

Pacific Islands - Ocean and Climate Outlook Forum (OCOF) No. 170

Country: Marshall Islands

Part 1: Recent climate

TABLE 1: Monthly Rainfall

Station (include data period)	Aug-2021	Sep-2021	Oct-2021				
			Total (mm)	33%tile	67%tile	Median	Rank
	Total (mm)	Total (mm)	Rainfall (mm)				
Majuro (1954-2021)	269.2	315.2	384.0	292.2	388.4	353.9	43/68
Kwajalein (1945-2021)	87.1	287.0	278.6	253.2	338.1	294.3	34/77

TABLE 2: Three-month Total Rainfall for August to October 2021

Station	Three-month Total		33%tile	67%tile	Median	Rank
	Rainfall (mm)					
Majuro (1954-2021)	968.4	Normal	880.4	1036.2	972.2	33/68
Kwajalein (1945-2021)	652.7	Below normal	756.5	901.3	857.2	11/77

NB: The X LEPS % score has been categorised as follows:

Very Low: $X < 0.0$

Low: $0 \leq X < 5$

Moderate $5 \leq X < 10$

Good: $10 \leq X < 15$

High: $15 \leq X < 25$

Very High: $25 \leq X < 35$ Exceptional: $X \geq 35$

Part 1i. Monthly and Seasonal Outlooks for December and December 2021 to February 2022

Monthly	Seasonal
Rainfall (Image 1)	Rainfall (Image 2)
<p>Tercile rainfall probabilities for December 2021</p> <p>Base period: 1981-2018 © Commonwealth of Australia 2021, Australian Bureau of Meteorology Shapefile data extracted from Flanders Marine Institute (2019), Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (2009M), version 11. Available online at http://www.maritimengos.org/ Model run: 06/11/2021 Model: ACCESS-S2</p>	<p>Tercile rainfall probabilities for December 2021 to February 2022</p> <p>Base period: 1981-2018 © Commonwealth of Australia 2021, Australian Bureau of Meteorology Shapefile data extracted from Flanders Marine Institute (2019), Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (2009M), version 11. Available online at http://www.maritimengos.org/ Model run: 06/11/2021 Model: ACCESS-S2</p>
Monthly Maximum temperature (Image 3):	Seasonal maximum temperature (Image 4):
<p>Tercile maximum temperature probabilities for December 2021</p> <p>Base period: 1981-2018 © Commonwealth of Australia 2021, Australian Bureau of Meteorology Shapefile data extracted from Flanders Marine Institute (2019), Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (2009M), version 11. Available online at http://www.maritimengos.org/ Model run: 06/11/2021 Model: ACCESS-S2</p>	<p>Tercile maximum temperature probabilities for December 2021 to February 2022</p> <p>Base period: 1981-2018 © Commonwealth of Australia 2021, Australian Bureau of Meteorology Shapefile data extracted from Flanders Marine Institute (2019), Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (2009M), version 11. Available online at http://www.maritimengos.org/ Model run: 06/11/2021 Model: ACCESS-S2</p>
Monthly minimum temperature (Image 5):	Seasonal minimum temperature (Image 6):
<p>Tercile minimum temperature probabilities for December 2021</p> <p>Base period: 1981-2018 © Commonwealth of Australia 2021, Australian Bureau of Meteorology Shapefile data extracted from Flanders Marine Institute (2019), Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (2009M), version 11. Available online at http://www.maritimengos.org/ Model run: 06/11/2021 Model: ACCESS-S2</p>	<p>Tercile minimum temperature probabilities for December 2021 to February 2022</p> <p>Base period: 1981-2018 © Commonwealth of Australia 2021, Australian Bureau of Meteorology Shapefile data extracted from Flanders Marine Institute (2019), Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (2009M), version 11. Available online at http://www.maritimengos.org/ Model run: 06/11/2021 Model: ACCESS-S2</p>

