

WMO VLab Regional Focus Group
of the Americas and Caribbean



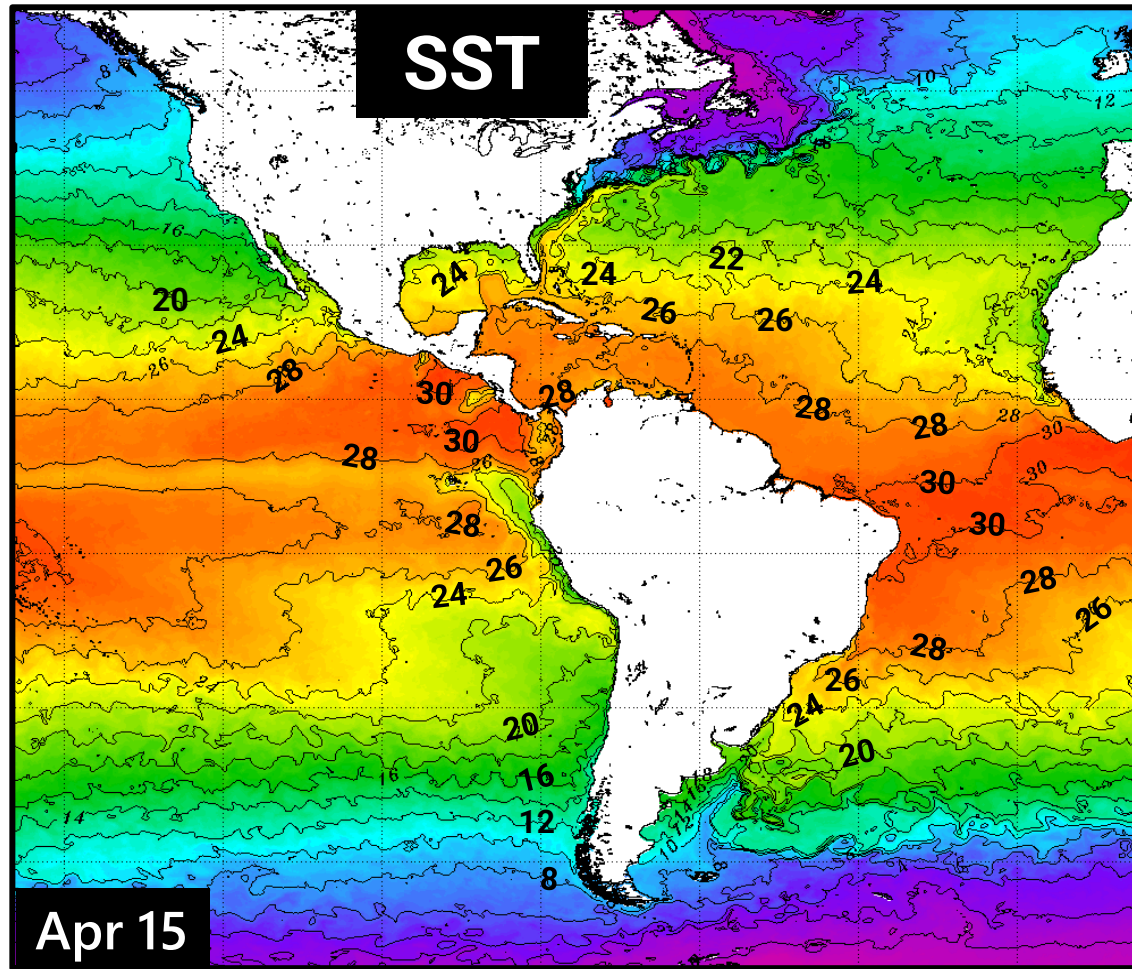
Since 2004

Climate Indices

Current Status and Projections

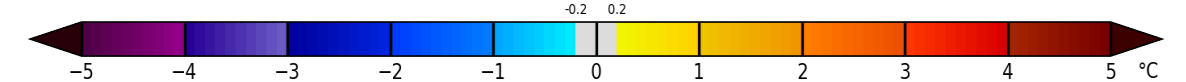
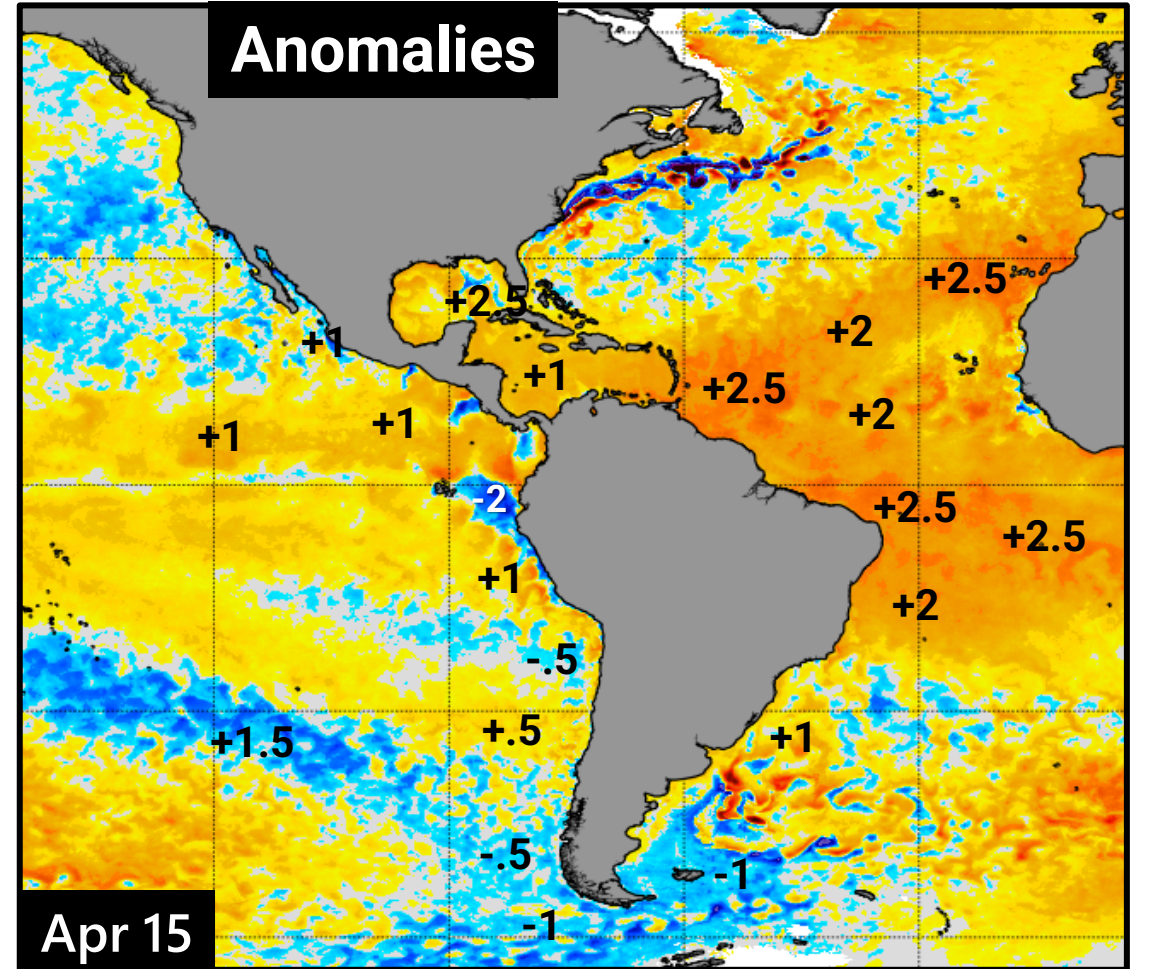
Wednesday 17 April 2024

