

## June 1, 2019 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.

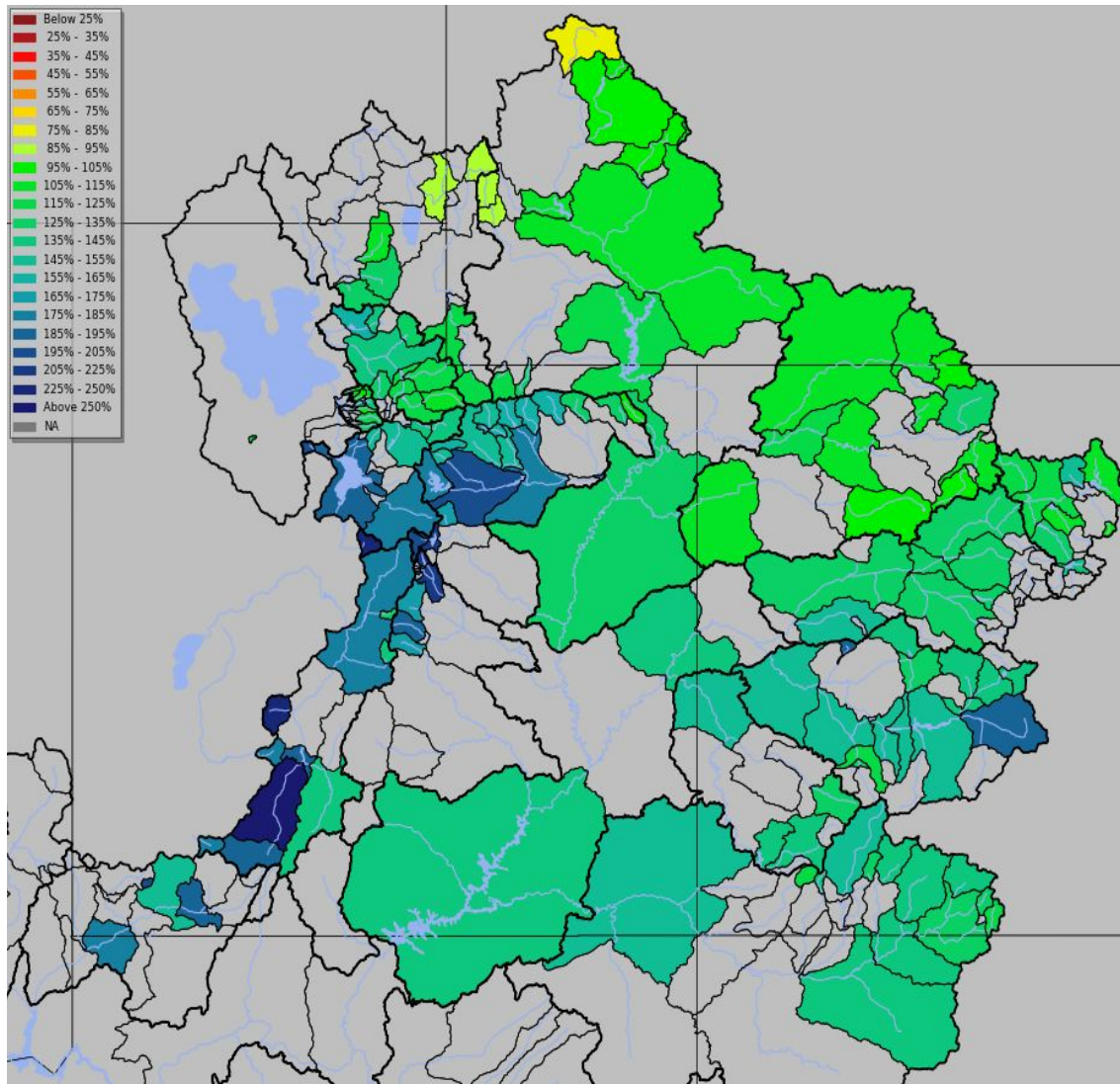
### **Water Supply Forecast Summary:**

The majority of the Upper Colorado River and Great Basin April-July water supply forecasts increased between May and June. The forecasts at locations that did not increase either had minimal changes or decreased from early May.

The largest increases in water supply forecasts between May 1st and June 1st occurred in the Duchesne, San Juan, Gunnison, Price-San Rafael and Virgin River Basins. Significant increases also occurred throughout the Six Creeks and Provo River basins, the Upper Colorado River headwaters, and parts of the Green River basin in Wyoming. Areas that remained the same or decreased include the Yampa River basin, the headwater basins of the Green River in Wyoming, and areas in the northern Great Basin. April-July runoff volume forecasts now range from near 115 to 250 percent of average. Currently only a few northern headwater basins of the Green River Basin in Wyoming and the Great Basin (Bear River Basin) have forecasts below average for the 2019 season.

