

February 1, 2015 Water Supply Forecast Discussion

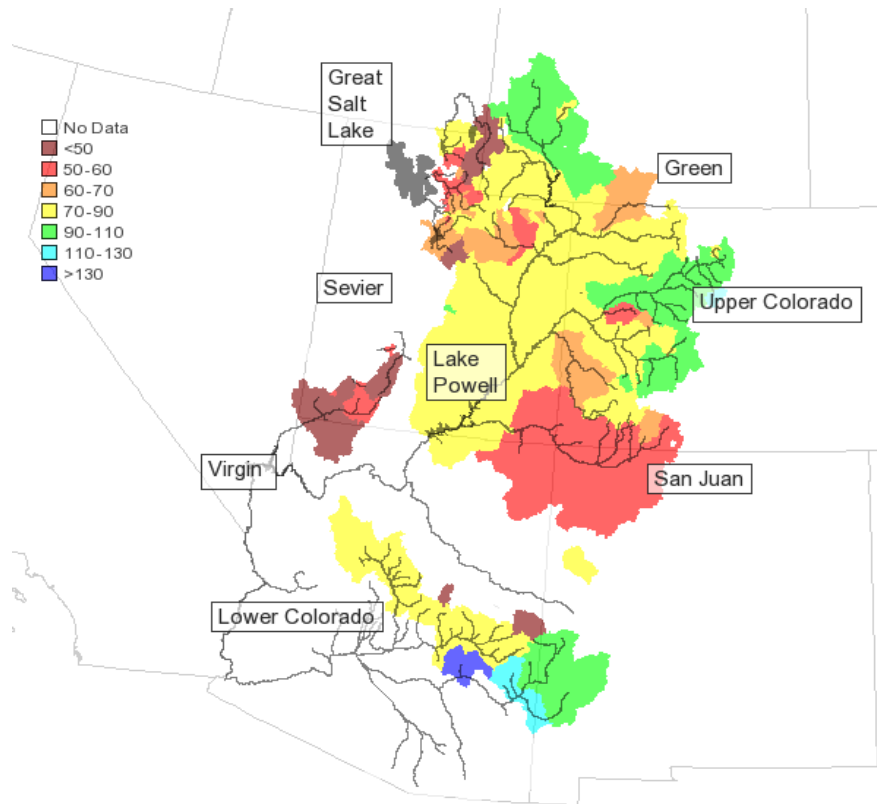
The [Colorado Basin River Forecast Center \(CBRFC\)](#) geographic forecast area includes the Upper Colorado River Basin, Lower Colorado River Basin, and Eastern Great Basin.

Seasonal Water Supply Forecasts:

Quick Summary:

In the Upper Colorado River Basin, above average April-July runoff volumes are only anticipated in the Blue River drainage of the Colorado River headwaters and Green River Basin headwaters above Warren Bridge. Near to slightly below average runoff volumes are expected elsewhere in the Green River Basin above Flaming Gorge Reservoir, Colorado River above Kremmling, and Gunnison River Basin above Blue Mesa Reservoir. Below average runoff volumes are expected in all other areas. Lowest percent of average volumes are expected in the San Juan River Basin above Navajo Reservoir, Virgin River Basin, parts of the Duchesne River Basin, and in the Great Basin, particularly downstream from headwater areas and in lower elevation basins.

In the Lower Colorado River Basin, February-May volumes are forecast near to above median in the Gila River Basin, with below median volumes expected in the Salt and Verde River Basins. These forecasts take into account the possibility of El Nino conditions developing over the next couple of months and improved soil moisture conditions in the Gila River Basin due to recent storms.



