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

Country: Tuvalu

TABLE 1: Monthly Rainfall

Station (include data period)	Sep-2020	Oct-2020	Nov-2020				
			Total (mm)	33%tile	67%tile	Median	Rank
	Total (mm)	Total (mm)	Rainfall (mm)				
Nanumea (1941-2020)	119.7	45.4	64.4	102.7	206.5	154.0	16/79
Nui (1946-2020)	119.9	142.3	164.1	191.6	271.6	231.1	20/75
Funafuti (1933-2020)	217.9	270.8	143.5	207.4	314.5	247.0	13/88
Niulakita (1953-2020)	328.2	199.2	271.4	215.1	323.2	281.8	32/67

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

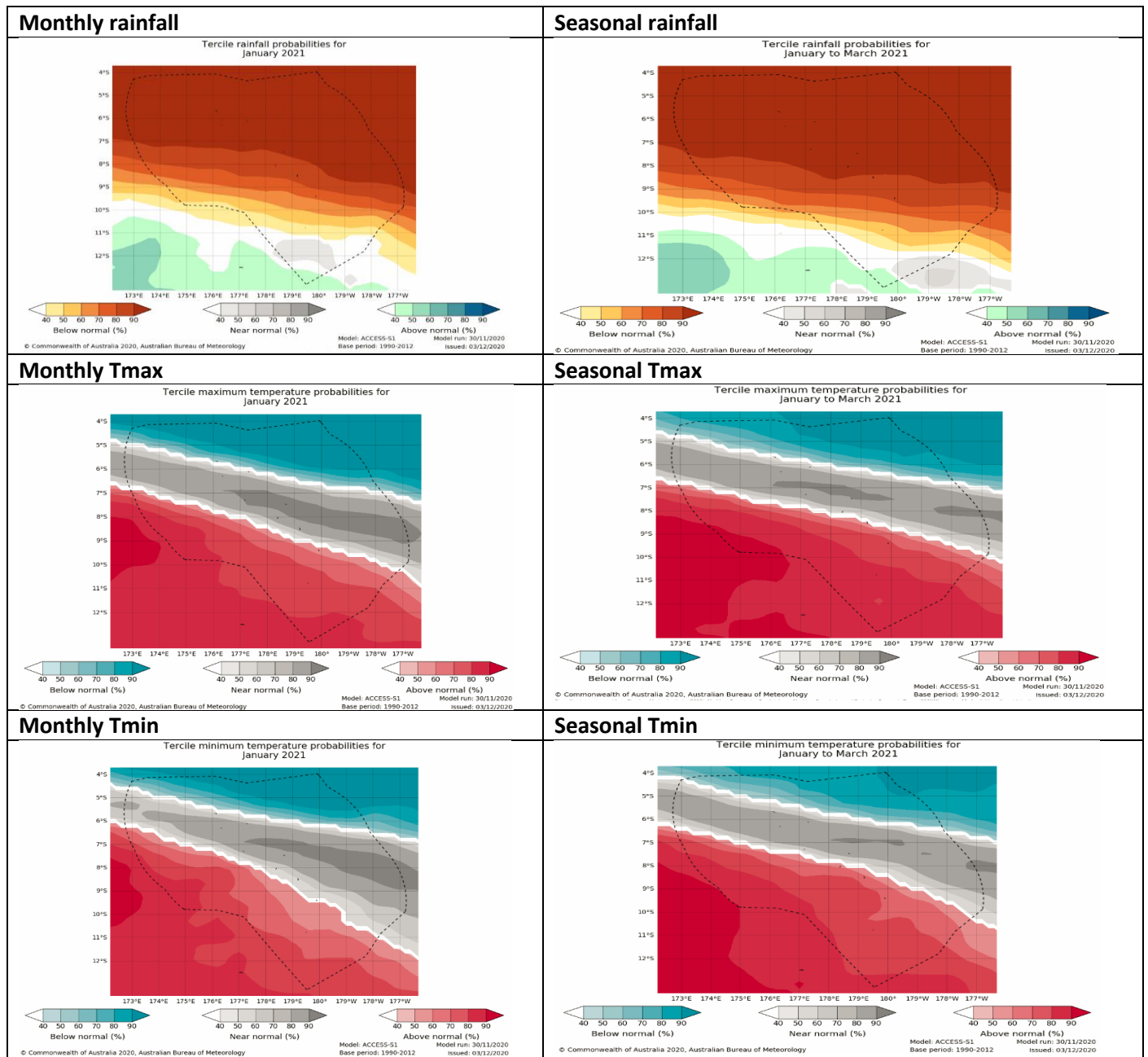| Station	Three-month Total		33%tile	67%tile	Median	Rank	SCOPIC forecast probabilities based on NINO3.4 June-July 2020				Verification: Consistent, Near-consistent, Inconsistent?
	Rainfall (mm)						B-N	N	A-N	LEPS	
Nanumea (1941-2020)	229.5	Below normal	325.0	634.3	470.7	18/79	33	42	25	30	Near-consistent
Nui (1946-2020)	426.3	Below normal	486.3	726.0	597.5	17/75	33	38	29	17	Near-consistent
Funafuti (1933-2020)	632.2	Below normal	636.2	843.2	739.2	30/88	33	36	31	13	Near-consistent
Niulakita (1953-2020)	798.8	Normal	612.1	833.8	708.0	42/67	34	33	33	-2	Near-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]
Nanumea (1941-2020)	91	955.1	9		30	73
Nui (1946-2020)	72	982.5	28		20	70
Funafuti (1933-2020)	67	1069.4	33		13	68
Niulakita (1953-2020)	41	1076.9	59		-2	39

