

## May 6, 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 May 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 15-75% of the 1981-2010 historical April-July average. Great Basin water supply forecasts are 10-70% of average. Water supply guidance as a percent of average decreased by 10-20% across the majority of the Upper Colorado River Basin and decreased by 5-15% across the majority of the Great Basin over the past month. Many April-July volume forecasts fall in the bottom (driest) five on record. Water supply forecast ranges (percent of normal) by basin are listed below.

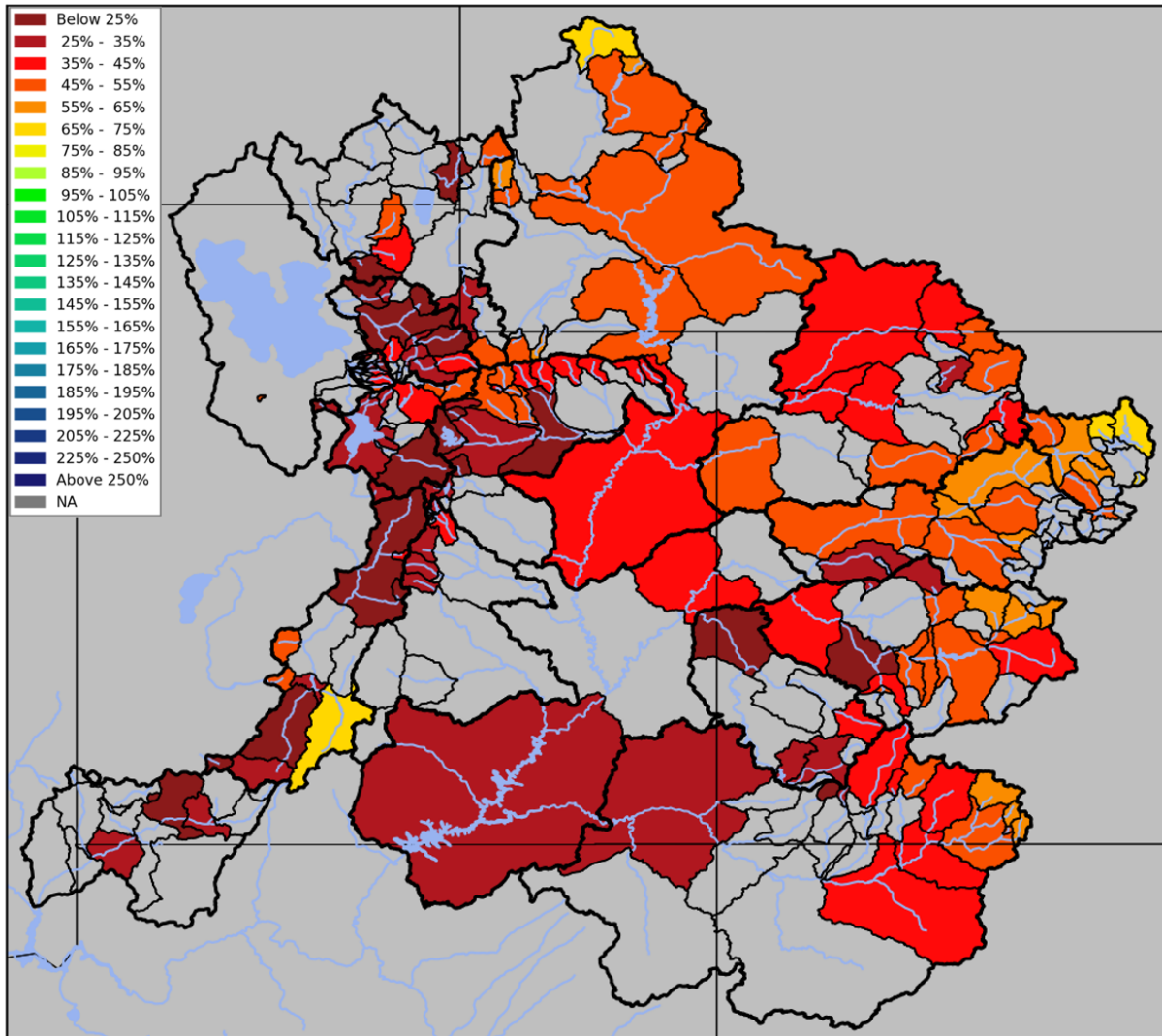
<b>Basin</b>	<b>Water Supply Forecast Range</b>
Upper Green	35-70%
Duchesne	10-55%
Yampa/White	40-55%
Upper Colorado Mainstem	25-75%
Gunnison	25-60%
Dolores	15-40%
San Juan	25-60%
Bear	10-55%
Weber	20-45%
Six Creeks	20-50%
Provo/Utah Lake	15-50%
Virgin	15-30%
Sevier	10-70%

