

May 17, 2023 Water Supply Forecast Discussion

The [Colorado Basin River Forecast Center \(CBRFC\)](#) geographic forecast area includes the Upper Colorado River Basin (UCRB), Lower Colorado River Basin (LCRB), and Eastern Great Basin (GB).

Water Supply Forecast Summary

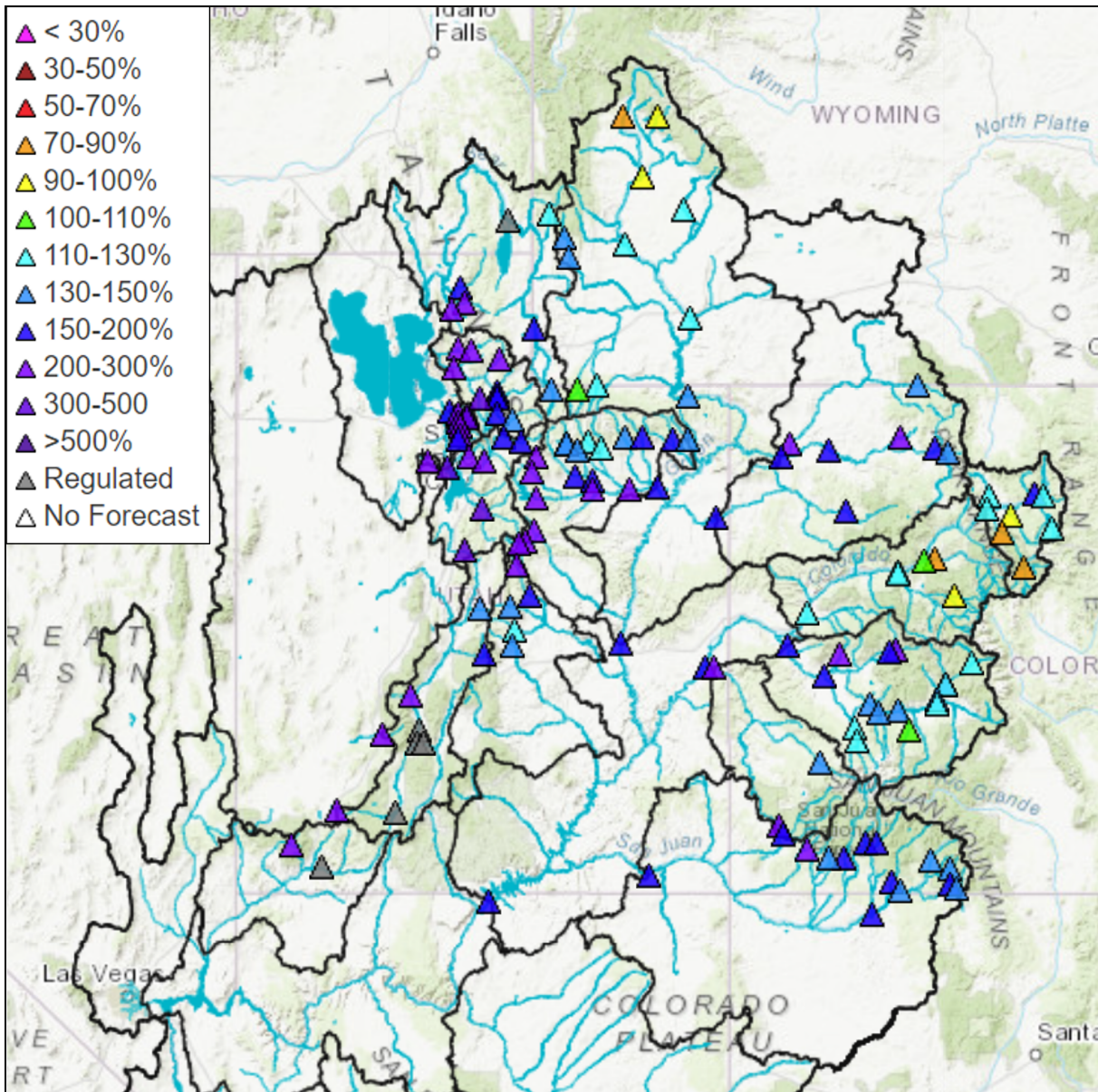
Although the majority of the CRB and GB received moisture during the first half of May, month-to-date precipitation is generally below average across the region. Exceptions where May-to-date precipitation is near to above average include portions of the Lower Green (Price, San Rafael, Dirty Devil River Basins), Colorado River headwaters, Provo/UT Lake, and Sevier River Basins. May precipitation has led to rain-on-snow (enhanced snowmelt) across lower elevations and additional snow accumulation across higher elevations.

