

Climate and Oceans Monitoring and Prediction (COMP)

Pacific Islands - Online Climate Outlook Forum No. 84 Summary Report

Date: Thursday 18 September 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. Country statements with regards to drought or drought-like conditions, drought module issues/concerns.
7. Next meeting (Thursday 16 October) and Chair (Fiji).

Participants:

The Forum was attended by 13 climate officers from 9 PIC NMSs.

Cook Islands: Turi Tutai

Fiji: Swastika Devi

Kiribati: Kamaitia Rubetaake

Niue: Melissa Douglas, Hingano Laufoli

Papua New Guinea:

Republic of Marshall Islands: Nover Juria

Samoa: Faapisa Aiono, Junior Lepale, Tile Tofaeono

Solomon Islands: Max Norman

Tonga:

Tuvalu: Meelina Ailesi, Eli Ene

Vanuatu: Melinda Natapei

The Bureau team: Elisabeth Thompson, Simon McGree, Grant Beard

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

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

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Observations and Verification of June to August 2014 outlooks from OCOF #80:

Observed rainfall for the one and three month periods ending August 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 Islands	August	29.5	4	76
Penrhyn, Cook Islands	Jun-Aug	91.8	2	75
Lautoka Mill, Fiji	August	0	1	115
Nadi Airport, Fiji	August	0	1	73
Laucala Bay (Suva), Fiji	August	39.0	5	73
Lakeba, Fiji	August	9.2	3	66
Vunisea, Fiji	August	34.0	3	78
Labasa Airport, Fiji	August	1.0	2	59
Lautoka Mill, Fiji	Jun-Aug	14.6	3	115
Nadi Airport, Fiji	Jun-Aug	14.6	4	73
Yasawa-i-rara, Fiji	Jun-Aug	16.9	2	61
Laucala Bay (Suva), Fiji	Jun-Aug	201.3	6	73
Nausori Airport, Fiji	Jun-Aug	247.4	5	58
Vunisea, Fiji	Jun-Aug	157.8	7	78
Labasa Airport, Fiji	Jun-Aug	33.0	3	58
Kwajalein, RMI	August	142.5	6	70
Momote, PNG	Jun-Aug	1606.8	62	65
Niuafu'ou, Tonga	August	37.1	3	44
Nuku'alofa, Tonga	August	15.3	1	70
Fua'amotu, Tonga	August	13.9	1	35
Vava'u, Tonga	Jun-Aug	139.2	5	68
Ha'apai, Tonga	Jun-Aug	111.9	6	68
Sola, Vanuatu	August	35.5	3	42
Whitegrass, Vanuatu	August	57.5	3	43
Whitegrass, Vanuatu	Jun-Aug	65.5	3	42

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

Validation of forecasts with observed rainfall across the region for June to August 2014 showed mostly inconsistent outlooks (23 out of 49 stations) at the 10 countries. There were 18 near-consistent outlooks and 8 inconsistent outlooks.

The largest inconsistency was at Labasa Airport, Fiji, where below normal rainfall was observed (33.0 mm) against outlook probabilities of 14/17/69 with good skill (LEPS=13.6%). The strongest consistent verification was at Taro, Solomon Islands, where normal rainfall was observed (816 mm), with outlook probabilities of 19/48/33 and low skill (LEPS=2.8%).

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A summary of results (C-consistent, NC-Near Consistent, I-Inconsistent, NA-not available) for each country for the June to August 2014 outlook is as follows:

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

Overall: 8C, 18NC, 23I.

October to December 2014 Outlooks:

Of the 10 countries contributing to the OCOF, the following predictors and periods were selected for October to December 2014: Four chose 3-month average NINO3.4 (June to August), five chose 2-month average NINO3.4 (June to July) and one chose 1-month SSTa 1 and 9 (August).

SCOPIC outlooks for the coming season mainly favoured below normal rainfall, with 15% of stations having highest probabilities in tercile 1, 24% in tercile 2, 2% in tercile 3, while 28% of the stations had similar probabilities in all terciles. The remainder of the outlooks had equal probabilities for two terciles.

POAMA outlooks: Four station outlooks favour tercile 1, eight favour tercile 2 and four favour tercile 3 for the coming season. Seven showed similar probabilities for in all terciles or a mixed outlook.

ENSO summary for the September 2014 OCOF

Sea surface temperatures (SSTs), ENSO status and outlook

Although tropical Pacific Ocean surface temperatures are within the neutral range, an area of the sub-surface is warmer than average. A late season El Niño remains possible if these warmer waters rise to the surface and then affect atmospheric circulation, or if another sustained westerly wind burst develops in the western Pacific.

