

# ENSO update - OCOF 168

15 September 2021

# ENSO Update

## ENSO Outlook

An alert system for the El Niño–Southern Oscillation

🕒 Issued 14 September 2021    Next issue 28 September 2021

Outlook

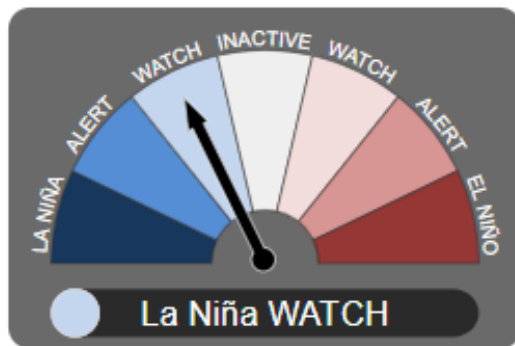
Criteria

ENSO Outlook history

About ENSO and the Outlook



## La Niña WATCH activated



The ENSO Outlook has been raised to La Niña WATCH. This means that while the El Niño–Southern Oscillation is currently neutral, the chance of a La Niña forming during the southern hemisphere spring has increased to around 50% - twice the normal likelihood.

This status change follows cooling in the tropical Pacific Ocean and an increase in the number of climate models suggesting La Niña thresholds may be reached in the coming months.

### La Niña

▼  La Niña WATCH

*"The chance of a La Niña developing in the coming season has increased. When these criteria have been met in the past, a La Niña event has developed around 50% of the time."*

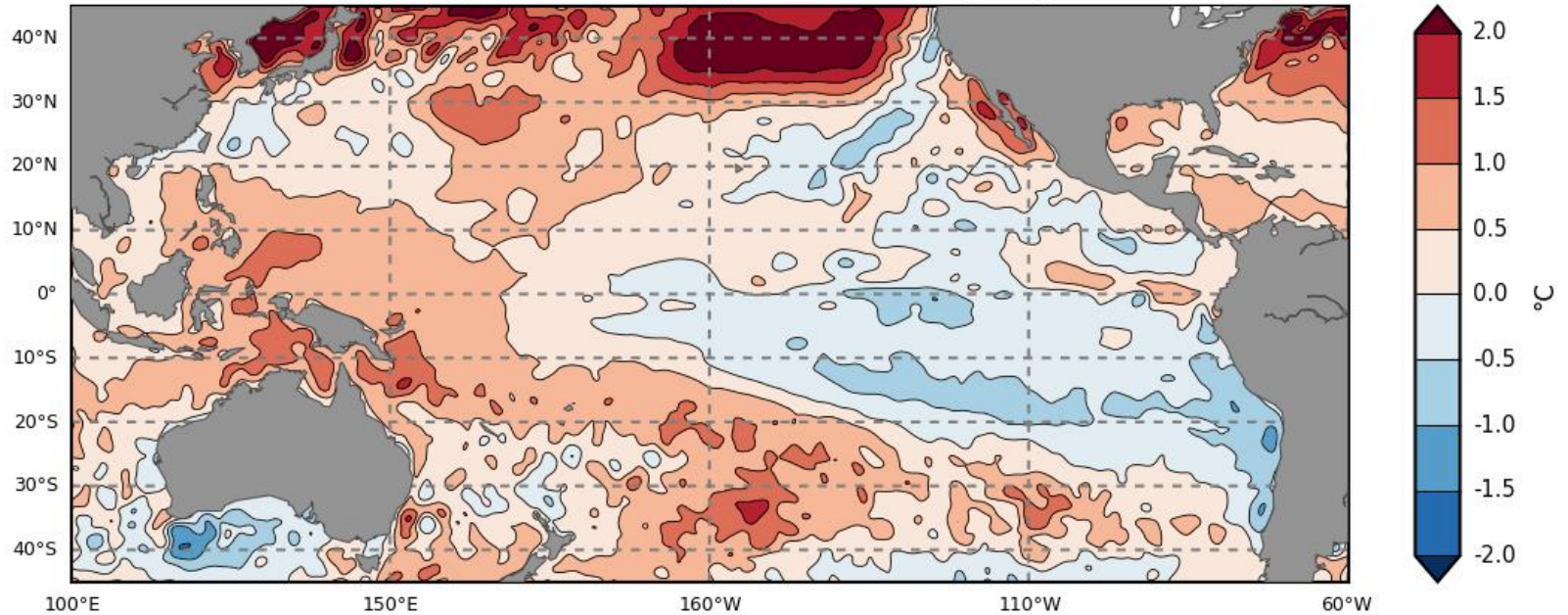
All the following criteria need to be satisfied:

- 1 **Current climate state:** ENSO phase is currently neutral or declining El Niño.
- 2 **Either:**
  - SOI analogues:** Of the 10 years that most closely resemble the current SOI pattern, 4 or more have shown La Niña characteristics.
  - Or:
  - Sub-surface:** Significant sub-surface cooling has been observed in the western or central equatorial Pacific Ocean.
- 3 **Models:** One-third or more of surveyed climate models show sustained cooling to at least 0.8 °C below average in the NINO3 or NINO3.4 regions of the Pacific Ocean by late winter or spring.

# August 2021 SSTs

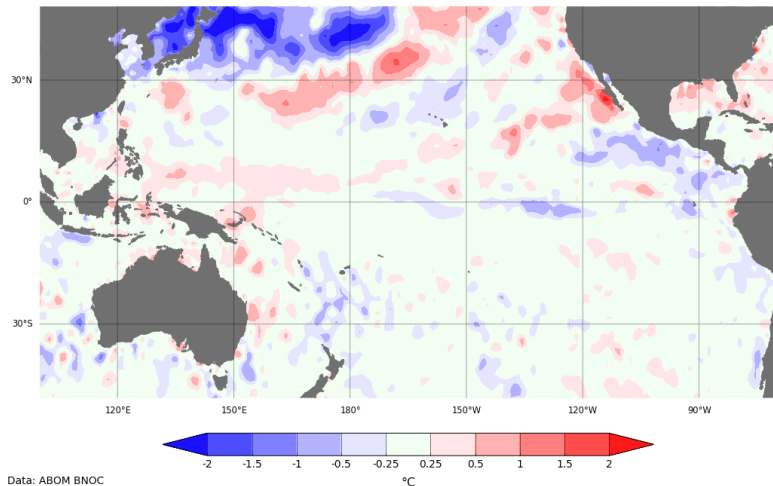
Pacific Ocean

Monthly Average Sea Surface Temperature Anomaly: August 2021



©Pacific Community (SPC) 2021  
Geoscience Energy and Maritime Division, COSPPac SPP