High elevation snow water equivalent (SWE) conditions remain near to well above normal across the majority of the UCRB and GB. Mid-May CBRFC model SWE across much of the UCRB is at or above 150% of normal. Mid-May CBRFC model SWE across the GB is greater than 200% of normal.

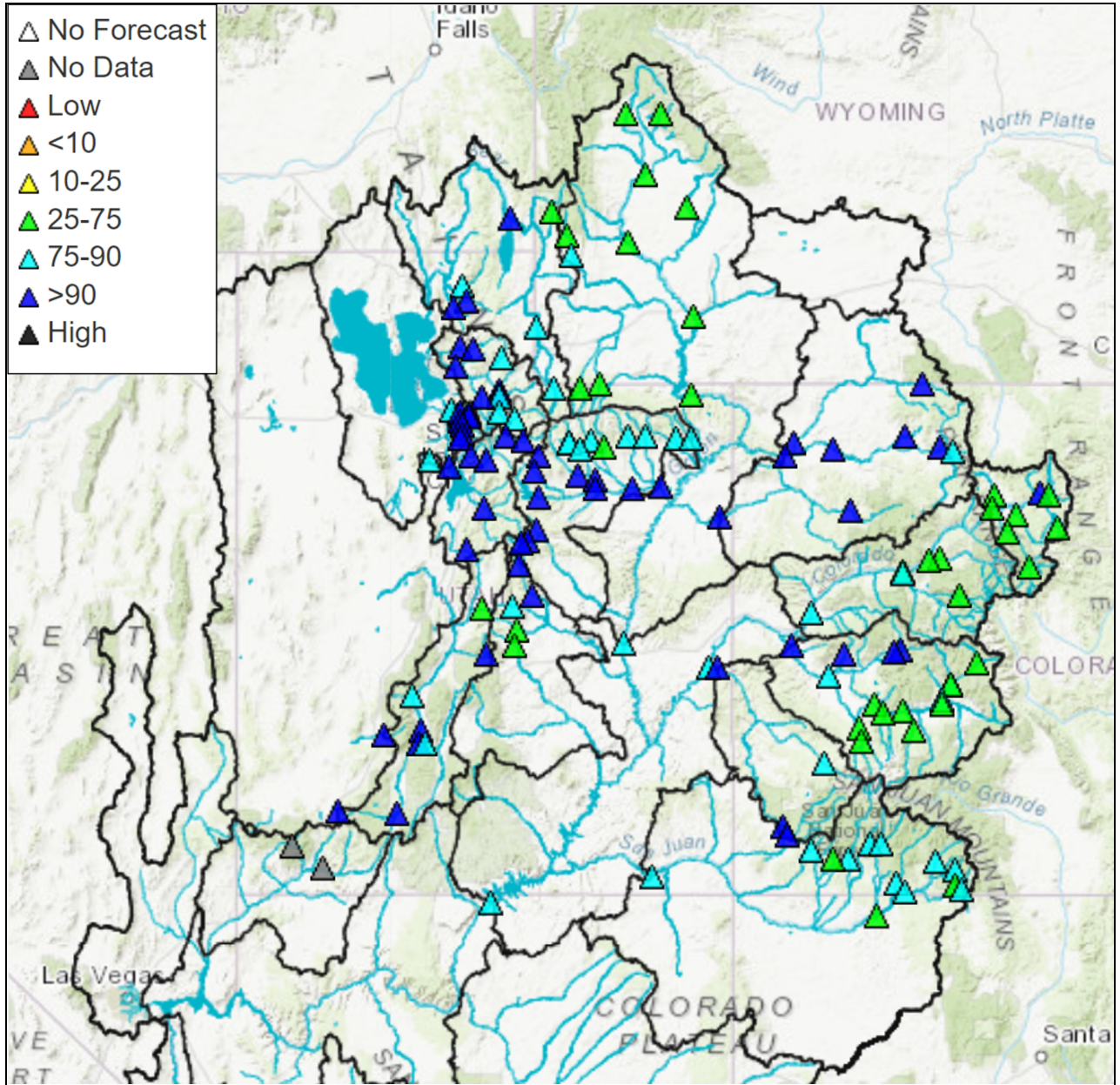
Mid-May forecasts of April-July unregulated inflow for some of the major reservoirs in the UCRB include Fontenelle Reservoir 830 KAF (113% average), Flaming Gorge 1300 KAF (135%), Blue Mesa Reservoir 830 KAF (131%), McPhee Reservoir 555 KAF (218%), and Navajo Reservoir 1010 KAF (160%). The Lake Powell inflow forecast is 11.0 MAF (172% of average), and did not change from the early May forecast.

