Pacific Islands - Online Climate Outlook Forum (OCOF) No. 158

Country: Tonga

TABLE 1: Monthly Rainfall

Station (include data period)	Aug-2020	Sep-2020	Oct-2020				
			Total (mm)	33%tile	67%tile	Median	Rank
	Total (mm)	Total (mm)	Rainfall (mm)				
Northern Division							
Niuafo'ou (1971-2020)	101.1	178.9	399.0	140.7	198.0	172.9	43/48
Niuatoputapu (1947-2020)	267.9	235.1	374.7	119.0	212.0	167.0	**64/71**
Central Division							
Vava'u (1947-2020)	57.2	175.8	265.6	99.0	181.0	139.3	66/74
Ha'apai (1947-2020)	118.8	302.0	315.6	50.0	123.0	94.8	**71/74**
Southern Division							
Fua'amotu (1979-2020)	126.0	111.5	243.5	54.0	115.9	79.3	**38/41**
Nuku'alofa (1944-2020)	163.0	145.0	184.0	60.0	129.0	96.5	65/77

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

Station	Three-month Total		33%tile	67%tile	Median	Rank	SCOPIC forecast probabilities based on NINO3.4 May-June 2020				Verification: Consistent, Near-consistent, Inconsistent?
	Rainfall (mm)						B-N	N	A-N	LEPS	
Northern Division											
Niuafo'ou (1971-2020)	679.0	Above normal	323.0	475.7	407.9	40/48	33	34	33	-2	Near-consistent
Niuatoputapu (1947-2020)	877.7	Above normal	277.0	513.4	340.0	**69/71**	32	**34**	**34**	2	Near-consistent
Central Division											
Vava'u (1947-2020)	498.6	Above normal	330.0	473.8	400.0	56/74	33	33	34	-1	Near-consistent
Ha'apai (1947-2020)	736.4	Above normal	236.0	355.0	284.5	**73/74**	33	33	34	4	Near-consistent
Southern Division											
Fua'amotu (1979-2020)	481.0	Above normal	280.0	402.7	353.0	33/41	34	33	33	-3	Near-consistent
Nuku'alofa (1944-2020)	492.0	Above normal	267.4	399.3	342.5	64/76	33	33	34	1	Near-consistent

