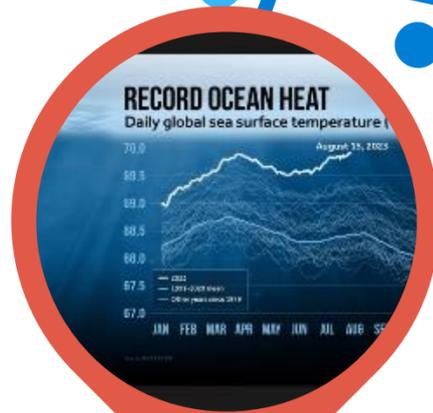


# 16<sup>TH</sup> SESSION OF THE PACIFIC ISLANDS CLIMATE OUTLOOK FORUM

# PICOF-16

23 APRIL, 2025  
ONLINE: ZOOM



# MICRONESIA PAST 6 MONTHS CLIMATE IMPACTS

**Nover Juria**

WSS & National Climate Officer  
RMI National Weather Service Office

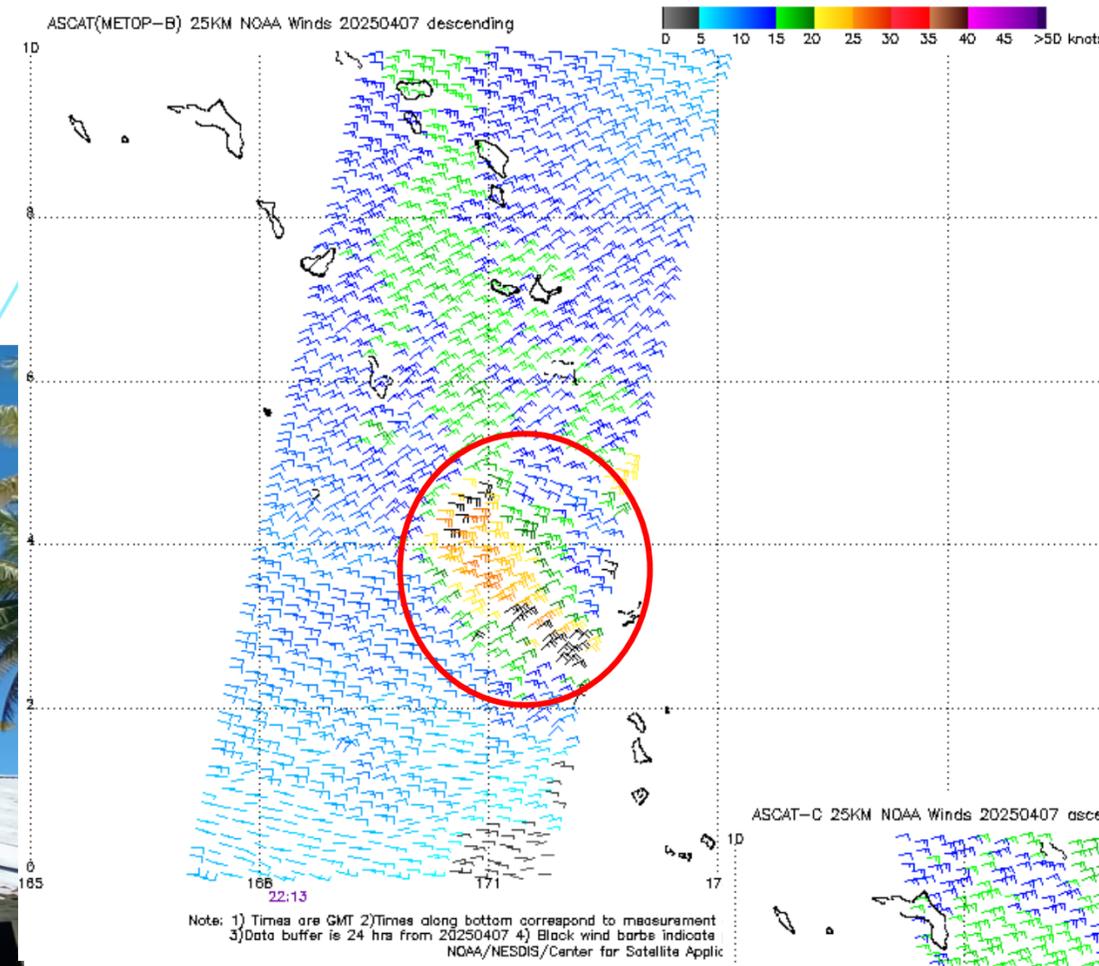


# KIRIBATI CLIMATE IMPACTS

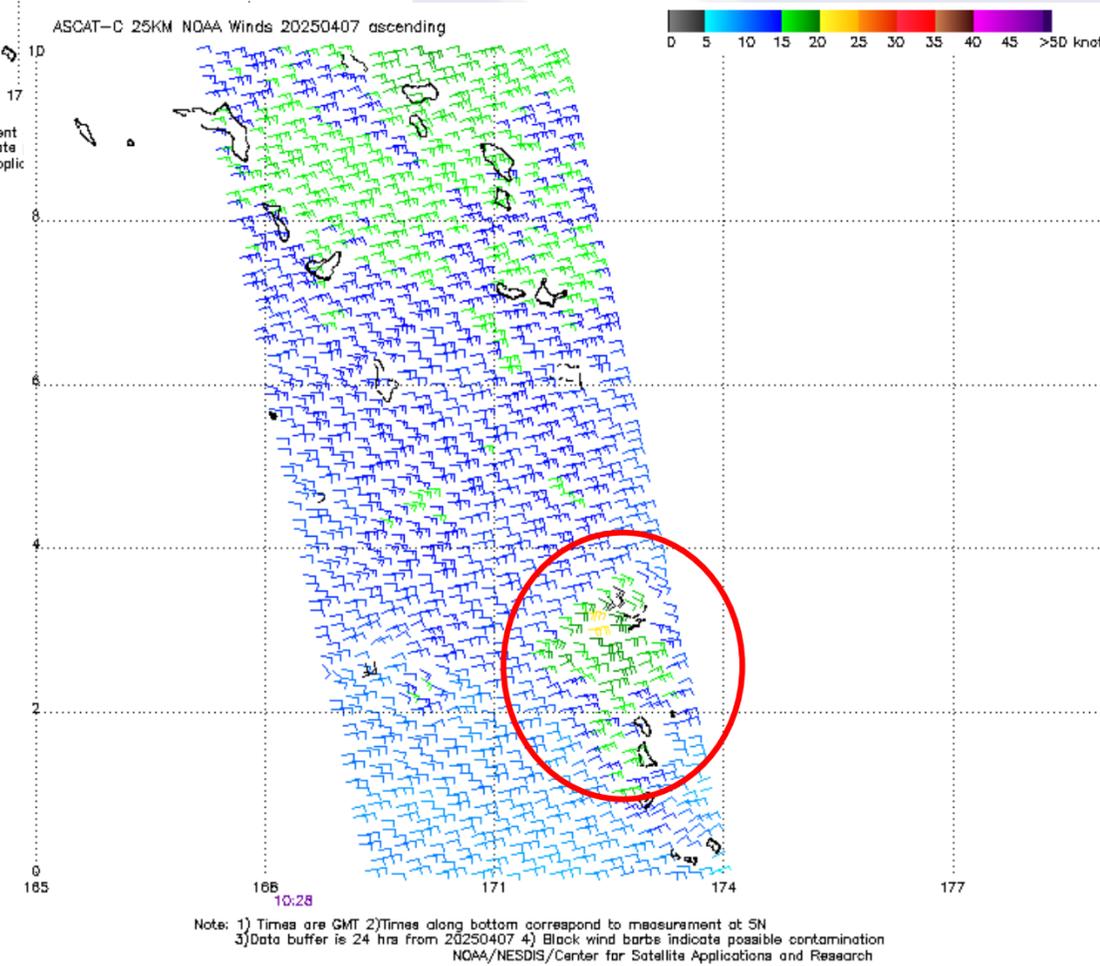
**Kamaitia Rubetaake**  
National Climate Officer  
Kiribati Meteorological Services



# Kiribati: Strong Wind Phenomena



Source: ASCAT Wind



Source: ASCAT Wind

**Fig 1:** Strong wind event reported from the central part of western Kiribati. Event reported by Island Clerk on the 7<sup>th</sup> of April 2025.

# NAURU CLIMATE IMPACTS OCT TO MAR 2024-25

**Ricky Joram**

Snr Climate Forecaster, Nauru Meteorological & Hydrological Services  
National Emergency Services



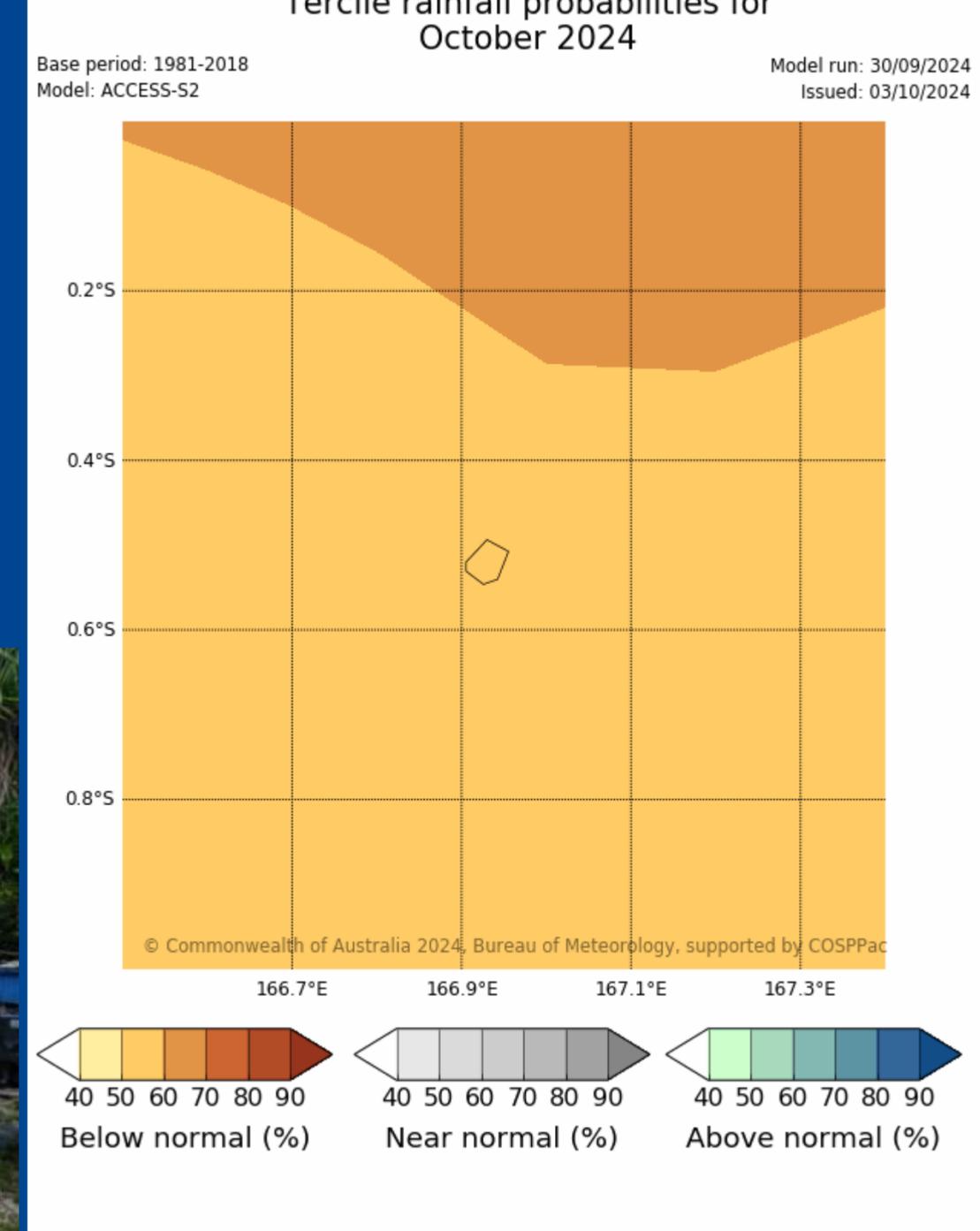
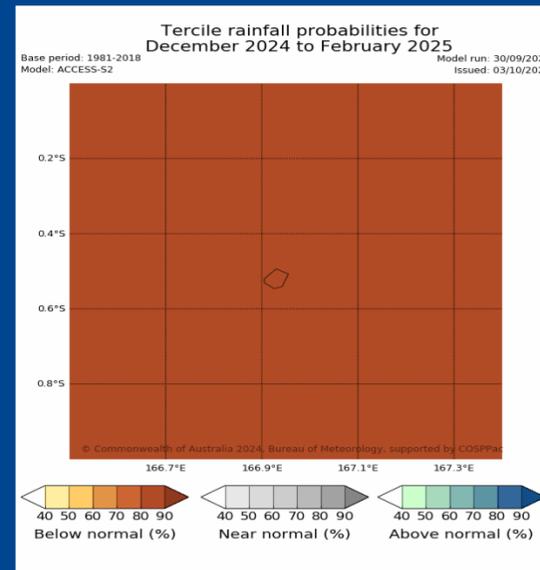
# October 2024 to March 2025

## Climate Status: ENSO Neutral-La Nina Watch

- **Below average rainfall**
- **Weak trade winds**
- **High temperatures**

## IMPACTS

- **Increased water demands**
- **Agricultural impacts**
- **Dry weather**
- **Low rainfall**



# DATA

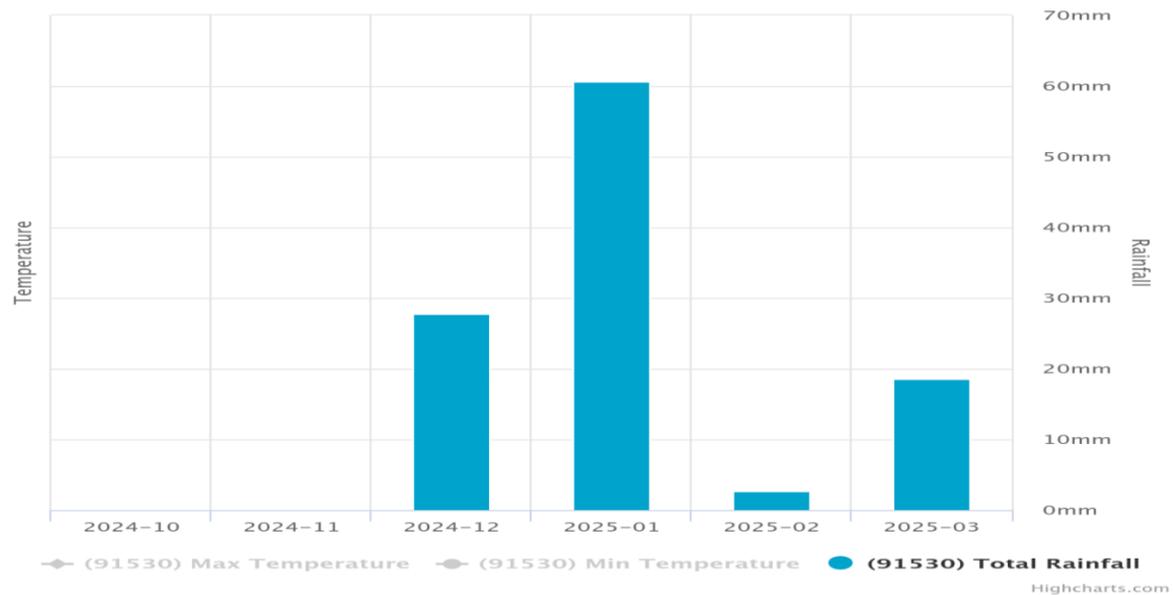
## Rainfall

- Past 6 months rainfall was observed as below average
- 60mm of rainfall was the highest amount that was collected on Jan 2025
- No rainfall for the whole month of October 2024 & November 2024

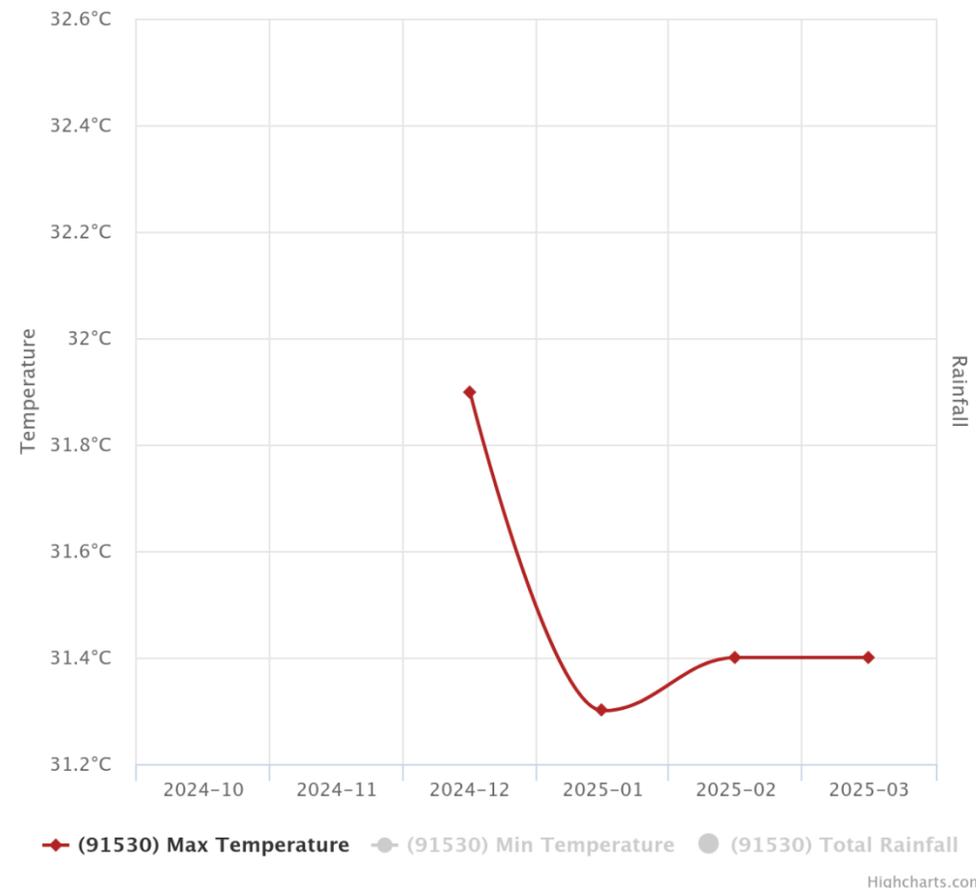
## Temperatures

- Maintaining high heat of above 30°C
- Drier than average conditions
- Highest temp more than 31.8
- Lowest temp below 26.4

