



# Early Action Rainfall (EAR) Watch

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The Early Action Rainfall Watch provides a summary of recent rainfall patterns, particularly the status of the rainfall and the outlook for the coming months. This product is issued on a monthly basis. For more details and climate information, contact the Vanuatu Meteorology and Geo-hazards Department.

## Summary

**ENSO Status:** El Niño continues in the tropical Pacific Ocean. Model forecasts and observations indicate sea surface temperatures in the central tropical Pacific have peaked and are now declining. Sea surface temperatures in the tropical Pacific are expected to return to neutral El Niño–Southern Oscillation (ENSO) levels around March to May 2024.

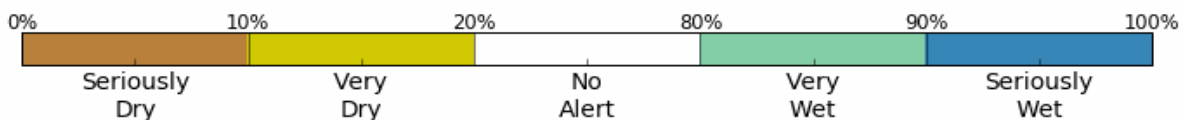
**Rainfall Status:** Lenakel was in ‘Seriously Dry’ conditions in December 2023. All other stations experienced ‘Very Dry’ to ‘Very Wet’ Conditions.

**Rainfall Outlook:** There is a medium chance of ‘Very Dry’ conditions throughout the country in February 2024, and the February to April 2024 period. The Torres group has a low chance of experiencing extreme conditions in both periods.

## Rainfall Status

The table below provides information on rainfall status for Vanuatu. The status refers to rainfall received over the last 1, 3, 6 and 12 months, highlighting very dry or very wet periods relative to normal.

