



Colorado Basin River Forecast Center

National Weather Service

Water Supply Forecast Discussion April 16, 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

Precipitation during the first half of April was well below average across the UCRB and GB and highly variable across the LCRB. Water year 2024 precipitation is generally near normal across CRB and GB significant runoff producing areas, with the exception of the Dolores and San Juan basins in southwest CO and the Virgin River Basin in southwest UT, where water year precipitation is below average.

Snow water equivalent (SWE) conditions as a percent of normal (median) declined during the first half of April due to below normal precipitation and snowmelt. April 10-15 was an active snowmelt period across much of the UCRB and GB, with many SNOTEL stations reporting 2-5 inches of melt. Mid-April SWE conditions generally range between 90-140% of normal across the UCRB and 110-130% of normal across the GB.

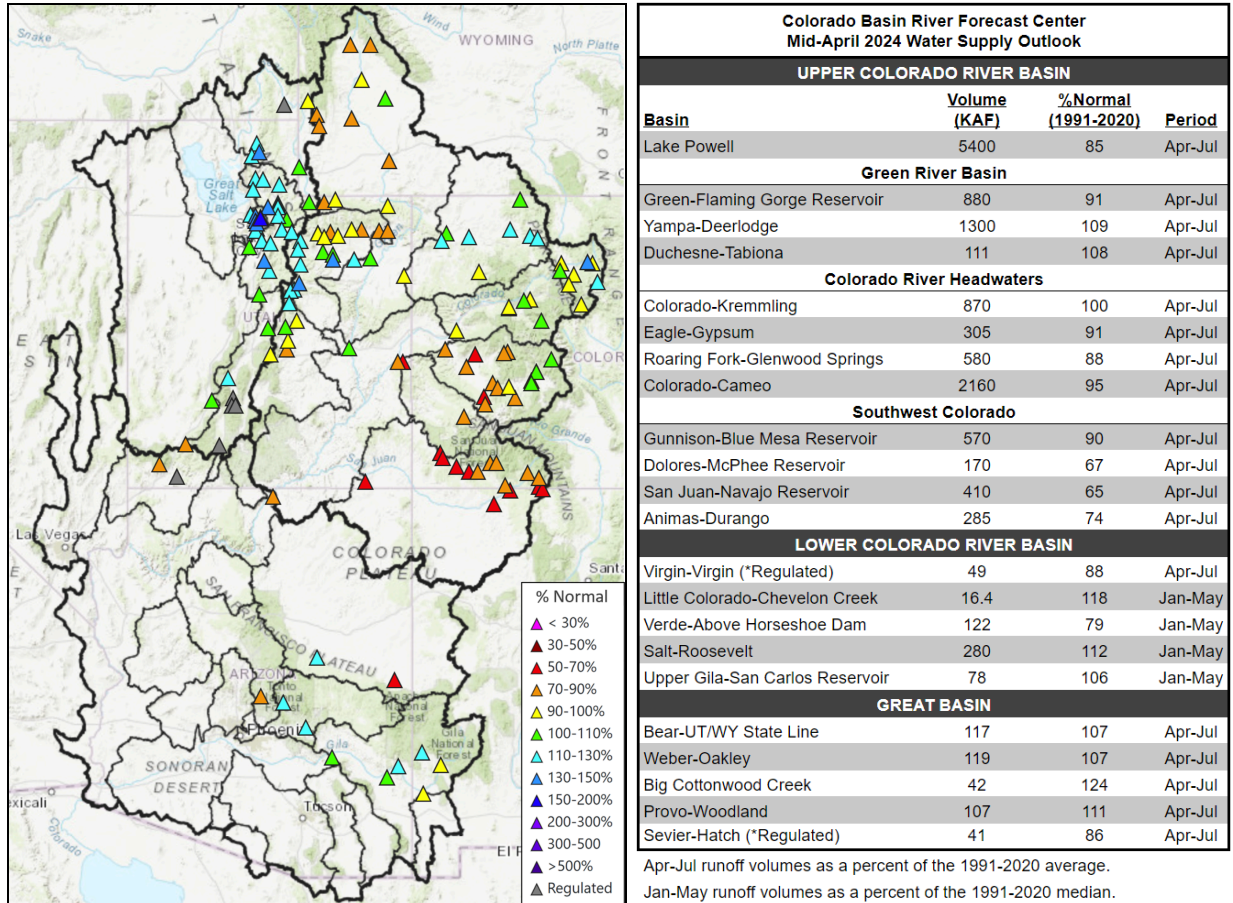
The water supply outlook has generally declined across the UCRB and GB due to below average precipitation during the first half of April. Seasonal (April-July) water supply volumes are most favorable in the GB, where water supply volumes are generally near to above normal. UCRB seasonal volumes are variable, ranging from near to above normal across central areas, with below normal volumes expected in northern and southern basins. LCRB January-May volumes are generally near normal.