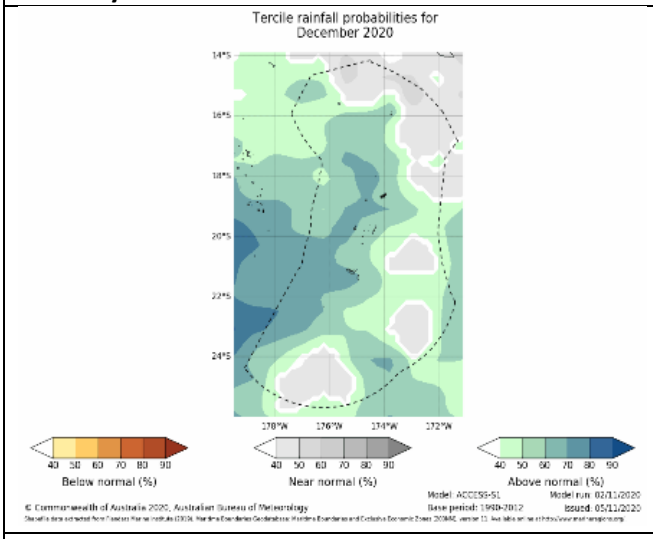
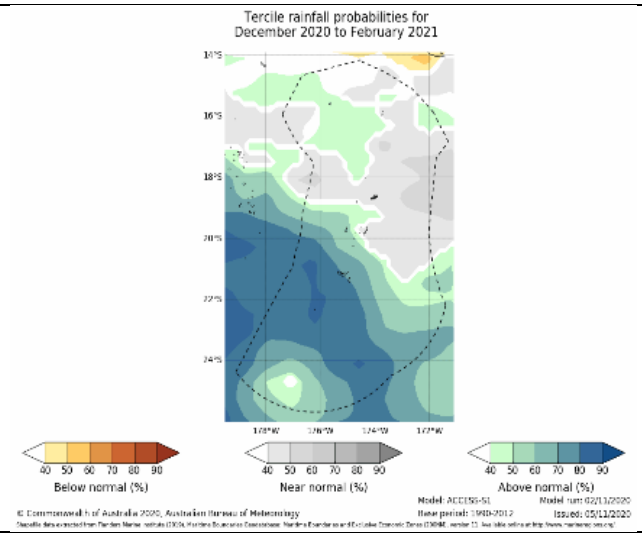
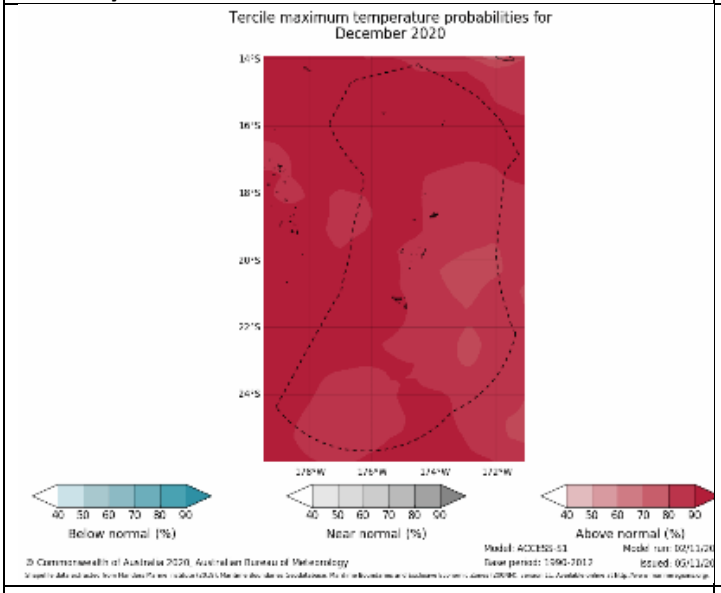
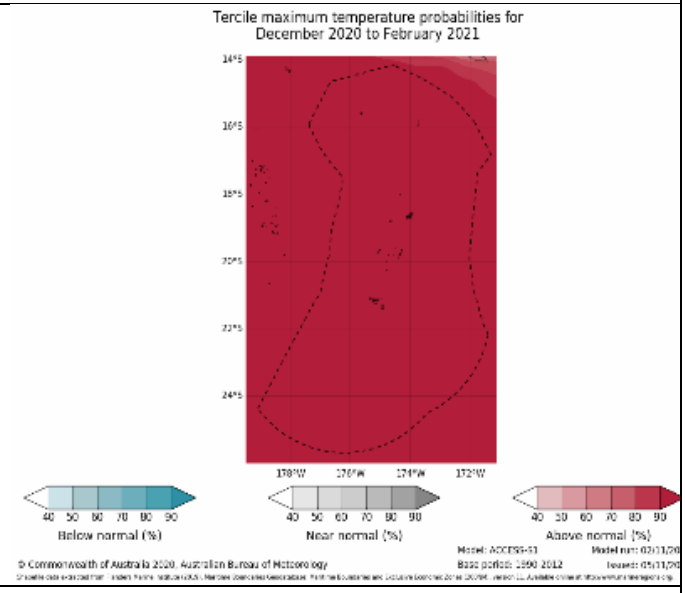
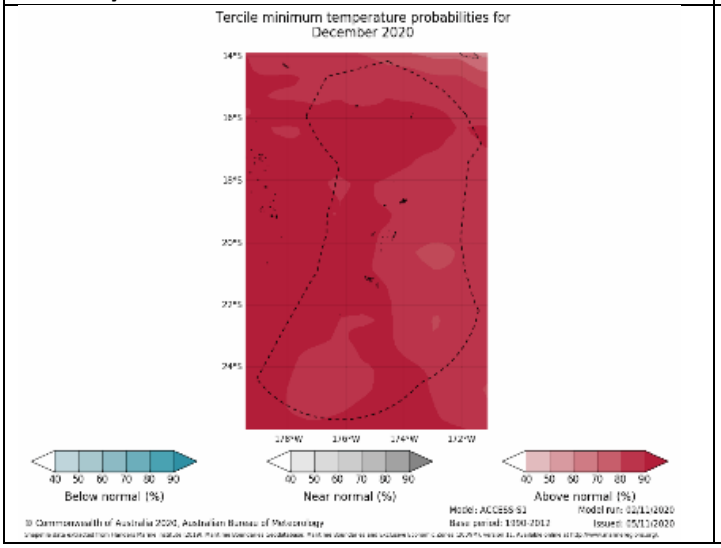
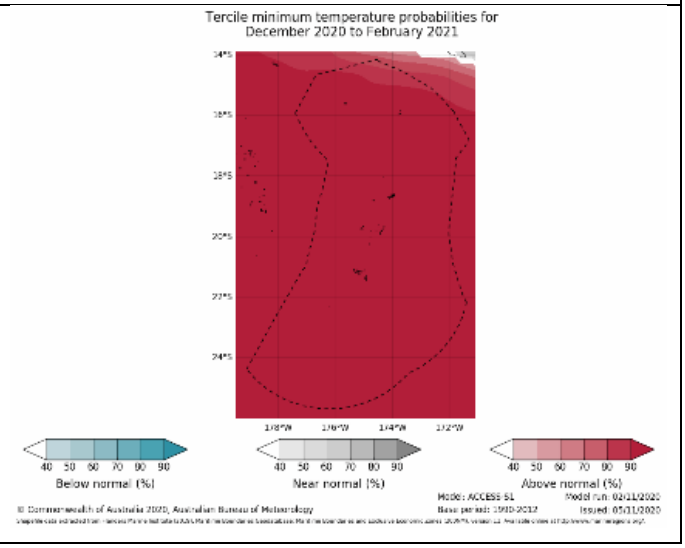
TABLE 3: Seasonal Climate Outlooks using SCOPIC for December 2020 to February 2021

