

February 16, 2023 Water Supply Forecast Discussion

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 Forecast Summary

Following above average December and January precipitation, weather during the first half of February has been much drier and less active across the CRB and GB. February 1-15 precipitation was well below average across most of the region and led to a decline in percent of normal snowpack conditions in most basins.

Despite below normal precipitation during the first half of the month, mid-February snow water equivalent (SWE) conditions remain near to much above normal across the CRB and GB. Mid-February CBRFC model SWE conditions are 95-175% of normal across the UCRB. SWE conditions across the LCRB are much above normal and exceeding expectations because La Niña conditions usually result in drier than average winter weather across the southwest US. Mid-February SWE conditions across the GB range from 135-175% of normal.

Water supply volume guidance across most of the UCRB and GB declined during the first half of February as a result of below normal precipitation. The exceptions are southeast UT and southwest CO, where precipitation from the mid-month storm led to modest increases to the water supply outlook.

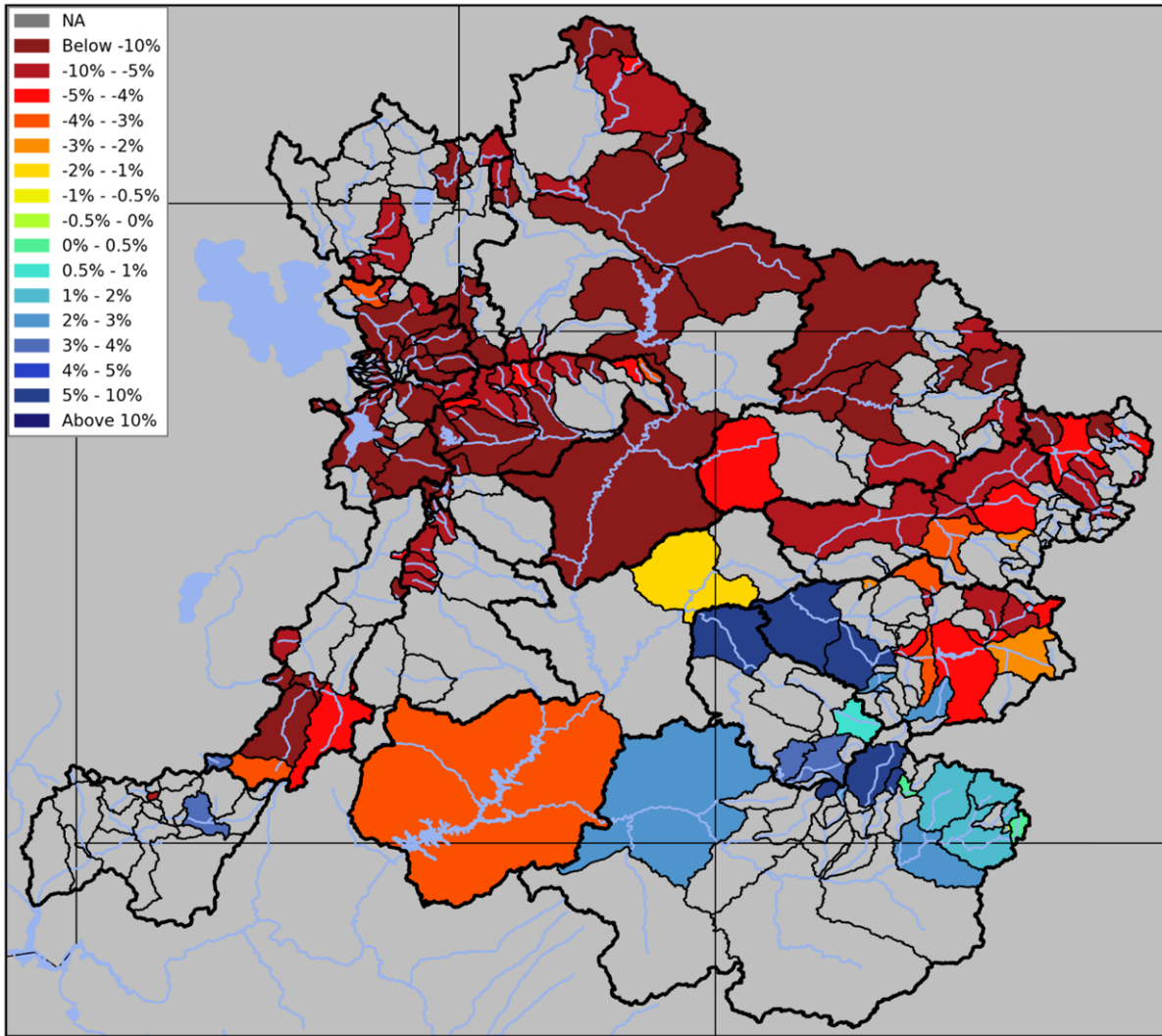
Mid-February forecasts of April-July unregulated inflow for some of the major reservoirs in the Upper Colorado River Basin include Fontenelle Reservoir 620 KAF (84% average), Flaming Gorge 830 KAF (86%), Blue Mesa Reservoir 650 KAF (102%), McPhee Reservoir 315 KAF (124%), and Navajo Reservoir 620 KAF (98%). The Lake Powell inflow forecast is 7.5 MAF (117% of average) and did not change from the early February forecast.

