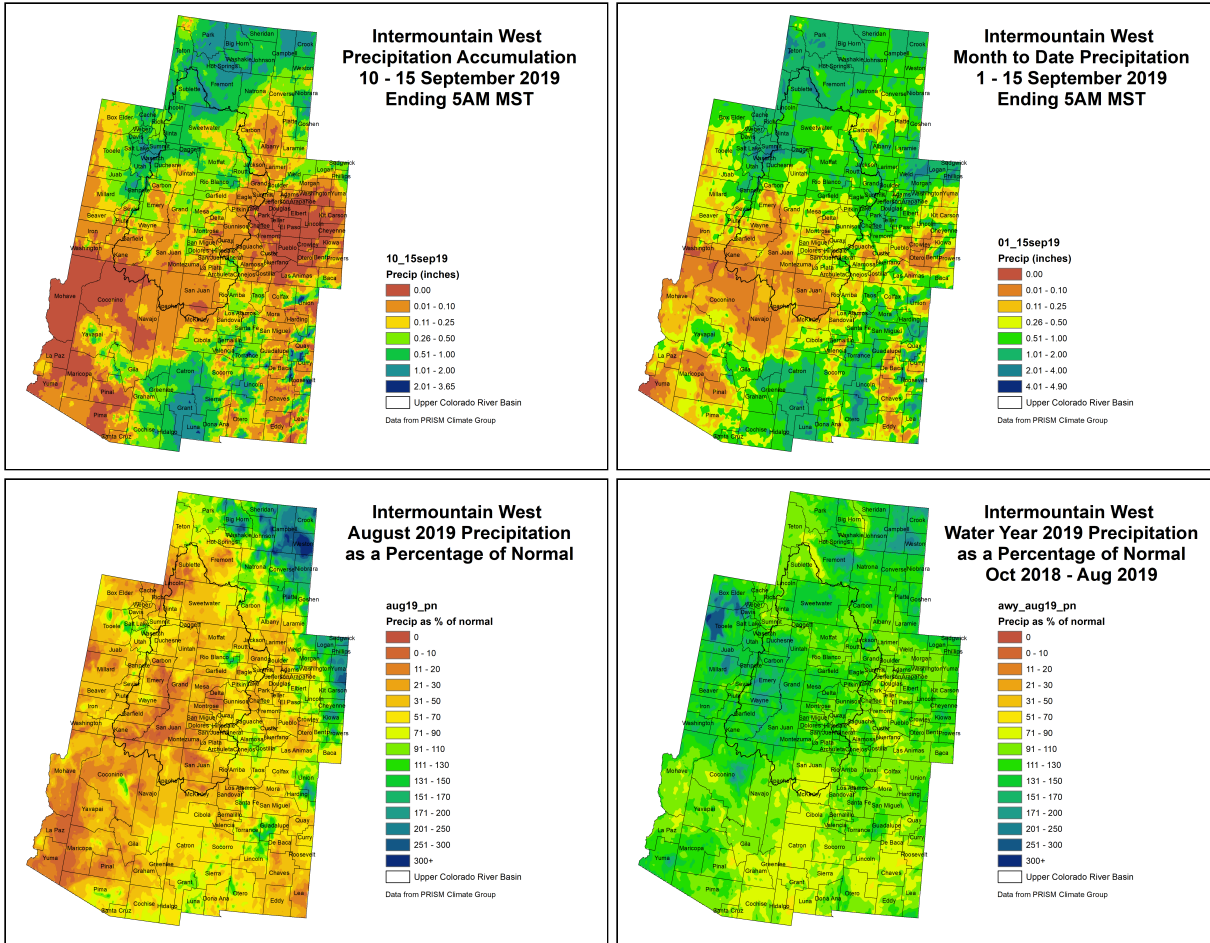


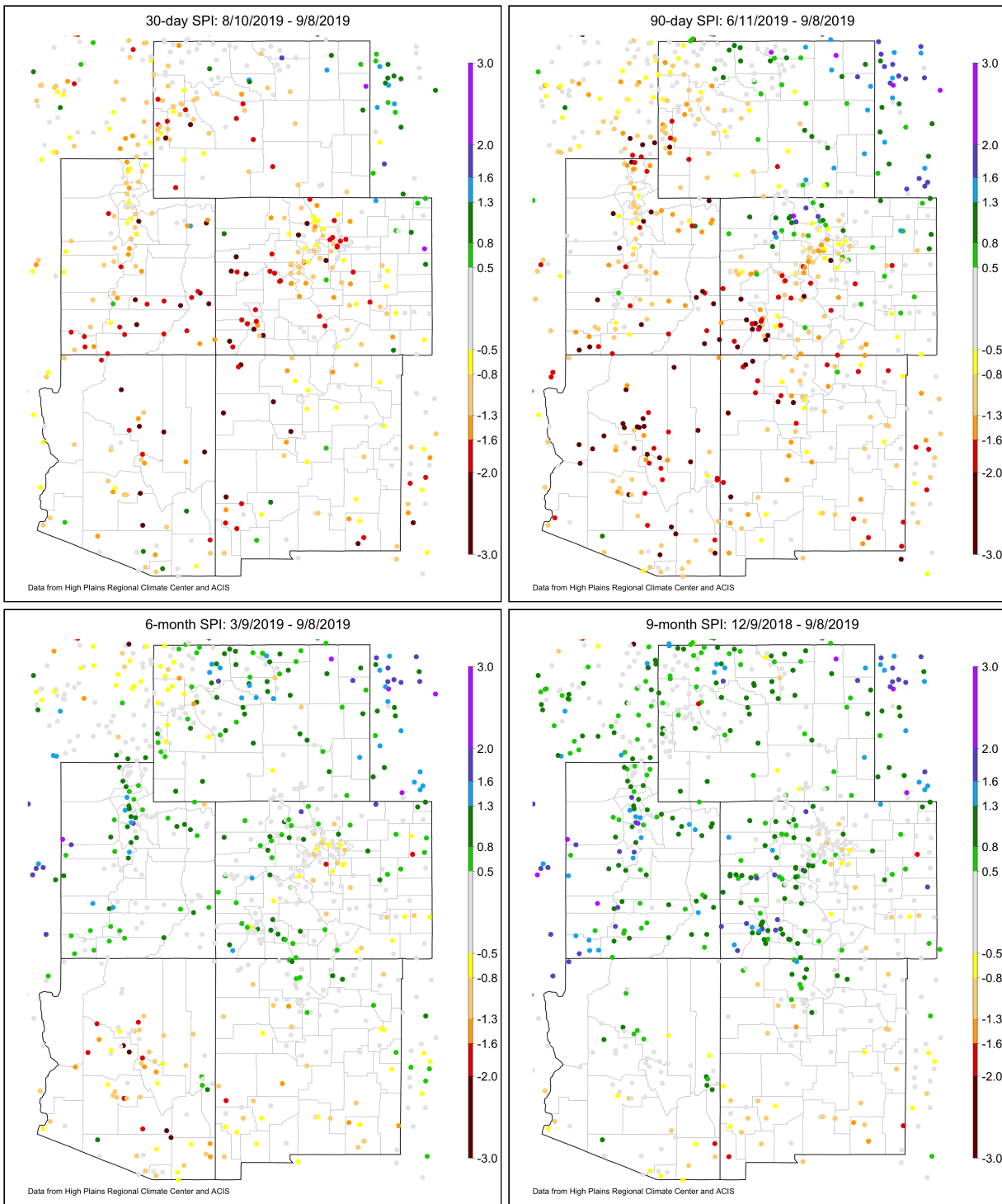
# NIDIS Intermountain West Drought Early Warning System September 17, 2019

