



Colorado Basin River Forecast Center

National Weather Service

Water Supply Forecast Discussion April 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

Active weather continued into March, making it the third consecutive month with near to above normal precipitation. Water year 2024 precipitation across significant runoff producing areas is generally near normal across the CRB and GB. Snow water equivalent (SWE) conditions as a percent of normal (median) improved during March and are near to above normal across the UCRB and GB. April 1 SWE conditions generally range between 95-150% of normal across the UCRB and 120-135% of normal across the GB.

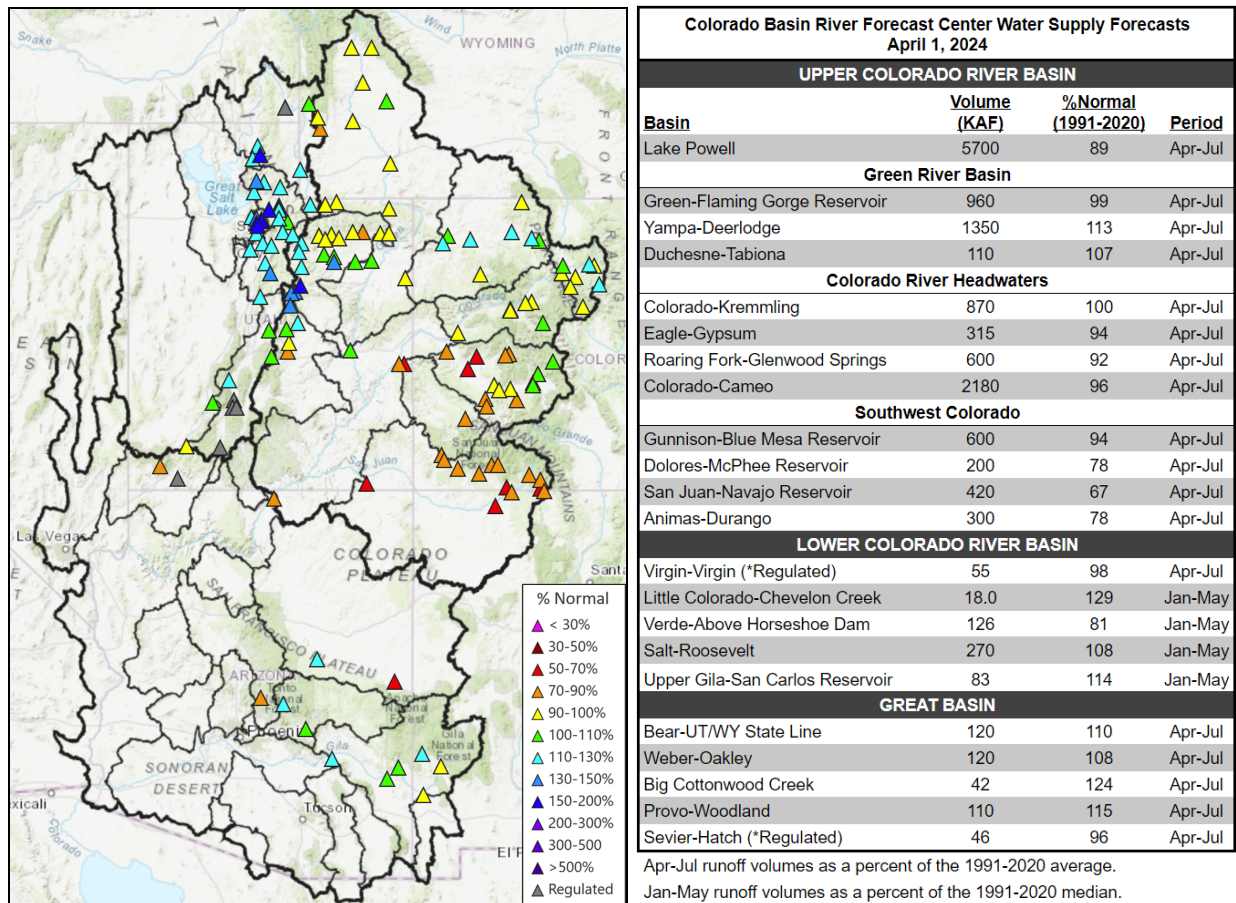
The water supply outlook has improved or remained steady across the CRB and GB due to above average March precipitation. Forecasted seasonal (April-July) water supply volumes are most favorable in the GB, where water supply forecasts are generally near to above normal. UCRB seasonal volumes are variable, ranging from near to above normal across central areas, with below normal volumes forecast in northern and southern basins. LCRB January-May volume forecasts are also variable, and improved during the last month due to above normal March precipitation.

