WMO VLab Regional Focus Group
of the Americas and Caribbean

Since 2004

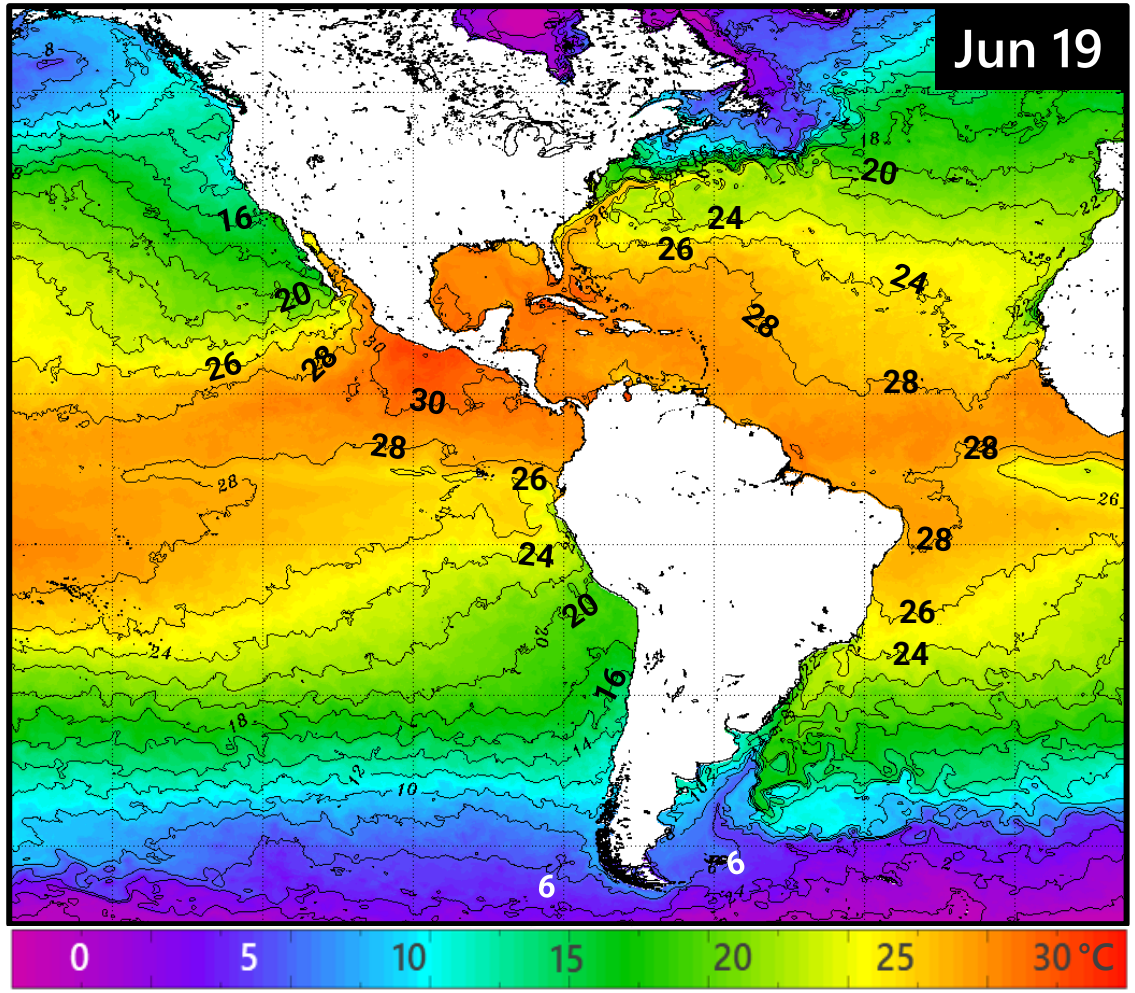
Climate Indices

Current Status and Projections

Wednesday 21 June 2023

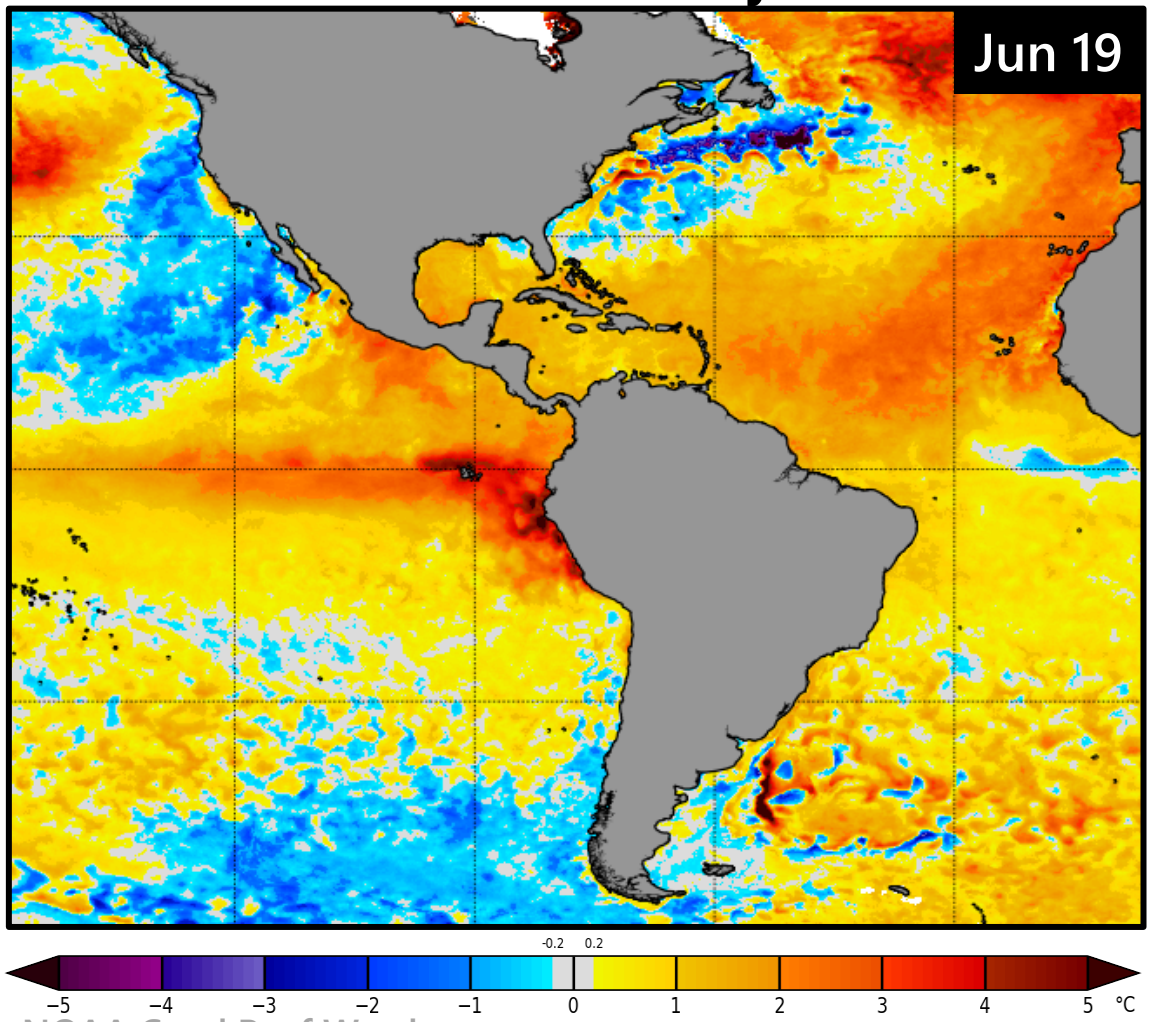
Sea Surface Temperature (SST)

