

# ENSO Update – OCOF 212

21 May 2025



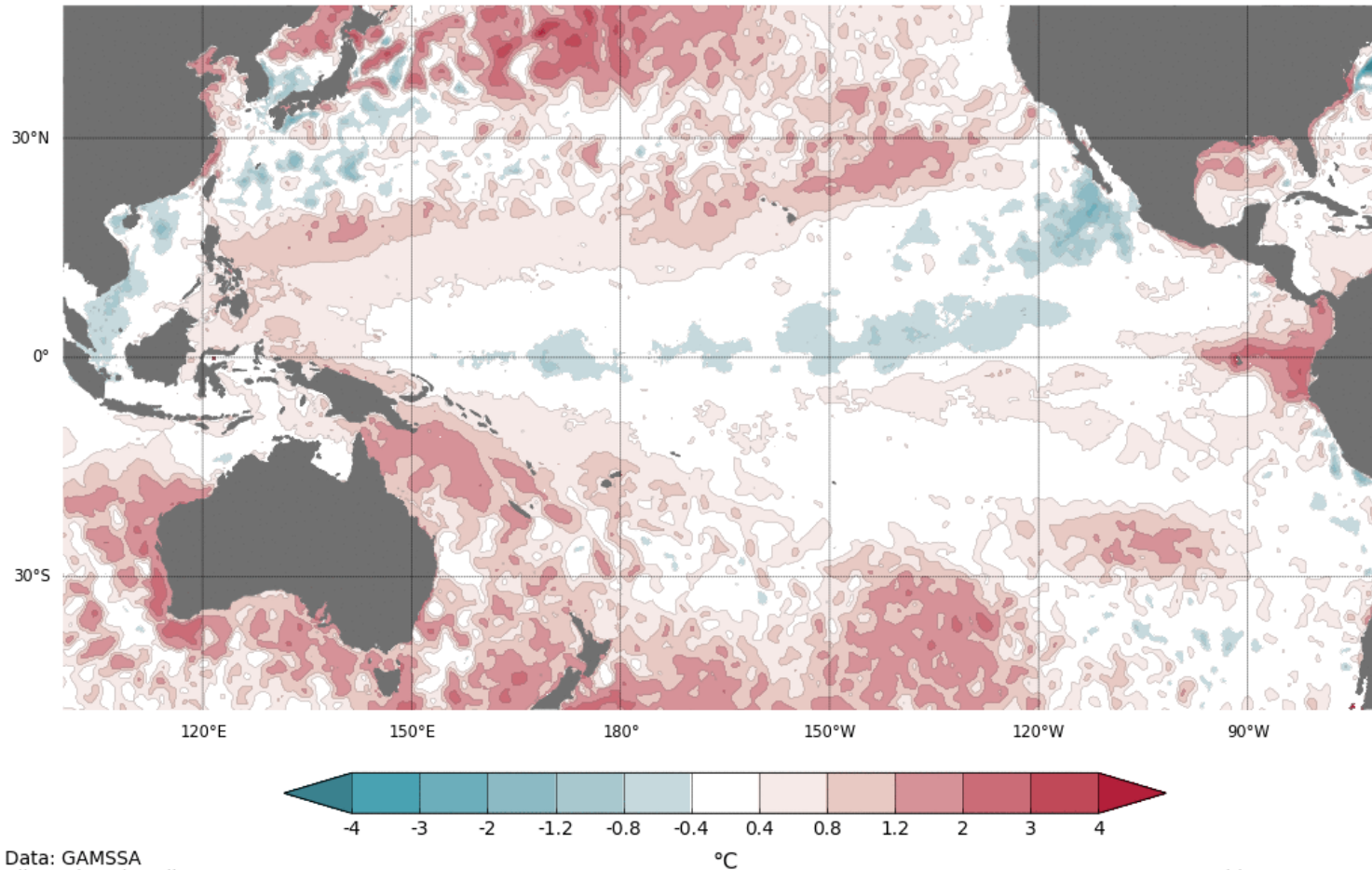
# ENSO Update

- 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.

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# April 2025 SSTs

Sea surface temperature anomaly: 01/04/2025 to 30/04/2025



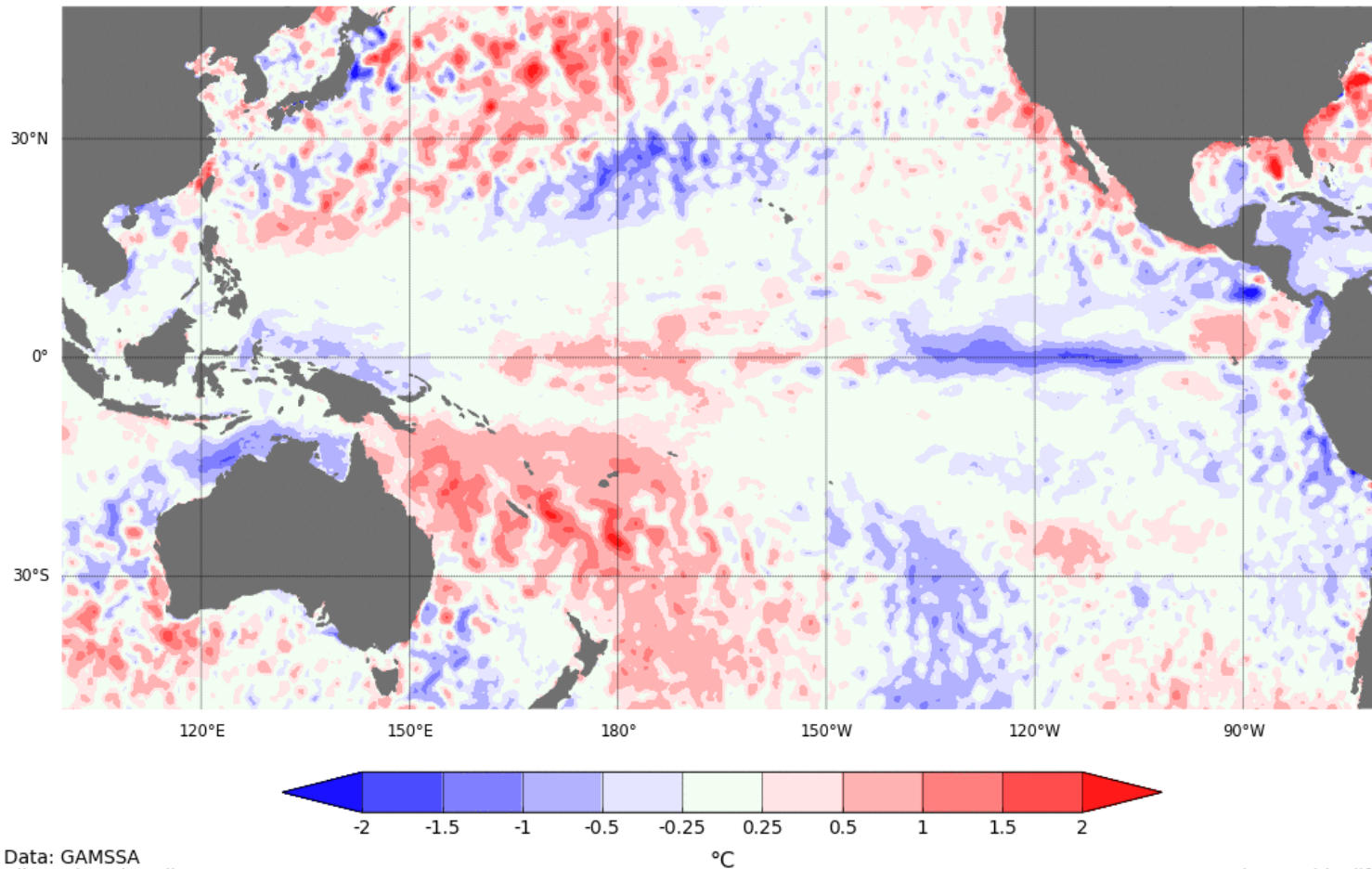
Data: GAMSSA  
Climatology baseline: 1991 to 2020  
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<http://www.bom.gov.au/climate>

