

Country: Tonga

Part 1: Recent climate

TABLE 1: Monthly Rainfall

Station (include data period)	Dec-2023	Jan-2024	Feb-2024				
			Total (mm)	33%tile	67%tile	Median	Rank
	Total (mm)	Total (mm)	Rainfall (mm)				
	Northern Division						
Niuafo'ou (1971-2024)	211.5	138.0	362.0	220.1	309.7	245.8	37/51
Niuatoputapu (1947-2024)	138.5	175.0	390.5	190.0	269.8	226.0	61/77
Central Division							
Vava'u (1947-2024)	136.0	277.5	275.1	201.2	317.0	224.0	47/78
Ha'apai (1947-2024)	63.1	195.4	106.8	138.3	258.3	191.8	16/78
Southern Division							
Fua'amotu (1979-2024)	75.3	625.1	134.0	148.2	271.6	205.5	13/45
Nuku'alofa (1944-2024)	44.0	464.5	141.5	162.0	286.5	228.8	24/80

TABLE 2: Three-month Total Rainfall for December 2023 to February 2024

Station	Three-month Total		33%tile	67%tile	Median	Rank
	Rainfall (mm)					
Northern Division						
Niuafo'ou (1971-2024)	711.5	Normal	702.8	951.1	845.8	17/47
Niuatoputapu (1947-2024)	704.0	Normal	633.0	911.4	747.0	33/72
Central Division						
Vava'u (1947-2024)	688.6	Normal	622.7	921.0	745.4	30/77
Ha'apai (1947-2024)	365.3	Below normal	435.0	678.0	575.1	21/77
Southern Division						
Fua'amotu (1979-2024)	834.4	Above normal	442.9	809.0	639.8	33/44
Nuku'alofa (1944-2024)	650.0	Normal	452.0	744.1	568.0	47/80

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

<p>Monthly: April</p> <p>Tercile rainfall probabilities for 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 http://www.maritimerregions.org/. Model run: 04/03/2024 Issued: 06/03/2024</p>	<p>Seasonal: April to June</p> <p>Tercile rainfall probabilities for April to June 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 http://www.maritimerregions.org/. Model run: 04/03/2024 Issued: 06/03/2024</p>
<p>Monthly Maximum temperature (Image 3):</p> <p>Tercile maximum temperature probabilities for 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 http://www.maritimerregions.org/. Model run: 04/03/2024 Issued: 06/03/2024</p>	<p>Seasonal maximum temperature (Image 4):</p> <p>Tercile maximum temperature probabilities for April to June 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 http://www.maritimerregions.org/. Model run: 04/03/2024 Issued: 06/03/2024</p>
<p>Monthly minimum temperature (Image 5):</p> <p>Tercile minimum temperature probabilities for 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 http://www.maritimerregions.org/. Model run: 04/03/2024 Issued: 06/03/2024</p>	<p>Seasonal minimum temperature (Image 6):</p> <p>Tercile minimum temperature probabilities for April to June 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 http://www.maritimerregions.org/. Model run: 04/03/2024 Issued: 06/03/2024</p>

Part 2: Recent Ocean Observation

Monthly/Three months: February 2024 and December 2023 to February 2024

Monthly: February 2024	Last three months: December 2023 to February 2024:
<div>Sea Surface Temperature (Image 1):</div> <div><p>Tonga</p><p>Monthly Average Sea Surface Temperature Anomaly: February 2024</p><p>©Commonwealth of Australia 2024 Australian Bureau of Meteorology, COSPPac</p><p>Reynolds SST</p></div>	<div>Sea Surface Temperature (Image 4):</div> <div><p>Tonga</p><p>3 monthly Average Sea Surface Temperature Anomaly: December 2023 to February 2024</p><p>©Commonwealth of Australia 2024 Australian Bureau of Meteorology, COSPPac</p><p>Reynolds SST</p></div>
<div>Sea level (Image 2):</div> <div><p>Tonga</p><p>Monthly Near Real Time Sea Level Anomaly: February 2024</p><p>©Commonwealth of Australia 2024 Australian Bureau of Meteorology, COSPPac</p><p>AVISO Ssalto/Duacs SLA</p></div>	
<div>Daily coral bleaching alert (Image 3):</div> <div><p>Tonga</p><p>Daily Coral Bleaching Alert: 06 March 2024</p><p>©Commonwealth of Australia 2024 Australian Bureau of Meteorology, COSPPac</p><p>NOAA Coral Reef Watch</p></div>	<div><p>Pacific Ocean</p><p>Daily Coral Bleaching Alert: 06 March 2024</p><p>©Commonwealth of Australia 2024 Australian Bureau of Meteorology, COSPPac</p><p>NOAA Coral Reef Watch</p></div>

