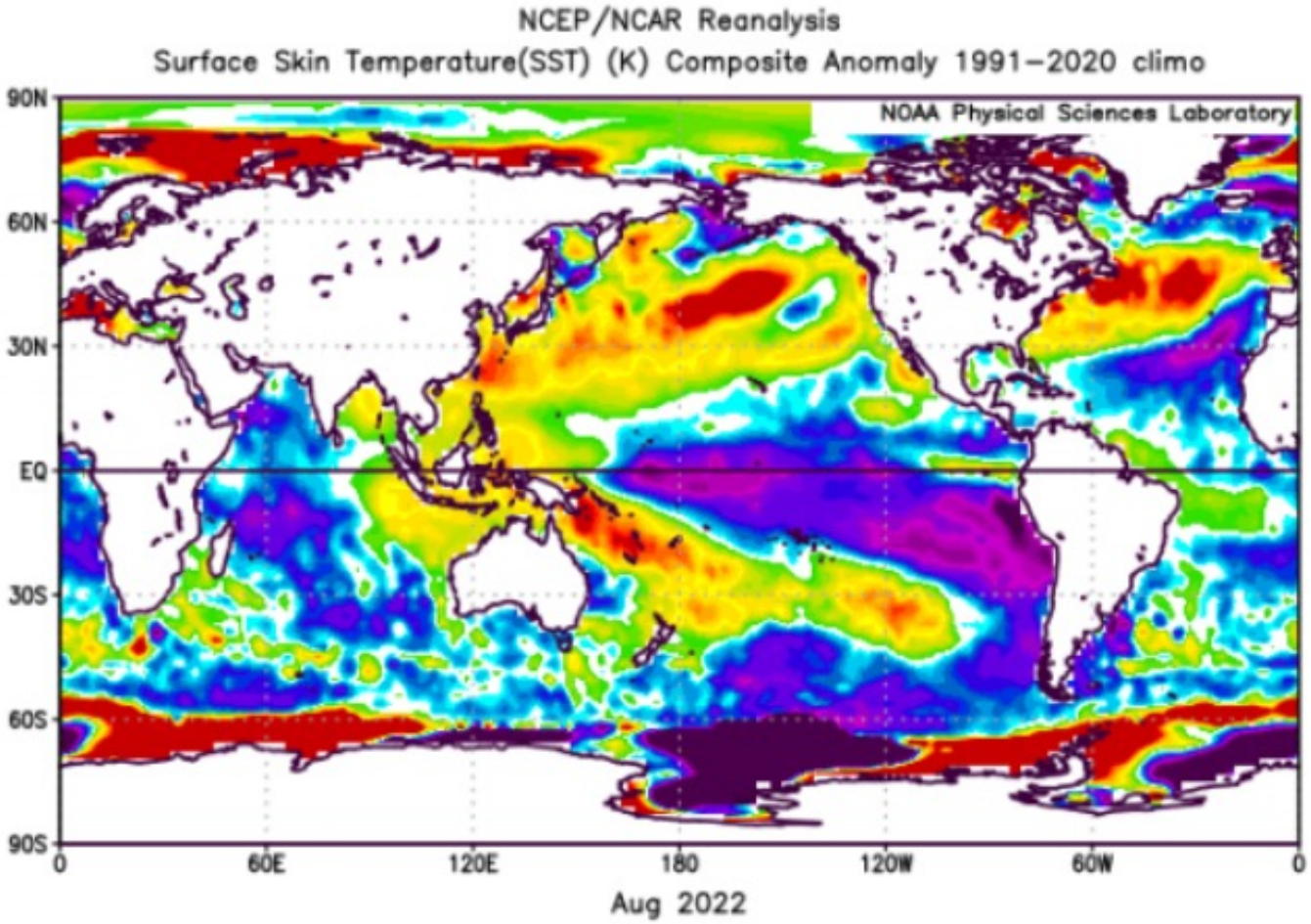
LDC Natural Gas Forum

Most Wonderful Time of the Year Presentation

September 13, 2022

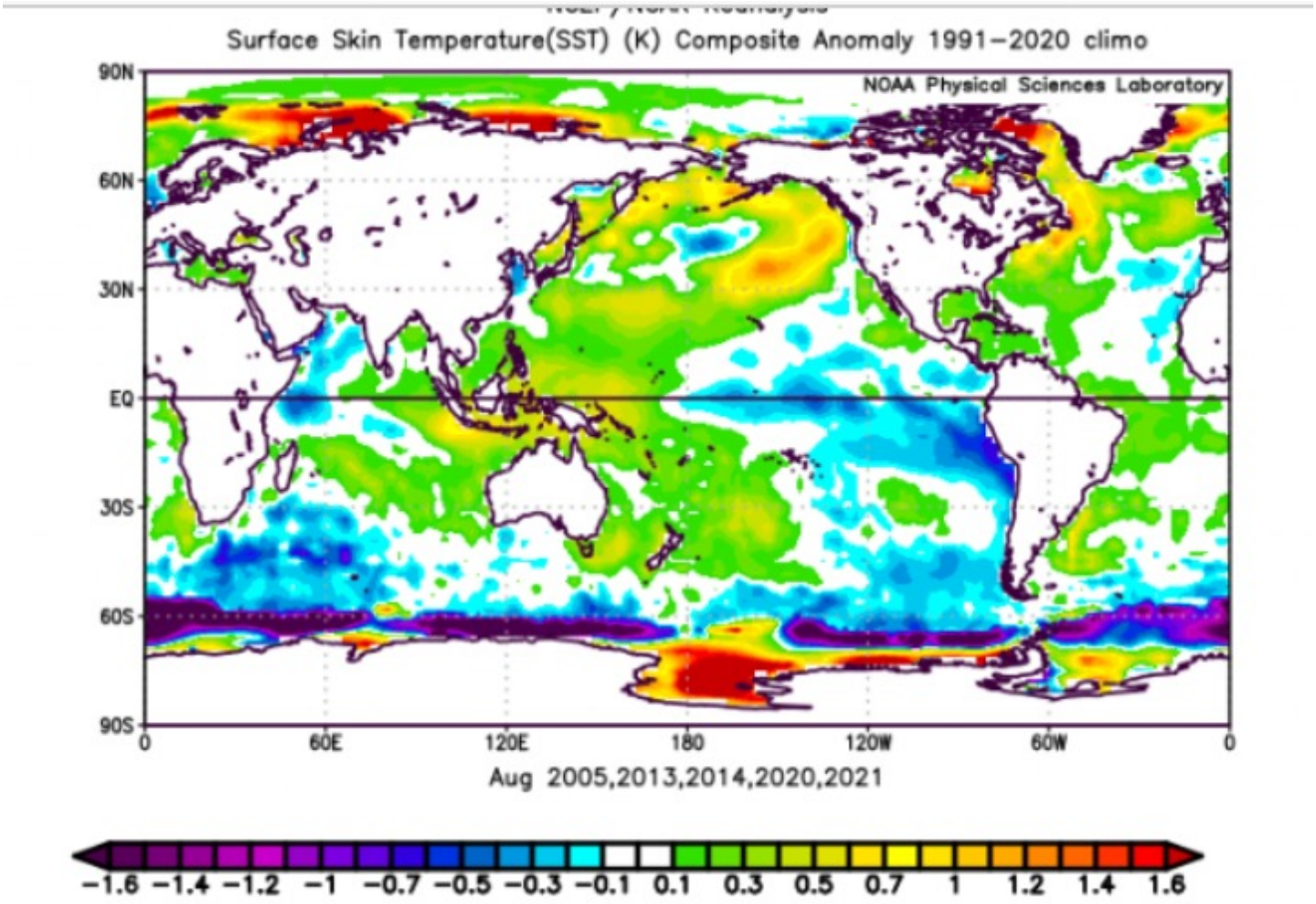
La Niña Schmiña

Unprecedented Northern Ocean Warmth



Analog years

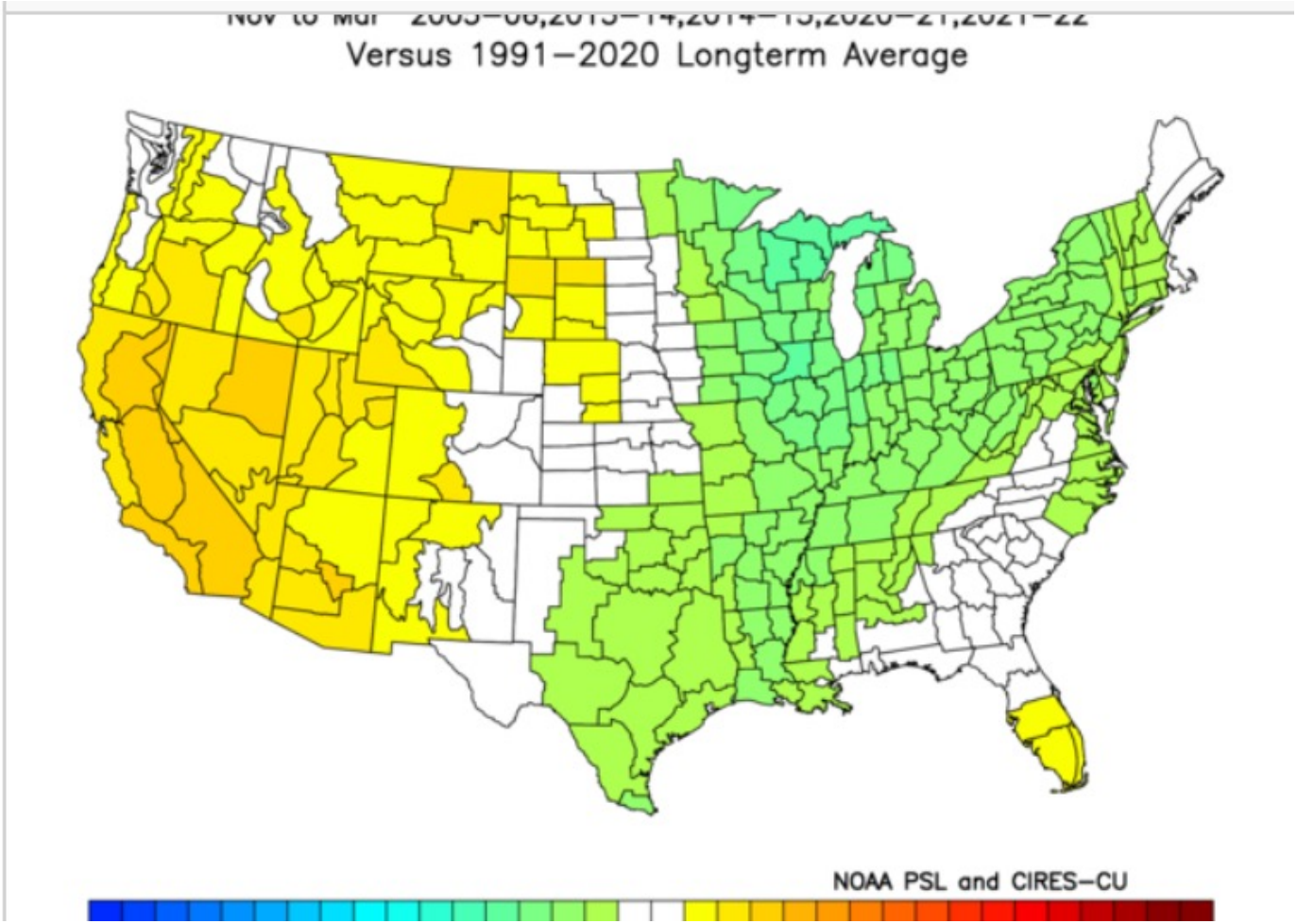
2005, 2013, 2014, 2020 & 2021



All these years had strong cold periods

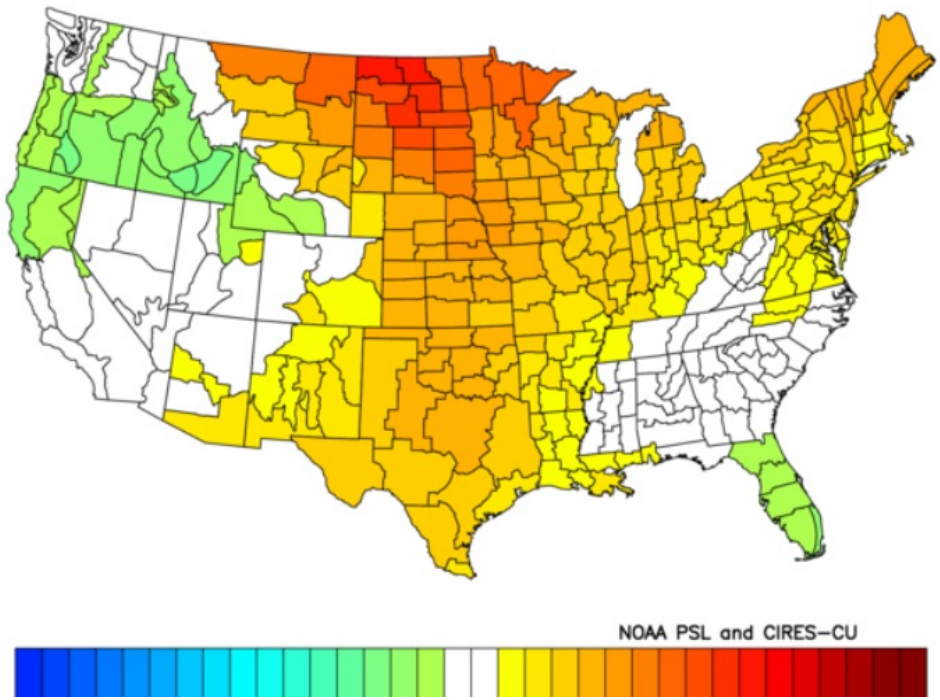
- 2005-06
  - Early cold period then gone
- 2013-14
  - Early cold period and then came back.
- 2014-15
  - November cold but then it disappeared in December
  - Then came back.
- 2020-21 and 2021-22
  - January and February rocked

