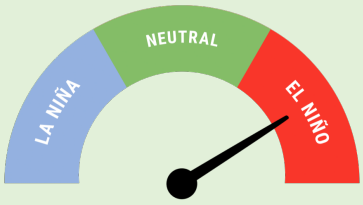
Island Climate Update

Earth Sciences New Zealand

ENSO Watch
October 2026

Recent



El Niño

El Niño continues to strengthen in the tropical Pacific Ocean, and this may become the strongest El Niño on record.

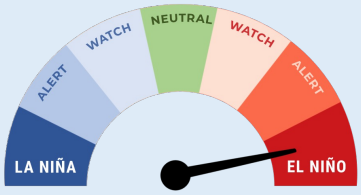
The Southern Oscillation Index (SOI) was in strong El Niño range (-2.4) from June-August 2026.

Tropical Pacific Ocean sea surface temperatures (SSTs) are in strong El Niño range and continue to strengthen.

Forecast

100% chance for **El Niño** to continue during **October-December 2026**

Chance for **El Niño** conditions during **November 2026-January 2027** **100%**



El Niño

ENSO situation summary

The current strong El Niño continues to strengthen in the tropical Pacific Ocean. There is a 100% chance that El Niño will continue during October-December, and a 100% chance that El Niño will continue through early 2027. This El Niño may become the strongest El Niño on record.

As of 14 September 2026, the 30-day NINO3.4 Index (in the central equatorial Pacific) was 2.74˚C, in strong El Niño range. The 30-day relative Niño 3.4 Index (RONI) was 1.95˚C, on the cusp of strong El Niño range and reflective of the central equatorial Pacific being warmer than the average of the global tropics.

The Southern Oscillation Index (SOI) was in strong El Niño range during June-August 2026 (-2.4), while the August value was -1.2.

Subsurface ocean temperatures in the equatorial Pacific continue to be well above average in the eastern part of the basin, and upper-ocean heat content anomalies are well above average in the tropical eastern Pacific.

Extremely warm water is located in the eastern equatorial Pacific from the surface to depths of about 150 metres, where temperature anomalies of 6-8°C are widespread, and reach 9°C in some places. This indicates that a strong El Niño is now occurring, and further strengthening to record levels is possible in the coming months.

During October-December, model guidance favours above normal or well above normal rainfall for many island groups along the equator. This may result in enhanced rainfall for island groups such as Naoero, Kiribati, Tuvalu, Tokelau, the northern Cook Islands, and the Marquesas.

Conversely, much drier than normal conditions are likely to occur for many island groups in the Pacific, including most of Micronesia and those along a line from Papua New Guinea east to the Pitcairn Islands. Most of these island groups will also have a high chance to be extremely dry during October-December (i.e. seasonal rainfall is expected to be below the 25th percentile). See pages 6-7 for more information.

Island Climate Update

Rainfall Watch

Earth Sciences New Zealand

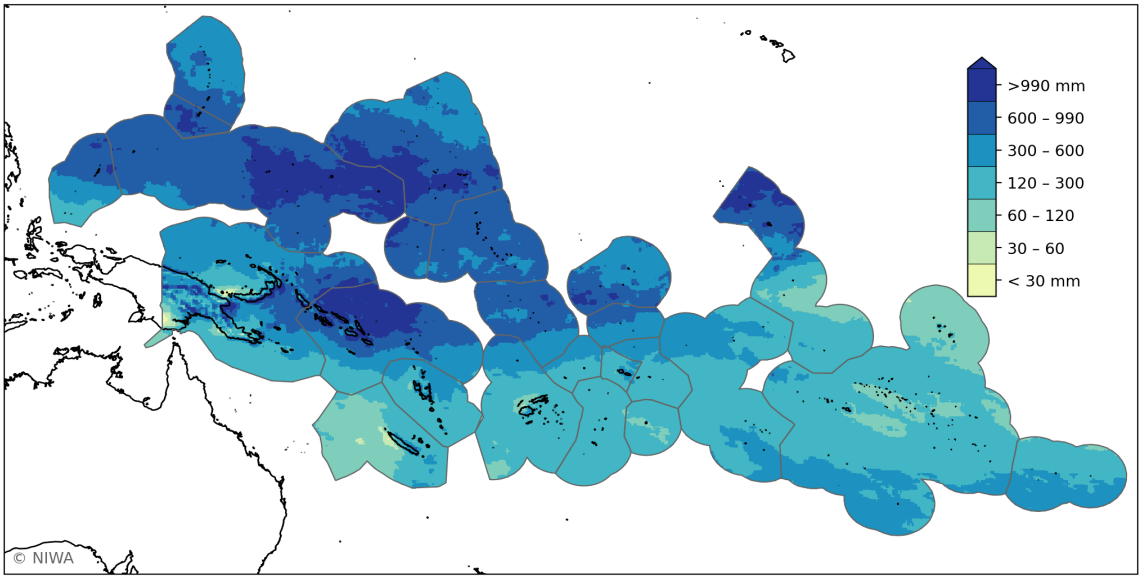
Regional situation summary (13 September 2026)

