March 16, 2022 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 Great Basin and Upper Colorado River Basin spring water supply outlook has remained fairly steady during the first half of March with mid-month volume guidance in most basins changing by +/-5% compared to the beginning of the month. Most of the region received precipitation during the first two weeks of March, and water supply volume guidance has trended with the recent precipitation. Utah's Wasatch Range and southwest Colorado received the most precipitation during the first half of March, while southwest Wyoming, the Colorado River headwaters, and southwest Utah received less precipitation.

April-July water supply volume forecasts are near to much below average across the Upper Colorado River Basin and Great Basin. Mid-March Upper Colorado River Basin water supply guidance generally ranges between 45-110% of the 1991-2020 historical average. Great Basin water supply volume guidance is 45-90% of average. Lower Colorado River Basin January-May water supply guidance has mostly decreased during the first half of March with seasonal volumes across Arizona forecasted to trend drier than normal given the current La Niña conditions.

March 15 water supply guidance (% of normal) by basin:

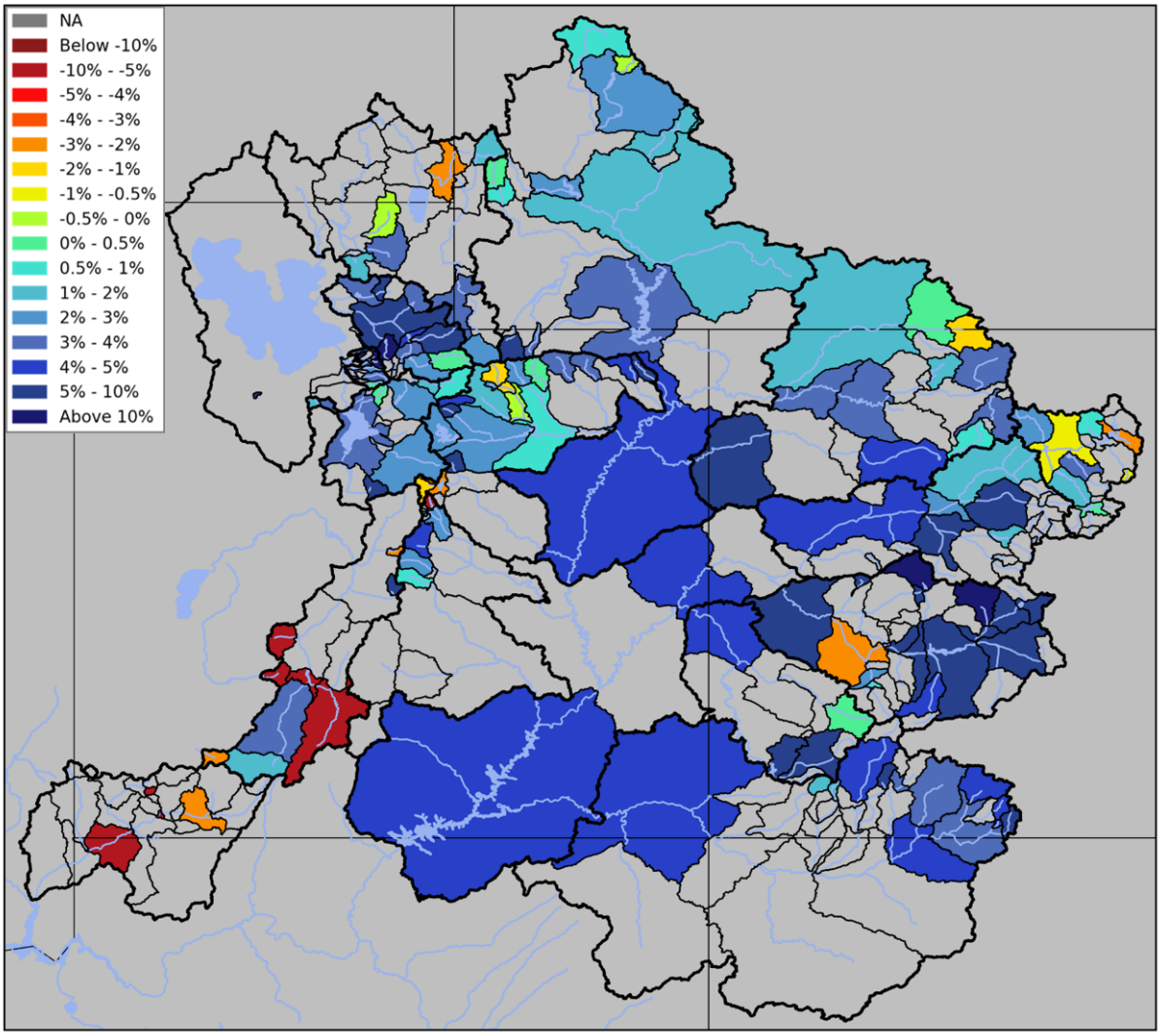
Basin	Water Supply Guidance Range
Upper Green	45-80%
Duchesne	70-100%
White/Yampa	70-95%
Upper Colorado Mainstem	65-100%
Gunnison	75-110%
Dolores	65-75%
San Juan	65-85%
Bear	45-85%
Weber	55-75%
Six Creeks	70-90%
Provo/Utah Lake	50-80%
Sevier	60-80%

