

ENSO Update – OCOF 228

16 September 2026

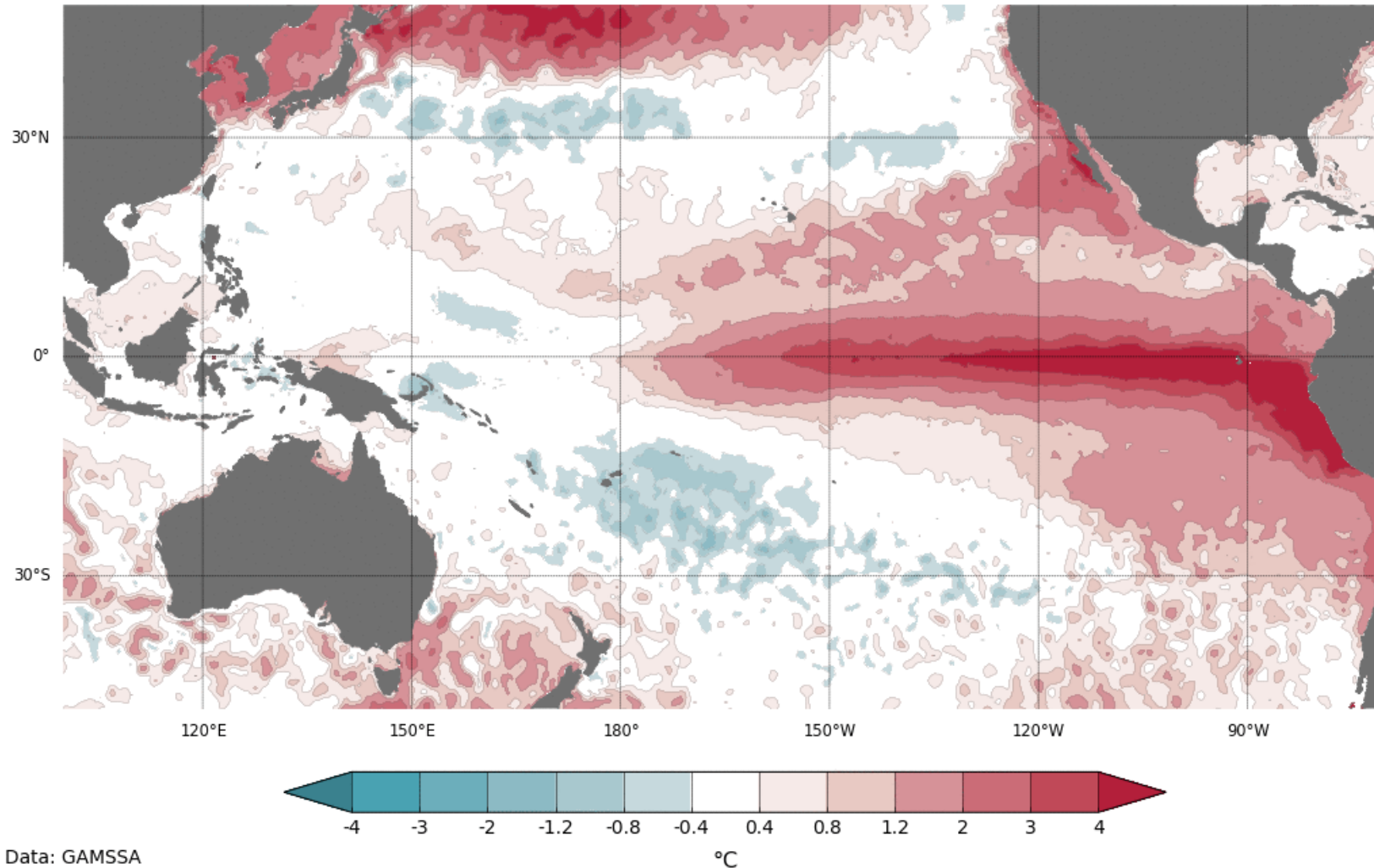


ENSO Update

- El Niño is firmly established. Both oceanic and atmospheric indices reflect values consistent with a strong El Niño, with further intensification likely during spring.
- The latest relative Niño3.4 index value for the week ending 13 September 2026 is +2.51 °C, well above the El Niño threshold (+0.80 °C).
- All models, including the bureau's, forecast the tropical Pacific to continue warming through the southern hemisphere spring, likely peaking in late spring or summer. Relative-Niño3.4 values are forecast to reach levels above the warmest observed since reliable records began in 1950, with the majority of models indicating a peak value above +3.0 °C.
- Given its current strength, in addition to the typical life cycle of an El Niño, this event is expected to persist into autumn 2027.
- The Southern Oscillation Index (SOI), a measure of the atmospheric component of the El Niño–Southern Oscillation (ENSO) remains strongly negative, with the latest 30-day SOI to 13 September 2026 at –18.5, well below the El Niño threshold of –7.
- A strong El Niño is also evident in the atmosphere, with weakened or reversed trade winds in the western to central tropical Pacific, enhanced cloudiness across the central to eastern tropical Pacific and reduced cloud cover over the Maritime Continent.
- Global SSTs (60°S to 60°N) for August 2026 were the warmest on record, at 1.04 °C above the 1961–1990 average in the NOAA ERSSTv5 dataset.

August 2026 Observed SSTs

Sea surface temperature anomaly: 01/08/2026 to 31/08/2026

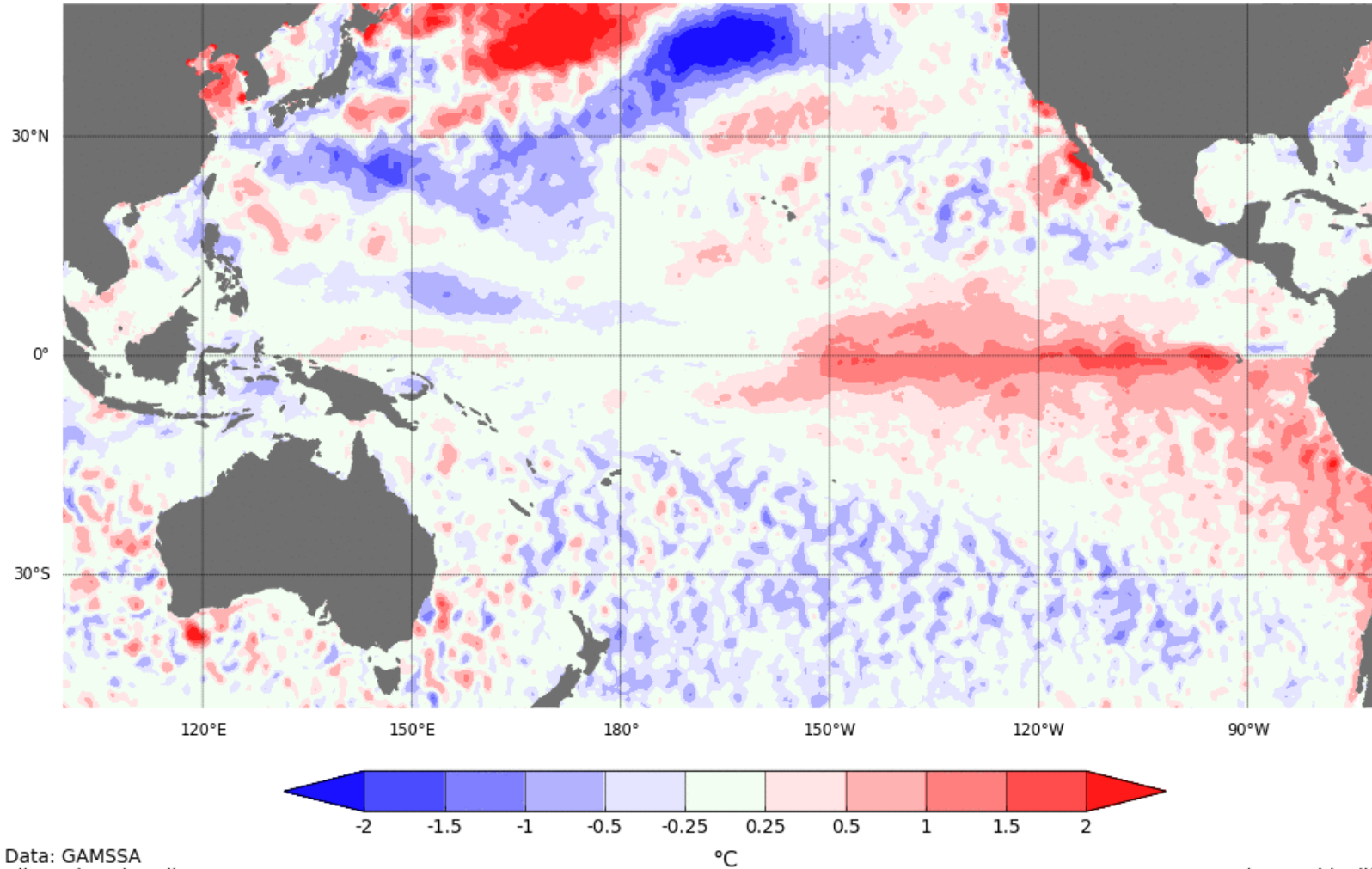


Data: GAMSSA
Climatology baseline: 1991 to 2020
© Commonwealth of Australia 2026, Australian Bureau of Meteorology

