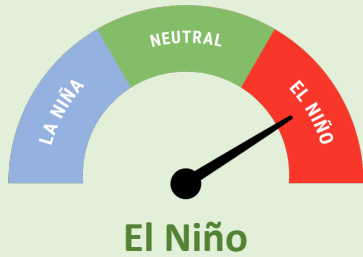


Island Climate Update



ENSO Watch
June 2024

Recent



El Niño is expected to ease to ENSO neutral at the end of May.

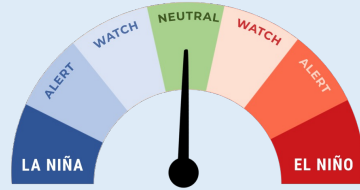
The Southern Oscillation Index (SOI) was +0.2 from March-May, in the neutral range.

Tropical Pacific Ocean sea surface temperatures (SSTs) continued to reflect a transition toward ENSO neutral in May.

70% chance for **ENSO neutral** conditions to occur during **June-August 2024**

Chance for **La Niña** conditions developing during **September-November 2024**

60%



ENSO neutral

Forecast

ENSO situation summary

El Niño has continued to weaken during May, and ENSO neutral conditions are favoured to develop by June 2024.

The 30-day NINO3.4 Index anomaly (in the central equatorial Pacific) as of 20 May was +0.49°C, falling below the El Niño threshold of +0.7°C.

The 30-day Niño 1+2 Index anomaly was -0.22°C, within the neutral range. In fact, it is the lowest value in that region since February 2023, at the end of the last La Niña event.

The Southern Oscillation Index (SOI) was in the neutral range during March-May (+0.2), but the May value was +0.7 (in the La Niña range).

Periods of enhanced trade winds in the coming months should contribute to additional cooling of sea-surface temperatures near the equator.

During mid-May, the subsurface equatorial Pacific was 4°C to 6°C cooler than average just below the surface in the east of the basin.

Meanwhile, above average temperatures persisted in the central and western parts of the basin. This signature was reflective of an oceanic transition out of El Niño toward a possible La Niña in a few months.

The South Pacific Convergence Zone was near its climatological normal position during May.

During the first half of June, a pulse of the Madden-Julian Oscillation may propagate across the Pacific. This may lead to a period of heavy rainfall with the potential for flooding, especially south of the equator in the South Pacific, like what's shown on page 6 (June outlook).

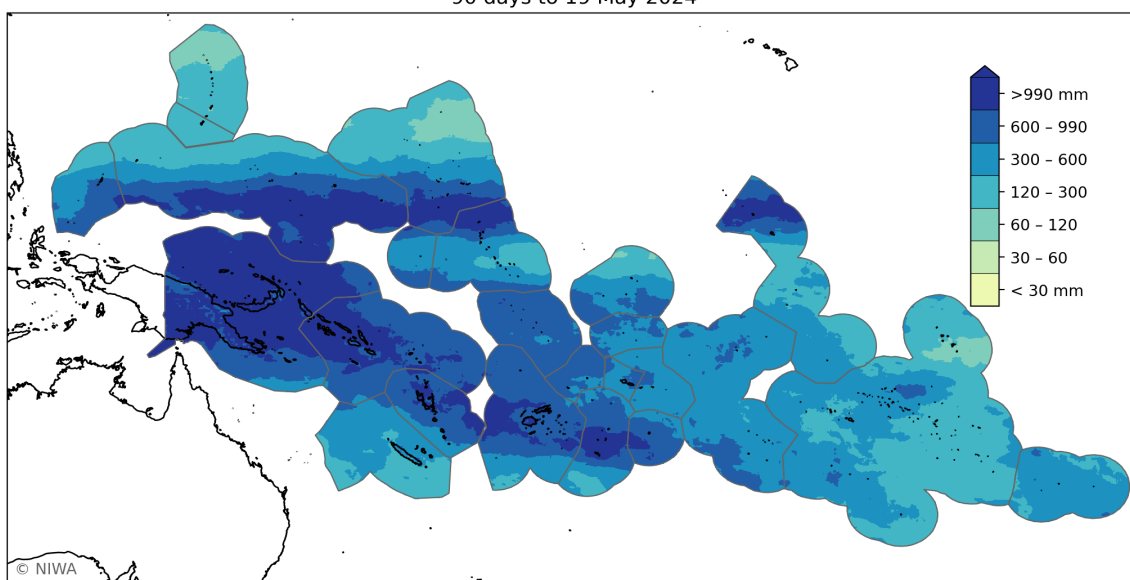
Regional situation summary (19 May 2024)

Rainfall summaries for the last month and three months are shown below.

