



Colorado Basin River Forecast Center

National Weather Service

Water Supply Forecast Discussion February 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

The first half of February was much wetter than normal across most of the region, with a number of SNOTEL stations across UT, CO, and AZ receiving near/record precipitation during this period. Snow water equivalent (SWE) conditions as a percent of normal (median) improved considerably since February 1 across much of the region. Mid-February CBRFC model SWE conditions generally range between 75-105% of normal across the UCRB, 120-250% of normal across the LCRB, and 95-105% of normal across the GB.

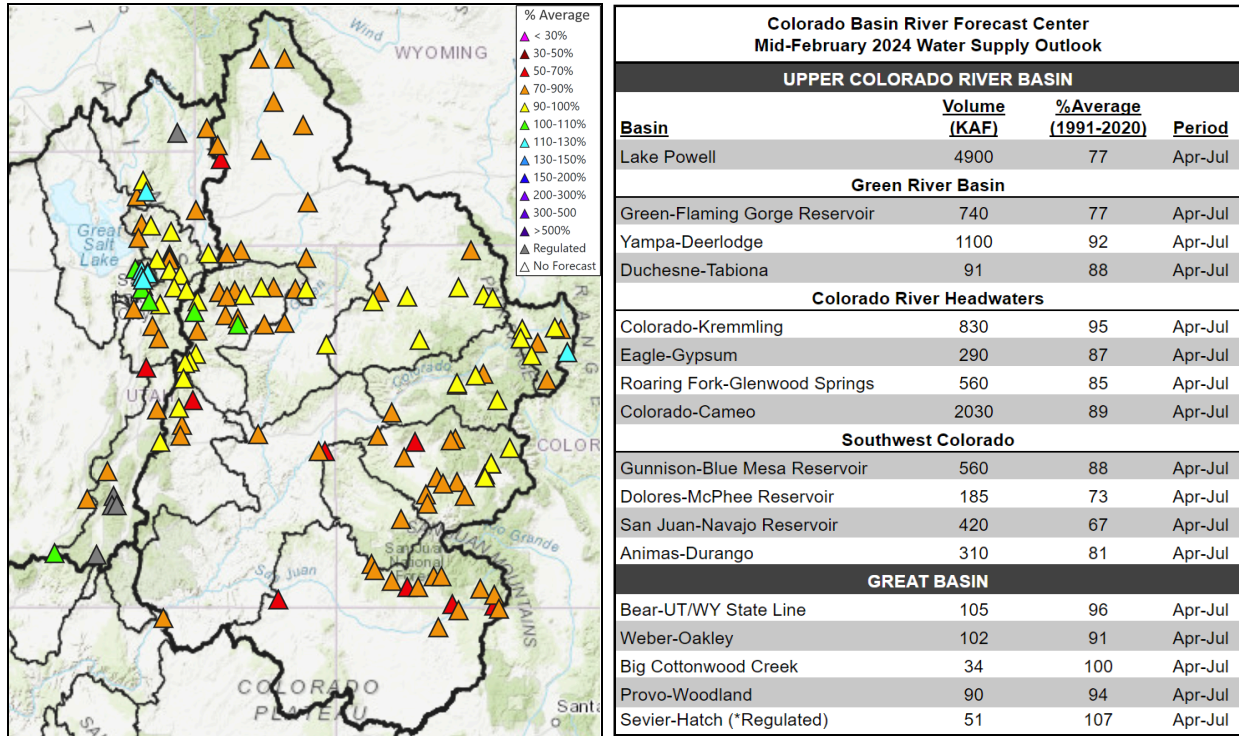
The water supply outlook has improved due to wetter than average weather during the first half of February. However, seasonal (April-July) water supply volumes generally remain near to below normal across the UCRB and GB. LCRB January-May volume forecasts are generally near to above normal and take into account the current El Niño, which typically results in increased chances of wetter than average winter weather across the LCRB.

Active weather will continue across the Intermountain West through next week. Storms will focus on the northern half of the area, with the largest precipitation amounts expected across higher elevations of UT and western CO. There will be a brief break in precipitation area wide on Saturday (February 17). On Sunday, the first in a series of disturbances will move across the region. Precipitation totals on Sunday will be around 0.25 to 0.5 inches across UT and western CO. Unsettled weather will bring additional precipitation to the area through the end of next week. 7-day precipitation totals are expected to be in the 1-2 inch range across the higher elevations of UT and CO.

