

March 1, 2014 Water Supply Forecast Discussion

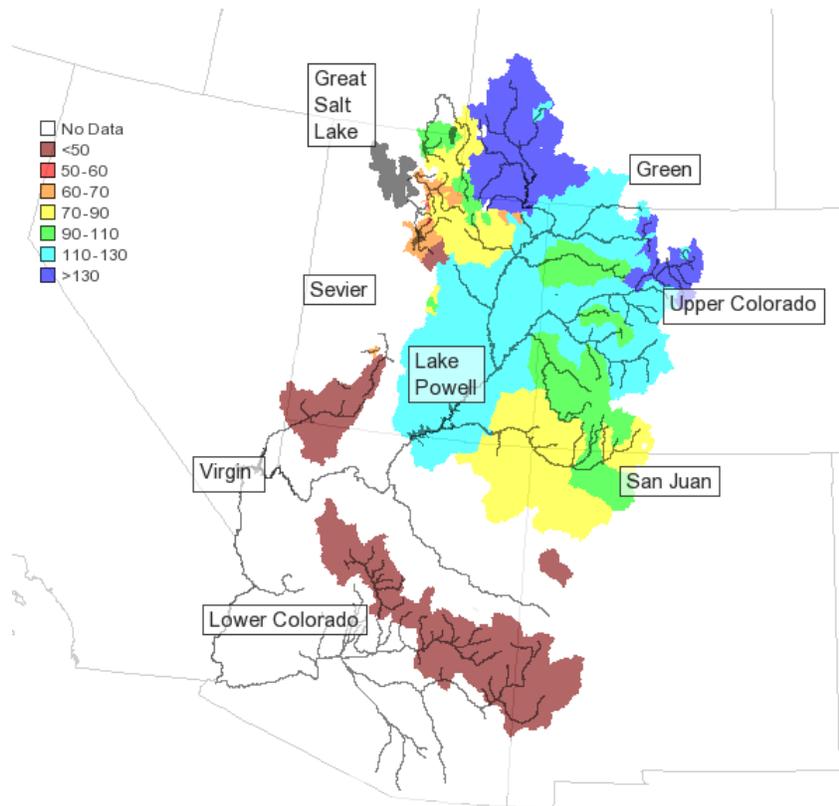
The [Colorado Basin River Forecast Center \(CBRFC\)](#) geographic forecast area includes the Upper Colorado River Basin, Lower Colorado River Basin, and Eastern Great Basin.

Seasonal Water Supply Forecasts:

Quick Summary:

Water supply forecasts vary significantly over the CBRFC area of responsibility. Much above average April-July runoff volumes are expected in the Yampa Basin, Green River Basin above Flaming Gorge, Colorado River Basin above Cameo, and Gunnison Basin above Blue Mesa. Near or slightly below average runoff volumes are anticipated in the remainder of the Gunnison Basin as well as the Dolores Basin, with below average forecasts in most of the San Juan Basin and Duchesne Basin. Conditions in the northern Great Basin have improved this past month, in particular the Bear River Basin, however for much of the Great Basin below average runoff is still expected.

Another dry month in the southern Great Basin and Lower Colorado Basin has resulted in very low runoff volume forecasts in the Sevier, Virgin, Gila, Verde and Salt Basins.

