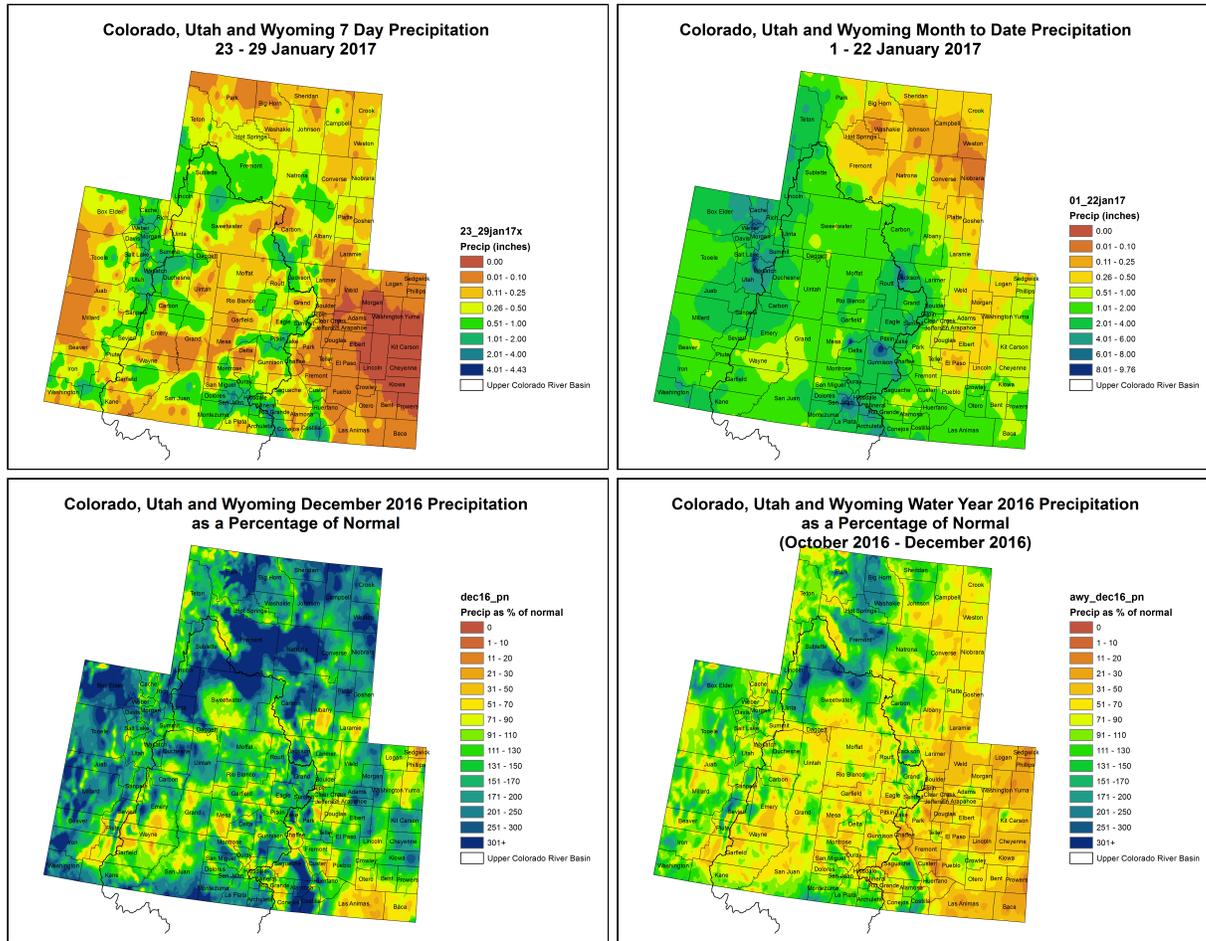


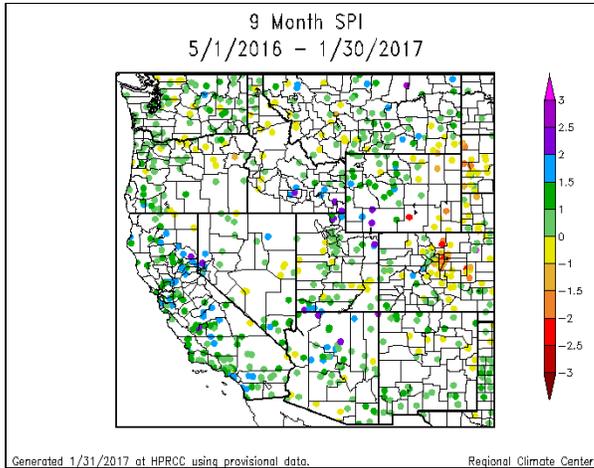
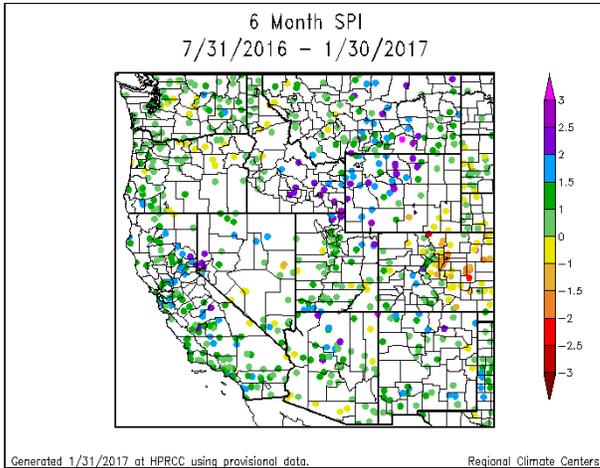
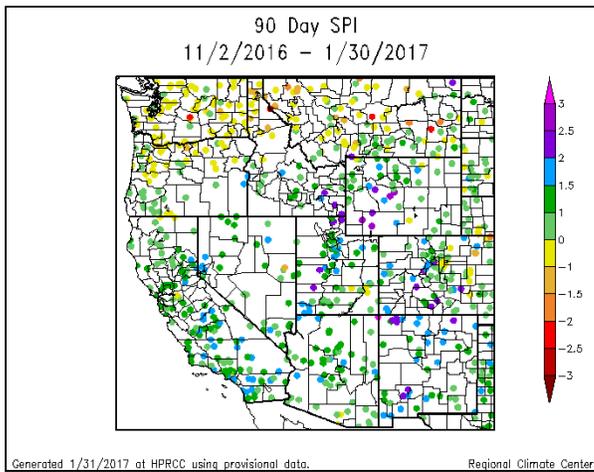
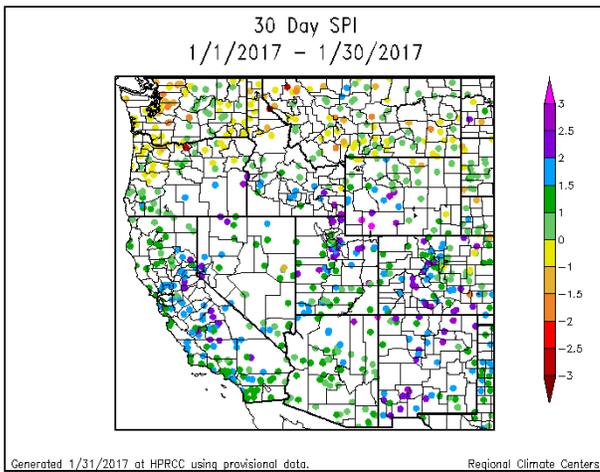
NIDIS Intermountain West Regional Drought Early Warning System January 31, 2017

Precipitation



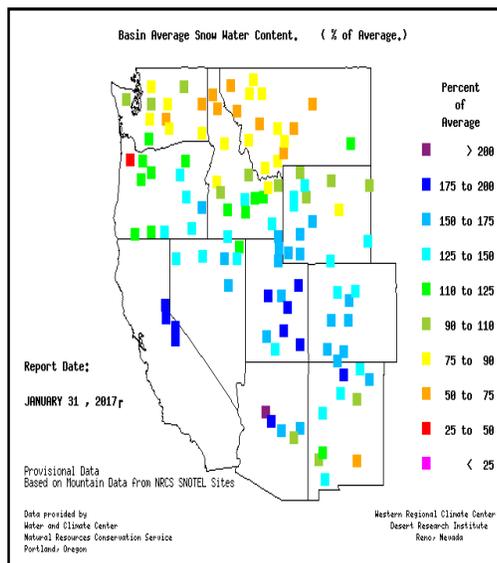
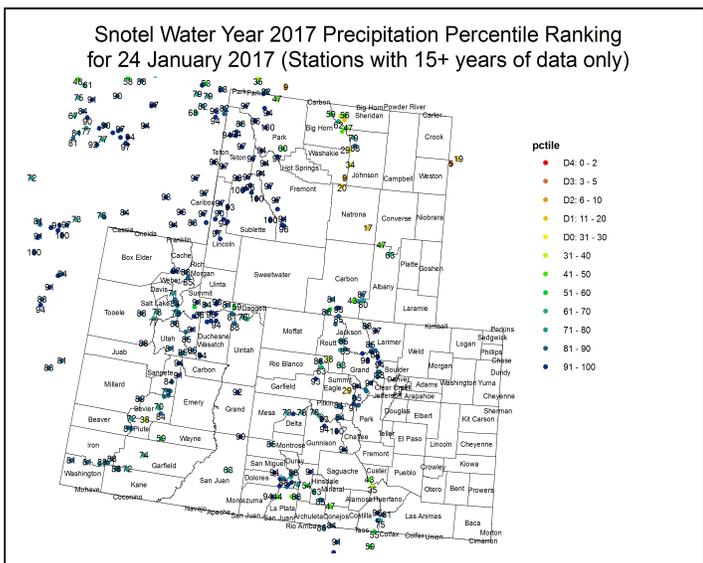
The images above use daily precipitation statistics from NWS COOP, CoCoRaHS, and CoAgMet stations. From top to bottom, and left to right: most recent 7-days of accumulated precipitation in inches; current month-to-date accumulated precipitation in inches; last month's precipitation as a percent of average; water-year-to-date precipitation as a percent of average.

