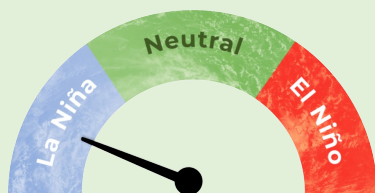


# Island Climate Update



**ENSO Watch**  
April 2022

**Recent**



**La Niña**

La Niña conditions strengthened slightly in the equatorial Pacific during March.

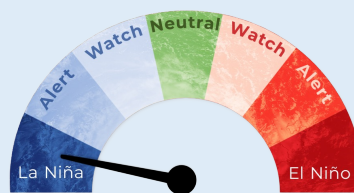
Sea surface temperatures (SSTs) were near the La Niña threshold in the central equatorial Pacific during March, on  $-0.79^{\circ}\text{C}$ .

The Southern Oscillation Index (SOI) was  $+1.4$  during March, in the La Niña range.

**65%** chance for **La Niña** conditions during April – June 2022.

Chance for **ENSO neutral** conditions during July - September 2022.

**50%**



**La Niña Event**

**Forecast**

## ENSO situation summary

The NINO3.4 Index anomaly over the last month (to 3 April) was  $-0.79^{\circ}\text{C}$ , near the La Niña threshold. The March monthly Southern Oscillation Index (SOI) was  $+1.4$ , in the La Niña range.

Upper-oceanic heat content decreased in the western and central Pacific during March, temporarily halting the transition toward ENSO neutral. The eastern Pacific had slightly above normal oceanic heat content. The overall signature was reflective of a central Pacific La Niña.

In the subsurface equatorial Pacific, the warm pool that was present during February surfaced in the east during March. Cooler subsurface waters redeveloped in central and western areas, which will allow a La Niña-like SST pattern to persist for at least part of the upcoming three months.

La Niña conditions are forecast to continue during April-June (65% chance). Between July-September, there is a 50% chance for ENSO neutral conditions. During October-December, ENSO neutral and La Niña are about equally likely.

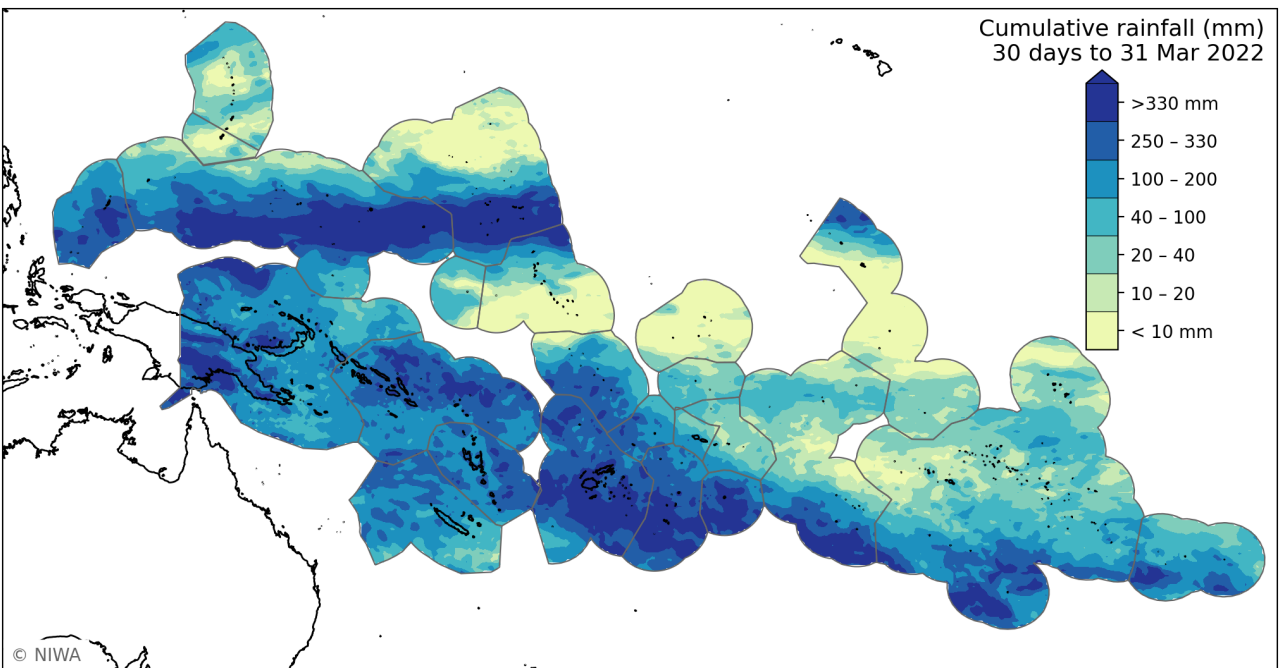
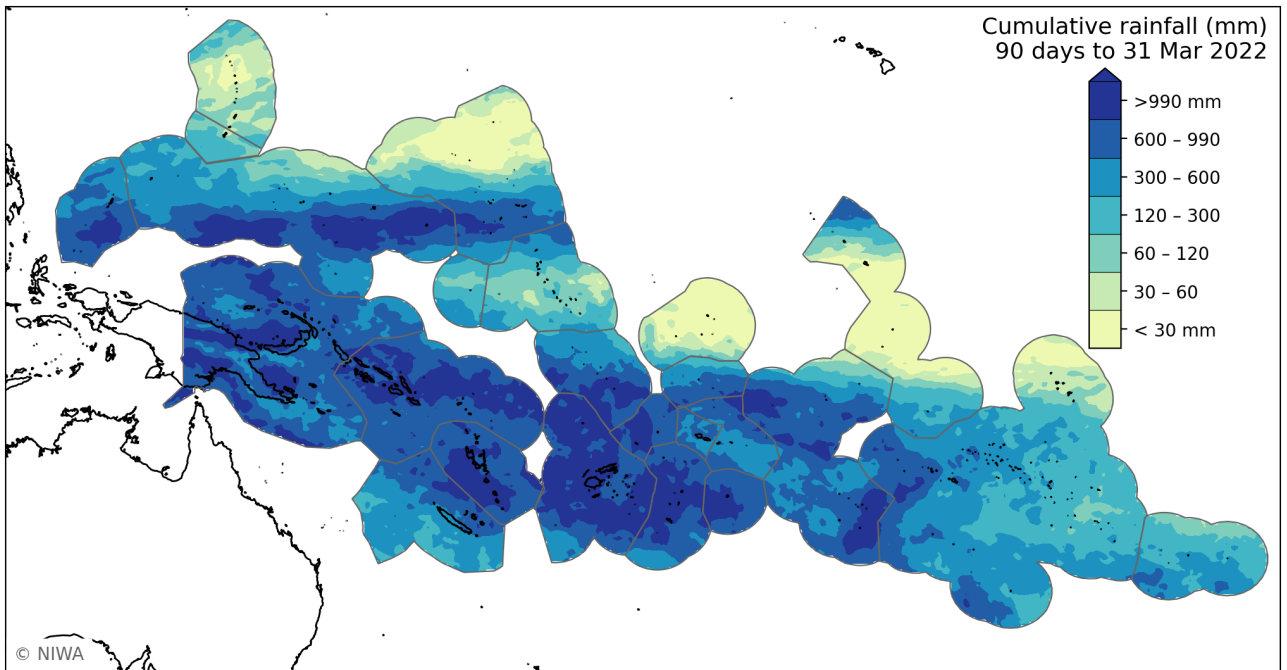
Tropical Cyclone Fili, the 7<sup>th</sup> tropical cyclone of the Southwest Pacific tropical cyclone season, will pass west of New Caledonia on Thursday. There is some risk for additional cyclone development during the month, particularly in the western part of the basin near Vanuatu, New Caledonia, and between the Coral Sea and Queensland.