Regional snow water equivalent (SWE) conditions as a percent of normal have remained relatively steady over the past month, with mid-March SWE conditions generally ranging between 85-115% of normal across the Upper Colorado River Basin and 80-90% of normal across the Great Basin. Lower Colorado River Basin SWE conditions are currently 20-145% of normal.

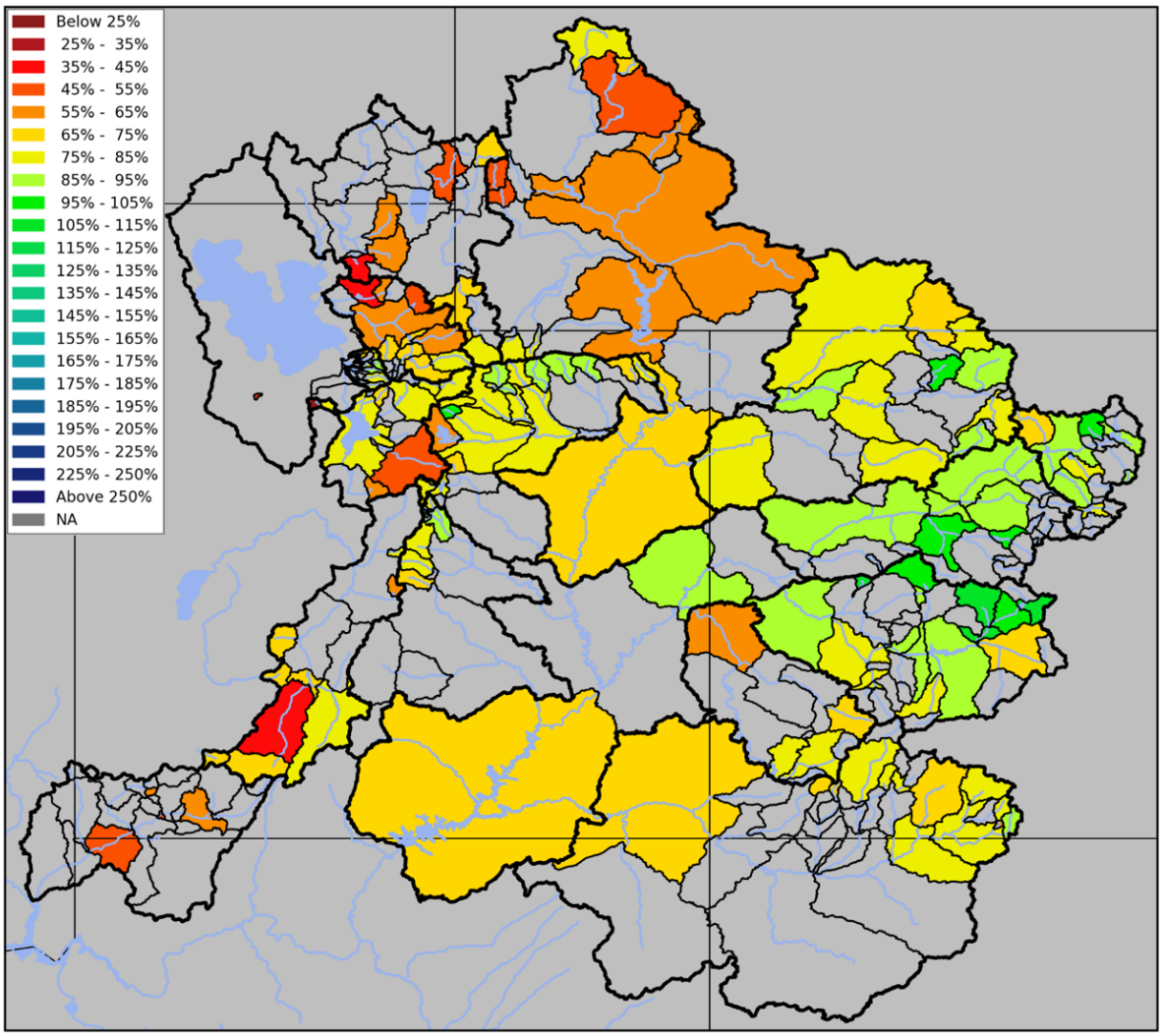
Mid-March April-July unregulated inflow forecasts for some of the major reservoirs in the Upper Colorado River Basin include Fontenelle Reservoir 450 KAF (61% average), Flaming Gorge 540 KAF (56%), Blue Mesa Reservoir 585 KAF (92%), McPhee Reservoir 190 KAF (75%), and Navajo Reservoir 465 KAF (74%). The Lake Powell inflow forecast is 4.6 MAF (72% of average), a three percent increase from the early March forecast.

