FIJI METEOROLOGICAL SERVICE

TROPICAL CYCLONE REPORT 2025/26

TROPICAL CYCLONE URMIL
27th February – 1st March

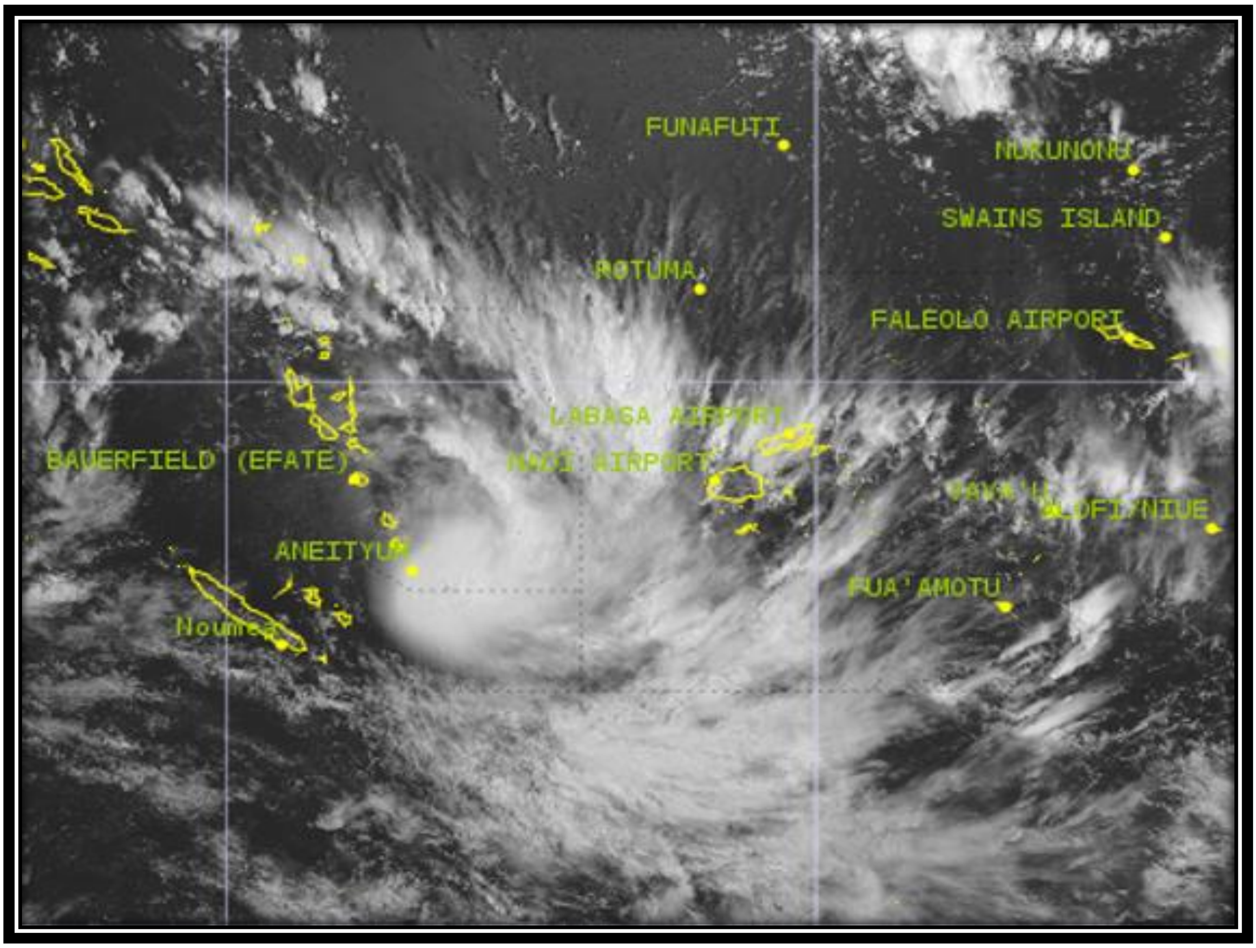

Image 1: Himawari Imagery of TC URMIL at around 27/2200UTC as it tracked through the southern parts of Vanuatu which reached peak intensity as a Category 2 system.

