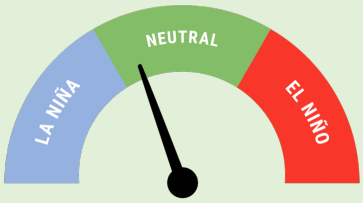
Island Climate Update

NIWA
Taihoro Nukurangi

ENSO Watch
May 2025

Recent



ENSO-Neutral

La Niña has now weakened to ENSO-neutral conditions.

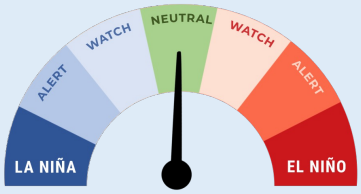
The Southern Oscillation Index (SOI) was in the La Niña range (+1.0) from February-April.

Tropical Pacific Ocean sea surface temperatures (SSTs) are now in the ENSO-neutral range.

Forecast

80% chance for **ENSO-neutral** conditions to continue during **May-July 2025**

Chance for **ENSO-neutral** conditions to continue during **June-August 2025** **65%**



ENSO-Neutral

ENSO situation summary

La Niña has now given way to ENSO-neutral conditions, and there is an 80% chance that ENSO-neutral conditions will continue during May-July 2025.

As of 21 April, the 30-day NINO3.4 Index (in the central equatorial Pacific) was -0.05˚C, in the neutral range. The 30-day relative Niño 3.4 Index (RONI) was -0.52˚C, reflective of the central equatorial Pacific being significantly cooler than the average of the global tropics.

The Southern Oscillation Index (SOI) was in the La Niña range during February-April (+1.0), while the April value was +0.9 (in the La Niña range).

The subsurface equatorial Pacific is up to 1˚C cooler than average just below the surface in the central part of the basin, a warming trend since last month. In addition, above average temperatures are emerging in the eastern Pacific, both indicating the decay of La Niña. However, above average upper oceanic heat content continues in western parts of the Pacific basin.

The South Pacific Convergence Zone (SPCZ) was located very close to its climatological normal position during April.

During May-July, model guidance continues to favour an enhancement in convective forcing over the western Pacific and Melanesia, collocated with the warmest sea surface temperatures and position of the SPCZ. This may lead to enhanced rainfall for island groups from southern Papua New Guinea east to Fiji. However, drier than normal conditions are likely to occur for many island groups along and north of the equator (see pages 6-7 for more information).

Tropical cyclone season officially ends on 30 April, although tropical cyclones can form outside of the official season.

Island Climate Update

Rainfall Watch

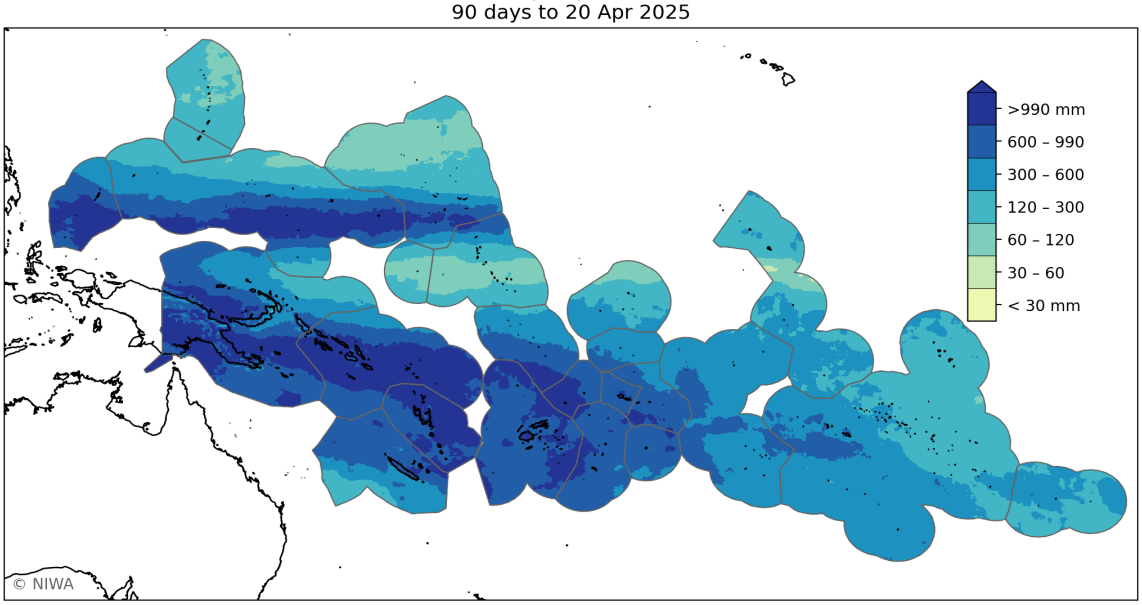
Regional situation summary (20 April 2025)