Blend of all of them for Nov-Mar

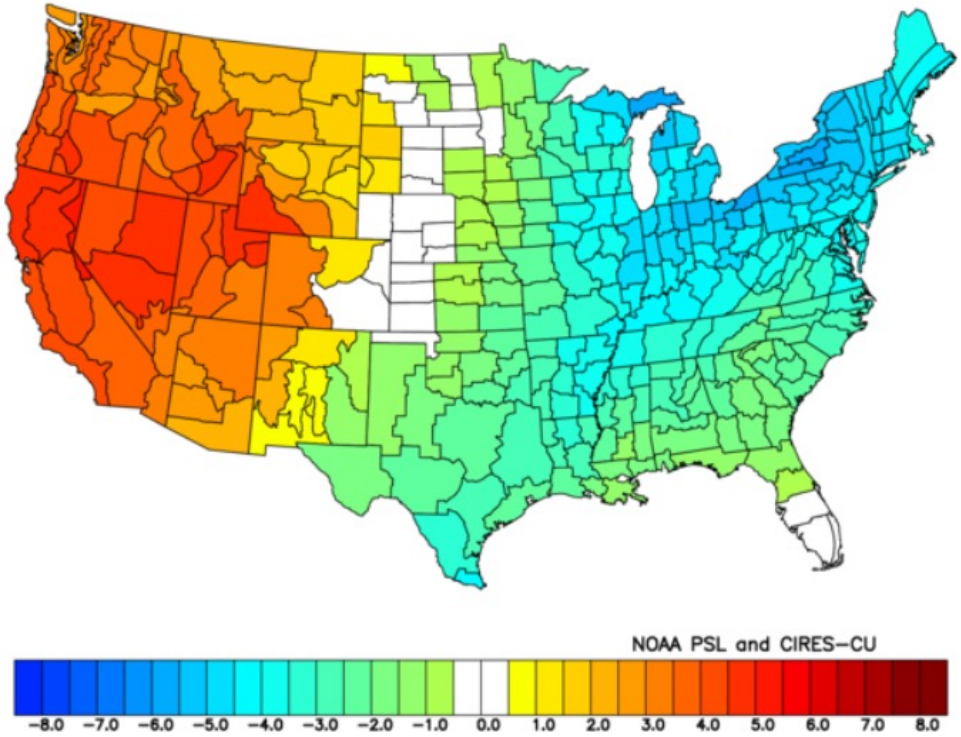


Wild variance - 2005-06

But in that package you had the warm winter of 05-06

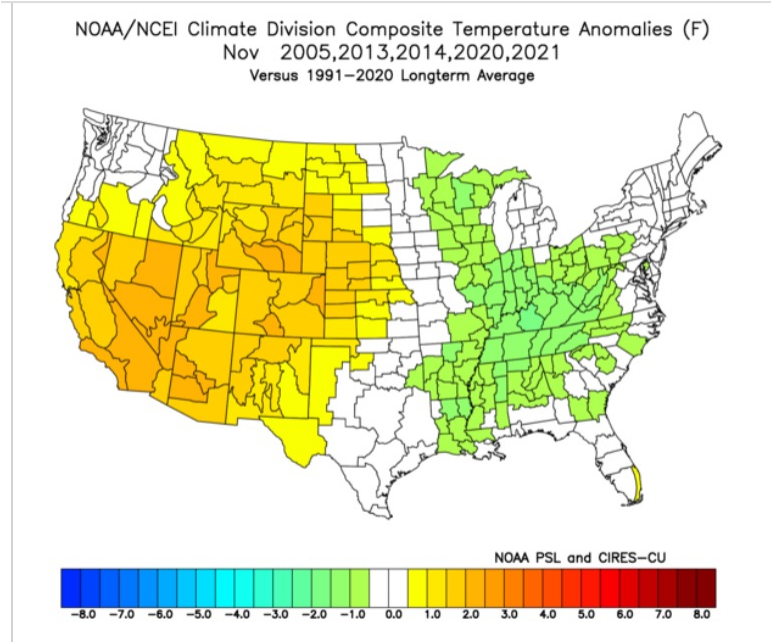


2014-15

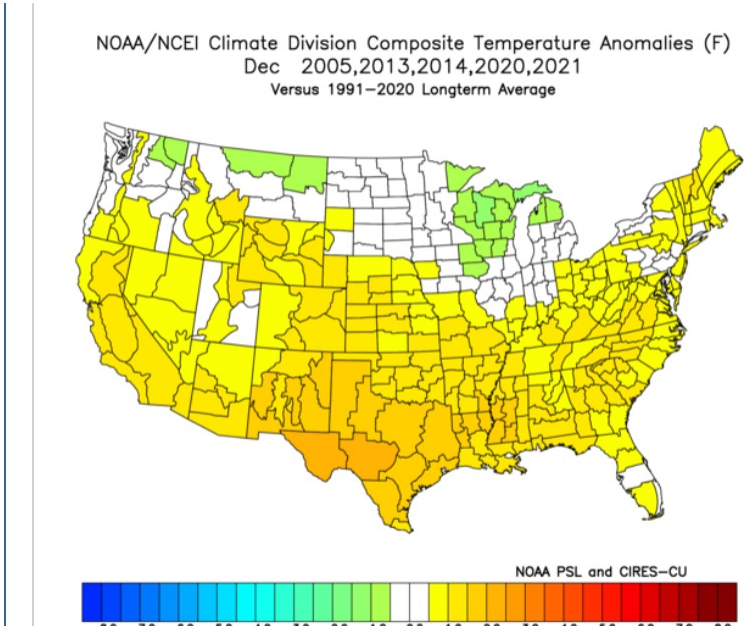

NOAA/NCEI Climate Division Temperature Anomalies (F)
Nov to Mar 2014–15
Versus 1991–2020 Longterm Average
NOAA PSL and CIRES–CU
−8.0 −7.0 −6.0 −5.0 −4.0 −3.0 −2.0 −1.0 0.0 1.0 2.0 3.0 4.0 5.0 6.0 7.0 8.0

Result

By the month - November



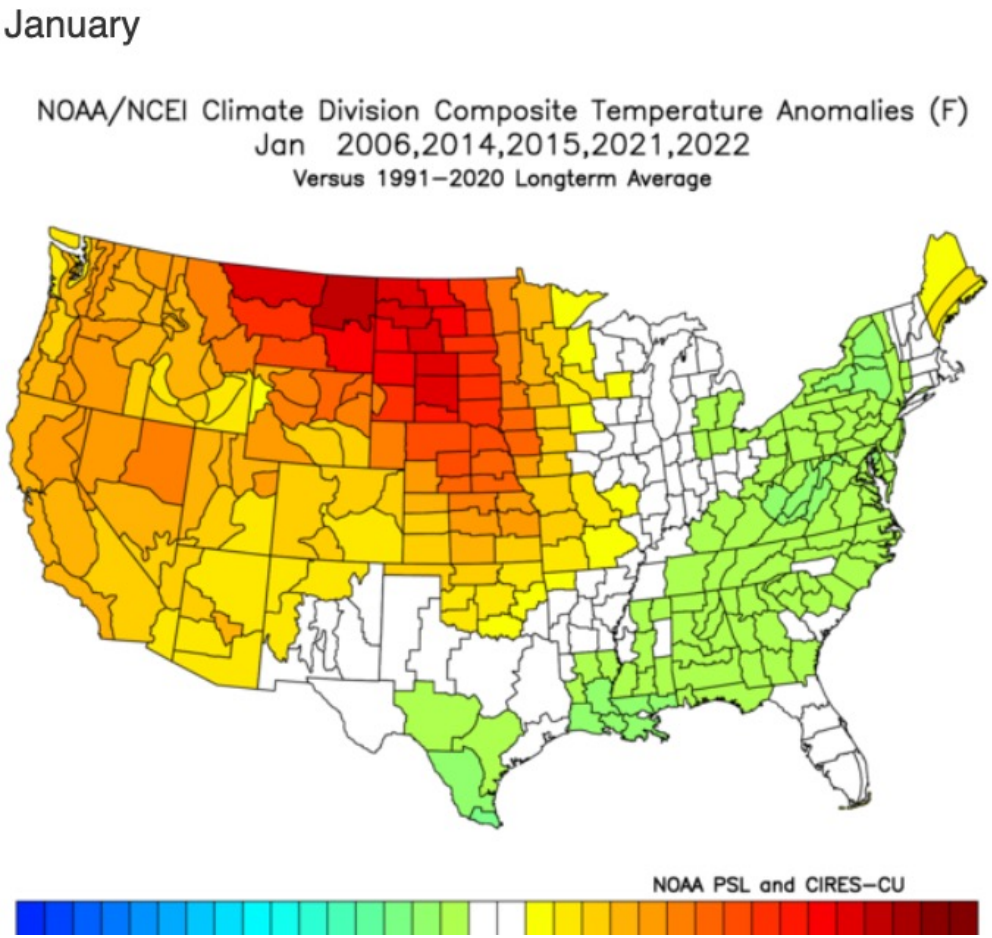
By the month - December



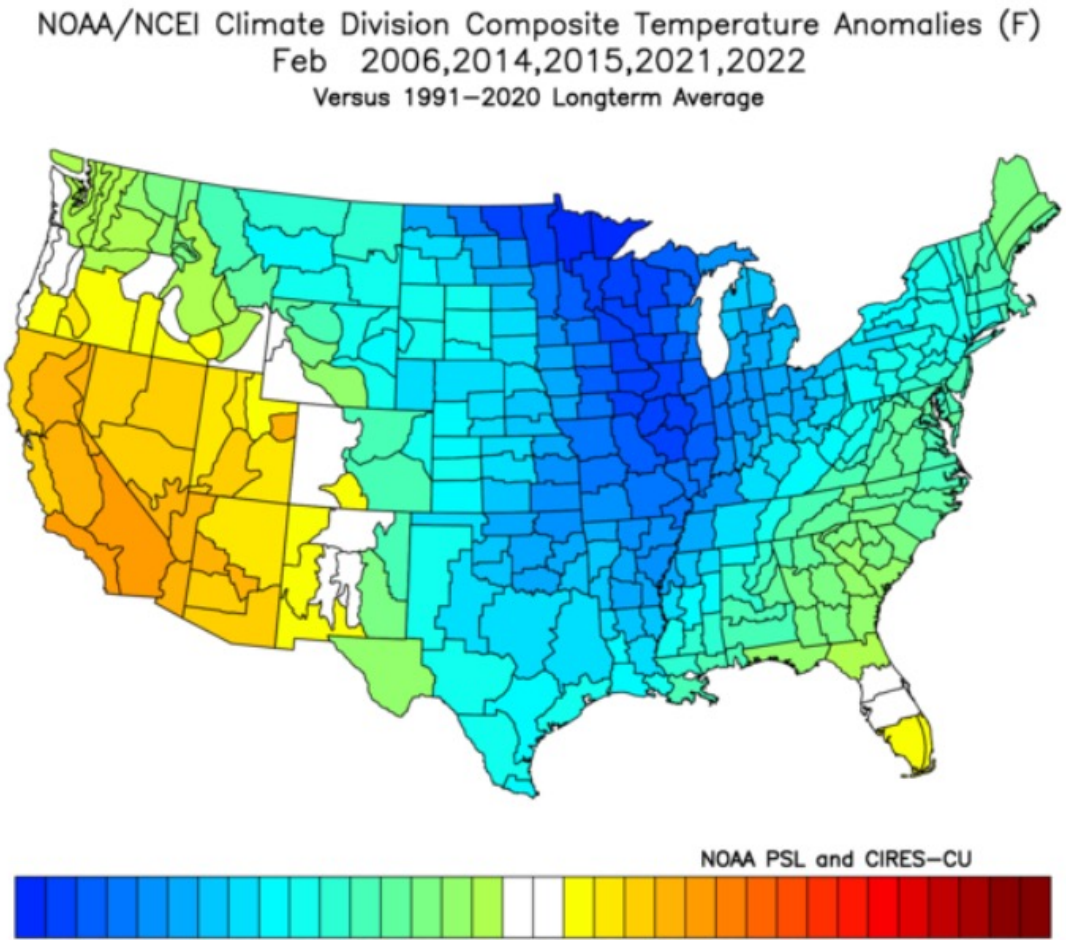
I will explain later why I may be a moron

You Gotta be a Moron, a complete moron to want to be a fighter (Rocky Balboa)
Weather:. You gotta be a moron, a complete moron to forecast a cold December. Yet..

