

Pacific Islands - Ocean and Climate Outlook Forum (OCOF) No. 188

Country: Palau

Part 1: Recent climate

TABLE 1: Monthly Rainfall

Station (include data period)	Feb-2023	Mar-2023	Apr-2023				Rank
			Total (mm)	33%tile	67%tile	Median	
	Total (mm)	Total (mm)	Rainfall (mm)				
Koror Airport (1951-2023)	220.2	259.8	167.1	174.2	259.8	205.5	21/72

TABLE 2: Three-month Total Rainfall for February to April 2023

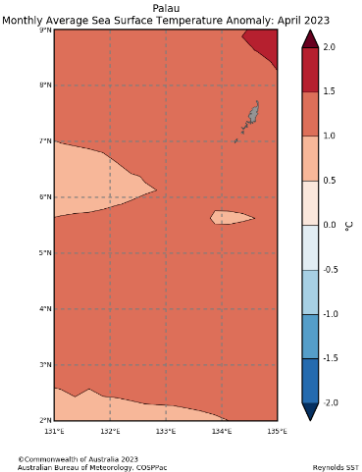
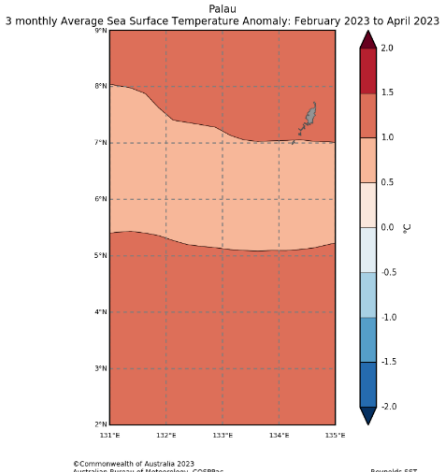
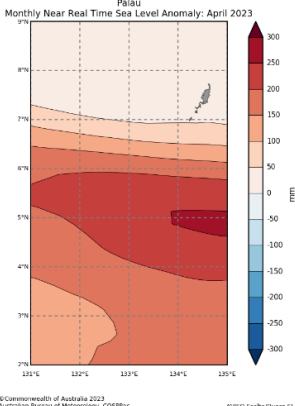
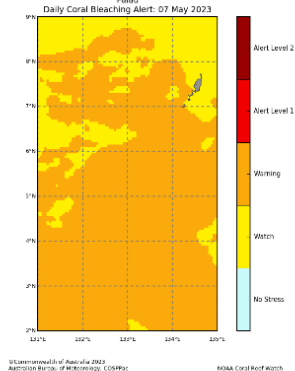
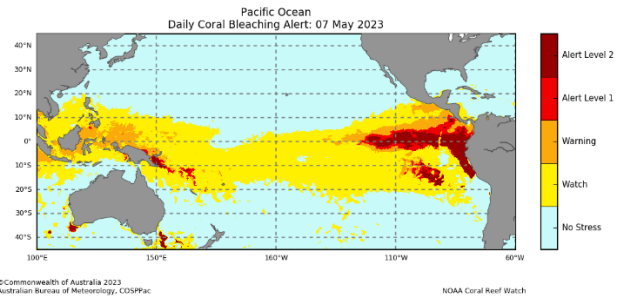
Station	Three-month Total		33%tile	67%tile	Median	Rank
	Rainfall (mm)					
Koror Airport (1951-2023)	647.1	Normal	571.9	784.9	679.7	31/72

