

# RENO/TAHOE WEATHER BLOG



## Our Story

Since 1988 I have been a weather watcher from my home in Galena Forest and now Montreux located in the Carson Range of the Sierra Nevada mountains near Reno, Nevada. Our current location is about 700 ft. lower in elevation but in the same general area. My interest in the weather dates back to my childhood when I am told I would pretend to be the TV weatherman. My years of flying as an instrument rated pilot increased my interest since many times correct weather interpretation kept my family and me alive. As an avid skier I am always interested in the storms that produce the heaven like powder snow we love to play in.

Over the years I found there are lots of folks interested in the same thing. Long range forecasting is my main interest, and it seems that local weather people are very hesitant to forecast very long range ( more than five days). Hence, I decided to begin sending an e-mail to my friends who shared the common interest or just wanted to plan sick days off around big snow dumps. Updates are posted every few days as weather predictions change during the active weather months. From June through September updates are seldom. Daily updates are found on our weather station site noted below.  
- Randy York

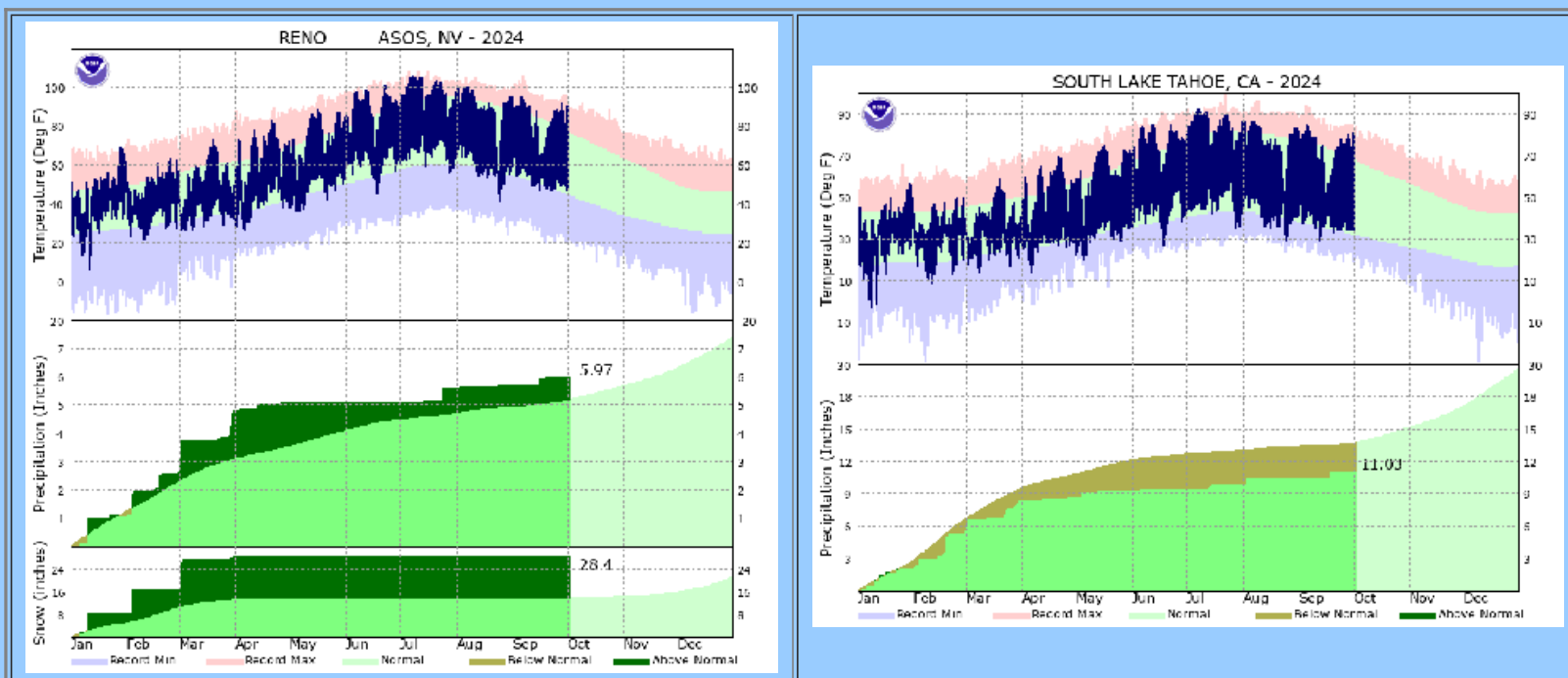
## ANNUAL 2024-25 WINTER FORECAST

October 6, 2024

It seems like forever since we published this blog, but here we are at the beginning of autumn and it is time to start thinking about the ski season and what we can expect weather wise in the winter ahead. The focus of this forecast is our local area, more precisely the Sierra Range from Mammoth Lakes to Portola. The blog originated as a tool to plan production at our former company, which was heavily dependent on the snow skiing industry. It later evolved as a guide for skiing enthusiasts, who were chomping at the bit to get out on the slopes.