### Regional situation summary (31 March 2022)

Rainfall estimates for the last month and three months are shown below. La Niña-like rainfall patterns continued in the Pacific, with less rainfall near the equator and more rainfall toward the sub-tropics.

During March (bottom plot), particularly heavy rainfall totals (> 300 mm) fell in parts of Palau, FSM, southern Marshall Islands, Fiji, Tonga, and Niue. Less than 20 mm of rainfall was observed in parts of the Northern Marianas, Guam, northern Marshall Islands, and Kiribati.

During January-March (top plot), less than 60 mm of rainfall was observed in parts of the Northern Marianas, northern Marshall Islands, and the Phoenix and Line Islands of Kiribati.

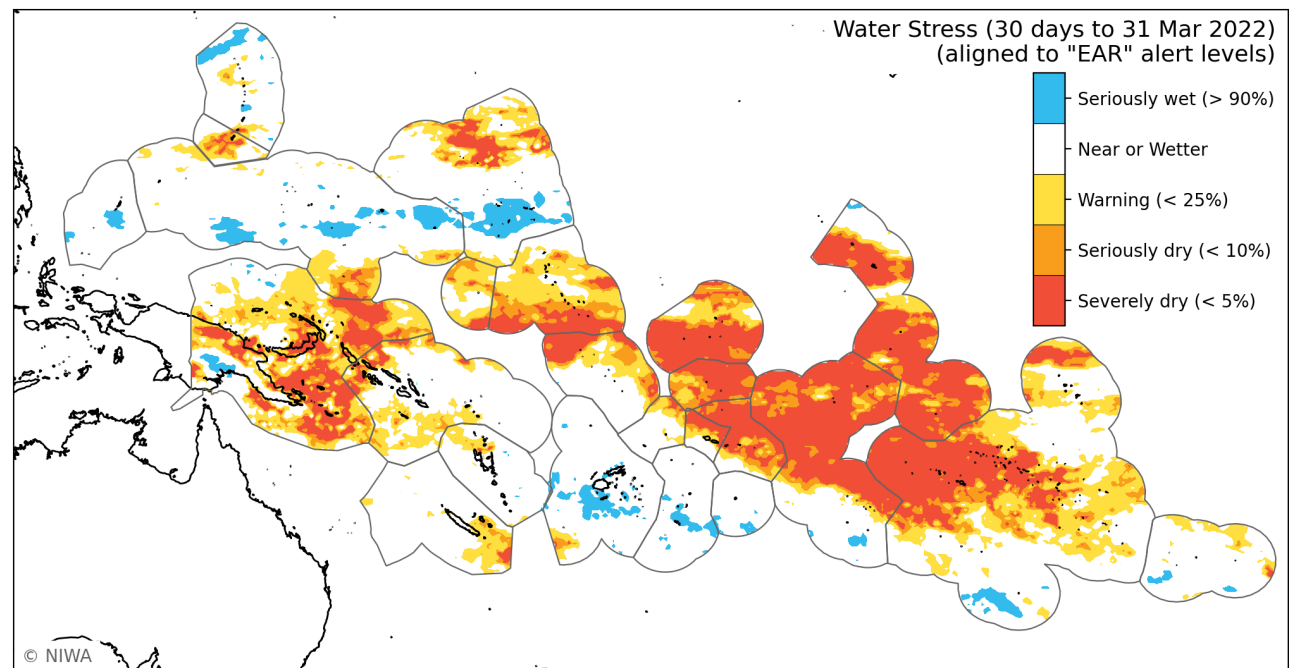
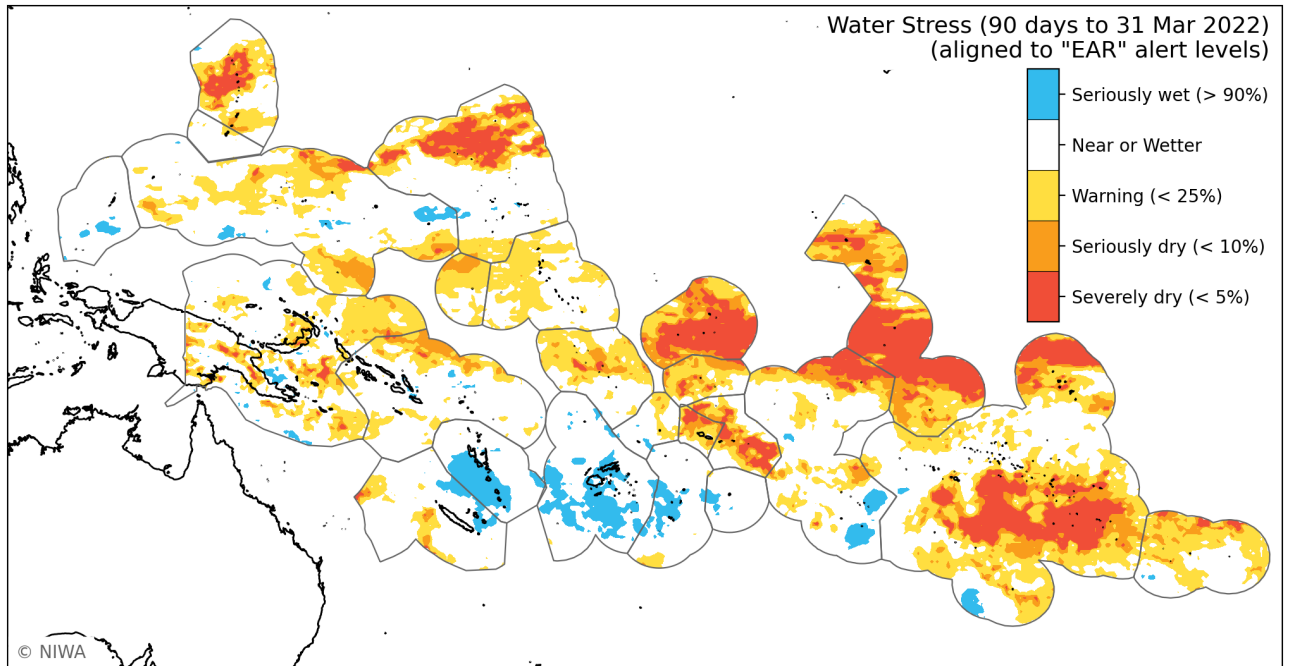