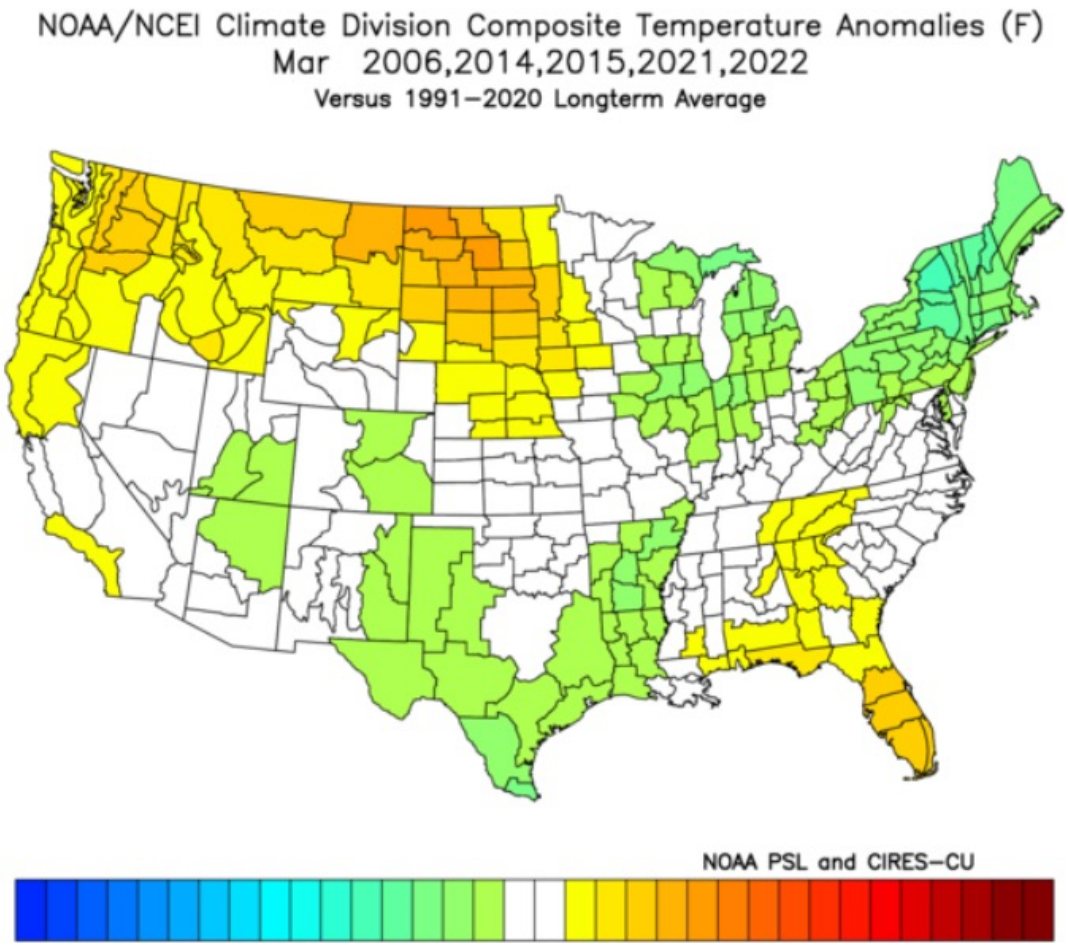
By the month - January



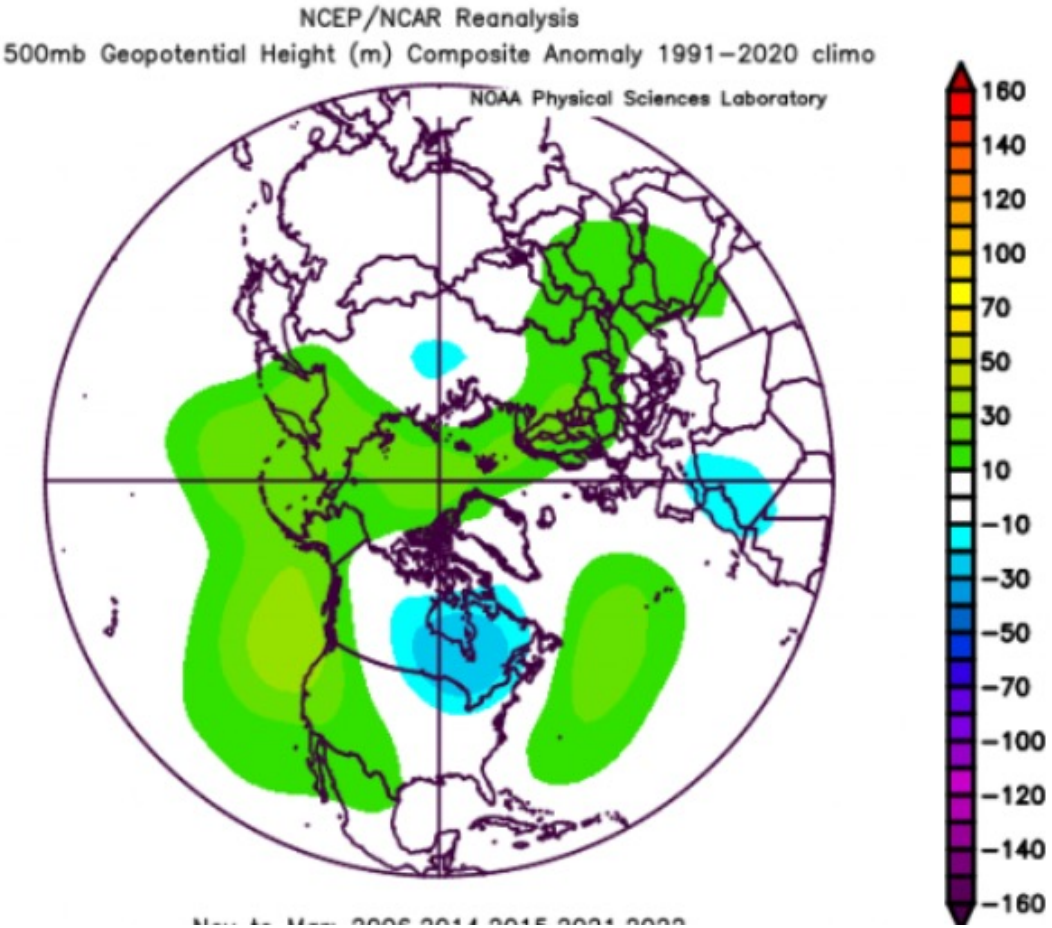
American Pie February (it made me shiver with each forecast I'd deliver).



By the month - March

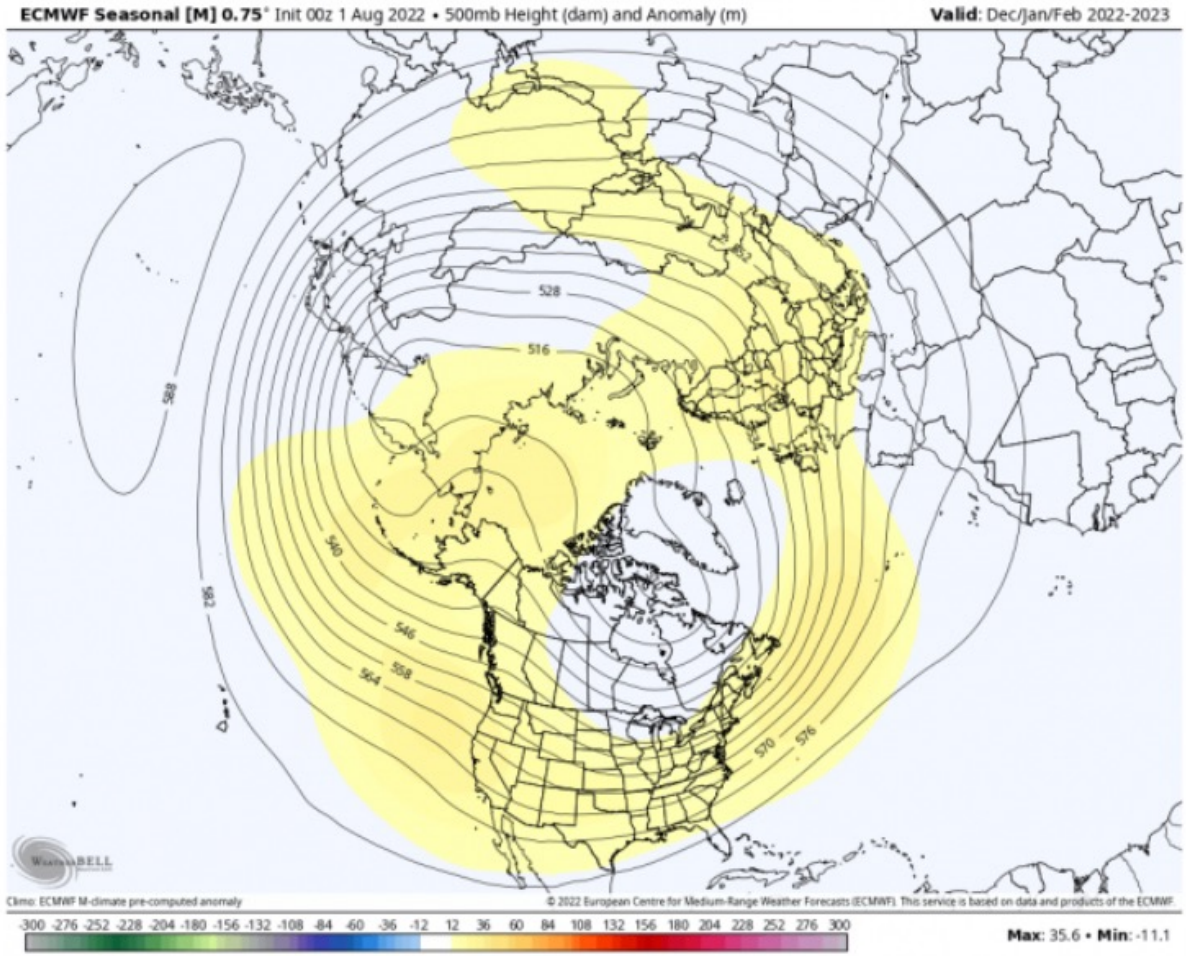


500 mb (halfway up) analog

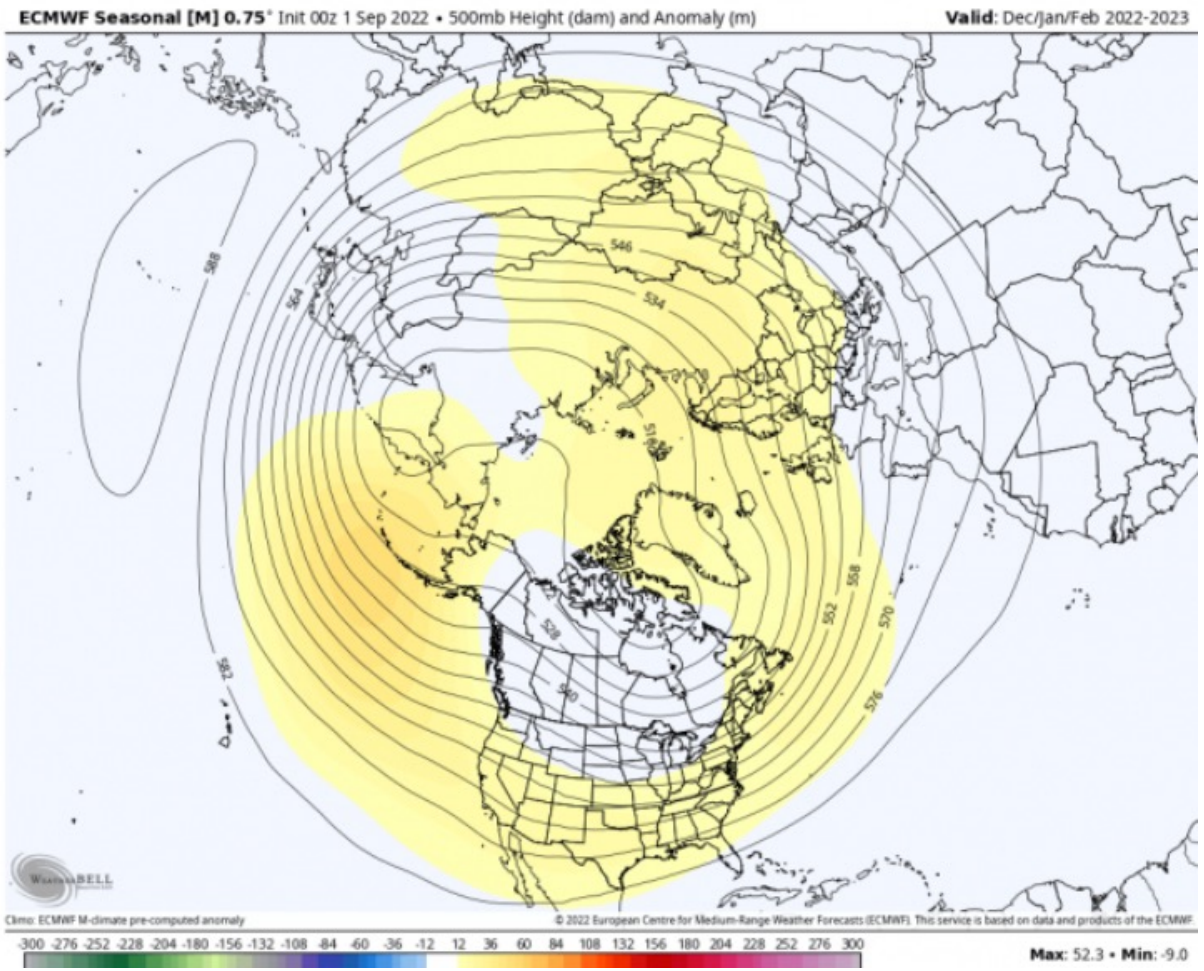


The Euro Seasonal

Last month had Alaskan Ridge (-EPO) developing



This month's forecast pulls it back
(but implies more blocking)

