

Country: Tuvalu

Part 1: Recent climate

TABLE 1: Monthly Rainfall

Station (include data period)	Oct-2023	Nov-2023	Dec-2023				
			Total (mm)	33%tile	67%tile	Median	Rank
	Total (mm)	Total (mm)	Rainfall (mm)				
Nanumea (1941-2024)	394.0	210.1	252.4	205.3	364.0	291.4	34/83
Nui (1946-2024)	296.4	257.5	246.1	269.9	418.7	309.6	18/76
Funafuti (1933-2024)	382.0	279.2	339.4	308.6	435.1	343.0	41/91
Niulakita (1953-2024)	337.6	449.2	177.7	236.4	352.9	291.6	11/69

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

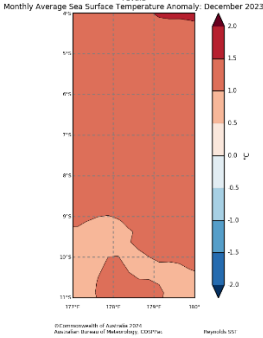
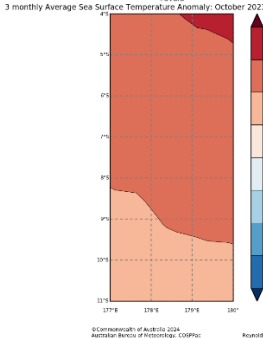
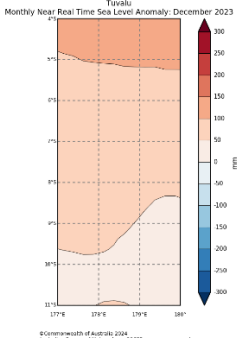
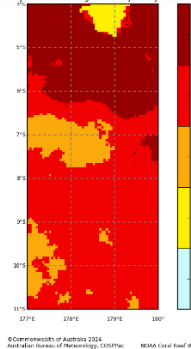
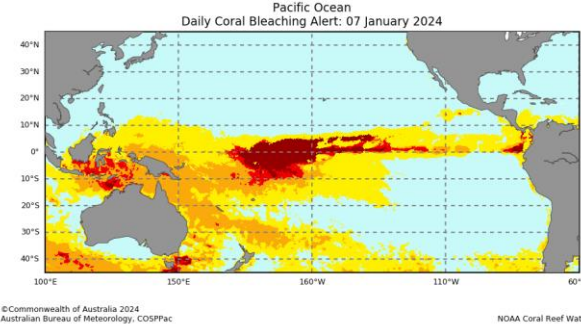
Station	Three-month Total		33%tile	67%tile	Median	Rank
	Rainfall (mm)					
Nanumea (1941-2024)	856.5	Above normal	522.6	755.4	622.0	66/81
Nui (1946-2024)	800.0	Normal	701.9	908.1	803.4	36/76
Funafuti (1933-2024)	1000.6	Normal	808.4	1008.4	887.8	57/91
Niulakita (1953-2024)	964.5	Above normal	764.5	948.8	832.2	47/68

