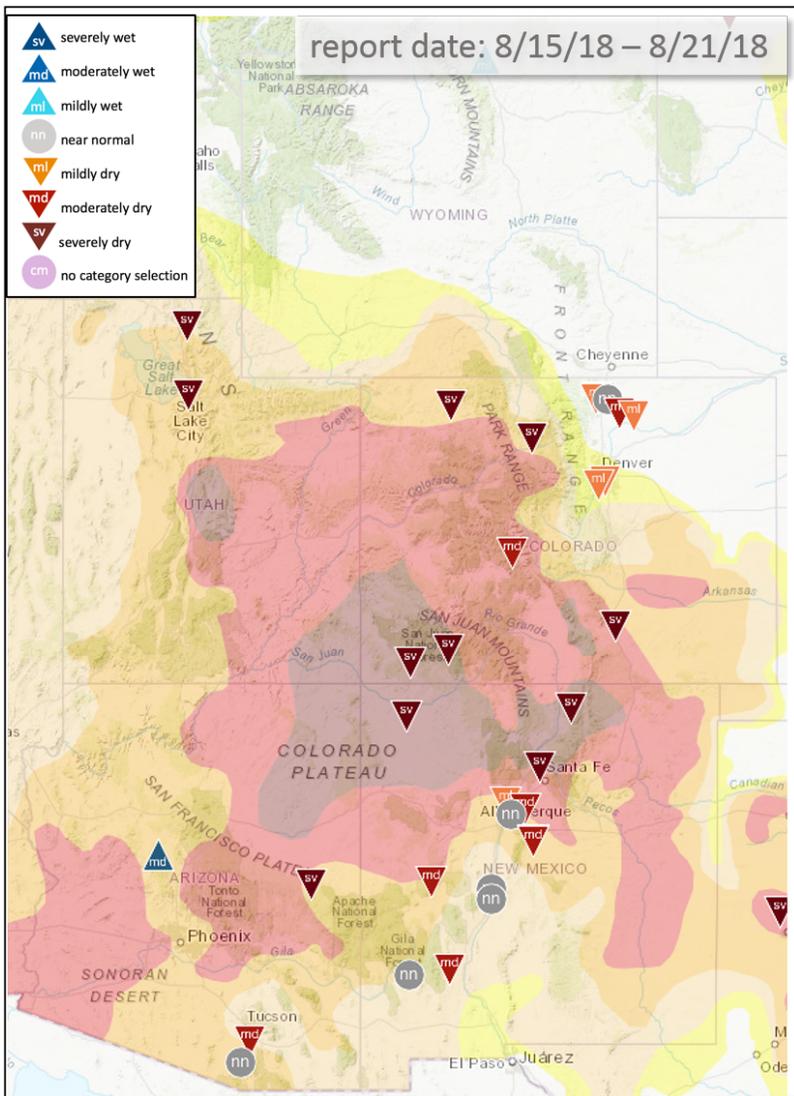
## Temperature



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.