### EAR regional situation summary (31 March 2022)

The regional thresholds for cumulative rainfall over the last 90 and 30 days are shown in the plots below.

During March (bottom plot), severely (<5<sup>th</sup> percentile) and seriously dry (<10<sup>th</sup> percentile) conditions were observed in Guam, northern Marshall Islands, parts of PNG, Kiribati, Tokelau, American Samoa, Society Islands, and the Tuamotu Archipelago.

During January-March (top plot), severely or seriously dry conditions affected parts of the Northern Marianas, the northern Marshall Islands, parts of PNG, Tuvalu, Kiribati (Phoenix and Line Islands), Tokelau, American Samoa, Northern Cook Islands, and French Polynesia.



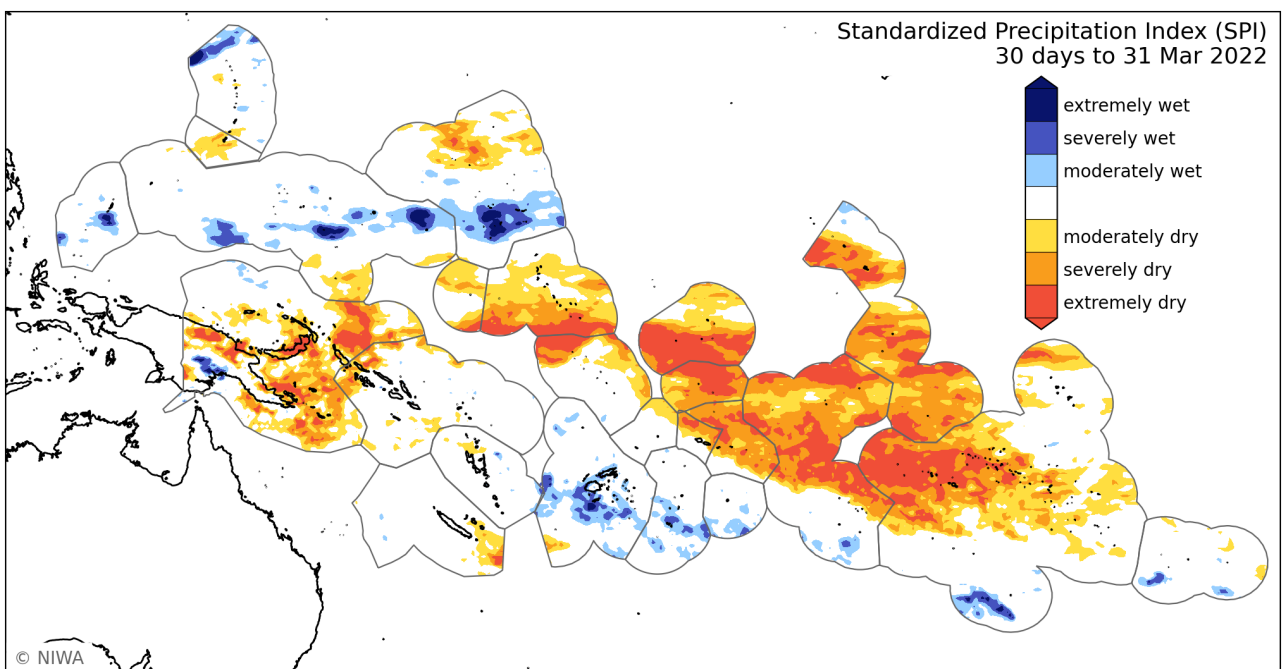
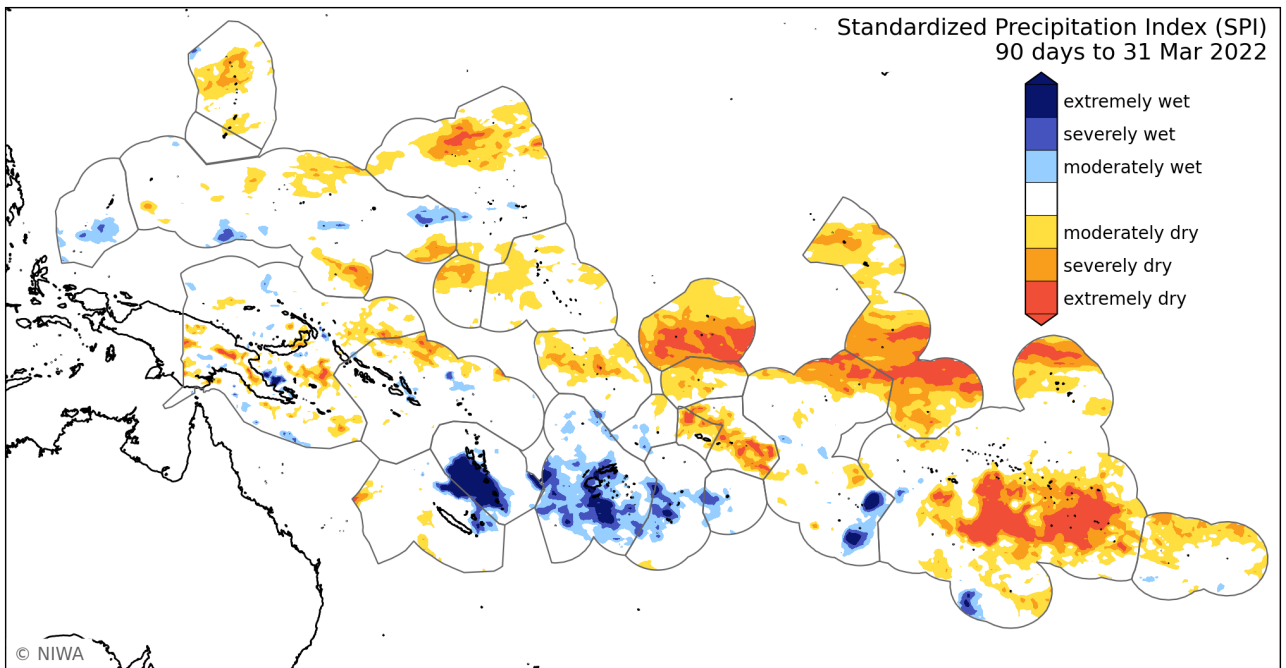


