Pacific Islands - Ocean and Climate Outlook Forum (OCOF) No. 194

Country: Tonga

Part 1: Recent climate

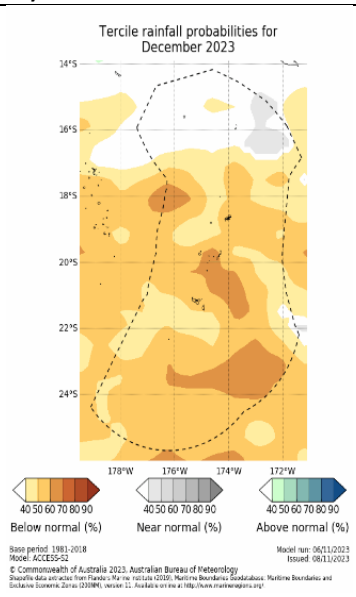
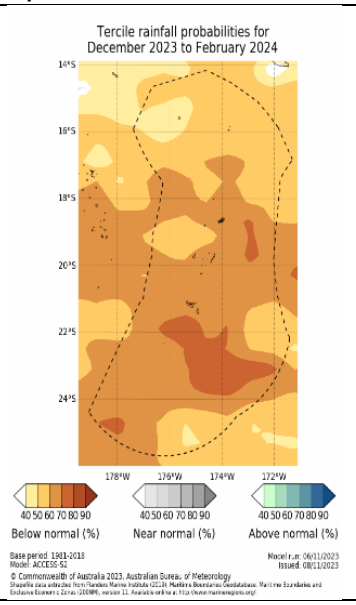
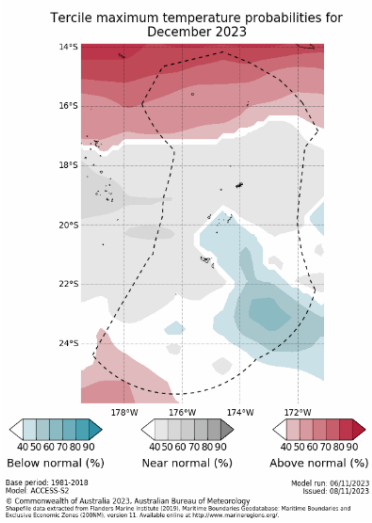
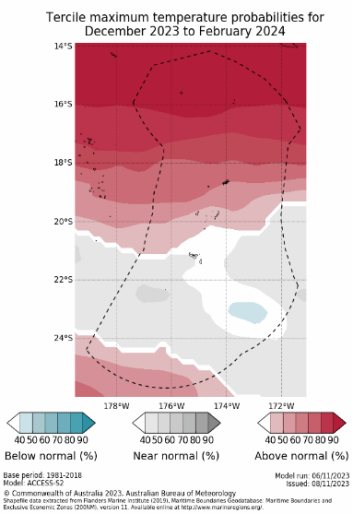
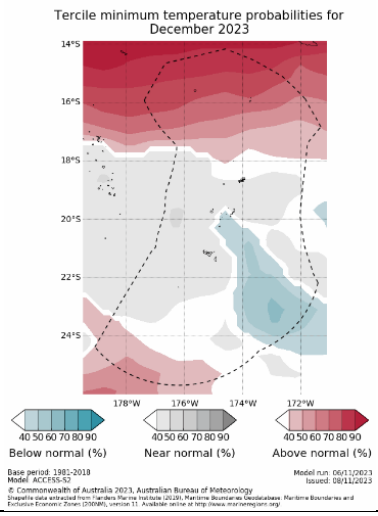
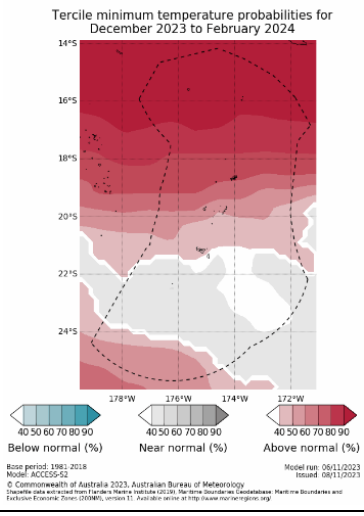
TABLE 1: Monthly Rainfall

