

Pacific Islands - Ocean and Climate Outlook Forum (OCOF) No. 189

Country: Tuvalu

Part 1: Recent climate

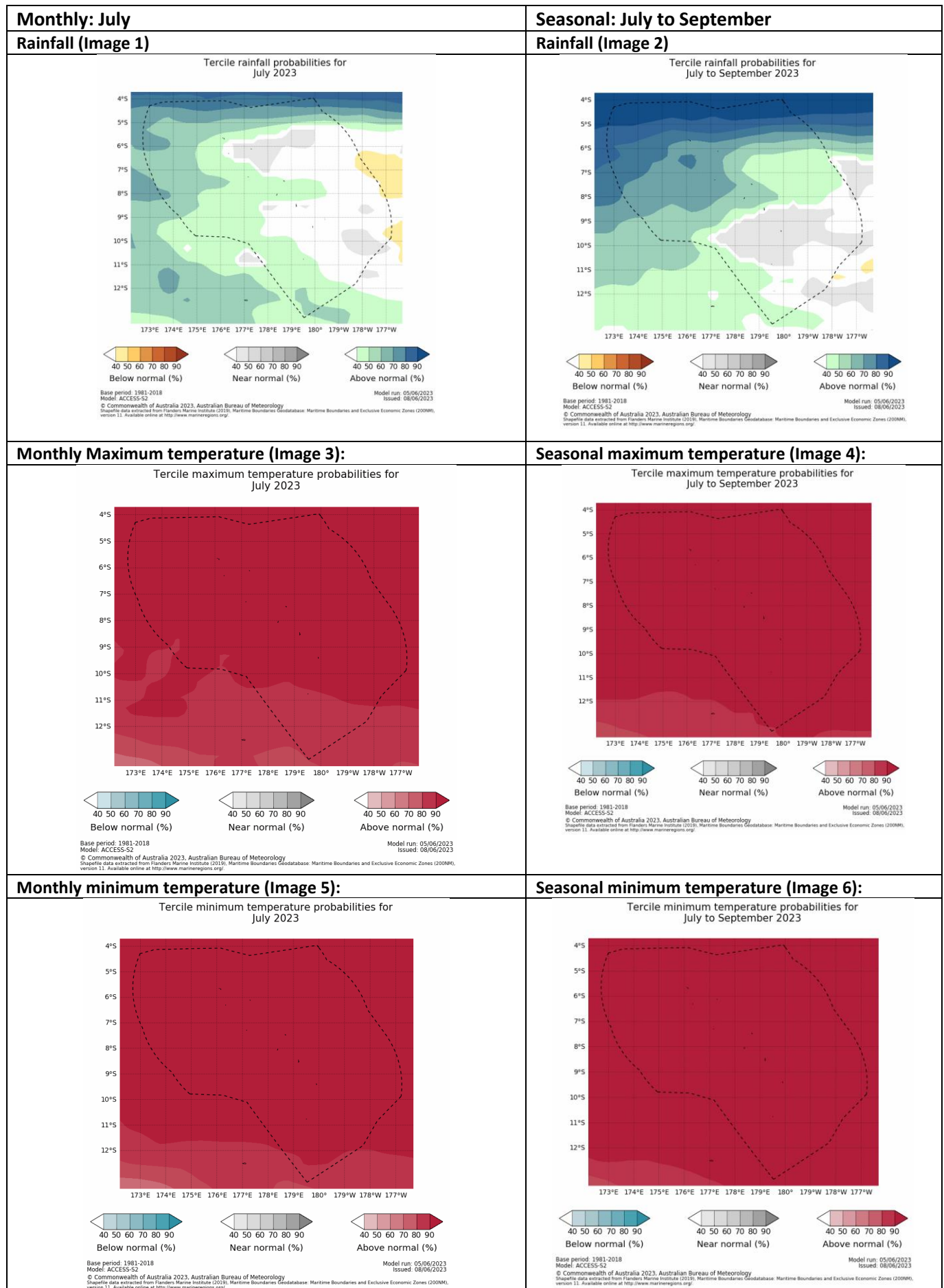
TABLE 1: Monthly Rainfall

Station (include data period)	Mar-2023	Apr-2023	May-2023				
			Total (mm)	33%tile	67%tile	Median	Rank
	Total (mm)	Total (mm)	Rainfall (mm)				
Nanumea (1941-2023)	108.4	139.4	95.4	131.1	256.7	200.9	17/83
Nui (1946-2023)	247.1	285.4	213.5	150.6	218.0	185.4	53/78
Funafuti (1933-2023)	299.4	270.5	166.7	198.3	266.4	230.5	26/91
Niulakita (1953-2023)	137.1	128.3	121.9	170.2	248.9	207.5	13/71

TABLE 2: Three-month Total Rainfall for March to May 2023

