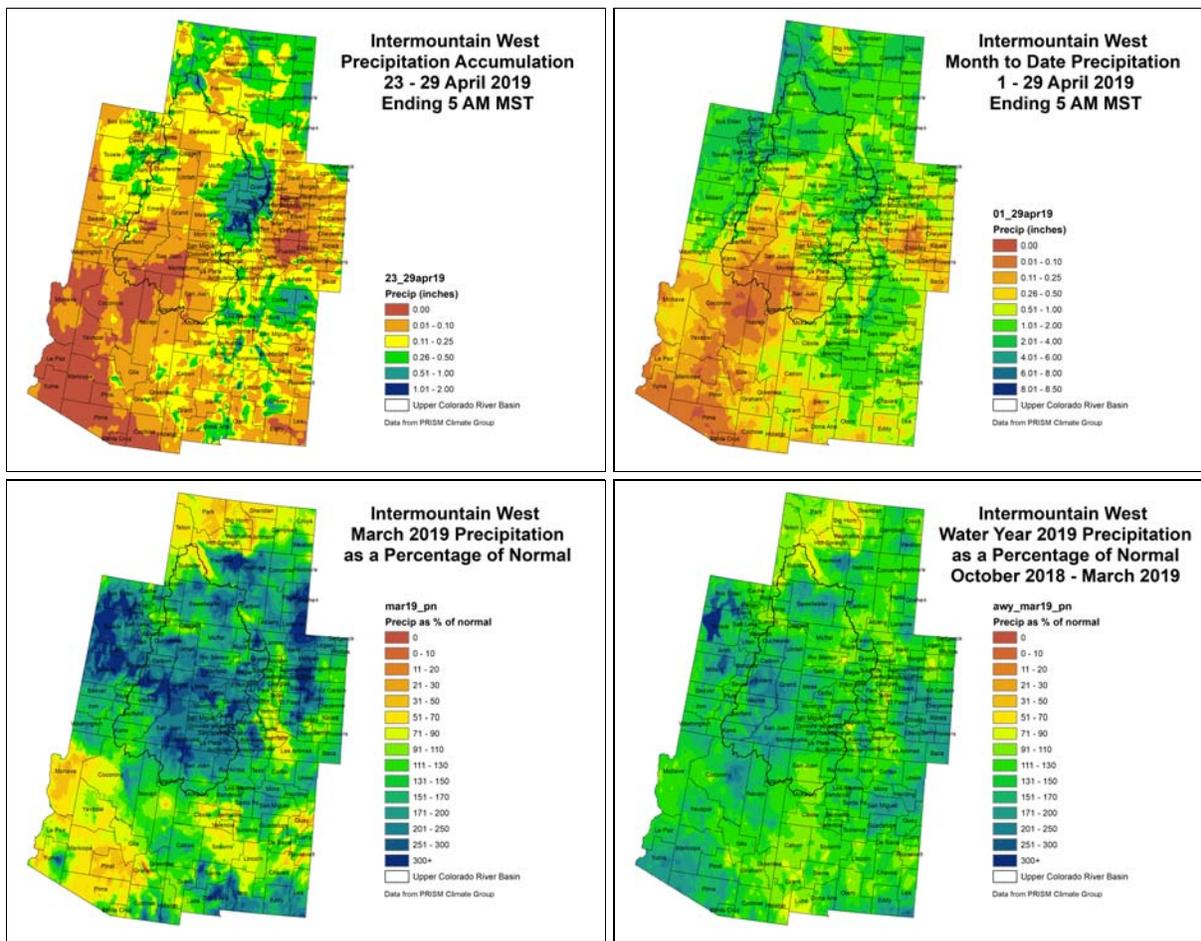


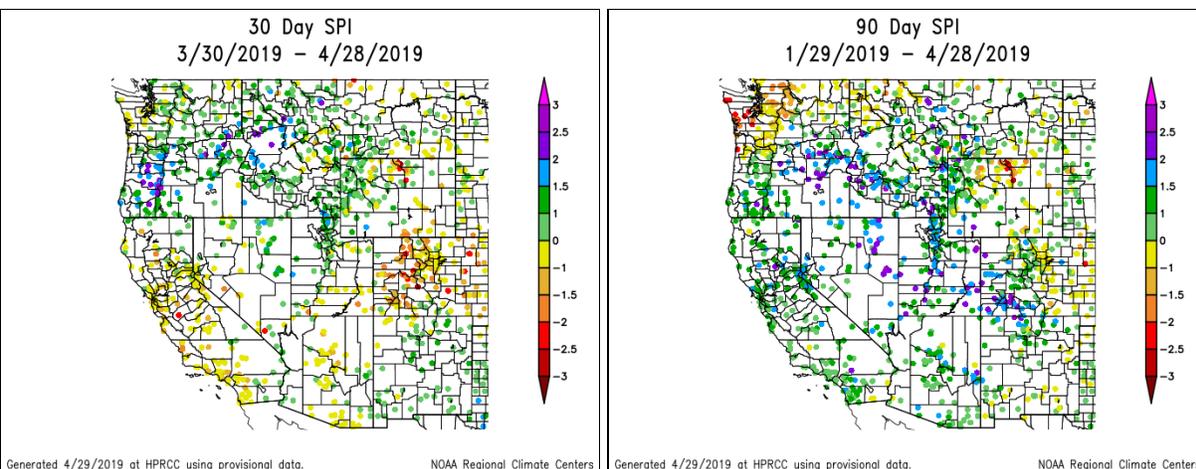
NIDIS Intermountain West Drought Early Warning System April 30, 2019

Precipitation

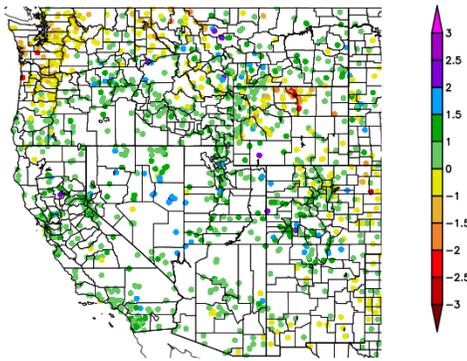


The images above use daily precipitation statistics from NWS COOP, CoCoRaHS, and CoAgMet stations. From top to bottom, and left to right: most recent 7-days of accumulated precipitation in inches; current month-to-date accumulated precipitation in inches; last month's precipitation as a percent of average;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

