



Tuvalu Meteorological Service Early Action Rainfall Watch:

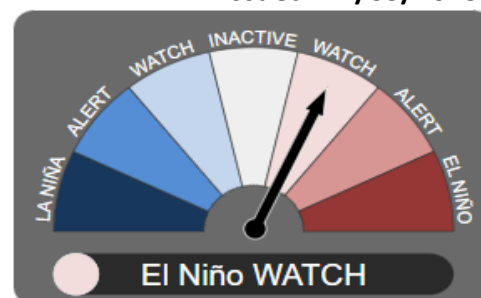


Purpose: The Early Action Rainfall Watch provides a summary of recent rainfall patterns, particularly the status of drought and the rainfall outlook for the coming months. The status and outlook will be revised on a monthly basis. Contact the Tuvalu Meteorological Service (TMS) for further information.

SUMMARY:

- Current situation for Tuvalu now is at El Niño Watch. The 2022–23 La Niña has ended, having been declared in September 2022. Oceanic and atmospheric indicators have returned to ENSO-neutral (neither El Niño nor La Niña) values.
- **RAINFALL STATUS:** It was Very Dry in Nanumea and Vaitupu in February 2023. Over the last 3 months, 6 months and 12 months, Metrological Drought existed in Nanumea, Nanumaga, Niutao, Niu, Vaitupu, Nukufetau, Funafuti, Nukulaelae and Niulakita.
- **VERY DRY/WET RAINFALL OUTLOOK:** There is a Very High chance of Very Dry conditions in March 2023 at Nanumea, Nanumaga, Niutao, Nui, vaitupu, Nukufetau, Funafuti and Nukulaelae (except Niulakita, where it was Medium). There is a High chance of Very Dry conditions over March to May in Niutao, Nui, Vaitupu and Funafuti. Medium chance of Very Dry Condition in Nanumea, Nanumaga, Nukufetau and Nukulaelae.
- Based on the outlook it is very likely the Very Dry (Drought) conditions experienced across parts of the country in February will diminish across Tuvalu in March and over March to May 2023. There is high and medium confidence in the outlooks for the north and central of Tuvalu.

