

June 3, 2021 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

Early June water supply volume forecasts are below to much below normal throughout the Colorado River Basin and Great Basin. Upper Colorado River Basin water supply forecasts range between 15-80% of the 1981-2010 historical April-July average. Great Basin water supply forecasts are 5-50% of average. Many April-July volume forecasts fall in the bottom (driest) five on record.

The trend in water supply volume guidance over the past month generally followed the trend in May observed precipitation. Near normal May precipitation across the Upper Green, Upper Colorado mainstem, and San Juan Basins led to relatively minor changes in water supply guidance over the past month while below normal May precipitation across the White/Yampa and Great Basins resulted in decreases in water supply guidance compared to a month ago. June water supply forecast ranges (percent of April-July normal volume) by basin are listed below.

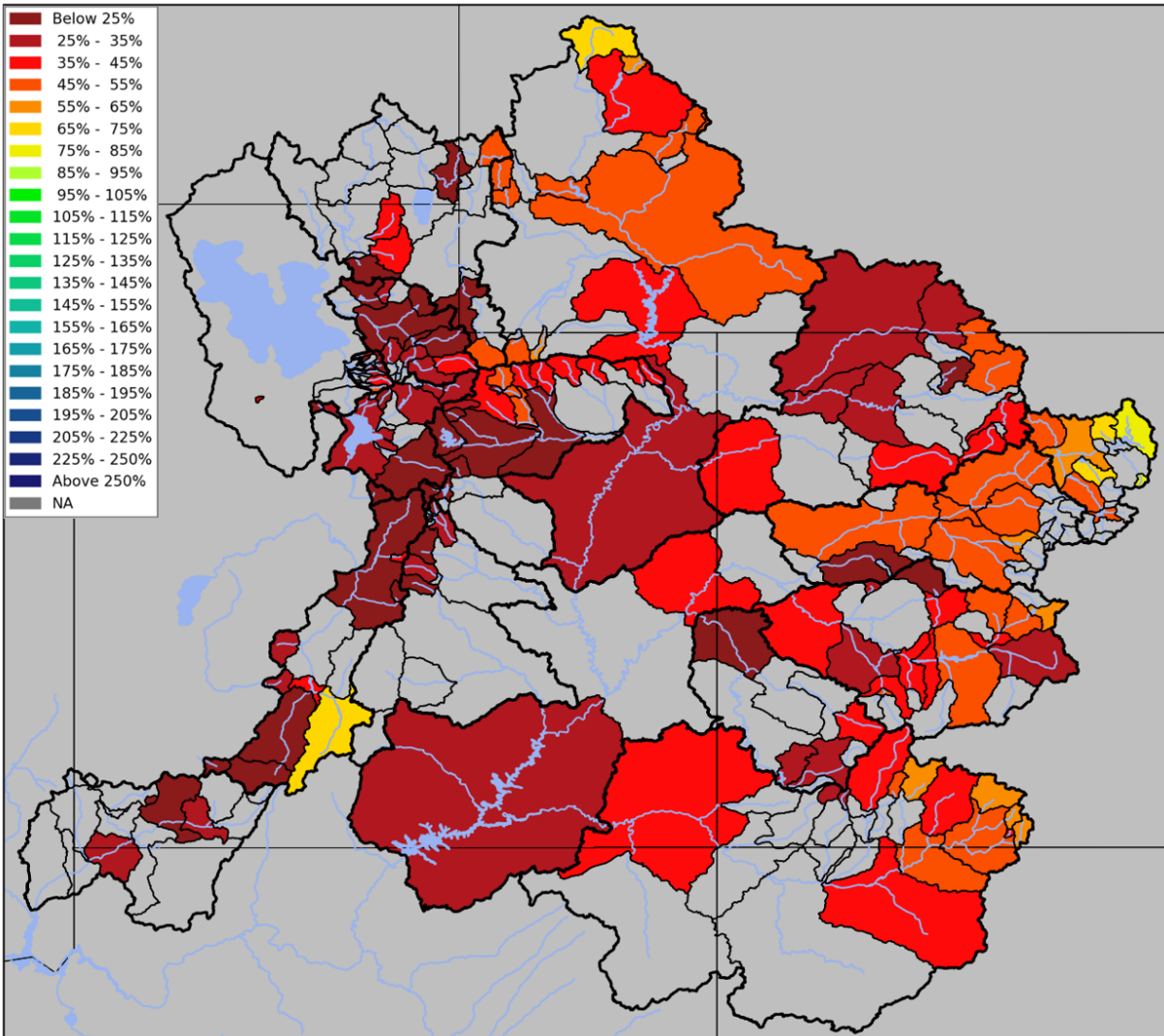
Basin	Water Supply Forecast Range
Upper Green	45-70%
Duchesne	15-50%
Yampa/White	25-50%
Upper Colorado Mainstem	25-80%
Gunnison	20-60%
Dolores	15-40%
San Juan	30-65%
Bear	10-50%
Weber	15-40%
Six Creeks	20-50%
Provo/Utah Lake	5-35%
Virgin	15-30%
Sevier	5-75%

