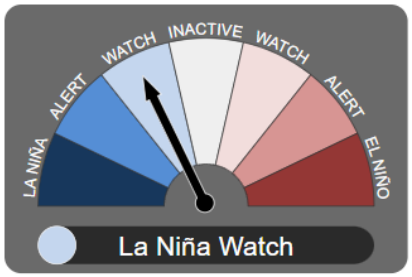
ENSO update - OCOF 200

16 May 2024

ENSO Update

La Niña Watch—some signs of La Niña formation later in 2024

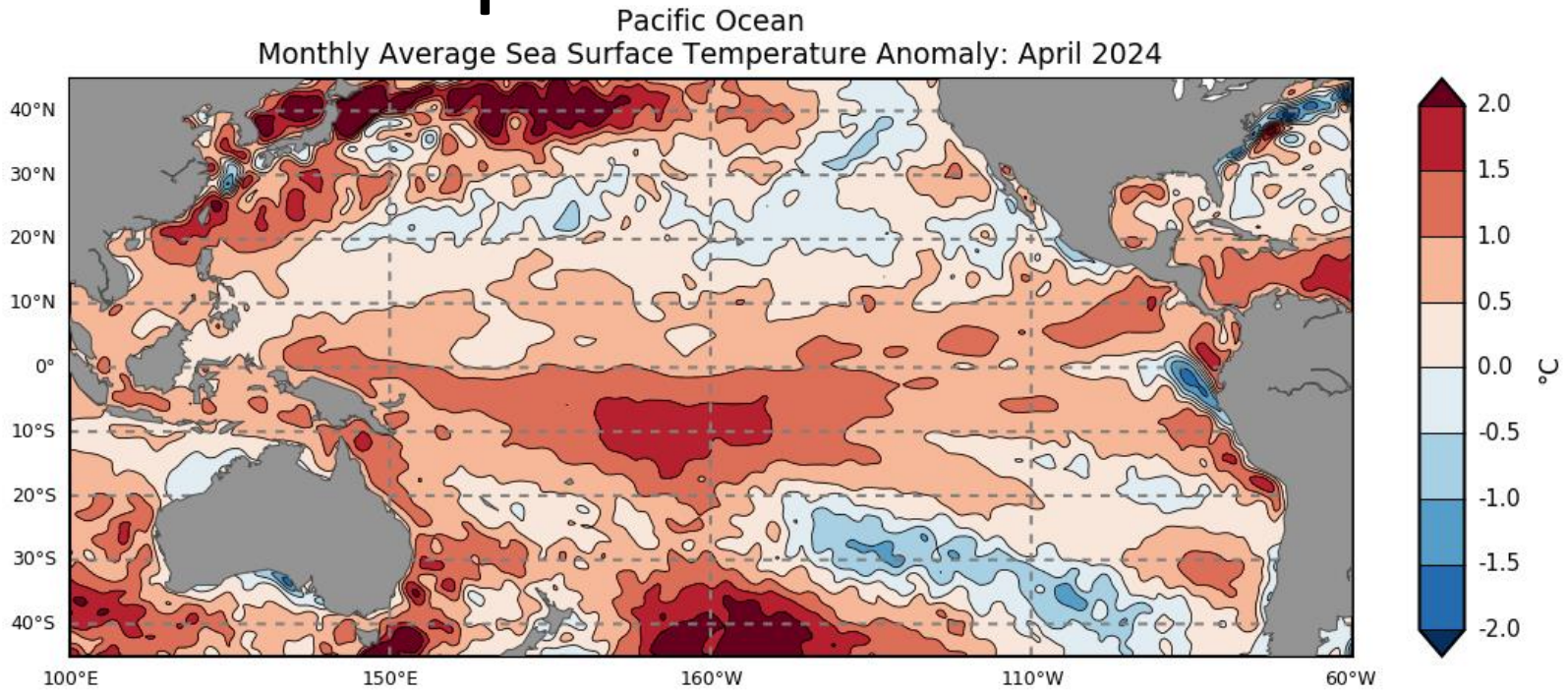


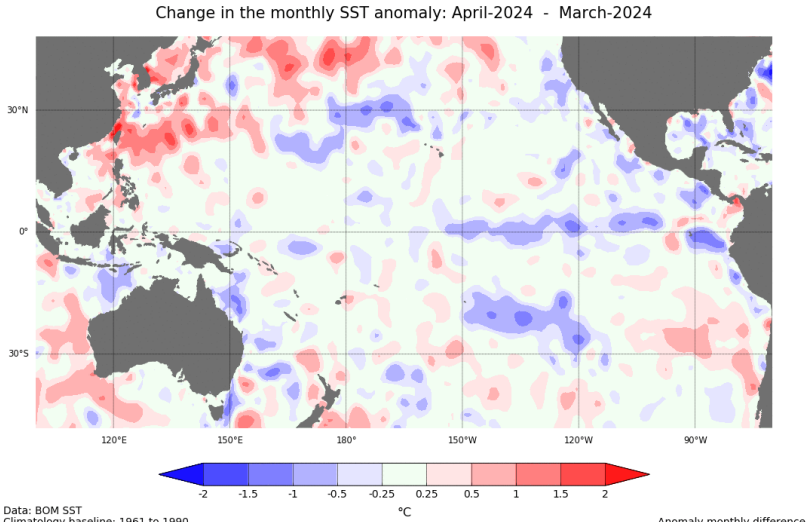
- The El Niño–Southern Oscillation (ENSO) is currently neutral. There are some early signs that a La Niña might form in the Pacific Ocean later in 2024. As a result, the Bureau's ENSO Outlook has shifted to La Niña Watch. When La Niña Watch criteria have been met in the past, a La Niña event has subsequently developed around 50% of the time.

- Sea surface temperatures (SSTs) in the central Pacific have been steadily cooling since December 2023. This surface cooling is supported by a significant amount of sub-surface cooling in the central and eastern Pacific. Recent cloud and surface pressure patterns are ENSO-neutral.

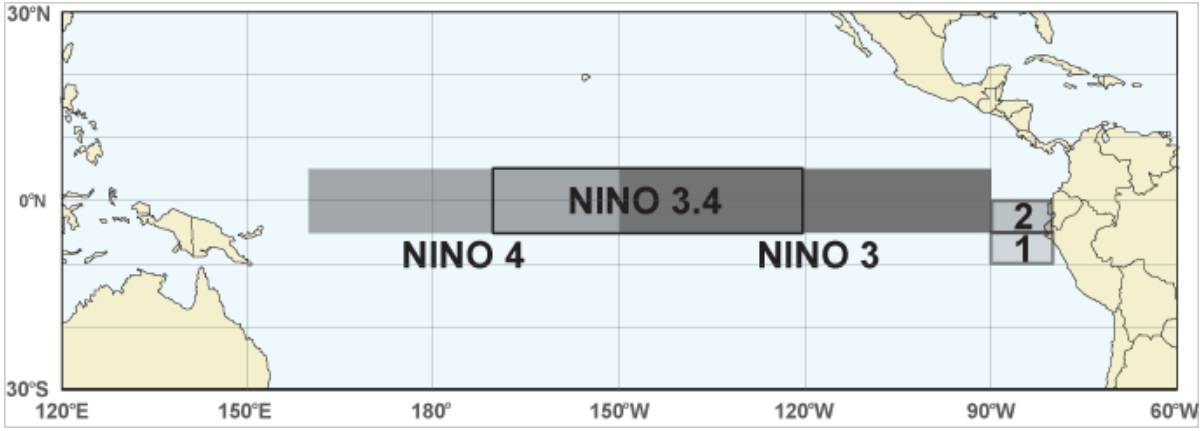
- The Bureau's modelling suggests that ENSO will likely remain neutral until at least July 2024.