## 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.

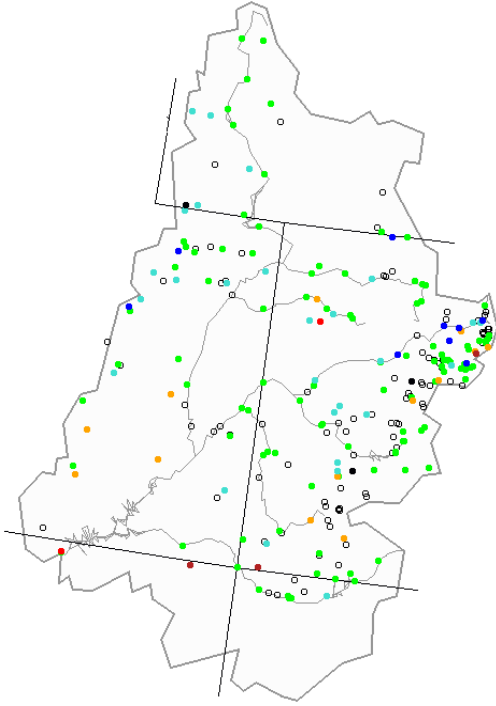
## Standardized Precipitation Index



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

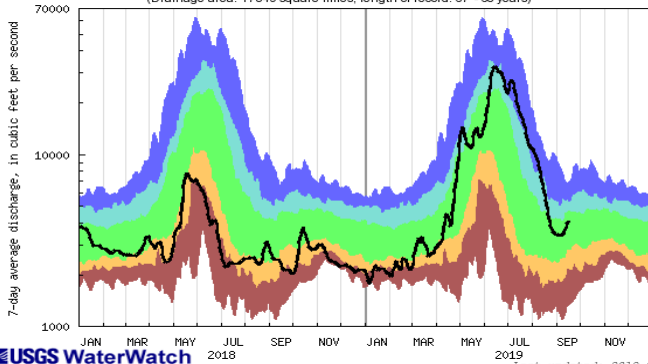
Tuesday, September 17, 2019



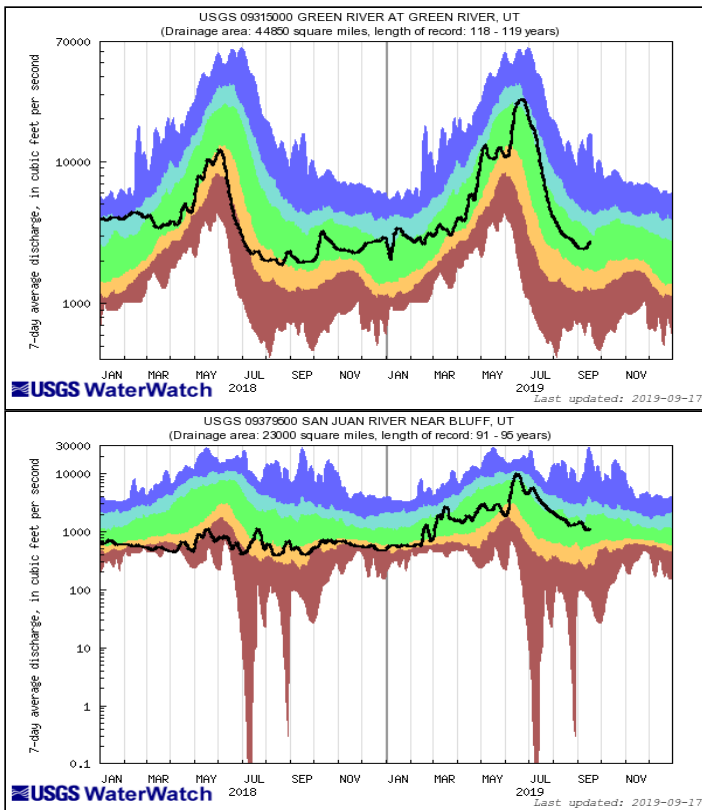
Explanation - Percentile classes

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

USGS 09163500 COLORADO RIVER NEAR COLORADO-UTAH STATE LINE  
(Drainage area: 17849 square miles, length of record: 67 - 68 years)

