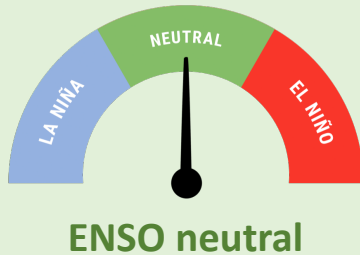


Island Climate Update



ENSO Watch
September 2024

Recent



ENSO neutral

ENSO neutral conditions are currently in place, but La Niña may develop during September-November.

The Southern Oscillation Index (SOI) was -0.2 from June-August, in the neutral range.

Tropical Pacific Ocean sea surface temperatures (SSTs) remain reflective of a possible transition to La Niña in a few months.

45% chance for **ENSO neutral** conditions to continue during **September-November 2024**

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

55%



La Niña Watch

Forecast

ENSO situation summary

ENSO neutral conditions are expected to continue over the next several weeks, but La Niña is slightly favoured over ENSO neutral during September-November.

From mid-August into early September, a surge in tropical Pacific trade winds will nudge the ocean in a La Niña-like direction. An alternative measure of central Pacific SSTs, called the relative oceanic Niño Index, has had an average anomaly of -0.6°C over the last month and is more aligned with La Niña-like oceanic conditions.

As of 20 August, the traditional 30-day Niño 1+2 Index anomaly was -0.45°C , within the neutral range. The 30-day NINO3.4 Index anomaly (in the central equatorial Pacific) was 0.0°C .

The Southern Oscillation Index (SOI) was in the neutral range during June-August (-0.2), while the August value was $+0.4$ (in the neutral range).

Above average oceanic temperatures persist in the central and western parts of the basin, with much cooler temperatures in the east. The West Pacific Warm Pool is becoming more unusually warm, which is also reflective of the potential development of La Niña.

The South Pacific Convergence Zone was very close to its climatological normal position during August.

During September-October, model guidance favours an enhancement in convective forcing over the western Pacific and Maritime Continent, consistent with a developing La Niña. This may lead to enhanced rainfall for some countries such as Palau, Papua New Guinea, and the Solomon Islands (based on the decile precipitation forecast for September and September-November; see pages 6-7 for more information).

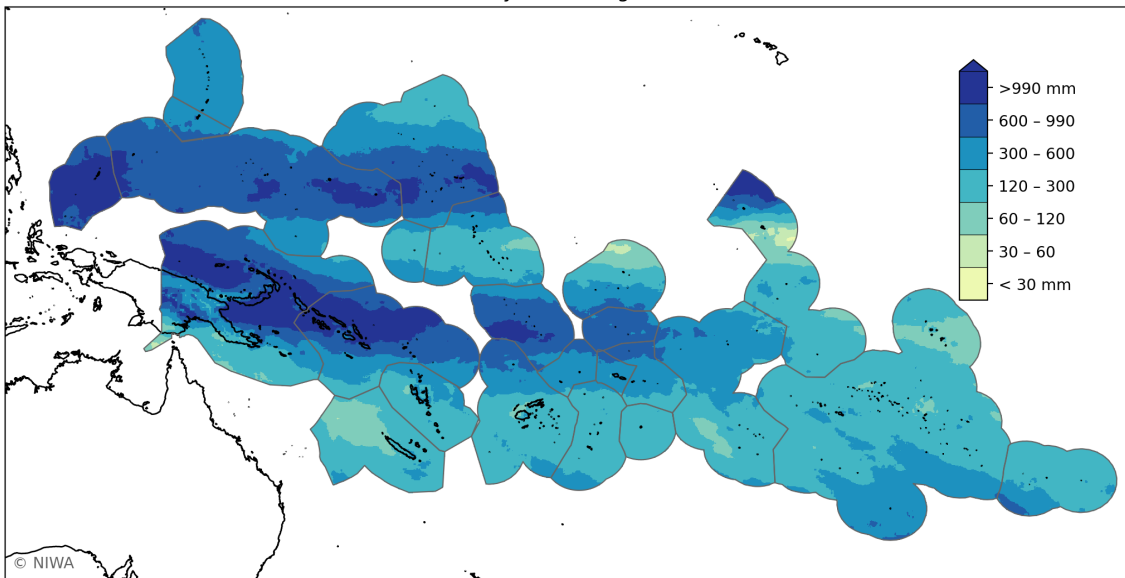
Regional situation summary (18 August 2024)

