WMO VLab Regional Focus Group
of the Americas and Caribbean

Since 2004

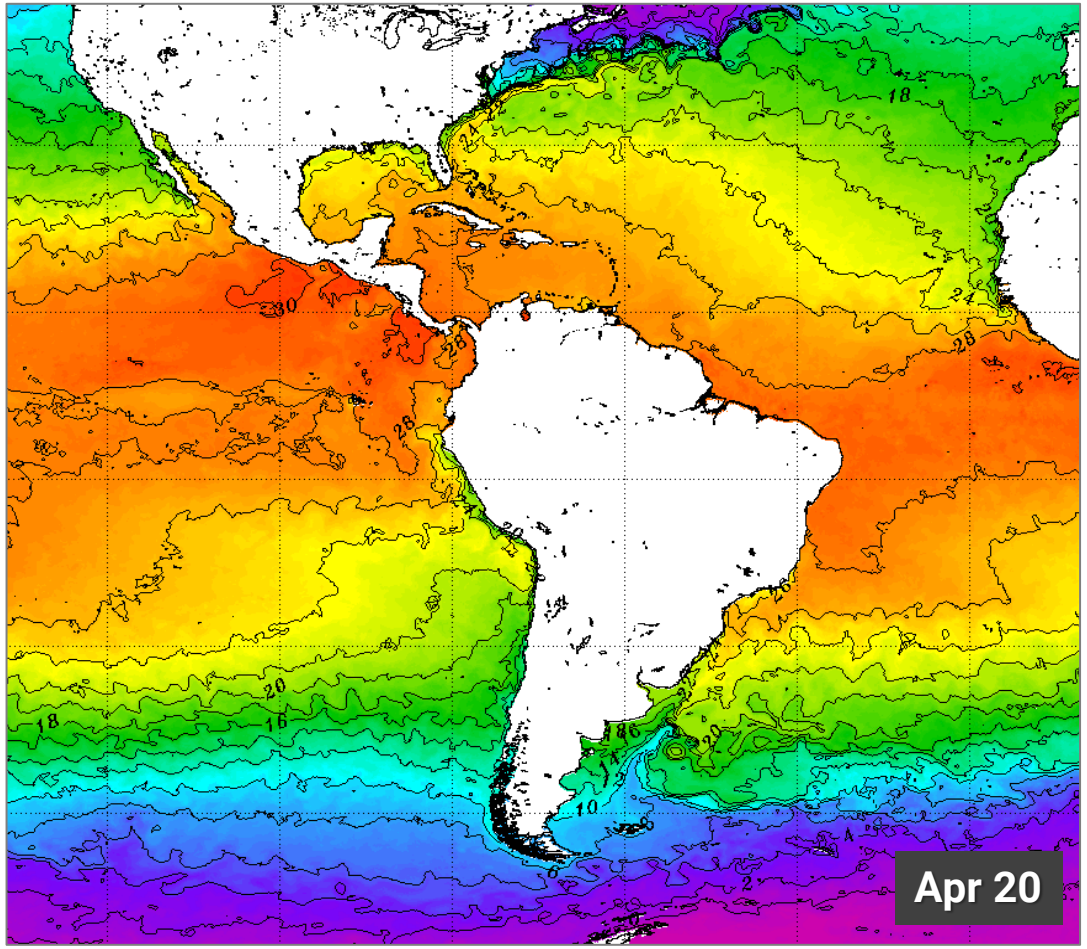
Climate Indices

Current Status and Projections

Wednesday 22 April 2026

Sea Surface Temperature (SST)

SST

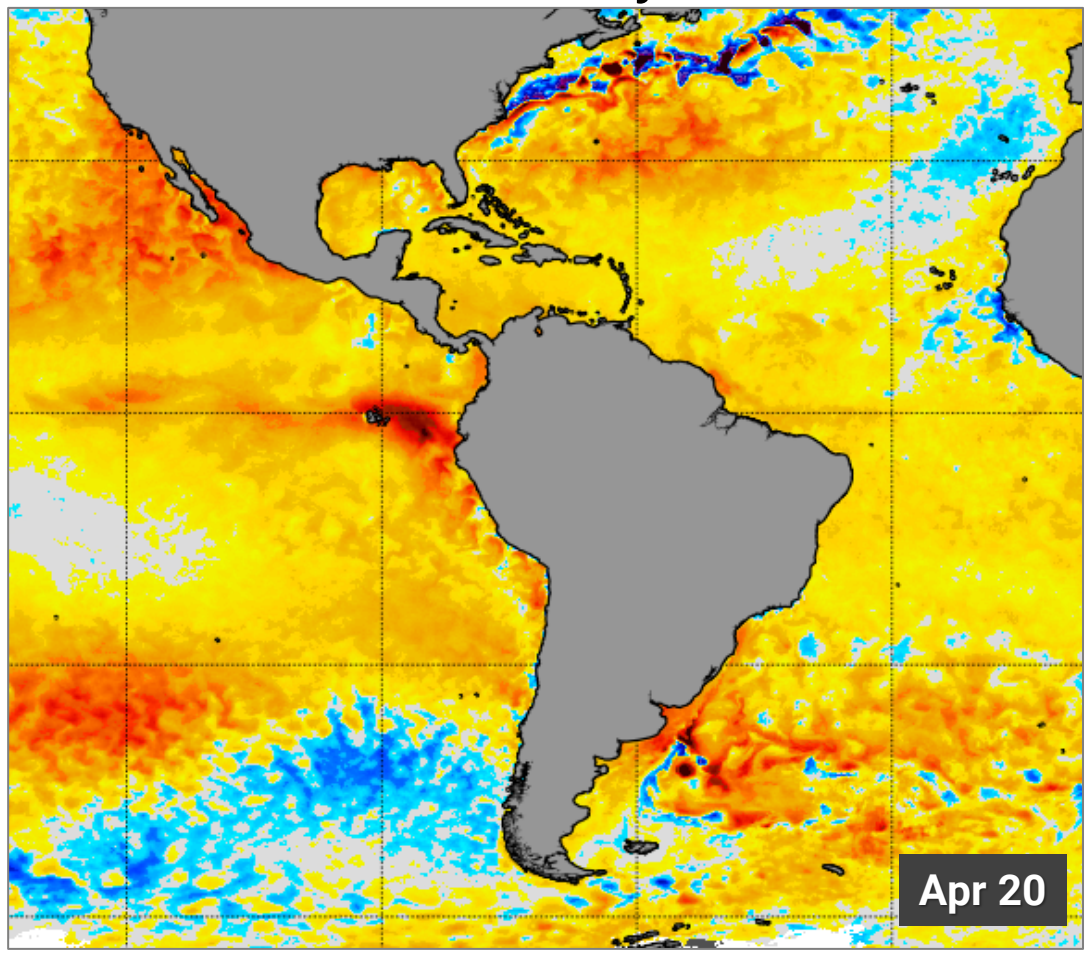


0 5 10 15 20 25 30

Source: OSPO

Sea Surface Temperature (°C)