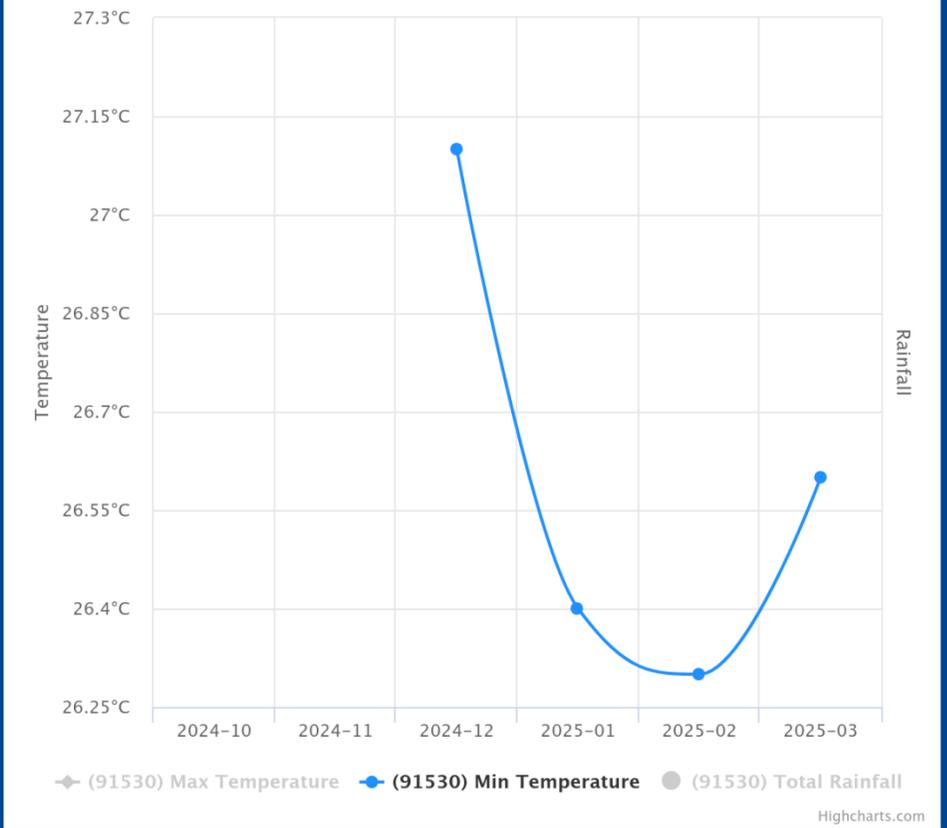
Monthly Rainfall, Max Temperature and Min Temperature for (91530) for 2024-10 to 2025-03 (All Data)



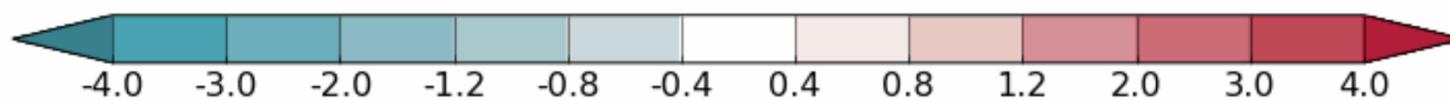
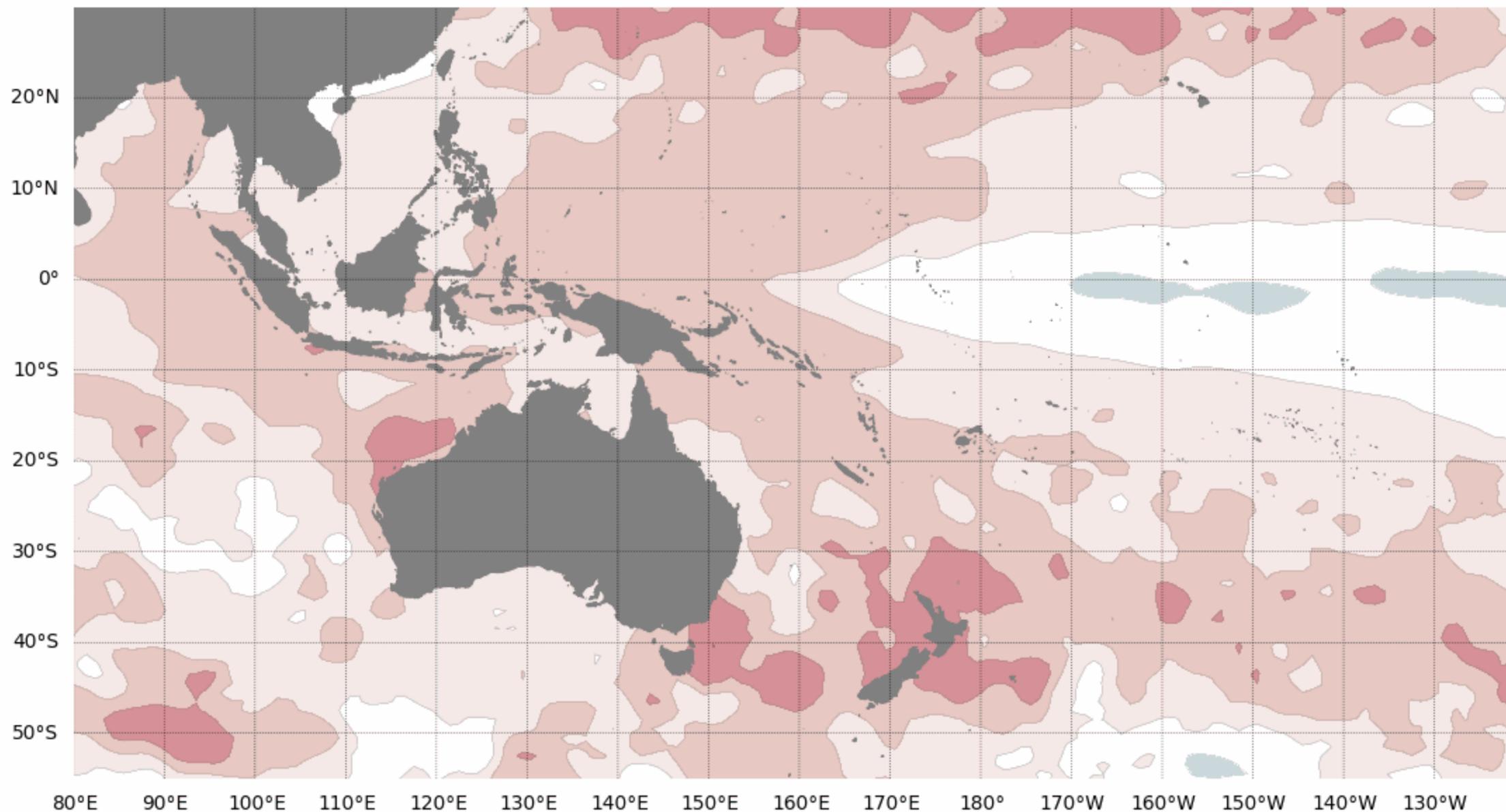
Monthly Rainfall, Max Temperature and Min Temperature for (91530) for 2024-10 to 2025-03 (All Data)



Monthly Rainfall, Max Temperature and Min Temperature for (91530) for 2024-10 to 2025-03 (All Data)



# Difference from average sea surface temperature forecast for November 2024 to January 2025



Difference from average (°C)

[www.bom.gov.au/climate](http://www.bom.gov.au/climate)

© Commonwealth of Australia 2024, Australian Bureau of Meteorology

Model: ACCESS-S2

Base period: 1981-2018

Model run: 30/09/2024

Issued: 02/10/2024

# RMI CLIMATE IMPACTS

**Nover Juria**

WSS & National Climate Officer  
RMI National Weather Service Office

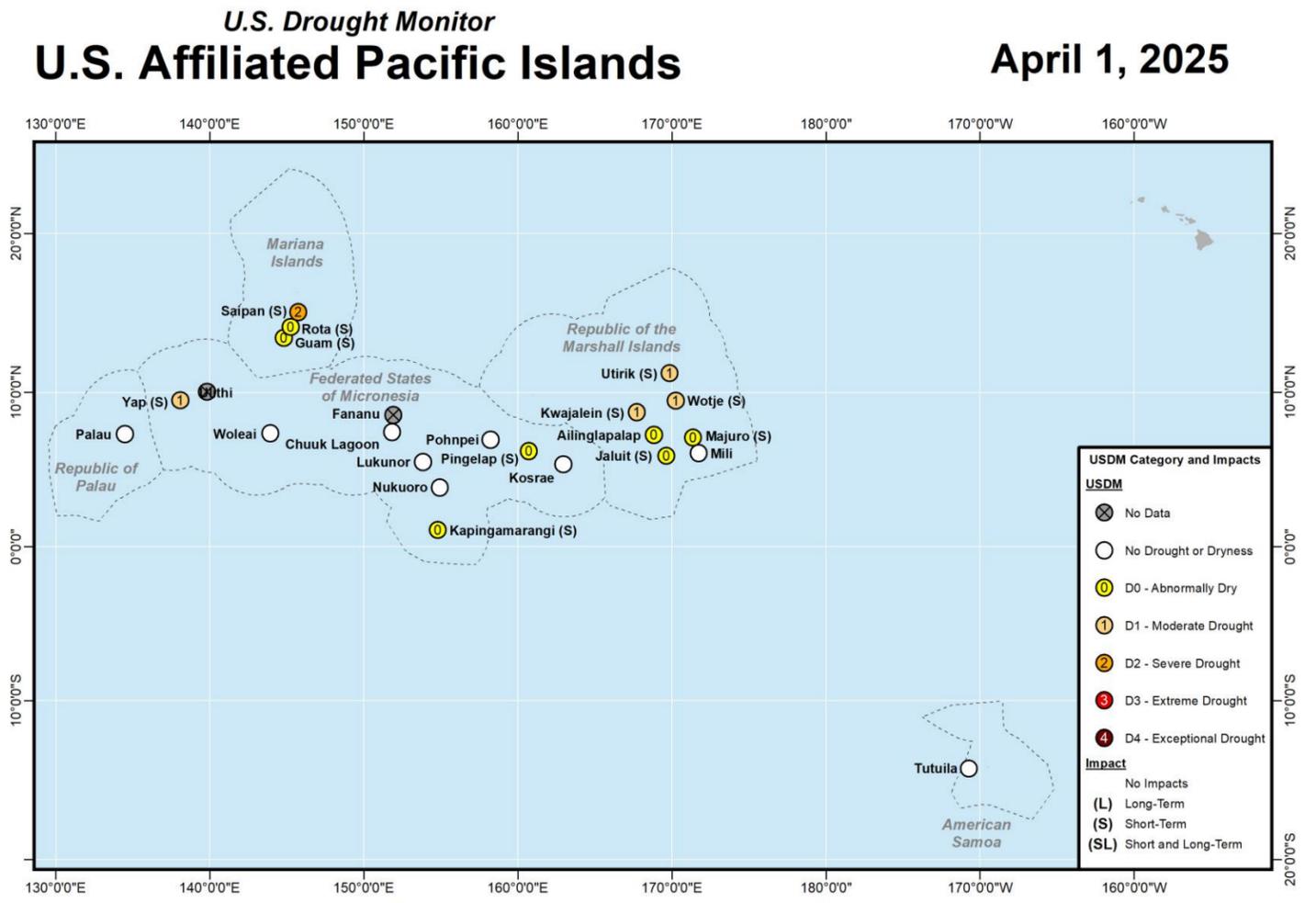
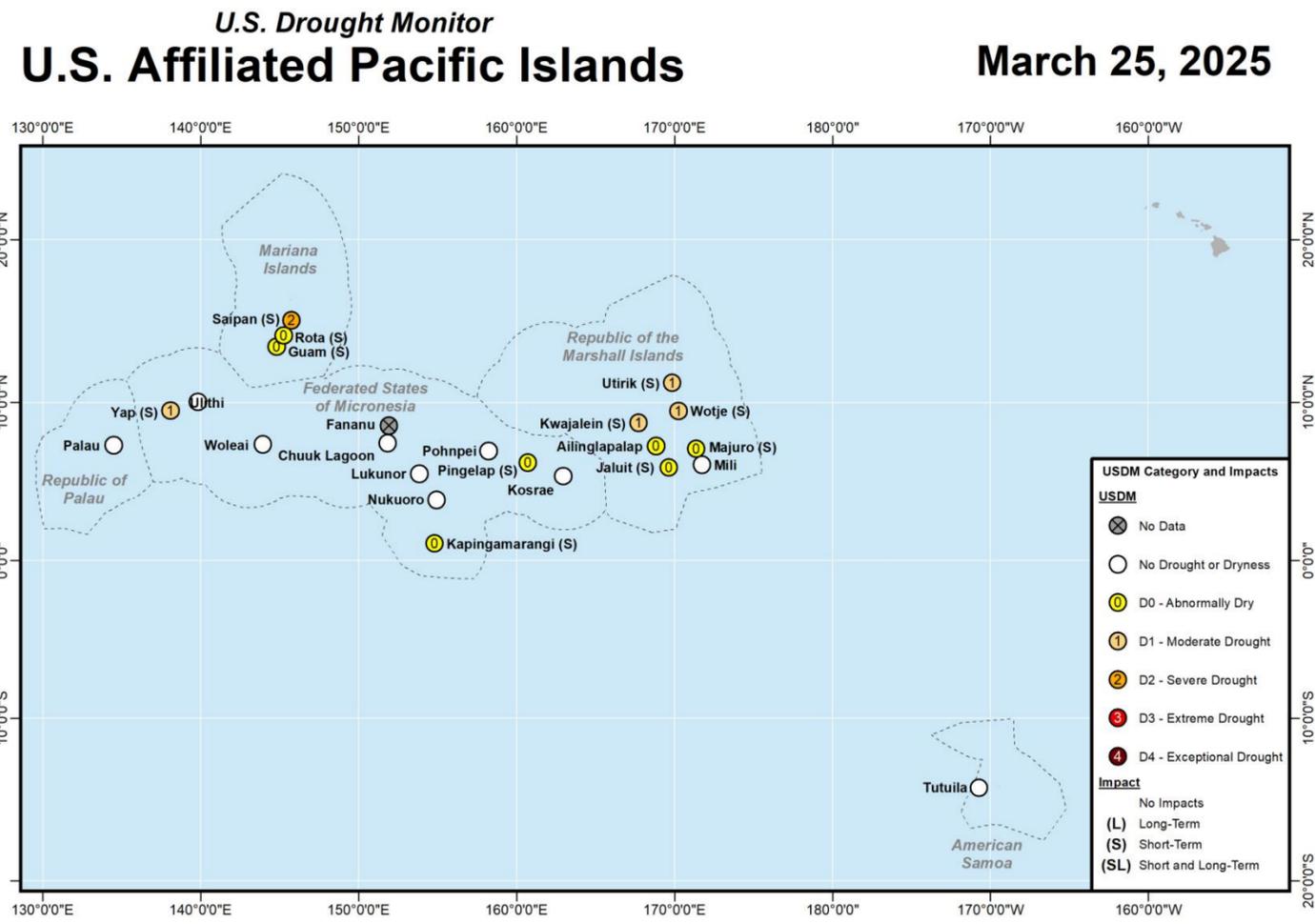


# Dry Conditions in the RMI - 2024/2025

The northern part of the RMI has experienced dry conditions since late 2024 and extended into early 2025 – Central and southern islands started to dry in early 2025. RMI NDMO, NWS, WFO Guam, and US Drought Monitor Team are monitoring the drought impacts across the islands