# Part 1i. Monthly and Seasonal Outlooks for June and June to August 2023

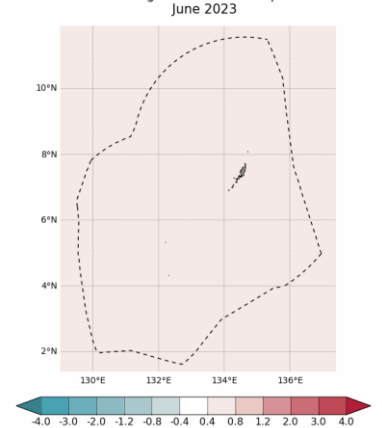
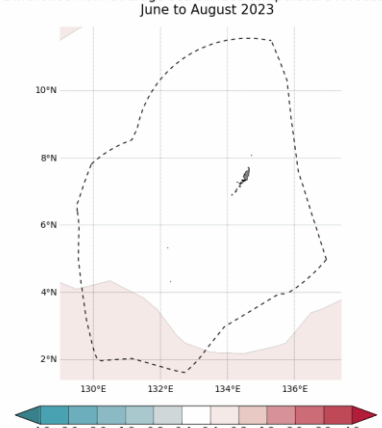
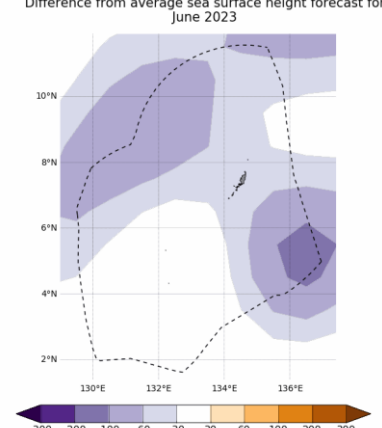
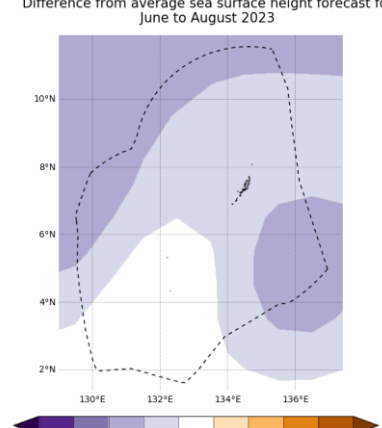
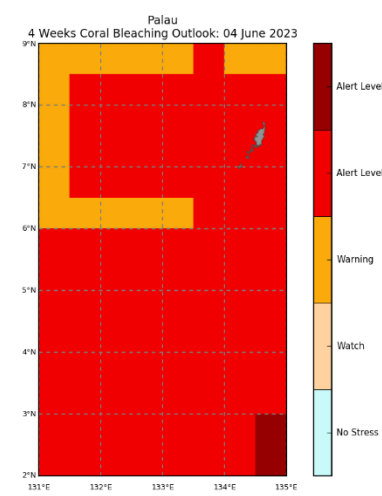
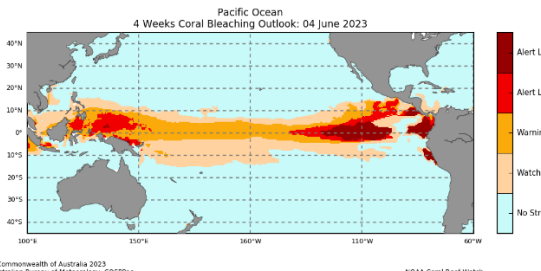
Monthly: June	Seasonal: June to August
<p><b>Rainfall (Image 1)</b></p> <p>Tercile rainfall probabilities for June 2023</p> <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2023, Australian Bureau of Meteorology Shapefile data extracted from Flinders Marine Institute (2019), Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (2004M), version 11. Available online at <a href="http://www.marine.gov.au">http://www.marine.gov.au</a></p> <p>Model run: 06/05/2023 Issued: Map not issued</p>	<p><b>Rainfall (Image 2)</b></p> <p>Tercile rainfall probabilities for June to August 2023</p> <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2023, Australian Bureau of Meteorology Shapefile data extracted from Flinders Marine Institute (2019), Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (2004M), version 11. Available online at <a href="http://www.marine.gov.au">http://www.marine.gov.au</a></p> <p>Model run: 06/05/2023 Issued: Map not issued</p>
<p><b>Monthly Maximum temperature (Image 3):</b></p> <p>Tercile maximum temperature probabilities for June 2023</p> <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2023, Australian Bureau of Meteorology Shapefile data extracted from Flinders Marine Institute (2019), Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (2004M), version 11. Available online at <a href="http://www.marine.gov.au">http://www.marine.gov.au</a></p> <p>Model run: 06/05/2023 Issued: Map not issued</p>	<p><b>Seasonal maximum temperature (Image 4):</b></p> <p>Tercile maximum temperature probabilities for June to August 2023</p> <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2023, Australian Bureau of Meteorology Shapefile data extracted from Flinders Marine Institute (2019), Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (2004M), version 11. Available online at <a href="http://www.marine.gov.au">http://www.marine.gov.au</a></p> <p>Model run: 06/05/2023 Issued: Map not issued</p>
<p><b>Monthly minimum temperature (Image 5):</b></p> <p>Tercile minimum temperature probabilities for June 2023</p> <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2023, Australian Bureau of Meteorology Shapefile data extracted from Flinders Marine Institute (2019), Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (2004M), version 11. Available online at <a href="http://www.marine.gov.au">http://www.marine.gov.au</a></p> <p>Model run: 06/05/2023 Issued: Map not issued</p>	<p><b>Seasonal minimum temperature (Image 6):</b></p> <p>Tercile minimum temperature probabilities for June to August 2023</p> <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2023, Australian Bureau of Meteorology Shapefile data extracted from Flinders Marine Institute (2019), Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (2004M), version 11. Available online at <a href="http://www.marine.gov.au">http://www.marine.gov.au</a></p> <p>Model run: 06/05/2023 Issued: Map not issued</p>

