

May 1, 2014 Water Supply Forecast Discussion

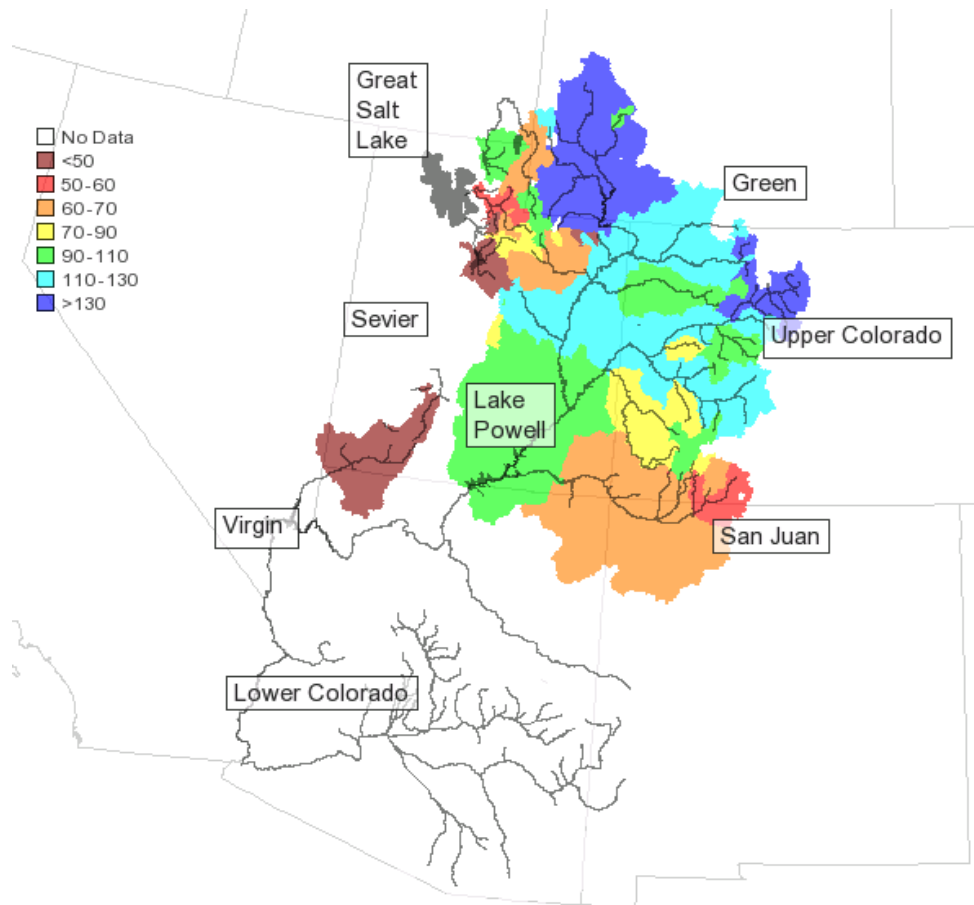
The [Colorado Basin River Forecast Center \(CBRFC\)](#) geographic forecast area includes the Upper Colorado River Basin, Lower Colorado River Basin, and Eastern Great Basin.

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, western Duchesne 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 including the Weber River Basin, Six Creeks, Provo River Basin, eastern Duchesne River Basin, Sevier River Basin, and Virgin River Basin much below average runoff is expected.



