



Climate Outlook 2024



December &
December 2024 to February 2025

Issued: 15 November 2024

Climate in October 2024

- Heavy rain on the 19th of October caused flooding of low lying areas and coastal areas impacted by inundation from extreme high tides mainly in Tongatapu and 'Eua causing damage to infrastructure and residential. See Fig 1-3 below.
- Extremely high rainfall received in October with highest 24 hours rainfall recorded in Fua'amotu (222.0mm) and 'Eua (355.0mm) since their rainfall record started. This is the highest October rainfall ever recorded in the whole of Tonga. Some impact pictures below from the heavy rain and flood in 'Eua and Tongatapu.
- Flash flooding of low-lying and coastal areas in Nuku'alofa, flooding and inundation also occurred in various places in Eastern side of Tongatapu as well as the western division of Tongatapu on the 19th October.
- Extreme high tide on the 18th and the 19th of October was also a contributing factor to flooding of low-lying coastal areas.
- Above average rainfall received over Tongatapu, 'Eua and Niuaotupapu, while below average rainfall was received over Vava'u and Ha'apai (see table below)
- The mean air temperature was 23.6°C which was 1.0°C below average.
- Highest maximum temperature was 29.9°C recorded at Fua'amotu on the 13th.
- Lowest temperature was 16.0°C recorded at 'Eua on the 23rd.



Fig 1. Damage to infrastructure due to heavy rain and waves: 'Eua, October 2024.
Source: NDRMO



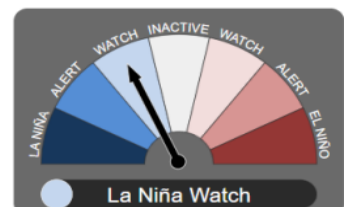
Fig 2. Flooding of low and coastal areas at Fasi, October 2024.
Source: NDRMO



Fig 3. Flooding of low and coastal areas at Fasi, October 2024.
Source: NDRMO

ENSO Status

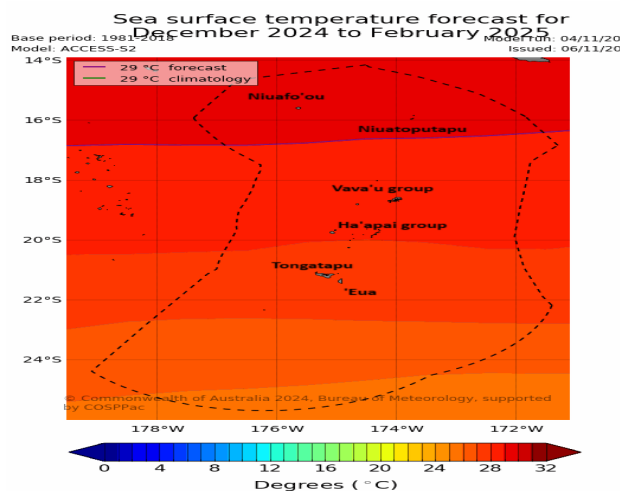
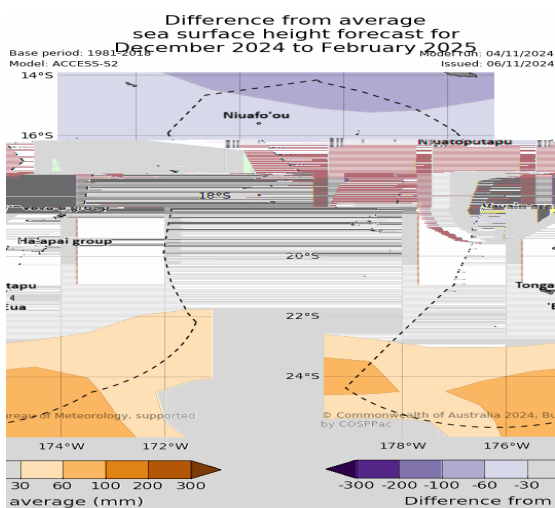
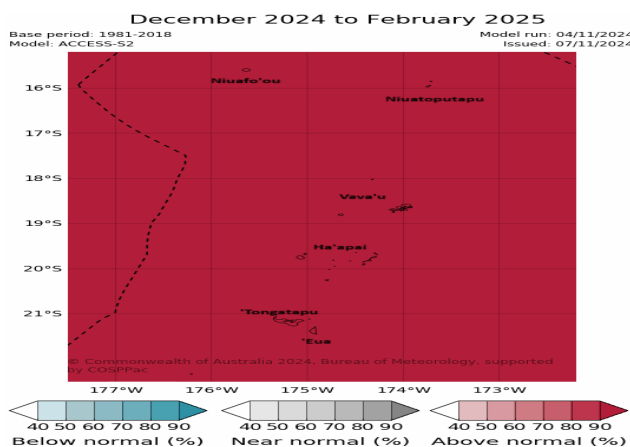
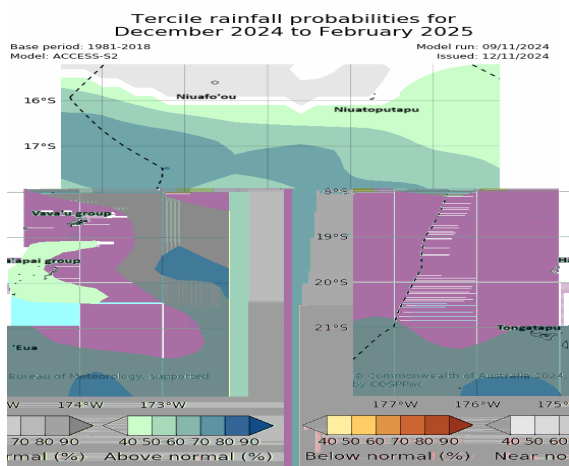
- The El Niño–Southern Oscillation (ENSO) is currently in neutral condition and is likely to continue during the forecast period up to early 2025.
- Climate models suggest that SSTs in the central tropical Pacific are likely to remain within the ENSO-neutral over the coming months.