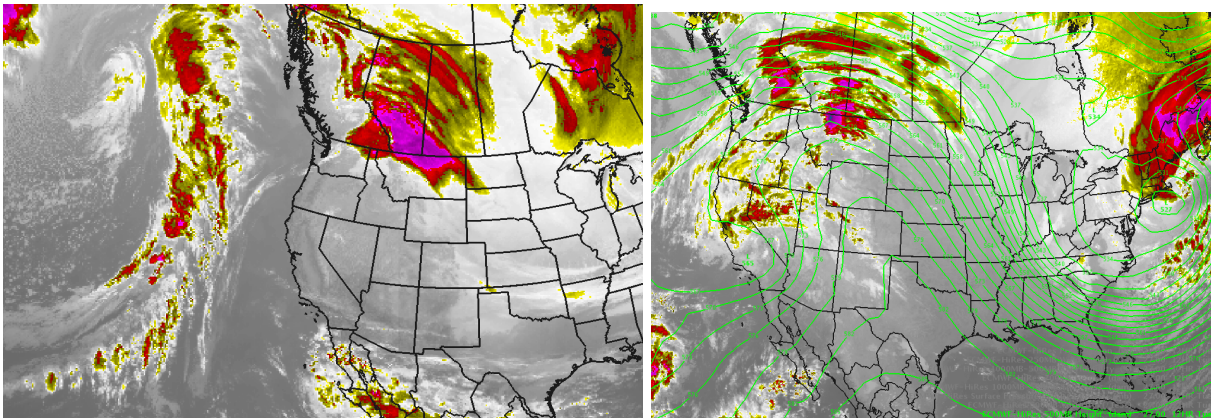
Upper Colorado Basin: April-July runoff volumes as a percent of 1981-2010 average
Lower Colorado Basin (Arizona): February-May volumes as a percent of 1981-2010 median

[Click here for specific site water supply forecasts](#)

Water Supply Discussion

Weather Synopsis:

January was characterized by a persistent ridge of high pressure over the western U.S. At times this high pressure ridge would retrograde closer to the west coast or weaken in response to storm systems that affected primarily the Lower Colorado River Basin. However high pressure would eventually rebound. This resulted in above average temperatures over the entire CBRFC forecast area for January with dry conditions over the northern half of the basin and wetter conditions to the south.



Left Image: A satellite image from January 7th shows a high pressure ridge and dry conditions over the area.

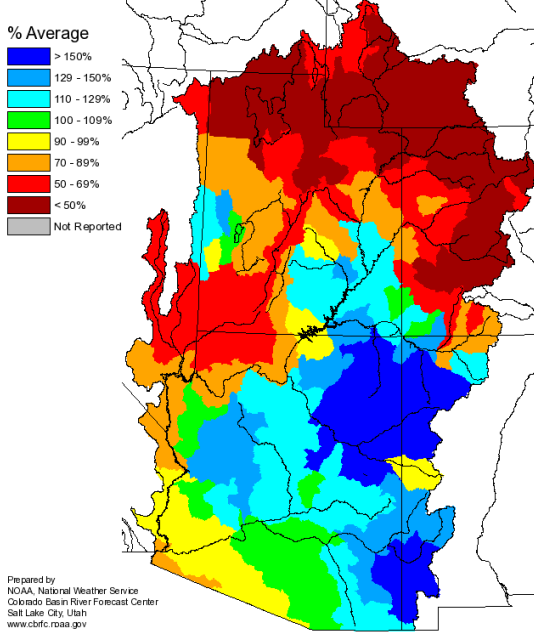
Right Image: A satellite image from Jan 27th shows a weakening storm system impacting the ridge. This storm system brought precipitation to the Lower Colorado River Basin.

Precipitation and Temperatures:

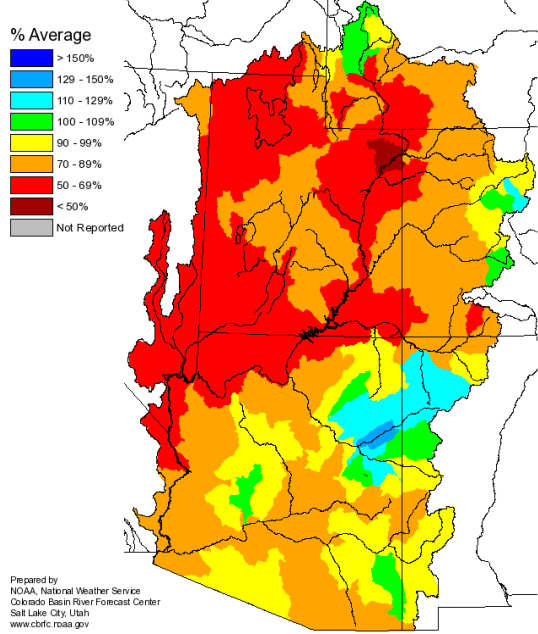
Precipitation was much below average over the entire eastern Great Basin and most of the Upper Colorado River Basin in January. From the convergence of the Green and Colorado Rivers in southeast Utah, south to include the Little Colorado River, Gila River, and Salt River Basins conditions were wetter. This was primarily due to a storm moving through this area late in the month. The San Juan River Basin had near to above average precipitation in lower elevations below Navajo Reservoir; however, in the water supply runoff producing areas below average precipitation occurred. The Virgin and Sevier River Basins also received much below average precipitation in January.

