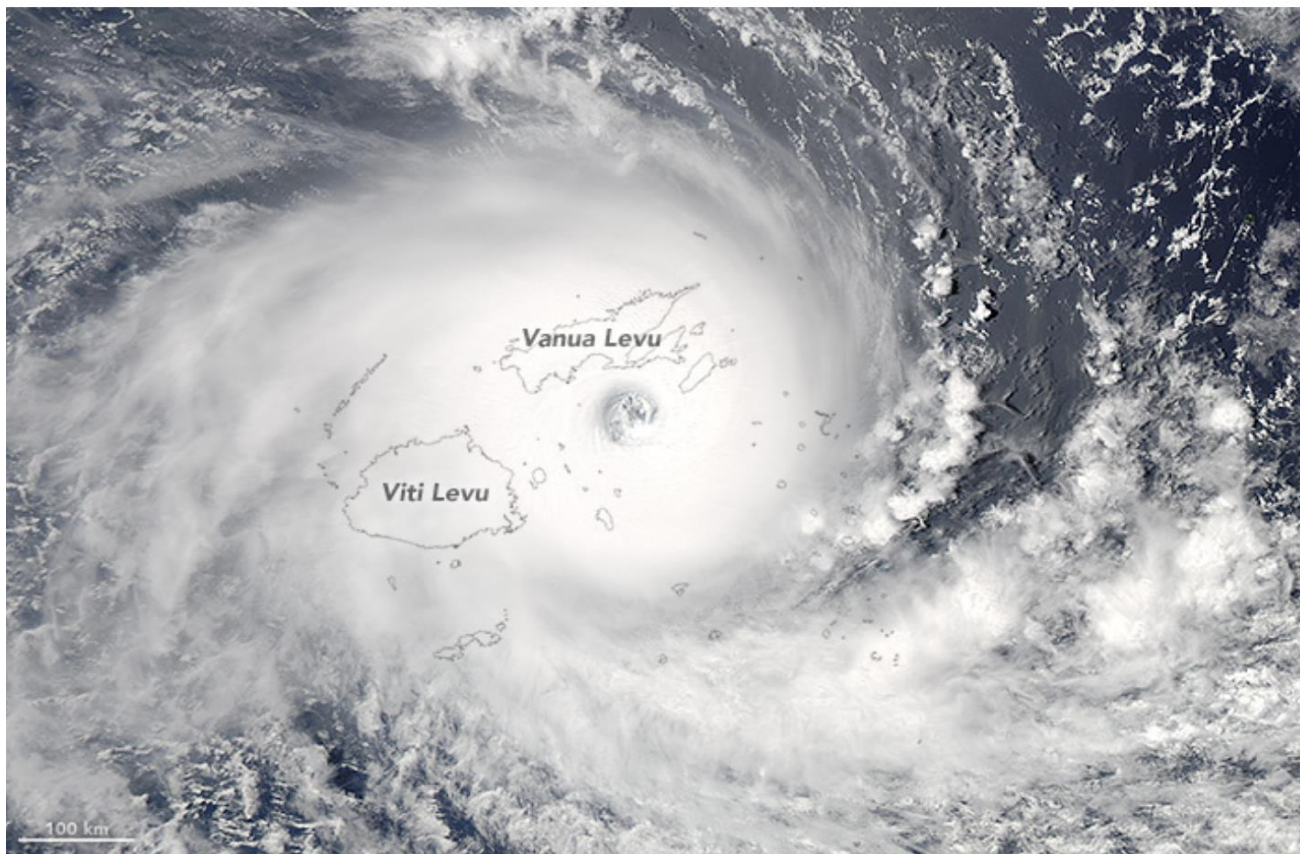


2020/21 RSMC-NADI TROPICAL CYCLONE OUTLOOK

"Near average to below average cyclone season"

[FOUR TO SIX TROPICAL CYCLONES]



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Detailed Outlook

Tropical cyclone activities in the Pacific Island region are closely associated with the El Niño Southern Oscillation (ENSO), which is a fluctuation of oceanic and atmospheric condition between the eastern and western tropical Pacific Ocean. The ENSO has two extreme phases, that is, El Niño and La Niña.

