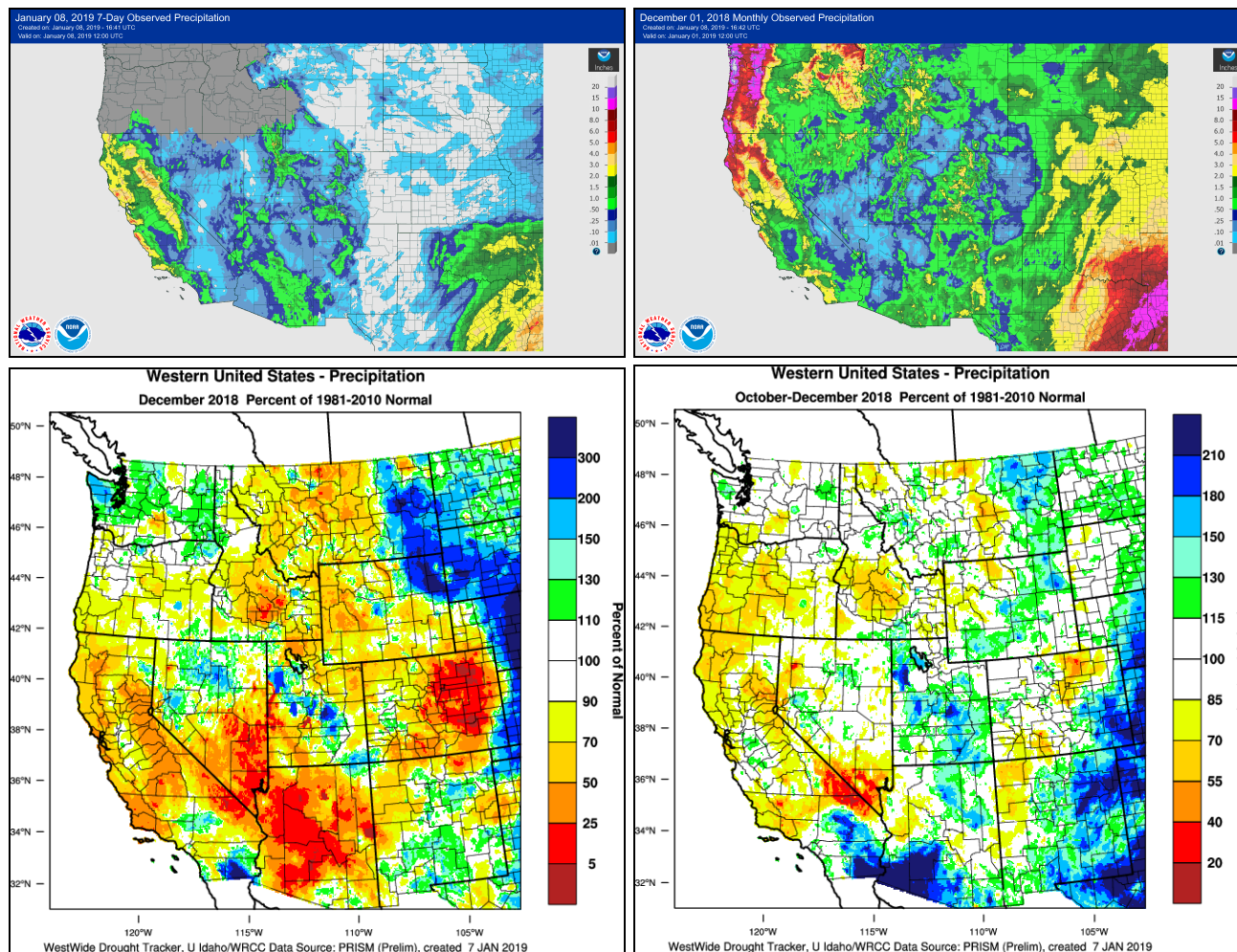


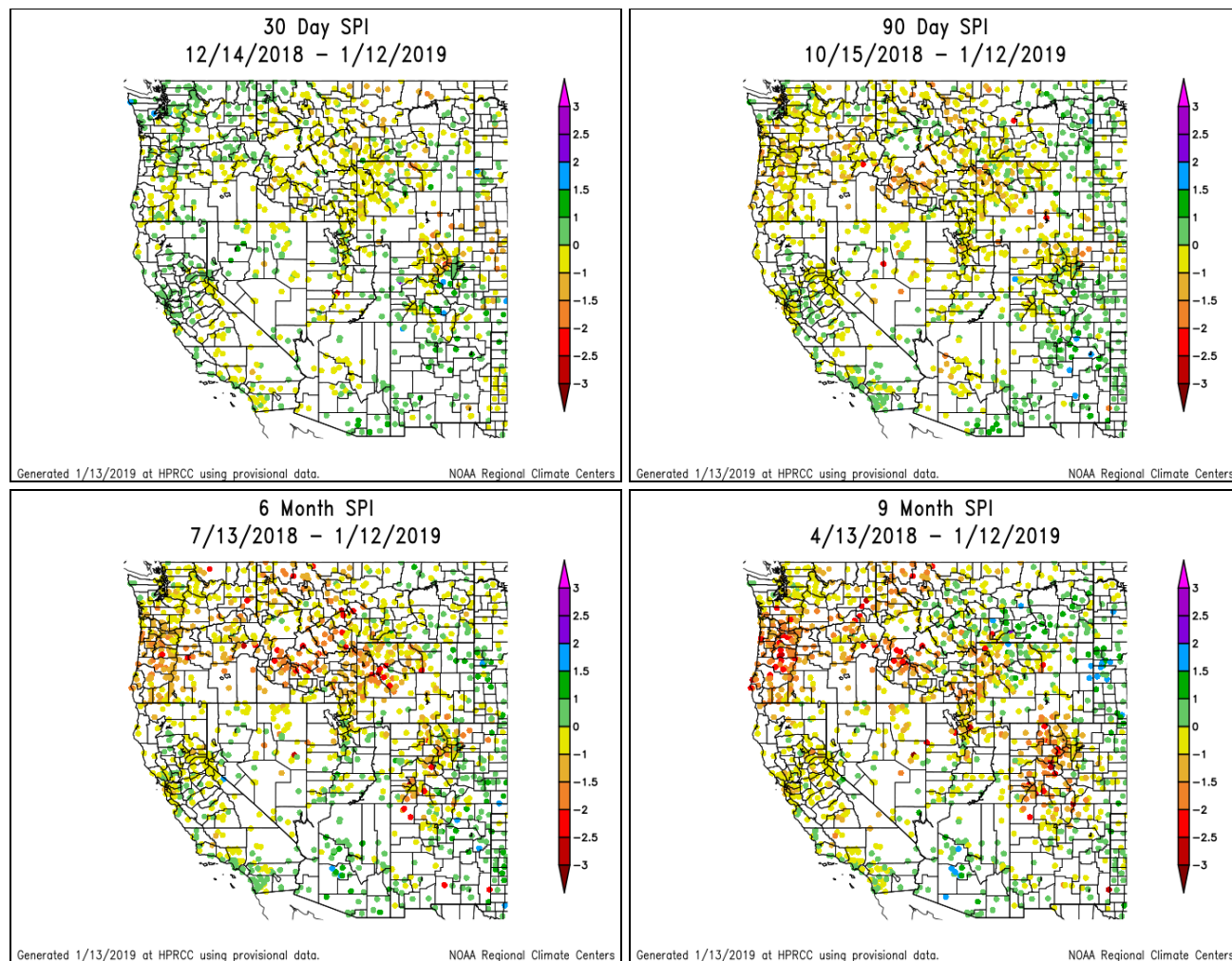
NIDIS Intermountain West Drought Early Warning System January 8, 2019

