

NOAA
National
Weather
Service

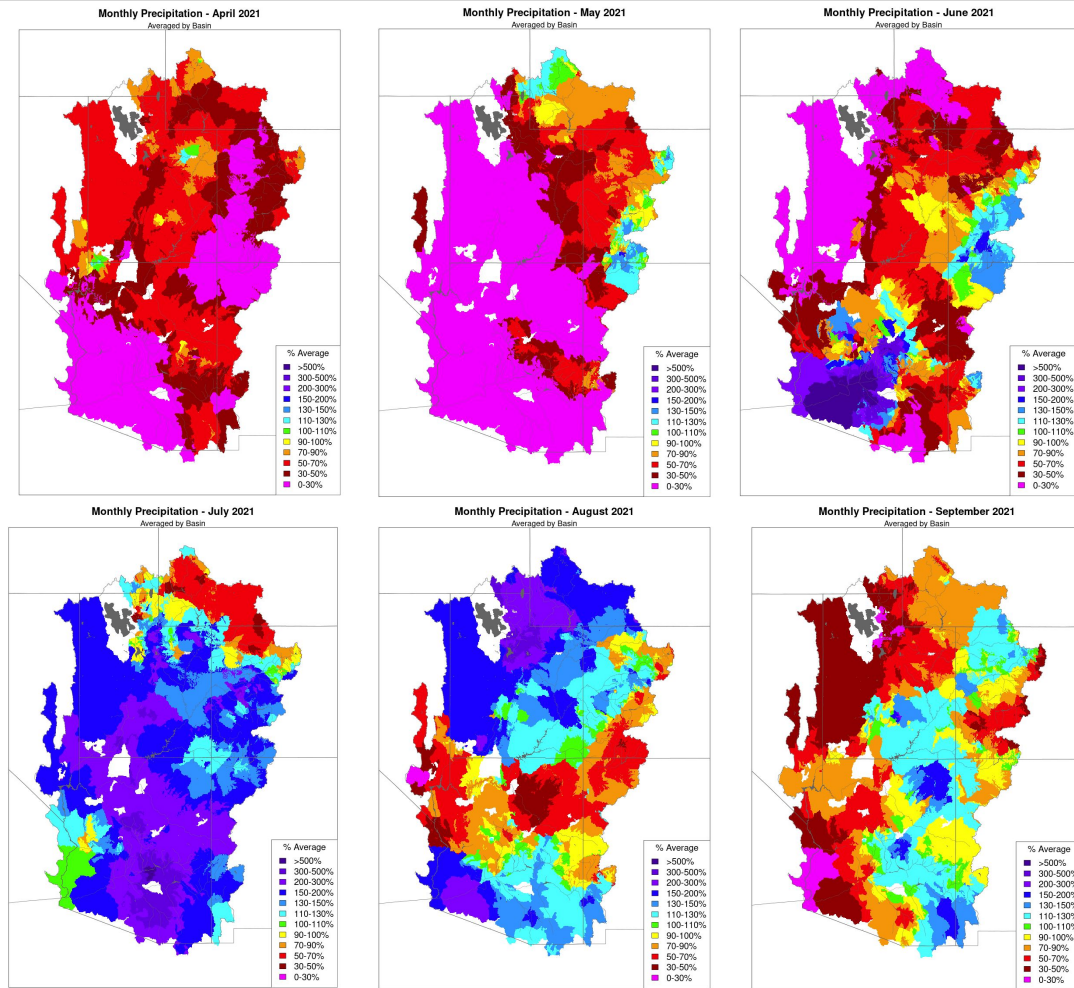
CBRFC Water Year 2022 Outlook

Colorado River Forecasting Service (CRFS) Meeting
November 18, 2021

Overview

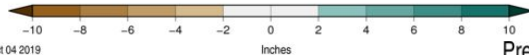
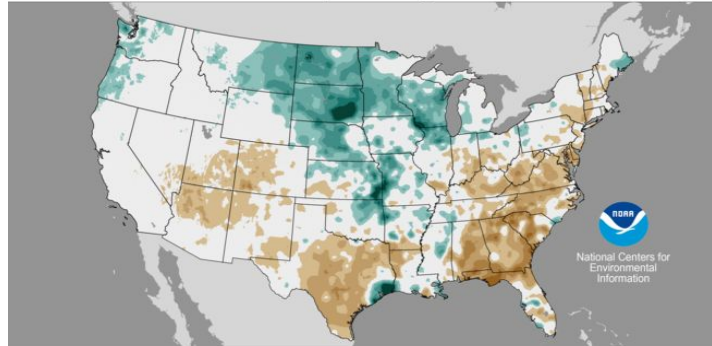
- Precipitation summary
- Streamflow conditions
- Current soil moisture conditions
- Current snowpack conditions
- April-July ESP volume outlook
- Future Weather Outlook
- ENSO status/impacts

