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ENSO Update – OCOF 217

14 October 2025

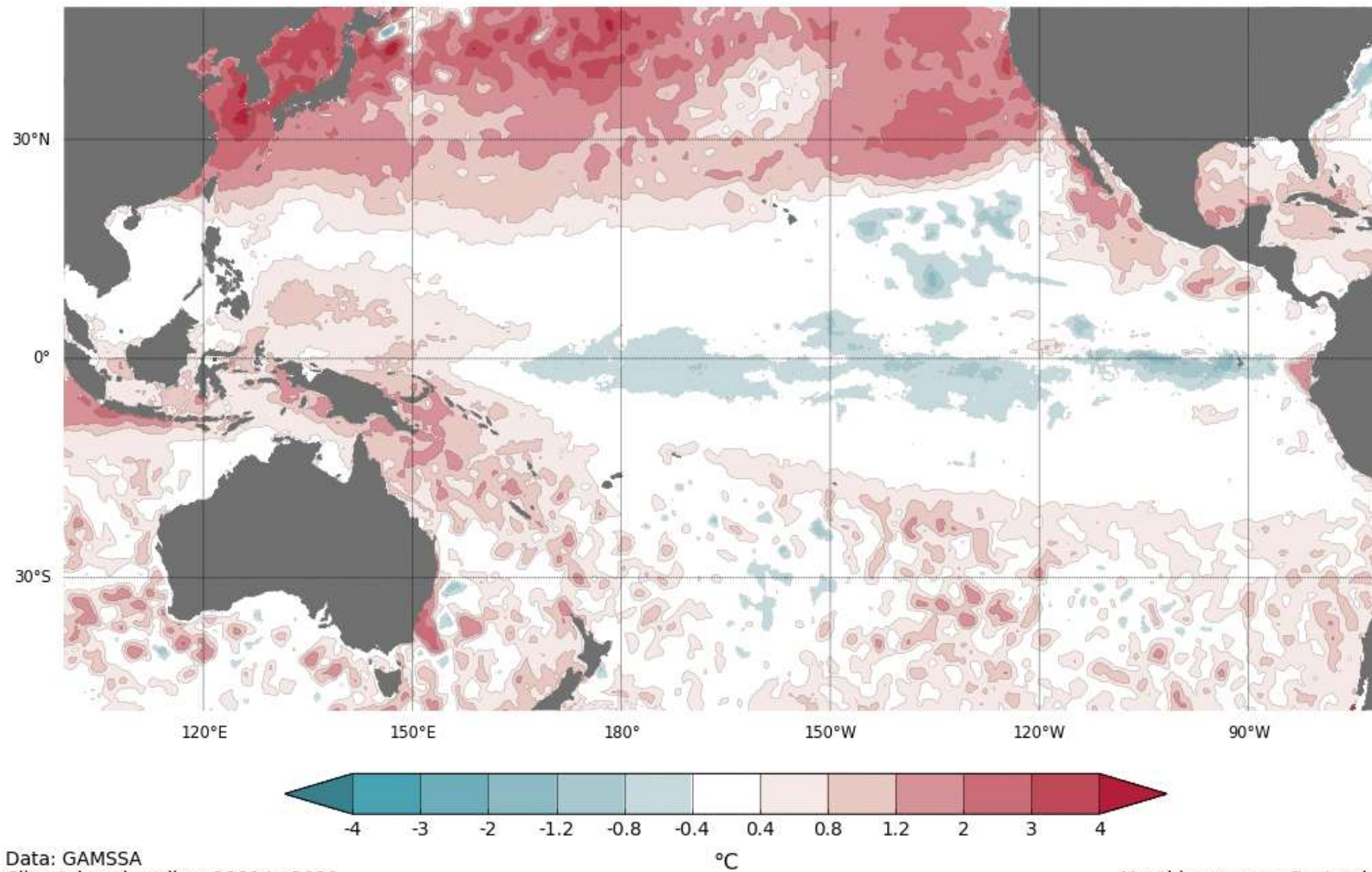


ENSO Update

- Global sea surface temperatures (SSTs) remain substantially above average. August 2025 SST's were the globally the third warmest on record.
- The El Niño–Southern Oscillation (ENSO) remains neutral. Sustained (3 consecutive monthly) monthly Nino3.4 values of below -0.8°C would be considered indicative of La Niña, along with an observed atmospheric response.
- SSTs in the central tropical Pacific have cooled over the past month, with the most recent value of Niño3.4 (-0.79°C for the week ending 12 October).
- The Bureau's models forecasts neutral ENSO conditions (neither El Niño nor La Niña) over the coming months.

September 2025 SSTs

Sea surface temperature anomaly: 01/09/2025 to 30/09/2025

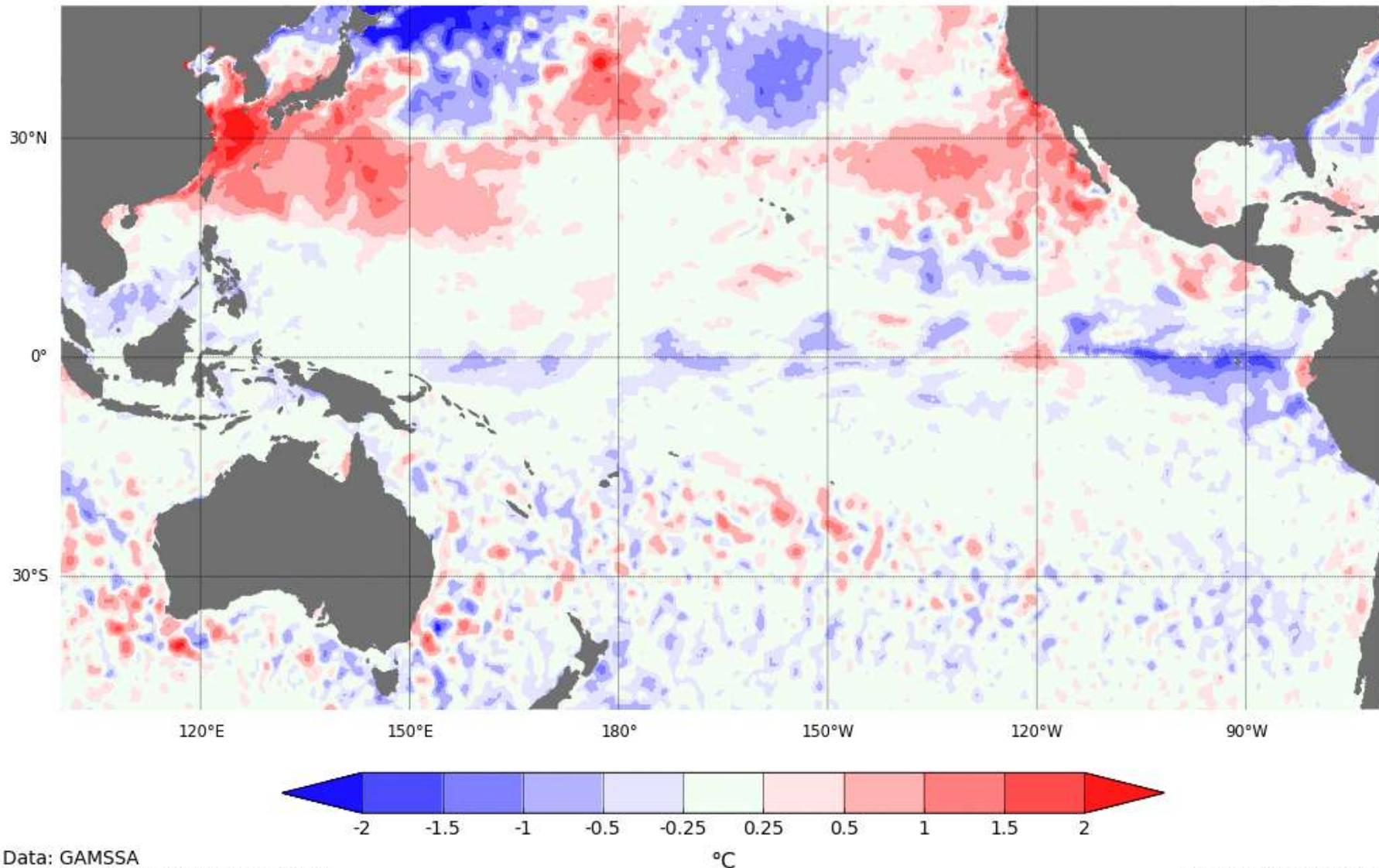


Data: GAMSSA
Climatology baseline: 1991 to 2020
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Monthly average: September 2025
Created: 03/10/2025
<http://www.bom.gov.au/climate>

SSTs difference to last month

Change in the monthly SST anomaly: September-2025 - August-2025



Data: GAMSSA
Climatology baseline: 1991 to 2020
© Commonwealth of Australia 2025, Australian Bureau of Meteorology

