

Pacific Islands - Ocean and Climate Outlook Forum (OCOF) No. 185

Country: Cook Islands

Part 1: Recent climate

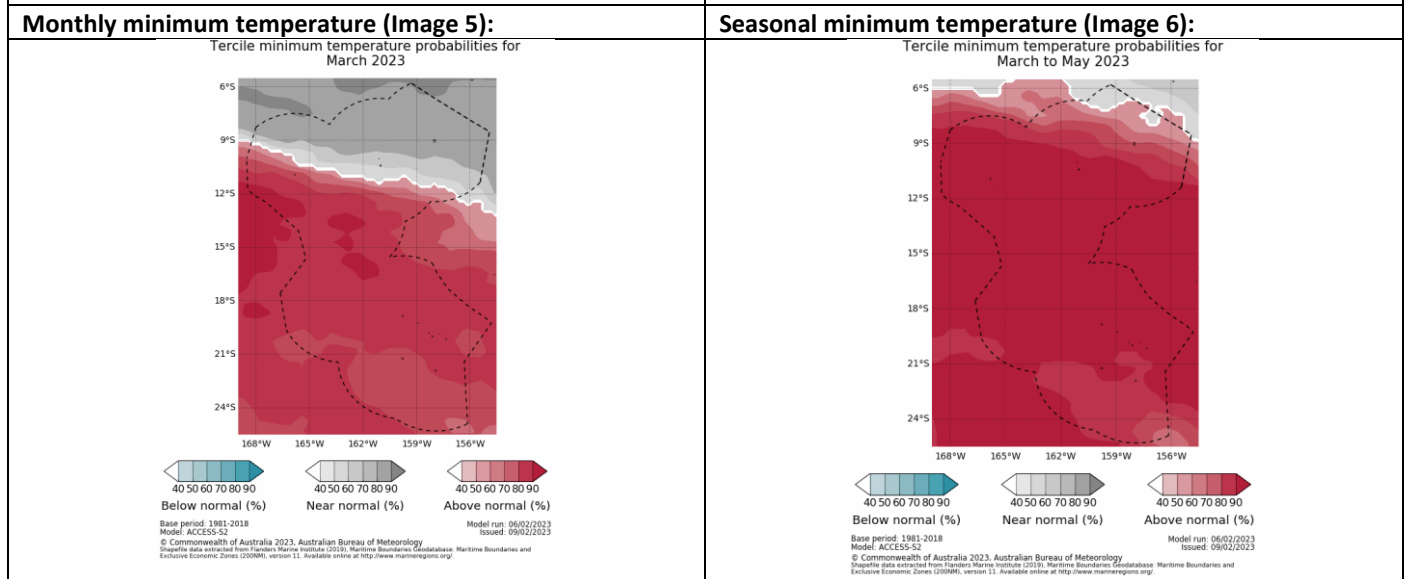
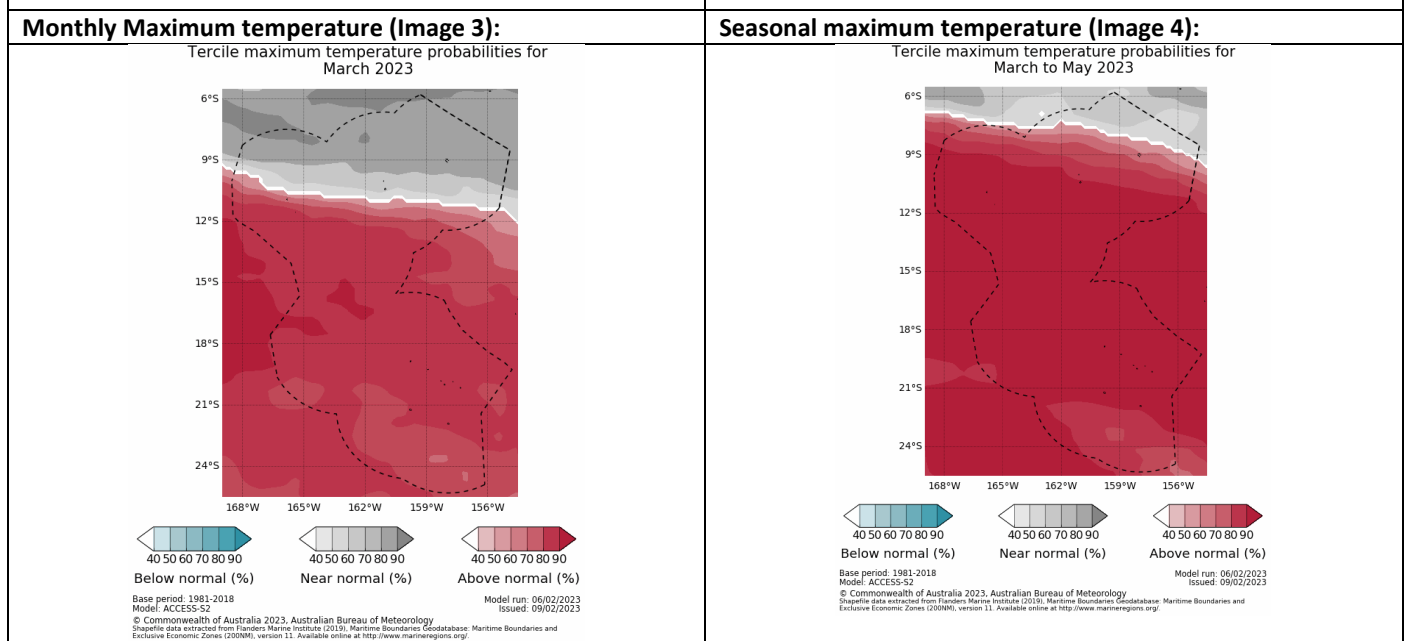
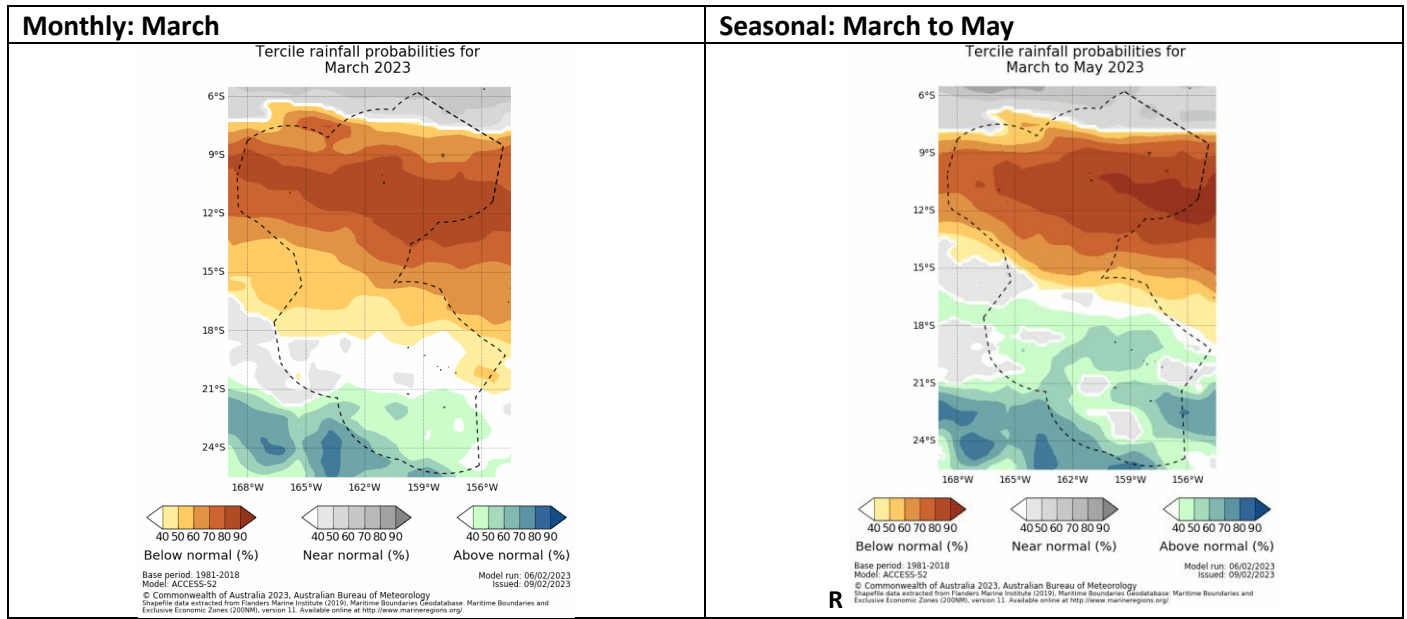
TABLE 1: Monthly Rainfall