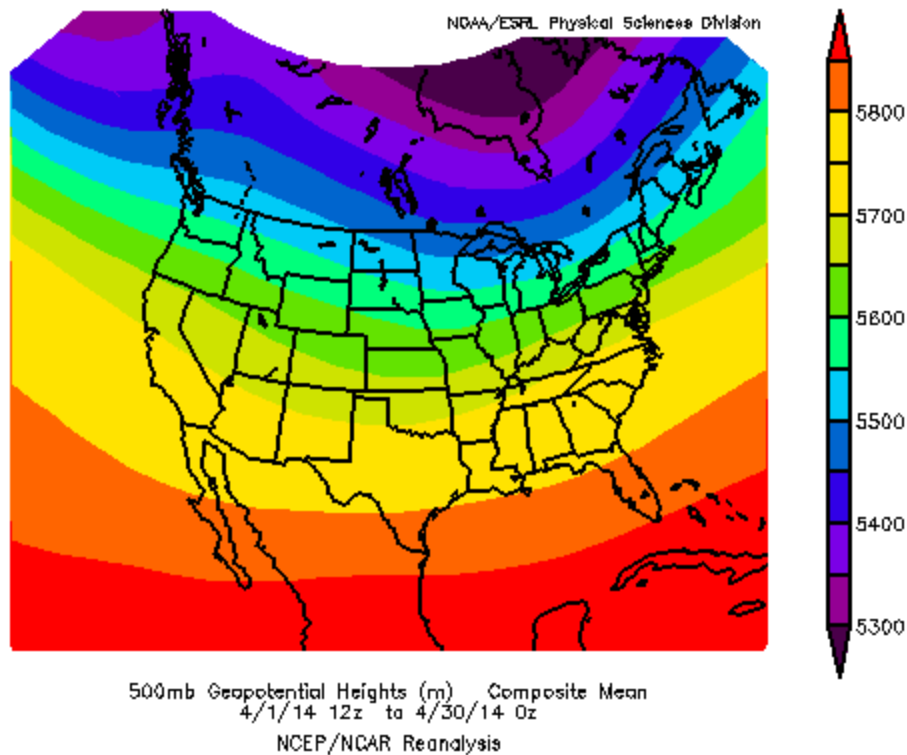
[Click here for specific site water supply forecasts](#)

Water Supply Discussion

Weather Synopsis:

The April weather pattern continued to be progressive similar to previous months with occasional storm systems moving through the area. Periods of below average temperatures and precipitation were followed by periods of dry conditions and above average temperatures. While precipitation was generally below average area wide, warming temperatures started the snow melt in most areas along with subsequent increases in stream flow levels.

Driest conditions were again over the southern half of the CBRFC area including much of the San Juan Basin, Virgin Basin, and Lower Colorado River Basin.



Mean upper air pattern during April 2014.

Precipitation and Temperatures:

Precipitation was generally below average throughout the CBRFC area in April. Exceptions to this pattern were very localized areas where convective activity resulted in heavier precipitation. Very dry conditions persisted once again in the San Juan and areas to the west and south.

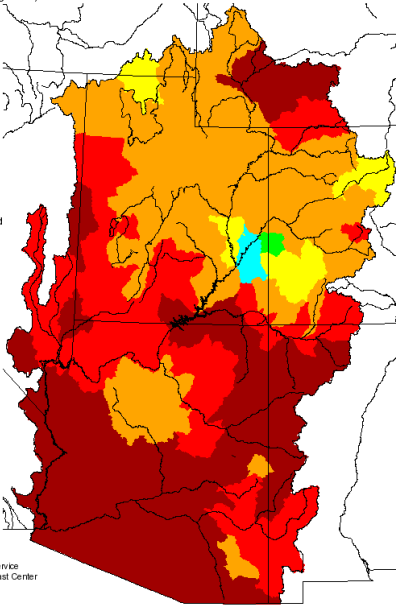
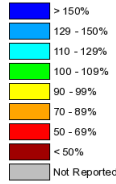
The seasonal October-April precipitation graphic (below) has not changed much for the 3rd consecutive month. Near to above average precipitation continues to be indicated in the Gunnison River Basin above Blue Mesa, Colorado above Cameo, and Yampa River Basin. Much above average seasonal precipitation has occurred in the Green River Basin above Fontenelle which is consistent with the snowpack conditions in that area.

Below average precipitation has occurred with very dry conditions in eastern Great Basin, San Juan, Duchesne, Virgin, and Lower Colorado River Basins.