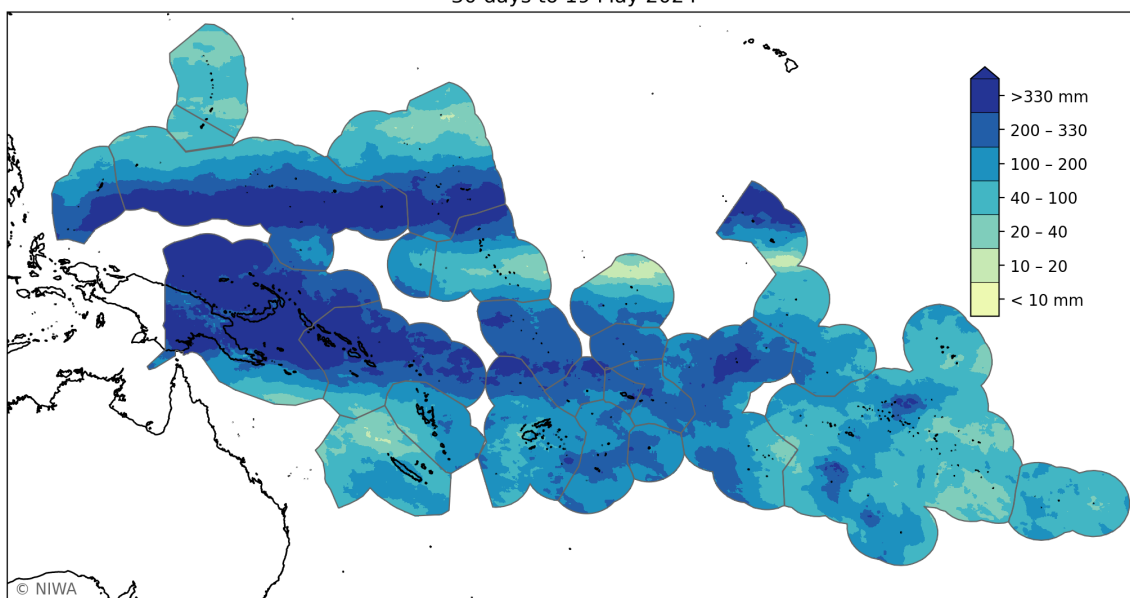
During the 90 days ending 19 May (top plot), over 990 mm of rain fell across parts of the southern Federated States of Micronesia (FSM), southern Marshall Islands, much of Papua New Guinea (PNG), the western Solomon Islands, Vanuatu, Kiribati (northern Gilbert Islands and northern Line Islands), and parts of Fiji and Tonga. Less than 60 mm of rain was not observed in any island groups during the same 90-day period.

During the 30 days ending 19 May (bottom plot), over 330 mm of rain fell across parts of Palau, southern FSM, southern Marshall Islands, PNG, Solomon Islands, northern Line Islands, southern Tuvalu, northern Cook Islands, and part of the Tuamotu Archipelago. Less than 40 mm of rain fell in the Northern Marianas, northern Marshall Islands, Kiribati (Gilbert Islands, northern Phoenix Islands, and central Line Islands), Fiji, Society Islands, eastern Tuamotu Archipelago, and Marquesas.

