



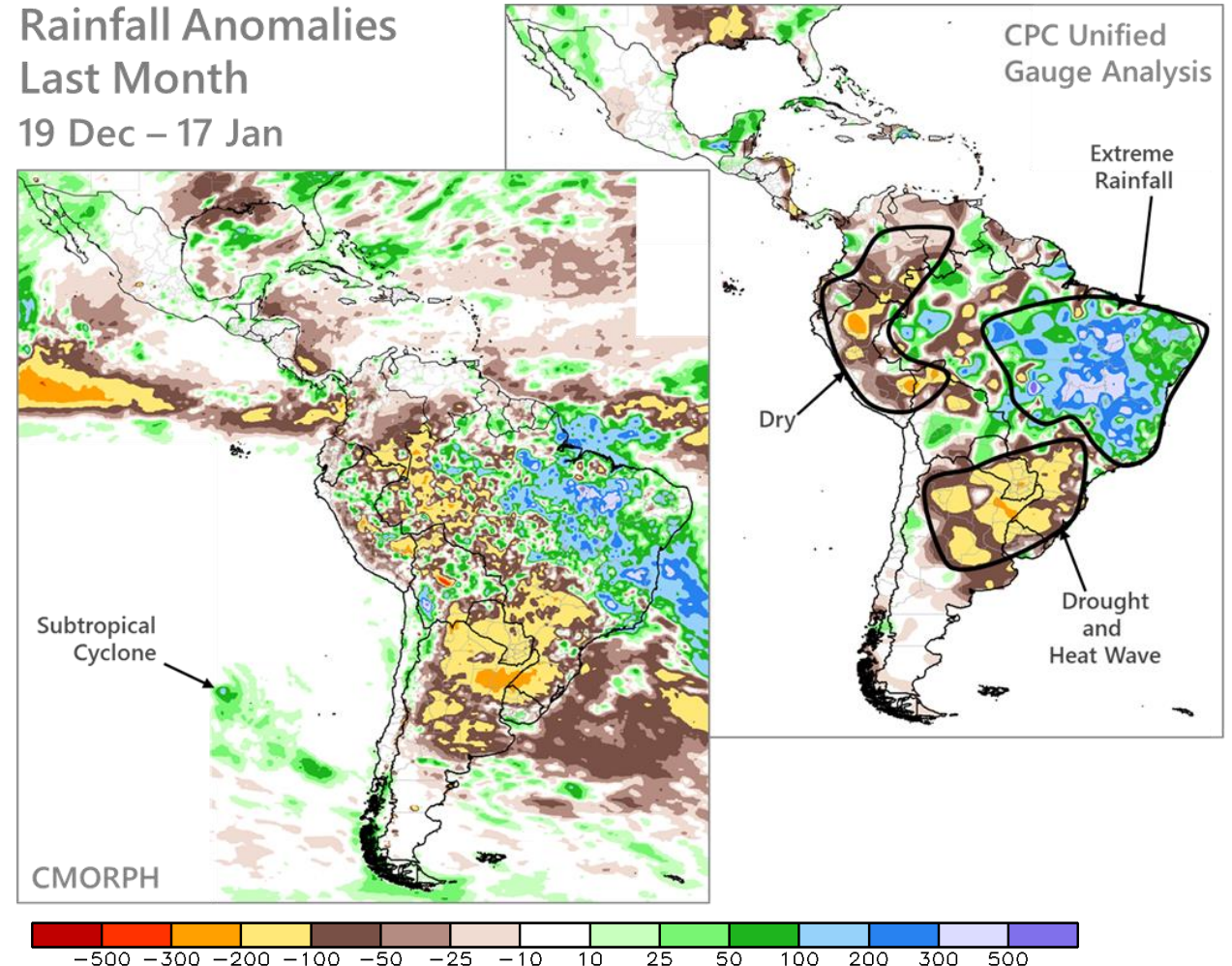
Monthly Regional Focus Group Session

Wednesday 17 January 2022

Too many topics to address during this session:

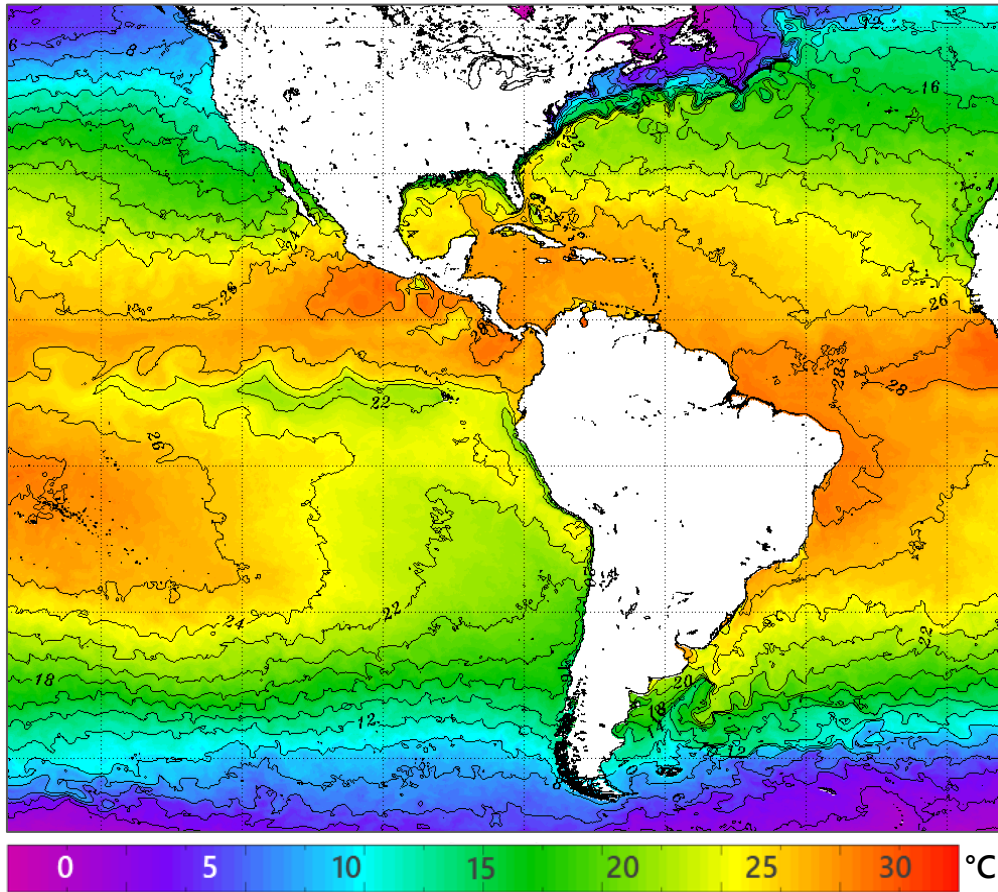
Dec 30	Fires in Colorado
Dec 23 -Jan 11	Extreme Rainfall in Brasil, persistent SACZ events
Jan 10-17	Heat wave amid drought in the Parana/La Plata Basin
Jan 11-12	Subtropical Cyclone off the coast of Chile
Jan 15	Tonga Volcano Explosion