Monthly average: April 2025  
Created: 03/05/2025

# April – March SSTs

Change in the monthly SST anomaly: April-2025 - March-2025

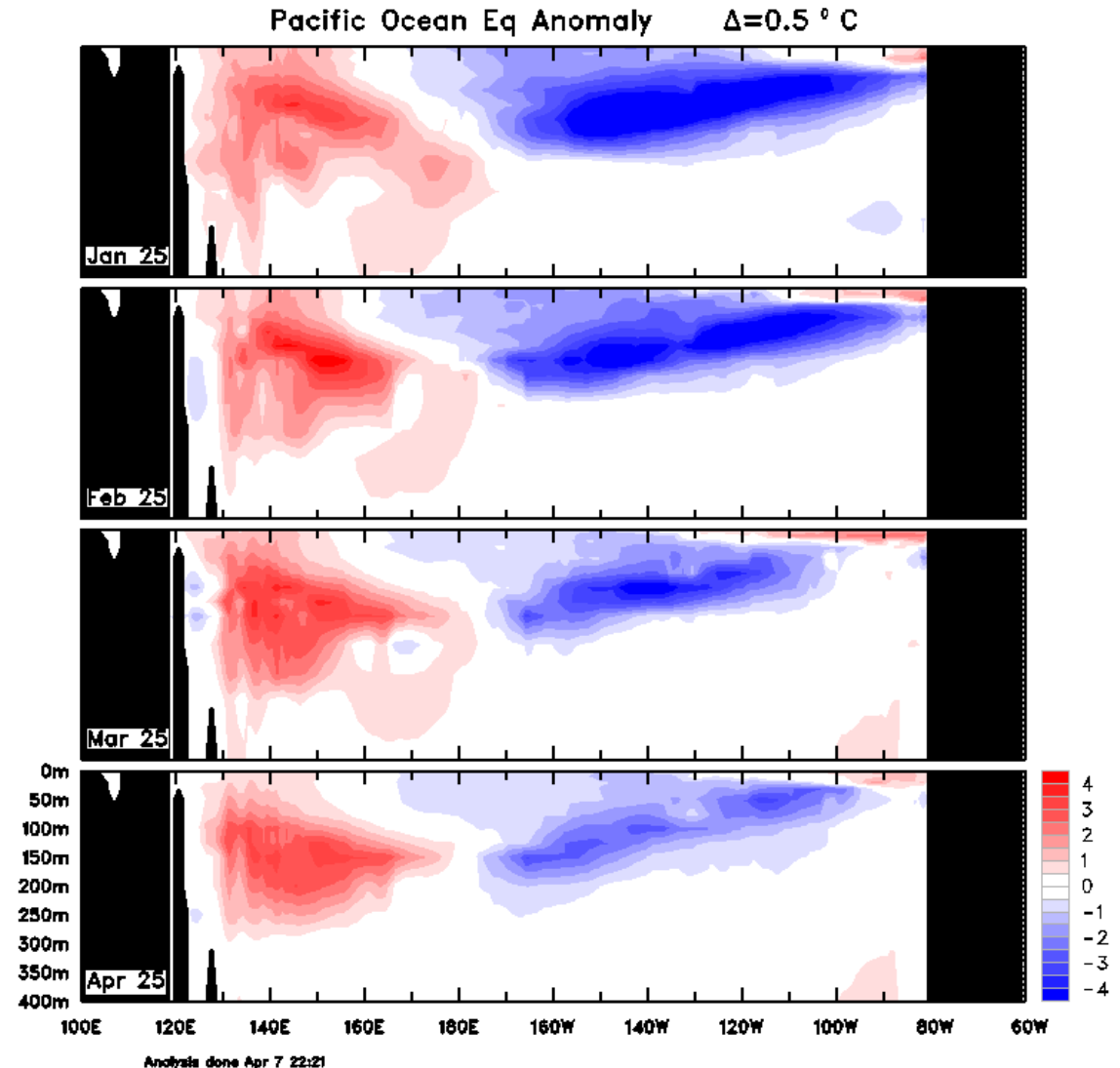
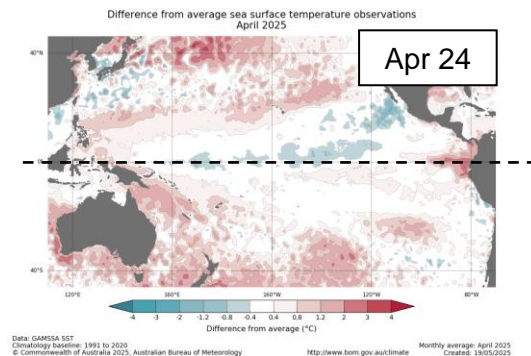
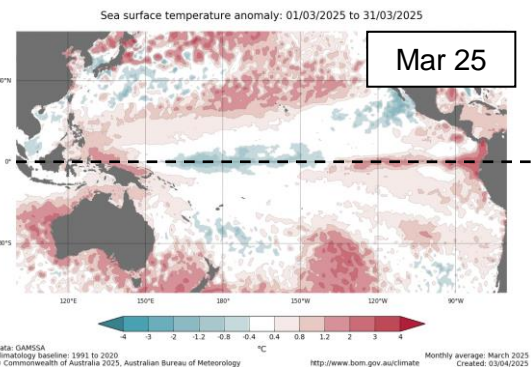
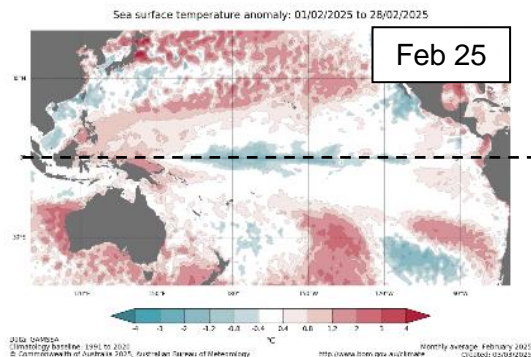


Data: GAMSSA  
Climatology baseline: 1991 to 2020  
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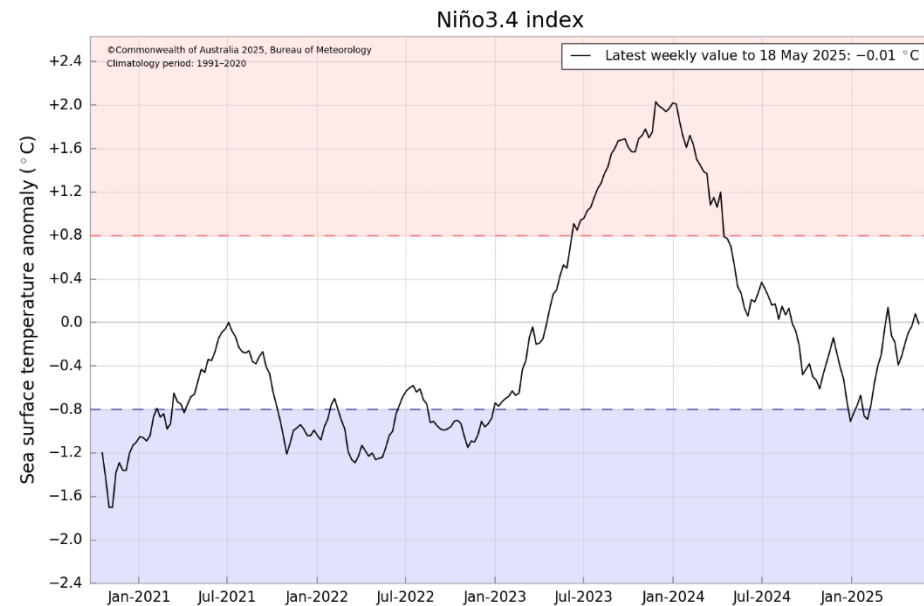
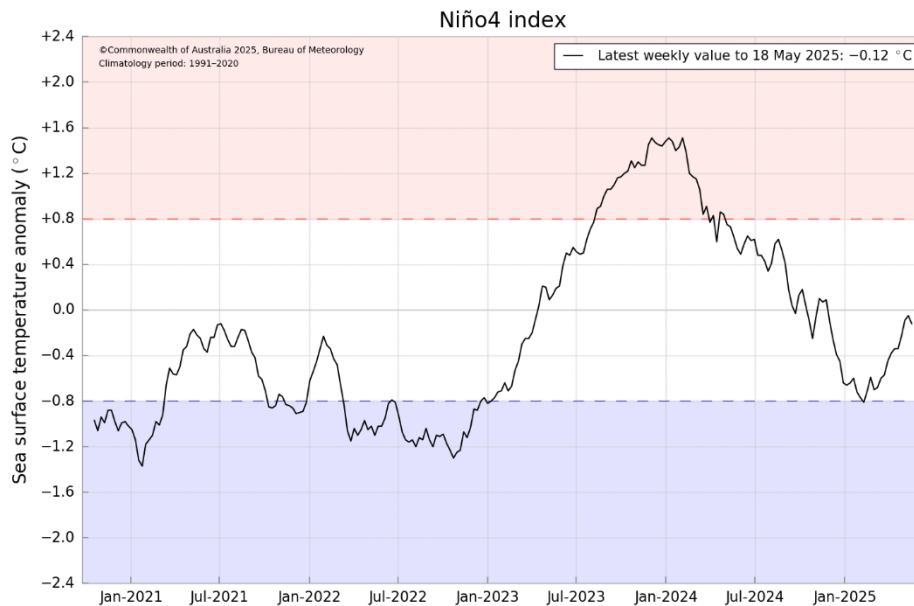
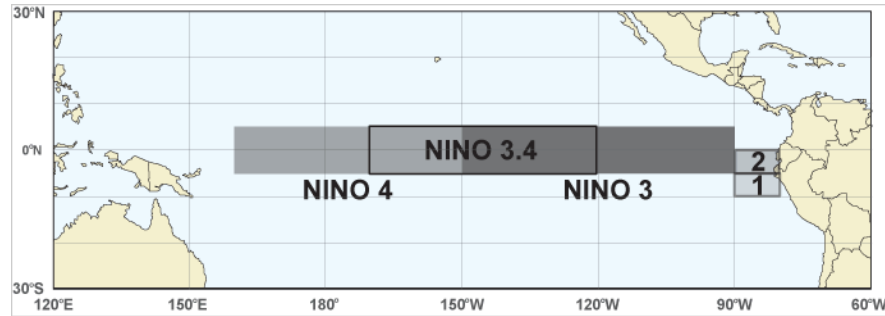
<http://www.bom.gov.au/climate>

