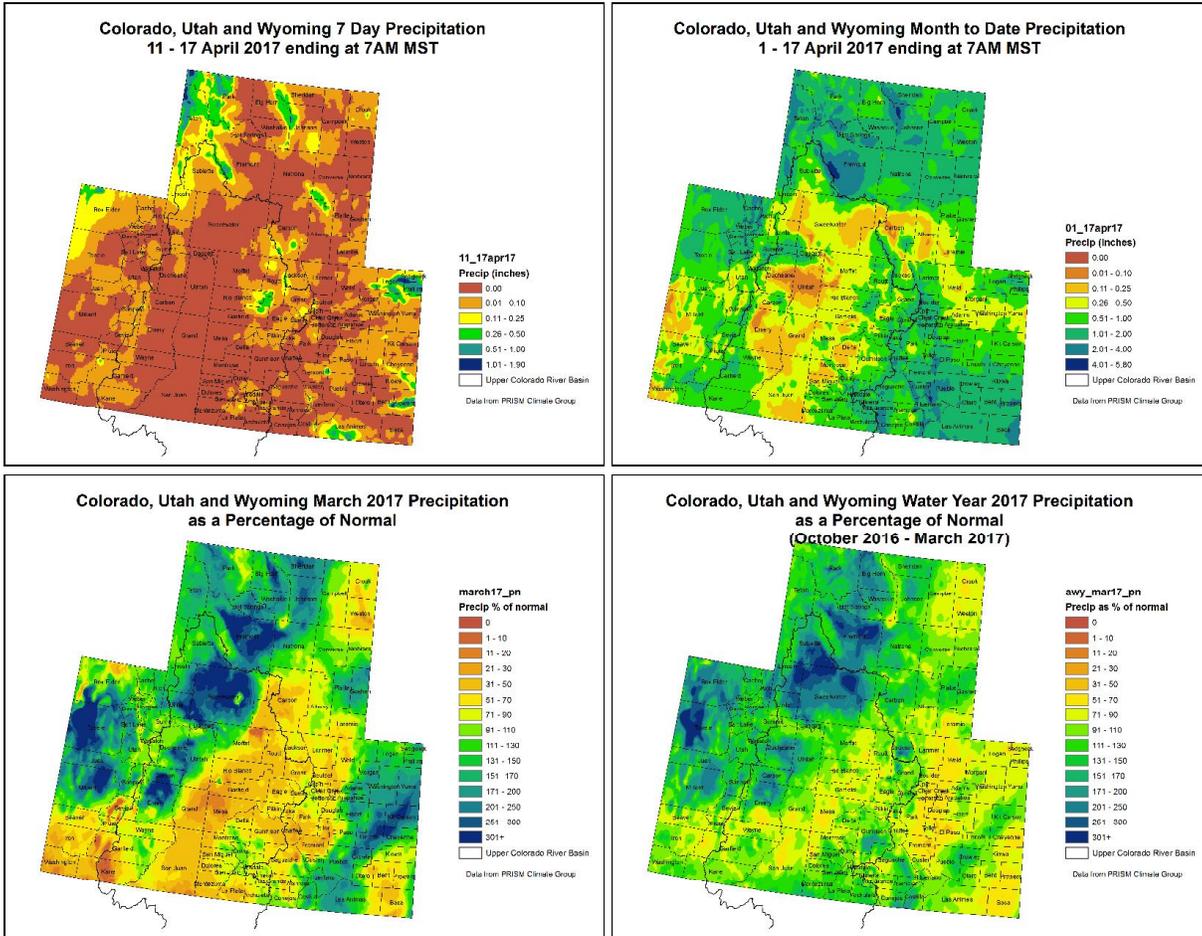


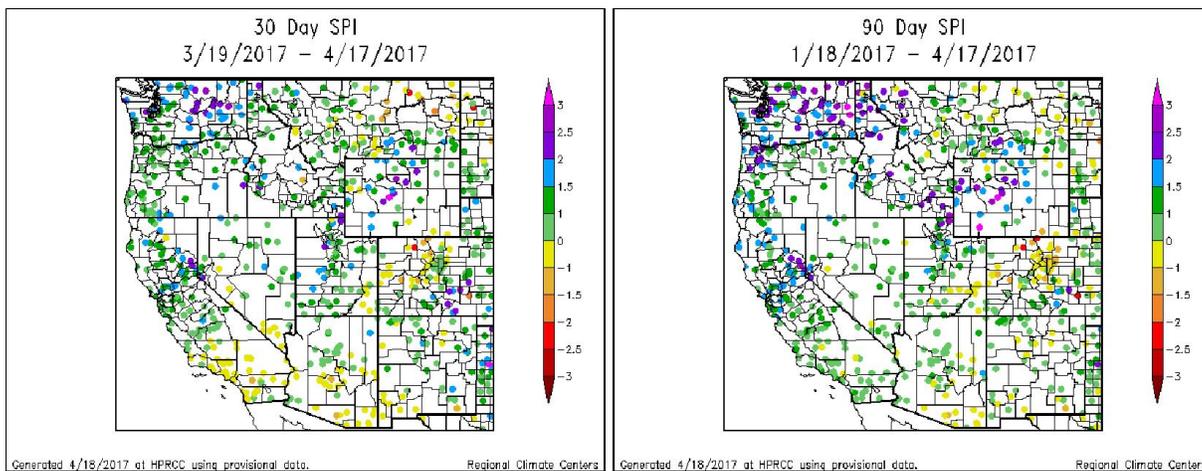
NIDIS Intermountain West Drought Early Warning System April 18, 2017