Cumulative rainfall (mm), source: MSWEP 2.8.0
90 days to 19 May 2024



Cumulative rainfall (mm), source: MSWEP 2.8.0
30 days to 19 May 2024

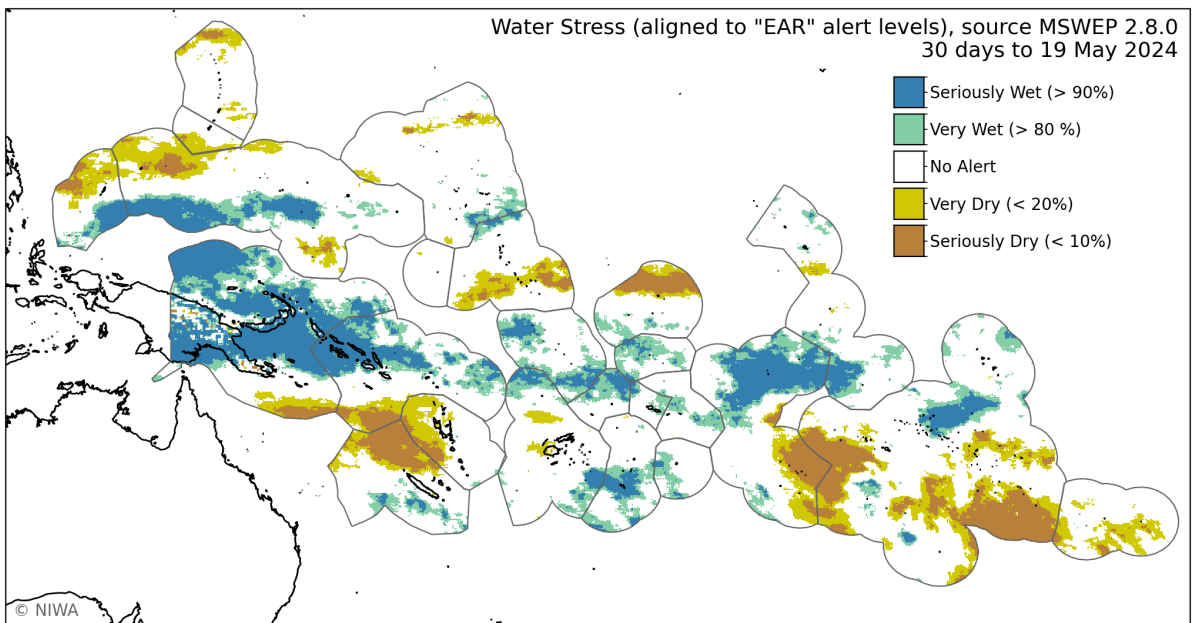
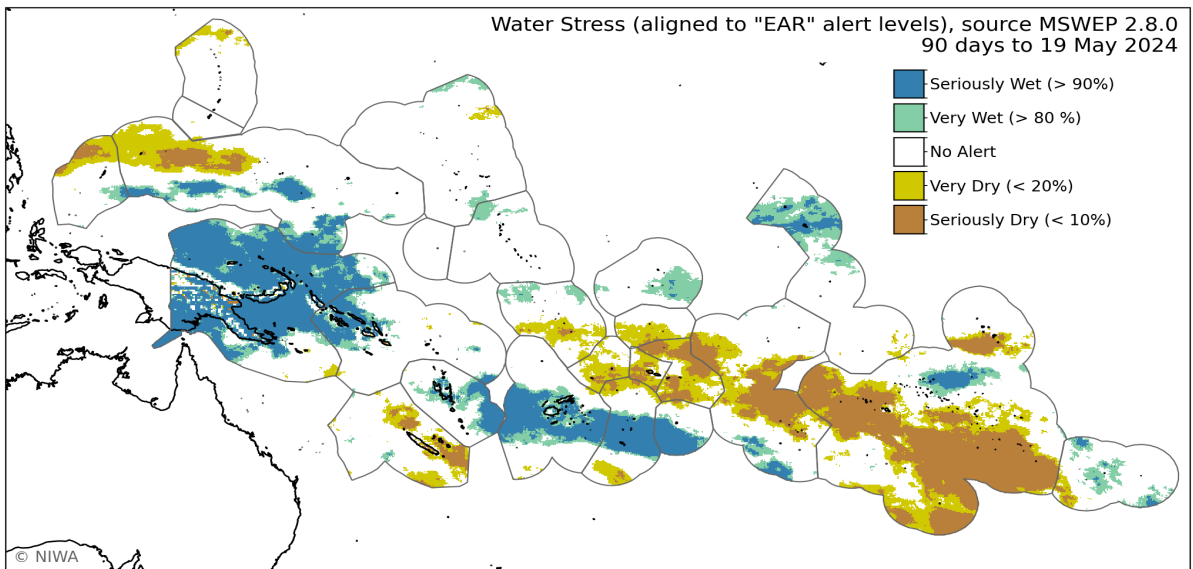


EAR regional situation summary (19 May 2024)

Cumulative rainfall thresholds aligned to the Early Action Rainfall (EAR) Watch over the last 90 and 30 days are shown in the plots below.

During the 90 days ending 19 May (top plot), seriously dry or very dry conditions affected parts of western FSM, small parts of PNG, New Caledonia, southern Tuvalu, Tokelau, Wallis & Futuna, northern Tonga, Samoa, American Samoa, southern Cook Islands, Austral Islands, Society Islands, eastern Tuamotu Archipelago, and Marquesas.

During the 30 days ending 19 May (bottom plot), seriously dry or very dry conditions affected parts of the Northern Marianas, Palau, FSM, northern Marshall Islands, Gilbert and northern Phoenix Islands, small parts of PNG, Vanuatu, Fiji, southern Cook Islands, Austral Islands, Society Islands, eastern Tuamotu Archipelago, and Pitcairn Islands.