Iosefo Cauravouvinaka

Introduction

Tropical Cyclone (TC) Urmil was a short-lived system that persisted for just over 48 hours as a named cyclone within the RSMC Nadi Area of Responsibility. Emerging in the Southwest Pacific basin, Urmil became the first named system of the 2025/26 cyclone season and was notable for being the latest tropical cyclone on record to form in a season.

At its peak, TC Urmil reached the mid-range of Category 2 intensity, producing sustained winds of up to 100 km/h and gusts of 140 km/h across southern Vanuatu, particularly Tafea Province. Initial forecasts had suggested overnight intensification to depression status, leading to the system being named on 27 February. Beginning as a Category 1 cyclone, Urmil strengthened as it tracked east-southeast, reaching Category 2 and maintaining this intensity until the afternoon of 1 March, when it exited into the Tropical Cyclone Warning Centre (TCWC) Wellington Area of Responsibility (AOR).

This report outlines the complete life cycle of TC Urmil, from formation to the stage of handing over to the TCWC Wellington AOR. It presents life history of TC Urmil, climatological context, an analysis of its intensity and track, summary of warnings and advisories issued during its lifetime, operational impacts. The report concludes with discussion and recommendations, followed by a summary of key findings.

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1. Life History

Tropical Cyclone Urmil was officially named at approximately 0000UTC on 27 February 2026, becoming the first named system by RSMC Nadi for the 2025/2026 Southwest Pacific tropical cyclone season.

The system originated as a weak low-pressure system embedded within scattered convection displaced to the north and east of the center, located over northern Vanuatu. Convection gradually consolidated, and by 2100UTC on 25 February the disturbance was designated Tropical Disturbance 09F (TD09F), situated about 130 kilometers northwest of Vila (Image 2). Within 15hours, TD09F intensified further and was classified as a tropical depression at 1200 UTC on 26 February (Image 3).

Rapid development followed, with deep convection wrapping around the low-level circulation center (LLCC) from the east. By 0000 UTC on 27 February, the system had reached sufficient organization and intensity to be named Tropical Cyclone Urmil (Image 4). This marked a swift transition from depression to cyclone status within just twelve hours, underscoring the system's intensification.

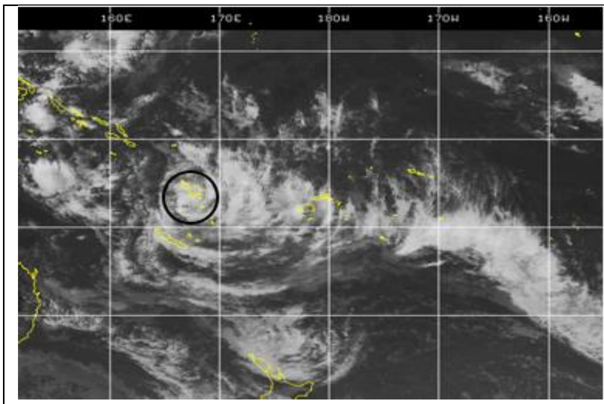

Image 2: TD09F (black) to the northern parts of Vanuatu around 9am FST (252100UTC) on the 26th of February becoming a significant tropical disturbance embedded in the region of Convergence.

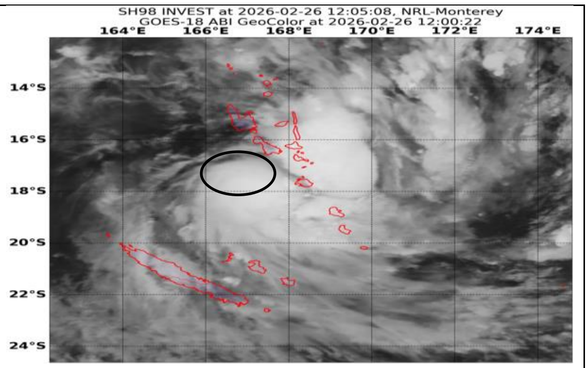

Image 3: TD09F intensified to a Tropical Depression (black circle) to the West of Vanuatu around 26/1200UTC or midnight on the 27th of February FST.

