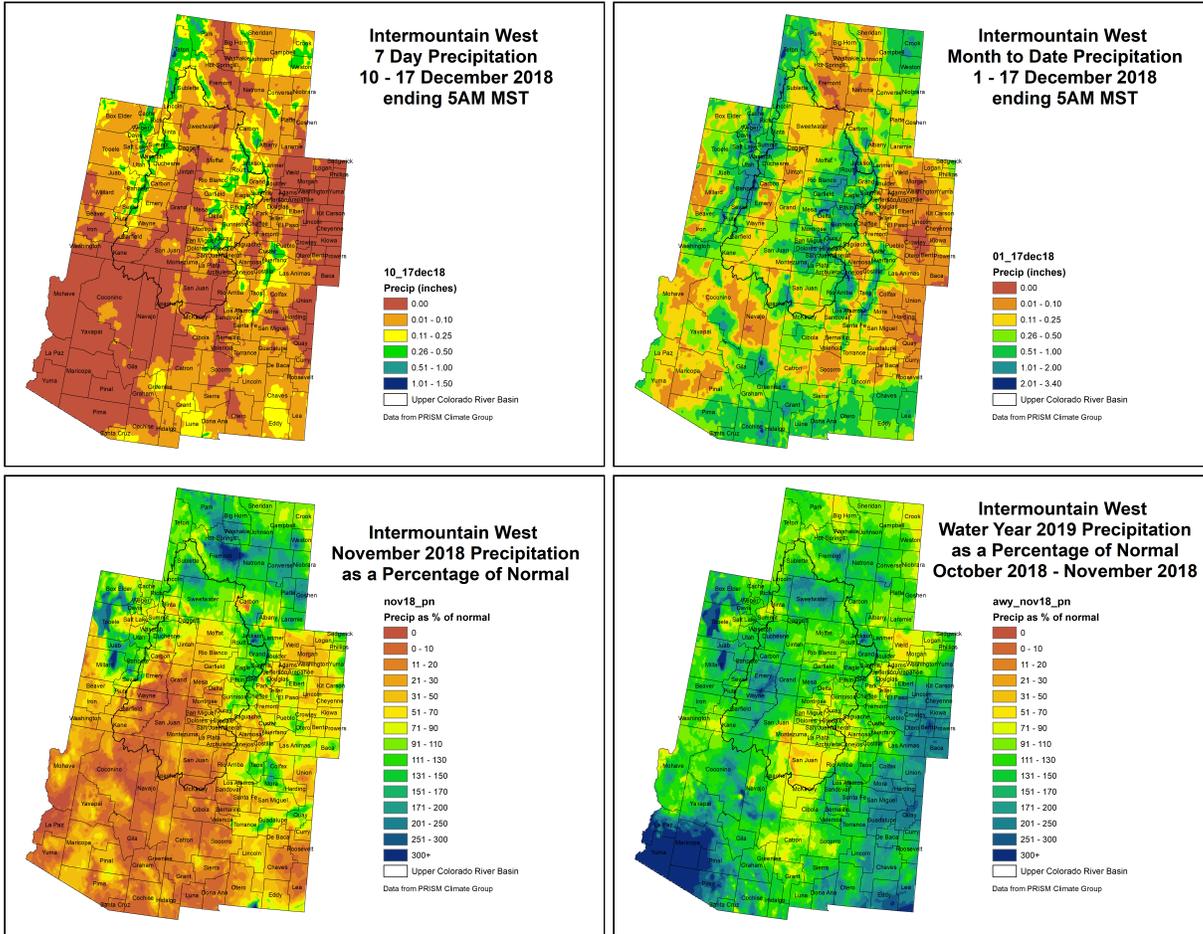


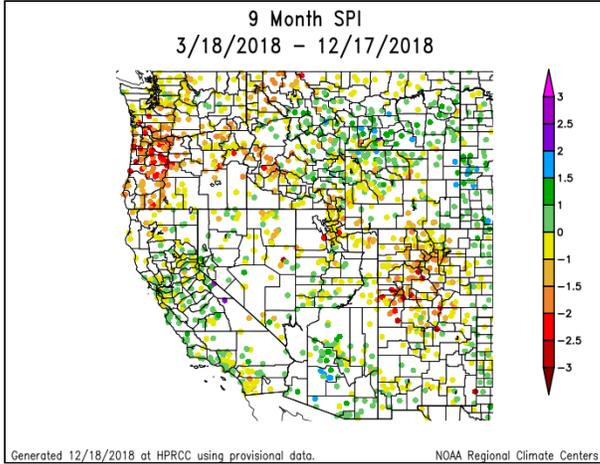
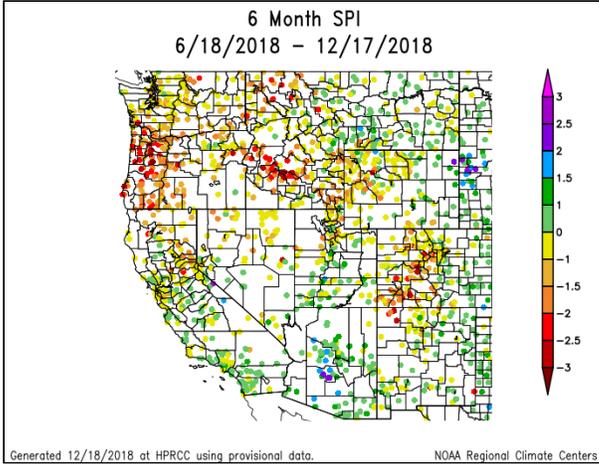
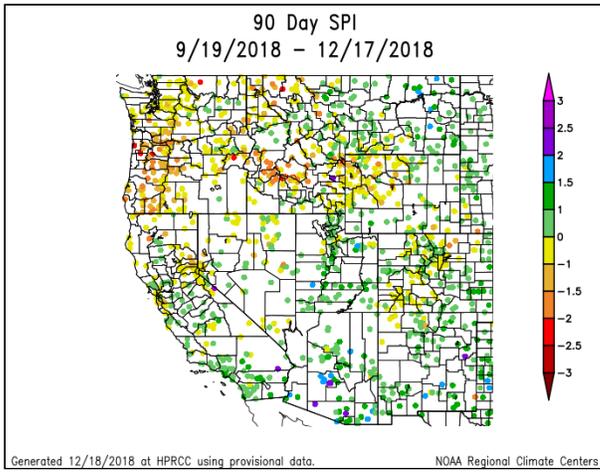
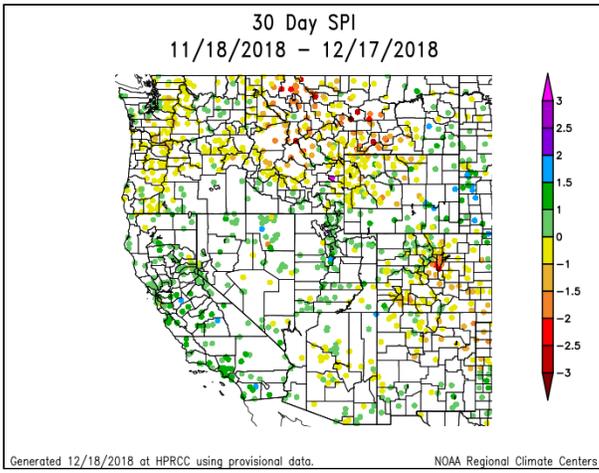
NIDIS Intermountain West Drought Early Warning System December 18, 2018

