



Colorado Basin River Forecast Center

National Weather Service

Water Supply Forecast Discussion March 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

An active weather pattern during February resulted in above average monthly precipitation across the CRB and GB. 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. Water year 2024 precipitation (October-February) is generally near normal across northern areas of the UCRB and GB, but remains below normal across southern areas. Snow water equivalent (SWE) conditions as a percent of normal (median) improved during February and are now near normal in many areas. March 1 SWE conditions generally range between 85-115% of normal across the UCRB, 80-115% of normal across the LCRB, and 100-120% of normal across the GB.

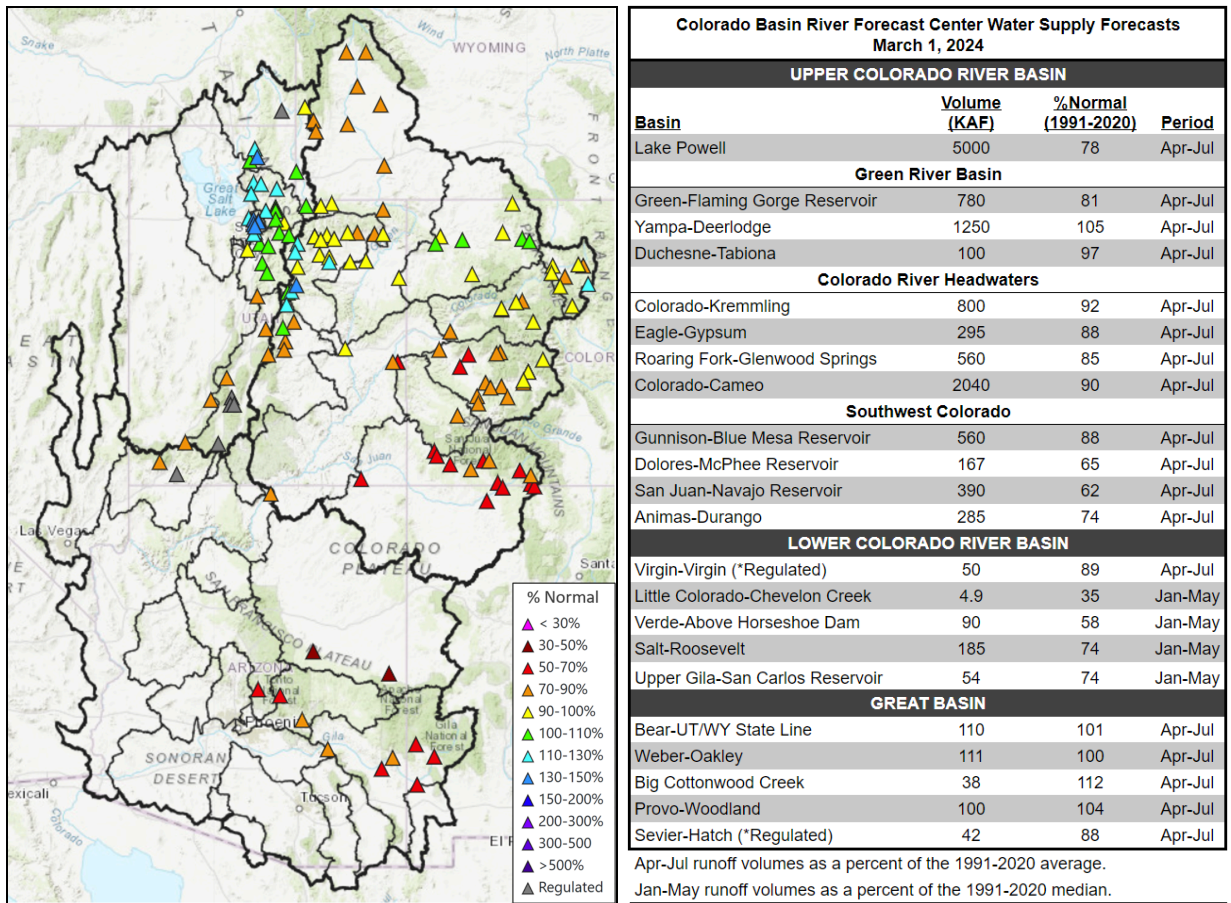
The water supply outlook has improved across most of the GB and UCRB due to above average February precipitation. Forecasted seasonal (April-July) water supply volumes are most favorable in the GB, where water supply forecasts are generally near to above normal. UCRB seasonal volumes are variable, ranging from near to above normal across central areas, with below normal volumes forecast in northern and southern basins. LCRB January-May volume forecasts are below normal due to poor antecedent soil moisture conditions and drier than average El Niño winter weather.