An area of high pressure is currently building over the Western US, which will bring quiet weather to the region through this weekend. During this period, no precipitation is forecast, and temperatures will remain 5-15 degrees below normal for this time of the year. By the end of the weekend, the overall weather pattern will become more active for the Western US as a series of short-wave troughs move along the northern edge of the region to start next week, bringing chances of precipitation for the GB and UCRB. Weather during the last week of February is expected to remain active with increased odds of above average precipitation and below average temperatures.

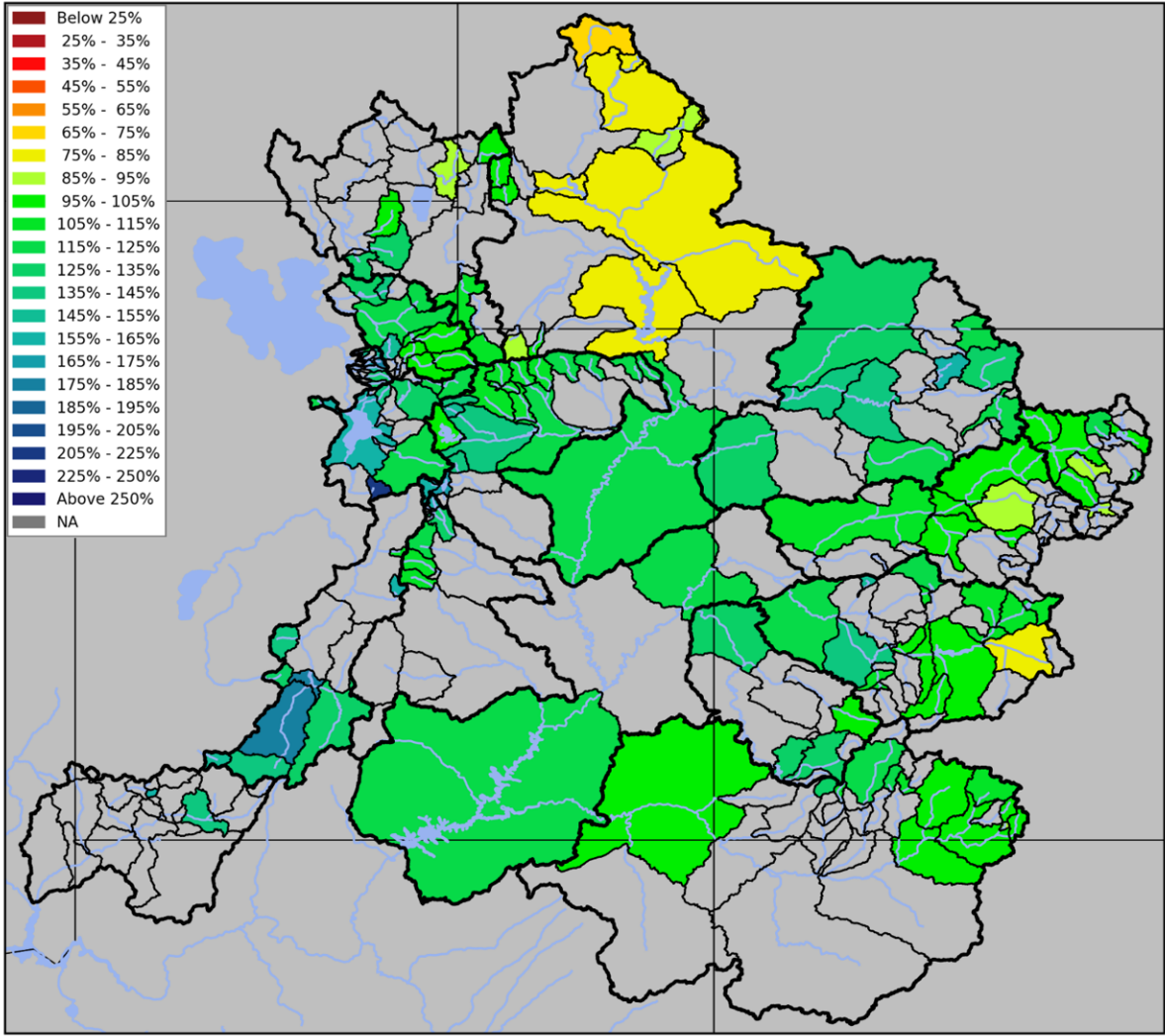
Seasonal Water Supply Forecasts

February 15 water supply guidance (% of normal) by basin:

| April-July Water Supply Forecast Guidance Ranges Percent of 1991-2020 Average | |