Standardized Precipitation Index

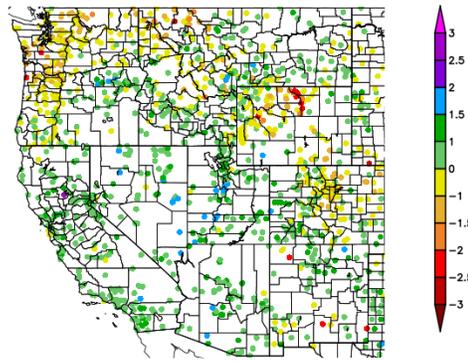


6 Month SPI
10/29/2018 - 4/28/2019



Generated 4/29/2019 at HPRCC using provisional data. NOAA Regional Climate Centers

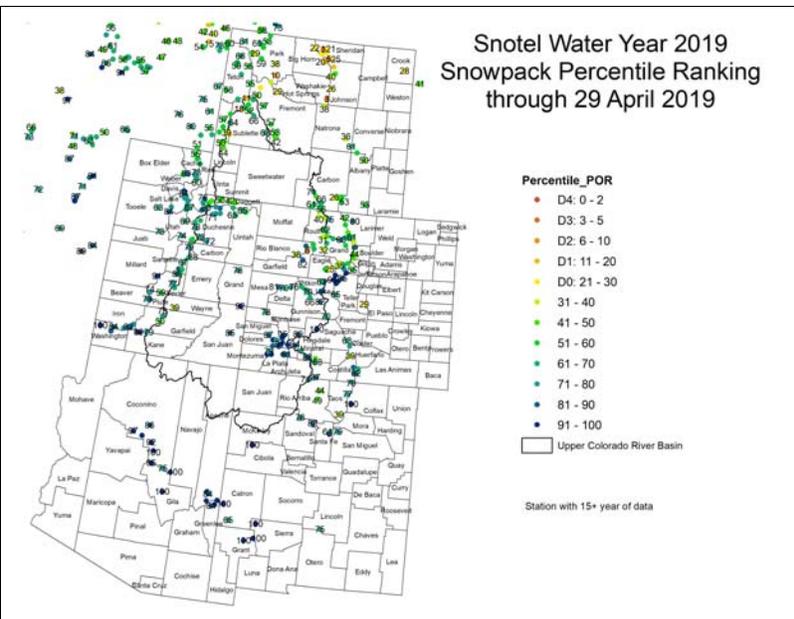
9 Month SPI
7/29/2018 - 4/28/2019



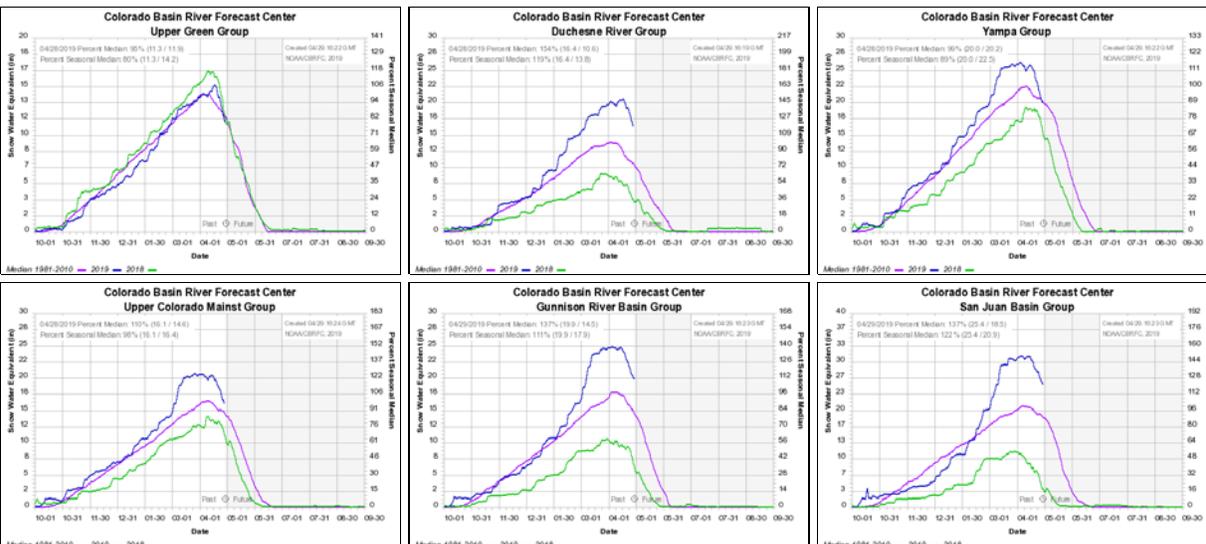
Generated 4/29/2019 at HPRCC using provisional data. NOAA Regional Climate Centers

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

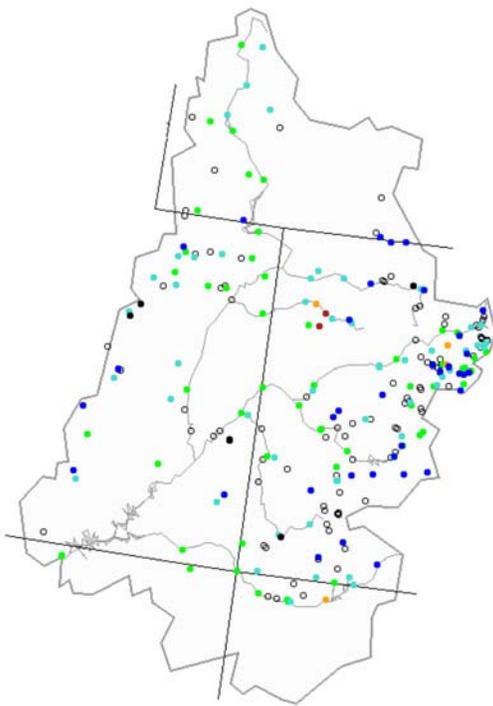


The above image shows SNOTEL snowpack percentiles for each SNOTEL site in the Intermountain West. The images below show accumulated snow water equivalent in inches (green) compared to average (blue) and last year (red) for several different sub-basins across the UCRB (and were created by the Colorado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



