WMO VLab Regional Focus Group
of the Americas and Caribbean

Since 2004

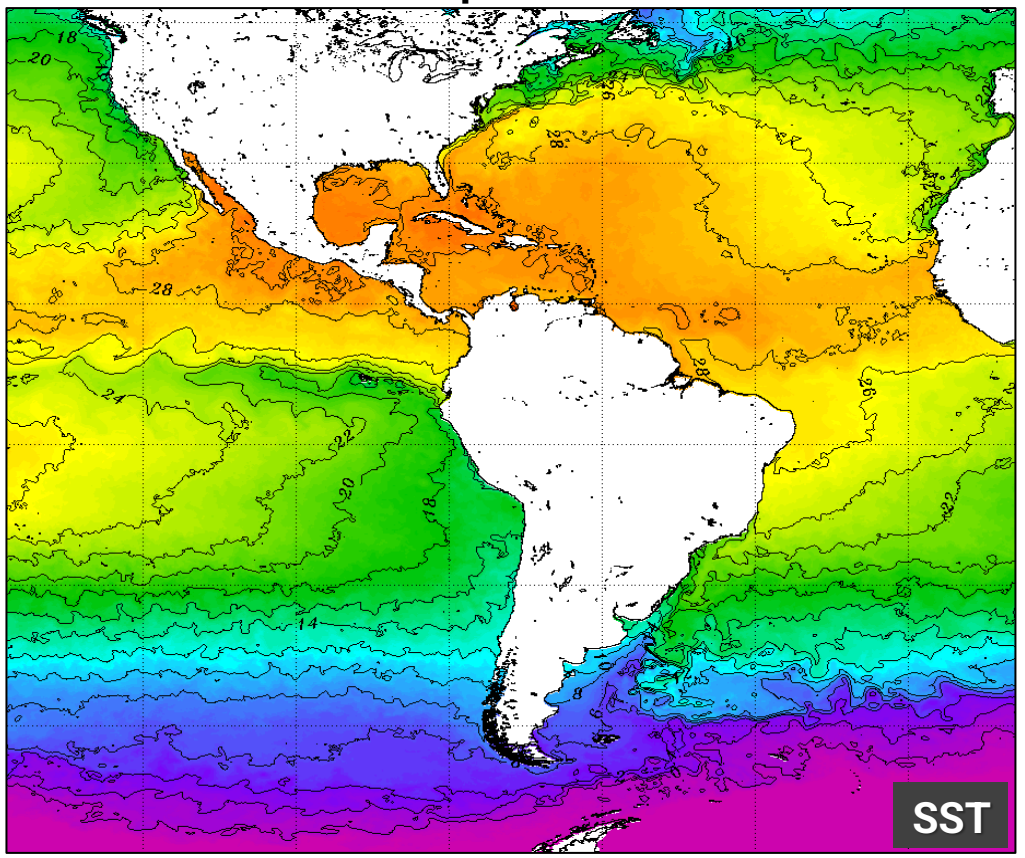
# Climate Indices

## Current Status and Projections

**Wednesday 16 September, 2025**

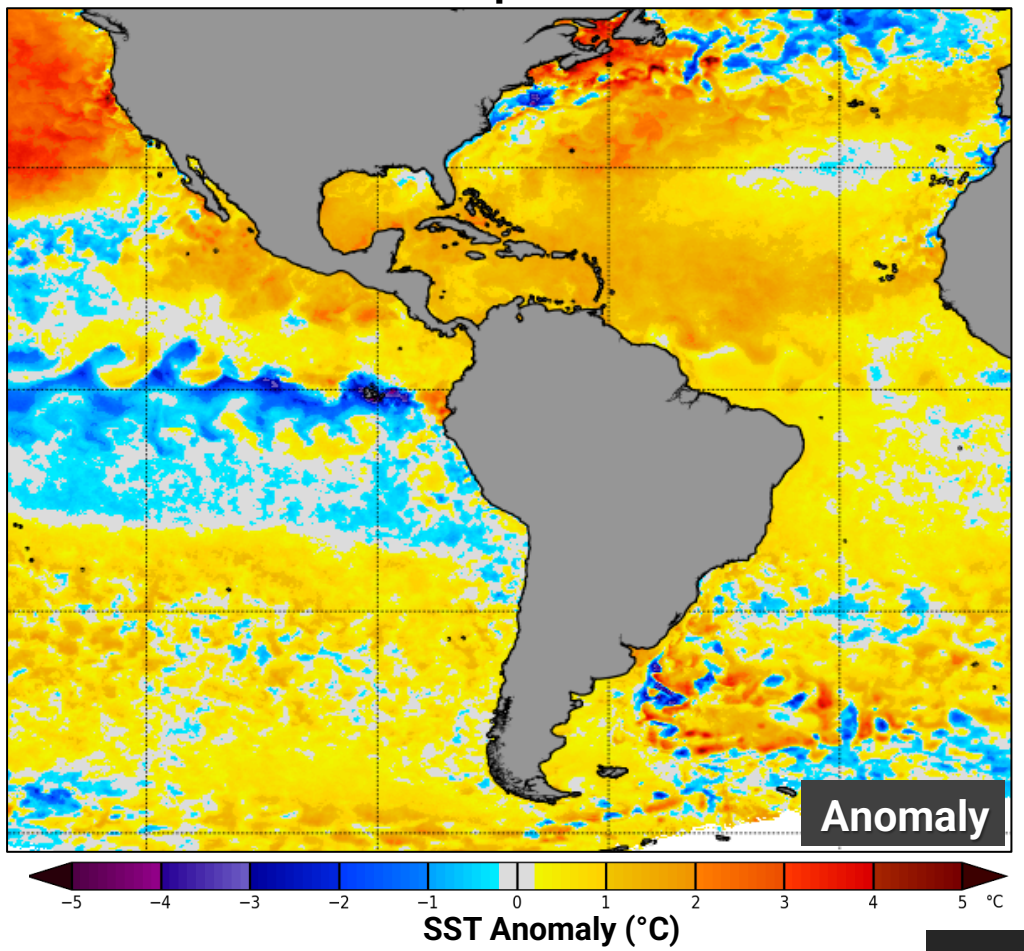
# Sea Surface Temperature (SST)

