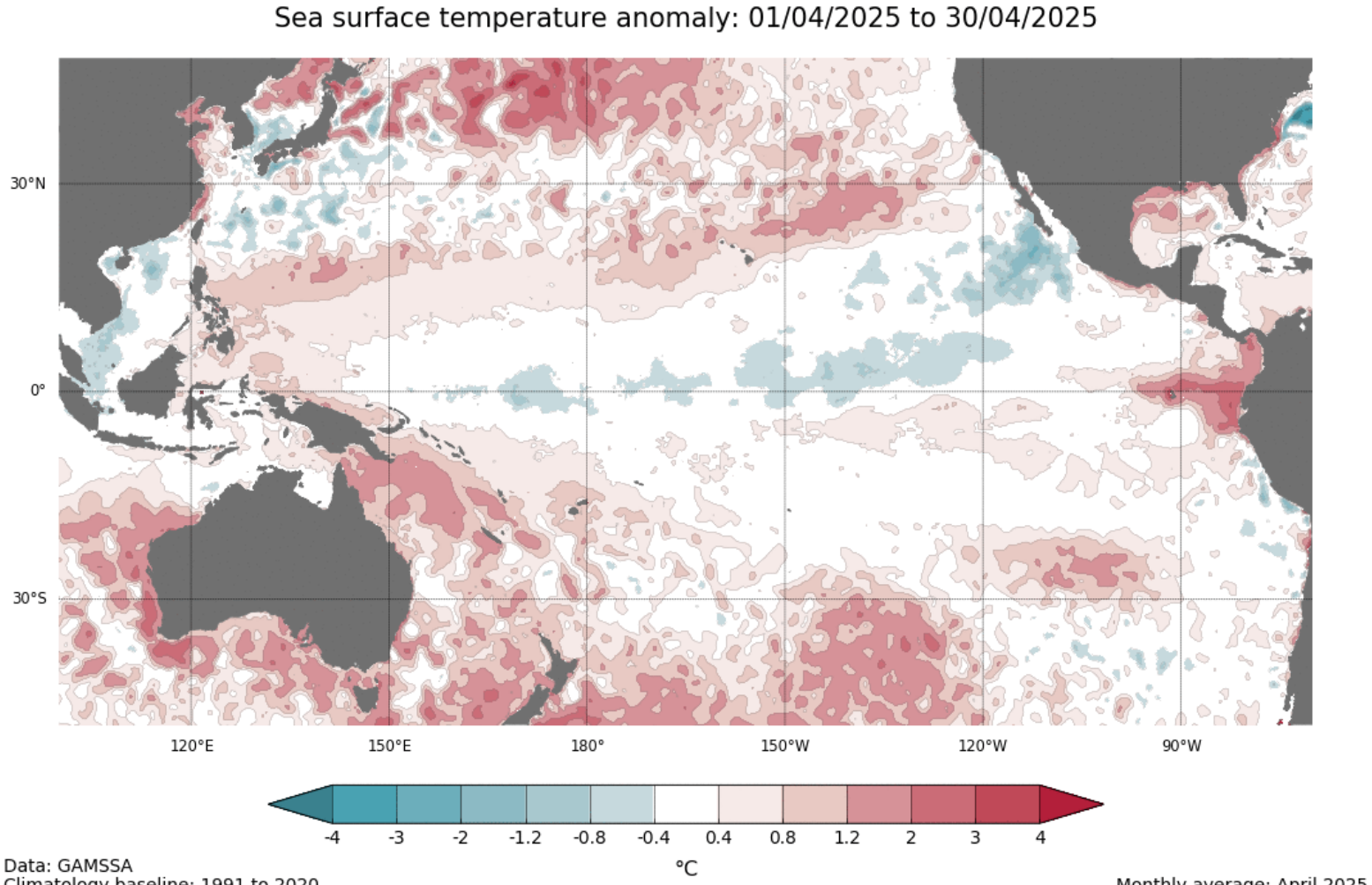
ENSO Update – OCOF 212

21 May 2025

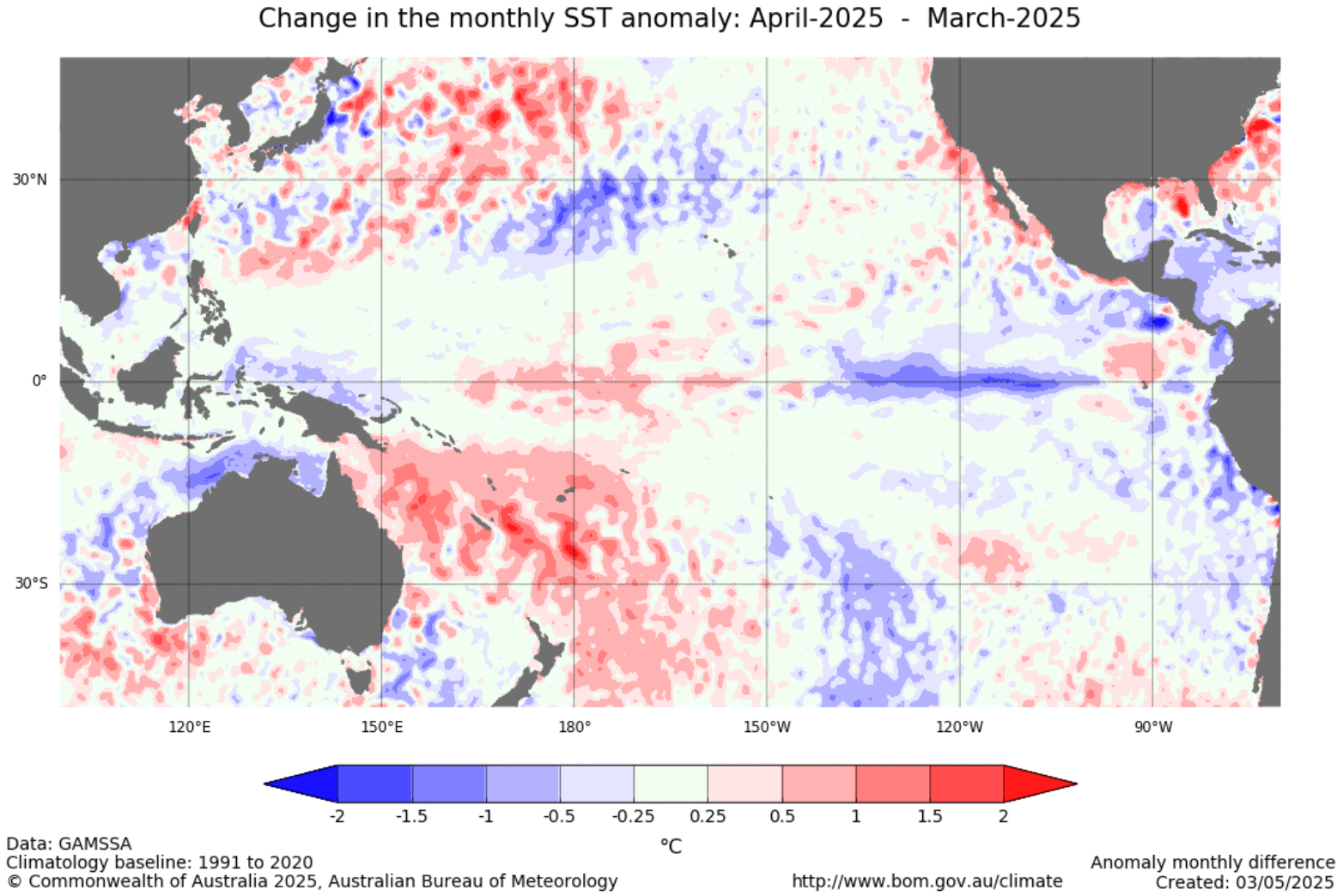
ENSO Update

- Global SSTs remain substantially above average. Monthly averaged SSTs in 2025 to date have been the second warmest on record for each respective month, only slightly cooler than temperatures recorded in 2024.
- The El Niño–Southern Oscillation (ENSO) remains neutral.
- The Bureau's model predicts a neutral ENSO (neither El Niño nor La Niña) until at least October. This is consistent with forecasts from most international models. However, there is a larger spread in the model forecasts towards the end of the outlook period, indicating greater uncertainty beyond winter.

