



Tuvalu Meteorological Service Early Action Rainfall Watch:



Purpose: The Early Action Rainfall Watch provides a summary of recent rainfall patterns, particularly the status of drought and the rainfall outlook for the coming months. The status and outlook will be revised on a monthly basis. Contact the Tuvalu Meteorological Service (TMS) for further information.

SUMMARY:

- The El Niño–Southern Oscillation (ENSO) is currently neutral (neither La Niña nor El Niño). The ENSO Outlook is at El Niño WATCH. This means there is approximately a 50% chance of El Niño in 2023.
- **RAINFALL STATUS:** It was Very Dry in Nanumea, Nanumaga, Niutao, Nui, Vaitupu, Nukufetau, Funafuti Nukulaelae in March 2023.

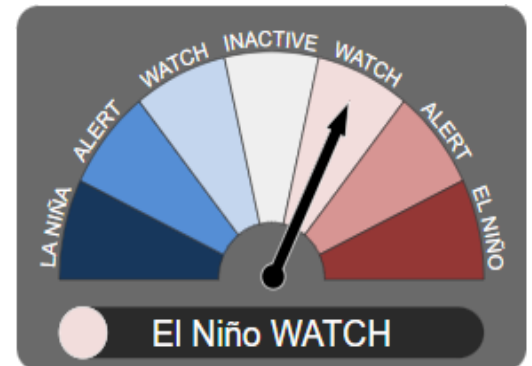
Over January 2023 to March 2023 (3 months), it was Very Dry in Nanumea, Nanumaga, Niutao, Nui and Funafuti while Metrological Drought existed in Vaitupu, Nukufetau, Nukulaelae and Niulakita.

October 2022 to March 2023 (6 months), it was Very Dry in Nanumea and Funafuti while Metrological Drought existed in Nanumaga, Niutao, Nui, Vaitupu, Nukufetau, Nukulaelae and Niulakita.

April 2022 to March 2023 (12 months), it was Very Dry at Funafuti while Metrological Drought existed in Nanumea, Nanumaga, Niutao, Nui, Vaitupu, Nukufetau, Nukulaelae and Niulakita.

- **VERY DRY/WET RAINFALL OUTLOOK:** For the month of April 2023, there is a Very High chance of Very Dry conditions at Vaitupu, Nukufetau and Funafuti, High chance of Very Dry conditions in Nukulaelae and Medium chance of Very Dry condition for Nanumea, Nanumaga, Niutao, Nui and Niulakita.
Over the next 3 months (April 2023 to June 2023), there is a Medium chance of Very Dry at Niutao, Nui, Vaitupu, Nukufetau, Funafuti, Nukulaelae and Niulakita.
- Based on the outlook it is very likely the Very Dry (Drought) conditions experienced across parts of the country in March will diminish across Tuvalu in April and over April to July 2023. There is a moderate confidence for the central group, while high confidence in the outlooks for the north and the southern group of Tuvalu.

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Rainfall status for the last month, 3-months, 6-months and 12-months

The table below provides information on rainfall received over specific periods in the last 12 months, whether a station is in drought or a very wet period (opposite of drought). If a station is in drought warning, this indicates an increased chances of drought in the coming months, especially when approaching the dry season. The time periods are associated with different drought impacts presented below the tables.

