May 19, 2018 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.

Water Supply Forecast Summary:

The first half of May was a bit of a mixed bag regarding precipitation impacts across the Colorado River and Great Basins. The orientation of the storm systems that moved through the CBRFC forecast area favored the upper Green River Basin of Wyoming, the Uinta Mountain range and Duchesne Basin in northeast Utah, and the Colorado River headwaters above Kremmling with above average precipitation. In addition, the Virgin River Basin of southwest Utah also received near to above average precipitation during this period.

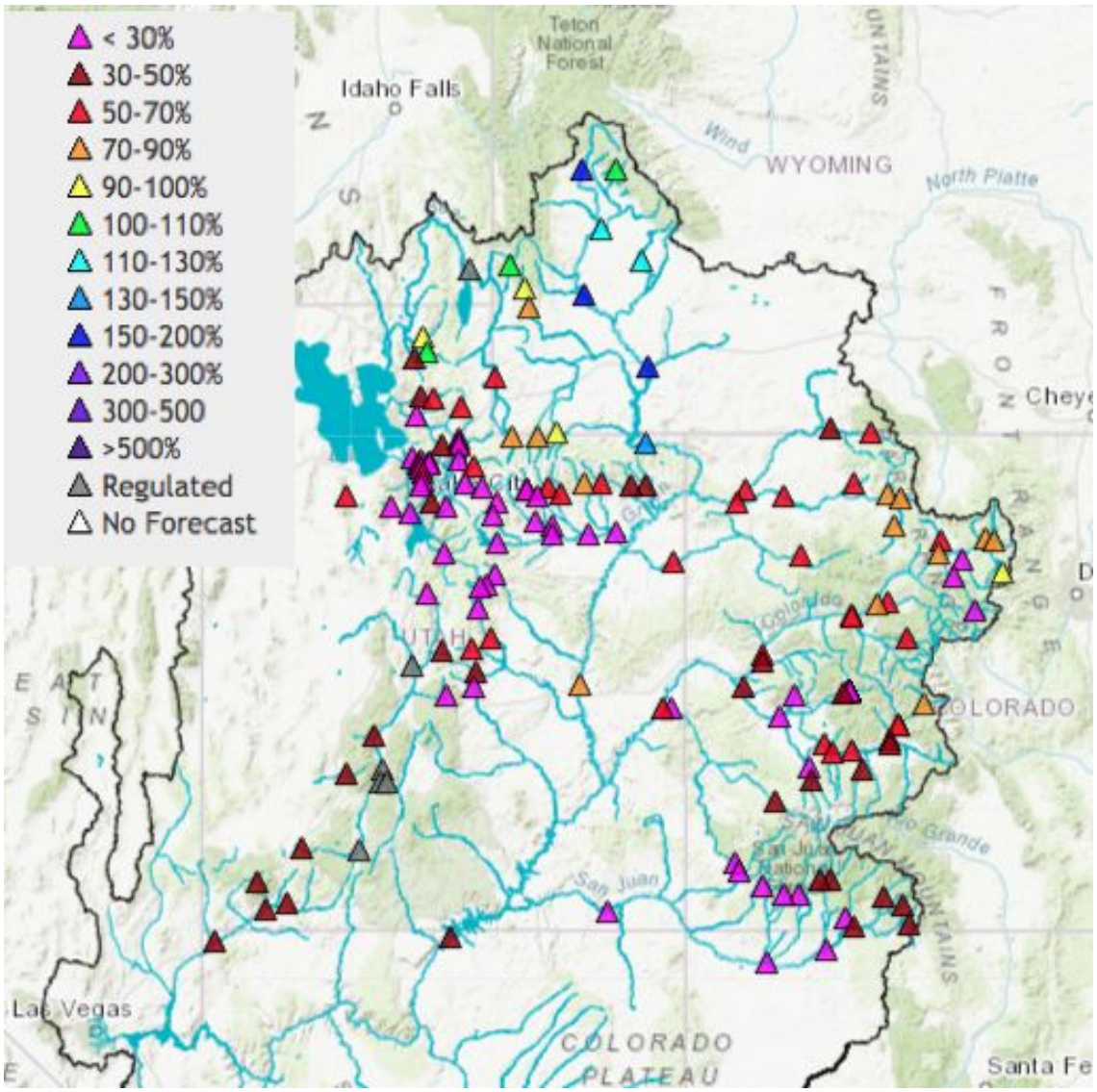
Below average precipitation was once again noted over the Dolores, Gunnison, and Yampa River Basins. Precipitation was generally near or below average in the San Juan Basin.

