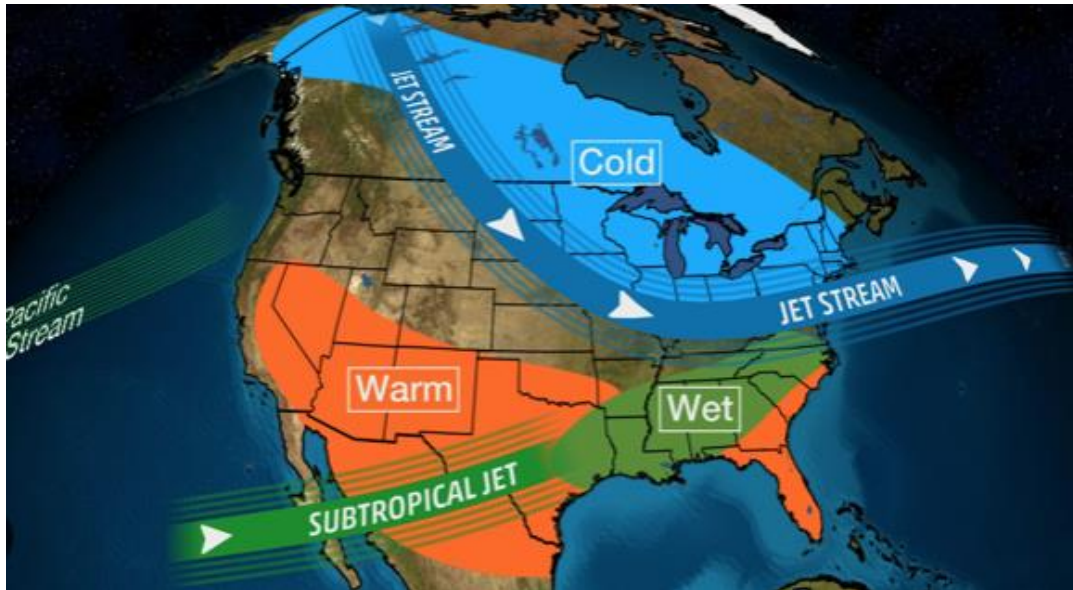
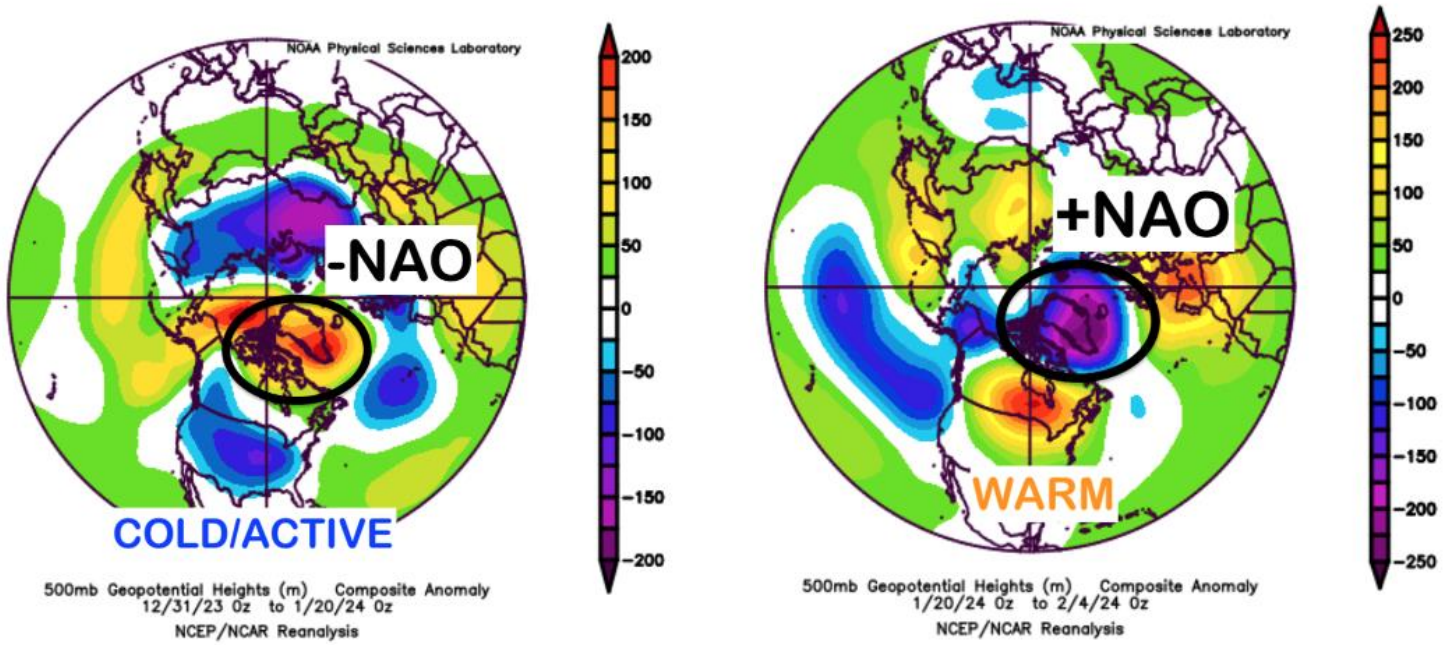