April-September 2021 Observed Monthly Precipitation Summary



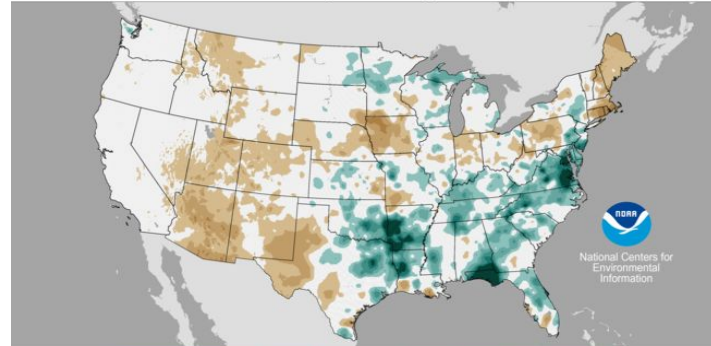
Monsoon Precipitation: July-September

Precipitation Departures from Average
July-September 2019
Average Period: 20th Century



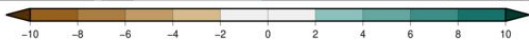
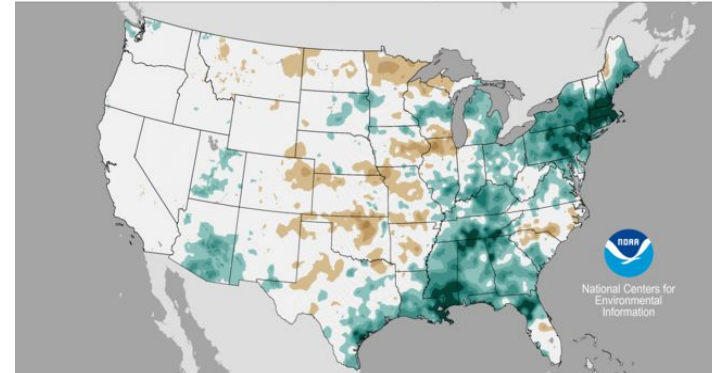
Created: Fri Oct 04 2019

Precipitation Departures from Average
July-September 2020
Average Period: 20th Century



Data Source: 5km Gridded (nClimGrid)

Precipitation Departures from Average
July-September 2021
Average Period: 20th Century



