

April 16, 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

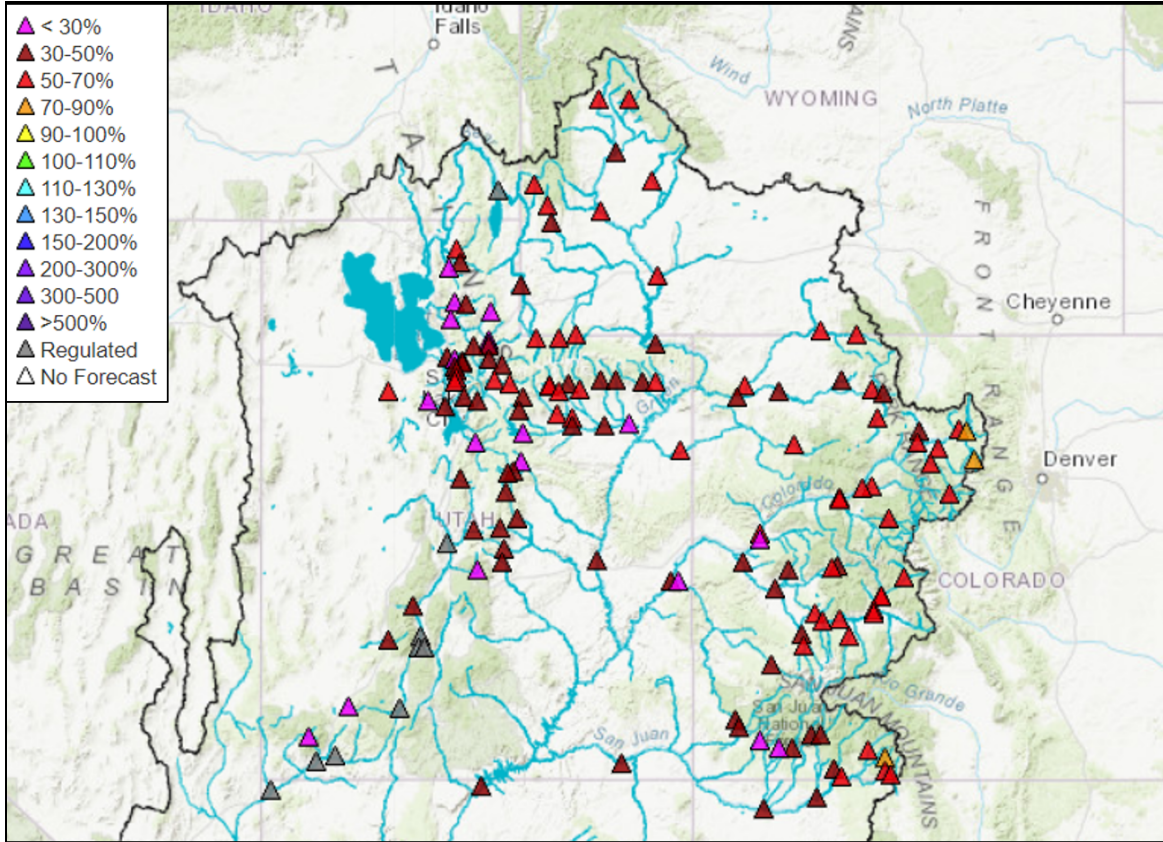
A very dry first two weeks of April has led to sharp declines in April-July water supply volume guidance across the region since the beginning of the month. Below normal spring runoff continues to be likely across the region due to very poor (dry) antecedent soil moisture conditions and below to much below normal seasonal (October-April) precipitation. Mid-April water supply guidance generally ranges between 25-70% of normal across the Upper Colorado River Basin and 15-55% across the Great Basin. Lower Colorado River Basin January-May water supply volume guidance is less than 35% of normal.

A strong ridge for early April dominated the weather pattern through much of the first week, bringing warm and dry conditions. Temperatures over the first week of April were remarkably warm (10-20 degrees above normal) across much of the region. The weather pattern transitioned to more troughing over the last five days, with a strong cutoff low pressure system over the Great Basin. The weather pattern change over the last week has brought temperatures down to near to below normal.