Water Supply Forecasts

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

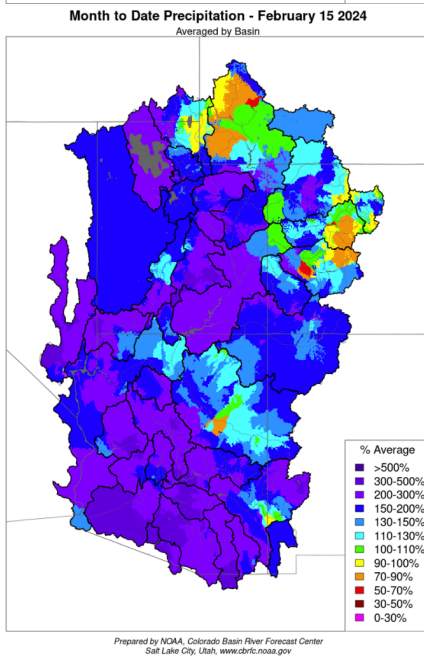
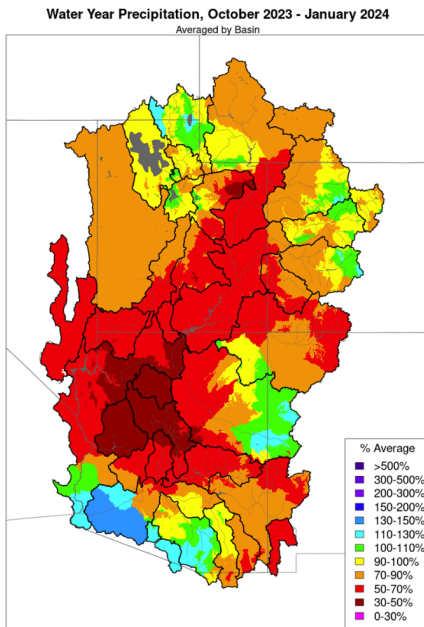


Mid-February 2024 seasonal water supply summary.

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 and the first half of February resulted in near to above average precipitation across most CRB and GB high elevation areas. The first half of February was much wetter than normal across most of the region, with a number of SNOTEL stations across UT, CO, and AZ receiving near/record precipitation during this period. Water year 2024 precipitation 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-Jan	Feb1-Feb15
Above Lake Powell	86	154
Green River Basin		
Above Fontenelle	81	146
Above Flaming Gorge	85	160
Yampa/White	96	136
Duchesne	76	245
Price/San Rafael/Dirty Devil	91	185
Colorado River Headwaters		
Above Kremmling	91	120
Eagle	96	100
Roaring Fork	94	92
Above Cameo	93	113
Southwest Colorado		
Gunnison	90	129
Dolores	72	182
San Juan	67	188
LOWER COLORADO RIVER BASIN		
Virgin	59	257
Little Colorado	63	201
Verde	48	256
Salt	67	201
Upper Gila	72	207
GREAT BASIN		
Bear	97	152
Weber	92	192
Six Creeks	98	212
Provo/Utah Lake	90	200
Sevier	71	188

