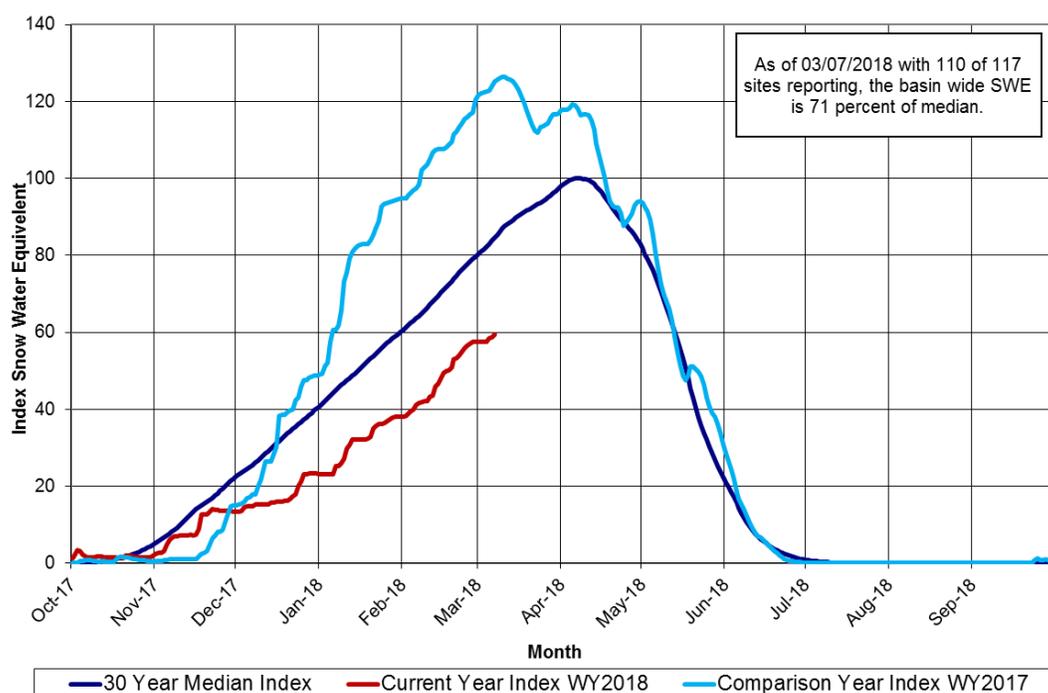


Colorado River Basin Hydrology Update March 2018

This hydrologic assessment of the Colorado River Basin provides insight to current flows and the water supply outlook. Inflows to Lake Powell, which currently sits at 56% of capacity, can have implications for deliveries to Lake Mead, which is currently 41% full¹. A vast majority of flows in the Colorado River originate as snow pack in the Upper Basin.

One of the most important metrics indicating runoff potential is snow water equivalent (SWE), or the amount of water contained in the snowpack. As of the first week of March, the 2018 water year (October through September) is trending well below the 30-year median. Record or near record low snowpack exists throughout much of the Upper Colorado River Basin, with many measurement sites continuing to report the lowest SWE values on record for this time of year³. The graph below provides a comparison of current 2018 SWE levels (**red**) in comparison to 2017 SWE (**light blue**) and the 30-year median (**dark blue**).

Upper Colorado River Basin Snow Water Equivalent Tracking



Source: US Bureau of Reclamation²; data provided by: Natural Resource Conservation Service

Current assessments and forecasts indicate that streamflow in the Colorado River will be well below average this year, in spite of some moderate snowfall in some parts of the Upper Basin in the month of February. At present, the April-July inflow forecast for Lake Powell is 3.40 million acre-feet, which is 47% of average.³ Although it is