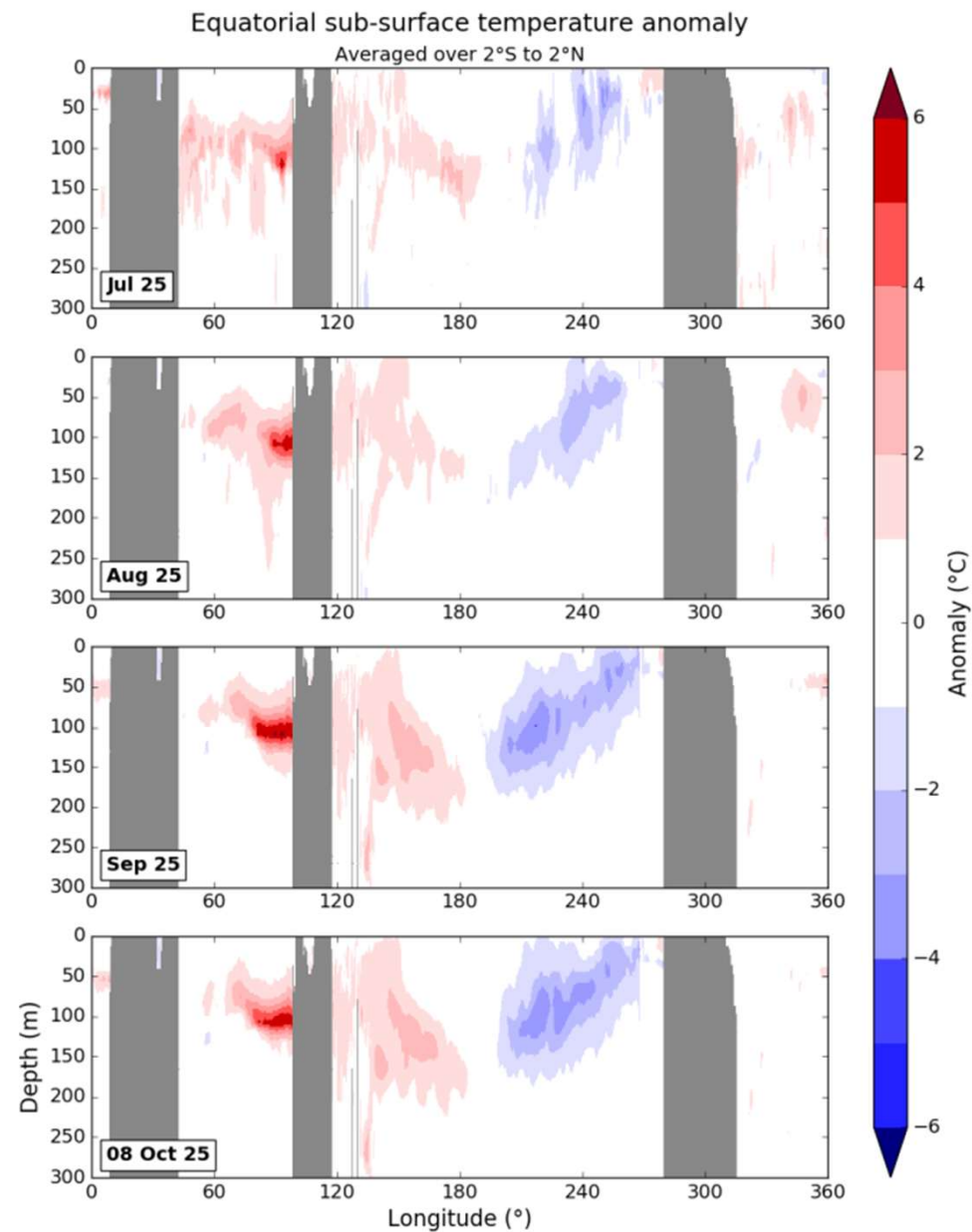
The Bureau of Meteorology

<http://www.bom.gov.au/climate>

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Anomaly monthly difference
Created: 03/10/2025

Equatorial Pacific Sub-surface Profile

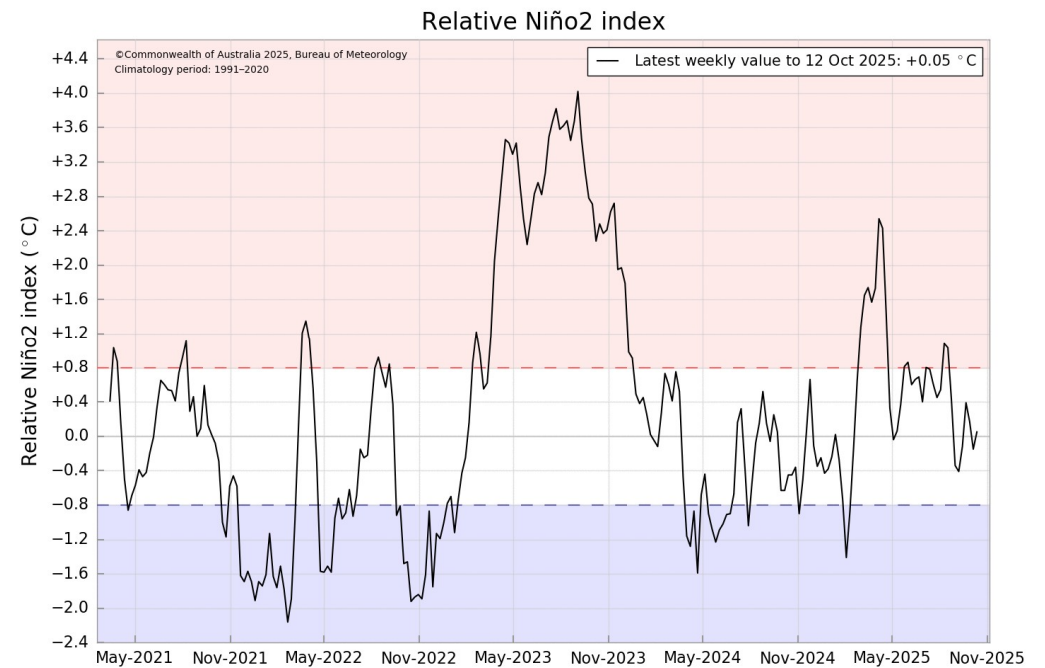
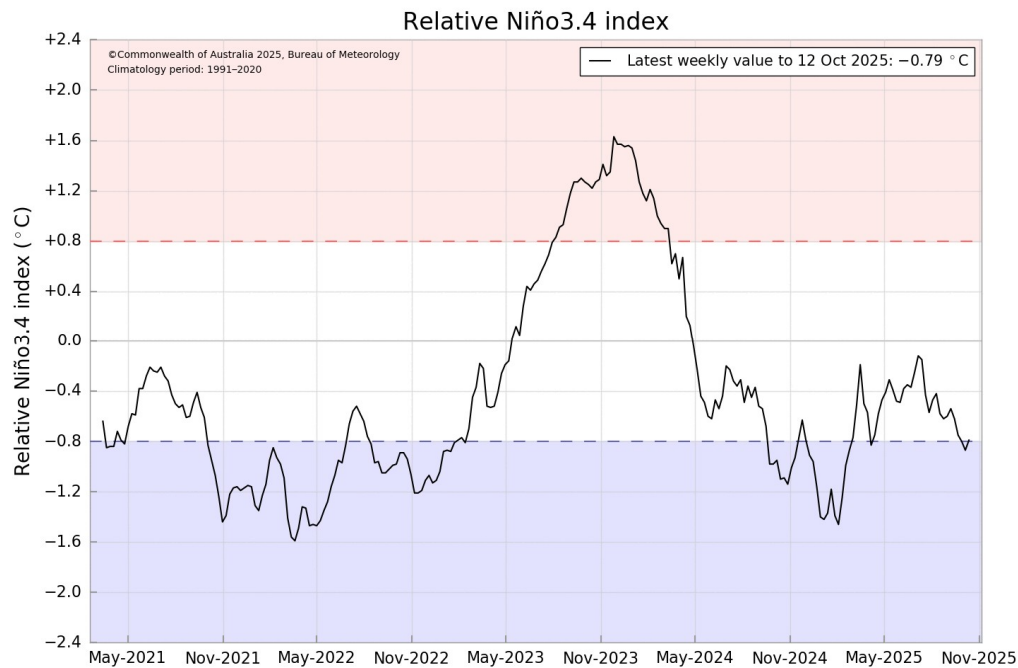
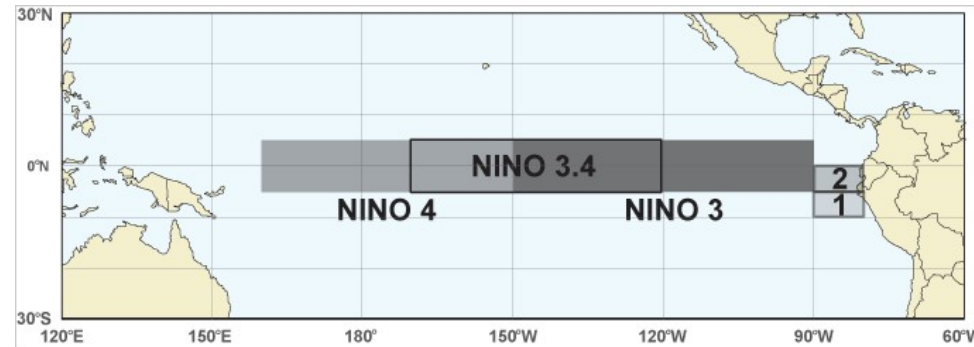