Station (include data period)	Aug-2023	Sep-2023	Oct-2023				
			Total (mm)	33%tile	67%tile	Median	Rank
	Total (mm)	Total (mm)	Rainfall (mm)				
Northern Division							
Niuafo'ou (1971-2023)	153.2	6.7	69.5	137.0	198.0	165.0	10/51
Niuatoputapu (1947-2023)	169.0	20.6	84.0	119.0	221.0	170.5	16/74
Central Division							
Vava'u (1947-2023)	307.6	30.6	13.4	103.0	181.0	144.4	**3/77**
Ha'apai (1947-2023)	109.8	32.9	11.2	58.3	126.0	95.0	**7/77**
Southern Division							
Fua'amotu (1979-2023)	77.4	26.5	18.9	58.0	122.0	94.6	**1/44**
Nuku'alofa (1944-2023)	72.5	15.5	17.0	60.0	130.0	99.0	**3/79**

TABLE 2: Three-month Total Rainfall for August to October 2023

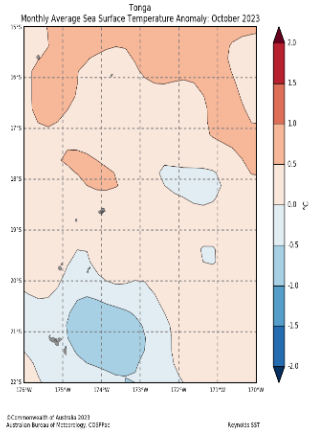
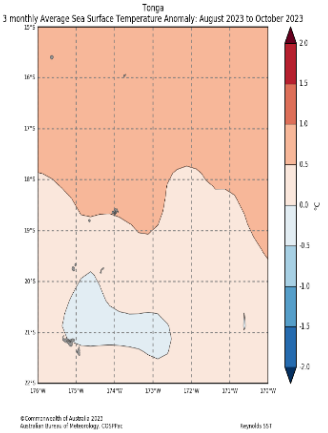
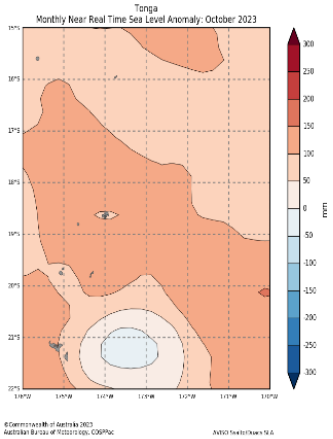
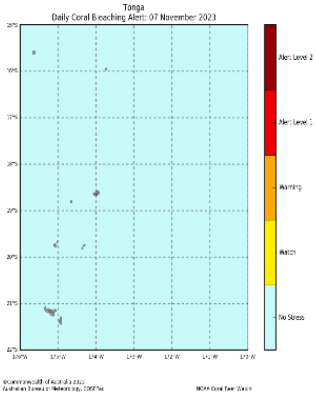
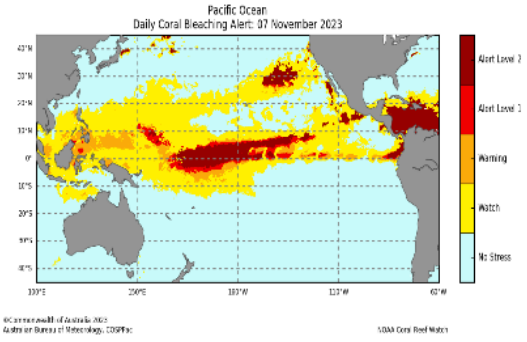
Station	Three-month Total		33%tile	67%tile	Median	Rank
	Rainfall (mm)					
Northern Division						
Niuafo'ou (1971-2023)	229.4	Below normal	315.0	479.0	407.9	8/50
Niuatoputapu (1947-2023)	273.6	Below normal	277.0	513.4	358.5	25/74
Central Division						
Vava'u (1947-2023)	351.6	Normal	330.0	475.0	401.0	29/77
Ha'apai (1947-2023)	153.9	Below normal	244.0	355.0	297.0	10/77
Southern Division						
Fua'amotu (1979-2023)	122.8	Below normal	280.0	402.7	359.0	**4/44**
Nuku'alofa (1944-2023)	105.0	Below normal	267.4	397.0	341.0	**4/79**