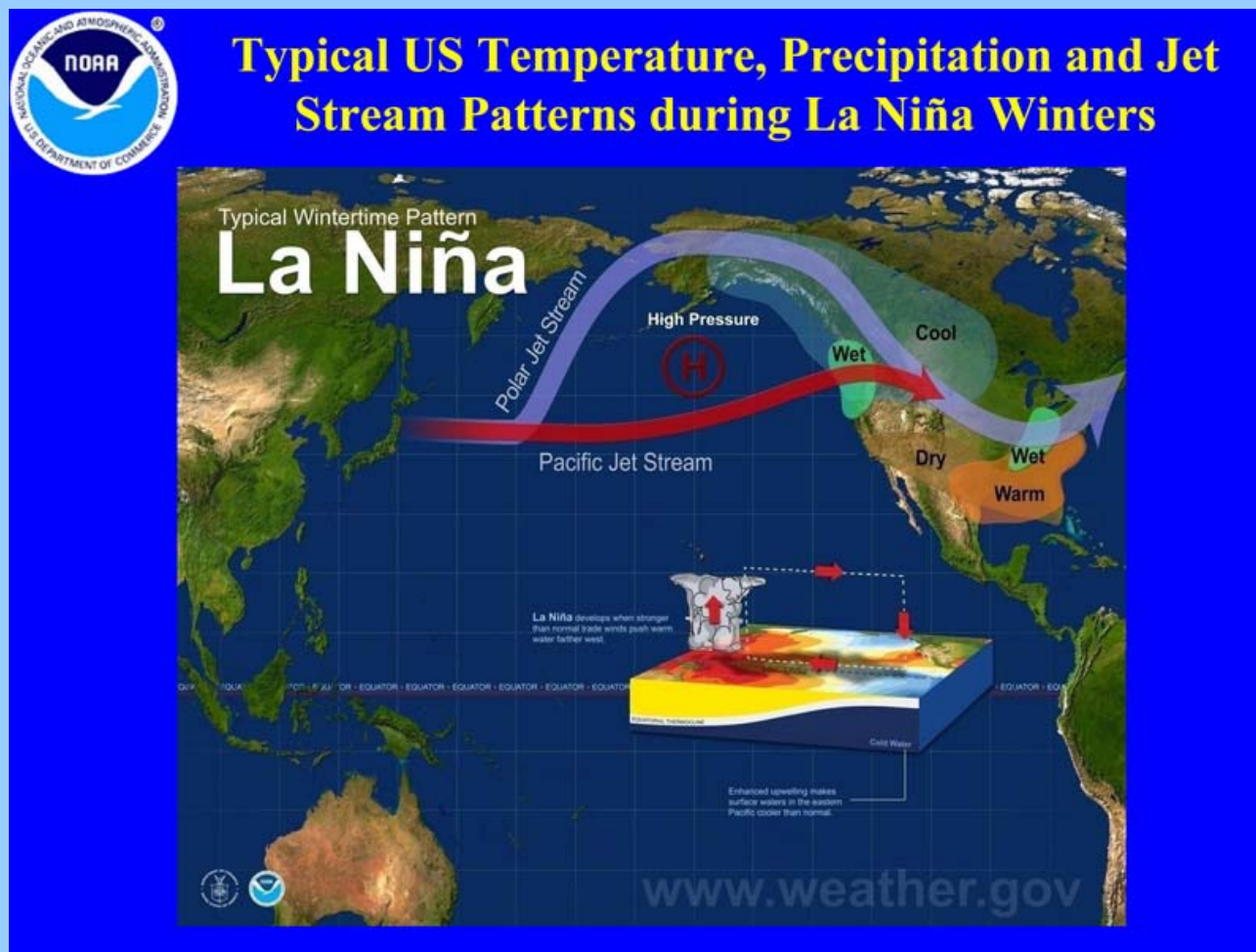
Today with modern snow making, it isn't quite as important to know when the first snowfall will come, since most of the areas in the region are able to begin operations by the Thanksgiving holiday. Of course, a couple of big storms in early November really help get the ball rolling and heighten interest. So how do we go about creating our forecast? First of all, accurate weather forecasting has improved significantly over the last 25 years. There are so many tools available, but accuracy beyond 10 days is very problematic. What we look at is the history of our area including past ENSO episodes, what summer was like compared to other summers, what last winter was like, what the current weather is like, what is going on with the jet stream, activity in the Pacific Ocean the compare it to the weather the past 35 to 75 years in our area. We also look to see what other forecasters are saying. We rely on data from many universities and the National Weather Service (NWS), including the Climate Prediction Center (CPC) and NOAA.