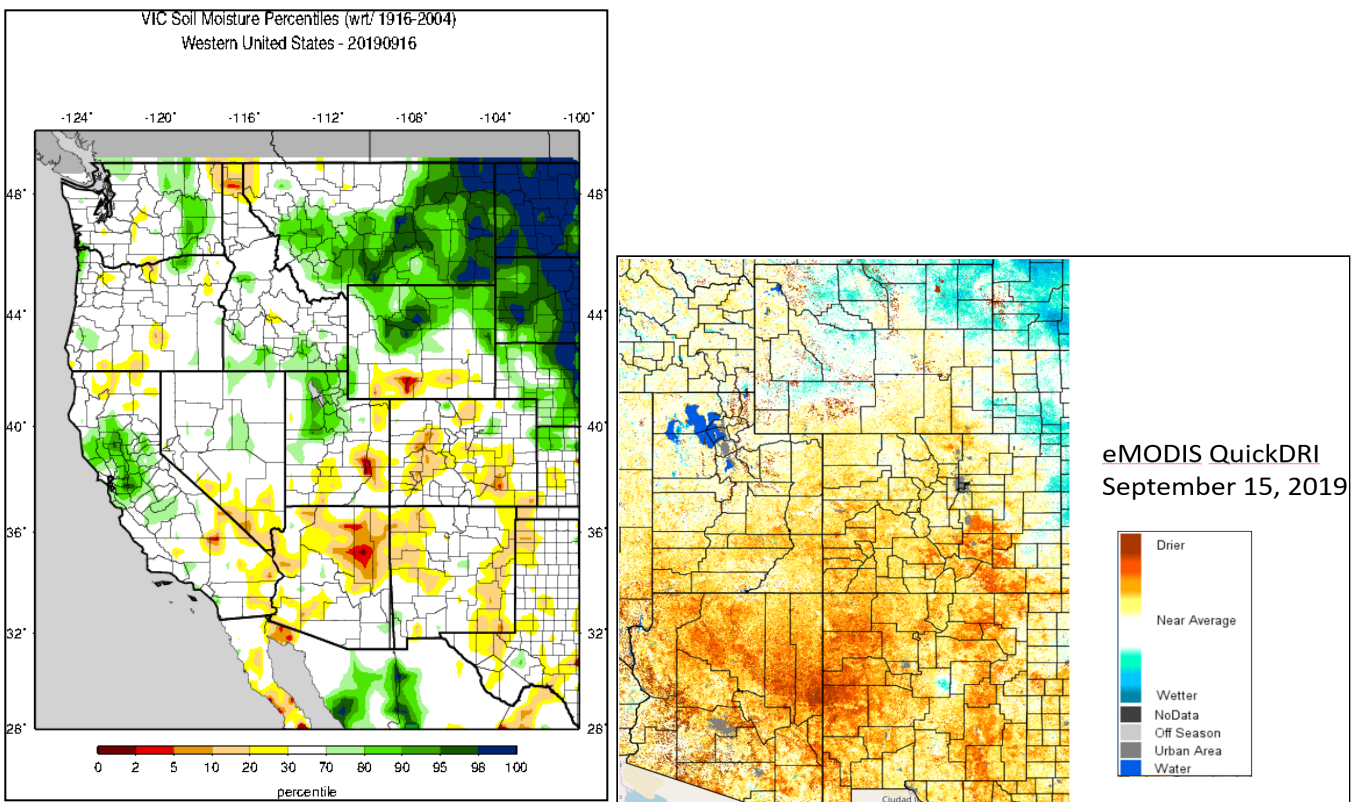


Last updated: 2019-09-17



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.

