ENSO update - OCOF 153

17 June 2020

ENSO Wrap-up

ENSO Wrap-Up

Current state of the Pacific and Indian oceans

Issued **9 June 2020** Next issue **23 June 2020**

Overview | Sea surface | Sea sub–surface | SOI | Trade winds | Cloudiness | Outlooks | Indian Ocean

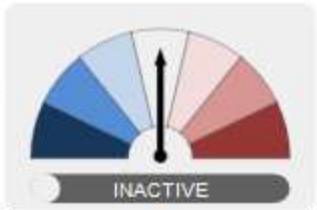
Tropical Pacific cooling expected to continue during winter

Both the El Niño–Southern Oscillation (ENSO) and Indian Ocean Dipole (IOD) remain neutral. While neutral ENSO is forecast for the southern hemisphere winter, some models suggest a La Niña-like pattern could develop in spring. Similarly, four of six models suggest the possibility of a negative IOD developing in the Indian Ocean from mid-winter.

Key indicators of ENSO, such as the Southern Oscillation Index (SOI), trade winds, cloudiness near the Date Line, and sea surface temperatures in the tropical Pacific Ocean, are generally at levels consistent with a neutral ENSO state. However, sea surface temperatures across the tropical Pacific Ocean have cooled over the past two months, and sub-surface temperatures in the tropical Pacific Ocean are also cooler than average.

International climate models surveyed by the Bureau forecast further cooling in the central tropical Pacific, but remain ENSO-neutral through the southern hemisphere winter. During spring, two out of the eight models exceed La Niña levels, with another two briefly touching thresholds. It is worth noting that ENSO predictions made in autumn or early winter have lower skill than those made later in the year.

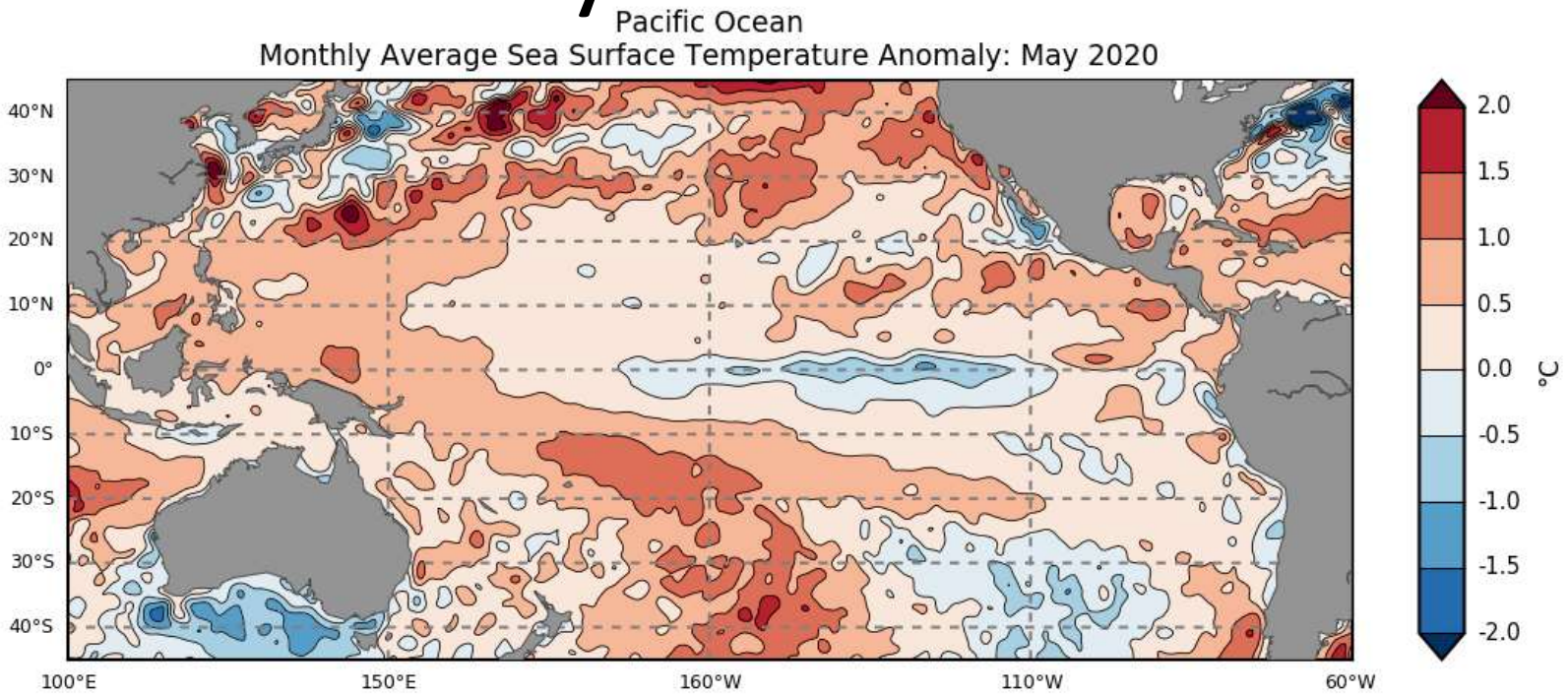
The Bureau's *ENSO Outlook* is currently INACTIVE. However, if further cooling is observed in coming weeks, and any additional models suggest La Niña development, the ENSO Outlook will be raised to La Niña WATCH.

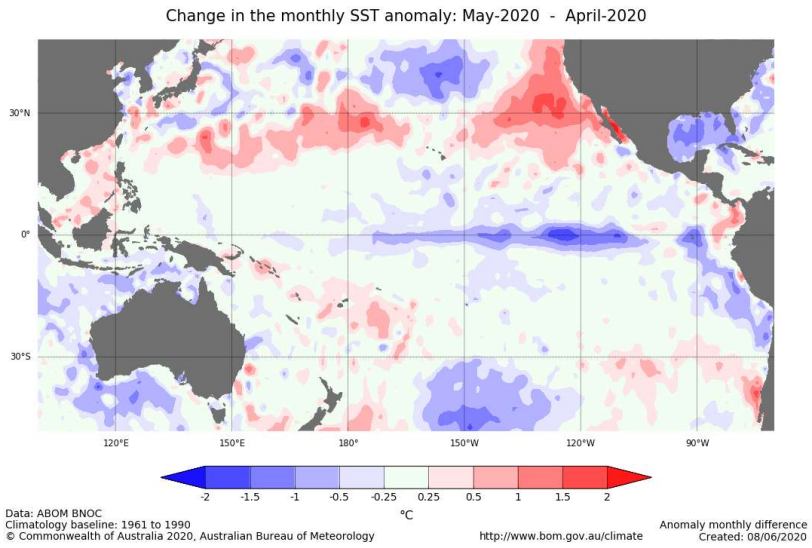


ENSO Outlook

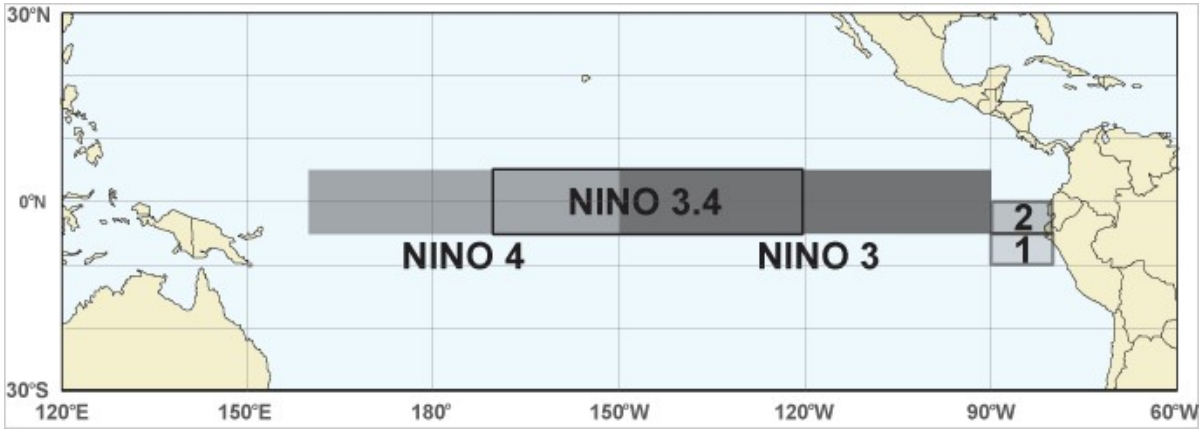
Information and video about Indian Ocean Dipole