So let's get started, Last winter we were under a strong, almost very strong El Nino, which produced a few good storms and we ended up very close to the average precipitation amounts. For the water year 7/1/23 through 6/30/24 the northern sierra was 94%, the central sierra 87% and southern sierra 91%. Here is a graphic showing temperature and precipitation for this calendar year at Reno and South Lake Tahoe. By the way, if you're not interested in how we come to our conclusions just scroll down to the "OUR FORECAST" section.



We can see that it was a hot summer, the dark blue in the graphic was well in the red area many times throughout June into August. As far as precipitation Reno was slightly above average while South Lake Tahoe was slightly below. This is based on the calendar year, not the water year. In my years of observation and looking at the data I'm not surprised that the Strong El Nino produced these results. Certainly there are many other

factors, but both strong El Niño and strong La Niña years tend not to produce as much precipitation and weak ones do. Here is a graphic showing a typical La Niña Winter.



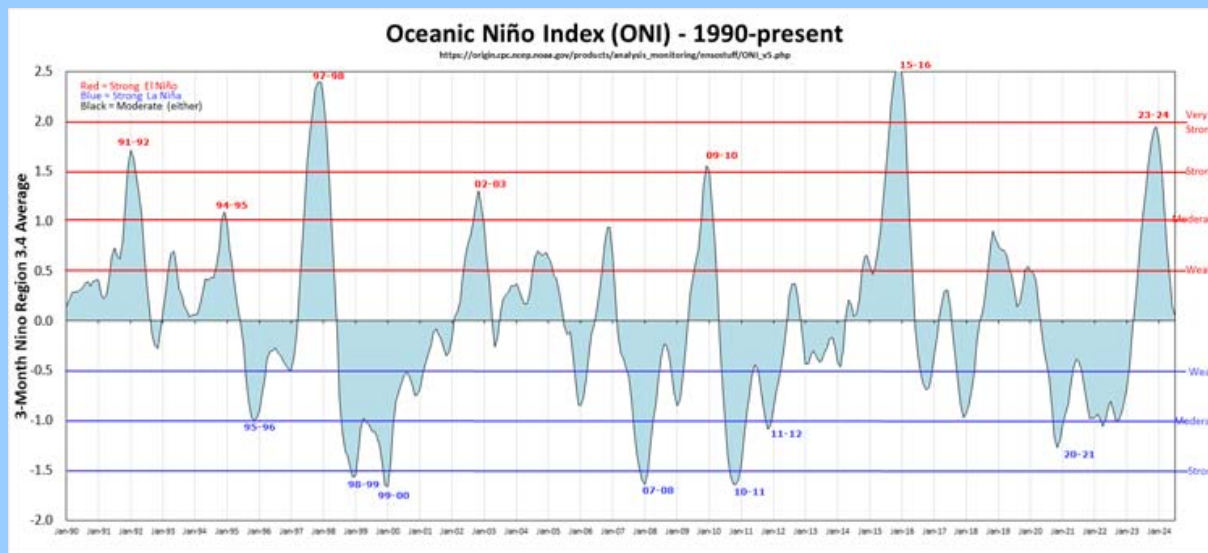
La Niña is the cool version of the El Niño Southern Oscillation (ENSO), where there is an upwelling of cooler waters off the coast of western South America. El Niño is the opposite, upwelling of warmer waters in the same area. When either El Niño or La Niña conditions are present versus the absence of either, which we refer to as neutral, we can use past history to help determine winter patterns. The above graphic would represent the typical La Niña event. The Climate Prediction Center is indicating a slowdown of the impending La Niña for this Fall and beginning of Winter. Here is a link if you want more information. [Click Here](#)

The ENSO was first discovered in 1950. Since then there have been 27 El Niño's and 25 La Niña's. To further examine the winter characteristics, we have classified them by their strength. The table below shows that data.