Here Comes The “Backloaded Winter”

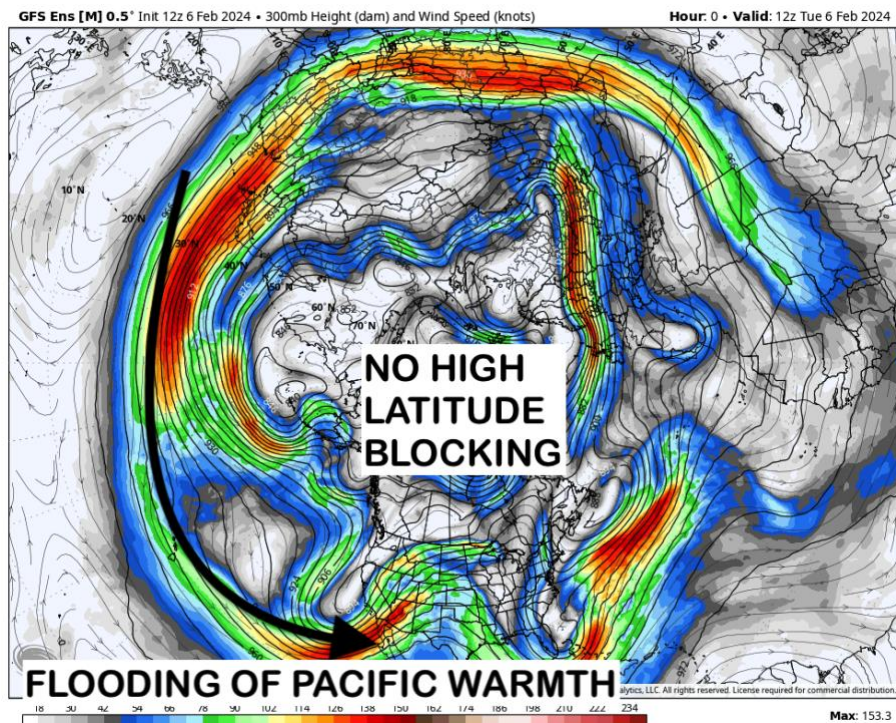


If there's one thing, it's that during the stronger El Nino events we tend to typically see winter show its “true colors” during the latter half. Due to a number of factors, it's why February and even March will feature colder and stormier patterns. It's the way that the sub-tropical jet positions itself, in conjunction with a strong polar jet that dips into the lower 48 as we get into the ideal climatological period of colder and snowier conditions east of the Mississippi.