Sea Surface Temperature (SST)



NOAA OSPO

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



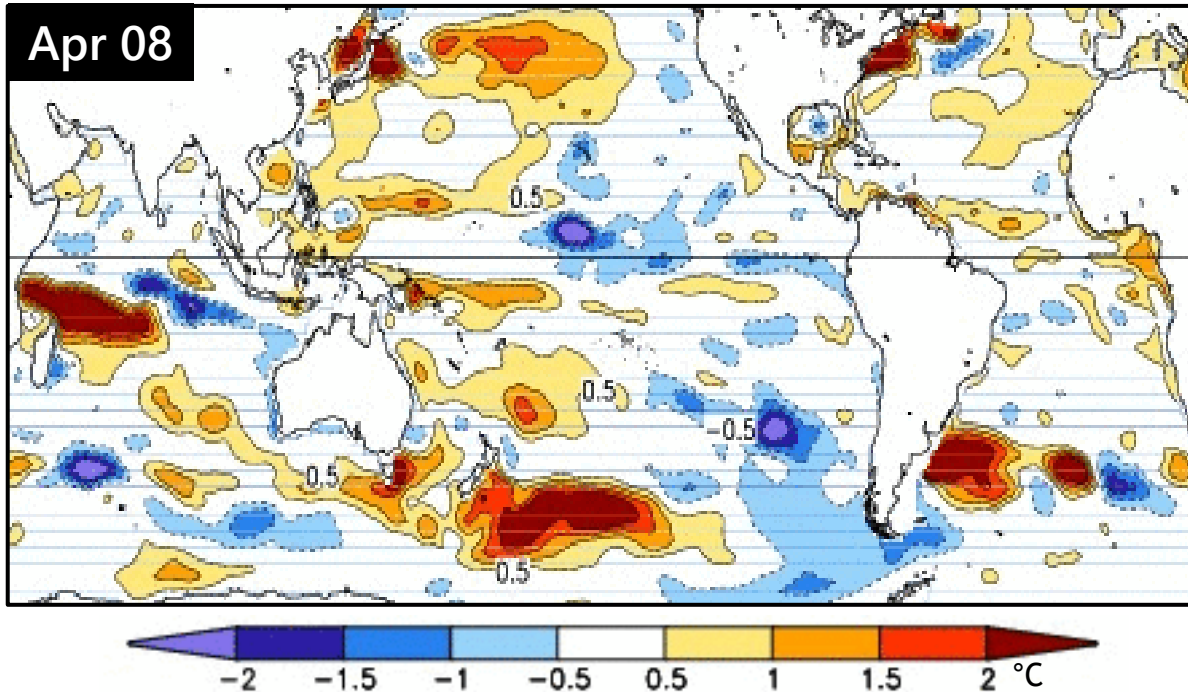
NOAA Coral Reef Watch

https://coralreefwatch.noaa.gov/product/5km/index_5km_ssta.php

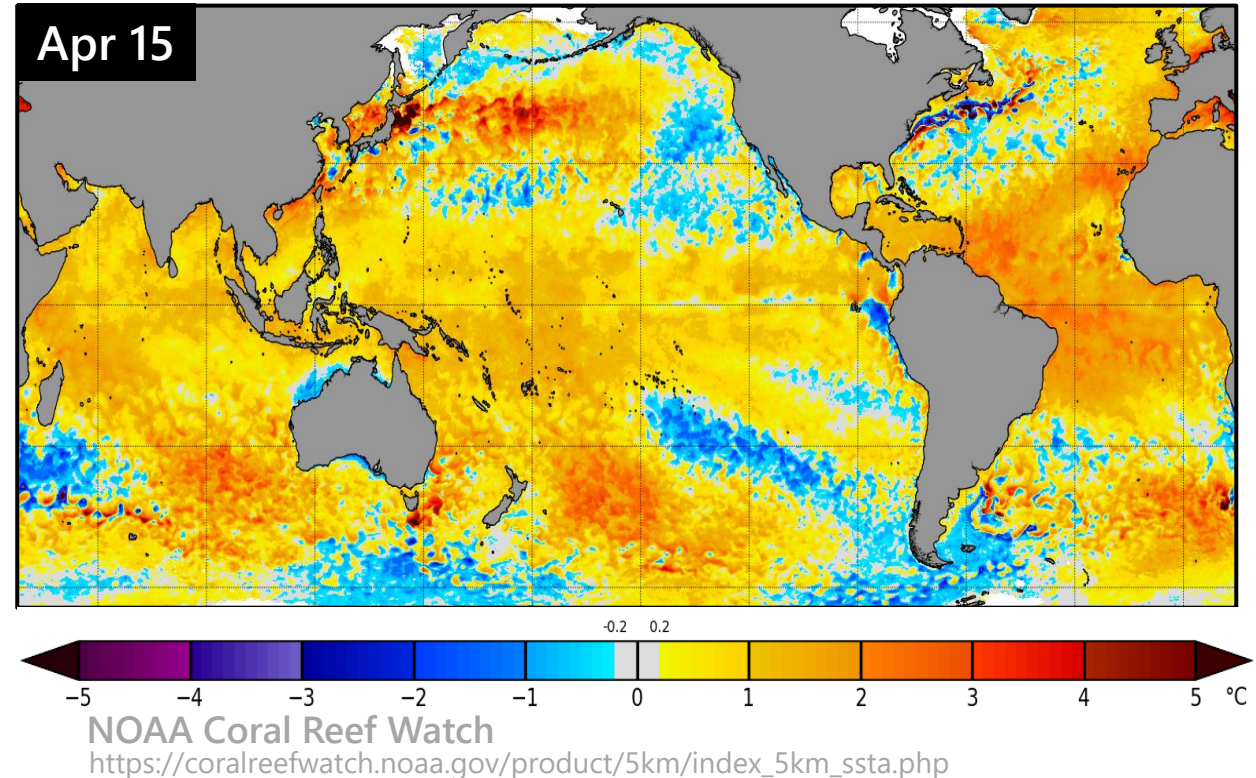
Top Layer Temperature Anomaly

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

Top 300m-Layer Anomaly




Surface Anomaly