Anomaly



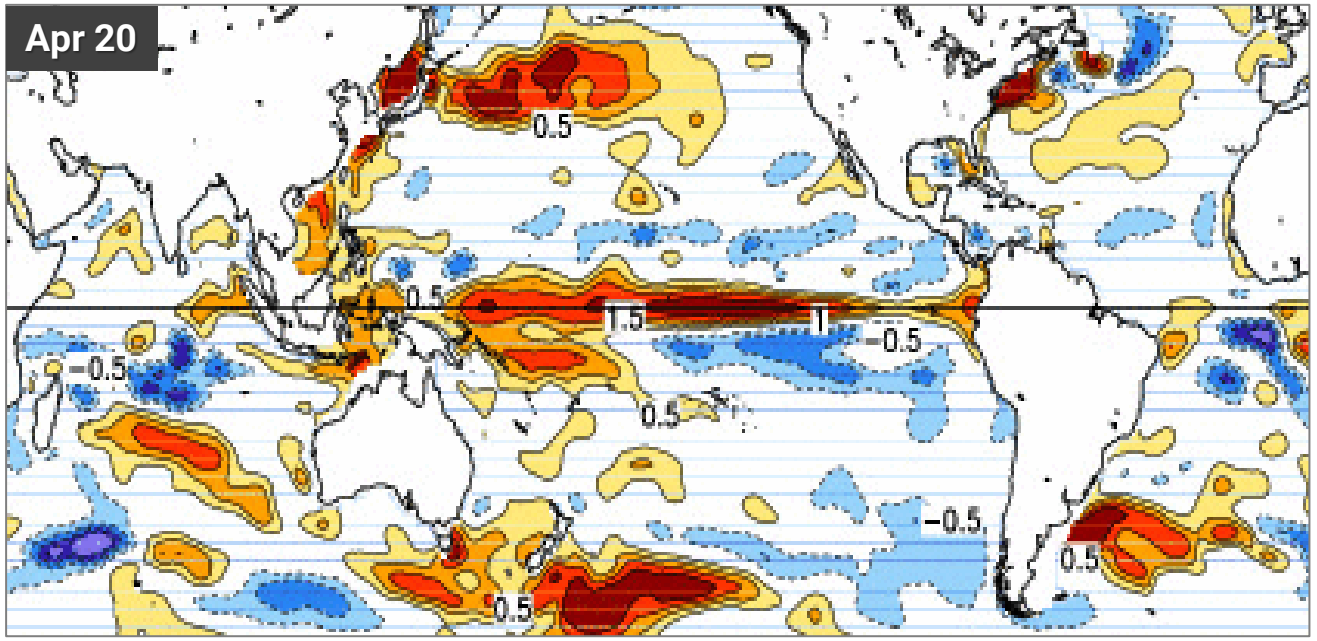
−5 −4 −3 −2 −1 0 1 2 3 4 5 °C

Source: NOAA Coral Reef Watch

SST Anomaly (°C)

Top 300m Layer Temperature Anomaly

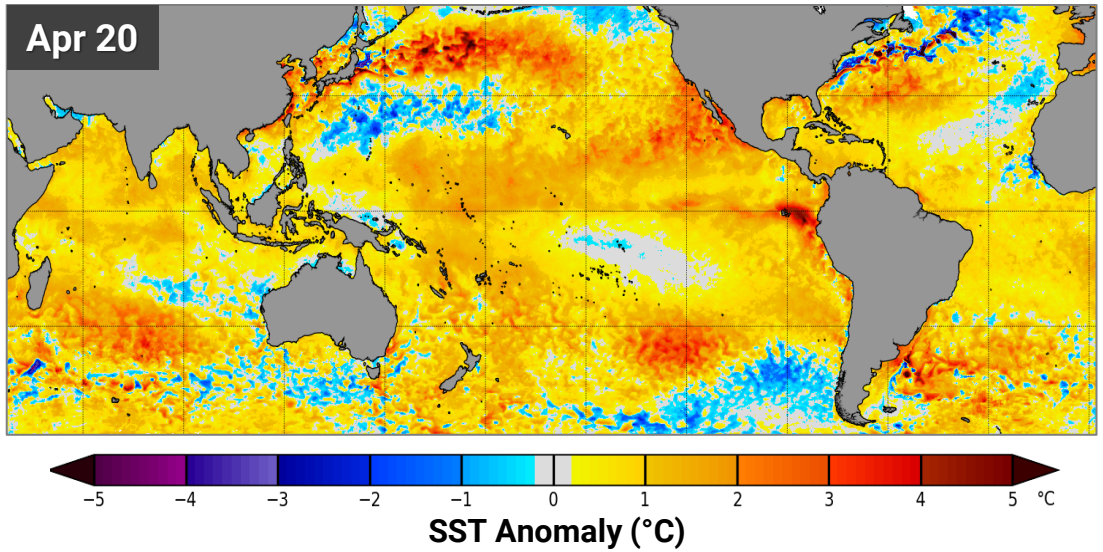
Layer Anomaly



Source: GODAS, CPC

Layer anomalies matter, as they last longer than superficial ones, making them a great subseasonal forecasting tool!

Surface Anomaly



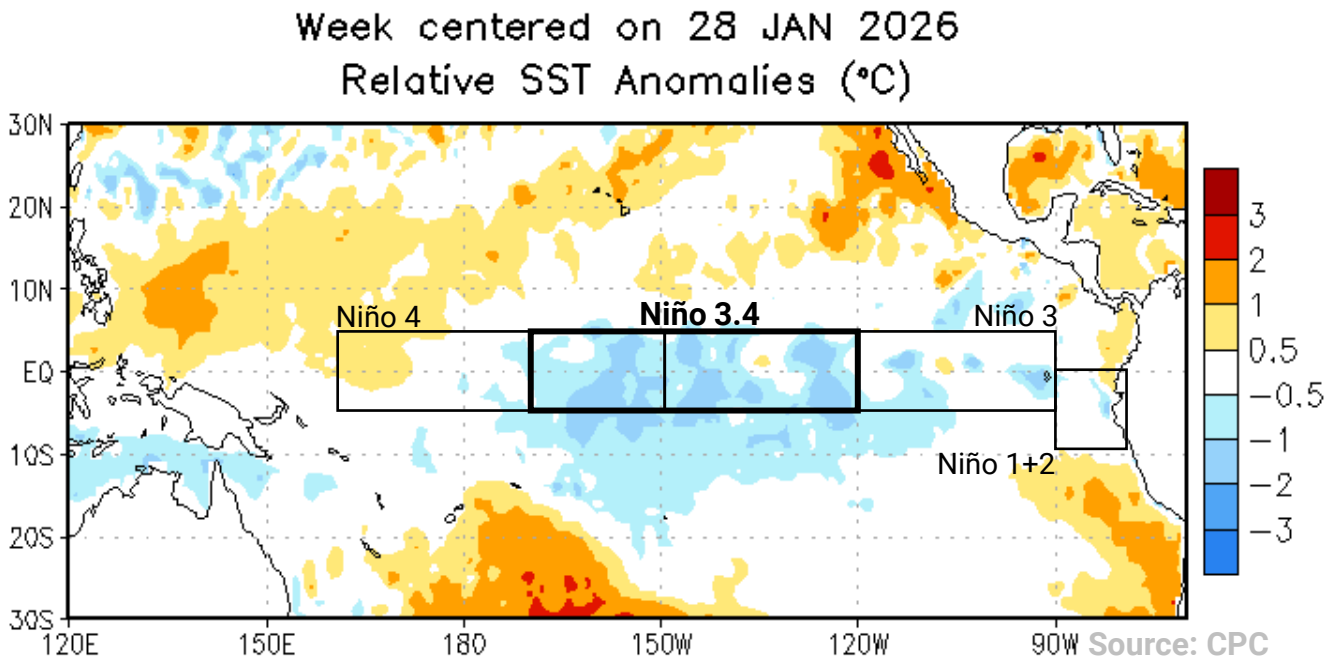
Source: NOAA Coral Reef Watch

El Niño-Southern Oscillation (ENSO)

CPC Official Statement

Final La Niña Advisory
El Niño Watch

- ENSO-neutral conditions are present.
- Equatorial sea surface temperatures (SSTs) are near-to-below-average in the east-central Pacific Ocean.



