

# PICOF-12

## Session 5: Looking Forward

### i. Atmosphere

Daeun Jeong  
APEC Climate Center

Thanks to NIWA, BoM, Meteo-France, NOAA, University of Hawaii, SPREP, and SPC

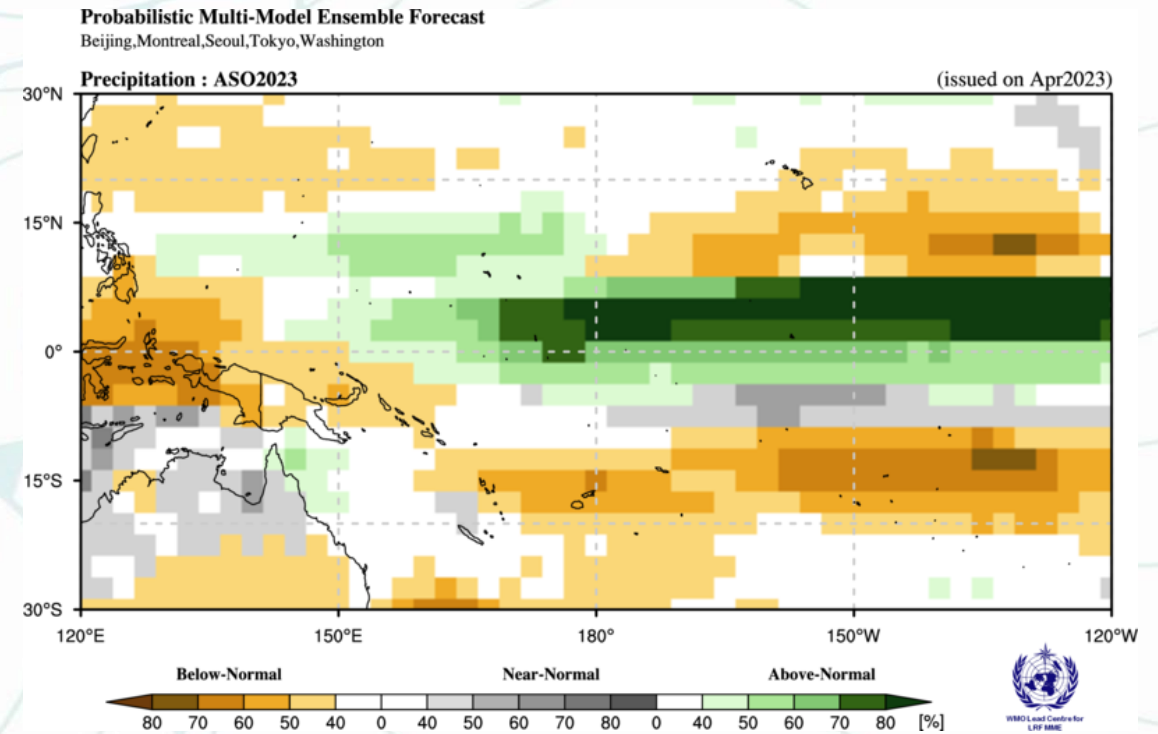
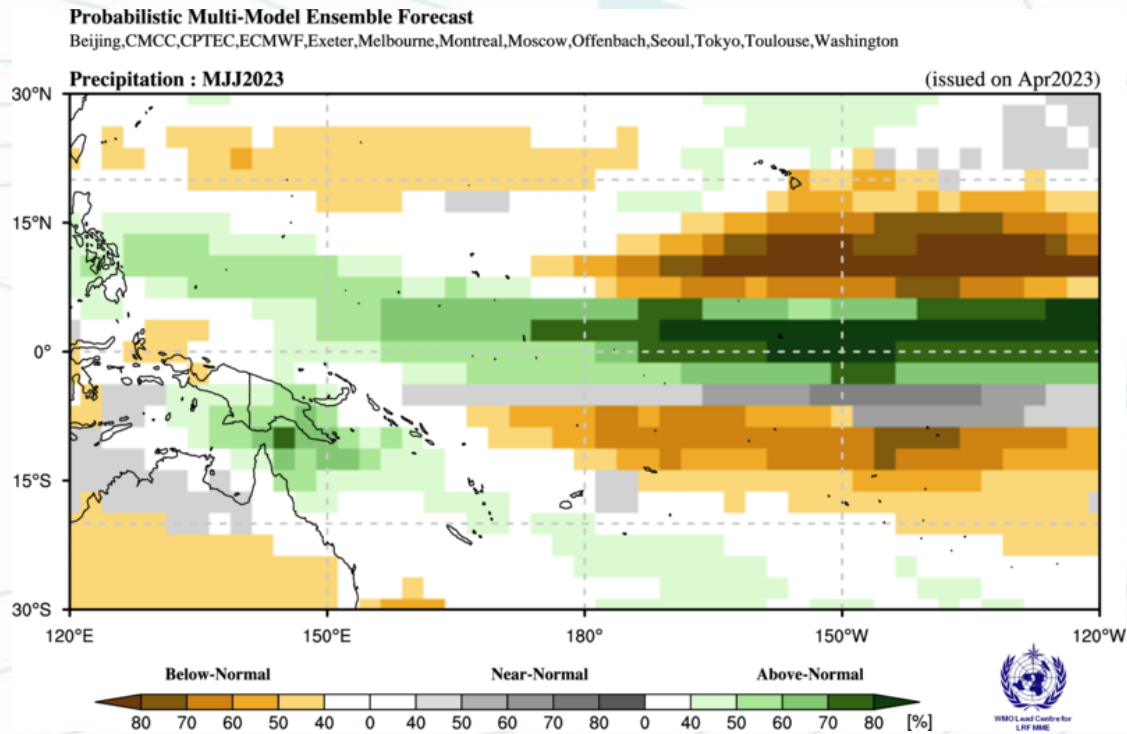
# Precipitation Outlook

# Precipitation Outlook for MJJ to ASO 2023

## WMO LC LRF MME

**2023MJJ:** Wet conditions for the equatorial region and Melanesia; Dry conditions for the off-equatorial region east of the Date Line

**2023ASO:** Wet conditions for the equatorial region; Weakening chances for dry conditions; Dry conditions for Melanesia



# Precipitation Outlook for MJJ 2023

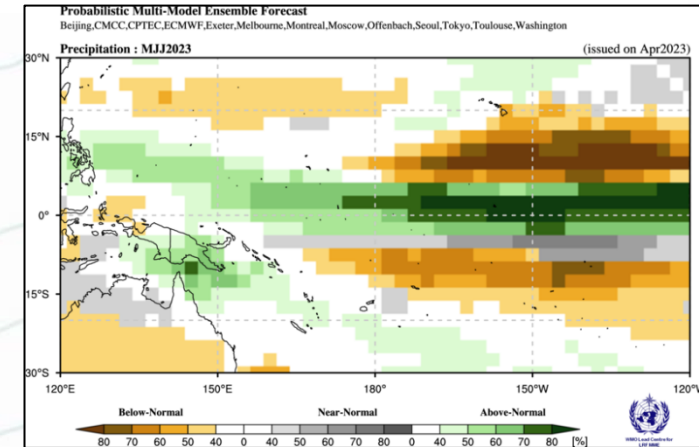
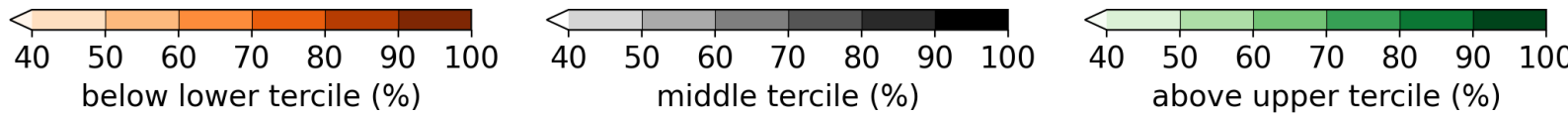
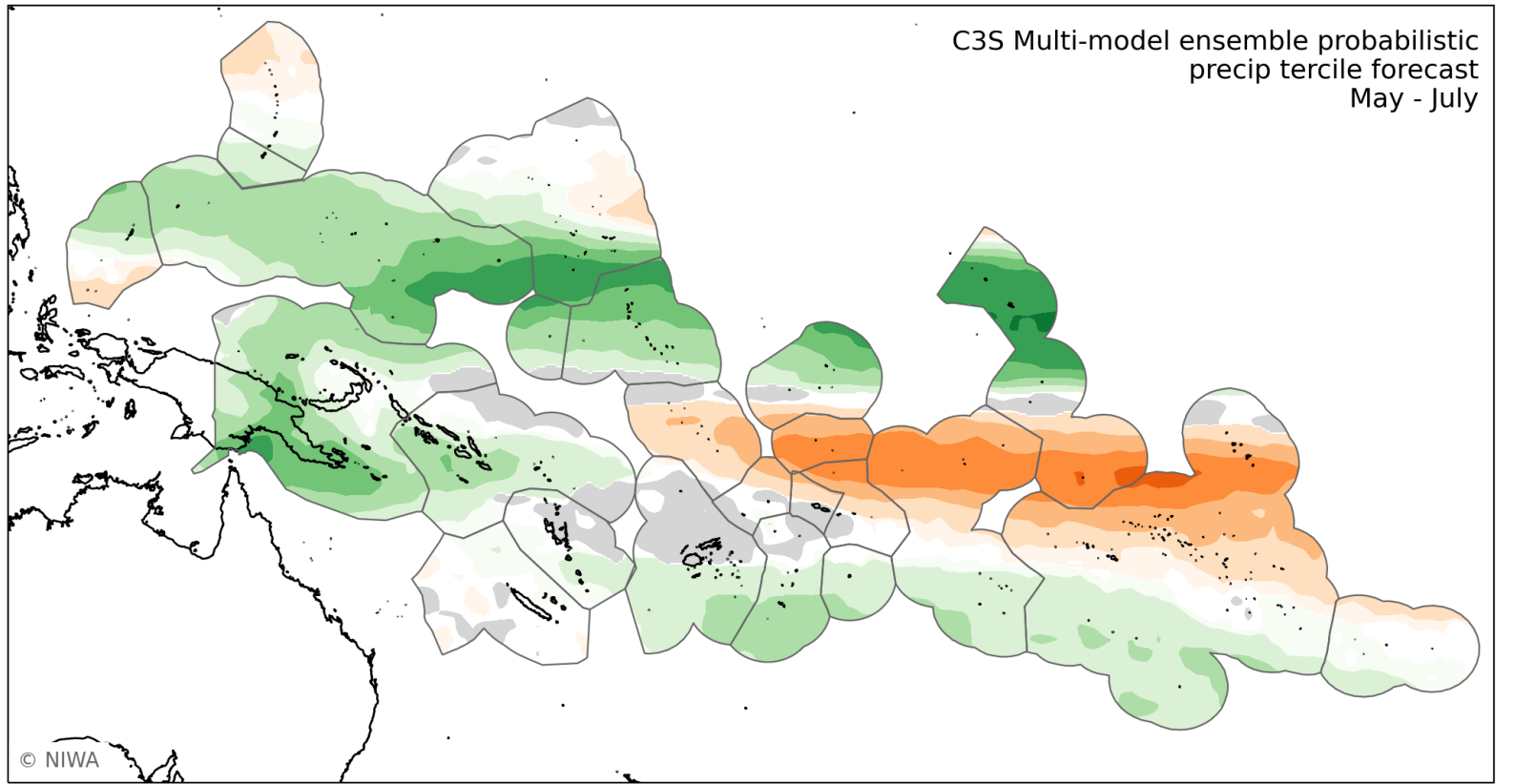
NIWA  
ICU

BoM  
ACCESS-S

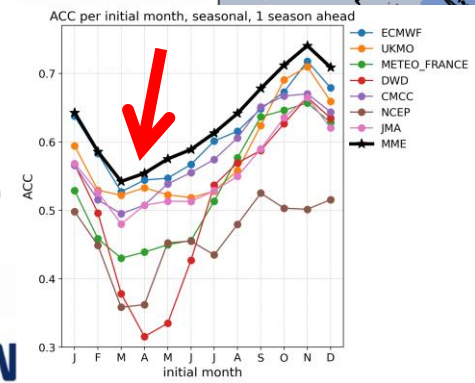
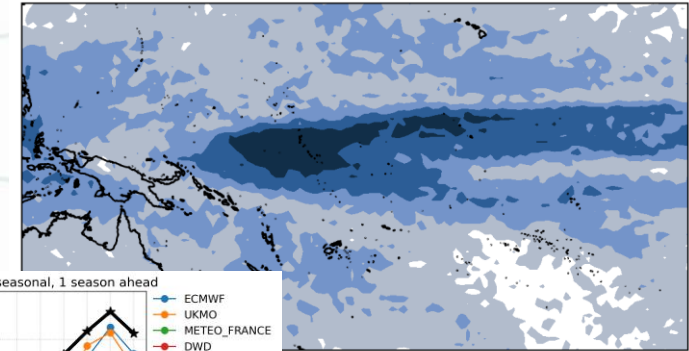
NOAA  
NMME

APCC  
PMME

SCOPIC



C3S MME, Accuracy [0 - 1], 1 season ahead



# Precipitation Outlook for MJJ 2023

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ICU

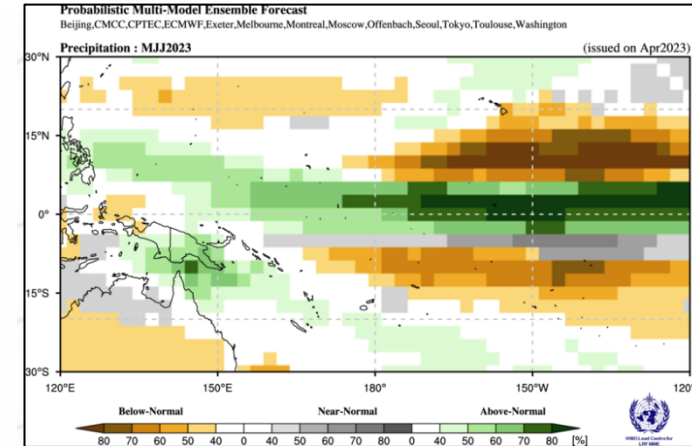
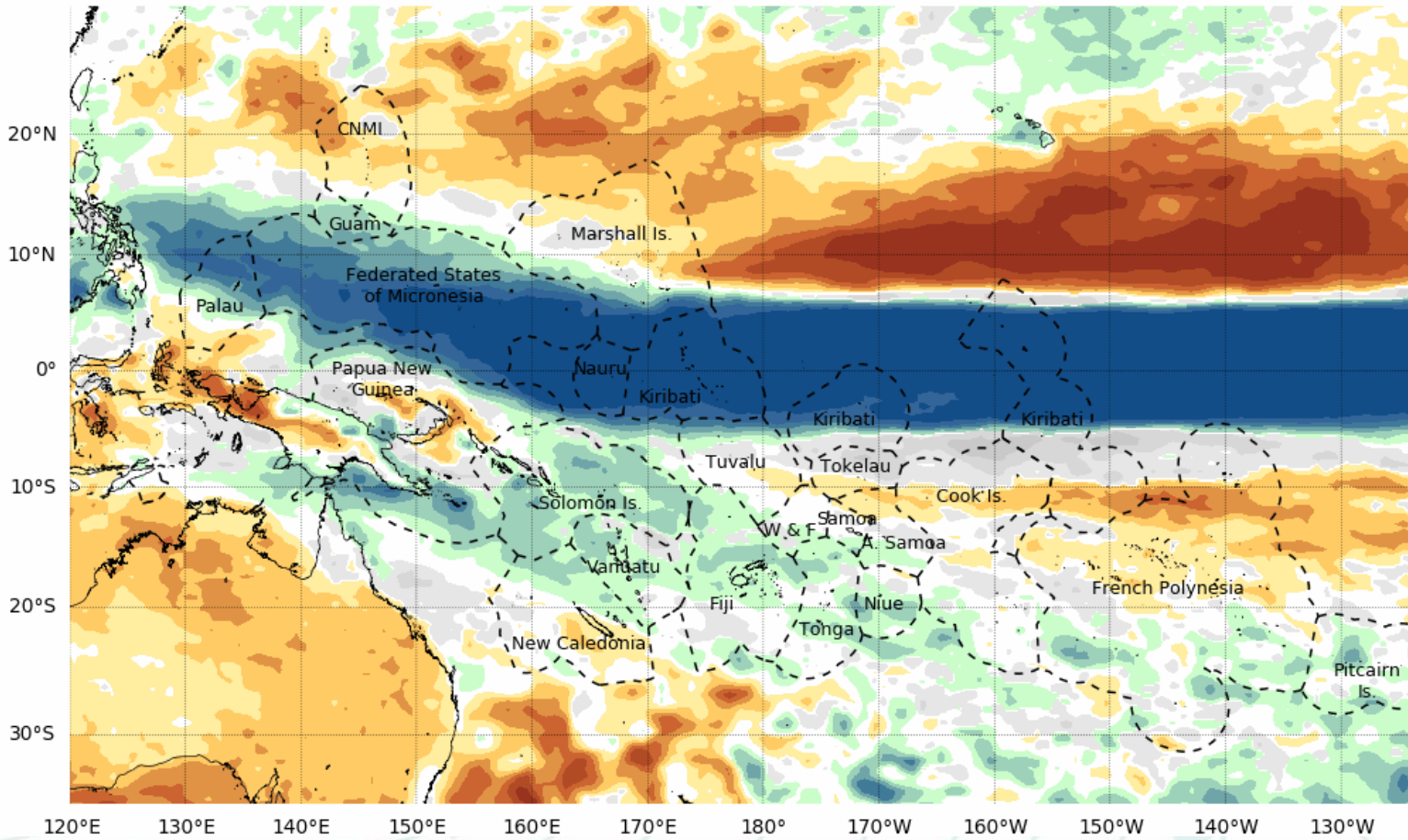
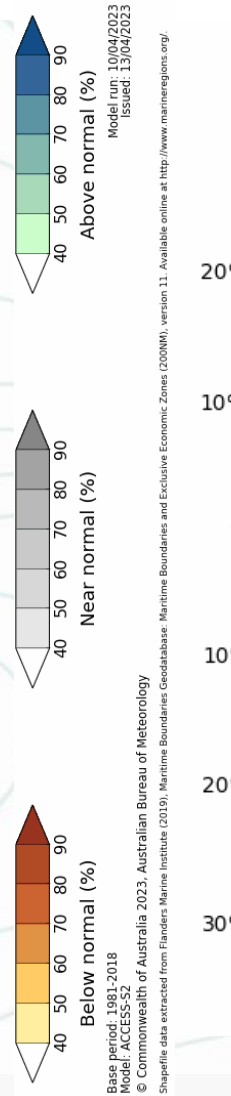
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ACCESS-S

