

Pacific Islands - Ocean and Climate Outlook Forum (OCOF) No. 177

Country: Cook Islands

Part 1: Recent climate

TABLE 1: Monthly Rainfall

Station (include data period)	Mar-2022	Apr-2022	May-2022				Rank
			Total (mm)	33%tile	67%tile	Median	
	Total (mm)	Total (mm)	Rainfall (mm)				
Penrhyn (1937-2022)	153.2	206.2	173.9	96.3	180.2	125.0	57/84
Rarotonga (1899-2022)	291.7	145.0	213.4	113.9	201.0	150.0	90/124

TABLE 2: Three-month Total Rainfall for March to May 2022

Station	Three-month Total		33%tile	67%tile	Median	Rank
	Rainfall (mm)					
Penrhyn (1937-2022)	533.3	Normal	375.0	675.0	486.8	51/82
Rarotonga (1899-2022)	650.1	Above normal	499.2	636.7	575.5	78/124

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

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Part 1i. Monthly and Seasonal Outlooks for July and July to September 2022

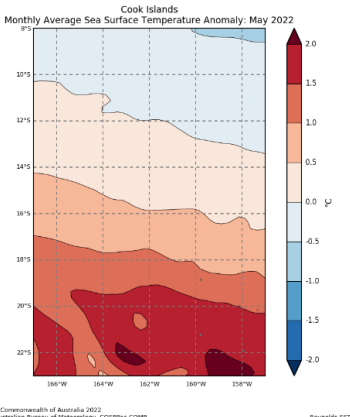
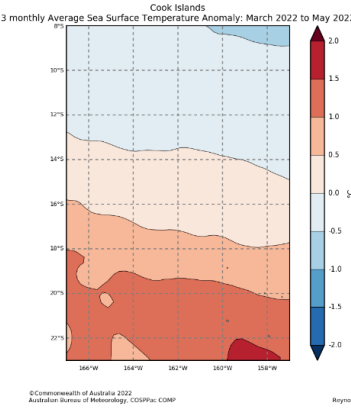
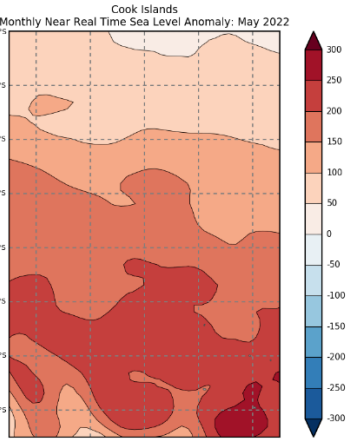
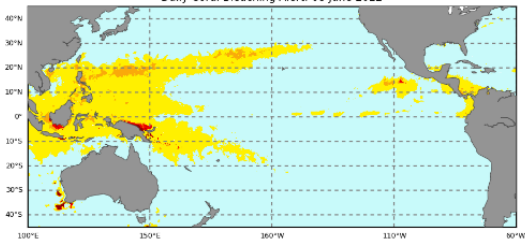
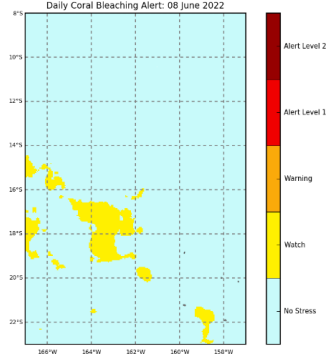
Monthly: July	Seasonal: July to September
<p>Rainfall (Image 1)</p> <p>Tercile rainfall probabilities for July 2022</p> <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2022, Australian Bureau of Meteorology Diagnostic data extracted from European Marine Institute (2020), Maritime Boundary Geodatabase, Maritime Boundaries and Exclusive Economic Zones (2009), version 1.1. Available online at http://www.marine.gov.au</p>	<p>Rainfall (Image 2)</p> <p>Tercile rainfall probabilities for July to September 2022</p> <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2022, Australian Bureau of Meteorology Diagnostic data extracted from European Marine Institute (2020), Maritime Boundary Geodatabase, Maritime Boundaries and Exclusive Economic Zones (2009), version 1.1. Available online at http://www.marine.gov.au</p>
<p>Monthly Maximum temperature (Image 3):</p> <p>Tercile maximum temperature probabilities for July 2022</p> <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2022, Australian Bureau of Meteorology Diagnostic data extracted from European Marine Institute (2020), Maritime Boundary Geodatabase, Maritime Boundaries and Exclusive Economic Zones (2009), version 1.1. Available online at http://www.marine.gov.au</p>	<p>Seasonal maximum temperature (Image 4):</p> <p>Tercile maximum temperature probabilities for July to September 2022</p> <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2022, Australian Bureau of Meteorology Diagnostic data extracted from European Marine Institute (2020), Maritime Boundary Geodatabase, Maritime Boundaries and Exclusive Economic Zones (2009), version 1.1. Available online at http://www.marine.gov.au</p>
<p>Monthly minimum temperature (Image 5):</p> <p>Tercile minimum temperature probabilities for July 2022</p> <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2022, Australian Bureau of Meteorology Diagnostic data extracted from European Marine Institute (2020), Maritime Boundary Geodatabase, Maritime Boundaries and Exclusive Economic Zones (2009), version 1.1. Available online at http://www.marine.gov.au</p>	<p>Seasonal minimum temperature (Image 6):</p> <p>Tercile minimum temperature probabilities for July to September 2022</p> <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2022, Australian Bureau of Meteorology Diagnostic data extracted from European Marine Institute (2020), Maritime Boundary Geodatabase, Maritime Boundaries and Exclusive Economic Zones (2009), version 1.1. Available online at http://www.marine.gov.au</p>