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

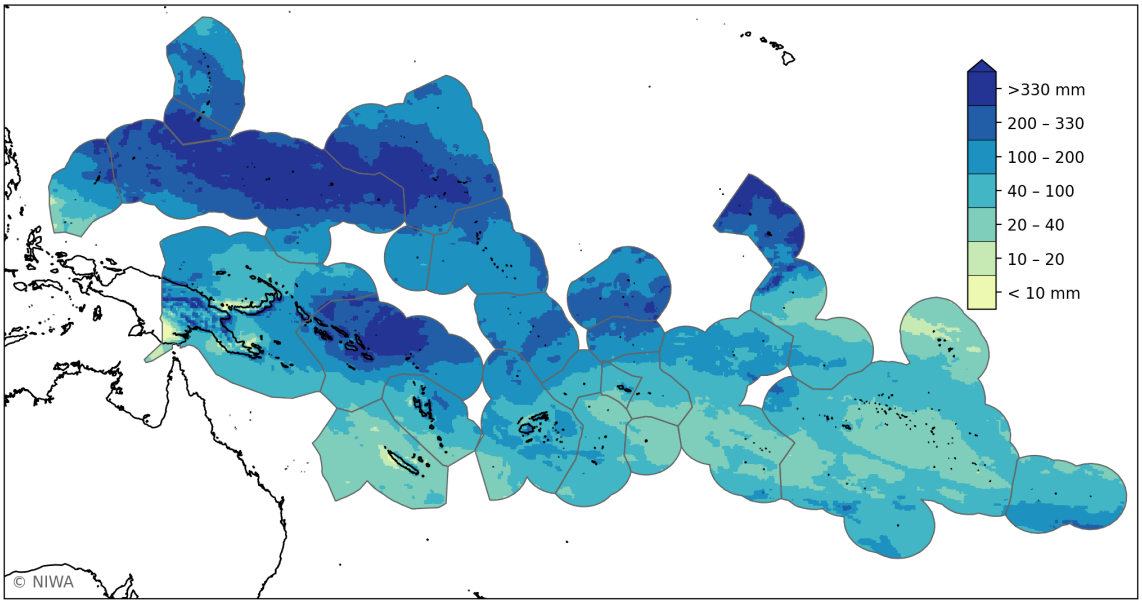
During the 90 days ending 13 September (top plot), over 990 mm of rain fell across the eastern Federated States of Micronesia (FSM), western Marshall Islands, northern Solomon Islands, and far northern Line Islands. Less than 60 mm of rain was observed in small portions of Papua New Guinea (PNG).

During the 30 days ending 13 September (bottom plot), over 330 mm of rain fell across Guam, central and eastern FSM, western Marshall Islands, parts of the Solomon Islands, and far northern Line Islands. Less than 40 mm of rain fell in southern Palau, parts of Papua New Guinea (PNG), New Caledonia, southern Vanuatu, northern Tonga, Niue, southern Cook Islands, and parts of the Austral Islands, Tuamotu Archipelago, and Marquesas.