April average temperatures were slightly below normal across the north and slightly above normal across the south. April precipitation was mostly below to well below normal across the Upper Colorado Basin and Great Basin. Several SNOTELs in the San Juan, Gunnison, and Yampa River Basins were below the 10th percentile for April precipitation. Below normal soil moisture and snowpack conditions in addition to below average April precipitation and relatively mild (near normal) April temperatures across the Upper Colorado River Basin and Great Basin lead to mostly below normal and in some cases record low observed April flows (unregulated streamflow volumes) across the region. A number of streamflow sites had record low April flows with many locations falling in the bottom five of their period of record.

Snow water equivalent (SWE) at the majority of SNOTEL stations across the region peaked between 70-85% of the normal peak SWE. Early May SWE conditions are below to much below normal (median) throughout the CBRFC forecast area. Upper Colorado River Basin SWE conditions generally range between 50-75% of the 1981-2010 historical median and Great Basin SWE generally ranges between 30-60% of normal.

April-July unregulated inflow forecasts for some of the major reservoirs in the Upper Colorado River Basin include Fontenelle 380 KAF (52% of average), Flaming Gorge 450 KAF (46%), Green Mountain 150 KAF (55%), Blue Mesa 340 KAF (50%), McPhee 81 KAF (27%), and Navajo 325 KAF (44%). The Lake Powell inflow forecast is 2.0 MAF (28% of average), a 17% decrease from April.

## Seasonal Water Supply Forecasts



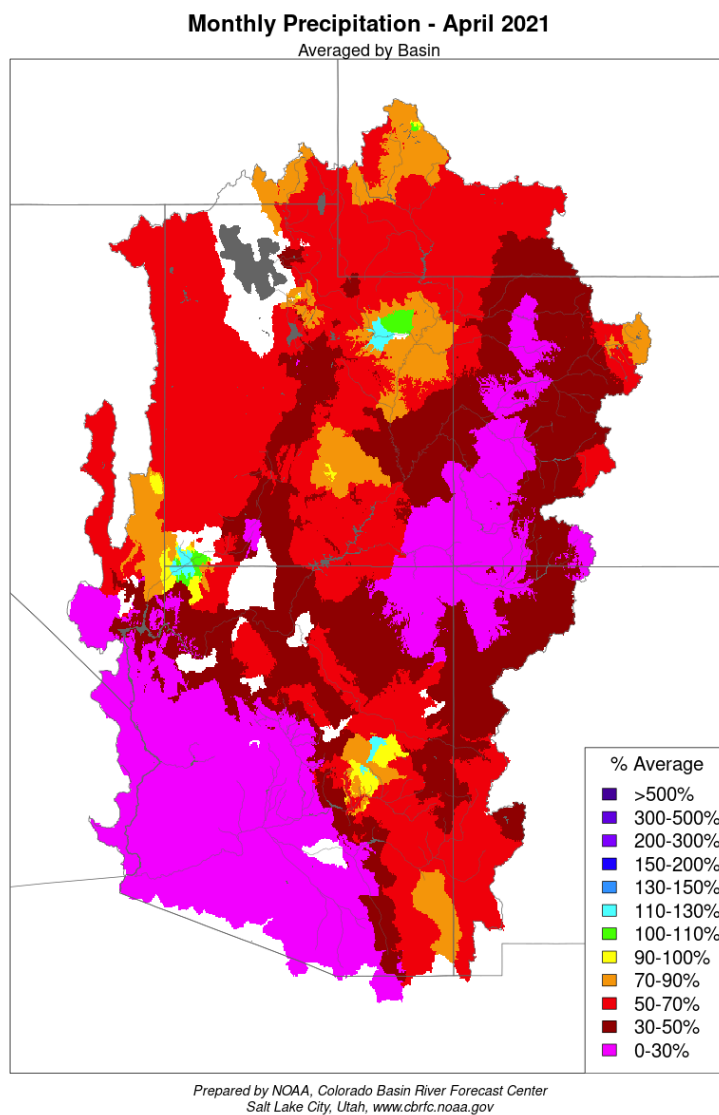
Upper Colorado, Great, Virgin River Basins: May 2021 April-July forecast volumes as a percent of 1981-2010 average.