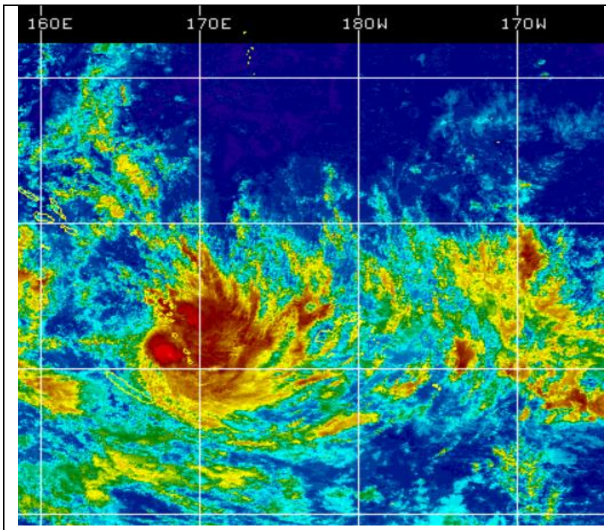

Image 4: At 27/0000UTC or 12pm FST, TD09F was named Tropical Cyclone Urmil. Deep convective banding from the east trying to wrap onto system center and expected to persist through favourable environment.

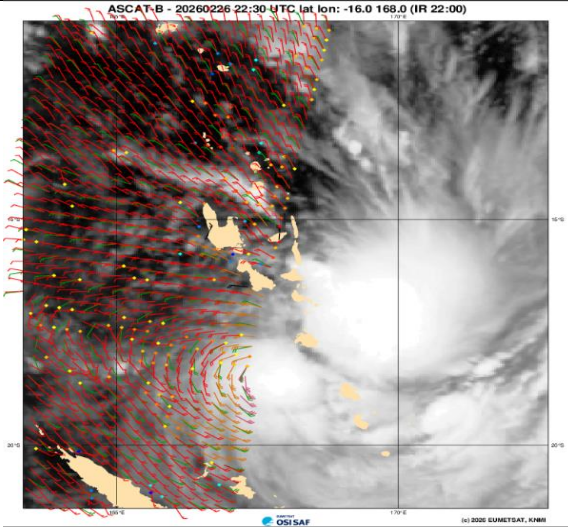

Image 5: At 26/2230UTC the ASCAT-B pass shows LLCC embedded within deep convection centre with 30 to 35 knots wrapping onto the LLCC as seen from the southwest quadrant.

Tropical Cyclone Urmil remained at Category 1 intensity for approximately 18 hours before intensifying into a Category 2 system at 2100 UTC on 27 February 2026. Steered southeast of Vanuatu by a subtropical ridge positioned to the south, the cyclone exhibited slight strengthening, with Images 6–9 showing a well-defined circulation and deep convection consolidating around the system center.

The cyclone was compact in size and maintained persistent deep convection over the low-level circulation centre, with secondary white bands wrapping in from the east and north (Figures 8–9). This organization was supported by a favourable environment of warm sea surface temperatures, low vertical wind shear, strong upper-level divergence, moderate to strong vorticity, and well-established poleward outflow.

Therefore, at 0600 UTC 28 February, Tropical Cyclone Urmil reached peak intensity with sustained winds of 100 km/h with gusts reaching 140 km/h. At that time, the system was located approximately 185kilometers east-southeast of Aneityum, south of Vanuatu. Urmil maintained its Category 2 strength while tracking southeast of Vanuatu, delivering its strongest impacts to Tafea Province.

