El Nino is Here and Coming in Strong !!

It's mid-November and High Tides and Big Storms are arriving to start our Winter.
The stage is set with ocean temps pushing record high levels in some areas.

Sea Surface Anomaly Chart
Nov 14, 2026
Are these the peak Sea Surface Temps?
El Nino usually peaks in December.

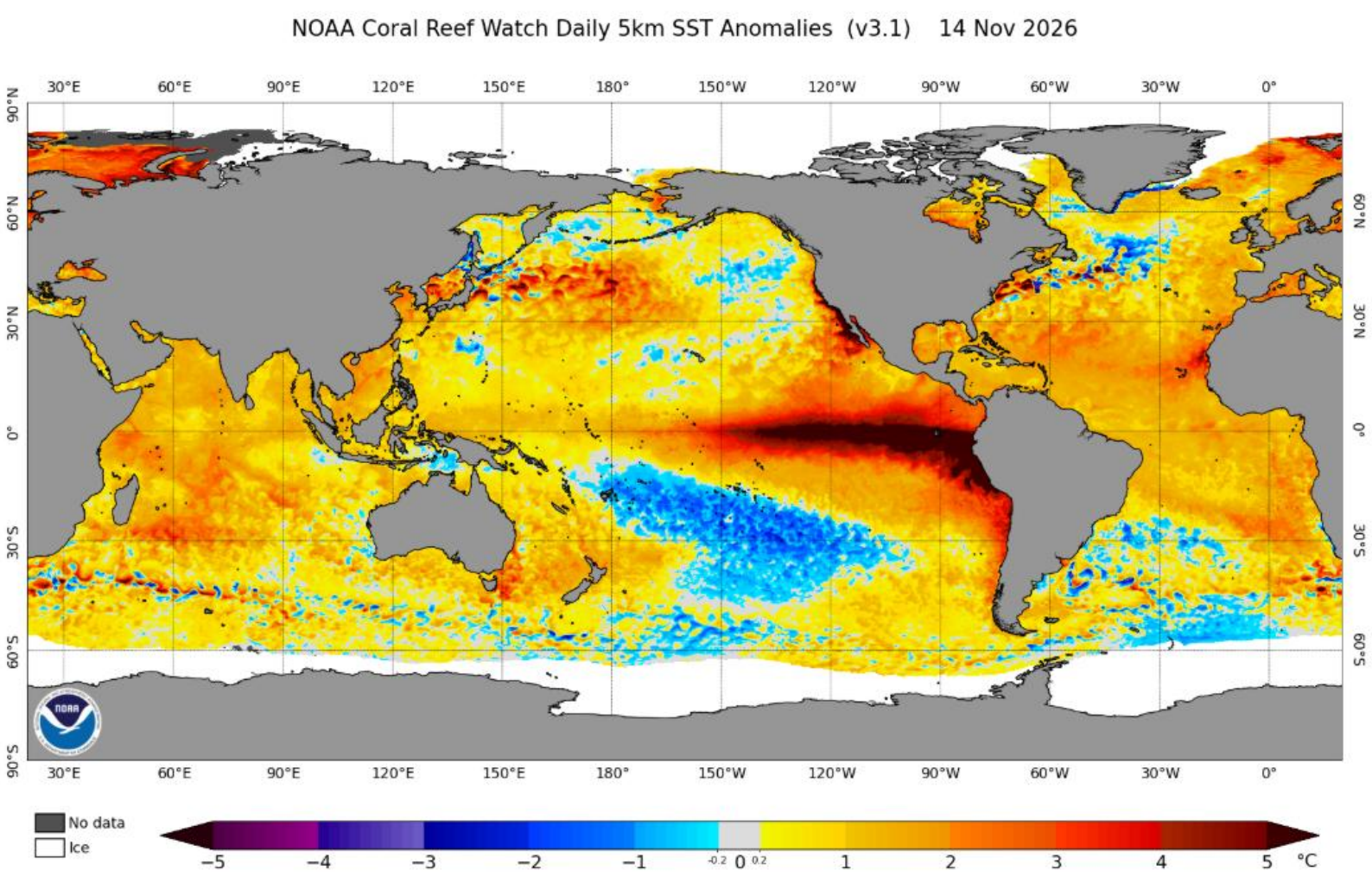
Here's a summary of where we are, how we got here and analog years for this winter. We'll soon see if we can still use the past to predict the future, some say not this year…

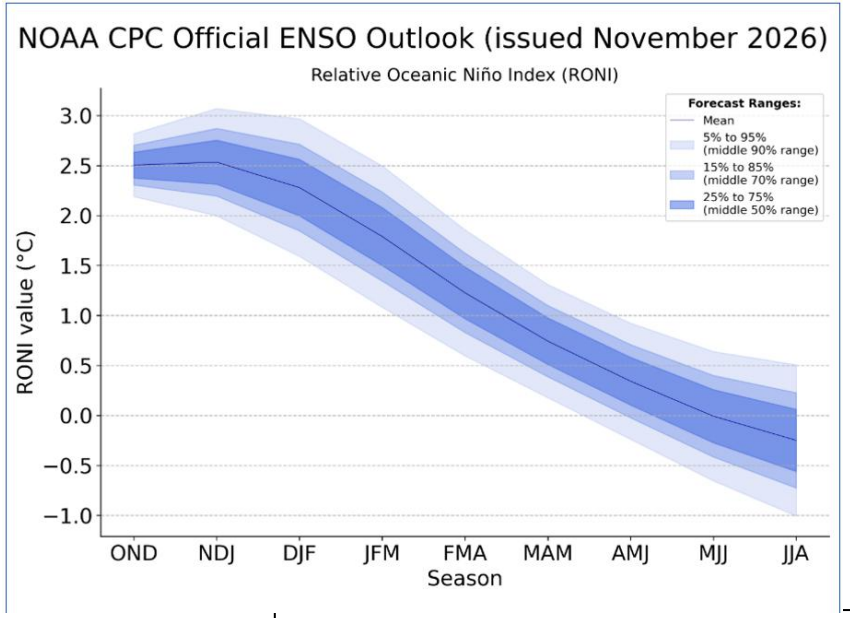
No guarantees where the wild winter weather will hit next, but extreme weather appears to be on the agenda. Behind us are the intense monsoons, Pacific hurricanes and intense SW rain events.

To kick start our winter we're watching an early Polar Vortex breakup, early arrival of Mavericks, and a Congo Line of pacific storms and its only mid-November !

Winter Starts Now !!

SST Anomaly Charts



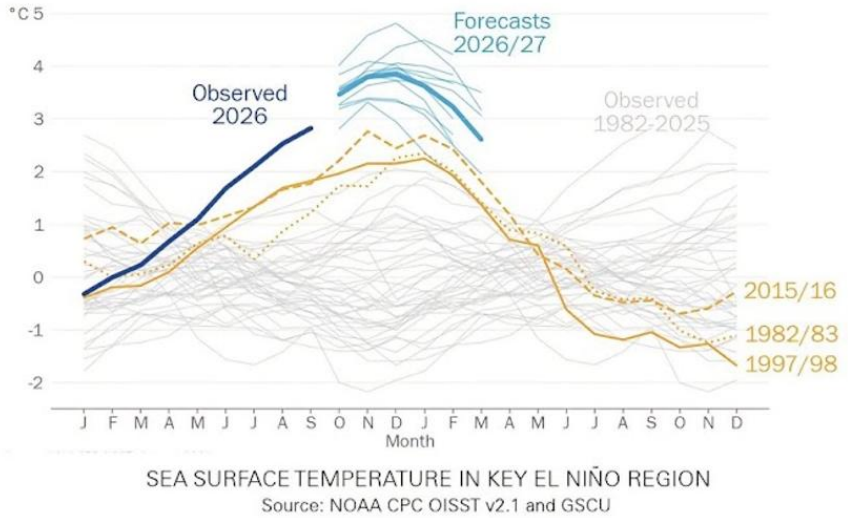


Some are hinting that El Nino is peaking or has… usually it doesn't peak until December, but it will be remembered as one of the strongest El Nino events in 150 years.

Its impacts will continue being felt whether it peaks early or not. A few forecasters are hinting at a La Nina brewing in 2027. We'll keep watching and talking about the *Year after a Strong El Nino* in another post because sometimes the following year is even better.

A strong El Niño developed rapidly in 2026

It is nearly certain to persist into early 2027, influencing climate impacts across many regions.



SEA SURFACE TEMPERATURE IN KEY EL NIÑO REGION
Source: NOAA CPC OISST v2.1 and GSCU

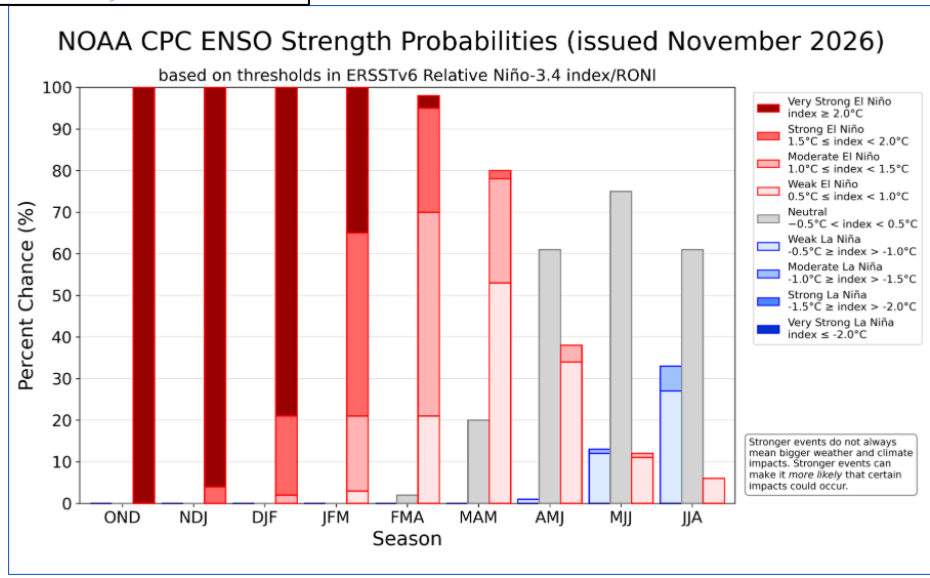
WMO #StateOfClimate for COP31 TÜRKİYE ANTALYA

World Meteorological Organization

CLIMATE PREDICTION CENTER/NCEP/NWS
12 November 2026

ENSO Alert System Status: El Niño Advisory

Synopsis: El Niño continues to strengthen, with a strong-to-very strong El Niño likely through January-March 2027 (remaining greater than a 79% chance).