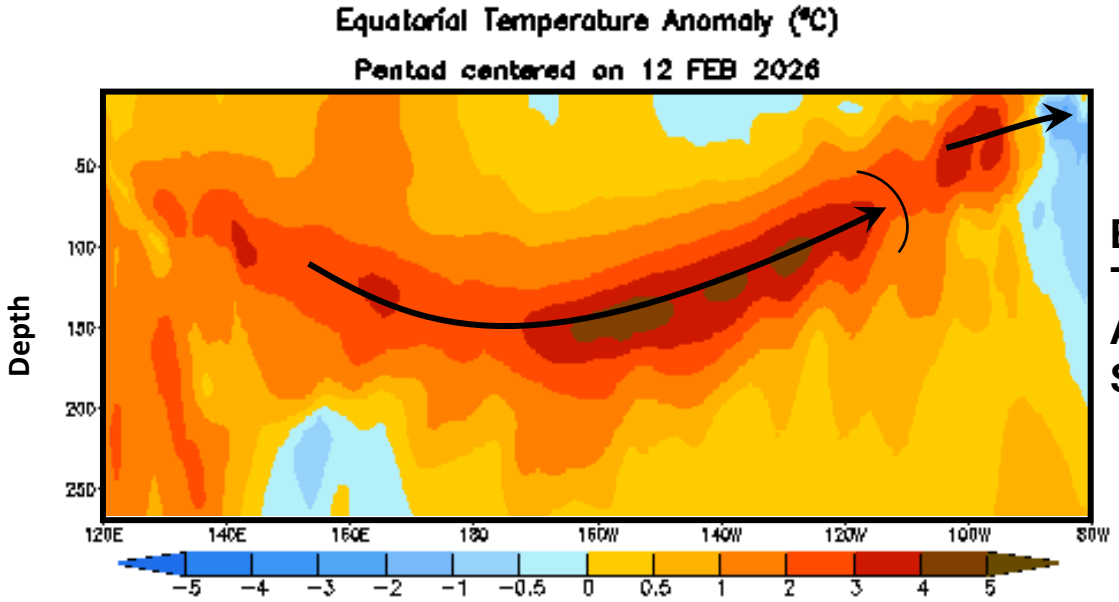
Key Points

- La Niña has evolved to ENSO-neutral
- All Niño regions are warming rapidly and their averaged SST anomalies have exceeded +0.5°C:
  - Niño 4 (SSTA ~ **+1.1°C**)
  - **Niño 3.4 (SSTA ~ +0.6°C)**
  - Niño 3 (SSTA ~ **+0.8°C**)
  - Niño 1+2 (SSTA ~ **+1.9°C**): Very warm due to the March Kelvin Wave, but warming remains mostly offshore, limiting coastal impacts.

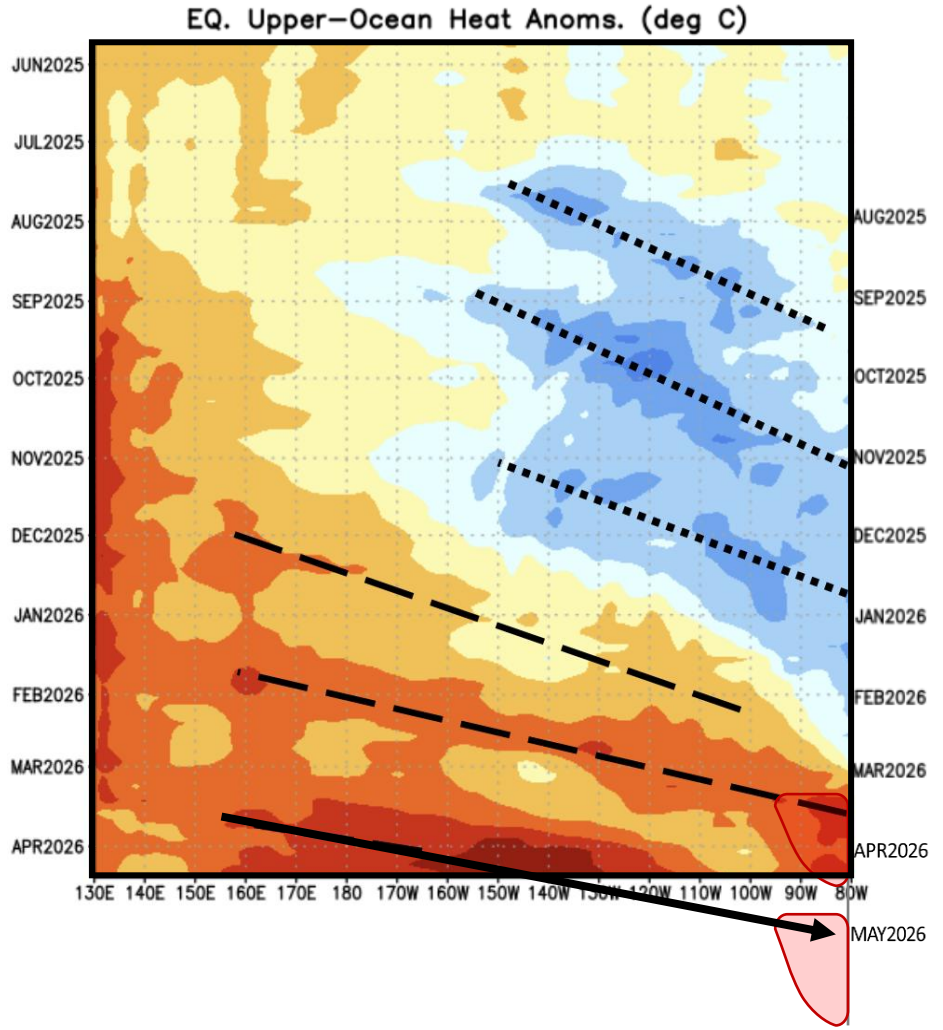
Massive Envelope of Warm Oceanic Kelvin Waves Present

Takeaways

- A massive envelope of warm (downwelling) Kelvin waves has formed due to persistent strong westerly wind bursts in the Western Pacific.
- Its leading edge extends near 115°W.
- It should arrive in South America near May 10th, infusing warm waters during 6+ weeks, leading to a massive warming of Niño 1+2 by late June.



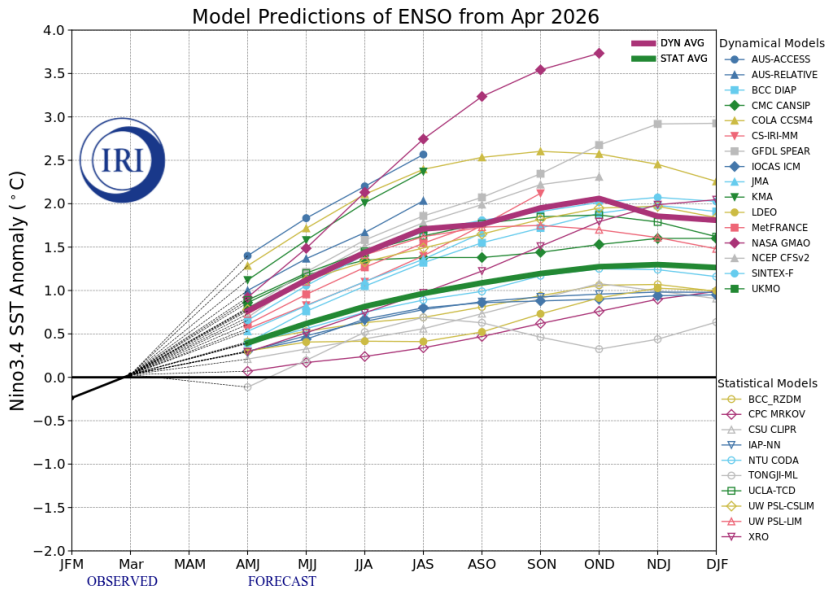
Equatorial Temperature Anomaly Cross Section