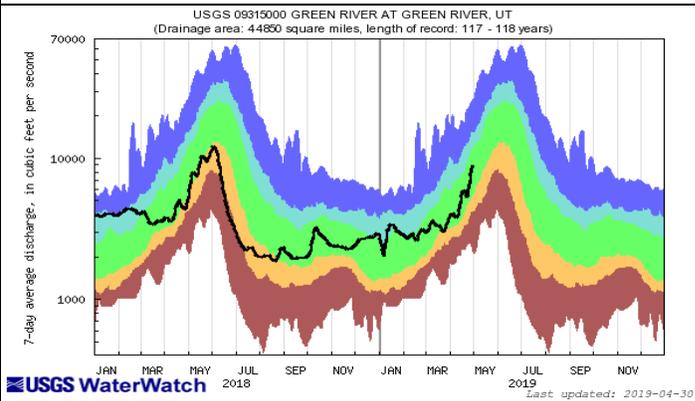
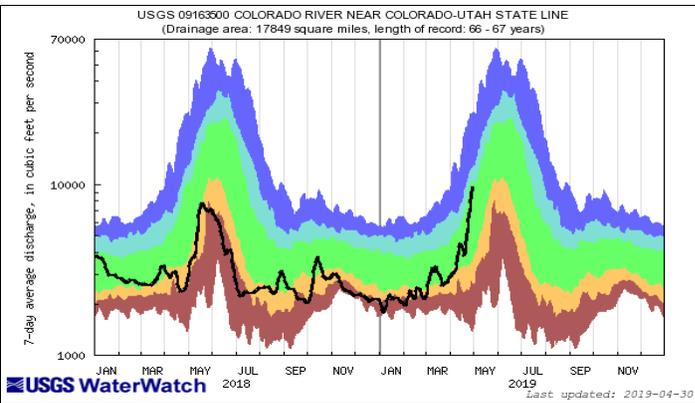
Streamflow

Monday, Apr 11 29, 2019

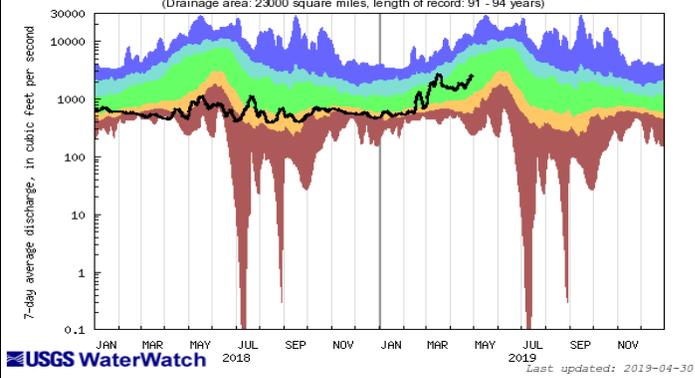


Explanation - Percentile classes

Color	Percentile Class	Description
Red	<10	Much below normal
Orange	10-24	Below normal
Yellow	25-75	Normal
Light Green	76-90	Above normal
Dark Green	>90	Much above normal
Black	High	
White	Not-ranked	

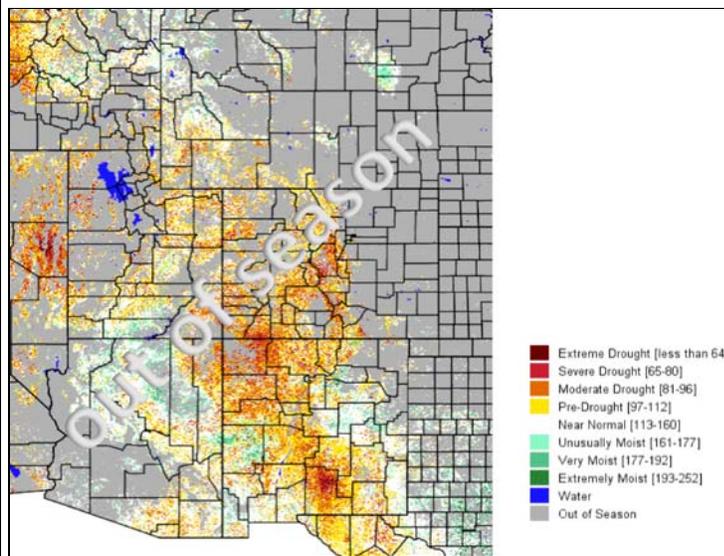
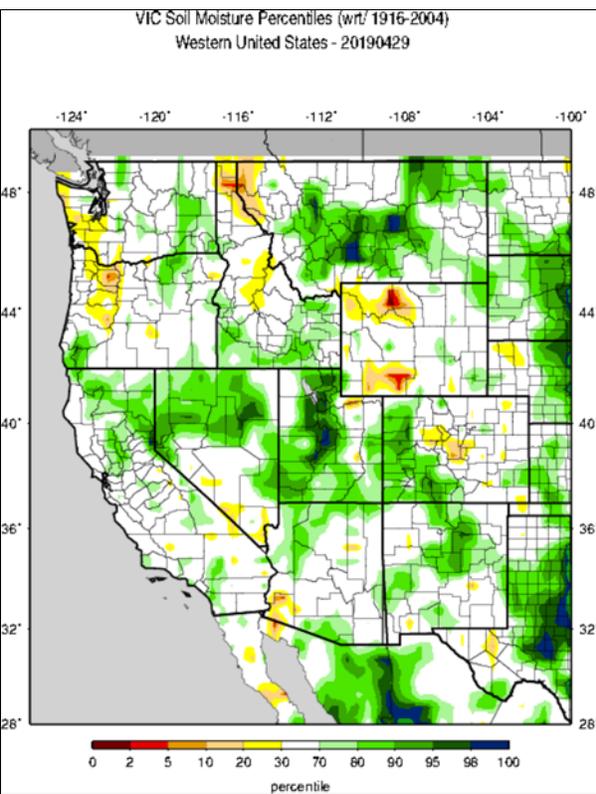


