WMO VLab Regional Focus Group
of the Americas and Caribbean

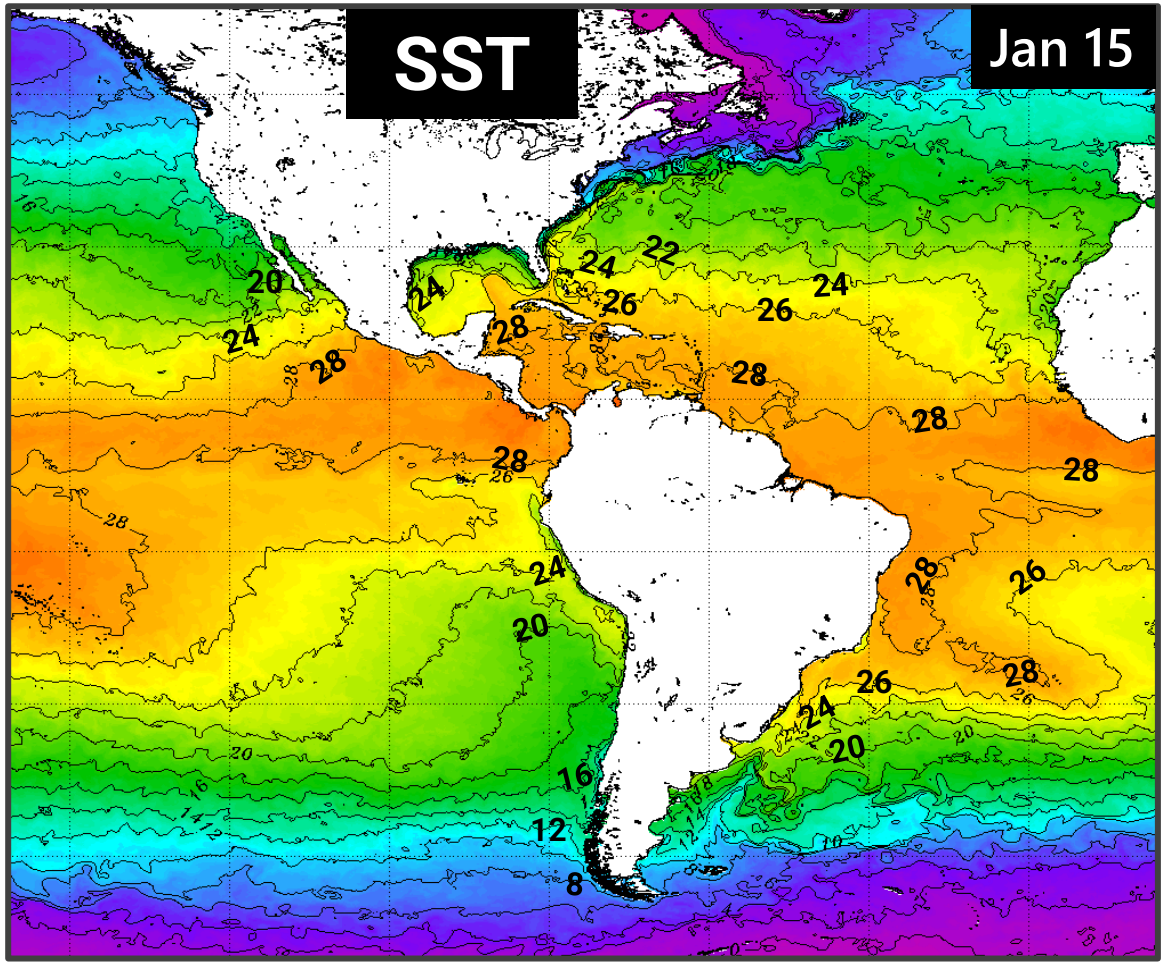
Since 2004

Climate Indices

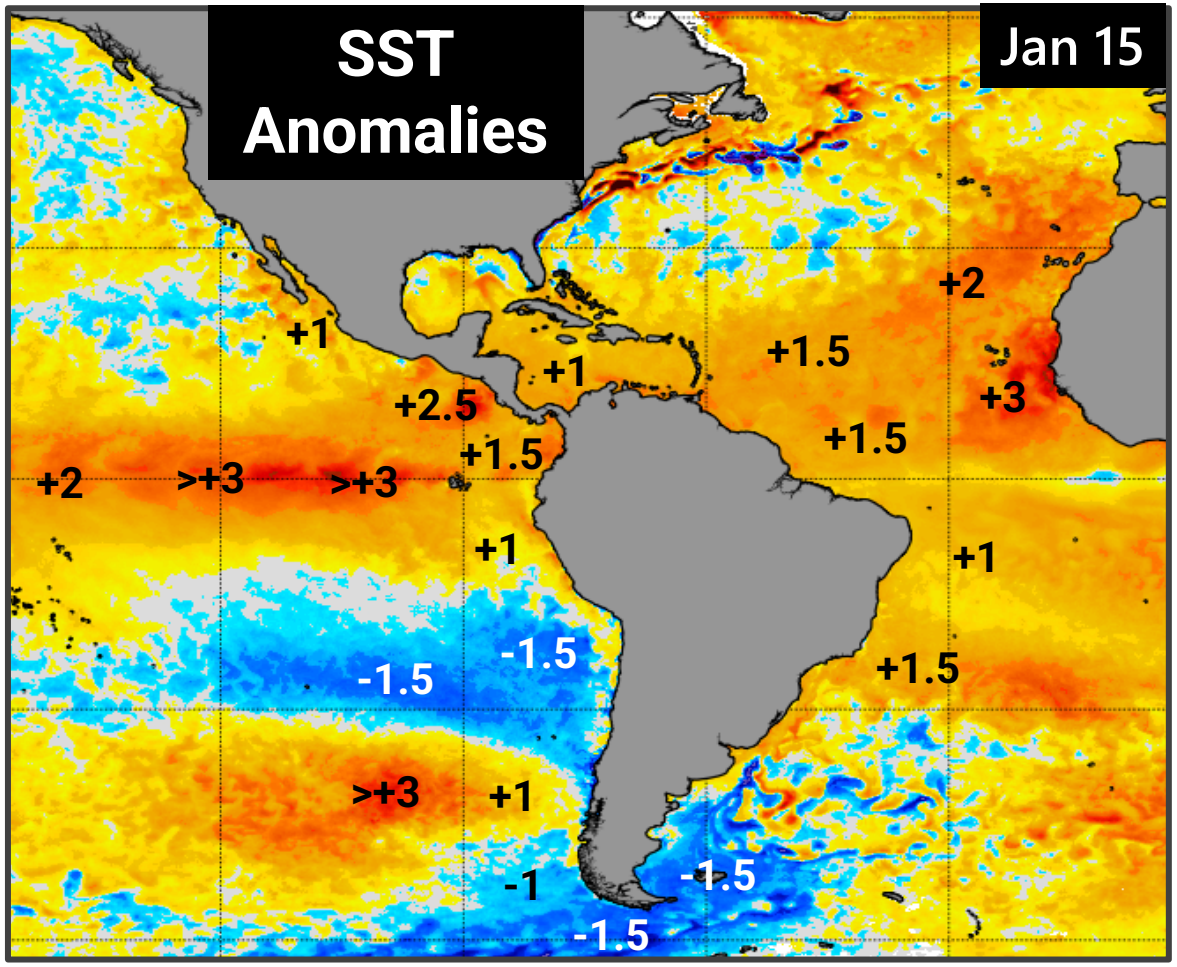
Current Status and Projections

Wednesday 17 January 2024

Sea Surface Temperature (SST)