NOAA  
NMME

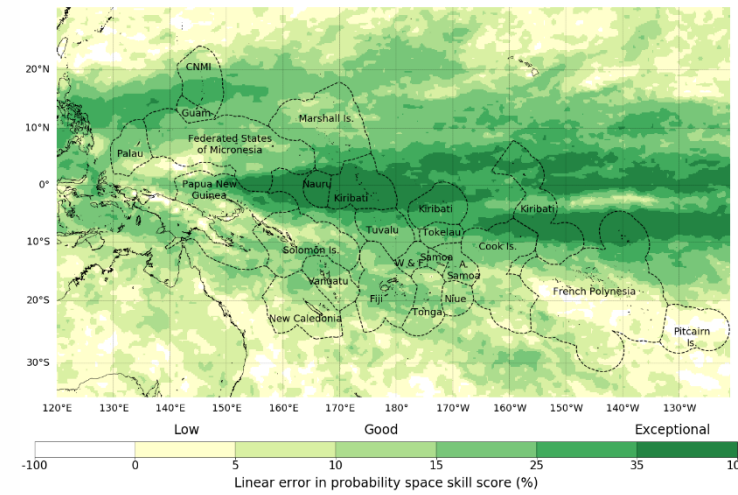
APCC  
PMME

SCOPIC

Tercile rainfall probabilities for  
May to July 2023



Tercile seasonal rainfall past accuracy for May - July. Lead time: 1 months



Run date: 9th April  
Data source: ACCESS-S2 and ERA5 Climate Reanalysis  
© Commonwealth of Australia 2023, Australian Bureau of Meteorology, Supported by COSPPac  
Shapelle data extracted from Flanders Marine Institute (2019), Maritime Boundaries and Exclusive Economic Zones (200NM), version 11. Available online at <http://www.marinerregions.org/>

Base period: 1981-2018  
Issued: 19/01/2022

# Precipitation Outlook for MJJ 2023

NIWA  
ICU

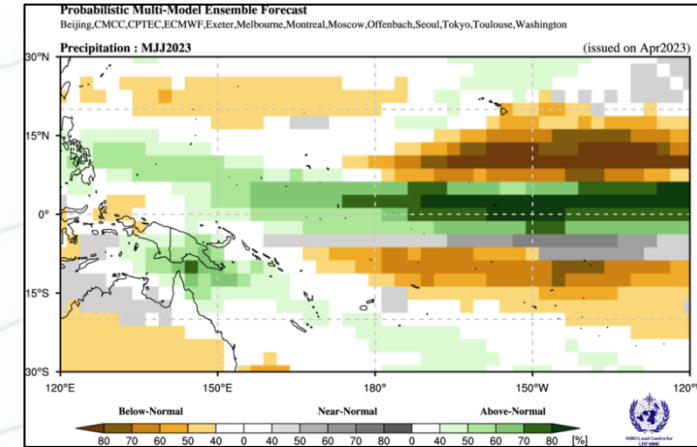
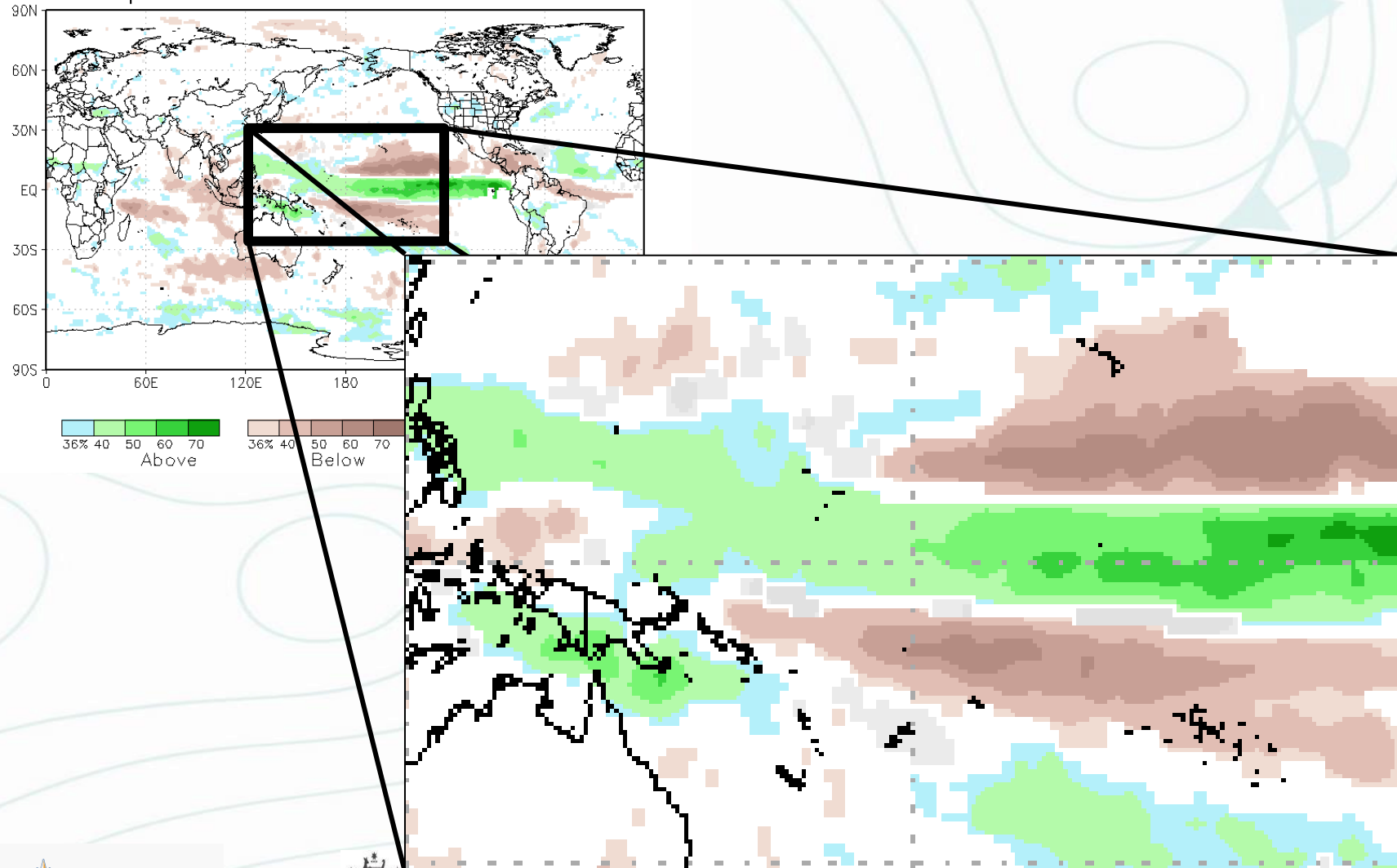
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ACCESS-S

NOAA  
NMME

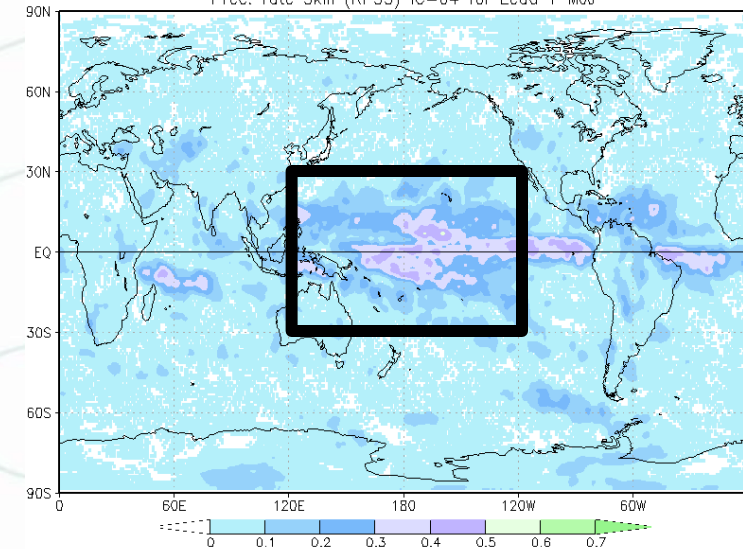
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PMME

SCOPIC

NMME prob fcst Prate IC=202304 for lead 1 2023 MJJ



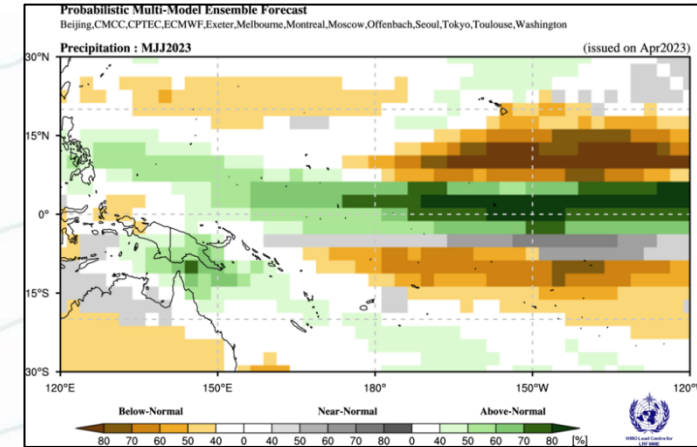
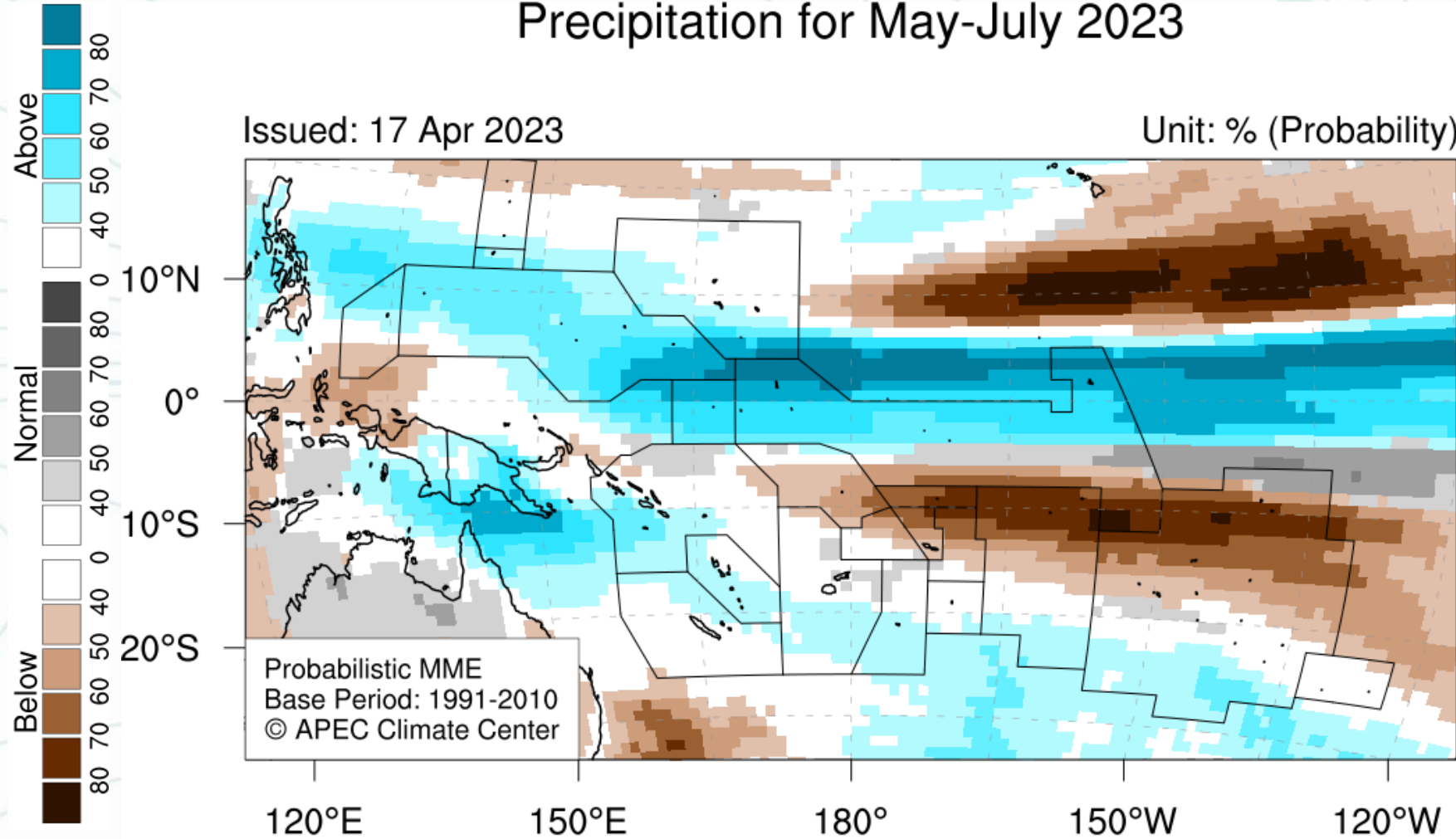
Prec. rate Skill (RPSS) IC=04 for Lead 1 MJJ



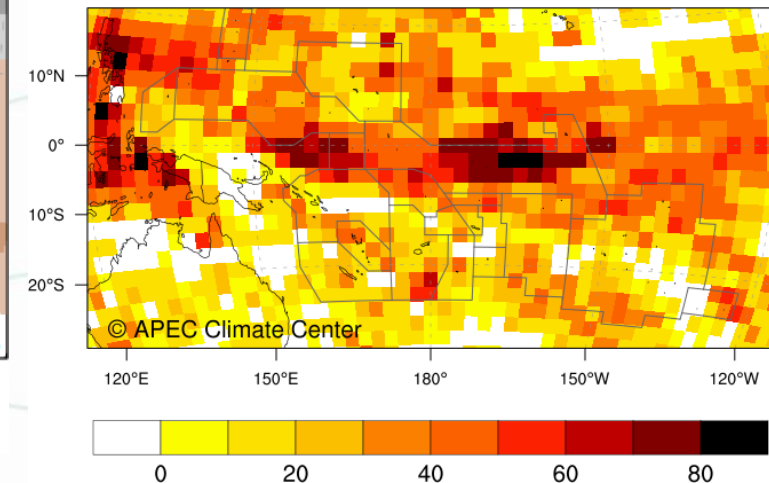
# Precipitation Outlook for MJJ 2023

NIWA | BoM | NOAA | APCC | SCOPIC  
 ICU | ACCESS-S | NMME | PMME

## Precipitation for May-July 2023



Heidke Skill Score : PREC, MJJ (1991-2010)