The majority of international climate models surveyed by the Bureau indicate central tropical Pacific surface temperatures will remain warmer than average, and may exceed El Niño thresholds by the end of the year. These model outlooks and current observations mean the Bureau's ENSO Tracker remains at WATCH status, indicating at least a 50% chance (double the normal likelihood) of an El Niño forming in 2014.

August SST anomaly values were NINO3 +0.5°C (down 0.2°C), NINO3.4 +0.3°C (up 0.1 °C) and NINO4 +0.7°C (up 0.3°C). The latest weekly values to 14 September are NINO3 +0.4°C, NINO3.4 +0.5°C, NINO4 +0.8°C.

Tropical subsurface

The four-month sequence of sub-surface temperature anomalies (to 15 Sept) shows warm anomalies that were close to the Date Line have moved further east and closer to the surface.

The TAO/TRITON sub-surface temperature map for the 5 days ending 15 August shows warm anomalies in the central Pacific at about 100 m.

Southern Oscillation Index (SOI)

The August 2014 value was -11.4; a fall from -3.0 in July. The current approximate 30-day SOI value is -11.3, while the 90-day value is -8.4.

Trade Winds

Westerly anomalies are present in the equatorial Pacific to about eastern Kiribati. These anomalies are strongest west of the Solomon Islands.

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Modes of Variability

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 suppressed activity between Yap State in FSM and the Date Line and enhanced ITCZ activity east of the Date Line.

In the South Pacific the SPCZ is enhanced as a thin line from around the Date Line, north of Samoa to French Polynesia. It is currently suppressed over the Solomon Islands, Fiji and islands further southeast to the southern Cook Islands.

Madden Julian Oscillation (MJO)

A very weak MJO signal has been observed over the eastern tropical Pacific Ocean this past week, which may have contributed to the enhanced tropical activity observed recently over that region.

Model outlooks of MJO diverge somewhat in likely scenarios, but common to all models is that any MJO activity is likely to be weak. It is possible that the MJO may act to enhance convection over the Americas and tropical Africa to some extent in the coming week.

ENSO Update (Issued on 9 September 2014)

Despite some warming of the tropical Pacific Ocean over the past month, ENSO remains neutral. However, models continue to suggest an El Niño remains possible in 2014, and hence the Bureau's ENSO Tracker remains at WATCH status, indicating at least double the normal risk of an El Niño developing by the end of the year.

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The majority of international climate models surveyed by the Bureau indicate central tropical Pacific surface temperatures will remain warmer than average, and may exceed El Niño thresholds by the end of the year. These model outlooks and current observations mean the Bureau's ENSO Tracker remains at WATCH status, indicating at least a 50% chance (double the normal likelihood) of an El Niño forming in 2014.

El Niño is often associated with below-average rainfall over large parts of southern and eastern inland areas of Australia and above-average daytime temperatures over southern Australia. Such impacts can often occur while an event is developing, as experienced in some locations over the past several months.

The negative Indian Ocean Dipole (IOD) in the tropical Indian Ocean has shown signs of weakening. Waters to the north of Australia and in the Timor Sea have cooled over the past two weeks. All climate models surveyed by the Bureau indicate the IOD will continue to weaken, with neutral conditions likely to return during the austral spring.

Next update expected on 23 September 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

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Observed Rainfall and Validation

Country	August	June to August 2014	Verification [†] for June-August 2014 outlooks
Cook Islands	Below Normal and Normal	Below Normal and Normal	Consistent and Near Consistent
Fiji	Below Normal Normal [Rotuma]	Below Normal Normal [Rotuma]	Near-Consistent to Inconsistent Consistent [Rotuma]
Kiribati	Normal	Normal and Above Normal	Consistent and Near Consistent
Niue	Normal	Normal	Near Consistent
Papua New Guinea	Below Normal & Normal Above Normal [Port Moresby]	Below Normal Above Normal [New Guinea Islands]	Near Consistent to Inconsistent
RMI	Below Normal	Below Normal and Above Normal	Consistent and Inconsistent
Samoa	Below Normal to Normal	Below Normal to Normal	Near Consistent
Solomon Islands	Normal Below Normal [Honiara]	Below Normal to Normal	Consistent to In-consistent
Tonga	Below Normal [Above Normal Niuatoputopu]	Below Normal to Normal	Consistent to In-consistent
Tuvalu			
Vanuatu	Below Normal [Normal Aneityum]	Below Normal	Consistent to In-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).