



Water Resources Update - December 16, 2021

Greetings! Here is the latest Water Resources Update from the CNRFC. Relevant figures, as well as a complete PDF version of this publication, are attached to this email.

KEY POINTS

- **After dry end of November and start of December, a wet weather pattern over the past several days has contributed to increased soil moisture and snowpack.**
- **Water year runoff outlook improves across the majority of the area.**
- **More storms expected to finish out December, but January looking possibly drier, especially for southern CA.**

DETAILS

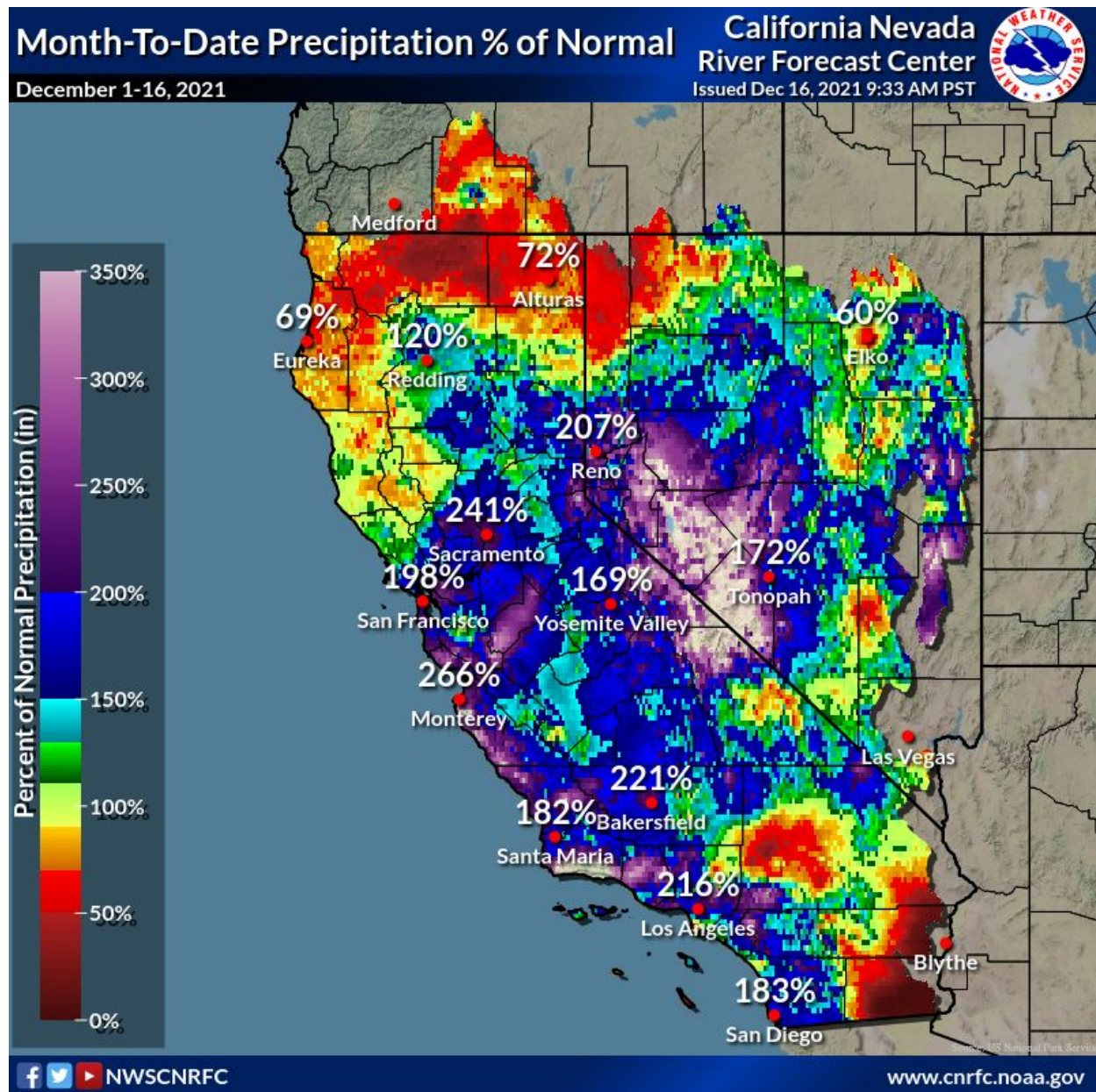
- **December Precipitation**
 - After ending the last week of November and most of the first week of December with little precipitation, a series of storms brought plenty of precipitation with moderate to low snow levels to the region. Figures 1 and 2 show December-to-date and Water Year-to-date % of average precipitation respectively. Central CA has seen the most impressive precipitation so far in December, with around 150-250% of normal for this point of the month. Figure 3 shows Water Year-to-date precipitation as a percentage of the entire WY 2021 precipitation totals. In general, the I-80 corridor in CA into western NV has the highest values, with that area seeing 75-180% of last year's observed total already since October 1.
- **Starting to Build Snowpack**
 - With the first part of December dry and then the storms over the past several days, an early look at snowpack indicates values around 90-100% of normal for this time of year across the state (Figure 4). Figure 5 shows 7-day change in SWE ending December 16, indicating 5-10 inches of SWE gained from the latest round of storms for much of the Sierra.
- **Soil Moisture Changes**
 - Figures 6 and 7 show 0-100 cm soil moisture (SPoRT-LIS) for November 30 and December 16 respectively. Except for the higher terrain where snow fell, the graphics show an increase from around 30-80 percentile soil moisture at the end of November to around 70 to over 98 percentile currently.
- **Water Year Runoff Forecast Increases**
 - Water Year runoff forecasts have increased in most locations compared to a few weeks ago. Figure 8 shows the CNRFC Water Year trend plot for the Central Valley Water Supply Index through December 16. The forecast total Water Year runoff has increased from 19.3 million acre-feet at the end of November to 26.5 million acre-feet today, or an increase from 95% of median to 130% of median. Figure 9 shows current water year runoff forecasts across the region.
- **Looking Forward**
 - After a brief break over the next few days, expect an active weather pattern to resume by early next week. Figure 10 shows the GEFS landfalling atmospheric river forecast for the next 16 days. Although there is still some uncertainty, guidance indicates a good probability of moisture plumes intersecting the CA coast again early next week. An early look at forecast precipitation totals from CNRFC through early Wed (Dec 22) shows the possibility of a few to several inches across much of northern CA. Beyond next week, CPC indicates a continued wetter- and cooler-than-normal pattern for Dec 24-30 (Figures 12 and 13). An early look at the Jan 2022 outlook issued today by CPC indicates no clear signal for precipitation trend for northern CA with a lean toward below normal precipitation in southern CA (Figure 14).