# Precipitation Outlook for MJJ 2023

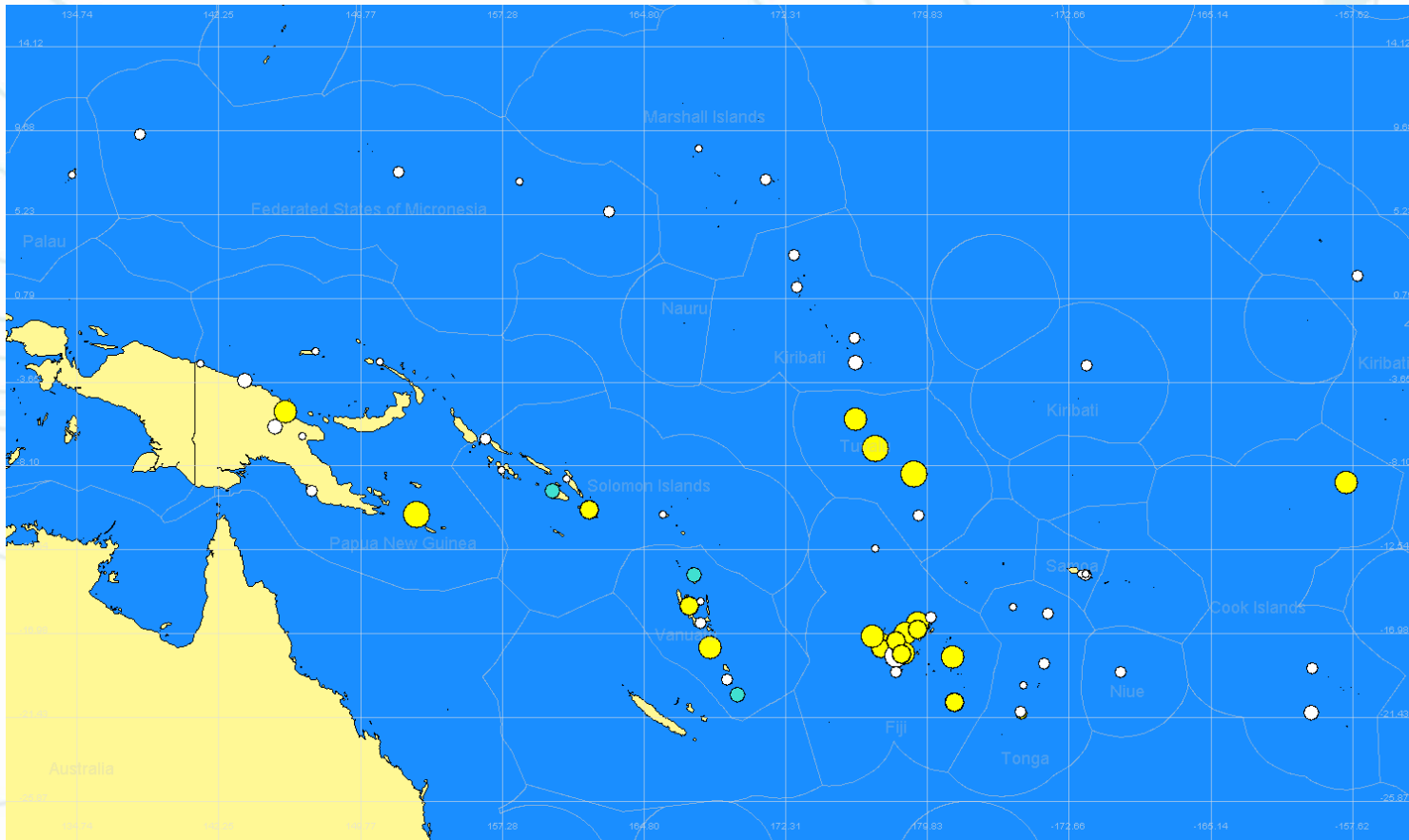
NIWA  
ICU

BoM  
ACCESS-S

NOAA  
NMME

APCC  
PMME

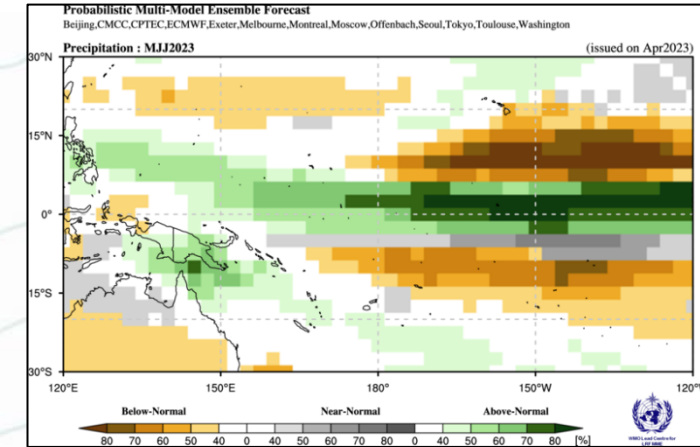
SCOPIC



**Legend**

- Bias towards below-normal rainfall
- Bias towards normal rainfall
- Bias towards above-normal rainfall
- No bias in forecast (Climatology)

Larger "bubbles" represent higher forecast skill (based on LEPS scores)





# Precipitation Outlook for ASO 2023

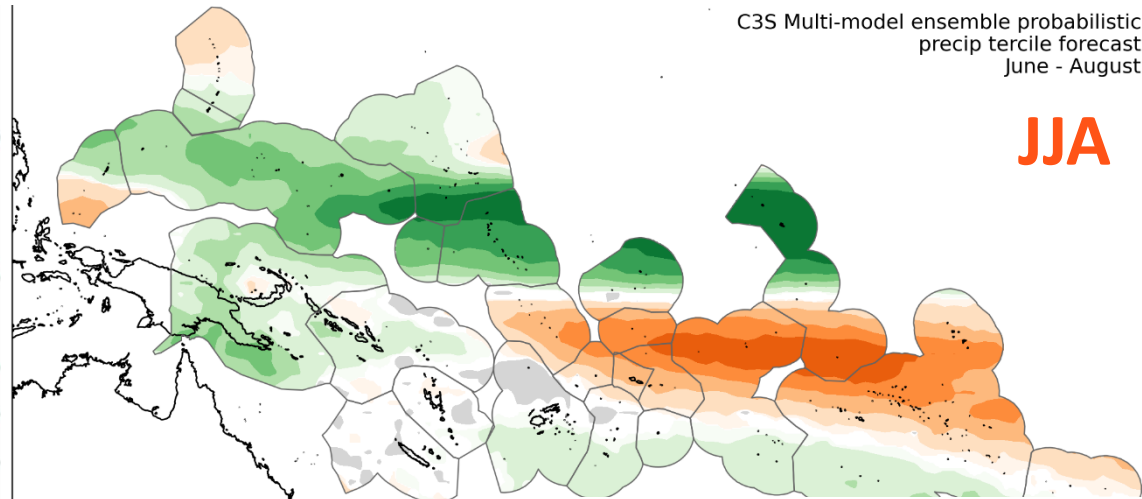
NIWA  
ICU

BoM  
ACCESS-S

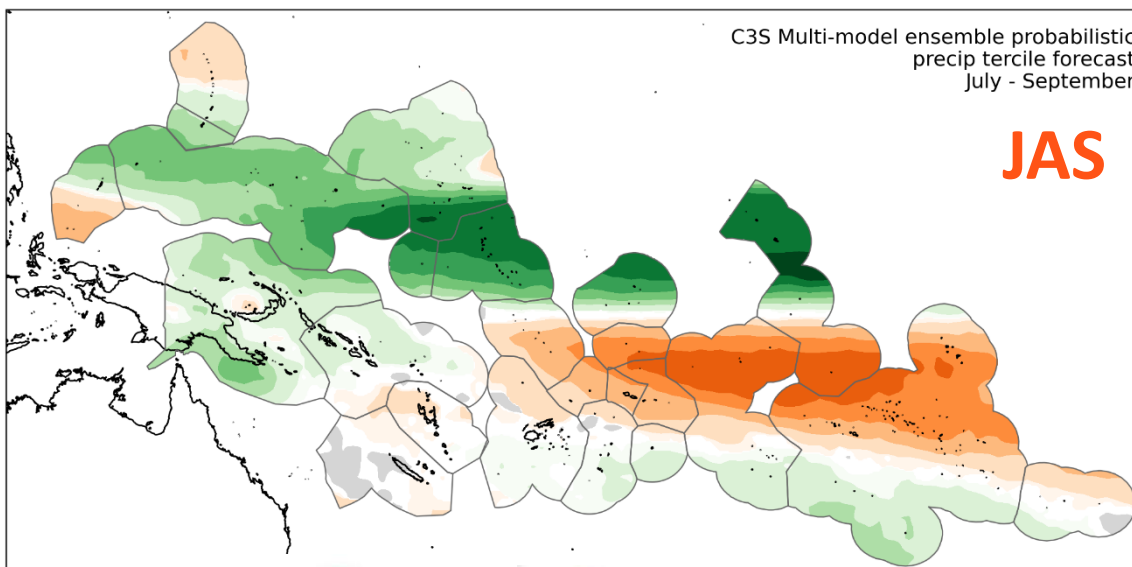
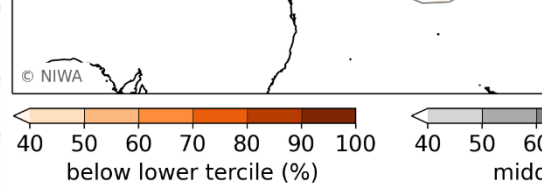
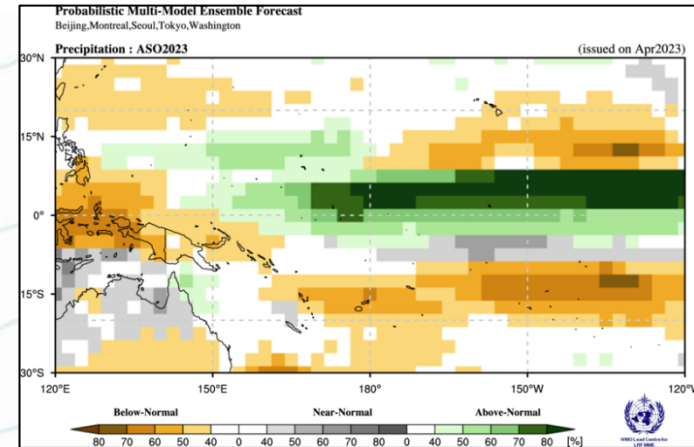
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NMME

APCC  
PMME

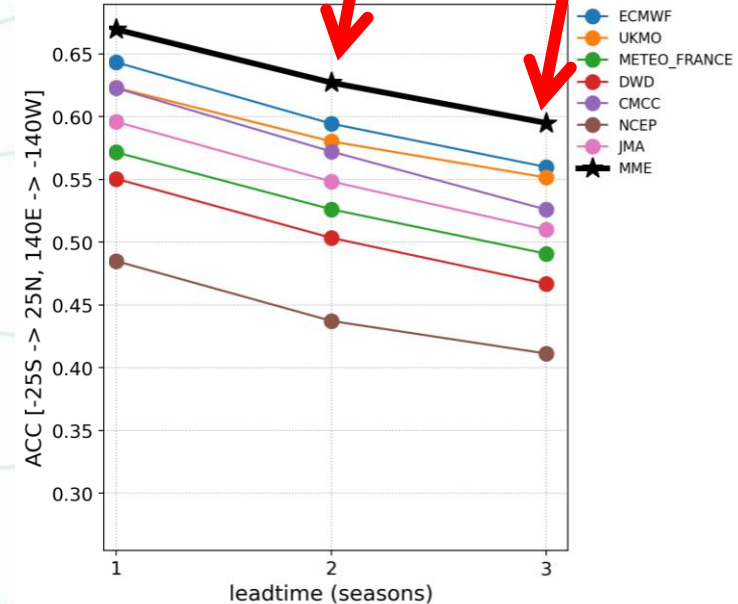
SCOPIC



ASO is not available!



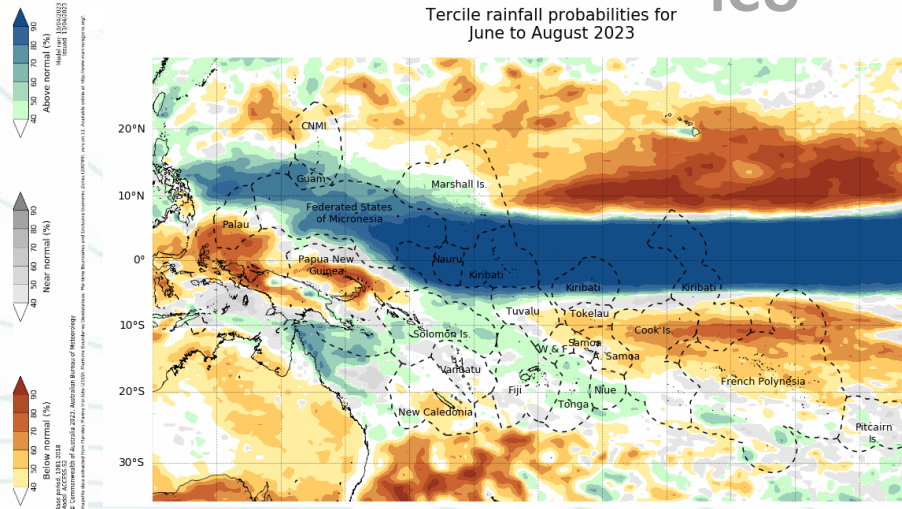
C3S MME ACC, Tropical Pacific seasonal forecasts



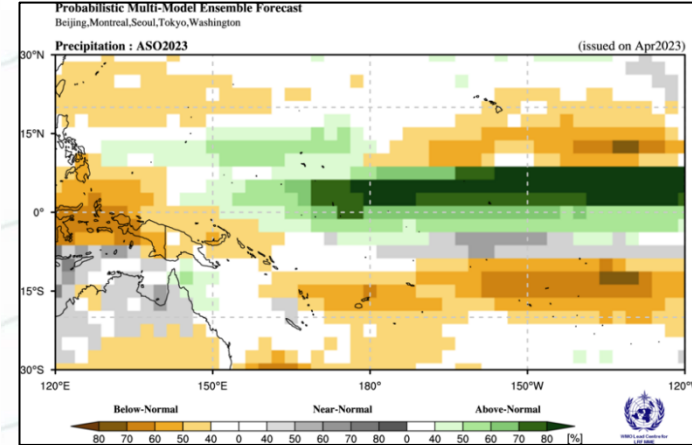
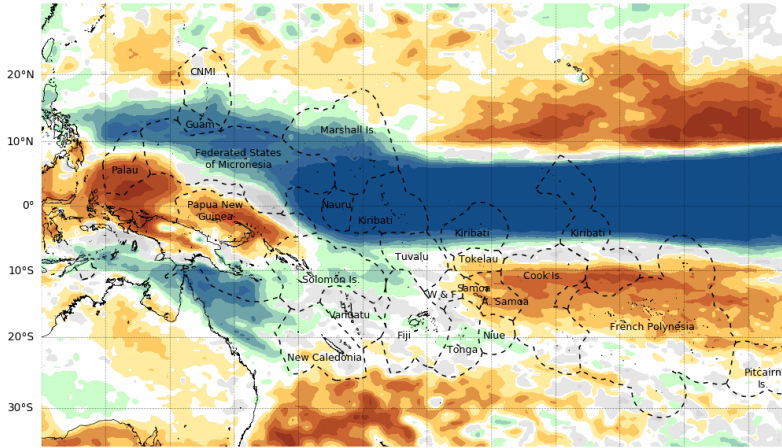
# Precipitation Outlook for ASO 2023