Cumulative rainfall (mm), source: MSWEP 2.8.0
90 days to 13 Sep 2026



Cumulative rainfall (mm), source: MSWEP 2.8.0
30 days to 13 Sep 2026

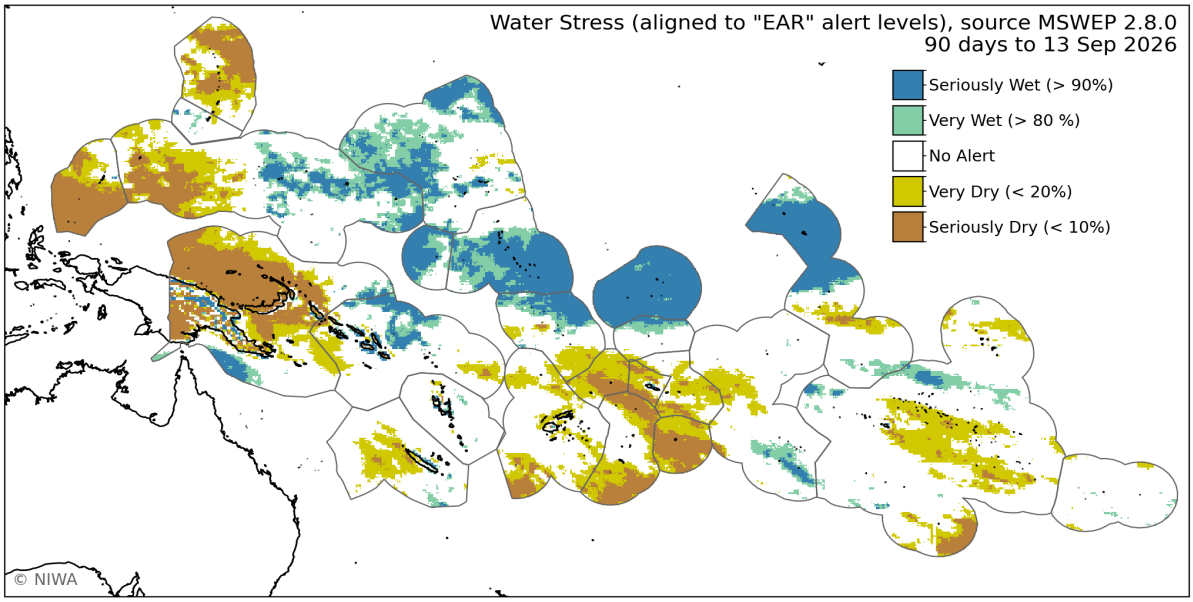


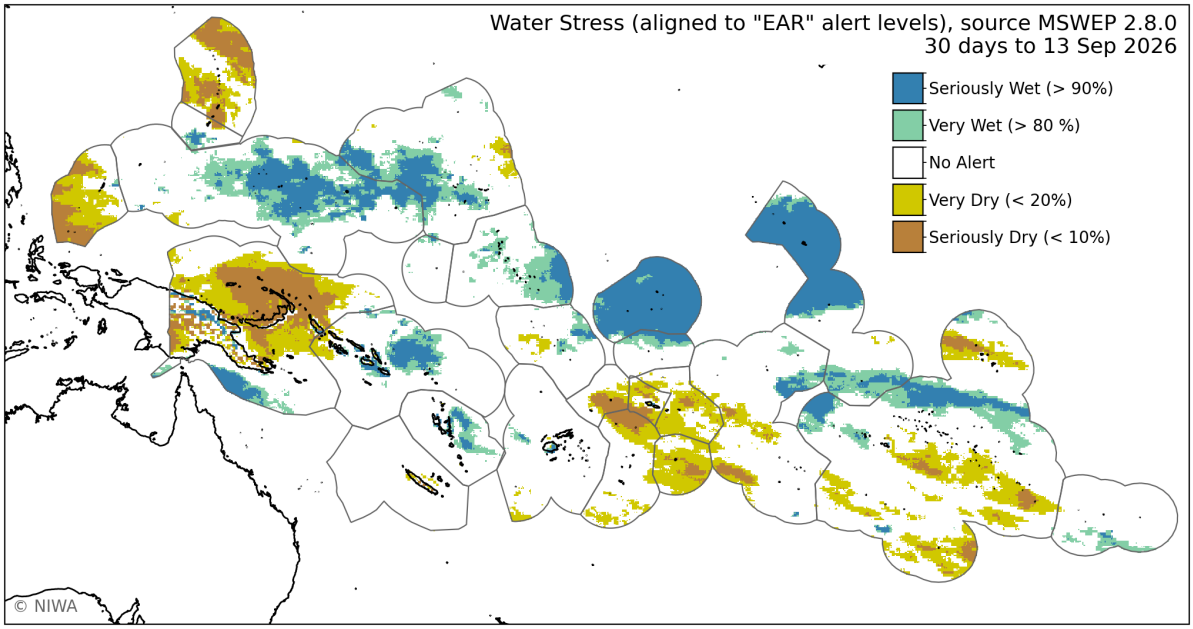
EAR regional situation summary (13 September 2026)

Cumulative rainfall categories 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 13 September (top plot), seriously dry or very dry conditions affected the Northern Marianas, Palau, western FSM, much of PNG, parts of New Caledonia, Fiji and Tonga, Niue, Wallis and Futuna, southern Tuvalu, parts of Samoa and American Samoa, and parts of the Tuamotu Archipelago.

During the 30 days ending 13 September (bottom plot), seriously dry or very dry conditions affected southern Palau, Northern Mariana Islands, much of PNG, northern Tonga, Niue, parts of Wallis and Futuna, Samoa and American Samoa, as well as parts of the Austral Islands, Tuamotu Archipelago, and Marquesas.