April 2024 SSTs





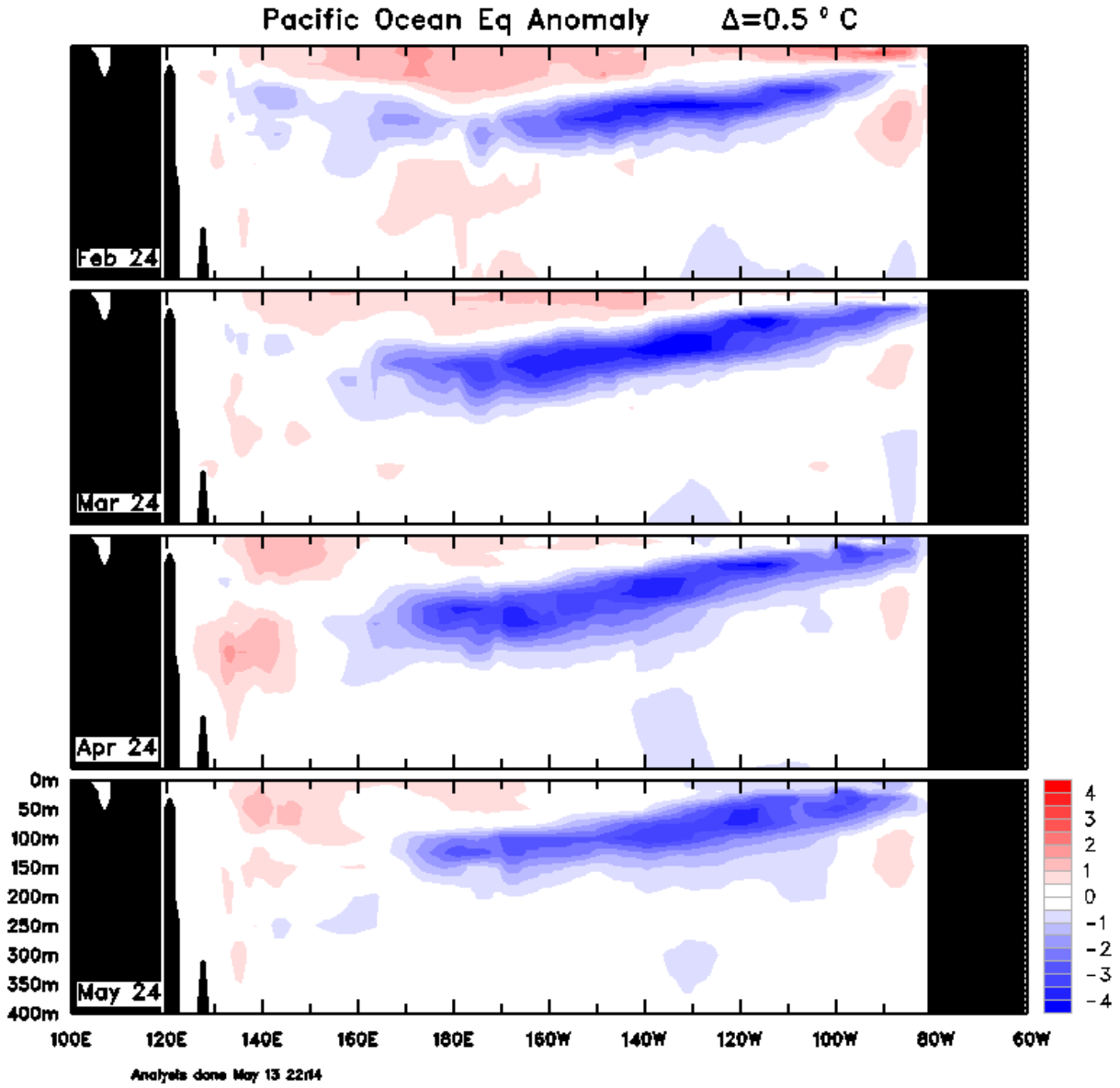
NINO INDICES SST anomalies (°C)



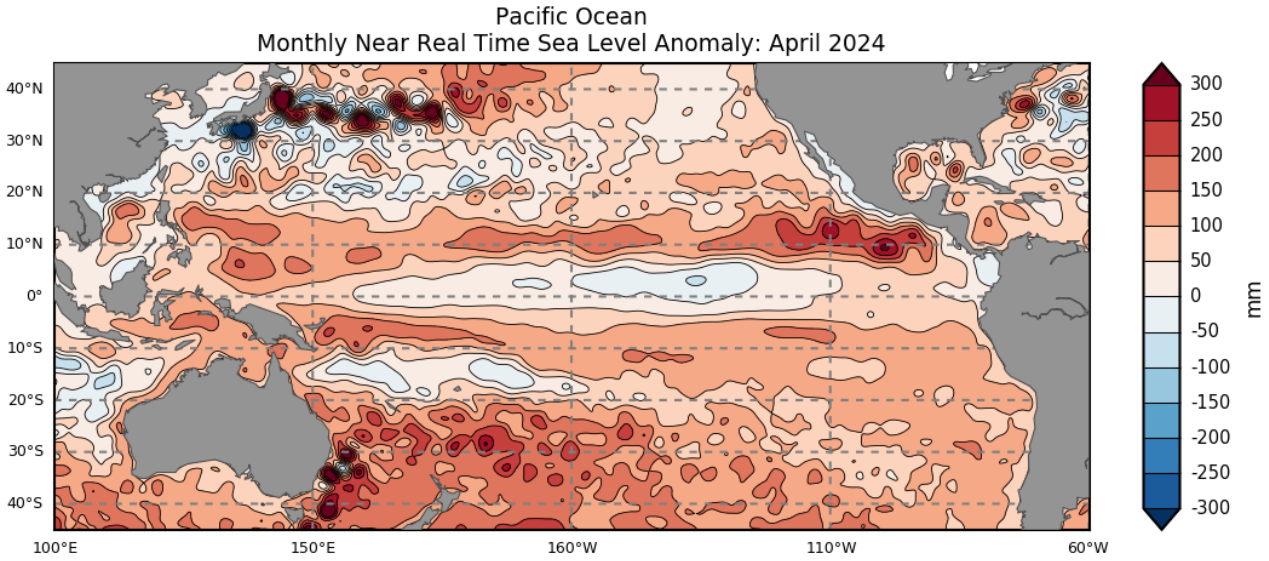
Index	March 2024	April 2024	Latest weekly
NINO3	+0.8	+0.5	+0.2
NINO3.4	+1.1	+0.8	+0.5
NINO4	+0.9	+0.8	+0.8

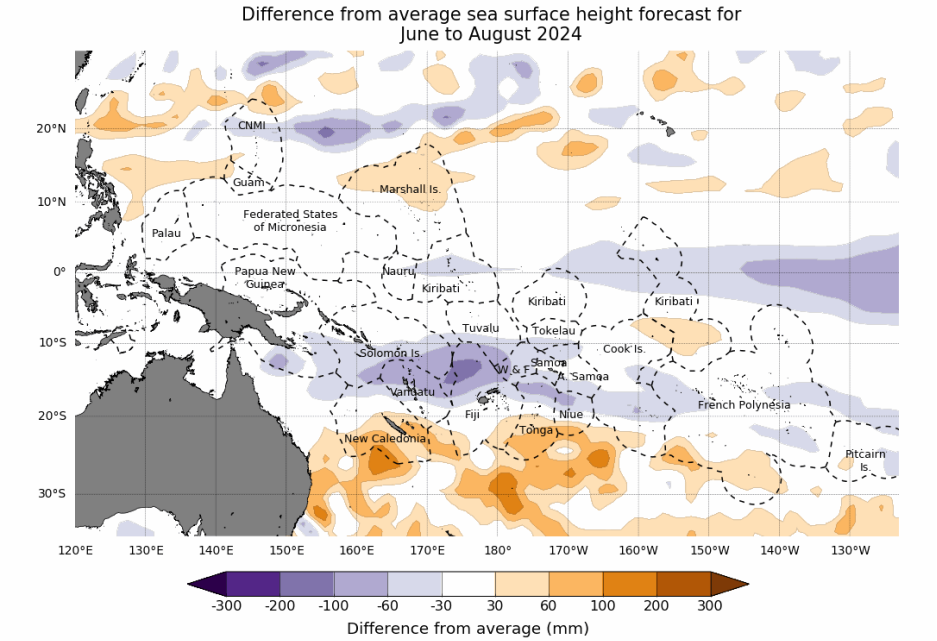
Weekly data for the week ending 12/05/2024

Equatorial Pacific sub-surface profile
Bureau of Meteorology



April 2024 Sea Level Anomaly



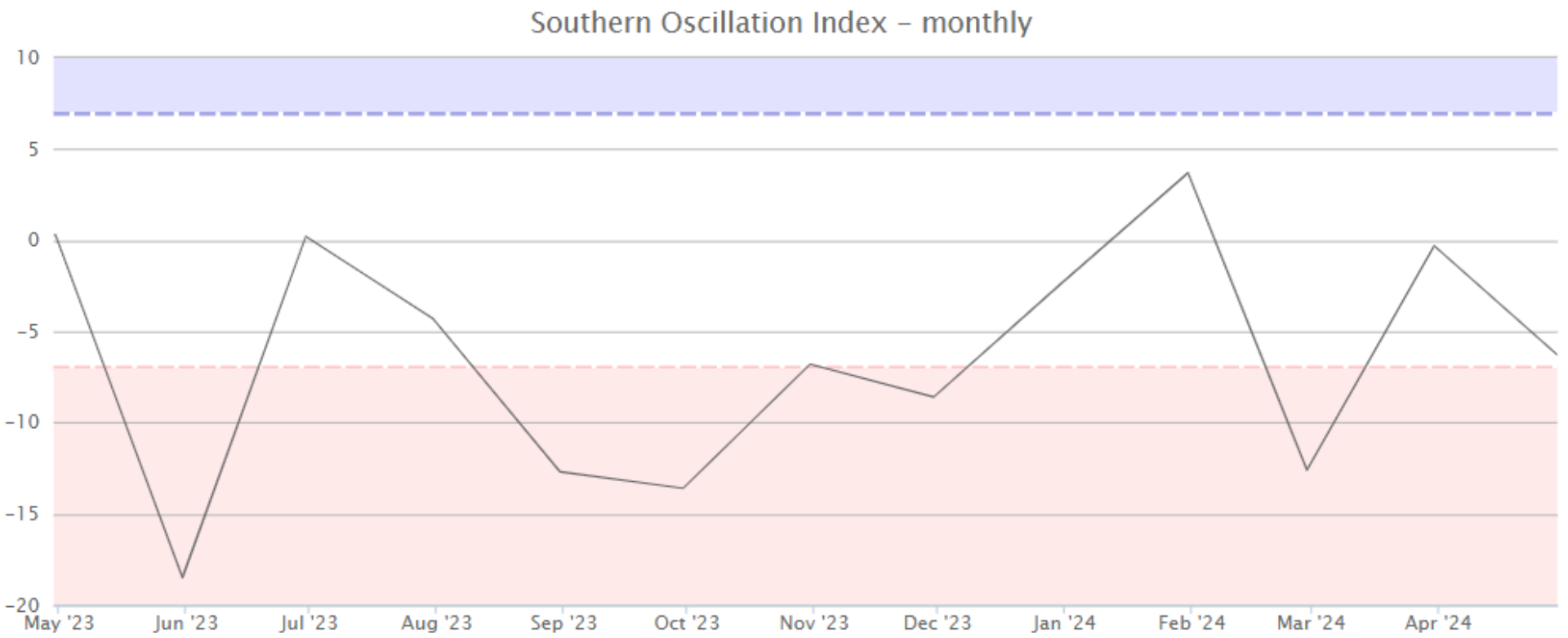


Base period: 1981-2018
Model: ACCESS-S2

Model run: 06/05/2024
Issued: 08/05/2024

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/.