NIWA | BoM | NOAA | APCC | SCOPIC  
ICU | ACCESS-S | NMME | PMME

Tercile rainfall probabilities for June to August 2023

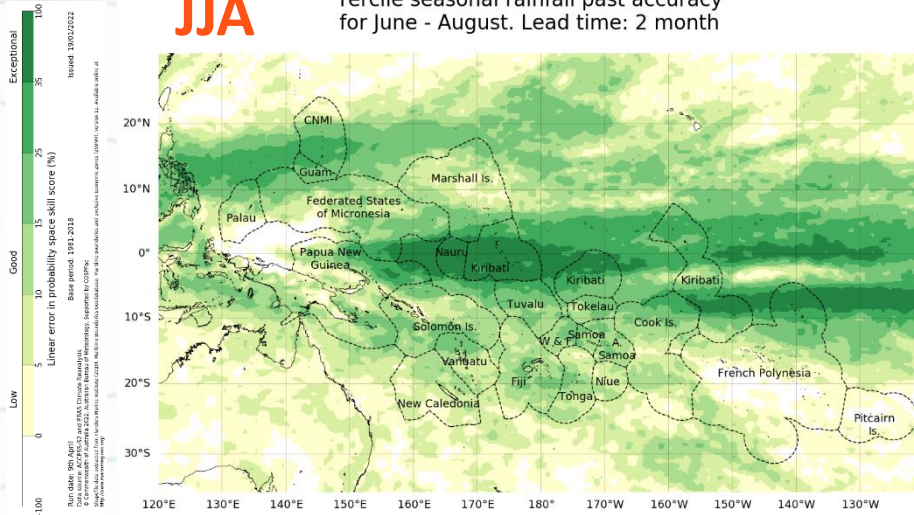


Tercile rainfall probabilities for July to September 2023



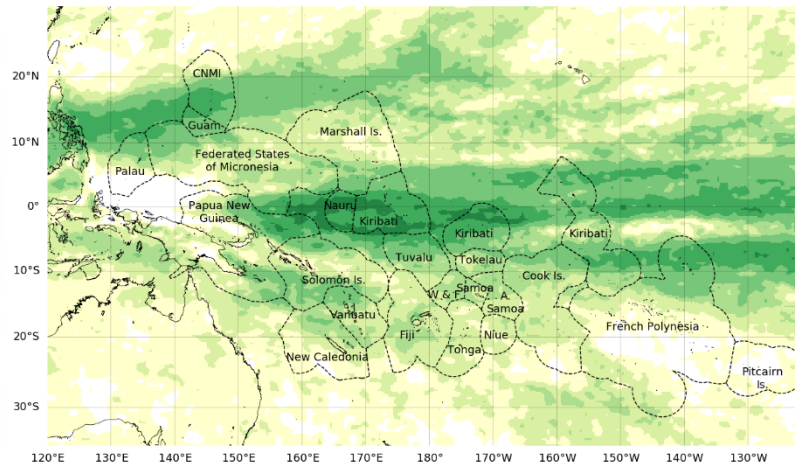
**JJA**

Tercile seasonal rainfall past accuracy for June - August. Lead time: 2 month



Tercile seasonal rainfall past accuracy for July - September. Lead time: 3 months

**JAS**



ASO is not available!

# Precipitation Outlook for ASO 2023

NIWA  
ICU

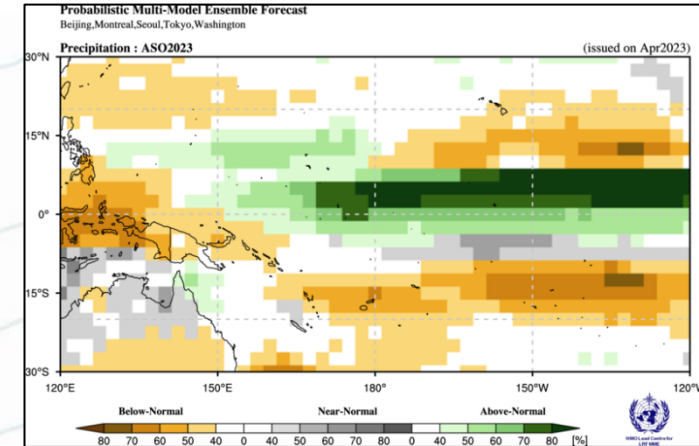
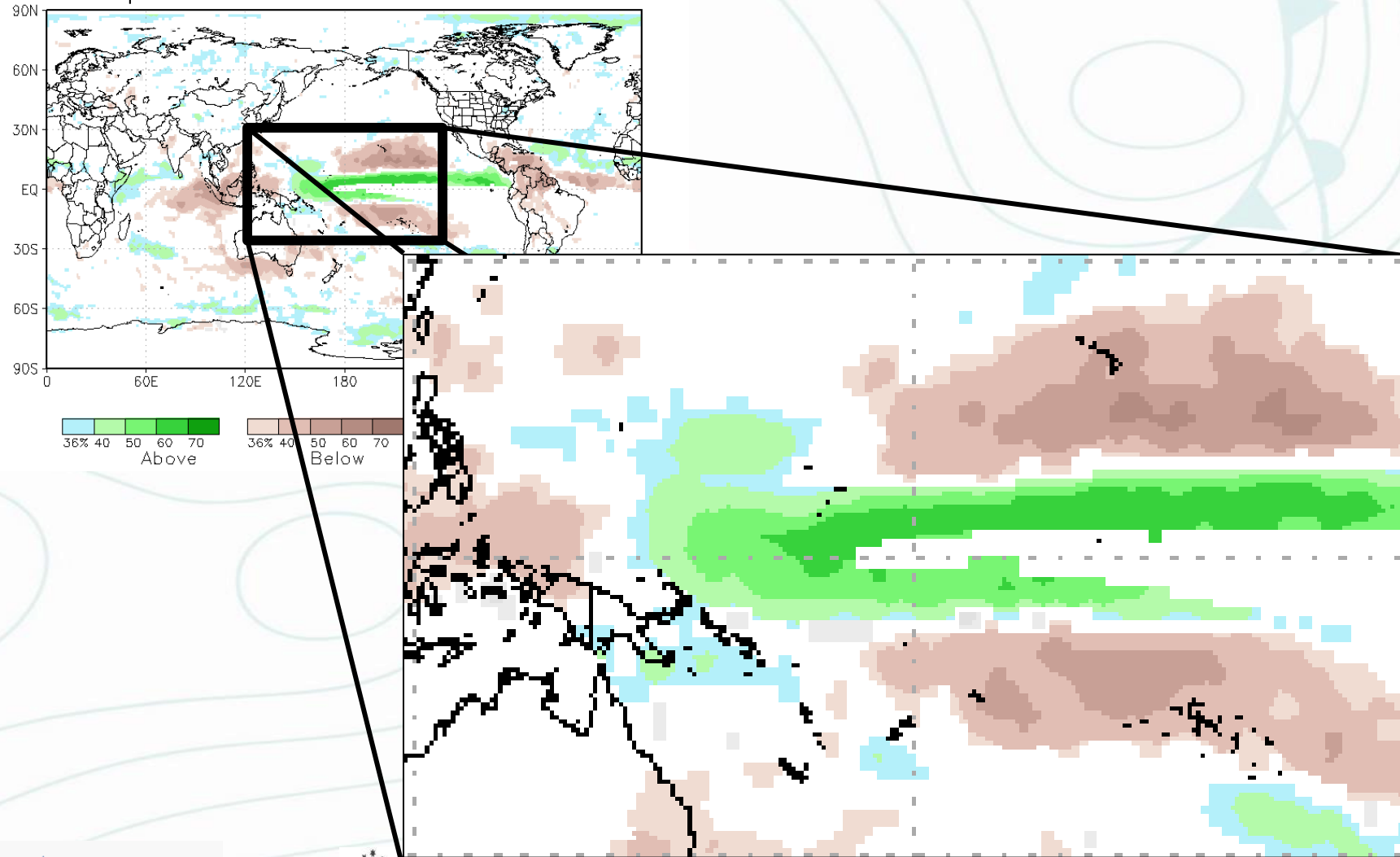
BoM  
ACCESS-S

NOAA  
NMME

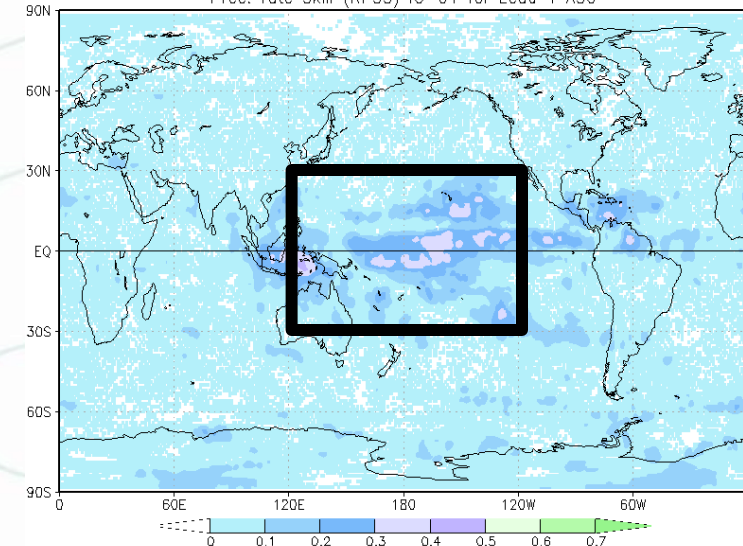
APCC  
PMME

SCOPIC

NMME prob fcst Prate IC=202304 for lead 4 2023 ASO



Prec. rate Skill (RPS) IC=04 for Lead 4 ASO



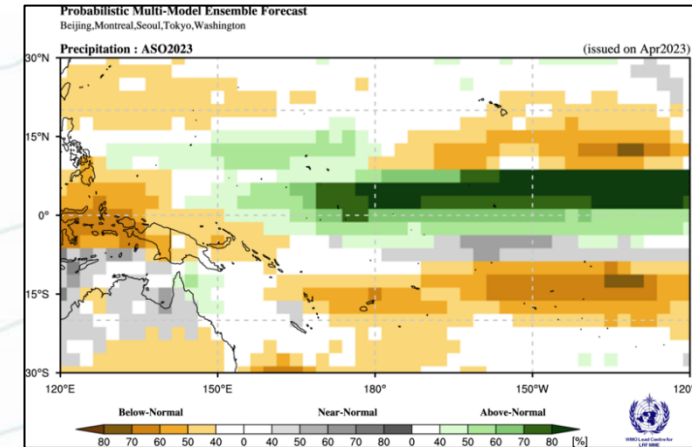
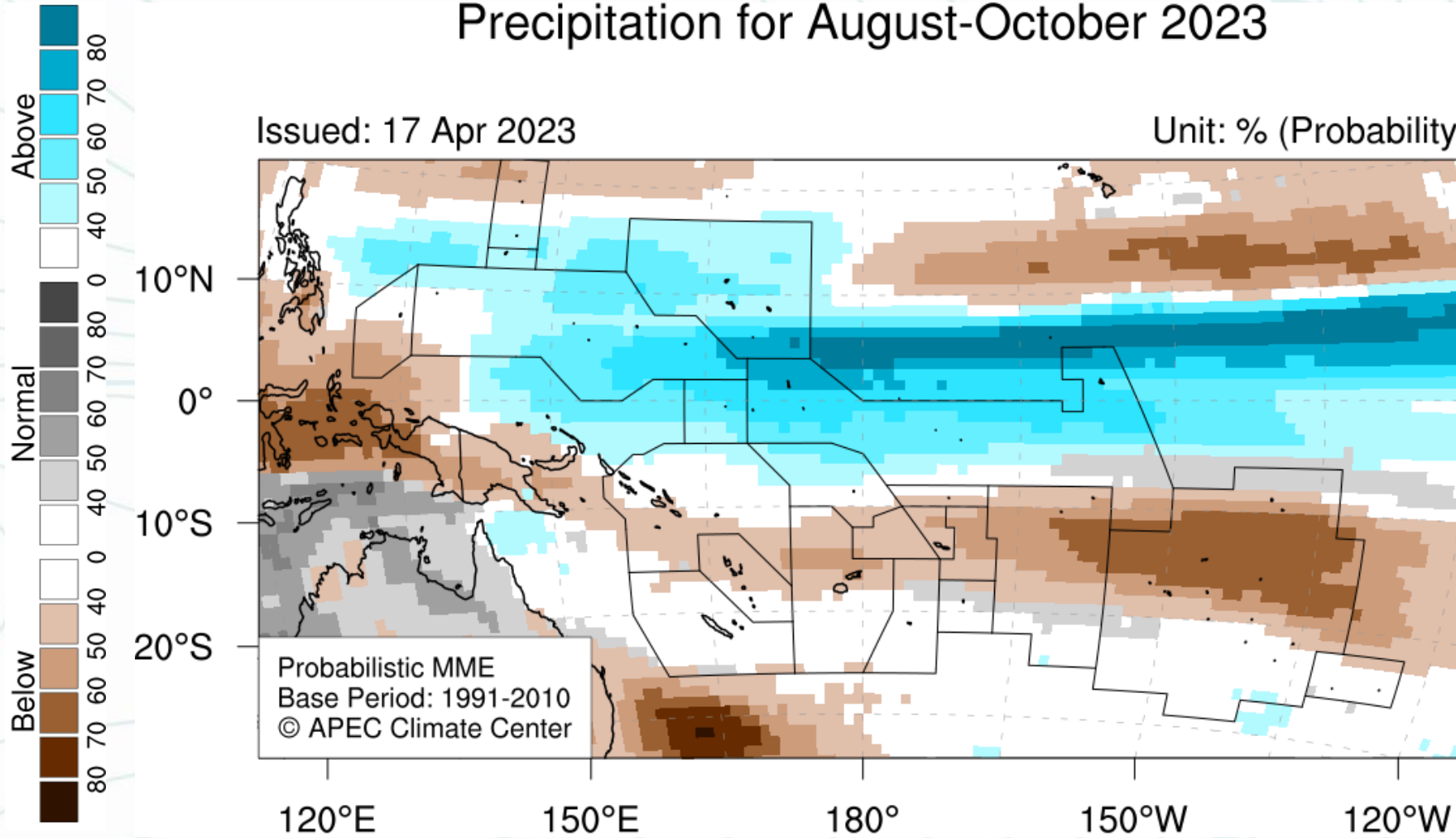
# Precipitation Outlook for ASO 2023

NIWA | BoM | NOAA | APCC | SCOPIC  
 ICU | ACCESS-S | NMME | PMME

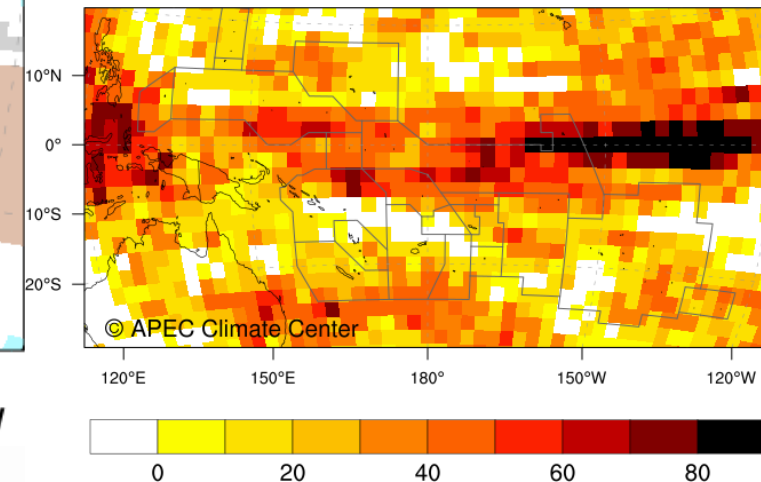
## Precipitation for August-October 2023

Issued: 17 Apr 2023

Unit: % (Probability)



Heidke Skill Score : PREC, ASO (1991-2010)



