

## The APEC CLIMATE CENTER Climate Outlook for Pacific Islands for February – July 2018

**BUSAN, 25 January 2018** – The synthesis of the latest model forecasts for February to July 2018 (FMAMJJ) from the APEC Climate Center (APCC), located in Busan, South Korea, indicates a below normal temperature anomaly across the eastern equatorial Pacific with a weak negative El Niño-Southern Oscillation (ENSO) phase. Above normal temperatures are expected to prevail over all of Melanesia and the whole of Micronesia and Polynesia, except in the equatorial belt for the whole forecast period. For the same period, above normal rainfall is probable for off-equatorial Micronesia and northern Polynesia, whereas below normal rainfall is probable for the equatorial belt of Micronesia and off-equatorial Polynesia.

### Sea Surface Temperature and ENSO Outlook:

The prevailing ENSO phase is expected to be negative. A tongue of negative SST anomalies in the central and eastern equatorial Pacific is predicted. The positive SST anomalies are expected to surround this cold tongue and span the tropical Pacific, which corresponds to a negative Niño 3.4 index. The La Niña condition continues throughout the first half of the forecast period and weakens slightly by the second half of the forecast period.

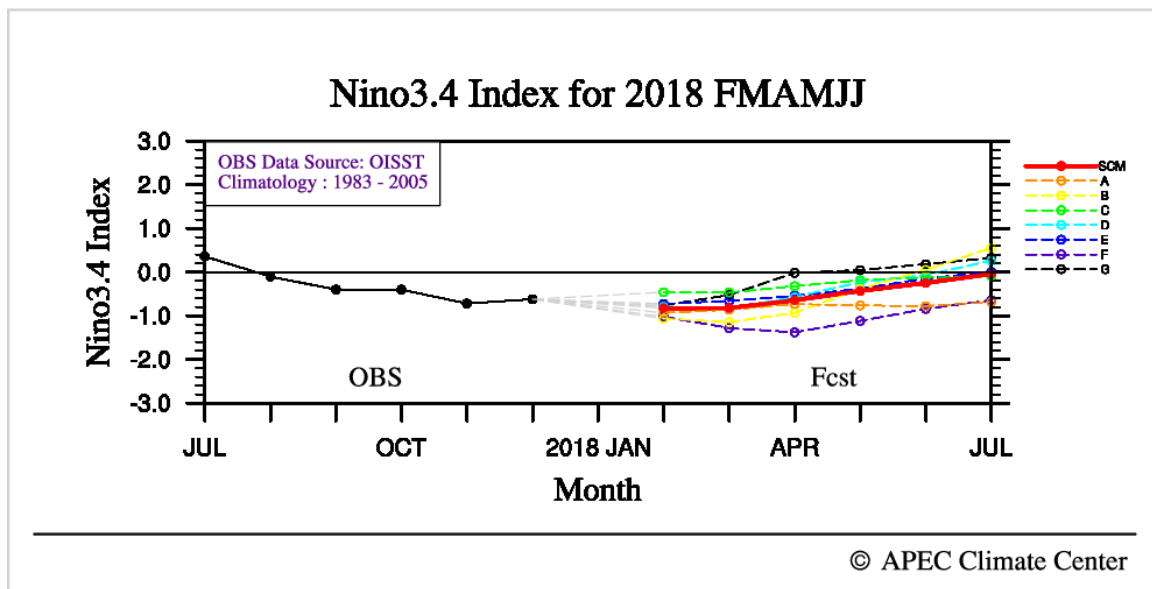


Fig. 1. Predicted Niño 3.4 Index from individual models (A, B, C, D, E, F, G, and F) and the simple composite Multi-Model Ensemble (MME) method (SCM).

