

Pacific Islands - Online Climate Outlook Forum (OCOF) No. 159

Country: Tonga

TABLE 1: Monthly Rainfall

Station (include data period)	Sep-2020	Oct-2020	Nov-2020				Rank
			Total (mm)	33%tile	67%tile	Median	
	Total (mm)	Total (mm)	Rainfall (mm)				
Northern Division							
Niuafu'ou (1971-2020)	178.9	399.0	130.9	174.6	272.6	236.6	11/47
Niuaatoputapu (1947-2020)	235.1	374.7	183.1	137.0	248.0	183.0	37/71
Central Division							
Vava'u (1947-2020)	175.8	265.6	380.9	79.1	169.0	117.9	69/74
Ha'apai (1947-2020)	302.0	315.6	48.3	63.2	134.0	88.5	22/74
Southern Division							
Fua'amotu (1979-2020)	111.5	243.5	58.8	44.0	136.0	102.5	16/41
Nuku'alofa (1944-2020)	145.0	184.0	61.5	48.0	133.0	80.5	32/77

TABLE 2: Three-month Rainfall for September to November 2020

Station	Three-month Total		33%tile	67%tile	Median	Rank	SCOPIC forecast probabilities based on NINO3.4 June-July 2020				Verification: Consistent, Near-consistent, Inconsistent?
	Rainfall (mm)						B-N	N	A-N	LEPS	
<i>Northern Division</i>											
Niuafu'ou (1971-2020)	708.8	Above normal	451.0	639.0	561.5	35/47	29	36	35	5	Near-consistent
Niuatoputapu (1947-2020)	792.9	Above normal	394.0	560.0	463.0	63/71	33	34	33	10	Near-consistent
<i>Central Division</i>											
Vava'u (1947-2020)	822.3	Above normal	364.0	525.0	421.5	72/74	33	35	32	14	Near-consistent
Ha'apai (1947-2020)	665.9	Above normal	225.0	384.0	295.0	70/74	32	34	34	5	Near-consistent
<i>Southern Division</i>											
Fua'amotu (1979-2020)	413.8	Above normal	245.5	402.4	315.0	29/41	28	34	38	8	Consistent
Nuku'alofa (1944-2020)	390.5	Normal	238.0	423.0	354.4	46/76	28	39	33	20	Consistent