May 2020 SSTs





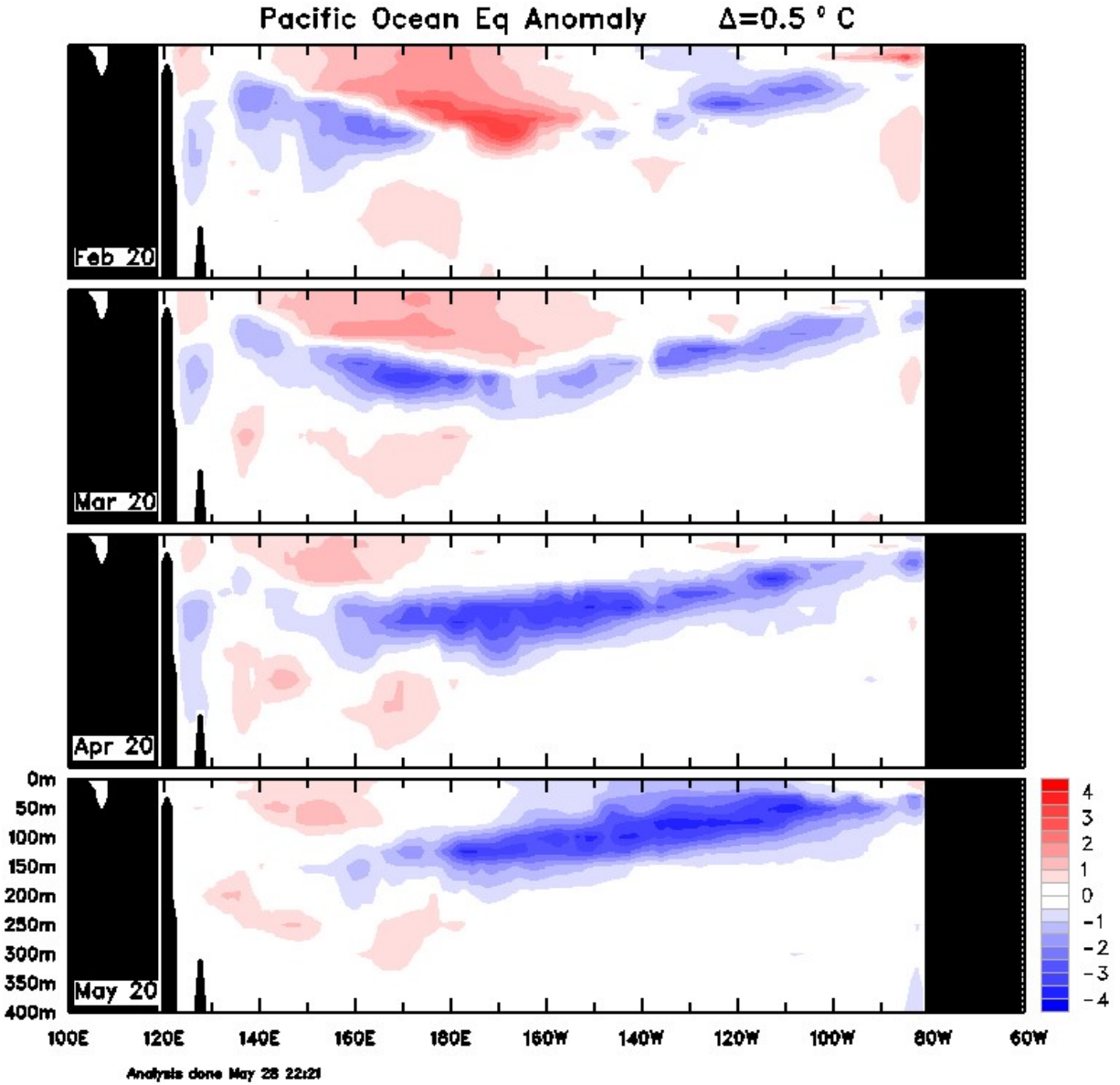
NINO SST anomalies (°C)



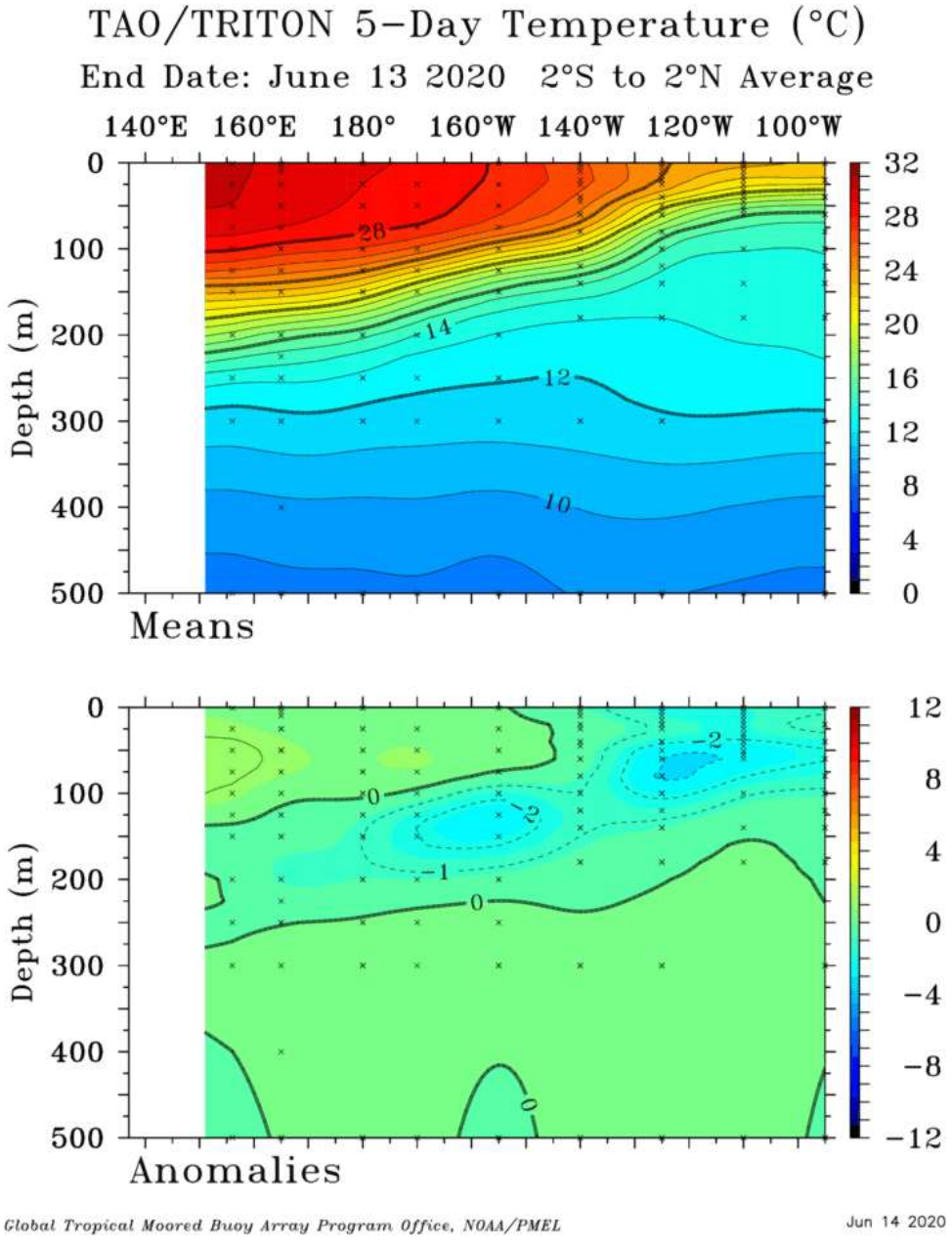
Index	Apr 2020	May 2020	Latest weekly
NINO3	+0.5	0.0	–0.4
NINO3.4	+0.5	–0.1	–0.2
NINO4	+0.5	+0.1	+0.3

Weekly data for the week ending 14/06/2020

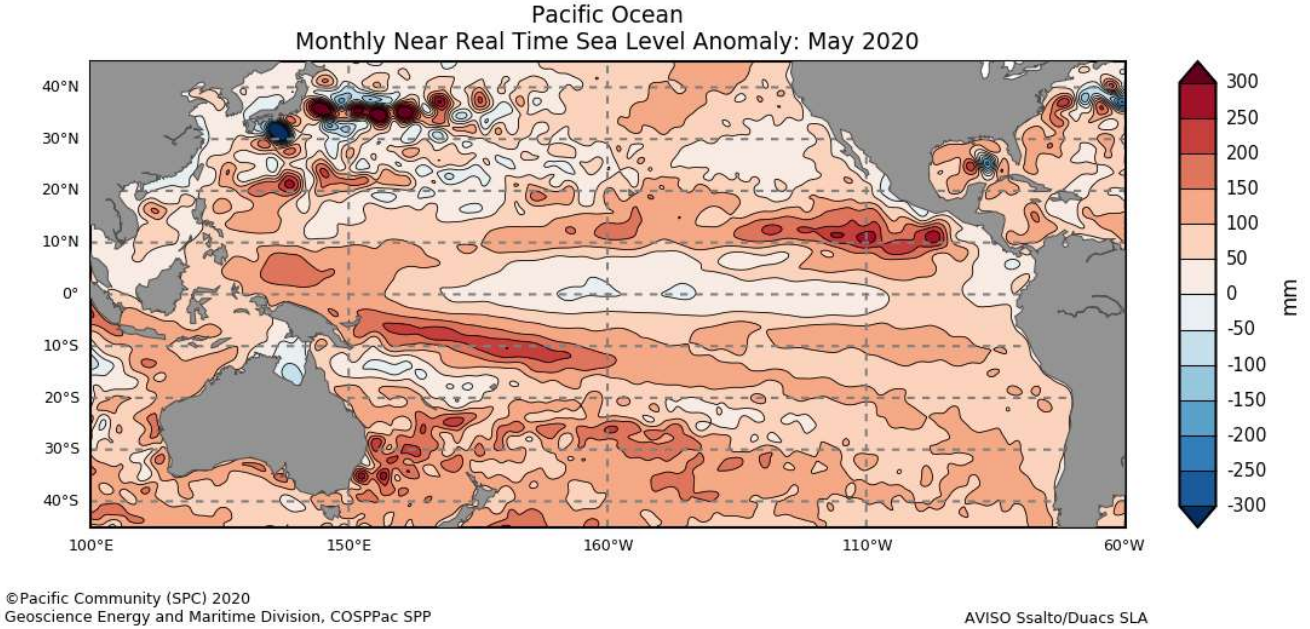
Equatorial Pacific sub-surface profile
Bureau of Meteorology

