WMO VLab Regional Focus Group
of the Americas and Caribbean

Since 2004

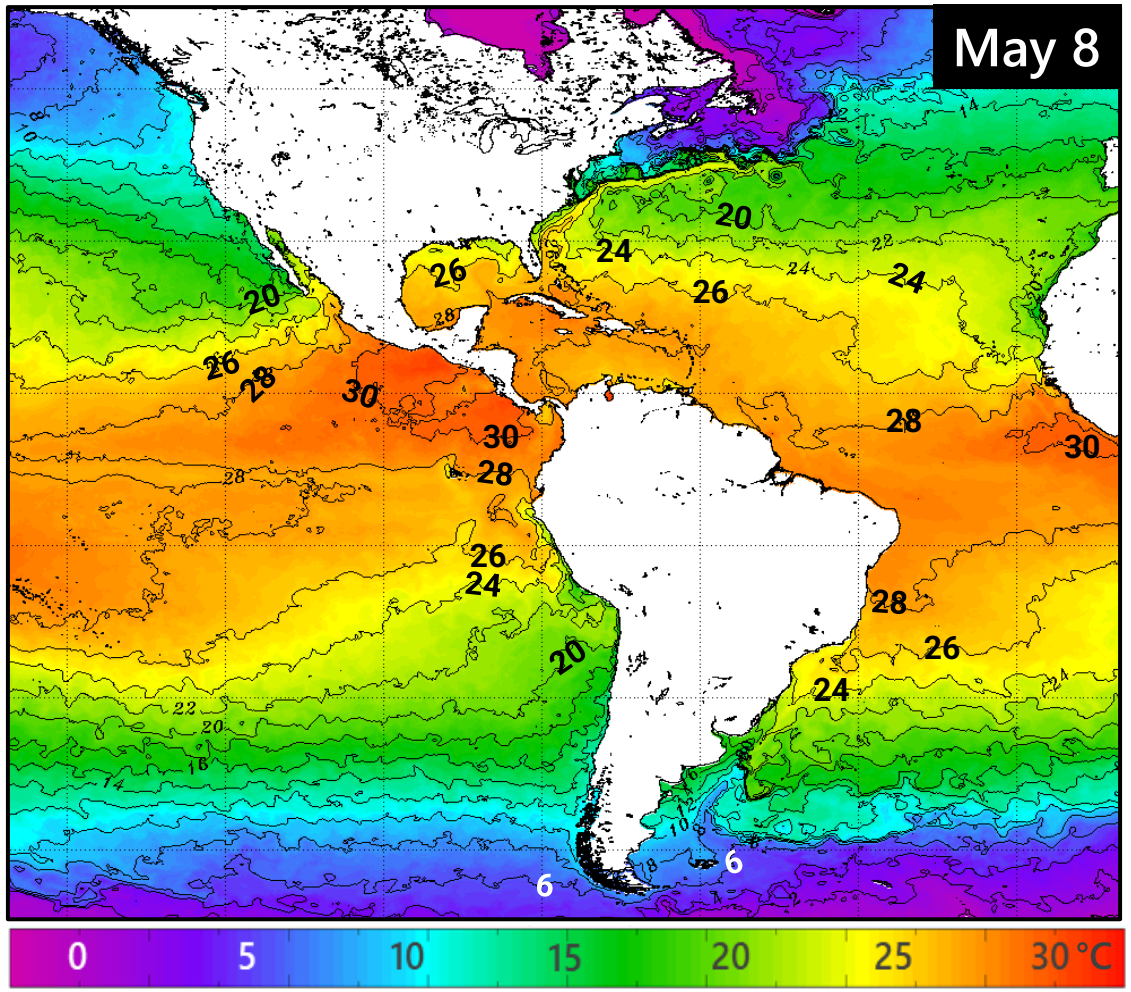
Climate Indices

Current Status and Projections

Wednesday 10 May 2023

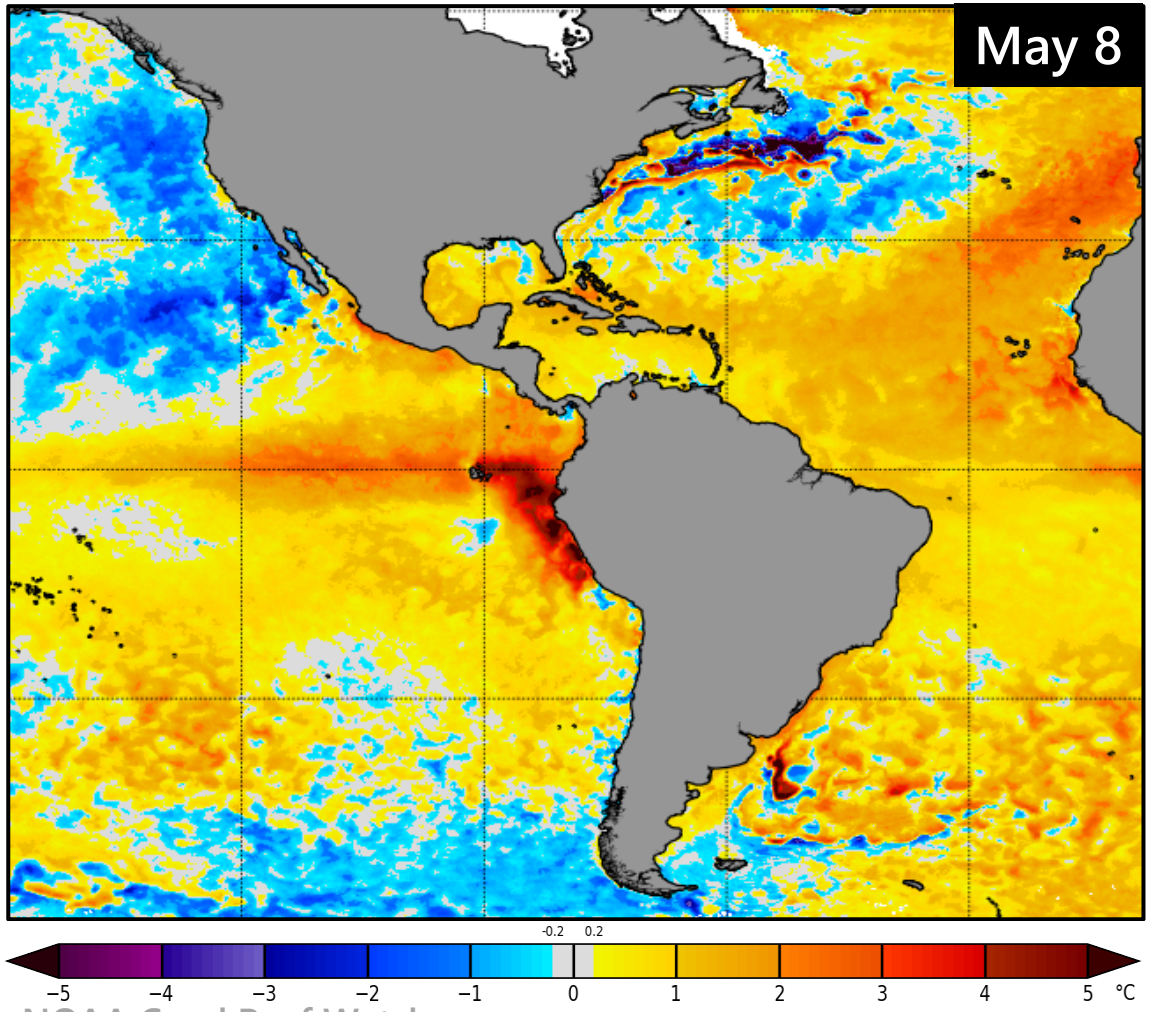
Sea Surface Temperature (SST)