Since the beginning of April, snow water equivalent (SWE) conditions as a percent of normal have declined significantly across the region. The decline in SWE conditions is a result of both the very warm start to April leading to substantial snowmelt and much below normal precipitation during the first half of April. Upper Colorado River Basin mid-April SNOTEL SWE conditions generally range between 30-80% of the 1981-2010 historical median. Snow across the Lower Colorado River Basin has mostly melted out and the majority of SNOTEL stations across Arizona are reporting less than an inch of SWE. Mid-April SWE conditions across the Great Basin generally range between 55-65% of normal.

April-July unregulated inflow forecasts for some of the major reservoirs in the Upper Colorado River Basin include Fontenelle Reservoir 400 KAF (55% average), Flaming Gorge 470 KAF (48%), Blue Mesa Reservoir 420 KAF (62%), McPhee Reservoir 95 KAF (32%), and Navajo Reservoir 370 KAF (50%). The Lake Powell inflow forecast is 2.7 MAF (38% of average), a seven percent decrease from the early April forecast.

Seasonal Water Supply Forecasts



Upper Colorado, Great, Virgin River Basins: April-July runoff volume guidance as of April 15, 2021
(percent of 1981-2010 average)

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

Water Supply Discussion

Weather Synopsis

A very strong ridge for early April dominated the weather pattern through much of the first week, bringing well above normal temperatures and dry conditions. The weather pattern transitioned to more troughing over the last five days, with a strong cutoff low pressure system over the Great Basin. As a result, temperatures have cooled considerably over much of the Great Basin and Upper Basin, and occasional showers have occurred.

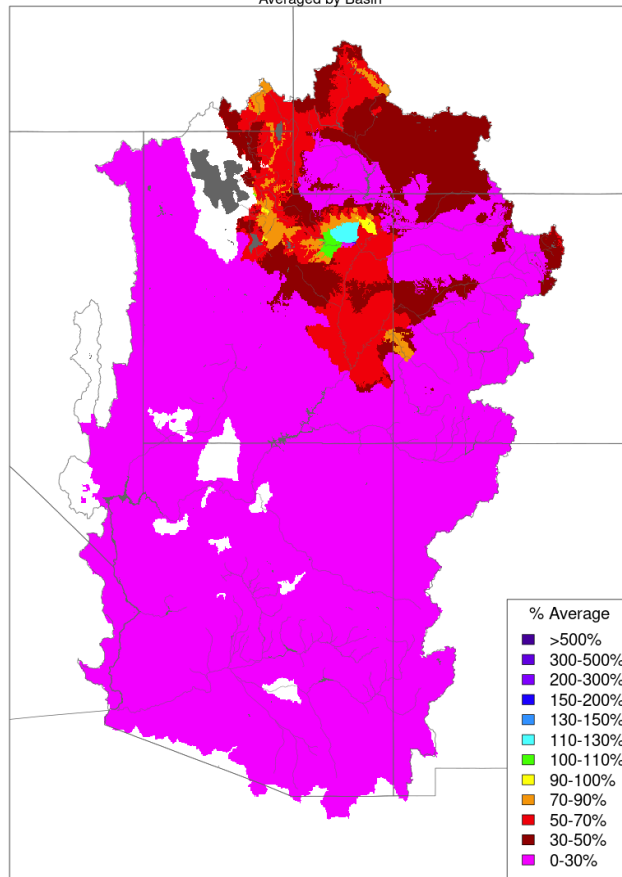
Precipitation

Month-to-date precipitation has been below to much below average over most of the region. The first week was very dry with little to no precipitation. The cutoff low has brought periods of showers over the last five days to Utah, Wyoming, and Colorado. Heaviest precipitation amounts (1-3 inches) have been over the northern Wasatch mountains and the Upper Colorado headwaters. Unfortunately, the southern half of Utah/Colorado did not receive as much precipitation with this system, and thus month-to-date precipitation is well below normal in these areas.