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

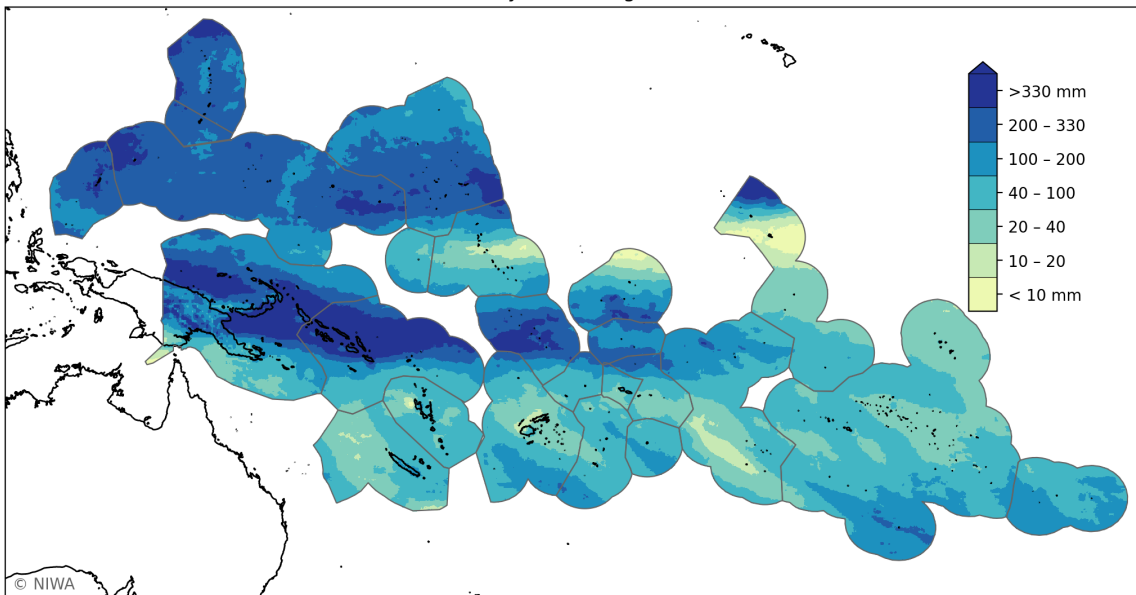
During the 90 days ending 18 August (top plot), over 990 mm of rain fell across Palau, parts of the Federated States of Micronesia (FSM), southern Marshall Islands, parts of Papua New Guinea (PNG), the Solomon Islands, and Tuvalu. Less than 60 mm of rain was observed in a portion of Kiribati (northern Line Islands).

During the 30 days ending 18 August (bottom plot), over 330 mm of rain fell across Palau, parts of FSM, southern Marshall Islands, PNG, Solomon Islands, and parts of Tuvalu. Less than 40 mm of rain fell in parts of Kiribati (Gilbert and northern Line Islands), southern PNG, New Caledonia, Vanuatu, Fiji, Tonga, Samoa, American Samoa, southern Cook Islands, parts of the Tuamotu Archipelago, and Marquesas.