A series of weather systems will bring precipitation to most of the area through Friday (March 8). However, precipitation will be light and significant accumulations are not expected. There will be a break in the weather this weekend as high pressure briefly builds over the area bringing warmer and drier conditions. Unsettled weather will return early next week with precipitation again focusing on the UCRB.

Water Supply Forecasts

The water supply outlook has improved across most of the GB and UCRB due to above average February 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 below normal due to poor antecedent soil moisture conditions and drier than average El Niño winter weather.

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

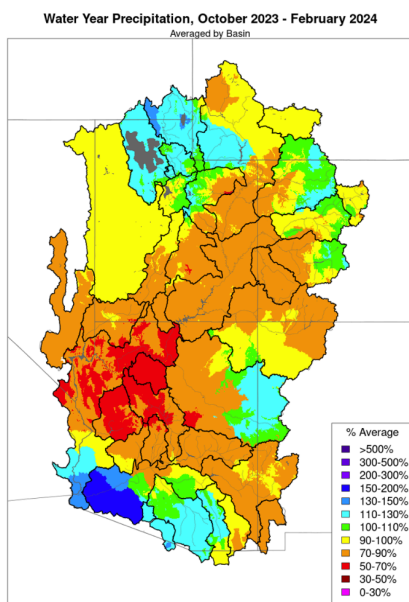
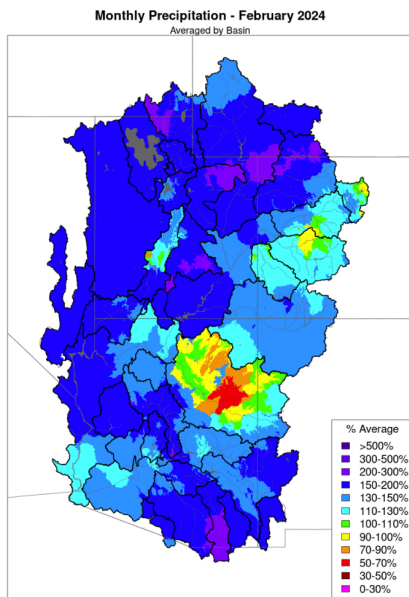


March 1, 2024 seasonal water supply forecast summary.

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. Water year 2024 precipitation (October-February) is generally near normal across northern areas of the UCRB and GB, below normal across southern areas, and summarized in the figures and table below.