Temperature

Temperatures over the first week of April were remarkably warm (10-20 degrees above normal) across much of the region. Several record high temperatures were set, especially on April 3-4. For more perspective on the magnitude of the warm spell, Salt Lake City experienced the *second* warmest temperatures on record over the period of April 1-5, and Grand Junction was the *third* warmest. The aforementioned change in the weather pattern over the last week has brought temperatures down to near to below normal. Thus, there has been a temperature swing of 20-30 degrees over the first half of April.

Month to Date Precipitation - April 16 2021
Averaged by Basin



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

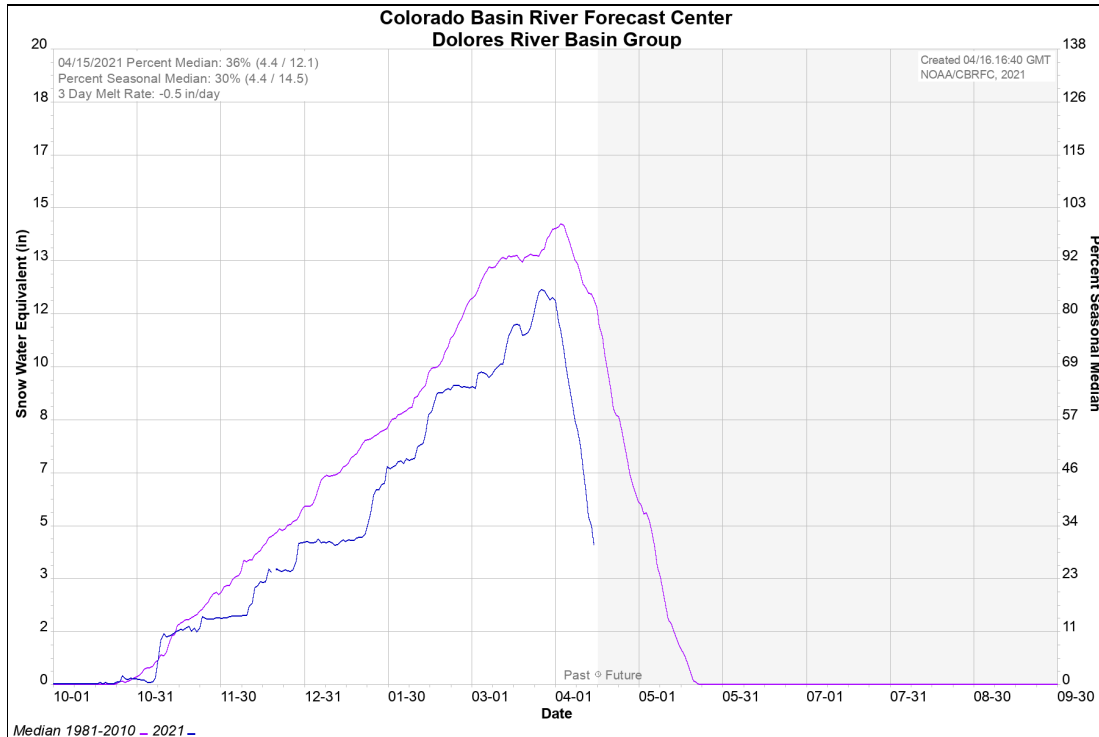
April 1-15, 2021 percent of average precipitation

Date	Max Temperature	Min Temperature	Avg Temperature	Avg Temperature Departure	HDD	CDD	Precipitation	Snowfall	Snow Depth
2021-04-01	66	33	49.5	2.3	15	0	0.00	0.0	0
2021-04-02	75	39	57.0	9.6	8	0	0.00	0.0	0
2021-04-03	79	46	62.5	14.9	2	0	0.00	0.0	0
2021-04-04	79	52	65.5	17.7	0	1	0.00	0.0	0
2021-04-05	74	41	57.5	9.5	7	0	0.05	0.0	0
2021-04-06	50	34	42.0	-6.1	23	0	0.09	T	0
2021-04-07	64	36	50.0	1.7	15	0	0.00	0.0	0
2021-04-08	65	43	54.0	5.4	11	0	0.00	0.0	0
2021-04-09	57	34	45.5	-3.3	19	0	0.00	0.0	0
2021-04-10	69	39	54.0	5.0	11	0	0.00	0.0	0
2021-04-11	54	39	46.5	-2.7	18	0	0.00	0.0	0
2021-04-12	55	32	43.5	-5.9	21	0	0.00	0.0	0
2021-04-13	57	36	46.5	-3.2	18	0	T	0.0	0
2021-04-14	50	38	44.0	-5.9	21	0	0.31	0.0	0
2021-04-15	47	34	40.5	-9.7	24	0	0.28	0.0	0

