

CLIMATE NEWS

January 2021

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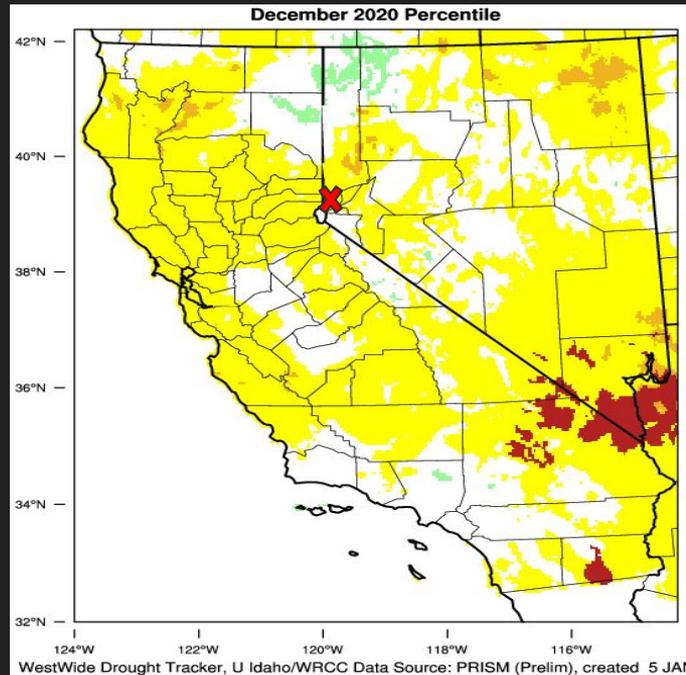


Axis-Heavenly X:-71.53 Y:+0.31 Z:1.0 USFS.caminoecc.01-05T07:32 © NV Seismo Lab 2021/01/06 10:12:40.85 ALERTwildfire.org

Taking a Look Back - Precipitation

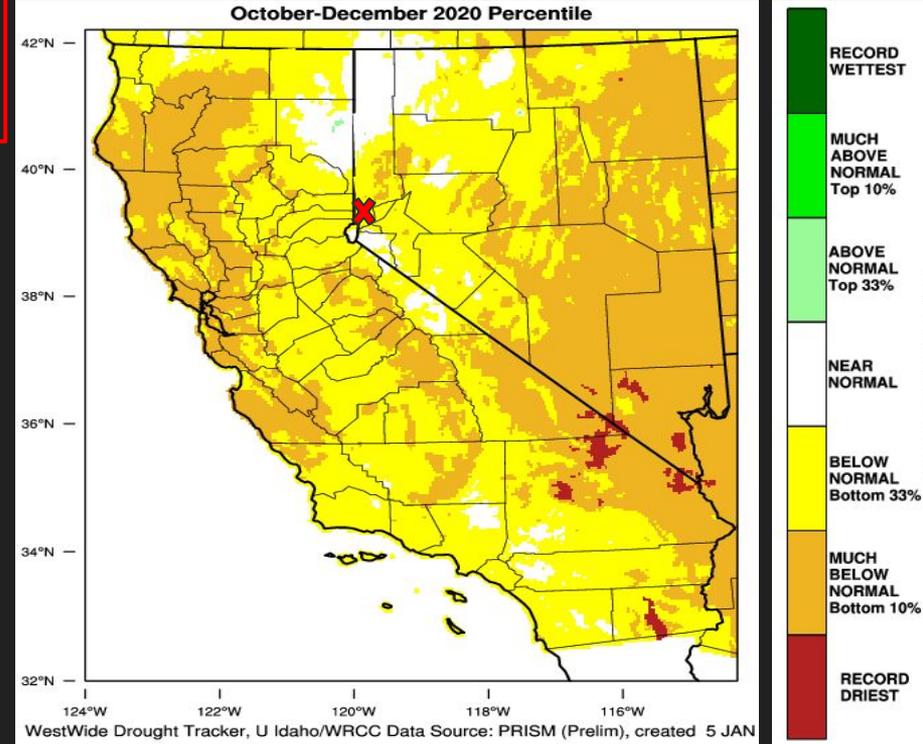
- **October-December:** Most of the region received precipitation ranked in the bottom 1/3rd vs past October-December periods.
- **December:** Modest storms starting in mid-December brought precipitation totals closer to more typical (white area) or even a bit above (green) typical levels compared to past Decembers.