Standardized Precipitation Index



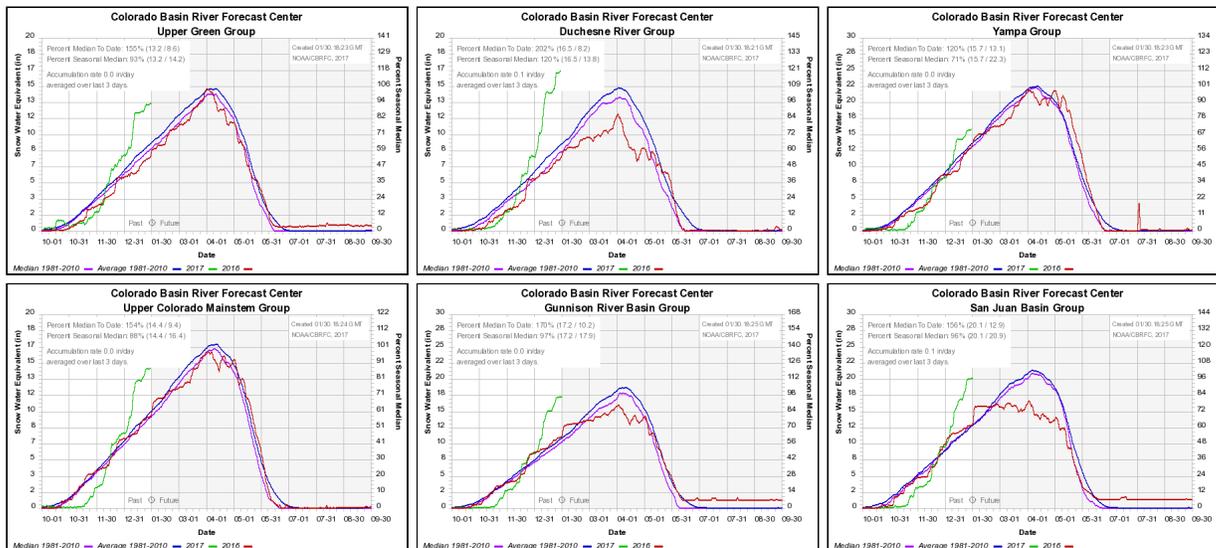
Standardized Precipitation Index standardizes precipitation accumulations for a specified time period into percentile rankings. -1.0 to -1.5 is equivalent to a D1 to D2. -1.5 to -2.0 is equivalent to a D2 to D3. -2.0 and worse is equivalent to a D3 to D4. 30- and 60-day SPIs focus on short-term conditions while 6- and 9-month SPIs focus on long-term conditions. SPI data provided by High Plains Regional Climate Center.

Snotel and Snowpack

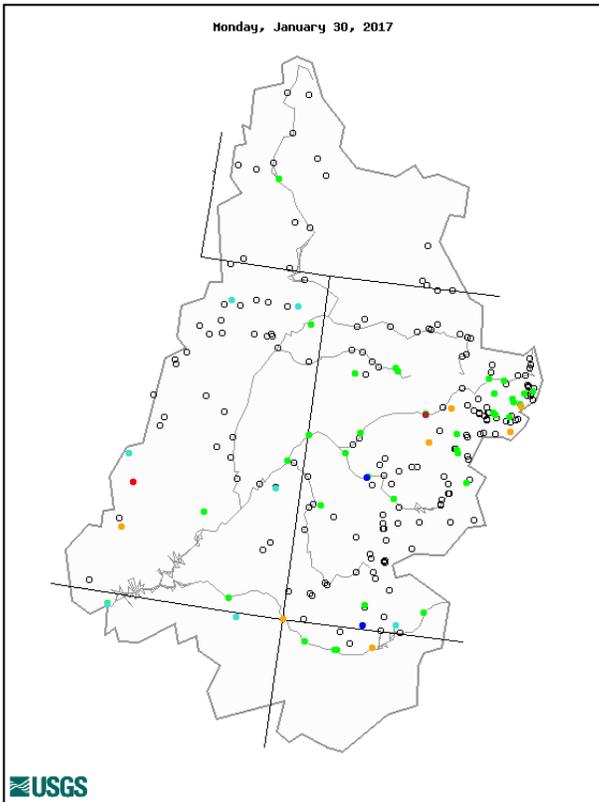


The top left image shows the Natural Resources Conservation Service's SNOTEL water-year-to-date precipitation percentile rankings. The top right image shows sub-basin averaged snow water equivalent accumulations as a percent of average. The images below show accumulated

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).