Rainfall Anomalies
Last Month
19 Dec – 17 Jan



Sea Surface Temperatures

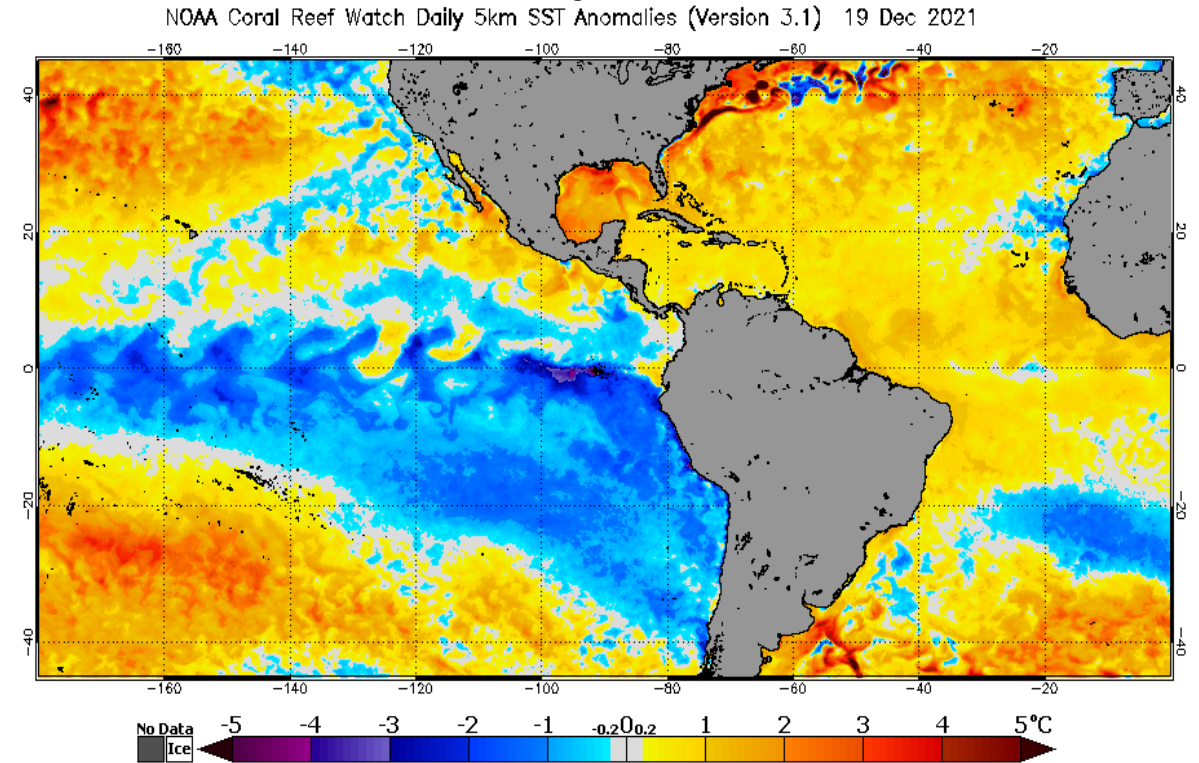
Daily SST Jan 17



NOAA OSPO

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

Anomaly Evolution



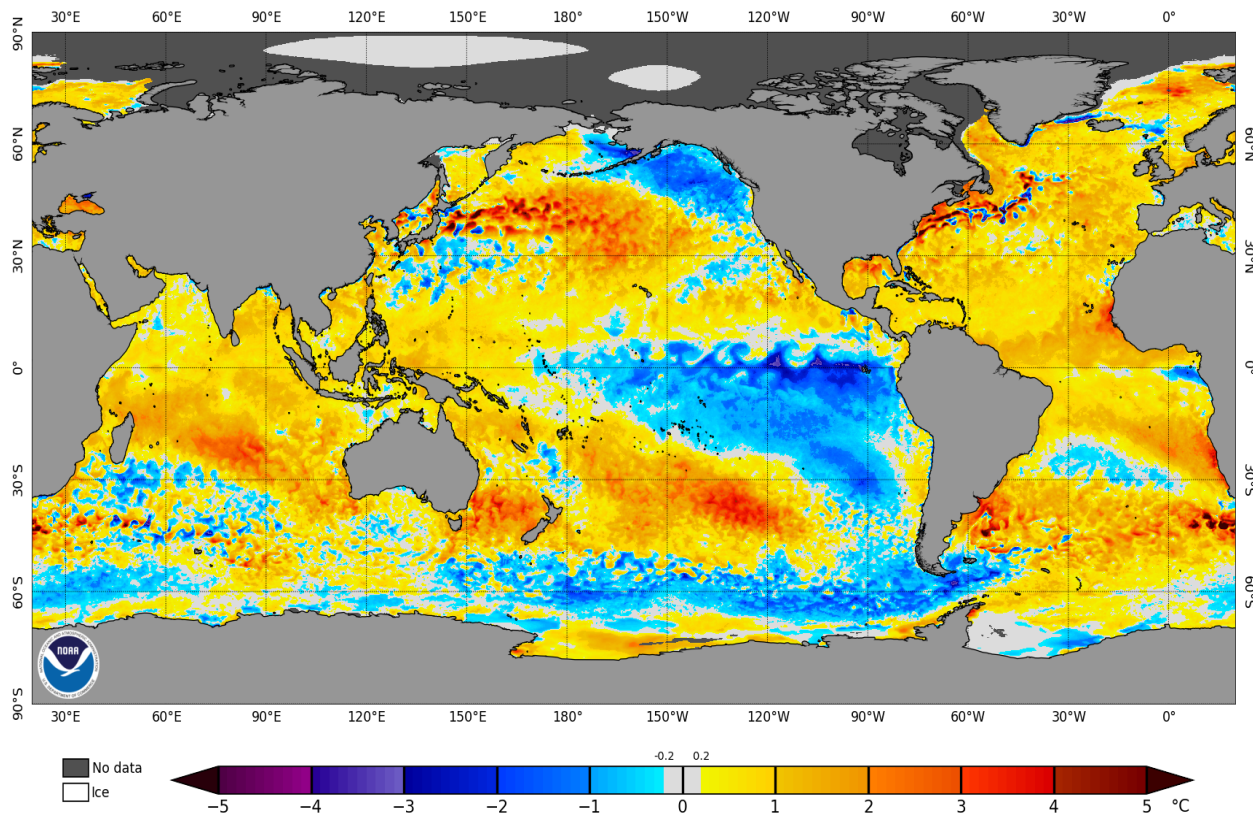
NOAA Coral Reef Watch

<https://coralreefwatch.noaa.gov/>

Are the anomalies deep?

Deep anomalies last longer, becoming useful for subseasonal forecasting.

