

April 1, 2014 Water Supply Forecast Discussion

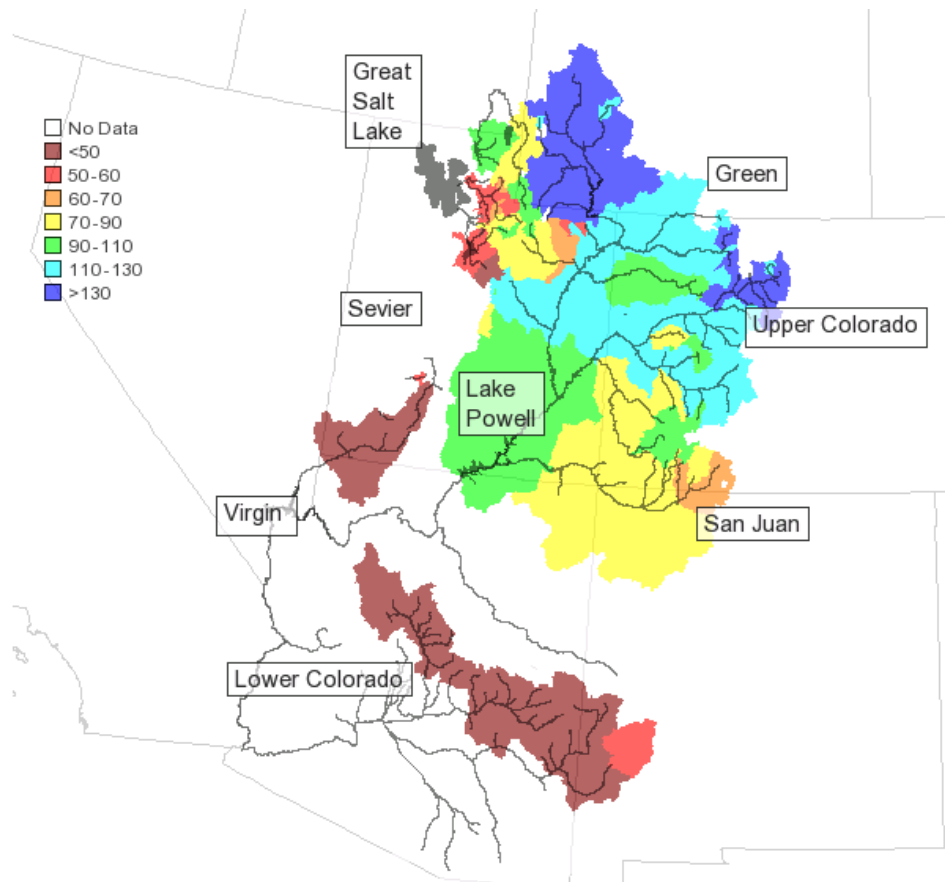
The [Colorado Basin River Forecast Center \(CBRFC\)](#) geographic forecast area includes the Upper Colorado River Basin, Lower Colorado River Basin, and Eastern Great Basin.

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 River Basin, Green River Basin above Flaming Gorge, Colorado River Basin above Cameo, and Gunnison River Basin above Blue Mesa. Near or below average runoff volumes are anticipated in the remainder of the Gunnison River Basin, Dolores River Basin, and most of the Bear River Basin. Near average runoff volumes are anticipated in the Animas River Basin however much below average runoff is expected elsewhere in the San Juan River Basin.

Elsewhere in the CBRFC area below or much below average runoff is expected, especially further south in the Virgin River Basin and Lower Colorado River Basin where dry conditions have persisted much of the winter.