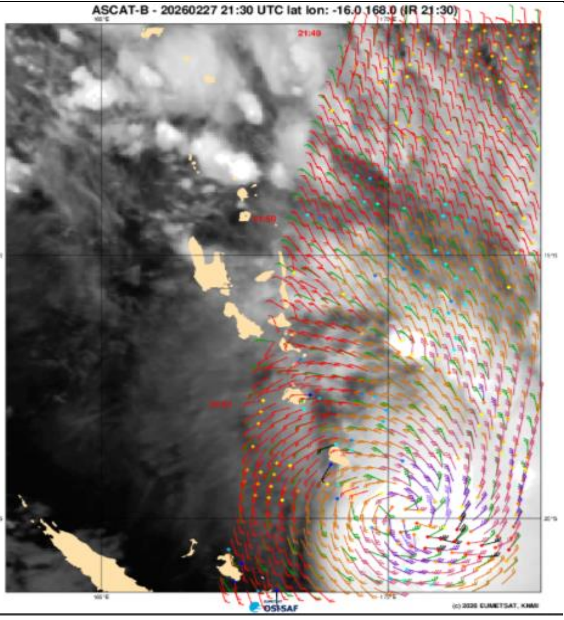

Image 6: Shows the Ascat-B pass at around 27/2130UTC with center still over deep convection and upto 45 knots from the NE to the SW quadrant of center. Dvorak analysis indicated a wrap of around 0.6/0.65 indicating the system remains at category 1 tropical cyclone strength.

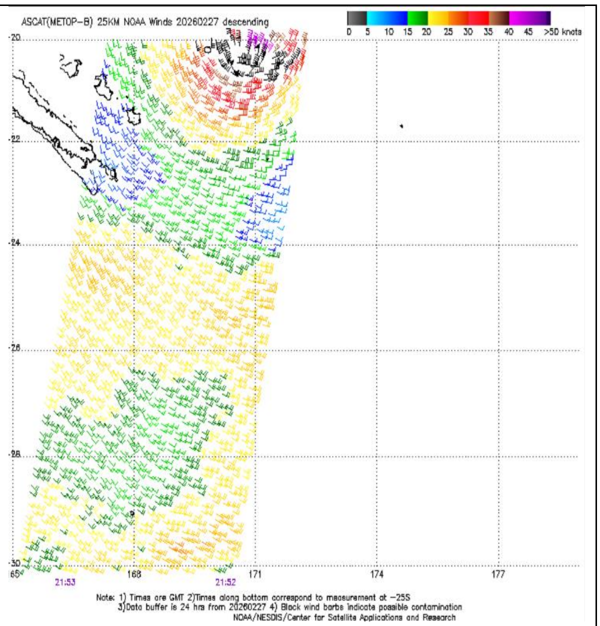

Image 7: Shows ASCAT (METOP-B) at around 27/2152UTC showing winds from 45 upto 50 knots over the southern semi-circle near the center.

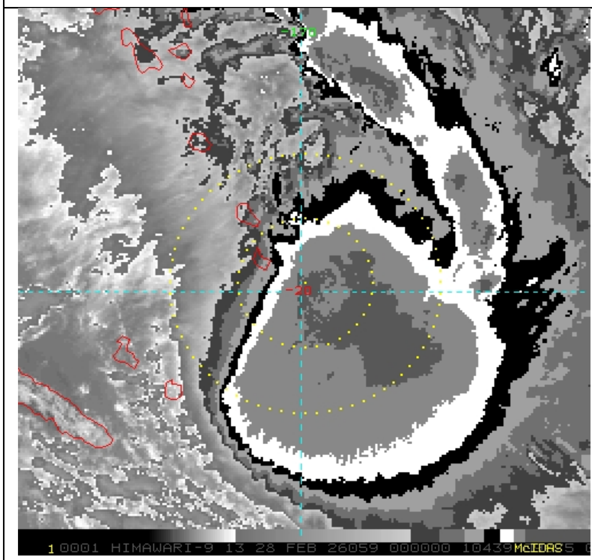

Image 8: TC Urmil intensified into a Category 2 Cyclone. Himawari Dvorak IR at 28/0000UTC indicating deep convection (0.7-0.8 wrap with white band) and reaching peak intensity 6hrs later (280600UTC).