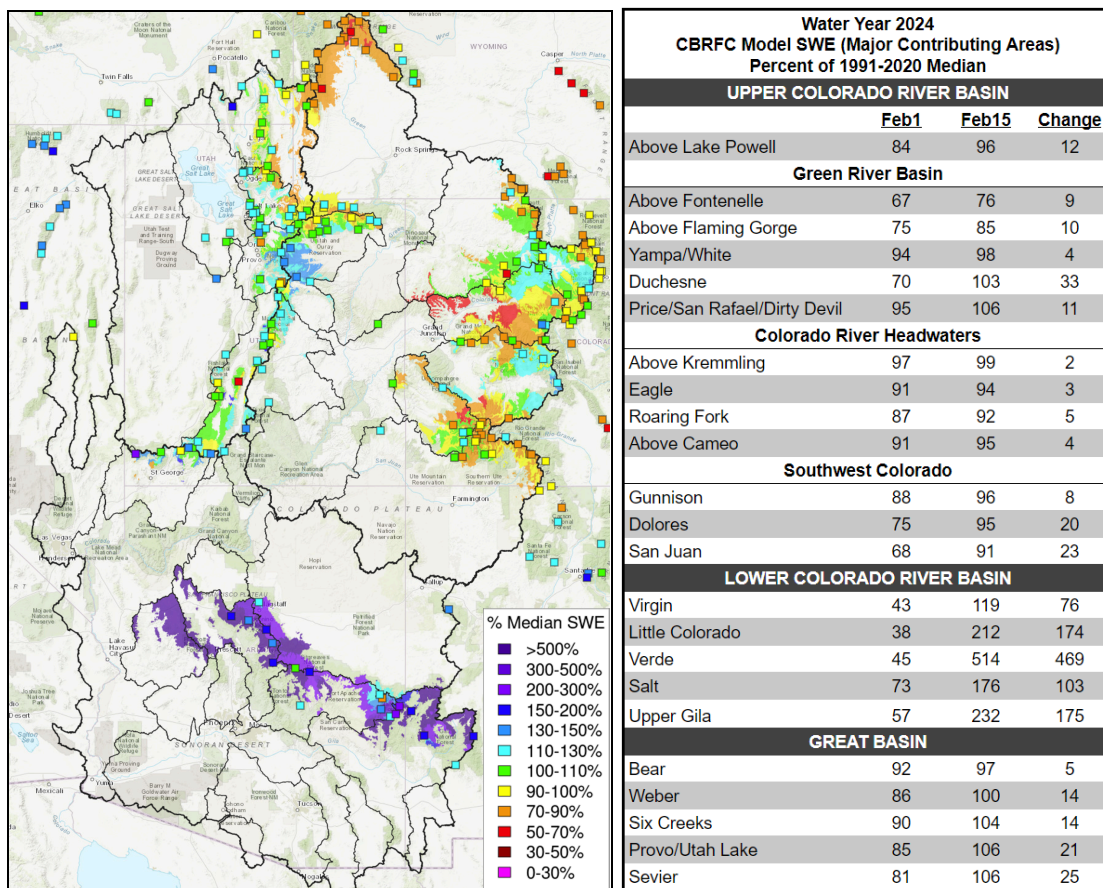
CBRFC observed precipitation maps: [Daily](#) | [Monthly](#) | [Water Year](#)

Snow

Snow water equivalent (SWE) conditions as a percent of normal (median) improved during the first half of February due to wetter than average weather. UCRB February 15 SWE conditions range between 75-105%. Snowpack conditions are least favorable across the Upper Green headwaters above Fontenelle Reservoir, where SWE is generally below the 25th percentile and ranked in the driest five on record at a few SNOTEL locations. SWE across the western slope of CO generally ranges between 90-100% of normal, with considerable improvements since February 1 across southwest CO (Dolores/San Juan basins). The portion of the UCRB within UT has slightly better SWE conditions at around 105% of normal.

LCRB SWE conditions improved significantly since February 1 and are now near to well above normal across the majority of LCRB high elevation areas. SWE conditions are generally 100-125% of normal across southwest UT and greater than 125% of normal across central AZ/west-central NM.

GB mid-February SWE conditions range between 95-105% of normal. GB snowpack conditions are generally more evenly distributed and better as a percent of normal when compared to the UCRB. SWE conditions are summarized in the figure and table below.



