

Pacific Islands - Online Climate Outlook Forum (OCOF) No. 148

Country: Tuvalu

TABLE 1: Monthly Rainfall

| Station (include data period) | Oct-2019   | Nov-2019   | Dec-2019      |         |         |        | Rank  |
|-------------------------------|------------|------------|---------------|---------|---------|--------|-------|
|                               |            |            | Total (mm)    | 33%tile | 67%tile | Median |       |
|                               | Total (mm) | Total (mm) | Rainfall (mm) |         |         |        |       |
| Nanumea (1941-2019)           | 183.7      | 43.1       | 431.0         | 212.9   | 359.7   | 298.2  | 63/78 |
| Nui (1946-2019)               | 146.5      | 133.5      | 521.8         | 265.9   | 415.8   | 307.6  | 65/74 |
| Funafuti (1933-2019)          | 142.7      | 330.1      | 426.1         | 309.7   | 433.5   | 354.5  | 56/87 |
| Niulakita (1953-2019)         | 58.3       | 313.6      | 420.7         | 233.7   | 352.9   | 291.1  | 51/66 |

**TABLE 2: Three-month Rainfall for October to December 2019**

| Station               | Three-month Total |        | 33%tile | 67%tile | Median | Rank  | SCOPIC forecast probabilities based on NINO3.4 July - August 2019 |    |     |      | Verification:<br>Consistent,<br>Near-consistent,<br>Inconsistent? |
|-----------------------|-------------------|--------|---------|---------|--------|-------|---|----|-----|------|---|
|                       | Rainfall (mm)     |        |         |         |        |       | B-N   | N  | A-N | LEPS |   |
| Nanumea (1941-2019)   | 657.8             | Normal | 541.2   | 755.4   | 665.9  | 39/78 | 14  | 34 | 52  | 34   | Near-consistent   |
| Nui (1946-2019)       | 801.8             | Normal | 711.3   | 921.7   | 840.8  | 36/74 | 22  | 39 | 39  | 7    | Near-consistent   |
| Funafuti (1933-2019)  | 898.9             | Normal | 811.0   | 1008.2  | 895.0  | 44/87 | 30  | 35 | 35  | -1   | Near-consistent   |
| Niulakita (1953-2019) | 792.6             | Normal | 731.7   | 960.0   | 829.6  | 30/66 | 34  | 37 | 29  | 0    | Consistent  |

**TABLE 3: Seasonal Climate Outlooks using SCOPIC for February to April 2020**

Predictor and Period used: NINO3.4 for November to December 2019

| Station               | Below Median (prob) | Median Rainfall (mm) | Above Median (prob) |  | LEPS (%) [whole numbers] | Hit-rate (%) [whole numbers] |
|-----------------------|---------------------|----------------------|---------------------|--|--------------------------|------------------------------|
| Nanumea (1941-2019)   | 35                  | 830.3                | 65                  |  | 18                       | 65                           |
| Nui (1946-2019)       | 43                  | 820.6                | 57                  |  | 4                        | 58                           |
| Funafuti (1933-2019)  | 36                  | 928.1                | 64                  |  | 16                       | 67                           |
| Niulakita (1953-2019) | 55                  | 937.3                | 45                  |  | 1                        | 54                           |

| Station               | Below Normal (prob) | 33%ile Rainfall (mm) | Normal (prob) | 67%ile Rainfall (mm) | Above Normal (prob) | LEPS (%) [whole numbers] | Hit-rate (%) [whole numbers] |
|-----------------------|---------------------|----------------------|---------------|----------------------|---------------------|--------------------------|------------------------------|
| Nanumea (1941-2019)   | 6                   | 639.3                | 45            | 992.0                | 49                  | 37                       | 59                           |
| Nui (1946-2019)       | 22                  | 698.3                | 38            | 977.9                | 40                  | 10                       | 52                           |
| Funafuti (1933-2019)  | 18                  | 824.6                | 43            | 1047.7               | 39                  | 12                       | 52                           |
| Niulakita (1953-2019) | 36                  | 851.0                | 34            | 1030.4               | 30                  | -1                       | 34                           |

**TABLE 4: Seasonal Climate Outlooks using POAMA2 for February to April 2020**

| Station   | Below Normal (prob) | 33%ile Rainfall (mm) | Normal (prob) | 67%ile Rainfall (mm) | Above Normal (prob) |
|-----------|---------------------|----------------------|---------------|----------------------|---------------------|
| Nanumea   | 9                   | 810.0                | 36            | 1106.0               | 55                  |
| Nui       | 9                   | 798.0                | 39            | 1126.0               | 52                  |
| Funafuti  | 33                  | 907.0                | 15            | 1086.0               | 52                  |
| Niulakita | 42                  | 878.0                | 13            | 1076.0               | 45                  |

## **Summary Statements**

### **Rainfall for December 2019:**

Three stations (Nanumea, Nui and Niulakita) collected above normal rainfall during December, while Funafuti collected normal rainfall.

### **Accumulated rainfall for October to December 2019, including outlook verification:**

All stations collected normal rainfall during the October to December 2019 season. The forecasts issued in September were Near-consistent at Nanumea, Nui and Funafuti, and consistent for Niulakita.

### **Outlooks for February to April 2020:**

#### **1. SCOPIC:**

The outlook for the season at Nanumea shows above normal as the most likely outcome, with normal the next most likely. Below normal is the least likely.

The outlook for Nui shows a near – equal likelihood of above normal and normal rainfall. Below normal rainfall is the least likely.

The outlook at Funafuti shows normal rainfall as the most likely outcome, with above normal the next most likely. Below normal is the least likely.

The outlook at Niulakita for the season offers little guidance as the chances of below normal, normal and above normal are similar with very low confidence in the skill of the model.

Model confidence at Nanumea is exceptional, while it is "good" at Nui and Funafuti.

#### **POAMA:**

The forecast at Nanumea and Nui favours above normal rainfall, with normal is the next most likely. Below normal rainfall is the least likely outcome.

The forecast at Funafuti favours above normal rainfall as the most likely outcome, with below normal rainfall as the next most likely. Normal rainfall is the least likely outcome.

The outlook for Niulakita is mixed, with similar chances for above normal or below normal rainfall; normal is the least 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:  $X \geq 35$

**Table: 5 Stakeholder Engagement- Evaluations of how effective NMS engage with stakeholders**

| Product                        | Date:<br>November<br>2019 | Stakeholder             | Total Number<br>of Participants | Number of<br>male | Number of<br>female |
|--------------------------------|---------------------------|-------------------------|---------------------------------|-------------------|---------------------|
| Climate<br>Bulletin            |                           | Senior staffs<br>of TMS | 7                               | 4                 | 3                   |
|                                |                           | Civil servant<br>list   | All civil servant<br>list       |                   |                     |
|                                |                           | Kaupule<br>Secretary    | 8                               | 7                 | 1                   |
| EAR Watch                      |                           |                         |                                 |                   |                     |
| Monthly<br>Climate<br>Briefing |                           | Senior staffs<br>of TMS | 7                               | 4                 | 3                   |
|                                |                           | Civil servant<br>list   | All civil servant<br>list       |                   |                     |
|                                |                           | Kaupule<br>Secretary    | 8                               | 7                 | 1                   |
| Ocean Bulletin                 |                           | Senior Staffs<br>of TMS | 7                               | 4                 | 3                   |
|                                |                           | Civil servant<br>list   | All civil servant<br>list       |                   |                     |
|                                |                           | Kaupule<br>Secretary    | 8                               | 7                 | 1                   |
| <b>Total</b>                   |                           |                         |                                 |                   |                     |