SST



NOAA OSPO
https://www.ospo.noaa.gov/data/sst/contour/global_small.c.gif

SST Anomaly

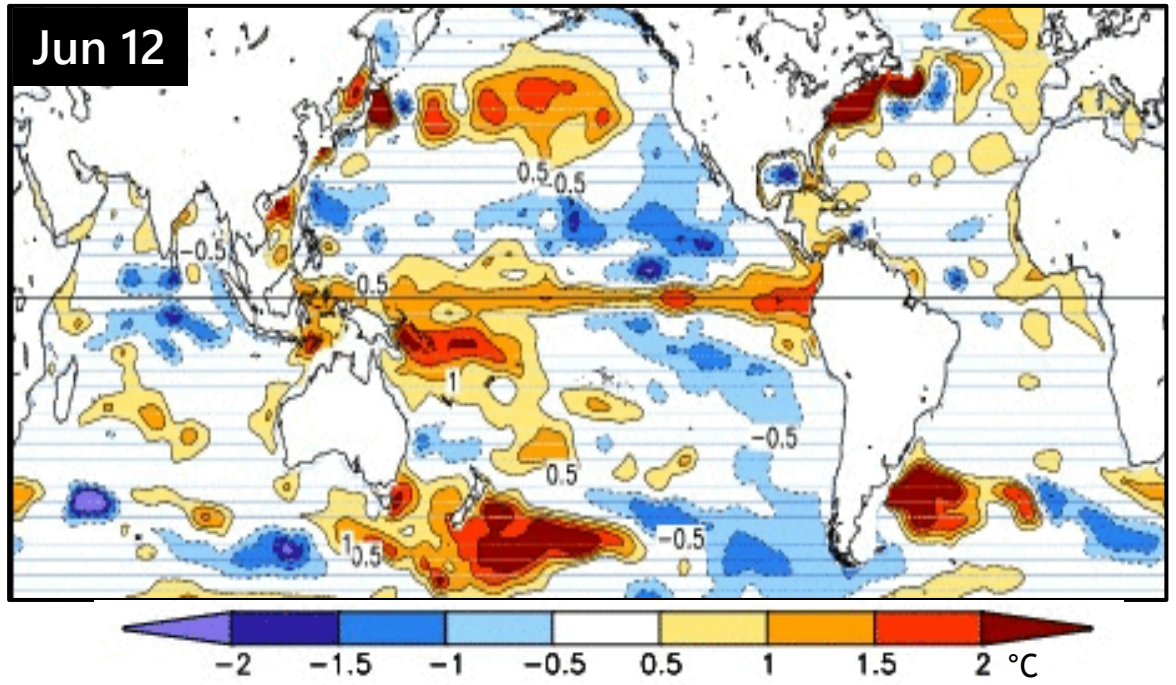


NOAA Coral Reef Watch
https://coralreefwatch.noaa.gov/product/5km/index_5km_ssta.php

Top Layer Temperature Anomaly

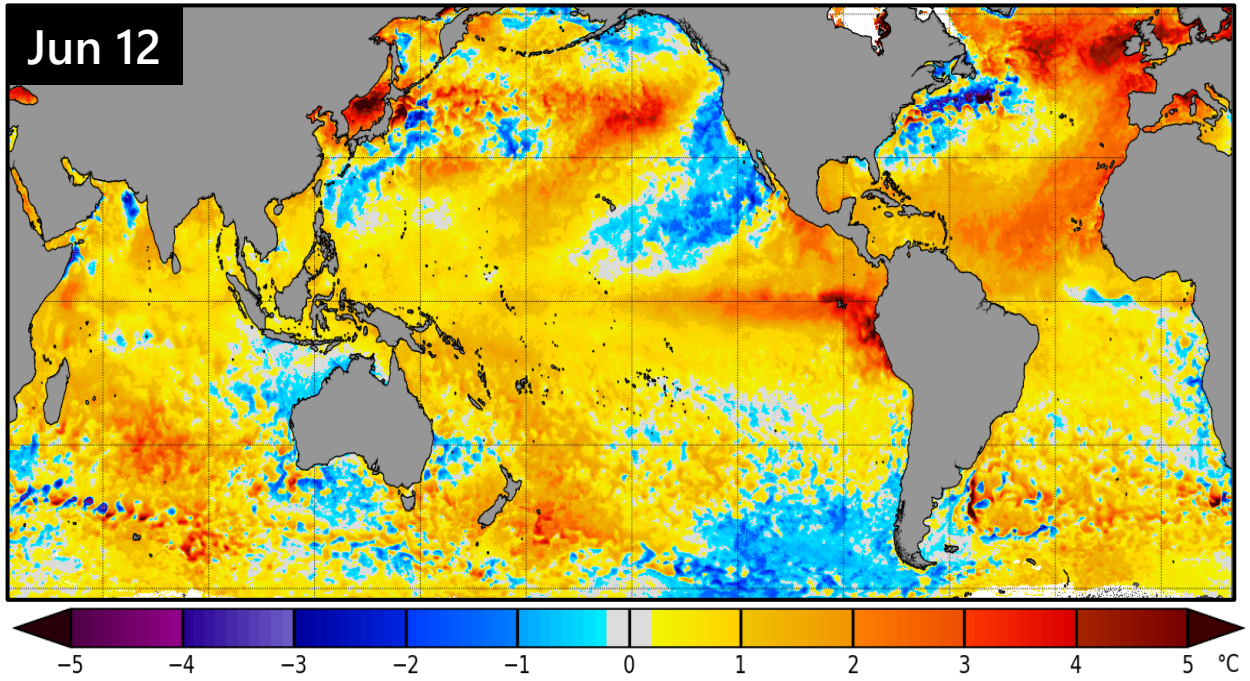
Anomalies in a layer take longer to dissipate than superficial ones, and can last for weeks.

Top 300m-Layer Anomaly



NOAA CPC
Source: CPC GODAS, https://www.cpc.ncep.noaa.gov/products/GODAS/

Surface Anomaly



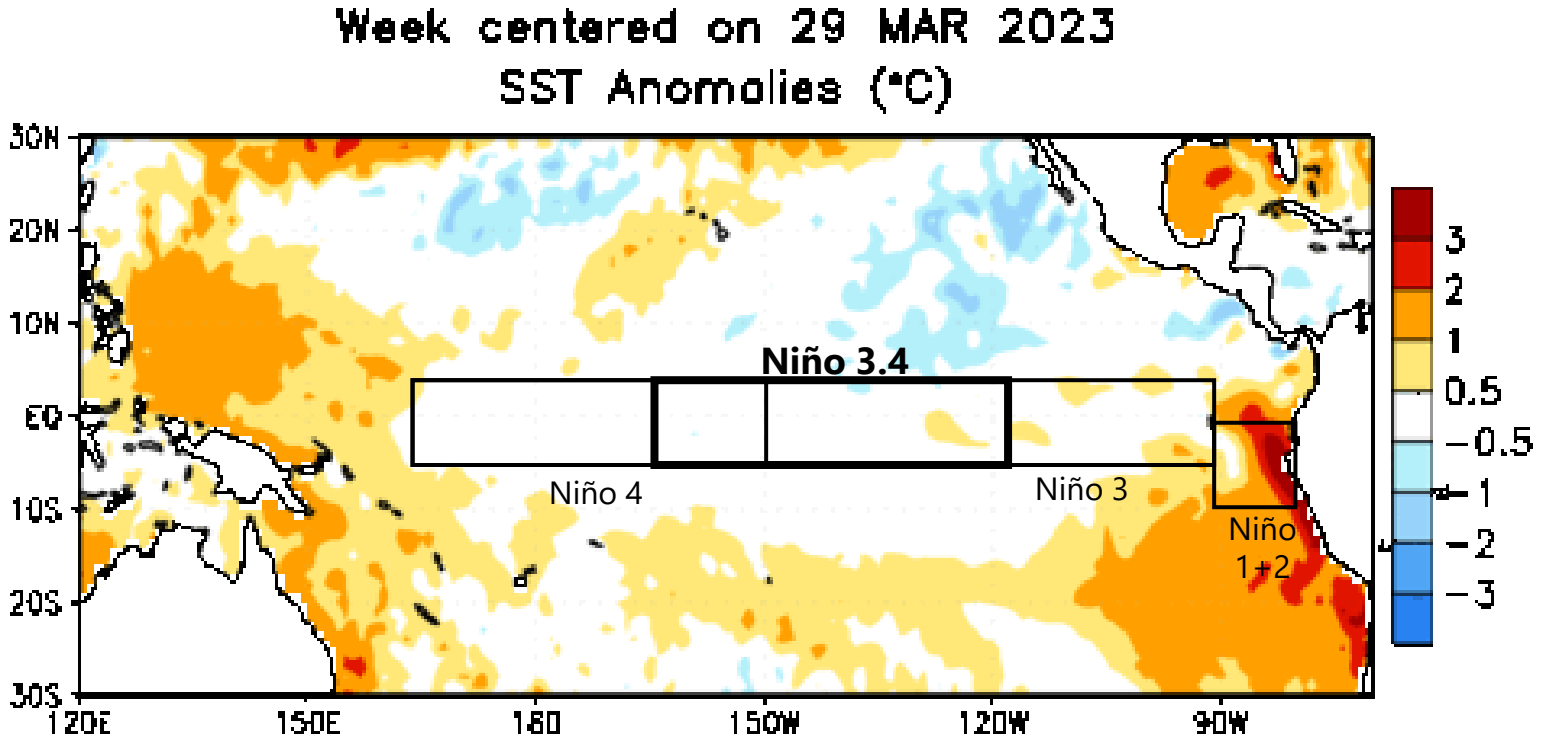
NOAA Coral Reef Watch
https://coralreefwatch.noaa.gov/product/5km/index_5km_ssta.php

