

Pacific Islands - Ocean and Climate Outlook Forum (OCOF) No. 167

Country: Cook Islands

Part 1: Recent climate

TABLE 1: Monthly Rainfall

Station (include data period)	May-2021	Jun-2021	Jul-2021				
			Total (mm)	33%tile	67%tile	Median	Rank
	Total (mm)	Total (mm)	Rainfall (mm)				
Penrhyn (1937-2021)	22.8	85.6	67.2	79.7	139.9	116.0	25/85
Rarotonga (1899-2021)	345.7	266.3	84.2	58.0	109.0	89.0	58/123

Monthly: July 2021 statement

Below normal rainfall was recorded at Penrhyn station, while normal rainfall was registered at Rarotonga station.

TABLE 2: Three-month Total Rainfall for May to July 2021

Station	Three-month Total		33%tile	67%tile	Median	Rank
	Rainfall (mm)					
Penrhyn (1937-2021)	175.6	Below normal	290.0	486.4	350.4	10/82
Rarotonga (1899-2021)	696.2	Above normal	303.0	390.3	340.0	120/123

Last three months: May to July 2021 statement:

Rainfall (Table 2):

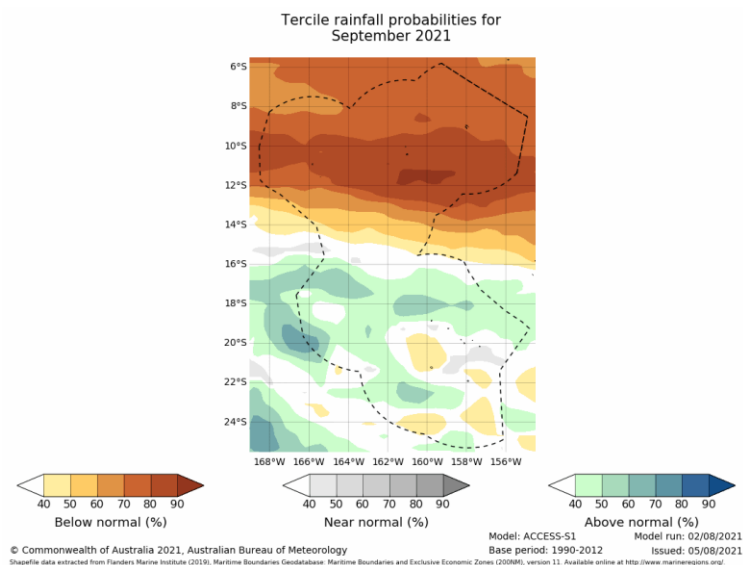
Below normal rainfall was recorded at Penrhyn station for the past three months. While above normal rainfall was recorded for Rarotonga station, this was the 4th wettest May to July period on Rarotonga's record.

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 September and September to November 2021

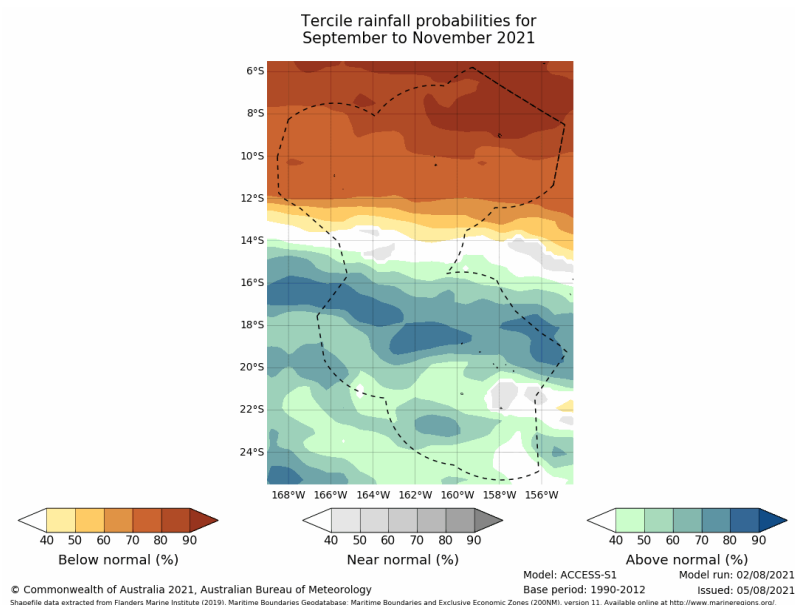
Monthly rainfall (Image 1):



Monthly rainfall Outlook statements

The outlook for the northern Cooks, which includes Penrhyn in September is very likely to be below normal with a 70-80% chance. The southern Cooks is mixed with it being mostly above normal rainfall, apart for the southern part of the southern Cooks. Rarotonga is located in an area where it is likely to be below normal rainfall for the month of September.