April-July unregulated inflow forecasts for some of the major reservoirs in the Upper Colorado River Basin include Fontenelle Reservoir 780 KAF (108% average), Flaming Gorge 1170 KAF (119% of average), Blue Mesa Reservoir 1040 KAF (154% of average), McPhee Reservoir 425 KAF (144% of average), and Navajo Reservoir 1000 KAF (136% of average). The Lake Powell inflow forecast is 10.3 MAF (144% of average).

## Seasonal Water Supply Forecasts:



Upper Colorado, Great, Virgin River Basins: 2019 April-July forecast volumes as a percent of 1981-2010 average (50% exceedance probability forecast)

For specific site water supply forecasts, refer to: <https://www.cbrfc.noaa.gov/rmap/wsuf/wsuplist.php>

## Water Supply Discussion

### May Weather Synopsis-Precipitation-Temperature:

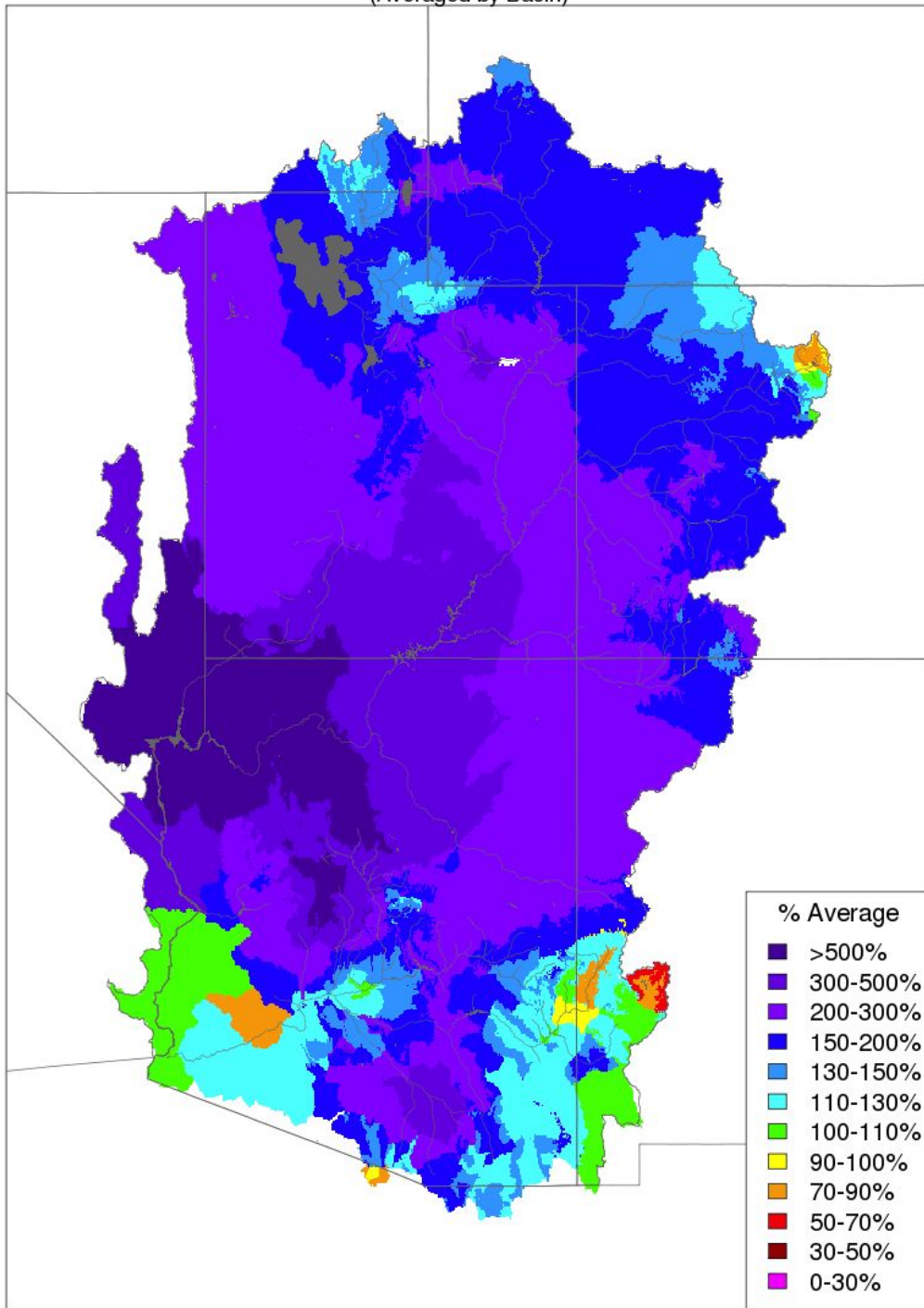
The last two weeks of May were very wet and unseasonably cool across the Upper Colorado Basin. An anomalously deep and persistent trough across the Intermountain West was responsible for these conditions. Many high elevation SNOTELs (above 9000 feet) across Utah and Colorado actually saw an increase in SWE over the last two weeks of May, a period when snowmelt is normally kicking into gear. Abnormally high precipitation amounts were not just restricted to the Upper Colorado Basin, as much of southern Utah and Arizona also experienced one of the wetter Mays on record. With the exception of the Upper Colorado Headwaters and the Upper Green River in Wyoming, May precipitation was generally at or above the 90th percentile. A truly exceptional end to already very wet precipitation

accumulation season across the Colorado River Basin!