Overall April-July water supply guidance decreased for many areas, particularly in the Dolores, Gunnison, and San Juan River Basin. These areas have struggled with abnormally dry conditions throughout the winter and spring with water year (October-April precipitation) amounts at record lows for many sites. Several April-July volume forecasts are the 2nd or 3rd lowest on record in these areas. Some decreases in water supply volume guidance, to a lesser extent, were also observed in part of the northern Great Basin.

Largest increases with respect to average occurred in the upper Green River of Wyoming. Some increases were also noted in parts of the Duchesne River Basin and in southwest Utah however seasonal volume forecasts remain very low in these areas with some forecasts at less than 30 percent of the 1981-2010 average.

April-July unregulated inflow forecasts as of mid-May for some of the major reservoirs in the Upper Colorado River Basin include Fontenelle Reservoir 980 KAF (135% of average), Flaming Gorge 1120 KAF (114% of average), Blue Mesa Reservoir 315 KAF (47% of average), McPhee Reservoir 53 KAF (18% of average), and Navajo Reservoir 185 KAF (25% of average). The Lake Powell inflow forecast is 3.00 MAF or 42% of average. The forecast for Lake Powell is the 5th lowest on record dating back to 1964.

Seasonal Water Supply Forecasts:



Upper Colorado, Great, Virgin River Basins: 2018 April-July forecast volumes as a percent of 1981-2010 average
Guidance as of May 17th 2018 (50% exceedance probability forecast)

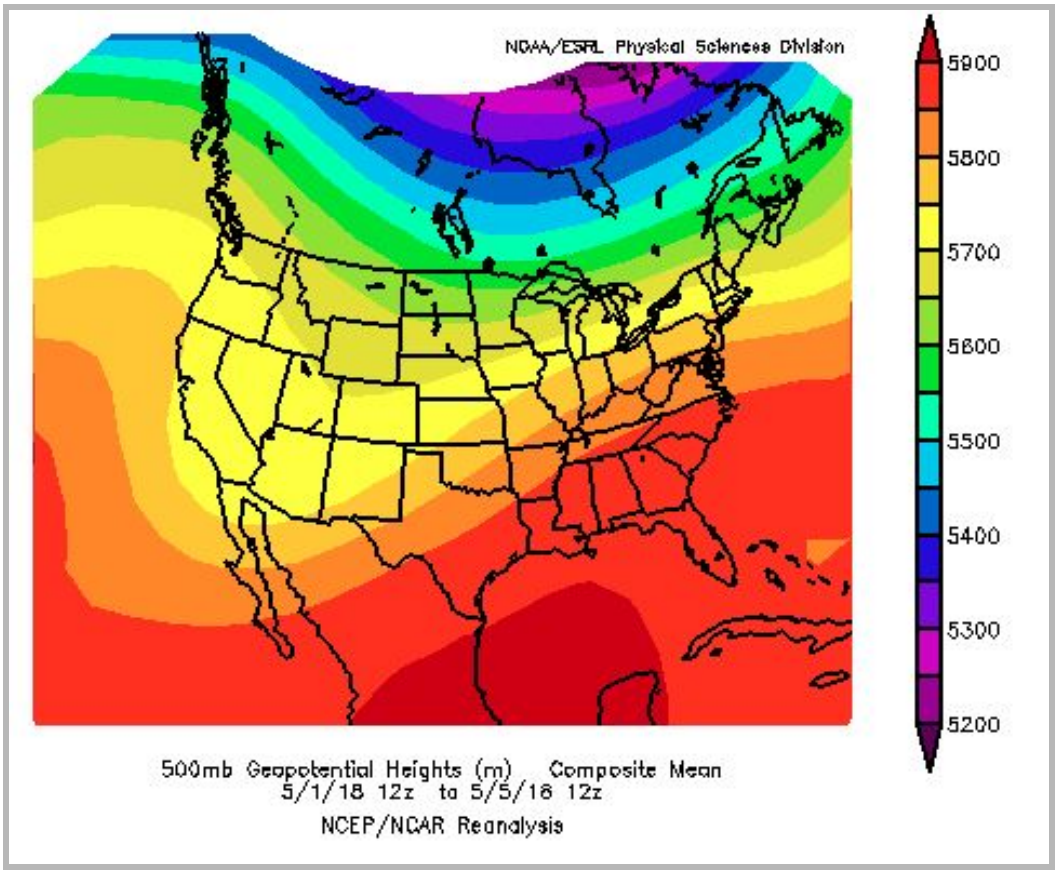
For specific site water supply forecasts click here