Abnormally Dry to Moderate Drought in March

Abnormally Dry to Moderate Drought in April



# Drought Impacts 2025



Residents of Ebeye, Kwajalein Atoll

By: MI Weekly Journal - April 2025



Residents of Utirik Atoll

By: ACWA Project - February 2025

## Water shortages for the last few months

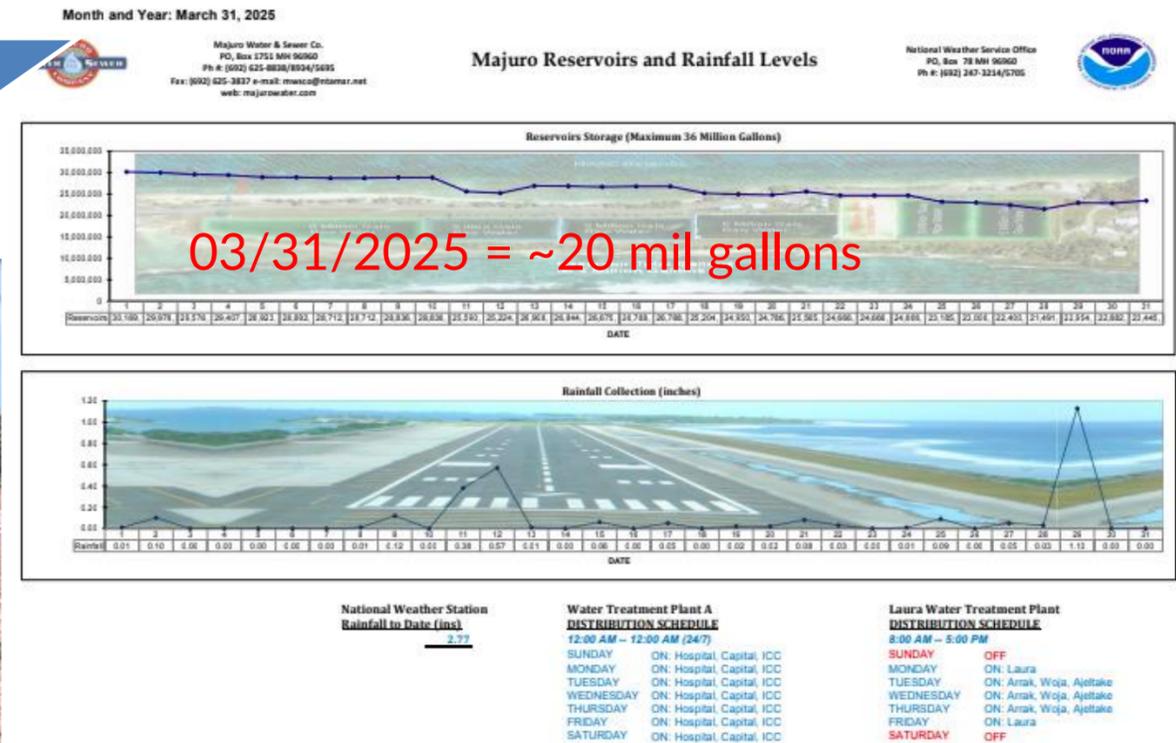
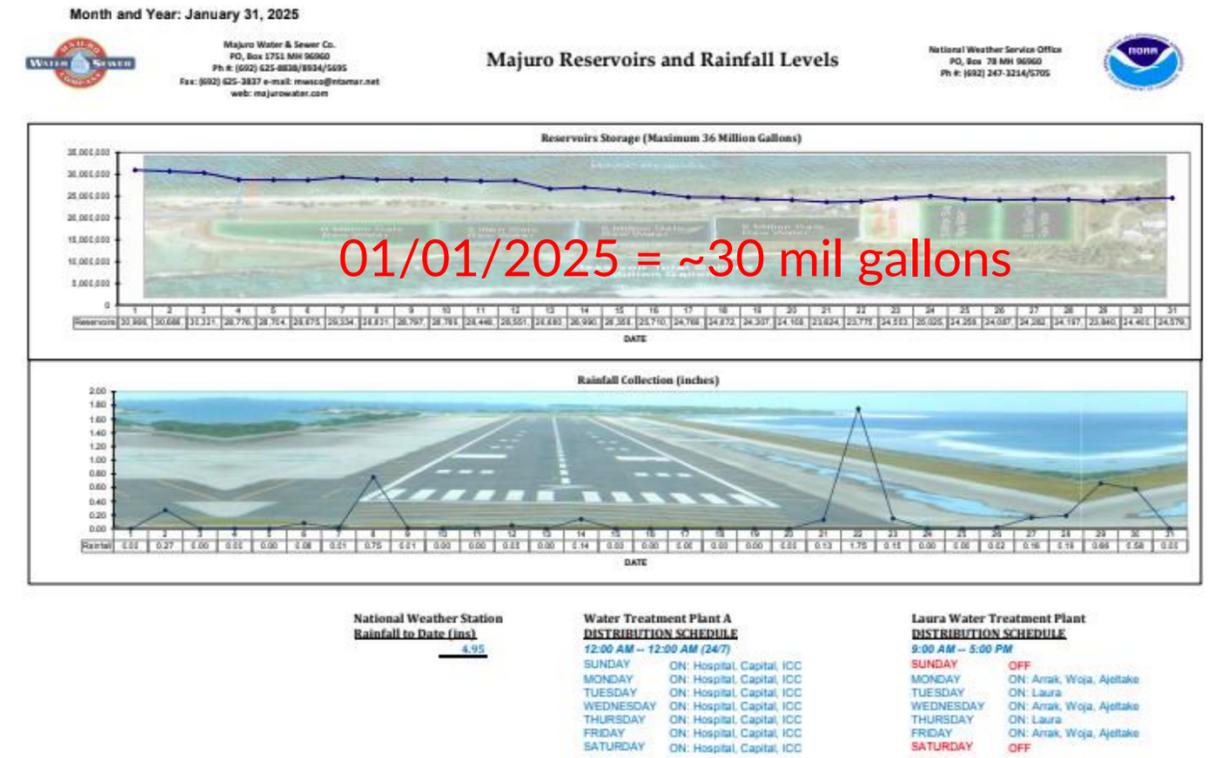
- Empty water tanks at many households on Ebeye and other northern atolls causing the residents to collect drinking waters from the RO units and also use the wells for their other needs.
- Declining of the **36 million capacity** Water Reservoirs on **Majuro Atoll**, the Capital from **~30 mil as of 1/01/2025**-(top picture) to **~20 mil as of 3/31/2025**-(bottom picture). That reduced days of water distribution for the residents from **4 days a week with 6 hours** to only **2 days a week with 3 hours**.

## Wotje Atoll

Airport in February 2025

- browning vegetation
- dusts blown all around

By: NDMO - 2/19/2025



Source: RMI MWSC & NWS

# Inundation / Coastal Erosion Events 2025

10 highest tides for 2025			10 lowest tides for 2025		
Date	Time	Height (m)	Date	Time	Height (m)
01-Mar	17:29	2.26	01-Mar	23:41	0.17
28-Feb	16:54	2.25	29-Mar	22:39	0.17
29-Mar	16:29	2.22	28-Feb	23:09	0.17
31-Mar	5:24	2.22	30-Mar	10:56	0.18
06-Nov	16:35	2.2	30-Mar	23:11	0.18
30-Mar	4:48	2.19	08-Oct	10:42	0.18
30-Mar	17:04	2.19	09-Sep	11:14	0.18
29-Apr	5:02	2.19	07-Oct	22:29	0.19
08-Oct	16:56	2.19	07-Oct	10:10	0.19
28-Apr	4:23	2.19	08-Oct	23:07	0.19

Source: SPC – RMI Tide Calendar 2025

## Flooding on the main road of Majuro, the Capital

Photo by: RMI NDMO 3/6/2025



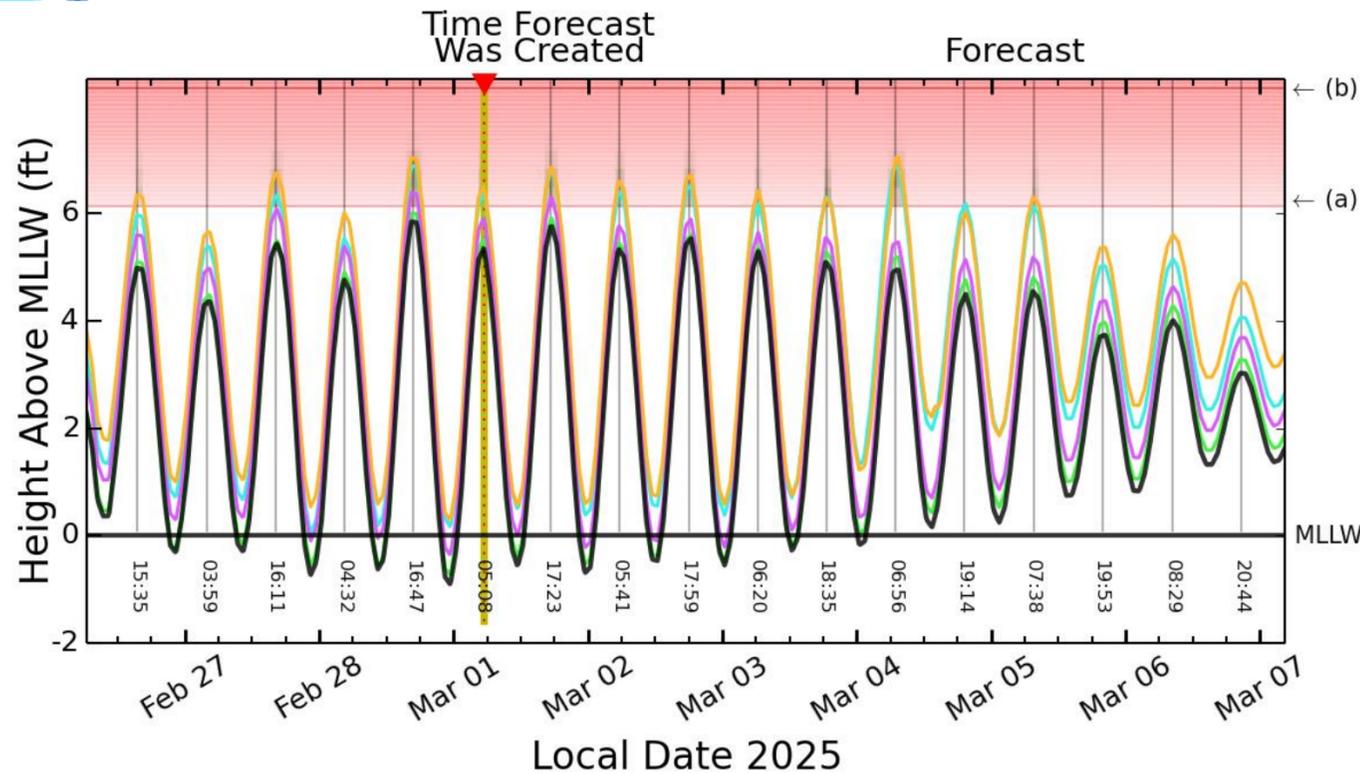
### Plenty of puddles

It was wet two weekends in a row with inundations in many parts of the atoll, including the area around Amata Kabua International Airport. At left is an example of a paddling pool in the road on Sunday and a reflection pool on Saturday. Photos: Giff Johnson.

Source: MI Weekly Journal– March 2025



## Inundation at Wotje Atoll in the Northern RMI



Source: <https://www.pacioos.hawaii.edu/shoreline/runup-majuro/#archive>

Photo by: ACWA Project February 2025 – Coastal erosion at Wotje Atoll in the Northern RMI

# High Surfs + Moderate Winds 2024/25

## Dec 2024 to Jan 2025

- Missing a 20ft boat and 4 of the 7 passengers and crew members including 3 classroom teachers between Majuro and Arno Atolls
- WFO Guam and WSO Majuro issued high surfs and small craft advisories for Majuro and waters surrounding

### Four lost in stormy voyage from Majuro

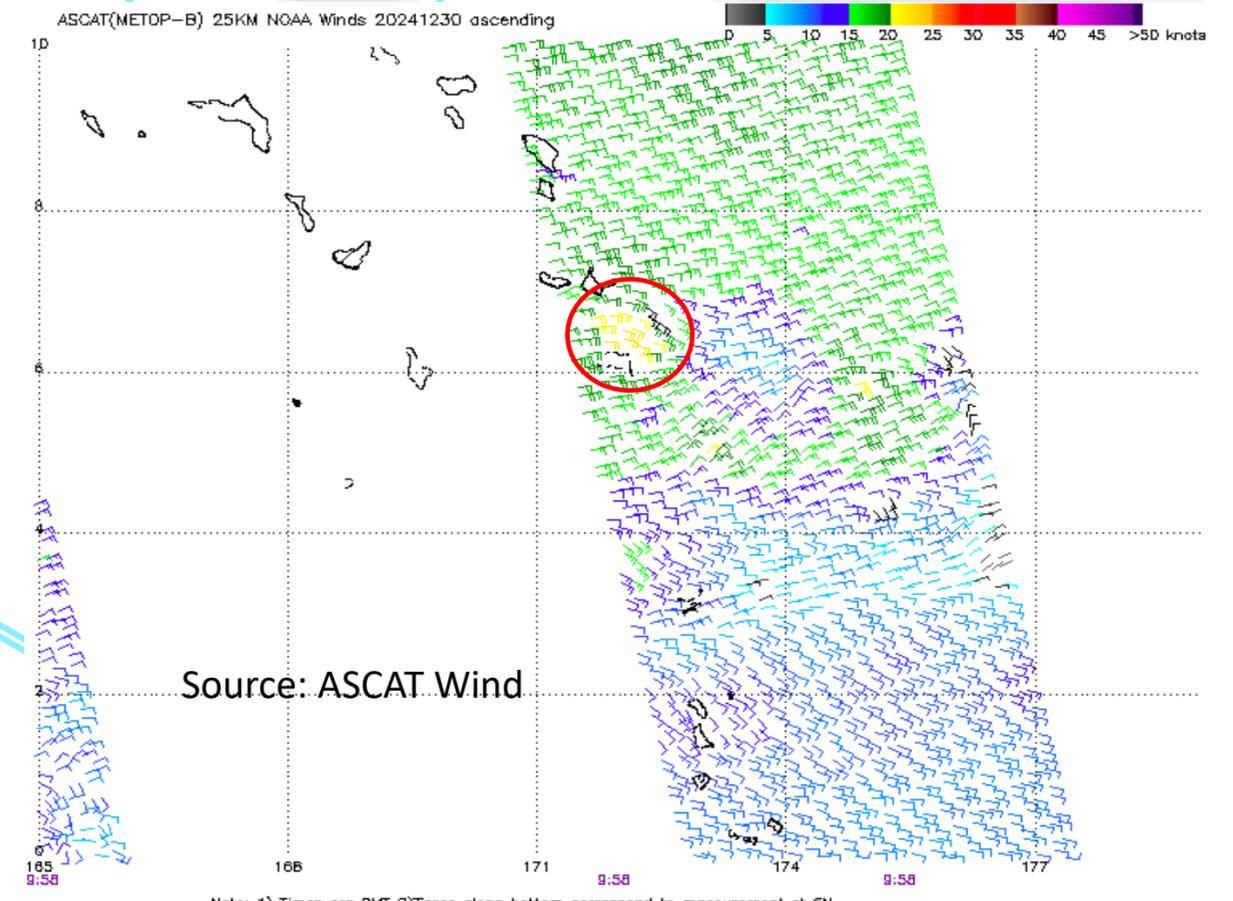
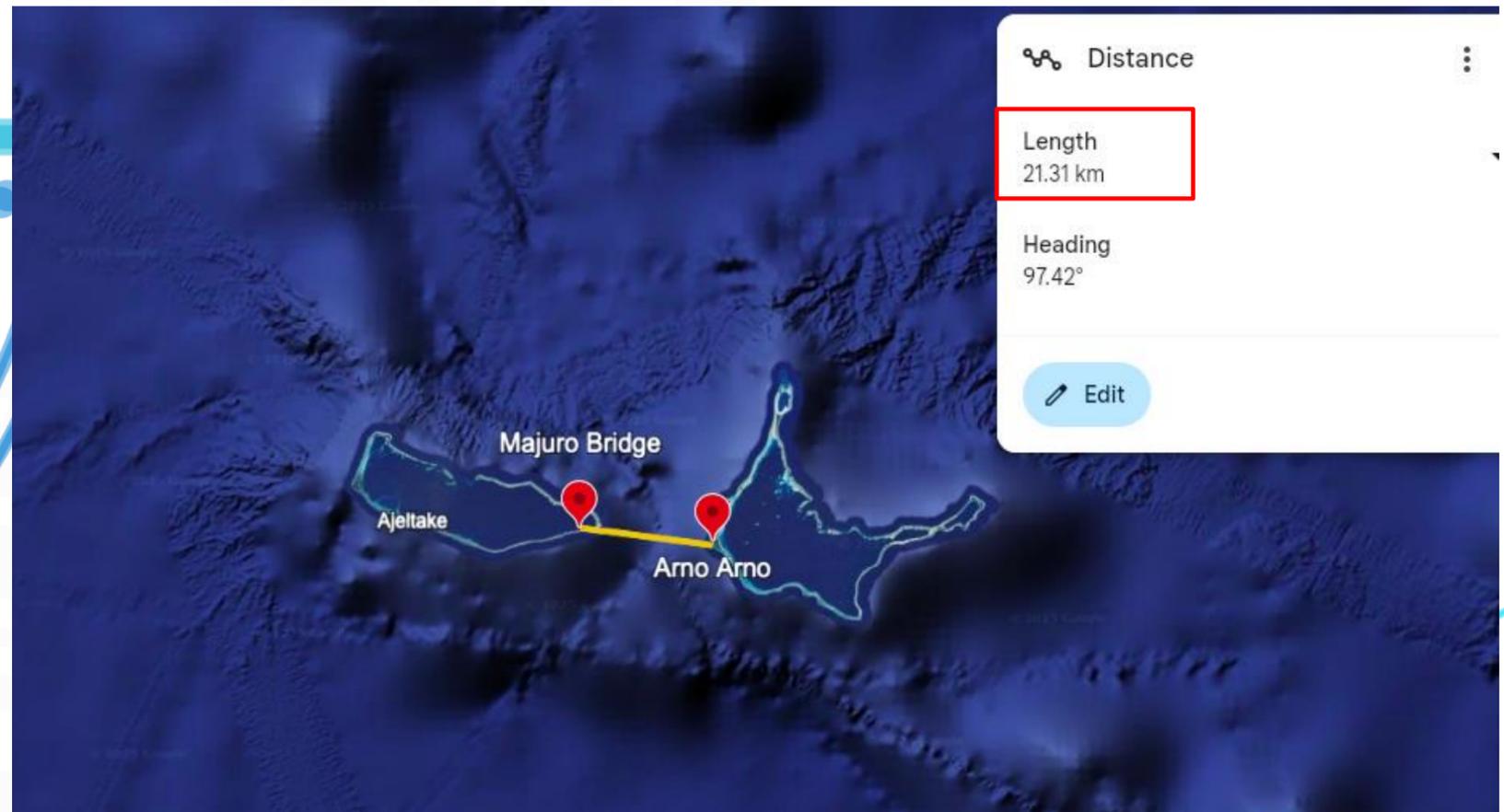
**WILMER JOEL**  
 A 20-foot passenger and cargo boat sank in heavy seas near Arno Atoll just before the New Year, with four passengers still missing and presumed lost. Only three of the seven people on the small boat that sank December 30 were able to use ocean currents to swim into Majuro. The three washed up in various locations in Majuro on New Year's Eve, 24 hours after the boat sank. Unknown to them and the others, an intensive search was launched the same night the boat sank and continued into last weekend.

the boat started to slow down and swamp. The other young crew member, 18-year-old Mokka Namto, said that the bow of the boat began leaking and the water washing into the boat was destabilizing the progress. One of the women tripped on the battery connected to the engine, causing the boat to come to a full stop where it was buffeted by big waves, Mokka said. They dumped the supplies to lessen the weight of the boat but waves bashed the boat five times, which eventually sank vertically in a matter of seconds. Mokka said he



Two of the survivors of the tragic boat incident on December 30, Bobson Hermios, left, and Mokka Namto. Mokka told the Journal that they waved clothes and shouted to three passing boats, but frustratingly none of the crew or passengers saw or heard their cries.