El Niño-Southern Oscillation (ENSO)

CPC Official Statement

Status: El Niño Advisory

- El Niño conditions are observed.*
- Equatorial sea surface temperatures (SSTs) are above average across the east-central and eastern Pacific Ocean.
- The tropical Pacific atmospheric anomalies are consistent with weak El Niño conditions.

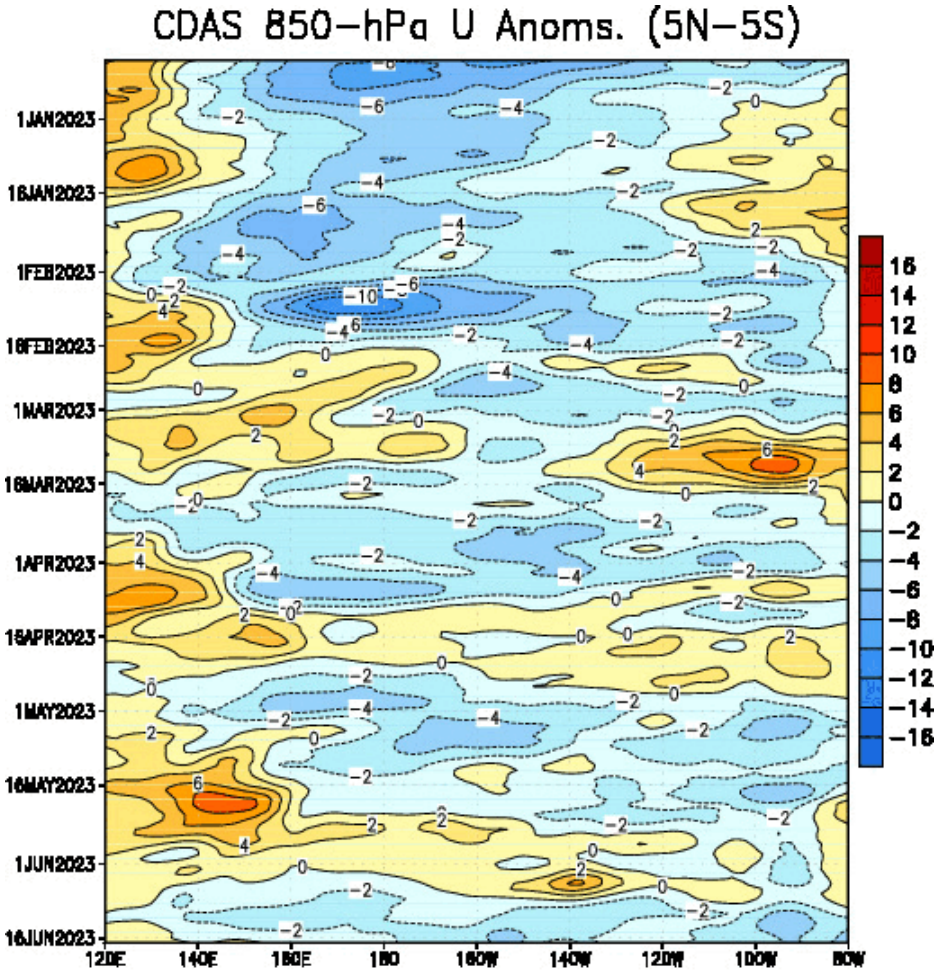


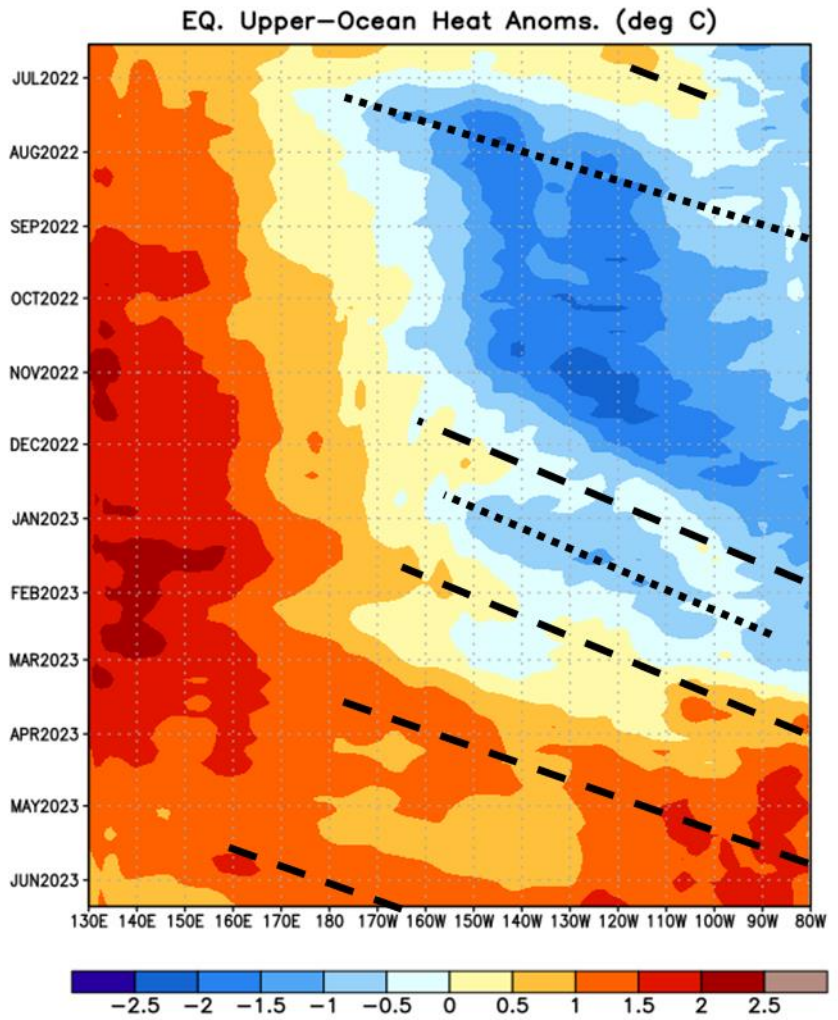
TAKEAWAYS

- **EPAC warming is spreading west.**
- **Niño 3.4 has now T anomalies between +0.5 and +1.5°C.**
- **The warming in the SAM coast is neither increasing nor decreasing in strength.**

Hovmöller of Zonal Wind & Heat Content Anomalies

Westerly wind bursts can trigger warm Kelvin Waves that propagate towards South America.