# Precipitation Outlook for ASO 2023

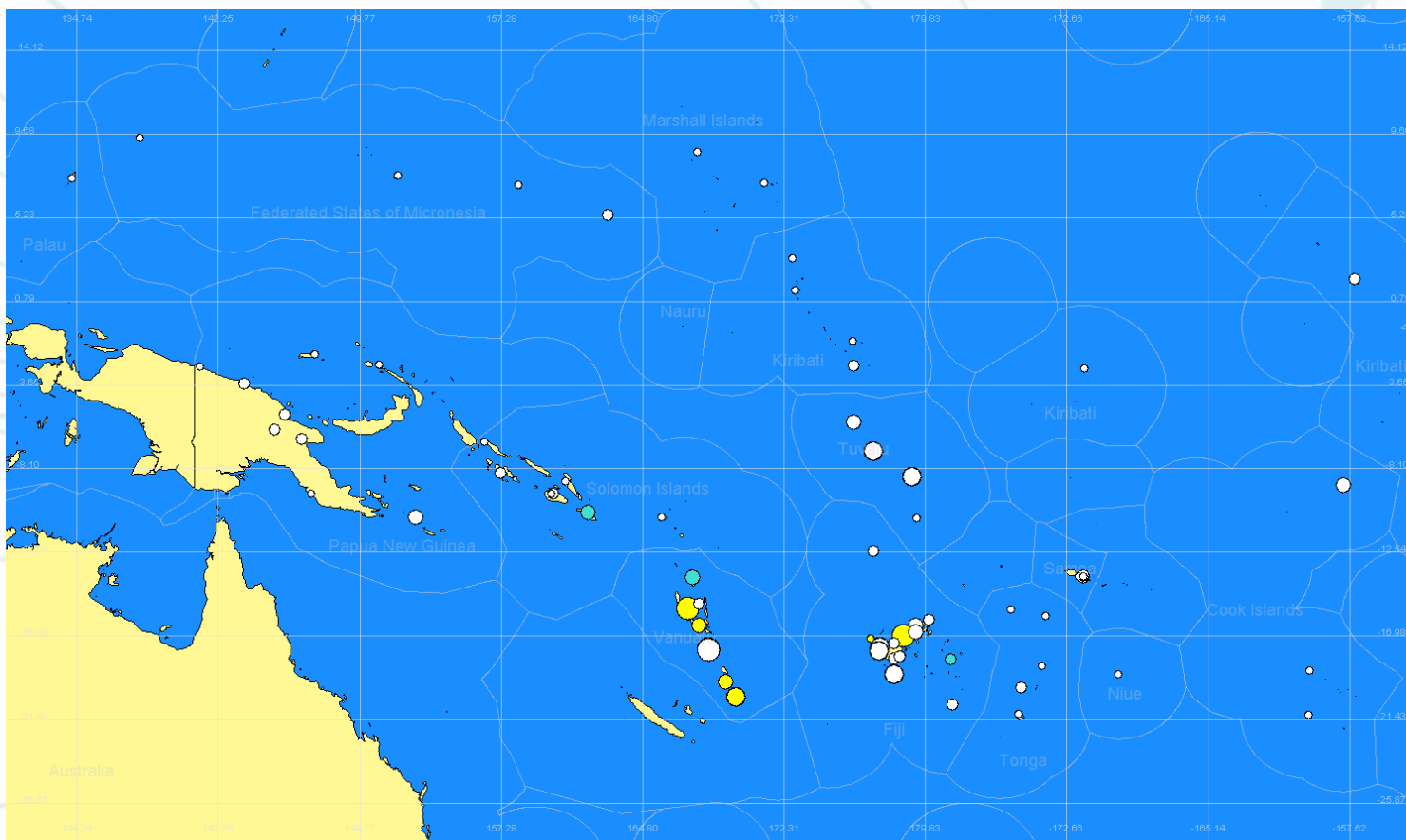
NIWA  
ICU

BoM  
ACCESS-S

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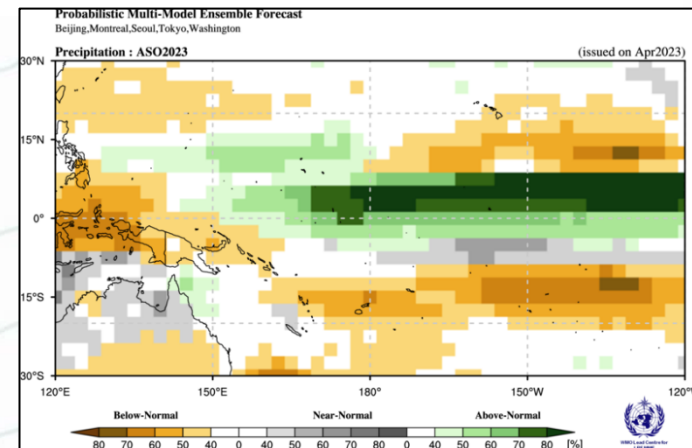
SCOPIC



**Legend**

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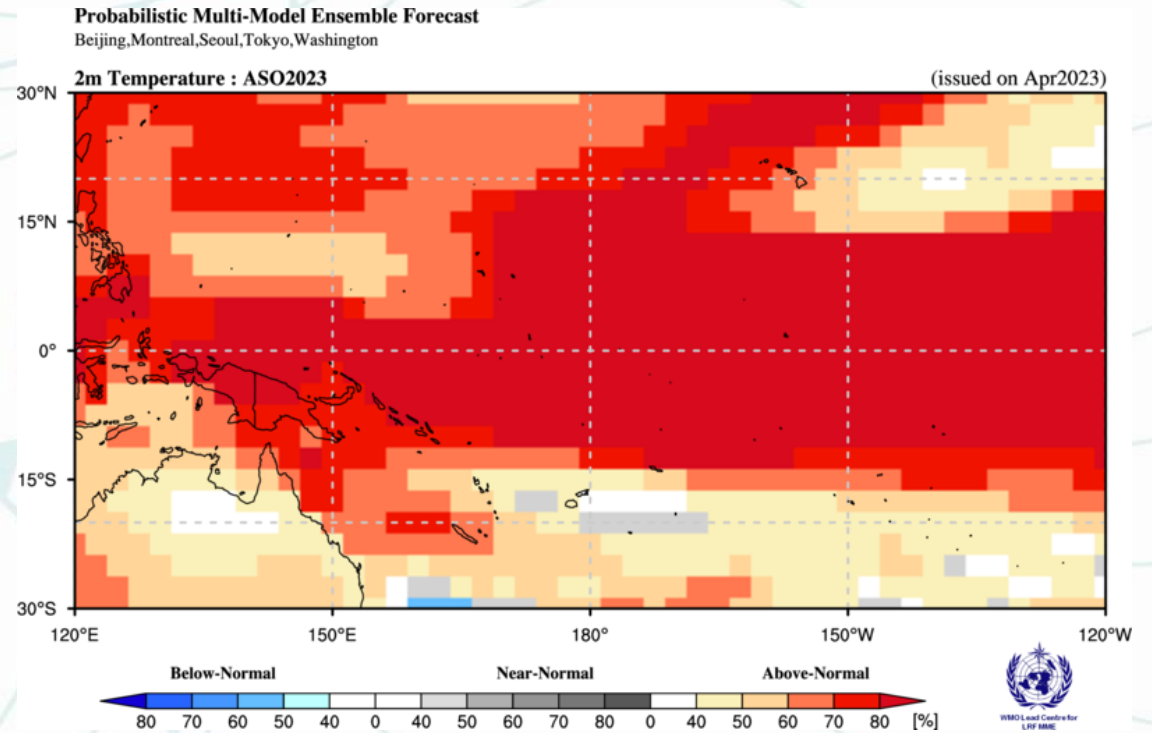
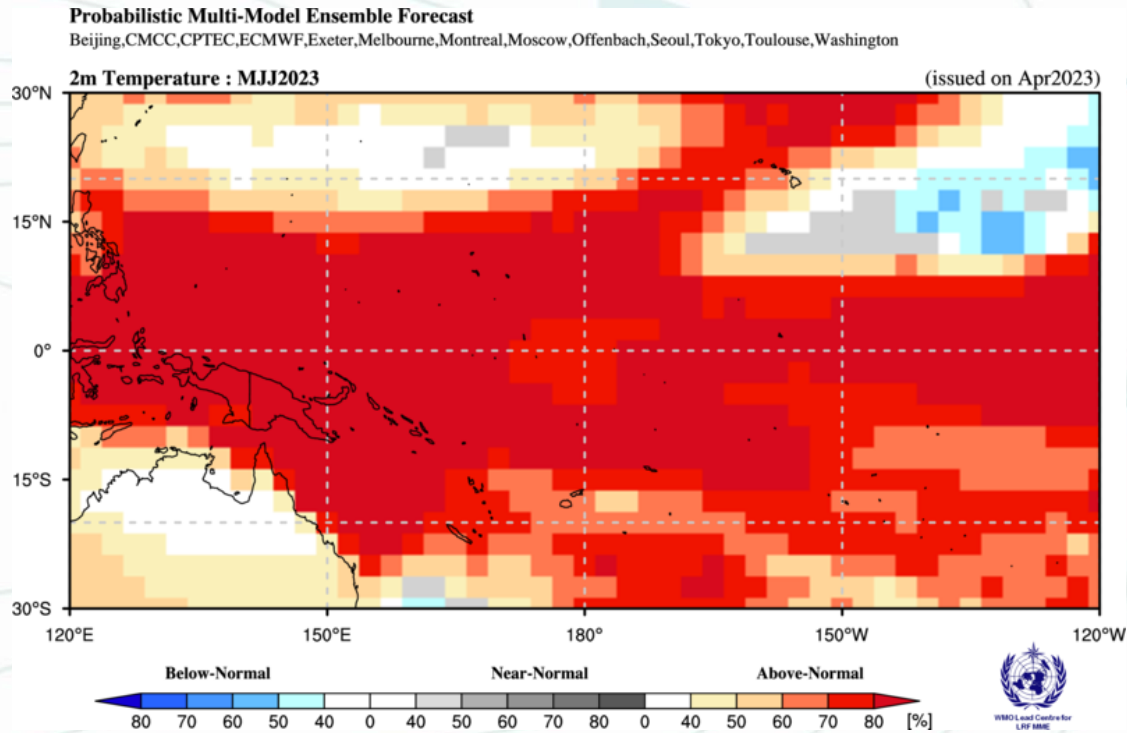
# Temperature Outlook

# Temperature Outlook for MJJ to ASO 2023

## WMO LC LRF MME

**2023MJJ:** Warmer than normal conditions for the whole Pacific Islands

**2023ASO:** Warmer than normal conditions for the whole Pacific Islands

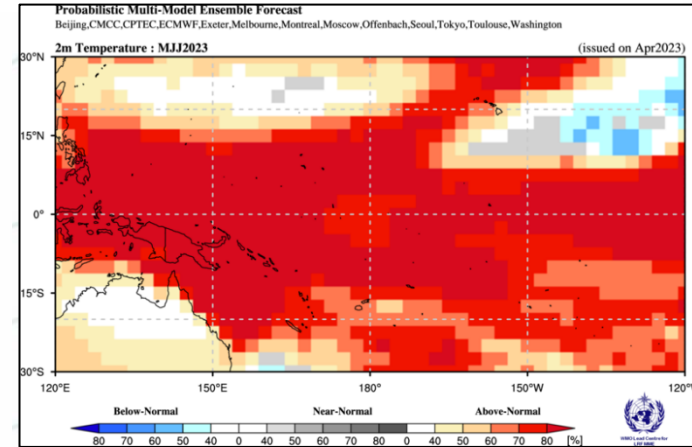
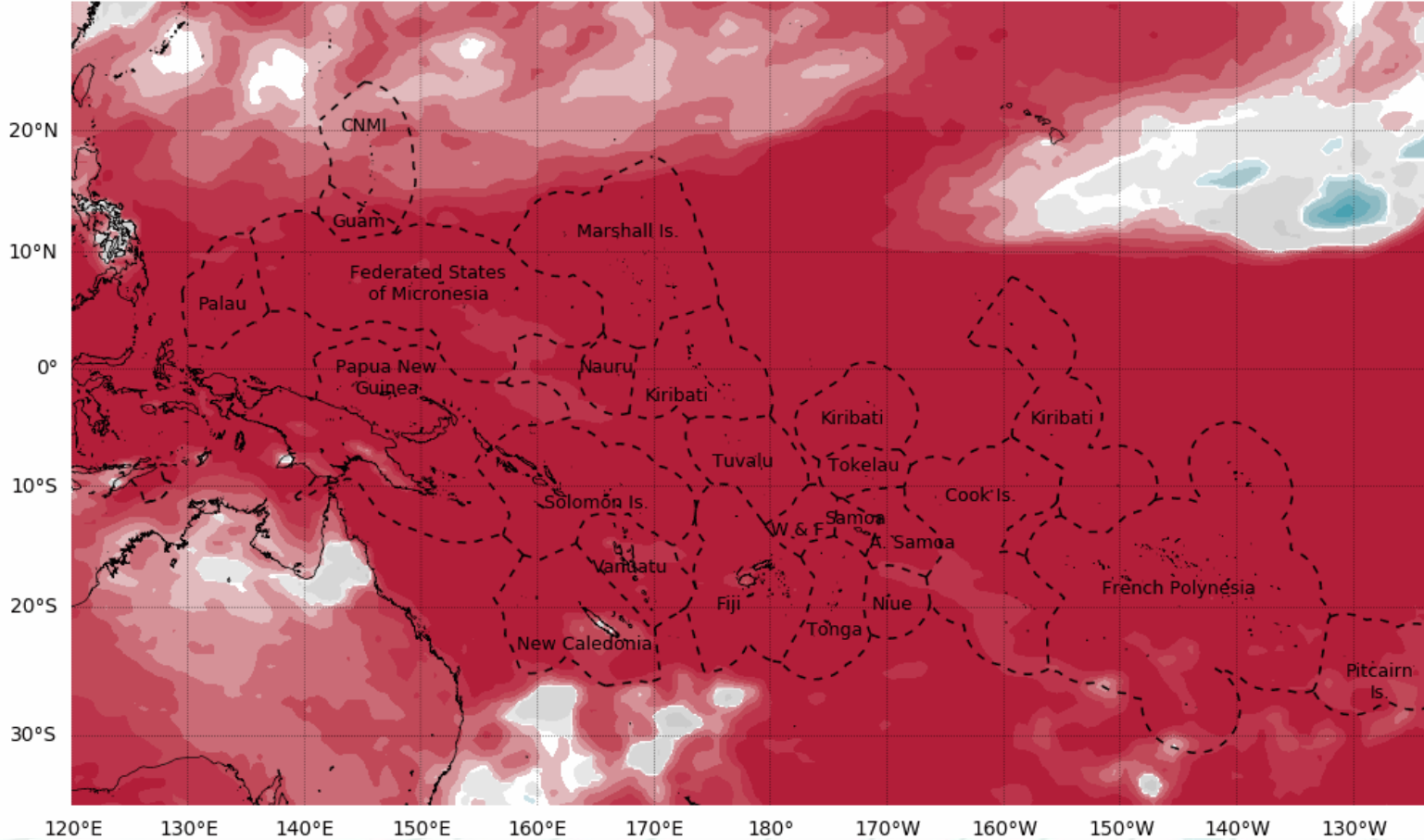
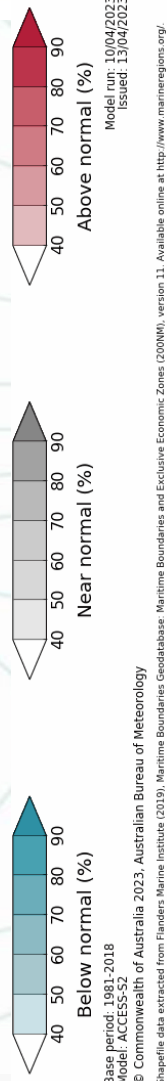


# Temperature Outlook for MJJ 2023

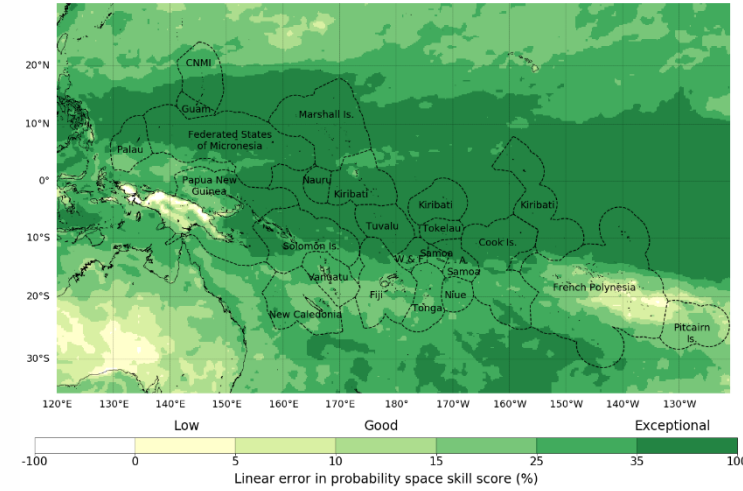
BoM | NOAA | APCC  
 ACCESS-S | NMME | PMME

## T max

Tercile maximum temperature probabilities for May to July 2023



Tercile seasonal maximum temperature past accuracy for May - July. Lead time: 1 months