### SPI Regional situation summary (31 March 2022)

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

During March (bottom plot), extremely or severely dry conditions were observed in parts of the Northern Marianas, parts of PNG, Kiribati, Tokelau, American Samoa, and the Tuamotu Archipelago.

During January-March (top plot), the driest conditions were found in the northern Marshall Islands, Kiribati (Phoenix and Line Islands), American Samoa, and the Tuamotu Archipelago.

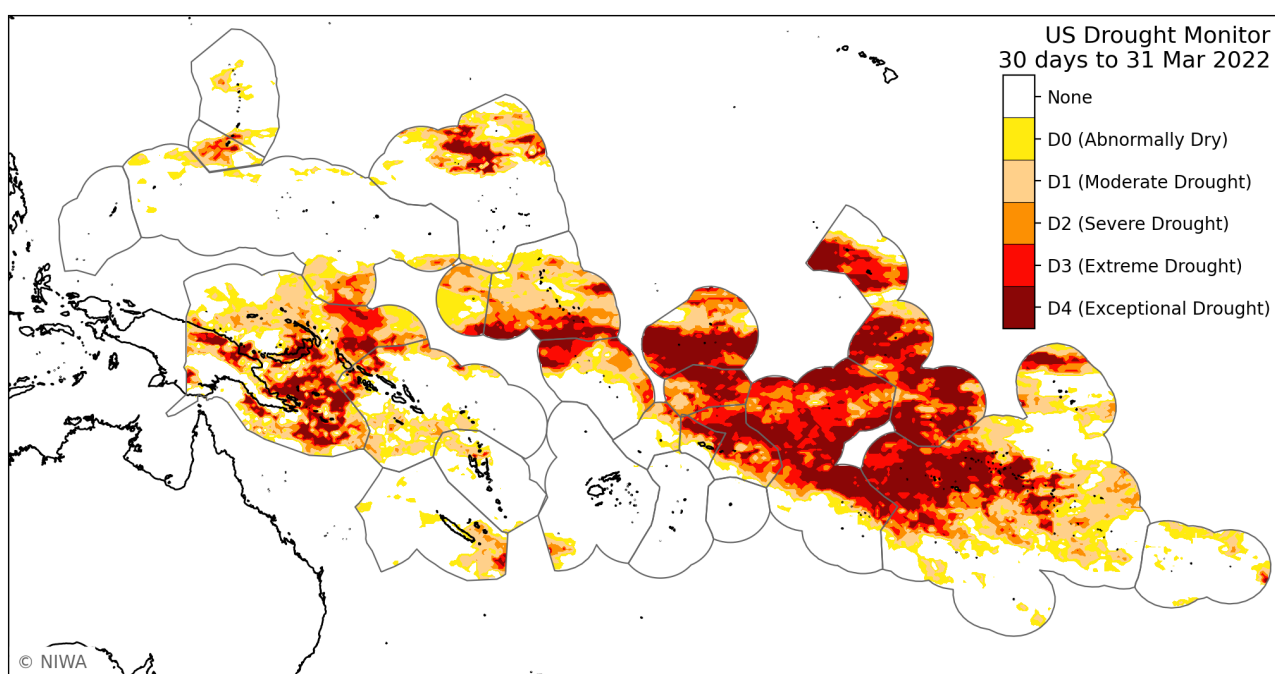
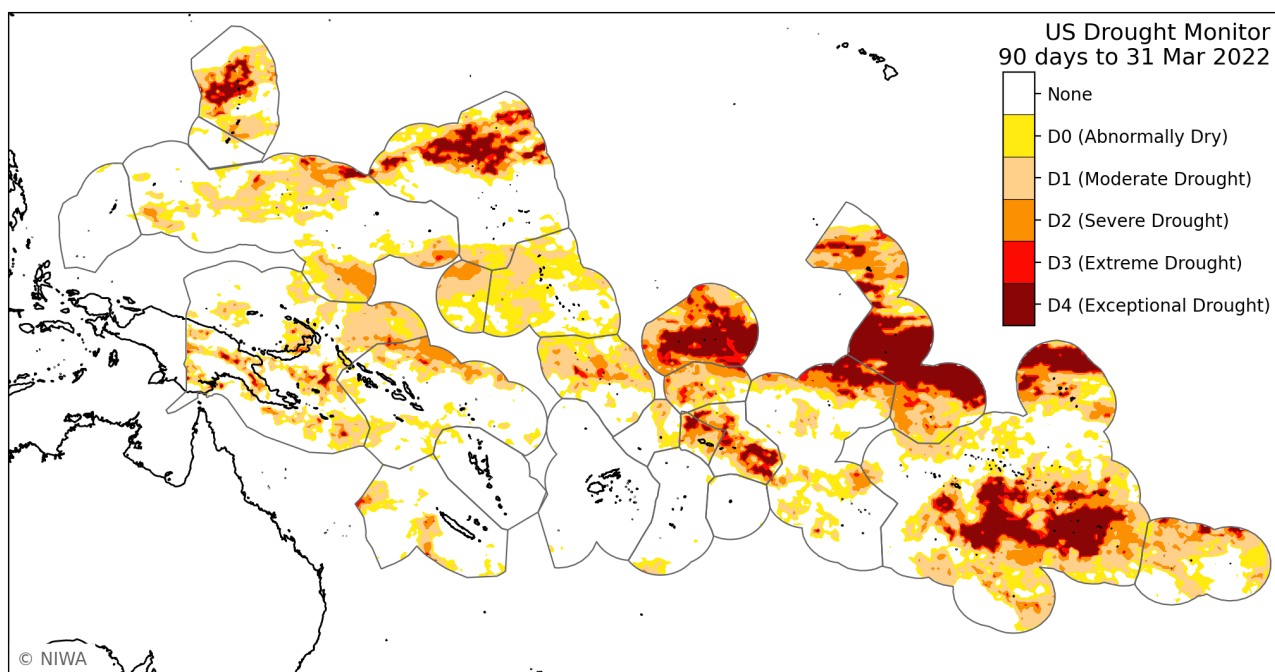