Seasonal October - January precipitation is below average over most of the CBRFC forecast area. Those areas with near or slightly above average seasonal precipitation are limited and include some of the Colorado River headwater basins above Kremmling, the Gunnison River Basin above Gunnison, the Upper Green River Basin above Fontenelle, and parts of the Little Colorado River Basin. Much below average seasonal precipitation has been received over much of the Great Basin and the Green River Basin below Fontenelle extending into Utah that includes the Duchesne River Basin. The Virgin River Basin of southwest Utah has also had much below average precipitation for the October - January period.

Monthly Precipitation for January 2015
(Averaged by Hydrologic Unit)



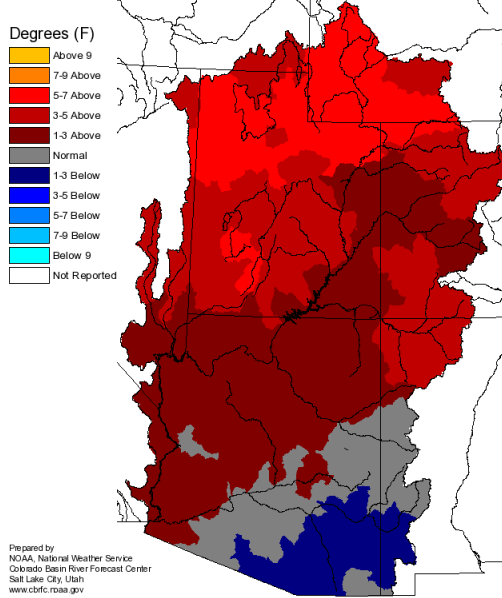
Seasonal Precipitation, October 2014 - January 2015
(Averaged by Hydrologic Unit)



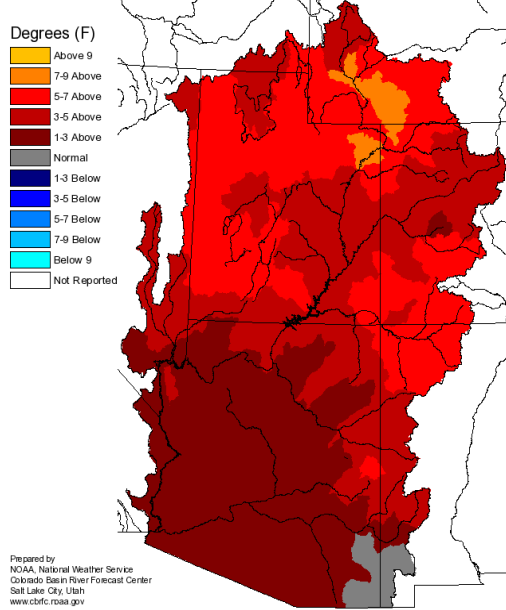
Monthly and seasonal precipitation graphics

In general both maximum and minimum temperatures were much above average for January with several daily records established. Precipitation fell in the form of rain in many areas that typically experience snow during the month of January. The warm temperatures and rain in areas that typically receive snow resulted in an increase in base streamflow during January in several areas.