By the end of the month, the highest wet anomalies (in percent of normal terms) were across northern Arizona into southern Utah, extending eastward into southwest Colorado (200-500% of average). Elsewhere across Utah and Colorado, precip was generally 130-250% of average. The only areas that saw near to slightly above normal (80-130% of average) precipitation were the Upper Colorado Headwaters and Upper Green River . The unseasonably cold trough that persisted across the region over the last two weeks of May caused monthly temperatures to be below normal (3-10 degrees below) and halted snowmelt across the Upper Colorado Basin.

# Monthly Precipitation - May 2019

(Averaged by Basin)

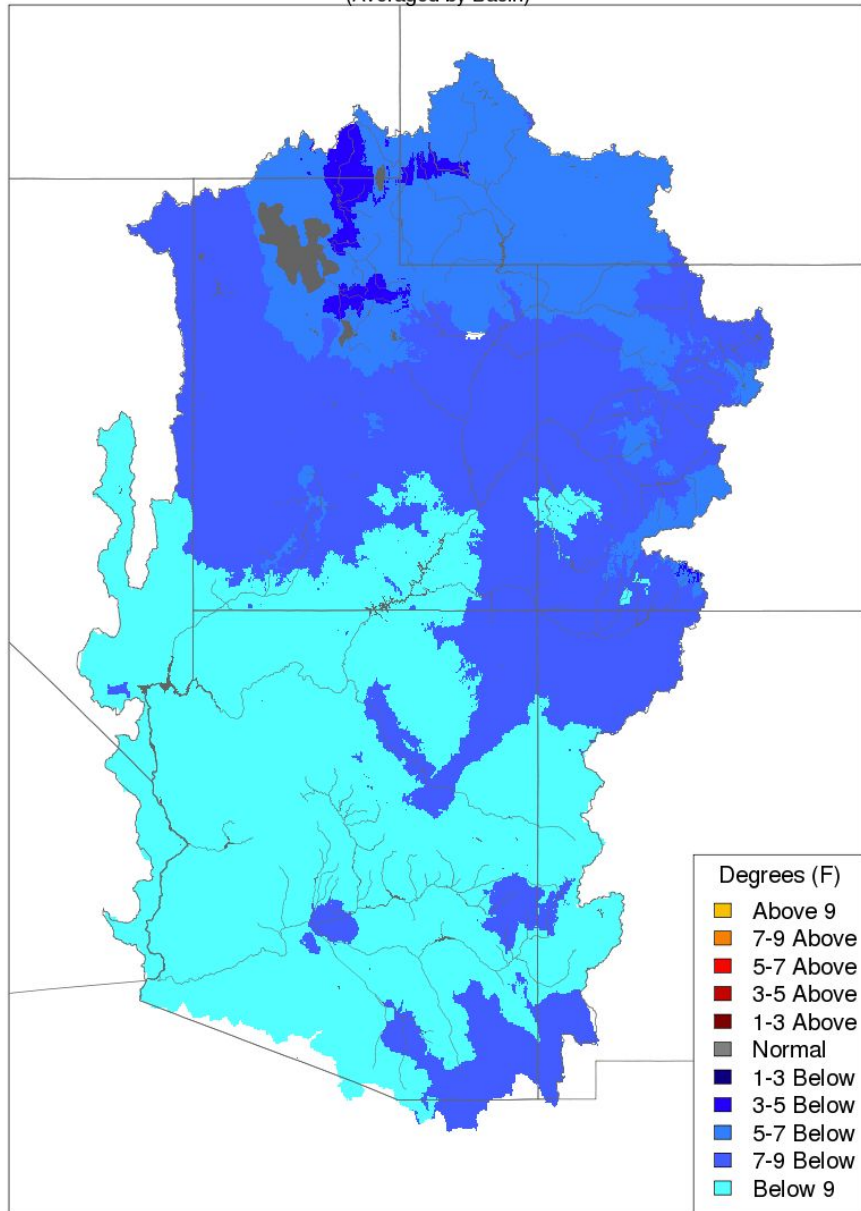


Prepared by NOAA, Colorado Basin River Forecast Center  
Salt Lake City, Utah, [www.cbrfc.noaa.gov](http://www.cbrfc.noaa.gov)

May 2019 Percent of Normal Precipitation  
(Averaged by basins defined in the CBRFC hydrologic model)