Monthly average: August 2026
Created: 03/09/2026
<http://www.bom.gov.au/climate>

August – July SSTs

Change in the monthly SST anomaly: August-2026 - July-2026

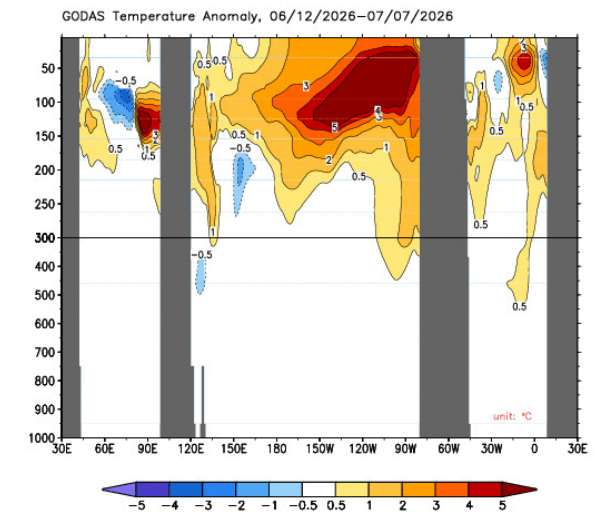
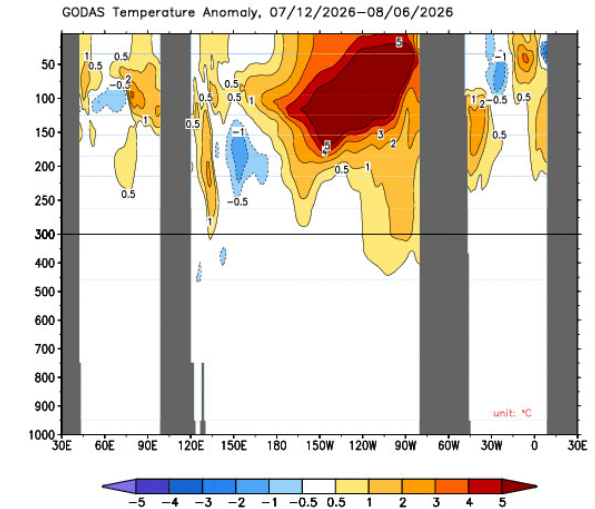
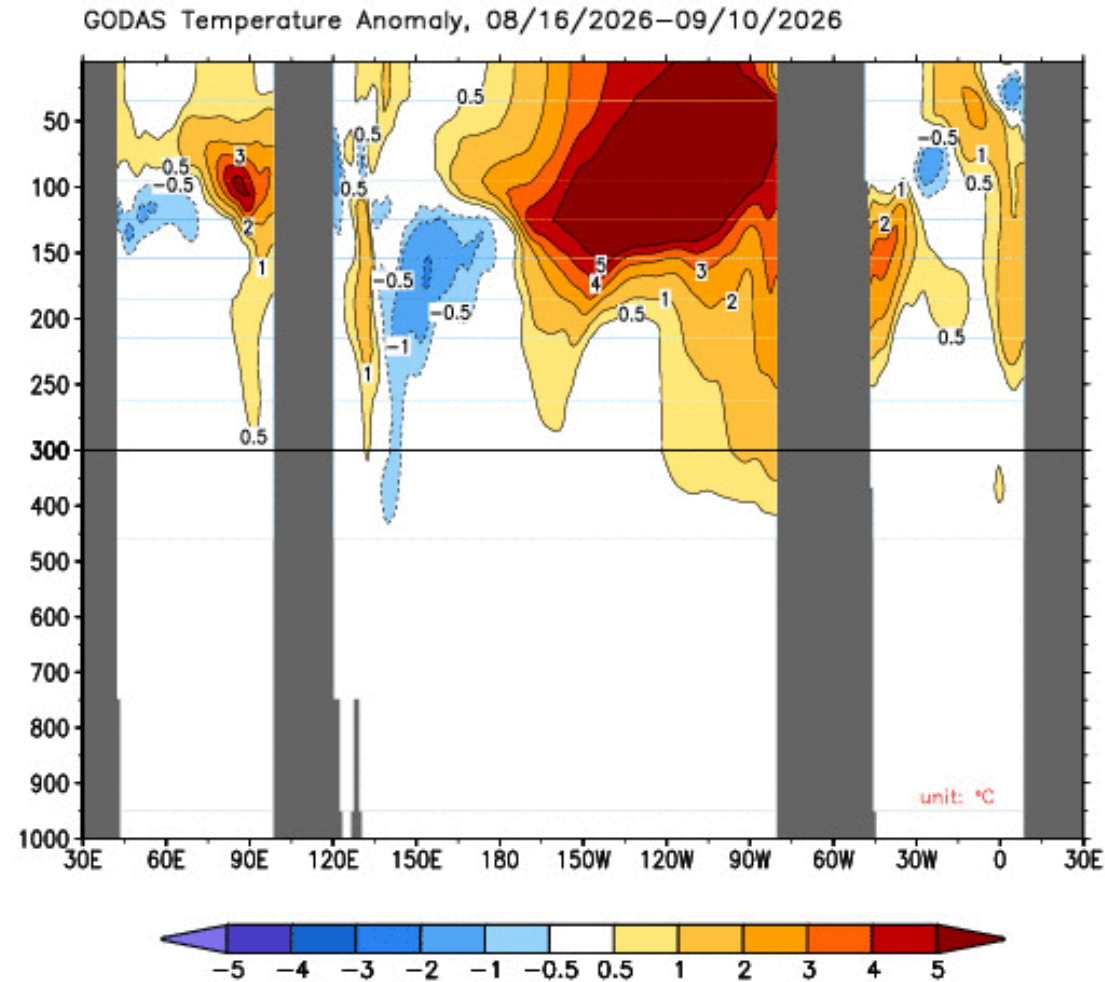


Data: GAMSSA
Climatology baseline: 1991 to 2020
© Commonwealth of Australia 2026, Australian Bureau of Meteorology