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

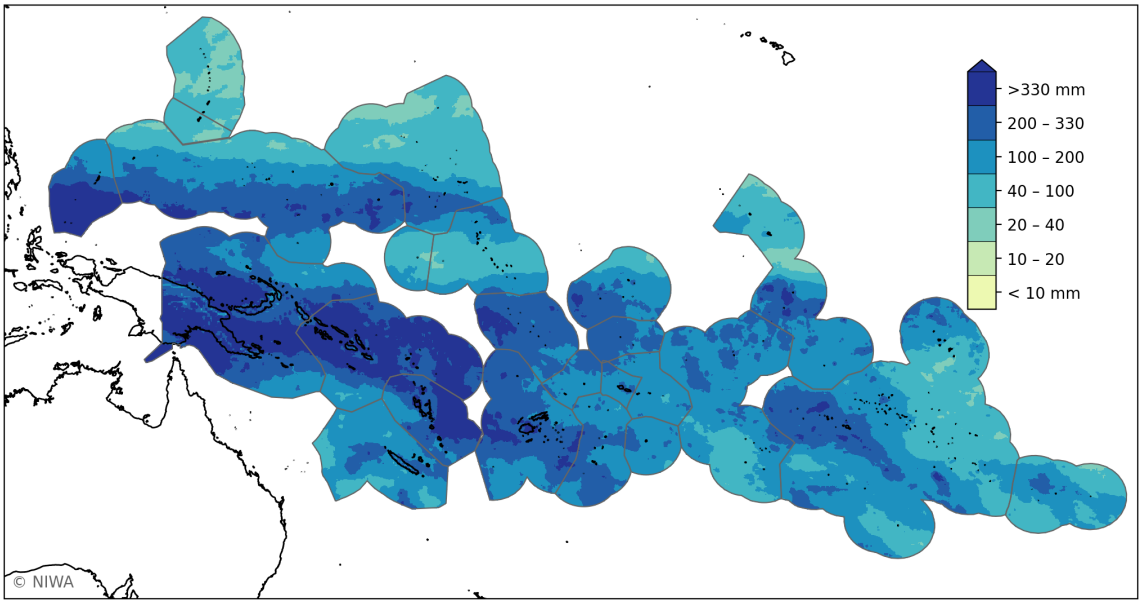
During the 90 days ending 20 April (top plot), over 990 mm of rain fell across southern Palau, southern Federated States of Micronesia (FSM), southern Marshall Islands, much of Papua New Guinea (PNG), Solomon Islands, Vanuatu, parts of Fiji, southern Tuvalu, Wallis and Futuna, and Samoa. Less than 60 mm of rain was not observed in any island groups.

During the 30 days ending 20 April (bottom plot), over 330 mm of rain fell across southern Palau, much of PNG, Solomon Islands, parts of Vanuatu and Fiji, western Tuvalu, Kiribati (central Line Islands), and parts of the Society Islands. Less than 40 mm of rain fell in the Northern Mariana Islands and northern Marshall Islands.