|--|------------------------------|
| UPPER COLORADO RIVER BASIN | |
| <u>Basin</u> | <u>Forecast Range</u> |
| Lake Powell | 117 |
| Green River Basin | |
| Upper Green | 75-100 |
| Duchesne | 100-155 |
| Yampa/White | 120-160 |
| Price/San Rafael/Dirty Devil | 105-170 |
| Colorado River Headwaters | |
| Above Kremmling | 90-120 |
| Kremmling to Cameo | 95-105 |
| Southwest Colorado | |
| Gunnison | 80-150 |
| Dolores | 105-135 |
| San Juan | 90-130 |
| GREAT BASIN | |
| Bear | 95-130 |
| Weber | 100-150 |
| Six Creeks | 115-180 |
| Provo/Utah Lake | 120-165 |
| Sevier | 115-185 |



Change in the April-July runoff volume forecast guidance from February 1 to February 15, 2023
 (Change in April-July percent of average)



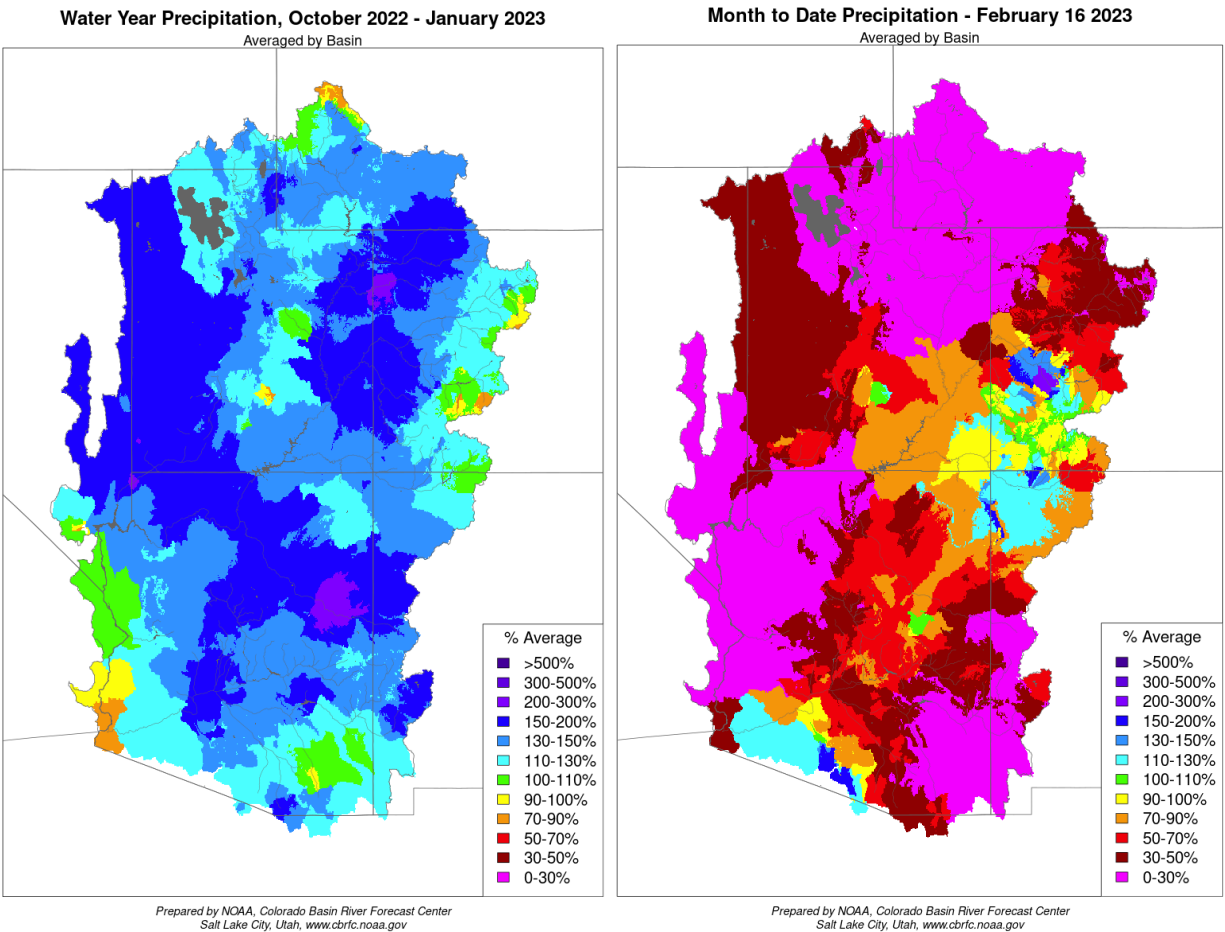
April-July runoff volume guidance as of February 15, 2023
(percent of 1991-2020 average)