**14 September**




Source: OSPO

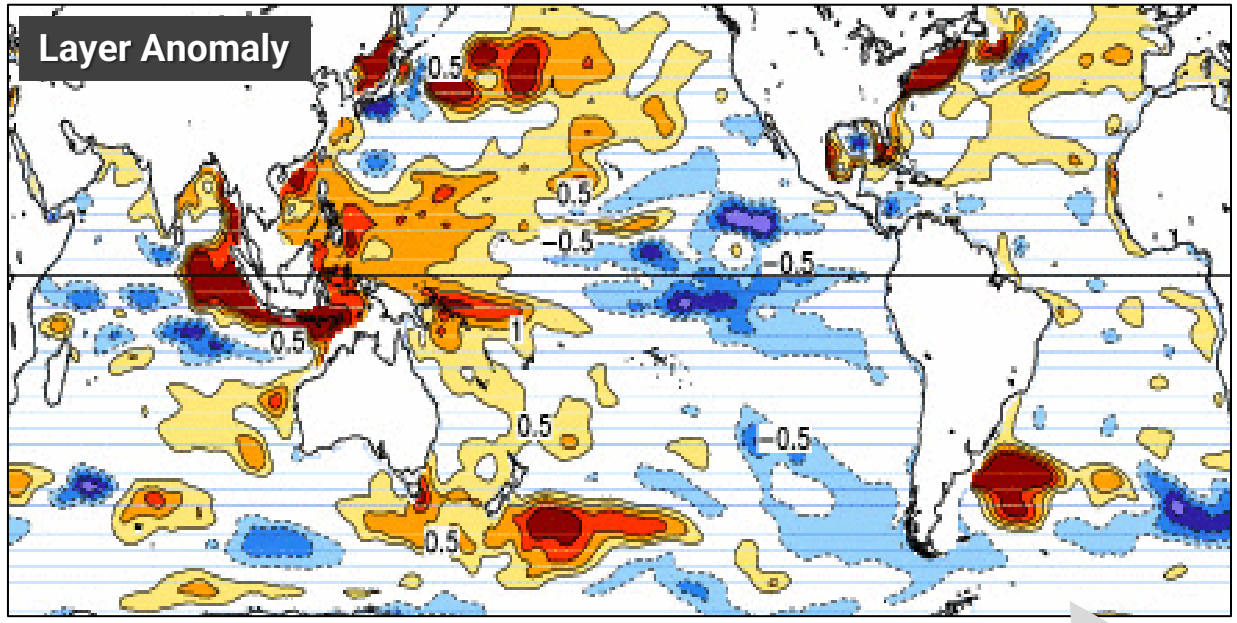
**14 September**




Source: NOAA Coral Reef Watch

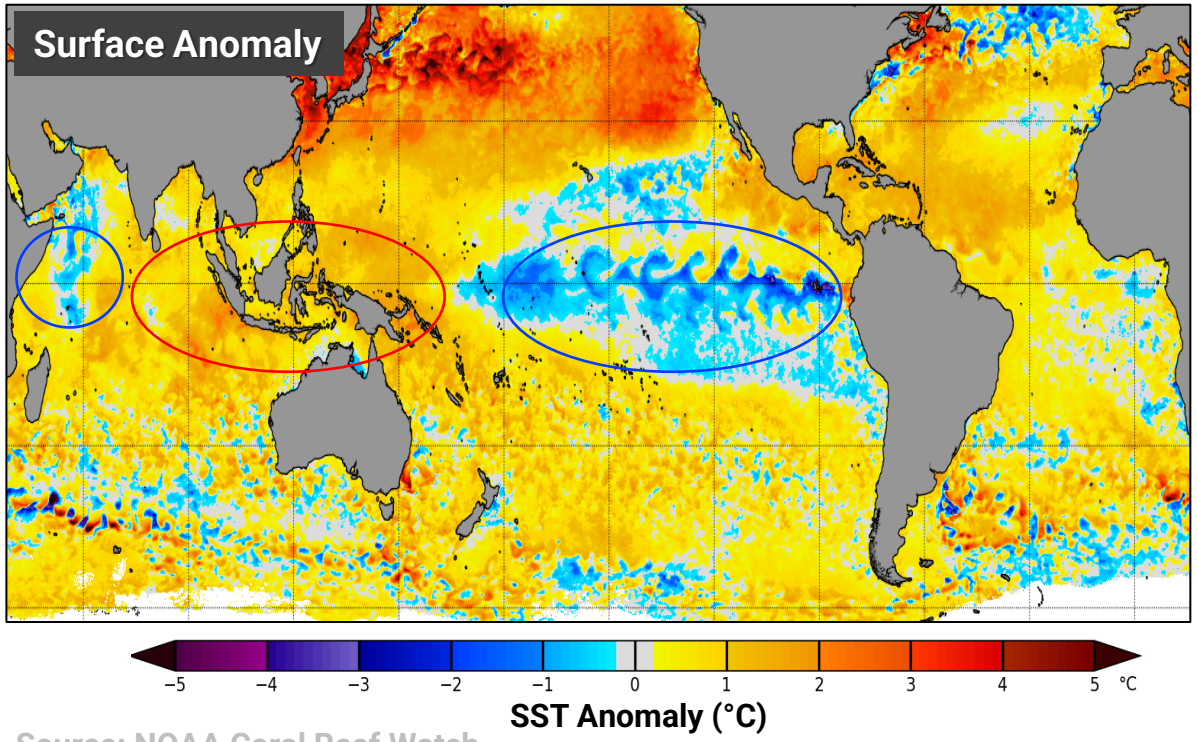
# Top 300m Layer Temperature Anomaly

**10 September**




Source: GODAS, CPC

**14 September**




Source: NOAA Coral Reef Watch

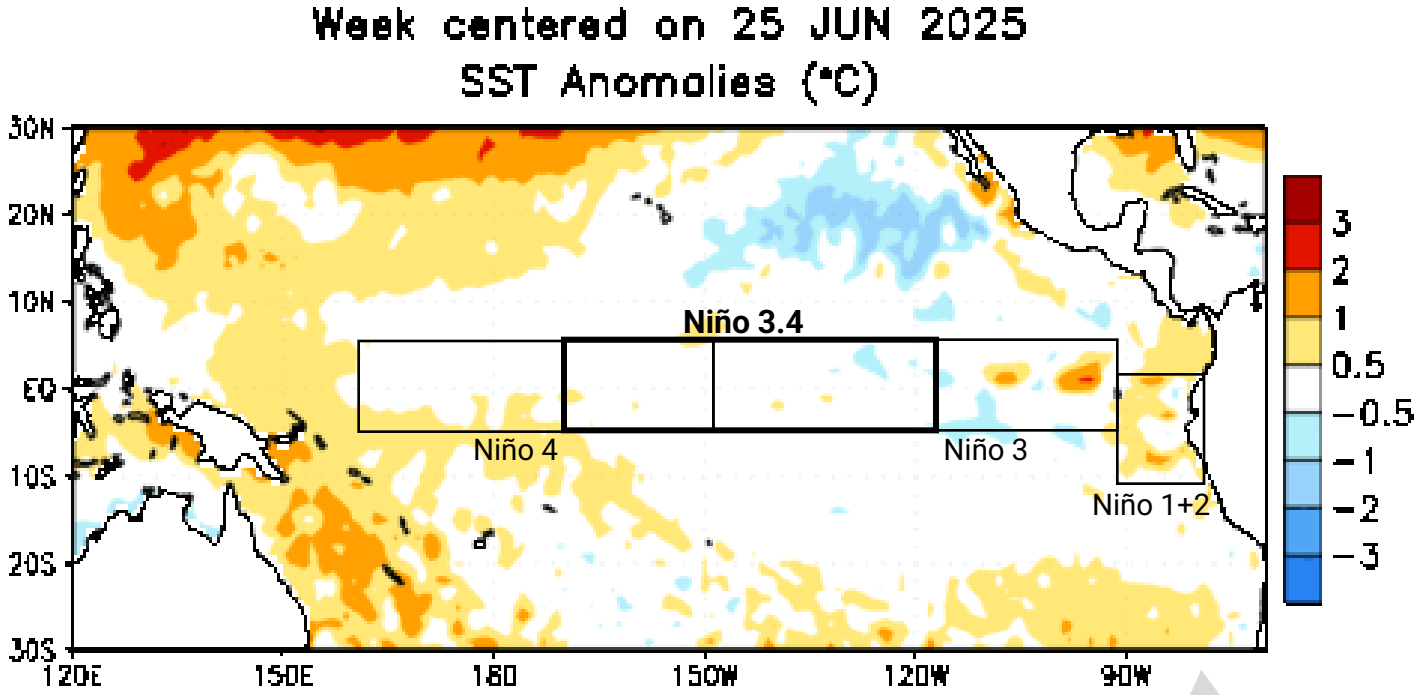
Layer anomalies take longer to dissipate than superficial ones, which makes them a great subseasonal forecasting tool!

