

February 18, 2016 Water Supply Forecast Discussion

The [Colorado Basin River Forecast Center \(CBRFC\)](#) geographic forecast area includes the Upper Colorado River Basin, Lower Colorado River Basin, and Eastern Great Basin.

Seasonal Water Supply Forecasts:

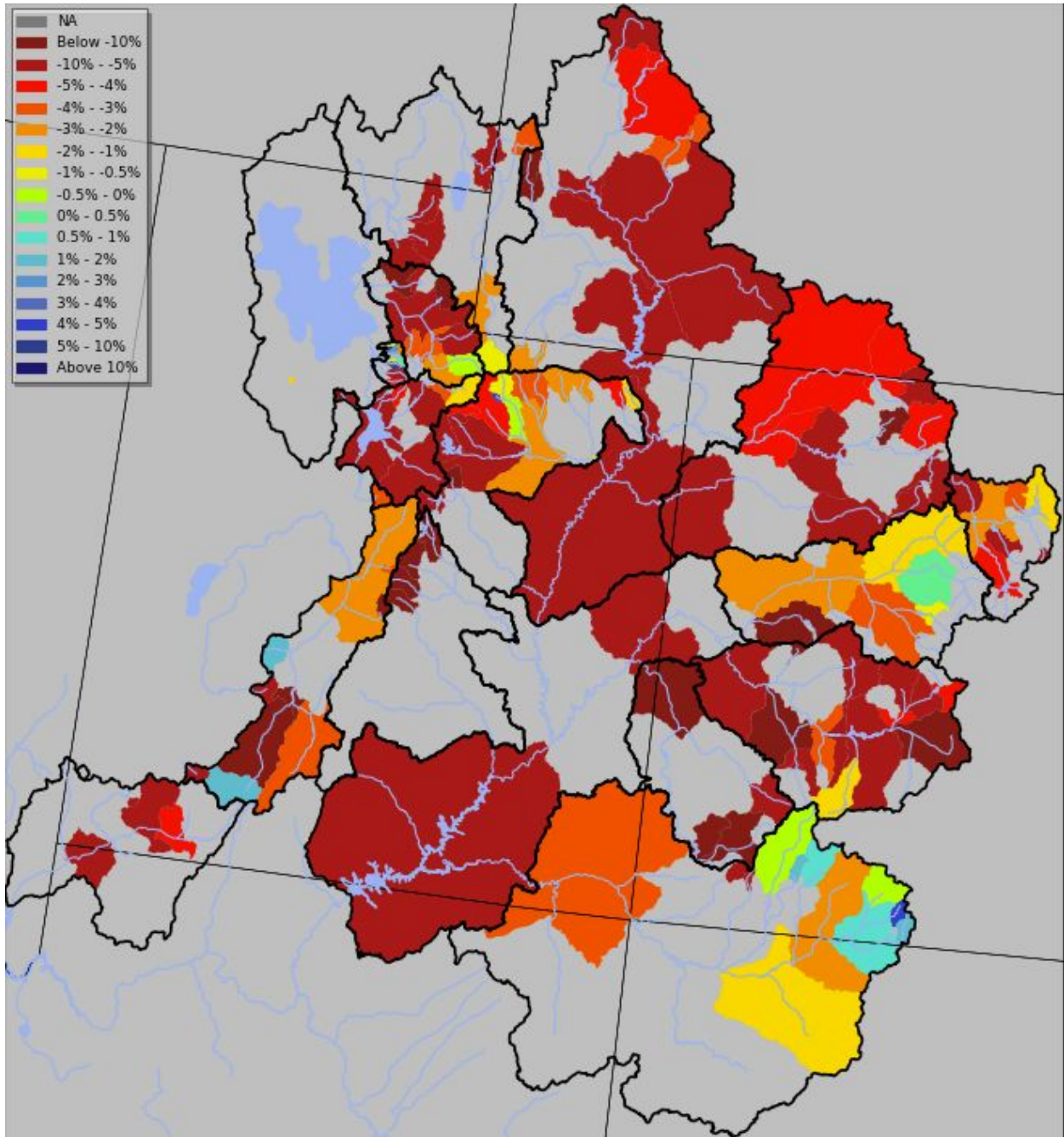
Water Supply Forecast Summary (Mid February Update):

During the first half of February an area of high pressure was the dominant weather feature over much of the area. As a result, precipitation amounts for the first half of the month were quite low, with many areas receiving less than 50 percent of average.