Precipitation



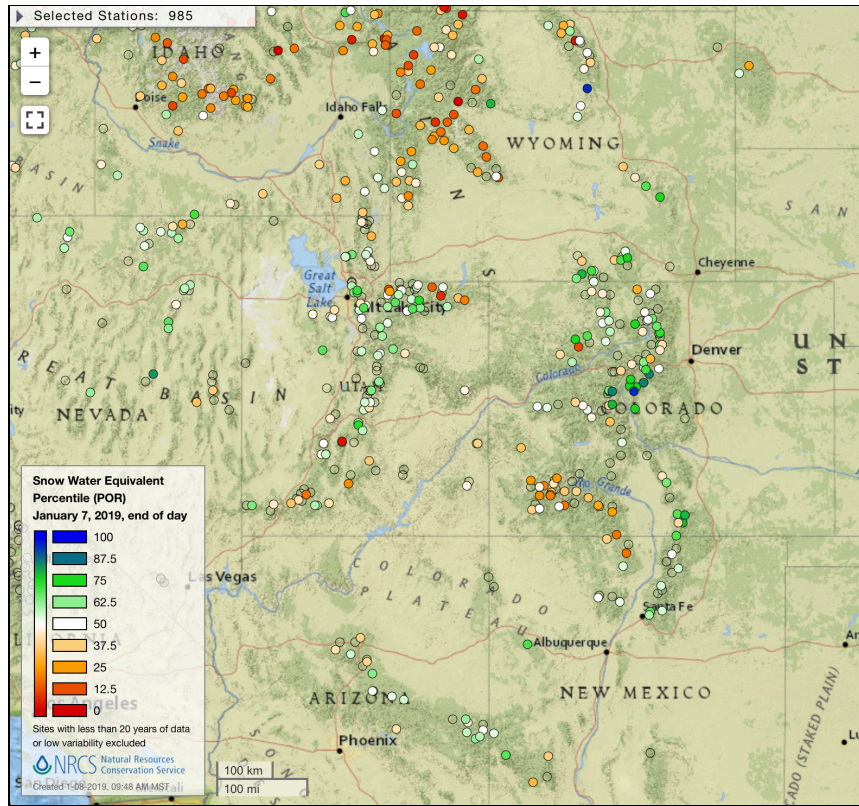
The images above use daily precipitation statistics from NWS COOP, CoCoRaHS, and CoAgMet stations. From top to bottom, and left to right: most recent 7-days of accumulated precipitation in inches; current month-to-date accumulated precipitation in inches; last month's precipitation as a percent of average;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

Standardized Precipitation Index

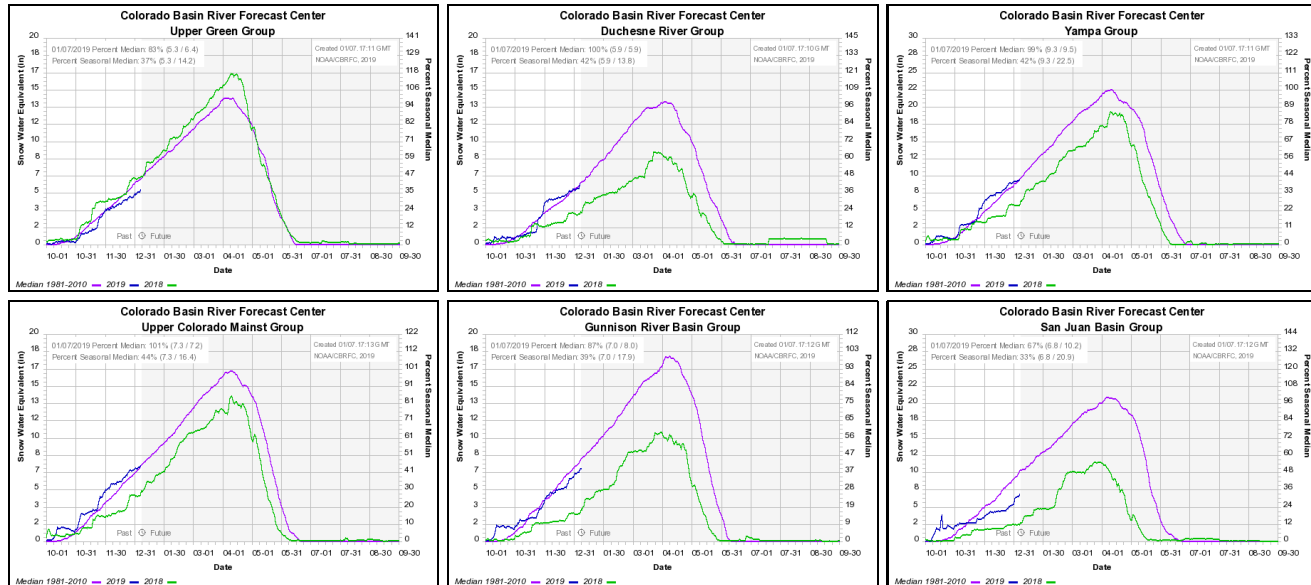


Standardized Precipitation Index standardizes precipitation accumulations for a specified time period into percentile rankings. -1.0 to -1.5 is equivalent to a D1 to D2. -1.5 to -2.0 is equivalent to a D2 to D3. -2.0 and worse is equivalent to a D3 to D4. 30- and 60-day SPIs focus on short-term conditions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