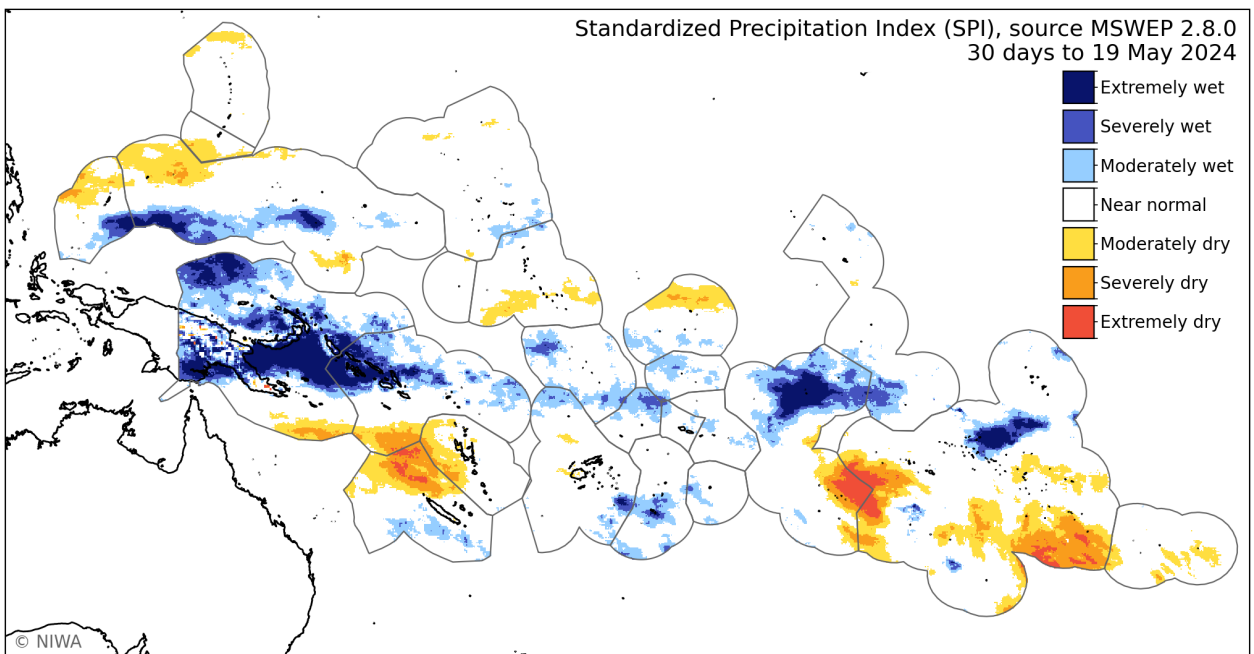
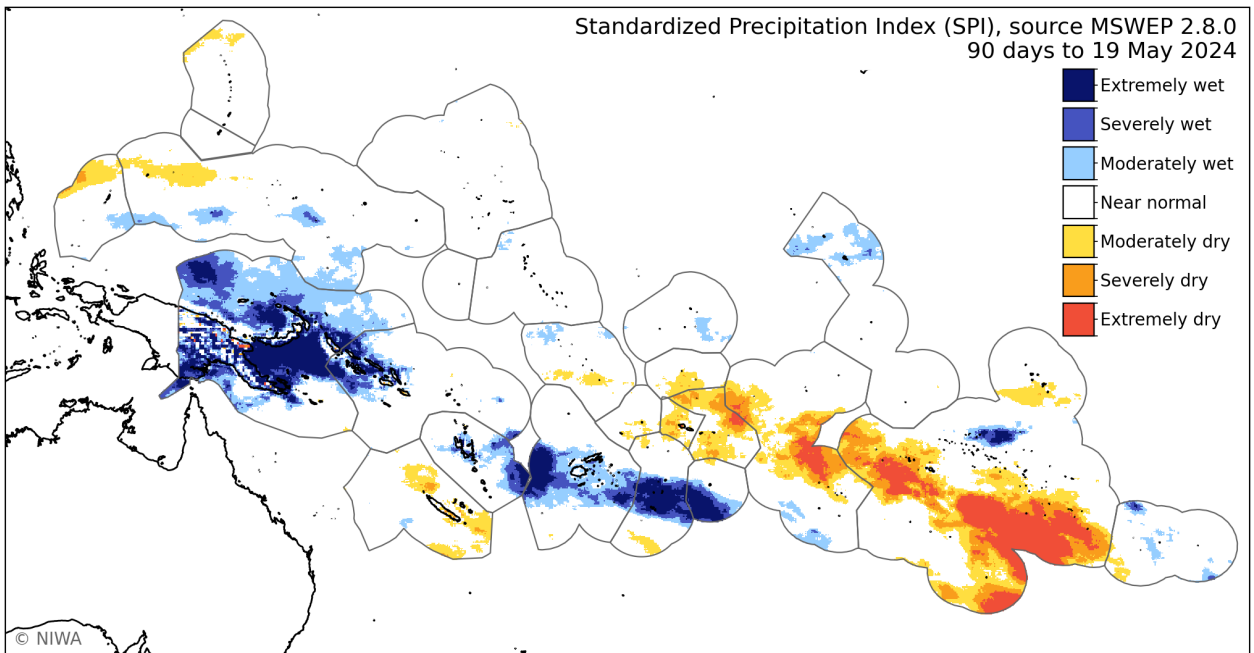


SPI Regional situation summary (19 May 2024)

The Standardized Precipitation Index (SPI) thresholds for cumulative rainfall over the last 90 and 30 days are shown in the plots below.

During the 90 days ending 19 May (top plot), extremely dry or severely dry conditions occurred in small parts of PNG, New Caledonia, Samoa, American Samoa, southern Cook Islands, Austral Islands, Society Islands, and eastern Tuamotu Archipelago.