## Southeast CO

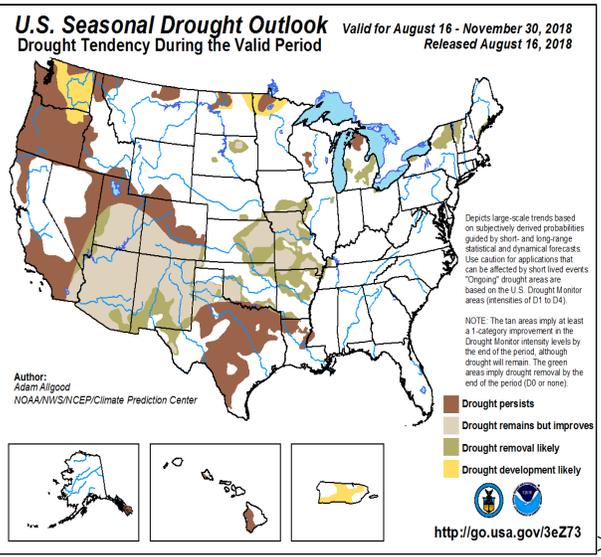
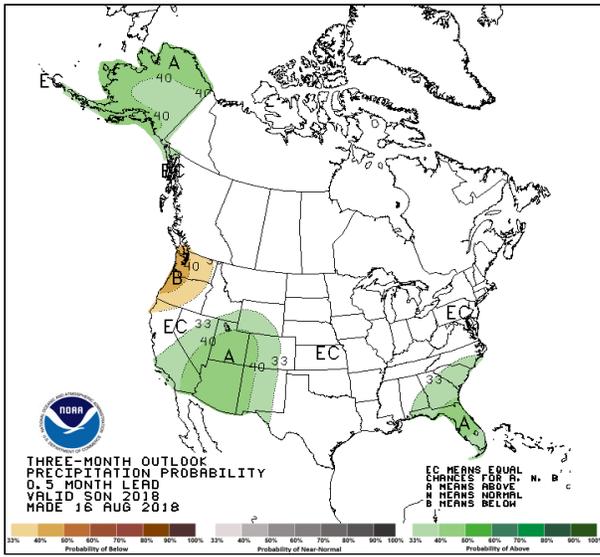
Driving down I-25, I observed fairly green conditions around Colorado Springs. As I headed further south, I began to notice a drying gradient as I passed south of Fountain. Grasses were yellow, soil was dry and dusty. South of Pueblo it was worse. Very poor conditions driving along the highway around Walsenburg and entering into Las Animas County. Streams were very low, widespread yellow and brown fields. I was also able to head up north along Highway 71 from Rocky Ford to Limon. Vegetation conditions in and around Crowley County were dreadful. What grass was there was dead or brown. Large areas of trees looked like the middle of winter. Widespread patches of dirt where there should be grasses. There was an improving gradient as I drove through Lincoln County. On I-70, I did observe some yellow grasses and slight dryness going through Elbert and Arapahoe counties. - Becky Bolinger

National Weather Service report that streams are pretty low, despite some of the "normal" range percentages on the map.