SST



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

SST Anomaly

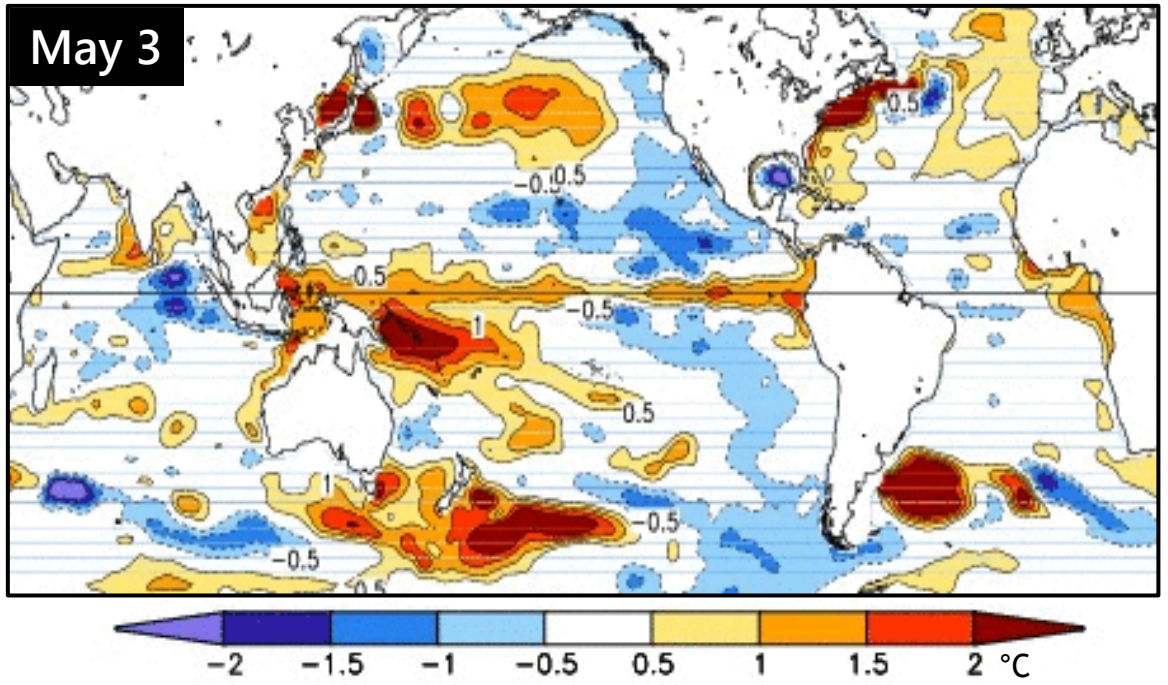


NOAA Coral Reef Watch
https://coralreefwatch.noaa.gov/product/5km/index_5km_ssta.php

Top Layer Temperature Anomaly

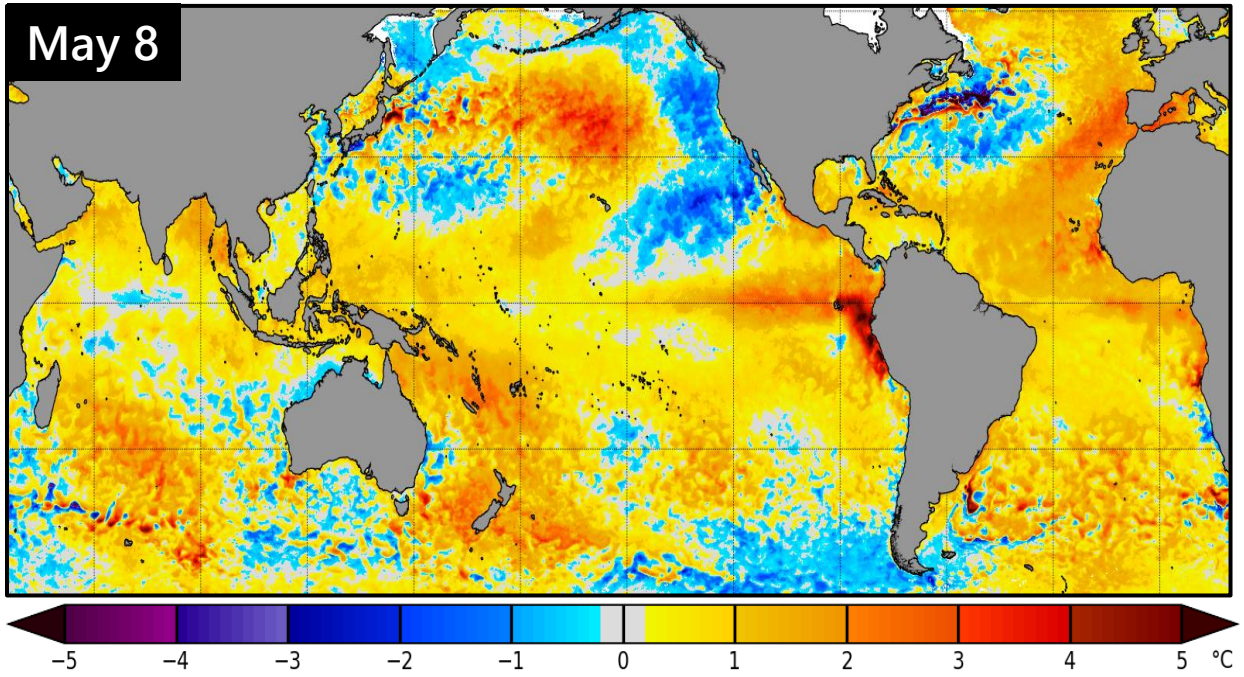
Anomalies in a layer take longer to dissipate than superficial ones, and can last for weeks.

Top 300m-Layer Anomaly



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

Surface Anomaly

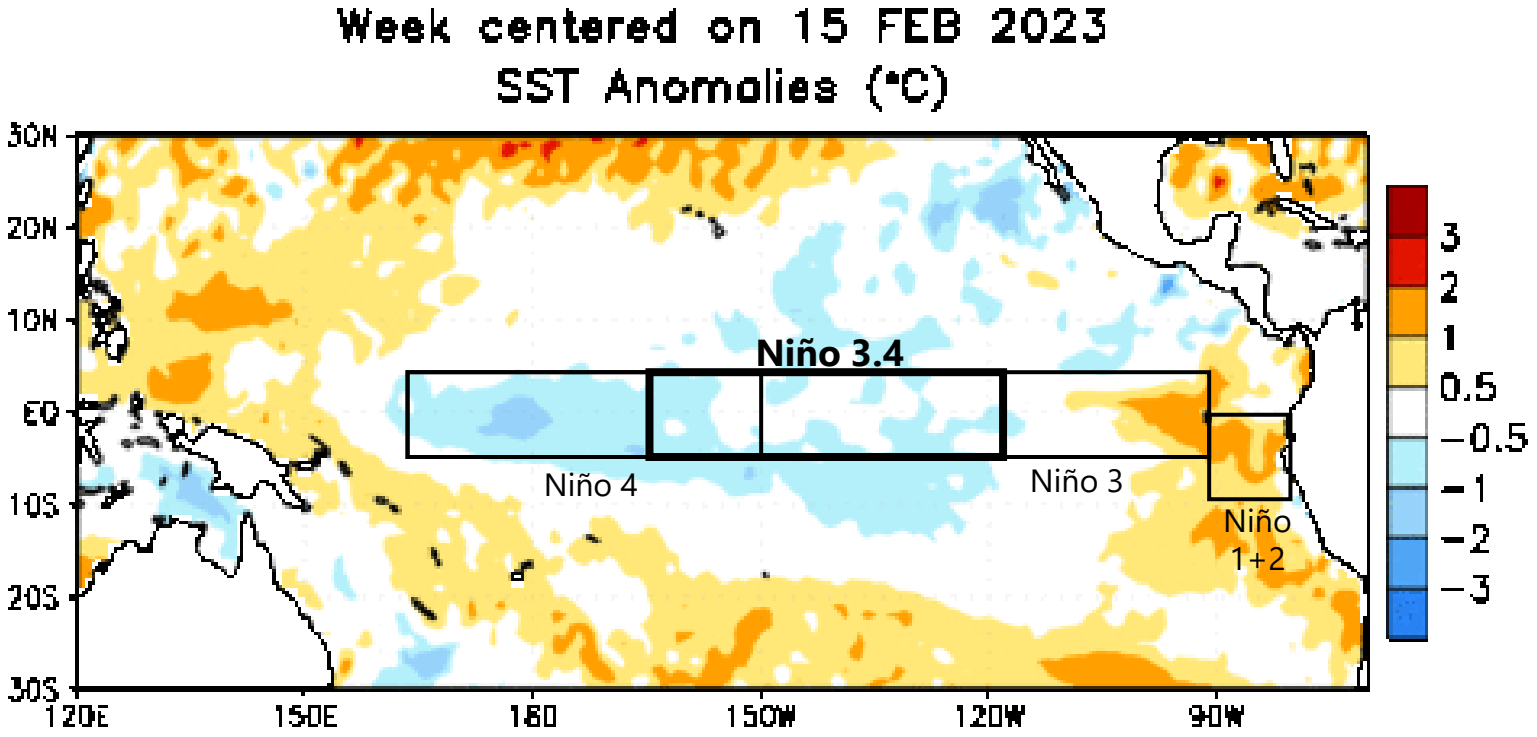


NOAA Coral Reef Watch
https://coralreefwatch.noaa.gov/product/5km/index_5km_ssta.php

El Niño-Southern Oscillation (ENSO)

CPC Official Statement
Status: El Niño Watch

- ENSO-neutral conditions are observed.*
- Equatorial sea surface temperatures (SSTs) are near-to-above average across most of the Pacific Ocean.



