

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

Country: Tuvalu

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)				
	Nanumea (1941-2023)	172.9	80.6	52.0	164.6	328.4	
Nui (1946-2023)	268.7	196.8	170.2	223.0	352.8	283.6	18/78
Funafuti (1933-2023)	331.9	250.4	424.8	257.9	426.2	330.6	59/91
Niulakita (1953-2023)	337.4	129.8	91.3	265.7	391.8	328.0	4/71

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

Station	Three-month Total		33%tile	67%tile	Median	Rank
	Rainfall (mm)					
Nanumea (1941-2023)	305.5	Below normal	704.8	1131.0	969.6	9/83
Nui (1946-2023)	635.7	Below normal	824.5	1186.0	1063.1	11/78
Funafuti (1933-2023)	1007.1	Normal	993.5	1259.1	1023.6	30/91
Niulakita (1953-2023)	558.5	Below normal	897.0	1181.0	1114.8	4/68

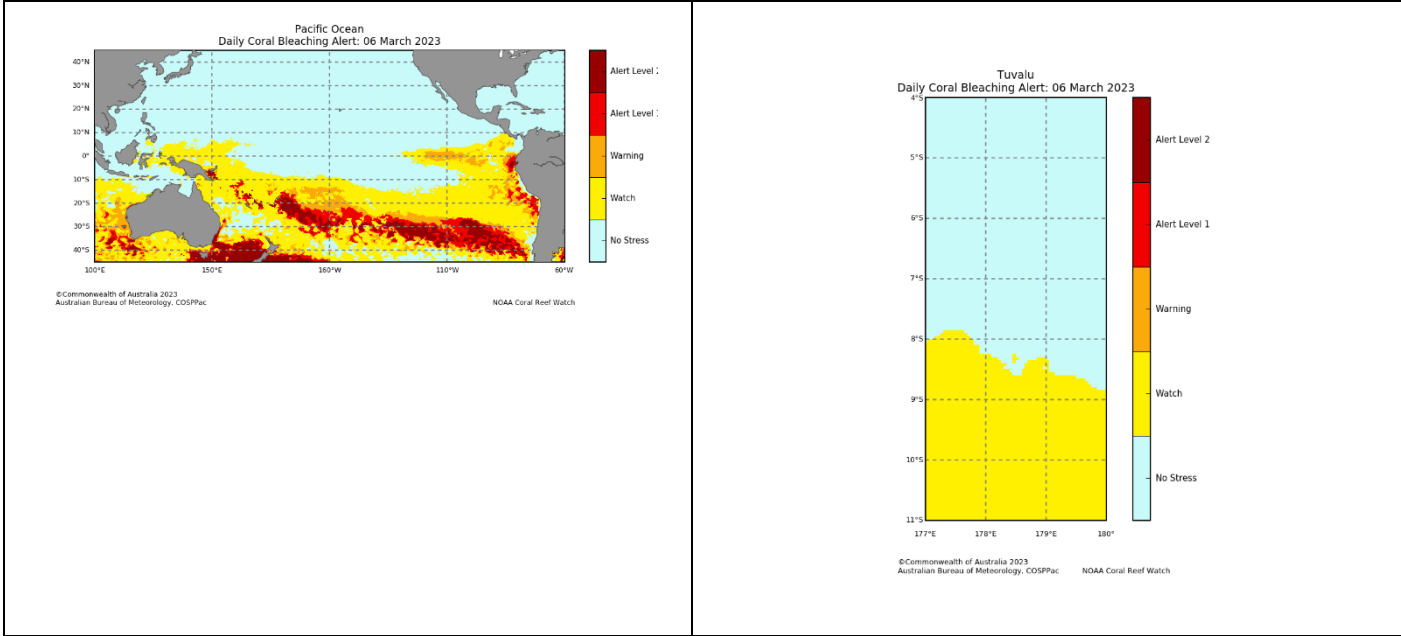
Part 1i. Monthly and Seasonal Outlooks for April and April to June 2023