Monthly Precipitation for April 2014

(Averaged by Hydrologic Unit)

% Average

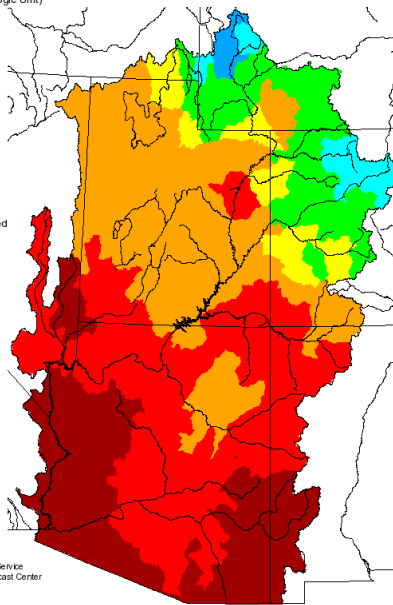
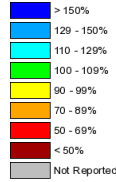


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Salt Lake City, Utah
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Seasonal Precipitation, October 2013 - April 2014

(Averaged by Hydrologic Unit)

% Average



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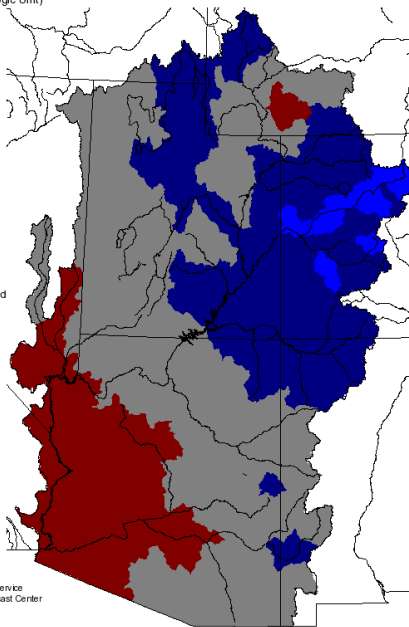
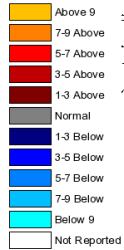
Monthly and water year precipitation graphics

Although there were periods of above and below average temperatures the monthly departure from average was not extreme. Slightly cooler than average monthly mean temperatures were observed over much of the upper Colorado River Basin.

Monthly Max Temp Deviation for April 2014

(Averaged by Hydrologic Unit)

Degrees (F)

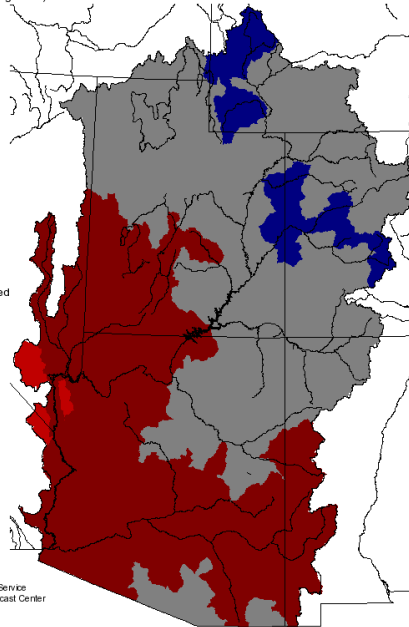
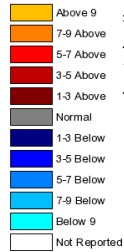


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Monthly Min Temp Deviation for April 2014

(Averaged by Hydrologic Unit)

Degrees (F)



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Monthly maximum and minimum temperature departure from average.