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

## Water Supply Discussion

### April Weather

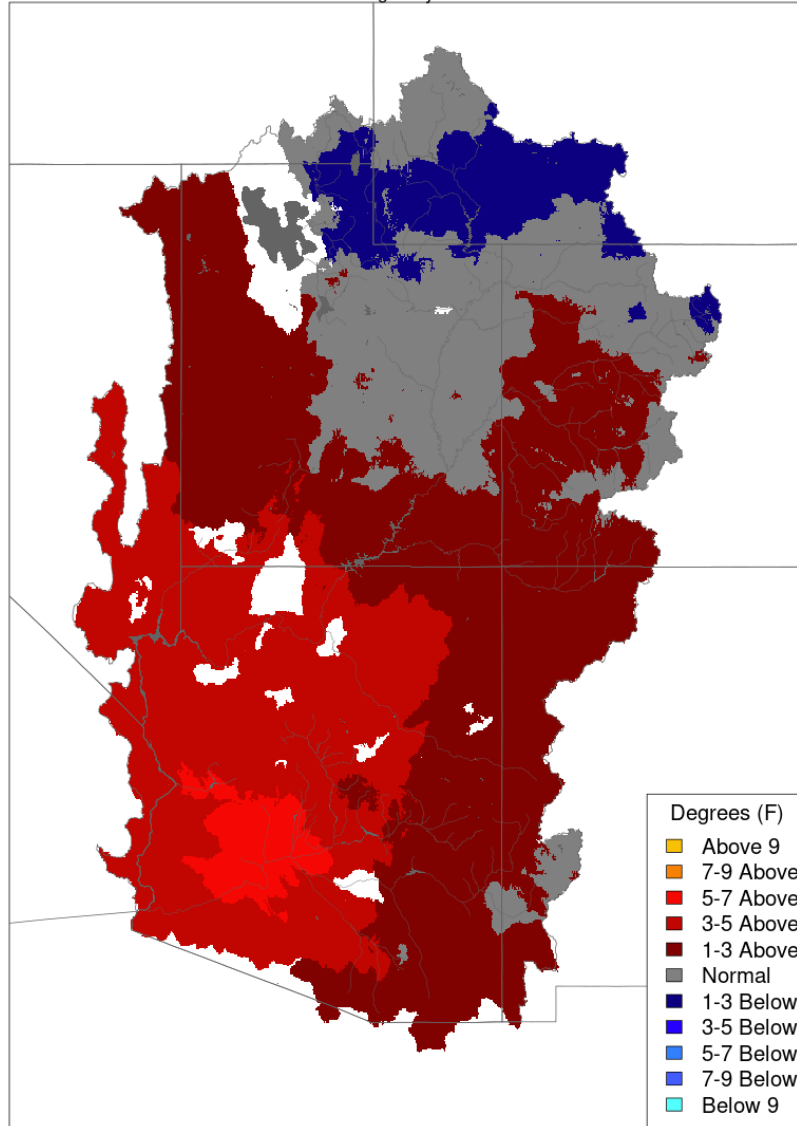
Monthly precipitation for April was mostly below to well below normal across the Upper Colorado Basin and Great Basin. Several of the SNOTELs in the San Juan, Gunnison, and Yampa River Basins were below the 10th percentile for April precipitation. A slow-moving cutoff low pressure system moved from western Utah into Arizona on April 25-28, bringing cooler temperatures and much needed widespread precipitation. Largely due to this system, portions of the northern Wasatch and Upper Colorado headwaters were near normal for monthly precipitation. The very dry April has increased water year precipitation deficits, and early May water supply guidance shows a corresponding decrease at many locations. April average temperatures were slightly below normal across the north and slightly above normal across the south.