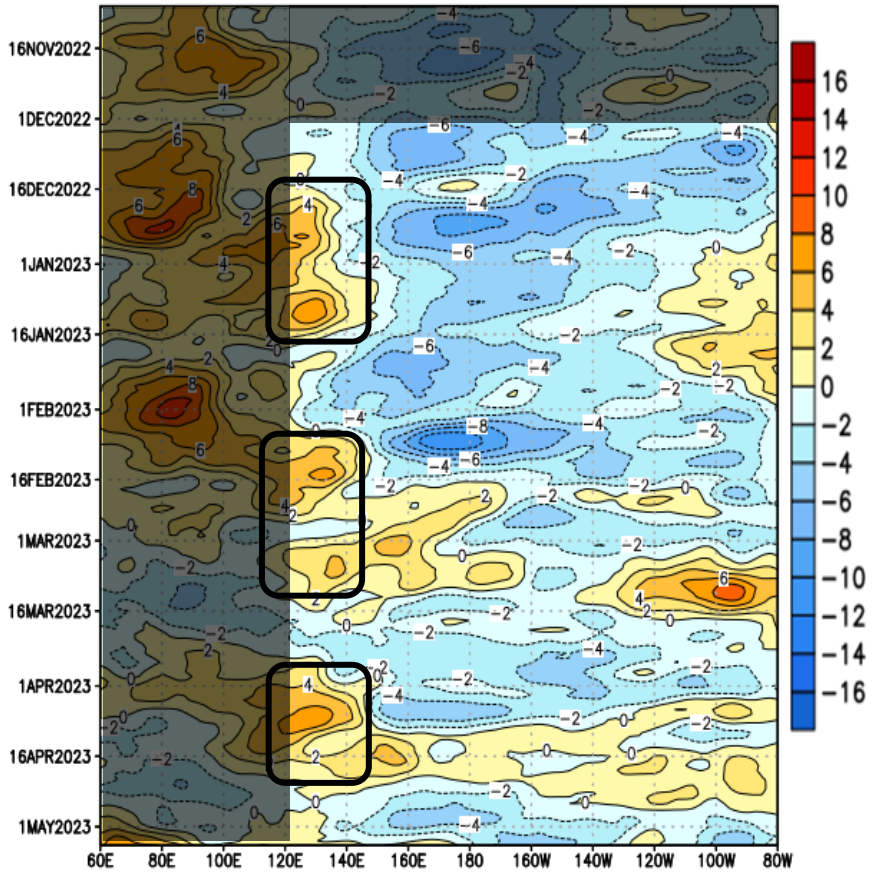
TAKEAWAYS

- The rapid EPAC warming that started in mid-March is expanding west and north.
- Impacts on weather and climate are becoming very prominent in Central America (warm temperatures and dry conditions). They continue in western South America.
- Niño 3.4 is warming, but still below +0.5°C (+0.4°C last week) .