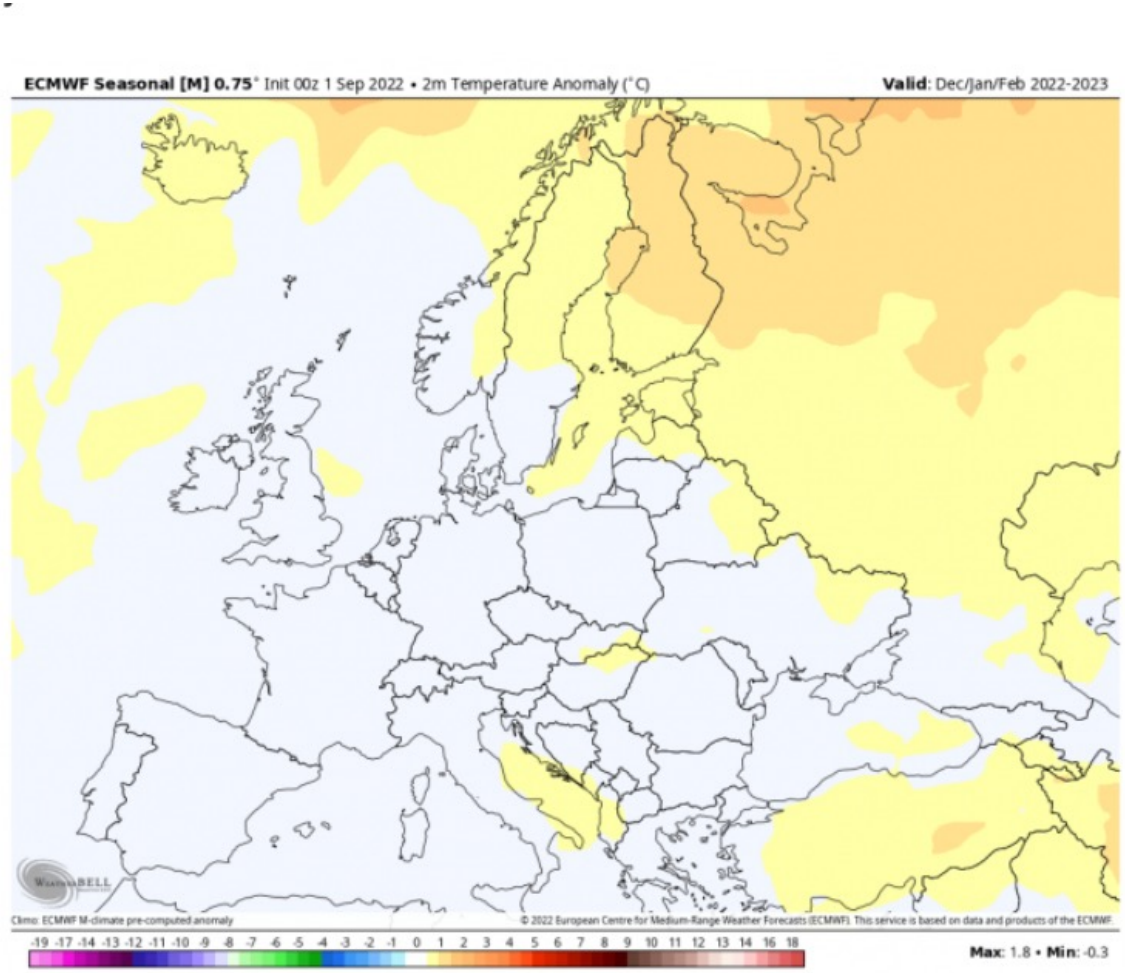


Models can't see longer term cold

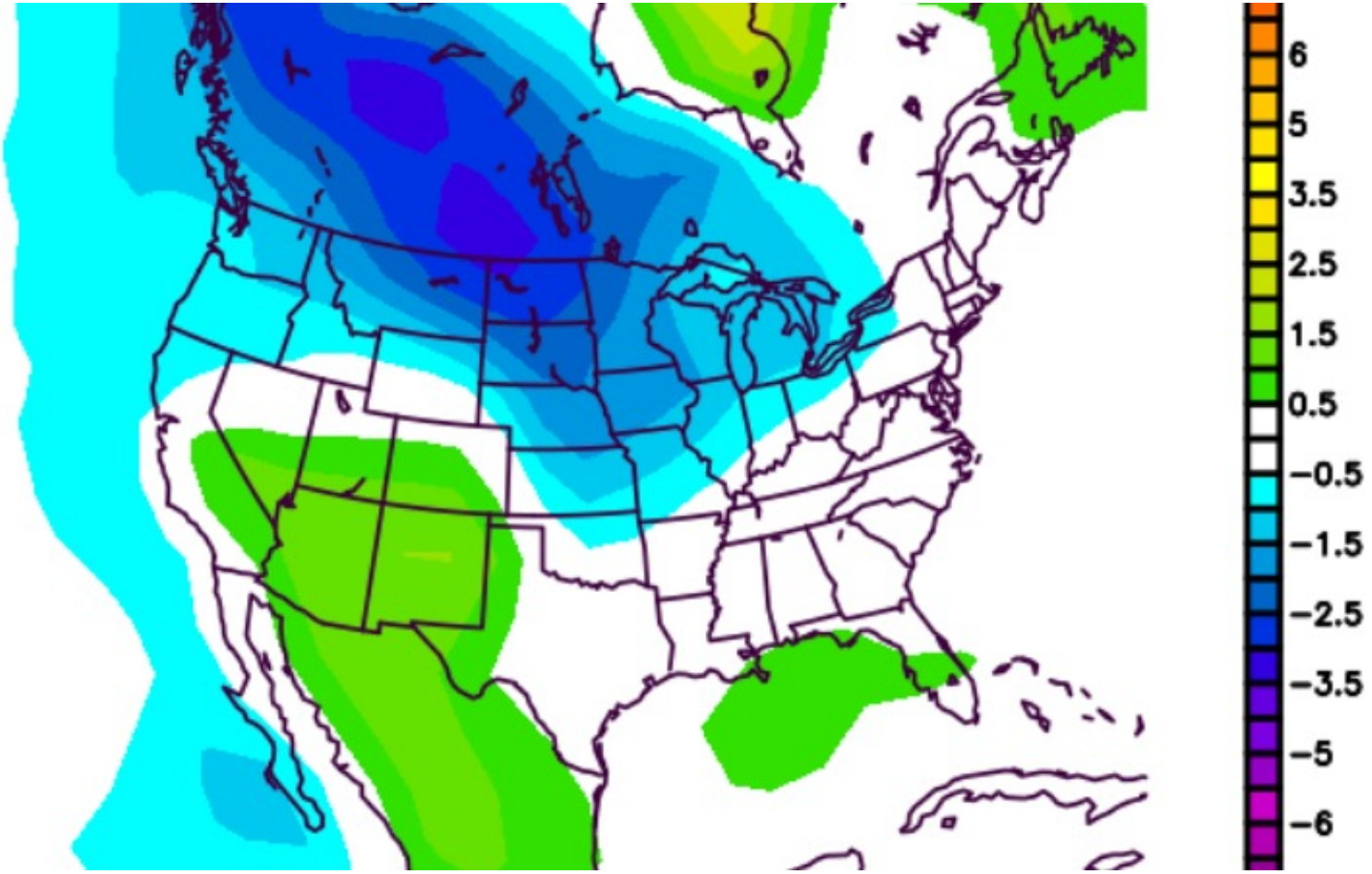
- There has been a major distortion of the pattern.
- The models simply wash out cold air and make everything warm or near normal.
  - This is unreasonable
- There is going to be cold somewhere.
  - The average temperature of the planet is not warm all over.
  - Warmth in the colder drier areas has been outdueling the cold elsewhere for that total.
- It means that the atmosphere is capable of producing major cold outbreaks and the best a model ca do is hint at it.

Europe is a huge forecast headache.

For the Euro model this is a cold run



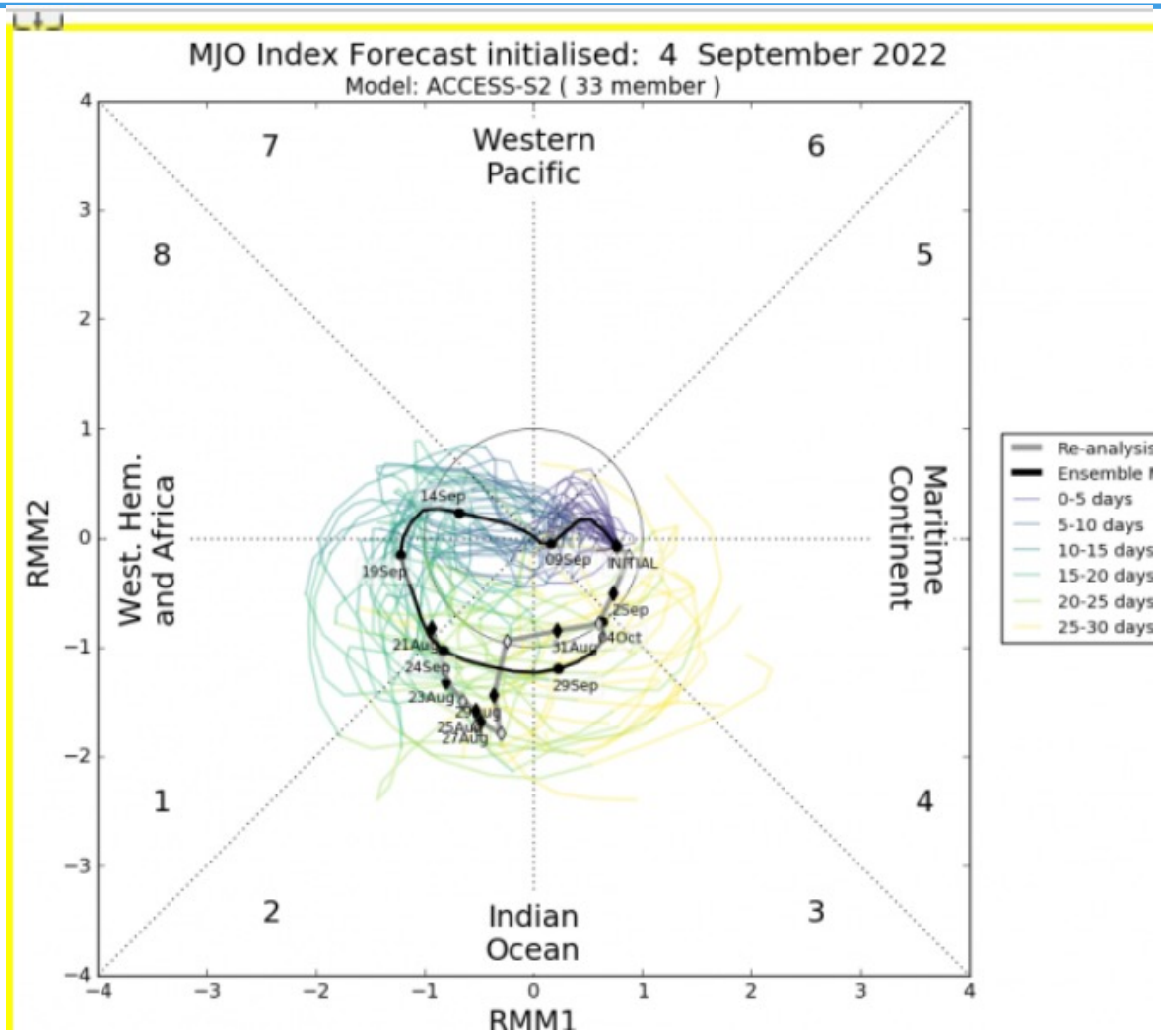
Pioneer Statistical Model



Here is how I am a moron

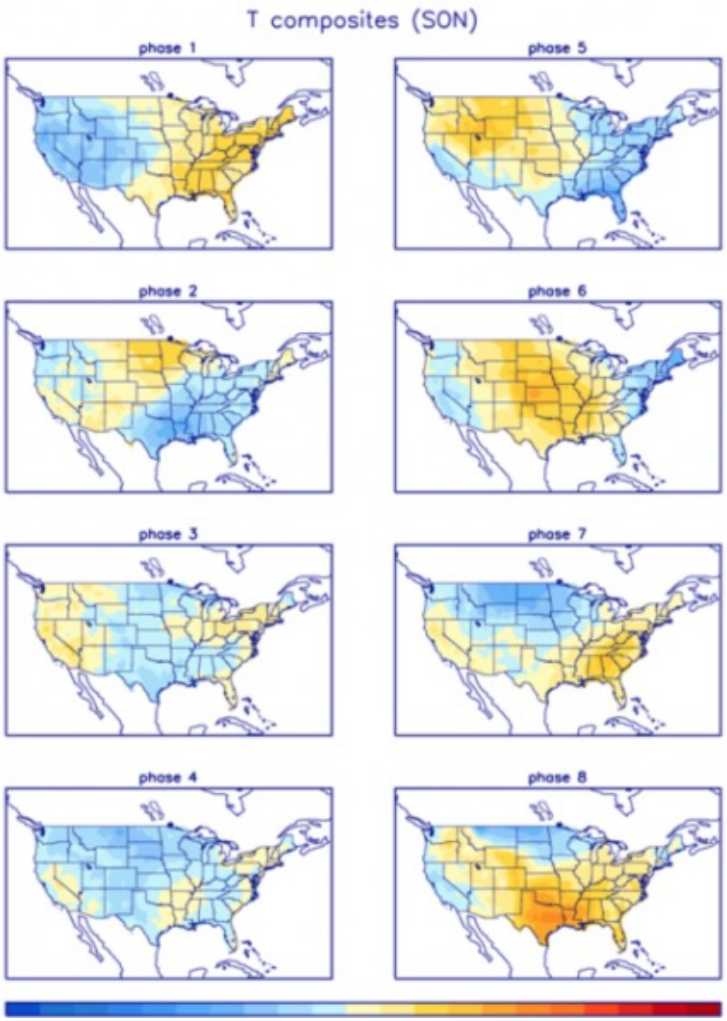
- The Hurricane analog relies on the MJO rotation.
- MJO rotations in late September and October produce a certain pattern.
- The rotation comes back around later in November and December.
- The result in October is widespread warmth.
  A wet Southeast with hurricane threats
- The result in December is cold!
  - There are too many examples to ignore.

