Pacific Islands - Ocean and Climate Outlook Forum (OCOF) No. 186

Country: Tonga

Part 1: Recent climate

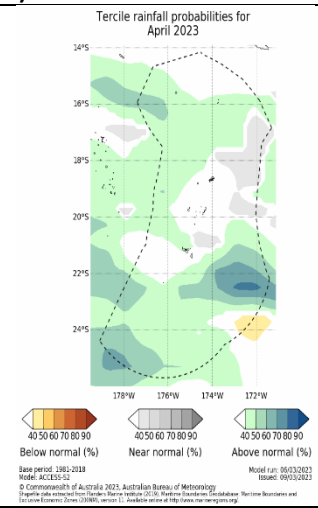
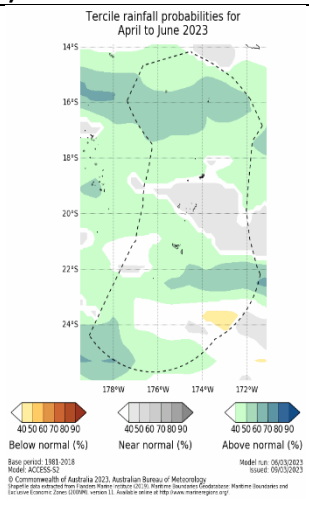
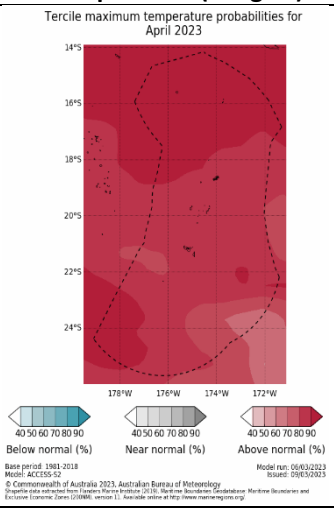
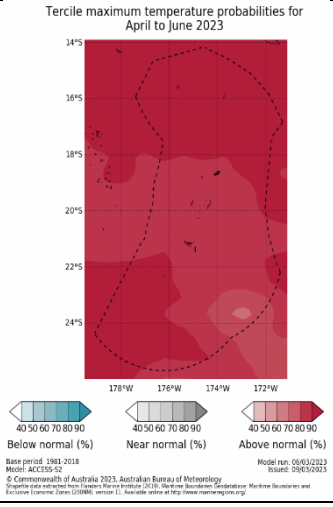
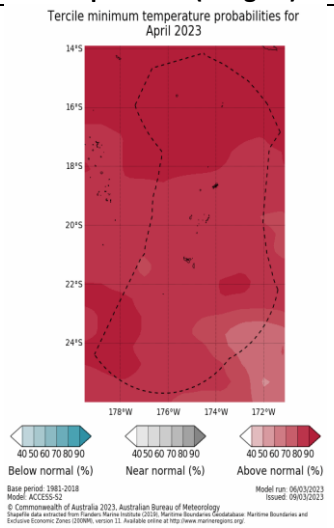
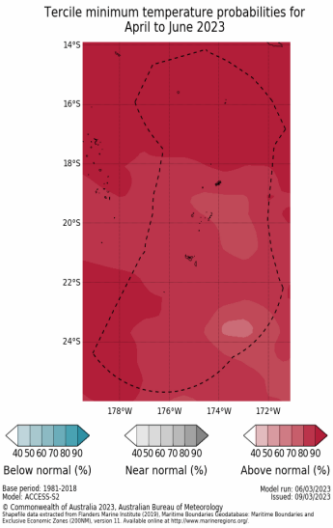
TABLE 1: Monthly Rainfall

Station (include data period)	Dec-2022	Jan-2023	Feb-2023				
			Total (mm)	33%tile	67%tile	Median	Rank
	Total (mm)	Total (mm)	Rainfall (mm)				
Northern Division							
Niuafo'ou (1971-2023)	71.2	243.4	219.5	209.0	314.0	244.7	18/50
Niuatoputapu (1947-2023)	128.5	219.3	156.0	190.2	272.2	229.0	17/76
Central Division							
Vava'u (1947-2023)	389.2	207.2	419.5	201.0	311.0	224.0	65/77
Ha'apai (1947-2023)	282.0	245.7	299.3	137.0	251.0	189.5	60/77
Southern Division							
Fua'amotu (1979-2023)	279.4	215.7	498.1	137.0	251.0	189.5	40/44
Nuku'alofa (1944-2023)	386.5	282.5	421.0	162.0	284.0	228.6	72/79

