Colorado Basin River Forecast Center
National Weather Service

Water Supply Forecast Discussion
May 1, 2024

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 Conditions Summary

April precipitation was generally below average across the region, the exceptions being the Colorado River headwaters above Kremmling and the Verde basins, where monthly precipitation was around average. Water year 2024 precipitation across significant runoff producing areas is generally near to below normal across the CRB and GB. Observed unregulated streamflow volumes during April were generally above average across the GB and central UCRB, near average across the Upper Green, and below average across southwest CO, where antecedent (Fall 2023) soil moisture conditions were also below normal.

Snow water equivalent (SWE) conditions as a percent of normal (median) declined during April and are near to below normal across the UCRB and GB. May 1 SWE conditions generally range between 70-100% of normal across the UCRB and 80-105% of normal across the GB. SNOTEL peak SWE generally occurred during the first half of April with SWE values near to above normal at most stations.

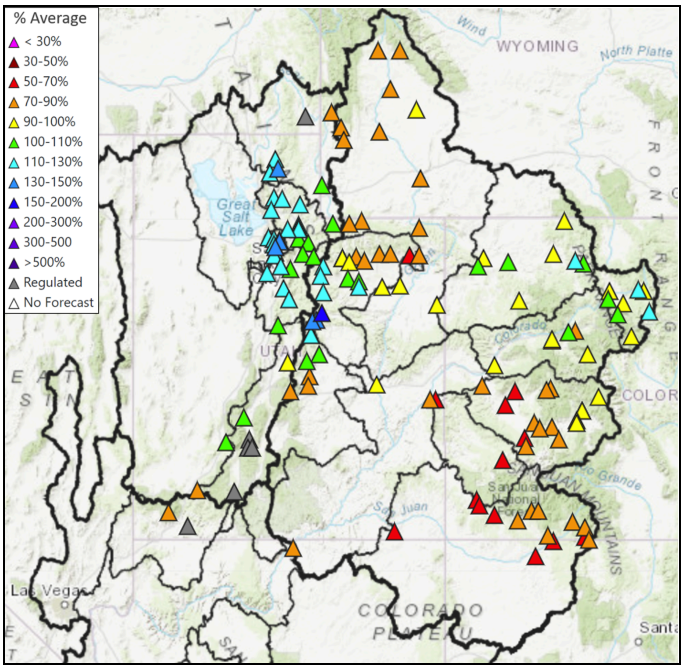
The water supply outlook has generally declined across the CRB and GB due to below average April precipitation. Forecasted seasonal (April-July) water supply volumes are most favorable in the GB, where water supply forecasts are generally near to above normal. UCRB seasonal volumes are variable, ranging from near normal across central areas to below normal in northern and southern basins.

A strong spring storm on May 5-6 brought widespread precipitation and below normal temperatures across the GB and UCRB. This storm system will stall over the northern Great Plains through mid-week, allowing for a series of quick moving disturbances to move across northern portions of the UCRB. This will continue chances of precipitation and below normal temperatures into Wednesday (May 8). Precipitation totals through this period will range from 0.5 to 1.5 inches, primarily across the northern half of the UCRB and GB. Once this storm system begins to move east, an area of low pressure will break off this main feature, and move southwest over the CRB. This system will be much weaker than the current storm, and will bring a slow warming trend to the region as well as another round of precipitation across CO Friday through Sunday (May 10-12). Precipitation totals will range from 0.1 to 0.75 inches, with the highest totals likely along the Continental Divide.

Water Supply Forecasts

The water supply outlook has generally declined across the CRB and GB due to below average April precipitation. Forecasted seasonal (April-July) water supply volumes are most favorable in the GB, where water supply forecasts are generally near to above normal. UCRB seasonal volumes are variable, ranging from near normal across central areas to below normal volumes in northern and southern basins.

May 1 water supply forecasts are summarized in the figure and table below.