High pressure is in place over the region, resulting in a brief period of dry and anomalously warm conditions. A series of storm systems will begin to impact the region on Friday, April 5, bringing cooler and wetter conditions through Tuesday, April 9. Precipitation will come in two waves, the first on Friday into Sunday, the second on Monday into Tuesday. Temperatures during this period will be around 10 to 15 degrees below climatological normals. Mid-week next week (April 10), model ensembles favor the development of a ridge of high pressure across the western US, which will bring drier and warmer than average conditions into mid-April.

Water Supply Forecasts

The water supply outlook has improved or remained steady across the CRB and GB due to above average March 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 to above normal across central areas, with below normal volumes forecast in northern and southern basins. LCRB January-May volume forecasts are also variable, and improved during the last month due to above normal March precipitation.

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

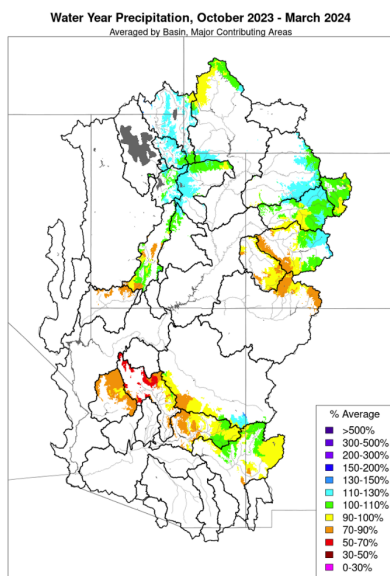
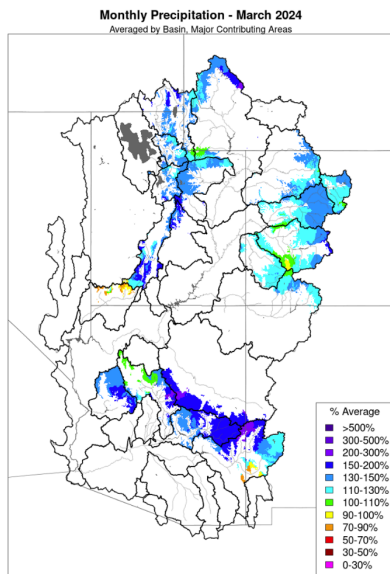


April 1, 2024 seasonal water supply forecast summary.

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. Water year 2024 precipitation across significant runoff producing areas is generally near normal across the CRB and GB, and summarized in the figures and table below.