A low pressure system that brought precipitation to the UCRB and GB is exiting the area, ushering in a period of warm, dry weather across most of the region. However, the UCRB and GB will see chances of light precipitation this week as a low pressure system passes to the north. A warming, drying trend is expected area wide, but temperatures will remain closer to normal across the UCRB and GB due to the influence of the weather system expected later this week. By the end of this week, temperatures are forecast to be around 5 degrees above normal across the UCRB/GB and 5 to 10 degrees above normal across the LCRB.

Water Supply Forecasts

The water supply outlook has generally declined across the UCRB and GB due to below average precipitation during the first half of April. 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 expected in northern and southern basins. LCRB January-May volumes are generally near normal (median).

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

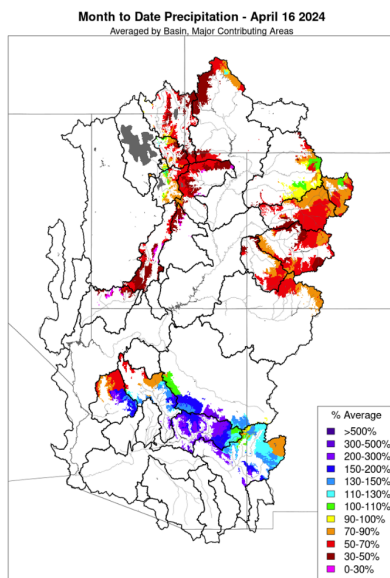
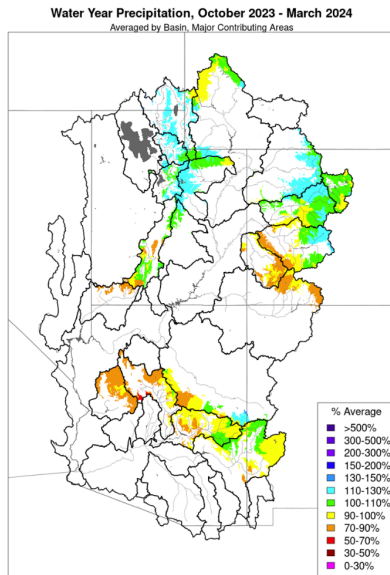


Mid-April 2024 seasonal water supply summary.

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. Precipitation during the first half of April was well below average across the UCRB and GB and highly variable across the LCRB. Water year 2024 precipitation across significant runoff producing areas is 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-Mar	Apr1-Apr15
Above Lake Powell		
	102	60
Green River Basin		
Above Fontenelle	102	35
Above Flaming Gorge	107	37
Yampa/White	112	78
Duchesne	107	37
Price/San Rafael/Dirty Devil	113	53
Colorado River Headwaters		
Above Kremmling	102	72
Eagle	109	69
Roaring Fork	105	58
Above Cameo	104	66
Southwest Colorado		
Gunnison	99	57
Dolores	91	56
San Juan	90	66
LOWER COLORADO RIVER BASIN		
Virgin	86	17
Little Colorado	97	106
Verde	89	62
Salt	97	154
Upper Gila	100	134
GREAT BASIN		
Bear	116	39
Weber	115	63
Six Creeks	118	87
Provo/Utah Lake	111	74
Sevier	98	42