Snowpack:

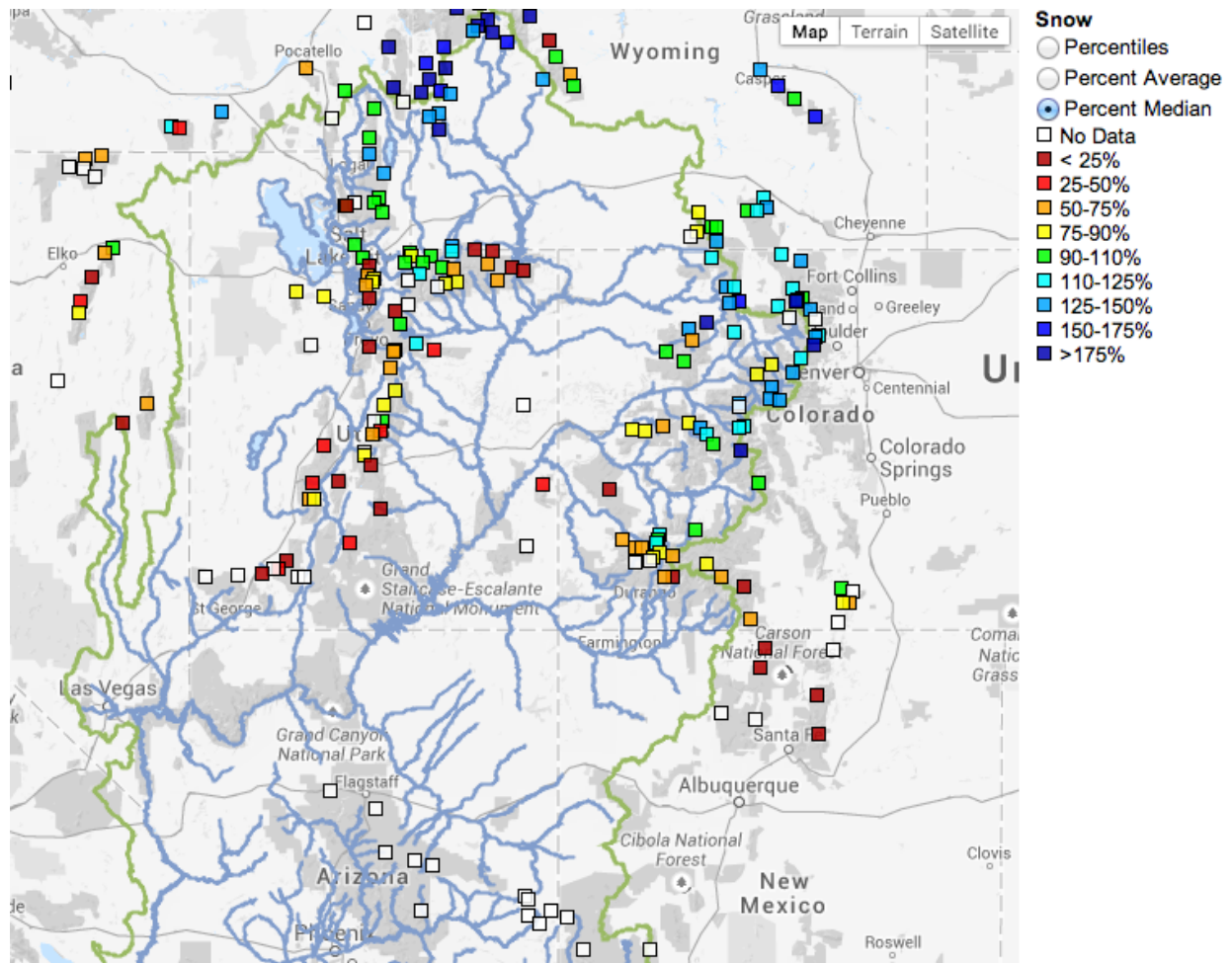
As the snow melt period is underway snow conditions in various river basins are as much a factor of recent temperature conditions as they are of the amount of precipitation received. As a percent of median, early May snow conditions have not changed considerably from those of early April in the Green River Basin above Fontenelle, Yampa River Basin, Colorado River Basin above Cameo, and northern Bear River Basin. Even though snow melt has been occurring snow conditions remain near to well above median in these areas, especially at higher elevations.