### USDM Regional situation summary (31 March 2022)

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

During March (bottom plot), extreme or exceptional drought was observed near Guam, northern Marshall Islands, PNG, Kiribati, Tuvalu, Tokelau, American Samoa, Northern Cook Islands, and French Polynesia.

During January-March (top plot), dryness was most pronounced for Northern Marianas, northern Marshall Islands, Tuvalu, Kiribati (Phoenix and Line Islands), Tokelau, American Samoa, and French Polynesia.

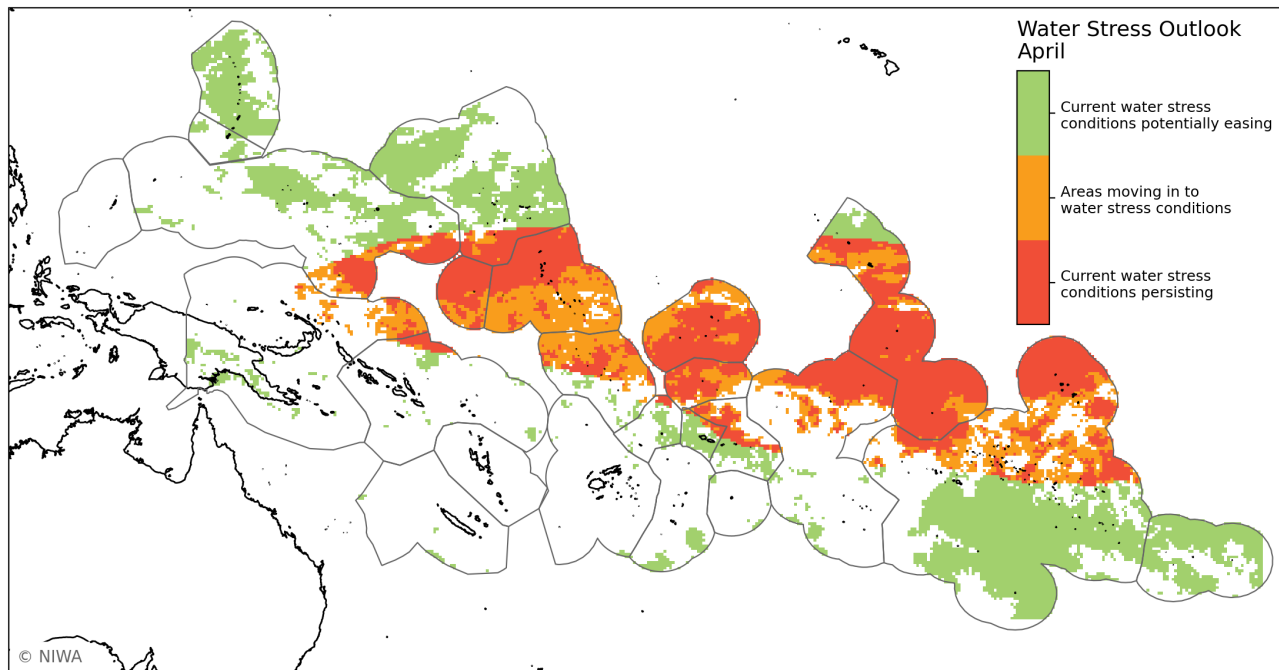
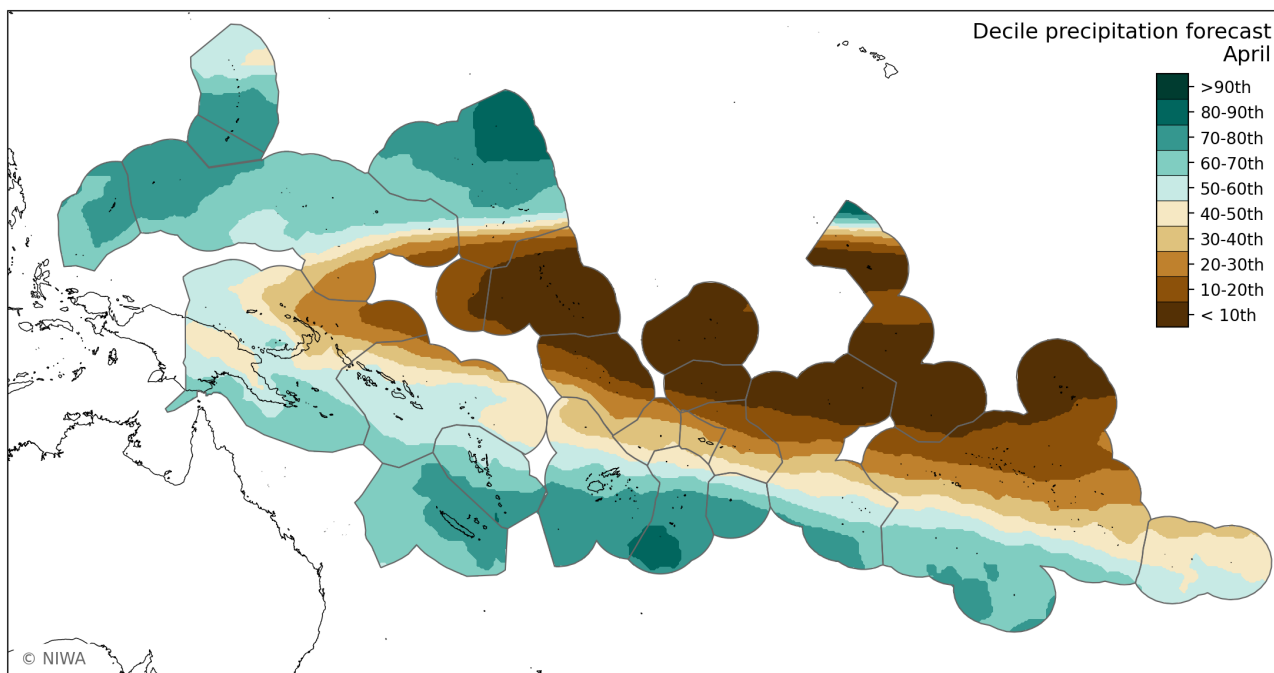


### April 2022 forecast summary

During April, drier than normal conditions are likely to occur along and extending southeastward of the equator, consistent with the continuation of La Niña conditions.

The island groups most likely to experience drier than normal conditions include eastern PNG, Nauru, Kiribati, Tuvalu, Tokelau, Samoa, American Samoa, Northern Cook Islands, Marquesas, Society Islands, and the Tuamotu Archipelago. Water stress may continue for Nauru, parts of Kiribati, Tuvalu, Tokelau, parts of the Northern Cook Islands, and northern parts of French Polynesia.

Wetter than normal conditions are most likely for island groups north of the equator in the western Pacific and most island groups extending southeastward of PNG.