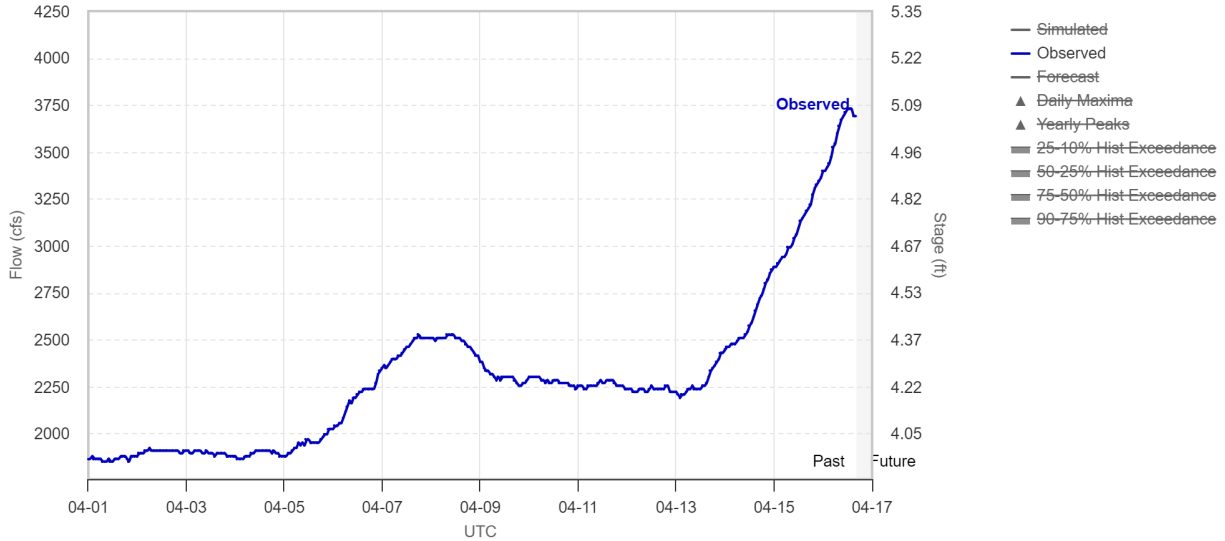
Water year 2024 precipitation summary.

April Weather/Streamflow

Weather during the first two weeks of April has consisted of both warm/dry periods that generated snowmelt and more active cool/wet periods that brought rain to lower elevations and snow to higher elevations. April 10-15 was an active snowmelt period across much of the UCRB and GB, with many SNOTEL stations reporting 2-5 inches of melt. April observed streamflow at a few locations are shown in the figures below.

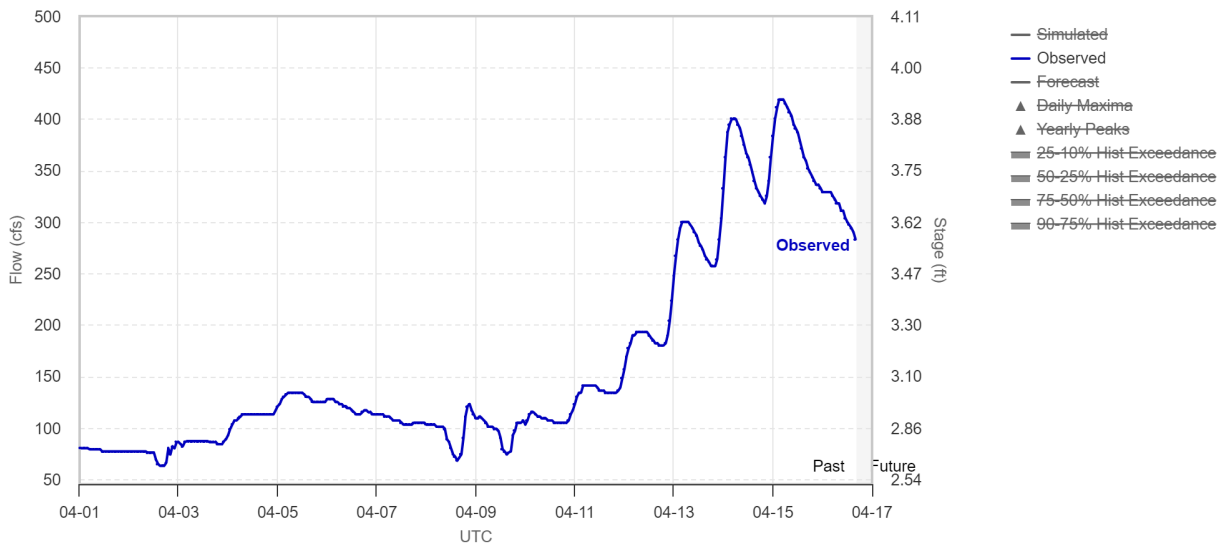
Forecast Hydrograph - Colorado - Cameo, Nr (CAMC2) - NOAA/CBRFC

