



**NOAA**  
National  
Weather  
Service

# CBRFC Water Year 2021 Outlook

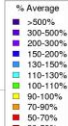
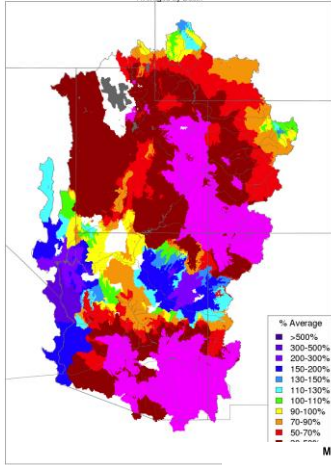
Colorado River Forecasting Service (CRFS) Meeting  
November 24, 2020

# Overview

- Precipitation summary
- Current soil moisture conditions
- Current snowpack conditions
- April-July ESP volume outlook
- Future Weather Outlook
- ENSO status/impacts

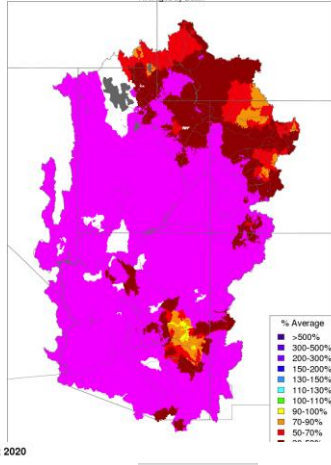
# April-October 2020 Observed Monthly Precipitation Summary

Monthly Precipitation - April 2020  
Averaged by Basin



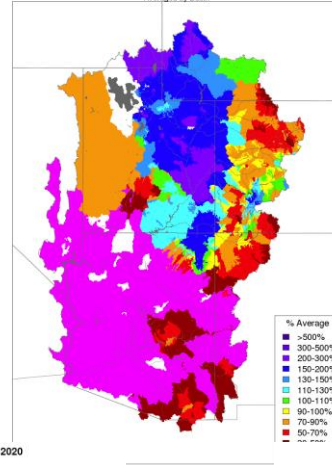
Prepared by NOAA, Colorado Basin River Forecast Center  
Salt Lake City, Utah, www.dbrfc.noaa.gov

Monthly Precipitation - May 2020  
Averaged by Basin



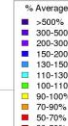
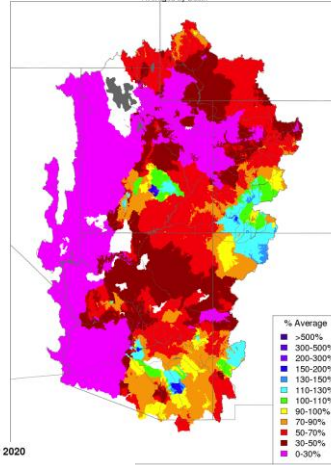
NOAA, Colorado Basin River Forecast Center  
Salt Lake City, Utah, www.dbrfc.noaa.gov

Monthly Precipitation - June 2020  
Averaged by Basin



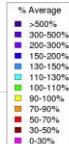
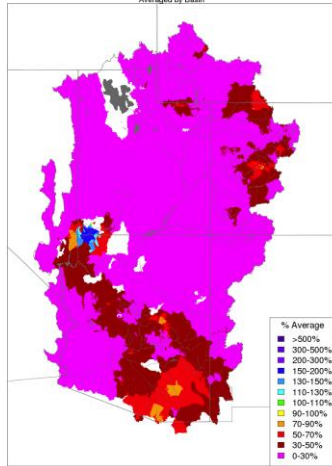
NOAA, Colorado Basin River Forecast Center  
Salt Lake City, Utah, www.dbrfc.noaa.gov

Monthly Precipitation - July 2020  
Averaged by Basin



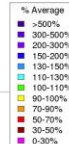
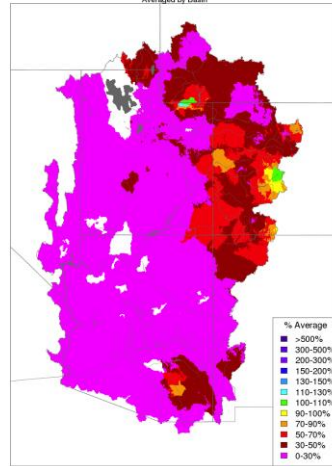
NOAA, Colorado Basin River Forecast Center  
Salt Lake City, Utah, www.dbrfc.noaa.gov

Monthly Precipitation - August 2020  
Averaged by Basin



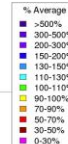
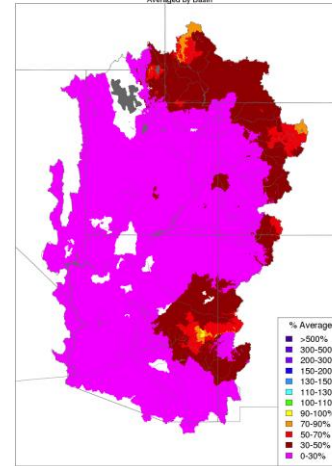
Prepared by NOAA, Colorado Basin River Forecast Center  
Salt Lake City, Utah, www.dbrfc.noaa.gov