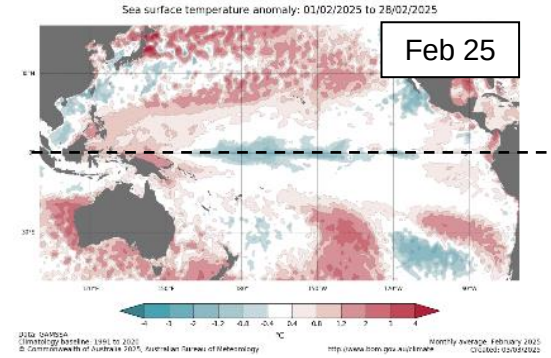
April 2025 SSTs

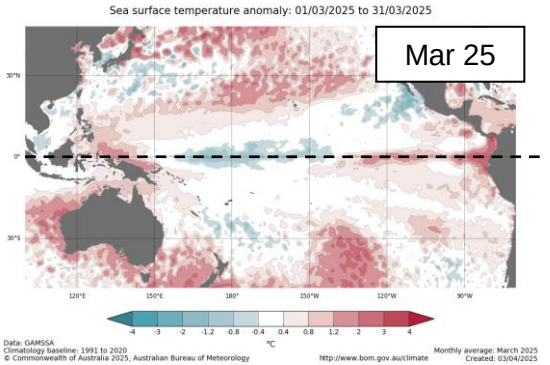


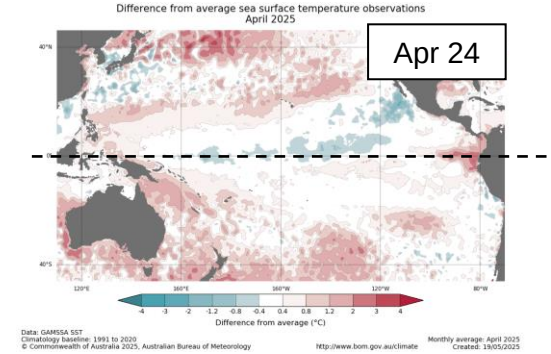
April – March SSTs

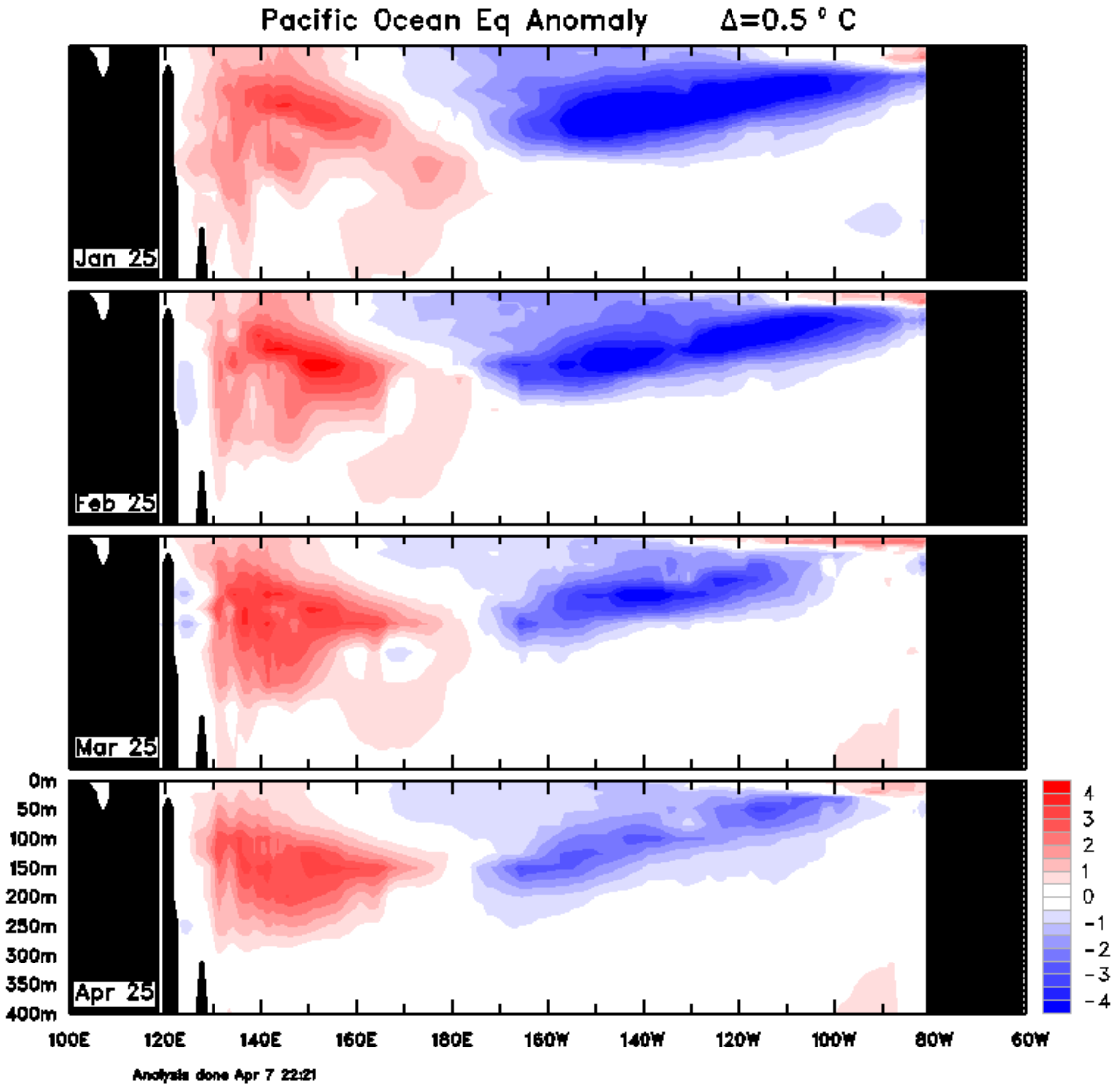


Equatorial Pacific Sub-surface Profile

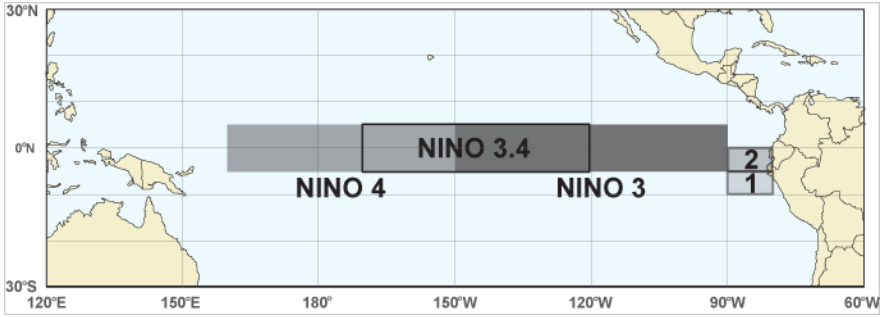


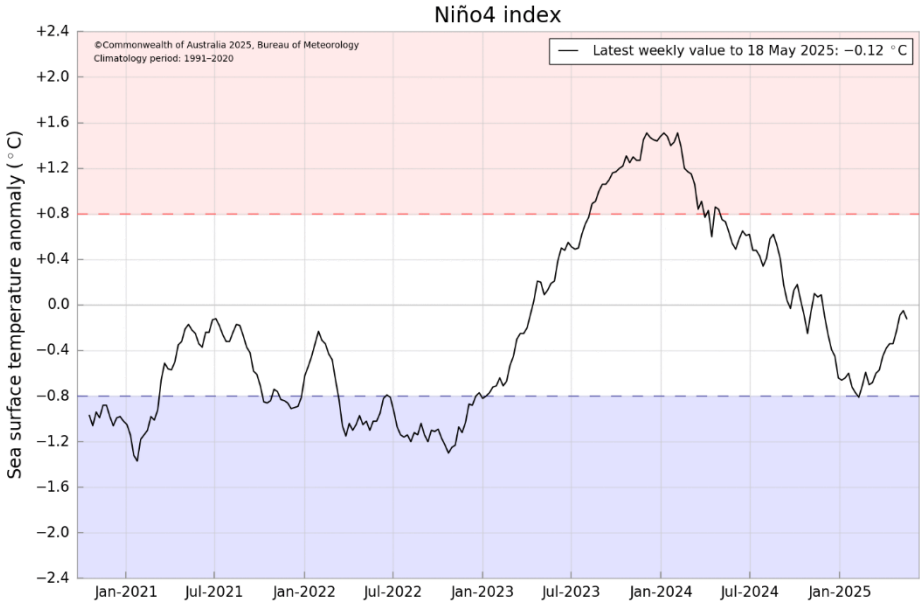


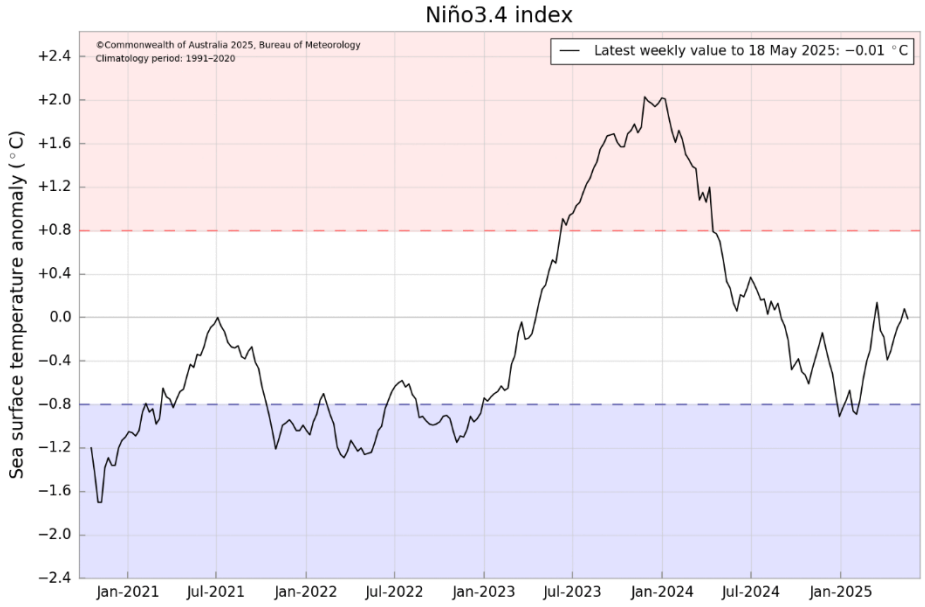