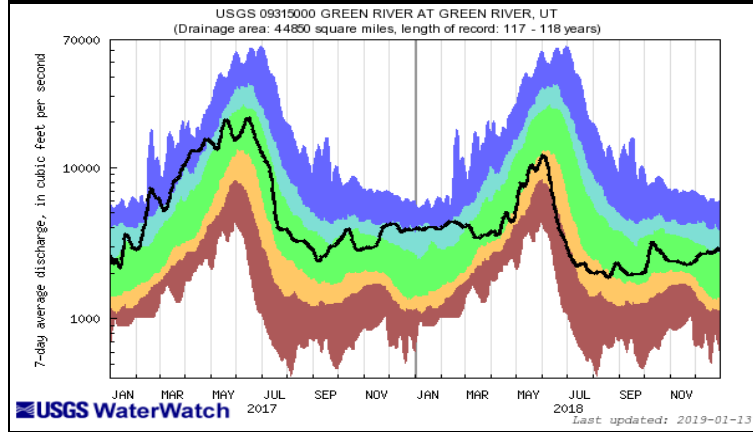
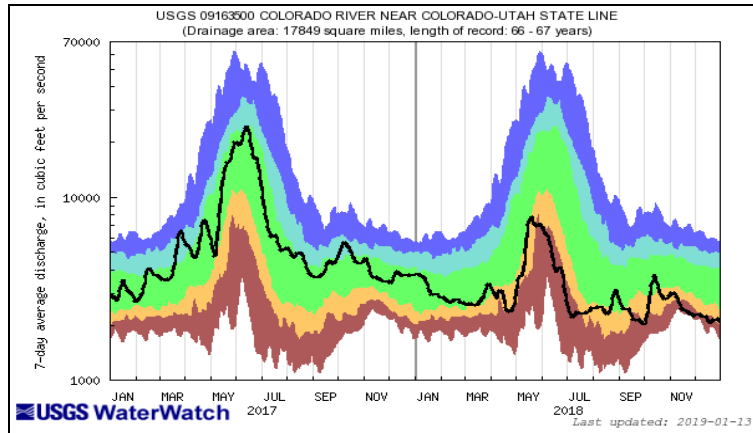
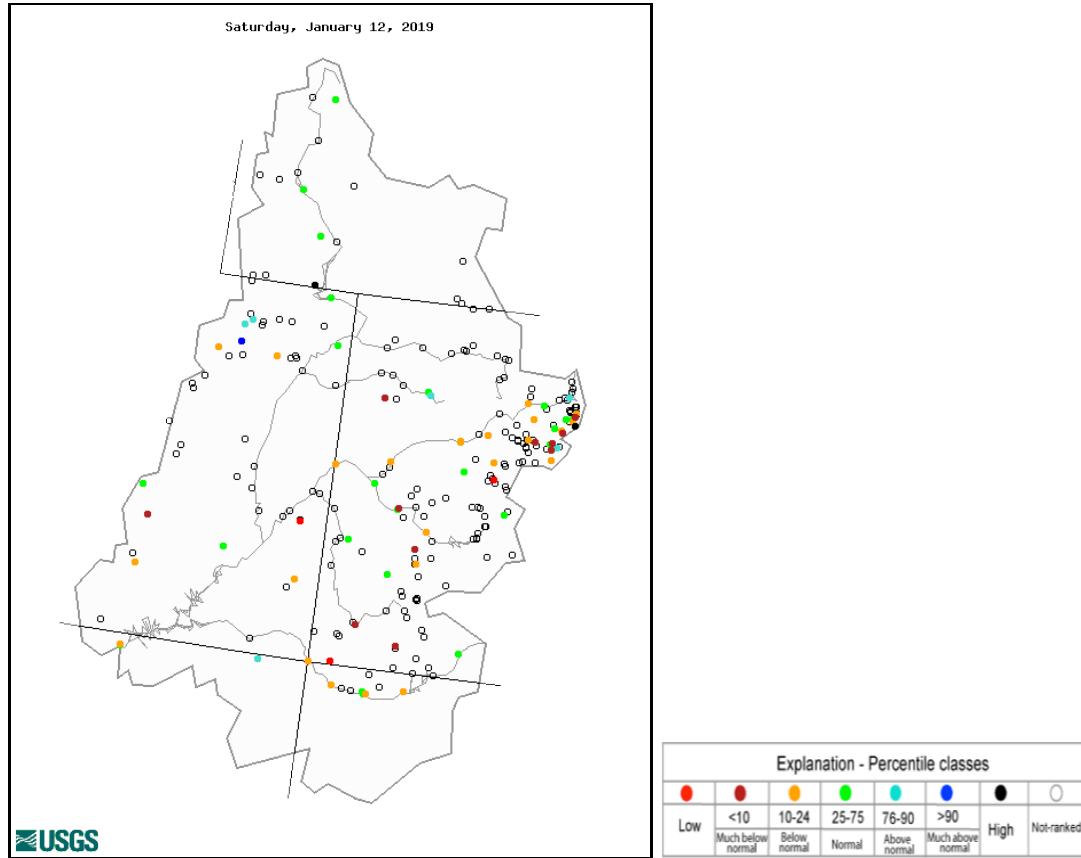
Snotel and Snowpack

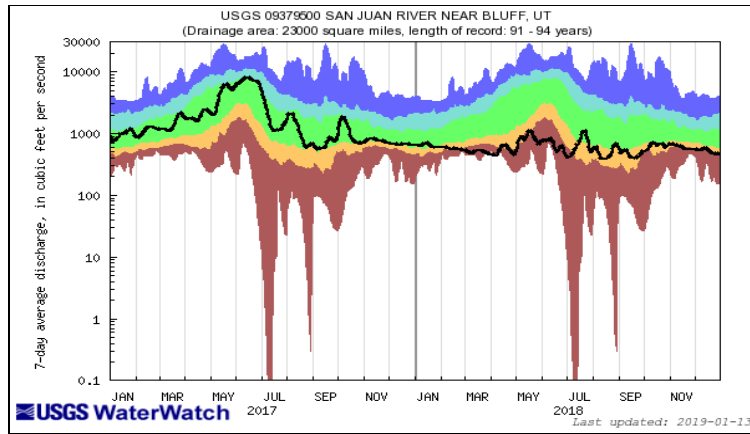


The above image shows SNOTEL snowpack percentiles for each SNOTEL site in the Intermountain West. The images below show accumulated snow water equivalent in inches (green) compared to average (blue) and last year (red) for several different sub-basins across the UCRB (and were created by the Colorado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