Southern Oscillation Index

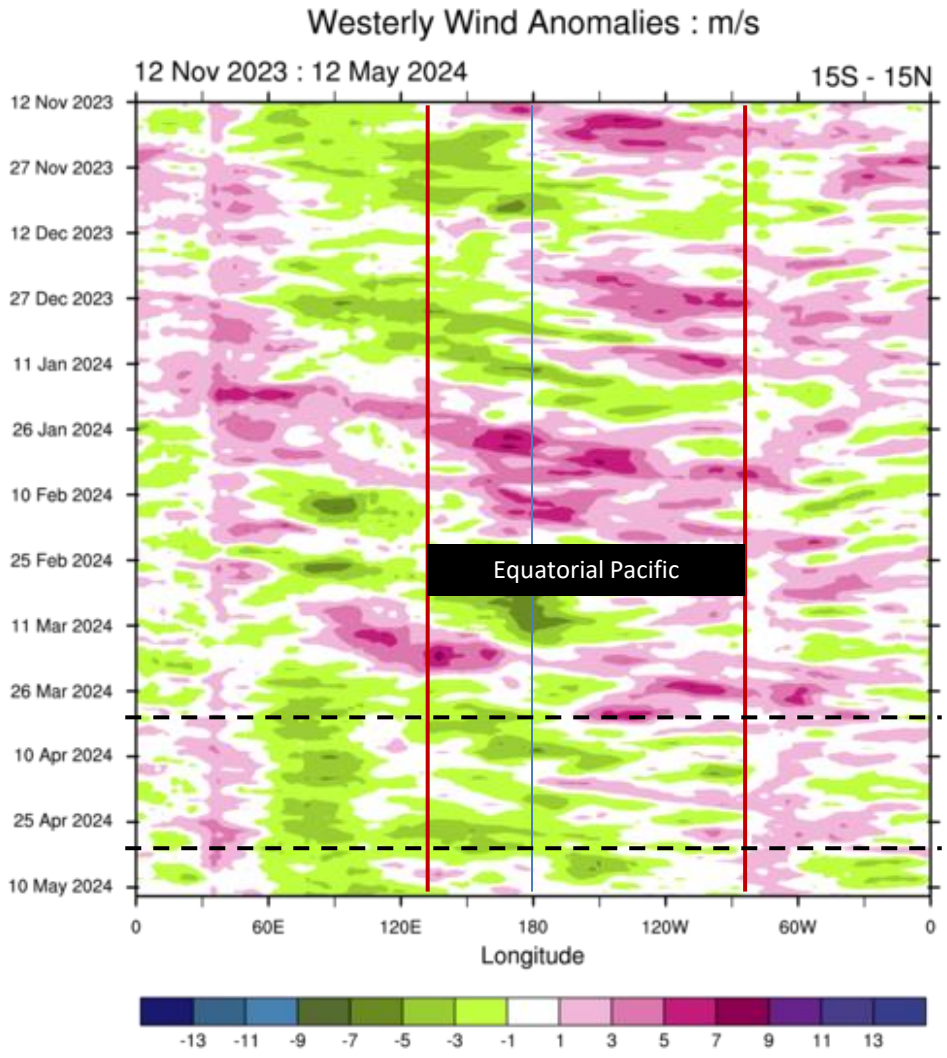


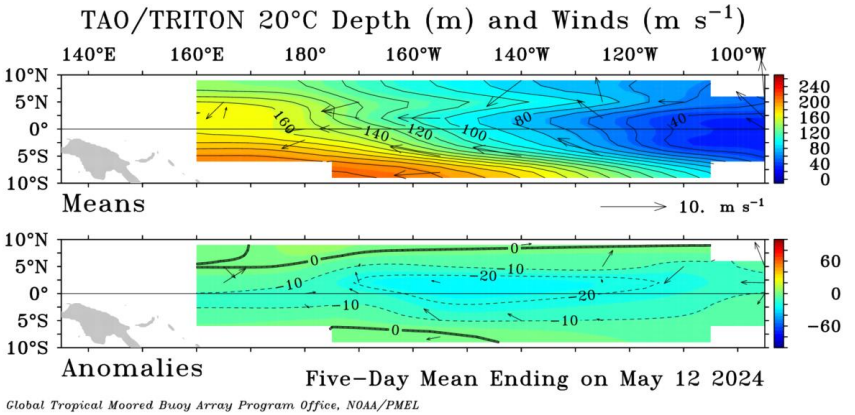
Southern Oscillation Index monthly data

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2024	+3.7	−12.6	−0.3	−6.3	-	-	-	-	-	-	-	-
2023	+11.8	+10.5	−2.0	+0.3	−18.5	+0.2	−4.3	−12.7	−13.6	−6.8	−8.6	−2.4