Below normal soil moisture and snowpack conditions in addition to mostly below average spring precipitation and relatively mild (near normal) spring temperatures across the Upper Colorado River Basin and Great Basin have resulted in much below normal and in some cases record low observed April-May flows (unregulated streamflow volumes) across the region. A number of streamflow sites across Utah reported the lowest April-May observed flow on record, with most locations falling in the bottom three. Many streamflow sites across western Colorado have reported April-May observed flows in the bottom five on record.

Snow water equivalent (SWE) at the majority of SNOTEL stations across the region peaked between 70-85% of the normal peak SWE this season. Early June SWE conditions are below to much below normal at most SNOTEL stations across the Colorado River Basin and Great Basin. Basins with the best remaining snowpack are the Upper Green headwaters and Upper Colorado headwaters, where a handful of high elevation SNOTEL stations are reporting 5-10 inches of SWE (50-85% of normal). Little to no snow is being reported at SNOTEL stations across Utah/Great Basin and southwest Colorado (Gunnison, Dolores, San Juan Basins).

April-July unregulated inflow forecasts for some of the major reservoirs in the Upper Colorado River Basin include Fontenelle 345 KAF (48% of average), Flaming Gorge 395 KAF (40%), Green Mountain 150 KAF (55%), Blue Mesa 310 KAF (46%), McPhee 76 KAF (26%), and Navajo 335 KAF (46%). The Lake Powell inflow forecast is 1.8 MAF (25% of average), a three percent decrease from May.

Seasonal Water Supply Forecasts



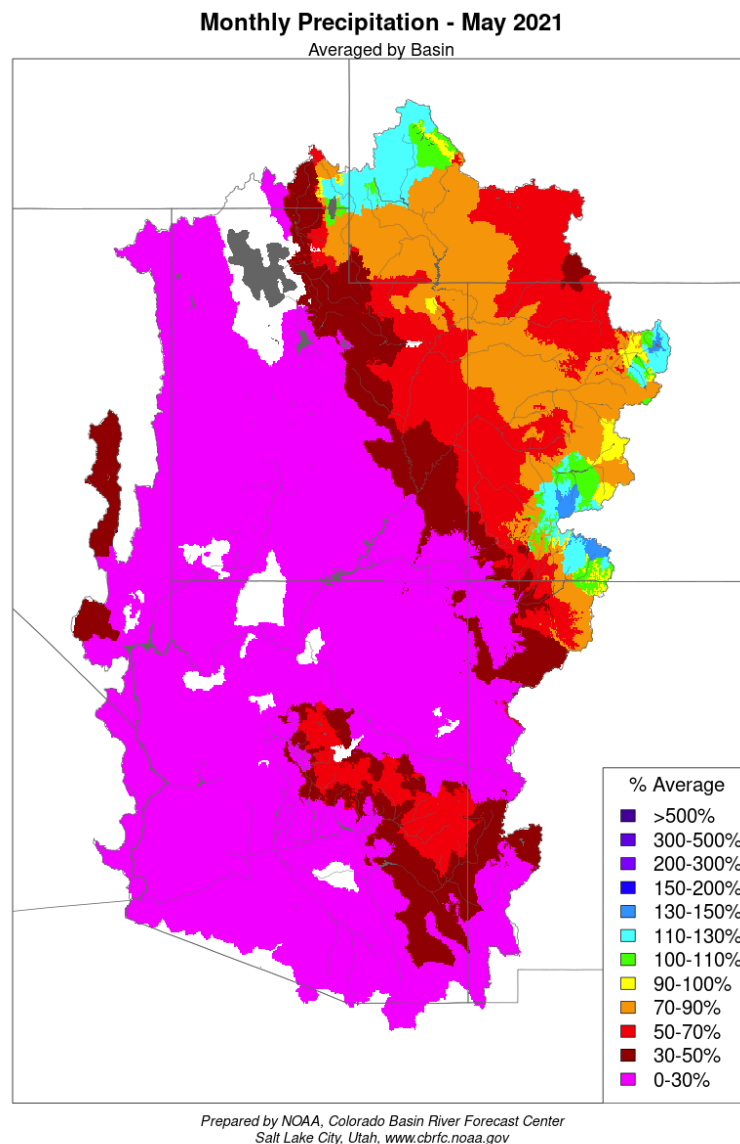
Upper Colorado, Great, Virgin River Basins: June 2021 April-July forecast volumes as a percent of 1981-2010 average.