Climate statistics for the first half of April in Salt Lake City, showing very warm (10 to 20 degrees above normal) temperatures in the first five days followed by the recent cooldown (5 to 10 degrees below normal)

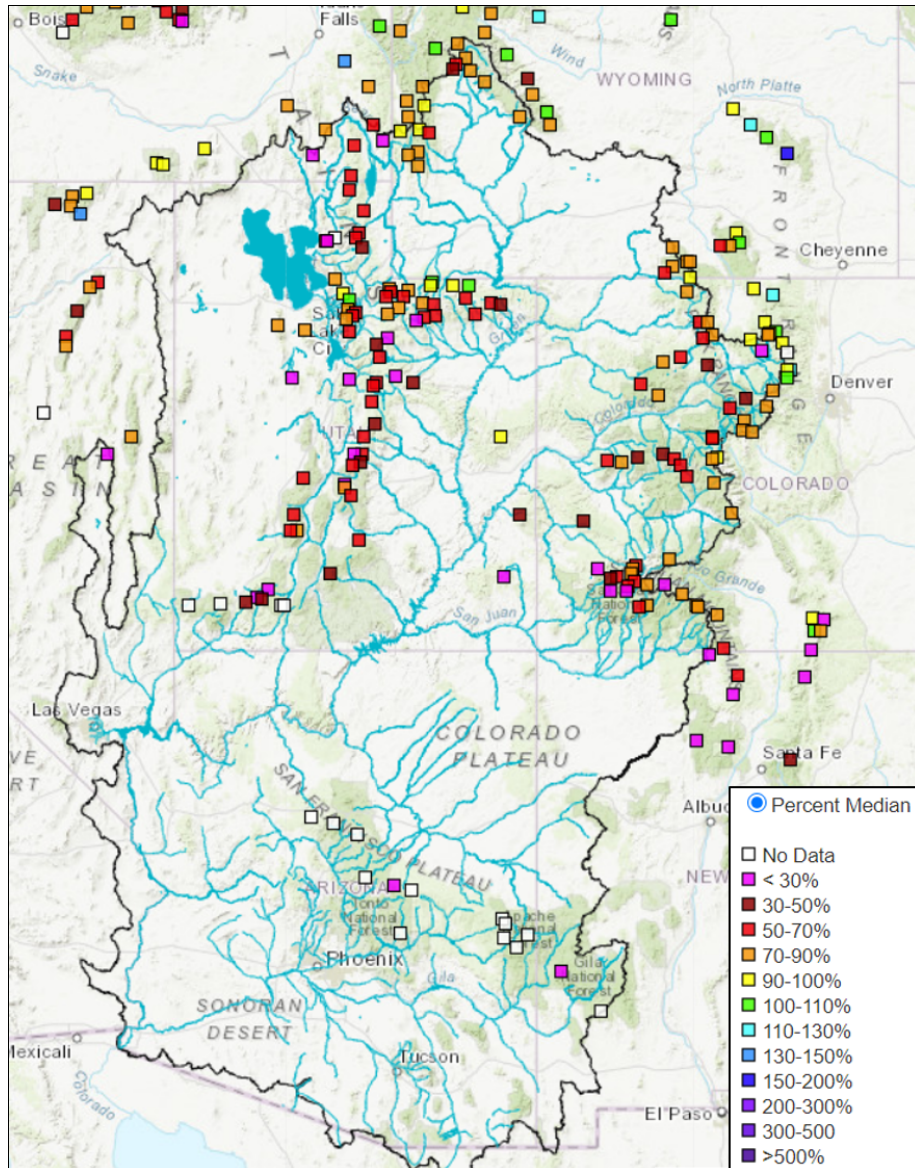
Snowpack

Since the beginning of April, snow water equivalent (SWE) conditions as a percent of normal have declined significantly across the region. The decline in SWE conditions is a result of both the very warm start to April leading to substantial snowmelt and much below normal precipitation during the first half of April. SWE has decreased by 4-8 inches at many SNOTEL stations across the region, most notably in central/southwest Utah and southwest Colorado.