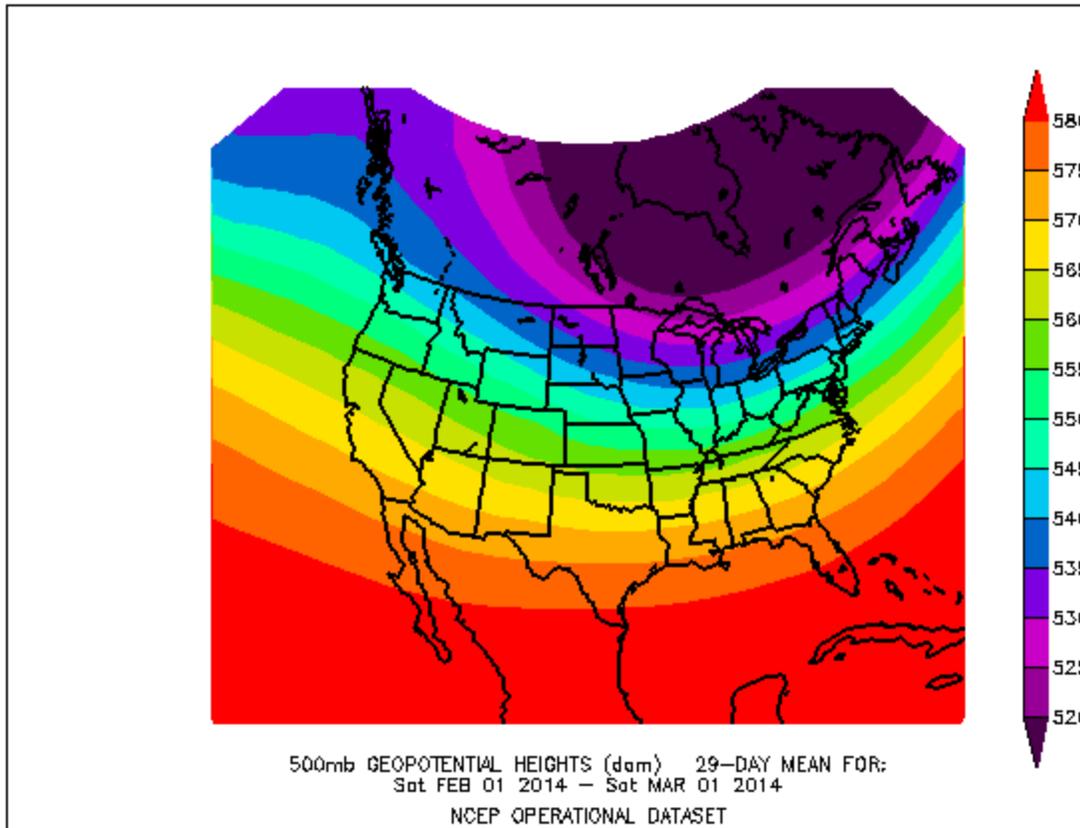


[Click here for specific site water supply forecasts](#)

Water Supply Discussion

Weather Synopsis:

February was an active weather month, especially for the northern and northeast parts of the CBRFC area. A mild and very moist upper air pattern, more typical of spring, resulted in significant precipitation in the Green River Basin above Flaming Gorge and the Bear River Basin. The snowpack increased in these areas as well as in the Yampa Basin, Gunnison Basin, Colorado River above Cameo, and the northern Great Basin.



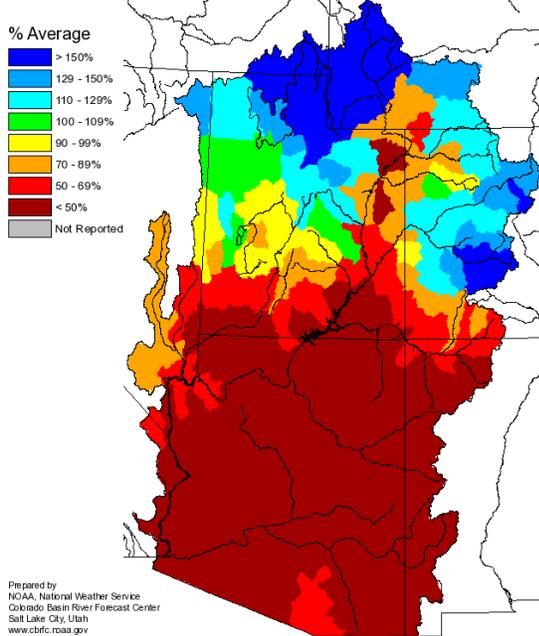
Mean upper air pattern during February 2014.