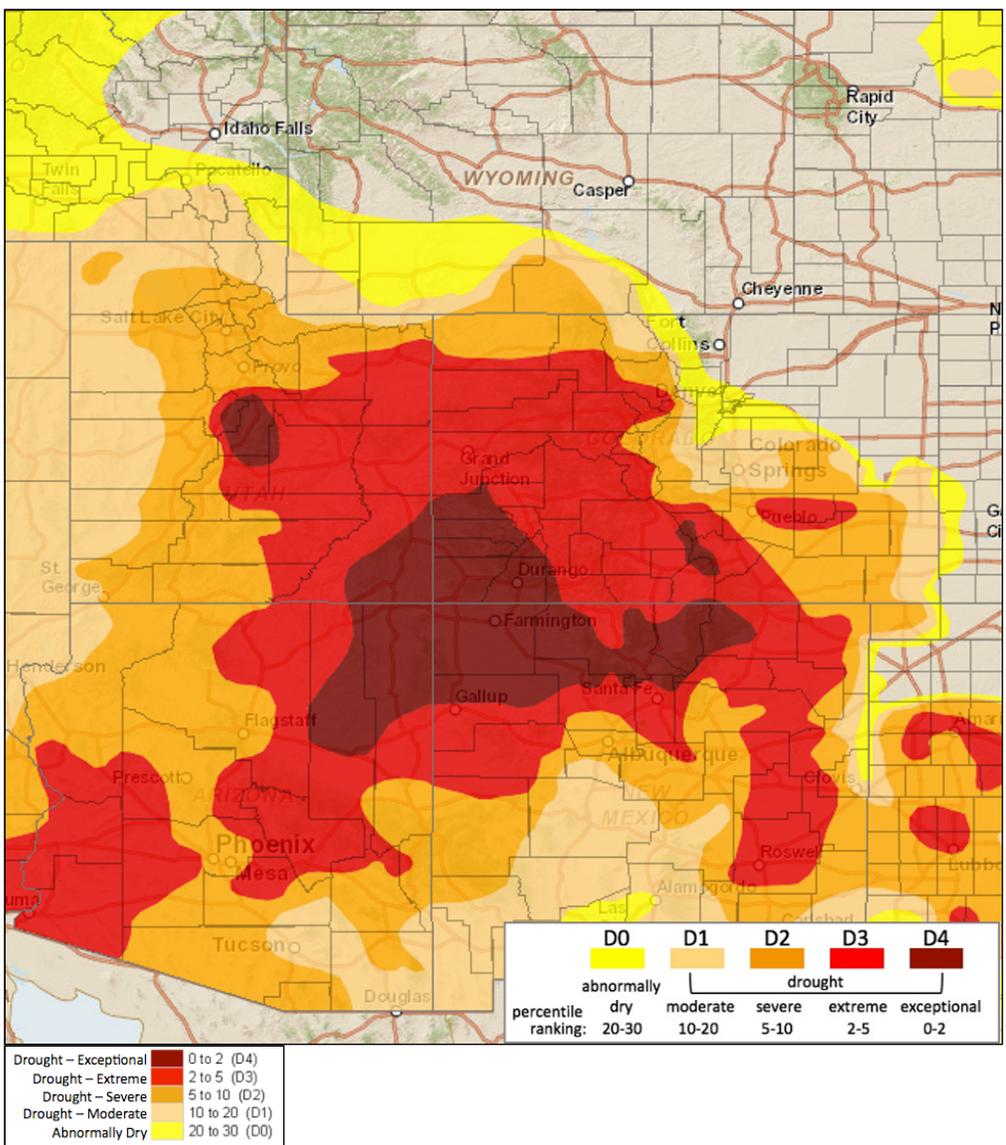
## Western CO

In the Upper Gunnison, a couple of gauges in the Taylor River region are reporting record low flows. Extremely dry. USGS reports that many of the near normal flows in the UCRB are the result of management and downstream of reservoirs. Colorado Parks and Wildlife have been reporting anomalously warm water temperatures and fish populations have been suffering.