Seasonal rainfall (Image 2):



Seasonal Rainfall Outlook statements

The outlook is very likely to be below normal for the northern Cooks, including Penrhyn while likely to be above normal for the southern Cooks, which includes Rarotonga for September to November 2021 season.

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Low: $0 \leq X < 5$

Moderate $5 \leq X < 10$

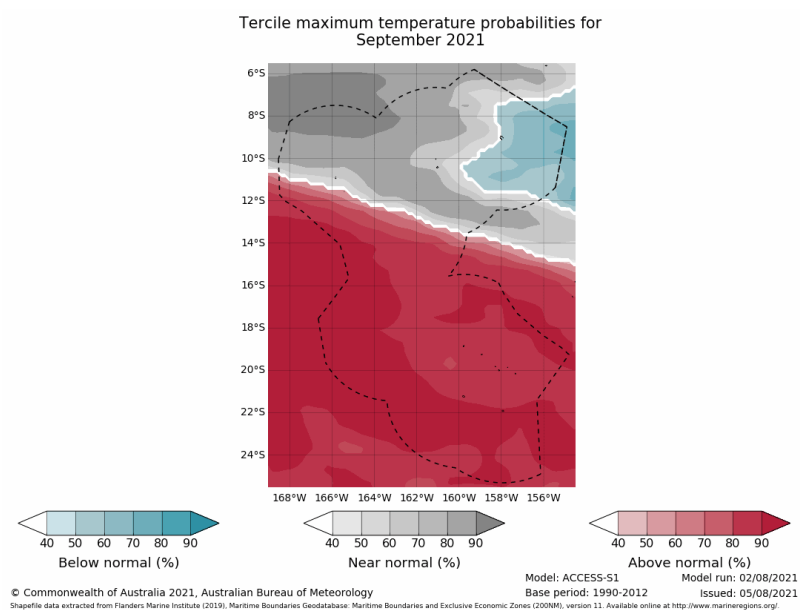
Good: $10 \leq X < 15$

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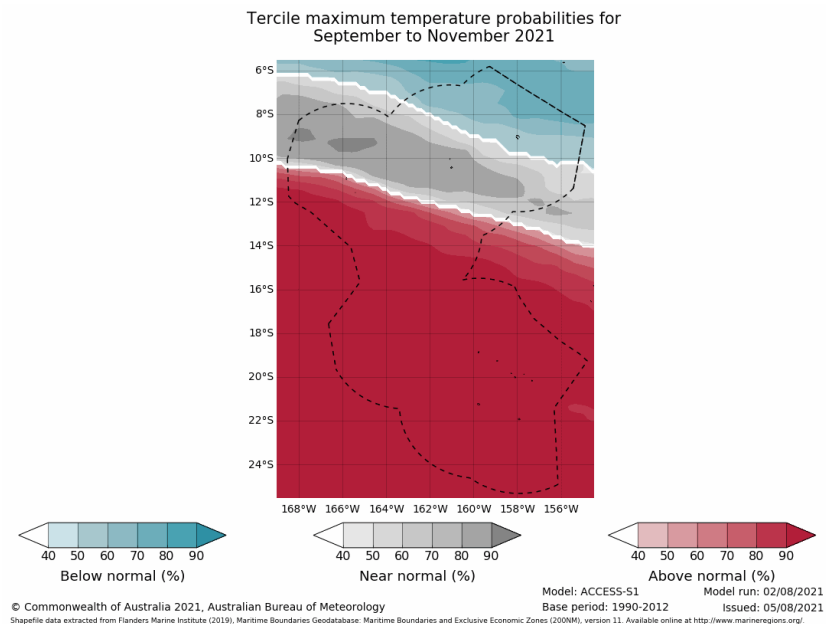
Monthly Maximum temperature (Image 3):



Monthly Maximum Outlook statements

Below normal maximum temperature is likely for Penrhyn with the rest of the northern coasts likely to be near normal. All of the southern coasts including Rarotonga is very likely to be above normal.