Precipitation



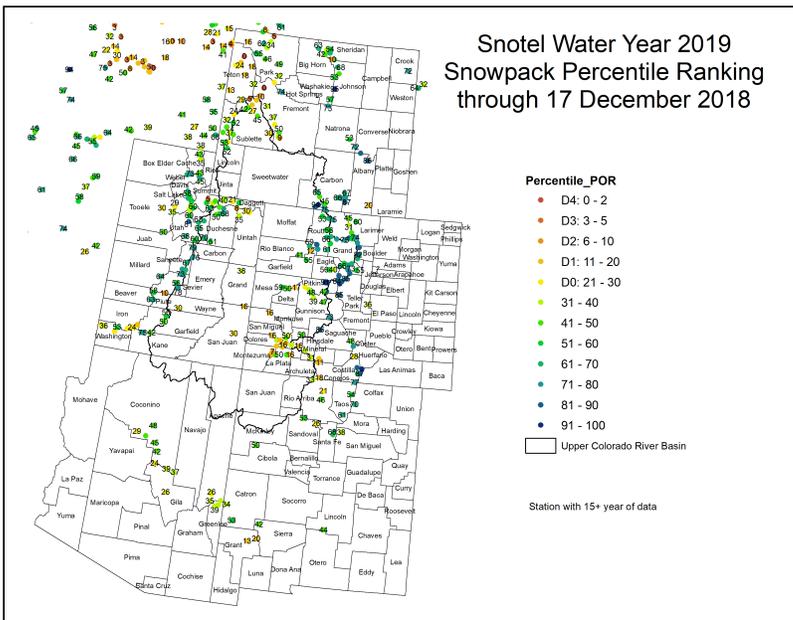
The images above use daily precipitation statistics from NWS COOP, CoCoRaHS, and CoAgMet stations. From top to bottom, and left to right: most recent 7-days of accumulated precipitation in inches; current month-to-date accumulated precipitation in inches; last month's precipitation as a percent of average;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

Standardized Precipitation Index



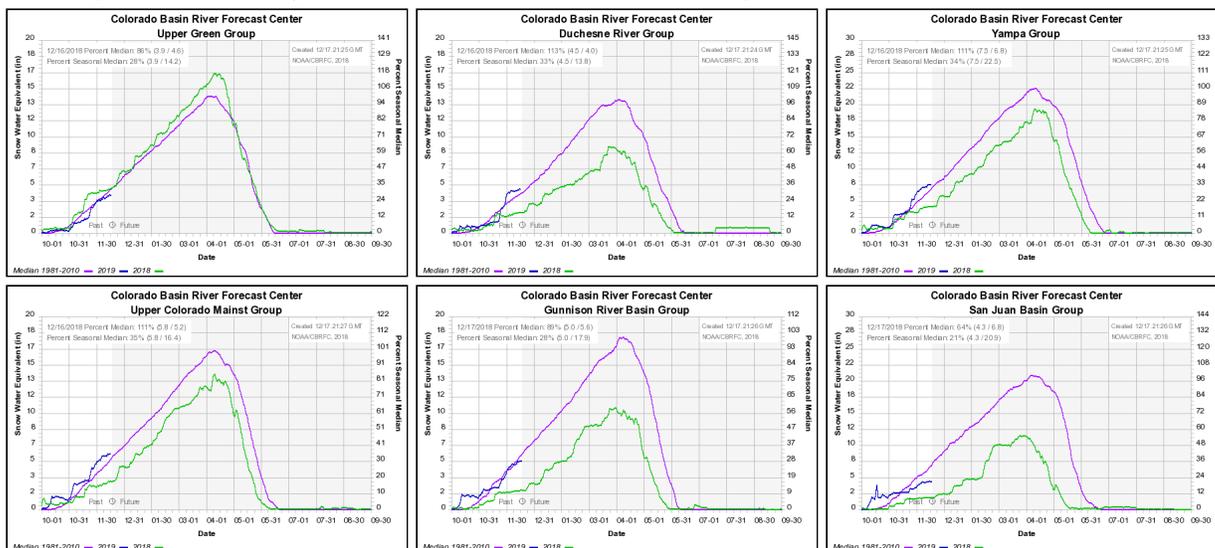
Standardized Precipitation Index standardizes precipitation accumulations for a specified time period into percentile rankings. -1.0 to -1.5 is equivalent to a D1 to D2. -1.5 to -2.0 is equivalent to a D2 to D3. -2.0 and worse is equivalent to a D3 to D4. 30- and 60-day SPIs focus on short-term conditions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

