WMO VLab Regional Focus Group
of the Americas and Caribbean

Since 2004

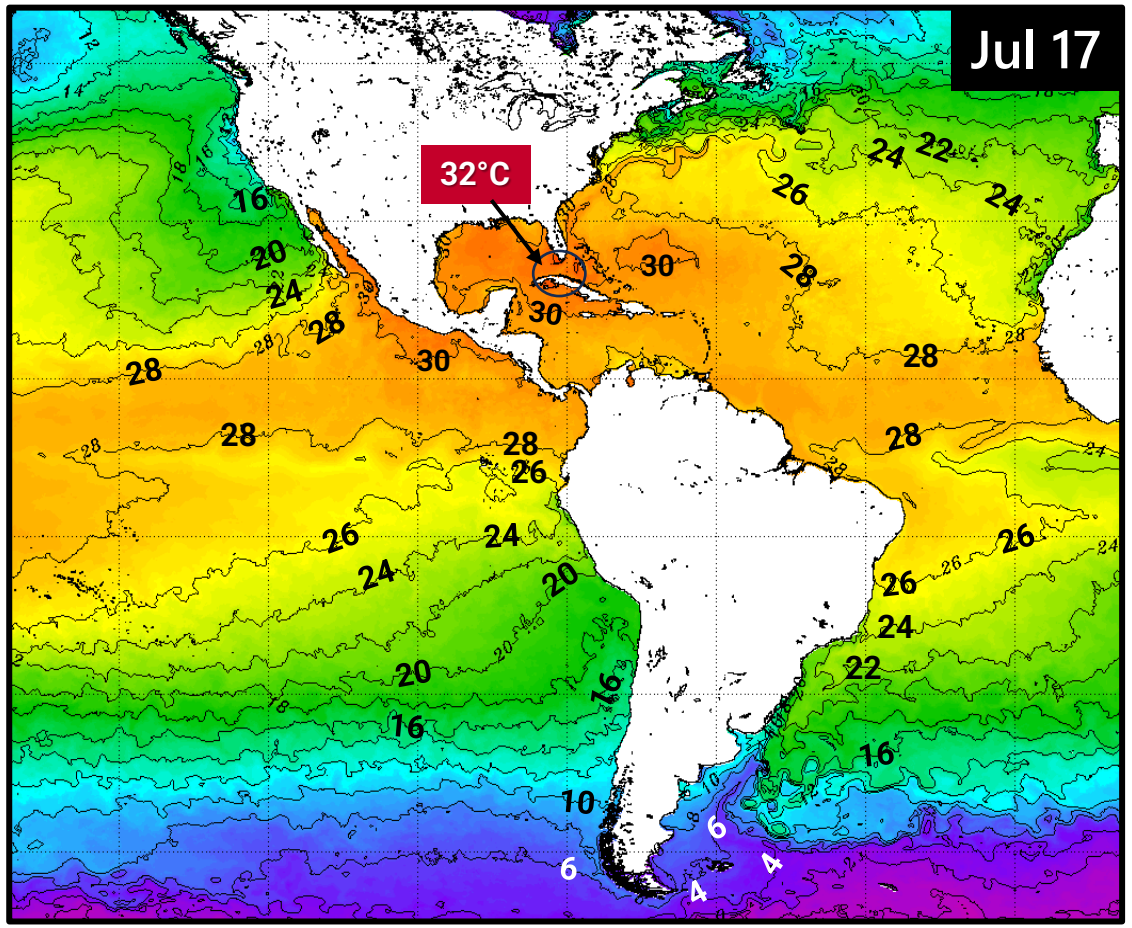
Climate Indices

Current Status and Projections

Wednesday 19 July 2023

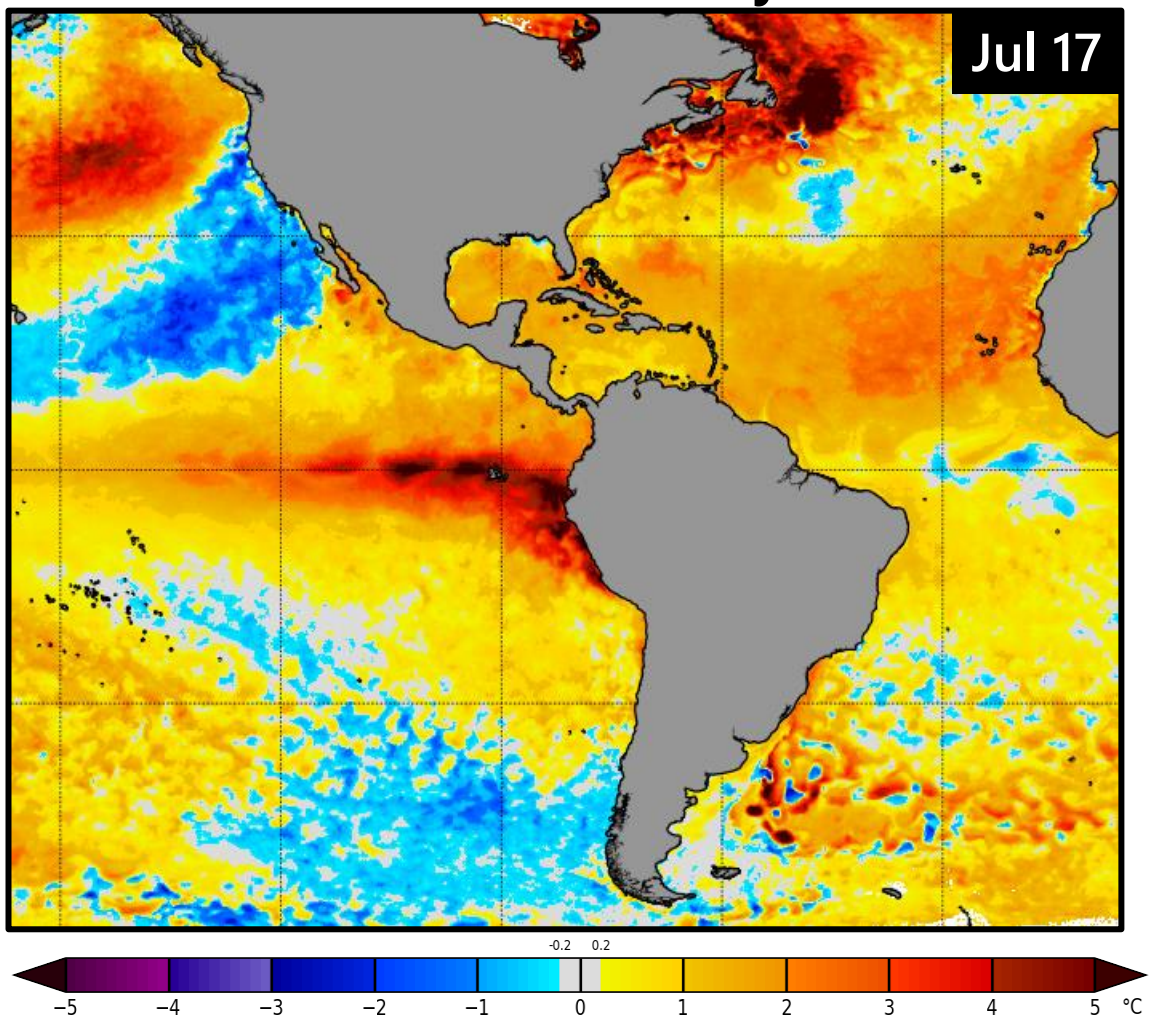
Sea Surface Temperature (SST)