Cumulative rainfall (mm), source: MSWEP 2.8.0
90 days to 18 Aug 2024



Cumulative rainfall (mm), source: MSWEP 2.8.0
30 days to 18 Aug 2024

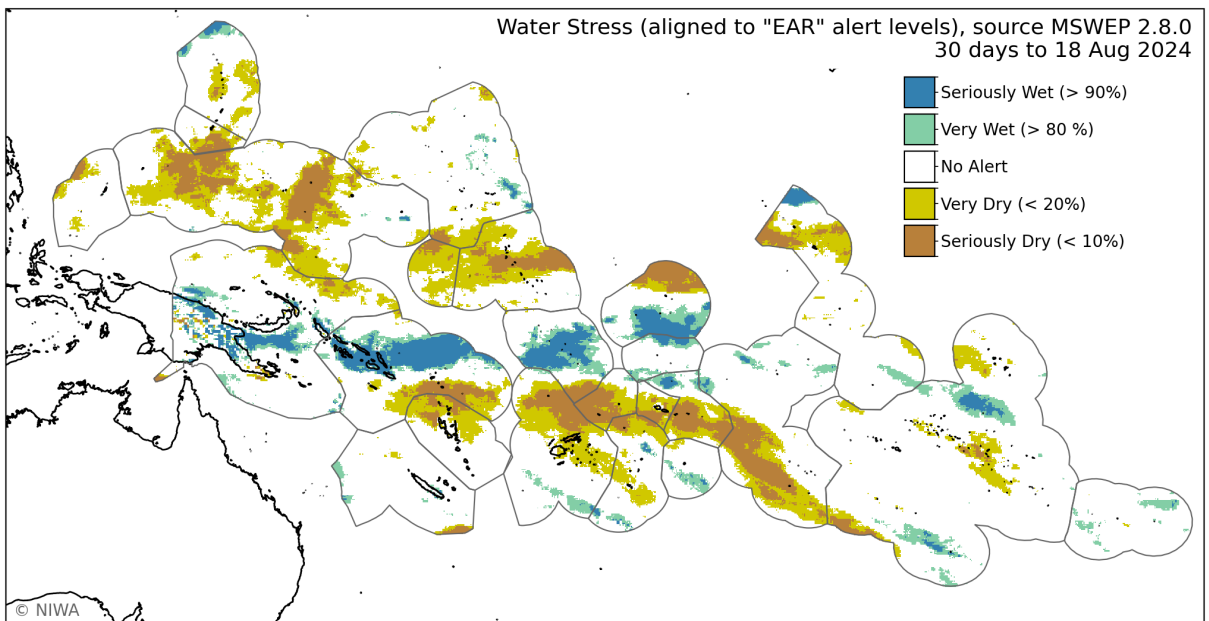
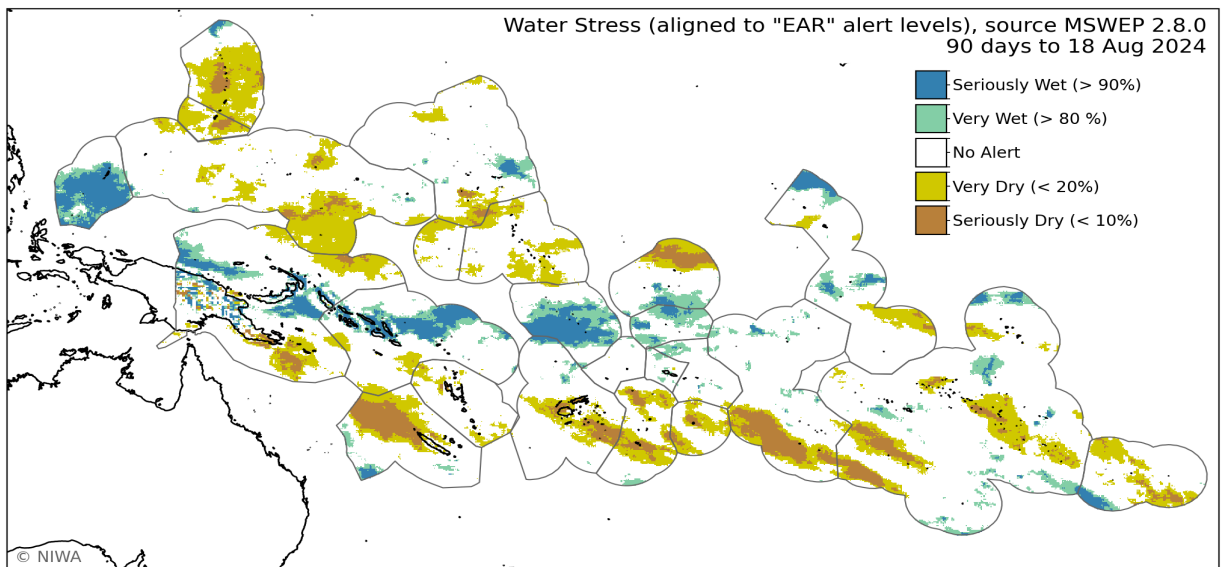


EAR regional situation summary (18 August 2024)

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 18 August (top plot), seriously dry or very dry conditions affected the Northern Marianas, Guam, parts of FSM, southern Marshall Islands, Kiribati (Gilbert and northern Phoenix Islands), parts of PNG, New Caledonia, Vanuatu, Fiji, Tonga, Niue, southern Cook Islands, Austral Islands, Tuamotu Archipelago, Marquesas, and Pitcairn Islands.

During the 30 days ending 18 August (bottom plot), seriously dry or very dry conditions affected parts of the Northern Marianas, Guam, FSM, southern Marshall Islands, Nauru, Kiribati (Gilbert, northern Phoenix, and northern Line Islands), parts of PNG, eastern Solomon Islands, Vanuatu, Fiji, southern Tuvalu, Wallis & Futuna, Samoa, American Samoa, Tonga, southern Cook Islands, Tuamotu Archipelago, and Marquesas.