The MJO forecast



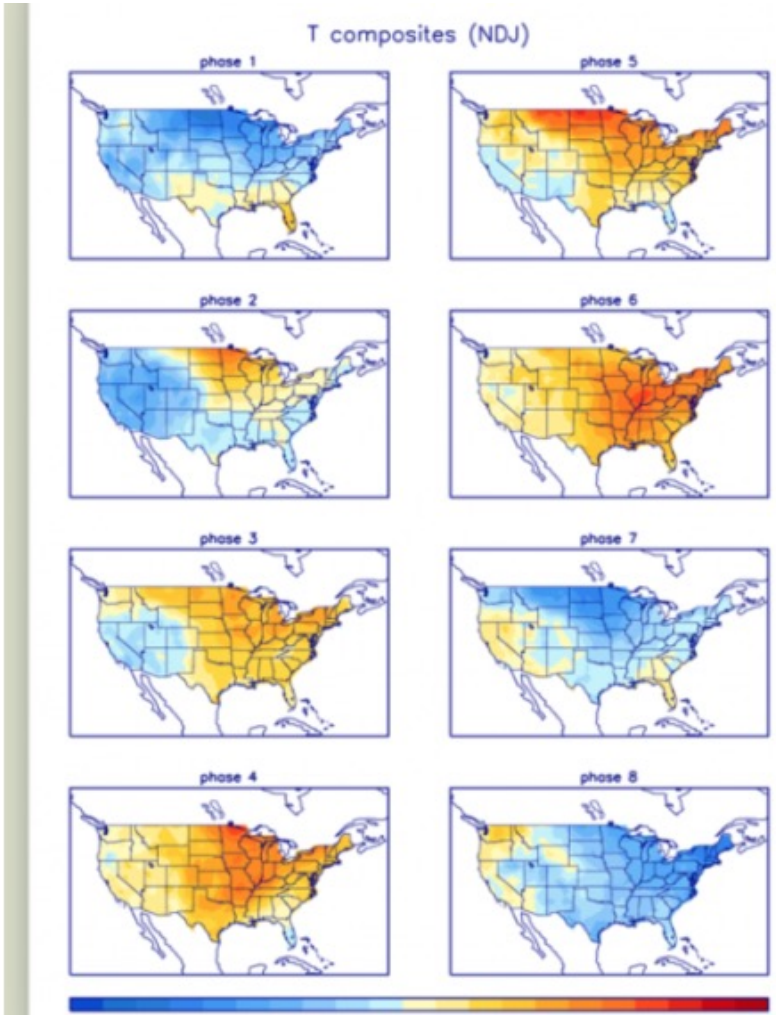
October MJO Phases 8,1,2 & 3

Lots of warmth

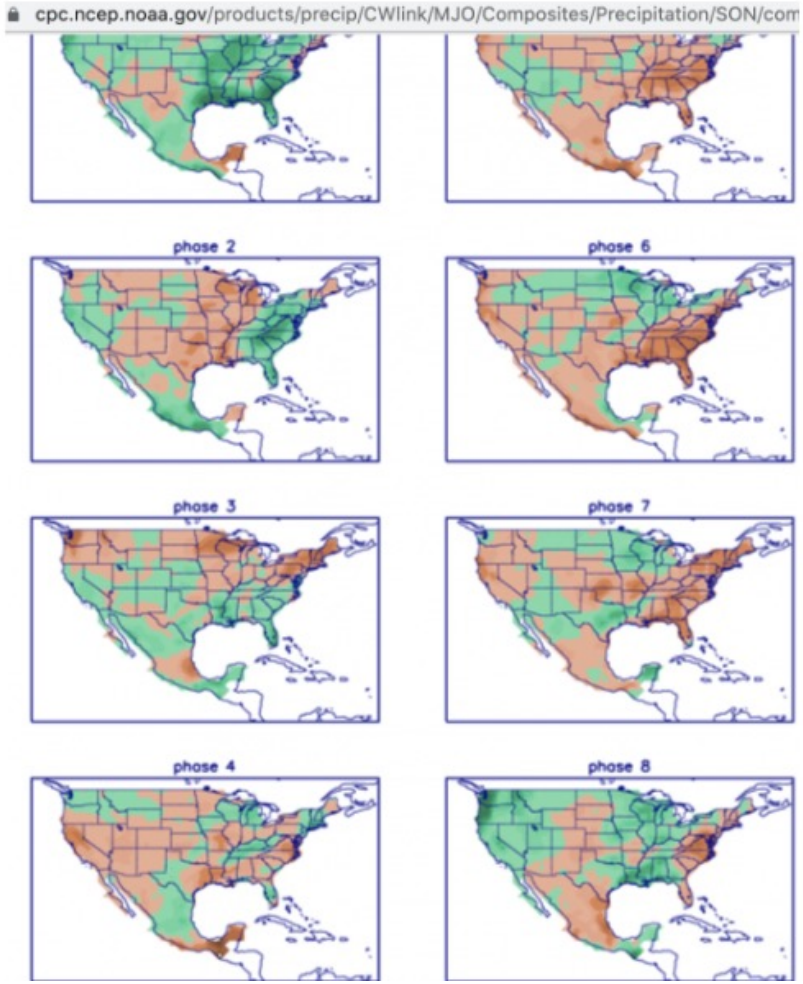


December

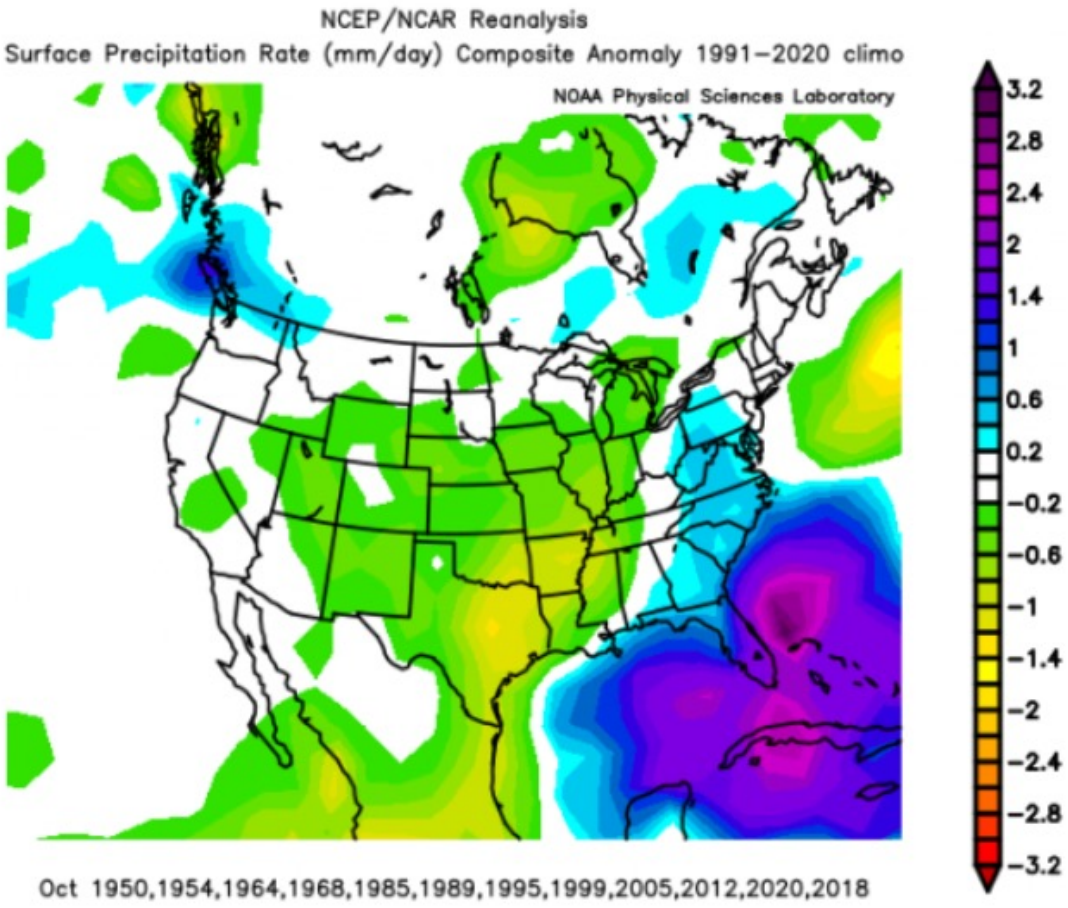
The same phases have plenty of cold air



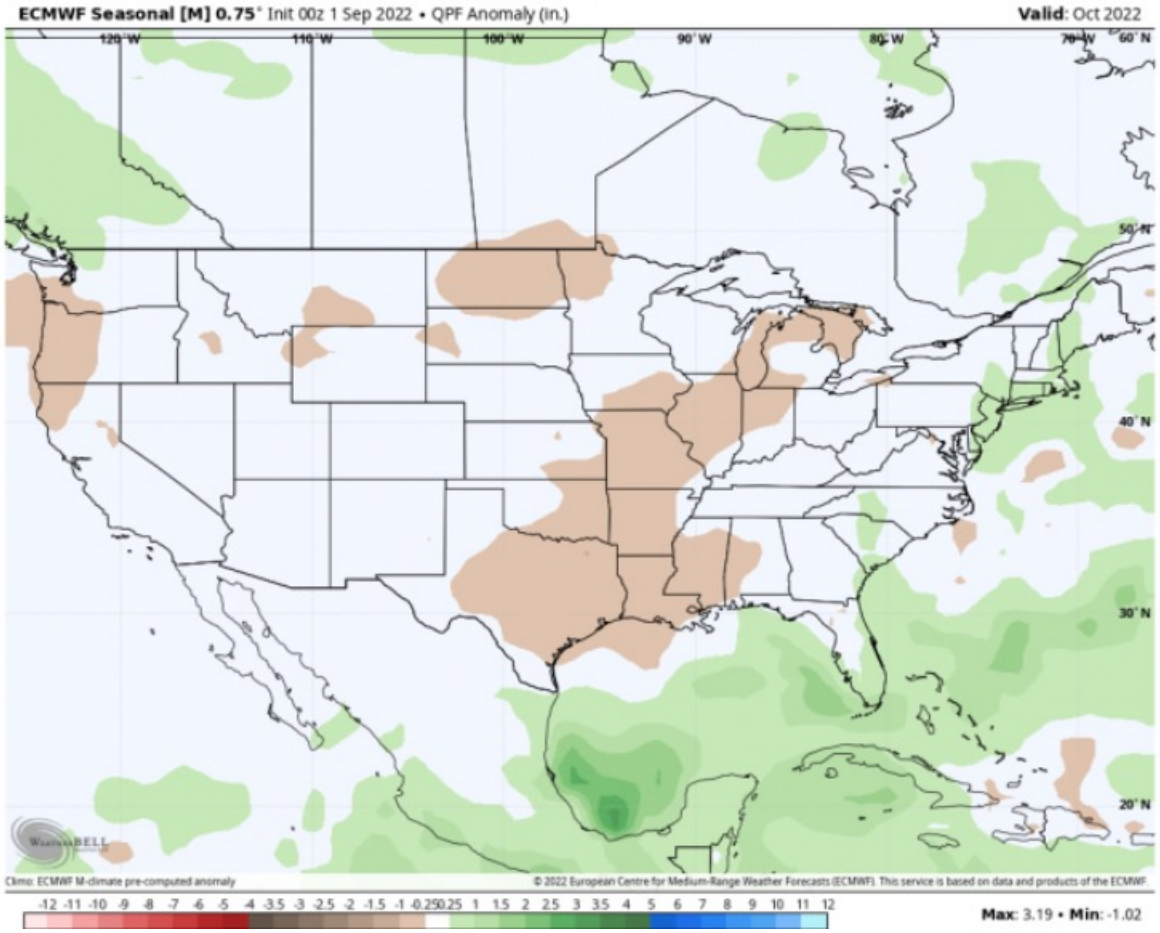
Also look at all the precipitation



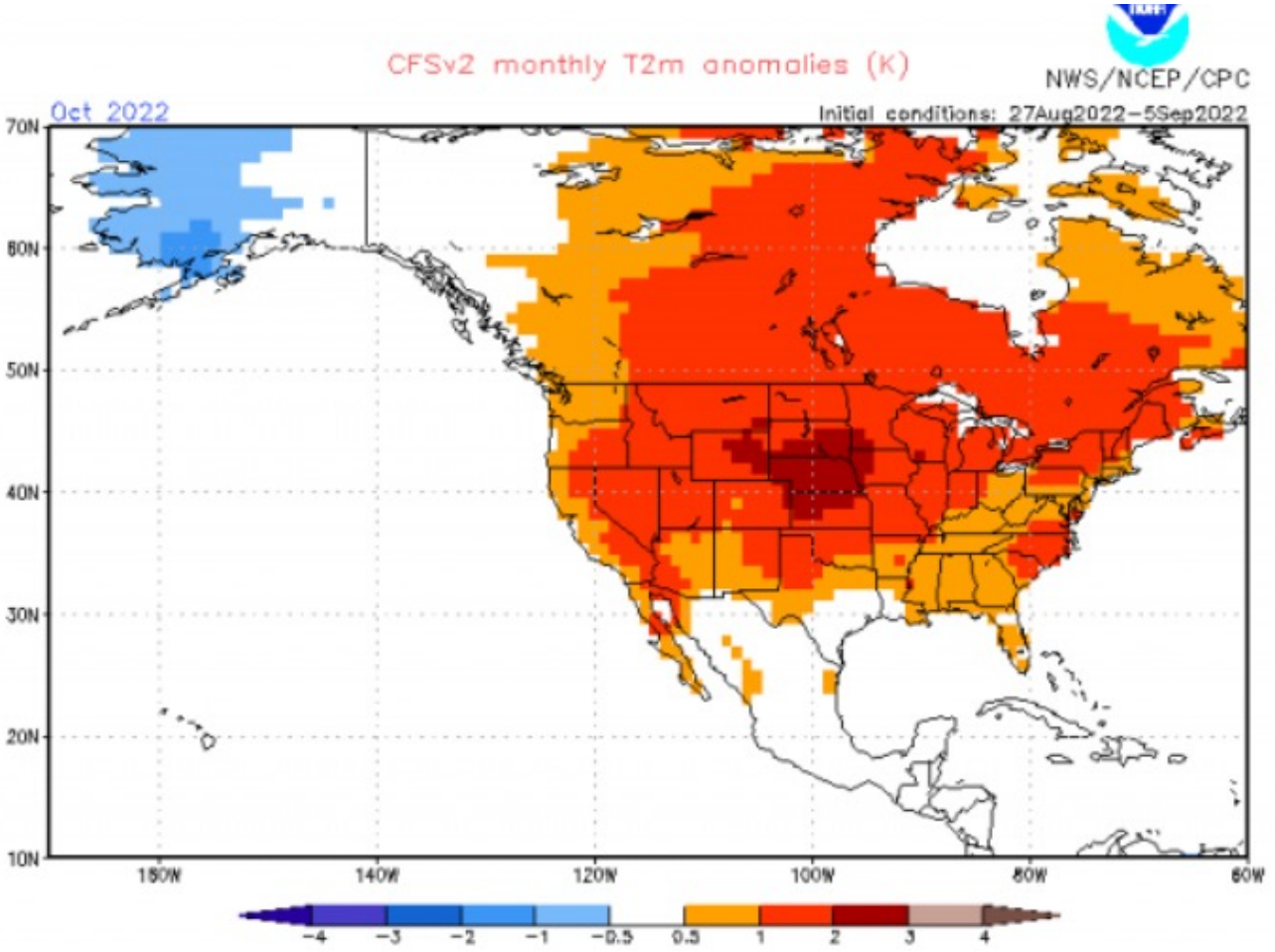
Precipitation in years with hurricane hits