Change in the monthly SST anomaly: August-2021 - July-2021

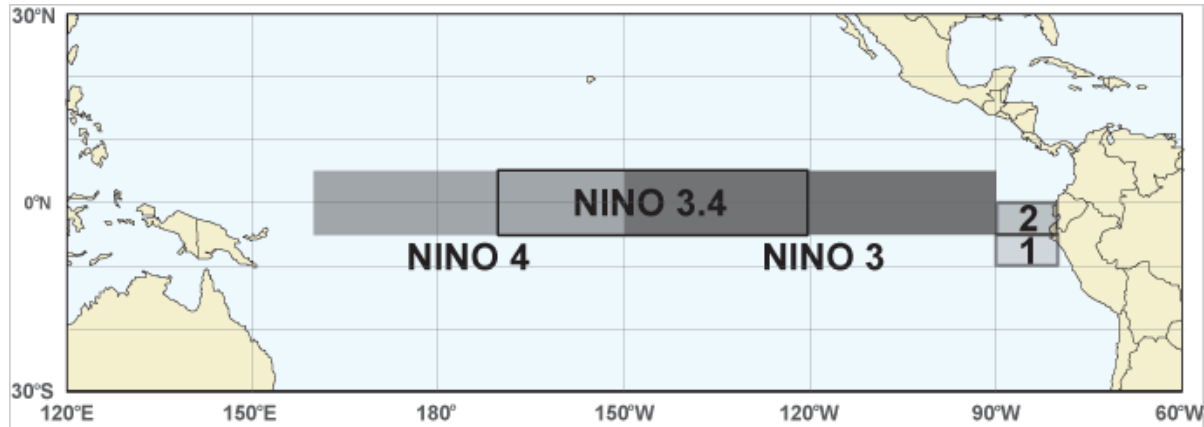


Data: ABOM BNOG  
Climatology baseline: 1961 to 1990  
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<http://www.bom.gov.au/climate>

Anomaly monthly difference  
Created: 06/09/2021

# NINO INDICES SST anomalies (°C)

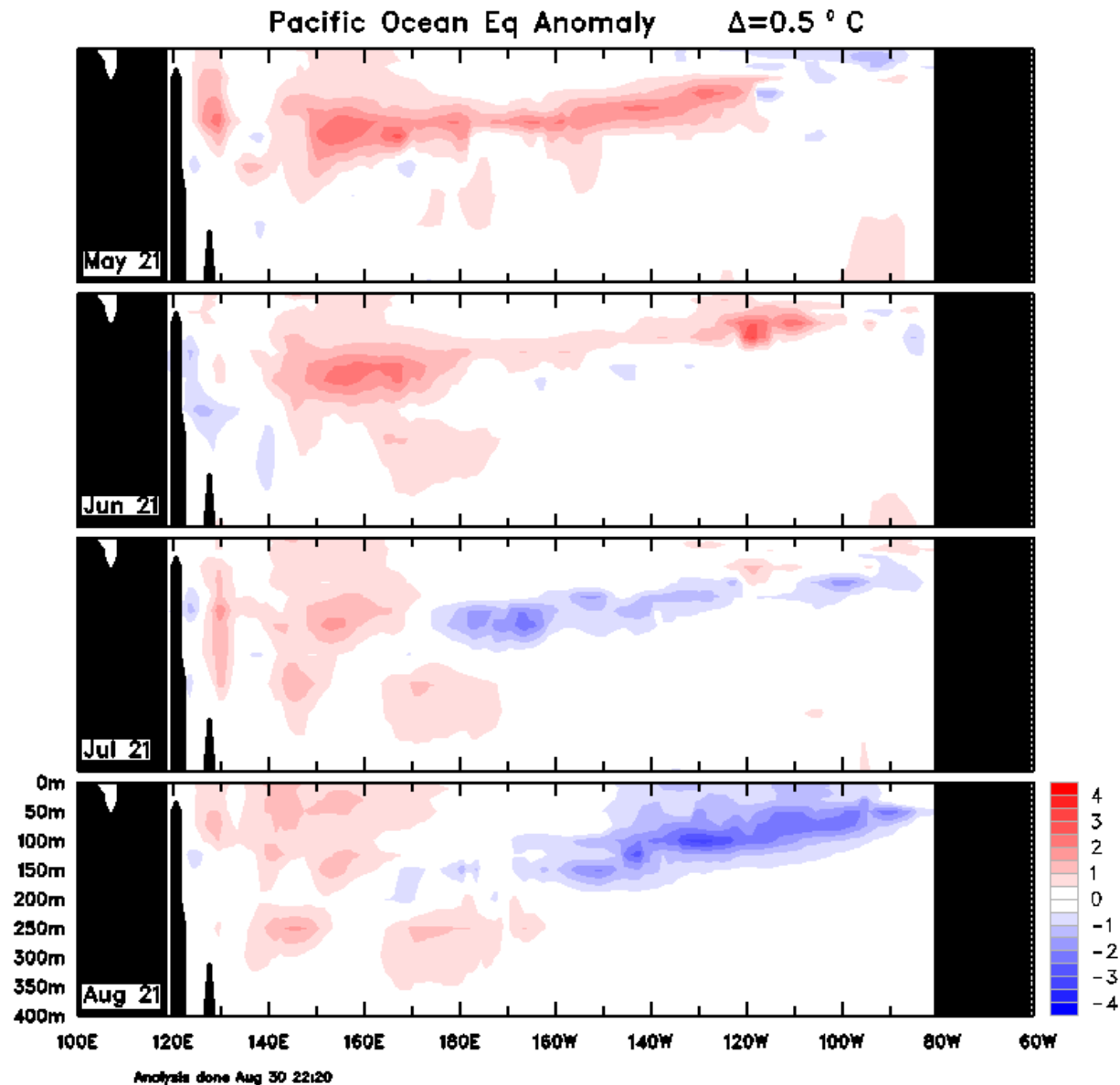


Index	Jul 2021	Aug 2021	Latest weekly
NINO3	+0.1	+0.0	-0.2
NINO3.4	+0.0	-0.1	-0.2
NINO4	+0.1	+0.2	-0.1