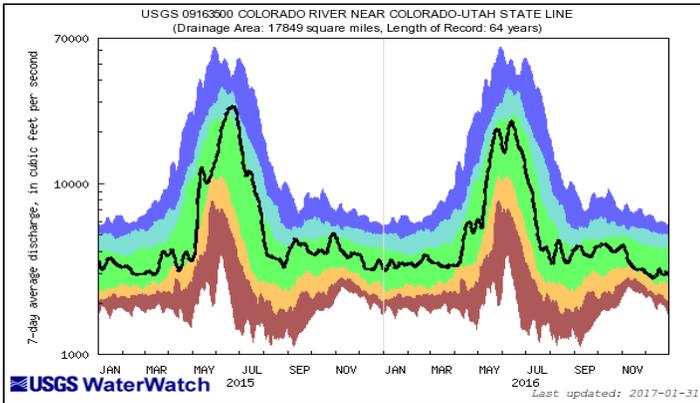


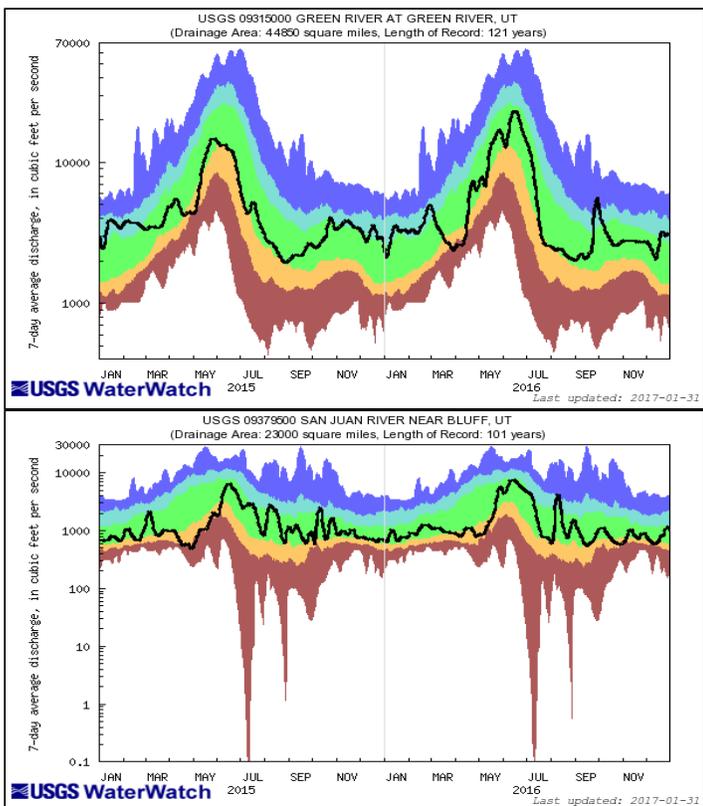
Streamflow



Explanation - Percentile classes

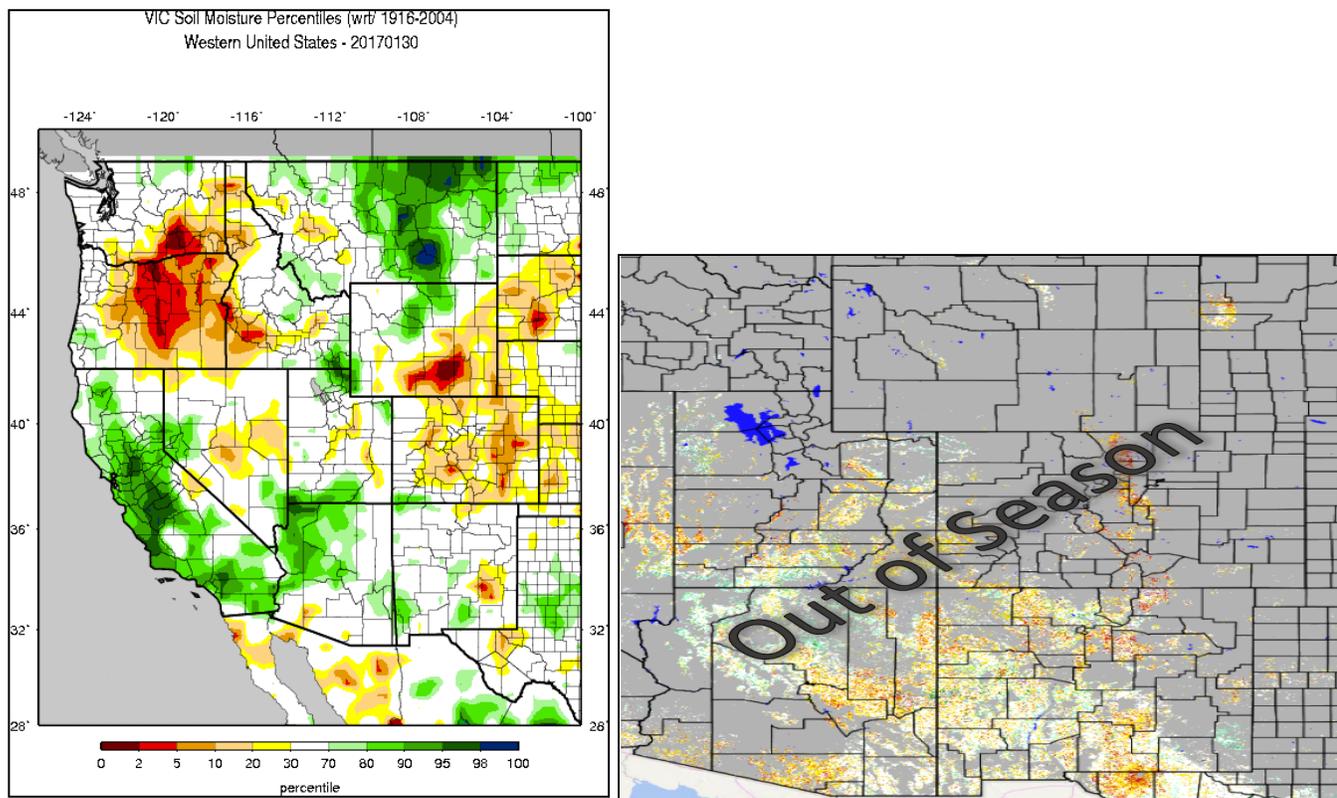
Low	<10 Much below normal	10-24 Below normal	25-75 Normal	76-90 Above normal	>90 Much above normal	High	Not-ranked





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.

