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.
**Snotel and Snowpack**

The above image shows SNOTEL snowpack percentiles for each SNOTEL site in the Intermountain West. The images below show accumulated snow water equivalent in inches (green) compared to average (blue) and last year (red) for several different sub-basins across the UCRB (and were created by the Colorado Basin River Forecast Center).

**Streamflow**

https://climate.colostate.edu/~drought/current_assessment.php
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

![Evaporative Demand Charts]

Generated by NOAA/ESRL, Physical Sciences Division
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.

https://climate.colostate.edu/~drought/current_assessment.php
Utah:

Condition Monitoring report of very dry soils and no planting moisture available for the fall wheat. Cattle are not putting on as much weight as they should because there's a lack of new fall growth available for them.

Colorado:

Condition Monitoring reports mention dry and blowing dust conditions. South facing slopes losing their snowpack. Some hauling of water mentioned.

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: November 12, 2019

Last week, widespread precipitation fell across central New Mexico and Arizona and throughout much of Wyoming, while leaving the central portion of the Intermountain West dry in Utah and Colorado. Following a record-cold October for much of the IMW region, last week larger portions saw near to slightly above average temperatures.

While the cold October was helpful in delaying exacerbating drought severity, continued dryness across the Four Corners region and extending north into Utah and Colorado, continues to be a growing concern. With a dry summer and poor performing monsoon, extremely dry conditions extend back to 120 days, with widespread 120-day SPIs below -2. For lower elevations that don't benefit as much from the stellar spring snows and runoff, there is more of an immediate concern. Hydrologically, the concern isn't as large right now either, for the reservoirs are still in good condition. Streamflows ended at base flow a little lower than normal. Soils show the very poor conditions that will again come into play during the spring thaw and melt off. For the higher elevations, impacts right now aren't significant, and the rest of the snow season offers plenty of time for recovery.
There is good news for the northern and central Colorado mountains, especially with many of the ski resort areas. Well-timed snow events coupled with very cold conditions resulted in strong and early openings for the season. For much of this region, the start of the new water year is a bit of a reset. The memory of dry conditions in the summer quickly fade, with impacts and ground conditions heavily weighted toward the short-term, so the area is looking good as of now.

**Recommendations:**

**Northern Colorado:** Based on the cold and snowy October, we recommend a 1-category improvement for areas along the blue line. Areas to the south and west would stay in their current categories. This would remove D0 from Routt, Grand, Summit, Clear Creek, Jefferson, Douglas, and Denver counties. D1 would be trimmed back in Eagle, Park, and Teller counties, and D2 would be removed from Park County. This delineation aligns well with decent WYTD SPIs and with 1-4 month SPEIs from WestWide Drought Tracker.

**Southern Colorado:** The author has proposed an eastward expansion of D2 along the CO-NM border to cover more of the Rio Grande basin and valley. Based on SPIs from 30-days out to 120-days, and modeled soil moisture conditions, this expansion is justified. The possibility of D3 is again being considered, but at this time, we recommend holding off. Consideration in the next couple weeks may come for the lower elevations (particularly in New Mexico), where the absence of monsoon moisture is much more of a factor. For the higher elevations (as you move north into Colorado), mountain snowpack dominates in terms of importance, so D3 is not as justifiable.