WMO VLab Regional Focus Group
of the Americas and Caribbean

Since 2004

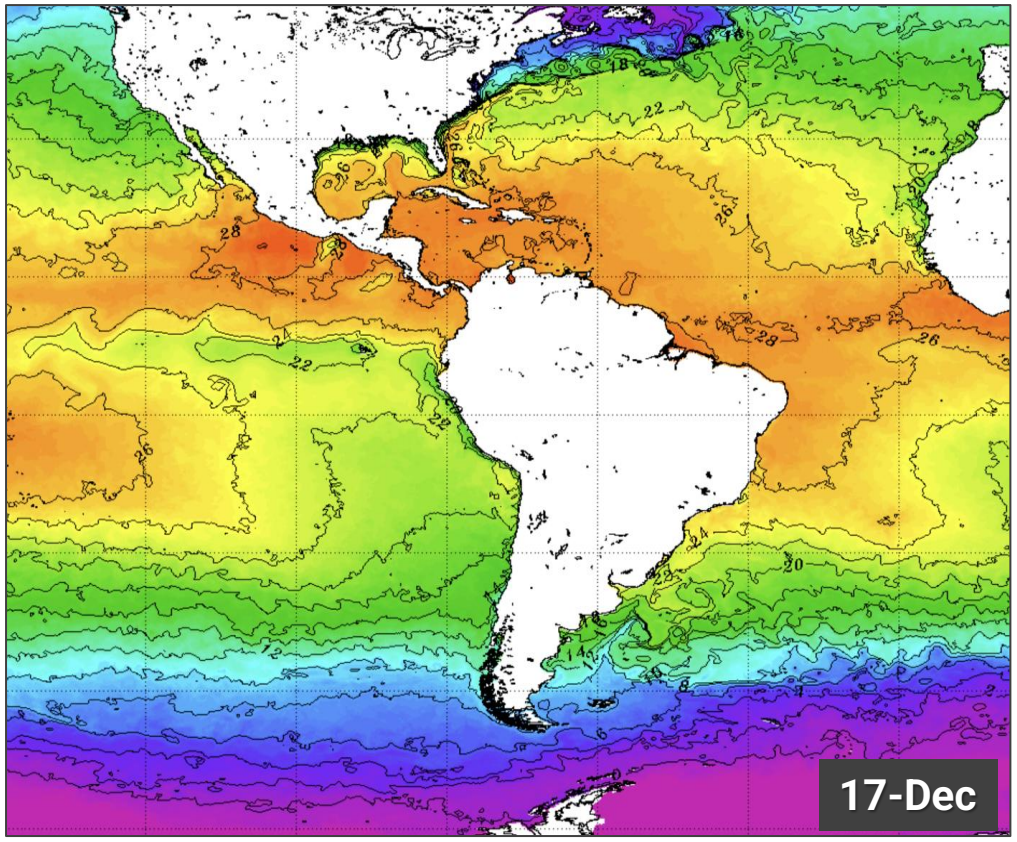
# Climate Indices

## Current Status and Projections

**Friday 19 December 2025**

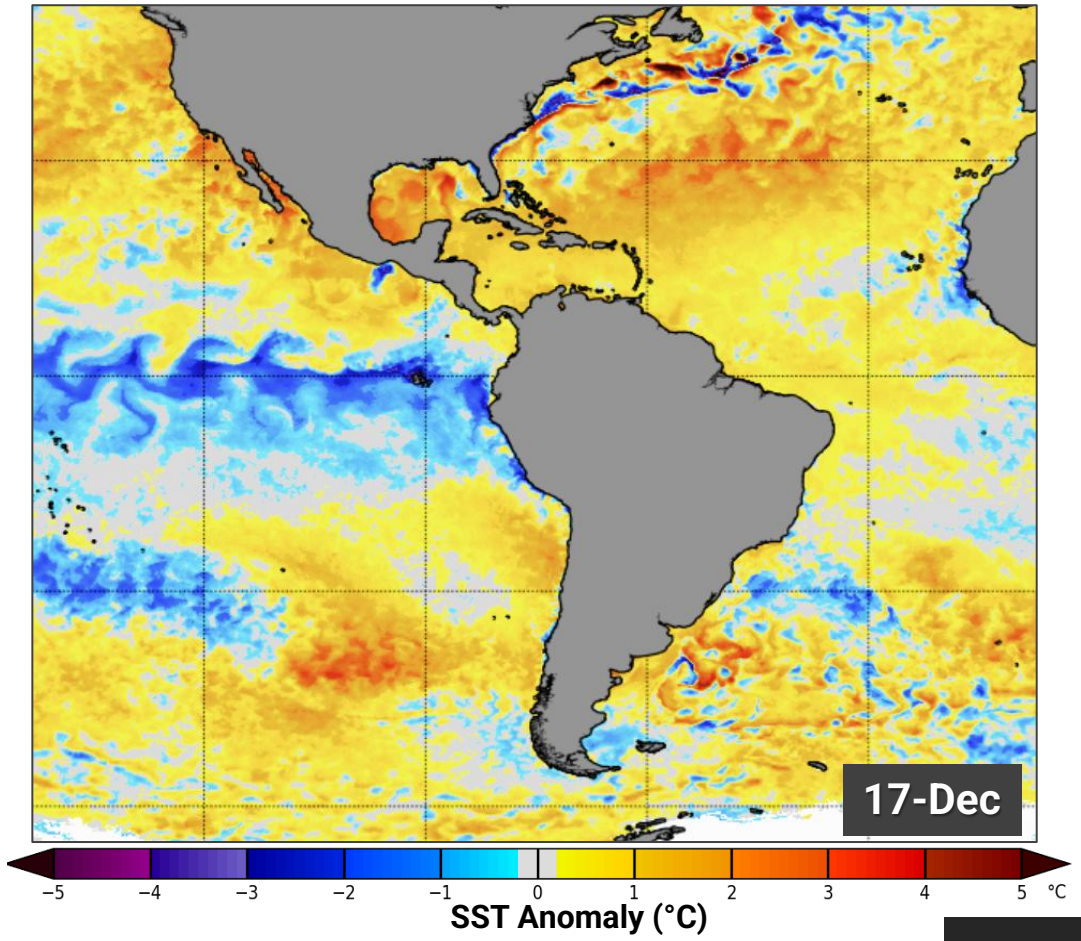
# Sea Surface Temperature (SST)