Monthly Precipitation - September 2020  
Averaged by Basin



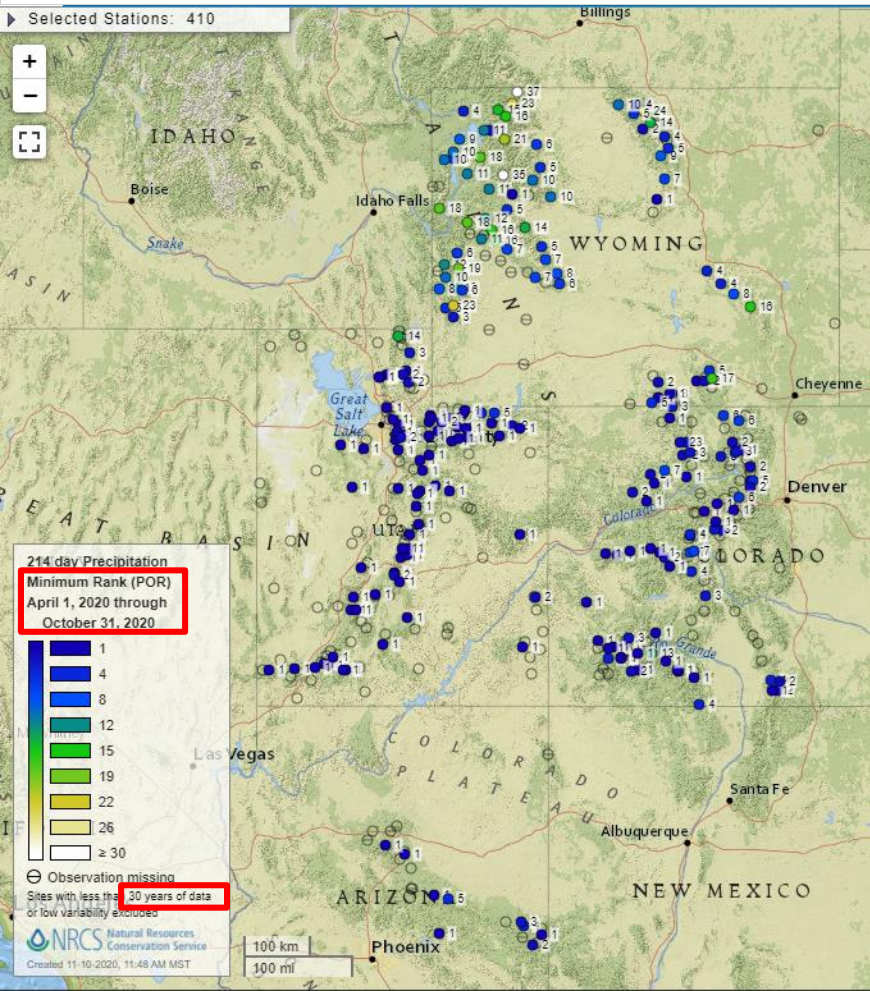
Prepared by NOAA, Colorado Basin River Forecast Center  
Salt Lake City, Utah, www.dbrfc.noaa.gov

Monthly Precipitation - October 2020  
Averaged by Basin

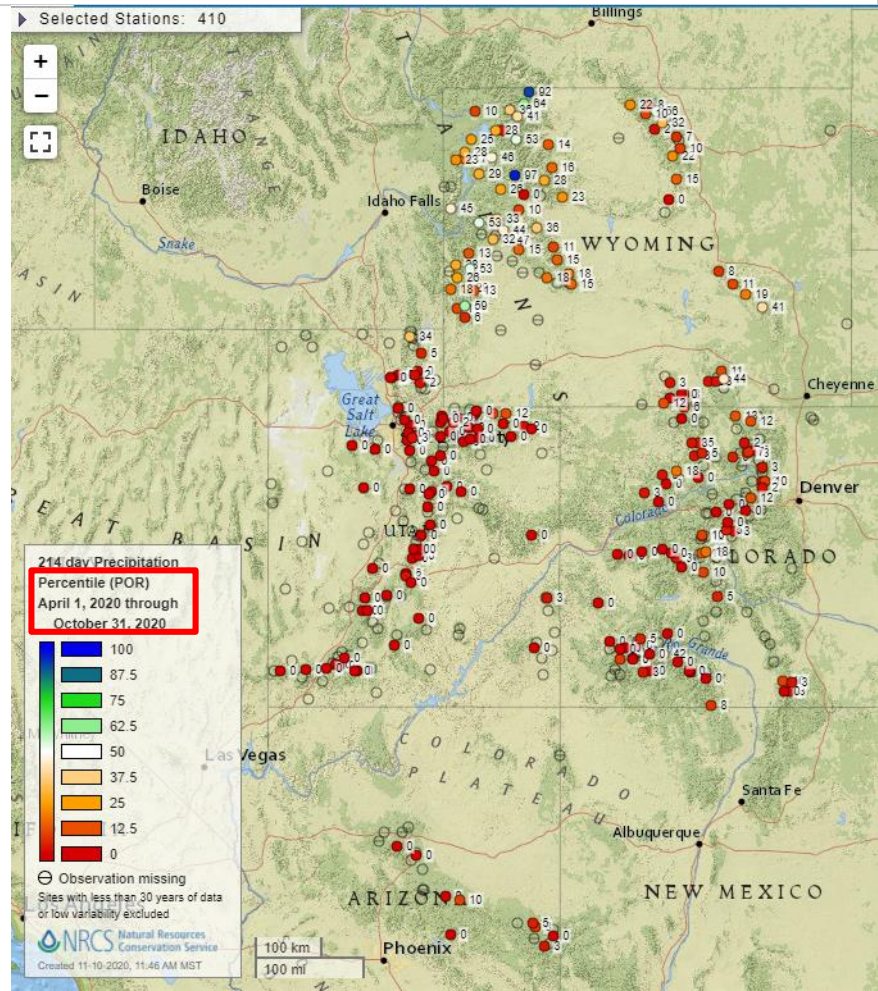


Prepared by NOAA, Colorado Basin River Forecast Center  
Salt Lake City, Utah, www.dbrfc.noaa.gov