October-December Precipitation Percentile



December
Precipitation
Percentile

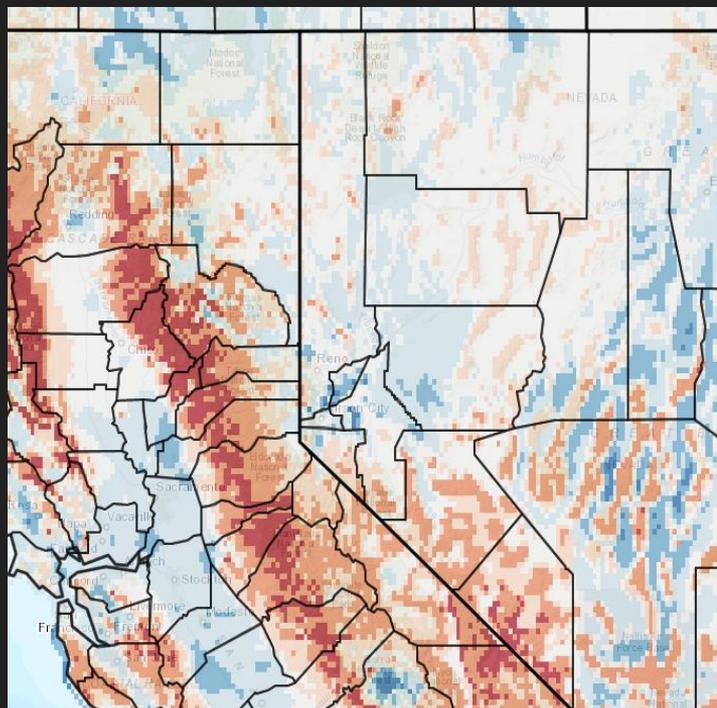
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Taking a Look Back - Temperatures

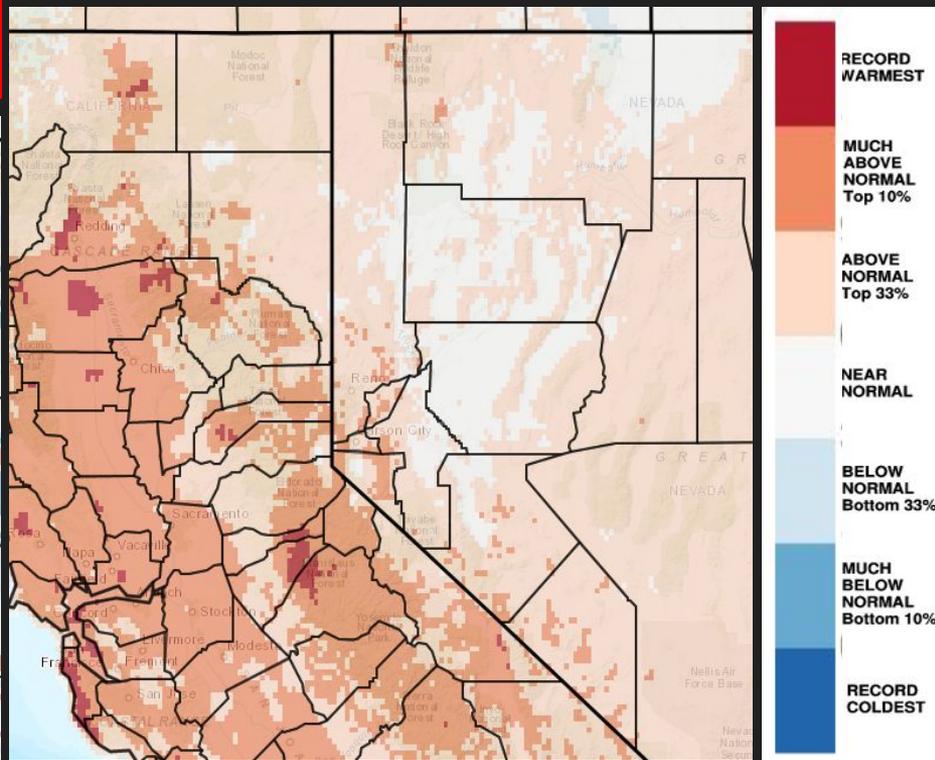
- Highs warmer than 2/3rds of other October - December periods for many areas, with higher terrain the most extreme.
- Lows in higher terrain warmer than 2/3rds of other Oct - Dec periods, with valleys closer to normal or even below.

