

Country: Tuvalu

Part 1: Recent climate

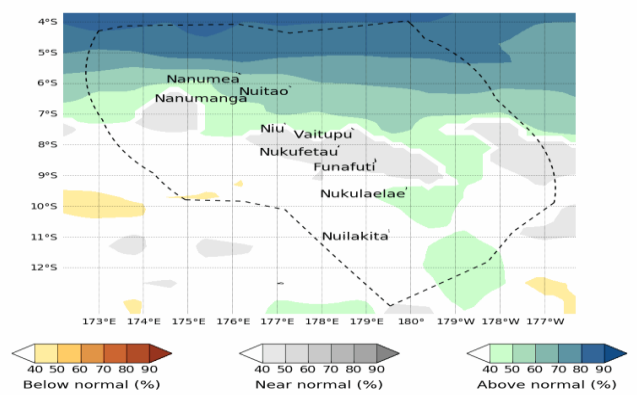
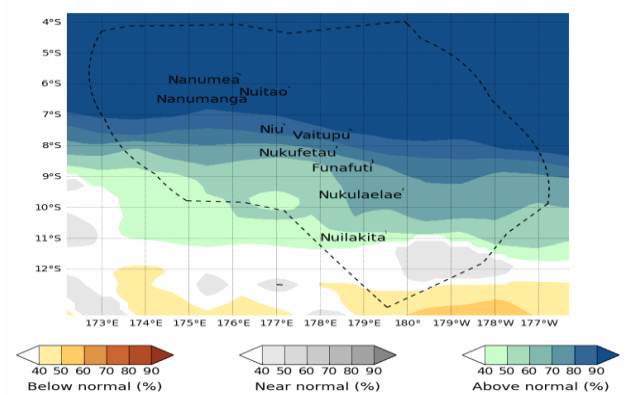
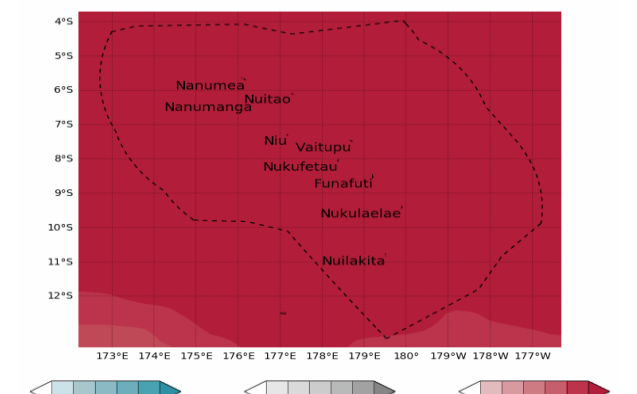
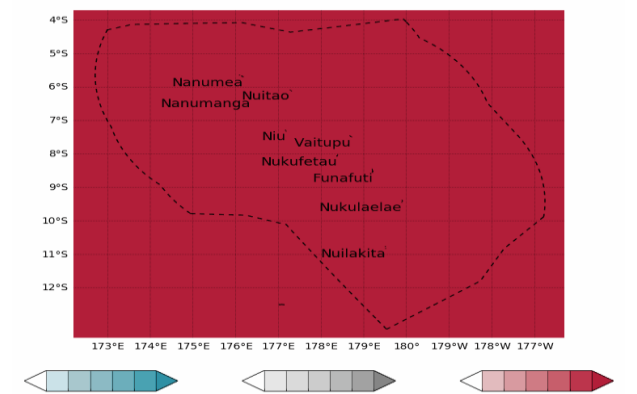
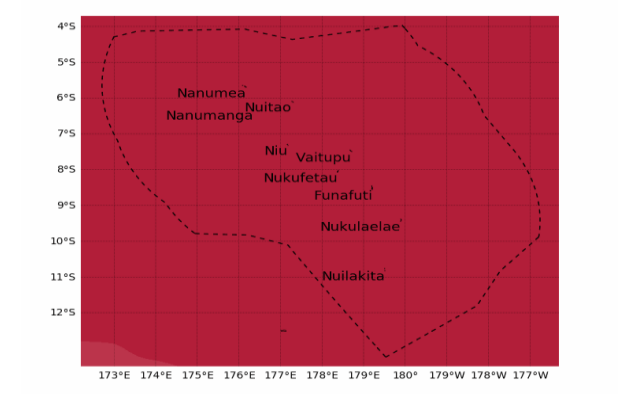
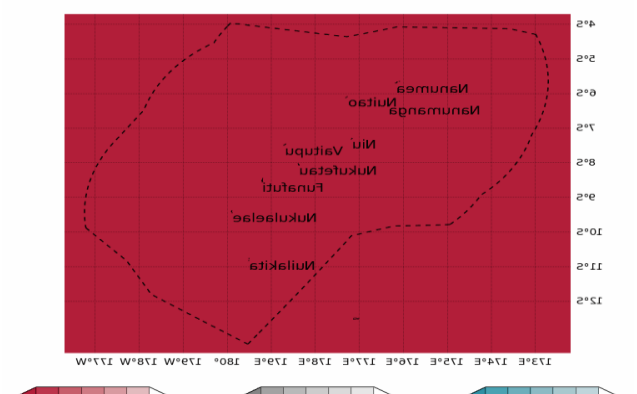
TABLE 1: Monthly Rainfall