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Part 2: Recent Ocean summary statement

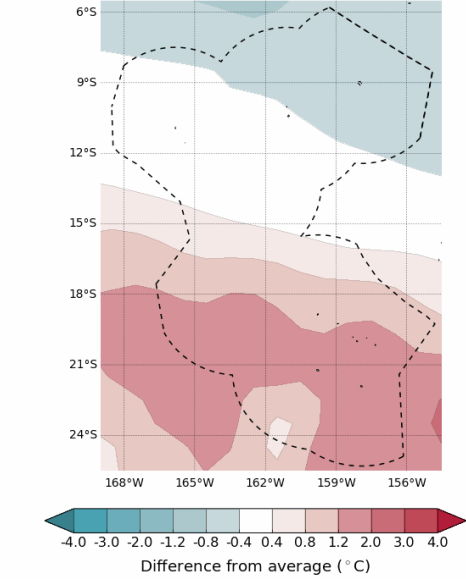
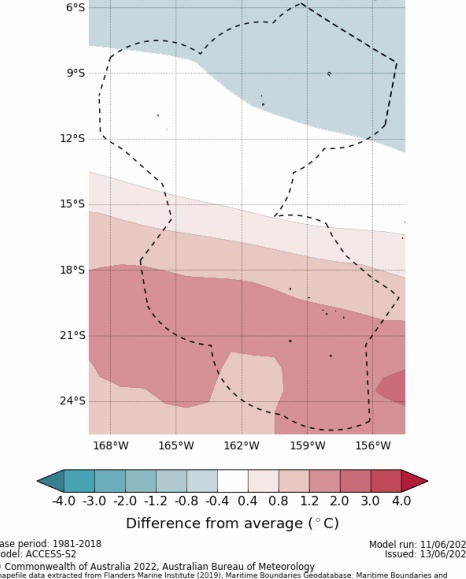
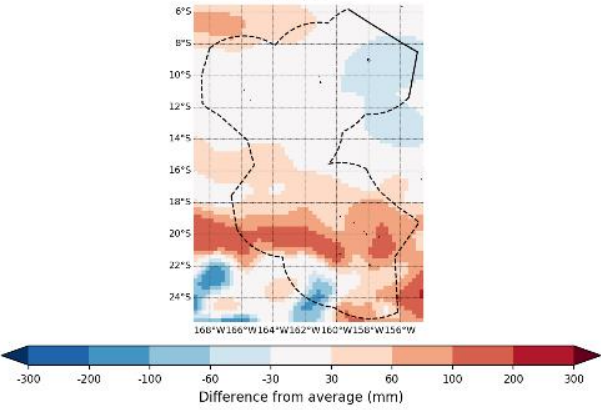
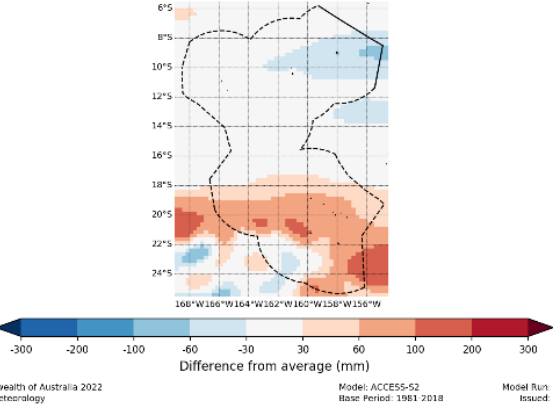
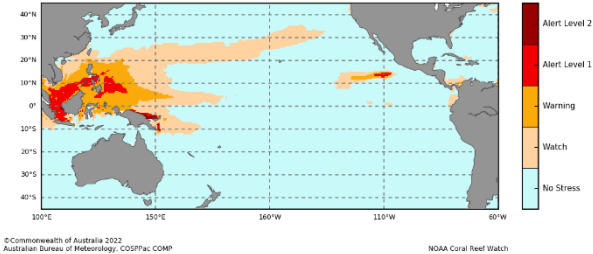
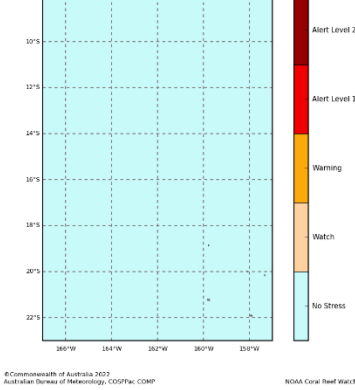
Monthly: May 2022

Monthly: May	Last three months: March to May 2022:
<p>Sea Surface Temperature (Image 1):</p>  <p>Cook Islands Monthly Average Sea Surface Temperature Anomaly: May 2022</p> <p>©Commonwealth of Australia 2022 Australian Bureau of Meteorology, COSPPac COMP</p> <p>Reynolds SST</p>	<p>Sea Surface Temperature (Image 4):</p>  <p>Cook Islands 3 monthly Average Sea Surface Temperature Anomaly: March 2022 to May 2022</p> <p>©Commonwealth of Australia 2022 Australian Bureau of Meteorology, COSPPac COMP</p> <p>Reynolds SST</p>
<p>Sea level (Image 2):</p>  <p>Cook Islands Monthly Near Real Time Sea Level Anomaly: May 2022</p> <p>©Commonwealth of Australia 2022 Australian Bureau of Meteorology, COSPPac COMP</p> <p>AVISO SeaWiFS/Quacs SLA</p>	
<p>Daily coral bleaching alert (Image 3):</p>  <p>Pacific Ocean Daily Coral Bleaching Alert: 08 June 2022</p> <p>©Commonwealth of Australia 2022 Australian Bureau of Meteorology, COSPPac COMP</p> <p>NOAA Coral Reef Watch</p>	 <p>Cook Islands Daily Coral Bleaching Alert: 08 June 2022</p> <p>©Commonwealth of Australia 2022 Australian Bureau of Meteorology, COSPPac COMP</p> <p>NOAA Coral Reef Watch</p>

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Part 2i. Monthly and Seasonal Outlooks for July and July to September 2022