October - December High Temperature Percentile



Oct - Dec
Low
Temperature
Percentile

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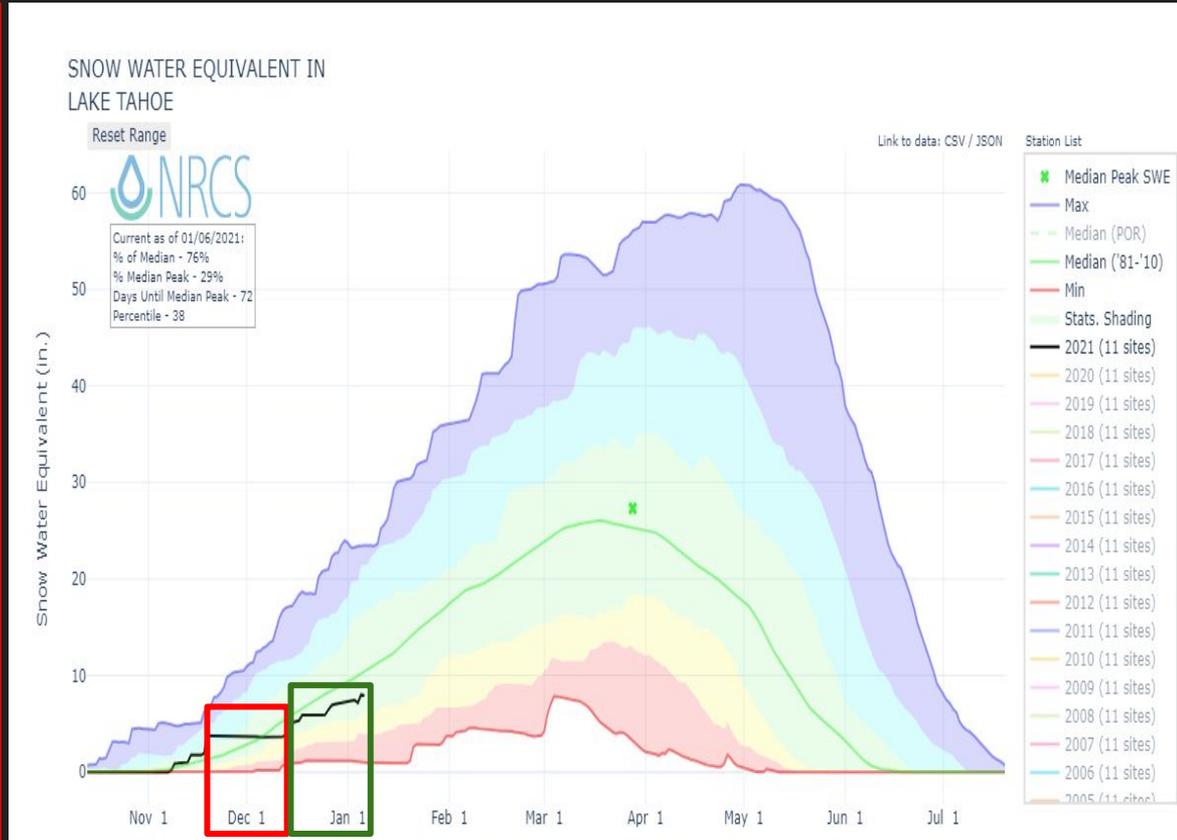
Reno National Weather Service