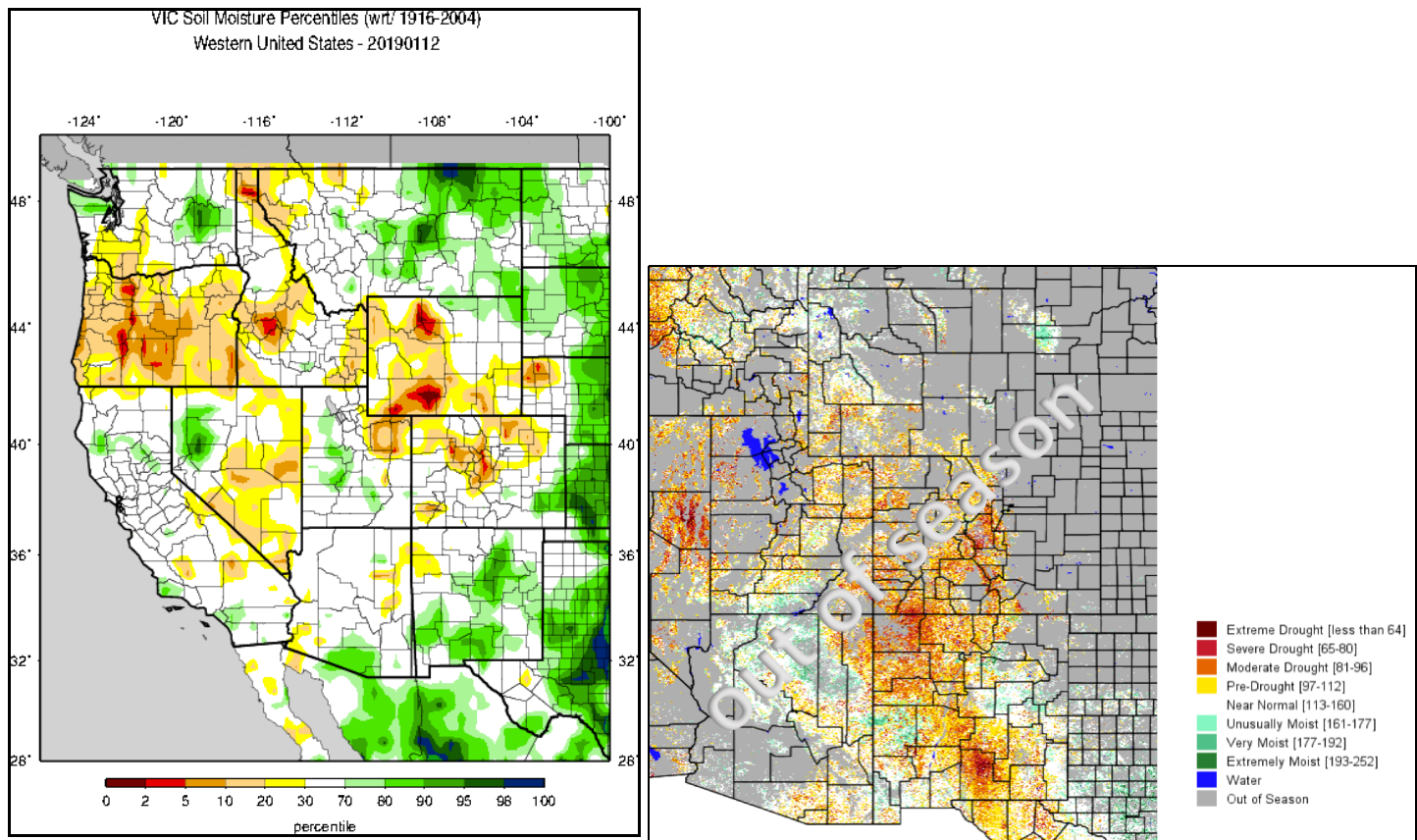
Streamflow





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.