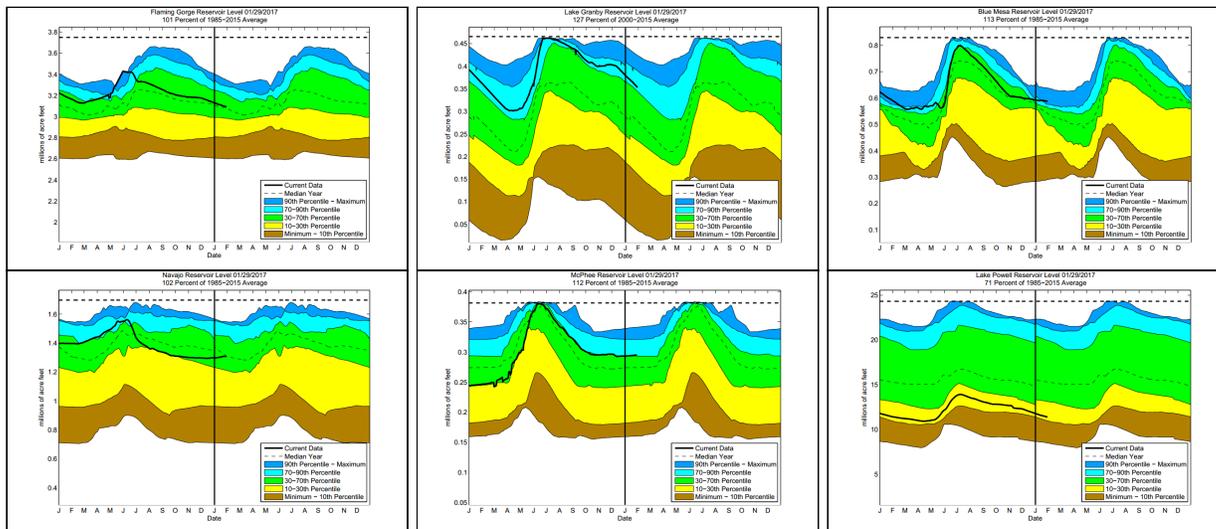
Surface Water



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).

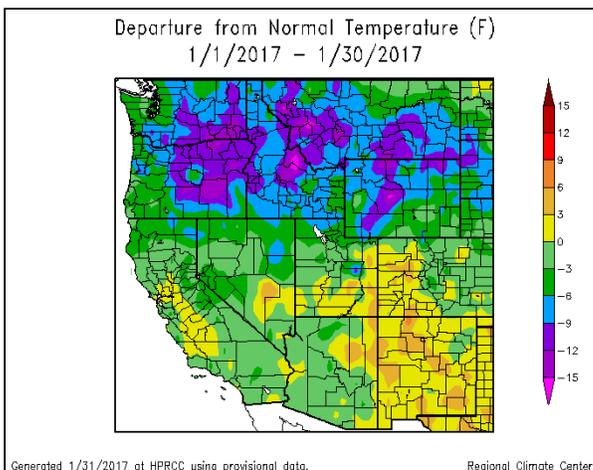
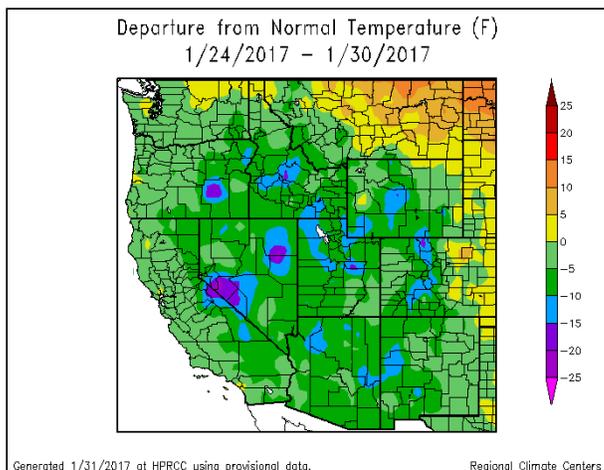
The graphs shown below are plots of reservoir volumes over the past full year and current year to date (black). The dashed line at the top of each graphic indicates the reservoir's capacity, and the background color-coded shading provides context for the range of reservoir levels observed over the past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



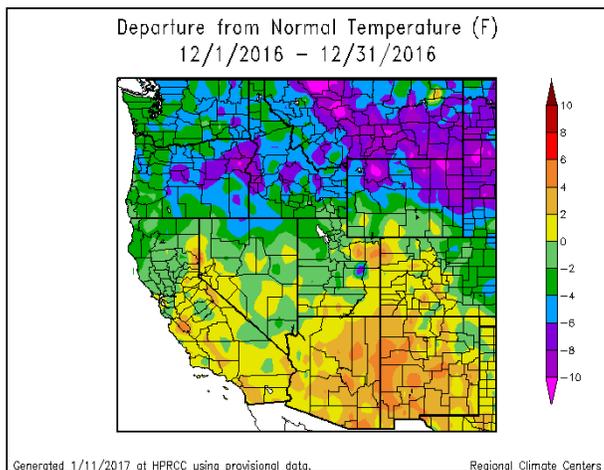
Evaporative Demand

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.