SST



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

SST Anomaly

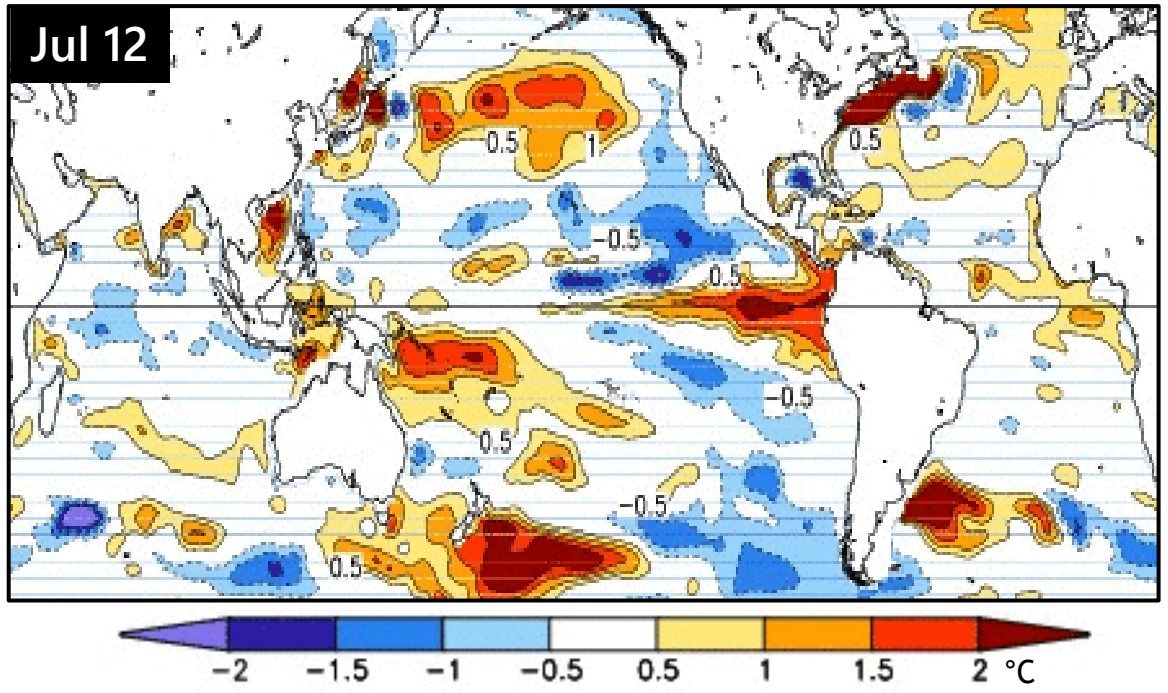


NOAA Coral Reef Watch https://coralreefwatch.noaa.gov/product/5km/index_5km_ssta.php

Top Layer Temperature Anomaly

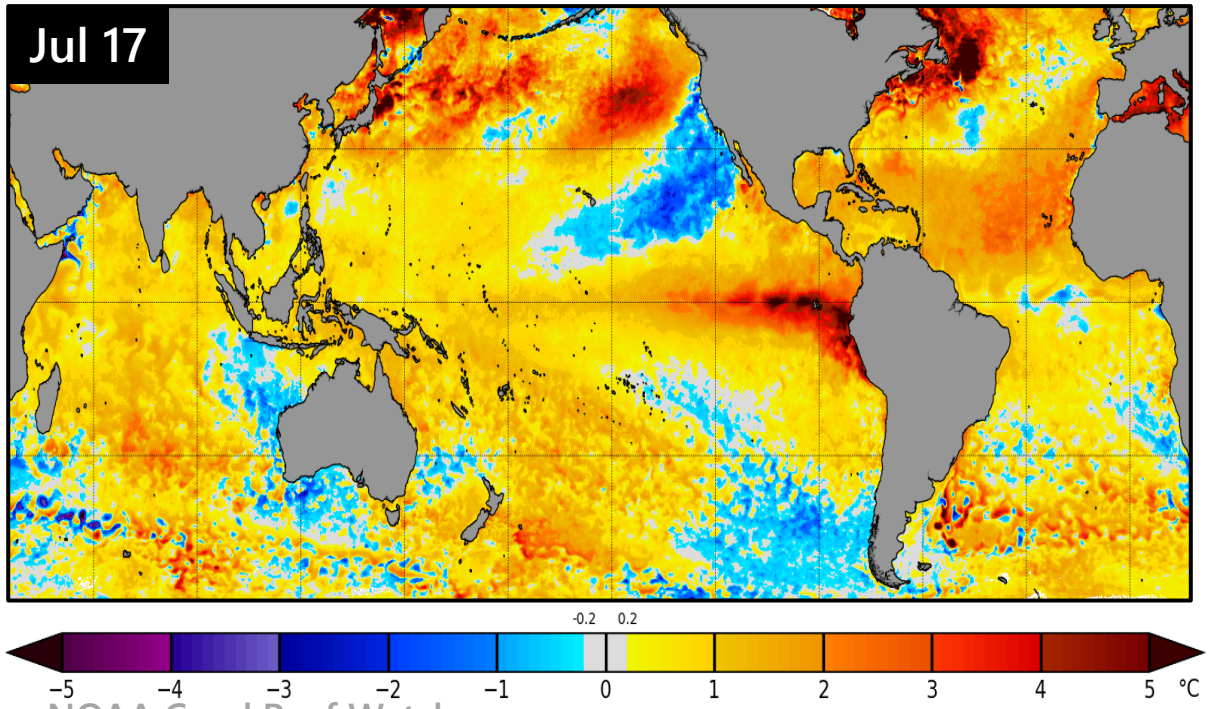
Anomalies in a layer take longer to dissipate than superficial ones, and can last for weeks.