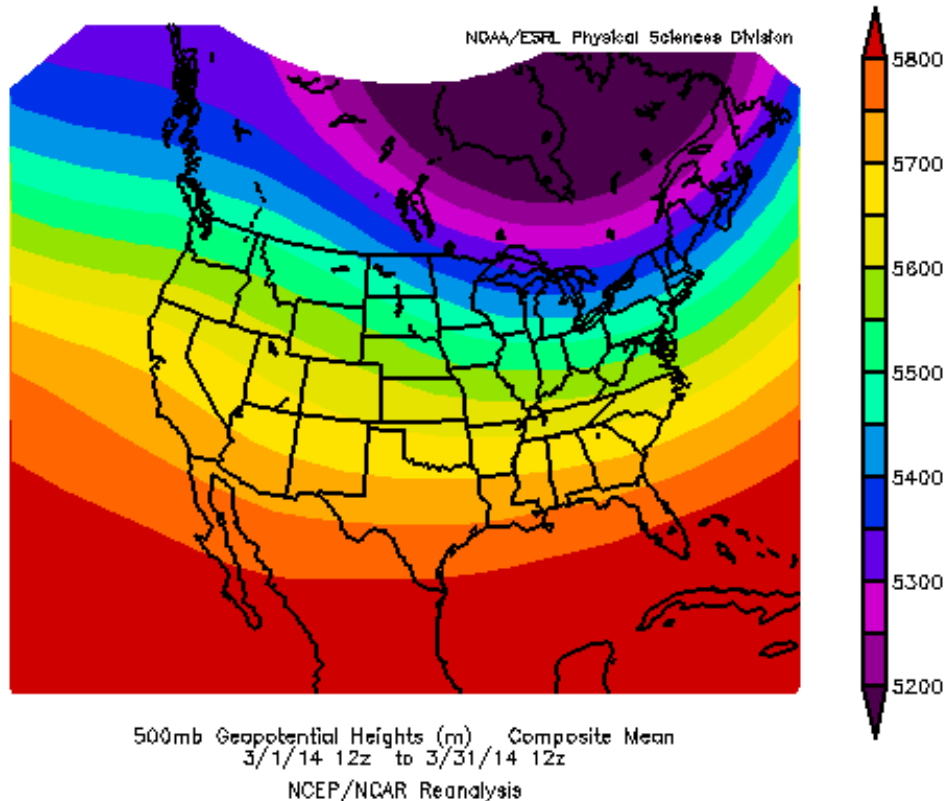


[Click here for specific site water supply forecasts](#)

Water Supply Discussion

Weather Synopsis:

March was a relatively active weather month, with frequent storms in a zonal upper air flow pattern. However the greatest impacts were again to the northern and northeast parts of the CBRFC area, characteristic of much of the winter season. While these northern areas received above average precipitation, areas to the south, including the San Juan, Virgin, Sevier and Duchesne River Basins were generally much drier. An exception to this was in parts of the Lower Colorado River Basin where a storm system tracked through that area resulting in some of the higher monthly precipitation amounts observed since late fall.



Mean upper air pattern during March 2014.

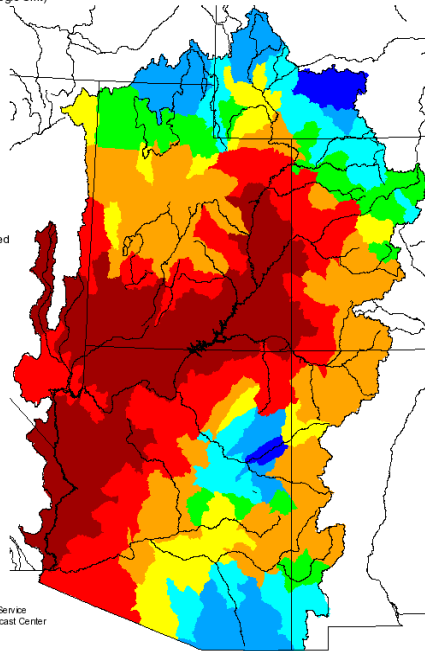
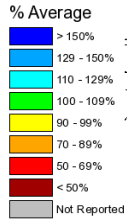
Precipitation and Temperatures:

Much above average precipitation occurred over northern river basins including parts of the Bear, Green River above Flaming Gorge, and headwaters of the Yampa. In these areas precipitation amounts for March mostly fell within the 120 to 200 percent of average category. Near to slightly above average precipitation was observed in the headwaters of the Colorado River Basin above Kremmling, Gunnison River Basin above Blue Mesa and at some sites in the Weber River Basin.