The Gunnison River Basin is a bit of a mixed bag with areas above Blue Mesa reservoir remaining near or above median while lower elevations and areas further west generally near or slightly below median. Much below median conditions exist in the San Juan River Basin with the exception of higher elevations of the Animas River Basin.

The Duchesne River Basin continues to show a marked east-west difference. Many SNOTEL sites at lower elevations and in the eastern Uinta range have melted out or are near melting out with better conditions to the west and at highest elevations.

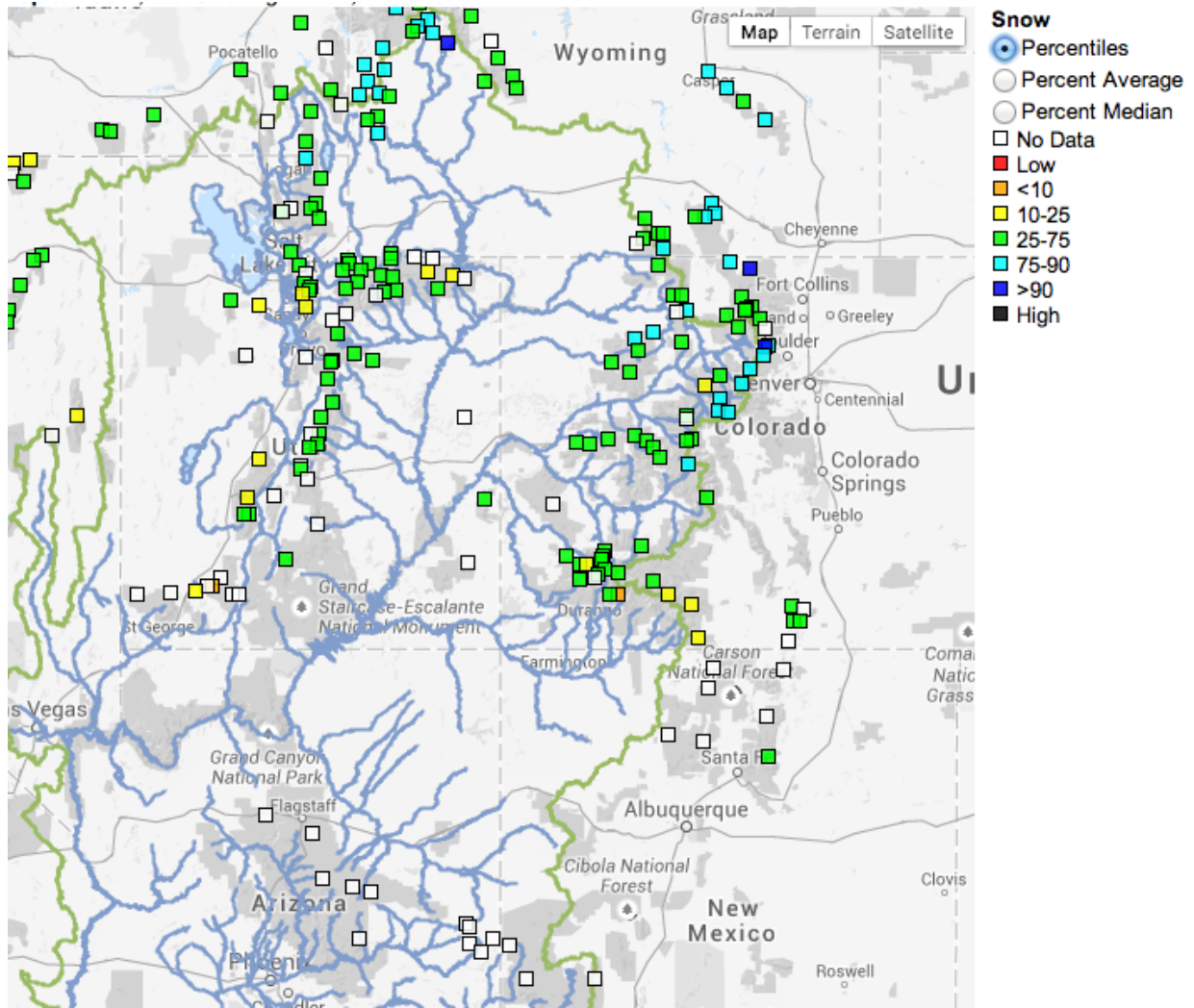
Within the Great Basin of Utah snow conditions as a percent of median continue to drop off due to both melt and below average April precipitation. Below to much below median conditions are the rule instead of the exception at most SNOTEL sites from the Six Creeks Basins south including the Provo Basin and Sevier River Basin. The snow in the Virgin River Basin is nearly depleted.