Top 300m-Layer Anomaly



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

Surface Anomaly

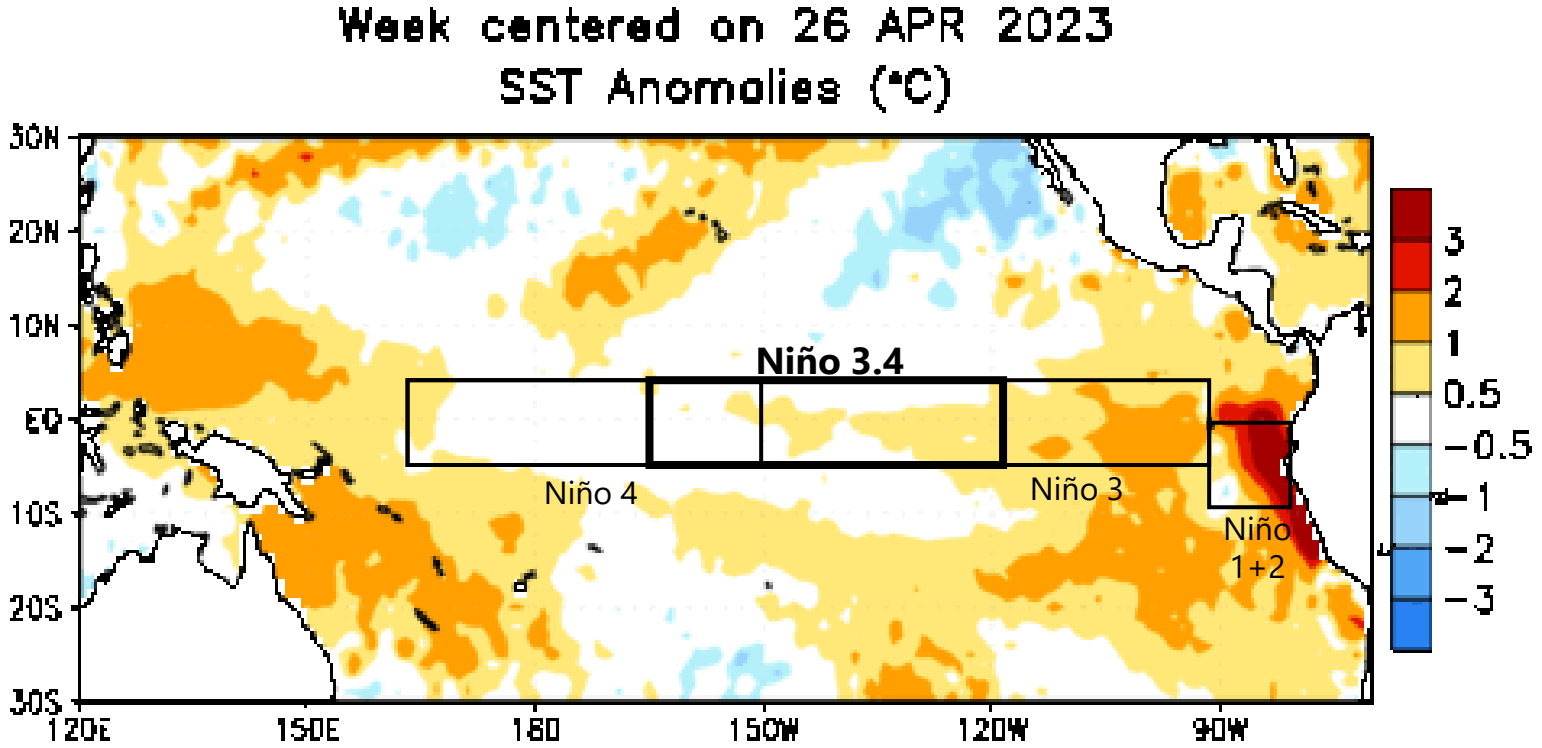


NOAA Coral Reef Watch
https://coralreefwatch.noaa.gov/product/5km/index_5km_ssta.php

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 central and eastern Pacific Ocean.
- The tropical Pacific atmospheric anomalies are consistent with weak El Niño conditions.

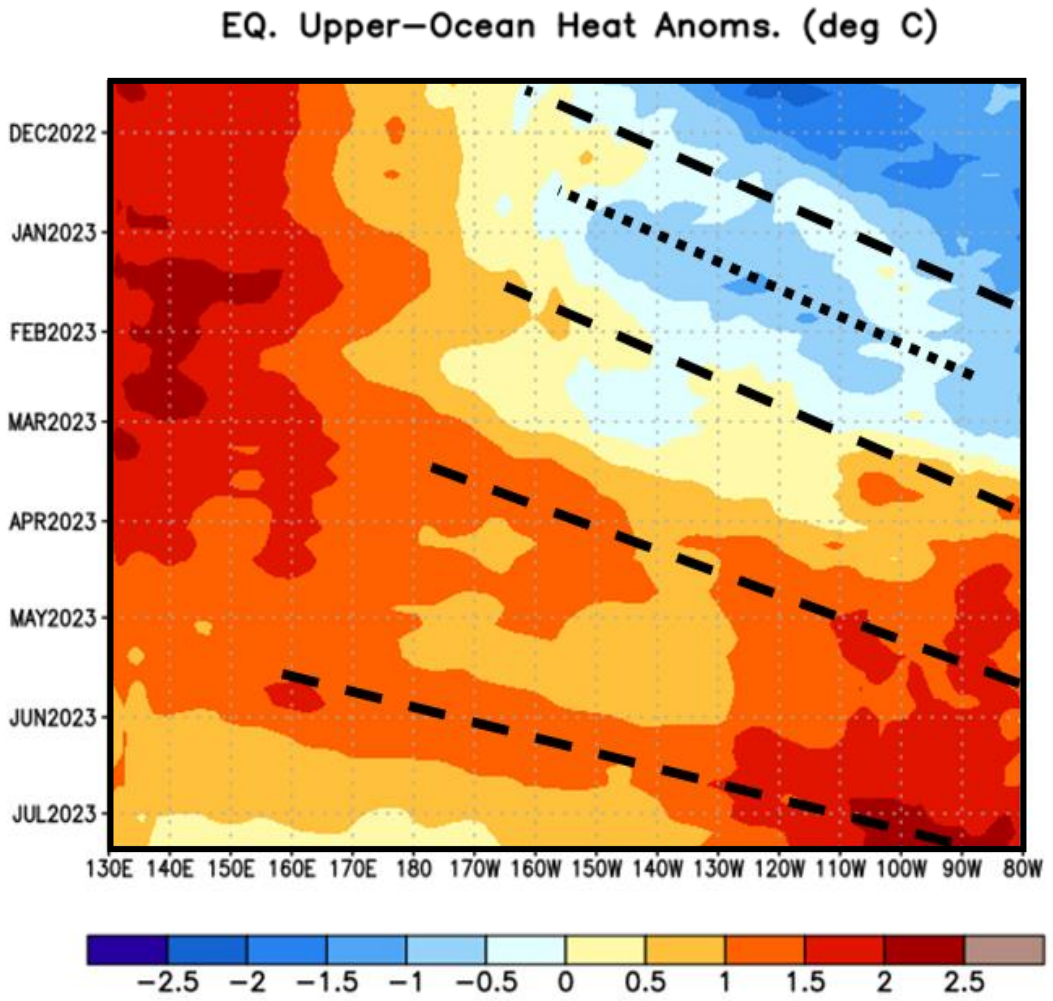


TAKEAWAYS

- **El Niño is establishing rapidly.**
- **Niño 1+2 warming is intensifying and expanding again!**