CBRFC raw model guidance has trended water supply forecasts downward over much of the upper Colorado River and eastern Great Basin forecast areas since February 1st. The only areas where model guidance did not change or may have indicated a slight increase were areas affected by a storm system the first few days of the month. After a slight increase in anticipated runoff volumes following the storm, model guidance has since trended runoff forecast volumes downward in those areas due to recent dry conditions.

Mid February forecasts for some of the major upper Colorado River Basin reservoirs included Fontenelle with a decrease from 71 percent to 67 percent of average, Flaming Gorge decreased from 70 percent to 67 percent of average, Blue Mesa decreased from 95 percent to 92 percent of average, and McPhee decreased from 124 to 117 percent of average. Forecasts remained unchanged at Navajo Reservoir with 100% of average expected and at Vallecito Reservoir with 106 percent of average expected. The Lake Powell inflow forecast decreased by 200 KAF, from 94 percent to 91 percent of average, and is now at 6.5 million acre-feet.

Model guidance also decreased seasonal volumes slightly in the Lower Colorado River Basin of Arizona where January-May volumes vary, with above median volumes in the upper Gila and slightly above to below median volumes elsewhere. While a strong El Niño event exists, it has been weakening in the far eastern Pacific. Official forecasts still anticipate possible impacts from the El Niño event into the early spring in the Lower Colorado River Basin.



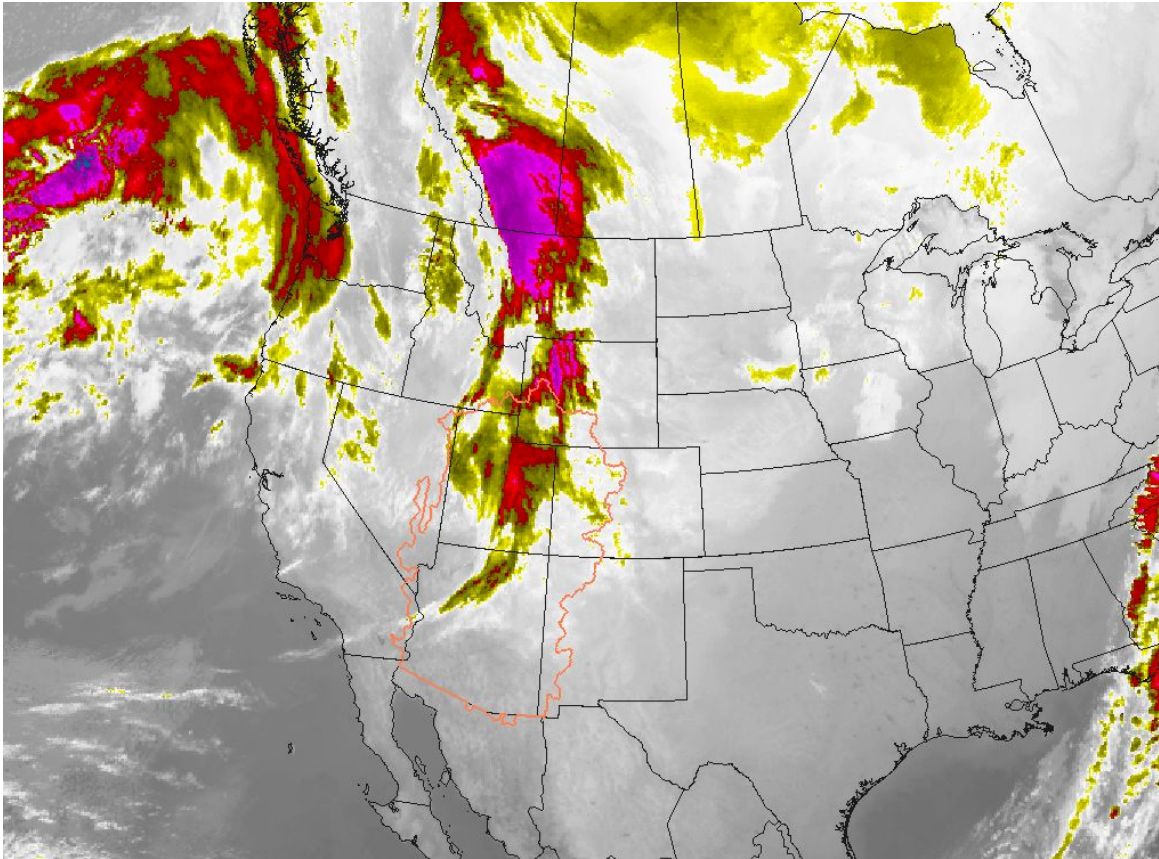
Trend in the April-July runoff volume forecasts since February 1st (Change in April-July percent of average)
 Many areas experienced decreases between 0-10% of the 1981-2010 average