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

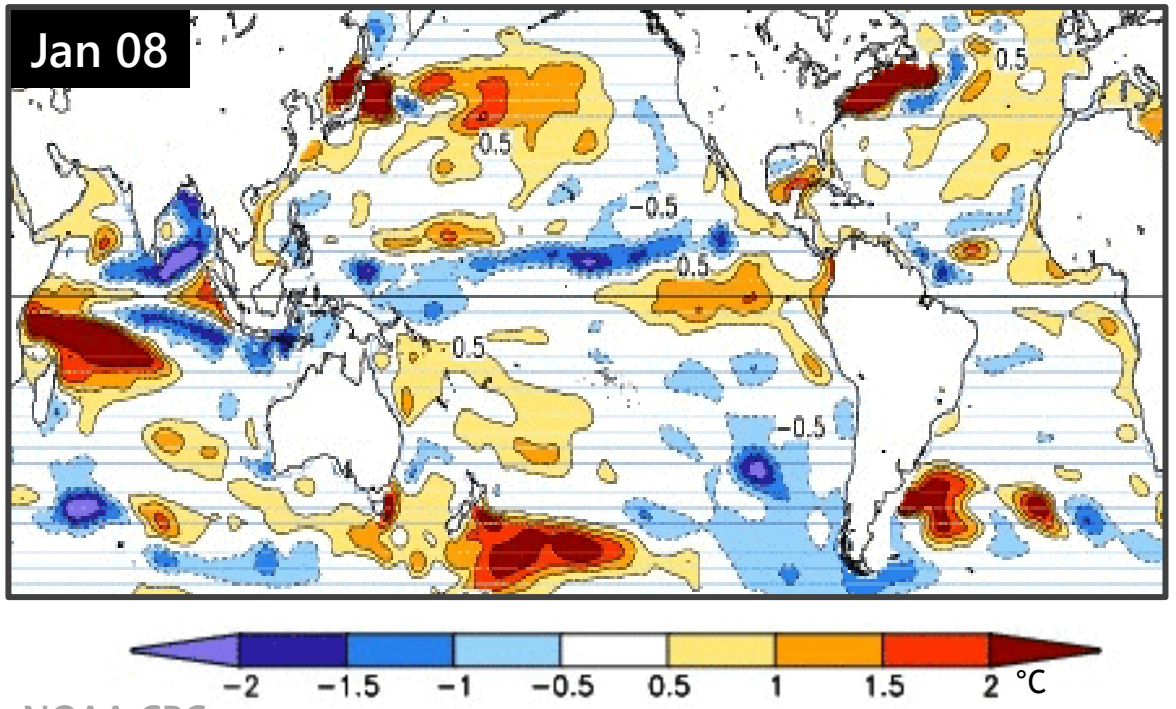


NOAA Coral Reef Watch https://coralreefwatch.noaa.gov/product/5km/index_5km_ssta.php

Top Layer Temperature Anomaly

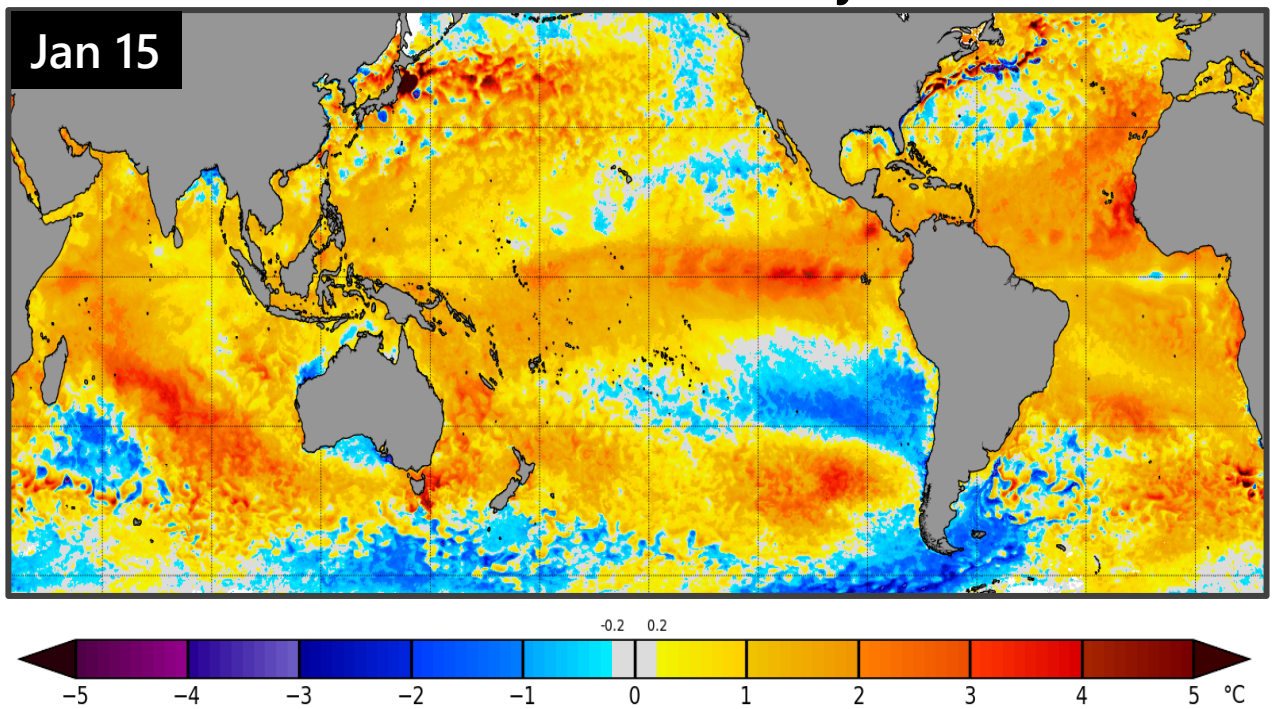
Anomalies in a layer take longer to dissipate than superficial ones, and can last for weeks.