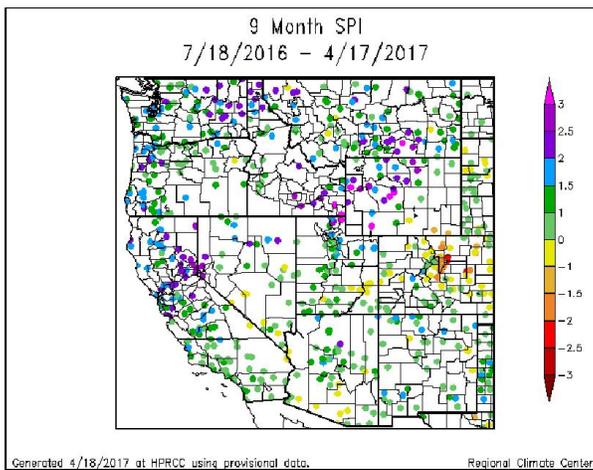
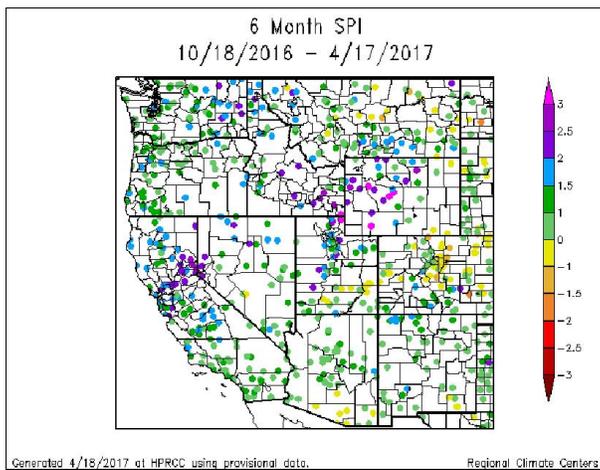
Precipitation



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.

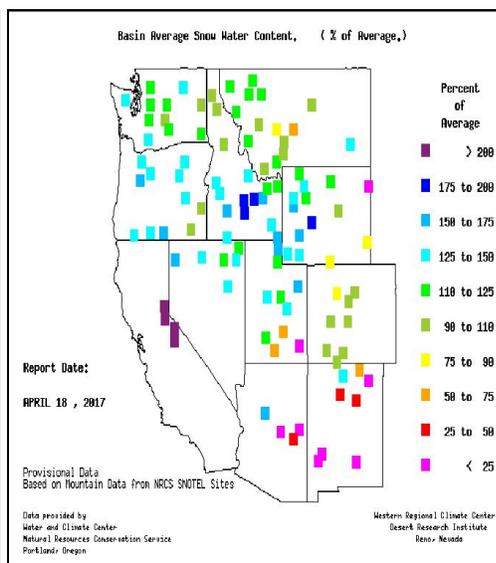
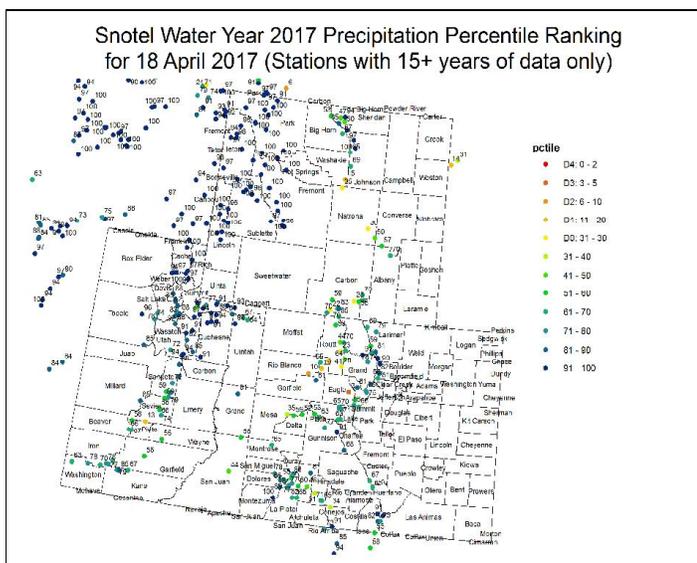
Standardized Precipitation Index



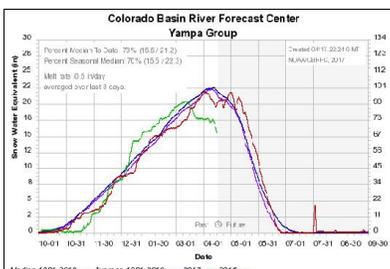
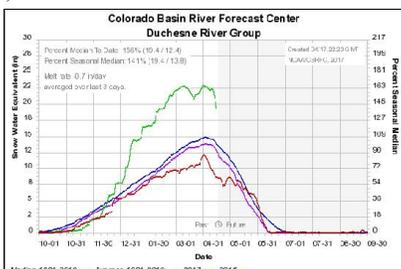
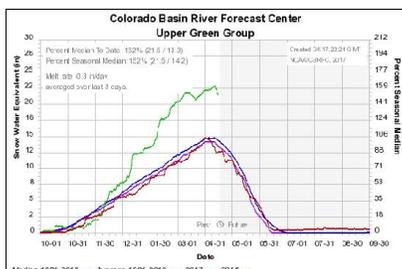


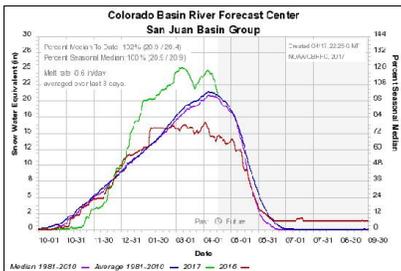
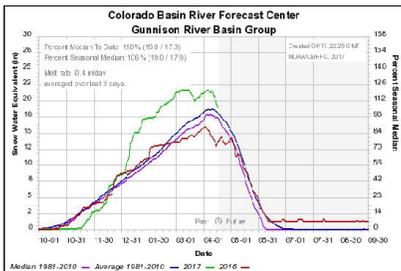
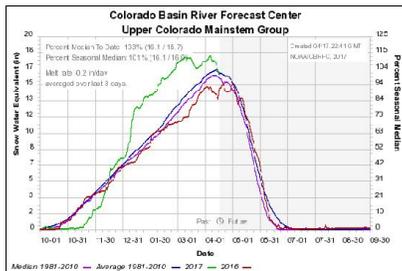
Standardized Precipitation Index standardizes precipitation accumulations for a specified time period into percentile rankings. -1.0 to -1.5 is equivalent to a D1 to D2. -1.5 to -2.0 is equivalent to a D2 to D3. -2.0 and worse is equivalent to a D3 to D4. 30- and 60-day SPIs focus on short-term conditions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