# Part 2: Recent Ocean Observation

## Monthly/Three months: April and February to April 2023

<p align="center"><b>Monthly: April</b></p>	<p align="center"><b>Last three months: February to April 2023:</b></p>
<p><b>Sea Surface Temperature (Image 1):</b></p>	<p><b>Sea Surface Temperature (Image 4):</b></p>
 <p align="center">Palau Monthly Average Sea Surface Temperature Anomaly: April 2023</p> <p align="center">Reynolds SST</p>	 <p align="center">Palau 3 monthly Average Sea Surface Temperature Anomaly: February 2023 to April 2023</p> <p align="center">Reynolds SST</p>
<p><b>Sea level (Image 2):</b></p>	
 <p align="center">Palau Monthly Near Real Time Sea Level Anomaly: April 2023</p> <p align="center">AVISO SeaWiFSv2 SLA</p>	
<p><b>Daily coral bleaching alert (Image 3):</b></p>	
 <p align="center">Palau Daily Coral Bleaching Alert: 07 May 2023</p> <p align="center">NOAA Coral Reef Watch</p>	 <p align="center">Pacific Ocean Daily Coral Bleaching Alert: 07 May 2023</p> <p align="center">NOAA Coral Reef Watch</p>

# Part 2i. Monthly and Seasonal Outlooks for June and June to August 2023

Monthly: June	Seasonal: June to August
<p><b>Monthly sea surface temperature (Image 5):</b></p> <p>Difference from average sea surface temperature forecast for June 2023</p>  <p>Difference from average (°C)</p> <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2023, Australian Bureau of Meteorology Spatial data extracted from Pacific Marine Institute (2019), Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (200NM), version 11. Available online at <a href="http://www.maritime.gov.au/">http://www.maritime.gov.au/</a></p> <p>Model run: 13/05/2023 Issued: 16/05/2023</p>	<p><b>Seasonal sea surface temperature (Image 6):</b></p> <p>Difference from average sea surface temperature forecast for June to August 2023</p>  <p>Difference from average (°C)</p> <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2023, Australian Bureau of Meteorology Spatial data extracted from Pacific Marine Institute (2019), Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (200NM), version 11. Available online at <a href="http://www.maritime.gov.au/">http://www.maritime.gov.au/</a></p> <p>Model run: 13/05/2023 Issued: 16/05/2023</p>
<p><b>Monthly sea level (Image 7):</b></p> <p>Difference from average sea surface height forecast for June 2023</p>  <p>Difference from average (mm)</p> <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2023, Australian Bureau of Meteorology Spatial data extracted from Pacific Marine Institute (2019), Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (200NM), version 11. Available online at <a href="http://www.maritime.gov.au/">http://www.maritime.gov.au/</a></p> <p>Model run: 13/05/2023 Issued: 16/05/2023</p>	<p><b>Seasonal sea level (Image 8):</b></p> <p>Difference from average sea surface height forecast for June to August 2023</p>  <p>Difference from average (mm)</p> <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2023, Australian Bureau of Meteorology Spatial data extracted from Pacific Marine Institute (2019), Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (200NM), version 11. Available online at <a href="http://www.maritime.gov.au/">http://www.maritime.gov.au/</a></p> <p>Model run: 13/05/2023 Issued: 16/05/2023</p>
<p><b>4-week Coral Bleaching (Image 9):</b></p> <p>Palau 4 Weeks Coral Bleaching Outlook: 04 June 2023</p>  <p>Alert Level 2 Alert Level 1 Warning Watch No Stress</p> <p>©Commonwealth of Australia 2023 Australian Bureau of Meteorology, COSPPac</p> <p>NOAA Coral Reef Watch</p>	<p>Pacific Ocean 4 Weeks Coral Bleaching Outlook: 04 June 2023</p>  <p>Alert Level 2 Alert Level 1 Warning Watch No Stress</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: April 2023/February to April 2023 statement**