## SST




Source: OSPO

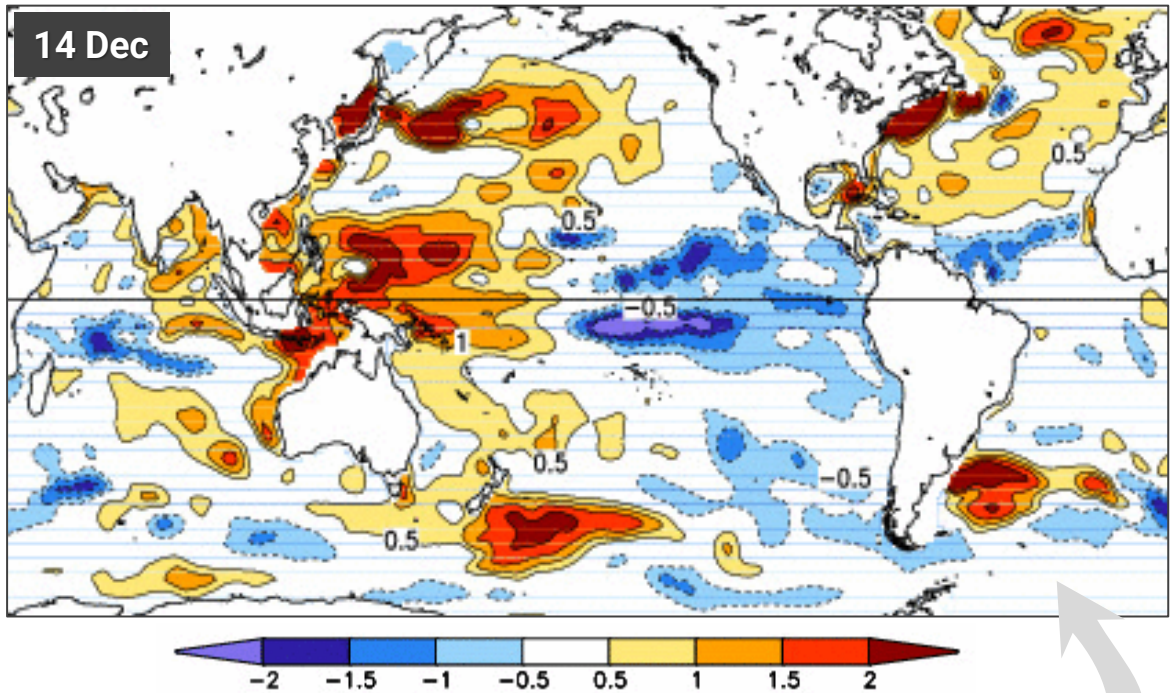
## SST Anomaly




Source: NOAA Coral Reef Watch

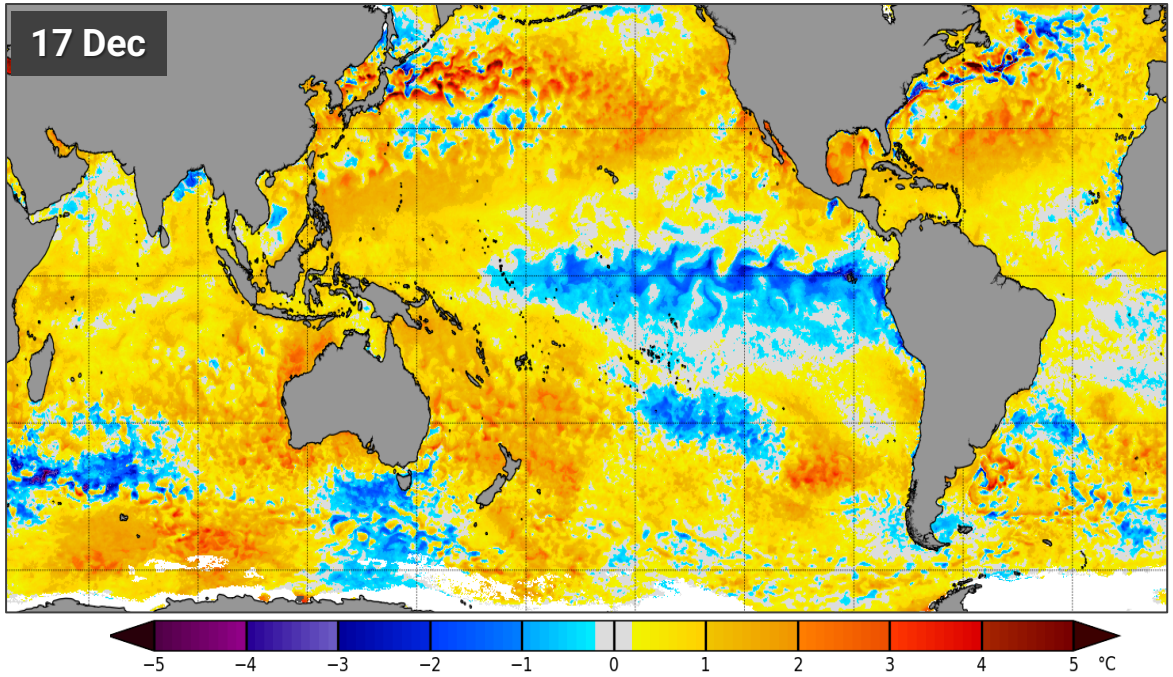
# Top 300m Layer Temperature Anomaly

## Layer Anomaly




Source: GODAS, CPC

## Surface Anomaly




Source: NOAA Coral Reef Watch

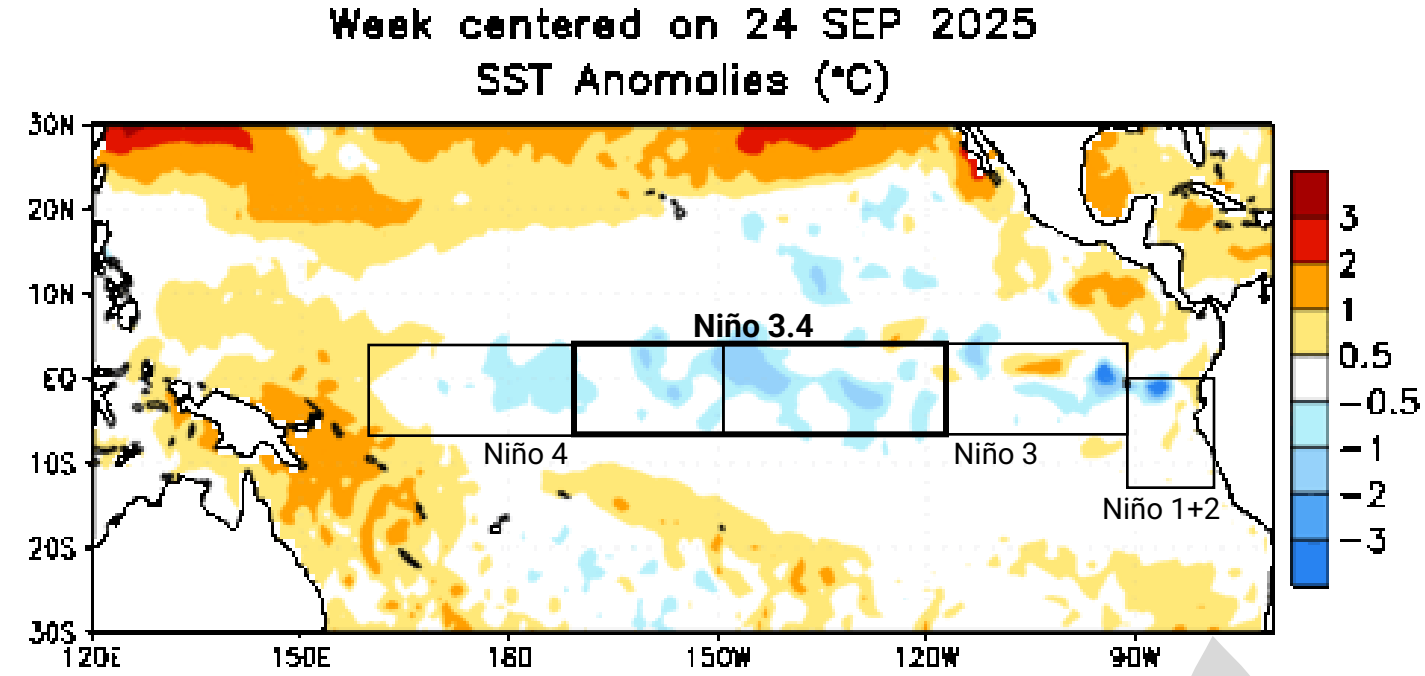
Layer anomalies take longer to dissipate than superficial ones, which makes them a great subseasonal forecasting tool!

# El Niño-Southern Oscillation (ENSO)

## CPC Official Statement

### La Niña Advisory

- La Niña is present.*
- Equatorial sea surface temperatures (SSTs) are below average across the central and east-central Pacific Ocean.
- Atmospheric anomalies over the tropical Pacific Ocean are consistent with La Niña.