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

### Max Temp - Monthly Deviation - April 2021

Averaged by Basin



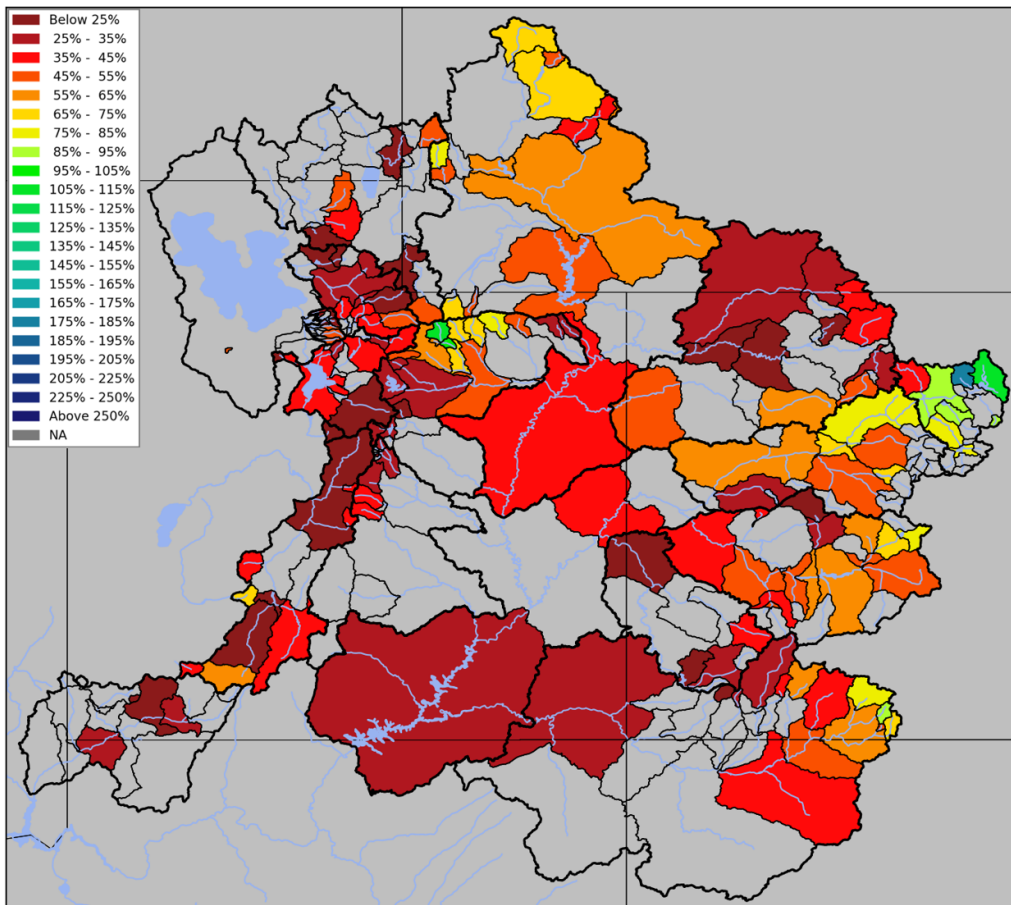
Prepared by NOAA, Colorado Basin River Forecast Center  
Salt Lake City, Utah, [www.cbrfc.noaa.gov](http://www.cbrfc.noaa.gov)