Island Climate Update

Water Stress Watch

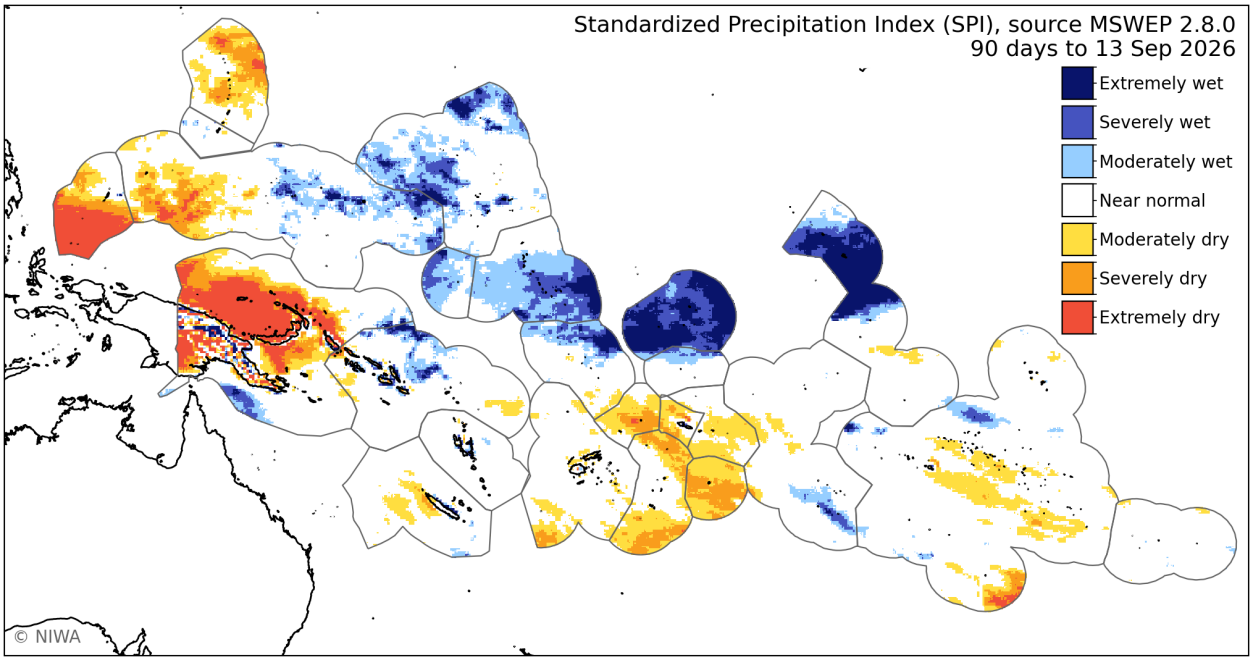
Earth Sciences New Zealand

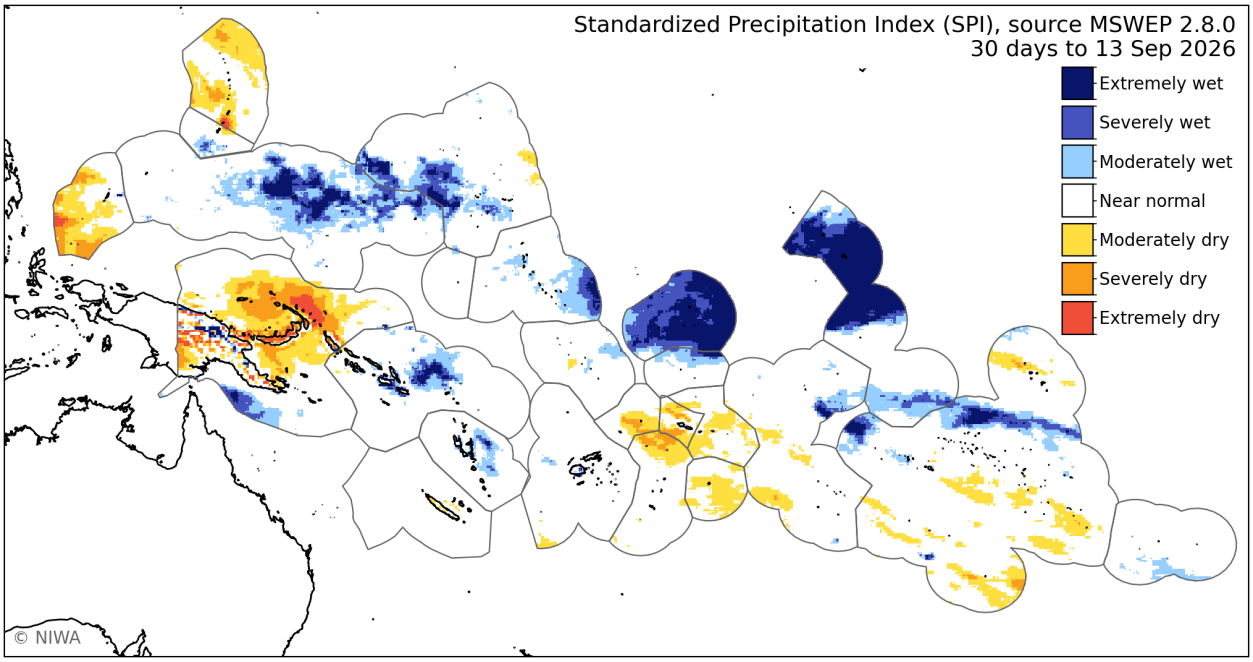
SPI Regional situation summary (13 September 2026)

