

Pacific Islands - Online Climate Outlook Forum (OCOF) No. 160

Country: Cook Islands

TABLE 1: Monthly Rainfall

Station (include data period)	Oct-2020	Nov-2020	Dec-2020				
			Total (mm)	33%tile	67%tile	Median	Rank
	Total (mm)	Total (mm)	Rainfall (mm)				
Penrhyn (1937-2020)	75.2	38.6	13.0	113.0	247.8	190.8	2/83
Rarotonga (1899-2020)	101.7	78.7	76.8	135.0	252.0	211.0	23/122

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

Station	Three-month Total		33%tile	67%tile	Median	Rank	SCOPIC forecast probabilities based on NINO3.4 July-August 2020				Verification: Consistent, Near- consistent, Inconsistent?
	Rainfall (mm)						B-N	N	A-N	LEPS	
Penrhyn (1937-2020)	126.8	Below normal	372.4	634.3	492.0	3/82	38	40	22	24	Near-consistent
Rarotonga (1899-2020)	257.2	Below normal	358.0	528.7	459.5	14/122	24	38	38	16	Near-consistent

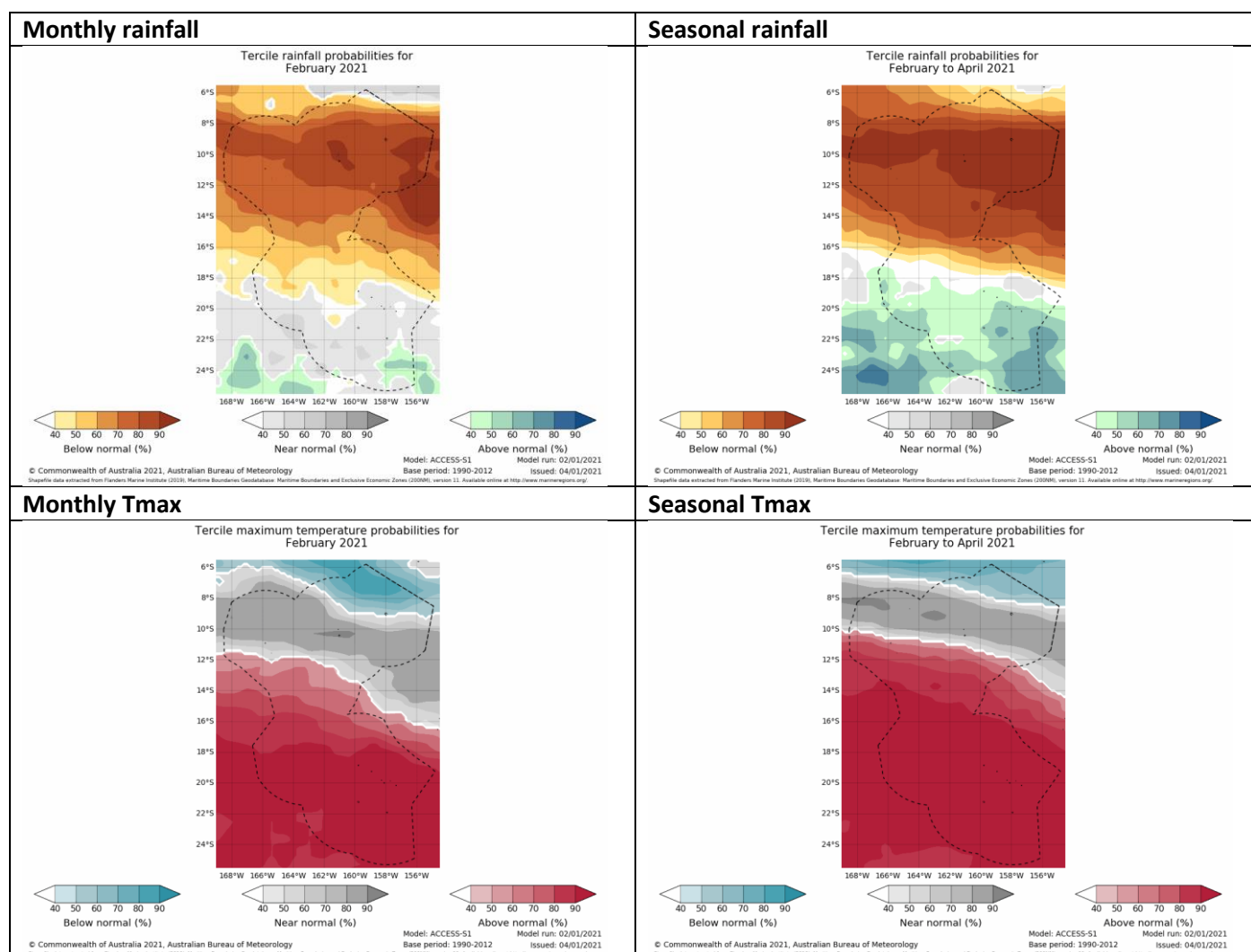
TABLE 3: Seasonal Climate Outlooks using SCOPIC for February to April 2021

