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APCC Monthly Climate Outlook for Pacific Islands

For May – October 2023

(Issued: Apr 17, 2023)

- ***The APCC ENSO Alert suggests "El Niño WATCH". In March 2023, slightly negative sea surface temperature anomalies were observed over the central equatorial Pacific, whereas above normal ones spanned the eastern equatorial Pacific. The Niño3.4 index is expected to increase from 0.5°C to 1.6°C for May – October 2023. The probability for El Niño conditions is expected to be above 90% for the same period.***
- ***Strongly enhanced probability for above normal temperatures is predicted for the whole Pacific Islands for May – July 2023, which is expected to decrease for Micronesia, southern Melanesia, and southern Polynesia for August – October 2023.***
- ***For the same period, strongly enhanced probability for above normal precipitation is predicted along the equator. Enhanced probability for above normal precipitation is expected for Micronesia. Strongly enhanced probability for below normal precipitation is expected for off-equatorial Polynesia for May – July 2023, which decreases for August – October 2023.***

SST and ENSO Outlook

The APCC ENSO outlook suggests "El Niño WATCH". Above normal SST anomalies are predicted along the equator. As most of the Multi-Model Ensemble participating models predict Niño3.4 above 0.5°C, Niño3.4 is expected to increase from 0.5°C to 1.6°C for May – October 2023. During the same period, the probability for El Niño conditions is expected to be above 90%. Weak El Niño is expected to be the most likely category for May – July 2023, whereas strong El Niño is expected to be the most likely one (~58%) for August – October 2023 [Figs. 1, 2, and 3].

Temperature and Precipitation Outlook

1. Forecast for May – July 2023

Strongly enhanced probability for above normal temperatures is predicted for the whole Pacific Islands. Strongly enhanced probability for above normal precipitation is expected along the equator. Enhanced probability for above normal precipitation is predicted for Micronesia and Melanesia. Strongly enhanced probability for below normal precipitation is expected for off-equatorial Polynesia [Fig. 4].

2. Forecast for August – October 2023

Strongly enhanced probability for above normal temperatures is predicted for northern Melanesia and northern Polynesia. Enhanced probability for above normal precipitation is expected for Micronesia, southern Melanesia, and southern Polynesia. Strongly enhanced probability for above normal precipitation is predicted along the equator. Enhanced probability for above normal precipitation is expected for Micronesia and northern Melanesia. Enhanced probability for below normal precipitation is predicted for off-equatorial Polynesia. A tendency for below normal precipitation is expected for southern Melanesia [Fig. 5].

3. Hindcast skill for APCC MME for MJJ and ASO

Across the Pacific Islands for the MJJASO period, the APCC MME is reasonably skillful in predicting temperature and precipitation as indicated by the Heidke Skill Score (HSS). The HSS values for temperature are above 40 for the whole Pacific Islands for MJJ, and the skills are still higher for ASO. The HSS values for precipitation along the equator are higher than those for the other regions for MJJ, and the relatively higher skills remain along the equator for ASO [Figs. 6 and 7].