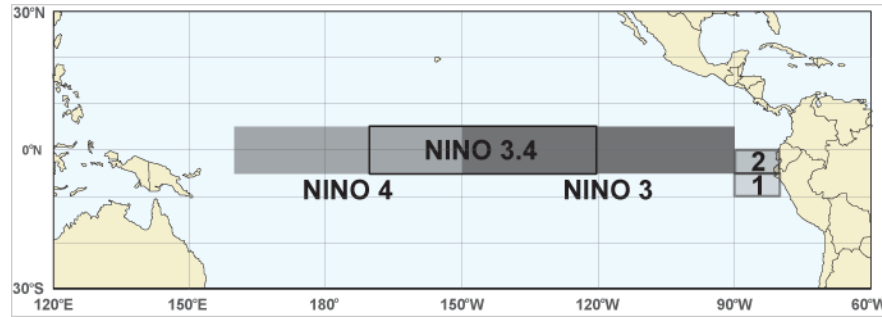
<http://www.bom.gov.au/climate>

Anomaly monthly difference
Created: 03/09/2026

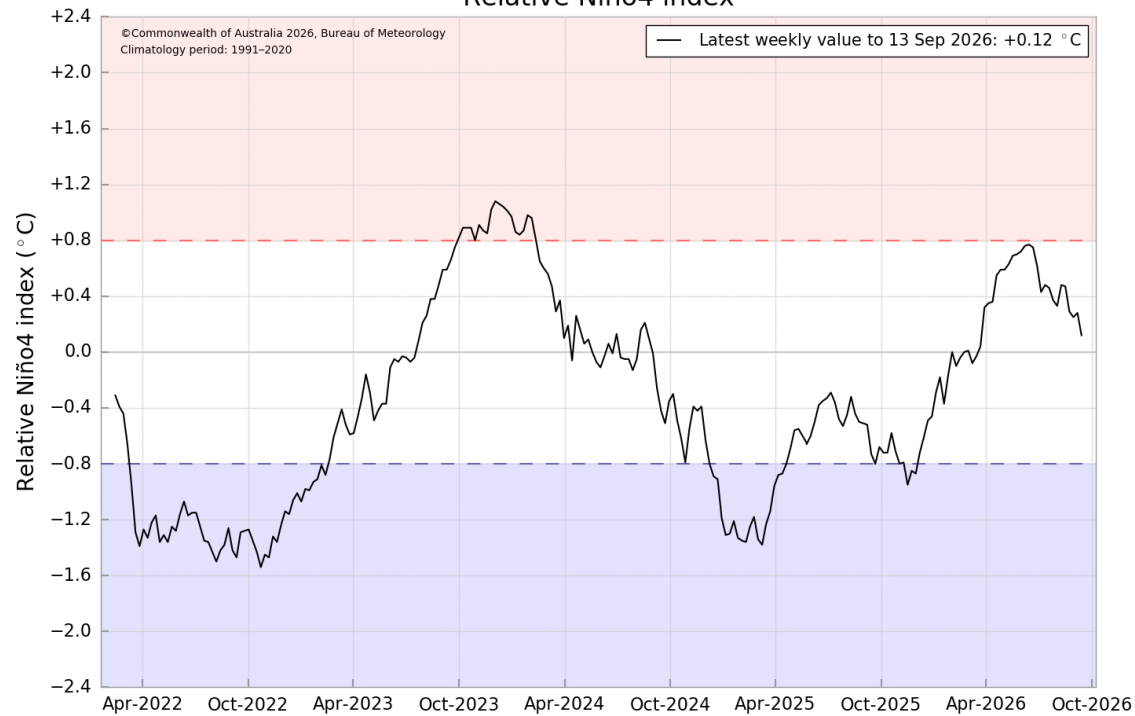
Equatorial Pacific Sub-surface Profile



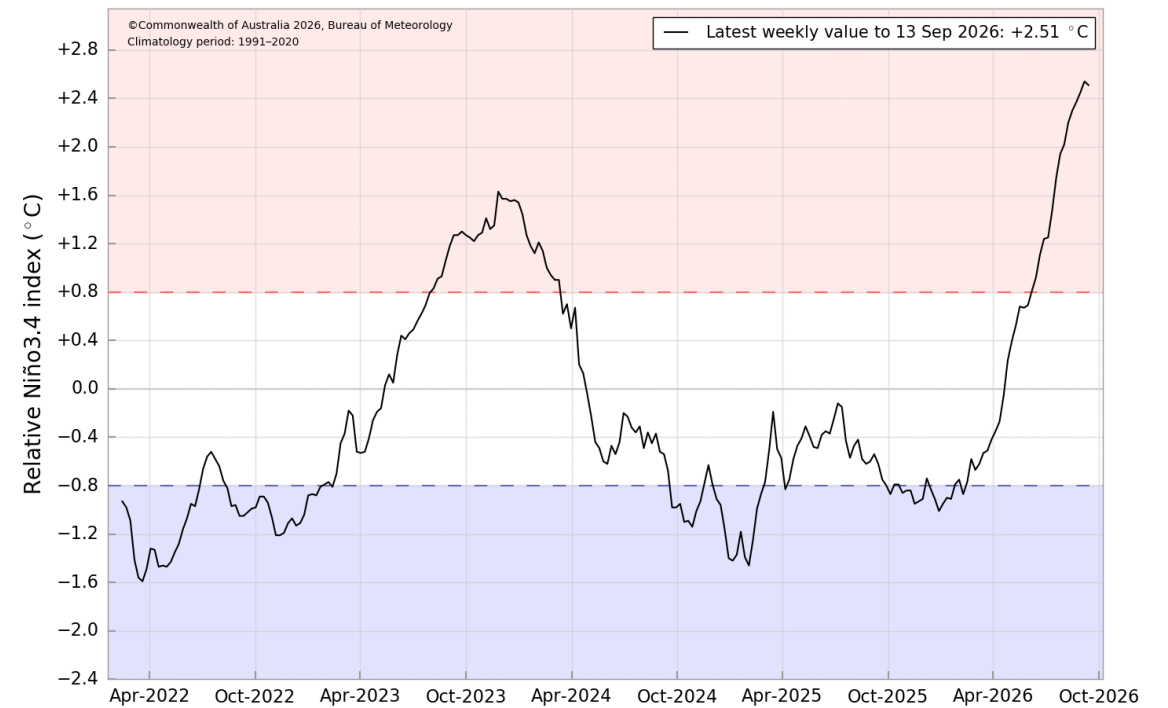
Observed Relative NINO Indices



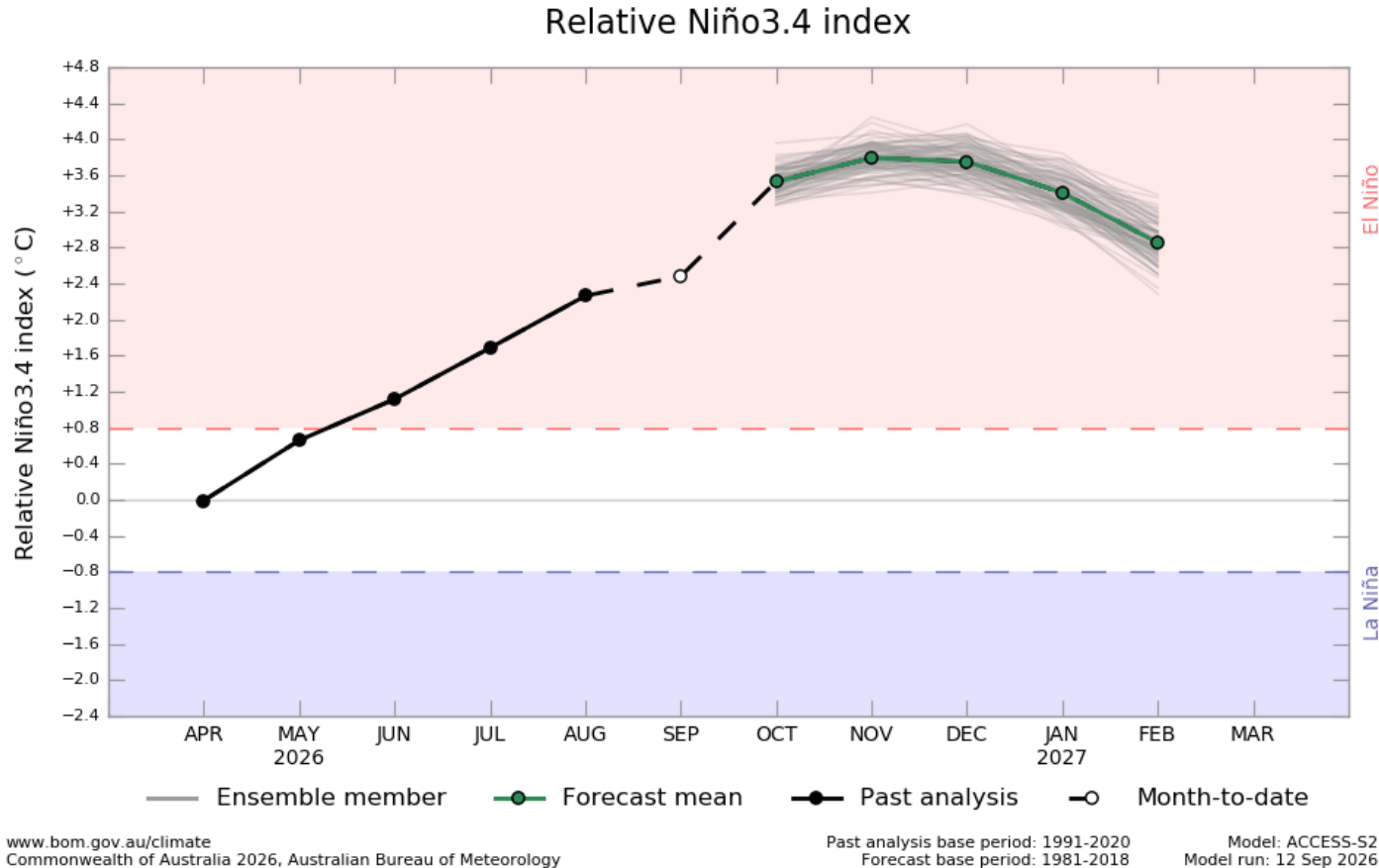
Relative Niño4 index



Relative Niño3.4 index



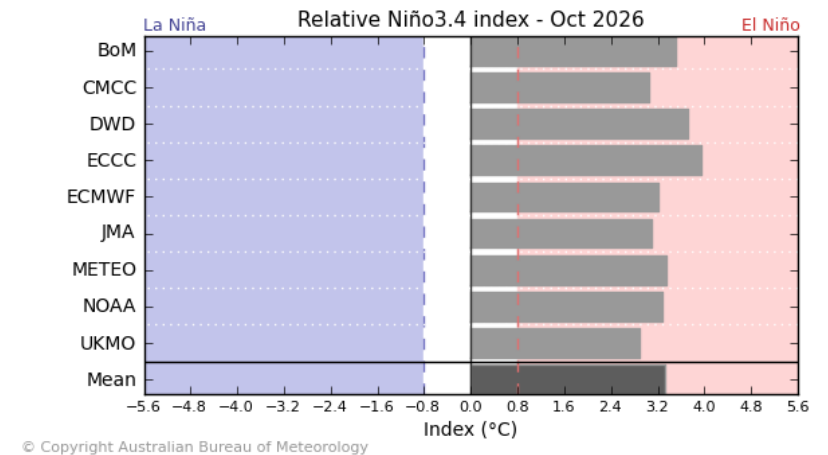
Relative ENSO Outlook



La Nina is associated with **increased rainfall** across the far western Pacific.

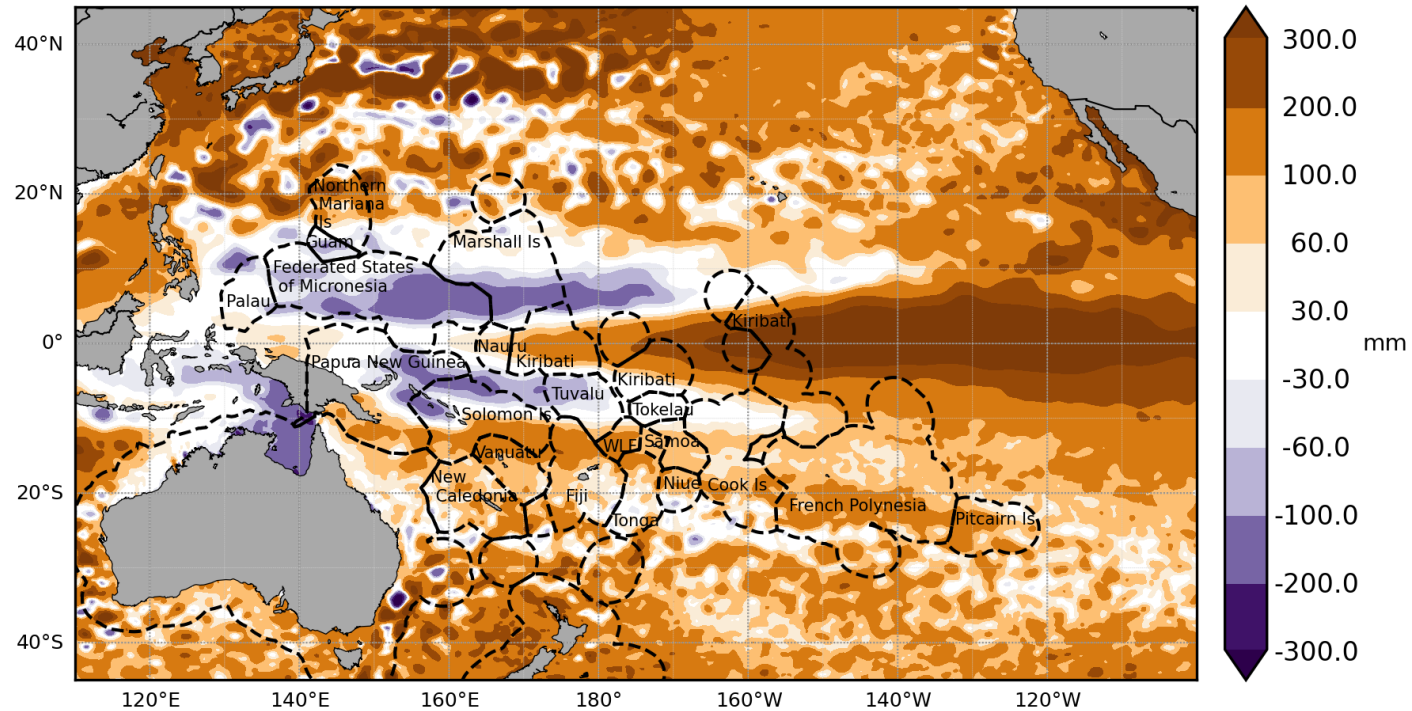


El Nino is associated with **decreased rainfall** across the far western Pacific.



August 2026 Sea Level Anomaly

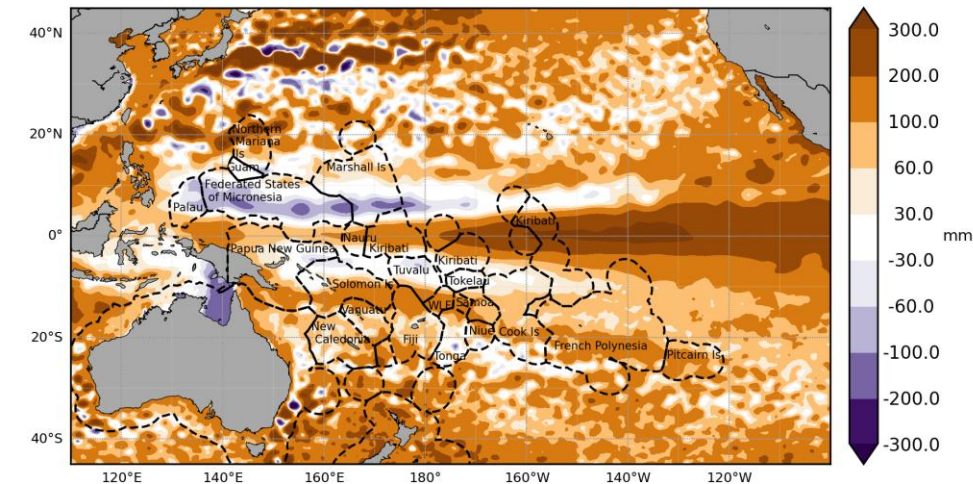
Pacific Islands
Monthly Sea Level Anomaly: August 2026



