

## Pacific Islands - Online Climate Outlook Forum (OCOF) No. 118

**Country Name:** COOK ISLANDS

### TABLE 1: Monthly Rainfall

| Station (include data period) |                  |                | June 2017   |                       |                       |                      |         |
|-------------------------------|------------------|----------------|-------------|-----------------------|-----------------------|----------------------|---------|
|                               | April 2017 Total | May 2017 Total | Total       | 33%tile Rainfall (mm) | 67%tile Rainfall (mm) | Median Rainfall (mm) | Ranking |
| <b>PENRHYN</b>                | 289.0            | 159.2          | <b>70.0</b> | 97.7                  | 169.9                 | 129.2                | 18/79   |
| <b>RAROTONGA</b>              | 244.4            | 113.6          | <b>77.7</b> | 68.0                  | 114.7                 | 94.5                 | 46/119  |
|                               |                  |                |             |                       |                       |                      |         |
|                               |                  |                |             |                       |                       |                      |         |
|                               |                  |                |             |                       |                       |                      |         |

### TABLE 2: Three-monthly Rainfall April to June 2017

[Please note that the data used in this verification should be sourced from table 3 of OCOF #114]

| 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?) |
|------------------|-------------------|-----------------------|-----------------------|----------------------|---------|---------------------------------|--|
| <b>PENRHYN</b>   | <b>518.2</b>      | 315.0                 | 526.0                 | 383.0                | 50/77   | <b>38/37/25</b><br>13.9%        | Near-consistent  |
| <b>RAROTONGA</b> | <b>435.7</b>      | 373.0                 | 485.0                 | 423.5                | 64/119  | <b>28/35/37</b><br>6.0%         | Near-consistent  |
|                  |                   |                       |                       |                      |         |                                 |  |
|                  |                   |                       |                       |                      |         |                                 |  |
|                  |                   |                       |                       |                      |         |                                 |  |

Period: \*below normal/normal/above normal

Predictors and Period used for April 2017 to June 2017 Outlooks (refer to OCOF #114):

#### NINO3.4 SST Anomalies Dec 2016 – Feb 2017

\* 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 August to October 2017**

Predictors and Period used: NINO3.4 SST Anomalies April – June 2017

| Station   | Below Median (prob) | Median Rainfall (mm) | Above Median (prob) |  | LEPS  | Hit-rate |
|-----------|---------------------|----------------------|---------------------|--|-------|----------|
| PENRHYN   | 26                  | 355.4                | 74                  |  | 14.2% | 61.5%    |
| RAROTONGA | 52                  | 337.5                | 48                  |  | -1.4% | 55.2%    |

| Station   | Below Normal (prob) | 33%ile rainfall (mm) | Normal (prob) | 66%ile rainfall (mm) | Above Normal (prob) | LEPS | Hit-rate |
|-----------|---------------------|----------------------|---------------|----------------------|---------------------|------|----------|
| PENRHYN   | 20                  | 292.3                | 25            | 439.3                | 55                  | 8.8% | 44.6%    |
| RAROTONGA | 46                  | 273.0                | 19            | 394.0                | 35                  | 0.9% | 49.3%    |

**TABLE 4: Seasonal Climate Outlooks using POAMA2 for August to October 2017**

| Station   | Lower Tercile (prob) | 33%ile rainfall (mm) | Middle Tercile (prob) | 66%ile rainfall (mm) | Upper Tercile (prob) |  |  |
|-----------|----------------------|----------------------|-----------------------|----------------------|----------------------|--|--|
| PENRHYN   | 21                   | 308                  | 55                    | 473                  | 24                   |  |  |
| RAROTONGA | 46                   | 251                  | 18                    | 372                  | 36                   |  |  |

## **Summary Statements**

### **Rainfall for June 2017:**

During the month of June Penrhyn recorded below normal rainfall amounts, while Rarotonga recorded normal amounts of rainfall.

### **Accumulated rainfall for April to June 2017, including outlook verification:**

Accumulated rainfall for the period of April through to the end of June 2017 was normal for both Penrhyn and Rarotonga stations.

SCOPIC outlook verification for the past three months was near-consistent for both Penrhyn and Rarotonga stations. Skill or confidence in the forecast was good for Penrhyn and just moderate for Rarotonga.

### **Outlooks for August to October 2017:**

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

Rainfall forecast for the upcoming months of July to September 2017 favours above normal at Penrhyn with normal being the next most likely to occur. Meanwhile Rarotonga's outlook shows below normal is the most likely category, with above normal being the next most likely; normal is the least likely to occur.

Confidence in the outlook is just moderate at Penrhyn and very low at Rarotonga.

#### **2. POAMA:**

Outlook from POAMA indicates normal rainfall for Penrhyn as the most likely, while below normal rainfall is the most likely for Rarotonga.

**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:  $X \geq 35$