Station (include data period)	Aug-2023	Sep-2023	Oct-2023				
			Total (mm)	33%tile	67%tile	Median	Rank
	Total (mm)	Total (mm)	Rainfall (mm)				
Nanumea (1941-2023)	136.0	121.4	394.0	90.7	188.4	135.0	78/82
Nui (1946-2023)	117.8	148.7	296.4	141.0	206.4	177.0	63/78
Funafuti (1933-2023)	106.0	258.0	382.0	202.4	292.8	260.1	79/91
Niulakita (1953-2023)	375.3	339.8	337.6	206.0	306.1	254.1	54/71

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

Station	Three-month Total		33%tile	67%tile	Median	Rank
	Rainfall (mm)					
Nanumea (1941-2023)	651.4	Above normal	331.0	605.0	477.5	65/82
Nui (1946-2023)	562.9	Normal	461.0	688.0	566.4	37/78
Funafuti (1933-2023)	746.0	Normal	606.2	799.2	678.2	55/91
Niulakita (1953-2023)	1052.7	Above normal	577.0	829.0	683.6	69/71

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

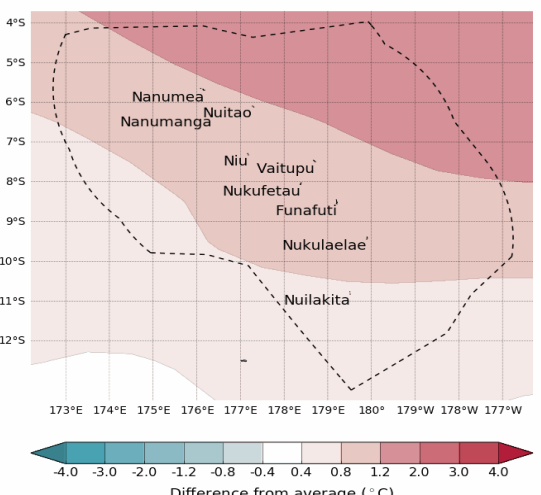
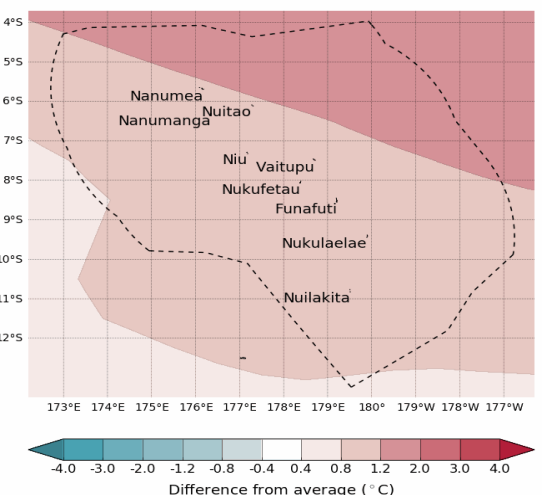
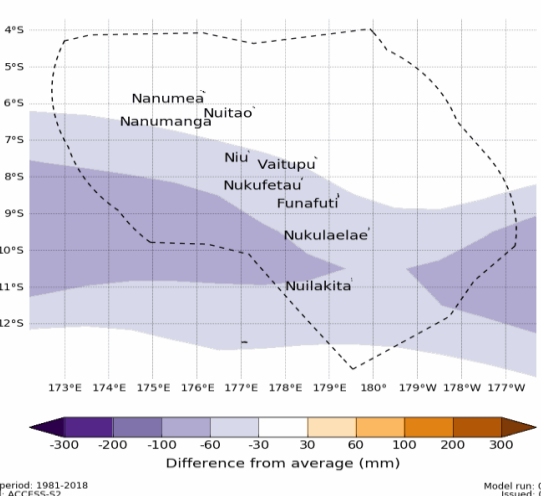
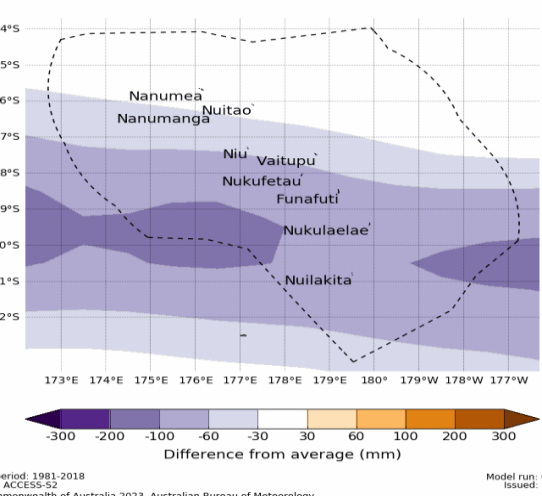
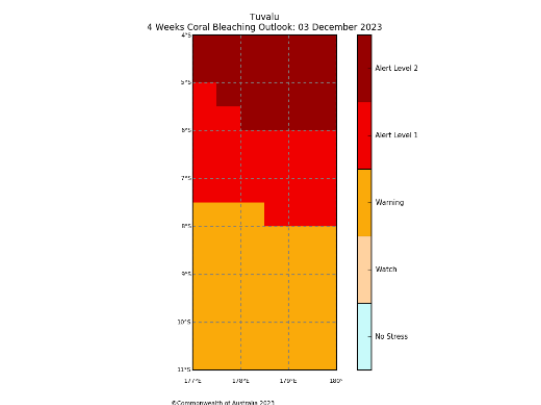
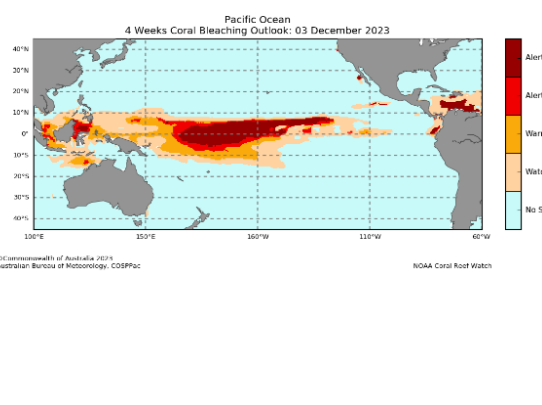
Monthly: December	Seasonal: December to February
Rainfall (Image 1)	Rainfall (Image 2)