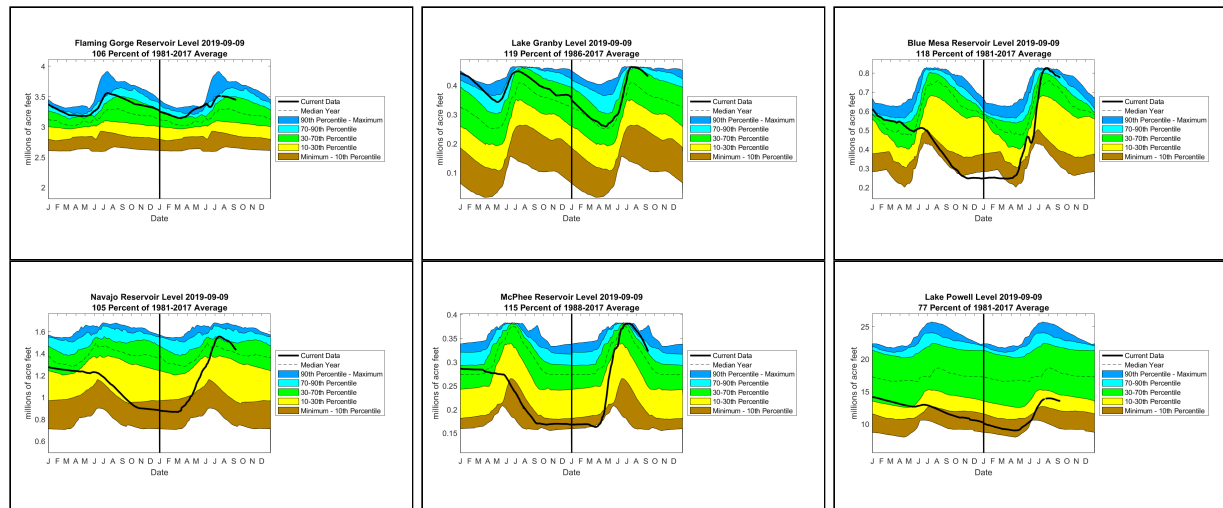
## Surface Water



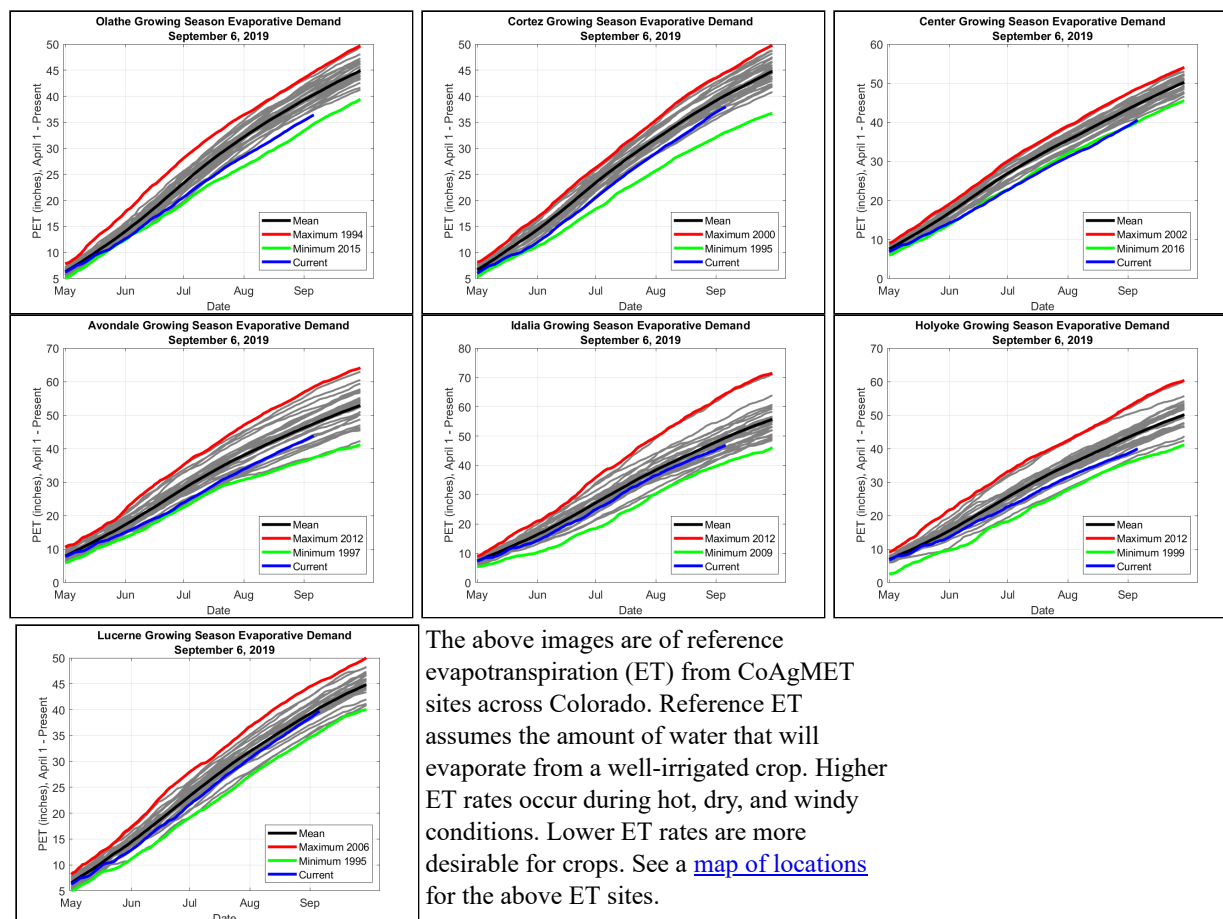
The top left image shows VIC modeled soil moisture as a percentile ranking. The top right image shows satellite-derived vegetation from the VegDRI product (which updates on Mondays).



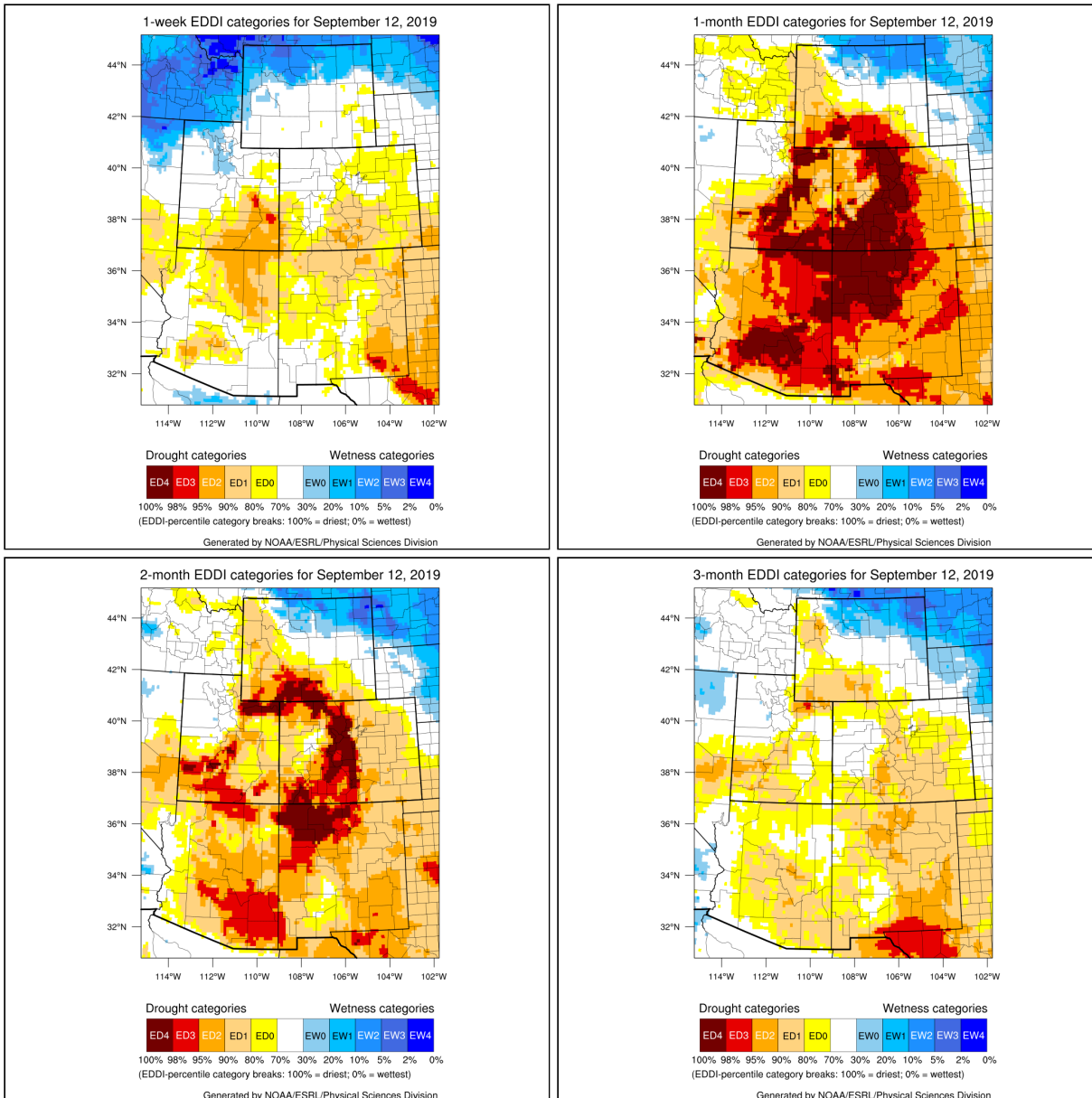
The graphs shown below are plots of reservoir volumes over the past full year and current year to date (black). The dashed line at the top of each graphic indicates the reservoir's capacity, and the background color-coded shading provides context for the range of reservoir levels observed over the past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