Snotel and Snowpack

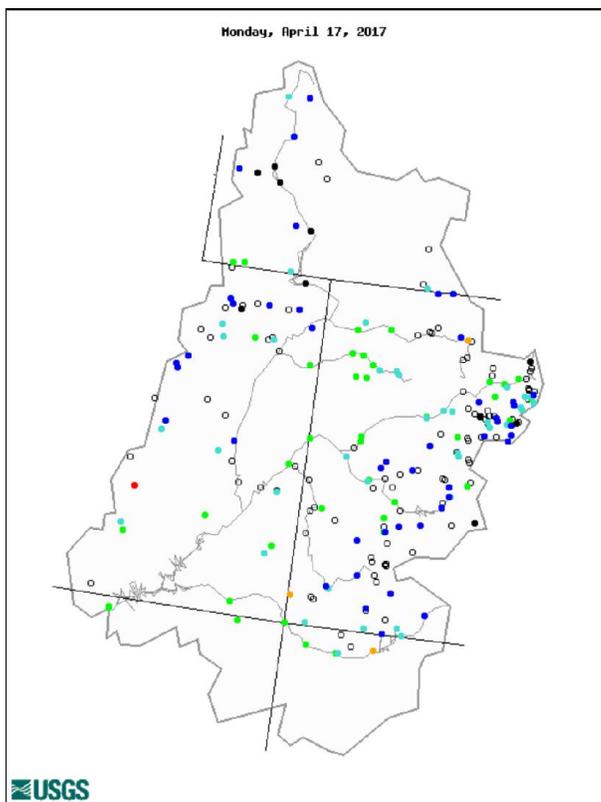


The top left image shows the Natural Resources Conservation Service's SNOTEL water-year-to-date precipitation percentile rankings. The top right image shows sub-basin averaged snow water equivalent accumulations as a percent of average. The images below show accumulated snow water equivalent in inches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