Seasonal maximum temperature (Image 4):



Seasonal maximum temperature Outlook statement

Same with the monthly pattern with, below normal maximum temperature is very likely for Penrhyn with the rest of the northern coasts likely to be near normal. All of the southern coasts including Rarotonga is very likely to be above normal.

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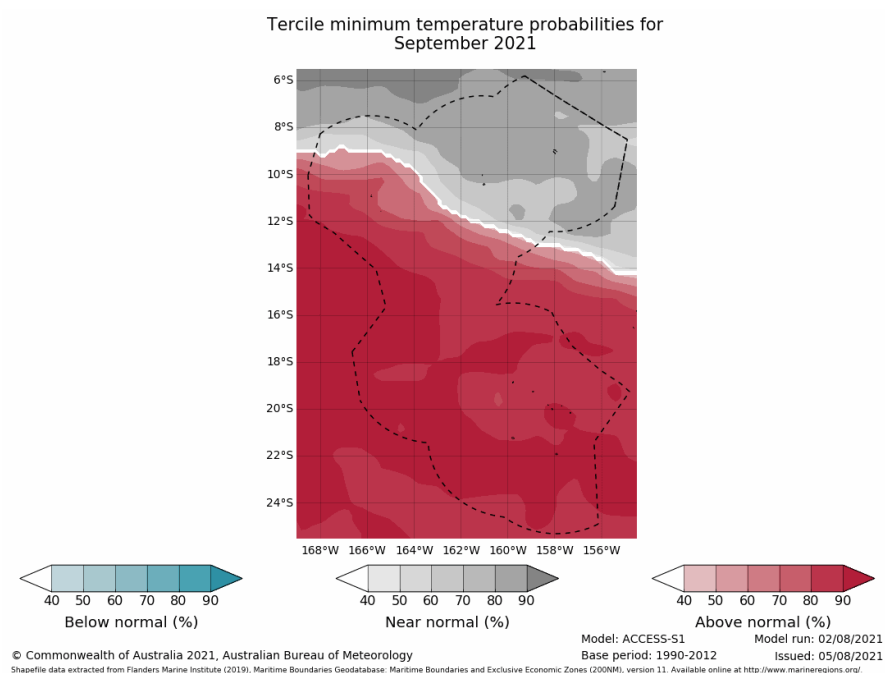
Good: $10 \leq X < 15$

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Exceptional: $X \geq 35$

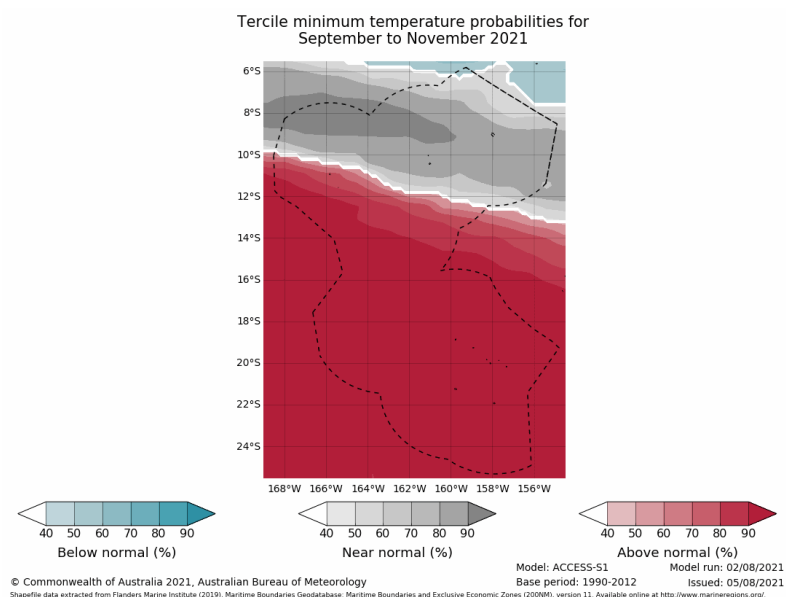
Monthly minimum temperature (Image 5):



Monthly Minimum Outlook statements

Near normal minimum temperature is very likely for the northern coasts including Penrhyn. Central and southern coasts is very likely to be above normal, which also includes Rarotonga station.