Issued: 22/03/2023

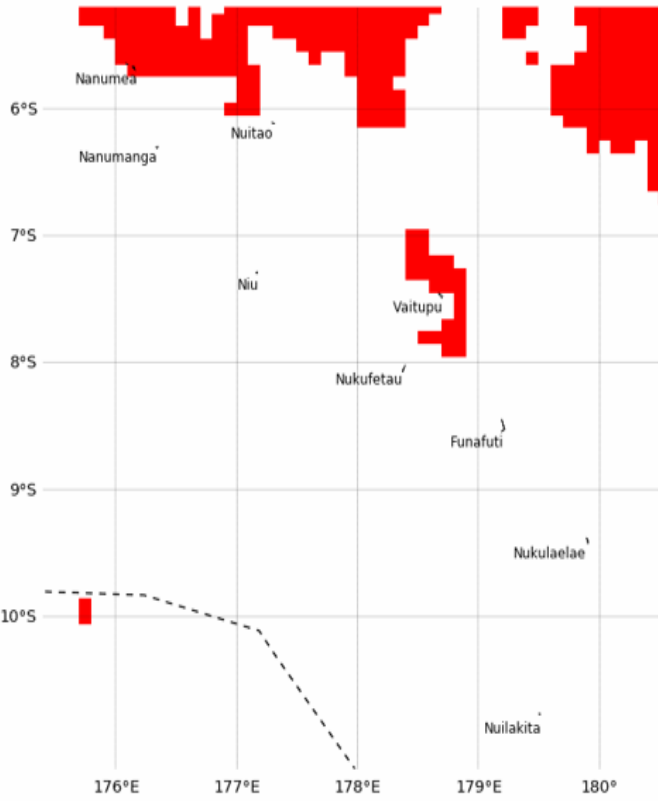


Rainfall status for the last month, 3-months, 6-months and 12-months

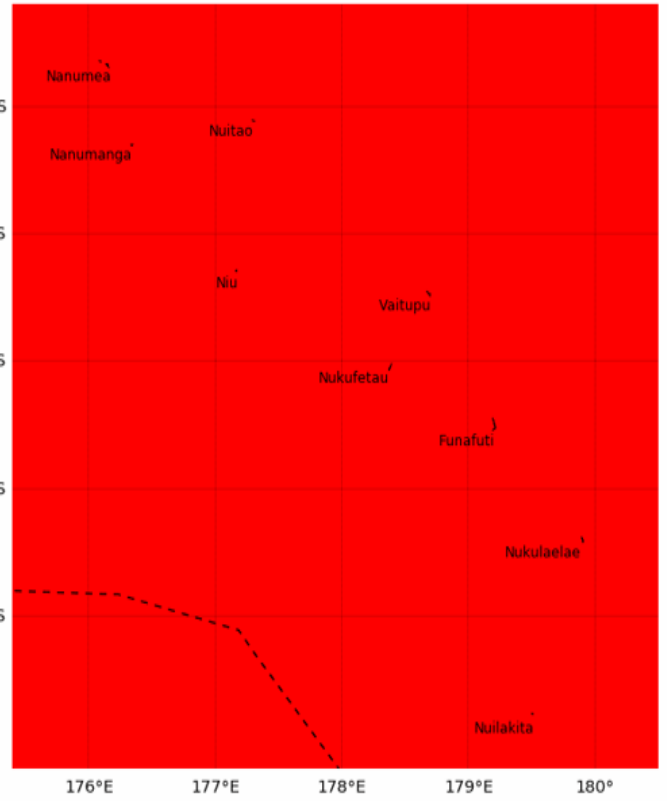
The table below provides information on rainfall received over specific periods in the last 12 months, whether a station is in drought or a very wet period (opposite of drought). If a station is in drought warning, this indicates an increased chances of drought in the coming months, especially when approaching 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 February 2023	3-months December 2022 to February 2023	6-months period July 2022 to February 2022	12-months January 2022 to February 2023		March 2023	March to May 2023
				Tuvalu Islands	Chance of extreme	Chance of extreme
Very Dry	Metrological Drought	Metrological Drought	Metrological Drought	Nanumea	Very High (Dry)	Medium (Dry)
No Alert	Metrological Drought	Metrological Drought	Metrological Drought	Nanumaga	Very High (Dry)	Medium (Dry)
No Alert	Metrological Drought	Metrological Drought	Metrological Drought	Niutao	Very High (Dry)	High (Dry)
No Alert	Metrological Drought	Metrological Drought	Metrological Drought	Nui	Very High (Dry)	High (Dry)
Very Dry	Metrological Drought	Metrological Drought	Metrological Drought	Vaitupu	Very High (Dry)	High (Dry)
No Alert	Metrological Drought	Metrological Drought	Metrological Drought	Nukufetau	Very High (Dry)	Medium (Dry)
No Alert	Metrological Drought	Metrological Drought	Metrological Drought	Funafuti	Very High (Dry)	High (Dry)
No Alert	Metrological Drought	Metrological Drought	Metrological Drought	Nukulaelae	Very High (Dry)	Medium (Dry)
No Alert	Metrological Drought	Metrological Drought	Metrological Drought	Niulakita	Medium (Dry)	No Alert (Dry)

