

# Pacific Islands - Ocean and Climate Outlook Forum (OCOF) No. 169

Country: Cook Islands

## Part 1: Recent climate

**TABLE 1: Monthly Rainfall**

Station (include data period)	Jul-2021	Aug-2021	Sep-2021				
			Total (mm)	33%tile	67%tile	Median	Rank
	Total (mm)	Total (mm)	Rainfall (mm)				
Penrhyn (1937-2021)	67.2	98.5	88.0	73.4	136.0	111.2	32/83
Rarotonga (1899-2021)	84.2	171.9	87.9	69.8	117.3	90.1	56/123

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

Station	Three-month Total		33%tile	67%tile	Median	Rank
	Rainfall (mm)					
Penrhyn (1937-2021)	253.7	Below normal	257.0	530.0	360.3	21/83
Rarotonga (1899-2021)	344.0	Normal	247.0	364.5	300.0	74/123

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

Very Low:  $X < 0.0$

Low:  $0 \leq X < 5$

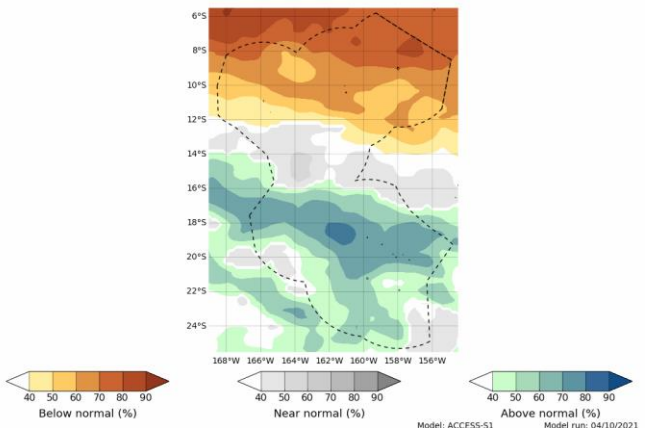
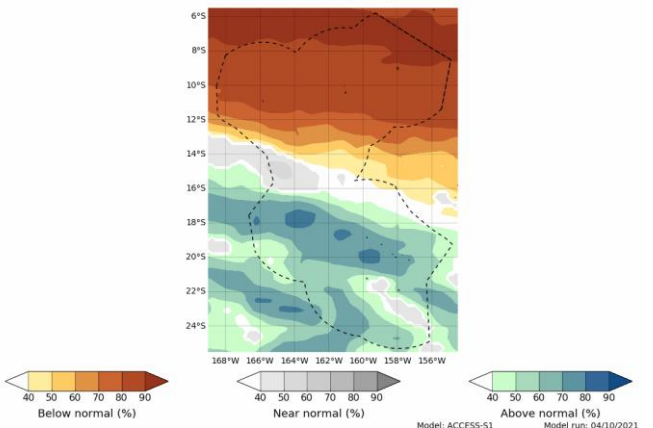
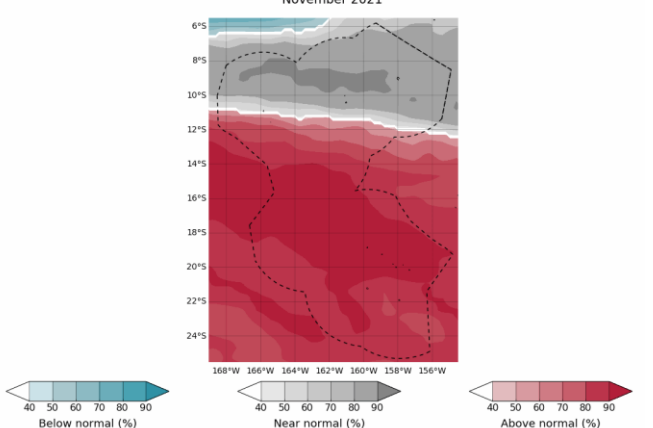
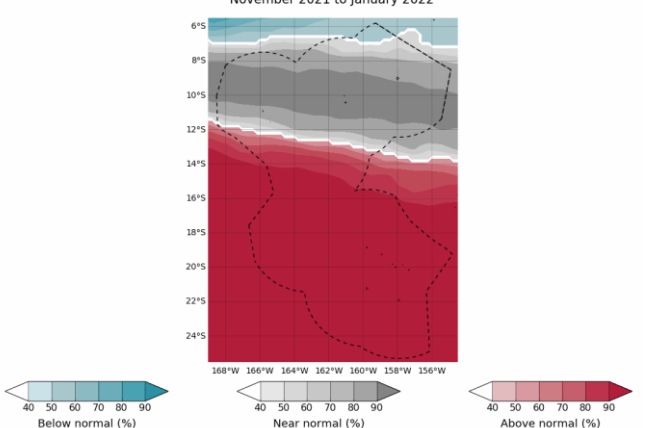
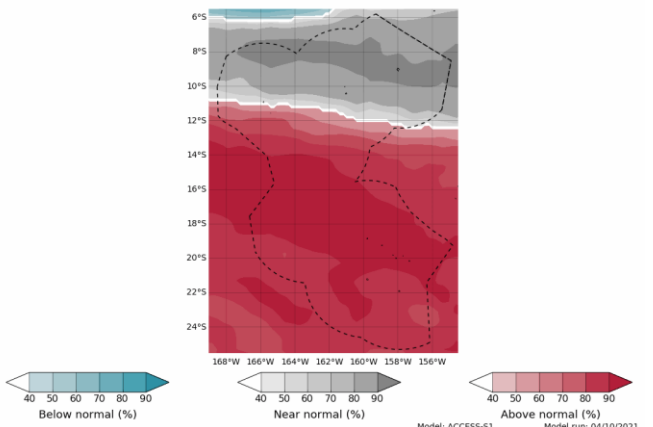
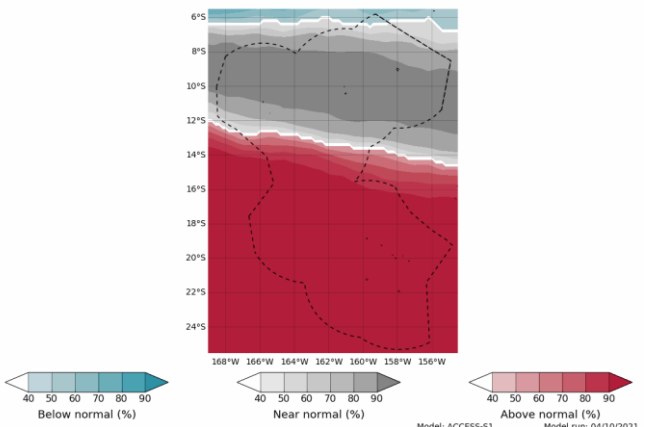
Moderate  $5 \leq X < 10$