Source: CPC

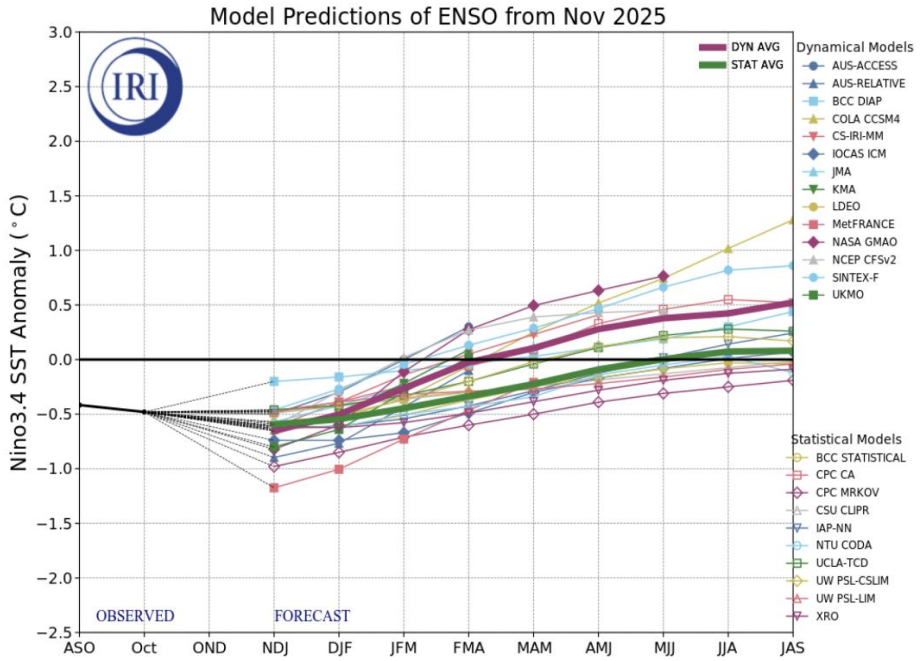
**Takeaway**

- La Niña conditions are very well established.

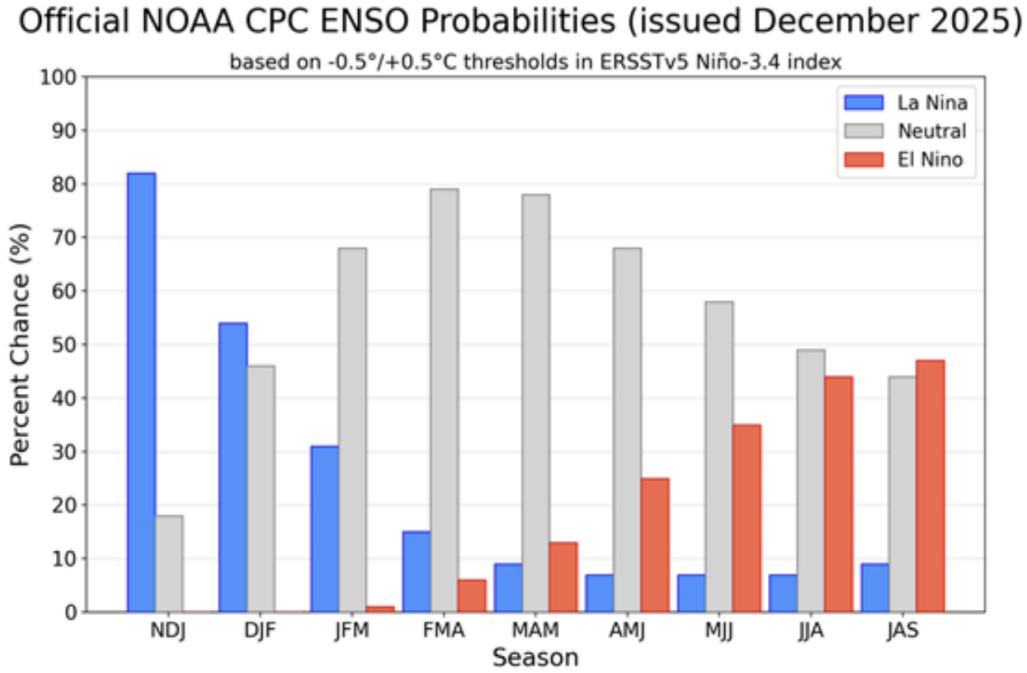
# ENSO Outlook:

La Niña is favored to continue for the next month or two, with a transition to ENSO-neutral most likely in January-March 2026 (68% chance).

