

Tropical Cyclone Outlook 2019-20

Regional Specialized Meteorological Centre Nadi

Tropical Cyclone Centre Area of Responsibility

The Tropical Cyclone (TC) activity in the 2019-20 TC season within the Regional Specialized Meteorological Center Nadi – Tropical Cyclone Centre (RSMC Nadi-TCC) Area of Responsibility (AoR) (Equator to 25° South between 160° East and 120° West) is anticipated to be **near normal** or **below normal** with **moderate confidence**. The official 2019-20 TC Season begins on the 1st November 2019 and ends on the 30th April 2020.

Five to eight TCs are expected to occur in the RSMC Nadi-TCC AoR during the 2019-20 season. In addition, **two to four** TCs may reach **severe TC** intensity (Category three status or above). The average for all the 50 seasons from 1969-70 to 2018-19 is 7.1 TCs. The average for El Niño, La Niña and neutral seasons are 8.4, 6.1 and 6.2 TCs, respectively.

This outlook is based upon the status of the El Niño Southern Oscillation (ENSO) over the preceding April to June and July to September 2019 periods. During this period, neutral conditions were present in the tropical Pacific. The analogue seasons were further consolidated based on the international guidance forecast for the continuation of the ENSO-neutral conditions during the upcoming TC season (November 2019 to April 2020). An analogue of 12 TC seasons with similar atmospheric and oceanic conditions to present were used to prepare this outlook (Table 1).

Risk of TC activities in Solomon Islands, New Caledonia, Fiji, Wallis & Futuna, Tonga, Niue, Southern Cook Islands, and Austral Islands are likely to be **near normal** this TC season, while there are **increased** risk for Tuvalu, Tokelau, and Samoa. **Reduced** risk of TC activities are anticipated for Vanuatu, Northern Cook Islands, Society Islands, Tuamotu Archipelago/Gambier Islands and Pitcairn Islands. TC activities in the Kiribati and Marquesas areas are unlikely. Refer to Table 2 for climatological numbers of TC.

There are **near normal** risk of **severe** TCs for Vanuatu, New Caledonia and Austral Islands, while there are **increased** risk for Fiji, Solomon Islands, Tuvalu, Wallis & Futuna, Tokelau, Samoa, Tonga and Niue. The risk of **severe** TCs are **reduced** for Northern and Southern Cook Islands, Society Islands and Tuamotu Archipelago/Gambier Islands. Severe TC is unlikely in the Pitcairn Islands, Marquesas and Kiribati regions. Refer to Table 3 for climatological numbers of **severe** TCs.

For Fiji, one to two TCs could pass through the Exclusive Economic Zone this season of which one may reach or exceed category three status. When TCs pass close to Fiji, the associated active cloud and rain bands may occasionally affect the country with marked rainfall and possible flooding, including sea flooding of low-lying coastal areas.

Historical records show that TCs have occasionally formed in our region outside the official TC Season, including May, June, July, September and October. Because of this, it is critical that all communities remain alert and prepared at all times. The peak period for TC activities in the RSMC Nadi-TCC AoR is usually from January to March.

Table 1: Analogue Years for 2019-20 Season

Seasons	TC Occurrence (RSMC Nadi-TCC AoR)	Severe TCs (Cat 3-5) (RSMC Nadi-TCC AoR)
1978-79	6	2
1980-81	12	4
1981-82	6	5
1989-90	7	2
1990-91	2	1
1992-93	10	6
1993-94	5	4
1996-97	11	6
2001-02	5	2
2003-04	3	2
2012-13	5	4
2013-14	6	2
Average (Median)	6.5 (6)	3.3 (3)

Table 2: TC occurrence risks during 2019-20 season in comparison to climatology

Country	Climatology	Analogue Seasons	Risk
Solomon Islands	1.7	1.8	Normal
Vanuatu	1.9	1.2	Reduced
New Caledonia	2.8	2.7	Normal
Fiji	2.1	1.9	Normal
Tuvalu	0.4	0.6	Increased
Wallis & Futuna	0.5	0.6	Normal
Tokelau	0.1	0.2	Increased
Samoa	0.3	0.4	Increased
Tonga	1.7	1.8	Normal
Niue	0.6	0.6	Normal
Northern Cook Islands	0.5	0.3	Reduced
Southern Cook Islands	1	1.1	Normal
Society Islands	0.5	0.2	Reduced