Hovmöller of Zonal Wind & Heat Content Anomalies

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

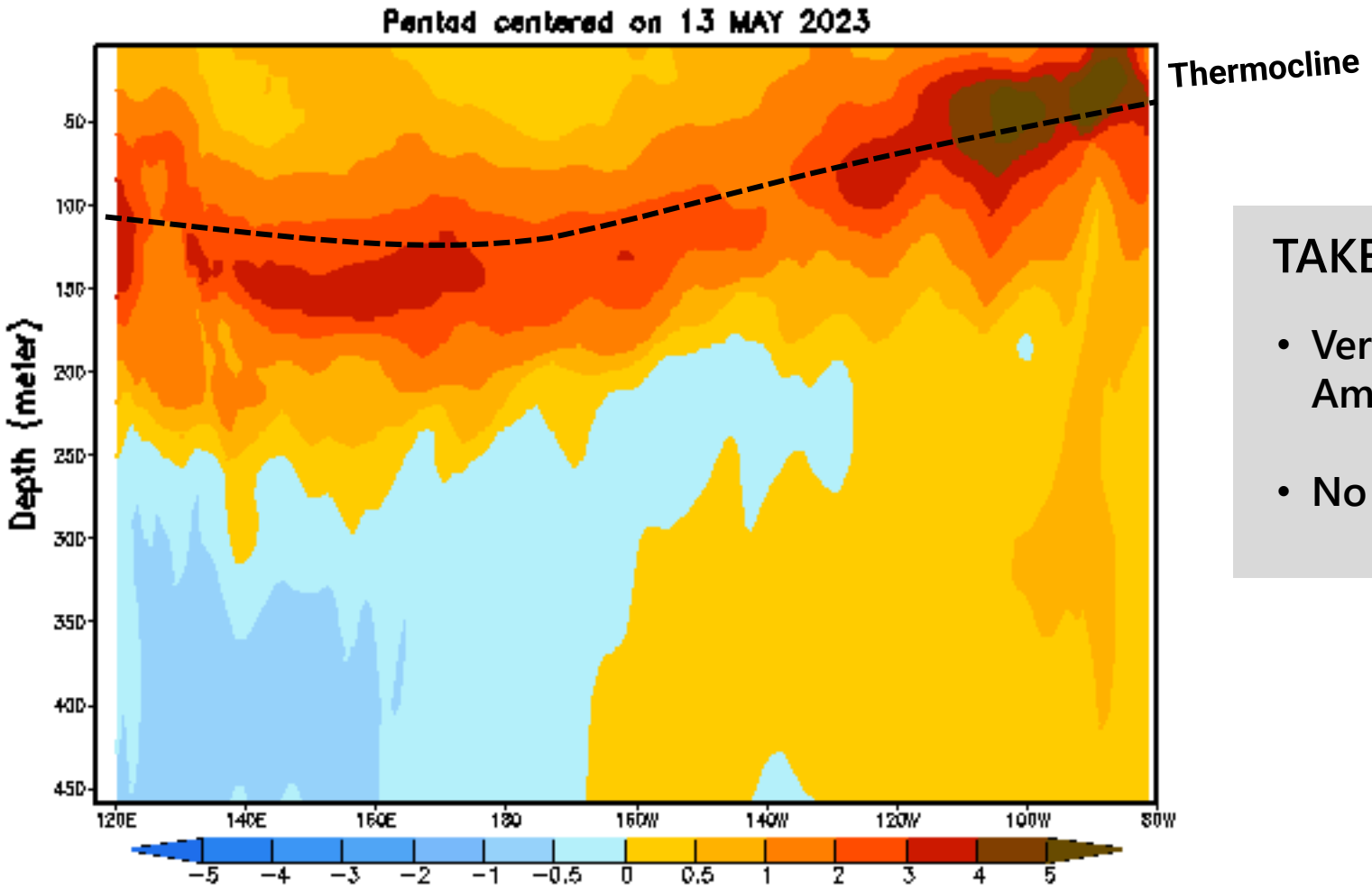


TAKEAWAYS

- Downwelling (warm) Kelvin arriving in the South American coast.
- Warm anomalies are present west of this wave, but there is no additional Kelvin Wave at the moment.

ENSO: Oceanic Kelvin Waves

Equatorial Pacific Temperature Anomaly Section



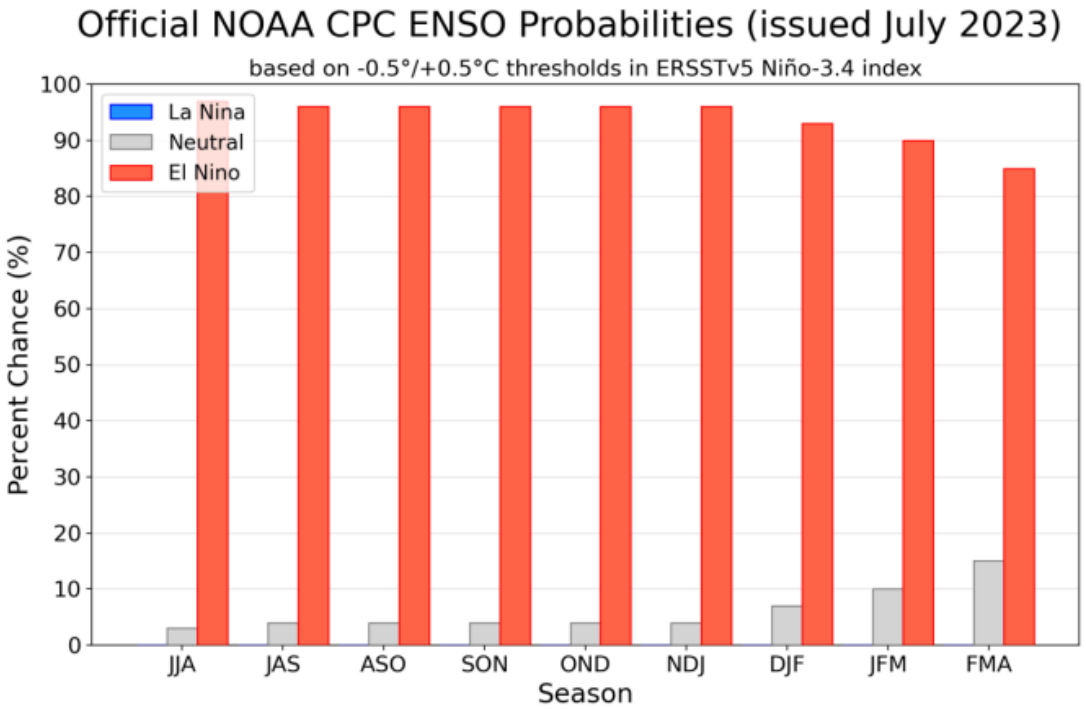
TAKEAWAYS

- Very warm close to the coast of South America (arriving warm Kelvin).
- No trailing Kelvin.

ENSO Outlook

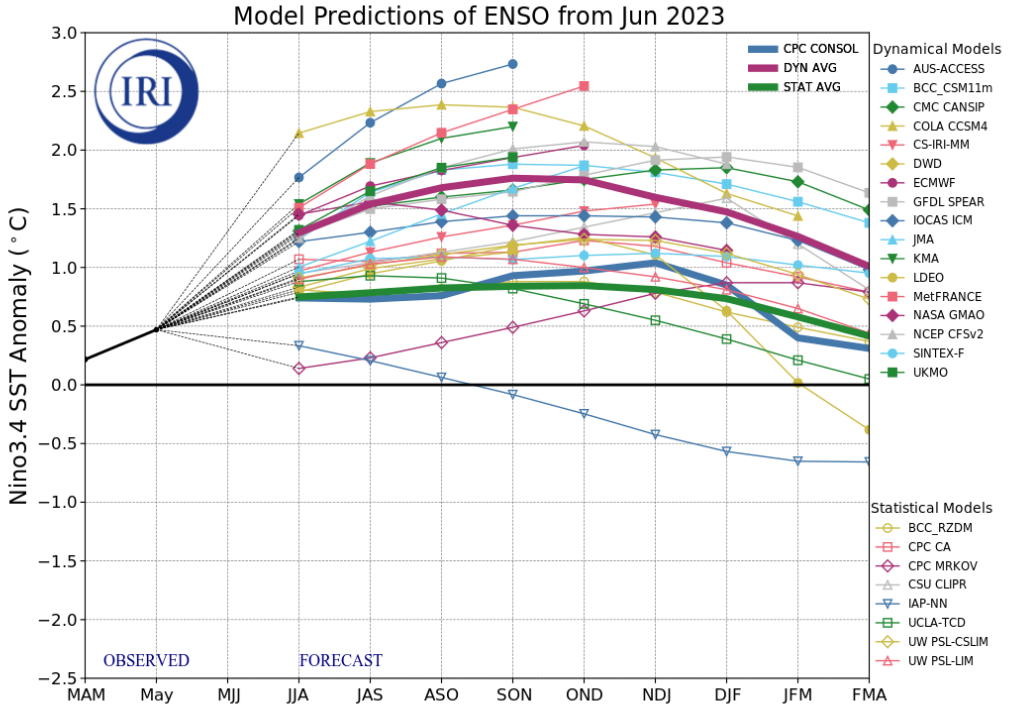
There is a greater than 90% chance that El Niño will continue through the Northern Hemisphere winter.