USGS 09379500 SAN JUAN RIVER NEAR BLUFF, UT
(Drainage area: 23000 square miles, length of record: 91 - 94 years)



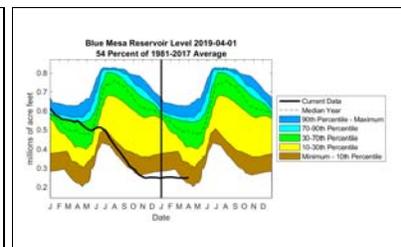
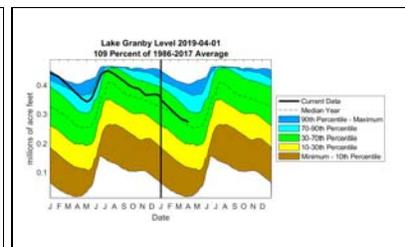
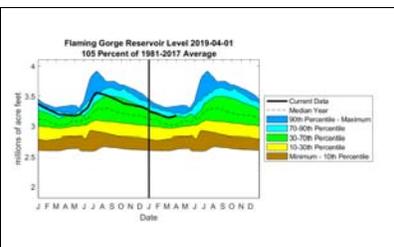
The top left image shows 7-day averaged streamflows as a percentile ranking across the UCRB. The top right image shows 7-day averaged discharge over time at three key sites around the UCRB: The Colorado River at the CO-UT state line; the Green River at Green River, UT; and the San Juan River near Bluff,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

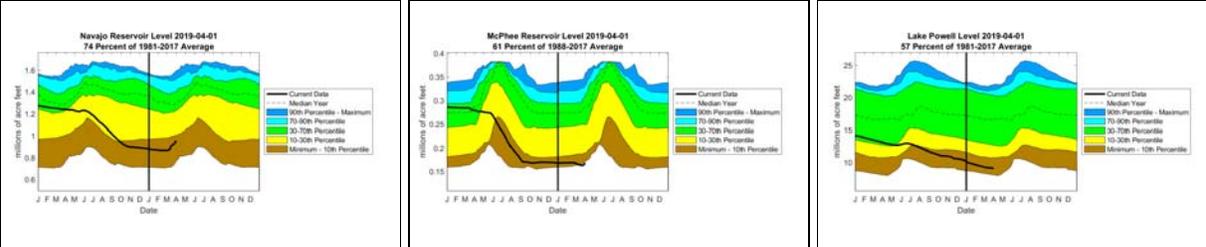
Surface Water



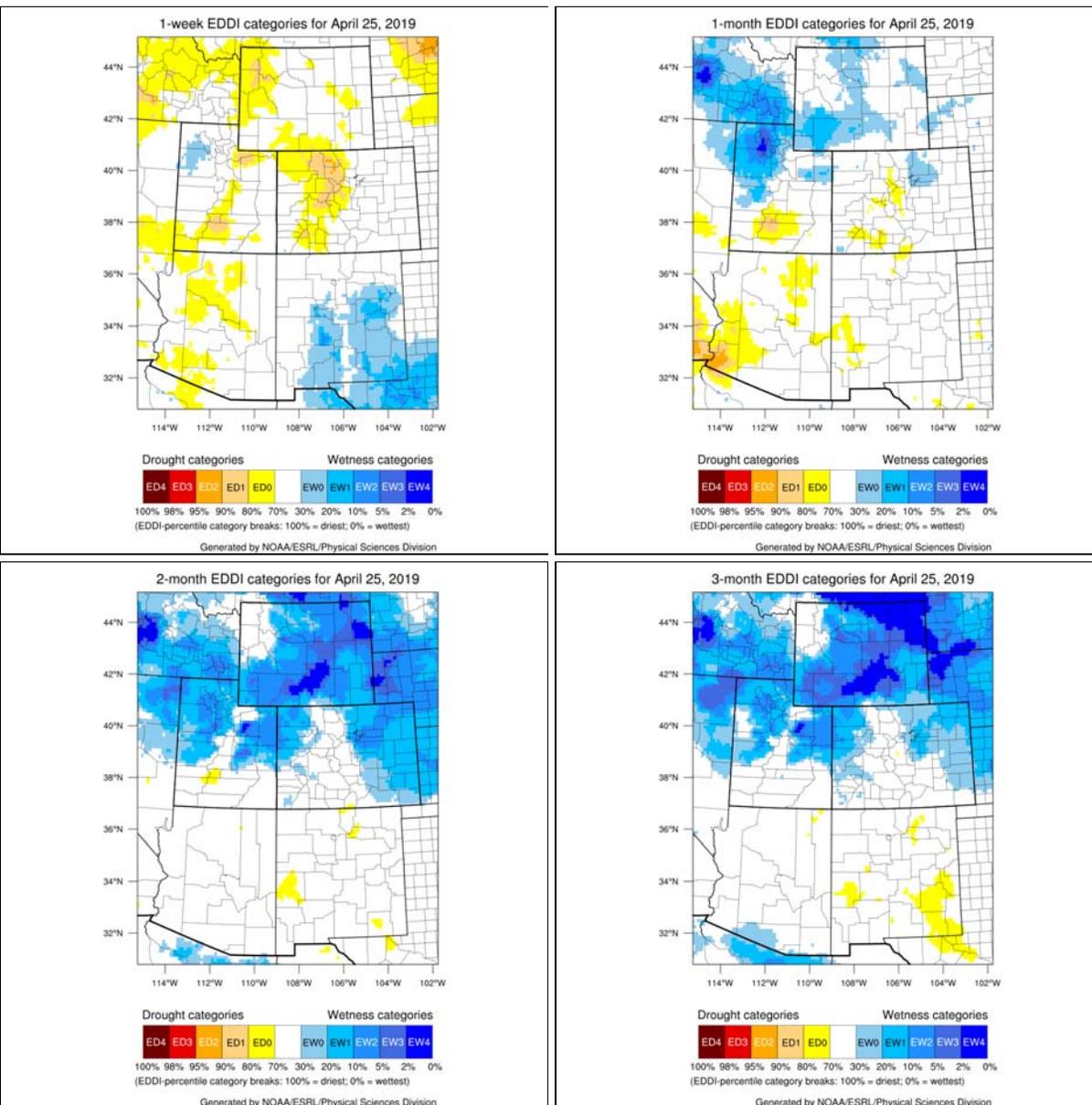
The top left image shows VIC modeled soil moisture as a percentile ranking. The top right image shows satellite-derived vegetation from the VegDRI product (which updates on Mondays).