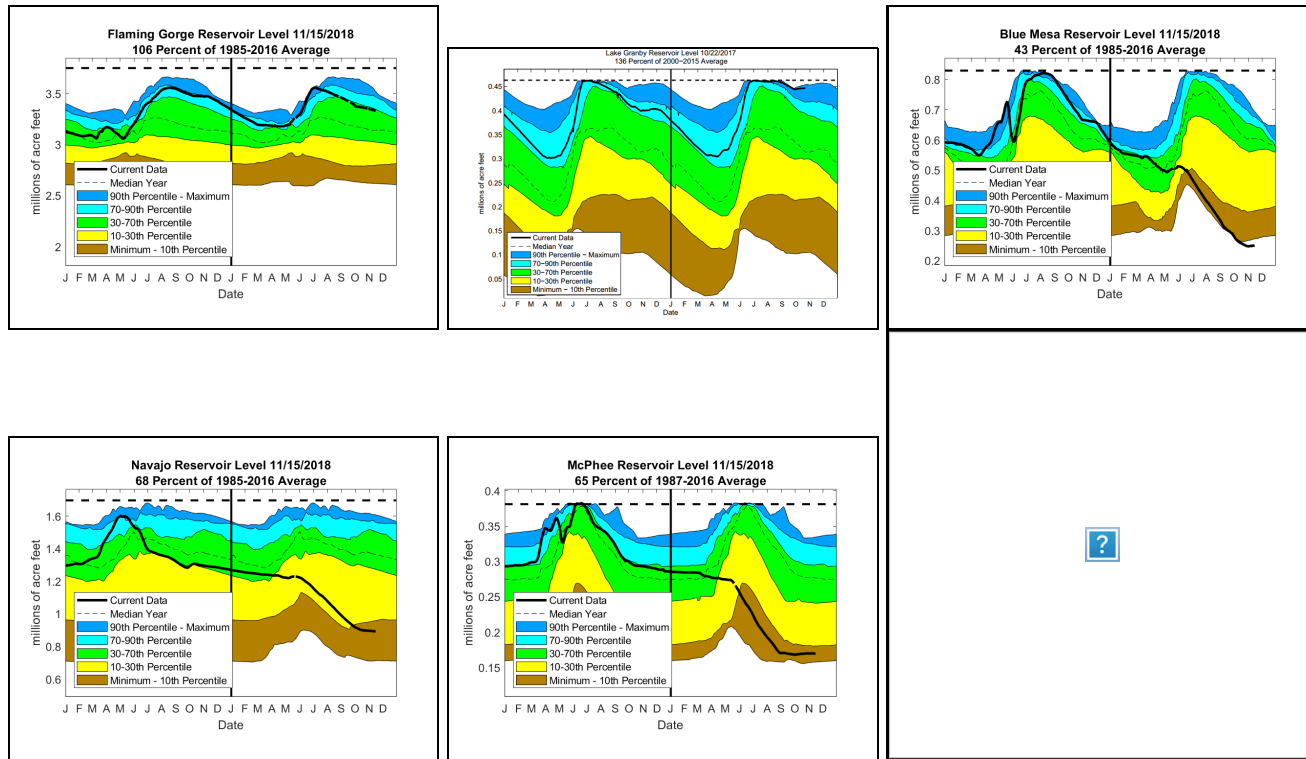
Surface Water



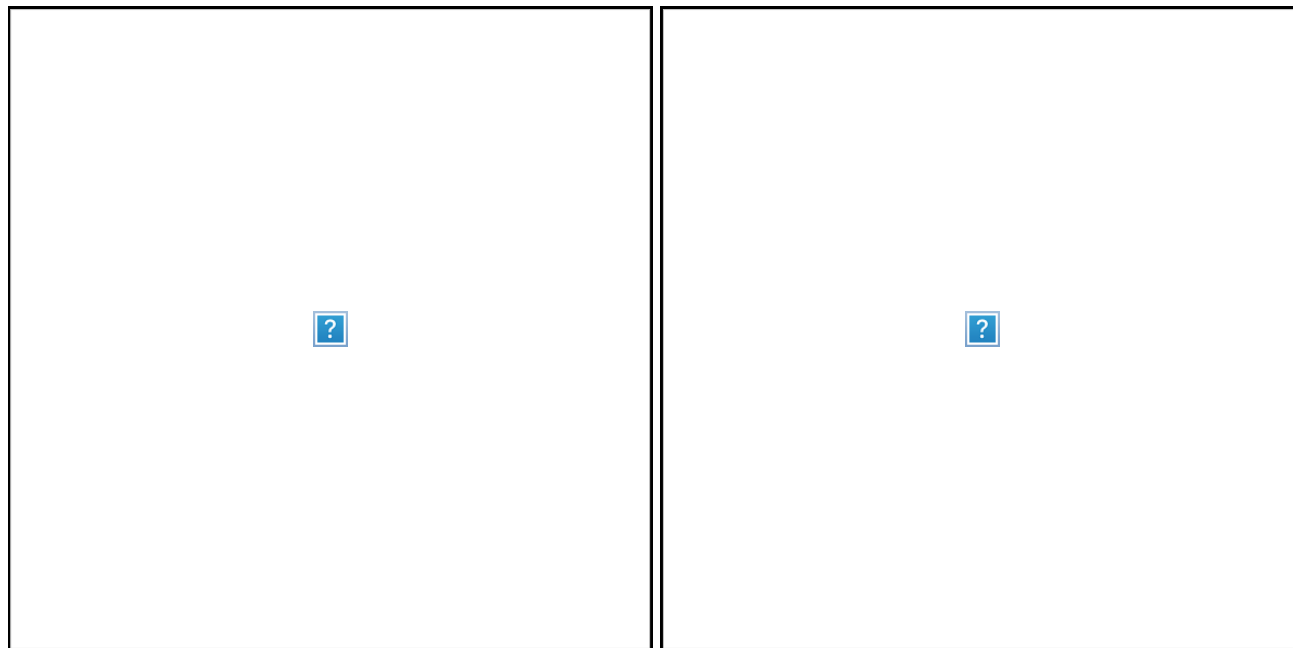
The top left image shows VIC modeled soil moisture as a percentile ranking. The top right image shows satellite-derived vegetation from the VegDRI product (which updates on Mondays).

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.



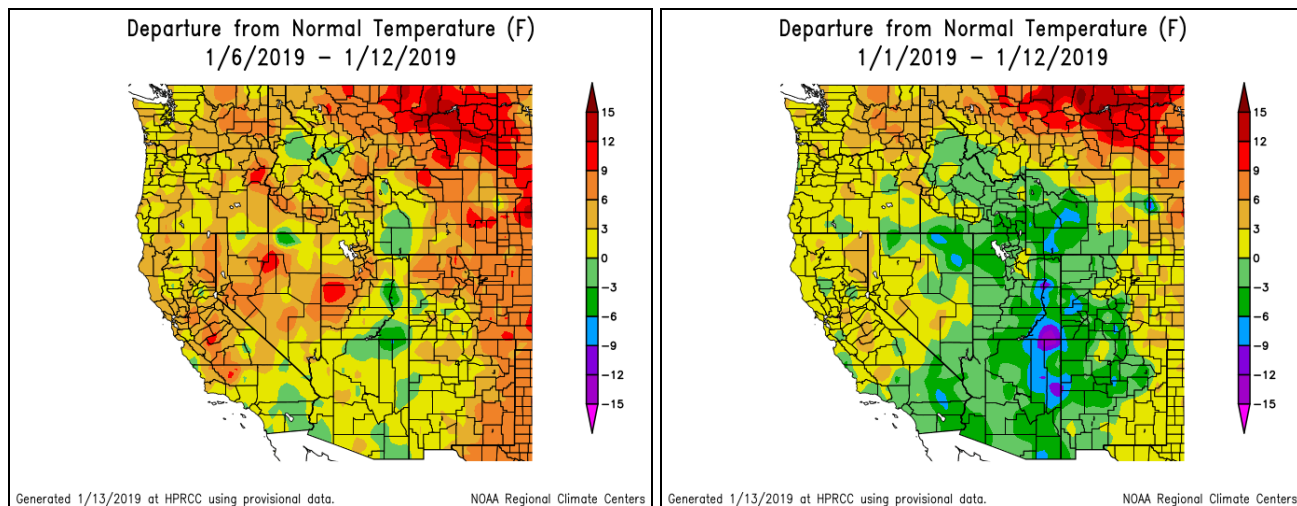
Evaporative Demand



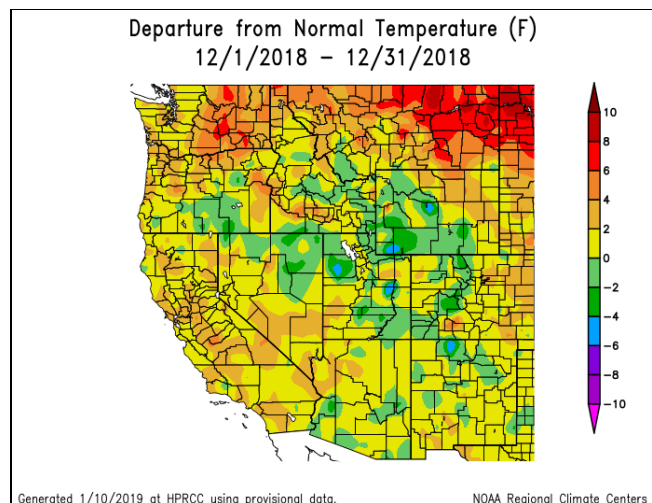


The above images are available courtesy of NOAA's Evaporative Demand Drought Index (EDDI). Drought classification listed is a function of the depth of reference evapotranspiration accumulated over a given period of record with respect to a climatology of 1981-2010. The drought categories displayed are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