Several locations in the Little Colorado, Salt, and Gila River Basins received between 1 and 3 inches of precipitation during March, enough to push these areas into the above or much above average category. Elsewhere precipitation was generally below average with the driest conditions in the Virgin River Basin and eastern Duchesne River Basin where less than 50 percent of average precipitation was the rule for March.

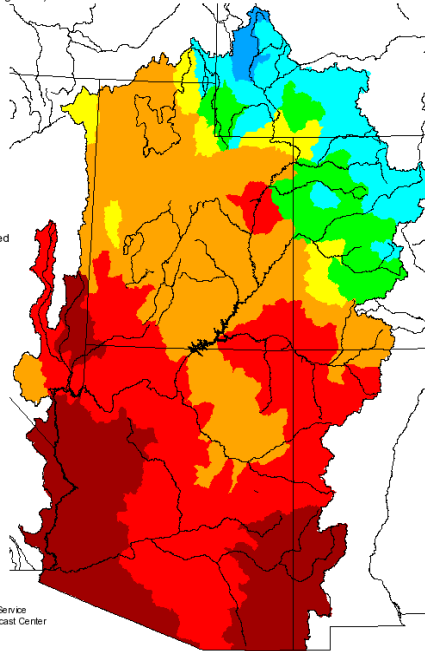
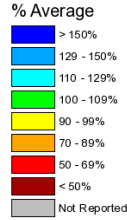
The seasonal (October through March) precipitation map is a very good indicator of the storm track throughout much of the winter and early spring. River basins including parts of the Bear, Green above Flaming Gorge, Yampa, White, Colorado above Kremmling, and Gunnison fall into above or much above average categories. Elsewhere below average precipitation has occurred with particularly dry conditions in the Virgin River Basin and Lower Colorado River Basins.

Monthly Precipitation for March 2014
(Averaged by Hydrologic Unit)



Prepared by
NOAA, National Weather Service
Colorado Basin River Forecast Center
Salt Lake City, Utah
www.cbafc.noaa.gov

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

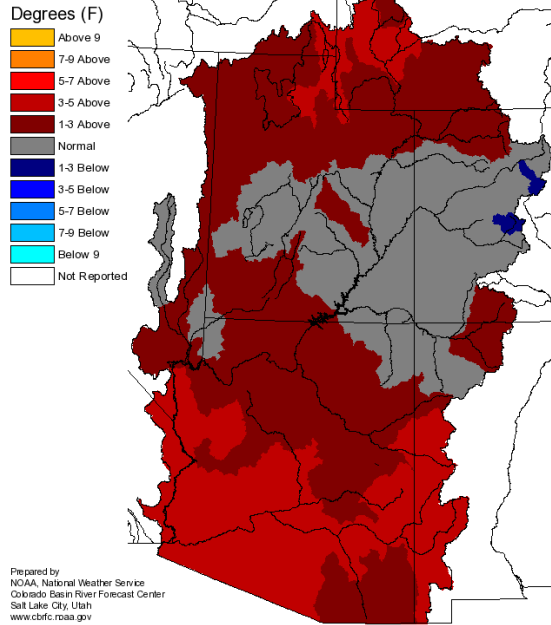


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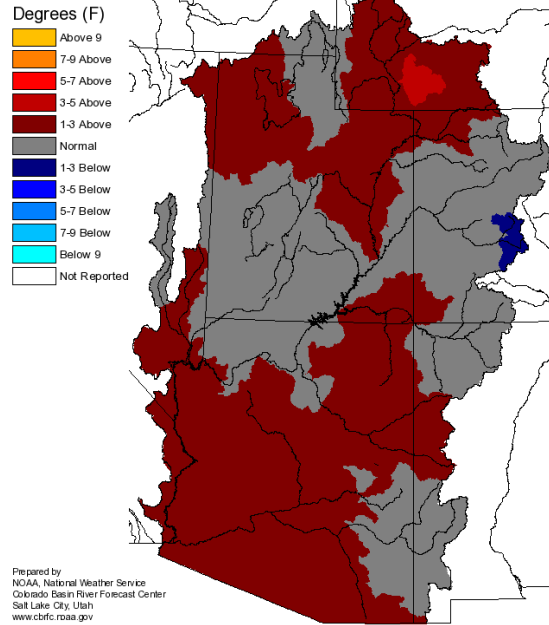
Monthly and water year precipitation graphics