Rainfall totals for the last six months, May to October 2024						
	May	June	July	August	September	October
Niuafo'ou	67.5	25.0	84.5	165.0	106.0	N/A
Niuaotupapu	163.0	157.5	119.5	50.0	148.5	128.5
Vava'u	162.2	107.8	85.1	109.1	104.0	60.9
Ha'apai	135.5	110.1	53.8	18.5	87.6	87.3
Fua'amotu	384.8	46.3	62.5	93.8	87.8	383.7
Nuku'alofa	297.5	37.5	66.5	159.0	64.0	387.0
'Eua	270.4	53.0	130.5	208.5	128.5	587.6
	Below average		Average (usual)		Above average	

Rainfall & Temperature outlook for December & December-February 2024

- Regardless of whether the criteria for La Niña is met over the coming months, all climate models forecast La Niña-like patterns for the remainder of 2024 and early 2025.
- The rainfall outlook over December 2024 to February 2025 is consistent with rainfall patterns experienced during past La Niñas.
- Average to above average rainfall is predicted for December and December 2024 to February 2025.
- Warmer than average air temperature.
- Sea surface temperature outlook is predicted to be 24°C about south of Tonga and increase northwards towards the Niuas.
- Sea level forecast shows average heights across most of Tonga waters except for the southern Tonga waters which shows 30-60mm above average.



The next Climate update will be issued second week of December

Disclaimer:

This summary is prepared as soon as possible following the end of the month, once climate data is received from recording stations around Tonga. Delays in data collection, communication and processing occasionally arise. While every effort is made to verify observational data, the Tonga Meteorological Service makes no statements, representations, or warranties about the accuracy or completeness of, and you should not rely on, any information contained in this report. Despite our best efforts, TMS makes no warranties that the information in this publication is free of numerical errors. TMS disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages and costs you might incur as a result of the information being inaccurate or incomplete in any way, and for any reason. This information should be used as a guidance only. For further information about this forecast should be directed to the Director of the Tonga Meteorological Service, at P.O. Box 1380, Nuku'alofa. Or email at metstaff@met.gov.to Tel: (676) 0800638/ 7400062 or our website; <http://www.met.gov.to> for more information.