

Country: Marshall Islands

Part 1: Recent climate

TABLE 1: Monthly Rainfall

Station (include data period)	May-2023	Jun-2023	Jul-2023				
	Total (mm)	Total (mm)	Total (mm)	33%tile	67%tile	Median	Rank
			Rainfall (mm)				
Majuro (1954-2023)	262.9	293.6	199.9	258.4	353.4	300.8	9/70
Kwajalein (1945-2023)	588.8	252.2	113.0	217.8	271.1	246.8	2/79

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

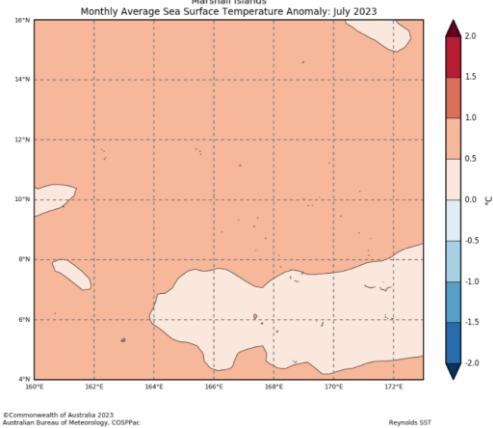
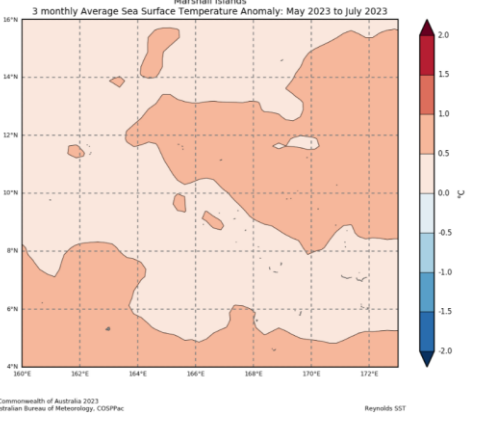
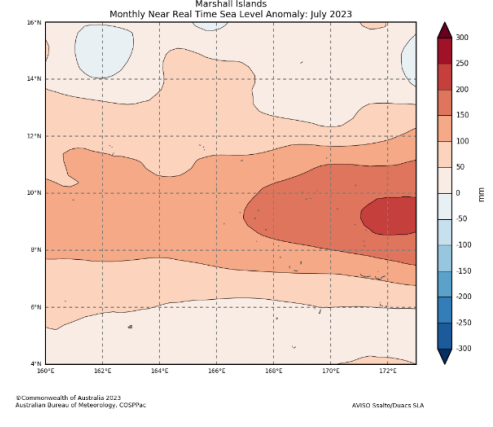
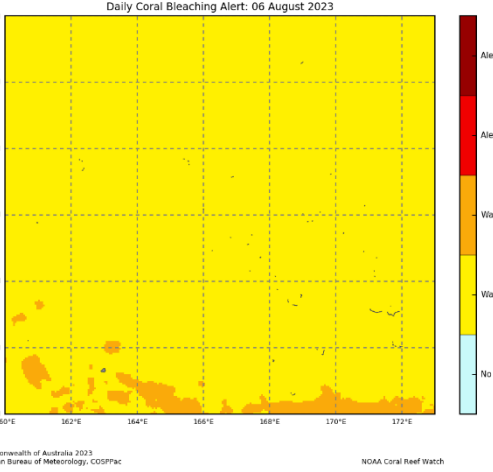
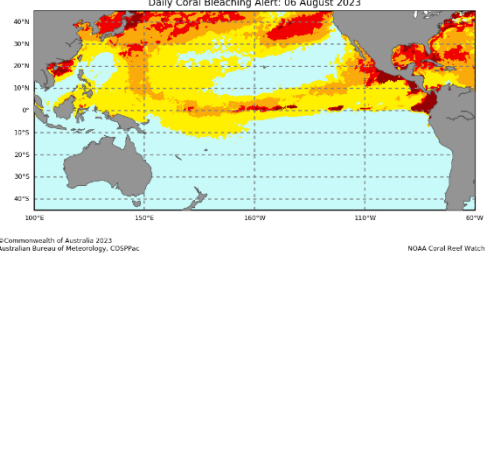
Station	Three-month Total		33%tile	67%tile	Median	Rank
	Rainfall (mm)					
Majuro (1954-2023)	756.4	Below normal	782.7	952.2	847.4	17/69
Kwajalein (1945-2023)	954.0	Above normal	575.4	799.5	684.7	70/79