© Pacific Community (SPC) 2025

E.U. Copernicus Marine Service Information;
<https://doi.org/10.48670/moi-00149>

Pacific Islands
Monthly Sea Level Anomaly: July 2026



© Pacific Community (SPC) 2025

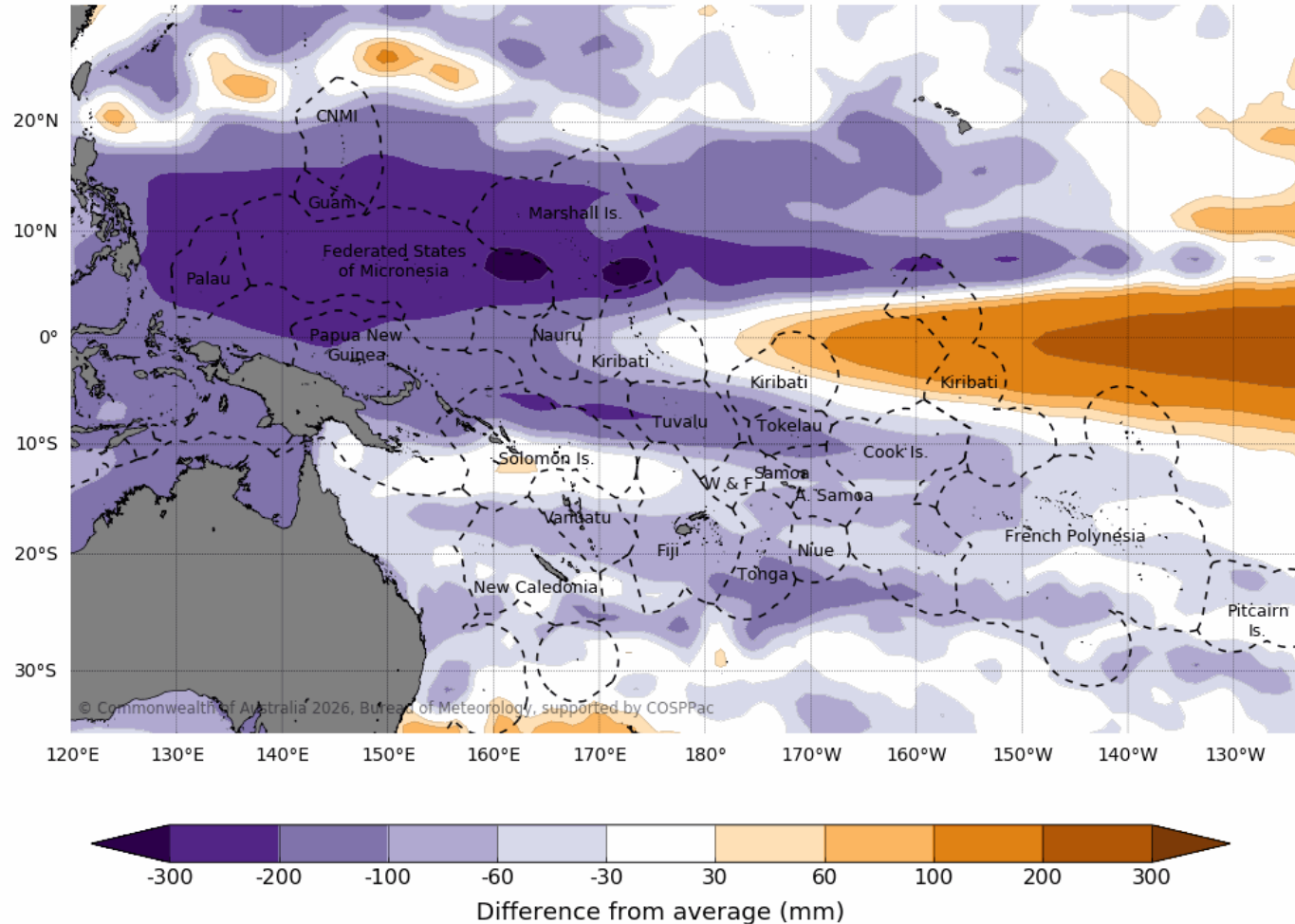
E.U. Copernicus Marine Service Information;
<https://doi.org/10.48670/moi-00149>

Seasonal Outlook: Sea Surface Height Anomaly

Difference from average sea surface height forecast for
October to December 2026

Base period: 1981-2018
Model: ACCESS-S2

Model run: 12/09/2026
Issued: 14/09/2026

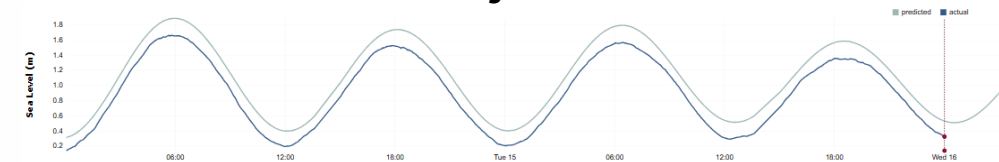


Decrease in average SSH

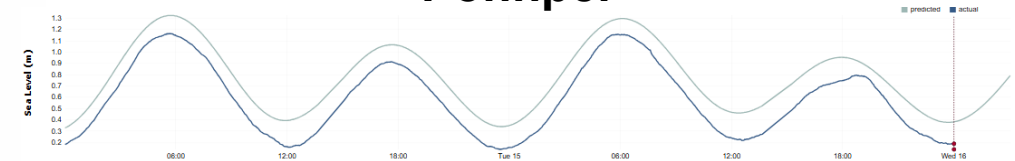


Increase in average SSH

Majuro



Pohnpei

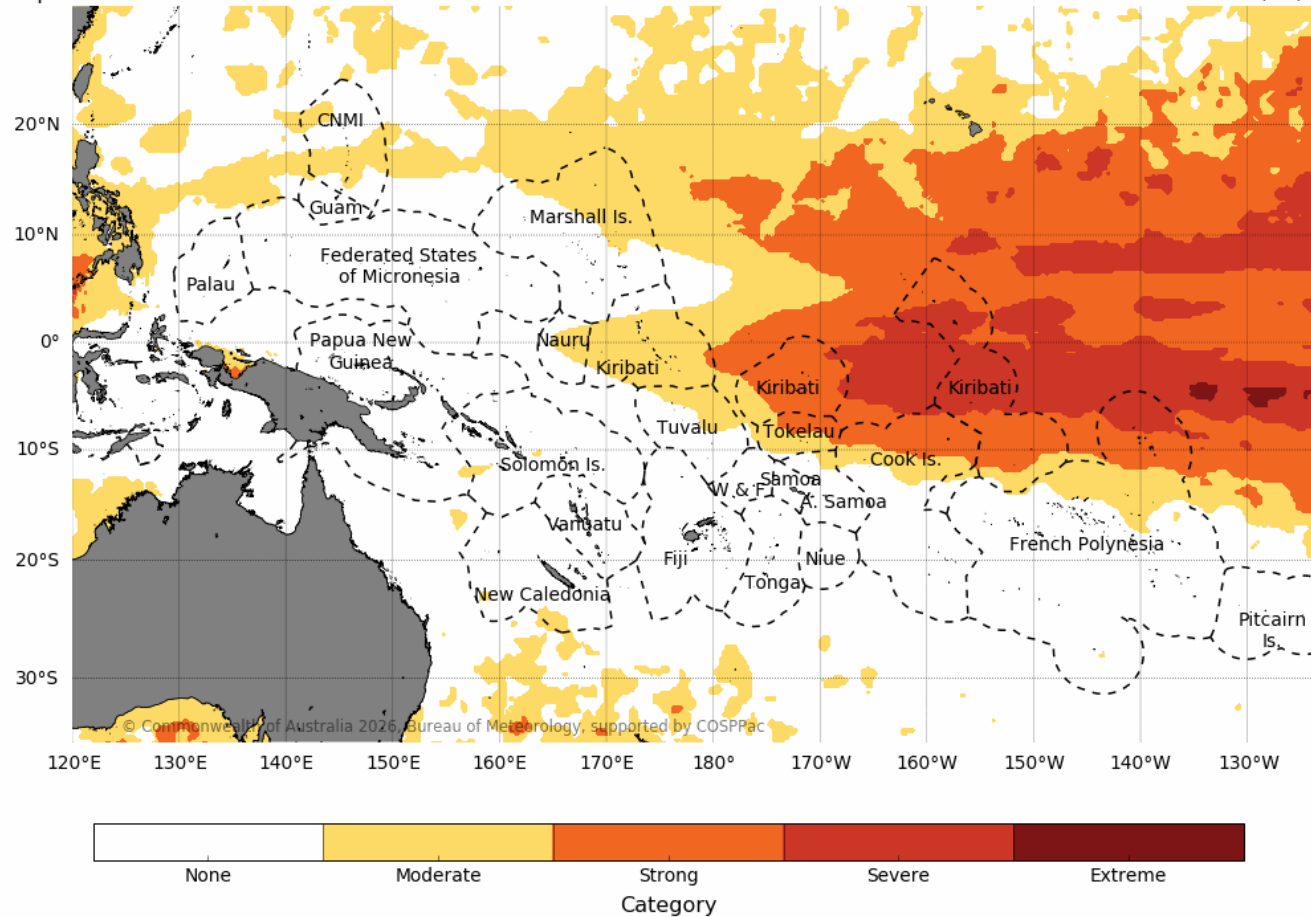


Marine Heatwaves

Marine heatwave category forecast for
October 2026

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

Model Run: 12/09/2026
Issued: 14/09/2026



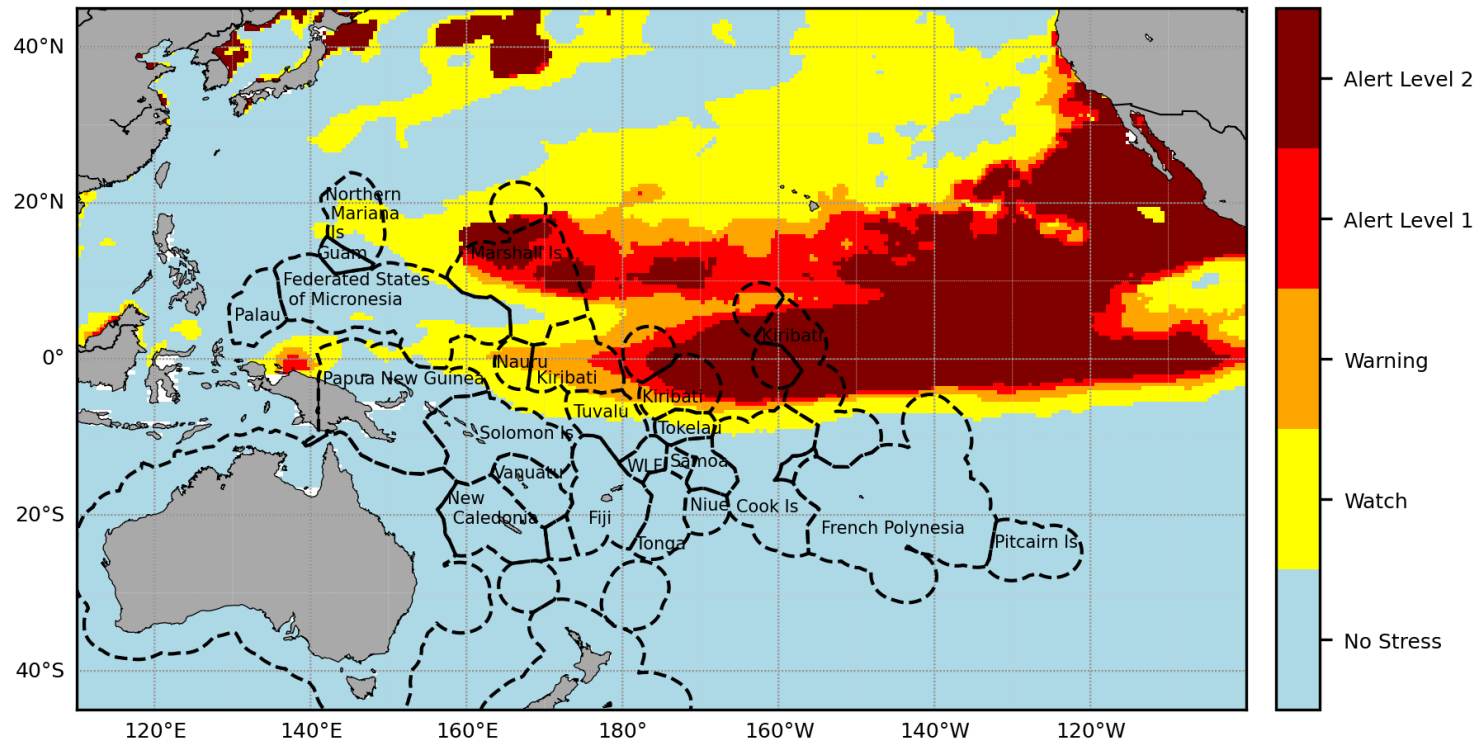
-- -- EEZ border V11 (Flanders Marine Institute (2019))

Marine Heatwaves are prolonged periods of anomalously high sea surface temperature (SST).