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

During the 90 days ending 13 September (top plot), extremely dry or severely dry conditions occurred in southern Palau, western FSM, much of PNG, northern Tonga, Niue, and parts of Wallis and Futuna.

During the 30 days ending 13 September (bottom plot), extremely dry or severely dry conditions occurred in far southern Palau, Northern Mariana Islands, much of PNG, and parts of northern Tonga and Wallis and Futuna.



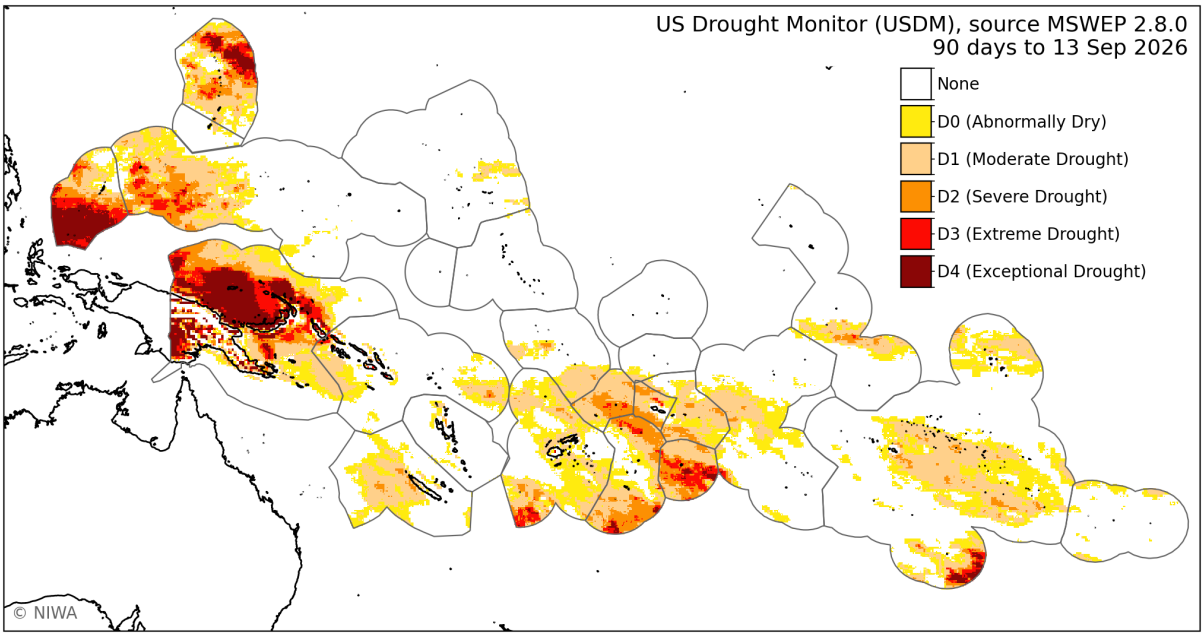


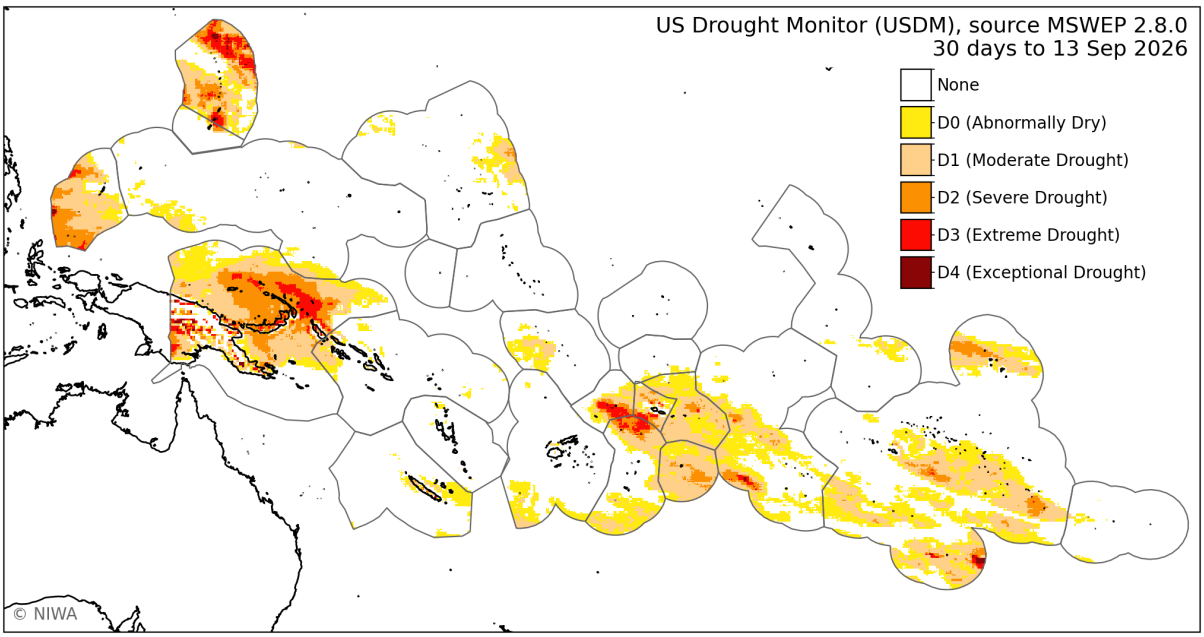
USDM Regional situation summary (13 September 2026)