# April-October 2020 Observed SNOTEL Precipitation Statistics (NRCS)



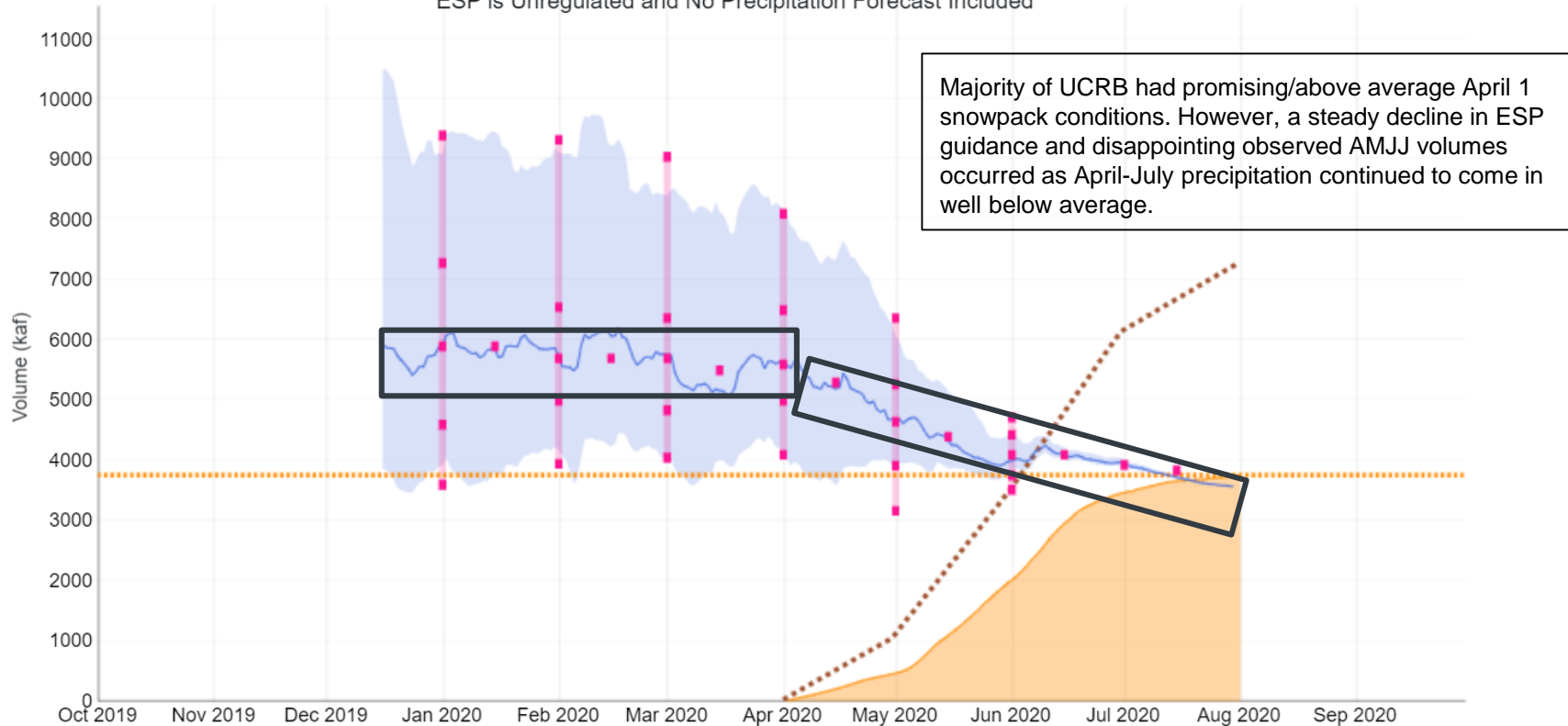
[link](#)