Impacts from marine heatwaves include death of marine flora and fauna, mass coral bleaching and reduces capacity for provision of ecological goods and services.

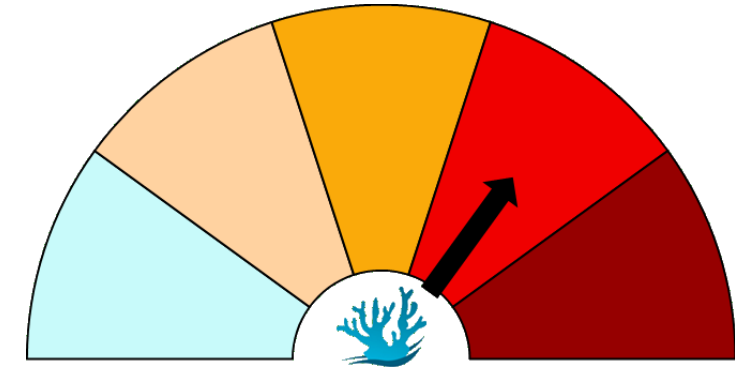
Coral Bleaching

Pacific Islands
4 Week Coral Bleaching Outlook: 28 September 2026



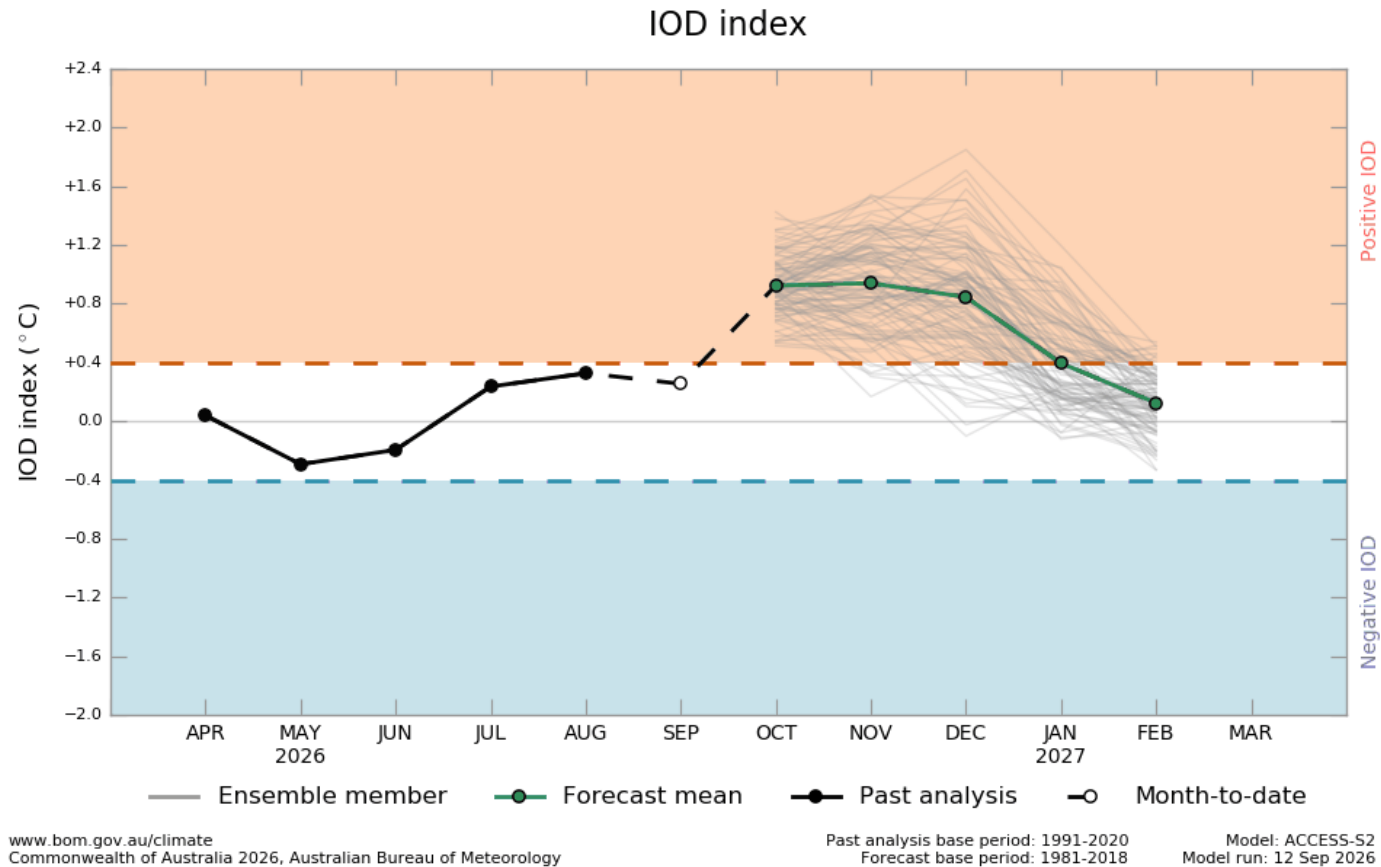
© Pacific Community (SPC) 2025

NOAA



Alert Level	Effect
No Data	No alert data available
No Stress	No thermal stress
Bleaching Watch	Low-level thermal stress
Bleaching Warning	Coral bleaching possible
Bleaching Alert Level 1	Coral bleaching likely
Bleaching Alert Level 2	Coral mortality likely

Indian Ocean Dipole (IOD)



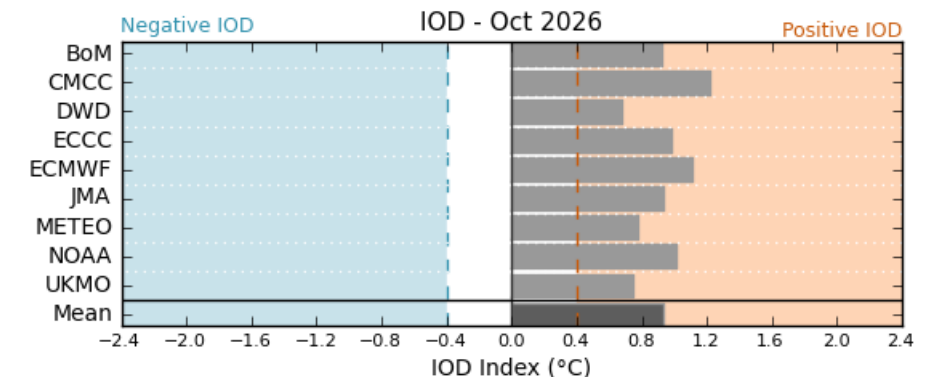
The peak of the **IOD** is **Sep-Oct** in the southern hemisphere. Decaying with the onset of the monsoon.