Top 300m-Layer Anomaly



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

Surface Anomaly



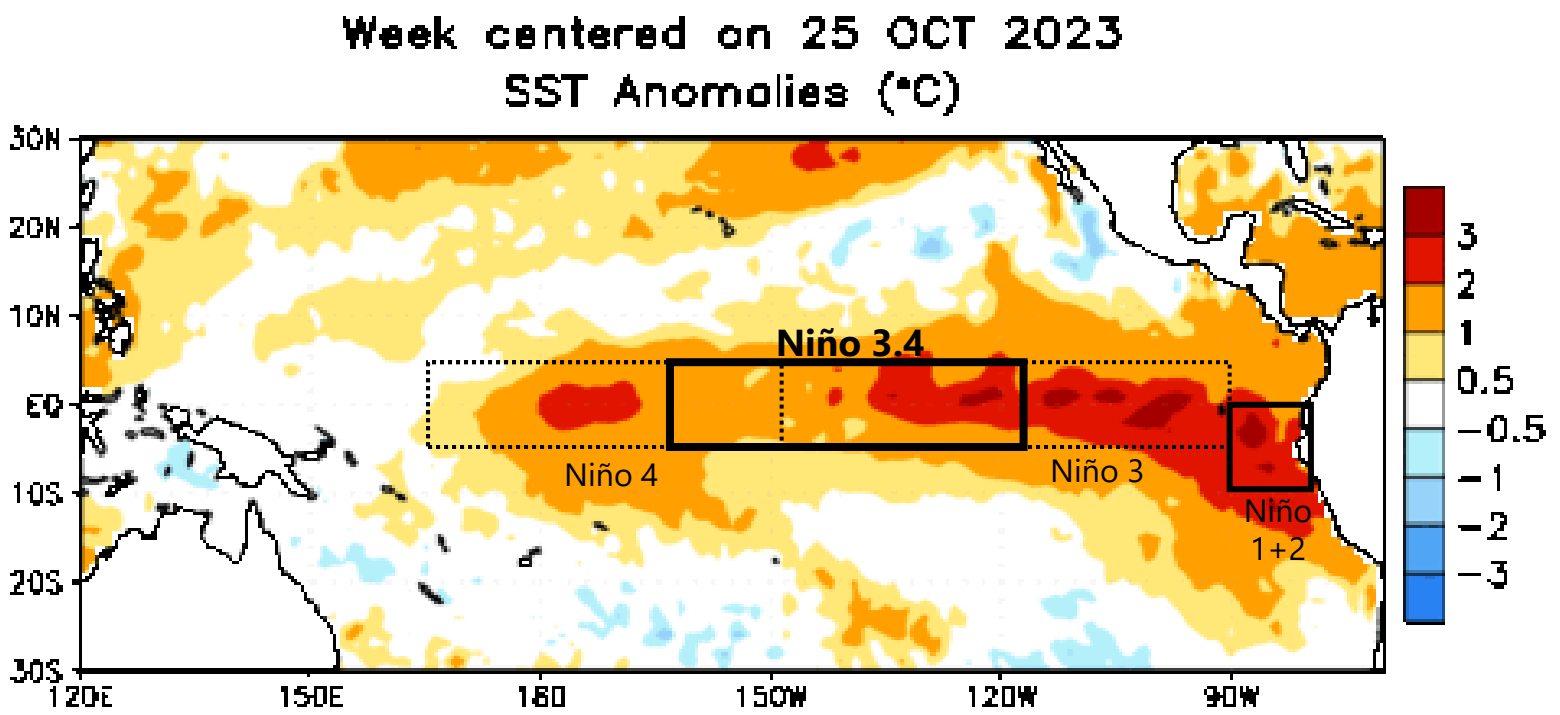
NOAA Coral Reef Watch
https://coralreefwatch.noaa.gov/product/5km/index_5km_ssta.php

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 El Niño.

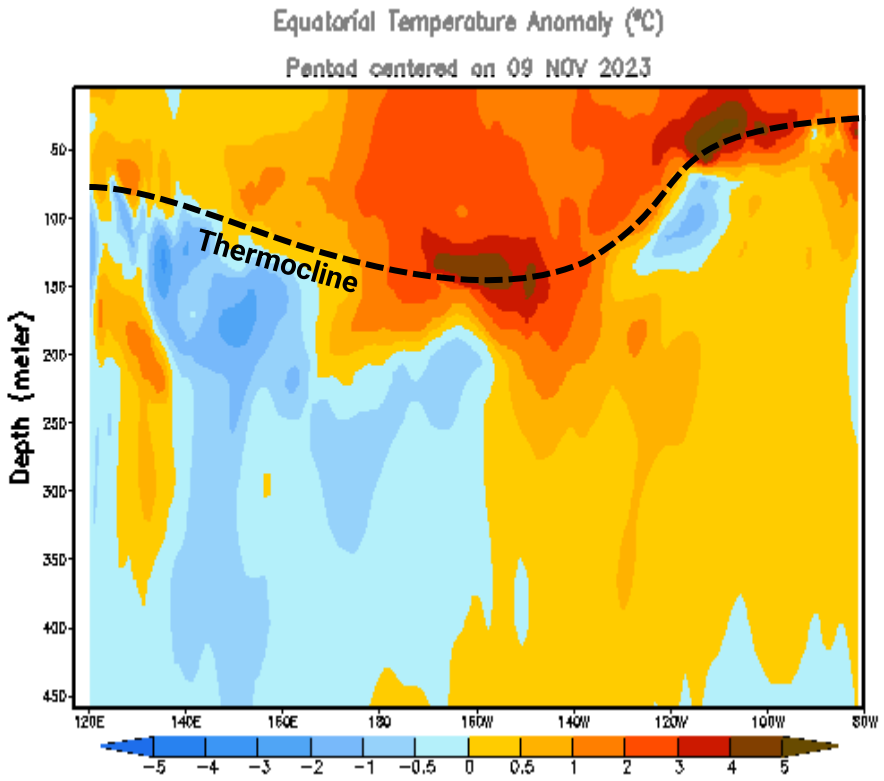


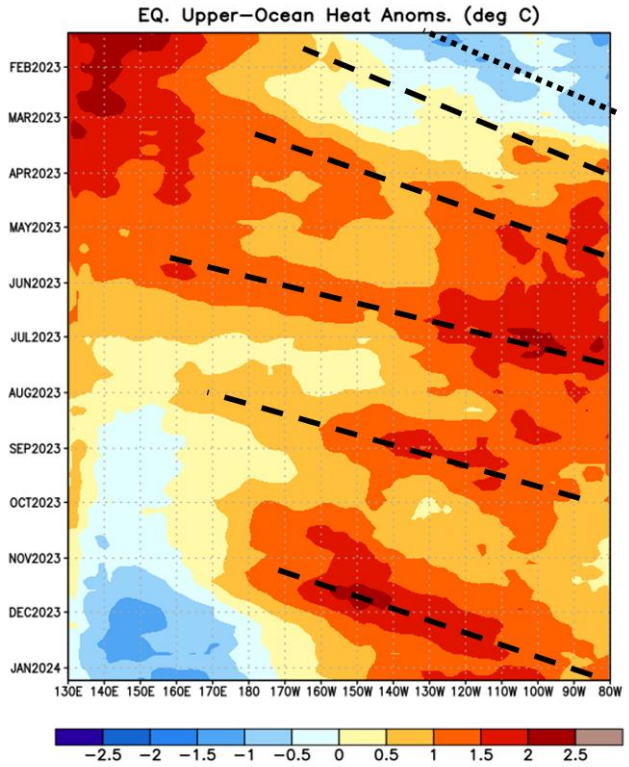
TAKEAWAYS

- **Niño 3.4 reaching near warmest, but overall anomalies are starting to decrease.**
- **Niño 1+2 (coast) cannot warm up as warm Kelvin continues arriving.**