The weather pattern will remain active over the next week as a series of weather disturbances are expected to move through the region and bring precipitation to the majority of the forecast area. High elevation areas across western Colorado are expected to receive 1.0-1.5” of precipitation, with lower amounts forecast across southwest Wyoming, Utah, and Arizona.

Seasonal Water Supply Forecasts



Trend in the April-July runoff volume forecast guidance from March 1 to March 15, 2022.
(change in April-July percent of average)



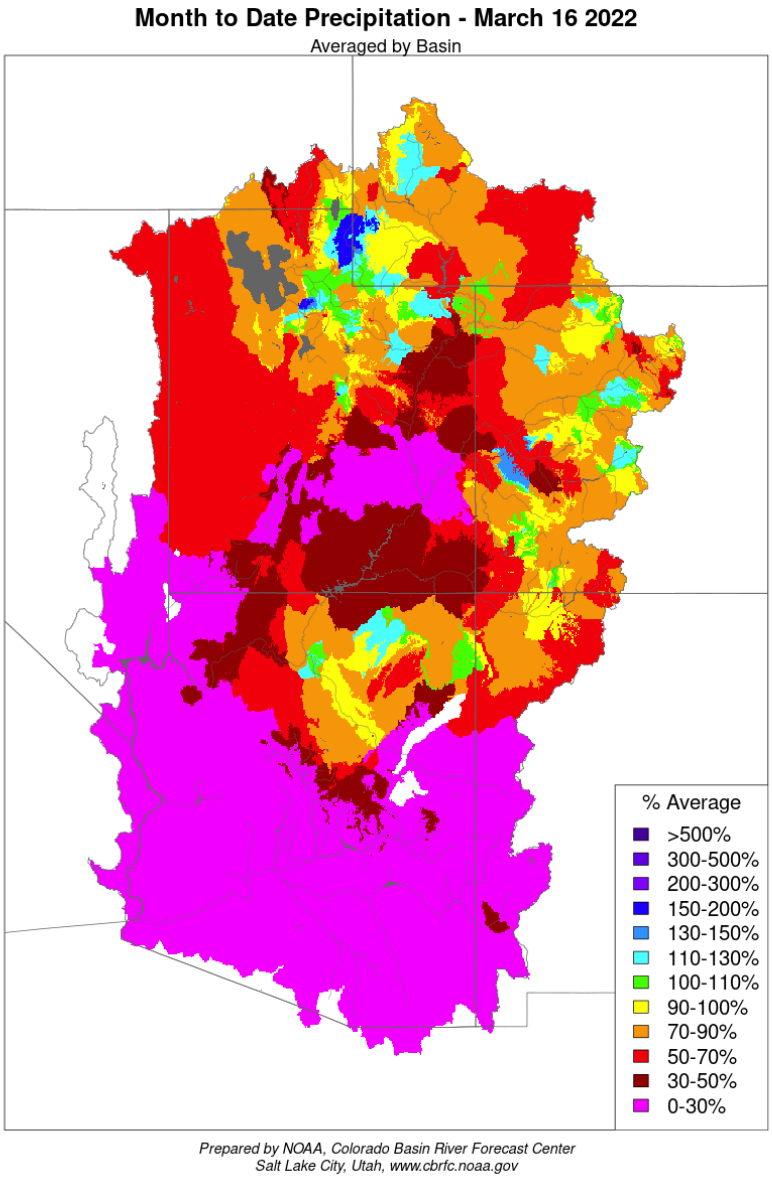
April-July runoff volume guidance as of March 15, 2022.
(percent of 1991-2020 average)