Austral Islands	0.6	0.5	Normal
Tuamotu Archipelago/Gambier Islands	0.4	0.1	Reduced
Pitcairn Islands	0.1	0	Reduced
Marquesas	0	0	Unlikely
Kiribati	0	0	Unlikely

Table 3: Severe TC (Cat 3-5) risks during 2019-20 season in comparison to climatology

Country	Climatology	Analogue Seasons	Risk
Solomon Islands	0.6	0.8	Increased
Vanuatu	0.9	0.8	Normal
New Caledonia	1.3	1.4	Normal
Fiji	0.8	1	Increased
Tuvalu	0.1	0.2	Increased
Wallis & Futuna	0.2	0.4	Increased
Tokelau	0.1	0.2	Increased
Samoa	0.1	0.3	Increased
Tonga	0.5	0.7	Increased
Niue	0.2	0.3	Increased
Northern Cook Islands	0.2	0.1	Reduced
Southern Cook Islands	0.4	0.3	Reduced
Society Islands	0.2	0.1	Reduced
Austral Islands	0.2	0.2	Normal
Tuamotu Archipelago/Gambier Islands	0.1	0	Reduced
Pitcairn Islands	0	0	Unlikely
Marquesas	0	0	Unlikely
Kiribati	0	0	Unlikely

In summary, based on the historical TC data, the predictions for the 2019-20 TC season are as follows:

- ▶ **Near normal** or **below normal** TC occurrence is anticipated in the RSMC Nadi-TCC AoR in the 2019-20 season;
- ▶ **Five to eight** TCs are expected to occur in the RSMC Nadi-TCC AoR;
- ▶ **Two to four** TCs may reach category three status or higher (severe TC);

- ▶ **Normal** TC activities are expected for Solomon Islands, New Caledonia, Fiji, Wallis & Futuna, Tonga, Niue, Southern Cook Islands and Austral Islands;
- ▶ **Increased** TC risk are likely for Tuvalu, Tokelau and Samoa;
- ▶ There are **reduced** risk for TC activities in Vanuatu, Northern Cook Islands, Society Islands, Tuamotu Archipelago/Gambier Islands and Pitcairn Islands;
- ▶ TC activity in the Kiribati region and Marquesas areas are **unlikely**;
- ▶ There are **normal** risk of **severe** TCs for Vanuatu, New Caledonia and Austral Islands;
- ▶ There are **increased** risk of **severe** TCs for Solomon Islands, Fiji, Tuvalu, Wallis & Futuna, Tokelau, Samoa, Tonga and Niue;
- ▶ **Reduced** risk of severe TCs are anticipated for Northern and Southern Cook Islands, Society Islands and Tuamotu Archipelago/Gambier Islands;
- ▶ Severe TCs are **unlikely** in the Pitcairn Islands, Marquesas and Kiribati region;
- ▶ Non-TCs or Tropical Depressions have and can still cause loss of lives and severe damages to properties.

It should be noted that the information provided are only to be used as guidance and the given range of TC numbers is indicative only. It is expected that the total number of TCs could be in the vicinity of the listed values, and not necessarily within the given range. The values are the most likely number of TCs 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 2019-20 TC season and take heed of TC alerts, warnings and advisories seriously whenever it is issued to reduce the effects on life and property.

Issued by:
The Director
Fiji Meteorological Service
11th October, 2019

Figure 1: Predicted number of tropical cyclones in RSMC-Nadi's AoR for the 2019_20 TC season.