Seasonal minimum temperature (Image 6):



Seasonal minimum temperature Outlook statement

Also following the same pattern of the monthly outlook of very likely near normal minimum temperatures for the northern coasts including Penrhyn. Central and southern coasts is very likely to be above normal, which also includes Rarotonga station.

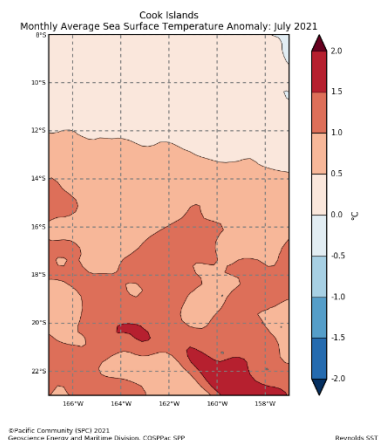
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Part 2: Recent Ocean summary statement

Monthly: July 2021

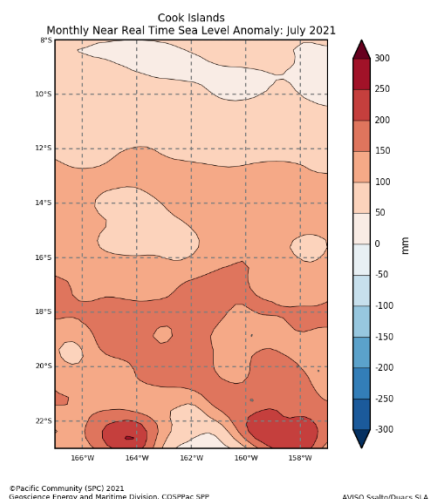
Sea Surface Temperature (Image 1):



Sea Surface Temperature statement

Most of the Cooks archipelago experienced above average SST in the month of July 2021. Significant warm SSTs were experienced in the southern cooks. Highest SSTs were 1.5 to 2.0 degrees above average and located just to the south off Rarotonga.

Sea level (Image 2):



Sea level statement

The sea level anomaly across the Cook Islands in July 2021 was significantly higher than normal, with majority of the archipelago in the range of 50 to 250 mm above average. This additional sea level anomaly needs to be taken into account when using the tide calendars by adding it onto the high/low tide levels.

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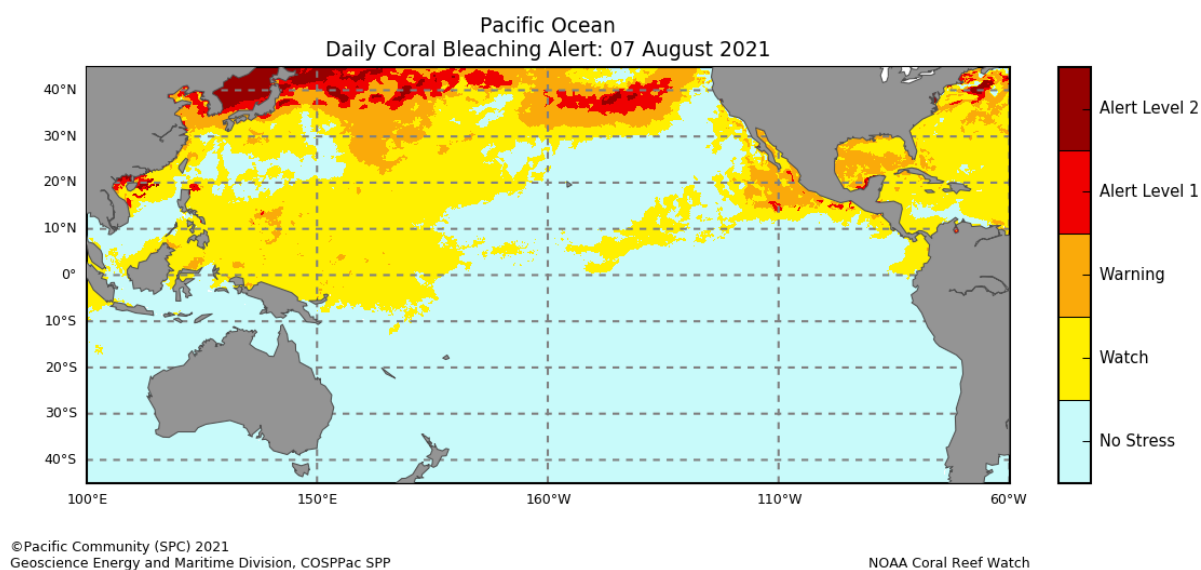
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Daily coral bleaching alert (Image 3):