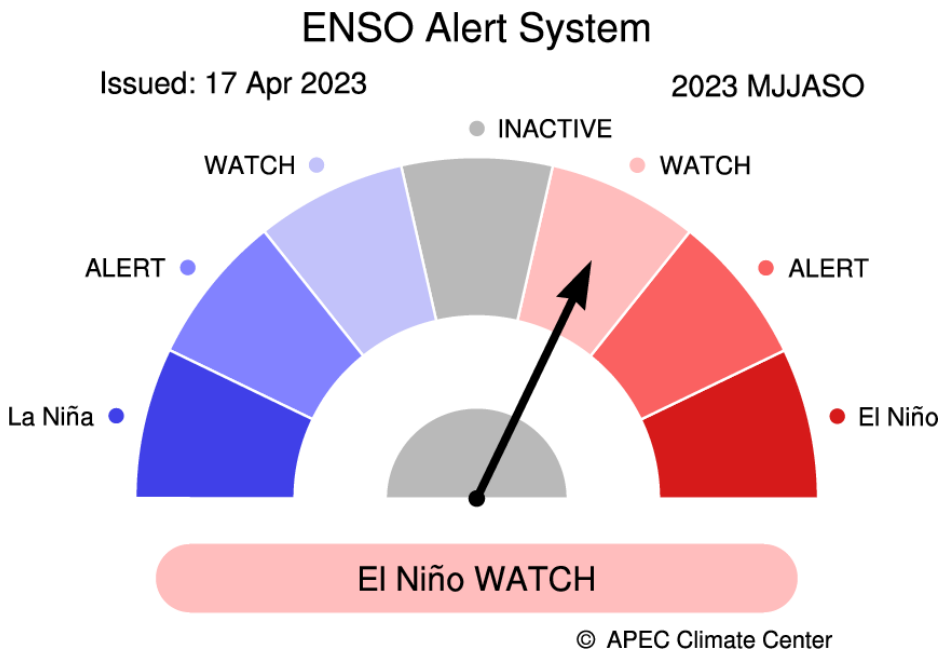

Fig. 1. The APCC ENSO Outlook status for May – October 2023. Anomalies are computed with respect to the common base period (1991-2010) of participating models in the APCC MME prediction. Observed data used for the recent seven months is the Optimum Interpolation Sea Surface Temperature (OISST). Effective from April 2022, ENSO alert information will be updated twice (around the 15th and 30th) each month to reflect the latest observation.

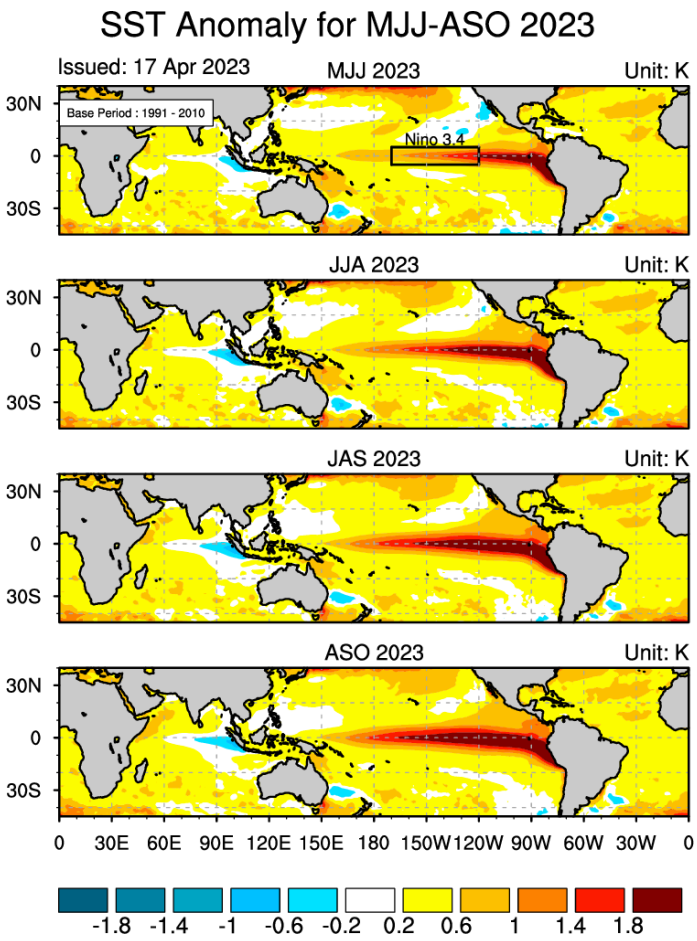

Fig. 2. Multi-model ensemble (MME) forecasts of SST anomalies for May – October 2023. Anomalies are computed with respect to the common base period (1991-2010) of participating models in the APCC MME prediction.

