

WY2022 Water Resources Update – Jan. 12, 2022

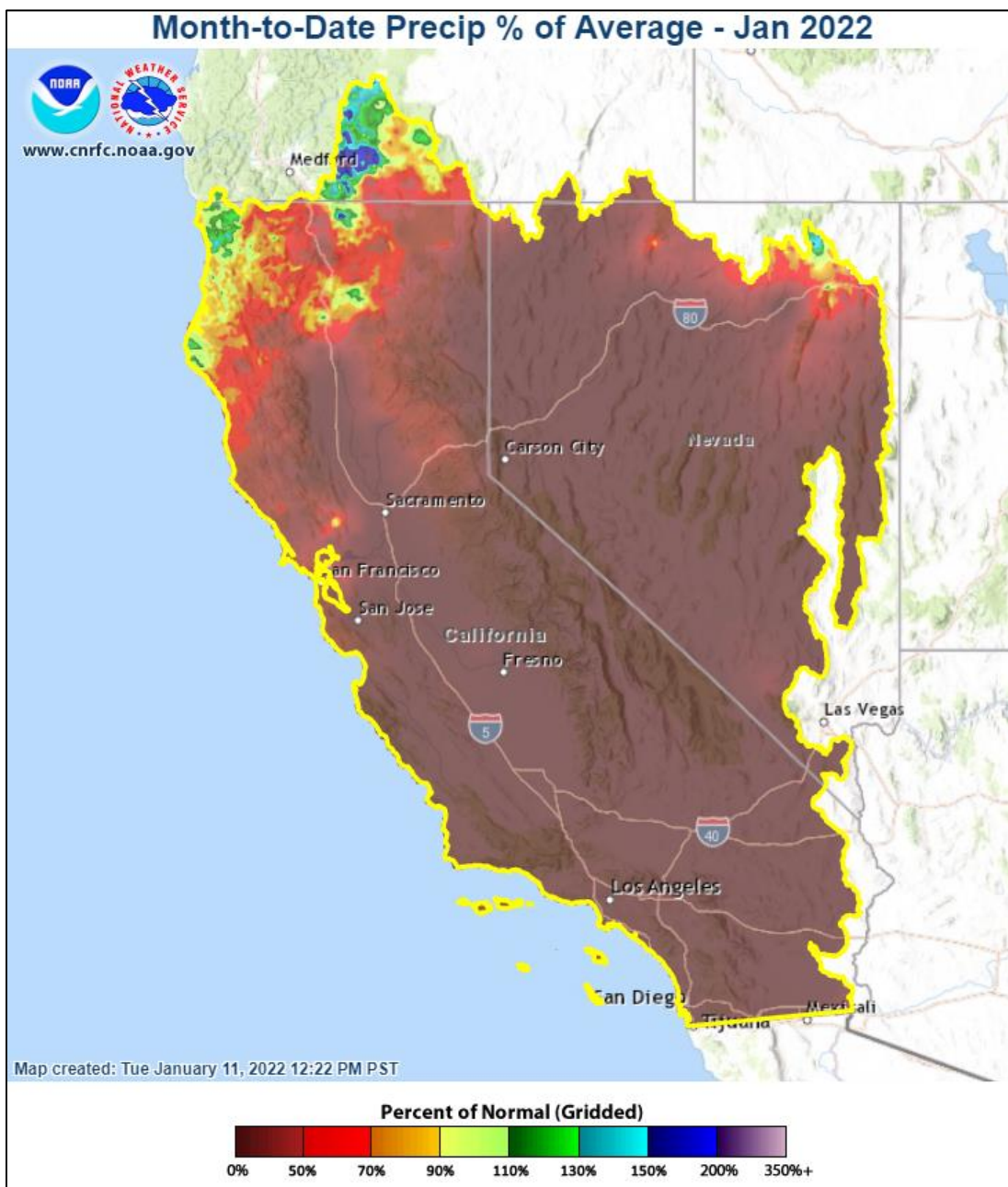
Summary:

- Minimal precipitation during first 12 days of January;
- Snowpack is abundant, lower elevation snowmelt will help with baseflows in January;
- January outlook is dry; but some early indications for more precipitation in late Jan. into February;
- Central Valley Water Supply outlook for WY2022 is currently 98% of average and falling daily.

Details:

Dry Start to 2022

As 2022 began, the storm track moved north and left only the very far northern reaches in its path. The Northern California 8 Station Index only picked up 1.3 inches (40% of average for the first 11 days of January), and most of it was above Lake Shasta.