A moist air mass underneath an upper level area of high pressure is currently situated over the region. This will bring a period of above average temperatures, as well as chances of scattered thunderstorms during the afternoons associated with daytime heating. Beginning Thursday, a trough and associated cold front will make its way through the GB and UCRB, bringing an uptick in precipitation coverage Thursday and Friday afternoon. This weekend, a ridge of high pressure quickly builds over the Western US, resulting in a downward trend in precipitation coverage, though with a moist air mass still in place, chances of afternoon thunderstorm development over high terrain will continue across the GB and UCRB. With the chance of scattered thunderstorms each afternoon during the next week, 7-day forecast precipitation totals range from less than 0.1" at lower elevations, to above one inch for high terrain.

Water Supply Forecast Guidance



April-July runoff volume guidance as of May 15, 2023 (percent of 1991-2020 average).



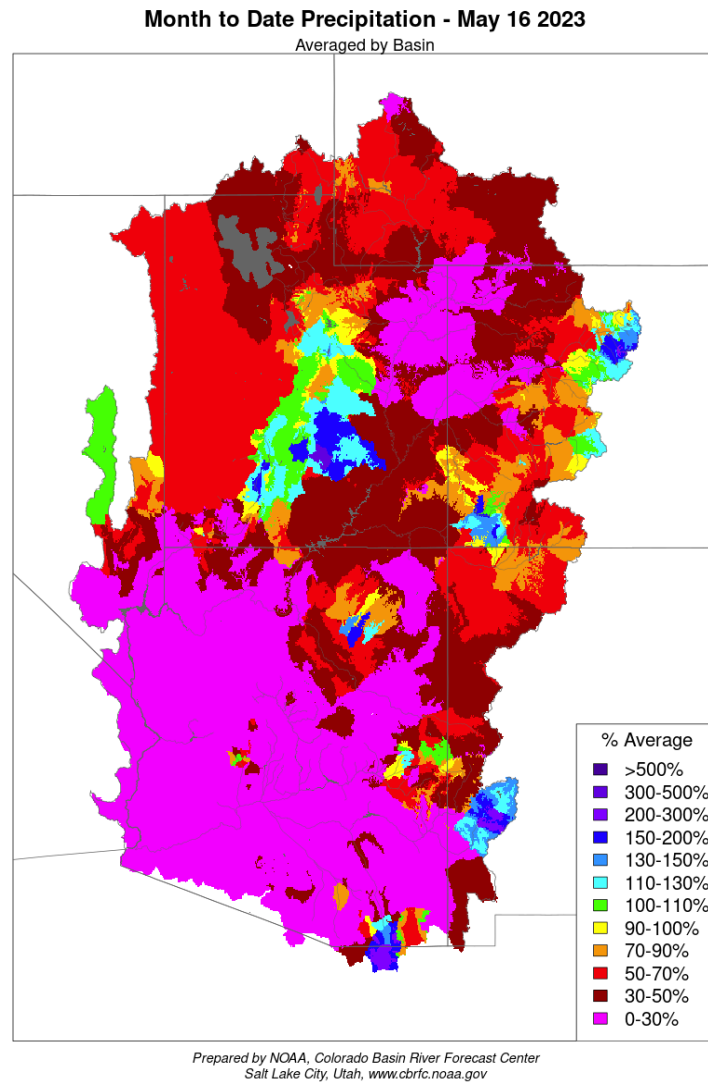
April-July runoff volume guidance as of May 15, 2023 (historical percentile).

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

Water Supply Discussion

May Weather

Although the majority of the CRB and GB received moisture during the first half of May, month-to-date precipitation is generally below average across the region. Exceptions where May-to-date precipitation is near to above average include portions of the Lower Green (Price, San Rafael, Dirty Devil River Basins), Colorado River headwaters, Provo/UT Lake, and Sevier River Basins. May precipitation has led to rain-on-snow (enhanced snowmelt) across lower elevations and additional snow accumulation across higher elevations. Precipitation is summarized in the figure and table below.



May 1-15 percent of average precipitation.

For CBRFC seasonal precipitation maps click [here](#).

For CBRFC monthly precipitation maps click [here](#).

