

Pacific Islands - Ocean and Climate Outlook Forum (OCOF) No. 192

Country: Palau

Part 1: Recent climate

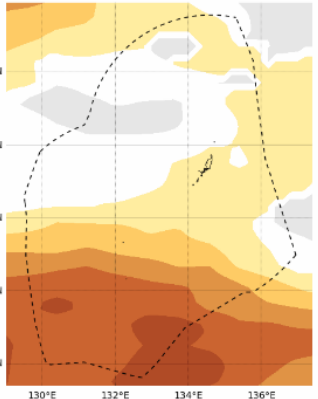
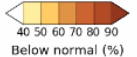
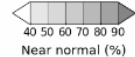
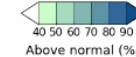
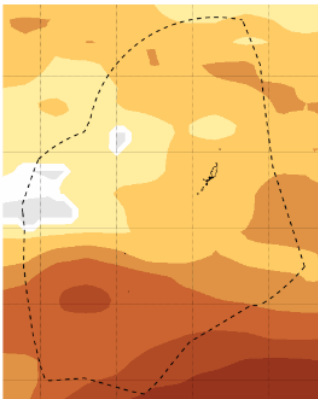
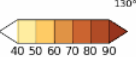
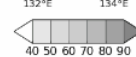
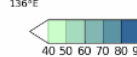
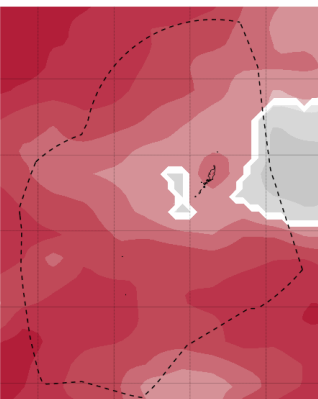
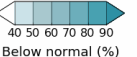
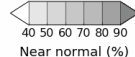
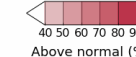

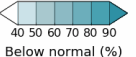
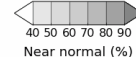
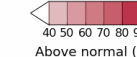
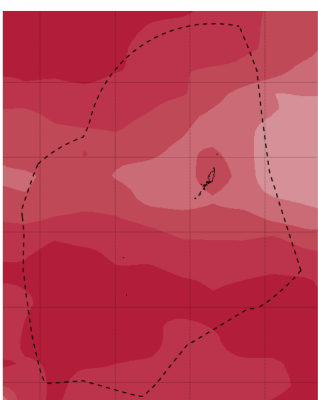
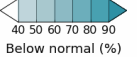
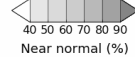
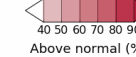
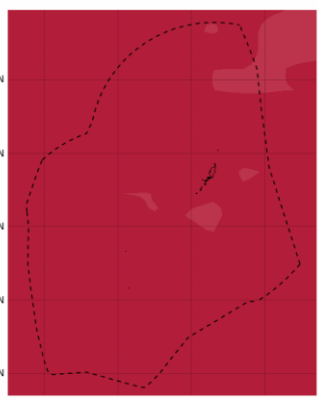

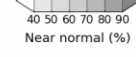
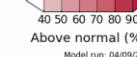
TABLE 1: Monthly Rainfall

Station (include data period)	Jun-2023	Jul-2023	Aug-2023				Rank
			Total (mm)	33%tile	67%tile	Median	
	Total (mm)	Total (mm)	Rainfall (mm)				
Koror (1951-2023)	373.6	717.8	456.4	321.8	427.7	349.0	59/73

TABLE 2: Three-month Total Rainfall for June to August 2023

Station	Three-month Total		33%tile	67%tile	Median	Rank
	Rainfall (mm)					
Koror (1951-2023)	1547.8	Above normal	708.8	870.4	768.0	66/72