# El Niño-Southern Oscillation (ENSO)

## CPC Official Statement

### La Niña Watch

- ENSO-neutral is present.*
- Equatorial sea surface temperatures (SSTs) are near-to-below average across most of the Pacific Ocean.

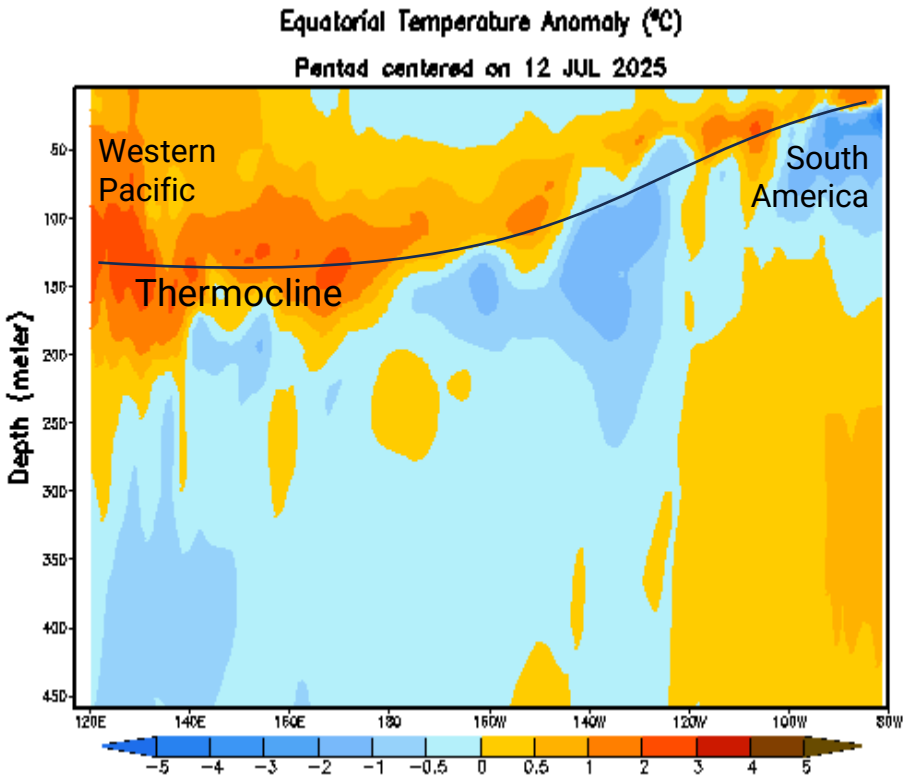



**Takeaways**

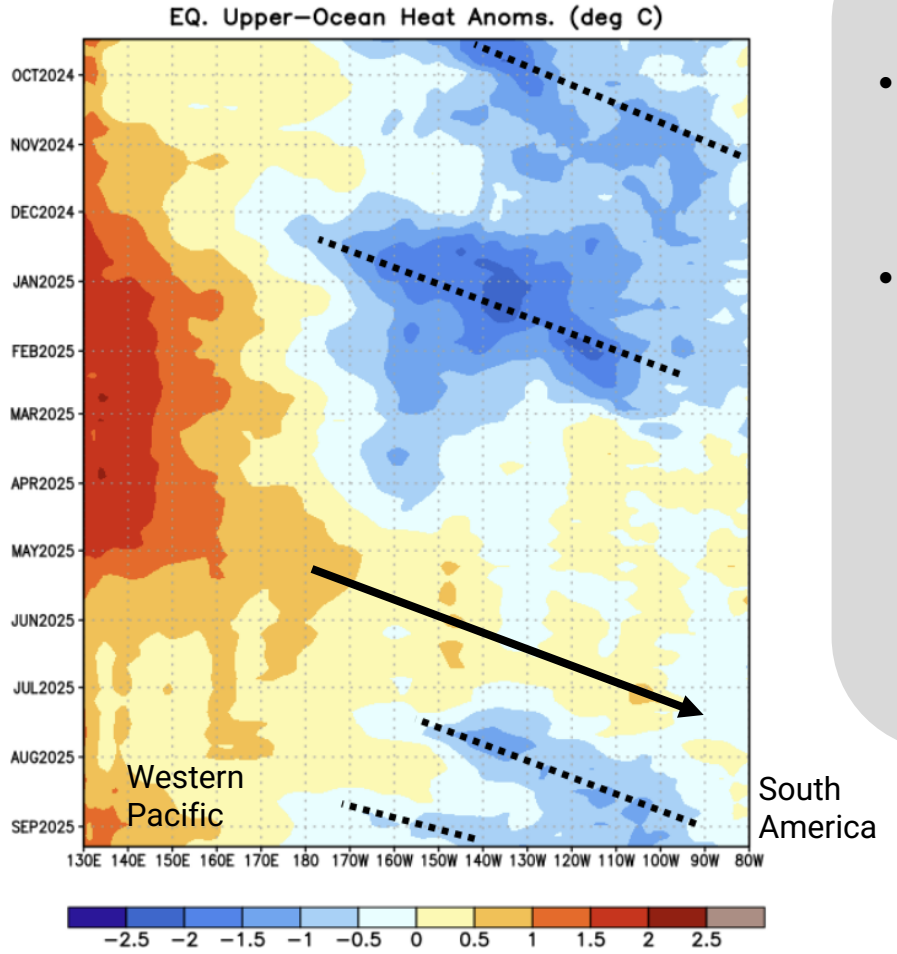
- The equatorial Pacific continues cooling.
- A recent local warming in the South American coast seems to be driven by changes in surface winds.

# Oceanic Kelvin Wave Activity (ENSO)

## Temperature Anomaly Cross Section




## Heat Content Hovmöller



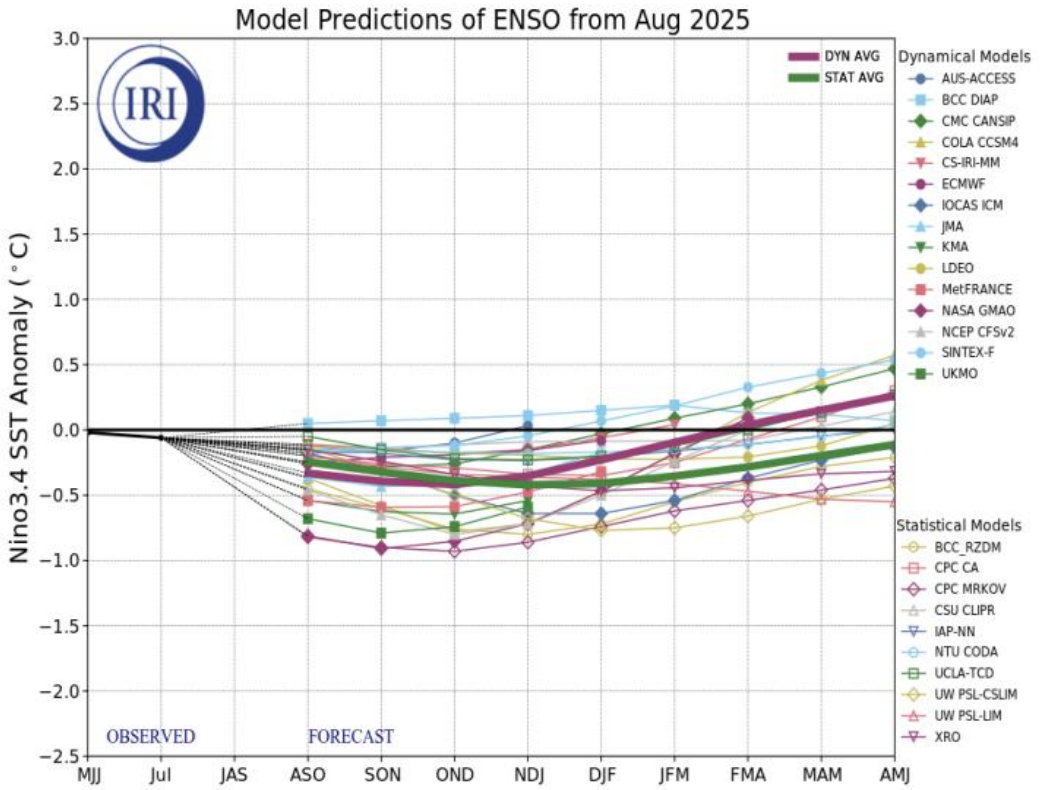

## Takeaways

- The central and eastern Pacific seem to continue to cool down.
- Two upwelling (cool) Kelvin waves seem to be propagating towards the coast of South America.

