

Climate and Oceans Monitoring and Prediction (COMP)

Pacific Islands - Online Climate Outlook Forum No. 83 Summary Report

Date: Thursday 21 August 2014

Time: Australian Eastern Standard Time 11:00AM (01:00 UTC)

Chair: Bureau of Meteorology

Main purpose for the OCOF:

- To provide a regular forum for the eleven participating PIC NMSs to discuss the current ENSO status and their seasonal climate outlooks with the COMP project team.

In addition it will serve as the online training forum on the latest SCOPIC* developments and will give the project team and the NMSs an opportunity to discuss other project related matters/concerns.

Agenda:

1. Brief introduction of PIC participants and the Bureau team.
2. Brief report on current ENSO status.
3. Each NMS report on their past 1 and 3 months rainfall in relation to the current ENSO situation (include ranking and verification), and their three-month outlooks. Wherever appropriate NMS to report on their drought status.
4. Round-table discussion: addressing general concerns/queries on outlooks and SCOPIC.
5. Feedback on COSPPac products and Services.
6. Interactions with stakeholders (new or existing).
7. Next meeting (Thursday 18 September) and Chair (Cook Islands).

Participants:

The Forum was attended by 17 climate officers from 10 PIC NMSs.

Cook Islands: Bates Manea (At the Bureau office in Melbourne)

Fiji: Arieta Baleisolomone

Kiribati: Kamaitia Rubetaake

Niue: Melissa Douglas, Rossy Mitiapo, Hingano Laufoli, Sean Tukutama, Robert Togiamana

Papua New Guinea:

Republic of Marshall Islands: Nover Juria (At the Bureau office in Melbourne)

Samoa: Faapisa Aiono

Solomon Islands: Llyod Tahani, Noel Sanau and Max Norman

Tonga: Sione Tu'ungafasi

Tuvalu: Meelina Ailesi (At the Bureau office in Melbourne)

Vanuatu: Melinda Natapei

The Bureau team: Elisabeth Thompson, Simon McGree, Jodie Kane and Melissa Matthews.

OCOFC tables were received from the eleven participating countries before and during the meeting.

* Seasonal Climate Outlooks in the Pacific Island Countries: climate prediction software developed under the PI-CPP.

Observations and Verification of April to June 2014 outlooks from OCOF #78:

Observed rainfall for the one and three month periods ending July 2014 were discussed for each PIC. This month, several countries experienced extreme rainfall as shown in the following table:

Station	Period	Rainfall Amount (mm)	Rainfall Rank	Years of Record
Penrhyn, Cook Is.	July	29.1	7	78
Lautoka, Fiji	July	0.8	8	115
Majuro, RMI	July	571.3	61	61
Vanimo, PNG	July	62.0	6	60
Momote, PNG	July	691.0	63	66
Momote, PNG	May-July	1512.0	65	66
Misima, PNG	July	11.0	1	89
Port Moresby, PNG	May-July	23.8	10	106
Henderson, Solomon Is.	July	44	4	40
Kirakira, Solomon Is.	May-July	458	2	48
Niuafo'ou, Tonga	July	11.7	3	44
Nanumea, Tuvalu	May-July	278.1	7	73
Nui, Tuvalu	May-July	291.6	4	69

[Note: The above data may not have undergone quality control]

Validation of forecasts with observed rainfall across the region for May to July 2014 showed mostly near consistent outlooks (31 out of 54 stations) at the 11 countries. There were 11 consistent outlooks and 12 inconsistent outlooks.

The largest inconsistency was at Misima, PNG, where below normal rainfall was observed (305.8 mm) against outlook probabilities of 7/37/56 with exceptional skill (LEPS=40.6%). The strongest consistent verification was at Vunisea, Fiji, where normal rainfall was observed (373.7 mm), with outlook probabilities of 20:63:17 and low skill (LEPS=2.0%).