# Lake Powell WY 2020 ESP Summary

## Water Supply Forecast

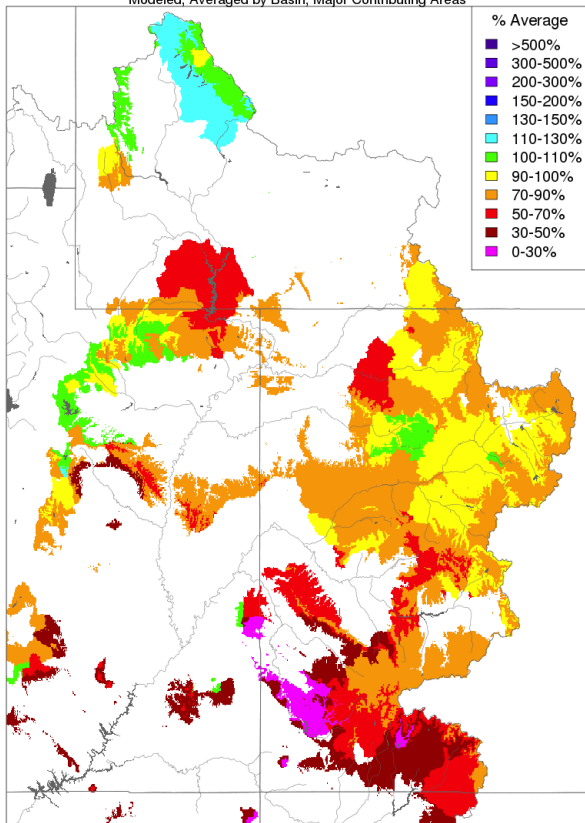
Colorado - Lake Powell, Glen Cyn Dam, At (GLDA3)  
Period: Apr-Jul, Observed Volume: 3760 kaf (52% Average, 58% Median)  
ESP is Unregulated and No Precipitation Forecast Included



# Fall Model Soil Moisture Conditions: 2019 vs. 2020

Soil Moisture - Fall - 2019 (November 15)

Modeled, Averaged by Basin, Major Contributing Areas



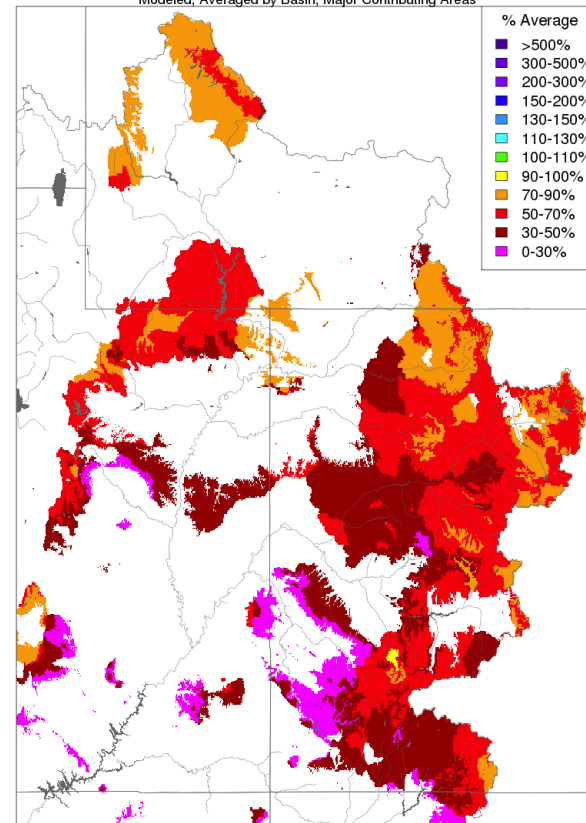
Prepared by NOAA, Colorado Basin River Forecast Center  
Salt Lake City, Utah, [www.cbrfc.noaa.gov](http://www.cbrfc.noaa.gov)

Current soil moisture conditions are worse off than they were a year ago due to near record low April-October 2020 precipitation across the region.

Model soil moisture is generally in the bottom 5 across the upper Colorado over the 1981-2020 40 year period. The San Juan and Dolores are generally in the bottom 3 with some areas being record dry.

Soil Moisture - Fall - 2020 (November 15)

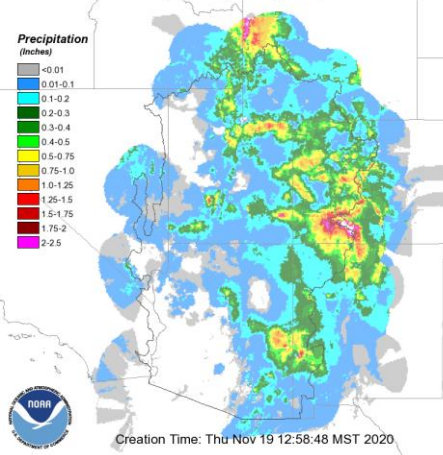
Modeled, Averaged by Basin, Major Contributing Areas



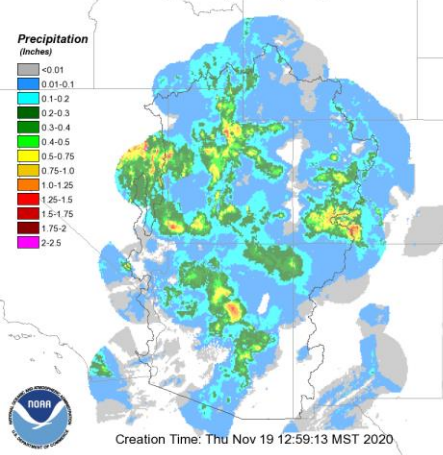
Prepared by NOAA, Colorado Basin River Forecast Center  
Salt Lake City, Utah, [www.cbrfc.noaa.gov](http://www.cbrfc.noaa.gov)

# November Storms

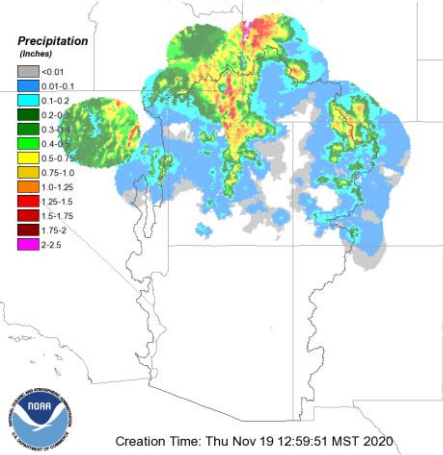
Observed 24hr Precipitation, Ending 12Z, 11/08/2020