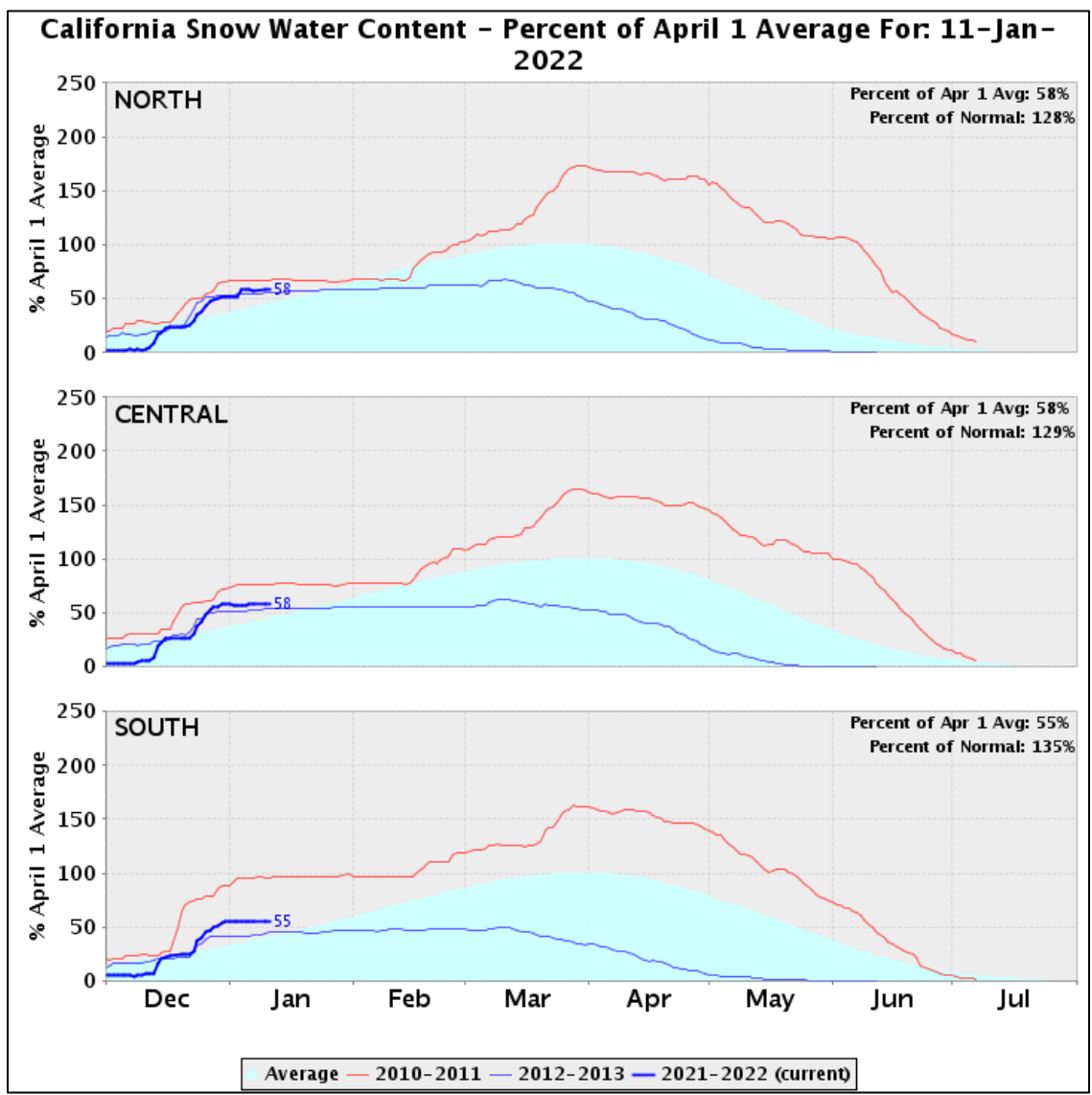


Source of graphic:
<https://cnrfc.noaa.gov/?product=QPEmonthlyPercentNormal&lat=37.970&lng=-119.662&PNGtypeID=QPEmonthlyPercentNo>

