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2017–2018 Tropical Cyclone Season Outlook for Tonga

(16 October 2017)

Summary

The tropical cyclone (TC) activity expected in the 2017/18 Tropical Cyclone Season to affect Tonga is likely to be around average. This means that Tonga could expect up to 2 cyclones this season with a 40-50% chance that at least 1 could be Severe (Category 3 or above).

Any tropical cyclones passing close to the country, associated active cloud and rain bands may occasionally affect Tonga with marked rainfall and possible flooding, including sea flooding of low-lying coastal areas.

With the expectation of tropical cyclone formation (genesis) to lie to the west of the Dateline towards the Coral Sea region, there is high chance that any tropical cyclone affecting Tonga would approach from the Northern, Western and Southern sectors.

About 4 to 6 named Tropical Cyclones are expected for the South West Pacific in 2017/2018 season.

Analysis and Outlook

For Tonga

The official 2017/18 TC Season will begin on 1st of November 2017, and will end on 30th April, 2018. It should be noted that tropical cyclones have occasionally formed outside this period e.g. 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.

International forecast guidance has changed markedly in the past month. Previously, there was a strong consensus for continuation of ENSO-neutral conditions. Now there is an approximate 50:50 split between La Niña and neutral conditions being forecast through to March 2018, with very little chance of El Niño development (<5%) through this period.

On record, about 1.88 cyclones affect Tonga during El Nino, 1.63 during La Nina and 1.67 during neutral years.

Cyclones that have affected Tonga in the past where current and forecast conditions are similar to the 2017/18 Cyclone Season

Cyclone Season	Severe (Cat3 and above)	Not Severe (Cat2 and Cat1)
1974-1975	1 <i>Severe TC "VAL"</i>	0
1983-1984	0	2
1995-1996	0	1
2005-2006	1 <i>Severe TC "VAIANU"</i>	2
2008-2009	0	2
2011-2012	0	2
2012-2013	1 <i>Severe TC "EVAN"</i>	0
2013-2014	1 <i>Severe TC "IAN"</i>	1
2016-2017	0	1
Average	0.44	1.22

Table 1: Current sea surface temperatures patterns indicate the 2017/18 Tropical Cyclone season is expected to be similar to 9 other seasons in the past (1974/75, 1983/84, 1995/96, 2005/06, 2008/09, 2011/12, 2013/14, 2016/17).

For the South West Pacific

La Niña-like signals in the ocean—atmosphere system in the tropical Pacific Ocean have become more prominent in September 2017, although have not yet reached the thresholds required for a La Niña event to be declared.

The Southern Oscillation Index (SOI) for September 2017 was positive at +0.6, on the La Niña side of neutral conditions. Wind observations also indicated enhanced trade-winds which is a pattern consistent with a developing La Nina.

Moreover, rainfall patterns in the tropical Pacific have become more La Niña-like than they were in August; that is, more rainfall closer to Australia and drier than normal conditions about and east of the Dateline.

The average number tropical cyclones that form in the Southwest Pacific is 8.1 During El Nino Years 6.1 during La Nina and 6.3 during neutral years.

The outlook indicates that about 4 to 6 named tropical cyclones are expected for the South West Pacific in 2017/2018 season. Tropical cyclone activity is expected to shift to west in the coming season consistent with cyclone tracks expected during La Nina.

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 scientific evidence, including the influences by regional and global weather and climate variability drivers and indices.

All communities should remain alert and prepared throughout the 2017-18 Tropical Cyclone Season and take heed of tropical cyclone alerts, warnings and advisories seriously whenever it is issued to reduce the effects on life and property. All communities are urged to be vigilant and follow forecast information provided by the Meteorology Department of the Ministry of MEIDECC throughout the season.

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