Jan 17 SST Anomalies

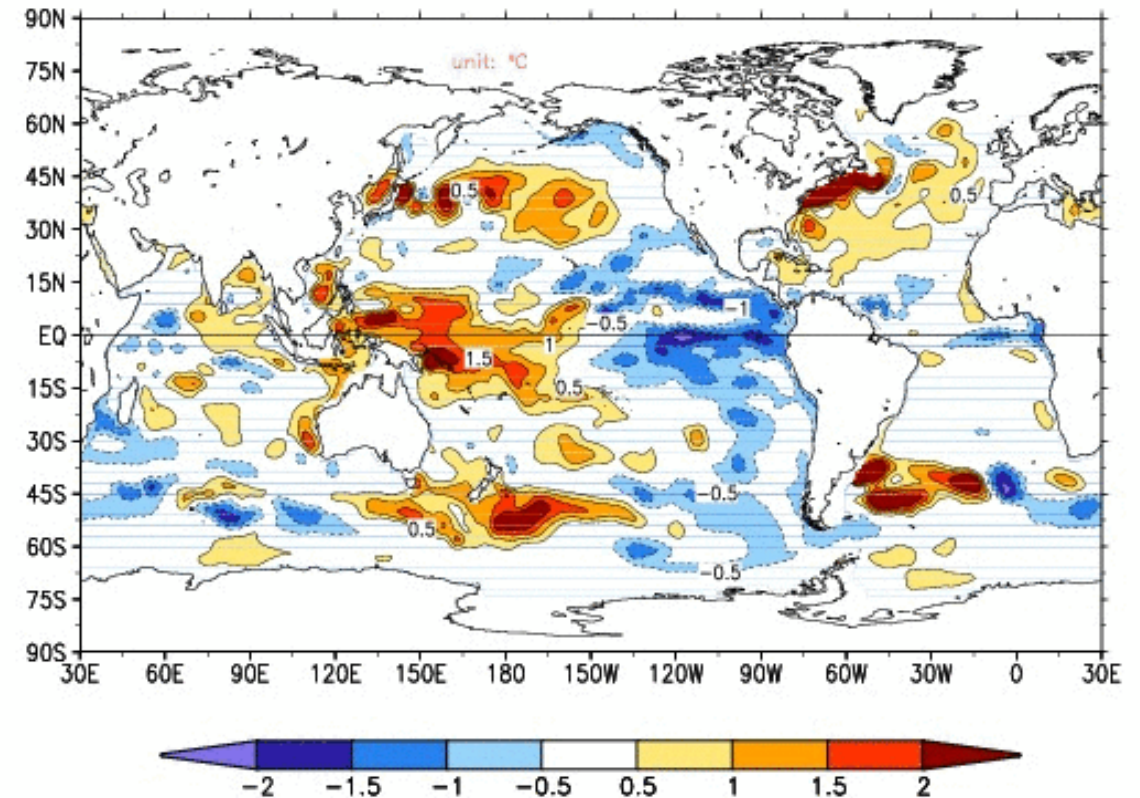


NOAA Coral Reef Watch

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

Top 300m Layer Anomaly

GODAS 300m Ave Temp Anomaly, 2022 Jan 13

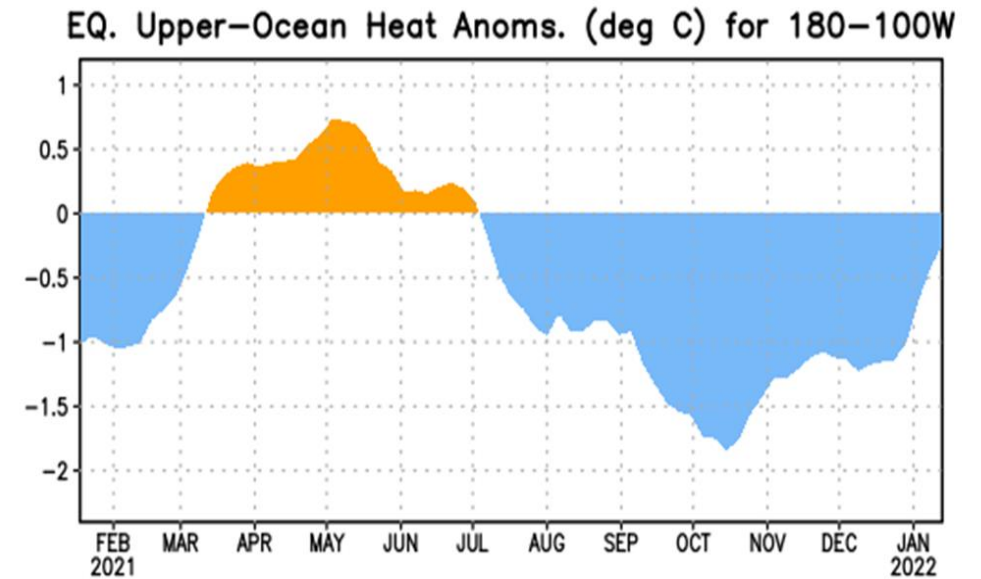
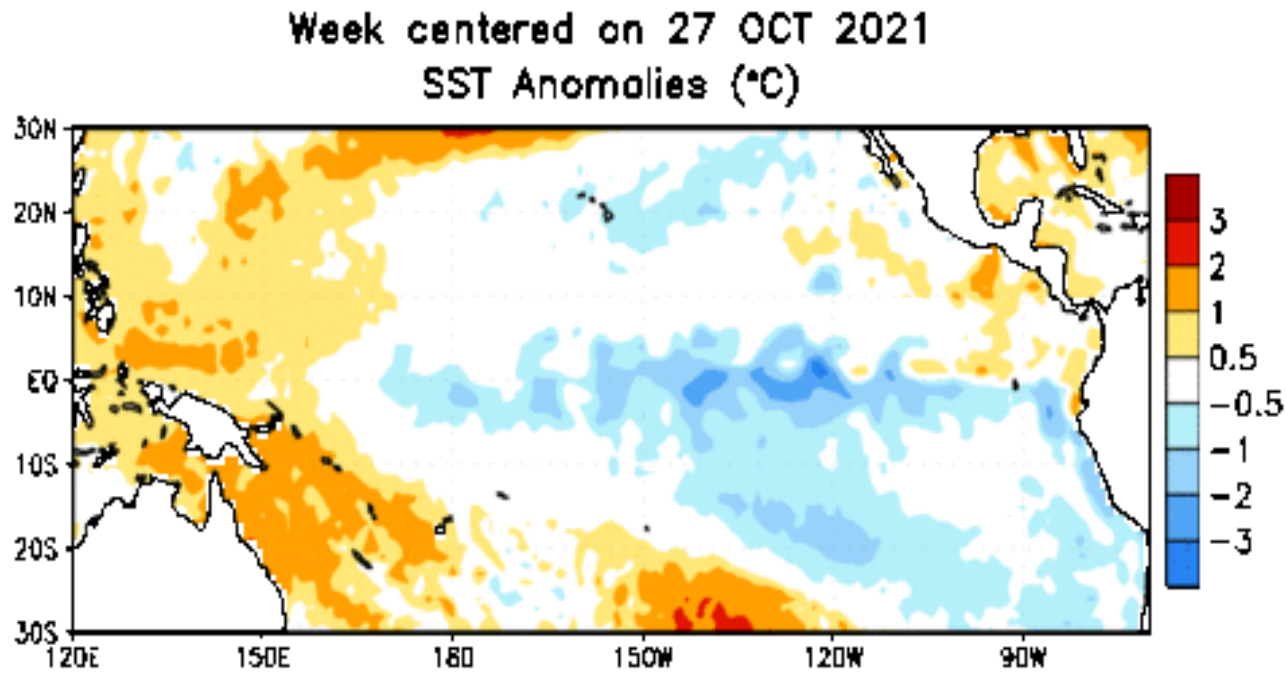