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.





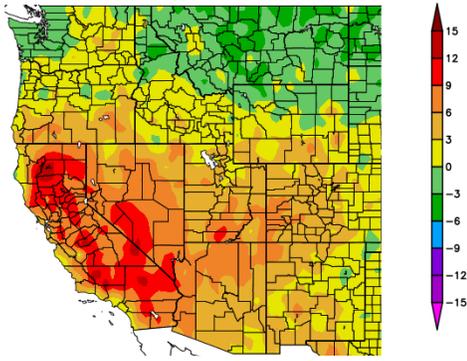
Evaporative Demand



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.

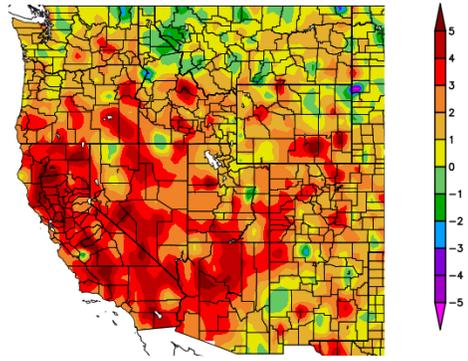
Temperature

Departure from Normal Temperature (F)
4/23/2019 - 4/29/2019



Generated 4/30/2019 at HPRCC using provisional data. NOAA Regional Climate Centers

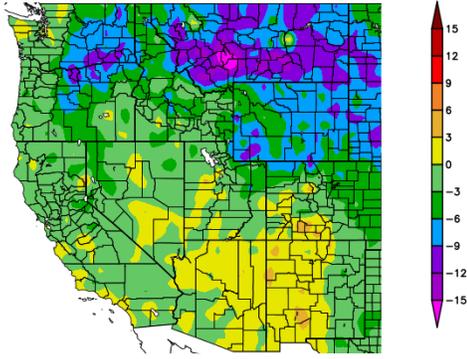
Departure from Normal Temperature (F)
4/1/2019 - 4/29/2019



Generated 4/30/2019 at HPRCC using provisional data. NOAA Regional Climate Centers

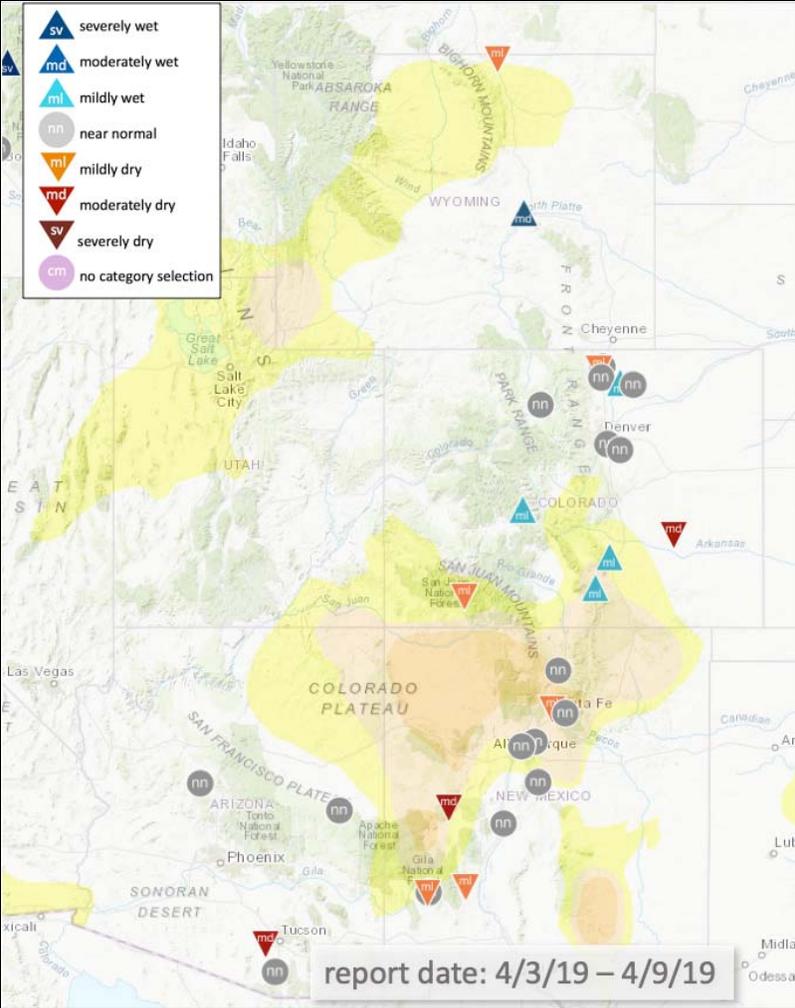
All images show temperature departures from average over different time periods (last 7 days on top left; month-to-date on top right; last full month on bottom). Temperature departure maps provided by HPRCC ACIS.