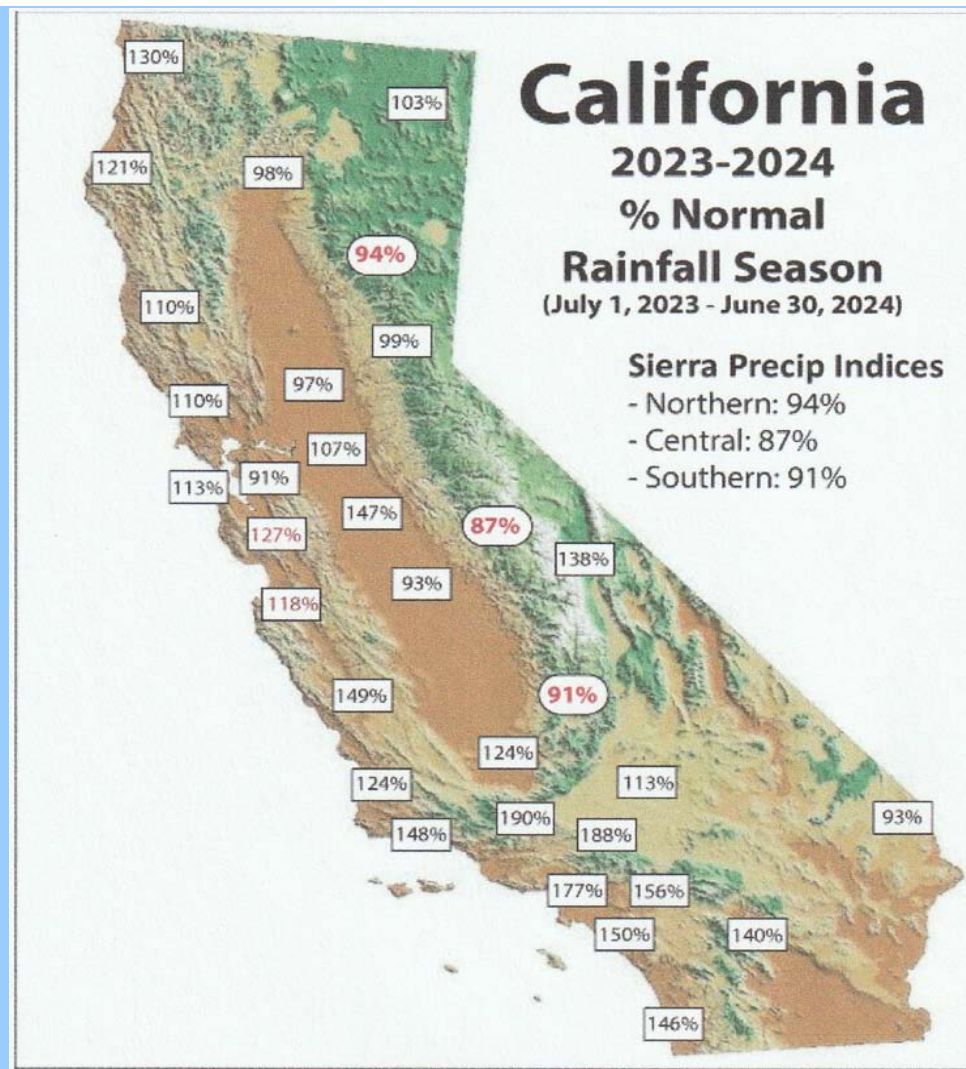


El Niño - 27				La Niña - 25		
Weak - 11	Moderate - 7	Strong - 6	Very Strong - 3	Weak - 12	Moderate - 6	Strong - 7
1952-53	1951-52	1957-58	1982-83	1954-55	1955-56	1973-74
1953-54	1963-64	1965-66	1997-98	1964-65	1970-71	1975-76
1958-59	1968-69	1972-73	2015-16	1971-72	1995-96	1988-89
1969-70	1986-87	1987-88		1974-75	2011-12	1998-99
1976-77	1994-95	1991-92		1983-84	2020-21	1999-00
1977-78	2002-03	2023-24		1984-85	2021-22	2007-08
1979-80	2009-10			2000-01		2010-11
2004-05				2005-06		
2006-07				2008-09		
2014-15				2016-17		
2018-19				2017-18		
				2022-23		

Now we will look at these events in the following graphic, the Oceanic Niño Index (ONI) 1990 to present.