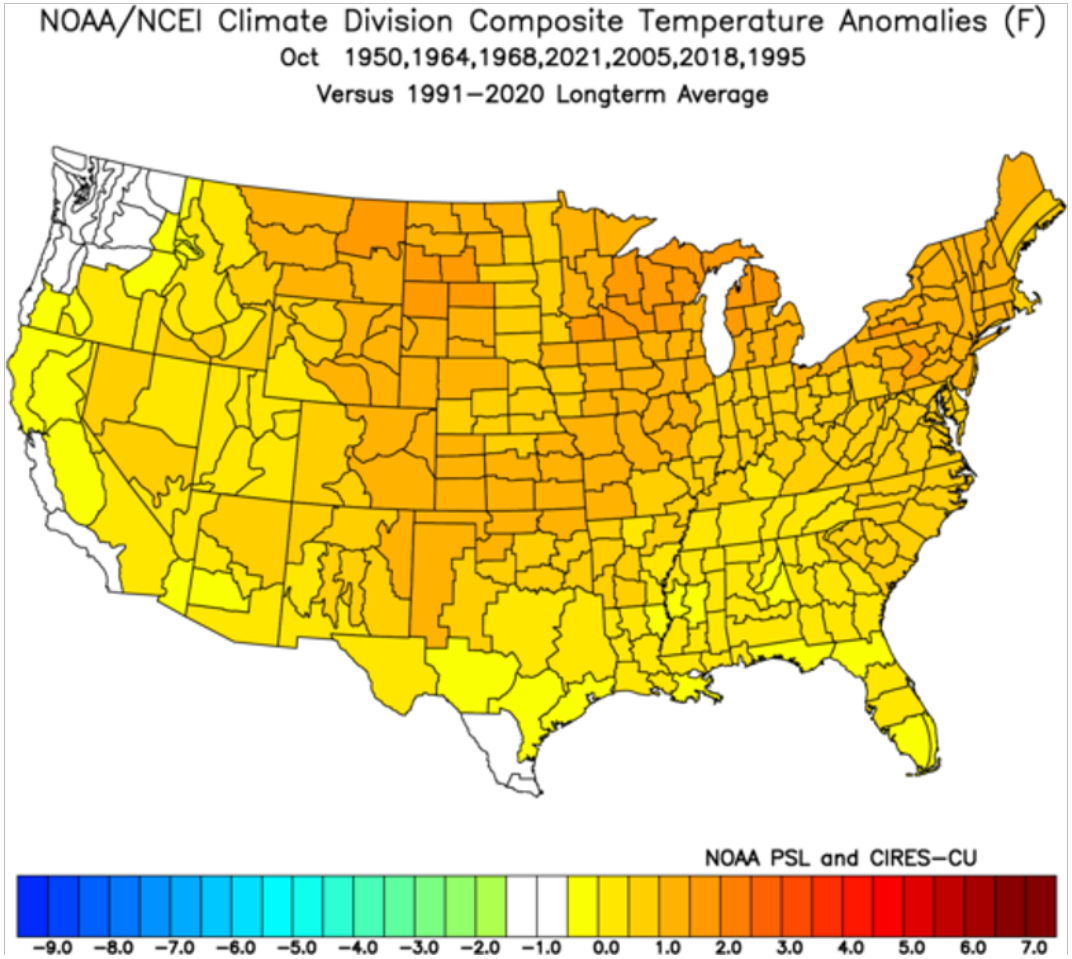
The Euro's precipitation forecast



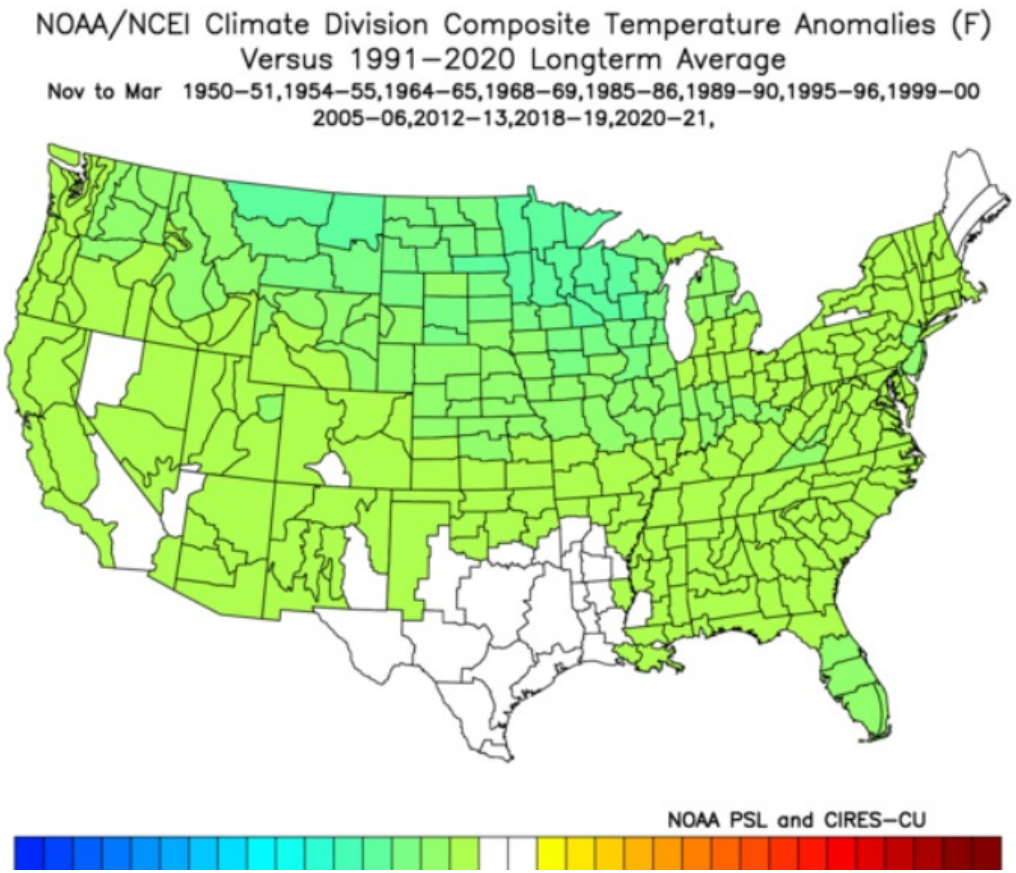
CFSv2 October Forecast



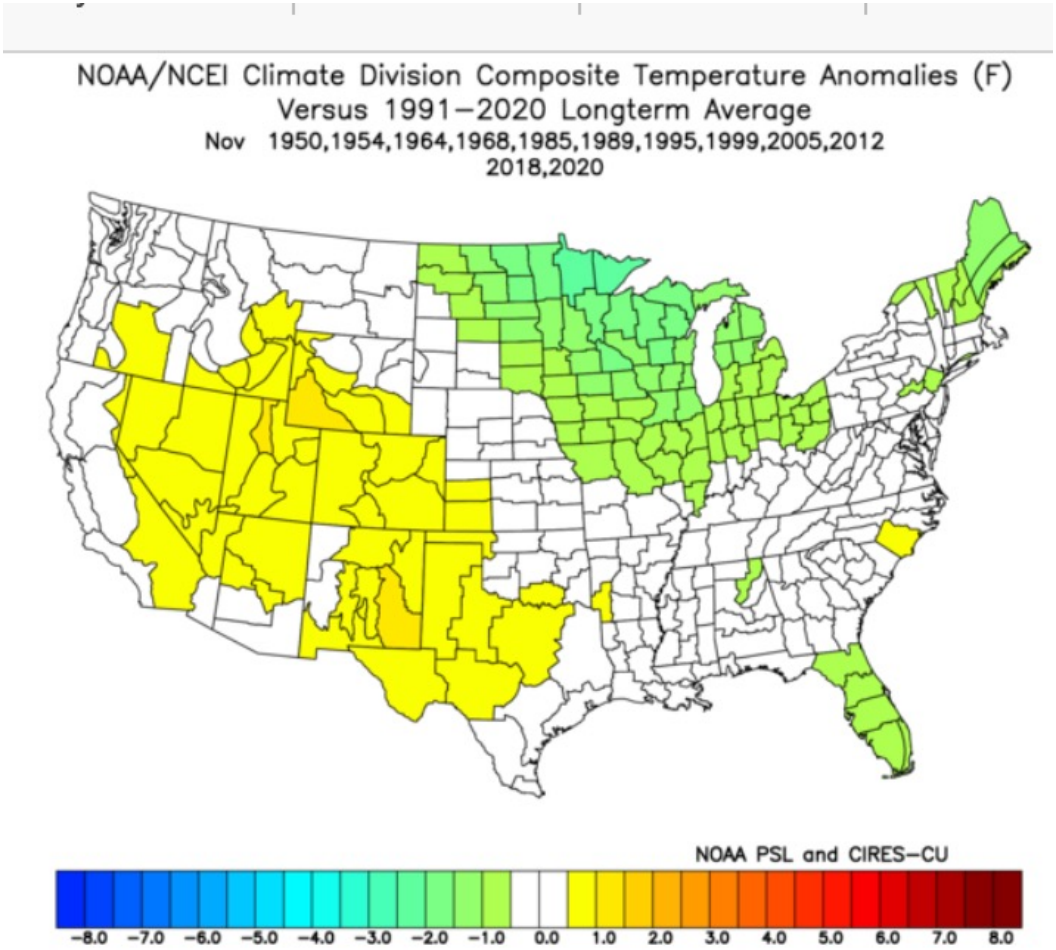
October Hurricane Hit Analog



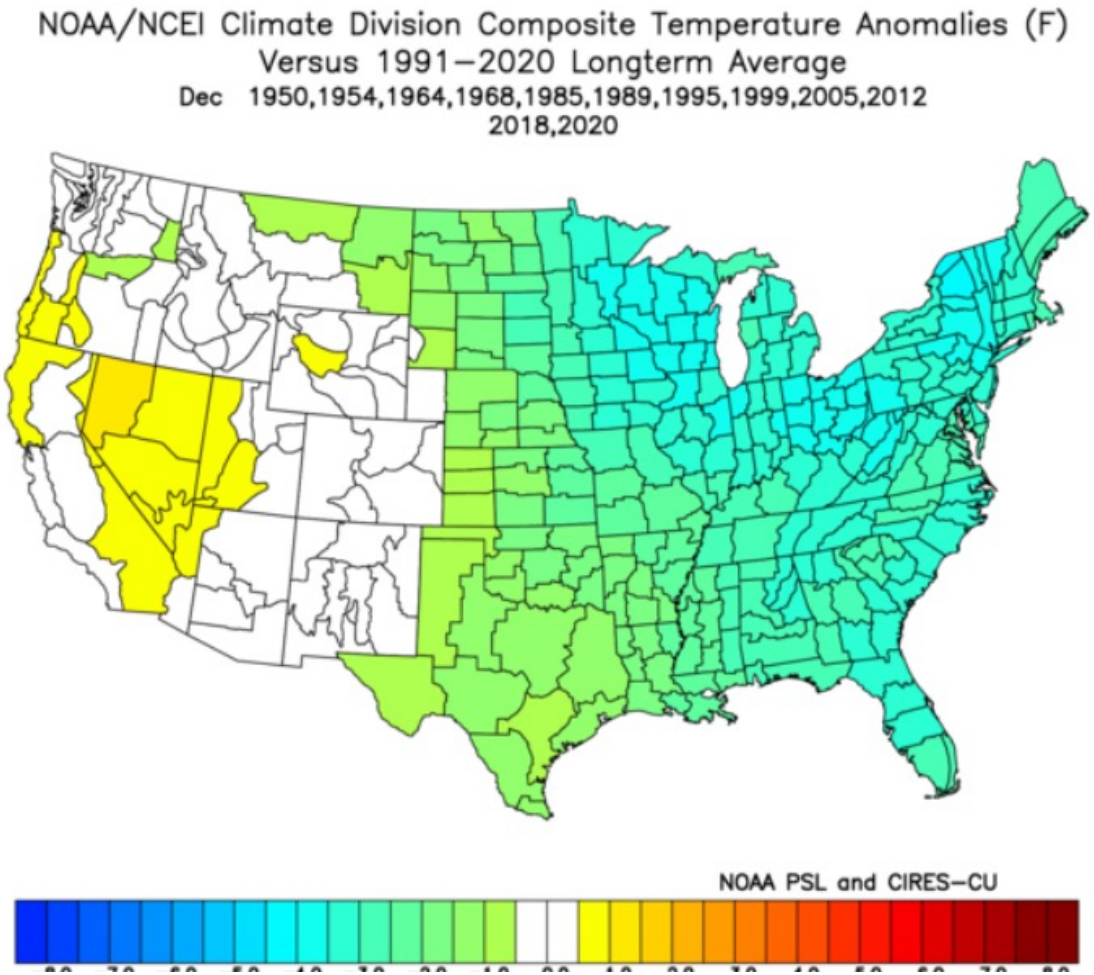
The following Heating Season



November


NOAA/NCEI Climate Division Composite Temperature Anomalies (F)
Versus 1991–2020 Longterm Average
Nov 1950,1954,1964,1968,1985,1989,1995,1999,2005,2012