# Island Climate Update

## Water Stress Outlook

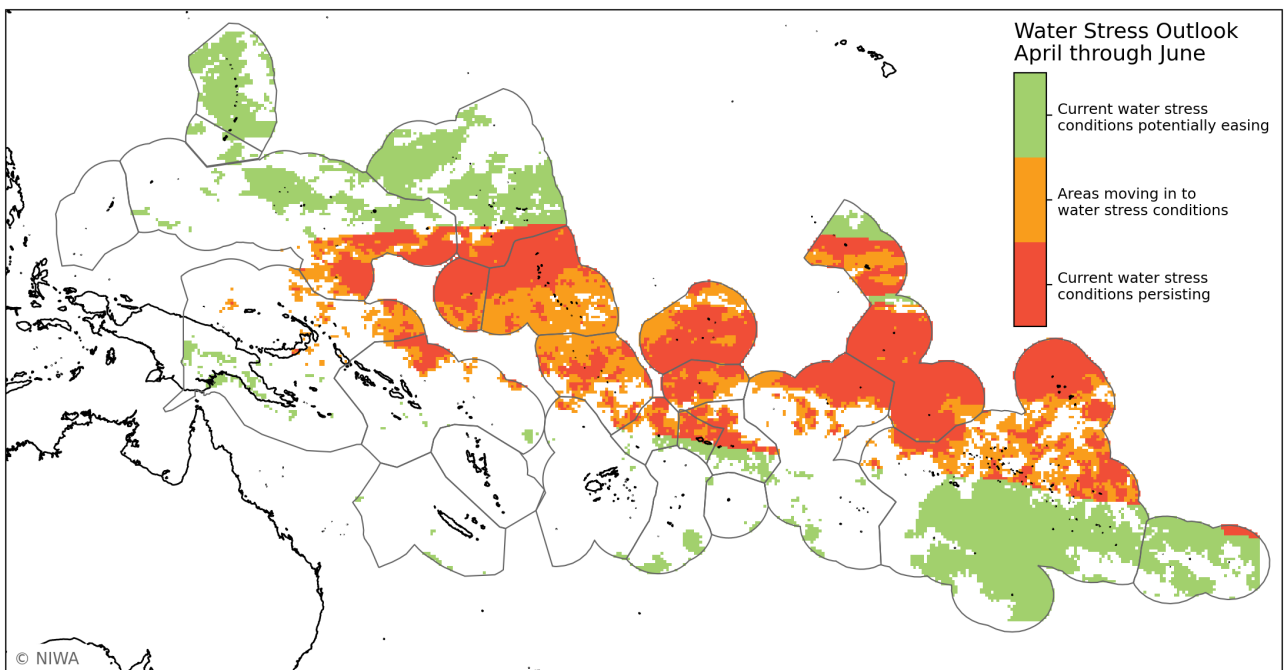
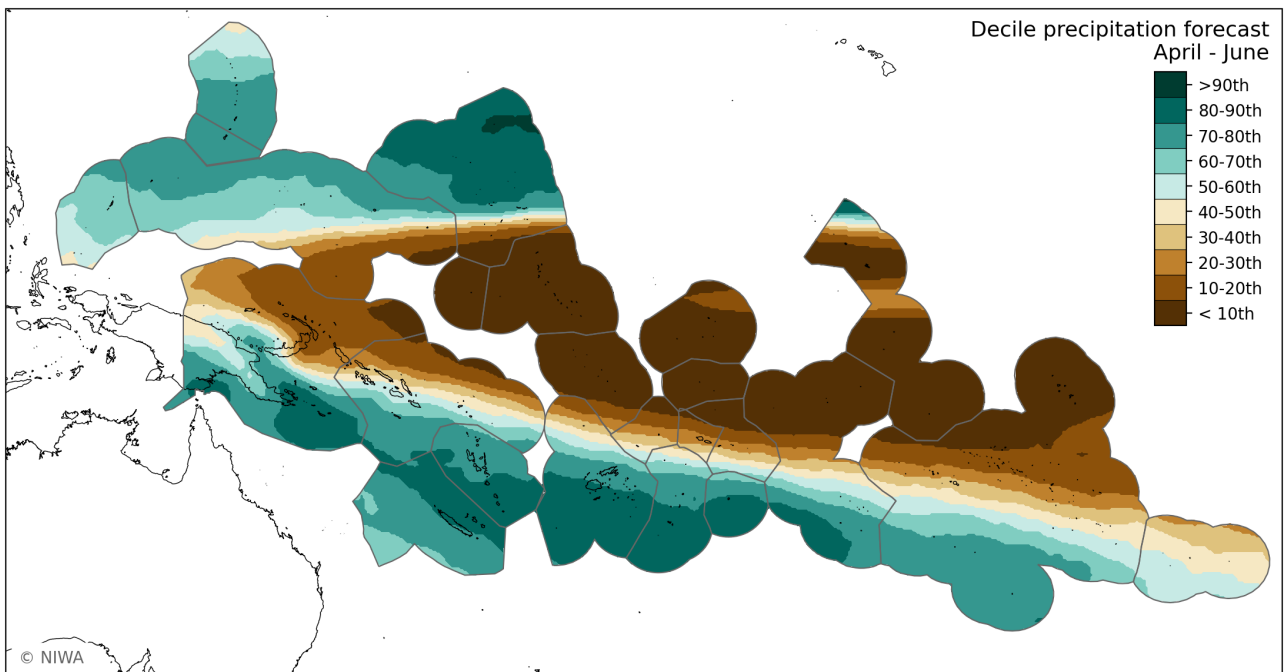


### April – June 2022 forecast summary

Seasonal rainfall patterns remain consistent with the continuation of La Niña conditions.

Several island groups have an elevated chance for a drier than normal April-June: eastern PNG, northern Solomon Islands, Nauru, Kiribati, Tuvalu, Tokelau, Wallis & Futuna, Samoa, American Samoa, Northern Cook Islands, Marquesas, Society Islands, and the northern part of the Tuamotu Archipelago. Water stress may develop or persist over many of these same island groups.

Wetter than normal conditions are most likely for island groups north of the equator in the western Pacific and most island groups extending southeastward of PNG.