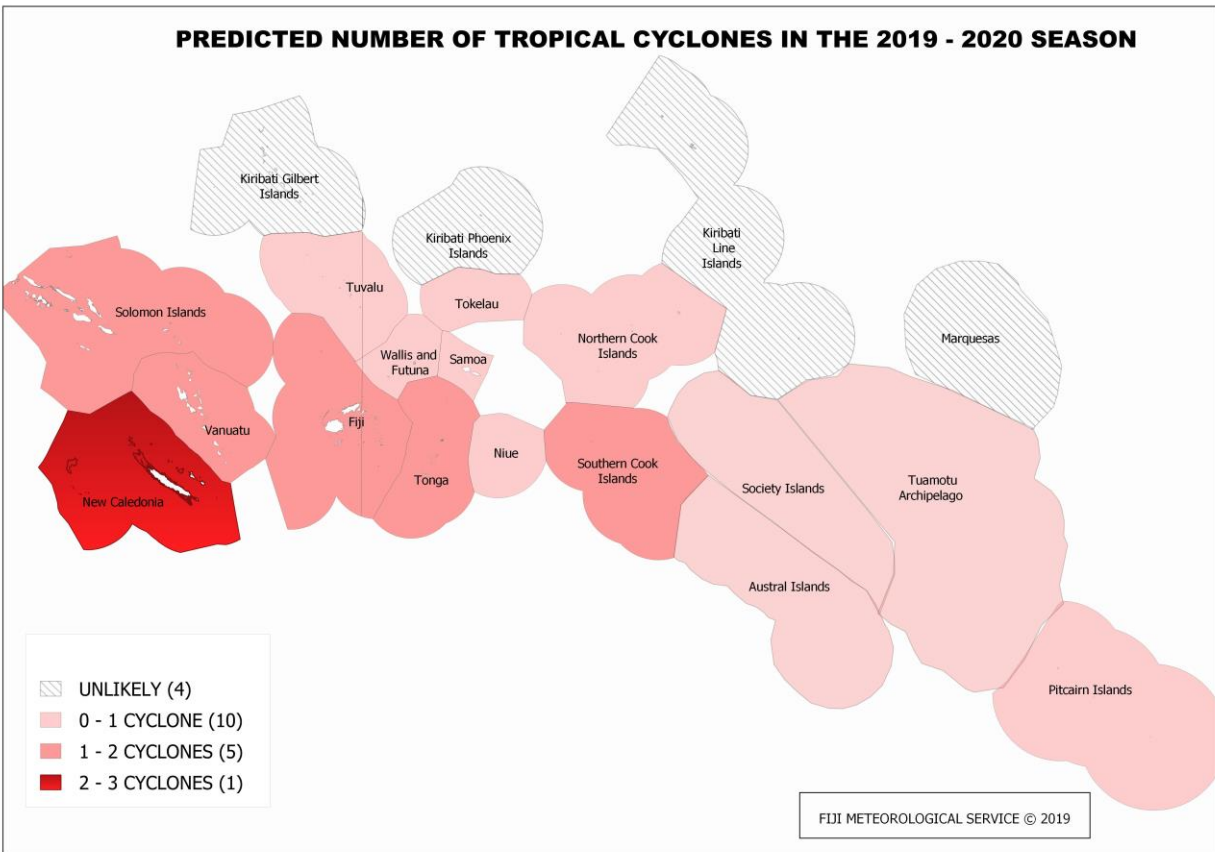


Figure 2: Predicted number of severe tropical cyclones in RSMC-Nadi's AoR for the 2019_20 TC season.