Dolores River Basin SNOTEL SWE (blue=2021; magenta=1981-2010 historical median)

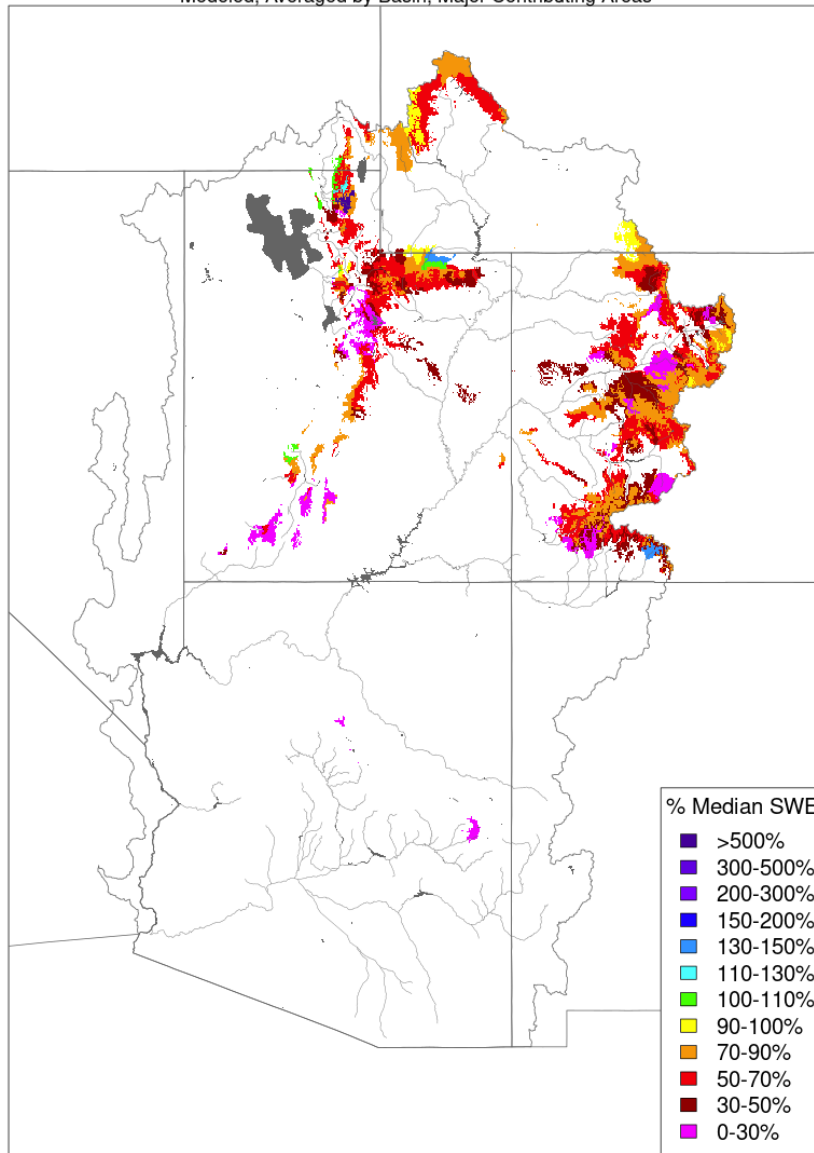
Upper Colorado River Basin mid-April SWE conditions generally range between 30-80% of the 1981-2010 historical median: Upper Green (80%); White/Yampa, Upper Colorado River mainstem/headwaters, Gunnison (65%); Duchesne (55%); Dolores (35%); Virgin (30%). Snow across the Lower Colorado River Basin has mostly melted out and the majority of SNOTEL stations across Arizona are reporting less than an inch of SWE. Mid-April SWE conditions across the Great Basin generally range between 55-65% of normal. The images below show the observed snow conditions and CBRFC hydrologic model snow conditions.