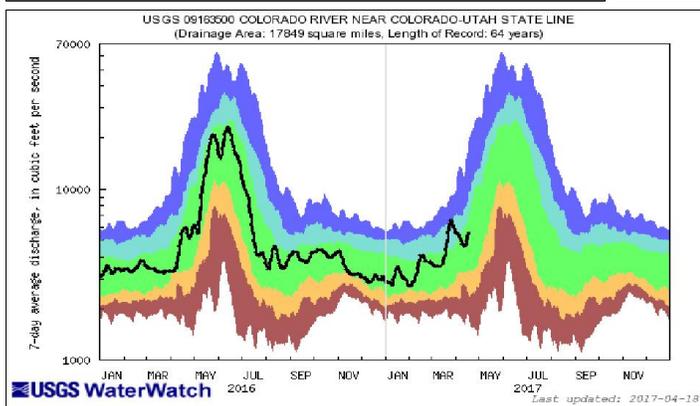


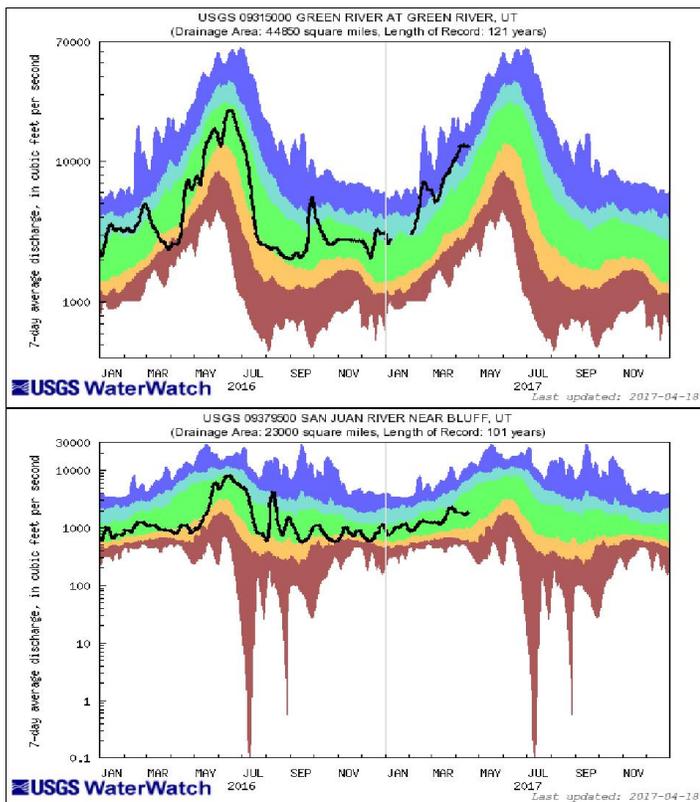
Streamflow



Explanation - Percentile classes

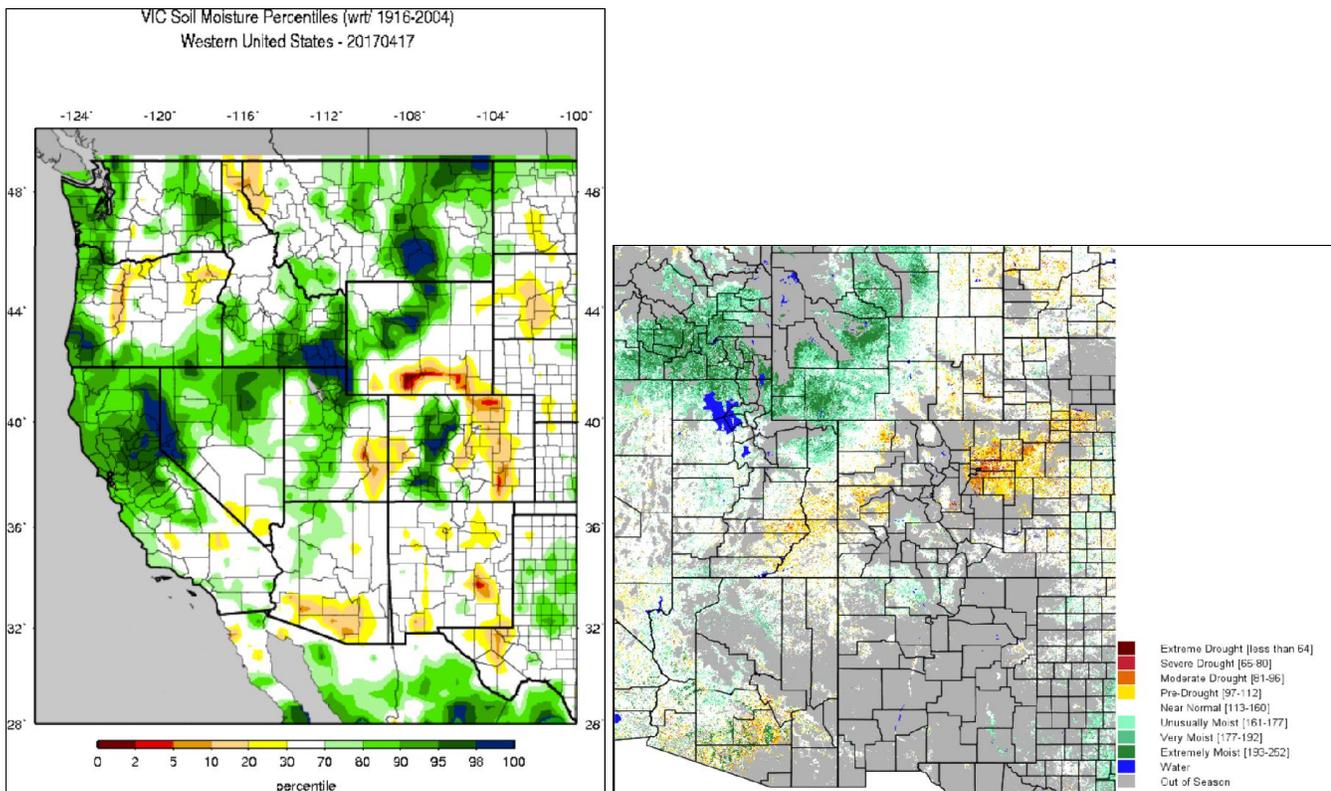
| | | | | | | |
|------------------------------------|---------------------------------------|--------------------------------------|-------------------------------------|-------------------------------------|--------------------------------------|-------------------------------------|
| ● | ● | ● |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





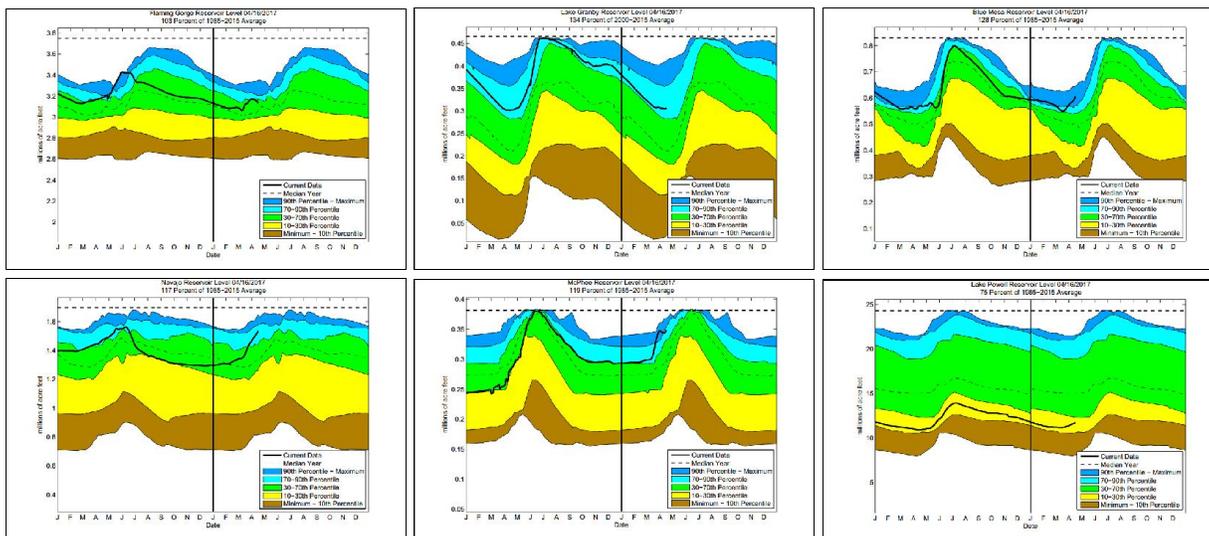
The top left image shows 7-day averaged streamflows as a percentile ranking across the UCRB. The top right image shows 7-day averaged discharge over time at three key sites around the UCRB: The Colorado River at the CO-UT state line; the Green River at Green River, UT; and the San Juan River near Bluff,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

Surface Water

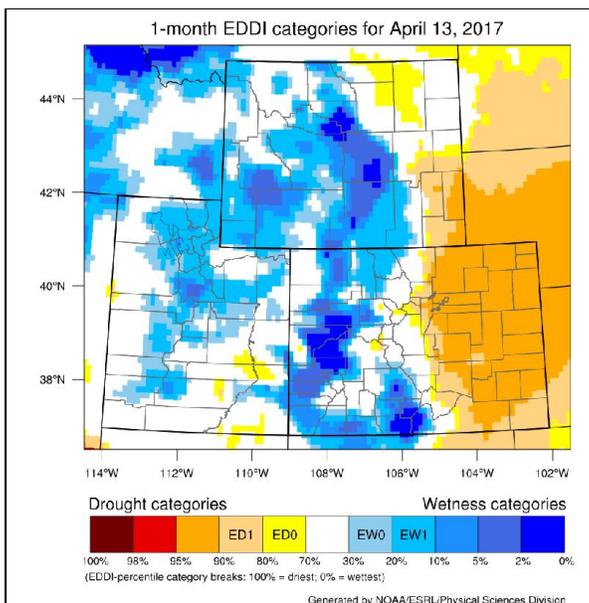
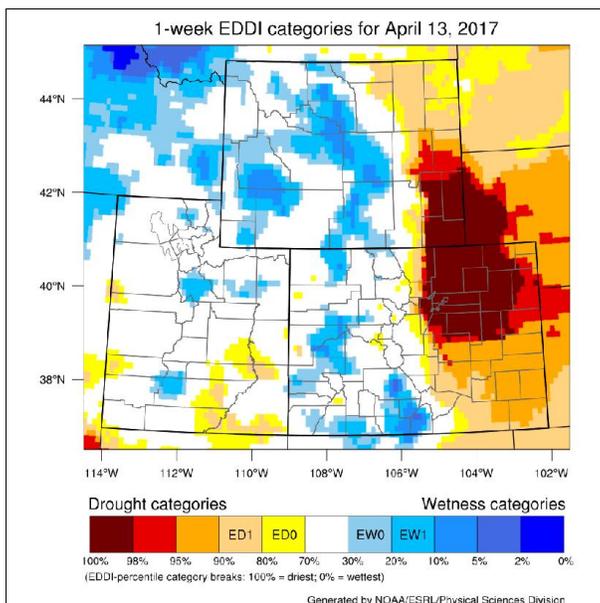


