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.

**Snotel and Snowpack**
The above image shows sub-basin averaged snow water equivalent accumulations as a percent of average. 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).
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 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.
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: December 5, 2017

The majority of the Intermountain West is currently experiencing a warm and dry pattern, as a persistent ridge of high pressure has settled over the region. Following a decent start to the water year and snowpack season in the northern mountains (for northern Colorado, and especially for western Wyoming), snowpack accumulations have stalled. In addition to dry short-term SPIs throughout the lower elevations, both modeled soil moisture and the Evaporative Demand Drought Index show early signs of drought stress, particularly in the southern portion of the IMW.

Monthly averaged temperatures throughout the Upper Colorado River Basin were 6 to 10 degrees warmer than average for November. Warm anomalies have continued, and while we can expect some cold snaps sprinkled in (it is after all winter!), it's likely that December will be warmer than average as well. These warm temperatures (and lack of snowfall in the lower to middle elevation mountains) are limiting sufficient snowpack accumulations. Many
locations that normally show a widespread solid snow cover by this time of year are now reporting bare ground.

At this time, impacts are fairly minimal as vegetation has entered dormancy and water supplies are in good condition. At the beginning of the new year, we begin a critical time period where impacts from lack of snowpack accumulation become an increasing certainty and deficits are harder to recoup and recover from. If the warm and dry pattern continues, we could see increases in evaporative losses in the latter part of winter, further drying of soils, and an early onset to snowmelt and wildfire risk. Due to a better start to the season for the northern basins, they may be spared; but areas around the Four Corners, southwest Colorado, and eastern Utah, and south into AZ and NM will be more vulnerable to severe drought impacts.

**Recommendations**

**UCRB:** Due to widespread degradation to D1 last week, we recommend status quo this week. With warm and dry persistent conditions, we will be anticipating expansion of D1 and possible introduction of D2 in the coming weeks. But for now, the current depiction is sufficient.

**Eastern Colorado:** Status quo is recommended.