Part 1i. Monthly and Seasonal Outlooks for December and December 2023 to February 2024

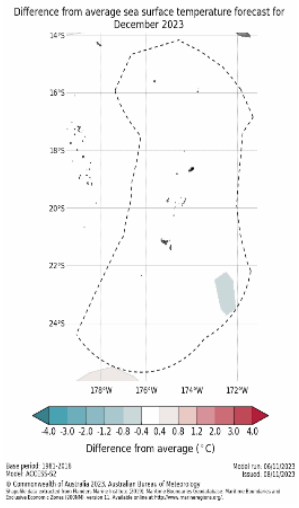
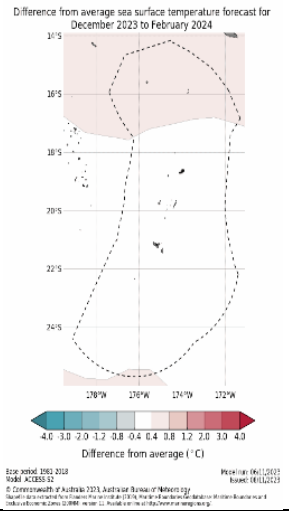
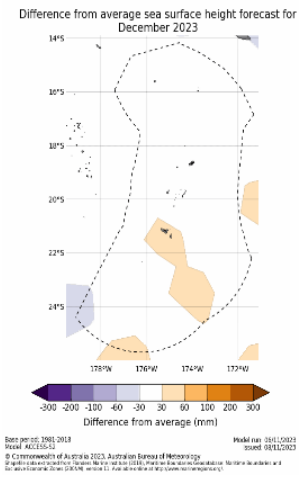
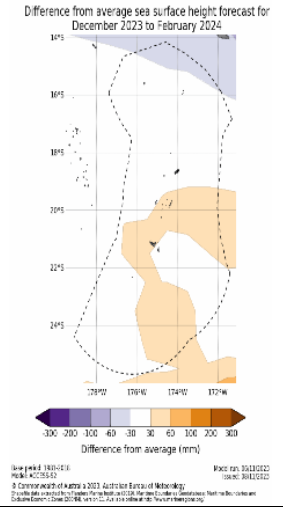
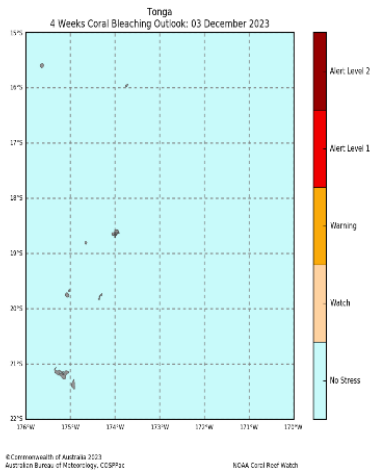
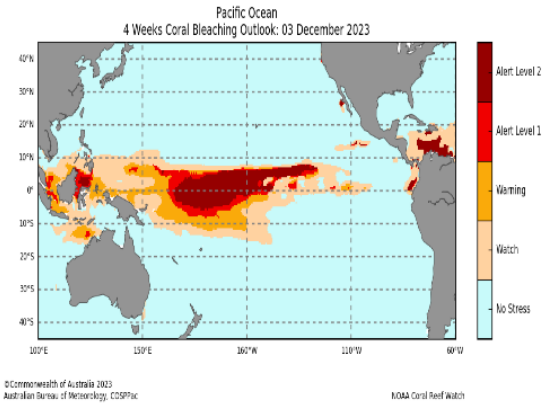
Monthly: December	Seasonal: December to February
Rainfall (Image 1)	**Rainfall (Image 2)**
	