NOAA CPC

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

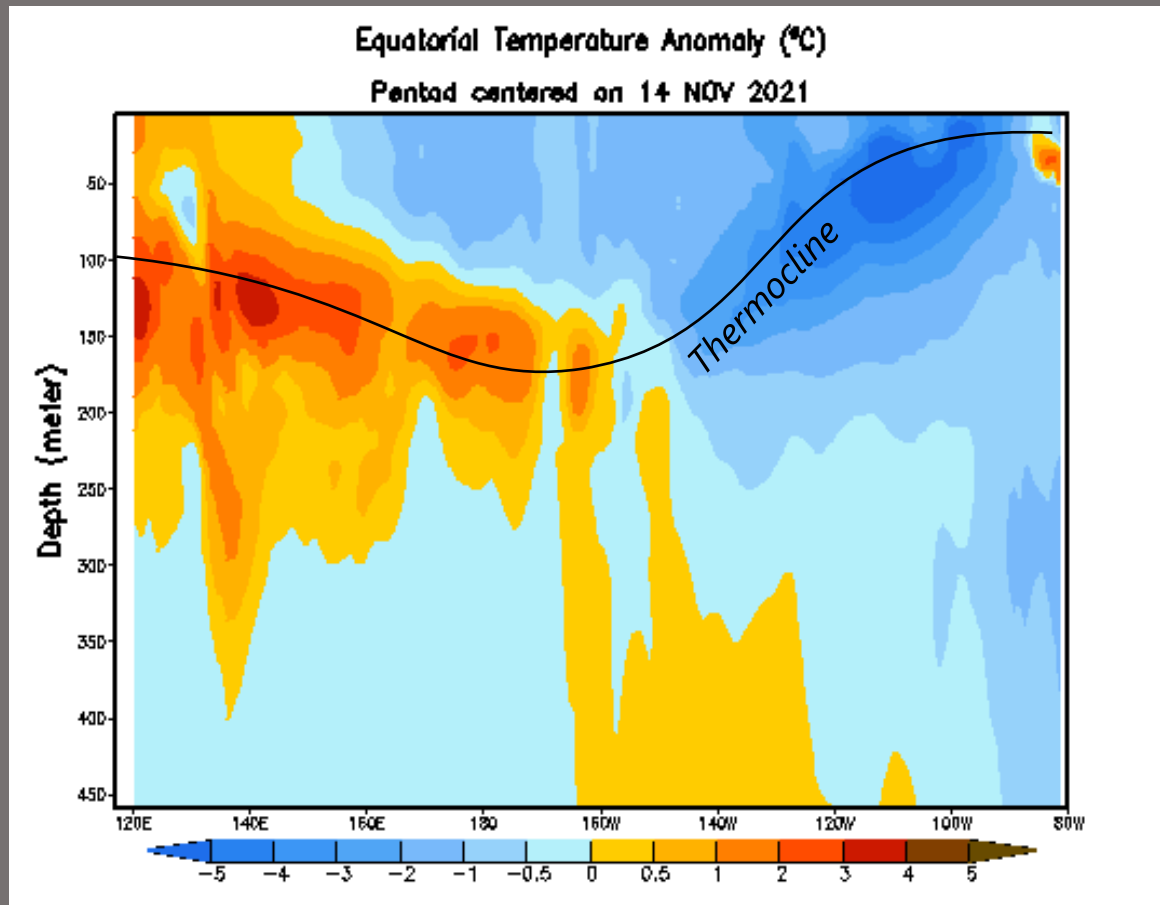
ENSO: La Niña

- ☯ La Niña is present.
- ☯ Equatorial sea surface temperatures (SSTs) are below average across the east-central and eastern Pacific Ocean.
- ☯ The tropical Pacific atmosphere is consistent with La Niña.



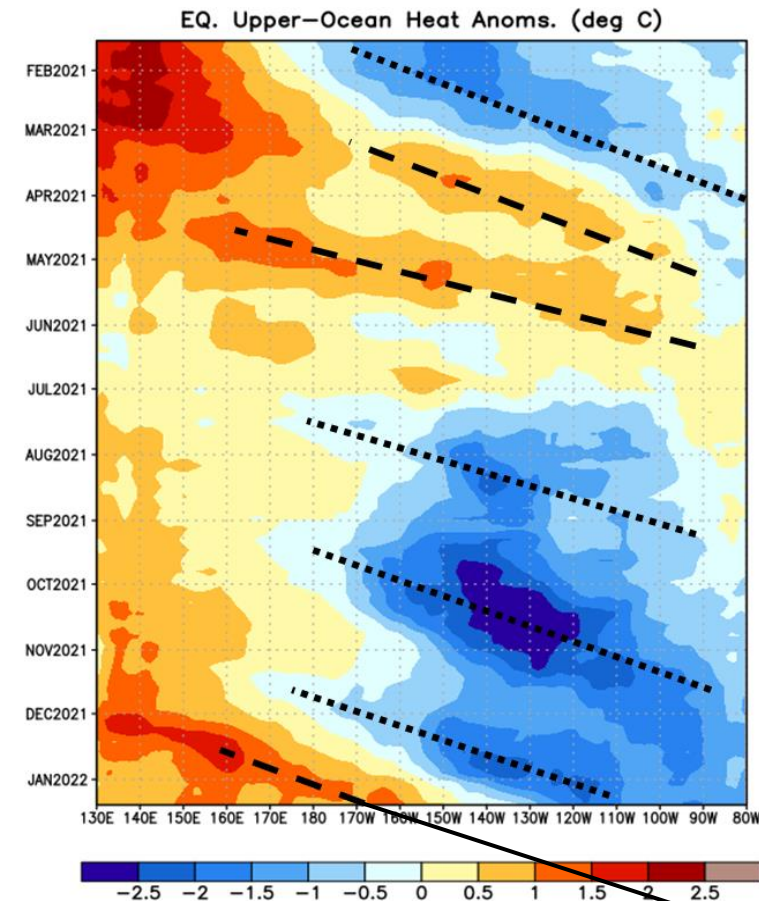
ENSO: Oceanic Kelvin Waves

Equatorial Pacific Temperature Anomalies



Source: CPC

Heat Content Hovmöller



Warming in South America in Mid March?

ENSO Outlook

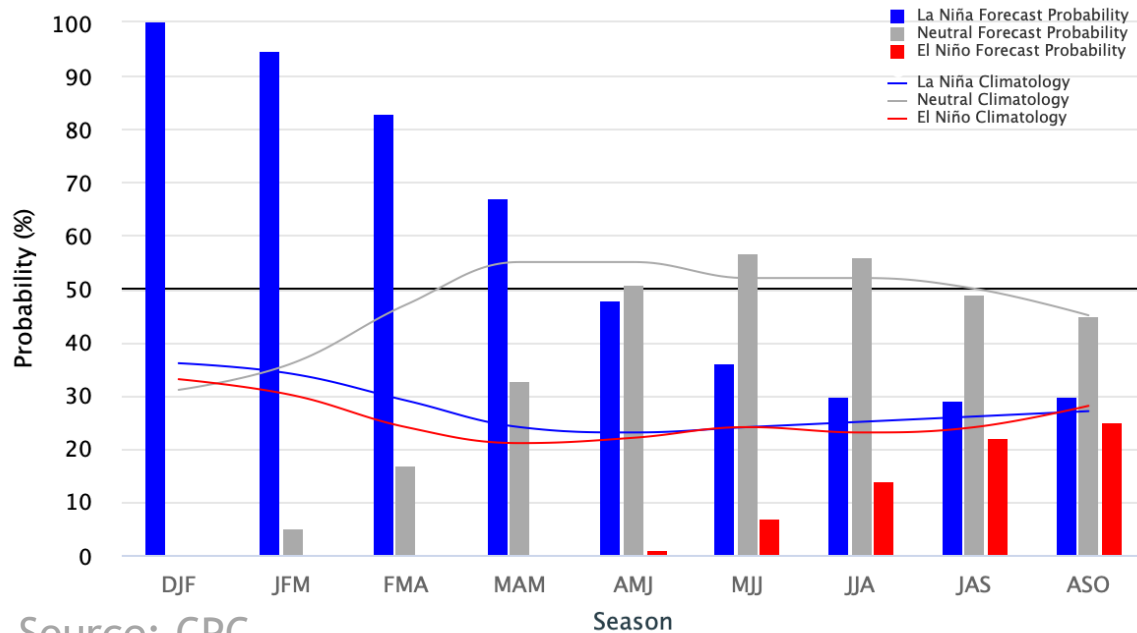
La Niña is likely to continue into the Northern Hemisphere spring (67% chance during March-May 2022) and then transition to ENSO-neutral (51% chance during April-June 2022).*