Water Year 2023 CBRFC Precipitation (Significant Runoff Areas) Percent of 1991-2020 Average		
UPPER COLORADO RIVER BASIN		
	<u>Oct-Apr</u>	<u>May1-15</u>
Above Lake Powell	121	81
Green River Basin		
Above Fontenelle	103	47
Above Flaming Gorge	112	54
Yampa/White	126	55
Duchesne	130	66
Price/San Rafael/Dirty Devil	134	106
Colorado River Headwaters		
Above Kremmling	93	135
Eagle	97	113
Roaring Fork	115	91
Above Cameo	105	111
Southwest Colorado		
Gunnison	123	75
Dolores	139	80
San Juan	127	64
LOWER COLORADO RIVER BASIN		
Virgin	158	22
Little Colorado	143	35
Verde	154	9
Salt	127	32
Upper Gila	116	82
GREAT BASIN		
Bear	134	65
Weber	141	65
Six Creeks	153	72
Provo/Utah Lake	148	90
Sevier	134	97

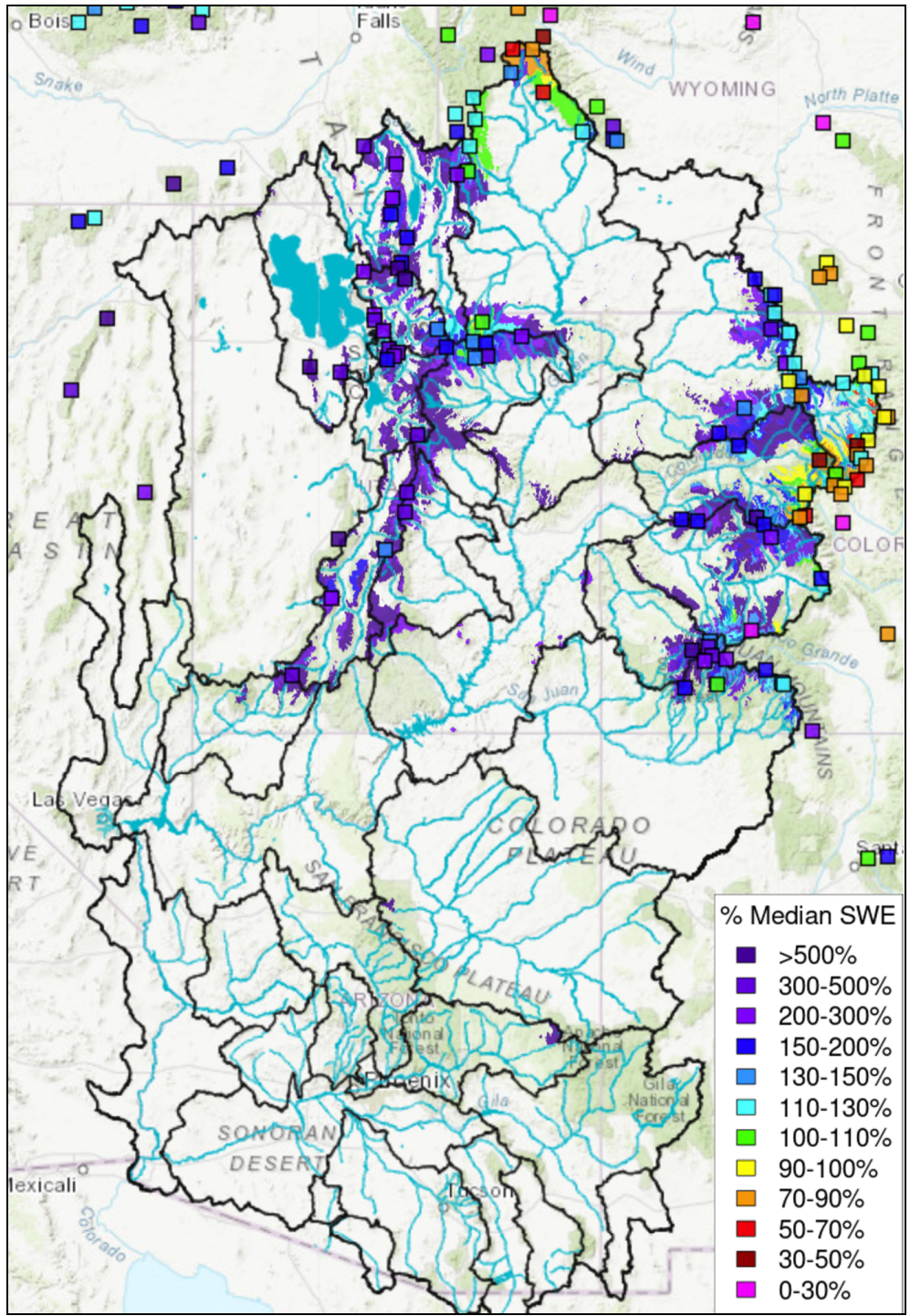
Snowpack

High elevation snow water equivalent (SWE) conditions remain near to well above normal across the UCRB and GB. Mid-May CBRFC model SWE across much of the UCRB is at or above 150% of normal - this includes the Duchesne, Price/San Rafael, and Dirty Devil River Basins in UT, the White/Yampa River Basins in northwest CO, and the Gunnison, Dolores, and San Juan River Basins in southwest CO. Mid-May SWE is less favorable, although still near normal, in the Upper Green River Basin above Fontenelle Reservoir and along Colorado's Western Slope extending from the Fraser River Basin to the headwaters of the Roaring Fork.