Fcst Date: 04/16/15Z - Latest Ob: 5.06 ft, 3692 cfs (04/16/16Z) - Flood: 12.5 ft, 25966 cfs - Action: 12.0 ft, 23897 cfs



Forecast Hydrograph - Provo - Woodland, Nr (WOOU1) - NOAA/CBRFC

Fcst Date: 04/16/15Z - Latest Ob: 3.57 ft, 284 cfs (04/16/16Z) - Flood: 7.2 ft, 3261 cfs - Action: 6.0 ft, 1856 cfs

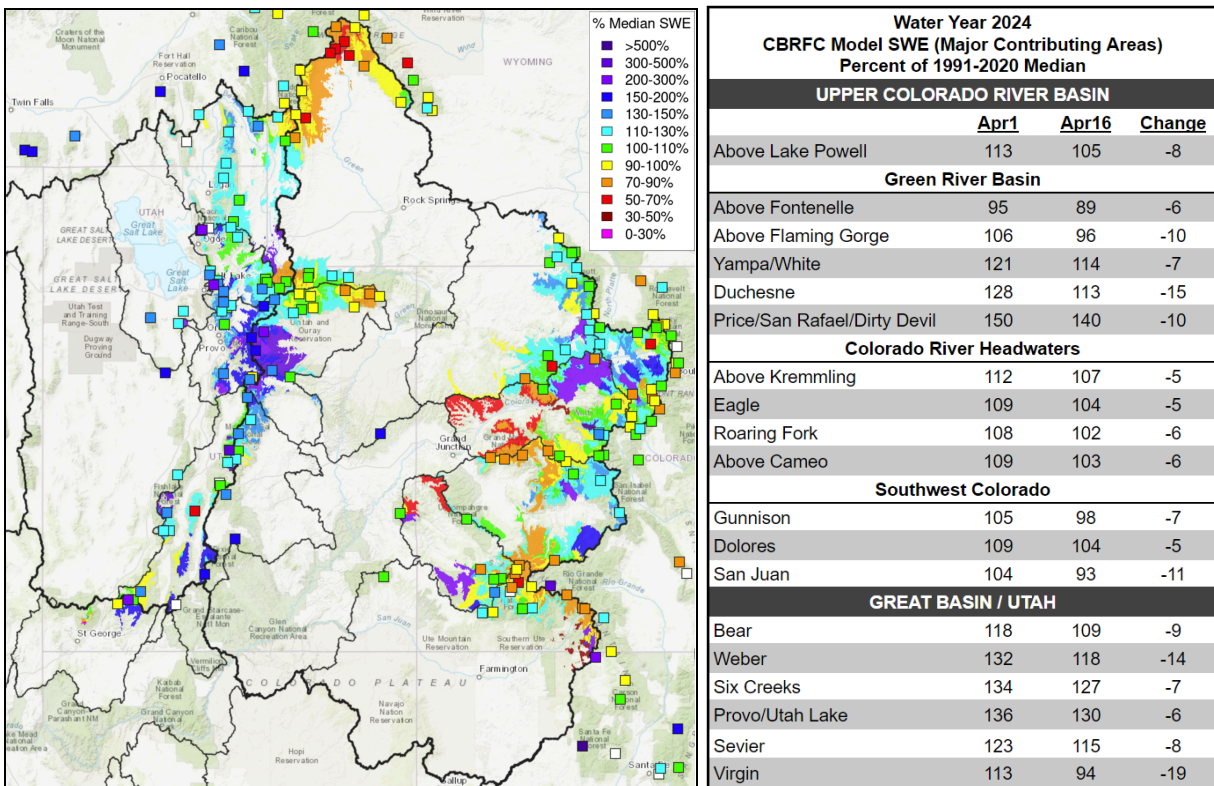


April 2024 USGS observed streamflow: Colorado River-Cameo (top) and Provo River-Woodland (bottom).

Snowpack Conditions

Snow water equivalent (SWE) conditions as a percent of normal (median) declined during the first half of April due to below normal precipitation and snowmelt. UCRB mid-April SWE conditions range between 90-140% of normal and are most favorable across portions of central UT (Price/San Rafael/Dirty Devil), although this area typically does not contribute a significant amount of spring runoff to the UCRB system. SWE conditions are generally near normal elsewhere across the UCRB. The current near normal SWE conditions above Lake Powell are a significant improvement since January 1, when UCRB SWE conditions were around 60% of normal.