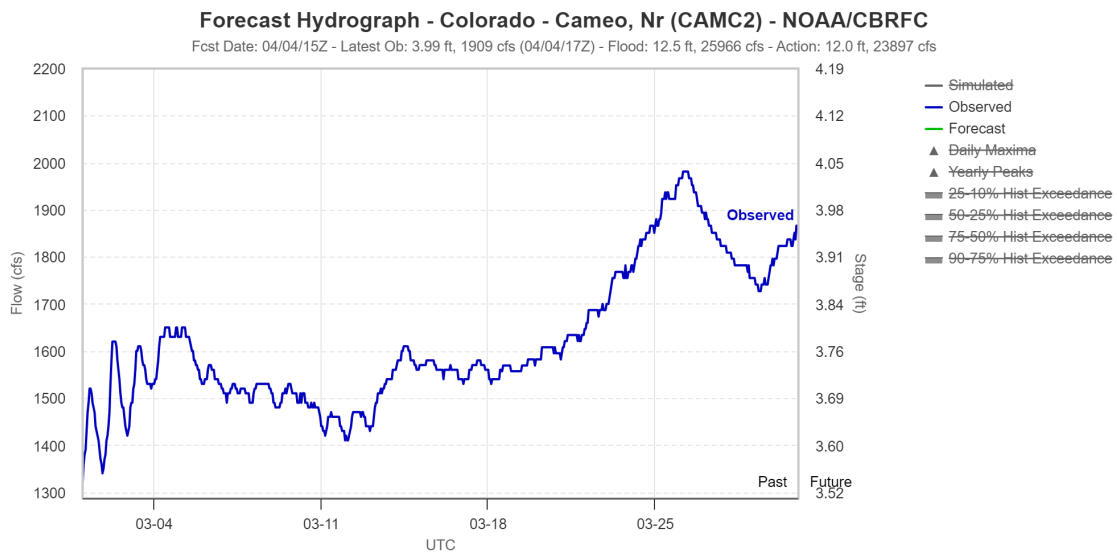
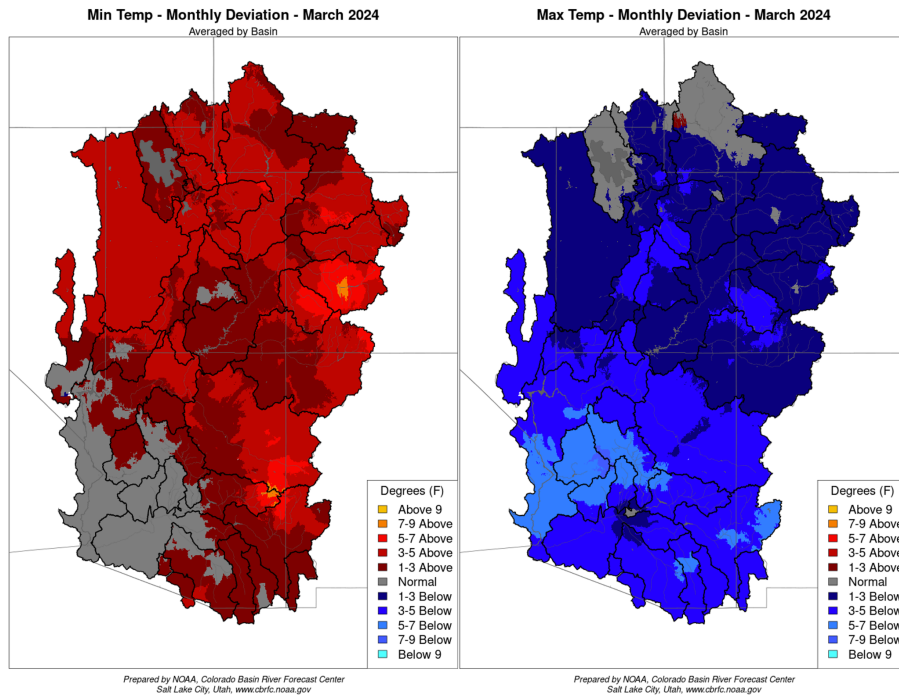
Prepared by NOAA, Colorado Basin River Forecast Center
Salt Lake City, Utah; www.cbrfc.noaa.gov

Water Year 2024 CBRFC Precipitation (Major Contributing Areas) Percent of 1991-2020 Average		
UPPER COLORADO RIVER BASIN		
	Mar	Oct-Mar
Above Lake Powell	130	102
Green River Basin		
Above Fontenelle	144	102
Above Flaming Gorge	141	107
Yampa/White	131	112
Duchesne	132	107
Price/San Rafael/Dirty Devil	157	113
Colorado River Headwaters		
Above Kremmling	127	102
Eagle	136	109
Roaring Fork	132	105
Above Cameo	130	104
Southwest Colorado		
Gunnison	119	99
Dolores	123	91
San Juan	127	90
LOWER COLORADO RIVER BASIN		
Virgin	97	86
Little Colorado	182	97
Verde	160	89
Salt	159	97
Upper Gila	153	100
GREAT BASIN		
Bear	139	116
Weber	133	115
Six Creeks	137	118
Provo/Utah Lake	136	111
Sevier	139	98

March and water year 2024 precipitation summary.