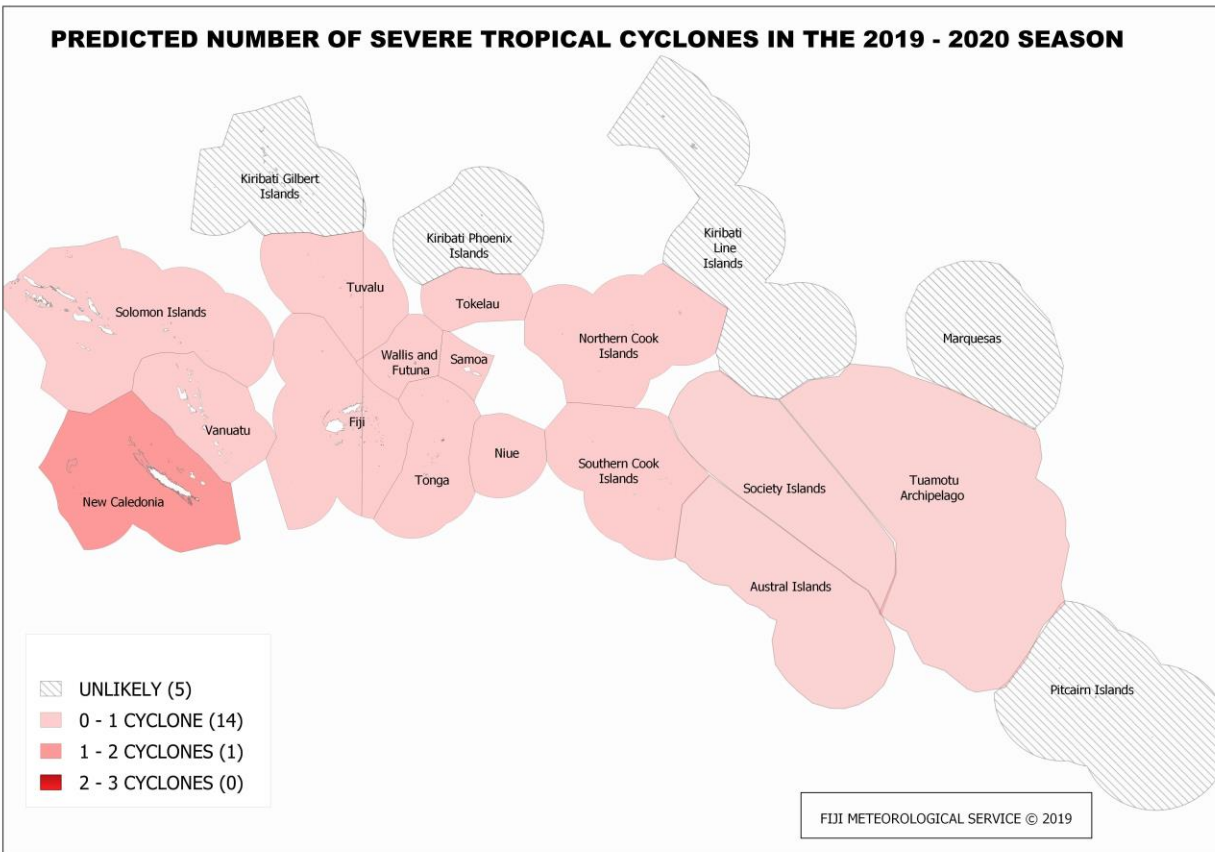


Figure 3: Tropical cyclone risk during the 2019_20 TC season in comparison to climatology.