Cumulative rainfall (mm), source: MSWEP 2.8.0
90 days to 20 Apr 2025



Cumulative rainfall (mm), source: MSWEP 2.8.0
30 days to 20 Apr 2025

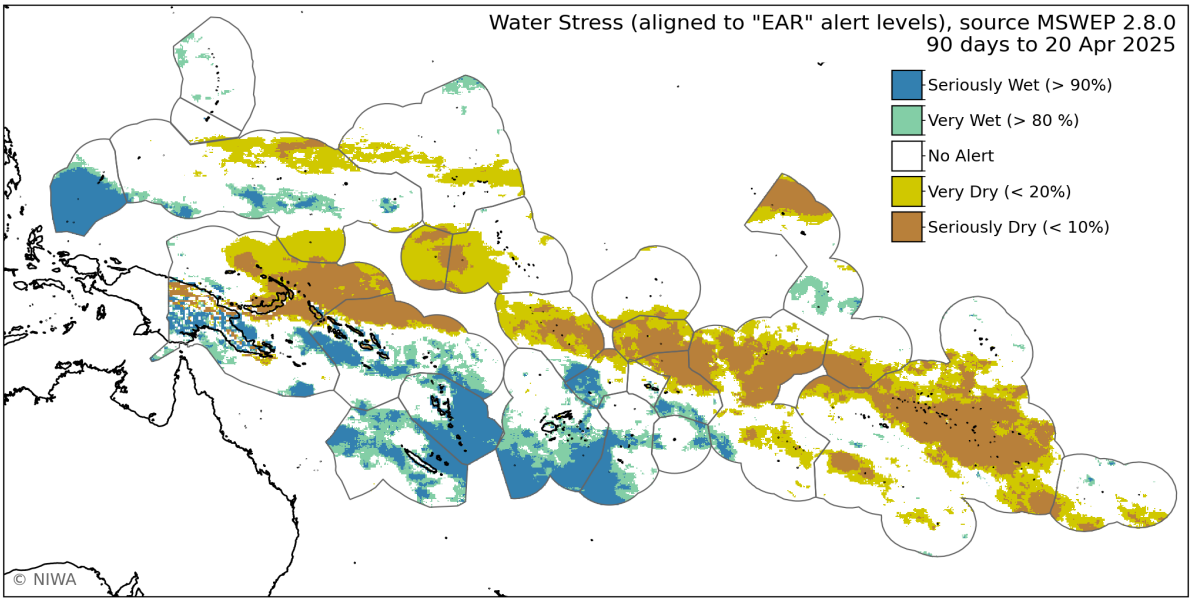


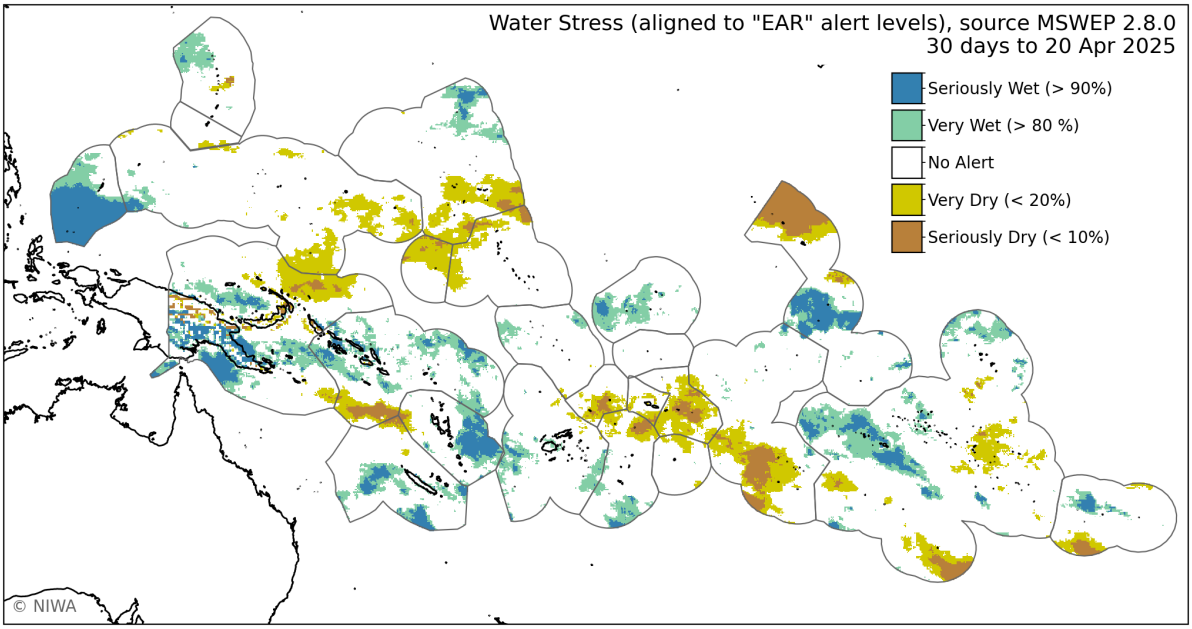
EAR regional situation summary (20 April 2025)

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 20 April (top plot), seriously dry or very dry conditions affected parts of FSM and the Marshall Islands, northern PNG, northern Solomon Islands, Nauru, Kiribati (western Gilbert and northern Line Islands), Tuvalu, Tokelau, American Samoa, northern and southern Cook Islands, Austral Islands, and Tuamotu Archipelago.

During the 30 days ending 20 April (bottom plot), seriously dry or very dry conditions affected southern FSM and the Marshall Islands, northern PNG, Nauru, Kiribati (northern Line Islands), Wallis and Futuna, northern Tonga, Samoa, American Samoa, southern Cook Islands, and parts of the Austral Islands and Tuamotu Archipelago.