Water Supply Discussion

Weather Synopsis:

Storms that moved through the CBRFC forecast area during the first half of May were closed low pressure systems.

These storms, not atypical of spring, tend to move slowly and depending on their trajectory may impact certain areas more than others. This allowed some areas to receive above average precipitation while other nearby areas were relatively dry. There was some additional snowfall as a colder system moved through the 2nd week of the month; however, this was limited to the higher elevations and not widespread across the CBRFC forecast area. Between storm systems, periods of much above average temperatures accelerated snowmelt in all areas.

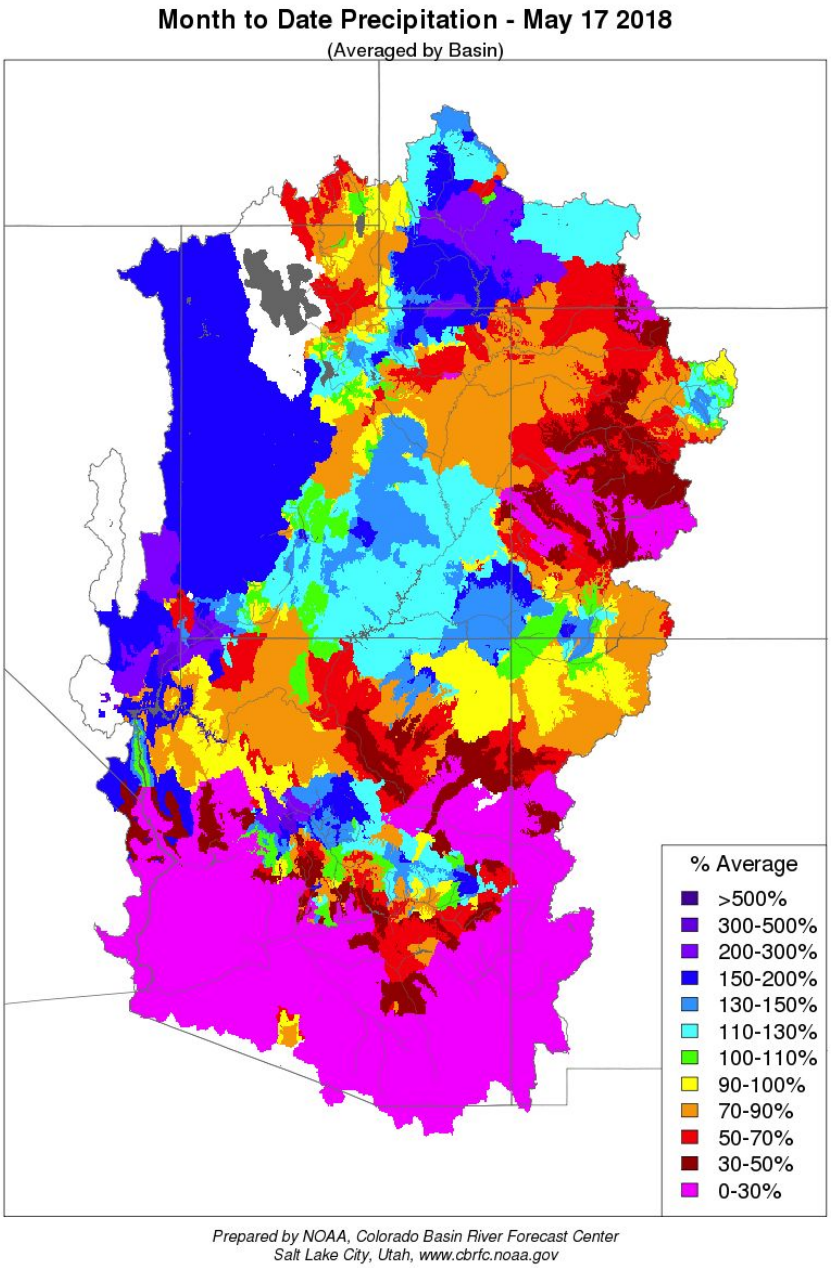


Mean atmospheric pattern in early May over the continental U.S.

Precipitation and Temperature:

Greatest precipitation impacts the first half of May occurred along the slow moving storm fronts and were enhanced by mountain orographic effects. With low pressure systems lingering to the west of the CBRFC forecast area, those river basins favored by a southwest flow fared best. Of those areas that contribute the greatest to the April-July runoff this included much of the upper Green River Basin, extending into northwest Utah, the Colorado River headwaters and into southwest Utah. Meanwhile much of western Colorado, with the exception of the western San Juan Basin were very dry the first of of May.

Temperatures were generally on the warm side, particularly in the Colorado River Basin. The proximity of the low pressure being to the west of the CBRFC forecast area resulted in extended periods of warm southwest flow particularly into western Colorado resulting in significant snow melt through the first half of the month. Temperatures did fluctuate as storm systems moved through the area, however at times maximum temperatures were 10-20 degrees above normal.



Month to date Percent Average Precipitation through May 17th
(Averaged by basins defined in the CBRFC hydrologic model)