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

Monthly: April	Seasonal: April to June
Monthly sea surface temperature (Image 5):	Seasonal sea surface temperature (Image 6):
<div><p>Difference from average sea surface temperature forecast for 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 http://www.marinerregions.org/</p><p>Model run: 04/03/2024 Issued: 06/03/2024</p></div>	<div><p>Difference from average sea surface temperature forecast for April to June 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 http://www.marinerregions.org/</p><p>Model run: 04/03/2024 Issued: 06/03/2024</p></div>
Monthly sea level (Image 7):	Seasonal sea level (Image 8):
<div><p>Difference from average sea surface height forecast for 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 http://www.marinerregions.org/</p><p>Model run: 04/03/2024 Issued: 06/03/2024</p></div>	<div><p>Difference from average sea surface height forecast for April to June 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 http://www.marinerregions.org/</p><p>Model run: 04/03/2024 Issued: 06/03/2024</p></div>
4-week Coral Bleaching (Image 9):	
<div><p>Tonga 4 Weeks Coral Bleaching Outlook: 31 March 2024</p><p>©Commonwealth of Australia 2024 Australian Bureau of Meteorology, COSPPac</p><p>NOAA Coral Reef Watch</p></div>	
	<div><p>Pacific Ocean 4 Weeks Coral Bleaching Outlook: 24 March 2024</p><p>©Commonwealth of Australia 2024 Australian Bureau of Meteorology, COSPPac</p><p>NOAA Coral Reef Watch</p></div>

Summary Statement

Monthly and last three months: February 2024/December 2023 to February 2024 statement

February 2024 rainfall was above normal in the Northern Division, near-normal at Vava'u, and below normal rainfall at remaining sites.

December 2023 to February 2024 rainfall was above normal at Fua'amotu, below normal at Ha'apai, and near-normal at remaining sites.

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

Monthly /Seasonal rainfall and temperature Outlook statements

Tonga's April rainfall is likely or very likely to be below normal over the Central and Southern Divisions. The outlook offers little guidance for Niuafo'ou and Niuatoputapu.

The rainfall for April to June is likely to be below normal over all of Tonga's main islands.

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

Part 2: Recent Ocean summary statement

Monthly and last three months: February 2024/December 2023 to February 2024

February ocean temperatures around Tonga were near normal to above normal.

Averaged over December to February, ocean temperatures around Tonga were near normal to 0.5 to 1.0°C above-normal.

February sea levels around Tonga were 50 to 200mm above normal.

Coral bleaching alert reveals 'Warning' for Tonga.

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

Ocean Variable statement

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

April sea levels and averaged over April to June sea levels around Tonga are predicted to be 30 to 200mm below normal for Vava'u and the Niua, and 30 to 200mm above normal for Tongatapu.

The 4 week coral bleaching outlook to 31st March 2024 shows 'Alert Level 1' for majority of Tonga.

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

Product	Date: February 2024	Stakeholder	Total Number of Participants	Number of Male	Number of Female	Comments (If there are comments from you Stakeholders)
Climate Bulletin	11 March	Government ministries, NGOs, Media, Private sector	155	118	37	
EAR Watch						
Monthly Climate Briefing						
Ocean Outlook						
Climate data request						
Total			115	118	37	