CPC/IRI Probabilistic Forecast

Early-January 2022 CPC/IRI Official Probabilistic ENSO Forecasts

ENSO state based on NINO3.4 SST Anomaly

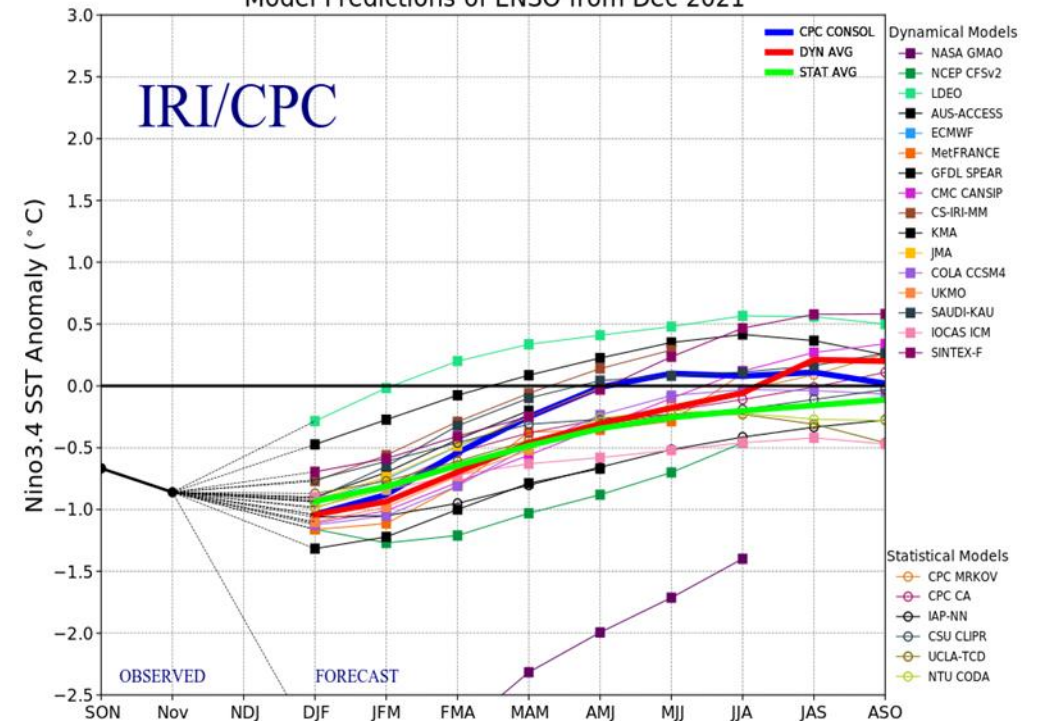
Neutral ENSO: -0.5°C to 0.5°C



Source: CPC

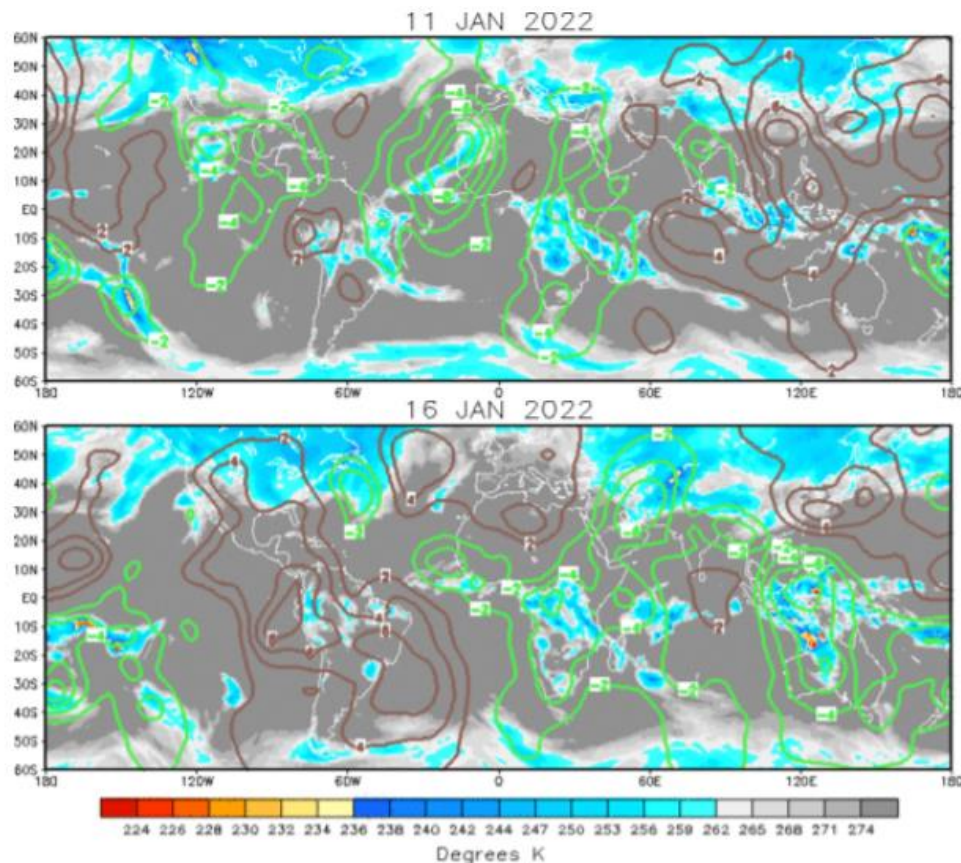
IRI/CPC Dynamic Models

Model Predictions of ENSO from Dec 2021

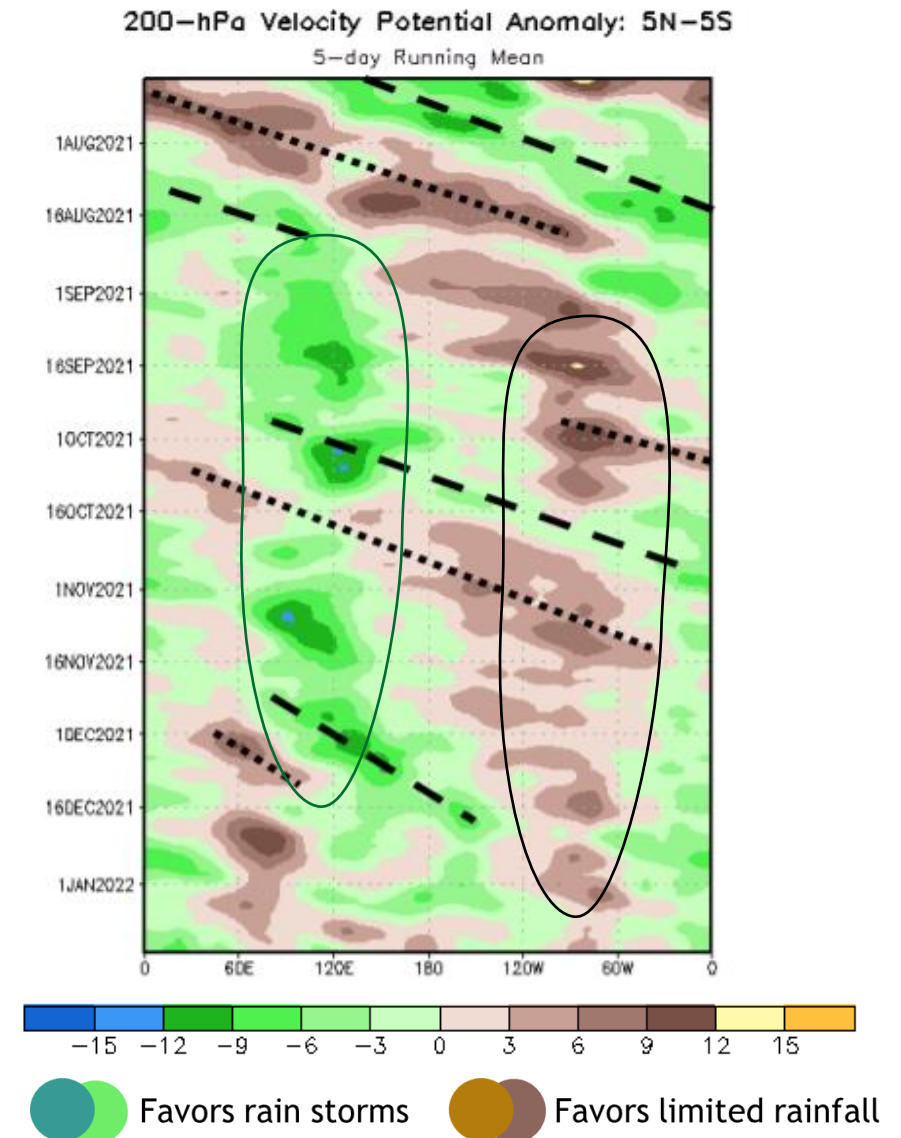


Madden-Julian Oscillation (MJO)