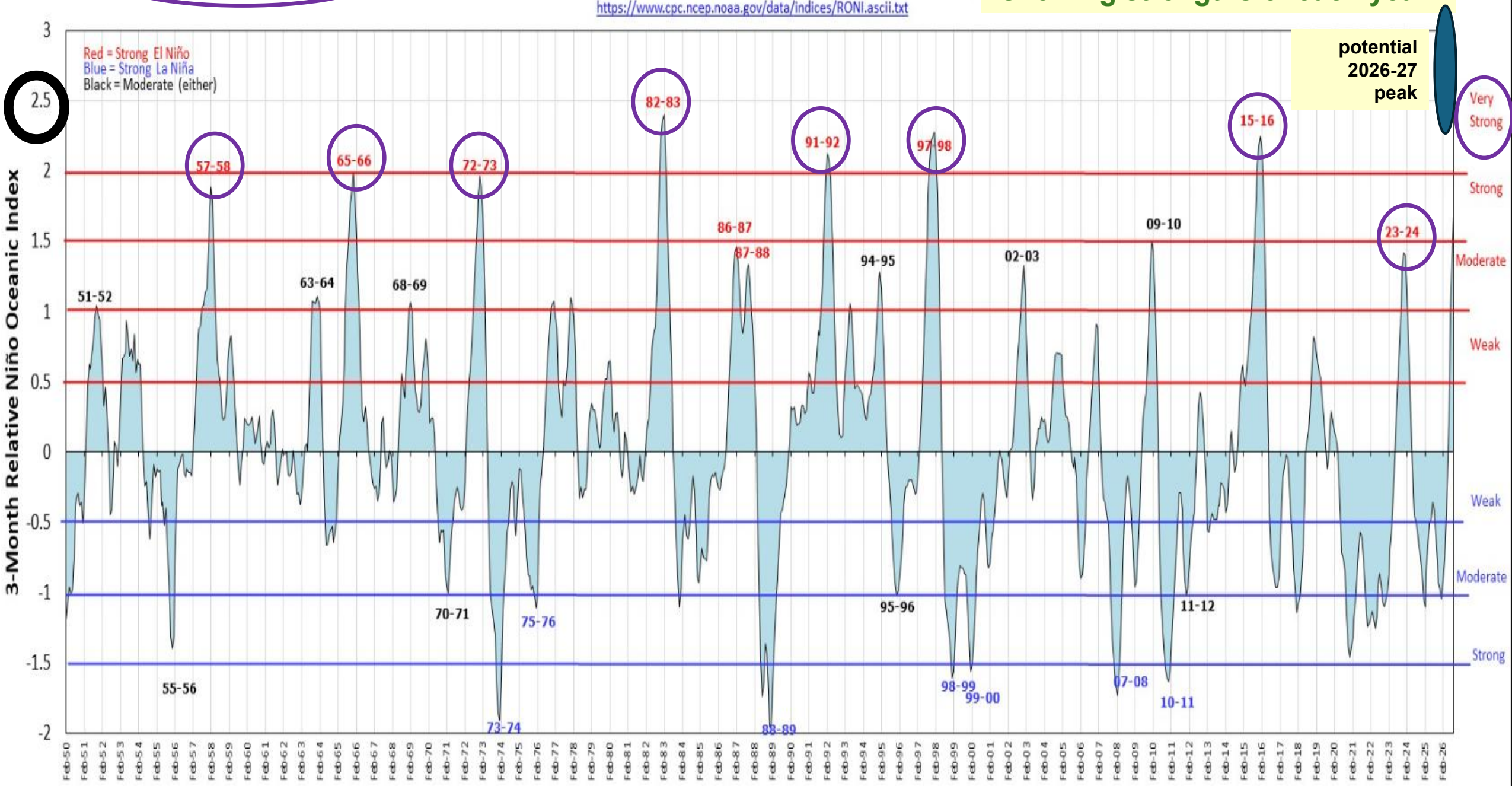


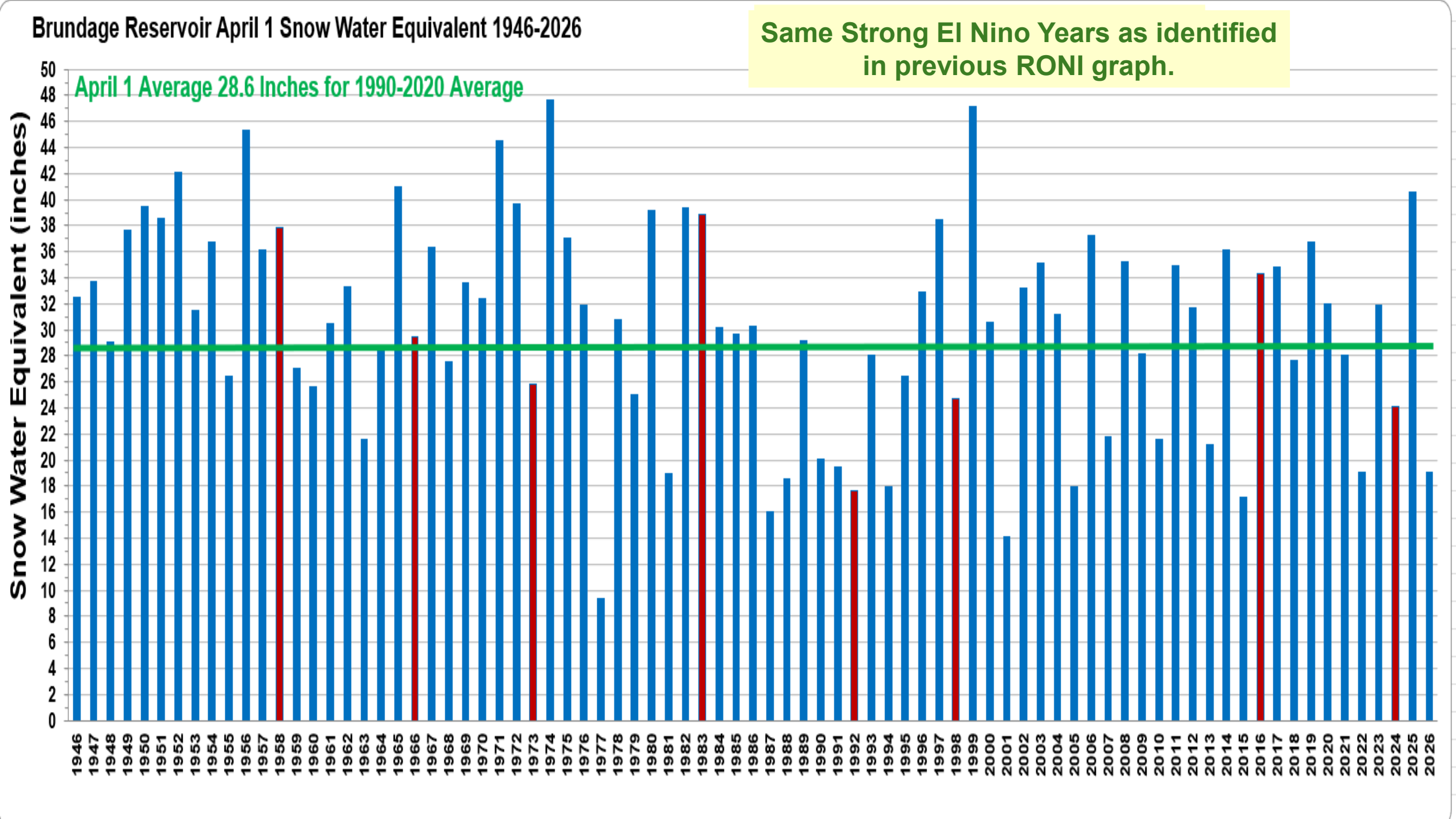
Strong El Nino Years

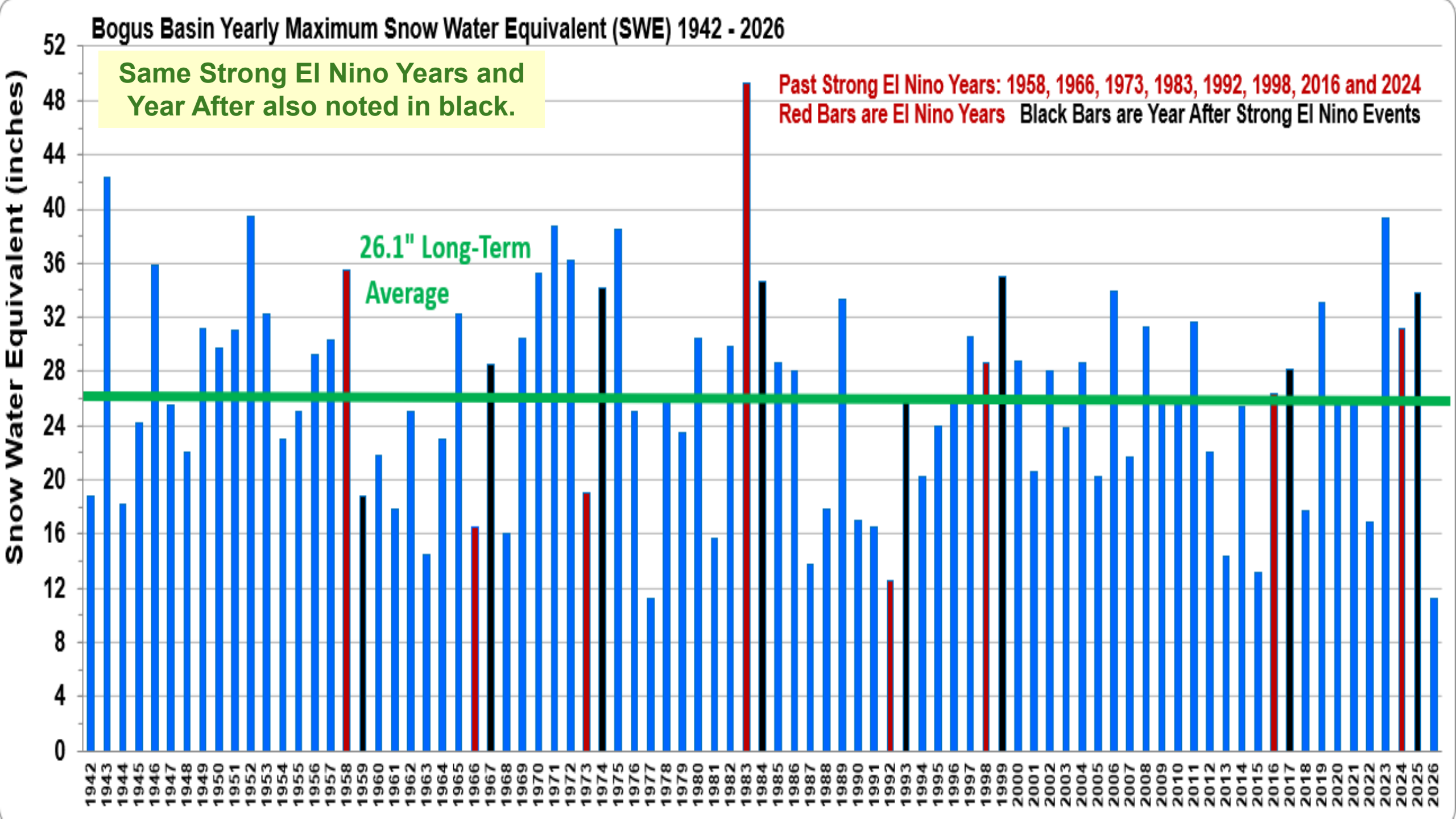
Relative Oceanic Niño Index (RONI)

https://www.cpc.ncep.noaa.gov/data/indices/RONI.ascii.txt

One of my favorite graphs showing strengths of each year!




Brundage Reservoir April 1 Snow Water Equivalent 1946-2026
Same Strong El Nino Years as identified in previous RONI graph.
April 1 Average 28.6 Inches for 1990-2020 Average
Snow Water Equivalent (inches)
0
2
4
6
8
10
12
14
16
18
20
22
24
26
28
30
32
34
36
38
40
42
44
46
48
50
1946 1947 1948 1949 1950 1951 1952 1953 1954 1955 1956 1957 1958 1959 1960 1961 1962 1963 1964 1965 1966 1967 1968 1969 1970 1971 1972 1973 1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026


Bogus Basin Yearly Maximum Snow Water Equivalent (SWE) 1942 - 2026
Same Strong El Nino Years and Year After also noted in black.
Past Strong El Nino Years: 1958, 1966, 1973, 1983, 1992, 1998, 2016 and 2024
Red Bars are El Nino Years
Black Bars are Year After Strong El Nino Events
26.1" Long-Term Average
Snow Water Equivalent (inches)
0
4
8
12
16
20
24
28
32
36
40
44
48
52
1942 1943 1944 1945 1946 1947 1948 1949 1950 1951 1952 1953 1954 1955 1956 1957 1958 1959 1960 1961 1962 1963 1964 1965 1966 1967 1968 1969 1970 1971 1972 1973 1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026

WFLA Jeff Berard...
Suggested for you · 1h ·

🔥 Astonishing Ocean Heat 🔥
All-time record sea surface anomaly of 17°F above normal off Peru right now. This is a "direct"influence of El Niño as the hot water shuts off cold water (nutrient-rich) upwelling. In fact it was Peruvian fishermen in the 1600s who named El Niño because every few years their waters, around Christmastime, would warm dramatically. The nutrients would disappear and the fishery would collapse! Exact name: El Niño de Navidad - The Christmas Child. It's a natural few-year cycle but this one is off the charts.
Also: Off Los Angeles water temps are at record levels ~13°F above normal. This is an "indirect" effect of El Niño which causes an invisible large scale Pacific wave, called a Kelvin wave. You can think of it as a massive bulge of warm water. The warmth expands the water column... the wave gets trapped up against the CA coast, this raises sea level up to 15 inches and it blocks deep cold water from surfacing. The result is the hottest November water they have ever seen along the

Now let's discuss how we got here:

Here's a good brief historic El Nino summary and info about how hot the ocean temps are!

massive bulge of warm water. The warmth expands the water column... the wave gets trapped up against the CA coast, this raises sea level up to 15 inches and it blocks deep cold water from surfacing. The result is the hottest November water they have ever seen along the South & Central #California coast. With #ElNino we should continue to expect the unexpected!
And while El Niño is the proximate cause of the distribution of Pacific heat, it's the longterm build of ocean heat from global warming that has enabled El Niño to reach unprecedented heights this year.



It's all about relationship which I still have lots to learn…
Its fun watching daily SOI spikes like this one from Oct 21 that may give an indication of future weather 4-6 weeks out. Here's a post and few slides from past talks to explain these SOI spikes:

https://snowweatherandflow.blog/2026/11/14/large-mid-oct-negative-southern-oscillation-index-spike/

Large mid-Oct negative Southern Oscillation Index spike

ON NOVEMBER 14, 2026 / BY RON ABRAMOVICH / EDIT

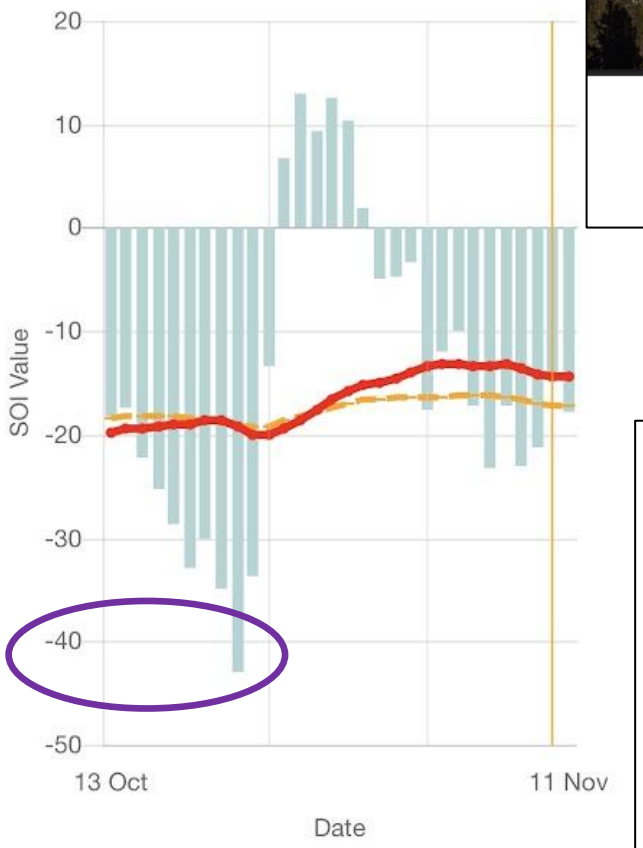
How did I miss this large mid-Oct negative Southern Oscillation Index spike – I must of been taking a siesta….