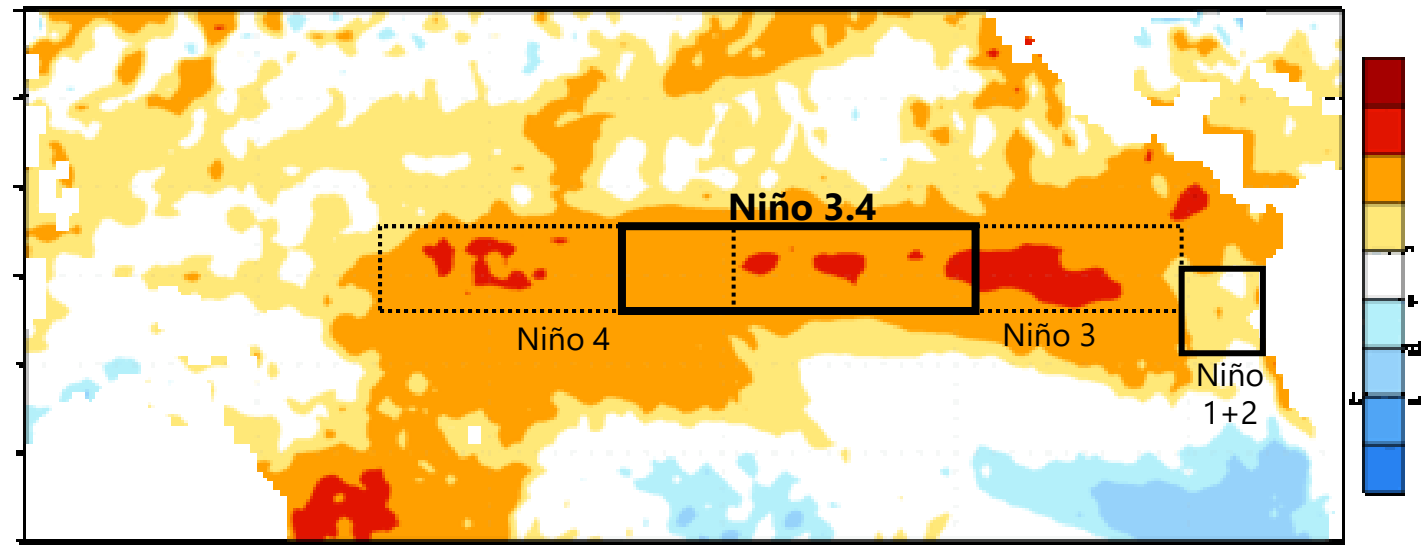
El Niño-Southern Oscillation (ENSO)

CPC Official Statement

El Niño Advisory / La Niña Watch

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

Error plotting dates

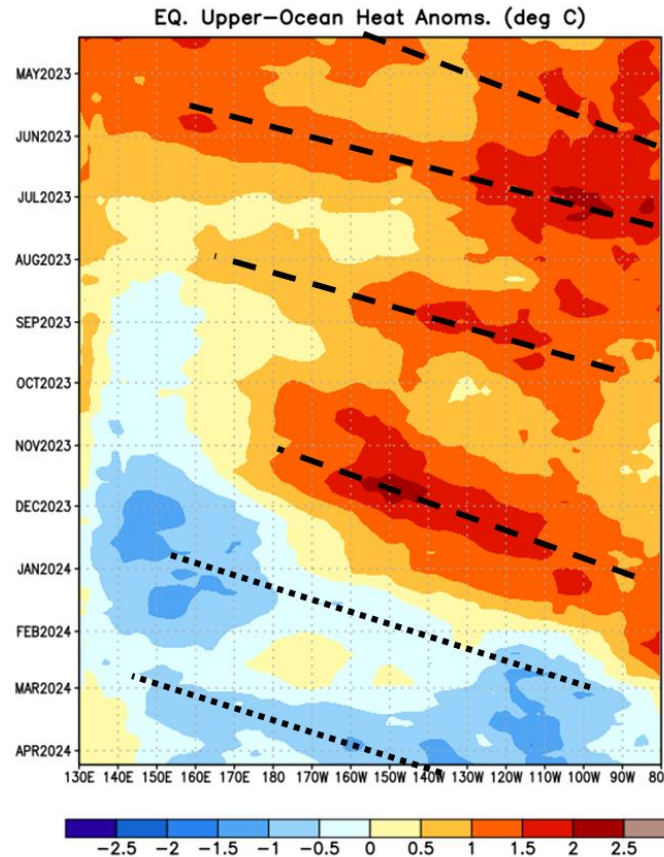
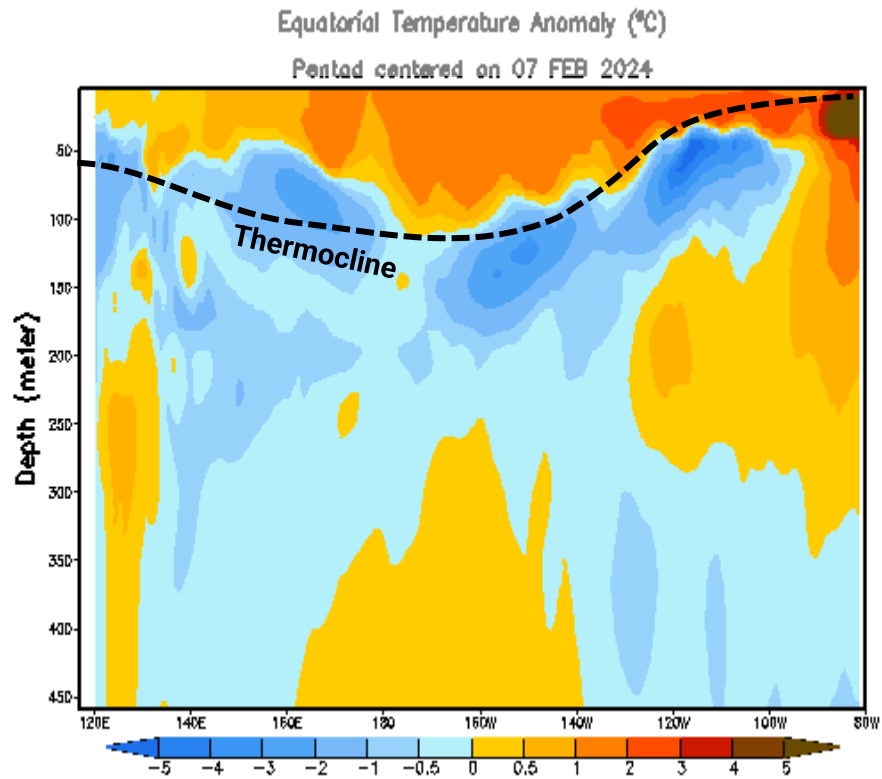


TAKEAWAYS

- Warm anomalies continue collapsing.
- South American coast is cooling down.