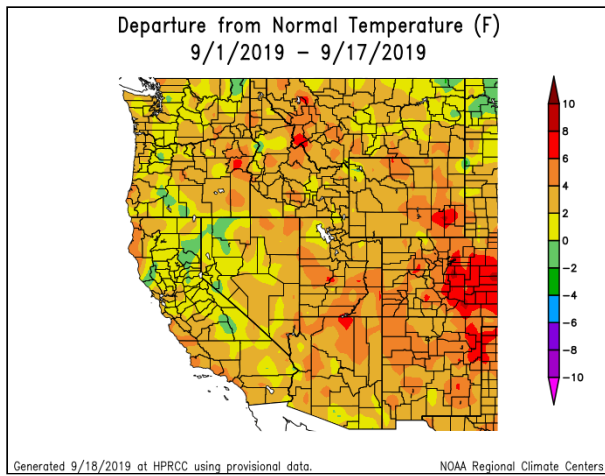
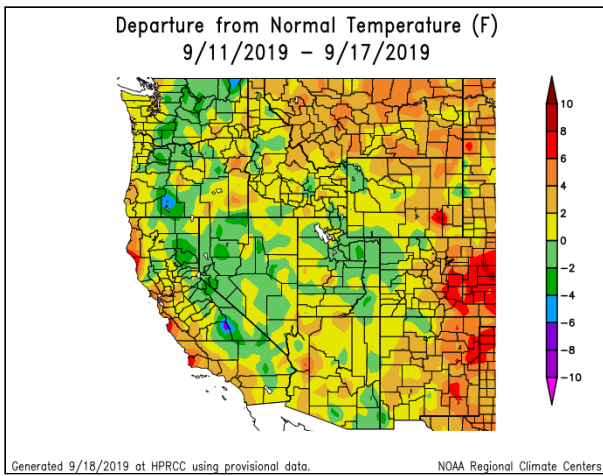


The above images are of reference evapotranspiration (ET) from CoAgMET sites across Colorado. Reference ET assumes the amount of water that will evaporate from a well-irrigated crop. Higher ET rates occur during hot, dry, and windy conditions. Lower ET rates are more desirable for crops. See a [map of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

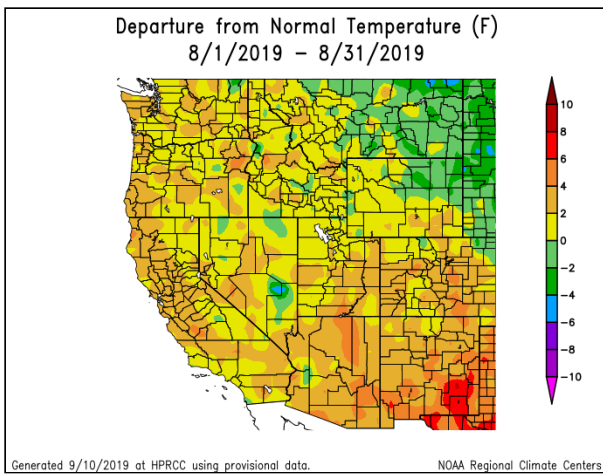


The above images are available courtesy of NOAA's Evaporative Demand Drought Index (EDDI). Drought classification listed is a function of the depth of reference evapotranspiration accumulated over a given period of record with respect to a climatology of 1981-2010. The drought categories displayed are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