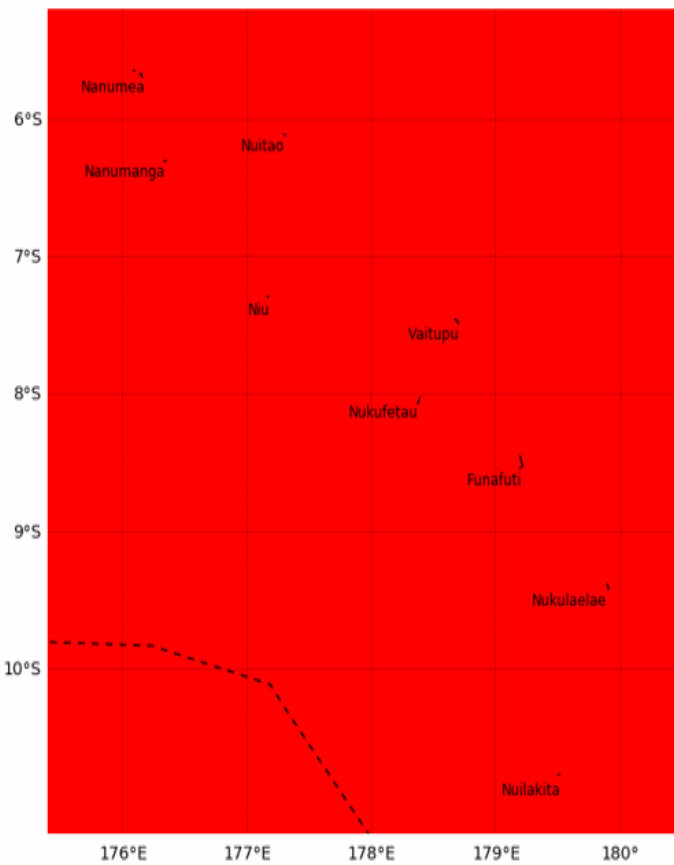
Rainfall status for February 2023



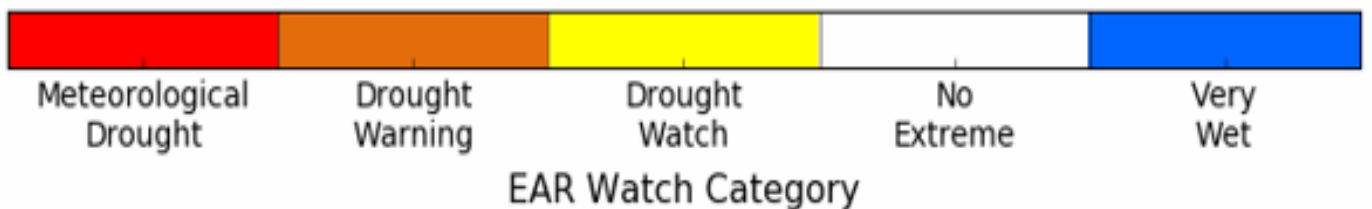
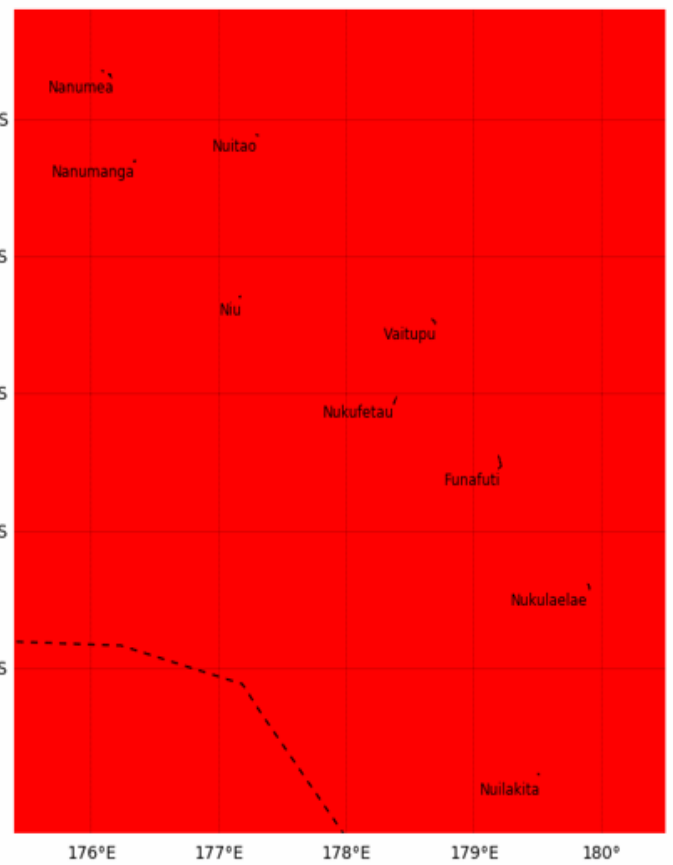
3-month rainfall status to end of February 2023



6-month rainfall status to end of February 2023



12-month rainfall status to end of February 2023



Data source: MSWEP
Method: SPI

Model Run: 01/02/2023
Base period: 1980-2021

© Commonwealth of Australia 2023, Australian Bureau of Meteorology, supported by COSPPac

Shapefile data extracted from Flanders Marine Institute (2019), Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (200NM), version 11. Available online at <http://www.marineregions.org/>.

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.