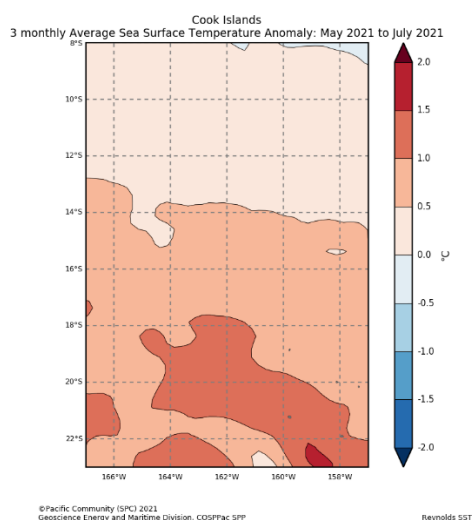


Daily bleaching alert statement

Even with the warm SSTs experienced across the Cook Islands, 'no stress' coral bleaching alert status for much of the region.

Last three months: May to July 2021:

Sea Surface Temperature (Image 4):



Last three months Sea Surface Temperature statement

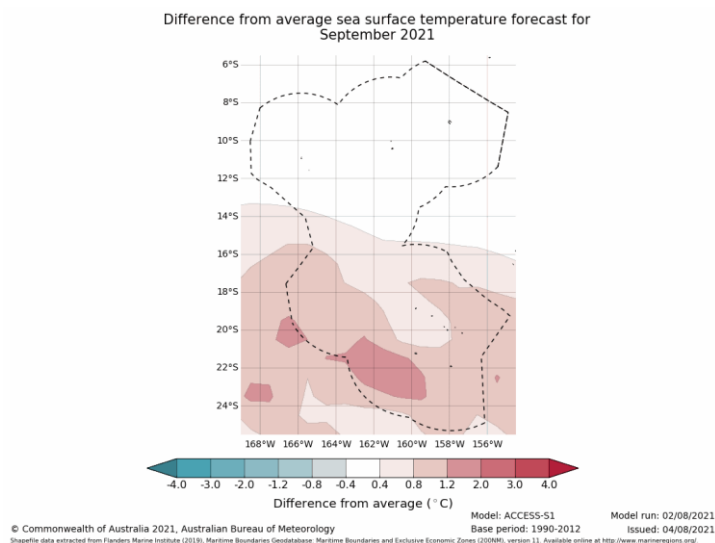
For the May to July 2021 period, similar to the monthly pattern of warmer than average SSTs were experienced in the Cook Islands in the range of 0.0 to 1.5 degrees above average.

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Part 2i. Monthly and Seasonal Outlooks for September and September to November 2021