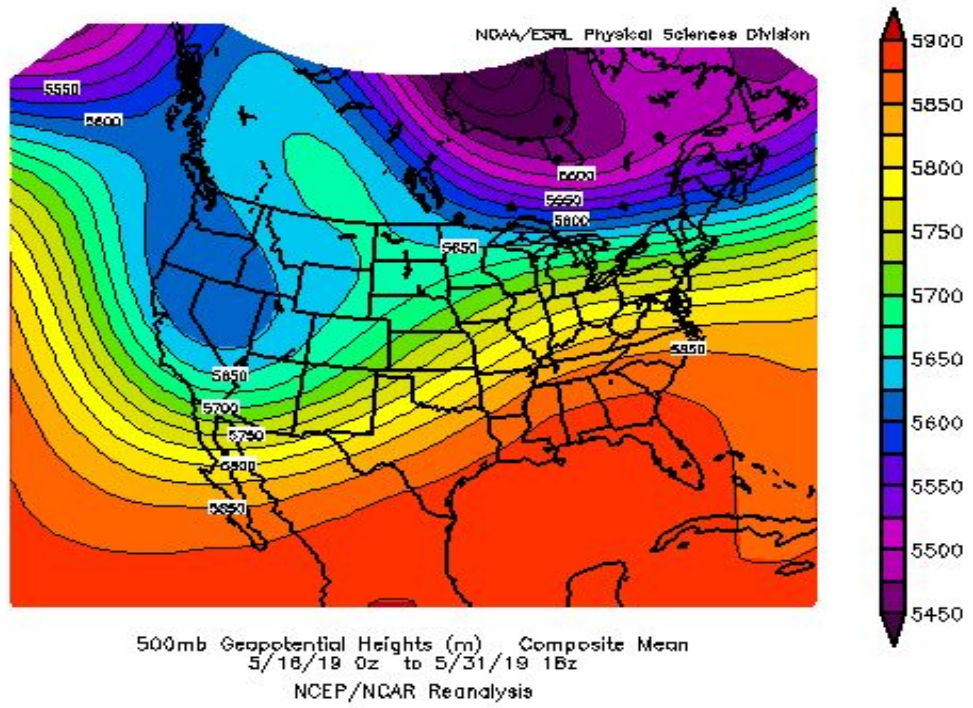
### Max Temp - Monthly Deviation - May 2019

(Averaged by Basin)

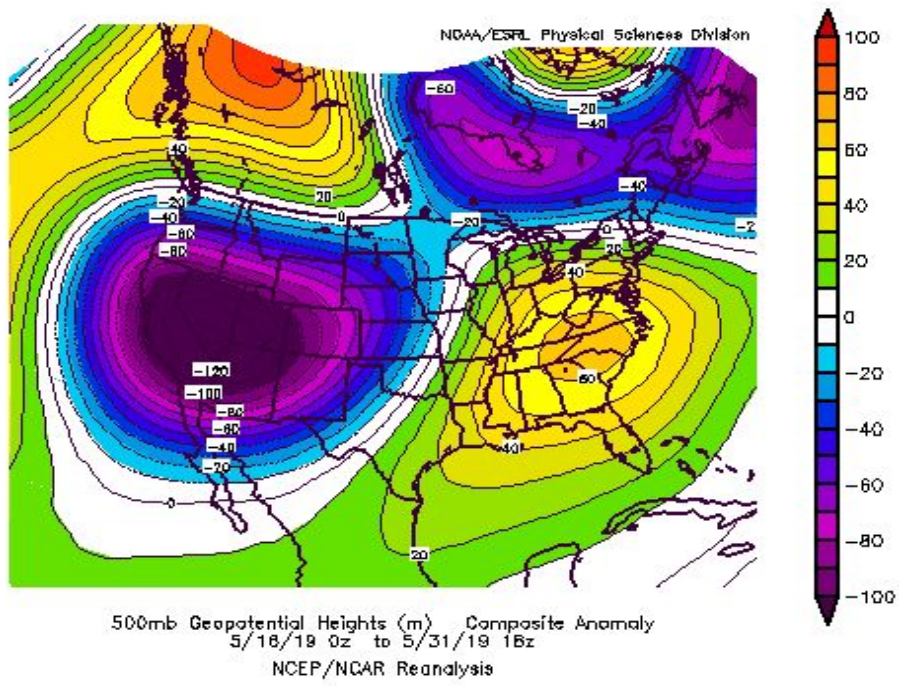


Prepared by NOAA, Colorado Basin River Forecast Center  
Salt Lake City, Utah, [www.cbrfc.noaa.gov](http://www.cbrfc.noaa.gov)

*May 2019 Mean Monthly Maximum Temperature (Deviation from normal)  
(Averaged by basins defined in the CBRFC hydrologic model)*



