

2020 June Outlook

For Northern & Central New Mexico



Albuquerque
WEATHER FORECAST OFFICE

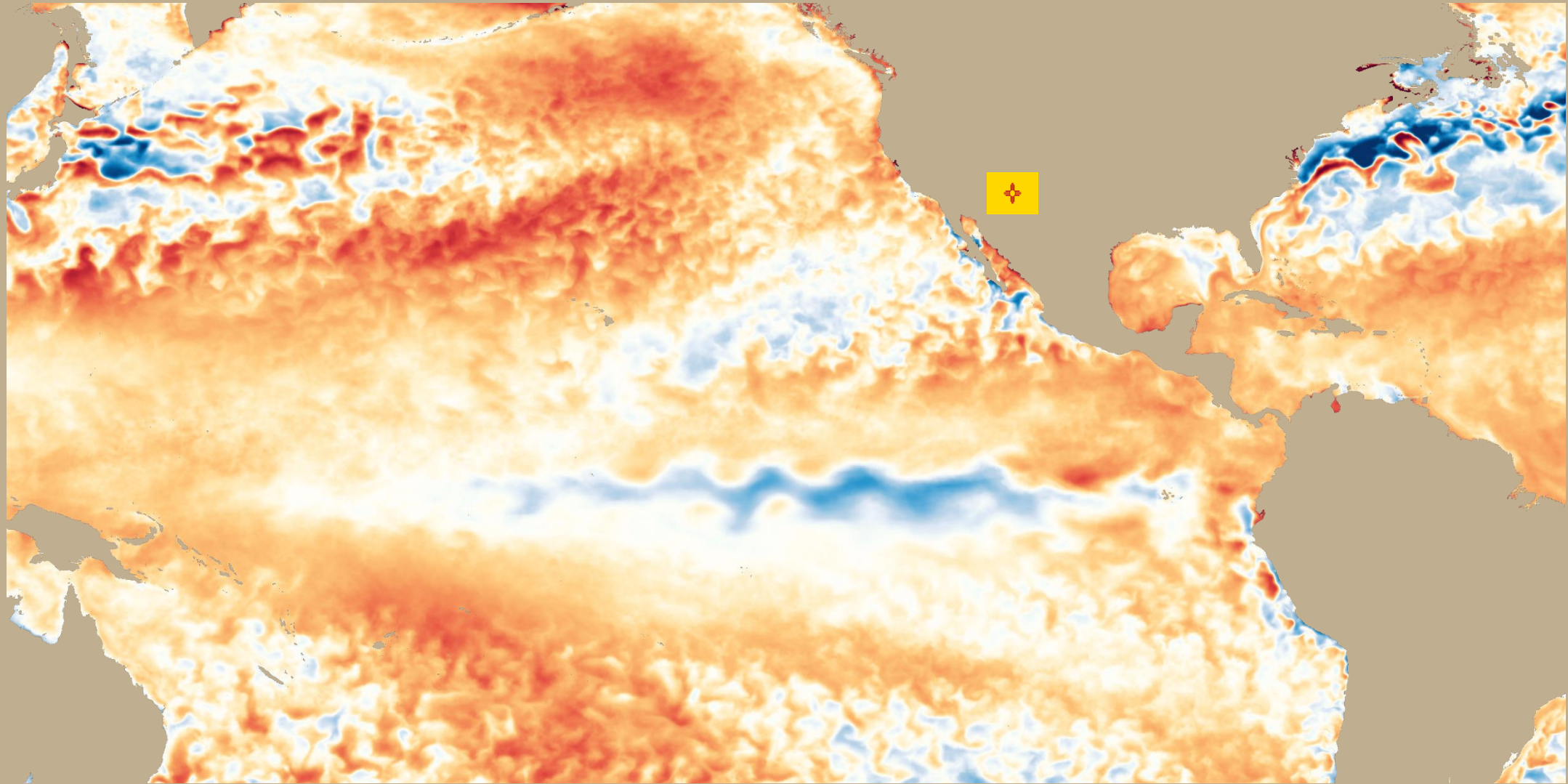


Figure 1. The Pacific Ocean is cooling at the surface and beneath the ocean surface. Is La Niña coming? How might this impact precipitation and temperature in northern and central New Mexico in June?