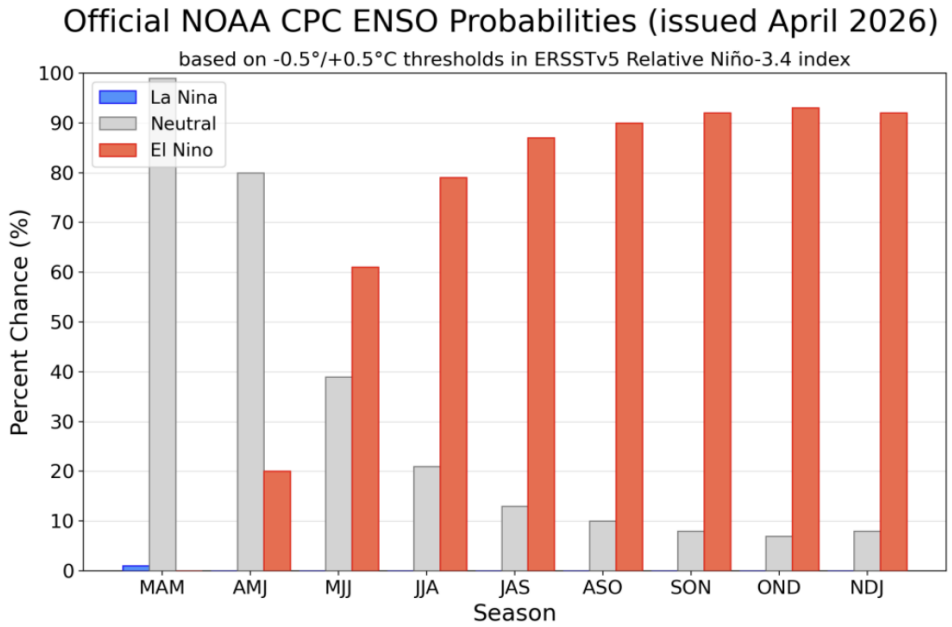
ENSO Outlook:

ENSO-neutral conditions favored through April-June 2026 (80% chance). In May-July 2026, El Niño is likely to emerge (61% chance) and persist through at least the end of 2026.

Dynamical Models



Probabilistic Forecast

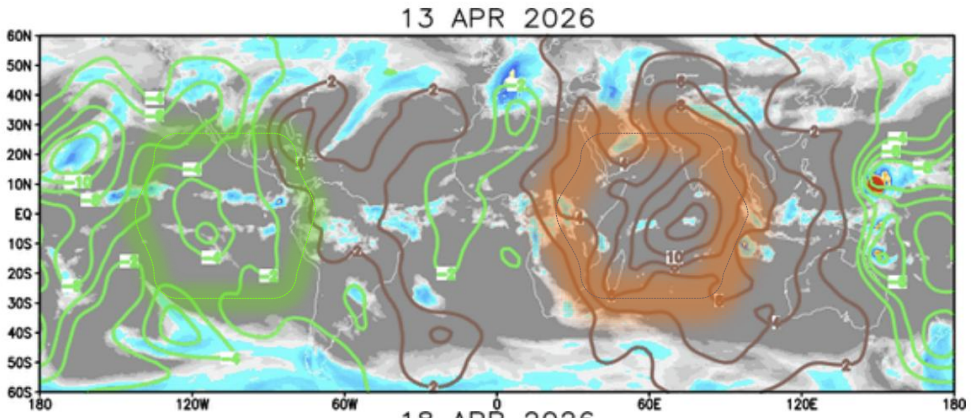


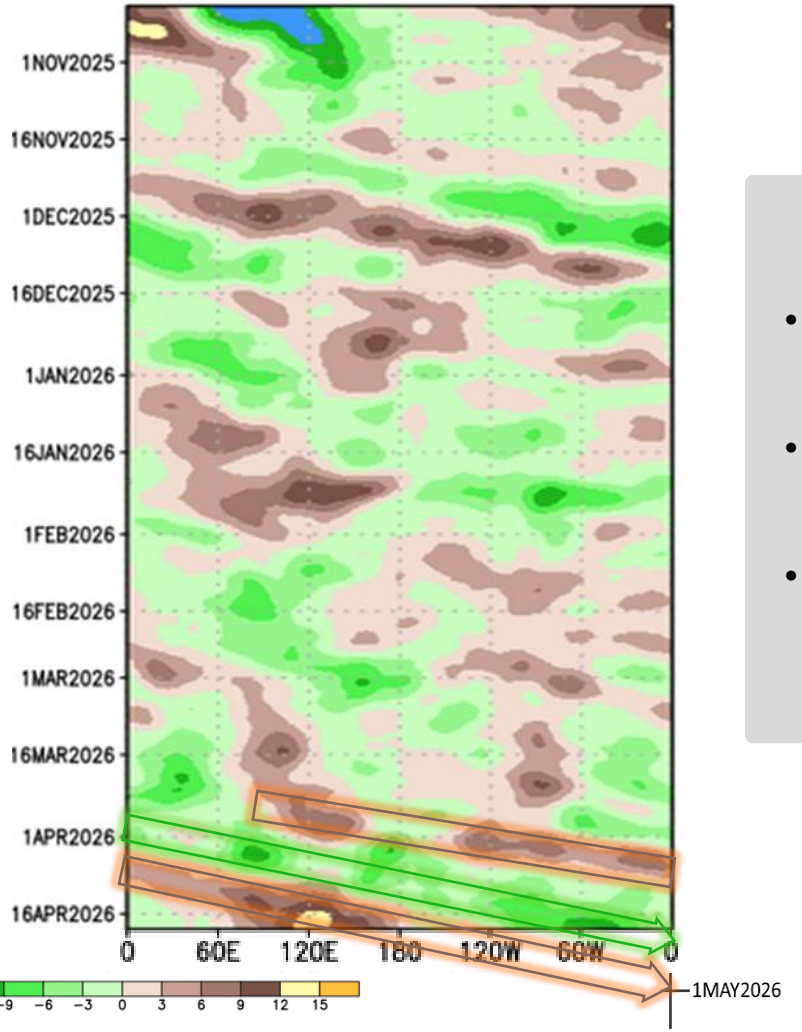
Takeaways

- NOAA is confident about El Niño developing during the north Hemisphere Summer, lasting at least through January 2027.
- Talk of a ‘super El Niño’ exists, but intensity is hard to predict, as it depends on ocean coupling/Kelvin wave generation, and other processes that are difficult to forecast months ahead.