March Weather

March consisted of fairly typical spring weather across the region and featured both warm/dry periods that generated snowmelt and more active cool/wet periods that brought rain to lower elevations and snow to higher elevations. March minimum temperatures were above average, while maximum temperatures were below average. March temperatures and streamflow at a Colorado River location are shown in the figures below.



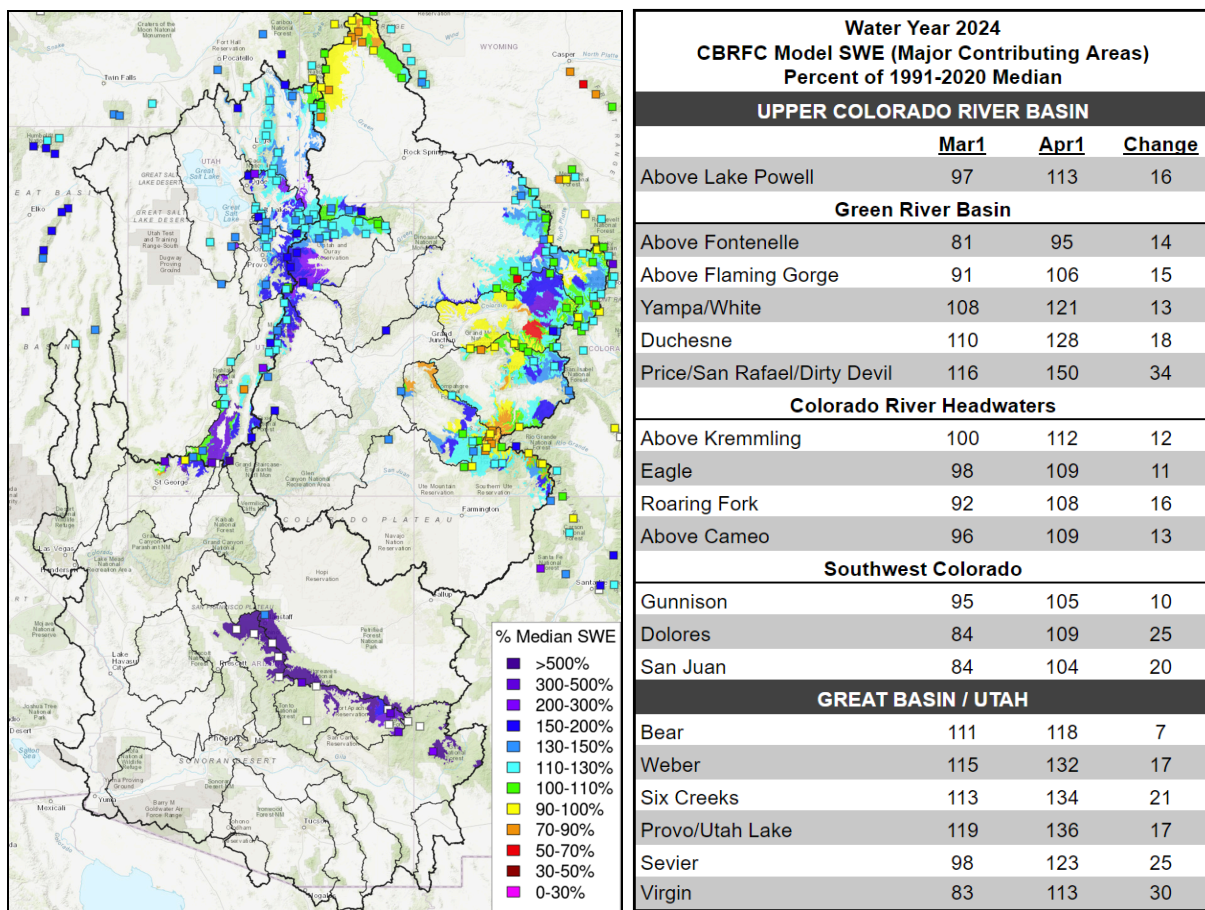
Top: minimum (left) and maximum (right) temperature departure from the 1991-2020 average.
Bottom: March 2024 observed streamflow at the Colorado River-Cameo USGS gage.