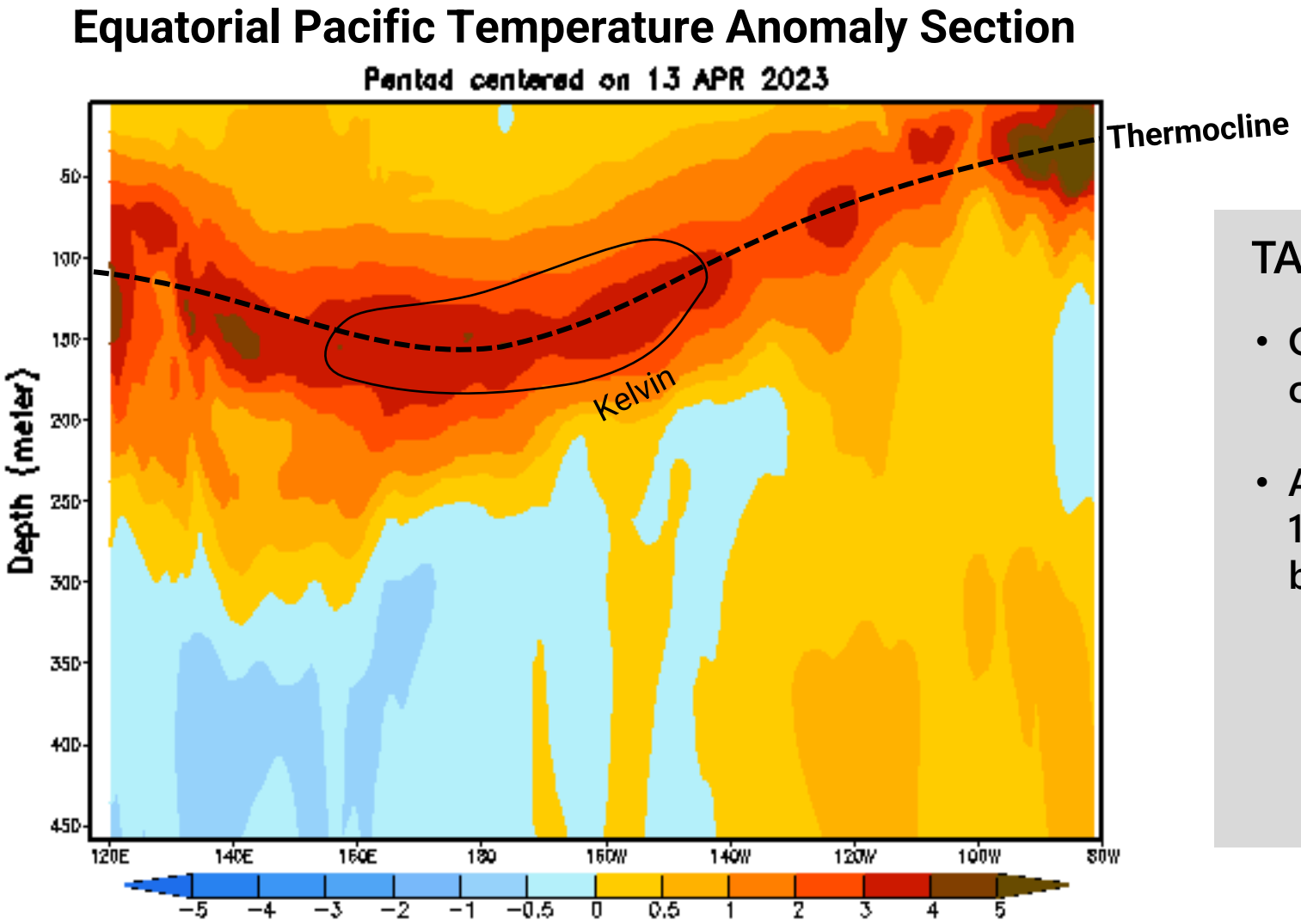




TAKEAWAYS

- Downwelling (warm) Kelvin propagating near 165W.
- To arrive in South America in 1.5 months or near early August, reinforcing surface warming.

ENSO: Oceanic Kelvin Waves



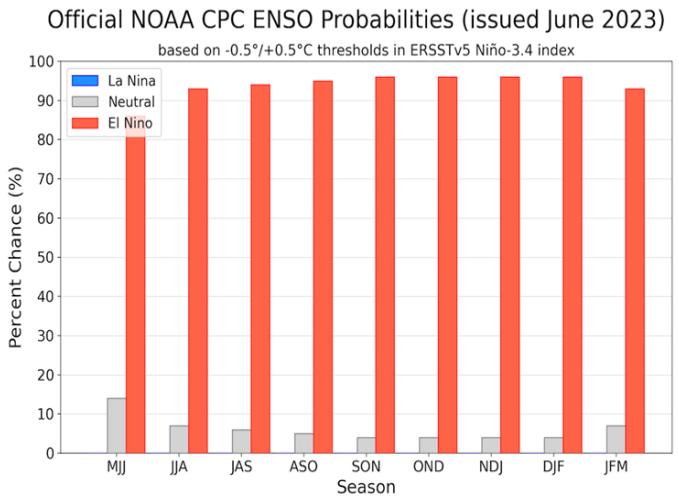
TAKEAWAYS

- Generalized sub-superficial warming of the equatorial Pacific.
- A warm Kelvin is propagating near 165W. No warm Kelvins are trailing behind at the moment.

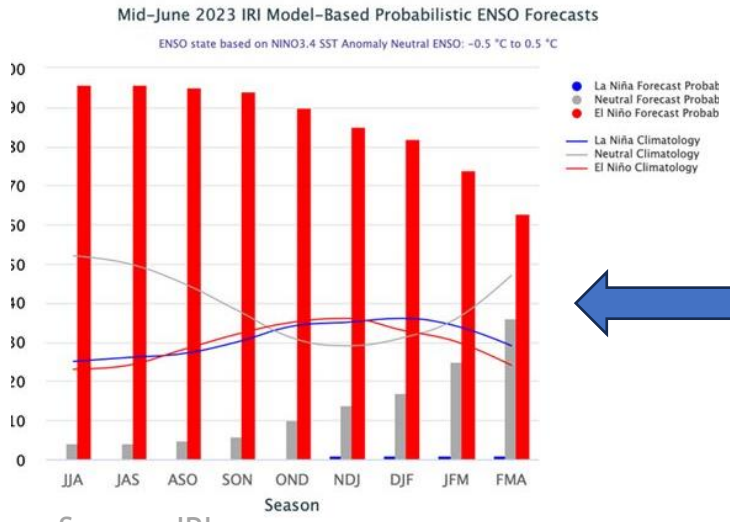
ENSO Outlook

El Niño conditions are expected to gradually strengthen into the Northern Hemisphere winter 2023-24.*