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

Monthly: September	Seasonal: September to November
<div>Rainfall (Image 1)</div> <div><p>Tercile rainfall probabilities for September 2023</p><p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2023, Australian Bureau of Meteorology Shapette data extracted from Flinders Marine Institute (2019), Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (2009M), version 1.1. Available online at http://www.marine.gov.au</p><p>Model run: 05/08/2023 Issued: 08/08/2023</p></div>	<div>Rainfall (Image 2)</div> <div><p>Tercile rainfall probabilities for September to November 2023</p><p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2023, Australian Bureau of Meteorology Shapette data extracted from Flinders Marine Institute (2019), Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (2009M), version 1.1. Available online at http://www.marine.gov.au</p><p>Model run: 05/08/2023 Issued: 08/08/2023</p></div>
<div>Monthly Maximum temperature (Image 3):</div> <div><p>Tercile maximum temperature probabilities for September 2023</p><p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2023, Australian Bureau of Meteorology Shapette data extracted from Flinders Marine Institute (2019), Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (2009M), version 1.1. Available online at http://www.marine.gov.au</p><p>Model run: 05/08/2023 Issued: 08/08/2023</p></div>	<div>Seasonal maximum temperature (Image 4):</div> <div><p>Tercile maximum temperature probabilities for September to November 2023</p><p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2023, Australian Bureau of Meteorology Shapette data extracted from Flinders Marine Institute (2019), Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (2009M), version 1.1. Available online at http://www.marine.gov.au</p><p>Model run: 05/08/2023 Issued: 08/08/2023</p></div>
<div>Monthly minimum temperature (Image 5):</div> <div><p>Tercile minimum temperature probabilities for September 2023</p><p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2023, Australian Bureau of Meteorology Shapette data extracted from Flinders Marine Institute (2019), Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (2009M), version 1.1. Available online at http://www.marine.gov.au</p><p>Model run: 05/08/2023 Issued: 08/08/2023</p></div>	<div>Seasonal minimum temperature (Image 6):</div> <div><p>Tercile minimum temperature probabilities for September to November 2023</p><p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2023, Australian Bureau of Meteorology Shapette data extracted from Flinders Marine Institute (2019), Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (2009M), version 1.1. Available online at http://www.marine.gov.au</p><p>Model run: 05/08/2023 Issued: 08/08/2023</p></div>

Part 2: Recent Ocean Observation

Monthly/Three months: May and May to July 2023

Monthly: July		Last three months: May to July 2023:	
Sea Surface Temperature (Image 1):		Sea Surface Temperature (Image 4):	
<div>Marshall Islands Monthly Average Sea Surface Temperature Anomaly: July 2023</div>  <div>©Commonwealth of Australia 2023 Australian Bureau of Meteorology, COSPPac</div> <div>Reynolds SST</div>		<div>Marshall Islands 3 monthly Average Sea Surface Temperature Anomaly: May 2023 to July 2023</div>  <div>©Commonwealth of Australia 2023 Australian Bureau of Meteorology, COSPPac</div> <div>Reynolds SST</div>	
Sea level (Image 2):			
<div>Marshall Islands Monthly Near Real Time Sea Level Anomaly: July 2023</div>  <div>©Commonwealth of Australia 2023 Australian Bureau of Meteorology, COSPPac</div> <div>AWIS SeaViewers SLA</div>			
Daily coral bleaching alert (Image 3):			
<div>Marshall Islands Daily Coral Bleaching Alert: 06 August 2023</div>  <div>©Commonwealth of Australia 2023 Australian Bureau of Meteorology, COSPPac</div> <div>NOAA Coral Reef Watch</div>		<div>Pacific Ocean Daily Coral Bleaching Alert: 06 August 2023</div>  <div>©Commonwealth of Australia 2023 Australian Bureau of Meteorology, COSPPac</div> <div>NOAA Coral Reef Watch</div>	