Madden-Julian Oscillation (MJO)

Velocity Potential and Outgoing Long Wave Radiation



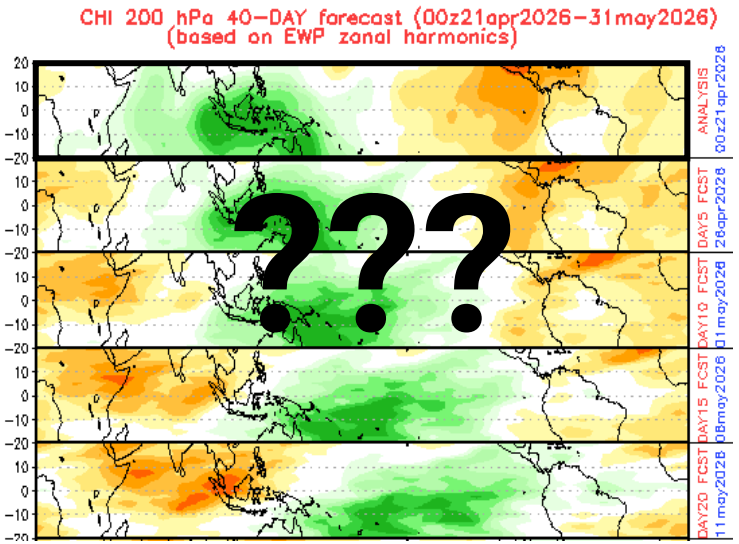


Takeaways

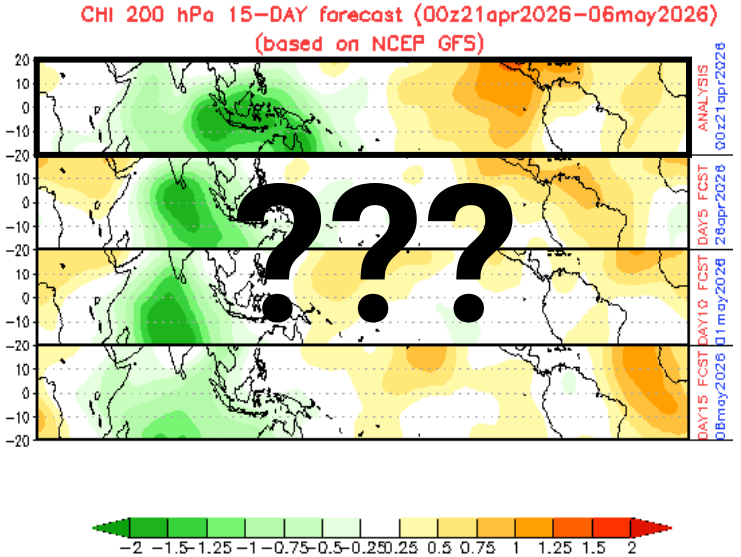
- The MJO is better organized, and now has a wave 1 pattern.
- The wet phase is crossing the Americas and Atlantic.
- The dry phase should arrive near the end of April and the wet phase in about 1 month.

MJO Forecasts

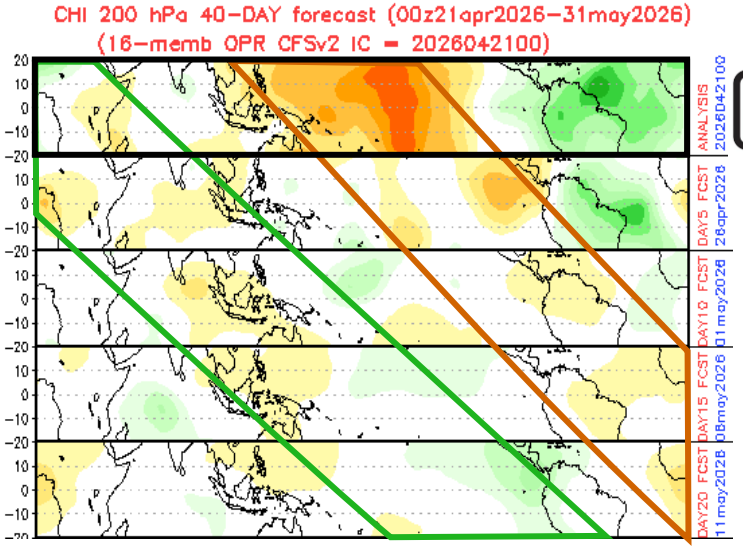
Empirical Wave Propagation



Global Forecast System (GFS)



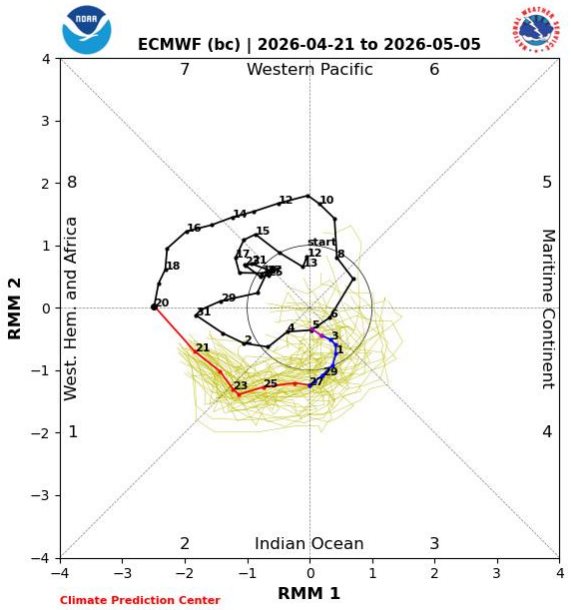
Climate Forecast System (CFS)