ENSO: Oceanic Kelvin Waves

Temperature Anomalies with Depth and Heat Content Anomalies



TAKEAWAYS

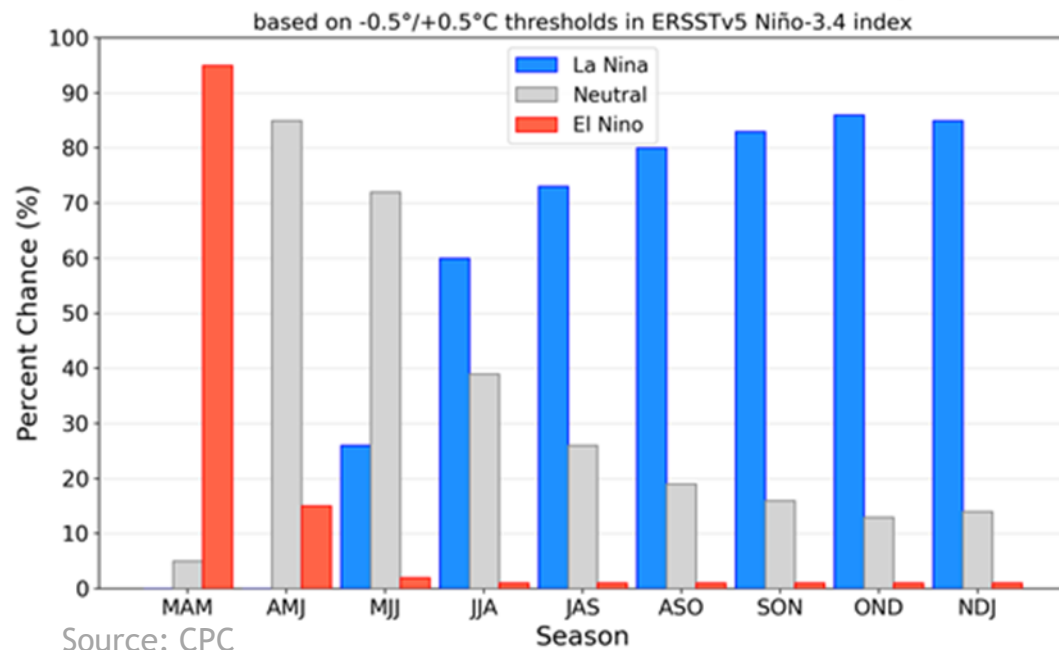
- Cool (upwelling) Kelvin propagating near 120W. Forecast to potentially cool down the South American Coast by late April/early May.
- No warm Kelvin is present, consistent with a transition away from el Niño.

ENSO Outlook

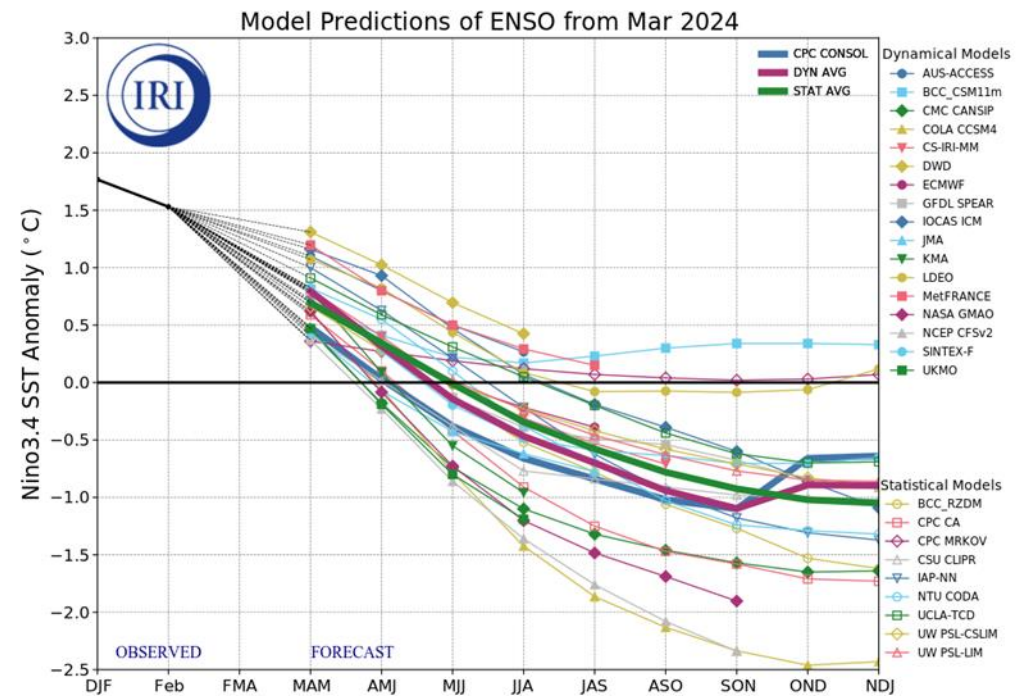
A transition from El Niño to ENSO-neutral is likely by April-June 2024 (85% chance), with the odds of La Niña developing by June-August 2024 (60% chance).*

Probabilistic Forecast

Official NOAA CPC ENSO Probabilities (issued Apr. 2024)



IRI/CPC Dynamic Models

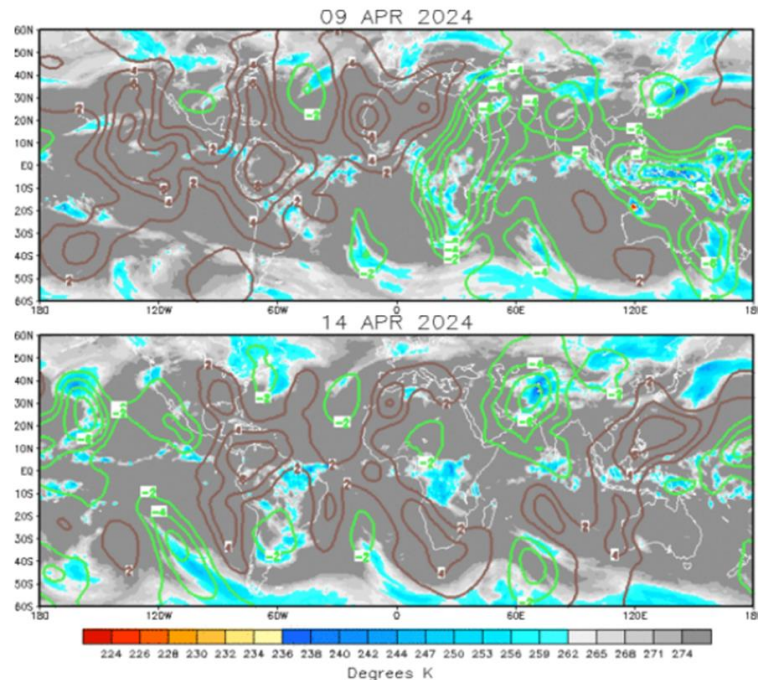


Madden-Julian Oscillation (MJO)

Current Observations:

- MJO is in wave-1 Mode and propagating fast.
- Yet, it is becoming disorganized (breakdown of wave energy).
- Wetter phase over the Pacific, reaching the Americas Apr 18-25.