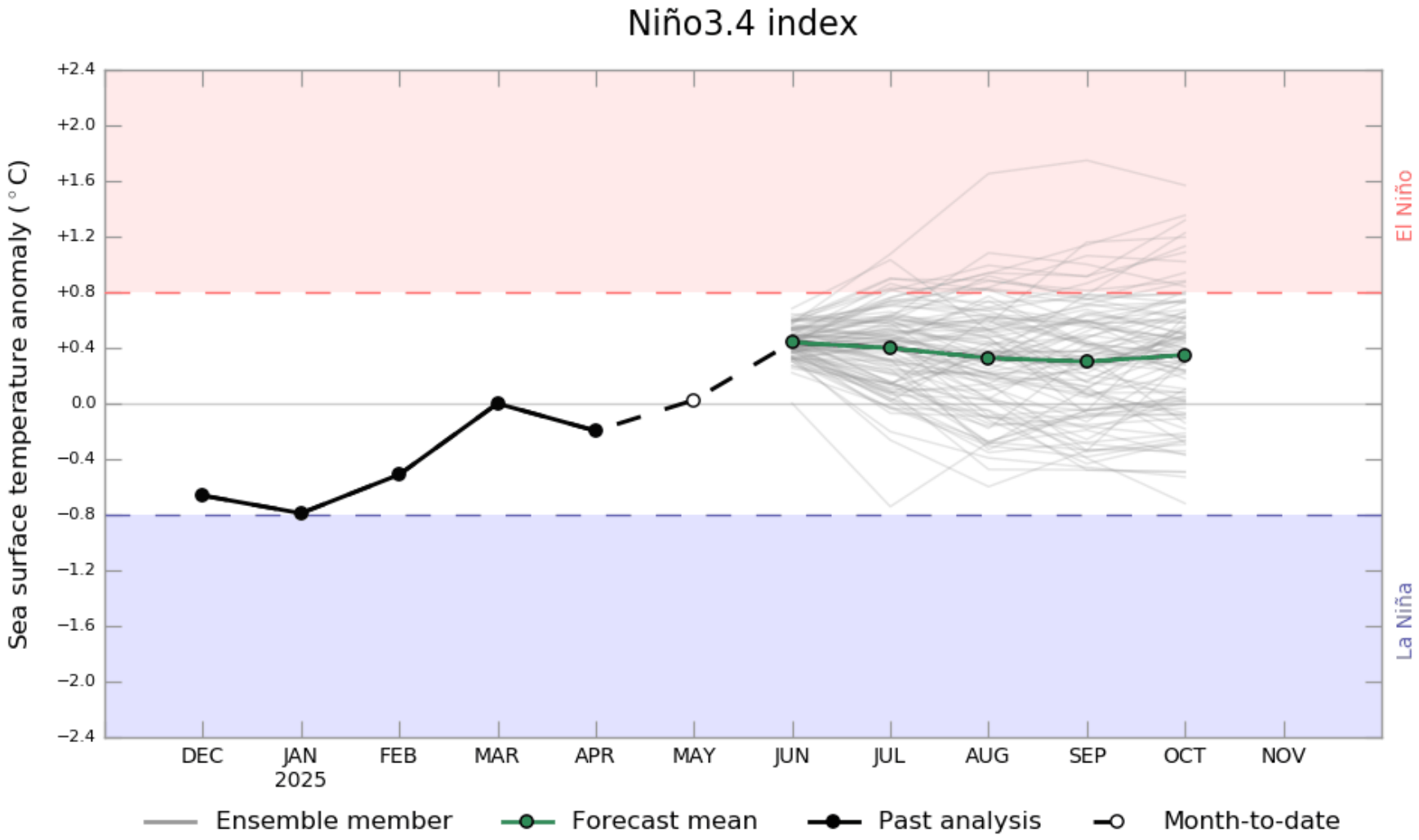
NINO Indices SST Anomalies (°C)







ENSO Outlook



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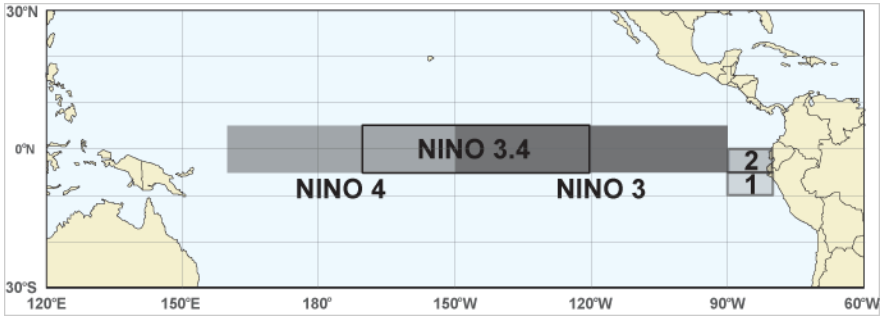
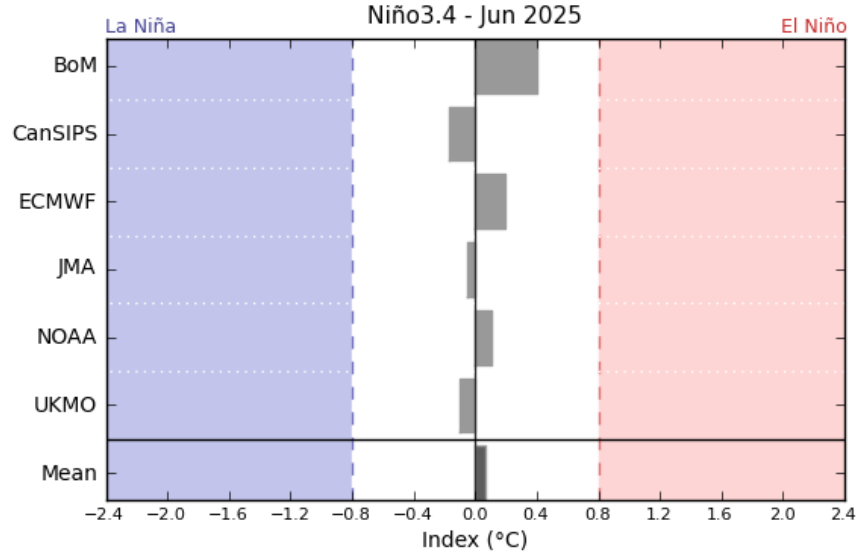
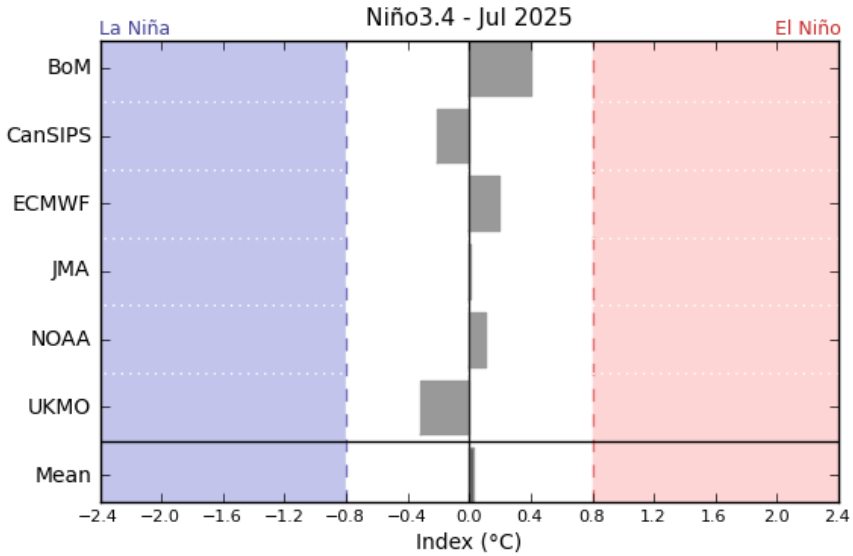
Past analysis base period: 1991-2020
Forecast base period: 1981-2018

