

Pacific Islands - Ocean and Climate Outlook Forum (OCOF) No. 189

Country: Palau

Part 1: Recent climate

TABLE 1: Monthly Rainfall

Station (include data period)	Mar-2023	Apr-2023	May-2023				Rank
			Total (mm)	33%tile	67%tile	Median	
	Total (mm)	Total (mm)	Rainfall (mm)				
Koror Airport (1951-2023)	259.8	167.1	416.8	259.0	357.7	303.0	54/72

TABLE 2: Three-month Total Rainfall for March to May 2023

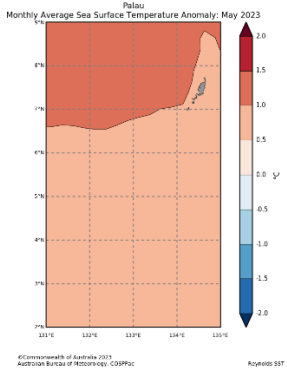
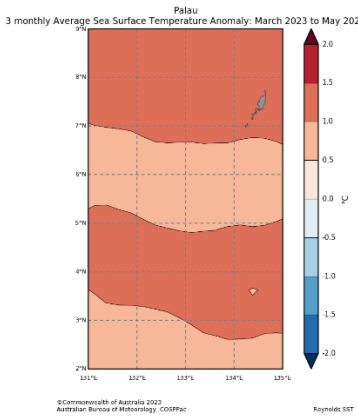
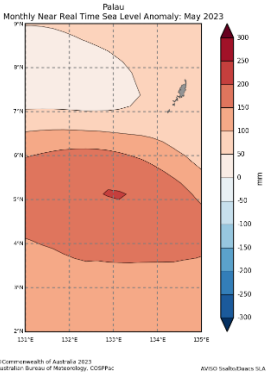
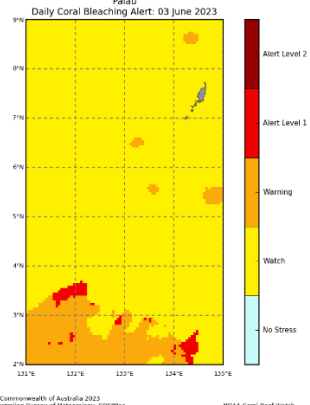
Station	Three-month Total		33%tile	67%tile	Median	Rank
	Rainfall (mm)					
Koror Airport (1951-2023)	843.7	Normal	679.5	862.4	783.6	45/72