Anomaly monthly difference  
Created: 03/05/2025

# Equatorial Pacific Sub-surface Profile



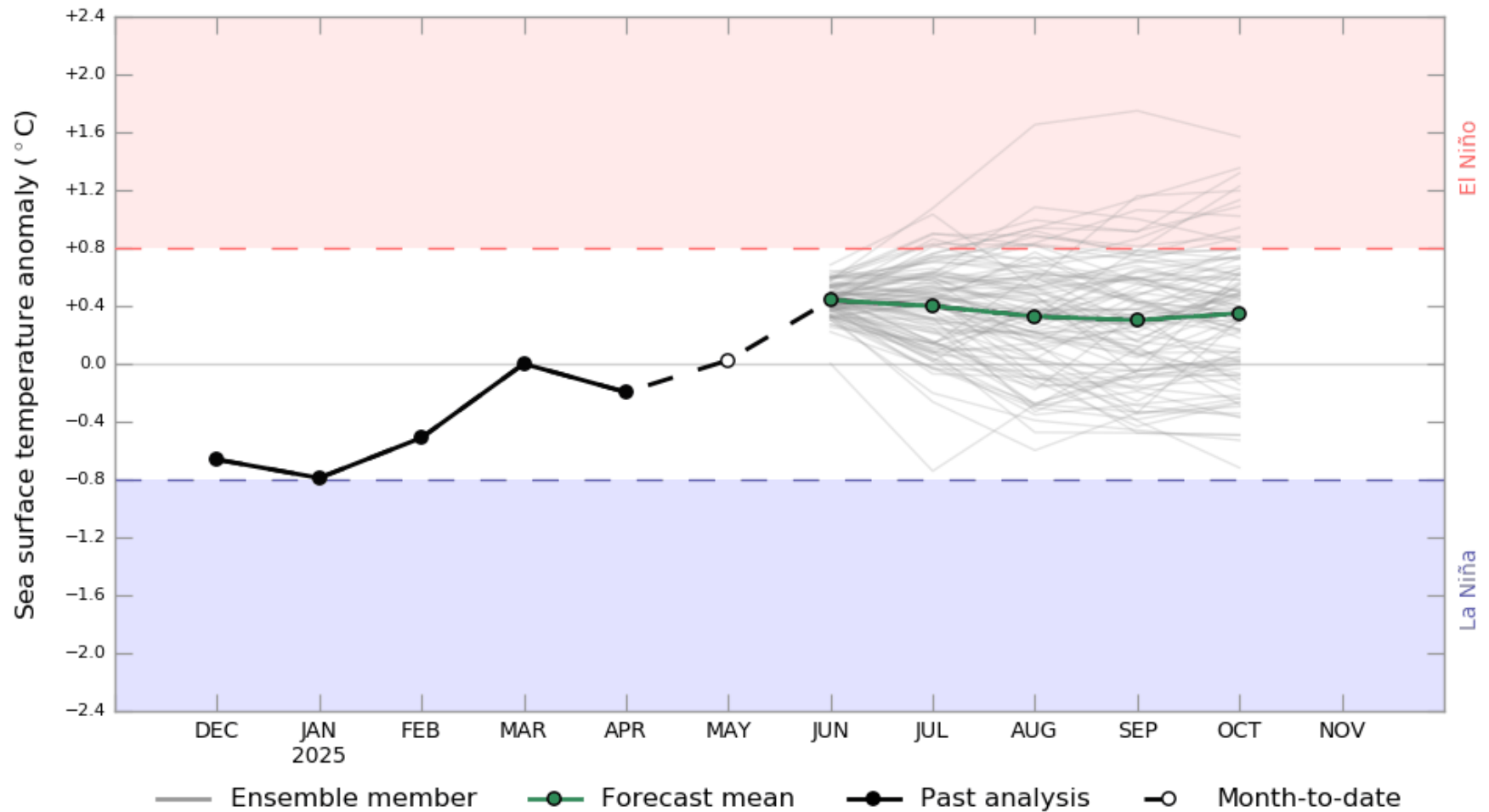
# NINO Indices SST Anomalies (°C)



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# ENSO Outlook

Niño3.4 index

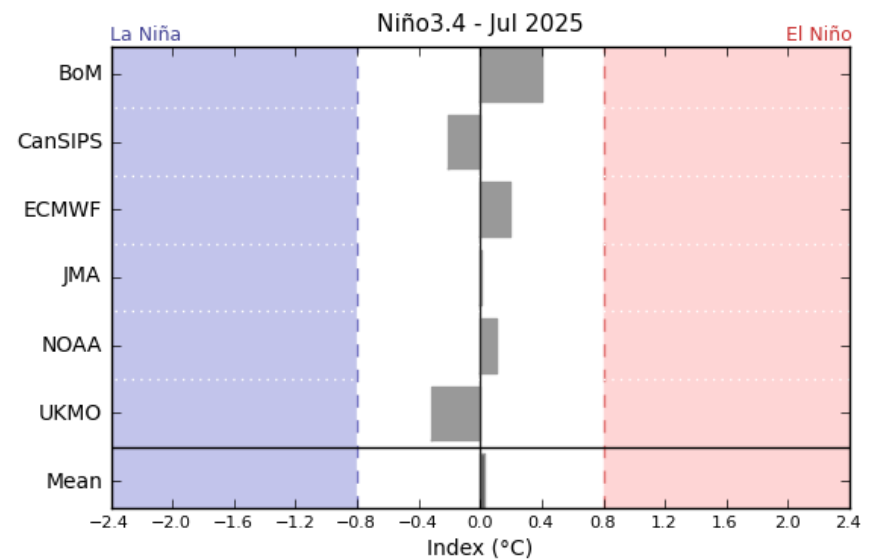
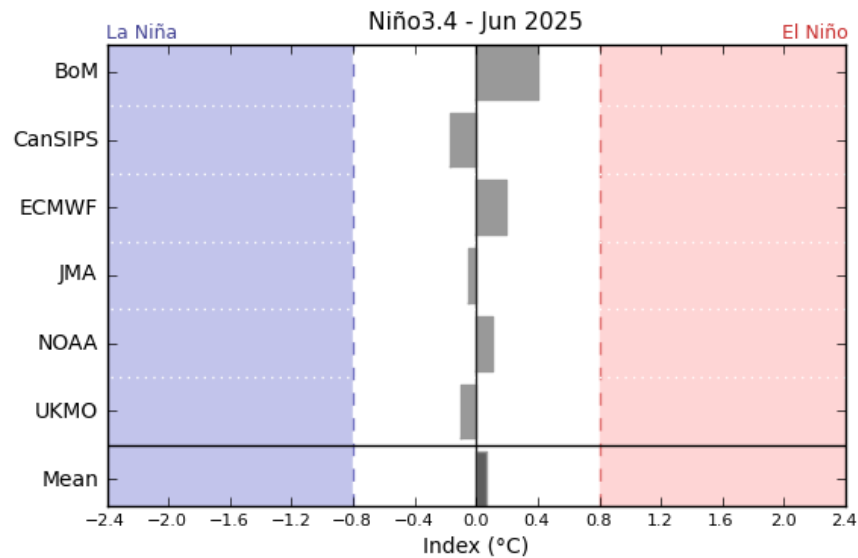
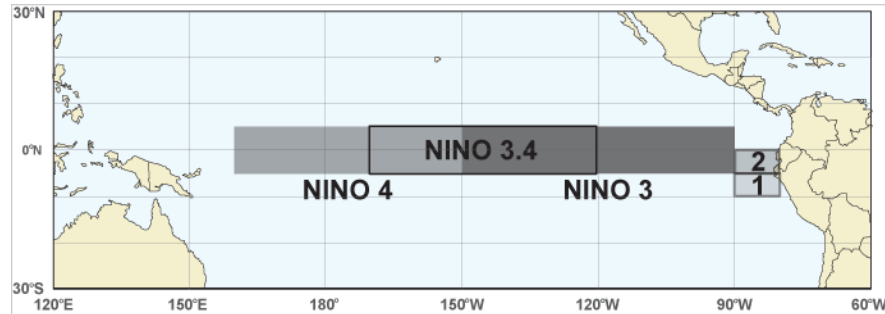


[www.bom.gov.au/climate](http://www.bom.gov.au/climate)  
Commonwealth of Australia 2025, Australian Bureau of Meteorology

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

Model: ACCESS-S2  
Model run: 17 May 2025

# ENSO Outlook



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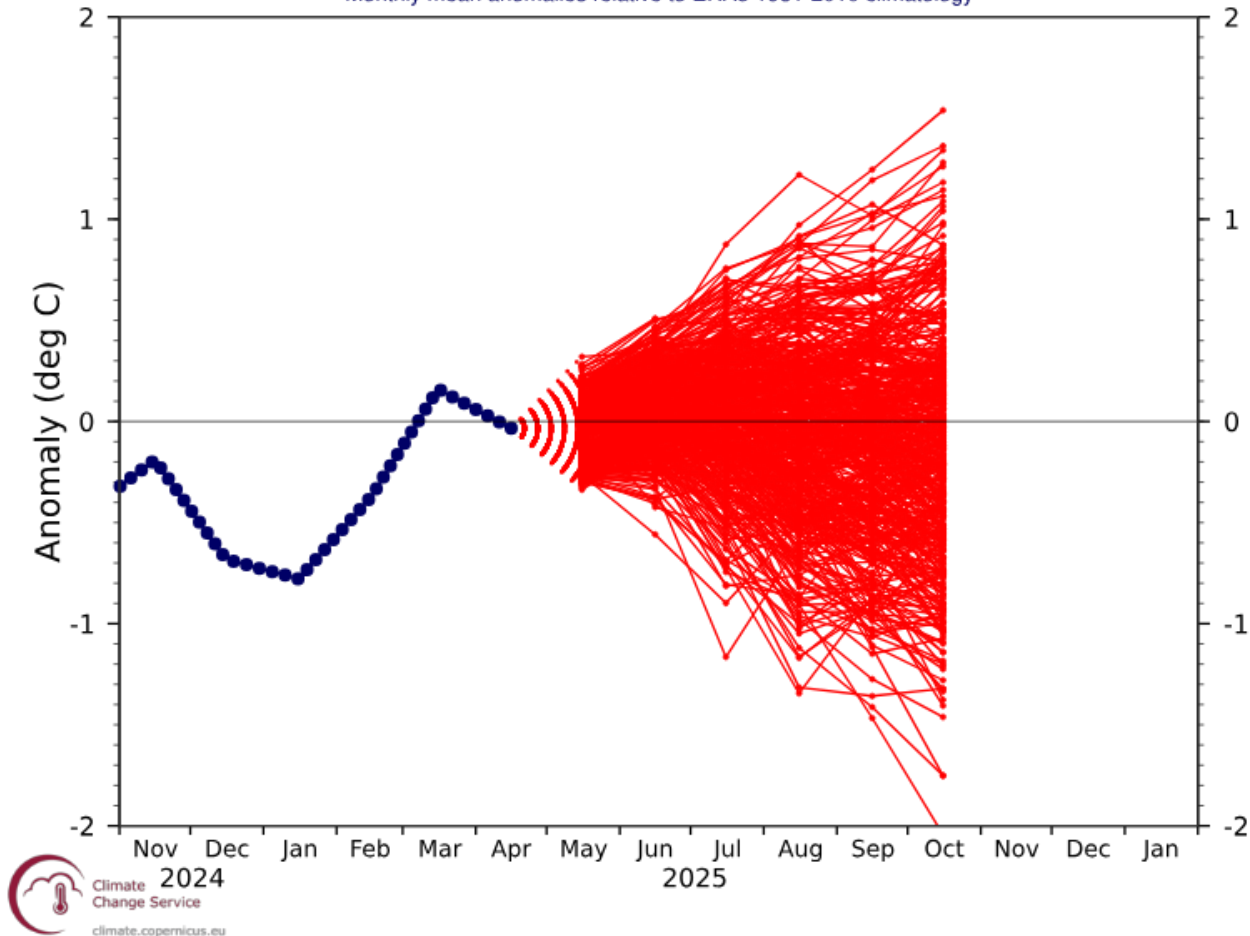
# NINO3.4 SST Anomaly Plume