ENSO: Oceanic Kelvin Waves

Temperature Anomalies with Depth and Heat Content Anomalies





TAKEAWAYS

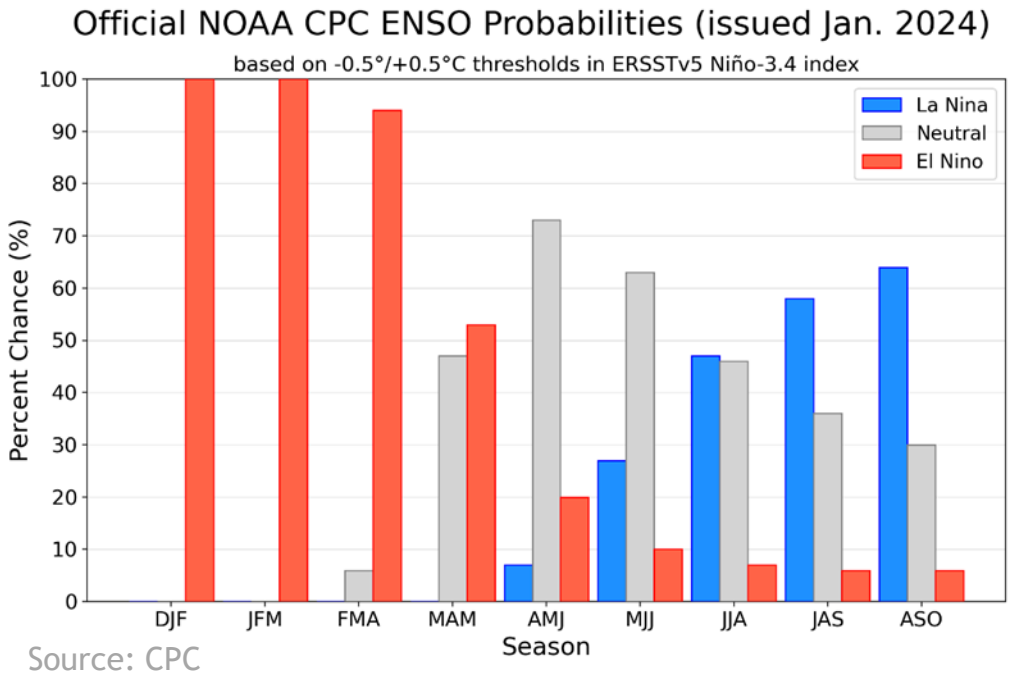
- Warm Kelvins are not enhancing the preexisting warm temperatures along the coast but they are limiting the cooling. A final pocket of warm Kelvins should arrive through the end of January.
- Cooling in the western Pacific continues increasing and expanding eastward along the thermocline. This is a large upwelling/cold Kelvin. Could mean a rapid coastal cooling starting sometime in March.

Source: CPC

ENSO Outlook

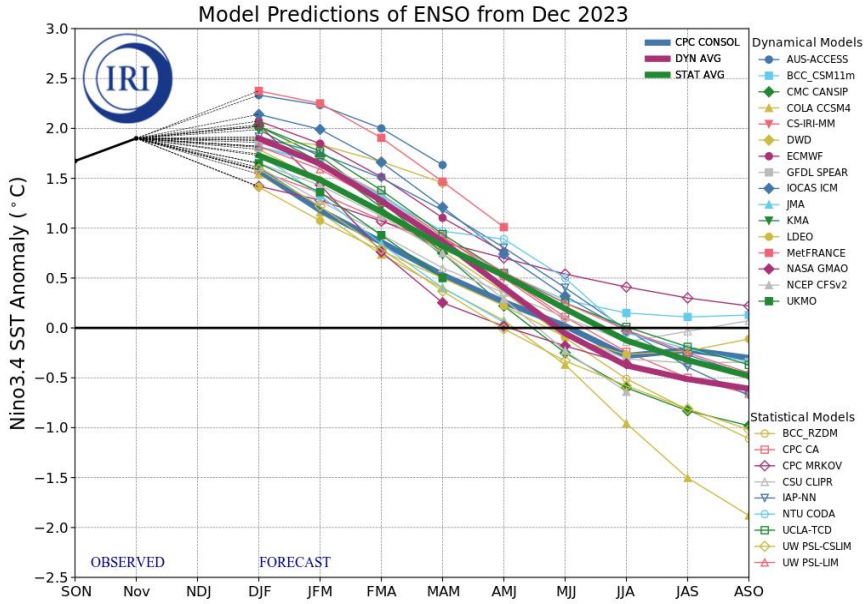
El Niño is expected to continue for the next several months, with ENSO-neutral favored during April-June 2024 (73% chance).*

Probabilistic Forecast



Source: CPC

IRI/CPC Dynamic Models



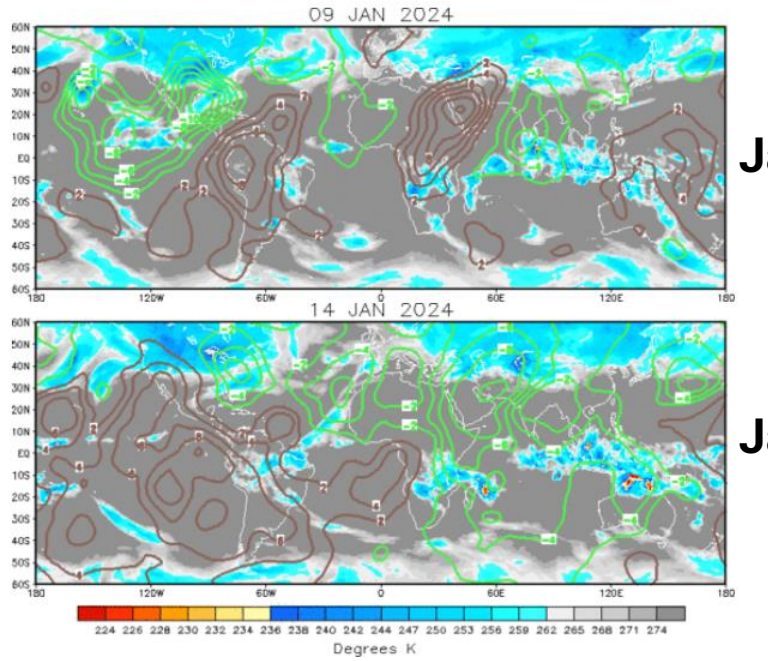
Source: IRI, updated 19 December 2023

Madden-Julian Oscillation (MJO)

Current Observations:

- The MJO is ~1.5 months to circle the globe.
- Dry pulse is crossing the Americas this week.
- Possibly transitioning to wet by the end of January.