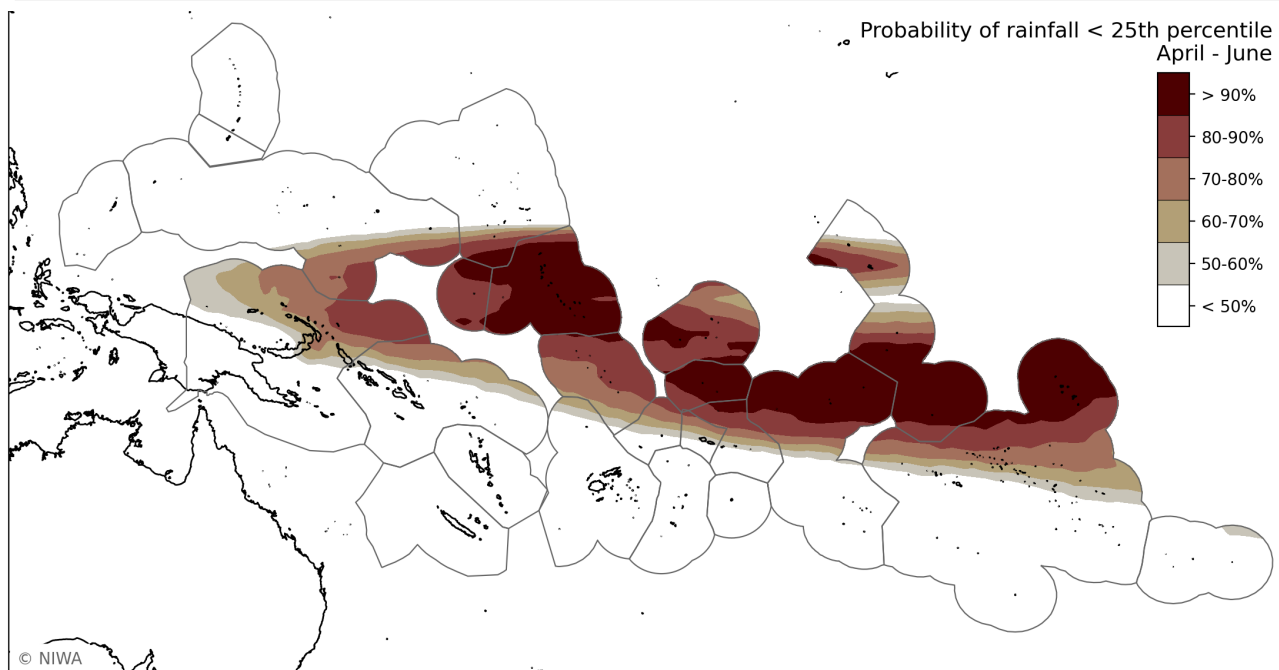
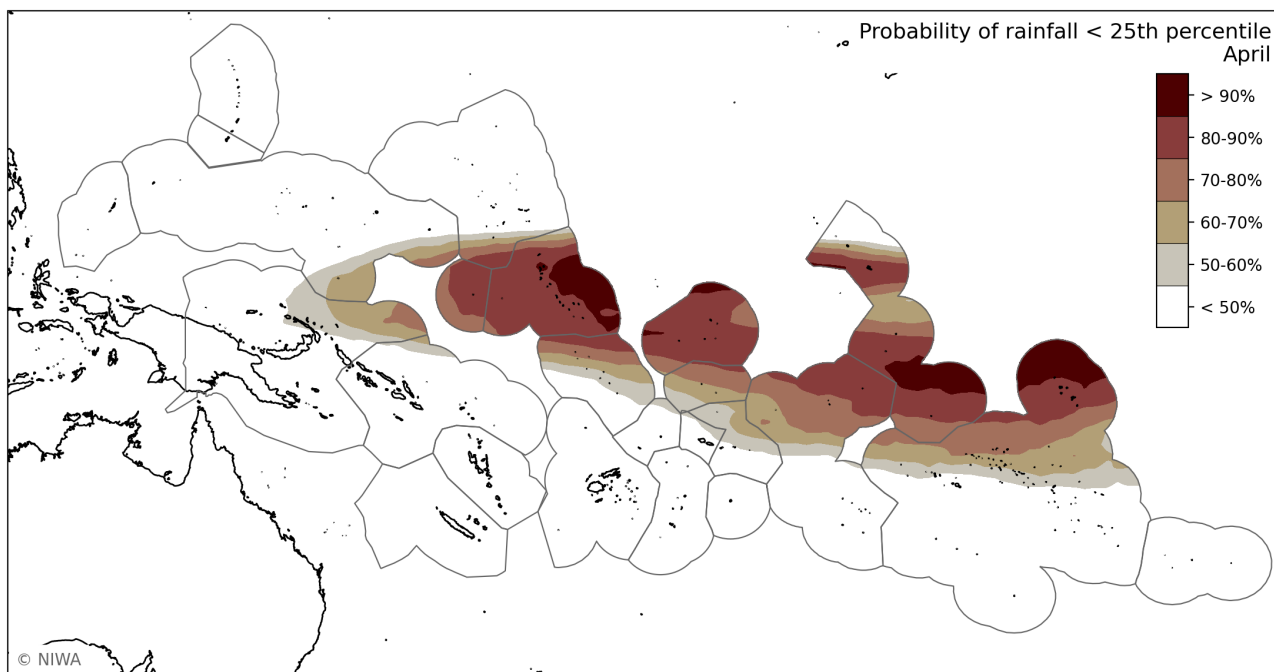


### Probabilities of rainfall < 25<sup>th</sup> percentile

The probability (likelihood) of dry conditions with cumulative rainfall being less than the 25<sup>th</sup> percentile for April (top plot) and for the season (April-June, bottom plot) are shown.

For April, very dry conditions are most likely for Nauru, Kiribati, northern Tuvalu, Tokelau, the Northern Cook Islands, Marquesas, and the northern Tuamotu Archipelago.

For April-June, very dry conditions are likely for many of the same island groups mentioned above, but also eastern PNG, and southern FSM and Marshall Islands.








# Island Climate Update



## About

### Understanding the Island Climate Update bulletin

The ICU utilises satellite rainfall data from the [NASA GPM-IMERG](#) and a multi-model ensemble forecast utilising 480+ members derived from nine Global Climate Models available from the [Copernicus Climate Data Store](#).

Bulletin page	Description
<b>Rainfall watch</b>	Rainfall plots are derived from NASA GPM-IMERG satellite rainfall data. Regional rainfall accumulation is shown for the last 30 days (1 month) and 90 days (3 months).
<b>Water stress watch</b>	Plots are derived from NASA GPM-IMERG satellite rainfall data. Different Pacific Island Meteorological Services use different approaches to defining drought and water stress. Hence 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.
<b>Water stress outlook</b>	<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"> <li>• Current water stress conditions potentially easing: Past 3 month accumulation less than 25<sup>th</sup> percentile. 1 month / seasonal accumulation forecast greater than 25<sup>th</sup> percentile.</li> <li>• Areas moving in to water stress: Past 3 month accumulation between the 40<sup>th</sup> and 25<sup>th</sup> percentile. 1 month / seasonal accumulation forecast less than 25<sup>th</sup> percentile.</li> <li>• Current water stress conditions persisting: Past 3 month accumulation less than 25<sup>th</sup> percentile. 1 month / seasonal accumulation forecast less than 25<sup>th</sup> percentile.</li> </ul> <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>
	<p>Additional regional and country-level resources are available online:</p> <ul style="list-style-type: none"> <li>• Daily updated plots for 30, 60, 90, 180 and 365 day: accumulative rainfall, number of dry days, number of days since last rainfall &gt; 1 mm, EAR, SPI and UNDM indices.</li> <li>• A range of probabilistic one to five monthly and seasonal forecast plots updated shortly after the 15<sup>th</sup> of each month.</li> </ul>



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 PRAS2201.

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