Velocity Potential and Brightness Temperature (shaded)



Apr 09

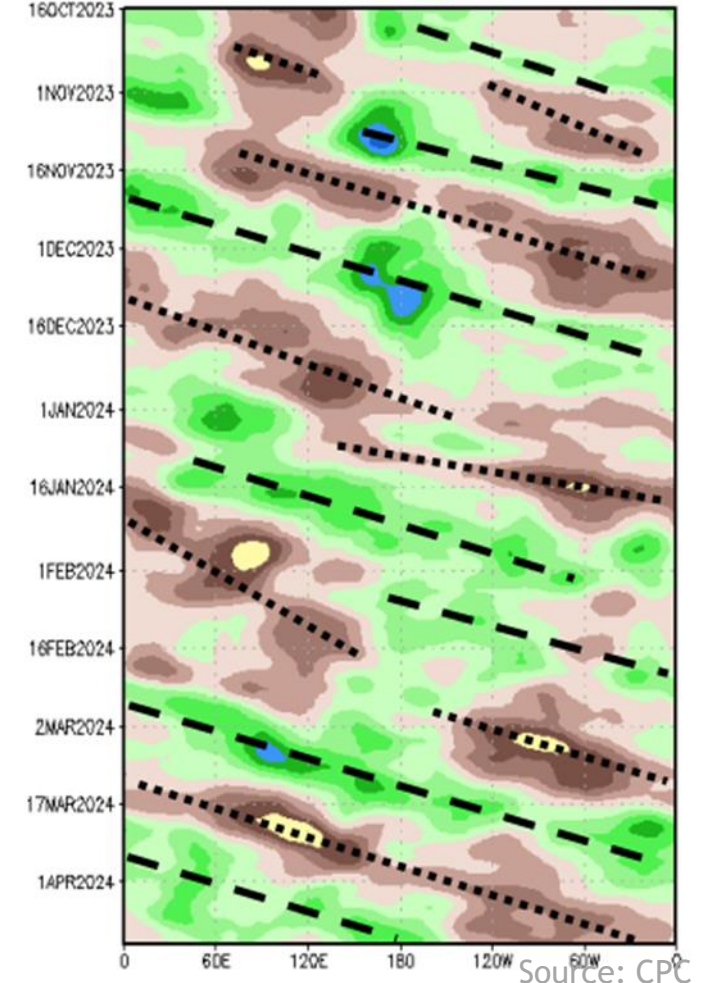
Apr 14

Source: CPC

-  Favors rain storms
-  Favors limited rainfall

200-hPa Velocity Potential Anomaly: 5N-5S

5-day Running Mean

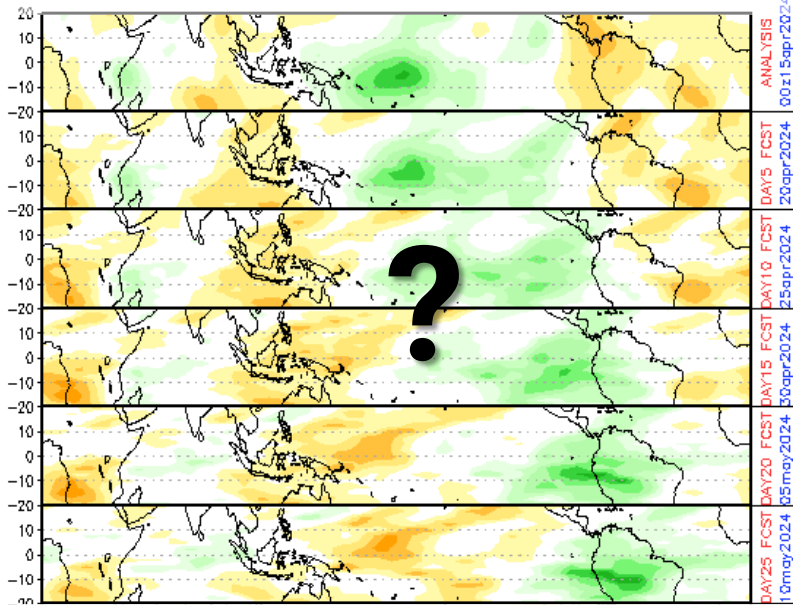


Source: CPC

MJO Forecasts

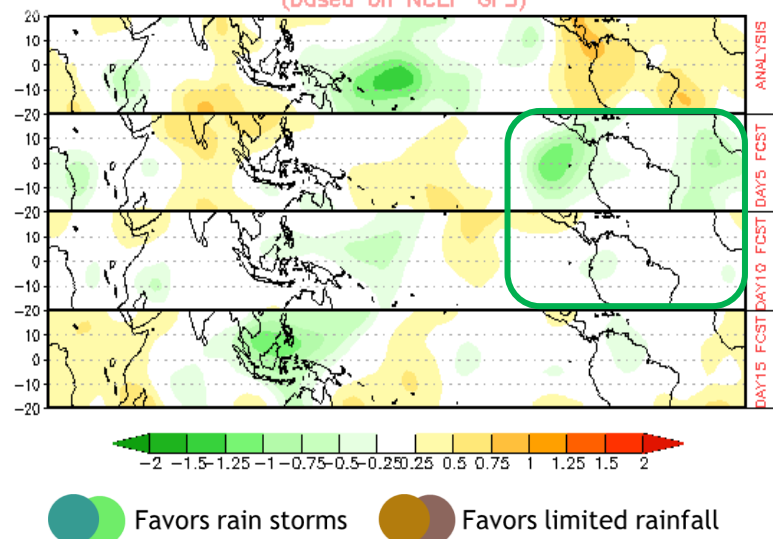
Empirical Wave Propagation (EWP)

CHI 200 hPa 40-DAY forecast (00z15apr2024-25may2024)
(based on EWP zonal harmonics)



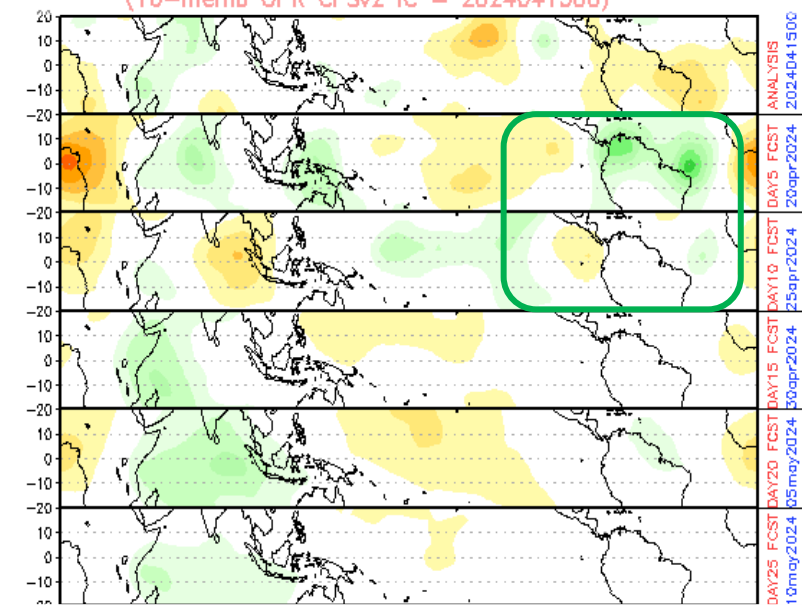
Global Forecast System (GFS)

CHI 200 hPa 15-DAY forecast (00z15apr2024-30apr2024)
(based on NCEP GFS)



Climate forecast System (CFS)

CHI 200 hPa 40-DAY forecast (00z15apr2024-25may2024)
(16-memb OPR CFSv2 IC = 20240+1500)