FOR MORE INFORMATION

For the latest forecast updates, visit cnrfc.noaa.gov.

If you have questions or to unsubscribe from these briefings, email cnrfc@noaa.gov or call (916) 979-3056.

GRAPHICS



Water Year-To-Date Precipitation % of Normal

October 1 through December 16, 2021

California Nevada
River Forecast Center

Issued Dec 16, 2021 9:32 AM PST

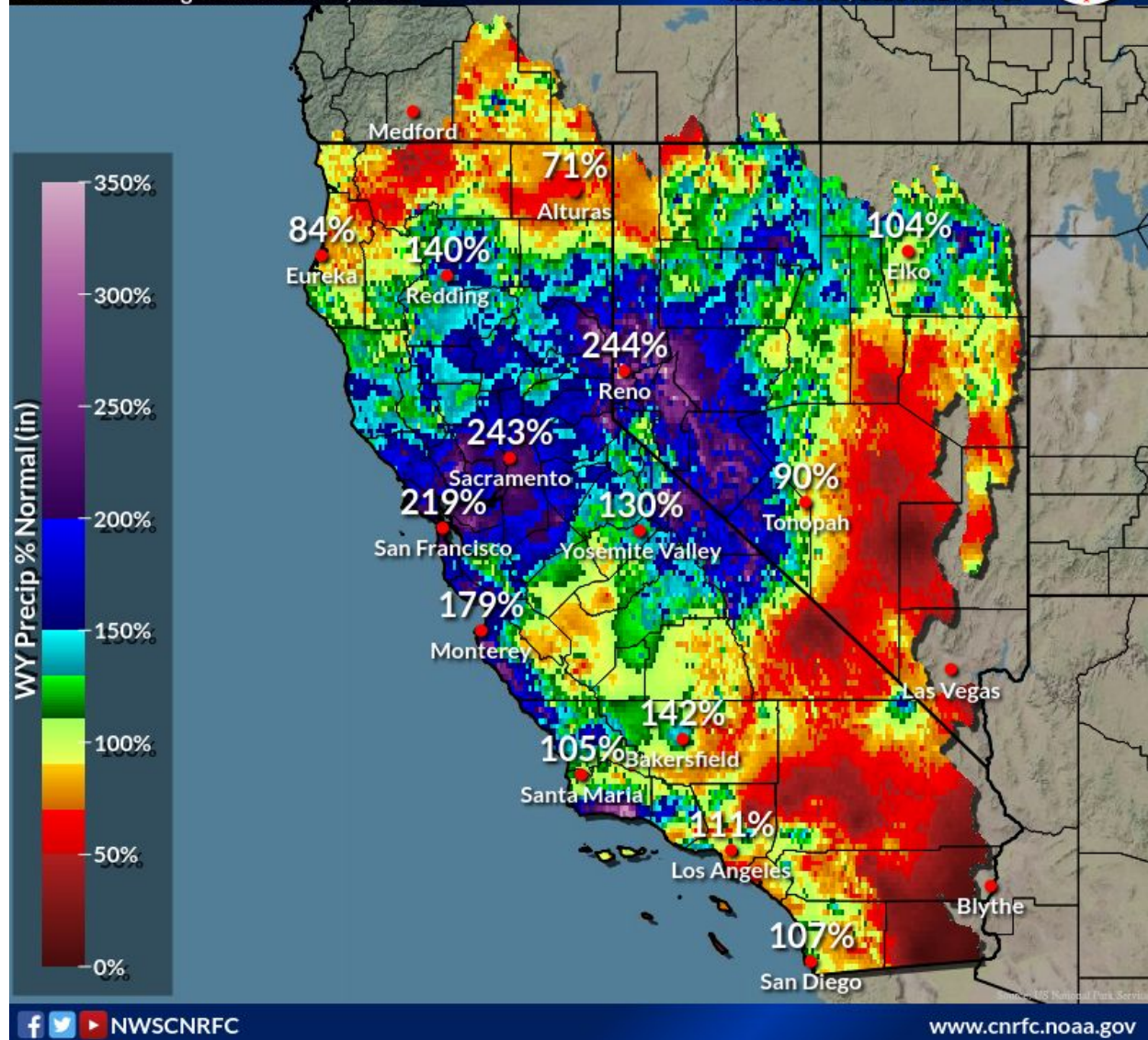


Figure 2 - Water Year-to-date Precipitation % of Average (CNRFC)