[Click here for the latest water supply model guidance](#)

[Water Supply Discussion](#)

Weather Synopsis:

A strong storm system moved through the CBRFC forecast area over the first few days of the month. This storm temporarily increased spring runoff volume forecasts for many areas. This storm was replaced by a ridge of high pressure that ushered in dry conditions that extended to the middle of the month. As a result, model guidance has reduced anticipated runoff forecasts over this period.



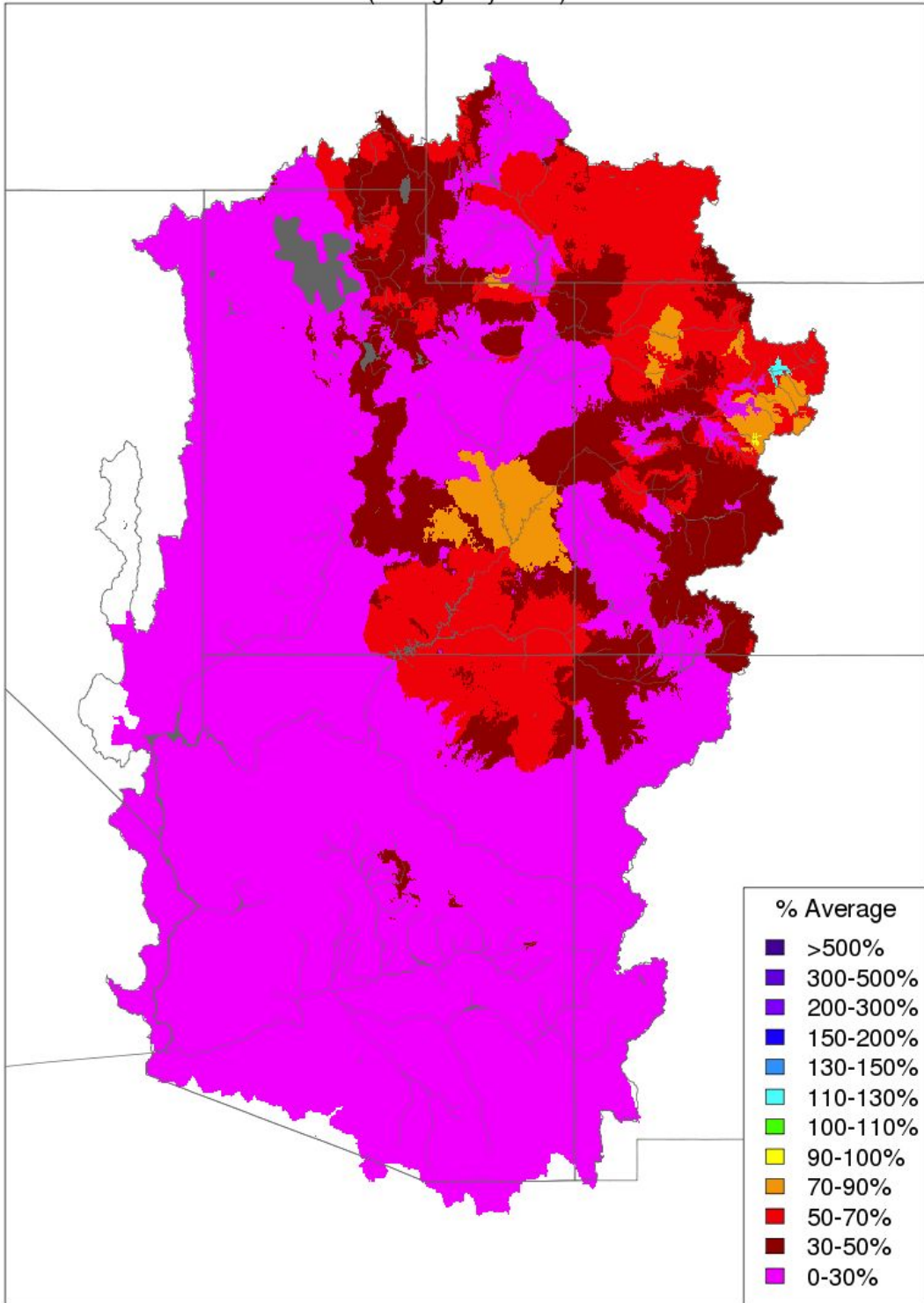
Satellite image for February 4th 2016 shows a storm system moving through the intermountain west. This was the final storm system for several days as dry weather followed and persisted into the middle of the month.

