

Pacific Islands - Ocean and Climate Outlook Forum (OCOF) No. 184

Country: Palau

Part 1: Recent climate

TABLE 1: Monthly Rainfall

Station (include data period)	Oct-2022	Nov-2022	Dec-2022				Rank
			Total (mm)	33%tile	67%tile	Median	
	Total (mm)	Total (mm)	Rainfall (mm)				
Koror Airport (1951-2022)	697.5	210.8	245.1	264.2	352.8	311.1	20/72

TABLE 2: Three-month Total Rainfall for October to December 2022

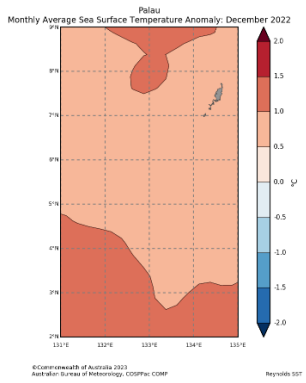
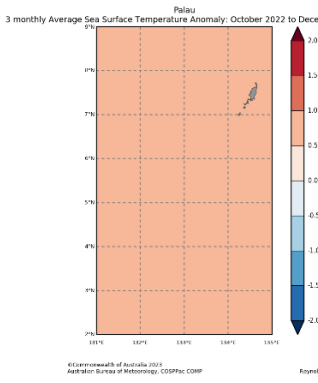
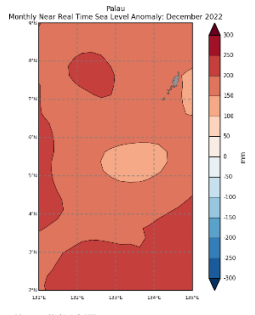
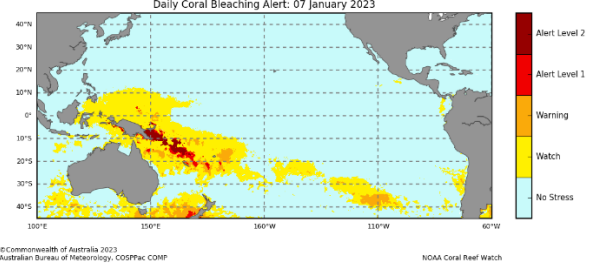
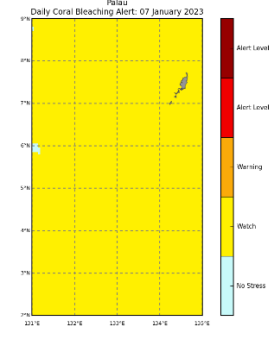
Station	Three-month Total		33%tile	67%tile	Median	Rank
	Rainfall (mm)					
Koror Airport (1951-2022)	1153.4	Above normal	810.6	1027.6	901.2	61/72