Created: 13/10/2025

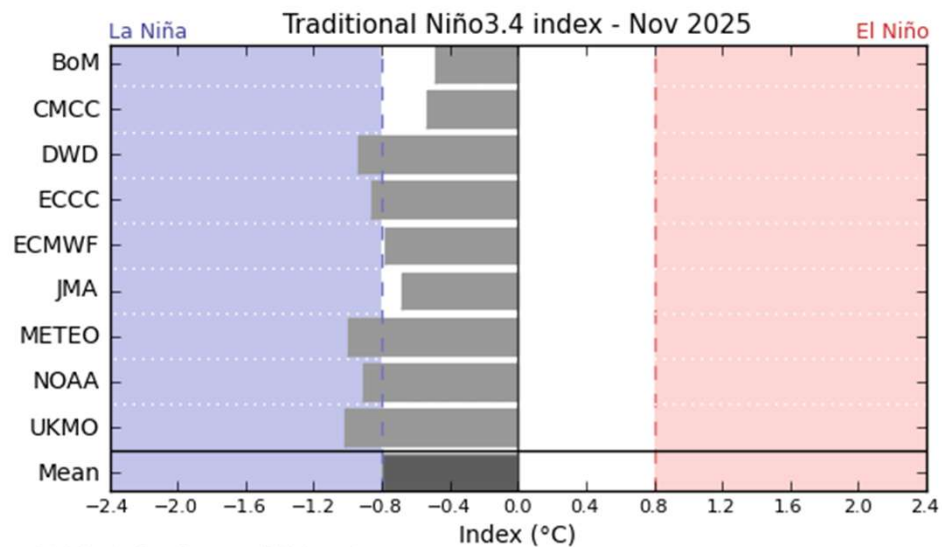
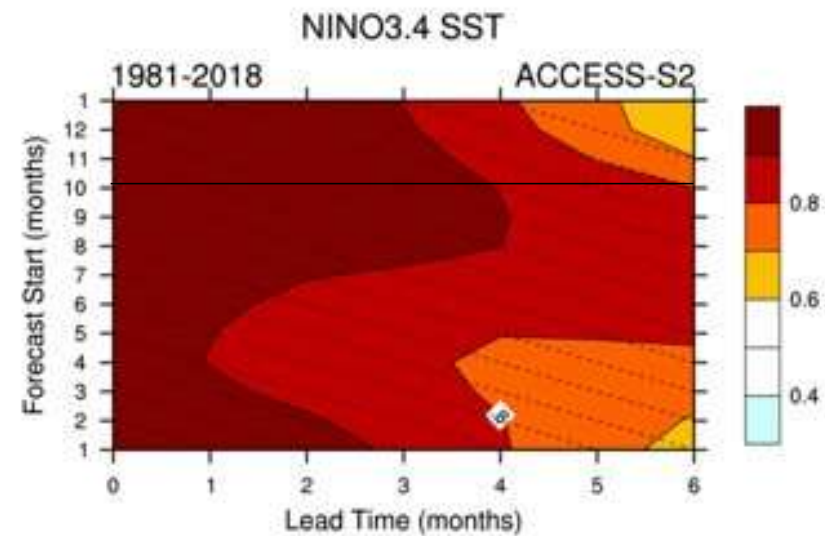
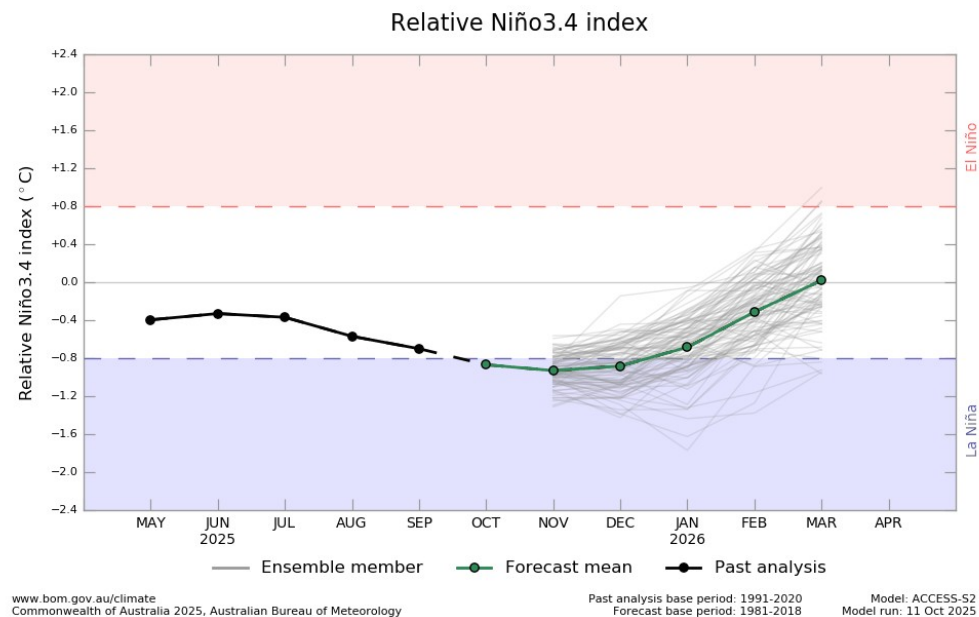
© Commonwealth of Australia 2025, Australian Bureau of Meteorology

Data: ACCESS-S2 ocean reanalysis
Climatology baseline: 1981 to 2018

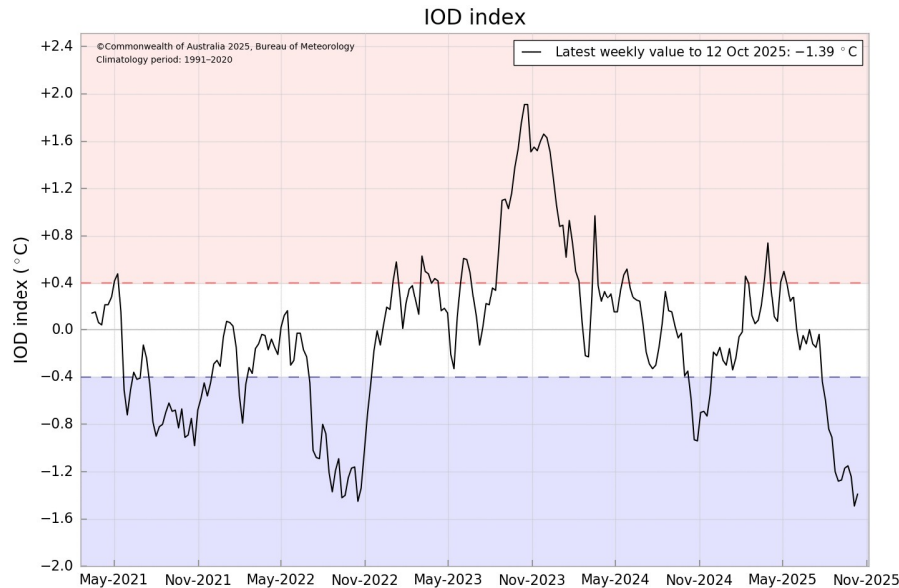
Observed Relative NINO Indices



Relative ENSO Outlook



Indian Ocean Dipole: Monitoring and Forecast



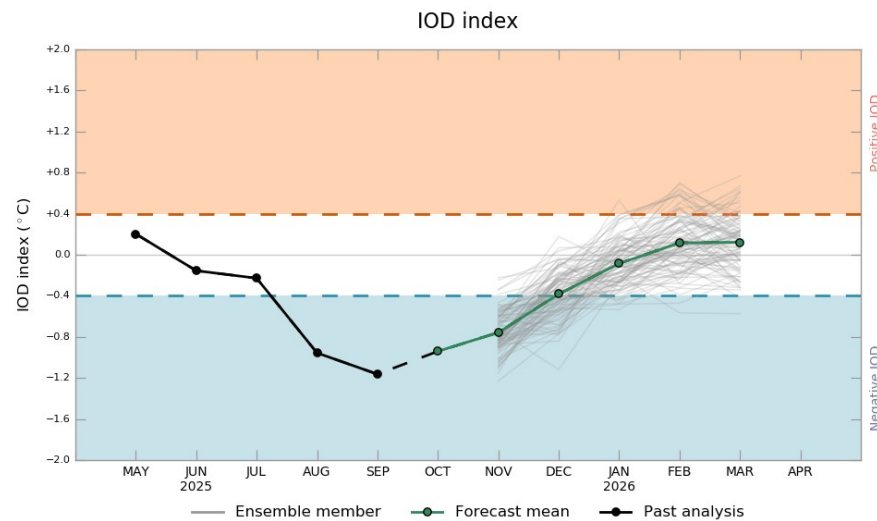
The peak of the **IOD** is **Sep-Oct** in the southern hemisphere. Decaying with the onset of the monsoon.



IOD negative is associated with **increased rainfall** across the far western Pacific.



IOD positive is associated with **decreased rainfall** across the far western Pacific.



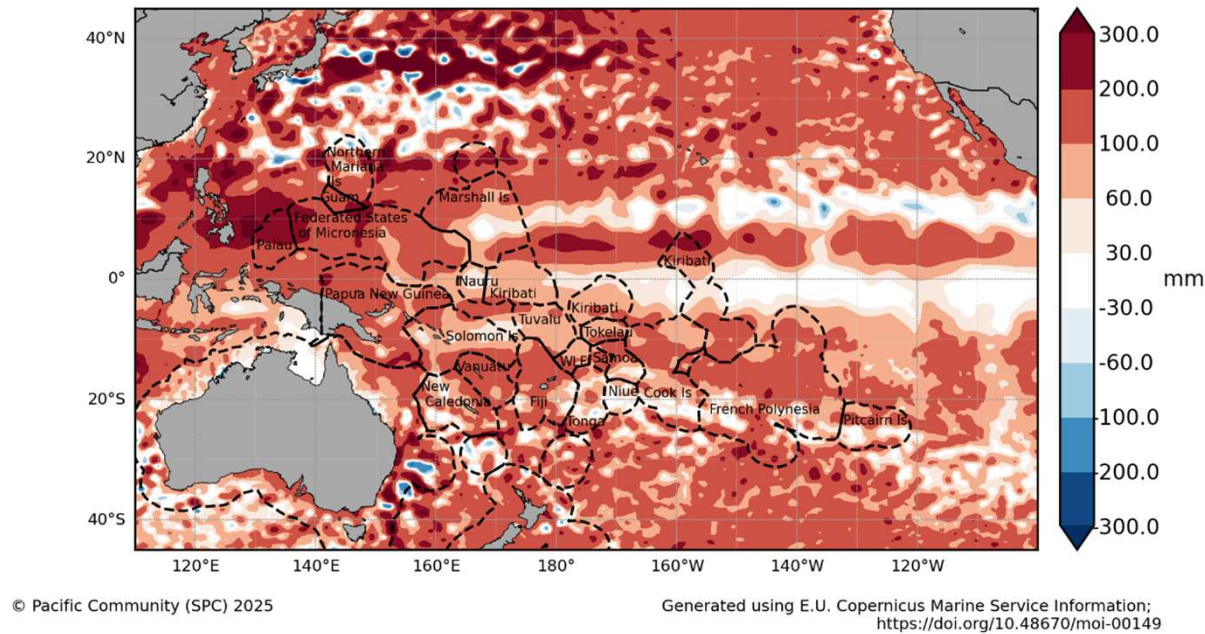
www.bom.gov.au/climate
Commonwealth of Australia 2025, Australian Bureau of Meteorology

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

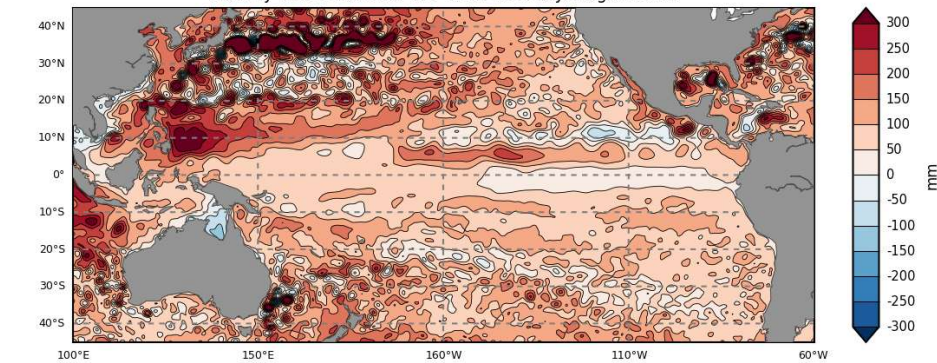
Model: ACCESS-S2
Model run: 11 Oct 2025

September 2025 Sea Level Anomaly

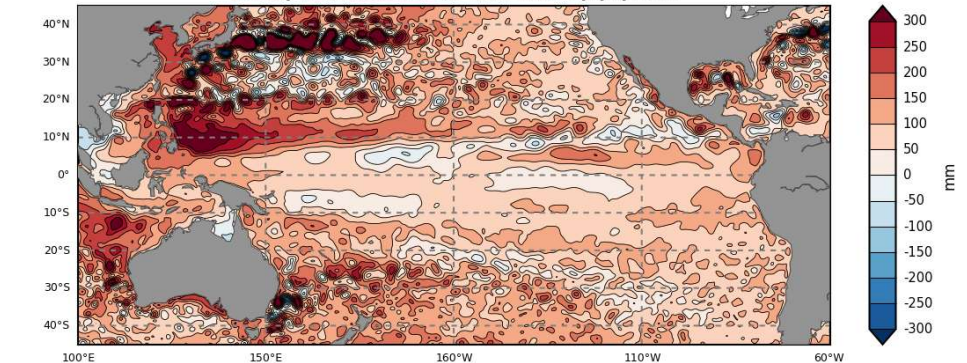
Pacific Islands
Monthly Sea Level Anomaly: September 2025