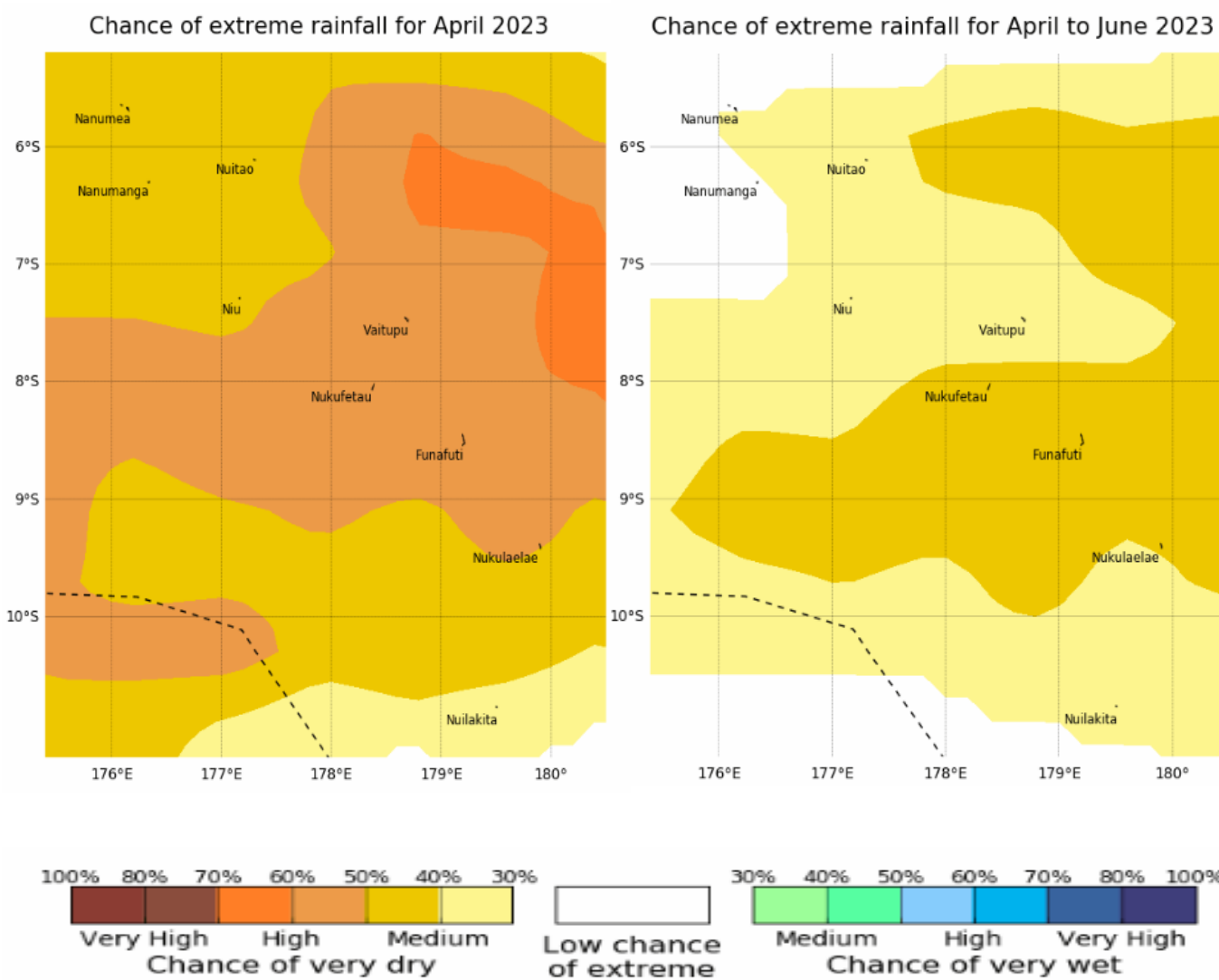
Past Rainfall Status						Very Dry/Wet Rainfall Outlook	
1-month March 2023	3-months January 2023 to March 2023	6-months October 2022 to March 2023	12-months April 2022 to March 2023		Tuvalu Islands	April 2023 Chance of extreme	April 2023 to July 2023 Chance of extreme
Very Dry	Very Dry	Very Dry	Metrological Drought		Nanumea	Medium (Dry)	No Alert
Very Dry	Very Dry	Metrological Drought	Metrological Drought		Nanumaga	Medium (Dry)	No Alert
Very Dry	Very Dry	Metrological Drought	Metrological Drought		Niutao	Medium (Dry)	Medium (Dry)
Very Dry	Very Dry	Metrological Drought	Metrological Drought		Nui	Medium (Dry)	Medium (Dry)
Very Dry	Metrological Drought	Metrological Drought	Metrological Drought		Vaitupu	Very High (Dry)	Medium (Dry)
Very Dry	Metrological Drought	Metrological Drought	Metrological Drought		Nukufetau	Very High (Dry)	Medium (Dry)
Very Dry	Very Dry	Very Dry	Very Dry		Funafuti	Very High (Dry)	Medium (Dry)
Metrological Drought	Metrological Drought	Metrological Drought	Metrological Drought		Nukulaelae	High (Dry)	Medium (Dry)
No Alert	Metrological Drought	Metrological Drought	Metrological Drought		Niulakita	Medium (Dry)	Medium (Dry)

Time periods and impacts:

- 1 – month** period is most relevant for shallow rooted crops (e.g. eggplant, cabbage, tomatoes, spring onions, watermelons, cucumber), small water tanks (e.g. 1000galloons) and household water cisterns. The following secondary health and social-economic have been associated with drought at the 1-month period. Diarrhoea, skin rash, cough and fever, red eye, desalination plant (increased power demand and higher water costs for households), health of babies and elderly people declines, schools close and construction stops.
- 2 – months** period is most relevant for bottle gourd, pawpaw, banana, chicken, pigs and community cisterns. The following secondary social-economic and health impacts have been associated with drought at the 2-months period. Community gatherings stop, increased in community disputes over water and limited or no employment.
- 3 – months** period is most relevant for pumpkin, groundwater and ponds. The following secondary social-economic and health impacts have been associated with drought at the 3-months period. Crimes increase e.g. water stealing, government offices close and national events postponed.
- 6 – months** period is most relevant for large trees (e.g. breadfruits, pulaka, taro). The following secondary social-economic and health impacts have been associated with drought at the 6-months periods. Meteorological balloon flights stop, interislands shipping delays, entry of visitors to Tuvalu restricted.
- 12- months** period is most relevant for felo, dragon fruits, pandanus, coconuts and ofega

Allow for uncertainty associated with island size, soil, types and geology.

Very Dry/Wet Rainfall Outlook: April and April to June 2023



Rainfall status

The Percentile Index is used to assess the rainfall status from the MSWEP dataset. MSWEP is a global precipitation product that combines rain gauges, satellite and reanalysis data to a 0.1° resolution. *Seriously Dry is defined as drought assessed by rainfall data only.* A site is assigned 'No Alert' when rainfall has been near normal or slightly above or below normal for the period(s) in question. The 3-, 6- and 12-month timescales can accurately predict drought.

Very Dry/Wet Rainfall Outlook

The chance of extremes outlook maps presents the likelihood of Very Wet or Very Dry conditions. They are displayed by the chance that the outlook will result in rainfall in the top or bottom 20% of historical observations for the selected outlook period. Where there is white shading it is less likely there will be either Very Wet or Very Dry conditions, rainfall is likely to be close to normal in this case. A very high chance of Very Dry (Very Wet) conditions is associated with the highest likelihood of rainfall being in the lowest (highest) 20% on record. A medium chance of Very Dry (Very Wet) conditions is associated with a lower but reasonable chance of rainfall being in the lowest (highest) 20% on record. The outlooks have been produced using the Australian Bureau of Meteorology ACCESS-S2 model <http://www.bom.gov.au/climate/ahead/about/model/access.shtml>.

Contact Tuvalu Meteorological Service for further information:

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