For specific site water supply forecasts click here.

Water Supply Discussion

March Weather/Precipitation

Similar to the last half of February, weather during the first half of March featured both warm/dry periods and more active cool/wet periods. March started with above normal temperatures and snowmelt occurring below around 9,500 feet across the region. March 4-15 was a fairly active weather period that brought precipitation to much of the area. Utah's Wasatch Range and southwest Colorado received up to 3 inches of precipitation, with amounts ranging between 0.5-2.0" elsewhere across much of the region during this period. Important water supply areas including southwest Wyoming, the headwaters of the Colorado River mainstem, and southwest Utah received less precipitation compared to surrounding basins. Precipitation as a percent of average during the first half of March was variable across the region and is shown in the image below.



Percent of average precipitation - March 1-15, 2022.

Snowpack

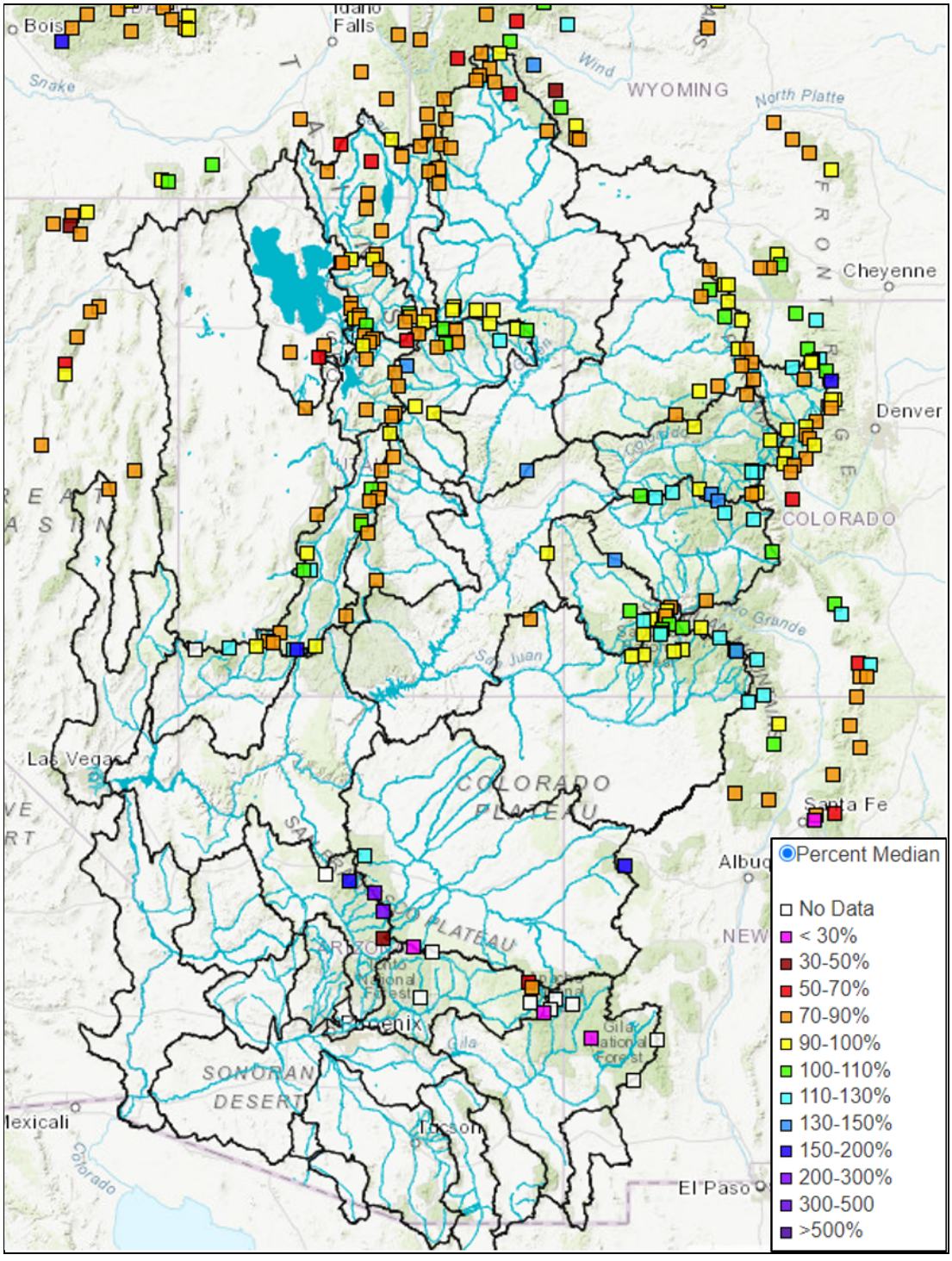
Regional snow water equivalent (SWE) conditions as a percent of normal have remained relatively steady over the past month, and are summarized in the below table. Mid-March SWE conditions across the Upper Colorado River Basin generally range between 85-115% of normal, and continue to be most favorable along the divide of the Roaring Fork and Gunnison River Basins in western Colorado. Precipitation during the past month has favored southwest Colorado, leading to modest increases in SWE conditions, particularly in the Dolores and San Juan basins. Upper Colorado River Basin SWE conditions are faring the worst across the Upper Green River Basin in southwest Wyoming, where mid-March SWE conditions are slightly below normal (85%).