Model: ACCESS-S2
Model run: 17 May 2025

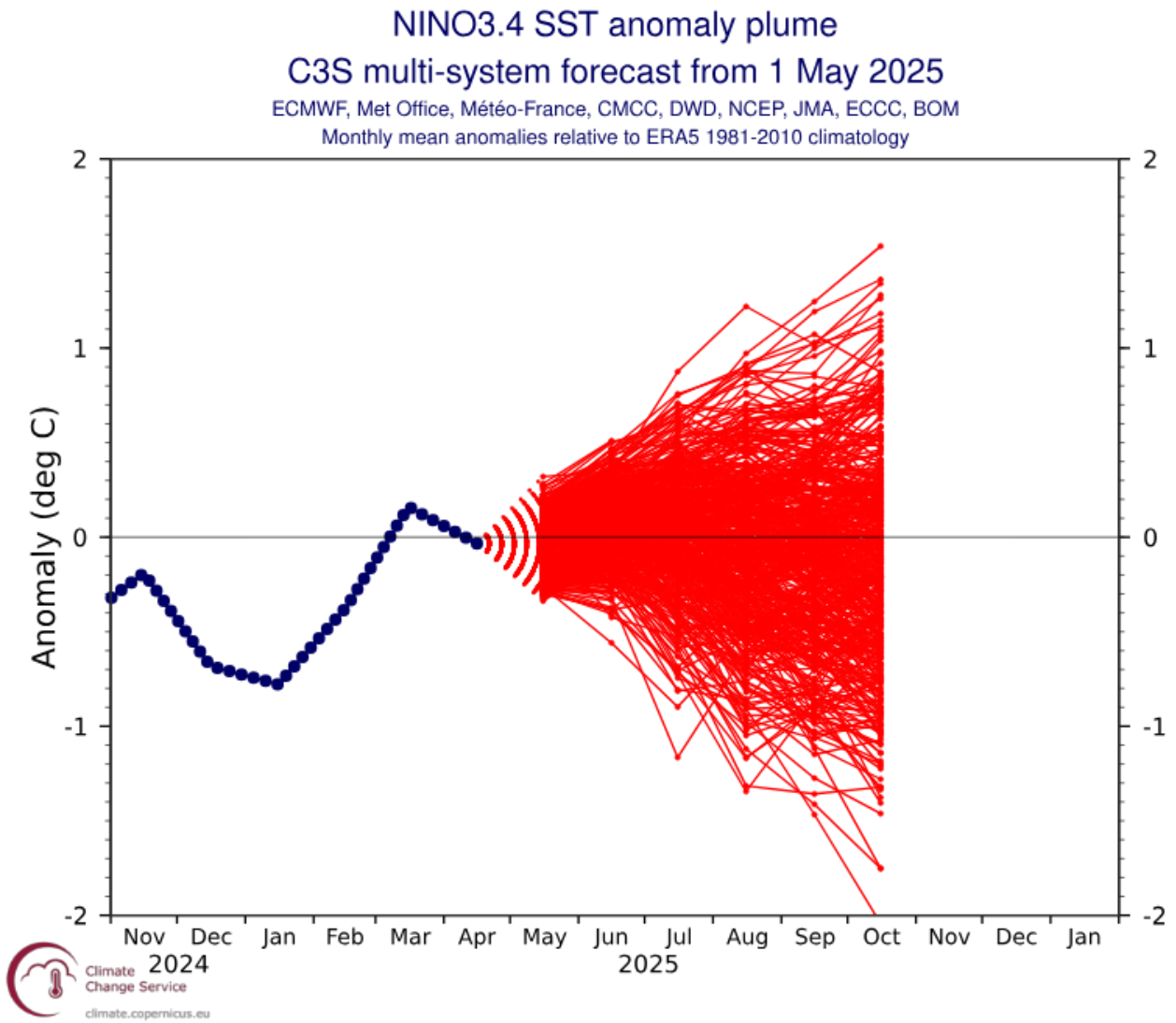
ENSO Outlook



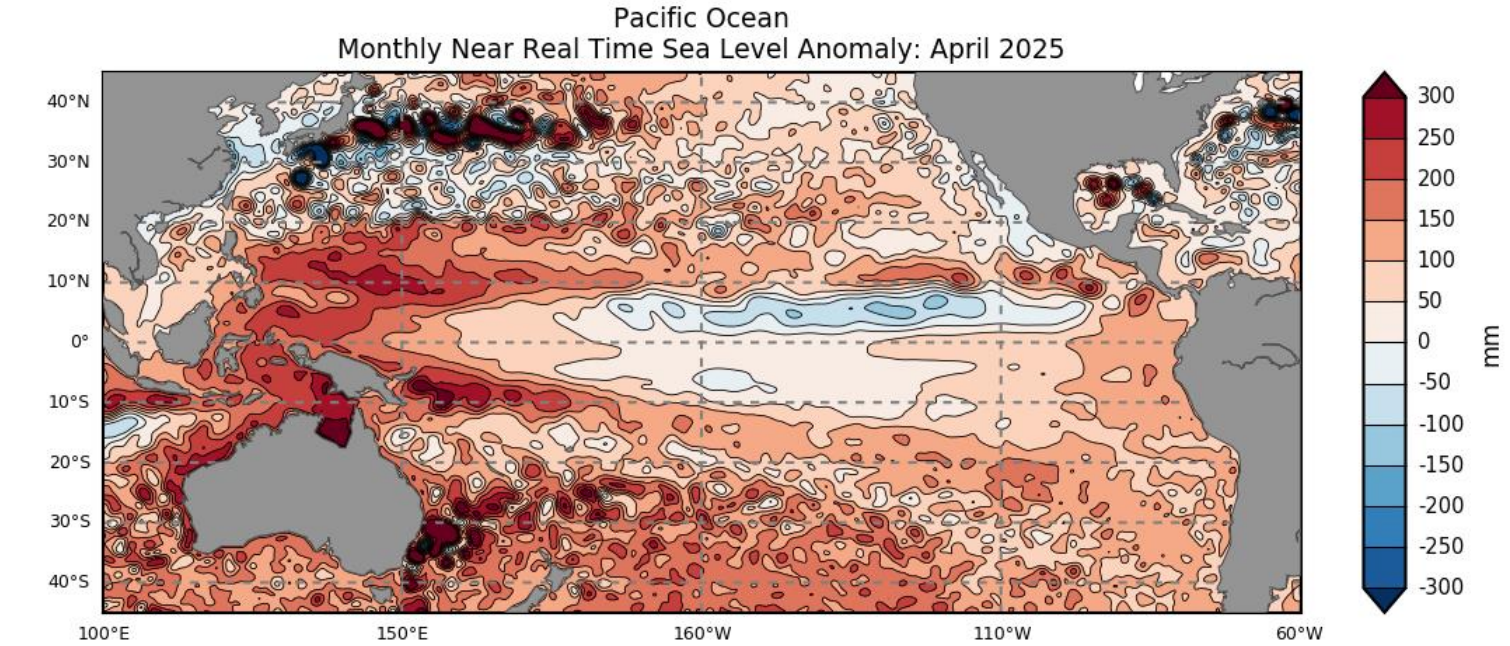




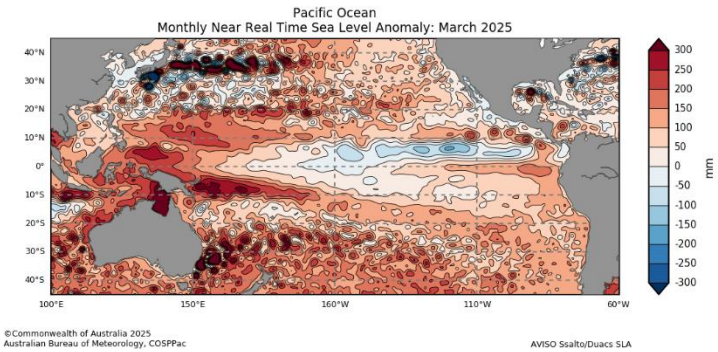
NINO3.4 SST Anomaly Plume



April 2025 Sea Level Anomaly

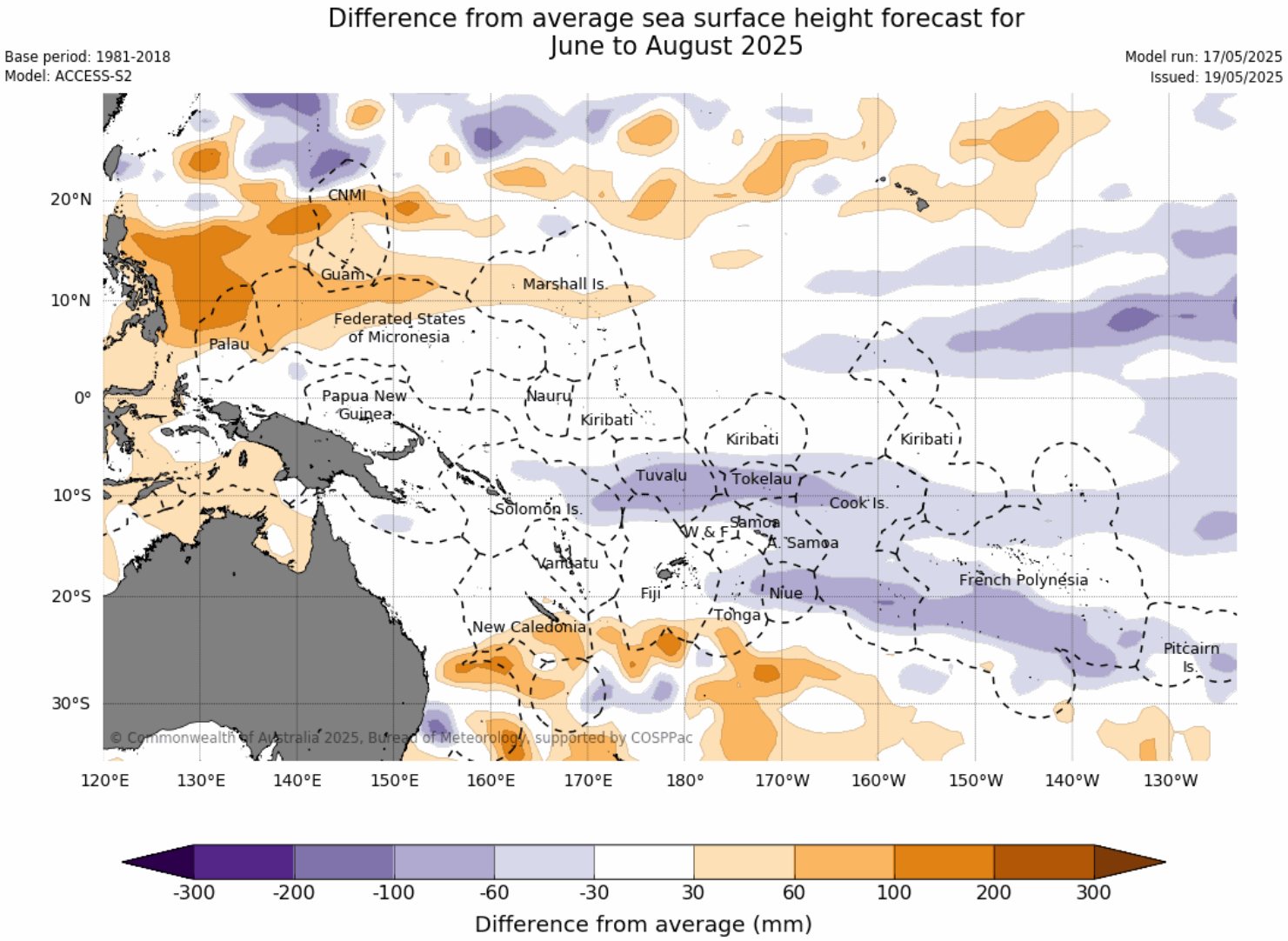


AVISO Ssalto/Duacs SLA



AVISO Ssalto/Duacs SLA

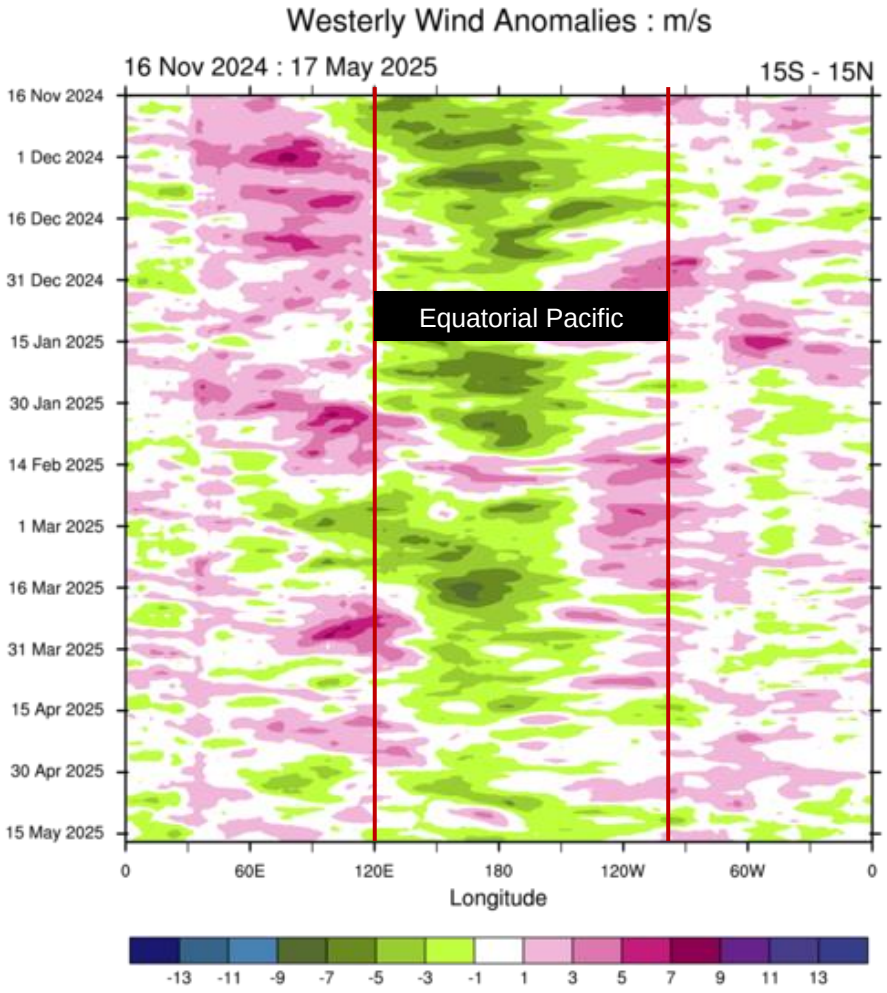
Seasonal Forecast: Sea Surface Height Anomaly



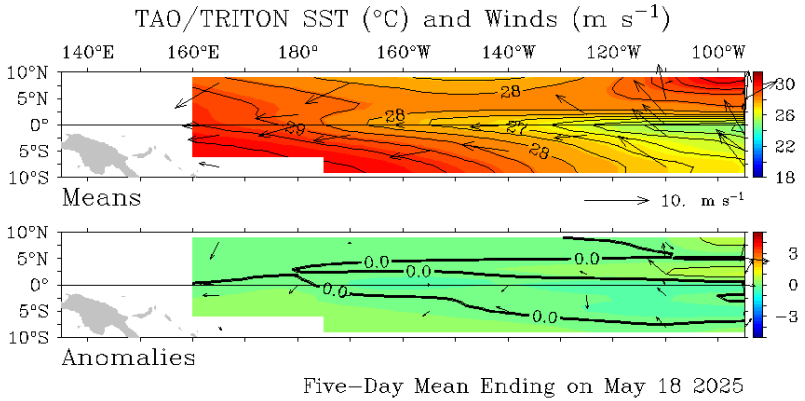
-- -- -- EEZ border V11 (Flanders Marine Institute, 2019).

Atmosphere

Enhance Tropical Activity