Forecasting for the Sierra and western Nevada since 1905



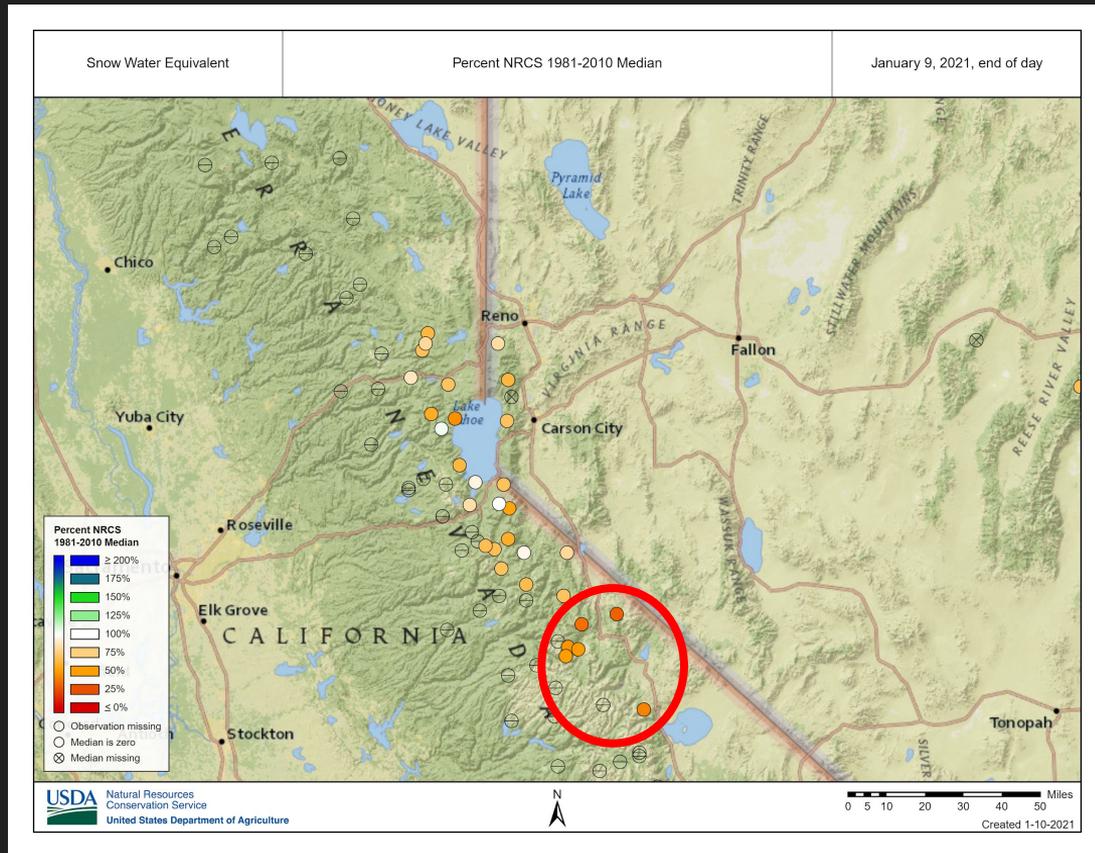
Current Snowpack Conditions

- Into early December, there was minimal snowpack accumulation (red box).
- However, mid-December to early January systems brought the snowpack (green box) back towards the median.
- Snowpack around 70% of median for Tahoe and Alpine County through January 9...but only 46% for Mono County.