Station (include data period)	Nov-2022	Dec-2022	Jan-2023				Rank
			Total (mm)	33%tile	67%tile	Median	
	Total (mm)	Total (mm)	Rainfall (mm)				
Penrhyn (1937-2023)	118.8	49.3	70.6	121.7	302.1	199.8	13/85
Rarotonga (1899-2023)	19.3	358.5	282.9	162.0	270.0	220.0	84/125

TABLE 2: Three-month Total Rainfall for November 2022 to January 2023

Station	Three-month Total		33%tile	67%tile	Median	Rank
	Rainfall (mm)					
Penrhyn (1937-2023)	238.7	Below normal	399.1	757.9	592.2	14/85
Rarotonga (1899-2023)	660.7	Normal	498.0	687.4	581.5	76/124

Part 1i. Monthly and Seasonal Outlooks for March and March to May 2023

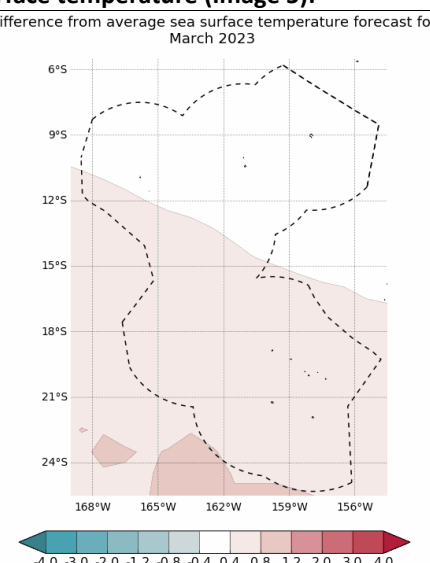
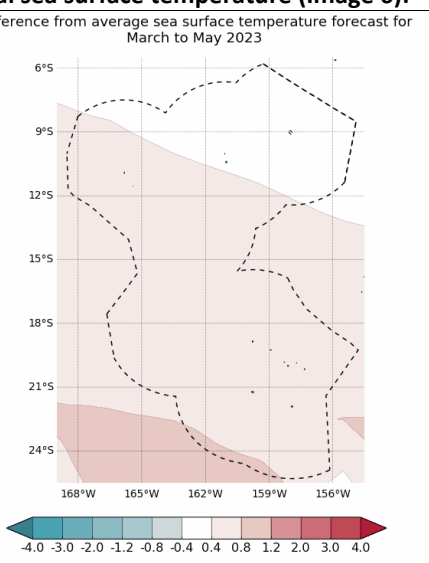
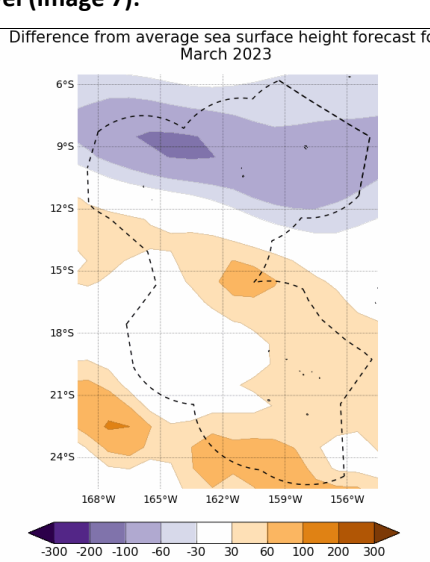
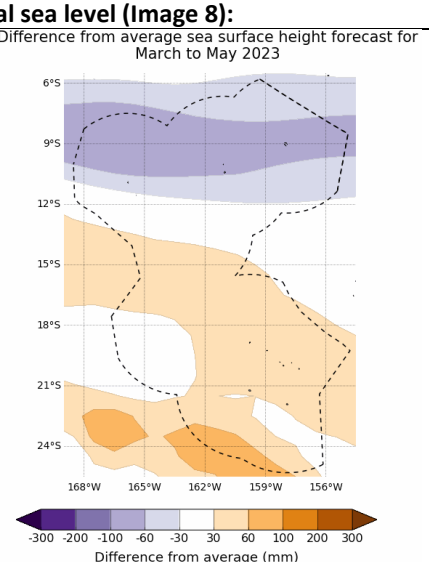
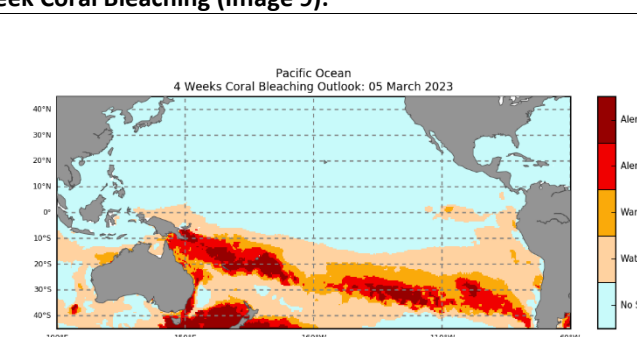
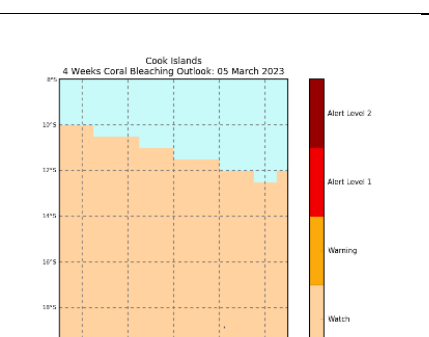