Pacific Ocean
Monthly Near Real Time Sea Level Anomaly: August 2025



Pacific Ocean
Monthly Near Real Time Sea Level Anomaly: July 2025

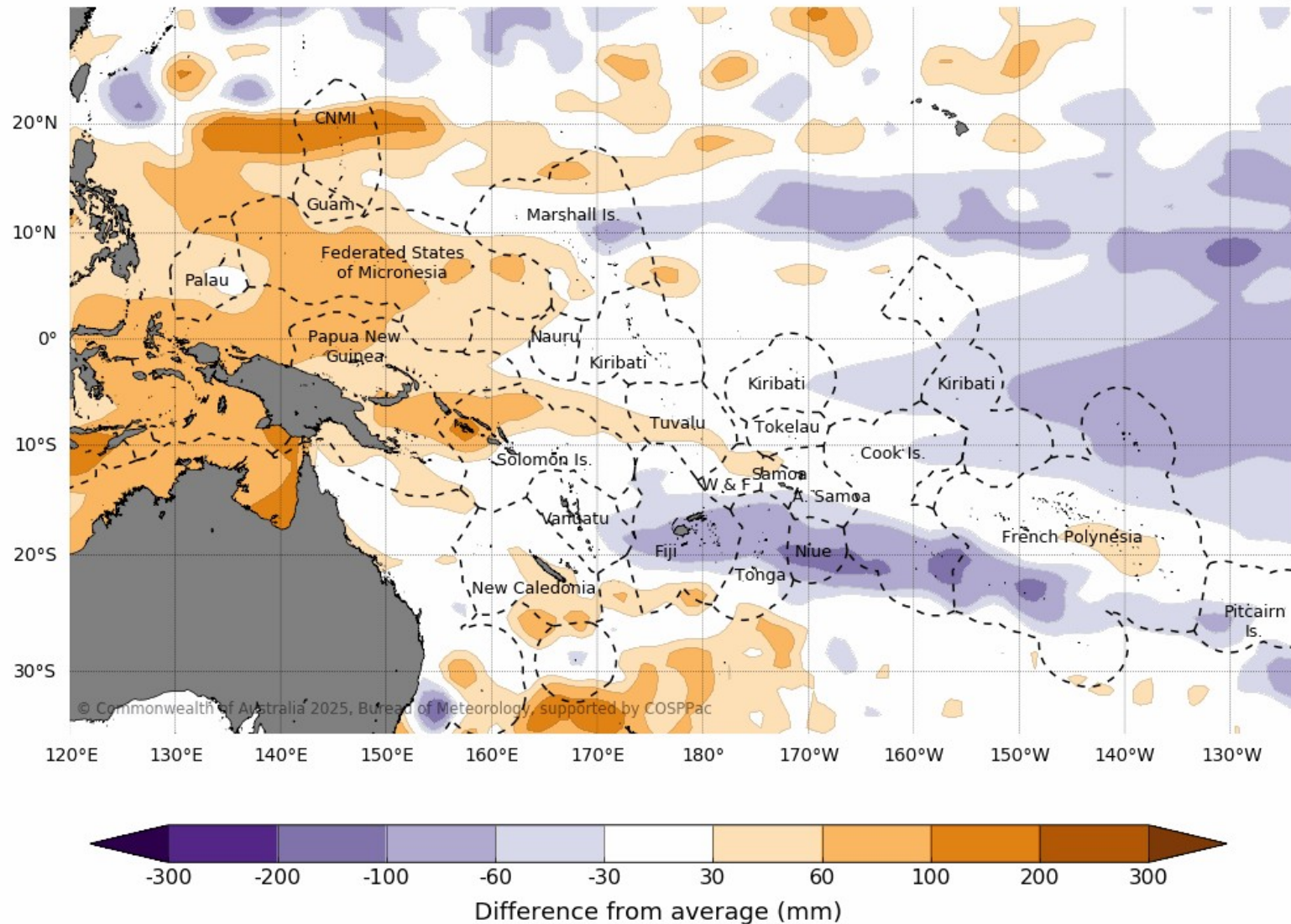


Seasonal Outlook: Sea Surface Height Anomaly

Difference from average sea surface height forecast for
November 2025 to January 2026

Base period: 1981-2018
Model: ACCESS-S2

Model run: 11/10/2025
Issued: 13/10/2025

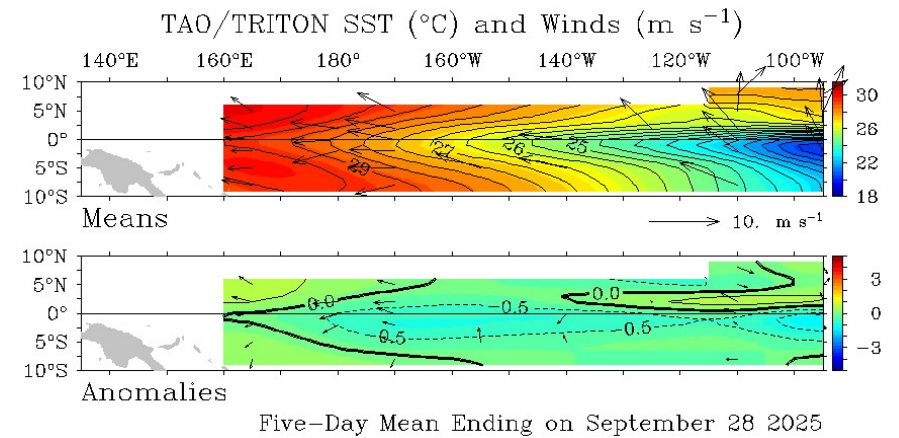
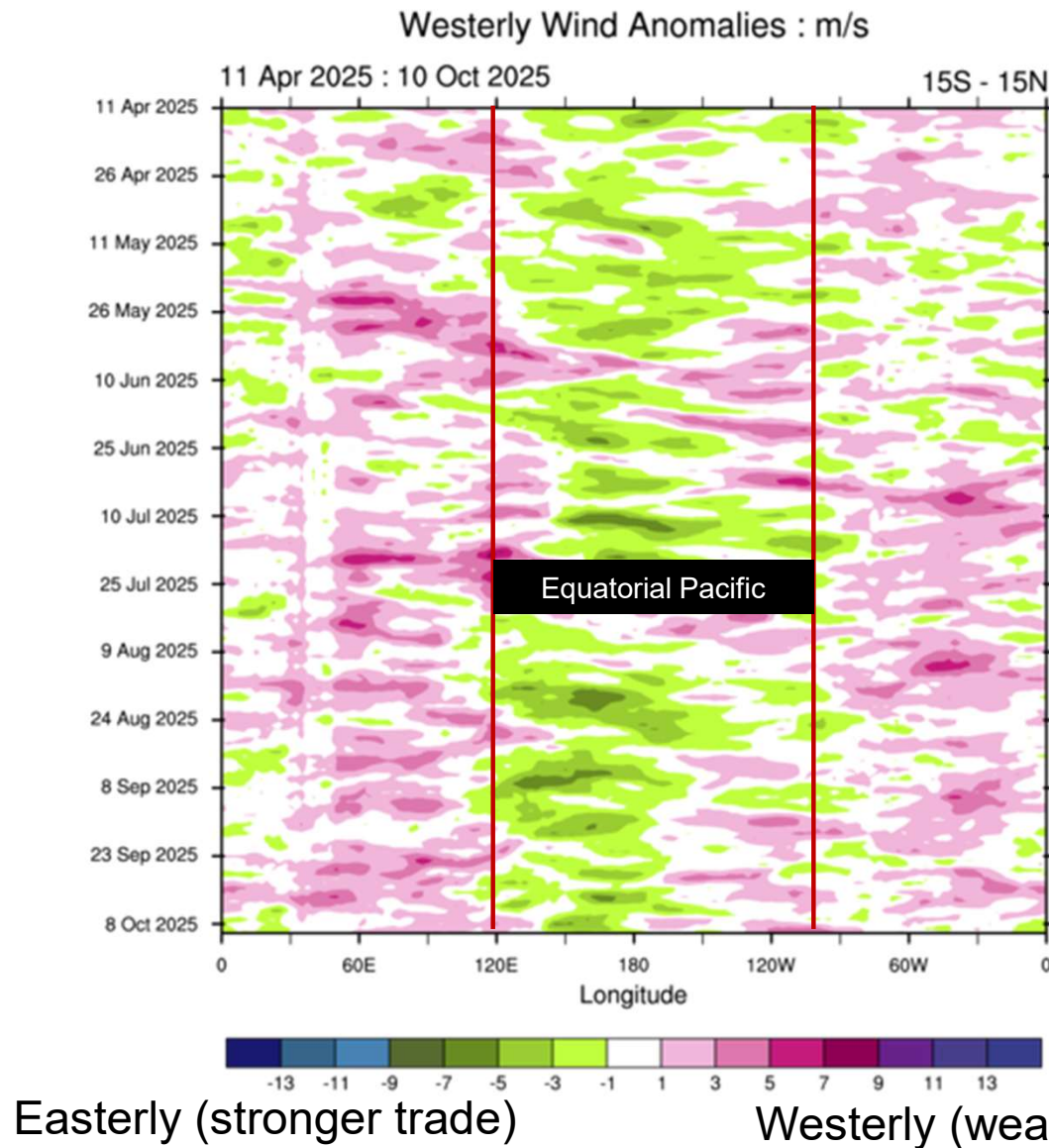