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

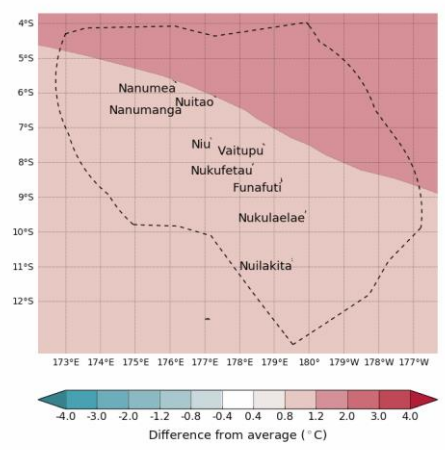
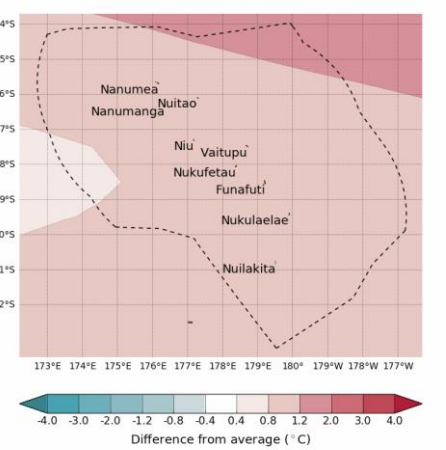
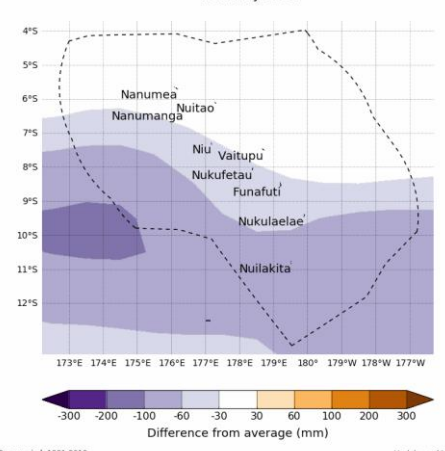
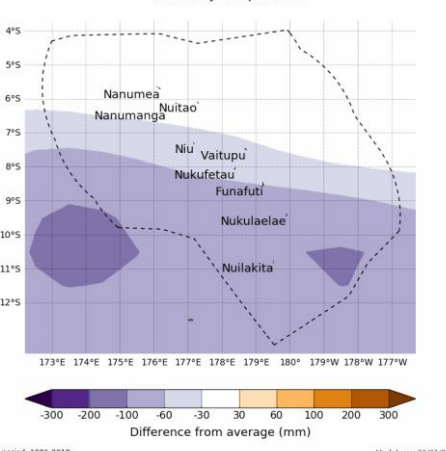
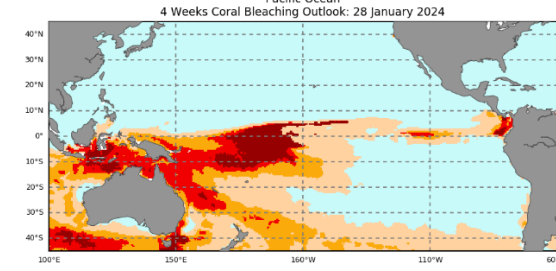
Monthly: February	Seasonal: February to April
Rainfall (Image 1)	Rainfall (Image 2)
<p>Tercile rainfall probabilities for February 2024</p> <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2024, Australian Bureau of Meteorology Shapefile data extracted from Flanders Marine Institute (2019). Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (200NM), version 11. Available online at <a href="http://www.maritimergions.org/">http://www.maritimergions.org/</a></p> <p>Model run: 01/01/2024 Issued: 03/01/2024</p>	<p>Tercile rainfall probabilities for February to April 2024</p> <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2024, 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 <a href="http://www.maritimergions.org/">http://www.maritimergions.org/</a></p> <p>Model run: 01/01/2024 Issued: 04/01/2024</p>
Monthly Maximum temperature (Image 3):	Seasonal maximum temperature (Image 4):
<p>Tercile maximum temperature probabilities for February 2024</p> <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2024, 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 <a href="http://www.maritimergions.org/">http://www.maritimergions.org/</a></p> <p>Model run: 01/01/2024 Issued: 03/01/2024</p>	<p>Tercile maximum temperature probabilities for February to April 2024</p> <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2024, 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 <a href="http://www.maritimergions.org/">http://www.maritimergions.org/</a></p> <p>Model run: 01/01/2024 Issued: 04/01/2024</p>
Monthly minimum temperature (Image 5):	Seasonal minimum temperature (Image 6):
<p>Tercile minimum temperature probabilities for February 2024</p> <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2024, 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 <a href="http://www.maritimergions.org/">http://www.maritimergions.org/</a></p> <p>Model run: 01/01/2024 Issued: 03/01/2024</p>	<p>Tercile minimum temperature probabilities for February to April 2024</p> <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2024, 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 <a href="http://www.maritimergions.org/">http://www.maritimergions.org/</a></p> <p>Model run: 01/01/2024 Issued: 04/01/2024</p>