## Dynamical Models



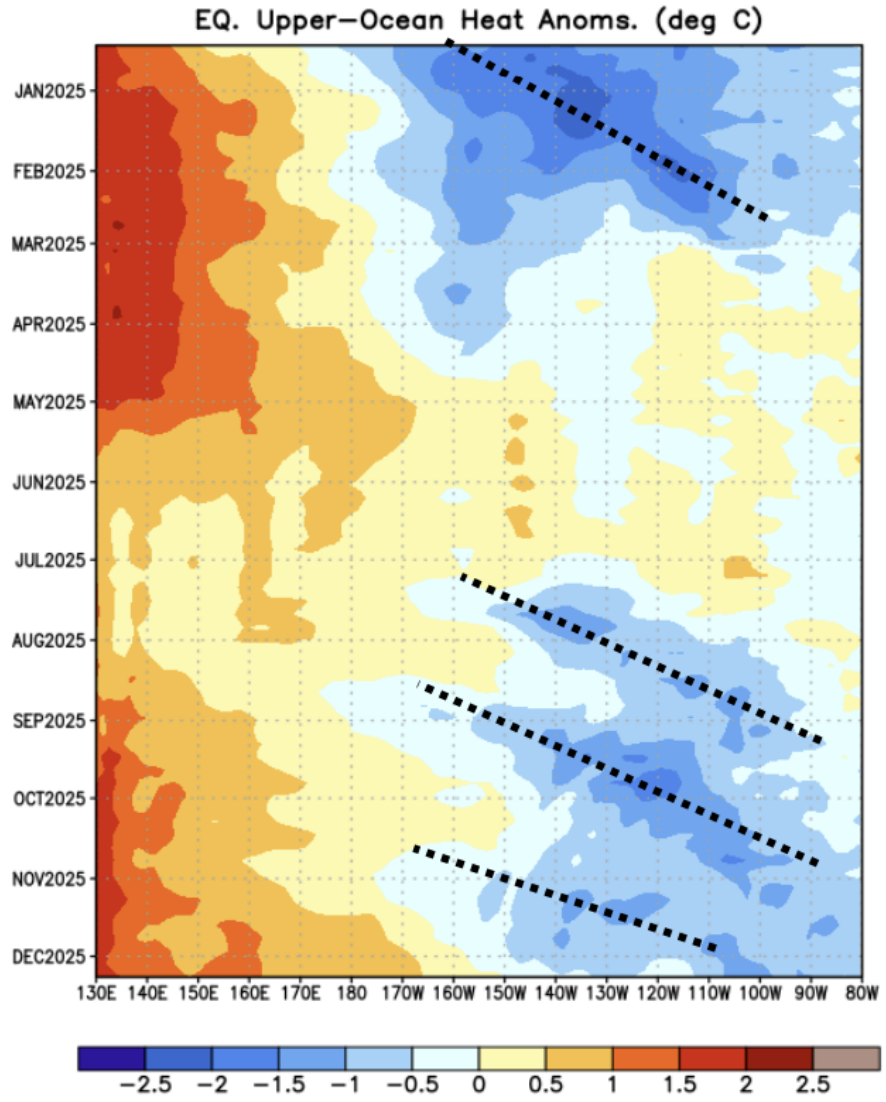

## Probabilistic Forecast




## Takeaways

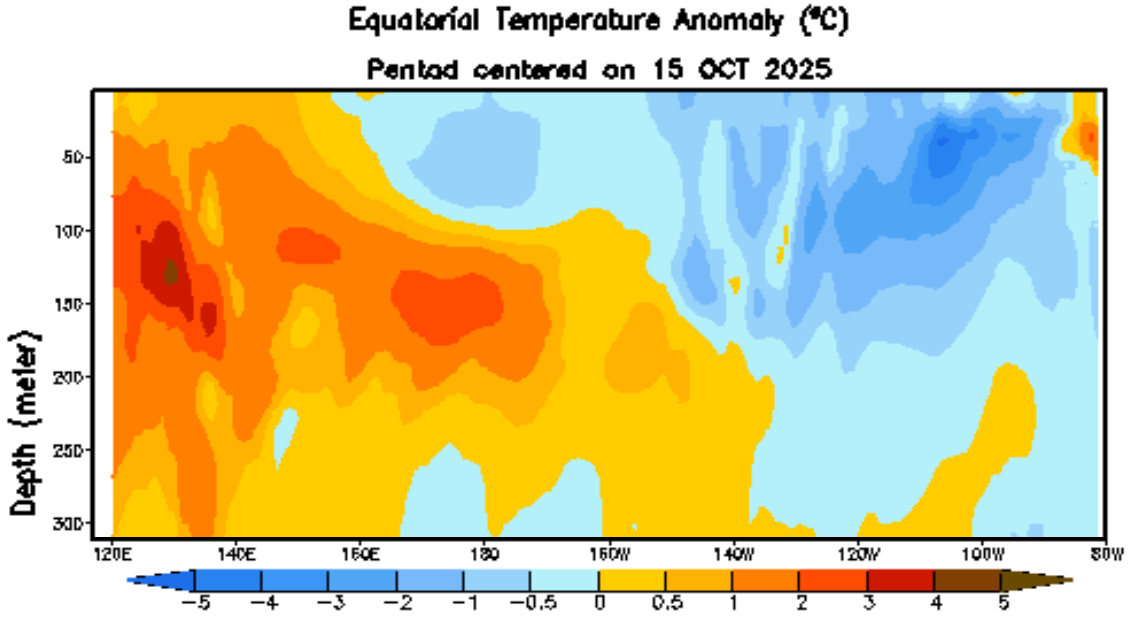
- La Niña should continue through January/February.
- Chances of El Niño increase past April, but are still lower than the chances for neutral conditions at least through June.

# Oceanic Kelvin Wave Activity (ENSO)



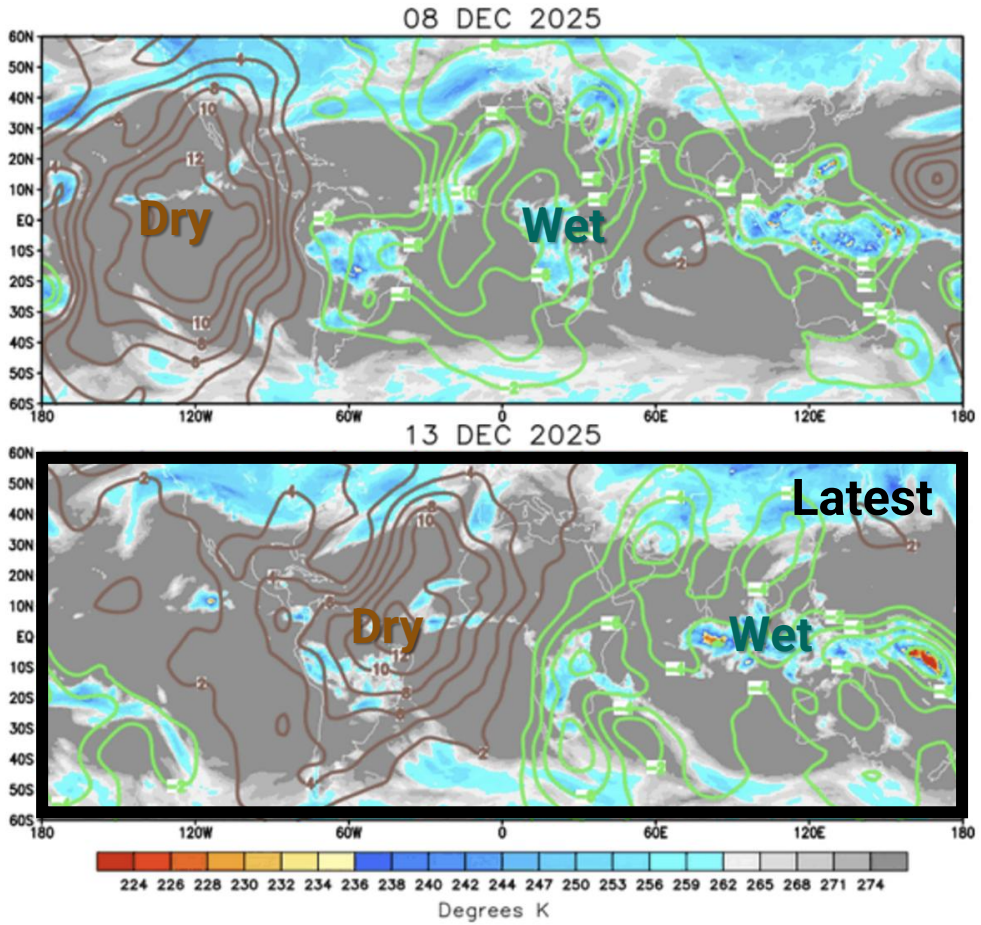

## Takeaways

- A cool Kelvin is approaching the South American coast, and could reinforce the cooling by early January.
- A warm Kelvin could be starting to propagate across 170W. If this is the case, this could favor a warming in the South American coast by February, consistent with a potential transition out of La Niña.



# Madden-Julian Oscillation (MJO)

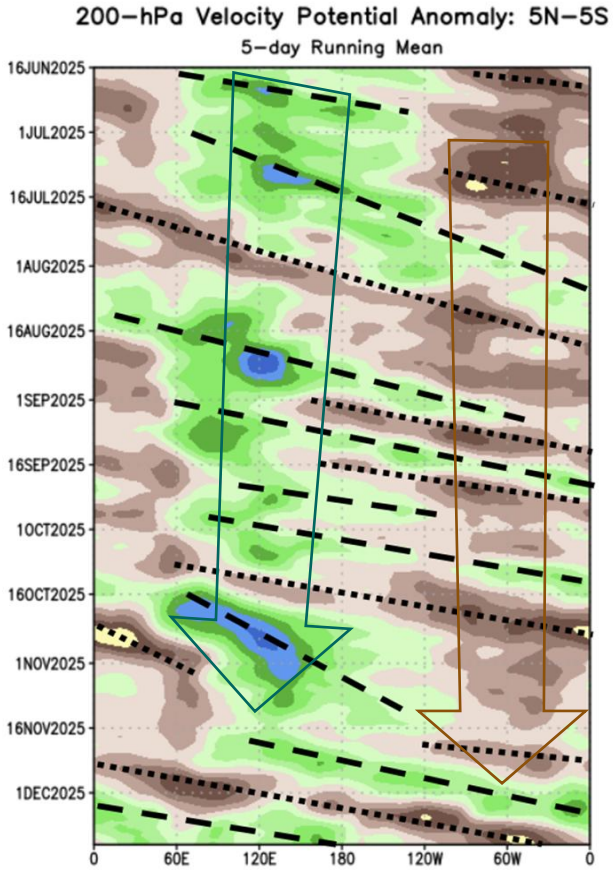
## Velocity Potential and Outgoing Long Wave Radiation




## Takeaways

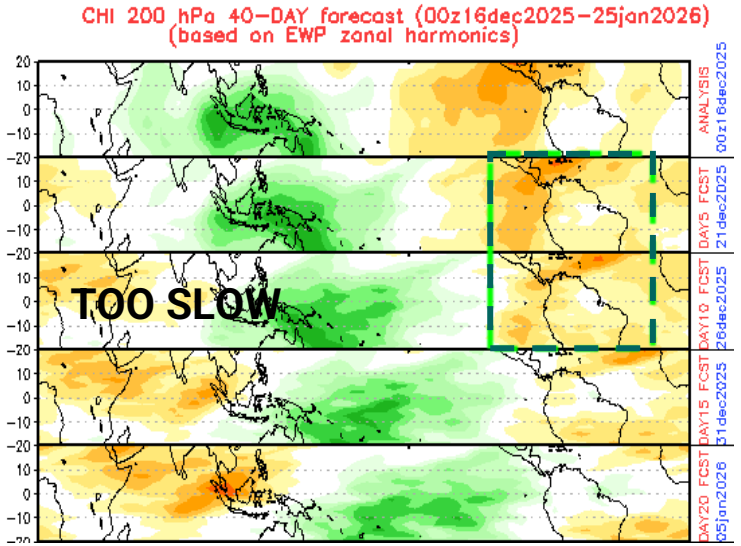
- The MJO is in mode 1, meaning one dry phase and one wet phase over the world.
- It is currently moving very fast, almost at speeds of Kelvin Waves.
- The upper convergent MJO phase (generally dry) is moving out of the Americas.
- A wet phase is underway, yet it seems to be disorganized.