Run date: 9th April  
 Data source: ACCESS-S2 and ERA5 Climate Reanalysis  
 © Commonwealth of Australia 2021, Australian Bureau of Meteorology, Supported by COSPPac  
 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/>  
 Issued: 21/12/2021

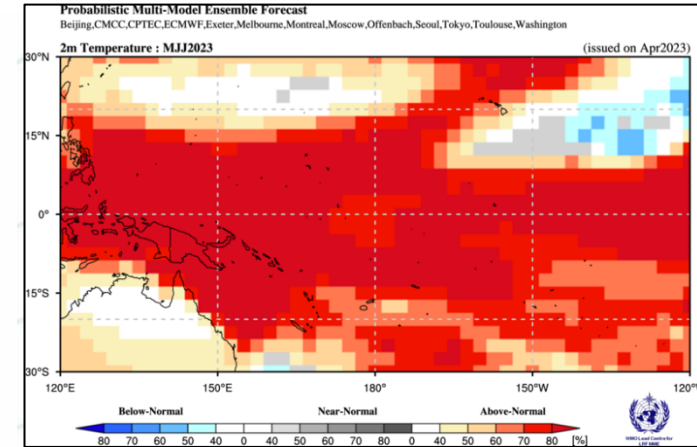
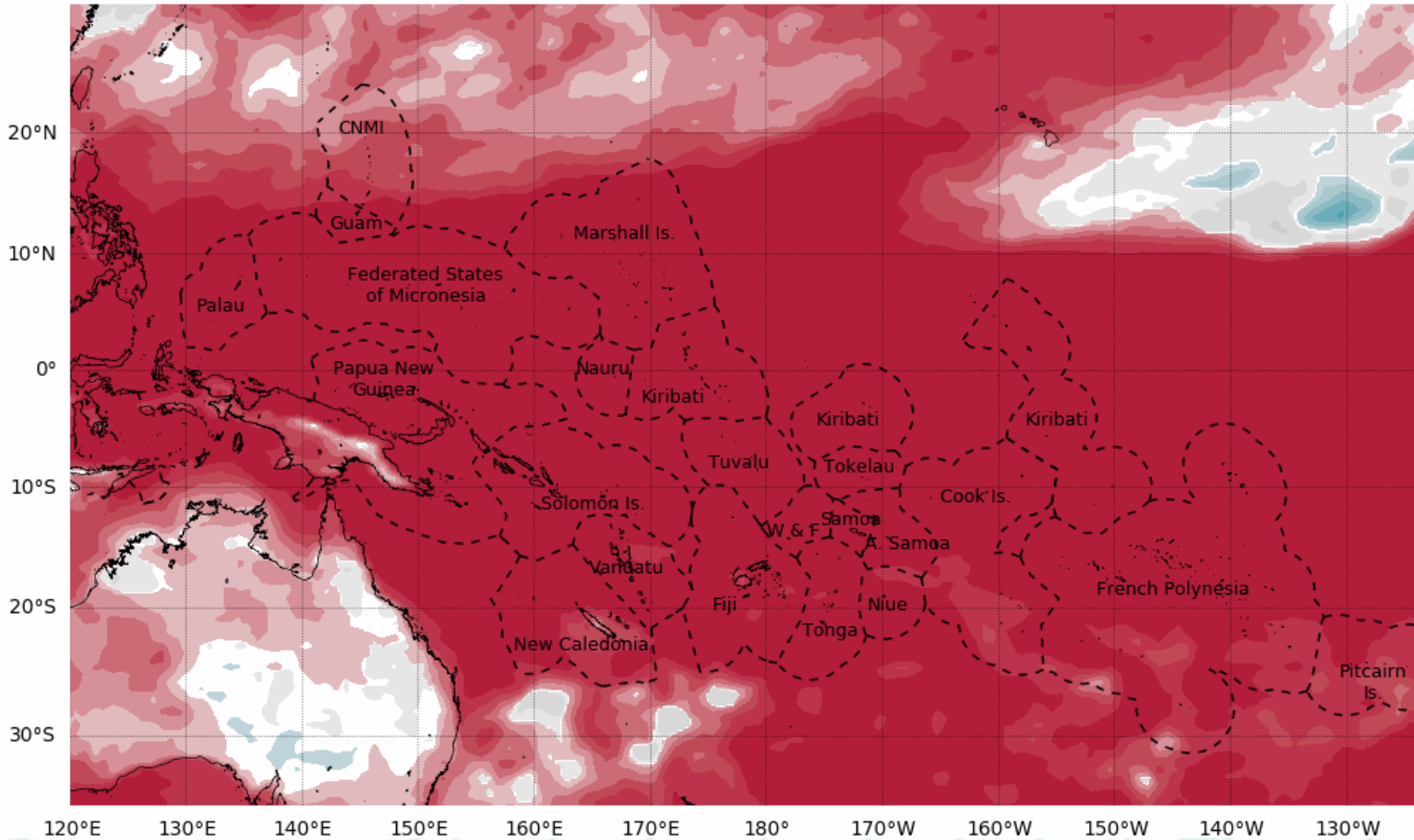
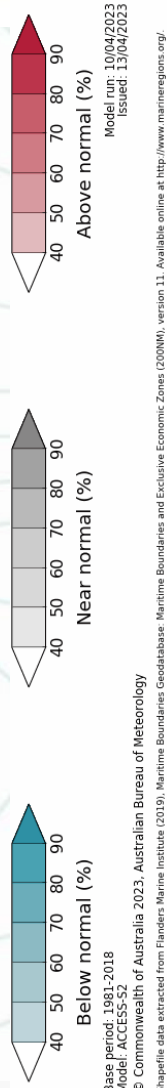


# Temperature Outlook for MJJ 2023

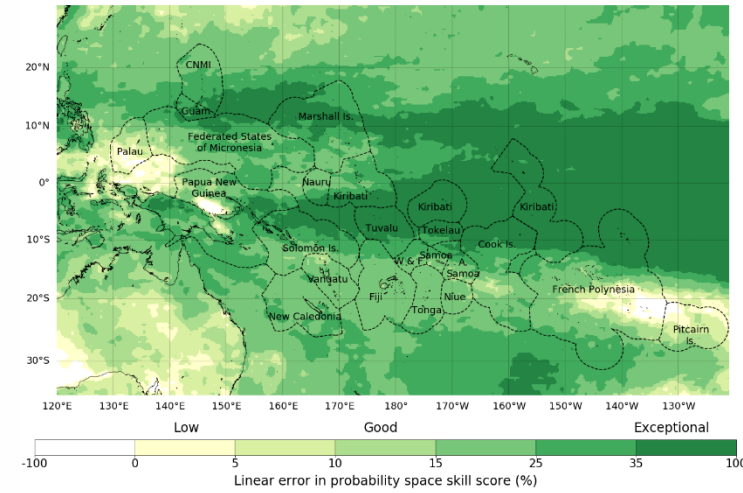
BoM | NOAA | APCC  
 ACCESS-S | NMME | PMME

## T min

Tercile minimum temperature probabilities for May to July 2023



Tercile seasonal minimum temperature past accuracy for May - July. Lead time: 1 months

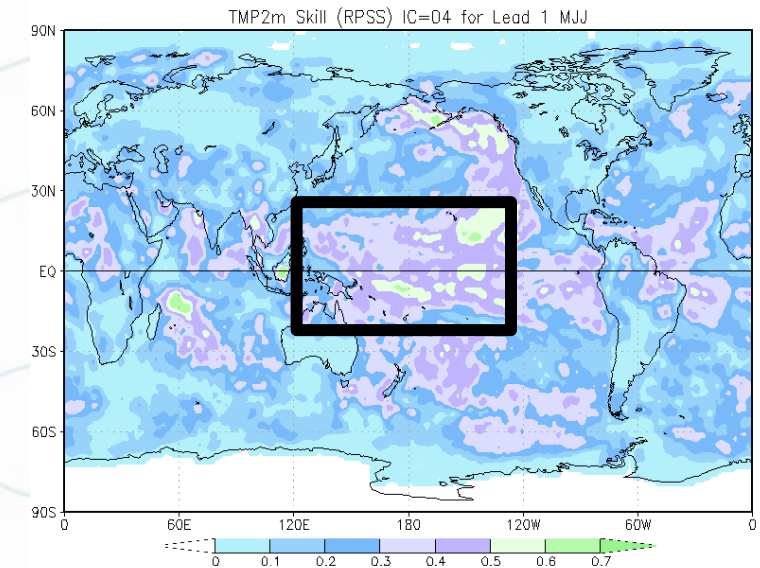
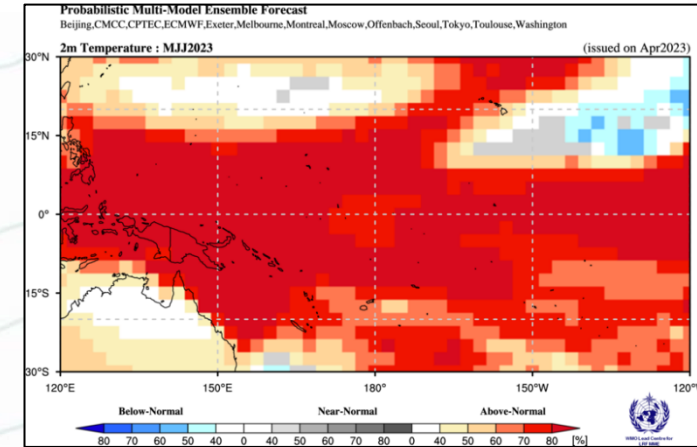
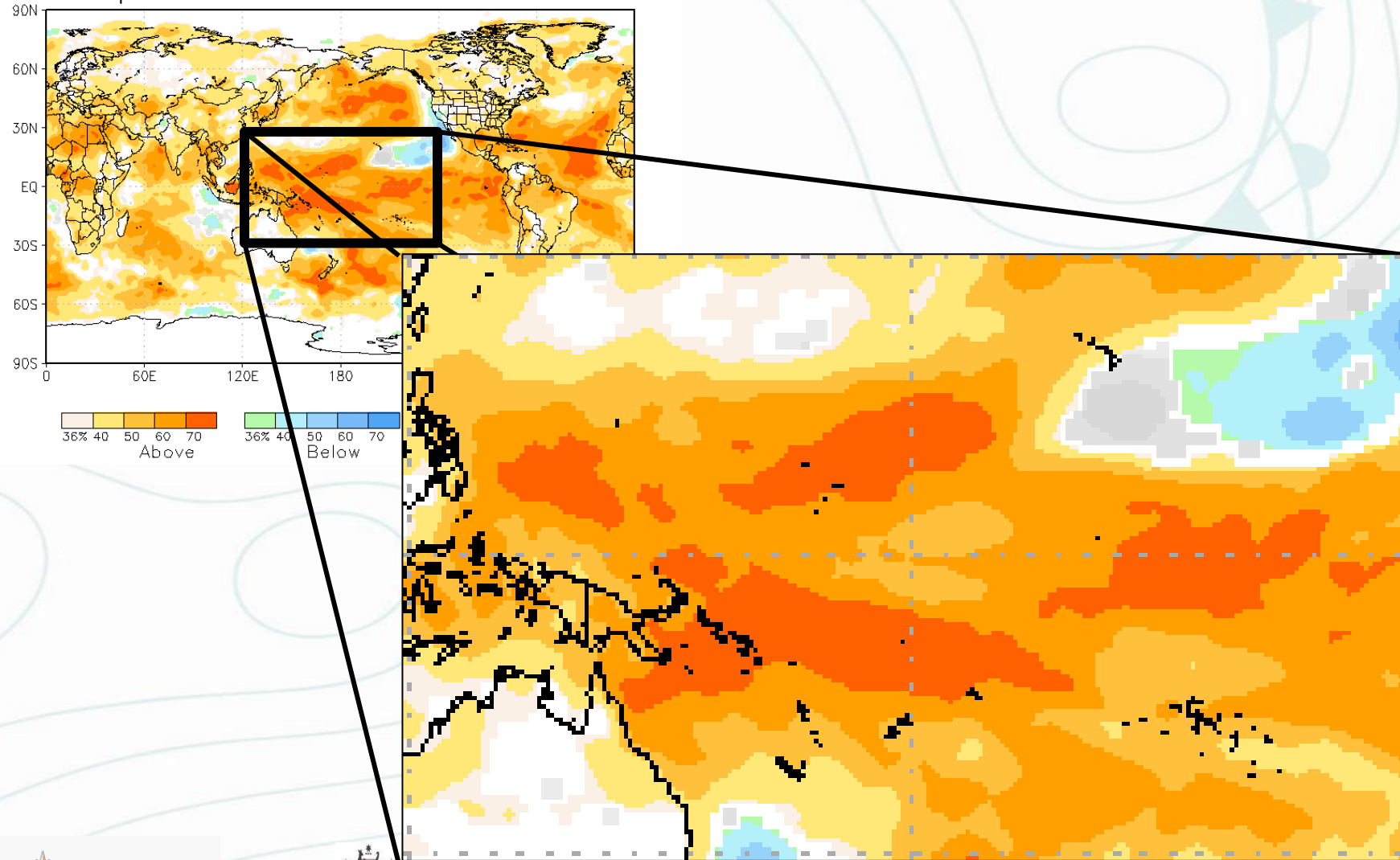


Run date: 9th April  
 Data source: ACCESS-S2 and ERA5 Climate Reanalysis  
 © Commonwealth of Australia 2023, Australian Bureau of Meteorology, Supported by CSDFPac  
 Shapefile data extracted from Flanders Marine Institute (2019). Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (200NM), version 11. Available online at <http://www.marineregions.org/>

# Temperature Outlook for MJJ 2023

BoM | NOAA | APCC  
 ACCESS-S | NMME | PMME

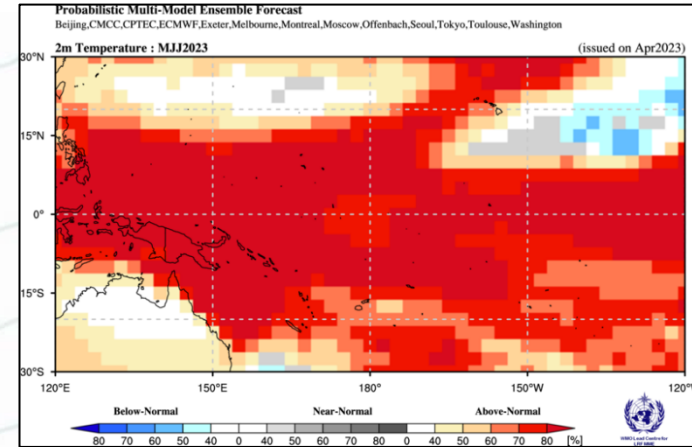
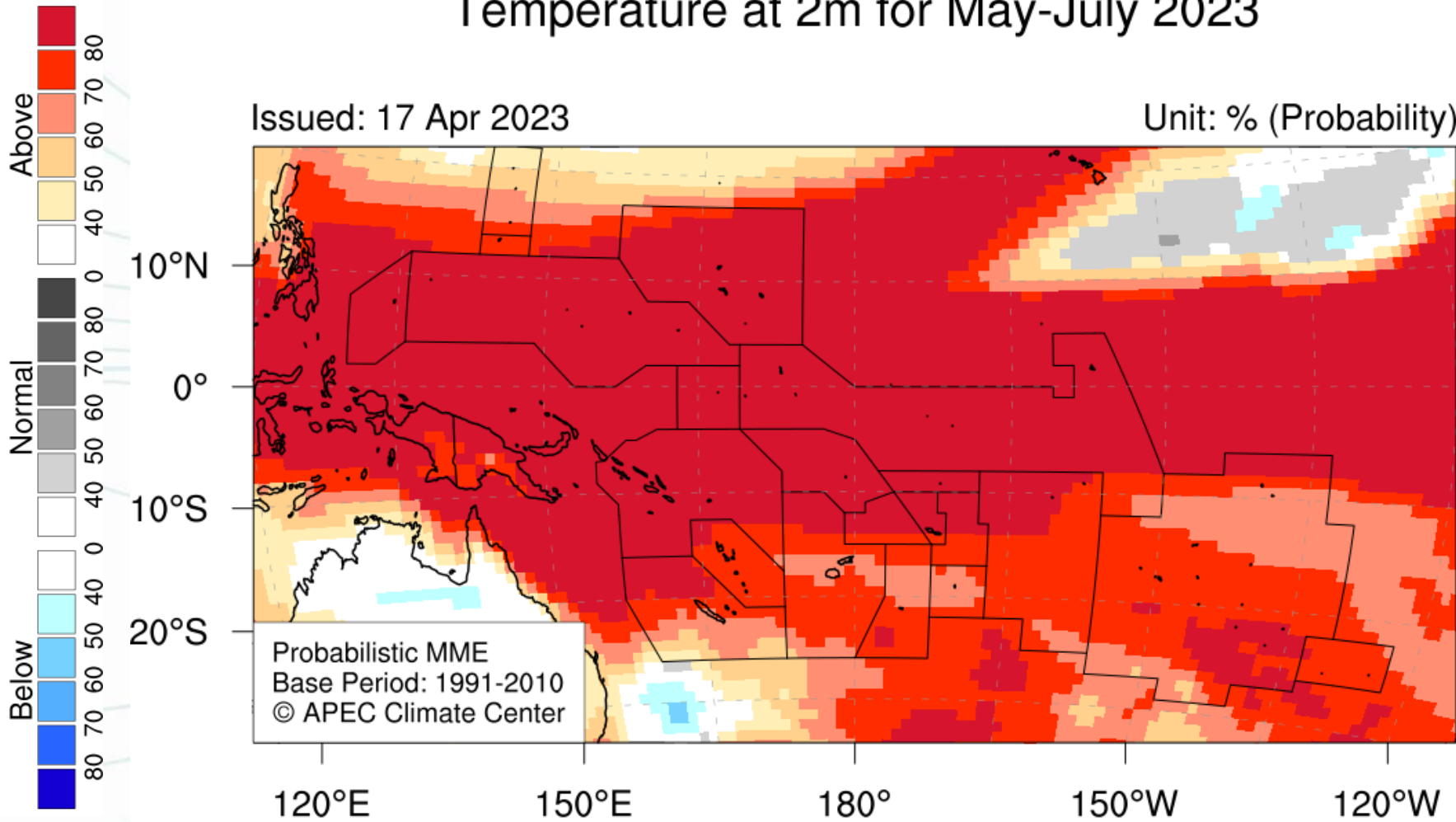
NMME prob fcst TMP2m IC=202304 for lead 1 2023 MJJ