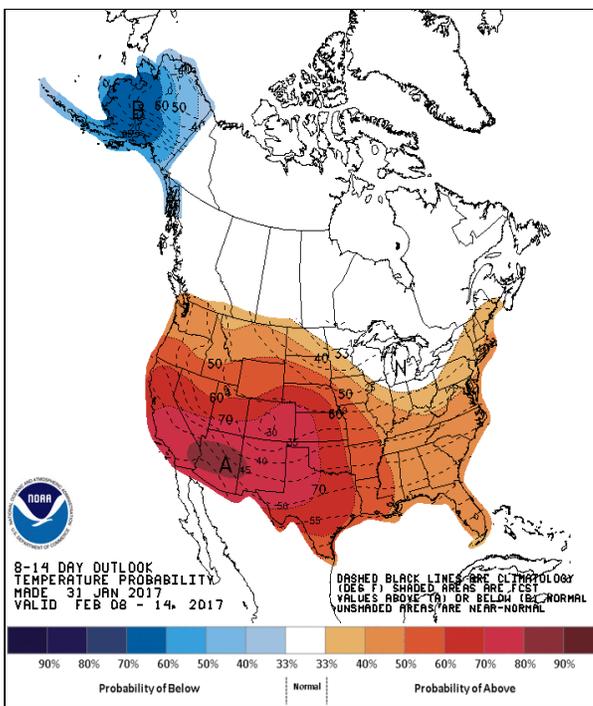
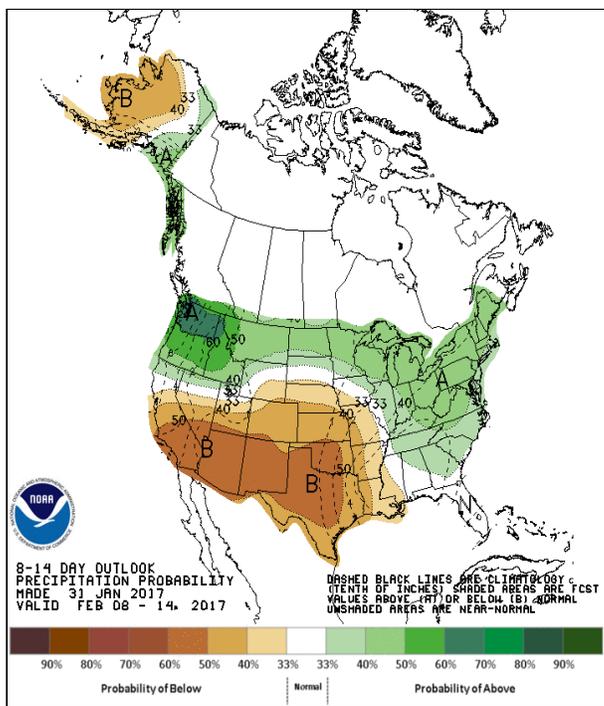
Temperature



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.