Probabilistic Forecast



Source: CPC, updated 13 July 2023

IRI/CPC Dynamic Models

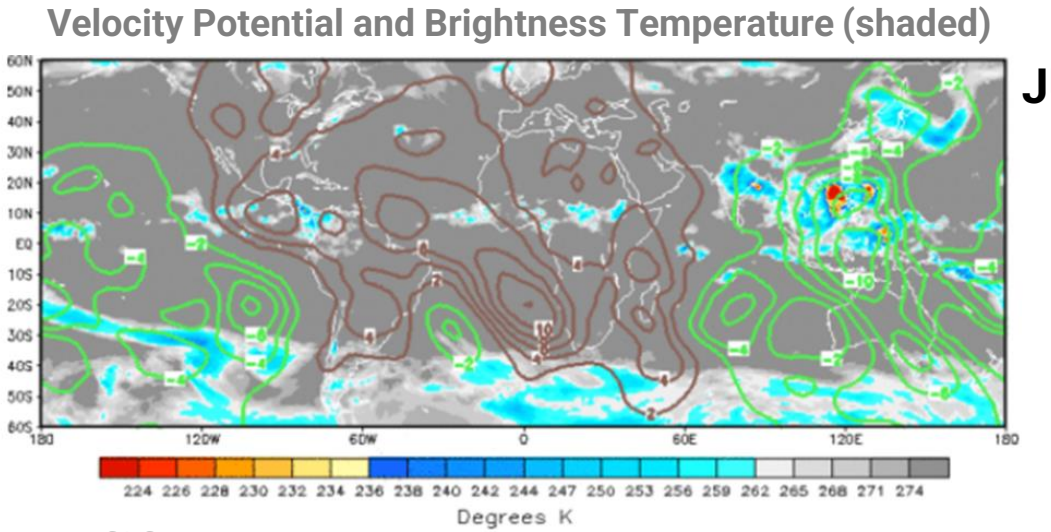


Source: IRI, updated 16 June 2023

Madden-Julian Oscillation (MJO)

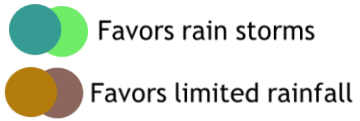
Current Observations:

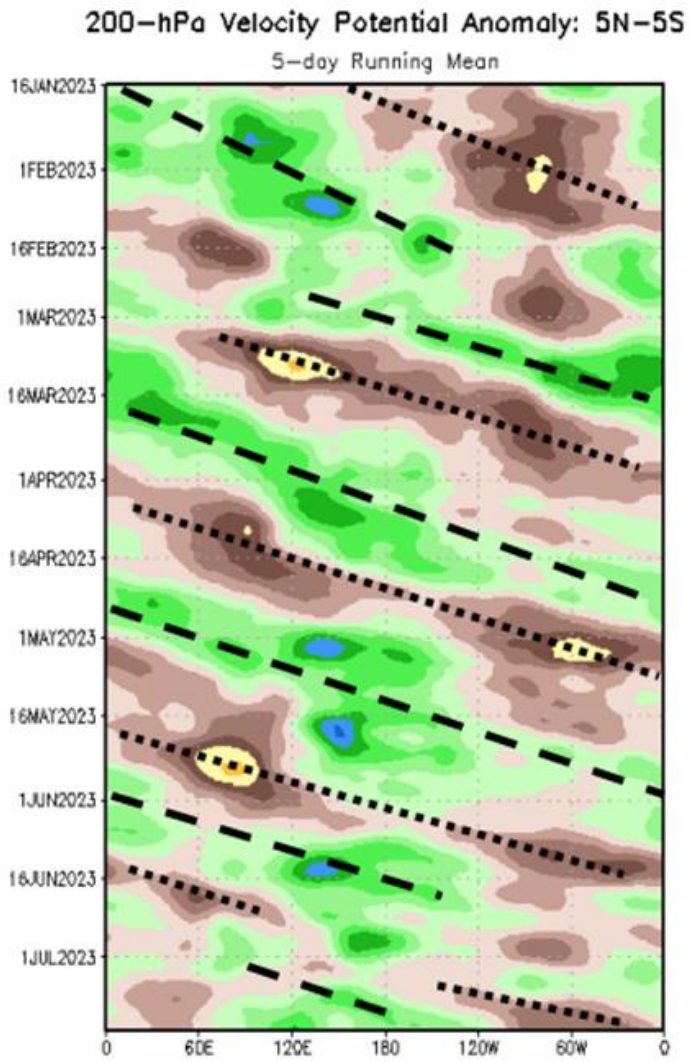
- MJO looks like a Wave-1 pattern, but this is recent.
- Propagation has been very incoherent since Mid-June.
- There are no clear signs of reorganization at this time.