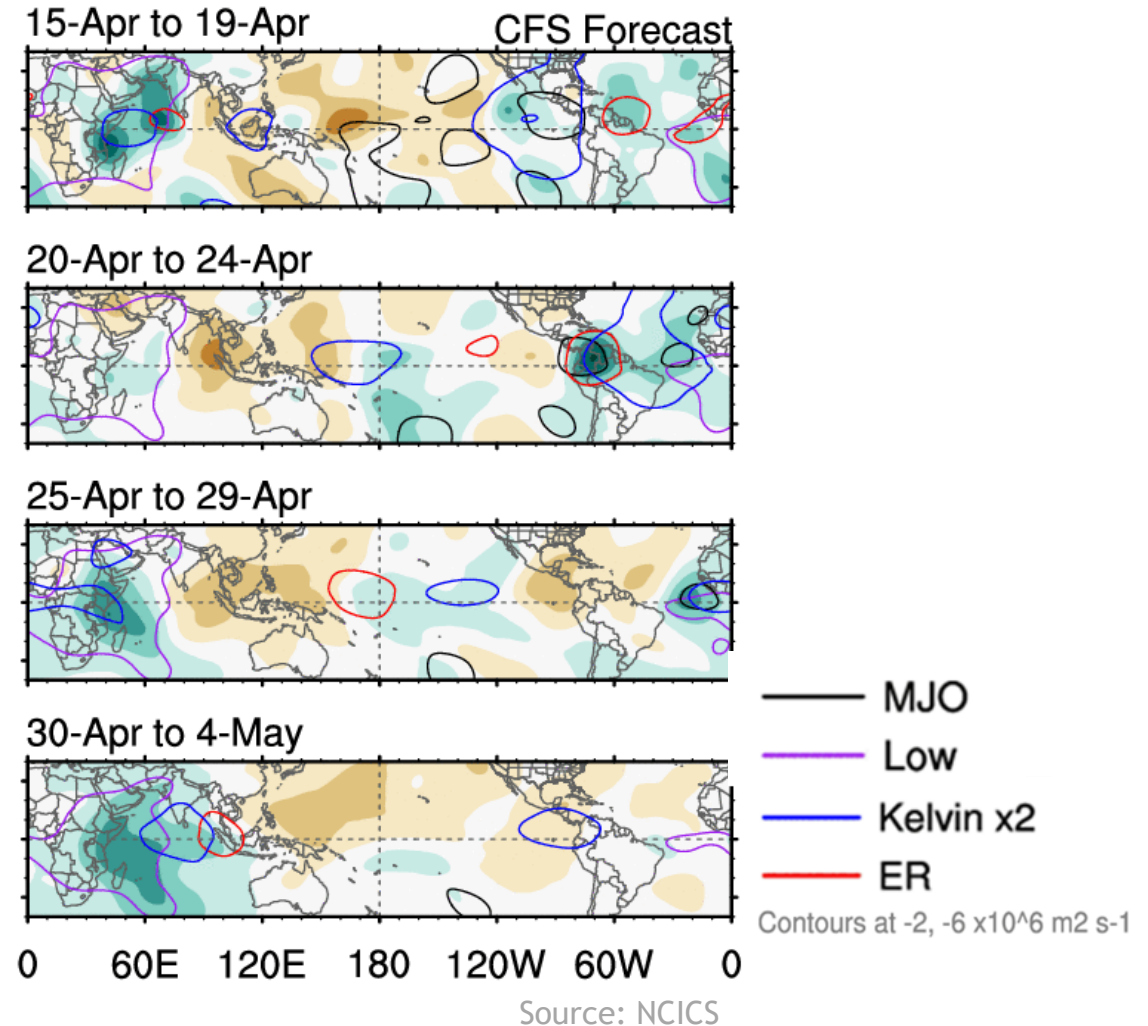
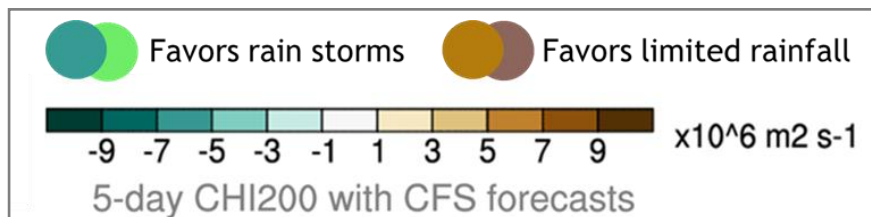
TAKEAWAYS

- CFS and GFS are more in tune, but agreement is not great.
- Wetter through April 25th, but what happens after (through Mid-May) is unclear.

MJO and Upper Tropospheric Waves

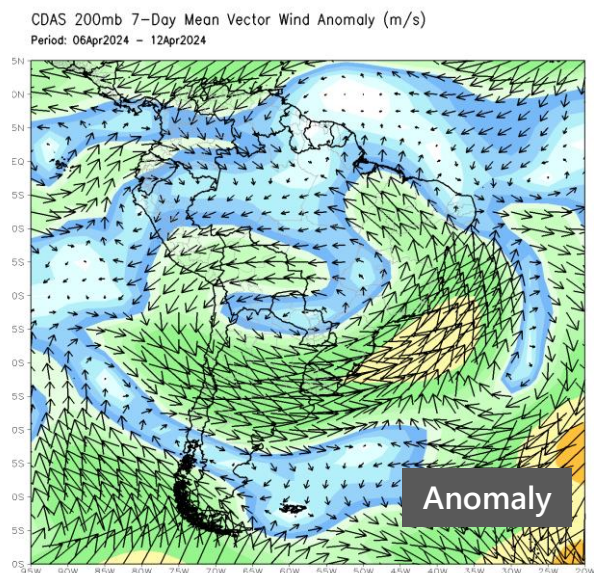
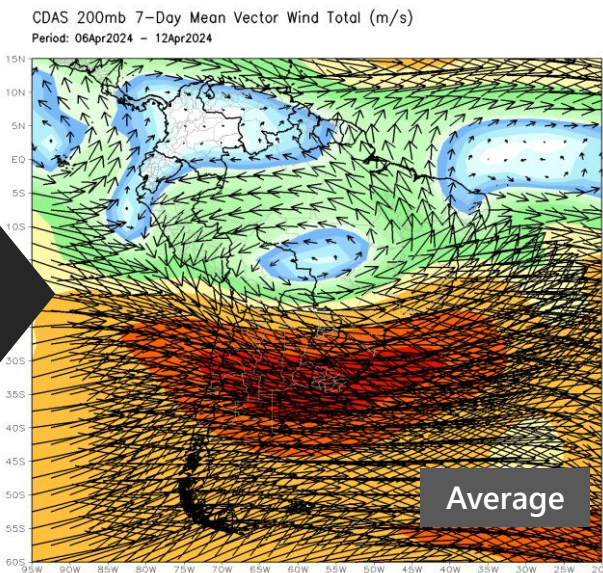
Outlook for the next few days:

- A wet (upper divergent) Kelvin is forecast to cross the Americas from April 17 through April 22.
- This will likely enhance convection in tropical regions, especially Colombia/Venezuela
- Another potential wet Kelvin arrives near May 1, but embedded in a drier/upper convergent pattern.