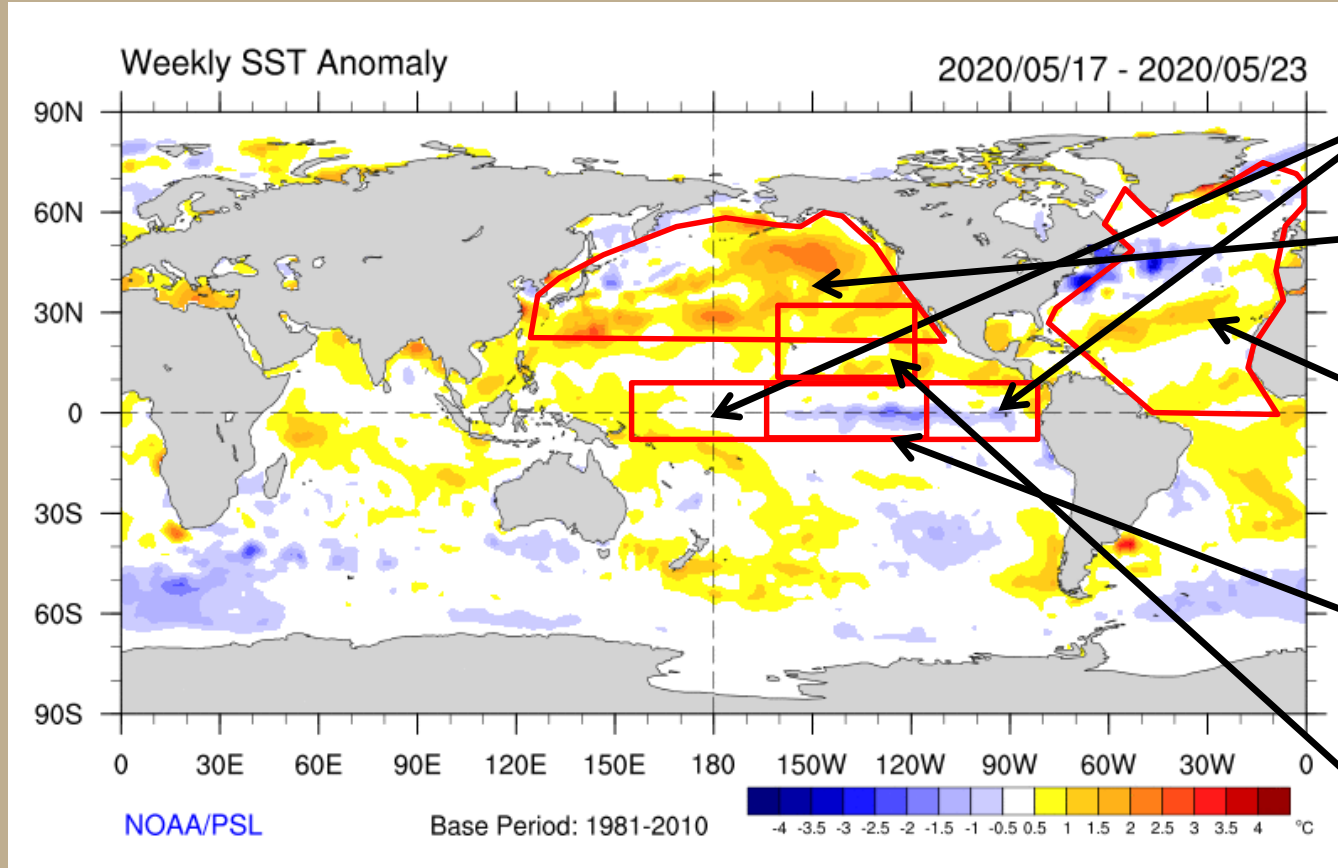
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*SST gradients are what drive tropical & sub-tropical thunderstorms. It's these thunderstorms that drive the jet stream and global weather patterns.



- Multivariate ENSO Index (MEI) for MAR-APR 2020: **-0.1**
- Pacific Decadal Oscillation (PDO) for APR 2020: **-0.57**
- Atlantic Multidecadal Oscillation (AMO) for APR 2020: **+0.36**
- Oceanic Niño Index (ONI) (uses **Niño 3.4 region** - inner rectangle) for FMA 2020: **+0.5**
- Pacific Meridional Mode (PMM) for MAR 2020: **-0.53**

Figure 2. Weekly SST Anomalies in the Equatorial Pacific Ocean in May 2020 showing cooler than average surface waters in the equatorial Pacific.

