

Pacific Islands - Online Climate Outlook Forum (OCOF) No. 156

Country: Tonga

TABLE 1: Monthly Rainfall

Station (include data period)	Jun-2020	Jul-2020	Aug-2020				Rank
			Total (mm)	33%tile	67%tile	Median	
	Total (mm)	Total (mm)	Rainfall (mm)				
Northern Division							
Niuafu'ou (1971-2020)	222.0	115.0	101.1	63.0	126.5	86.0	28/48
Niuatoputapu (1947-2020)	183.7	168.6	267.9	53.0	102.3	73.3	71/73
Southern Division							
Vava'u (1947-2020)	72.3	84.5	57.2	62.0	127.0	87.5	22/74
Ha'apai (1947-2020)	118.3	135.0	118.8	59.1	116.0	77.0	52/74
Southern Division							
Fua'amotu (1979-2020)	113.7	271.8	126.0	67.0	140.7	92.5	26/41
Nuku'alofa (1944-2020)	52.0	231.5	163.0	59.0	137.0	100.0	61/76

TABLE 2: Three-month Rainfall for June to August 2020

Station	Three-month Total		33%tile	67%tile	Median	Rank	SCOPIC forecast probabilities based on NINO3.4 March-April 2020				Verification: Consistent, Near-consistent, Inconsistent?
	Rainfall (mm)						B-N	N	A-N	LEPS	
<i>Northern Division</i>											
Niuafu'ou (1971-2020)	438.1	Above normal	274.9	415.0	348.5	34/45	35	26	39	-2	Consistent
Niutoputapu (1947-2020)	620.2	Above normal	239.7	360.3	313.0	69/73	39	27	34	-1	Inconsistent
<i>Central Division</i>											
Vava'u (1947-2020)	214.0	Below normal	251.0	354.0	309.5	17/74	37	28	35	-1	Consistent
Ha'apai (1947-2020)	372.1	Above normal	195.0	306.2	276.5	61/74	34	37	29	-1	Near-consistent
<i>Southern Division</i>											
Fua'amotu (1979-2020)	511.5	Above normal	271.1	401.0	351.0	36/41	33	31	36	-3	Consistent
Nuku'alofa (1944-2020)	446.5	Above normal	236.0	374.9	298.1	65/76	30	34	36	-1	Consistent

TABLE 3: Seasonal Climate Outlooks using SCOPIC for October to December 2020

Predictor and Period used: NINO3.4 for July to August 2020

Station	Below Median (prob)	Median Rainfall (mm)	Above Median (prob)		LEPS (%) [whole numbers]	Hit-rate (%) [whole numbers]
<i>Northern Division</i>						
Niuafo'ou (1971-2020)	45	711.0	55		3	51
Niuaatoputapu (1947-2020)	43	619.0	57		14	63
<i>Central Division</i>						
Vava'u (1947-2020)	42	499.5	58		19	69
Ha'apai (1947-2020)	42	336.0	58		19	66
<i>Southern Division</i>						
Fua'amotu (1979-2020)	40	371.5	60		10	58
Nuku'alofa (1944-2020)	40	346.3	60		22	71

Station	Below Normal (prob)	33%ile Rainfall (mm)	Normal (prob)	67%ile Rainfall (mm)	Above Normal (prob)	LEPS (%) [whole numbers]	Hit-rate (%) [whole numbers]
<i>Northern Division</i>							
Niuafo'ou (1971-2020)	30	638.7	34	855.0	36	1	31
Niuaatoputapu (1947-2020)	30	533.0	33	742.7	37	6	42
<i>Central Division</i>							
Vava'u (1947-2020)	26	378.0	36	613.0	38	20	53
Ha'apai (1947-2020)	26	246.0	36	421.0	38	18	54
<i>Southern Division</i>							
Fua'amotu (1979-2020)	8	309.0	45	444.7	47	26	60
Nuku'alofa (1944-2020)	17	281.0	43	421.0	40	29	54

Table 4: Monthly and Seasonal Climate Outlooks using ACCESS-S for October to December 2020

<p>Monthly rainfall</p> <p><i>Insert map</i></p> <p>Tercile rainfall probabilities for October 2020</p> <p>Model: ACCESS-S1 Base period: 1990-2012 Model run: 31/08/2020 Issued: 03/09/2020</p>	<p>Seasonal rainfall</p> <p><i>Insert map</i></p> <p>Tercile rainfall probabilities for October to December 2020</p> <p>Model: ACCESS-S1 Base period: 1990-2012 Model run: 31/08/2020 Issued: 03/09/2020</p>
<p>Monthly Tmax</p> <p><i>Insert map</i></p> <p>Tercile maximum temperature probabilities for October 2020</p> <p>Model: ACCESS-S1 Base period: 1990-2012 Model run: 31/08/2020 Issued: 03/09/2020</p>	<p>Seasonal Tmax</p> <p><i>Insert map</i></p> <p>Tercile maximum temperature probabilities for October to December 2020</p> <p>Model: ACCESS-S1 Base period: 1990-2012 Model run: 31/08/2020 Issued: 03/09/2020</p>
<p>Monthly Tmin</p> <p><i>Insert map</i></p> <p>Tercile minimum temperature probabilities for October 2020</p> <p>Model: ACCESS-S1 Base period: 1990-2012 Model run: 31/08/2020 Issued: 03/09/2020</p>	<p>Seasonal Tmin</p> <p><i>Insert map</i></p> <p>Tercile minimum temperature probabilities for October to December 2020</p> <p>Model: ACCESS-S1 Base period: 1990-2012 Model run: 31/08/2020 Issued: 03/09/2020</p>

Summary Statements

Rainfall for August 2020:

Below normal rainfall was recorded in Vava'u, Niuafu'ou and Fua'amotu recorded normal rainfall, and above normal rainfall occurred over the rest of the group.

Niutoputapu recorded its third wettest August on record.

Accumulated rainfall for June to August 2020, including outlook verification:

Rainfall was below normal for Vava'u, while above normal was recorded over the rest of country. Niutoputapu recorded its fifth wettest and Fua'amotu recorded its sixth wettest June-August period on record.

The verification of the outlook issued in May was Near-consistent for Ha'apai, Inconsistent for Niutoputapu and Consistent at the remaining four sites in Tonga.

Outlooks for October to December 2020:

1. SCOPIC:

Central and Southern Divisions: The outlook for season shows a near-equal likelihood of above normal and normal rainfall. Below normal is the least likely.

Northern Division: The outlook offers little guidance as the chances of above normal, normal and below normal rainfall are similar.

2. ACCESS-S:

Monthly rainfall:

Above normal rainfall is favoured in October for all the main island groups in Tonga.

Monthly maximum and minimum temperatures:

Above normal October temperatures are favoured across the country.

Seasonal rainfall:

Above normal rainfall is favoured for October to December across the country.

Seasonal maximum and minimum temperature:

Above normal October to December temperatures are favoured across 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: $X \geq 35$

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

Product	Date: August 2020	Stakeholder	Total Number of Participants	Number of male	Number of female
Climate Bulletin	03/08/2020	General public	132	66	34
EAR Watch					
Monthly Climate Briefing					
Ocean Bulletin	03/08/2020	General public	132	66	34
Total			132		