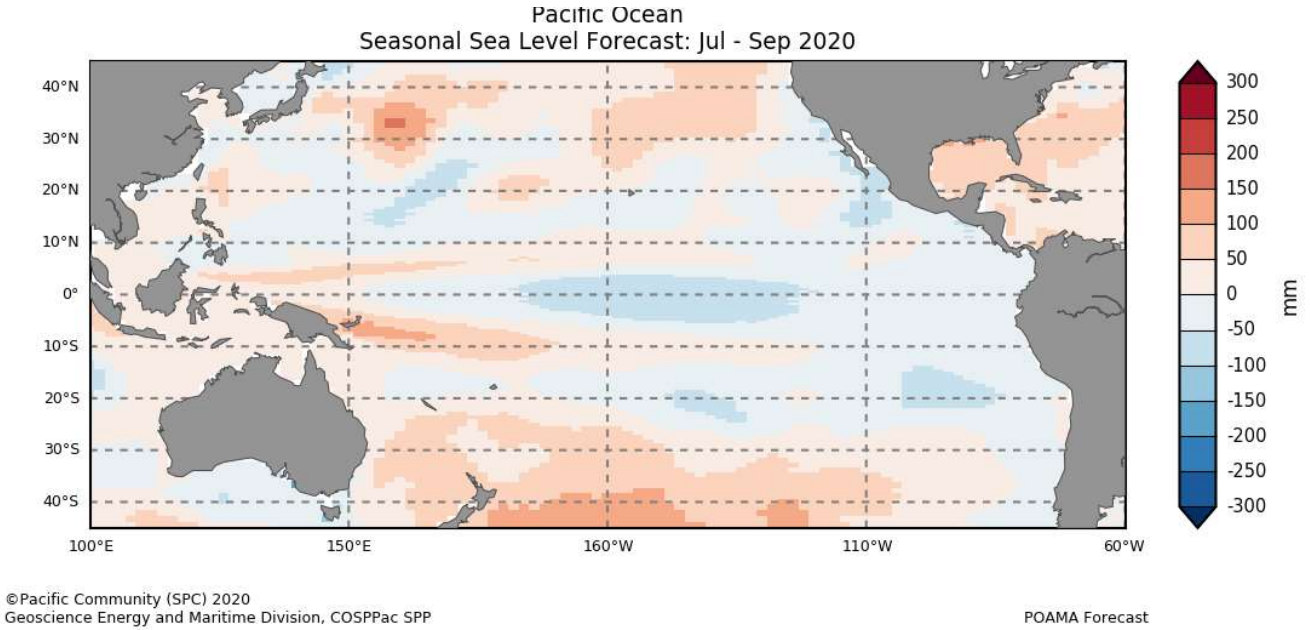


Equatorial Pacific sub-surface profile

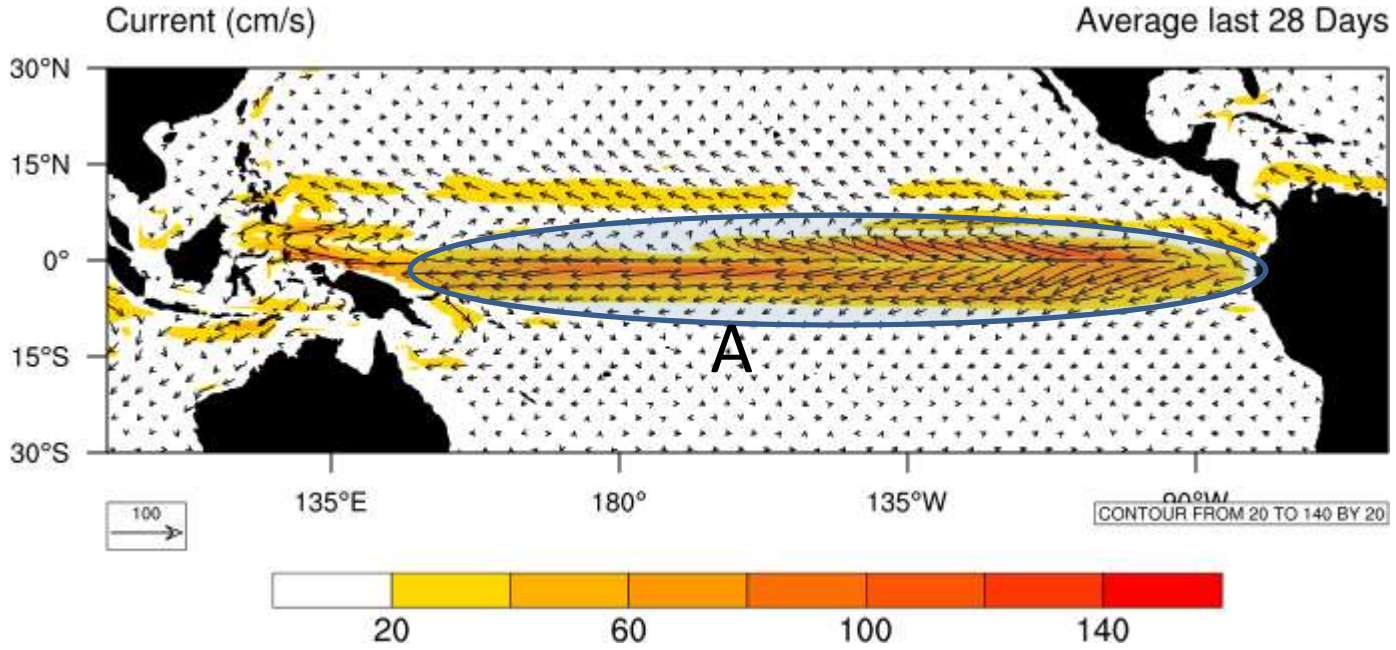


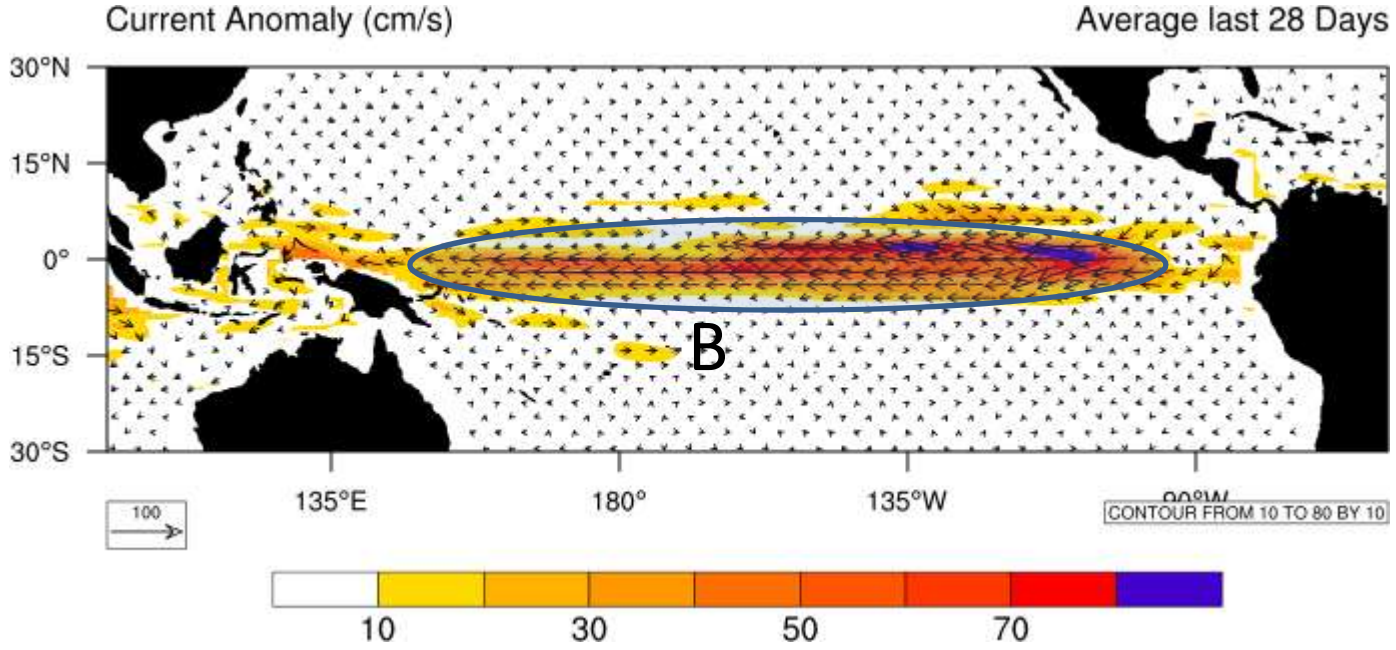
May 2020 Sea Level Anomaly



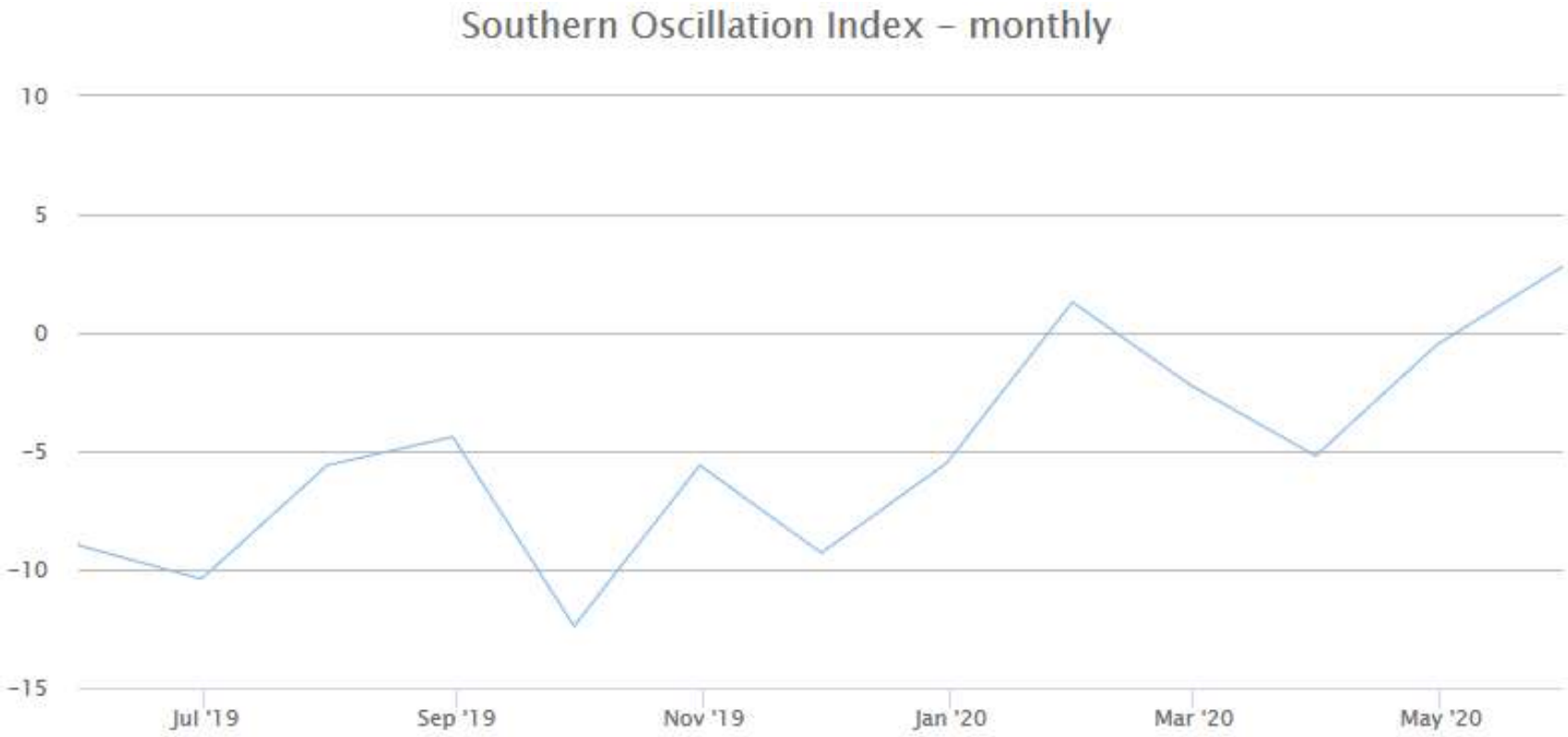


Ocean Currents at 5 June 2020





Southern Oscillation Index