Island Climate Update

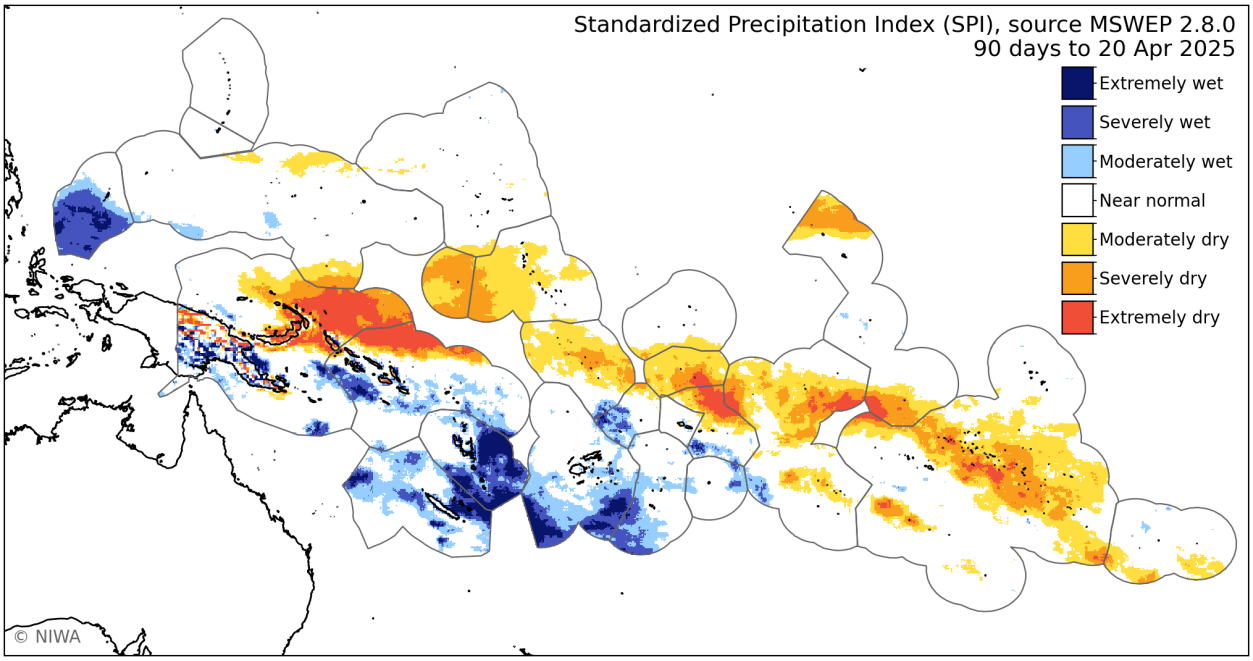
Water Stress Watch

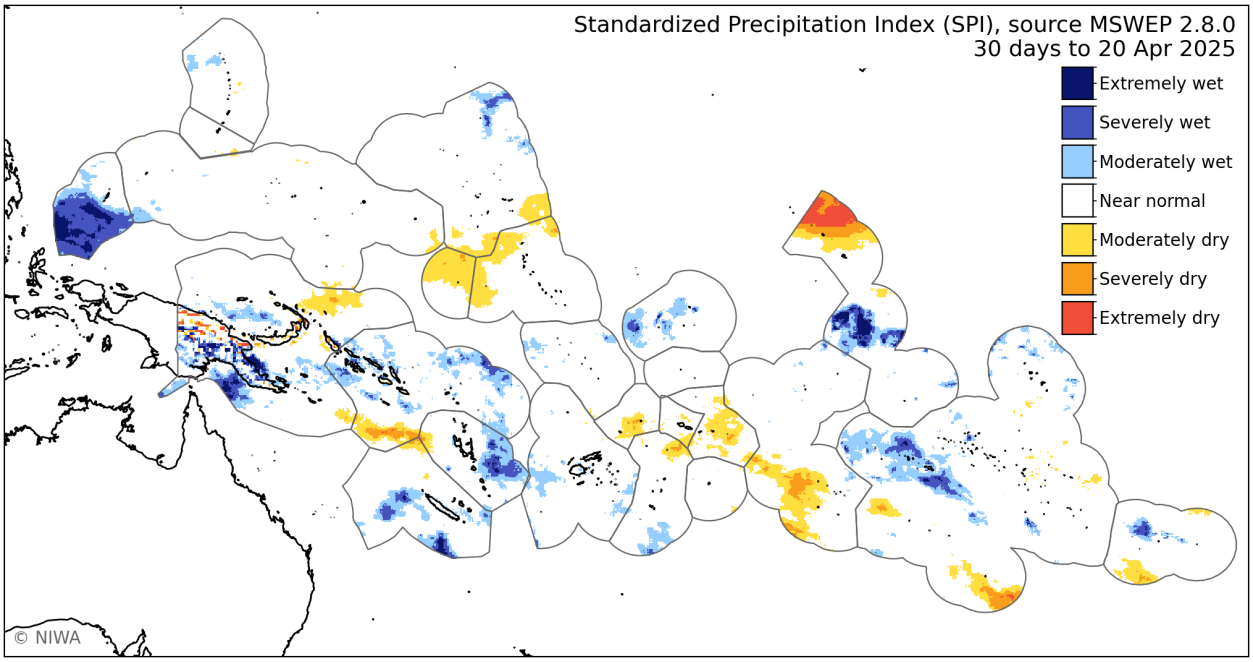
SPI Regional situation summary (20 April 2025)