Source: MI Weekly Journal 1/10/2025

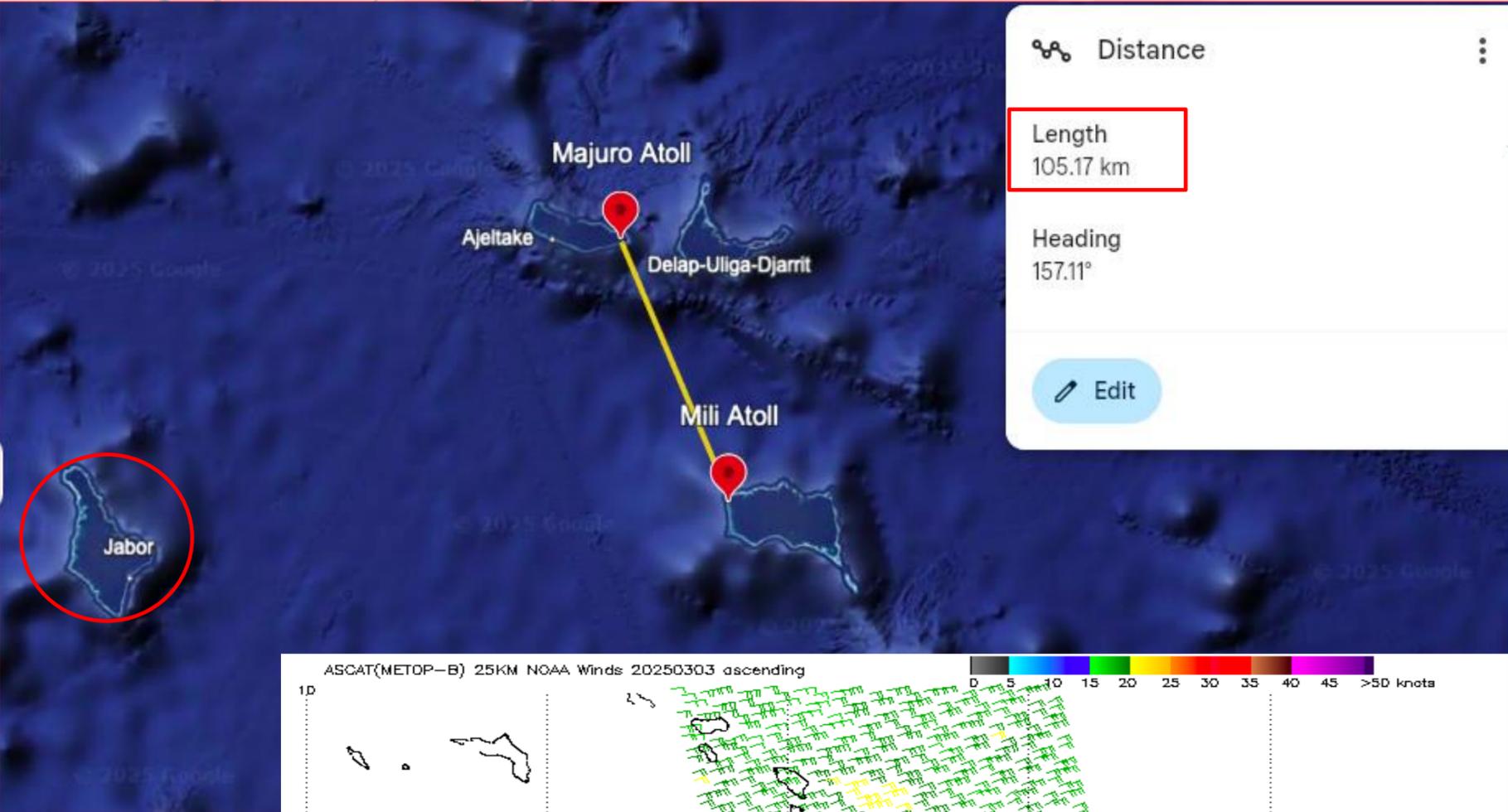


Source: ASCAT Wind

Note: 1) Times are GMT 2) Times along bottom correspond to measurement at 5N 3) Data buffer is 24 hrs from 20241230 4) Black wind barbs indicate possible contamination NOAA/NESDIS/Center for Satellite Applications and Research

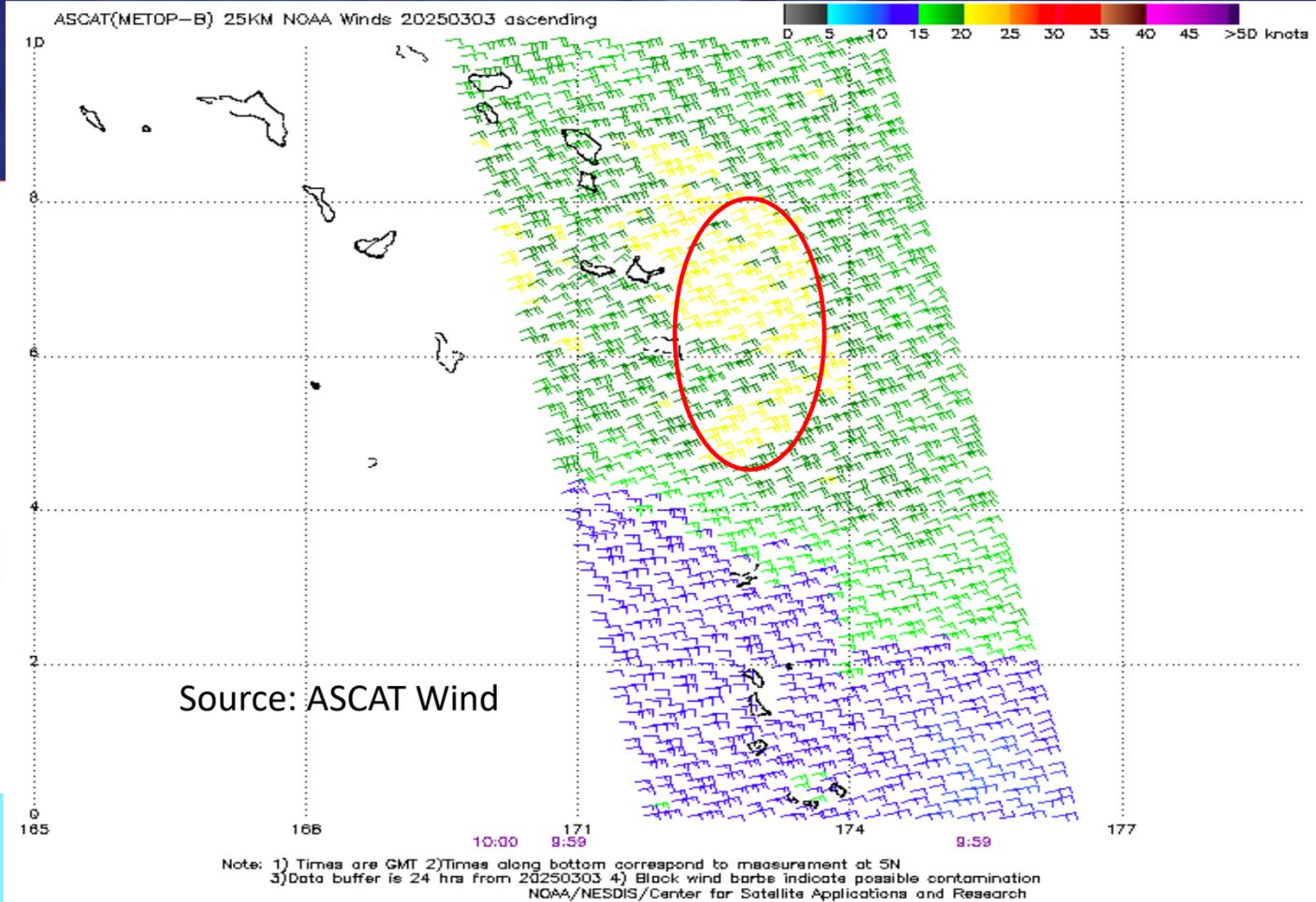
# Swells + Strong trade winds - March 2025

- A 37ft boat was capsized and all 4 crew members including the captain and 3 health assistants were missing between Majuro and Mili Atolls
- WFO Guam and WSO Majuro issued forecasts on moderate sea conditions and high winds up to 25kts with some gusty winds



The overturned sea ambulance on the rocks at the Jitoken area of Jaluit Atoll.

Source: MI Weekly Journal 3/14/2025



# CORAL BLEACHING AND STRONG GUSTY WINDS ON POHNPEI

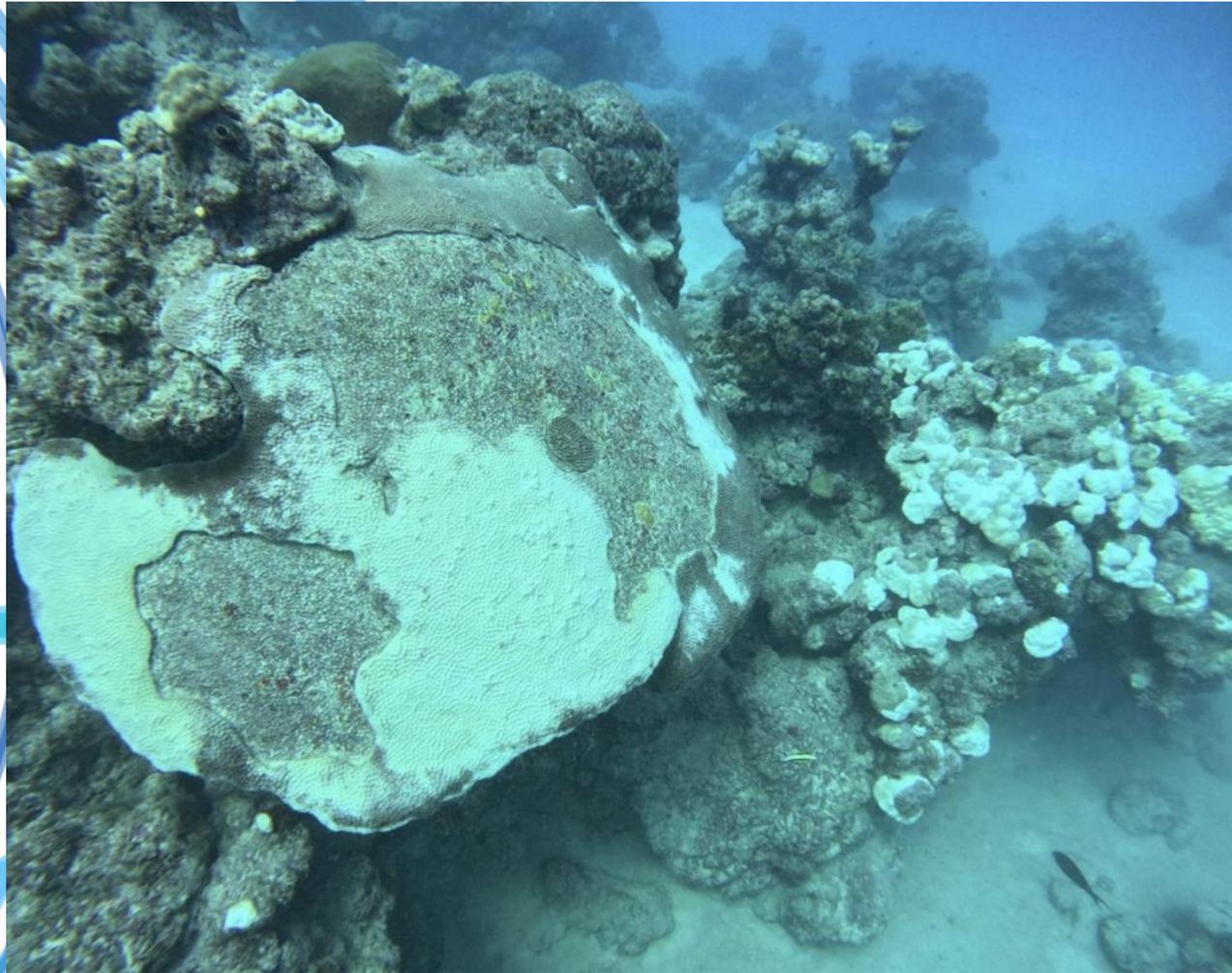
Wallace Jacob

WSS & Climate Focal Point

Weather Service Office, Pohnpei FSM



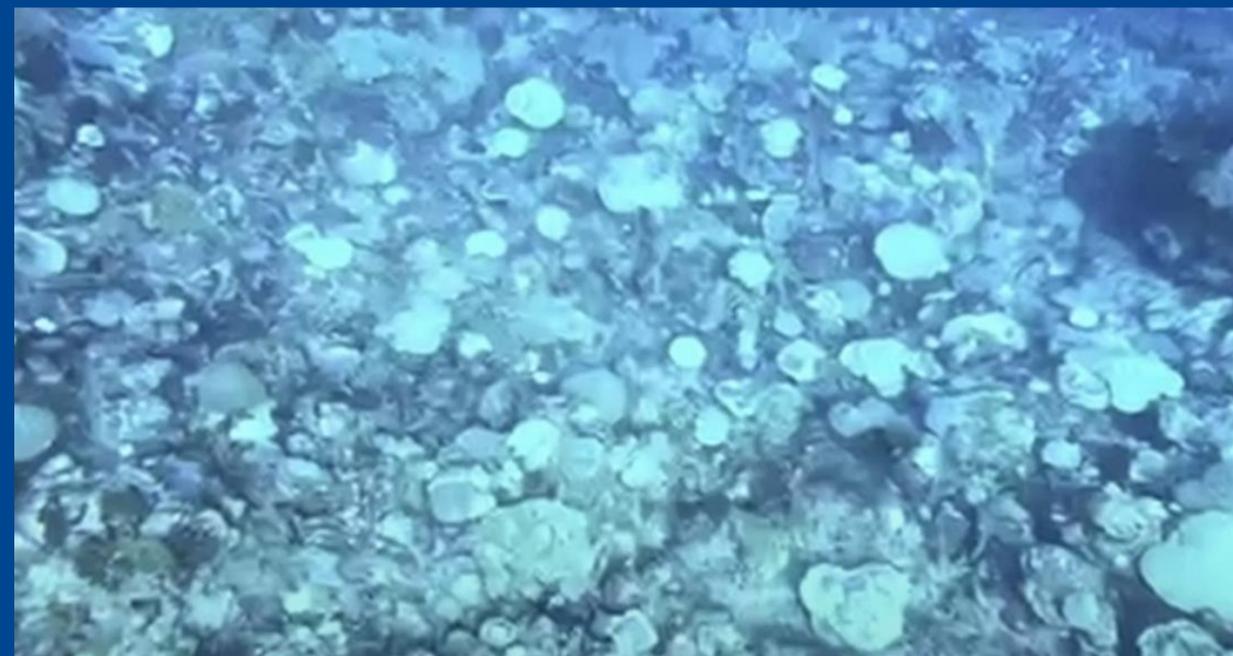
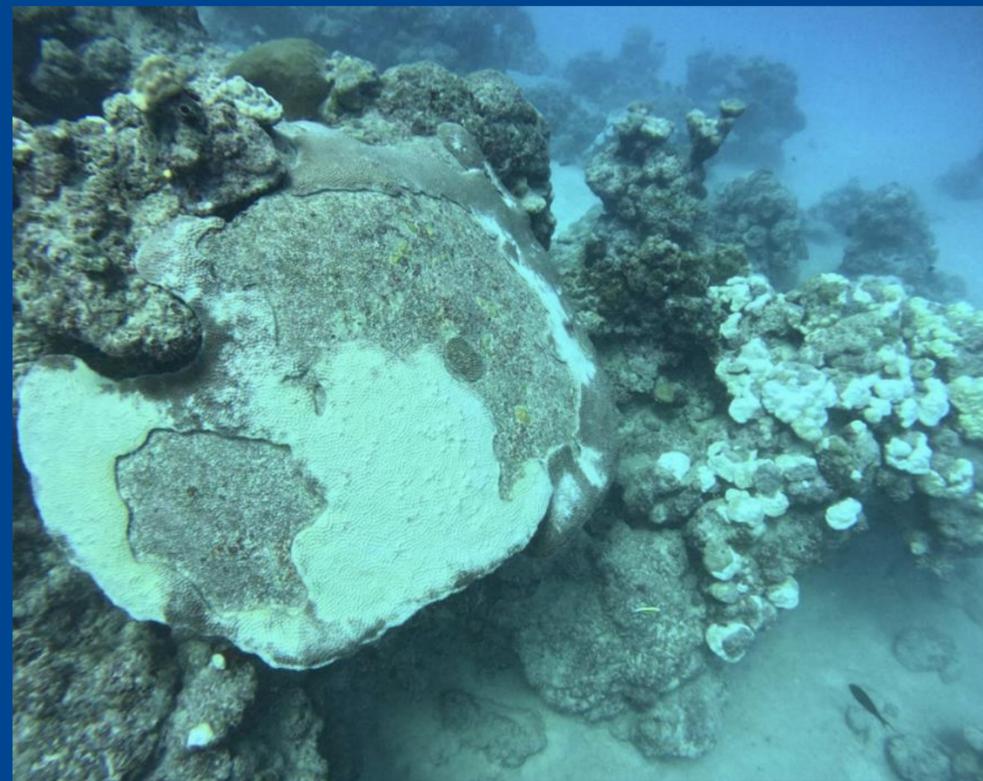
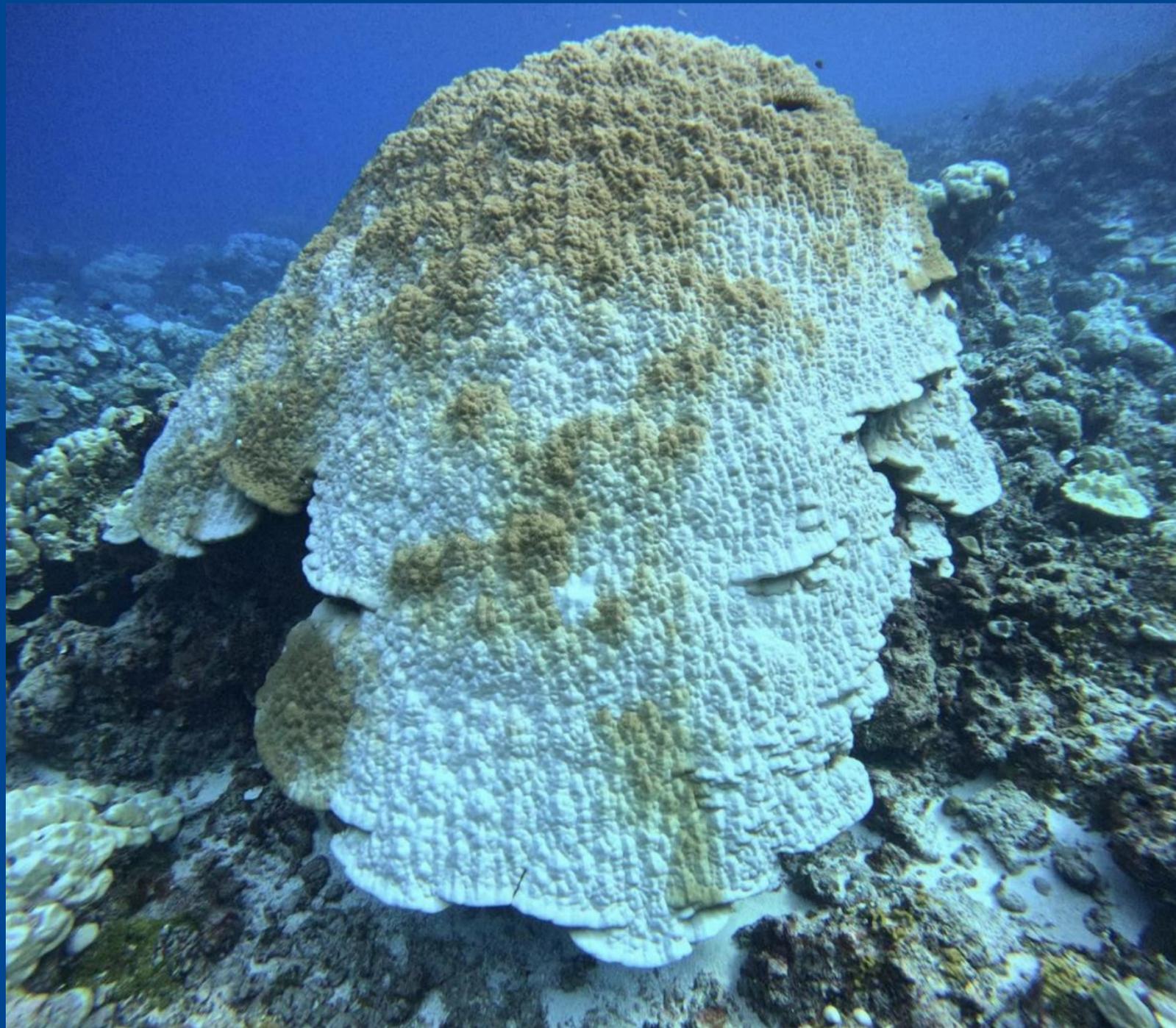
# Coral bleaching and effects of a strong wind gust