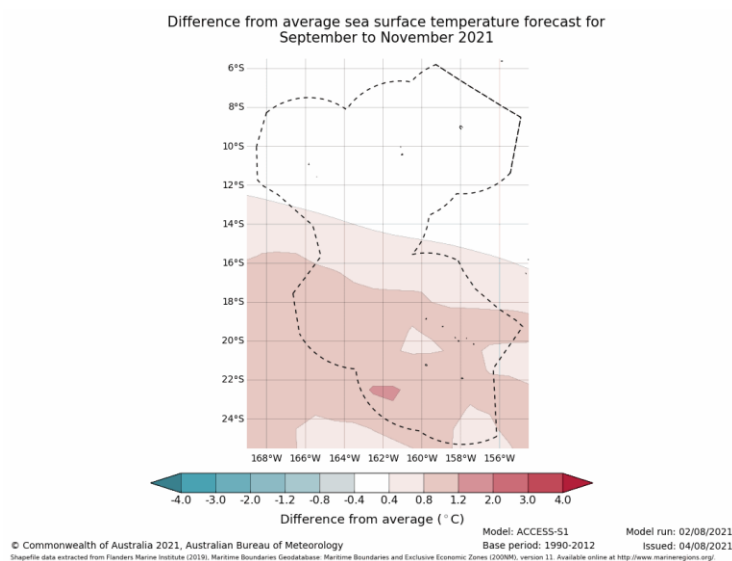
Monthly sea surface temperature (Image 5):



Monthly sea surface temperature statement

The outlook for the Cook Islands archipelago shows a significant temperature difference of -0.4-1.2°C for September.

Seasonal sea surface temperature (Image 6):



Seasonal Sea Surface Temperature statement

The outlook for the Cooks archipelago shows SSTs are likely to be close to average for the September to November period. The outlook for Rarotonga shows a significant temperature difference of 0.8-1.2°C above normal for the September to November period.

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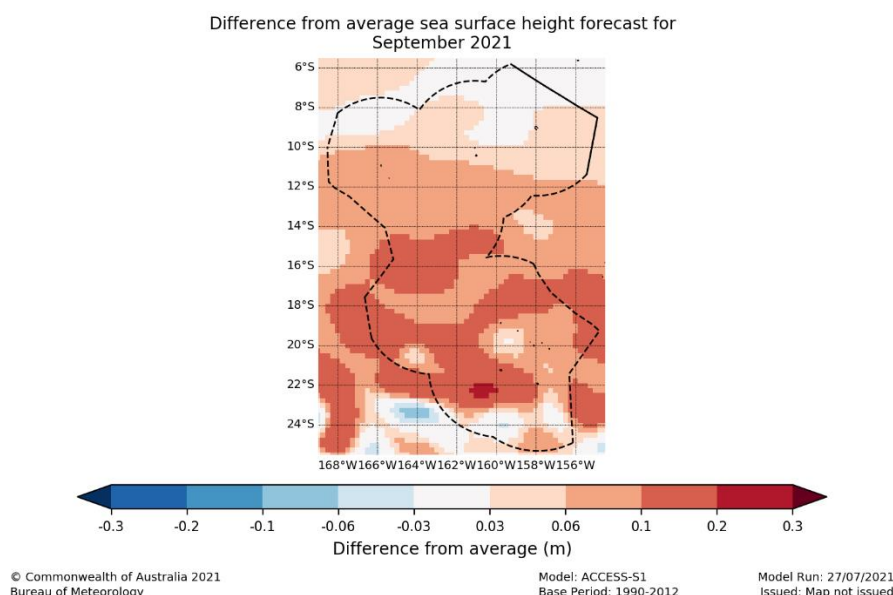
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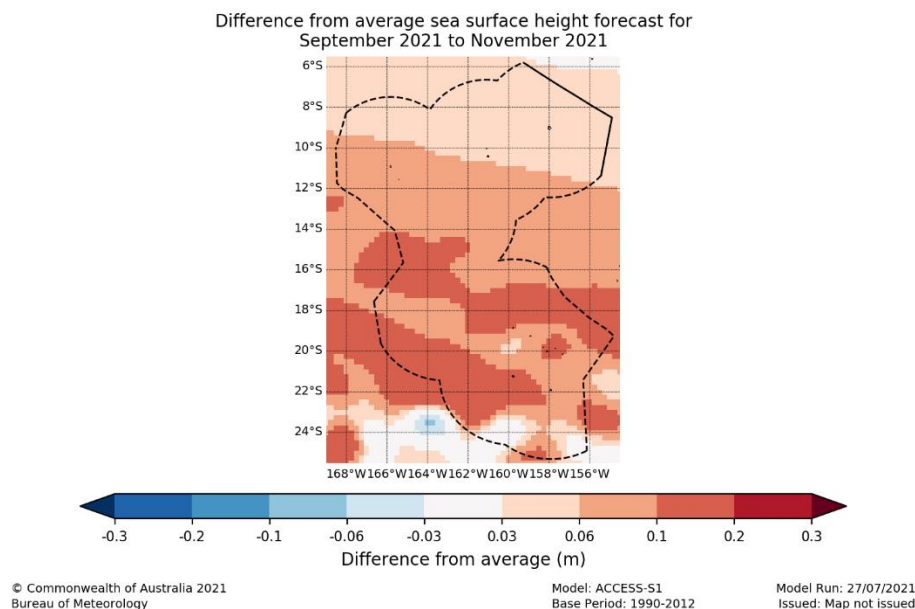
Monthly sea level (Image 7):