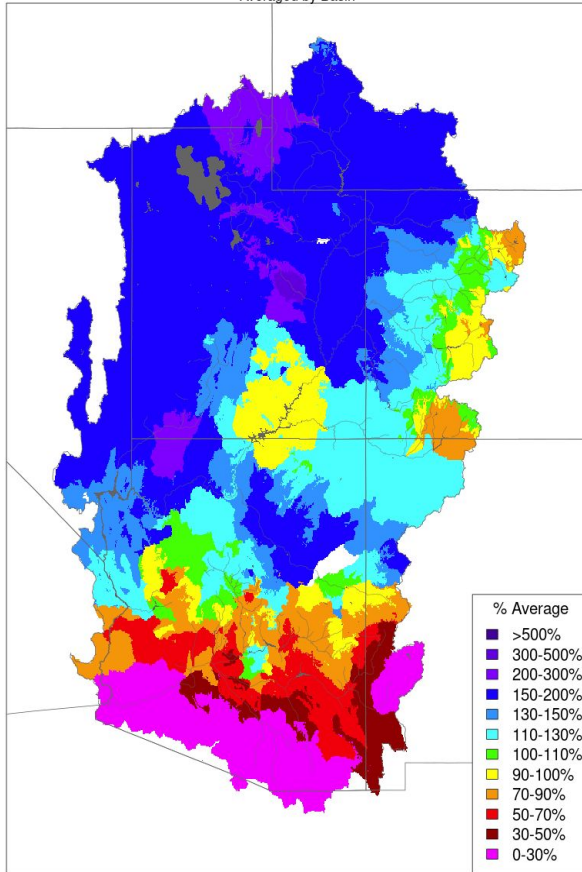
Created: Wed Oct 06 2021

Data Source: nClimGrid

WY22 Precipitation: October-November

Monthly Precipitation - October 2021

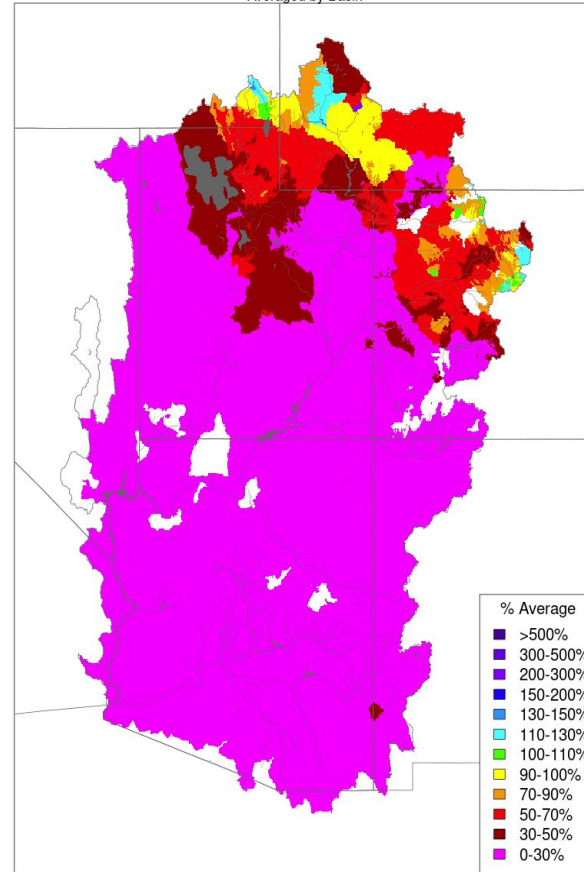
Averaged by Basin



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

Month to Date Precipitation - November 17 2021

Averaged by Basin

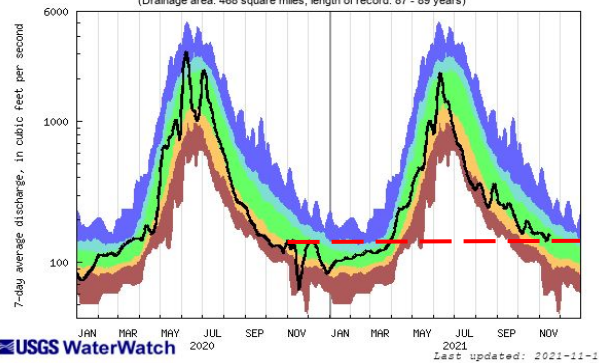


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Streamflow Conditions

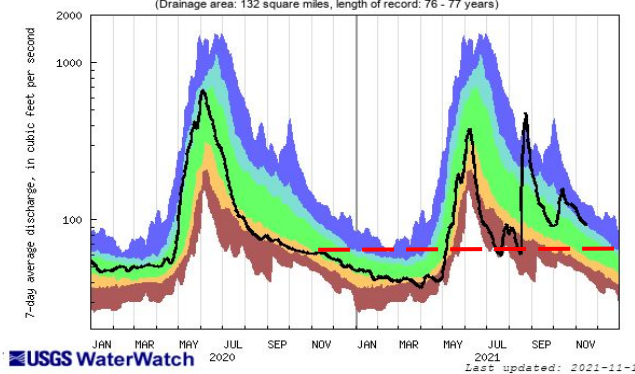
Upper Green River Basin

USGS 09188500 GREEN RIVER AT WARREN BRIDGE, NEAR DANIEL, WY
(Drainage area: 468 square miles, length of record: 87 - 89 years)



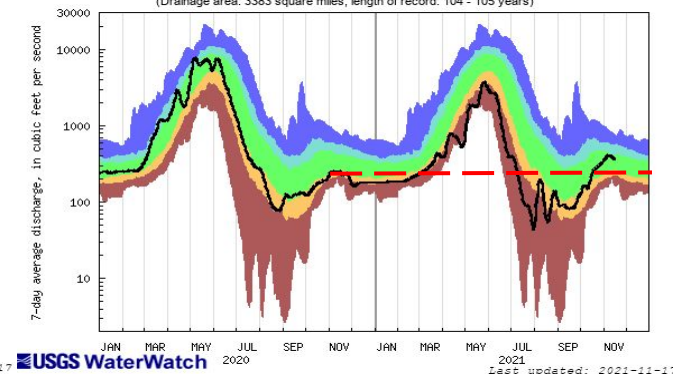
Duchesne River Basin

USGS 09292500 YELLOWSTONE RIVER NEAR ALTONAH, UT
(Drainage area: 132 square miles, length of record: 76 - 77 years)



Yampa River Basin

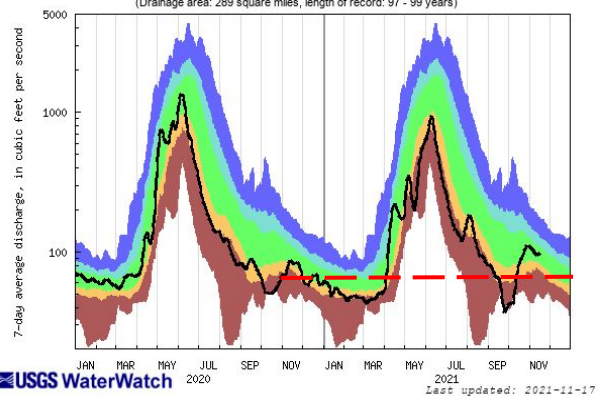
USGS 09251000 YAMPA RIVER NEAR MAYBELL, CO
(Drainage area: 3383 square miles, length of record: 104 - 105 years)