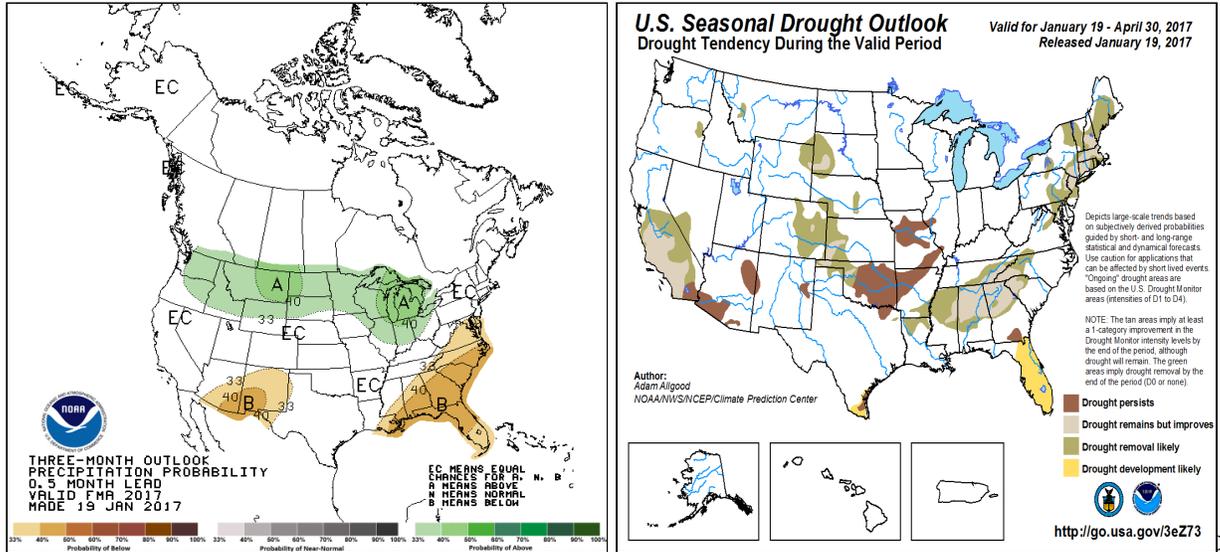


Outlook

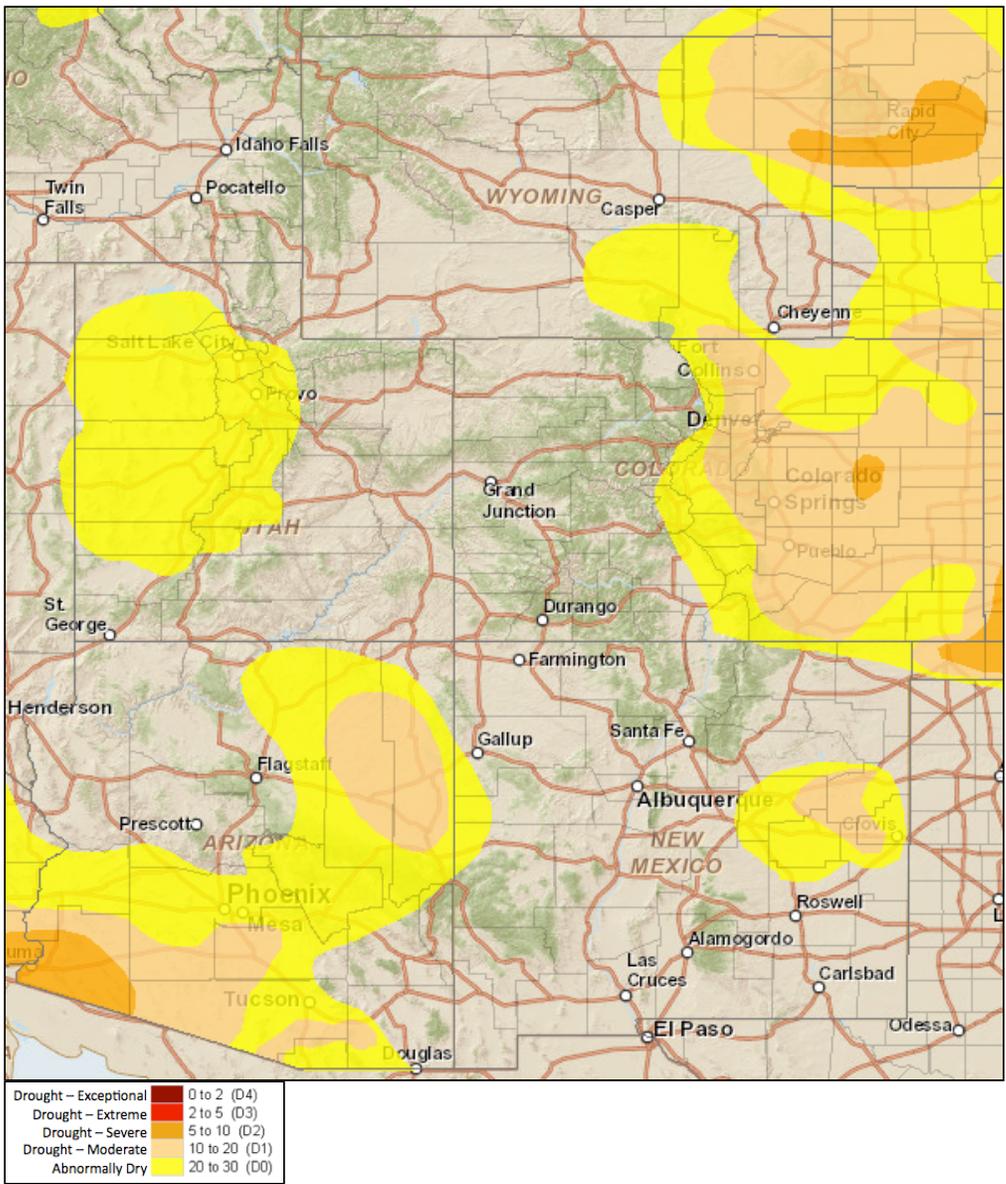


The top two images show Climate Prediction Center's Precipitation and Temperature outlooks

