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

## Country: Cook 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) | | | | |
| Penrhyn (1937-2021) | 98.5 | 88.0 | 163.9 | 90.0 | 170.0 | 124.9 | 52/83 |
| | | | | | | | |
| Rarotonga (1899-2021) | 171.9 | 87.9 | 105.9 | 62.7 | 122.1 | 86.6 | 67/123 |

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

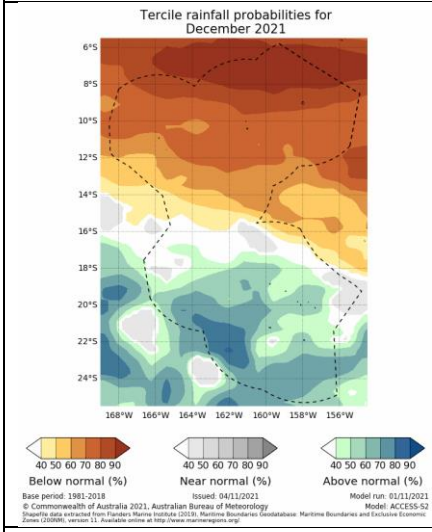
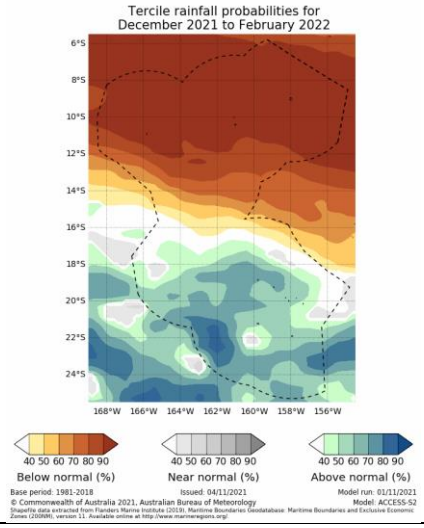
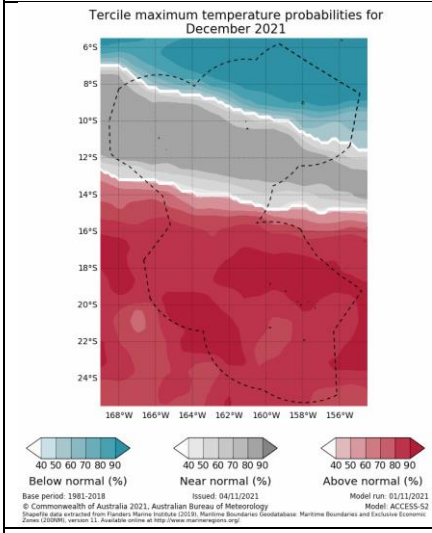
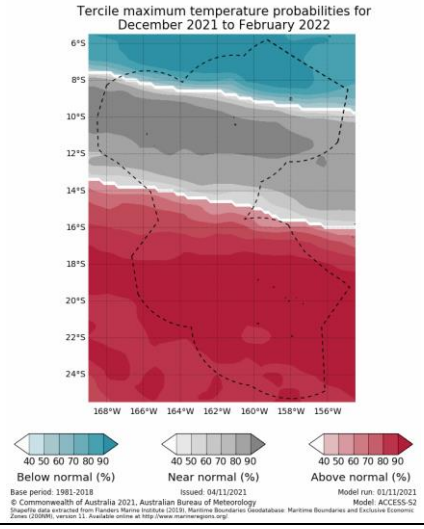
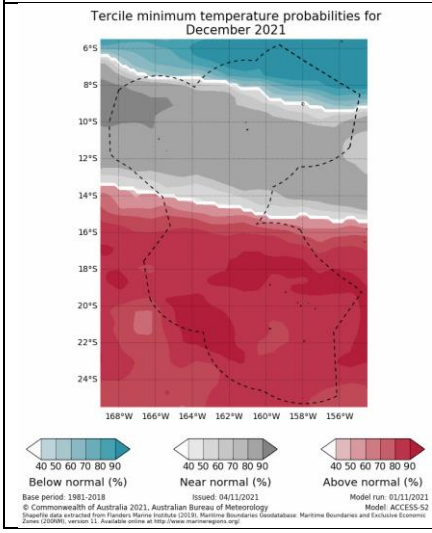
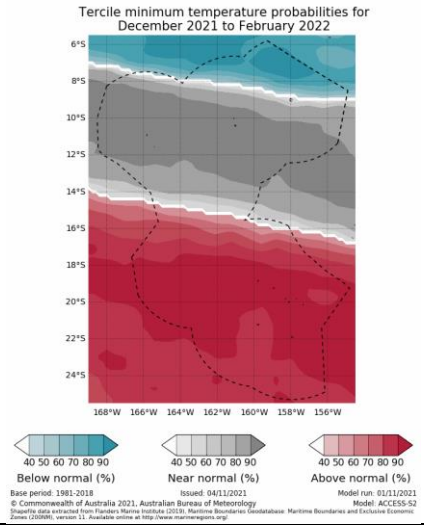
| Station | Three-month Total | | 33%tile | 67%tile | Median | Rank |
|---|---|---|---|---|---|---|
| | Rainfall (mm) | | | | | |
| Penrhyn (1937-2021) | 350.4 | Normal | 291.3 | 422.7 | 335.0 | 43/82 |
| | | | | | | |
| Rarotonga (1899-2021) | 365.7 | Normal | 253.0 | 373.7 | 315.1 | 72/123 |