At 12 May 2024: 30-day SOI = –3; 90-day SOI = –1

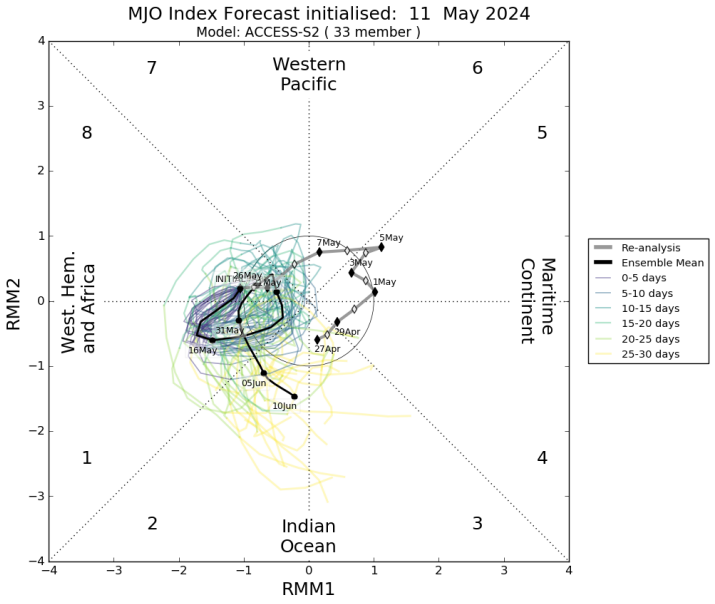
Equatorial Trade Winds



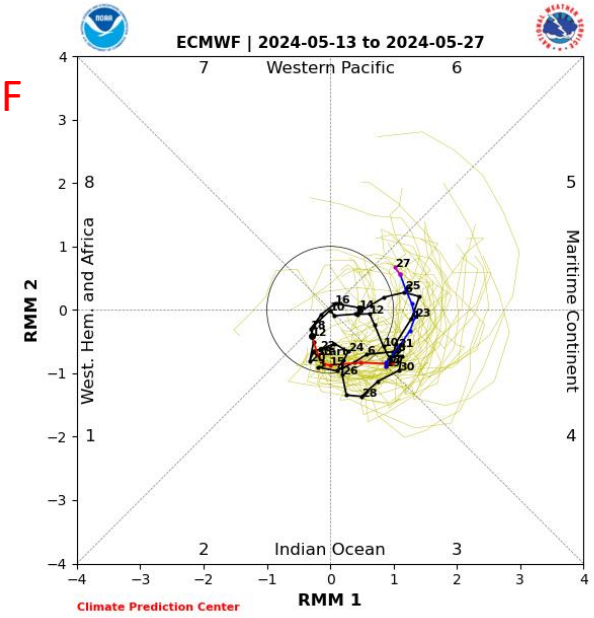


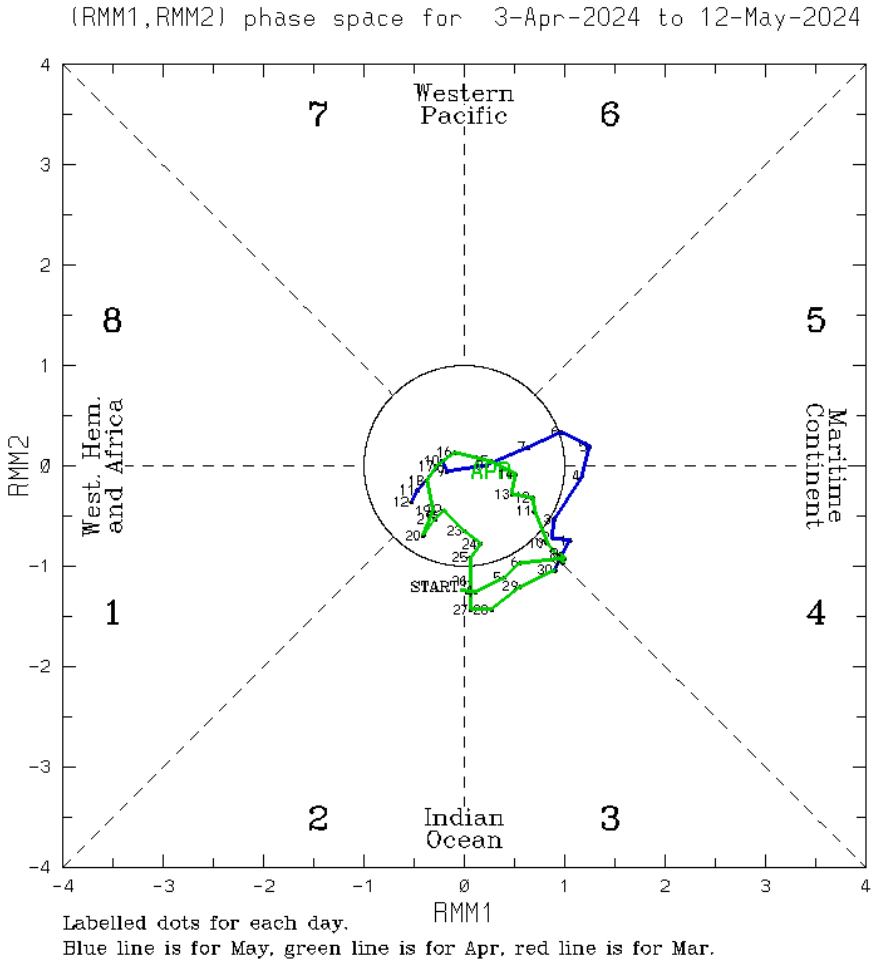
Madden-Julian Oscillation

ACCESS

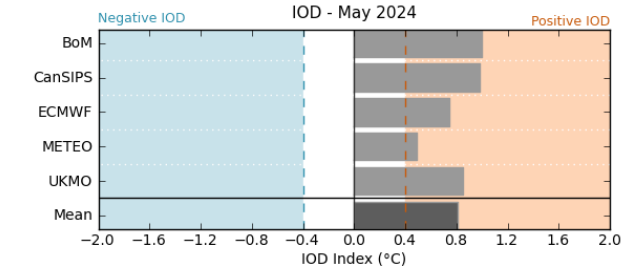


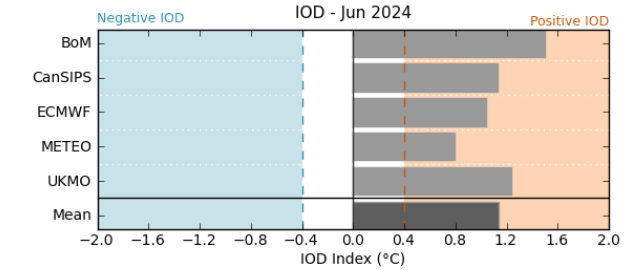
ECMWF

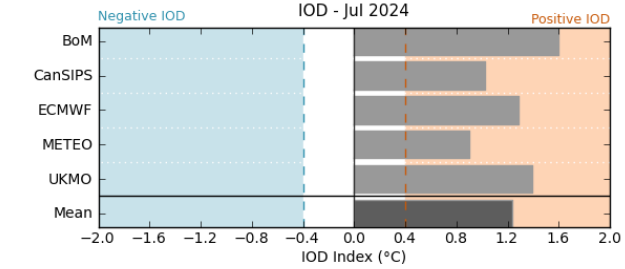


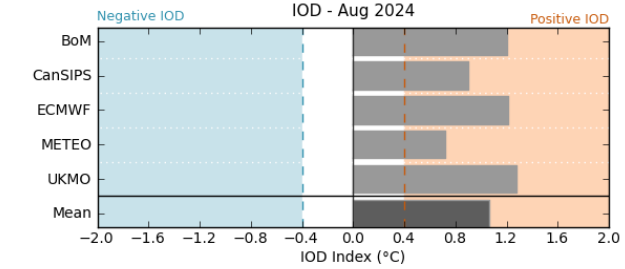


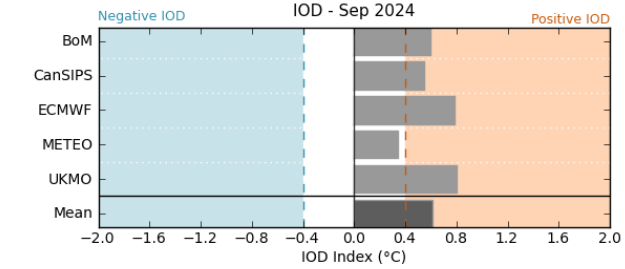
Indian Ocean Dipole (IOD)