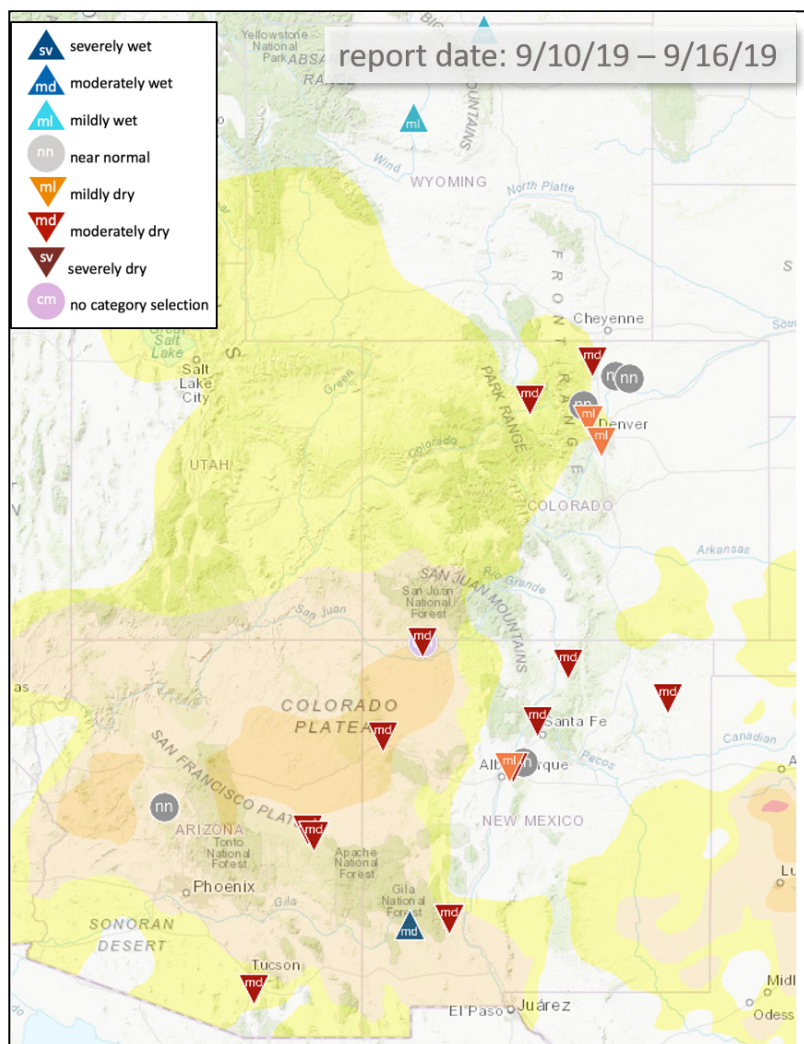
# Temperature



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



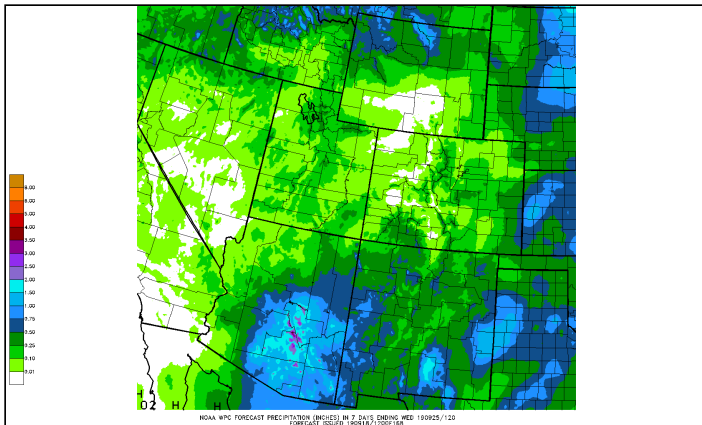
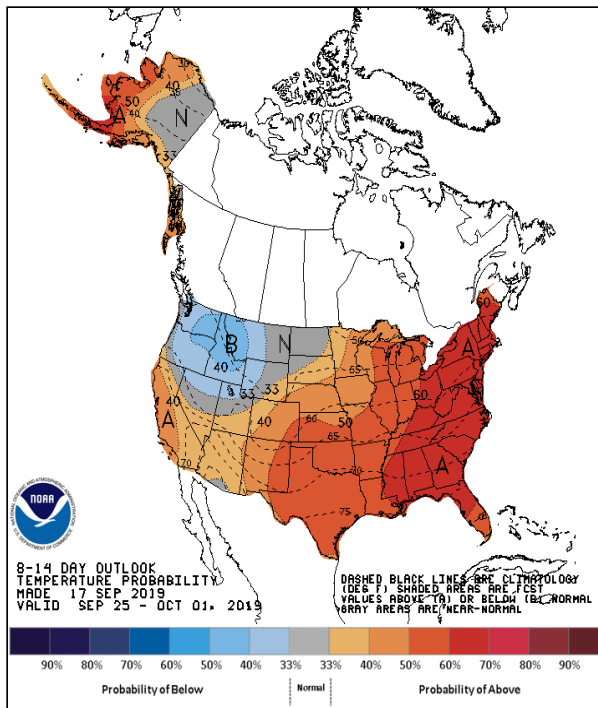
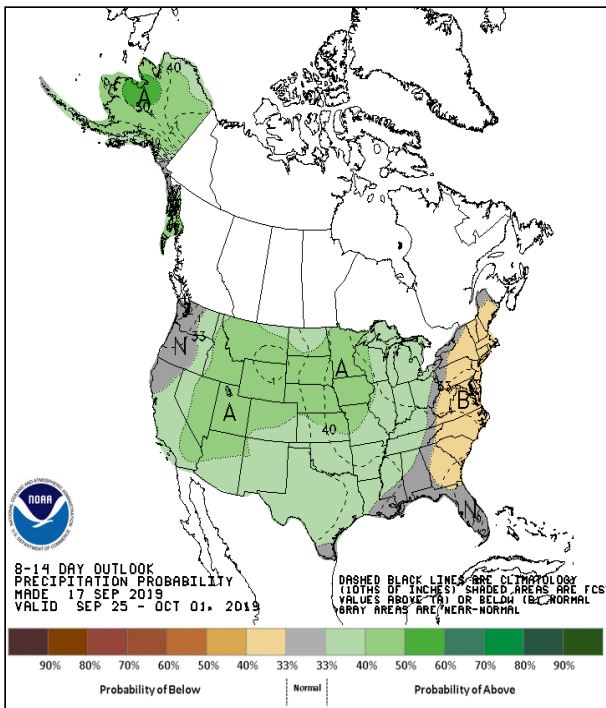
Map of current condition monitoring reports submitted to CoCoRaHS in the last week overlaid on the current U.S. Drought Monitor depiction. Specific impacts reports from local experts listed below.