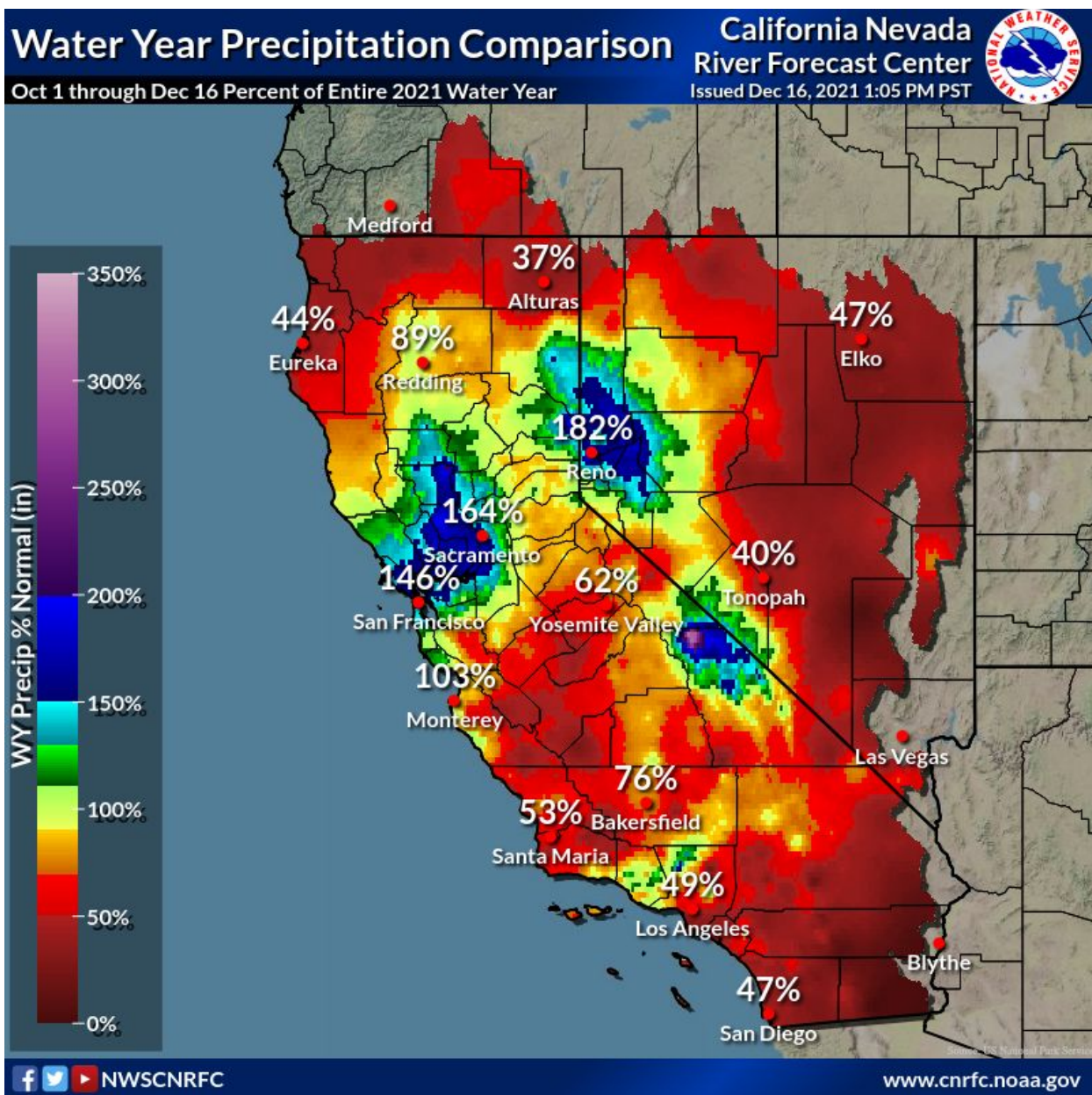


Figure 3 - Current Water Year-to-Date Precipitation Totals Percent of WY 2021 Precipitation (CNRFC)

California Snow Water Content - Percent of April 1 Average For: 16-Dec-2021

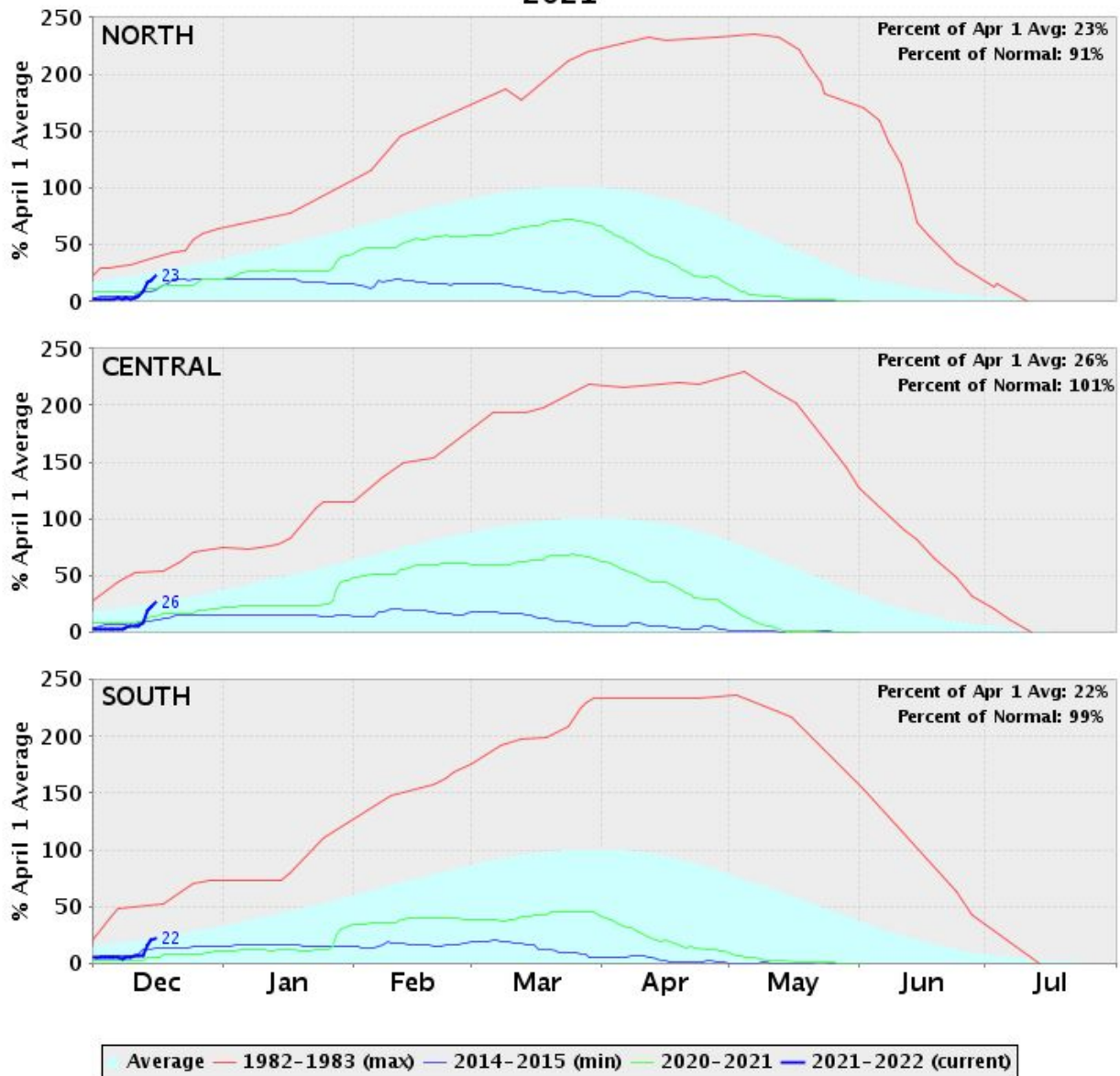


Figure 4 - Snow Water Content (CA DWR - <https://cdec.water.ca.gov/snowapp/swcchart.action>)