Station	Three-month Total		33%tile	67%tile	Median	Rank
	Rainfall (mm)					
Nanumea (1941-2023)	343.2	Below normal	554.4	883.3	775.0	7/81
Nui (1946-2023)	746.0	Normal	555.9	854.3	698.5	44/78
Funafuti (1933-2023)	736.6	Normal	681.3	924.2	796.5	38/91
Niulakita (1953-2023)	387.3	Below normal	681.0	912.1	822.9	3/71

Part 1i. Monthly and Seasonal Outlooks for July and July to September 2023

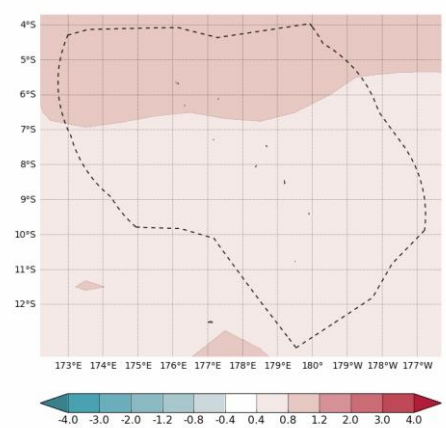
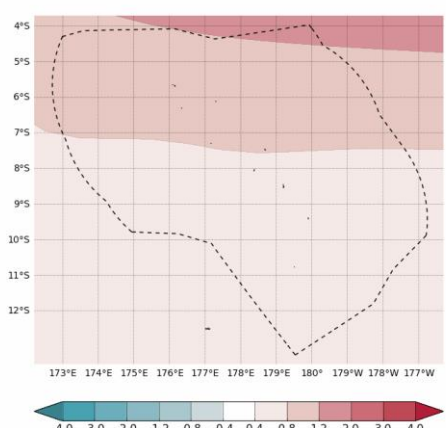
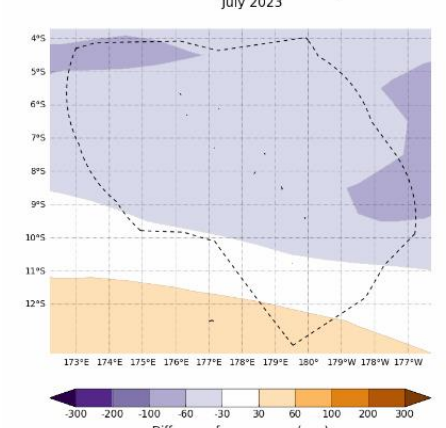
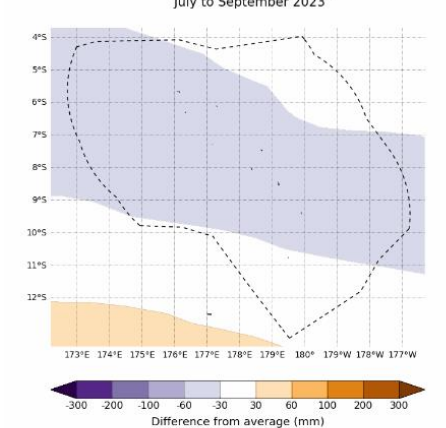
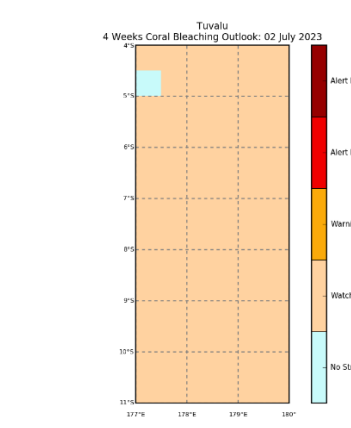
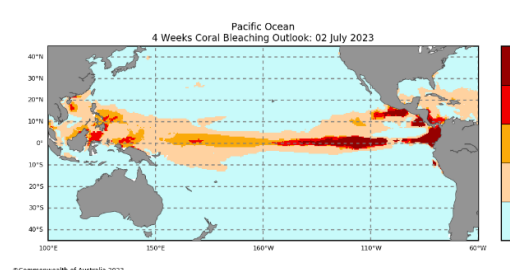