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 20 April (top plot), extremely dry or severely dry conditions occurred in northern PNG, northern Solomon Islands, Nauru, Kiribati (northern Line Islands), parts of Tuvalu and Tokelau, northern American Samoa, parts of the northern Cook Islands, Austral Islands, and Tuamotu Archipelago.

During the 30 days ending 20 April (bottom plot), extremely dry or severely dry conditions occurred in parts of northern PNG and southern Cook Islands, and Kiribati (northern Line Islands).



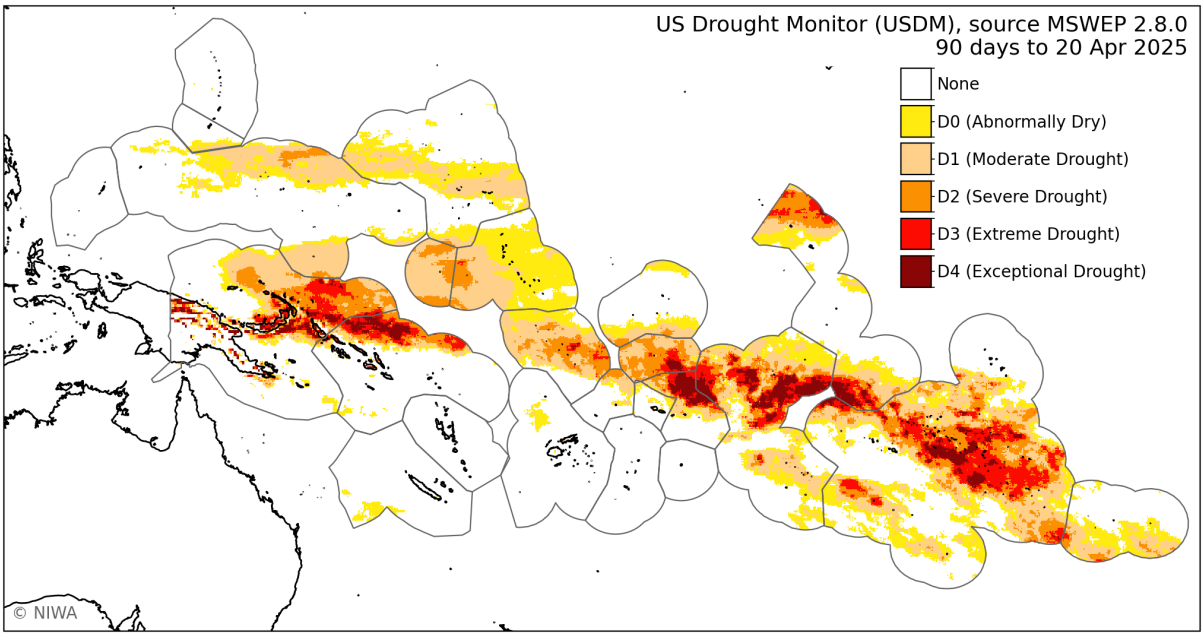


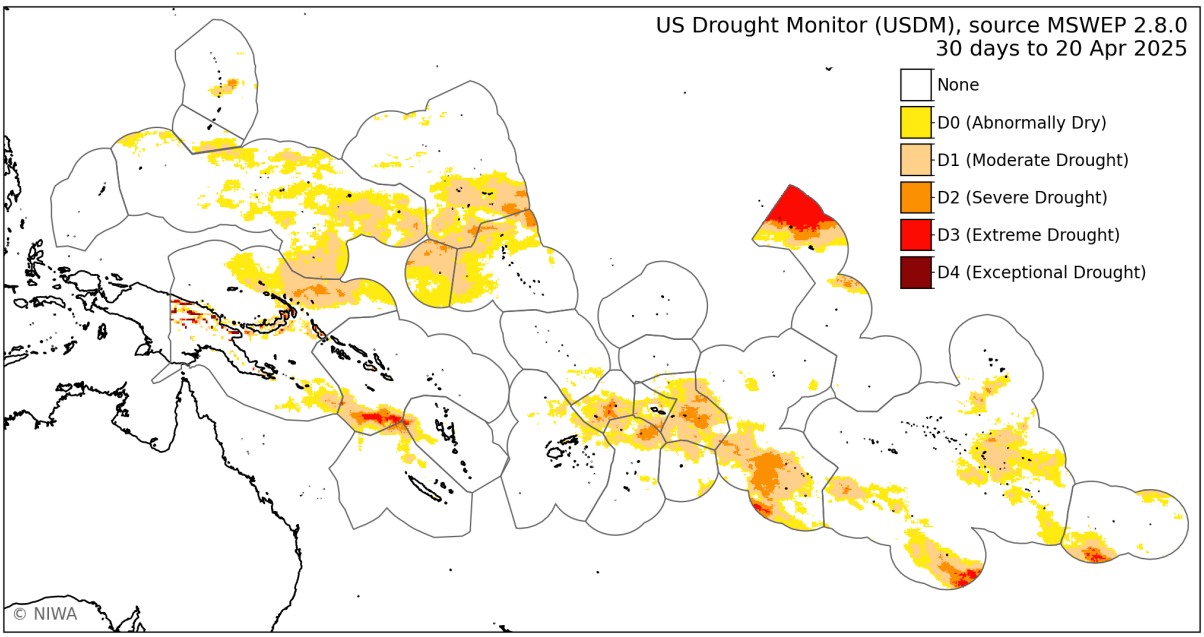
USDM Regional situation summary (20 April 2025)