### Impacts in Salt Lake City area:

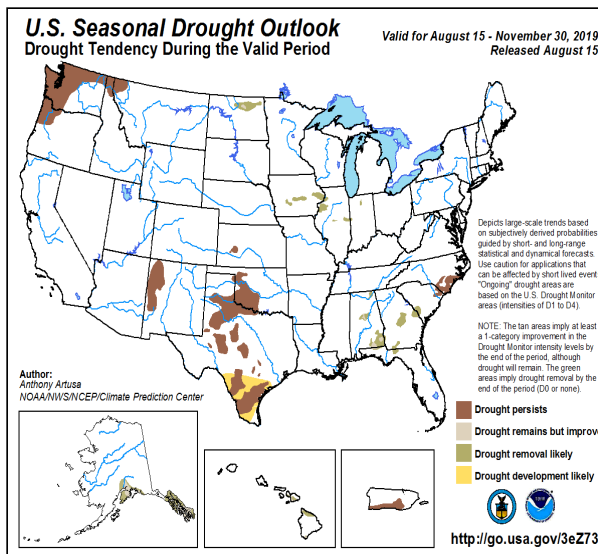
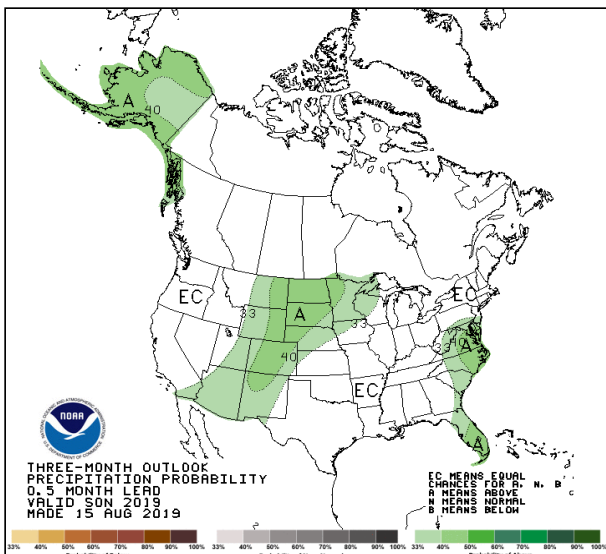
We had some very strong thunderstorms move through Salt Lake County last Tuesday and are forecasted to receive more precipitation tonight and tomorrow. On Tuesday, 0.81” of rain was recorded at SLC International Airport and 1.32” at Alta. So far in Salt Lake City, we have seen 1.11” of rain compared to an average of 0.52”. The Wasatch Mountains in Salt Lake County and Summit County have also seen well above average amounts of rain this month. Alta has received 2.46” this month (1.32” average) and Park City has received 1.25”, so far in September, which is just a little below the record of 1.36” in 2006 through September 15th.

Observationally, conditions in the forests of the Wasatch Mountains in Salt Lake County are finally starting to noticeably moisten.

## Outlook

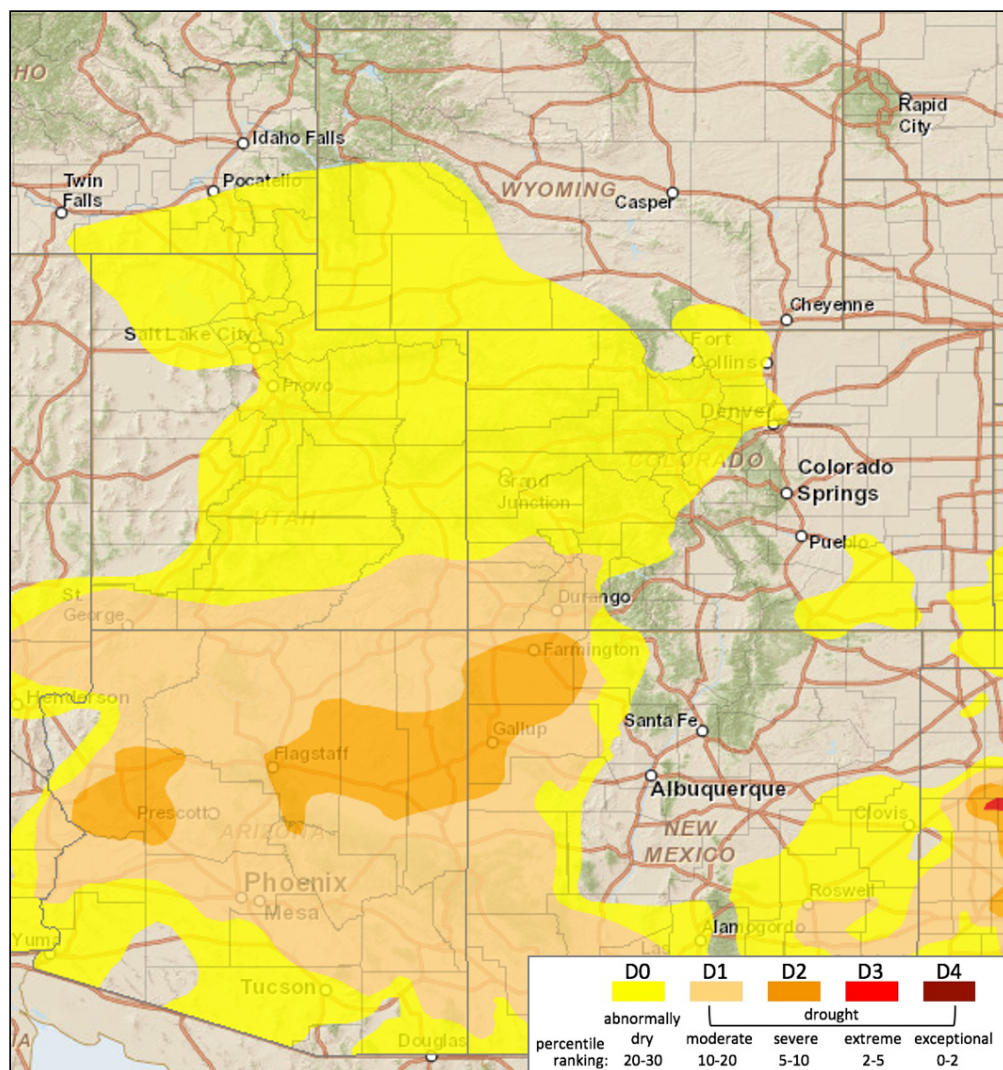


The top two images show Climate Prediction Center's Precipitation and Temperature outlooks for 8 - 14 days. The middle image shows the Weather Prediction Center's Quantitative Precipitation Forecast accumulation for seven days. The bottom left image shows the 3-month precipitation outlook from Climate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