Hovmöller of Zonal Wind & Heat Content Anomalies

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

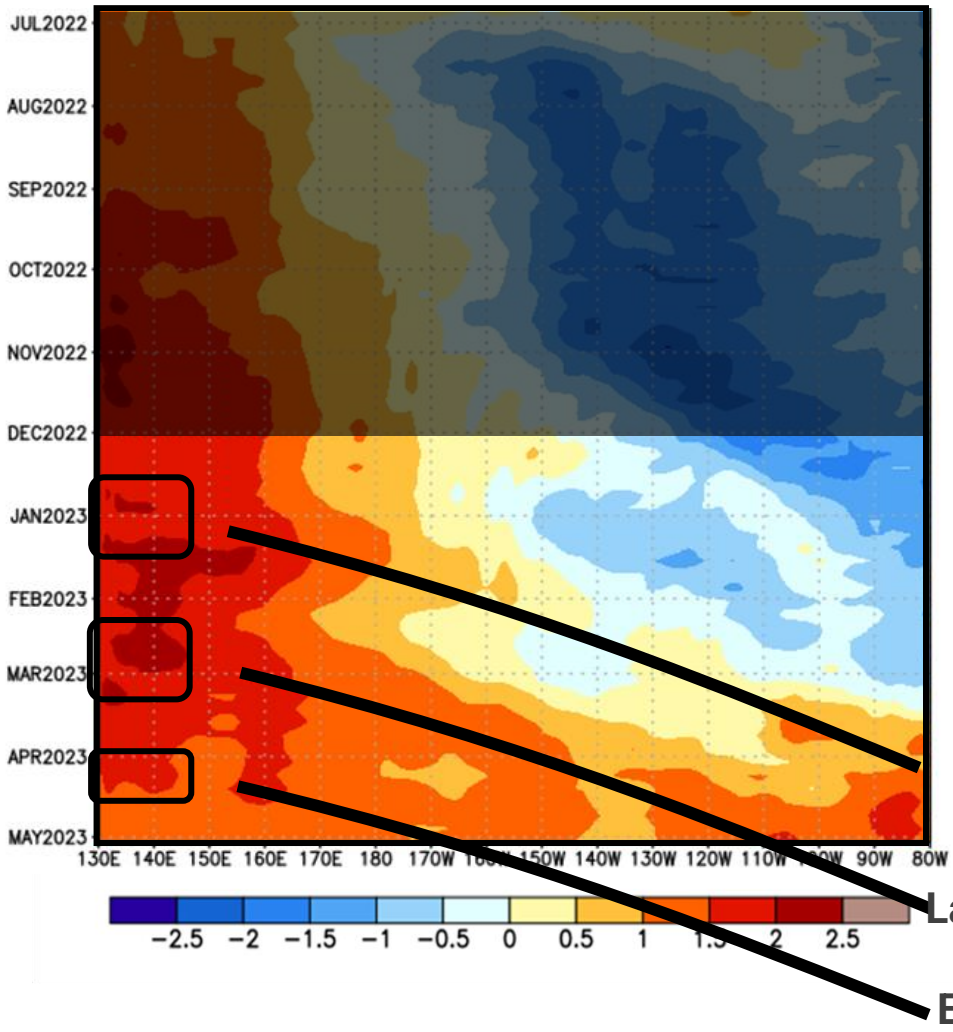
850 hPa Zonal Wind Anomaly



Source: CDAS, CPC

(5N-5S) in m/s

Heat Content Anomaly

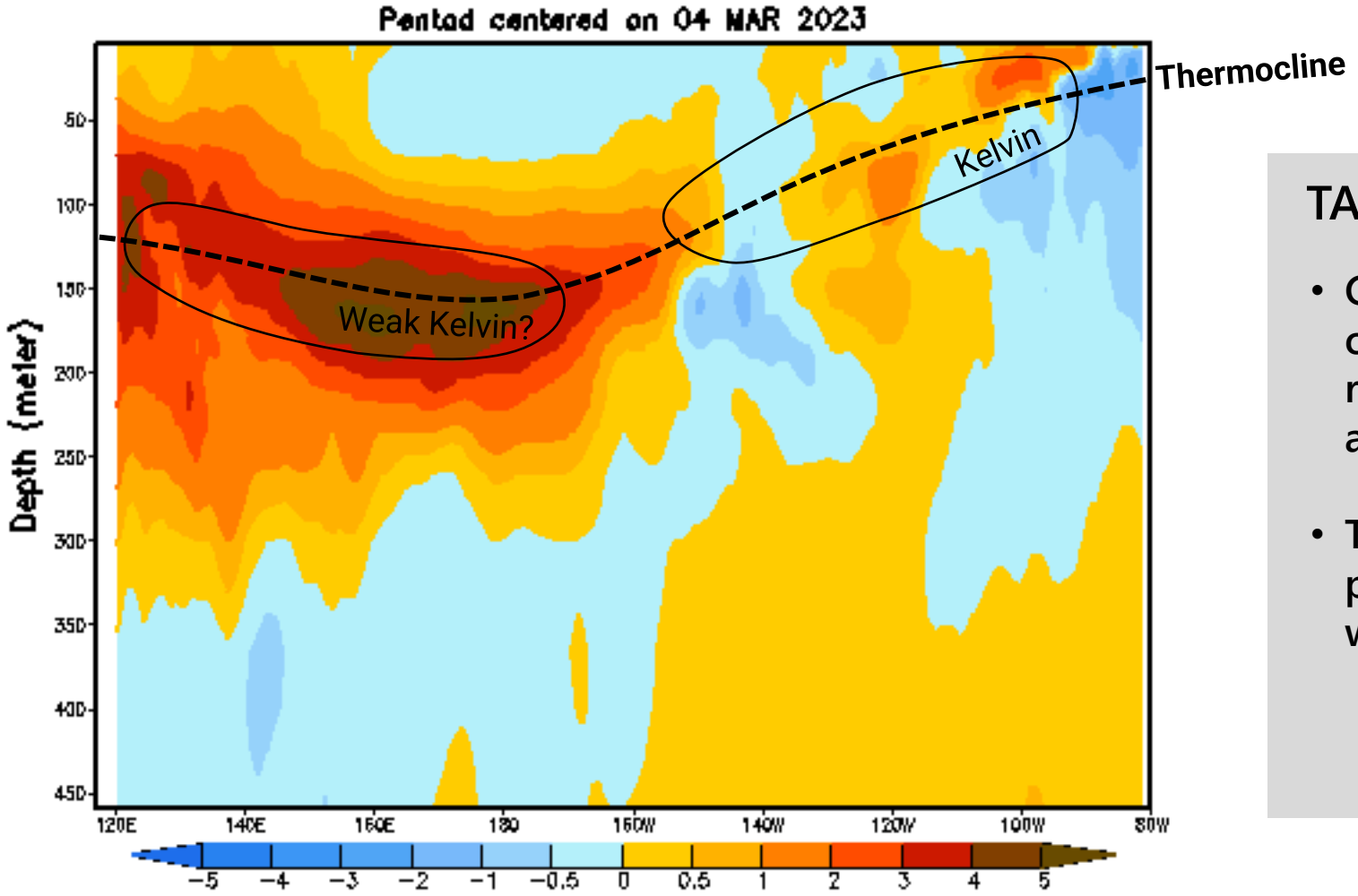


TAKEAWAYS

- Heat Content Anoms. suggest 2 warm Kelvin, potentially arriving in SAM by late May and early July.
- Periods of basin-wide westerly anomalies have exacerbated heat content anomalies.

ENSO: Oceanic Kelvin Waves

Equatorial Pacific Temperature Anomaly Section



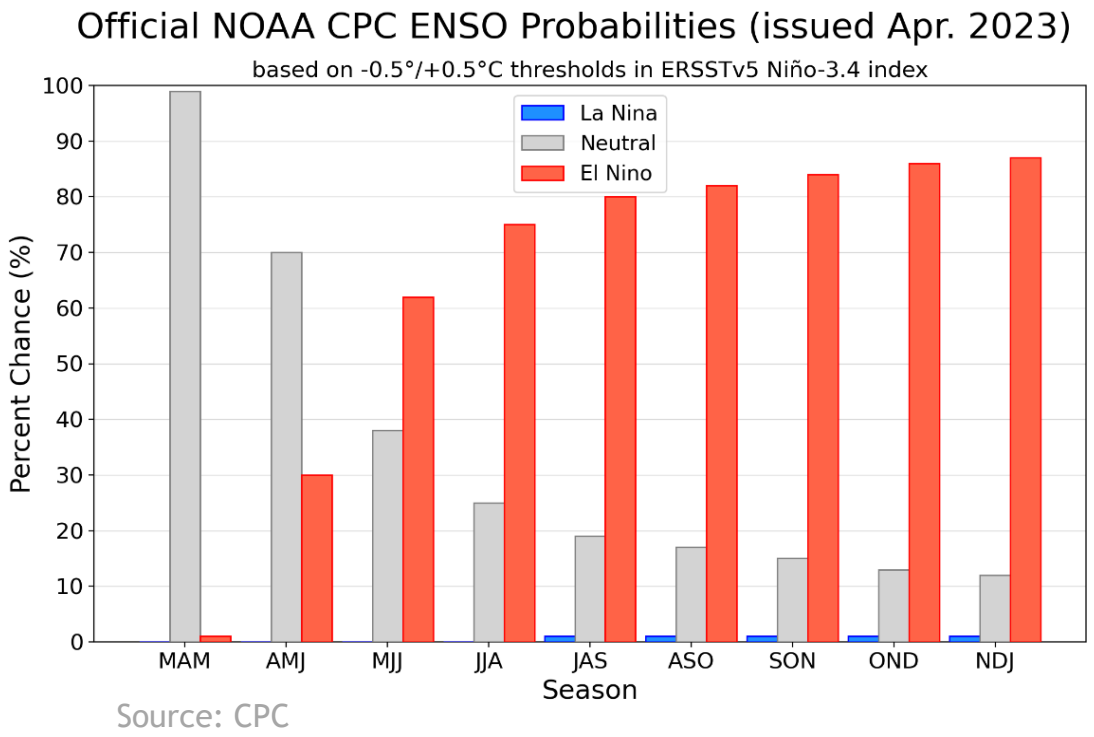
TAKEAWAYS

- Generalized sub-superficial warming of the equatorial Pacific from recurrent basin-wide westerly anomalies favored by the active MJO.
- Two warm Kelvin waves are propagating, the western one is much weaker.

ENSO Outlook

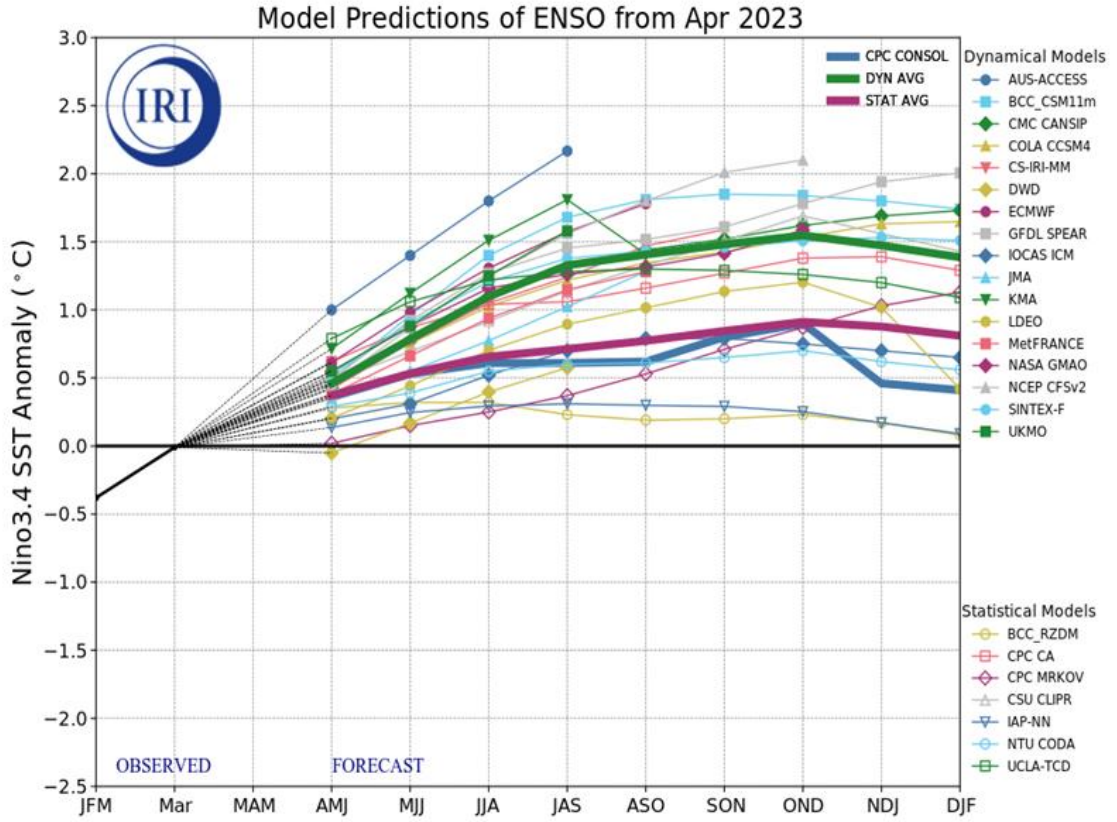
ENSO-neutral conditions are expected to continue through the Northern Hemisphere spring, followed by a 62% chance of El Niño developing during May-July 2023.*