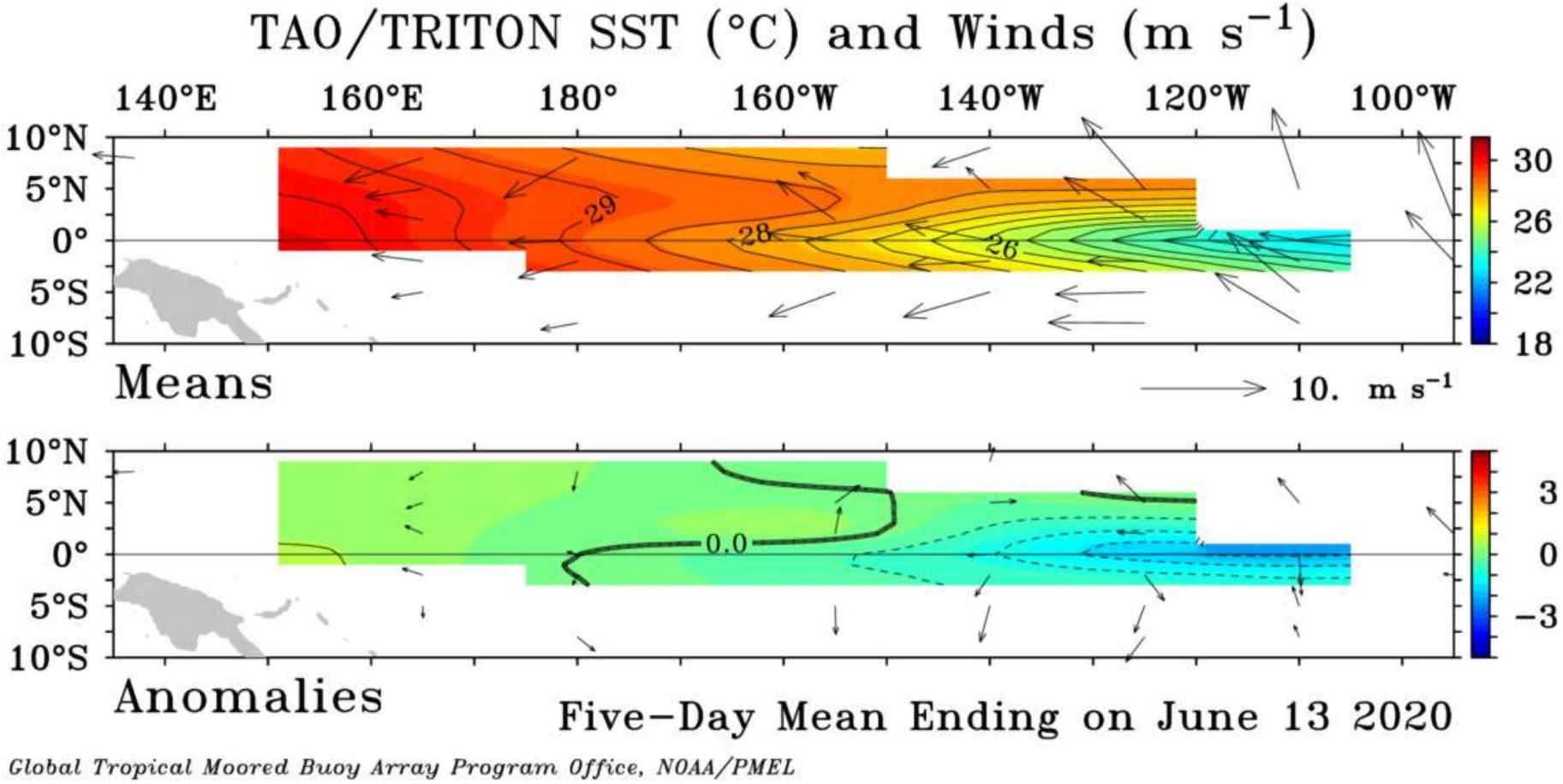


Southern Oscillation Index monthly data

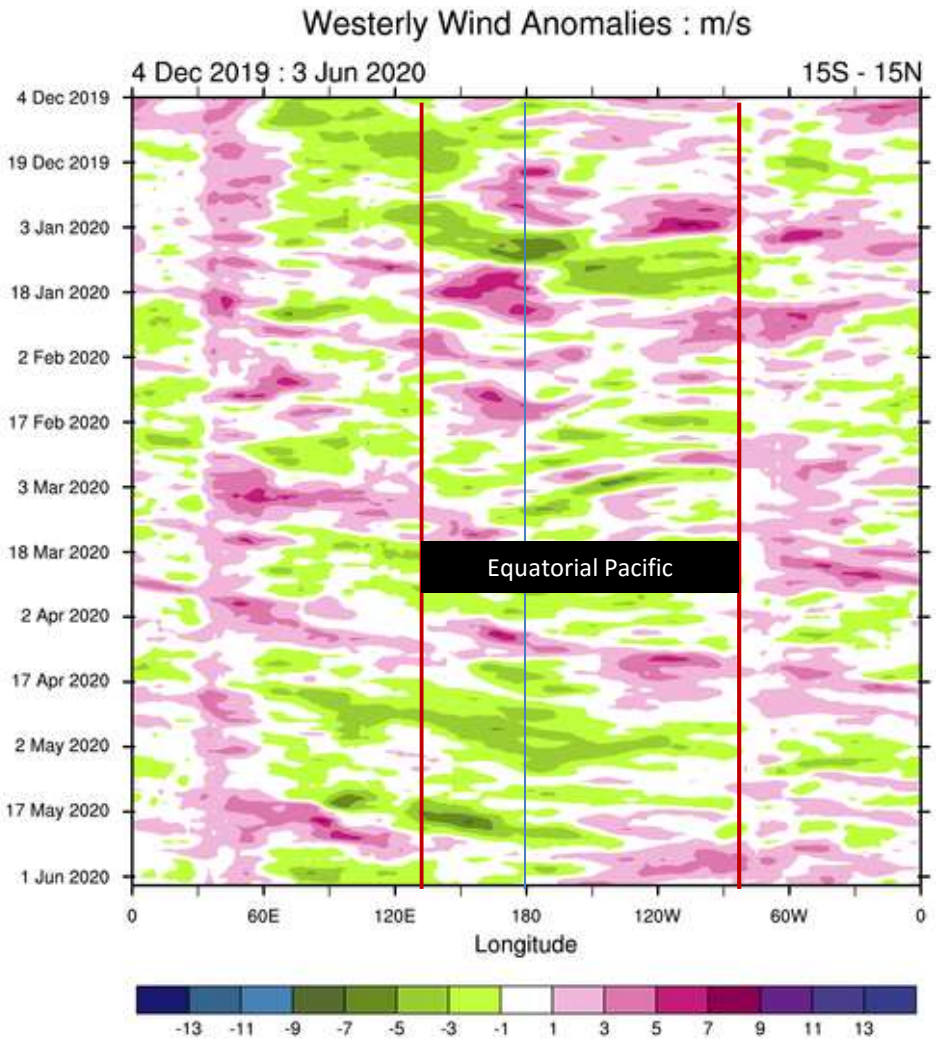
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2020	+1.3	−2.2	−5.2	−0.5	+2.8	-	-	-	-	-	-	-
2019	−0.6	−13.5	−6.8	−1.3	−9.0	−10.4	−5.6	−4.4	−12.4	−5.6	−9.3	−5.5