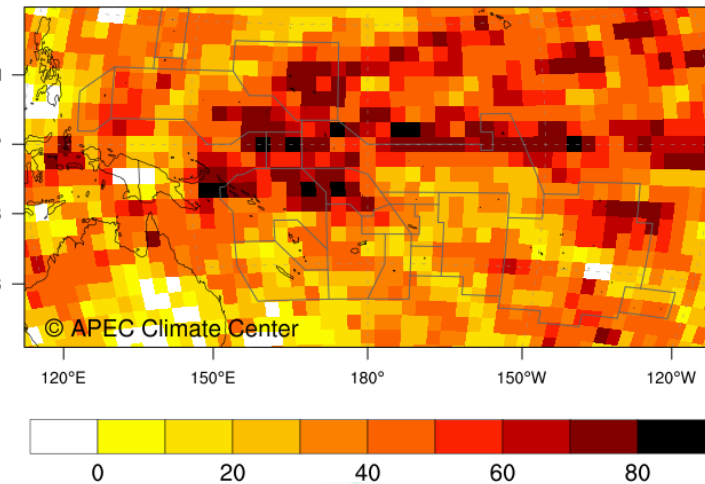
# Temperature Outlook for MJJ 2023

BoM | NOAA | APCC  
 ACCESS-S | NMME | PMME

## Temperature at 2m for May-July 2023



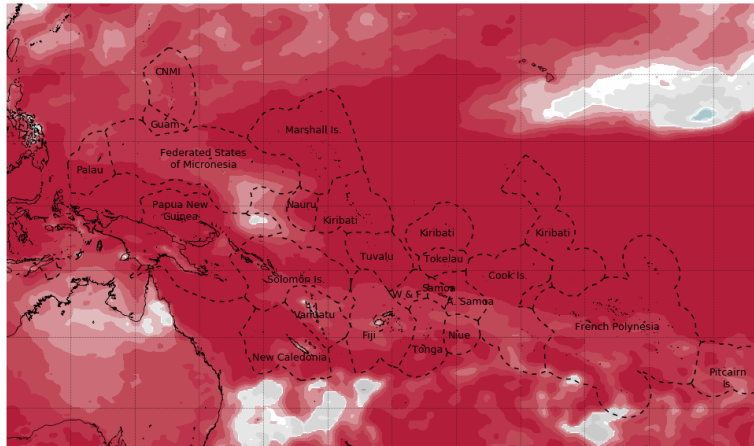
Heidke Skill Score : T2M, MJJ (1991-2010)



# Temperature Outlook for ASO 2023

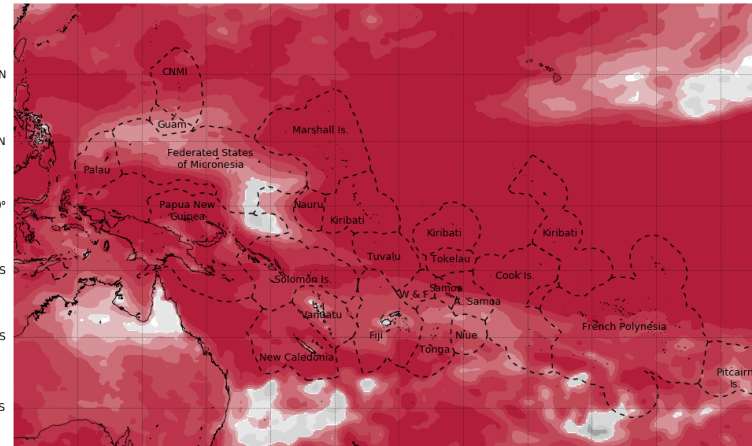
BoM | NOAA | APCC  
ACCESS-S | NMME | PMME

Tercile maximum temperature probabilities for June to August 2023

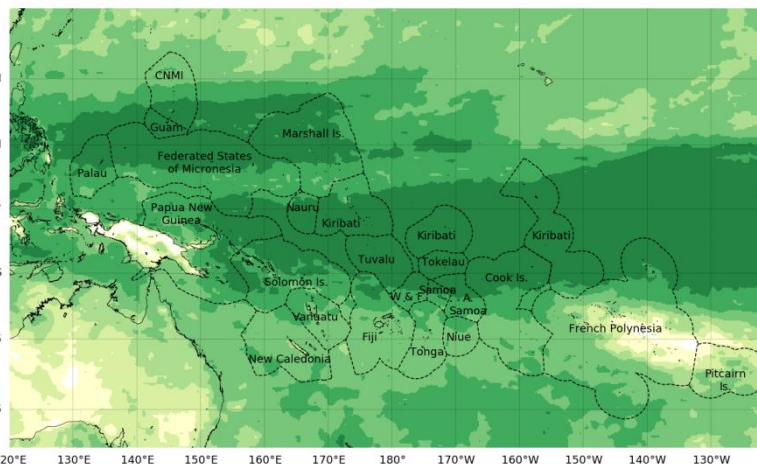
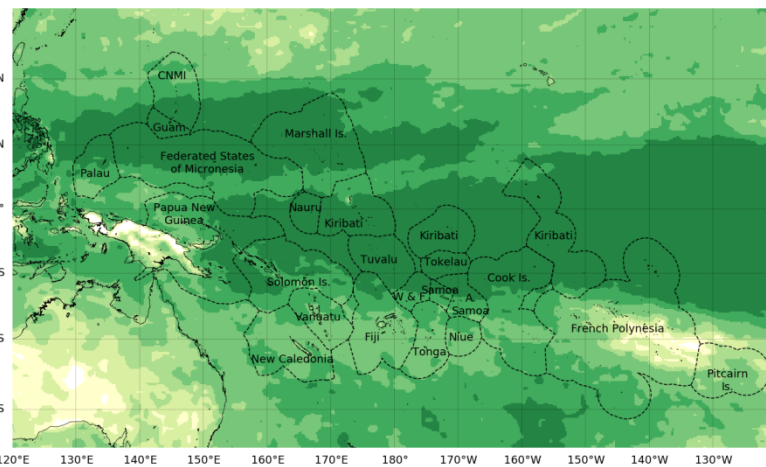
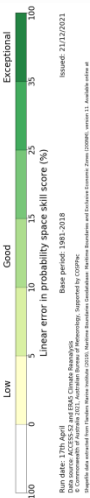
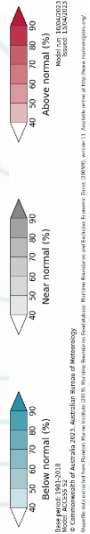
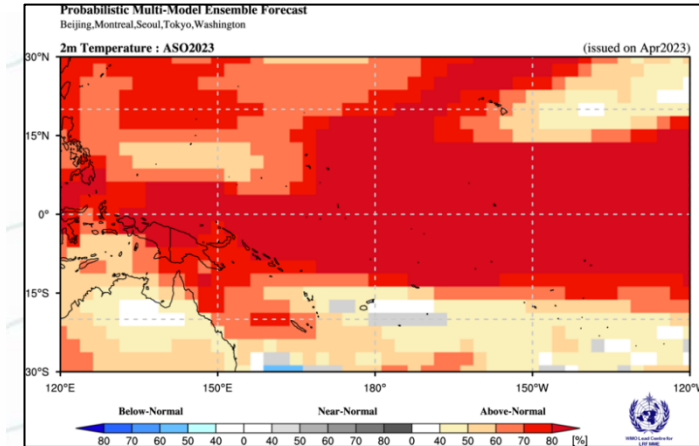


**JJA** Tercile seasonal maximum temperature past accuracy for June - August. Lead time: 2 month

Tercile maximum temperature probabilities for July to September 2023



Tercile seasonal maximum temperature past accuracy for July - September. Lead time: 3 months **JAS**



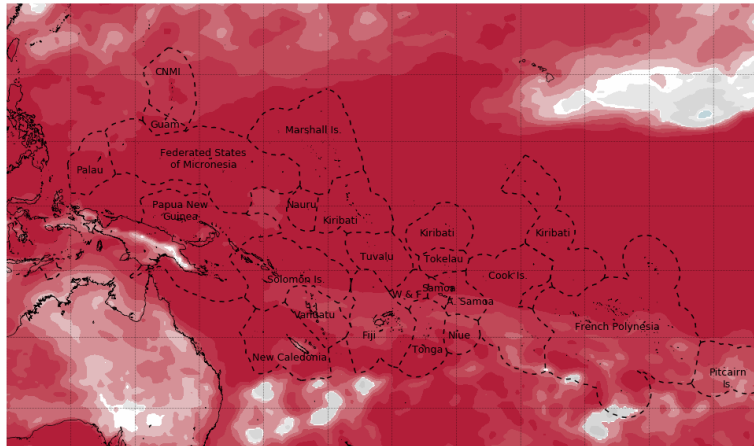
**T max**

ASO is not available!

# Temperature Outlook for ASO 2023

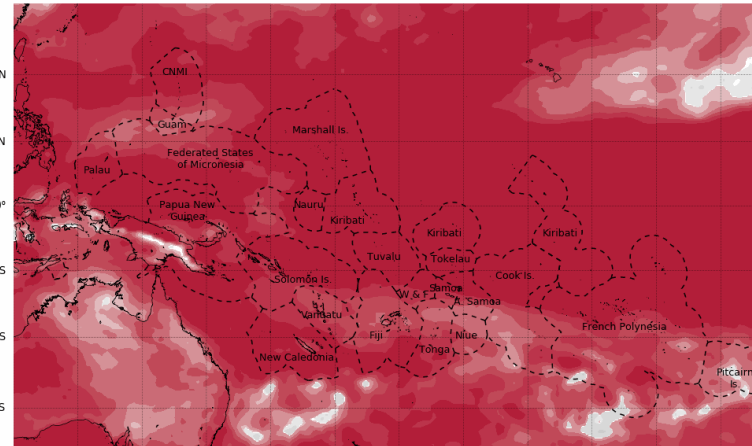
BoM | NOAA | APCC  
ACCESS-S | NMME | PMME

Tercile minimum temperature probabilities for June to August 2023

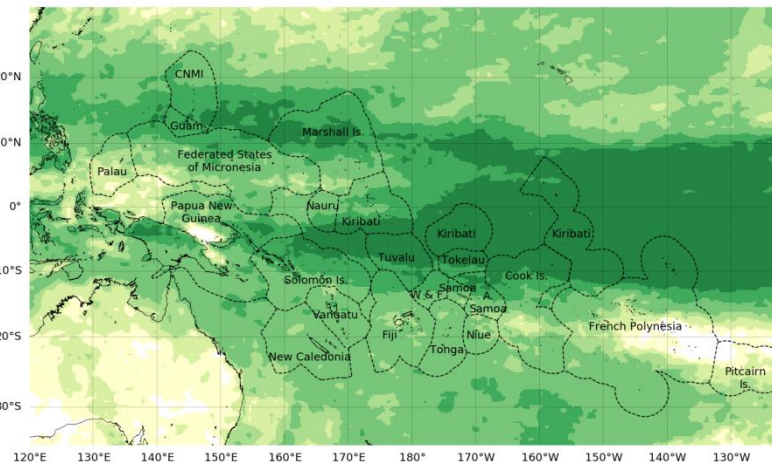
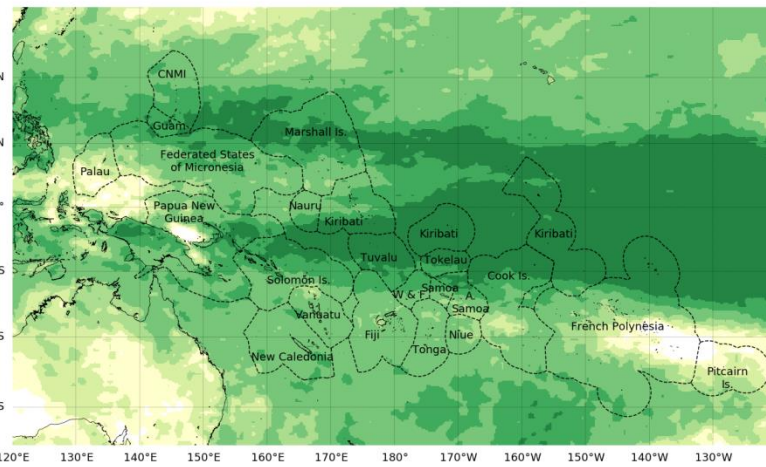
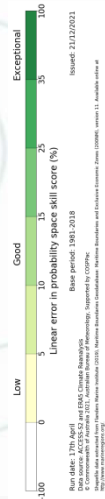
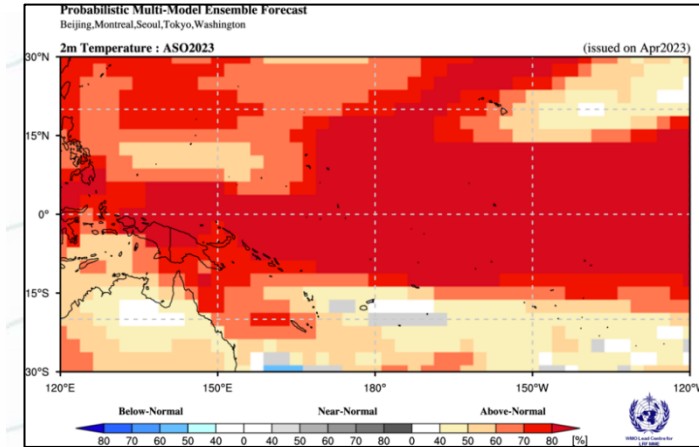