Precipitation and Temperatures:

The image below shows the extent of the dry conditions over the CBRFC forecast area through the first 15 days of the month.

Month to Date Precipitation - February 15 2016

(Averaged by Basin)

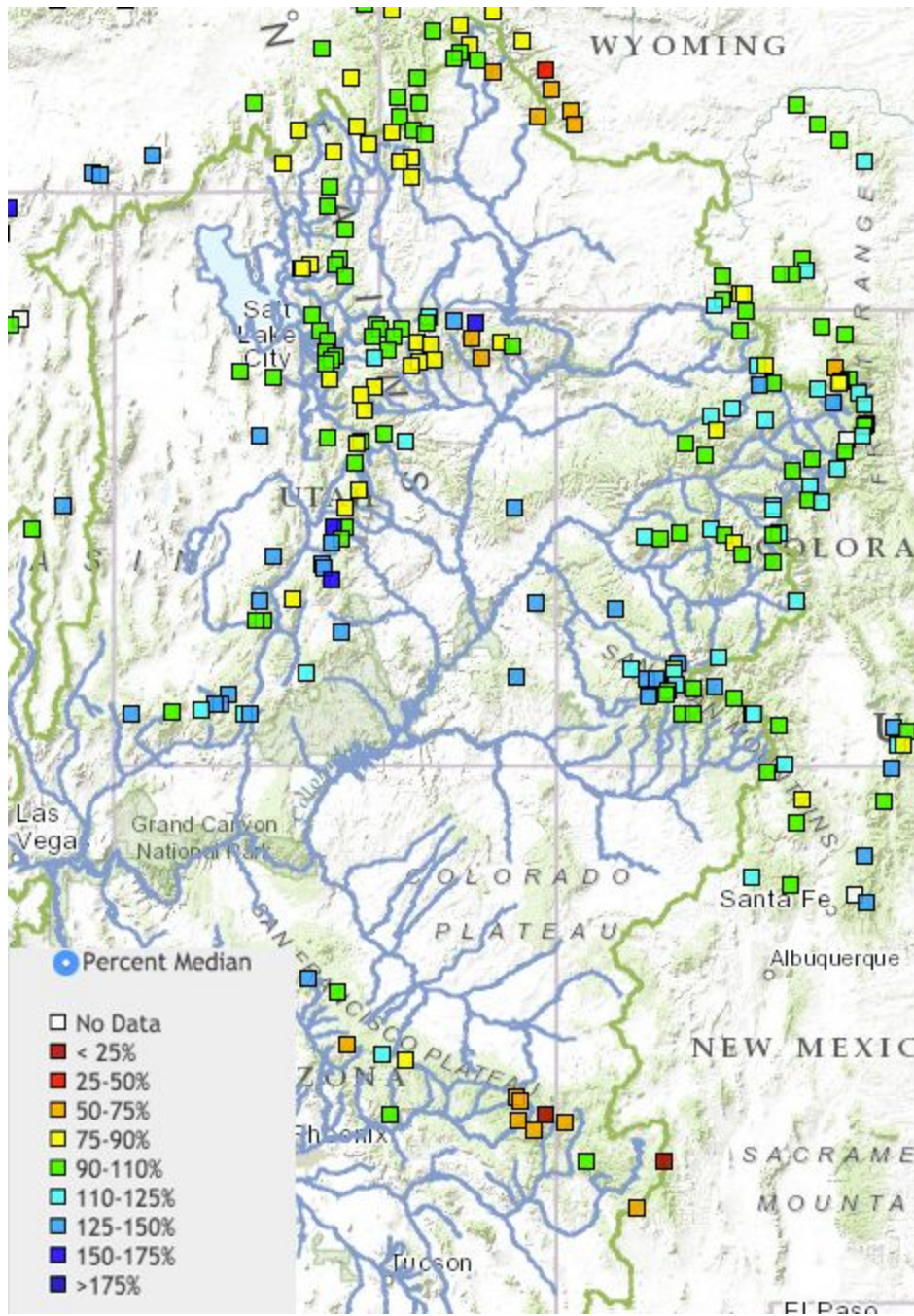


Prepared by NOAA, Colorado Basin River Forecast Center
Salt Lake City, Utah, www.cbrfc.noaa.gov

February 1-15 percent of average precipitation

Snowpack:

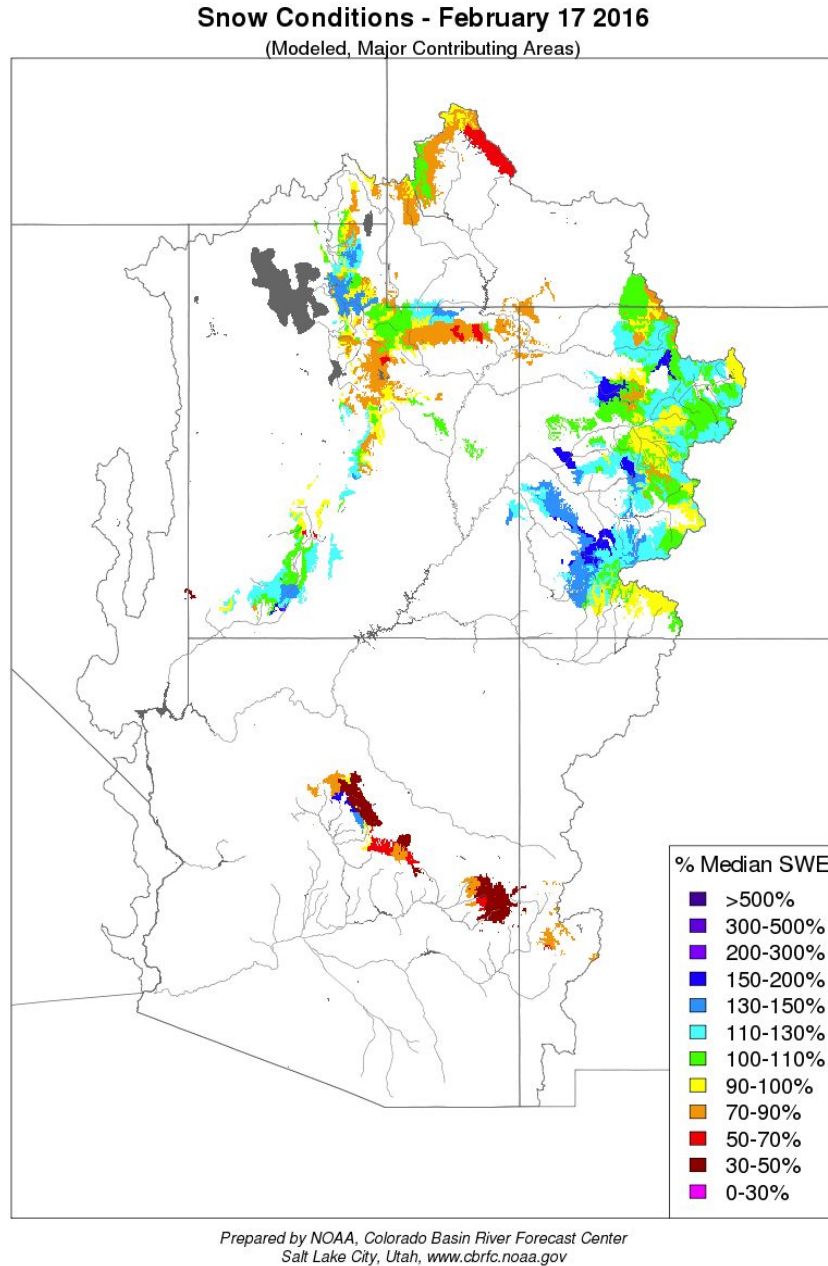
Although snow conditions decreased as a percent of the historical median over the first half of February, favorable snow conditions still exist in many areas. The greatest snow with respect to historical median extends from the Virgin River Basin into the Sevier River Basin and also in the Dolores River Basin. Lowest snow conditions with respect to median exist in the Duchesne River Basin, parts of the Green River Basin above Fontenelle Reservoir, and in the Salt and Gila River Basins where melt has been occurring.