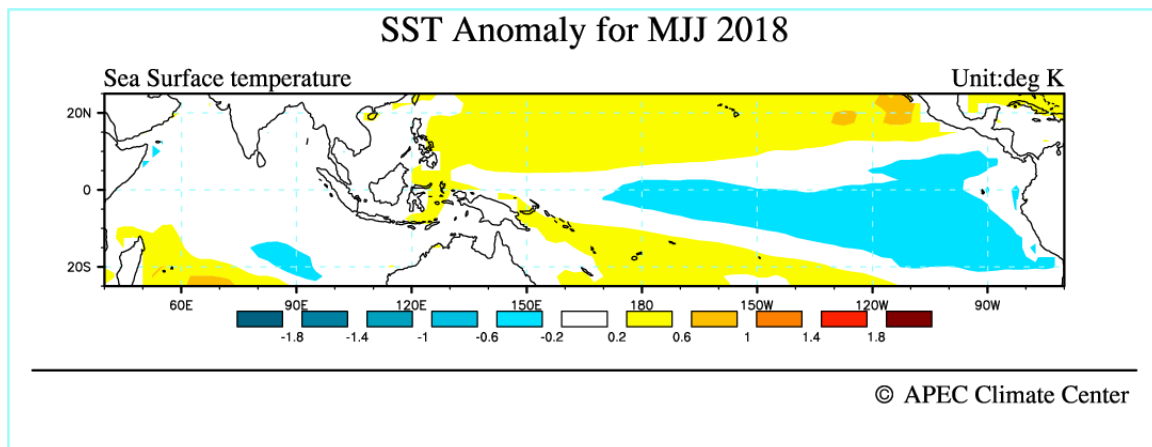
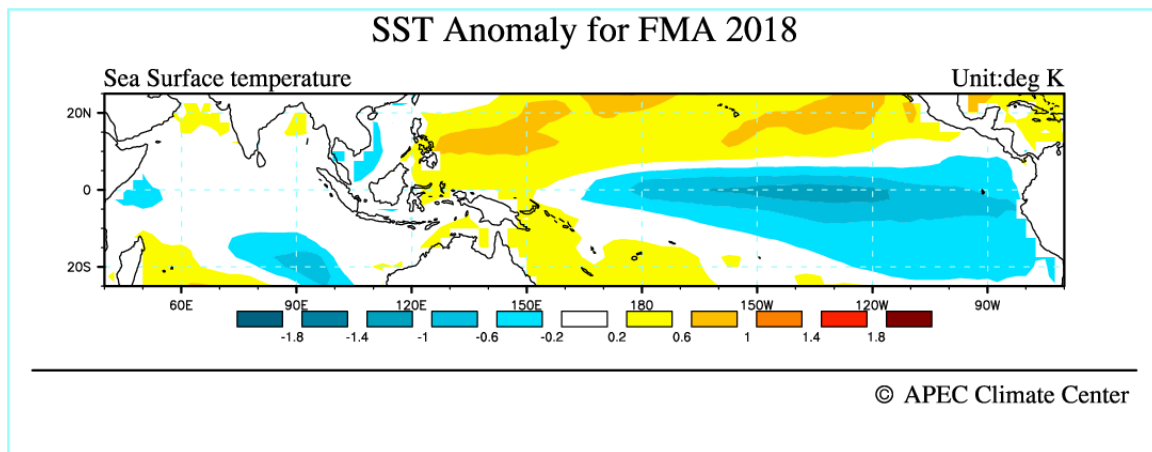


Fig. 2. Spatial distributions of forecasted SST anomalies for February – July 2018 over the tropical Indo-Pacific. The top panel shows the SST anomaly forecast for February – April 2018 and the bottom panel shows the SST anomaly forecast for May – July 2018.

## **Temperature and Precipitation Outlook:**

### **1. Forecast for February – April 2018**

Strongly enhanced probability for above normal temperatures is predicted for Micronesia and northern Polynesia, except in the equatorial belt. Enhanced probability for above normal temperatures is expected for Micronesia. Strongly enhanced probability for below normal temperatures is predicted for the equatorial belt of Micronesia and Polynesia. Strongly enhanced probability for above normal precipitation is expected for northern off-equatorial Micronesia and Polynesia. Enhanced probability for above normal precipitation is predicted for Melanesia. Strongly enhanced probability for below normal precipitation is expected for equatorial Micronesia and Polynesia.

### **2. Forecast for May – July 2018**

Strongly enhanced probability for above normal temperatures is predicted for some parts of Melanesia and Micronesia, except in the equatorial belt. Enhanced probability for above normal temperatures is expected for off-equatorial Polynesia. Strongly enhanced probability for below normal temperatures is predicted for the equatorial belt of Polynesia. Enhanced probability for above normal precipitation is expected for northern off-equatorial Micronesia and Polynesia. Strongly enhanced probability for below normal precipitation is expected for equatorial Micronesia and Polynesia.