Monthly: July	Seasonal: July to September
<p>Monthly sea surface temperature (Image 5):</p> <p>Difference from average sea surface temperature forecast for July 2022</p>  <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2022, 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: 11/06/2022 Issued: 13/06/2022</p>	<p>Seasonal sea surface temperature (Image 6):</p> <p>Difference from average sea surface temperature forecast for July to September 2022</p>  <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2022, 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: 11/06/2022 Issued: 13/06/2022</p>
<p>Monthly sea level (Image 7):</p> <p>Difference from average sea surface height forecast for July 2022</p>  <p>© Commonwealth of Australia 2022 Bureau of Meteorology</p> <p>Model: ACCESS-S2 Base Period: 1981-2018</p> <p>Model Run: 28/06/2022 Issued: 07/07/2022</p>	<p>Seasonal sea level (Image 8):</p> <p>Difference from average sea surface height forecast for July 2022 to September 2022</p>  <p>© Commonwealth of Australia 2022 Bureau of Meteorology</p> <p>Model: ACCESS-S2 Base Period: 1981-2018</p> <p>Model Run: 28/06/2022 Issued: 07/07/2022</p>
<p>4-week Coral Bleaching (Image 9):</p> <p>Pacific Ocean 4 Weeks Coral Bleaching Outlook: 03 July 2022</p>  <p>© Commonwealth of Australia 2022 Australian Bureau of Meteorology, COSPAR, COMIP</p> <p>NOAA Coral Reef Watch</p>	<p>Cook Islands 4 Weeks Coral Bleaching Outlook: 03 July 2022</p>  <p>© Commonwealth of Australia 2022 Australian Bureau of Meteorology, COSPAR, COMIP</p> <p>NOAA Coral Reef Watch</p>

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Summary Statement

Monthly and last three months: May 2022/March to May 2022 statement (Highly significant changes)

Normal rainfall was recorded at Penrhyn station for May and March to May period while Rarotonga recorded above normal for the same periods.

Part 1i. Monthly and Seasonal Outlooks for July and July to September 2022

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

Rainfall outlook for next month and 3 months is very likely to be below normal for Penrhyn and near normal to above normal for Rarotonga.

Temperature outlook patterns is similar for next month and next 3 months which is very likely to be below normal for Penrhyn, and above normal is very likely for all Southern Cooks including Rarotonga.

Part 2: Recent Ocean summary statement

Monthly and last three months: May/March to May 2022 (Highly significant changes)

Sea Surface Temperature statement

Penrhyn experienced below normal SST meanwhile the rest of the Cooks experienced above average SST for May 2022.

Sea level statement

Above normal for all Cooks waters in May 2022.

Daily bleaching alert statement

Few 'watch alert' patches in the central and southern Cooks and 'no stress' coral bleaching alert status was seen for the rest of Cook Islands for May 2022.

Last three months Sea Surface Temperature statement

For the March to May 2022 period, warmer than average SSTs were experienced for central and the southern Cooks. Far north of northern Cooks, including Penrhyn was below normal.

Part 2i. Monthly and Seasonal Outlooks for July and July to September 2022

Ocean Variable statement (Highly significant changes)

Monthly sea surface temperature statement

Monthly and seasonal outlook shows below average for Penrhyn and above average for Southern Cooks including Rarotonga with a significant temperature difference of 0.8 to 2.0°C for July 2022.

Seasonal Sea Surface Temperature statement

Seasonal outlook similar to the monthly outlook.

Monthly sea level statement

Outlooks are likely to be below average for Penrhyn and above normal for Rarotonga in July 2022.

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Seasonal sea level statement

Similar to monthly outlook.

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

Product	Date: May 2022	Stakeholder	Total Number of Participants	Number of male	Number of female
Climate Bulletin		MoT (Ministry of Transport)	29	17	12
EAR Watch		C.I Govt. Stakeholders and Public	?	?	?
Monthly Climate Briefing		Climate Change	8	2	6
Ocean Outlook					
Climate data request		MMR (Ministry of Marine Resources)	1		1
Total			38	19	19

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