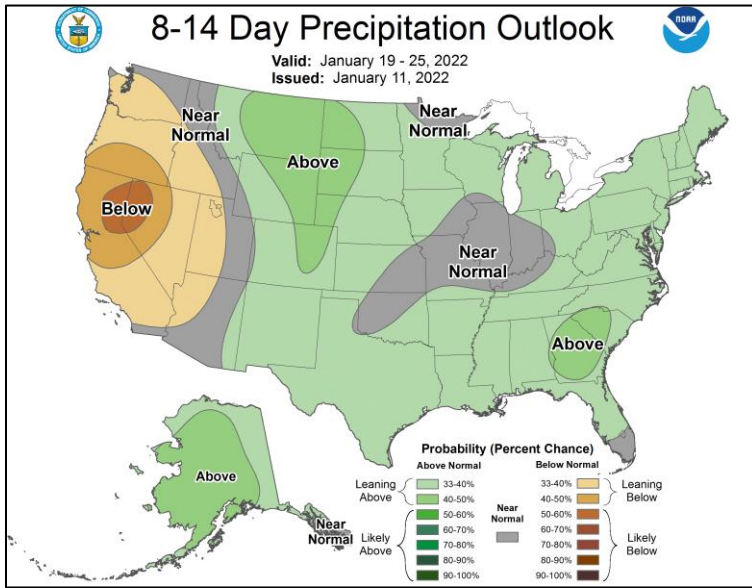
Above average snowpack

After lots of cold storms in December, snowpack continues to remain above average, running at 130% of average. While the past two weeks have seen very little additional snow, high elevation snow will remain intact for some time yet. Lots of low elevation snow (below 5000 feet) still remains and this snowmelt will help keep river baseflows from dropping too rapidly in mountainous watersheds.

While a dry January does not help to fill reservoirs, there are many weeks left to add to our snowpack and increase runoff. Two similar wateryears are depicted below. In WY2011 (also a La Nina year), the region was mostly dry for about 45 days in January and early February, but then ended very wet in late February and March. But in WY2013, we continued to stay mostly dry for the rest of the water year and ended up with a below normal snowpack.



Source of graphic: <https://cdec.water.ca.gov/snowapp/swcchart.action>



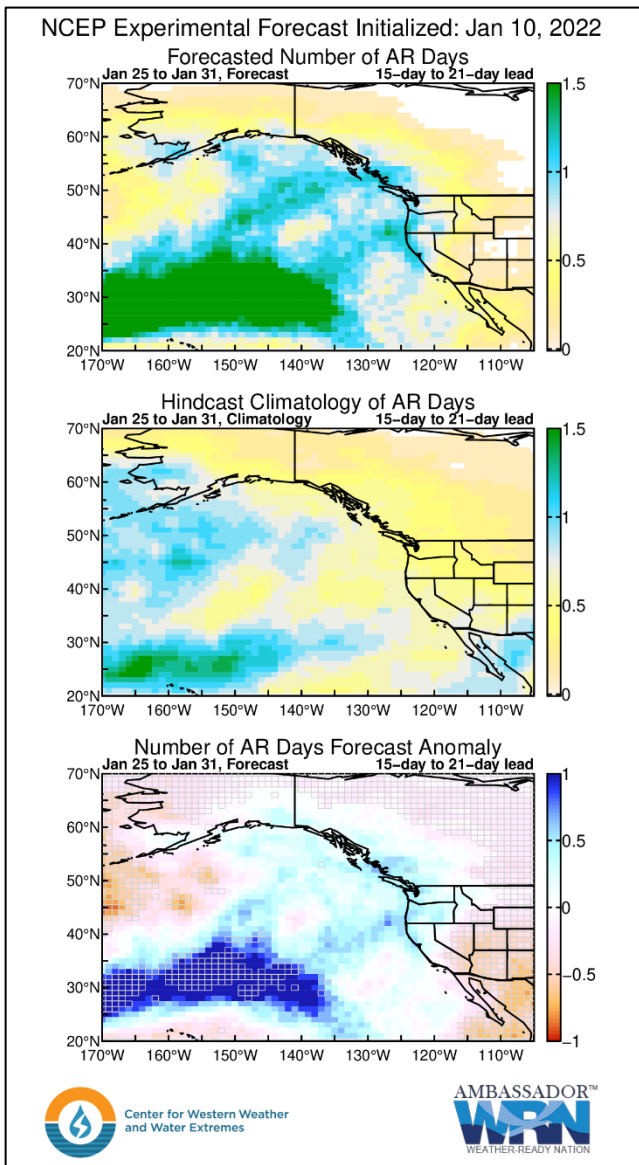
Dry for 2 weeks and then... ???

All indications are that the weather will remain pretty uneventful over the next 10-14 days. While Southern CA has a small possibility of some rain, the central and northern regions look to remain dry.

The NCEP Experimental Forecast published by CW3E indicates that we may see a storm towards the end of month in Northern California.

Looking at some of the other extended models (European weeklies, CFSv2 Extended), there are some hints that February may see the return to more normal precipitation. Naturally the confidence in these outlooks is very low, but the current sea surface temperature conditions seem to support these outlooks.

With WY2022 conditions currently in the moderate La Nina range, WY2009 and WY2011 may serve as good analogs.