The maps below show conditions of snotel sites across the CBRFC area as of May 1, 2014. For more details and daily updates, please refer [here](#).



Percent Median Snow condition as of May 1, 2014

The snow percentile map below indicates where the current snow measurements rank in their historical record. Some sites in the Colorado River headwaters, Yampa River Basin, and Green River Basin above Fontenelle Reservoir rank in the top 20 percent of their historical record. The historical records are typically between 25-35 years.

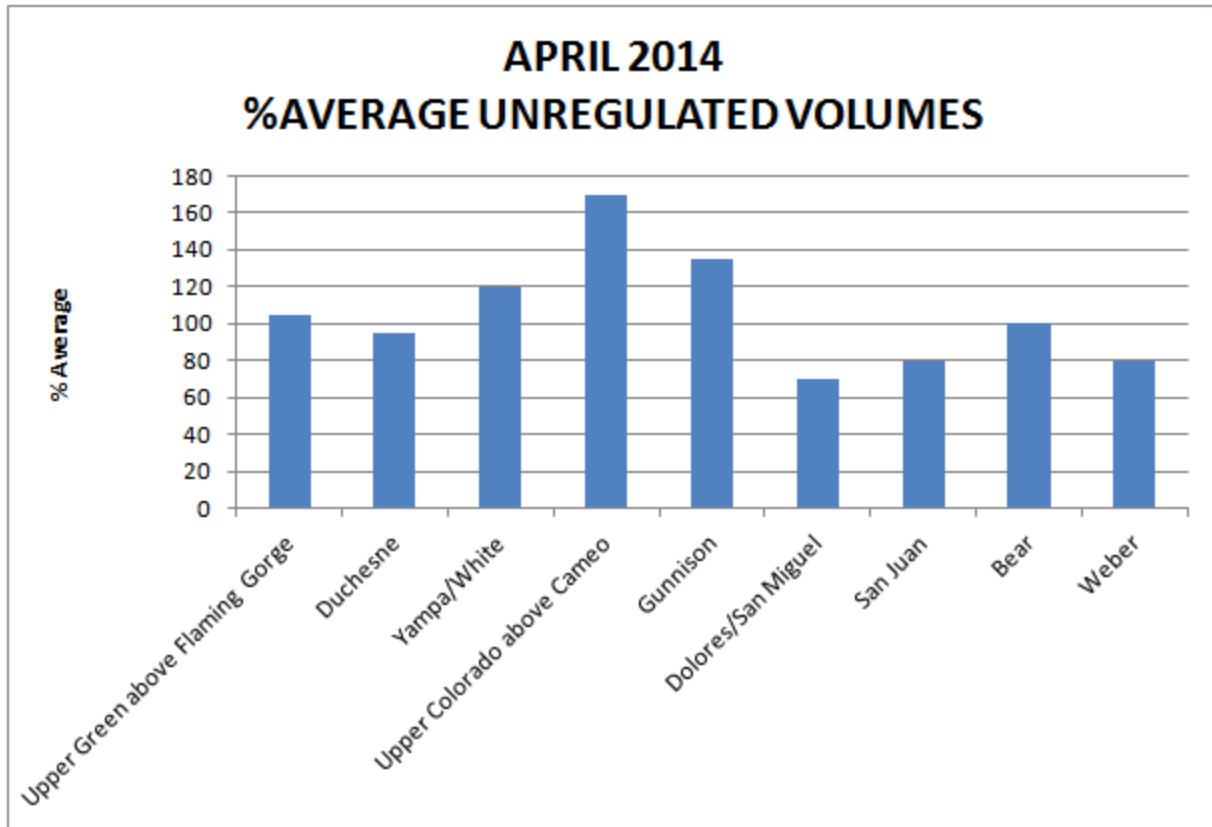


Percentiles snow conditions as of May 1, 2014. Sites ranked based on historical record.