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

During the 90 days ending 13 September (top plot), extreme or exceptional drought occurred in southern Palau, western FSM, much of PNG, northern Tonga, and Niue.

During the 30 days ending 13 September (bottom plot), extreme or exceptional drought occurred in the Northern Marianas, much of PNG, northern Tonga, and parts of Wallis and Futuna.





Island Climate Update

Water Stress Outlook

Earth Sciences New Zealand

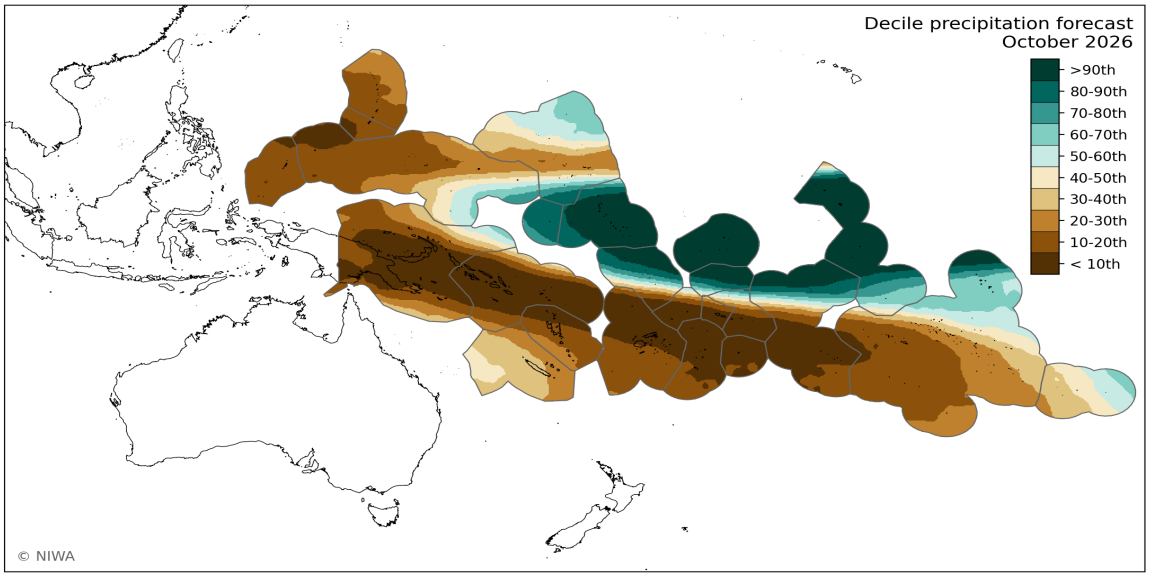
October 2026 forecast & probabilities of rainfall < 25th percentile