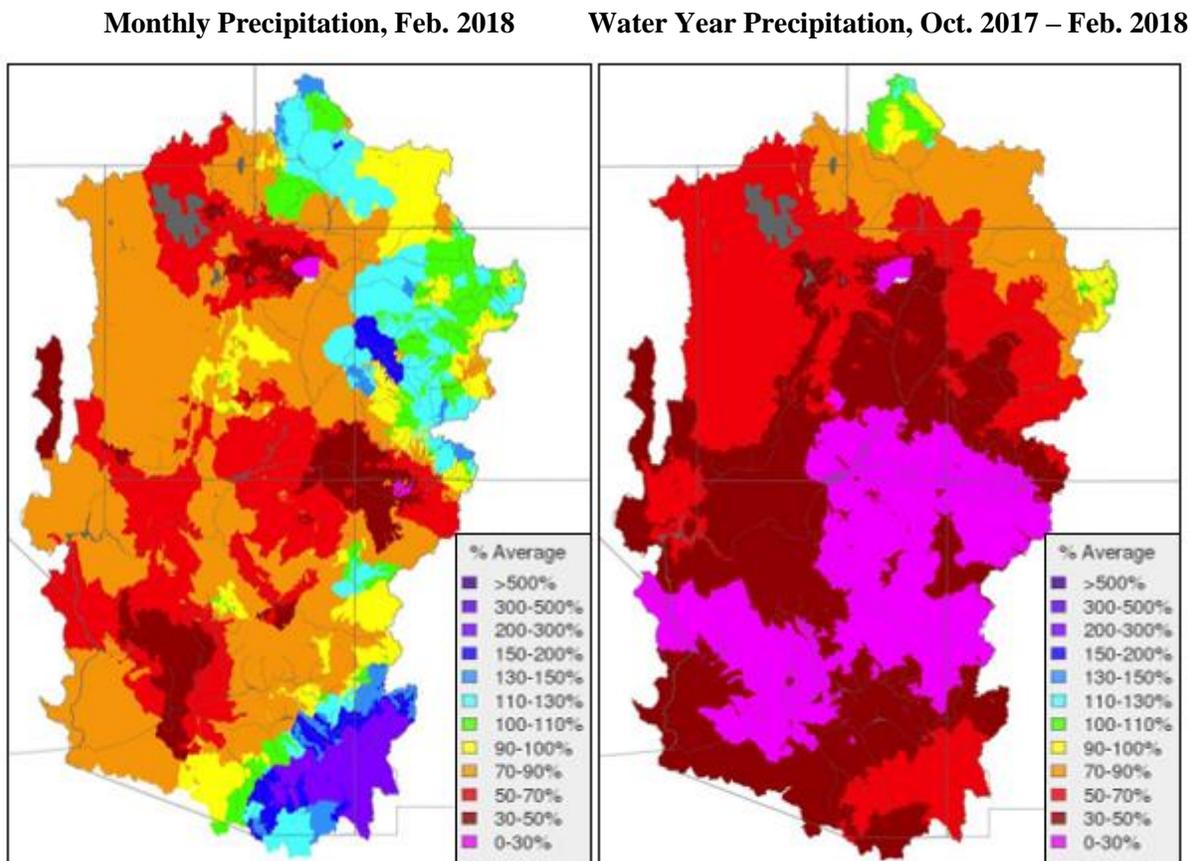
¹ US Bureau of Reclamation. March 05, 2018. "Lower Colorado Water Supply Report." US Bureau of Reclamation, River Operations. Retrieved March 06, 2018 from <https://www.usbr.gov/lc/region/g4000/weekly.pdf>

² US Bureau of Reclamation. 2018. "Lake Powell Snow Chart". US Bureau of Reclamation, Upper Colorado Region. Retrieved March 05, 2018 from https://www.usbr.gov/uc/water/notice/Graphs/Upper_Colorado.png

³ Colorado Basin River Forecast Center. 2018. "March 01, 2018 Water Supply Forecast Discussion." Retrieved March 06, 2018 from <https://www.cbrfc.noaa.gov/wsup/pub2/discussion/current.pdf>

still likely that Lake Mead will receive a 9 million acre foot release from Powell, the official determination of how much water will be released from Lake Powell to Lake Mead will be made in April. In 2017, for example, an exceptionally warm and dry March, which followed a very wet January and February, tempered and eliminated any expectations that Lake Mead would receive a very large release of 11 million acre-feet.

The figure below shows the percent of average precipitation for February (left) and the water year (right)³. Though some areas of the Colorado River Basin received above average precipitation in February, overall the month was far drier than average for most of the basin, as shown by the areas colored orange and red. The aggregate below average precipitation in February did not improve the current outlook for the water year. Precipitation in the Upper Colorado Basin is currently at 67% of average for the water year **Error! Bookmark not defined.**, while the lower part of the basin primarily remains extremely dry, with precipitation sitting in a range from 0 to 50% of average.



The April-July streamflow volumes forecasts in some limited areas of the Upper Colorado River Basin may approach above average flows as of early March, however outside of these areas and in most of the Basin, models are predicting below or well below average flows. For example, streamflow volume forecasts in Arizona and New Mexico are predicting streamflow volumes in the range from 5-40% of the median³. Overall, as mentioned previously, flows into Lake Powell during the important April to July runoff period are still predicted to remain less than half of ‘normal’. Additionally, dry soils throughout most of the basin will adversely impact flows as the soils will retain more water from precipitation events until the soils are fully saturated. Several storms may be necessary in some areas before there is increased streamflow. The weather outlook for March predicts an initial period of warmer and drier conditions, followed by more favorable precipitation conditions for the rest of the month. The amount of moisture these forecasted storms may bring is unknown at this point³. Although a ‘Miracle March’ is in theory possible, it remains likely that dry overall conditions will persist throughout much of the Colorado River Basin.