Map created: Thu December 16, 2021 10:51 AM PST

SPoRT-LIS 0-100 cm Soil Moisture percentile valid 30 Nov 2021

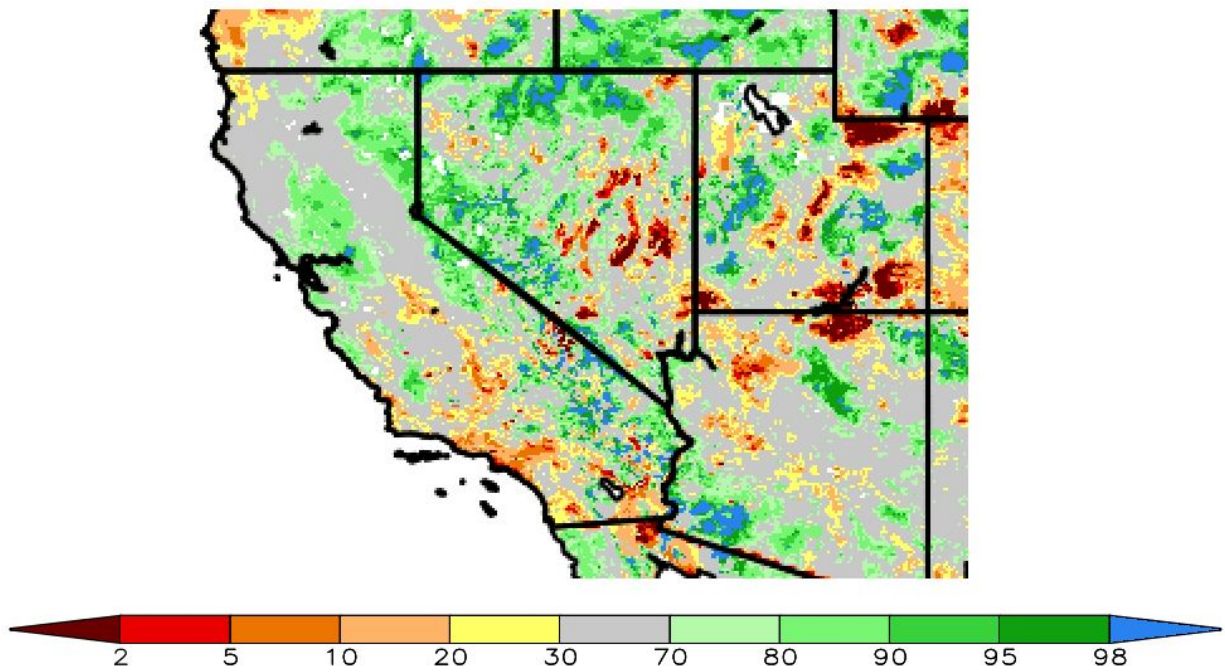


Figure 6 - SPoRT-LIS 0-100 cm Soil Moisture Percentile - Nov 30, 2021 (NASA - https://weather.msfc.nasa.gov/sport/case_studies/lis_CONUS.html)

SPoRT-LIS 0-100 cm Soil Moisture percentile valid 16 Dec 2021

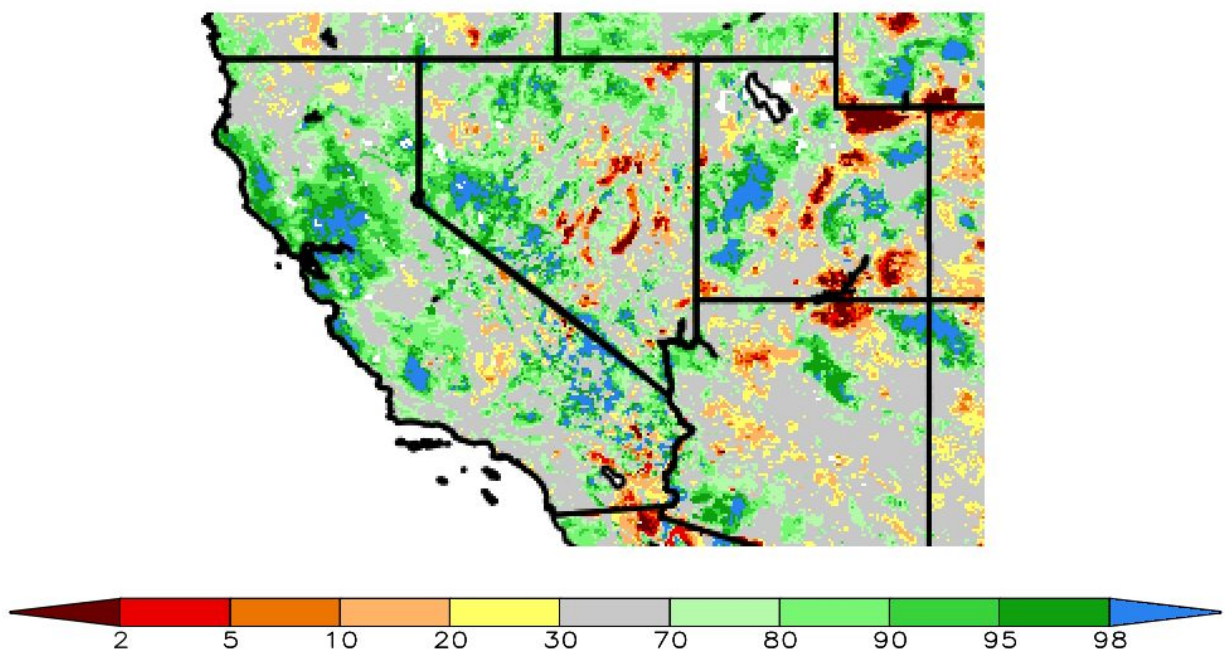


Figure 7 - SPoRT-LIS 0-100 cm Soil Moisture Percentile - Dec 16, 2021 (NASA - https://weather.msfc.nasa.gov/sport/case_studies/lis_CONUS.html)