Short story – Weather happens 4-6 weeks later. Winter Starts this Weekend !

Here's the long AI summary…

A large negative daily spike of -40 in the Southern Oscillation Index (SOI) in mid-October signifies a powerful, short-term surge of tropical atmospheric energy that heavily influences North American weather 4 to 6 weeks later (late November to early December) through a lagged climate phenomenon known as an atmospheric teleconnection.

Recent (preliminary) Southern Oscillation Index values





Another Signal of What Might be Expected Soon:

Jan 14 2014 daily SOI (Southern Oscillation Index) value was above 50, and the pressure at Darwin was at 998mb for 2nd consecutive day.
Nov 19 & 23 2025 SOI was 38

A reading of a 50 does not occur often, based on 23+ years of record.
Here are FEW times the SOI daily number has been in the mid 40's or above and events that followed:

- **Nov 19 & 23 2025: (38.)** **?????**
- **Jan 14/15 2014: (54.90)** **Abundant Moisture Feb/Mar 2014**
- **Dec 25 2011: (49.20)** **Snowstorm/Arctic Blast Jan 14, 2012**
- **Jan 17/18 2011: (50.87, 55.43)** **Snow/Arctic Blast Feb 24, 2011**
- **Dec 22/23 2003: (44.34, 44.34)** **Snow/Arctic Blast Jan 2, 2004**
- **Dec 4/5 2000: (49.61, 47.14)** **Modified Arctic air Dec 10-15, 2000**
- **Dec 11/12 1998: (51.02, 49.60)** **Major Arctic Blast Dec 19, 1998**

It's no fool proof method, but is now showing agreement with models

12:50

Meteorologist M...

Suggested for you · ... ·

The Polar Vortex just did something we've NEVER seen this early in the season.

For the first time on record, winds high above the Arctic reversed direction in early November, breaking the previous record from 1968 by 17 days.

The vortex has now begun spinning in its normal direction again, with forecasts suggesting it could rapidly strengthen toward the end of November.

This historic disruption could have major implications for winter weather, although the most significant impacts may develop across Europe and Asia rather than the United States.



This November saw the earliest Polar Vortex breakup since records start in 1950s. Usually these breakups occur in Jan/Feb; some say the breakup happened too early as more cold air is needed over the north pole. Now we'll watch and see how the PV heals and future impacts on the jet stream.

Surfs up !
Mavericks had the earliest start too.

Any relationship here or just coincidence ?

Its time for a Hawaii road trip to catch a wave.

Big Wave Challe.....

Suggested for you · ... ·

ryan augenstein opens the XXL bidding at Mavericks to... See more



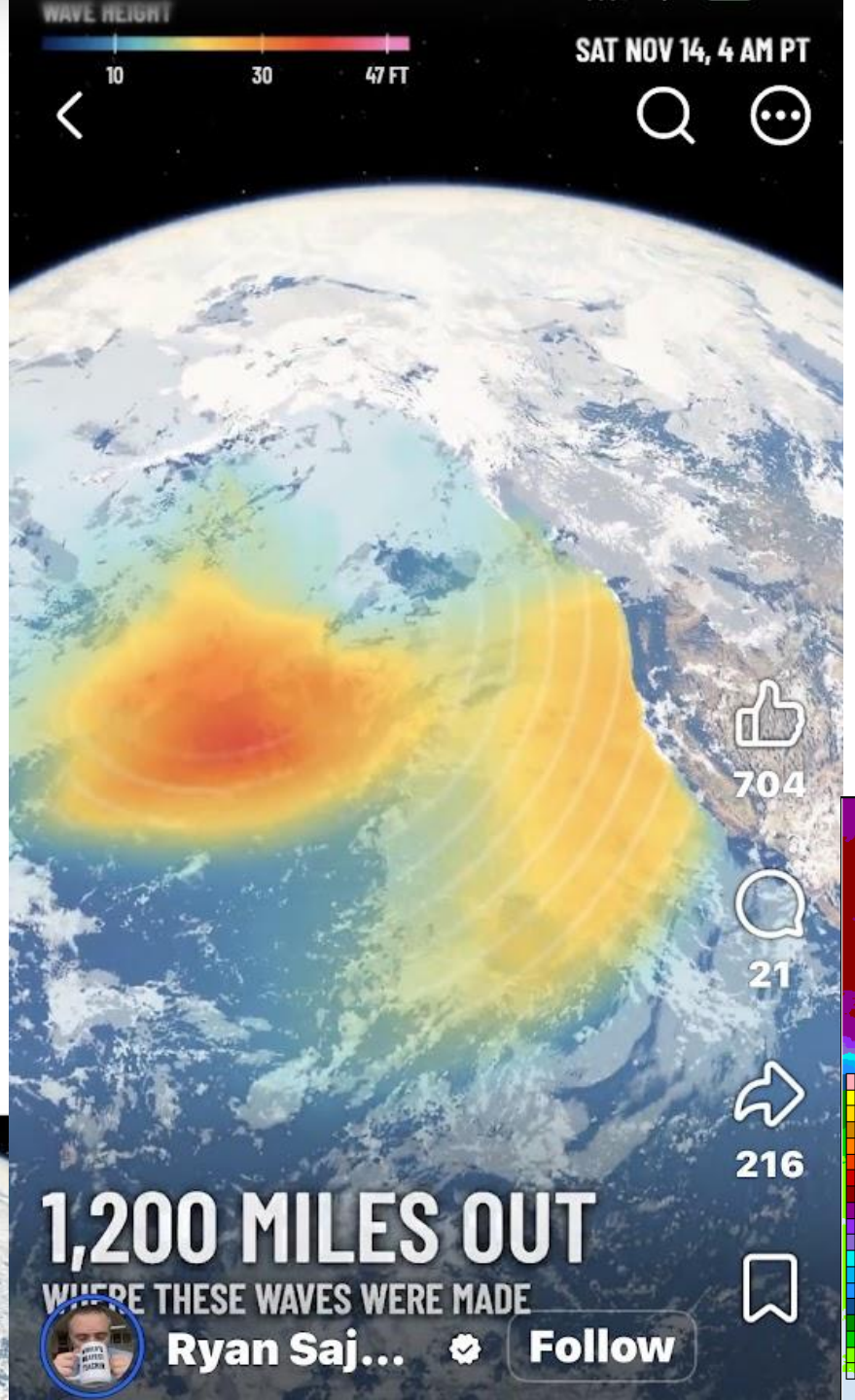
Ryan Sajdak
Suggested for you · 1d ·

While New York gets its first snow, the West Coast is getting 50-foot waves.

They were made by a storm 1,200 miles out in the Pacific. It raced east at about the same speed as the waves it was making, so it kept pushing on the same waves for two days. On Friday a NOAA buoy 275 miles off Oregon measured seas 47 feet tall, with 19 seconds between waves.

Wave model: NOAA GFS-Wave (WAVEWATCH III). Buoy: NOAA NDBC 46002. Surf warning: NWS San Francisco. Satellite: NOAA GOES-19.
Wave footage: "Good looking sets rolling" by YoTuT, Newport Beach, CA (file footage, not this swell), CC BY 3.0, via Wikimedia Commons.

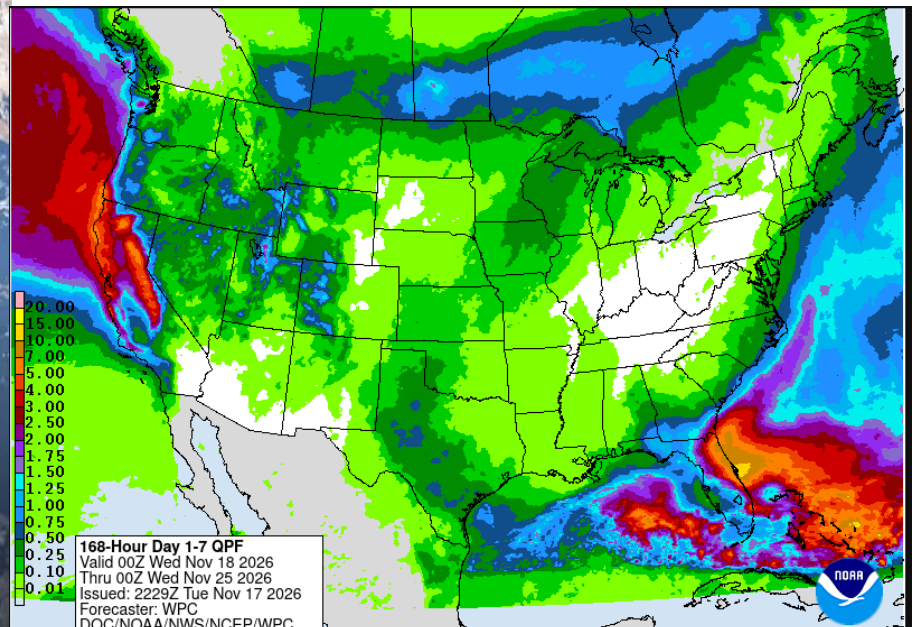




This would have been a fun storm to track across the northern Pacific and watch the waves crashing on shore, from a distance.

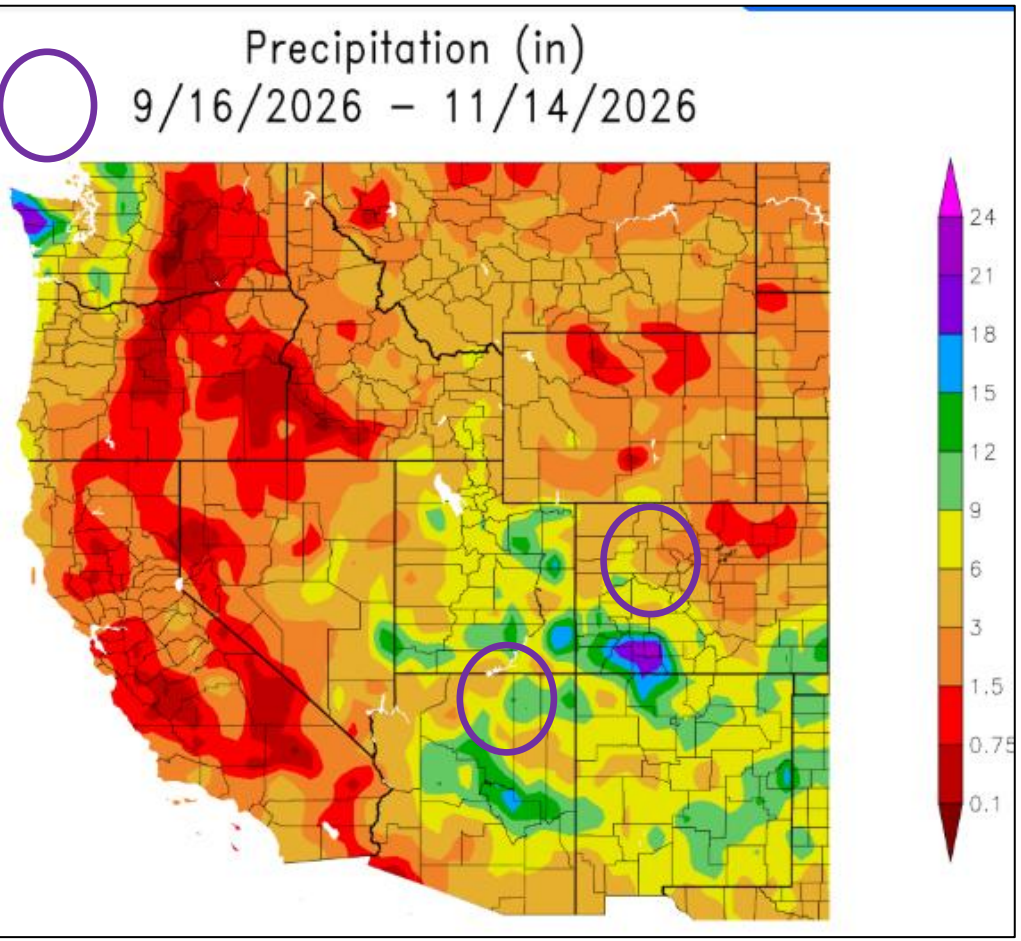
It appears to have opened the door for storms to track across the West and a Congo Line of storms are lined up.