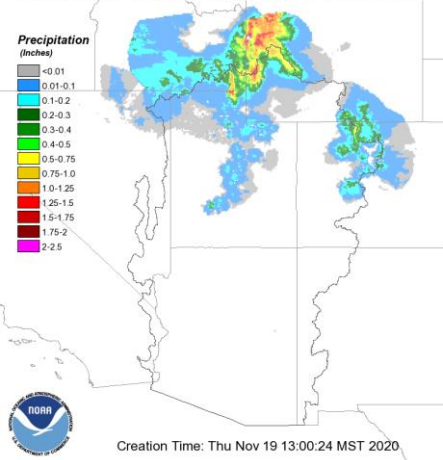
Observed 24hr Precipitation, Ending 12Z, 11/09/2020



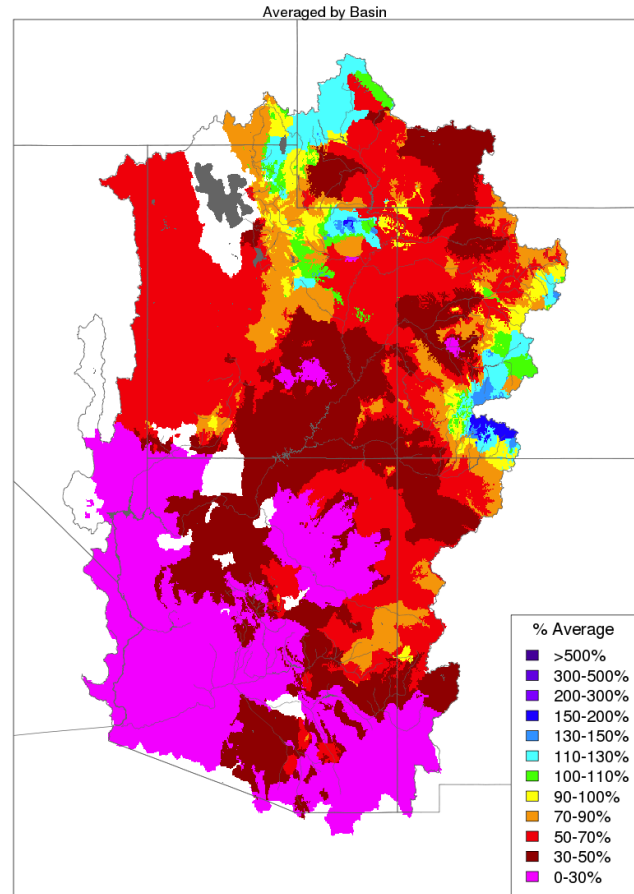
Observed 24hr Precipitation, Ending 12Z, 11/14/2020



