

Pacific Islands - Online Climate Outlook Forum (OCOF) No.92

Country Name: Tonga

TABLE 1: Monthly Rainfall

Station (include data period)			April 2015				
	Feb 2015 Total	Mar 2015 Total	Total	33%tile Rainfall (mm)	67%tile Rainfall (mm)	Median Rainfall (mm)	Ranking
Northern Division							
Niuafo'ou (1971-2014)	244.7	244.6	248.2	155	315	268.4	25/44
Niuaotoputapu (1947-2014)	190.3	167.0	329.1	161	271	235.0	53/65
Central Division							
Vava'u (1947-2014)	415.6	227.8	81	163	264	307.2	8/69
Ha'apai (1947-2014)	351.0	199.8	36.6	119	241	236	4/69
Southern Division							
Nukuálofa (1944-2014)	228.6	193.5	29.8	112	203	211.5	3/71
Fuaámotu (1980-2014)	160.8	232.4	17.1	102	234	180.0	1/36

Period: *below normal/normal/above normal

TABLE 2: Three-monthly Rainfall

February - April 2015

Predictors and Period used: NINO 3.4 (Oct to Dec 2014)

[Please note that the data used in this verification should be sourced from table 3 of OCOF #88]

Station	Three-month Total	33%tile Rainfall (mm)	67%tile Rainfall (mm)	Median Rainfall (mm)	Ranking	Forecast probs.* (include LEPS)	Verification ¹ (Consistent, Near-consistent or Inconsistent)
Northern Division							
Niuafo'ou (1971-2015)	737.5	720	938	891	16/40	(42,26,32)(1.2)	Near consistent
Niuaotoputapu (1947-2015)	686.4	699	843	765	21/63	(41,23,36)(-0.7)	Consistent
Central Division							
Vava'u (1947-2015)	724.4	689	907	821	26/69	(42,30,28)(2.7)	Near consistent
Ha'apai (1947-2015)	587.4	540	711	649	27/69	(46,34,20)(10.5)	Near consistent
Southern Division							
Nukuálofa(1944-2015)	451.9	544	681	610	18/71	(37,36,27)(0.3)	Consistent
Fuaámotu(1980-2015)	410.3	461	679	510	9/36	(44,33,23)(10.2)	Consistent

¹Forecast 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).

**TABLE 3: Seasonal Climate Outlooks using SCOPIC for
June-August 2015**

Predictors and Period used: NINO 3.4 (March to April 2015)

Station	Below Normal (prob)	33%ile rainfall (mm)	Normal (prob)	66%ile rainfall (mm)	Above Normal (prob)	LEPS (%)	Hit-rate (%)
<i>Northern Division</i>							
Niuafó'u (1971-2015)	30	276	28	417	42	-0.2	48.7
Niutopotapu (1947-2015)	44	239	22	356	34	-0.4	43.8
<i>Central Division</i>							
Vava'u (1947-2015)	41	252	30	350	29	-0.4	21.5
Ha'apai (1947-2015)	33	190	44	311	23	-0.3	35.4
<i>Southern Division</i>							
Nukuálofa(1944-2015)	34	242	35	360	31	-1.6	36.9
Fuaámotu(1980-2015)	35	270	34	400	31	-3.2	11.4

Seasonal Climate Outlook:

June to August 2015- Median Table:

Predictors and Period used: NINO 3.4 (March – April 2015)

Station	Below Median (prob)	Median rainfall (mm)	Above Median (prob)	LEPS	Hit-rate
<i>Northern Division</i>					
Niuafó'u (1971-2015)	50	361	50	-2.7	23.1
Niutopotapu (1947-2015)	49	312	51	-1.6	34.4
<i>Central Division</i>					
Vava'u (1947-2015)	58	308	42	-0.4	49.2
Ha'apai (1947-2015)	61	273	39	2.1	58.5
<i>Southern Division</i>					
Nuku'alofa (1944-2015)	54	298	46	-1.2	47.7
Fua'amotu Airport (1980-2015)	52	353	48	-2.8	25.7

TABLE 4: Seasonal Climate Outlooks using POAMA2 for
June – August 2015

Station	Lower Tercile (prob)	33%ile rainfall (mm)	Middle Tercile (prob)	66%ile rainfall (mm)	Upper Tercile (prob)
Ha'apai	79%	207	16%	324	5%
Niufo'ou	88%	249	7%	417	12%
Nuku'alofa	58%	261	27%	402	15%

Summary Statements

Rainfall for April 2015:

Northern division: Niufo'ou was normal
 Niuatoputapu was above normal
 Central division: Below normal
 Southern division: Below normal

Accumulated rainfall for February – April 2015, including outlook verification:

Northern division: Niufo'ou was normal, near consistent
 Niuatoputapu was below normal, and forecast was consistent
 Central division: Normal and the forecast was near consistent
 Southern division: Below normal and the forecast was consistent

The SCOPIC forecasts for the last three months were consistent at 3 stations, and near-consistent at 3 stations.

Outlooks for June – August 2015:

1. SCOPIC:

The seasonal rainfall outlook for May to July 2015 shows:

Northern division:

The seasonal outlook for Niufo'ou shows the most likely outcome is above-normal and the next most likely is below normal. The outlook for Niuatoputapu shows the most likely outcome is for below normal rainfall and the next most likely is above normal. Confidence is very low at both stations.

Central division:

The seasonal rainfall outlook shows the most likely outcome for Vava'u is below normal, with normal or above normal the next most likely. For Ha'apai, the outlook shows the most likely outcome is for normal rainfall and the next most likely is below normal. Confidence is very low.

Southern division:

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

2. POAMA:

The seasonal rainfall outlook for Nuku'alofa, Ha'apai, Vava'u (Lupepau'u), Niuatoputopu (Keppel) and Niuafu'ou for June to August shows the most likely outcome is below-normal, with normal the next most likely except at Niuafu'ou where above normal is the next most likely category.

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: $X \geq 35$