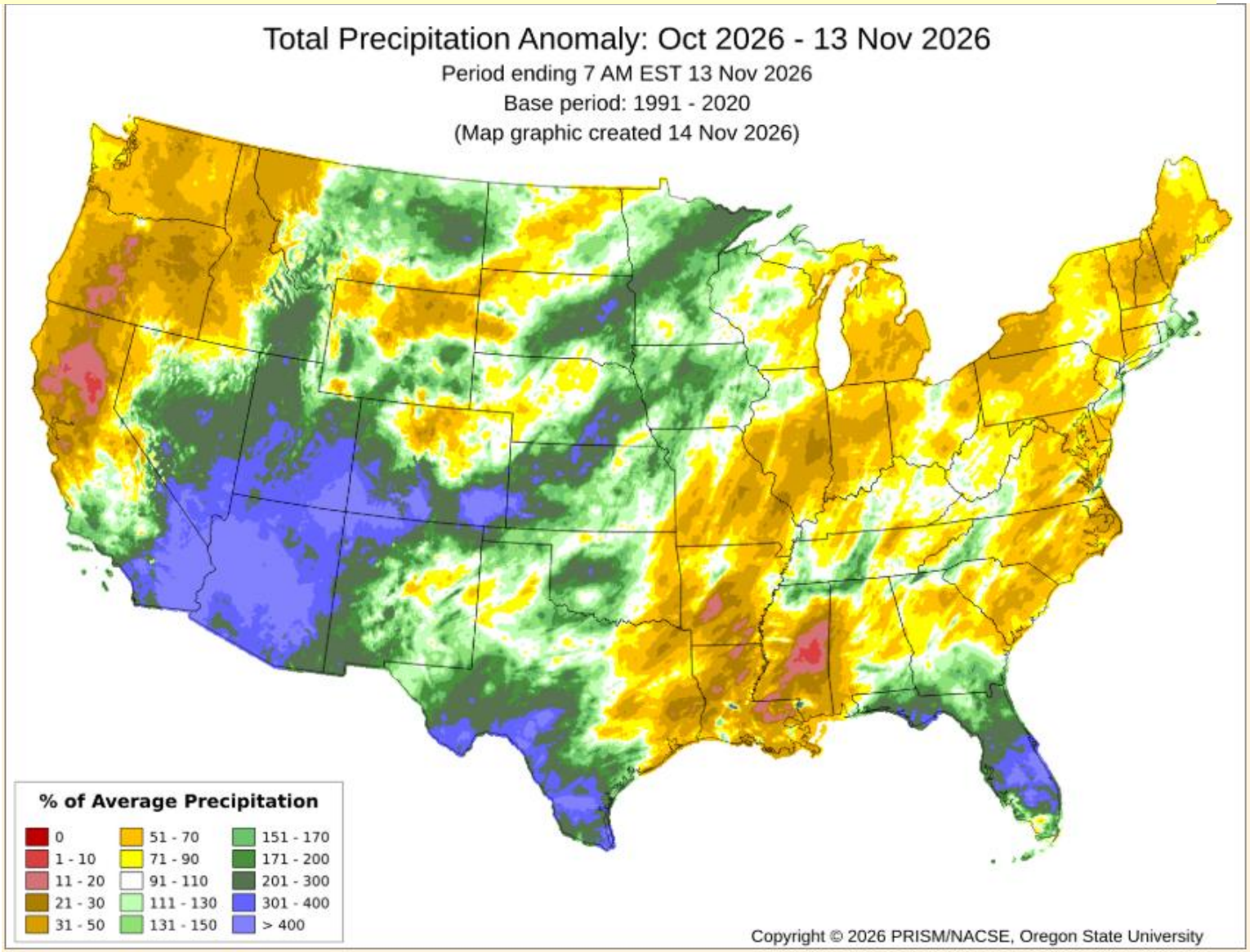
7-day Total Precip for Nov 18-25 is below

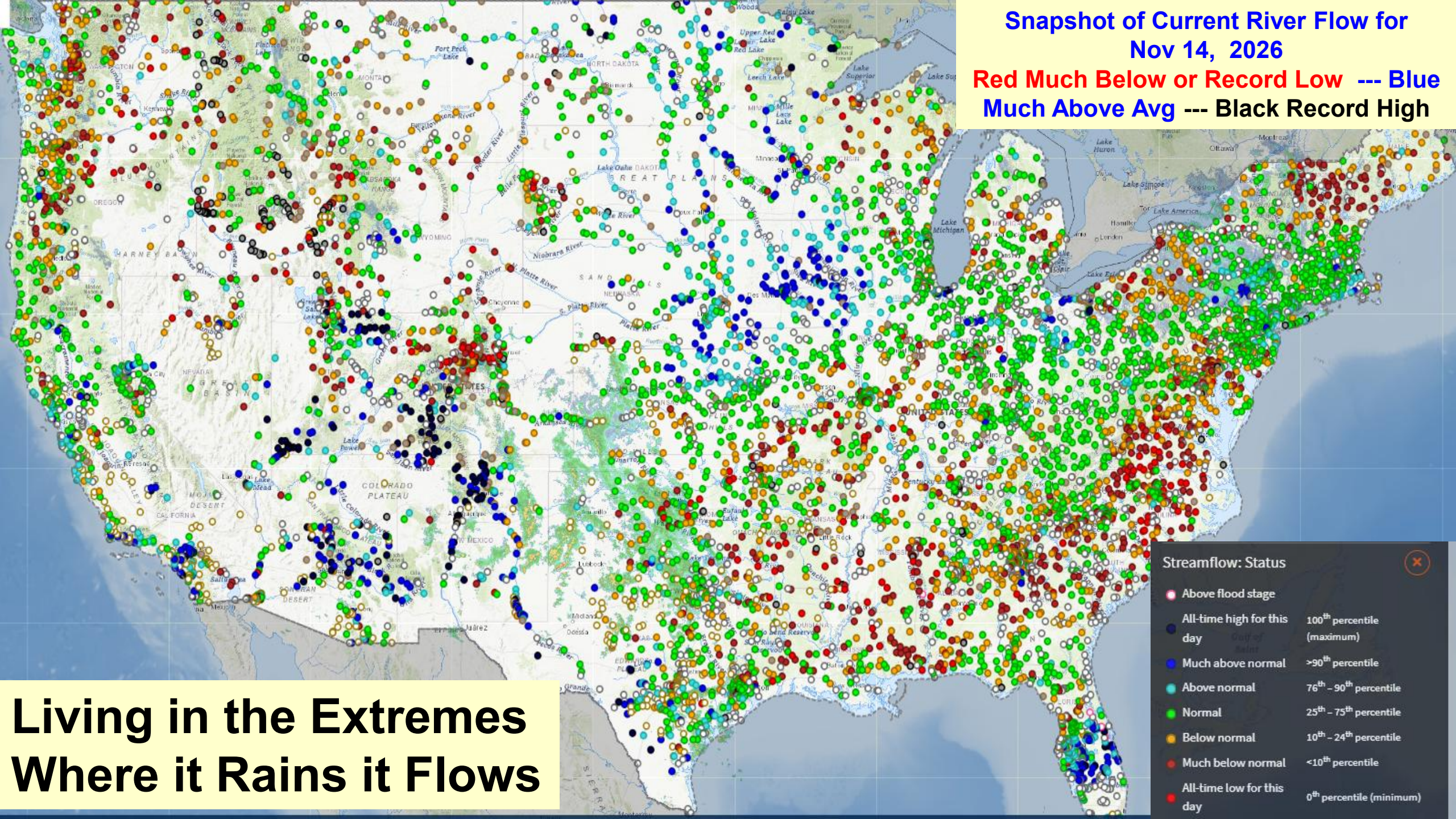


You can see from the precip graphs where the abundant moisture fell.
Below are precipitation maps in *Inches* and *% of Average* for current Water Year, Oct 1 – Nov 13.

Intense monsoons, fall rains and hurricane/typhoons allowed Lake Powell to increase 26+ feet from it's historic low.
Any bets Lake Powell will fill this spring or the Year After a Strong El Nino?






Snapshot of Current River Flow for
Nov 14, 2026
Red Much Below or Record Low --- Blue
Much Above Avg --- Black Record High
Streamflow: Status
Above flood stage
All-time high for this day
100th percentile (maximum)
Much above normal
>90th percentile
Above normal
76th – 90th percentile
Normal
25th – 75th percentile
Below normal
10th – 24th percentile
Much below normal
<10th percentile
All-time low for this day
0th percentile (minimum)
Living in the Extremes
Where it Rains it Flows



Instead of lumping all El Nino years together like we did above, sometimes its better to be a splitter and look at a few past similar years that match how this year is setting up. We call these Analog Years.

Pete Parson & Crew does a great job looking at changing and developing ENSO conditions. Here are the Forecast Highlights from Oct 15 and words of caution.

El Niño Southern Oscillation (ENSO) Current Status and Forecast

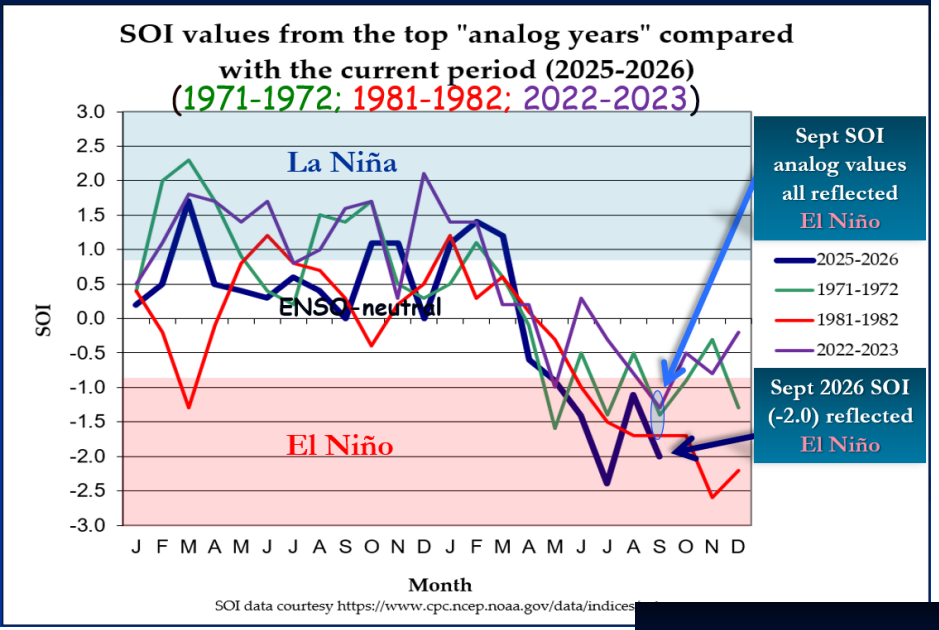
- The July – September 2026 Oceanic Niño Index (ONI) rose (warmed) to +2.2°C, reaching the "Very Strong El Niño" range.
- NOAA's Climate Prediction Center (CPC) expects El Niño to continue strengthening through the end of the year, likely exceeding the strength of previously recorded El Niño events dating back to 1950.
- Unprecedented events, which this El Niño should be, add error to an analog-based forecast. However, some atmospheric "themes" are likely to repeat, so considerable validity still exists in this forecast process.

Forecast Highlights

- This forecast is based on the 1972-73, 1982-83, & 2023-24 analog years (unchanged from last month). They had either a strong or very strong El Niño by late-fall & winter coupled with a cool or neutral PDO.
- These years all developed a classic El Niño split-flow jet stream pattern along the west coast of North America during the forecast period. That tends to promote relatively mild weather, but Arctic intrusions can't be ruled out, especially in December and January.

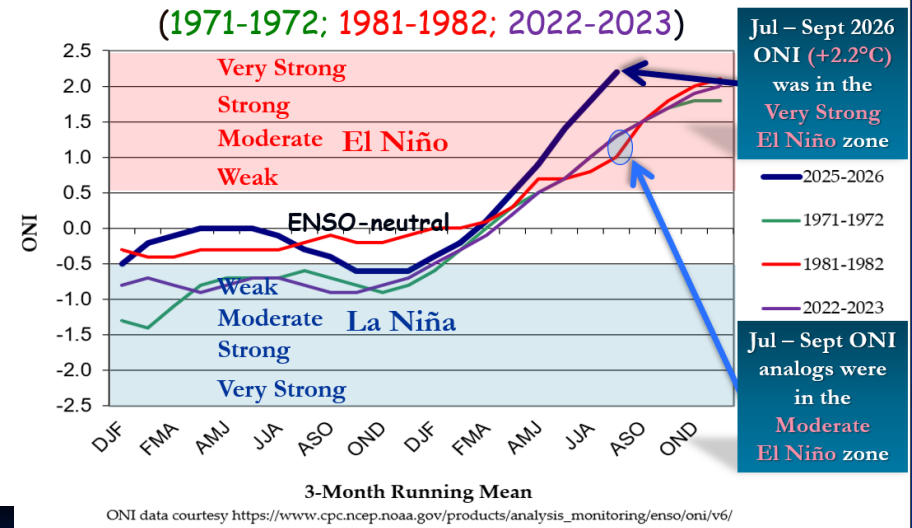
Analog Years can still change as Oct and Nov ENSO data comes in but keep in mind there aren't many Strong El Nino years to compare this year to.