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 20 April (top plot), extreme or exceptional drought occurred in northern PNG, northern Solomon Islands, Kiribati (northern Line Islands), parts of Tuvalu, Tokelau, northern American Samoa, northern Cook Islands and isolated parts of the southern Cook Islands, parts of the Austral Islands, and Tuamotu Archipelago.

During the 30 days ending 20 April (bottom plot), extreme or exceptional drought occurred in isolated parts of northern PNG and Kiribati (northern Line Islands).





Island Climate Update

Water Stress Outlook

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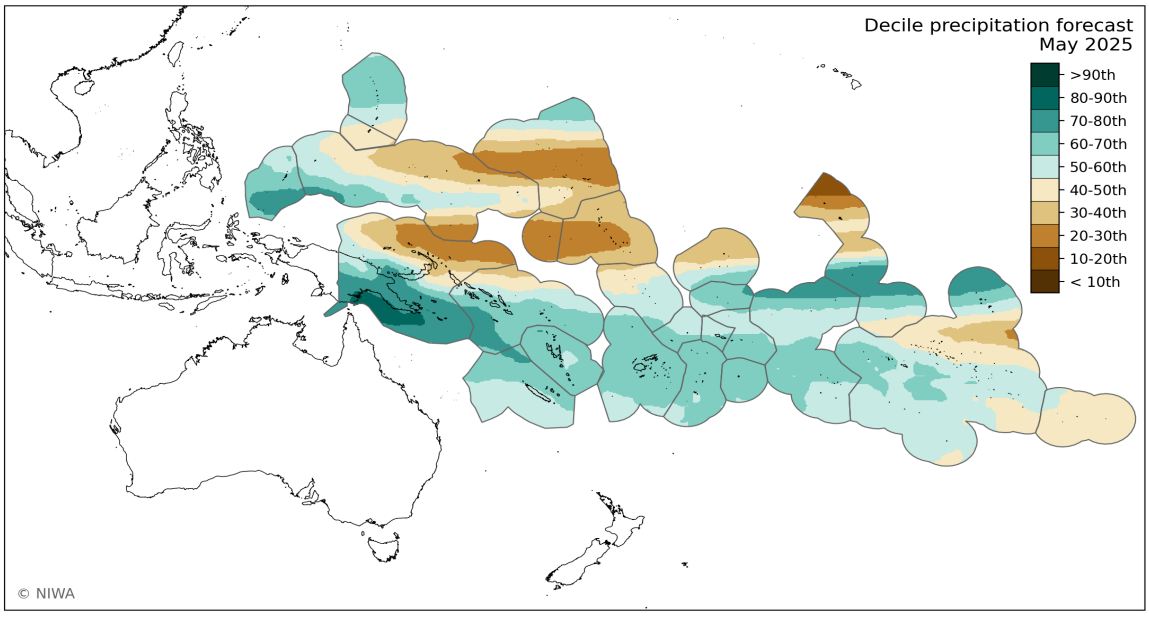
May 2025 forecast & probabilities of rainfall < 25th percentile