Monthly Max Temp Deviation for January 2015
(Averaged by Hydrologic Unit)



Monthly Min Temp Deviation for January 2015
(Averaged by Hydrologic Unit)



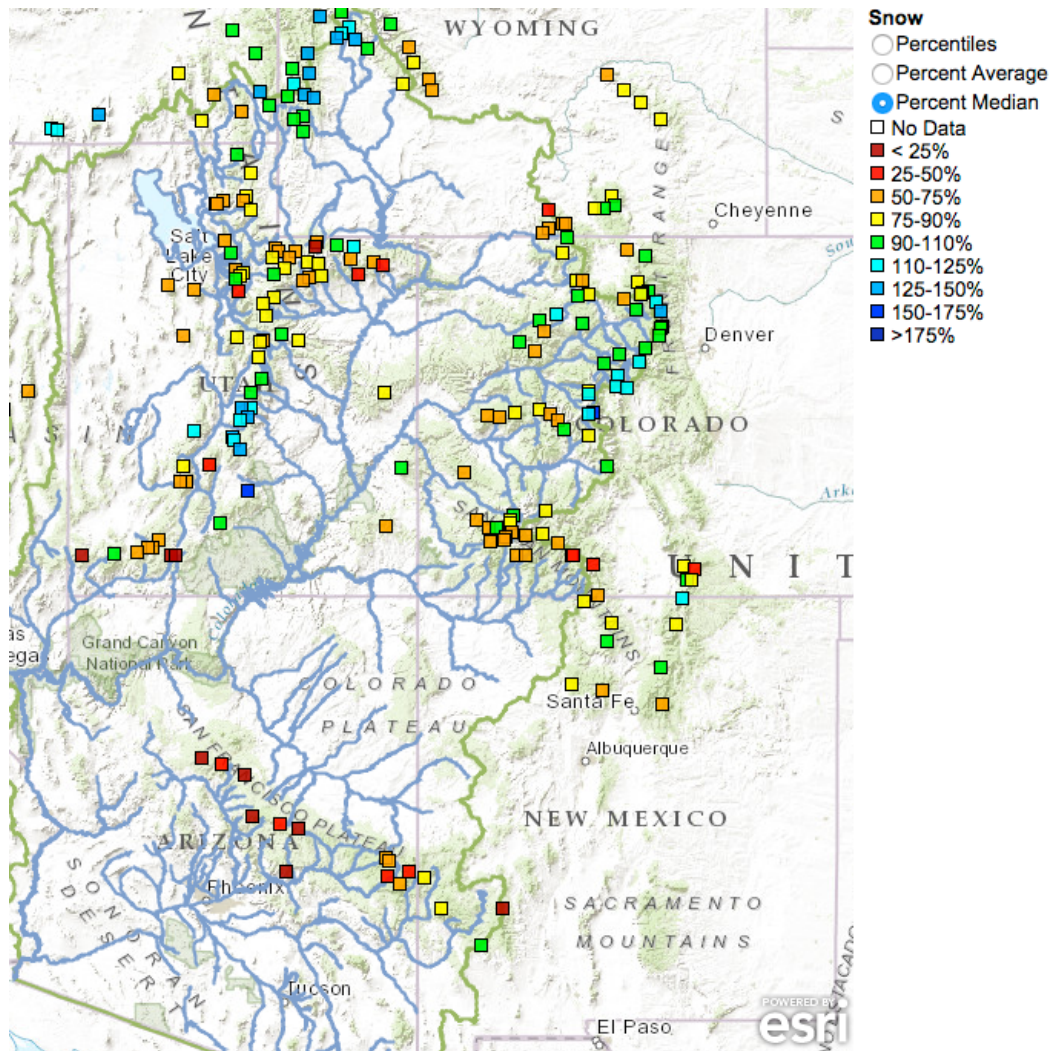
Monthly maximum and minimum temperature departure from average.

Snowpack:

Snow conditions, as a percent of median, decreased nearly everywhere between early January and February. There are still several areas with near or above average snow as of early February. These include the Green River Basin above Fontenelle, Colorado River headwaters above Kremmling, a few sites in the upper Gunnison River Basin and several smaller river basins in south central Utah that drain into the Colorado River above Lake Powell. Elsewhere conditions are generally below or much below median with several sites in the Duchesne River Basin, San Juan River Basin, Virgin River Basin, and Lower Colorado River Basin below 50 percent of average for early February.