This type of weather pattern during March is somewhat typical for this time of year. Temperatures were slightly on the mild side but did not deviate significantly from average.

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



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



Monthly maximum and minimum temperature departure from average.

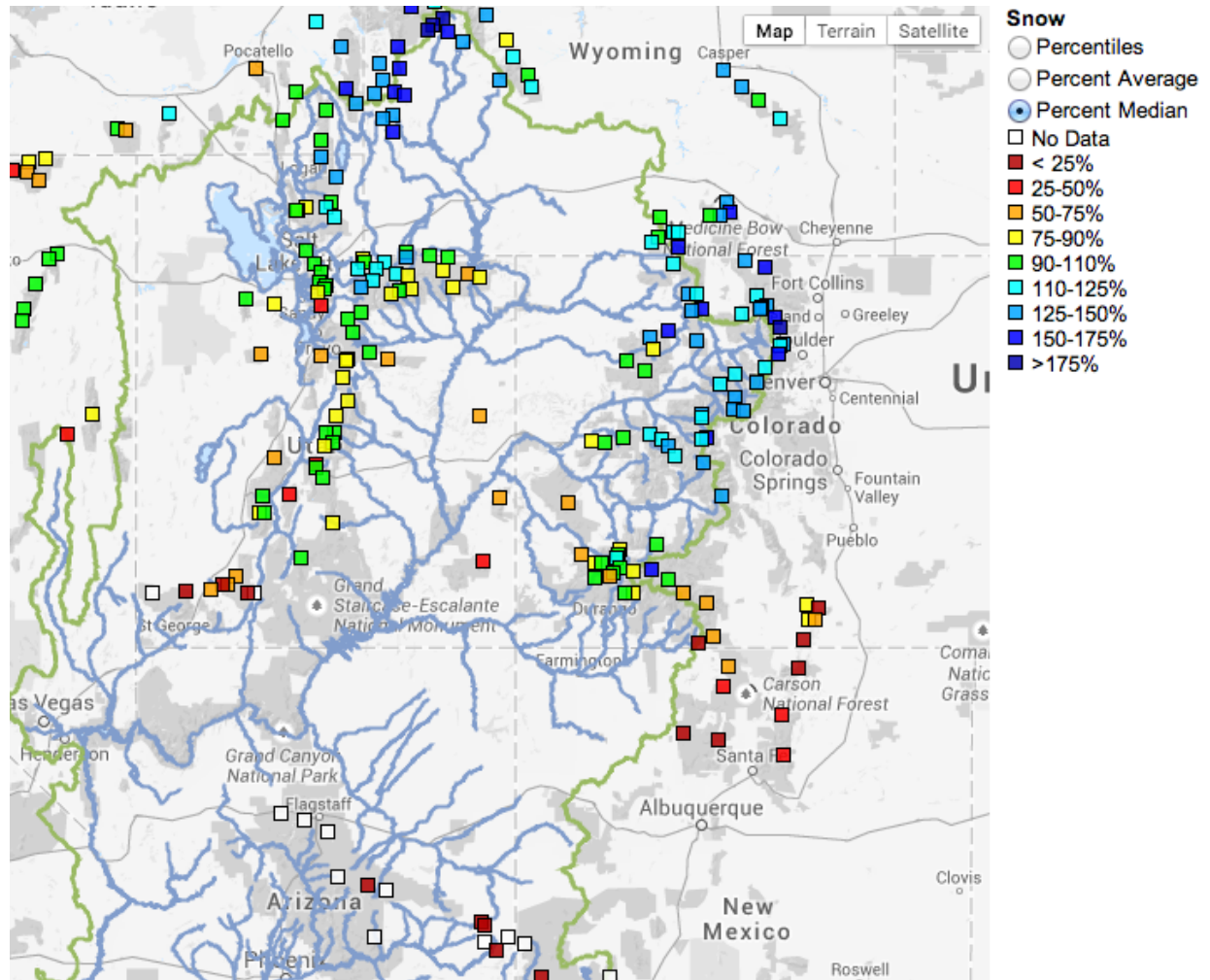
Snowpack:

As a percent of average, snow conditions did not change significantly over the wetter areas compared to early March. Some fluctuation occurred at individual sites, especially in parts of the Bear River Basin and Six Creeks where some improvement occurred. Much above median snow conditions persist in the Bear River Basin, Green River Basin above Flaming Gorge, Yampa River Basin, Colorado River Basin above Cameo, and Gunnison River Basin above Blue Mesa.

Although some increase in snowpack occurred during the last week of the month in the western Duchesne River Basin and tributaries that feed the Lower Green River, snowpack conditions remain below median. With the exception of a couple of higher elevation sites in the Sevier River Basin of central Utah, snow conditions as a percent of median decreased in most other areas. In the San Juan Basin, snow is near median in the Animas but quickly drops off to 70 percent of median in the eastern part of the Basin above Navajo Reservoir.

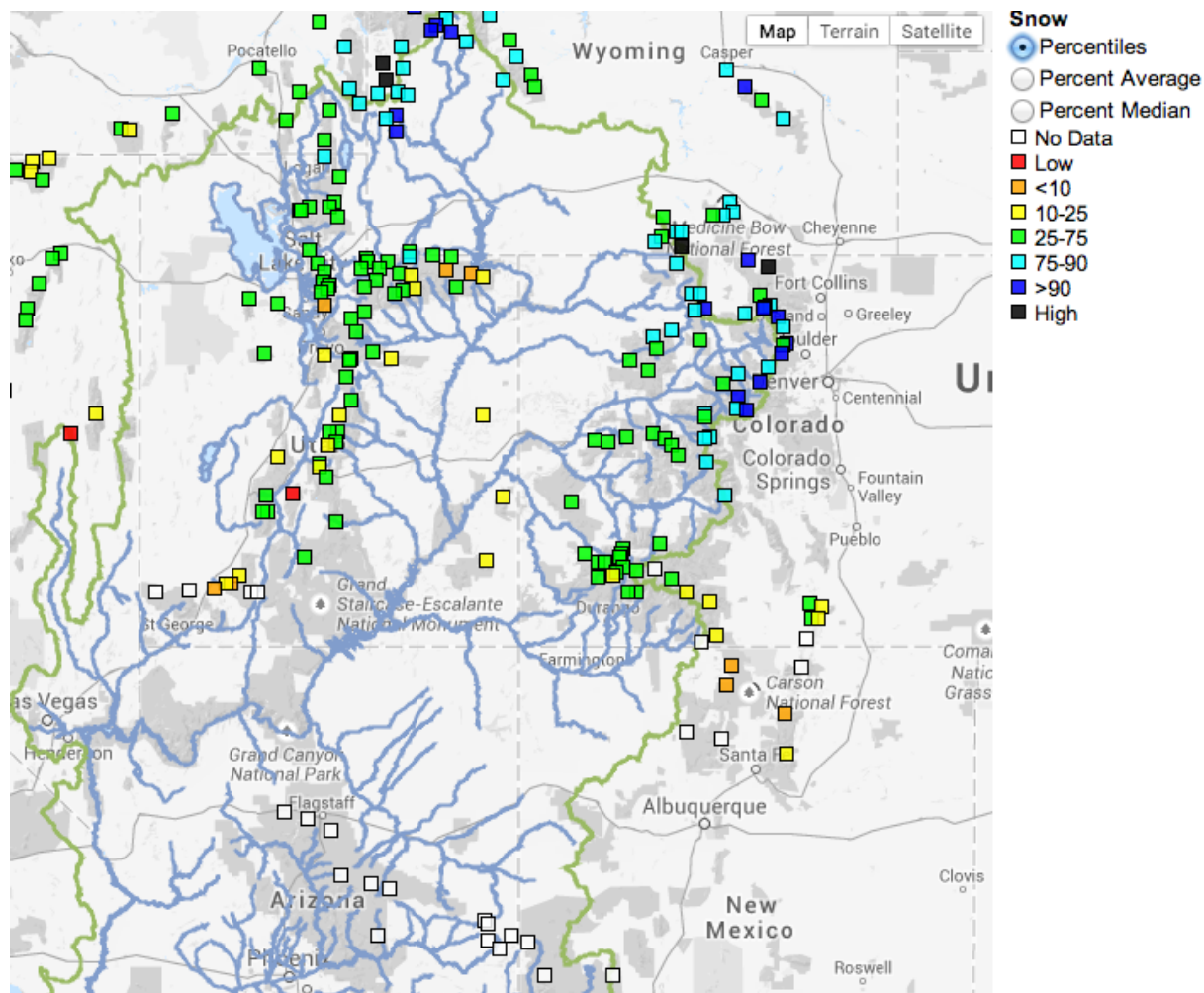
The Virgin River Basin has experienced significant snow melt and is near 40 percent of median while the Lower Colorado River Basin has all but melted out.