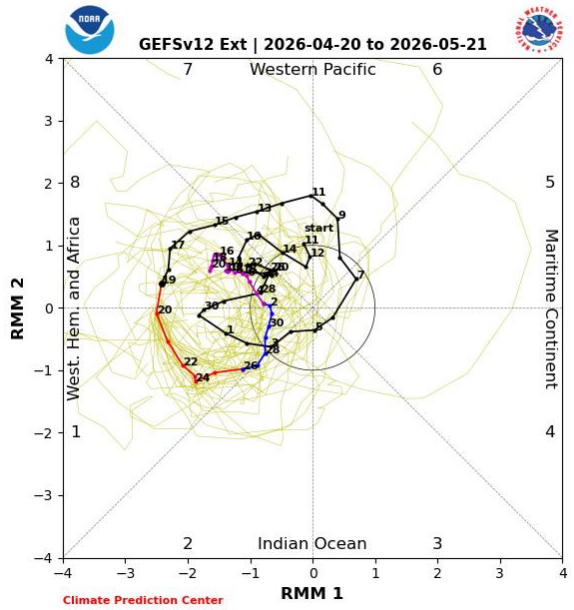


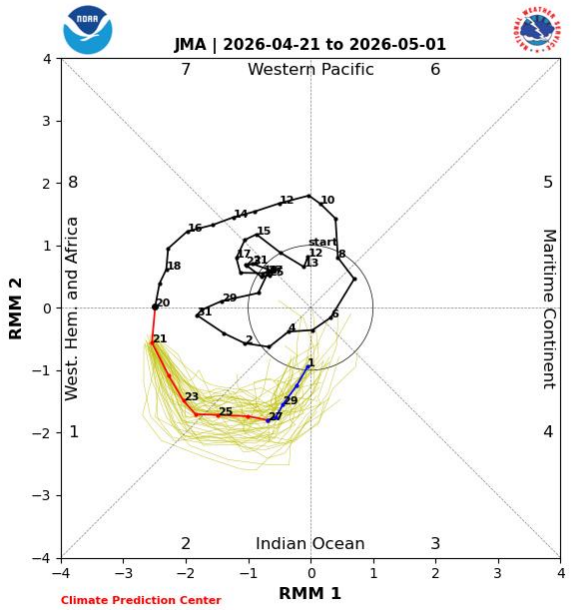
Takeaways

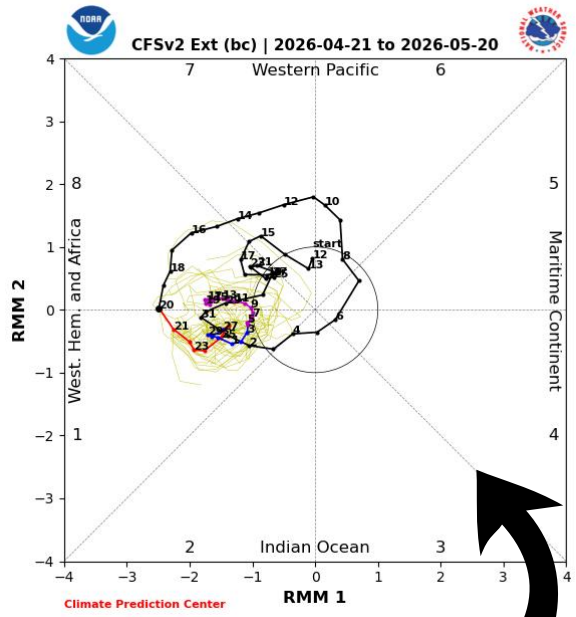
- The CFS aligns well with observations and propagation speed, capturing the dry phase over the Americas between April 27 and May 8. However, it indicates a rapid weakening of the MJO signal.
- But the EPW and GFS seem to have an initialization error as divergent potential velocity (green) is currently over the Americas, NOT over the Maritime Continent. Thus, this time, we will look at other models using MJO Phase diagrams.

MJO Forecasts: Phase Diagrams





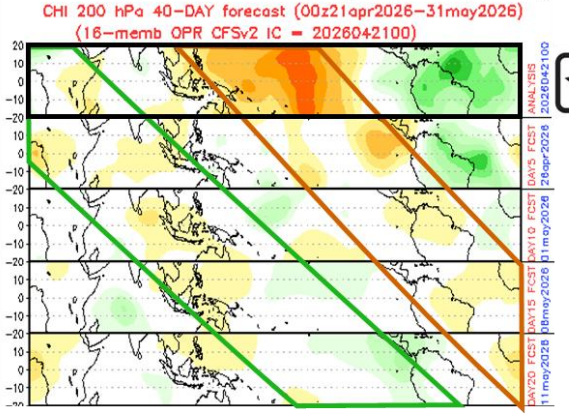




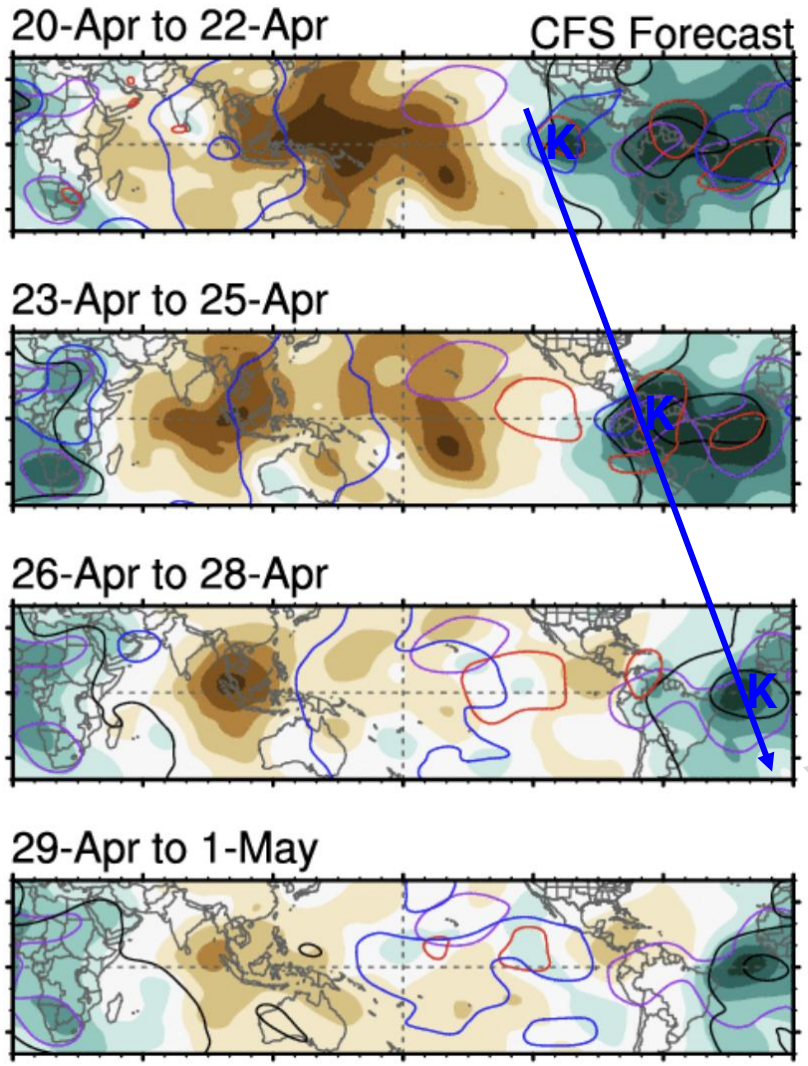
Takeaways

- Phase Diagrams confirm that the MJO is entering phase 1, or the Atlantic/Africa. Wet for the Americas.
- They all show the MJO becoming extremely disorganized by May 1, as it enters the circle while nearing/in phase 2 (east Africa/Indian Ocean).

Climate Forecast System (CFS)



Upper Tropospheric Waves

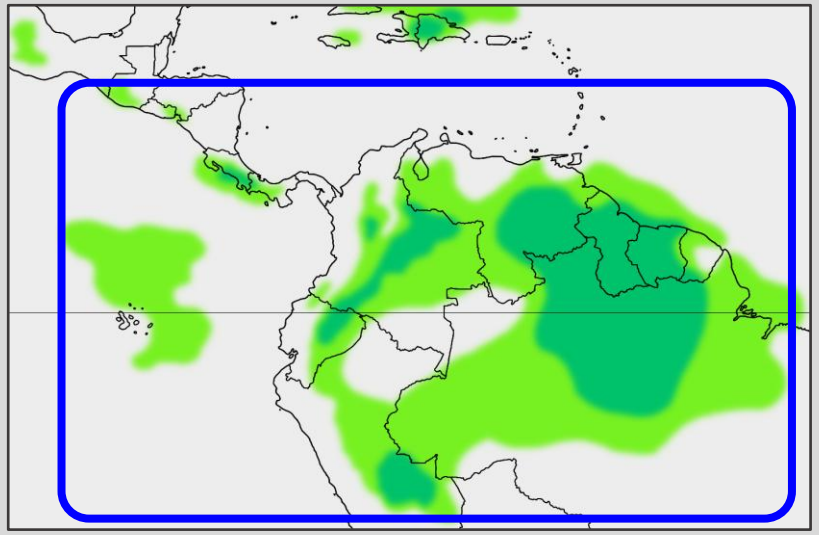


Kelvin Wave:

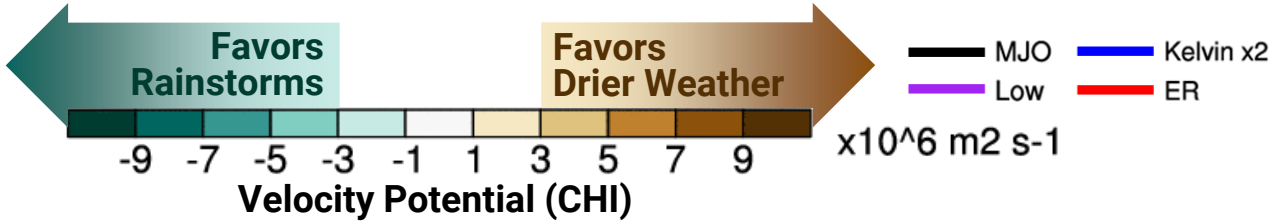
It will likely enhance rainfall through April 26 in:

- S Costa Rica and Chiriquí.
- SE Venezuela, Guyana, Suriname and N Brazil.
- Ecuador and, east of the Andes and in the Magdalena Medio.
- Perú: Selva sur y central.