TABLE 2: Three-month Total Rainfall for December 2022 to February 2023

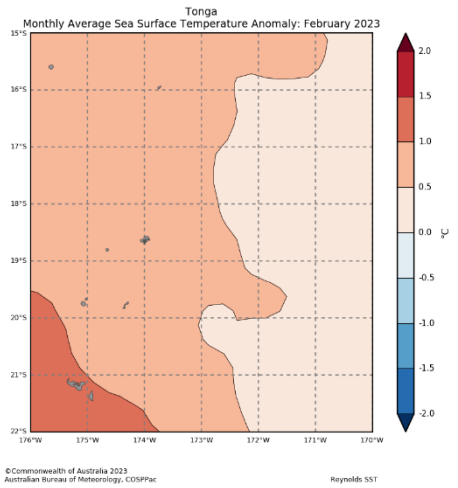
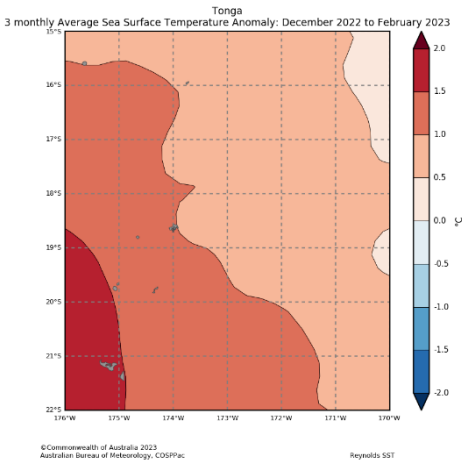
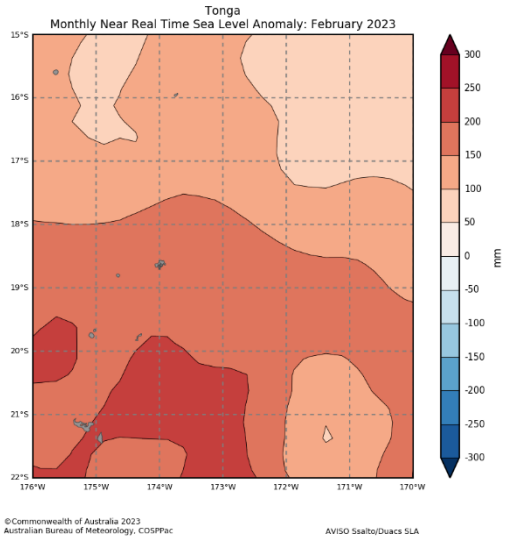
Station	Three-month Total		33%tile	67%tile	Median	Rank
	Rainfall (mm)					
Northern Division						
Niuafo'ou (1971-2023)	534.1	Below normal	727.3	966.3	858.8	9/45
Niuatoputapu (1947-2023)	503.8	Below normal	647.0	916.1	761.0	14/71
Central Division						
Vava'u (1947-2023)	1015.9	Above normal	620.1	911.7	743.2	59/76
Ha'apai (1947-2023)	827.0	Above normal	435.0	675.3	575.1	64/76
Southern Division						
Fua'amotu (1979-2023)	993.2	Above normal	438.0	807.3	630.3	37/43
Nuku'alofa (1944-2023)	1090.0	Above normal	449.7	731.4	562.5	**77/79**

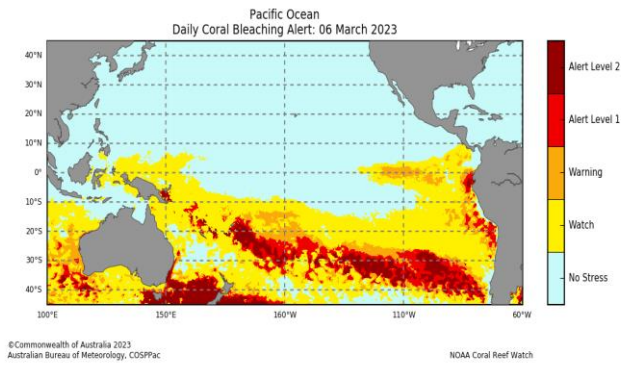
Part 1i. Monthly and Seasonal Outlooks for April and April to June 2023