GB mid-April SWE conditions range between 110-130% 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.

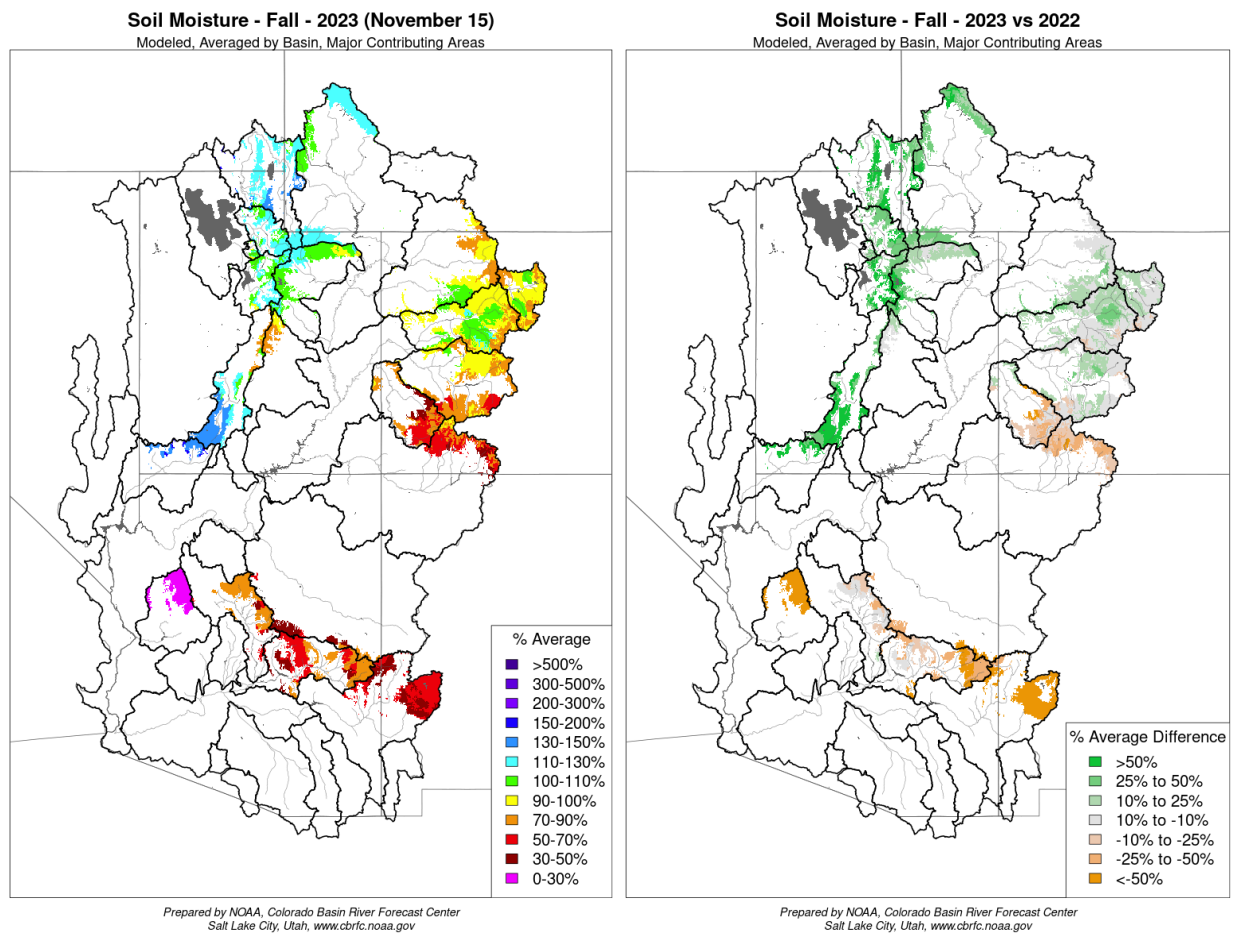


Left: April 16, 2024 SWE - NRCS SNOTEL observed (squares) and CBRFC hydrologic model.
Right: trend in CBRFC hydrologic model SWE conditions.

Soil Moisture

Soil moisture conditions impact 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.