Explanation - Percentile classes					
lowest-10th percentile	10-24	25-75	76-90	90th percentile - highest	Flow
Much below normal	Below normal	Normal	Above normal	Much above normal	

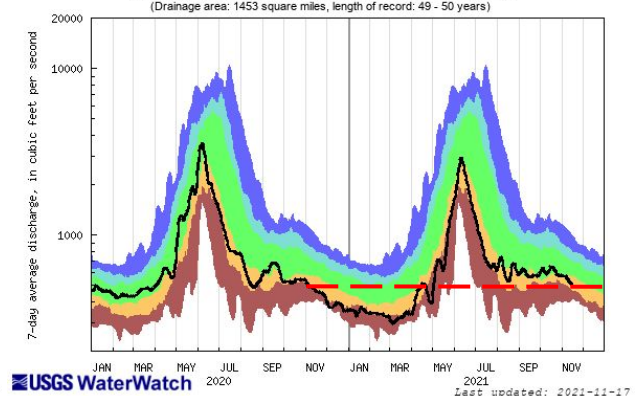
Gunnison River Basin

USGS 09112500 EAST RIVER AT ALMONT, CO
(Drainage area: 289 square miles, length of record: 97 - 99 years)



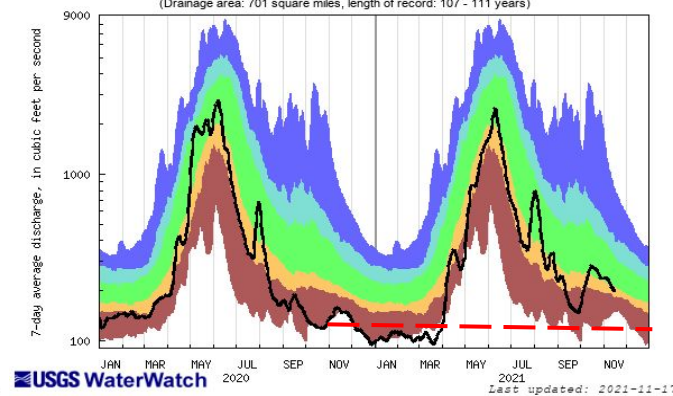
Upper Colorado Mainstem River Basin

USGS 09085000 ROARING FORK RIVER AT GLENWOOD SPRINGS, CO.
(Drainage area: 1453 square miles, length of record: 49 - 50 years)



San Juan River Basin

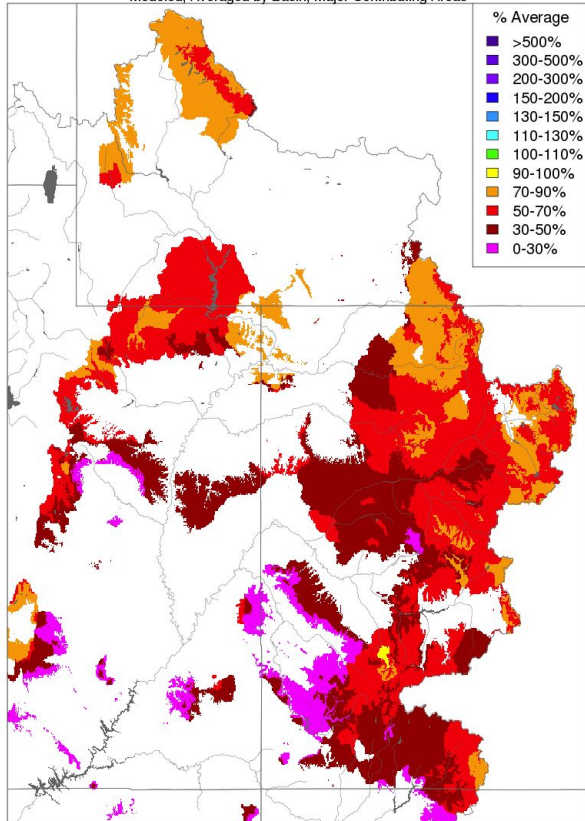
USGS 09361500 ANIMAS RIVER AT DURANGO, CO
(Drainage area: 701 square miles, length of record: 107 - 111 years)



Fall Model Soil Moisture Conditions: 2020 vs. 2021

Soil Moisture - Fall - 2020 (November 15)