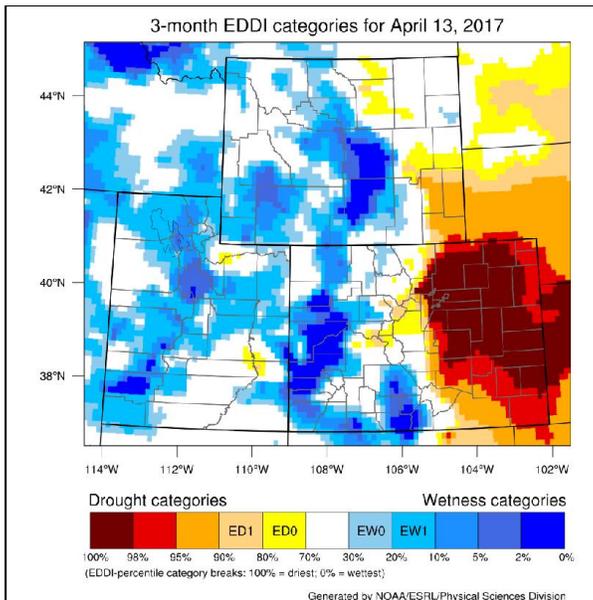
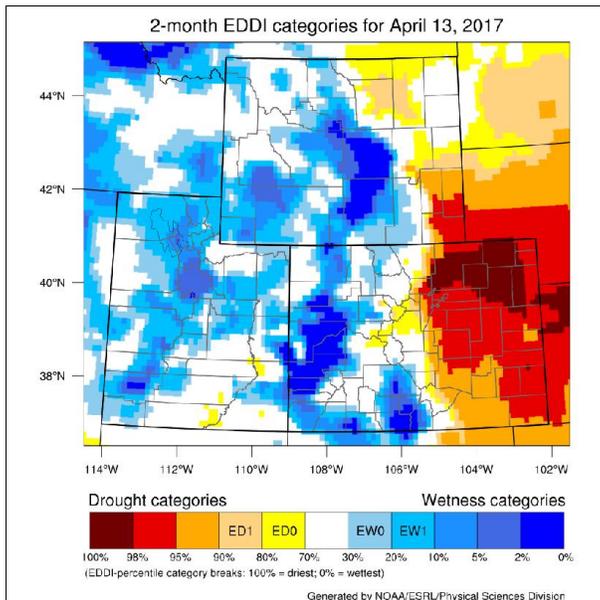
The top left image shows VIC modeled soil moisture as a percentile ranking. The top right image shows satellite-derived vegetation from the VegDRI product (which updates on Mondays).

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.



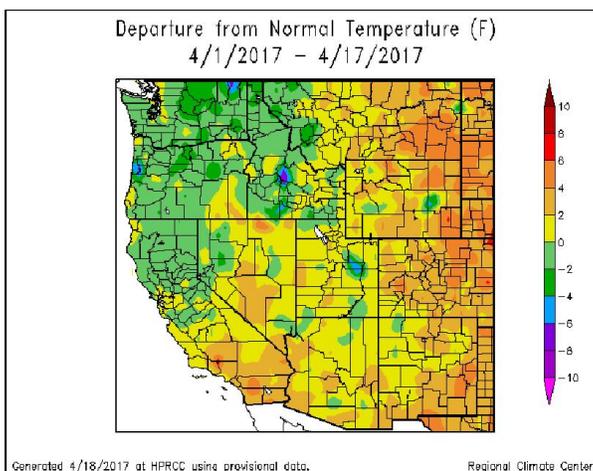
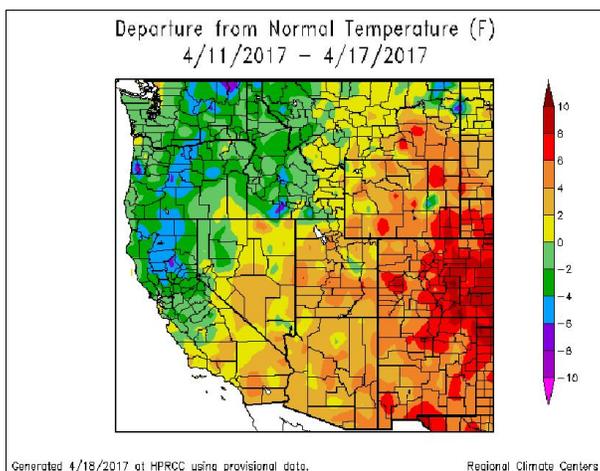
Evaporative Demand