Precipitation and Temperatures:

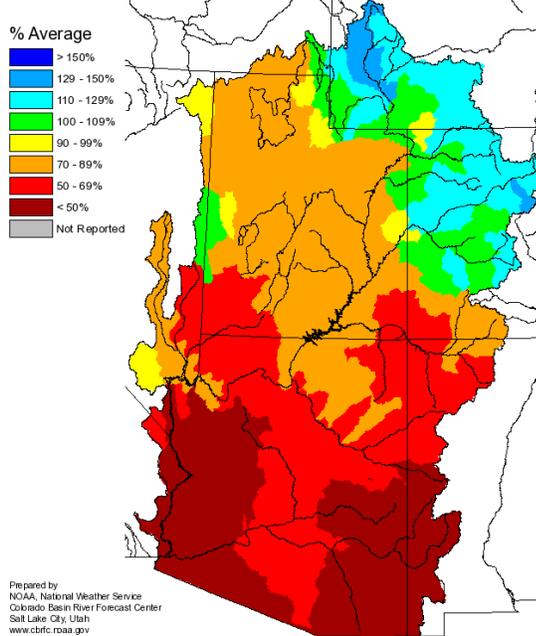
The Green River Basin above Flaming Gorge and the Bear River Basin received significant precipitation in February with some sites receiving over 300 percent of average precipitation. Above average precipitation also occurred in the Yampa Basin, Colorado River above Cameo, and the Gunnison River above Blue Mesa. February precipitation was much below average throughout Arizona, southern Utah and western New Mexico, where less than half of average was recorded for the third month in a row.

For the water year to date, the Colorado River above Cameo, Yampa Basin, Green River above Flaming Gorge and Gunnison Basin have received above average amounts of precipitation. Below average precipitation occurred elsewhere.

Monthly Precipitation for February 2014
(Averaged by Hydrologic Unit)



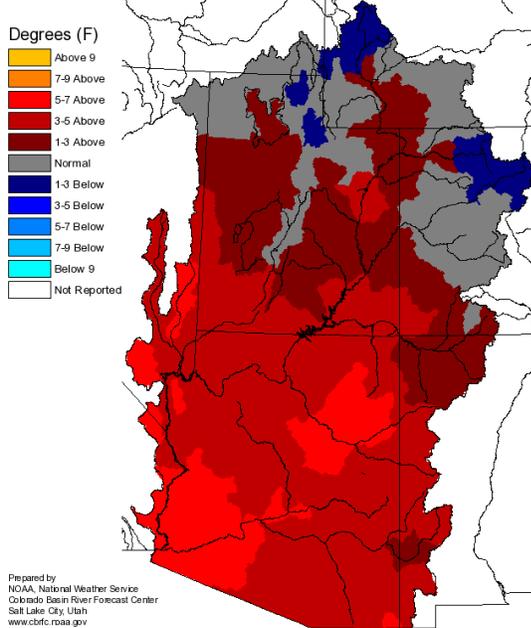
Seasonal Precipitation, October 2013 - February 2014
(Averaged by Hydrologic Unit)



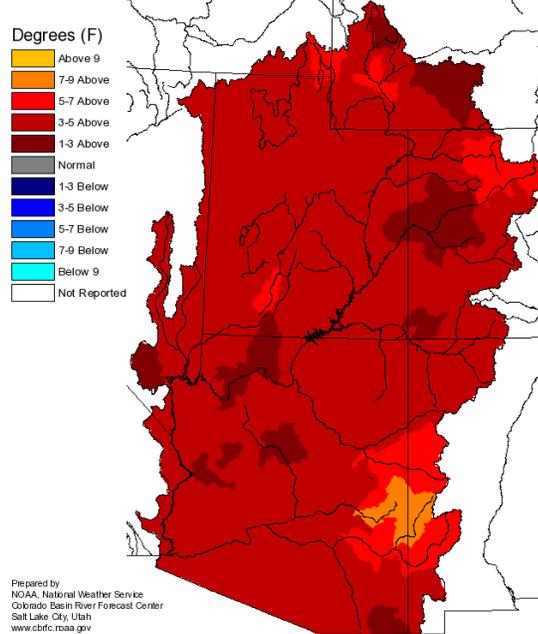
Monthly and seasonal precipitation for the Colorado River Basin.

Minimum temperatures were well above average again this month over the entire CBRFC area. Maximum temperatures were well above average over the area with the exception of the Green River above Fontenelle, Yampa Basin, and the Colorado River above Cameo where slightly cooler conditions prevailed.