Coral Bleaching in Pohnpei stretching into the Nov/Dec period



March 14: Pohnpei recorded 39kt gusts winds



## **Coral Bleaching photo taken in December 2024**

Source: Photo credit to Allois Malfitani, Pohnpei Surf Club



## Utility workers clearing the road and fixing downed power pole.

Source: Australian Embassy, FSM

# CHUUK, FSM CLIMATE IMPACTS

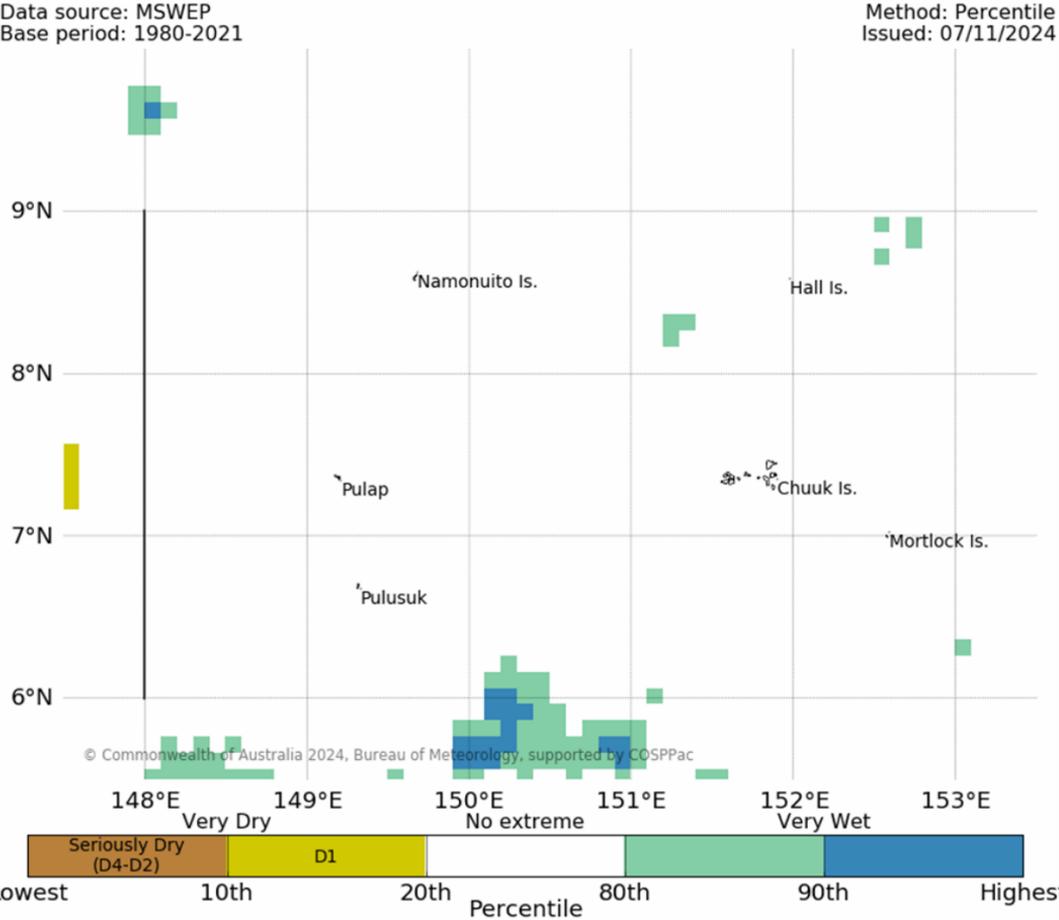
Boyd Mackenzie  
Staff Meteorologist  
Weather Service Office, Chuuk



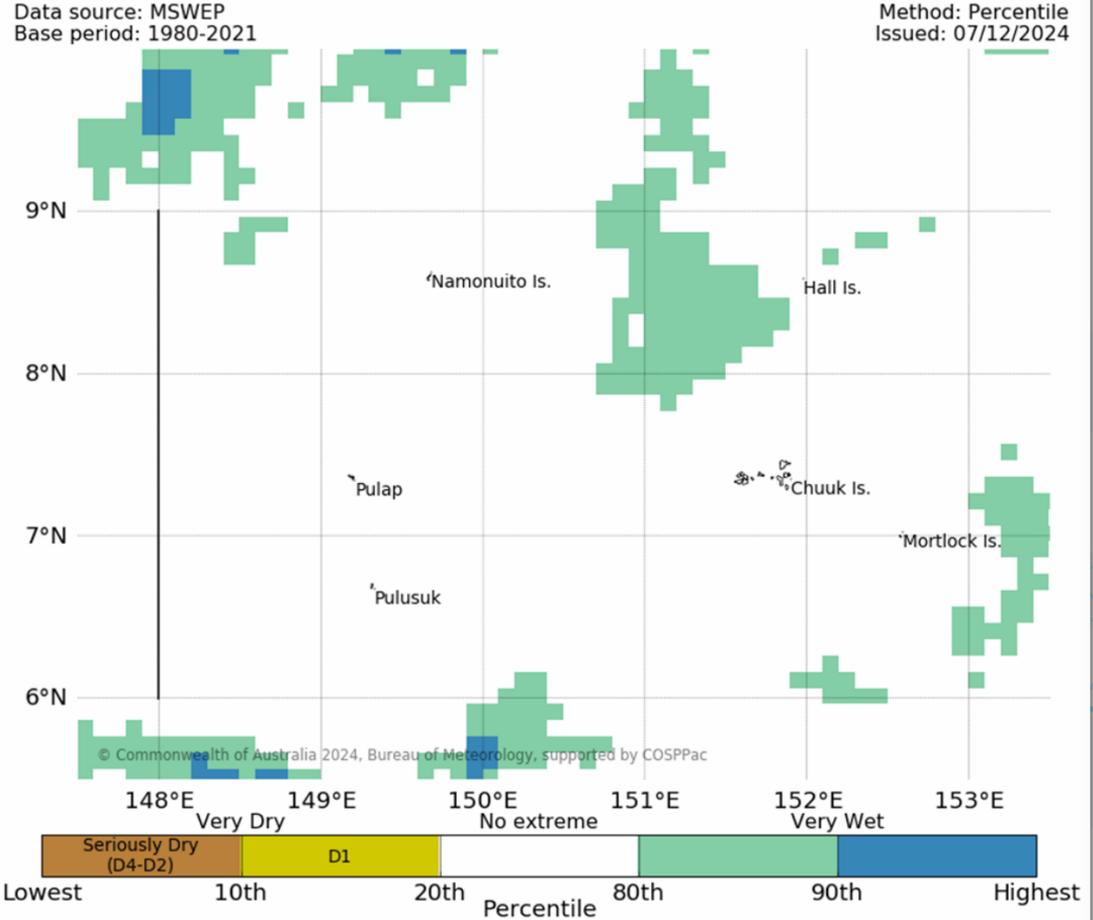
# Rainfall so far: ASO, SON, OND

Seasonal rainfall for Chuuk Lagoon has consistently remained within a “No extreme range” .

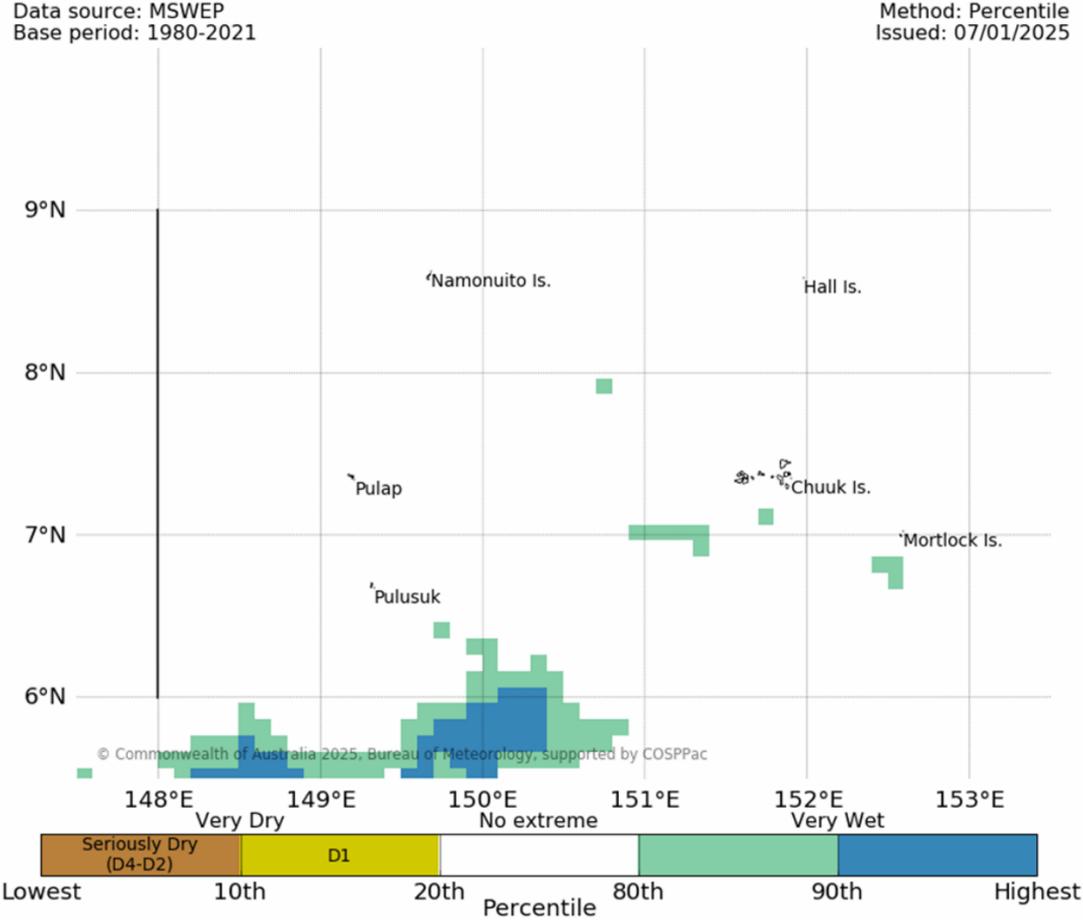
3-month rainfall status to end of October 2024



3-month rainfall status to end of November 2024

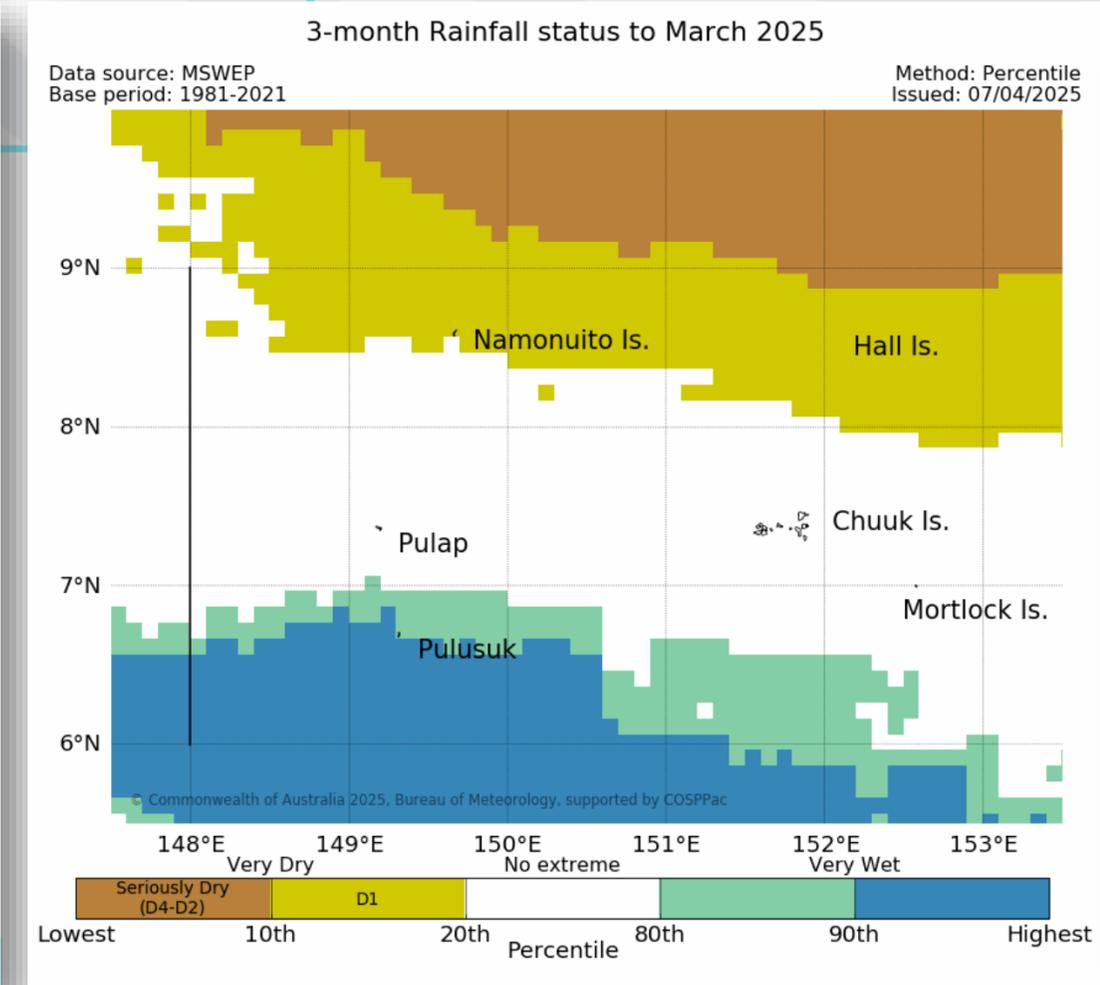
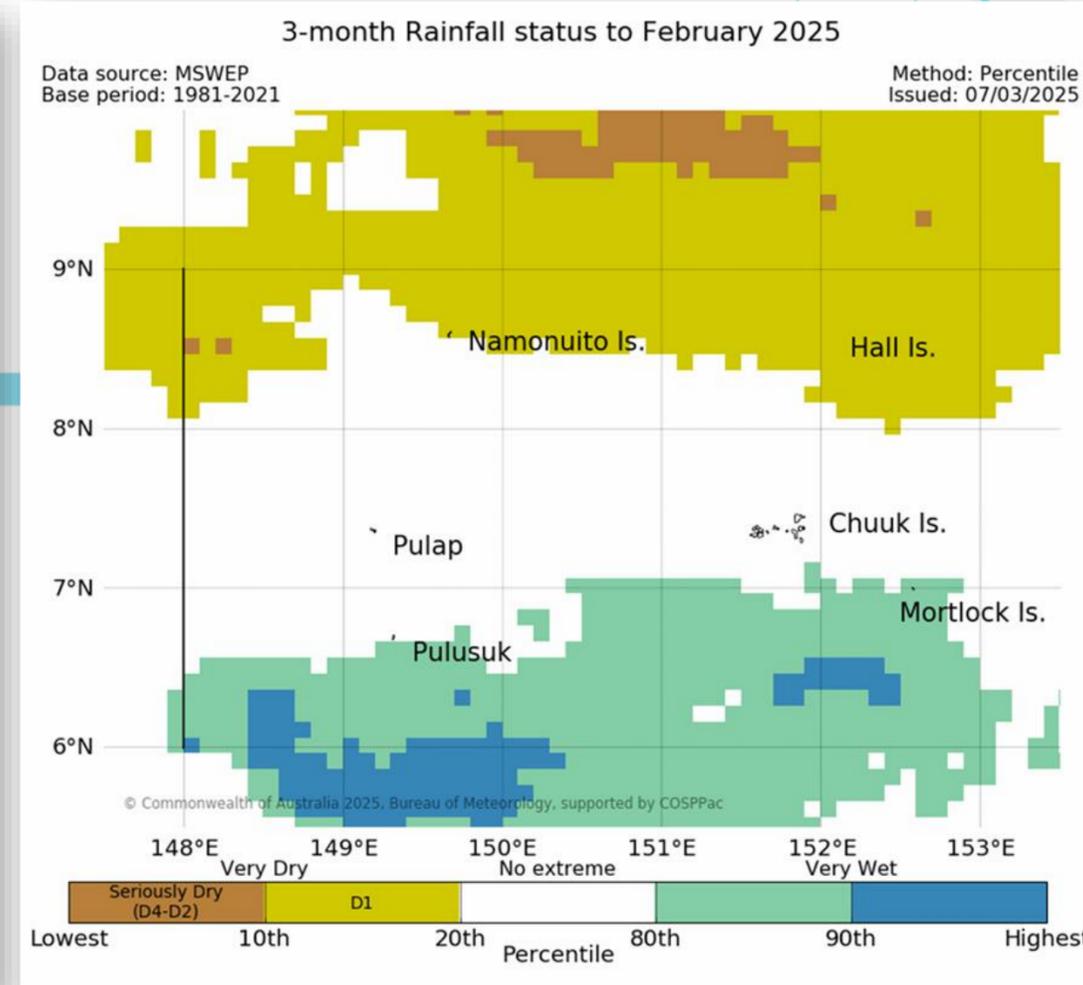
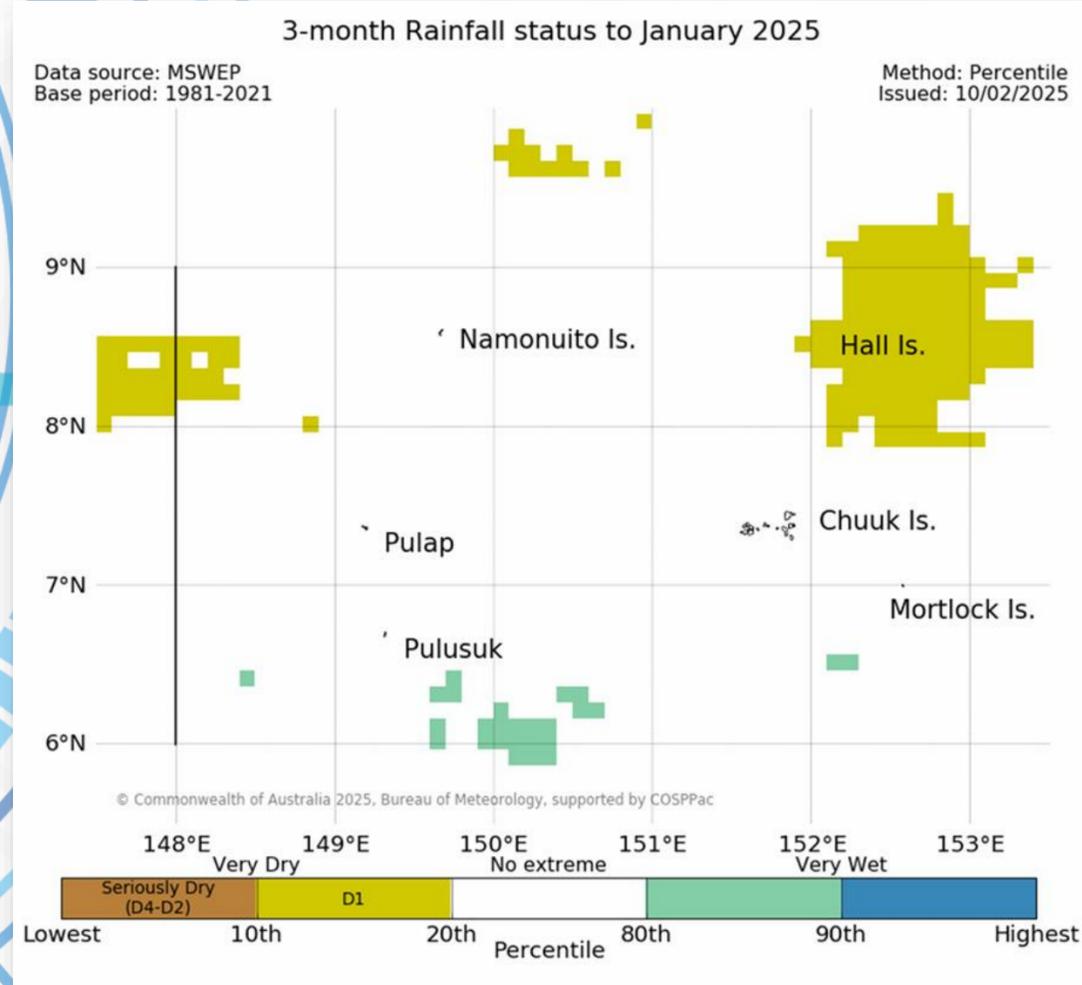