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



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



© Copyright Australian Bureau of Meteorology

Atmosphere Outlook



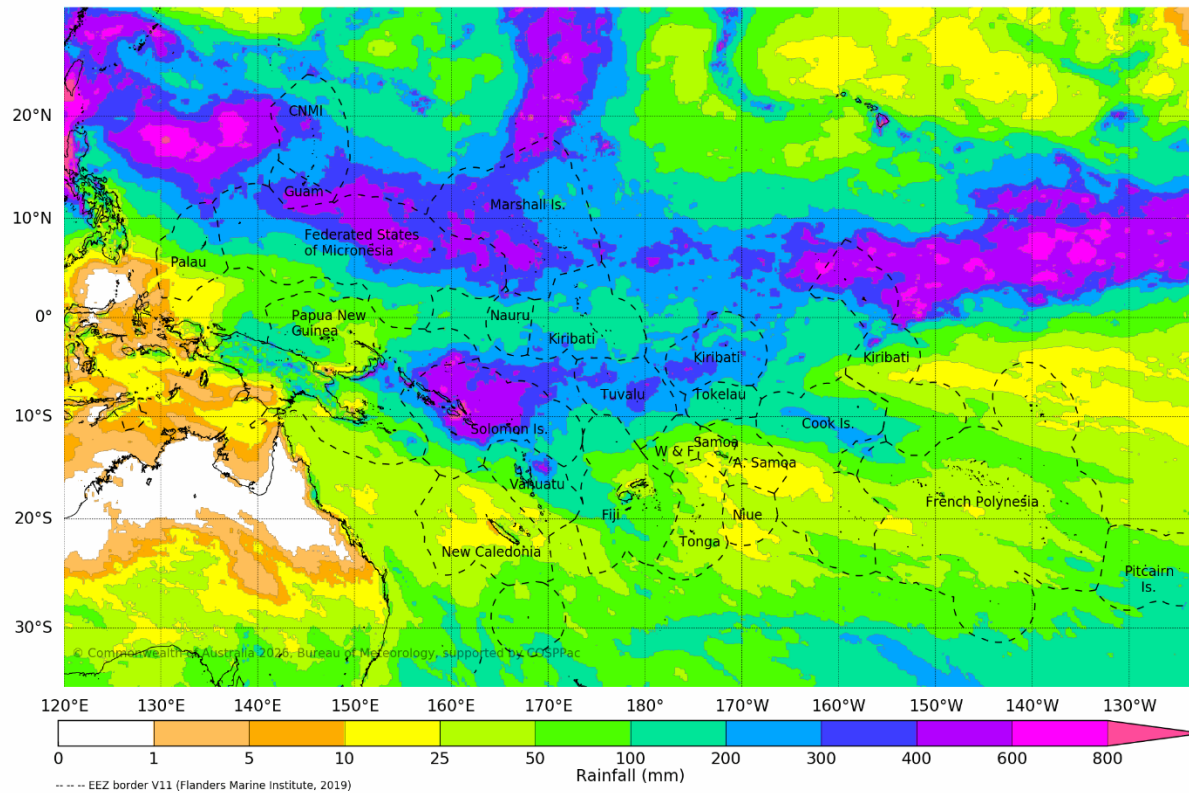
Observed Rainfall – August 2026

Observed

1-month total rainfall ending August 2026

Data source: MSWEP

Issued: 07/09/2026

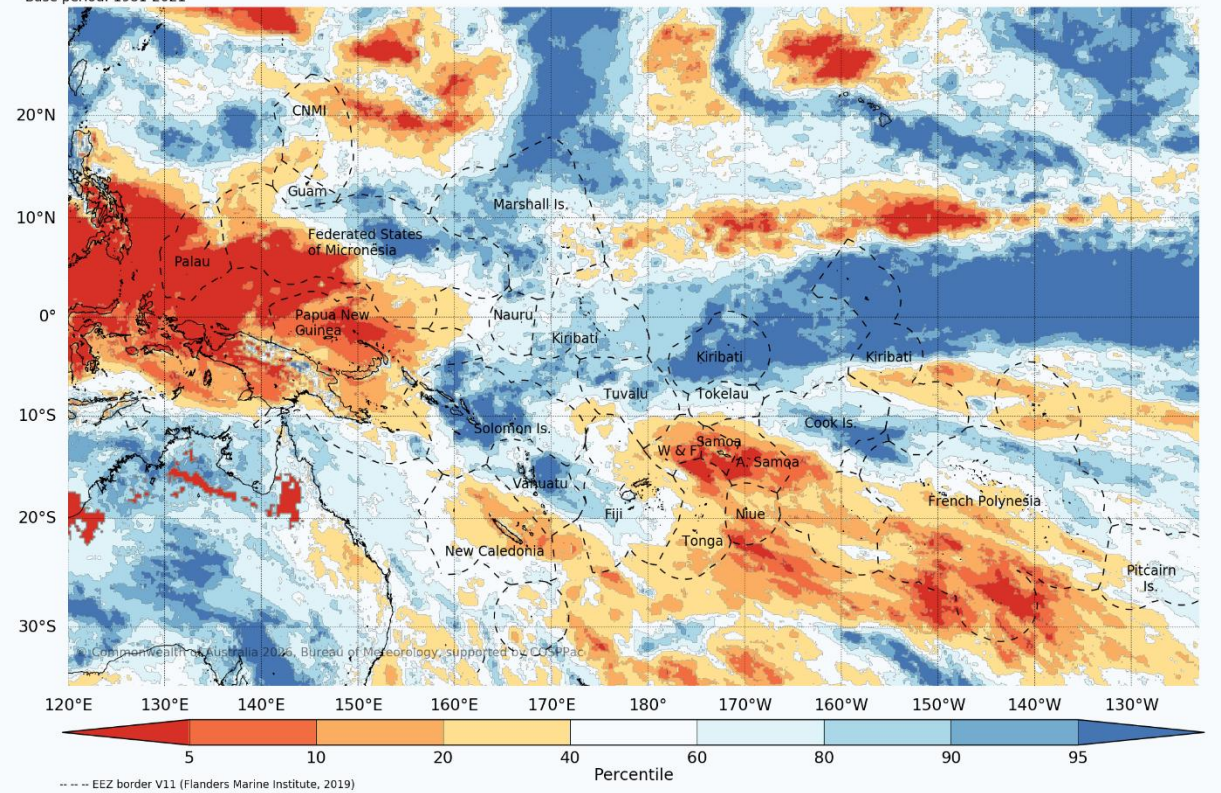


Percentile

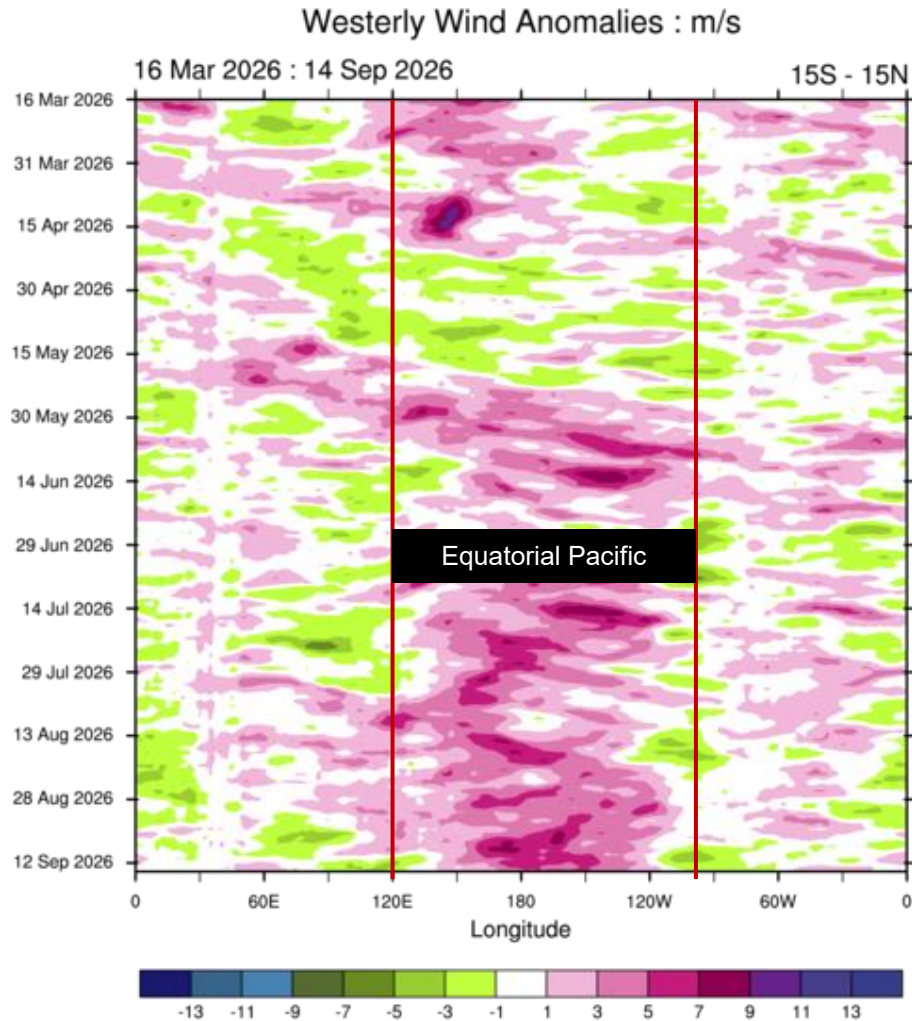
1-month Percentile to end of August 2026

Data source: MSWEP
Base period: 1981-2021

Issued: 07/09/2026

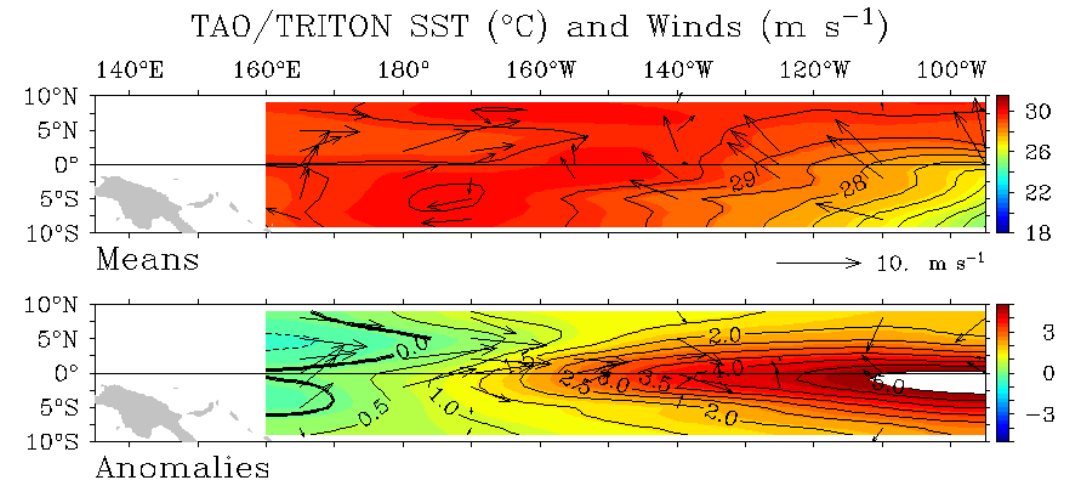


Wind Anomalies



Easterly (stronger trade)

Westerly (weaker trade)



Five-Day Mean Ending on September 13 2026



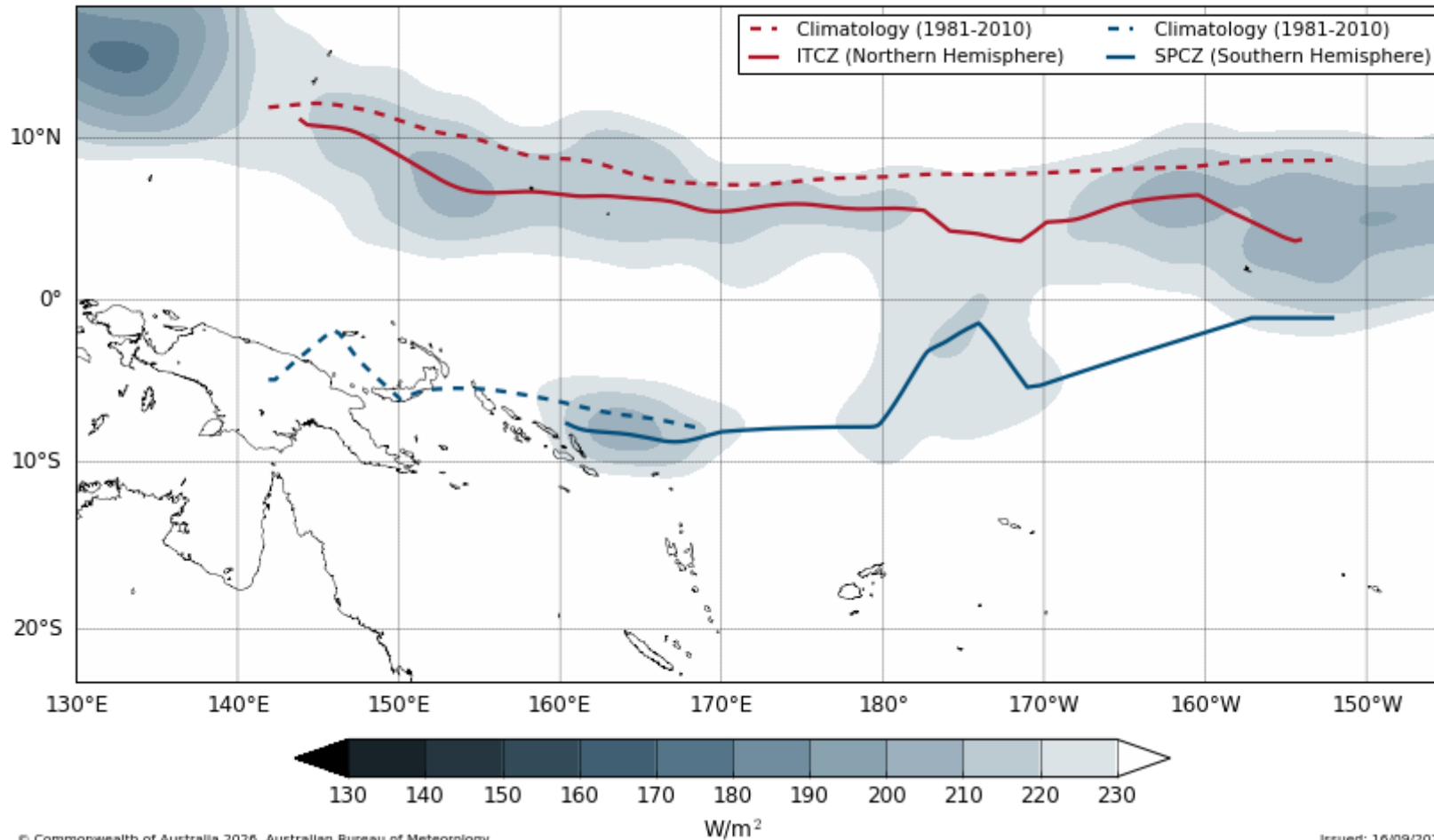
Weaker trade winds (pink) allow for the development of more clouds and potential for rain.