The maps below show conditions of snotel sites across the CBRFC area as of April 2, 2014. For more details and daily updates, please refer [here](#).



Percent Median Snow condition as of April 2, 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. Several locations in the Green River Basin above Fontenelle are in the top 3 in 30 years of record.



Percentiles snow conditions as of April 2, 2014. Sites ranked based on historical record.

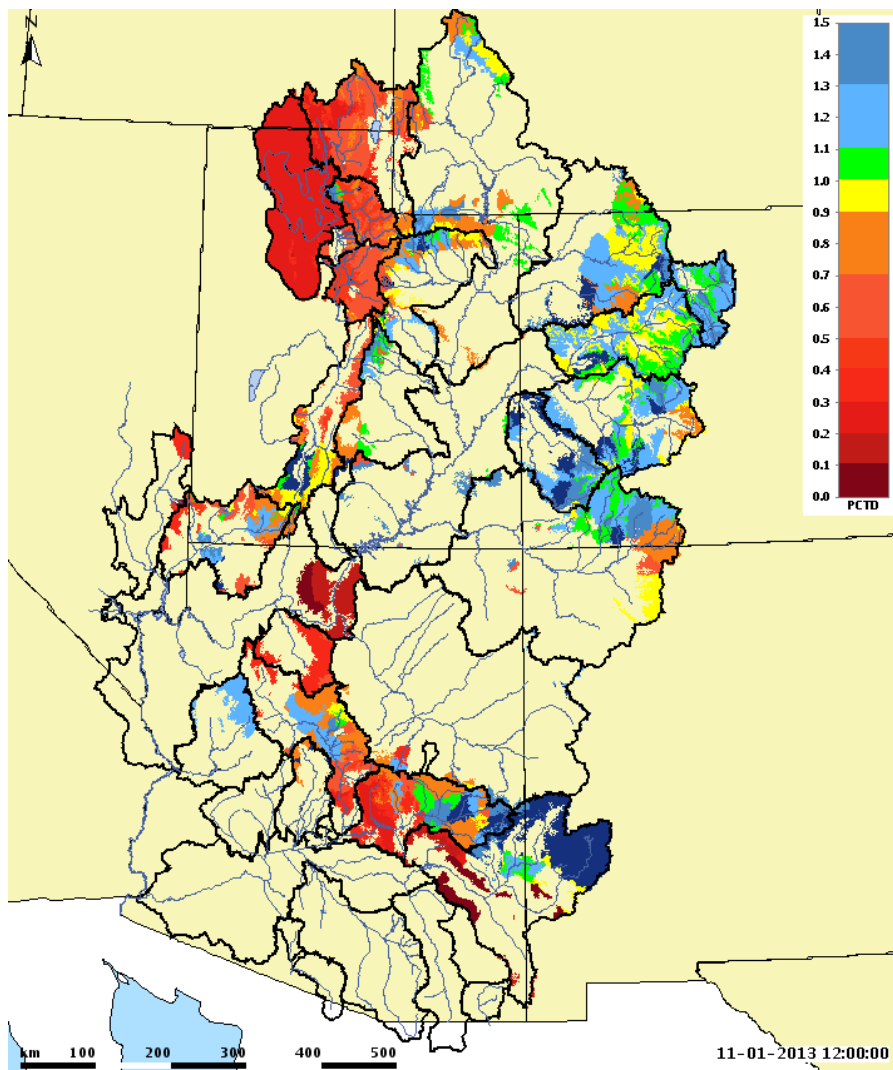
Soil Moisture:

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.

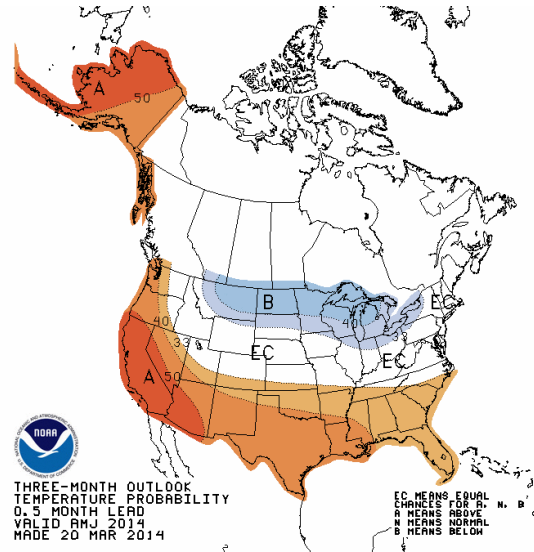
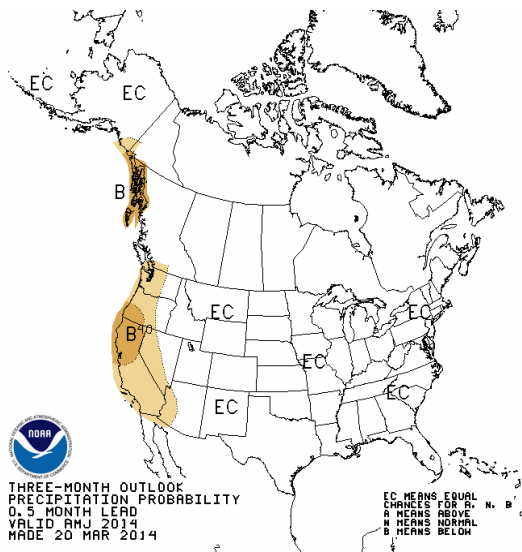
The soil moisture conditions are having an impact on forecasts, particularly in areas where the modeled soil moisture is well above average yet the snow conditions are near or below average. The above average soil moisture is acting to keep the forecasts at a higher level than they would be if soil moisture conditions were closer to average. 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



Climate Outlook:

The El Nino Southern Oscillation (ENSO) condition continues to be neutral. Climate models are forecasting a slight tendency toward an El Nino event in the 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 April through June. There is a higher chance of above normal temperatures throughout the basin for the same time period over Arizona and extending into the Virgin River and San Juan Basins.



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 conditions exist in the San Juan Basin, multiple months of below average precipitation and near or below median snowpack are having a greater impact and the runoff volume forecasts are below average.

Below to much below average conditions generally exist elsewhere. While snow conditions have improved in the Great Basin, less favorable soil moisture conditions exist and runoff volume forecasts are generally below average with the exception of the Bear River Basin where runoff volume forecasts are near 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.

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](#)