For specific site water supply forecasts click [here](#).

Water Supply Discussion

Water Year 2023 Weather/Precipitation

Following above average December and January precipitation, weather during the first half of February has been much drier and less active across the CRB and GB. A February 5-8 storm system moved through the GB and UCRB and delivered modest precipitation amounts (0.50-1.0") to higher elevations across central UT, southwest WY, and northwest CO. A more potent storm system and associated cold front moved through the region around mid-February and brought 1.0-2.5" of precipitation (mostly snow) across central AZ and far southwest CO, with lower amounts across northern basins. February 1-15 precipitation (figure and table below) was well below normal across most of the region and is summarized in the figures and table below.



October-January (left) and February 1-15 (right) percent of average precipitation.

For CBRFC seasonal precipitation maps click [here](#).

For CBRFC monthly precipitation maps click [here](#).

| Water Year 2023 CBRFC Precipitation (Significant Runoff Areas) Percent of 1991-2020 Average | | |
|--|----------------|-------------------|
| UPPER COLORADO RIVER BASIN | | |
| | Oct-Jan | Feb1-Feb15 |
| Above Lake Powell | 123 | 54 |
| Green River Basin | | |
| Above Fontenelle | 97 | 14 |
| Above Flaming Gorge | 110 | 16 |
| Yampa/White | 140 | 37 |
| Duchesne | 132 | 14 |
| Price/San Rafael/Dirty Devil | 141 | 32 |
| Colorado River Headwaters | | |
| Above Kremmling | 106 | 36 |
| Eagle | 110 | 43 |
| Roaring Fork | 117 | 57 |
| Above Cameo | 114 | 44 |
| Southwest Colorado | | |
| Gunnison | 119 | 79 |
| Dolores | 132 | 92 |
| San Juan | 119 | 92 |
| LOWER COLORADO RIVER BASIN | | |
| Virgin | 167 | 63 |
| Little Colorado | 148 | 61 |
| Verde | 153 | 56 |
| Salt | 137 | 53 |
| Upper Gila | 138 | 28 |
| GREAT BASIN | | |
| Bear | 125 | 26 |
| Weber | 134 | 23 |
| Six Creeks | 142 | 29 |
| Provo/Utah Lake | 148 | 23 |
| Sevier | 143 | 51 |