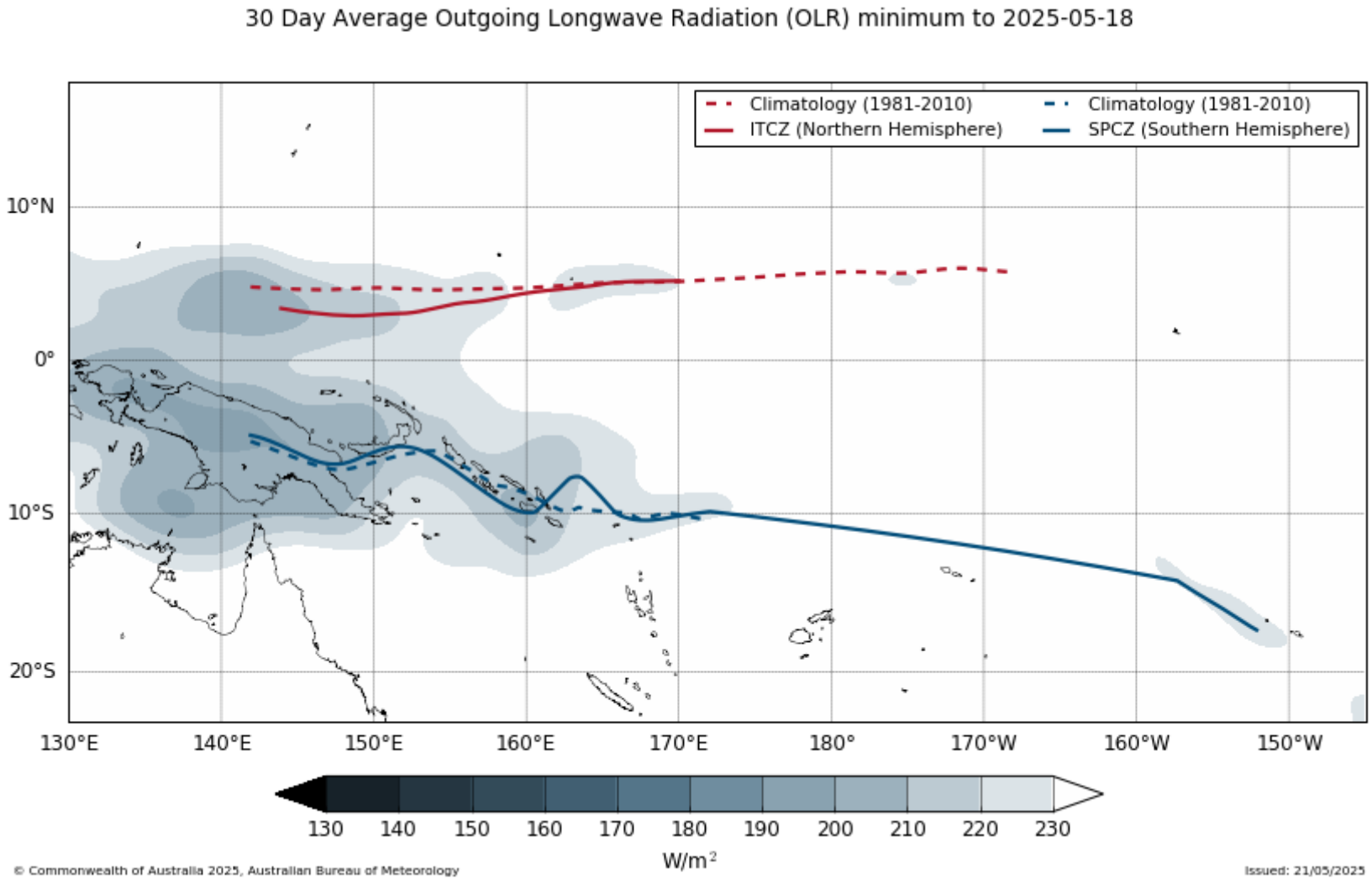
- Last month has been dominated by stronger trade winds or easterlies.
- Stronger trade winds decrease cloud develop in the atmosphere.



Easterly (stronger trade)

Westerly (weaker trade)

ITCZ and SPCZ



More clouds

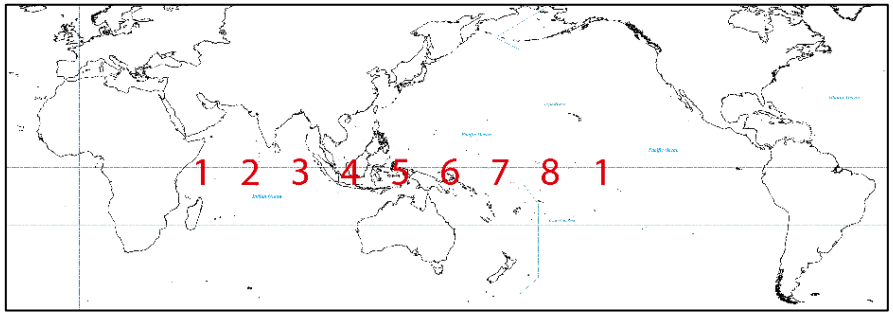
Less clouds

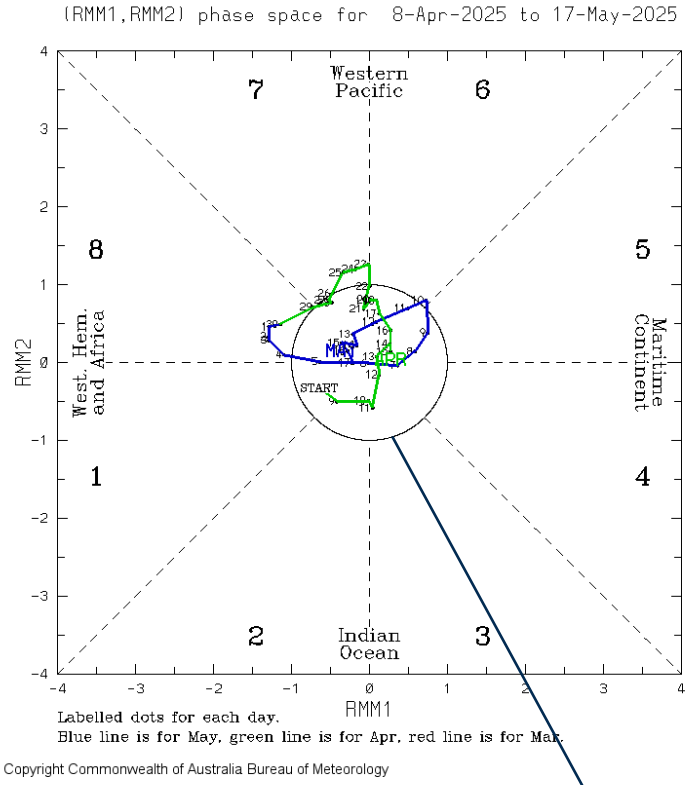
Madden – Julian Oscillation

The **MJO signal is very weak to non-existent** as it is inside the unit circle.

Phases **6, 7 and 8** are typically associated with **increased rainfall** across the Pacific.