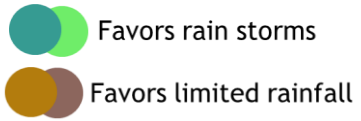
Velocity Potential and Brightness Temperature (shaded)

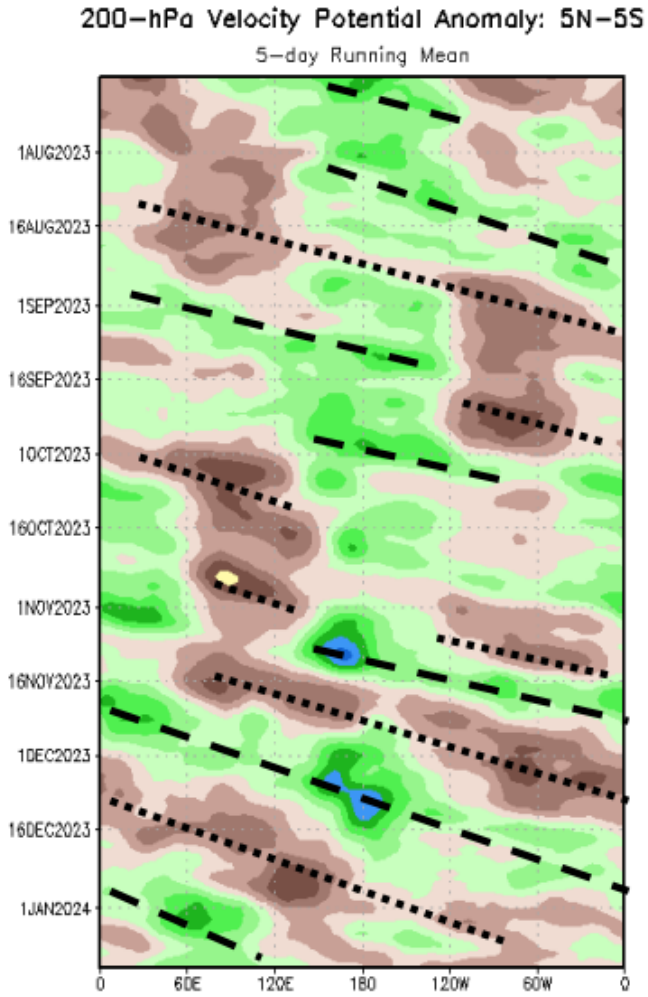


Jan 9

Jan 14

Source: CPC

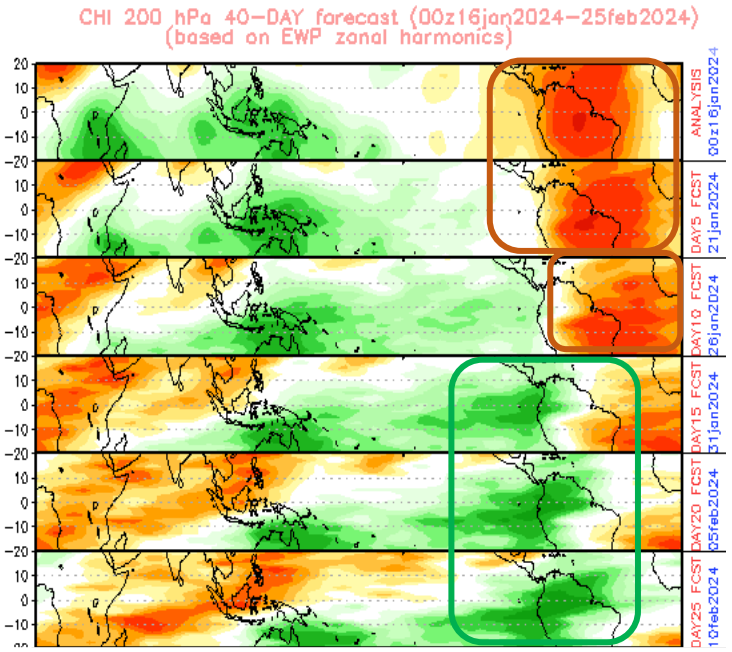




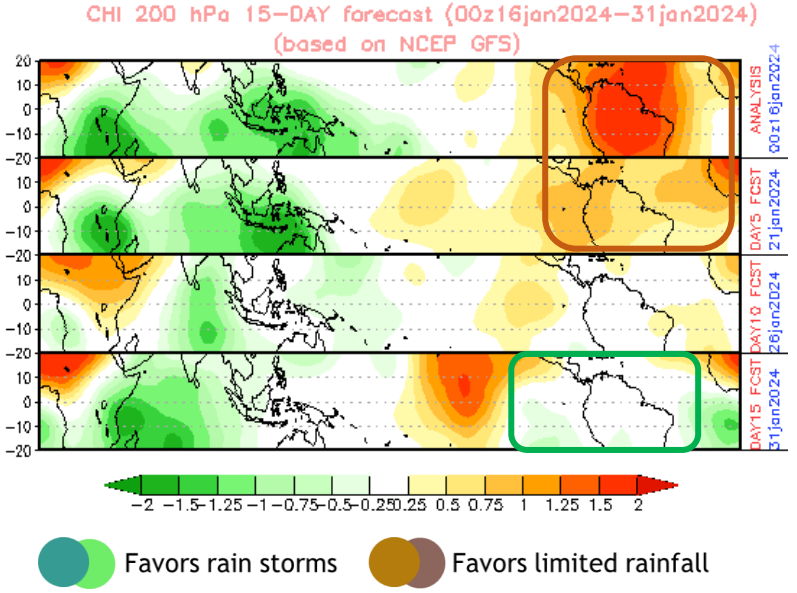
Source: CPC

MJO Forecasts

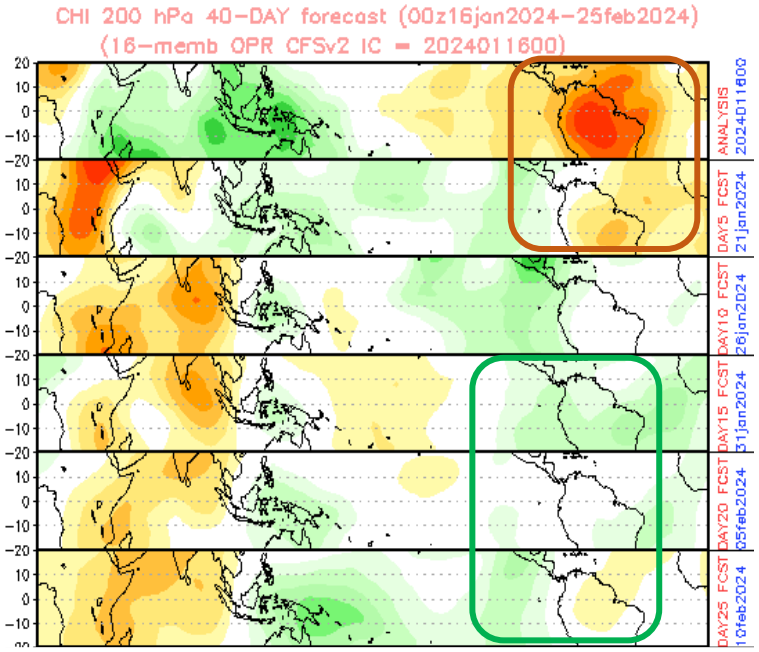
Empirical Wave Propagation (EWP)



Global Forecast System (GFS)



Climate forecast System (CFS)