Monthly Max Temp Deviation for February 2014
(Averaged by Hydrologic Unit)



Monthly Min Temp Deviation for February 2014
(Averaged by Hydrologic Unit)



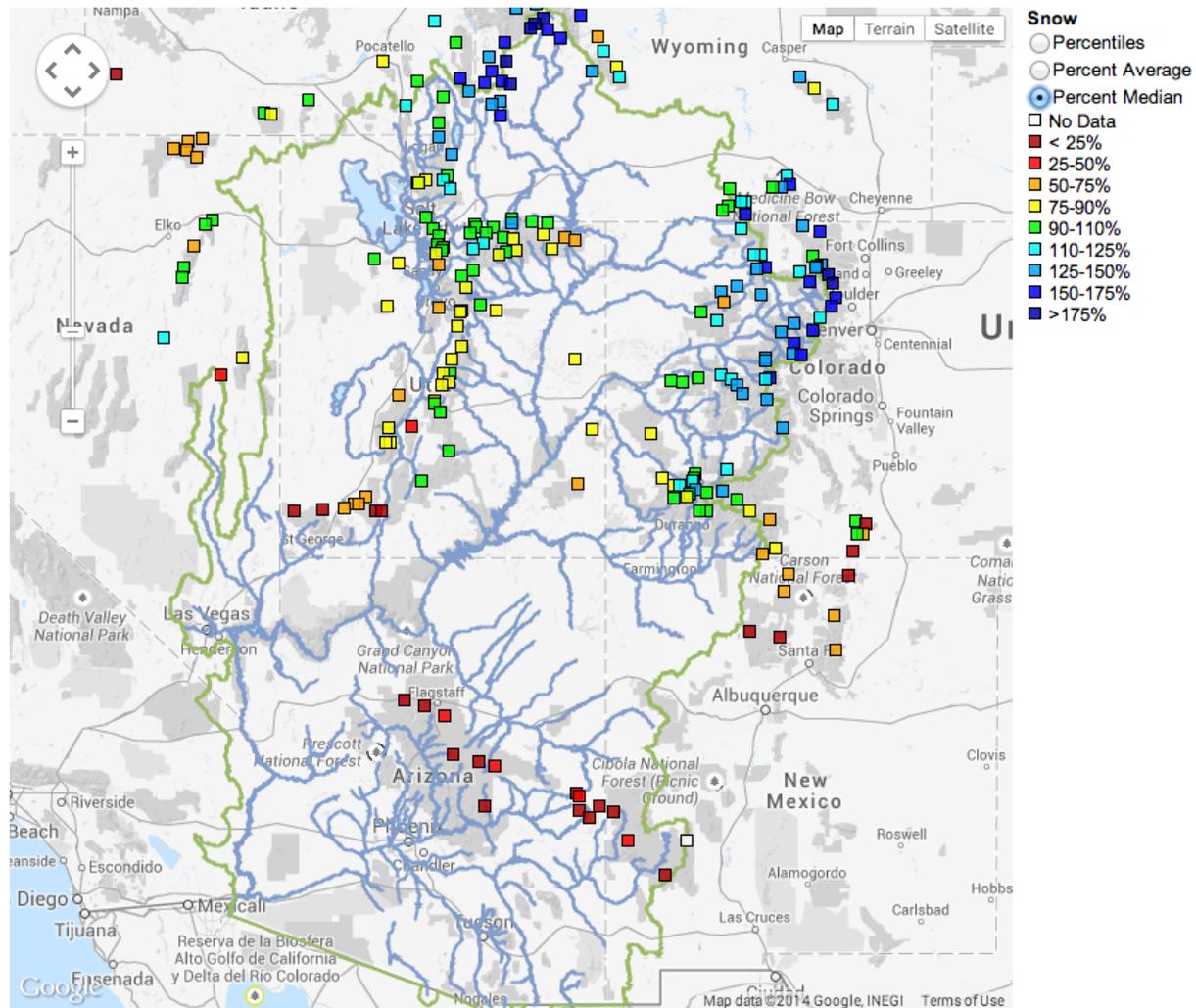
Monthly maximum and minimum temperature deviation for the Colorado River Basin.