To predict the outlook for the coming tropical cyclone season, analogue seasons were identified, that is, seasons in the past (from 1969) with similar ENSO state. Firstly, the analogue seasons were identified based on the state of tropical Pacific in the months preceding the tropical cyclone season, in particular, between May and September. During this period, the ENSO state transitioned from ENSO neutral (neither El Niño nor La Niña) to a weak La Niña. The analogue seasons were further narrowed based on ENSO outlooks from the global climate models. The global climate model outlooks suggest that this tropical cyclone season is likely to be driven by a weak or moderate La Niña event. This outlook uses the three-month running mean of the NINO3.4 index and the Southern Oscillation Index for analogue identification, the most widely used indices for defining the ENSO.

Based on the above methodology six analogue seasons were identified with similar climate state to present and expected condition during this tropical cyclone season. The analogue seasons includes 1970-71, 1984-85, 1995-96, 2007-08, 2016-17 and 2017-18 seasons. Note that the selection of analogue seasons are limited due to availability of high-quality satellite data from the 1969-70 season. Enhanced high quality tropical cyclone best track data from the Southern Hemisphere Tropical Cyclone Portal were used for tropical cyclone analysis.

Upon analysis of tropical cyclone counts in the analogue seasons, four to six tropical cyclones are expected in the RSMC Nadi-TCC AoR. On average, around seven tropical cyclones affect this region a season. Thus, this season is predicted to have a near average or below average tropical cyclone activity.

Out of the predicted four to six tropical cyclones, one to three are expected to become a severe tropical cyclone, that is, Category 3 to 5 intensity. On average around three severe tropical cyclones affect the RSMC Nadi-TCC AoR a season. Thus, this season is likely to have near average or below average number of severe tropical cyclones.

Table 1: Tropical cyclone numbers in the RSMC Nadi-TCC AoR in the six analogue seasons

Seasons	Total Number of Tropical Cyclones (Category 1 to 5)	Number of Severe Tropical Cyclones (Category 3 to 5)
1970-71	5	0
1984-85	9	5
1995-96	4	1
2007-08	4	3
2016-17	2	1
2017-18	6	3
Average (rounded-off)	5	2

Near average or above average tropical cyclone activity is likely to the west of International Dateline in the RSMC Nadi-TCC AoR this season with around three to six tropical cyclones expected to occur in this region, in comparison to normal of three to five tropical cyclones. Out of the three to six expected tropical cyclones, one to three are likely to be severe tropical cyclones, which is close to the normal number of severe tropical cyclones for this region.

On average around four tropical cyclones occur east of International Dateline in the RSMC-Nadi TCC AoR every season. However, it is expected that this area will have reduced tropical cyclone activity this season with one to two tropical cyclones likely. The risk of severe tropical cyclone is also reduced to the east of Dateline this season in comparison to seasonal average of two severe tropical cyclones.

Usually around one to three tropical cyclones affect Fiji per season. Near normal tropical cyclone activity for Fiji is likely this season, with one to three tropical cyclones likely to pass through Fiji's Exclusive Economic Zone. Out of the one to three tropical cyclones, one severe tropical cyclone is likely to affect Fiji.

Table 2: Tropical cyclone numbers passing through Fiji’s Exclusive Economic Zone in the six analogue seasons

Seasons	Total Number of Tropical Cyclones (Category 1 to 5)	Number of Severe Tropical Cyclones (Category 3 to 5)
1970-71	1	0
1984-85	4	3
1995-96	0	0
2007-08	3	2
2016-17	1	0
2017-18	3	2
Average (rounded-off)	2	1

The analysis of past TC tracks shows that a greater number of tropical cyclones which affected Fiji in seasons similar to present, passed through the Western Division of Fiji. Hence, there is an elevated risk of tropical cyclone activity in the Western Division. Similarly, TCs also affected other parts of Fiji in seasons similar to present in the past. Therefore, all parts of Fiji should be equally prepared in the coming tropical cyclone season.