Southern Oscillation Index (SOI)



SOI data courtesy https://www.cpc.ncep.noaa.gov/data/indices

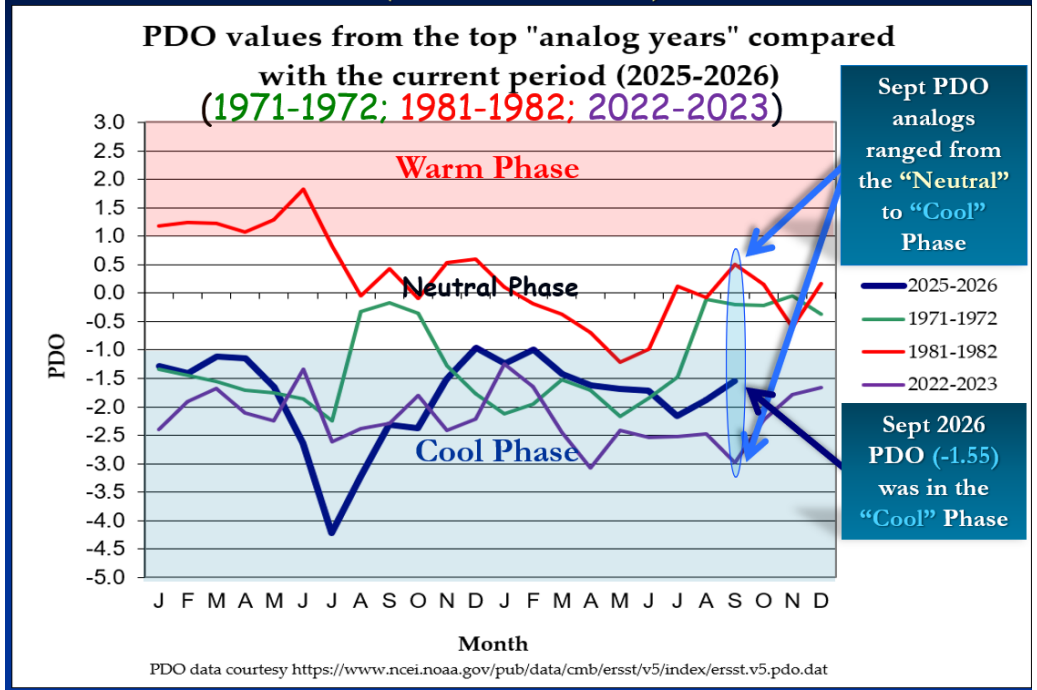
Oceanic Niño Index (ONI)



ONI data courtesy https://www.cpc.ncep.noaa.gov/products/analysis_monitoring/enso/oni/v6/

North Pacific Ocean

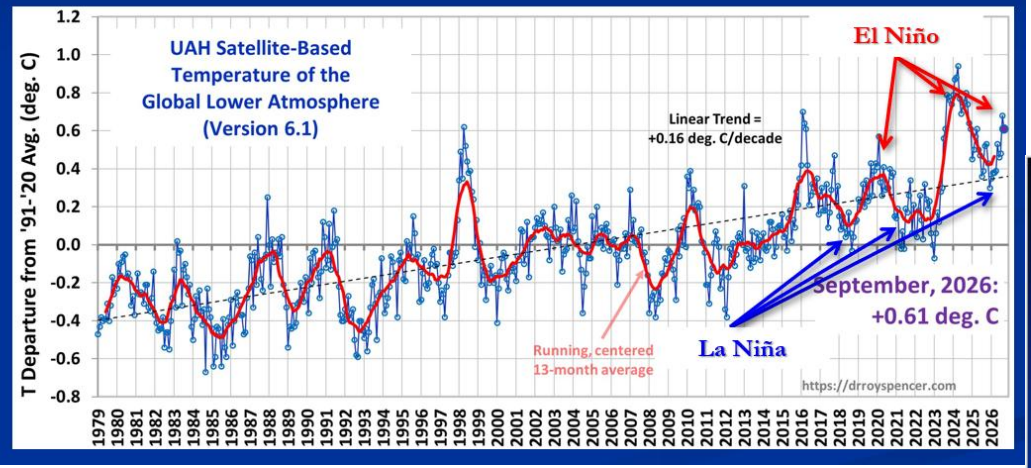
(Poleward of 20°N Latitude)



PDO data courtesy https://www.ncei.noaa.gov/pub/data/cmb/ersst/v5/index/ersst.v5.pdo.dat

Some are saying this Super El Nino event is very unique / unusual and past Strong El Nino years shouldn't be used as an indicator for this winter. One forecaster mentioned that the whole West could benefit from this year's winter's storms… Ahh would 'it that be nice.

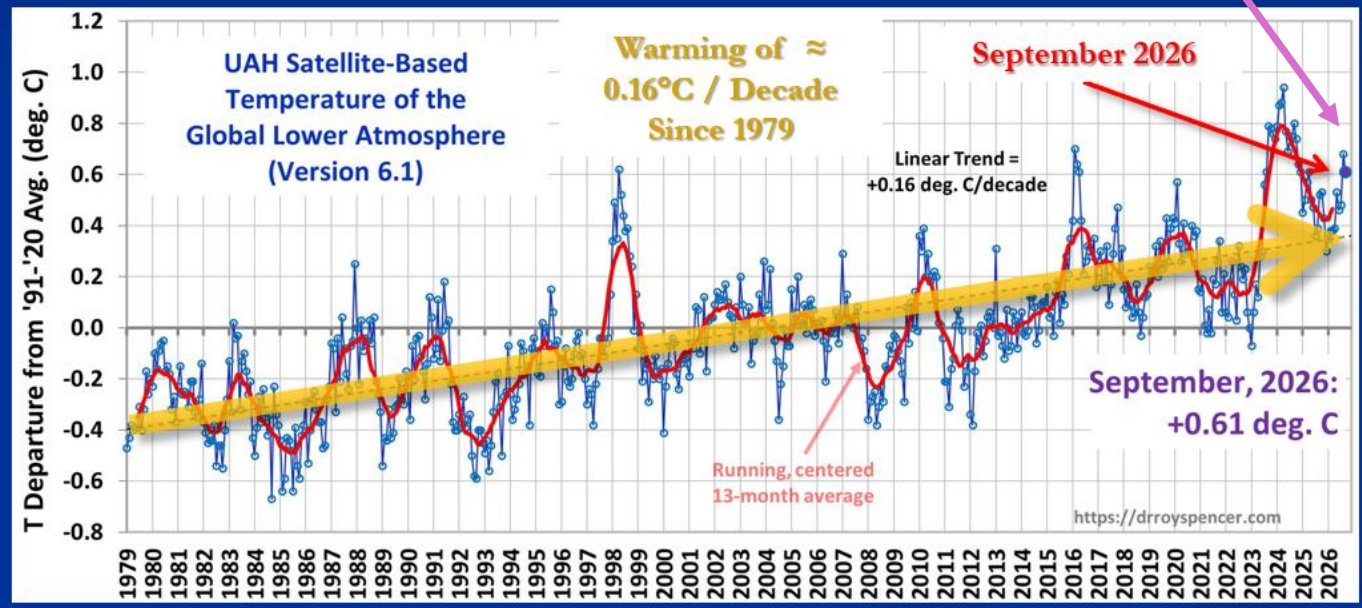
The ENSO Signal is Reflected in Global Temperatures



Keep in mind temps are warming and impact they might have on this Super El Nino event.

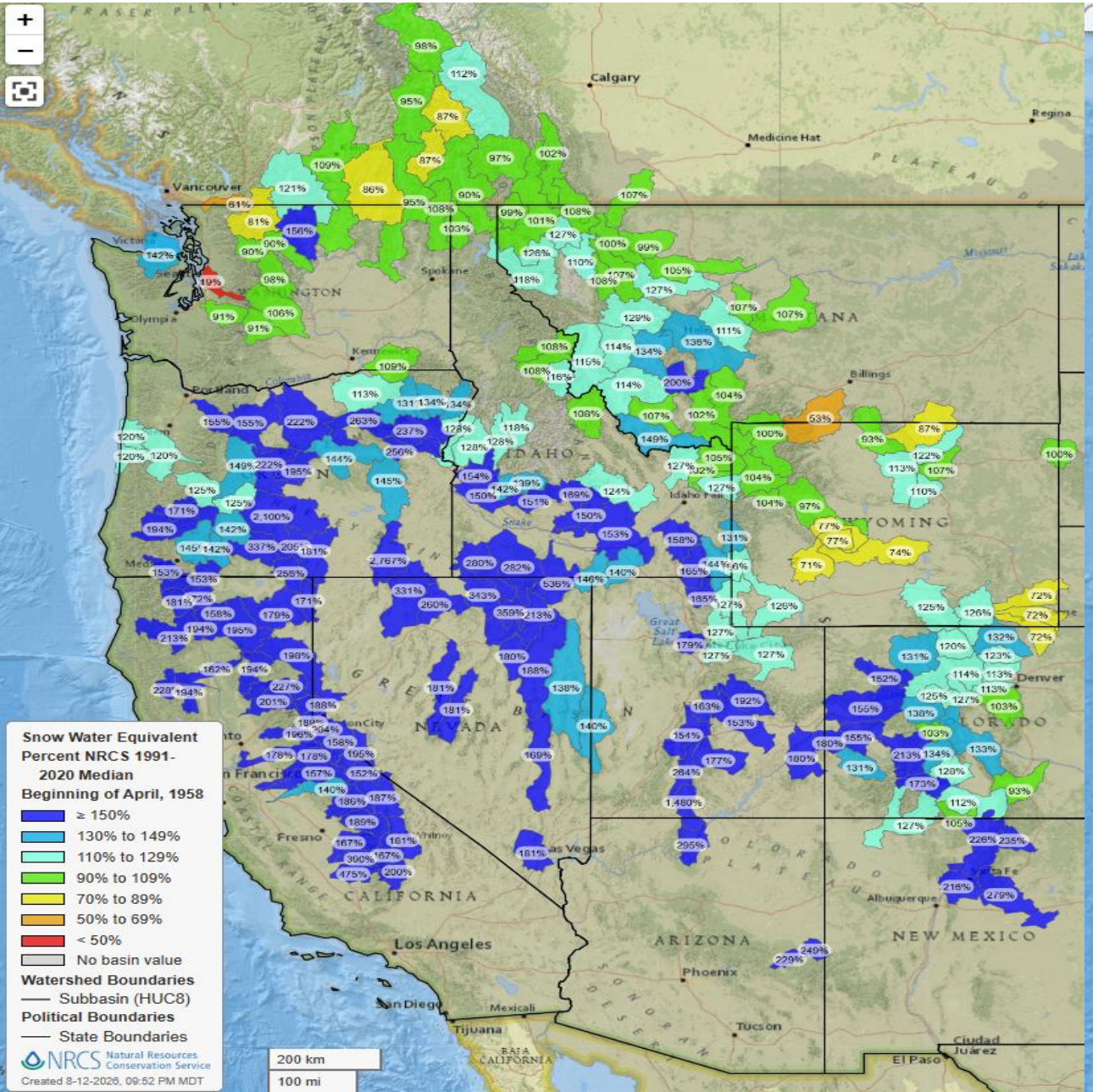
This is interesting – a temp decease in Sept 2026 from August. Usually, El Nino brings warmer global temps and doesn't peak until Dec. Maybe El Nino did peak. Someone with more time than I should dig deeper into this data and past El Nino events. We'll keep an eye on this trend to see what the Oct, Nov and Dec trend shows us.

Global Temperature Changes Increase Error in Analog Forecasts!

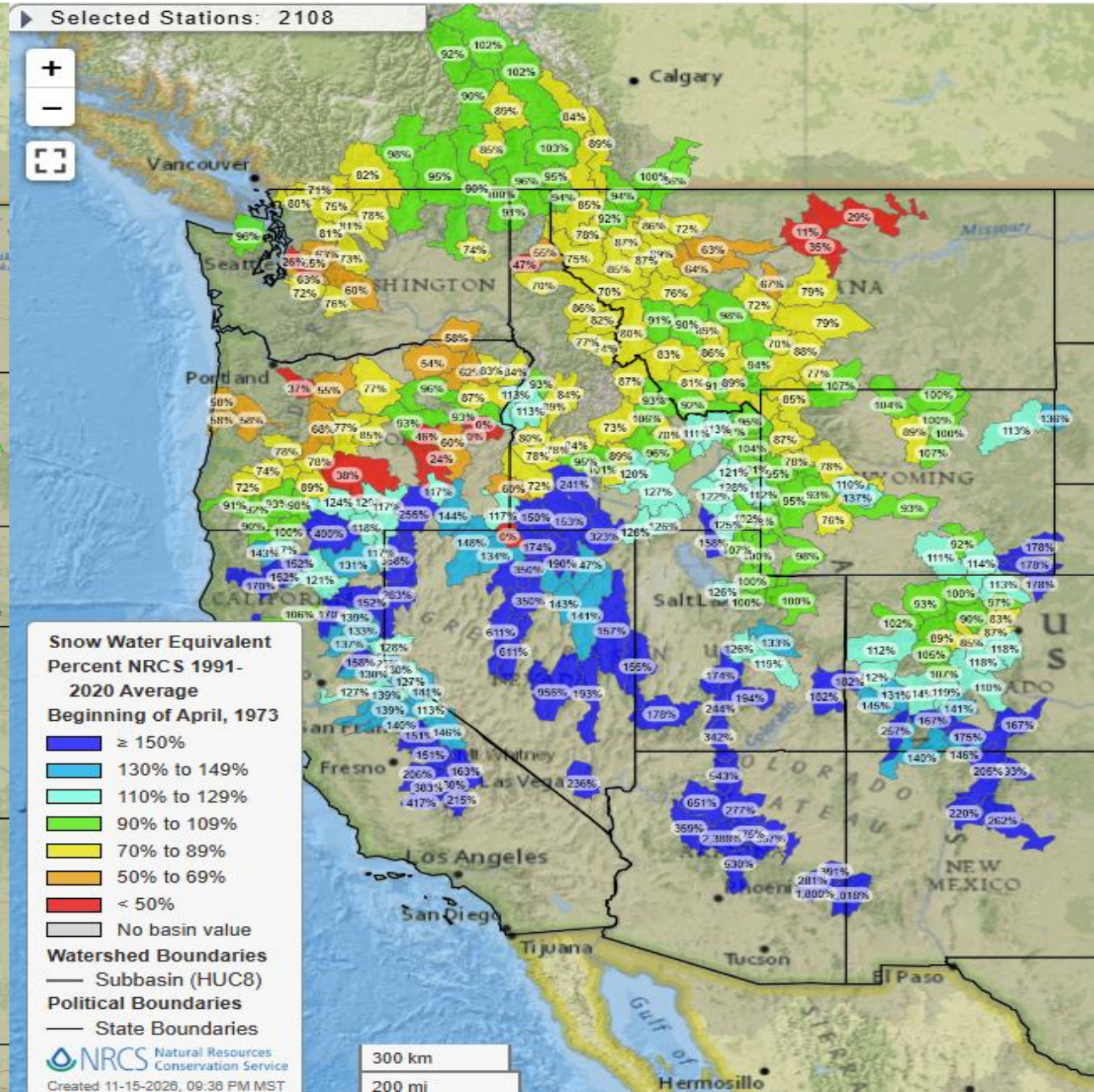


Let's look for any noticeable trends in the Westwide April 1 Snow maps for these Strong El Nino Years.