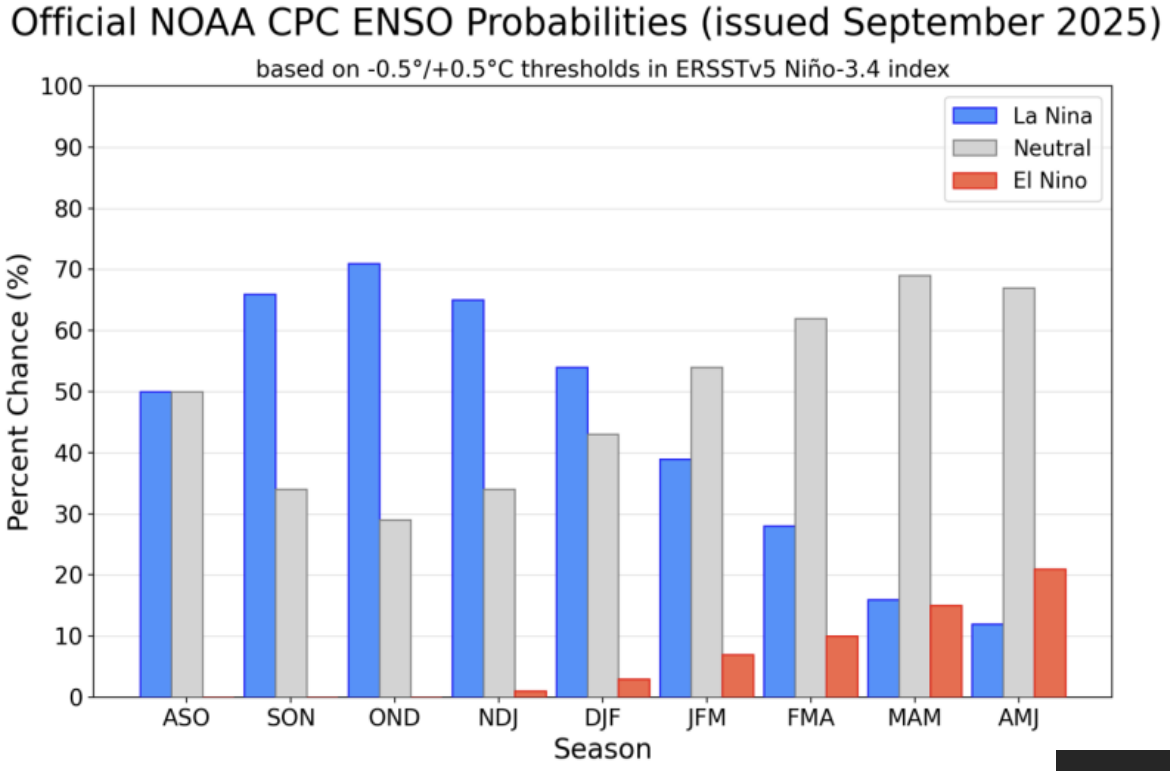
# ENSO Outlook:

A transition from ENSO-neutral to La Niña is likely in the next couple of months, with a 71% chance of La Niña during October - December 2025. Thereafter, La Niña is favored but chances decrease to 54% in December 2025 – February 2026.*