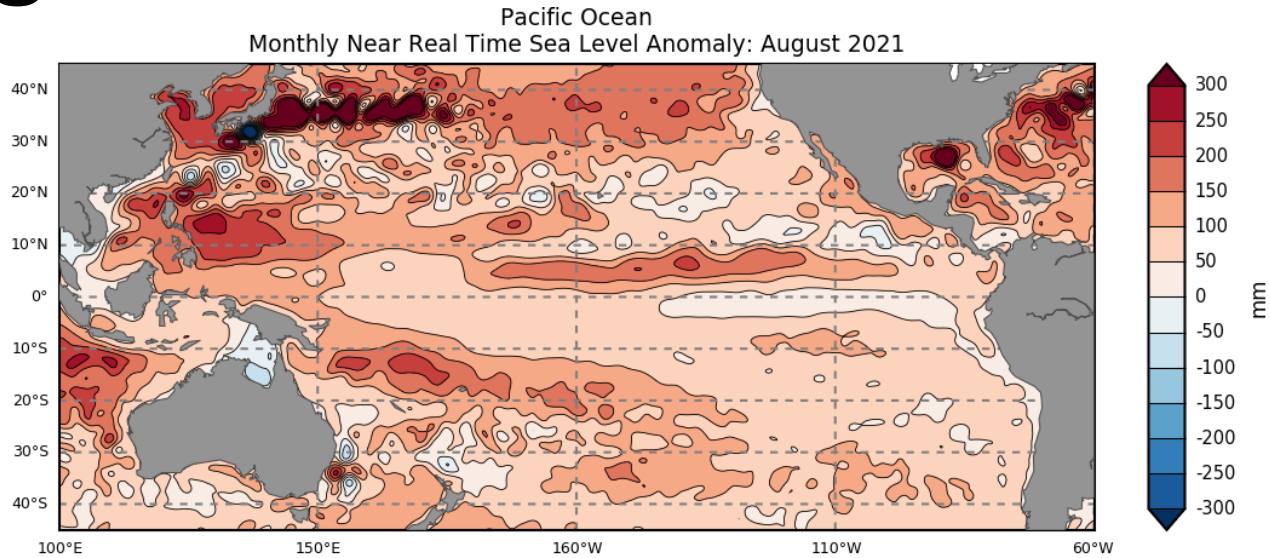
Weekly data for the week ending 12/09/2021