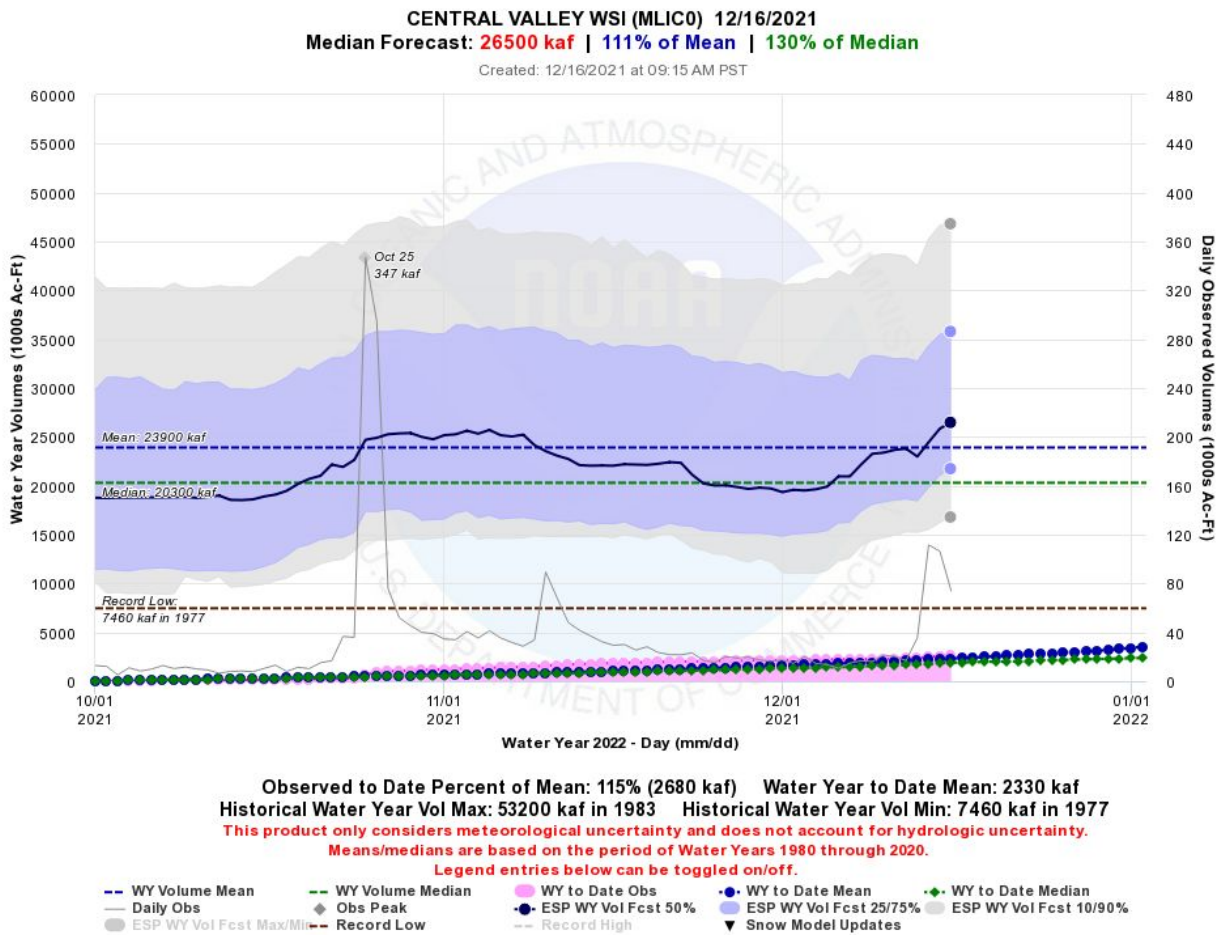


Figure 8 - Central Valley Water Resources Index Trend Plot (CNRFC -
<https://www.cnrfc.noaa.gov/ensembleProduct.php?id=MLIC0&prodID=9>)