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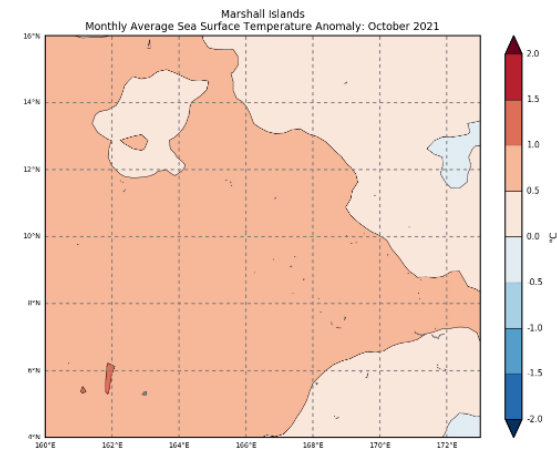
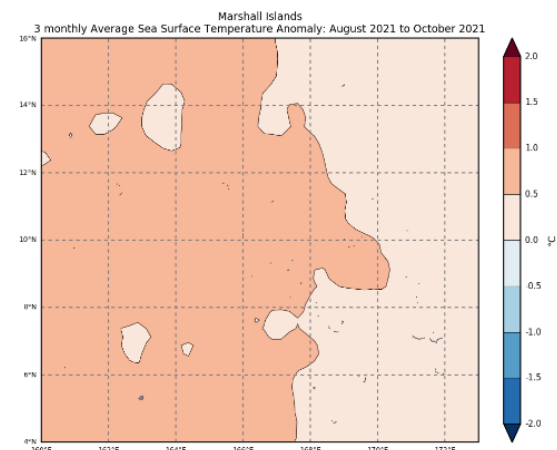
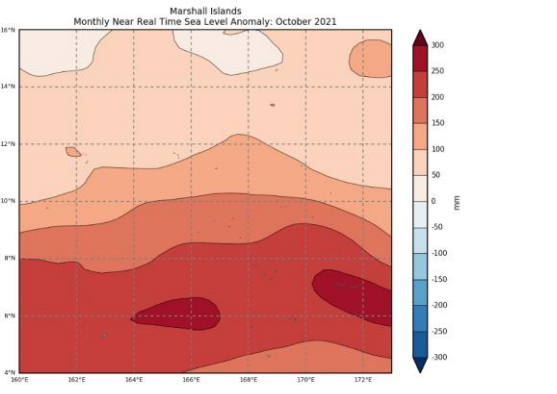
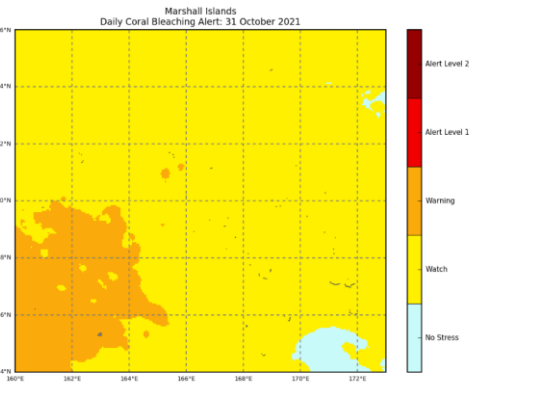
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Part 2: Recent Ocean summary statement

Monthly: October 2021

Monthly: October	Last three months: August to October 2021:
<p>Sea Surface Temperature (Image 1):</p>  <p>Marshall Islands Monthly Average Sea Surface Temperature Anomaly: October 2021</p> <p>©Pacific Community (SPC) 2021 Geoscience Energy and Maritime Division, COSPPac SPP Reynolds SST</p>	<p>Sea Surface Temperature (Image 4):</p>  <p>Marshall Islands 3 monthly Average Sea Surface Temperature Anomaly: August 2021 to October 2021</p> <p>©Pacific Community (SPC) 2021 Geoscience Energy and Maritime Division, COSPPac SPP Reynolds SST</p>
<p>Sea level (Image 2):</p>  <p>Marshall Islands Monthly Near Real Time Sea Level Anomaly: October 2021</p> <p>©Pacific Community (SPC) 2021 Geoscience Energy and Maritime Division, COSPPac SPP AVISO SeaWiFS/SLA</p>	
<p>Daily coral bleaching alert (Image 3):</p>  <p>Marshall Islands Daily Coral Bleaching Alert: 31 October 2021</p> <p>©Pacific Community (SPC) 2021 Geoscience Energy and Maritime Division, COSPPac SPP NOAA Coral Reef Watch</p>	