Monthly: April	Seasonal: April to June
Rainfall (Image 1)	Rainfall (Image 2)
<div><p>Tercile rainfall probabilities for April 2023</p><p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2023, Australian Bureau of Meteorology Shapfile data extracted from Randers Marine Institute (2019), Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (200NM), version 11. Available online at http://www.marinegorgons.org/.</p><p>Model run: 06/03/2023 Issued: 09/03/2023</p></div>	<div><p>Tercile rainfall probabilities for April to June 2023</p><p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2023, Australian Bureau of Meteorology Shapfile data extracted from Randers Marine Institute (2019), Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (200NM), version 11. Available online at http://www.marinegorgons.org/.</p><p>Model run: 06/03/2023 Issued: 09/03/2023</p></div>
Monthly Maximum temperature (Image 3):	Seasonal maximum temperature (Image 4):
<div><p>Tercile maximum temperature probabilities for April 2023</p><p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2023, Australian Bureau of Meteorology Shapfile data extracted from Randers Marine Institute (2019), Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (200NM), version 11. Available online at http://www.marinegorgons.org/.</p><p>Model run: 06/03/2023 Issued: 09/03/2023</p></div>	<div><p>Tercile maximum temperature probabilities for April to June 2023</p><p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2023, Australian Bureau of Meteorology Shapfile data extracted from Randers Marine Institute (2019), Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (200NM), version 11. Available online at http://www.marinegorgons.org/.</p><p>Model run: 06/03/2023 Issued: 09/03/2023</p></div>
Monthly minimum temperature (Image 5):	Seasonal minimum temperature (Image 6):
<div><p>Tercile minimum temperature probabilities for April 2023</p><p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2023, Australian Bureau of Meteorology Shapfile data extracted from Randers Marine Institute (2019), Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (200NM), version 11. Available online at http://www.marinegorgons.org/.</p><p>Model run: 06/03/2023 Issued: 09/03/2023</p></div>	<div><p>Tercile minimum temperature probabilities for April to June 2023</p><p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2023, Australian Bureau of Meteorology Shapfile data extracted from Randers Marine Institute (2019), Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (200NM), version 11. Available online at http://www.marinegorgons.org/.</p><p>Model run: 06/03/2023 Issued: 09/03/2023</p></div>