1958 April 1 Snow Water Equivalent Map

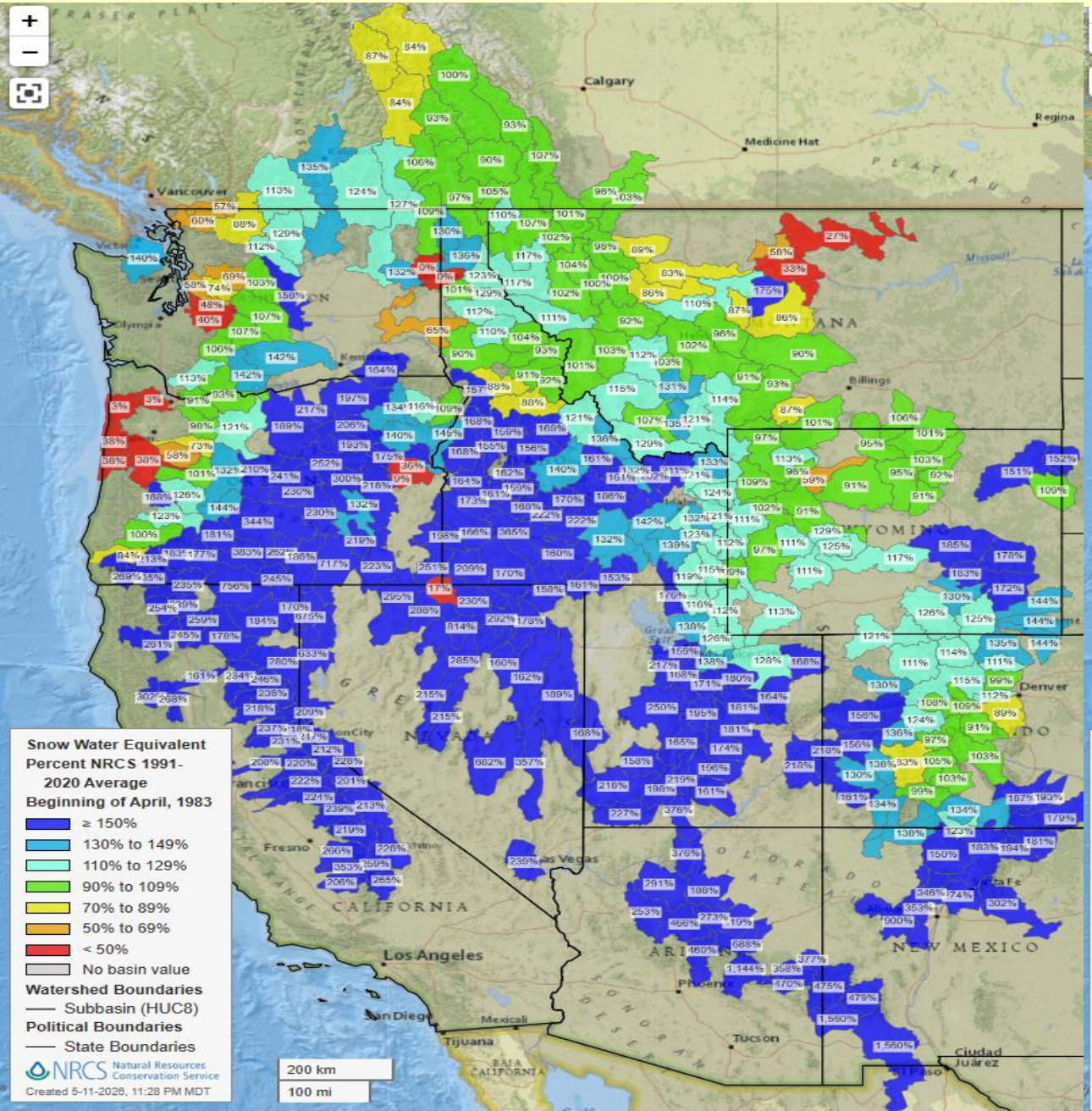


1973 April 1 Snow Water Equivalent Map

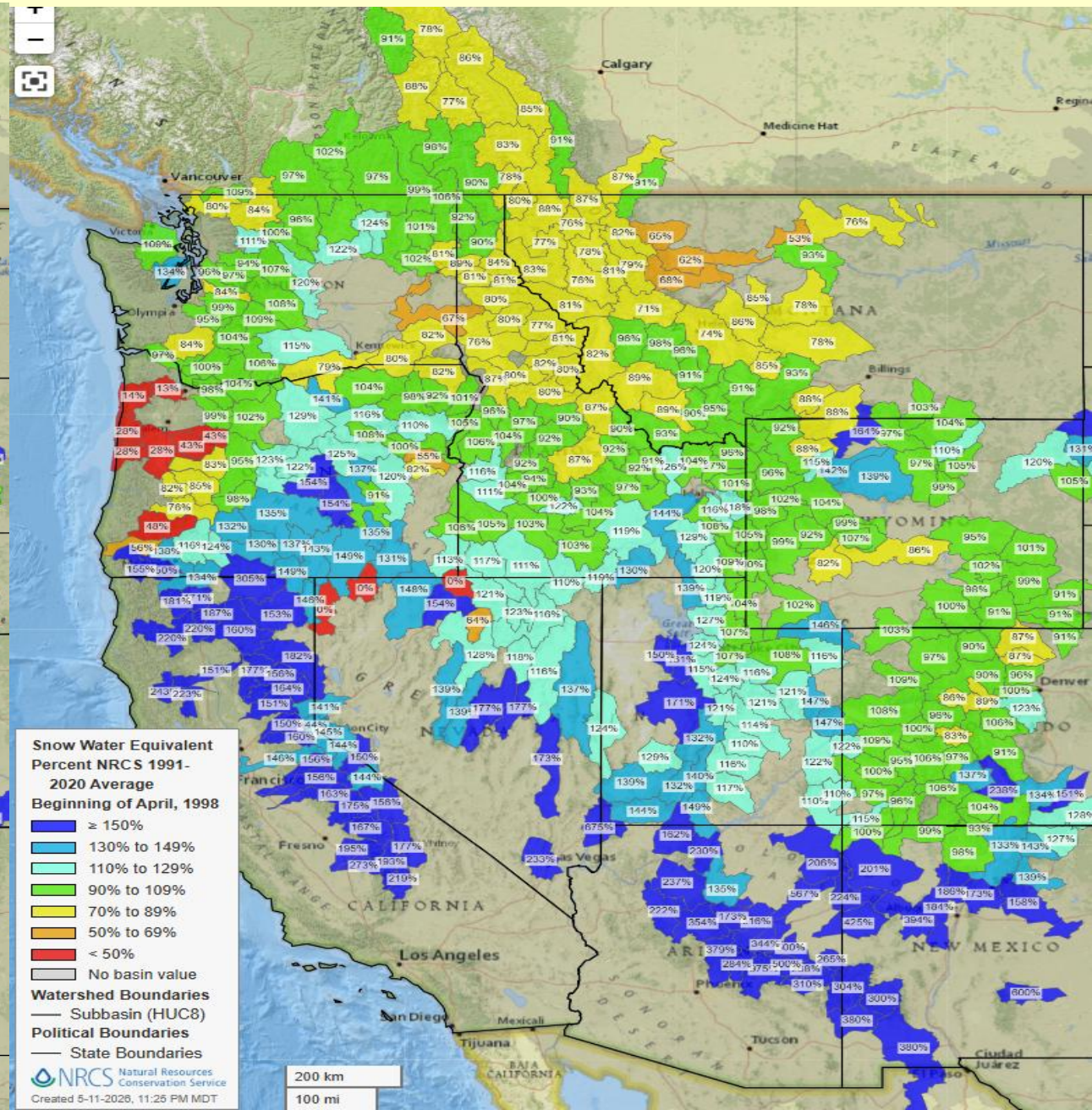


Strong El Nino Analog Years

1983 April 1 Snow Water Equivalent Map

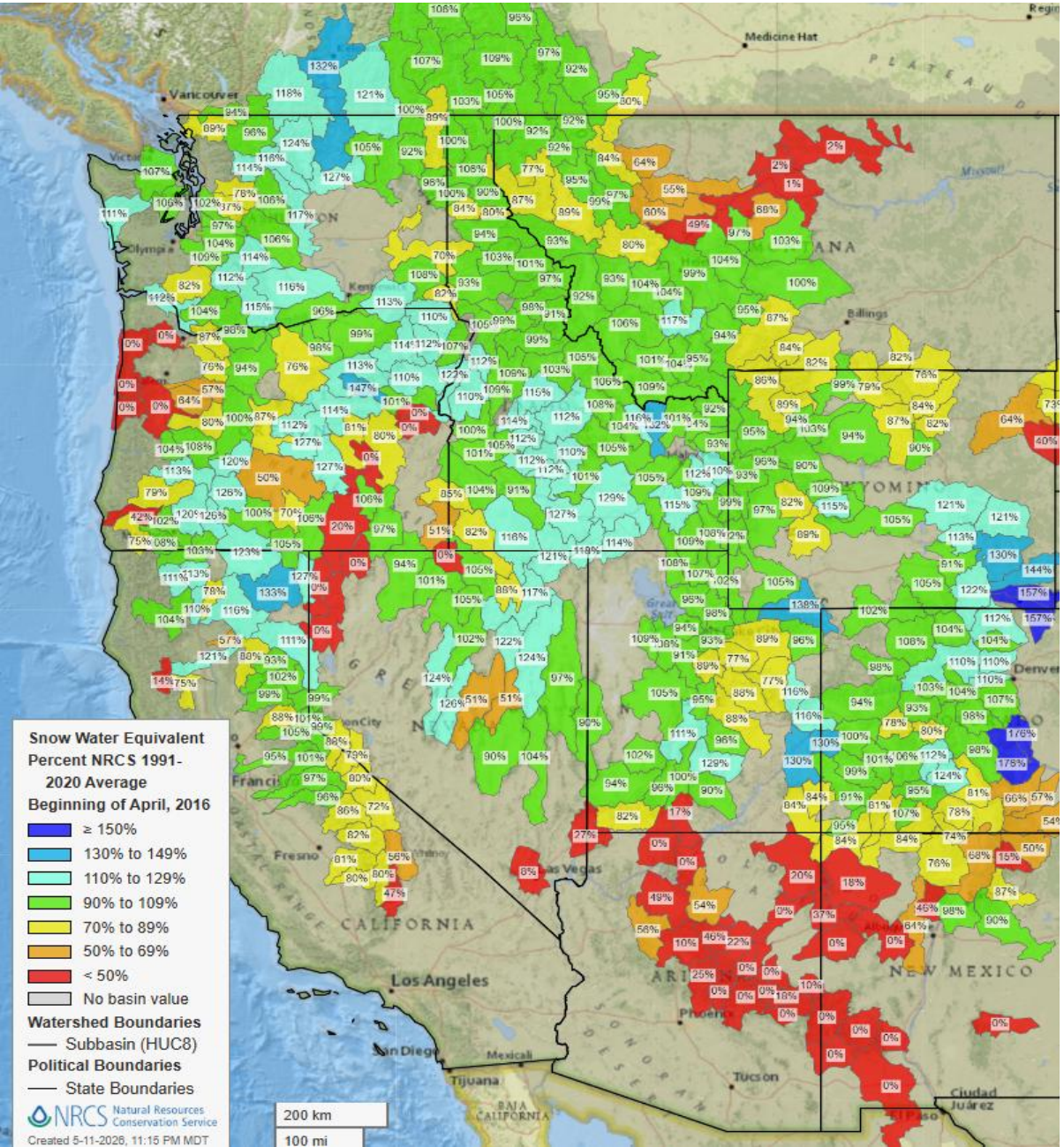


1998 April 1 Snow Water Equivalent Map

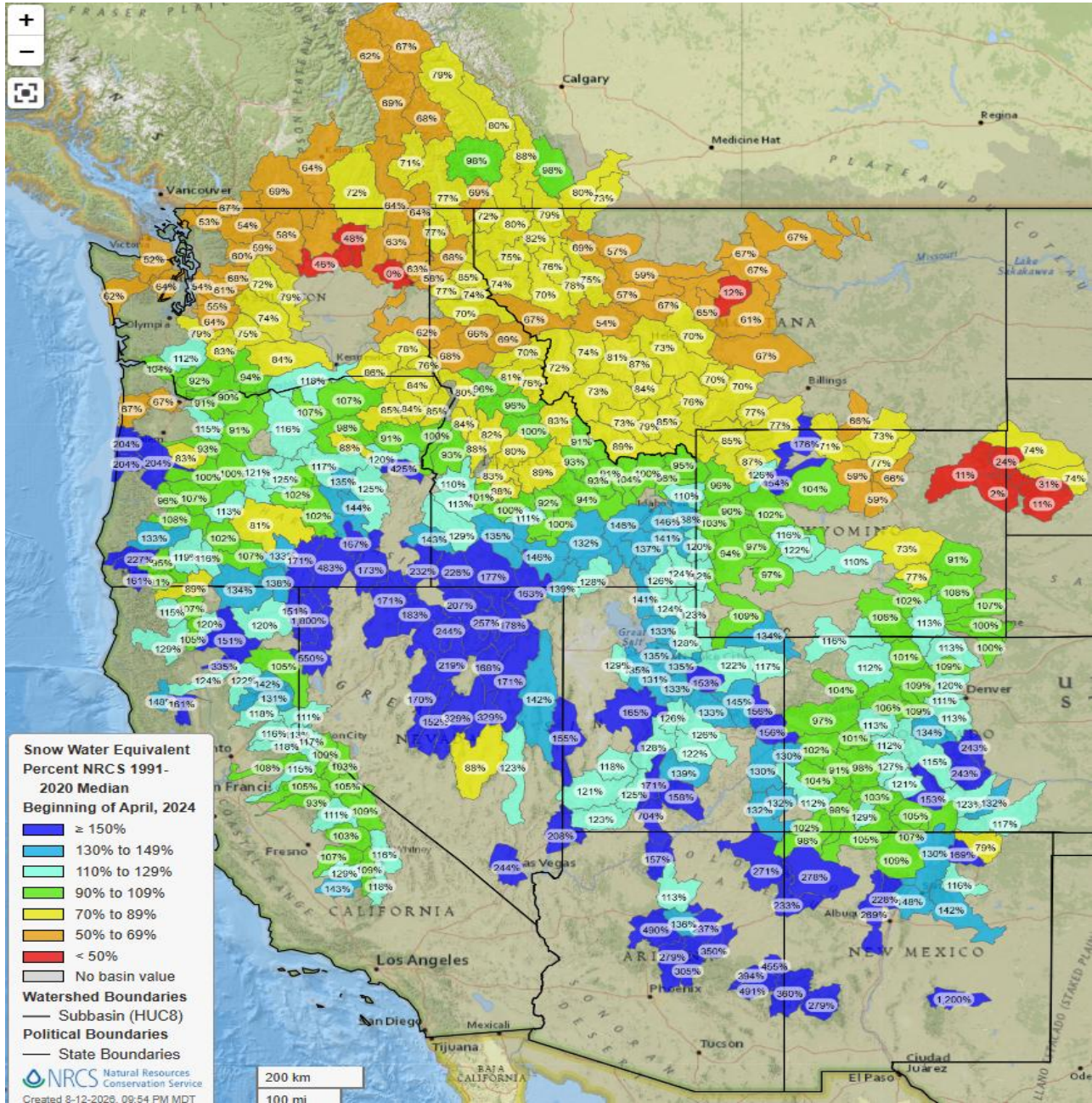


Strong El Nino Analog Years

2016 April 1 Snow Water Equivalent Map



2024 April 1 Snow Water Equivalent Map



Analog Years that I hear being used the most to compare to this year are: 1982-83 and 1997-98.