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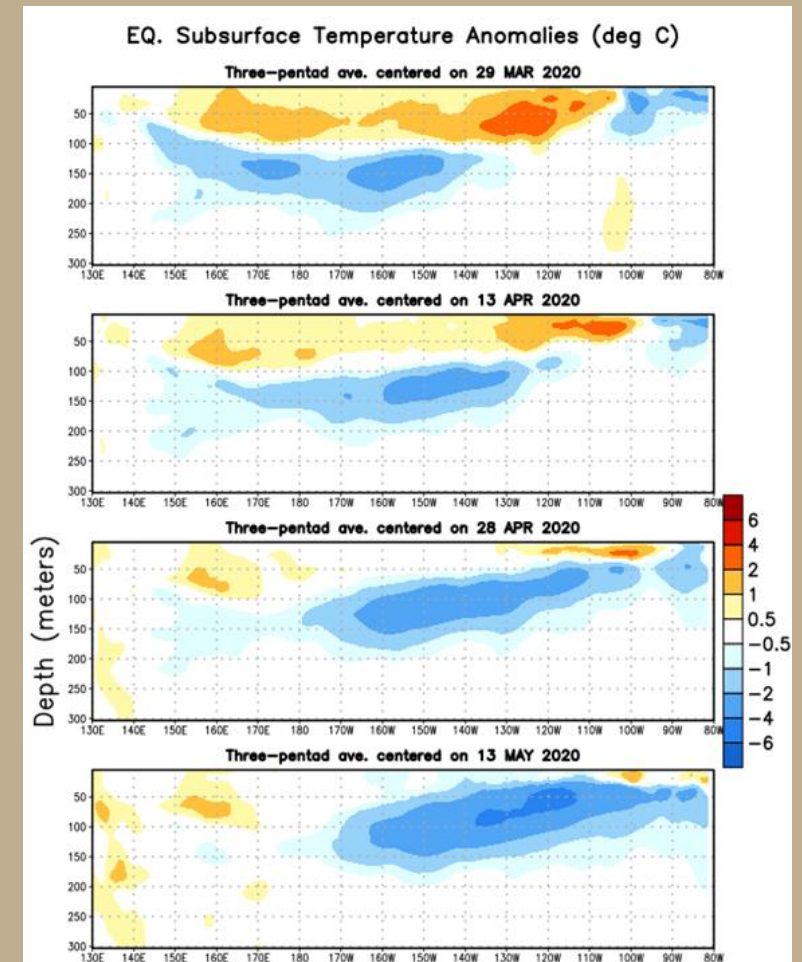
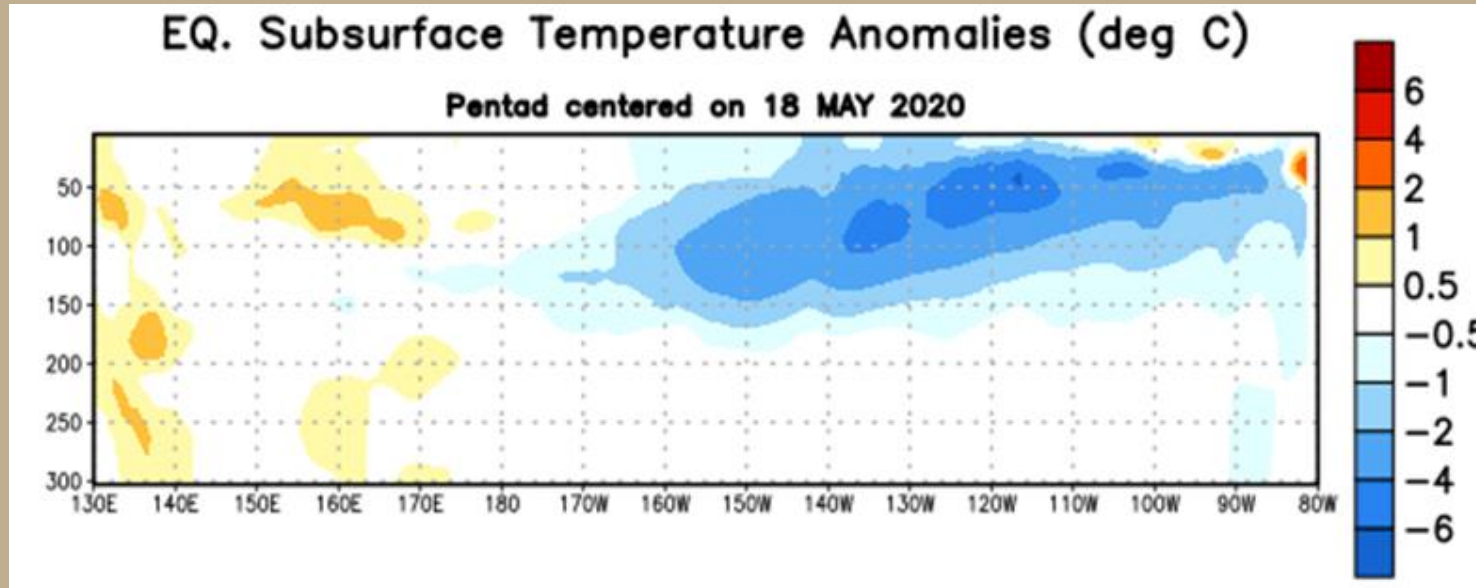


Figure 3-4 Sub-surface temperature anomalies at the equator. Sub-surface temperatures often lead the surface temperatures by several months. An increasing amount of anomalously cool water under the surface would provide some confidence to shore up the models that are forecasting a cooling Pacific in summer. Currently, sub-surface temperatures in the central and eastern Pacific continue to cool.