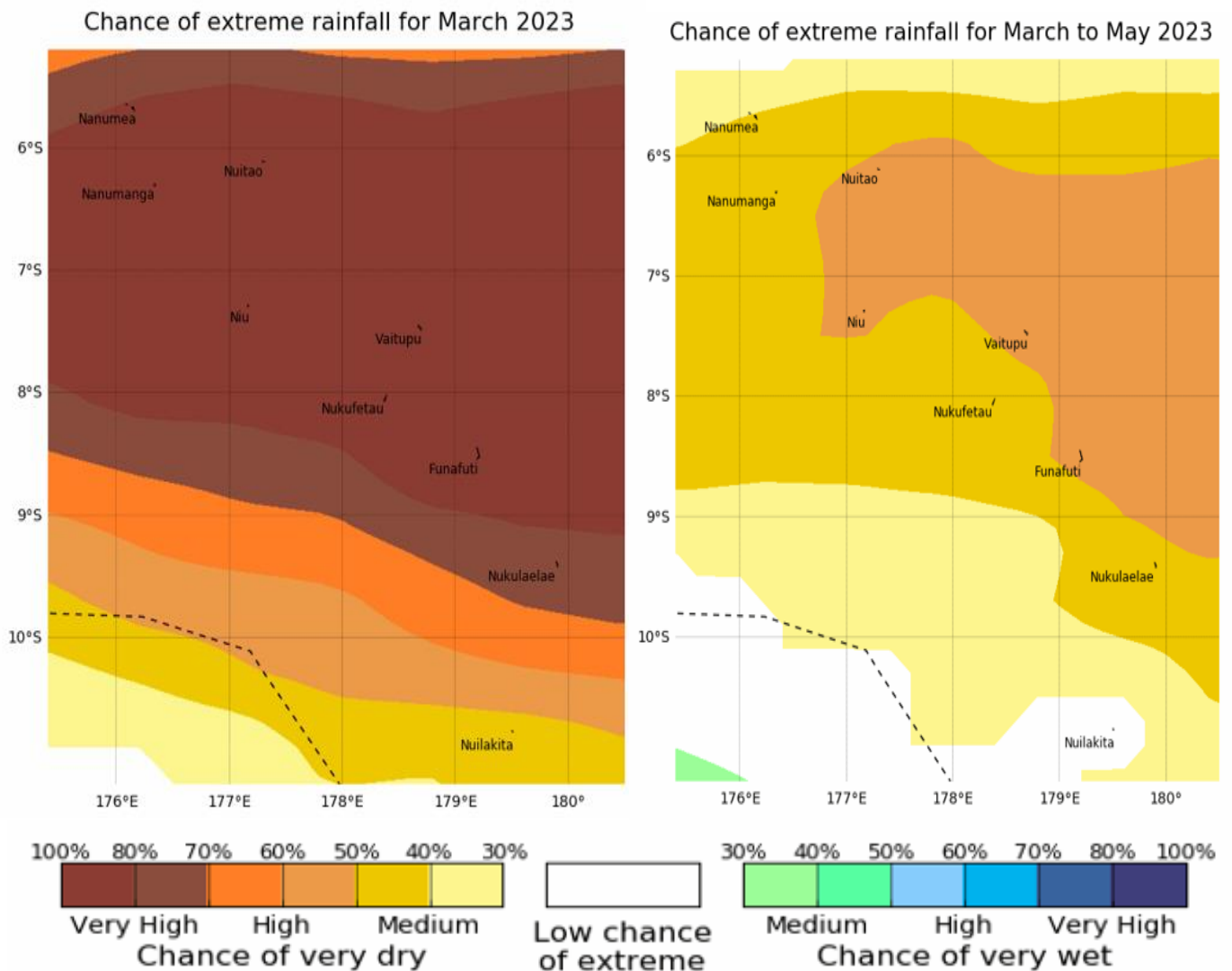
3 – months period is most relevant for pumpkin, groundwater and ponds. The following secondary social-economic and health impacts have been associated with drought at the 3-months period. Crimes increase e.g. water stealing, government offices close and national events postponed.

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: March and March to May 2023



Data source: ACCESS-S2
 Issued: 14/03/2023

Model Run: 01/03/2023
 Base period: 1981-2018

© Commonwealth of Australia 2023, Australian Bureau of Meteorology, supported by COSPPac

Shapefile data extracted from Flanders Marine Institute (2019), Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (200NM), version 11. Available online at <http://www.marineregions.org/>.

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 present 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:

Chief Meteorological Officer, Ministry of Public Works, Infrastructure, Environment, Labour, Meteorology and Disaster, Vaiaku, Funafuti, Tuvalu. Phone (688) 20090, 20736, 20095, Email: tauala.k@gmail.com, tuvalumet@yahoo.com, website: tuvmet.tv, Facebook:<tuvalumetservice>