# Equatorial Pacific sub-surface profile

## Bureau of Meteorology

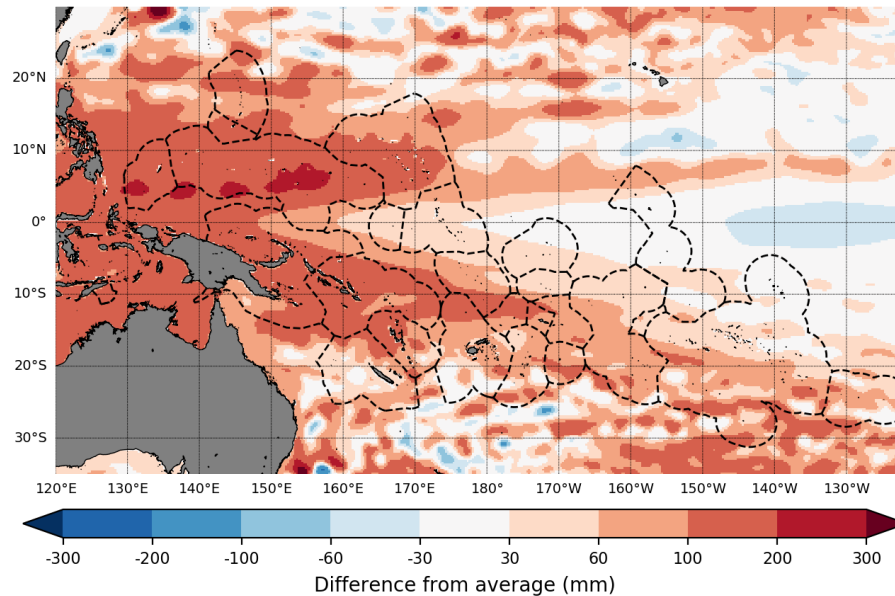


# August 2021 Sea Level Anomaly



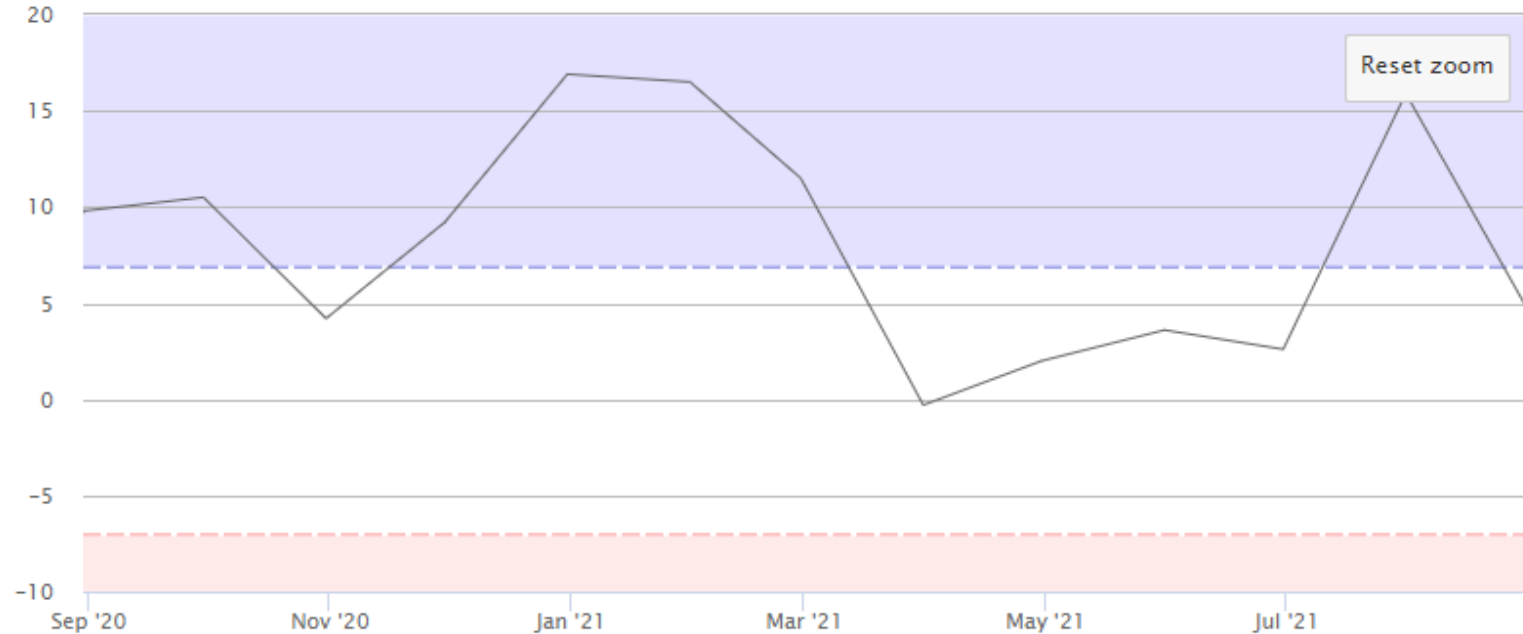
©Pac  
Geos

Difference from average sea surface height forecast for  
October 2021 to December 2021



# Southern Oscillation Index

Southern Oscillation Index – monthly



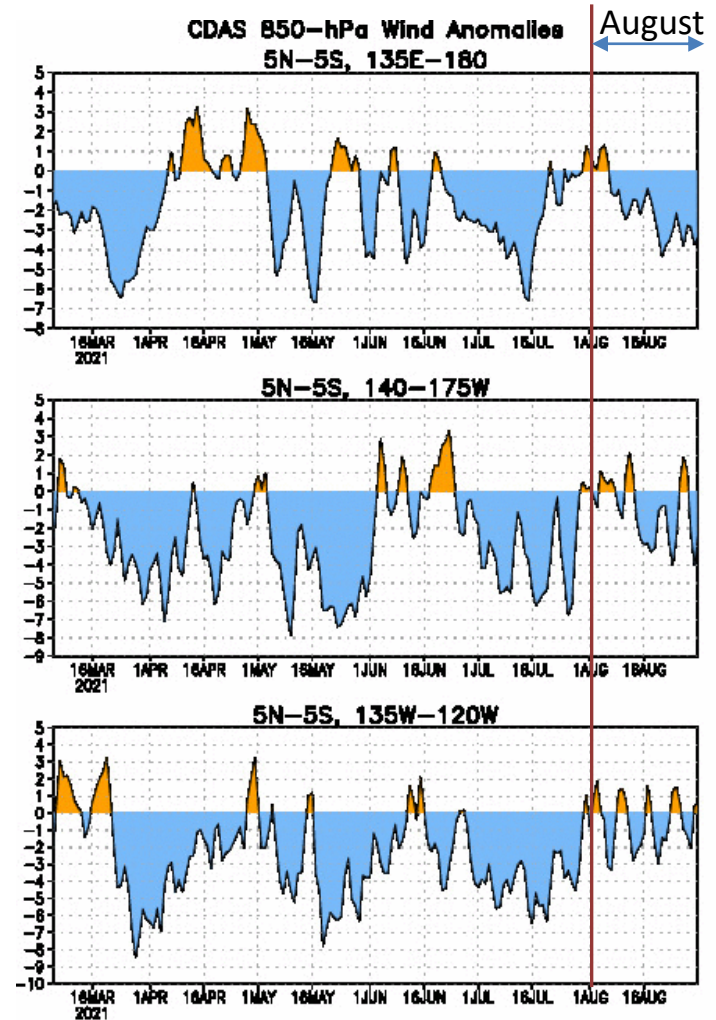
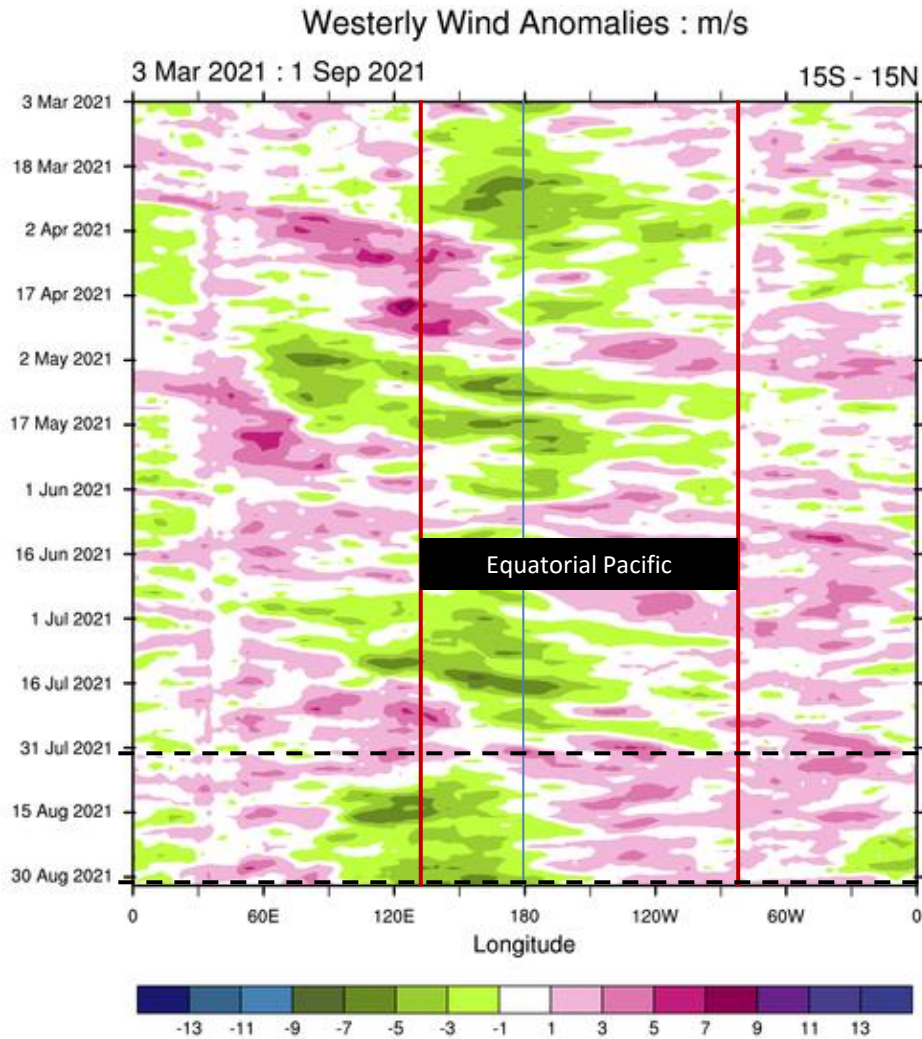
© Copyright Commonwealth of Australia 2021, Bureau of Meteorology