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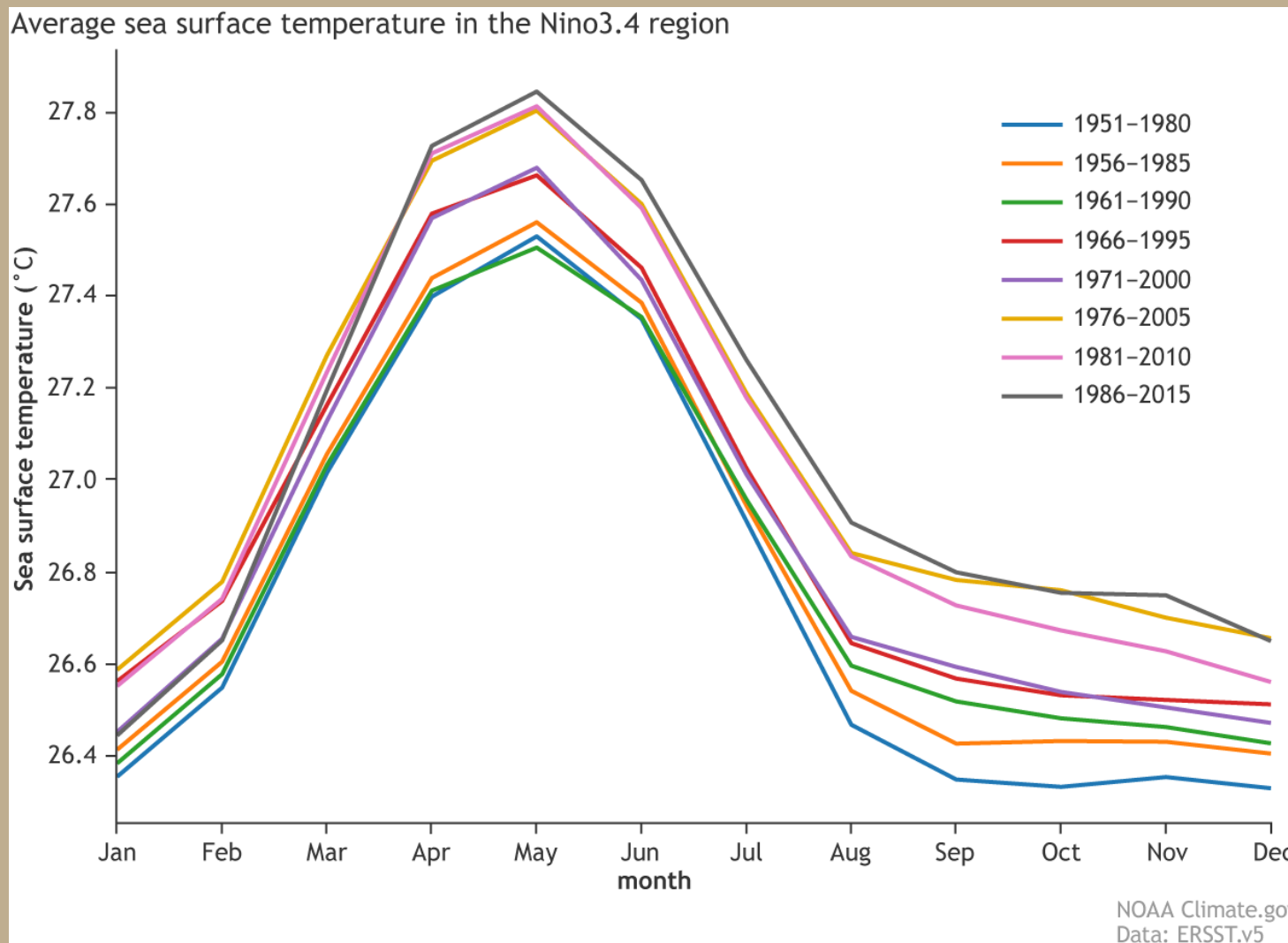