Snowpack Conditions

Snow water equivalent (SWE) conditions as a percent of normal (median) improved during March due to above normal precipitation during the month. UCRB April 1 SWE conditions range between 95-150% of normal and are most favorable across central areas including the Price/San Rafael/Dirty Devil, Duchesne and White/Yampa basins. SWE conditions are near normal elsewhere across the UCRB. Above normal January through March precipitation across the UCRB has led to near to above normal April 1 SWE conditions above Lake Powell, which is a significant improvement since January 1, when UCRB SWE conditions were around 60% of normal.

LCRB April 1 SWE conditions are highly variable and difficult to provide statistics for, especially across central AZ and western NM, because little to no snow is normal on April 1. With that said, April 1 LCRB SWE amounts are generally well above normal across southwest UT, central AZ, and west-central NM.

GB April 1 SWE conditions range between 120-135% of normal, a considerable improvement from January 1 SWE conditions that ranged between 45-70% of normal. SWE conditions are summarized in the figure and table below.

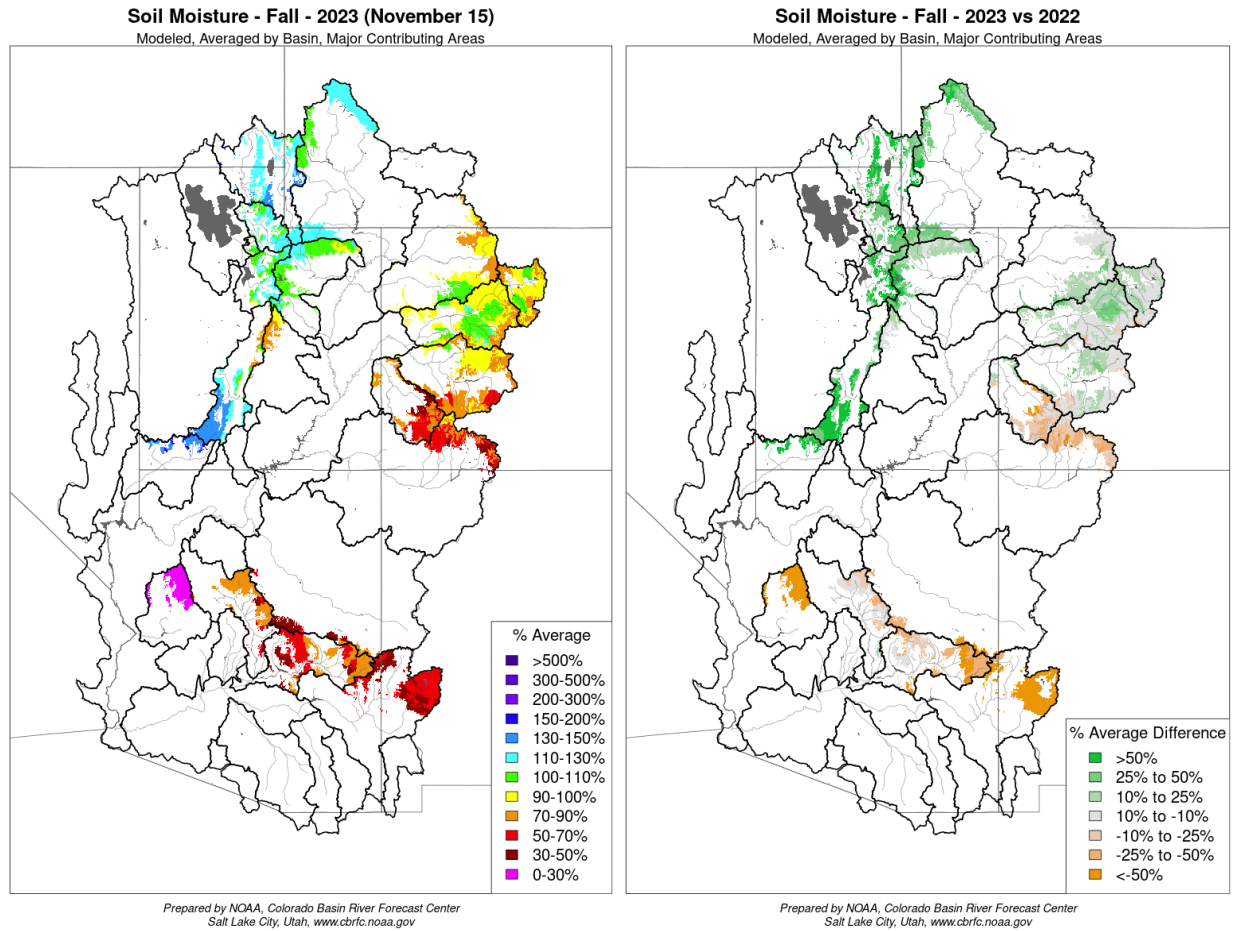


Left: April 1, 2024 SWE - NRCS SNOTEL observed (squares) and CBRFC hydrologic model.

Right: trend in CBRFC hydrologic model SWE conditions.

Soil Moisture

Above normal spring 2023 runoff was followed by a drier than normal Southwest monsoon season across much of the region. June-October precipitation was generally below the 15th percentile across most of AZ and southwest CO, resulting in below normal fall (antecedent) soil moisture conditions that are worse compared to a year ago. However, northern areas including the GB, Upper Green, and much of northwest CO received above normal summer/fall precipitation, leading to above normal fall soil moisture conditions that are improved from a year ago.