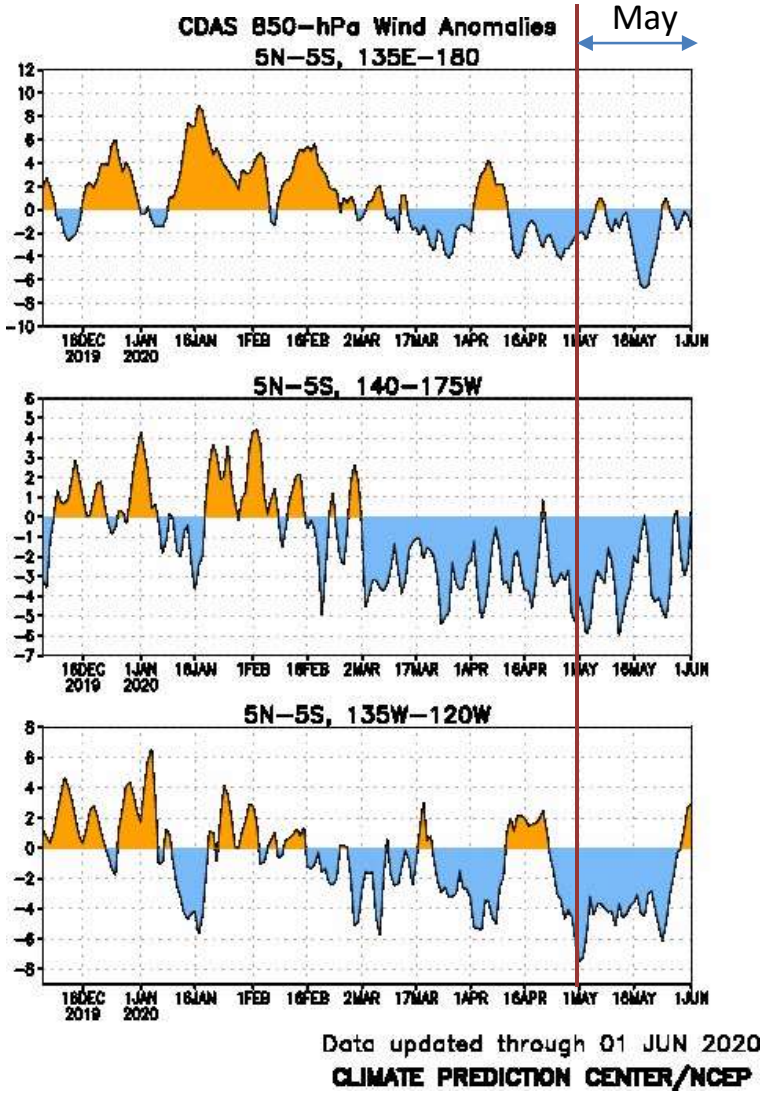
At 13 June 2020: 30-day SOI = –4; 90-day SOI = –4