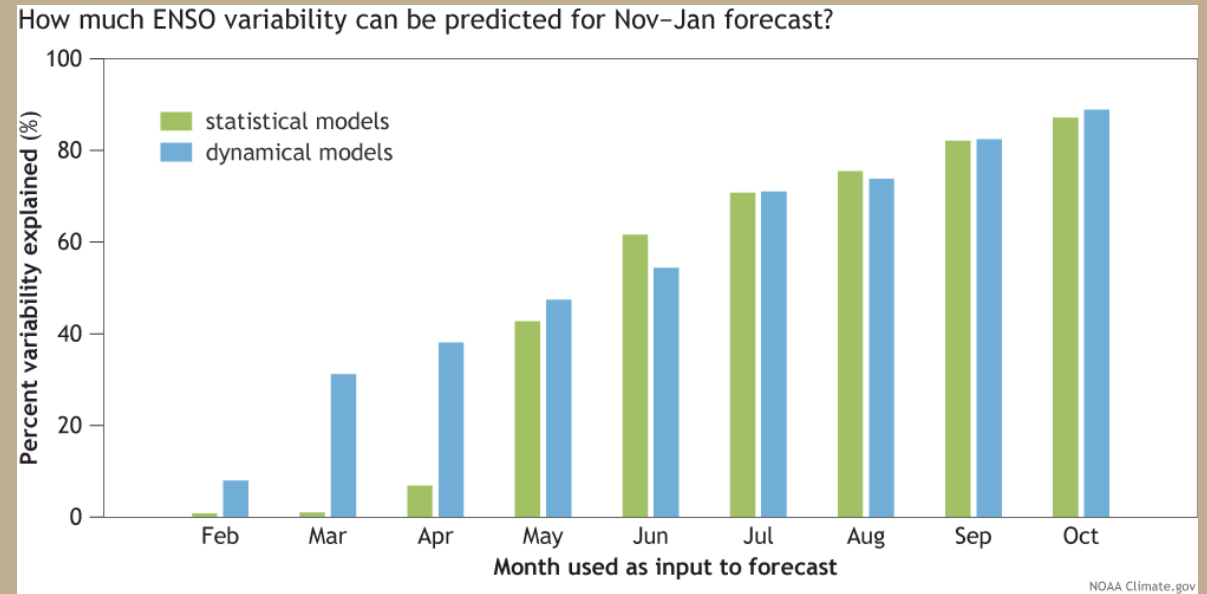
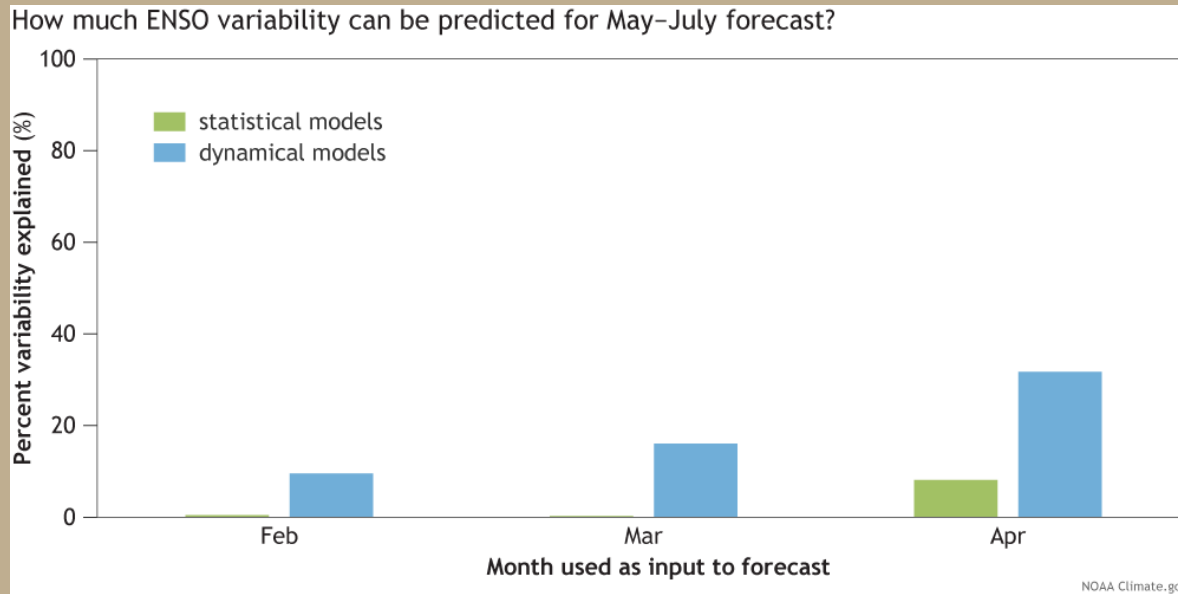