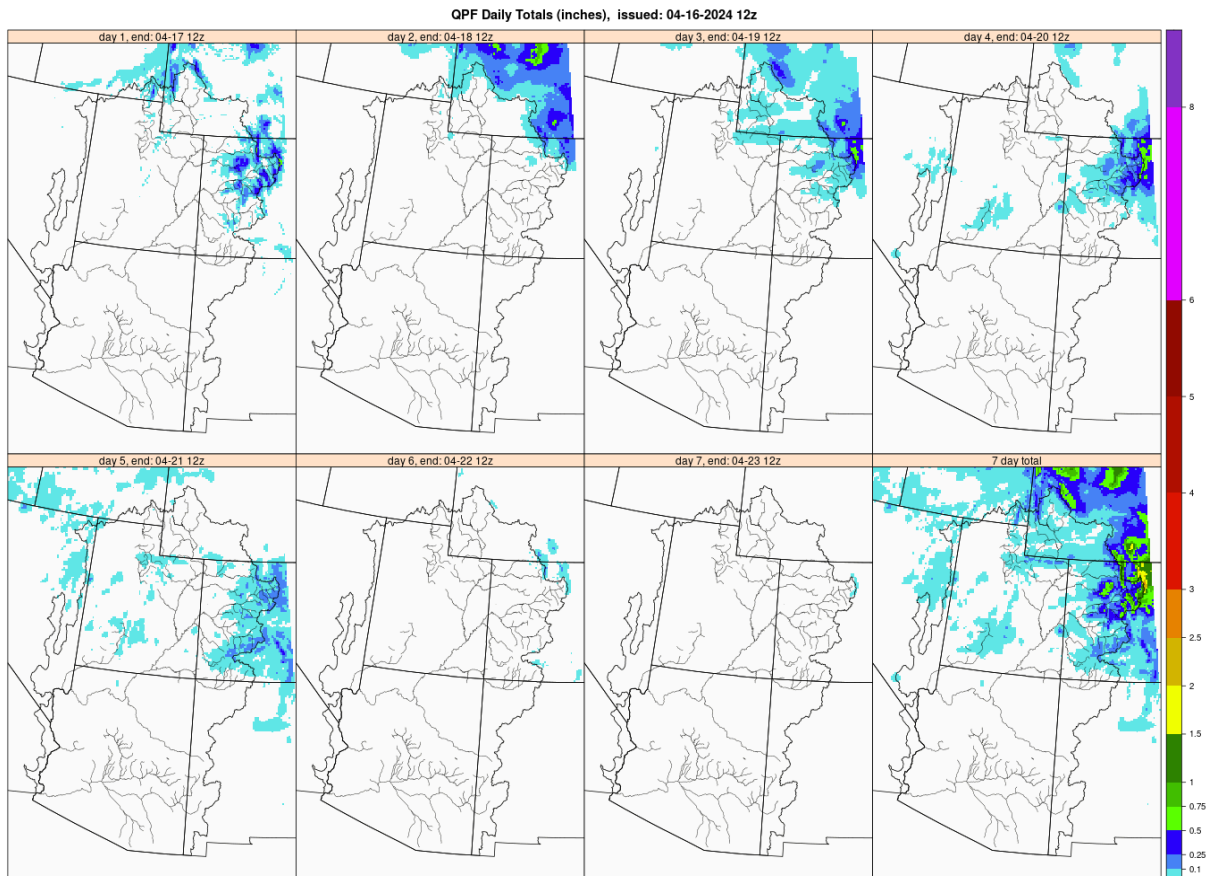
CBRFC model soil moisture conditions heading into spring 2024 runoff were below normal and worse compared to last year in southwest CO and most of AZ. However, northern areas including the GB, Upper Green, and much of northwest CO had above normal antecedent soil moisture conditions that are improved from a year ago. CBRFC model soil moisture conditions are shown in the figures below.



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

Upcoming Weather

A low pressure system that brought precipitation to the UCRB and GB is exiting the area, ushering in a period of warm, dry weather across most of the region. However, the UCRB and GB will see chances of light precipitation this week as a low pressure system passes to the north. A warming, drying trend is expected area wide, but temperatures will remain closer to normal across the UCRB and GB due to the influence of the weather system expected later this week. By the end of this week, temperatures are forecast to be around 5 degrees above normal across the UCRB/GB and 5 to 10 degrees above normal across the LCRB. Moving into next week, warm and dry weather is expected to persist. By midweek, temperatures have the potential to reach 10 to 20 degrees above normal.