Modeled, Averaged by Basin, Major Contributing Areas

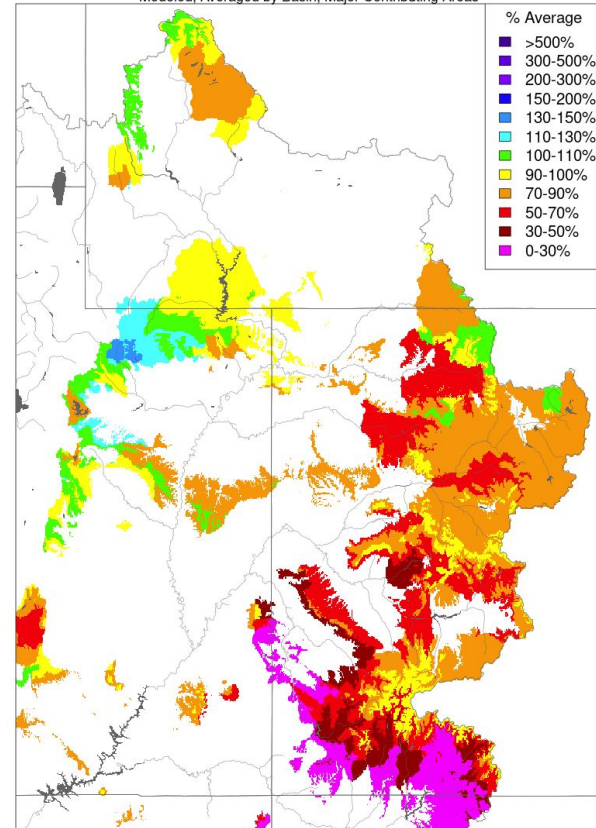


Prepared by NOAA, Colorado Basin River Forecast Center
Salt Lake City, Utah, www.cbrfc.noaa.gov

Overall, current soil moisture conditions have improved since last year due to recharge from runoff and summer/fall precipitation events.

Soil Moisture - Fall - 2021 (November 15)

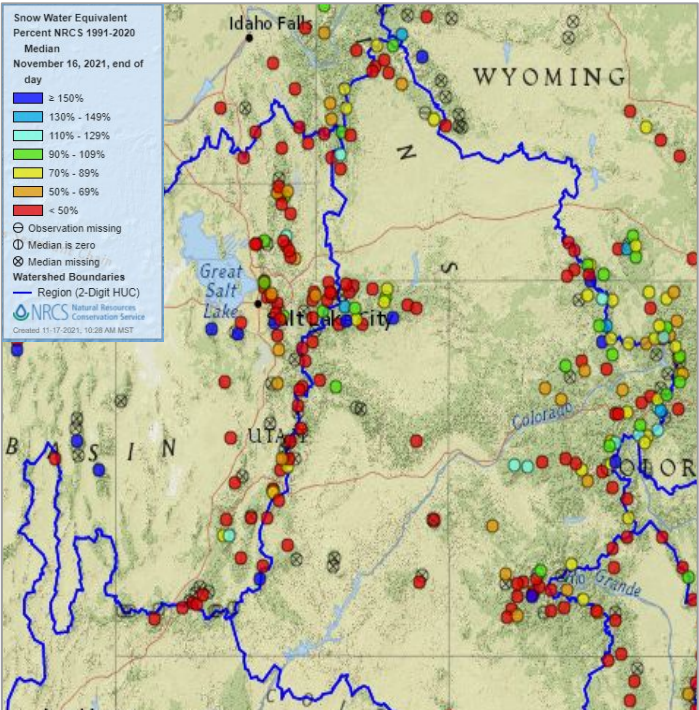
Modeled, Averaged by Basin, Major Contributing Areas



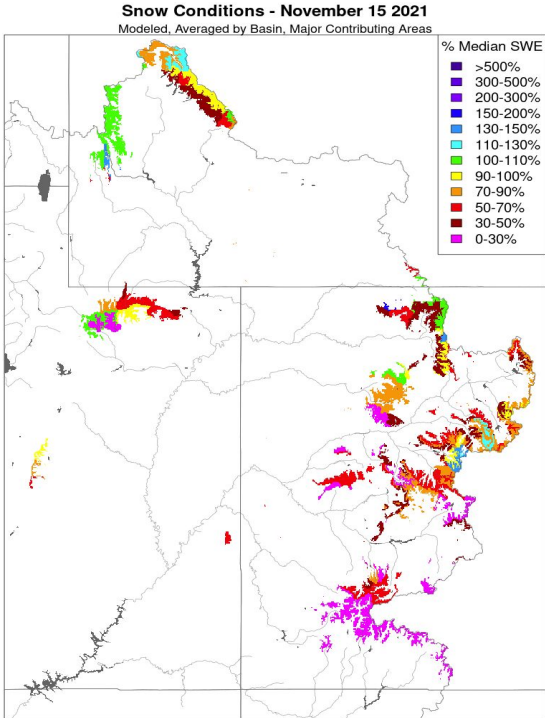
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Current Snow Conditions