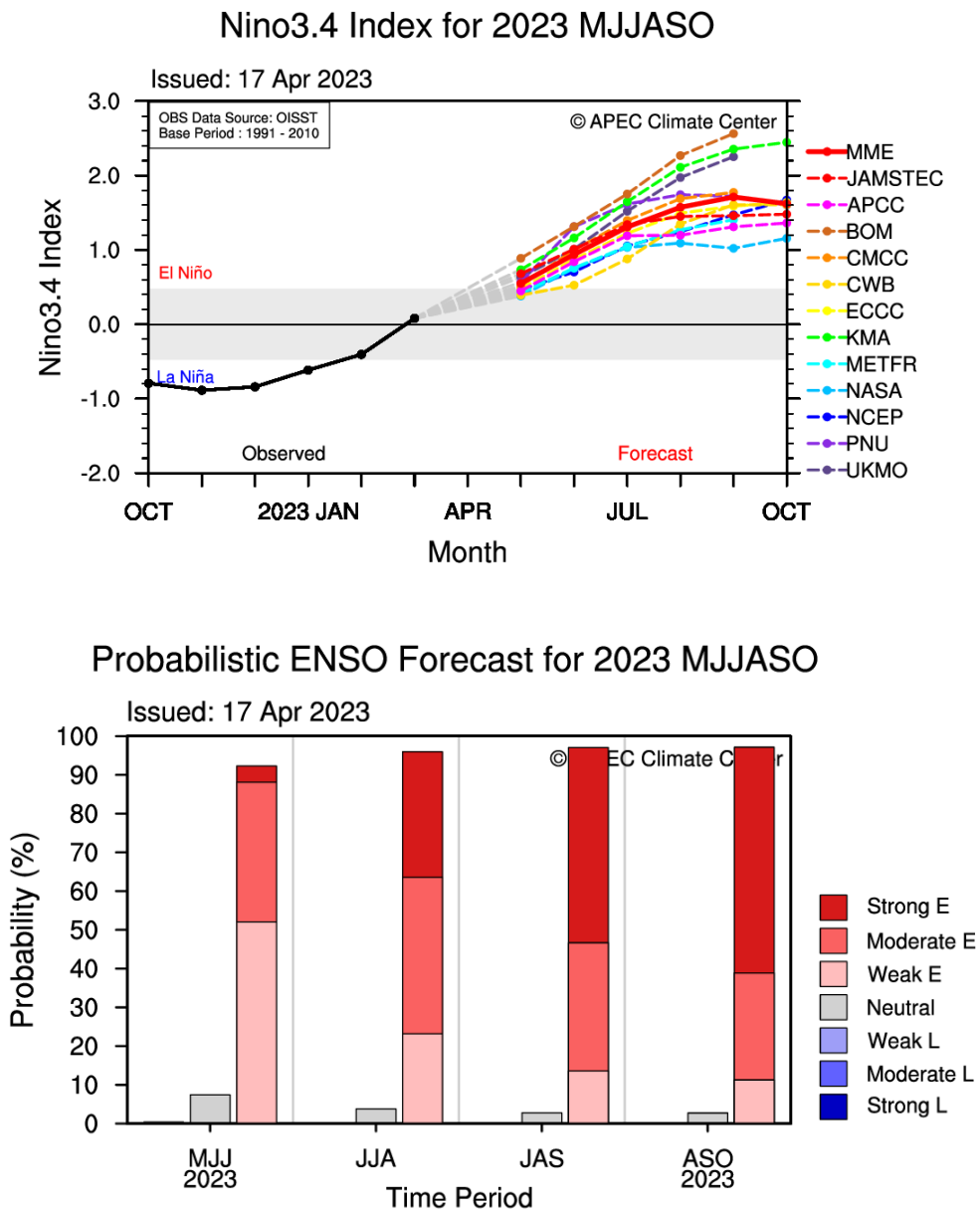

Fig. 3. Predicted Niño3.4 index from individual models and the MME for May – October 2023 (top). Probabilistic MME forecasts of the status and intensity based on Niño3.4 index for four overlapping 3-month mean periods (bottom). Anomalies are computed with respect to the common base period (1991-2010) of participating models in the APCC MME prediction.