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 November and November 2021 to January 2022

Monthly	Seasonal
Rainfall (Image 1)	Rainfall (Image 2)
<p>Tercile rainfall probabilities for November 2021</p>  <p>Model: ACCESS-S1 Base period: 1990-2012 Model run: 04/10/2021 Issued: 07/10/2021</p>	<p>Tercile rainfall probabilities for November 2021 to January 2022</p>  <p>Model: ACCESS-S1 Base period: 1990-2012 Model run: 04/10/2021 Issued: 07/10/2021</p>
Monthly Maximum temperature (Image 3):	Seasonal maximum temperature (Image 4):
<p>Tercile maximum temperature probabilities for November 2021</p>  <p>Model: ACCESS-S1 Base period: 1990-2012 Model run: 04/10/2021 Issued: 07/10/2021</p>	<p>Tercile maximum temperature probabilities for November 2021 to January 2022</p>  <p>Model: ACCESS-S1 Base period: 1990-2012 Model run: 04/10/2021 Issued: 07/10/2021</p>
Monthly minimum temperature (Image 5):	Seasonal minimum temperature (Image 6):
<p>Tercile minimum temperature probabilities for November 2021</p>  <p>Model: ACCESS-S1 Base period: 1990-2012 Model run: 04/10/2021 Issued: 07/10/2021</p>	<p>Tercile minimum temperature probabilities for November 2021 to January 2022</p>  <p>Model: ACCESS-S1 Base period: 1990-2012 Model run: 04/10/2021 Issued: 07/10/2021</p>