## CHI Hovmöller

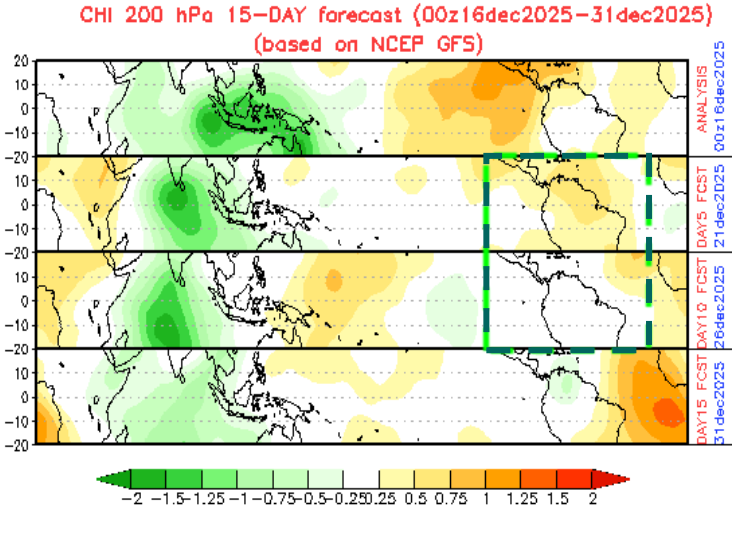


# MJO Forecasts

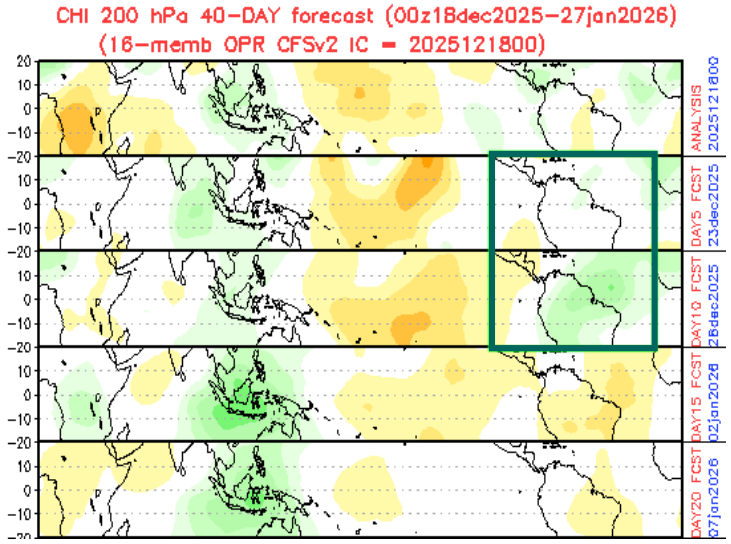
## Empirical Wave Propagation




## Global Forecast System (GFS)



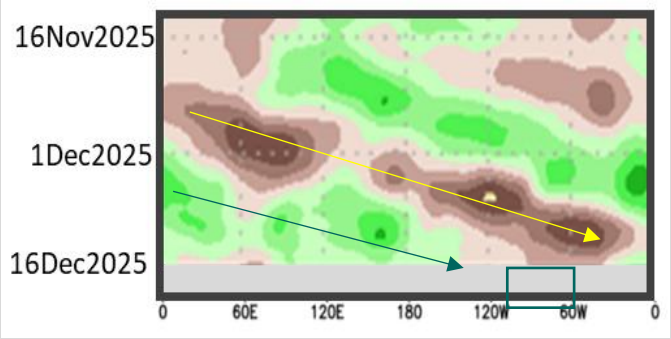

## Climate Forecast System (CFS)



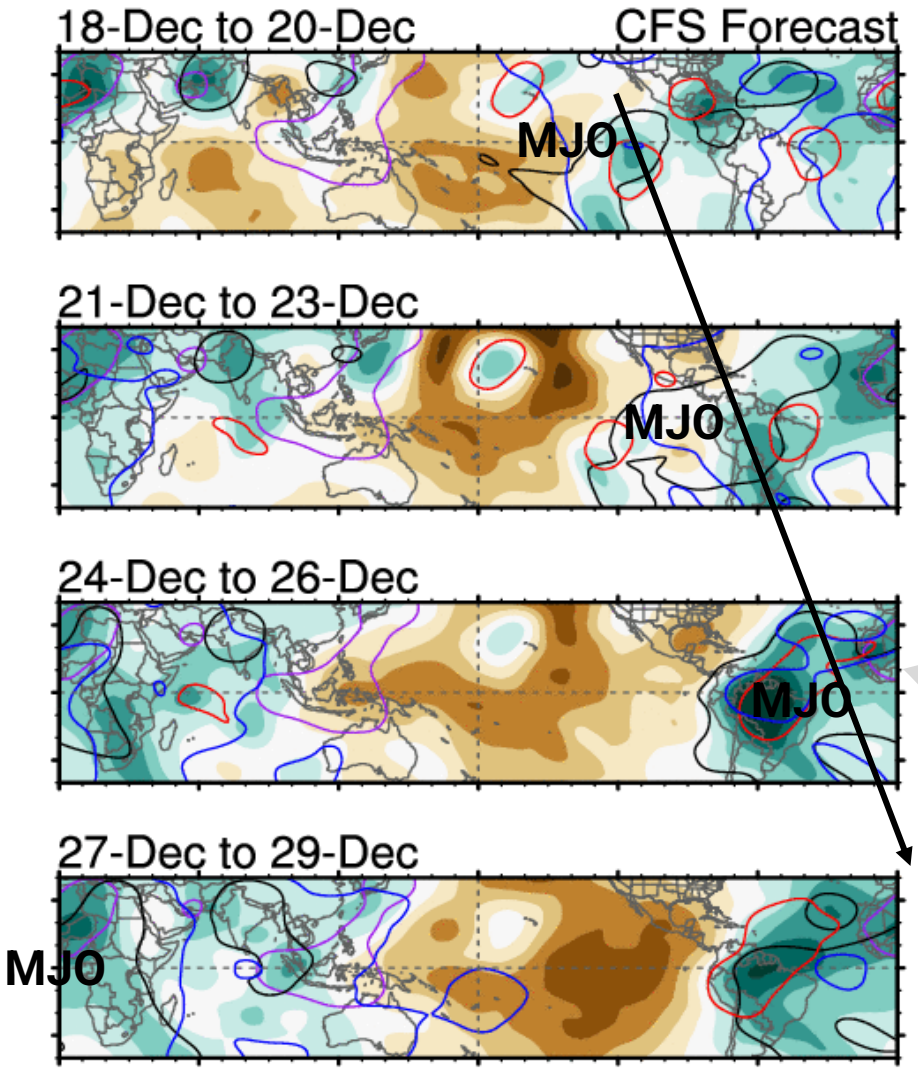

## Takeaways

- Models differ.
- Based on observations, the CFS solution makes the most sense: A disorganized rapidly-moving wet phase through the end of the month, transitioning to drier conditions after.
- Wet in Tropical South America near Christmas.