Part 2: Recent Ocean Observation

Monthly/Three months: December and October to December 2023

Monthly: December	Last three months: October to December 2023:
Sea Surface Temperature (Image 1):	Sea Surface Temperature (Image 4):
<div><p>Tuvalu</p><p>Monthly Average Sea Surface Temperature Anomaly: December 2023</p><p>©Commonwealth of Australia 2024 Australian Bureau of Meteorology 1300 367 000</p></div>	<div><p>Tuvalu</p><p>3 monthly Average Sea Surface Temperature Anomaly: October 2023 to December 2023</p><p>©Commonwealth of Australia 2024 Australian Bureau of Meteorology 1300 367 000</p></div>
Sea level (Image 2):	
<div><p>Tuvalu</p><p>Monthly Near Real Time Sea Level Anomaly: December 2023</p><p>©Commonwealth of Australia 2024 Australian Bureau of Meteorology 1300 367 000</p></div>	
Daily coral bleaching alert (Image 3):	
<div><p>Tuvalu</p><p>Daily Coral Bleaching Alert: 07 January 2024</p><p>©Commonwealth of Australia 2024 Australian Bureau of Meteorology 1300 367 000</p></div>	<div><p>Pacific Ocean</p><p>Daily Coral Bleaching Alert: 07 January 2024</p><p>©Commonwealth of Australia 2024 Australian Bureau of Meteorology 1300 367 000</p><p>NOAA Coral Reef Watch</p></div>

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

Monthly: February	Seasonal: February to April
<p><b>Monthly sea surface temperature (Image 5):</b></p> <p>Difference from average sea surface temperature forecast for February 2024</p>  <p>Map showing the difference from average sea surface temperature for February 2024. The map covers the region from 4°S to 12°S and 173°E to 177°W. Islands labeled include Nanumea, Naitao, Nanumanga, Niu, Vaitupu, Nukufetau, Funafuti, Nukulaelae, and Nuilakita. A color scale at the bottom ranges from -4.0 to 4.0 °C, with red indicating positive differences and blue indicating negative differences. The map shows a large area of positive difference (red) in the northern part of the region, particularly around Naitao and Nukulaelae.</p> <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2024. Australian Bureau of Meteorology Shapefile data extracted from Flinders Marine Institute (2019). Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (200NM), version 1.1. Available online at <a href="http://www.marine.gov.au">http://www.marine.gov.au</a></p> <p>Model run: 01/01/2024 Issued: 03/01/2024</p>	<p><b>Seasonal sea surface temperature (Image 6):</b></p> <p>Difference from average sea surface temperature forecast for February to April 2024</p>  <p>Map showing the difference from average sea surface temperature for February to April 2024. The map covers the region from 4°S to 12°S and 173°E to 177°W. Islands labeled include Nanumea, Naitao, Nanumanga, Niu, Vaitupu, Nukufetau, Funafuti, Nukulaelae, and Nuilakita. A color scale at the bottom ranges from -4.0 to 4.0 °C, with red indicating positive differences and blue indicating negative differences. The map shows a large area of positive difference (red) in the northern part of the region, particularly around Naitao and Nukulaelae.</p> <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2024. Australian Bureau of Meteorology Shapefile data extracted from Flinders Marine Institute (2019). Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (200NM), version 1.1. Available online at <a href="http://www.marine.gov.au">http://www.marine.gov.au</a></p> <p>Model run: 01/01/2024 Issued: 03/01/2024</p>
<p><b>Monthly sea level (Image 7):</b></p> <p>Difference from average sea surface height forecast for February 2024</p>  <p>Map showing the difference from average sea surface height for February 2024. The map covers the region from 4°S to 12°S and 173°E to 177°W. Islands labeled include Nanumea, Naitao, Nanumanga, Niu, Vaitupu, Nukufetau, Funafuti, Nukulaelae, and Nuilakita. A color scale at the bottom ranges from -300 to 300 mm, with blue indicating negative differences and red indicating positive differences. The map shows a large area of negative difference (blue) in the northern part of the region, particularly around Naitao and Nukulaelae.</p> <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2024. Australian Bureau of Meteorology Shapefile data extracted from Flinders Marine Institute (2019). Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (200NM), version 1.1. Available online at <a href="http://www.marine.gov.au">http://www.marine.gov.au</a></p> <p>Model run: 01/01/2024 Issued: 03/01/2024</p>	<p><b>Seasonal sea level (Image 8):</b></p> <p>Difference from average sea surface height forecast for February to April 2024</p>  <p>Map showing the difference from average sea surface height for February to April 2024. The map covers the region from 4°S to 12°S and 173°E to 177°W. Islands labeled include Nanumea, Naitao, Nanumanga, Niu, Vaitupu, Nukufetau, Funafuti, Nukulaelae, and Nuilakita. A color scale at the bottom ranges from -300 to 300 mm, with blue indicating negative differences and red indicating positive differences. The map shows a large area of negative difference (blue) in the northern part of the region, particularly around Naitao and Nukulaelae.</p> <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2024. Australian Bureau of Meteorology Shapefile data extracted from Flinders Marine Institute (2019). Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (200NM), version 1.1. Available online at <a href="http://www.marine.gov.au">http://www.marine.gov.au</a></p> <p>Model run: 01/01/2024 Issued: 03/01/2024</p>
<p><b>4-week Coral Bleaching (Image 9):</b></p>	<p><b>4 Weeks Coral Bleaching Outlook: 28 January 2024</b></p>  <p>Map showing the 4-week coral bleaching outlook for 28 January 2024. The map covers the Pacific Ocean from 40°N to 40°S and 100°E to 60°W. A color scale on the right indicates Alert Level 2 (red), Alert Level 1 (orange), Warning (yellow), Watch (light yellow), and No Stress (white). The map shows a large area of Alert Level 2 (red) in the central Pacific, particularly around 10°N and 150°E.</p> <p>© Commonwealth of Australia 2024 Australian Bureau of Meteorology, COSPPAC</p> <p>NOAA Coral Reef Watch</p>

