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Tropical Cyclone (TC) Seasonal Outlook for Tonga: 2025-2026

Key Messages

- 1. Expect normal tropical cyclone activity for Tonga: 1 to 2 tropical cyclones**
- 2. Moderate to high risk ($\geq 60\%$) of Tonga being affected by at least 1 Severe Tropical Cyclone.**
- 3. The peak months for tropical cyclone activity for Tonga will be from January to March 2026.**
- 4. Expect average to above average rainfall for the first half of the TC Season (November 2025 – January 2026).**

(Date of Release: 24th October 2025)

Summary

The Tropical Cyclone (TC) activity expected in the 2025-2026 Tropical Cyclone Season to affect Tonga is likely to be around average (1 to 2 TCs). Historical records also indicate that Tonga could expect at least 1 cyclone and at most 2 cyclones to occur with a moderate to high chance ($\geq 60\%$) of at least 1 Severe Tropical Cyclone occurring.

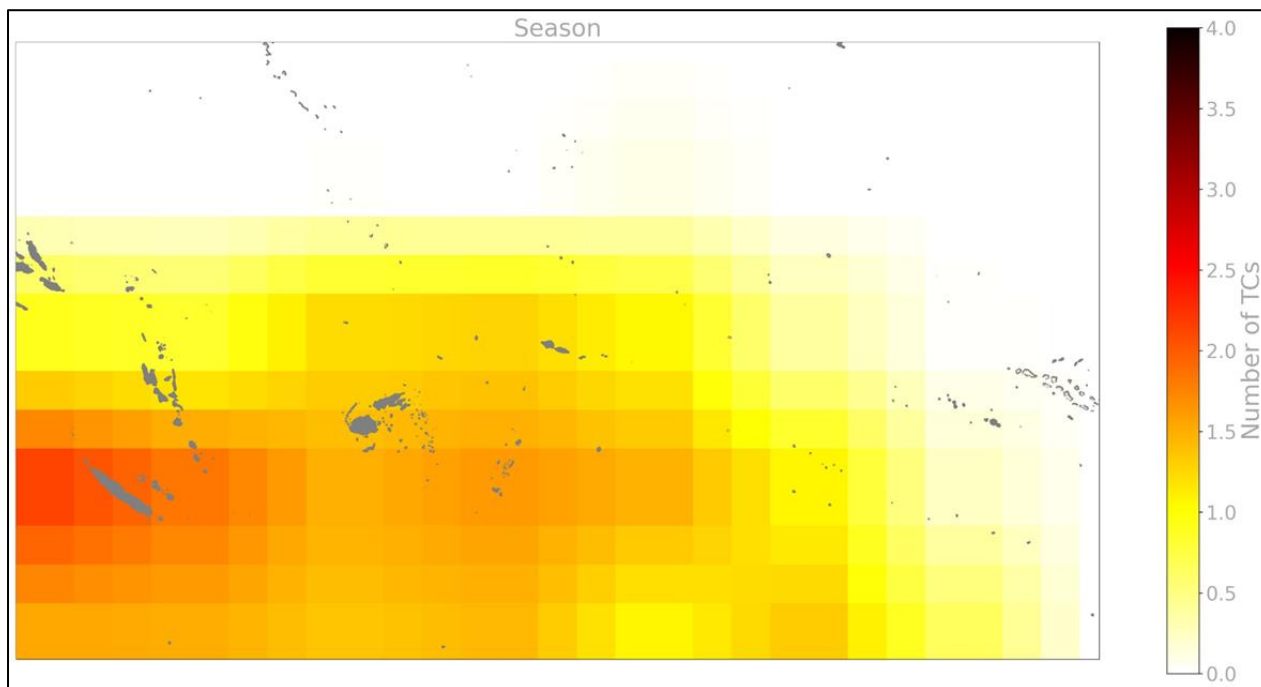


Figure 1: Expected number of Tropical Cyclones predicted to affect Tonga during the Tropical Cyclone Season 2025-26. One to two TCs is expected to affect Tonga this TC season.