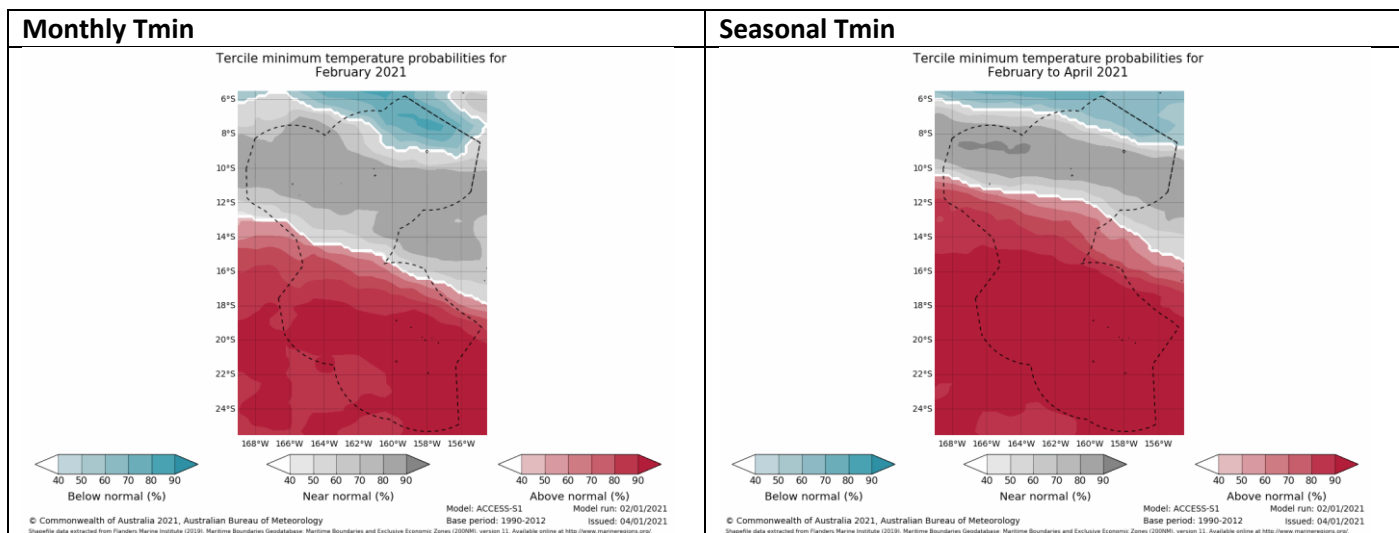
Predictor and Period used: NINO3.4 for November to December 2020

Station	Below Median (prob)	Median Rainfall (mm)	Above Median (prob)		LEPS (%) [whole numbers]	Hit-rate (%) [whole numbers]
Penrhyn (1937-2020)	69	584.4	31		15	68
Rarotonga (1899-2020)	37	630.0	63		4	59

Station	Below Normal (prob)	33%ile Rainfall (mm)	Normal (prob)	67%ile Rainfall (mm)	Above Normal (prob)	LEPS (%) [whole numbers]	Hit-rate (%) [whole numbers]
Penrhyn (1937-2020)	58	467.2	22	726.7	20	15	42
Rarotonga (1899-2020)	20	540.3	39	691.2	41	5	21

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





Summary Statements

Rainfall for December 2020:

Rainfall for December 2020 was below normal for both Rarotonga and Penrhyn stations. With only 13mm, Penrhyn had its second driest December on record, the driest being 1961 with a total of 11mm.

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

Rainfall was below normal for both Rarotonga and Penrhyn, with the outlook issued in September being verified as near-consistent at both.

Outlooks for February to April 2021:

1. SCOPIC:

The rainfall outlook for Penrhyn favours below normal rainfall. Rarotonga's outlook shows near-equal chances of above normal and normal rainfall; below normal is the least likely.

Forecast confidence is good for Penrhyn and moderate for Rarotonga.

2. ACCESS-S:

Monthly rainfall:

The February outlook for the Cook Islands favours below normal across the northern half of the country, including Penrhyn. Over the southern half of the country, the outlook mainly shows normal rainfall as the most likely, with a region favouring above normal rainfall in the far southeast of the EEZ. Rarotonga is situated in an area where normal rainfall is the most likely outcome.

Seasonal rainfall:

For the February - April 2021 period, the outlook also favours below normal rainfall over the northern Cook Islands, including Penrhyn, while above normal rainfall is the most likely across the southern half of the country, apart from some scattered areas of near-normal and little guidance over central areas. At Rarotonga, above normal rainfall is favoured.

Monthly maximum and minimum temperatures:

Over the central and southern Cook Islands, including Rarotonga, above normal maximum and minimum temperatures are favoured during February, but over the far northern Cook Islands, including at Penrhyn, below normal temperatures are most likely. A region where normal temperatures are favoured is situated in the central to northern part of the country.

Seasonal maximum and minimum temperatures:

The seasonal temperature outlook pattern is very similar to the monthly pattern: near normal temperatures are favoured at Penrhyn, while Rarotonga sits in a large area where above normal maximum and minimum temperatures are favoured for the coming three months. Near-normal temperatures are favoured in a broad region of the central to northern Cook Islands, while below normal temperatures are indicated in only the far north of the EEZ.

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: December 2020	Stakeholder	Total Number of Participants	Number of male	Number of female
Climate Bulletin		Ministry of Transport	30	20	10
EAR Watch		Cook Islands Govt.	Unknown	?	?
Monthly Climate Briefing					
Ocean Bulletin					
Total					