NRCS SNOTEL Conditions



CBRFC Model Snow Conditions



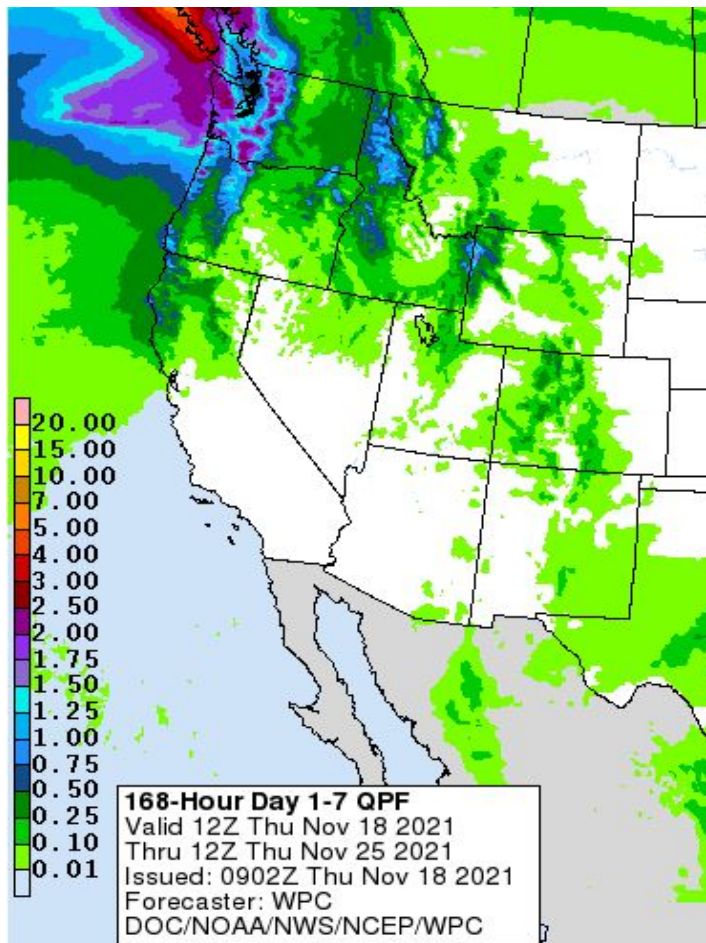
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 Salt Lake City, Utah, www.cbrfc.noaa.gov

ESP Outlooks: 2022 April-July Volumes

Location	Oct 1 Raw ESP 50% KAF / %AVG	Mid-Nov Raw ESP 50% KAF / %AVG	% Change Raw ESP (Oct-Mid Nov)
Fontenelle	575 / 78	645 / 88	+12%
Flaming Gorge	705 / 72	825 / 85	+17%
Blue Mesa	510 / 80	500 / 79	-2%
Navajo	570 / 91	420 / 67	-25%
Lake Powell	4815 / 75	4525 / 71	-6%

ESP is driven by current conditions which includes soil moisture, snow and streamflow. Final model soil moisture adjustments were accounted for in the mid-Nov ESP run.

Future Weather: Nov 18 - Nov 25 Forecast Precipitation



Light precipitation is possible over the northern half of the basin Friday-Saturday. Chances for precipitation over Colorado for early next week (Tue-Wed) but confidence is low at this point. No significant precipitation expected in the forecast period.

Temperatures are expected to be near to above normal.

Future Weather: Last week of November

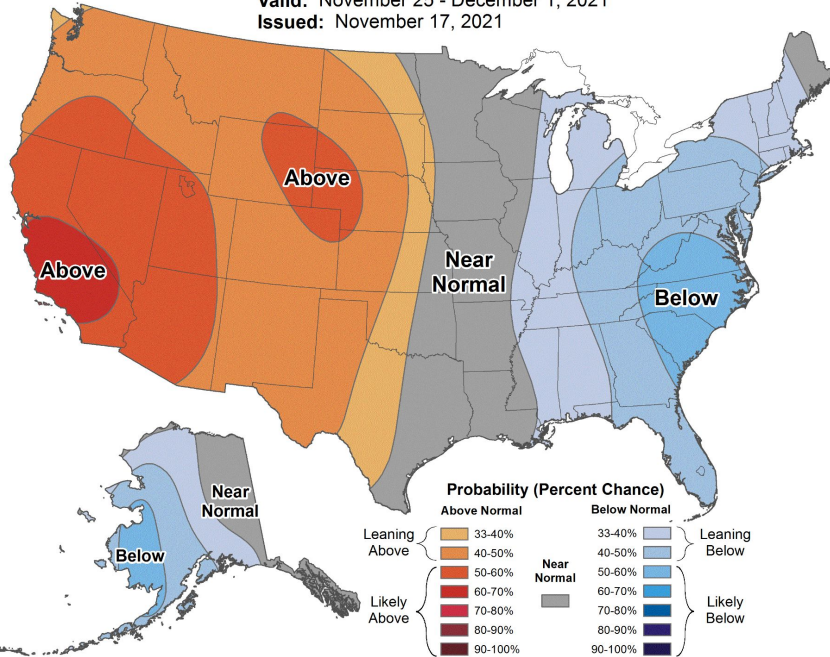
Currently there are no significant storms expected through the end of the month. November precipitation will most likely end below average for the month.