Snowpack

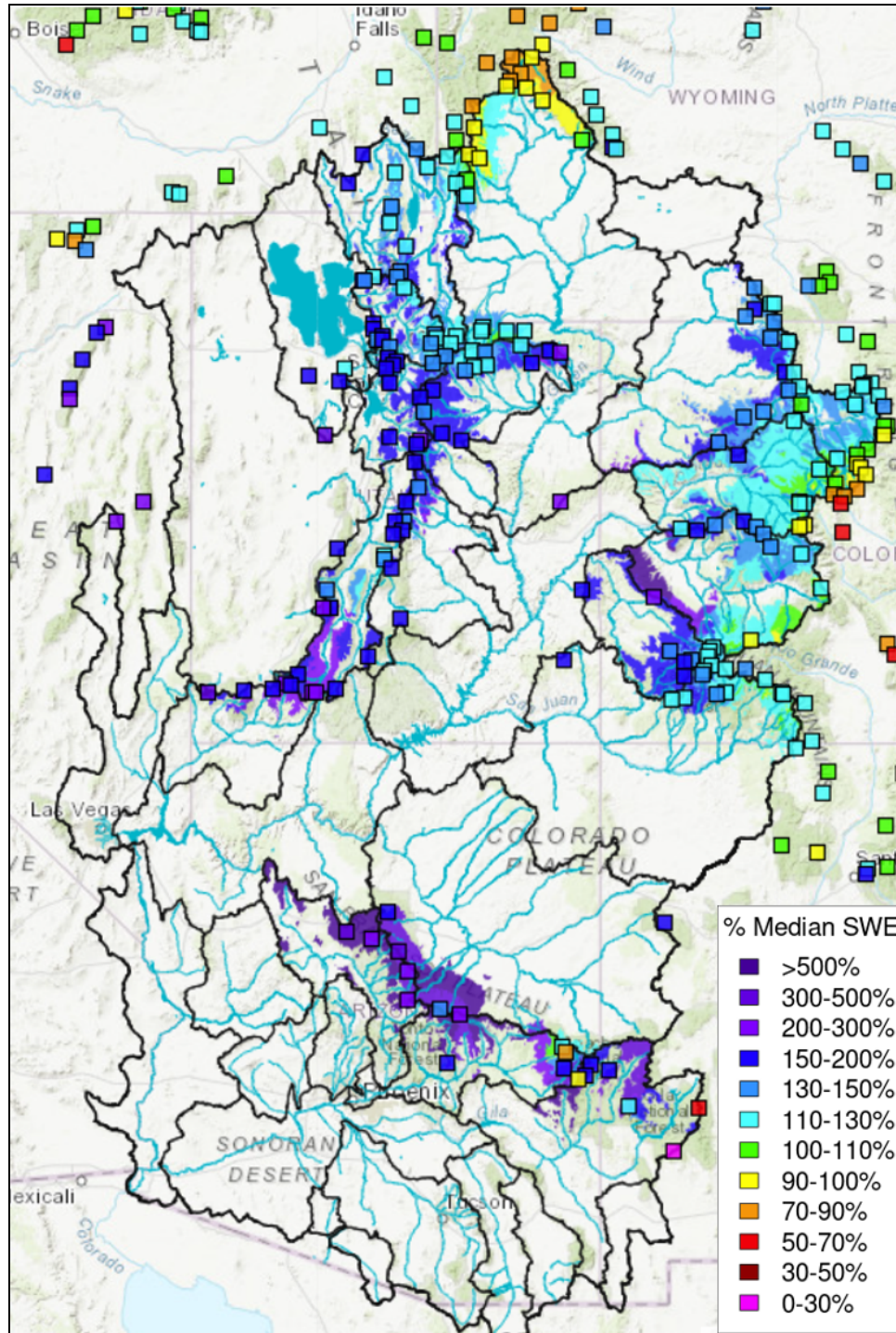
Despite below normal precipitation during the first half of the month, mid-February snow water equivalent (SWE) conditions remain near to much above normal across the CRB and GB. Mid-February CBRFC model SWE conditions are 95-175% of normal across the UCRB. SWE conditions along Colorado's Western Slope are more favorable in the northern (White/Yampa) and southern (Gunnison, Dolores, San Juan) basins compared to Colorado River headwater basins in west-central CO. Most SNOTEL stations in the White/Yampa River Basin are reporting mid-February SWE values that rank in the top five of the station's record and above the 90th percentile. Mid-February snowpack conditions are least favorable in the far northern Upper Green River Basin above Fontenelle Reservoir, where SWE conditions are 90-95% of normal.