SNOTEL Sites - Percent Median Snow condition as of February 17, 2016

For the latest snow conditions click [here](#)

The snow condition as represented by the CBRFC hydrologic forecast model is depicted in the image below. The much below median snow conditions are clearly displayed throughout the Green River Basin above Fontenelle Reservoir and also over the Duchesne River Basin. In addition some of the higher elevation snow amounts throughout the upper Colorado River Basin are lower as a percent of median compared to lower elevations. Some snowmelt has also been occurring over the past couple of weeks in lower elevations and throughout much of the Lower Colorado River Basin that includes the Salt River, Verde River, Gila River, and Little Colorado River Basins.



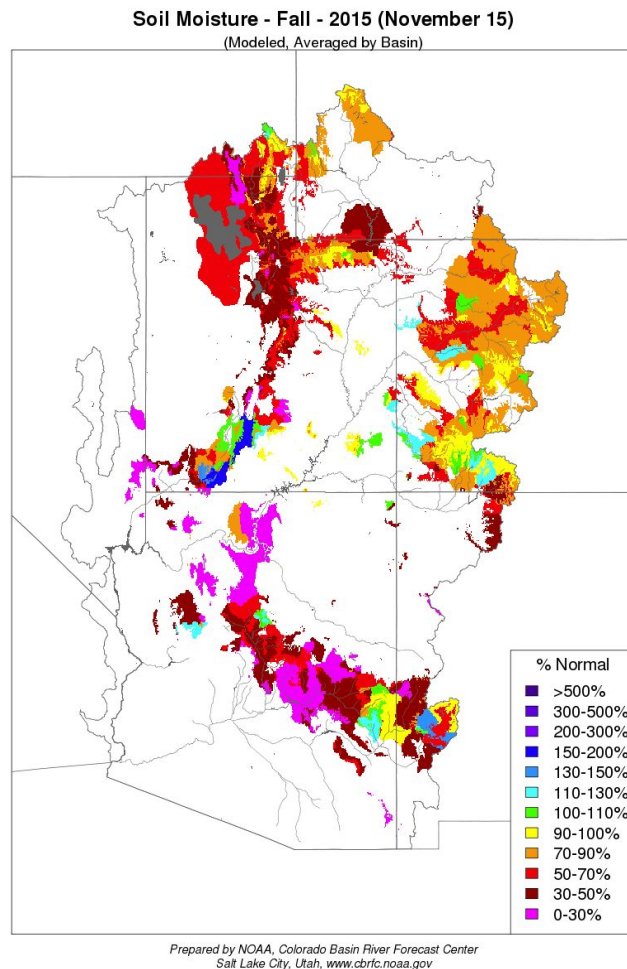
Snow conditions as seen by the hydrologic model on February 17, 2016
Trimmed to show those areas with the greatest contribution to seasonal runoff volumes.

Soil Moisture:

Soil moisture conditions in the higher elevation headwater areas are important entering the winter, prior to snowfall, as it influences the efficiency of the snowmelt runoff the following spring. Modeled soil moisture conditions as of November 15th were generally below or much below average. Soil moisture was exceptionally low in much of the Great Basin of central and northern Utah. Soil moisture conditions were more favorable in parts of the San Juan and Dolores River Basin as well as parts of the Sevier and Virgin River Basins in southwest Utah. There were also a few isolated basins near or above average in the Bear, Duchesne, Gunnison, and White River Basins but generally conditions were not as favorable.

