

Pacific Islands - Online Climate Outlook Forum (OCOF) No. 83

Country Name: TONGA

TABLE 1: Monthly Rainfall

| Station (include data period) | July 2014 | | | | | | |
|-------------------------------|----------------|-----------------|-----------------|-----------------------|-----------------------|----------------------|---------|
| | May 2014 Total | June 2014 Total | July 2014 Total | 33%tile Rainfall (mm) | 67%tile Rainfall (mm) | Median Rainfall (mm) | Ranking |
| Northern Division | | | | | | | |
| Niuafoóu | 143.8 | 33.4 | 11.7 | 66.5 | 152.3 | 121.0 | 3/44 |
| Niuaotoputapu | | 28.3 | 125.2 | 59.0 | 131.0 | 88.0 | 6/68 |
| Vavaú | 144.1 | 41.9 | 54.9 | 66.0 | 120.4 | 80.6 | 16/68 |
| Haápai | 149.6 | 30.1 | 47.2 | 56.0 | 108.0 | 77.0 | 16/68 |
| Nukuálofa | 228 | 144.3 | 157.7 | 55.3 | 106.3 | 76.0 | 54/70 |
| Fuaámotu | 174.2 | 134.7 | 121.3 | 64.0 | 114.3 | 84.0 | 23/35 |

TABLE 2: Three-monthly Rainfall

May to July 2014

[Please note that the data used in this verification should be sourced from table 3 of OCOF #79]

Predictors and Period used: SSTa 1 & 9 – January to March 2014

| 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 | | | | | | | |
| Niuafoóu | 188.9 | 374.3 | 474.0 | 432.0 | 19/44 | 28,28,44 (-3.0) | Inconsistent |
| Niuaotoputapu | Have some missing values | 322.0 | 407.0 | 360.6 | 16/68 | 21,42,37 (2.8) | |
| Central Division | | | | | | | |
| Vavaú | 240.9 | 301.0 | 401.0 | 358.0 | 21/68 | 19,27,53 (12.5) | Inconsistent |
| Haápai | 226.9 | 209.7 | 303.3 | 240.5 | 30/68 | 23,31,46 (5.0) | Near consistent |
| Southern Division | | | | | | | |
| Nukuálofa | 530.0 | 234.7 | 343.0 | 294.6 | 56/70 | 14,42,44 (14.1) | Consistent |
| Fuaámotu | 430.2 | 271.3 | 441.0 | 366.0 | 22/35 | 15,36,49 (8.9) | Near consistent |

Period: *below normal/normal/above normal

* 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).

TABLE 3: Seasonal Climate Outlooks using SCOPIC for September to November 2014

Predictors and Period used: NINO 3.4 SST Anomalies– June to July 2014

| Station | Below Median (prob) | Median Rainfall (mm) | Above Median (prob) | | LEPS | Hit-rate |
|--------------------------|---------------------|----------------------|---------------------|--|------|----------|
| Northern Division | | | | | | |
| Niuafo'ou | 53 | 561 | 47 | | 4.2 | 55 |
| Niuaatoputapu | 57 | 486 | 43 | | 15.1 | 65.6 |
| Central Division | | | | | | |
| Vava'u | 59 | 416 | 41 | | 19.7 | 68.8 |
| Ha'apai | 55 | 304 | 45 | | 5.4 | 54.7 |
| Southern Division | | | | | | |
| Nuku'alofoa | 59 | 354 | 41 | | 19.6 | 71.9 |
| Fua'amotu | 51 | 315 | 49 | | 3.4 | 58.8 |

| Station | Below Normal (prob) | 33%ile rainfall (mm) | Normal (prob) | 66%ile rainfall (mm) | Above Normal (prob) | LEPS | Hit-rate |
|--------------------------|---------------------|----------------------|---------------|----------------------|---------------------|------|----------|
| Northern Division | | | | | | | |
| Niuafo'ou | 35 | 451 | 34 | 639 | 30 | 3.6 | 35.0 |
| Niuaatoputapu | 38 | 389 | 37 | 596 | 26 | 10.6 | 41.0 |
| Central Division | | | | | | | |
| Vava'u | 38 | 364 | 38 | 546 | 24 | 14.5 | 48.4 |
| Ha'apai | 37 | 236 | 36 | 405 | 27 | 7.1 | 43.8 |
| Southern Division | | | | | | | |
| Nuku'alofoa | 38 | 251.7 | 38 | 430.7 | 24 | 20.8 | 50.0 |
| Fua'amotu | 34 | 257 | 37 | 411 | 29 | 11.0 | 38.2 |

TABLE 4: Seasonal Climate Outlooks using POAMA2 for September 2014 to November 2014

| Station | Lower Tercile (prob) | 33%ile rainfall (mm) | Middle Tercile (prob) | 66%ile rainfall (mm) | Upper Tercile (prob) | | |
|-------------|----------------------|----------------------|-----------------------|----------------------|----------------------|--|--|
| Nuku'alofoa | 9.09 | 249 | 85.91 | 395 | 5.00 | | |

Summary Statements

Rainfall for July 2014:

Northern Division: Niuafóú: Below normal

Niuatoputapu: Above normal

Central Division: Below normal.

Southern Division: Above normal.

Accumulated rainfall for May - July 2014, including outlook verification:

Northern Division: Niuafóú: Below normal, forecast was inconsistent.

Niuatoputapu (missing daily rainfall)

Central Division: Vava'u: Below Normal, forecast was inconsistent.

Ha'apai: Normal, forecast was near consistent

Southern Division: Nuku'alofa: Above normal, forecast was consistent.

Fua'amotu: Normal, forecast was near consistent

Outlooks for September- November 2014:

1. SCOPIC:

The SCOPIC seasonal rainfall outlook for August to October 2014 shows:

- The most likely outcomes for the Nuku'alofa, Niuatoputapu, Ha'apai and Vava'u are "normal" and below normal" with "above normal" the next most likely.
- There is little indication of bias towards either "**above-normal**", "**normal**" or "**below-normal**" rainfall conditions for Fuaámotu and Niuafóú.

2. POAMA: POAMA seasonal Outlook for Nuku'alofa for September to November shows the most likely outcome is 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: $X \geq 35$