SNOTEL percent median snow conditions as of April 15, 2021

Snow Conditions - April 15 2021

Modeled, Averaged by Basin, Major Contributing Areas



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

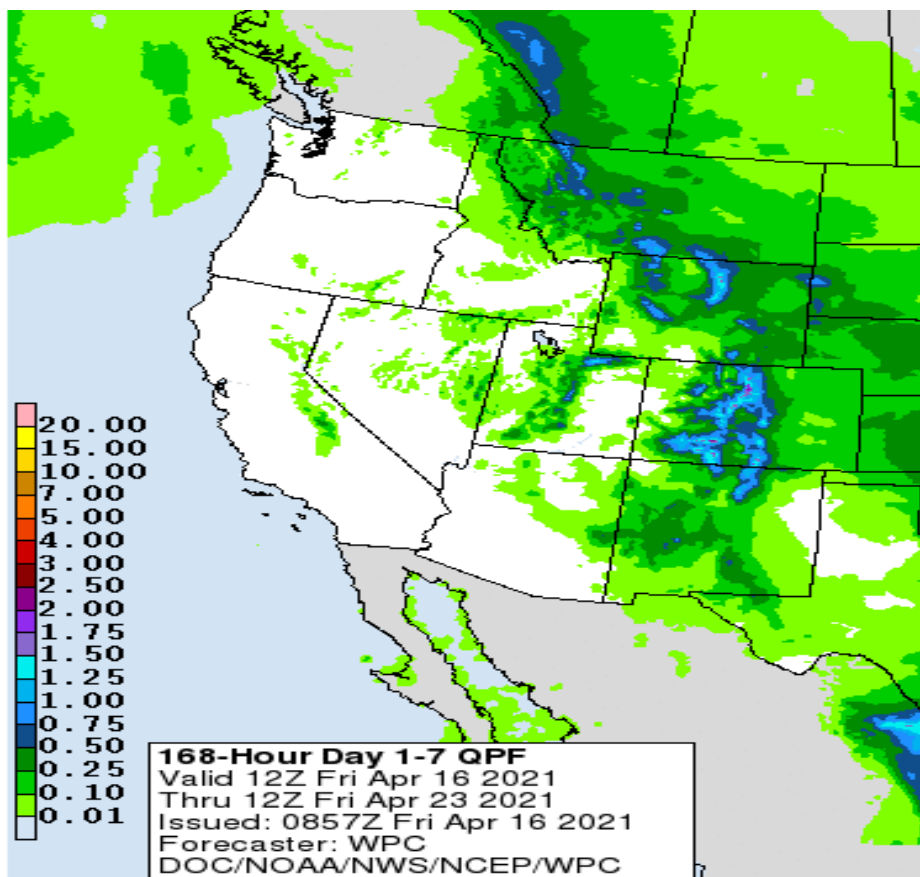
Snow representation from the CBRFC hydrologic model April 15, 2021

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

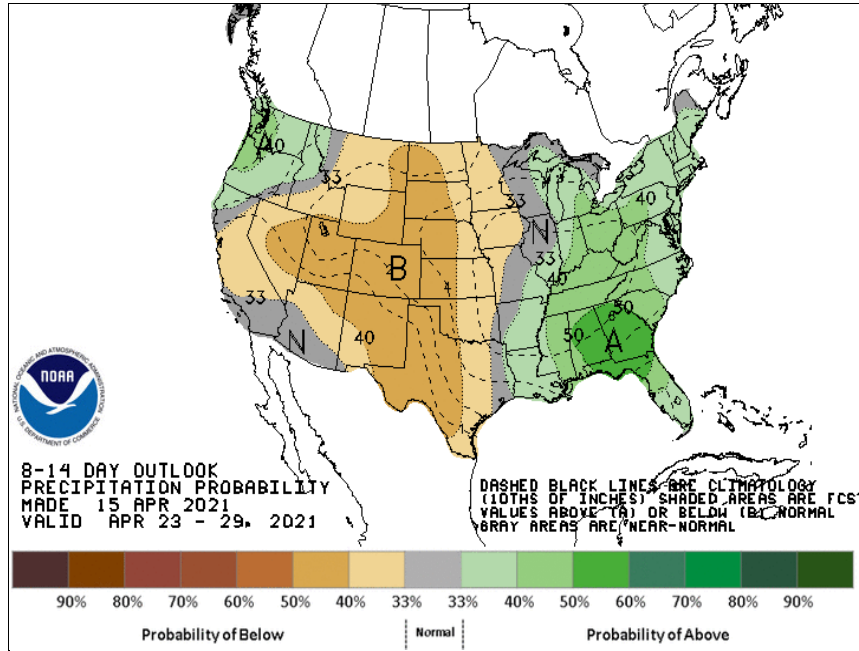
For CBRFC hydrologic model snow click [here](#).