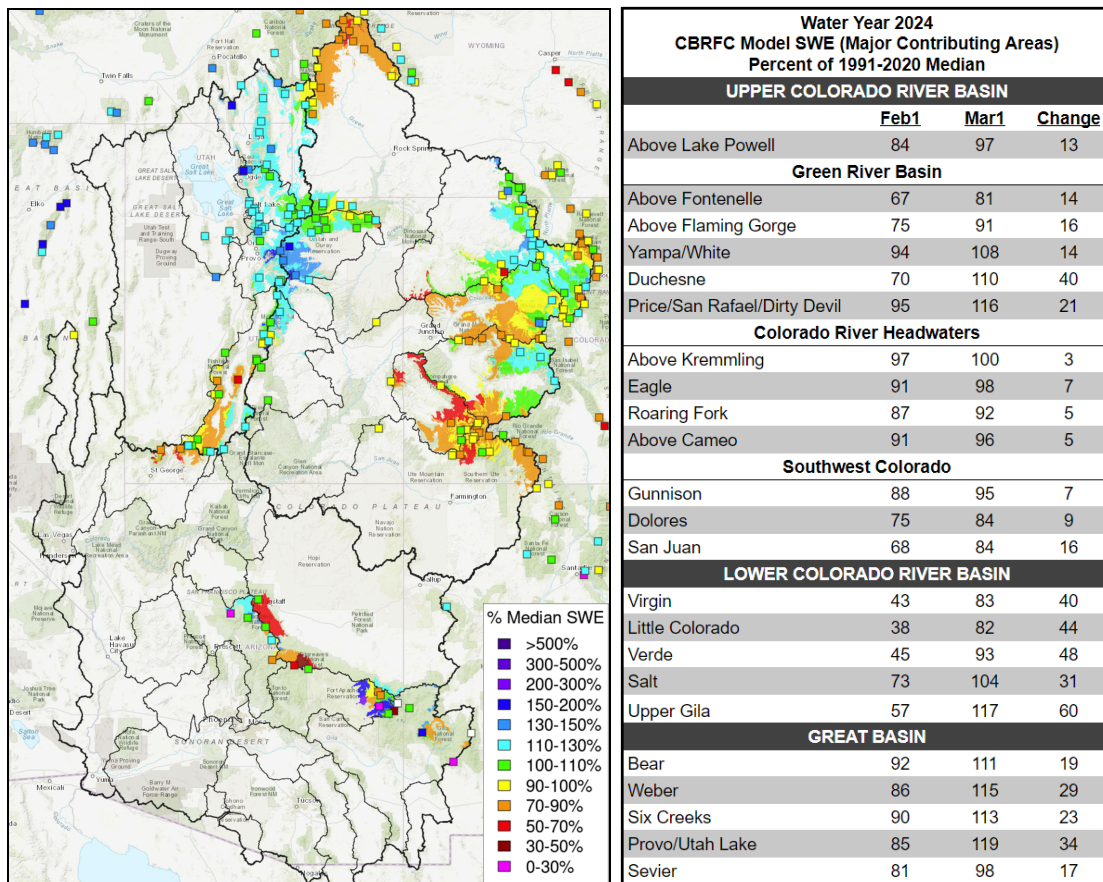
Water Year 2024 CBRFC Precipitation (Major Contributing Areas) Percent of 1991-2020 Average		
UPPER COLORADO RIVER BASIN		
	Feb	Oct-Feb
Above Lake Powell	137	96
Green River Basin		
Above Fontenelle	137	92
Above Flaming Gorge	153	99
Yampa/White	154	108
Duchesne	199	102
Price/San Rafael/Dirty Devil	154	104
Colorado River Headwaters		
Above Kremmling	112	95
Eagle	129	103
Roaring Fork	114	98
Above Cameo	118	98
Southwest Colorado		
Gunnison	114	95
Dolores	127	83
San Juan	138	82
LOWER COLORADO RIVER BASIN		
Virgin	154	83
Little Colorado	144	79
Verde	161	74
Salt	139	82
Upper Gila	163	88
GREAT BASIN		
Bear	163	111
Weber	181	111
Six Creeks	178	113
Provo/Utah Lake	170	106
Sevier	143	87

Snow

Snow water equivalent (SWE) conditions as a percent of normal (median) improved during February due to above normal precipitation during the month. UCRB March 1 SWE conditions range between 85-115% of normal and are more favorable across central areas including the Duchesne, White/Yampa, Colorado River headwaters, and Gunnison basins. SWE conditions remain below normal across northern (Upper Green headwaters) and southern (Dolores, San Juan) areas of the UCRB. January and February precipitation across UCRB central areas generally rank around the wettest five on record and has led to near normal March 1 SWE conditions above Lake Powell, which is a significant improvement since January 1, when UCRB SWE conditions were around 60% of normal.

LCRB March 1 model SWE conditions range between 80-115% of normal and improved considerably during February. The first 10 days of February were cold and wet across the LCRB, with high elevation snow accumulating, while drier and sunnier weather led to snowmelt during the last three weeks of the month. March 1 LCRB SWE conditions are most favorable across portions of the Salt and Upper Gila River Basins in higher elevation areas near the AZ/NM border.