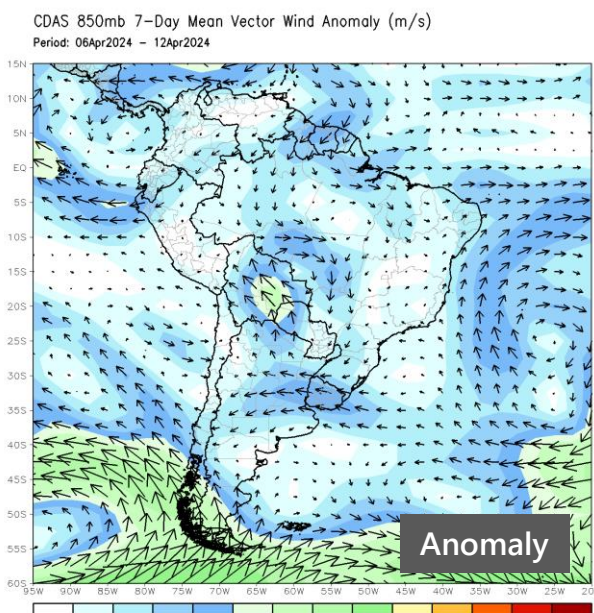
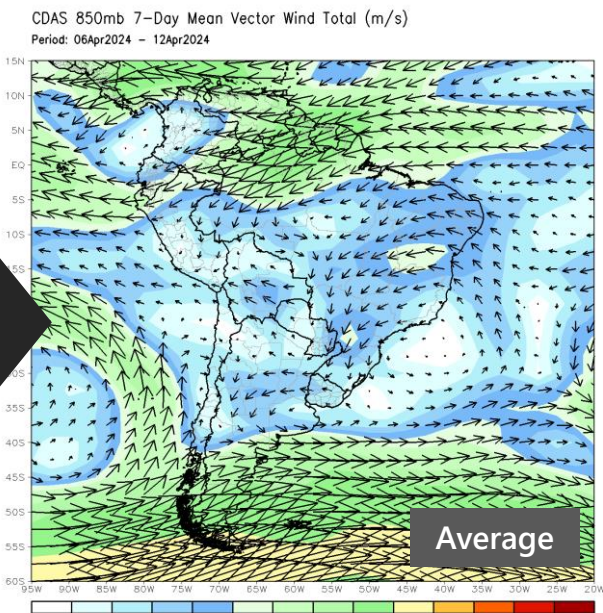


South America, Last 7 Days

200 hPa
Flow

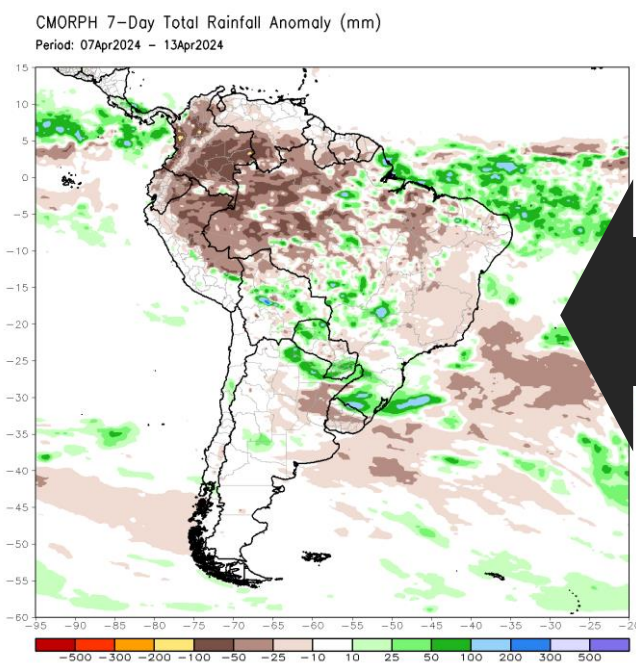
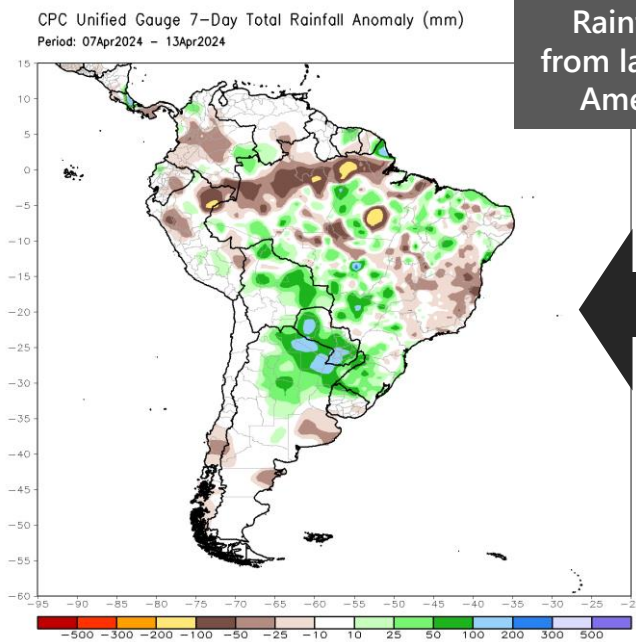