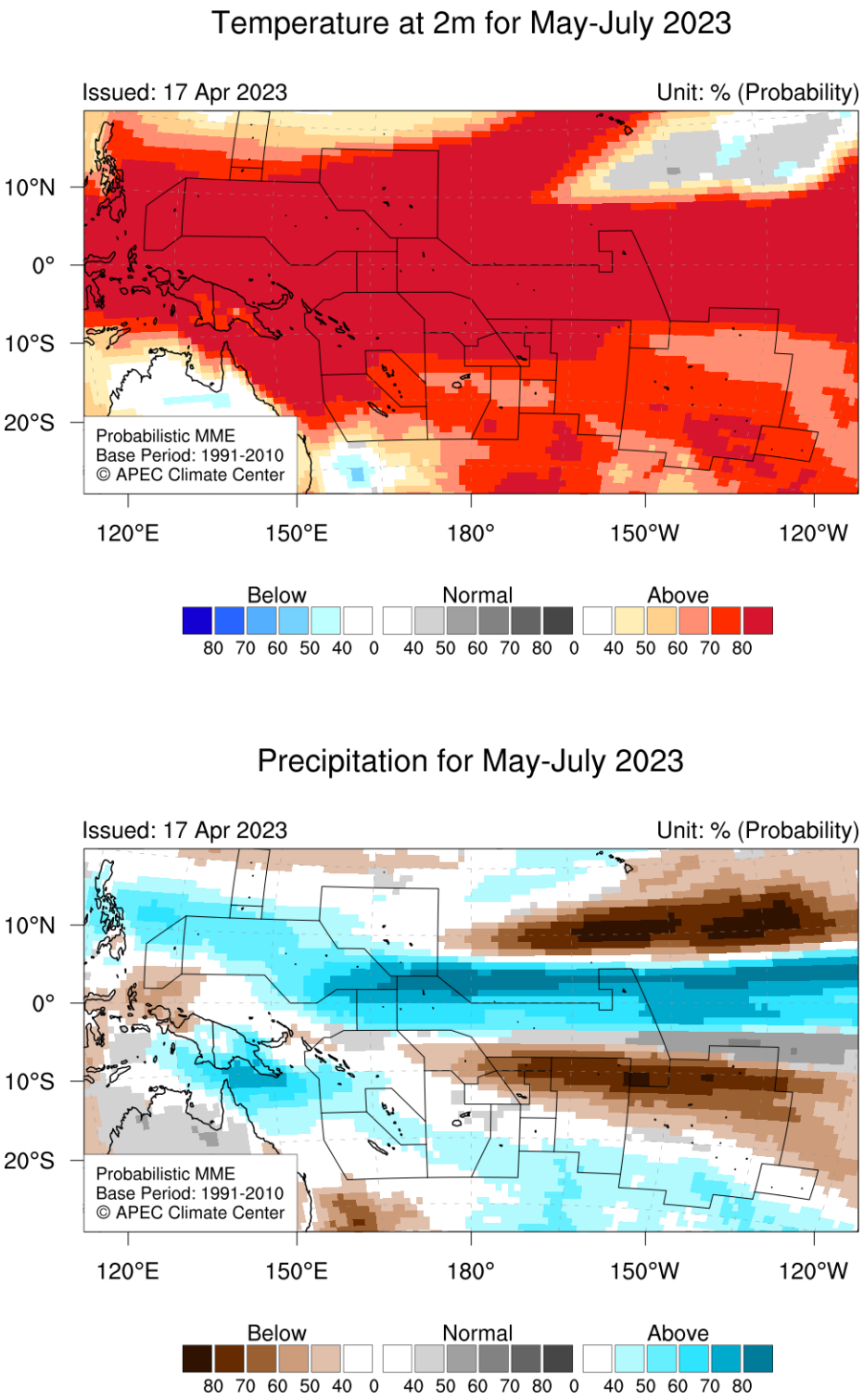

Fig. 4. Probabilistic MME forecasts of 2m temperature (top) and precipitation (bottom) May – July 2023. Normal conditions are computed with respect to the common base period (1991-2010) of participating models in the APCC MME prediction.