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

Station	Below Median (prob)	Median Rainfall (mm)	Above Median (prob)		LEPS (%) [whole numbers]	Hit-rate (%) [whole numbers]
Northern Division						
Niuafo'ou (1971-2020)	36	845.0	64		5	61
Niuatoputapu (1947-2020)	34	733.0	66		9	68
Central Division						
Vava'u (1947-2020)	33	735.6	67		12	67
Ha'apai (1947-2020)	20	573.2	80		30	76
Southern Division						
Fua'amotu (1979-2020)	17	612.4	83		27	70
Nuku'alofa (1944-2020)	21	553.0	79		28	70

Station	Below Normal (prob)	33%ile Rainfall (mm)	Normal (prob)	67%ile Rainfall (mm)	Above Normal (prob)	LEPS (%) [whole numbers]	Hit-rate (%) [whole numbers]
Northern Division							
Niuafo'ou (1971-2020)	15	722.0	46	951.0	39	3	44
Niuatoputapu (1947-2020)	10	633.0	45	897.0	45	18	43
Central Division							
Vava'u (1947-2020)	17	615.0	27	886.8	56	18	57
Ha'apai (1947-2020)	10	435.0	38	674.0	52	20	53
Southern Division							
Fua'amotu (1979-2020)	12	426.0	21	806.5	67	22	55
Nuku'alofa (1944-2020)	12	445.0	29	725.0	59	27	54

TABLE 4: Monthly and Seasonal Climate Outlooks using ACCESS-S for December 2020 to February 2021

Monthly rainfall	Seasonal rainfall
	
Monthly Tmax	**Seasonal Tmax**
	
Monthly Tmin	**Seasonal Tmin**
	

Summary Statements

Rainfall for October 2020:

Above normal rainfall occurred over the country.

Ha'apai and Fua'amotu recorded their fourth wettest October on record.

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

Rainfall was above normal across the country for August to October. Ha'apai recorded its second wettest and Niuatoputapu recorded its third wettest August-October period on record.

The verification of the outlook was Near-consistent for all stations.

Outlooks for December 2020 February 2021:

1. SCOPIC:

Central and Southern Divisions: The outlook favours above normal with normal the next most likely.

Niuafo'ou: The Outlook for season shows normal as the most likely outcome, with above normal the next mostly likely; below normal is the least likely.

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

2.ACCESS-S:

Monthly rainfall:

Above normal rainfall is favoured for December across most of the country.

Monthly maximum and minimum temperatures:

Above normal temperatures are favoured across the country for December.

Seasonal rainfall:

Above normal rainfall is favoured in December 2020 to February 2021 for Tongatapu, and it's the most likely outcome for Niuafo'ou. Near-normal rainfall is the most likely outcome for Ha'apai, Vava'u and Niuatoputapu.

Seasonal maximum and minimum temperatures:

Above normal temperatures are favoured across the country for December 2020 to February 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: October 2020	Stakeholder	Total Number of Participants	Number of male	Number of female
Climate Bulletin					
EAR Watch					
Monthly Climate Briefing					
Ocean Bulletin					
		Total			