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Part 2i. Monthly and Seasonal Outlooks for December and December 2021 to February 2022

Monthly: December	Seasonal: December to February
Monthly sea surface temperature (Image 5):	Seasonal sea surface temperature (Image 6):
<p>Difference from average sea surface temperature forecast for December 2021</p> <p>© Commonwealth of Australia 2021 Bureau of Meteorology</p> <p>Model: ACCESS-52 Base Period: 1981-2018</p> <p>Model Run: 27/10/2021 Issued: Map not issued</p>	<p>Difference from average sea surface temperature forecast for December 2021 to February 2022</p> <p>© Commonwealth of Australia 2021 Bureau of Meteorology</p> <p>Model: ACCESS-52 Base Period: 1981-2018</p> <p>Model Run: 27/10/2021 Issued: Map not issued</p>
Monthly sea level (Image 7):	Seasonal sea level (Image 8):
<p>Difference from average sea surface height forecast for November 2021</p> <p>© Commonwealth of Australia 2021 Bureau of Meteorology</p> <p>Model: ACCESS-52 Base Period: 1981-2018</p> <p>Model Run: 27/10/2021 Issued: Map not issued</p>	<p>Difference from average sea surface height forecast for November 2021 to January 2022</p> <p>© Commonwealth of Australia 2021 Bureau of Meteorology</p> <p>Model: ACCESS-52 Base Period: 1981-2018</p> <p>Model Run: 27/10/2021 Issued: Map not issued</p>
4-week Coral Bleaching (Image 9):	
<p>Marshall Islands 4 Weeks Coral Bleaching Outlook: 28 November 2021</p> <p>© Pacific Community (SPC) 2021 Geoscience Energy and Maritime Division, COSPac SPP</p> <p>NOAA Coral Reef Watch</p>	

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Summary Statement

Monthly and last three months: October 2021/August to October statement (Highly significant changes)

Both Majuro and Kwajalein recorded normal rainfall for the month of October.

Normal rainfall was recorded at Majuro for the period of August to October. On the other hand, below normal was recorded at Kwajalein for the period.

Part 1i. Monthly and Seasonal Outlooks for December and December 2021 to February 2022

Monthly /Seasonal rainfall and temperature Outlook statements (Highly significant changes)

The rainfall outlook for December is likely to be above normal for both Majuro and Kwajalein. A similar pattern is also projected for the next three months (December to February).

The monthly and seasonal minimum and maximum temperature outlook is very likely to be above normal for most of the islands in the Republic. Near normal temperature is likely for the southernmost islands.

Part 2: Recent Ocean summary statement

Monthly and last three months: October/August to October 2021 (Highly significant changes)

Most of the islands experienced above average SST ranging from 0.5 to 1.0 °C during the month of October. For the period (August to October), the western islands including Kwajalein experienced above average SST ranging from 0.5 to 1.0 °C while Majuro and nearby atolls ranging from 0.0 to 0.5 °C.

The monthly sea level anomaly was significantly higher than normal at Majuro and nearby atolls ranging from 250 to 300 mm. While Kwajalein and rest of the islands observed sea level higher than normal ranging from 200 to 250 mm during the month of October.

A 'WATCH' status for Coral Bleaching was in place for most of the RMI during the month of October.

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Part 2i. Monthly and Seasonal Outlooks for December and December 2021 to February 2022

Ocean Variable statement *(Highly significant changes)*

The monthly and seasonal outlook for the RMI archipelago shows a significant temperature difference of 0.4 to 0.8°C.

The monthly and seasonal outlook for central RMI shows a significant sea surface heights difference of 60 to 100 mm, while -30 to 30 mm for the northern atolls, and 100 to 200 mm for the western atolls.

The 4 weeks Coral Bleaching Outlook shows a 'WATCH' status for most of the islands in the RMI.

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

Product	Date: October 2021	Stakeholder	Total Number of Participants	Number of male	Number of female
Climate Bulletin					
EAR Watch					
Monthly Climate Briefing	10/22/21	Office of the Chief Secretary (CSO) and National Disaster Management Office (NDMO)	5	2	3
Ocean Outlook					
Climate data request					
Total			5	2	3

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