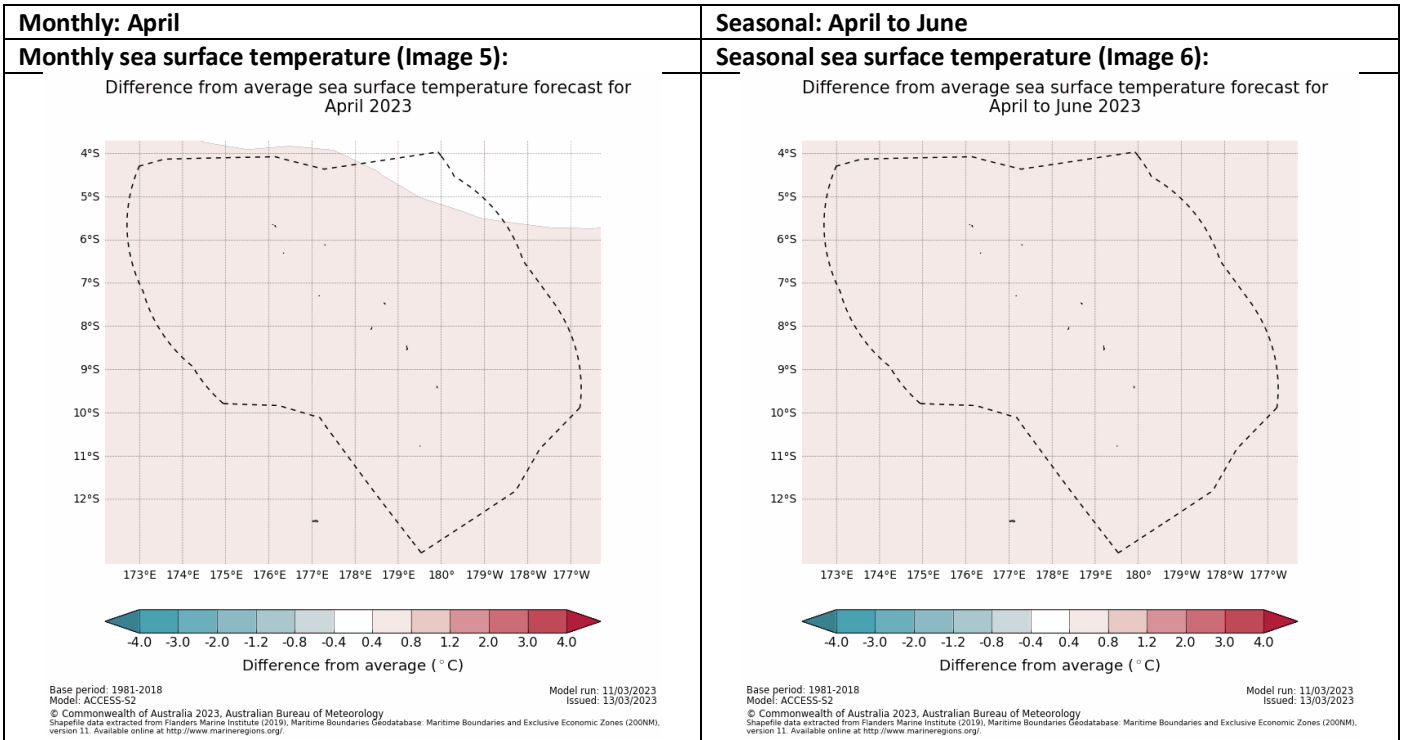
Part 2: Recent Ocean Observation

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

<p><u>Monthly: February</u></p>	<p><u>Last three months: December 2022 to February 2023:</u></p>
<p>Sea Surface Temperature (Image 1):</p>	<p>Sea Surface Temperature (Image 4):</p>
<div><p>Tuvalu</p><p>Monthly Average Sea Surface Temperature Anomaly: February 2023</p><p>©Commonwealth of Australia 2023 Australian Bureau of Meteorology, COSPPac</p><p>Reynolds SST</p></div>	<div><p>Tuvalu</p><p>3 monthly Average Sea Surface Temperature Anomaly: December 2022 to February 2023</p><p>©Commonwealth of Australia 2023 Australian Bureau of Meteorology, COSPPac</p><p>Reynolds SST</p></div>
<p>Sea level (Image 2):</p>	
<div><p>Tuvalu</p><p>Monthly Near Real Time Sea Level Anomaly: February 2023</p><p>©Commonwealth of Australia 2023 Australian Bureau of Meteorology, COSPPac</p><p>AVISO Ssalto/Duacs SLA</p></div>	
<p>Daily coral bleaching alert (Image 3):</p>	

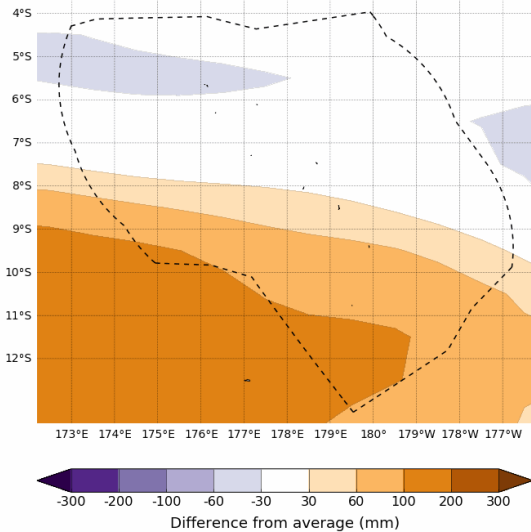


Part 2i. Monthly and Seasonal Outlooks for April and April to June 2023



Monthly sea level (Image 7):

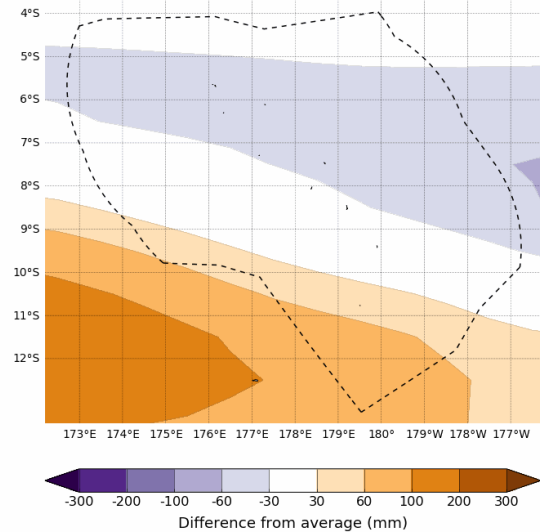
Difference from average sea surface height forecast for April 2023



