

Pacific Islands - Online Climate Outlook Forum (OCOF) No.91

Country Name: Tonga

TABLE 1: Monthly Rainfall

Station (include data period)			March 2015				
	Dec 2014 Total	Jan 2014 Total	Total	33%tile Rainfall (mm)	67%tile Rainfall (mm)	Median Rainfall (mm)	Ranking
Northern Division							
Niuafou'ou (1971-2014)	46.5	244.7	244.6	211.3	348.0	268.4	20/43
Niuaotoputapu (1947-2014)	210.4	190.3	167.0	184.0	312.0	235.0	15/65
Central Division							
Vava'u (1947-2014)	281.9	415.6	227.8	229.2	363.3	307.2	23/69
Ha'apai (1947-2014)	191.9	351.0	199.8	189.0	315.9	236	25/69
Southern Division							
Nukuálofa (1944-2014)	95.8	228.6	193.5	169.0	261.0	211.5	30/71
Fuaámotu (1980-2014)	75.5	160.8	232.4	149.3	220.0	180.0	25/36

Period: *below normal/normal/above normal

TABLE 2: Three-monthly Rainfall

January - March 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 #87]

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)	535.8	763.7	962.3	906.0	8/42	(45,26,29)(4.9)	Consistent
Niuatoputapu (1947-2015)	567.7	660.0	925.0	810.0	10/69	(49,37,14)(17.5)	Consistent
Central Division							
Vava'u (1947-2015)	925.3	690.0	928.0	851.0	45/69	(44,32,23)(7.9)	Near consistent
Ha'apai (1947-2015)	742.7	563.3	784.0	660.5	43/69	(53,30,17)(20.3)	Near consistent
Southern Division							
Nukuálofa(1944-2015)	517.9	496.0	823.0	640.5	26/71	(46,38,16)(15.2)	Near consistent
Fuaámotu(1980-2015)	468.7	465.7	788.3	623.0	13/36	(45,40,15)(18.7)	Near 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
May-July 2015**

Predictors and Period used: NINO 3.4 (February to March 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>							
Niuafo'ou (1971-2015)	36	373	36	471	28	-0.3	30.0
Niuaotoputapu (1947-2015)	37	323	39	421	24	1.1	42.6
<i>Central Division</i>							
Vava'u (1947-2015)	43	299	35	400	22	7.2	47.7
Ha'apai (1947-2015)	43	211	33	299	24	4.7	40.6
<i>Southern Division</i>							
Nukuálofa(1944-2015)	46	235	29	343	25	10.3	38.5
Fuaámotu(1980-2015)	45	273	28	440	27	8.1	26.5

Seasonal Climate Outlook:

May to July 2015- Median Table:

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

Station	Below Median (prob)	Median rainfall (mm)	Above Median (prob)	LEPS	Hit-rate
<i>Northern Division</i>					
Niuafo'ou (1971-2015)	57	430.5	43	2.7	65.0
Niuaotoputapu (1947-2015)	53	366.6	47	-0.9	55.7
<i>Central Division</i>					
Vava'u (1947-2015)	62	352.5	38	8.0	56.9
Ha'apai (1947-2015)	65	237	35	10.4	56.3
<i>Southern Division</i>					
Nuku'alofa (1944-2015)	62	295.8	38	7.4	55.4
Fua'amotu Airport (1980-2015)	66	372	34	15.1	58.8

TABLE 4: Seasonal Climate Outlooks using POAMA2 for May – July 2015

Station	Lower Tercile (prob)	33%ile rainfall (mm)	Middle Tercile (prob)	66%ile rainfall (mm)	Upper Tercile (prob)
Ha'apai	79	210	16	329	5
Niuafo'ouNuku'alofa	70	354	21	477	9
Nuku'alofa	49	220	42	359	9

Summary Statements

Rainfall for March 2015:

Northern division: Below normal in Niuatoputapu and Normal in Niuafu'ou
Central division: Below normal in Vava'u and Normal in Ha'apai
Southern division: Normal in Nuku'alofa and AboveNormal in Fua'amotu

Accumulated rainfall for January 2015 – March 2015, including outlook verification:

Northern division: Below normal and the forecast was Consistent
Central division: Normal and the forecast was near consistent
Southern division: Normal and the forecast was near consistent

The SCOPIC forecasts for the last three months were consistent at 2 stations, and near-consistent at 4 stations.

Outlooks for May – July 2015:

1. SCOPIC:

The seasonal rainfall outlook for May to July 2015 shows:

Northern division:

The seasonal outlook offers little guidance for Niuafu'ou as the chances of above-normal, normal and below-normal rainfall are similar. The outlook for Niuatoputapu shows the most likely outcome is for normal to below normal rainfall. Confidence is low at both stations.

Central division:

The seasonal rainfall outlook shows the most likely outcome is below normal, with normal the next most likely. Confidence is low to moderate.

Southern division:

The seasonal rainfall outlook shows the most likely outcome is below normal, with normal the next most likely. Confidence of the outlook is moderate.

2. POAMA:

The seasonal outlook shows the most likely outcome is below normal for all stations, with normal the next most likely.

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: $X \geq 35$