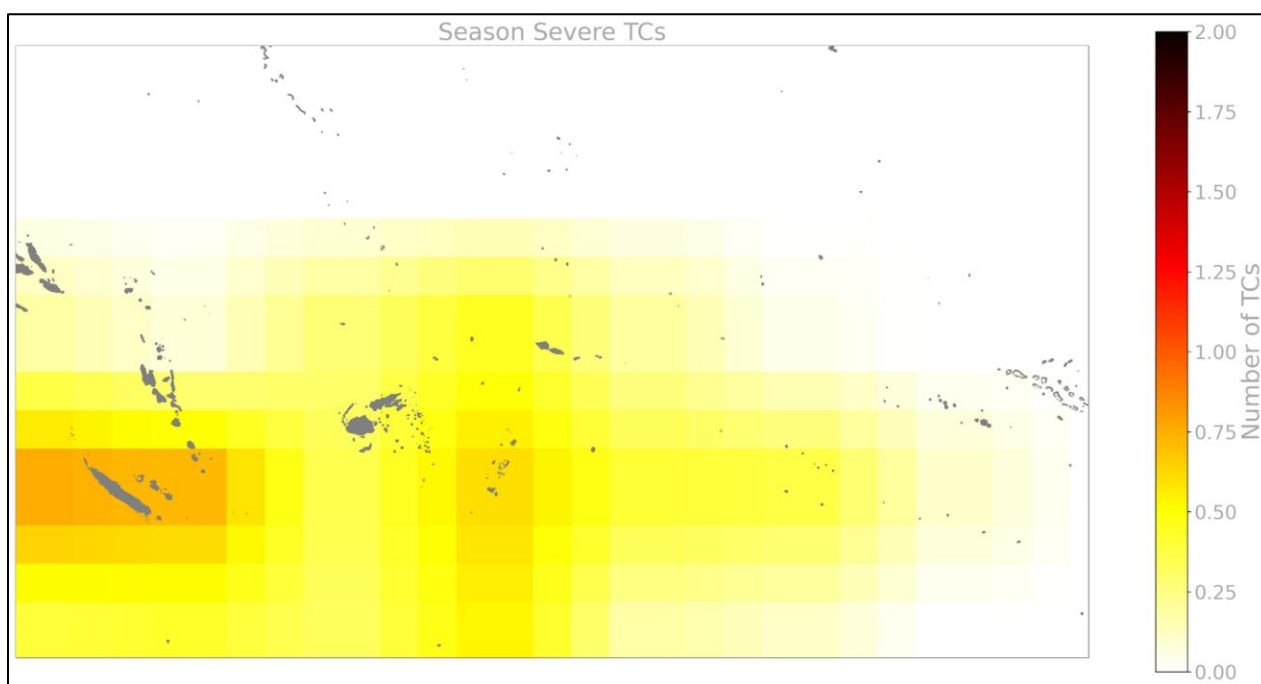


Figure 2: Expected number of Severe Tropical Cyclones predicted to affect Tonga during the Tropical Cyclone (TC) Season 2025-26. One Severe TC is expected to affect Tonga during this TC season. Severe TCs are cyclones with intensities of category 3, 4 or 5.

Any Tropical Cyclones passing close to the country, associated active cloud with heavy rain bands may occasionally affect Tonga with marked high rainfall, damaging to destructive force winds and possible flooding, including sea flooding from storm surge impacts on low-lying coastal areas.

Tropical Cyclones affecting Tonga in the 2025-26 season should expect to be mostly coming from the West and North-West quadrants (Fiji Area: 70%) and the rest from the North, East and North-East quadrants. Tropical cyclone formation areas will be shifted to the warmer ocean temperatures in the Solomon Islands and Vanuatu regions.