Part 1i. Monthly and Seasonal Outlooks for October and October to December 2023

Monthly: October	Seasonal: October to December
Rainfall (Image 1)	Rainfall (Image 2)
<p style="text-align: center;">Tercile rainfall probabilities for October 2023</p>  <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  <p>Below normal (%)</p> </div> <div style="text-align: center;">  <p>Near normal (%)</p> </div> <div style="text-align: center;">  <p>Above normal (%)</p> </div> </div> <p style="font-size: small;">Base period: 1981-2018 Model: ACCESS-S2 Model run: 04/09/2023 Issued: 06/09/2023 © 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 http://www.maritimergistry.org</p>	<p style="text-align: center;">Tercile rainfall probabilities for October to December 2023</p>  <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  <p>Below normal (%)</p> </div> <div style="text-align: center;">  <p>Near normal (%)</p> </div> <div style="text-align: center;">  <p>Above normal (%)</p> </div> </div> <p style="font-size: small;">Base period: 1981-2018 Model: ACCESS-S2 Model run: 04/09/2023 Issued: 06/09/2023 © 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 http://www.maritimergistry.org</p>
Monthly Maximum temperature (Image 3):	Seasonal maximum temperature (Image 4):
<p style="text-align: center;">Tercile maximum temperature probabilities for October 2023</p>  <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  <p>Below normal (%)</p> </div> <div style="text-align: center;">  <p>Near normal (%)</p> </div> <div style="text-align: center;">  <p>Above normal (%)</p> </div> </div> <p style="font-size: small;">Base period: 1981-2018 Model: ACCESS-S2 Model run: 04/09/2023 Issued: 06/09/2023 © 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 http://www.maritimergistry.org</p>	<p style="text-align: center;">Tercile maximum temperature probabilities for October to December 2023</p>  <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  <p>Below normal (%)</p> </div> <div style="text-align: center;">  <p>Near normal (%)</p> </div> <div style="text-align: center;">  <p>Above normal (%)</p> </div> </div> <p style="font-size: small;">Base period: 1981-2018 Model: ACCESS-S2 Model run: 04/09/2023 Issued: 06/09/2023 © 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 http://www.maritimergistry.org</p>
Monthly minimum temperature (Image 5):	Seasonal minimum temperature (Image 6):
<p style="text-align: center;">Tercile minimum temperature probabilities for October 2023</p>  <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  <p>Below normal (%)</p> </div> <div style="text-align: center;">  <p>Near normal (%)</p> </div> <div style="text-align: center;">  <p>Above normal (%)</p> </div> </div> <p style="font-size: small;">Base period: 1981-2018 Model: ACCESS-S2 Model run: 04/09/2023 Issued: 06/09/2023 © 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 http://www.maritimergistry.org</p>	<p style="text-align: center;">Tercile minimum temperature probabilities for October to December 2023</p>  <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  <p>Below normal (%)</p> </div> <div style="text-align: center;">  <p>Near normal (%)</p> </div> <div style="text-align: center;">  <p>Above normal (%)</p> </div> </div> <p style="font-size: small;">Base period: 1981-2018 Model: ACCESS-S2 Model run: 04/09/2023 Issued: 06/09/2023 © 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 http://www.maritimergistry.org</p>

Part 2: Recent Ocean Observation

Monthly/Three months: June and June to August 2023

Monthly: August	Last three months: June to August 2023:
<p>Sea Surface Temperature (Image 1):</p> <p>Palau Monthly Average Sea Surface Temperature Anomaly: August 2023</p> <p>©Commonwealth of Australia 2023 Australian Bureau of Meteorology, CC BY-NC</p> <p>Reynolds SST</p>	<p>Sea Surface Temperature (Image 4):</p> <p>Palau 3 monthly Average Sea Surface Temperature Anomaly: June 2023 to August 2023</p> <p>©Commonwealth of Australia 2023 Australian Bureau of Meteorology, CC BY-NC</p> <p>Reynolds SST</p>
<p>Sea level (Image 2):</p> <p>Palau Monthly Near Real Time Sea Level Anomaly: August 2023</p> <p>©Commonwealth of Australia 2023 Australian Bureau of Meteorology, CC BY-NC</p> <p>AVISO SeaWiFS/QuikSCAT SLA</p>	
<p>Daily coral bleaching alert (Image 3):</p> <p>Palau Daily Coral Bleaching Alert: 05 September 2023</p> <p>©Commonwealth of Australia 2023 Australian Bureau of Meteorology, CC BY-NC</p> <p>NOAA Coral Reef Watch</p>	<p>Pacific Ocean Daily Coral Bleaching Alert: 05 September 2023</p> <p>©Commonwealth of Australia 2023 Australian Bureau of Meteorology, CC BY-NC</p> <p>NOAA Coral Reef Watch</p>

Part 2i. Monthly and Seasonal Outlooks for October and October to December 2023

Monthly: October	Seasonal: October to December
Monthly sea surface temperature (Image 5):	Seasonal sea surface temperature (Image 6):
<p>Difference from average sea surface temperature forecast for October 2023</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 (2004N), version 11. Available online at http://www.marinegovernance.org/</p> <p>Model run: 04/09/2023 Issued: 06/09/2023</p>	<p>Difference from average sea surface temperature forecast for October to December 2023</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 (2004N), version 11. Available online at http://www.marinegovernance.org/</p> <p>Model run: 04/09/2023 Issued: 06/09/2023</p>
Monthly sea level (Image 7):	Seasonal sea level (Image 8):
<p>Difference from average sea surface height forecast for October 2023</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 (2004N), version 11. Available online at http://www.marinegovernance.org/</p> <p>Model run: 04/09/2023 Issued: 06/09/2023</p>	<p>Difference from average sea surface height forecast for October to December 2023</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 (2004N), version 11. Available online at http://www.marinegovernance.org/</p> <p>Model run: 04/09/2023 Issued: 06/09/2023</p>
4-week Coral Bleaching (Image 9):	
<p>Palau 4 Weeks Coral Bleaching Outlook: 01 October 2023</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: 01 October 2023</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: August 2023/June to August 2023 statement

The rainfall for August and June to August was above normal at Koror. The June to August total was the seventh highest in 72 years of record.