The TC season of the RSMC Nadi-TCC AoR extends from November to April, with the peak TC activity normally experienced from January to March. However, TCs have occasionally occurred in this region during October and May, and rarely in September and June. The analogue seasons also have out of season TCs. Thus, out of season TCs are also possible this season.

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 2020-21 TC season and take heed of TC alerts, warnings and advisories whenever it is issued to reduce the loss of life and damage to property.

It should be also noted that this outlook is for the RSMC Nadi-TCC AoR and it does not cover whole of the southwest Pacific. Nonetheless, most of the TCs in the southwest Pacific tend to occur in the RSMC Nadi-TCC AoR.

During La Niña events, Fiji usually experiences *elevated rainfall activity*. The climate models are also favouring for above normal rainfall over majority of the Fiji during the coming October to

December and January to March seasons. With a La Niña event established and in view of the rainfall outlook, there is an elevated risk of flooding in Fiji over the coming Wet Season.

Figure 1a: Analogue season track map - 1970-71 season

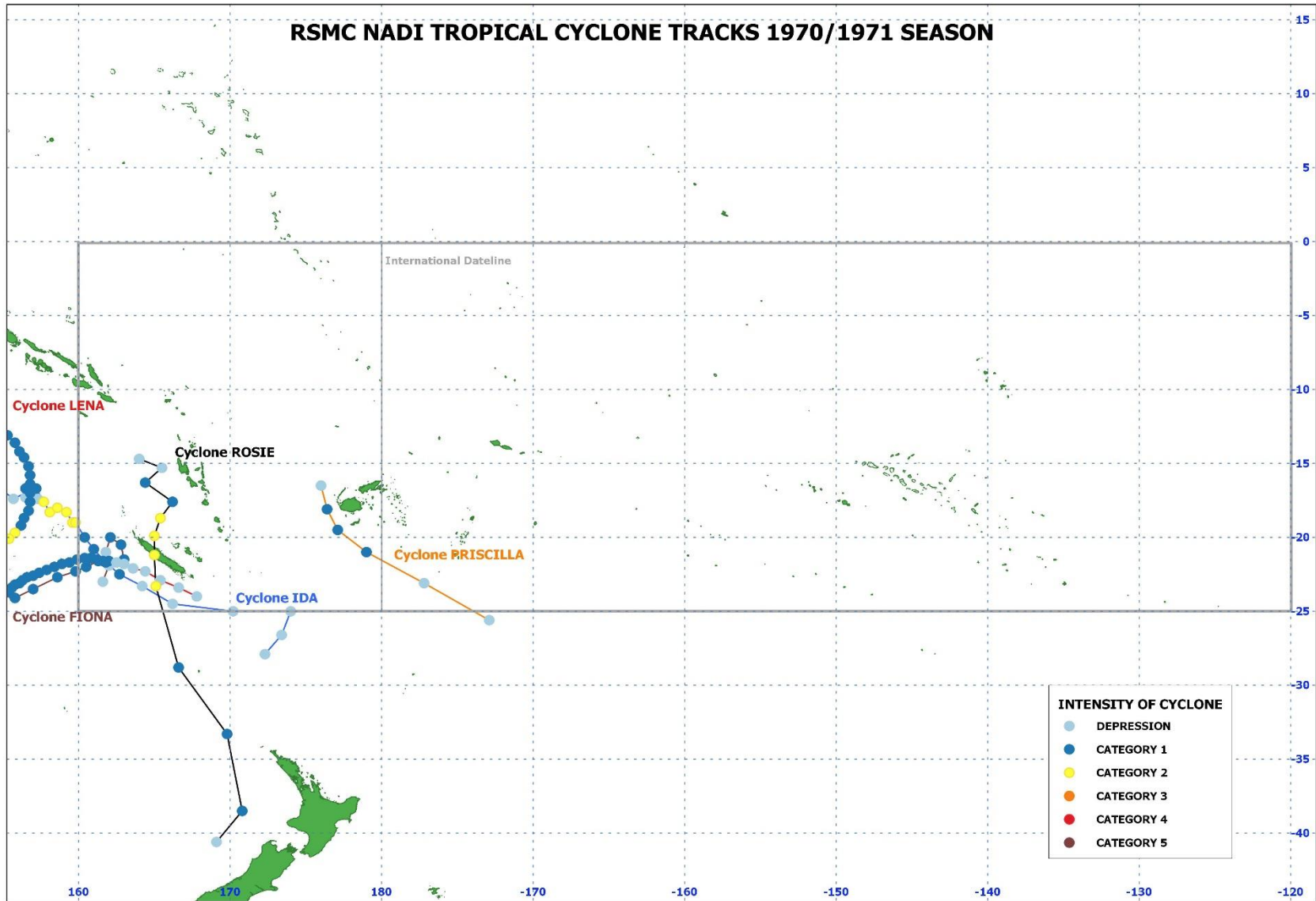


Figure 1b: Analogue season track map - 1984-85 season

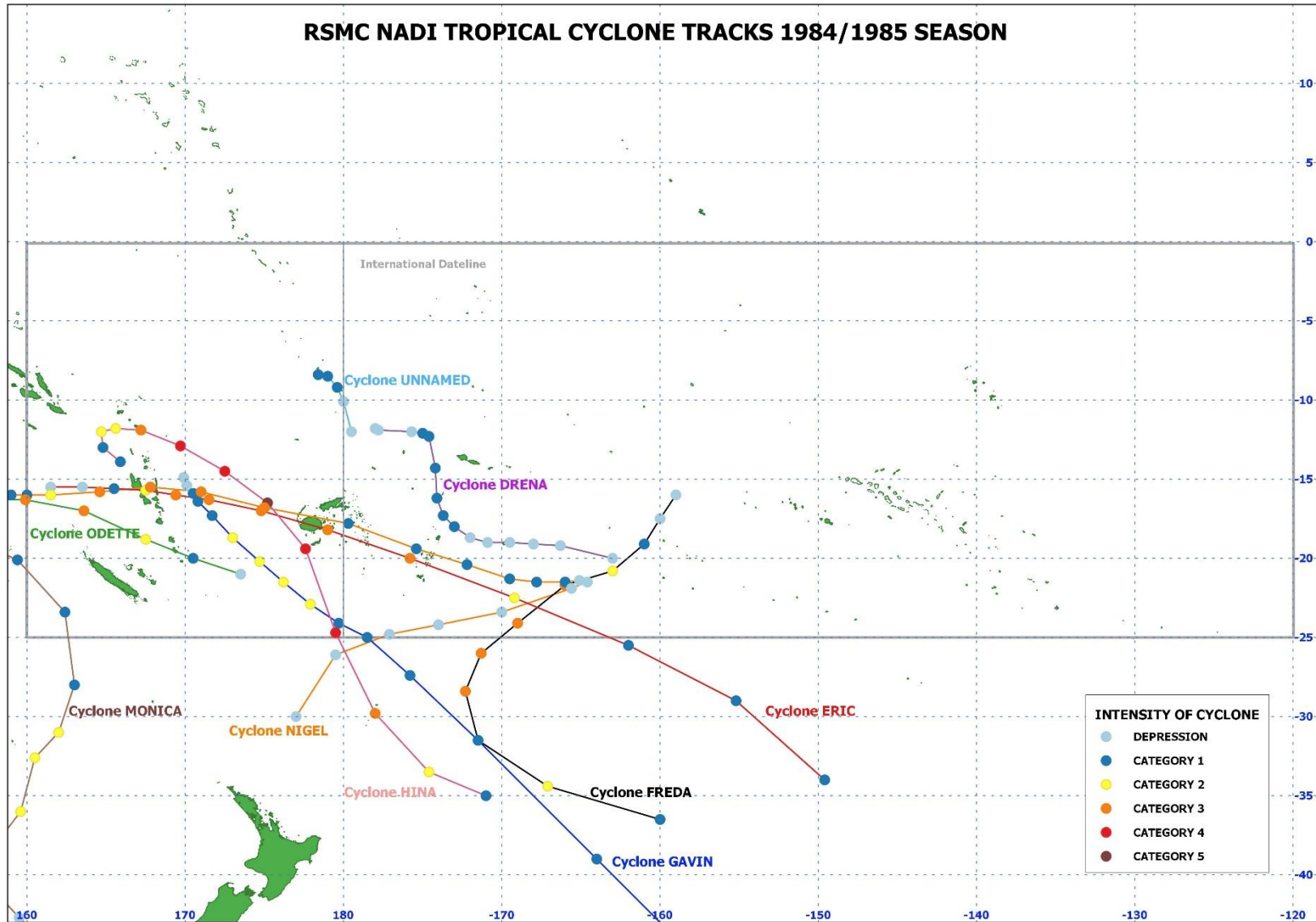


Figure 1c: Analogue season track map - 1995-96 season

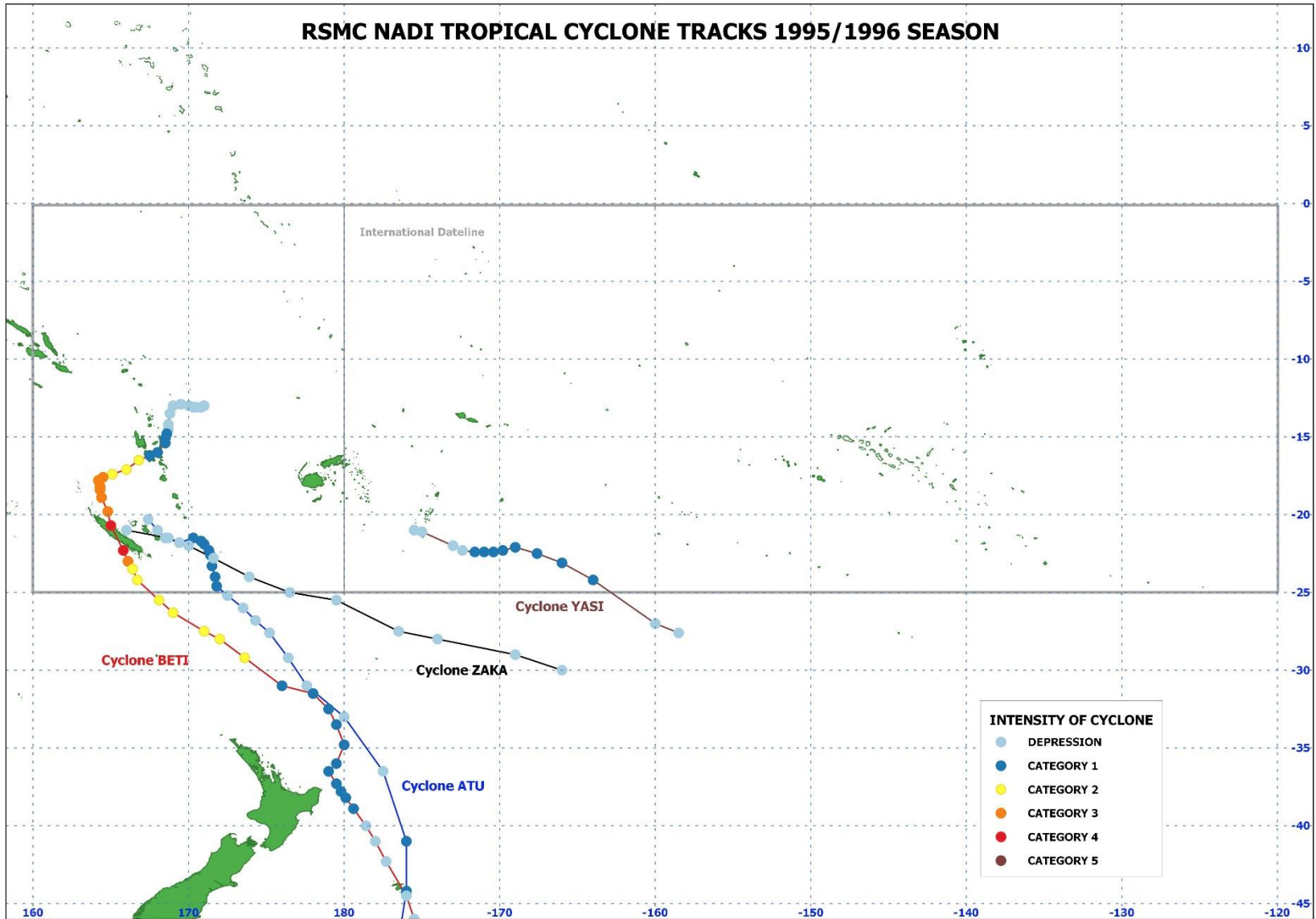