JUL 16

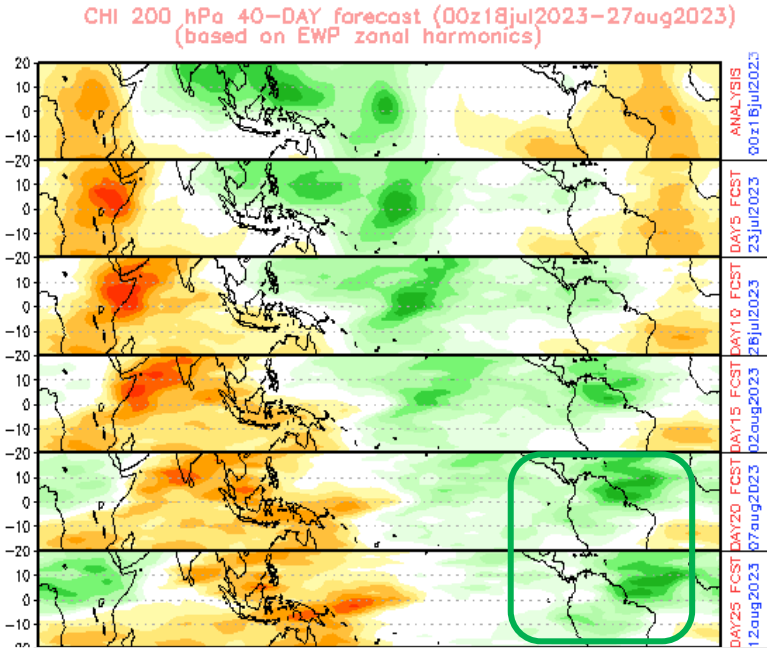
Source: CPC



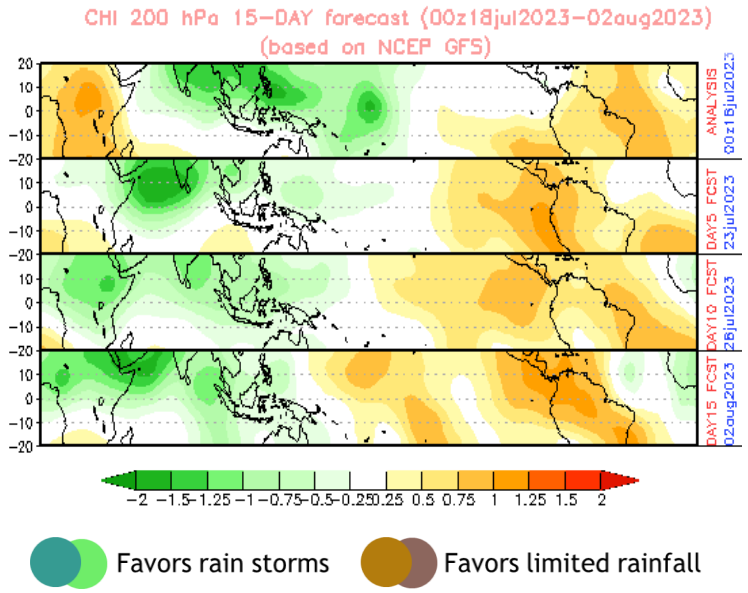


MJO Forecasts

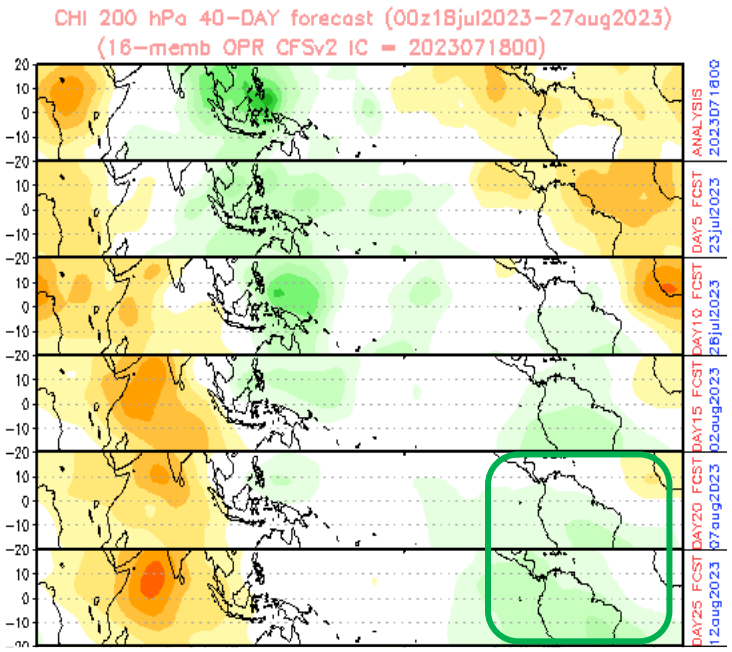
Empirical Wave Propagation (EWP)



Global Forecast System (GFS)



Climate forecast System (CFS)



Source: CPC

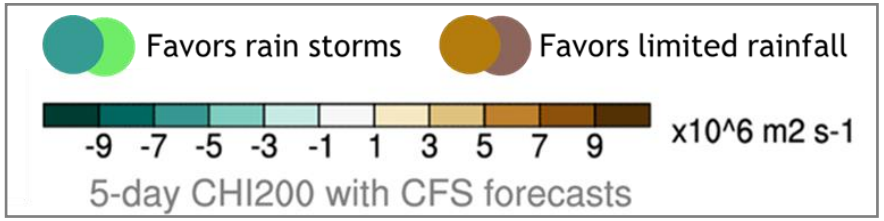
TAKEAWAYS

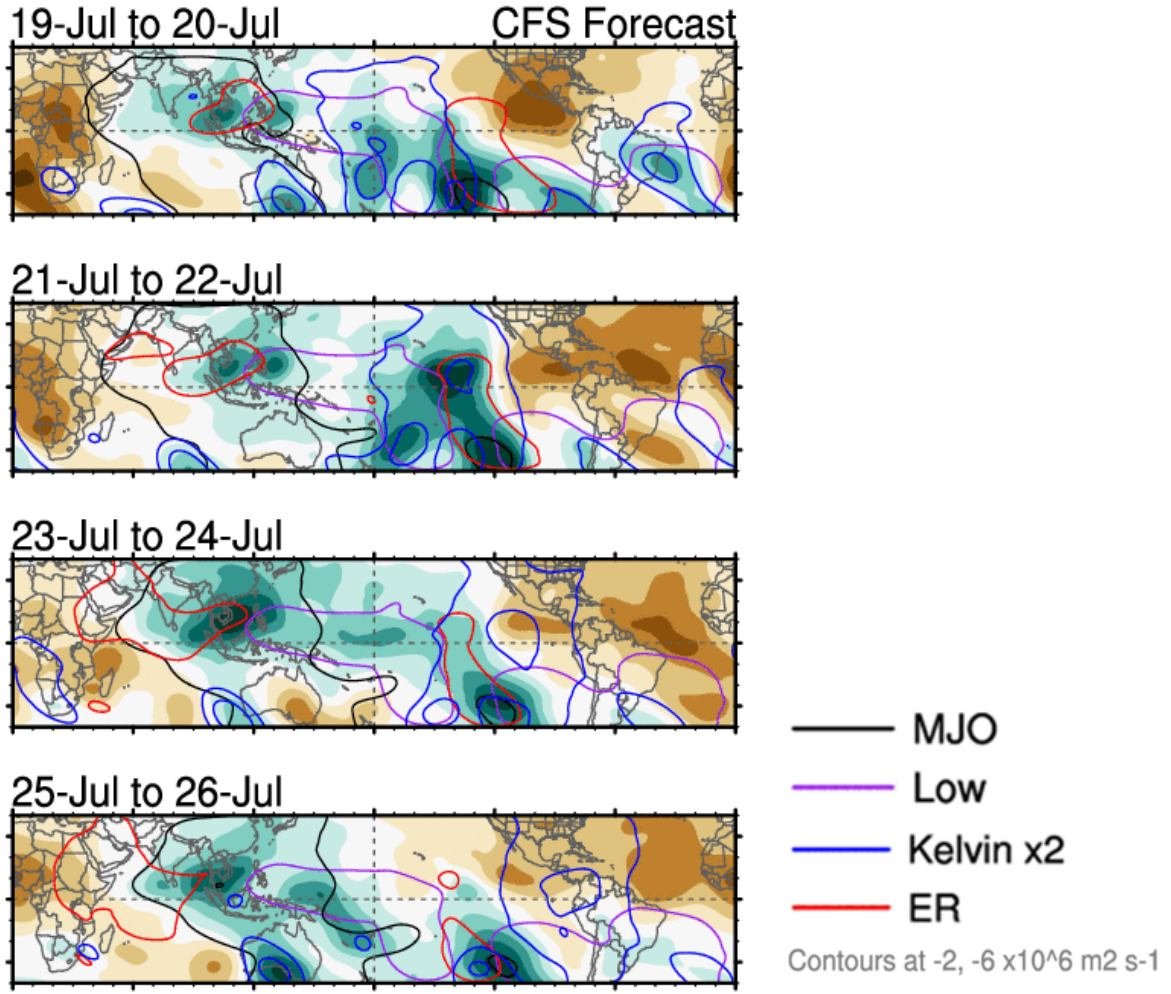
- **MJO is not propagating coherently. Yet…**
- **There is some agreement in a transition towards wetter conditions by early August.**

MJO and Upper Tropospheric Waves

Outlook for the next few days:

- Upper convergent pattern continues in the basin.
- A tropospheric Kelvin is forecast to arrive in Central America/northern South America around July 24-25, still embedded in a large scale upper convergent pattern. → Localized enhancement of deep convection.