Snotel and Snowpack



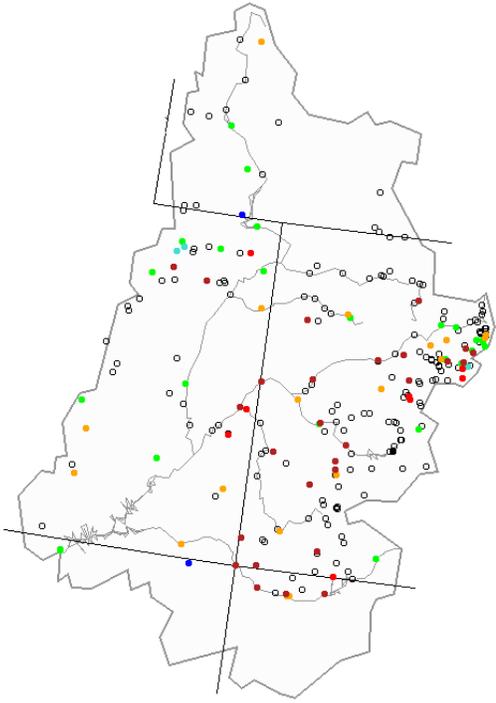
The above image shows SNOTEL snowpack percentiles for each SNOTEL site in the Intermountain West. The images below show accumulated snow water equivalent in inches

(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).



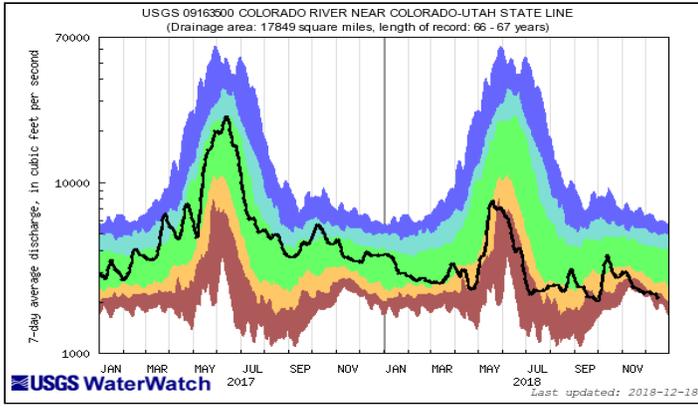
Streamflow

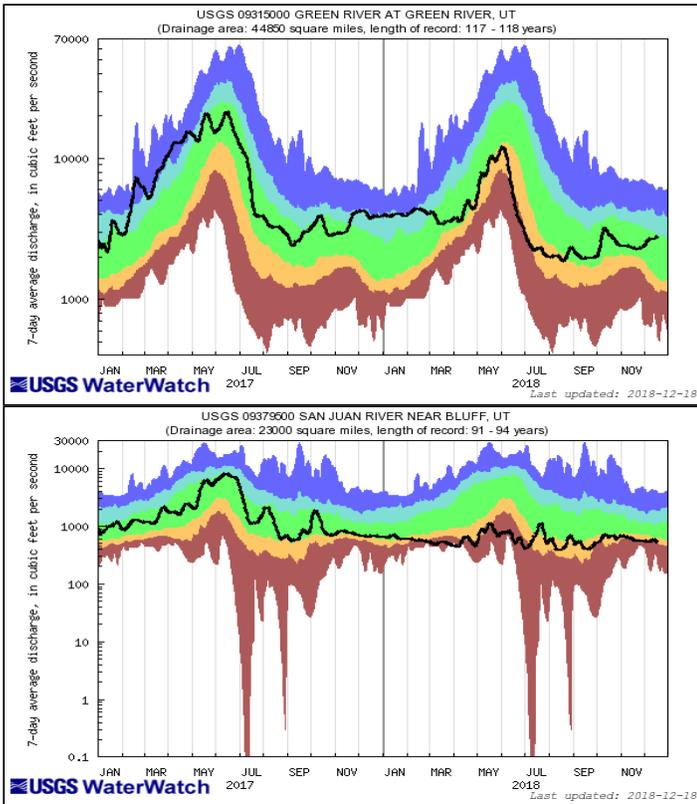
Monday, December 17, 2018



Explanation - Percentile classes

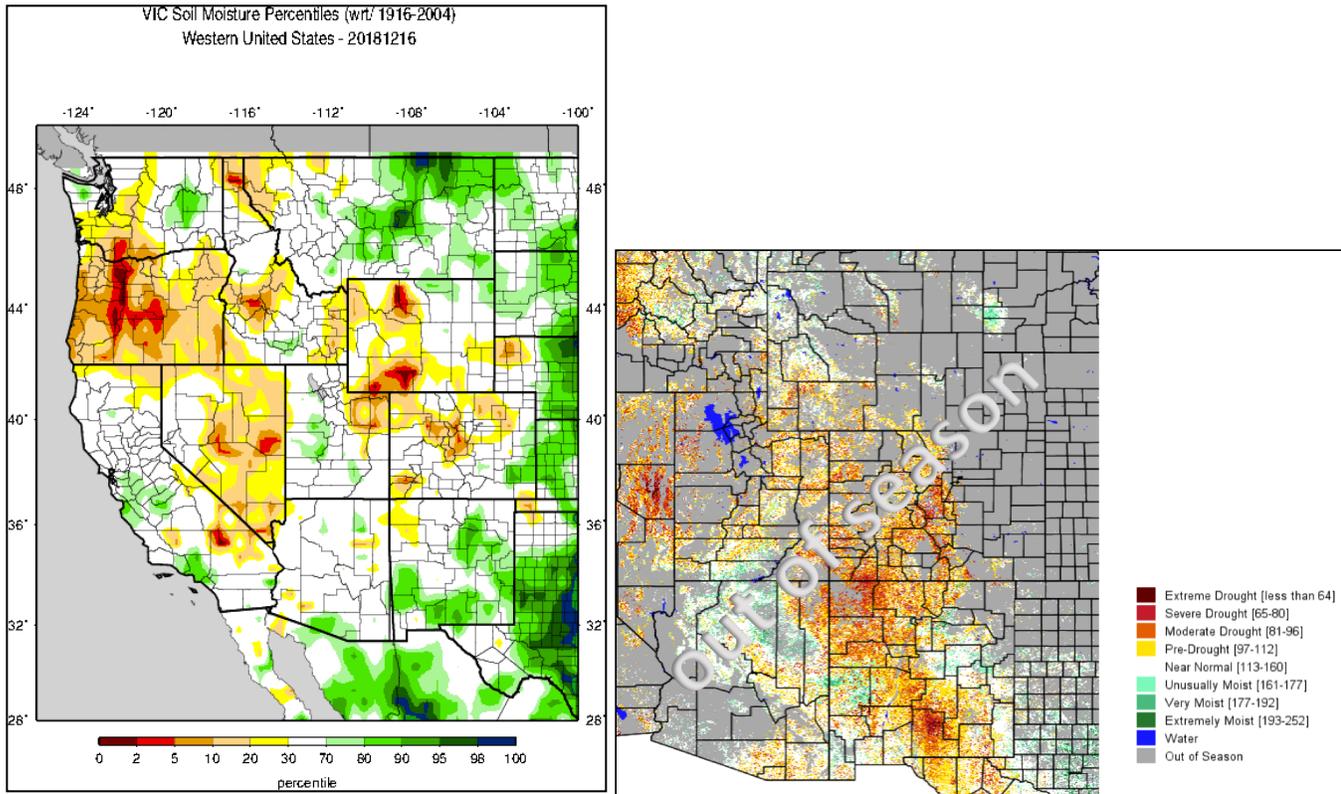
●	●	●	●	●	●	○
Low	<10	10-24	25-75	76-90	>90	High
	Much below normal	Below normal	Normal	Above normal	Much above normal	Not-ranked