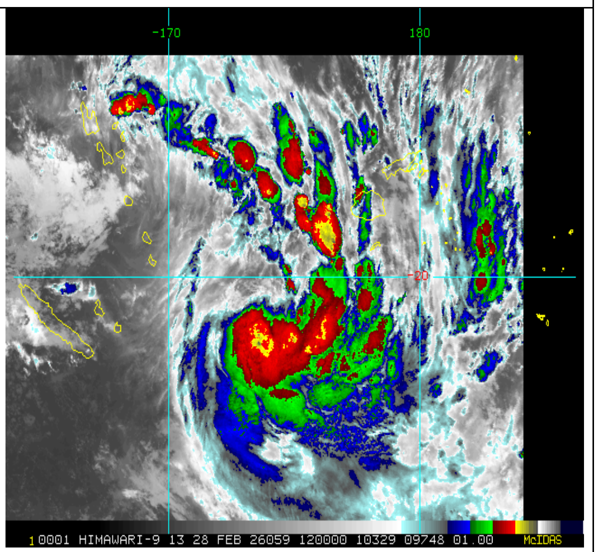

Image 9: Shows Himawari EIR imagery at 28/1200UTC with persistent white band wrapping onto the LLCC from the east and north as TC Urmil reached peak intensity.

By late 28 February, Urmil began a gradual weakening trend as it moved further south, away from the Fiji group. Increasing vertical wind shear and cooler sea surface temperatures contributed to slow convective disintegration, with cloud tops warming and convection becoming less organized.

On 1 March, Urmil exited into the TCWC Wellington AOR, as indicated in Images 10–13. At this stage, the cyclone was still classified as Category 2 but showed clear signs of structural decay, with convection displaced from the low-level circulation centre and the system beginning to lose tropical characteristics.

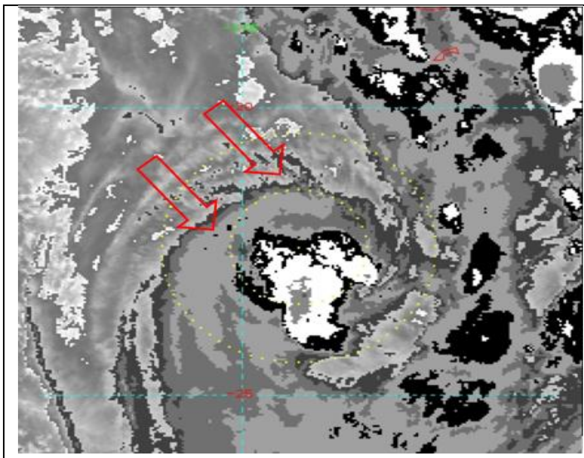

Image 10: Shows the Dvorak IR imagery at 282100UTC or 9am on the 1st March FST where TC Urmil is affected by high northwesterly shear gradually weakening the system with deep convection pushed to the southeast of the LLCC.

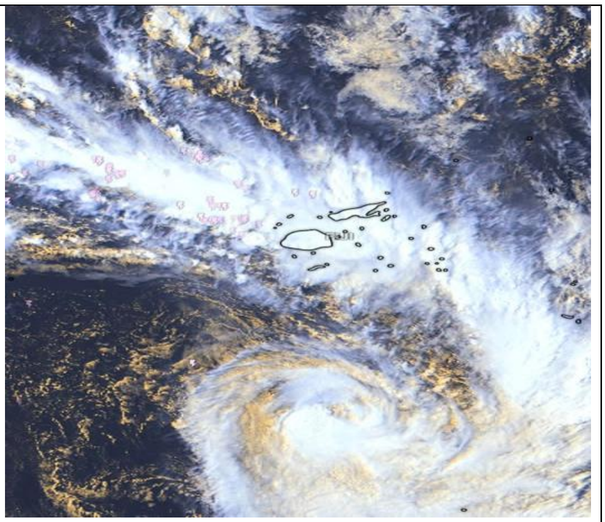

Image 11: Shows the Himawari VIS imagery at 01/0000UTC showing TC Urmil well south of Fiji and partially exposed. Active rain bands affect the Fiji group.