Departure from Normal Temperature (F)
3/1/2019 - 3/31/2019



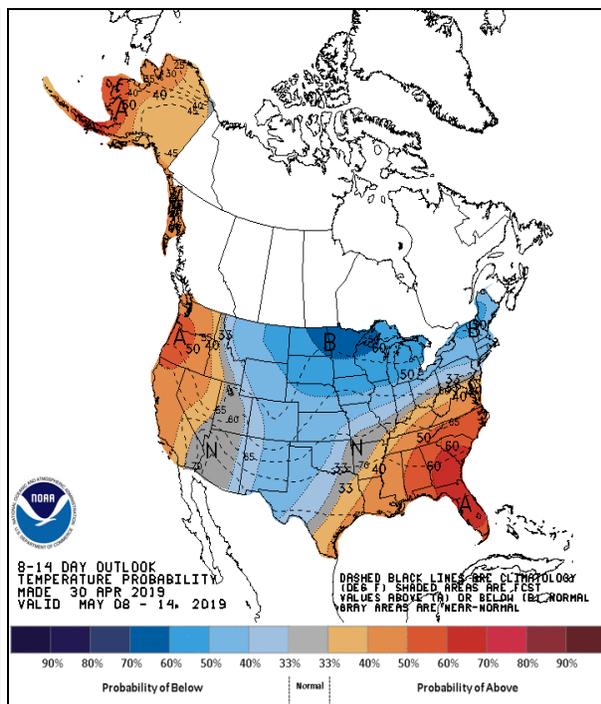
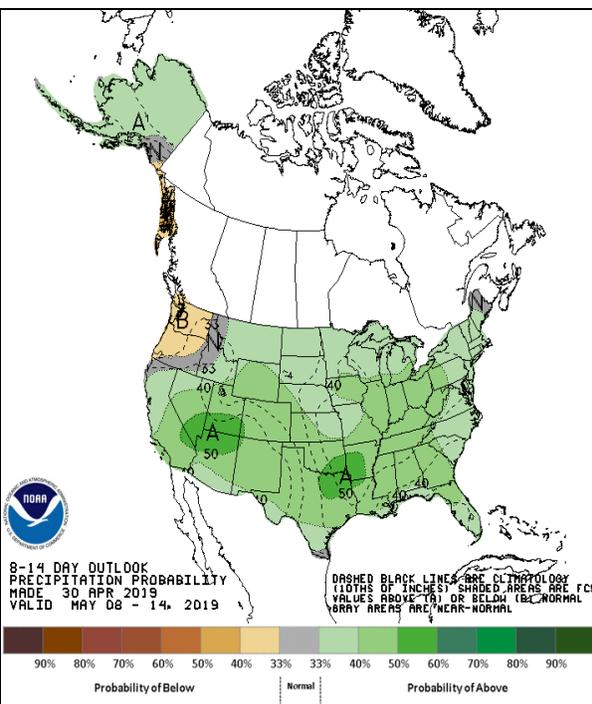
Generated 4/20/2019 at HPRCC using provisional data. NOAA Regional Climate Centers

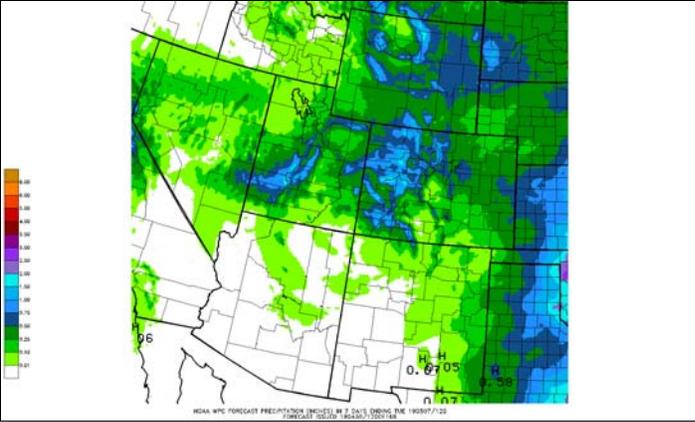
Condition Monitoring and Impacts



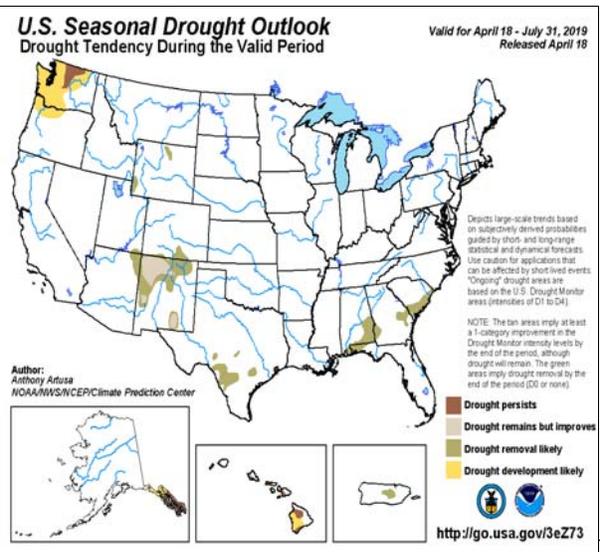
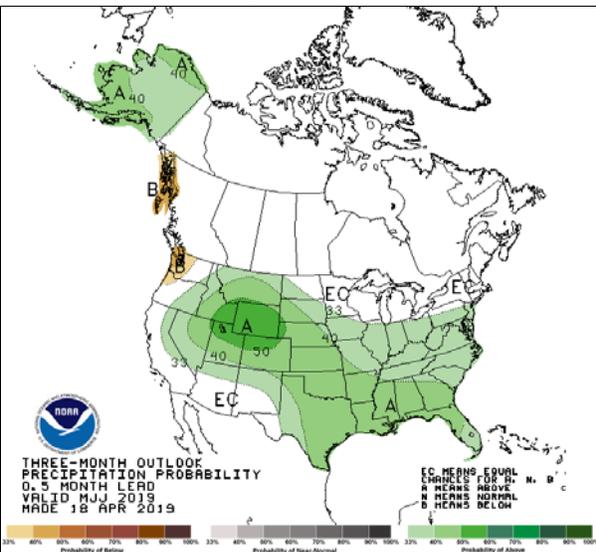
Map of current condition monitoring reports submitted to CoCoRaHS in the last week overlaid on the current U.S. Drought Monitor depiction. Specific impacts reports from local experts listed below.