Snowpack:

The very wet pattern over the northern CBRFC area resulted in a significant increase in snowpack in the Green River Basin above Fontenelle. Many locations have exceeded their average seasonal peak that typically occurs in early to mid April. The current snow water equivalent at several locations in the Green River Basin above Fontenelle is 175 to 200 percent of median for early March and 140 to 180 percent of the annual seasonal peak. Much above median snow also exists in the Yampa Basin, Colorado River above Cameo, and Gunnison River above Blue Mesa that were also favored by the storm pattern. Snow conditions improved in the northern Great Basin with several locations now near median and a few sites above median.

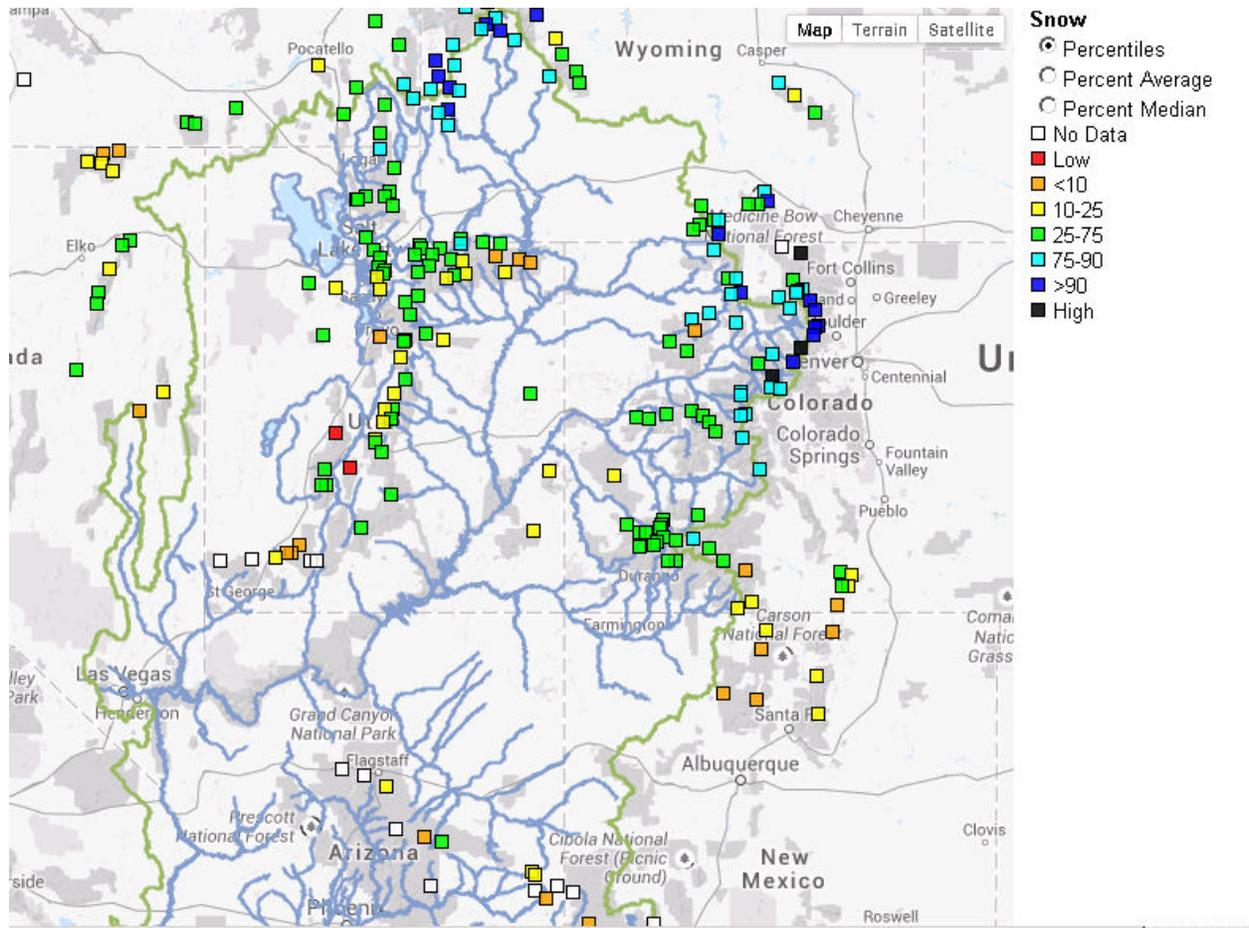
Further to the south snow conditions are quite the opposite. With the exception of the Animas Basin, the San Juan Basin generally has near to below median snow. Below or much below median snow exists over most of the southern Great Basin, Virgin Basin, and eastern Duchesne Basin. The snow has all but melted out of the Salt, Verde, and Gila Basins and only minimal amounts remain.