Source: CPC

TAKEAWAYS

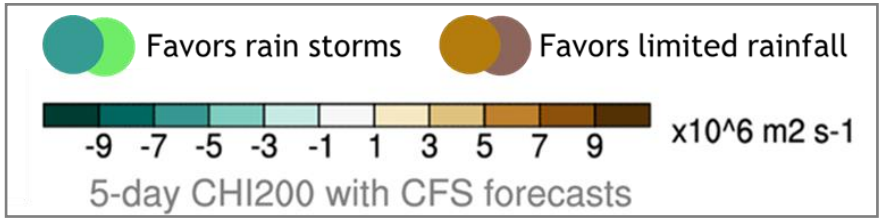
- Models in decent agreement.
- Dry through Jan 21-24
- Wet MJO possibly between Jan 30 and mid February

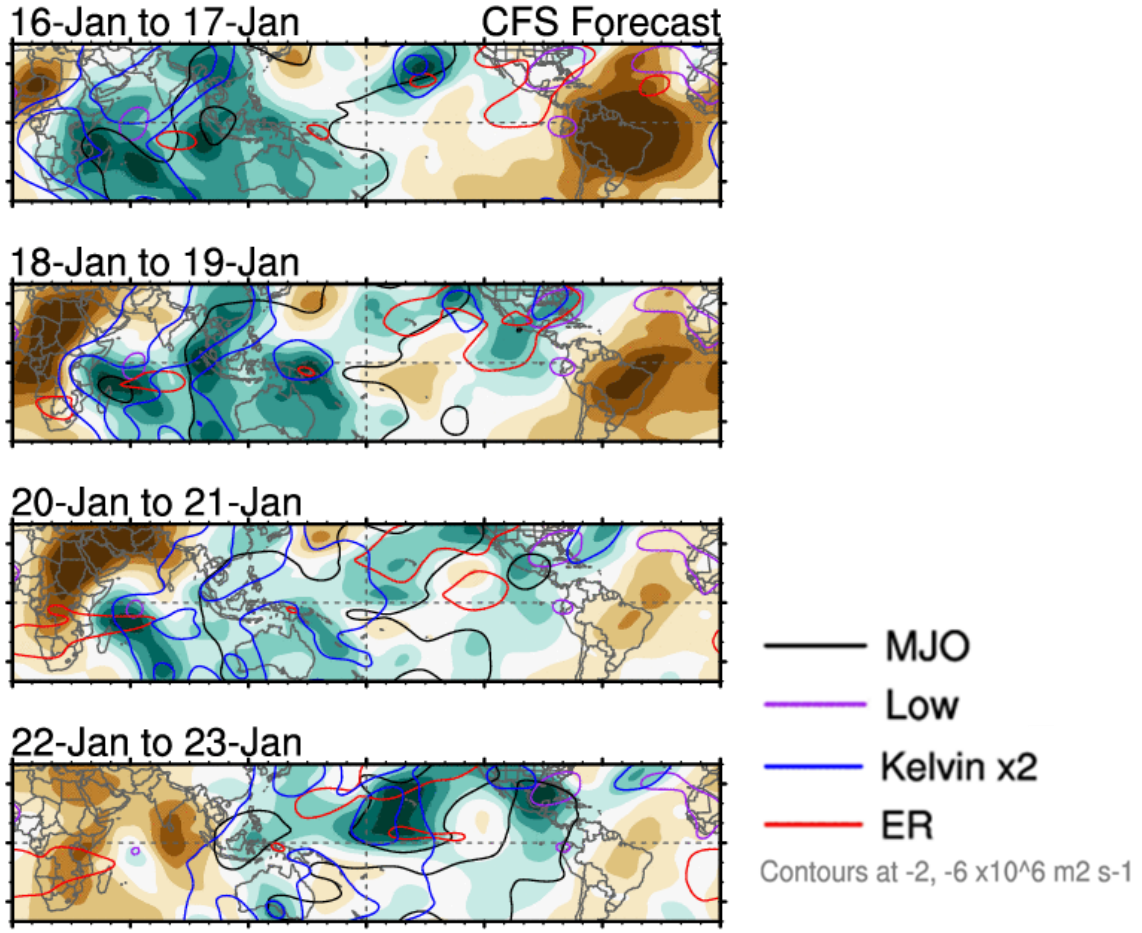
MJO and Upper Tropospheric Waves

Outlook for the next few days:

- General dry/upper convergent weather pattern over the Americas through the week.
- Potential Wet Kelvin on **Jan 22-24**, most prominent impacts in Central America and Mexico.

  Mexico: Possibly scattered T-storms, rainfall and localized snowfall in high elevations of Sierra Madre Occidental and Sierra Tarahumara.