<p>Tercile rainfall probabilities for December 2023</p>  <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2023, Australian Bureau of Meteorology Shapefile data extracted from Flanders Marine Institute (2019). Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (200NM), version 11. Available online at http://www.maritimergions.org/</p> <p>Model run: 04/11/2023 Issued: 06/11/2023</p>	<p>Tercile rainfall probabilities for December 2023 to February 2024</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.maritimergions.org/</p> <p>Model run: 04/11/2023 Issued: 06/11/2023</p>
Monthly Maximum temperature (Image 3):	Seasonal maximum temperature (Image 4):
<p>Tercile maximum temperature probabilities for December 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.maritimergions.org/</p> <p>Model run: 04/11/2023 Issued: 06/11/2023</p>	<p>Tercile maximum temperature probabilities for December 2023 to February 2024</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.maritimergions.org/</p> <p>Model run: 04/11/2023 Issued: 06/11/2023</p>
Monthly minimum temperature (Image 5):	Seasonal minimum temperature (Image 6):
<p>Tercile minimum temperature probabilities for December 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.maritimergions.org/</p> <p>Model run: 04/11/2023 Issued: 06/11/2023</p>	<p>Tercile minimum temperature probabilities for December 2023 to February 2024</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.maritimergions.org/</p> <p>Model run: 04/11/2023 Issued: 06/11/2023</p>