During the 30 days ending 19 May (bottom plot), extremely dry or severely dry conditions occurred in parts of northern FSM, small parts of PNG, southern Cook Islands, Austral Islands, and eastern Tuamotu Archipelago.

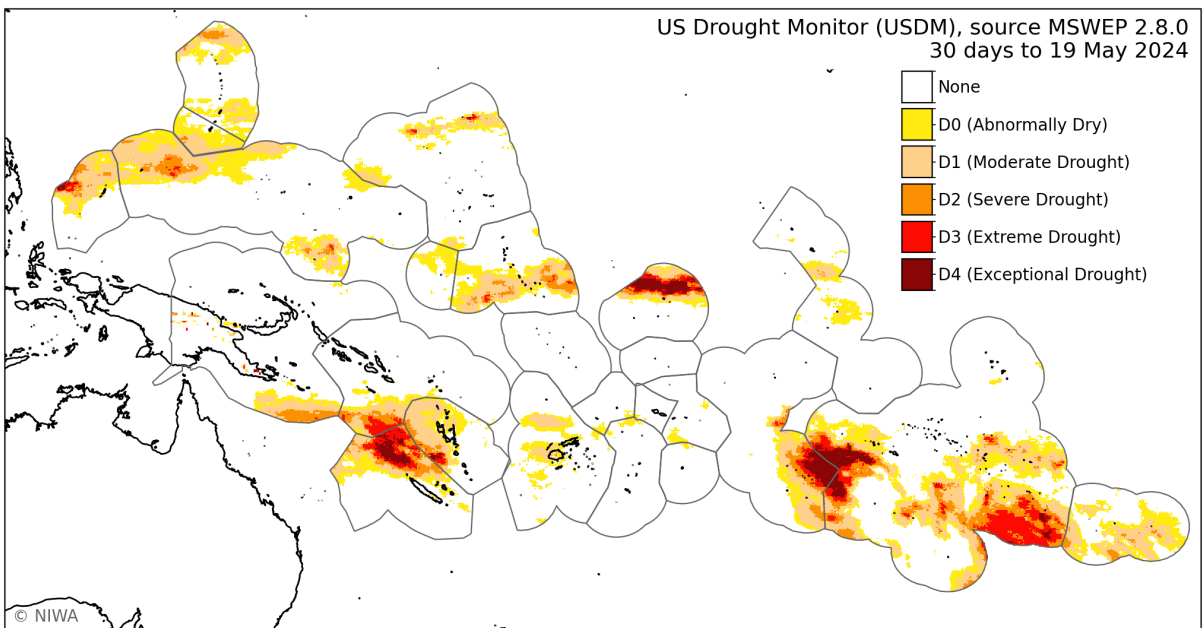
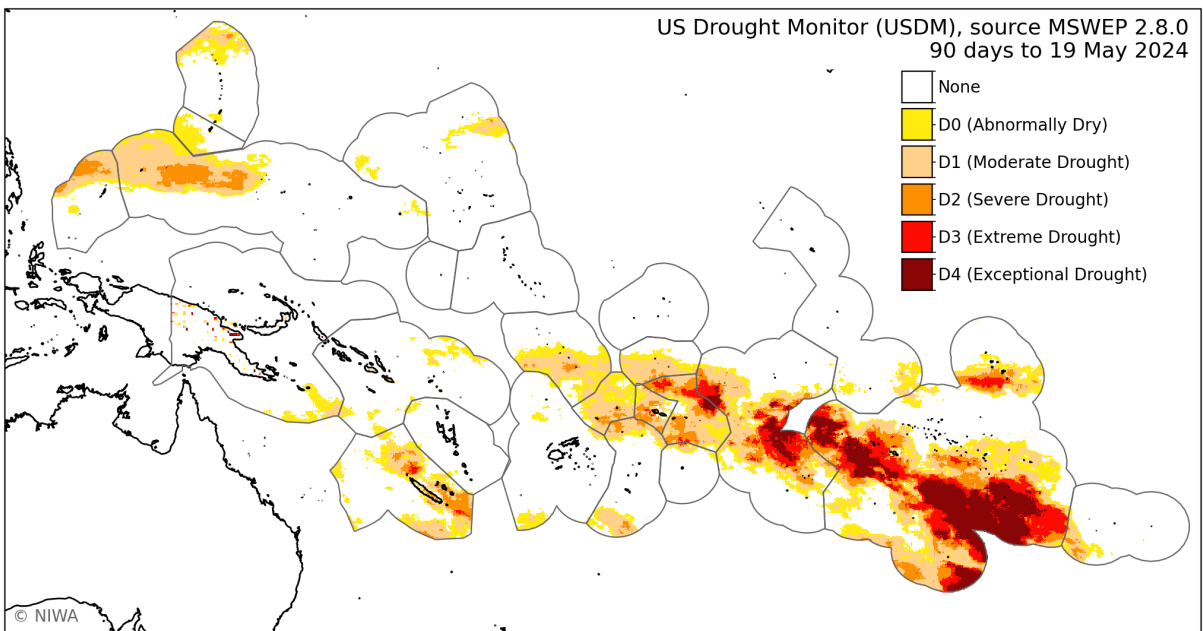


USDM Regional situation summary (19 May 2024)

The US Drought Monitor Index (USDM) levels for cumulative rainfall over the last 90 and 30 days are shown in the plots below.