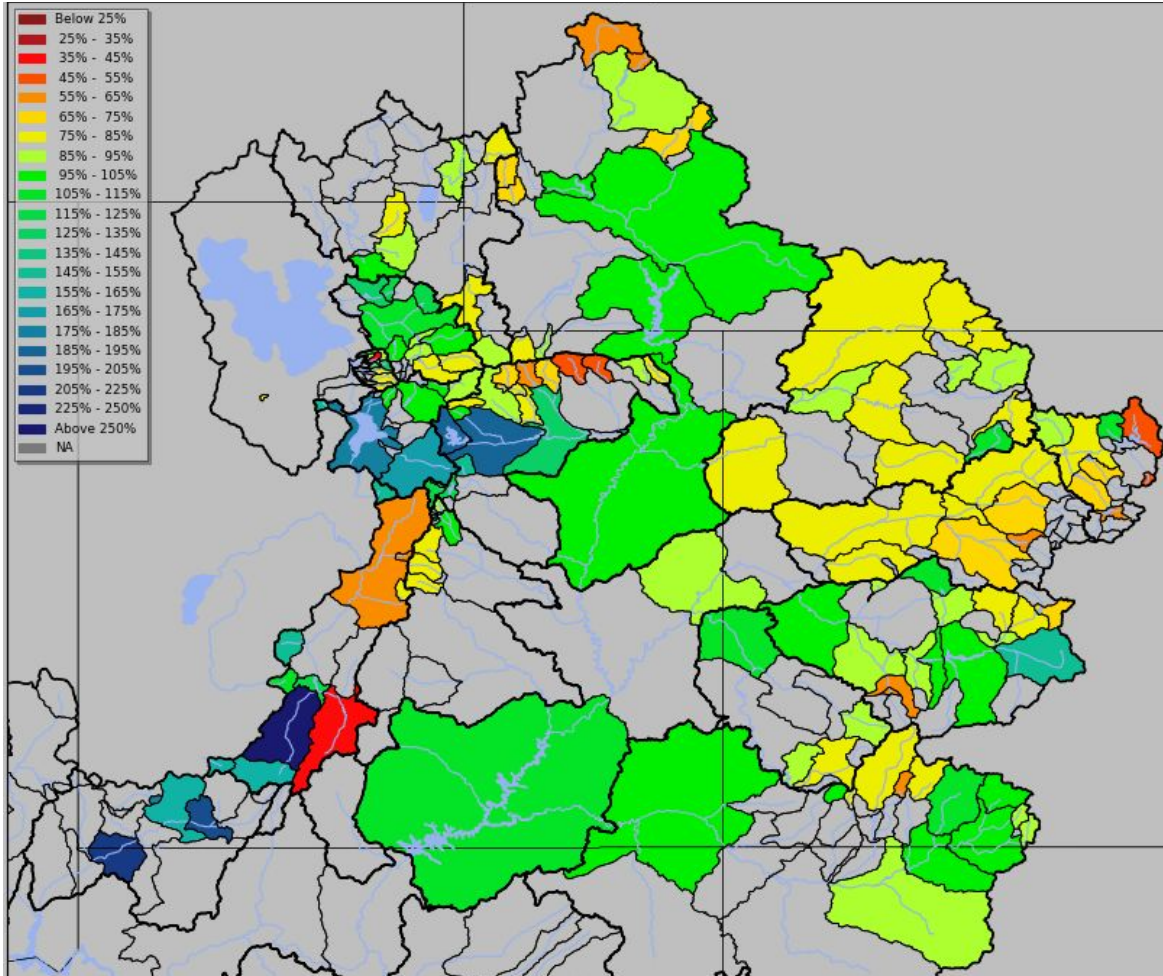
Mean 500mb height from May 16-31.



Mean 500mb height anomaly for May 16-31.

### Observed Flow:

The observed flows for May were a bit of a mixed bag and somewhat dependent on the elevation of the basin. As a result of below normal temperatures and an active weather pattern most streamflows, especially high elevation areas, were below average in the Upper Colorado River basin. A few exceptions included lower elevation basins where flows were near to above average. These areas continued to see decent low elevation snowmelt during the warm periods and also received significant rain that contributed to streamflow. Largest May flows, as a percent of the 1981-2010 average, occurred in the Great Basin, the western Duchesne River Basin, and southwest Utah, where many sites had upwards of 150-200 percent of the average.



Upper Colorado, Great, Virgin River Basins May 2019 unregulated volumes as a percent of the 1981-2010 average.