CPC Probabilistic Forecast



Source: CPC

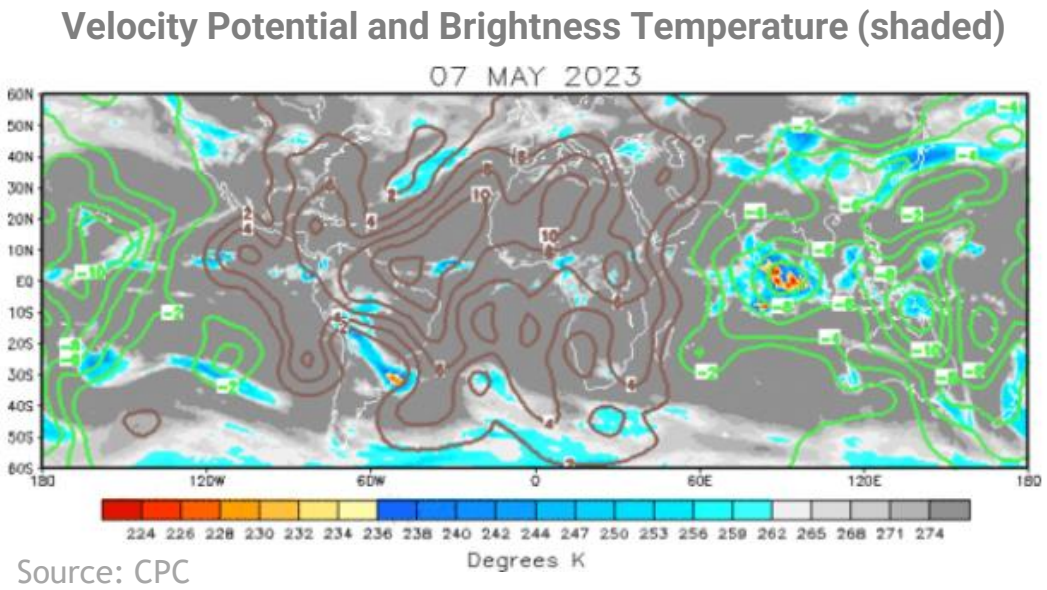
IRI/CPC Dynamic Models



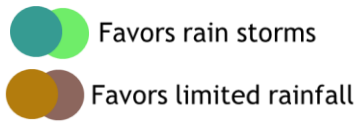
Madden-Julian Oscillation (MJO)

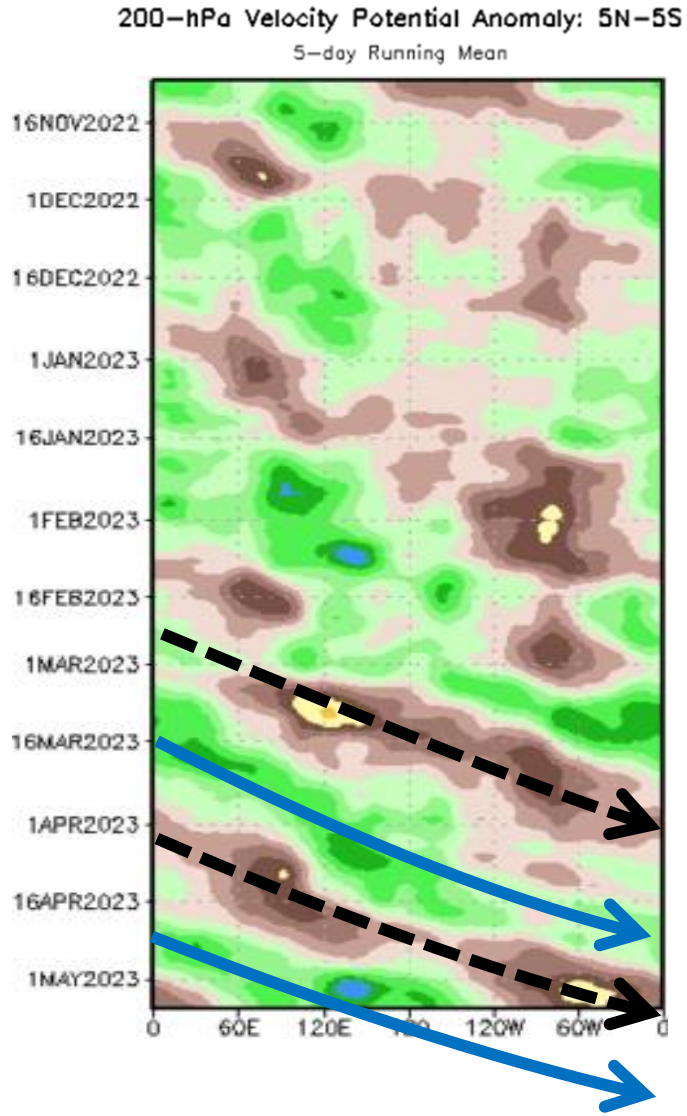
Current Observations:

- Very well defined Wave-1 Pattern continues.
- Speed: 1 to 1.5 months to circle the globe.
- Wet phase in the Maritime Continent/West Pac, arriving circa May 20.