### **3. Historical skill for APCC MME for FMA and MJJ**

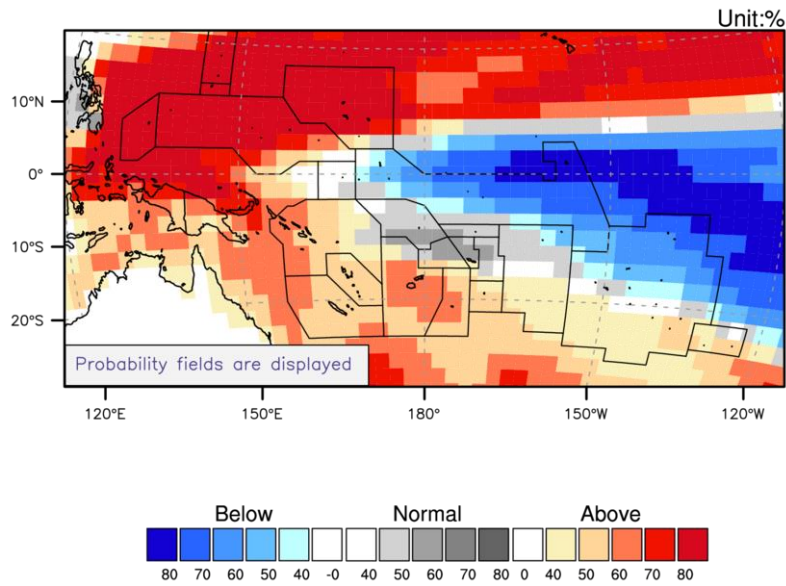
Across the Pacific for the FMAMJJ period, the APCC MME is reasonably skillful in predicting both temperatures and precipitation, as indicated by the Heidke Skill Score (HSS). The highest HSS values are featured by temperatures over all of Micronesia and equatorial Polynesia for FMA. For the same period, the HSS values for precipitation over equatorial Micronesia are higher than those over the other regions. The HSS values for precipitation over the Pacific Islands region for MJJ become lower than those for the previous season.

*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. It produces seasonal and monthly forecasts of climate conditions for all seasons around the globe. APCC collects seasonal forecasts from 16 institutes in the APEC region: the Australian Bureau of Meteorology, Meteorological Service of Canada, Beijing Climate Center China, Institute of Atmospheric Physics China, Japan Meteorological Agency Japan, Korea Meteorological Administration Korea, Pusan National University Korea, Met Office United Kingdom, Euro-Mediterranean Center on Climate Change Italy, Hydrometeorological Research Center of Russia, Voeikov Main Geophysical Observatory of Russia, Central Weather Bureau Chinese Taipei, National Aeronautics and Space Administration USA, National Centers for Environmental Prediction USA, International Research Institute for Climate and Society USA, and the Center for Ocean-Land-Atmosphere Studies USA.*

*The APCC climate forecasts are based on model simulations from 16 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. The APCC forecasts are based not just on the magnitude of the seasonal changes that are predicted, but also take into account their simulated probability. Further details as well as the verification for the forecasts on a long term basis are available at <http://www.apcc21.org>. Historical verification of the forecast performance is based on a retrospective forecast period of all the models for the period 1983-2005.*

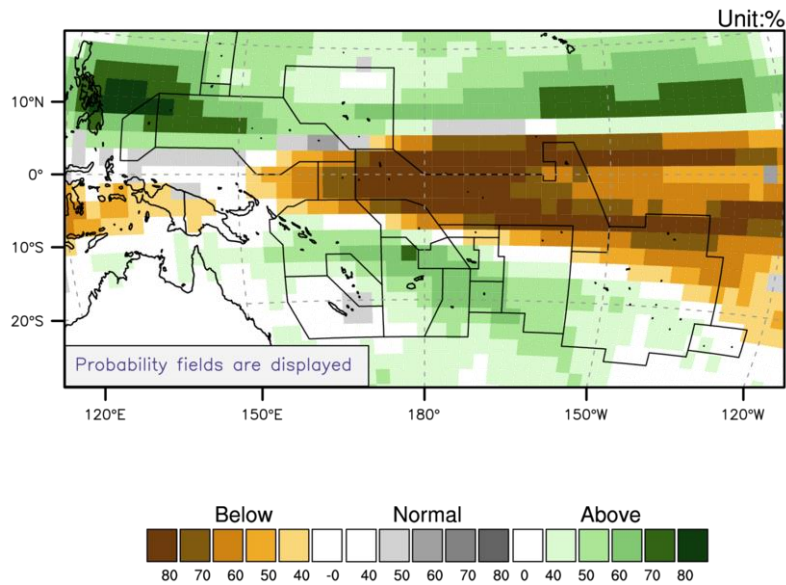
### Temperature at 2m for February-April 2018



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Fig. 3. Probabilistic MME seasonal 2m temperature forecast for February – April 2018.