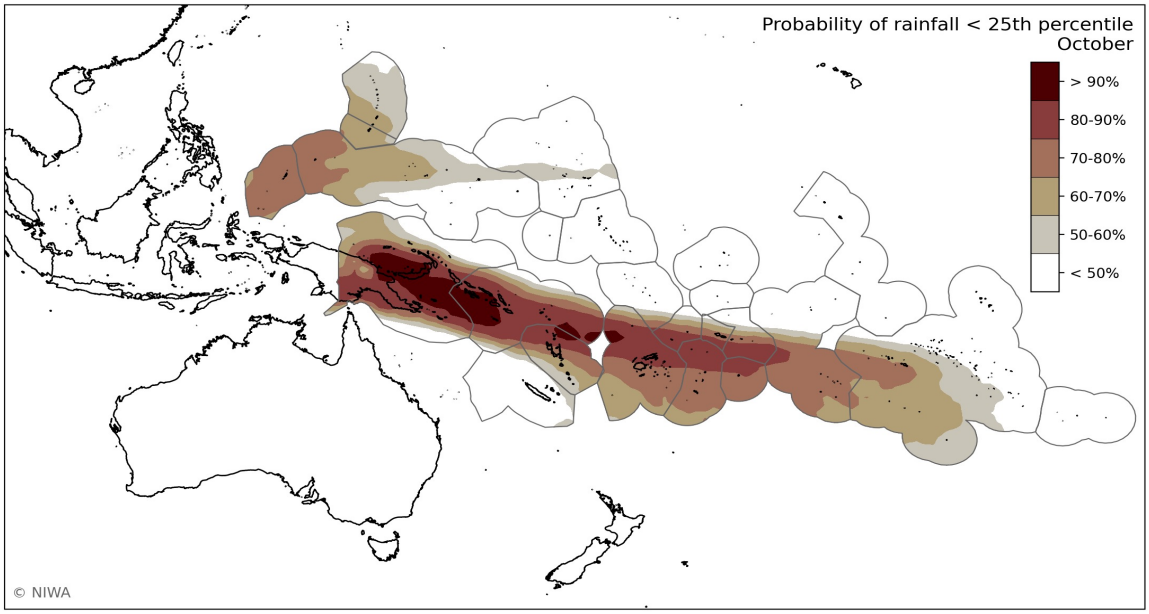
During October, significantly below normal rainfall is favoured in Palau, Guam, the Northern Marianas, most of FSM, parts of the Marshall Islands, PNG, the Solomon Islands, New Caledonia, Vanuatu, Fiji, Tonga, Niue, southern Tuvalu, Wallis and Futuna, Samoa, American Samoa, southern Cook Islands, Austral Islands, Society Islands, and the Tuamotu Archipelago.

Significantly above normal rainfall is favoured in Naoero, Kiribati (Gilbert, Phoenix, and Line Islands), northern Tuvalu, Tokelau, northern Cook Islands, and Marquesas.

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

During October, the highest chances for very dry conditions are located in Palau, Guam, the Northern Marianas, western and central FSM, central Marshall Islands, PNG, the Solomon Islands, Vanuatu, Fiji, Tonga, Niue, southern Tuvalu, Wallis and Futuna, Samoa, American Samoa, southern Cook Islands, Austral Islands, Society Islands, and a portion of the Tuamotu Archipelago.





Island Climate Update

Water Stress Outlook

Earth Sciences New Zealand

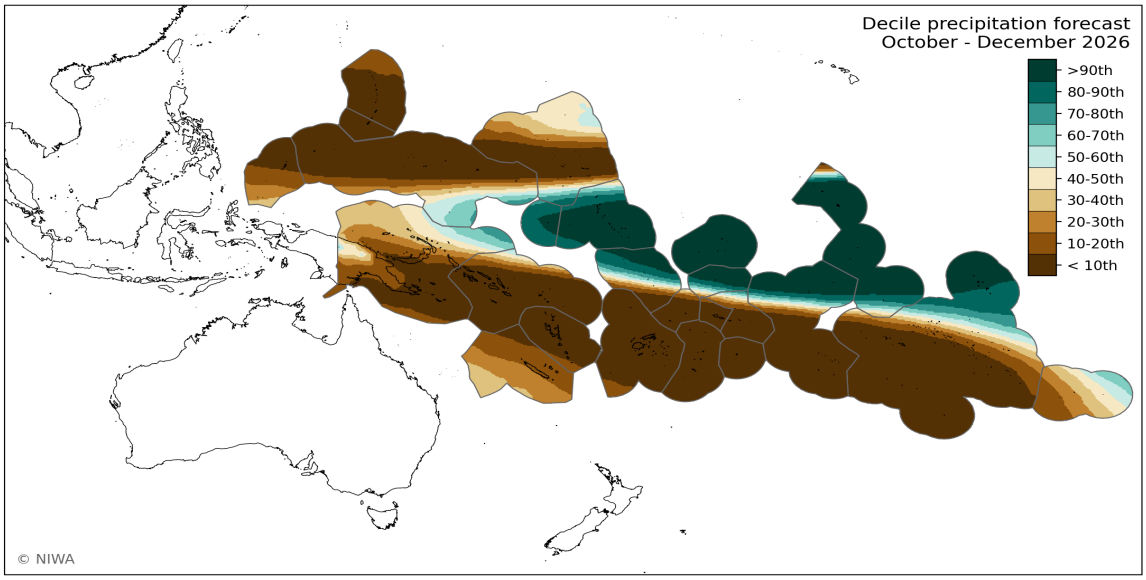
Oct-Dec 2026 forecast & probabilities of rainfall < 25th percentile