Great Basin SWE conditions as a percent of normal have seen minor changes over the past month. Mid-March SWE conditions across the Great Basin are generally slightly below normal (80-90%), with the Sevier River Basin in south-central Utah faring the best.

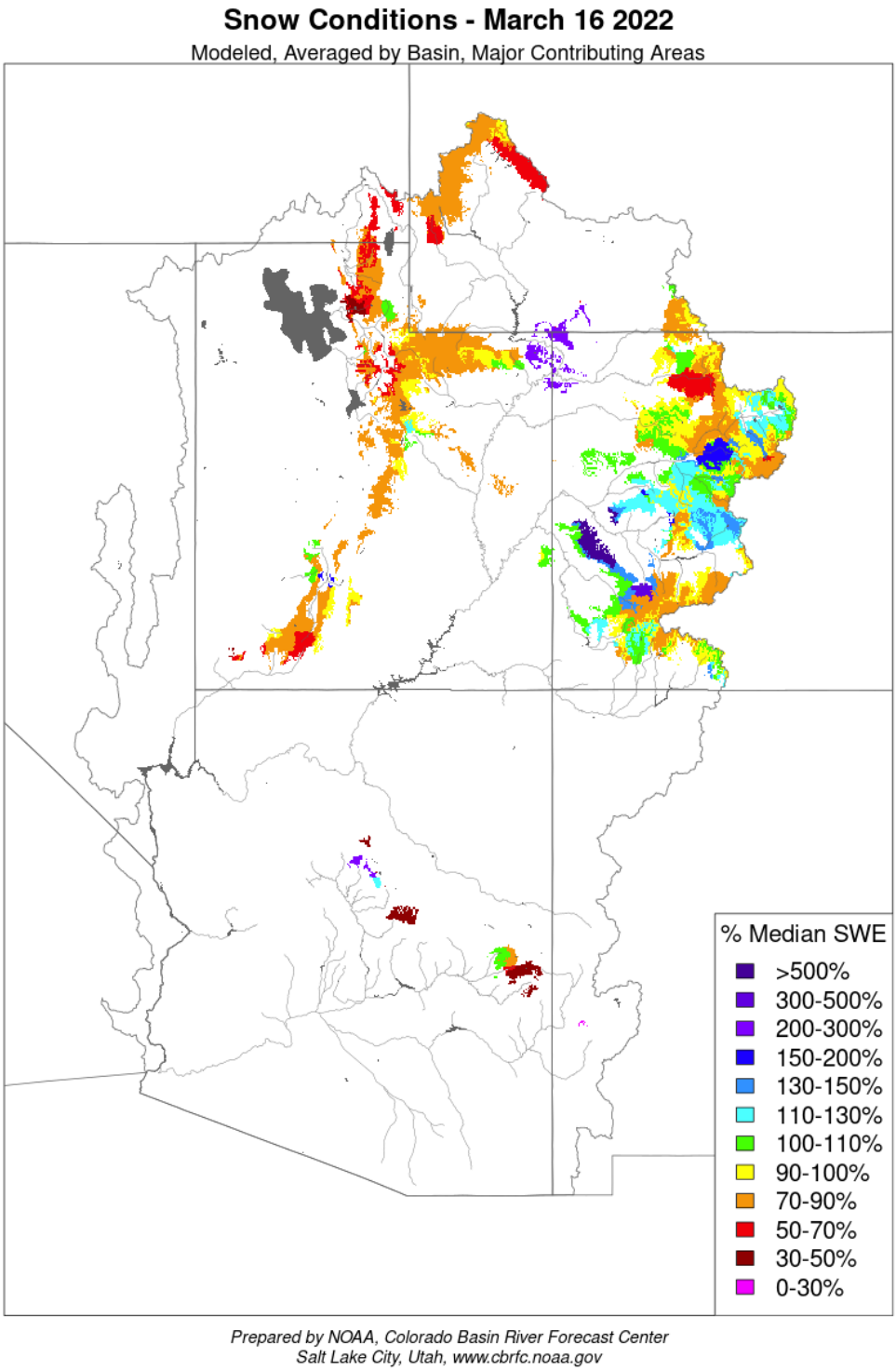
Lower Colorado River Basin SWE conditions are more variable and tend to fluctuate more frequently over time, with peak SWE typically occurring during the first half of March. Snowpack conditions are largely influenced by snowmelt and precipitation type (rain vs. snow). With that said, mid-March SWE conditions across the Lower Colorado River Basin are 20-145% of normal and have remained mostly steady over the past month. The exception is the Verde River Basin, where percent of normal SWE increased significantly during the past month as a result of snow accumulation during the Feb 22-23 precipitation event in addition to receiving snow across high elevations during the first half of March.

February 15 - March 15 basin SWE summary (NRCS SNOTEL):

Basin	Feb15 %Median SWE	Mar15 %Median SWE
Upper Green	87	84
Duchesne	99	96
White/Yampa	87	90
UC Headwaters	95	95
Roaring Fork	108	113
Gunnison	104	111
Dolores	85	99
San Juan	91	108
Bear	86	86
Weber	77	81
Provo/UT Lake	79	82
Sevier	93	92
Virgin	103	102
Little Colorado	58	66
Verde	74	143
Salt	60	63
Upper Gila	39	18



SNOTEL percent median SWE - March 16, 2022.