### Precipitation for February-April 2018



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Fig. 4. Probabilistic MME seasonal precipitation forecast for February – April 2018.

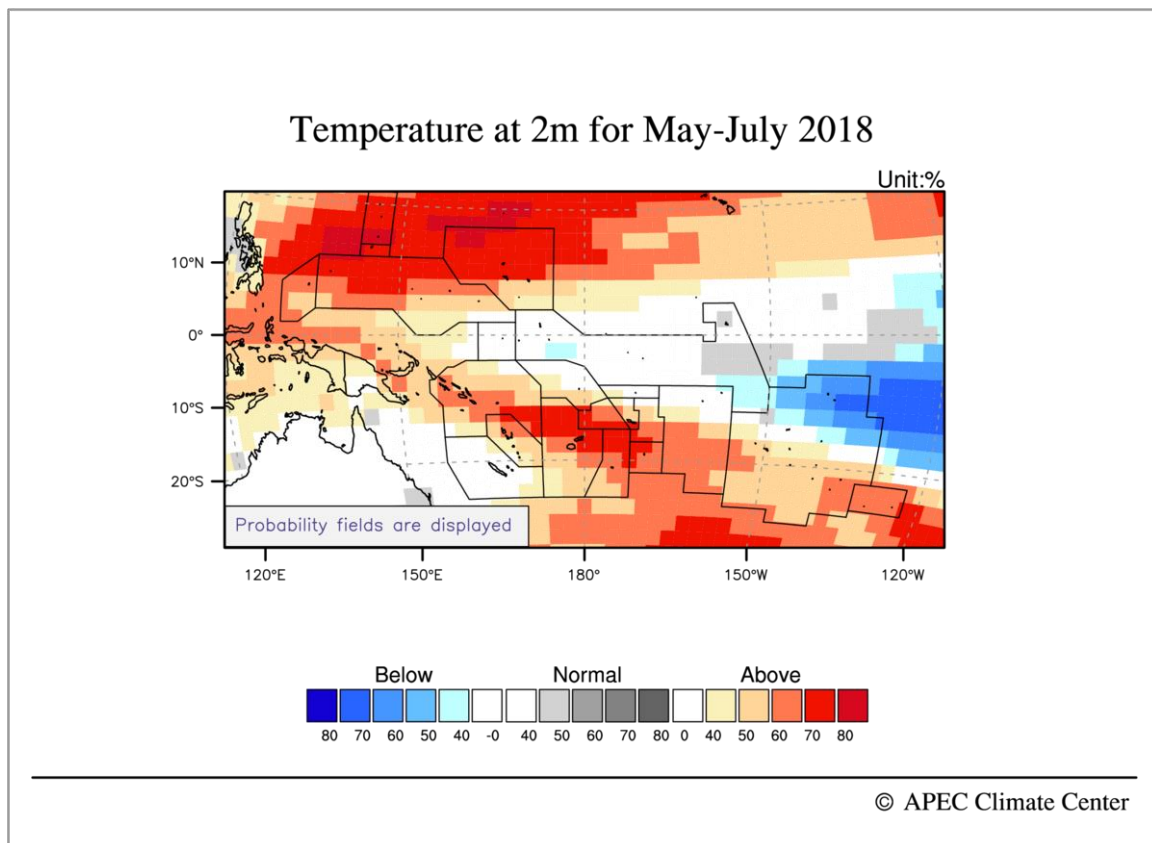


Fig. 5. Probabilistic MME seasonal 2m temperature forecast for May – July 2018.