A summary of results (C-consistent, NC-Near Consistent and I-Inconsistent) for each country for the February to April 2014 outlook is as follows:

Cook Islands (2NC); Fiji (2C, 8NC, 3I); Kiribati (2NC, 1I); Niue (1C); PNG (1C, 1NC, 4I); RMI (1C, 1I); Samoa (1C, 3NC); Solomon Islands (3C, 4NC); Tonga (1C, 2NC, 2I); Tuvalu (4NC); and Vanuatu (1C, 5NC, 1I).

Overall: 11C, 31NC, 12I.

September to November 2014 Outlooks:

Of the 11 countries contributing to the OCOF, the following predictors and periods were selected for the September to November 2014: Four chose 3-month average NINO3.4 (May to July), six chose 2-month average NINO3.4 (June to July) and one chose 1-month SSTa 1 and 9 (July).

SCOPIC outlooks for the coming season mainly favoured below normal rainfall, with 41% of stations with high probabilities in tercile 1, 8% in tercile 2, 8% of the stations had the highest probabilities for tercile 3, and 27% of the stations had similar probabilities in all terciles. The remainder of the outlooks had equal probabilities for two terciles. POAMA outlooks: 8 station outlooks favour Tercile 1, 15 favour Tercile 2 and 9 favour Tercile 3 for the coming season.

ENSO summary for August 2014 OCOF

Sea surface temperatures (SSTs), ENSO status and outlook

The Pacific Ocean has shown some renewed signs of El Niño development. Some warming has occurred in the central and eastern equatorial Pacific Ocean in recent weeks, due to a weakening of the trade winds.

The Bureau's ENSO Tracker remains at WATCH status. This means the chance of an El Niño developing in 2014 is at least 50%. Five of the eight climate models surveyed by the Bureau suggest El Niño is likely for spring (Sept-Nov). However, if El Niño were to occur, it is unlikely to be a strong event.

July SST anomaly values were NINO3 +0.7°C (down 0.2°C), NINO3.4 +0.2°C (down 0.3 °C) and NINO4 +0.4°C (down 0.2°C). The latest weekly values to 17 Aug are NINO3 +0.4°C, NINO3.4 +0.2°C, NINO4 +0.6°C.

Tropical subsurface

The four-month sequence of sub-surface temperature anomalies (to 18 Aug) shows a further break down of warm anomalies in the top 100 m over the past fortnight in the eastern Pacific. Cool anomalies now dominate the eastern Pacific sub-surface to about 150 m. A weak warm signal has appeared near the Date Line from the surface to about 300 m.

The TAO/TRITON sub-surface temperature map for the 5 days ending 10 August shows waters across the equatorial Pacific are generally near average, with waters above around 100 m depth slightly warmer than average.

Southern Oscillation Index (SOI)

The SOI currently remains neutral. The July 2014 value was -3.0; a slight fall from -1.5 in June. The current approximate 30-day SOI value is -8.3, while the 90-day value is -2.6.

Trade Winds

Westerly wind anomalies were present over part of the western tropical Pacific, on and to the north of the equator, from late July to mid-August (eased in the last week). During this time, a number of tropical storm systems on the northern side of the tropical Pacific partially contributed towards these weakened trade winds. Over the remainder of the tropical Pacific winds were near-average. In westerly wind anomalies in the western Pacific continue they could drive further warming of surface waters in the central and eastern Pacific. Sustained westerly wind anomalies would be a sign that the atmosphere could be falling into alignment with the signs of a developing El Niño in the ocean.

South Pacific Convergence Zone (SPCZ), West Pacific Monsoon (WPM), Intertropical Convergence Zone (ITCZ)

Outgoing Longwave Radiation (OLR) and TRMM observations for the last 30 days show a small area of enhanced ITCZ activity in the far western north Pacific and in the central and eastern Pacific. ITCZ activity near the Date Line is near normal.

In the South Pacific the SPCZ is enhanced over the northern Solomon Islands and extends over Samoa to French Polynesia. The SPCZ band appears to be narrower than normal as rainfall is suppressed over the southern Solomon Islands, Fiji, southern Tonga, Niue and the southern Cook Islands.