850 hPa
Flow

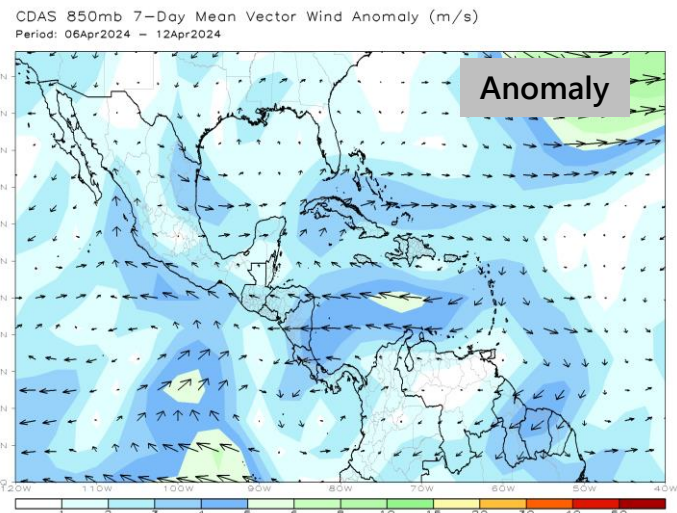
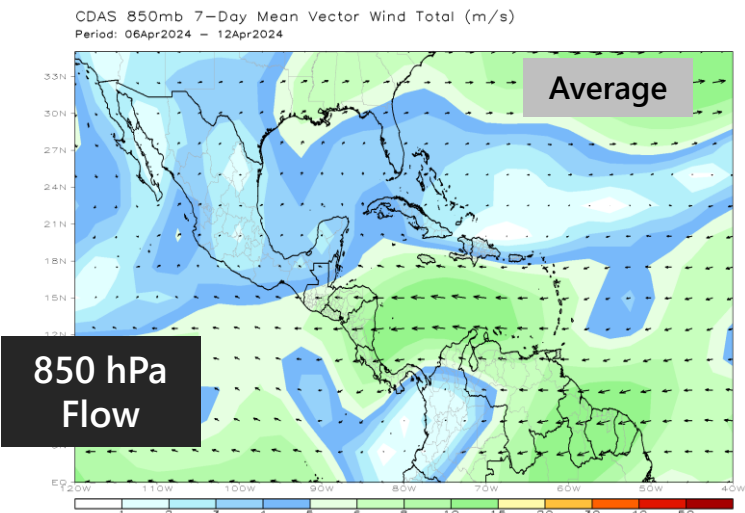
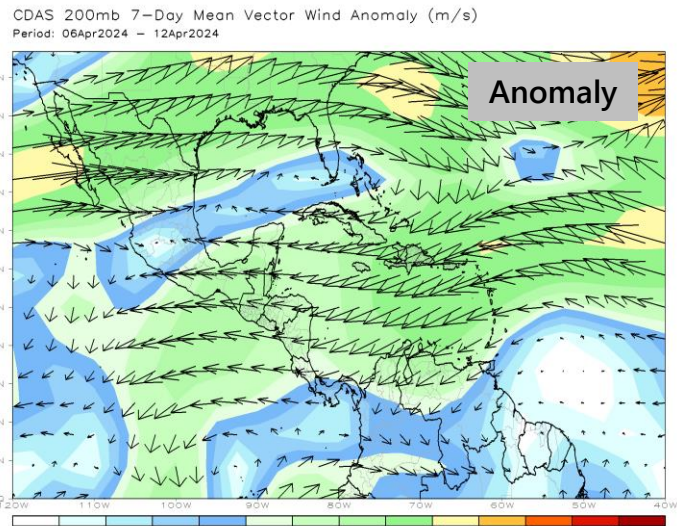
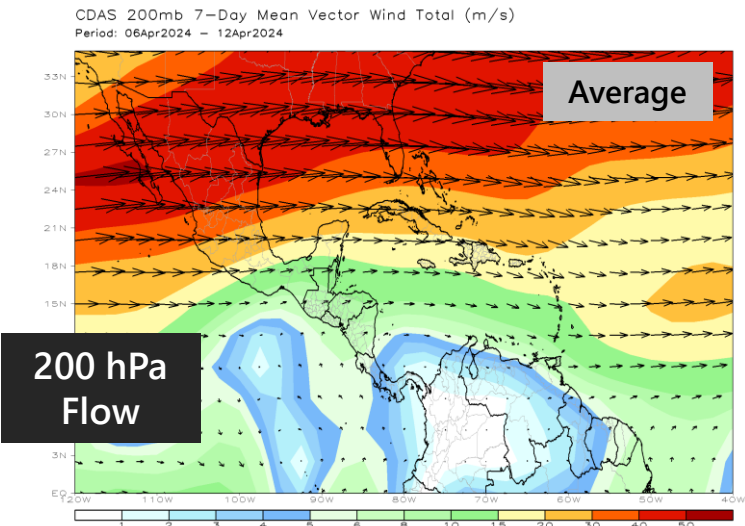


Rainfall Anomalies

Does not capture
Rainfall/Snowfall event
from last weekend in South
America (ends Apr 13)

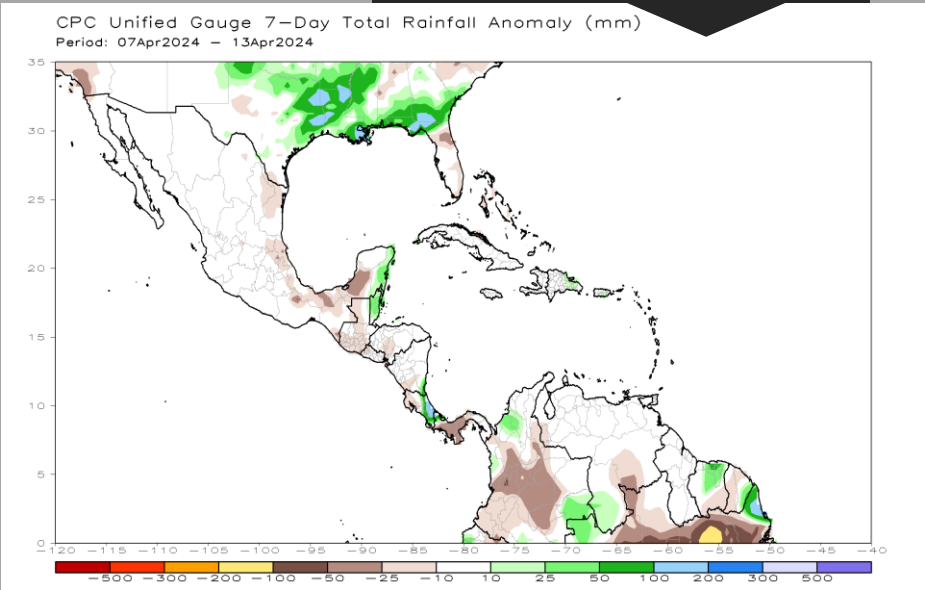


Caribbean and Central America, Last 7 Days

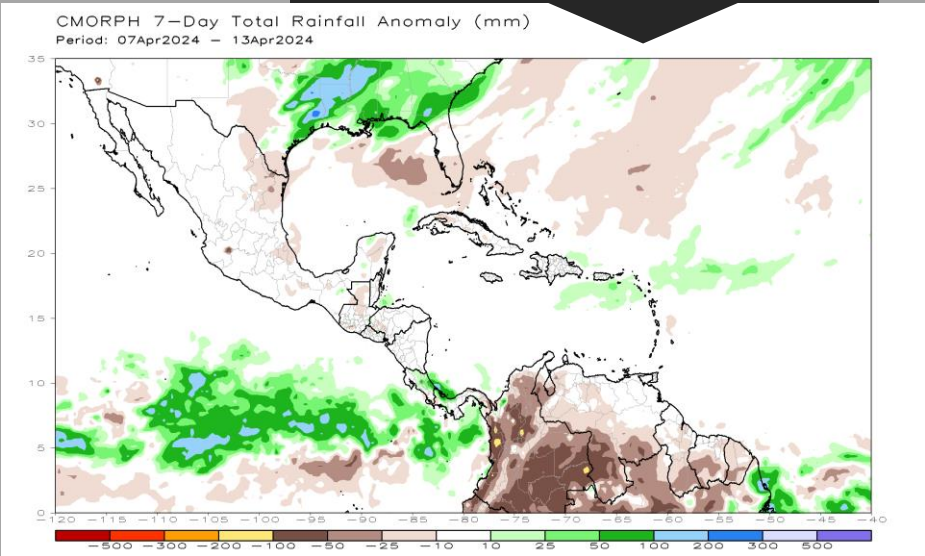


Rainfall Anomalies

Gauges (CPC)



Satellite – Estimated (CMORPH)



¡Gracias! Thank you! ¡Obrigado!

Next Session: Wednesday May 22, 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