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Atmosphere Outlook



Wind Anomalies



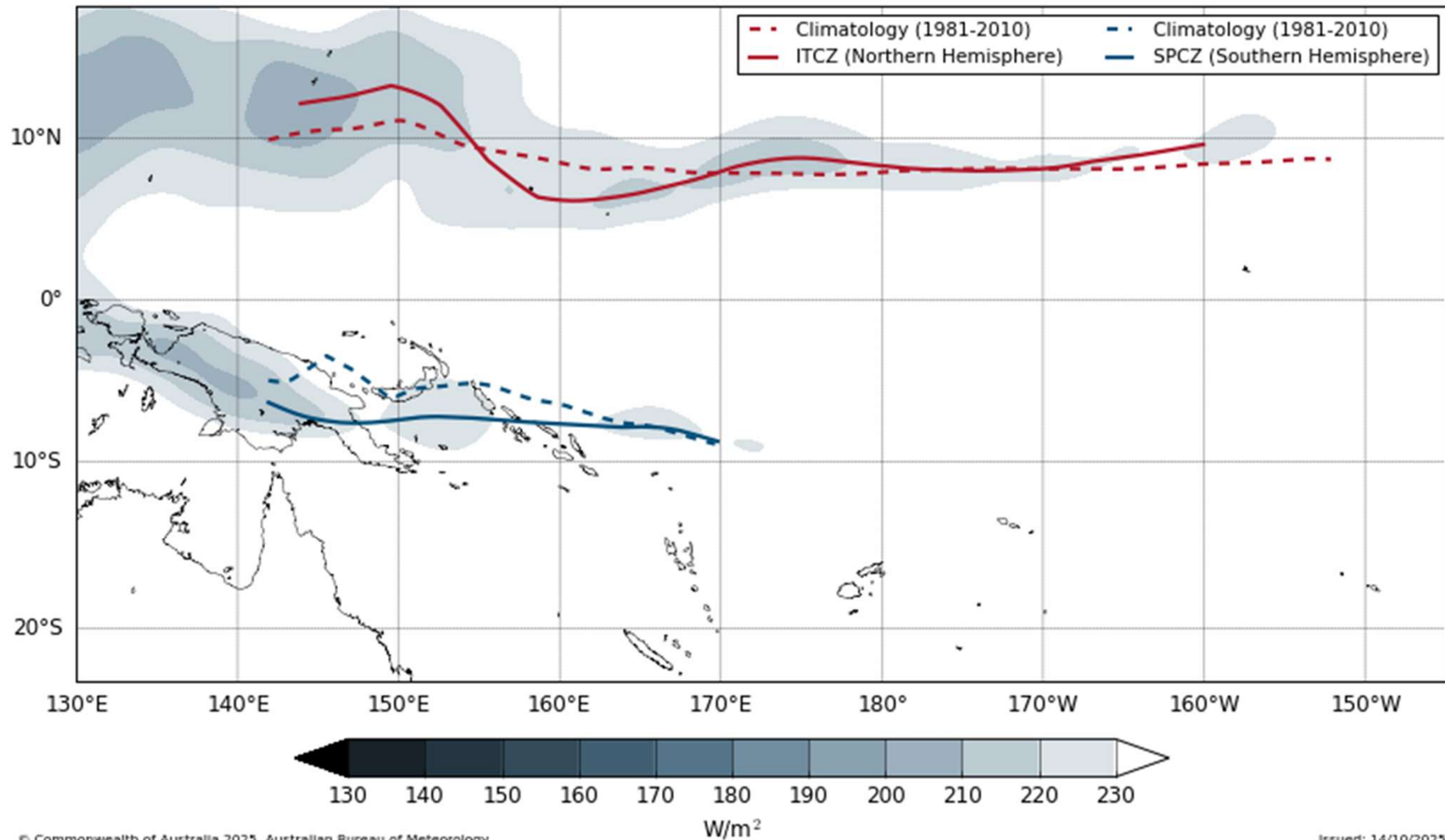
Weaker trade winds (pink) allow for the development of more clouds and potential for rain.



Stronger trade winds (green) hinders cloud development and the potential for rain.

ITCZ and SPCZ

30 Day Average Outgoing Longwave Radiation (OLR) minimum to 2025-10-11



More clouds

Less clouds

Madden – Julian Oscillation



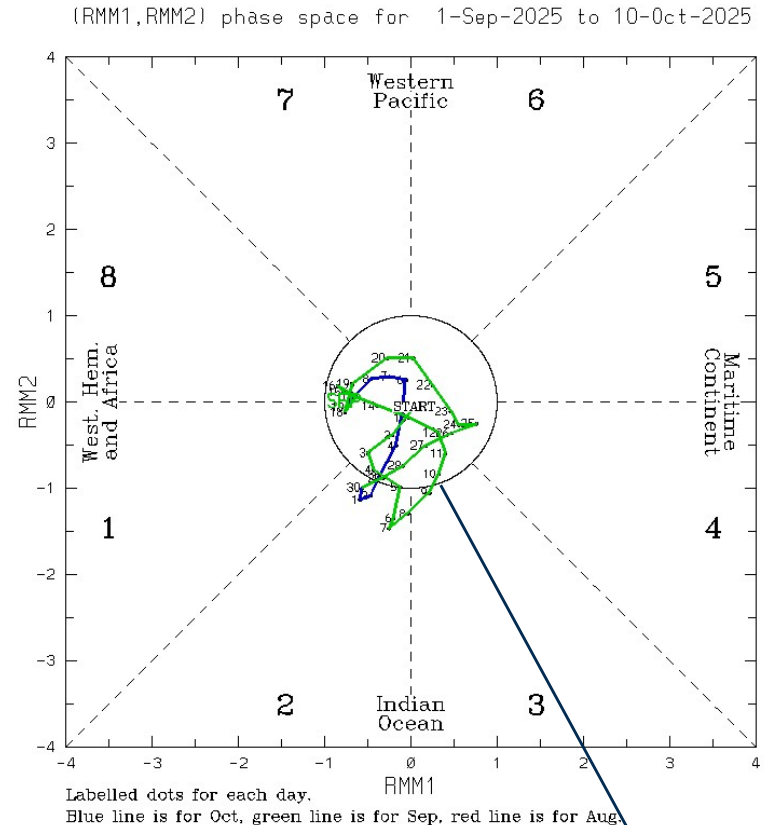
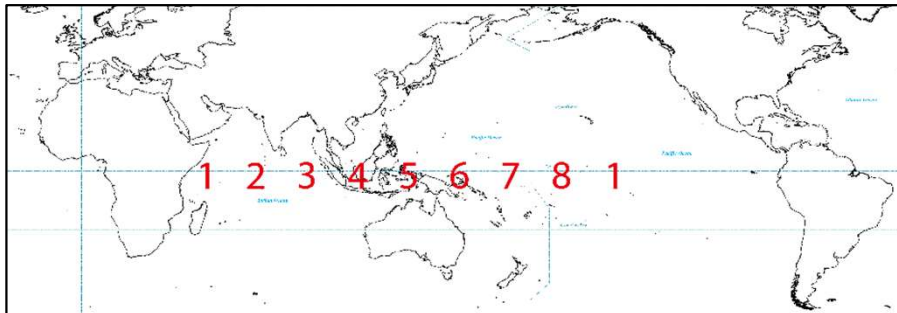
The **MJO** is currently weak.



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.

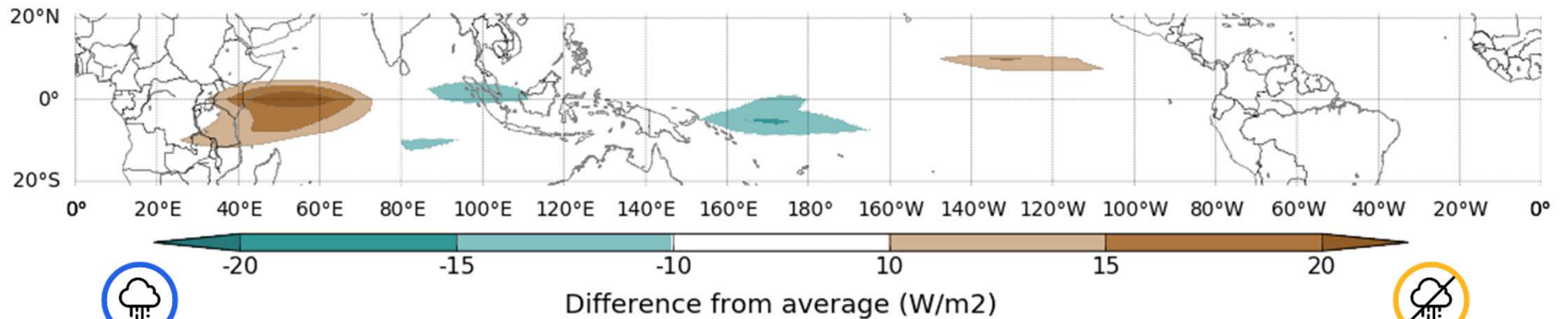
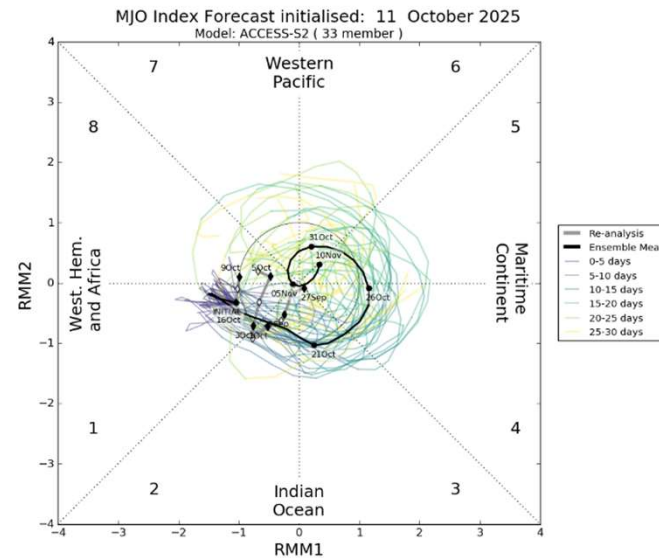
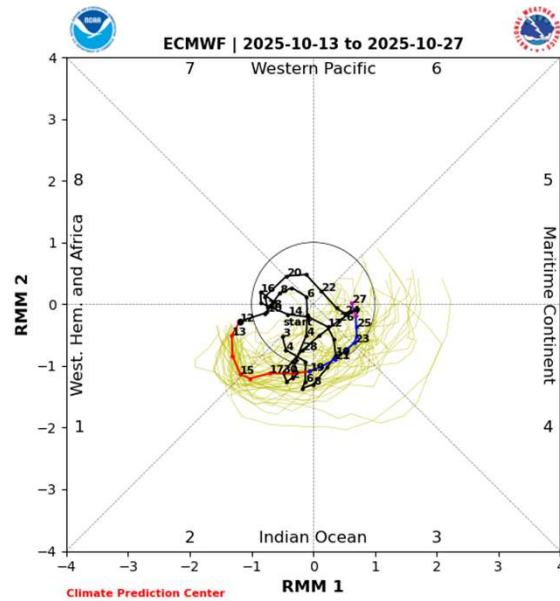