### Observations

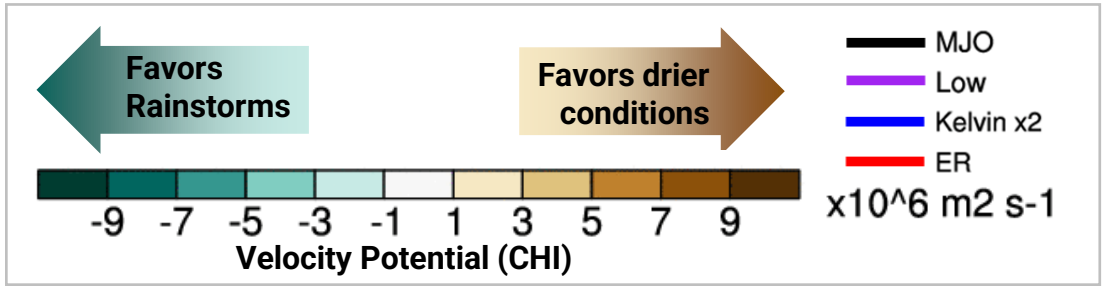


# MJO and Upper Tropospheric Waves




## Takeaways

- The MJO is propagating fast, almost at the speed of Kelvin Waves.
- The CFS has a very wet signal over tropical South America near Christmas. Rainfall will likely be enhanced somewhere in tropical South America, but where?