Observed 24hr Precipitation, Ending 12Z, 11/16/2020

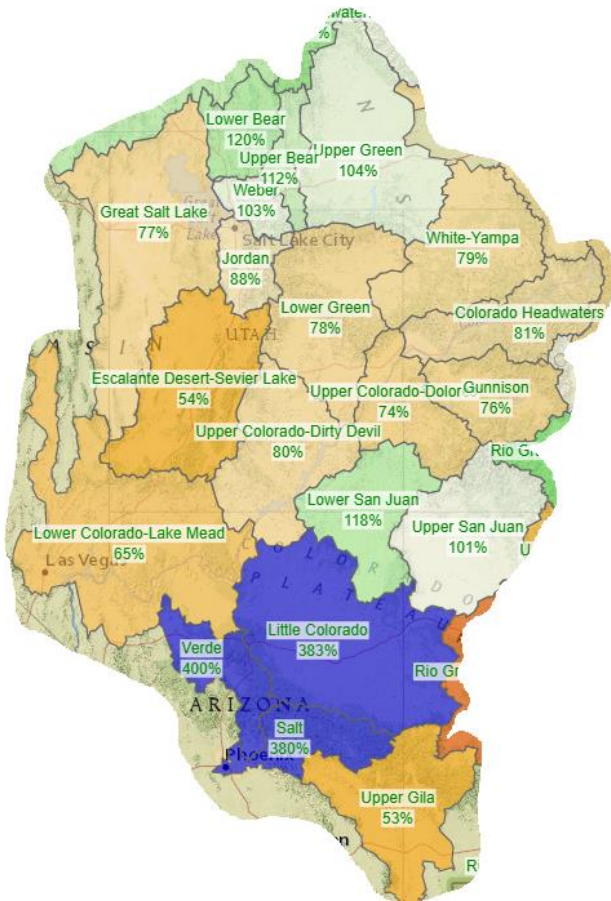


Month to Date Precipitation - November 24 2020

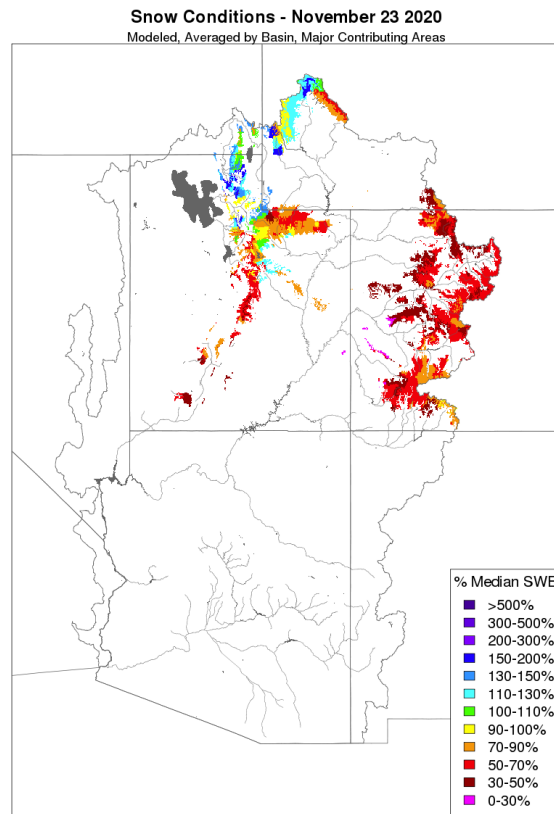


# Current Snow Conditions

## NRCS Basin SNOTEL Conditions



## CBRFC Model Snow Conditions



Snow Water Equivalent  
Percent NRCS 1981-2010  
Median  
November 22, 2020, end of  
day

- ≥ 200%
- 175%
- 150%
- 125%
- 100%
- 75%
- 50%
- 25%
- ≤ 0%
- No basin value

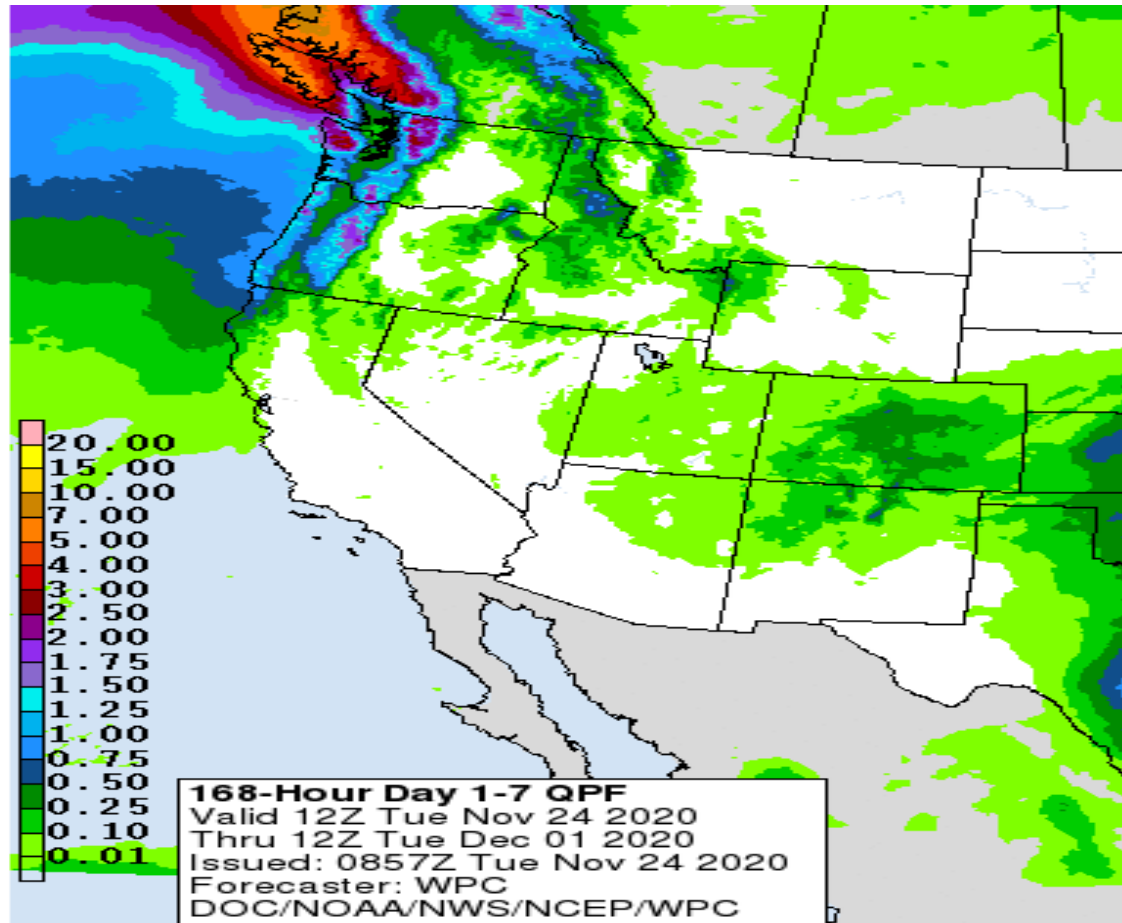
Watershed Boundaries  
— Basin (6-Digit HUC)



# ESP Outlooks: 2021 April-July Volumes

Location	Aug 1 Raw ESP	Oct 1 Raw ESP	Mid-Nov Raw ESP	% Change Raw ESP (Aug-Oct / Oct-Mid Nov)
Fontenelle	655	590	590	-10% / 0%
Flaming Gorge	795	670	715	-16% / +7%
Blue Mesa	610	535	465	-12% / -13%
Navajo	600	515	470	-14% / -9%
Lake Powell	5510	4650	4470	-16% / -4%