Across the LCRB, percent of normal SWE can be highly variable due to percentages being computed using smaller values, and precipitation type (rain vs. snow) having a large impact on percent of normal conditions. This year is a good example as winter temperatures across the LCRB have been below normal with more snow than normal observed at lower elevations leading to large percent of normal snowpack conditions. With that said, mid-February CBRFC model SWE conditions across the LCRB are much above normal and exceeding expectations because La Niña conditions usually result in drier than average winter weather across the southwest US.

More storms and precipitation events have targeted UT this winter compared to southwest WY, and western CO, and SWE conditions in the GB generally reflect better conditions when compared to the UCRB. Mid-February SWE conditions across the GB range from 135% of normal in the Bear River Basin to 175% of normal in the Provo/Utah Lake Basin. A majority of SNOTEL stations in UT are reporting mid-February SWE values that rank in the top five of the station's record and above the 85th percentile.

February SWE conditions are summarized in the table and figure below.

| Water Year 2023 | | | |
|---|-------------|--------------|---------------|
| CBRFC Model SWE (Significant Runoff Areas) | | | |
| Percent of 1991-2020 Median | | | |
| UPPER COLORADO RIVER BASIN | | | |
| | Feb1 | Feb16 | Change |
| Above Lake Powell | 144 | 131 | -13 |
| Green River Basin | | | |
| Above Fontenelle | 106 | 92 | -14 |
| Above Flaming Gorge | 126 | 109 | -17 |
| Yampa/White | 163 | 144 | -19 |
| Duchesne | 174 | 149 | -25 |
| Price/San Rafael/Dirty Devil | 193 | 172 | -21 |
| Colorado River Headwaters | | | |
| Above Kremmling | 126 | 111 | -15 |
| Eagle | 120 | 107 | -13 |
| Roaring Fork | 126 | 117 | -9 |
| Above Cameo | 129 | 116 | -13 |
| Southwest Colorado | | | |
| Gunnison | 137 | 130 | -7 |
| Dolores | 165 | 155 | -10 |
| San Juan | 124 | 121 | -3 |
| LOWER COLORADO RIVER BASIN | | | |
| Virgin | 263 | 220 | -43 |
| Little Colorado | 269 | 327 | 58 |
| Verde | 541 | 625 | 84 |
| Salt | 168 | 174 | 6 |
| Upper Gila | 215 | 228 | 13 |
| GREAT BASIN | | | |
| Bear | 156 | 134 | -22 |
| Weber | 169 | 148 | -21 |
| Six Creeks | 175 | 157 | -18 |
| Provo/Utah Lake | 191 | 175 | -16 |
| Sevier | 183 | 160 | -23 |