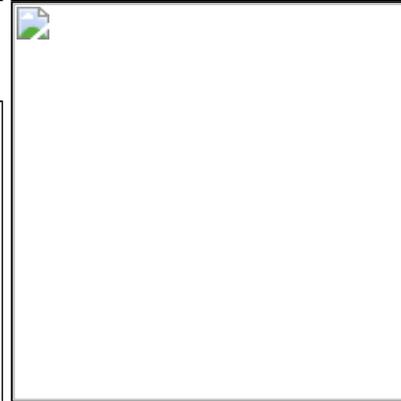
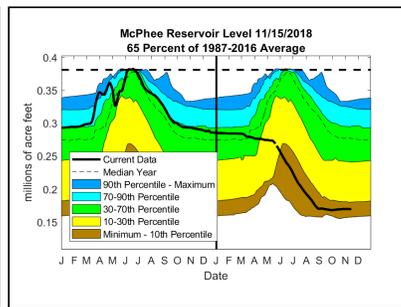
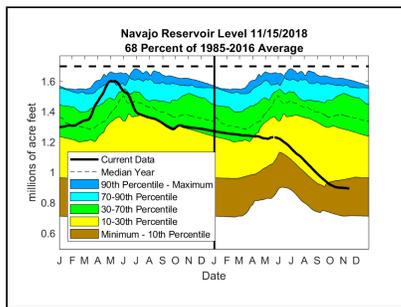
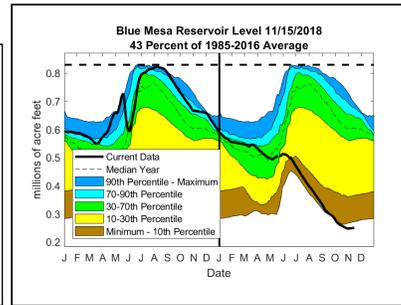
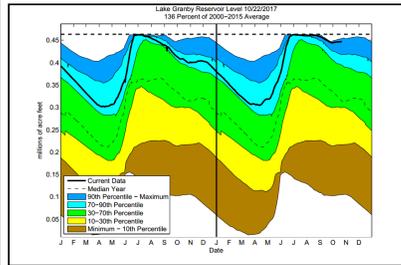
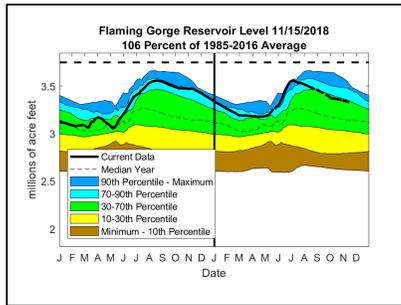
The top left image shows 7-day averaged streamflows as a percentile ranking across the UCRB. The top right image shows 7-day averaged discharge over time at three key sites around the UCRB: The Colorado River at the CO-UT state line; the Green River at Green River, UT; and the San Juan River near Bluff, UT. All streamflow data provided by United States Geological Survey.