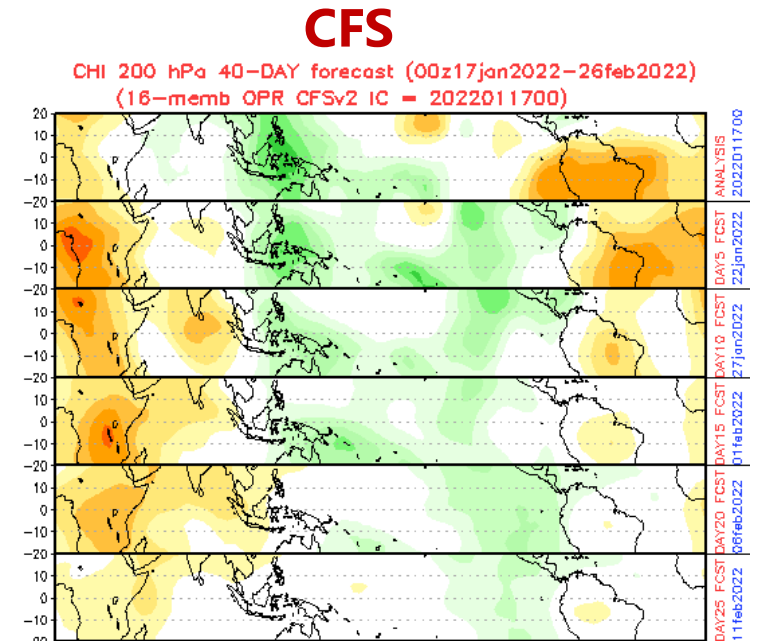
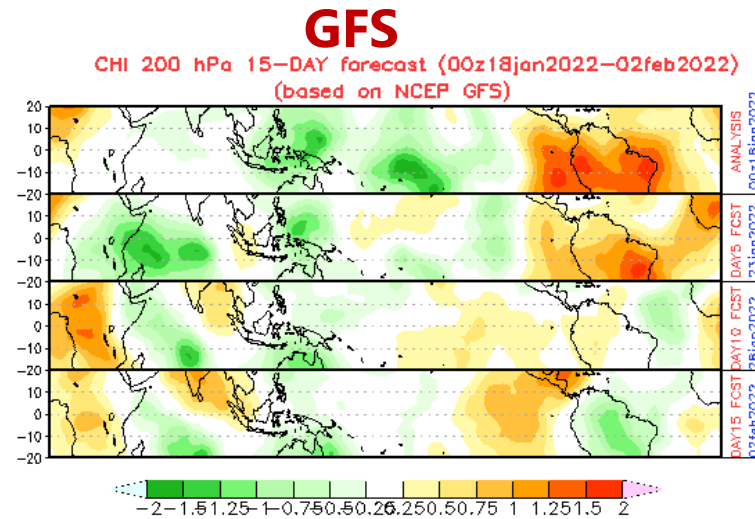
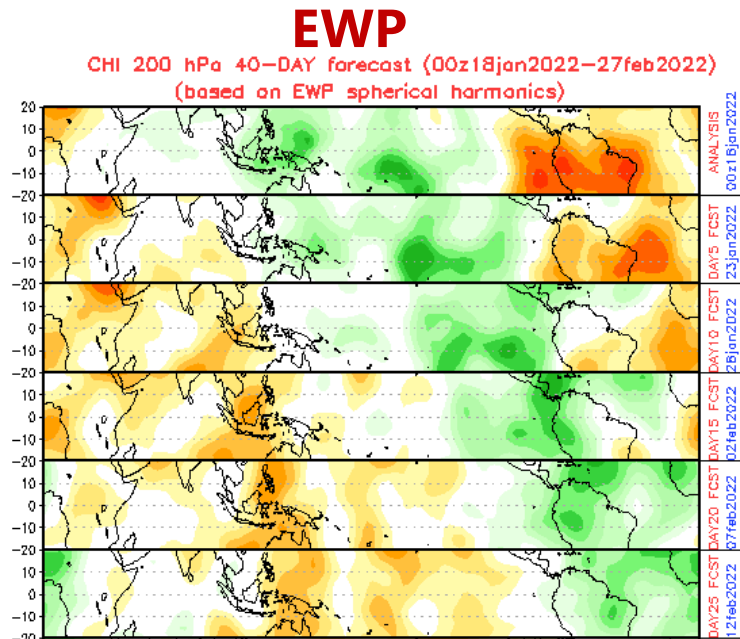
- Disorganized
- Ill-defined propagation
- Low frequency anomalies are dissipating



Source: CPC



MJO Forecasts for the Americas

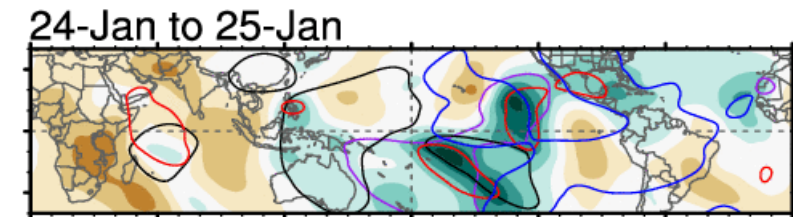
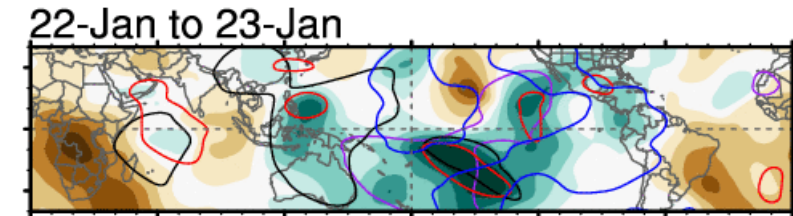
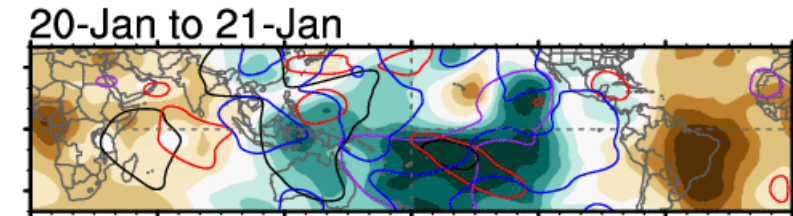
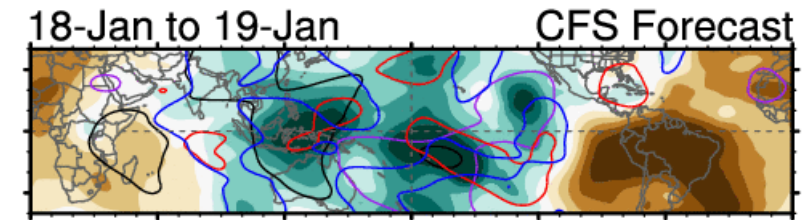


- Discrepancies in models (consistent with observations) = lower confidence forecast
- Upper convergent (dry) through the weekend
- Upper divergent (wetter) the first half of February

Tropospheric Equatorial Waves

➤ Kelvin (wet) on Jan 23-26

- Impacts mostly in the NW Caribbean
- To monitor:
 - Mid-latitude cyclones and fronts in the Gulf of Mexico
 - Rainfall in the Gulf of Mexico basin, Caribbean basin of northern Central America, W Cuba, NW Bahamas.



