

Pacific Islands - Online Climate Outlook Forum (OCOF) No.95

Country Name: Tonga

TABLE 1: Monthly Rainfall

Station (include data period)			July 2015				
	May 2015 Total	June 2015 Total	July 2015 Total	33%tile Rainfall (mm)	67%tile Rainfall (mm)	Median Rainfall (mm)	Ranking
Northern Division							
Niuafu'ou (1971-2015)	200.0	116.6	48.6	53.3	146.8	106.2	15/45
Niuaotupou (1947-2015)	144.4	85.3	53.3	61.0	131.0	92.0	20/68
Central Division							
Vava'u (1947-2015)	59.8	51.2	13.9	62.7	119.9	80.5	3/69
Ha'apai (1947-2015)	54.5	104.1	42.8	55.3	106.0	74.0	12/69
Southern Division							
Nukuálofa (1944-2015)	75.6	86.8	30.5	64.0	117.0	84.0	8/71
Fuaámotu (1980-2015)	88.5	135.4	20.8	73.7	134.3	105.0	1/36

Period: *below normal/normal/above normal

**TABLE 2: Three-monthly Rainfall
May – July 2015**

Predictors and Period used: NINO 3.4 (Feb – Mar 2015)

[Please note that the data used in this verification should be sourced from table 3 of OCOF #91]

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)	365.2	374.4	483.0	433.5	14/43	36,35,29 (-0.1)	Consistent
Niuatoputapu (1947-2015)	283.0	321.3	405.0	356.7	15/67	37,37,26 (0.9)	Near Consistent
Vava'u (1947-2015)	124.9	299.0	400.3	352.5	2/69	42,34,24 (6.1)	Consistent
Ha'apai (1947-2015)	201.4	211.0	312.4	237.0	21/68	42,33,25 (4.1)	Consistent
Nukuálofa(1944-2015)	192.9	235.0	343.0	297.5	13/71	45,30,25 (10.0)	Consistent
Fuaámotu(1980-2015)	244.7	269.7	429.1	348.2	9/36	45,28,27 (8.0)	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
Sep - Nov 2015**

Predictors and Period used: NINO 3.4 (Jun-Jul 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>							
Niuafu'ou (1971-2015)	56.0	448.1	32.0	638.2	12.0	6.1	40.5
Niuatoputapu (1947-2015)	64.0	389.0	30.0	560.0	6.0	10.6	42.2
<i>Central Division</i>							
Vava'u (1947-2015)	59.0	350.7	37.0	539.0	4.0	14.6	49.2
Ha'apai (1947-2015)	55.0	228.7	34.0	396.7	11.0	6	41.5
<i>Southern Division</i>							
Nuku'álofa(1944-2015)	80.0	240.6	16.0	432.0	4.0	17.3	46.2
Fuaámotu(1980-2015)	63.0	247.7	27.0	391.8	10.0	9	37.1

**Seasonal Climate Outlook:
Sep – Nov 2015- Median Table:**

Predictors and Period used: NINO 3.4 (May - June 2015)

Station	Below Median (prob)	Median rainfall (mm)	Above Median (prob)	LEPS	Hit-rate
<i>Northern Division</i>					
Niuafou'ou (1971-2015)	75	561.1	25	4.9	54.8
Niutoputapu (1947-2015)	89	482	11	15.6	68.8
<i>Central Division</i>					
Vava'u (1947-2015)	92	413	8	21	70.8
Ha'apai (1947-2015)	79	302	21	7.1	58.5
<i>Southern Division</i>					
Nuku'alofa (1944-2015)	93	359	7	21.6	73.8
Fua'amotu Airport (1980-2015)	74	314	26	7	57.1

**TABLE 4: Seasonal Climate Outlooks using POAMA2 for
Sep – Nov 2015**

Station	Lower Tercile (prob)	33%ile rainfall (mm)	Middle Tercile (prob)	66%ile rainfall (mm)	Upper Tercile (prob)
Niuafou'ou	69.7	360	15.2	567	15.2
Niutoputapu	69.7	320	15.2	458	15.2
Vava'u	39.4	276	45.5	418	15.2
Ha'apai	39.4	204	45.5	304	15.2
Nuku'alofa	33.3	189	60.6	309	6.1

Summary Statements

Rainfall for July 2015:

Northern division: Below normal

Central division: Below normal

Southern division: Below normal

Accumulated rainfall for May - July 2015, including outlook verification:

Northern division: Below normal and the forecast was near consistent to consistent

Central division: Below normal and the forecast was consistent

Southern division: Below normal and the forecast was consistent

The SCOPIC forecasts for the last three months were consistent in all stations, except Niuatoputapu where it was near consistent.

Outlooks for Sep - Nov 2015:

1. SCOPIC:

The seasonal rainfall outlook for Jul to Sept 2015 shows:

Northern division:

The seasonal rainfall outlook shows the most likely outcome for the Northern division is for below normal. Confidence is moderate.

Central division:

The seasonal rainfall outlook shows the most likely outcome for the Central division is for below normal. Confidence is good.

Southern division:

The seasonal rainfall outlook shows the most likely outcome for the Southern division for below normal. Confidence is good.

2. POAMA:

POAMA seasonal outlook for all stations for September to November 2015 shows the most likely rainfall outlook is for below normal in Northern division and normal for the rest of the country.

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: $X \geq 35$