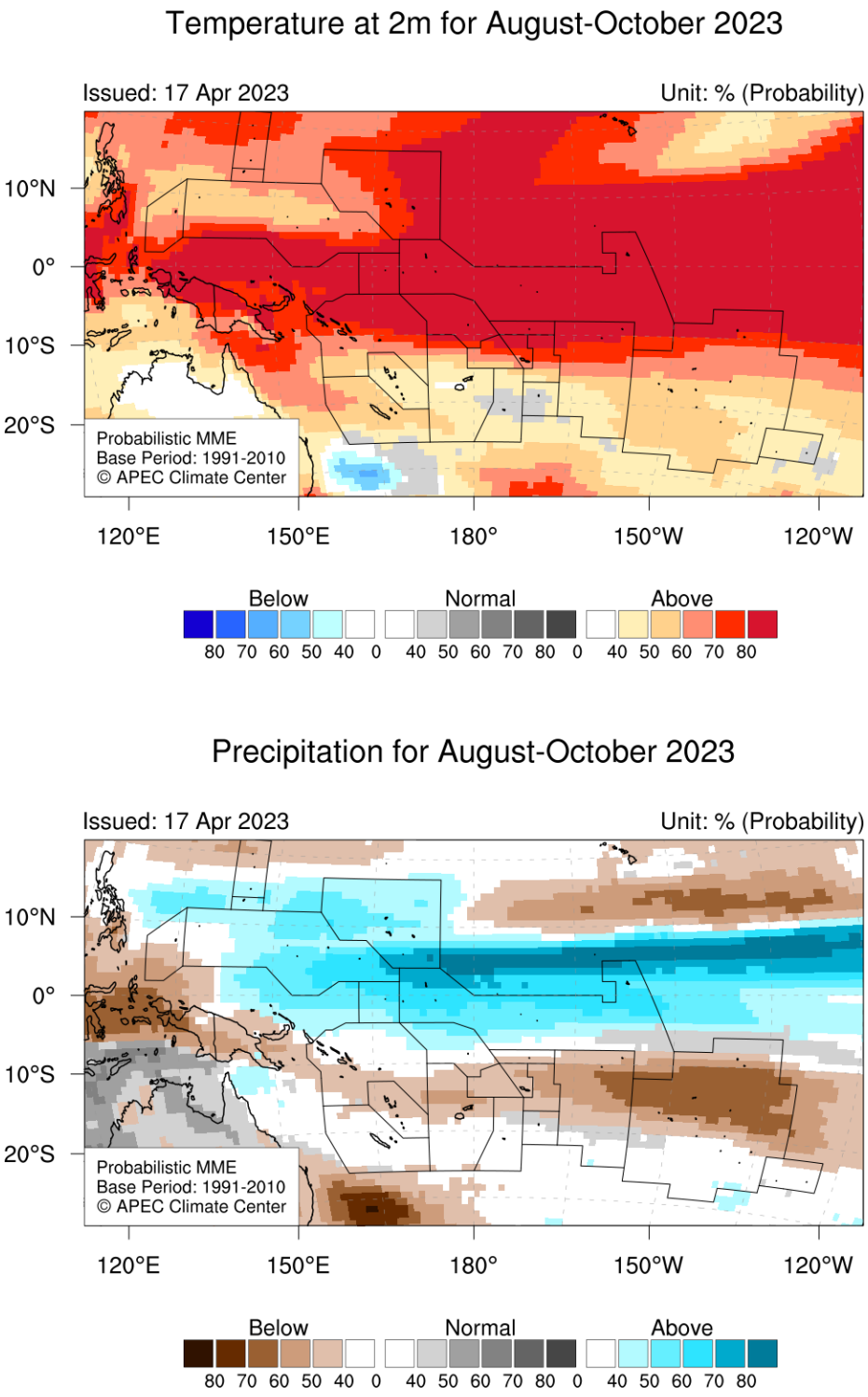

Fig. 5. Probabilistic MME forecasts of 2m temperature (top) and precipitation (bottom) for August – October 2023. Normal conditions are computed with respect to the common base period (1991-2010) of participating models in the APCC MME prediction.