For specific site water supply forecasts click [here](#)

Water Supply Discussion

May Weather

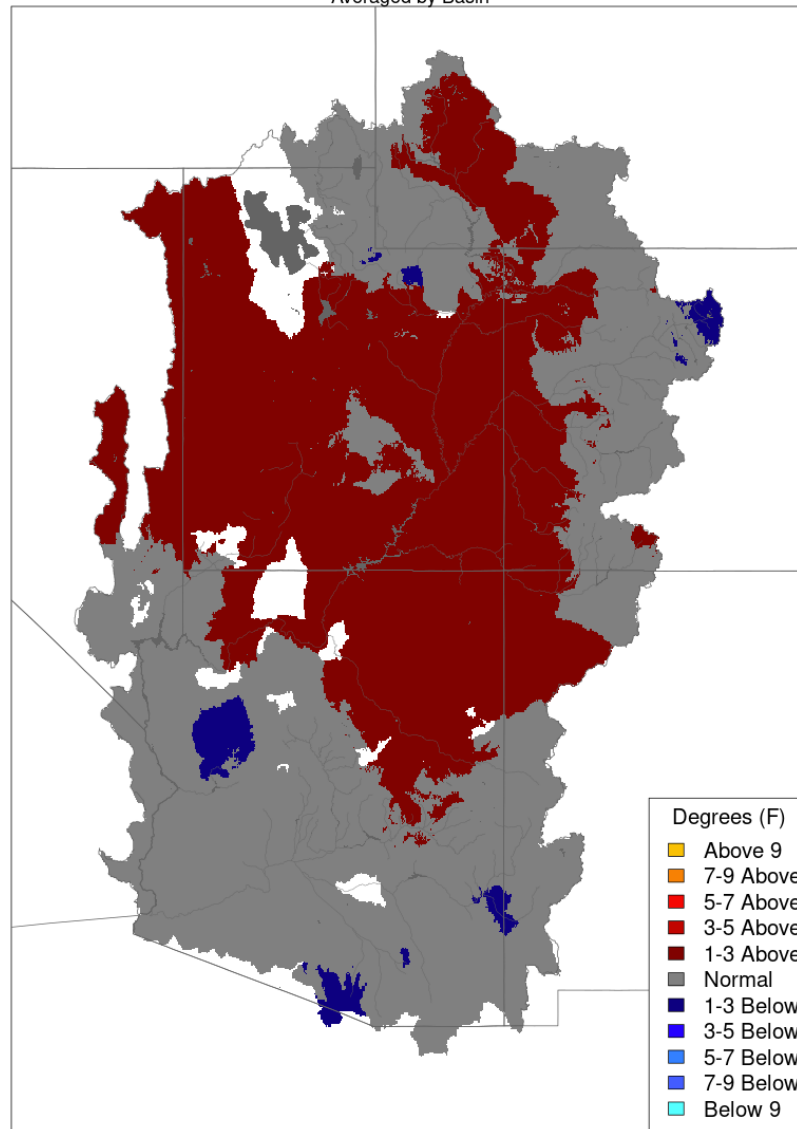
May precipitation was variable across the region. Utah experienced very dry conditions, with several SNOTELs below the 15th percentile. Meanwhile, other areas like the Upper Green in Wyoming and portions of Colorado saw near to slightly above normal precipitation. A storm system on May 21 produced widespread 2-3 inches over the San Juan mountains in southwest Colorado. For the second year in a row, the April-May period was quite dry across much of the Upper Colorado Basin and Great Basin. There were no prolonged periods of below or above normal temperatures in May as the weather pattern was rather progressive. Overall, monthly average temperatures were near to slightly (1-3 degrees) above normal.