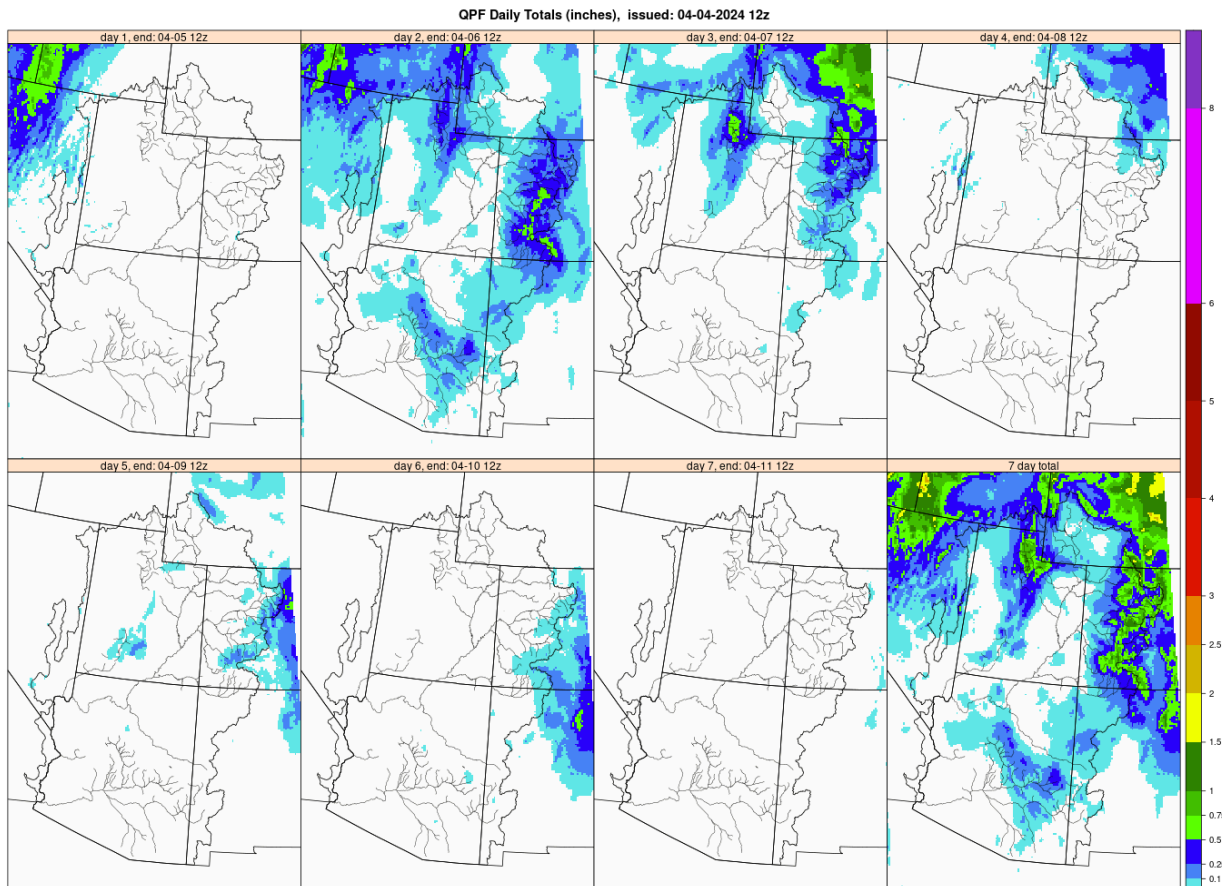


November 2023 CBRFC hydrologic model soil moisture conditions - as a percent of the 1991-2020 average (left) and compared to November 2022 (right).

CBRFC model fall soil moisture conditions impact early season water supply forecasts and the efficiency of spring runoff. Basins with above average soil moisture conditions can be expected to experience more efficient runoff from rainfall or snowmelt while basins with below average soil moisture conditions can be expected to have lower runoff efficiency until soil moisture deficits are fulfilled. The timing and magnitude of spring runoff is ultimately a result of snowpack conditions, spring weather, and soil moisture conditions.

Upcoming Weather

High pressure is in place over the region, resulting in a brief period of dry and anomalously warm conditions. A series of storm systems will begin to impact the region on Friday, April 5, bringing cooler and wetter conditions through Tuesday, April 9. Precipitation will come in two waves, the first on Friday into Sunday, the second on Monday into Tuesday. Precipitation totals across the GB and UCRB with the first wave of precipitation will range from 0.25 to 0.5 inches, with approximately a 50% chance that high elevations of northern UT and north-central CO will exceed 1 inch. Precipitation chances across the LCRB are lower, with precipitation totals likely under 0.25 inches across higher elevations. The second wave of precipitation on Monday and Tuesday will be lighter, with precipitation totals ranging from 0.1 to 0.25 inches across the GB and UCRB. Temperatures during this period will be around 10 to 15 degrees below climatological normals. Mid-week next week (April 10), model ensembles favor the development of a ridge of high pressure across the western US, which will bring drier and warmer than average conditions into mid-April.