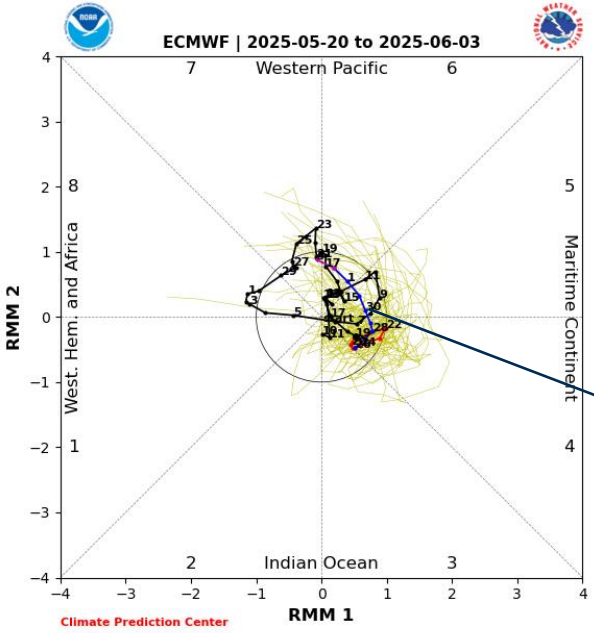
Phases **2, 3 and 4** are typically associated with **decreased rainfall** across the Pacific.



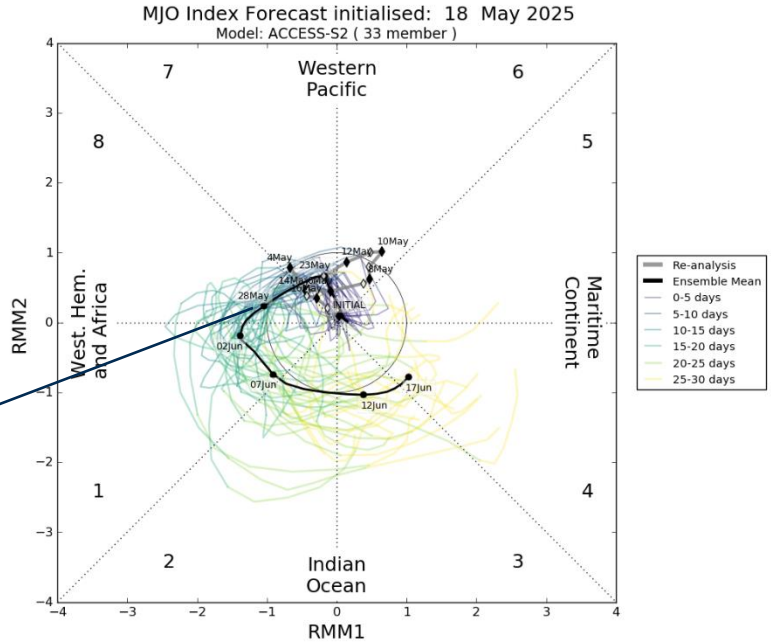


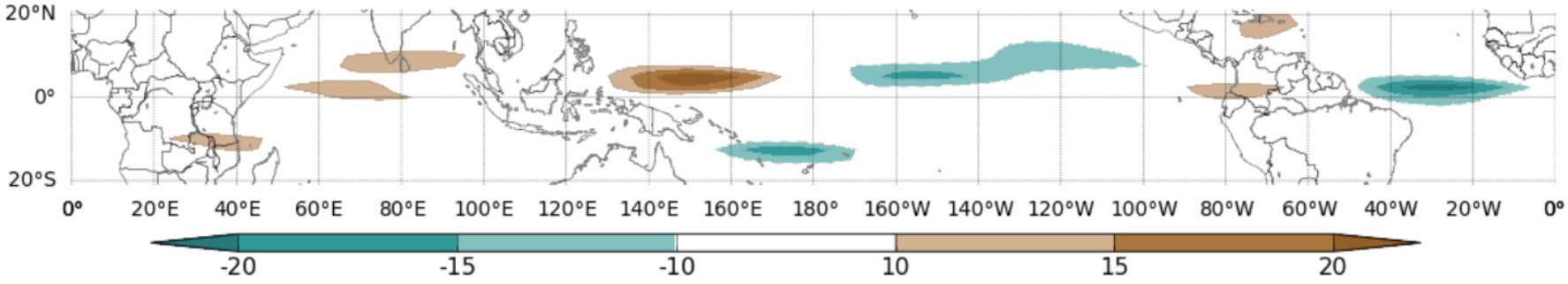
Unit circle:
If inside the unit circle the MJO signal is weak

Madden – Julian Oscillation



Unit circle:
If inside the unit circle the MJO signal is weak





Increased Convection

Decreased Convection

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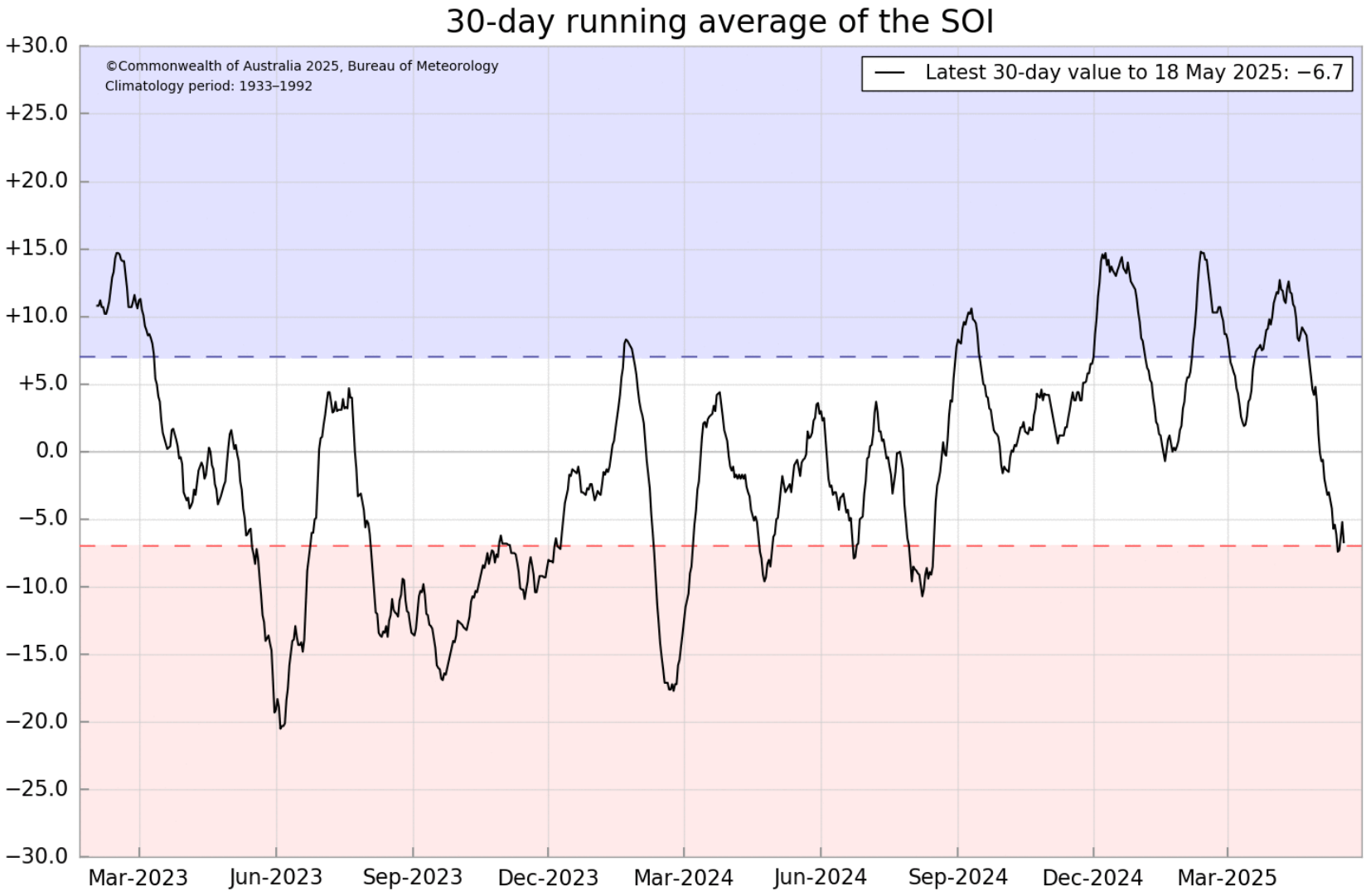
Model: ACCESS-S2
Base period: 1981-2018