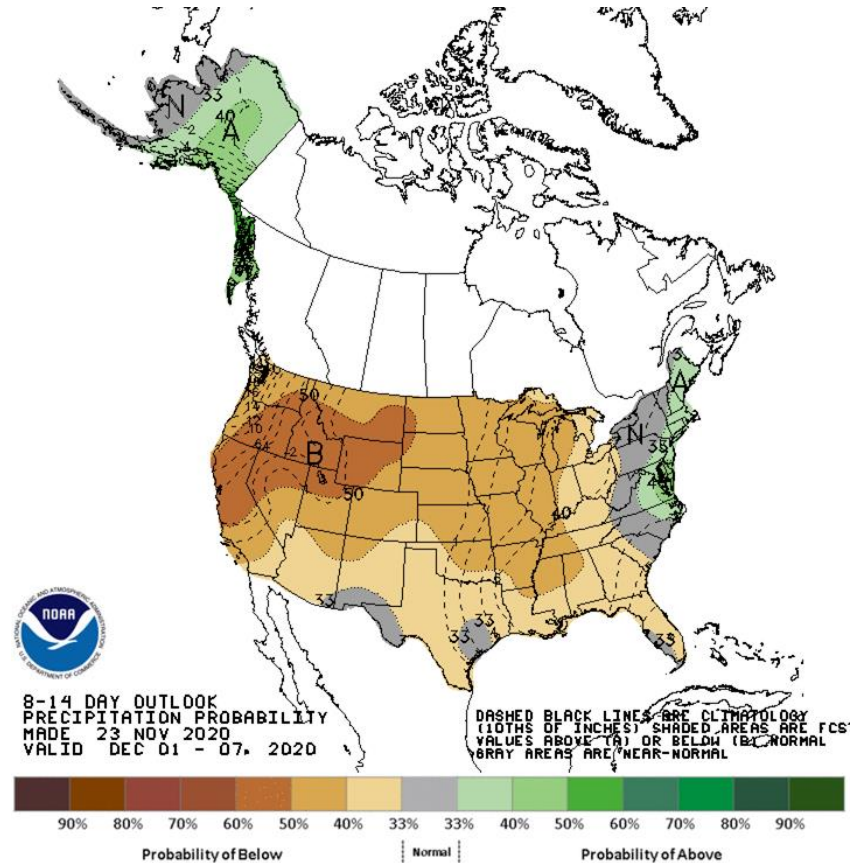
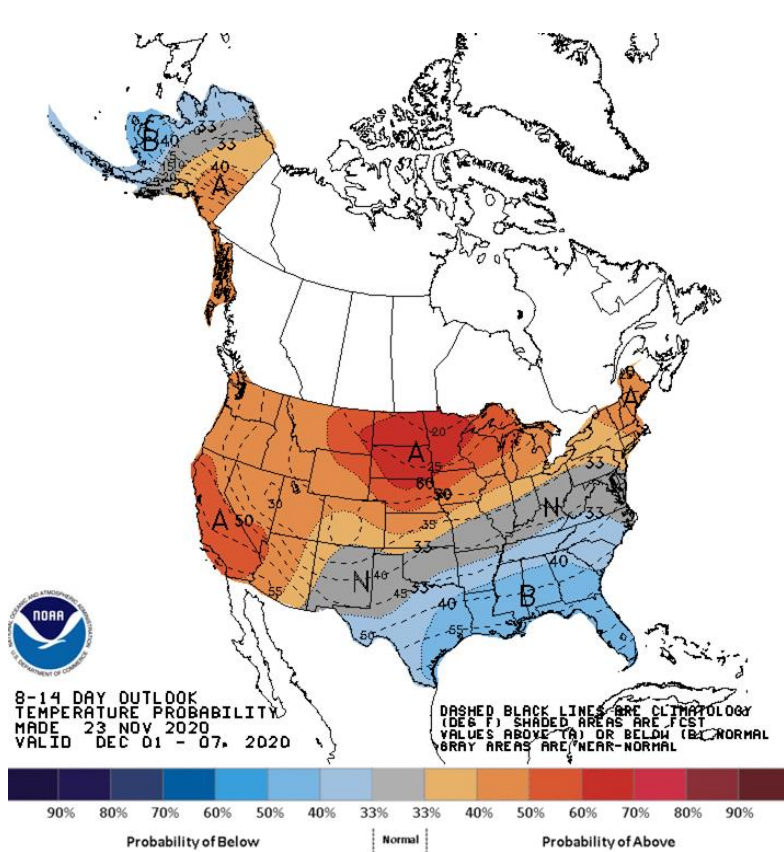
# Future Weather: Nov 24 - Dec 1 Forecast Precipitation



Light precipitation expected over the next few days. Ensemble forecasts favor another ridge of high pressure building over the Desert Southwest this weekend, resulting in tranquil weather through Sunday.