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

ITCZ and SPCZ

30 Day Average Outgoing Longwave Radiation (OLR) minimum to 2026-09-13



More clouds

Less clouds

Intertropical Convergence Zone (ITCZ) is the area around the equator where trade winds from the northern and southern hemisphere collide. This area consists of high convection systems that can bring, rainfall, thunderstorms and tropical cyclones to Pacific Islands.

South Pacific Convergence Zone (SPCZ) is an area in the southern Pacific that has high convective activity. Likewise, when active the SPCZ can bring, rainfall, thunderstorms and tropical cyclones to South Pacific Islands.

Madden – Julian Oscillation



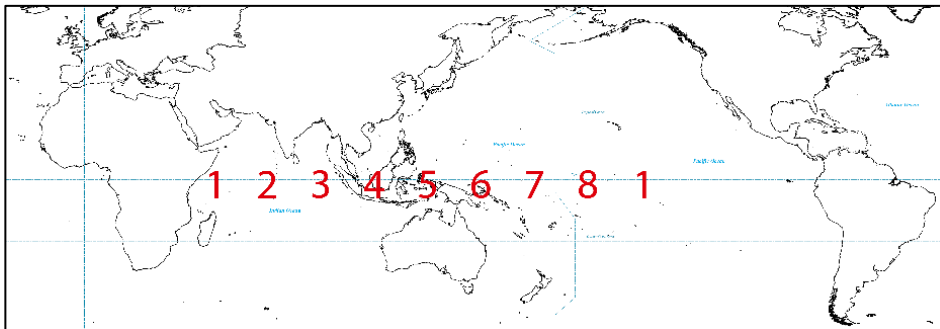
The **MJO** is weak in **Phase 2** Indian Ocean. Preliminary forecast has return to **Phase 6** Western Pacific late March.



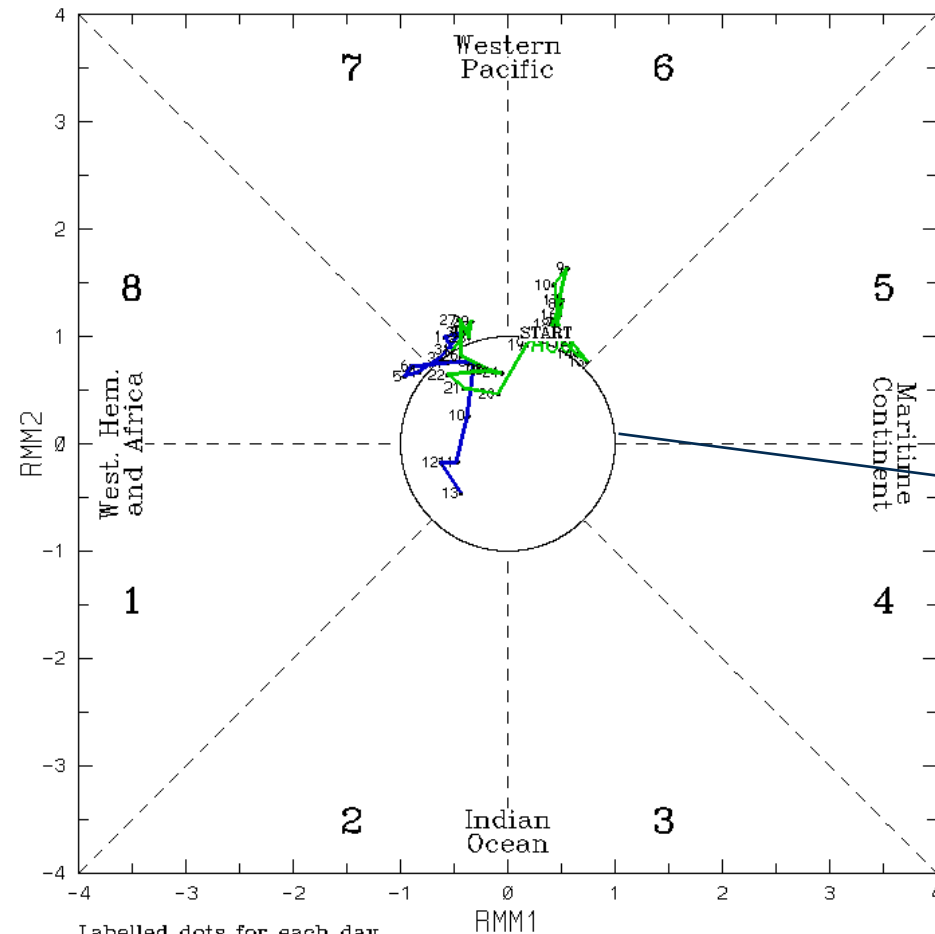
Phases **6, 7 and 8** are typically associated with **increased rainfall** across the Pacific.



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



(RMM1,RMM2) phase space for 5-Aug-2026 to 13-Sep-2026

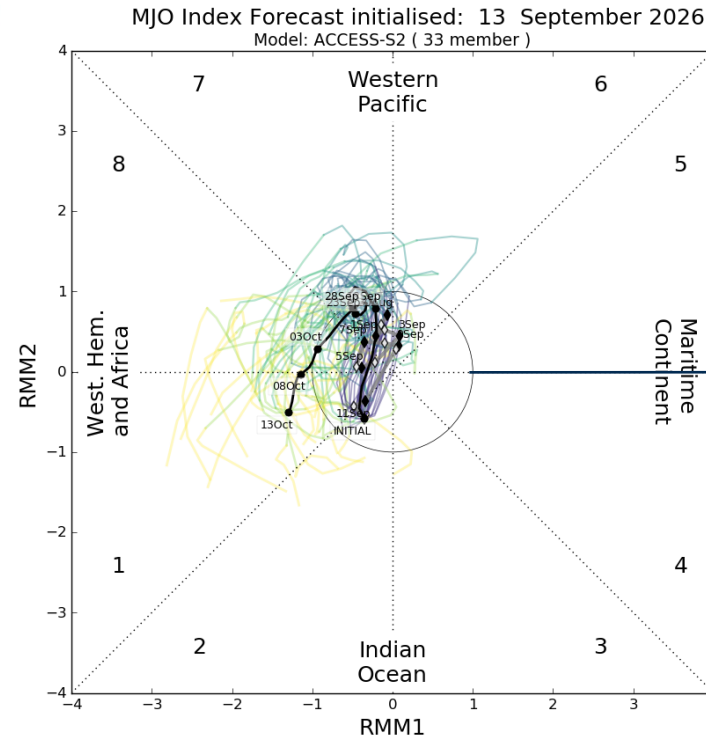
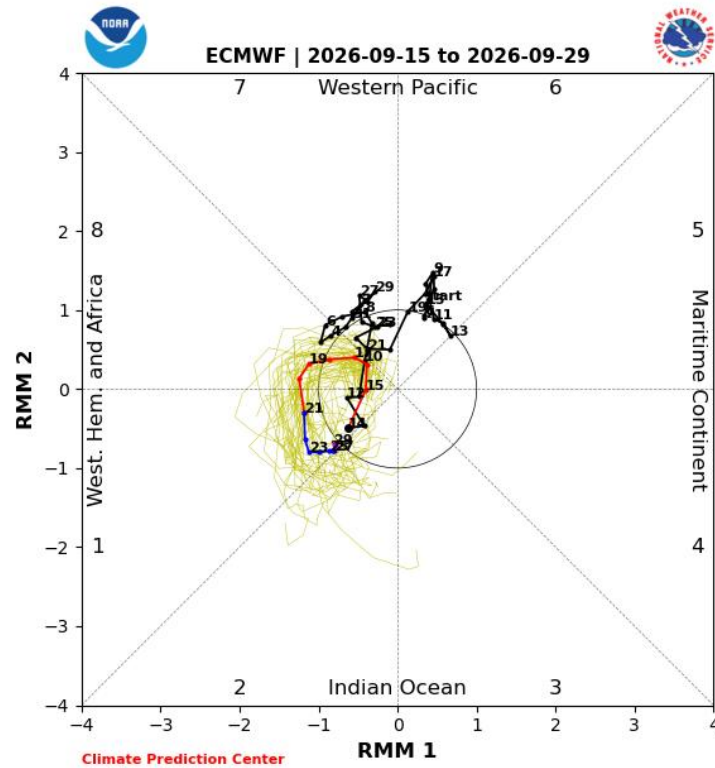


Labelled dots for each day.
Blue line is for Sep, green line is for Aug, red line is for Jul.

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

(C) Copyright Commonwealth of Australia Bureau of Meteorology

Madden – Julian Oscillation



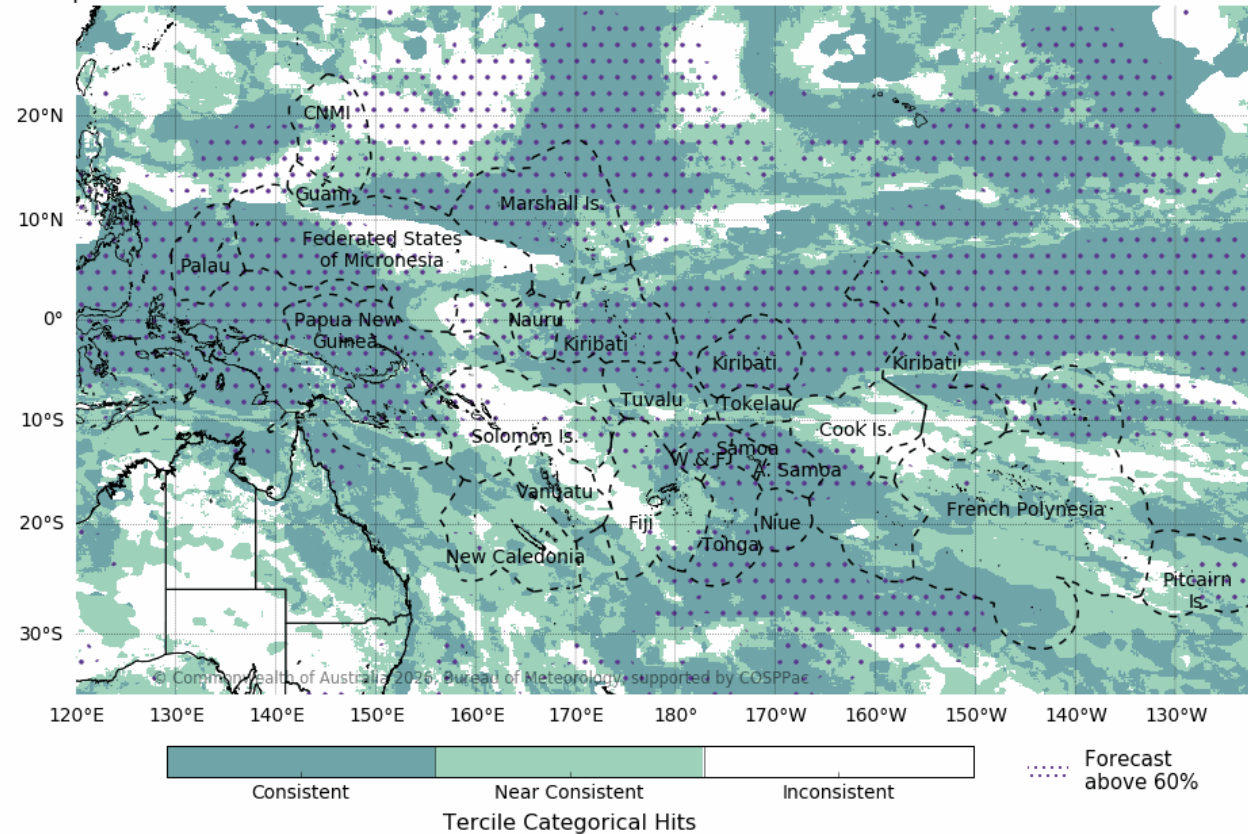
Unit circle:
If inside the unit circle
the MJO signal is
weak.