Part 2: Recent Ocean Observation

Monthly/Three months: May and March to May 2023

Monthly: May		Last three months: March to May 2023:	
Sea Surface Temperature (Image 1):		Sea Surface Temperature (Image 4):	
<div><p>Tuvalu</p><p>Monthly Average Sea Surface Temperature Anomaly: May 2023</p><p>©Commonwealth of Australia 2023 Australian Bureau of Meteorology, COSPPac</p><p>Hopkins SS1</p></div>		<div><p>Tuvalu</p><p>3 monthly Average Sea Surface Temperature Anomaly: March 2023 to May 2023</p><p>©Commonwealth of Australia 2023 Australian Bureau of Meteorology, COSPPac</p><p>Argo/RSR/SeaWiFS</p></div>	
Sea level (Image 2):			
<div><p>Tuvalu</p><p>Monthly Near Real Time Sea Level Anomaly: May 2023</p><p>©Commonwealth of Australia 2023 Australian Bureau of Meteorology, COSPPac</p><p>AVISO SeaWiFS/SeaWIFS</p></div>			
Daily coral bleaching alert (Image 3):			
<div><p>Tuvalu</p><p>Daily Coral Bleaching Alert: 06 June 2023</p><p>©Commonwealth of Australia 2023 Australian Bureau of Meteorology, COSPPac</p><p>NOAA Coral Reef Watch</p></div>		<div><p>Pacific Ocean</p><p>Daily Coral Bleaching Alert: 06 June 2023</p><p>©Commonwealth of Australia 2023 Australian Bureau of Meteorology, COSPPac</p><p>NOAA Coral Reef Watch</p></div>	

Part 2i. Monthly and Seasonal Outlooks for July and July to September 2023

Monthly: July	Seasonal: July to September
<p>Monthly sea surface temperature (Image 5):</p> <p>Difference from average sea surface temperature forecast for July 2023</p>  <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2023, Australian Bureau of Meteorology Shapefile data extracted from Flanders Marine Institute (2019), Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (200NM), version 11. Available online at http://www.maritimeregions.org/</p> <p>Model run: 05/06/2023 Issued: 07/06/2023</p>	<p>Seasonal sea surface temperature (Image 6):</p> <p>Difference from average sea surface temperature forecast for July to September 2023</p>  <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2023, Australian Bureau of Meteorology Shapefile data extracted from Flanders Marine Institute (2019), Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (200NM), version 11. Available online at http://www.maritimeregions.org/</p> <p>Model run: 05/06/2023 Issued: 07/06/2023</p>
<p>Monthly sea level (Image 7):</p> <p>Difference from average sea surface height forecast for July 2023</p>  <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2023, Australian Bureau of Meteorology Shapefile data extracted from Flanders Marine Institute (2019), Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (200NM), version 11. Available online at http://www.maritimeregions.org/</p> <p>Model run: 05/06/2023 Issued: 07/06/2023</p>	<p>Seasonal sea level (Image 8):</p> <p>Difference from average sea surface height forecast for July to September 2023</p>  <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2023, Australian Bureau of Meteorology Shapefile data extracted from Flanders Marine Institute (2019), Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (200NM), version 11. Available online at http://www.maritimeregions.org/</p> <p>Model run: 05/06/2023 Issued: 07/06/2023</p>
<p>4-week Coral Bleaching (Image 9):</p> <p>Tuvalu 4 Weeks Coral Bleaching Outlook: 02 July 2023</p>  <p>© Commonwealth of Australia 2023 Australian Bureau of Meteorology, COSPPac NOAA Coral Reef Watch</p>	<p>Pacific Ocean 4 Weeks Coral Bleaching Outlook: 02 July 2023</p>  <p>© Commonwealth of Australia 2023 Australian Bureau of Meteorology, COSPPac NOAA Coral Reef Watch</p>

Summary Statement

Monthly and last three months: May 2023/March to May 2023 statement

Nanumea, Niulakita and Funafuti recorded below normal rainfall for May, while Nui recorded normal rainfall.