8-14 Day Temperature Outlook



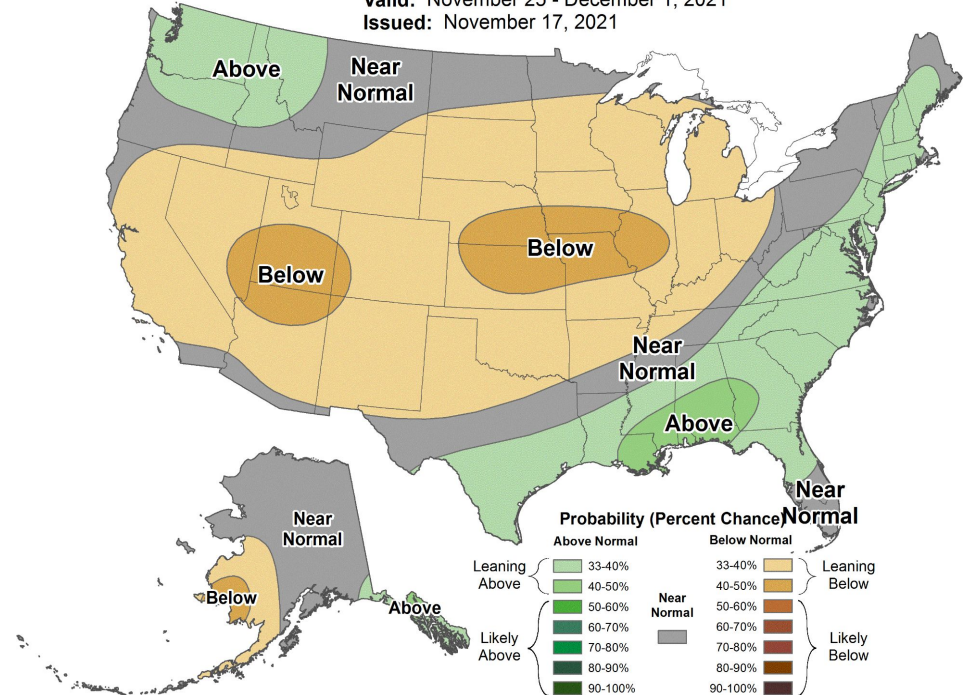
Valid: November 25 - December 1, 2021
 Issued: November 17, 2021



8-14 Day Precipitation Outlook



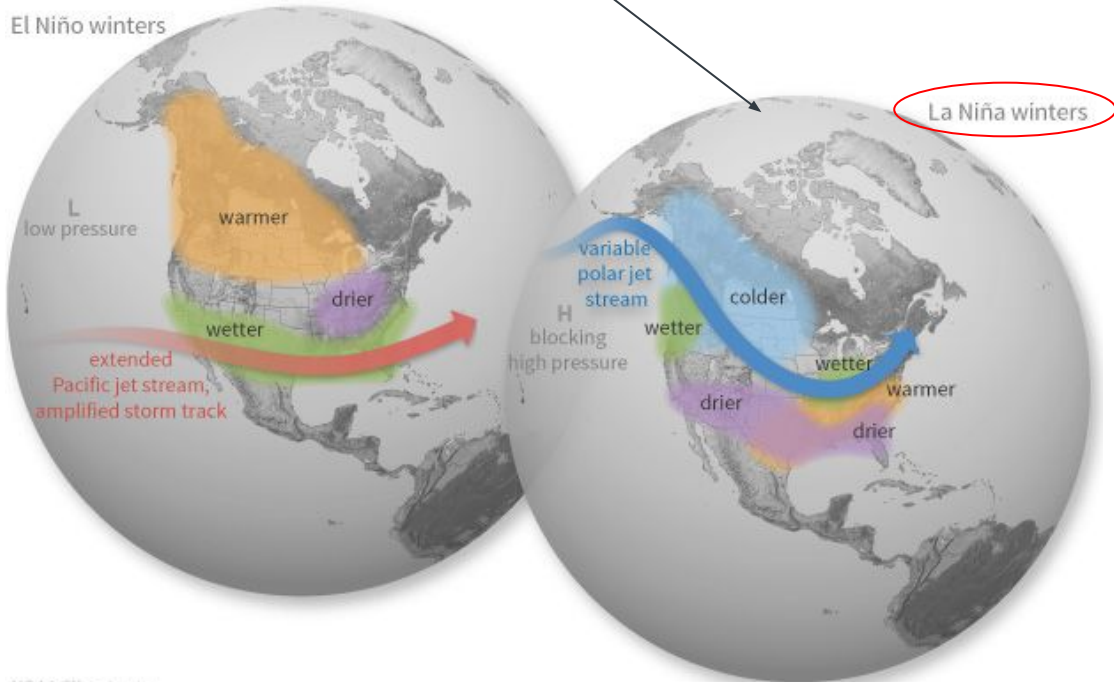
Valid: November 25 - December 1, 2021
 Issued: November 17, 2021