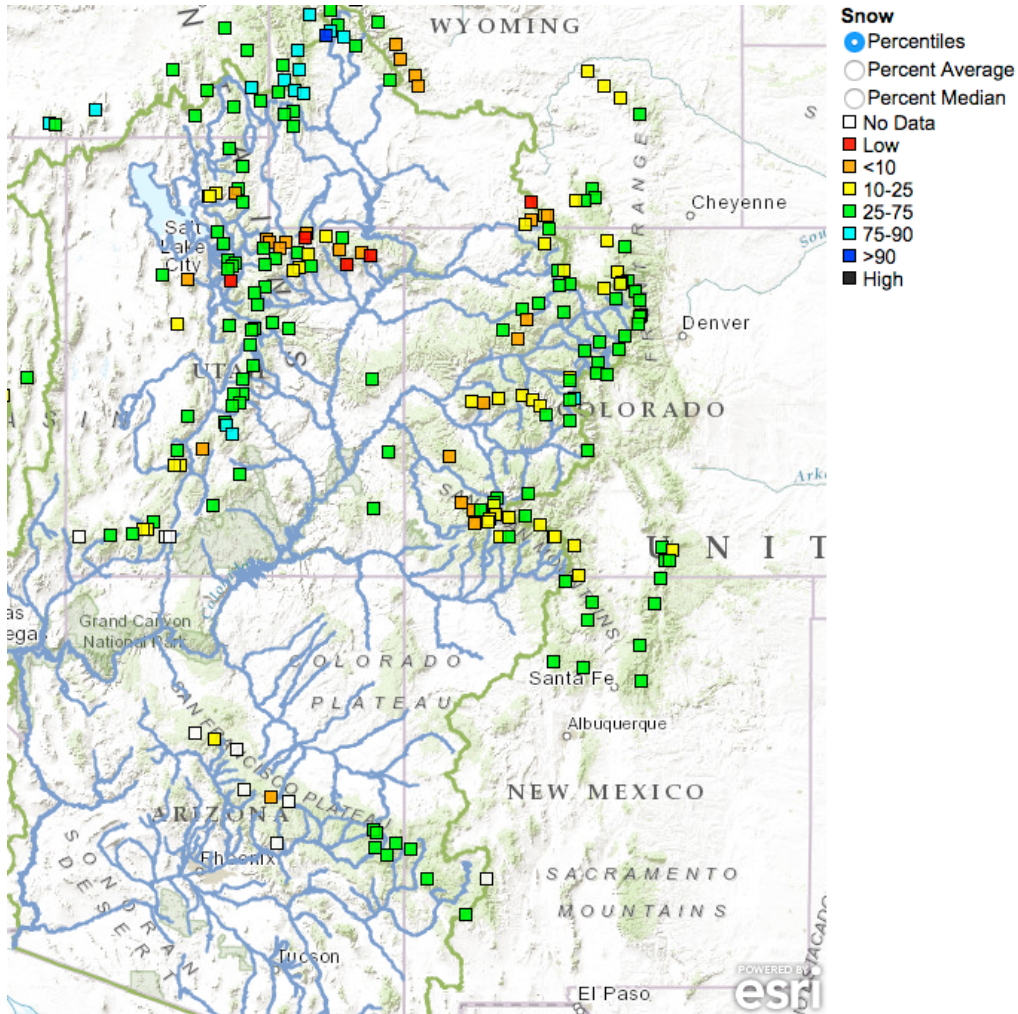
Snow conditions also vary within individual river basins. Some of this can be attributed to unseasonably warm conditions during autumn storms as well as January storms where rain fell in areas that typically accumulate snow during those times.

The map below shows conditions of SNOTEL sites across the CBRFC area as of February 3, 2015. For more details and daily updates, please refer [here](#).



Percent median snow conditions as of February 3, 2015

The snow percentile map displayed below indicates where the current snow measurement ranks in the historical record for each site. In the Duchesne River Basin, several sites (displayed in red) are at their lowest in over 30 years of record as of February 3, 2015. Many sites in other river basins in Colorado and Utah are in the bottom 10 percent (displayed in orange) of their historical record.