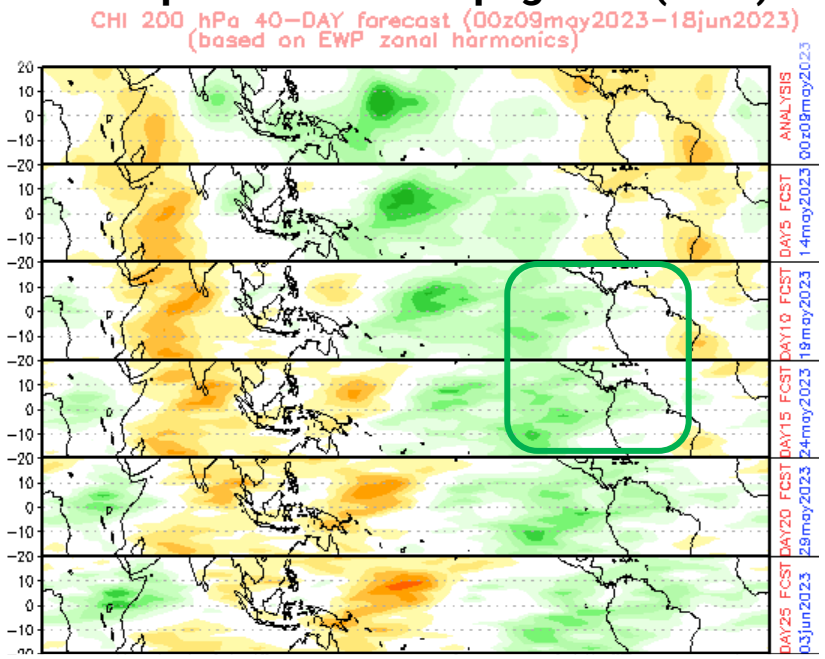
Source: CPC





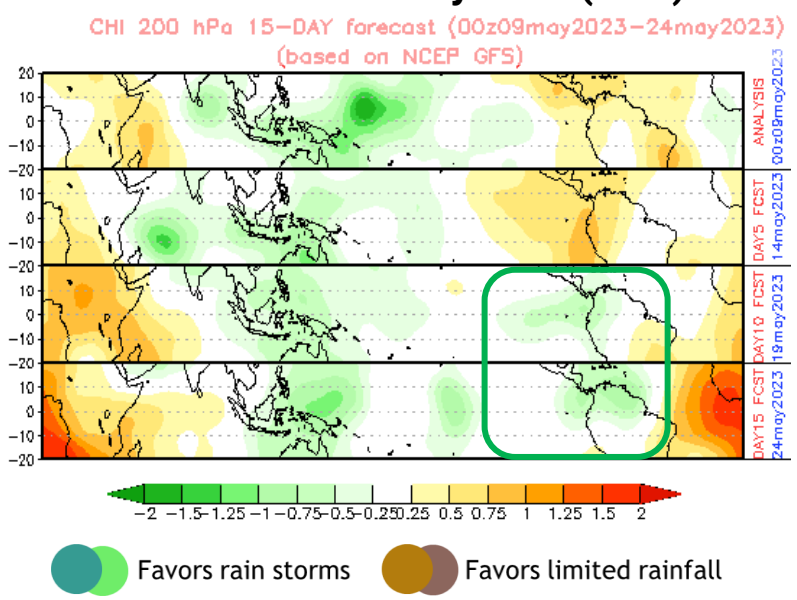
MJO Forecasts

Empirical Wave Propagation (EWP)

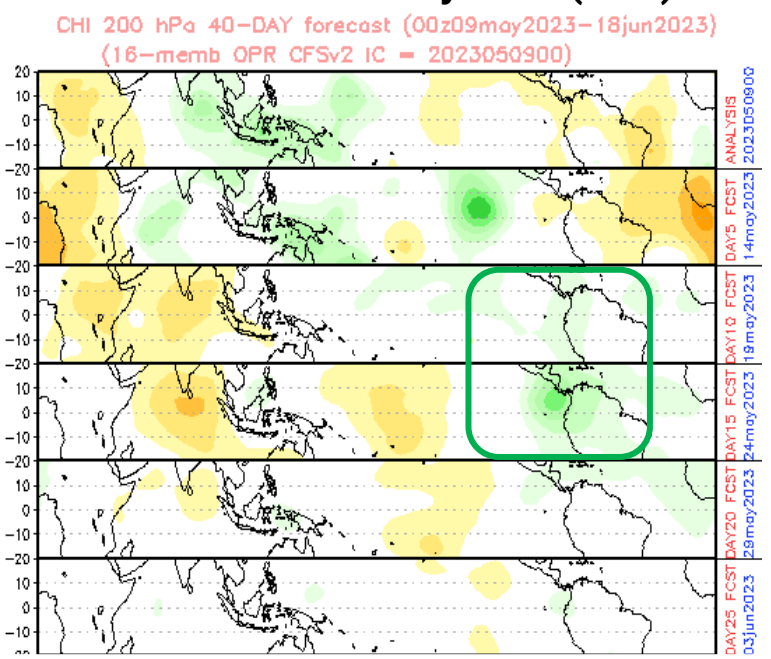


Source: CPC

Global Forecast System (GFS)



Climate forecast System (CFS)



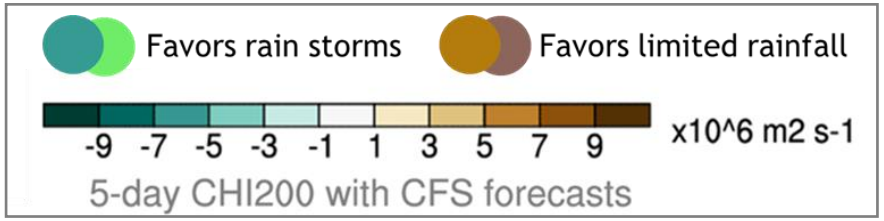
TAKEAWAYS

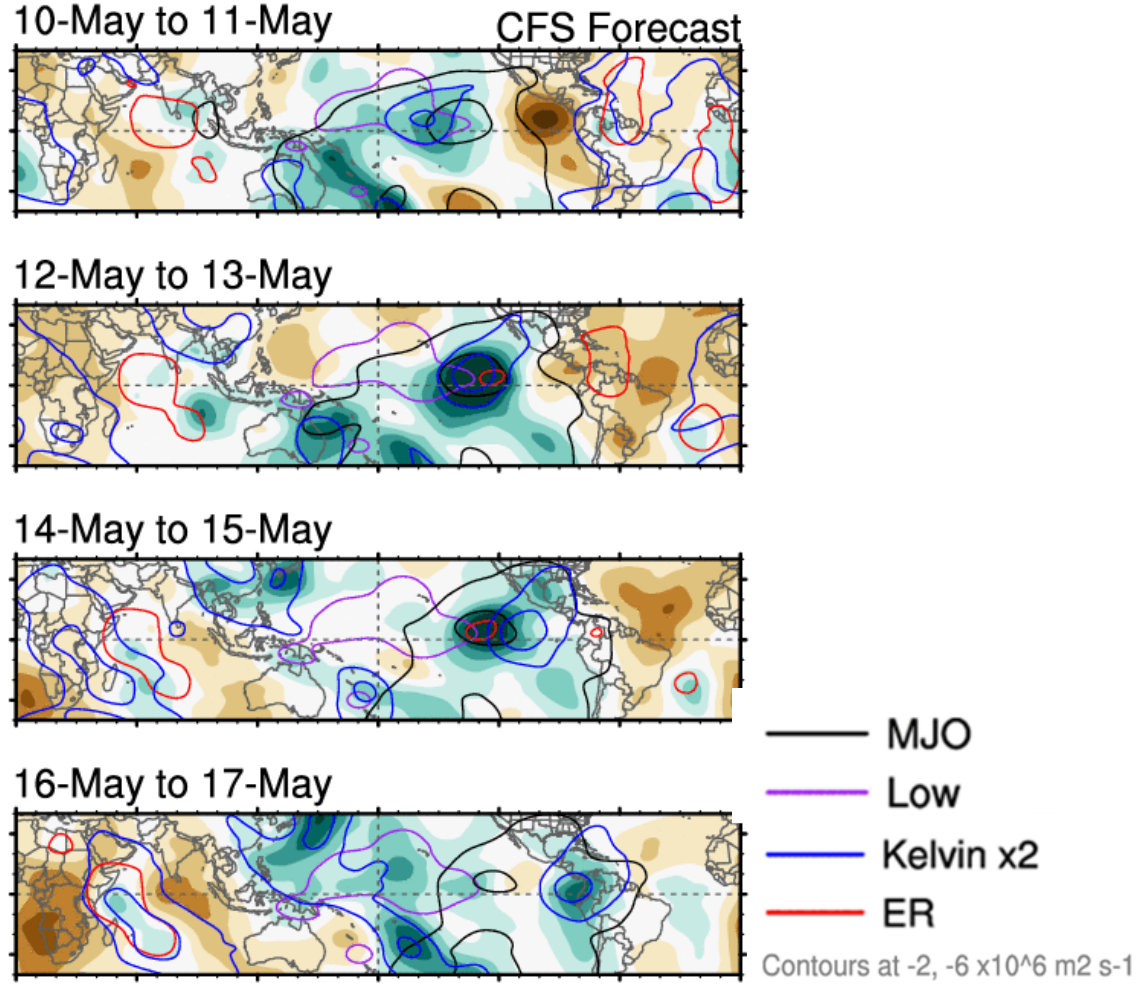
- **Dry MJO ending circa May 15.**
- **Wet MJO last 10 days of May, primarily.**

MJO and Upper Tropospheric Waves

Outlook for the next few days:

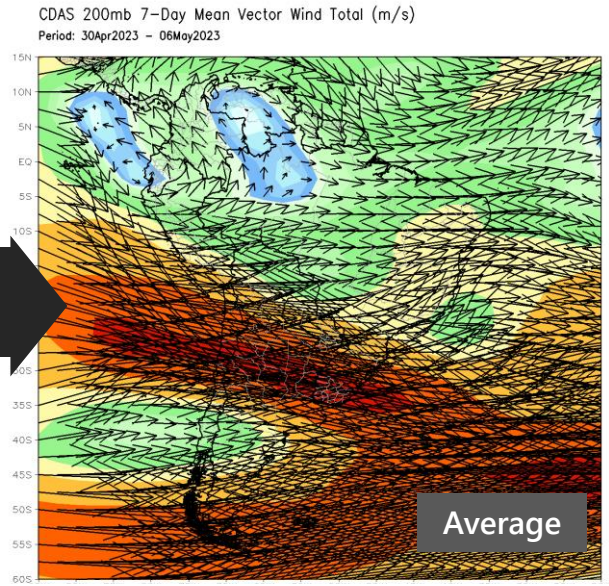
- Wet Kelvin on May 13-15 for Mexico/Central America, and May 16-18 for northern South America.