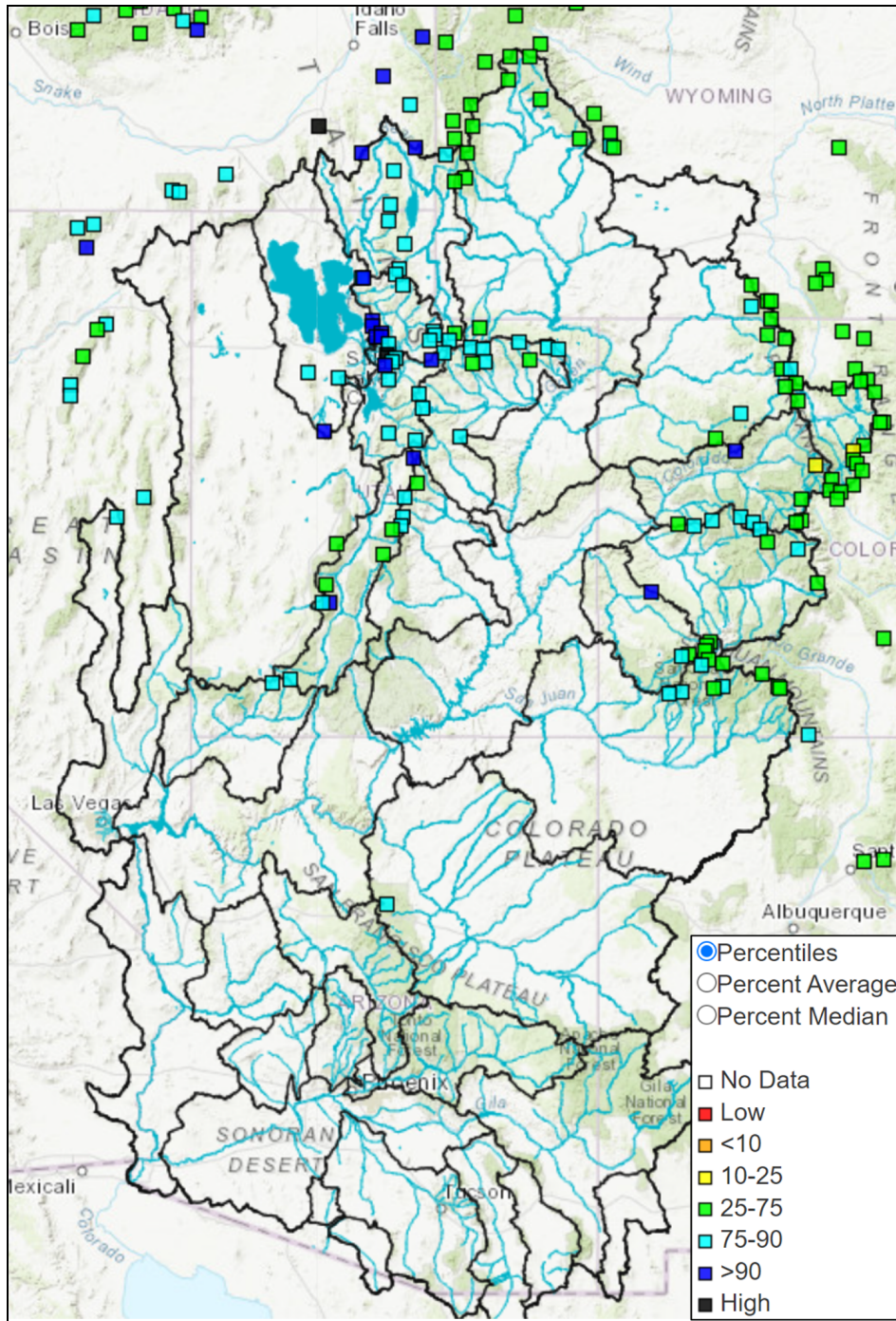
SWE conditions in the GB are generally better when compared to the UCRB, as more storms and precipitation events have targeted UT this winter compared to southwest WY, and western CO. Mid-May CBRFC model SWE across the GB is greater than 200% of normal.

SWE conditions are summarized in the table and figures below.