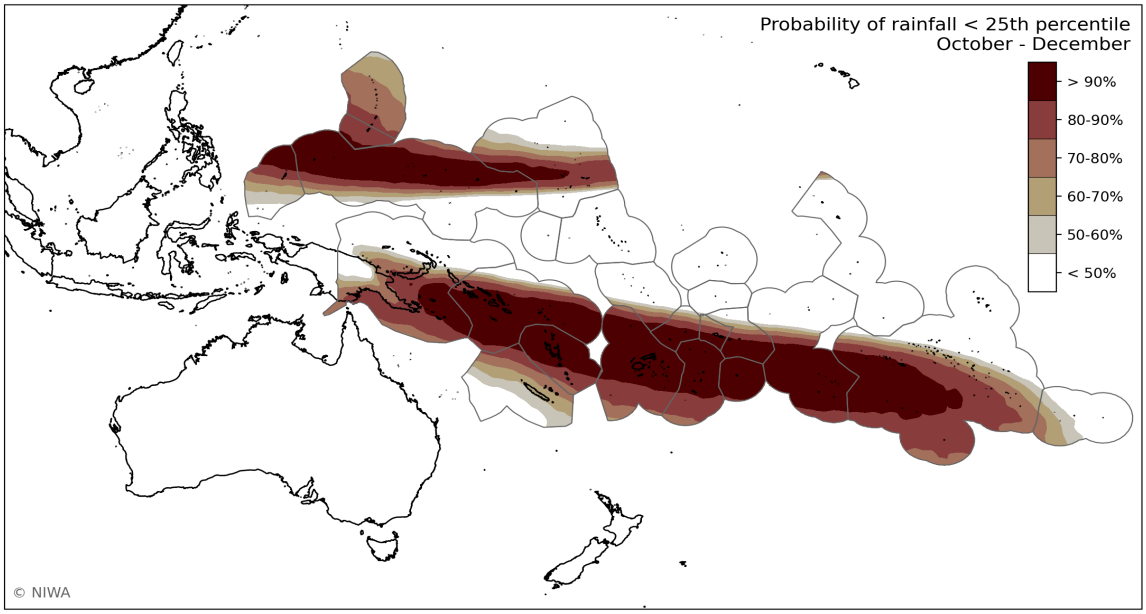
During October-December, significantly below normal rainfall is favoured in Palau, Guam, the Northern Marianas, most of FSM and the Marshall Islands, PNG, Solomon Islands, New Caledonia, Vanuatu, Fiji, southern Tuvalu, Wallis and Futuna, Tonga, Niue, Samoa, American Samoa, southern Cook Islands, Austral Islands, Society Islands, the Tuamotu Archipelago, and Pitcairn Islands.

Significantly above normal rainfall is favoured in Naoero, Kiribati (Gilbert, Phoenix, and Line Islands), northern Tuvalu, Tokelau, northern Cook Islands, and Marquesas.

All other island groups are expected to see near normal rainfall amounts during October-December.

During October-December, the highest chances for very dry conditions are located in Palau, Guam, the Northern Marianas, much of FSM and the Marshall Islands, PNG, Solomon Islands, New Caledonia, Vanuatu, Fiji, southern Tuvalu, Wallis and Futuna, Tonga, Niue, Samoa, American Samoa, southern Cook Islands, Austral Islands, Society Islands, and much of the Tuamotu Archipelago.





Island Climate Update

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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 ten 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 realtime rainfall data and a multi-model ensemble forecast derived from ten 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 into 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 forecast data [forecast].

WMO

Earth Sciences New Zealand 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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The Island Climate Update bulletin and associated video and products are prepared before the end of each month. Delays in data availability occasionally arise. While every effort is made to verify the data, Earth Sciences New Zealand does not guarantee the accuracy and reliability of the analysis and forecast information presented and accepts no liability for any losses incurred through the use of this bulletin and its contents.

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