Forecast ESP Water Year 2022 Volume

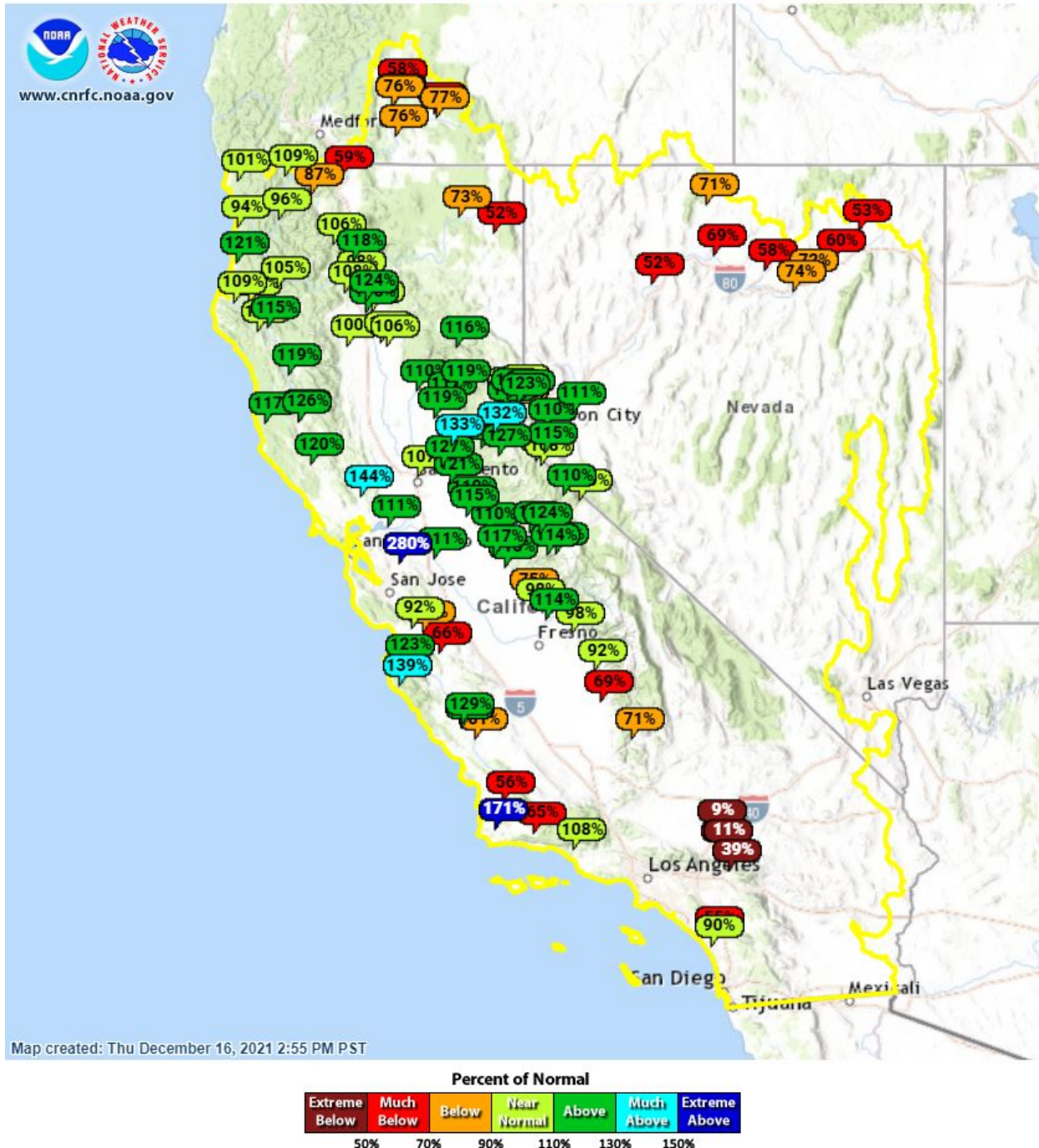
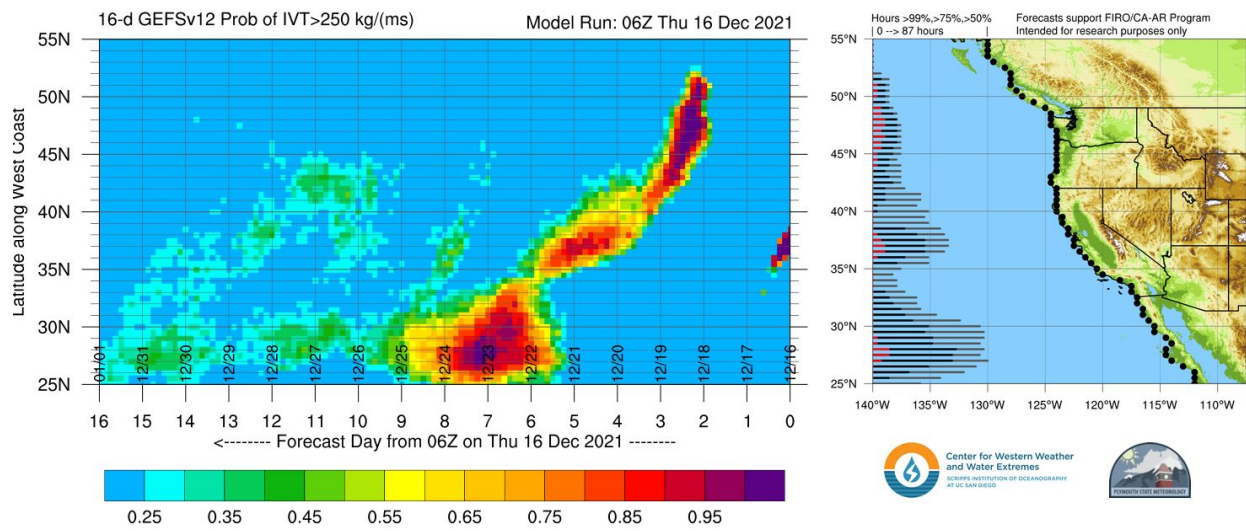


Figure 9 - Water Year 2022 Runoff Forecast % of Mean (CNRFC - <https://www.cnrfc.noaa.gov/?product=espcstWY>)



6-Day Precipitation Forecast
Thu Dec 16 04 AM PST (16/12Z) to Wed Dec 22 04 AM PST (22/12Z)