We've certainly hit a hiatus in what was an active stretch since the turn of the new year. Let's look quickly at two height (mid-level) composites that show simply the temperature between two levels (i.e. orange/yellow mean above average temps, and blue/purple are below average). On the left, we see that we had a -NAO and high latitude blocking since the end of December and through the first half of January. This produced an active pattern of several wintry systems, cold air masses, and even an arctic outbreak. On the right reveals the “flip” to the +NAO state since the last 10 days of January and up until present day. Notice the dramatic warmth we've seen across the U.S. Many would refer this as the “pattern reload”, where we tend to experience these breaks.

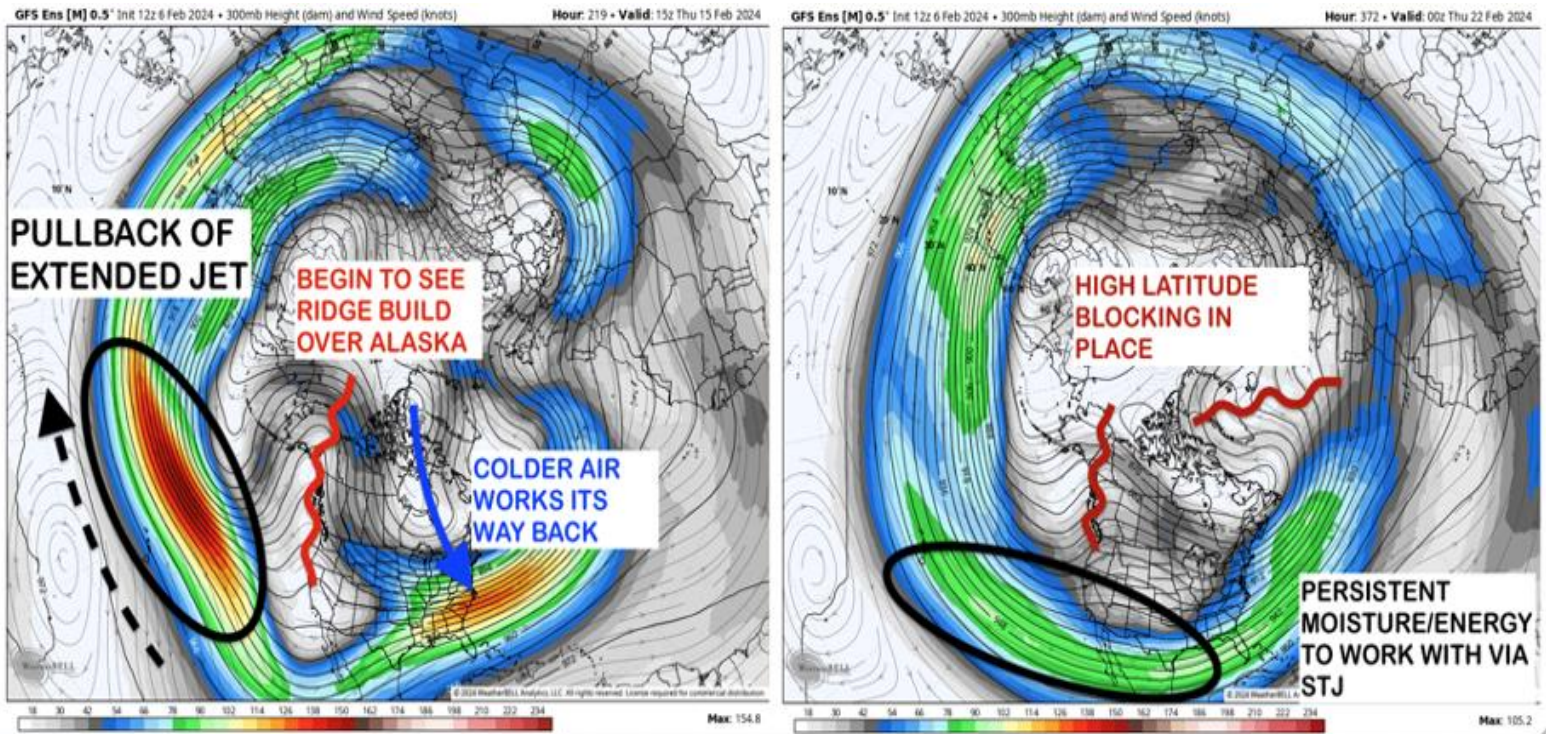


With the reference above, you also may be wondering why has it been glaringly mild, and non-winter like across most of the U.S. except for parts of the West. Take a look below at the position of the Pacific jet stream. Notice how extended it is into the West Coast. I'm sure you've seen the flooding headlines across Southern California. Well, we tend to see these "Pineapple Expresses" during El Nino's thanks to the sub-tropical jet that provides so much moisture!