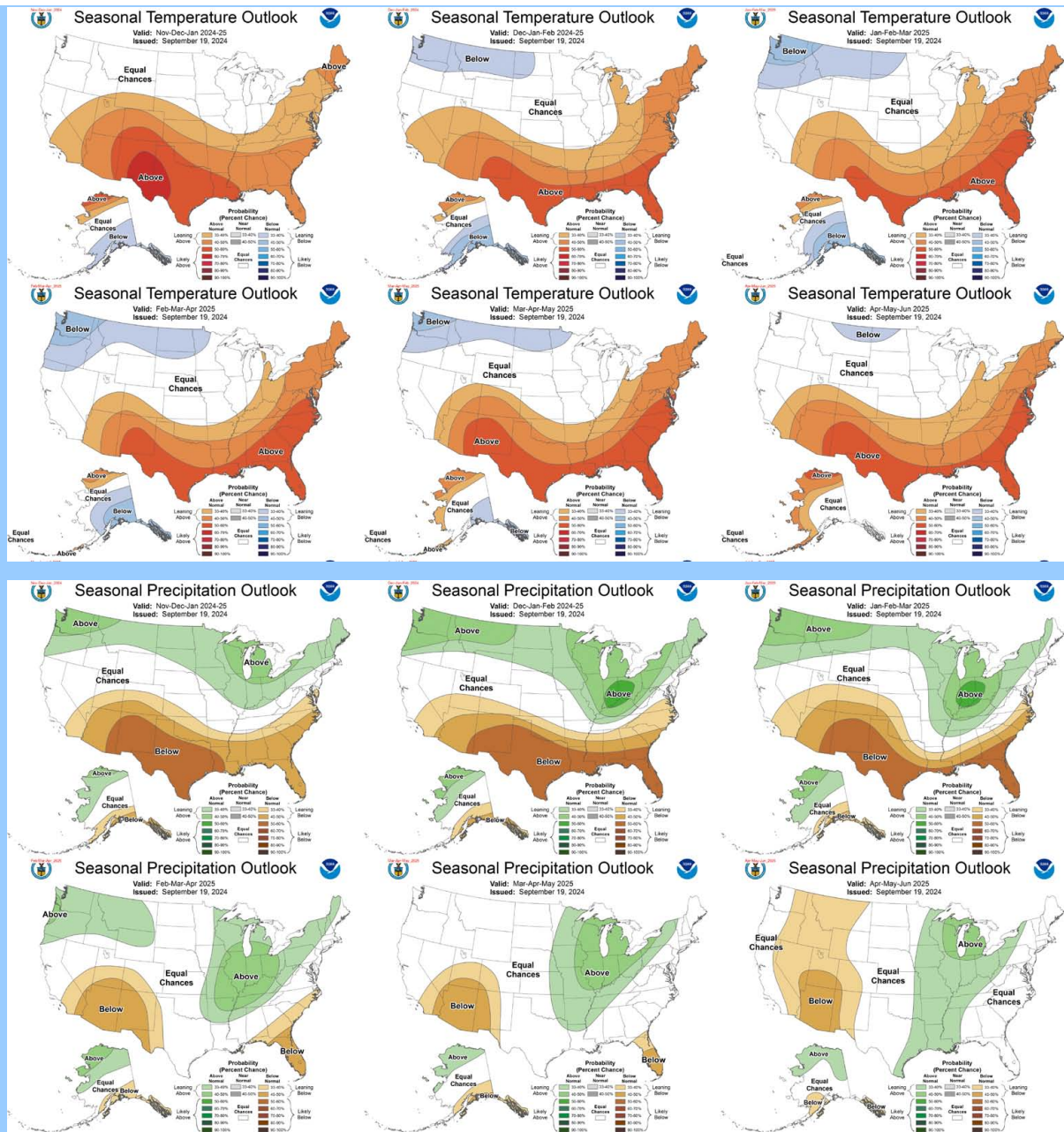
What we can gather so far is that there are patterns to the ENSO cycle. Last year we had a strong, nearly very strong, El Niño that produced near normal amounts of precipitation. We are predicting a weak La Niña this Winter. So let's look back to see if there are similar patterns in the past. Since we only have three very strong El Niño's, it is pretty easy to check the following Winters for La Niñas. As it turns out, two were followed by weak La Niña's, 1983-84 and 2016-17. If we investigate those two Winters, both recorded well above precipitation for that year. In 1983-84 the central sierra posted 45.3" and the northern sierra posted 59.3". In 2016-17 central sierra was 71.5" and northern sierra was 94.4". Average precipitation for the central sierra is 39.5" and the northern sierra is 52.8".



The graphic above shows a breakdown of precipitation percentages for last year in California. You might note the Lake Tahoe basin recorded 99% of average. So now, we are starting to dial in one of the tools in our meteorology bag of tricks. Even if we average the two seasons we identified, we can expect a fairly high probability of having an above average Winter. Both had very dry June through September summers and well above average temperatures. In 1983-84 precipitation was very heavy in November, and December, then below average January and February, then a good March. 2016-17 saw heavy precipitation in October, Average in November and December with well above average January and February with an average March.

Another source of information is the National Oceanic and Atmospheric Administration (NOAA). its Climate Prediction Center (CPC) produces long range forecasts for temperature and Precipitation. Here are those graphics.