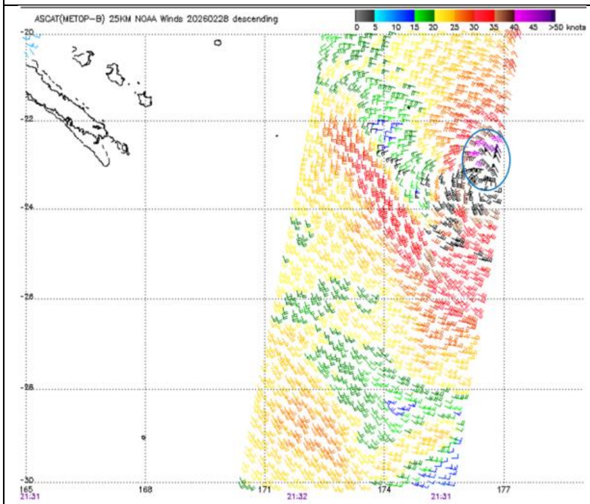

Image 12: Shows Ascat METOP B at around 28/2132UTC where the blue oval showing 40-50 knots near TC Urmil center.

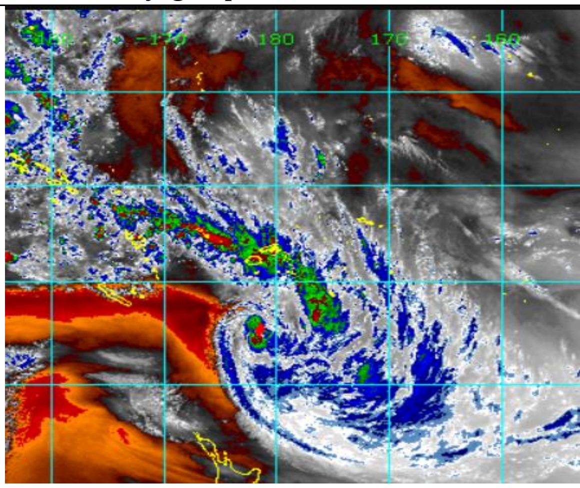

Image 13: WV satellite imagery at around 01/0300UTC showing dry air intrusion building in from the west disrupting convection over the system center.

2. Climatological Summary

Climatological Summary for February 2026

The environmental conditions influencing the development of Tropical Cyclone (TC) Urmil during February 2026 were assessed through analyses of Equatorial Sea Surface Temperature (SST) anomalies, the Southern Oscillation Index (SOI), and the Madden–Julian Oscillation (MJO).