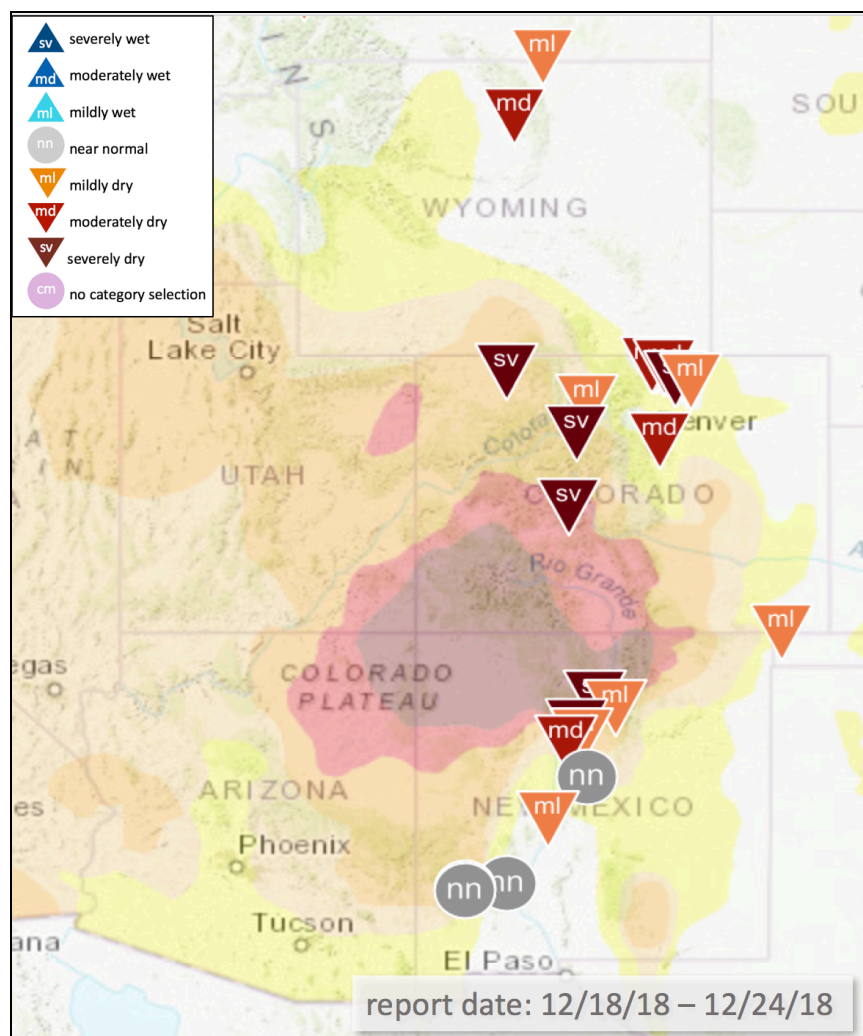
Temperature



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

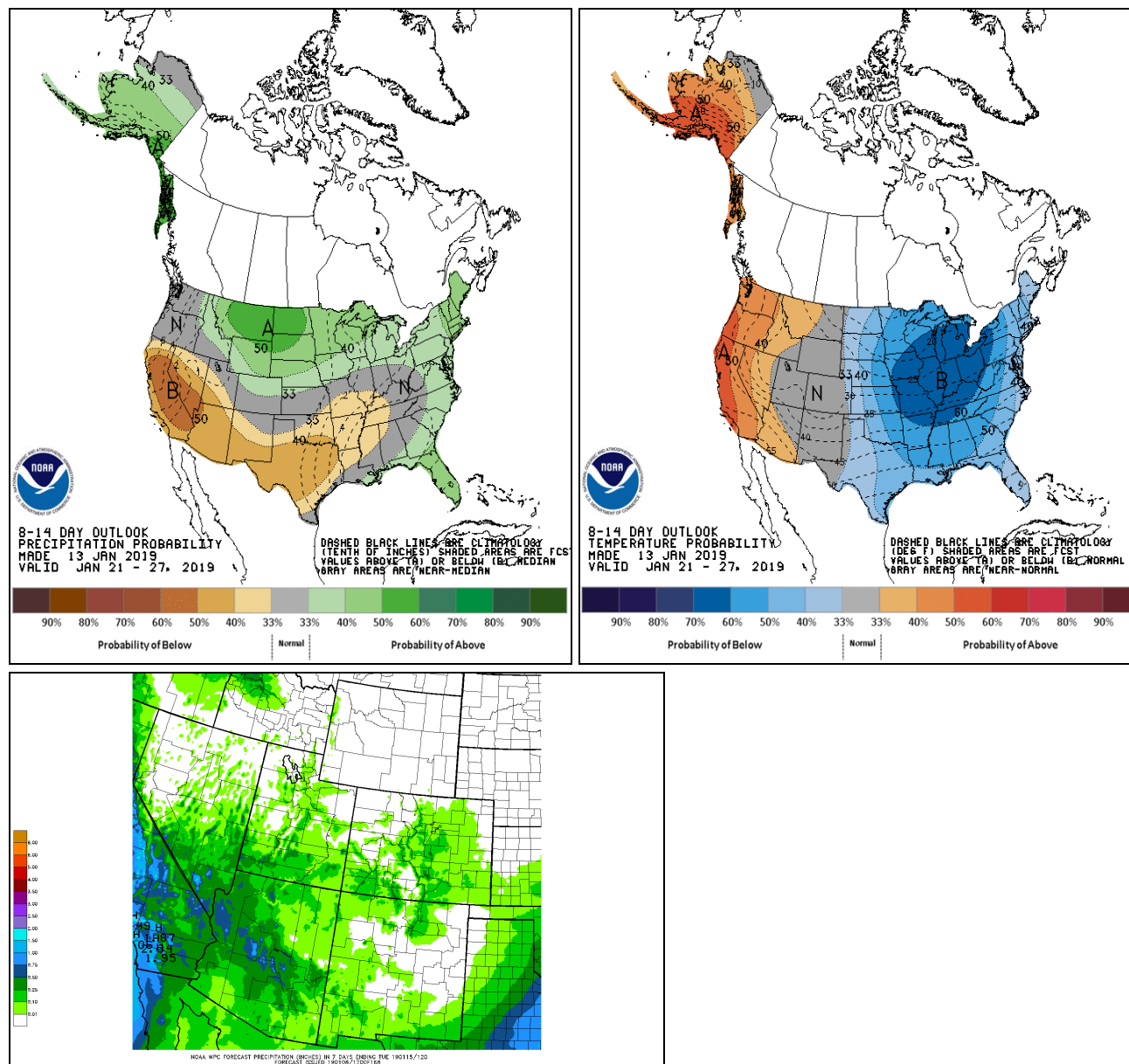


Map of current condition monitoring reports submitted to CoCoRaHS in the last week overlaid on the current U.S. Drought Monitor depiction. Specific impacts reports from local experts listed below.