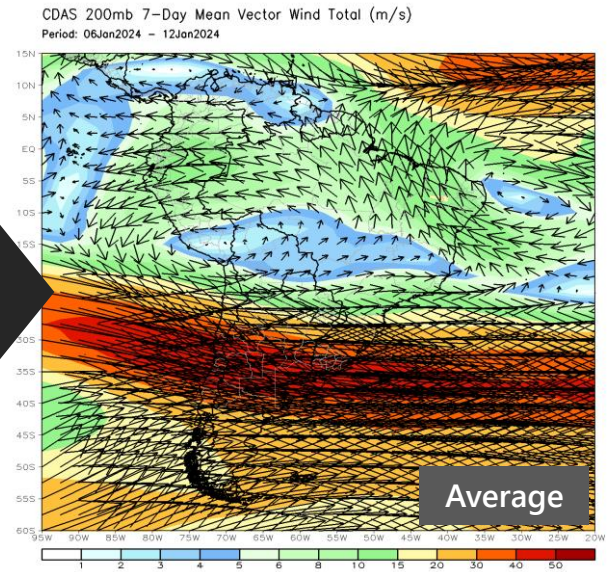


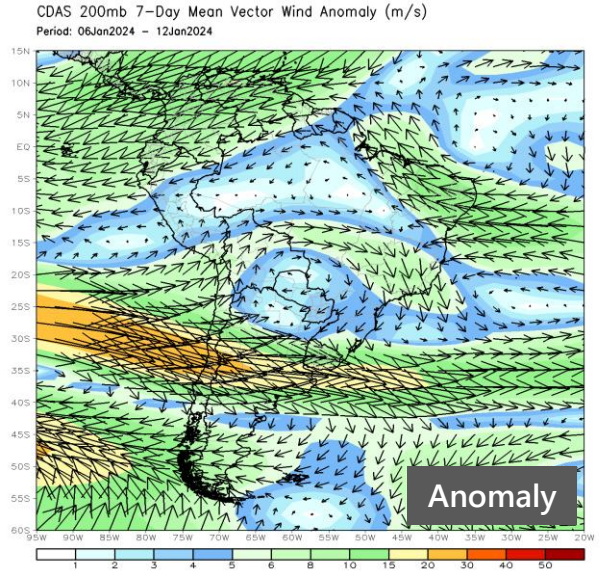


Source: NCICS

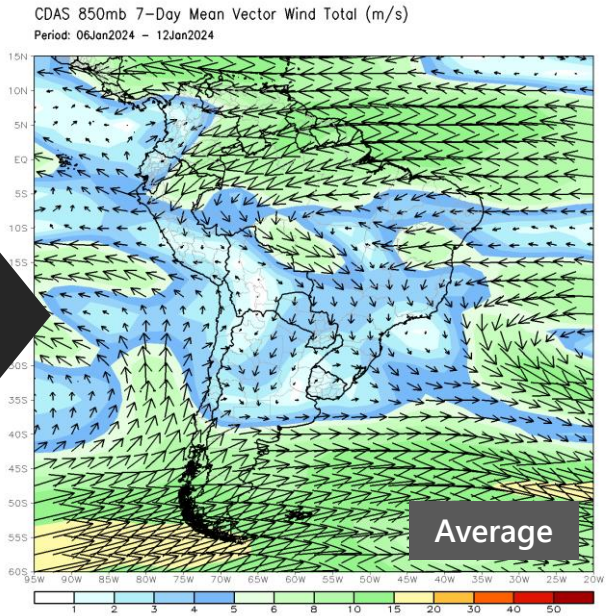
South America, Last 7 Days

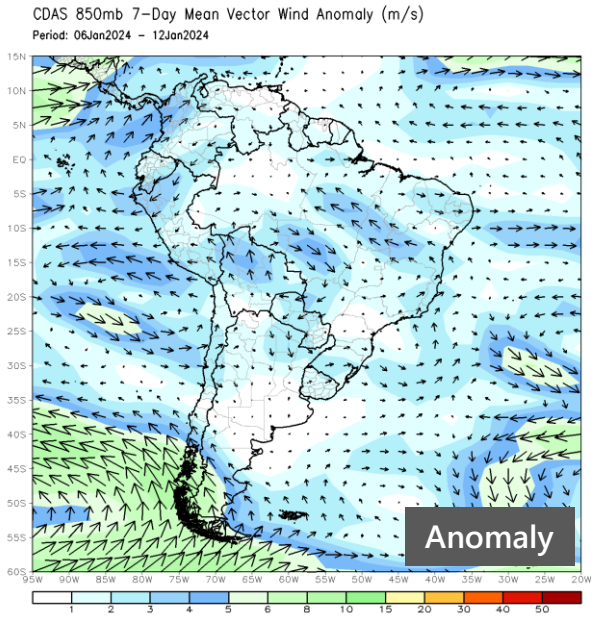
200 hPa Flow



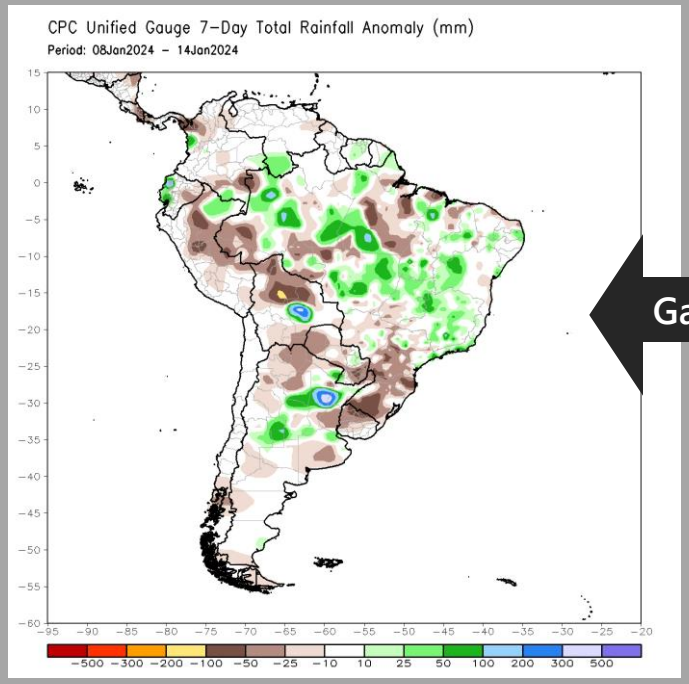


850 hPa Flow

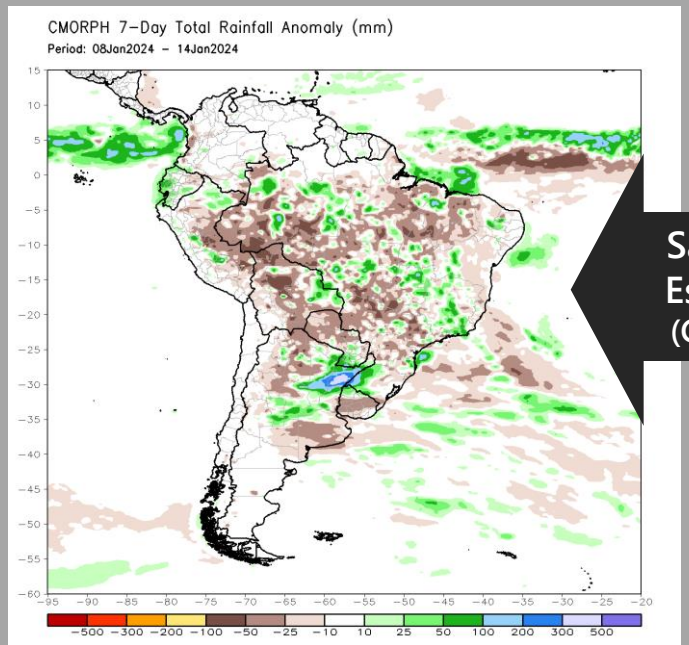




Rainfall Anomalies



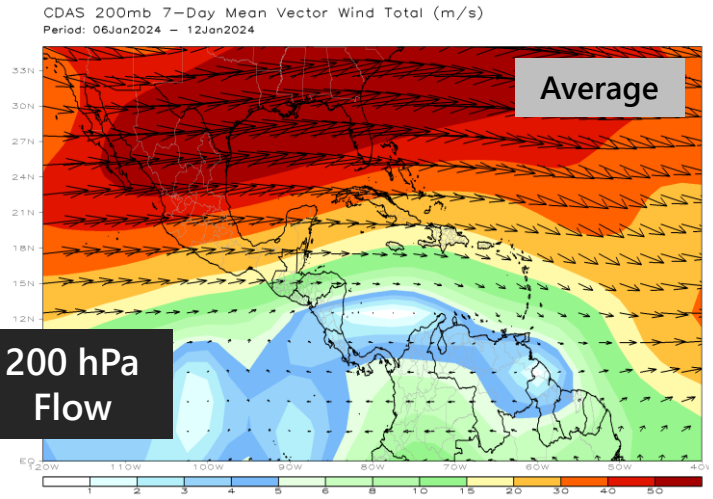
Gauges

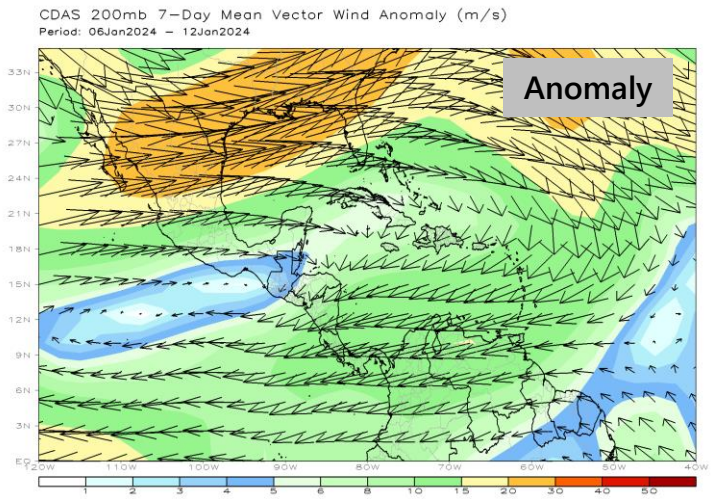


Satellite – Estimated (CMORPH)