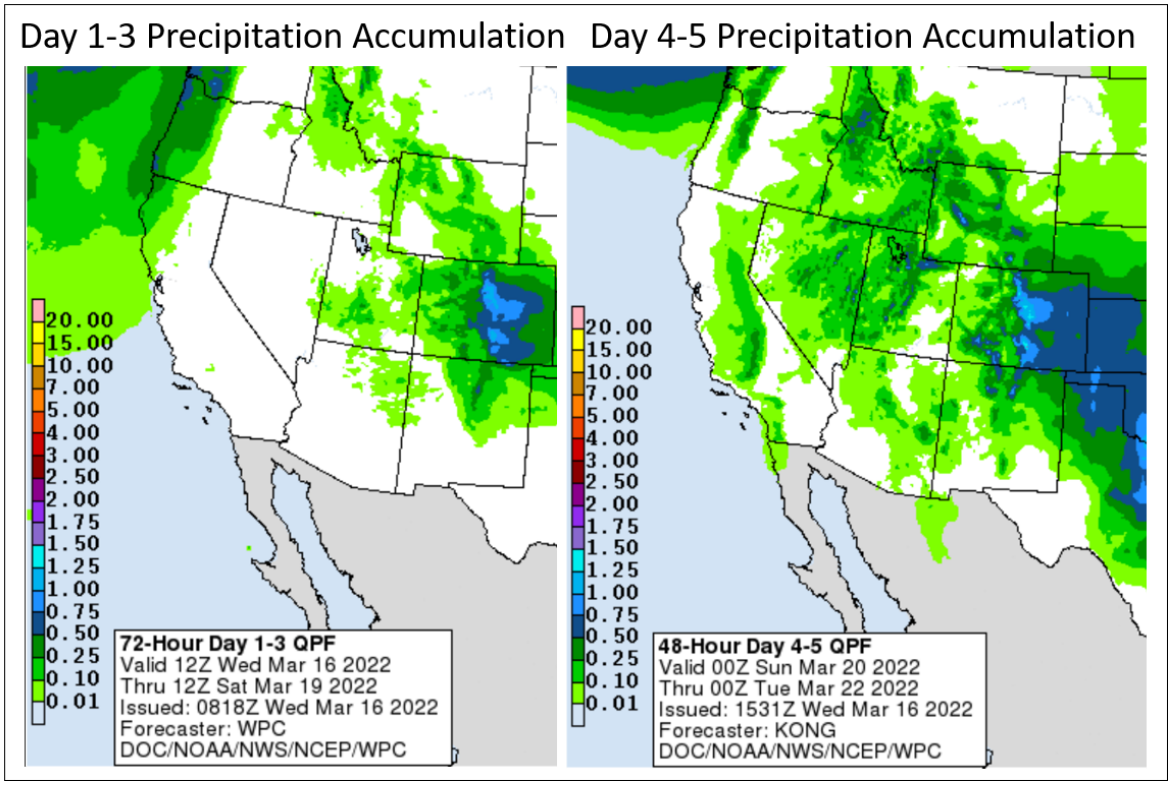
CBRFC hydrologic model percent median SWE - March 16, 2022.

For updated SNOTEL information refer to click here.
For CBRFC hydrologic model snow click here.