Figure 1d: Analogue season track map – 2007-08 season

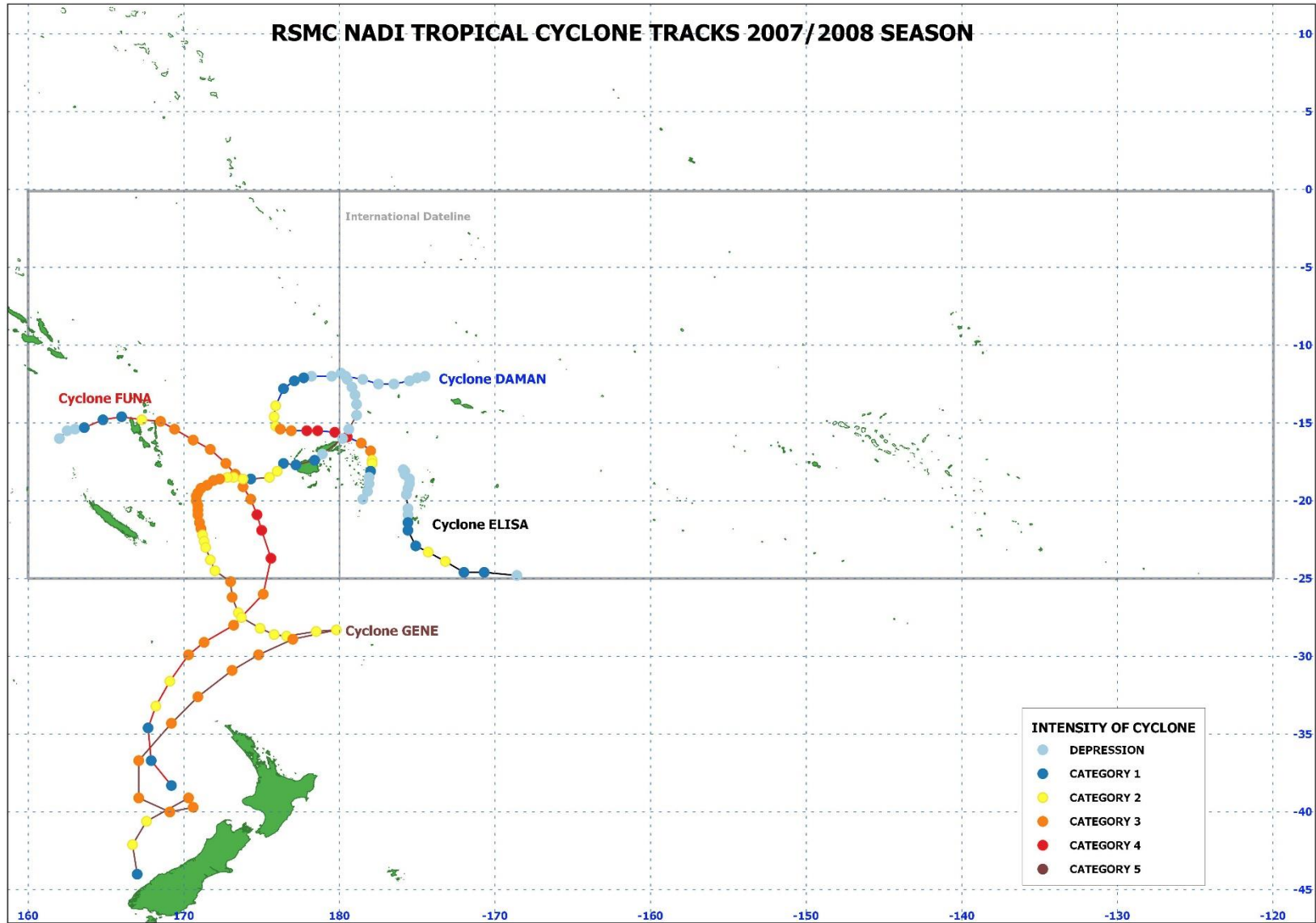


Figure 1e: Analogue season track map – 2016-17 season

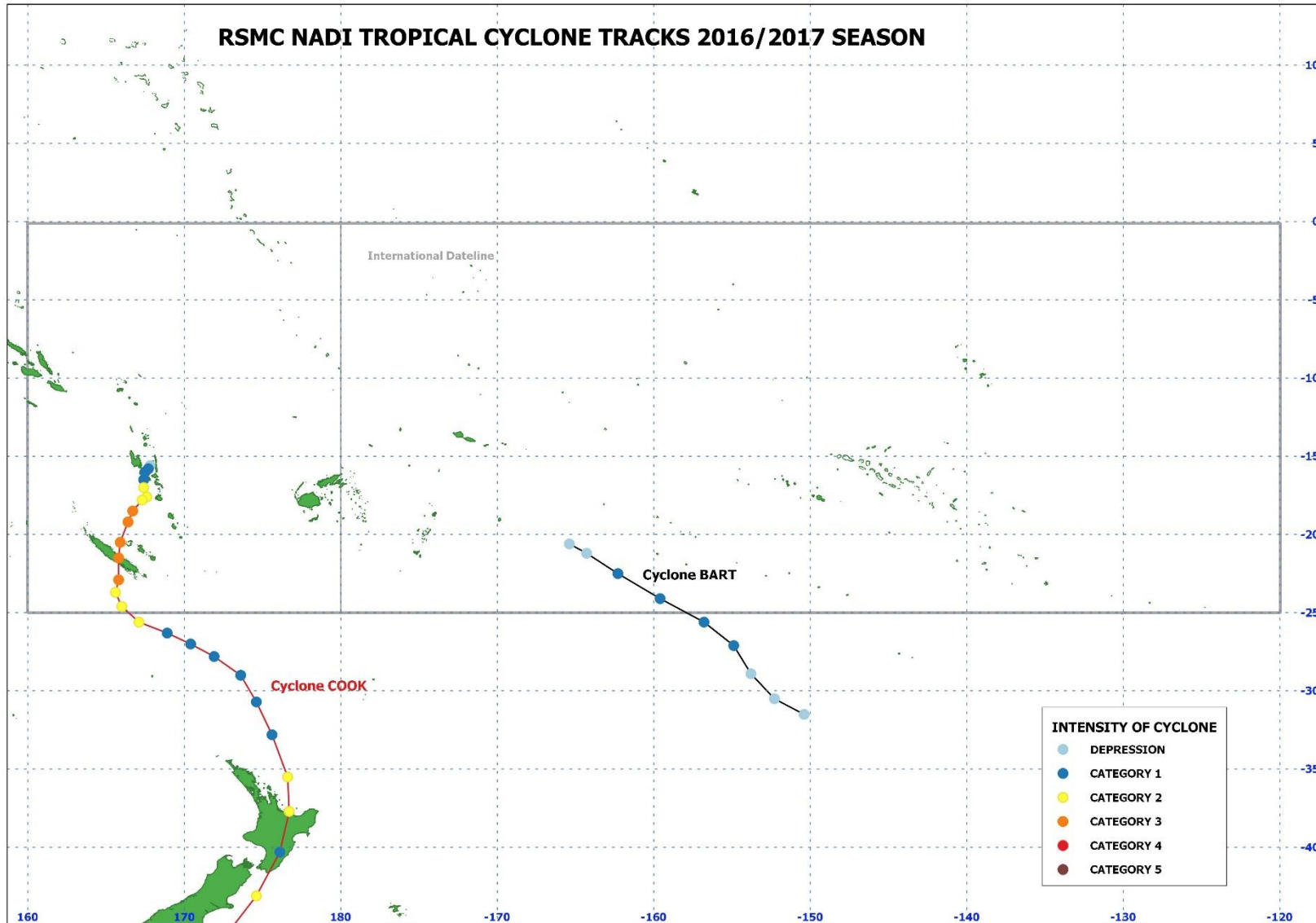
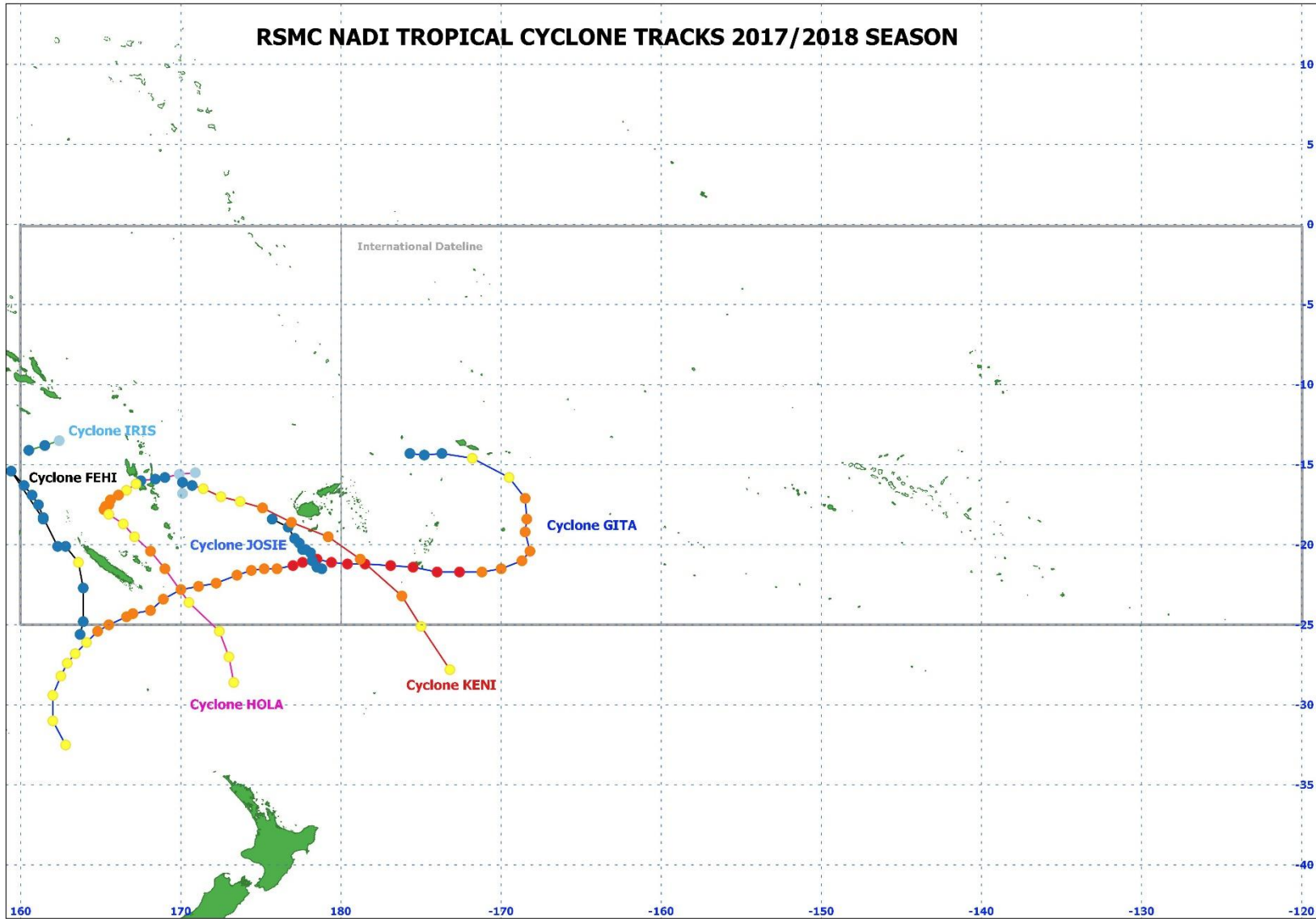


Figure 1f: Analogue season track map – 2017-18 season



End...