Southern Oscillation Index monthly data												
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2021	+16.5	+11.5	-0.3	+2.0	+3.6	+2.6	+15.9	+4.6	-	-	-	-
2020	+1.3	-2.2	-5.2	-0.5	+2.8	-9.6	+4.2	+9.8	+10.5	+4.2	+9.2	+16.9

At 12 September 2021: 30-day SOI = +9; 90-day SOI = +9



# Equatorial Trade Winds

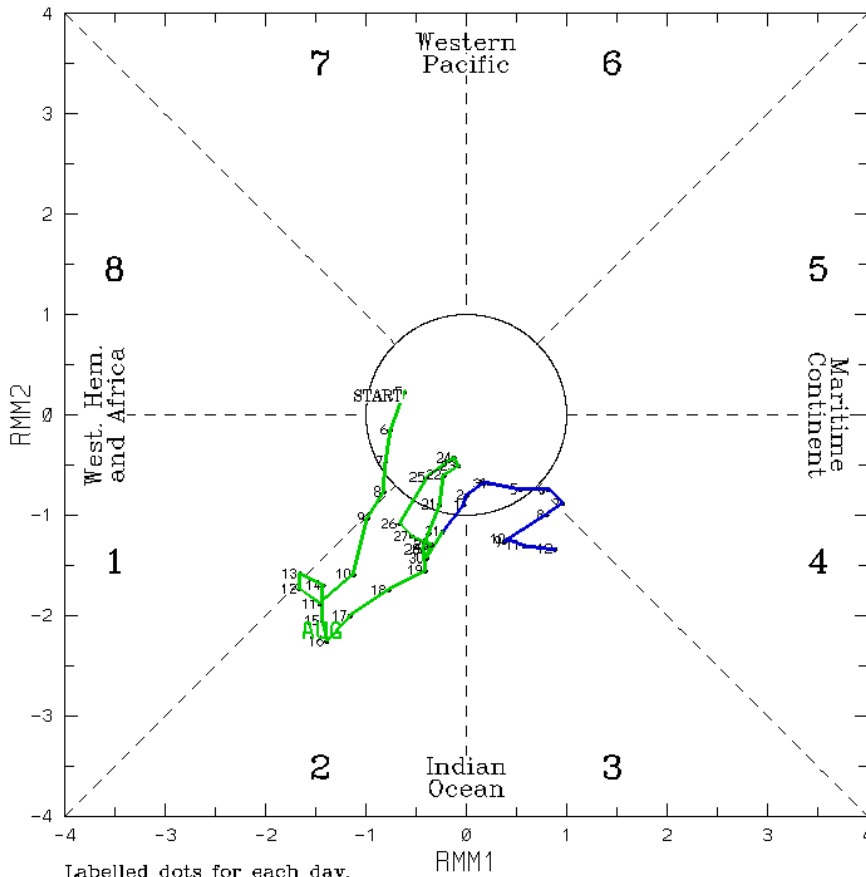


Data updated through 31 AUG 2021  
**CLIMATE PREDICTION CENTER/NCEP**



# Madden-Julian Oscillation

(RMM1,RMM2) phase space for 4-Aug-2021 to 12-Sep-2021



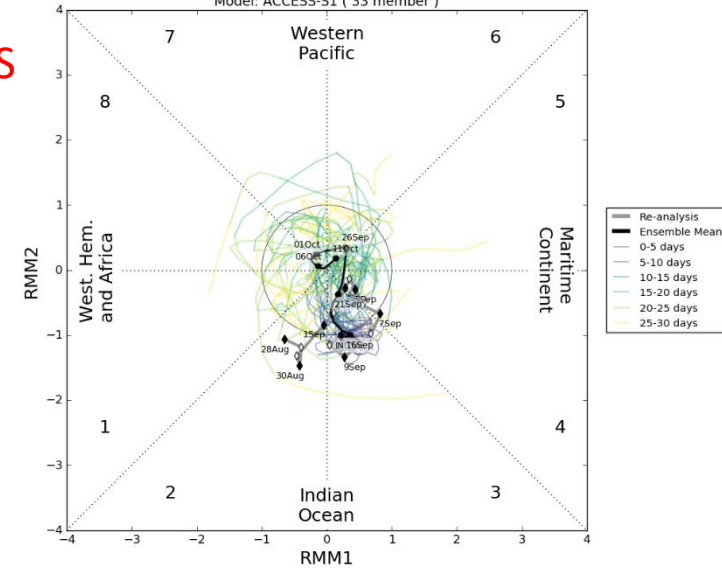
Labelled dots for each day.

Blue line is for Sep, green line is for Aug, red line is for Jul.