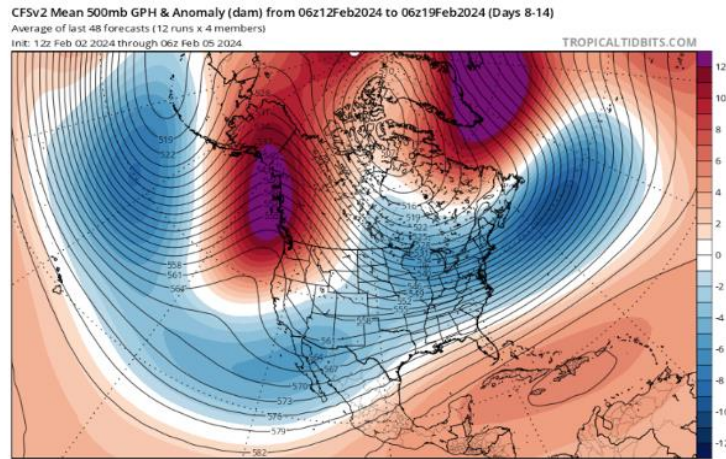


“Flipping The Page”

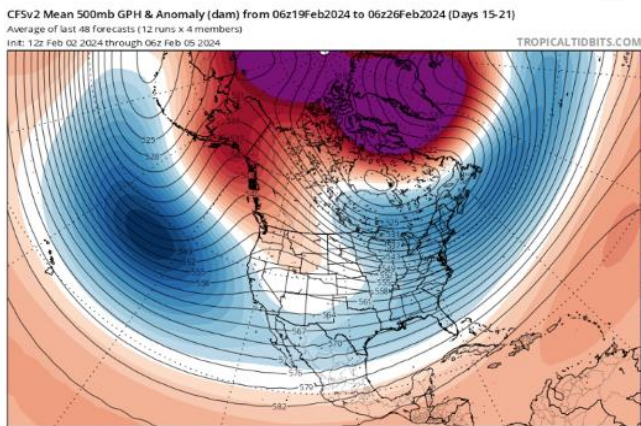
Now with the facts out of the way and what we've seen to this point, we're now going to show what's coming and changes that are already in motion. Already by next week, the pattern begins to change quite dramatically that occurs first out across the Pacific. In a moment-by-moment snapshot, let's look at the evolution of the Pacific jet over the next 1-2 weeks. First, a retracted jet. Once this pulls back, its orientation across the Pacific positions itself in a way that allows Alaskan ridging to form (i.e. -EPO). This then sets up a flow pattern allowing cold air masses to bleed into the U.S. The first image is valid exactly by mid-month. Then forward another week by the end of the month, we see an established active sub-tropical jet and retracted Pacific jet (no flooding of mild air) and a return to favorable high latitude blocking with both ridges across Alaska and now Greenland (-NAO).