## Dynamical Models

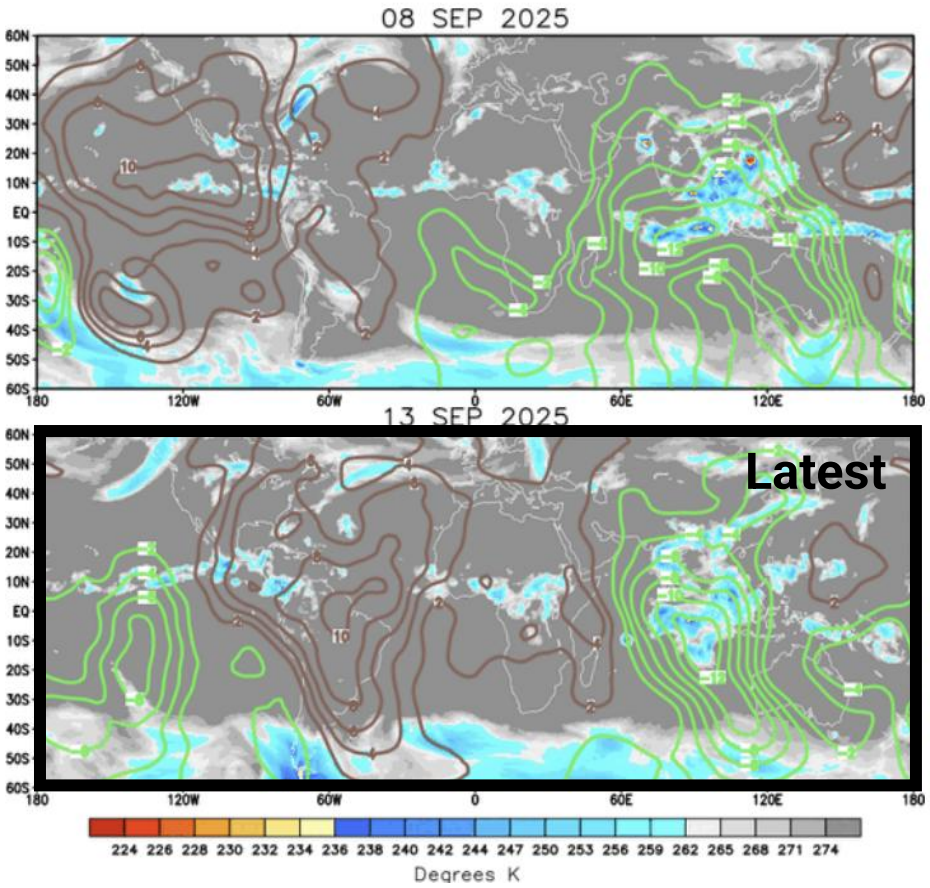



## Probabilistic Forecast

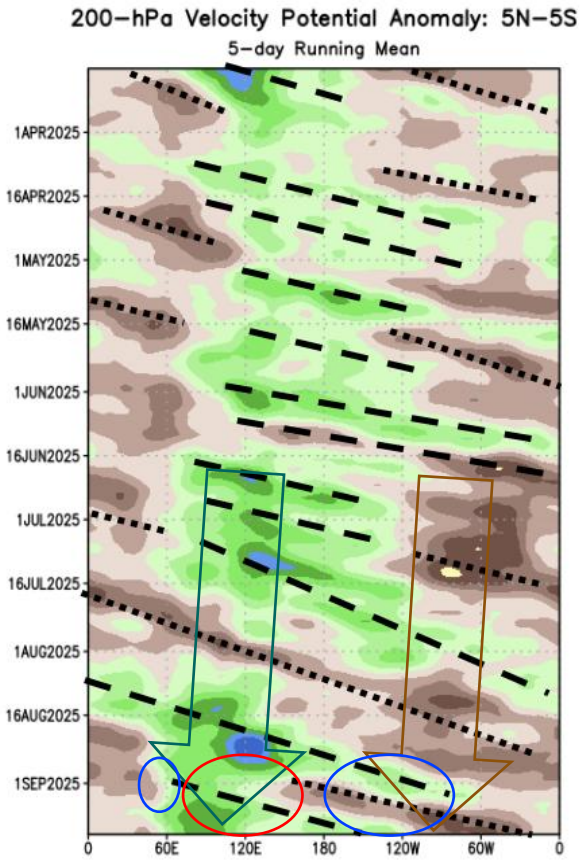


# Madden-Julian Oscillation (MJO)

## Velocity Potential and Outgoing Long Wave Radiation




## CHI Hovmöller

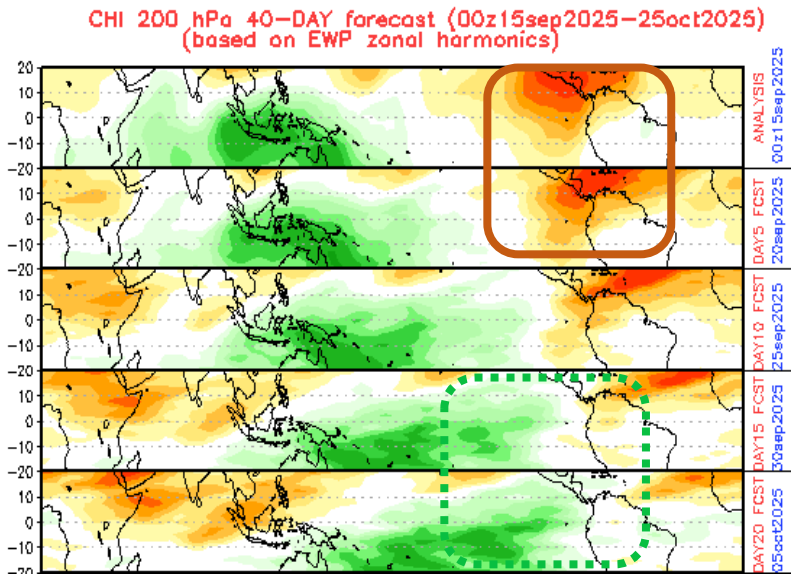



## Takeaways

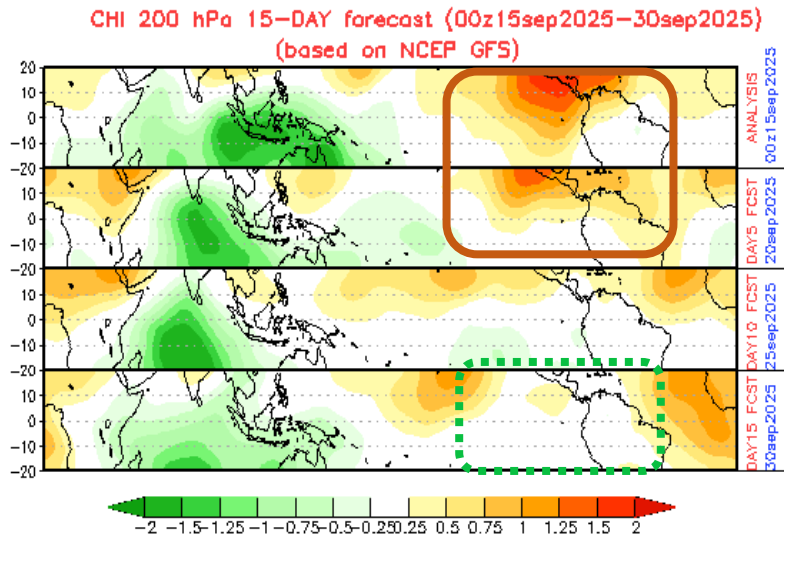
- The MJO is on a Wave-1 mode.
- Propagation has not been coherent during the last few weeks and models have mostly failed to resolve it.
- Although a wet signal is propagating into the central Pacific, low frequency modes seem to be gaining amplitude (wet maritime continent, from a warm eastern Indian Ocean versus dry Eastern Pacific from La Niña-like cooling).