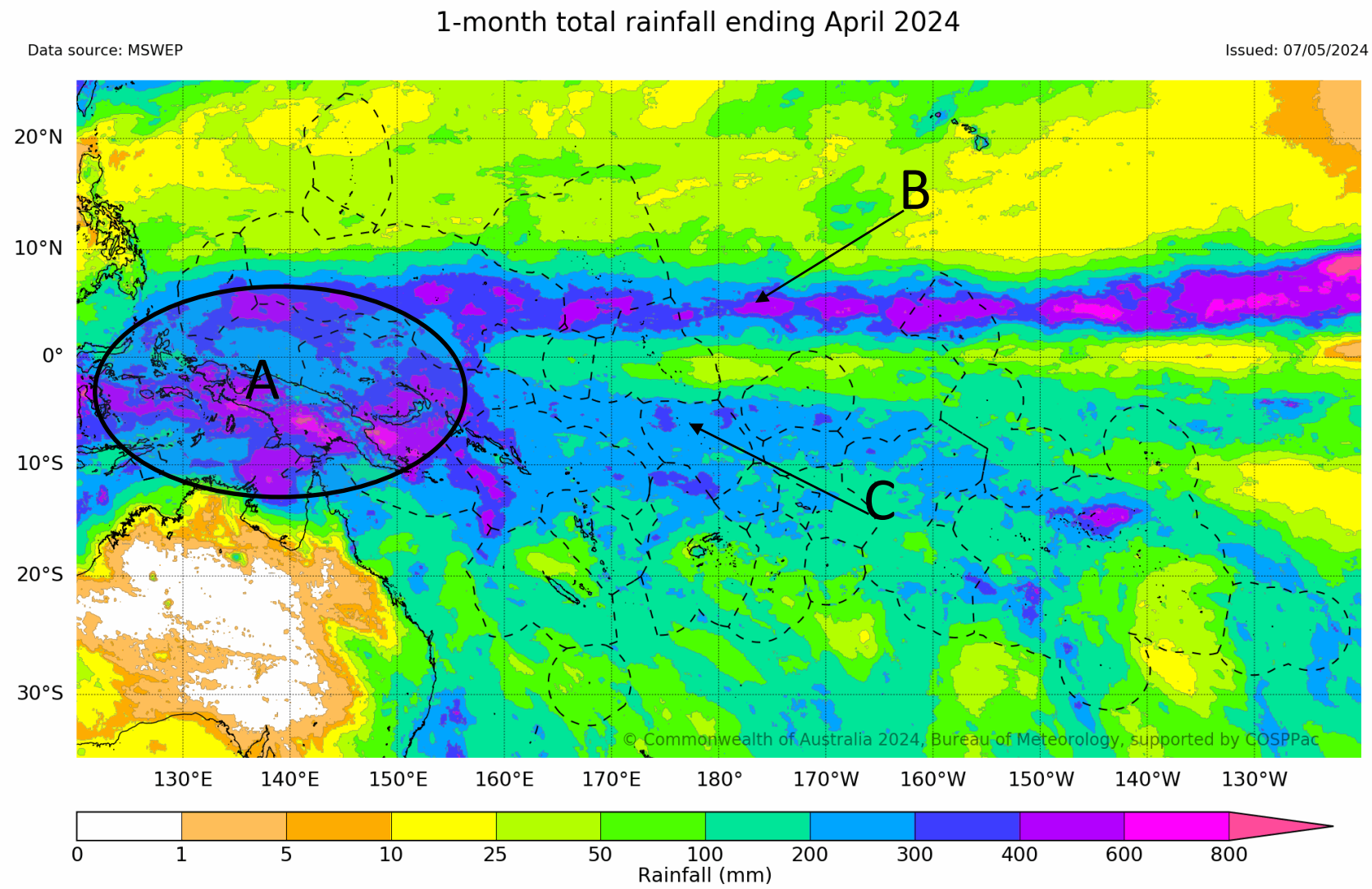






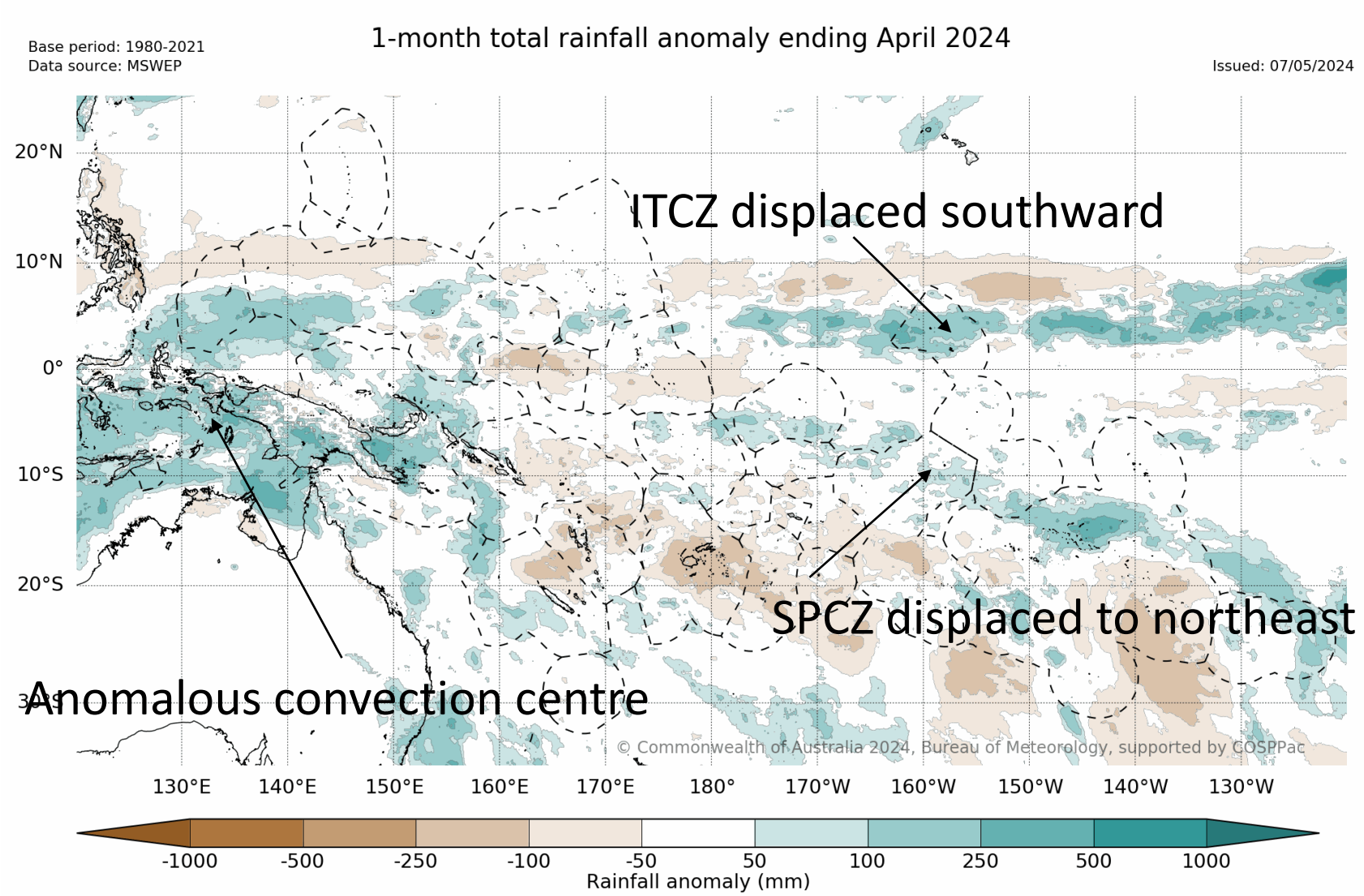


Satellite Rainfall April 2024



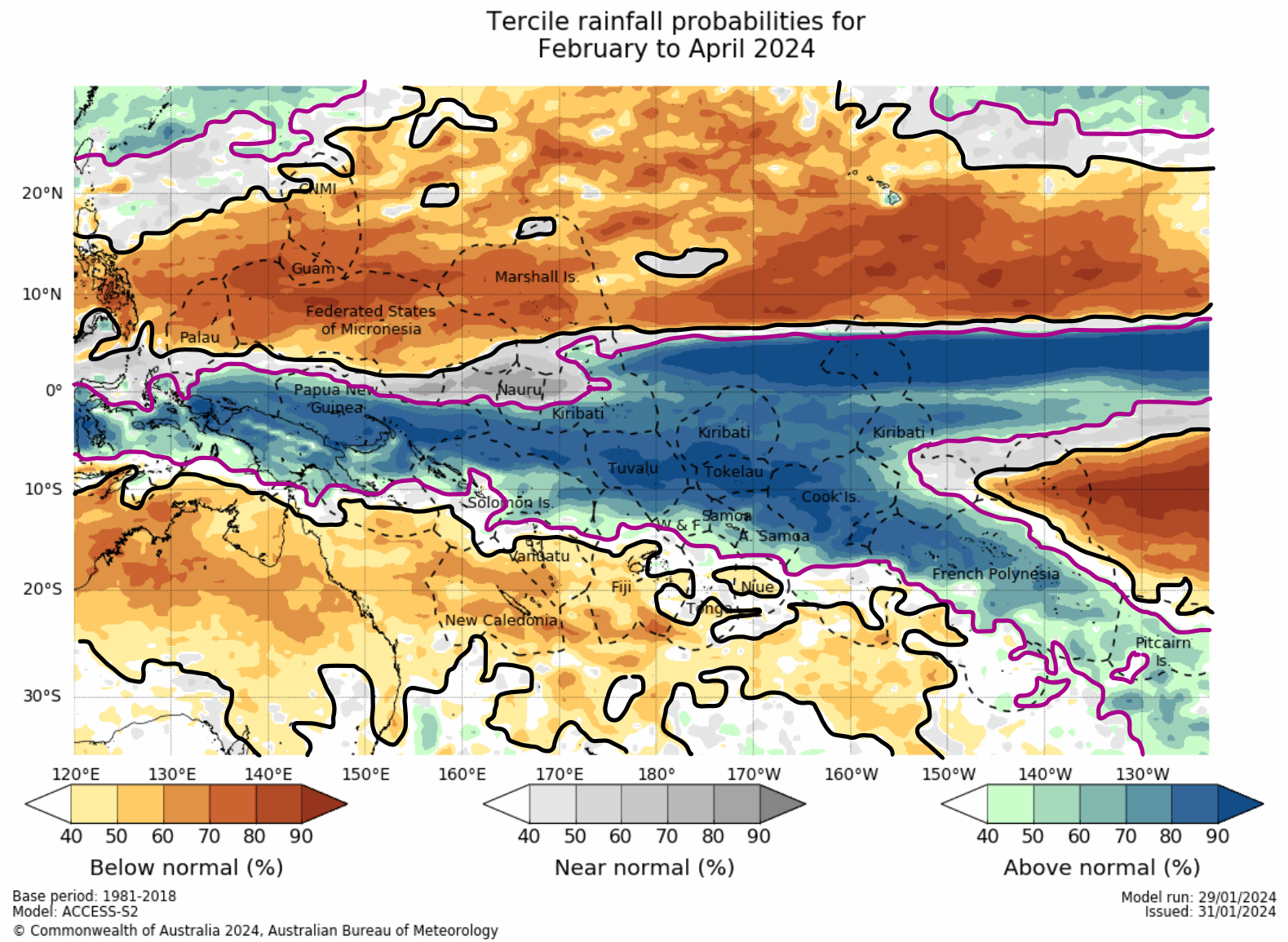
Dashed EEZ shapefile data extracted from Flanders Marine Institute (2019), Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (200NM), version 11. Available online at http://www.marineregions.org/.

Satellite Rainfall Anomaly April 2024



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/.