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

## April Observed Streamflow

Below normal soil moisture and snowpack conditions in addition to below average April precipitation and relatively mild (near normal) April temperatures across the Upper Colorado River Basin and Great Basin lead to mostly below normal and in some cases record low observed April flows (unregulated streamflow volumes) across the region. Above normal temperatures during the beginning and end of April generated the bulk of the runoff during the month. Despite the accelerated snowmelt during these warmer than normal periods, streamflow volumes for the most part were very low largely due to the low antecedent base flow and soil moisture conditions. 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.

April flows were closest to normal in a handful of basins across the Duchesne, Upper Green, and headwater basins along the Continental Divide within Colorado. The East Troublesome Fire in the Upper Colorado River mainstem headwater had a noticeable impact on April runoff - inflows into both Willow Creek Reservoir and Granby Reservoir were above average and greater than nearby basins. April flows in the White/Yampa River Basin, which is just northwest of the East Troublesome Fire, were some of the lowest in the past 100+ years. Great Basin April flows compared to average were mostly below 25% and generally worse off than Upper Colorado River Basin April flows. A number of streamflow sites across the region had record low April flows with many locations falling in the bottom five of their period of record.



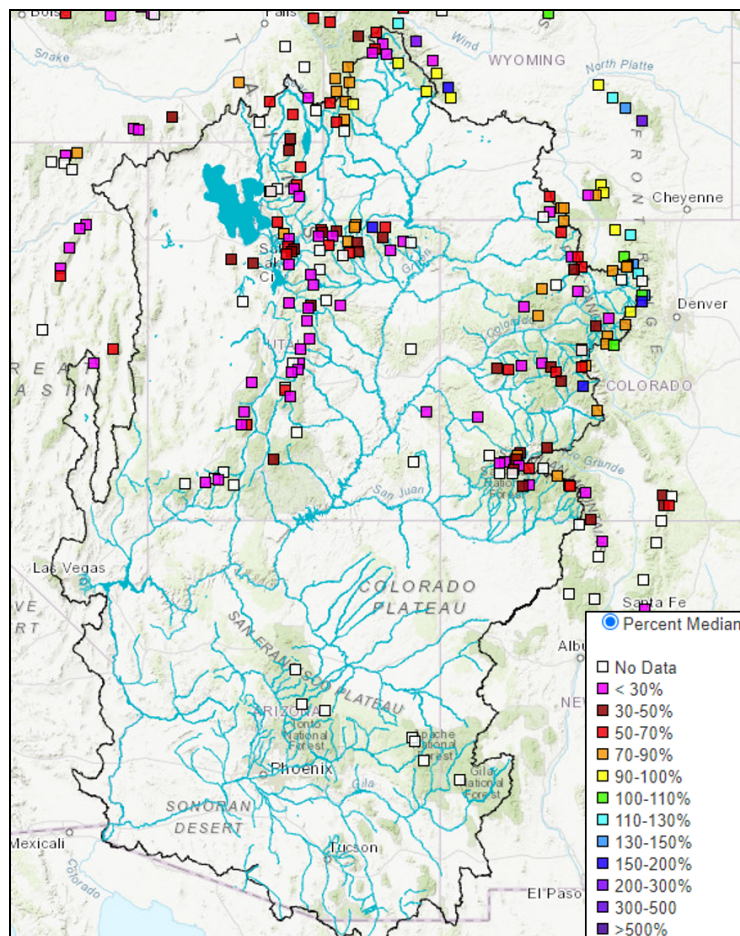
Upper Colorado, Great, Virgin River Basins: April 2021 observed unregulated volumes as a percent of the 1981-2010 average.