Monthly sea level statement

The outlook across the Cooks archipelago shows sea surface heights are likely to be above the average for September. In the north, Penrhyn Island is predicted to reach 0.02 to 0.03 metres above normal which is the lowest. Rarotonga is likely to reach heights of 0.1 to 0.2 metres above normal.

Seasonal sea level (Image 8):



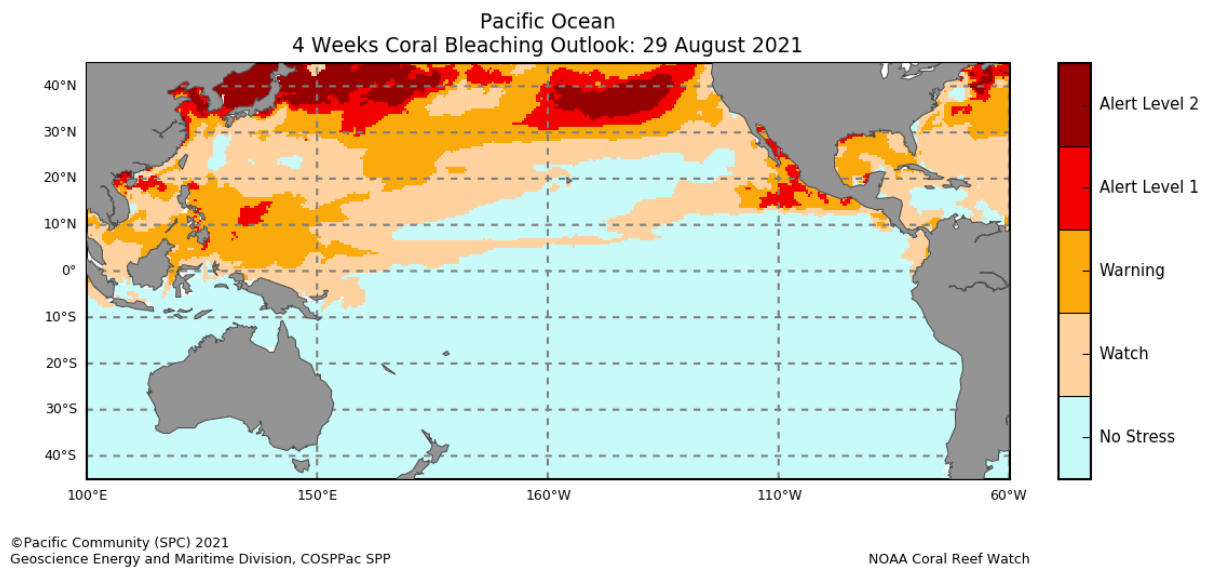
Seasonal sea level statement

Similar patterns to the monthly outlook, the Cooks archipelago shows sea surface heights are likely to be above the average for September to November period. In the north, Penrhyn Island is predicted to reach 0.03 to 0.06 metres above normal which is the lowest. Rarotonga is likely to reach heights of 0.1 to 0.2 metres above normal.

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4-week Coral Bleaching (Image 9):



4-weeks Coral Bleaching statement

The outlook for the Cook Islands archipelago shows there are no coral bleaching alerts.

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

Product	Date: July 2021	Stakeholder	Total Number of Participants	Number of male	Number of female
Climate Bulletin					
EAR Watch					
Monthly Climate Briefing					
Ocean Outlook					
Total					

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