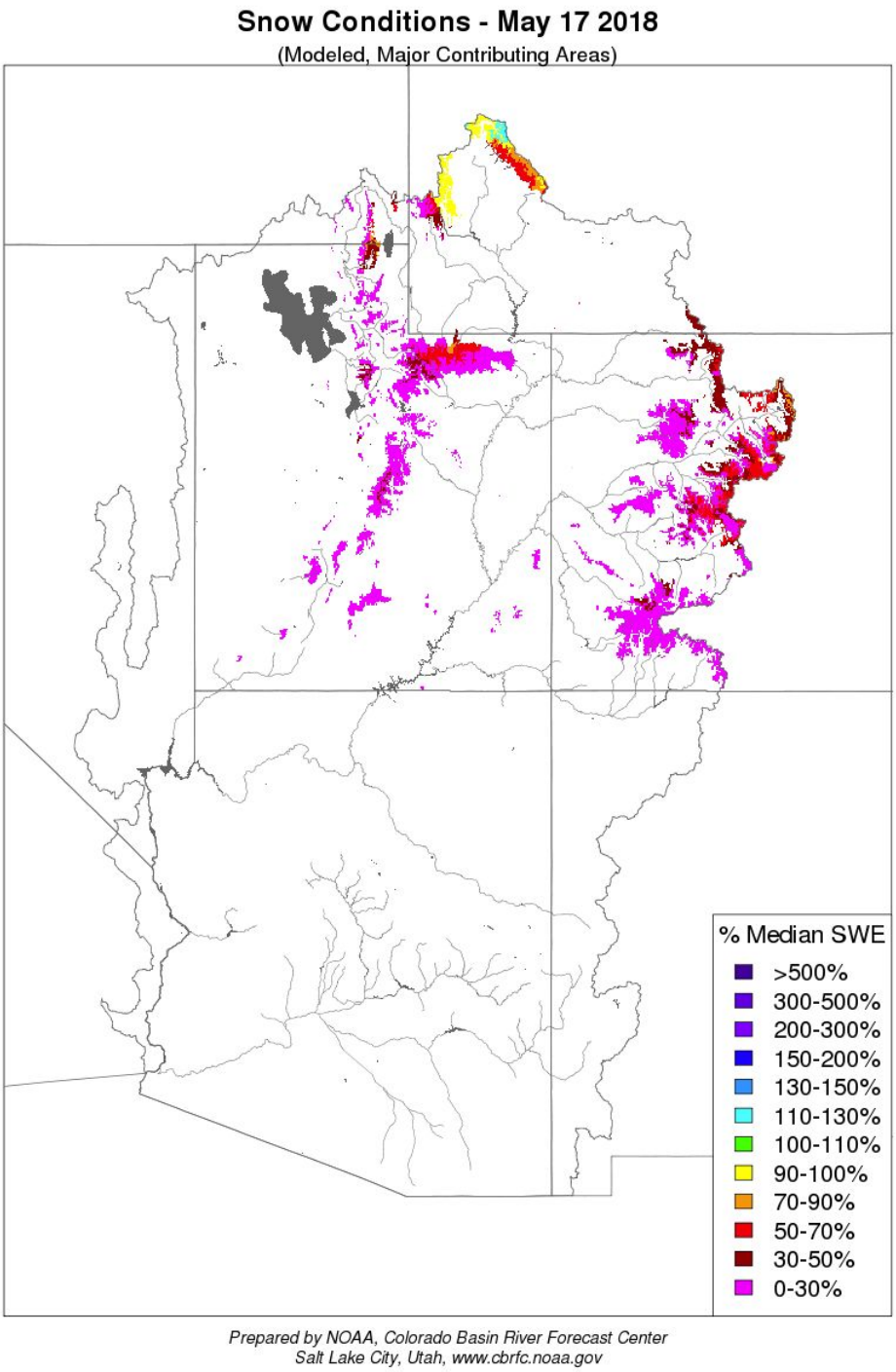
Snowpack:

Extremely poor snow conditions have existed throughout much of the winter and spring season over a majority of the Colorado River and Great Basin. The only exception to this include the upper Green River Basin of Wyoming and Colorado River headwaters above Kremmling. While some higher elevation areas did receive a little boost in

snowpack from the storms the first half of May, increases were minimal and snow melt resumed once warm temperatures returned.

With the exception of the upper Green River Basin of Wyoming many streams throughout the Colorado River and Great Basin have already realized their annual spring peak. In most cases these peaks were very early and also significantly below the average annual snow melt peak. With the snowpack continuing to dwindle most streams south of the upper Green River Basin are likely to be in their seasonal recession by the final week of May if not already.

The image below is the representation of snow in the CBRFC hydrologic model. Only those areas that provide the greatest contribution to the April-July runoff volumes are displayed. The takeaway message is that poor snowpack conditions are widespread as indicated by the hydrologic model.



Modeled Snow: Snow representation from the CBRFC hydrologic model May 17th 2018

For updated SNOTEL information, click here.

For CBRFC hydrologic model snow conditions, click here

Upcoming Weather:

Unless weather over the next two months becomes abnormally wet there is unlikely to be a significant impact to the the current water supply runoff situation. The period for snow accumulation has passed and late spring into early summer is generally a drier climatological period. In the near term looking forward the next couple of weeks the weather pattern remains active with low pressure systems along the west coast that may move across primarily northern parts of the Great Basin and Colorado River Basin. These systems may bring periodic showers and cooler temperatures with the benefit of possibly curbing or delaying water demand.