Here's my thinking to keep it simple and eliminate a few years.

- **1957-58 has limited data.**
- **1972-73 snow was better in southern half of the West, and if next year is a La Nina year, this may be an analog for next year.**
- **2015-16 brought near normal April 1 snowpacks but not to Desert Southwest.**
- **2023-24 was only a moderate El Nino event and faded away quickly in spring.**

As we progress into winter, we may use one of these to track snowfall, but let's keep it simple for now and use Water Years 1983 and 1998 .

Long range forecasts keep changing with new data, info and models runs, so let's post this now before the El Nino forecasts change again.

Well, bad night to blog – some of NRCS snow analysis tools went down Nov 16 and are still down now Nov 17 and 18.

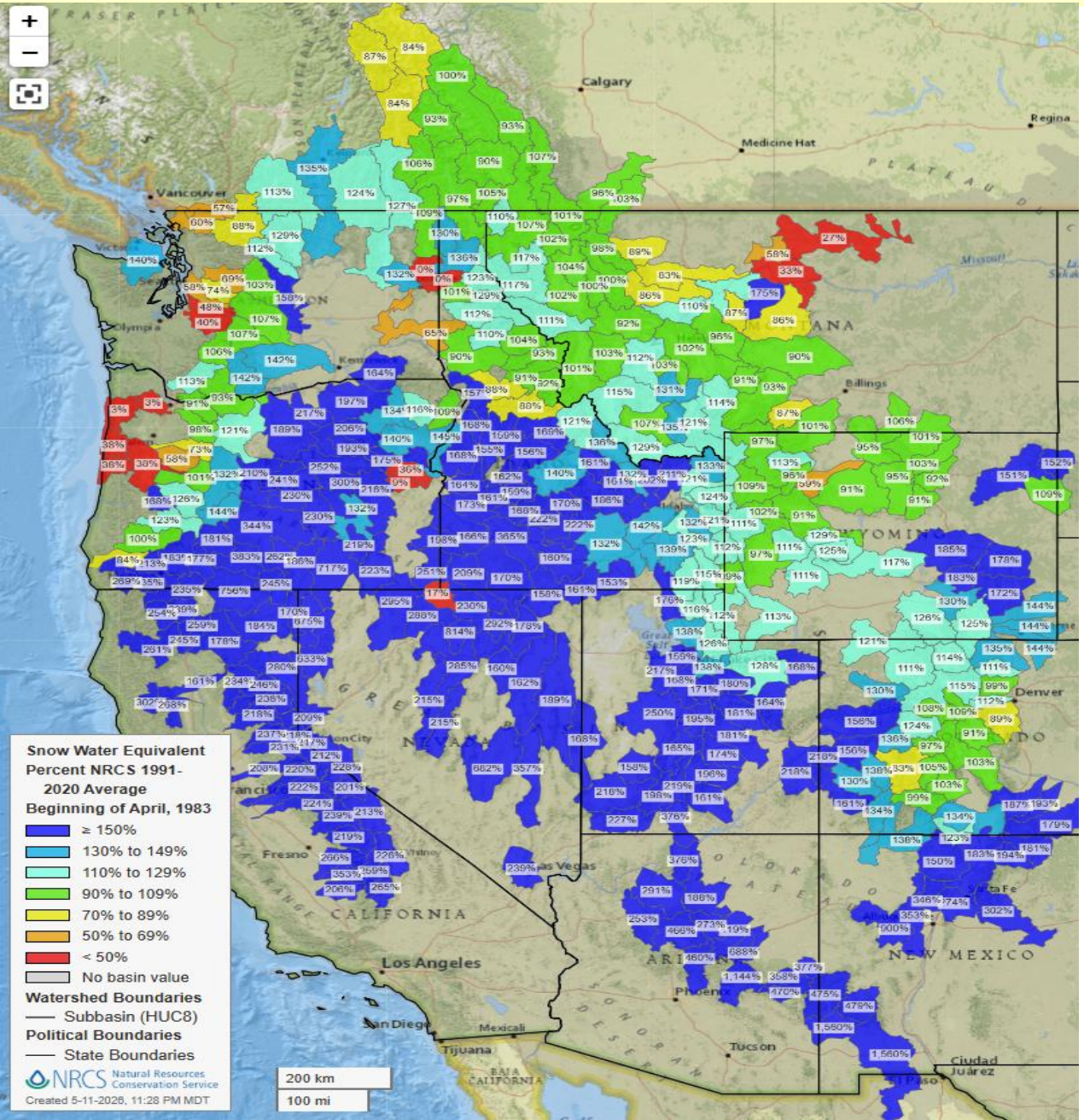


Repeating because of Importance:

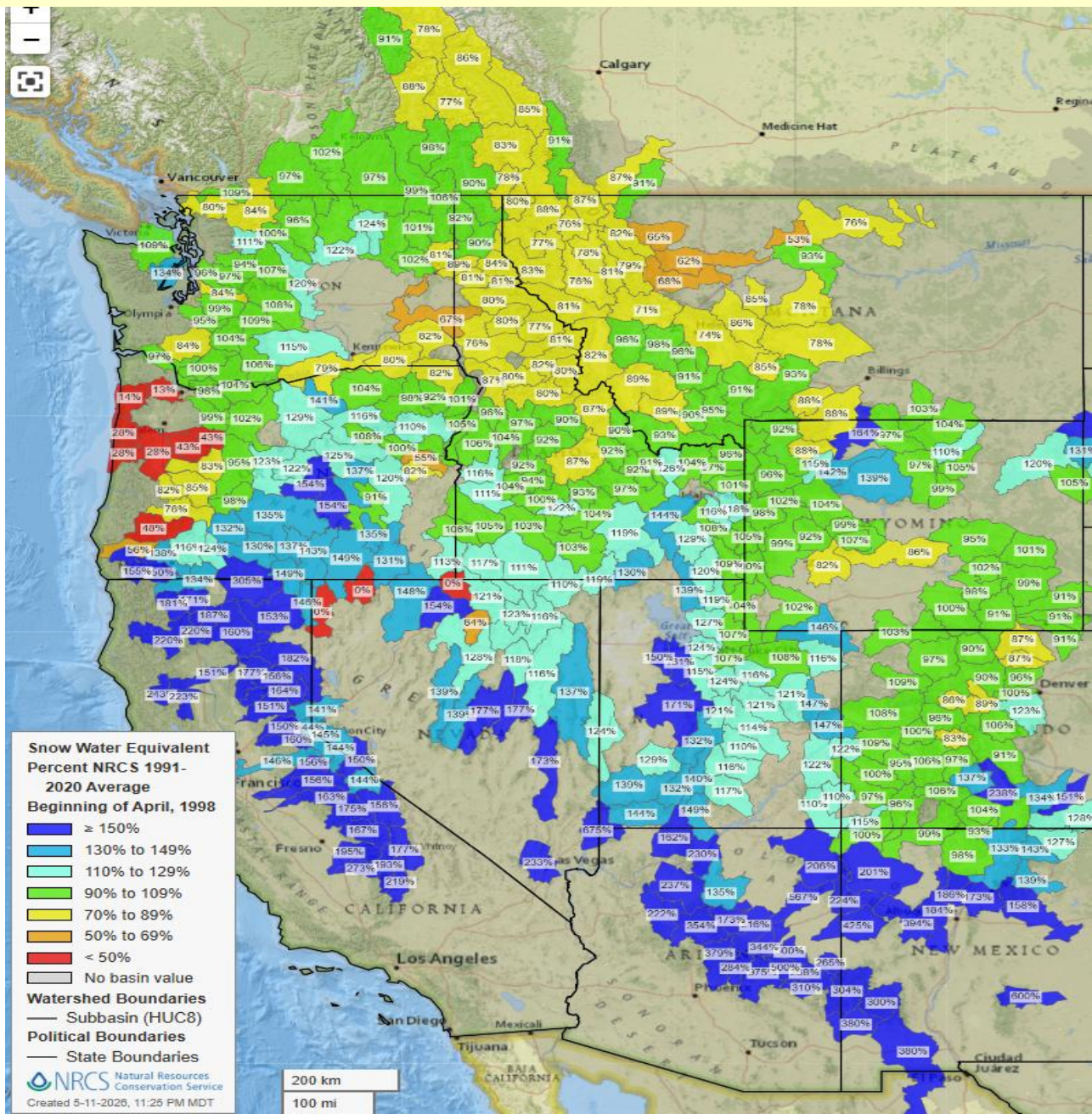
Some are saying this Super El Nino event is very unique/unusual and past Strong El Nino years shouldn't be used as an indicator for this winter. One forecast showed the whole West could benefit from this year's winter's storms… Ahh would 'it that be nice.

Best two Super El Nino Analog Year to Consider for Now

1983 April 1 Snow Water Equivalent Map



1998 April 1 Snow Water Equivalent Map



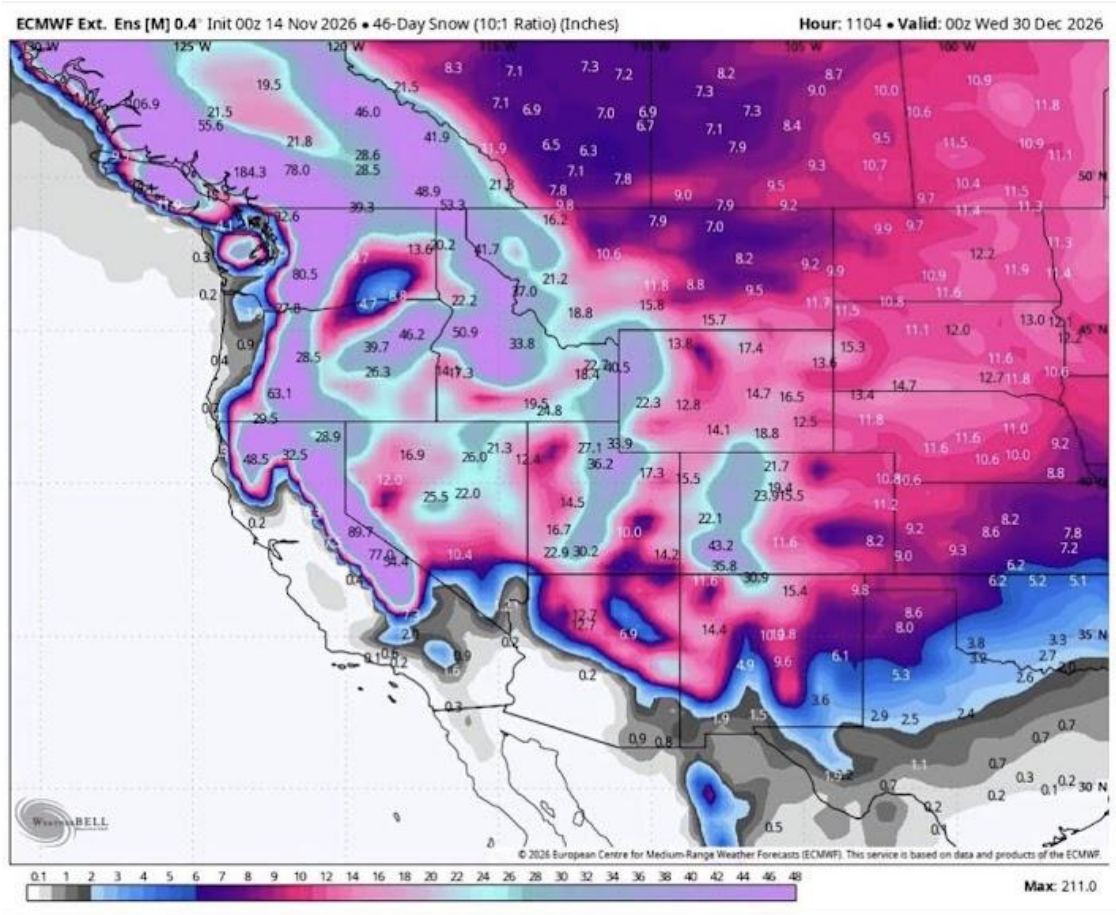
Parting Shots:

Here's one forecast from Nov 14 for total snowfall from now (Nov 14) to Jan 1.