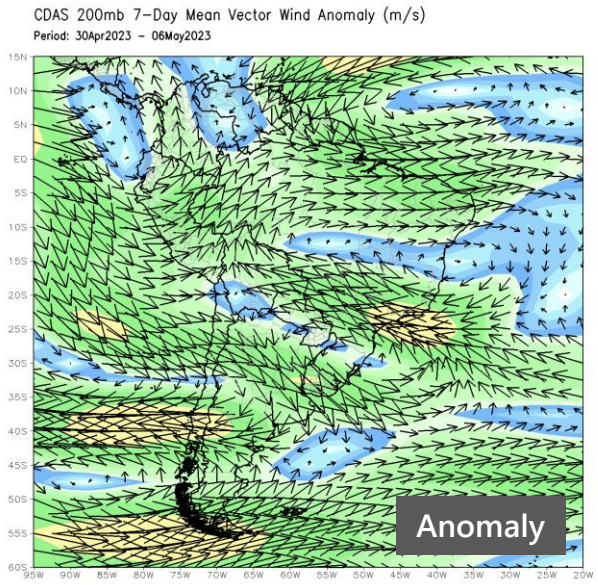


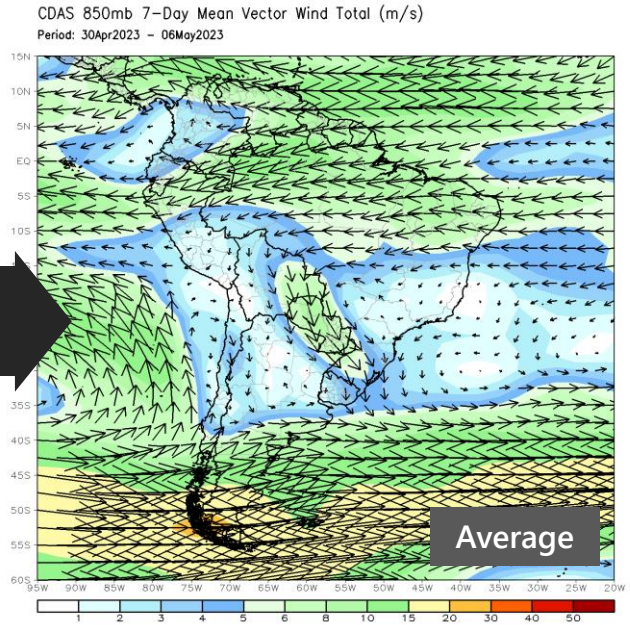
Source: NCICS

South America, Last 7 Days

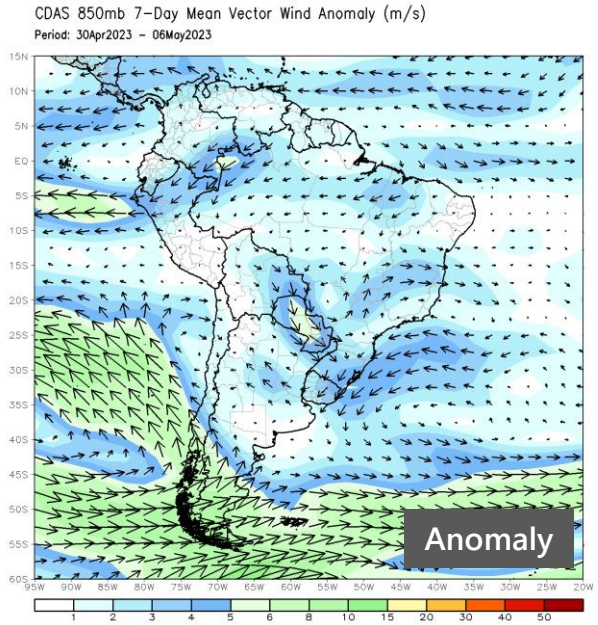


200 hPa Flow

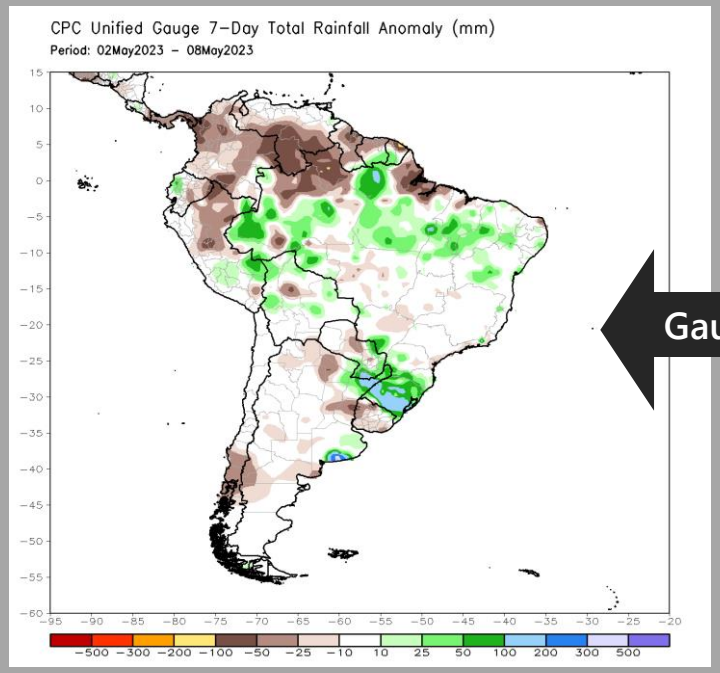




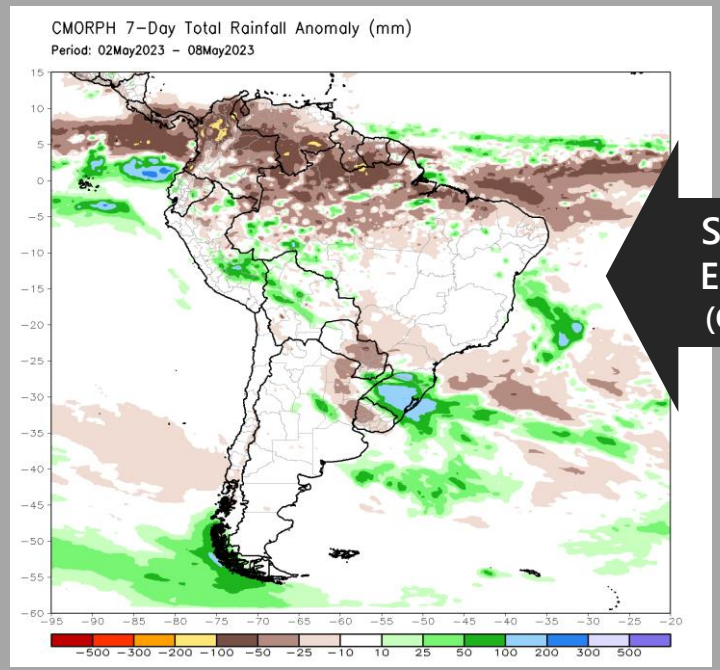
850 hPa Flow



Rainfall Anomalies



Gauges

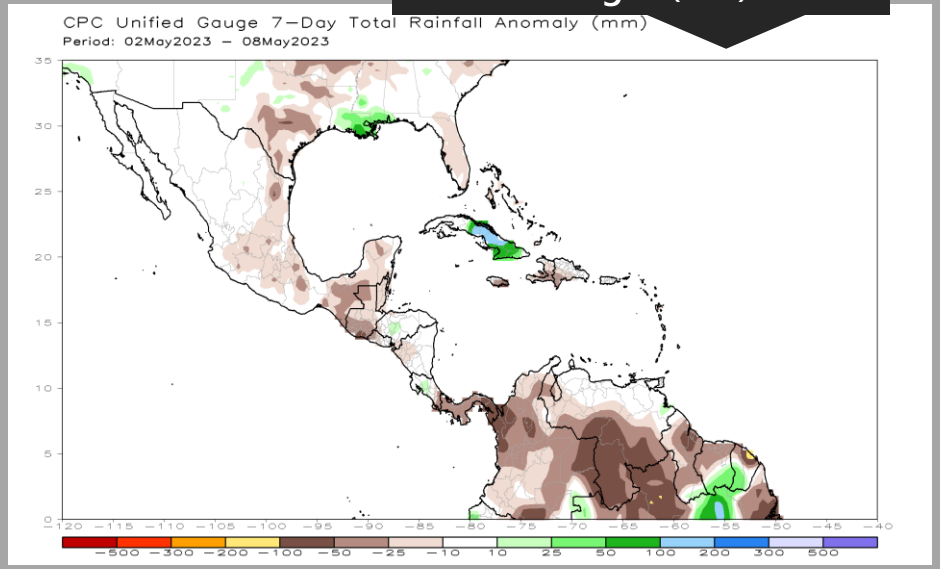


Satellite – Estimated (CMORPH)

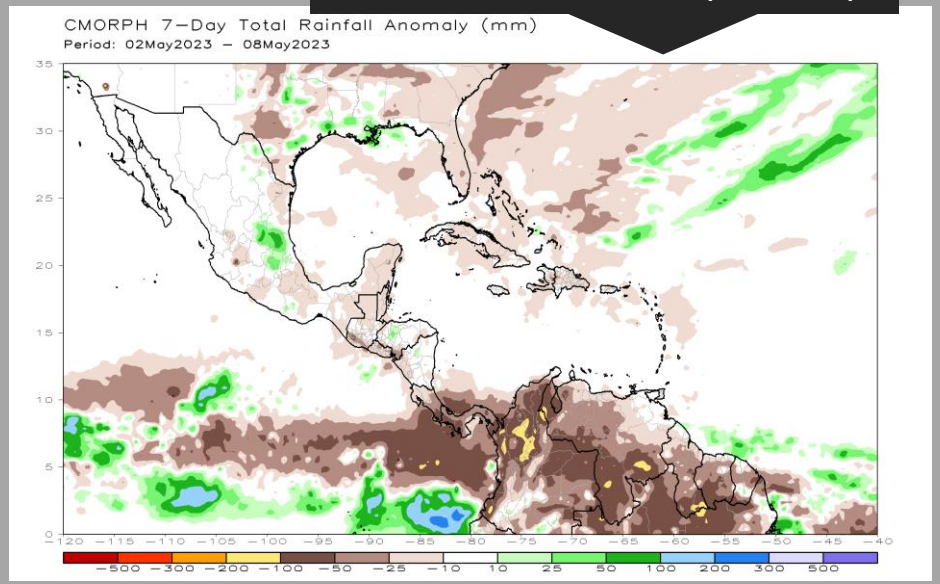