Water Year 2023			
CBRFC Model SWE (Significant Runoff Areas)			
Percent of 1991-2020 Median			
UPPER COLORADO RIVER BASIN			
	May1	May15	Change
Above Lake Powell	163	147	-16
Green River Basin			
Above Fontenelle	129	99	-30
Above Flaming Gorge	146	119	-27
Yampa/White	180	148	-32
Duchesne	205	205	0
Price/San Rafael/Dirty Devil	255	302	47
Colorado River Headwaters			
Above Kremmling	113	98	-15
Eagle	110	91	-19
Roaring Fork	137	123	-14
Above Cameo	129	111	-18
Southwest Colorado			
Gunnison	162	153	-9
Dolores	240	225	-15
San Juan	155	152	-3
GREAT BASIN			
Bear	250	219	-31
Weber	267	258	-9
Six Creeks	275	283	8
Provo/Utah Lake	310	310	0
Sevier	225	257	32



May 16 percent median SWE -
 NRCS SNOTEL observed (squares) and CBRFC hydrologic model significant runoff areas.



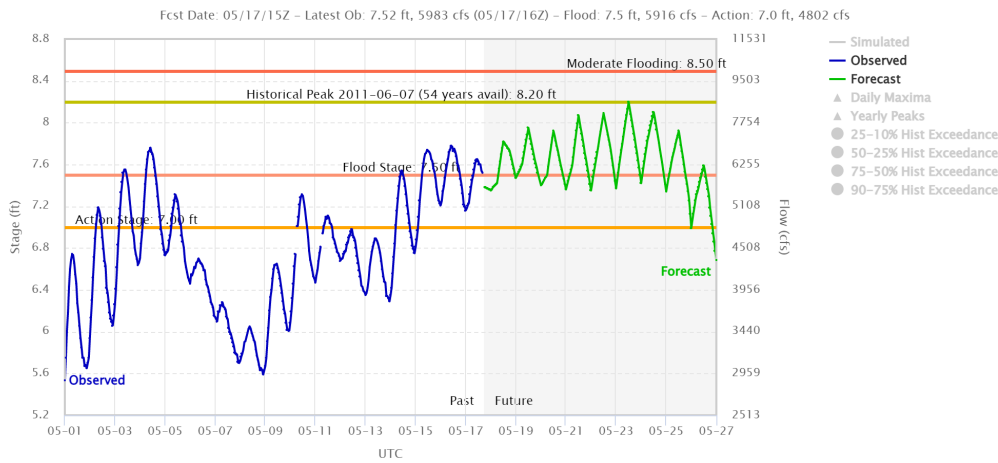
May 16, 2023 SNOTEL station SWE percentiles.

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

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

Shown below are hydrographs at a few locations that experienced elevated flows due primarily to snowmelt during the first half of May.

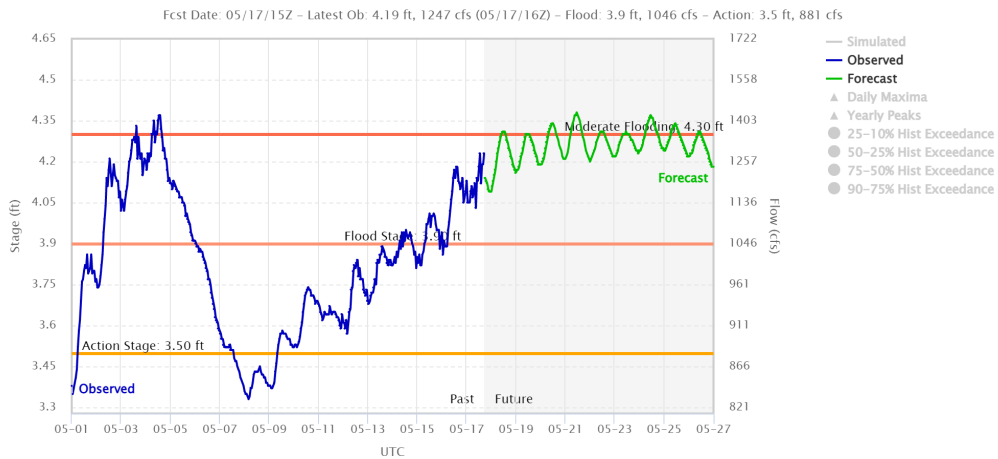
Forecast Hydrograph – Elk – Milner, Nr (ENMC2) – NOAA/CBRFC