Forecast Verification: Feb-Apr

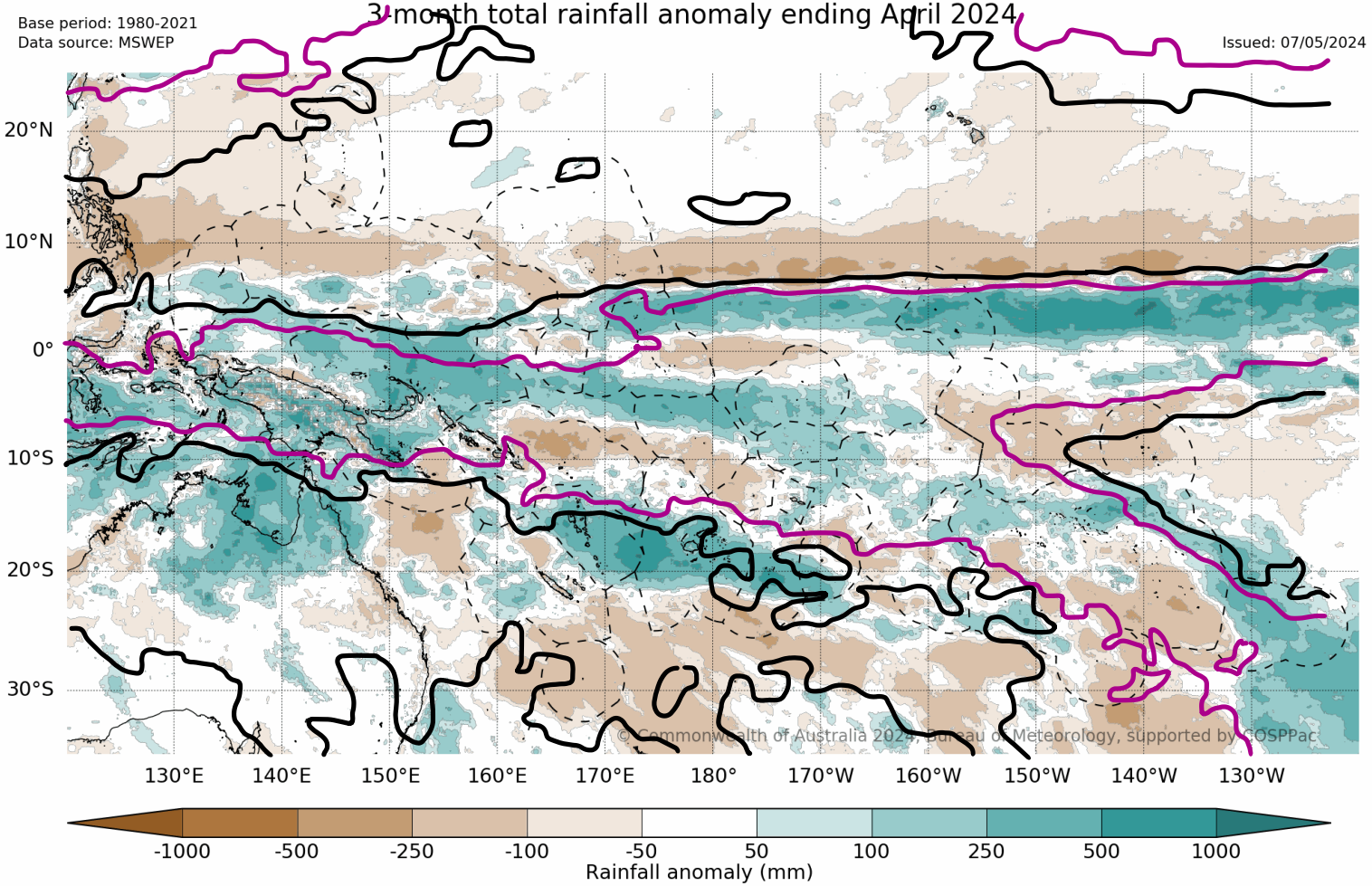


Base period: 1981-2018
Model: ACCESS-S2

Model run: 29/01/2024
Issued: 31/01/2024

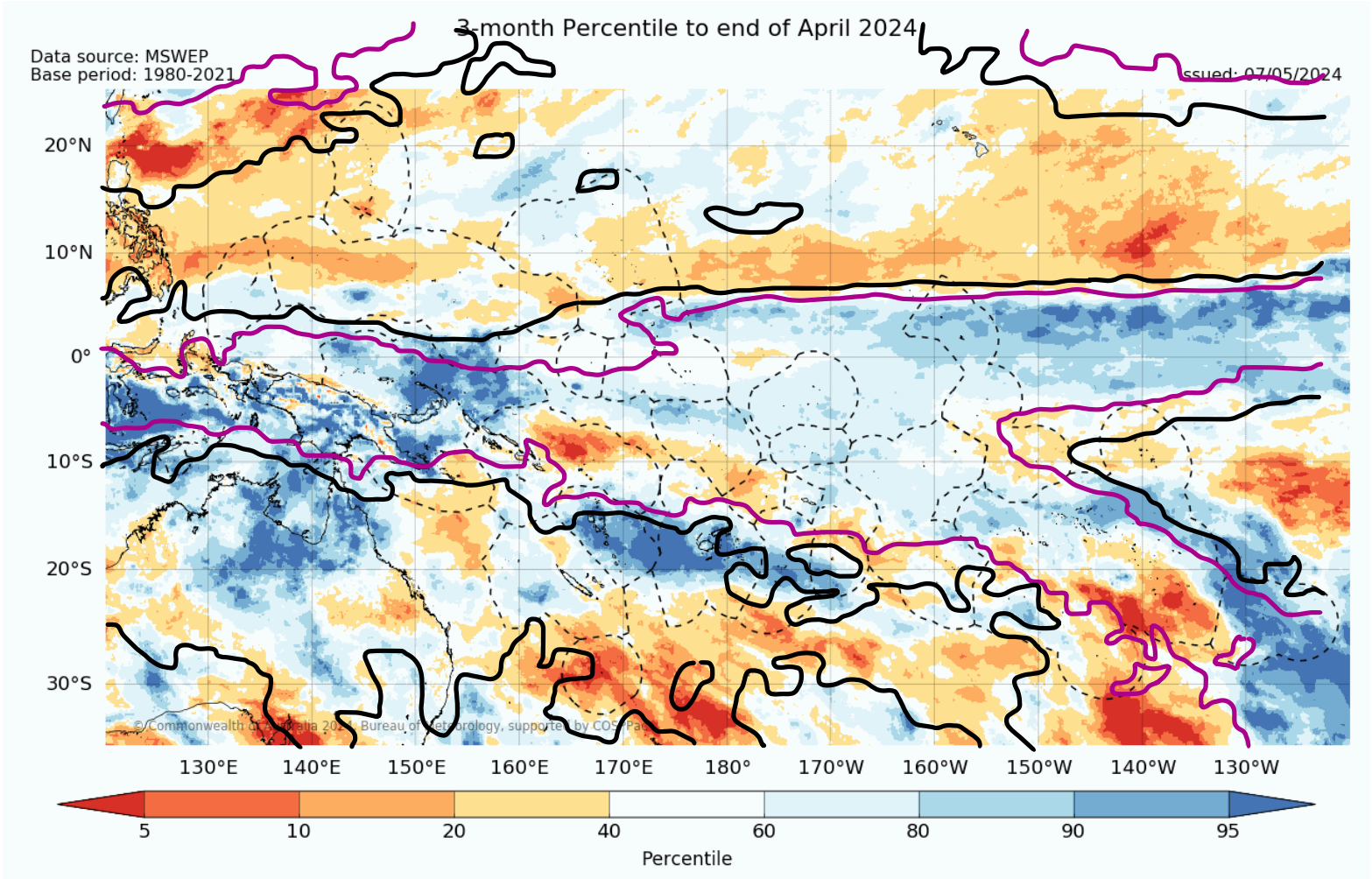
Shapefile data extracted from Flanders Marine Institute (2019), Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (200NM), version 11. Available online at http://www.marineregions.org/.

Forecast Verification: Feb-Apr

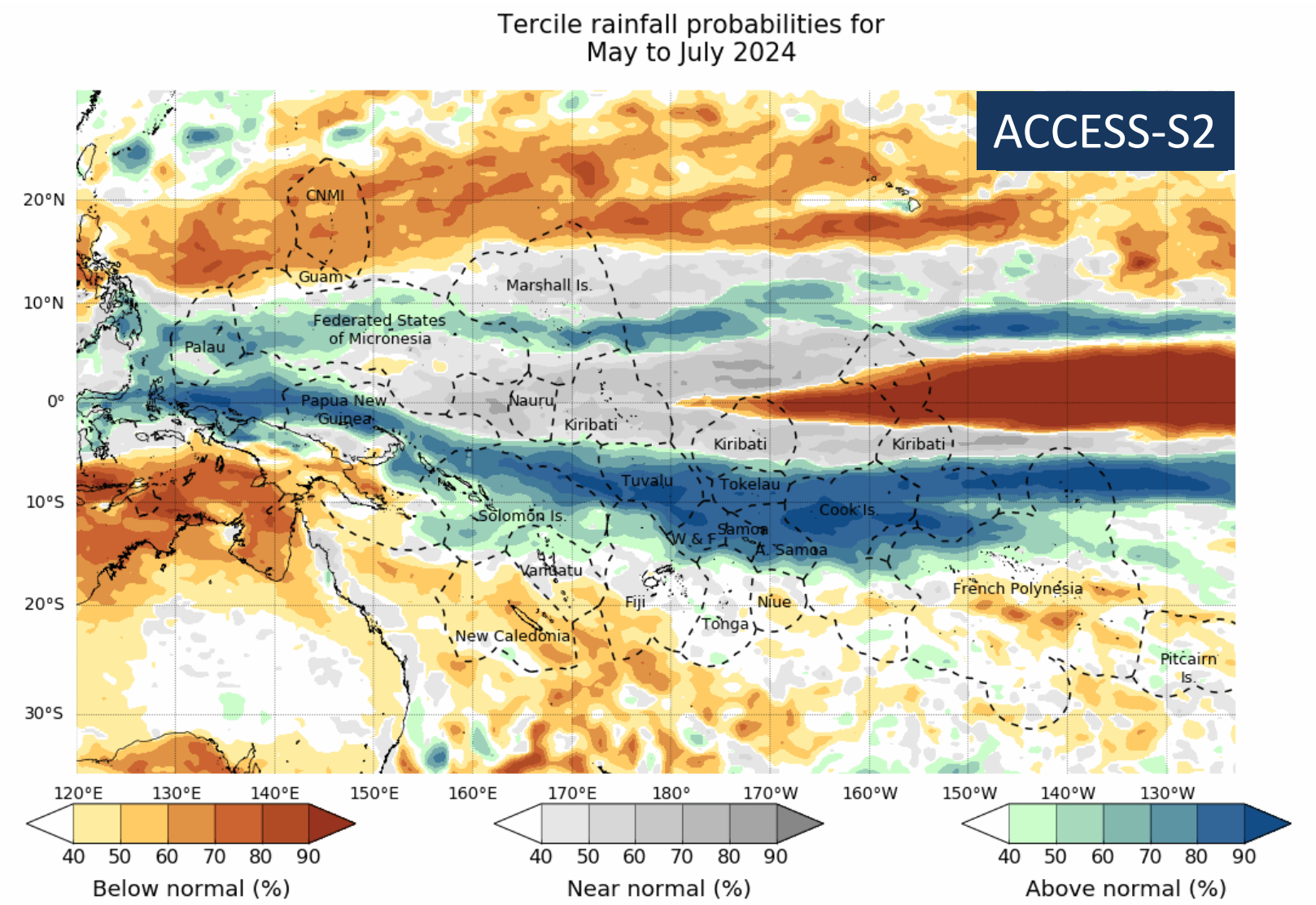


Dashed EEZ shapefile data extracted from Flanders Marine Institute (2019), Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (200NM), version 11. Available online at http://www.marineregions.org/.