Caribbean and Central America, Last 7 Days

Rainfall Anomalies

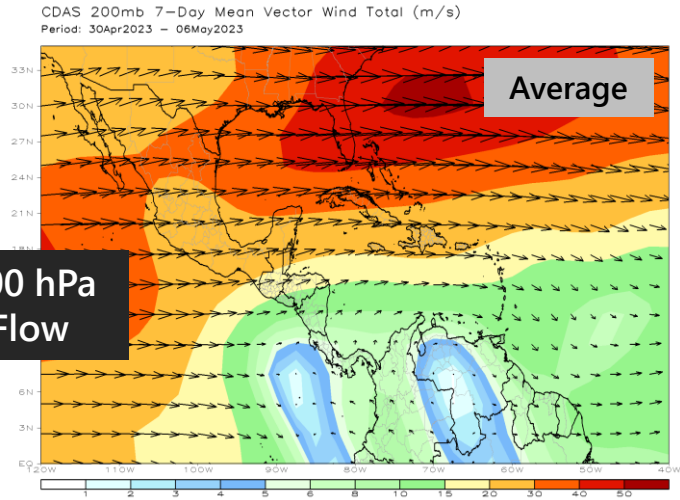
Gauges (CPC)

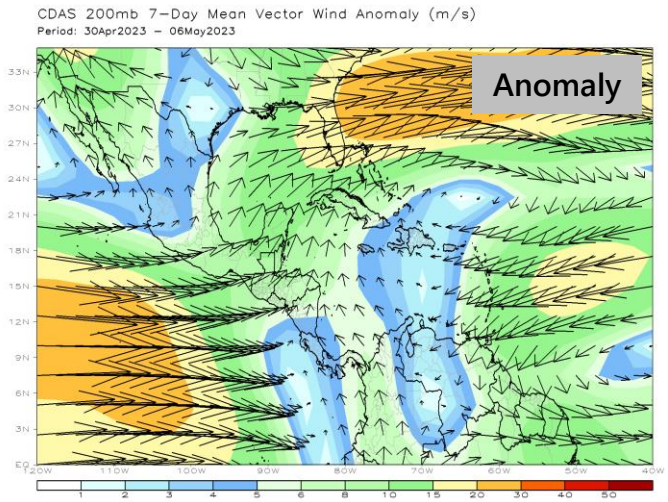


Satellite – Estimated (CMORPH)

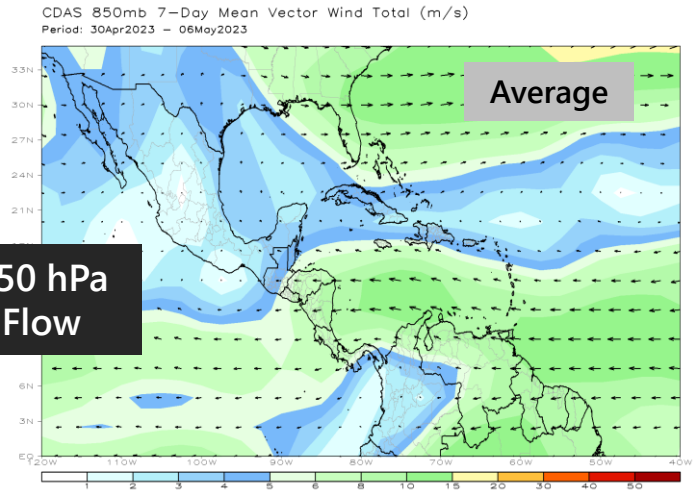


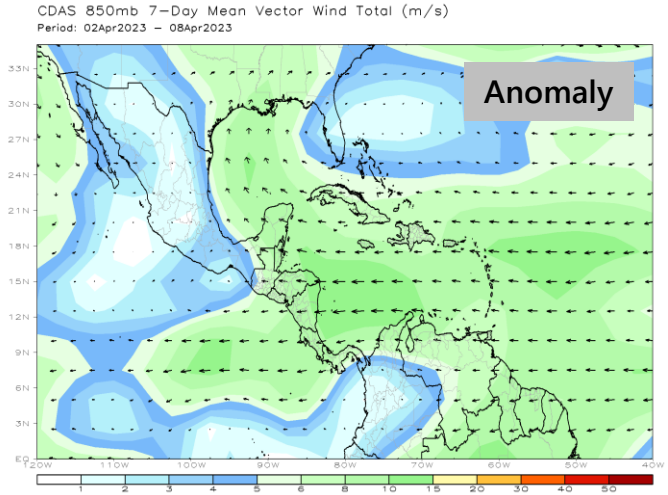
200 hPa Flow





850 hPa Flow





¡Gracias! Thank you! ¡Obrigado!

Next Session: 14 June 2023 at 15:00 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