(C) Copyright Commonwealth of Australia 2021. Bureau of Meteorology  
2021

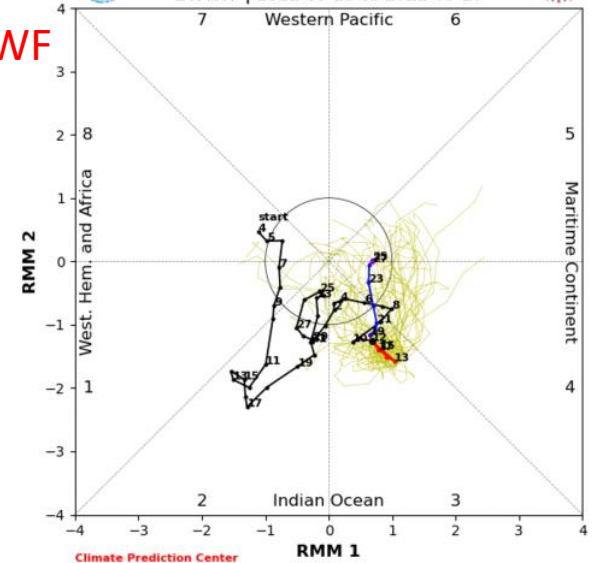
ACCESS

MJO Index Forecast initialised: 11 September 2021  
Model: ACCESS-S1 ( 33 member )