Equatorial Trade Winds

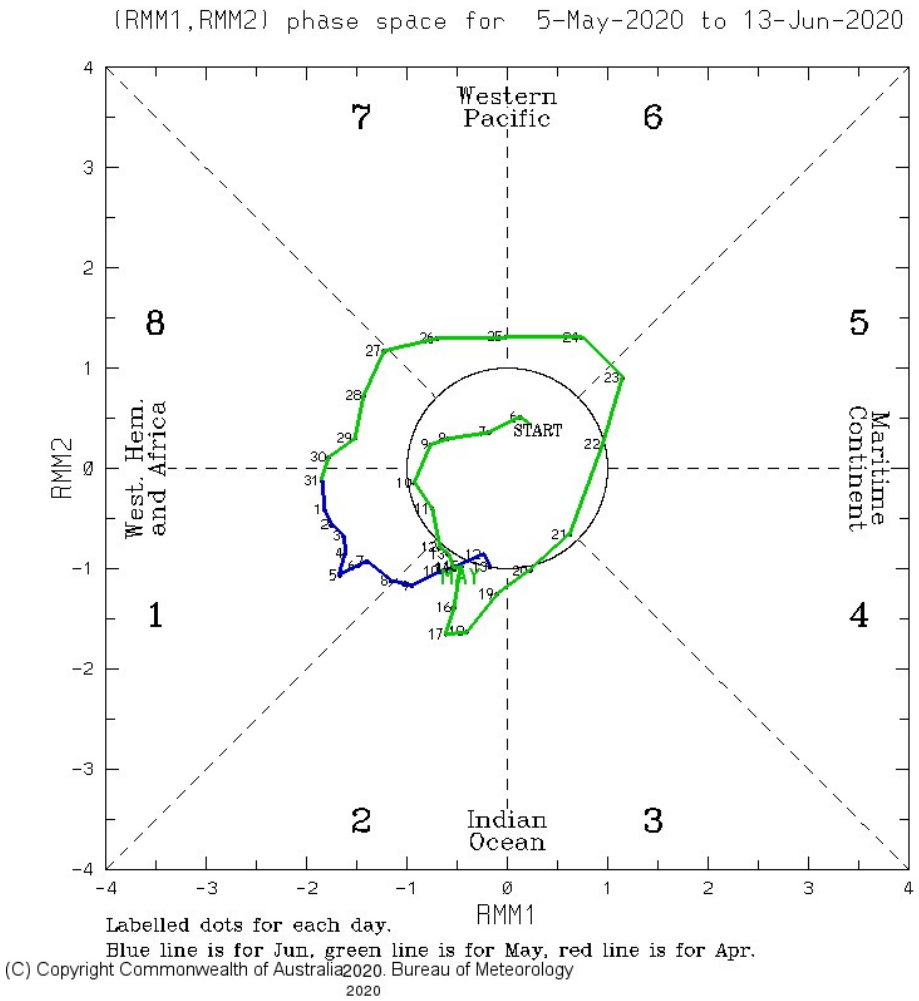


Equatorial Trade Winds

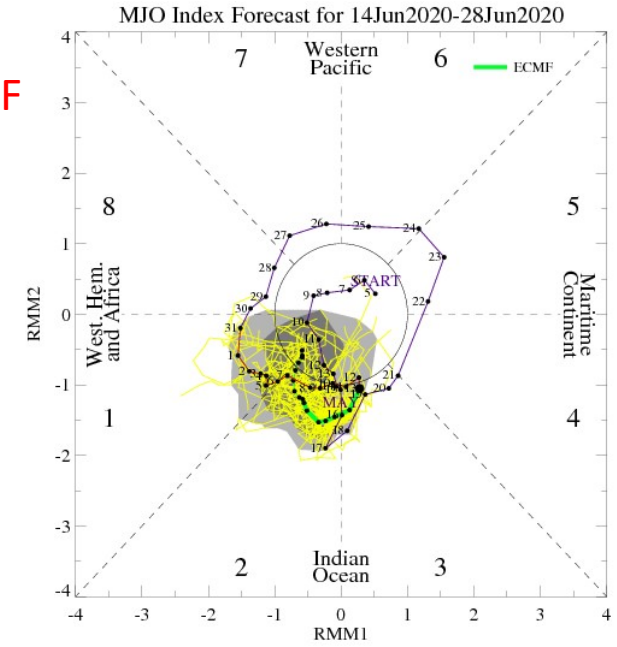




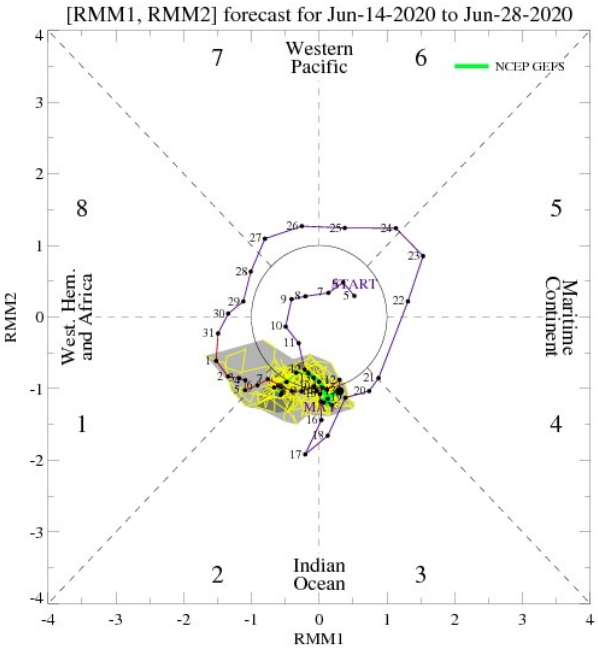
Madden-Julian Oscillation



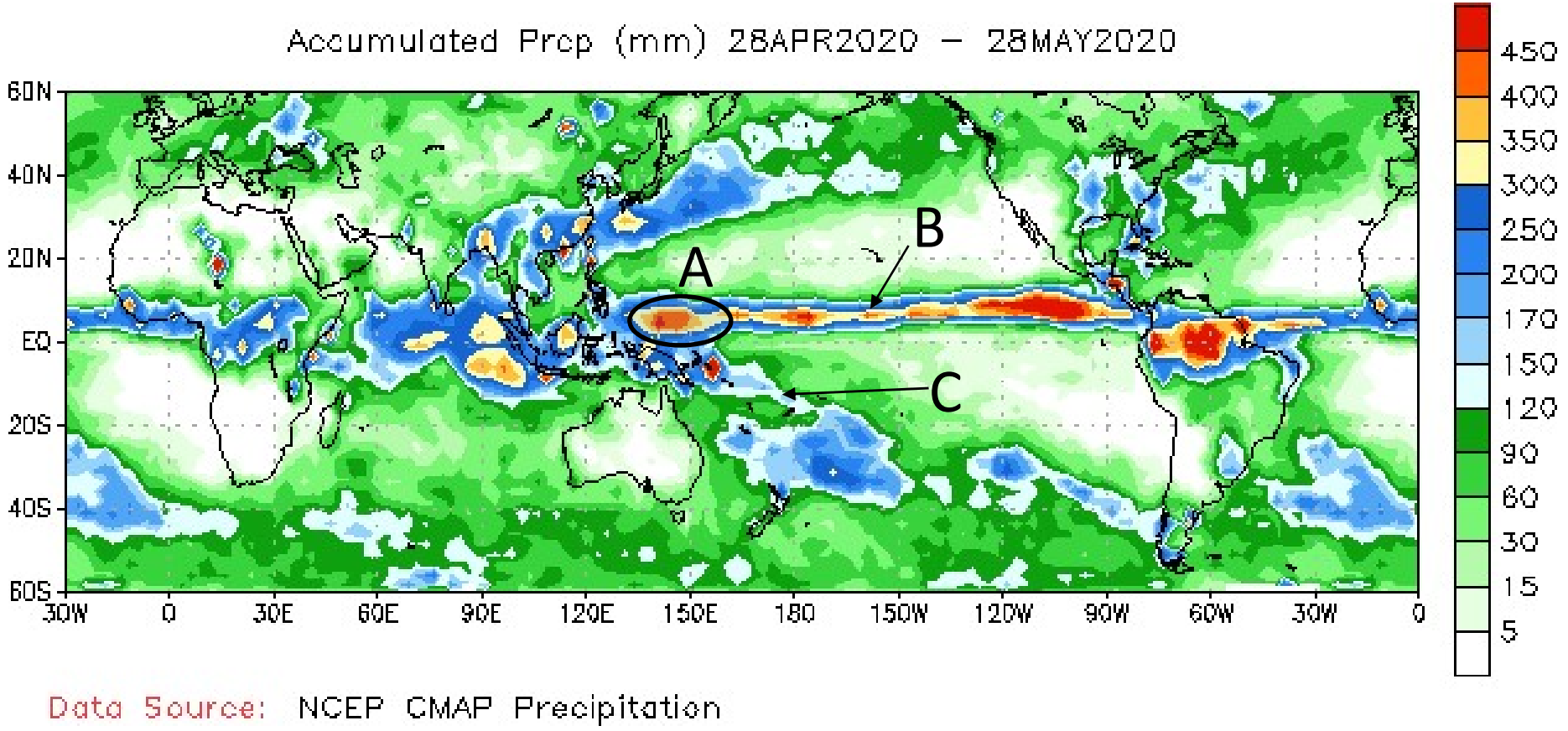
ECMWF



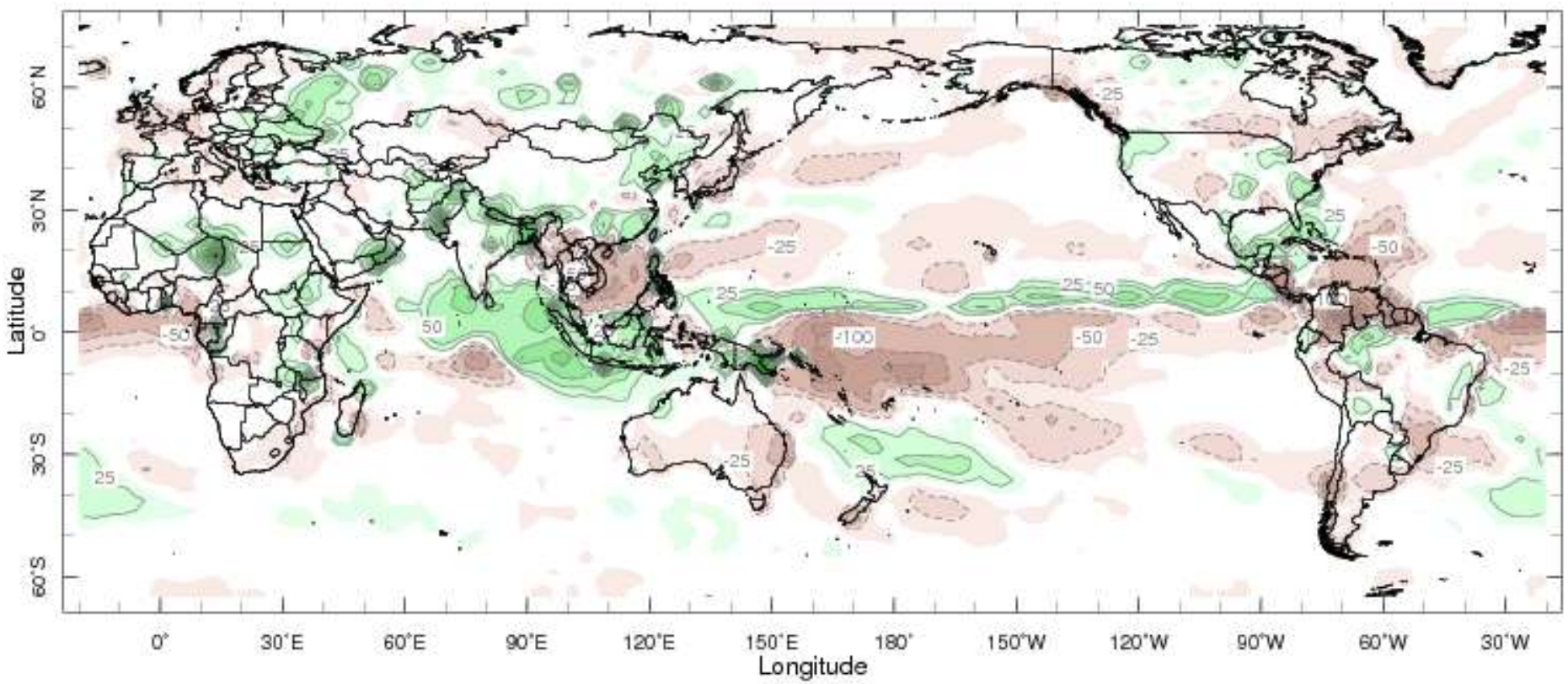
NCEP