May 2021 percent of normal precipitation.
(Averaged by basins defined in the CBRFC hydrologic model)

Max Temp - Monthly Deviation - May 2021

Averaged by Basin



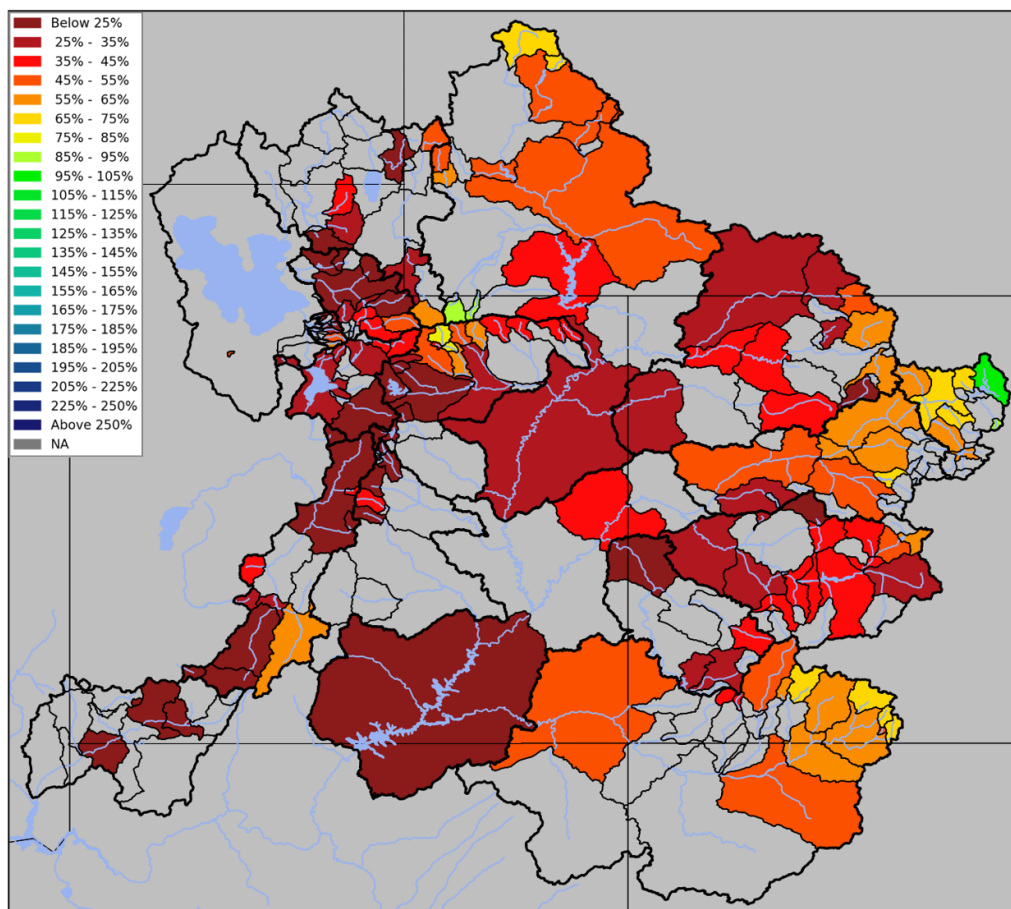
Prepared by NOAA, Colorado Basin River Forecast Center
Salt Lake City, Utah, www.cbrfc.noaa.gov

May 2021 temperature anomaly
(Averaged by basins defined in the CBRFC hydrologic model)

Observed Streamflow

CBRFC hydrologic model soil moisture conditions entering the 2021 spring runoff season were generally in the bottom five of the 1981-2020 40-year period across the region as a result of much below normal April-December 2020 precipitation. Below normal soil moisture is a factor in runoff efficiency, and a portion of any runoff that occurs from rainfall or snowmelt will fulfill soil moisture deficits before contributing to streamflow. Below normal soil moisture and snowpack conditions in addition to mostly below average spring precipitation and relatively mild (near normal) spring temperatures across the Upper Colorado River Basin and Great Basin have resulted in mostly much below normal and in some cases record low observed April-May flows (unregulated streamflow volumes) across the region.

A number of streamflow sites across Utah reported the lowest April-May observed (unregulated) flow on record, with most locations falling in the bottom three. Many streamflow sites across western Colorado have reported April-May observed flows in the bottom five on record.