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

Very Low: X < 0.0 Low: 0 ≤ X < 5 Moderate 5 ≤ X < 10 Good: 10 ≤ X < 15 High: 15≤ X < 25

Very High: 25 ≤X < 35 Exceptional: X ≥ 35

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

| Monthly | Seasonal |
|---|---|
|  |  |
| **Monthly Maximum temperature (Image 3):** | **Seasonal maximum temperature (Image 4):** |
|  |  |
| **Monthly minimum temperature (Image 5):** | **Seasonal minimum temperature (Image 6):** |
|  |  |

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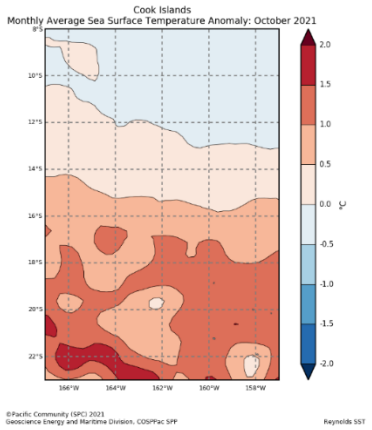
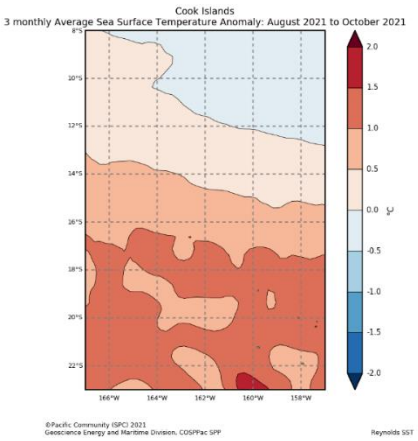
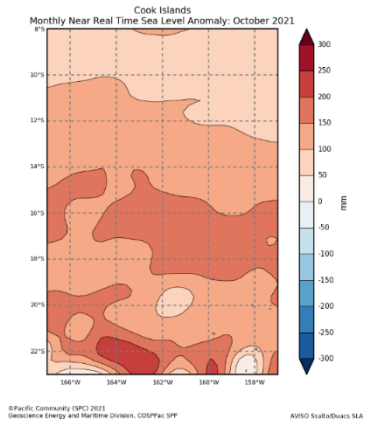
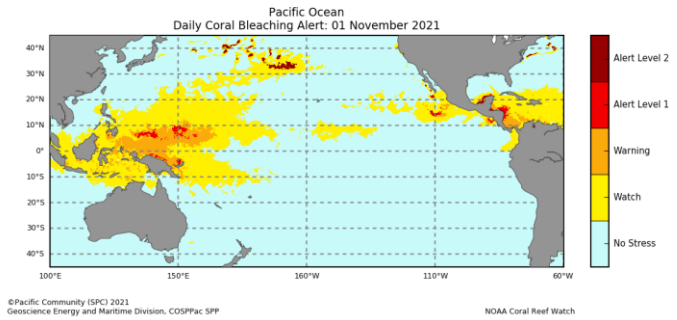
# Part 2: Recent Ocean summary statement

## Monthly: October 2021

| Monthly: October | Last three months: August to October 2021: |
|---|---|
| **Sea Surface Temperature (Image 1):** | **Sea Surface Temperature (Image 4):** |
|  |  |
| **Sea level (Image 2):** | |
|  | |
| **Daily coral bleaching alert (Image 3):** | |
|  | |