Part 2: Recent Ocean Observation

Monthly/Three months: January 2023 and November 2022 to January 2023

Monthly: January	Last three months: November 2022 to January 2023:
<p>Sea Surface Temperature (Image 1):</p> <p>Cook Islands Monthly Average Sea Surface Temperature Anomaly: January 2023</p> <p>©Commonwealth of Australia 2023 Australian Bureau of Meteorology, COSPPac</p> <p>Reynolds SST</p>	<p>Sea Surface Temperature (Image 4):</p> <p>Cook Islands 3 monthly Average Sea Surface Temperature Anomaly: November 2022 to January 2023</p> <p>©Commonwealth of Australia 2023 Australian Bureau of Meteorology, COSPPac</p> <p>Reynolds SST</p>
<p>Sea level (Image 2):</p> <p>Cook Islands Monthly Near Real Time Sea Level Anomaly: January 2023</p> <p>©Commonwealth of Australia 2023 Australian Bureau of Meteorology, COSPPac</p> <p>AVISO SeaLands/Duacs SLA</p>	
<p>Daily coral bleaching alert (Image 3):</p> <p>Pacific Ocean Daily Coral Bleaching Alert: 06 February 2023</p> <p>©Commonwealth of Australia 2023 Australian Bureau of Meteorology, COSPPac</p> <p>NOAA Coral Reef Watch</p>	<p>Cook Islands Daily Coral Bleaching Alert: 06 February 2023</p> <p>©Commonwealth of Australia 2023 Australian Bureau of Meteorology, COSPPac</p> <p>NOAA Coral Reef Watch</p>