Figure 5. Average SSTs in the Nino3.4 rectangle (slide 2). What is average and is it changing thanks to climate change? Average is indeed changing. What counts as “average” is getting warmer over time.

Spring Predictability Barrier



Figures 6-7. Spring Predictability Barrier is not a physical barrier but a period when climate models have a difficult time making accurate forecasts. After spring in the Northern Hemisphere, the ability of the models to predict becomes increasingly better. This is partially why June is separated out from the remainder of summer and why we wait so long to get out a North American Monsoon (NAM) forecast. Also keep in mind that the NAM starts in July for central and northern NM.

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“Analog” Years

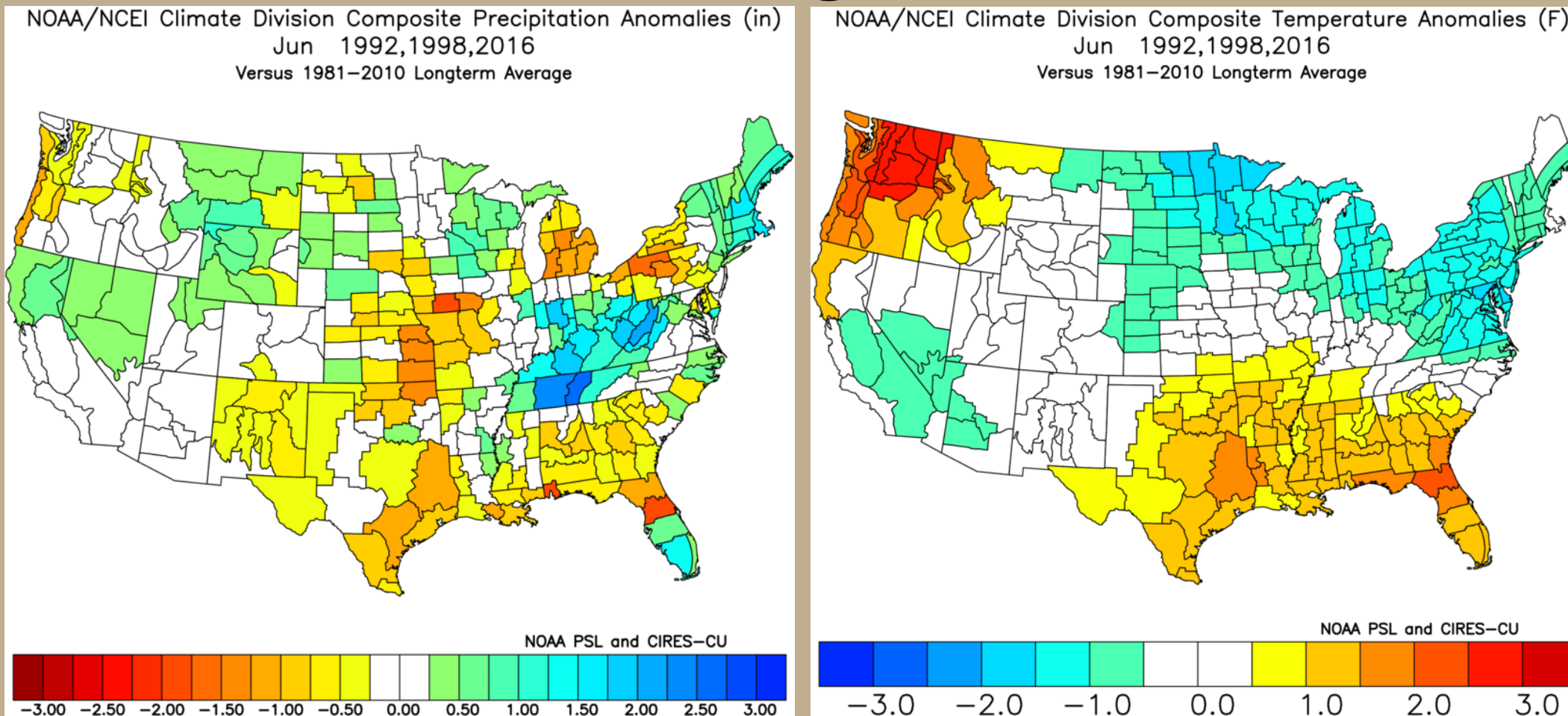


Figure 8-9. While analog years continue to show declining skill as our climate system changes, here’s a peek at the three most recent “analog”, 1992, 1998 and 2016. What does it show? Slightly drier than average for much of NM with near average temperatures.