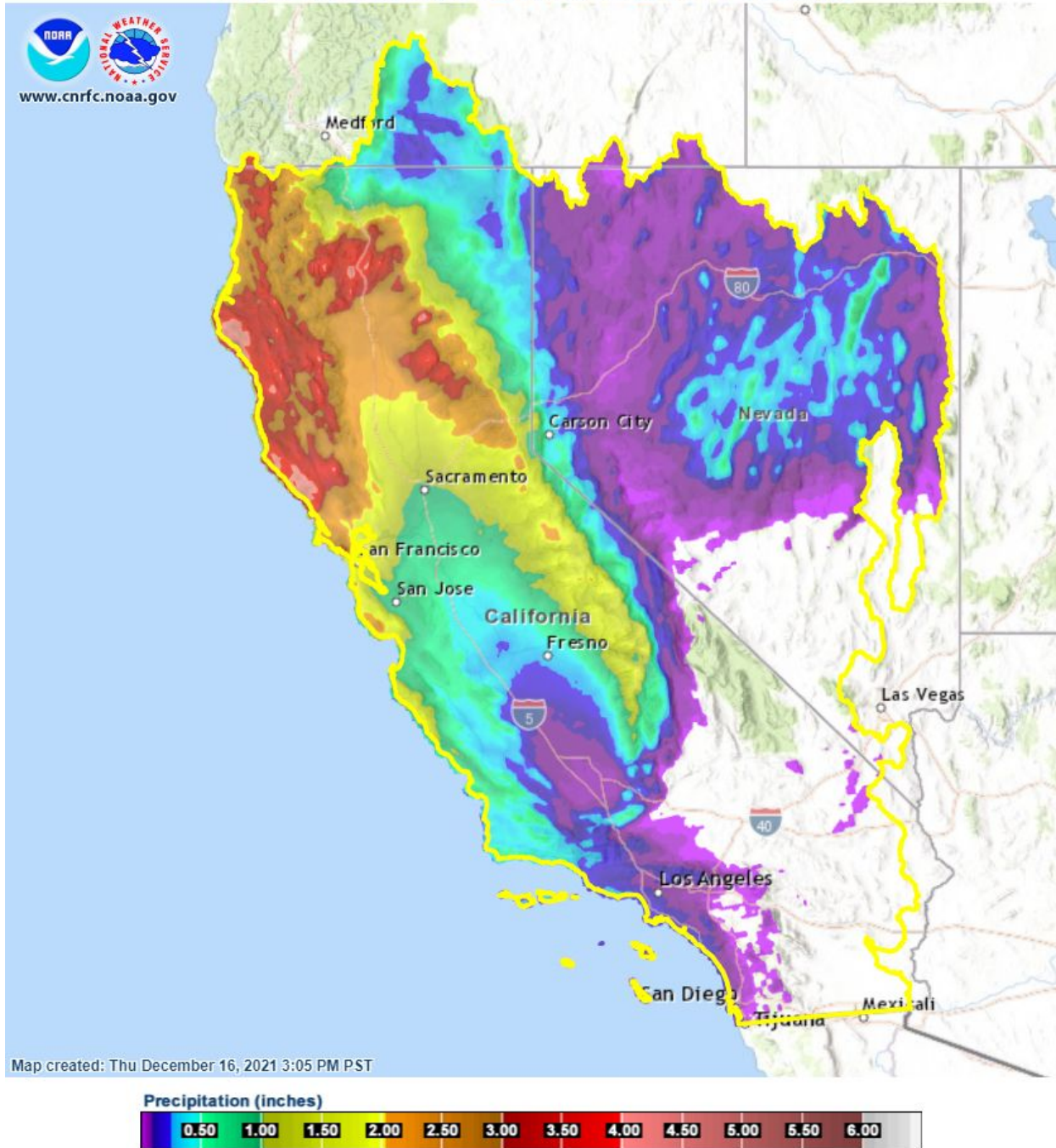


Figure 11 - Six-Day Precipitation Forecast Dec 16 4AM through Dec 22 4AM PST (CNRFC - <https://www.cnrfc.noaa.gov/?product=QPF6day&time=6day&PNGtypeID=QPF>)



8-14 Day Precipitation Outlook



Valid: December 24 - 30, 2021
Issued: December 16, 2021

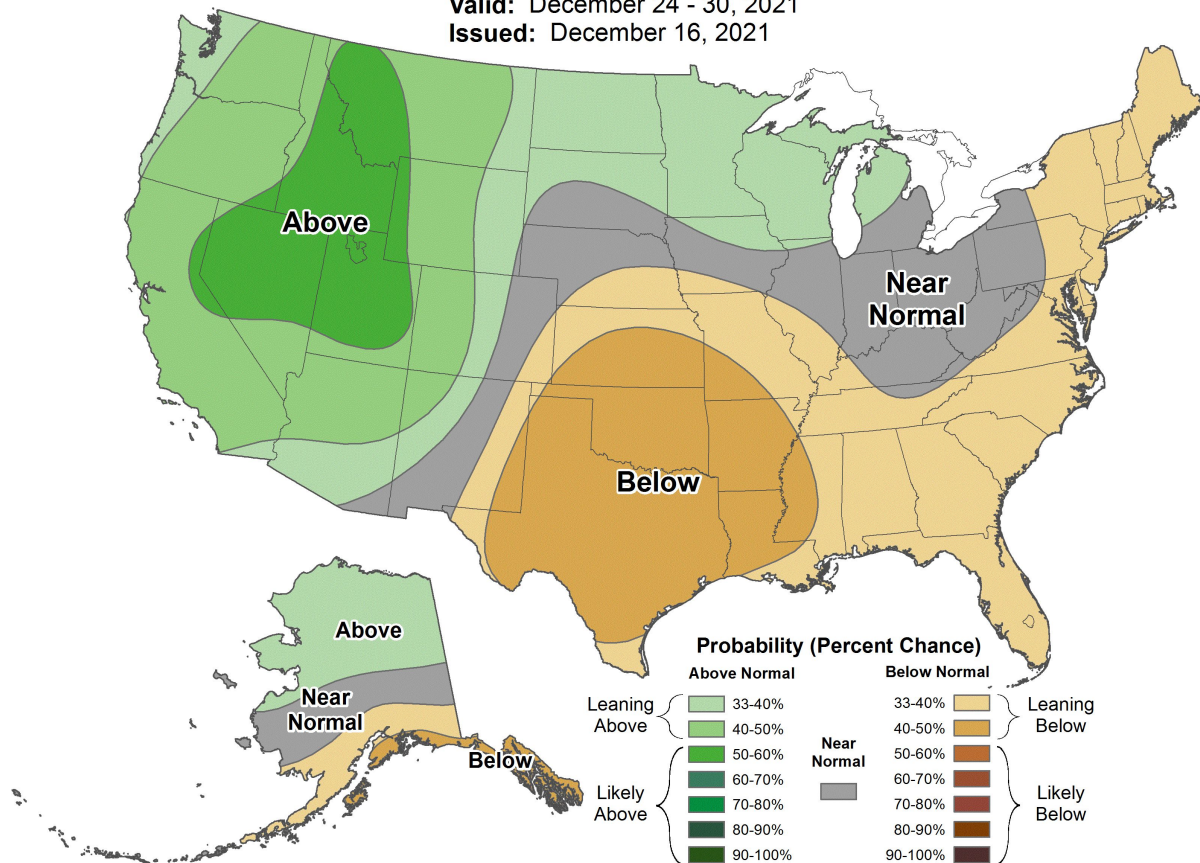


Figure 12 - Climate Prediction Center 8-14 Day Precipitation Outlook (CPC - <https://www.cpc.ncep.noaa.gov/products/predictions/814day>)