Soil moisture conditions tend to fluctuate more in the Lower Colorado River Basin in the winter due to the frequency of rain events and possibility of melting snow. Fall soil moisture conditions in the lower basin are less informative than they are in the northern basins that remain under snowpack throughout the winter season.

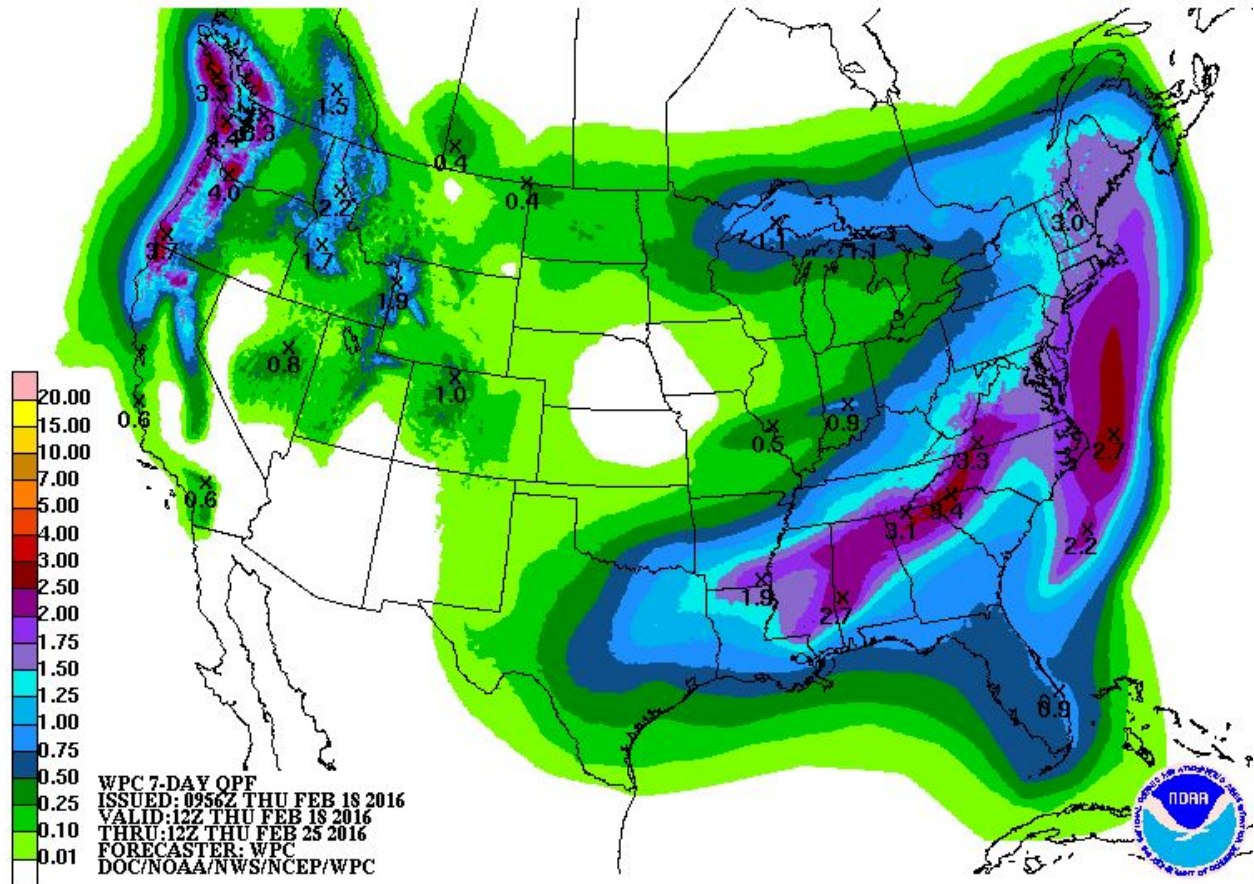
In the map below, areas in the blue are above the historical model soil moisture average while those in the yellow, orange, and red are below average. Only the higher elevation areas that have greatest impact to runoff volumes are displayed. The areas in white are not included.