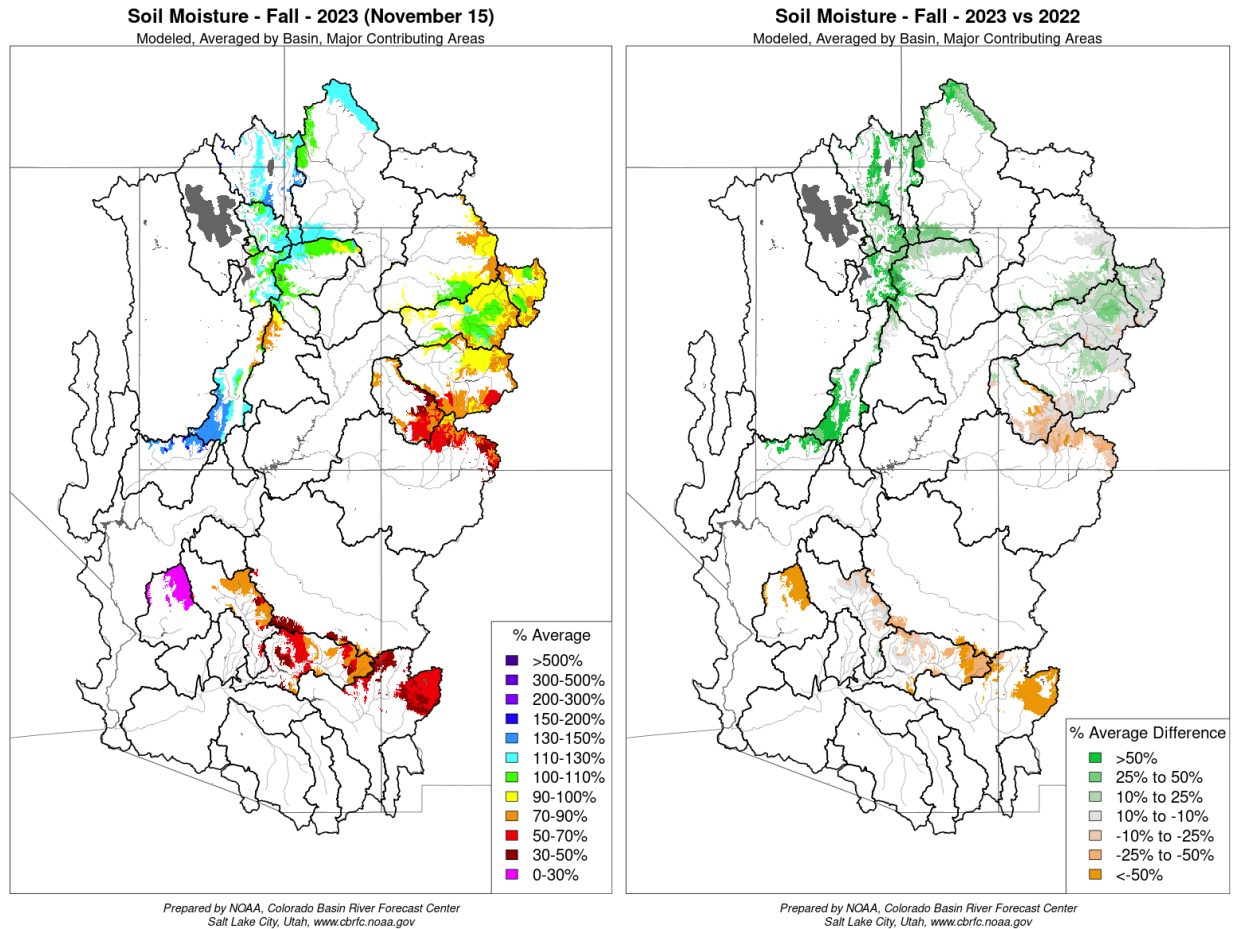
Left: February 15, 2024 SWE - NRCS SNOTEL observed (squares) and CBRFC hydrologic model.

Right: trend in CBRFC hydrologic model SWE conditions.

Current snow conditions: [SNOTEL](#) | [CBRFC Model](#)

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.