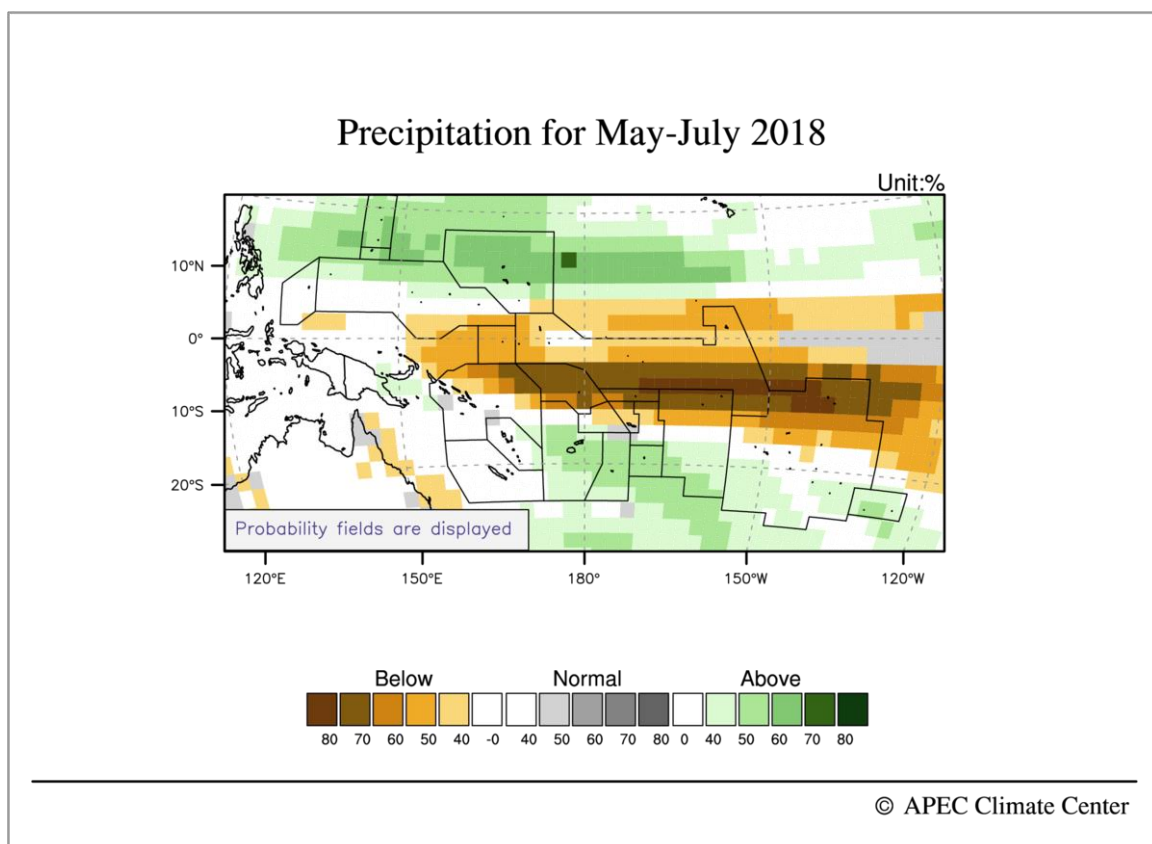
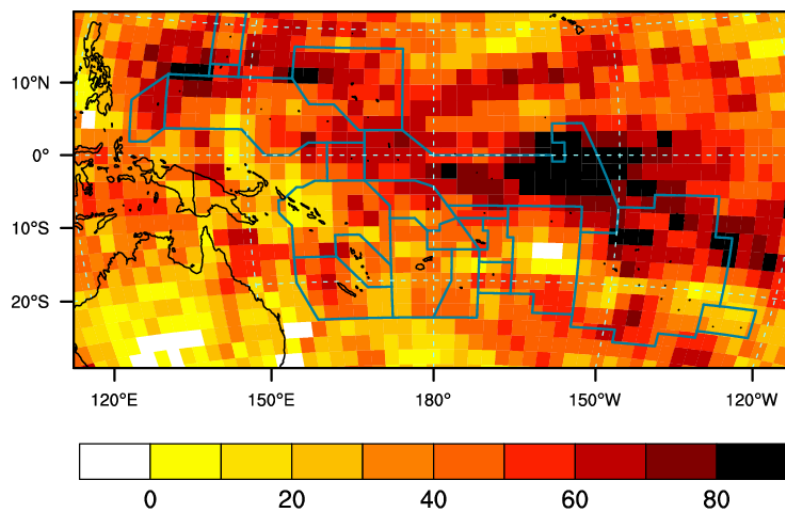


Fig. 6. Probabilistic MME seasonal precipitation forecast for May – July 2018.