Part 1i. Monthly and Seasonal Outlooks for February and February to April 2023

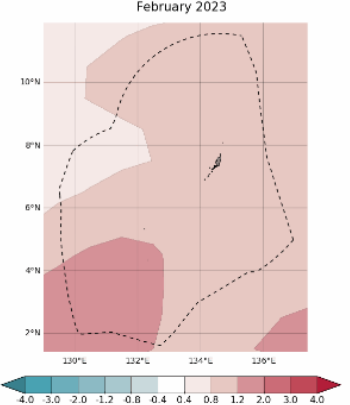
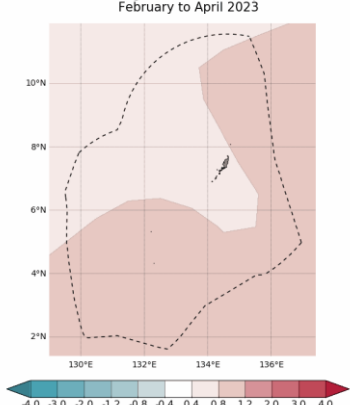
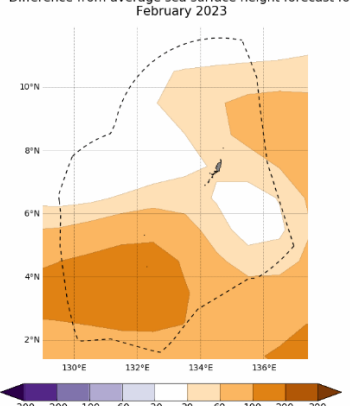
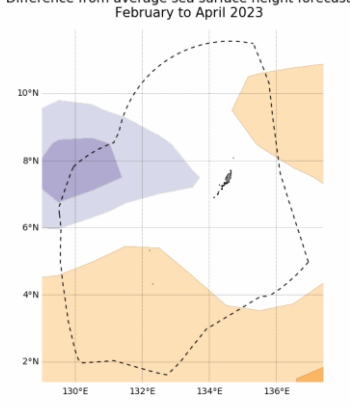
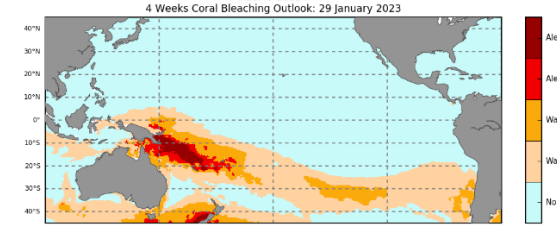
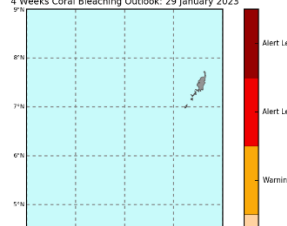
Monthly: February	Seasonal: February to April
Rainfall (Image 1)	Rainfall (Image 2)
<p style="text-align: center;">Tercile rainfall probabilities for February 2023</p> <p style="text-align: center;"> 40 50 60 70 80 90 40 50 60 70 80 90 40 50 60 70 80 90 Below normal (%) Near normal (%) Above normal (%) </p> <p><small>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2023. Australian Bureau of Meteorology Significant data extracted from: Bureau of Meteorology (2023). Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (ECONZ), version 11. Available online at http://www.marine.gov.au</small></p>	<p style="text-align: center;">Tercile rainfall probabilities for February to April 2023</p> <p style="text-align: center;"> 40 50 60 70 80 90 40 50 60 70 80 90 40 50 60 70 80 90 Below normal (%) Near normal (%) Above normal (%) </p> <p><small>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2023. Australian Bureau of Meteorology Significant data extracted from: Bureau of Meteorology (2023). Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (ECONZ), version 11. Available online at http://www.marine.gov.au</small></p>
Monthly Maximum temperature (Image 3):	Seasonal maximum temperature (Image 4):
<p style="text-align: center;">Tercile maximum temperature probabilities for February 2023</p> <p style="text-align: center;"> 40 50 60 70 80 90 40 50 60 70 80 90 40 50 60 70 80 90 Below normal (%) Near normal (%) Above normal (%) </p> <p><small>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2023. Australian Bureau of Meteorology Significant data extracted from: Bureau of Meteorology (2023). Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (ECONZ), version 11. Available online at http://www.marine.gov.au</small></p>	<p style="text-align: center;">Tercile maximum temperature probabilities for February to April 2023</p> <p style="text-align: center;"> 40 50 60 70 80 90 40 50 60 70 80 90 40 50 60 70 80 90 Below normal (%) Near normal (%) Above normal (%) </p> <p><small>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2023. Australian Bureau of Meteorology Significant data extracted from: Bureau of Meteorology (2023). Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (ECONZ), version 11. Available online at http://www.marine.gov.au</small></p>
Monthly minimum temperature (Image 5):	Seasonal minimum temperature (Image 6):
<p style="text-align: center;">Tercile minimum temperature probabilities for February 2023</p> <p style="text-align: center;"> 40 50 60 70 80 90 40 50 60 70 80 90 40 50 60 70 80 90 Below normal (%) Near normal (%) Above normal (%) </p> <p><small>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2023. Australian Bureau of Meteorology Significant data extracted from: Bureau of Meteorology (2023). Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (ECONZ), version 11. Available online at http://www.marine.gov.au</small></p>	<p style="text-align: center;">Tercile minimum temperature probabilities for February to April 2023</p> <p style="text-align: center;"> 40 50 60 70 80 90 40 50 60 70 80 90 40 50 60 70 80 90 Below normal (%) Near normal (%) Above normal (%) </p> <p><small>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2023. Australian Bureau of Meteorology Significant data extracted from: Bureau of Meteorology (2023). Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (ECONZ), version 11. Available online at http://www.marine.gov.au</small></p>

Part 2: Recent Ocean Observation

Monthly/Three months: December 2022 and October to December 2022

<p>Monthly: December</p>	<p>Last three months: October to December 2022:</p>
<p>Sea Surface Temperature (Image 1):</p>	<p>Sea Surface Temperature (Image 4):</p>
 <p>Palau Monthly Average Sea Surface Temperature Anomaly: December 2022</p> <p>©Commonwealth of Australia 2023 Australian Bureau of Meteorology, COSPac COMP</p> <p>Reynolds SST</p>	 <p>Palau 3 monthly Average Sea Surface Temperature Anomaly: October 2022 to December 2022</p> <p>©Commonwealth of Australia 2023 Australian Bureau of Meteorology, COSPac COMP</p> <p>Reynolds SST</p>
<p>Sea level (Image 2):</p>	
 <p>Palau Monthly Near Real Time Sea Level Anomaly: December 2022</p> <p>©Commonwealth of Australia 2023 Australian Bureau of Meteorology, COSPac COMP</p> <p>AVISO SSB/UNDEL SEA</p>	
<p>Daily coral bleaching alert (Image 3):</p>	
 <p>Pacific Ocean Daily Coral Bleaching Alert: 07 January 2023</p> <p>©Commonwealth of Australia 2023 Australian Bureau of Meteorology, COSPac COMP</p> <p>NOAA Coral Reef Watch</p>	 <p>Palau Daily Coral Bleaching Alert: 07 January 2023</p> <p>©Commonwealth of Australia 2023 Australian Bureau of Meteorology, COSPac COMP</p> <p>NOAA Coral Reef Watch</p>