Tim's Texas Weat...

Suggested for you · 5h ·

If the Euro is right, it's going to be an unreal ski season in the Rockies. Here are the expected snow totals between now and January 1.



This is just one of many forecasts but shows most of West benefiting with snowfall from now to Jan 1.

This is a good sign for the West as a whole if it happens. The weather is active and it doesn't appear that we'll be waiting for storms to arrive.

Let's hope this trend continues into the heart of Winter Dec - Jan – Feb !!!

Northeast Weather Alert.
a day ago ·

WHY I BELIEVE THIS EL NIÑO WILL NOT BE LIKE ITS PREDECESSORS

Northeast Weather Alert | Winter 2026–2027 Discussion

For quite some time, I have repeatedly cautioned against putting all our eggs in the El Niño basket when discussing the upcoming winter. There is a reason I have continued to emphasize that point, and it involves something that occurred nearly five years ago that I believe deserves considerably more attention.

On January 15, 2022, the Hunga Tonga–Hunga Ha'apai underwater volcano erupted in the South Pacific. This was no ordinary volcanic eruption. It introduced an extraordinary amount of water vapor into the stratosphere, creating atmospheric conditions unlike anything previously documented in the modern satellite record.

I believe this event may be one of the overlooked pieces of the puzzle when trying to understand why our current El Niño may not follow the same atmospheric playbook as some of its predecessors.

WHAT MADE THE HUNGA TONGA ERUPTION SO DIFFERENT?

Most major volcanic eruptions inject sulfur dioxide and other particles high into the atmosphere, where they can reflect incoming sunlight and temporarily cool the Earth's surface.

Hunga Tonga was different.

Because the eruption occurred beneath the ocean, it injected approximately 150 million metric tons of water vapor into the stratosphere, increasing its total water vapor content by roughly 10%.

That is an enormous addition of moisture to a portion of the atmosphere that is normally extremely dry.

Why is this important?

Water vapor plays a significant role in atmospheric radiation and temperature regulation. When an extraordinary amount is introduced into the stratosphere, it can change temperature distributions, influence ozone chemistry, and alter atmospheric circulation.

Research has confirmed that these changes were not limited to the immediate aftermath of the eruption. In fact, the excess moisture is expected to remain detectable in the stratosphere until approximately 2030.

Think about that for a moment. We are approaching five years since this eruption, yet its atmospheric fingerprint has not completely disappeared.

THE CONNECTION TO EL NIÑO AND THE POLAR VORTEX

Second forecaster to discuss lingering impacts from the Jan 15, 2022 Honga-Tonga underwater eruption.

You know me – I don't believe the 1st forecast I hear, but when 2 or 3 of my unrelated friends start saying the same thing, I start listening…

THE CONNECTION TO EL NIÑO AND THE POLAR VORTEX

This is where things become particularly interesting.

Research published during 2026 has examined whether the eruption altered the behavior of the El Niño–Southern Oscillation, commonly referred to as ENSO.

Climate simulations have demonstrated that the volcanic disturbance can influence tropical Pacific circulation, producing La Niña-like responses during certain periods, followed by El Niño-like responses later.

That does not establish that Hunga Tonga created our current El Niño. However, it does demonstrate a scientifically plausible mechanism through which the eruption can modify the larger climate system.

There is also another important development.

Research published on November 4, 2026, presented evidence linking lingering Hunga Tonga water vapor and associated ozone changes to the unusually strong Northern Hemisphere stratospheric polar vortex during the winter of 2024–2025.

The findings suggest that changes in stratospheric temperatures may have contributed to strengthening the vortex during that period.

Why does that matter to us?

Because the polar vortex, Arctic Oscillation, and North Atlantic Oscillation are all important components of the atmospheric circulation that can determine whether Arctic air remains bottled up across northern latitudes or becomes displaced farther south.

These interactions can influence the position of the jet stream, the development of atmospheric blocking, and ultimately the tracks of winter storms.

WHY I AM QUESTIONING THE TRADITIONAL EL NIÑO OUTLOOK

We currently have a very strong El Niño developing across the tropical Pacific. I am certainly not disputing that.

What I am questioning is whether the atmosphere will respond in the same manner it did during previous strong El Niño winters.

The current event is developing against a different background of ocean temperatures and atmospheric conditions, including a negative Pacific Decadal Oscillation.

Now introduce the possibility of lingering stratospheric changes associated with Hunga Tonga.

We have several potentially competing influences operating within an interconnected atmospheric system.

The Pacific may be sending one signal while the circulation over the Arctic and North Atlantic responds to other influences.

That is precisely why I continue to emphasize the importance of looking beyond El Niño alone.

WHAT COULD THIS MEAN FOR THE NORTHEAST AND MID-ATLANTIC?

I believe we need to remain particularly attentive to the development of high-latitude blocking behavior of the polar vortex, and the strength and positioning of the Pacific and southern jet streams.

MY CLOSING THOUGHTS

I have never believed that one climate driver should be used to determine the outcome of an entire winter.

El Niño is important. There is no question about that. But it does not operate in isolation.

The atmosphere is an interconnected system, and when an event as extraordinary as Hunga Tonga introduces a substantial and long-lasting disturbance into that system, I believe we would be making a mistake by overlooking its potential influence.

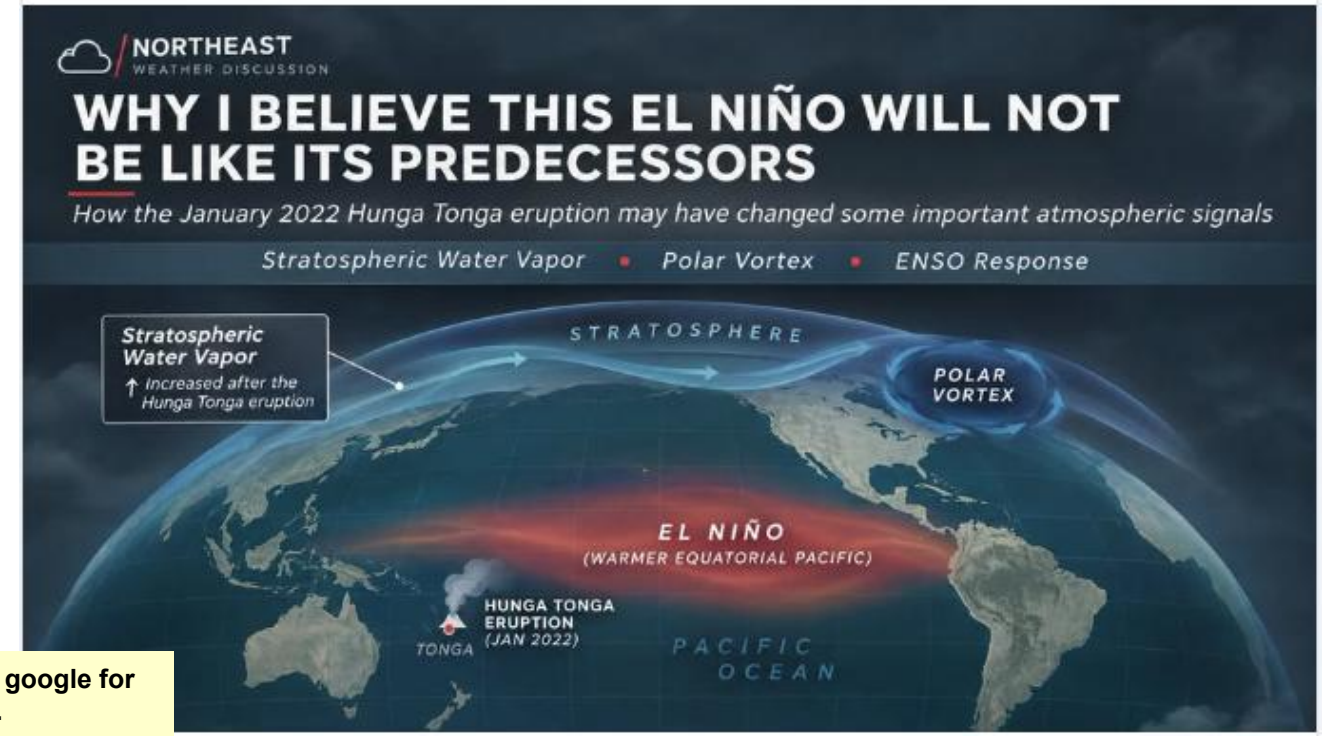
My concern is not whether El Niño will influence this winter. It certainly will. My concern is whether we are placing too much confidence in how we expect the atmosphere to respond.

That is why I believe the winter of 2026–2027 may not behave like some of the strong El Niño winters we have experienced in the past.

There are additional pieces on the atmospheric chessboard, and Hunga Tonga may be one of them.

I intend to continue examining the complete pattern rather than allowing one climate signal to dictate my winter expectations.

— Northeast Weather Alert **See less**



Cut a bit, google for full story.

I learned a new word/term Vaporized !

Stay tuned – more to come as we move into winter because Winter Starts Now !!





Future Snow
1m ·

First round has moved out, take a look at the snow stakes, next round moves in Friday.

PATTERN DISCUSSION 300 Level Weather
We have a split flow pattern with the north branch being blocked by a ridge (that hump above British Columbia and Alberta). For Utah and Colorado, the southern branch is generally where most of the storms have come from in this year's pattern. That's why the southern Rockies are getting the most snow.

Below is an animation of the strongest part of the jet stream. You can see how it does not flow smoothly (neither does the animation but you get the point). Those large "kinks" in the flow disrupt and redirect the storms. Those northward humps are ridges and the southward dips are troughs.

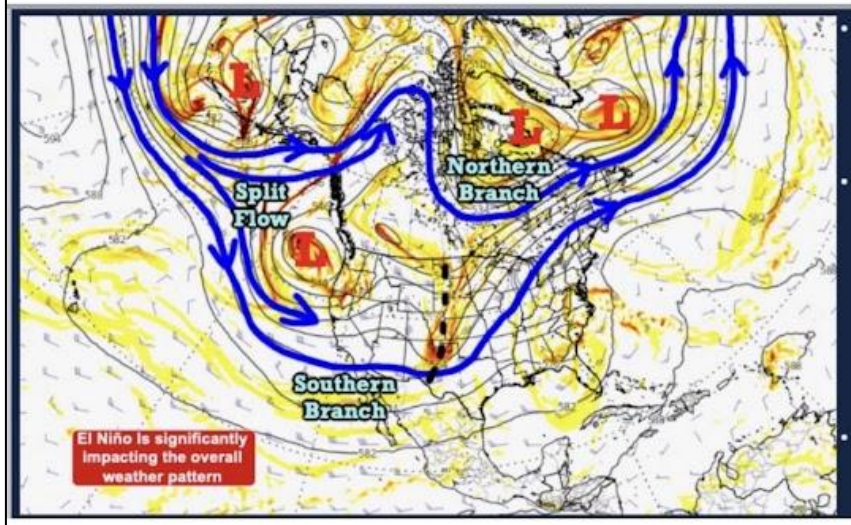
This is from Nov 18 – lots to learn about 'wave pattern' but probably similar to watching the storm and waves cross the Pacific last week.

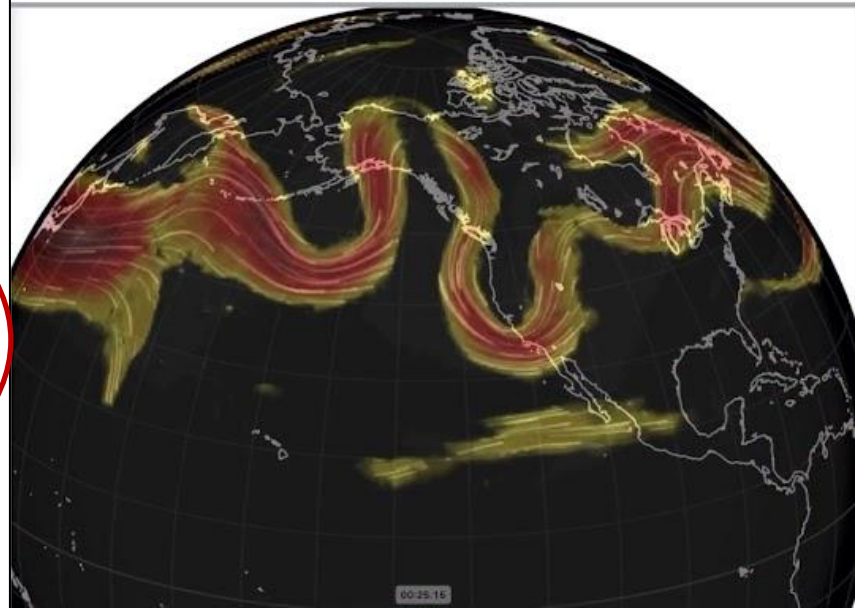
Future Snow's post

Together they form atmospheric waves that make up the cycling pattern.
Those atmospheric waves become imprinted in the fall and flow like a river flows in its banks. Repeating on a loop, with seasonal differences.

Once you know the number of days it takes to repeat, then you can predict storms based on that wave pattern. That is what we do with future snow and how we can forecast 30, 60 and 90 days in advance so accurately.
Rocky Mountain Sled Conditions

Future Snow's post





Hoping for another year like this…

Winter started Monday Nov 16 at 8PM at Bogus Basin with 10 inches falling in next 10 hours !



Near Banner Summit on Highway 21 in Central Idaho, March 2017