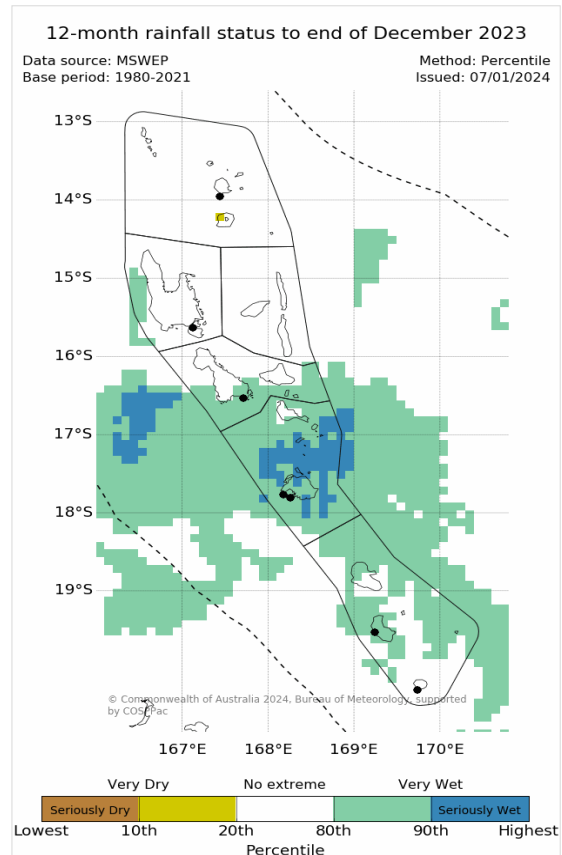
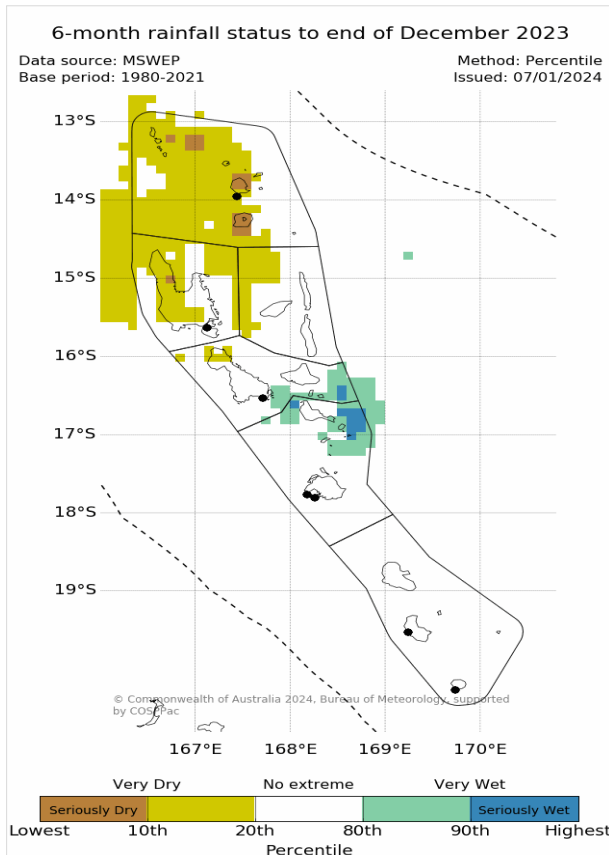
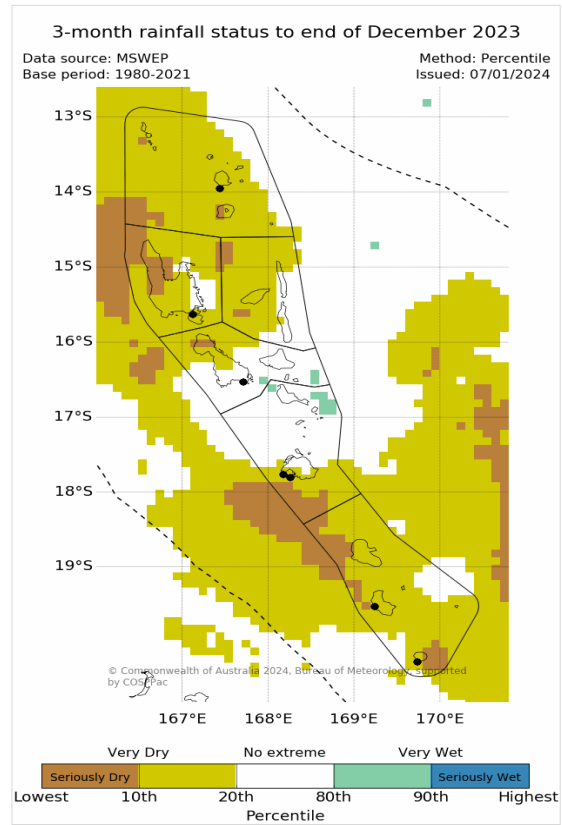
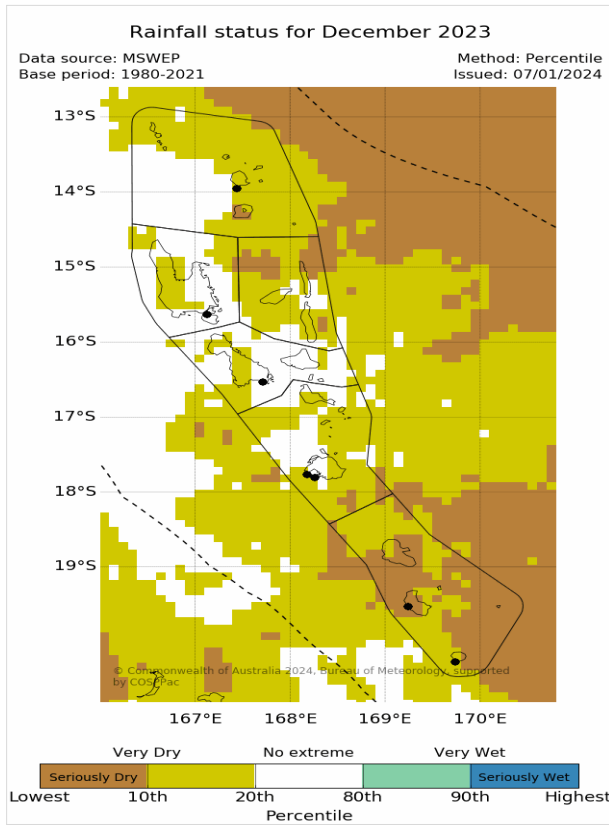
Period	Rainfall Status			
	1-month period	3-month period	6-month period	12-month period
Months	December 2023	October — December 2023	July — December 2023	November 2022 — December 2023
Torres	Very Dry	Very Dry	Very Dry	
Sola	Very Dry	Very Dry	Very Dry	
Luganville				
Saratamata	Very Dry	Very Dry		
Lakatoro				Very Wet
Sherpherds	Very Dry			Very Wet
Port Vila		Very Dry		Very Wet
Lenakel	Seriously Dry	Very Dry		Very Wet
Anelghaohat	Very Dry	Very Dry		