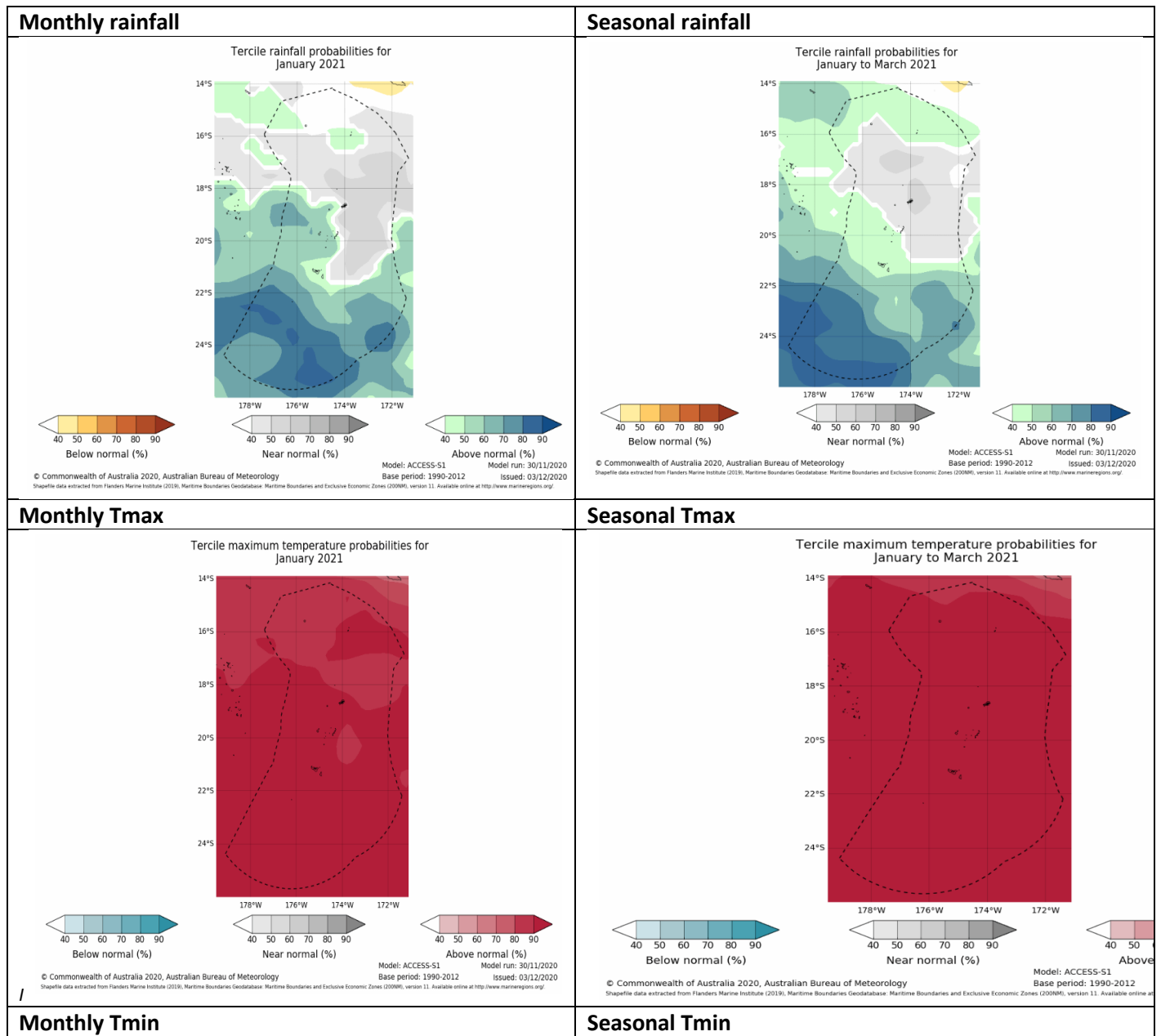
TABLE 3: Seasonal Climate Outlooks using SCOPIC for January to March 2021

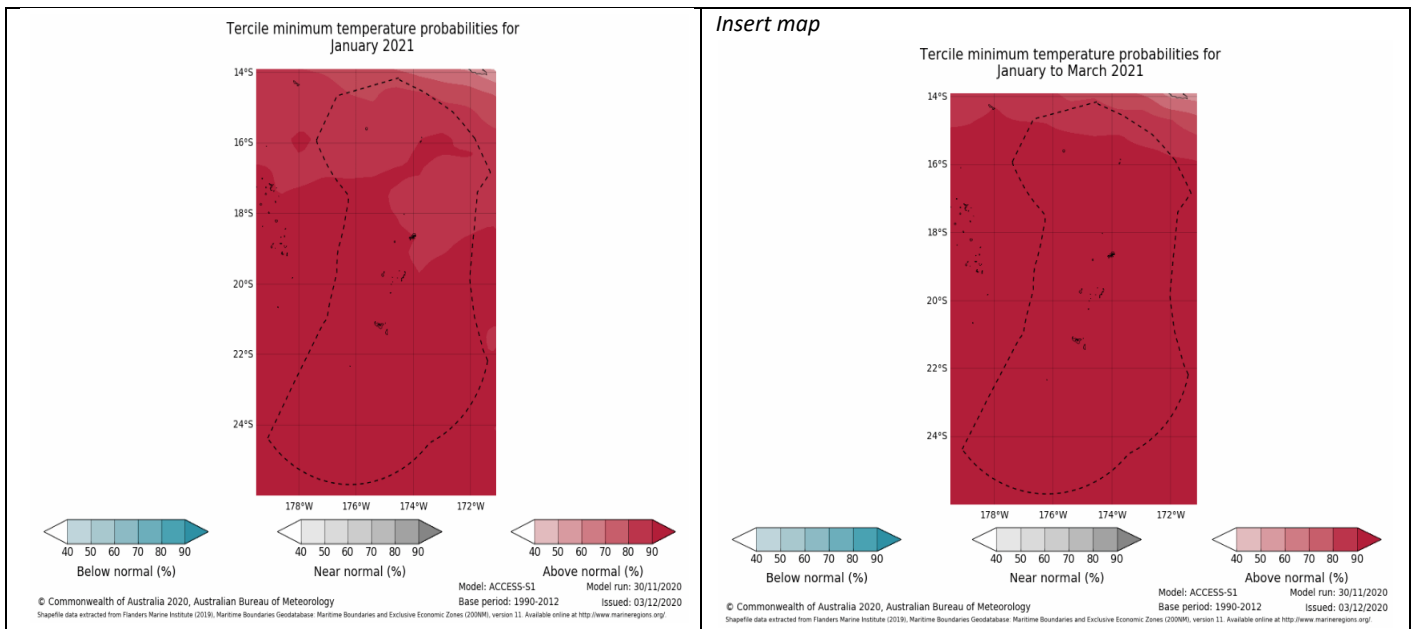
Predictor and Period used: NINO3.4 for October to November 2020