Colorado Basin River Forecast Center Water Supply Forecasts
May 1, 2024

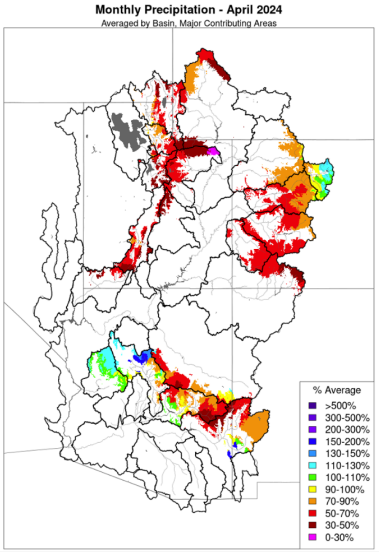
Basin	Volume (KAF)	%Average (1991-2020)	Period
UPPER COLORADO RIVER BASIN			
Lake Powell	5100	80	Apr-Jul
Green River Basin			
Green-Flaming Gorge Reservoir	800	83	Apr-Jul
Yampa-Deerlodge	1270	107	Apr-Jul
Duchesne-Tabiona	108	105	Apr-Jul
Colorado River Headwaters			
Colorado-Kremmling	925	106	Apr-Jul
Eagle-Gypsum	300	90	Apr-Jul
Roaring Fork-Glenwood Springs	575	88	Apr-Jul
Colorado-Cameo	2180	96	Apr-Jul
Southwest Colorado			
Gunnison-Blue Mesa Reservoir	570	90	Apr-Jul
Dolores-McPhee Reservoir	142	56	Apr-Jul
San Juan-Navajo Reservoir	420	67	Apr-Jul
Animas-Durango	285	74	Apr-Jul
GREAT BASIN / UTAH			
Bear-UT/WY State Line	111	102	Apr-Jul
Weber-Oakley	117	105	Apr-Jul
Big Cottonwood Creek	39	115	Apr-Jul
Provo-Woodland	105	109	Apr-Jul
Sevier-Hatch (*Regulated)	41	85	Apr-Jul
Virgin-Virgin (*Regulated)	45	80	Apr-Jul

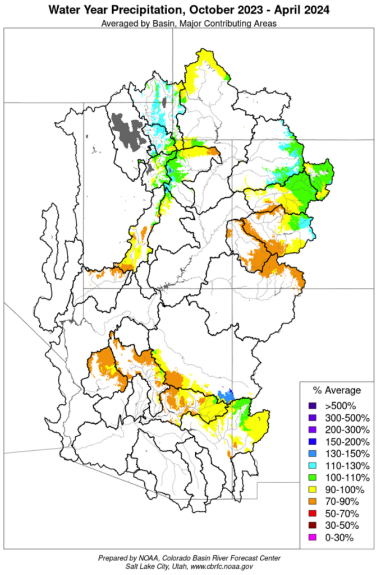
May 1, 2024 seasonal water supply forecast summary.

CBRFC water supply forecast Map | List

Water Year Precipitation

Precipitation during the first three months (October-December) of water year 2024 was below average across the region. An active weather pattern during much of January resulted in near to above average precipitation across most CRB and GB high elevation areas. February was generally wetter than January across the region, with a number of SNOTEL sites across the GB and UCRB receiving February precipitation amounts ranking in the wettest five on record. Active weather continued into March, making it the third consecutive month with near to above normal precipitation. April precipitation was generally below average across the region, the exceptions being the Colorado River headwaters above Kremmling and the Verde basins, where monthly precipitation was around average. Water year 2024 precipitation across significant runoff producing areas is generally near to below normal across the CRB and GB, and summarized in the figures and table below.