The 2025/26 tropical cyclone season will likely bring average to above average rainfall to all island divisions of Tonga during the cyclone season due to weak La Nina conditions projected to develop for the first half of this tropical cyclone season (November 2025 – January 2026). In some island divisions, the average monthly rainfall can be doubled.

Tropical Cyclone (TC) Detailed Analysis for Tonga

The official 2025-2026 TC Season will begin on the 01st November 2025 and will end on the 30th April 2026. It should be noted that Tropical Cyclones have occasionally formed outside this period. For instance, Tropical Cyclone “Keli” which affected Northern Tonga in June 1997. The peak time for the occurrence of Tropical Cyclones in Tonga is from January to March with most events occurring in February.

Tropical cyclone activities in the Pacific Island region, including Tonga, are closely associated with the El Niño Southern Oscillation (ENSO), which is the fluctuation and coupling effects of the oceanic and atmospheric conditions between the eastern and western tropical Pacific. The ENSO is characterised by three phases, that is: El Niño, La Niña and the Neutral phase.

To generate outlook for this upcoming 2025/26 TC Season, previous seasons with comparable El Niño–Southern Oscillation (ENSO) conditions were selected as analogue TC seasons. Initially, the analogue seasons were identified based on the status of the tropical Pacific during the months leading up to the TC season, specifically between May to September. The selected few analogue years were further refined using the ENSO outlooks from the global climate models. According to global climate model predictions, this TC season is likely to be influenced by a ‘*Neutral*’ ENSO phase or a weak ‘*La Nina*’ phase. The El Niño Southern Oscillation (ENSO) is at ‘*Neutral*’ state at the start of this TC season (November 2025).

Using the methodology outlined, eight (8) analogue seasons were selected that show similar climate conditions to those currently observed and anticipated during this tropical cyclone season. The identified analogue seasons are 1980/81, 1983/84, 2000/01, 2001/02, 2003/04, 2005/06, 2012/13, and 2016/17 (see Table 1).

A 500km buffer zone along Tonga’s Exclusive Economic Zones (EEZ) was created (figure 5) to show case the number of tropical systems (tropical depressions and tropical cyclones) that has crossed our Tonga area during these past TC analogue seasons. This reflects the importance of understanding how tropical systems behaves and its characteristics over our Tonga areas in previous analogue TC seasons with similar conditions to this upcoming 2025-2026 TC season.

During every Tropical Cyclone season there are active periods in which the potential for tropical cyclone formation is increased. These active periods come around every 30 to 60 days on average and lasts for a duration of about 2 to 3 weeks in our region. On average, there are about 3 active periods during the tropical cyclone season for the Southwest Pacific region.

Current dynamics indicate that the first tropical cyclone activity for this season in the South West Pacific region (including Tonga) is most likely to occur around mid-November to December 2025. These active period(s) will be updated during the course of the cyclone season to support planning, decision making and preparedness.