Outlook Verification – August

Near real-time tercile verification hit rate: rainfall August 2026

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

Model Run: 01/08/2026
Issued: 07/09/2026



Verification map is based on the ACCESS-S outlook. The greener the area the outlook picked the correct tercile category.

Dots identify where there was a strong outlook above 60%.

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

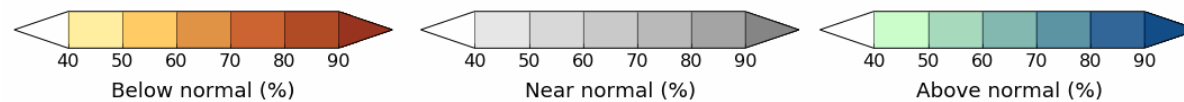
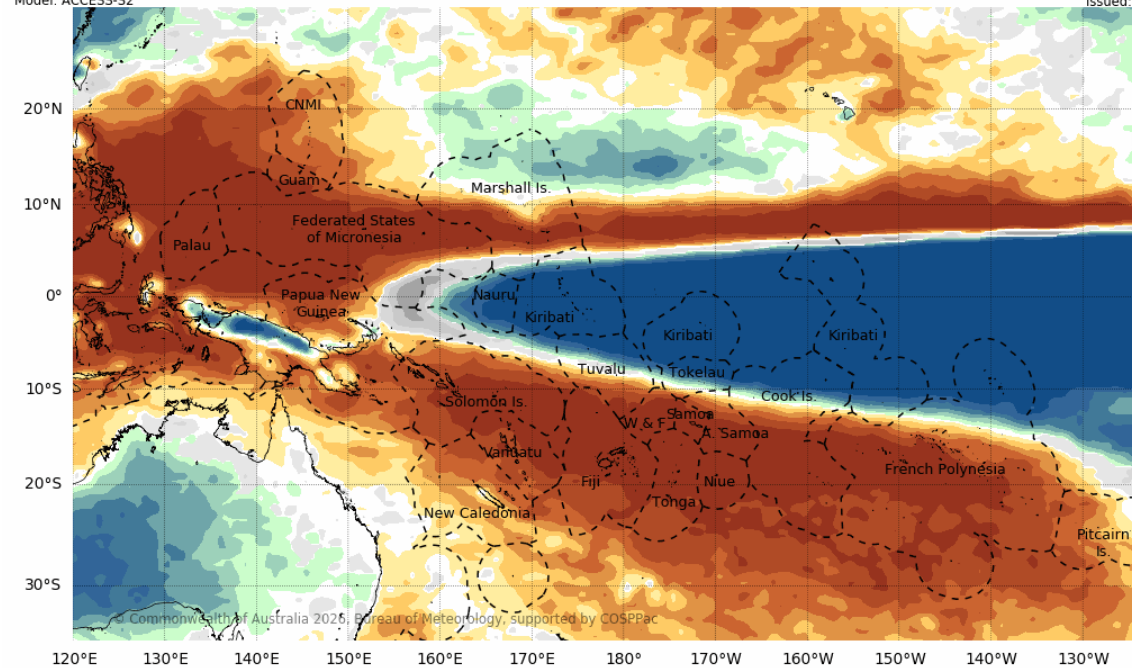
Model Rainfall Predictions (OND 2026)

ACCESS-S2

Tercile rainfall probabilities for
October to December 2026

Base period: 1981-2018
Model: ACCESS-S2

Model run: 12/09/2026
Issued: 14/09/2026

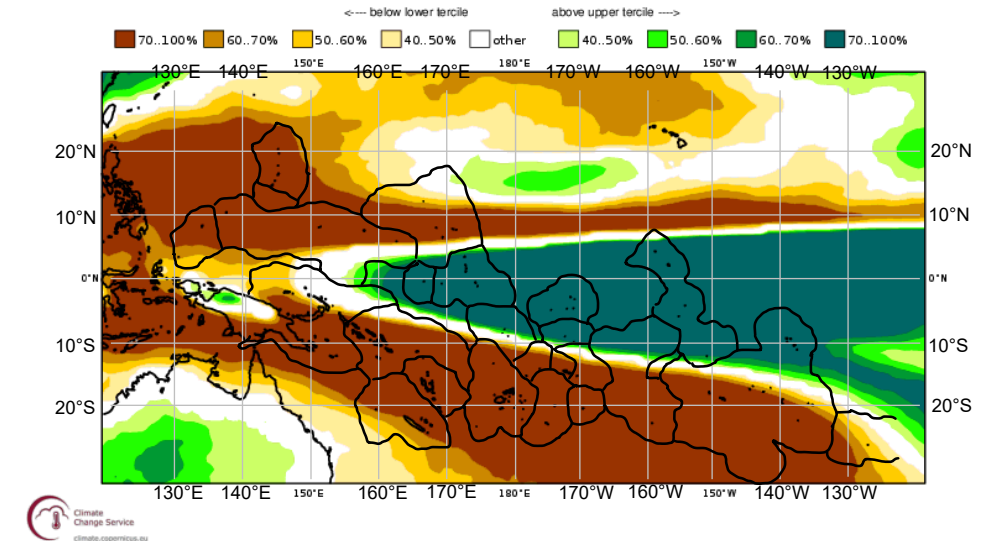


-- EEZ border V11 (Flanders Marine Institute, 2019).

C3S

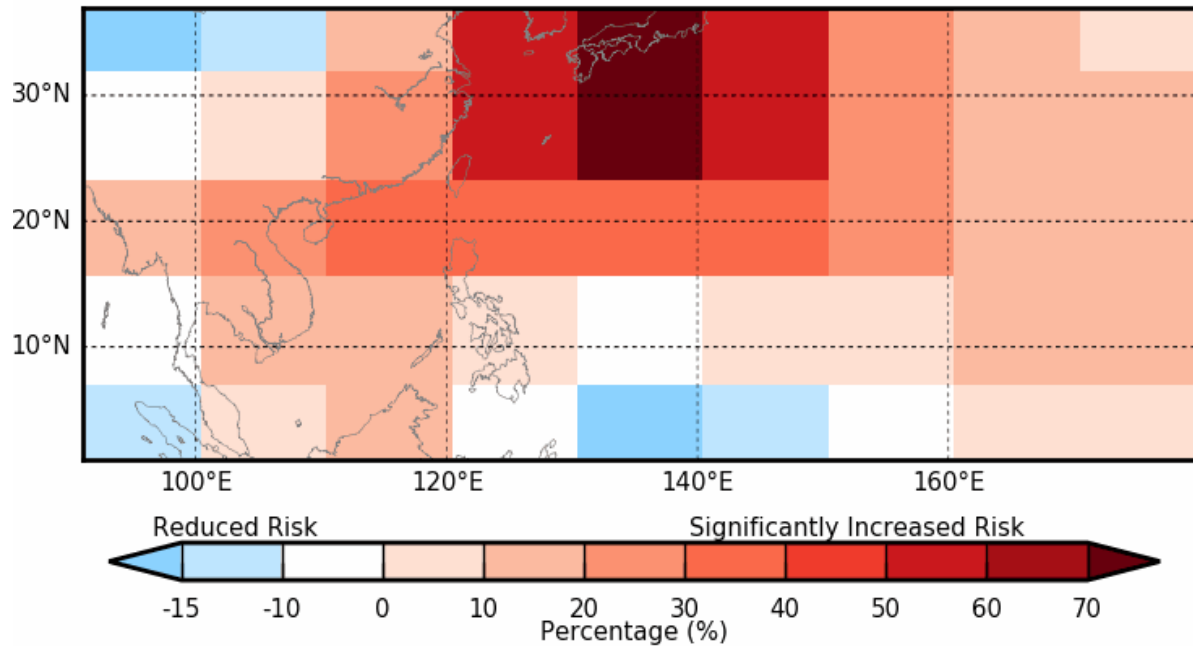
C3S multi-system seasonal forecast ECMWF/Met Office/Météo-France/CMCC/DWD/NCEP/JMA/ECCC/BOM
Prob(most likely category of precipitation)
OND 2026

Nominal forecast start: 01/09/26
Unweighted mean



TC Outlooks – Two Weeks

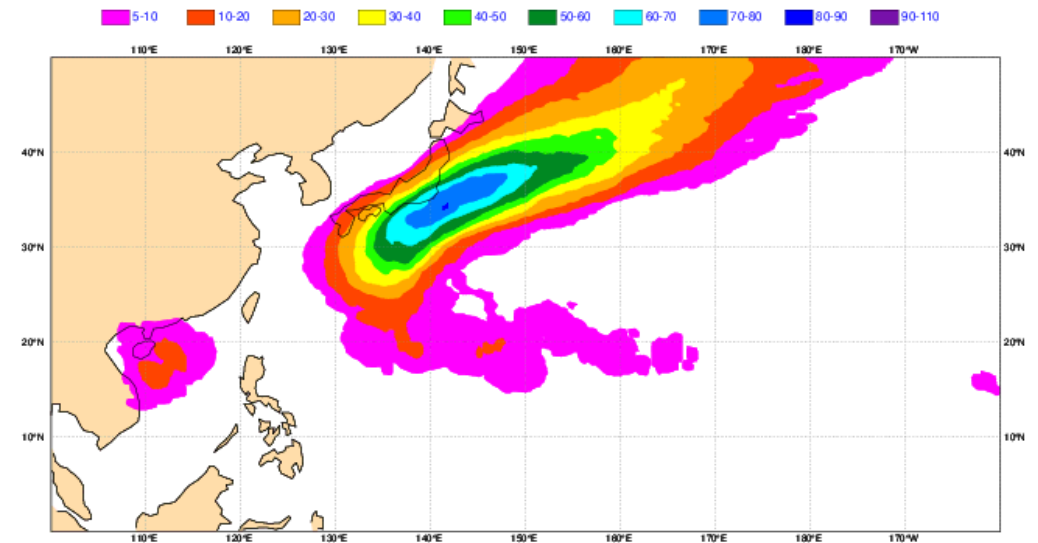
Difference from normal chance of Tropical Cyclone's in the Northern Pacific
Forecast period: 21/09/2026 - 27/09/2026



Calibrated Model anomaly probability in overlapping 15 x 20 degree boxes
© Commonwealth of Australia 2026, Australian Bureau of Meteorology

Model: ACCESS_S2 Model Run: 13/09/2026 Issued: 15/09/2026

Weekly mean Tropical Storm Strike Probability. Date: 20260915 0 UTC t+(144-312)
Probability of a TS passing within 300km radius



Thank you

pacificclimateservices@bom.gov.au

