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 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).
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).

http://climate.colostate.edu/~drought/current_assessment.php
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**
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.

**Kiowa County**

Very windy in Eads with no moisture in the forecast. Surface conditions are dry.

**Otero County**

There was a fire just south of Grenada. Two fires broke out as a result of Coyote hunting. 10,000 acres were burned. In Otero County the winds are sapping what little moisture falls. Tridicale is looking more like winter wheat this time of year.

**Elbert and Douglas County**

Several thousand acres were burned over the weekend and Monday. Soils are dry down to a depth of three feet, and perhaps beyond.

**Lincoln County**

Winter wheat is blowing out of the ground. Wheat planted early where there was better soil moisture stands a chance, but wheat planted later is in bad shape.

**Montezuma County**
There is zero soil moisture in Cortez. Stock runs are being considered with ponds drying out. There's no snow at the chain-up station on the west side of Wolf Creek Pass. Moisture under 9500 feet has not improved conditions.

**Huerfano County**

Very low snow. Available water is from last year's rainfall. Some are starting to irrigate to get moisture in the ground before the start of the growing season.

**Routt, Jackson, and Larimer Counties**

Rabbit Ears Pass and Cameron pass snow depth looks similar. Usually Rabbit Ears Pass snow would be deeper this time of year. There has been enough snow to keep valleys snow covered west of Steamboat as far as the eye can see from the top of Storm Peak.

**Emery County, UT**

Milsite Reservoir was drained last year. With snowpack, and subsequent streamflow projections, so low, there is concern about having adequate drinking water for the coming warm season.

**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: March 6, 2018

A shift in the jet stream has brought slightly below average temperatures to the Upper Colorado River Basin, but marked the return of above average temperatures east of the Continental Divide, particularly on the eastern plains of Colorado. Snows fell heavy in the Tetons and the northernmost regions of the Upper Green River Basin over the last week. For the rest of the Upper Colorado River Basin, precipitation was mostly below average with a disturbance on Sunday bringing widespread totals of 0.10-0.25". East of the divide, conditions were bone dry with strong wind gusts.

Snowpack numbers improved across the Intermountain West in February, but dry conditions across much of the region are leading to % of normal snowpack numbers once again trending down. In southeast Utah, we’re seeing a dangerous combination of low snowpack, dry soils, low streamflows, and low reservoir levels. Southwest Colorado is seeing much of the same, but with better reservoir storage. Further north in the basin, snowpack is still below normal, but overall hydrologic system conditions improve.

Snowpack in the Rio Grande and Arkansas River Basins in southeast Colorado is also concerningly low at 53 and 61% of average for this time of year respectively. Soil moisture models are showing generally normal soil conditions in the Arkansas Basin, but this is directly at odds with impact reports from FSA.

As we look forward to spring, weekly snowpack accumulations will become critical for future runoff and water supply. Streamflow forecasts are below average for most of the southern basins in the IMW, and generally improve looking to the north. Temperature anomalies are always important, but have major implications this time of year. Warm anomalies could impact the timing of peak snowpack and snowmelt. If there is an early peak and no major accumulations, expect to see widespread increasing drought conditions throughout the mountains, and particularly in the southern portion of the Upper Colorado River Basin.
The outlook is calling for a near average week of precipitation for the southern Rockies and Wasatch Ranges, and another good week up in the headwaters of the Green River. Widespread low moisture totals will be possible for the Upper Colorado River Basin this coming weekend. East of the divide, precipitation totals will be low, but the coming weather pattern should at least lead to winds calming down. Longer term, the outlook is for increased likelihood of below normal precipitation. This is highly disconcerting, as southwest Colorado and southeast Utah are already dry on short and long timescales, and showing it across all aspects of the hydrologic system. Furthermore, snowpack is already low across most of the Colorado River Basin.

Recommendations

**UCRB:** The Colorado Climate Center agrees with D3 expansion in draft one, which would expand into western San Juan County, UT. We'll defer to local experts in Arizona and New Mexico on the southern extension of the D3 expansion.

It is recommended that D3 be added in southwest Colorado below 9500 ft between Montezuma County and Rio Arabia County in New Mexico. Snowpack, soil moisture, and streamflows are all well below average in this area, and lower elevation snow is nonexistant. Recent storms have come with more than their fair share of wind and dust. We'll have to defer to our colleagues to the south on where to draw the southern border of this D3.

**Eastern Colorado:** It is recommended that D2 be added in Bent County, eastern Huerfano County, northern Las Animas County, eastern Otero and Crowley Counties, northern Prowers County, Kiowa County, and southern Lincoln and Cheyenne Counties. Recent dry and windy weather has raised concern about drought conditions across eastern and southeast Colorado. Our water year to date map was cited by FSA as being generally representative of where drought impacts are the most severe in eastern Colorado. Despite a very wet year last year, we've had reports of wilted soils down to a depth of three feet, early watering, failing triticale, and winter wheat crops failing (especially those planted late).