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Unit circle:
If inside the unit circle the MJO signal is weak

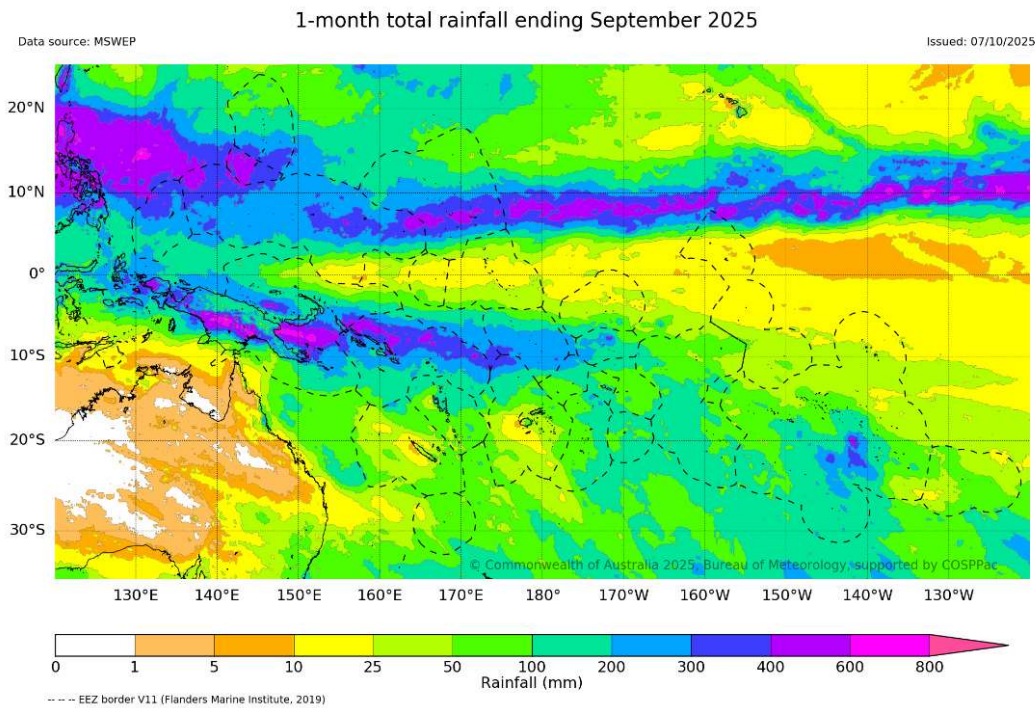
Madden – Julian Oscillation

The forecast is for the MJO to remain weak over the coming fortnight.

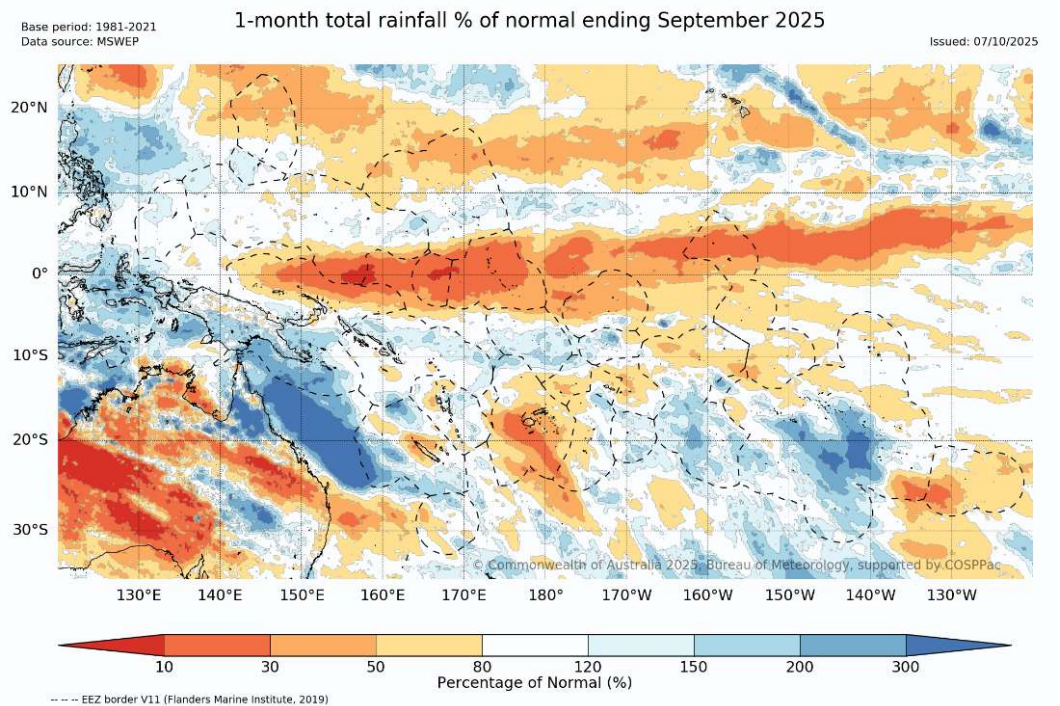


Observed Rainfall – September 2025

Observed



Percentile

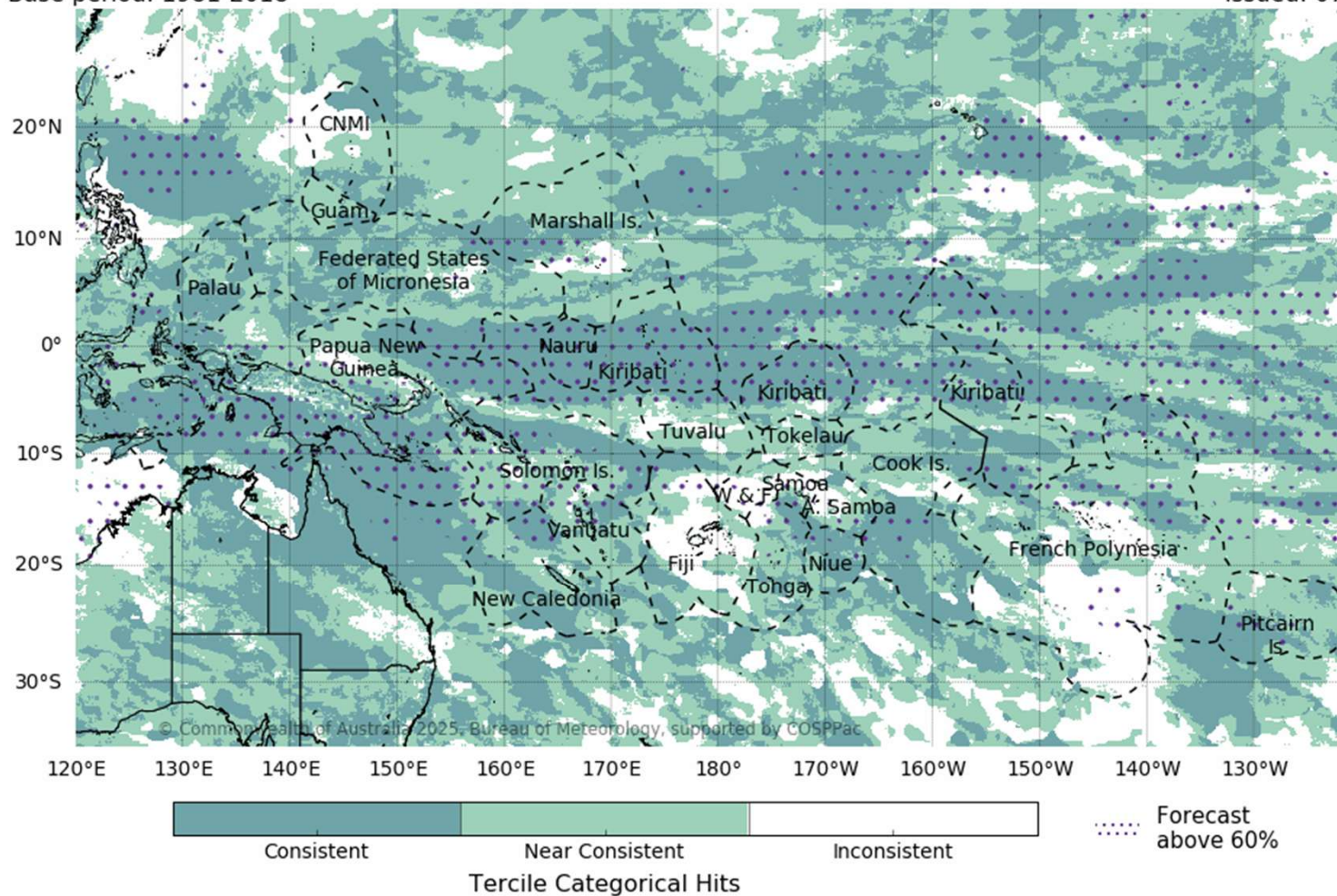


Forecast Verification - September

Near real-time tercile verification hit rate: rainfall September 2025

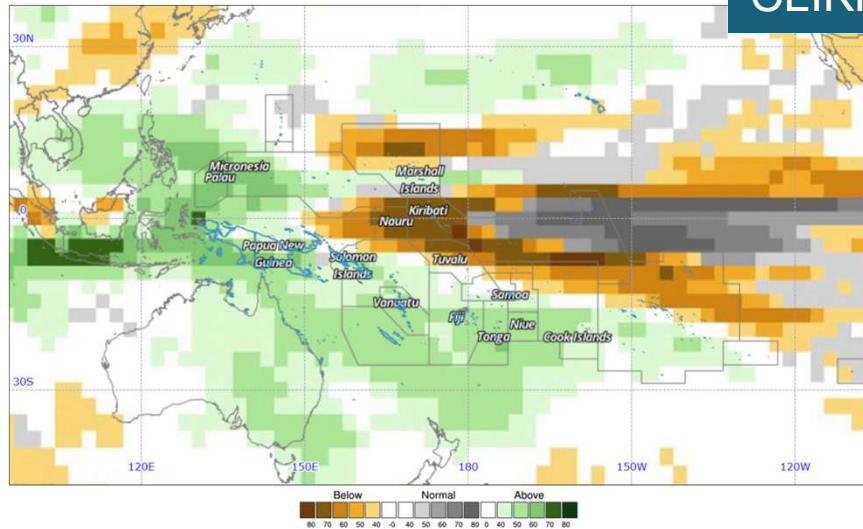
Data source: ACCESS-S2
Observations: MSWEP
Base period: 1981-2018