Snow Percentile Map: Historical ranking as of February 3, 2015

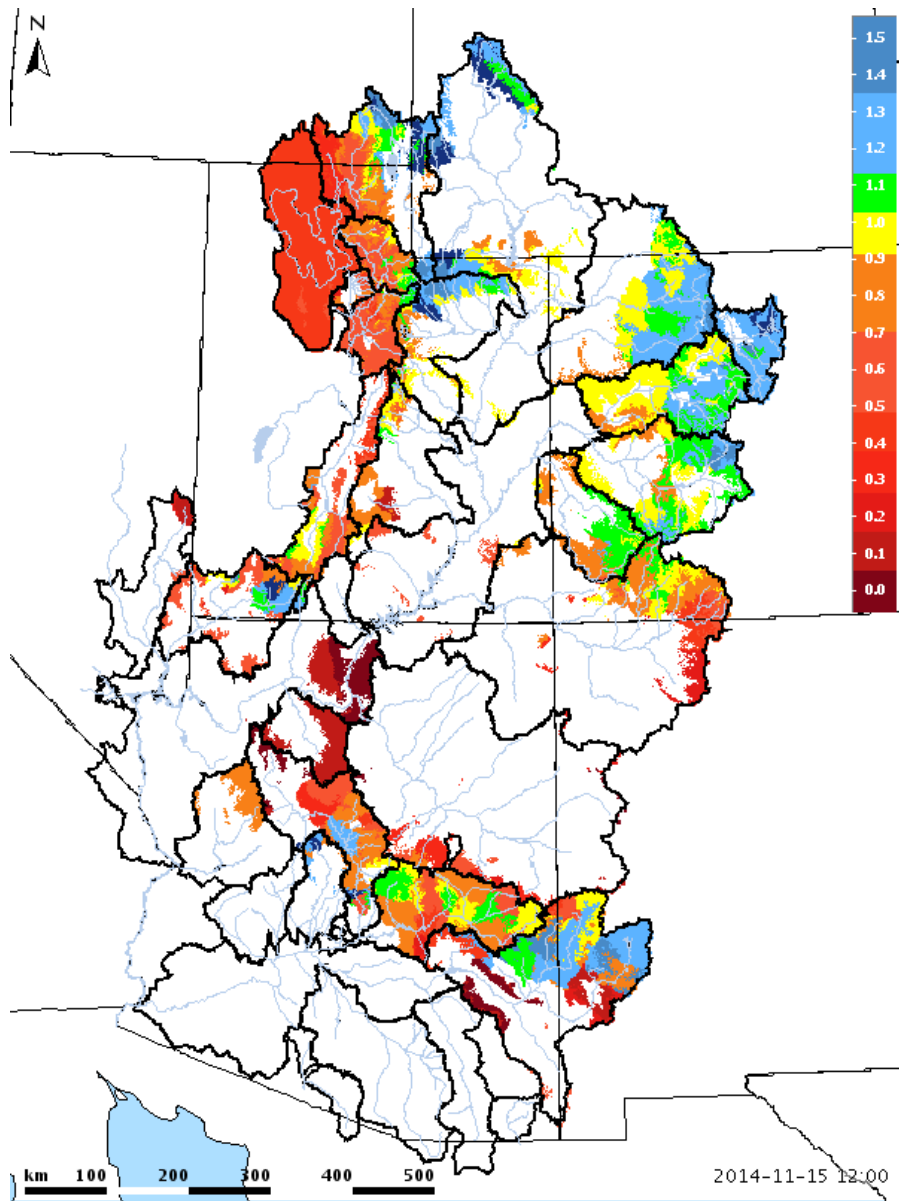
Soil Moisture:

Soil moisture conditions in the higher elevation headwater areas are important entering the winter, prior to snowfall, as it influences the efficiency of the snowmelt runoff the following spring. Modeled soil moisture conditions as of November 15th were above average over much of the Green River Basin above Fontenelle, headwaters of the Yampa and White River Basins, and the Colorado River headwaters above Kremmling. Above average soil moisture also existed over much of the Uinta Mountain range that drains into the Bear River, Duchesne River, and Green River above Flaming Gorge.

Soil moisture conditions were below average over the lower Bear River, Weber River, Provo River, and Six Creeks Basins. The Sevier River, San Juan River, and most of the Virgin River also had below average soil moisture conditions entering the winter. In Arizona, conditions varied but most areas were below average. However, the

January-May runoff volumes in those areas are primarily influenced by the frequency and magnitude of winter rain events and soil moisture conditions will change throughout the winter season.