Surface Water

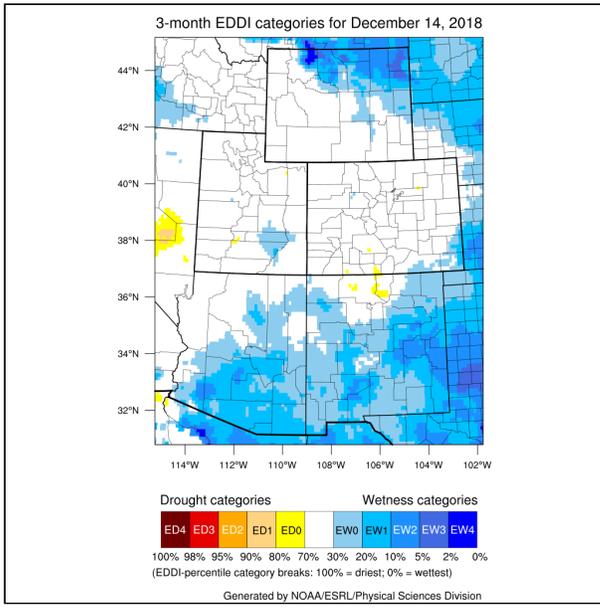
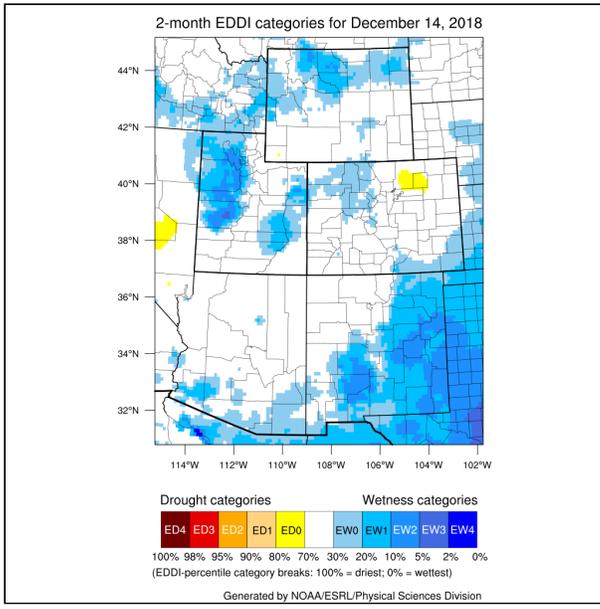
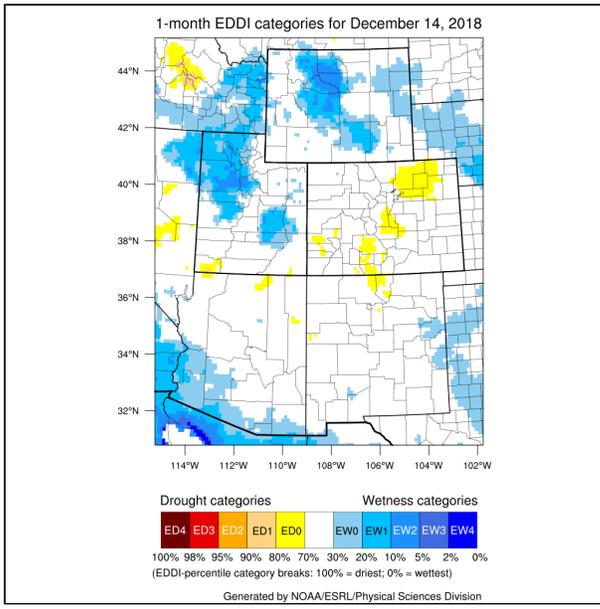
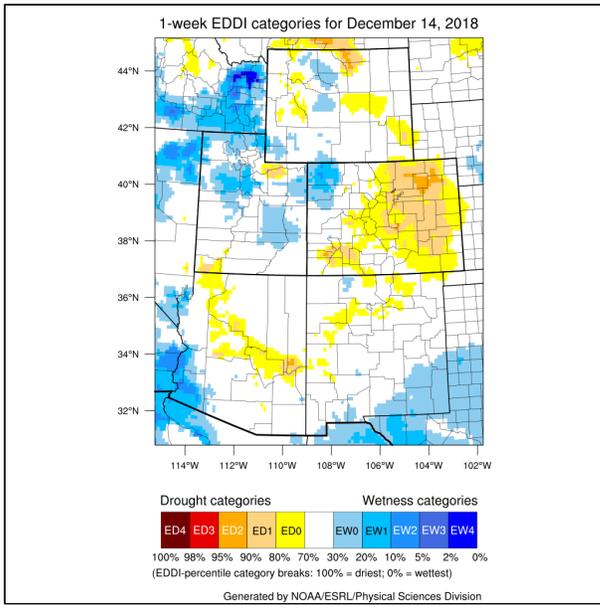


The top left image shows VIC modeled soil moisture as a percentile ranking. The top right image shows satellite-derived vegetation from the VegDRI product (which updates on Mondays).

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.

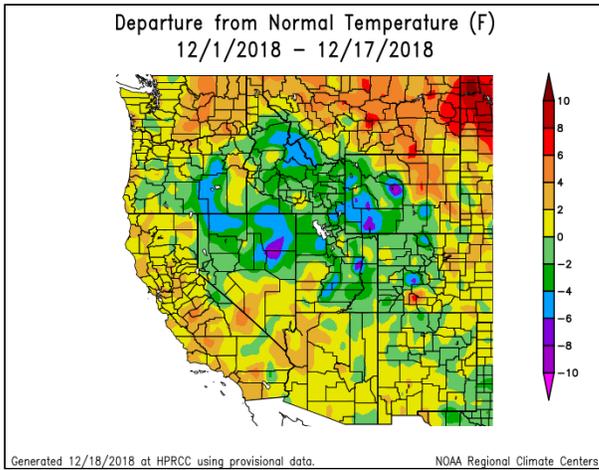
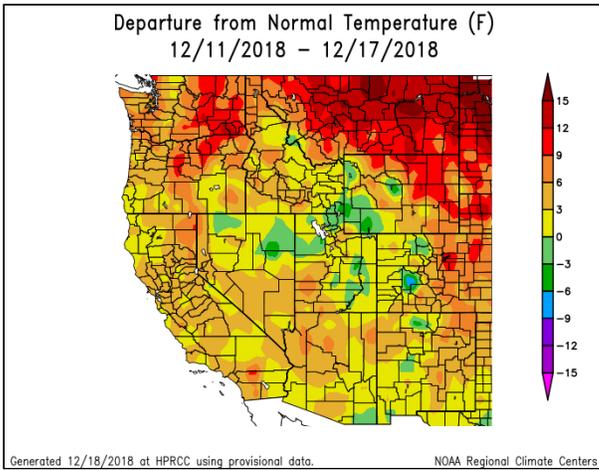


Evaporative Demand

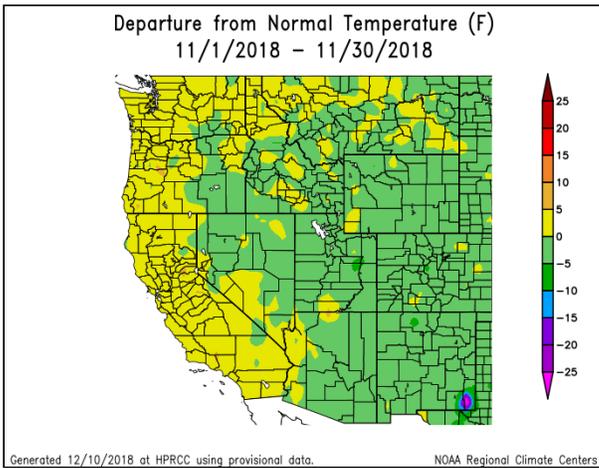


The above images are available courtesy of NOAA's Evaporative Demand Drought Index (EDDI). Drought classification listed is a function of the depth of reference evapotranspiration accumulated over a given period of record with respect to a climatology of 1981-2010. The drought categories displayed are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