Forecast Hydrograph – Dolores – Cisco, Nr (DOLU1) – NOAA/CBRFC



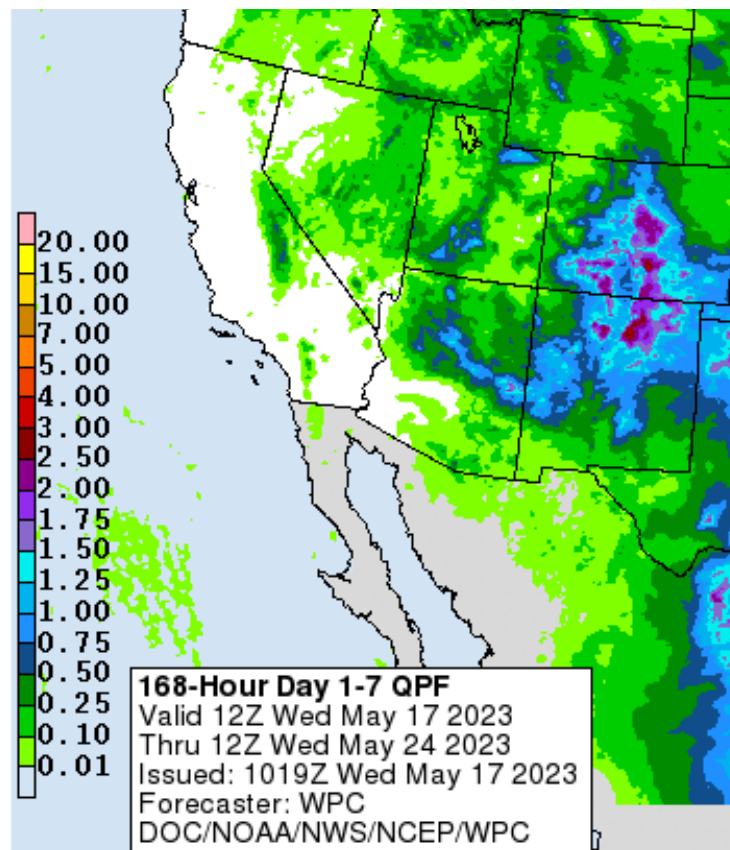
Forecast Hydrograph – Sevier – Hatch (HATU1) – NOAA/CBRFC



Upcoming Weather

A moist air mass underneath an upper level area of high pressure is currently situated over the region. This will bring a period of above average temperatures, as well as chances of scattered thunderstorms during the afternoons associated with daytime heating. Beginning Thursday, a trough and associated cold front will make its way through the GB and UCRB, bringing an uptick in precipitation coverage Thursday and Friday afternoon. This front will slow and stall in Southern CO on Saturday, bringing continued chances of precipitation to Southern CO through Saturday. Temperatures across the region will remain near to above average despite the passage of the frontal boundary. This weekend, a ridge of high pressure quickly builds over the Western US, resulting in a downward trend in precipitation coverage, though with a moist air mass still in place, chances of afternoon thunderstorm development over high terrain will continue across the GB and UCRB. Temperatures will continue to remain near to above average across the region. With the chance of scattered thunderstorms each afternoon during the next week, 7-day forecast precipitation totals range from less than 0.1" at lower elevations, to above one inch for high terrain.

At the start of next week, weather models indicate the development of a trough along the Pacific Coast. Although there is uncertainty in the track of this trough, this pattern change will result in moist southwesterly flow throughout next week which will continue the possibility of afternoon thunderstorms over high terrain across the region. Additionally, temperatures will remain above average. The Climate Prediction Center (CPC) indicates increased odds of above average precipitation and near to above average temperatures across the region during May 22-30.