Probabilistic Forecast

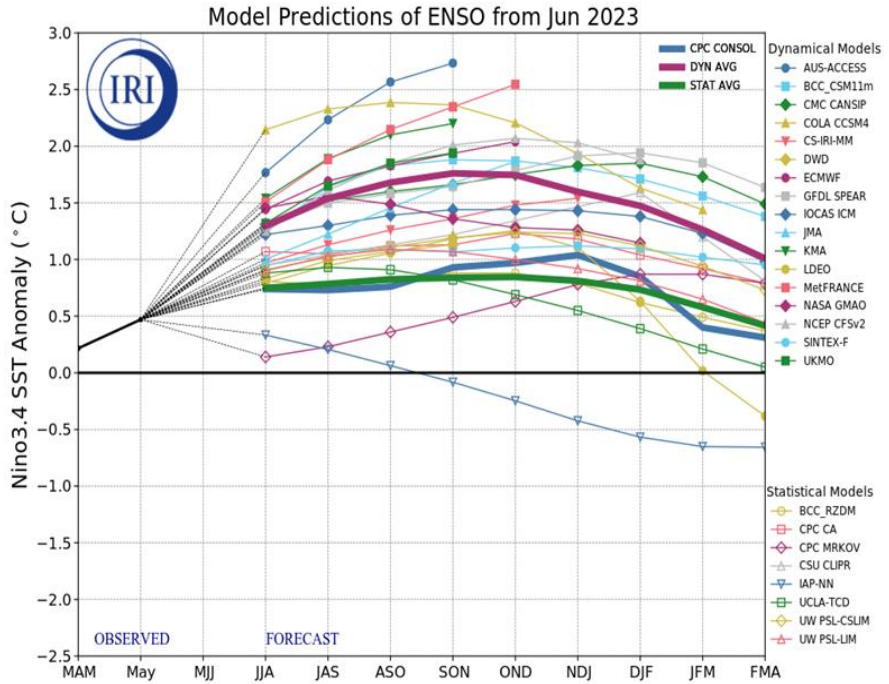


Source: CPC



Source: IRI

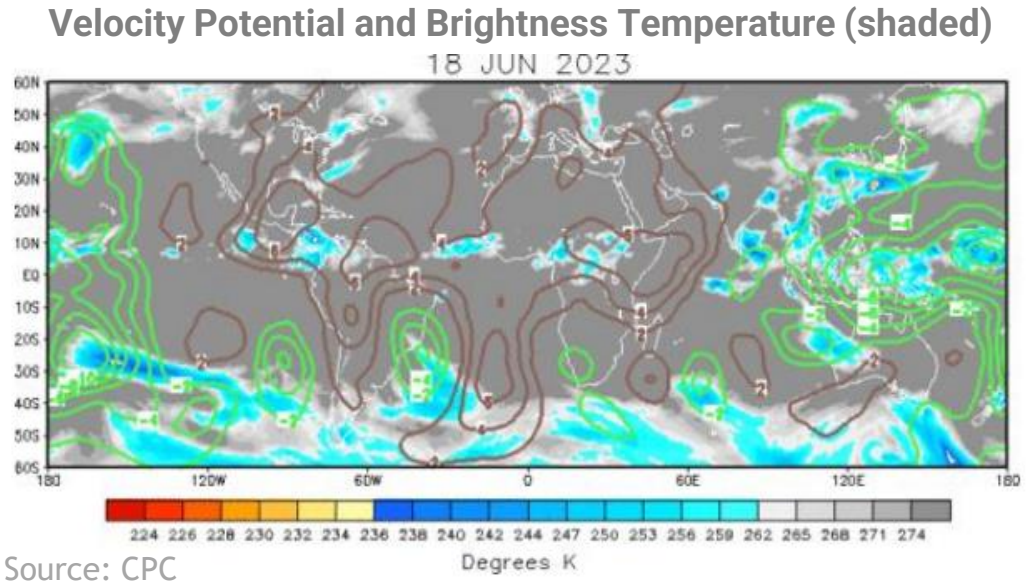
IRI/CPC Dynamic Models



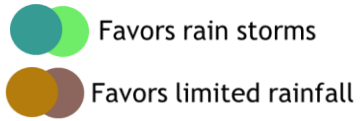
Madden-Julian Oscillation (MJO)

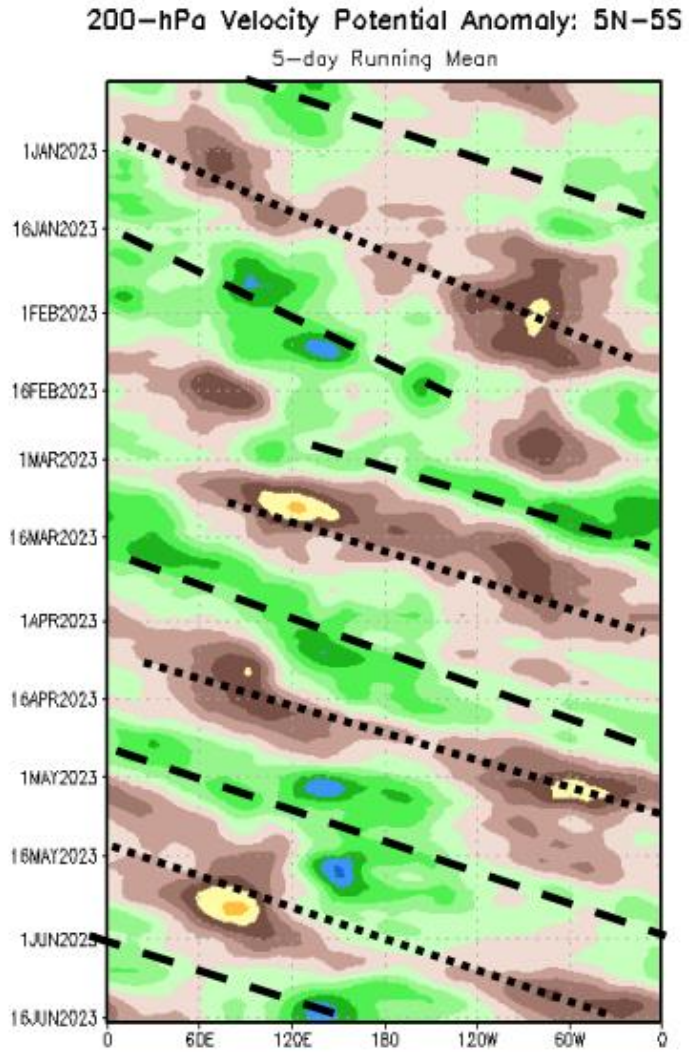
Current Observations:

- Propagation slower and not as well defined as in previous months.
- Positive interference with ENSO, enhancing convection west of the dateline.
- Extrapolating propagation, next wet MJO in early to mid July.