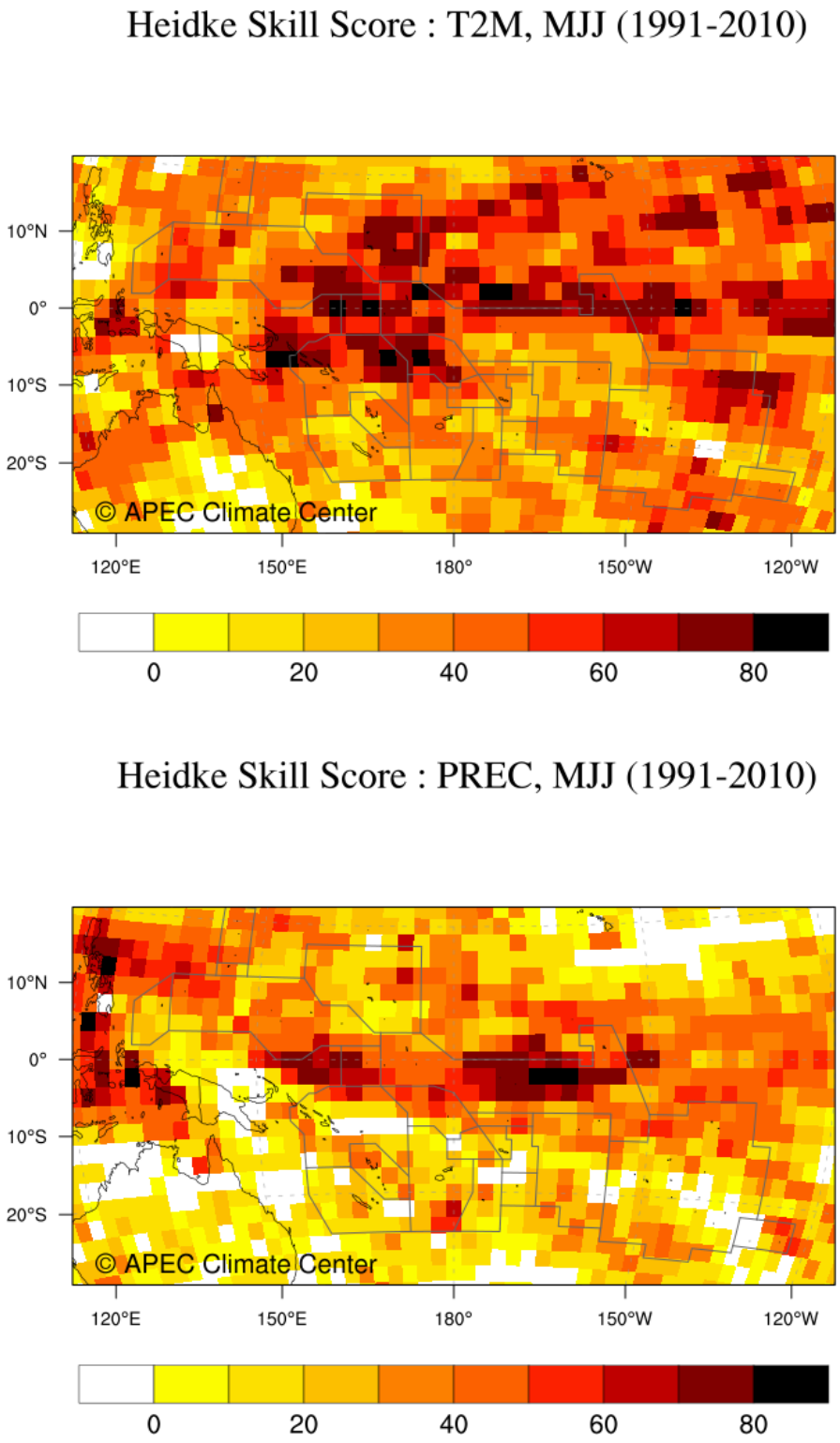

Fig. 6. Heidke Skill Score for probabilistic MME forecasts of 2m temperature (top) and precipitation (bottom) for May – July (1991-2010).