April Streamflow Volumes:

April unregulated streamflow volumes were above to much above average in the Yampa River Basin, Colorado River Basin above Cameo, and Gunnison River Basin. Near average volumes occurred in the Upper Green above Flaming Gorge, Duchesne River Basin and Bear River Basin. The rest of the CBRFC area had below to much below April volumes.

Most sites in the Colorado River Basin above Cameo had volumes that ranked in the top 5 of the historical records with quite a few in the top 3. The Blue River inflow to Dillon Reservoir was the highest on record in the last 55 years. Other sites with notable volumes include the Yampa River at Steamboat Springs which ranked 6 out of 107 years and the East River at Almont which ranked 3 out of 92 years.



Soil Moisture:

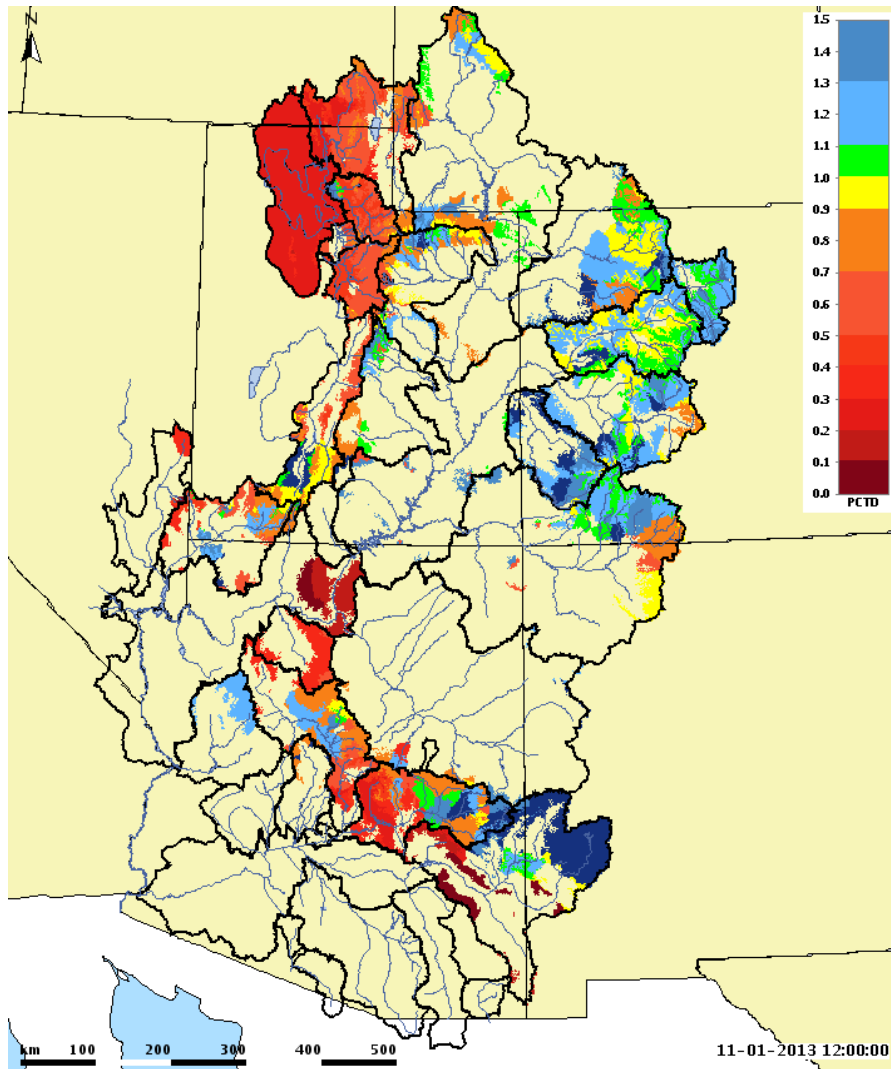
Soil moisture conditions in the higher elevation headwater areas are important entering the winter, prior to snowfall, as it influences the efficiency of the snowmelt runoff the following spring. Modeled soil moisture conditions

