

Water Supply Forecast Discussion May 16, 2024

The <u>Colorado Basin River Forecast Center (CBRFC)</u> geographic forecast area includes the Upper Colorado River Basin (UCRB), Lower Colorado River Basin (LCRB), and Eastern Great Basin (GB).

Water Supply Conditions Summary

Precipitation during the first half of May was generally above normal over northern basins and below normal over southern areas. A few SNOTEL sites along the Continental Divide and Wasatch Front reported record May 1-15 precipitation amounts. Water year 2024 precipitation is generally near to slightly below normal across CRB and GB significant runoff producing areas.

Snow water equivalent (SWE) conditions as a percent of normal (median) improved during the first half of May due to additional snow accumulation, with mild/cloudy weather also playing a role in restraining snowmelt. Mid-May SWE conditions generally range between 85-125% of normal across the UCRB and 90-140% of normal across the GB.

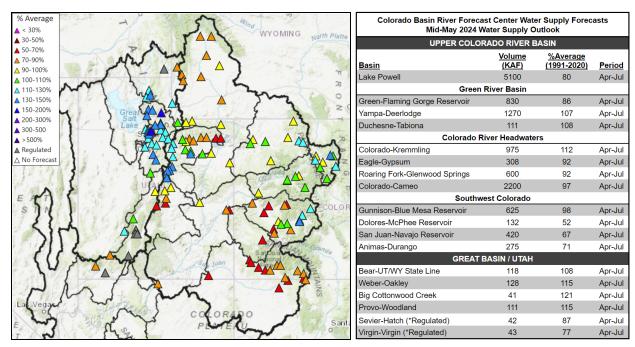
The water supply outlook has generally improved or remained steady across the CRB and GB due to above average precipitation across most of the region during the first half of May. Forecasted seasonal (April-July) water supply volumes are most favorable in the GB, where water supply forecasts are generally 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 low pressure system that brought scattered showers to the region is moving east as a ridge builds into the Western US. As a result, overall warmer and drier weather is in the forecast heading into the weekend. Temperatures over this weekend will reach 5-10 degrees above normal area wide. The forecast becomes more active at the start of next week, with a trough moving in from the Pacific Northwest on Sunday (May 19). There is uncertainty with how strong and how far south the low will track as it moves across the region Monday through Wednesday. Overall, the GB and UCRB will see a cooling trend with increasing chances of precipitation.

Water Supply Forecasts

The water supply outlook has generally improved or remained steady across the CRB and GB due to above average precipitation across most of the region during the first half of May. 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 to above normal across central areas to below normal in northern and southern basins.

The mid-May water supply outlook is summarized in the figure and table below.



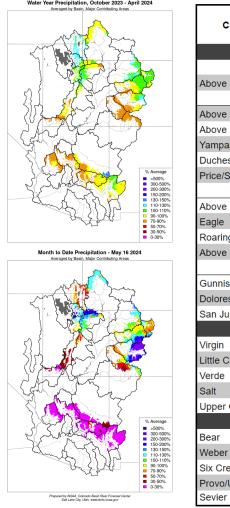
Mid-May seasonal water supply summary.

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.

Precipitation during the first half of May was generally above normal over northern basins and below normal over southern areas. A few SNOTEL sites along the Continental Divide and Wasatch Front reported record May 1-15 precipitation amounts. Water year 2024 precipitation is generally near to slightly below normal across CRB and GB significant runoff producing areas, and summarized in the figures and table below.



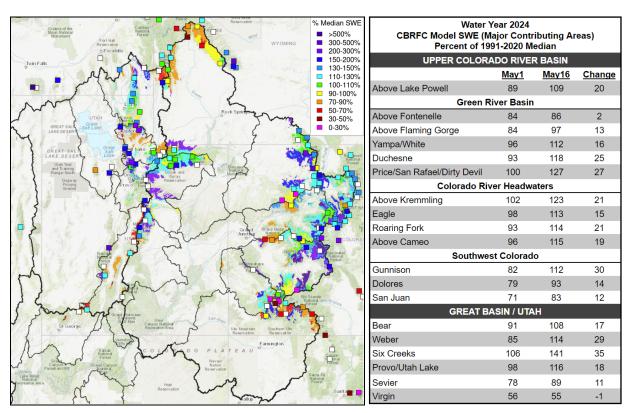
Water Year 2024 CBRFC Precipitation (Major Contributing Areas) Percent of 1991-2020 Average		
UPPER COLORADO RIVER BASIN		
	Oct-Apr	<u>May1-15</u>
Above Lake Powell	97	122
Green River Basin		
Above Fontenelle	94	108
Above Flaming Gorge	97	128
Yampa/White	108	115
Duchesne	98	123
Price/San Rafael/Dirty Devil	105	98
Colorado River Headwaters		
Above Kremmling	103	101
Eagle	105	120
Roaring Fork	100	173
Above Cameo	102	119
Southwest Colorado		
Gunnison	94	177
Dolores	86	78
San Juan	85	83
LOWER COLORADO RIVER BASIN		
Virgin	81	30
Little Colorado	95	16
Verde	90	4
Salt	94	19
Upper Gila	98	4
GREAT	BASIN	
Bear	109	90
Weber	109	132
Six Creeks	111	170
Provo/Utah Lake	104	112
Sevier	92	50

Water year 2024 precipitation summary.