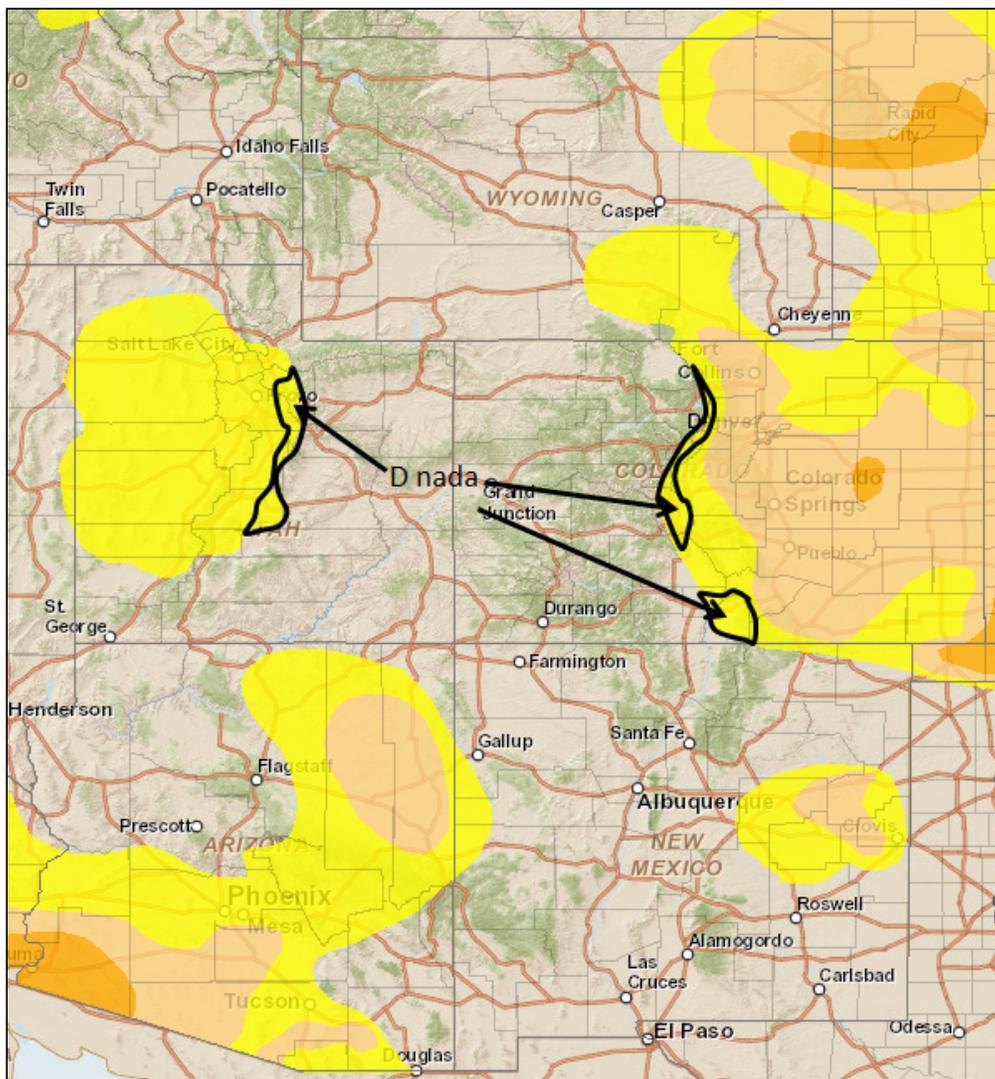
for 8 - 14 days. The middle image shows the Weather Prediction Center's Quantitative Precipitation Forecast accumulation for seven days. The bottom left image shows the 3-month precipitation outlook from Climate Prediction Center, and the bottom right image shows the Climate Prediction Center's most 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: January 31, 2017

Precipitation in the UCRB exhibited typical behavior for mid-winter over the last seven days with the mountain terrain highly-preferred for accumulation, and the valleys being much drier. The largest precipitation totals fell over the San Juans and Spanish Peaks in southwest and south-central Colorado. Snow water equivalent totals here were mostly between 1.00 and 2.00", but in the 2-4" range in some areas. The northern Wasatch Range picked up 1.00-2.00" of surface moisture. The mountain valleys generally received 0.10-0.25" with the driest areas being around Grand Junction and Moab. Eastern Colorado was much drier. The Urban Corridor and Eastern Plains received 0-0.25".

Temperatures were 5-10 degrees below average across the UCRB over the past week, and mean daily temperatures for most of the basin are below freezing at this point in the year. Temperatures east of the divide were near normal for the week.

The majority of stream gages are iced over at this time, and most of those that are flowing are flowing at low, but climatologically normal rates for this time of year. The Animas and Gunnison Rivers in western Colorado are showing some above to much above average flows. Flows along the South Platte and Arkansas are in the normal to above normal range.

Subbasin snowpack levels are well above normal for this time of year across the basin and in eastern Colorado, anywhere from 130 to 198 percent of normal. Duchesne River Basin snowpack is above its average seasonal peak snowpack over two months in advance of the anticipated peak. Especially given the slow start to the snow season, this is remarkable.

Soils are still drier than normal across much of the eastern portion of the UCRB. Storage from soil moisture plus snowpack is above average save for a fraction of the lower mountain valley terrain. Conversely, modeled soil moisture is still showing large areas of well below average root zone soil moisture across eastern Colorado. This area is not overlain by seasonal snowpack. This could make documenting drought impacts come springtime tricky as mountain snowmelt-irrigated areas are far less likely to see impacts than dryland farming and ranching practices.

Recommendations

UCRB: It is recommended that all lingering D0 east of the divide between the Upper Colorado River Basin and the Great Basin be removed. SNOTEL precipitation is now above the 80th percentile for the water year to date on the east side of the divide in the Wasatch Range.

It is recommended that D0 be removed from southern Summit County, eastern Grand County, and eastern Larimer County over the Continental Divide, and in Lake County, and Chaffee County in central Colorado. Recent precipitation is above normal. Long-term SPIs and SNOTEL precipitation percentiles are now in the normal range.

Eastern Colorado: It is recommended that D0 be removed from the Spanish Peaks in Costilla County. The five SNOTEL sites in the area are all above average for the water year to date. Improvements may be within reach for southeast and northeast corners of Colorado where short-term precipitation is above average, and long-term SPIs are between -1 and +1. Because of the timing of dryness, and above average evaporative demand in the late summer and fall, soils still indicate the need for D0 and D1.