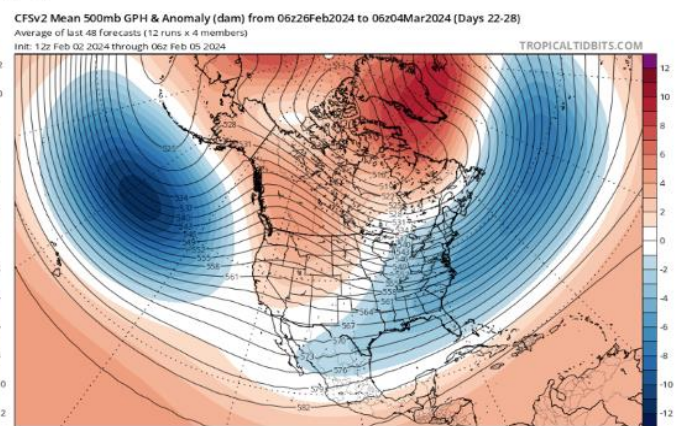
Next, here is the climate model dubbed as the CFSv2, which is capable of looking at many variables like any model but is used for long range forecasting. I should note that if you were to look at any ensemble, they all agree on this exact type of a pattern as there's very strong support. Not just models, but aid from meteorological signals from the MJO and help from stratospheric disruptions that all correlate to increased high latitude blocking regimes, and an active/stormier pattern. Below shows a weekly breakdown of the 500mb pattern through mid-March. Now these are weekly composites, so they're averaged. Week 1 denotes Feb. 12th-19th, and this goes represents 8 days as a week.