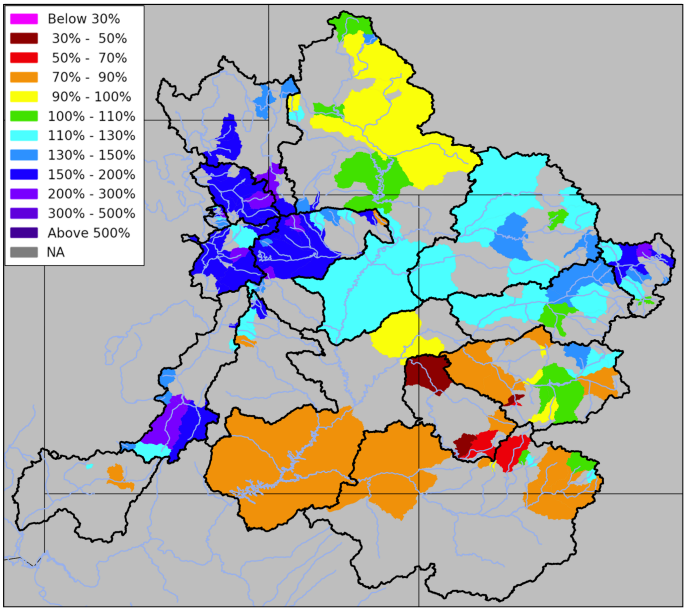


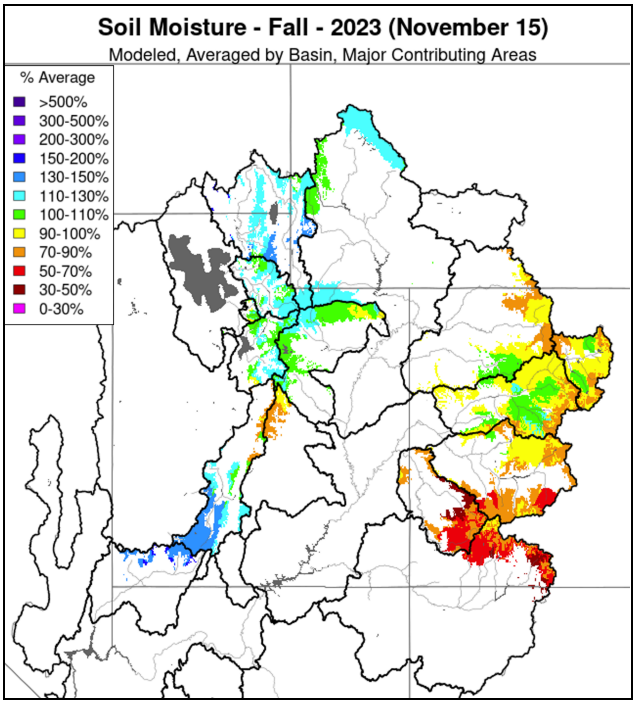
Water Year 2024 CBRFC Precipitation (Major Contributing Areas) Percent of 1991-2020 Average		
UPPER COLORADO RIVER BASIN		
	Apr	Oct-Apr
Above Lake Powell	69	97
Green River Basin		
Above Fontenelle	55	94
Above Flaming Gorge	50	97
Yampa/White	82	108
Duchesne	45	98
Price/San Rafael/Dirty Devil	54	105
Colorado River Headwaters		
Above Kremmling	108	103
Eagle	86	105
Roaring Fork	72	100
Above Cameo	89	102
Southwest Colorado		
Gunnison	63	94
Dolores	60	86
San Juan	52	85
LOWER COLORADO RIVER BASIN		
Virgin	45	81
Little Colorado	74	95
Verde	95	90
Salt	71	94
Upper Gila	70	98
GREAT BASIN		
Bear	59	109
Weber	67	109
Six Creeks	70	111
Provo/Utah Lake	57	104
Sevier	56	92

April and water year 2024 precipitation summary.

Observed Streamflow / Antecedent Soil Moisture

Observed unregulated streamflow volumes during April were generally above average across the GB and central UCRB, near average across the Upper Green, and below average across southwest CO, where antecedent (Fall 2023) soil moisture conditions were also below normal. April 2024 observed unregulated streamflow and antecedent soil moisture conditions are shown in the figures below.