0 60E 120E 180 120W 60W 0



ncics.org/mjo



7-day CHI200 with CFS forecasts

Wed 2020-09-16 1018 UTC

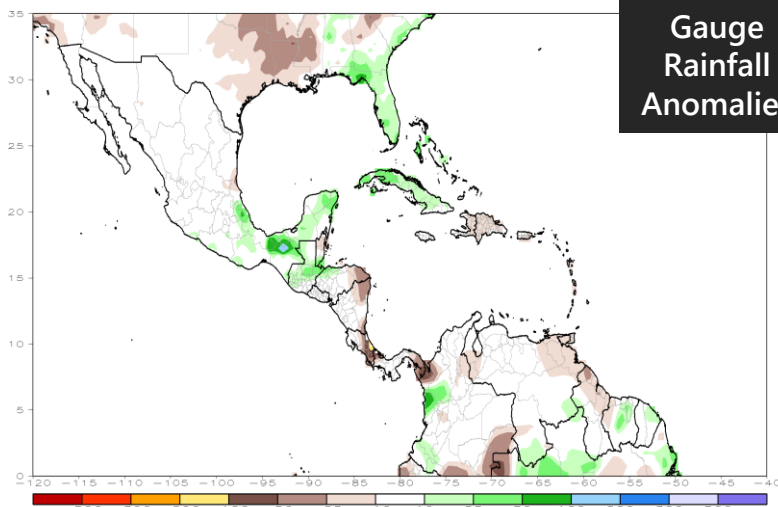
— MJO — Kelvin x2
— Low — ER

Contours at -2, -6 $\times 10^6$ m² s⁻¹

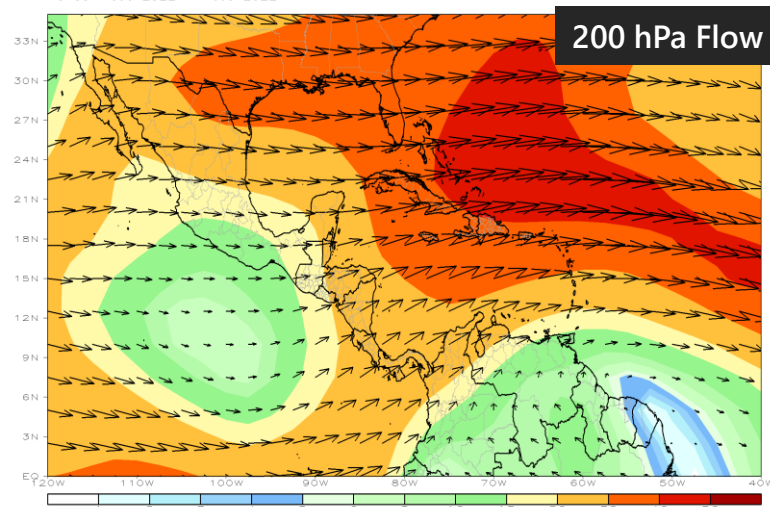
Carl Schreck
carl_schreck@ncsu.edu

Flow and Rainfall Anomalies, Last 7 Days

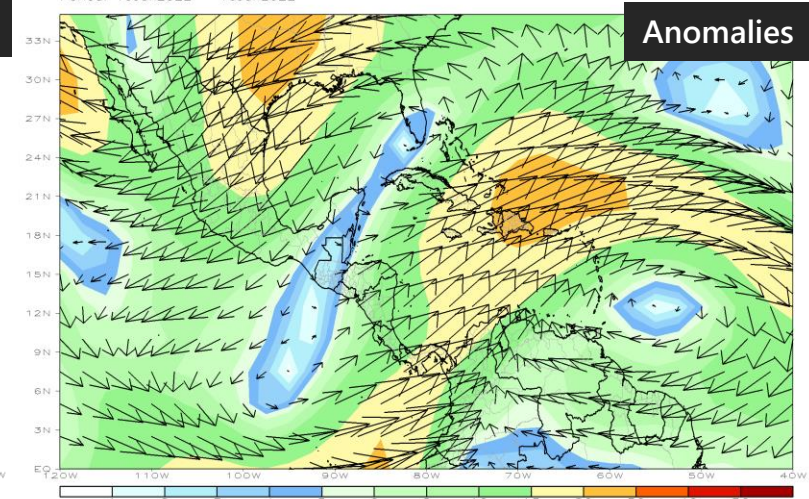
CPC Unified Gauge 7-Day Total Rainfall Anomaly (mm)
Period: 11Jan2022 - 17Jan2022



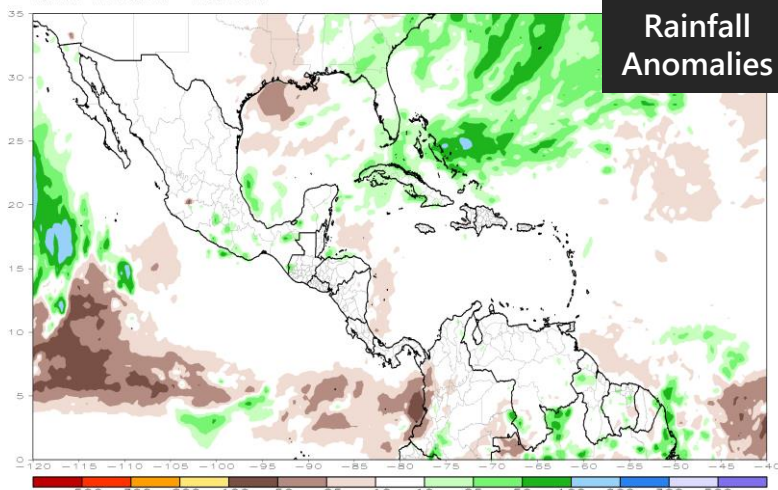
CDAS 200mb 7-Day Mean Vector Wind Total (m/s)
Period: 10Jan2022 - 16Jan2022



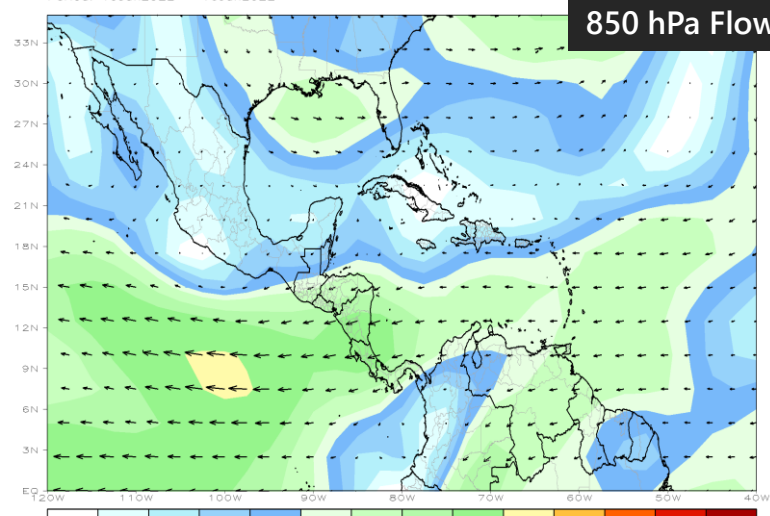
CDAS 200mb 7-Day Mean Vector Wind Anomaly (m/s)
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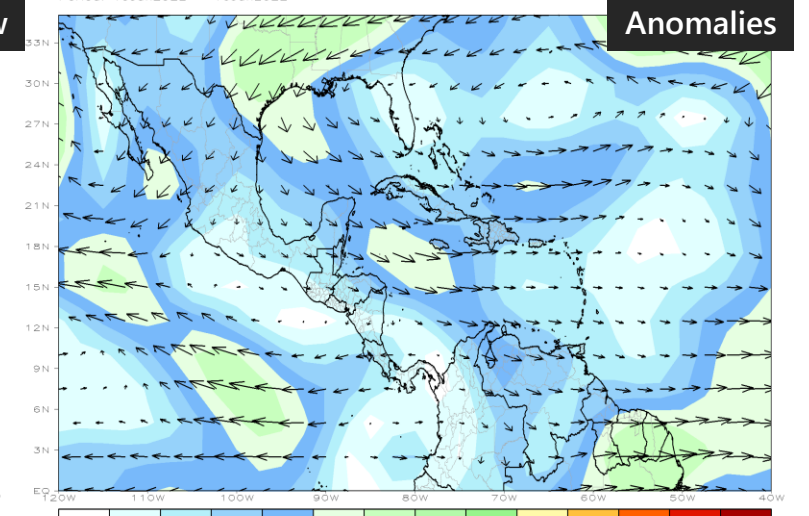
CMORPH 7-Day Total Rainfall Anomaly (mm)
Period: 11Jan2022 - 17Jan2022