Madden Julian Oscillation (MJO)

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For the second week in a row, the focus of tropical convection has been over the Indian Ocean. Last week saw an increase in rainfall over the northern tropical Indian Ocean, including southern India. In contrast, South-East Asia, the Philippines and the northwest Pacific region have seen another week of suppressed tropical activity.

If it were to remain slow moving and strengthen over the tropical Indian Ocean, convection would likely be enhanced over the Indian Ocean and remain suppressed over the northwest Pacific and South-East Asia.

ENSO Update (Issued on 12 August 2014)

The Pacific Ocean has shown some renewed signs of El Niño development. Some warming has occurred in the central and eastern equatorial Pacific Ocean in the recent fortnight, due to a weakening of the trade winds. If the trade winds remain weak, more warming towards El Niño thresholds is possible.

The Bureau's ENSO Tracker remains at WATCH status. This means the chance of an El Niño developing in 2014 is at least 50%, which is double the normal likelihood of an event. Five of the eight climate models surveyed by the Bureau suggest El Niño is likely for spring. However, if El Niño were to occur, it is unlikely to be a strong event.

El Niño is often associated with below-average rainfall over southern and eastern inland areas of Australia and above-average daytime temperatures over southern Australia. Similar impacts regularly occur prior to the event becoming fully established.

The Indian Ocean Dipole (IOD) index has been below -0.4 °C (the negative IOD threshold) since mid-June, which means 2014 is now considered a negative IOD year. Model outlooks suggest this negative IOD event is likely to be relatively short-lived, with the Indian Ocean returning to neutral by spring. A negative IOD pattern typically brings wetter winter and spring conditions to inland and southern Australia, and could be countering the effects of the current El Niño-like ocean pattern in the Pacific.

Next update expected on 26 August 2014

For up to date information on the state of ENSO please refer to the links below;

BoM ENSO Wrap Up - <http://www.bom.gov.au/climate/enso/>

BoM model survey - <http://www.bom.gov.au/climate/ahead/ENSO-summary.shtml>

IRI model summary - http://iri.columbia.edu/climate/ENSO/currentinfo/SST_table.html

AUSAID PROJECT: Climate and Oceans Support Program in the Pacific (COSPPac)

Observed Rainfall and Validation

Country	Jun	Apr-Jun 2014	Verification [†] for Apr-Jun 2014 outlooks
Cook Islands	Below Normal to Normal	Normal	Near Consistent
Fiji	Below Normal to Normal Above Normal [Rotuma]	Below Normal to Normal	Inconsistent to Consistent
Kiribati	Above Normal	Above Normal	Inconsistent to Near Consistent
Niue	Above Normal	Normal	Near Consistent
Papua New Guinea	Below Normal & Above Normal Normal [Port Moresby]	Below Normal & Above Normal Normal [Nadzab]	Inconsistent to Consistent
RMI	Normal	Above Normal	Near Consistent to Consistent
Samoa	Below Normal to Normal	Normal to Above Normal	Near Consistent to Consistent
Solomon Islands	Below Normal Above Normal [Munda & Taro]	Normal to Above Normal Below Normal [Lata]	Inconsistent to Consistent
Tonga	Below Normal to Normal [Above Normal Nukuálofa]	Below Normal to Normal [Above Normal Nukuálofa]	Near Consistent to Consistent [Inconsistent Vavaú]
Tuvalu	Below Normal to Normal	Below Normal	Consistent
Vanuatu	Below Normal to Normal	Below Normal	Inconsistent to Near Consistent

[†] Forecast is consistent when observed and predicted (tercile with the highest probability) categories coincide (are in the same tercile).

Forecast is near-consistent when observed and predicted (tercile with the highest probability) differ by only one category (i.e. terciles 1 and 2 or terciles 2 and 3).

Forecast is inconsistent when observed and predicted (tercile with the highest probability) differ by two categories (i.e. terciles 1 and 3).