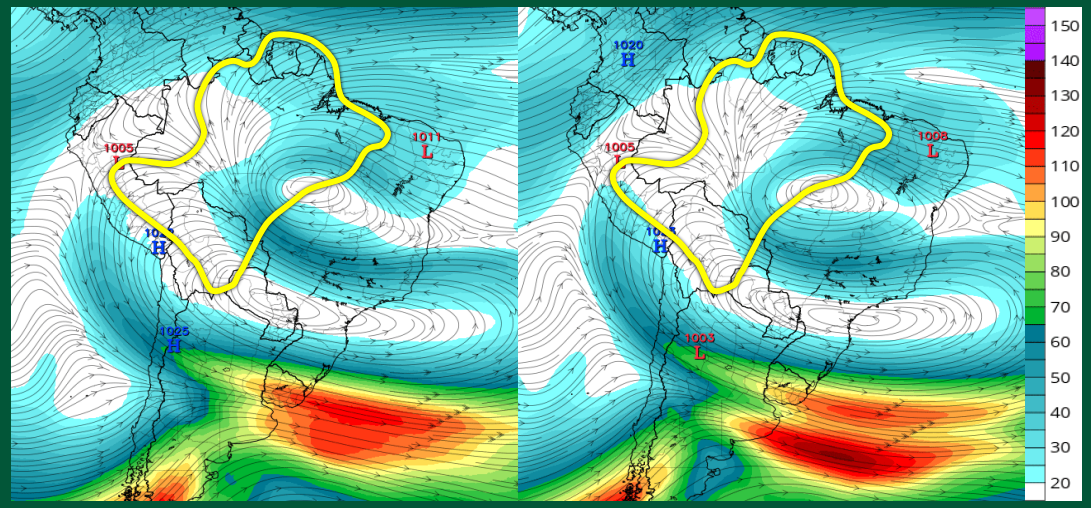


# Where might Christmas be wet in Tropical South America?

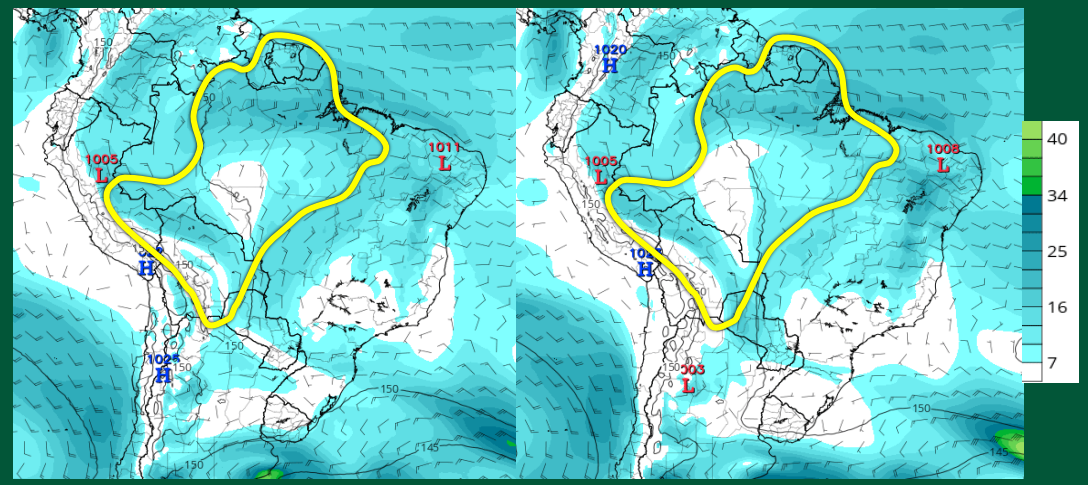
AI GFS

AI ECMWF

250 Winds

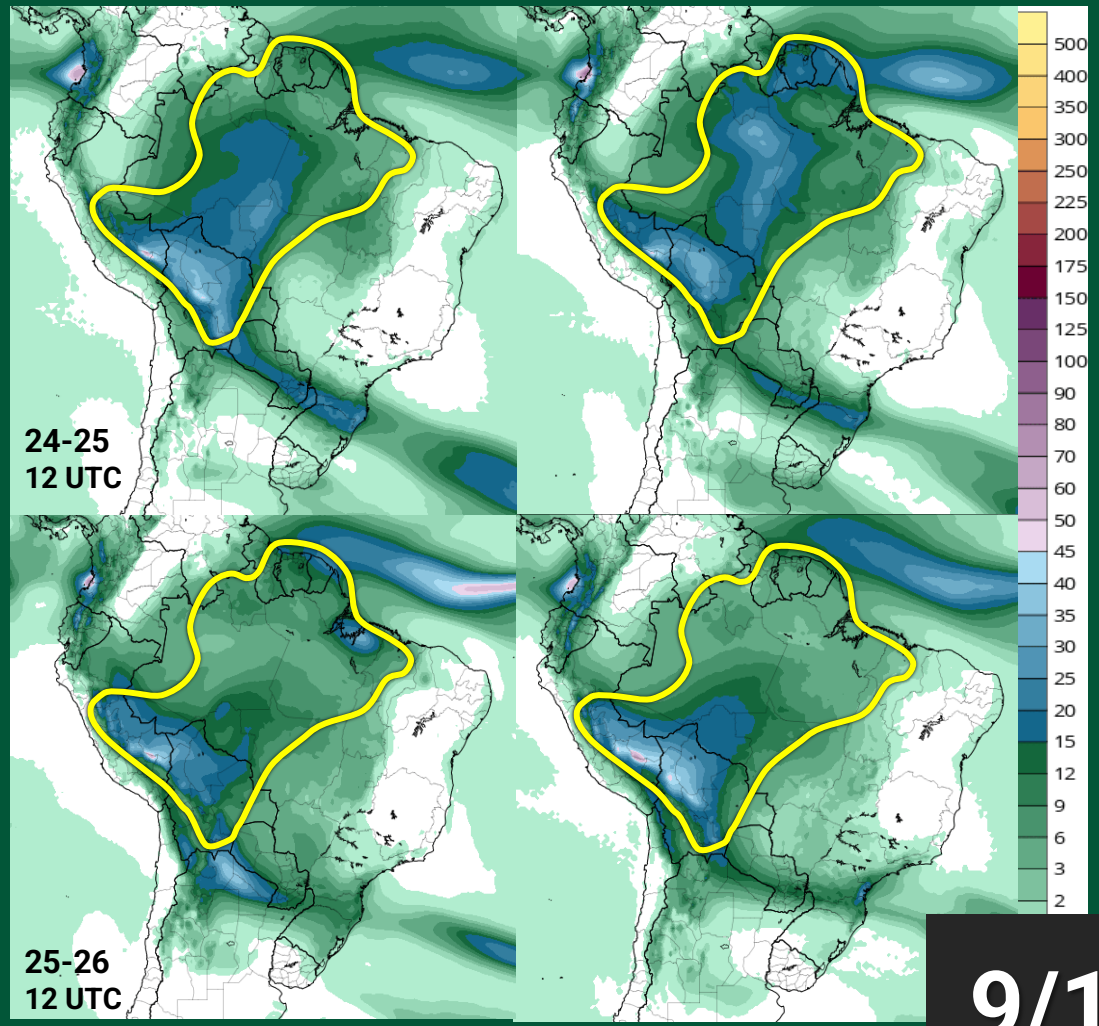



850 Winds




AI GFS

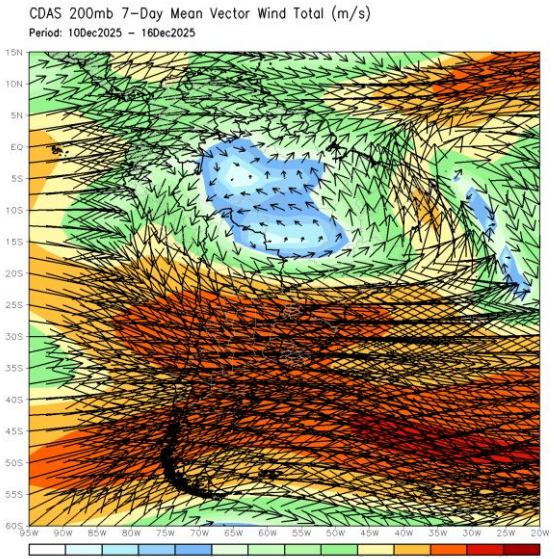
AI ECMWF

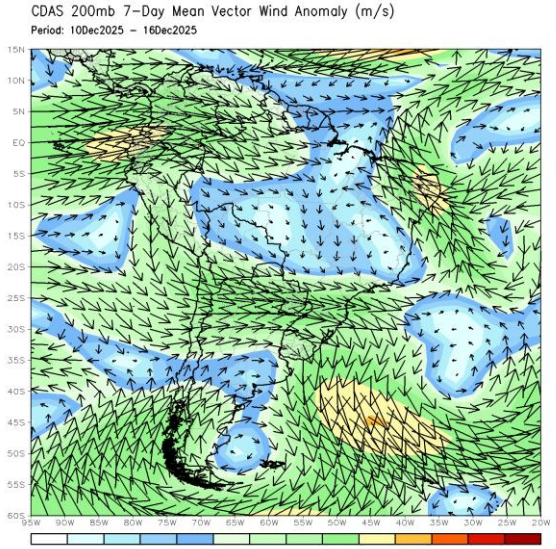


# South America, last 7 days

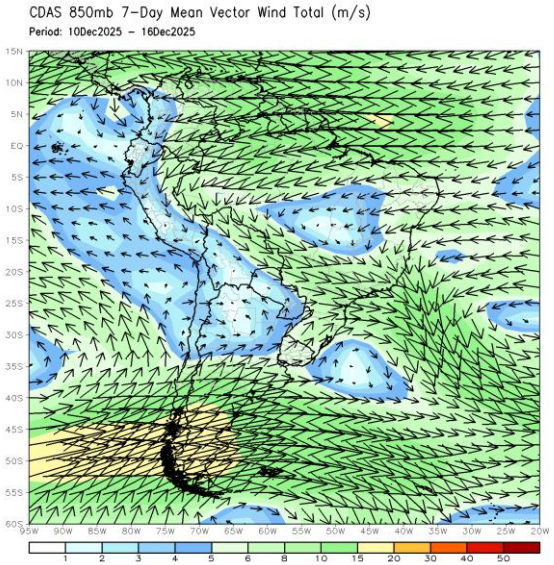
## Flow

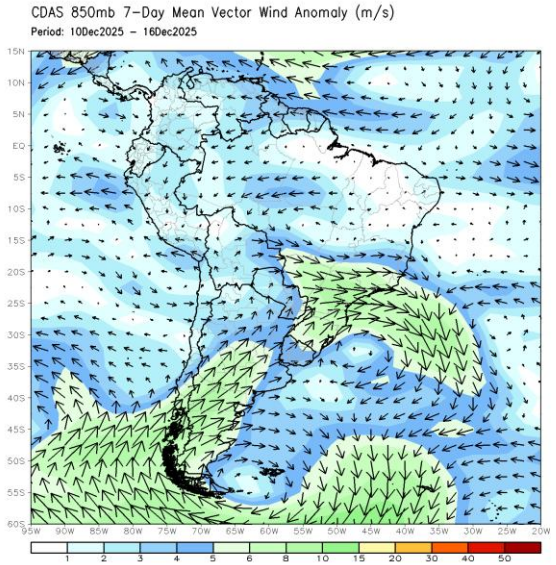
200 hPa



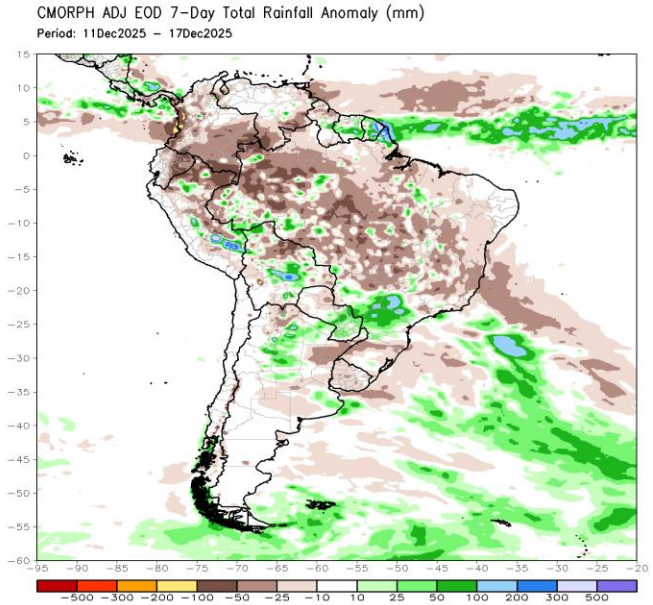



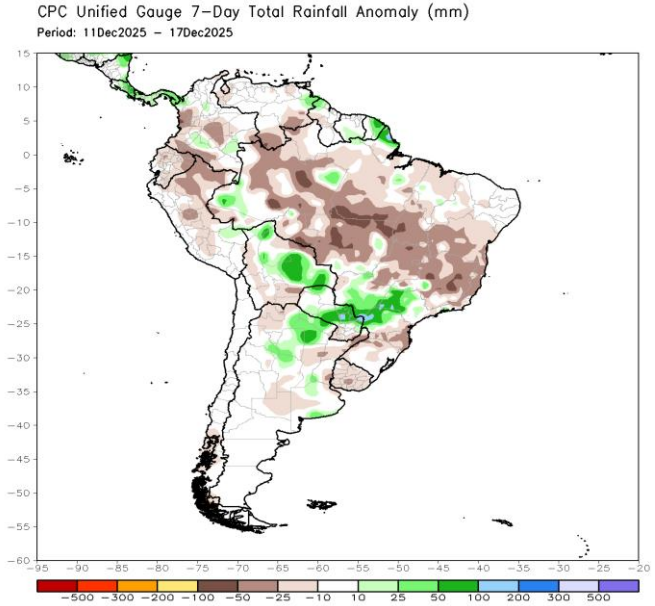

850 hPa




## Rainfall Anomalies

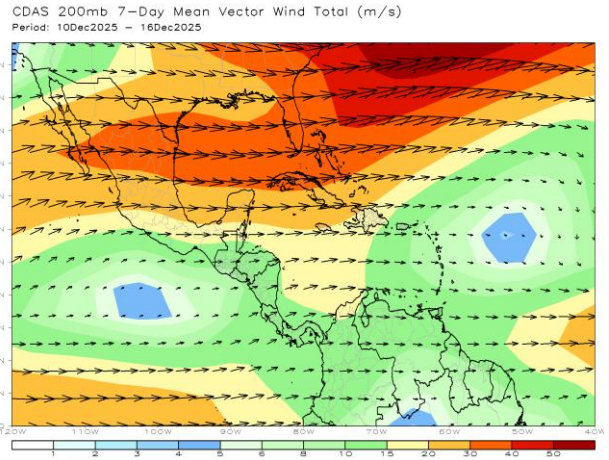


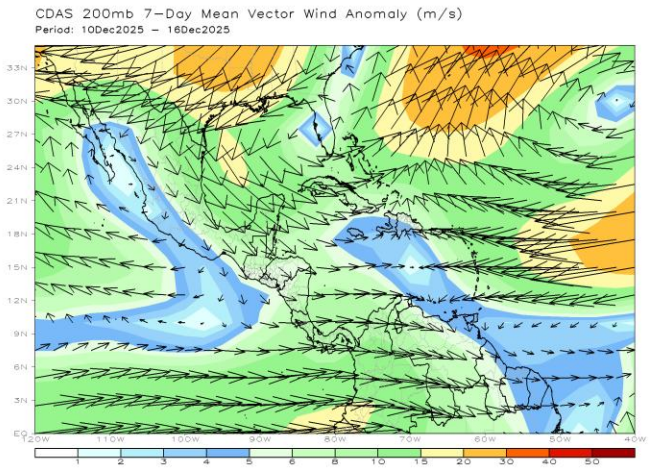