2018,2020
NOAA PSL and CIRES–CU
−8.0 −7.0 −6.0 −5.0 −4.0 −3.0 −2.0 −1.0 0.0 1.0 2.0 3.0 4.0 5.0 6.0 7.0 8.0

December


NOAA/NCEI Climate Division Composite Temperature Anomalies (F)
Versus 1991–2020 Longterm Average
Dec 1950,1954,1964,1968,1985,1989,1995,1999,2005,2012
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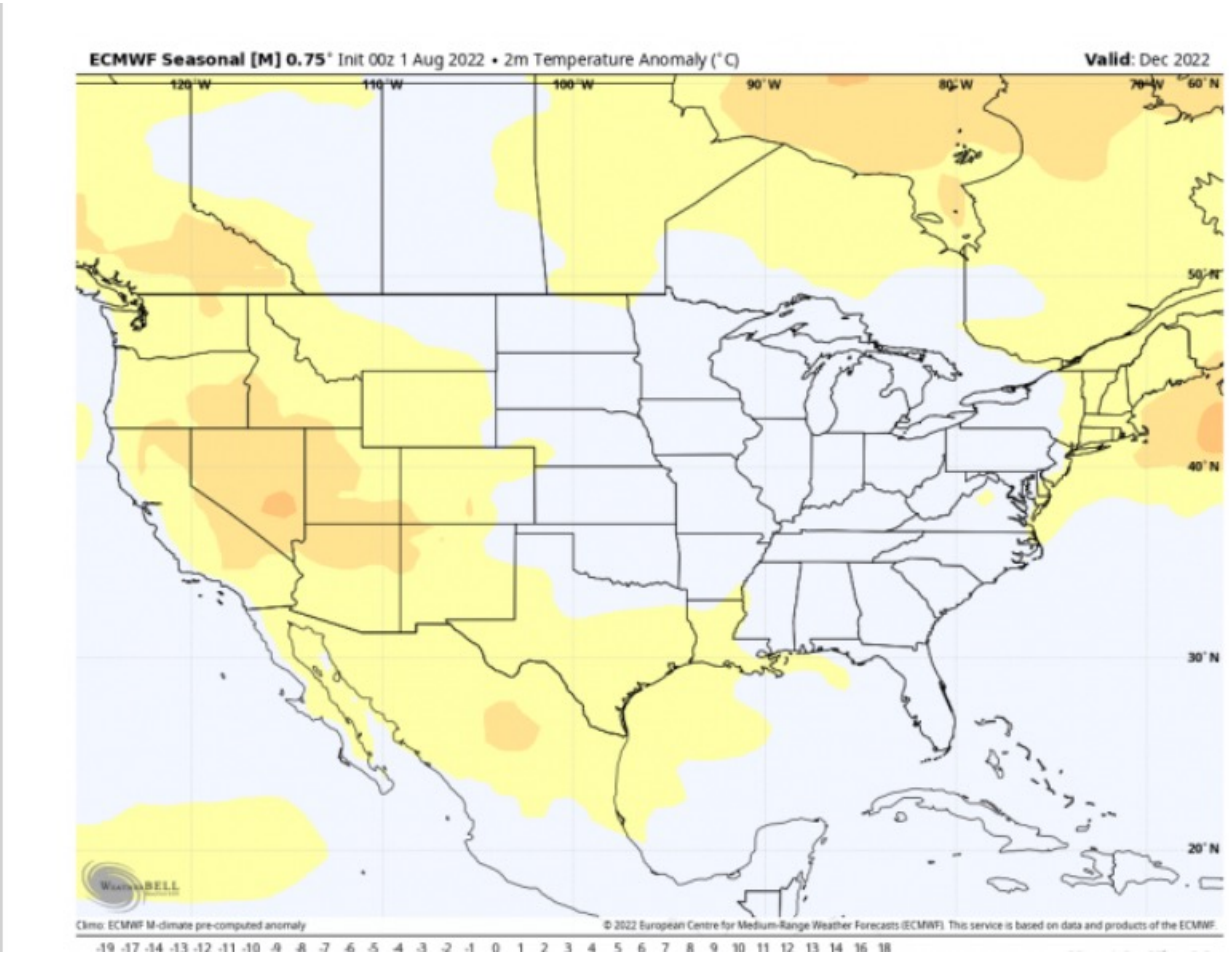
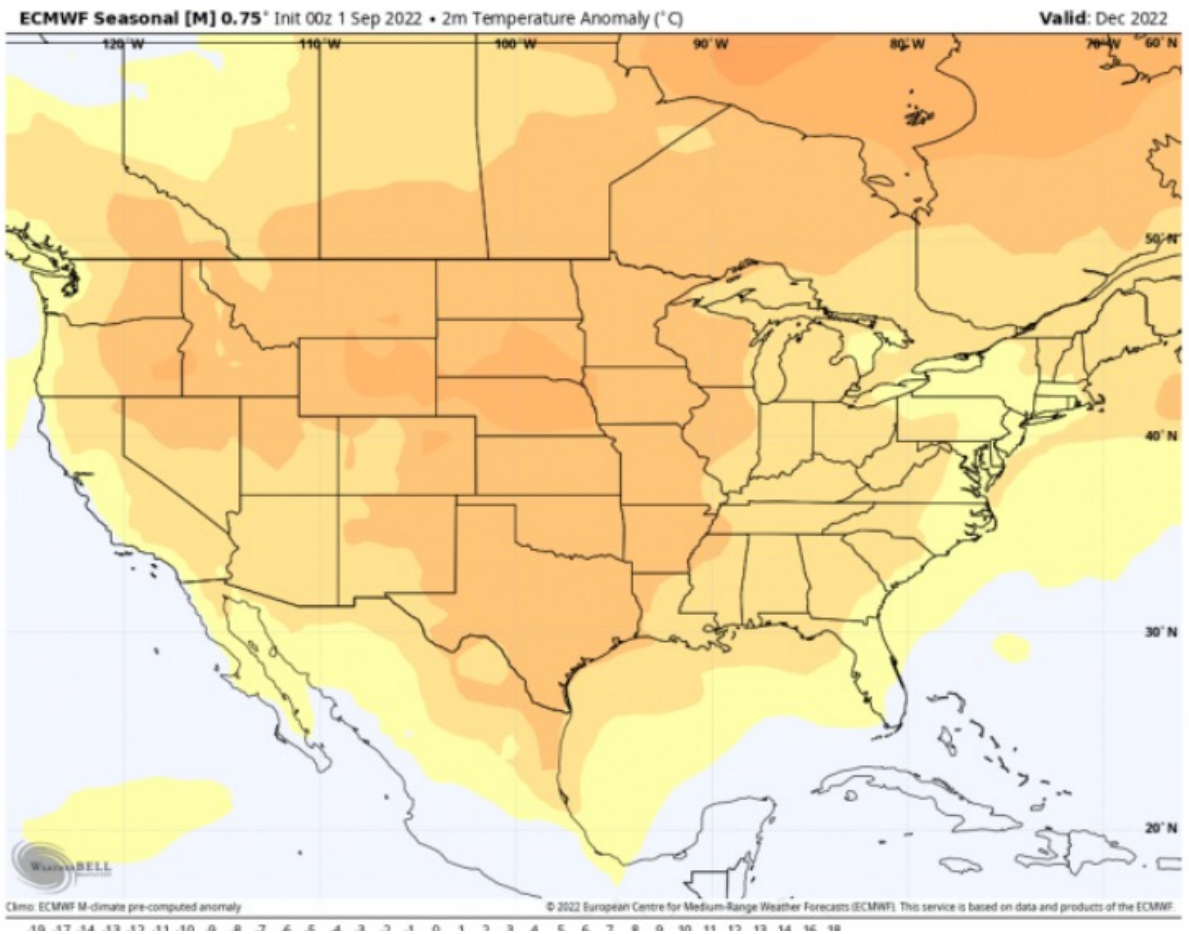
NOAA PSL and CIRES-CU