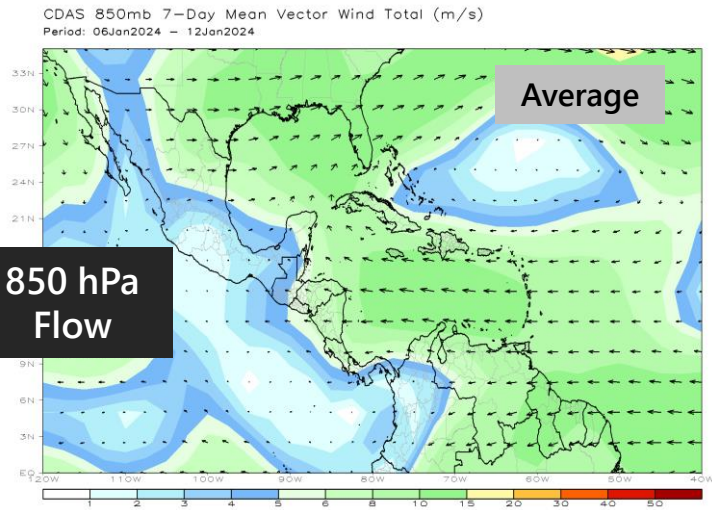
Caribbean and Central America, Last 7 Days

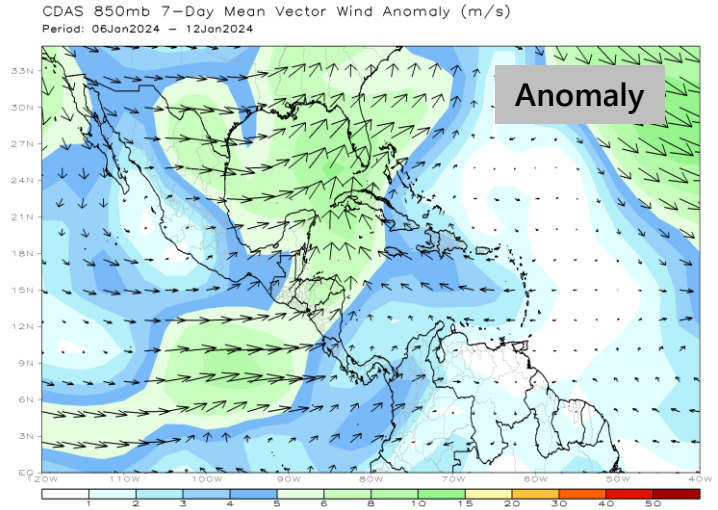
200 hPa Flow





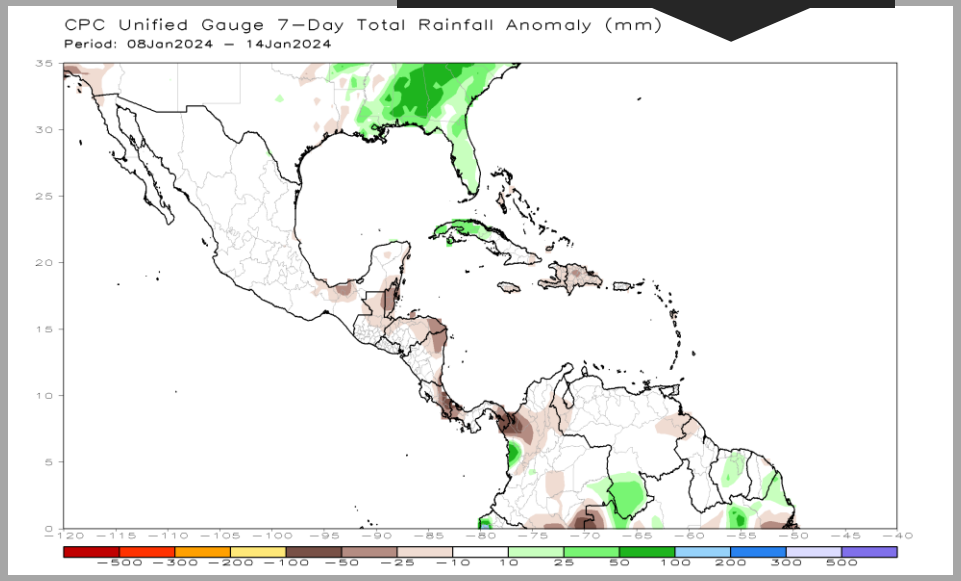
850 hPa Flow





Rainfall Anomalies

Gauges (CPC)



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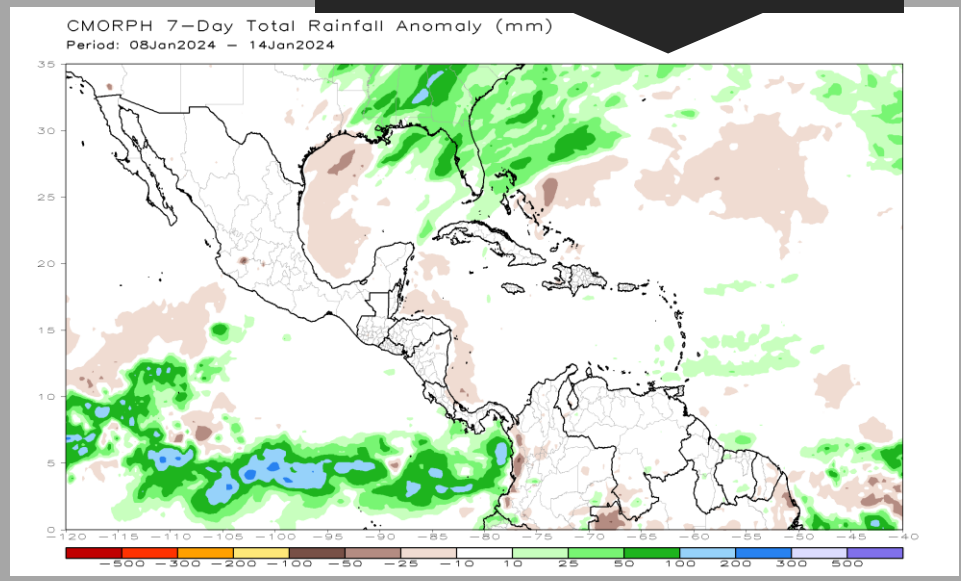

¡Gracias! Thank you! ¡Obrigado!

Next Sessions:

- Wednesday February 21 at 16 UTC
- Wednesday March 21 at 14 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