CDAS 850mb 7-Day Mean Vector Wind Total (m/s)
Period: 10Jan2022 - 16Jan2022

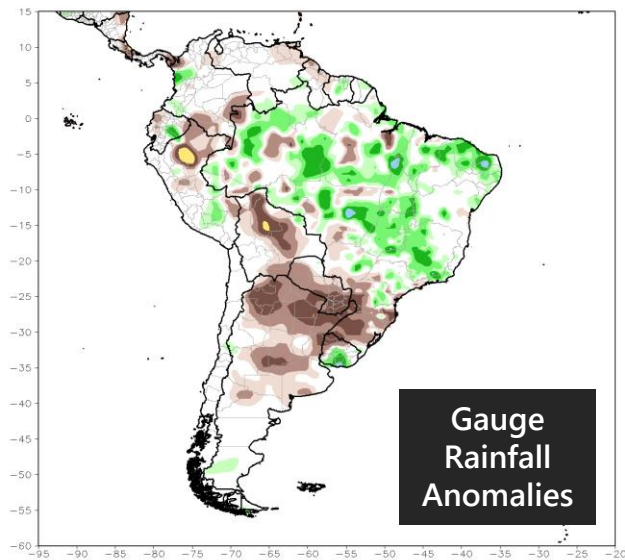


CDAS 850mb 7-Day Mean Vector Wind Anomaly (m/s)
Period: 10Jan2022 - 16Jan2022

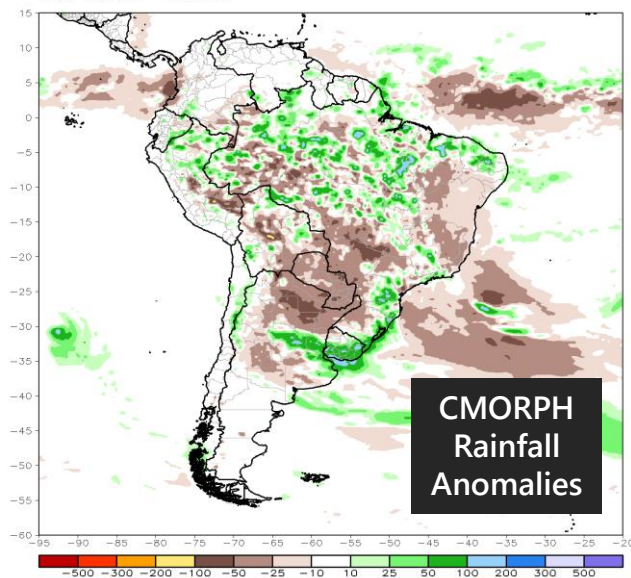


South America: Last 7 Days

CPC Unified Gauge 7-Day Total Rainfall Anomaly (mm)
Period: 11Jan2022 - 17Jan2022

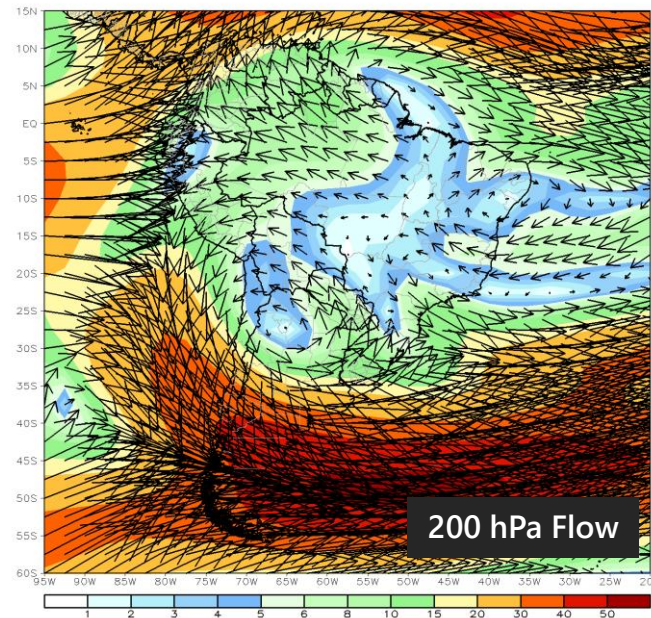


CMORPH 7-Day Total Rainfall Anomaly (mm)
Period: 11Jan2022 - 17Jan2022

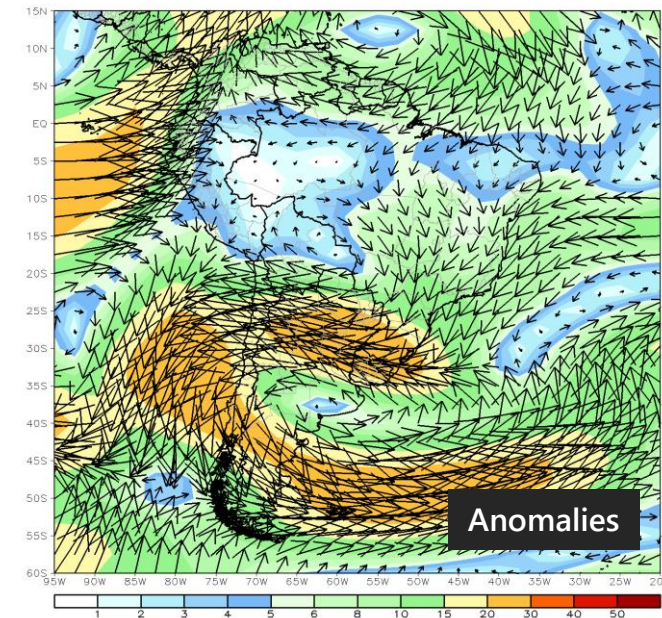


CMORPH: CPC
Morphing Technique
https://www.cpc.ncep.noaa.gov/products/janowiak/cmorph_description.html

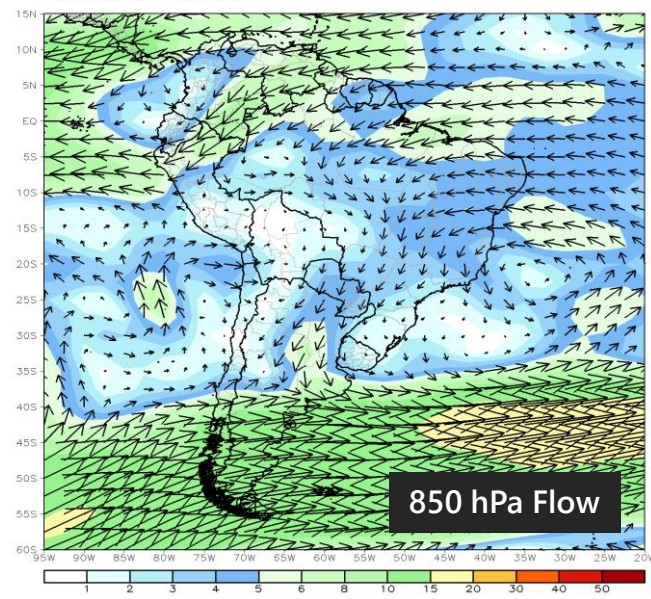
CDAS 200mb 7-Day Mean Vector Wind Total (m/s)
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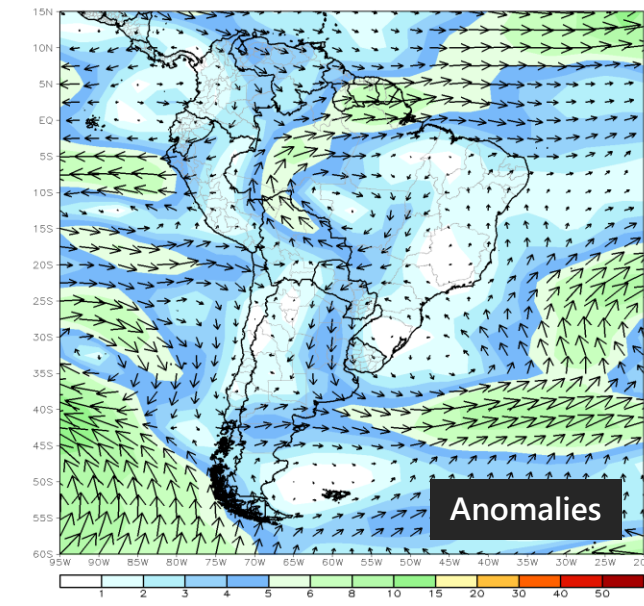
CDAS 200mb 7-Day Mean Vector Wind Anomaly (m/s)
Period: 10Jan2022 - 16Jan2022



CDAS 850mb 7-Day Mean Vector Wind Total (m/s)
Period: 10Jan2022 - 16Jan2022



CDAS 850mb 7-Day Mean Vector Wind Anomaly (m/s)
Period: 10Jan2022 - 16Jan2022



¡Gracias! Thank you!

**Next session:
Wednesday Feb 17 at 16 UTC**