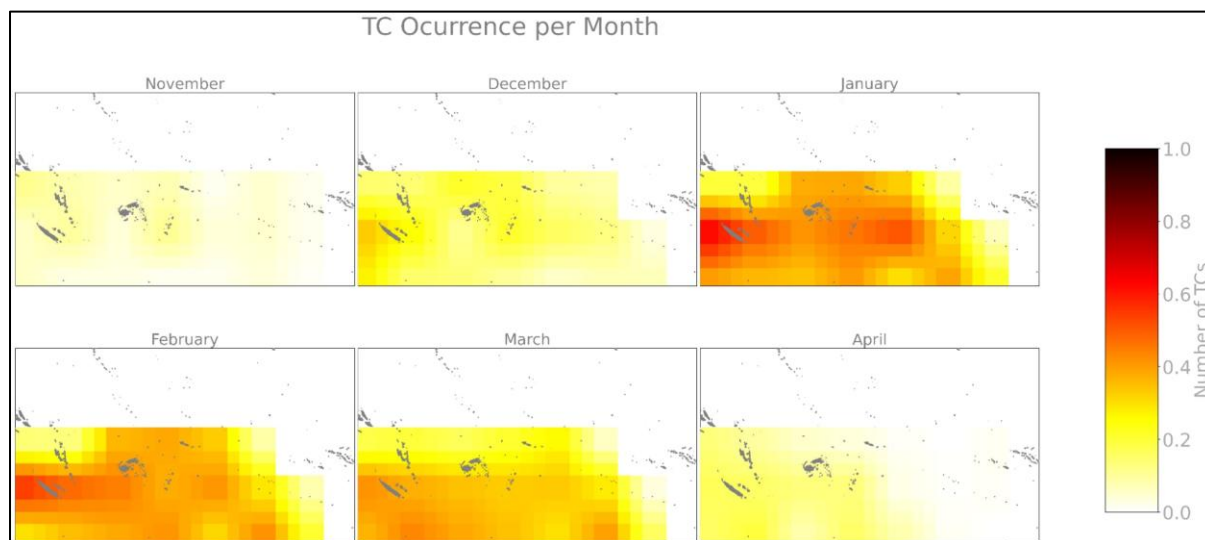


Figure 3: Expected tropical cyclone activity per month for the 2025-26 cyclone season, indicating the peak timeline for most tropical cyclone activity for Tonga should be expected to occur in the months of January to March 2026.

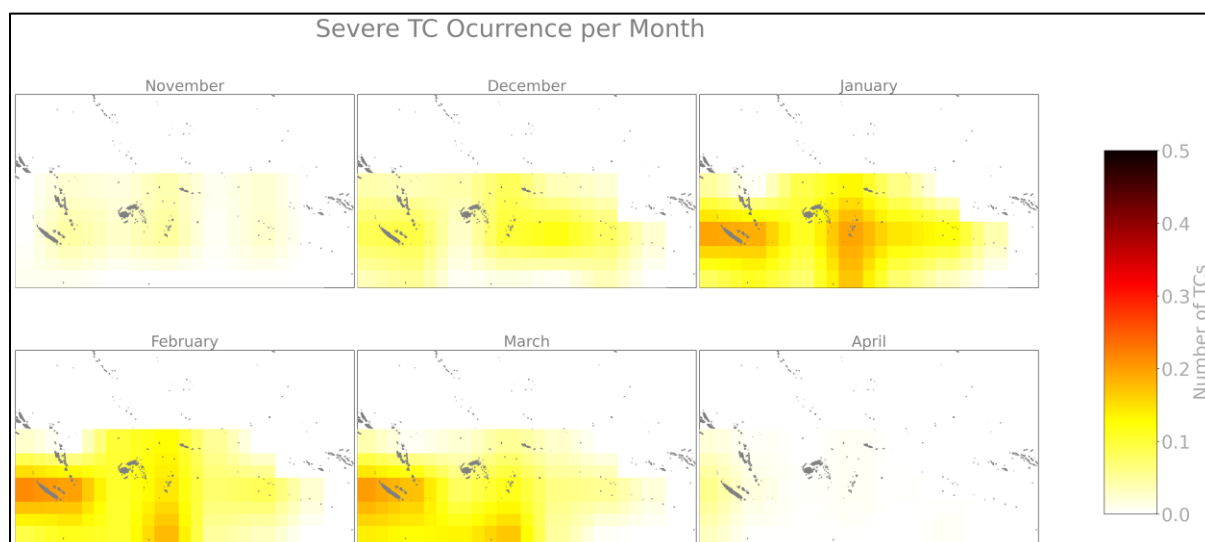


Figure 4: Expected severe tropical cyclone activity per month for the 2025-26 cyclone season, indicating that the peak month of severe tropical cyclone activity for Tonga should be expected to occur in the month of January and February 2026.

Historical Tropical Cyclone events that have affected Tonga during Tropical Cyclone Seasons similar to the upcoming 2025-2026 Tropical Cyclone Season.

Tropical Cyclones that have affected Tonga in the past where current and forecast conditions are similar to the 2025/2026 Tropical Cyclone Season are indicated in Table 1.