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 and snow conditions are near or above 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, Gunnison above Blue Mesa, and the Yampa Basin has resulted in much above average runoff

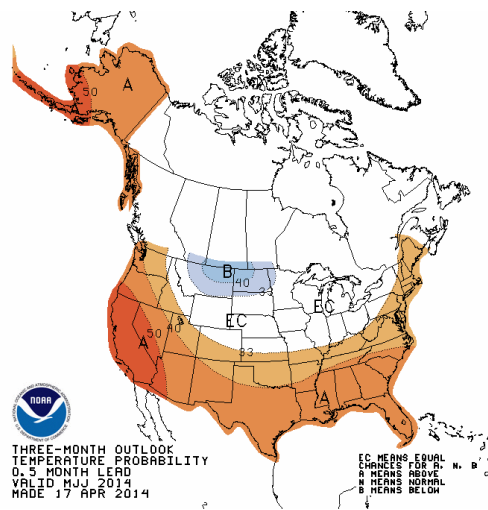
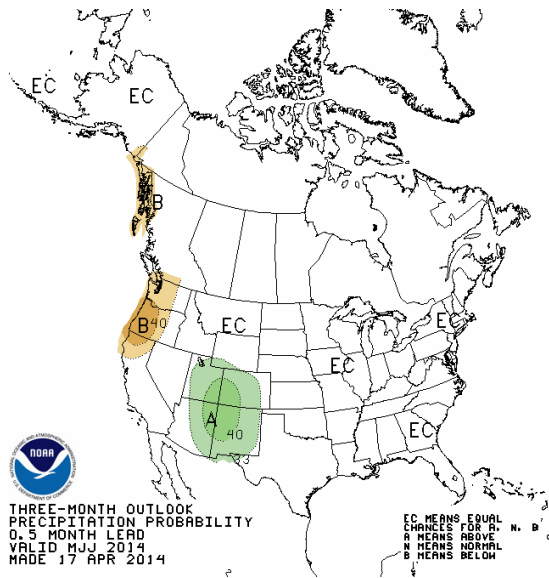
forecasts. The opposite is occurring in the Great Basin where dry soils and near to below average snowpack have combined to create low runoff volume forecasts.

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 is now forecast to become an El Nino this summer and fall. El Nino can mean wetter condition in the lower parts of the Colorado Basin. This is reflected here in the Climate Prediction Center's outlook for May through July, with higher than average chance of wet conditions over most of Utah, eastern Arizona, and most of Colorado and New Mexico. 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, remains the same as what we have seen in previous months' outlooks.



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. April streamflow volumes were above to much above average and near to above median snowpack and favorable soil moisture conditions exist in these areas. Persistent dry conditions have resulted in much below average runoff volumes expected in much of the San Juan Basin with the exception of the Animas River. In the Dolores River Basin below average runoff volumes are expected. Much below average runoff is also expected in lower elevation areas of the Duchesne River Basin with closer to average runoff for higher elevation drainages.

Forecasts decreased in the Great Basin where below average precipitation in April combined with a below average snowpack and less favorable soil moisture conditions. Below to much below average runoff is expected in this area.

Very dry conditions throughout the winter in the Virgin River Basin has resulted in very low forecasts with streamflow levels receding toward base flow.

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](#)

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[Sevier River Basin](#)

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