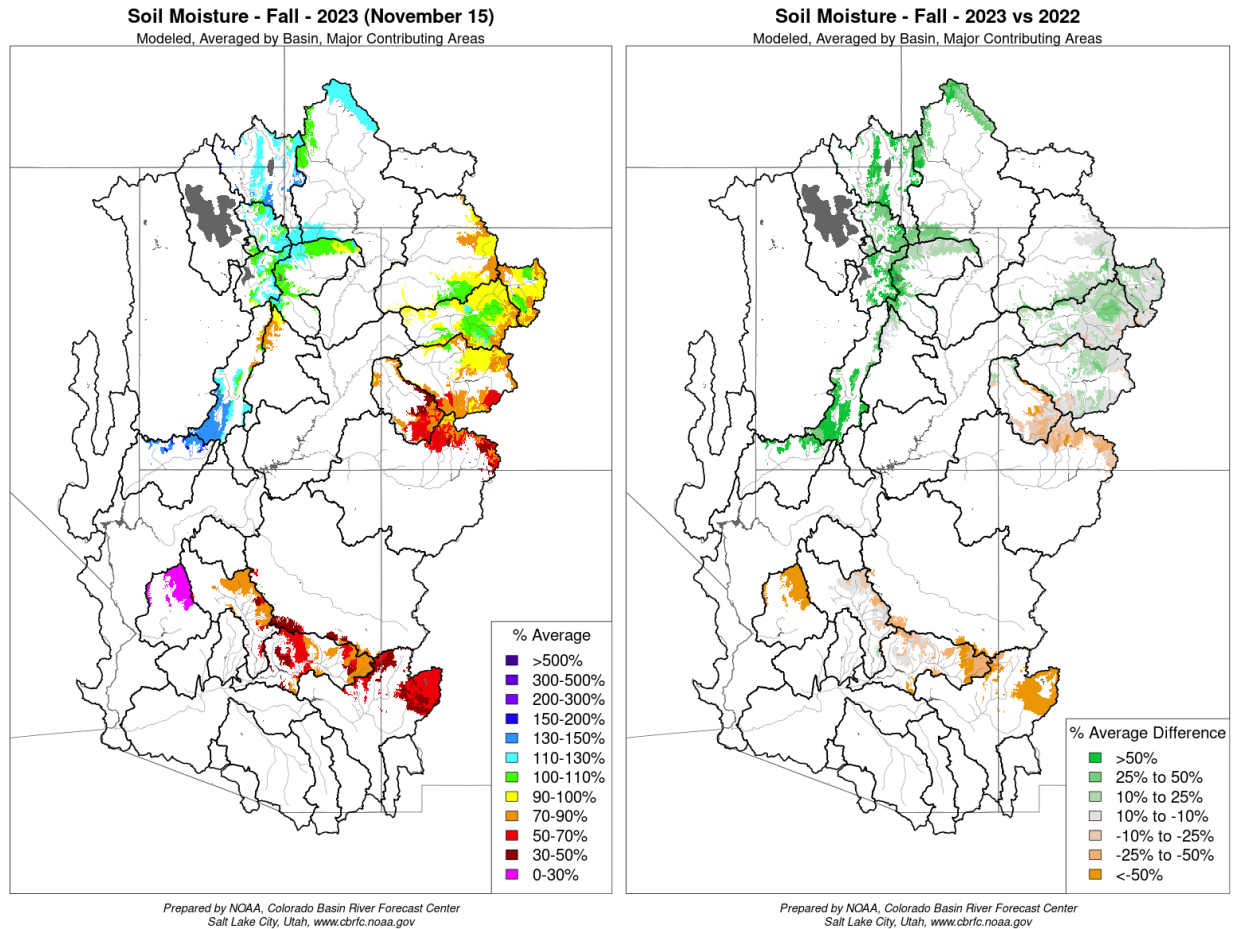
GB March 1 SWE conditions range between 100-120% of normal, a considerable improvement from January 1 SWE conditions that ranged between 45-70% of normal. SWE conditions are summarized in the figure and table below.



Left: March 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.