Tropical Cyclone Season	No. of Tropical Cyclones and Depression occurring in our Area	No. of Severe Tropical Cyclones Occurring in our Area
1980-81	6	0
1983-84	2	0
2000-01	1	1
2001-02	1	1
2003-04	2	1
2005-06	3	1
2012-13	2	1
2016-17	2	0
Average	2.4 $\approx$ 2	0.6 $\approx$ 1

Table 1: Current sea surface temperatures patterns indicates that the 2025/26 Tropical Cyclone season is expected to be similar to 8 other Tropical Cyclone seasons in the recorded past. These are referred to as the analogue years: 1980-81, 1983-84, 2000-01, 2001-02, 2003-04, 2005-06, 2012-13, 2016-17.

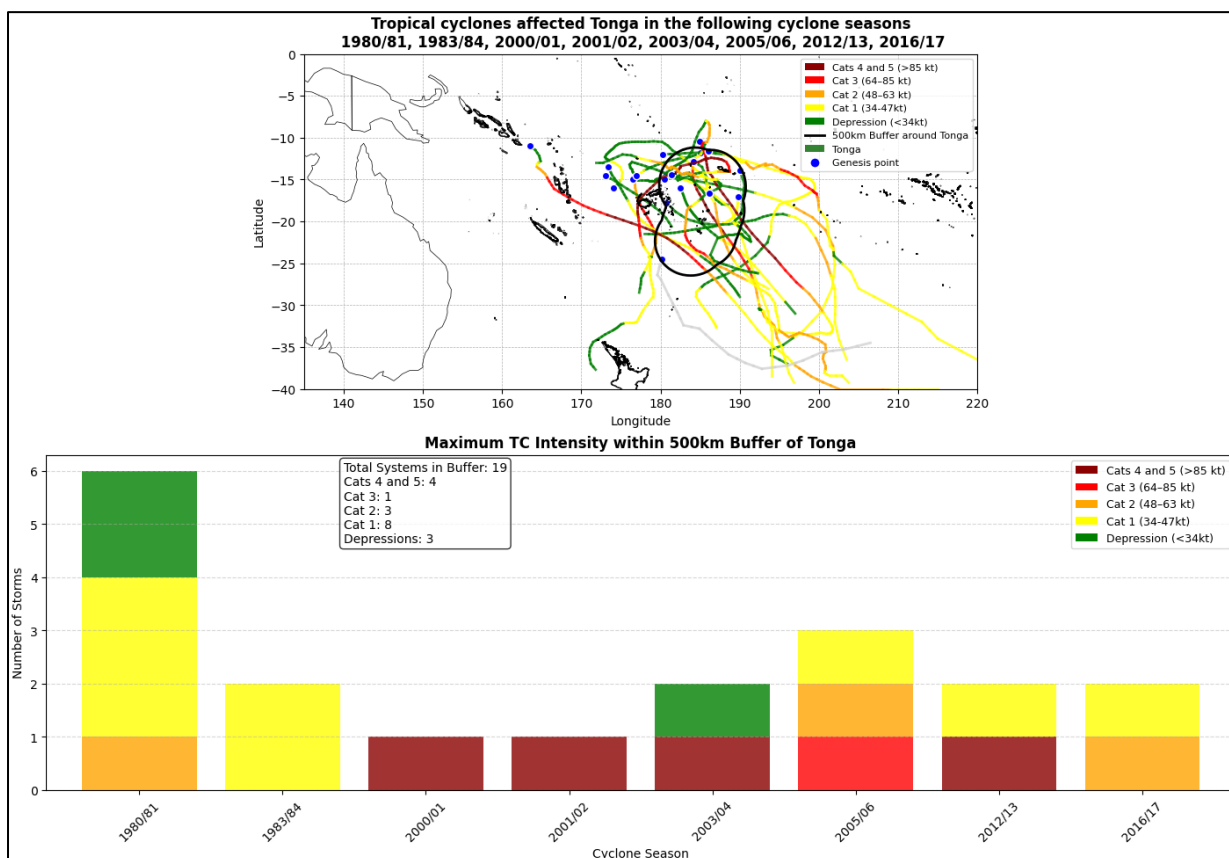


Figure 5: Tropical Cyclones (TC) and tropical depressions that affected Tonga using a 500km buffer zone in the past analogue TC seasons with similar conditions to this upcoming 2025-26 TC season (top panel) and the count of maximum TC intensities (bottom panel) within the 500km buffer zone of Tonga.