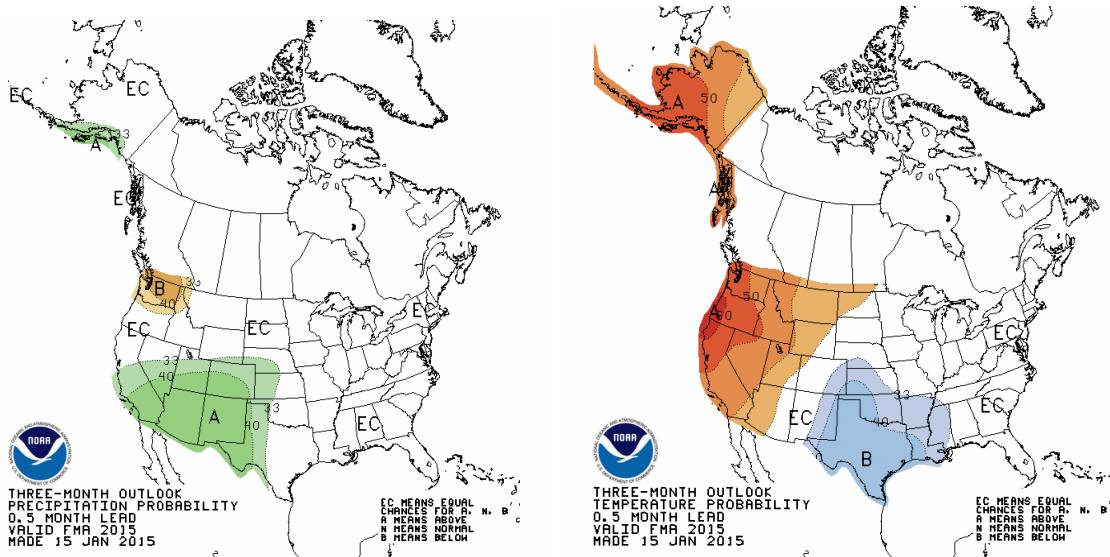
In the map below areas in blue are above the historical model soil moisture average while those in the red and orange are below average. Only the higher elevation areas are displayed. The areas in white are not included because they contribute very little to the runoff volumes.



Climate Outlook:

The El Niño Southern Oscillation (ENSO) condition continues to be neutral. However, positive sea surface temperatures anomalies exist across most of the Pacific Ocean. Climate models indicate a 50%-60% chance that weak El Niño conditions will develop through March. Beyond that, ENSO neutral conditions are most likely through the summer months. The Climate Prediction Center indicates enhanced chances of above normal precipitation over much of the CBRFC forecast area during the February-April period. However, equal chances of above or below

average precipitation is indicated for the extreme northern Great and the Green River Basins of Wyoming during same period. There is an enhanced chance of above normal temperatures over the eastern Great Basin and much of the Green River Basin with equal chances of above or below normal temperatures elsewhere during the February-April period.



Conclusion:

Dry conditions in January in the Upper Colorado River Basin and eastern Great Basins resulted in a decrease in forecast April-July runoff volumes. Snow conditions, as a percent of median, decreased nearly everywhere over the past month. A few areas still have near to above average snow conditions and these include the Green River Basin above Fontenelle, the Colorado River headwaters above Kremmling, and tributaries of the Colorado River in south central Utah.

Highest runoff volumes as a percent of average are forecast in areas where above average soil moisture conditions existed entering the winter season and current snow conditions are near or above average. These areas include the Green River Basin above Fontenelle and Colorado River headwaters above Kremmling. Below average soil moisture and below average snow have combined for the lowest runoff volumes in parts of the San Juan Basin, Virgin River Basin, and Great Basin of northern Utah. This is especially noticeable in lower elevation river basins that have been receiving rain instead snow at times this winter due to unseasonably warm temperatures.

In the Lower Colorado River Basin soil moisture conditions improved in the Gila River Basin due to late January rain. Near to above median February-May volumes are forecast for the Gila River Basin. Conditions are less favorable in the Salt and Verde River Basins where less precipitation occurred, soils are drier, and snowpack is either minimal or nonexistent. Below median February-May volumes are expected in the Salt and Verde River Basins.

End Of Month Reservoir Content Tables

- [Green River Basin](#)
- [Upper Colorado River Basin](#)
- [San Juan River Basin](#)
- [Great Salt Lake Basin](#)

[Sevier Basin](#)

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](#)