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/>
Model run: 11/03/2023
Issued: 13/03/2023

Seasonal sea level (Image 8):

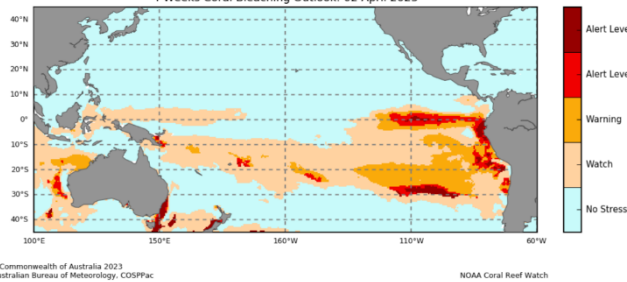
Difference from average sea surface height forecast for April to June 2023



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/>
Model run: 11/03/2023
Issued: 13/03/2023

4-week Coral Bleaching (Image 9):

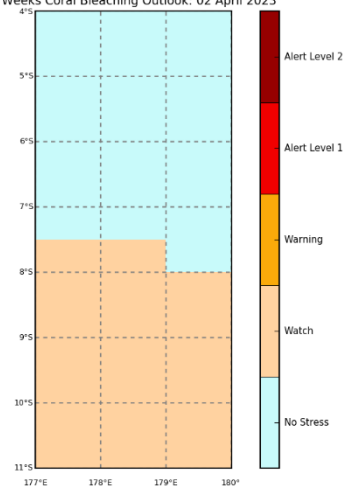
Pacific Ocean
4 Weeks Coral Bleaching Outlook: 02 April 2023



© Commonwealth of Australia 2023
Australian Bureau of Meteorology, COSPPac

NOAA Coral Reef Watch

Tuvalu
4 Weeks Coral Bleaching Outlook: 02 April 2023



© Commonwealth of Australia 2023
Australian Bureau of Meteorology, COSPPac

NOAA Coral Reef Watch

Summary Statement

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

Below normal rainfall was observed at Nanumea, Nui and Niulakita for February 2023 and December 2022 to February 2023, while Funafuti observed nearnormal rainfall for both periods.

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

Monthly /Seasonal rainfall and temperature Outlook statements

The rainfall for April is likely or very likely to be near-normal over most of the country.

The rainfall for April to June is likely or very likely to be near-normal over the northern and central parts of the country, while the southeastern part, including Niulakita, is likely to be below normal.

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

Part 2: Recent Ocean summary statement

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

February and averaged December 2022 to February 2023 ocean temperatures were 0.5 to 1.0°C above normal for southern Tuvalu Islands, while the northern part reveals -0.5 to -1.0°C.

February sea levels around Tuvalu were 100mm to 300mm above normal.

Coral Bleaching is on watch alert southwest part of the country.

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

Ocean Variable statement

April and averaged April to June ocean temperatures over the whole country are predicted to be 0.4 to 0.8°C (above normal).

April sea levels for southern Tuvalu is 30mm to 200mm above normal, with far northern Tuvalu predicted to be below normal from -30mm to -60mm.

Averaged over April to June, sea levels are predicted to be above normal ranging from 30mm to 100mm for far southern Tuvalu. Below normal sea levels of -30mm to -60mm for northern Tuvalu.

Coral bleaching outlook for the next four weeks is on 'Watch' status for central and southern Tuvalu.

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		MET Staff	22	17	5
		Disaster Dept	2	2	
		TRC	2	1	1
		TuCAN	1	1	
		Agriculture	2		2
		All Civil Servants			
		All Kaupule Secretary			
EAR Watch		MET Staff	22	17	5
		Disaster Dept	2	2	
		TRC	2	1	1
		TuCAN	1	1	
		Agriculture	2		2
		All Civil Servants			
		All Kaupule Secretary			
Monthly Climate Briefing		MET Staff	22	17	5
		Disaster Dept	2	2	
		TRC	2	1	1
		TuCAN	1	1	
		Agriculture	2		2
		All Civil Servants			
		All Kaupule Secretary			
Ocean Outlook		MET Staff	22	17	5
		Disaster Dept	2	2	
		TRC	2	1	1
		TuCAN	1	1	
		Agriculture	2		2
		All Civil Servants			
		All Kaupule Secretary			
Climate data request		Students	2		2
Total			117	85	34