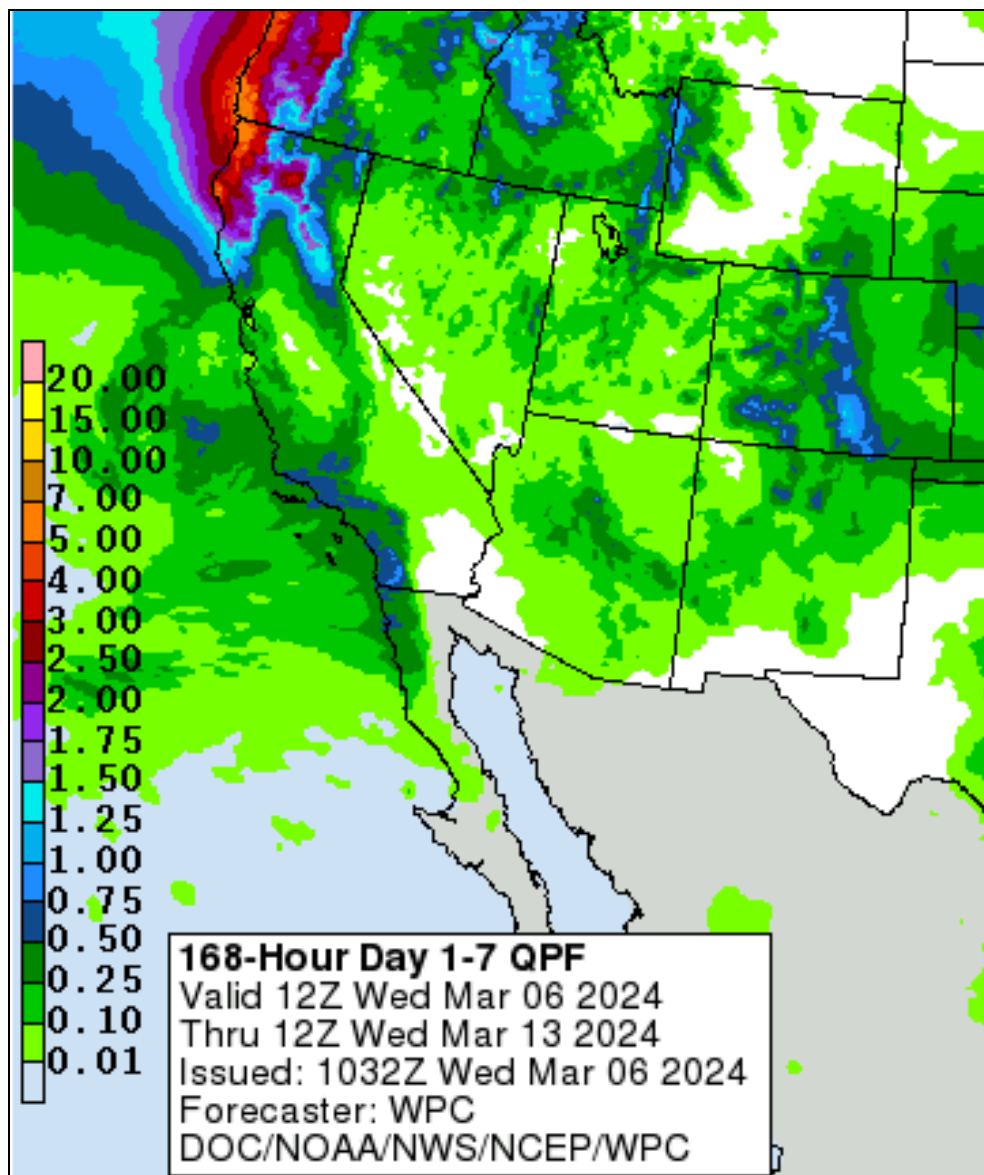
November 2023 CBRFC hydrologic model soil moisture conditions - as a percent of the 1991-2020 average (left) and compared to November 2022 (right).

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.

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

Upcoming Weather

A series of weather systems will bring precipitation to most of the area through Friday (March 8). However, precipitation will be light and significant accumulations are not expected. The first system will cross the northern portion of the area Wednesday and Thursday bringing around 0.25" of precipitation to the UCRB. A second weather system will move across the southern portion of the area on Thursday and Friday. Precipitation totals will be similar with around 0.25" of precipitation across the LCRB by Friday evening. There will be a break in the weather this weekend as high pressure briefly builds over the area bringing warmer and drier conditions. Unsettled weather will return early next week with precipitation again focusing on the UCRB. Weather models disagree on the timing and details of the storms, but there is general consensus that the higher elevations of the UCRB will see greater than 0.25" of precipitation with a 60% chance storm totals will exceed 1".