During the last three months, Niulakita and Nanumea recorded below normal rainfall, while Nui and Funafuti recorded normal rainfall. Niulakita recorded its third driest March to May in 71 years of record, while Nanumea recorded its seventh driest in 81 years of record.

Part 1i. Monthly and Seasonal Outlooks for July and July to September 2023

Monthly /Seasonal rainfall and temperature Outlook statements

July rainfall is likely or very likely to be above normal for Nanumea, Nui and Niulakita, while near-normal is likely for the north-central part of Tuvalu. The outlook offers little guidance for the eastern side of Tuvalu's EEZ, including Funafuti.

July to September rainfall is likely or very likely to be above normal for the northern half of Tuvalu and some parts of the southwest, while the central region is likely to have near-normal rainfall.. The outlook offers little guidance for some parts of southern and eastern Tuvalu. This shows a clear indication of progression of El Niño and its impact on rainfall in Tuvalu.

Maximum and minimum temperatures outlook for July and averaged over July to September 2023 are very likely to be above normal over Tuvalu.

Part 2: Recent Ocean summary statement

Monthly and last three months: May 2023/March to May 2023

May ocean temperatures around the Northern group were 0.0 to 0.5°C near normal. In the Central and Southern group were 0.5 to 1.0°C above normal.

Averaged over March to May, ocean temperatures around Northern group of Tuvalu were 0.0 to 0.5°C near normal, while Central and the Southern group were 0.5 to 1.0°C.

May sea levels around the northern and the central group were 50mm to 150mm above normal, while in the southern part of Tuvalu were 150mm to 200mm.

Coral bleaching was on watch status across the country of Tuvalu.

Part 2i. Monthly and Seasonal Outlooks for July and July to September 2023

Ocean Variable statement

July ocean temperatures around Northern group are predicted to be 0.8 to 1.2°C above normal. In the central and southern group are predicted to be 0.4 to 0.8°C above normal.

Averaged over July to September, ocean temperatures around Northern group predicted to be 0.8 to 1.2°C above normal.

July sea levels around northern and central part of Tuvalu are predicted to be -30mm to -60mm above normal. While for the Southern part predicted to be near normal.

Averaged over July to September, sea levels around northern and central part are predicted to be -30mm to -60mm above normal. In the Southern part predicted to be near normal.

Coral bleaching outlook for July on 'Watch' across the country.

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

Product	Date: May 2023	Stakeholder	Total Number of Participants	Number of Male	Number of Female	Comments (If there are comments from you Stakeholders)
Climate Bulletin		METT Staff	19	10	9	
		Disaster Dept	2	1	1	
		TRC	1	1		
		TuCAN	1		1	
		Agriculture	2	1	1	
		All Kaupule Secretary				
EAR Watch		METT Staff	19	10	9	
		Disaster Département	2	1	1	
		TRC	1	1		
		TuCAN	1		1	
		Agriculture	2	1	1	
		All Kaupule Secretary				
Monthly Climate Briefing		METT Staff	19	10	9	
		Disaster	2	1	1	
		Department	1	1		
		TRC	1	1		
		TuCAN	1		1	
		Agriculture	2	1	1	
		All Kaupule Secretary				
Ocean Outlook		METT Staff	19	10	9	
		Disaster Département	2	1	1	
		TRC	1	1		
		TuCAN	1		1	
		Agriculture	2	1	1	
		All Kaupule Secretary				
		Agriculture	2	1	1	

Climate data request		Disaster Département	2	1	1	
Total			103	55	50	