Satellite Rainfall



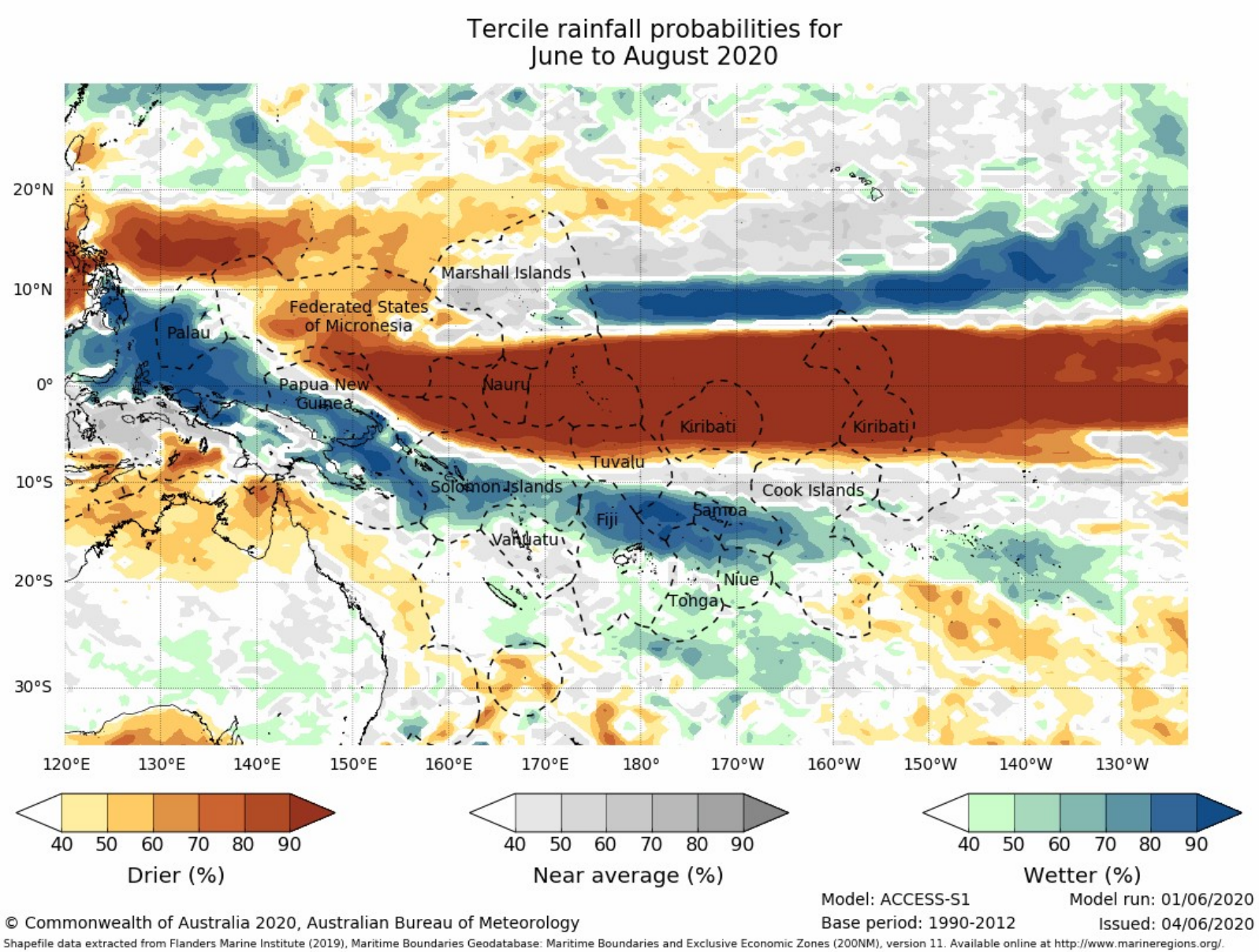
Satellite Rainfall Anomaly



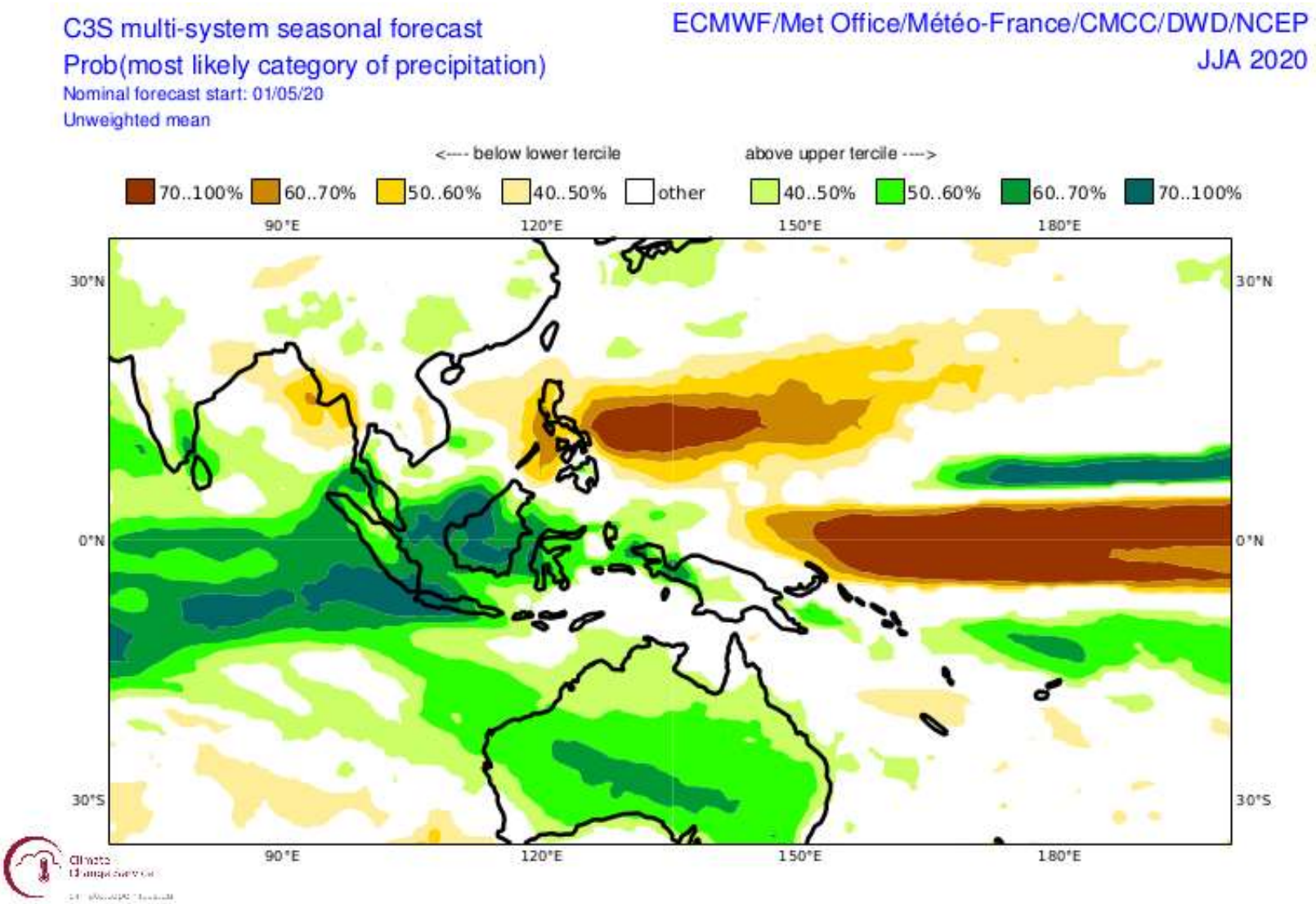
May 2020

Units = mm per month

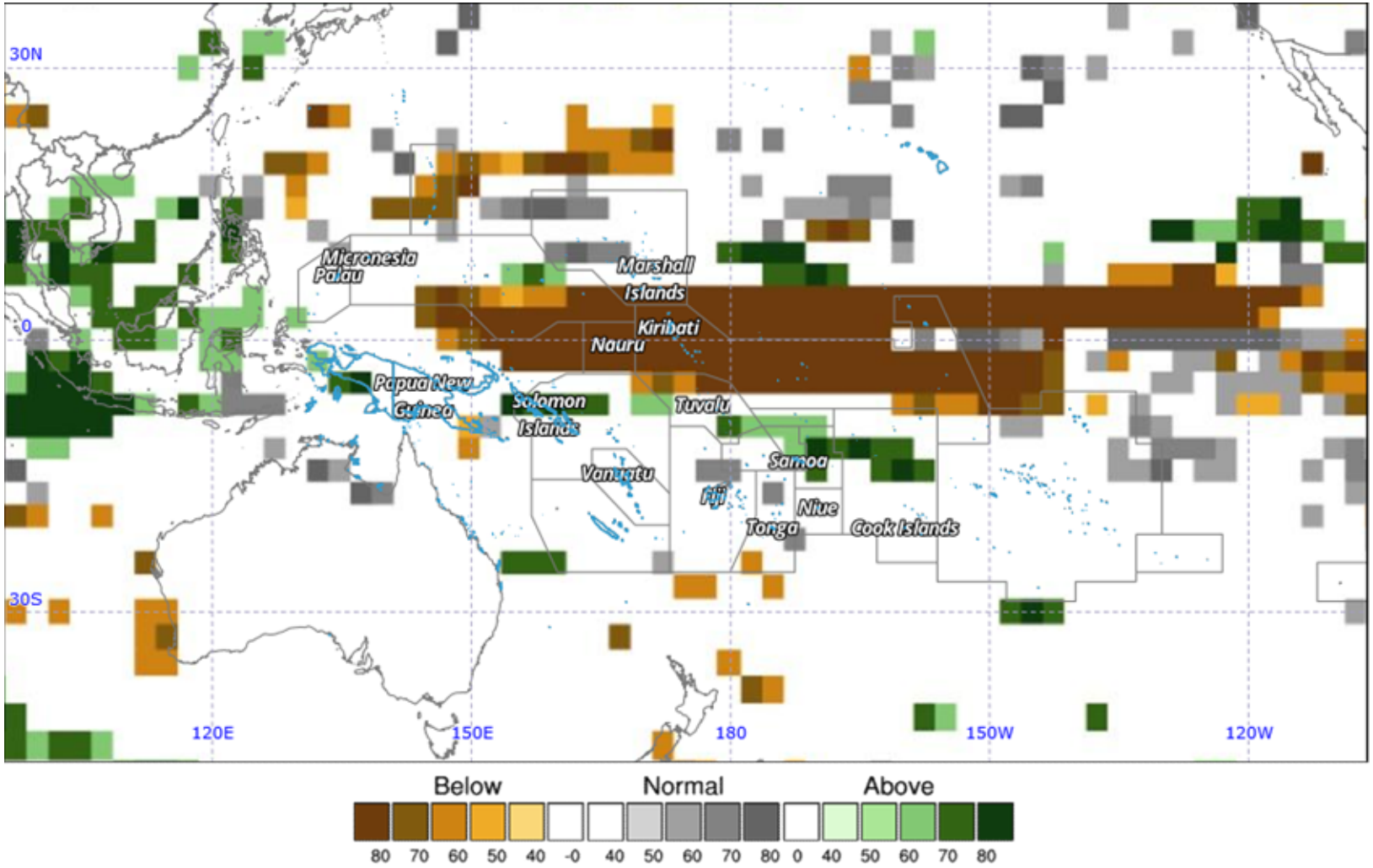
Model Rainfall Predictions (JJA)



Model Rainfall Predictions (JJA)



Model Rainfall Predictions (JJA)