NINO3.4 SST anomaly plume

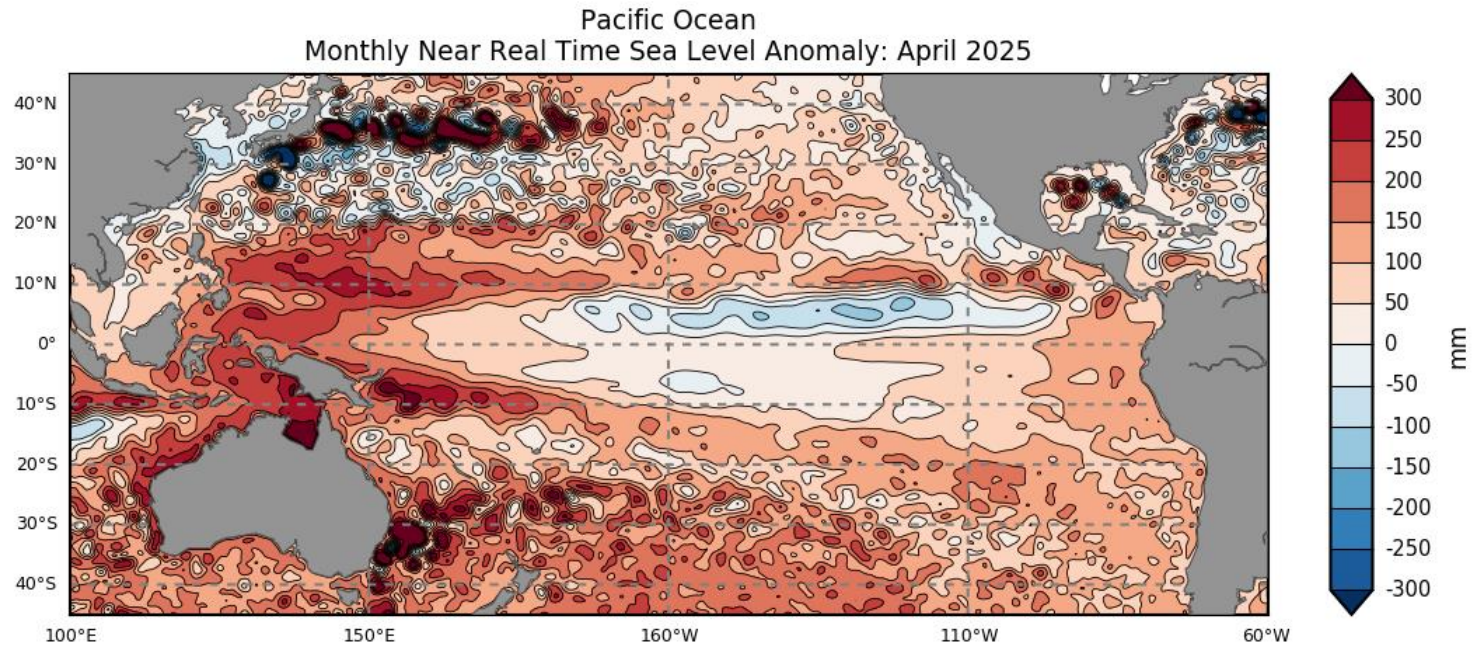
C3S multi-system forecast from 1 May 2025

ECMWF, Met Office, Météo-France, CMCC, DWD, NCEP, JMA, ECCC, BOM

Monthly mean anomalies relative to ERA5 1981-2010 climatology

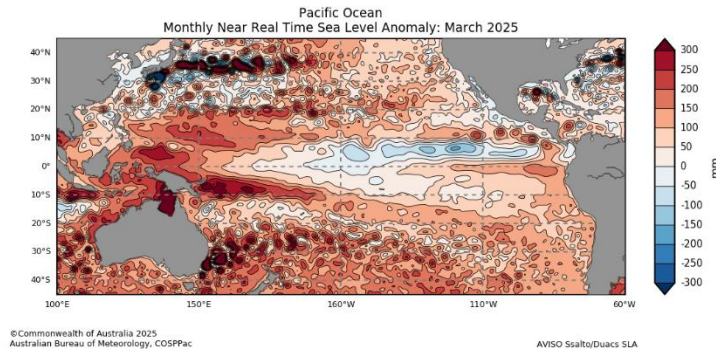


# April 2025 Sea Level Anomaly



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Australian Bureau of Meteorology, COSPPac