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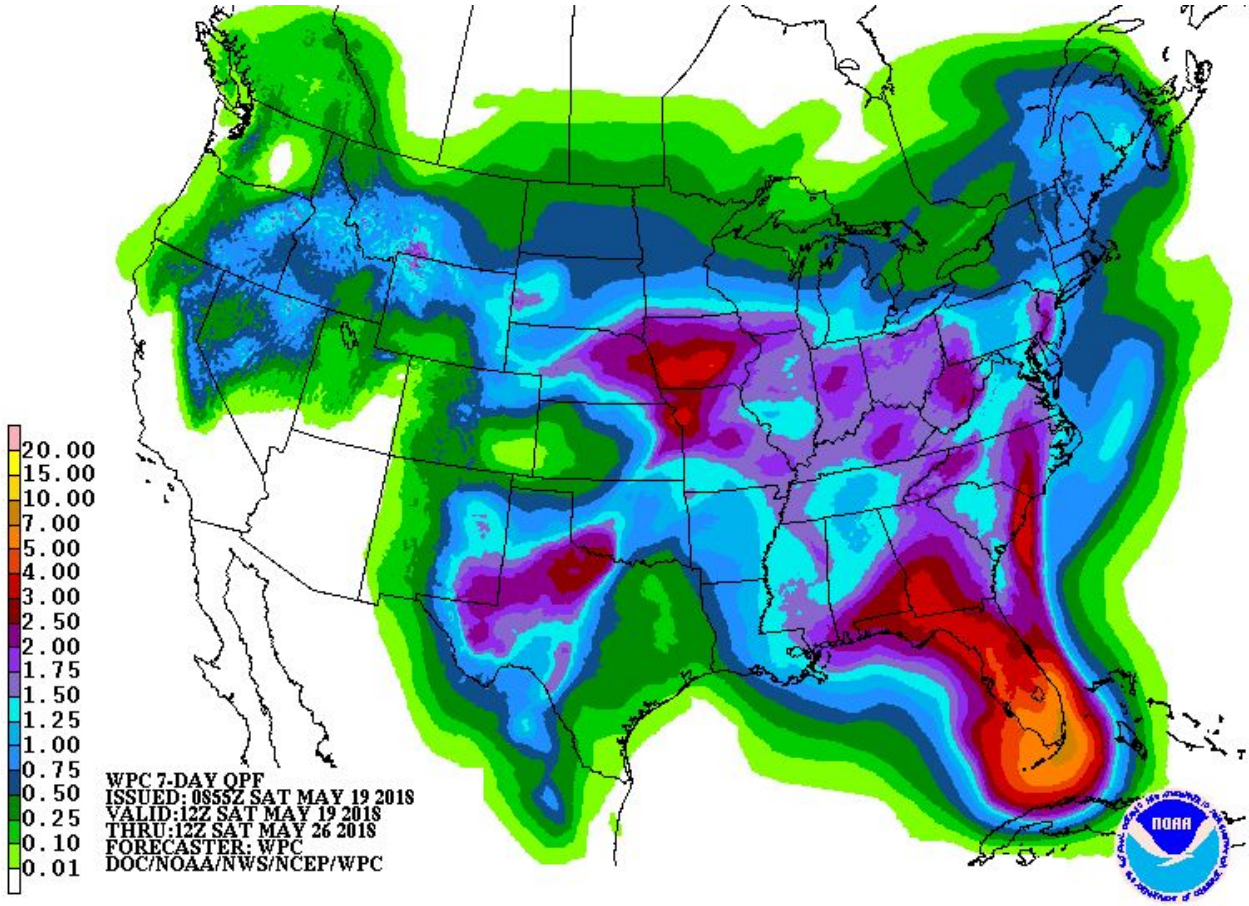
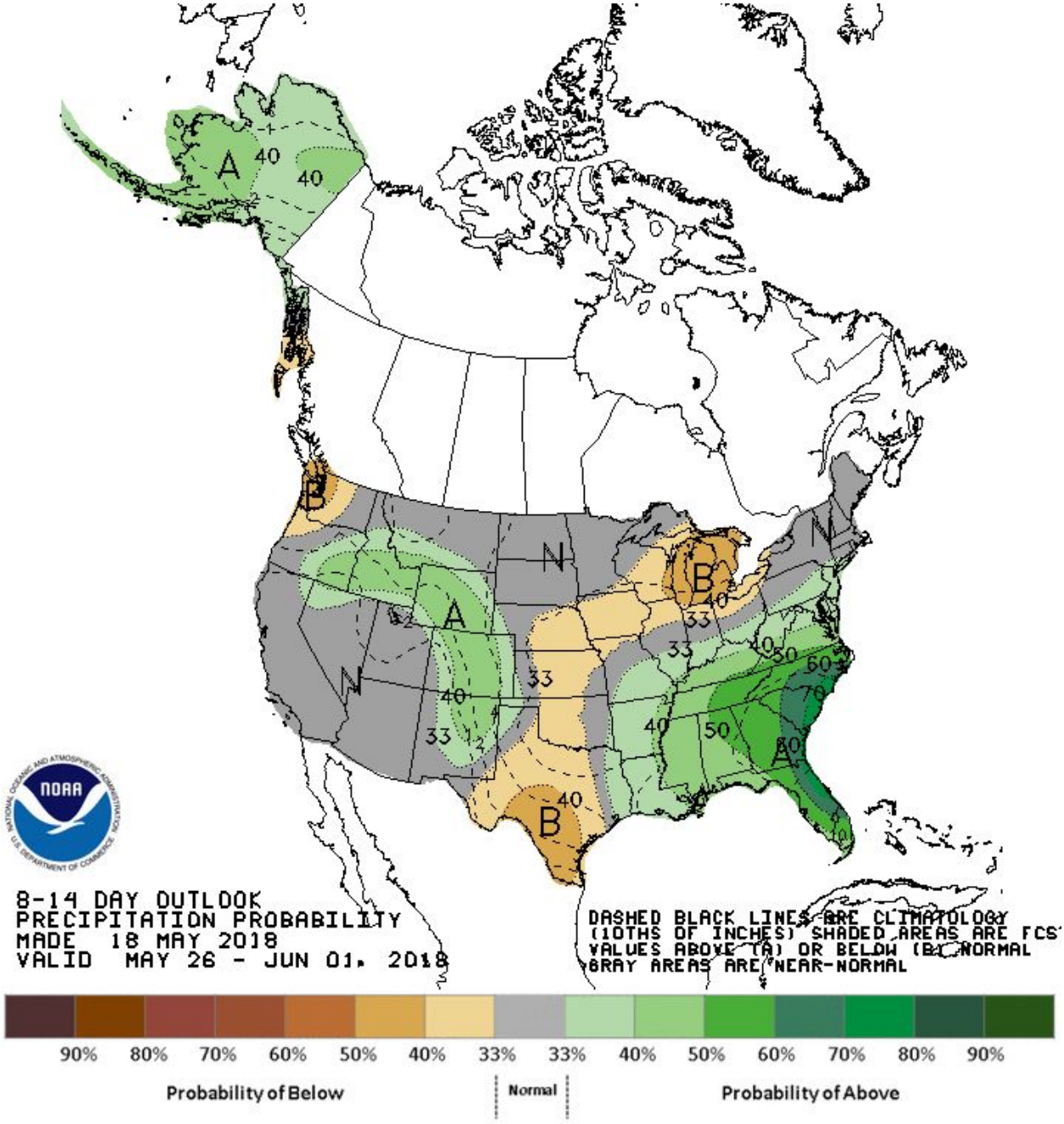


NWS Weather Prediction Center precipitation forecast for May 19-26, 2018



NWS Climate Prediction Center 8-14 Day Precipitation Outlook for May 26-June 1, 2018.

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