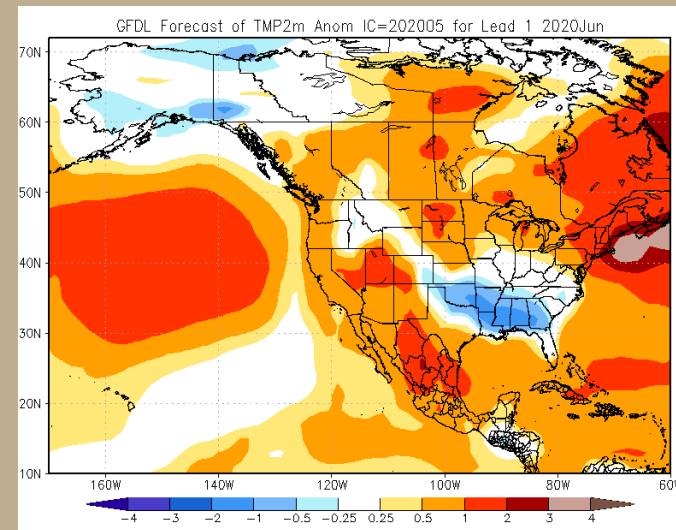
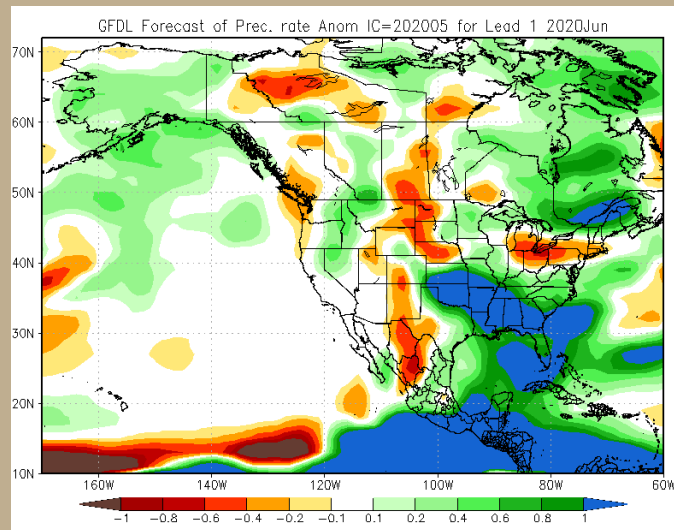
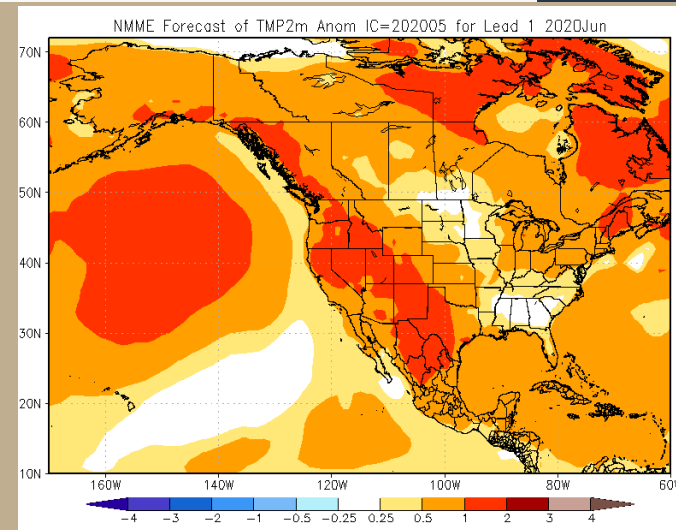
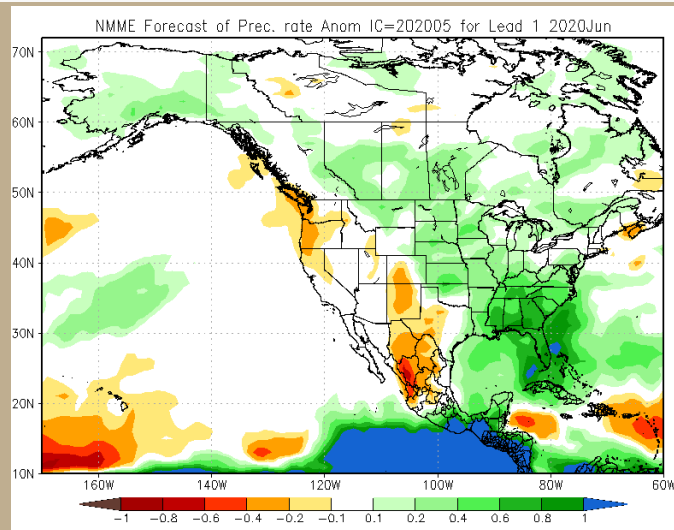
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Figures 10-13. The North American Multi-Model Ensemble (NMME) and Geophysical Fluid Dynamics Model (GFDL_CM2.1) have good skill percentages for precipitation over New Mexico in June and are forecasting below average amounts for much of the state. Both models also have good skill regarding temperature and are forecasting above average temperature for June 2020.