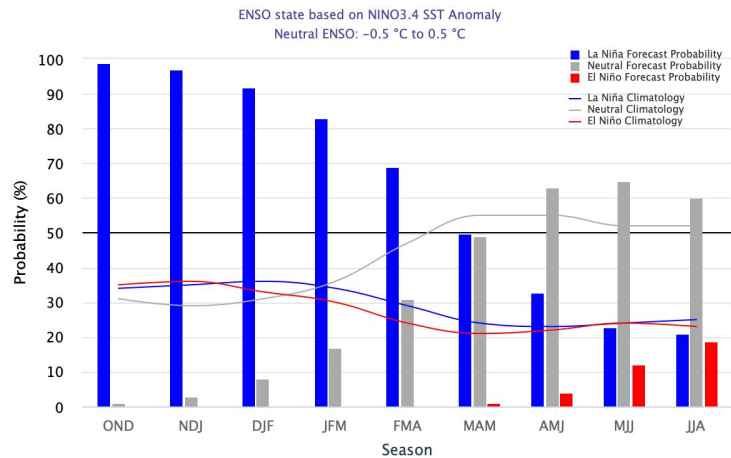
El Niño-Southern Oscillation (ENSO) Status

- La Niña** is likely to continue through the Northern Hemisphere winter 2021-22 (~85% chance during January-March) and into spring 2022 (~50% chance during March-May).
 - Increased chances of drier winter weather in Arizona/LCRB
 - Much weaker correlation/winter weather signal elsewhere in basin

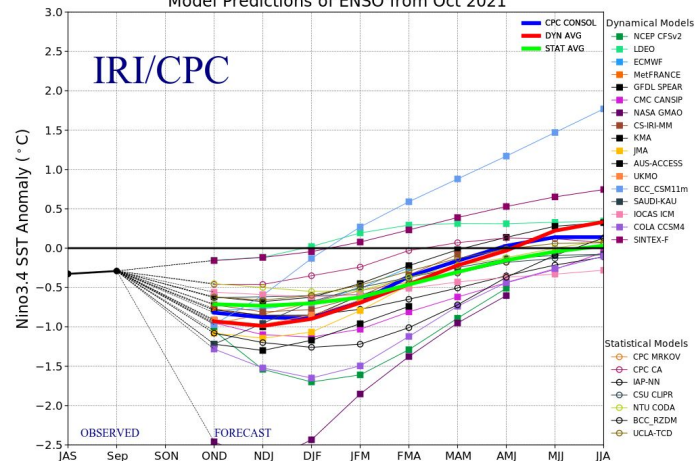
El Niño winters



Early–November 2021 CPC/IRI Official Probabilistic ENSO Forecasts



Model Predictions of ENSO from Oct 2021



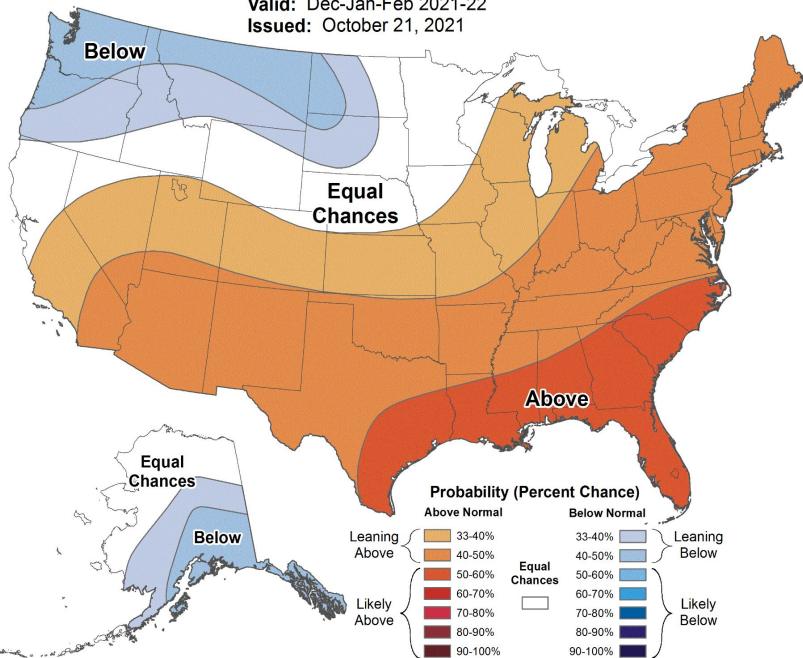
Climate Prediction Center Winter (DJF) Outlook



Seasonal Temperature Outlook



Valid: Dec-Jan-Feb 2021-22
Issued: October 21, 2021



Seasonal Precipitation Outlook



Valid: Dec-Jan-Feb 2021-22
Issued: October 21, 2021