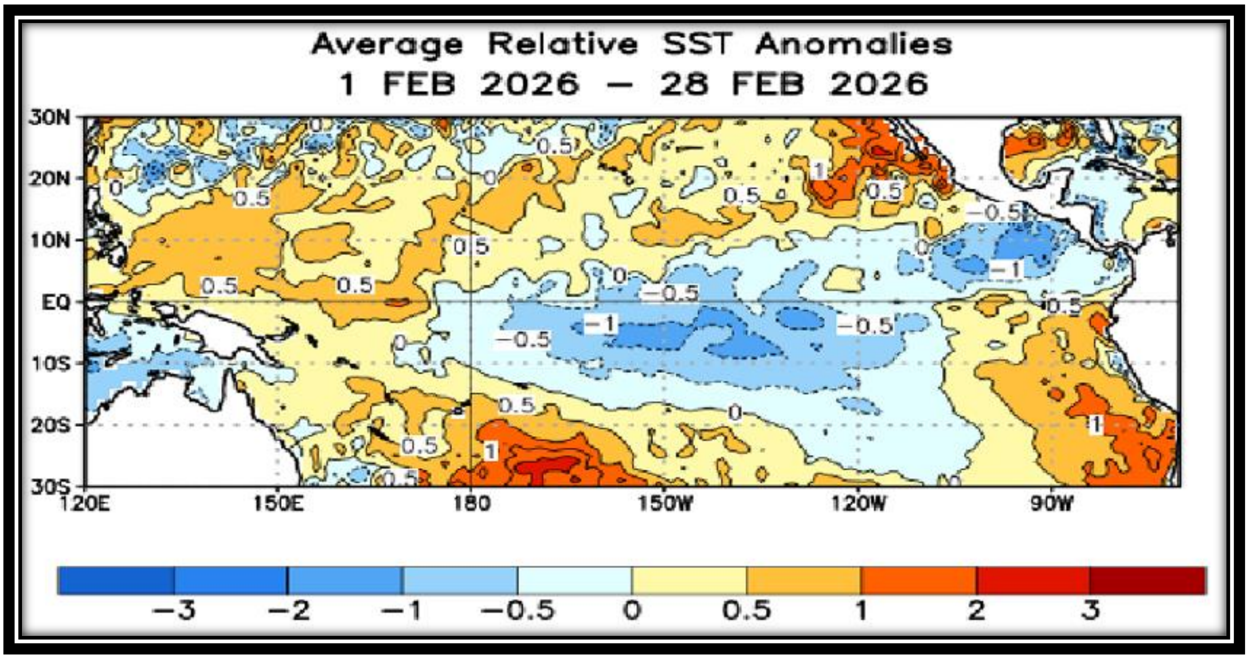

Figure 1: Sea Surface Temperature (SST) Anomalies. Equatorial SSTs were above average in the western and far eastern Pacific Ocean, below average SSTs were evident across the east-central Pacific Ocean.

During February 2026, SST anomalies (Figure 1) indicated a complex thermal pattern across the Pacific. The western and far eastern Pacific experienced above-average SSTs, while the east-central equatorial Pacific showed below-average anomalies, suggesting a weak La Niña pattern. Meanwhile, SSTs over Vanuatu and Fiji were above average, potentially enhancing regional convective activity.

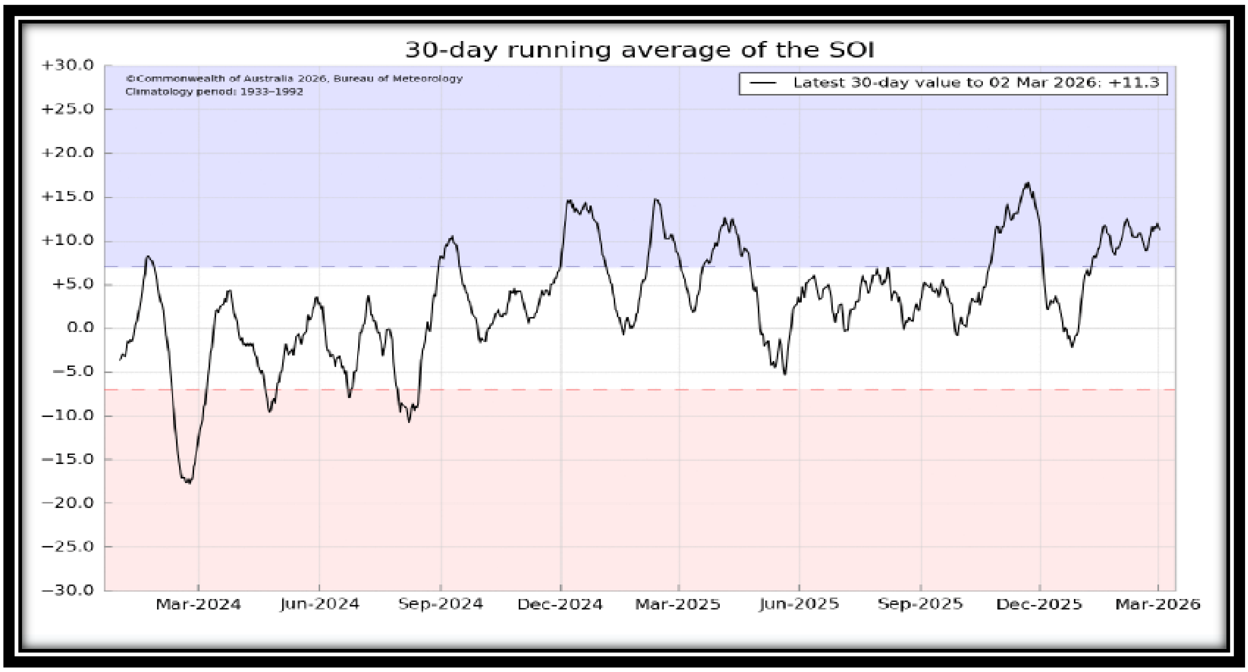

Figure 2: Southern Oscillation Index (SOI) for the period ending 2nd March 2026

The 30-day running mean of the SOI for the period ending 2 March 2026 (Figure 2) was +11.3, a positive value that typically aligns with weak La Niña-like conditions. This pattern contributed to enhanced low-level convergence and moisture availability across the region.