Monthly Maximum temperature (Image 3):	**Seasonal maximum temperature (Image 4):**
	
Monthly minimum temperature (Image 5):	**Seasonal minimum temperature (Image 6):**
	

Part 2: Recent Ocean Observation

Monthly/Three months: October and August to October 2023

Monthly: October	**Last three months: August to October 2023:**
Sea Surface Temperature (Image 1):	**Sea Surface Temperature (Image 4):**
	
Sea level (Image 2):	
	
Daily coral bleaching alert (Image 3):	
	

Part 2i. Monthly and Seasonal Outlooks for December and December 2023 to February 2024

Monthly: December	Seasonal: December to February
Monthly sea surface temperature (Image 5):	**Seasonal sea surface temperature (Image 6):**
	
Monthly sea level (Image 7):	**Seasonal sea level (Image 8):**
	
4-week Coral Bleaching (Image 9):	
	

Summary Statement

Monthly and last three months: October 2023/August to October 2023 statement

October rainfall was well below normal across the country. Fua'amotu posted its lowest October rainfall in 44 years of record, and the fifth lowest of any month, the lowest being 4.0mm in January 1986. In addition, Vava'u and Nuku'alofa had their third lowest, and Ha'apai its seventh lowest October totals respectively.

For August to October, Vava'u recorded near-normal rainfall but rainfall was below normal for the rest of Tonga. Fua'amotu and Nuku'alofa had their fourth lowest August to October totals in 44 years and 79 years of record respectively.

Part 1i. Monthly and Seasonal Outlooks for December and December 2023 to February 2024

Monthly /Seasonal rainfall and temperature Outlook statements

The rainfall for December is likely to be below normal over Tonga's Central and Southern Divisions, but there's little guidance for the Northern Division.

The rainfall for December 2023 to February 2024 is likely or very likely to be below normal across the country.

Maximum and minimum temperatures during December are likely or very likely to be above normal over the Northern Division, below normal at Ha'apai, and near- normal at Vava'u, Nuku'alofa and Fua'amotu.

Maximum and minimum temperatures averaged over December 2023 to February 2024 are likely or very likely to be above normal over most of the main island groups, the main exception being around Tongatapu and 'Eua where maximum temperatures for the coming three months are likely to near-normal.

Part 2: Recent Ocean summary statement

Monthly and last three months: October 2023/August to October 2023

October ocean temperatures around Niuafo'ou and Niuatoputapu were near normal.

Averaged August to October ocean temperatures reveal that these two island were upmost 1.0°C above normal. The remaining parts of the country were near normal.

October sea levels around Tonga were 50mm to 150mm above normal.

Coral bleaching alert reveals no thermal stress for Tonga.

Part 2i. Monthly and Seasonal Outlooks for December and December to February 2024

Ocean Variable statement

December ocean temperatures around Tonga are predicted to be near normal. Averages over December to February, ocean temperatures around Niuafo'ou and Niuatoputapu are predicted to be 0.4 to 0.8°C above normal. The remaining parts are likely to be near normal.

December sea levels are likely to be near normal except for Tongatapu likely to be 30mm to 60mm above normal.

Averages over December to February sea levels are 30mm to 60mm above normal over Tongatapu and Ha'apai, with the remaining parts likely to be near normal.

Coral bleaching outlook predicts no thermal stress for the next four weeks.

TABLE 3: Stakeholder Engagement- Evaluations of how effective NMS engage with stakeholders

Product	Date: October 2023	Stakeholder	Total Number of Participants	Number of Male	Number of Female	Comments (If there are comments from you Stakeholders)
Climate Bulletin	3 October	Government ministries, NGOs, Media Private Sector.	155	118	37	
EAR Watch						
Monthly Climate Briefing						
Ocean Outlook	3 October	Government ministries, NGOs, Media Private Sector.	155	118	37	
Climate data request						
		Total	**310**	**236**	**74**	