Outlook

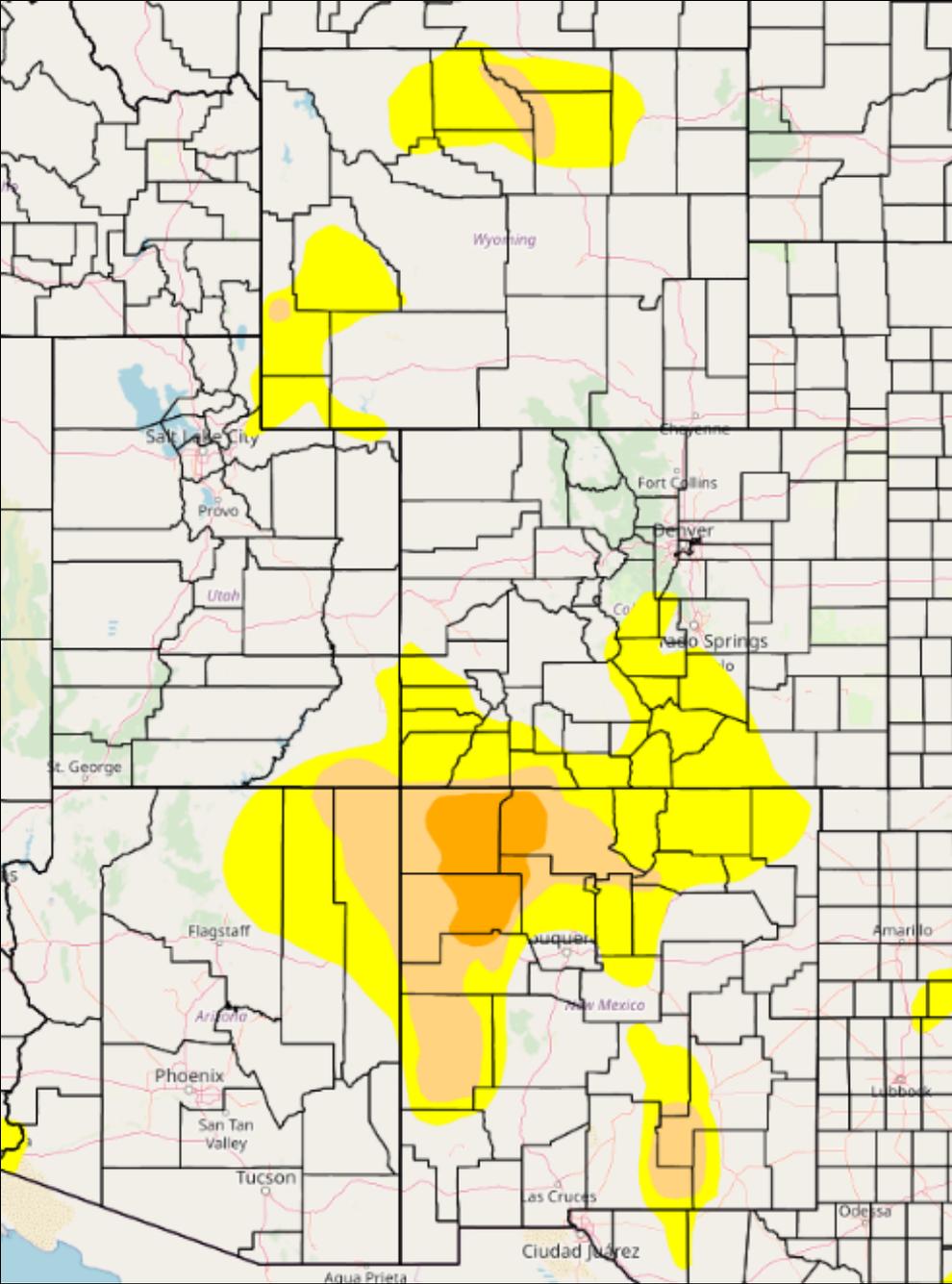




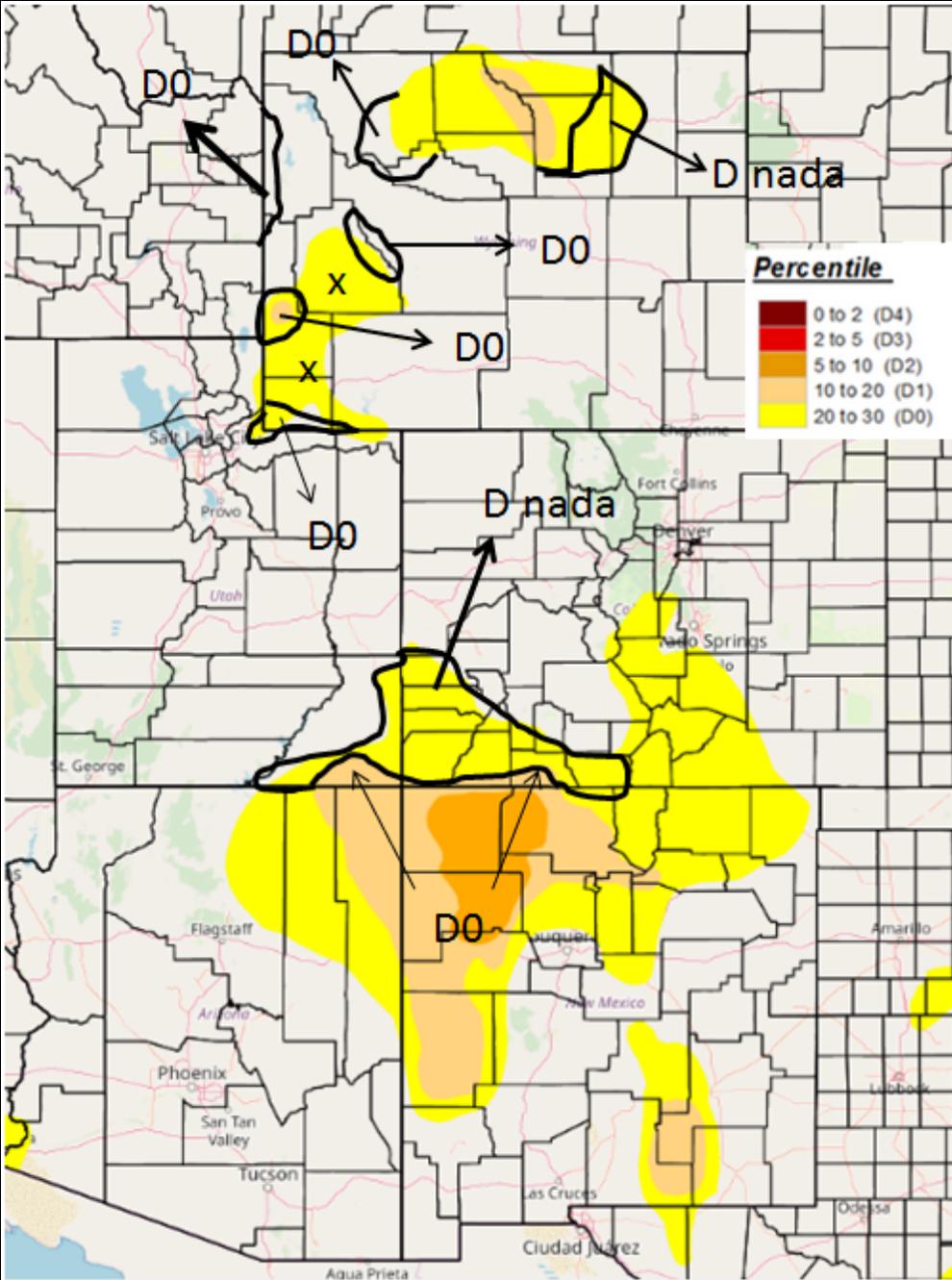
The top two images show Climate Prediction Center's Precipitation and Temperature outlooks for 8 - 14 days. The middle image shows the Weather Prediction Center's Quantitative Precipitation Forecast accumulation for seven days. The bottom left image shows the 3-month precipitation outlook from Climate 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: April 30, 2019

The month of April to date has warmer than average which can be seen as a nice break from the cooler than average temperatures that much of the Intermountain West experienced in February and March. Temperatures have been above average for the month with the exception of northern Wyoming where they experienced temperatures slightly below average. This last week the UCRB and eastern Colorado all showed above average temperatures with the greatest departure from normal of 9-12 degrees warmer over southern Utah. Precipitation totals over the last week have been below average across western Colorado, northwest New Mexico and Arizona, but have remained above average for most of northern Utah, and western Wyoming. That being said, the precipitation for the past 24 hours was impressive with the statewide arithmetic average of 0.39" making it one of the wetter days for the entire water year to date in Colorado.

Snowpack numbers are still well above normal for this time of year across the Intermountain West. Snowpack peaked at over 150% of normal for parts of southwest Colorado and Utah, this included some record high snowpack numbers. At this point it's looking like all the snowpack measurement sites have peaked for the year, and the melt

process has begun.

With the snowmelt season beginning, we are also starting to see streamflows come up. Even though we are expecting cooler than average temperatures for the first two weeks of May we can still expect big changes in flows and reservoir levels in the upcoming weeks as snowpack continues to melt. Soil moisture is average or better across the clear majority of the Intermountain West.