Forecast of largest rainfall totals through April 26



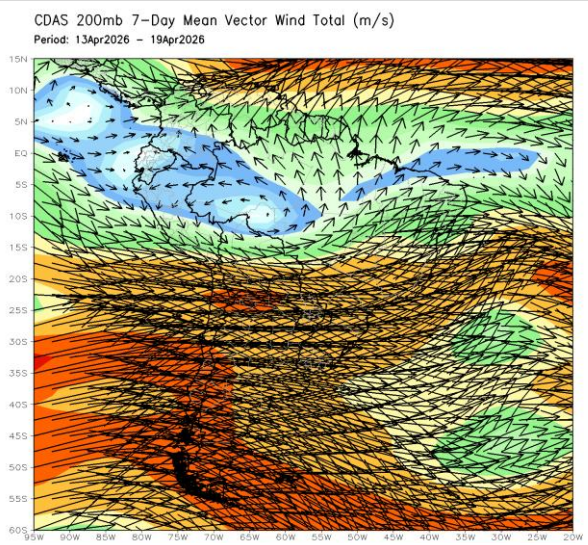
Largest Rainfall Totals

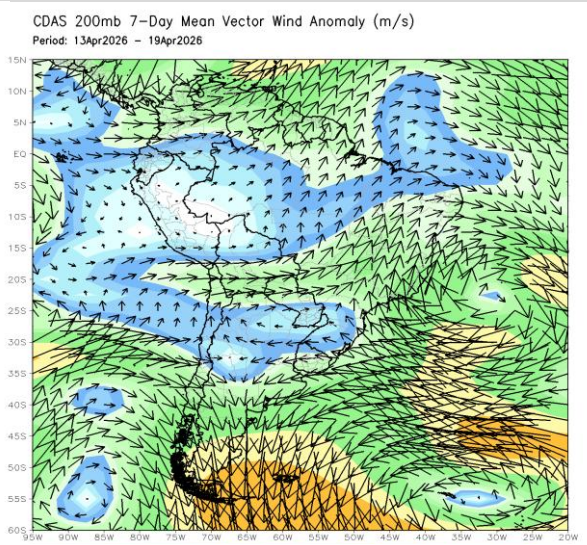


South America - Last 7 days

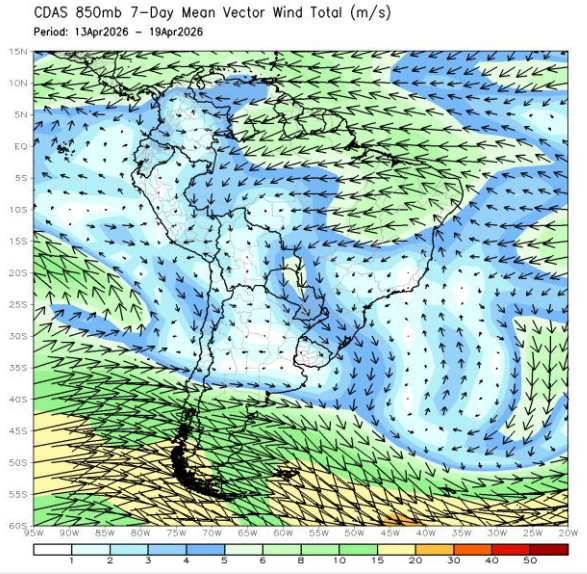
Flow

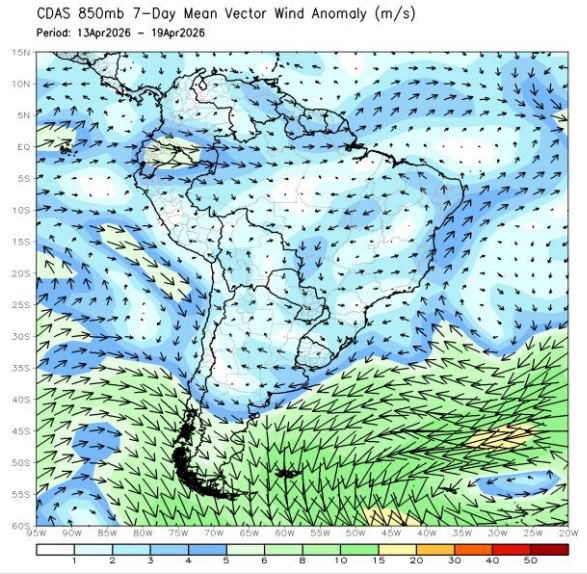
200 hPa



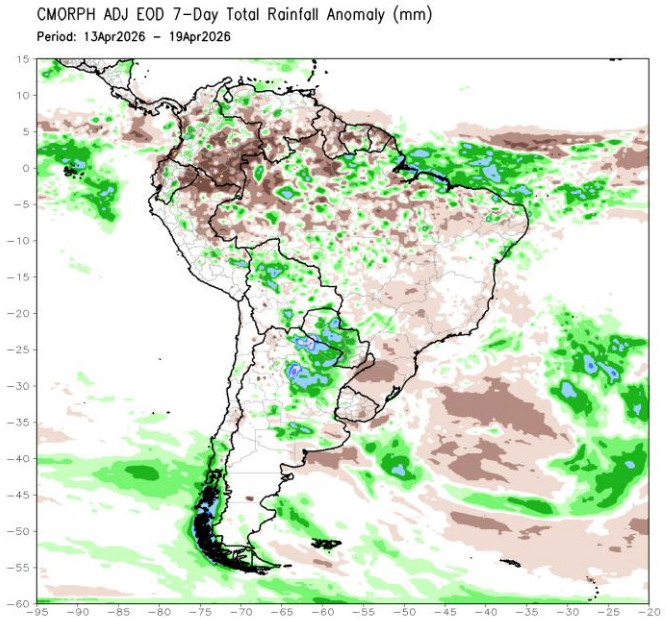


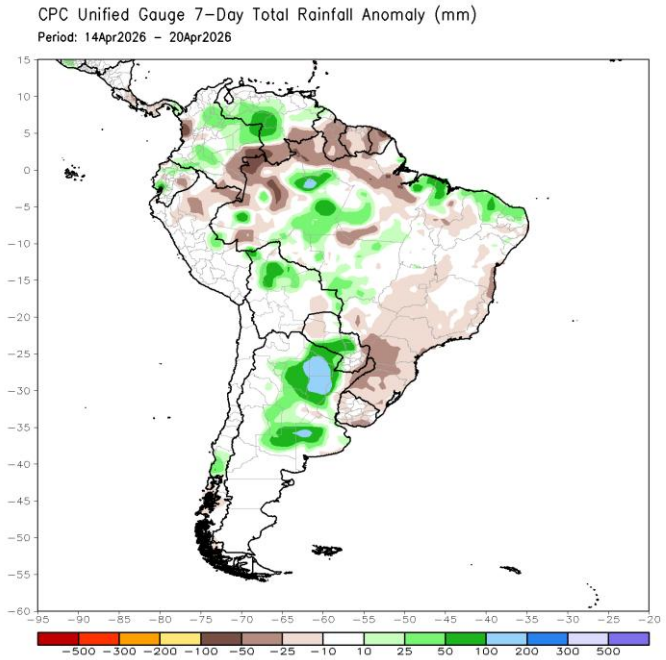
850 hPa





Rainfall Anomalies

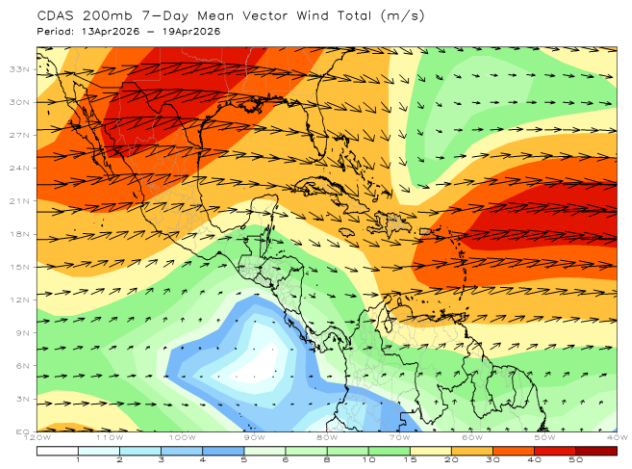