## 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. With that said, early May SWE conditions are mostly below to much below normal throughout the CBRFC forecast area. Upper Colorado River Basin SWE conditions generally range between 50-75% of the 1981-2010 historical median: Upper Green and Upper Colorado River Mainstem (75%); White/Yampa (65%); Gunnison and San Juan (55%); Duchesne (50%). Early May snow conditions are very poor in the Virgin and Dolores basins, where it has mostly melted out and is less than 10% of normal. Great Basin snow conditions generally range between 30-60% of normal: Six Creeks (60%); Bear (50%); Weber (45%); Provo/Utah Lake (30%).

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. 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.

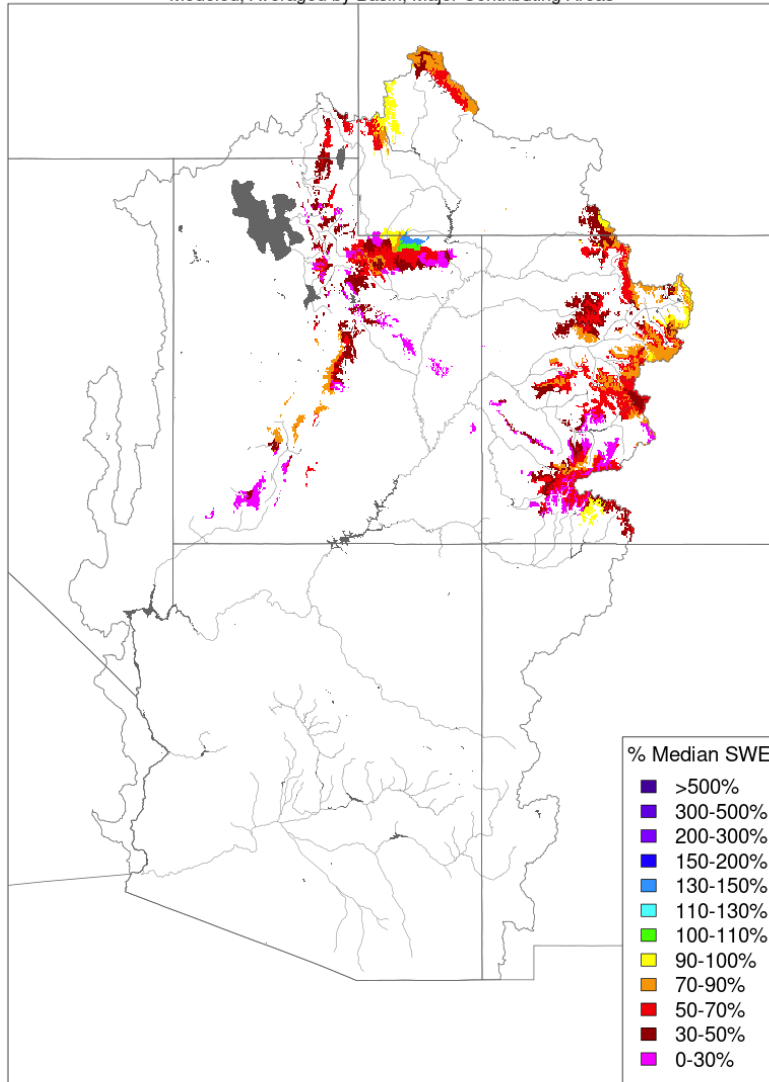
The images below show early May observed snow conditions and CBRFC hydrologic model snow conditions.



May 5, 2021 observed SNOTEL SWE conditions (percent of historical median).