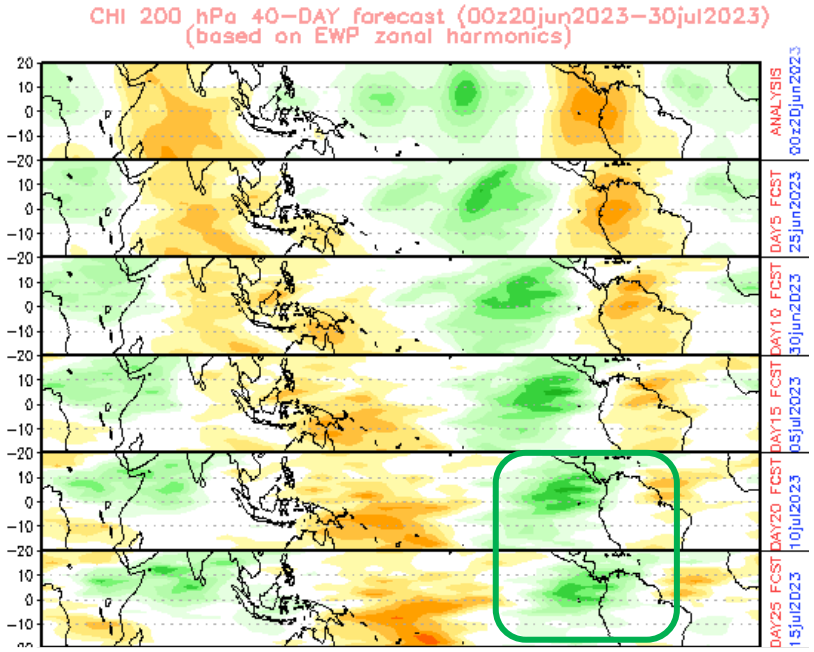
Source: CPC



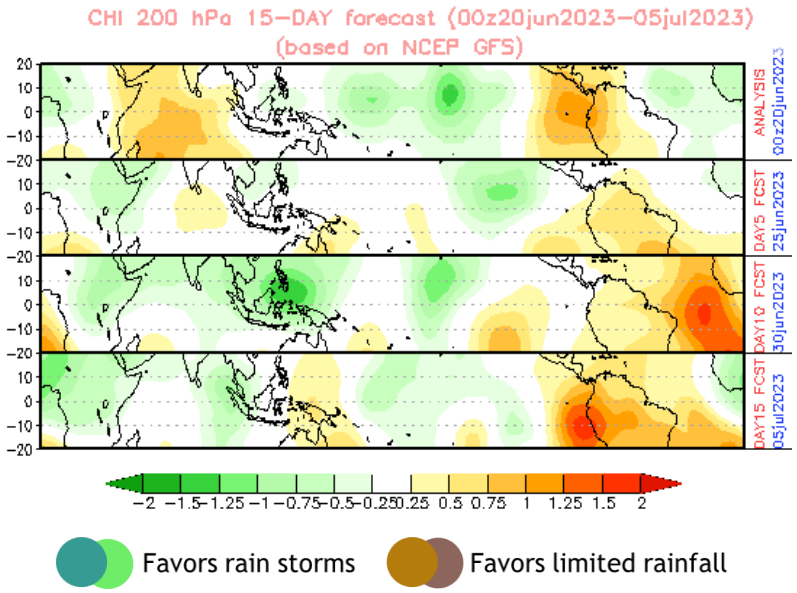


MJO Forecasts

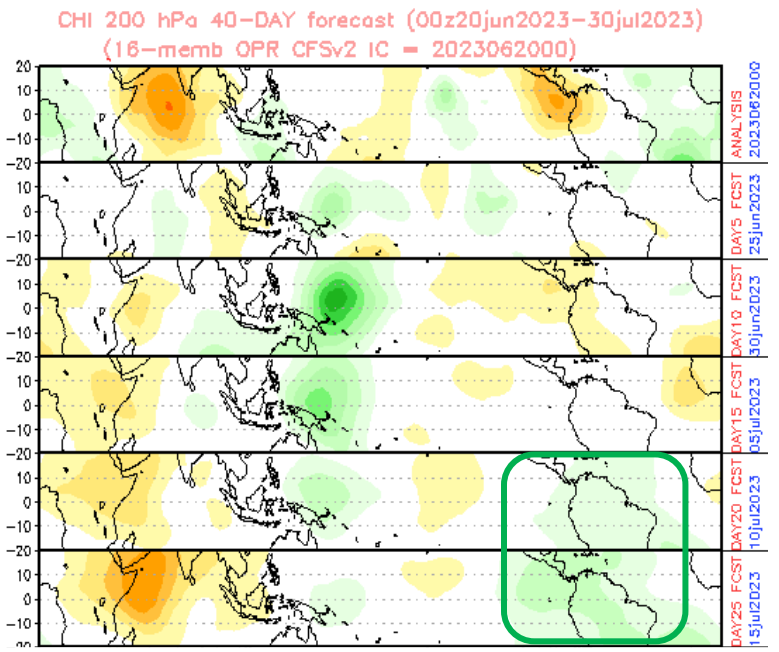
Empirical Wave Propagation (EWP)



Global Forecast System (GFS)



Climate forecast System (CFS)



Source: CPC

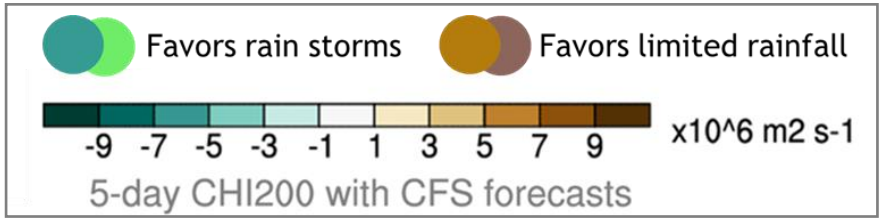
TAKEAWAYS

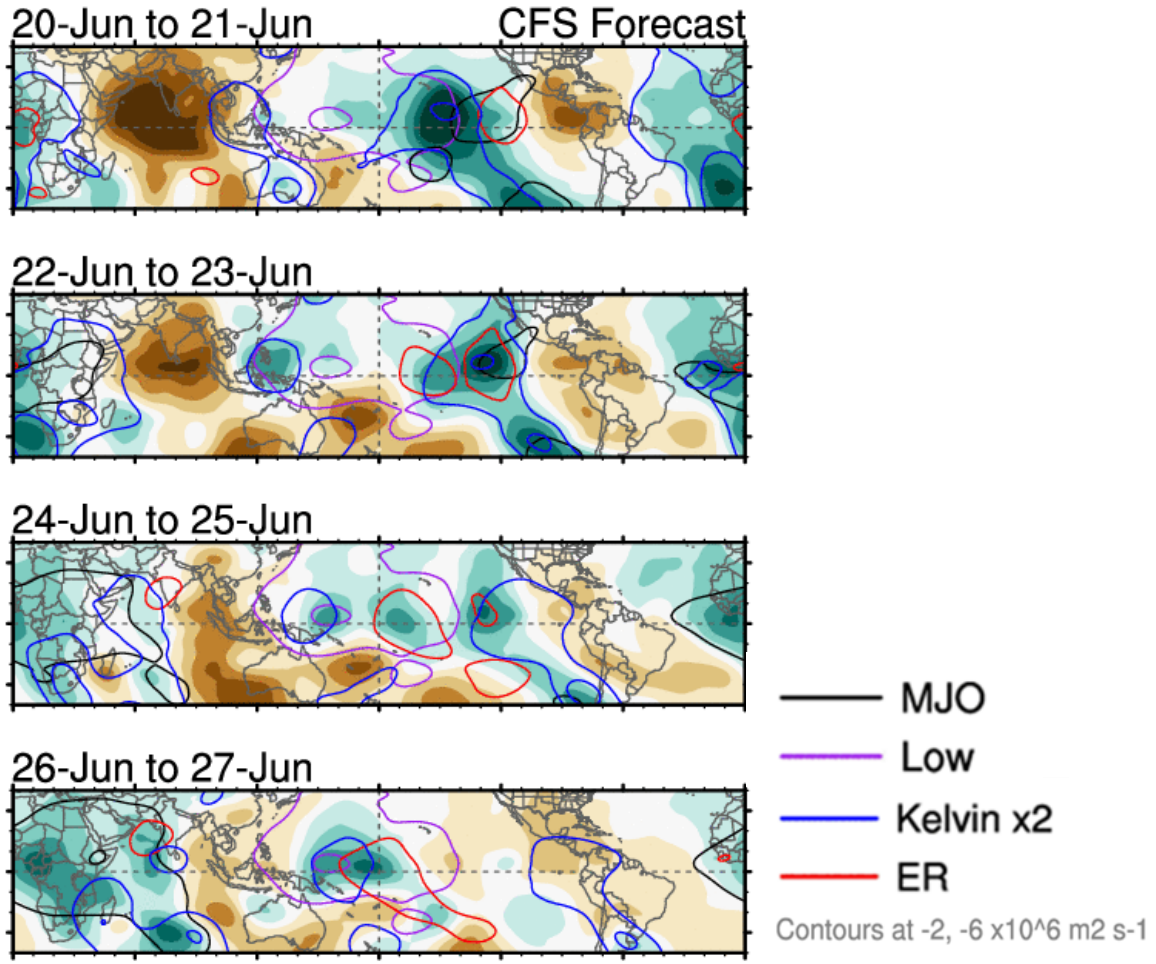
- **MJO slower and discrepancies in models.**
- **Wet likely during the first half of July.**

MJO and Upper Tropospheric Waves

Outlook for the next few days:

- Wet Kelvin arriving in Central America, but coinciding with large scale upper convergent patern = limited impacts.
- Eastward propagating upper divergence anomalies might help with convection in Argentina/Uruguay on June 26-28.