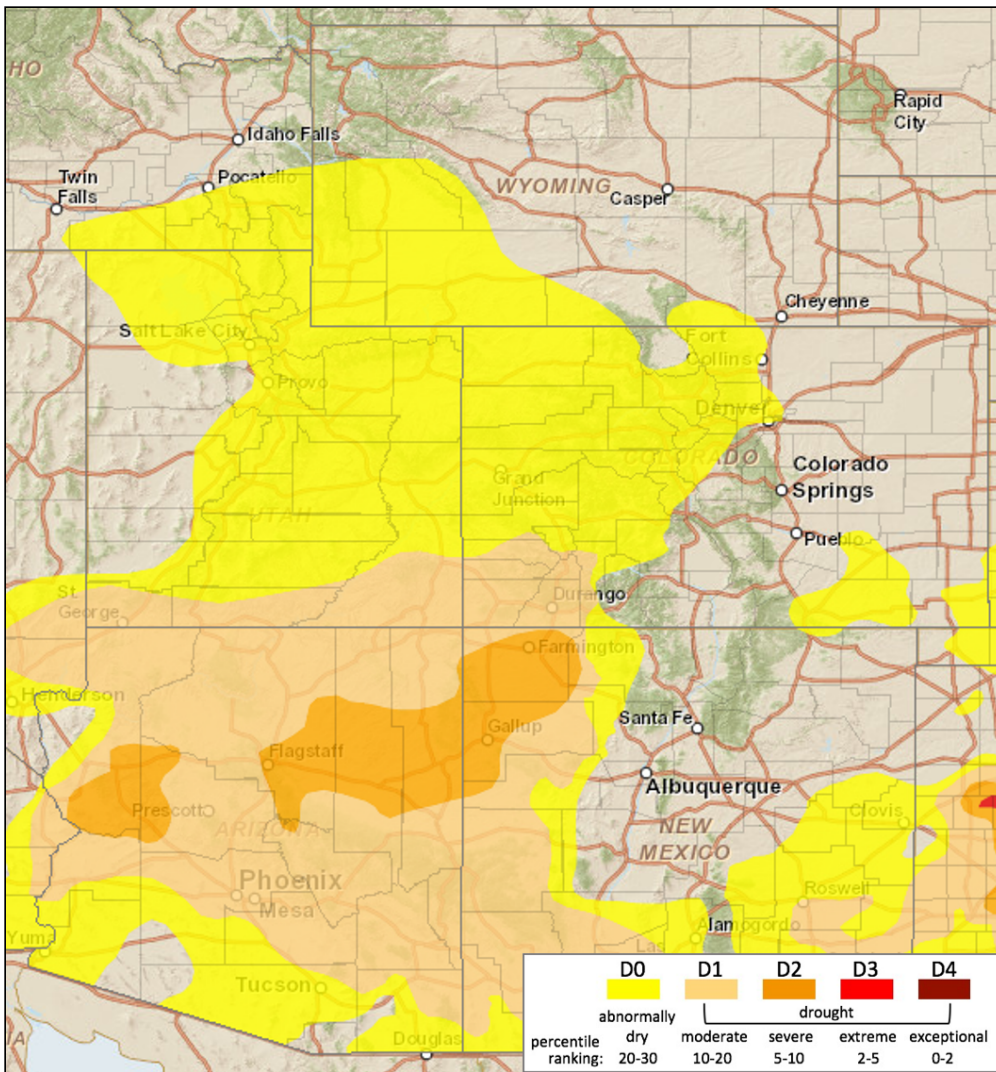


# Summary and Recommendations



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: September 17, 2019

The last week in the Intermountain West region saw some precipitation in Wyoming and northern Utah and southern New Mexico and dry through the rest of the region. Northern and southwestern Wyoming saw between 0.50 and 2.00" last week, with the higher amounts to the north. North-central Utah also saw precipitation amounts up to 2.00", and drier through the rest of the state seeing less than 0.25". Colorado was mostly shut out of precipitation seeing less than 0.10" over much of the state. Far northeastern and northwestern Colorado did see some precipitation amounts between 0.25" and 0.50".

Despite the dryness in the region, temperatures in Utah, western Colorado and Wyoming were slightly cooler than average for this time of year. Eastern Colorado and New Mexico continued to see much warmer than normal temperatures for this time of year, while Arizona was near average for the last week.

The lower temperatures helped the evaporative demand in the western portion of the region. Helping to slightly ease the dry impacts. Areas in Wyoming and Utah that saw precipitation are still seeing high evaporative demand over the last month, keeping the improvements from the recent precipitation to a minimum.

The 7-day outlook is hinting at some precipitation in western Colorado and northern Utah and a more precipitation in northern Wyoming. The rest of the region looks spotty. Temperatures should be starting to cool off this week.

### **Recommendations:**

**UCRB:** Status quo. I thought about extending the D1 in southwest Utah and southeast Colorado further north, but looking closer this area is slightly better than further south in the Four Corners area. If precip doesn't come in the next few weeks, I would definitely say D1 will be justified. If there are any strong feelings this week, I'm happy to make that degradation. If the USDM Author decides to degrade this area, I probably wouldn't stop that from happening.

I also toyed with the idea of bringing D0 into the San Luis Valley, but the last 30-days haven't been too bad and there might be some precip coming this week, possibly even today. So I will hold off.

Areas around Salt Lake have seen some good precip amounts and improvements could be made in the coming weeks.

**Eastern Colorado:** Status quo. Southeast Colorado continues to be dry in parts, but the last week wasn't dry enough to force additional degradations.