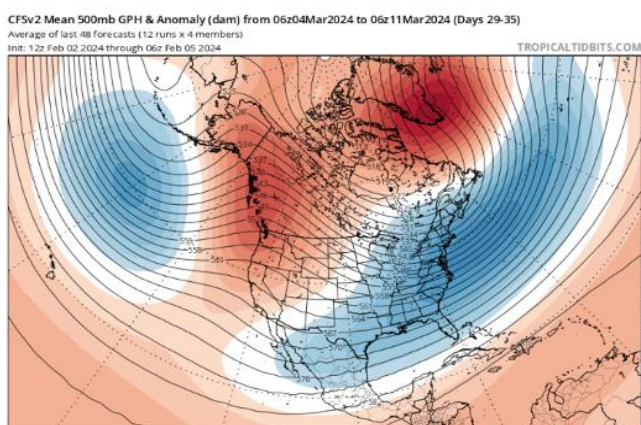
WEEK 1



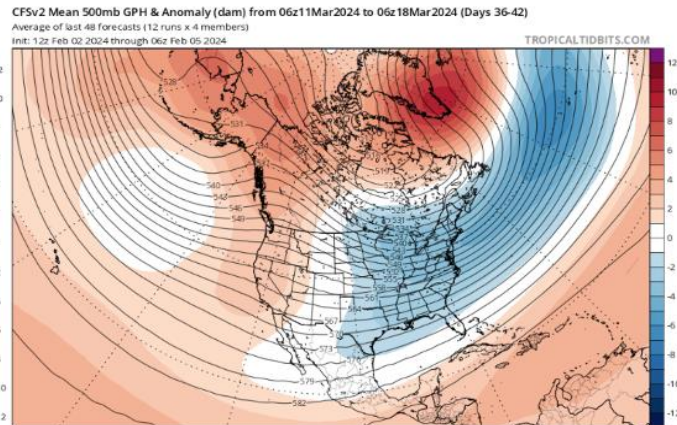
WEEK 2



WEEK 3

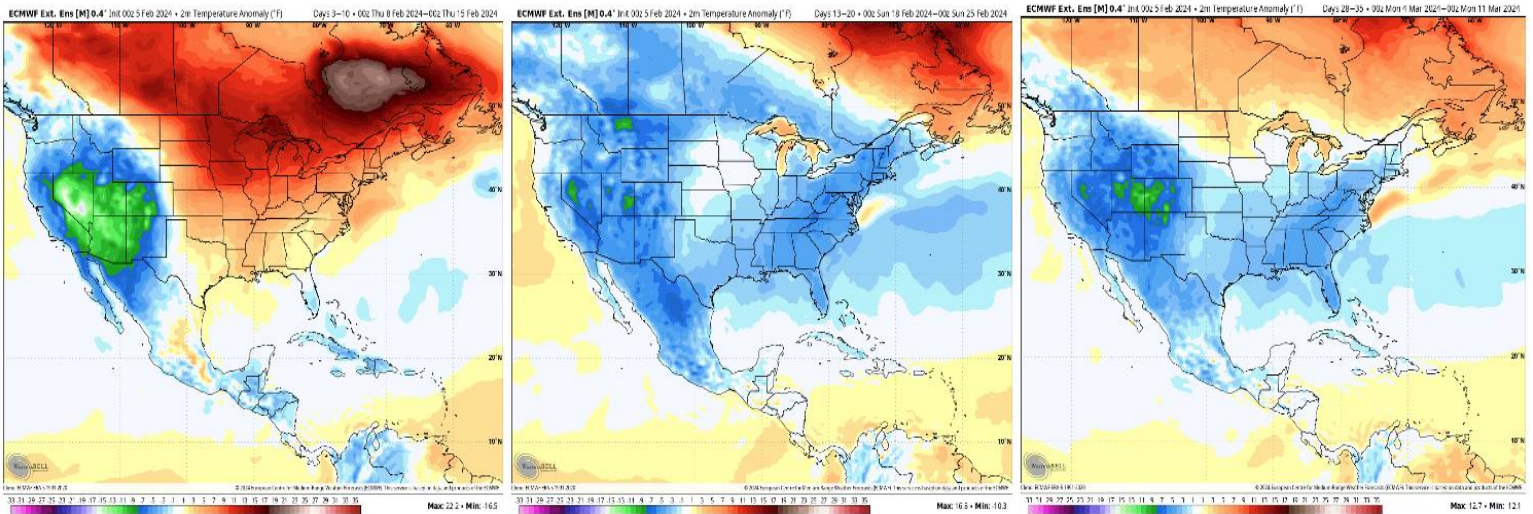


WEEK 4



WEEK 5

We see a return to high latitude blocking (i.e. -AO/-NAO), ridging across Alaska and across the West (-EPO/+PNA), below average heights extending from north of Hawaii through the southern U.S., and a mean trough in the East. There's no pattern out there that could produce a colder and snowier one than what is shown, and this is why we're prepping for what'll likely be an active stretch into March. Notice how we see this reflected in surface temperature anomalies thanks to the large-scale changes.