Current Snowpack Conditions

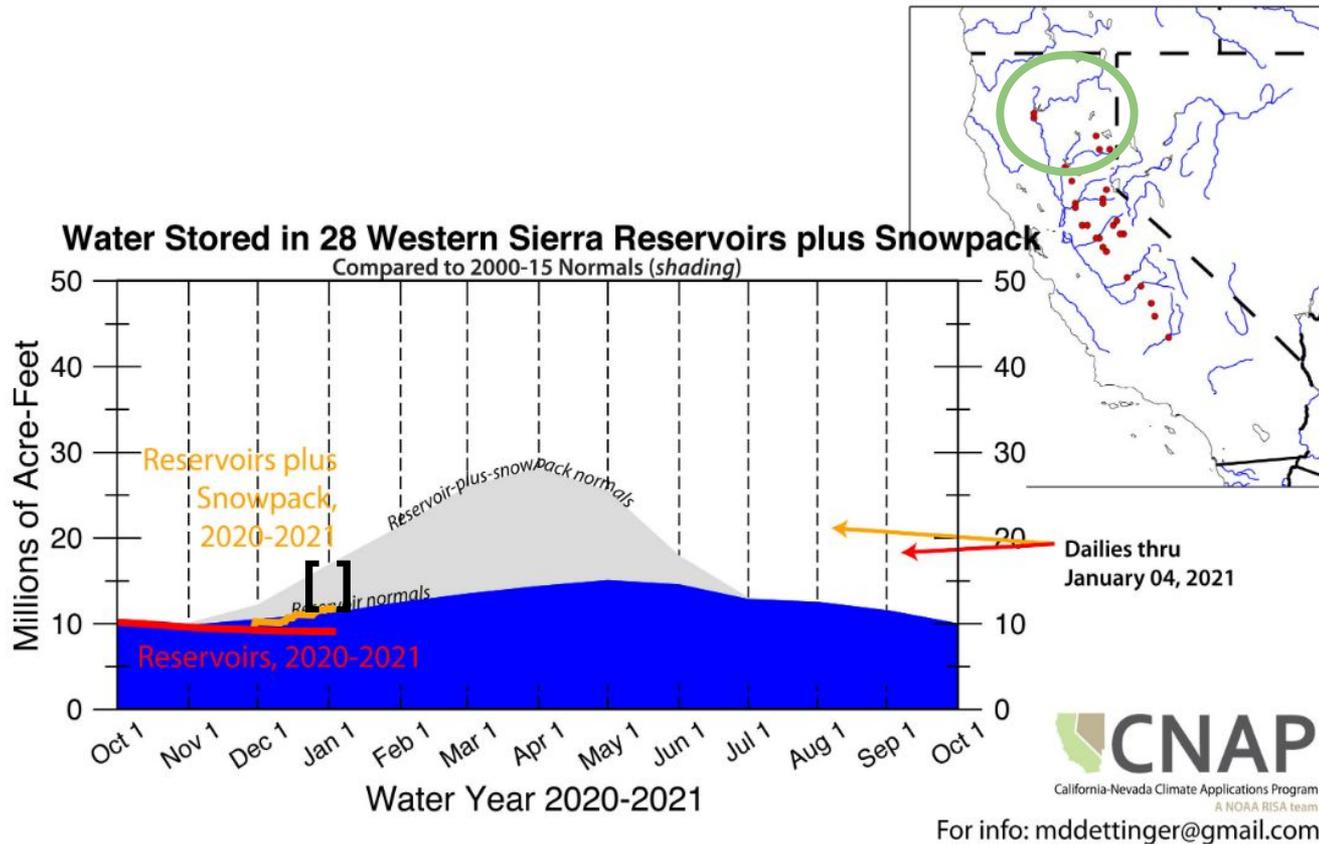
- **Alpine County / Tahoe area Sierra:**
Many observing sites at 60-80% through January 9th.
- **Mono County Sierra (red circle):** mostly 50% or less of median through January 9th.



Reservoir + Snowpack Conditions

This chart shows snowpack from winter snow combined with reservoir storage for all major Sierra reservoirs through January 4th.

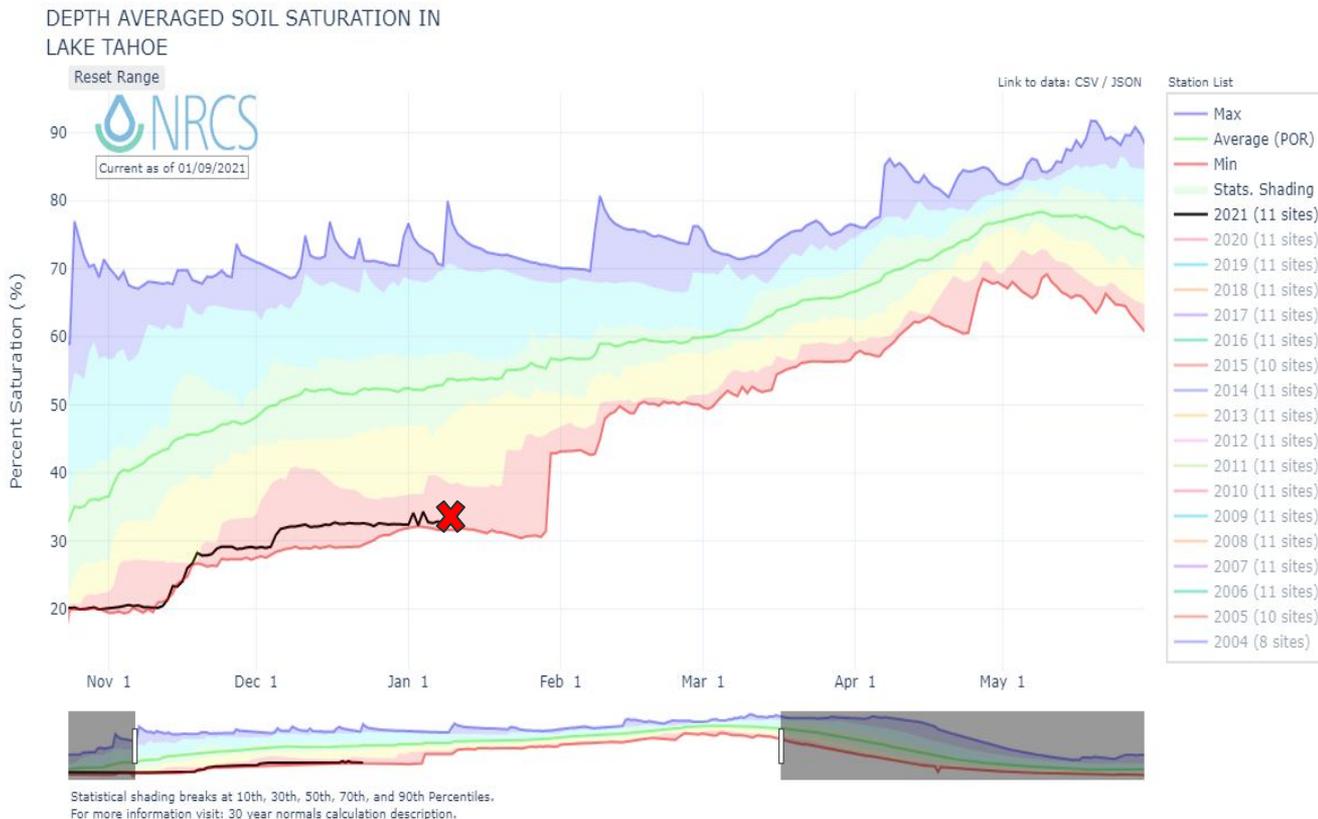
Overall, reservoirs are below normal (red line), worst for northern Sierra reservoirs (green oval...chart not shown). The current water storage deficit versus normal is shown by the black brackets.