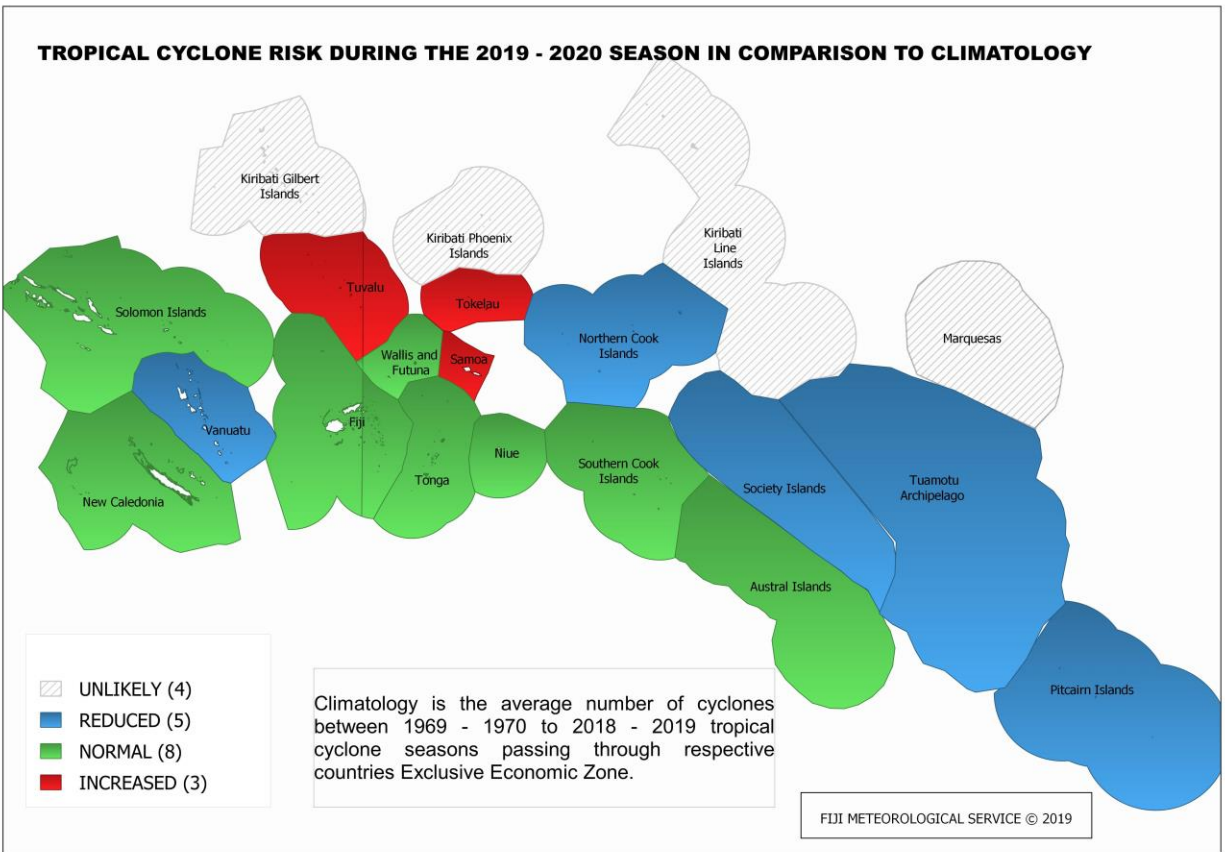
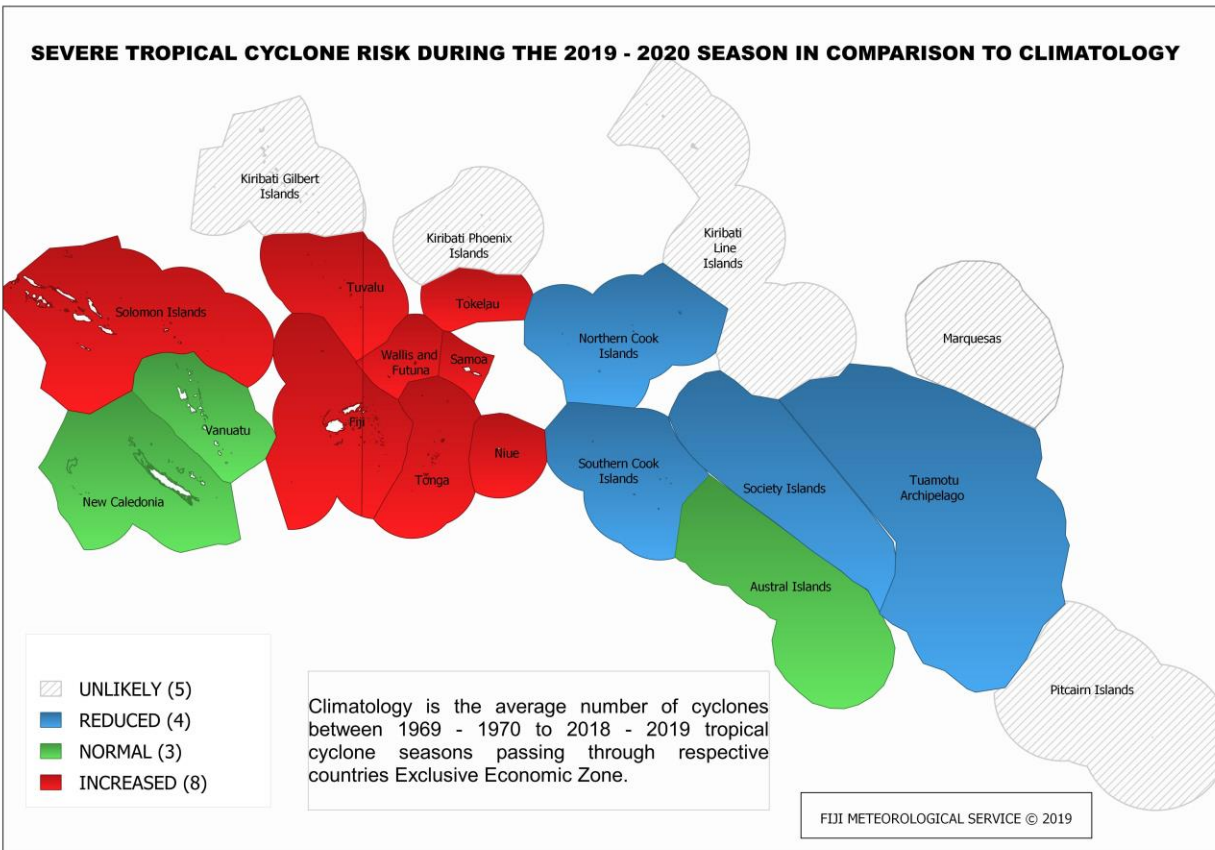


Figure 4: Severe tropical cyclone risk during the 2019_20 TC season in comparison to climatology.



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