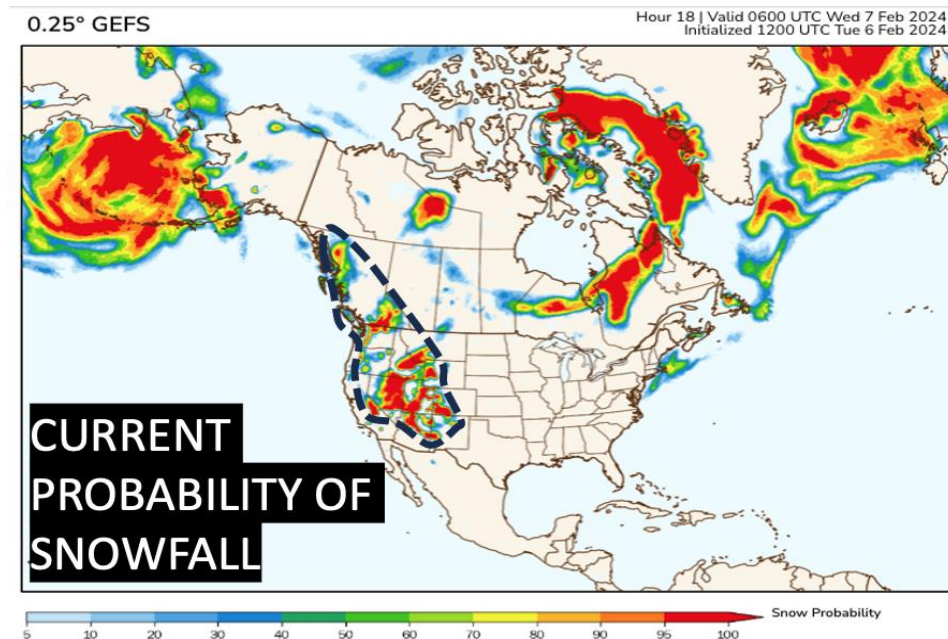


CURRENT

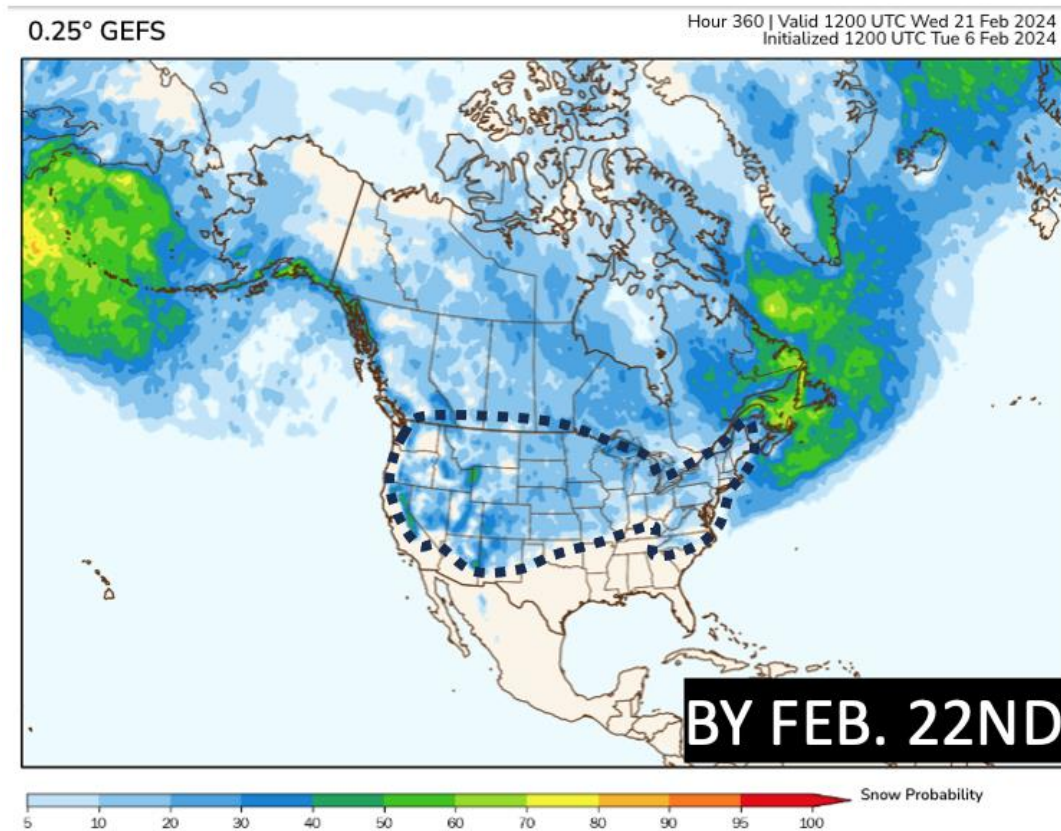
POST MID-MONTH

END OF FEB-EARLY MARCH

To illustrate this point of change further, look at the probability of snowfall now vs. by post-mid Feb. (credit Tomer Burg-polarwx.com). A pattern we're currently in now only favors high elevation snow in the West. It's scarce elsewhere and accordingly so as it makes sense. We have no blocking, no support for cold air, etc.



However, once we see our large-scale adjustment that stems out from the Pacific and works its way across the Arctic and in the North Atlantic, look how the pattern becomes much more conducive to snowfall as we see the probability become so widespread. It's no coincidence we're seeing this in computer models!



With all of this being stated, we'd like to emphasize one point. While the return to a much colder and active pattern is coming undoubtedly given these big changes, we still can't guarantee snow in backyards. We're just showing you the promising signals that we've seen time and time again over the years, with literature to back it up that have produced major nor'easters and big winter systems. We're likely in store of a fun stretch, but it remains to be seen just how much snowfall can occur between now and through March as this pattern looks to have staying power.