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)	34	893.5	66		6	59
Niuaotoputapu (1947-2020)	28	803.8	72		15	71
<i>Central Division</i>						
Vava'u (1947-2020)	35	854.3	65		6	59
Ha'apai (1947-2020)	27	642.0	73		15	61
<i>Southern Division</i>						
Fua'amotu (1979-2020)	17	676.0	83		29	73
Nuku'alofa (1944-2020)	21	671.0	79		23	67

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)	14	719.0	44	959.3	42	6	46
Niuaotoputapu (1947-2020)	13	641.1	27	925.0	60	20	56
<i>Central Division</i>							
Vava'u (1947-2020)	21	720.3	33	927.1	46	6	43
Ha'apai (1947-2020)	12	563.3	35	784.0	53	17	50
<i>Southern Division</i>							
Fua'amotu (1979-2020)	8	471.6	20	785.7	72	26	54
Nuku'alofa (1944-2020)	17	518.0	30	838.0	53	12	44

TABLE 4: Monthly and Seasonal Climate Outlooks using ACCESS-S for January to March 2021





Summary Statements

Rainfall for November 2020:

Above normal rainfall occurred in Vava'u while average rainfall occurred in Fua'amotu, Nuku'alofa and Niuatoputapu. Below normal rainfall occurred in Niufo'ou and Ha'apai. Vava'u had its sixth wettest November in 74 years of record.

Accumulated rainfall for September to November 2020, including outlook verification:

Mostly above normal rainfall occurred across the country for the September to November period. Vava'u had its third wettest September to November, while Ha'apai had its fifth wettest. Both sites have 74 years of record.

Outlooks for January to March 2021:

1. SCOPIC:

Niuatoputapu, Southern and Central Divisions: The outlook for the season shows above normal as the favoured or most likely outcome, with normal the next most likely.

Niufo'ou: The outlook for the season shows a near-equal likelihood of above normal or normal rainfall. Below normal is the least likely.

2. ACCESS-S:

Monthly rainfall:

Above normal rainfall is favoured for **January 2021** across most of the south and west of the country, including Nuku'alofa, Fua'amotu and Ha'apai, as well as at Niuatoputapu in the north. Near-normal rainfall is the most likely at Vava'u, and there's little guidance for Niufo'ou.

Monthly maximum and minimum temperatures:

Above normal temperatures are favoured across the country for January 2021.

Seasonal rainfall:

Above normal to normal rainfall is favoured in **January to March** 2021 for most of the country: Above normal – Southern Division and Niuatoputapu; Normal – Central Division and Niuafo’ou.

Seasonal maximum and minimum temperatures:

Above normal temperatures are favoured across the country for January to March 2021.

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: November 2020	Stakeholder	Total Number of Participants	Number of male	Number of female
Climate Bulletin	27/11/2020	General public	132	66	34
EAR Watch					
Monthly Climate Briefing					
Ocean Bulletin		General public			
Total			132		