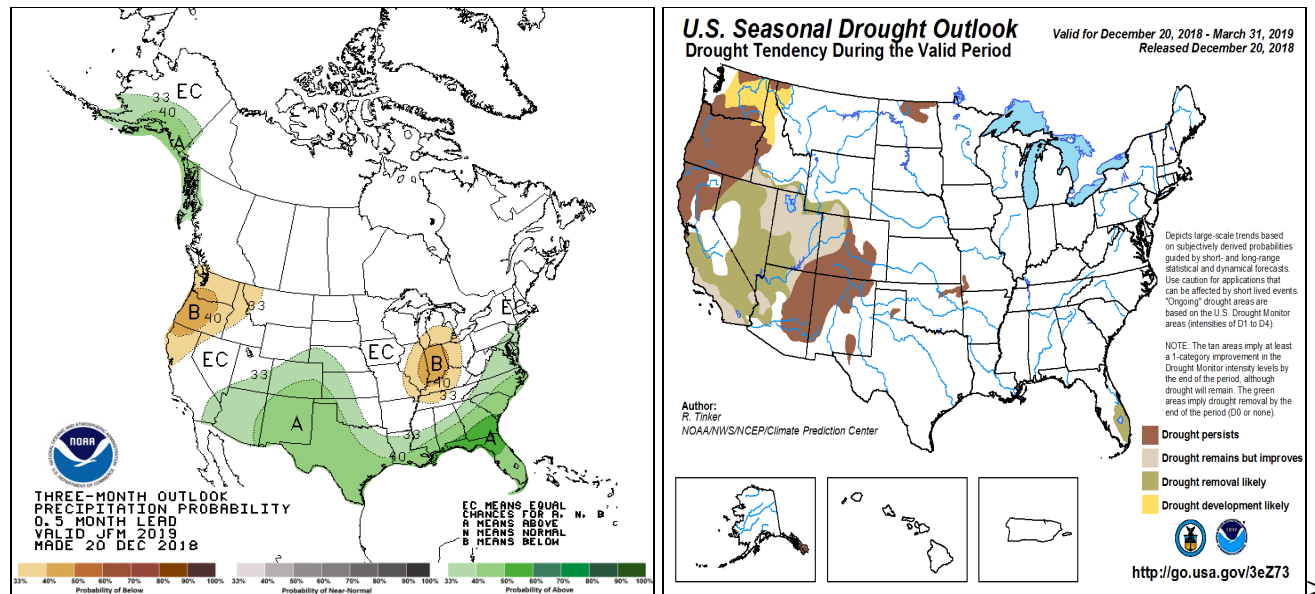
Fort Collins, CO

Local outdoor recreation shop manager referenced a lack of selling snow and cold outdoor merchandise because it hasn't snowed much. They have extra inventory of sleds that people aren't buying.