# Rainfall Monitoring Maps

## Information on the Maps

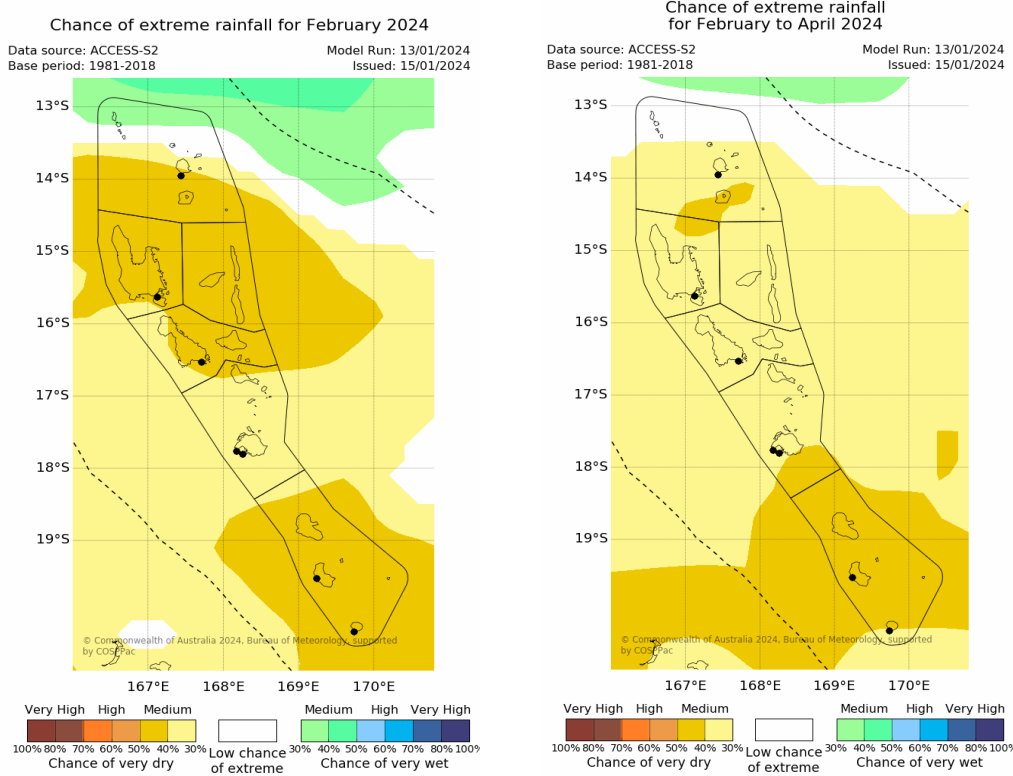
Vanuatu's rainfall status is assessed using the MSWEP dataset available via <http://www.gloh2o.org/mswep/>. MSWEP is a global precipitation dataset at 0.1° resolution, available from 1979 that combines data from rain gauges, satellite observations and reanalysis. The data is processed and presented in Percentile Index form by the Australian and New Zealand DFAT Climate and Ocean Support Program in the Pacific. 'No Alert' is assigned where rainfall was between the 20th and 80th percentile for the period in question.



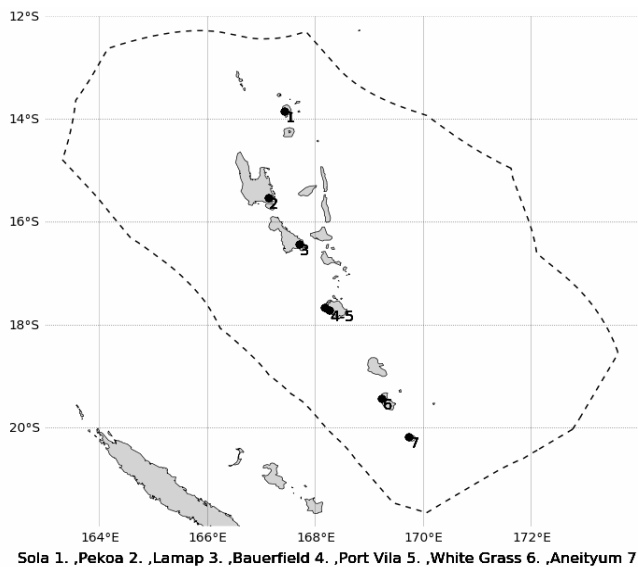
# Rainfall Outlook Maps

## Forecast for Extreme Rainfall maps

The chance of extremes outlook maps present the likelihood of very wet or very dry conditions. They display 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.



## Vanuatu Reference Map



### Climate Change Drought Projections to 2090

For the whole of Vanuatu, the overall amount of time spent in drought is expected to stay the same or slightly decrease in the future. Droughts are expected to occur less often. Drought length is not expected to change. Overall, there is low confidence ('trust') in drought projections. However, droughts will continue to occur including serious droughts and people still need to prepare for these events.