# Future Weather: Next Week

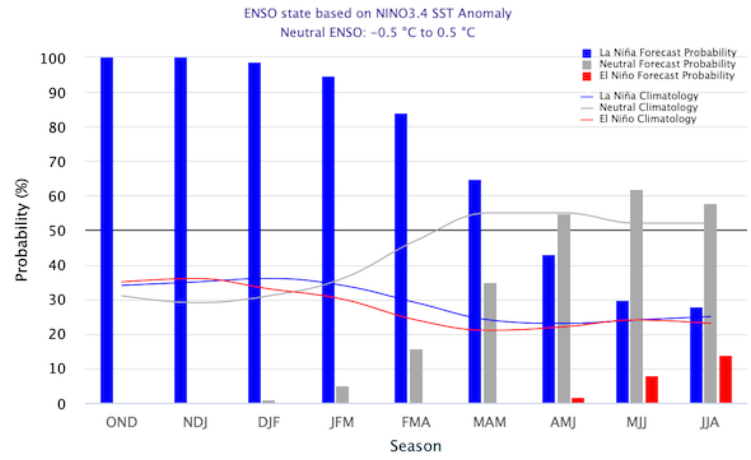
A ridge is forecasted to dominate the weather pattern for next week, thus the odds favor below normal precipitation across much of the Colorado Basin and Great Basin.



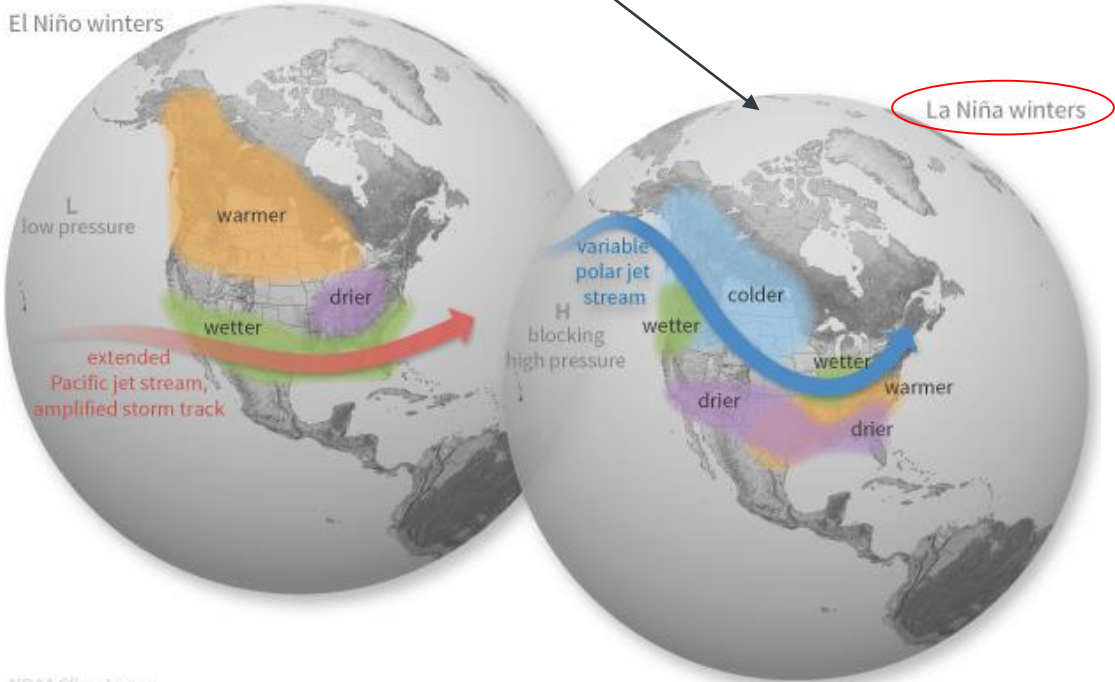
# El Niño-Southern Oscillation (ENSO) Status

- **La Niña** is likely to continue through the Northern Hemisphere winter 2020-21 (~95% chance during January-March) and into spring 2021 (~65% chance during March-May).
  - Increased chances of drier winter weather in Arizona/LCRB
  - Much weaker correlation/winter weather signal elsewhere in basin

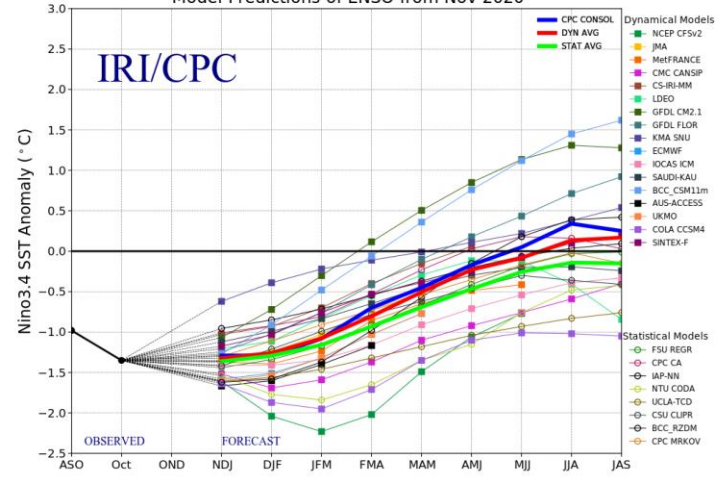
Early–November 2020 CPC/IRI Official Probabilistic ENSO Forecasts



El Niño winters



Model Predictions of ENSO from Nov 2020



# Climate Prediction Center Winter (DJF) Outlook

Best odds of below normal precip is across the Lower Basin, especially Arizona. Much of the Upper Basin has equal chances for above and below normal precip.