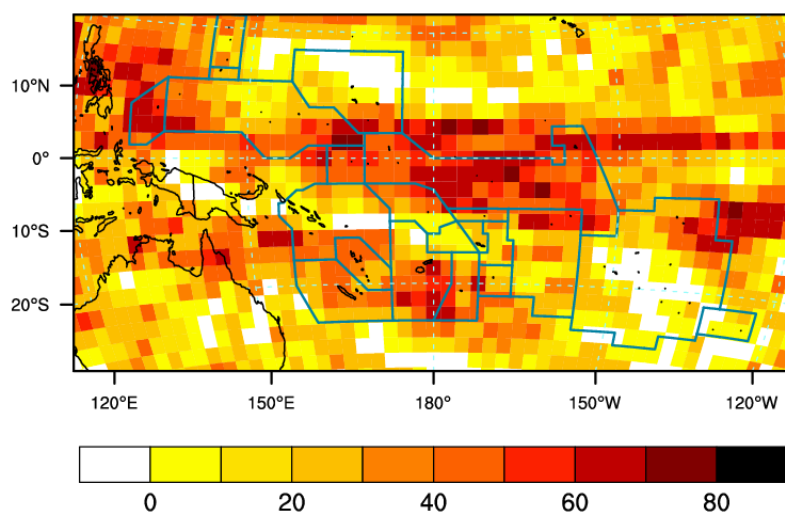
### Heidke Skill Score : T2M, FMA (1983-2005)



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Fig. 7. Heidke Skill Score for probabilistic MME seasonal 2m temperature forecast for February – April.

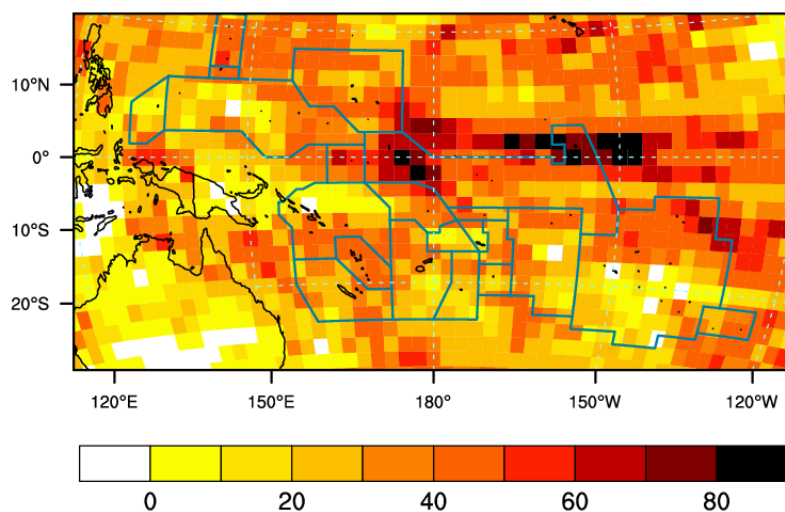
### Heidke Skill Score : PREC, FMA (1983-2005)



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Fig. 8. Heidke Skill Score for probabilistic MME seasonal precipitation forecast for February – April.

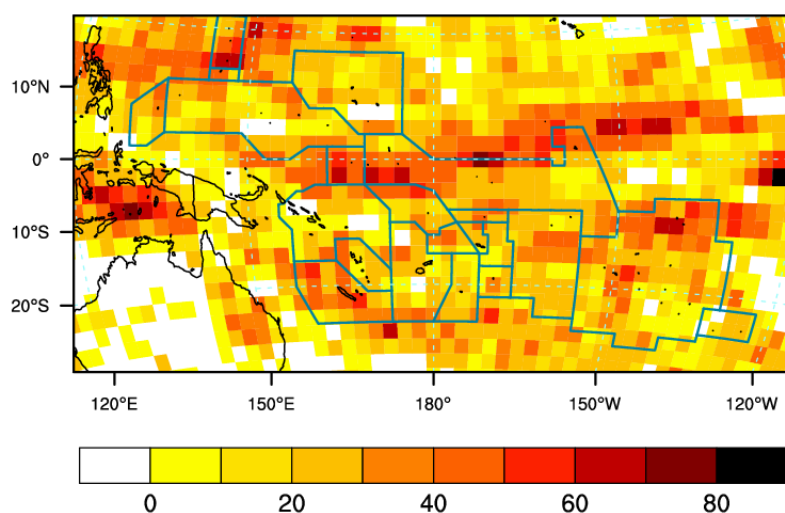
### Heidke Skill Score : T2M, MJJ (1983-2005)



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Fig. 9. Heidke Skill Score for probabilistic MME seasonal 2m temperature forecast for May – July.

### Heidke Skill Score : PREC, MJJ (1983-2005)



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Fig. 10. Heidke Skill Score for probabilistic MME seasonal precipitation forecast for May – July.