Snowpack Conditions

Snow water equivalent (SWE) conditions as a percent of normal (median) improved during the first half of May due to additional snow accumulation, with mild/cloudy weather also playing a role in restraining snowmelt. UCRB mid-May SWE conditions range between 85-125% of normal, with more favorable conditions across central areas and less favorable SWE conditions across the northern and southern areas of the UCRB.

GB mid-May SWE conditions range between 90-140% of normal. GB SWE is most favorable in the Six Creek area and least favorable in the Sevier River Basin. Peak SWE at most GB 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.

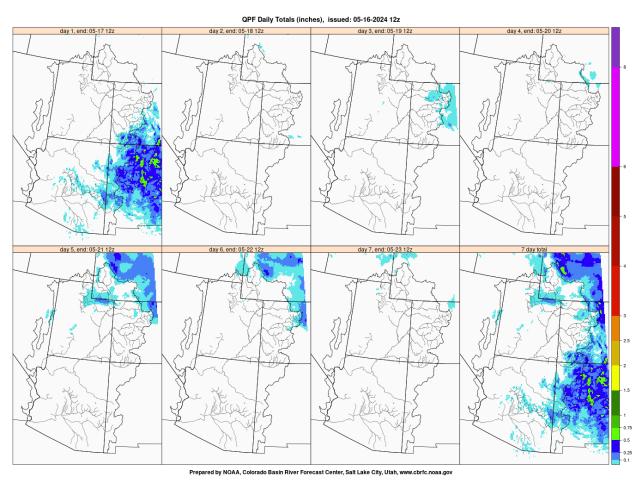


Left: May 16, 2024 SWE - NRCS SNOTEL observed (squares) and CBRFC hydrologic model. Right: trend in CBRFC hydrologic model SWE conditions.

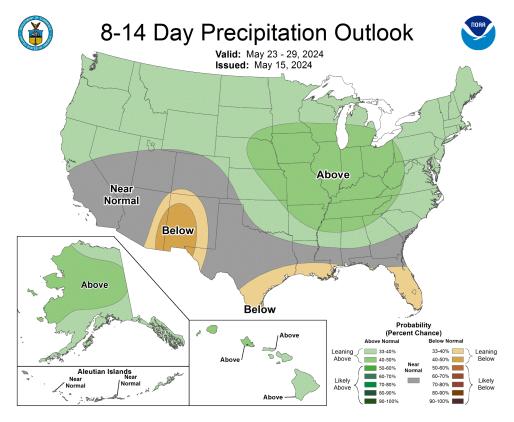
Upcoming Weather

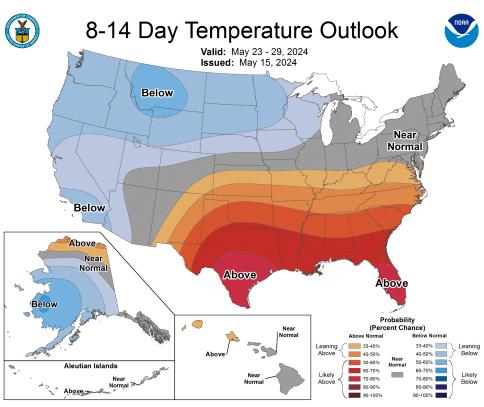
A low pressure system that brought scattered showers to the region is moving east as a ridge builds into the Western US. As a result, overall warmer and drier weather is in the forecast heading into the weekend. Temperatures over this weekend will reach 5-10 degrees above normal area wide. On Saturday (May 18), there is a slight chance of showers developing along a warm front moving across central UT and CO, however, the overall aerial coverage and precipitation totals will be low.

The forecast becomes more active at the start of next week, with a trough moving in from the Pacific Northwest on Sunday. There is uncertainty with how strong and how far south the low will track as it moves across the region Monday through Wednesday. Overall, the GB and UCRB will see a cooling trend with increasing chances of precipitation, with the greatest chances of colder and wetter weather over the northern half of these areas. Temperatures will be around 5 degrees below average across northern portions of the GB and UCRB, and near normal further south. Precipitation totals with this storm system unfortunately do not look significant at this time. Ranges in precipitation totals are between 0.1 to 0.5 inches, with the highest precipitation totals forecast for higher terrain. Ensemble models indicate another trough moving through the region towards the end of next week, continuing the period of cooler and unsettled weather.



7-day precipitation forecast for May 16-23, 2024.





Climate Prediction Center precipitation and temperature probability forecasts for May 23-29, 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