Current Soil Moisture

Soil moisture percentage through Jan 9 (red X) for the Lake Tahoe area. Most other areas are as low or nearly as low.

Soil moisture is very low versus historical values. This will eat up some of the snowmelt in the spring as some of the melted snow will go into moistening the soil before the rest can runoff into rivers, creeks, and reservoirs.



Outlook (Highlights)

	Through January 20	January 20 - February 3	1-3 Months [February-April]
Precipitation	Below to much below average. High pressure ridge persistent over West.	Leaning below overall.	Leaning below average (moderate La Niña)
Temperatures	Mostly above average.	Leaning above overall.	Leaning above average due to long-term (decadal) rising trend.
Snowpack?	Falling further below average. Down to ~40-65% by Jan 20 with little or no additional precipitation expected.	* Likely remaining considerably below median.*	Likely finishing below average. 20-25% chance of reaching average.
El Niño/ La Niña	N/A...longer time scale prediction		La Niña persists...60% chance that it stays moderate strength thru March.

Color Key

Nothing Major To Note

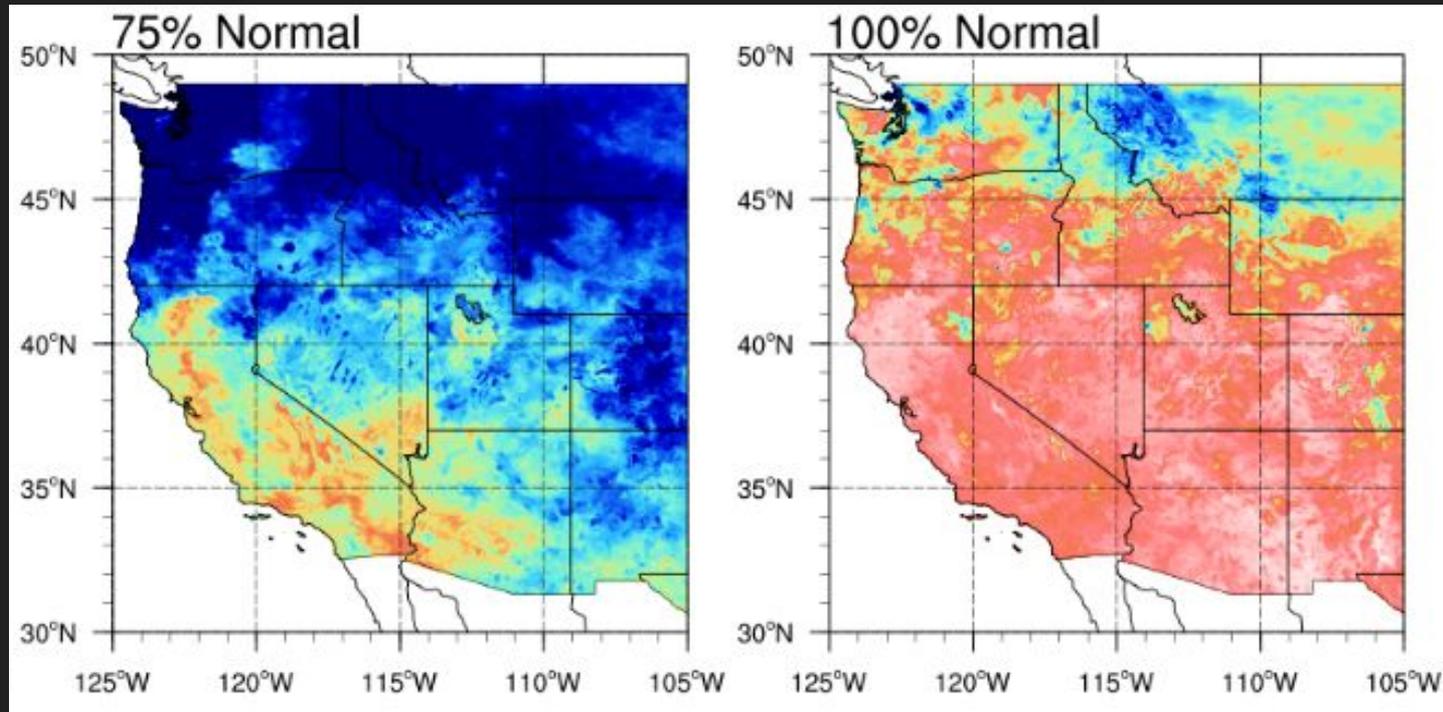
Of Some Interest

Major Interest

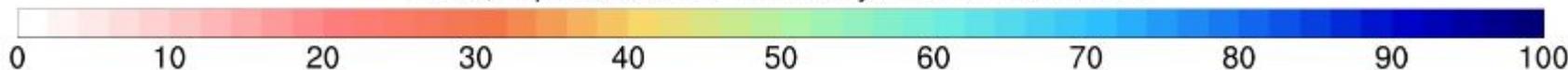


Seasonal Outlook - Precipitation

While we have received a boost of precipitation with weak-moderate systems since mid-December, odds still favor below average precipitation for the water year.



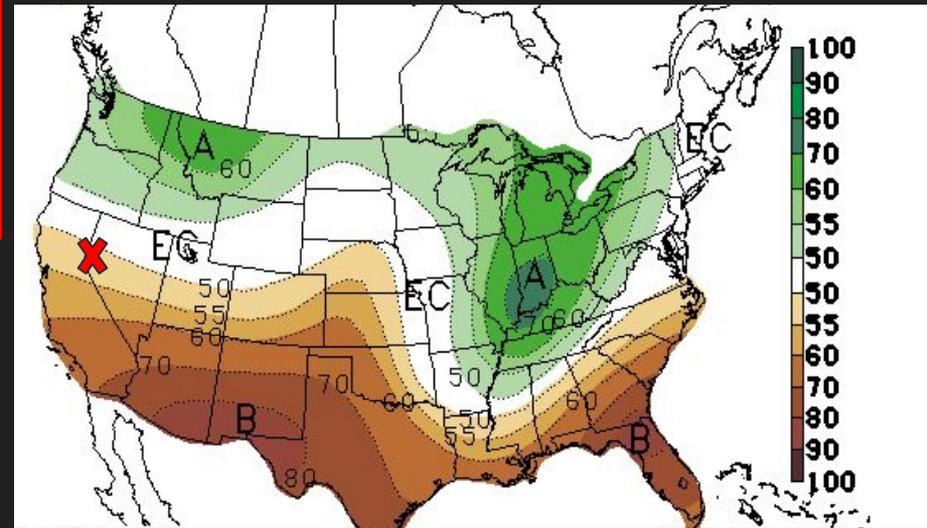
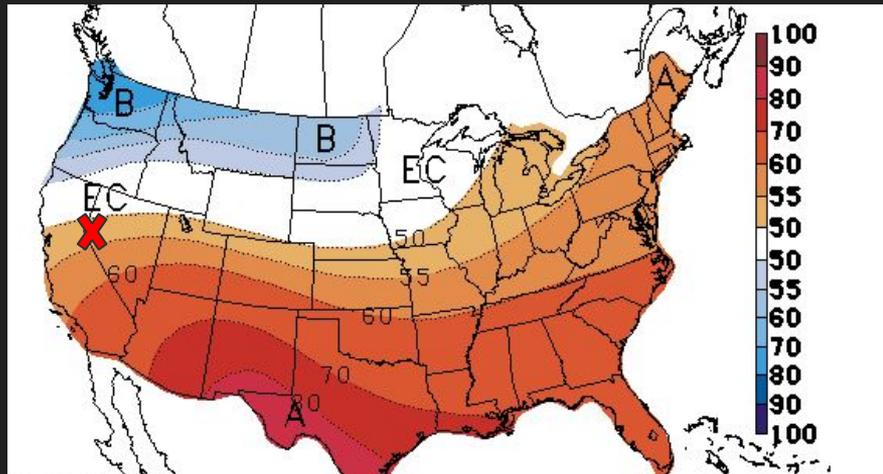
Odds, in percent of the 70 water years from 1948-2017