Below normal rainfall was recorded at Koror for April, while it was near-normal for the period February to April 2023.

## **Part 1i. Monthly and Seasonal Outlooks for June and June to August 2023**

### **Monthly /Seasonal rainfall and temperature Outlook statements**

The rainfall for June is very likely to be above normal over Koror and the whole country.

June to August rainfall is likely to be above normal over Koror and the main islands, but in southwest islands, the below normal is likely for Sonsorol, and very likely for Hatohobei.

Maximum and minimum temperatures during June and averaged over June to August are very likely to be above normal across Palau.

## **Part 2: Recent Ocean summary statement**

### **Monthly and last three months: April 2023/February to April 2023**

April ocean temperatures around Palau were 1.0 to 1.5°C above normal.

Averaged over February to April, ocean temperatures around majority of Palau were 1.0 to 1.5°C above normal.

April sea levels around the southwest island of Sonsorol were 150mm to 250mm above normal.

Coral bleaching status on 'Warning' for western waters of Koror and the southern main islands. Coral bleaching status on 'Watch' for the northern main islands and the eastern waters of Koror and the southern main islands.

## **Part 2i. Monthly and Seasonal Outlooks for June and June to August 2023**

### **Ocean Variable statement**

June ocean temperatures around Palau are predicted to be 0.4 to 0.8°C above normal.

Averaged over June to August, ocean temperatures around Palau are likely to be near normal with exception around Hatohobei are predicted to be 0.4 to 0.8°C above normal.

June sea levels around Koror and the main islands are predicted to be -30mm to -60mm below normal.

Averaged over June to August, sea levels around Koror and the main islands are predicted to be -30mm to -60mm below normal.

Coral bleaching outlook predicts 'Alert Level 1' thermal stress for Palau.

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

Product	Date: April 2023	Stakeholder	Total Number of Participants	Number of Male	Number of Female	Comments (If there are comments from your Stakeholders)
EAR Watch	12	<b>National Emergency Committee (NEC)</b> -Office of the Vice President -Office of the President -NEMO Coordinator -National Weather Service -Bureau of Budget and Planning -Bureau of Tourism -Bureau of Commercial Development -Attorney General's Office -Bureau of Youth, Applied Arts and Careers -Bureau of Public Health -Bureau of Public Work -Bureau of Public Safety -Palau Community College -Bureau of Education Administration -Palau Public Utility Corporation -Palau National Communication Corporation -Bureau of Foreign Affairs & Trade -Bureau of Domestic Affairs -Bureau of Agriculture -Governors Association -Palau Red Cross Society -Environment Quality Protection Board -Bureau of Aviation -Division of Property and Supply -Palau Chamber of Commerce -Palau Visitor's Authority -Bureau of Customs & Boarder Protection -Koror State Government	28	19	9	
NCOF	17, 18	NEC	28	19	9	
Stakeholder engagement	19, 20	NEC	28	19	9	
PICOF-12	20	WSO Palau	1		1	Participant : K. Mochimaru
<b>Total</b>			<b>29</b>	<b>19</b>	<b>10</b>	