ECMWF

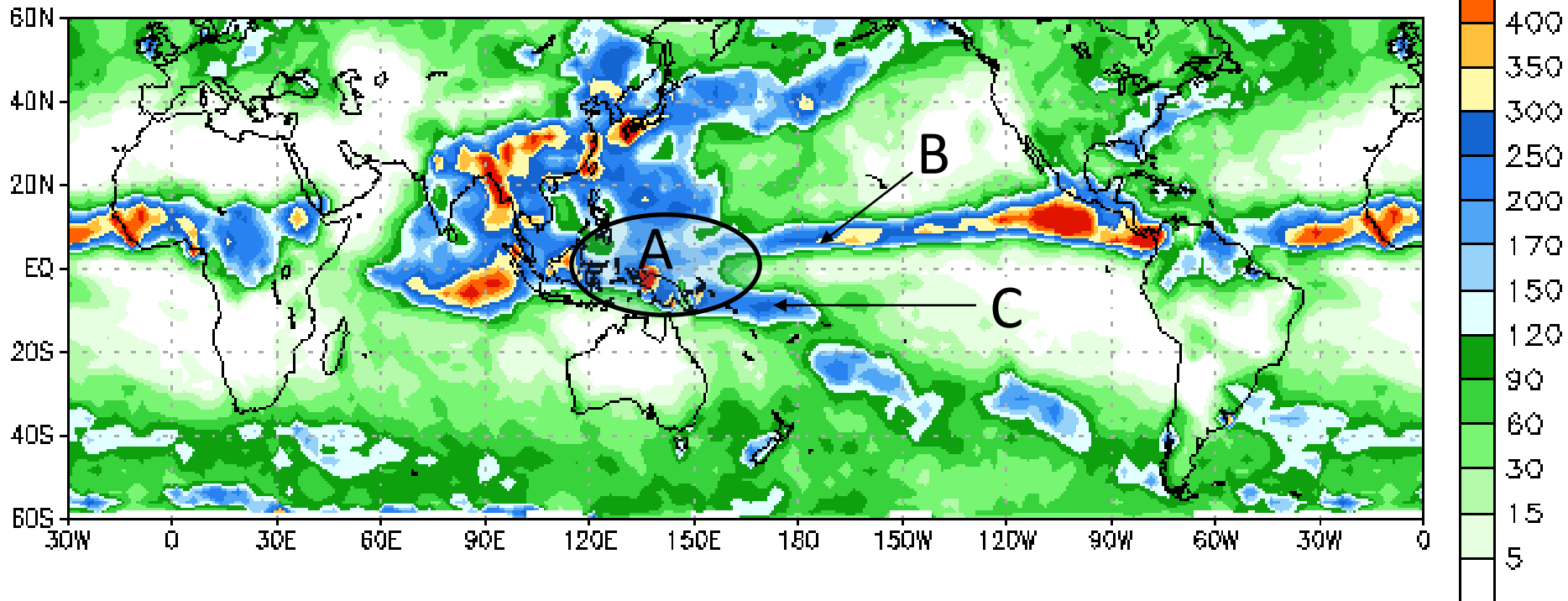
ECMWF | 2021-09-13 to 2021-09-27



Climate Prediction Center

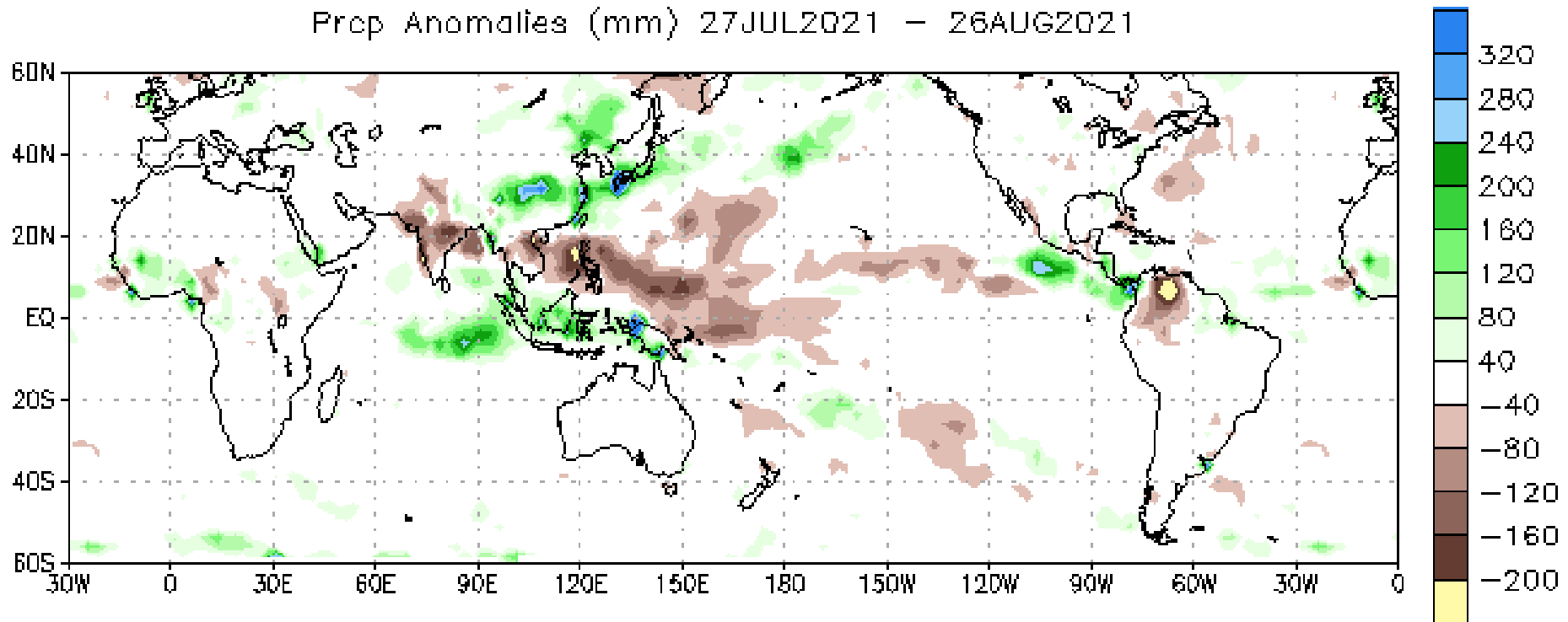
# Satellite Rainfall August 2021

Accumulated Prop (mm) 27JUL2021 – 26AUG2021



Data Source: NCEP CMAP Precipitation

# Satellite Rainfall Anomaly August 2021

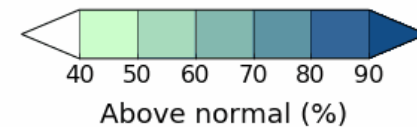
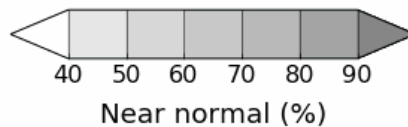
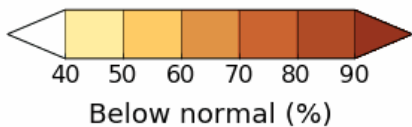
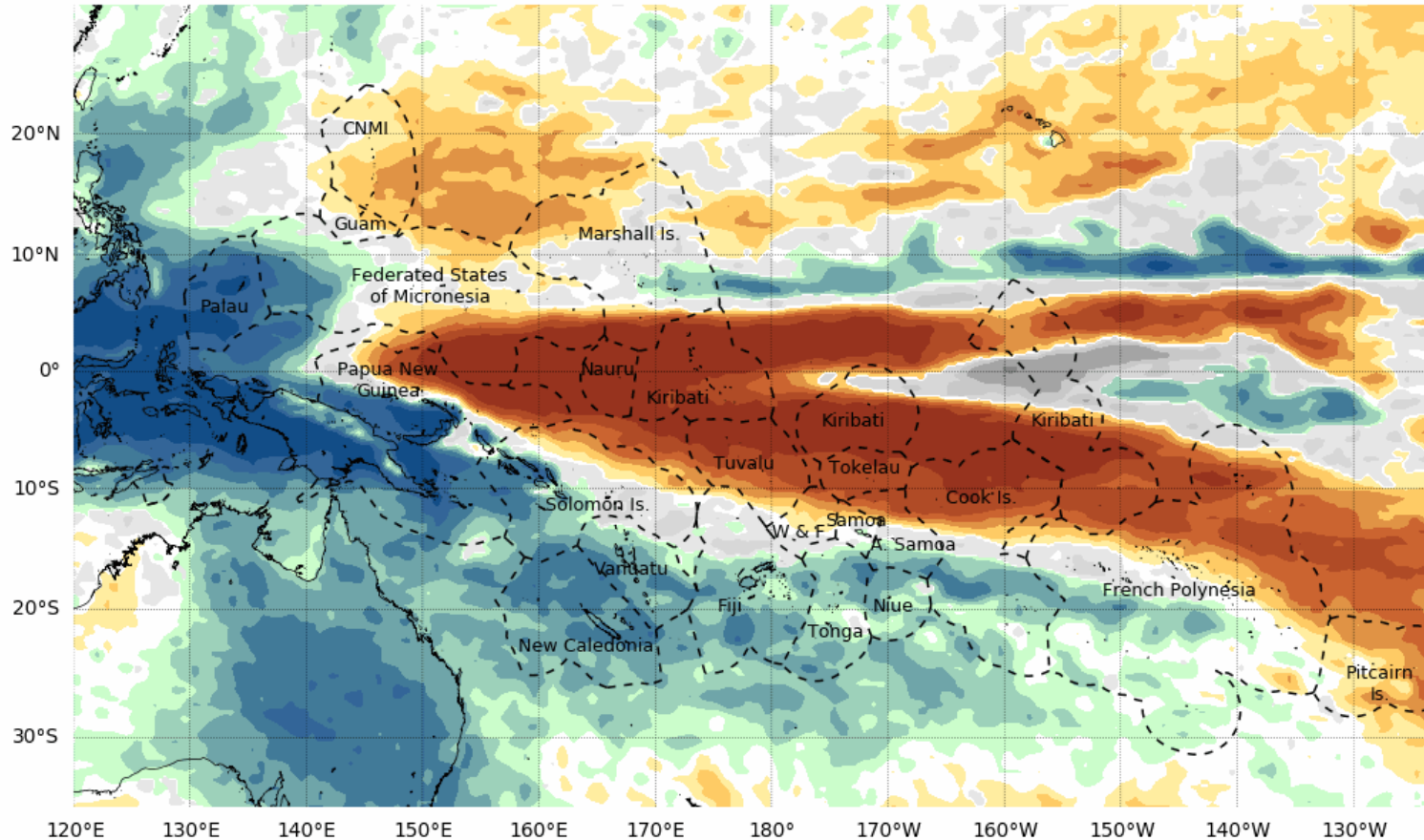


Data Source: NCEP CMAP Precipitation  
Climatology (1991–2020)