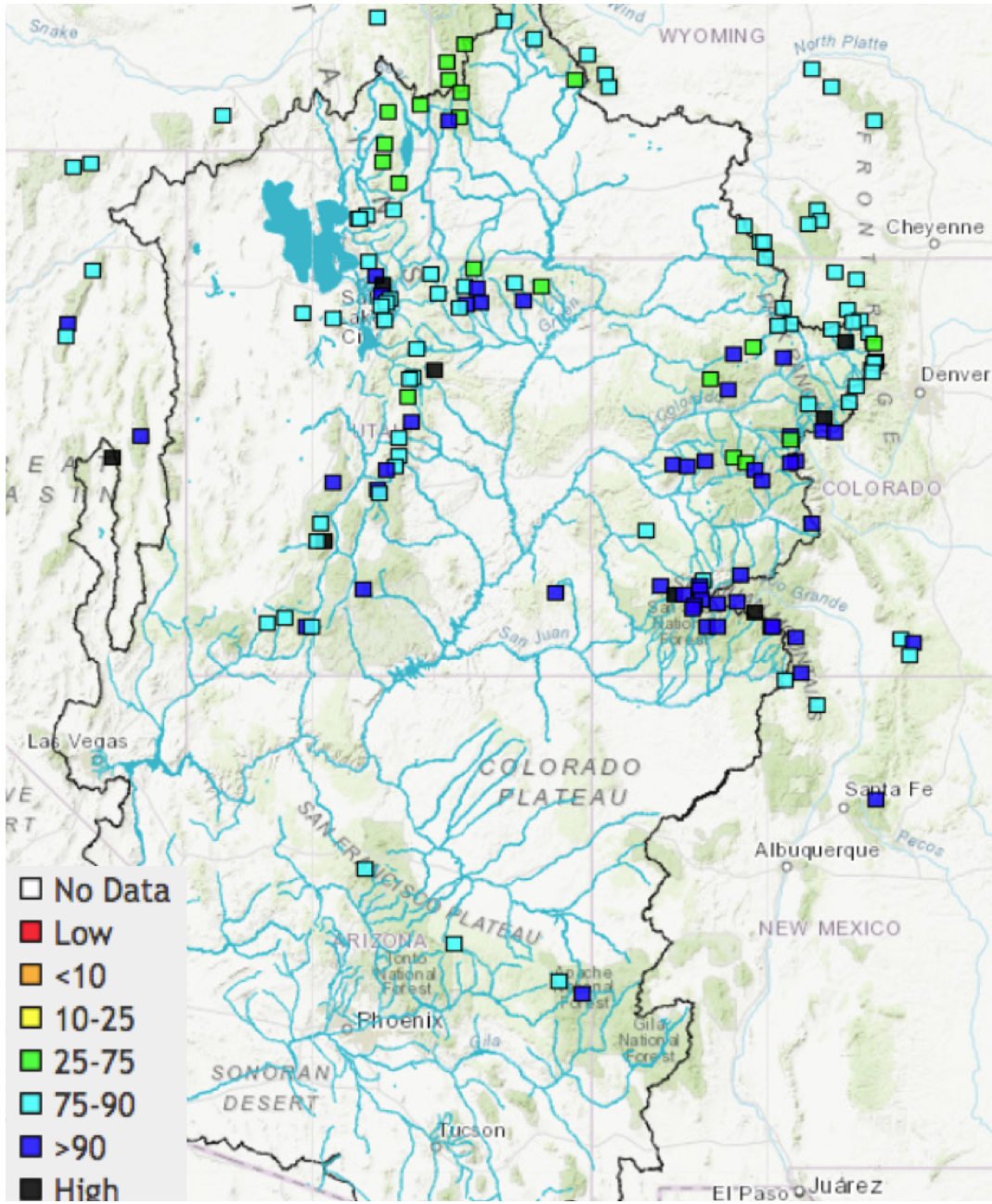
**Snowpack:**

In the spring after the normal time of peak snowpack has passed, percent median snow water equivalent (SWE) can be misleading and vary significantly from day to day, as well as site to site, depending on the rate of snowmelt, new snow accumulation, and the magnitude of the median value.

June median SWE values are generally small and it is normal for many areas to have little or no snow remaining. This is not necessarily the case across much of the Upper Colorado and Great Basin in the 2019 water year due to below normal spring temperatures and much above average snowpack conditions. In general, much above normal (median) snow conditions exist across much of Utah and western Colorado.