Forecast Verification: Feb-Apr



Model Rainfall Predictions (MJJ)

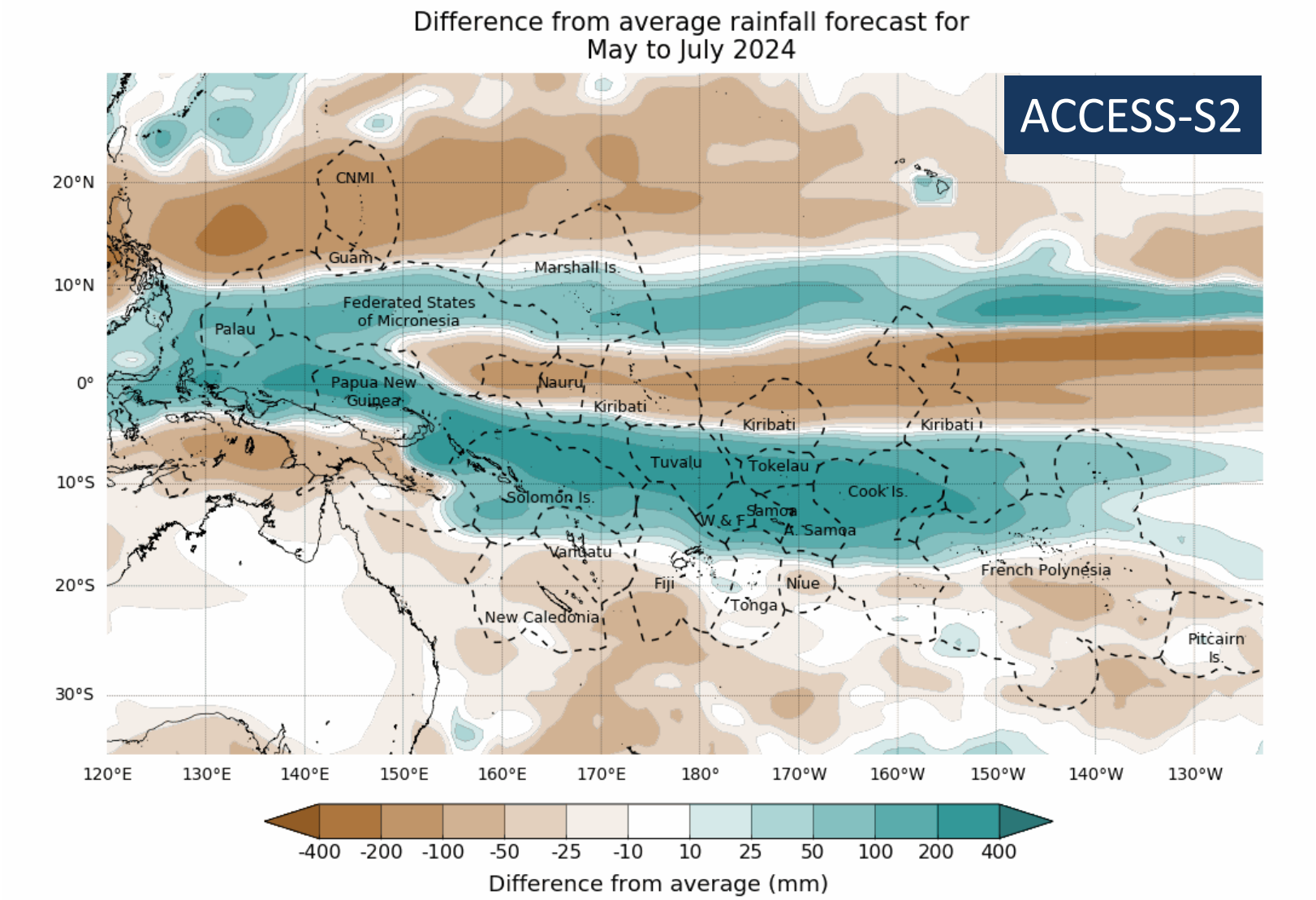


Base period: 1981-2018
Model: ACCESS-S2

Model run: 29/04/2024
Issued: 01/05/2024

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/.

Difference from Average (MJJ)