Model Run: 01/09/2025
Issued: 07/10/2025



Model Rainfall Predictions

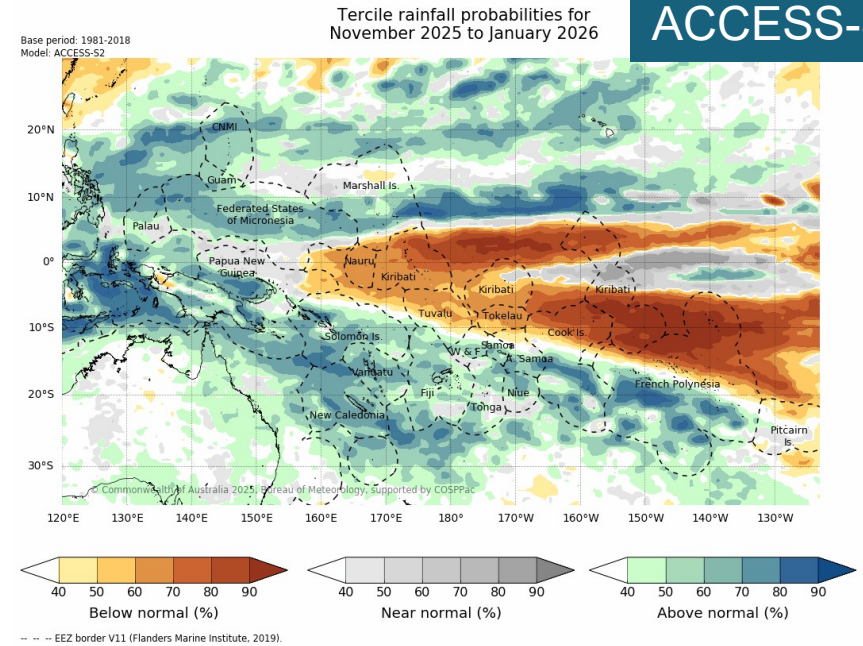
CLIKP



Year: 2025, Season: OND, Lead Month: 3, Method: GAUS
 Model: APCC, BOM, CMCC, CMA, ECCO, NASA, NCEP, PNU
 Generated using CLIKP (2025-10-14)

© APEC Climate Center

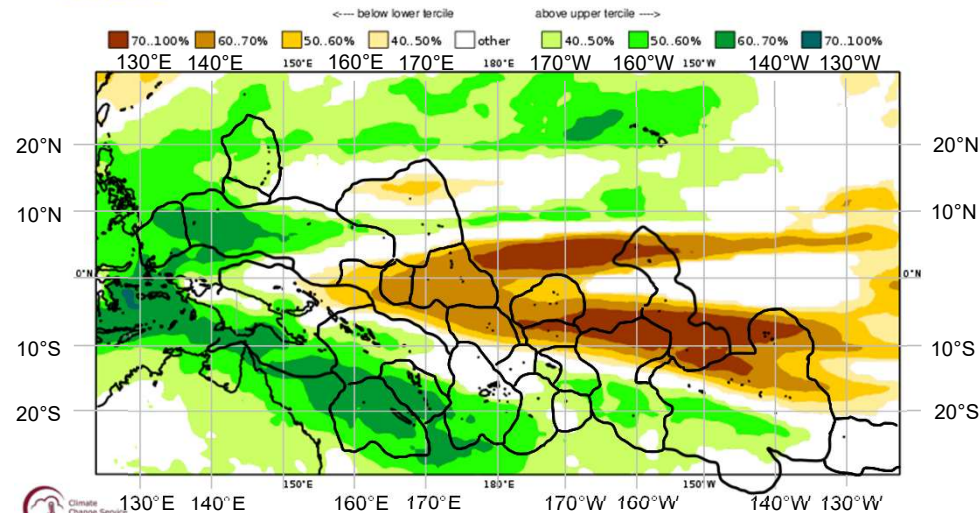
ACCESS-S2



C3S multi-system seasonal forecast ECMWF/Met Office/Météo-France/CMCC/DWD/NCEP/JMA/ECCC/BOM
 Prob(most likely category of precipitation)
 Nominal forecast start: 01/10/25
 Unweighted mean