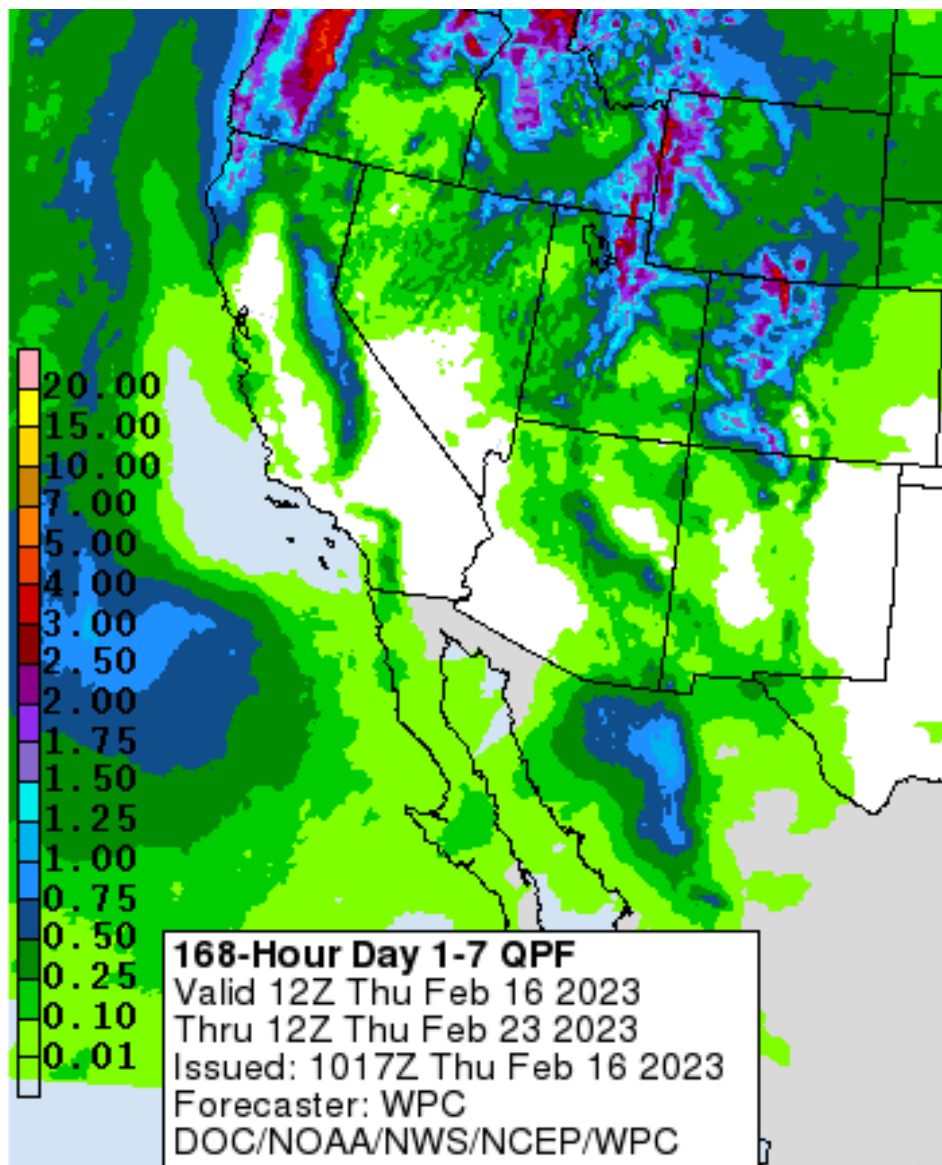
February 16, 2023 percent median SWE -
 NRCS SNOTEL observed (squares) and CBRFC hydrologic model significant runoff areas.

For updated SNOTEL information refer to click [here](#).

For CBRFC hydrologic model snow click [here](#).

Upcoming Weather

An upper-level area of high pressure is currently building over the Western US, which will bring quiet weather to the region through this weekend. During this period, no precipitation is forecast, and temperatures will remain 5-15 degrees below normal for this time of the year. Once the upper-level ridge moves to the east of the region by the end of the weekend, the overall weather pattern will become more active for the Western US. Initially, a series of short-wave troughs will move along the northern edge of the region to start next week, bringing chances of precipitation for the GB and UCRB. Moving into mid-week and beyond, a long-wave troughing pattern will become entrenched over the Western US, providing favorable opportunities for periods of precipitation across the region. This weather pattern will allow for increased odds of below average temperatures and above average precipitation, as indicated by the Climate Prediction Center graphics below.



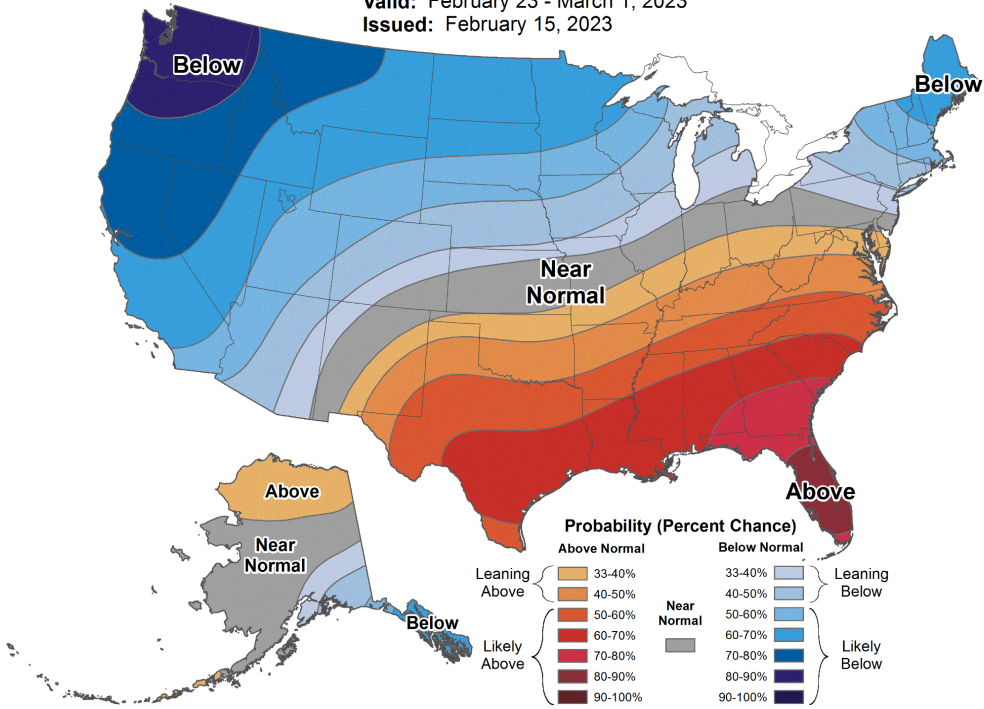
Weather Prediction Center precipitation forecast for February 16-23, 2023.