## Seriously Dry Condition Impacts

The following table provides examples of impacts that have been associated with drought at the 1, 3, 6 and 12 month periods. For further information and details refer to the ENSO handbook and contact the relevant government departments.

Sector/ Department	1-month period	3-month period	6-month period	12-month period
<b>Water</b>	Water quality in wells and tanks reduced in small islands and west side of large islands.	Small to medium water tanks, small rivers.  Rainwater catchments will be affected & water level reduced.	Dams, bores, industrial tanks, wet lands, medium rivers.  Rainwater catchments will be heavily affected including large rainwater tanks, surface water affected with reduced water level.  Water quantity and water quality is further reduced.	Large water sources e.g. large rivers, lakes.  Groundwater supply systems affected, water level drops, hand dug wells dry up and groundwater sources become saline.
<b>Agriculture and freshwater fisheries</b>	Small vegetables (e.g. tomato, lettuce, Chinese cabbage) and island cabbage on small islands and drier side of larger islands (W to N).  Pasture will also be affected.	Banana, cassava, new yam, water taro, English potato, kumala, vanilla, young kava, apple banana, aquaculture.	Rice, sugarcane, banana, wheat, root crops affected e.g., mature yam, Fiji taro, manioc.	Large fruit trees, (e.g. coconuts, coffee, mango, guava, orange, mandarin), wild yam.
<b>Livestock</b>		Loss of small livestock (poultry).	Loss of large livestock (pigs, goats and cattle), farmed and wild freshwater fish and prawns.	
<b>Forestry</b>		Loss of small trees (spread of insects and diseases attacks), sandalwood seedlings, bushfires.	Loss large trees (due to increase spread and intensity of insect attacks)  Loss of forest canopy affects quality and quantity of water, bushfire.	Bushfire, insect pests and Diseases.
<b>Environment</b>	Grassland		Streams/lakes & any water bodies affected, introduction of alien/invasive species, landslides on new volcanic slopes.	Loss of habitat, migration of endemics/species, degradation of landscape quality, loss of biodiversity/vegetation (extinction), introduction of alien/invasive species, secondary impacts, e.g., resettlements (2015)
<b>Health</b>	Increase in gender based violence, increase non-communicable diseases.  Disable persons due to higher water needs, increase discrimination.	Health - Deterioration in young and old human health (malnutrition, poor lactation, dehydration, skin disease and diarrhoea cases).  Education - affects schools for children due to reduced water supply e.g. schools close half day.  Socio-economic - Unbalance diet/ less vegetables, additional labor on children & women, traveling distance to collect water, increase in psychological/mental stress, stealing.  Food prices increase, reduced income.  Some negative social disruption but also some positive impacts e.g. formation of women's networks.	Health - Increase in migration due to water and food shortages.  Deterioration in adult human health (poor lactation, malnutrition, cases of typhoid, dengue, malaria, increase in skin, respiratory and eye diseases).  Education - Affect education and children attendance, increase in social disruptions (e.g. reduced school hours) unbalance diet (relying on rice, tin fish & noodles), mental stress, diarrhoea, increased cases of skin diseases.  Socio-economic - Increase in social disruptions (e.g. financial stress, assets being sold, crime). Social obligations being postponed. less income/less production of local produces, bush fires destroying building.	Health - further deterioration in human health (e.g. cases of cholera appear, severe unbalance diet leading to death, cough & staunting, mental stress, diarrhoea, increased cases of skin diseases).  Education - school close.  Socio-economic - less income/less production of local produces, bush fires destroying building, reduced river transport on large rivers, women migrating to get water.  Increased chances of traditional houses burn down, reduced building materials.
<b>Tourism</b> Accommodation: Toilet/Shower, Swimming Pool, Restaurants, Flower/garden, Water, Activities, Snorkeling, Kayaking, Water, Picnic, Waterfall		Poor quantity and quality supply of water, inconsistency supply, affect availability of vegetables and others for hotels, flowers and plans drying up.	Drop in visitor numbers, reducing employment, reduce in income for business owners. Increase water temperature affecting snorkeling, reduce in the water level affect visitors to river activities, drier river level, reduced in income, reduced number of visitations.	Airline & transport industry affected, agriculture and fishermen activities affected as well as duty free shops.
<b>Infrastructure</b>		Road works thrive on drought as rainfall disturbs & damages roads & infrastructure (bridges & culverts)		
<b>Energy</b>		Infrastructure that depends on water in hydro-power, during drought, river/water level drops, affects generation of electricity. Sola energy companies thrive on droughts.		