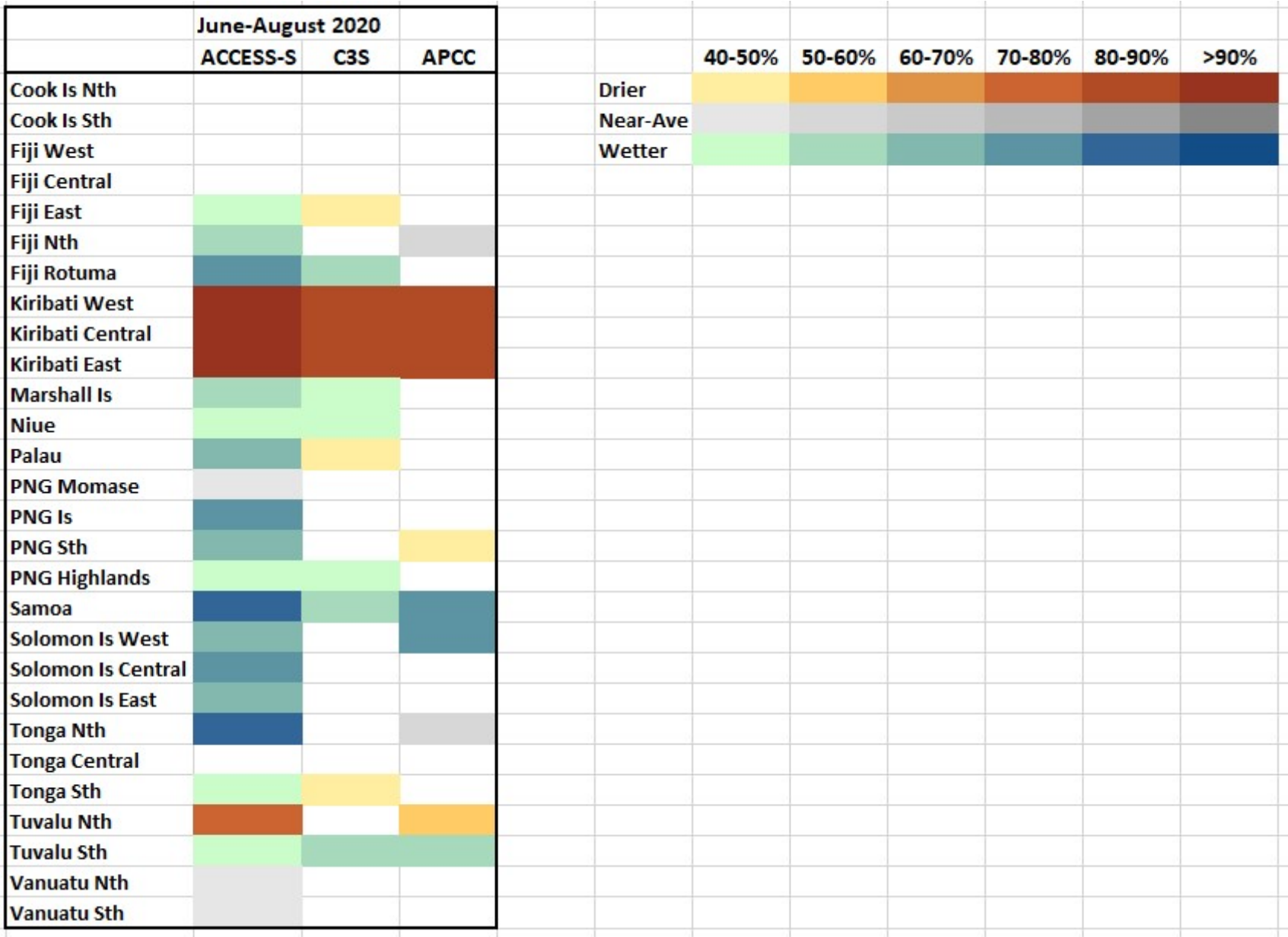


Year: 2020, Season: JJA, Lead Month: 3, Method: GAUS

Model: APCC

Generated using CLIK® (2020-6-11)

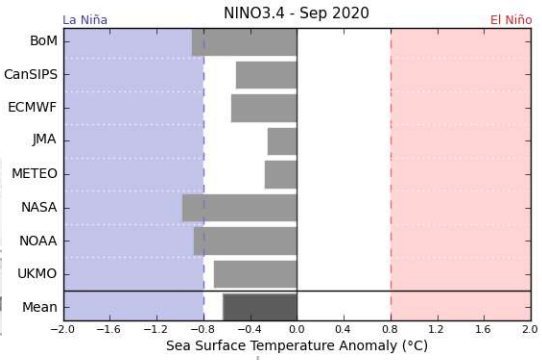
Model Rainfall Predictions (JJA)



Climate Model Summary for July to November 2020

Issued **12 June 2020** Next issue **13 July 2020**

Australian climate is influenced by temperature patterns in the Pacific and Indian Oceans. This page provides information Ocean outlooks for the coming six months based on a survey of international climate models.



Overview | Pacific Ocean | Indian Ocean | Bureau model | Models | Related information

Negative IOD possible from late-winter, increased chance of La Niña in spring

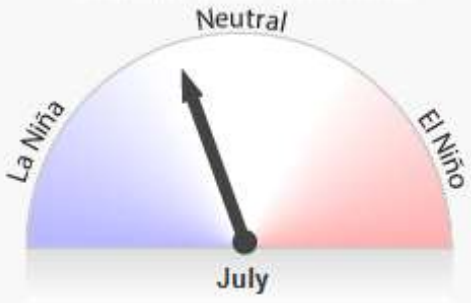
The Indian Ocean Dipole (IOD) is currently neutral but model outlooks indicate a negative IOD could develop in late winter or early spring. A negative IOD typically brings above average winter–spring rainfall to southern Australia.

The El Niño–Southern Oscillation (ENSO) is also neutral, but models suggest cooling in the central tropical Pacific is likely to continue. While an ENSO-neutral state is the most likely scenario until the end of winter 2020, several models suggest La Niña thresholds could be exceeded in early spring. La Niña events typically enhance spring rainfall in northern, central and eastern Australia.

These outlooks will be monitored closely over the coming weeks, as ENSO and IOD predictions made during autumn and early winter tend to have lower accuracy than predictions made at other times of year.

Further details: ENSO Wrap-Up (ENSO and IOD); Climate Outlooks

Average of international model outlooks for NINO3.4

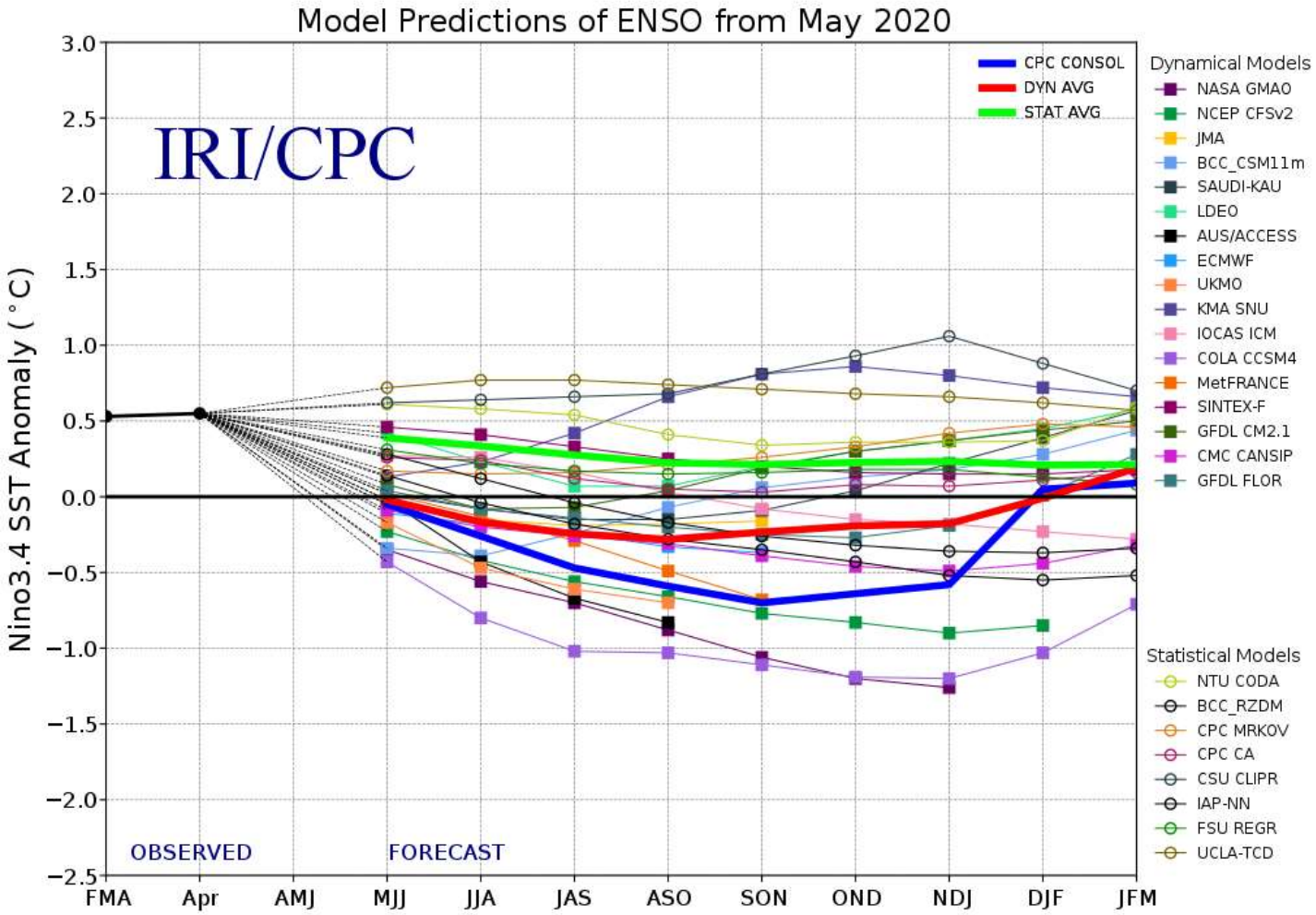


SST anomaly: −0.5 °C

SST anomaly: −0.6 °C

SST anomaly: −0.7 °C

Climate Model Summary



Outgoing Longwave Radiation (OLR)

30 Days

Discontinued

Coral Bleaching Status

Discontinued