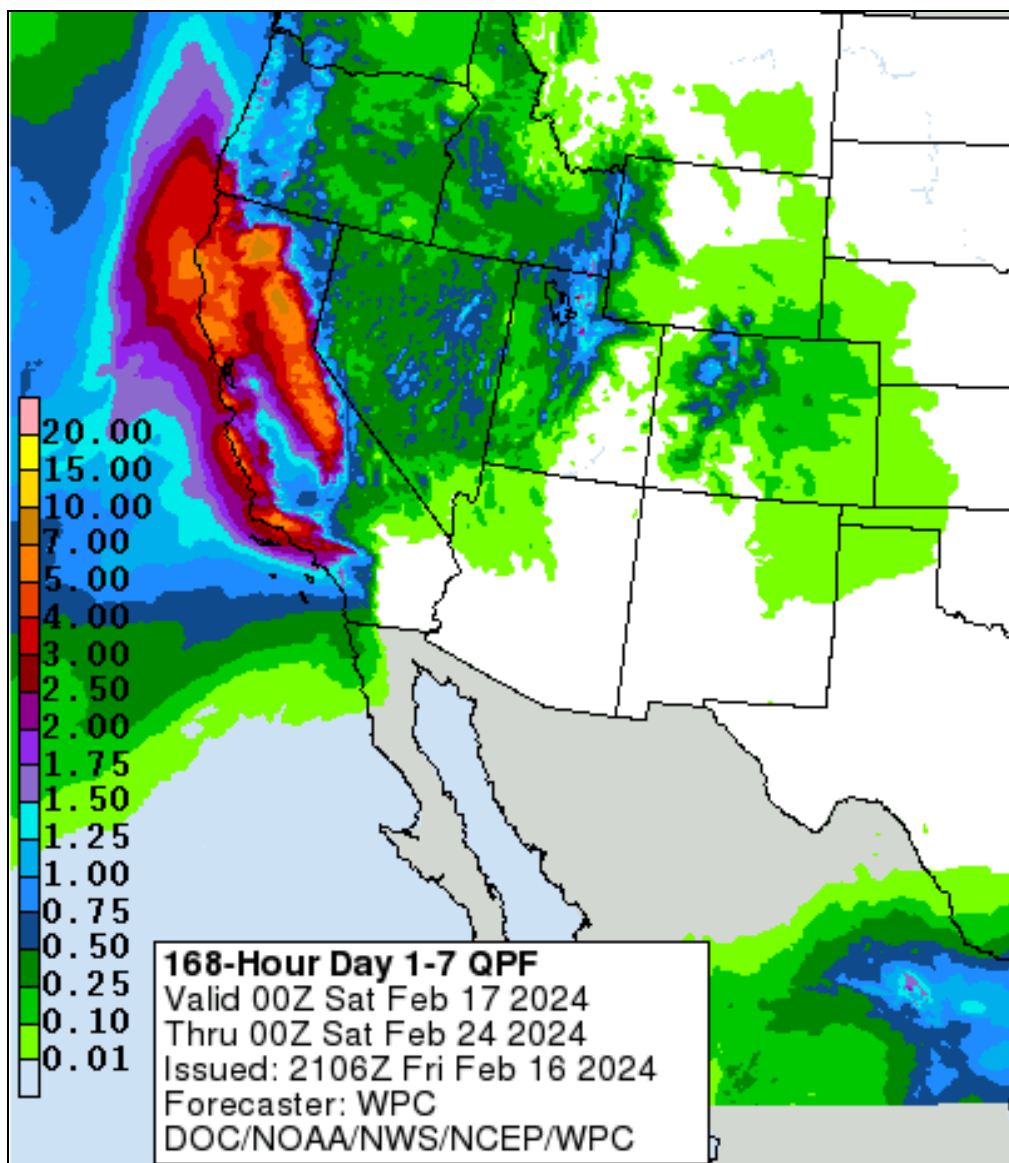
November 2023 CBRFC hydrologic model soil moisture conditions - as a percent of the 1991-2020 average (left) and compared to November 2022 (right).

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.

CBRFC hydrologic model soil moisture conditions are available [here](#).

Upcoming Weather

Active weather will continue across the Intermountain West through next week. Storms will focus on the northern half of the area, with the largest precipitation amounts expected across higher elevations of UT and western CO. Northwest AZ is expected to receive some precipitation early next week, although forecast precipitation totals are less than 0.25". There will be a brief break in precipitation area wide on Saturday. On Sunday, the first in a series of disturbances will move across the region. Precipitation totals on Sunday will be around 0.25 to 0.5 inches across UT and western CO. Unsettled weather will bring additional precipitation to the area through the end of next week. 7-day precipitation totals are expected to be in the 1-2 inch range across the higher elevations of UT and CO. There is relatively high confidence that this active weather pattern will remain in place through the end of the month resulting in above average precipitation and near-normal temperatures for the CBRFC area.