Units = mm per month

# Model Rainfall Predictions (SON)

Tercile rainfall probabilities for  
September to November 2021



Model: ACCESS-S1

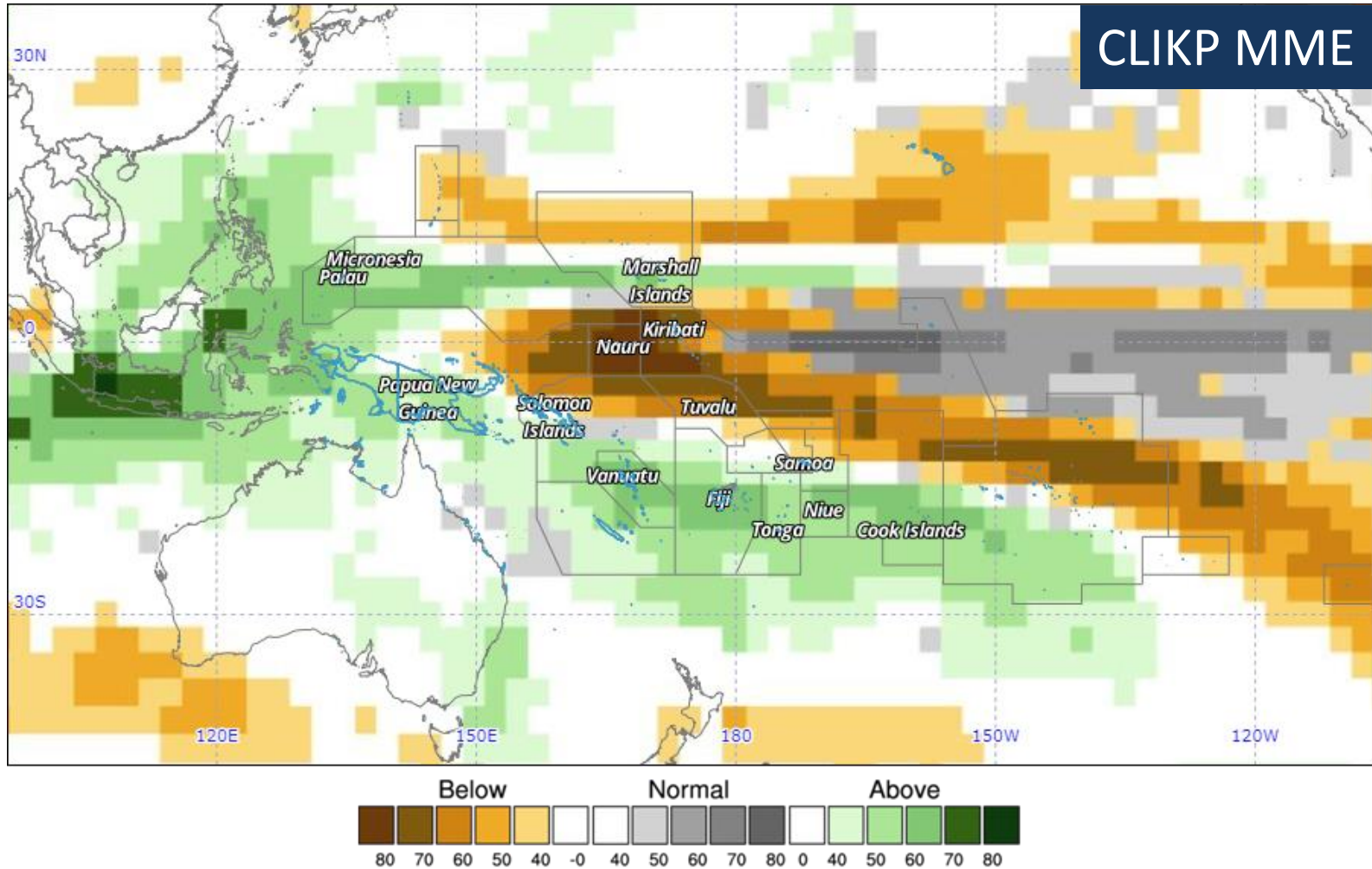
Model run: 28/08/2021

Base period: 1990-2012

Issued: 30/08/2021



# Model Rainfall Predictions (SON)



Year: 2021, Season: SON, Lead Month: 3, Method: GAUS

Model: APCC, CWB, MSC, NASA, NCEP, PNU

Generated using CLIK® (2021-9-2)

© APEC Climate Center



# Model Rainfall Predictions (SON)

	September-November 2021		
	ACCESS-S	C3S	CLIKP
Cook Is North	Dark Red	Red	Orange
Cook Is South	Light Green	Light Green	Teal
Fiji West	Teal	Teal	Teal
Fiji Central	Light Green	Light Green	Teal
Fiji East	Light Grey	Light Green	Teal
Fiji North	Teal	Light Green	Teal
Fiji Rotuma	Light Grey	Light Green	Light Green
FSM West	Teal	Light Green	Light Green
FSM Central	Light Grey	Light Green	Teal
FSM East	Orange	Light Green	Light Grey
Kiribati West	Dark Red	Red	Red
Kiribati Central	Red	Red	Orange
Kiribati East	Yellow	Light Green	Light Grey
Marshall Is	Light Green	Light Green	Light Green
Nauru	Dark Red	Red	Red
Niue	Light Green	Light Green	Teal
Palau	Dark Blue	Light Green	Teal
PNG Momase	Teal	Light Green	Light Green
PNG Is	Dark Blue	Light Green	Orange
PNG South	Dark Blue	Teal	Light Green
PNG Highlands	Dark Blue	Teal	Light Green
Samoa	Light Grey	Light Green	Light Green
Solomon Is West	Teal	Light Green	Light Green
Solomon Is Central	Dark Blue	Light Green	Light Green
Solomon Is East	Light Green	Light Green	Light Grey
Tonga North	Light Green	Light Green	Light Green
Tonga Central	Light Green	Light Green	Light Green
Tonga South	Light Green	Teal	Light Green
Tuvalu North	Dark Red	Red	Red
Tuvalu Central	Red	Red	Orange
Tuvalu South	Orange	Red	Orange
Vanuatu North	Teal	Teal	Teal
Vanuatu South	Teal	Teal	Teal

	41-50%	51-60%	61-70%	71-80%	81-90%	>90%
Below normal	Yellow	Orange	Red	Dark Red	Dark Red	Dark Red
Near-normal	Light Grey	Light Grey	Light Grey	Light Grey	Light Grey	Light Grey
Above normal	Light Green	Light Green	Teal	Teal	Dark Blue	Dark Blue

# Climate Model Summary