# MJO Forecasts

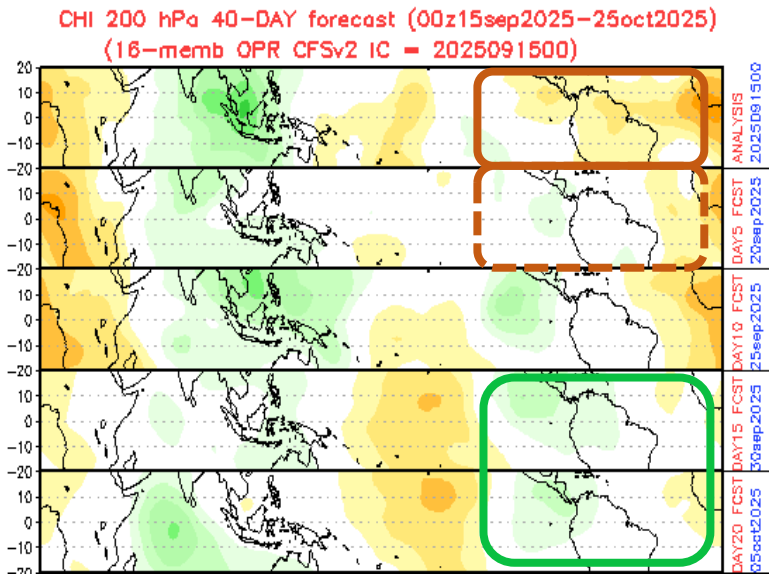
## Empirical Wave Propagation




## Global Forecast System (GFS)



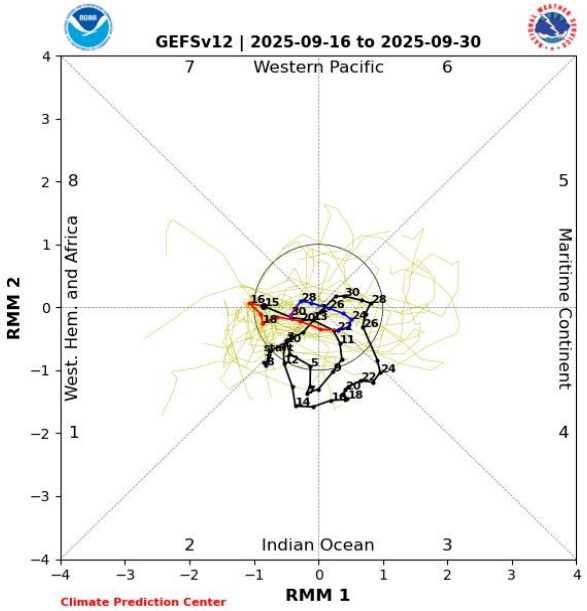

## Climate Forecast System (CFS)

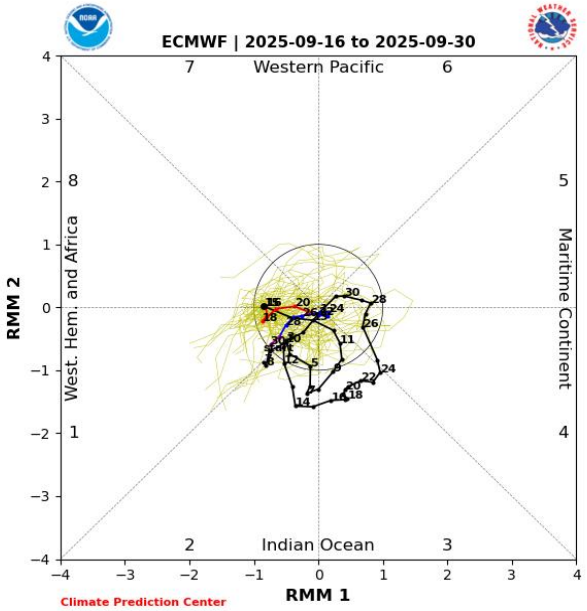


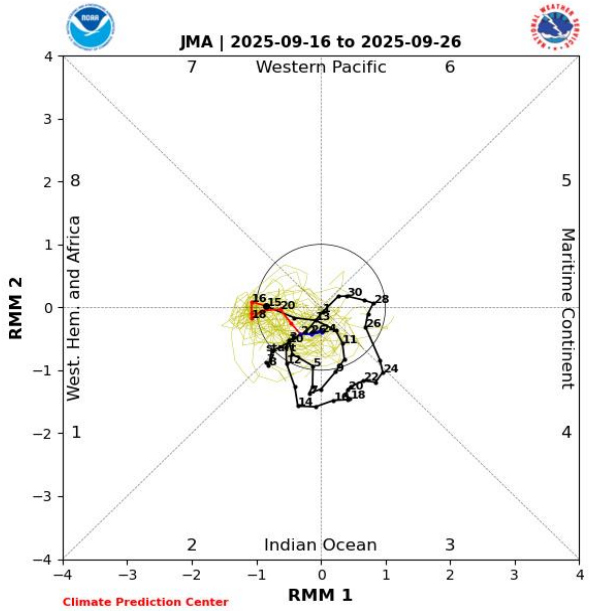

## Takeaways

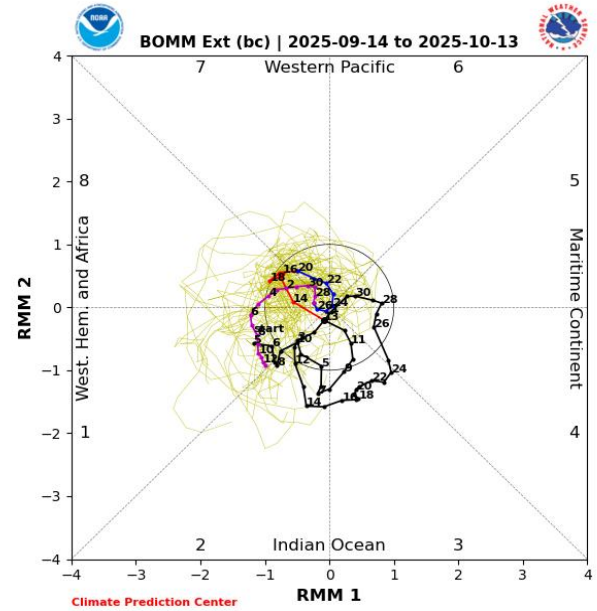
- Models failed with their forecasts last month. Are they reliable now?
- Disorganized wet phase in the Central Pacific could enter the Americas by the end of September. Is this our window for more precipitation?

# MJO Forecasts: Phase Diagrams



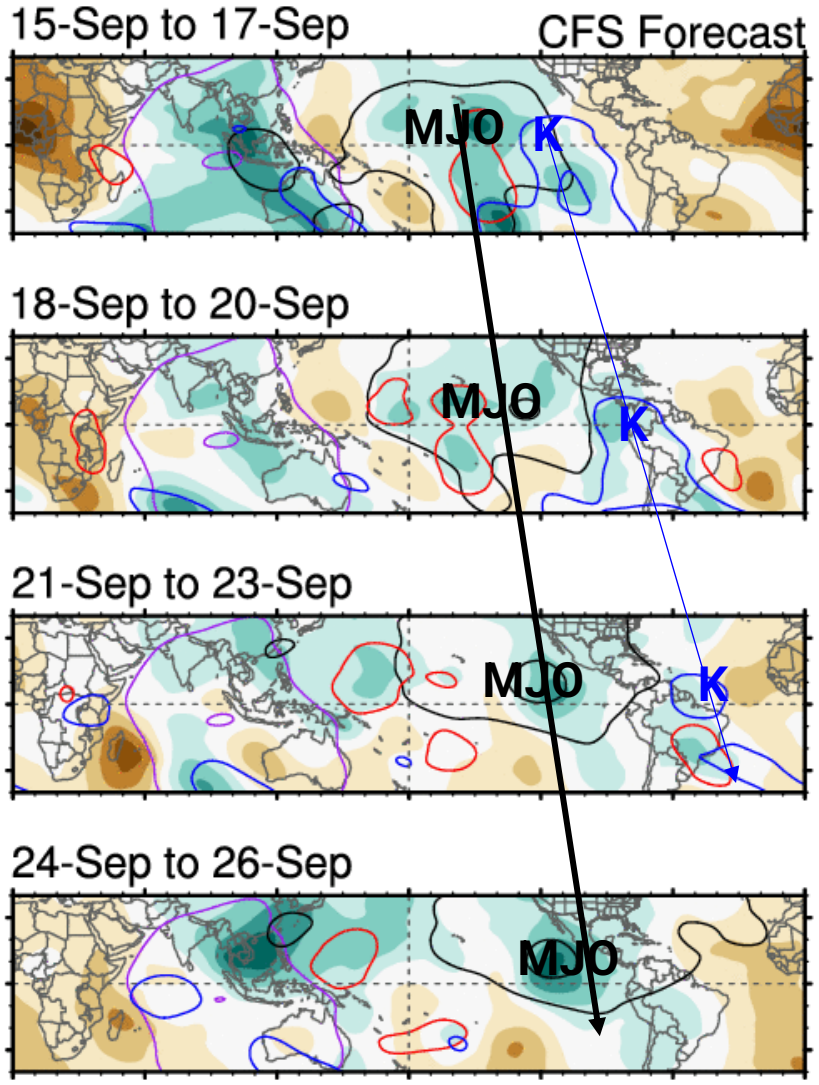




## Takeaways

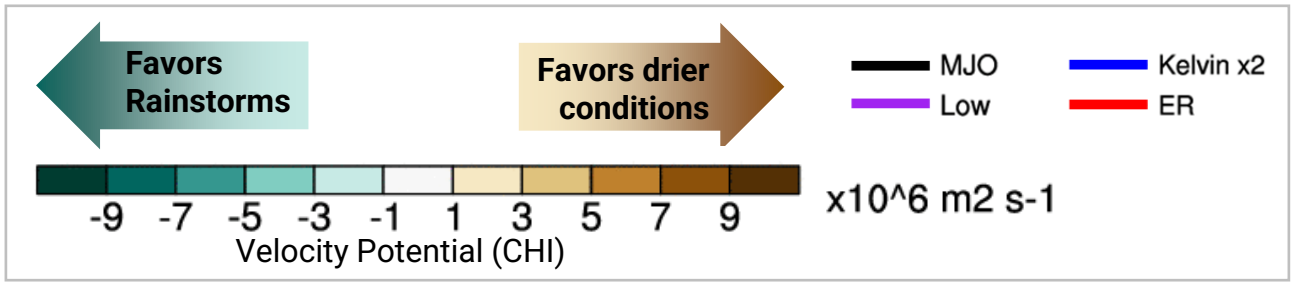
- There is too much uncertainty.
- Looking at different models, there is some agreement on the MJO moving into phases 7, 8 and 1 (wet for the Americas) by the end of September, but remaining very disorganized.