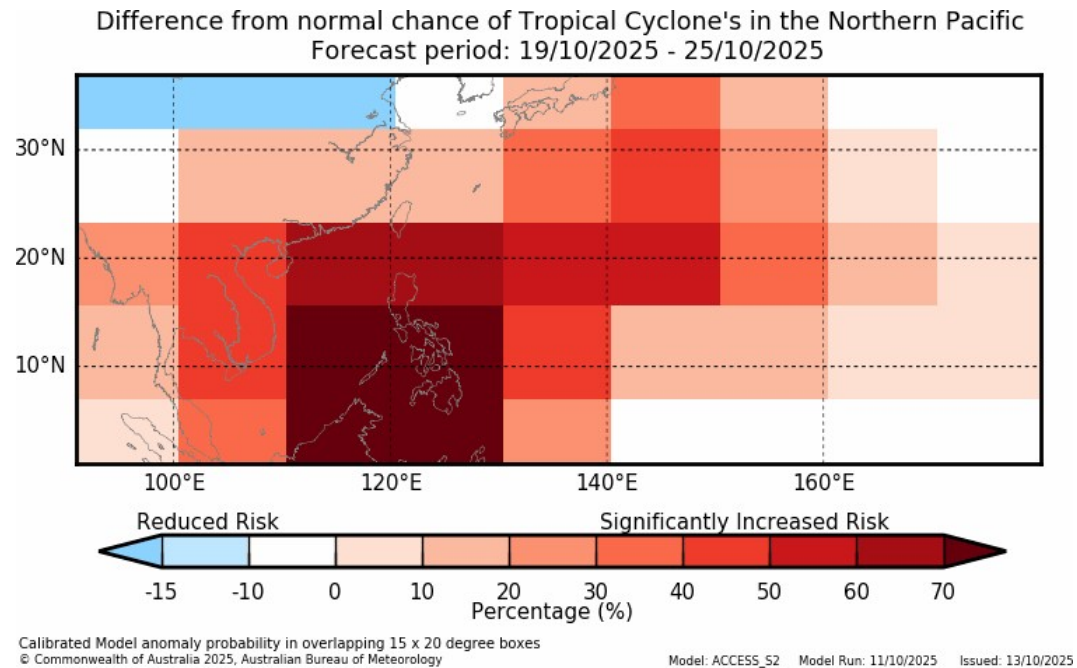
NDJ 2025/26

C3S

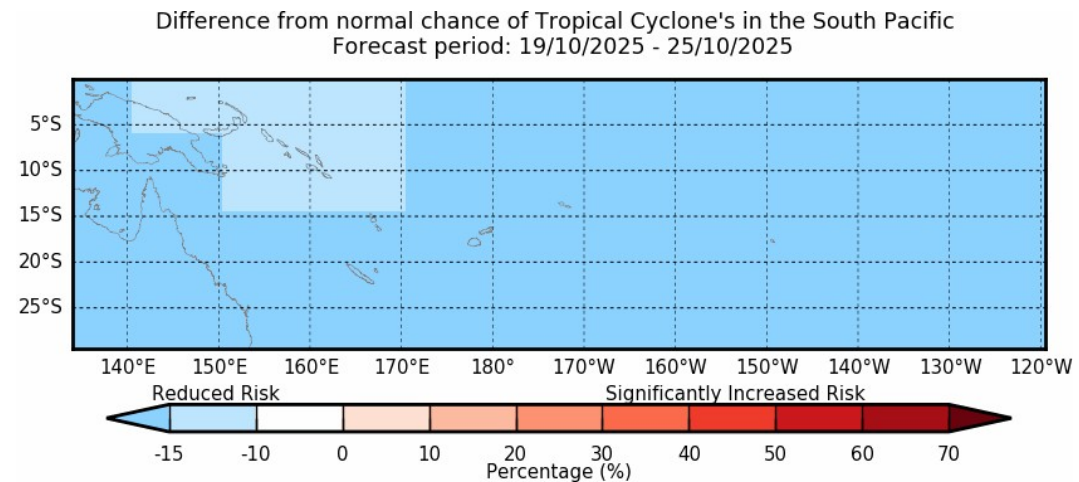


TC Outlooks – Two Weeks

North Pacific



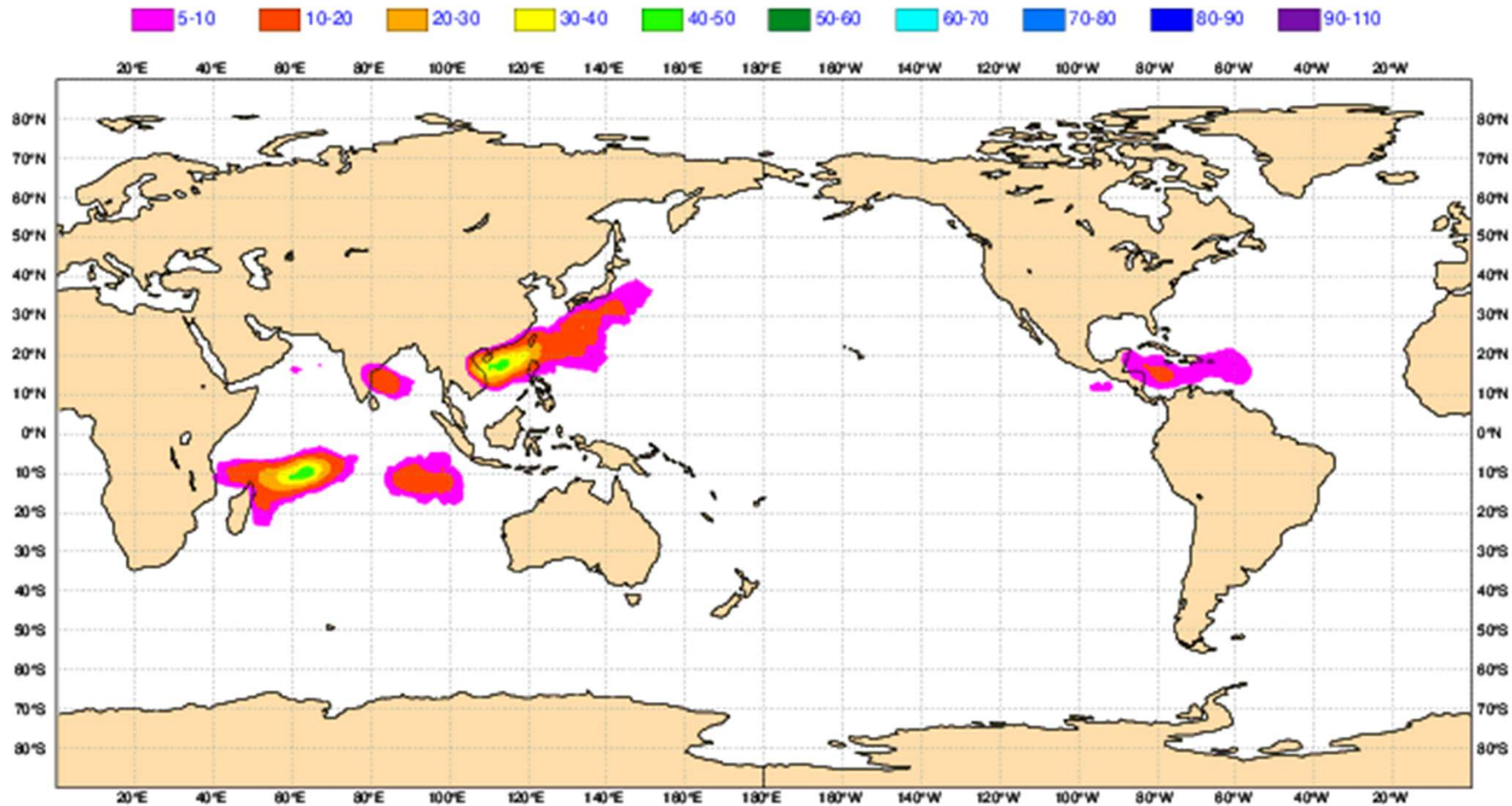
South Pacific



Weekly ECMWF TC Forecast

Weekly mean Tropical Storm Strike Probability. Date: 20251013 0 UTC t+(168-336)

Probability of a TS passing within 300km radius

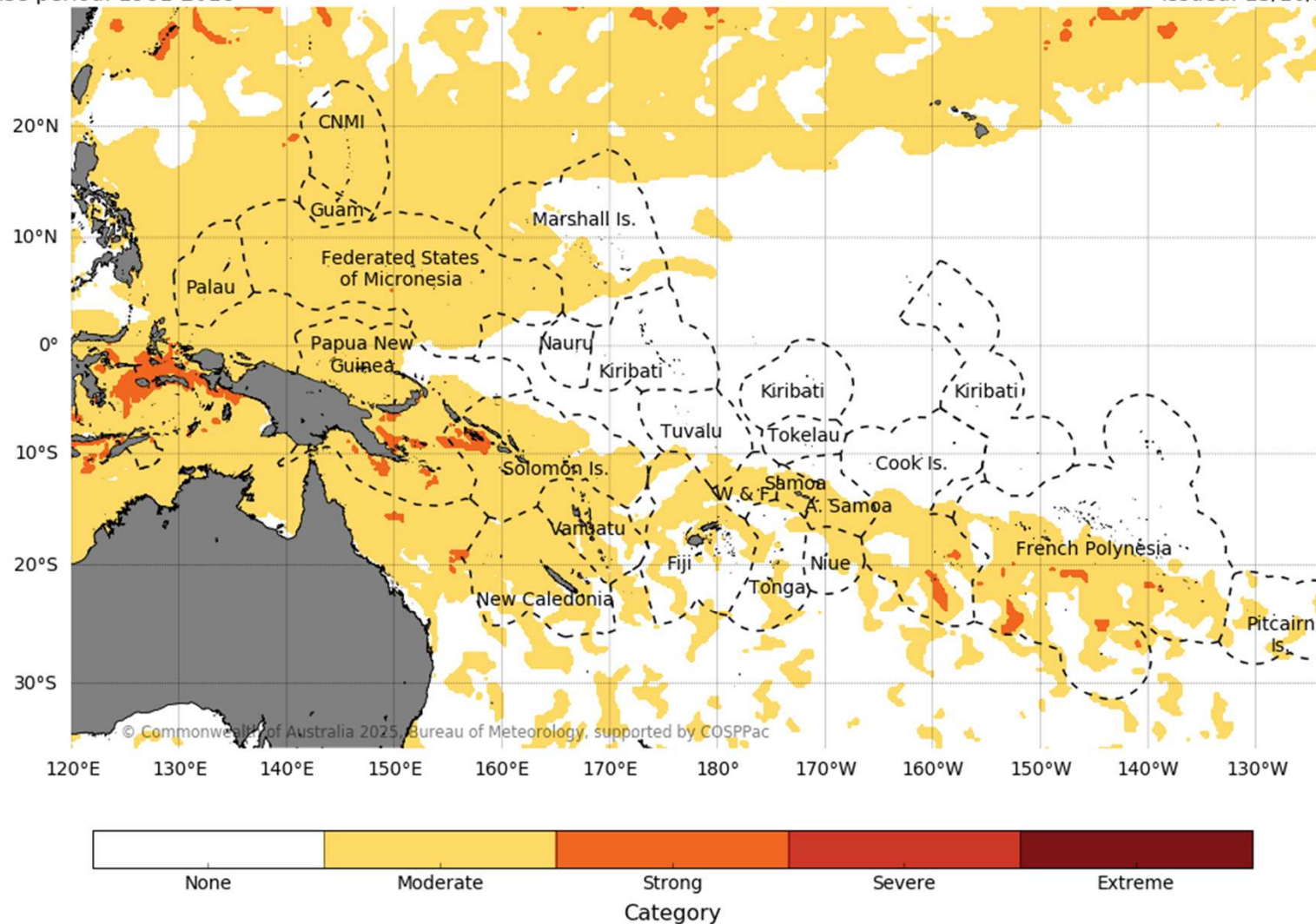


Marine Heatwaves

Marine heatwave category forecast for
November 2025

Data source: ACCESS-S2
Base period: 1981-2018

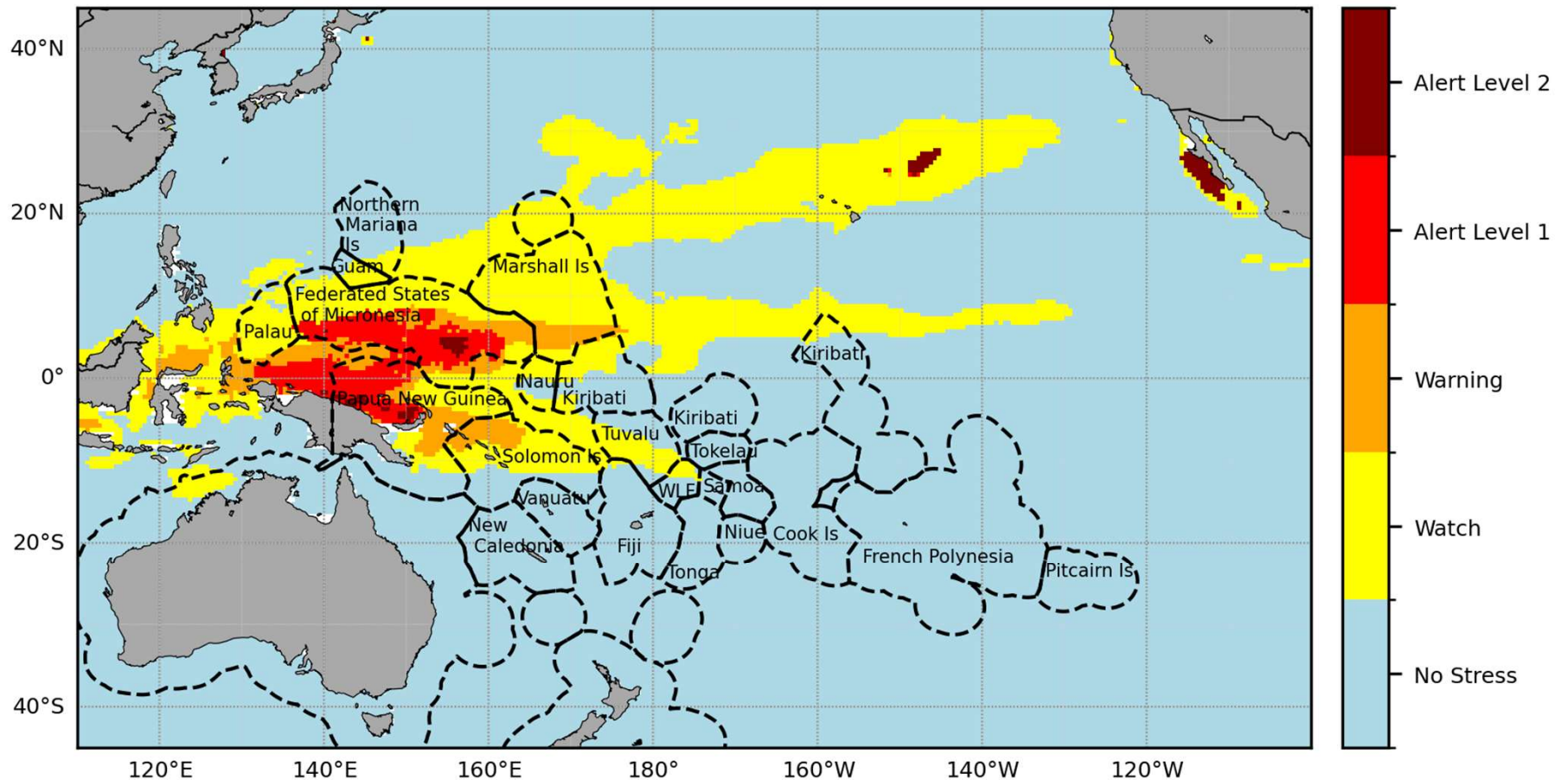
Model Run: 11/10/2025
Issued: 13/10/2025



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

Coral Bleaching

Pacific Islands
4 Week Coral Bleaching Outlook: 27 October 2025



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Thank you

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