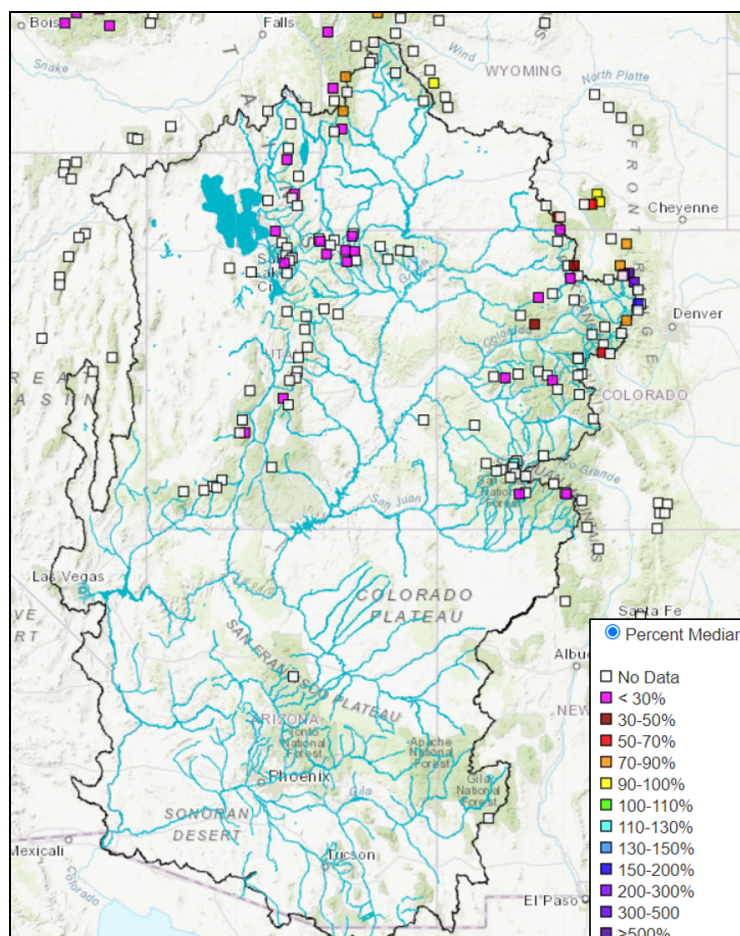
Upper Colorado, Great, Virgin River Basins: May 2021 observed unregulated volumes as a percent of the 1981-2010 average.

Snowpack

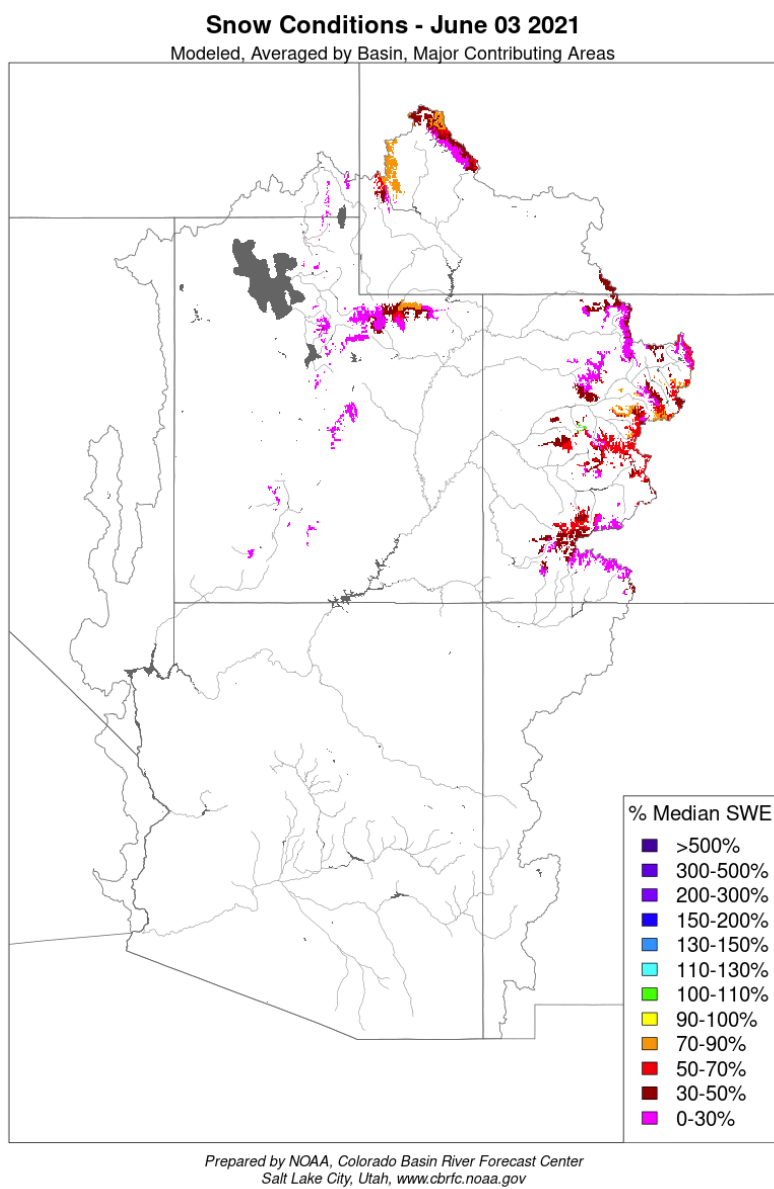
Percent normal (median) snow water equivalent (SWE) can be misleading and vary significantly in the spring after peak snowpack has passed/during the snowmelt season. June historical median SWE values are generally small and it is normal for many areas to have little or no snow remaining. That being said, early June SWE conditions are below to much below normal at most SNOTEL stations across the Colorado River Basin and Great Basin. Basins with the best remaining snowpack are the Upper Green headwaters and Upper Colorado headwaters, where a handful of high elevation SNOTEL stations are reporting 5-10 inches of SWE (50-85% of normal). Little to no snow is being reported at SNOTEL stations across Utah/Great Basin and southwest Colorado (Gunnison, Dolores, San Juan basins).