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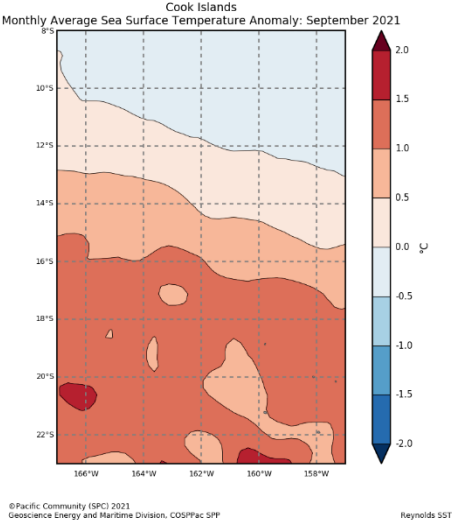
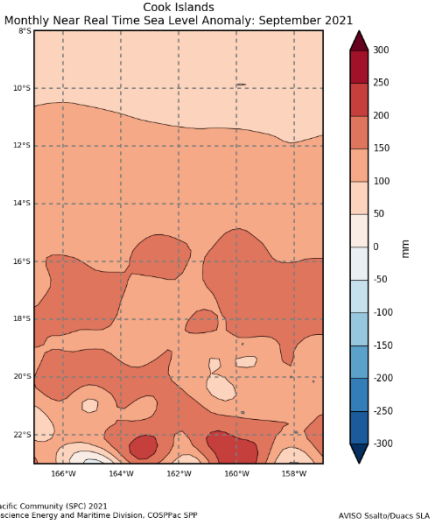
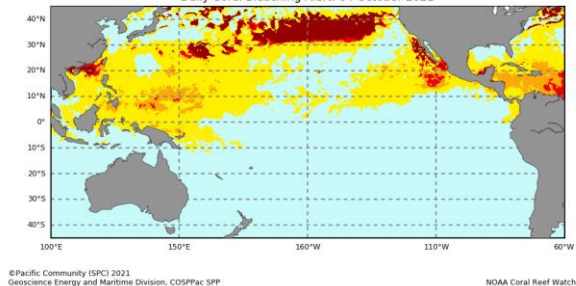
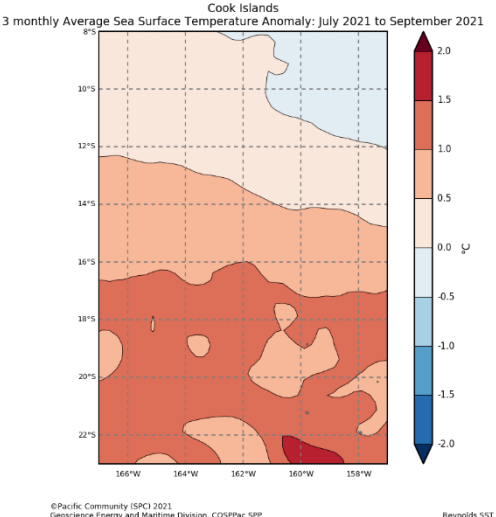
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## Part 2: Recent Ocean summary statement

**Monthly: September 2021**

<p><b>Monthly: September</b></p>	
<p><b>Sea Surface Temperature (Image 1):</b></p>  <p>Cook Islands Monthly Average Sea Surface Temperature Anomaly: September 2021</p> <p>Reynolds SST</p> <p>©Pacific Community (SPC) 2021 Geoscience Energy and Maritime Division, COSPPac SPP</p>	<p><b>Sea level (Image 2):</b></p>  <p>Cook Islands Monthly Near Real Time Sea Level Anomaly: September 2021</p> <p>AVISO SsaltoDuacs SLA</p> <p>©Pacific Community (SPC) 2021 Geoscience Energy and Maritime Division, COSPPac SPP</p>
<p><b>Daily coral bleaching alert (Image 3):</b></p>  <p>Pacific Ocean Daily Coral Bleaching Alert: 04 October 2021</p> <p>NOAA Coral Reef Watch</p> <p>©Pacific Community (SPC) 2021 Geoscience Energy and Maritime Division, COSPPac SPP</p>	<p><b>Last three months: July to September 2021:</b></p> <p><b>Sea Surface Temperature (Image 4):</b></p>  <p>Cook Islands 3 monthly Average Sea Surface Temperature Anomaly: July 2021 to September 2021</p> <p>Reynolds SST</p> <p>©Pacific Community (SPC) 2021 Geoscience Energy and Maritime Division, COSPPac SPP</p>