The maps below show conditions of snotel sites across the CBRFC area as of March 4, 2014. For more details and daily updates, please refer [here](#).



Percent Median Snow condition as of March 4, 2014

The snow percentile map below indicates where the current snow measurements rank in their historical record. A couple of sites in the Colorado River above Kremmling are indicating the highest amount for this time of year in 36 years of record. Many locations in the Green River Basin above Fontenelle are in the top 3 in 30 years of record. Meanwhile, in the Sevier Basin of southwest Utah two locations are at their lowest in over 30 years of record.



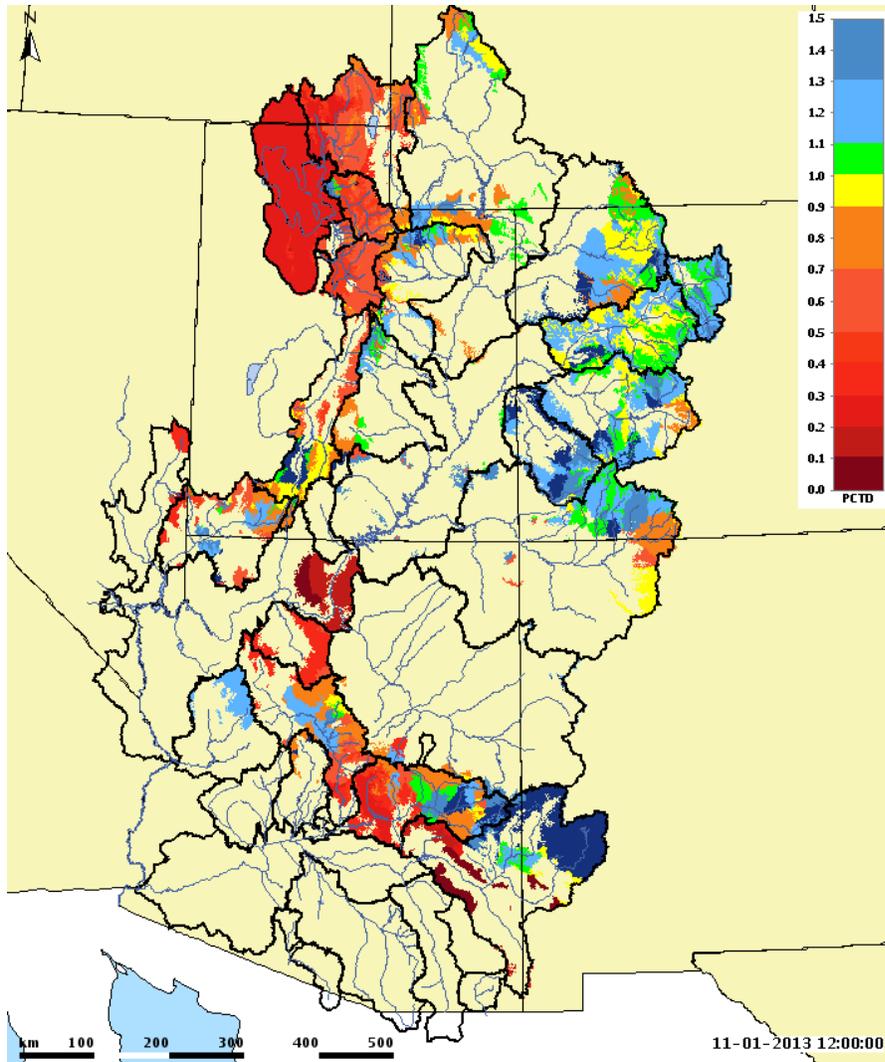
Percentiles snow conditions as of March 5, 2014. Sites ranked based on historical record.

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 1st were above average over much of the Upper Colorado Basin, and parts of the headwaters of the Salt and Gila Basins. Elsewhere conditions were below average.