It was seldom the case that SNOTEL station SWE exceeded its normal seasonal peak value this season, but it did occur at a few locations, most notably the north slope of the Uintas, the headwaters of the Fryingpan River upstream of Ruedi Reservoir, and the headwaters of the San Juan River Basin. SWE at the majority of SNOTEL stations across the region peaked between 70-85% of the normal peak SWE this season. Around a dozen SNOTEL stations along the Continental Divide within Colorado recorded seasonal peak values that were 90-100% of the normal peak, but it was much more common for peak SWE to fall in the 70-85% category across the Upper Colorado River Basin and Great Basin.

The images below show early June observed snow conditions and CBRFC hydrologic model snow conditions.



June 3, 2021 observed SNOTEL SWE conditions (percent of historical median).



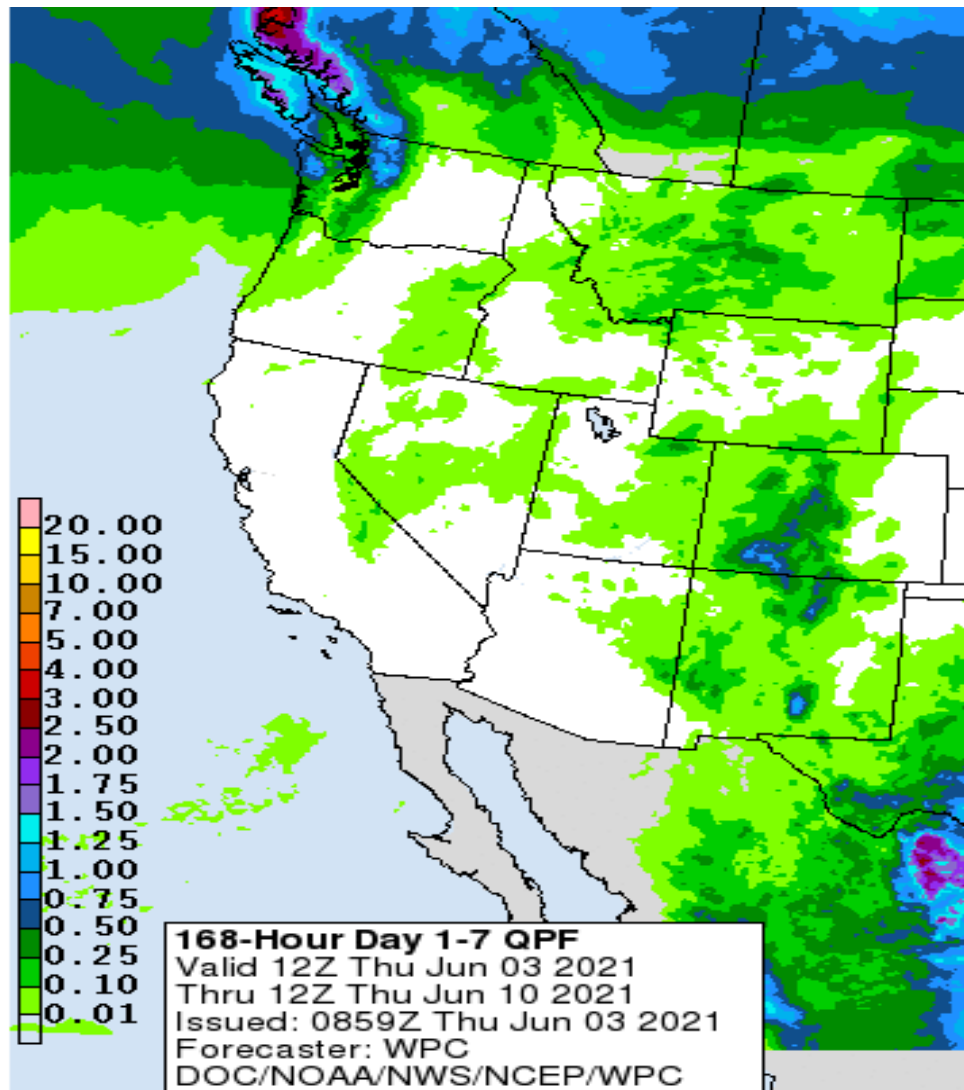
June 3, 2021 CBRFC hydrologic model snow conditions (percent of median).