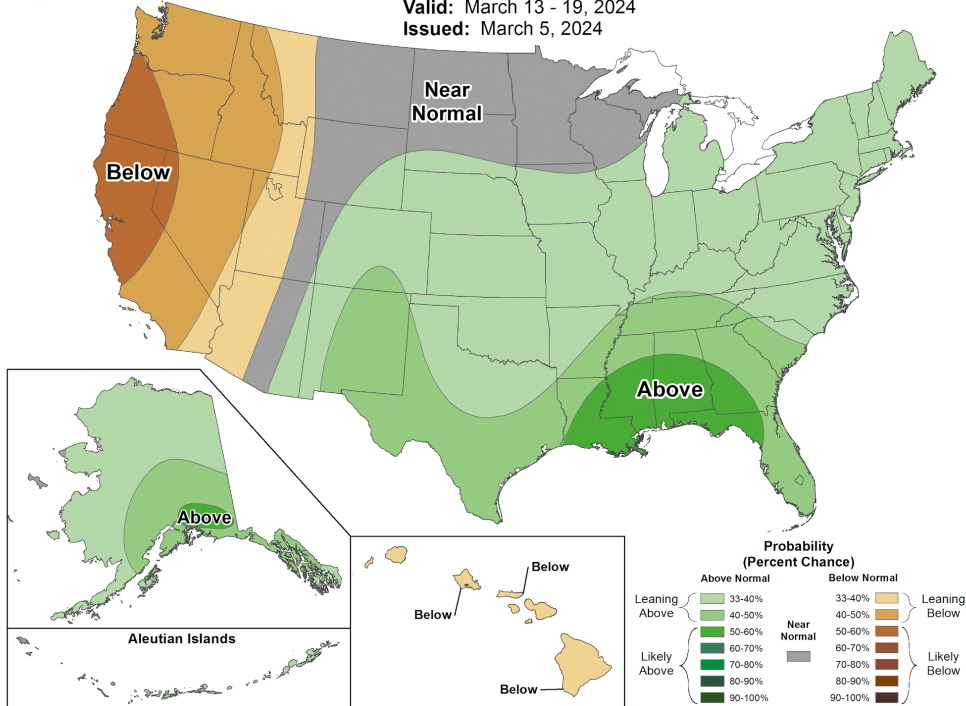
NWS Weather Prediction Center precipitation forecast for March 6-13, 2024.



8-14 Day Precipitation Outlook



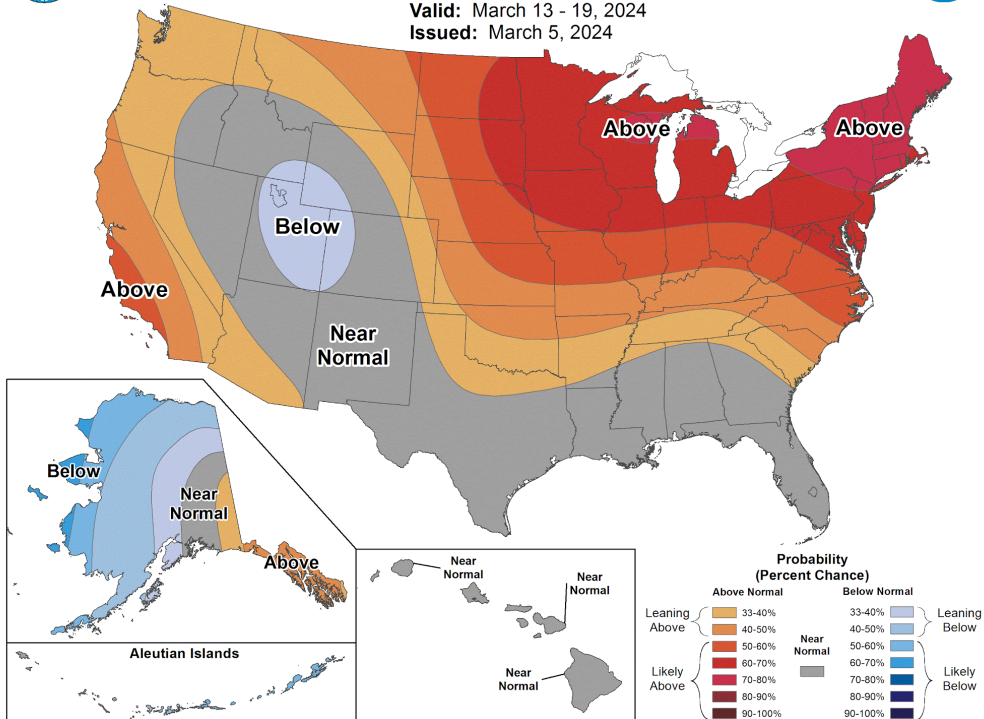
Valid: March 13 - 19, 2024
Issued: March 5, 2024



8-14 Day Temperature Outlook



Valid: March 13 - 19, 2024
Issued: March 5, 2024



Climate Prediction Center precipitation and temperature probability forecasts for March 13-19, 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