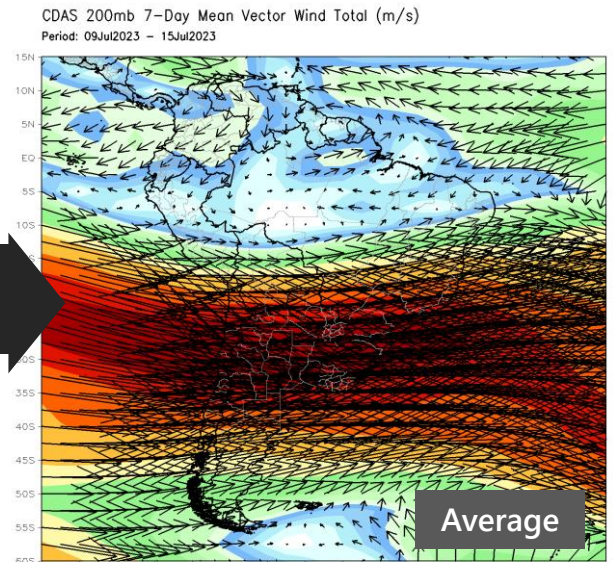


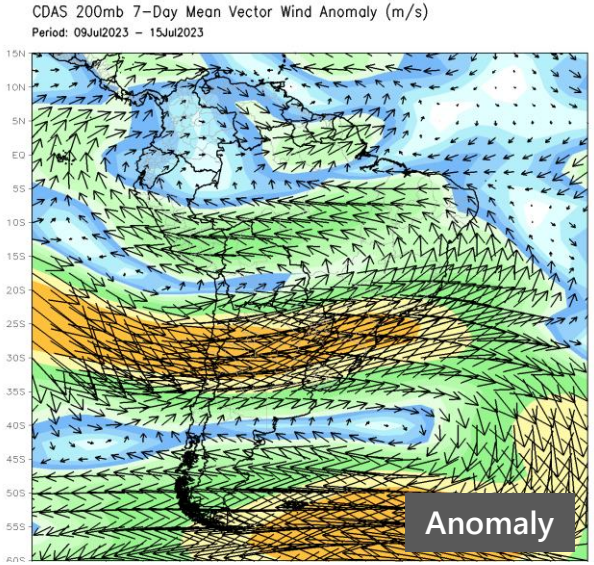


Source: NCICS

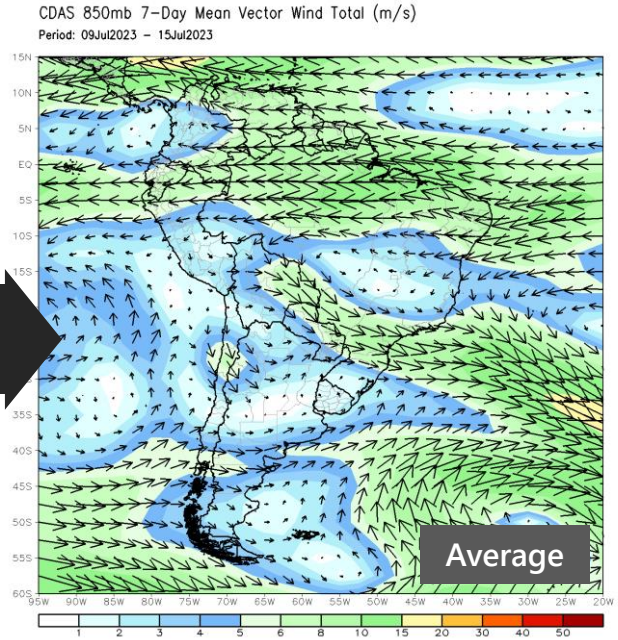
South America, Last 7 Days

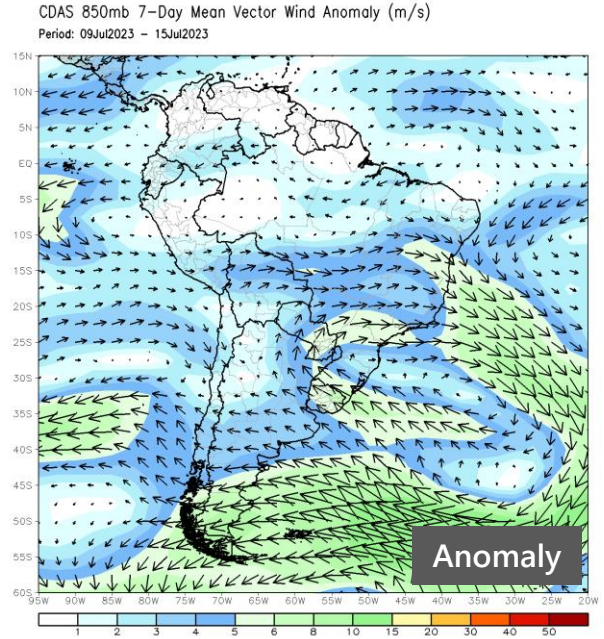
200 hPa Flow



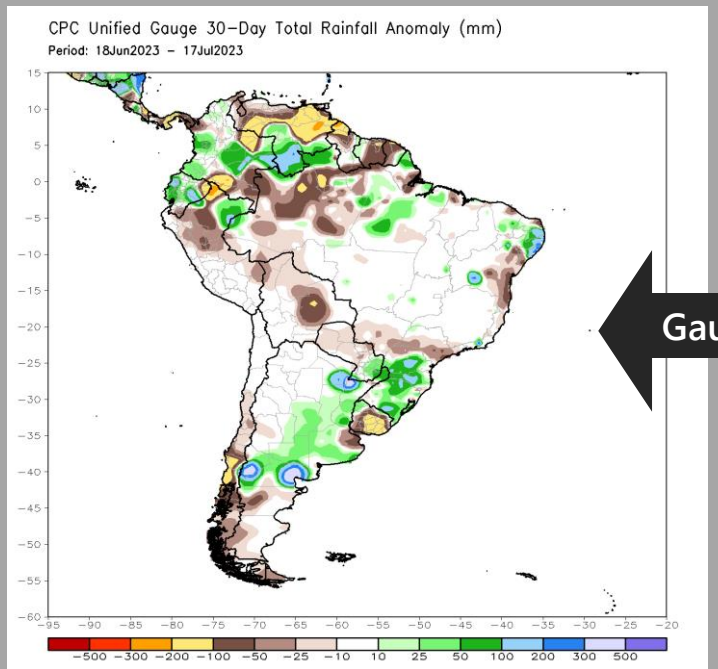


850 hPa Flow

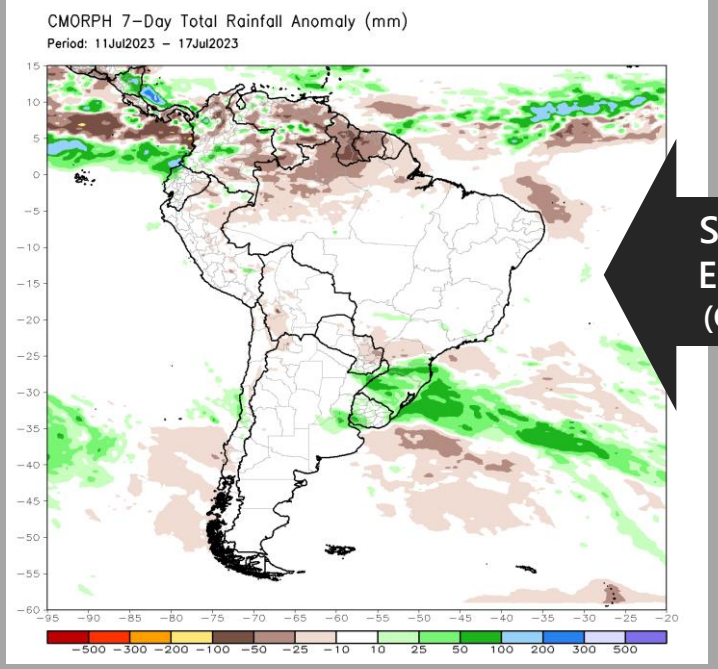




Rainfall Anomalies



Gauges

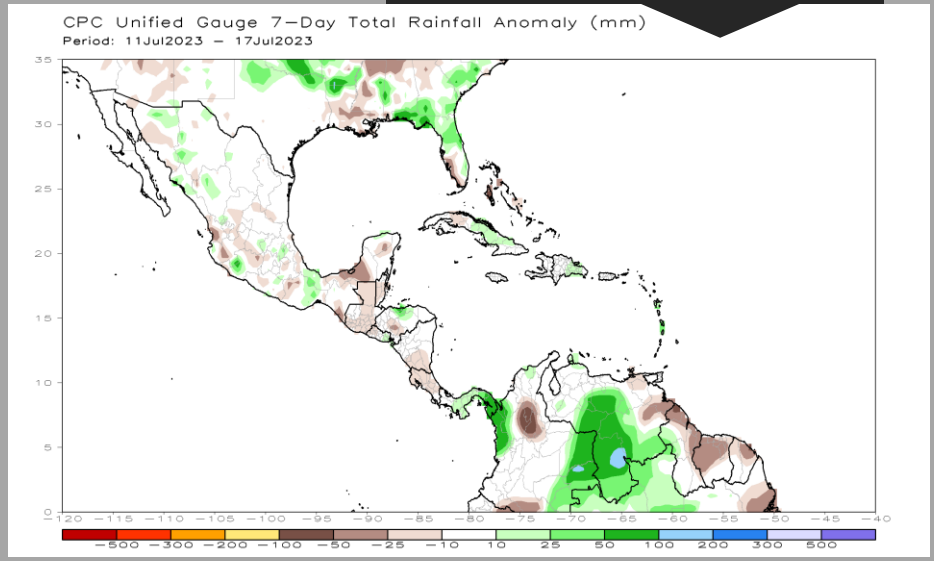


Satellite – Estimated (CMORPH)

Caribbean and Central America, Last 7 Days