### Snow Conditions - May 05 2021

Modeled, Averaged by Basin, Major Contributing Areas



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

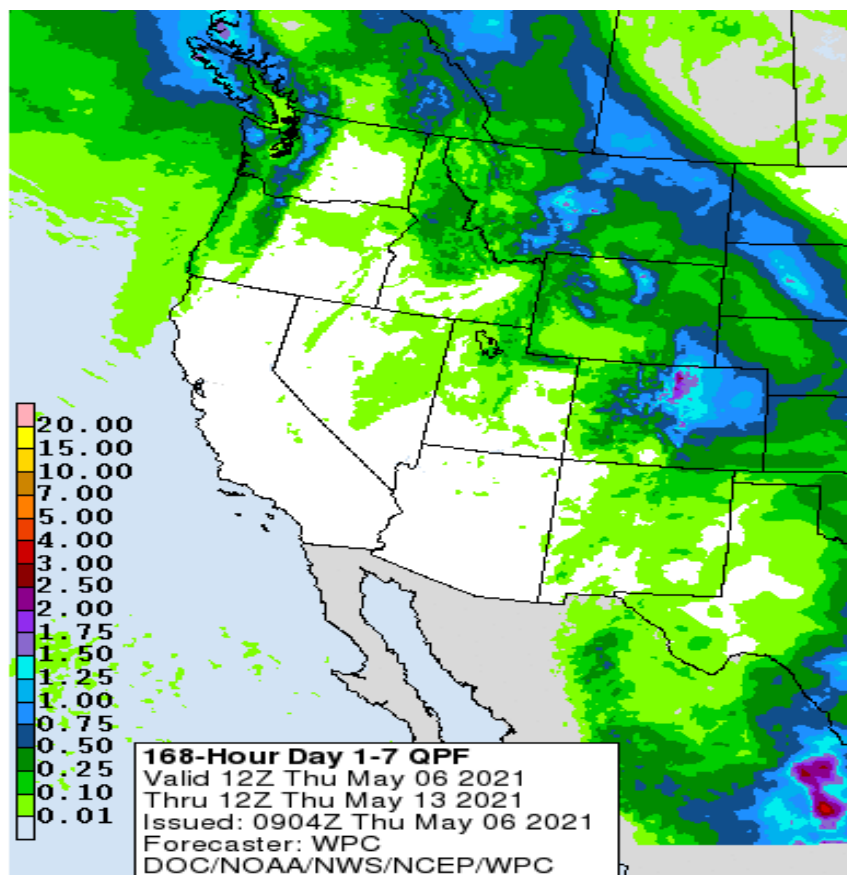
May 5, 2021 CBRFC hydrologic model snow conditions (percent of median).