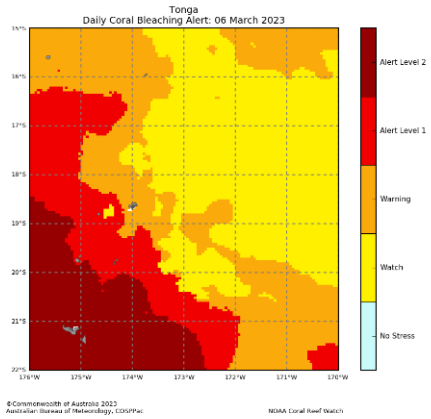
Monthly: April	Seasonal: April to June
Rainfall (Image 1)	**Rainfall (Image 2)**
	
Monthly Maximum temperature (Image 3):	**Seasonal maximum temperature (Image 4):**
	
Monthly minimum temperature (Image 5):	**Seasonal minimum temperature (Image 6):**
	

Part 2: Recent Ocean Observation

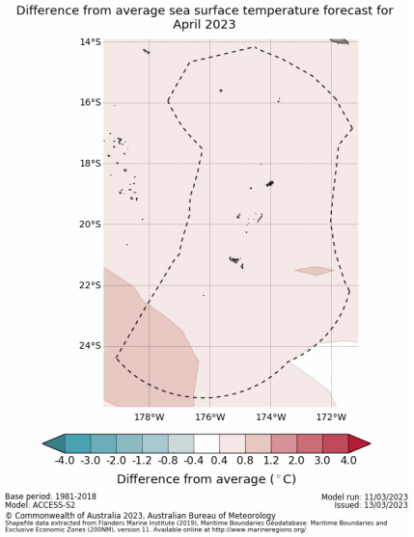
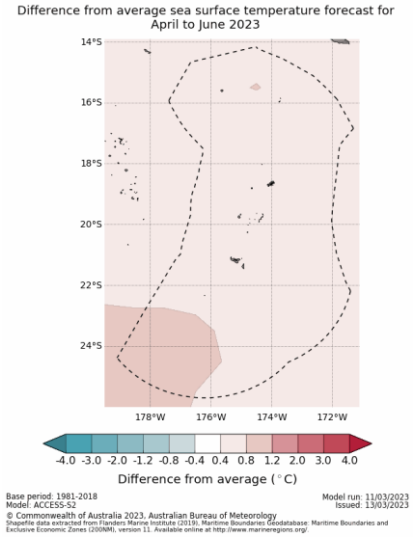
Monthly/Three months: February 2023 and December 2022 to February 2023

Monthly: February	**Last three months: December 2022 to February 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 April and April to June 2023

Monthly: April	Seasonal: April to June
Monthly sea surface temperature (Image 5):	**Seasonal sea surface temperature (Image 6):**
	