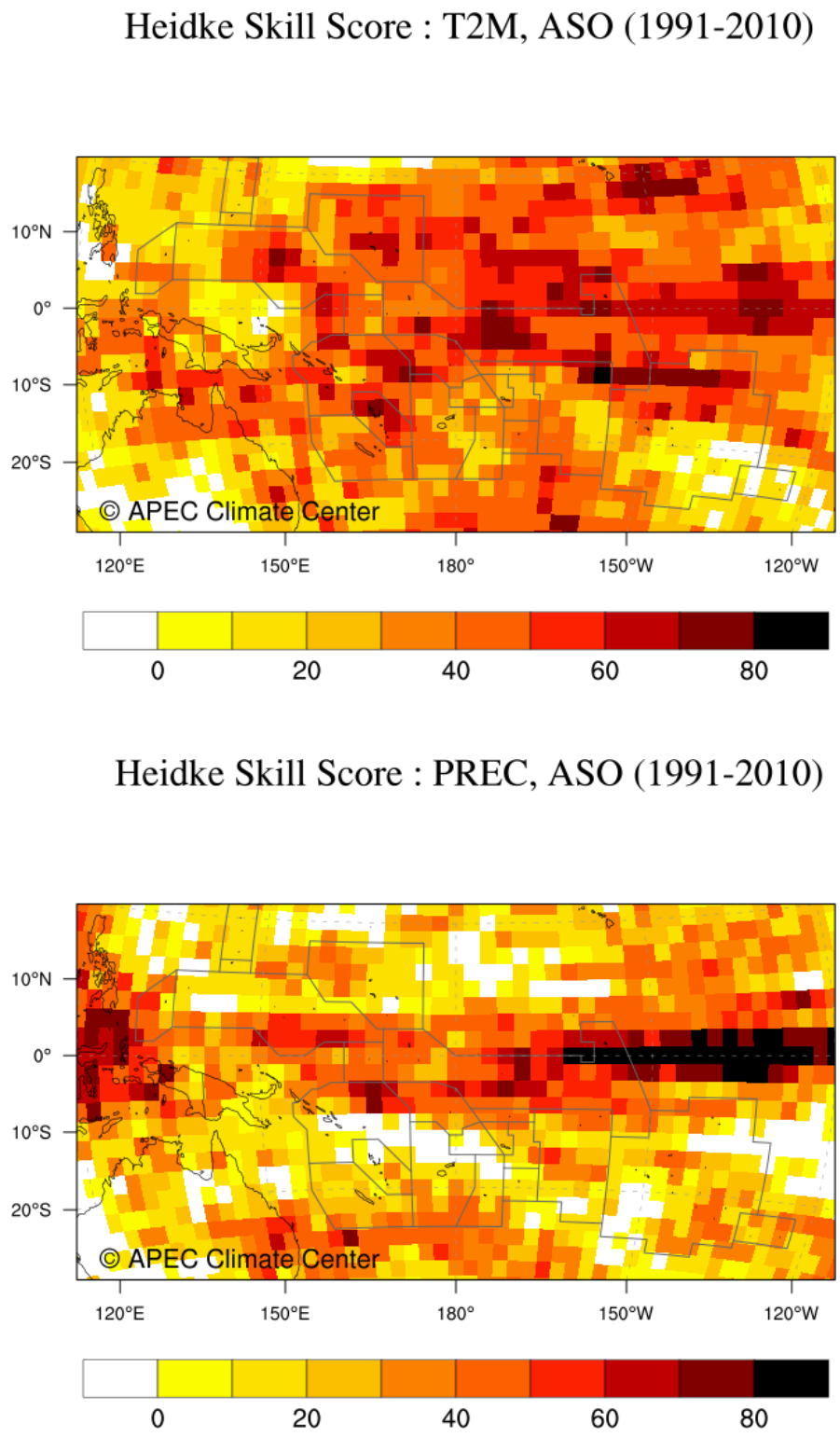

Fig. 7. Heidke Skill Score for probabilistic MME forecasts of 2m temperature (top) and precipitation (bottom) for August – October (1991-2010).

* More information on current climate conditions is available at:

http://www.apcc21.org/ser/high.do?lang=en

* More information on prediction and verification results is available at:

http://www.apcc21.org/ser/outlook.do?lang=en

This outlook is prepared by the Climate Prediction Department in the Climate Services and Research Division, APCC.

If you would like to subscribe to our Climate Outlook or have any questions, please e-mail mme@apcc21.org.

The APCC seasonal forecast is produced through a multi-model ensemble method, utilizing climate models from 15 climate forecasting centers and institutions in 11 countries around the world. Our forecast information should be used for reference only. Please consult the respective country's national meteorological service for the official seasonal forecast for that country.

Acknowledgements

The APEC Climate Center is a major APEC science facility, which was established in November 2005 during the leaders meeting of the Asia-Pacific Economic Forum in Busan, Korea. The APCC climate forecasts are based on model simulations from 15 prominent climate forecasting centers and institutes in the APEC region. These forecasts are collected and combined using state-of-the-art schemes to produce a statistically 'consensual' forecast. APCC collects seasonal forecasts from 15 institutes in the APEC region: the Australian Bureau of Meteorology (BoM), Environment and Climate Change Canada (ECCC), Beijing Climate Center China (BCC), Central Weather Bureau Chinese Taipei (CWB), Météo-France France (METFR), Euro-Mediterranean Center on Climate Change Italy (CMCC), Japan Meteorological Agency Japan (JMA), APEC Climate Center Korea (APCC), Korea Meteorological Administration (KMA), Pusan National University Korea (PNU), Hydrometeorological Research Center of Russia (HMC), Voeikov Main Geophysical Observatory of Russia (MGO), Met Office United Kingdom (UKMO), National Aeronautics and Space Administration USA (NASA), and the National Centers for Environmental Prediction USA (NCEP).