AVISO Ssalto/Duacs SLA

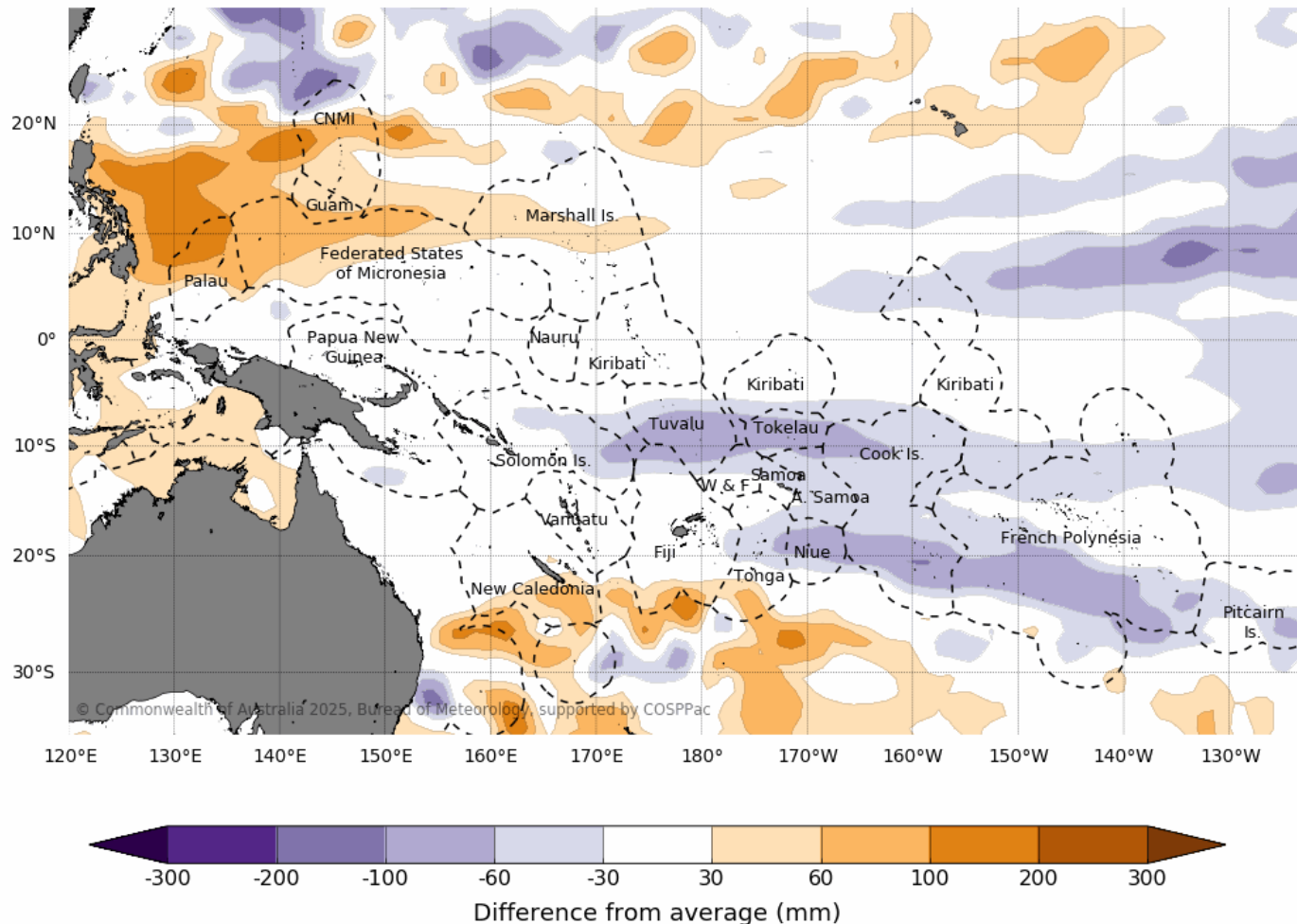


# Seasonal Forecast: Sea Surface Height Anomaly

Difference from average sea surface height forecast for  
June to August 2025

Base period: 1981-2018  
Model: ACCESS-S2

Model run: 17/05/2025  
Issued: 19/05/2025

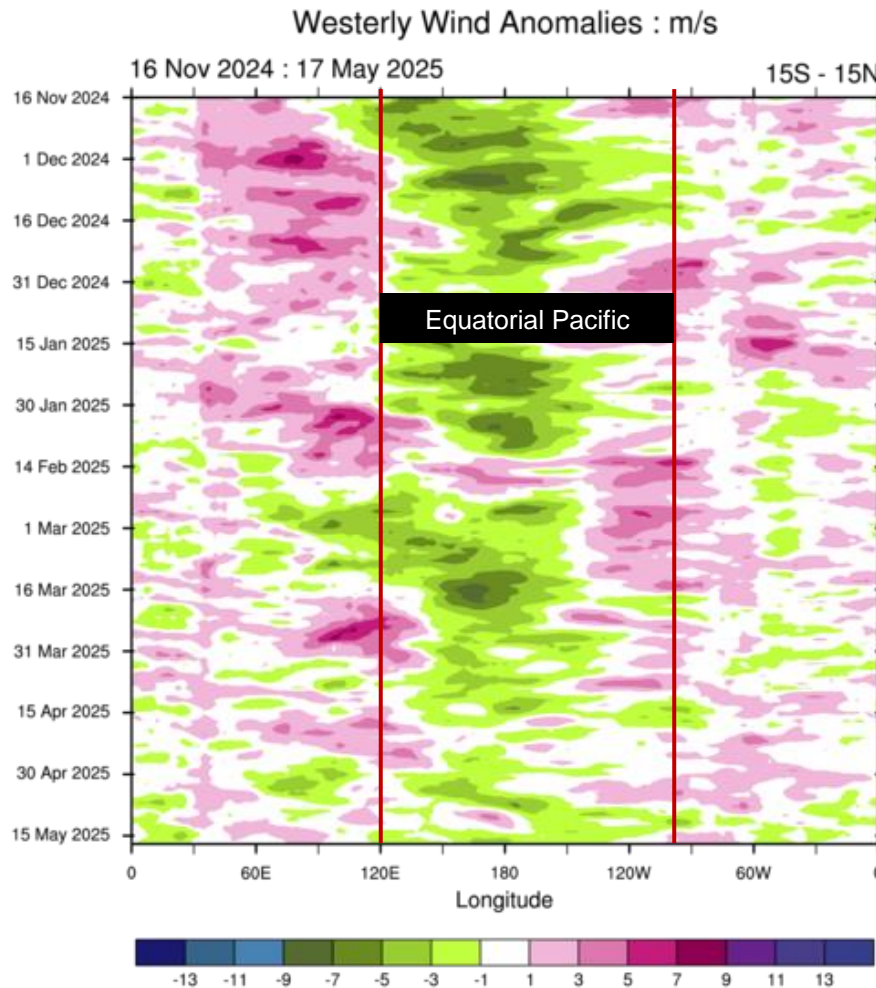


# Atmosphere





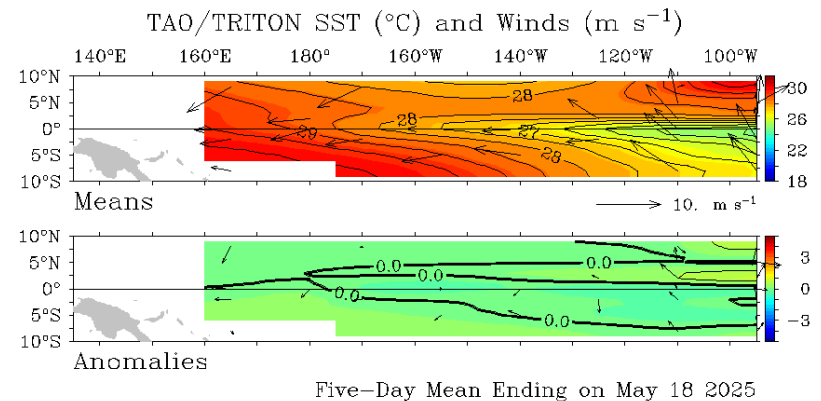
# Enhance Tropical Activity



Easterly (stronger trade)

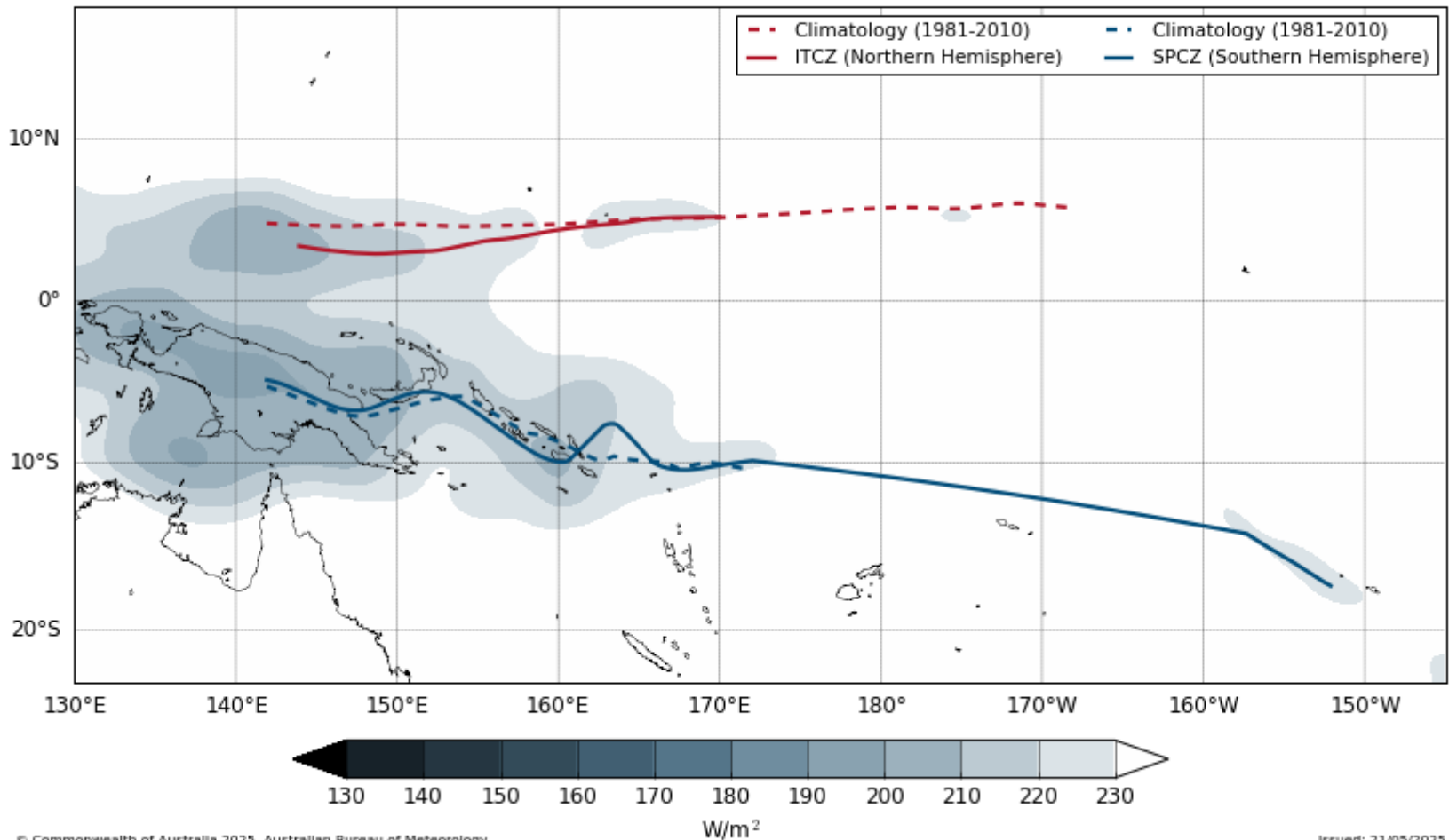
Westerly (weaker trade)

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



# ITCZ and SPCZ

30 Day Average Outgoing Longwave Radiation (OLR) minimum to 2025-05-18



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Issued: 21/05/2025

More clouds

Less clouds

# Madden – Julian Oscillation



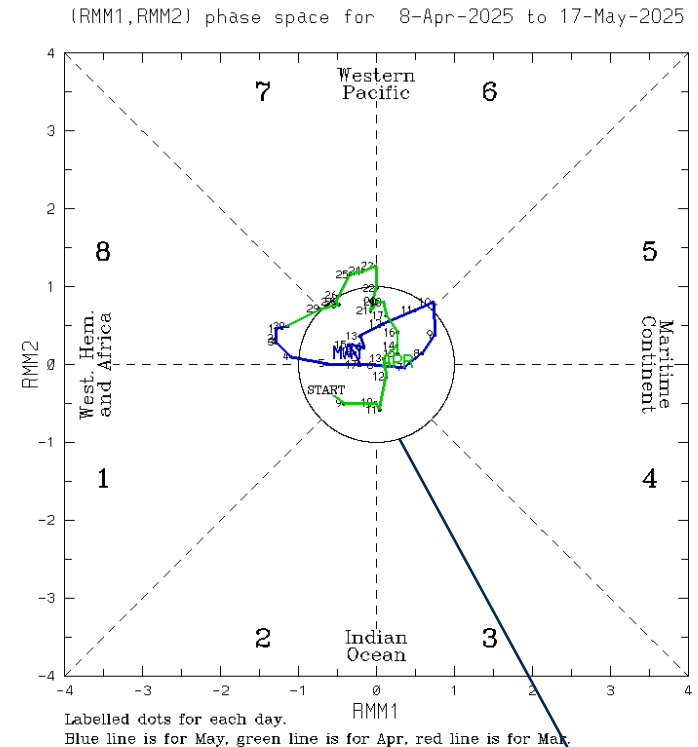
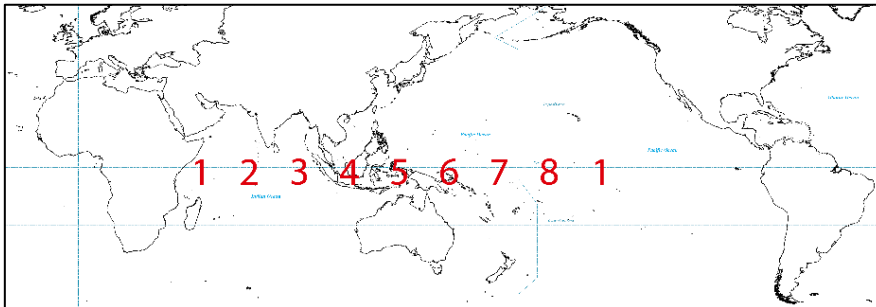
The **MJO signal is very weak to non-existent** as it is inside the unit circle.



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



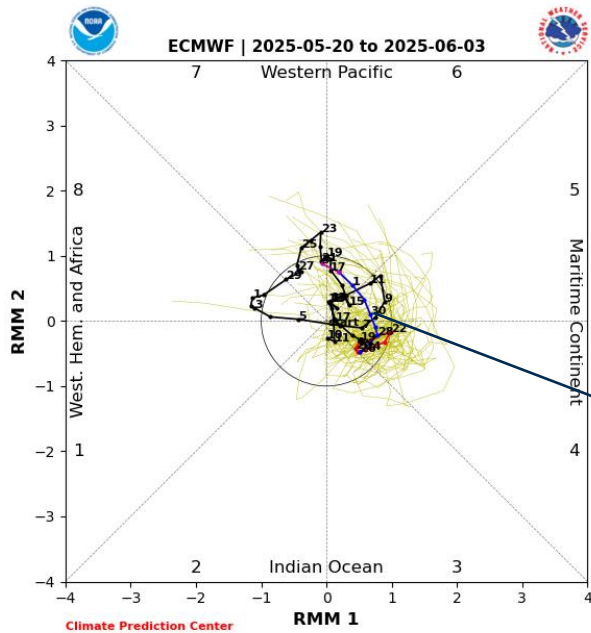
Phases **2, 3 and 4** are typically associated with **decreased rainfall** across the Pacific.