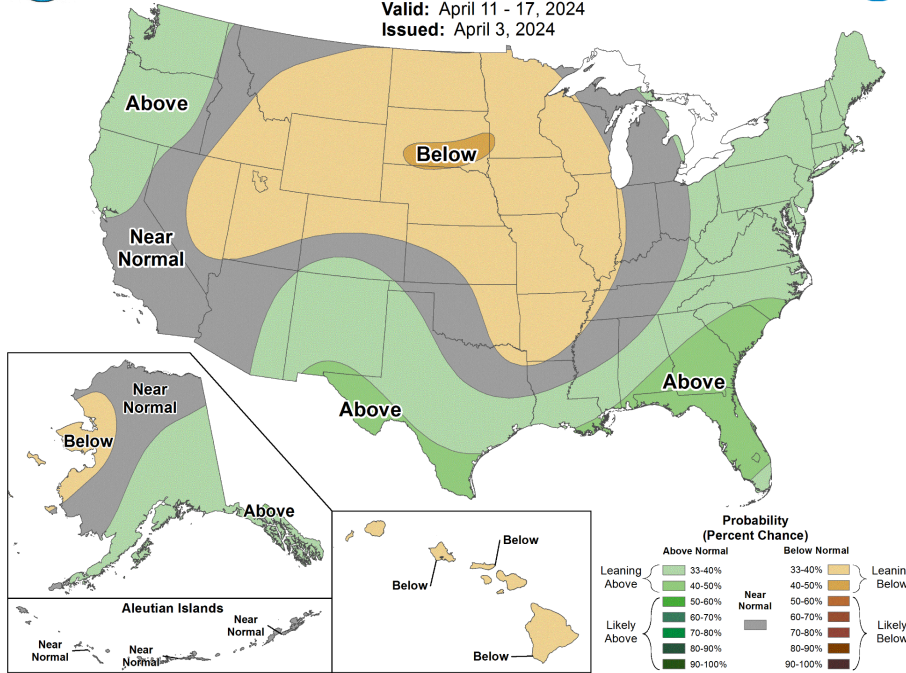
7-day precipitation forecast for April 4-10, 2024.



8-14 Day Precipitation Outlook



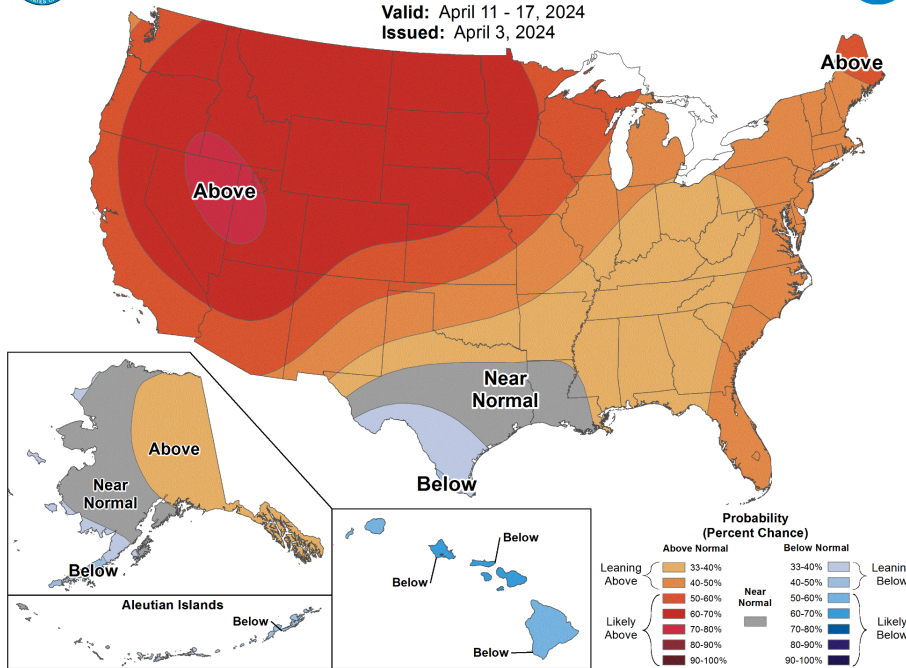
Valid: April 11 - 17, 2024
Issued: April 3, 2024



8-14 Day Temperature Outlook



Valid: April 11 - 17, 2024
Issued: April 3, 2024



Climate Prediction Center precipitation and temperature probability forecasts for April 11-17, 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
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