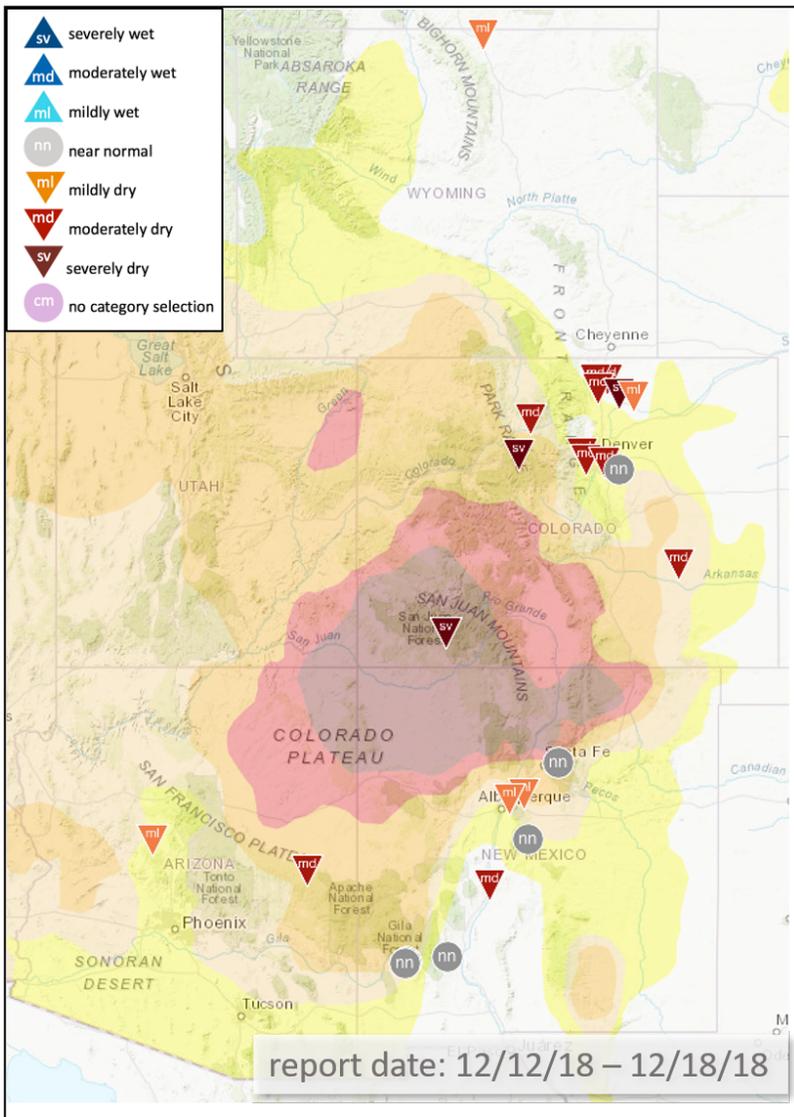
Temperature



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.



Condition Monitoring and Impacts

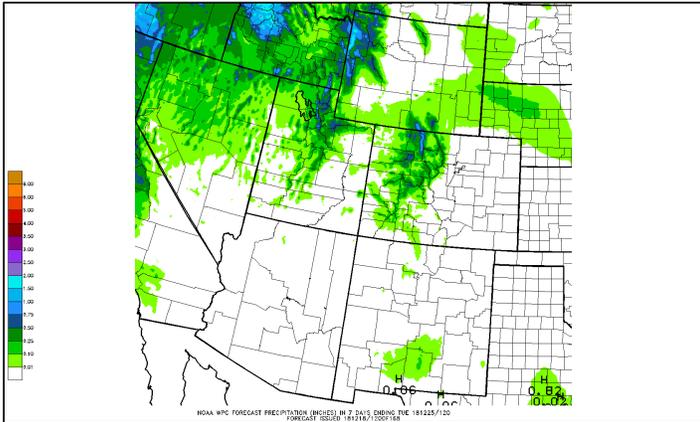
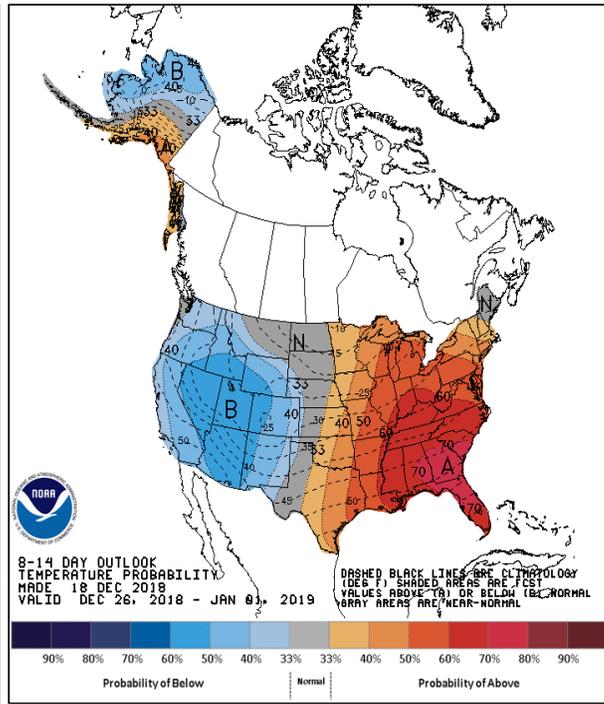
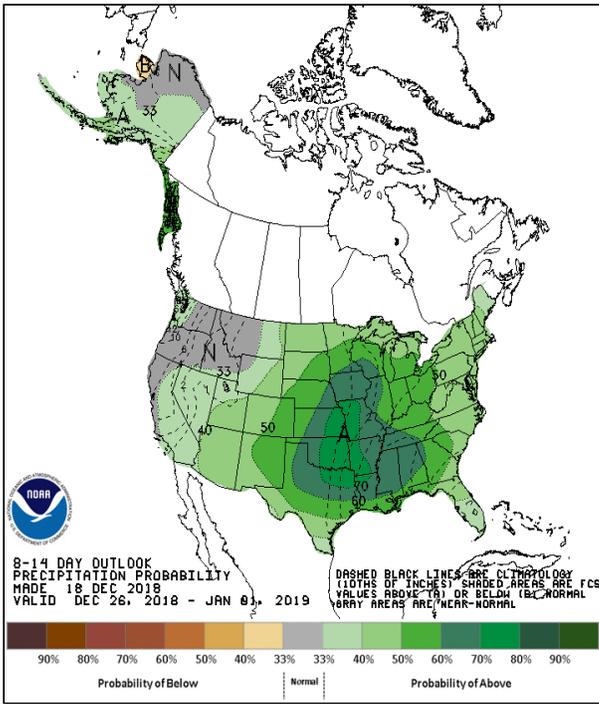


Map of current condition monitoring reports submitted to CoCoRaHS in the last week overlaid on the current U.S. Drought Monitor depiction. Specific impacts reports from local experts listed below.