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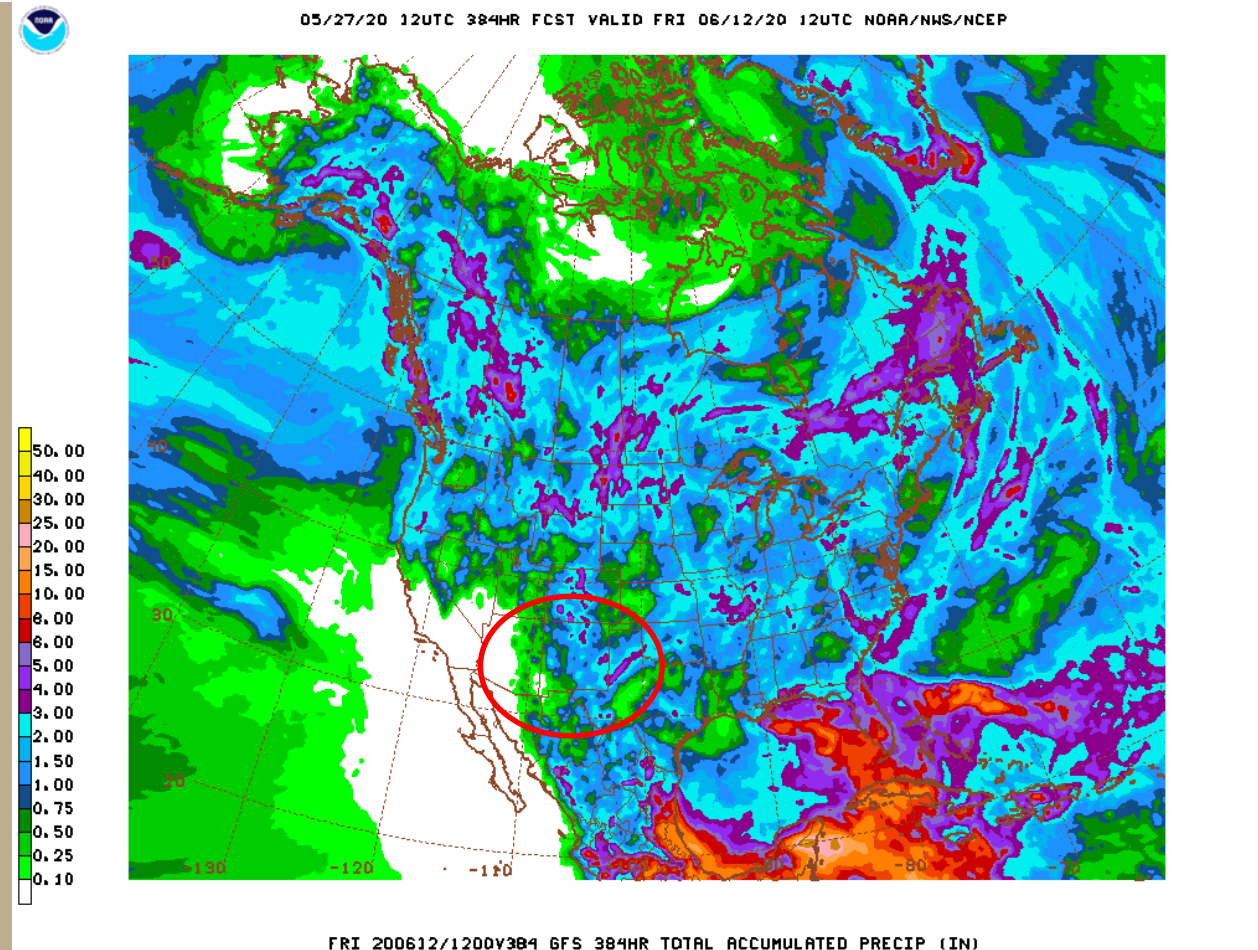


Figure 16. Precipitation forecast from the Global Forecast System (GFS) model from 12Z May 27, 2020 through June 12, 2020. This climate “outlook” is different in that June is just around the corner and the Global Forecast System (GFS) and its ensemble members have been very consistent from run to run over the past week. What does that mean? It gives forecasters confidence in its forecasts. It doesn’t take much for much of NM to get to above average precipitation amounts in June (ABQ’s June Avg = 0.61”, Santa Fe (2) = 1.12”, Farmington = 0.39”, Socorro = 0.57”, Chama = 0.91”, Eagle Nest = 1.18”, and Wolf Canyon in the Jemez Mountains = 1.14”).

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- Forecasts from the GFS and Global Ensemble Forecast System (GEFS) for June 2020 in New Mexico indicate that precipitation in central and northern New Mexico during June will most likely range from near average to slightly above 1981-2010 climatological averages.
- Temperature forecasts from the two most highly skilled climate models along with the GFS and GEFS for June 2020 in New Mexico indicate that temperatures in central and northern New Mexico will mostly likely be slightly above to above average.
- 2020 North American Monsoon (NAM) Outlook will be released during the second week of June once the June climate models runs are available.



- **Outlook provided by National Weather Service Forecast Office Albuquerque, NM.**
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