Climate Prediction Center Outlook

January - March 2021

The outlook for temperatures (below) and precipitation (right) for the 3-month period between January and March. The outlook is based mainly on the pattern of a wetter Pac NW and drier southwest U.S. that stronger La Niña events have typically brought since 1950. The current La Niña (moderate strength) is expected to last through the spring.



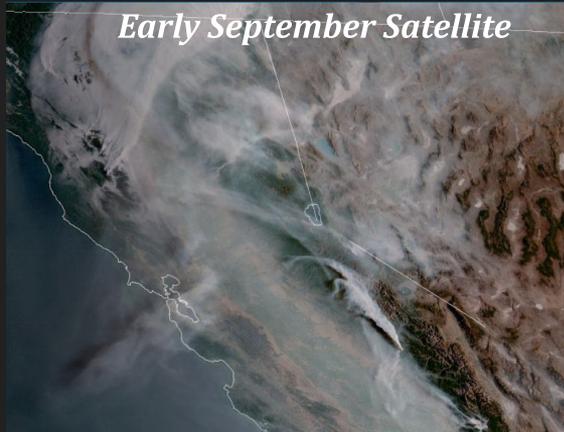
Notable Event Spotlight

California Wildfires - August-September

Remnant tropical moisture (Fausto) aloft + hot/dry lower levels = instability for thunderstorms! When combined with parched vegetation, the result was an unusually prolific lightning outbreak, especially for areas west of Interstate 5 in California.

By mid-September, the jet stream carried smoke (yellow/red shading) across the country. As the smoke was between 2-5 miles high once it reached the East Coast, it mainly affected sky color and the brightness of the sun there versus air quality farther west.

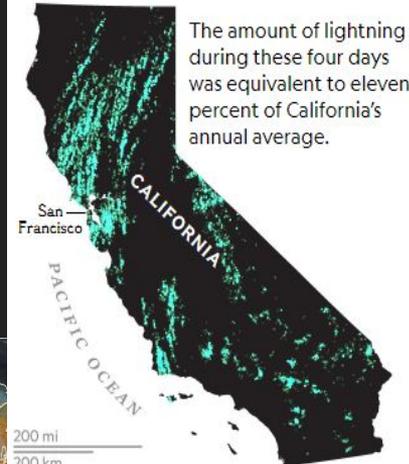
Early September Satellite



Smoke extent Sep 16



Lightning strikes August 15-19, 2020



The amount of lightning during these four days was equivalent to eleven percent of California's annual average.

Fires detected August 14-21



~20,000 lightning strikes in 5 days!

RILEY D. CHAMPINE, NG STAFF. SOURCES: CHRIS VAGASKY, VAISALA; NASA; CALFIRE

Notable Event Spotlight, Part 2!

Record low pressure in Western Aleutian Islands

- Around the time of this satellite loop, a land pressure reading of 924.8 mb was recorded on Shemya Island (indicated by yellow arrow)...**lowest land pressure reading ever in Alaska!** Wind gusts 80-85 mph reported.
- Ocean Prediction Center analyzed 921 mb over ocean...**strongest non-tropical cyclone in North Pacific since at least 1958!** A buoy just south of Aleutians had a 20-min average wave height of 58 ft...so individual waves could have reached 100 feet!
- Bonus weather: “sea effect snow” off the Sea of Japan (red arrows)!