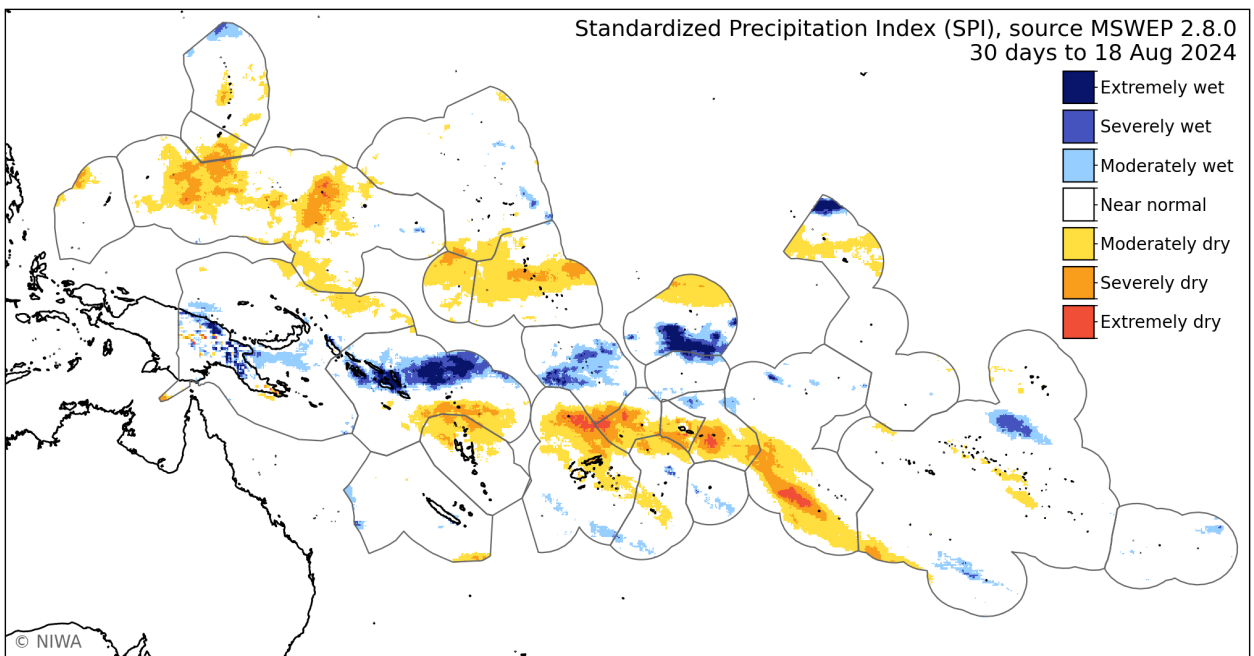
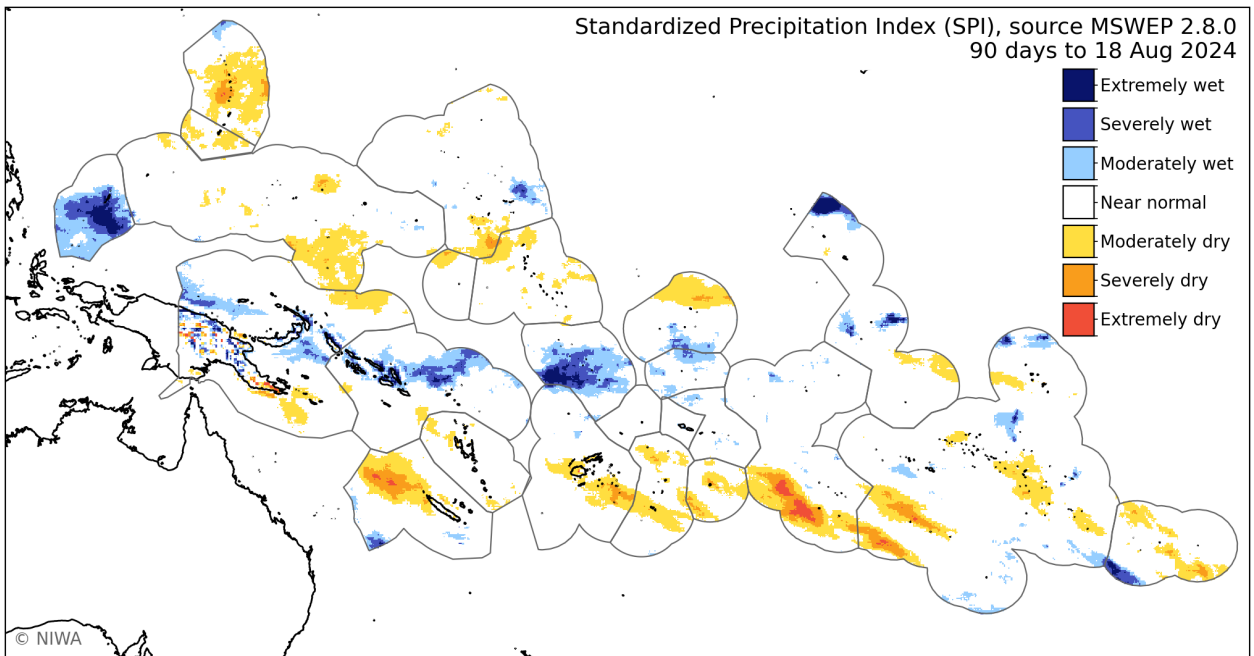