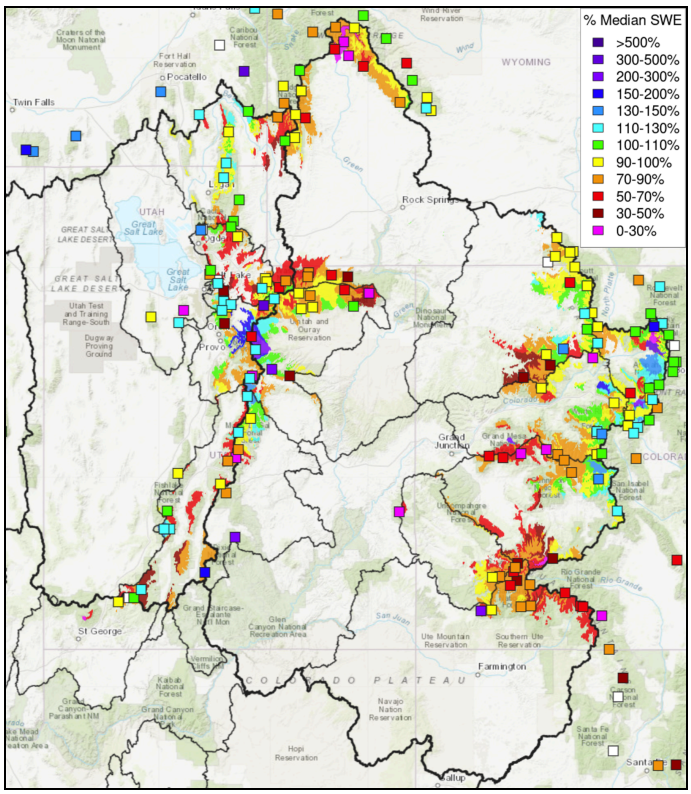


Top: April 2024 observed unregulated streamflow as a percent of average.
Bottom: Antecedent (mid-November 2023) CBRFC model soil moisture conditions.

Snowpack Conditions

Snow water equivalent (SWE) conditions as a percent of normal (median) declined during April due to below normal precipitation and snowmelt during the month. UCRB May 1 SWE conditions range between 70-100% of normal and are most favorable across central areas including the Price/San Rafael/Dirty Devil, Duchesne, White/Yampa, and Colorado River headwater basins. SWE conditions are below normal elsewhere across the UCRB. SNOTEL station SWE generally peaked during the first half of April, with seasonal peak SWE near to above normal across central areas and near to below normal across northern and southern basins. The May 1 Colorado Dust-On-Snow Dust-on-Snow (CODOS) report specifies dust severity around average this year, except for the Roaring Fork region, where dust-on-snow conditions are severe.

GB May 1 SWE conditions range between 80-105% of normal. GB peak SWE at most SNOTEL stations occurred during the first half of April, with peak SWE values generally above normal. SWE conditions are summarized in the figure and table below.