Upcoming Weather

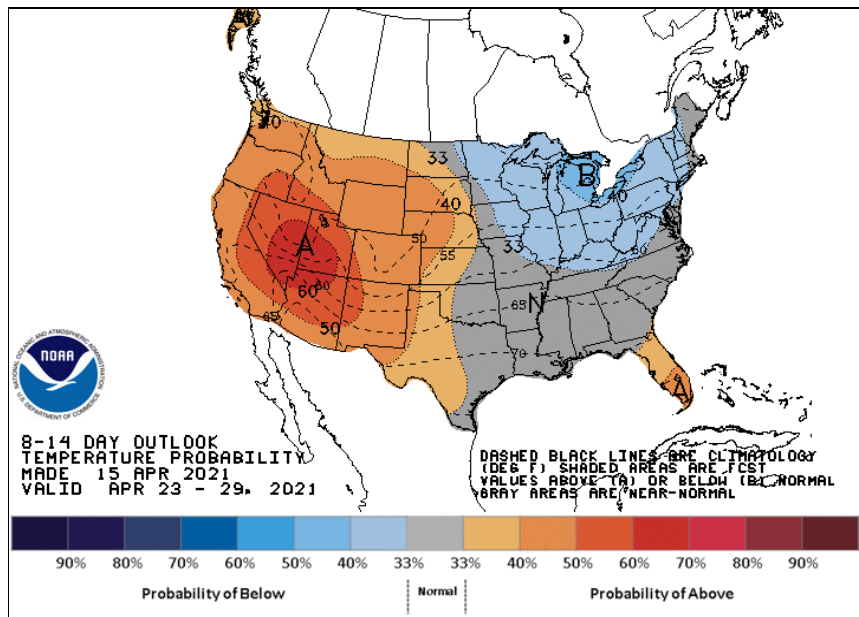
The cutoff low pressure system that has been impacting the Upper Basin and Great Basin over the past few days will weaken and move out of the region through Saturday. Scattered showers are possible today across portions of Utah/Colorado, with only modest precipitation amounts expected. Temperatures will moderate over the weekend, before another trough moves southward over Wyoming and into Colorado by next Monday/Tuesday (April 19-20). Temperatures will decrease to below normal (5-10 degrees) and a brief period of precipitation is forecasted, mainly over the Upper Green, Yampa, and Upper Colorado headwaters. The middle of next week will feature near normal temperatures with the potential for scattered showers over portions of the Upper Basin. There is general agreement among the weather models that more pronounced ridging will occur over the Intermountain West by next weekend (April 24-25), and this is reflected in the Climate Prediction Center outlook for elevated odds of above normal temperatures and below normal precipitation.



Weather Prediction Center precipitation forecast for April 16-23, 2021



NWS Climate Prediction Center precipitation probability forecast for Apr 23-29, 2021



NWS Climate Prediction Center temperature probability forecast for Apr 23-29, 2021

For CBRFC's beginning of the month online publication that contains basin conditions, summary graphics, and end of month reservoir content tables, refer to the following links.

End Of Month Reservoir Content Tables

[Green River Basin](#)

[Upper Colorado River Basin](#)

[San Juan River Basin](#)

[Great Salt Lake Basin](#)

[Sevier Basin](#)

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](#)