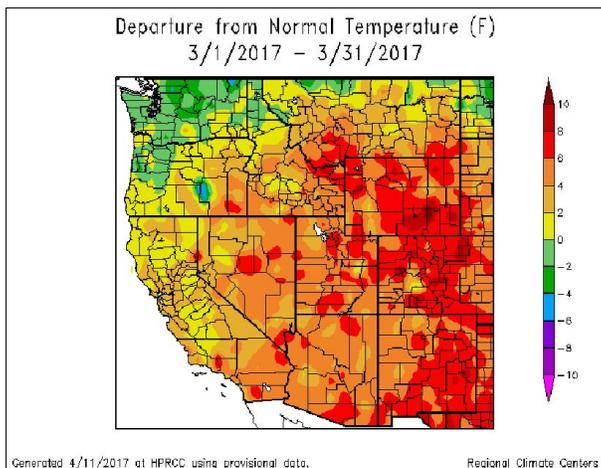


The above images are available courtesy of NOAA’s Evaporative Demand Drought Index (EDDI). Drought classification listed is a function of the depth of reference evapotranspiration accumulated over a given period of record with respect to a climatology of 1981-2010. The drought categories displayed are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

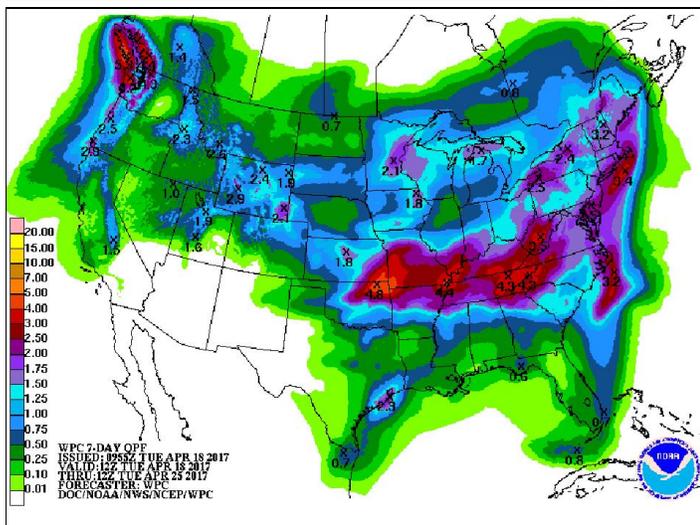
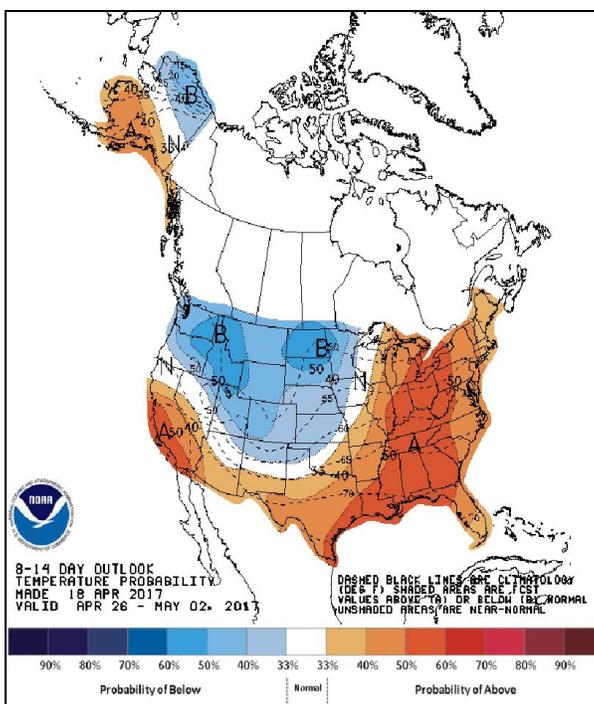
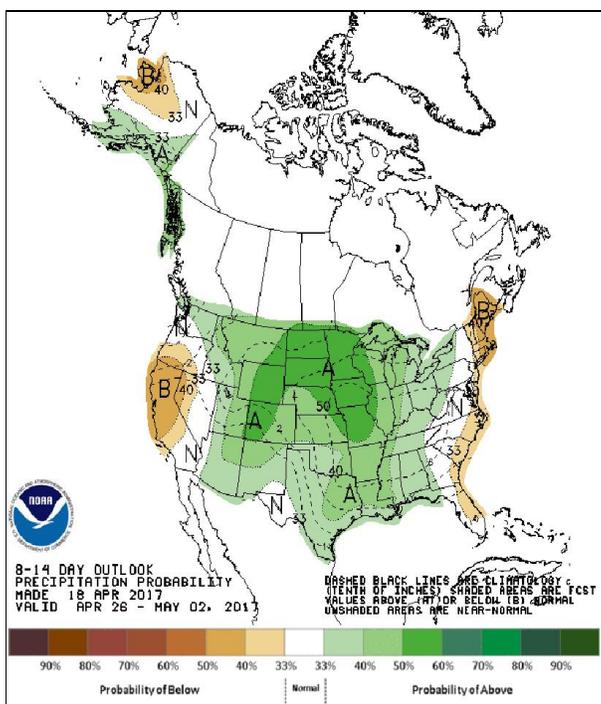
Temperature



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.