Severe Tropical Cyclones that have occurred in years similar of this coming Tropical Cyclone season

Island Group Affected	Severe Cyclone	TC Season
Ha'apai/Tongatapu/Eua	PAULA (Cat 4)	2000/01
Niuafo'ou/Niuaatoputapu/Vava'u	WAKA (Cat 4)	2001/02
Niuafo'ou/Niuaatoputapu	HETA (Cat 3)	2003/04
Tongatapu/Eua	VAIANU (Cat 3)	2005/06
Niuafo'ou/Niuaatoputapu	EVAN (Cat 3)	2012/13

Table 2: Severe Tropical Cyclone events that have occurred in past TC seasons similar to this upcoming 2025-26 TC Season.

Likely Sector Impacts during the 2025-2026 Tropical Cyclone Season

1. Agriculture

Although there is average cyclone occurrence for Tonga this TC season, it is the cyclone season so strong wind events will happen from time to time and crops prone to wind damage like Banana, Papaya and Breadfruit will be affected. At the same time, Neutral to La Nina conditions will bring average to above average rainfall which will be good for planting higher rainfall (big leaf plants) crops such as Kava, Taro, Banana and Kape. Weed management will be a must this season in order to get a good harvest.

2. Water

Water surplus during this season is to be expected for the first half of the TC Season. Therefore, rain water should be collected and harvested this season as much as possible to be used when the rainy season ends around April 2026. Clean roofs and replace guttering.

3. Health

Higher risk of water contamination related diseases occurring due to events of above average rainfall expected and flooding of low-lying areas. Mosquitoes will be a problem from the months of November to December due to higher rainfall and higher humidity so mosquito management will be key to prevent mosquito transmitted disease like dengue.

4. Infrastructure

There is a moderate to high chance of one severe cyclone happening this season, so the public are advised to fix shutters and trim trees near the house just in case we get a severe event.

5. Tourism

Moderate to High risk for Tourism activities due to moderate to high chance of a severe cyclone occurring.

6. Fisheries

Ocean nutrients will be abundant due to La Nina conditions so expect tuna fisheries to be good as well as trolleying. Expect low to moderate coral bleaching or algae blooms.

7. Utilities

Moderate to high risk of Communications, Water and Power utilities failures due to tropical cyclone activity. But high risk of flooding related problems.

8. Transport

Moderate to high risk of above than normal cancellations to ferry and aircraft operations due to stronger winds and tropical cyclone activity. Higher risk road and drainage flooding related problems due to higher expectation of above average rainfall.

Note of caution

It should be noted that the information provided is only to be used as guidance and the given range of tropical cyclone numbers is indicative only. It is expected that the total number of tropical cyclones could be in the vicinity of the listed values, and not necessarily within the

given range. The values are the most likely number of tropical cyclones based on statistical and dynamical analysis, including the influences by regional and global weather and climate variability drivers and indices.

All communities should remain alert and prepared throughout the 2025-2026 Tropical Cyclone Season and take heed of tropical cyclone alerts, warnings and advisories seriously whenever it is issued to reduce the negative effects on life and property.

All communities are urged to be vigilant and follow daily forecast information, TC outlooks and advisories provided by the Meteorology Department of the Ministry of MEIDECC throughout the season. An update to this outlook will be issued by the end of January 2026. For more information, please contact us via email at metstaff@met.gov.to or our toll free number at 0800638.

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