# Part 1i. Monthly and Seasonal Outlooks for July and July to September 2023

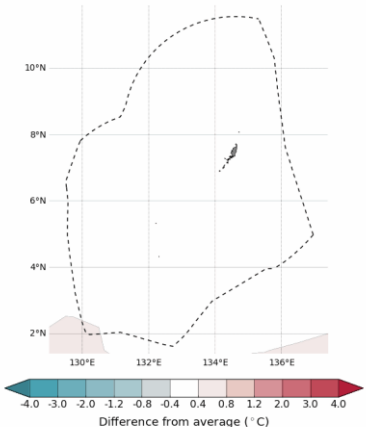
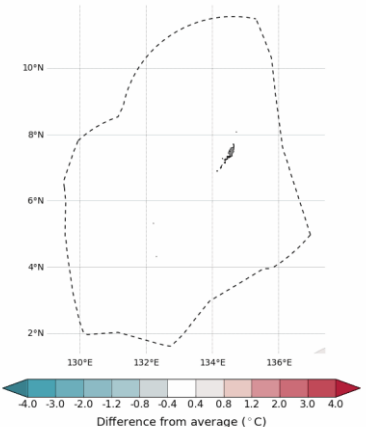
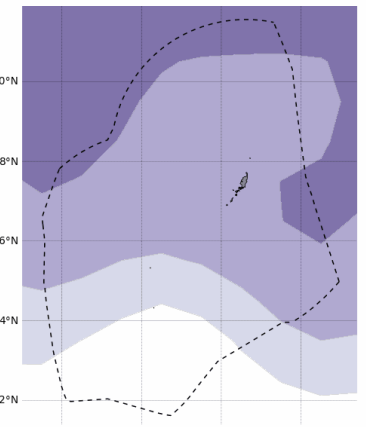
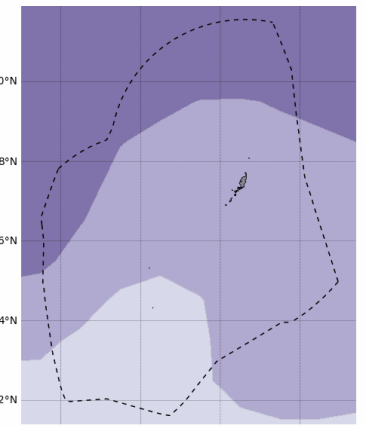
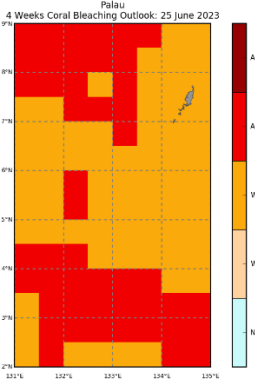
Monthly: July	Seasonal: July to September
<p><b>Rainfall (Image 1)</b></p> <p>Tercile rainfall probabilities for July 2023</p> <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2023, Australian Bureau of Meteorology Geospatial data extracted from Travers Marine Institute (2019), 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: 03/06/2023 Issued: Map not issued</p>	<p><b>Rainfall (Image 2)</b></p> <p>Tercile rainfall probabilities for July to September 2023</p> <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2023, Australian Bureau of Meteorology Geospatial data extracted from Travers 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: 03/06/2023 Issued: Map not issued</p>
<p><b>Monthly Maximum temperature (Image 3):</b></p> <p>Tercile maximum temperature probabilities for July 2023</p> <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2023, Australian Bureau of Meteorology Geospatial data extracted from Travers 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: 03/06/2023 Issued: Map not issued</p>	<p><b>Seasonal maximum temperature (Image 4):</b></p> <p>Tercile maximum temperature probabilities for July to September 2023</p> <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2023, Australian Bureau of Meteorology Geospatial data extracted from Travers 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: 03/06/2023 Issued: Map not issued</p>
<p><b>Monthly minimum temperature (Image 5):</b></p> <p>Tercile minimum temperature probabilities for July 2023</p> <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2023, Australian Bureau of Meteorology Geospatial data extracted from Travers 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: 03/06/2023 Issued: Map not issued</p>	<p><b>Seasonal minimum temperature (Image 6):</b></p> <p>Tercile minimum temperature probabilities for July to September 2023</p> <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2023, Australian Bureau of Meteorology Geospatial data extracted from Travers 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: 03/06/2023 Issued: Map not issued</p>

## Part 2: Recent Ocean Observation

### Monthly/Three months: May and March to May 2023

Monthly: May	Last three months: March to May 2023:
<p><b>Sea Surface Temperature (Image 1):</b></p>  <p>Palau Monthly Average Sea Surface Temperature Anomaly: May 2023</p> <p>©Commonwealth of Australia 2023 Australian Bureau of Meteorology, COSPPac</p> <p>Raymeids SST</p>	<p><b>Sea Surface Temperature (Image 4):</b></p>  <p>Palau 3 monthly Average Sea Surface Temperature Anomaly: March 2023 to May 2023</p> <p>©Commonwealth of Australia 2023 Australian Bureau of Meteorology, COSPPac</p> <p>Raymeids SST</p>
<p><b>Sea level (Image 2):</b></p>  <p>Palau Monthly Near Real Time Sea Level Anomaly: May 2023</p> <p>©Commonwealth of Australia 2023 Australian Bureau of Meteorology, COSPPac</p> <p>AVISO SeaLevelData S.A.</p>	
<p><b>Daily coral bleaching alert (Image 3):</b></p>	
 <p>Palau Daily Coral Bleaching Alert: 03 June 2023</p> <p>©Commonwealth of Australia 2023 Australian Bureau of Meteorology, COSPPac</p> <p>NCSA Coral Reef Watch</p>	