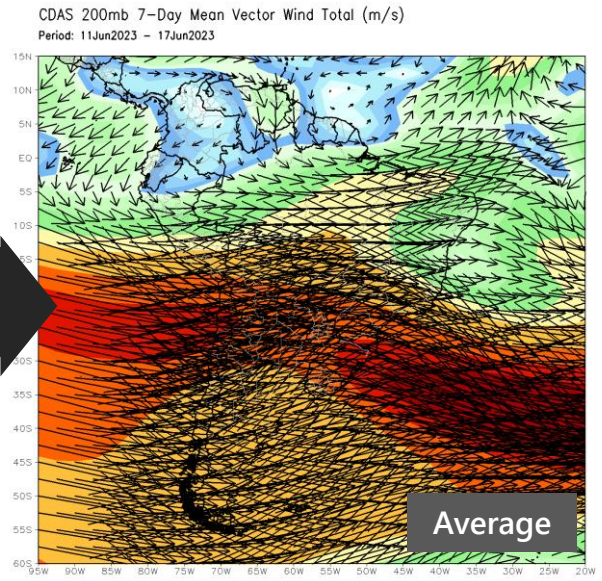


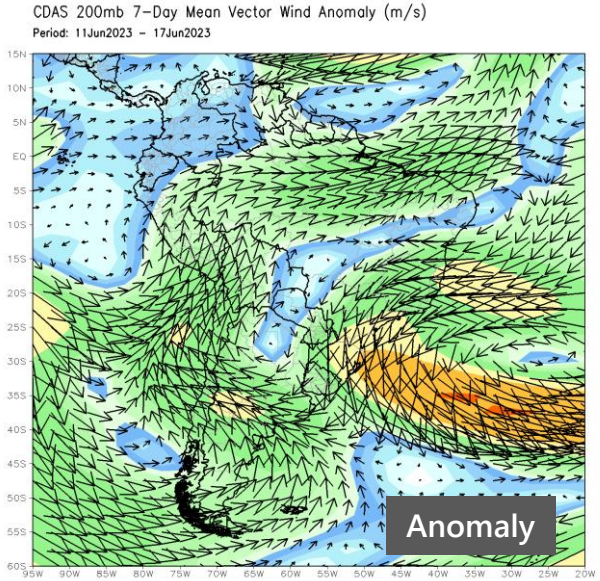


Source: NCICS

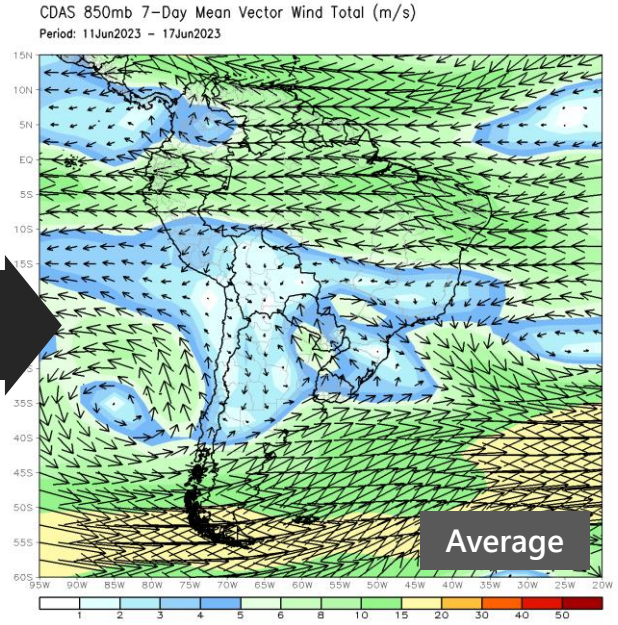
South America, Last 7 Days

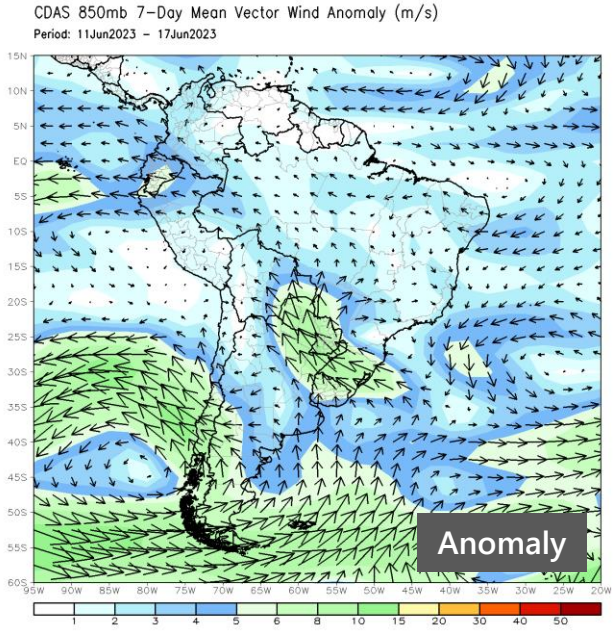
200 hPa Flow



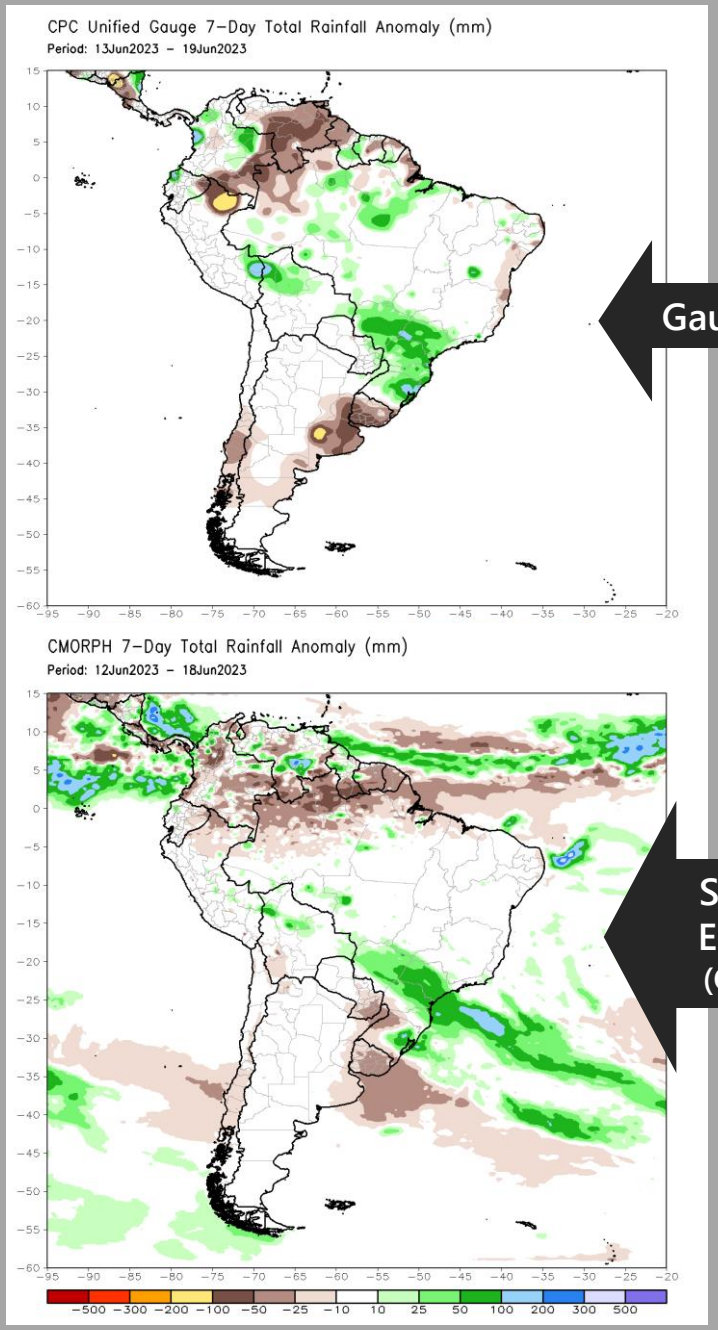


850 hPa Flow





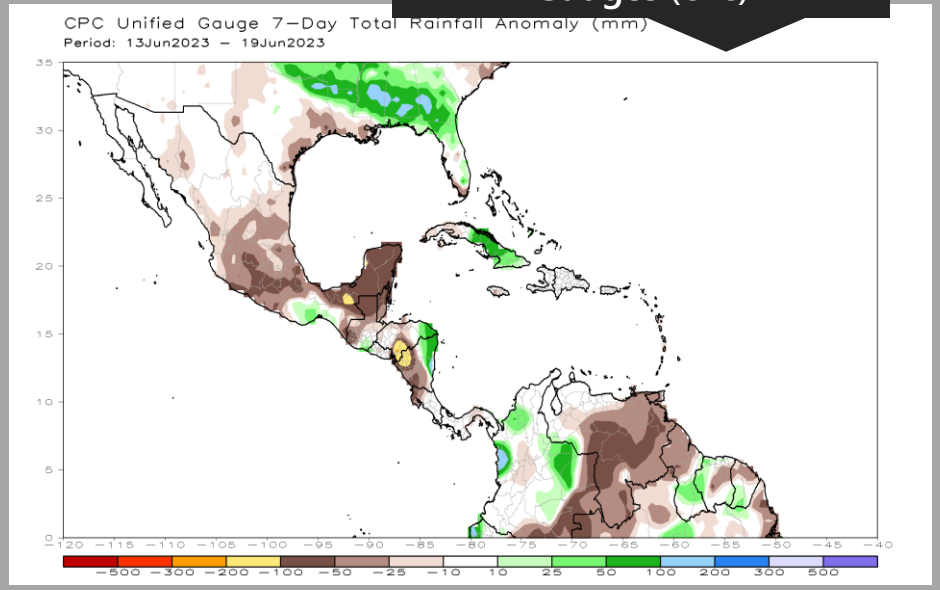
Rainfall Anomalies



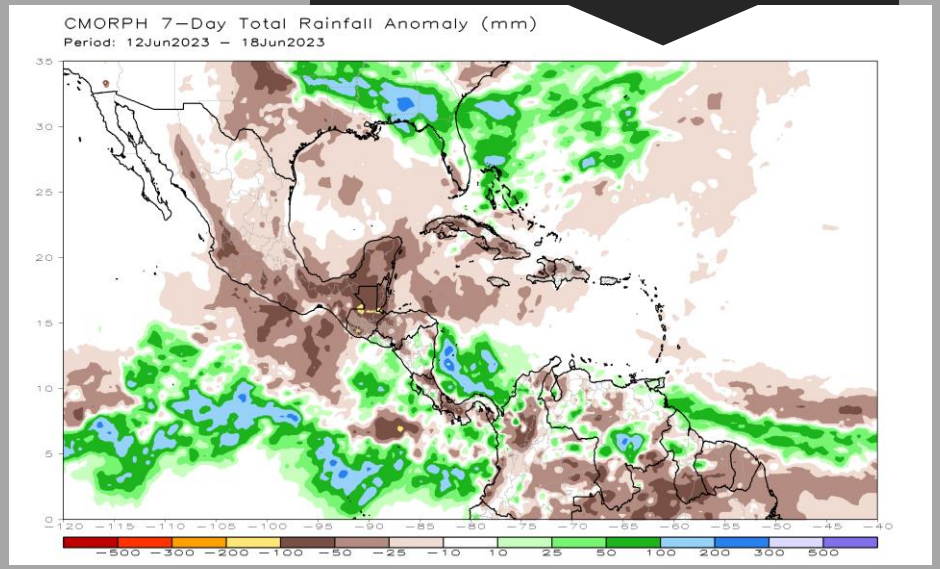
Caribbean and Central America, Last 7 Days

Rainfall Anomalies

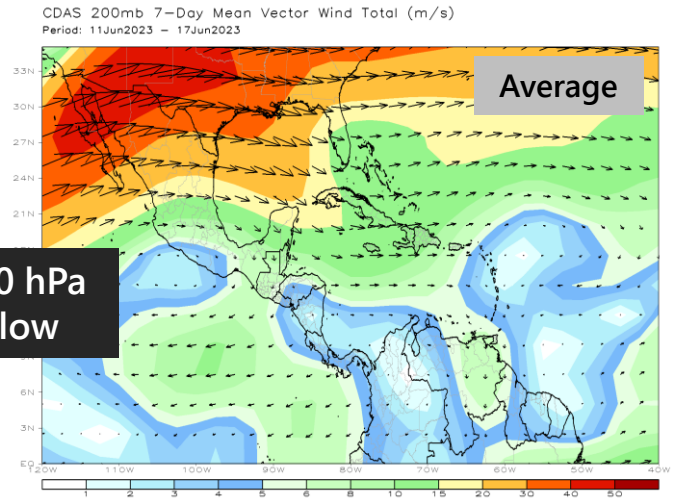
Gauges (CPC)