SPI Regional situation summary (18 August 2024)

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 18 August (top plot), extremely dry or severely dry conditions occurred in parts of the Northern Marianas, southern Marshall Islands, PNG, Fiji, Niue, southern Cook Islands, and Austral Islands.

During the 30 days ending 18 August (bottom plot), extremely dry or severely dry conditions occurred in parts of FSM, Kiribati (Gilbert Islands), PNG, eastern Solomon Islands, Vanuatu, northern Fiji, northern Tonga, far southern Tuvalu, Wallis & Futuna, Samoa, American Samoa, and southern Cook Islands.

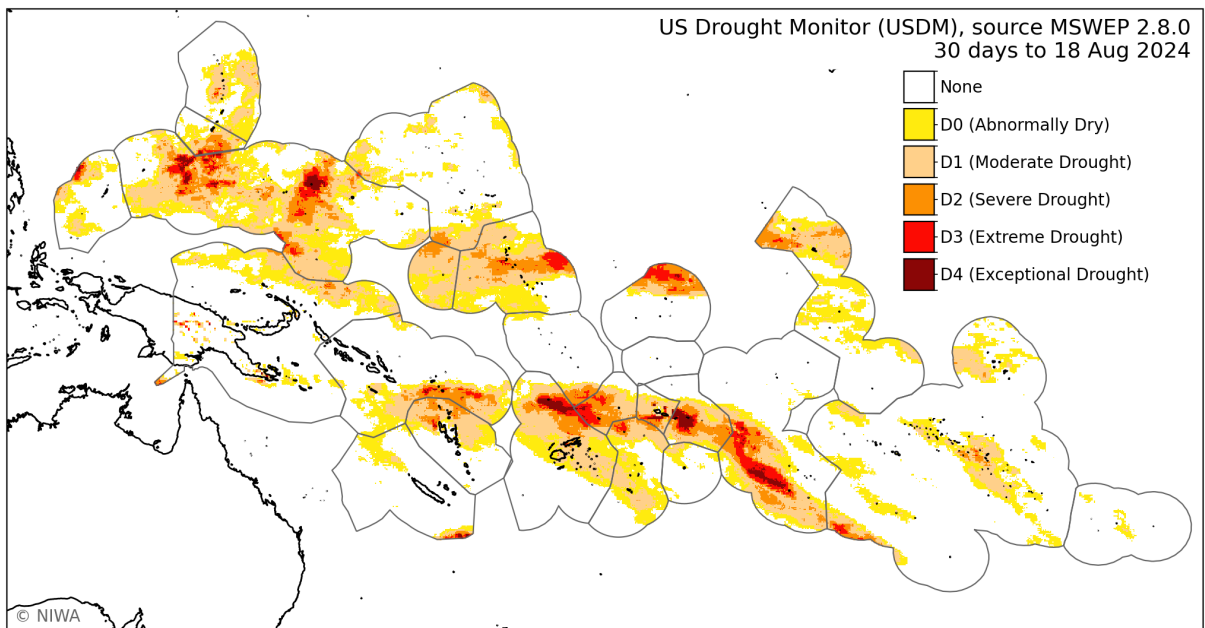
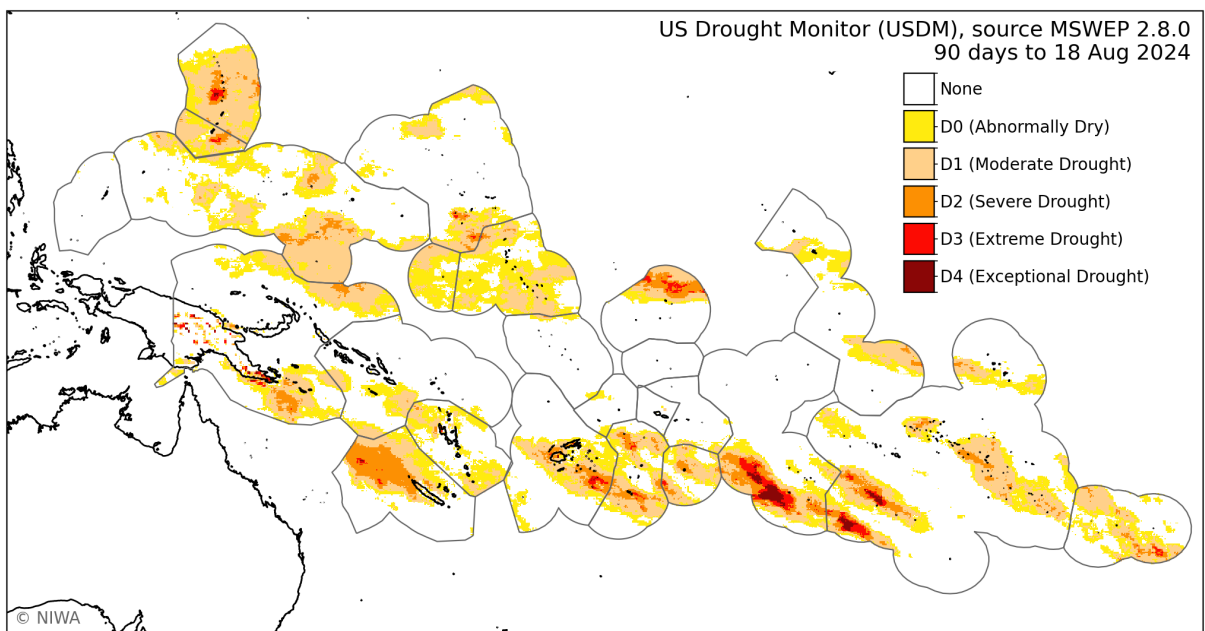