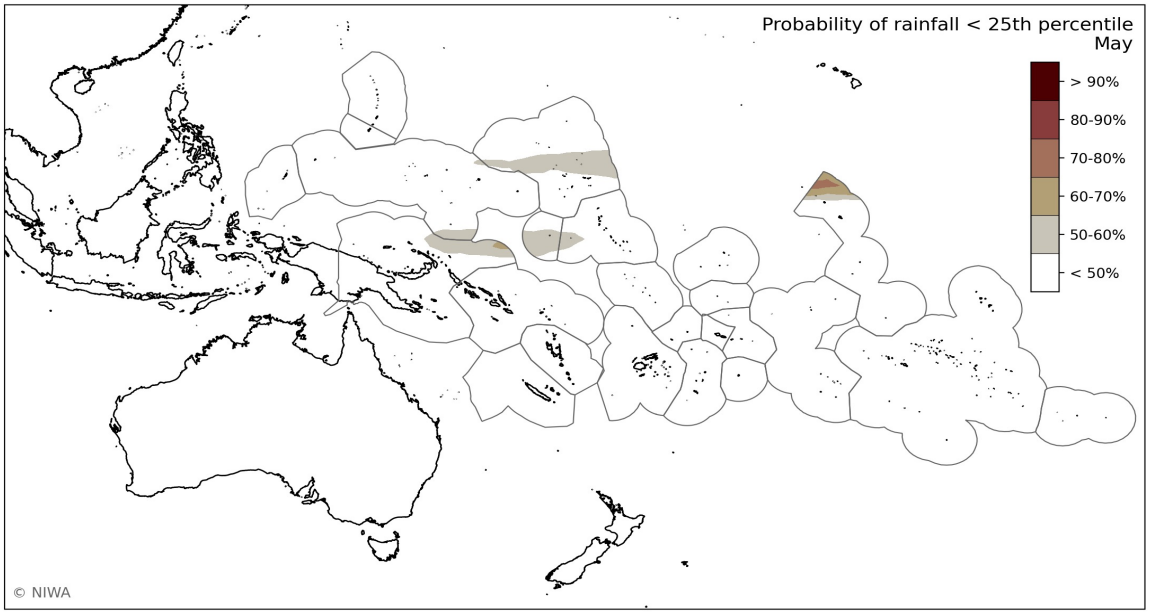
During May, significantly below normal rainfall is favoured in northern and southern FSM, the Marshall Islands, northern PNG, Nauru, and Kiribati (Gilbert, Phoenix, and northern Line Islands).

Significantly above normal rainfall is favoured in Palau, parts of western FSM, southern PNG, southern Solomon Islands, Vanuatu, parts of New Caledonia, Fiji, Tonga, Niue, Wallis and Futuna, Samoa, American Samoa, Tokelau, parts of the northern and southern Cook Islands, Kiribati (central Line Islands), Society Islands, and Marquesas.

All other island groups are expected to see near normal rainfall amounts during May.

For May, the highest chances for very dry conditions are located across the central Marshall Islands, Nauru, and Kiribati (western Gilbert Islands and northern Line Islands).





Island Climate Update

Water Stress Outlook

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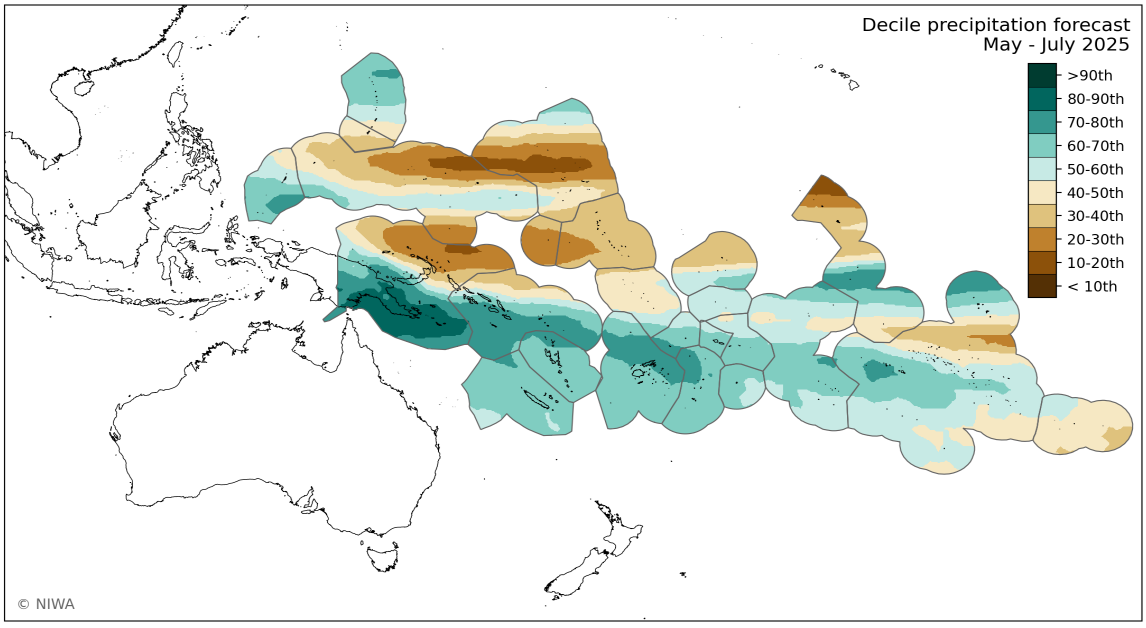
May-July 2025 forecast & probabilities of rainfall < 25th percentile