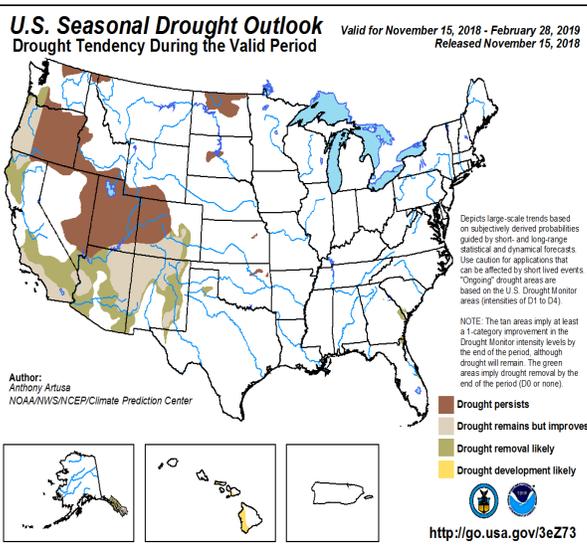
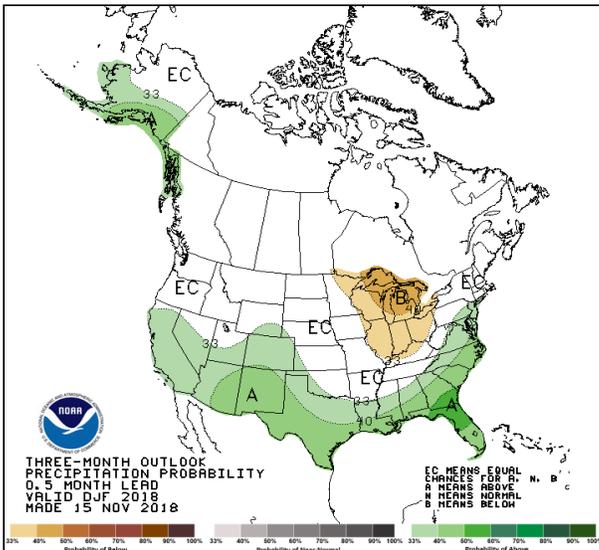
SW CO - Drinking water for this winter and next season is a concern for Mancos. Unlike Cortez, which gets its potable water from McPhee, Mancos is drawing from the smaller Jackson Lake. Prior to fall storms, the lake was at dead pool levels.

Ark Basin - Irrigated crops in the Canon City area that pulled water directly from the Arkansas River did okay, but some of the areas relying on smaller tributaries (including parts of Wetmore and Penrose) had reduced yields or failures.