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

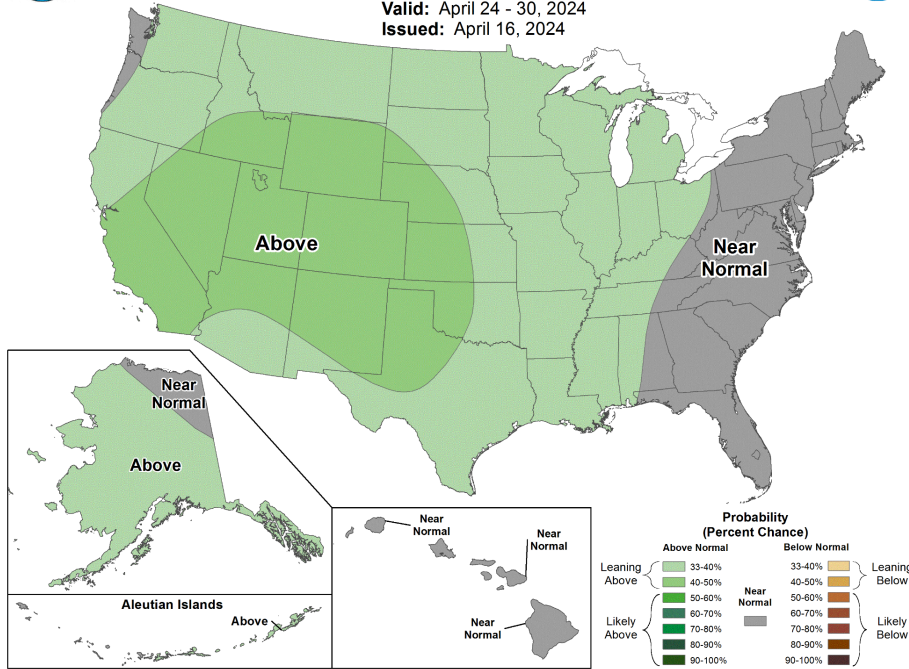
7-day precipitation forecast for April 16-22, 2024.



8-14 Day Precipitation Outlook



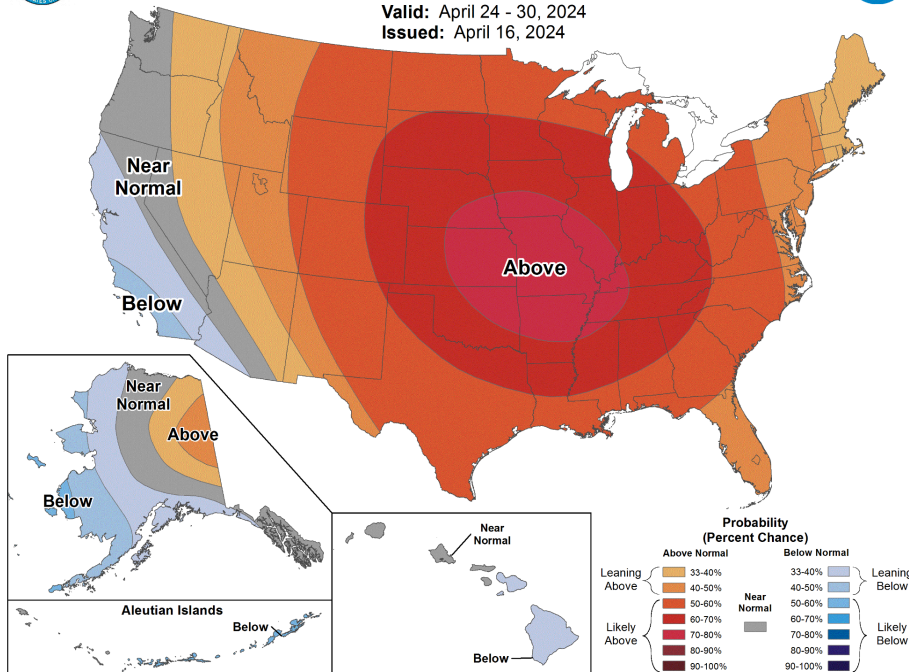
Valid: April 24 - 30, 2024
Issued: April 16, 2024



8-14 Day Temperature Outlook



Valid: April 24 - 30, 2024
Issued: April 16, 2024



Climate Prediction Center precipitation and temperature probability forecasts for April 24-30, 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