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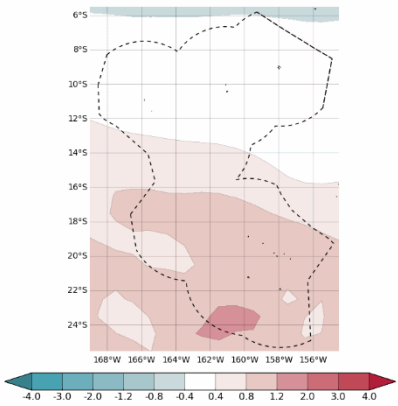
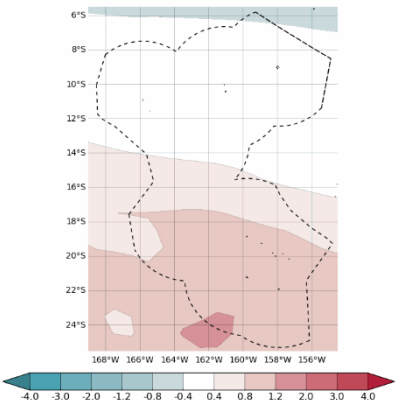
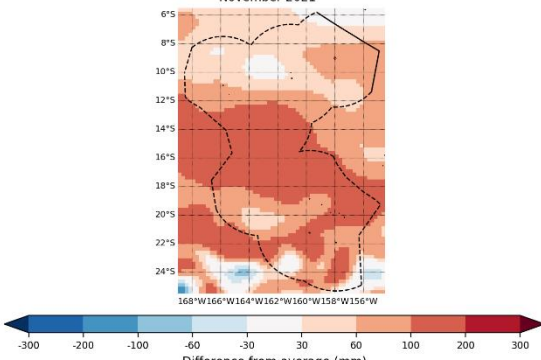
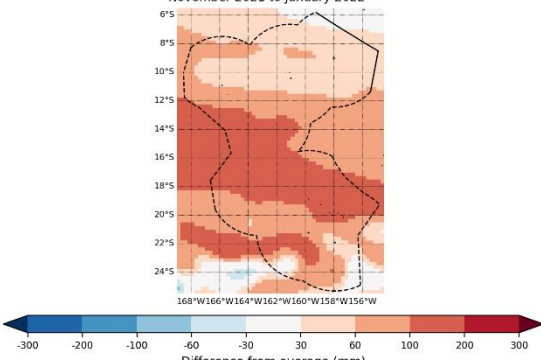
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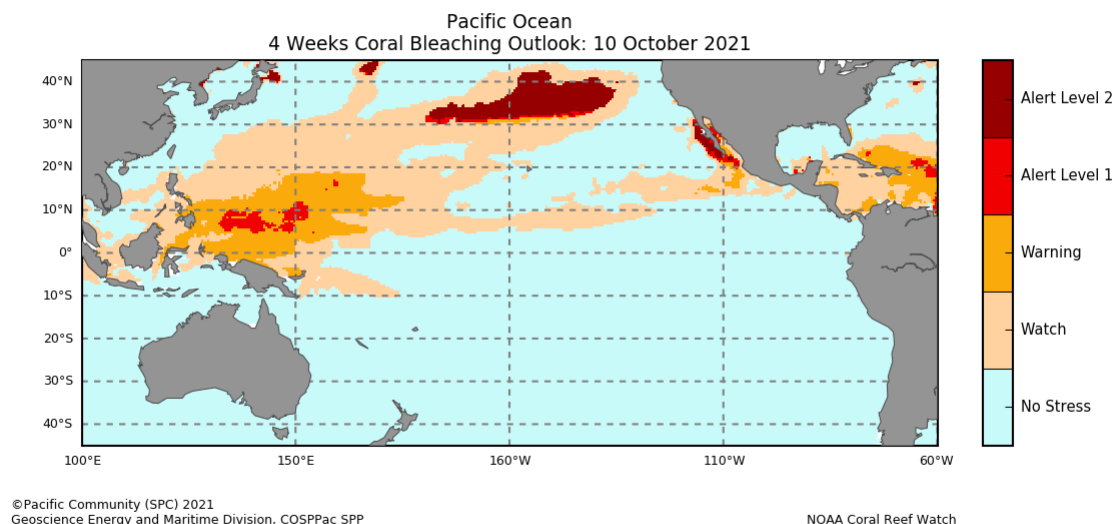
Part 2i. Monthly and Seasonal Outlooks for November and November 2021 to January 2022