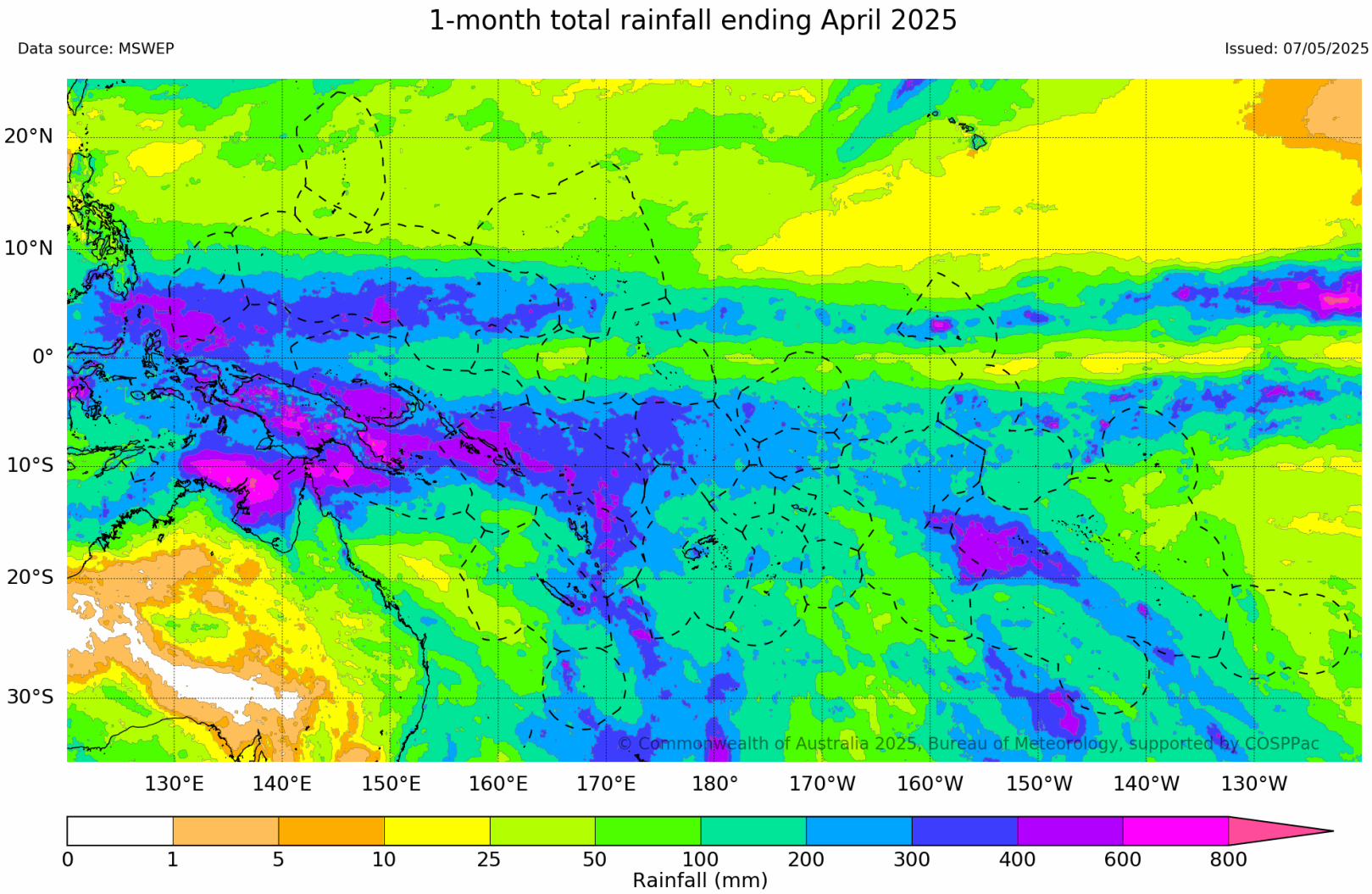
Forecast date:21/05/2025
Model run date: 18/05/2025

COSPPac
Climate and Oceans Support Program in the Pacific

Southern Oscillation Index

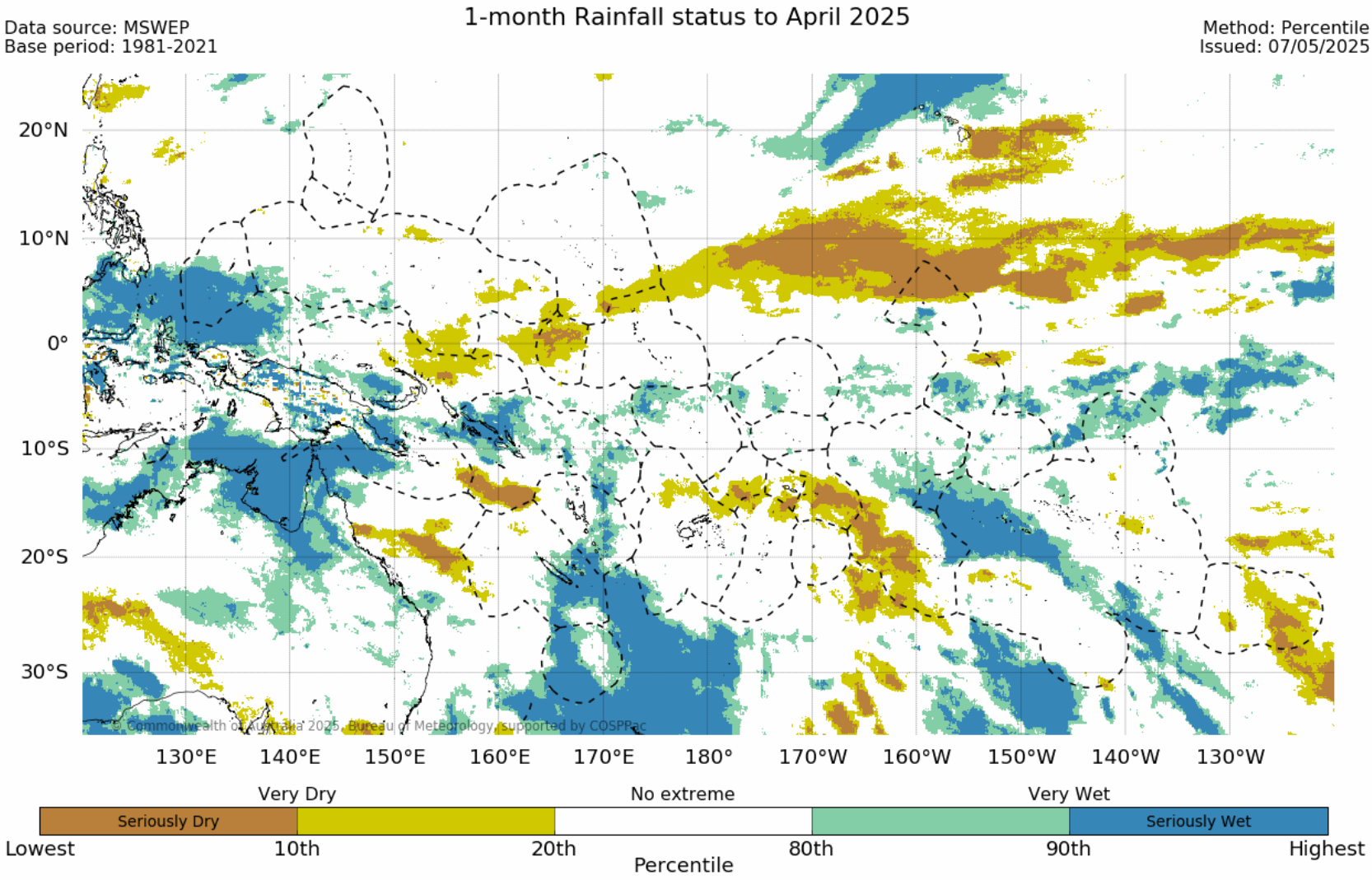


Satellite Rainfall –April 2025

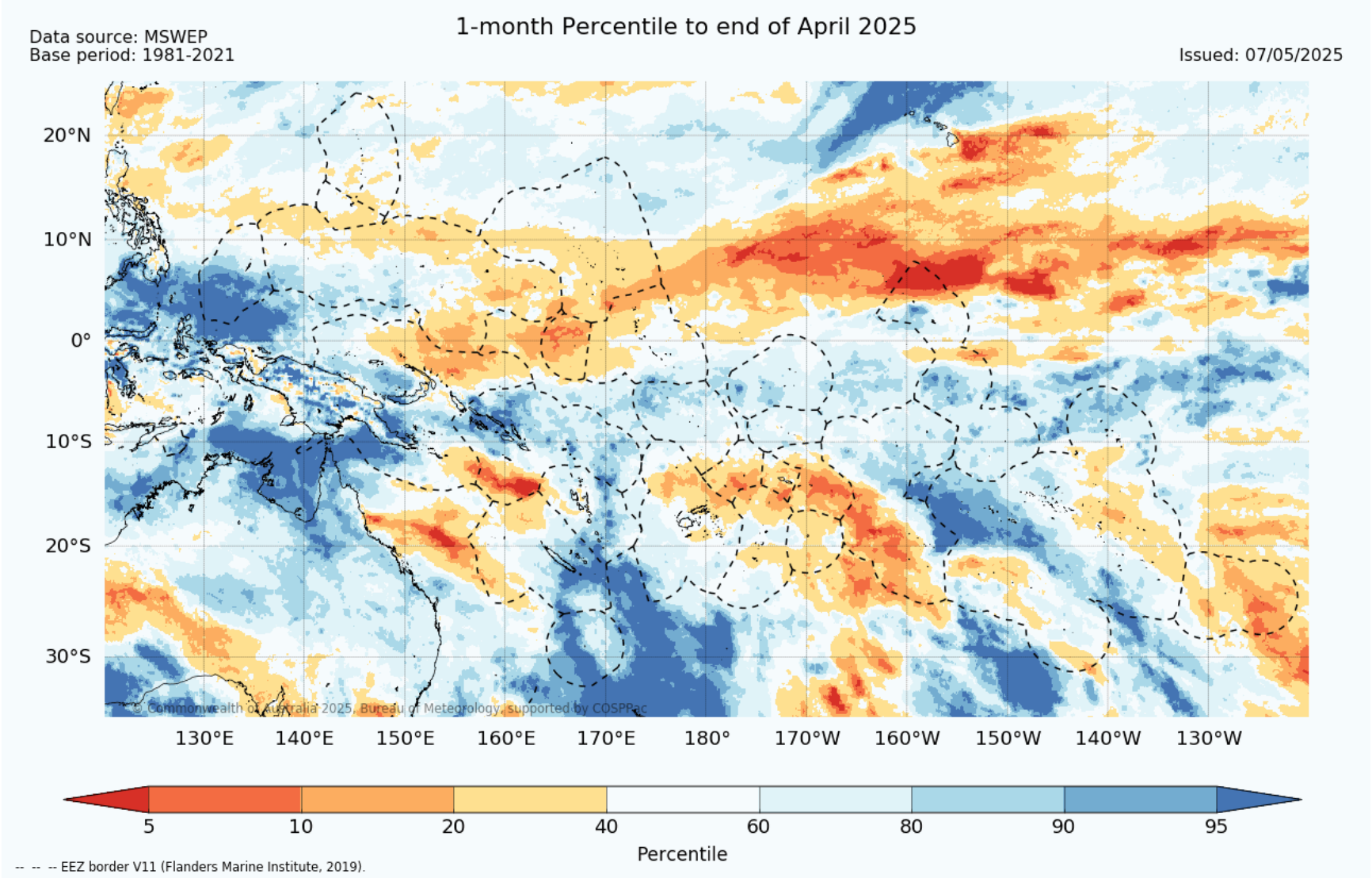


Dashed EEZ shapefile data extracted from Flanders Marine Institute (2019), Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (200NM), version 11. Available online at http://www.marineregions.org/.