3-month rainfall status to end of December 2024

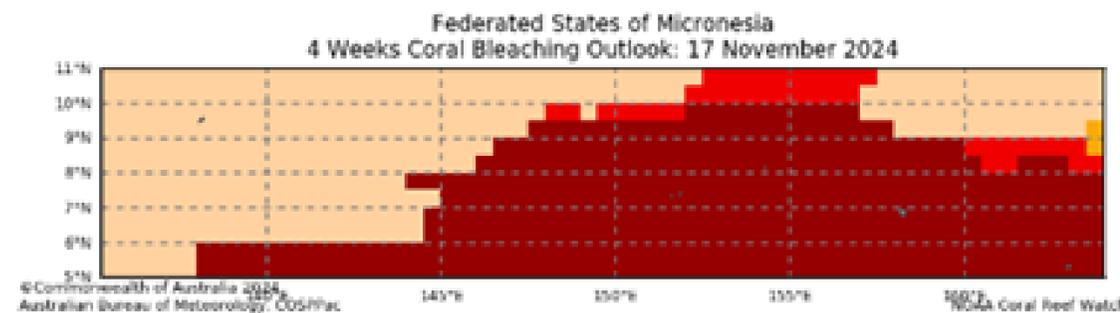
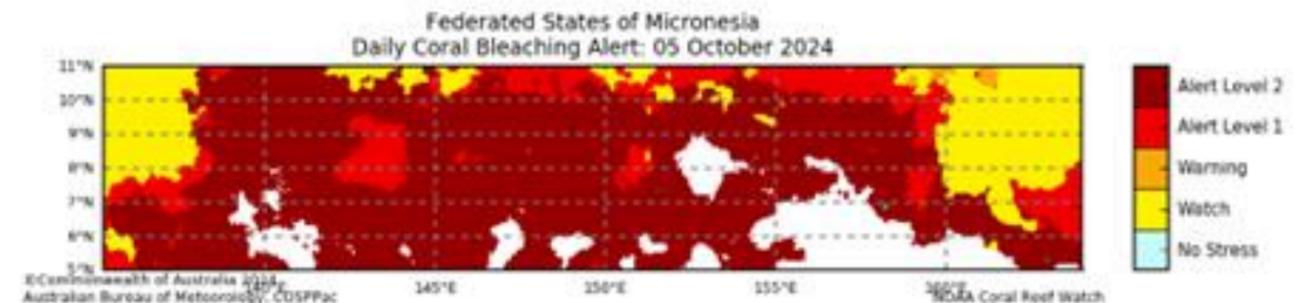
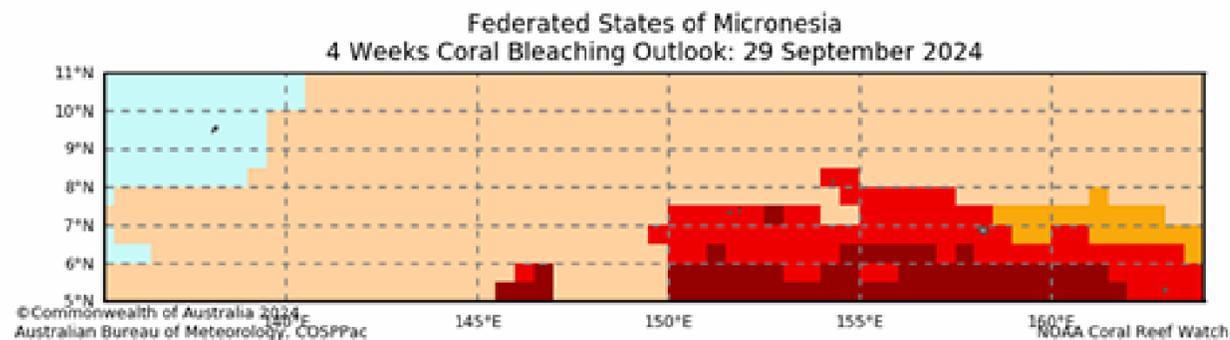
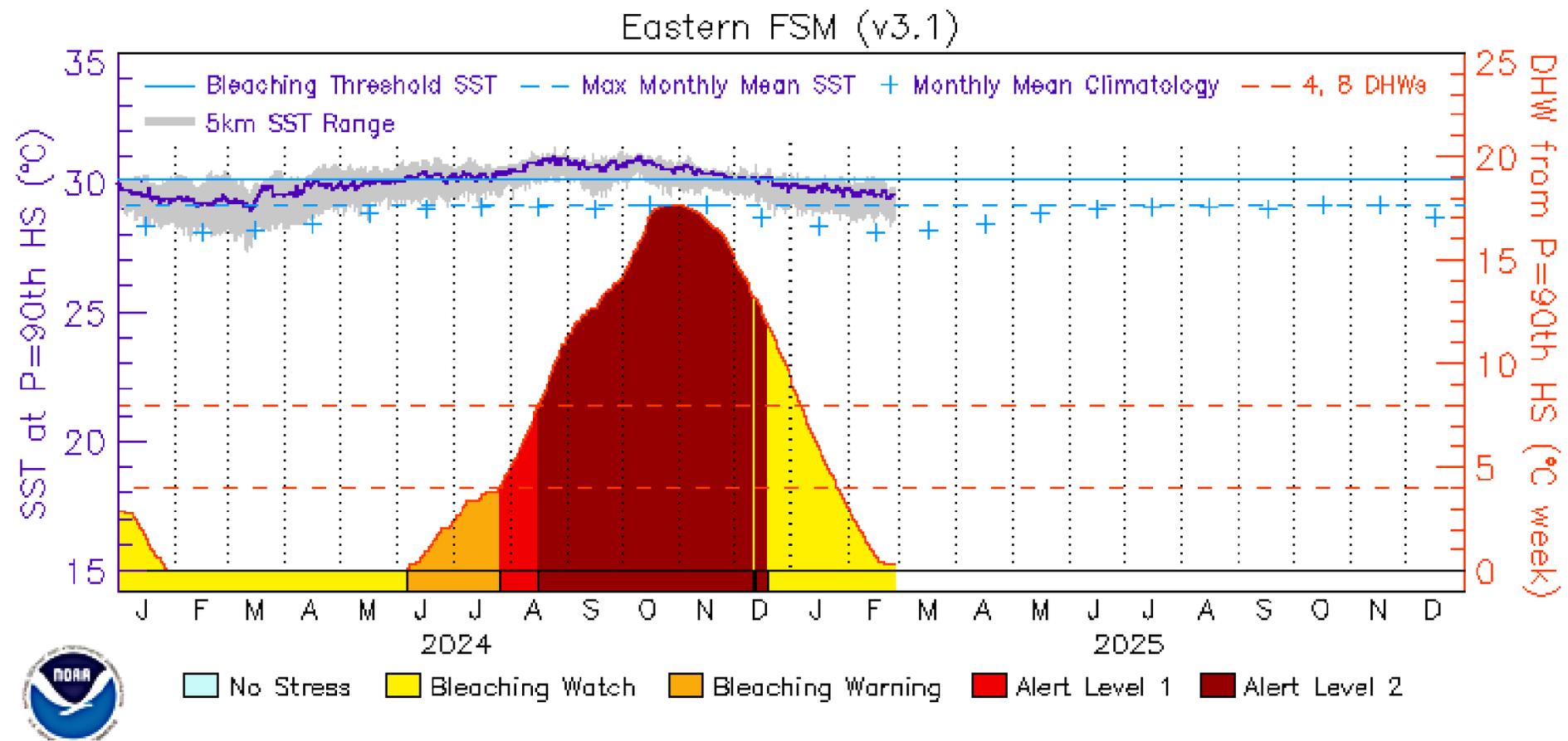


# Rainfall for NDJ, DJF, JFM

- Seasonal rainfall for Chuuk Lagoon remained within the “No extreme” range.
- During DJF and JFM, notable dry conditions were seen in the northern islands while wetter conditions were seen in the southern portions



# Coral bleaching



Coral bleaching was evident during the last few months of 2024.

# PALAU CLIMATE IMPACTS OCT TO MAR 2024-25

**Kikuko K. Mochimaru**

Staff Meteorologist, National Climate Officer and National Data Officer  
Palau National Weather Service Office (WSO Palau)



# OCTOBER MONSOON OF 2024

State of the Climate: ENSO Neutral-La Nina Watch

Low October rainfall first half of the month

Light and variable trade-winds

October 21-27: Monsoon Troughs with TC 22W, TC 23W, and Invest Area 98W

- Increase in October rainfall totals
- Strong southwest winds 20 to 29kt
- Near Gale to Gale Force gusts 32 to 42 kt
- Downed Power Lines, Power outage (Ngesaol)

- Transformer repairs
- Few residences impacted

Low to no water (Imeong, Ngeremlengui)

- Water pump electrical issues



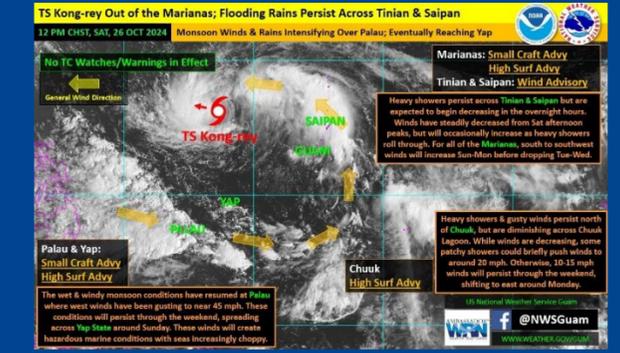
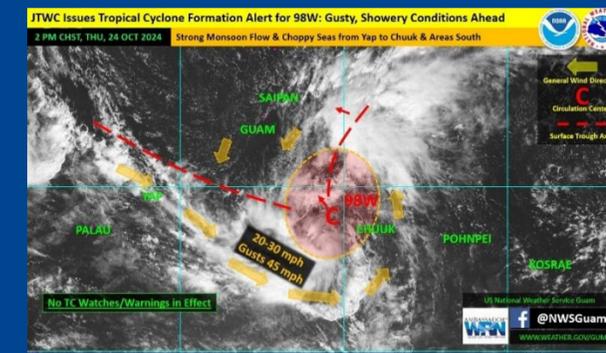
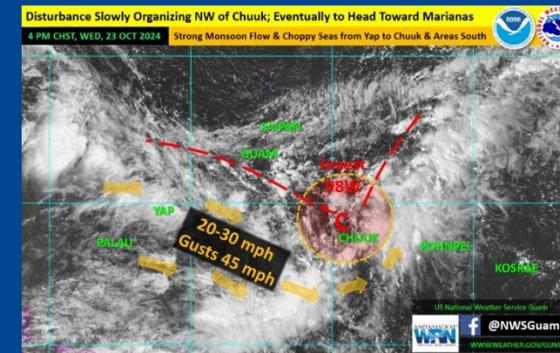
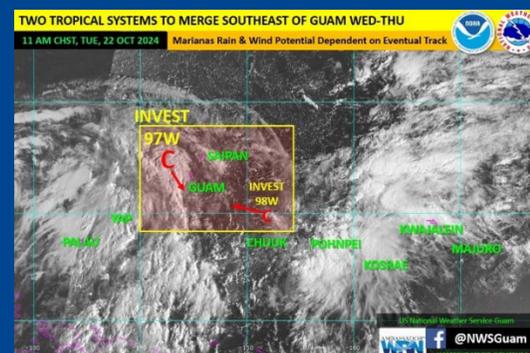
Oct. 21, 2025  
TD 22W and two trade wind troughs