USDM Regional situation summary (18 August 2024)

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 18 August (top plot), extreme or exceptional drought occurred in parts of the Northern Marianas, southern Marshall Islands, northern Phoenix Islands, PNG, Vanuatu, Fiji, Tonga, southern Cook Islands, and Austral Islands.

During the 30 days ending 18 August (bottom plot), extreme or exceptional drought occurred in parts of FSM, Kiribati (Gilbert and northern Phoenix Islands), PNG, eastern Solomon Islands, Vanuatu, northern Fiji, northern Tonga, far southern Tuvalu, Wallis & Futuna, Samoa, American Samoa, and southern Cook Islands.



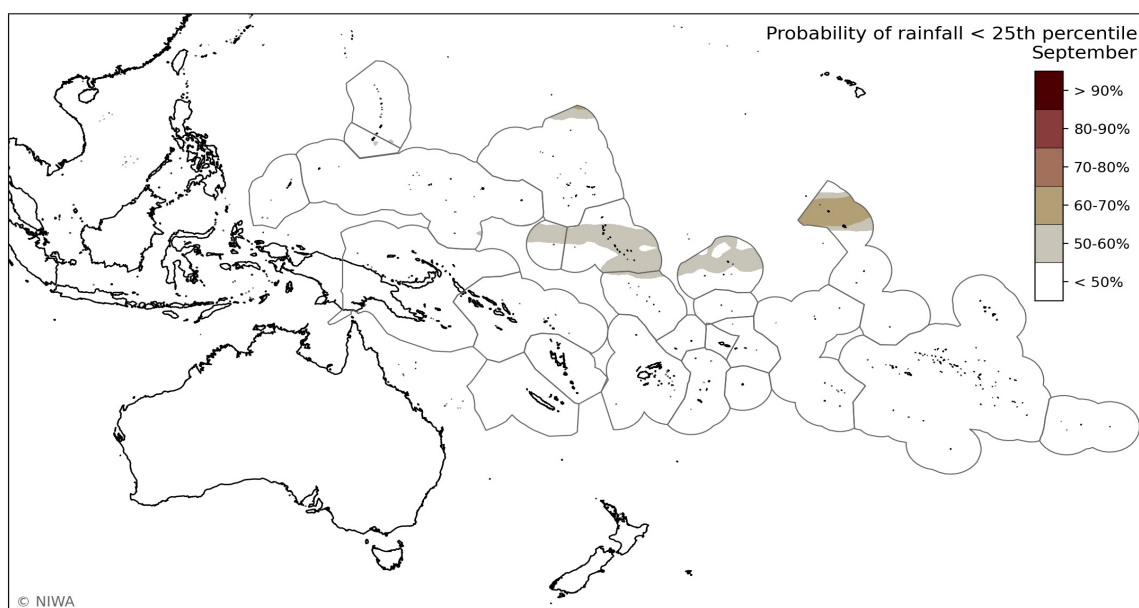
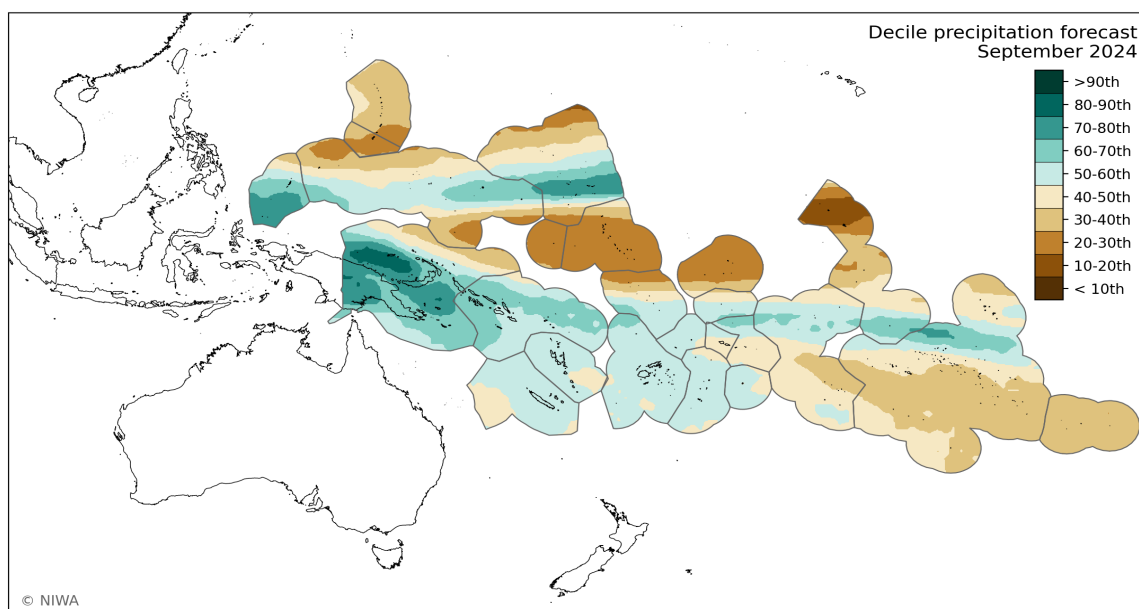
Sept 2024 forecast & probabilities of rainfall < 25th percentile

During September, significantly below normal rainfall is favoured in Guam, the Northern Marianas, parts of FSM and the Marshall Islands, Nauru, Kiribati (Gilbert Islands, Phoenix Islands, and northern and central Line Islands), southern Cook Islands, Austral Islands, Tuamotu archipelago, and Pitcairn Islands.

Significantly above normal rainfall is favoured in Palau, parts of FSM and the Marshall Islands, PNG, Solomon Islands, and northern Cook Islands.