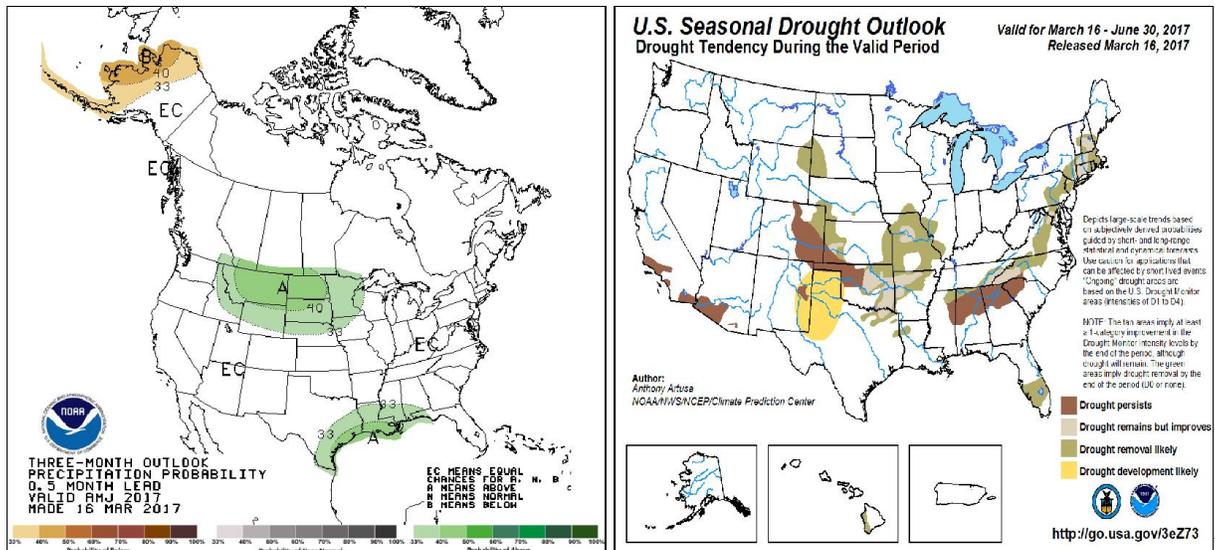


Outlook

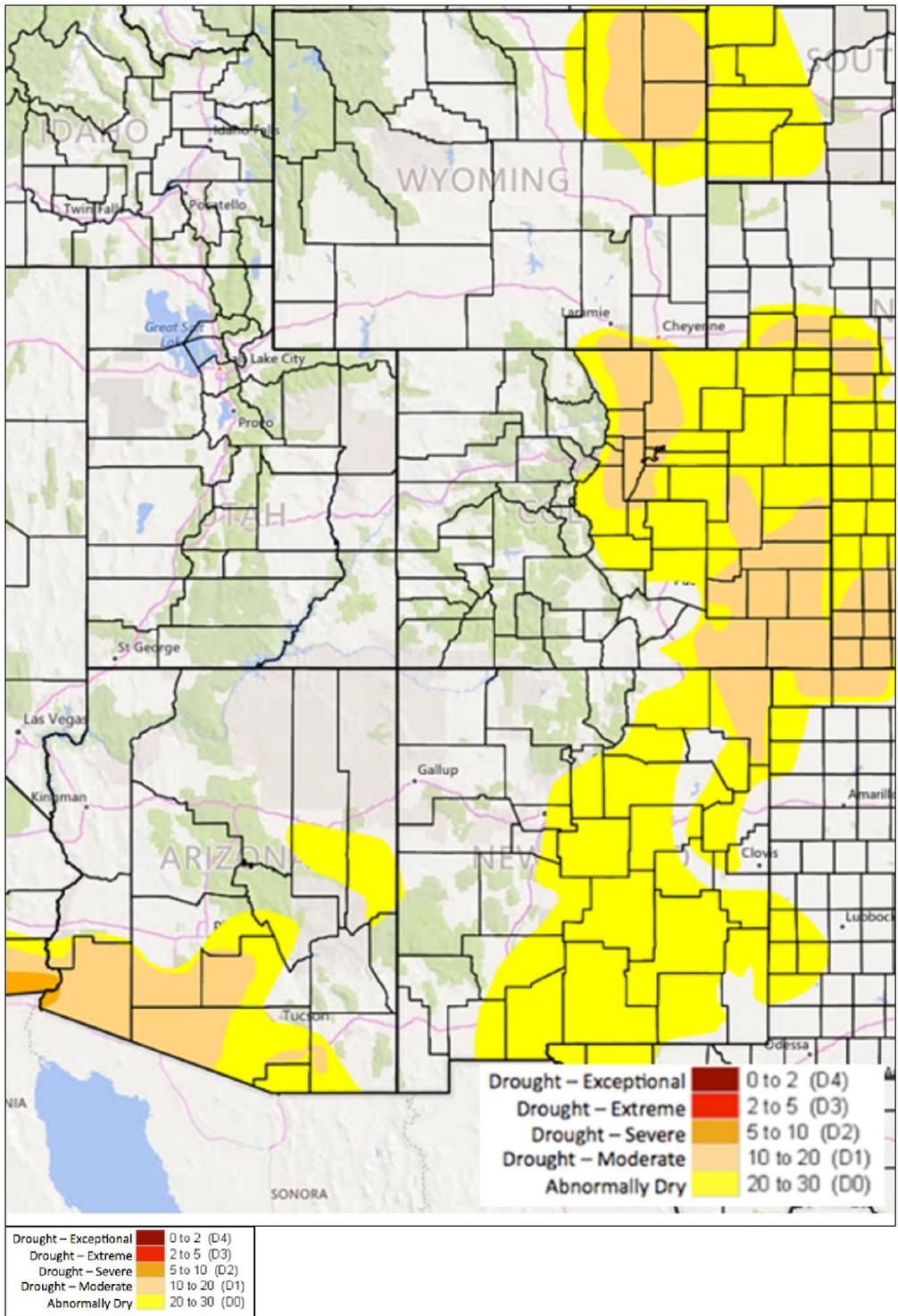


The top two images show Climate Prediction Center's Precipitation and Temperature outlooks for 8 - 14 days. The middle image shows the Weather Prediction Center's Quantitative