As you can see in this graphic, the CPC is taking a very conservative position in forecasting an average fall, winter and spring. Usually about this time of the year they will come out with their annual prediction, which can vary from this 12 month look ahead. It is usually a better source of information, but again, their predictions are usually very conservative. Accuweather and Weather Underground are also good sources. They also publish a Winter forecast about this time of the year, so watch for those as well.

Putting the forecast together entails more than the information discussed above, but I can tell you, I am strongly influenced by history. As a result I will weigh heavily on the Winter of 2016-17 as a guidance for my predictions. Climatology is a very non exact science, and many things can influence the weather. As we approach winter we will be tracking the Madden-Julian Oscillation (MJO), Kelvin Wave, which is fully active now across the

southwestern pacific below the equator, the Pacific-North American Pattern (PNA), the Arctic Oscillation (AO), and others, as we watch for pattern changes.

### 2024-25 Winter Weather Prediction

I am predicting above average precipitation for this fall and winter. Since we are already into October, and experiencing an Indian Summer, I suspect most of the precipitation will come later in the fall as snow in the sierra. Overall we think our overall precipitation in the sierra will range from 120% to 140% of average for the water year. Following is our guess at monthly weather events.

October will likely see some cooling in the second half of the month, but many days will still be warmer than the seasonal average. We may see a storm arrive near the end of the month, most likely the tail end of a system that brings some good rains to the pacific northwest.

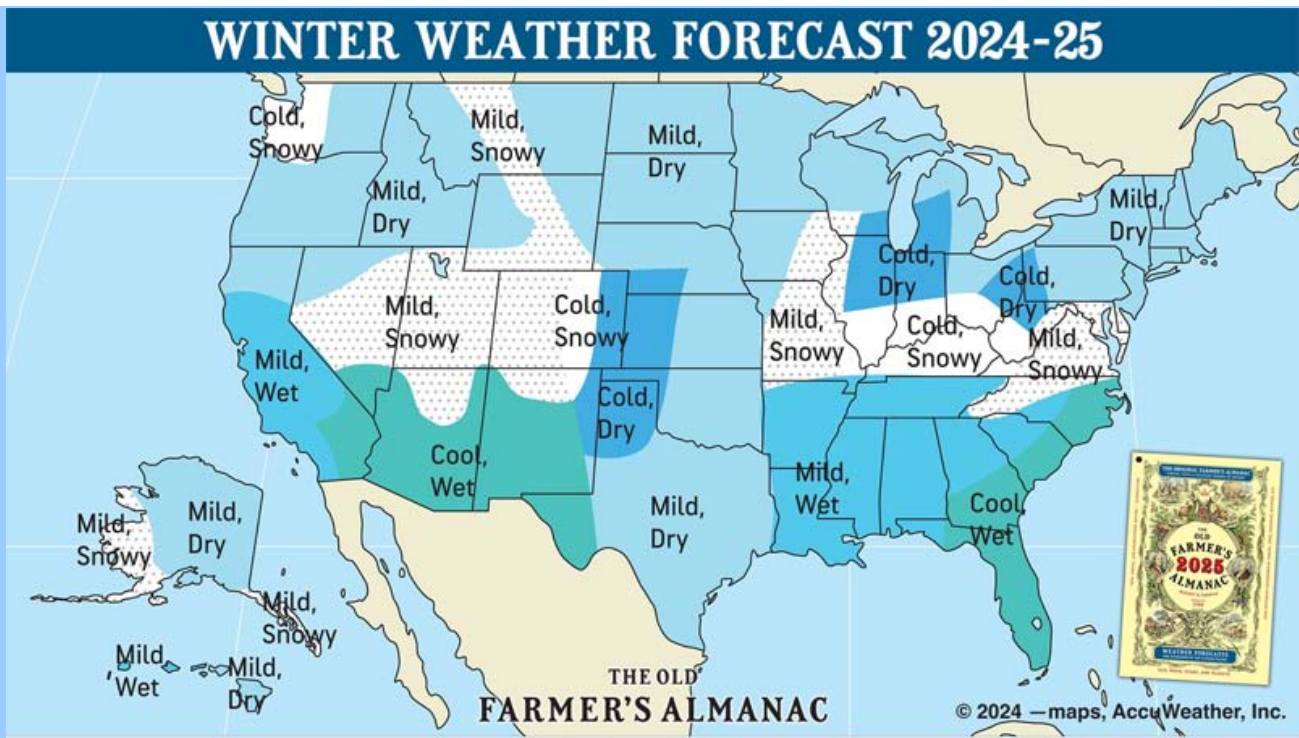
November will likely see a couple of good precipitation events. The first one around mid month, and the second around the Thanksgiving Holidays. The mid month event is likely to produce rain below 7500 ft. and snow above, the second event may be cold enough to bring snow down the 5500 ft or below. These two system should produce and good start to the ski season.