The Euro had the best it could do

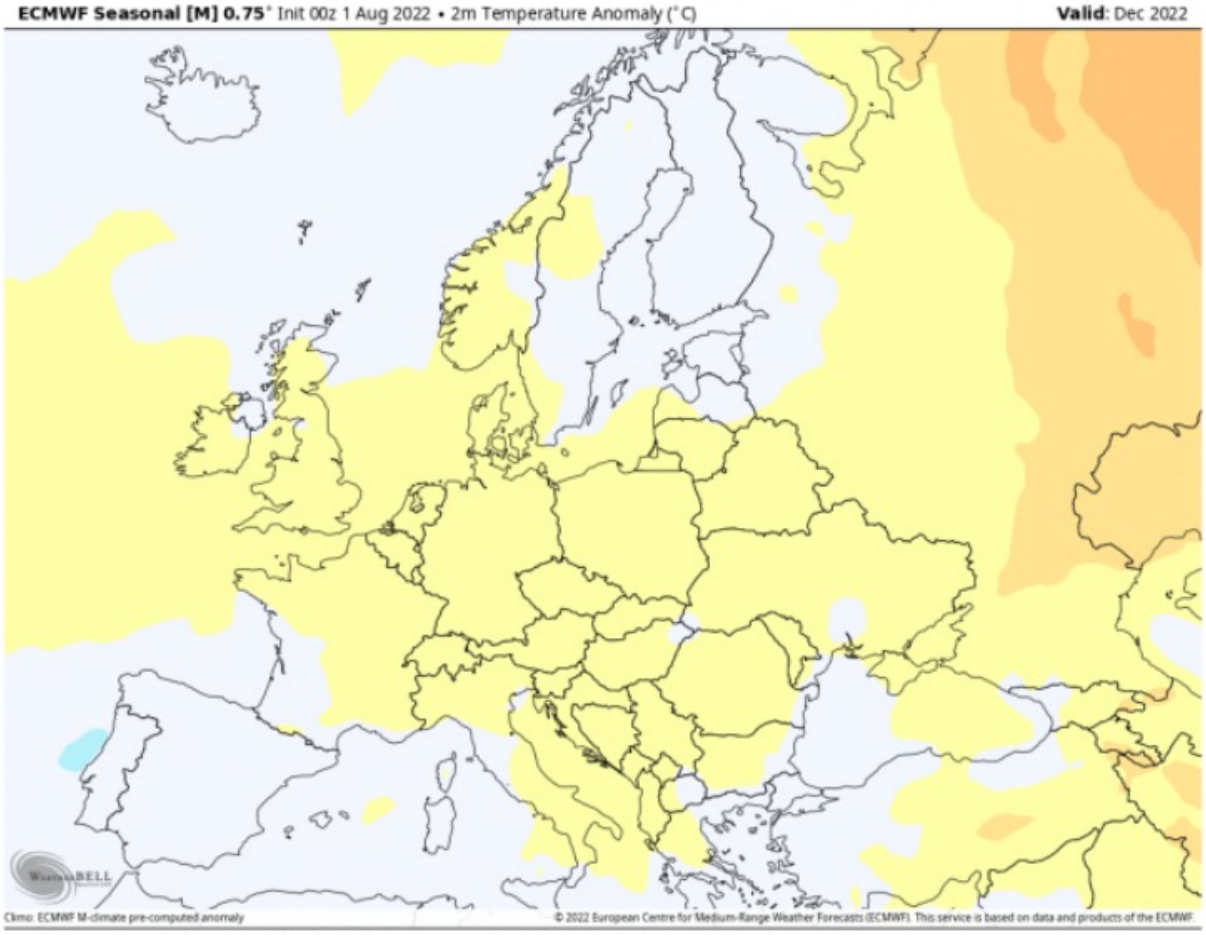


It then went back to what the last 5 Decembers have averaged …

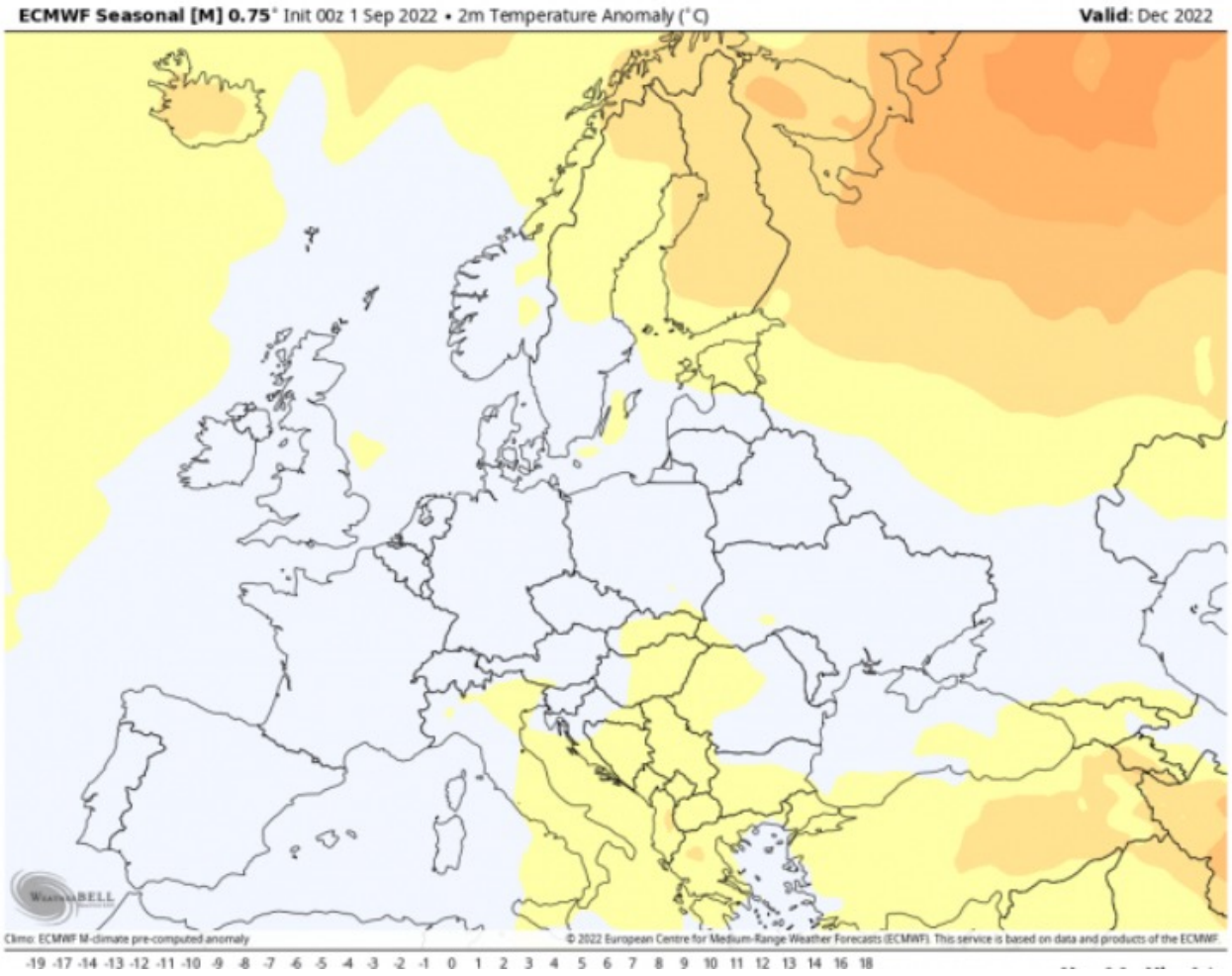


It makes little sense

It flipped the opposite in Europe (teleconnects to the U.S.)



New run


ECMWF Seasonal [M] 0.75° Init 00z 1 Sep 2022 • 2m Temperature Anomaly (°C)
Valid: Dec 2022
Clim: ECMWF M-climate pre-computed anomaly
© 2022 European Centre for Medium-Range Weather Forecasts (ECMWF). This service is based on data and products of the ECMWF
-19 -17 -14 -13 -12 -11 -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 16 18

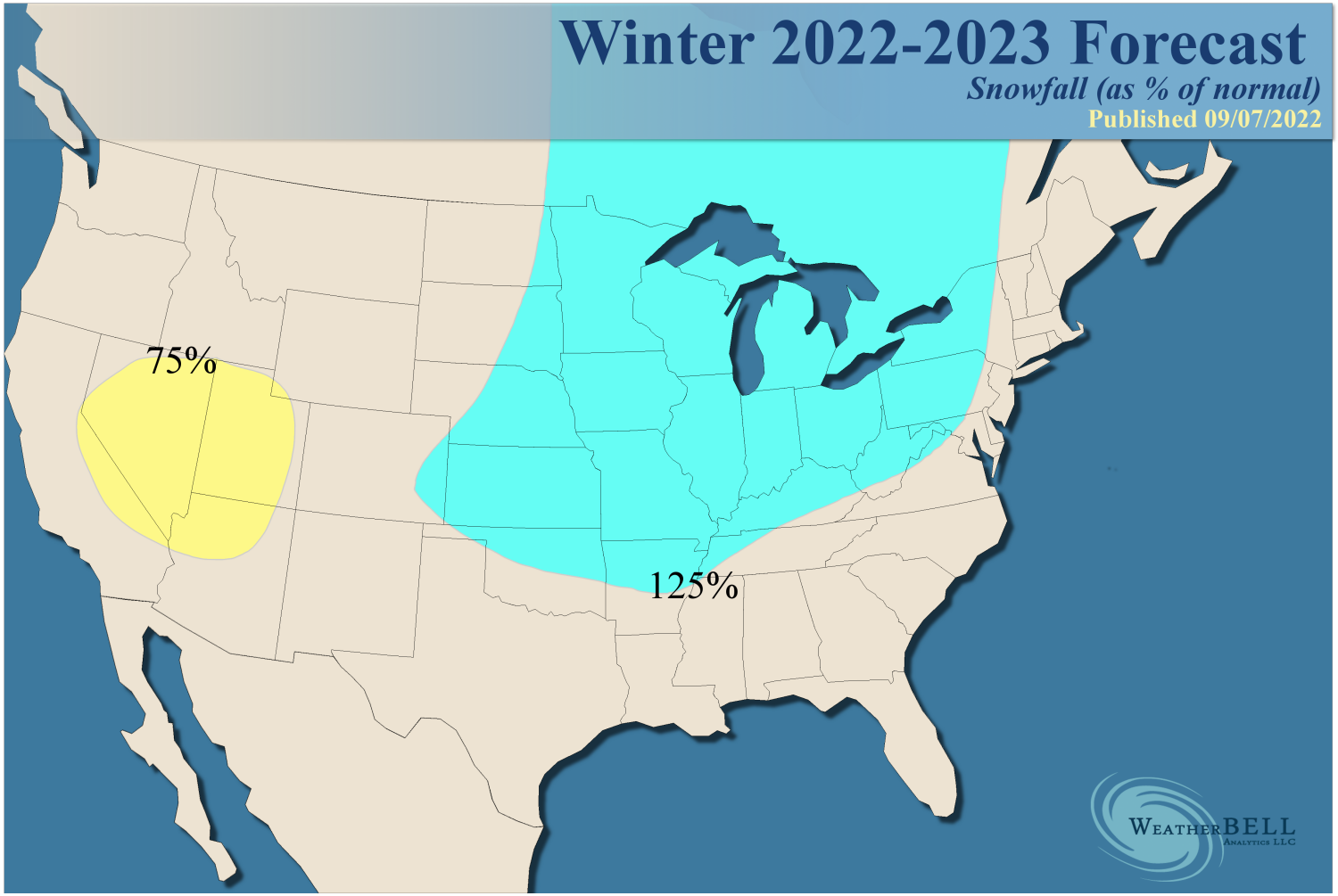
So here is the test

- 1. Widespread warm October
- 2. Wet over the Southeast
- 3. Hurricane hit

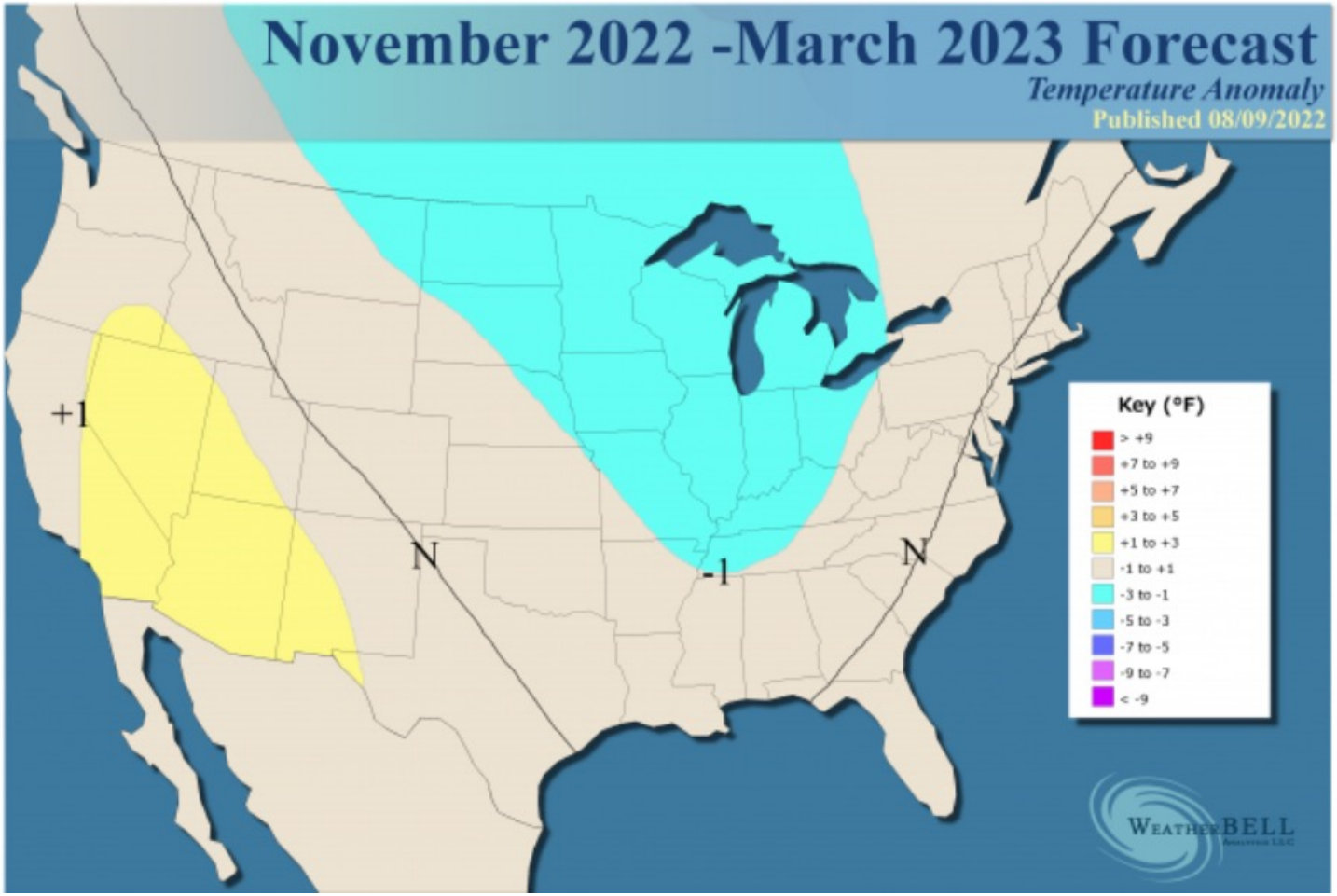
Realtime testing to see if I am a Moron

You Gotta be a Moron, a complete moron to want to be a fighter (Rocky Balboa)
Weather:. You gotta be a moron, a complete moron to forecast a cold December. Yet..

Snowfall


Winter 2022-2023 Forecast
Snowfall (as % of normal)
Published 09/07/2022
75%
125%
WeatherBELL
Analytics LLC

You've been a good audience so here is the forecast



HDDs

November-March USA Gas-Weighted HDDs	
Gas-Weighted HDDs	3981
Change from last forecast	N/A
Forecast Range	3642-4320
1991-2020	3874
2012/13-2021/22	3826
2021/22	3743

Questions