8-14 Day Temperature Outlook



Valid: February 23 - March 1, 2023
Issued: February 15, 2023



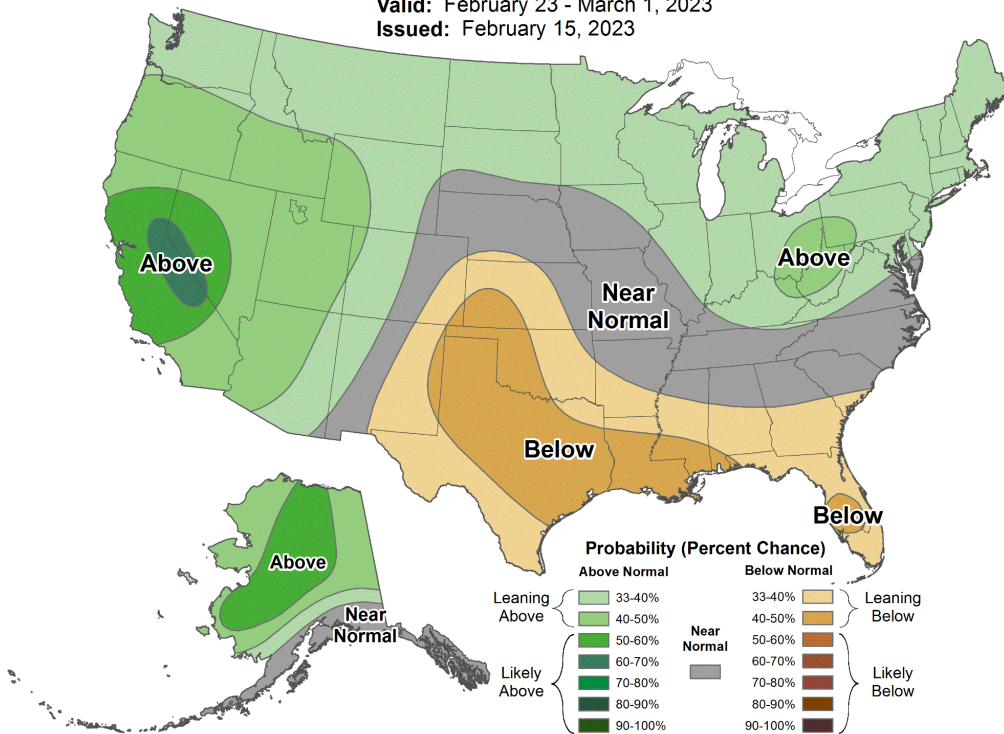
NWS Climate Prediction Center temperature probability forecast for February 23 - March 1, 2023.



8-14 Day Precipitation Outlook



Valid: February 23 - March 1, 2023
Issued: February 15, 2023



NWS Climate Prediction Center precipitation probability forecast for February 23 - March 1, 2023.

For CBRFC's beginning of the month online publication that contains basin conditions, summary graphics, and end of month reservoir content tables, refer to the following links.

Basin Conditions and Summary Graphics

[Green River Basin](#)

[Upper Colorado River Basin](#)

[San Juan River Basin](#)

[Great Salt Lake Basin](#)

[Sevier River Basin](#)

[Virgin River Basin](#)

End Of Month Reservoir Content Tables

[Green River Basin](#)

[Upper Colorado River Basin](#)

[San Juan River Basin](#)

[Great Salt Lake Basin](#)

[Sevier Basin](#)

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