During the 90 days ending 19 May (top plot), extreme or exceptional drought occurred in small parts of PNG, New Caledonia, Samoa, American Samoa, southern Cook Islands, Austral Islands, Society Islands, eastern Tuamotu Archipelago, and Marquesas.

During the 30 days ending 19 May (bottom plot), extreme or exceptional drought occurred in parts of FSM, northern Marshall Islands, small parts of PNG, northern Phoenix Islands, southern Cook Islands, Austral Islands, and eastern Tuamotu Archipelago.



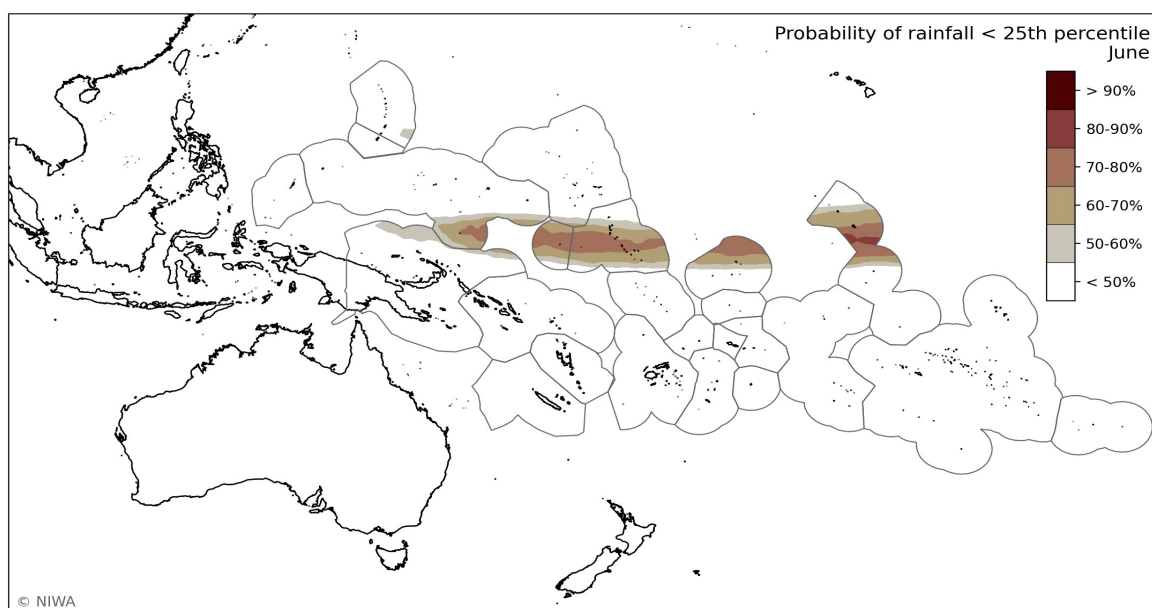
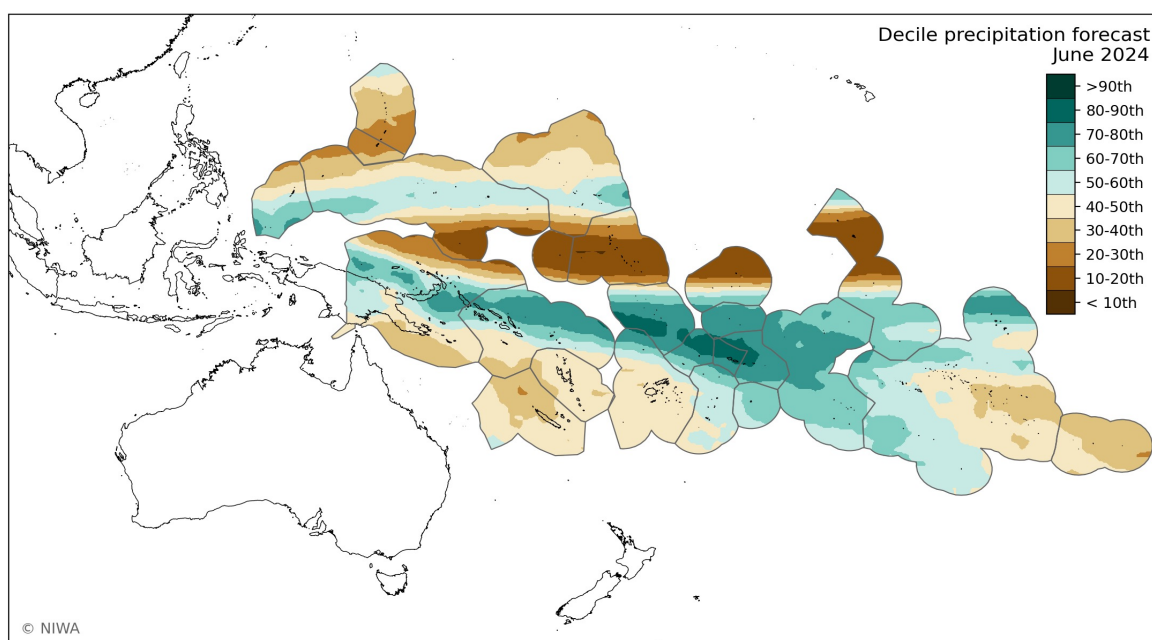
June 2024 forecast & probabilities of rainfall < 25th percentile