# Part 2i. Monthly and Seasonal Outlooks for July and July to September 2023

Monthly: July	Seasonal: July to September
<p><b>Monthly sea surface temperature (Image 5):</b></p> <p>Difference from average sea surface temperature forecast for July 2023</p>  <p>Difference from average (°C)</p> <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2023. 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 <a href="http://www.marinegovernance.org/">http://www.marinegovernance.org/</a></p> <p>Model run: 03/06/2023 Issued: 05/06/2023</p>	<p><b>Seasonal sea surface temperature (Image 6):</b></p> <p>Difference from average sea surface temperature forecast for July to September 2023</p>  <p>Difference from average (°C)</p> <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2023. 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 <a href="http://www.marinegovernance.org/">http://www.marinegovernance.org/</a></p> <p>Model run: 03/06/2023 Issued: 05/06/2023</p>
<p><b>Monthly sea level (Image 7):</b></p> <p>Difference from average sea surface height forecast for July 2023</p>  <p>Difference from average (mm)</p> <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2023. 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 <a href="http://www.marinegovernance.org/">http://www.marinegovernance.org/</a></p> <p>Model run: 03/06/2023 Issued: 05/06/2023</p>	<p><b>Seasonal sea level (Image 8):</b></p> <p>Difference from average sea surface height forecast for July to September 2023</p>  <p>Difference from average (mm)</p> <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2023. 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 <a href="http://www.marinegovernance.org/">http://www.marinegovernance.org/</a></p> <p>Model run: 03/06/2023 Issued: 05/06/2023</p>
<p><b>4-week Coral Bleaching (Image 9):</b></p> <p>Palau 4 Weeks Coral Bleaching Outlook: 25 June 2023</p>  <p>Alert Level 2 Alert Level 1 Warning Watch No Stress</p> <p>© Commonwealth of Australia 2023 Australian Bureau of Meteorology, 125019e NOAA Coral Reef Watch</p>	

## **Summary Statement**

### **Monthly and last three months: May 2023/March to May 2023 statement**

Above normal rainfall was recorded at Koror for May, while it was near-normal for March to May 2023.

## **Part 1i. Monthly and Seasonal Outlooks for July and July to September 2023**

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

The rainfall for July is very likely to be above normal for the main islands and Sonsorol, and very likely to be below normal over the southwest island of Hatohobei.

The rainfall for July to September is likely to be below normal over the northern main islands, likely to be near-normal for Koror and the southern main islands, and very likely to be below normal for the southwest islands.

Maximum and minimum temperatures during July and averaged over July to September are very likely to be above normal over Koror and the whole country.

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

### **Monthly and last three months: May 2023/March to May 2023**

May ocean temperatures around Palau were 0.5 to 1.0°C above normal.

Averaged over March to May, ocean temperatures around Palau were 1.0 to 1.5°C above normal.

May sea levels around Sonsorol were 150mm to 200mm above normal. Sea levels around Koror and the main islands were 50mm to 100mm.

Coral bleaching alert on 'Watch' for most of Palau waters.

## **Part 2i. Monthly and Seasonal Outlooks for July and July to September 2023**

### **Ocean Variable statement**

July ocean temperatures around Palau are predicted to be near-normal.

Averaged over July to September, ocean temperatures around Palau are predicted to be near-normal.

July sea levels around Palau are predicted to be -60mm to -100mm below normal.

Averaged over July to September, sea levels around Palau are predicted to be -60mm to -100mm below normal.

Coral bleaching outlook at 'Alert Level 1' for Palau waters.

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

Product	Date: May 2023	Stakeholder	Total Number of Participants	Number of Male	Number of Female	Comments (If there are comments from you Stakeholders)
PacIOOS	1	PacIOOS & WSO Palau	2	0	2	Meeting regarding Ngaraard drifted and retrieved wave rider buoy.
NEC Water Task Force	2	NEMO, PPUC and WSO Palau	4	2	2	
Radio Talkshow	4	NEMO, PPUC and WSO Palau	4	2	2	Talk on water conservation and El Nino Watch.
EAR Watch	10	<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	
Pacific ENSO Applications Climate Services (PEAC)	12	North Pacific participants	10	8	2	
Republic of Korea (ROK) CLiPs 2 Climate Predictions Tools Training for Micronesians Members	22-26	FSM, RMI, Nauru and WSO Palau	13	12	1	Day 22 participants listed. Pending roster.

	<b>Total</b>	<b>61</b>	<b>43</b>	<b>18</b>	
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