## Summary Statement

### Monthly and last three months: December 2023/October to December 2023 statement

The rainfall for December was near-normal at Nanumea and Funafuti, while below normal was recorded in Nui and Niulakita.

For the past three months, rainfall was above normal over Nanumea and Niulakita, while near--normal was posted at Nui and Funafuti.

## Part 1i. Monthly and Seasonal Outlooks for February and February to April 2024

### Monthly /Seasonal rainfall and temperature Outlook statements

The rainfall for February and February to April is very likely to be above normal over Tuvalu.

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

## Part 2: Recent Ocean summary statement

### Monthly and last three months: December 2023/October to December 2023

December ocean temperatures at the Northern group and Central group were 1.0 to 1.5°C above normal, except some parts for the Southern group were 0.5 to 1.5°C above normal.

Averaged over October to December, ocean temperatures around the Northern group and Central group were 1.0 to 1.5°C above normal, except for the far Northern parts of the EEZ were 1.5 to 2.0°C above normal. In the Southern group ocean temperature were 0.5 to 1.0°C above normal.

December sea levels at the Northern group were 50mm to 150mm above normal. In the Central group 50mm to 100mm above normal, while near normal for the Southern group.

Coral Bleaching Alert was Alert Level 1 to Alert Level 2 at the Northern group, and for the Central group and Southern group on Warning to Alert Level 1.

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

### Ocean Variable statement

February ocean temperatures around Northern group is 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.

Averaged over February to April, ocean temperatures over Tuvalu are predicted to be 0.8 to 1.2°C above normal, except some parts for the North-North-East of the EEZ are predicted to be 1.2 to 2.0°C above normal.

February sea levels and averaged over February to April sea levels around Northern group is predicted to be near normal. In the Central group and Southern group is predicted to be 30mm to 100mm below normal.

Coral Bleaching Outlook for the next four weeks is predicted to be Alert Level 2 over Tuvalu.

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

Product	Date: December 2023	Stakeholder	Total Number of Participants	Number of Male	Number of Female	Comments (If there are comments from you Stakeholders)
Climate Bulletin	05/01/24	MET Staff Disaster Dept TRC TuCAN Agriculture All Civil Servants All-Kaupule Secretary	All 2 1 2 2 All 13	2   1   7	  1 1 2   6	
EAR Watch	05/01/24	MET Staff Disaster Dept TRC TuCAN Agriculture All Civil Servants All-Kaupule Secretary	All 2 1 2 2 All 13	2   1   7	  1 1 2   6	
Monthly Climate Briefing						
Ocean Outlook	05/01/24	MET Staff Disaster Dept TRC TuCAN Agriculture All Civil Servants All-Kaupule Secretary	All 2 1 2 2 All 13	2   1   7	  1 1 2   6	
Climate data request						
<b>Total</b>			<b>60</b>	<b>30</b>	<b>30</b>	