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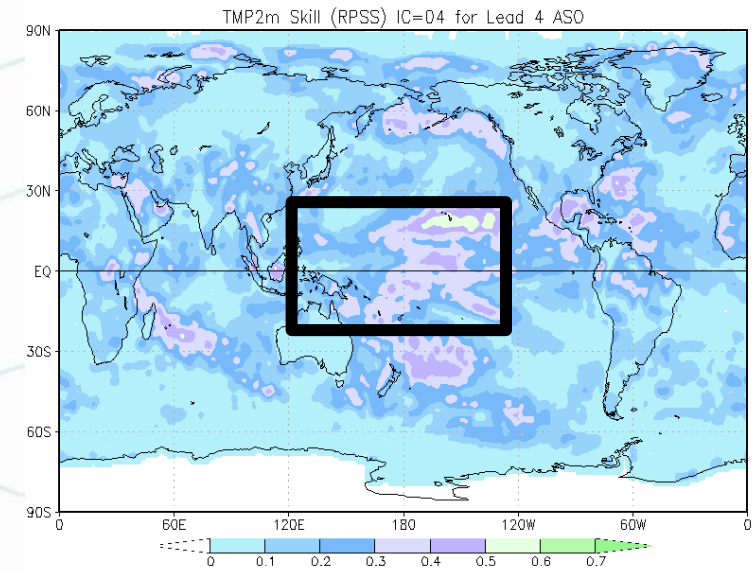
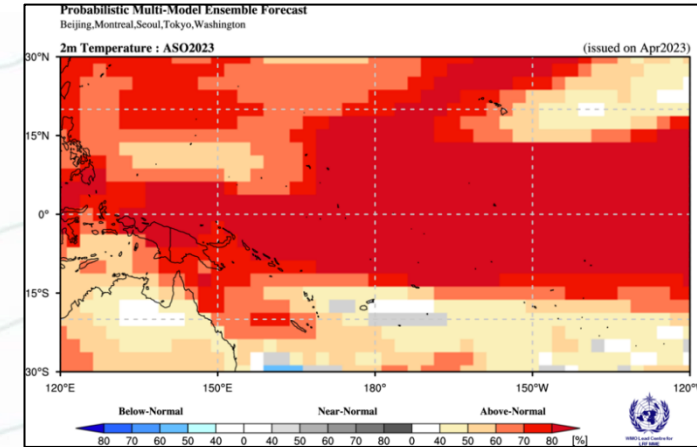
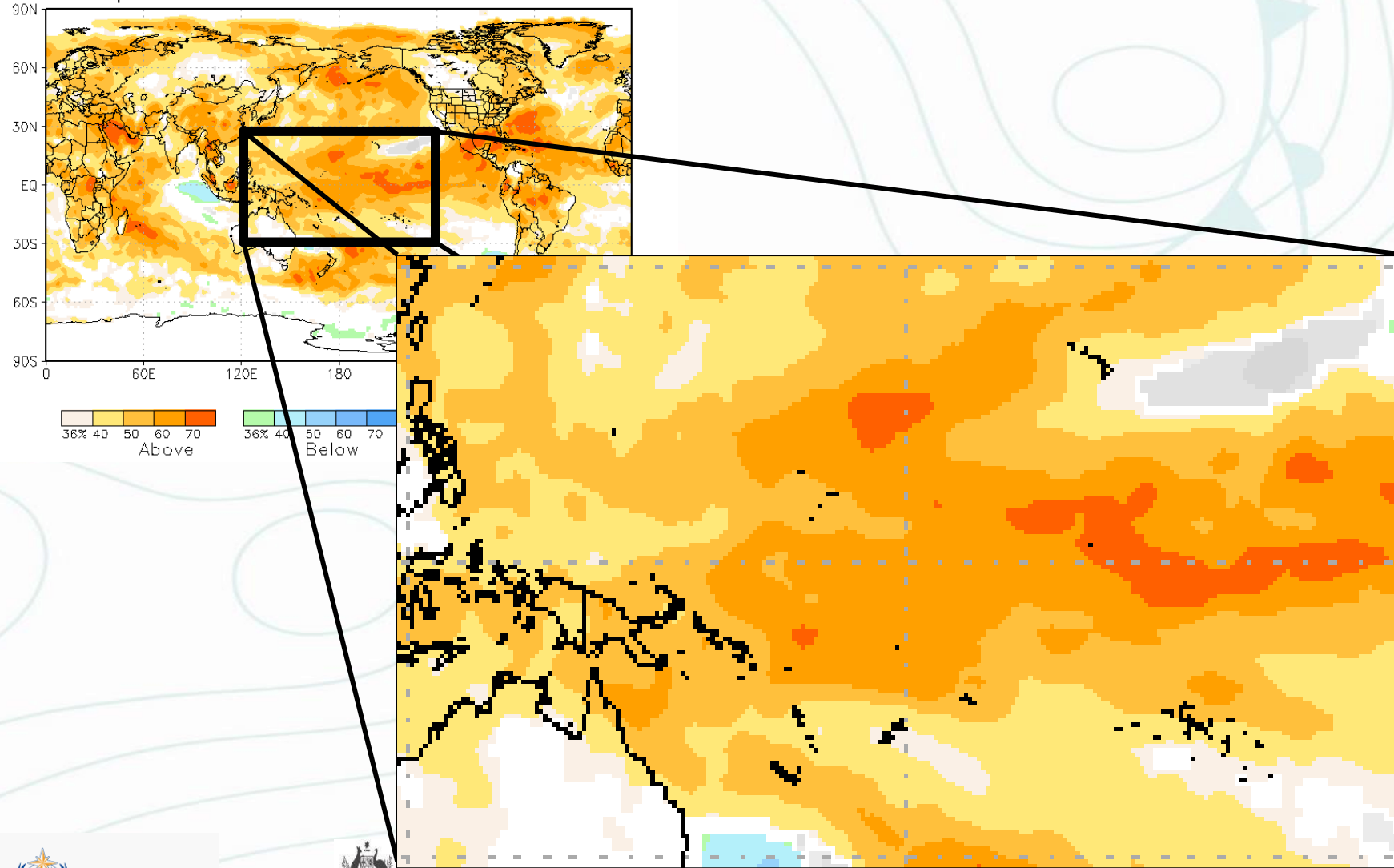
**T min**

ASO is not available!

# Temperature Outlook for ASO 2023

BoM | NOAA | APCC  
 ACCESS-S | NMME | PMME

NMME prob fcst TMP2m IC=202304 for lead 4 2023 ASO



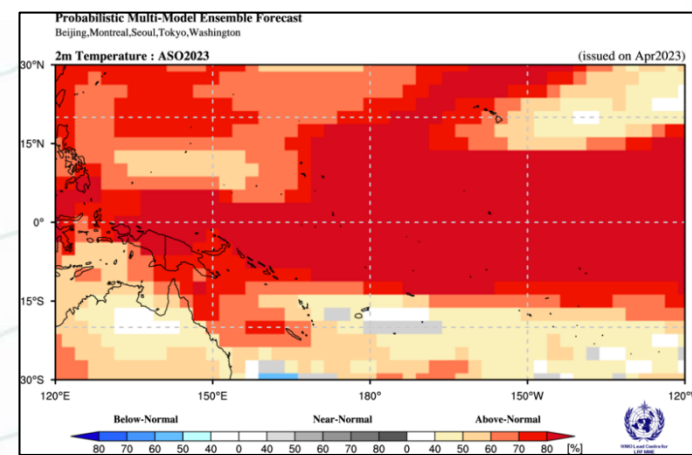
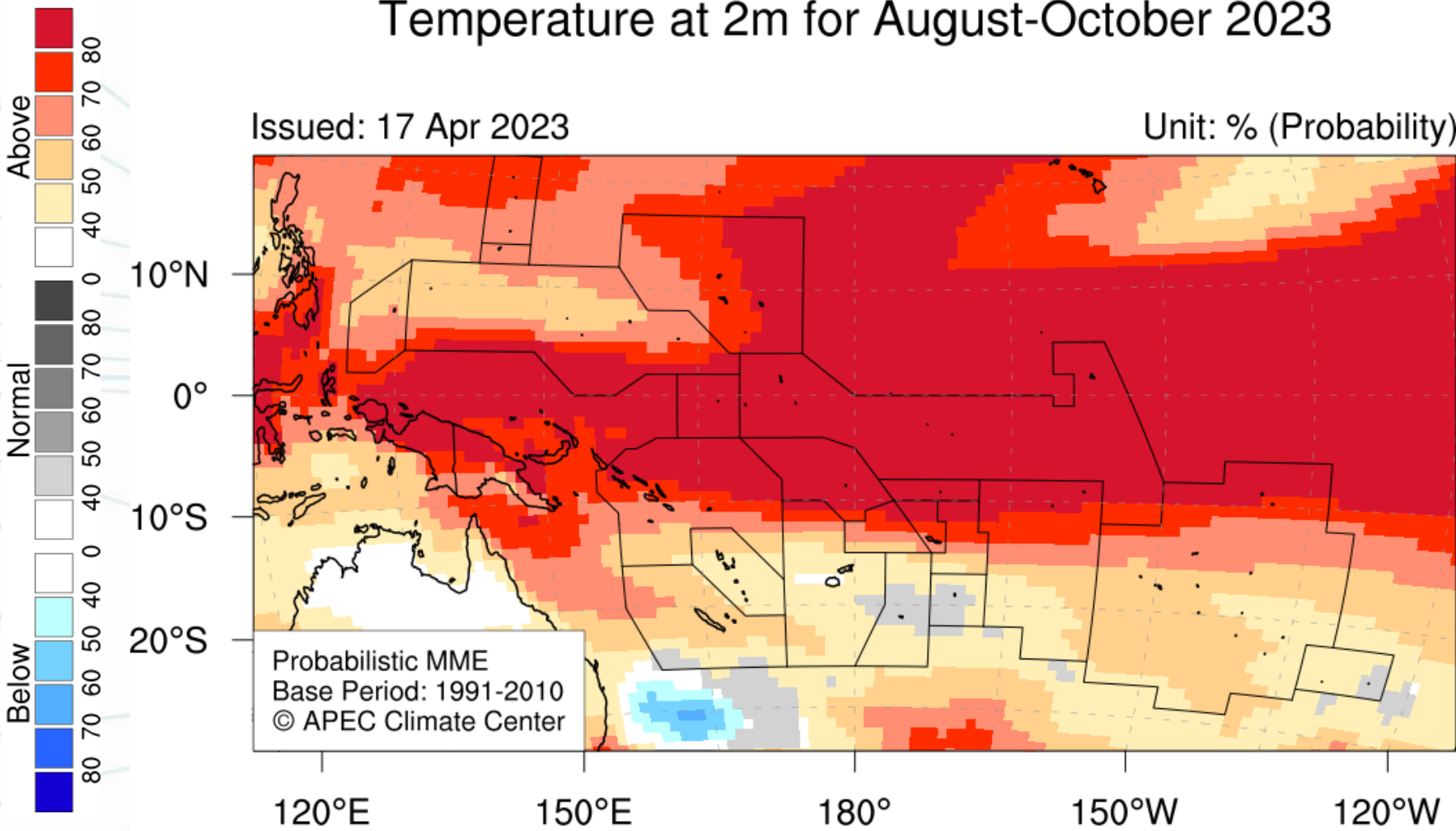
# Temperature Outlook for ASO 2023

BoM | NOAA | APCC  
 ACCESS-S | NMME | PMME

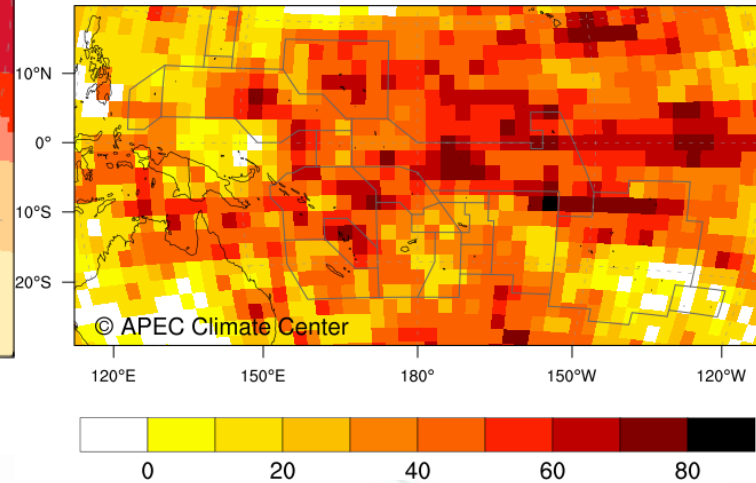
## Temperature at 2m for August-October 2023

Issued: 17 Apr 2023

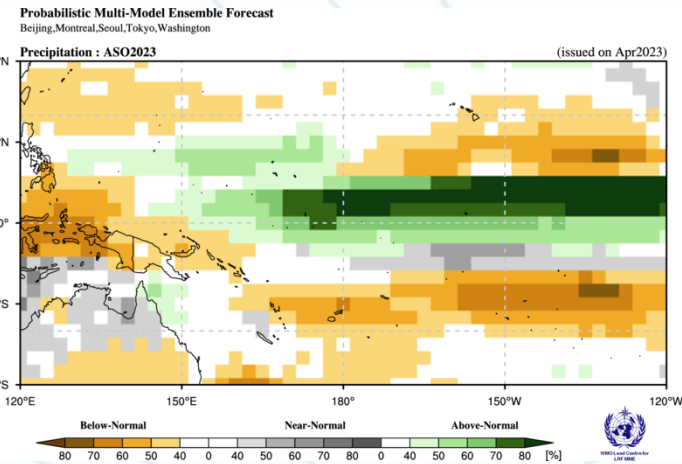
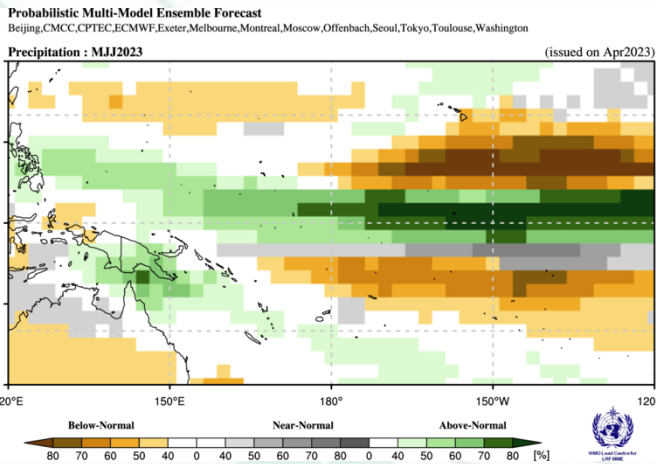
Unit: % (Probability)



Heidke Skill Score : T2M, ASO (1991-2010)

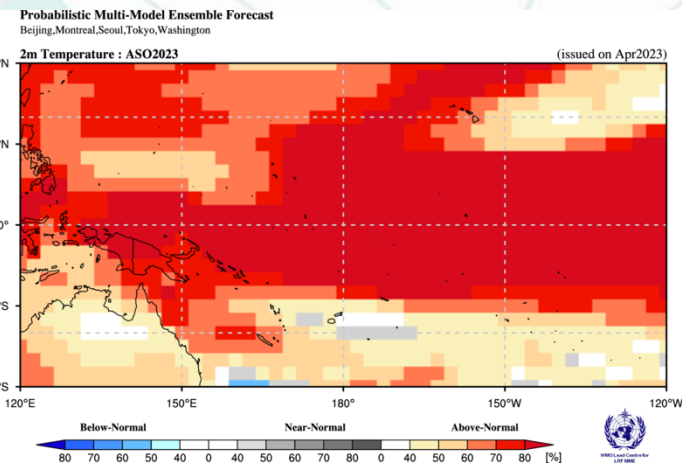
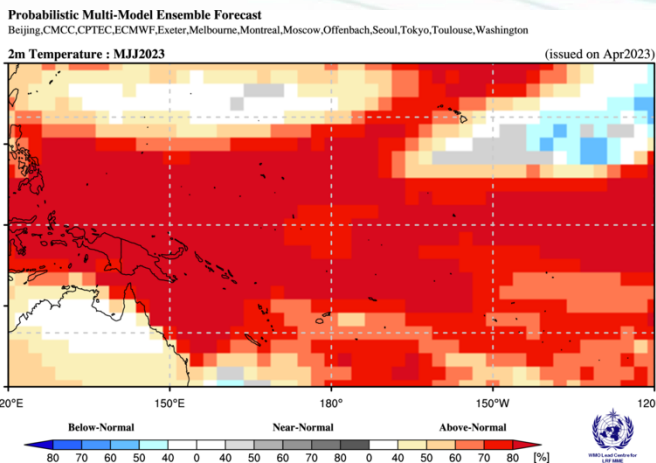


# Summary



## Precipitation

- For May – July 2023, wet conditions are expected along the equator and Melanesia. Dry conditions are expected for the off-equatorial region east of the Date Line.
- For August – October 2023, wet conditions are expected to persist along the equator, whereas the chances for dry conditions for the off-equatorial region are likely to be weakened. Dry conditions are expected for Melanesia.



## Temperature

- For May – July 2023, warmer than normal conditions are expected for the whole Pacific Islands.
- Warmer than normal conditions are likely to persist for August – October 2023.