Part 2i. Monthly and Seasonal Outlooks for February and February to April 2023

Monthly: February	Seasonal: February to April
<p>Monthly sea surface temperature (Image 5):</p> <p>Difference from average sea surface temperature forecast for February 2023</p>  <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2023, Australian Bureau of Meteorology Support data extracted from: Tropical Marine Heatwaves (TMHW) Analysis, Marine Boundaries and Exclusive Economic Zones (2018), version 11. Available online at http://www.marine.gov.au/</p> <p>Model run: 07/01/2023 Issued: 09/01/2023</p>	<p>Seasonal sea surface temperature (Image 6):</p> <p>Difference from average sea surface temperature forecast for February to April 2023</p>  <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2023, Australian Bureau of Meteorology Support data extracted from: Tropical Marine Heatwaves (TMHW) Analysis, Marine Boundaries and Exclusive Economic Zones (2018), version 11. Available online at http://www.marine.gov.au/</p> <p>Model run: 07/01/2023 Issued: 09/01/2023</p>
<p>Monthly sea level (Image 7):</p> <p>Difference from average sea surface height forecast for February 2023</p>  <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2023, Australian Bureau of Meteorology Support data extracted from: Tropical Marine Heatwaves (TMHW) Analysis, Marine Boundaries and Exclusive Economic Zones (2018), version 11. Available online at http://www.marine.gov.au/</p> <p>Model run: 07/01/2023 Issued: 09/01/2023</p>	<p>Seasonal sea level (Image 8):</p> <p>Difference from average sea surface height forecast for February to April 2023</p>  <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2023, Australian Bureau of Meteorology Support data extracted from: Tropical Marine Heatwaves (TMHW) Analysis, Marine Boundaries and Exclusive Economic Zones (2018), version 11. Available online at http://www.marine.gov.au/</p> <p>Model run: 07/01/2023 Issued: 09/01/2023</p>
<p>4-week Coral Bleaching (Image 9):</p> <p>Pacific Ocean 4 Weeks Coral Bleaching Outlook: 29 January 2023</p>  <p>© Commonwealth of Australia 2023 Australian Bureau of Meteorology, COSPac COMP</p> <p>NOAA Coral Reef Watch</p>	<p>Pelau 4 Weeks Coral Bleaching Outlook: 29 January 2023</p>  <p>© Commonwealth of Australia 2023 Australian Bureau of Meteorology, COSPac COMP</p> <p>NOAA Coral Reef Watch</p>

Summary Statement

Monthly and last three months: December 2022/October to December 2022 statement

Below normal rainfall was recorded at Koror for December 2022. Above normal rainfall was recorded at Koror for the period October to December 2022.

Part 1i. Monthly and Seasonal Outlooks for February and February to April 2023

Monthly /Seasonal rainfall and temperature Outlook statements

The rainfall totals for February and February to April are very likely to be above normal over Koror and the whole country.

Maximum and minimum temperatures during February and averaged over February to April are very likely to be above normal for Koror and the whole country.

Part 2: Recent Ocean summary statement

Monthly and last three months: December/October to December 2022

December ocean temperatures around majority of Palau were 0.5 to 1.0°C above normal rising to 1.0 to 1.5°C above normal for the southwest islands.

Averaged over October to December, ocean temperatures around Palau were 0.5 to 1.0°C above normal.

December sea levels around majority of Palau were 150 mm to 250 mm above normal.

Part 2i. Monthly and Seasonal Outlooks for February and February to April 2023

Ocean Variable statement

February ocean temperatures around the majority of Palau are predicted to be 0.8 to 1.2°C above normal, increasing to 1.2 to 2.0°C above normal for the southwest islands.

Averaged over February to April, ocean temperatures around Palau are predicted to be 0.8 to 1.2°C above normal, decreasing to 0.4 to 0.8°C above normal for Koror and the main islands.

February sea levels around Koror and the main islands are predicted to be 30 mm to 60 mm above normal, increasing to 100 mm to 200 mm above normal over the southwest islands.

Averaged over February to April, sea levels around Koror and the main islands are predicted to be near-average, while sea levels around the southwest islands are predicted to be 30 mm to 60 mm above normal.

Coral bleaching alert reveals a Watch over Koror and the whole country.

Coral bleaching outlook for the next 4 weeks reveals no stress.

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

Product	Date: December 2022	Stakeholder	Total Number of Participants	Number of male	Number of female
EAR Watch	12	National Emergency Committee (NEC) <ul style="list-style-type: none"> • 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
		TOTAL	28	19	9