# MJO and Upper Tropospheric Waves




## Takeaways

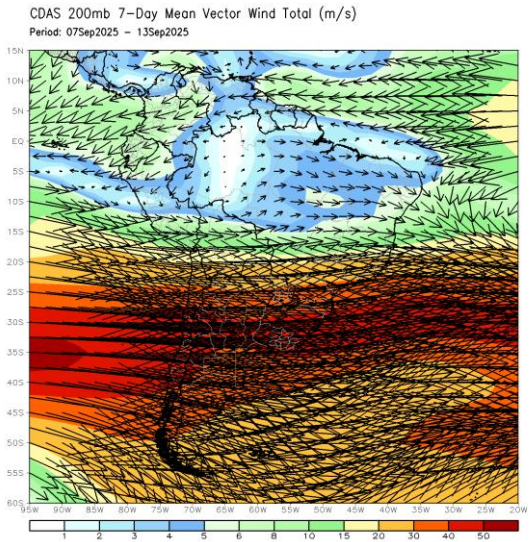
- According to the CFS, the upper troposphere should become increasingly more upper divergent through the end of the month.
- A Kelvin should cross the Americas from Sept 18 through the 23rd.
- The MJO trails (slower propagation). If the CFS is right, the MJO peak could occur in two weeks (near Oct 1).

