

Pacific Islands - Online Climate Outlook Forum (OCOF) No. 116

Country Name: Tonga

TABLE 1: Monthly Rainfall

Station (include data period)	April 2017						
	Feb 2017 Total	Mar 2017 Total	Apr 2017 Total	33%tile Rainfall (mm)	67%tile Rainfall (mm)	Median Rainfall (mm)	Ranking
Northern Division							
Niuafou'ou	528.1	287.5	181.4	170.3	315.0	219.0	18/46
Niuatoputapu	693.9	154.4	445.9	165.3	291.0	222.5	62/67
Central Division							
Vava'u	925.6	305.2	114.3	155.0	259.0	209.0	11/71
Ha'apai	498.0	285.3	41.6	113.0	234.0	167.5	6/71
Southern Division							
Fua'amotu	473.9	257.7	36.8	97.0	238.1	172.0	6/38
Nuku'alofa	416.9	268.7	n.a	109.0	205.0	136.5	-

**TABLE 2: Three-monthly Rainfall
February to April 2017**

[Please note that the data used in this verification should be sourced from table 3 of OCOF #112]

Station	Three-month Total	33%tile Rainfall (mm)	67%tile Rainfall (mm)	Median Rainfall (mm)	Ranking	Forecast probs.* (include LEPS)	Verification* (Consistent, Near-consistent Inconsistent?)
Northern Division							
Niuafou'ou	997.0	728.5	936.0	885.7	33/42	31,31,38(-0.1)	Consistent
Niuatoputapu	1294.2	686.4	840.0	755.0	64/65	28,39,33(0.5)	Near Consistent
Central Division							
Vava'u	1345.1	692.0	890.0	820.6	70/71	28,34,38(3.1)	Consistent
Ha'apai	824.9	543.0	705.0	649.0	53/71	25,33,42(8.9)	Consistent
Southern Division							
Fua'amotu	768.4	456.0	672.0	510.0	28/38	20,35,45(10.9)	Consistent
Nuku'alofa							

* 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).

Predictors and Period used for February 2017 to April 2017 Outlooks ([refer to OCOF #112](#)):

Period: *below normal/normal/above normal

TABLE 3: Seasonal Climate Outlooks using SCOPIC for June to August 2017-Tercile Method

Predictors and Period used: NINO 3.4 (March - April 2017)

Station	Below Normal (prob)	33%ile rainfall (mm)	Normal (prob)	66%ile rainfall (mm)	Above Normal (prob)	LEPS (%)	Hit-rate (%)
Northern Division							
Niuafo'ou (1971-2016)	36	270.5	28	415.0	36	-2.1	36.6
Niuaatoputapu (1947-2016)	39	236.3	28	352.1	33	0.2	45.5
Central Division							
Vava'u (1947-2016)	37	251.0	30	353.0	33	-1.0	31.3
Ha'apai (1947-2016)	33	191.0	37	314.0	30	-1.0	32.8
Southern Division							
Fua'amotu(1980-2016)	32	271.1	34	401.0	34	-2.8	32.4
Nuku'alofa(1944-2016)	34	249.0	31	368.0	35	-1.6	44.8

Station	Below Median (prob)	Median Rainfall (mm)	Above Median (prob)	LEPS	Hit-rate
Northern Division					
Niuafo'ou (1971-2016)	54	335.9	46	-1.4	58.5
Niuaatoputapu (1947-2016)	49	312.0	51	-1.6	36.4
Central Division					
Vava'u (1947-2016)	53	307.5	47	-1.0	50.7
Ha'apai(1947-2016)	56	276.5	44	1.3	58.2
Southern Division					
Fua'amotu (1980-2016)	49	353.0	57	-2.7	43.2
Nuku'alofa(1944-2016)	50	298.0	50	-1.5	16.4

TABLE 4: Seasonal Climate Outlooks using POAMA2 for

June to August 2017

Station	Lower Tercile (prob)	33%ile rainfall (mm)	Middle Tercile (prob)	66%ile rainfall (mm)	Upper Tercile (prob)
Northern Division					
Niuafu'ou	39	249	25	417	36
Niutopotapu	39	248	25	363	36
Vava'u	36	272	37	344	27
Ha'apai	36	207	37	324	27
Nuku'alofa	15	261	49	402	36

Summary Statements

Rainfall for April 2017:

Northern division: Normal in Niuafu'ou and Above Normal in Niutopotapu.

Central division: Below Normal.

Southern division: Below Normal

Accumulated rainfall for February to April 2017, including outlook verification:

Northern division: Above Normal. Forecast was consistent in Niuafu'ou and near consistent in Niutopotapu.

Central division: Above Normal. Forecast was consistent.

Southern division: Below Normal. Forecast was consistent.

Outlooks for June to August 2017:

1. SCOPIC:

Northern division: The seasonal rainfall outlook offers little guidance for the coming season as the chances of normal, below-normal and above-normal rainfall are similar for Niuafu'ou and below normal for Niutopotapu. Confidence is very low.

Central division: The seasonal rainfall outlook offers little guidance for the coming season as the chances of normal, below-normal and above-normal rainfall are similar. Confidence is very low.

Southern division: Again there is little indication of bias towards either above normal, normal, or below normal. Confidence is very low.

2. POAMA:

Northern division: A mixed outlook, with similar chances for below-normal and above-normal totals; near-normal is the least likely outcome.

Central division: A near equal likelihood of below-normal and normal rainfall. Above normal rainfall is the least likely.

Southern division: The most likely outcome is normal, with above normal the next most likely. The least likely category is below-normal.

NB: The X LEPS % score has been categorised as follows:

Very Low: $X < 0.0$

Low: $0 \leq X < 5$

Moderate $5 \leq X < 10$

Good: $10 \leq X < 15$

High: $15 \leq X < 25$

Very High: $25 \leq X < 35$

Exceptional: $X \geq 35$