December It will be cold as La Nina will be in full force, although on the weak side. Two more systems in December with many days unsettled and cloudy skies. Likely we will have a White Christmas in Reno. December is always a tough month to forecast as we transition from fall to winter so as a disclaimer, the second storm of the month may get pushed into January.

January It will remain cold under the influence of La Nina. As stated above, the month may start with a storm that was delayed in December. It is likely after that we will have a dry period mid month before the storm cycle picks up again towards the end of the month.

February - March we are really getting out there now, but if we are correct in our thinking, we should see several good snow events during these two months. The caveat is that the CPC predicts La Nina to wane as we approach the spring which may cut off the storm cycles early. We will just have to wait and see.

This departs somewhat from the 2016-17 year we are using as a guide in that October was a very wet month that year, and isn't this year. My experience is when we have a dry October we make up for it in November or December, then experience a fairly dry January. I'm going with that this year. Since the CPC has quite a different forecast I am posting the graphic below from the Old Farmers Almanac which aligns better with what we are forecasting.



As you can see they are also forecasting a wet west coast, including most of the Sierra. Finally, I found an interesting graphic that displays a typical pattern for west coast storms. It is a bonus for all my weather watcher friends. The quality is not great, but something that can be used in short term forecasting. We will be doing a lot of that this year.



### Typical Wintertime Weather Anomalies Preceding Heavy West Coast Precipitation Events

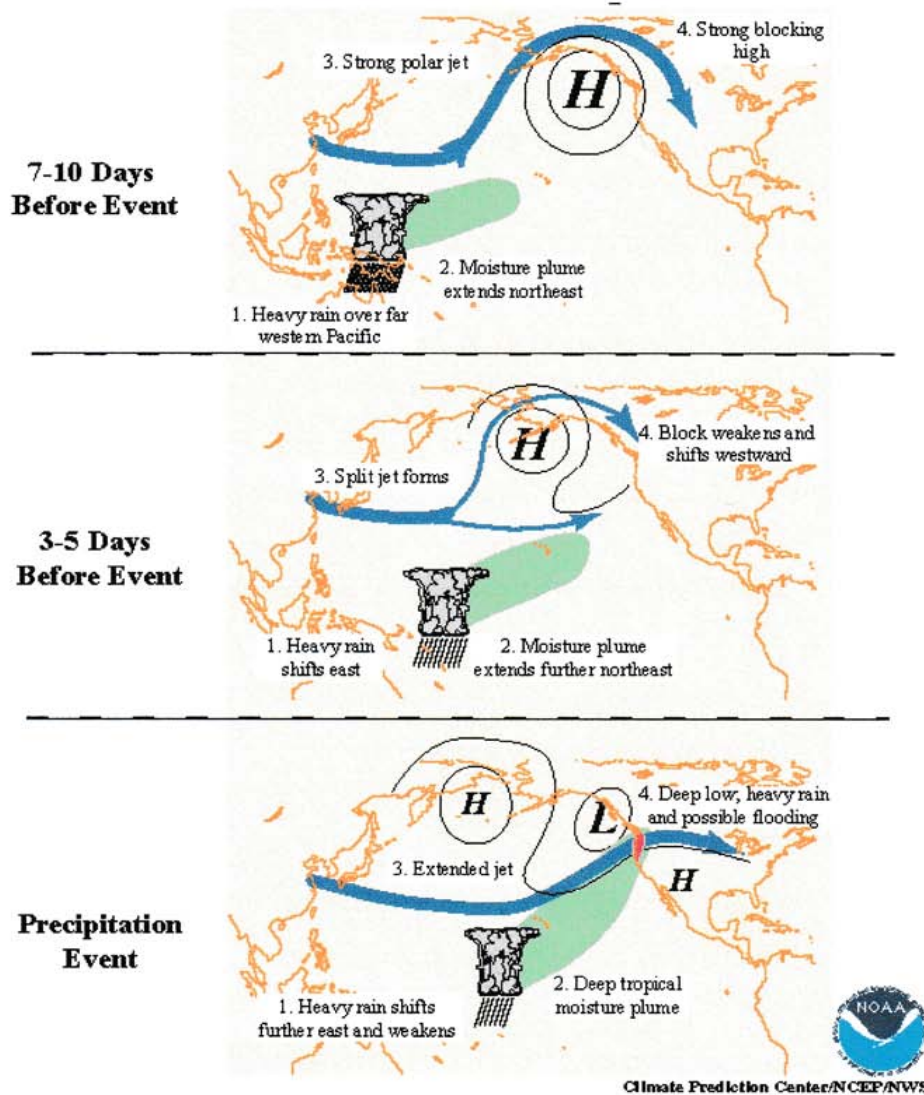


Figure 11: Schematic of circulation and moisture patterns associated with extreme rainfall events along the west coast of North America associated with the MJO.