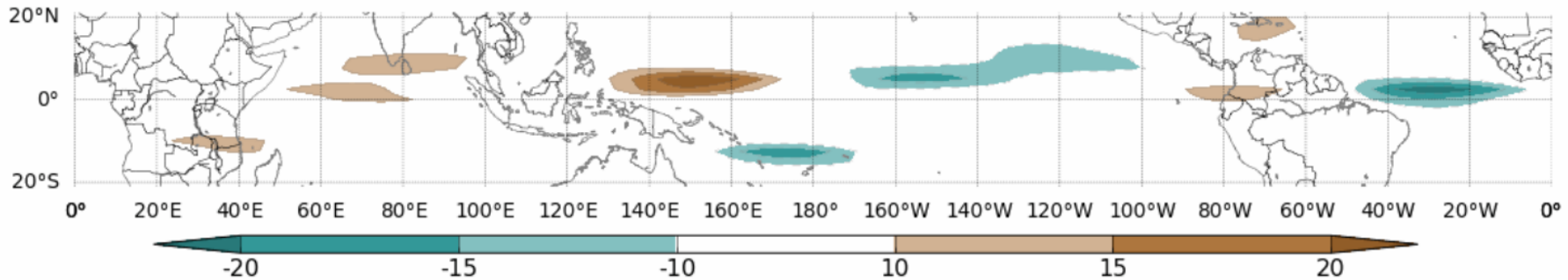
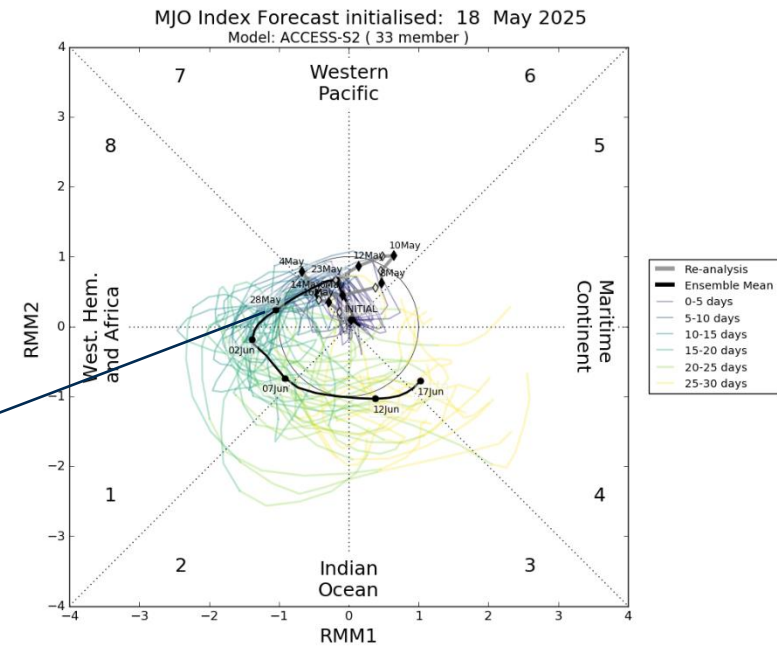
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**Unit circle:**  
If inside the unit circle the MJO signal is weak

# Madden – Julian Oscillation



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



Increased Convection

[www.bom.gov.au/climate](http://www.bom.gov.au/climate)

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The Bureau of Meteorology

Difference from average (W/m<sup>2</sup>)