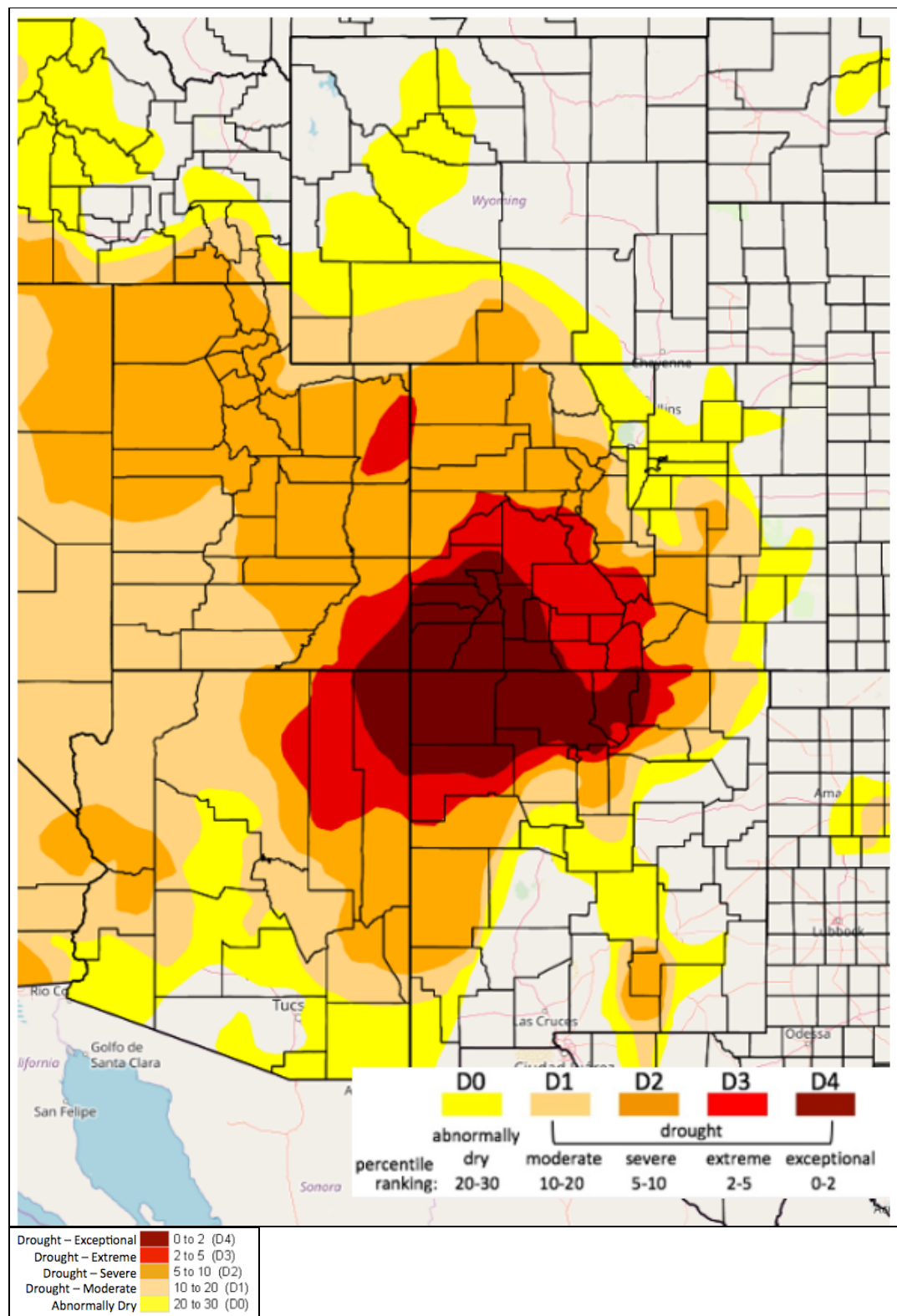
Outlook



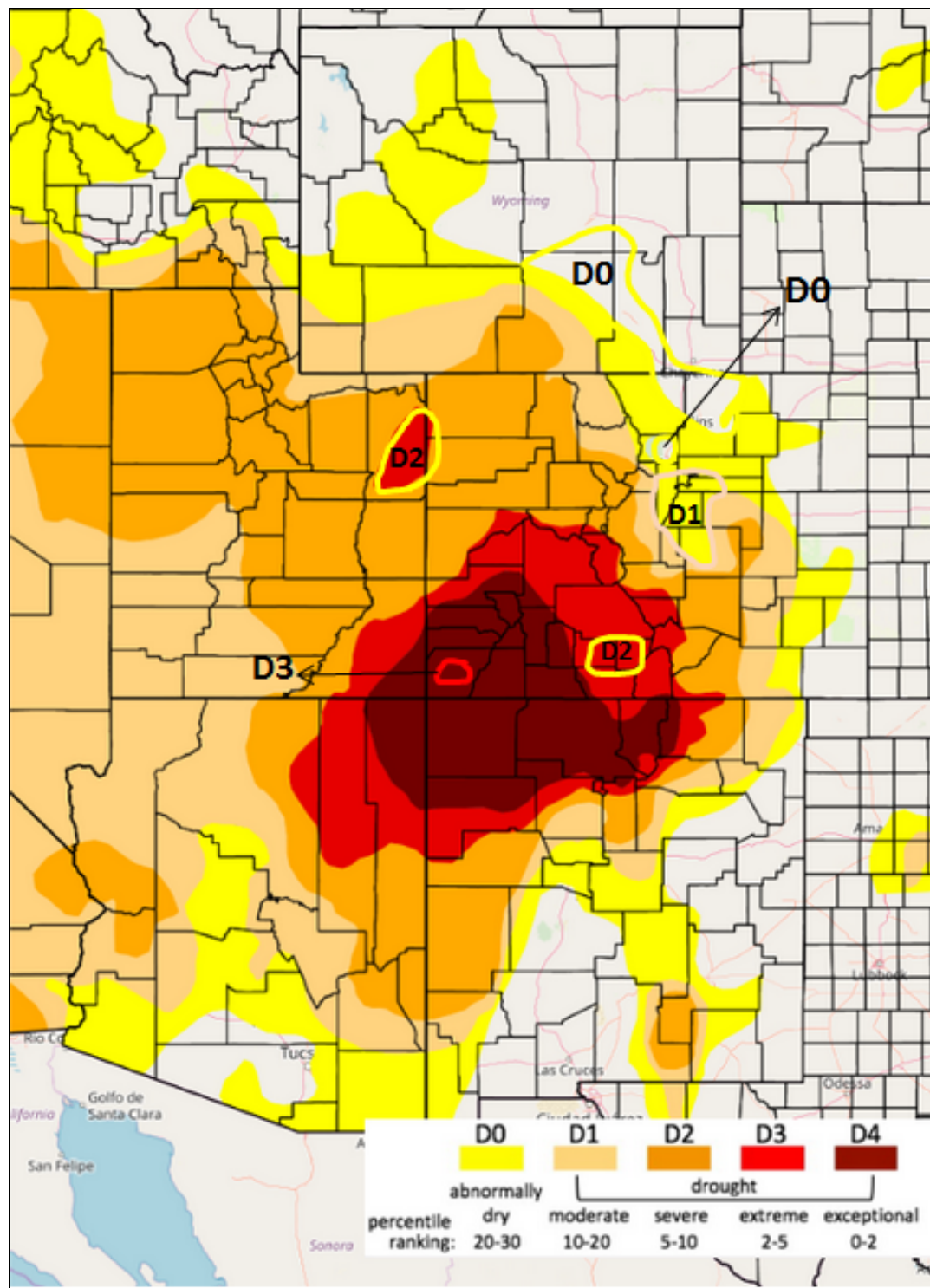
The top two images show Climate Prediction Center's Precipitation and Temperature outlooks for 8 - 14 days. The middle image shows the Weather Prediction Center's Quantitative Precipitation Forecast accumulation for seven days. The bottom left image shows the 3-month precipitation outlook from Climate 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 8, 2019

The first week of January brought some precipitation and cooler temperatures for much of the west region while east of the Front Range saw warmer temperatures with little to no precipitation. The Upper Colorado River Basin and western Colorado had a cool/wet week with below average temperatures and decent precipitation. For example, the Four Corners regions saw temperature departures of 10 to 20 degrees below average. Much of the

lower elevation regions saw 0.25-0.50" of new precipitation while higher elevations, such as the San Juan Mountains, saw 2.0-3.0".

This week's precipitation has done well to improve snowpack in the UCRB. The San Miguel/Dolores/Animas Basin is showing 78% of median, up from 61% from the previous week. Higher elevations to the north are continuing to look good. Early season snow accumulations and lack of melting have resulted in a good foundation for snowpack. Colorado, North Platte, and Yuma/White are all above 100% of median.

Eastern Colorado experienced the opposite, above average temperatures in much of the area with little to no precipitation. The Front Range experienced dry/warm conditions, zero precipitation in the last week with temperature departures of approximately 5 degrees above average. These factors have increased the likelihood of increased drought conditions in this area. 30 day SPI values over Boulder and Weld counties have shown worsening conditions over the last week. The northern Front Range is showing 0 to -2 SPI's on all time scales.

The current forecast for the IMW starts off dry as the NWS is calling for a ridge of high pressure moving in Tuesday-Thursday. Friday a weak trough moves through with models indicating little to no snowfall. On Saturday afternoon another system might bring light flurries along the continental divide. Another system expected to move into the area early next week that could possibly bring light moisture to the Four Corners region.

Recommendations:

UCRB: Over the first week of January the UCRB received decent precipitation and temperatures were below average. It is recommended that the area of D3 over Uintah County Utah be improved to D2. This region saw a temperature departure of 5 to 10 degrees lower than average and received 0.25 to 1.50" of precipitation.

It is recommended to improve a small region in the Four Corners area, south of Cortez up to Yellow Jacket in Montezuma County, from D4 to D3.

Cortez is now nearly an inch above normal precipitation since the beginning of the water year, and received approximately 0.5" in the last week.

However, we recommend containing this improvement to the lower elevations as higher elevations are still showing below average snowpack.

San Luis Valley: It is recommended to improve the region over Rio Grande and Alamosa counties in Colorado from D3 to D2. These areas also experienced below average temperatures and 0.10 to 1.00" of precipitation in

the last week. SPI values support this on all time scales.

Eastern Colorado: While the UCRB and western Colorado had some recommended improvements, the opposite is suggested for eastern Colorado. It is recommend to increase drought from D0 to D1 over El Paso county into Adams county, add D0 to Boulder county, and add D0 to northcentral Colorado into Wyoming. Eastern Colorado saw little to no precipitation and much of the region showed above average temperatures.