Oct. 22, 2025  
Invests 97W and 98W

Oct. 23, 2025  
Invest 98W

Oct. 24, 2025  
Invest 98W

Oct. 26, 2025  
TS Kong-Rey

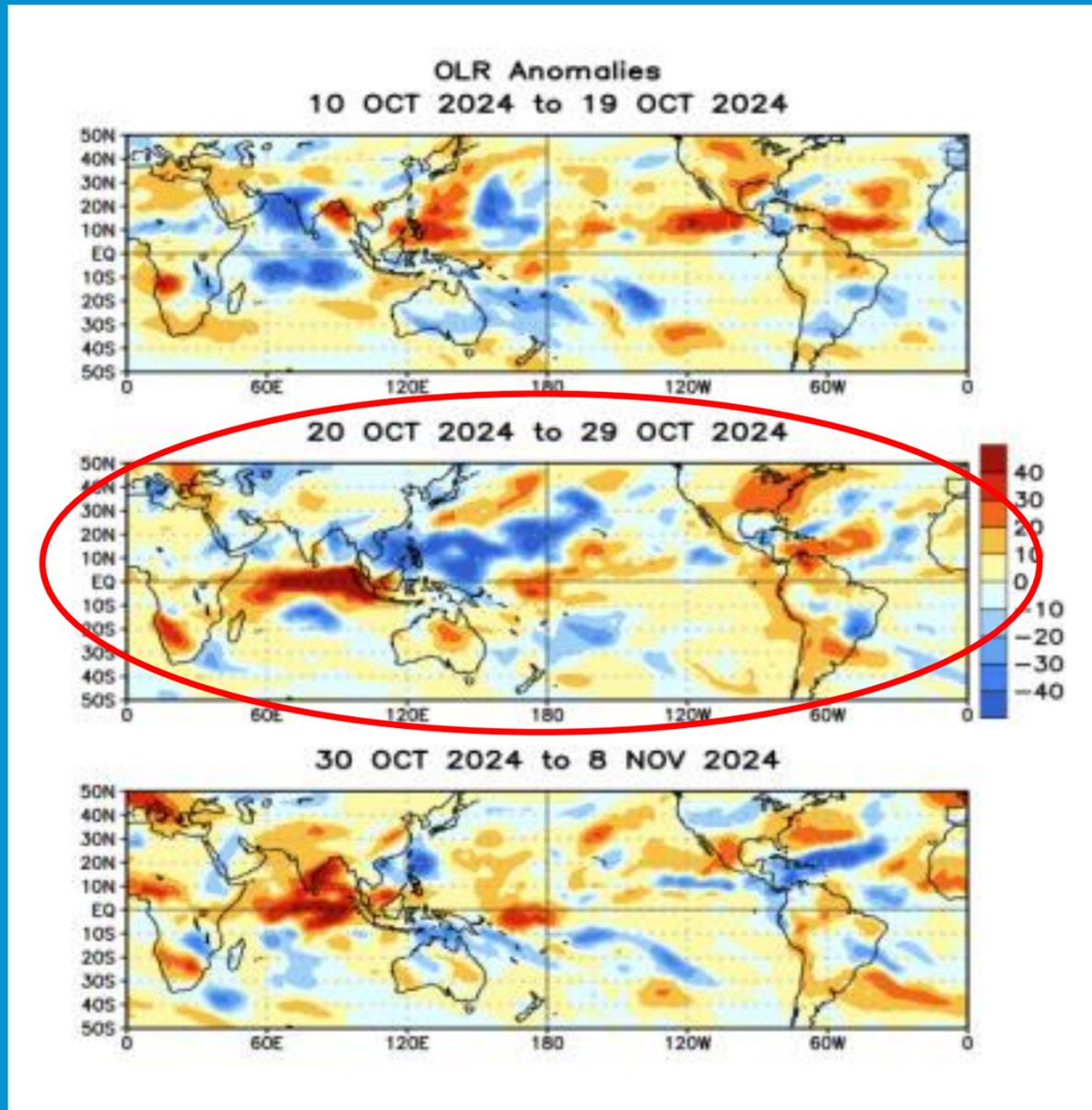


## The Monsoon, Tropical Cyclones, and Invests Areas

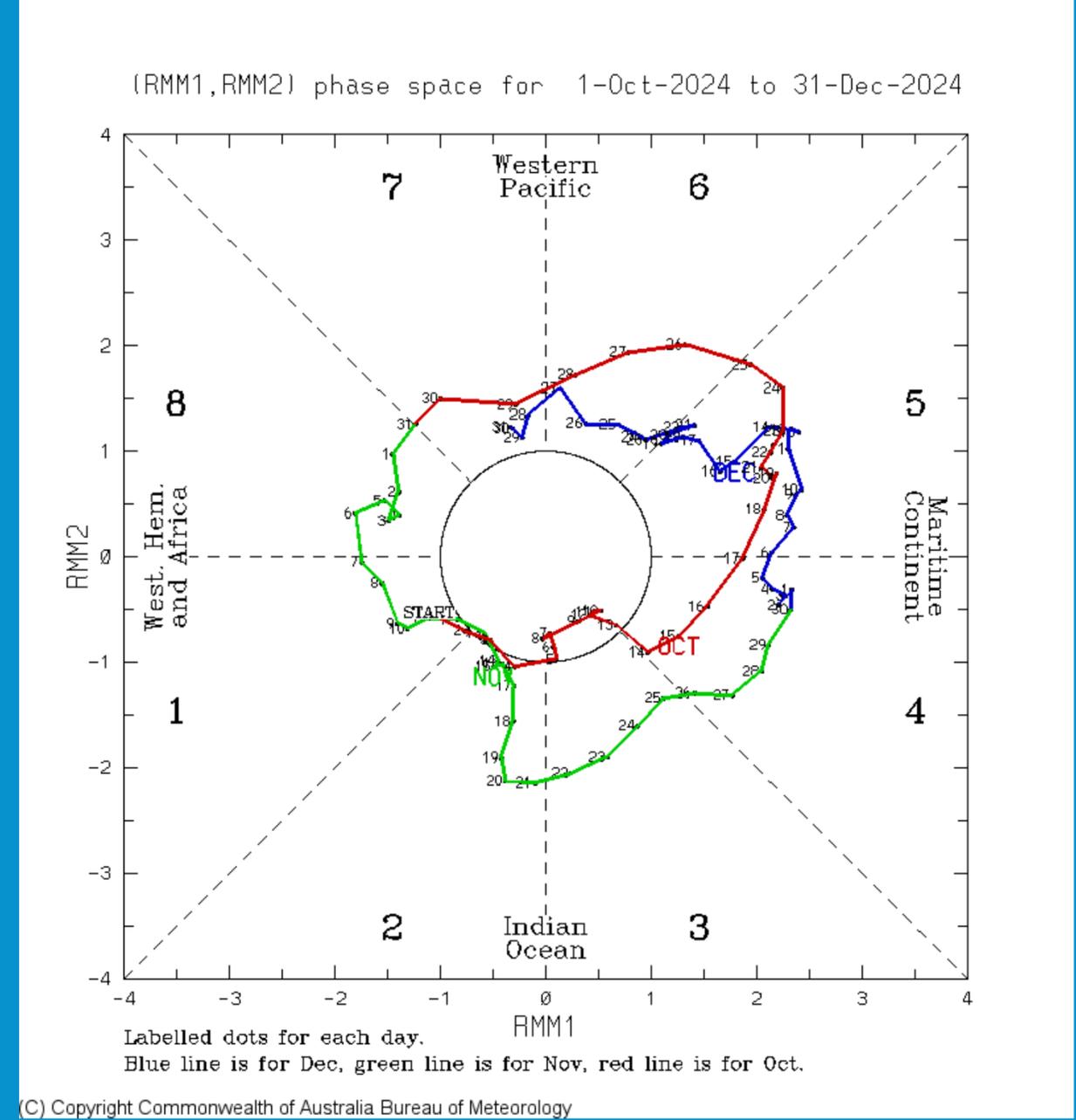
Source: Social media pages for WFO Guam and Palau Public Utilities Corporation, and WSO Palau

Observations

# MADDEN-JULIAN OSCILLATION



OLR forecasts from the GEFS (focused north of the equator) show MJO activity coming through the filtering and propagating into the western Pacific later in October.

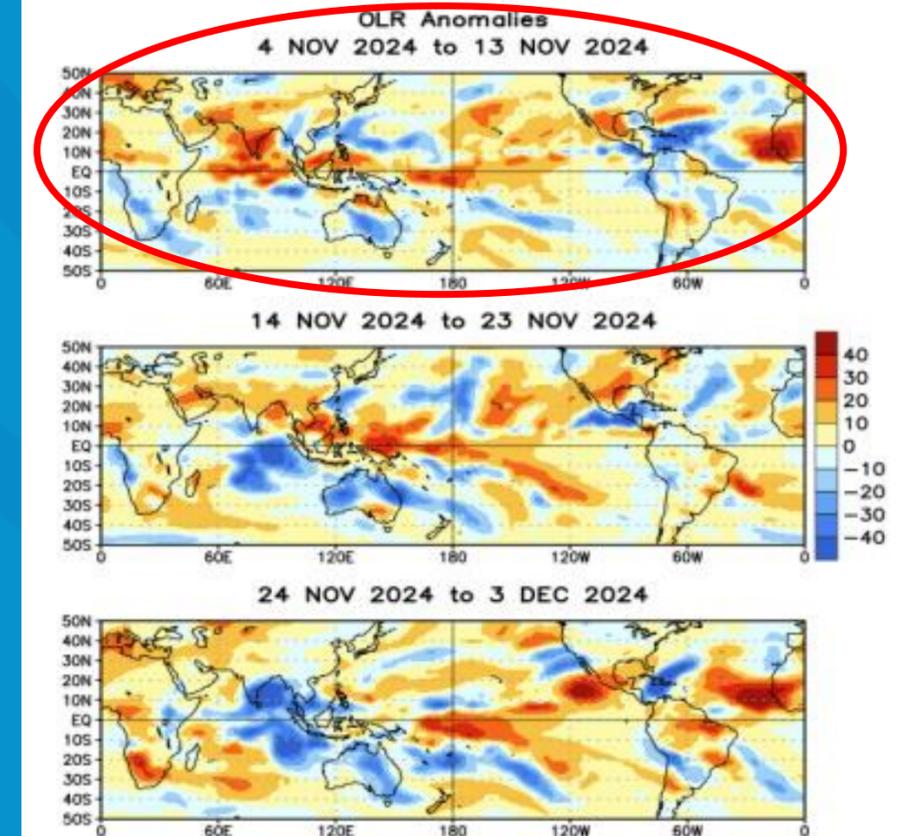
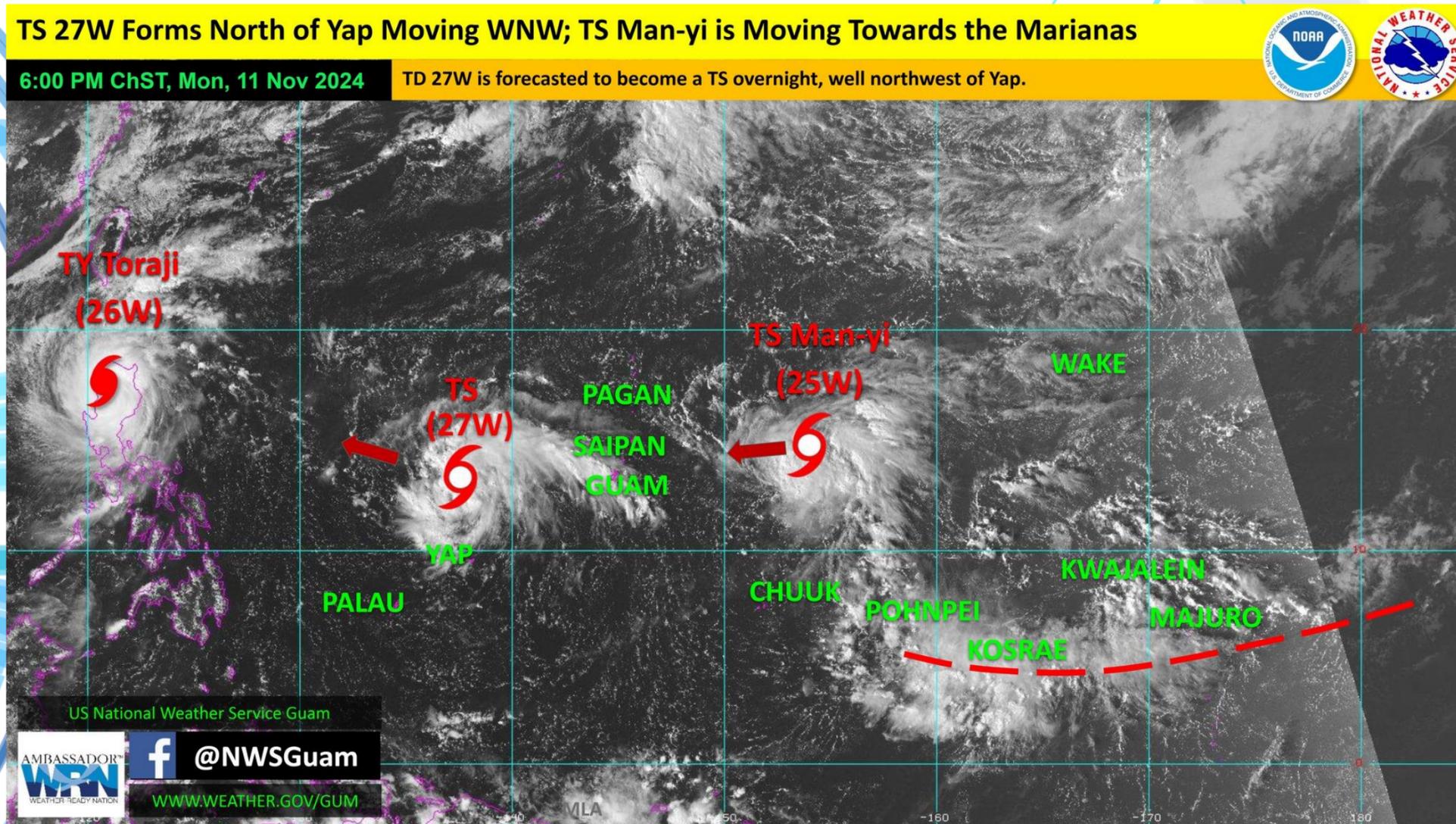


**MJO STRENGTH & PROGRESSION LEGEND**  
**OCTOBER=RED LINE**  
**NOVEMBER=GREEN LINE**  
**DECEMBER=BLUE LINE**

## MJO'S INFLUENCE ON THE MONSOON AND PALAU'S WEATHER

Source: NOAA MJO Archive and BoM MJO Monitoring

# A train of Tropical Cyclones formed north of western Micronesia.



The circulation anomalies tied to the MJO are consistent with the observed OLR responses, consisting of enhanced convection over the Indian Ocean, with suppressed convection throughout much of equatorial Pacific which is also reinforcing weak La Niña conditions.

## MJO'S influence on tropical cyclone formations and Palau's weather.

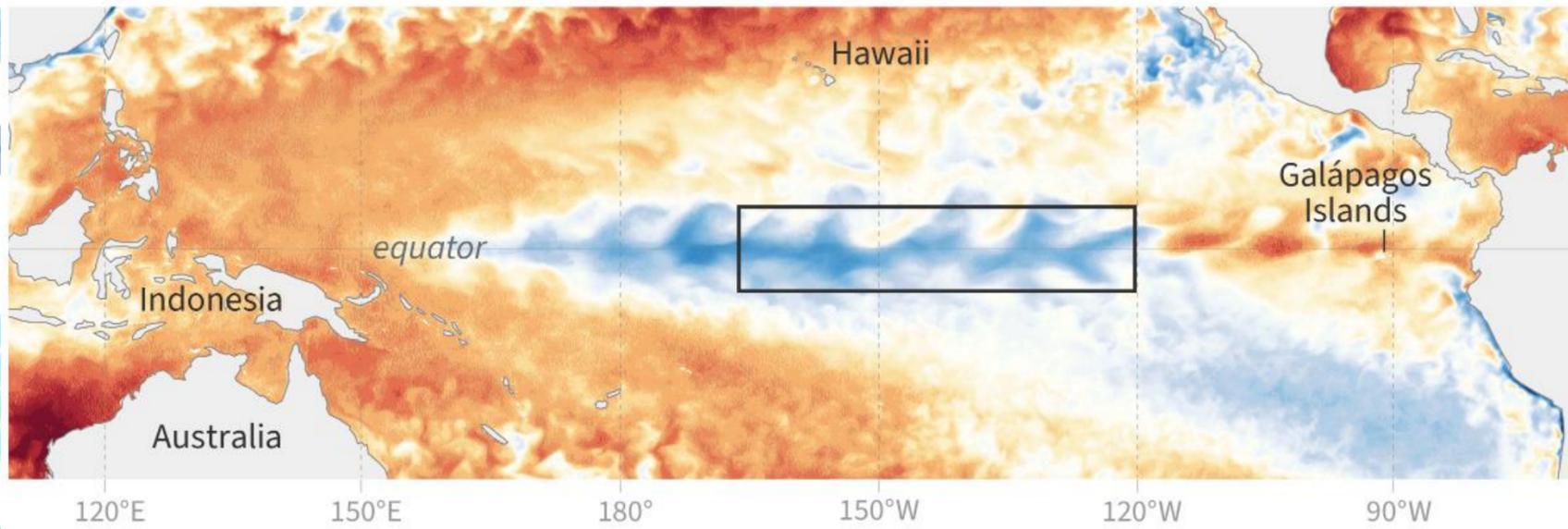
Source: WFO Guam social media page and NOAA MJO Archive

# ENSO Neutral for most of 2024, the Niño-3.4 index passed the La Niña threshold in December 2024.

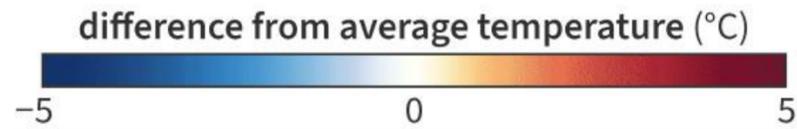
## Time to get down to brass tacks

Ok! We've been expecting La Niña to show up since last spring. While she's dragged her heels, all the pieces came together this past month.