Decreased Convection

Model: ACCESS-S2

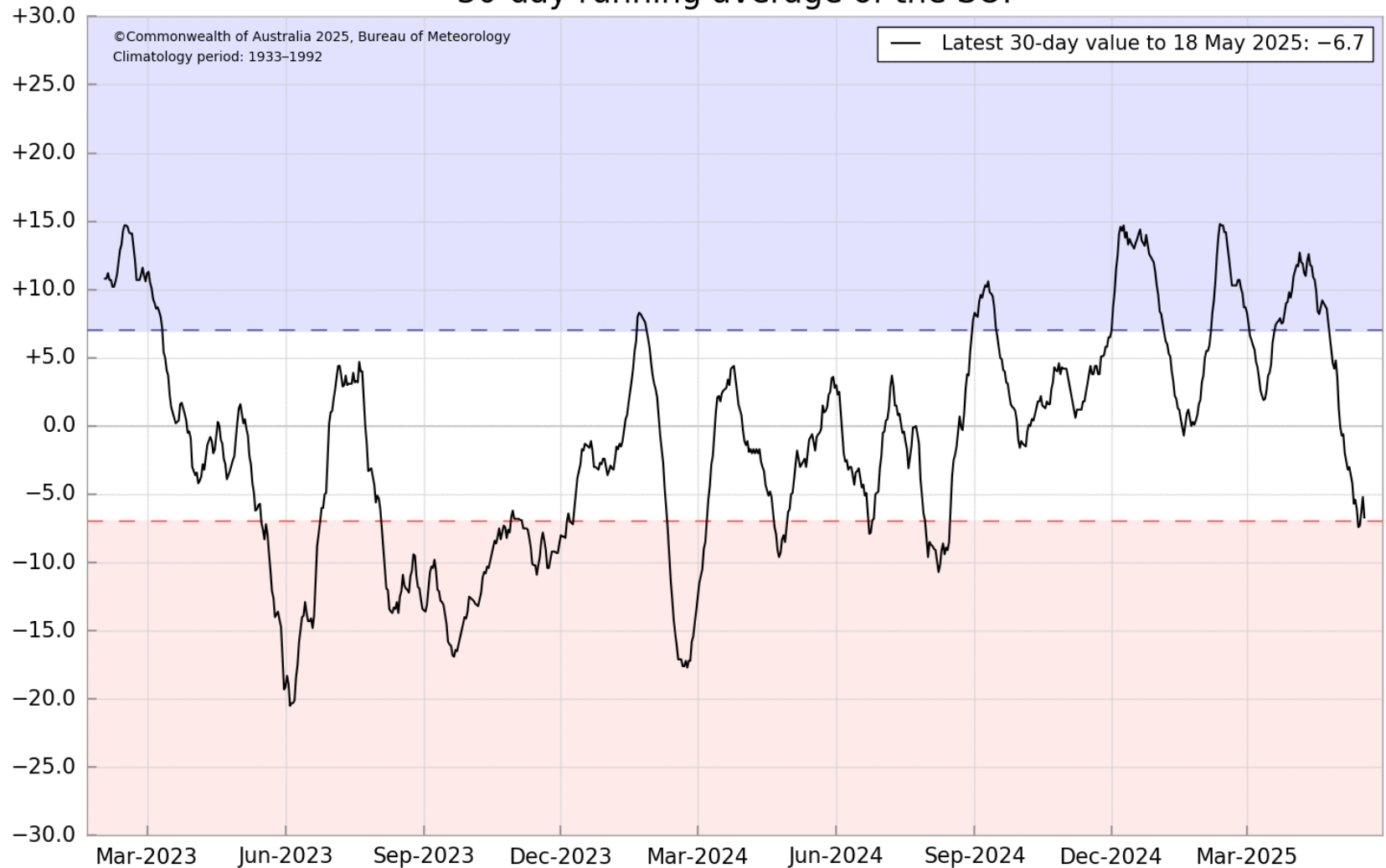
Forecast date: 21/05/2025

Base period: 1981-2018 Model run date: 18/05/2025



# Southern Oscillation Index

30-day running average of the SOI

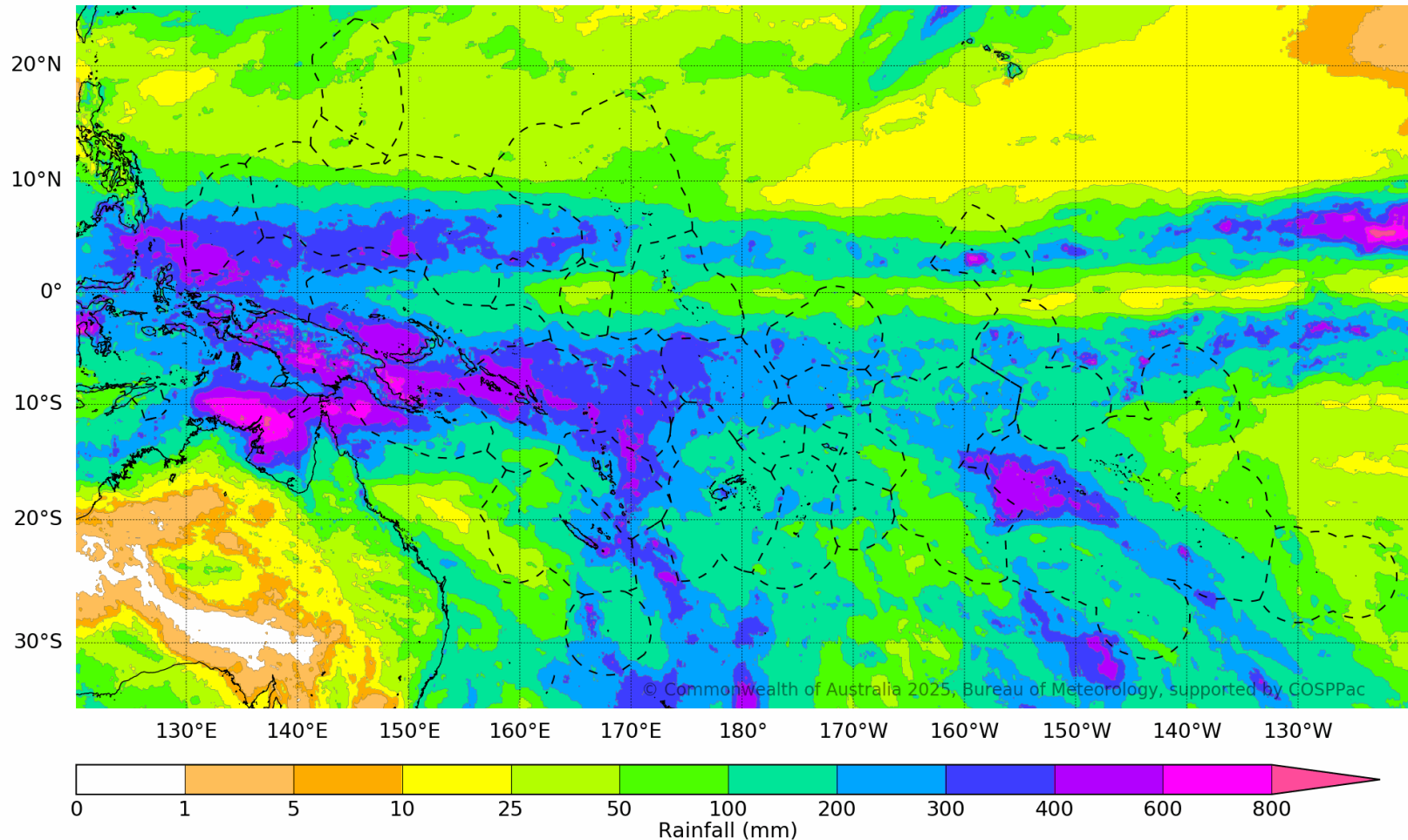


# Satellite Rainfall –April 2025

1-month total rainfall ending April 2025

Data source: MSWEP

Issued: 07/05/2025



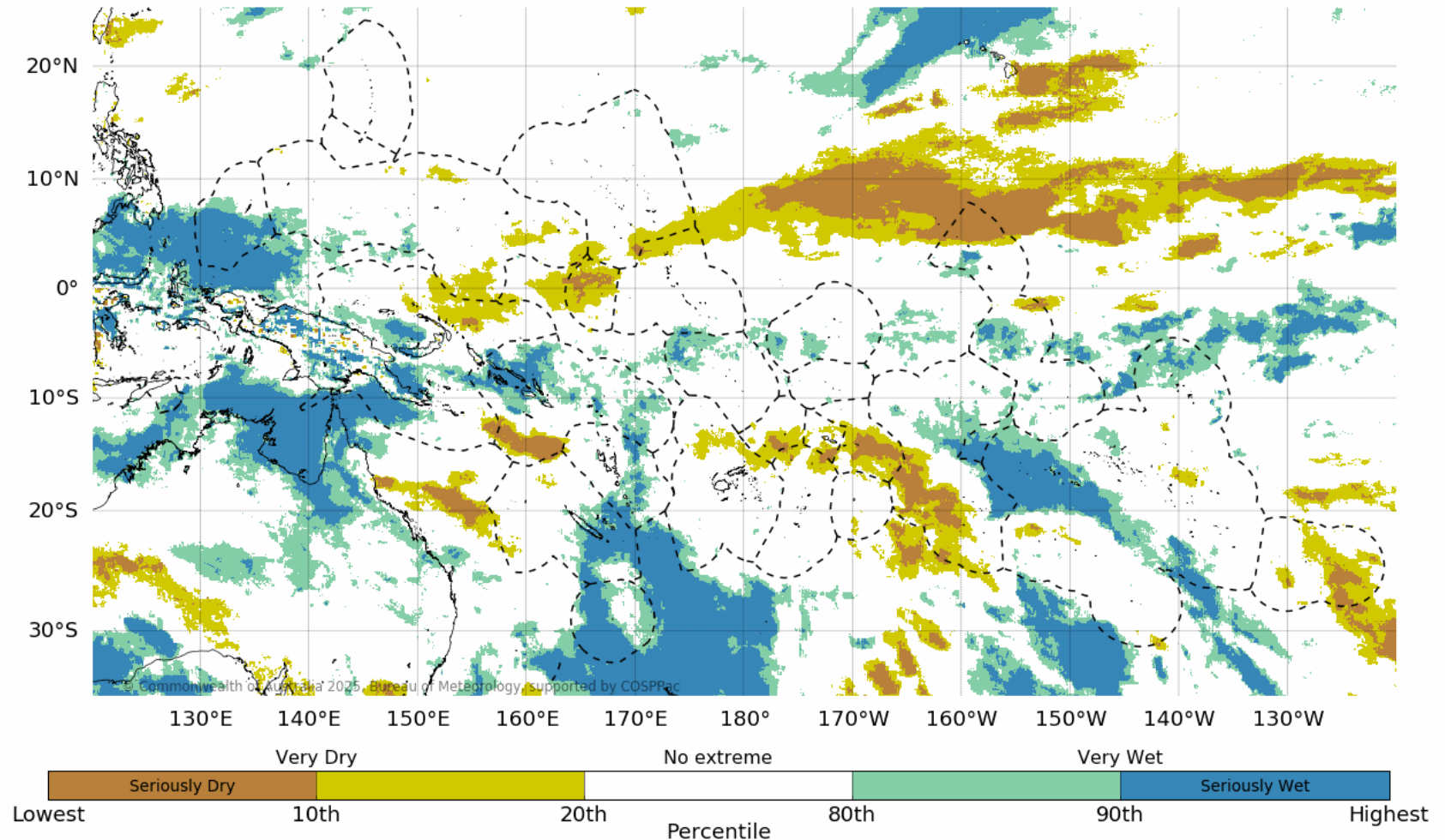
Dashed EEZ shapefile data extracted from Flanders Marine Institute (2019), Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (200NM), version 11. Available online at <http://www.marineregions.org/>.

# Rainfall Extremes –April 2025

Data source: MSWEP  
Base period: 1981-2021

1-month Rainfall status to April 2025

Method: Percentile  
Issued: 07/05/2025



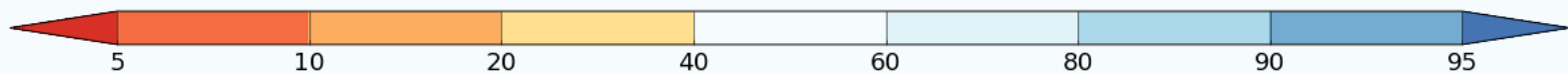
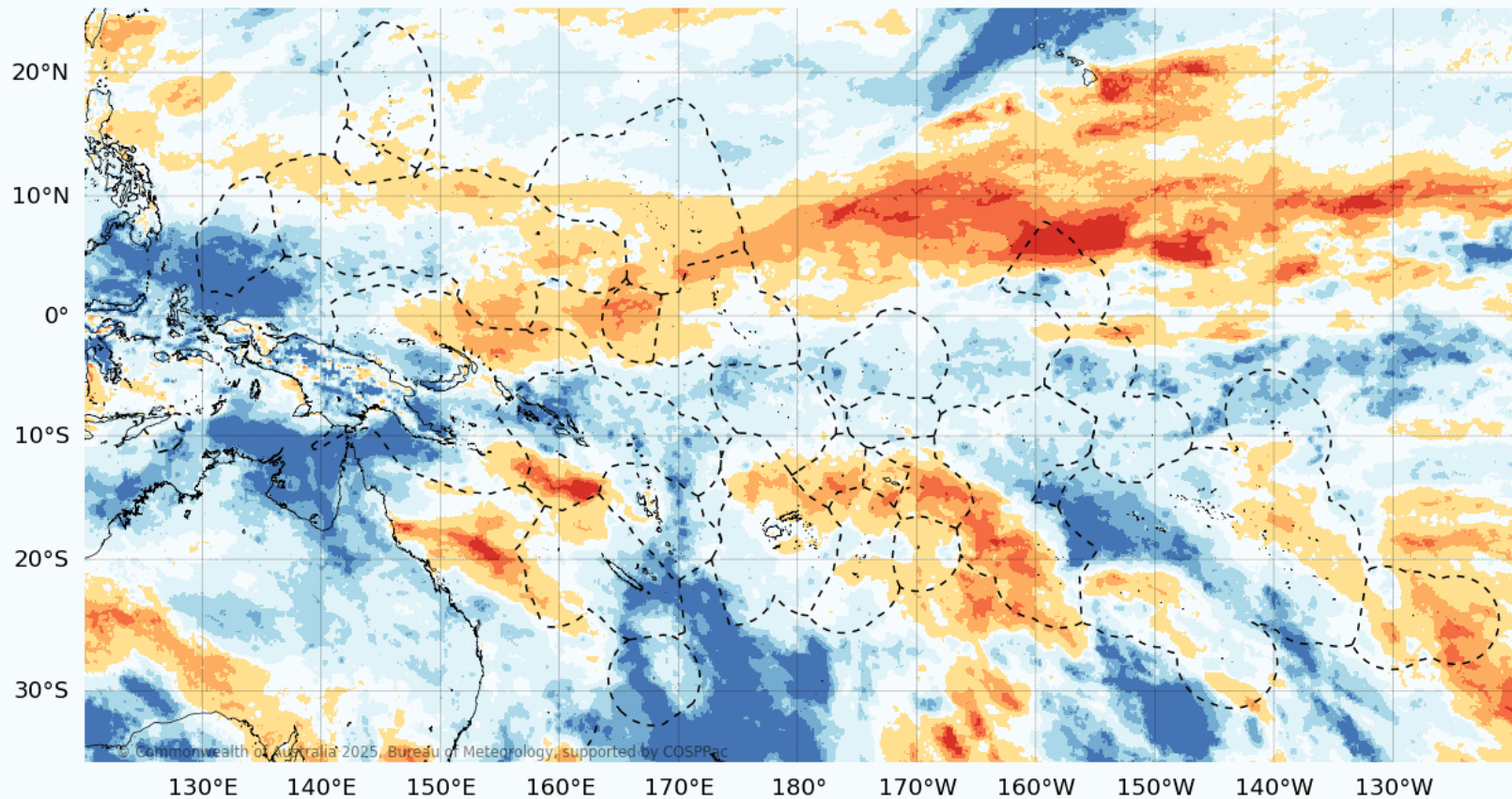
-- -- EEZ border V11 (Flanders Marine Institute, 2019).