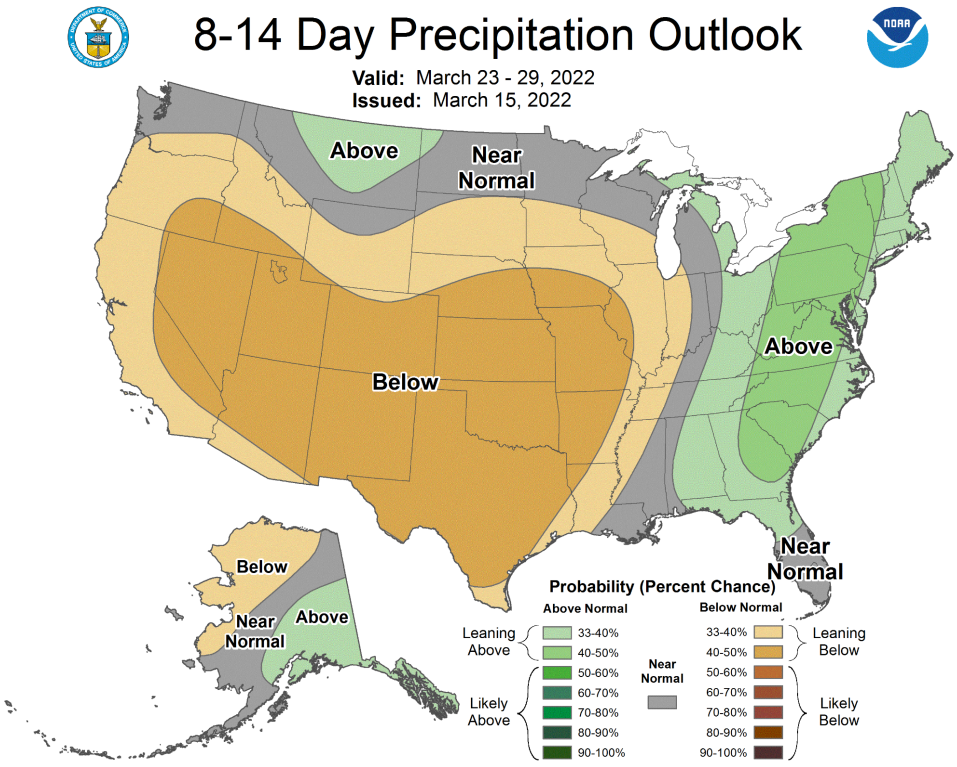
Upcoming Weather

A series of weather disturbances will move through the western US into this weekend bringing precipitation to the majority of the forecast area. The first storm will move through the eastern part of the area through Thursday. The greatest precipitation totals will be along the Continental Divide which will generally see 0.50-0.75” of precipitation. Portions of eastern Utah and northern Arizona will see lighter precipitation with totals generally below a tenth of an inch. The second weather system will impact the area this weekend. The higher elevations of Utah and Colorado will see 0.50-0.75” of additional precipitation by early next week while lower elevation locations will receive 0.10-0.25” of precipitation.

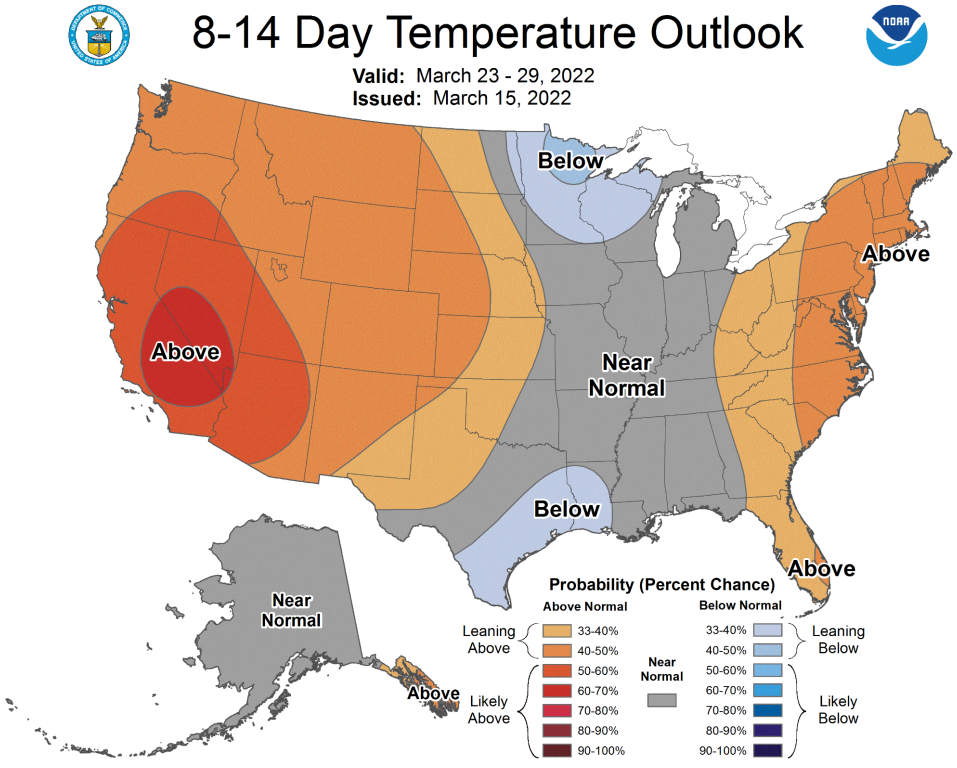
The overall weather pattern will shift next week as high pressure builds over the area. As a result, warmer and drier than normal conditions are expected next week. Beyond seven days, there is uncertainty in the weather forecast. Weather model ensembles are currently favoring a shift to warm and dry weather, but there is a chance the weather pattern will remain active and bring additional precipitation to the region.



Weather Prediction Center precipitation forecast for March 16-22, 2022.



NWS Climate Prediction Center precipitation probability forecast for March 23-March 29, 2022.



NWS Climate Prediction Center Temperature Outlook for March 23-March 29, 2022.

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.

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