Part 2i. Monthly and Seasonal Outlooks for March and March to May 2023

Monthly: March	Seasonal: March to May
<p>Monthly sea surface temperature (Image 5):</p> <p>Difference from average sea surface temperature forecast for March 2023</p>  <p>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.maritimerregions.org/</p> <p>Model run: 11/02/2023 Issued: 13/02/2023</p>	<p>Seasonal sea surface temperature (Image 6):</p> <p>Difference from average sea surface temperature forecast for March to May 2023</p>  <p>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.maritimerregions.org/</p> <p>Model run: 11/02/2023 Issued: 13/02/2023</p>
<p>Monthly sea level (Image 7):</p> <p>Difference from average sea surface height forecast for March 2023</p>  <p>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.maritimerregions.org/</p> <p>Model run: 11/02/2023 Issued: 13/02/2023</p>	<p>Seasonal sea level (Image 8):</p> <p>Difference from average sea surface height forecast for March to May 2023</p>  <p>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.maritimerregions.org/</p> <p>Model run: 11/02/2023 Issued: 13/02/2023</p>
<p>4-week Coral Bleaching (Image 9):</p> <p>Pacific Ocean 4 Weeks Coral Bleaching Outlook: 05 March 2023</p>  <p>© Commonwealth of Australia 2023 Australian Bureau of Meteorology, COSPPac</p> <p>NOAA Coral Reef Watch</p>	<p>Cook Islands 4 Weeks Coral Bleaching Outlook: 05 March 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: January 2023/November 2022 to January 2023 statement

Rainfall was below normal at Penrhyn for January 2023 and for the 3-month period of November 2022 to January 2023. On the hand, Rarotonga had above normal rainfall for January 2023, and near-normal for November 2022 to January 2023.

Part 1i. Monthly and Seasonal Outlooks for March and March to May 2023

Monthly /Seasonal rainfall and temperature Outlook statements

March rainfall is likely or very likely to be below normal over the central to northern Cook Islands, including Penrhyn. Rarotonga's March rainfall is likely to be near-normal, while further south above normal rainfall is likely

The rainfall for March to May very likely to be below normal over the northern islands, including Penrhyn, while above normal rainfall is likely over the southern islands, including Rarotonga.

Maximum and minimum temperatures during March are likely to be near-normal over the far northern islands, including Penrhyn, but above normal temperatures are very likely elsewhere, including at Rarotonga.

Maximum and minimum temperatures averaged over March to May are very likely to be above normal over most of the country, including both Penrhyn and Rarotonga.

Part 2: Recent Ocean summary statement

Monthly and last three months: January 2023/November 2022 to January 2023

For January and the past three months, November to January, majority of Cook Islands experienced near normal ocean temperatures, with exception of far northern islands experiencing below normal temperatures of upmost -1 degrees Celsius.

For January 2023, Cook Islands experienced above average sea level heights of upmost 200mm. Far southern Cooks experienced above average sea level anomalies of upmost 300mm.

Coral bleaching alert status on 'Watch'.

Part 2i. Monthly and Seasonal Outlooks for March and March to May 2023

Ocean Variable statement

March ocean temperatures around Penrhyn are predicted to be -0.4 to 0.4°C near normal, and 0.4 to 0.8°C above normal for Rarotonga.

Averaged over March to May, ocean temperatures Penrhyn are predicted to be -0.4 to 0.4°C near normal, and 0.4 to 0.8°C above normal for Rarotonga.

March sea levels around Penrhyn are predicted to be -60mm to -100mm below normal and between 30mm to 60mm above normal around Rarotonga.

Averaged over March to May, sea levels around Penrhyn are predicted to be -60mm to -100mm below normal and between 30mm to 60mm above normal around Rarotonga.

Coral bleaching outlook status is on 'Watch'.

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

Product	Date: January 2023	Stakeholder	Total Number of Participants	Number of male	Number of female
Climate Bulletin					
EAR Watch		CIMS, MOT, EMCI & Climate	40	20	20
Monthly Climate Briefing		CIMS, MOT, EMCI & Climate	40	20	20
Ocean Outlook					
Climate data request		MMR & TTV	2		2
Total			82	40	42