The soil moisture conditions are having an impact on forecasts, particularly in areas where the modeled soil moisture is well above average yet the snow conditions are near or below average. The above average soil moisture is acting to keep the forecasts at a higher level than they would be if soil moisture conditions were closer to average. This is most pronounced in the San Juan and parts of the Gunnison Basin. In addition, the combination of above average soil moisture and above average snow conditions in the Colorado above Cameo and the Yampa Basin has resulted in much above average runoff forecasts. The opposite is occurring in the Great Basin where dry soils and near to below average snowpack have combined to create low runoff volume forecasts.

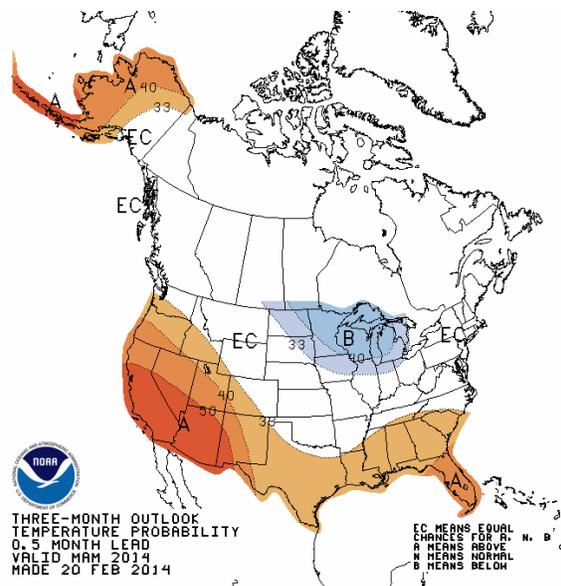
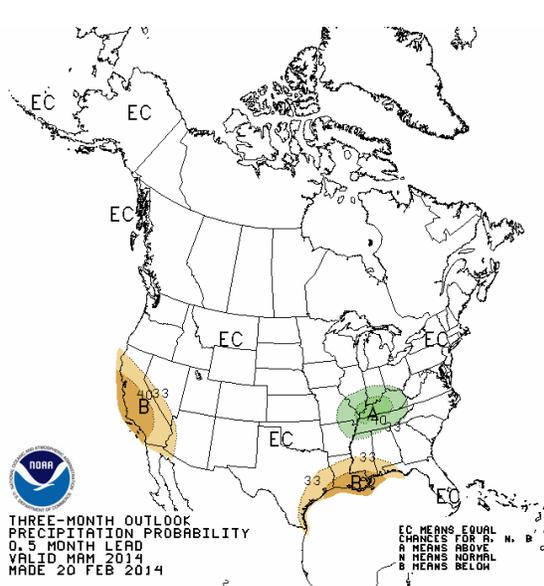
In the map below areas in blue are above the historical model soil moisture average while those in the red and orange are below average



Modeled soil moisture as of November 1st 2013

Climate Outlook:

The El Nino Southern Oscillation (ENSO) condition continues to be neutral and is expected to remain neutral through the spring. Climate models are forecasting a slight tendency toward an El Nino event in the late summer and fall months. The Climate Prediction Center indicates equal chances of above or below average precipitation in the the Colorado and Eastern Great Basins for March through May. There is a higher chance of above normal temperatures throughout the basin for the same time period, mostly over Arizona.



Conclusion:

Much above average runoff volumes are likely for the Green River Basin above Flaming Gorge, Yampa Basin, Colorado River above Cameo, and Gunnison River above Blue Mesa. Above median snowpack and favorable soil moisture exists in these areas. While favorable soil moisture exists in the San Juan Basin the snowpack is generally near or below median. Precipitation received has been below average for the past 3 months and runoff volume forecasts are also near to below average.

Below to much below average conditions generally exist elsewhere. While snow conditions have improved in the northern Great Basin, less favorable soil moisture conditions exist and runoff volume forecasts are generally below average. Further south in the Virgin Basin and Lower Colorado River Basin of Arizona very dry conditions have been persistent and very low runoff volumes are likely.

With an active weather pattern expected to continue into at least mid March additional snow is possible in the areas that already have a significant snowpack.

End Of Month Reservoir Content Tables

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