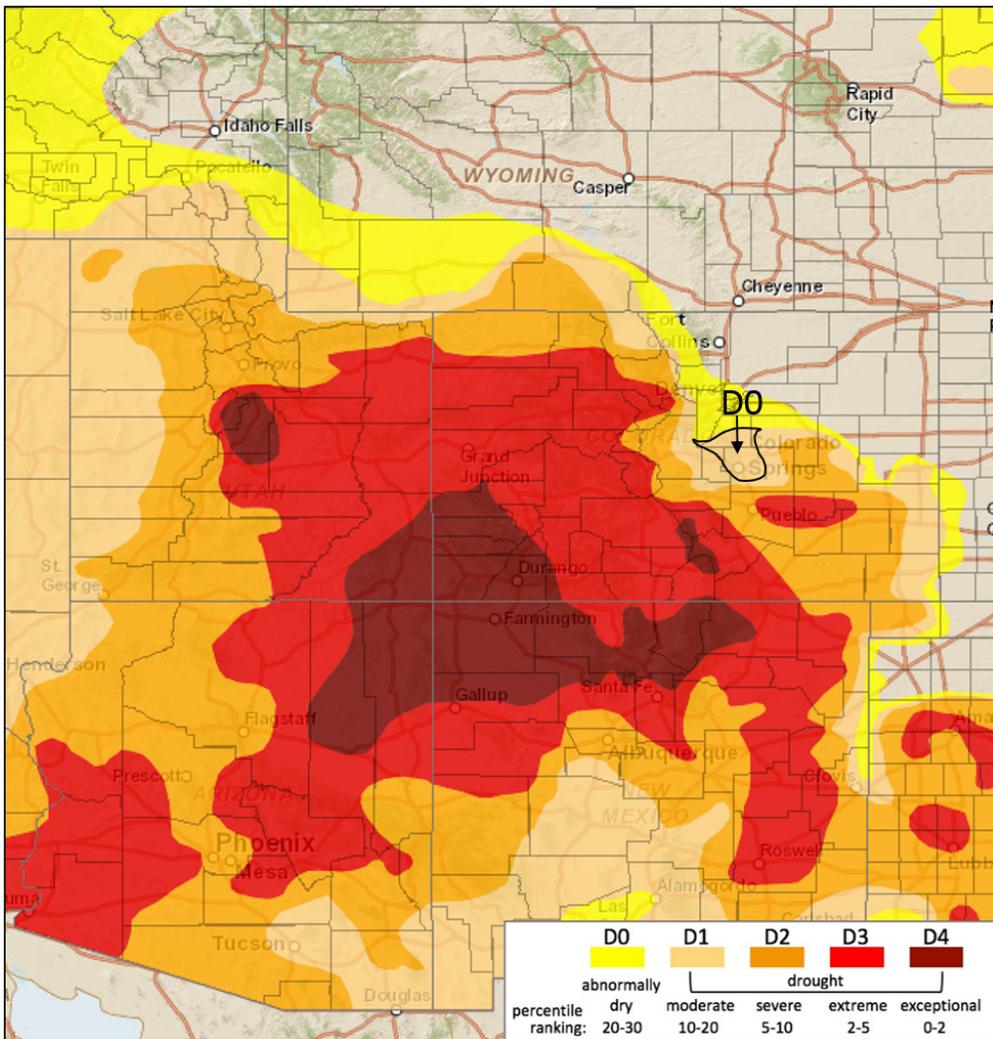




## Summary and Recommendations



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 21, 2018

Last week was dry for much of the Intermountain West Region, seeing less than 0.25" of precipitation. The exception was eastern Colorado, where spotty storms dropped up to 2", with isolated areas up over 2". Areas that missed out in eastern CO were along the Arkansas River, southern Elbert County, Weld, Logan and eastern Washington County, with amounts of less than 0.50". Northeastern New Mexico also saw some great precipitation, with amounts up to 4.00".

The dryness in the UCRB continues to take a toll on the streamflow, with over 75% of gauges showing below normal or lower flows, the majority of those are in the much below normal category (less than 10th percentile).

Temperatures over the last week and August to date were above normal in the UCRB and near or below normal in eastern Wyoming, Colorado and New Mexico. The temperatures are reflective in the Evaporative Demand, with the western portion of the IMW Region showing above average demand and normal demand in the eastern portion of the region for the same time period. The 2 and 3 month evaporative demand shows above normal demand extends into eastern Colorado.

The forecast for the next 7 days is favorable for precipitation in western Colorado, western New Mexico, much of Arizona and central Utah. Let us hope this forecast pans out and brings some much needed rain to the area. The

8-14 day forecast is favoring below normal precipitation and warmer than normal temperatures for much of the region.

The freshly released 3-month outlook for September - November from the Climate Prediction Center is showing enhanced probabilities for above normal precipitation for Arizona, Utah and western Colorado and New Mexico. This outlook is consistent with the probability of El Nino development.

**Recommendations:**

**USBR:** Status quo for this week. Last week D3 was extended into Northwest Colorado. This seems to be a good depiction.

**Eastern CO:** Reduction of D1 in El Paso and Douglas counties is being recommended. This area has seen multiple storms over the past few weeks, dropping 1"-4" this month. SPIs in El Paso County out to the 90-day are positive and are in the D0 category for the longer term.

An argument can be made to remove the D4 in the Sangre de Cristo mountains of Colorado, between Custer, Huerfano, Saguache, Alamosa and Costilla counties. Snotel precipitation percentiles are just out of the D4 category and SPIs are mostly in the D2/D3 for both short and long term. However, August precipitation has been lower in this area and the deficits that were accumulated were quite large thanks to record low snowfall leading to record low snowpack. Therefore, the recommendation is to leave the D4 in place.

The D3 in the Arkansas valley is recommended to stay. While indicators show D2, on the ground reports (see Impact Reports page) still indicate prolonged impacts that should justify the D3.