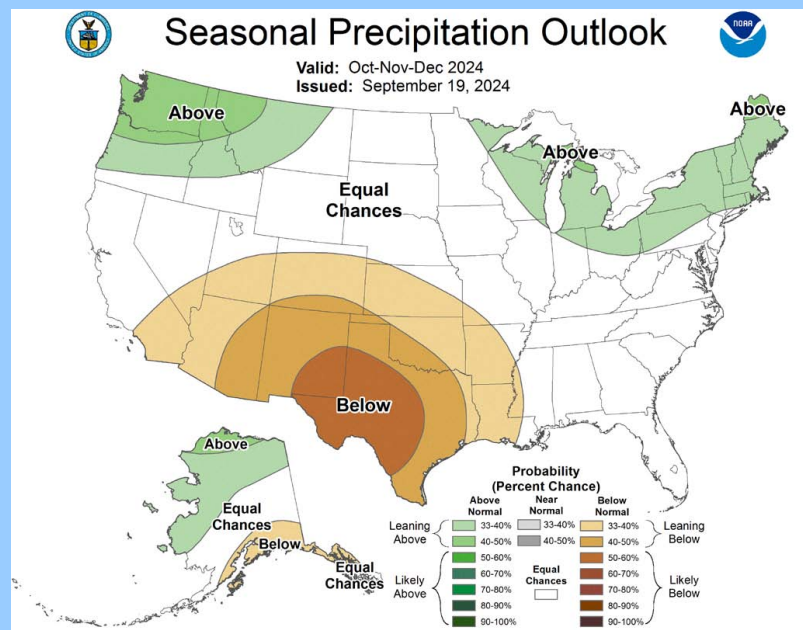
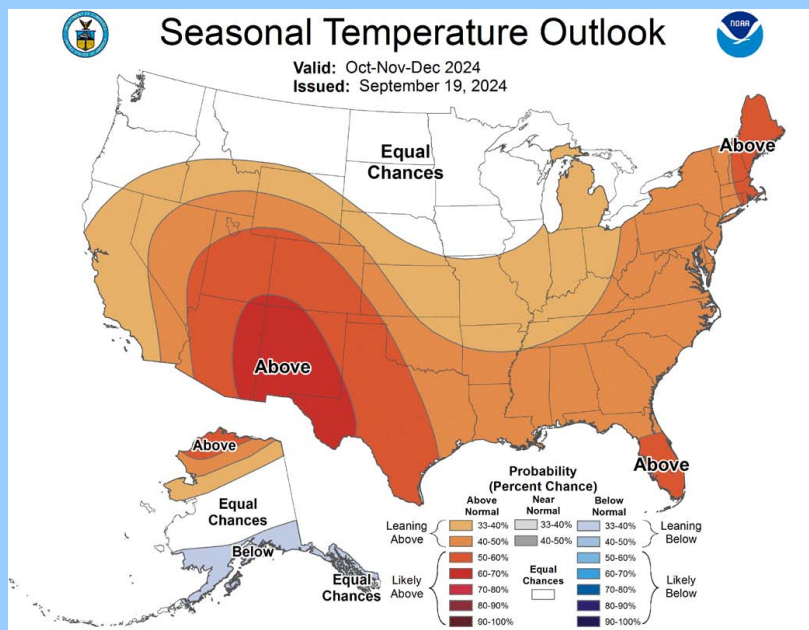
Watch for the moisture plume developing over Indonesia and making its way northeast across the equator towards the USA 10 days out or so. Just a fun tidbit, but it also follows the MJO activity quite closely. We will be updating the blog as needed throughout the fall-winter-spring as needed. Until then enjoy our warm and dry Fall.

That's it for now, check our [daily report](#) and the National Weather Service for updates. Short term, check out our daily report on our weather station

site, it usually looks 3 to 5 days ahead.

Please comment if you like on our forecasts, your own observations, or anything else. Our email link is posted below.

Three month look ahead for October, November December 2024.



Visit our weather station site for Daily Forecasts at [www.renowx.net](http://www.renowx.net)

Contact us by sending your email to [info@renowx.net](mailto:info@renowx.net)