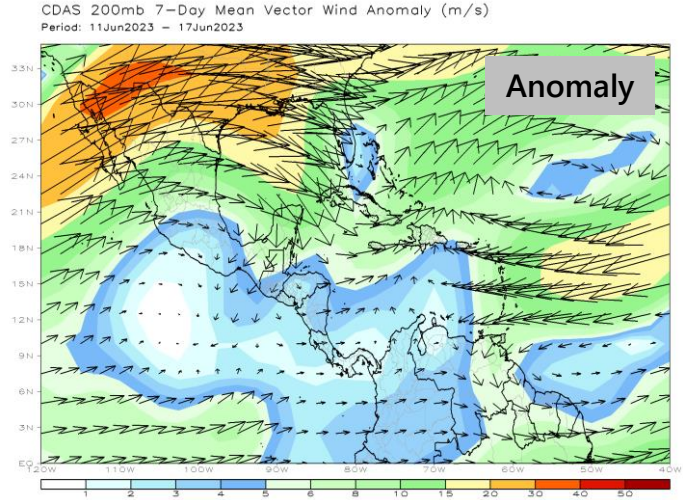


Satellite – Estimated (CMORPH)

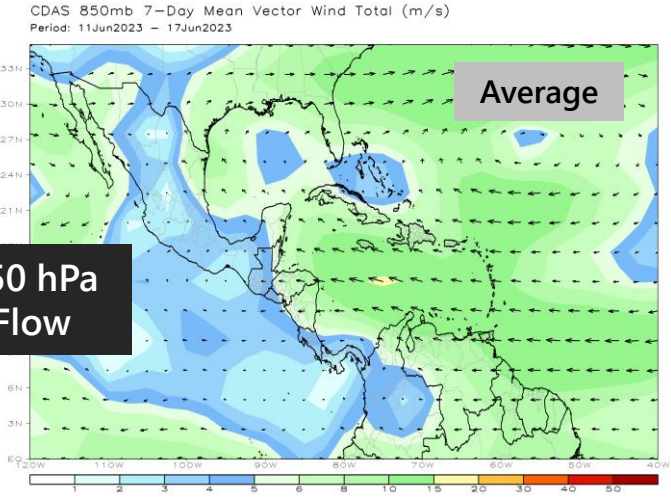


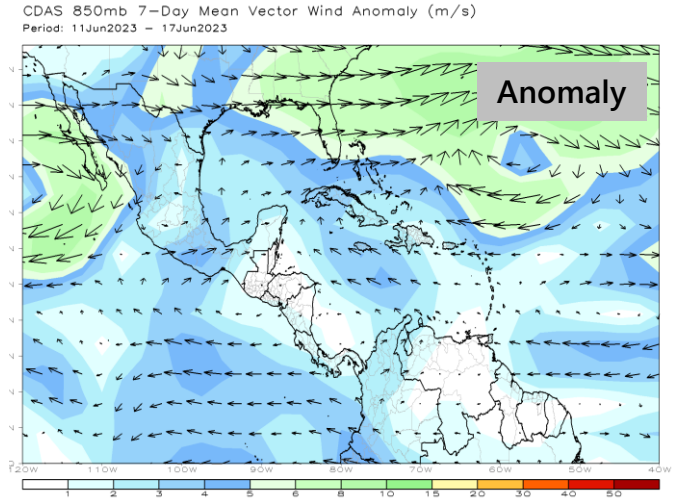
200 hPa Flow





850 hPa Flow





¡Gracias! Thank you! ¡Obrigado!

Next Session: To be discussed

Recorded sessions and more information available at:
https://rammb2.cira.colostate.edu/training/rmtc/focusgroup/

For enrolling in the distribution list for RFG announcements, please send an email to jose.galvez@noaa.gov or bernie.connell@colostate.edu