# Rainfall Extremes –April 2025

Data source: MSWEP  
Base period: 1981-2021

1-month Percentile to end of April 2025

Issued: 07/05/2025



Percentile

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

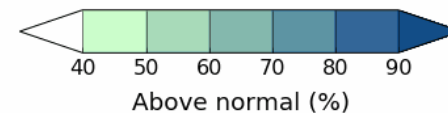
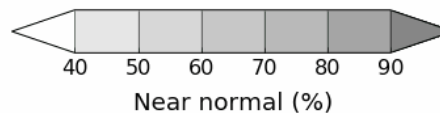
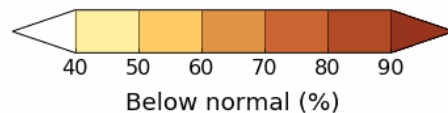
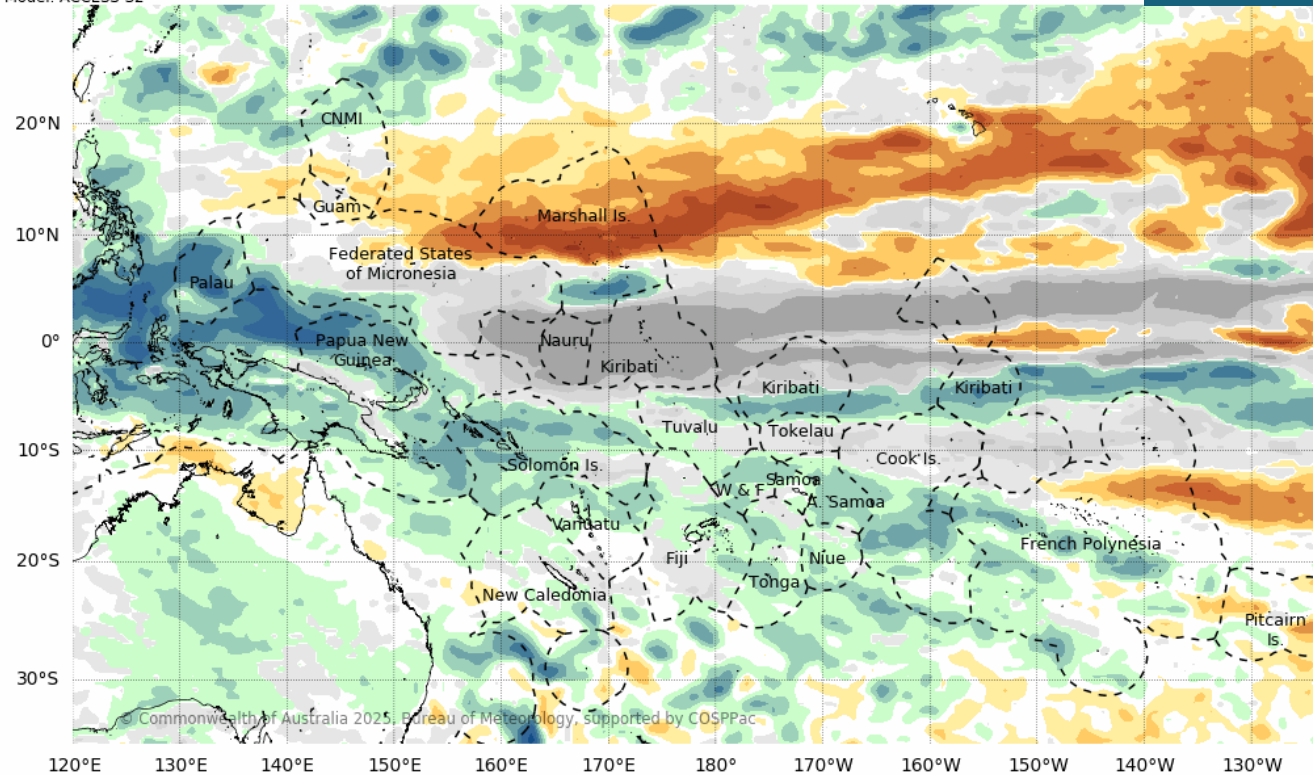


# Model Rainfall Predictions (JJA)

Tercile rainfall probabilities for  
June to August 2025

ACCESS-S2

Base period: 1981-2018  
Model: ACCESS-S2



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

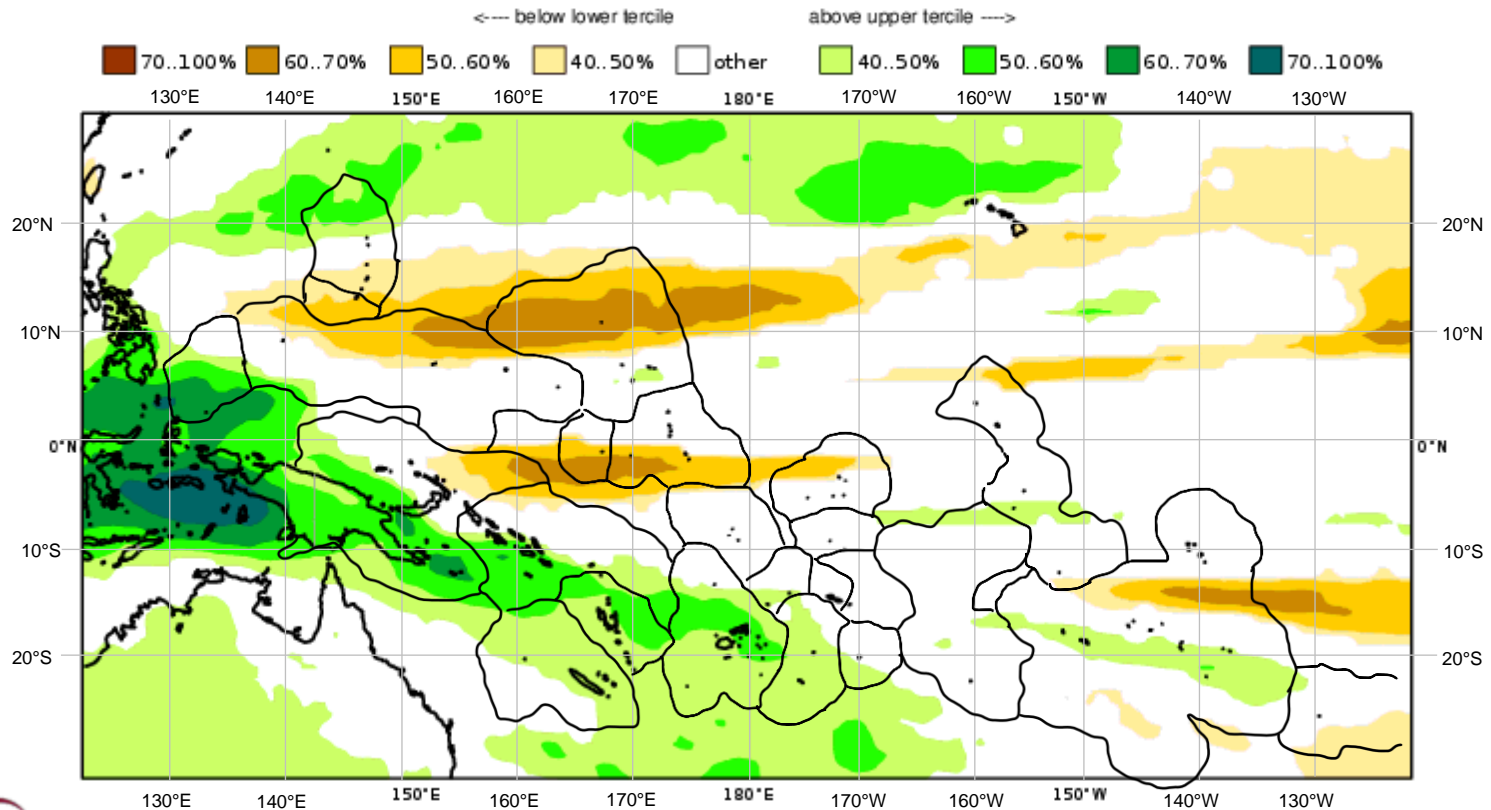
# Model Rainfall Predictions (JJA)

C3S

C3S multi-system seasonal forecast ECMWF/Met Office/Météo-France/CMCC/DWD/NCEP/JMA/ECCC/BOM  
 Prob(most likely category of precipitation) JJA 2025

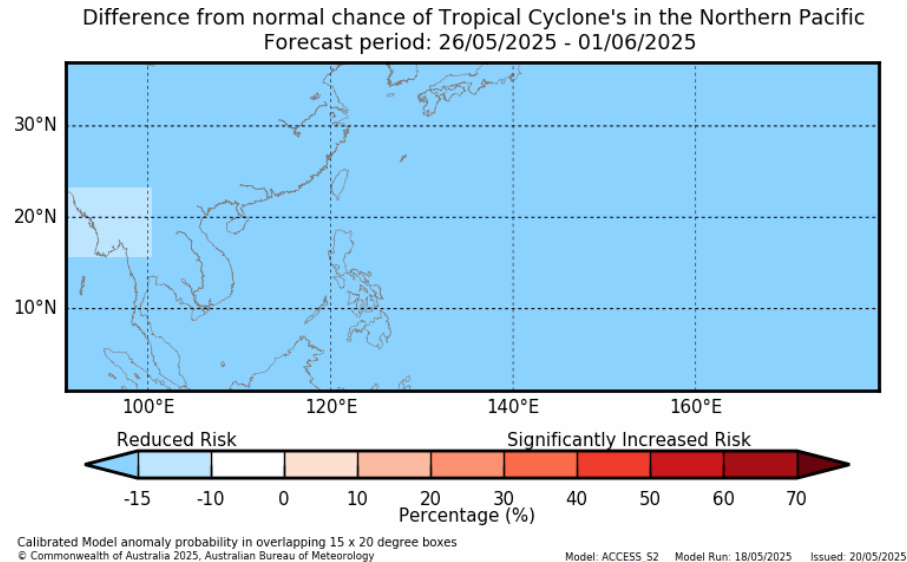
Nominal forecast start: 01/05/25

Unweighted mean



# TC Outlooks – Two Weeks

## North Pacific



## South Pacific

**Out of season: November to April.**