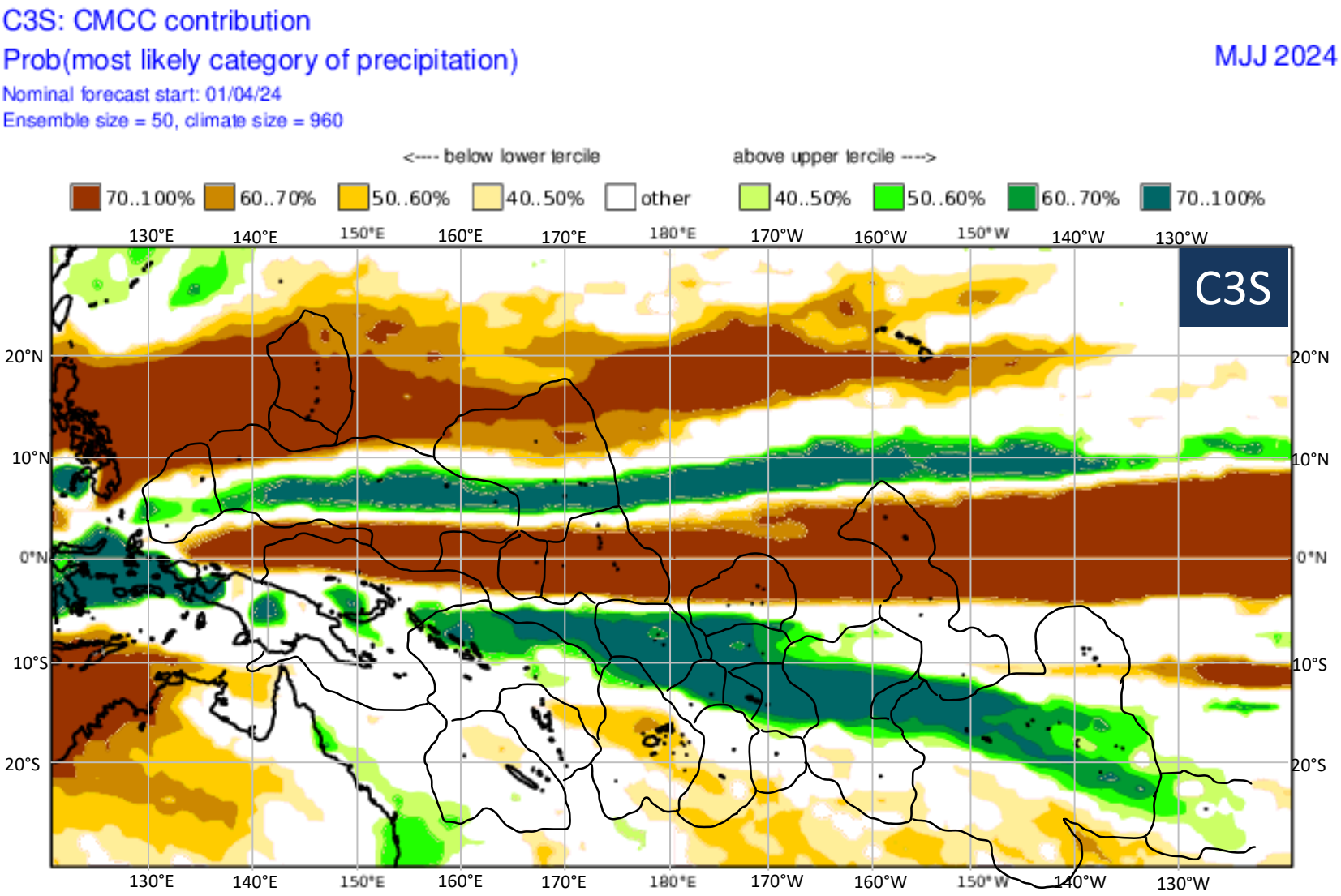


Base period: 1981-2018
Model: ACCESS-S2

Model run: 29/04/2024
Issued: 01/05/2024

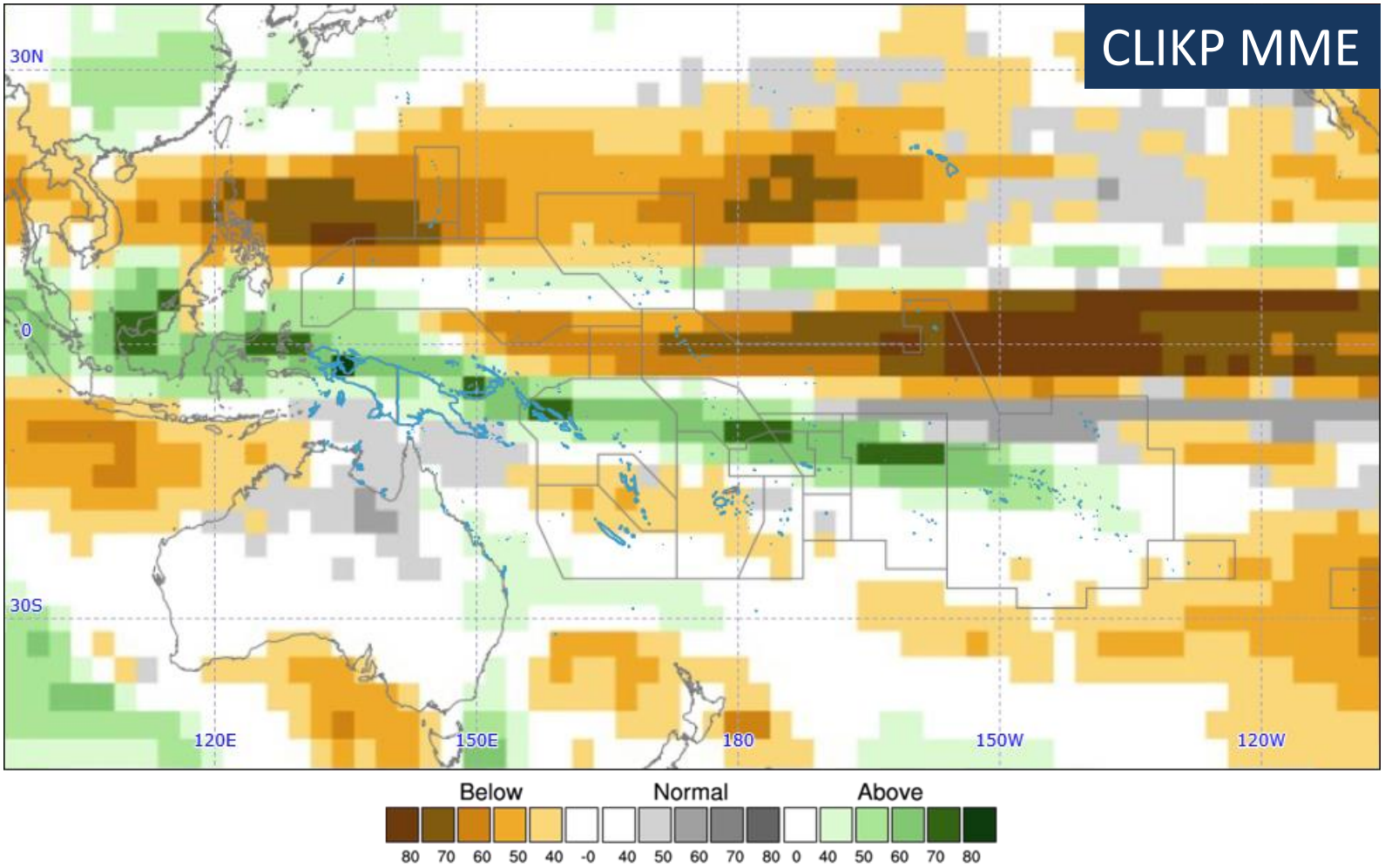
Shapefile data extracted from Flanders Marine Institute (2019), Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (200NM), version 11. Available online at http://www.marineregions.org/.

Model Rainfall Predictions (MJJ)



Climate Change Service
climate.copernicus.eu

Model Rainfall Predictions (MJJ)



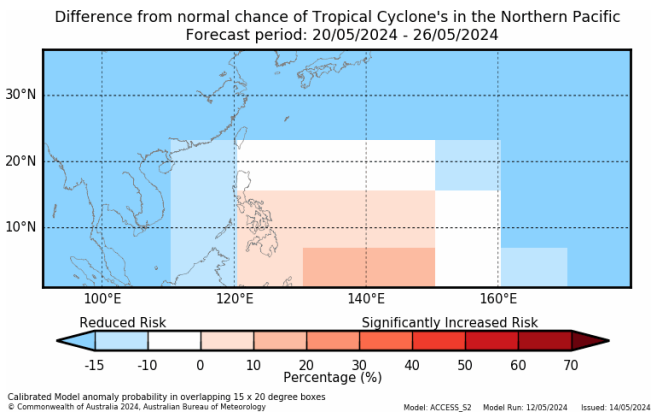
Model Rainfall Predictions (MJJ)

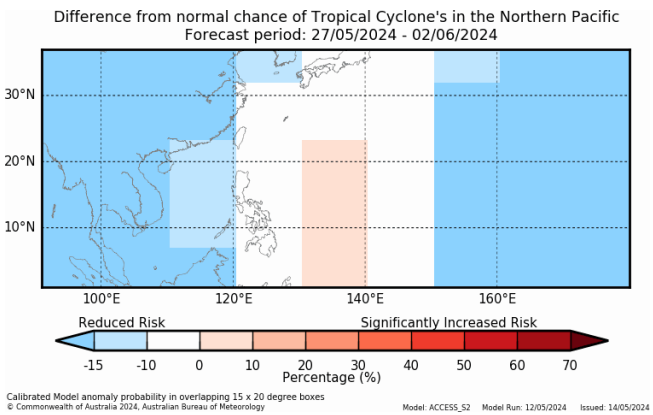
May to July 2024	ACCESS-S	C3S	CLIKP
Cook Is North			
Cook Is South			
Fiji West			
Fiji Central			
Fiji East			
Fiji North			
Fiji Rotuma			
FSM West			
FSM Central			
FSM East			
Kiribati West			
Kiribati Central			
Kiribati East			
RMI North			
RMI Central			
RMI South			
Nauru			
Niue			
Palau			
PNG Momase			
PNG Is			
PNG South			
PNG Highlands			
Samoa			
Solomon Is West			
Solomon Is Central			
Solomon Is East			
Tonga North			
Tonga Central			
Tonga South			
Tuvalu North			
Tuvalu Central			
Tuvalu South			
Vanuatu North			
Vanuatu South			

	41-50%	51-60%	61-70%	71-80%	81-90%	>90%
Below normal						
Near-normal						
Above normal						

TC Outlooks

Northwest Pacific



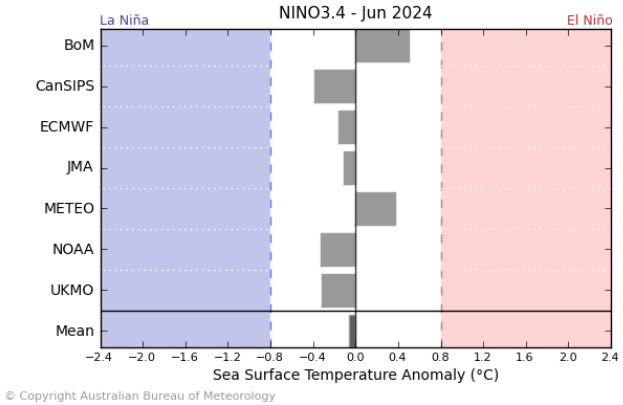


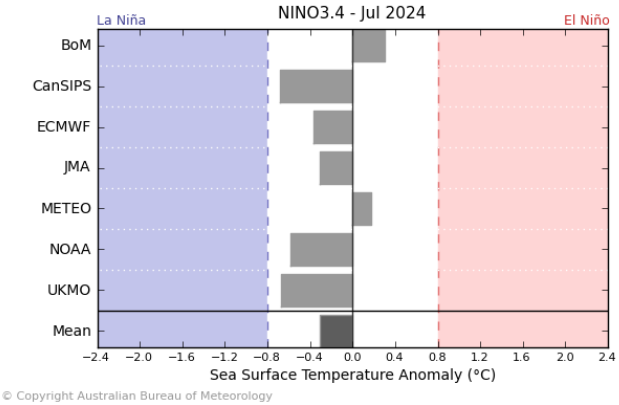
South Pacific

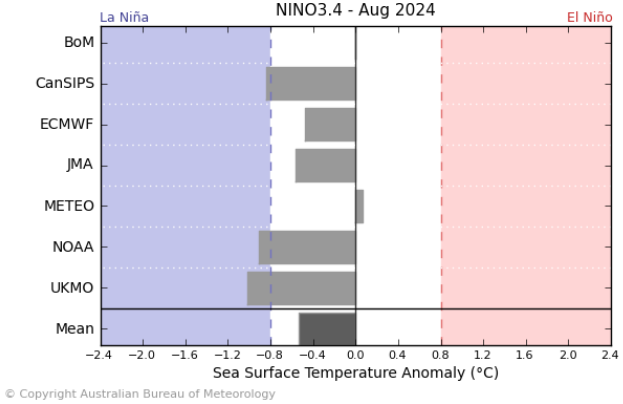
OUT OF SEASON

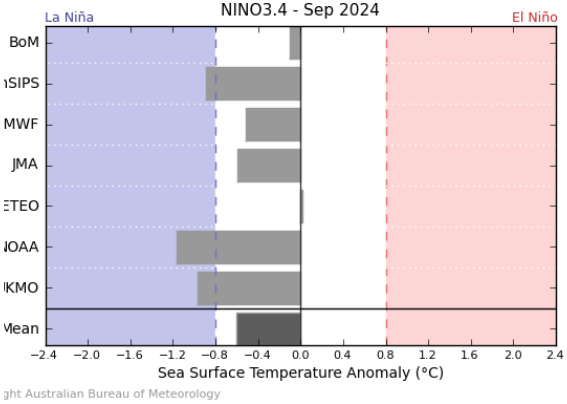
Calibrated Tropical Cyclone outlooks
are for November to April

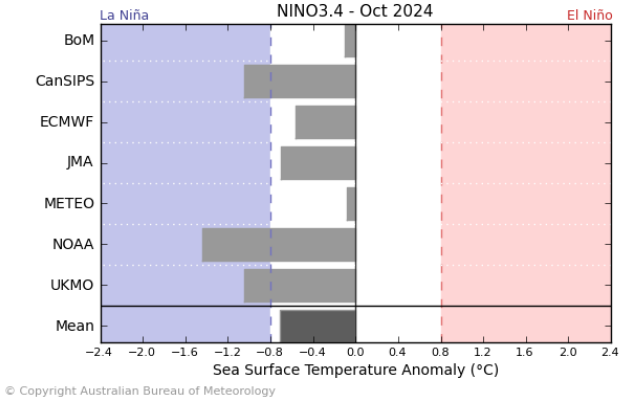
Climate Model Summary











IRI Climate Model Summary