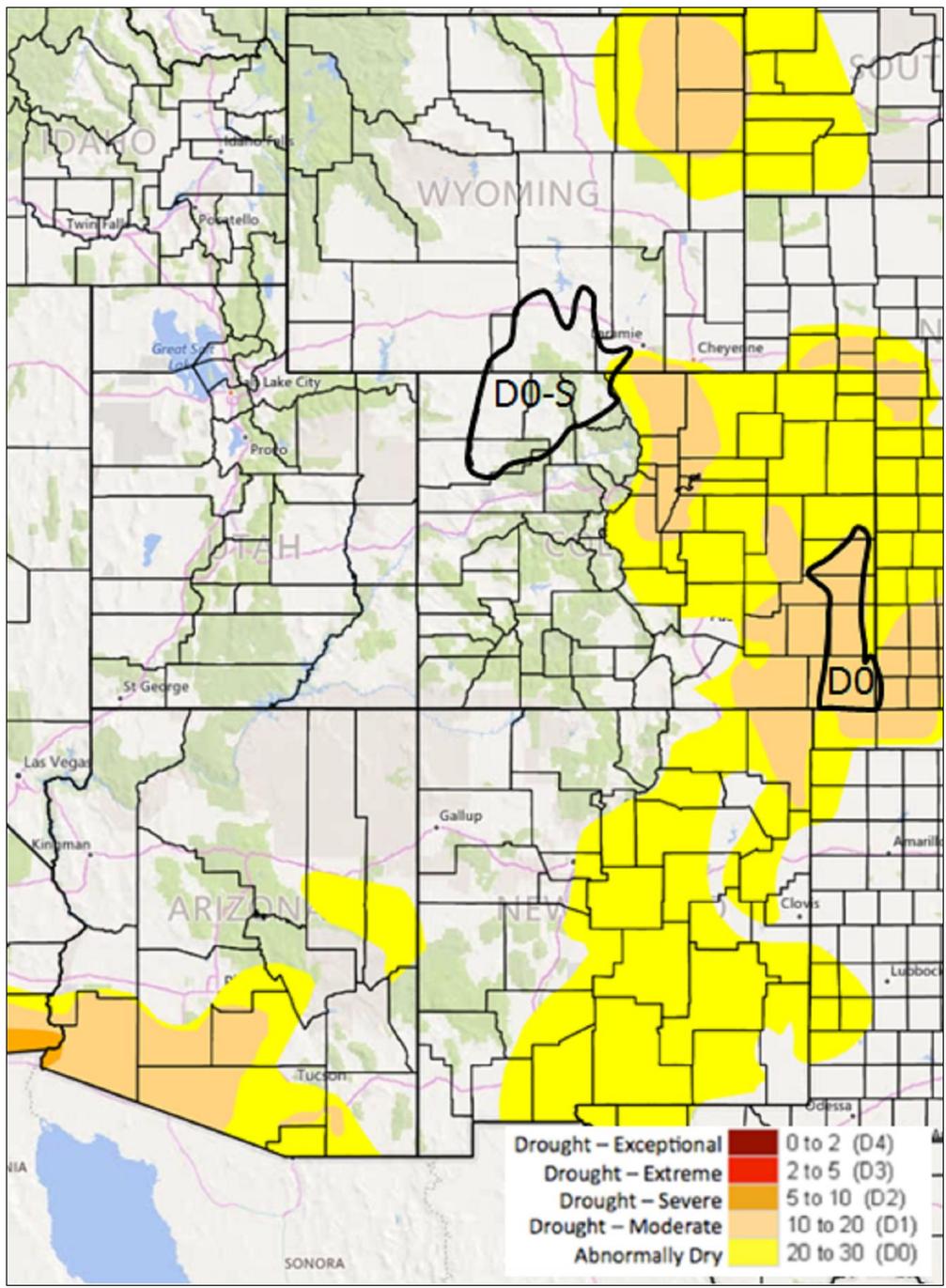
Precipitation Forecast accumulation for seven days. The bottom left image shows the 3-month precipitation outlook from Climate Prediction Center, and the bottom right image shows the Climate Prediction Center's most recent release of the U.S. Seasonal Drought Outlook.



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 18, 2017

The last week was characterized by mostly dry conditions and warmer than average temperatures across the UCRB and eastern Colorado. Warm, west-southwesterly winds dominated the week's weather pattern with a couple minor low pressure disturbances spinning off the lee of the Rockies and bringing modest amounts of moisture into eastern Colorado. There were several notable thunderstorms that occurred in northeast Colorado and southeast Colorado, which brought over an inch of precipitation to isolated areas. Most of the region received less than a tenth of an inch of new moisture.

Snowpack, which had begun to rebound, went back into full melt mode over the past week with even faster melt rates than in mid-to-late March due largely to more intense sun angles. Snowmelt is now generally slightly ahead of the seasonal median schedule, but that could change if another cool, wet week is realized. The only major river basin that did not peak with above average snowpack this winter was the Yampa & White River Basin. This area has been drier than average from mid-January onward.

Due to the combination of above average snowpack, early snowmelt, and fast melt rates, streamflows across the UCRB and eastern Colorado are now generally much above average. These streamflows should be expected to converge toward the normal range in the coming weeks as the streamflow averages themselves increase. In areas such as the Duchesne and Upper Green Basins

where annual snowpack was much above average, look for streamflows to remain above average through peak season. Major reservoirs are mostly in good shape across the region. Lake Powell, which is still below normal, and will remain below normal, is scheduled to net 1.2 million acre feet this spring.

Root soil moisture percentiles are generally high across the western and central portions of the UCRB. This can be attributed to a combination of above average winter moisture and early snowmelt. Root zone soils are in the normal range across much of the state of Colorado at this time. The central east plains and urban corridor are drier than average.

Weather outlooks indicate that wetter conditions and near normal temperatures will likely return for the northern portion of the UCRB and northeast Colorado, but remain warmer than average for the southern portion of the basin with large precipitation unlikely over the next seven days. The 8-14 day time frame shows increased chances of wetter conditions returning for the full region.

Recommendations

UCRB/Upper Missouri: It is recommended that short-term D0 be introduced to extreme southwest Laramie County, southern Carbon County, and the very southeast corner of Sweetwater County in Wyoming. This recommendation comes from Tony Bergantino in the Wyoming state climate office. It is recommended that short-term D0 also be added to eastern Moffat and Rio Blanco Counties, and all but the southern edges of Routt and Jackson Counties in Colorado. This area had an excellent January from the early 2017 snow onslaught, but has since been drier than average during what is normally peak precipitation season. The Yampa/White Basin was one of the only areas in the UCRB that did not reach average peak snowpack. Snow is melting early, and crops are coming out of dormancy early. Low elevation snowpack disappeared much earlier than normal.

Eastern Colorado: It is recommended that eastern and central Baca County, eastern Prowers County, eastern Kiowa County, and Cheyenne County be improved from D1 to D0. While central Prowers County did receive two beneficial thunderstorms over the course of the last week, this recommendation is primarily a reanalysis of earlier improvements. SPIs in the area are slightly above average on short-term timescales, and slightly below average long-term. Modeled root zone soil moisture in the region has returned to the normal range.