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 (1941-2020)	68	729.6	28	1131.6	4	35	55
Nui (1946-2020)	44	838.0	38	1095.2	27	5	52
Funafuti (1933-2020)	49	930.5	36	1173.4	30	7	51
Niulakita (1953-2020)	31	947.9	26	1164.9	43	0	40

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

Monthly rainfall	Seasonal rainfall
Tercile rainfall probabilities for January 2021	Tercile rainfall probabilities for January to March 2021
Monthly Tmax	**Seasonal Tmax**
Tercile maximum temperature probabilities for January 2021	Tercile maximum temperature probabilities for January to March 2021
Monthly Tmin	**Seasonal Tmin**
Tercile minimum temperature probabilities for January 2021	Tercile minimum temperature probabilities for January to March 2021

Monthly rainfall:
Below normal (%) 40 50 60 70 80 90
Near normal (%) 40 50 60 70 80 90
Above normal (%) 40 50 60 70 80 90
© Commonwealth of Australia 2020, Australian Bureau of Meteorology
Model: ACCESS-S1   Model run: 30/11/2020
Base period: 1990-2012   Issued: 03/12/2020

Seasonal rainfall:
Below normal (%) 40 50 60 70 80 90
Near normal (%) 40 50 60 70 80 90
Above normal (%) 40 50 60 70 80 90
© Commonwealth of Australia 2020, Australian Bureau of Meteorology
Model: ACCESS-S1   Model run: 30/11/2020
Base period: 1990-2012   Issued: 03/12/2020

Monthly Tmax:
Below normal (%) 40 50 60 70 80 90
Near normal (%) 40 50 60 70 80 90
Above normal (%) 40 50 60 70 80 90
© Commonwealth of Australia 2020, Australian Bureau of Meteorology
Model: ACCESS-S1   Model run: 30/11/2020
Base period: 1990-2012   Issued: 03/12/2020

Seasonal Tmax:
Below normal (%) 40 50 60 70 80 90
Near normal (%) 40 50 60 70 80 90
Above normal (%) 40 50 60 70 80 90
© Commonwealth of Australia 2020, Australian Bureau of Meteorology
Model: ACCESS-S1   Model run: 30/11/2020
Base period: 1990-2012   Issued: 03/12/2020

Monthly Tmin:
Below normal (%) 40 50 60 70 80 90
Near normal (%) 40 50 60 70 80 90
Above normal (%) 40 50 60 70 80 90
© Commonwealth of Australia 2020, Australian Bureau of Meteorology
Model: ACCESS-S1   Model run: 30/11/2020
Base period: 1990-2012   Issued: 03/12/2020

Seasonal Tmin:
Below normal (%) 40 50 60 70 80 90
Near normal (%) 40 50 60 70 80 90
Above normal (%) 40 50 60 70 80 90
© Commonwealth of Australia 2020, Australian Bureau of Meteorology
Model: ACCESS-S1   Model run: 30/11/2020
Base period: 1990-2012   Issued: 03/12/2020

Summary Statements

Rainfall for November 2020:

Nanumea, Nui and Funafuti observed below normal rainfall, with normal rainfall observed at Niulakita.

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

Below normal rainfall was observed at Nanumea, Nui and Funafuti, while Niulakita recorded normal rainfall. The outlook issued in August was verified as near-consistent at all sites.

Outlooks for January to March 2021:

1. **SCOPIC:**
   Nanumea: The outlook for the season favours below normal rainfall.

   Niu and Funafuti: The outlook shows below normal as the most likely outcome, with normal rainfall as the next most likely. Above normal rainfall is the least likely outcome.

   Niulakita: The outlook shows above normal rainfall as the most likely outcome, with below normal the next most likely. Normal rainfall is the least likely.

2. **ACCESS-S:**

   Monthly rainfall:

   The outlook for **January** favours below normal rainfall at Nanumea, Nui and Funafuti while below normal rainfall is also the most likely outcome at Niulakita.

   Monthly maximum and minimum temperatures:

   The outlook for maximum and minimum temperatures for January shows three bands aligned northwest-southeast favouring below normal (Nanumea maximum), near-normal (Nui and Funafuti - both maximum and minimum, plus Nanumea minimum), and above normal (Niulakita - both maximum and minimum).

   Seasonal rainfall:

   The outlook for **January to March** favours below normal rainfall at all sites. In the far south of the EEZ, the outlook indicates normal to above normal as the most likely outcomes.

   Seasonal maximum and minimum temperatures:

   As with the January outlook, the January to March outlook shows three different bands across the country. Normal temperatures are favoured at Nanumea, Nui and Funafuti, and above normal temperatures are favoured for Niulakita.

NB: The X LEPS % score has been categorised as follows:

Very Low: X < 0.0   Low: 0 ≤ X < 5   Moderate 5 ≤ X < 10   Good: 10 ≤ X < 15   High: 15≤ X < 25

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		Met staffs Disaster Members All civil servants and kaupule members	6 9	5 5	1 4
EAR Watch		Met staffs Disaster Members All civil servants and kaupule members	6 9	5 5	1 4
Monthly Climate Briefing		Met staffs Disaster Members All civil servants and kaupule members	6 9	5 5	1 4
Ocean Bulletin		Met staffs Disaster Members All civil servants and kaupule members	6 9	5 5	1 4
Total			**60**	**40**	**20**