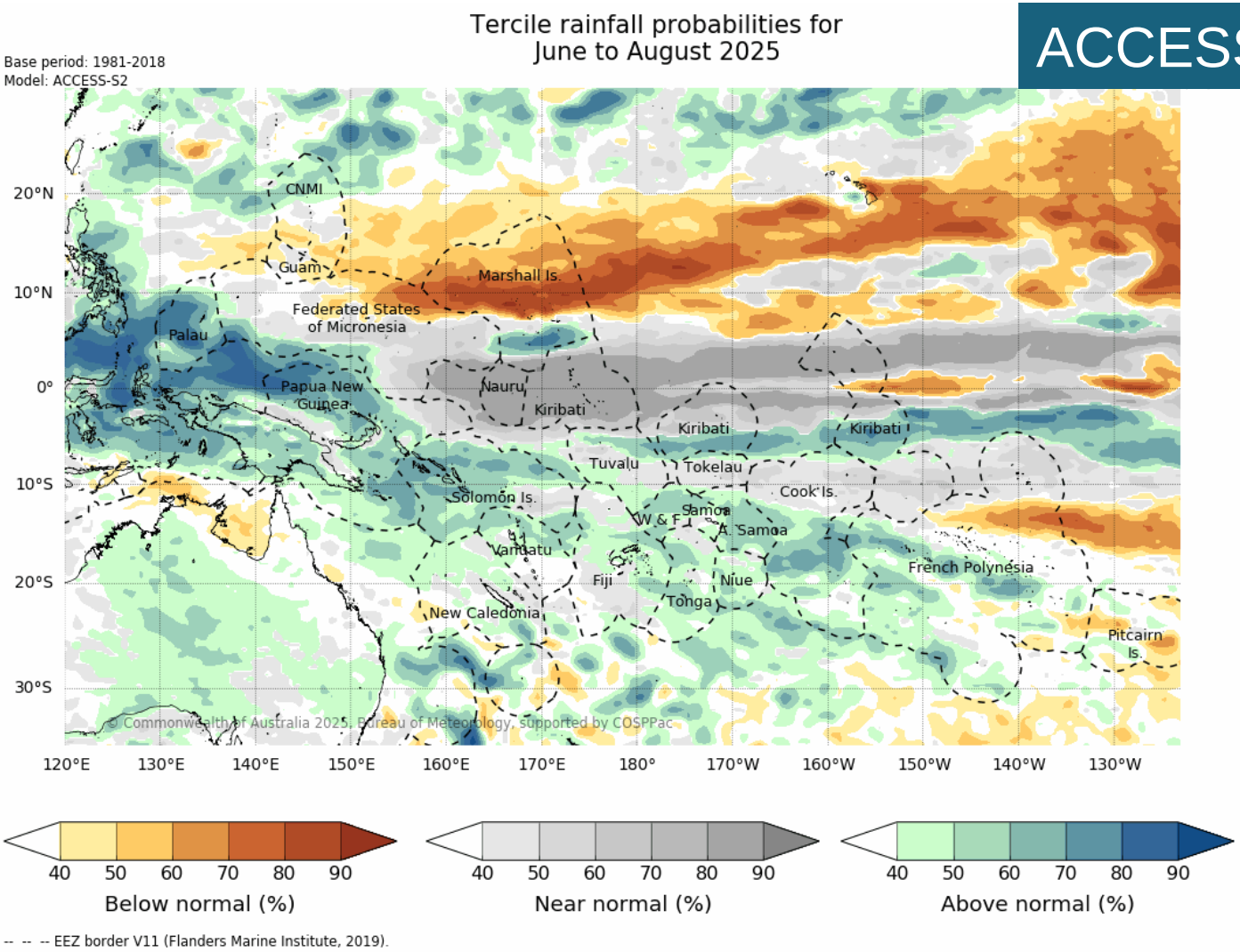
Rainfall Extremes –April 2025



Rainfall Extremes –April 2025

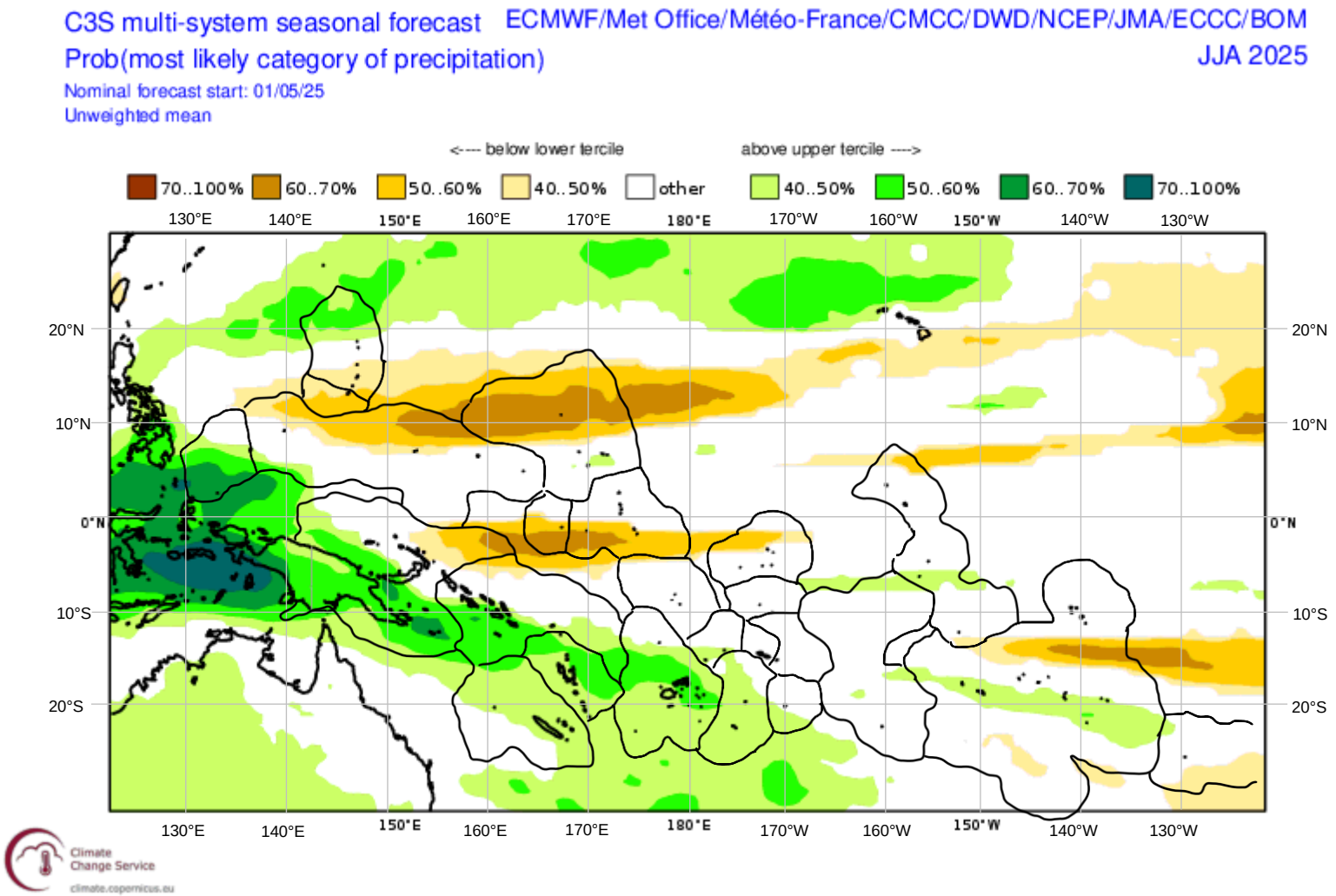


Model Rainfall Predictions (JJA)



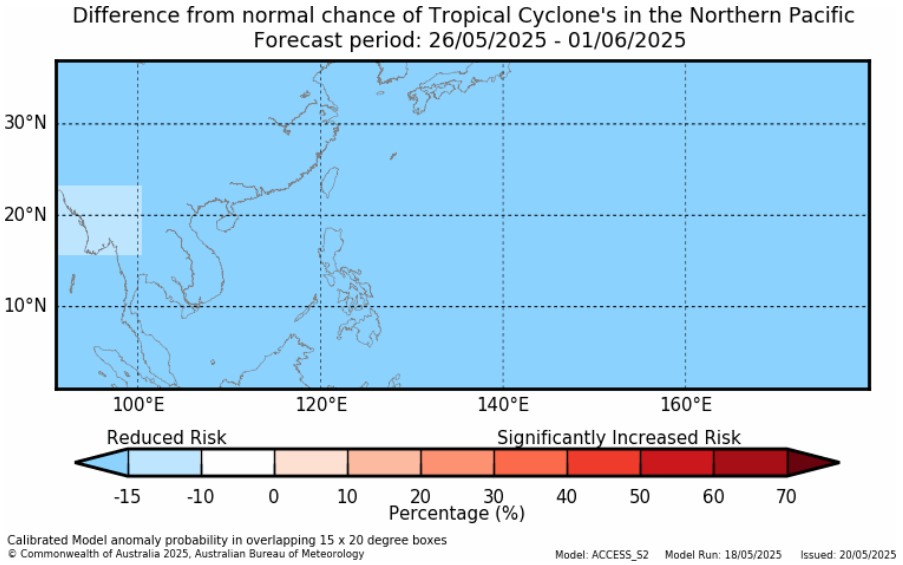
Model Rainfall Predictions (JJA)

C3S



TC Outlooks – Two Weeks

North Pacific



South Pacific

Out of season: November to April.