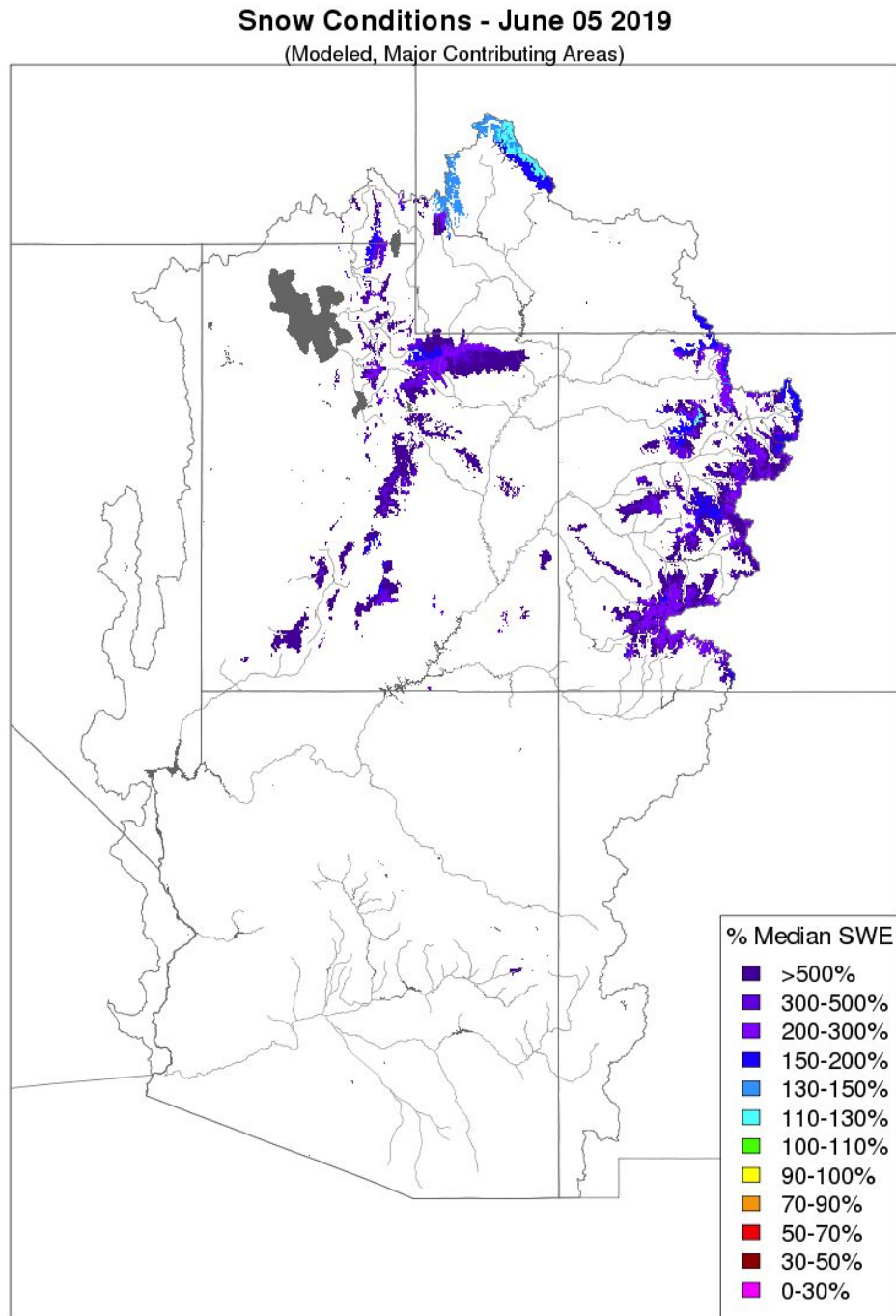
The snow percentile image displayed below indicates where the current snow measurement ranks in the historical record (typically 35-40 years) for each site as of June 6. Sites in black are the highest on record and sites in dark blue are in the top 3 of their historical record. This map helps highlight the areas with unusually high snowpack at this time, such as the San Juan basin in southwest Colorado.





Percentile ranking of SNOTEL conditions as of June 6, 2019.

The image below is the representation of snow in the CBRFC hydrologic model as of June 5. Model snow conditions correlate closely to the SNOTEL sites throughout the Upper Colorado River Basin and Great Basin.



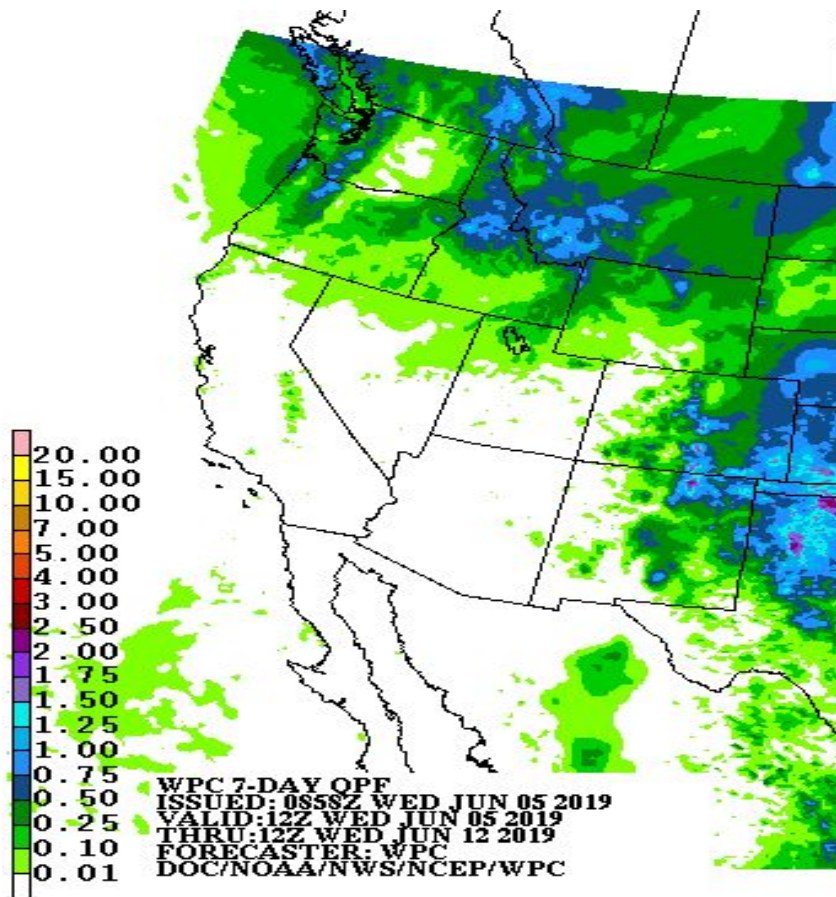
June 5, 2019 CBRFC hydrologic model snow compared to the 1981-2010 median.