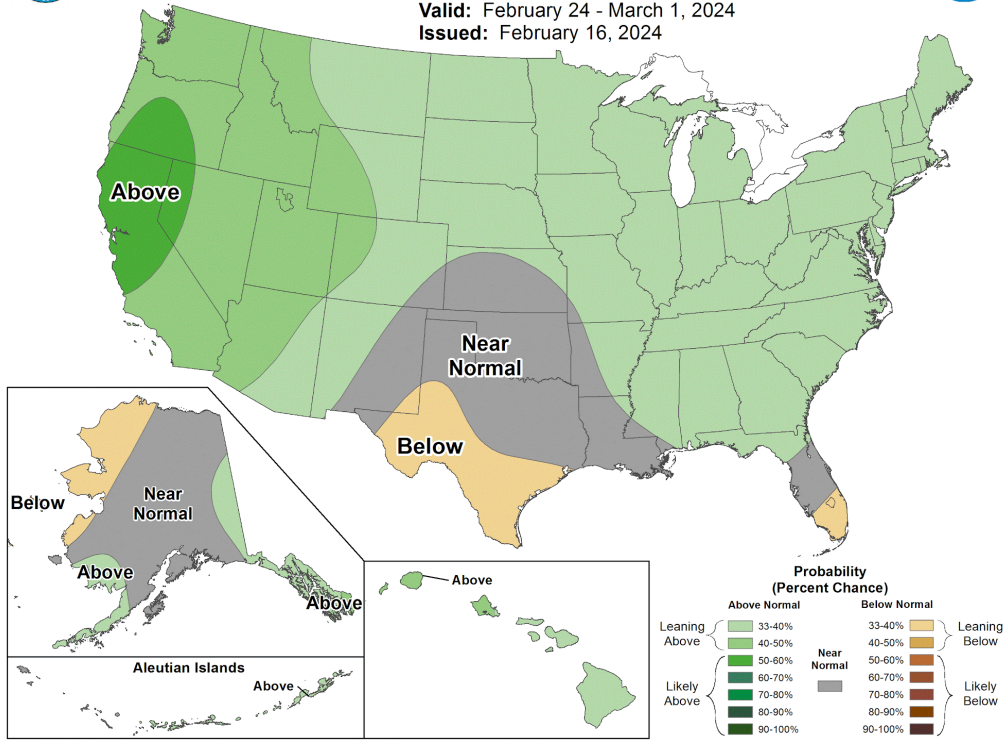
NWS Weather Prediction Center precipitation forecast for February 17-24, 2024.



8-14 Day Precipitation Outlook



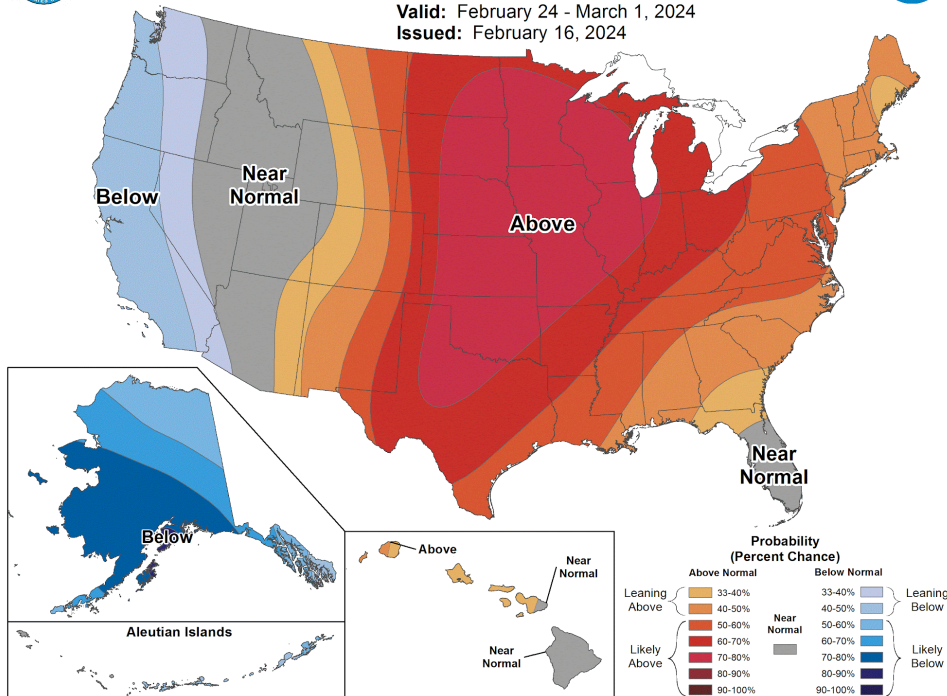
Valid: February 24 - March 1, 2024
Issued: February 16, 2024



8-14 Day Temperature Outlook



Valid: February 24 - March 1, 2024
Issued: February 16, 2024



Climate Prediction Center precipitation and temperature probability forecasts for February 25-March 1, 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
WPC - Weather Prediction Center