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

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



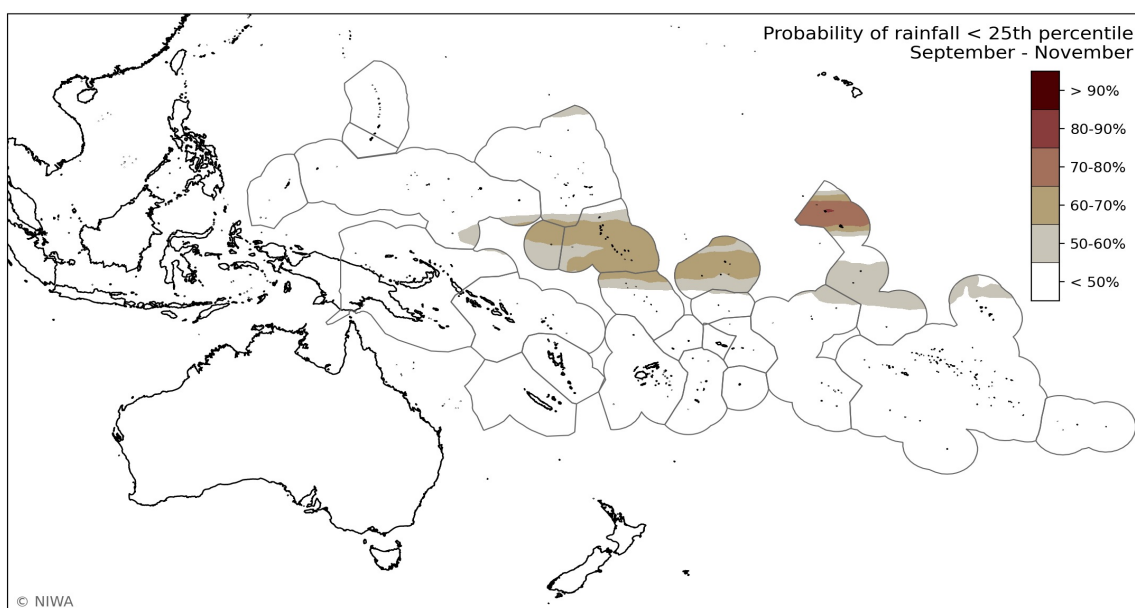
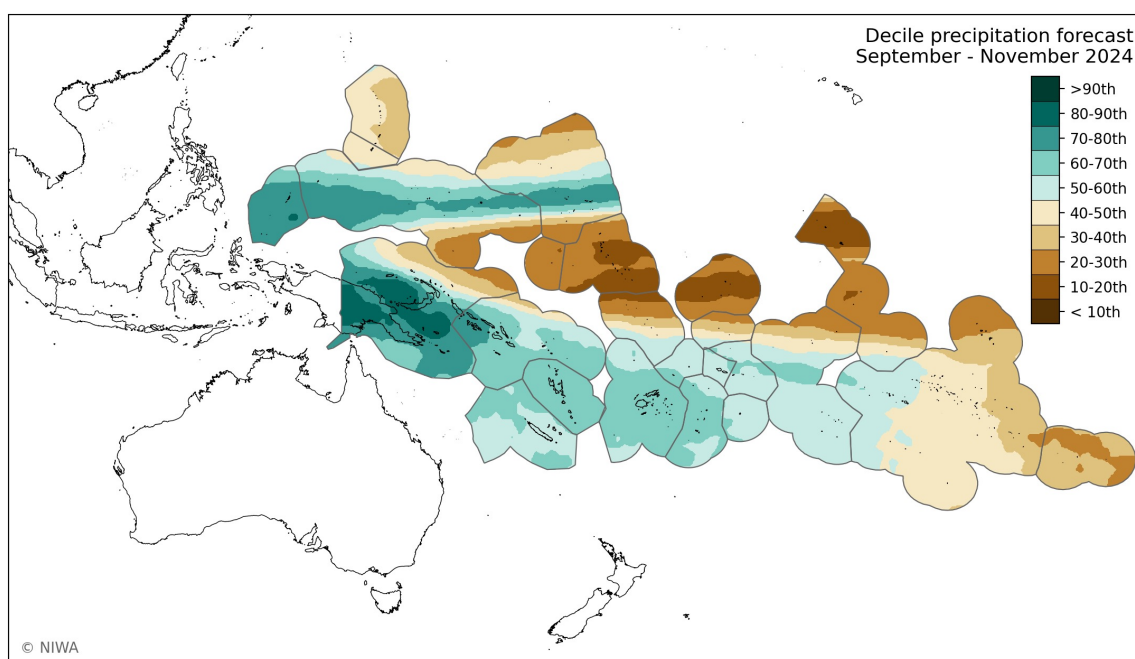
Sep-Nov 2024 forecast & probabilities of rainfall < 25th percentile

During September-November, significantly below normal rainfall is favoured in parts of the Northern Marianas, FSM and the Marshall Islands, Nauru, Kiribati, northern Tuvalu, Tokelau, northern Cook Islands, eastern Tuamotu Archipelago, Marquesas, and Pitcairn Islands.

Significantly above normal rainfall is favoured in Palau, parts of FSM and the Marshall Islands, PNG, Solomon Islands, Vanuatu, Fiji, southern Wallis & Futuna, and Tonga.

All other island groups are expected to see rainfall amounts closer to normal during September-November.

For September-November, the highest chances for very dry conditions are located across Nauru, northern Tuvalu, 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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