8-14 Day Temperature Outlook



Valid: December 24 - 30, 2021

Issued: December 16, 2021

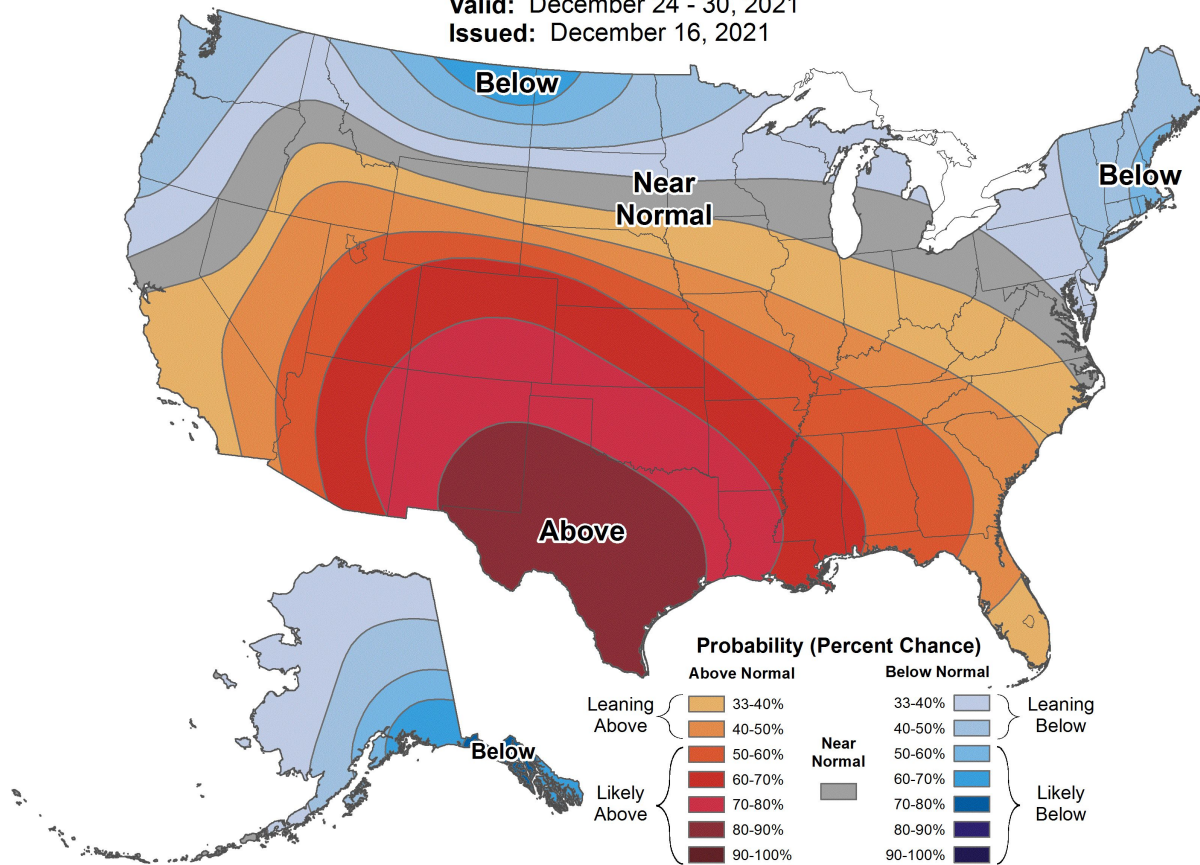


Figure 13 - Climate Prediction Center 8-14 Day Temperature Outlook (CPC - <https://www.cpc.ncep.noaa.gov/products/predictions/814day>)



Monthly Precipitation Outlook



Valid: January 2022
Issued: December 16, 2021

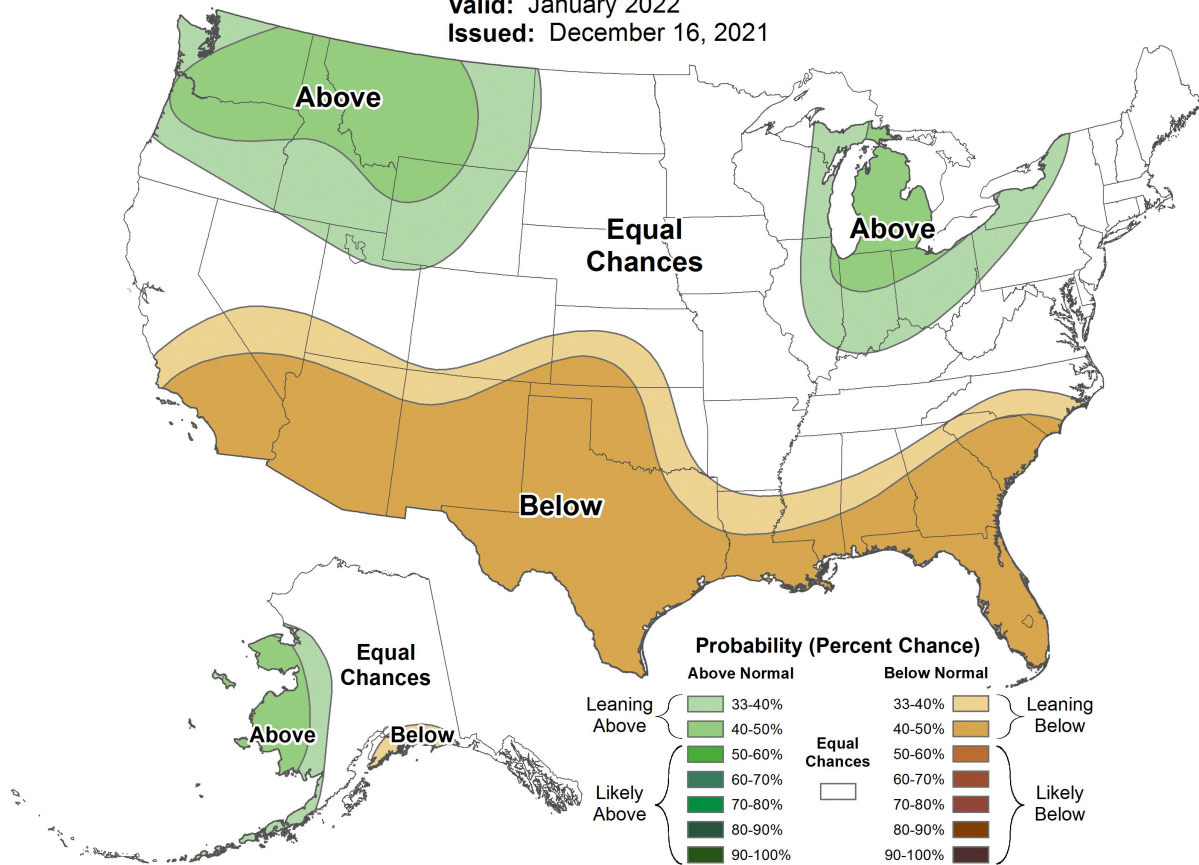


Figure 14 - Climate Prediction Center Monthly Precipitation Outlook (CPC - https://www.cpc.ncep.noaa.gov/products/predictions/long_range/lead14)