Part 1i. Monthly and Seasonal Outlooks for October and October to December 2023

Monthly /Seasonal rainfall and temperature Outlook statements

The rainfall for October and October to December is likely to be below normal over the main islands, grading to very likely over the southwest islands. Maximum and minimum temperatures during October and averaged over October to December are very likely to be above normal over Palau.

Part 2: Recent Ocean summary statement

Monthly and last three months: August 2023/June to August 2023

August ocean temperatures were 0.0 to 0.5°C below normal for majority of the main islands and 0.5 to 1.0°C above normal for the southwest islands.

Averaged over June to August, ocean temperatures around the outermost southwest islands were 0.5 to 1.0°C above normal and the main islands were up to 0.5°C.

August sea levels around Palau were 50mm to 100mm above normal.

Coral bleaching alert status is at a 'Watch' for Palau.

Part 2i. Monthly and Seasonal Outlooks for October and October to December 2023

Ocean Variable statement

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

Averaged over October to December, ocean temperatures around are predicted to be near-normal.

October sea levels around the southwest islands are predicted to be 30mm to 60mm below normal and near-normal for the main islands.

Averaged over October to December, sea levels around Palau are predicted to be 60mm to 100mm below normal.

Coral bleaching outlook for the next four weeks is at 'No Stress'.

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

Product	Date: August 2023	Stakeholder	Total Number of Participants	Number of Male	Number of Female	Comments (If there are comments from your Stakeholders)
WFO Guam and PRH station visit and inventory check.	1	WSO Palau	14	6	8	WFO Guam=National Weather Service Forecast Office Guam, PRH=Pacific Region Headquarters, WSO Palau=Palau National Weather Service Office
Rock Island trip and scenic observations.	2	PRH, WFO Guam and WSO Palau	16	8	8	
“Organizational Health Blueprint” training by PRH	3	WSO Palau	14	6	8	
Weather update video on the monsoon event in Palau	5	NWS Micronesia WhatsApp participants; observers and forecasters	23	4	19	NWS=National Weather Service
AWS meeting	7	EPSs and Governors of Aimeliik and Koror	3	3	0	AWS=Automated Weather Station, EPS=Electronic Program Specialist
EAR Watch	8	WSO Palau & Social Media	15+	10	5	Hearts: 2 Likes: 5 Share: 1 Post Impressions: 616 Reached: 583 Engagement: 63
AWS site location inspection in Ngeremlengui	8	EPSs	2	2	0	
UN Dept. of Safety and Security visit at WSO Palau	9	Field Associate, IOM rep, Staff MET, Admin Assistant, WSS on shift	4	1	3	IOM=International Organization of Mitigation, WSS=Weather Service Specialist/observer
UNDP meeting with EPSs, NEMO reps for Peleliu AWS installation	14-18	EPS, NEMO and UNDP rep	7	7	0	NEMO=National Emergency Management Office. UNDP=United Nations Development Programme. A week of work on AWS installation.
Enhancing Climate Information and Knowledge Services for Resilience in 5 Pacific countries (UNEP CIS-Pac5)	23	MIC, Staff MET, AA and Programme coordinator for UNEP project	5	0	5	MIC=Meteorologist in Charge/Director, AA=Administrative Assistant, and UNEP=United Nations Environment Programme
Climate data request ; Koror data : Jan 2020-July 2023 and Airai 2004 to 2023	24-25	Coral Reef Research Foundation; Director, Lab Manager/Research Biologist, Boatman/Collector, Research biologists, Associate Research Biologists, Research assistants, Mapping Specialist, GIS Analyst	11	6	5	
Enhancing Climate Information and	25	MIC, Staff MET, AA and Programme coordinator	8	0	8	

Knowledge Services for Resilience in 5 Pacific countries (UNEP CIS-Pac5) meeting		for UNEP project, Technical Advisor for GCF/UNEP Pacific Climate Resilience Programme for the Red Cross Red Crescent Climate Center and UNEP Project Manager Unit under ROP Bureau of Budget and Planning				
UNEP Project meeting	28	Similar partners listed above	6	0	6	
Climate Bulletin & Outlook	28	WSO Palau & Social Media	15+	10	5	Hearts : 1 Likes : 1 Shares : 1 Post Impressions : 382 Reached : 367 Engagement : 27
Ocean Bulletin & Outlook	28	WSO Palau & Social Media	15+	10	5	Climate & Ocean Bulletin and Outlooks are a one pager, back to back. Sharing same stats above.
Total			158	73	85	<i>EAR Watch, social media stats:</i> Hearts: 2 Likes: 5 Share: 1 Post Impressions: 616 Reached: 583 Engagement: 63 <i>Climate & Ocean Bulletin & Outlook, social media stats:</i> Hearts : 1 Likes : 1 Shares : 1 Post Impressions : 382 Reached : 367 Engagement : 27