Temperatures over the next seven days will be average through Utah and Colorado, slightly cooler than average over Wyoming and slightly warmer than average over the southeast corner of Colorado. The precipitation forecast is hinting at a pretty normal spring pattern for much of Wyoming and eastern Colorado. The northern Rockies and Uintahs will likely receive 0.50-1.50" with totals tapering off on the valleys and plains. The 8-14 day outlook is calling for a continuation of cooler than normal temperatures and normal moisture.

The seasonal outlook indicates an increased chance of above average precipitation for most of the Intermountain West for May, June, and July. These odds are highest in western Wyoming and northern Utah.

Recommendations:

Wyoming: We are in agreement with the recommendations provided by the Wyoming drought monitor that include trimming of some D0 in the southwest corner while adding some D0 to the northwest corner. We considered adding some D0 areas over the southeast in Laramie and Carbon counties but decided to hold off as these areas received a nice dose of moisture yesterday, close to an inch in Carbon county.

UCRB: It is recommended that the D0 over south eastern Utah and south western Colorado be improved to D nada. An improvement from the D1 areas, over San Juan county Utah and La Plata/Archuleta counties in Colorado, to D0 is also recommended. These areas received a nice dose of moisture yesterday, over an inch in some areas. As our snowpack built, we expressed concern on several occasions about improving conditions too fast in the wake of 2018's exceptional drought. Now that the melt season has come, we see these concerns are for naught. Stream flows are above normal, soil moisture is above normal, McPhee Reservoir is expected to fill, and there is still plenty of snowpack at high elevations left to be melted. While low SPIs may still exist at timescales greater than 12 months, lingering impacts on the hydrologic system are likely being absorbed well downstream.

Eastern Colorado: Status quo. Eastern Colorado did not receive much precipitation over the last week with the exception of the northeast counties seeing the greatest totals of around 0.50" falling over the weekend. Long term SPIs are starting to show dryness over northeast Colorado. However, month-to-date precipitation for April looks decent and March precipitation totals in this area were great, most areas showing 200-300 percent of normal. We will watch this area closely; downgrading may be in order if the first couple weeks of May don't provide adequate precipitation.