Rainfall Anomalies

Gauges (CPC)



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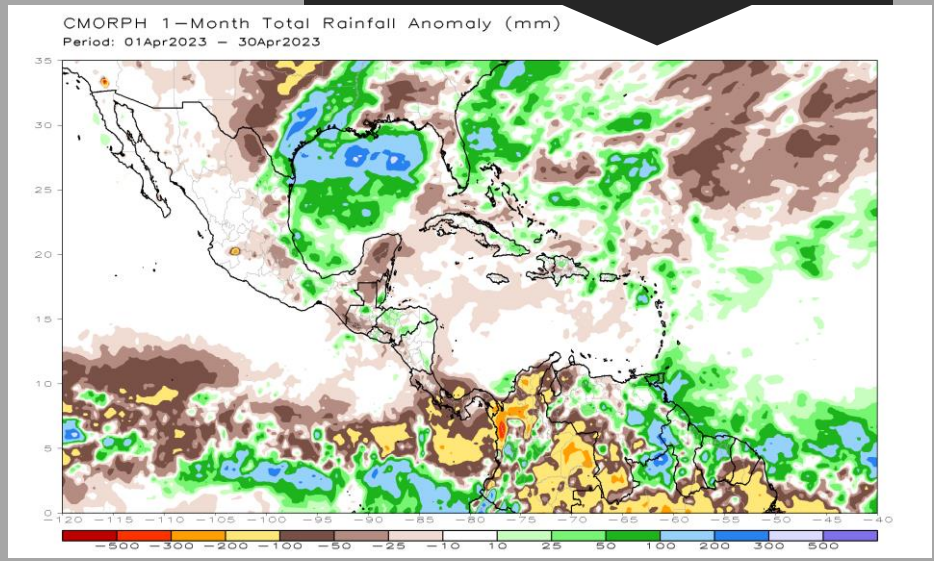
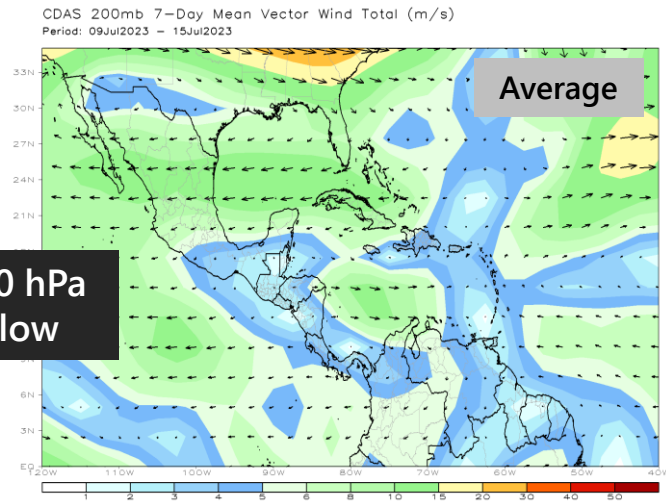
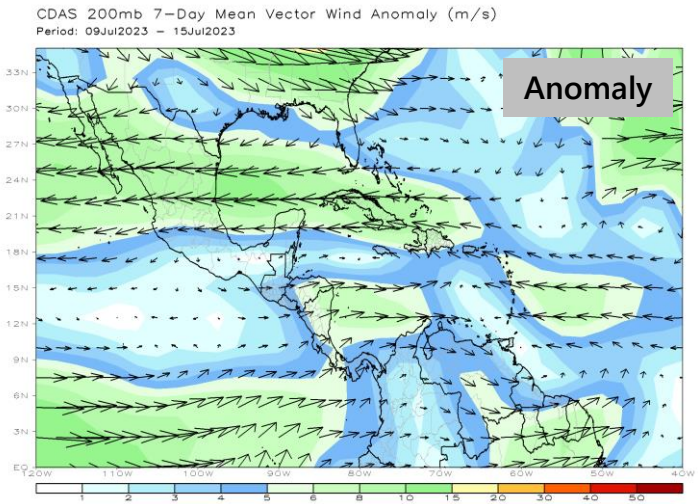
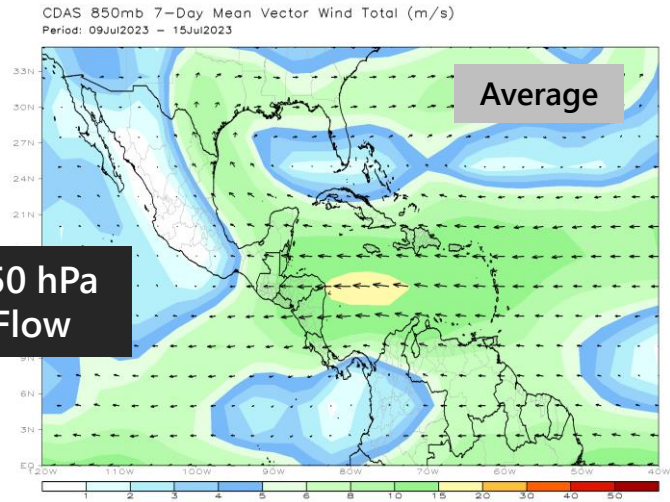


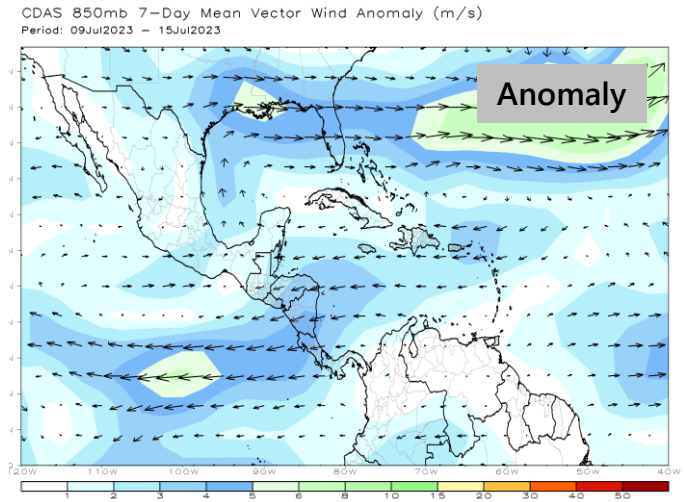
200 hPa Flow





850 hPa Flow





¡Gracias! Thank you! ¡Obrigado!

Next Session: 24 August 2023, 15 UTC

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