Part 2: Recent Ocean Observation

Monthly/Three months: October and August to October 2023

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

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

Monthly: December	Seasonal: December to February
<p>Monthly sea surface temperature (Image 5):</p> <p>Difference from average sea surface temperature forecast for December 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.marinerregions.org/</p> <p>Model run: 06/11/2023 Issued: 08/11/2023</p>	<p>Seasonal sea surface temperature (Image 6):</p> <p>Difference from average sea surface temperature forecast for December 2023 to February 2024</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.marinerregions.org/</p> <p>Model run: 06/11/2023 Issued: 08/11/2023</p>
<p>Monthly sea level (Image 7):</p> <p>Difference from average sea surface height forecast for December 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.marinerregions.org/</p> <p>Model run: 06/11/2023 Issued: 08/11/2023</p>	<p>Seasonal sea level (Image 8):</p> <p>Difference from average sea surface height forecast for December 2023 to February 2024</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.marinerregions.org/</p> <p>Model run: 06/11/2023 Issued: 08/11/2023</p>
<p>4-week Coral Bleaching (Image 9):</p> <p>Tuvalu 4 Weeks Coral Bleaching Outlook: 03 December 2023</p>  <p>© Commonwealth of Australia 2023 Australian Bureau of Meteorology, CSIRO NOAA Coral Reef Watch</p>	<p>Pacific Ocean 4 Weeks Coral Bleaching Outlook: 03 December 2023</p>  <p>© Commonwealth of Australia 2023 Australian Bureau of Meteorology, CSIRO NOAA Coral Reef Watch</p>

Summary Statement

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

The rainfall for October was above normal at all stations of Tuvalu. Nanumea recorded its fifth wettest October on record.

For the past three months, rainfall was above normal at Nanumea and Niulakita, while normal rainfall was observed in Nui and Funafuti. Niulakita recorded its third wettest August to October period on record.

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 or very likely to be above normal at the Northern group, while near-normal is likely for the Central group. The outlook offers little guidance for the Southern group of Tuvalu.

The rainfall for December 2023 to February 2024 is likely or very likely to be above normal over most of Tuvalu, except for the far south of the EEZ where there is a mixture of below normal being likely, near-normal being likely, or little guidance.

Maximum and minimum temperatures during December and averaged over December 2023 to February 2024 are very likely to be above normal over Tuvalu.

Part 2: Recent Ocean summary statement

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

October ocean temperatures around the Northern group were 1.0 to 1.5°C above normal. In the Central and Southern group were 0.5 to 1.5°C above normal.

Averaged over August to October, ocean temperatures at the Northern group were 1.0 to 1.5°C above normal, while for the Central group and Southern group of Tuvalu were 0.5 to 1.5°C above normal.

October sea levels at the Northern group were 100mm to 150mm above normal. In the Central group were 50mm to 100mm above normal, and near normal over the Southern group of Tuvalu.

Coral Bleaching Alert on 07 November 2023, shows 'Warning to Alert Level 1' in the Northern group, while for the Central group and the Southern group on 'Watch'.

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

Ocean Variable statement

December ocean temperatures around the Northern group is predicted to be 0.8 to 2.0°C above normal. The Central group and Southern group are predicted to be 0.8 to 1.2°C above normal, except, some parts of the Southern of Tuvalu EEZ including Niulakita is predicted to be 0.4 to 0.8°C above normal.

Averaged over December to February, ocean temperatures around the Northern group are predicted to be 0.8 to 2.0°C above normal. In the Central group and Southern group are predicted to be 0.8 to 1.2°C above normal.

December sea levels in the Northern group is predicted to be near normal. The Central and Southern groups are predicted to be -30 to -60mm below normal.

Averaged over December to February, sea levels around the Northern group are predicted to be near normal, while the Central and Southern groups are predicted to be -30mm to -100mm below normal.

Coral bleaching outlook at the Northern group is predicted to be 'Alert Level 2' and Central group shows 'Alert Level 1', while 'Warning' at the Southern group of Tuvalu.

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

Product	Date: October 2023	Stakeholder	Total Number of Participant s	Number of Male	Number of Female	Comments (If there are comments from you Stakeholders)
Climate Bulletin		MET Staff	24	13	11	
		Disaster Dept	1	1		
		TRC	1		1	
		TuCAN	1	1		
		Agriculture	2	2		
		All Civil Servants	All staff			
		All-Kaupule Secretary	13	7	6	
		Media Broadcast	3		3	
EAR Watch		MET Staff	24	13	11	
		Disaster Dept	1	1		
		TRC	1		1	
		TuCAN	1	1		
		Agriculture	2	2		
		All Civil Servants	All staff			
		All-Kaupule Secretary	13	7	6	
		Monthly Climate Briefing		MET Staff	24	
Disaster Dept	1			1		
TRC	1				1	
TuCAN	1			1		
Agriculture	2			2		
All Civil Servants	All staff					
All-Kaupule Secretary	13			7	6	
Ocean Outlook				MET Staff	24	13
		Disaster Dept	1	1		
		TRC	1		1	
		TuCAN	1	1		
		Agriculture	2	2		
		All Civil Servants	All staff			
		All-Kaupule Secretary	13	7	6	
		Media Broadcast	3		3	
Climate data request						
Total			180	96	84	