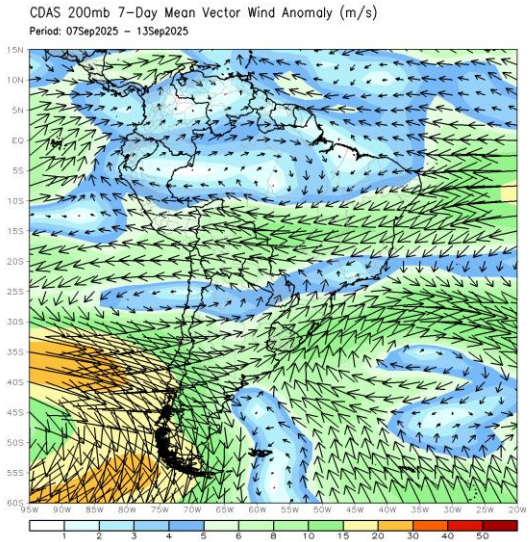


# South America, last 7 days

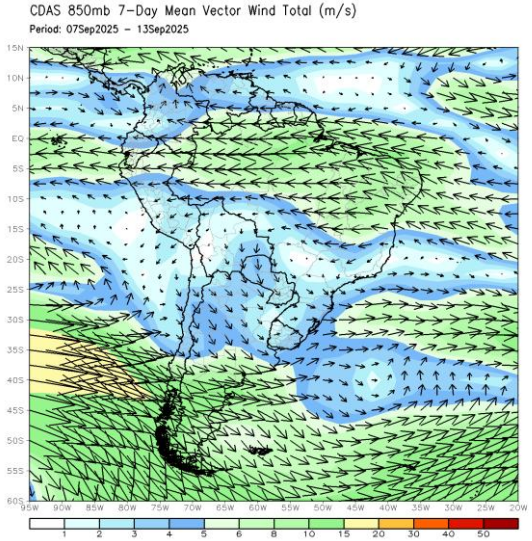
## Flow

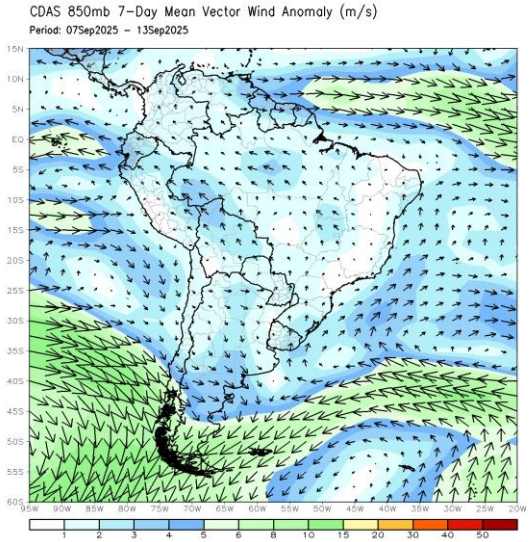
200 hPa



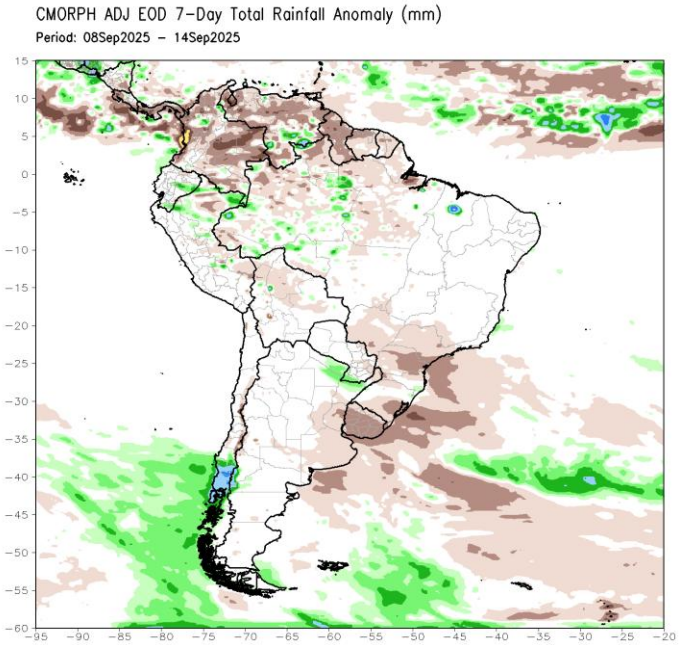



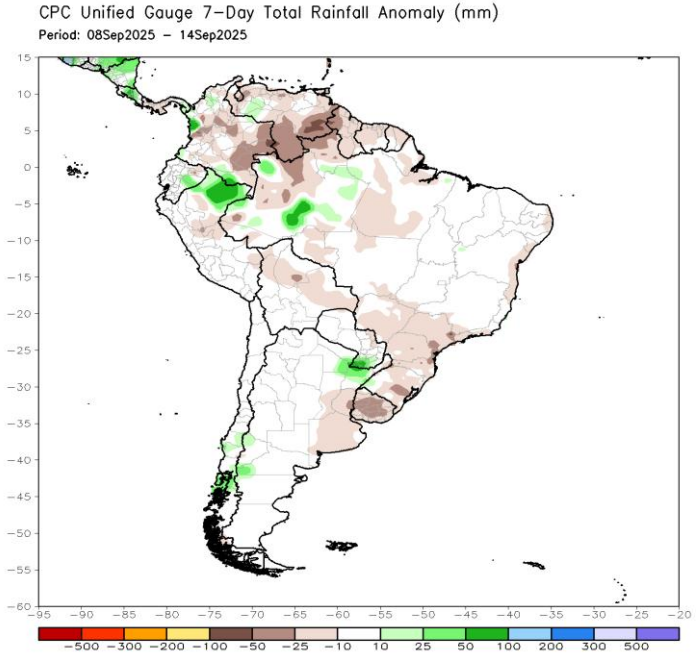

850 hPa




## Rainfall Anomalies

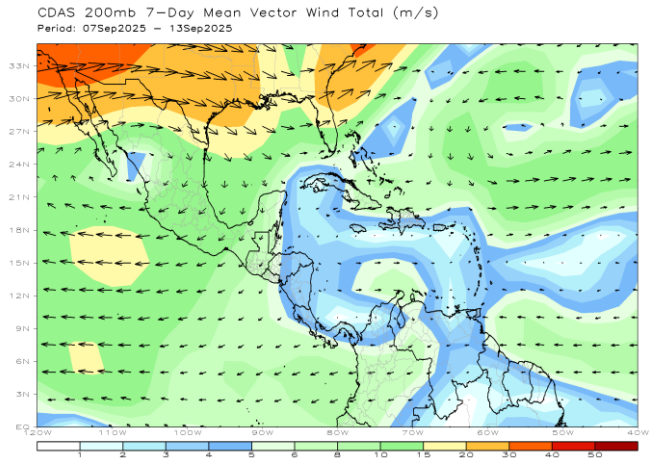


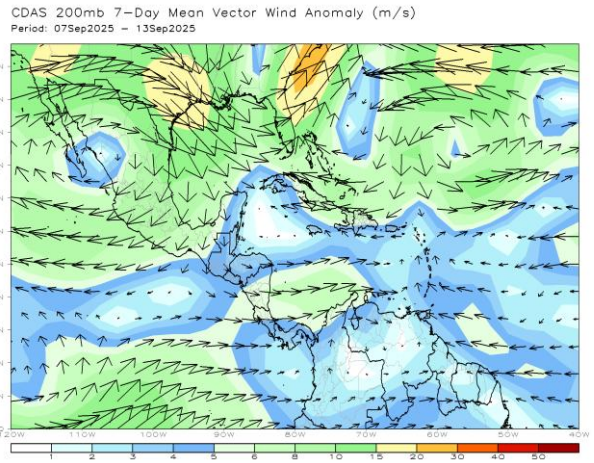



# Caribbean, Central America and Mexico, last 7 days

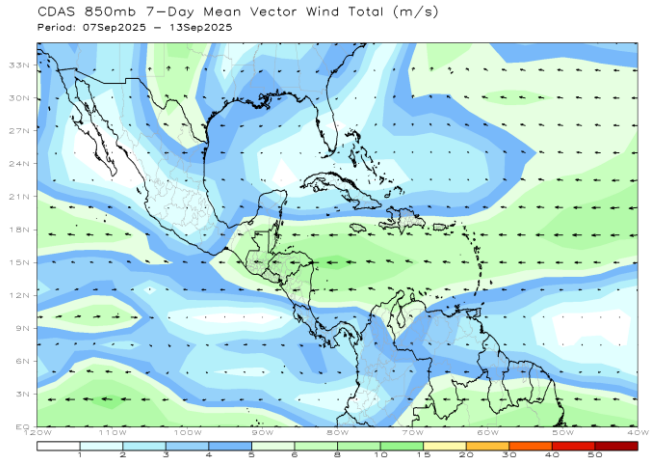
## Flow

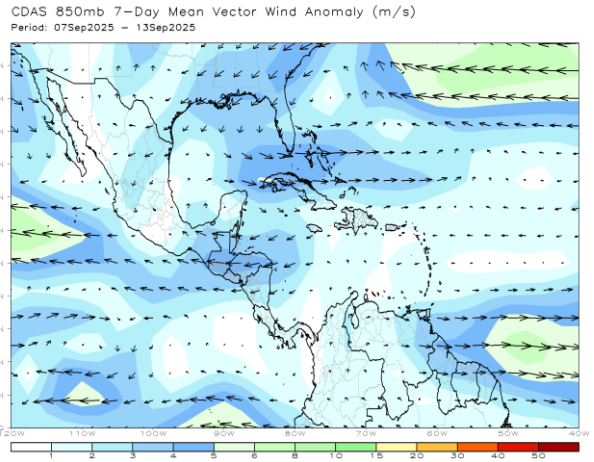
200 hPa



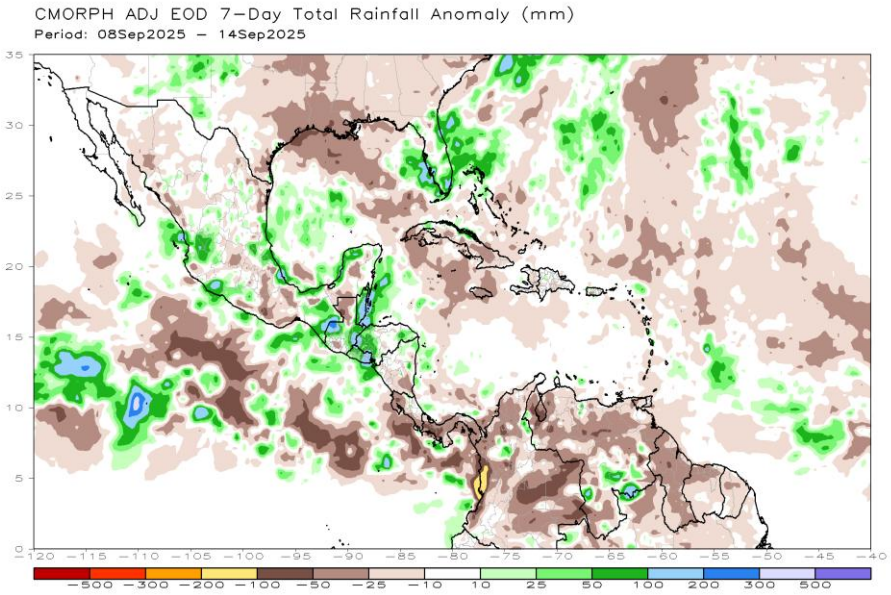



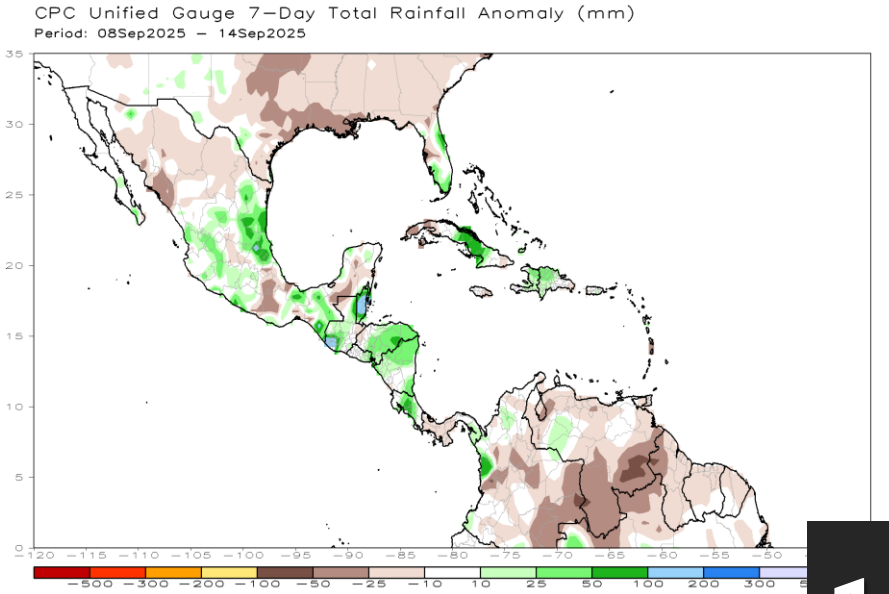

850 hPa




## Rainfall Anomalies



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Since 2004

**Next Sessions:** **Wednesday 22 October at 15 UTC**
**Wednesday 12 November at 16 UTC**
**Wednesday 17 December at 16 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!