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

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

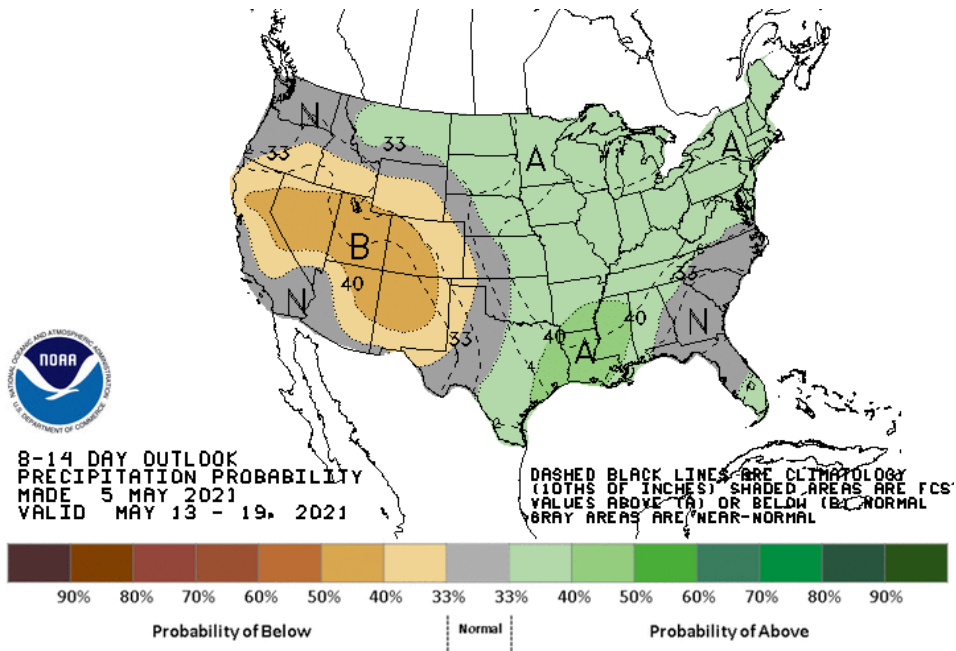
## Upcoming Weather

Temperatures will warm to 10-20 degrees above normal on Thursday/Friday as a ridge builds across the Intermountain West. This will accelerate snowmelt after the brief lull over the past few days. This warm up will be short lived however, as a trough is forecasted to move across Wyoming/Montana on Saturday through Monday (May 8-11). This trough will usher in cooler temperatures, especially to the northern half of Utah/Colorado and Wyoming, and bring showers to mainly the Upper Green and basins in northern Colorado. Precipitation amounts look mostly modest at this time, with the highest forecasted amounts (0.75-1.25 inches) over the Upper Colorado River headwaters. As this system departs, the models are in general agreement at indicating a ridge redeveloping over the Intermountain West by the middle of next week. Unfortunately, no prolonged period of troughing and associated wet conditions is seen over at least the next 10 days, a pattern that we desperately need given the very poor water supply conditions. The hope of a Miracle May is fading quickly.

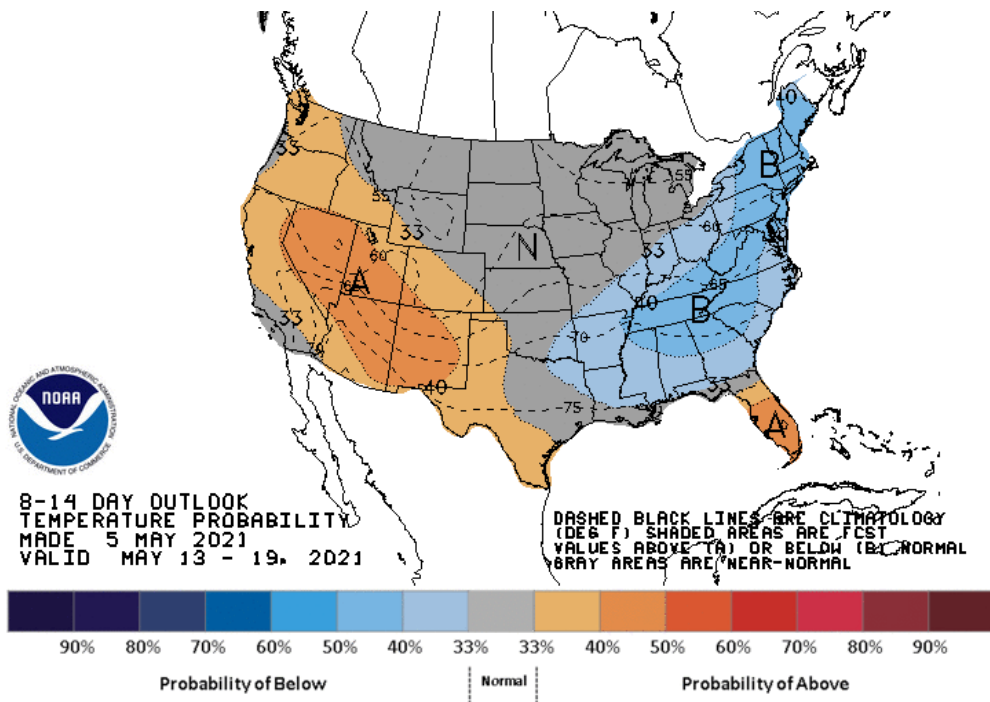


NWS Weather Prediction Center precipitation forecast for May 6-13, 2021.





NWS Climate Prediction Center precipitation probability forecast for May 13-19, 2021.



NWS Climate Prediction Center temperature probability forecast for May 13-19, 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](#)