Monthly sea level (Image 7):	**Seasonal sea level (Image 8):**

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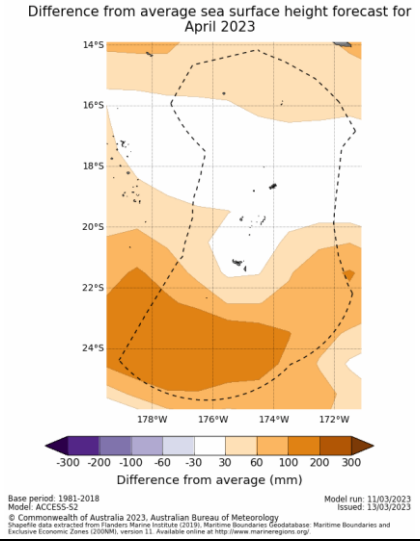
<td> 
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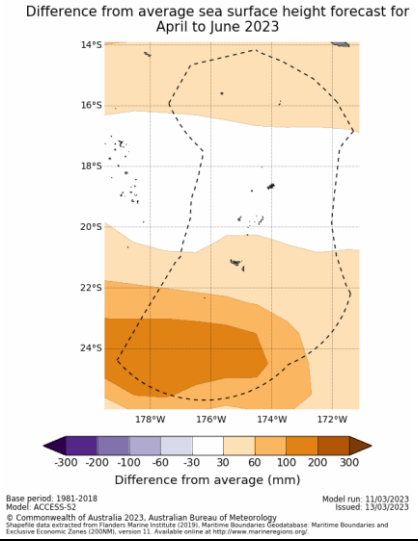
<td> 
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<td>4-week Coral Bleaching (Image 9):</td>
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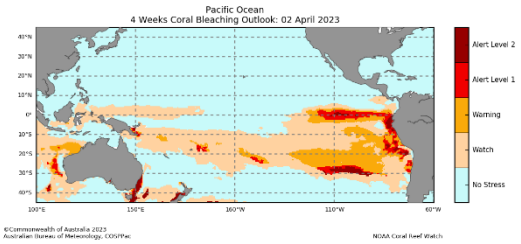
<td> 
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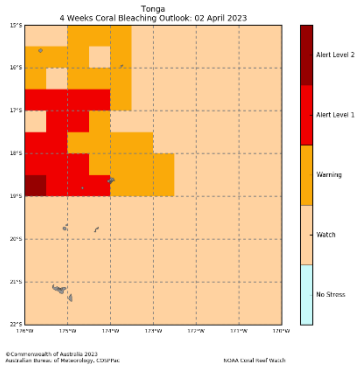
<td> 
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Summary Statement

<u>Monthly and last three months: February 2023/December 2022 to February 2023 statement</u>

February rainfall was below normal at Niuatoputapu, near-normal at Niuafo'ou, and above normal for the rest of the country. Fua'amotu had its fifthh highest and Nuku'alofa its eighth highest February rainfall on record respectively.

December to February rainfall was below normal at Niuafo'ou and Niuatoputapu, and above normal for the rest of Tonga. Niuafo'ou had its ninth lowest December to February rainfall. In contrast Fua'amotu had its seventh highest and Nuku'alofa its third highest December to February rainfall on record respectively.

Part 1i. Monthly and Seasonal Outlooks for April and April to June 2023

Monthly /Seasonal rainfall and temperature Outlook statements

April rainfall is likely to be above normal over the northern islands and parts of the Southern Division. In the Central Division, however, the outlook offers little guidance for April rainfall.

April to June rainfall is likely to be above normal over the Northern and Southern Divisions. In the Central Division, Ha'apai's April to June rainfall is likely to be near-normal, but there is little guidance for Vava'u.

Maximum and minimum temperatures during April and averaged over April to June, are very likely to be above normal across the country.

Part 2: Recent Ocean summary statement

Monthly and last three months: February 2023/December 2022 to February 2023

February ocean temperature around Tonga were 0.5 to 1.5°C above normal.

Averaged over December 2022 to February 2023, ocean temperatures were 0.5 to 2.0°C above normal.

February sea levels around Tonga were 100mm to 250mm above normal.

Coral bleaching alert reveals 'Alert Level 2' for southern Tonga.

Part 2i. Monthly and Seasonal Outlooks for April and April to June 2023

Ocean Variable statement

April and averaged April to June ocean temperatures around Tonga are predicted to be 0.4 to 1.2°C above normal.

April and average April to June sea levels around Tonga are predicted to be near normal in northern Tonga, with sea surface heights of up to 200mm for southern Tonga. The 4 weeks coral bleaching outlook to 02nd April 2023 shows Alert Level 1 and 2 for Tonga.

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

Product	Date: February 2023	Stakeholder	Total Number of Participants	Number of male	Number of female
Climate Bulletin	3 Feb	Government ministries, NGOs,Media, Private sector	155	118	37
EAR Watch					

Monthly Climate Briefing					
Ocean Outlook	3 Feb	Government ministries, NGOs,Media, Private sector	155	118	37
Climate data request					
		Total	**310**	**236**	**74**