# Caribbean, Central America and Mexico, last 7 days

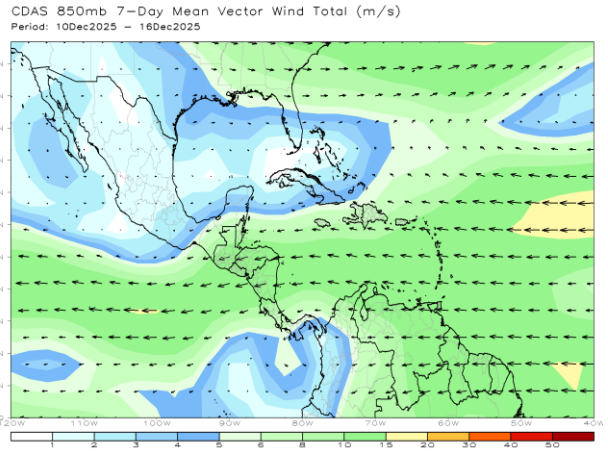
## Flow

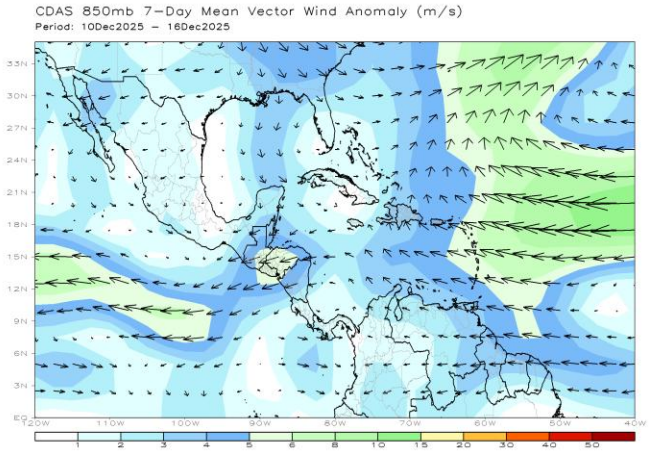
200 hPa



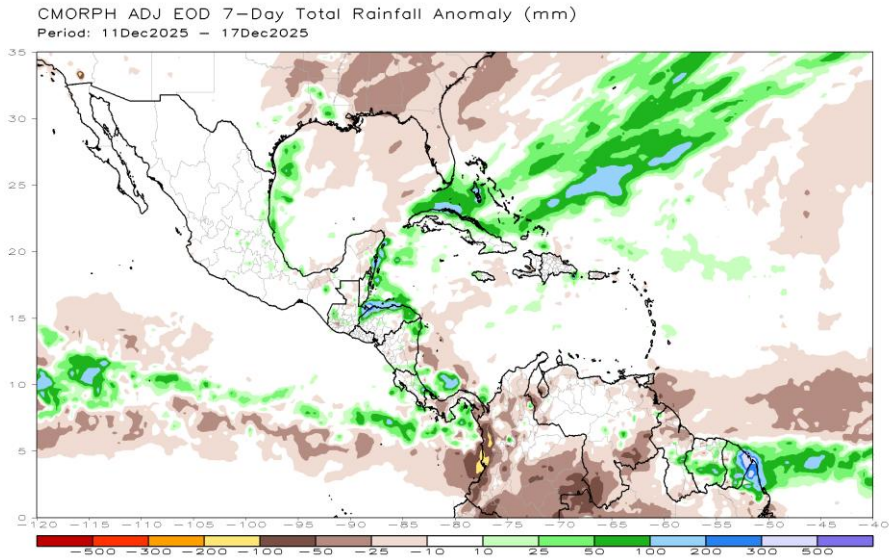



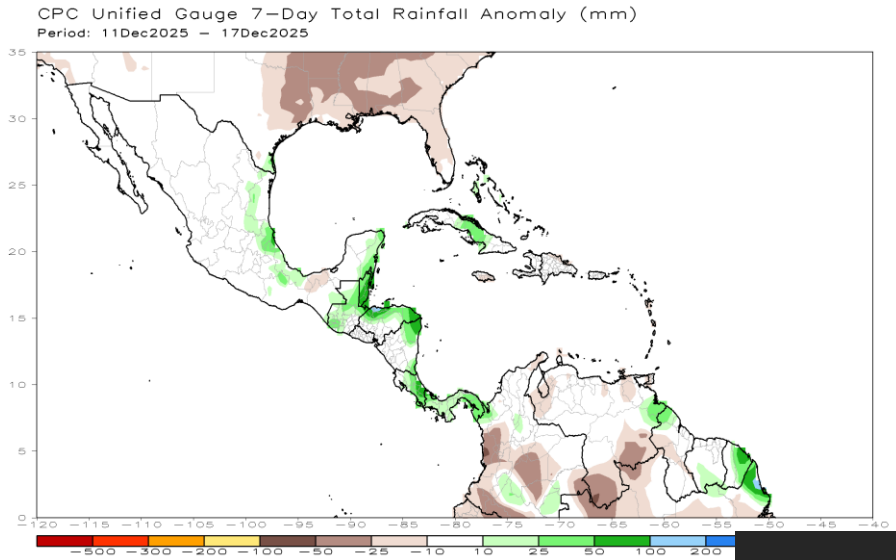

850 hPa




## Rainfall Anomalies



## Next Sessions

Wednesday, 14 January 2025 at 16:00 UTC

Wednesday, 11 February 2025 at 16:00 UTC

Wednesday, 25 March 2025 at 15:00 UTC

★ **Our website: https://rammb2.cira.colostate.edu/training/rmtc/focusgroup/**

★ **To join our distribution list: email erin.sanders@colostate.edu, or jose.galvez@colostate.edu**

Thank you! Gracias! Obrigado!