During June, significantly below normal rainfall is favoured in Guam, Northern Marianas, parts of FSM and Marshall Islands, southern PNG, New Caledonia, Nauru, Kiribati (Gilbert Islands, northern Phoenix Islands, and northern Line Islands), eastern Tuamotu archipelago, and Pitcairn Islands.

Significantly above normal rainfall is favoured in southern Palau, parts of PNG, Solomon Islands, Tuvalu, Tokelau, northern Fiji, Wallis & Futuna, Samoa, American Samoa, northern Tonga, Niue, Cook Islands, Austral Islands, and Marquesas.

All other island groups are expected to see rainfall amounts closer to normal during June.

For June, the highest chances for very dry conditions are across southern FSM, Nauru, and Kiribati (Gilbert Islands, northern Phoenix Islands, and northern Line Islands).



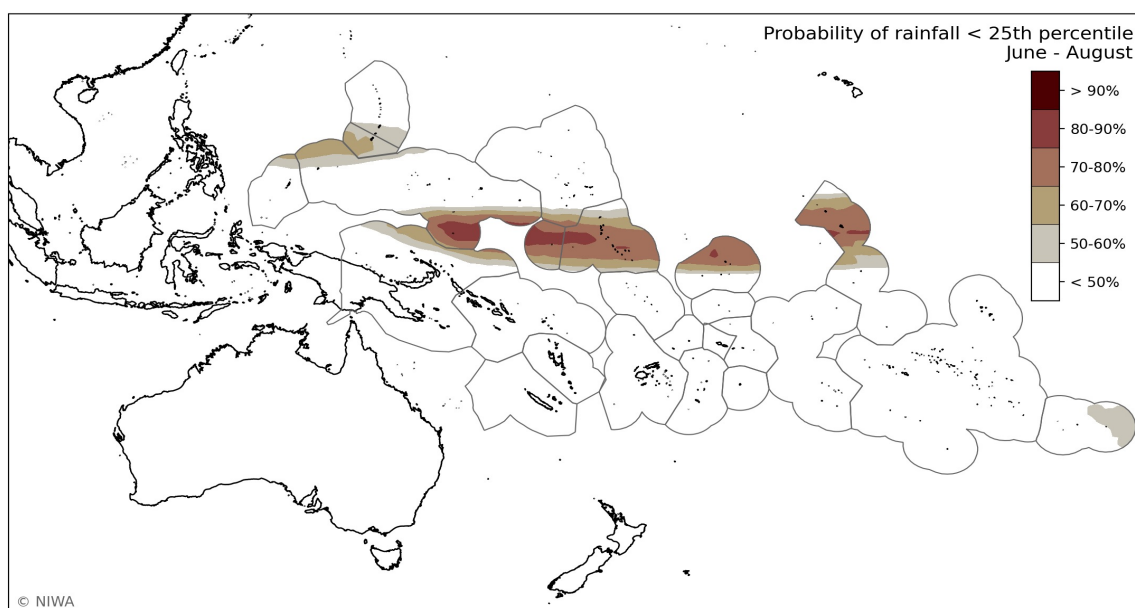
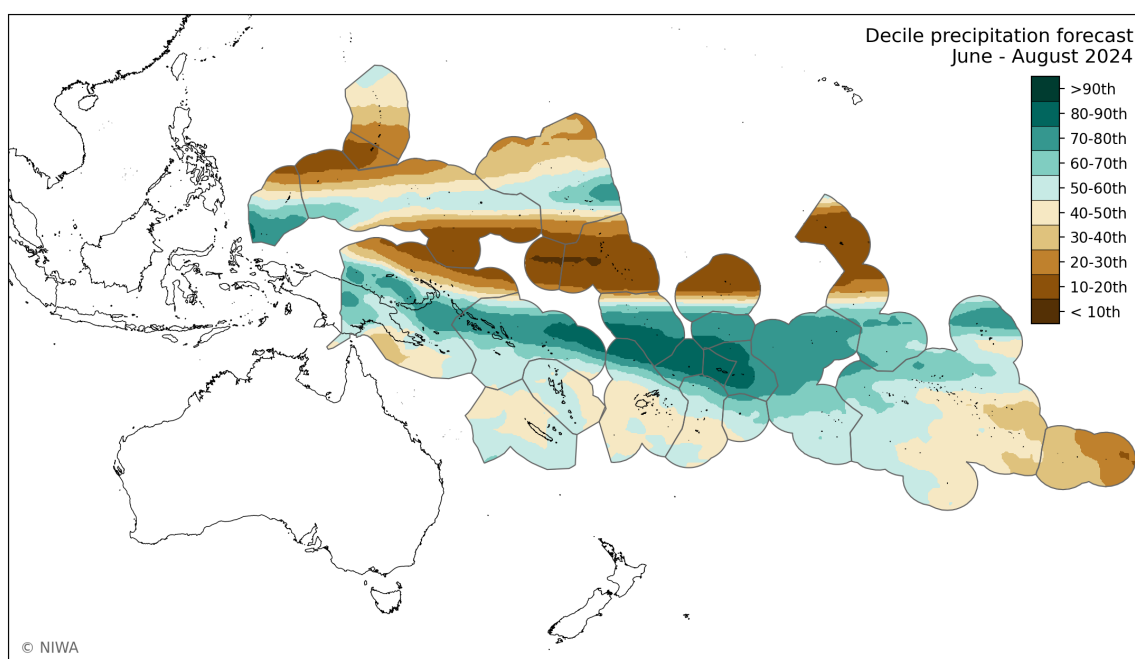
Jun-Aug 2024 forecast & probabilities of rainfall < 25th percentile