For updated SNOTEL information refer to click [here](#)

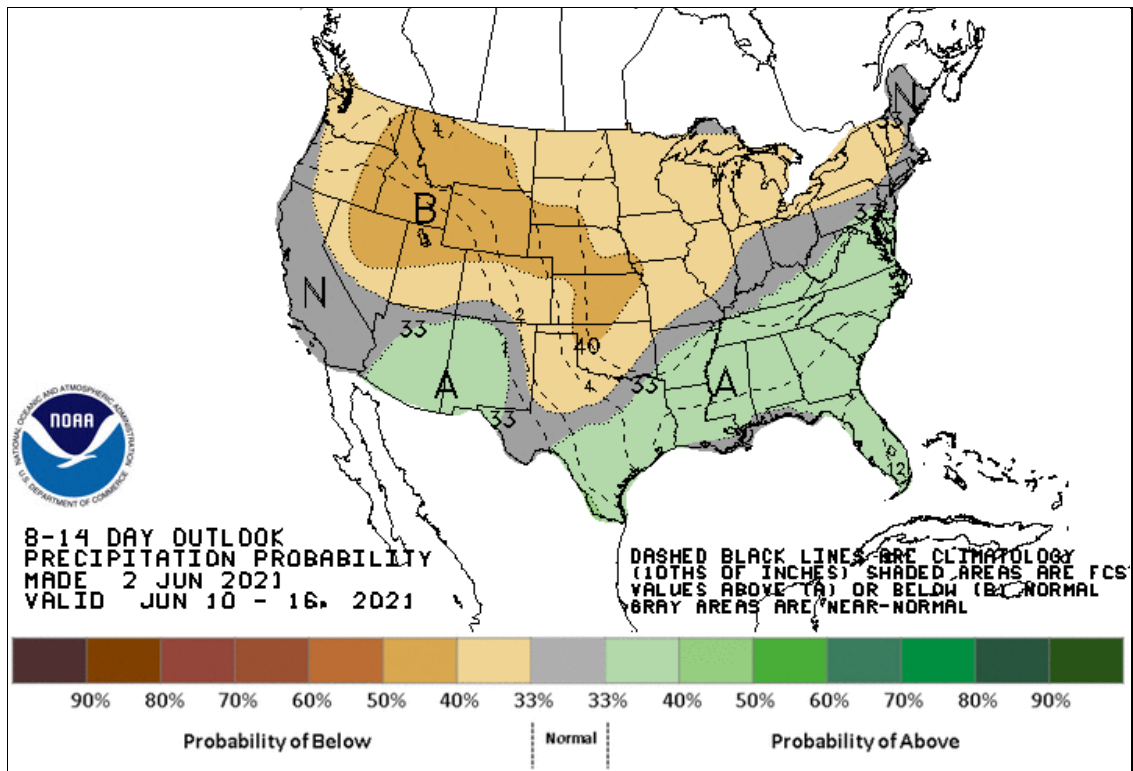
For CBRFC hydrologic model snow click [here](#)