### Weekly sea surface temperature patterns in tropical Pacific (Oct 14, 2024-Jan 5, 2025)

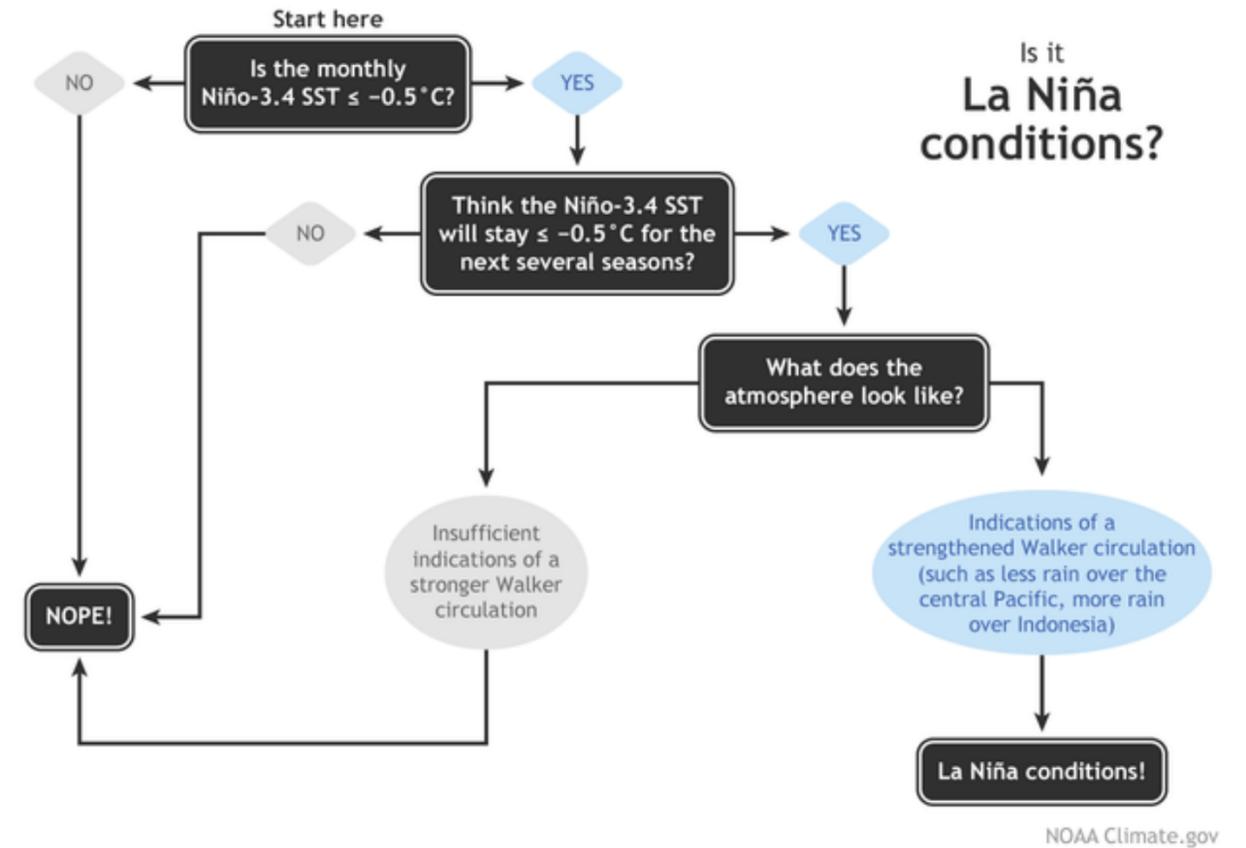


Dec 30, 2024-Jan 5, 2025



NOAA Climate.gov  
Data: NOAA View

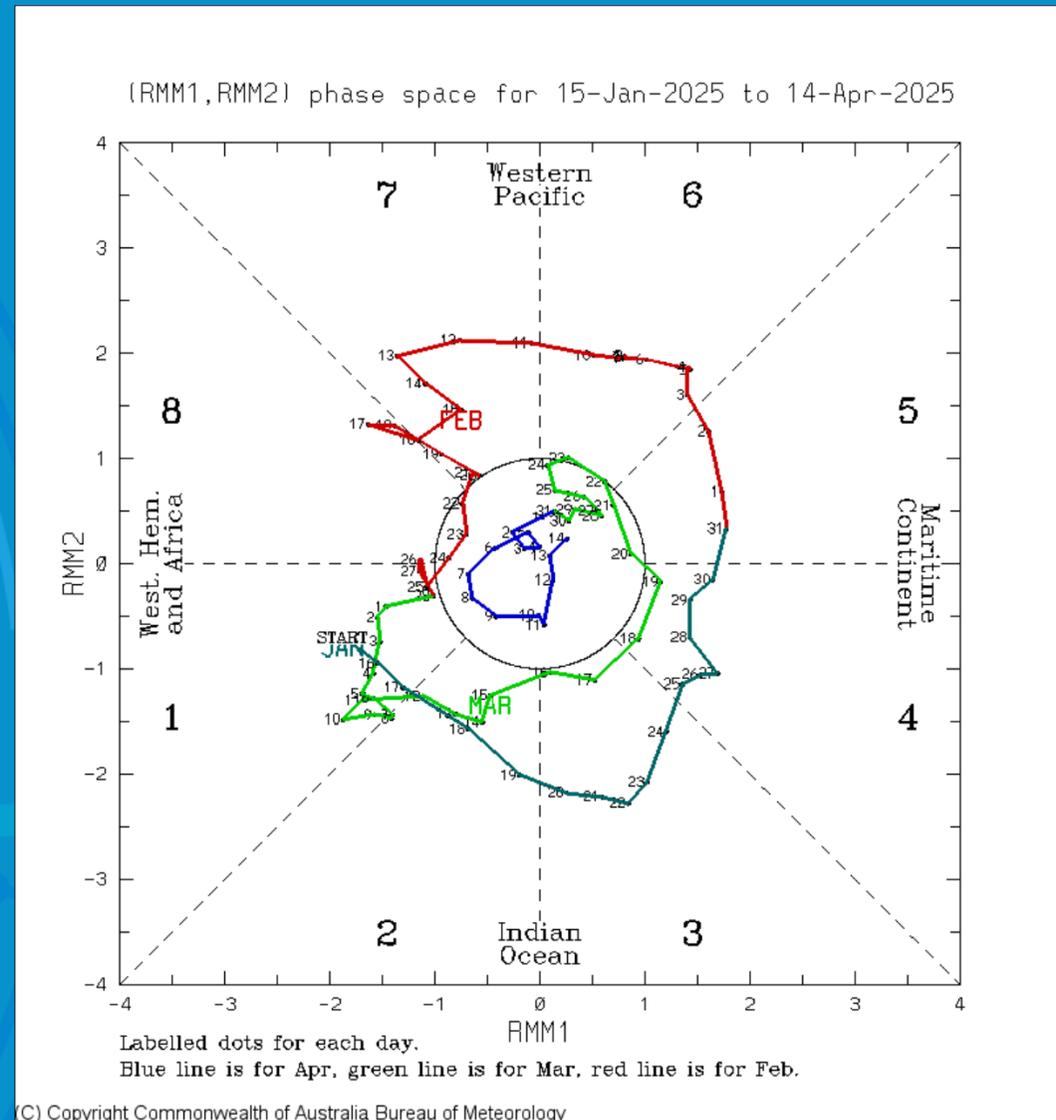
**Image caption**  
This animation shows weekly sea surface temperatures in the Pacific Ocean compared to average from October 14 2024-January 5 2025. Orange and red areas were warmer than average; blue areas were cooler than average. The sea surface temperature in the key ENSO-monitoring region of the tropical Pacific (outlined with black box) was slightly below average for many weeks, but the cooler-than-average region has strengthened lately. NOAA Climate.gov animation, based on Coral Reef Watch Data and maps from NOAA View. [View the full-size version](#) in its own browser window.



The tropical Pacific sea surface temperature loitered in ENSO-neutral since April 2024, with our primary ENSO monitoring index, the Niño-3.4 index, within 0.5 °C of the long-term average. In December, however, the Niño-3.4 index was -0.6 °C, according to the ERSSTv5, our most reliable long-term sea surface temperature dataset.

Source: NOAA Climate.gov

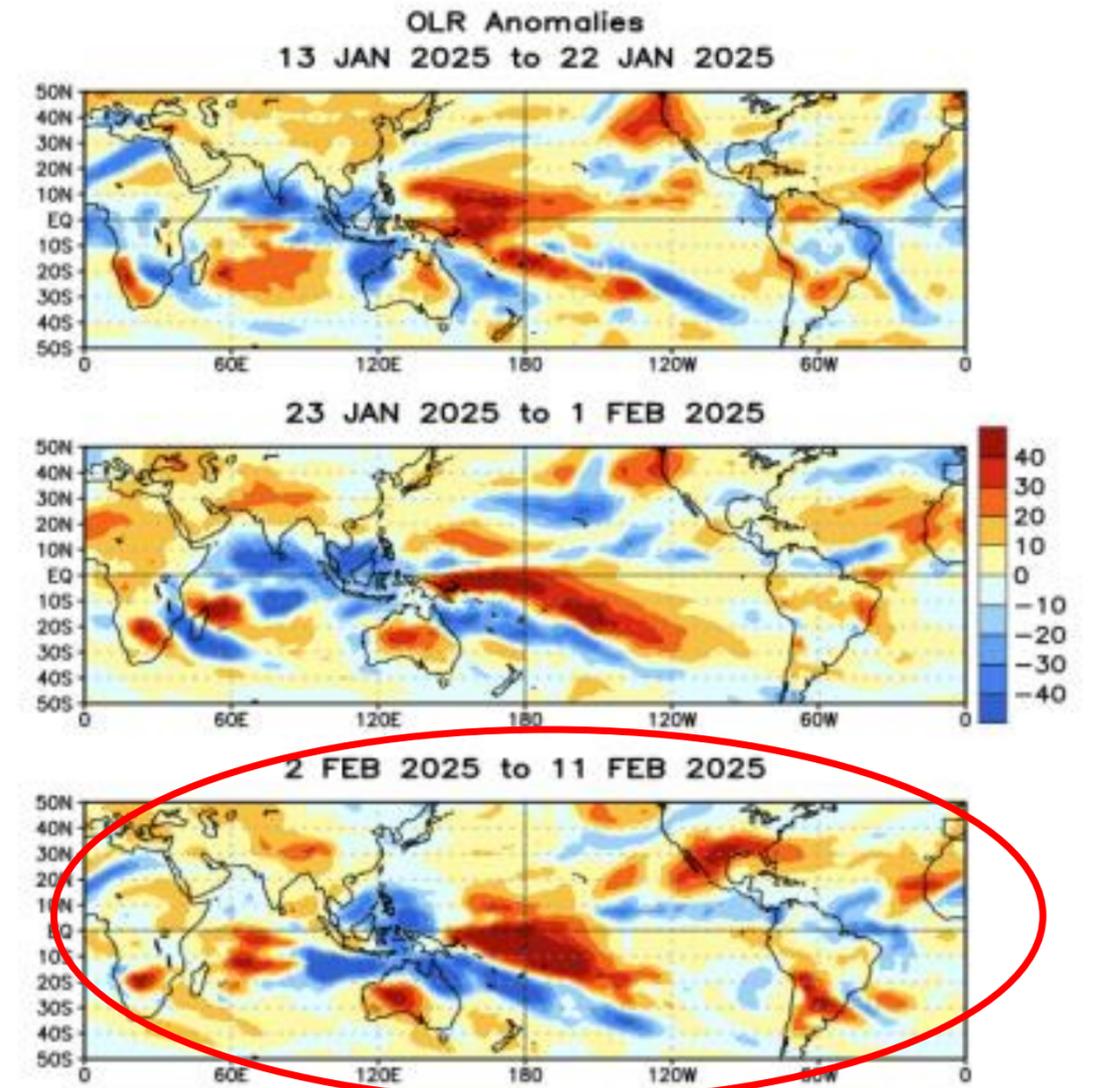
# FEBRUARY 2025 WAS KOROR'S 3<sup>RD</sup> WETTEST DEC TO FEB SEASON WAS THE 7<sup>TH</sup> WETTEST



**MJO STRENGTH & PROGRESSION LEGEND**  
**JAN=EVERGREEN**  
**FEB=RED**  
**MARCH=GREEN**  
**APRIL=BLUE**

NOAA/NWS/NCEP/CPC 10 FEB 2025: There has been a steady eastward propagation of the MJO across the Indian Ocean into the Western Pacific during the past several weeks.

MJO activity has become much more apparent recently in the Outgoing Longwave Radiation (OLR) Hovmoller, although the low-frequency La Nina footprint continues to be a major factor in tropical convection patterns.



# Summary - Kiribati & Nauru

## Key points for PICOF Outcomes Statement:

- Central part of western Kiribati experienced strong winds on the 7<sup>th</sup> of April 2025
- Between October 2024 and March 2025, Nauru experienced typical tropical weather patterns with consistently warm temperatures and varying rainfall.
- October 2024 marked the transition from rainy season (El-Nino) to ENSO neutral state.
- November 2024 was the driest month where no precipitation was observed.
- Jan 2025 was the wettest month recorded during the past 6 months (60mm was recorded)
- Apart from all that, Nauru experienced drier conditions and light trade winds.



# Summary - RMI & FSM

- Continued dry conditions in Northern RMI with Abnormally Dry to Moderate Drought persisting into early 2025.
- Documented drought impacts include water shortages and browning vegetation in atolls such as Wotje, Utirik and Ebeye.
- Coastal inundation events occurred in Majuro and Wotje due to high tides. Coastal erosion at Wotho Atoll.
- High surf and moderate winds contributed to two maritime incidents, resulting in missing persons and loss of boats between Majuro, Arno, and Mili.
- Ongoing coordination among NWS, NDMO, WFO Guam, and regional partners in monitoring and issuing advisories.
- Coral bleaching event was reported at Pohnpei from fall 2024, with the event stretching into Nov/Dec period.
- On May 14, 2025 a surging deep convection with embedded thunderstorms produced a 39kt wind gusts that damaged some vegetation and one reported power pole on Pohnpei.
- In Chuuk, no rainfall impacts. Seasonal rainfall has consistently remained within the “No extreme range” for the past 6 seasons.
- Coral bleaching in Chuuk was evident during the last few months of 2024 and peaking around October.



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Climate and Ocean Systems  
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NIWA  
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# Summary - RoP

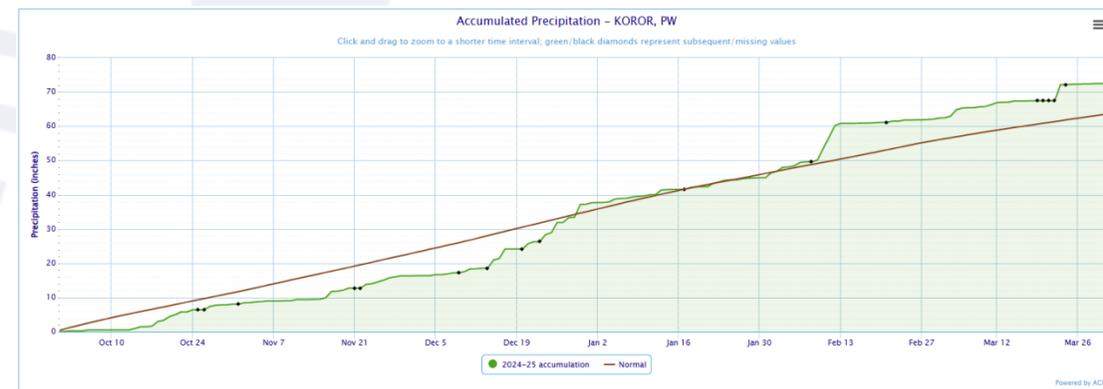
## Oct 2024 to Mar 2025 Koror Rainfall Trend

Variable at Monthly  
timescales but  
increasing over time.

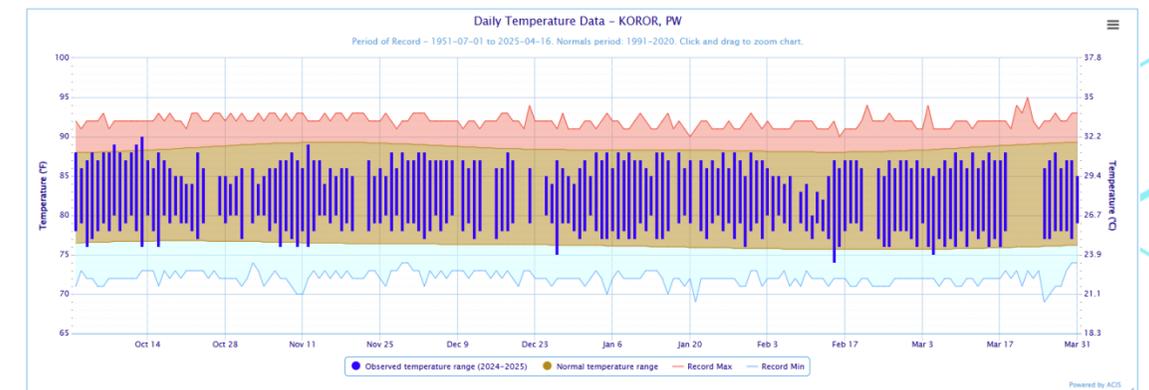
Below/Above  
Normal Rainfall:

October: Below  
November: Below  
December: Above  
January: Below  
February: Above  
March: Above

- **ENSO-Neutral for most of 2024 with La Niña like conditions towards the end of the year.**
- **The MJO influenced the Monsoon, Tropical Cyclone formation, and Weather over Palau.**
- **October 2024 Monsoon was weaker than recent years but still impactful to some communities in terms of energy, infrastructure, and water.**
- **The MJO influenced Tropical Cyclone formations north of western Micronesia with suppressed rainfall over Palau for the first half of October and November.**
- **By December 2024, NOAA declared an official La Niña.**
- **On April 10, 2025, NOAA ended the Final La Niña Advisory with ENSO-Neutral conditions as the current classification of the ENSO state. Ocean Niño monitoring regions were in ENSO-Neutral thresholds but the atmosphere may still experience La Niña-like conditions.**
- **Variable monthly rainfall trend at Koror for October 2024 to March 2025 but increasing over time.**
- **February was the third wettest and December to February was the 7<sup>th</sup> wettest in 74 years of records.**
- **Below Normal Averaged Maximum Air Temperatures, Above Averaged Minimum Temperatures and Above Average Mean Temperatures in October and Below Average for Nov 2024-March 2025.**



Koror Monthly Rainfall Trend from Oct 2024-March 2025 with Climatology. Source: xmACIS2



Koror Air Temperature Observations October 2024-March 2025 with Climatology. Source: xmACIS2



# Sector impacts across Micronesia

## **Water Security**

- Significant water shortages in Majuro and other atolls
- Dry conditions across the RMI and Nauru
- Water pump issues in Palau due to power outages

## **Infrastructure & Energy**

- Power outages and electrical issues in Palau and Pohnpei
- Flooded roads in Majuro, and damaged airstrips in northern RMI

## **Fisheries & Marine Transport**

- Coral bleaching in Pohnpei and Chuuk
- Two fatal maritime incidents in RMI during high surf/wind conditions

## **Ecosystems & Agriculture**

- Vegetation loss in drought-affected areas (Wotje, Utirik)
- Marine ecosystem stress due to sustained bleaching events

## **Health & Education**

- Loss of teachers and health workers in boat accidents
- Heat stress and dust exposure during dry periods

## **Disaster Response & Coordination**

- Ongoing monitoring and advisories by NWS offices, NDMO, WFO Guam, and regional partners



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COSPPac  
Climate Services and Programmes



NIWA  
Taihoro Nukurangi



# THANK YOU!

[co@met.gov.ki](mailto:co@met.gov.ki)

[rickypkb95@gmail.com](mailto:rickypkb95@gmail.com)

[nover.juria@noaa.gov](mailto:nover.juria@noaa.gov)

[wallace.jacob@noaa.gov](mailto:wallace.jacob@noaa.gov)

[boyd.mackenzie@noaa.gov](mailto:boyd.mackenzie@noaa.gov)

[kiku.mochimaru@noaa.gov](mailto:kiku.mochimaru@noaa.gov)