During June-August, significantly below normal rainfall is favoured in Guam, Northern Marianas, parts of FSM and Marshall Islands, northern PNG, Nauru, Kiribati, eastern Tuamotu archipelago, and Pitcairn Islands.

Significantly above normal rainfall is favoured in southern Palau, parts of the Marshall Islands and PNG, Solomon Islands, Tuvalu, Tokelau, northern Fiji, Wallis & Futuna, Samoa, American Samoa, northern Tonga, Niue, northern Cook Islands, western Tuamotu Archipelago, and Marquesas.

All other island groups are expected to see rainfall amounts closer to normal during June-August.

For June-August, the highest chances for very dry conditions are across Guam, parts of the Northern Marianas, southern FSM, Nauru, and Kiribati.






Island Climate Update



About

Understanding the Island Climate Update bulletin

The ICU utilises rainfall data from the [Multi-Source Weighted-Ensemble Precipitation](#) (MSWEP) and a multi-model ensemble forecast utilising 550+ members derived from nine global climate models available from the [Copernicus Data Store](#).

Bulletin page	Description
Rainfall watch	Rainfall plots are derived from MSWEP data. Regional rainfall accumulation is shown for the last 30 days (1 month) and 90 days (3 months).
Water stress watch	Plots are derived from MSWEP data. Different Pacific Island Meteorological Services use different approaches to defining drought and water stress. Current regional water stress classifications are shown for the Early Action Rainfall (Page 3), Standard Precipitation Index (Page 4), and US Drought Monitoring (Page 5) alert levels for the last 90 and 30 days of accumulated rainfall.
Water stress outlook	<p>Outlook water stress classifications are based on both the satellite rainfall data and a multi-model ensemble forecast derived from nine global climate models for the next month and three months.</p> <p>The top plots on each page show the rainfall decile band for the next 1 and 3 months for which the cumulative probability derived from the multi-model ensemble forecasts reaches 50%.</p> <p>The bottom plots bring together conditions over the past 3 months and forecast conditions over the next month:</p> <ul style="list-style-type: none"> • Current water stress conditions potentially easing: Past 3 month accumulation less than 25th percentile. 1 month / seasonal accumulation forecast greater than 25th percentile. • Areas moving in to water stress: Past 3 month accumulation between the 40th and 25th percentile. 1 month / seasonal accumulation forecast less than 25th percentile. • Current water stress conditions persisting: Past 3 month accumulation less than 25th percentile. 1 month / seasonal accumulation forecast less than 25th percentile. <p>The final page shows the probability that forecast rainfall over the next 1 or 3 months is within the lowest 25% of cumulative rainfall over the same period (a measure of the confidence in a low rainfall forecast).</p>
 Online Resources	<p>Additional regional and country-level resources are available online:</p> <ul style="list-style-type: none"> • Daily updated plots for 30, 60, 90, 180 and 365 day: accumulative rainfall, number of dry days, number of days since last rainfall > 1 mm, EAR, SPI and USDM indices. • A range of probabilistic one to five monthly and seasonal forecast plots updated around the 11th of each month. • Click here for the imagery and here for the underlying data [observations, forecast].



NIWA is the Network co-lead for the [WMO RA V Regional Climate Centre Node](#) on Long Range Forecast and consortium member for nodes on Climate Monitoring, Operational Data Services, and Training.

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