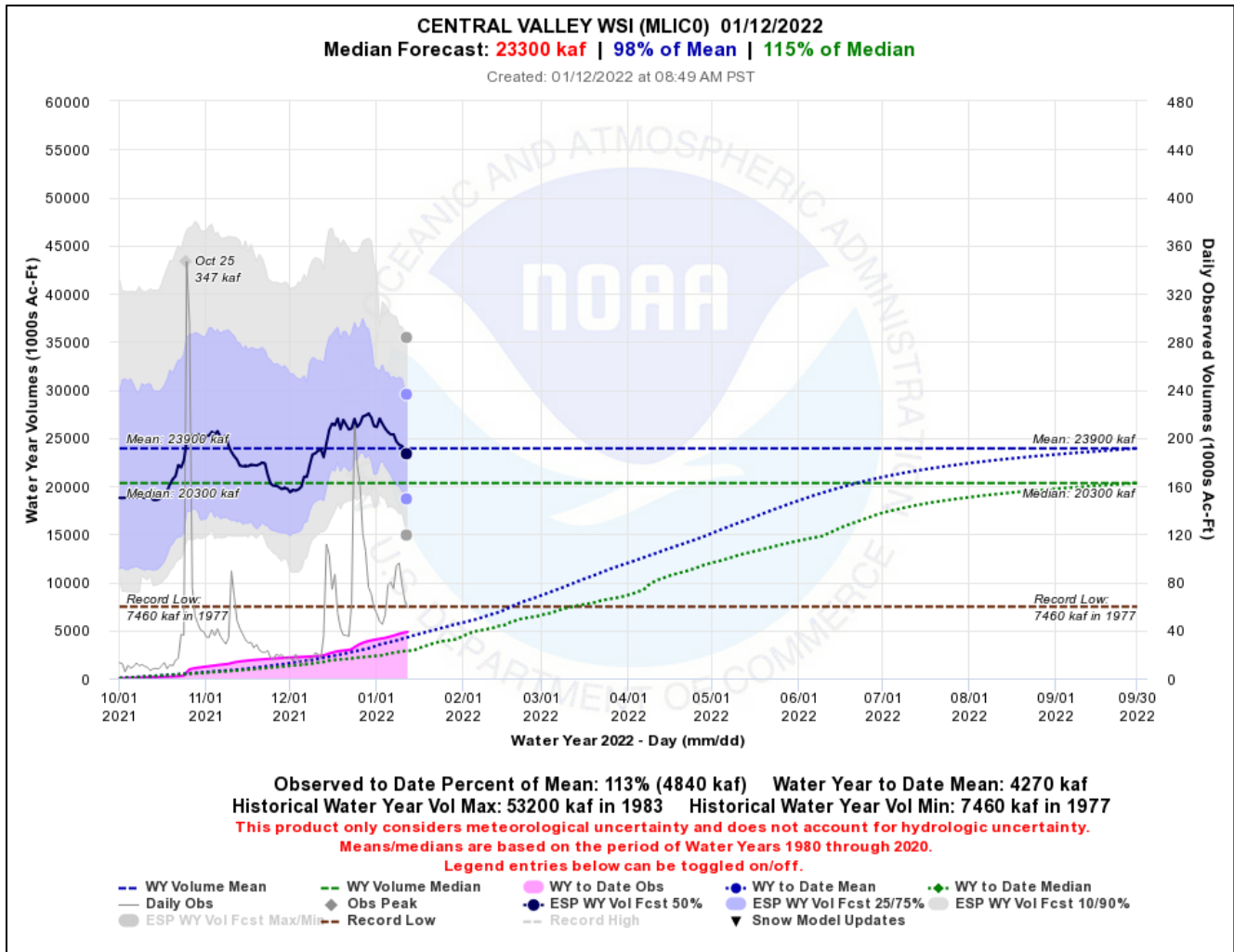


Source top graphic:
<https://www.cpc.ncep.noaa.gov/products/predictions/814day/814prcp.new.gif>

Source bottom graphic:
<http://cw3e.ucsd.edu/iwv-and-ivt-forecasts/>

Water Supply Impacts (HEFS = Hydrologic Ensemble Forecast Service)

Water Year Runoff Projection



Source: <https://www.cnrfc.noaa.gov/ensembleProduct.php?id=MLIC0&prodID=9>

While the wet weather in December pushed us to a peak median forecast of about 27 MAF, we have since dropped to 23.3 MAF as of Jan 12th. Since HEFS outlooks incorporate a 14-day weather forecast, we will likely see continued drops in the median forecast until signs of a wetter pattern appear.

Nevertheless, observed flows to today’s date are around 114% of average. Our forecasts have also risen 4.5 MAF since the beginning of the water year.

Conclusion:

The mid-point of the Water Year falls around January 26th for the 8 Station Index accumulation. Much of the winter still lies ahead of us. So far we've done quite well, but after two years of drought, a strong finish would go a long ways to putting the drought behind us.

We are still in the heart of winter (despite the beautiful weather) so stay tuned.

CNRF/C/Pete Fickenscher

Jan 12, 2022