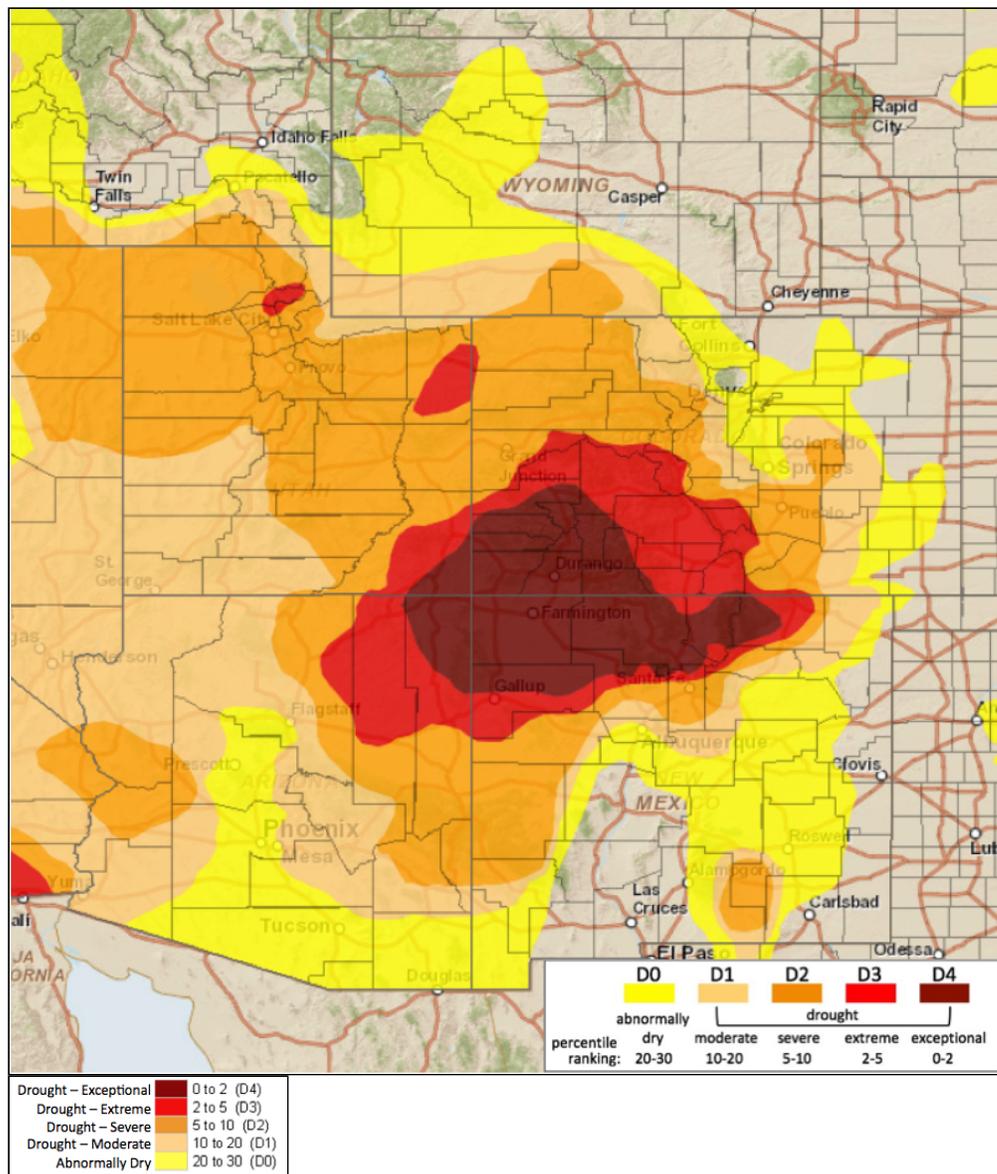
Outlook



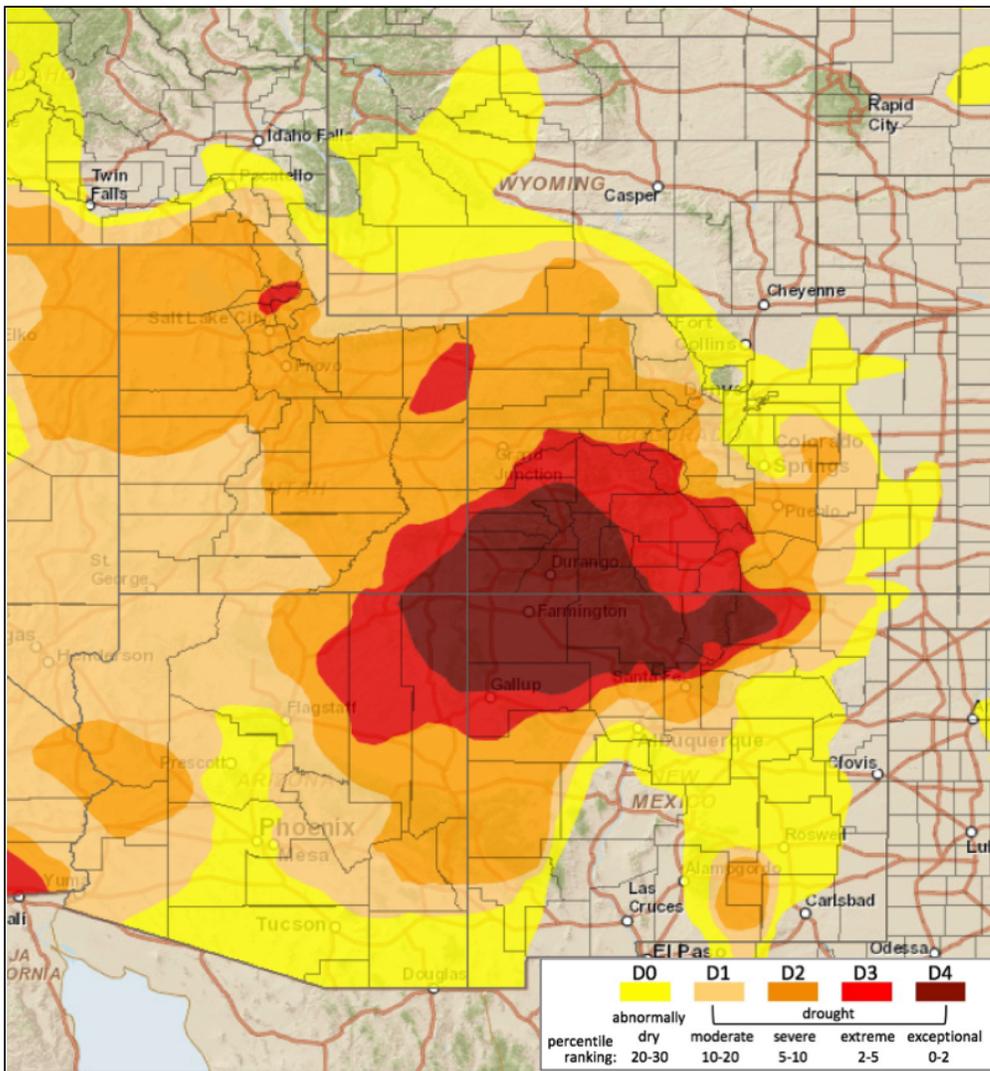
The top two images show Climate Prediction Center's Precipitation and Temperature outlooks for 8 - 14 days. The middle image shows the Weather Prediction Center's Quantitative Precipitation Forecast accumulation for seven days. The bottom left image shows the 3-month precipitation outlook from Climate 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 18, 2018

The Intermountain West saw another dry week, with many areas seeing less than 0.10" of precipitation. The higher elevations of the mountains in Colorado, Utah and Wyoming saw up to 1 inch. Much of eastern Colorado, eastern Utah and almost all of Arizona saw no precipitation last week. This continues a trend for the month of December. The lower elevations in the IMW have mainly seen less than 0.25", while the higher elevations have seen 1.00 - 2.00 inches for the month to date. Southeastern Arizona and southern New Mexico did see some nice precipitation early in the month with amounts up to 1 inch.

Thanks to a strong October snowpack has started off strong through much of the IMW. The San Juan Mountains in southwest Colorado are struggling already, however not as bad as last year. It is still early in the snow season and conditions can change quickly.

The region has entered into a warming trend with much of the IMW seeing above normal temperatures over the last week. Western Colorado, southwestern Wyoming and most of Utah still are below normal for the month. The rest of the region is having an above normal month for temperature.

The outlook is showing the pattern of dry in the lower elevations and the higher elevations seeing precipitation continuing for the next week.

Recommendations:

UCRB: Status quo

Eastern CO: Status quo: It should be noted the northern Front Range of Colorado is starting to dry out with this dry trend. If the dry conditions continue we will look at degradations, however we will most likely hold off until after the New Year.