<b>Monthly: November</b>	<b>Seasonal: November to January</b>
<b>Monthly sea surface temperature (Image 5):</b>	<b>Seasonal sea surface temperature (Image 6):</b>
<div><p>Difference from average sea surface temperature forecast for November 2021</p><p>Model: ACCESS-S1 Base period: 1990-2012 Model run: 04/10/2021 Issued: 06/10/2021</p></div>	<div><p>Difference from average sea surface temperature forecast for November 2021 to January 2022</p><p>Model: ACCESS-S1 Base period: 1990-2012 Model run: 04/10/2021 Issued: 06/10/2021</p></div>
<b>Monthly sea level (Image 7):</b>	<b>Seasonal sea level (Image 8):</b>
<div><p>Difference from average sea surface height forecast for November 2021</p><p>Model: ACCESS-S1 Base period: 1990-2012 Model Run: 27/09/2021 Issued: Map not issued</p></div>	<div><p>Difference from average sea surface height forecast for November 2021 to January 2022</p><p>Model: ACCESS-S1 Base period: 1990-2012 Model Run: 27/09/2021 Issued: Map not issued</p></div>
<b>4-week Coral Bleaching (Image 9):</b>	

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## Summary Statement

### Monthly and last three months: September 2021/July to September statement (Highly significant changes)

Normal rainfall was recorded at both Penrhyn and Rarotonga station for September.

Below normal rainfall was recorded at Penrhyn station and normal rainfall was recorded for Rarotonga for the past three months.

## Part 1i. Monthly and Seasonal Outlooks for November and November 2021 to January 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 above normal for Rarotonga.

Temperature pattern outlooks is the same for next month and next 3 months which is very likely to be near normal for northern Cooks and Penrhyn and very likely to be above normal for southern Cooks and Rarotonga.

## Part 2: Recent Ocean summary statement

### Monthly and last three months: September/July to September 2021 (Highly significant changes)

#### Sea Surface Temperature statement

Most of the Cooks archipelago experienced above average SST with exception of Penrhyn, for September 2021. Significant warm SSTs were experienced in the southern Cooks. Highest SSTs were 1.5 to 2 degrees above average.

#### Sea level statement

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The sea level anomaly across the Cook Islands in September 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.

#### Daily bleaching alert statement

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

#### Last three months Sea Surface Temperature statement

For the July to September 2021 period, similar to the monthly pattern of warmer than average SSTs were experienced in the Cook Islands, with the exception of Penrhyn. Ranges of 0.0 to 2 degrees above average.

## Part 2i. Monthly and Seasonal Outlooks for November and November 2021 to January 2022

#### Ocean Variable statement *(Highly significant changes)*

##### Monthly sea surface temperature statement

Monthly outlook for the Cook Islands shows a significant temperature difference of -0.4-2°C for November.

##### Seasonal Sea Surface Temperature statement

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

##### Monthly sea level statement

Outlook across the Cooks shows sea surface heights are likely to be above the average for November.

##### Seasonal sea level statement

Similar patterns to the monthly outlook, sea surface heights are likely to be above the average for November to January period.

##### 4-weeks Coral Bleaching statement

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

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

Product	Date: September 2021	Stakeholder	Total Number of Participants	Number of male	Number of female
Climate Bulletin		Ministry of Transport	29	17	12
EAR Watch		C.I Govt. Stakeholders Public	?	?	?
Monthly Climate Briefing		Climate Change	8	2	6
Total			37	19	18

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