For updated SNOTEL information refer to: <https://www.cbrfc.noaa.gov/lmap/lmap.php?interface=snow>

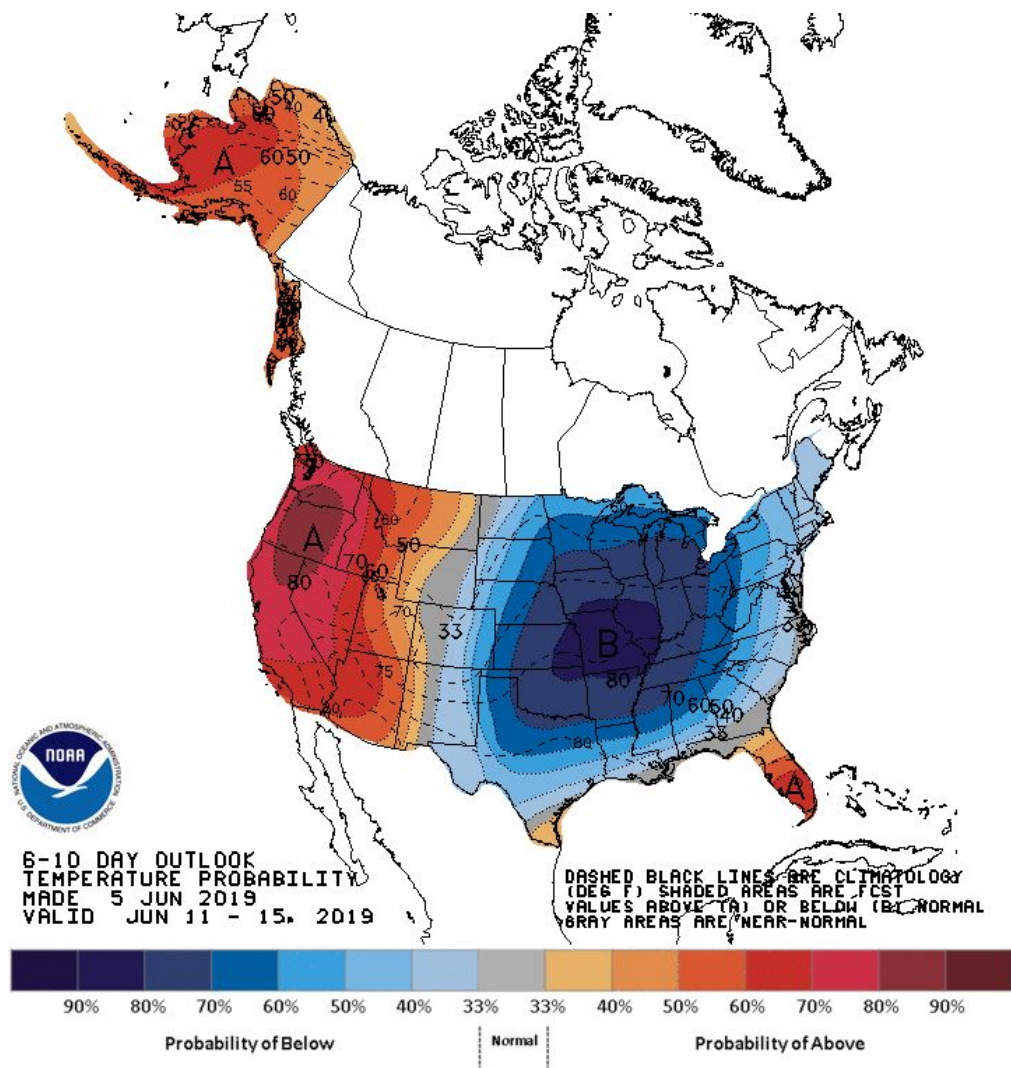
For CBRFC hydrologic model snow: <https://www.cbrfc.noaa.gov/rmap/grid800/index.php?type=snow>

### Upcoming Weather:

The weather will be transitioning to a drier/warmer pattern over the next few days. A weak storm system will impact portions of central/southern Colorado on Wednesday (June 5) with scattered showers and thunderstorms. Increased ridging will ensue by Thursday and Friday with warming temps and generally less cloud cover than we have seen over the past week. A quick moving trough and associated cold front will usher in much cooler temperatures late Friday through the remainder of the weekend (June 8-9). This should result in a brief reduction in snowmelt, particularly over the northern half of Utah/Colorado and Wyoming. While uncertainty into next week is greater, the model consensus indicates a return to a ridge pattern over the Intermountain West with steady warming. There is the potential for temperatures to increase to 5 to 10 degrees above normal by the middle of next week (in the June 13-15 period). Thus, the weather as we enter the first half of June is fairly typical, as we enter the climatologically warm and dry month of June.



NWS Weather Prediction Center precipitation forecast for June 5-12, 2019.



NWS Climate Prediction Center temperature probability forecast for June 11-15, 2019.

For our online publication that contains basin conditions, summary graphics, and end of month reservoir content tables, refer to: <https://www.cbrfc.noaa.gov/wsupsup/pub2/map/html/cpub.php>