Modeled soil moisture entering the winter season (as of November 15 2015)

Weather Outlook:

The weather pattern is expected to be more active during the second half of the month. A storm system moving through during the end of the 3rd week of February will be followed by a mostly westerly flow. This will leave the CBRFC forecast area open to quick moving storm systems although precipitation amounts are likely to be on the light side.

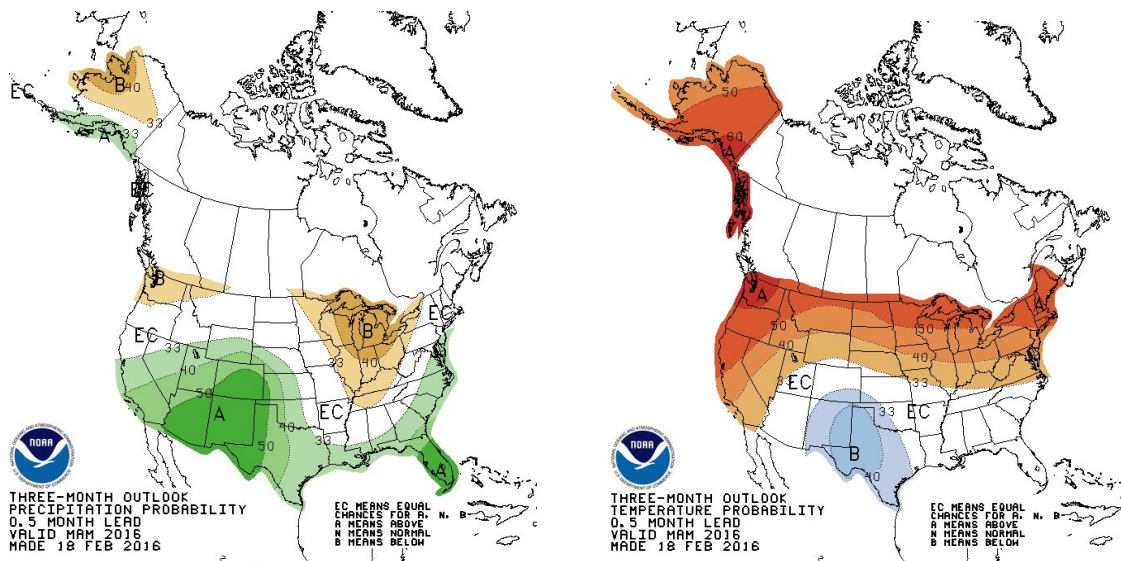


Precipitation outlook for February 18-February 25 from the Weather Prediction Center.

Climate Outlook:

A strong El Niño Southern Oscillation (ENSO) condition currently exists across most of the equatorial Pacific Ocean. However the strength has been diminishing over the past few weeks in the far eastern Pacific near the coasts of Central and South America. El Niño conditions are expected to become neutral by late spring 2016 with an increasing chance of La Niña conditions developing by fall of 2016.

The Climate Prediction Center indicates enhanced chances of above normal precipitation over the CBRFC forecast area for March through May 2016. They also indicate enhanced chances for above normal temperatures during the same period over parts of the Great Basin and Green River Basin above Flaming Gorge.



Climate Prediction Center Precipitation and Temperature Outlooks as of Feb 18 2016

Conclusion:

Very dry conditions the first half of February resulted in decreasing water supply forecast guidance throughout most of the CBRFC forecast area. Due to the dry pattern snow conditions have become more variable with additional areas falling below median for this time of year. Lowest snow conditions with respect to median exist in the Duchesne River Basin and Green River Basin above Fontenelle. Favorable snowpack conditions persist in the Virgin River Basin and Dolores River Basin with a mix of much below to near median conditions elsewhere in the upper Colorado River Basin. Snow has been melting in the Lower Colorado River Basin and conditions have become highly variable in the Verde, Salt, and Gila River Basins.

The weather pattern for the remainder of February, while more active, is not expected to bring monthly precipitation values back to average and February is likely to end as a dry month.

The El Niño event remains strong but has shown signs of weakening recently and is expected to revert to a neutral condition by later this spring. Forecasts indicate neutral conditions over the summer then increasing chances of La Niña conditions by Fall 2016.