Upcoming Weather

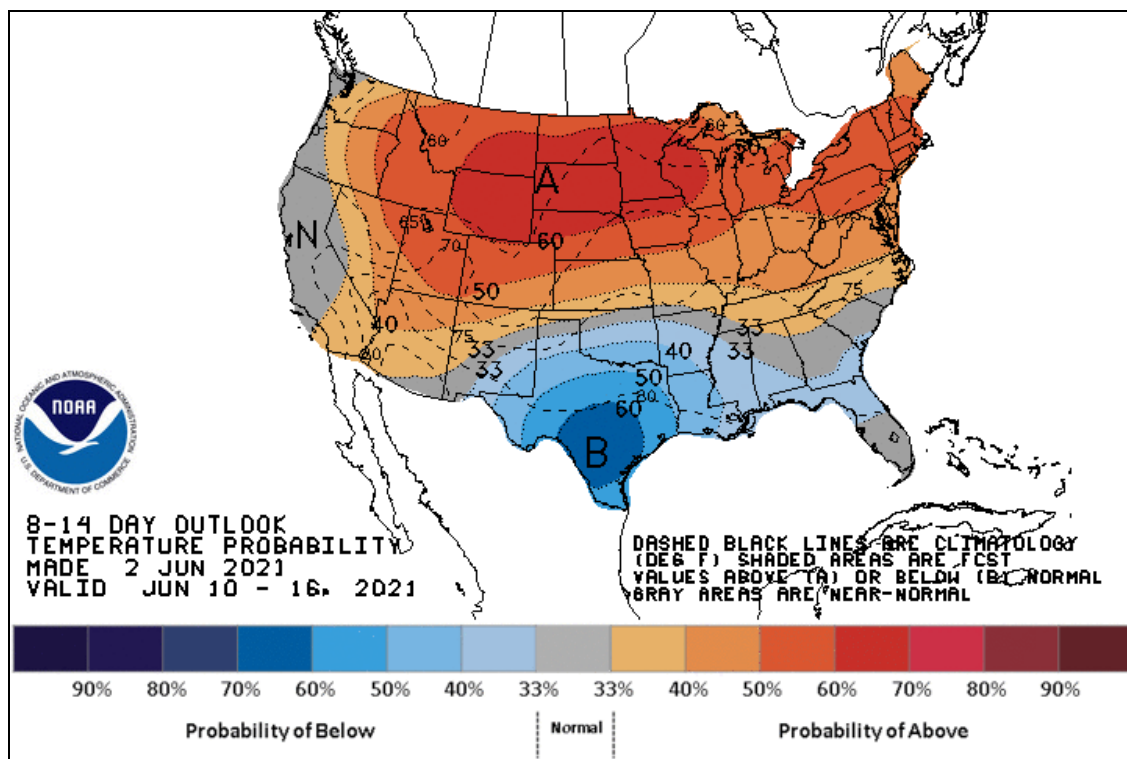
Weather models are in good agreement at showing a strong ridge of high pressure remaining in place over the region for the next week. Temperatures will be very warm (10-20 degrees above normal), which will accelerate snowmelt across the highest elevations. Isolated to scattered afternoon showers will be possible over the Colorado mountains, particularly this weekend (June 5-6). However, forecasted precipitation amounts over the next week are rather light, generally less than a half inch. The models suggest that a ridge of high pressure will remain in place through the end of next week for a continuation of warm/dry conditions. The Climate Prediction Center outlook for June 10-16 has elevated odds for above normal temperatures and below normal precipitation over much of the Upper Colorado Basin and Great Basin.



NWS Weather Prediction Center precipitation forecast for June 3-9, 2021.



NWS Climate Prediction Center precipitation probability forecast for June 10-16, 2021.



NWS Climate Prediction Center temperature probability forecast for June 10-16, 2021.

Basin Conditions and Summary Graphics

[Green River Basin](#)

[Upper Colorado River Basin](#)

[San Juan River Basin](#)

[Great Salt Lake Basin](#)

[Sevier River Basin](#)

[Virgin River Basin](#)

End Of Month Reservoir Content Tables

[Green River Basin](#)

[Upper Colorado River Basin](#)

[San Juan River Basin](#)

[Great Salt Lake Basin](#)

[Sevier Basin](#)