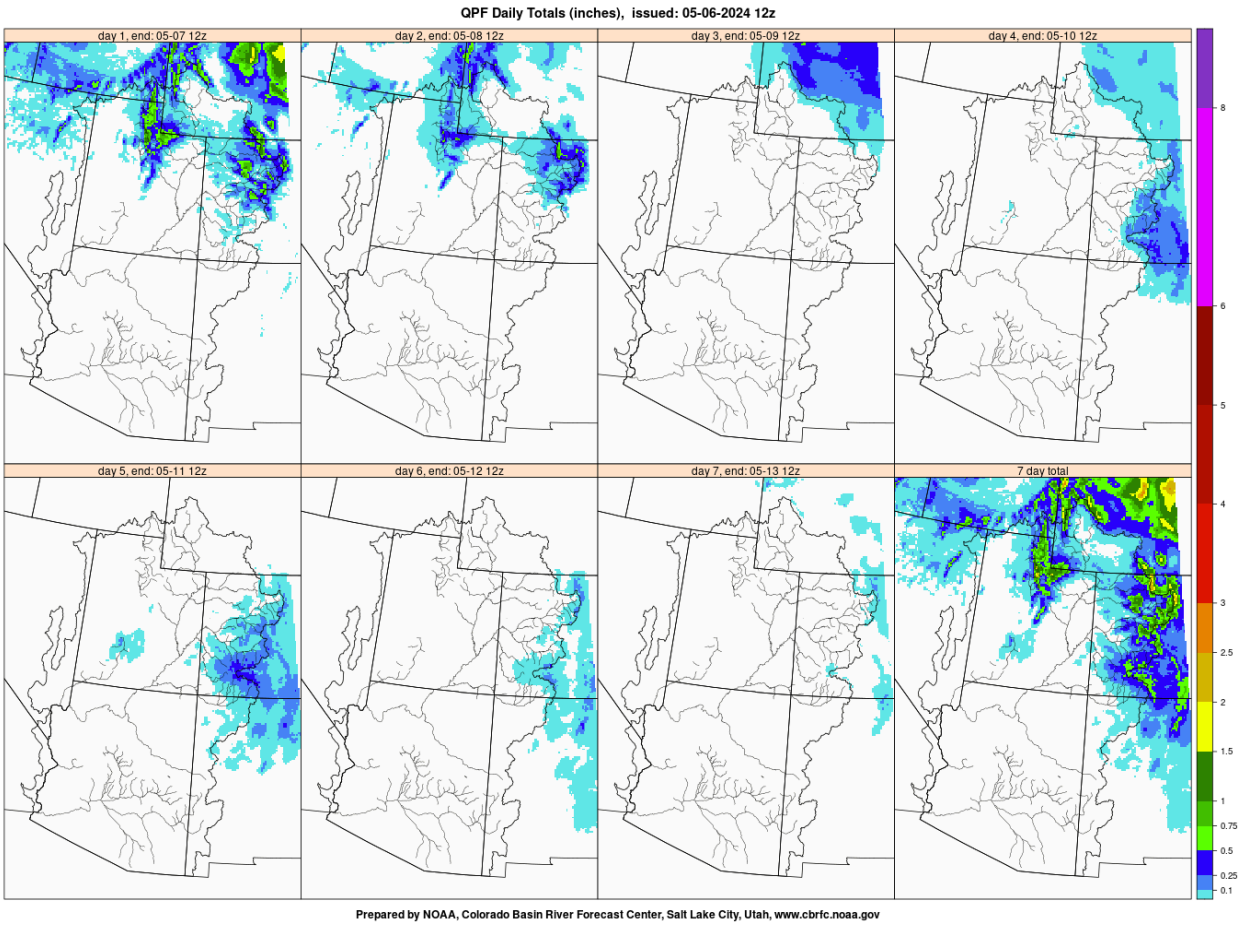


Water Year 2024 CBRFC Model SWE (Major Contributing Areas) Percent of 1991-2020 Median			
UPPER COLORADO RIVER BASIN			
	Apr1	May1	Change
Above Lake Powell	113	89	-24
Green River Basin			
Above Fontenelle	95	84	-11
Above Flaming Gorge	106	84	-22
Yampa/White	121	96	-25
Duchesne	128	93	-35
Price/San Rafael/Dirty Devil	150	100	-50
Colorado River Headwaters			
Above Kremmling	112	102	-10
Eagle	109	98	-11
Roaring Fork	108	93	-15
Above Cameo	109	96	-13
Southwest Colorado			
Gunnison	105	82	-23
Dolores	109	79	-30
San Juan	104	71	-33
GREAT BASIN / UTAH			
Bear	118	91	-27
Weber	132	85	-47
Six Creeks	134	106	-28
Provo/Utah Lake	136	98	-38
Sevier	123	78	-45
Virgin	113	56	-57

Left: May 1, 2024 SWE - NRCS SNOTEL observed (squares) and CBRFC hydrologic model.
Right: trend in CBRFC hydrologic model SWE conditions.

Upcoming Weather

A strong spring storm on May 5-6 brought widespread precipitation and below normal temperatures across the GB and UCRB. This storm system will stall over the northern Great Plains through mid-week, allowing for a series of quick moving disturbances to move across northern portions of the UCRB. This will continue chances of precipitation and below normal temperatures into Wednesday (May 8). Precipitation totals through this period will range from 0.5 to 1.5 inches, primarily across the northern half of the UCRB and GB. Once this storm system begins to move east, an area of low pressure will break off this main feature, and move southwest over the CRB. This system will be much weaker than the current storm, and will bring a slow warming trend to the region as well as another round of precipitation across CO Friday through Sunday (May 10-12). Precipitation totals will range from 0.1 to 0.75 inches, with the highest totals likely along the Continental Divide. Temperatures will return to near normal by this weekend. An area of high pressure will begin to develop over the western US at the start of next week (May 12) bringing a drying trend and above normal temperatures into mid-May.



7-day precipitation forecast for May 6-13, 2024.

CBRFC Web Links
Official Water Supply Forecasts: Map | List
Latest Water Supply Model Guidance: Map | List
Snowpack Conditions: SNOTEL | CBRFC Model
Monthly Precipitation: Map | Image
Soil Moisture: Map | Image
7-Day Precipitation Forecast: Map | Image
Climate Forecasts: Image
Water Supply Briefing Webinars: Registration

Acronyms & Abbreviations
CBRFC - Colorado Basin River Forecast Center
CODOS - Colorado Dust-on-Snow Program
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
USGS - United States Geological Survey
WPC - Weather Prediction Center