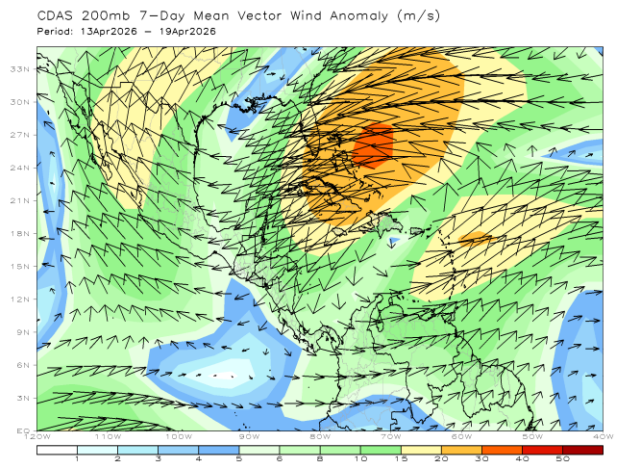


Caribbean, Central America and Mexico
last 7 days

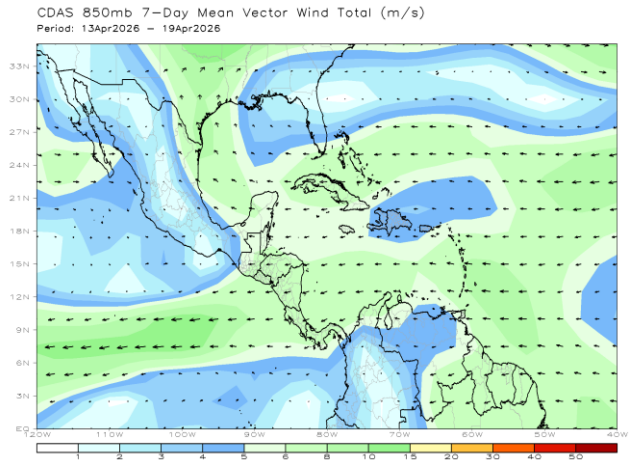
Flow

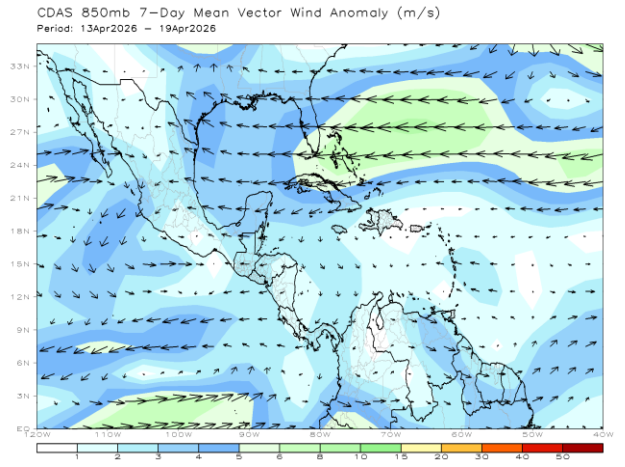
200 hPa



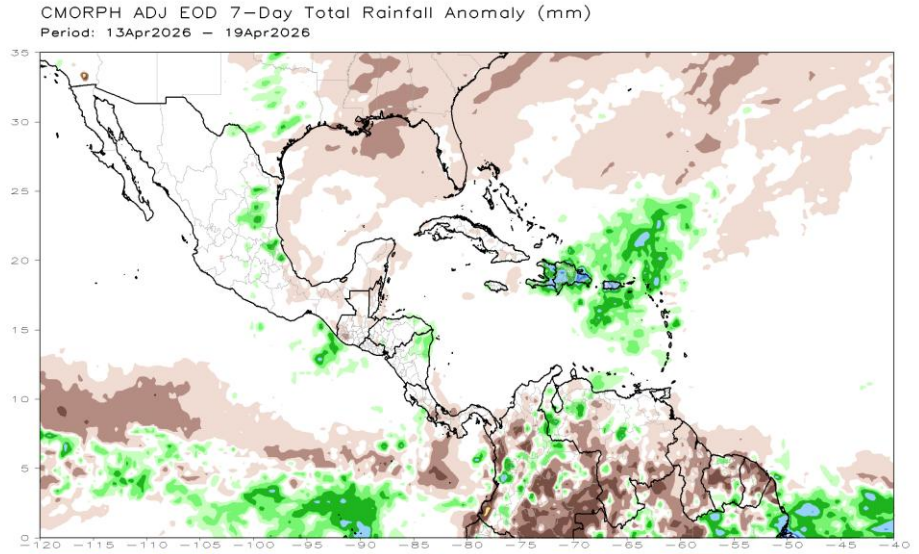


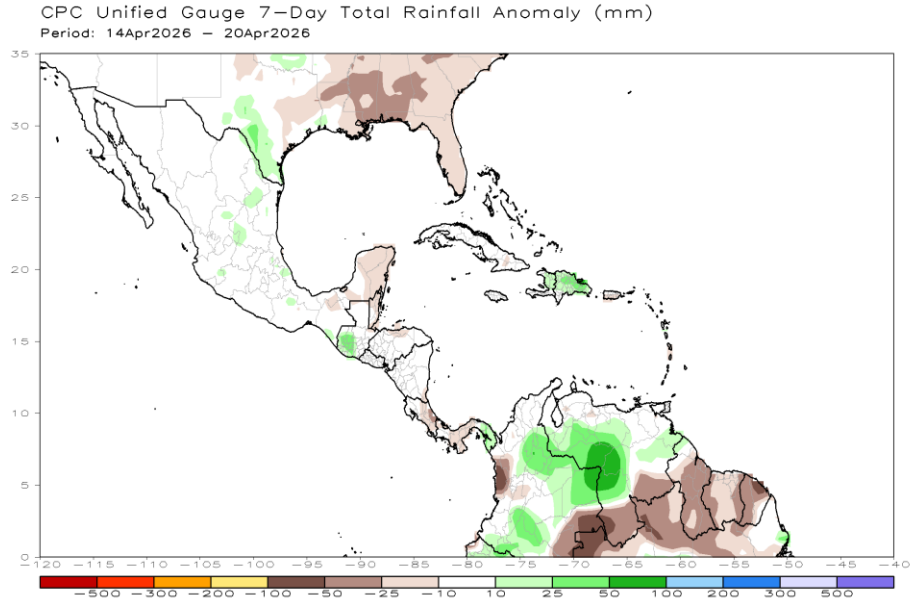
850 hPa





Rainfall Anomalies





Thank you! Gracias! **Obrigado!**

Next Sessions

Wednesday, 20 May 2026 at 15:00 UTC

Wednesday, 24 June 2026 at 15:00 UTC

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