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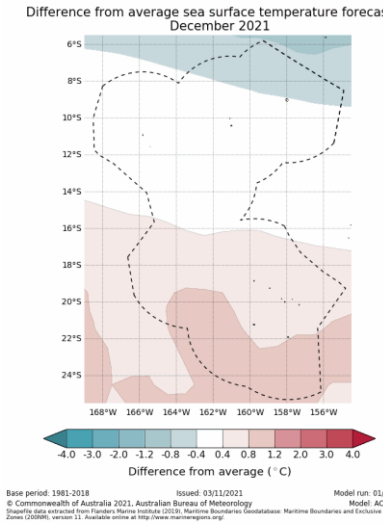
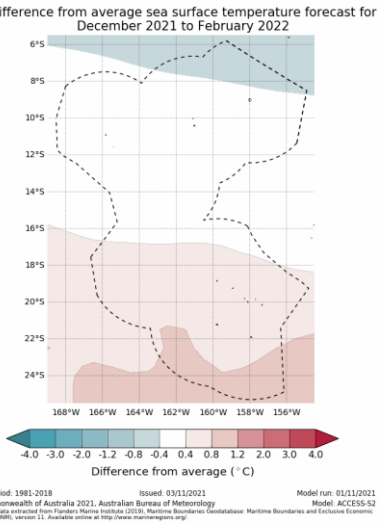
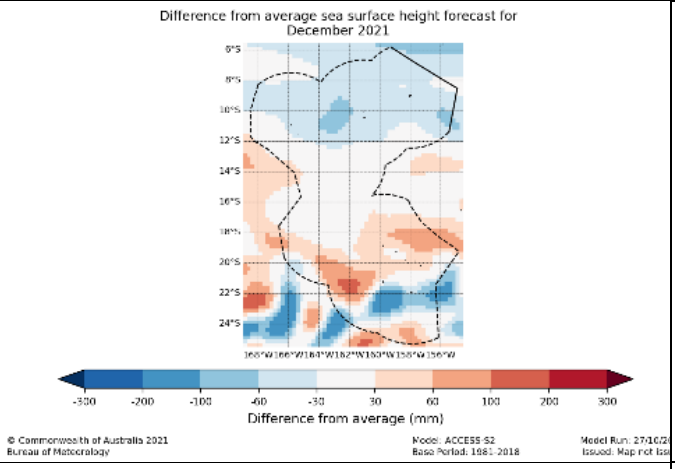
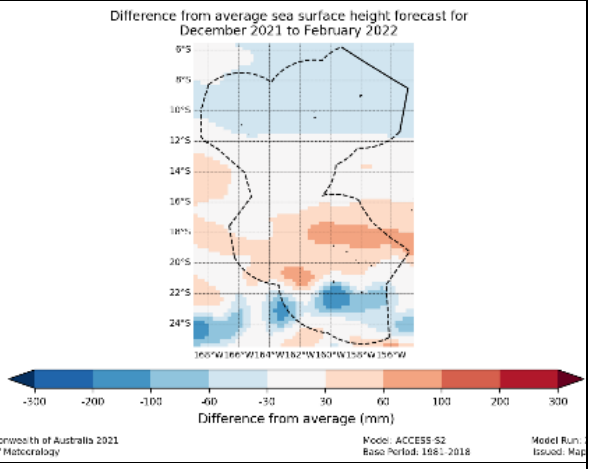
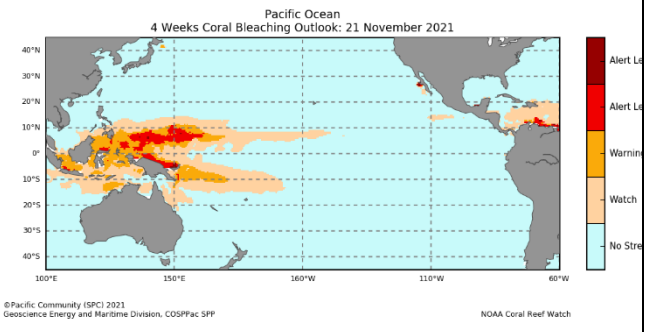
# Part 2i. Monthly and Seasonal Outlooks for December and December 2021 to February 2022

| Monthly: December | Seasonal: December to February |
|---|---|
| **Monthly sea surface temperature (Image 5):** | **Seasonal sea surface temperature (Image 6):** |
|  |  |
| **Monthly sea level (Image 7):** | **Seasonal sea level (Image 8):** |
|  |  |
| **4-week Coral Bleaching (Image 9):** | |
|  | |

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## Summary Statement

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

Normal rainfall was recorded at both Penrhyn and Rarotonga station for October and August to October 2021 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)*

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 central and majority of the northern Cooks, Penrhyn is very likely to be below normal. Above normal is very likely for southern Cooks and Rarotonga.

## Part 2: Recent Ocean summary statement

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

**Sea Surface Temperature statement**

Most of the Cooks archipelago experienced above average SST with exception of Penrhyn, for October 2021. Significant warm SSTs was experienced in the southern cooks. Highest SSTs were 1.0 to 1.5 degrees above average.

**Sea level statement**

The sea level anomaly across the Cook Islands in October 2021 was significantly higher than normal, with majority of the archipelago in the range of 50 to 200 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 August to October 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 December and December 2021 to February 2022

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

**Monthly sea surface temperature statement**

Monthly outlook for the Cook Islands shows a significant temperature difference of up to 1.2 °C in the south for December 2021.

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**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 November 2021 to January 2022 period. The outlook for Rarotonga shows a significant temperature difference of up to 1.2 °C in the south above normal for the November 2021 to January 2022 period.

**Monthly sea level statement**

Outlook across the Cooks shows sea surface heights are likely to be below average for Penrhyn and above the average for Rarotonga for December.

**Seasonal sea level statement**

Similar patterns to the monthly outlook, sea surface heights are likely to be below average for Penrhyn and above to near normal for Rarotonga for December 2021 to February 2022 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: October 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<br>Public | ? | ? | ? |
| Monthly Climate Briefing | | Climate Change | 8 | 2 | 6 |
| Ocean Outlook | | | | | |
| Climate data request | | | | | |
| | | **Total** | **37** | **19** | **18** |

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