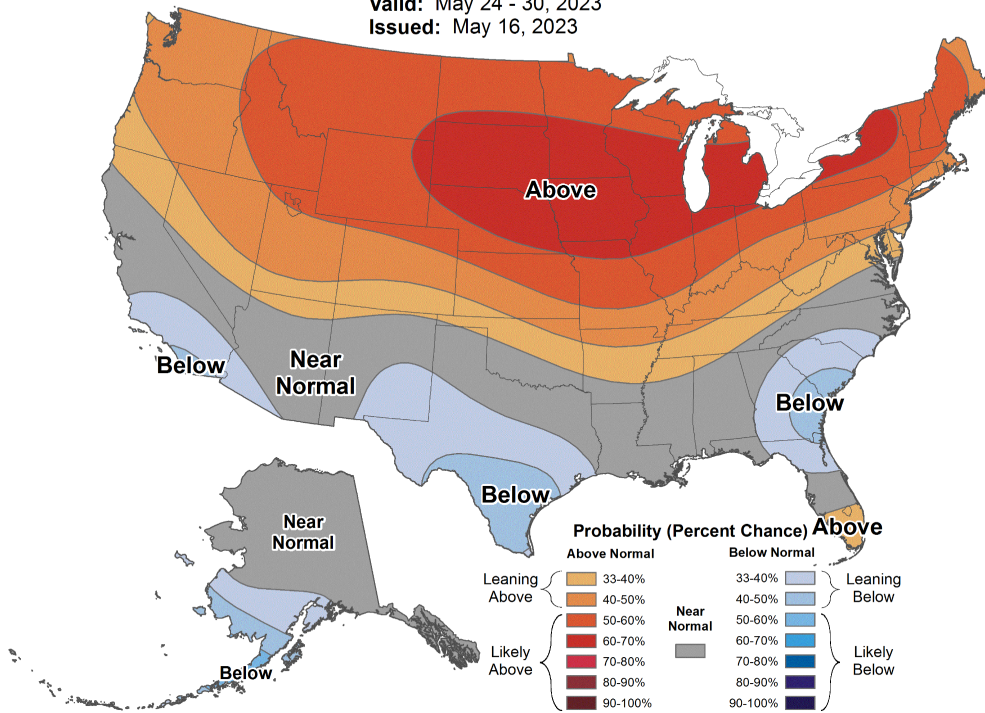
Weather Prediction Center precipitation forecast for May 17-24, 2023.



8-14 Day Temperature Outlook



Valid: May 24 - 30, 2023
Issued: May 16, 2023



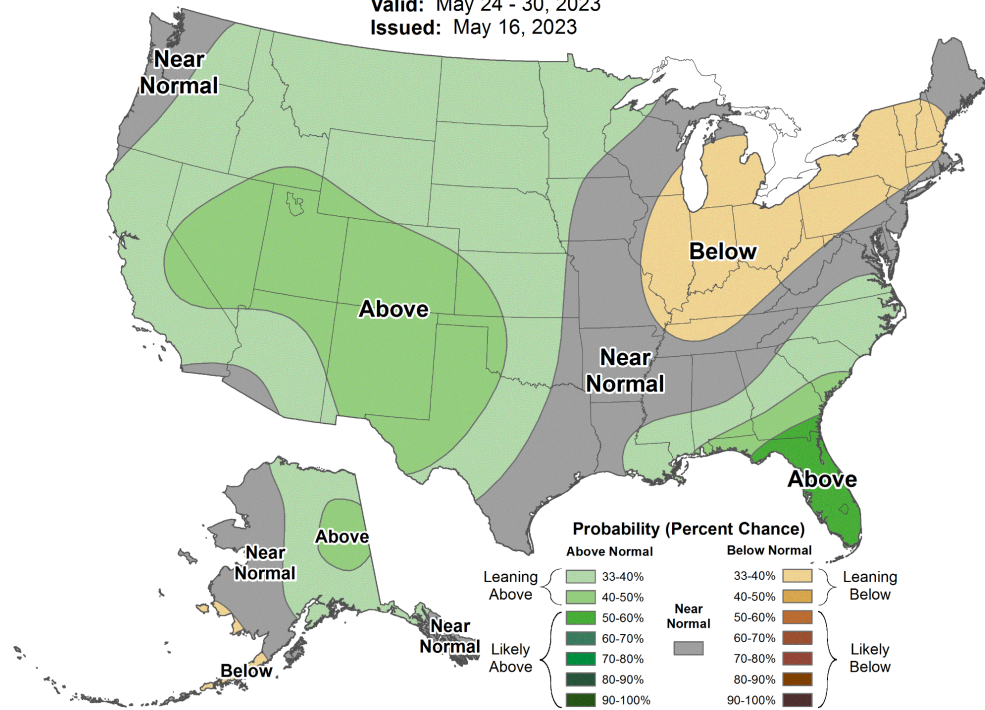
NWS Climate Prediction Center temperature probability forecast for May 24 - 30, 2023.



8-14 Day Precipitation Outlook



Valid: May 24 - 30, 2023
Issued: May 16, 2023



NWS Climate Prediction Center precipitation probability forecast for May 24 - 30, 2023.

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](#)

Acronyms & Abbreviations

CBRFC - Colorado Basin River Forecast Center

CPC - Climate Prediction Center

CRB - Colorado River Basin

ENSO - El Niño/Southern Oscillation

ESP - Ensemble Streamflow Prediction

GB - Great Basin

KAF - Thousand Acre-Feet

LCRB - Lower Colorado River Basin

MAF - Million Acre-Feet

NWS - National Weather Service

QPF - Quantitative Precipitation Forecast

SNOTEL - Snow Telemetry

SWE - Snow Water Equivalent

UCRB - Upper Colorado River Basin

WPC - Weather Prediction Center