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

Monthly: September	Seasonal: September to November
<p>Monthly sea surface temperature (Image 5):</p> <p>Difference from average sea surface temperature forecast for September 2023</p> <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2023, Australian Bureau of Meteorology Seafile data extracted from: Australian Marine Institute (2013), Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (2008M), version 11. Available online at http://www.marine.gov.au/</p> <p>Model run: 05/08/2023 Issued: 07/08/2023</p>	<p>Seasonal sea surface temperature (Image 6):</p> <p>Difference from average sea surface temperature forecast for September to November 2023</p> <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2023, Australian Bureau of Meteorology Seafile data extracted from: Australian Marine Institute (2013), Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (2008M), version 11. Available online at http://www.marine.gov.au/</p> <p>Model run: 07/08/2023 Issued: 09/08/2023</p>
<p>Monthly sea level (Image 7):</p> <p>Difference from average sea surface height forecast for September 2023</p> <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2023, Australian Bureau of Meteorology Seafile data extracted from: Australian Marine Institute (2013), Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (2008M), version 11. Available online at http://www.marine.gov.au/</p> <p>Model run: 05/08/2023 Issued: 07/08/2023</p>	<p>Seasonal sea level (Image 8):</p> <p>Difference from average sea surface height forecast for September to November 2023</p> <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2023, Australian Bureau of Meteorology Seafile data extracted from: Australian Marine Institute (2013), Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (2008M), version 11. Available online at http://www.marine.gov.au/</p> <p>Model run: 07/08/2023 Issued: 09/08/2023</p>
<p>4-week Coral Bleaching (Image 9):</p> <p>4 Weeks Coral Bleaching Outlook: 03 September 2023</p> <p>©Commonwealth of Australia 2023 Australian Bureau of Meteorology, COSPPac</p> <p>NOAA Coral Reef Watch</p>	<p>4 Weeks Coral Bleaching Outlook: 03 September 2023</p> <p>©Commonwealth of Australia 2023 Australian Bureau of Meteorology, COSPPac</p> <p>NOAA Coral Reef Watch</p>

Summary Statement

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

Below normal rainfall was recorded at both stations for July, with Kwajalein having its second lowest July rainfall in 79 years of record. Majuro experienced below average rainfall for May to July, whilst Kwajalein recorded above average rainfall.

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

Monthly /Seasonal rainfall and temperature Outlook statements

The rainfall for September is likely or very likely to be above normal over central and southern RMI, including Majuro. In most of northern RMI September's rainfall is likely to be below normal. Between these two regions is a narrow strip, which includes Kwajalein, where the outlook offers little guidance.

The rainfall for September to November is likely or very likely to be above normal over central, western and southern RMI, including at both Majuro and Kwajalein. The outlook offers little guidance for some of the northern atolls, while below normal rainfall is likely or very likely for the northeast quarter of RMI.

Maximum and minimum temperatures during September and averaged over September to November are very likely to be above normal across the Marshall Islands.

Part 2: Recent Ocean summary statement

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

July ocean temperatures around most of the RMI were utmost 1.0°C above normal, while 0.5°C near normal for Majuro and southern and southeast half of RMI.

Averaged over May to July, ocean temperatures around southern and northeast half of RMI were 0.5 to 1.0°C above normal, while the central and northern most and north western RMI were 0.0 to 0.5°C near normal.

July sea levels around the central, northern atolls and eastern RMI were 100mm to 300mm above normal.

Coral bleaching was on WATCH status for most of RMI's water.

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

Ocean Variable statement

September ocean temperatures around central and northern RMI are predicted to be 0.4 to 0.8°C above normal, while 0.8 to 1.2°C above normal in the southern RMI.

Averaged over September to November, ocean temperatures around the central and northern RMI are predicted to be 0.4 to 0.8°C above normal. Temperatures around 0.8 to 1.2°C are predicted to persist in south eastern RMI.

September and average over September to November sea levels around central and southern RMI are predicted to be -30mm to -200mm below normal. A small area of above normal sea level ranging over 60 to 100 mm is predicted in the easternmost RMI.

Coral bleaching outlook for the next four weeks at WATCH status is in place for most of the RMI's water.

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

Product	Date: July 2023	Stakeholder	Total Number of Participants	Number of Male	Number of Female	Comments (If there are comments from you Stakeholders)
Climate Bulletin						
EAR Watch						
Monthly Climate Briefing	07/17/23	Chief Secretary Office and National Disaster Management Office	7	4	3	
Ocean Outlook						
Climate data request						
Total			7	4	3	