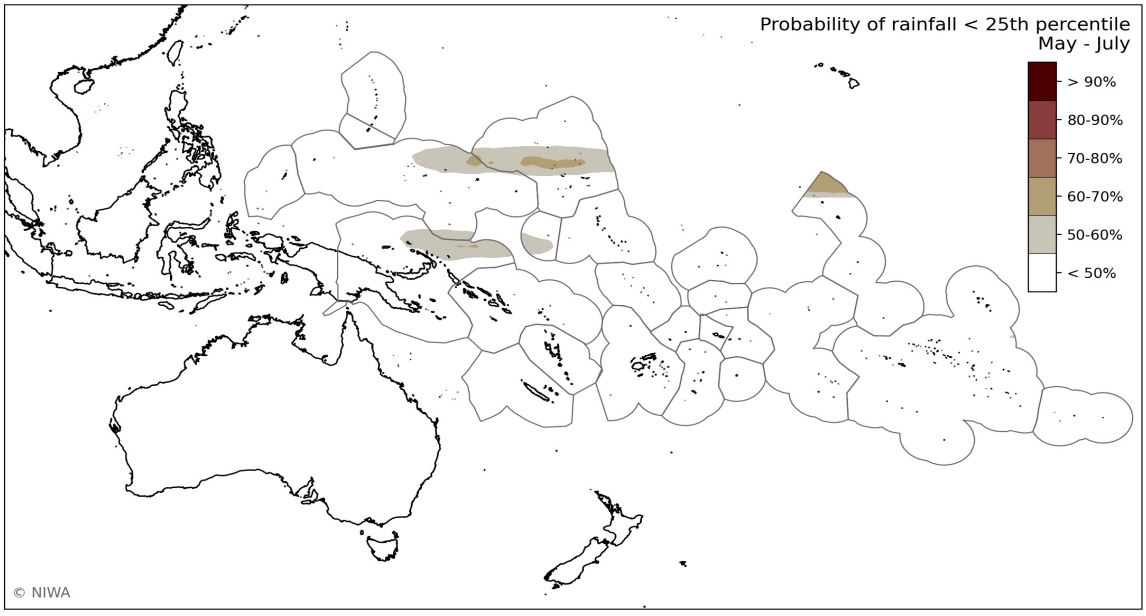
During May-July, significantly below normal rainfall is favoured in northern and southern FSM, the Marshall Islands, northern PNG, Nauru, and Kiribati (Gilbert, northern Phoenix, and northern Line Islands).

Significantly above normal rainfall is favoured in southern Palau and parts of the Northern Marianas, southern PNG, southern Solomon Islands, New Caledonia, Vanuatu, Fiji, Wallis and Futuna, Samoa, American Samoa, Tonga, Niue, parts of the southern Cook Islands, Society Islands, parts of the Tuamotu Archipelago, and northern Marquesas.

All other island groups are expected to see near normal rainfall amounts during May-July.

For May-July, the highest chances for very dry conditions are located across parts of northern FSM and central Marshall Islands, far northern PNG, and Kiribati (northern Line Islands).





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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	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. 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%. The bottom plots bring together conditions over the past 3 months and forecast conditions over the next month: • 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. 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).
Online Resources	**Additional regional and country-level resources are available online**: • 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].

WMO

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.

Development and production of the ICU is supported by NIWA Strategic Science Investment Funding under contract PRAS2401.

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