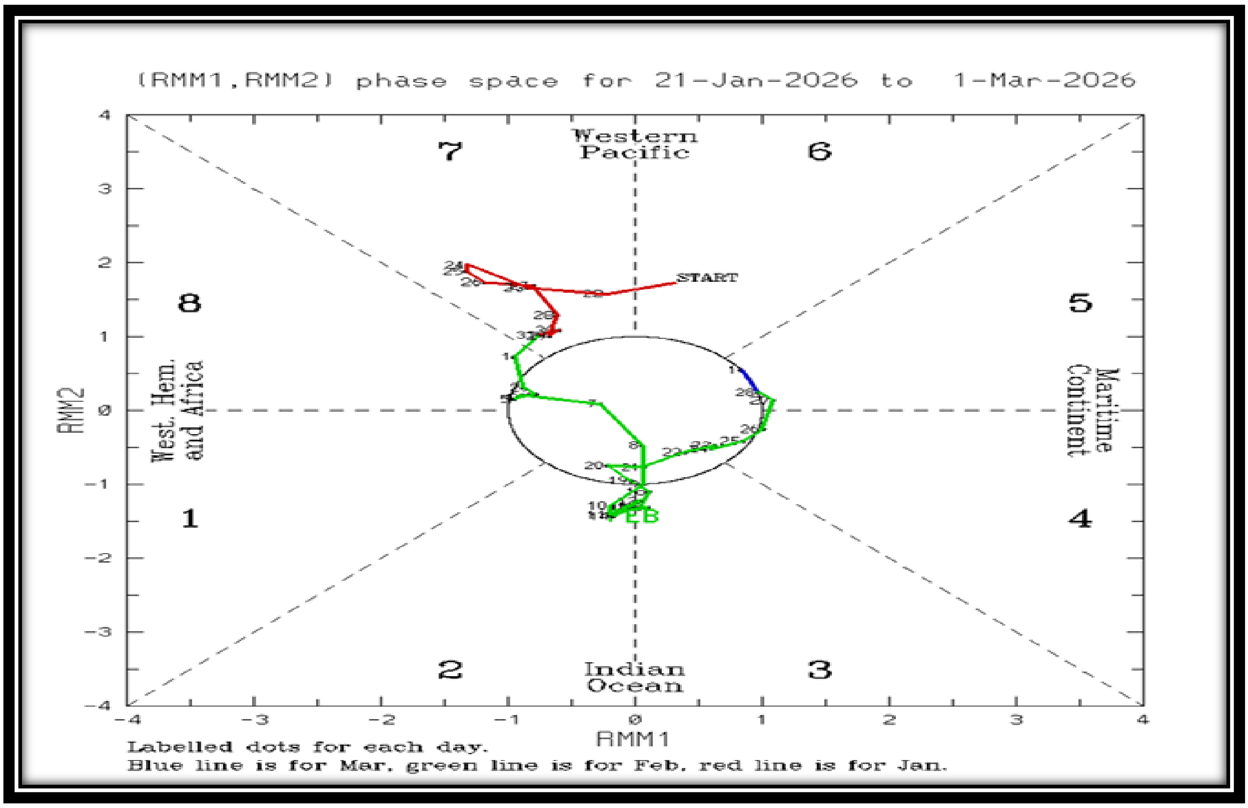

Figure 3: Madden–Julian Oscillation (MJO) from late December 2024 to February 2025

The MJO phase diagram for 21 January 2026 to 1 March 2026 (Figure 3) showed that the MJO was weak for whole of February, largely propagating through the Maritime continent and Western pacific (Phases 5 to 6). The MJO's eastward movement and weak/moderate amplitude along with Rosby wave interference, upper-level divergence, and poleward outflow, all of which supported the rapid organization and intensification of TD09F into Tropical Cyclone Urmil.

Together, these factors created a highly favourable environment: warm SSTs, low vertical wind shear, strong upper-level divergence, moderate to strong vorticity, and effective poleward outflow. These conditions support Urmil's compact structure, persistent deep convection, and rapid intensification into a Category 2 cyclone within a short timeframe.

3. Intensity and Position Analysis

3.1 Post Event Best Track

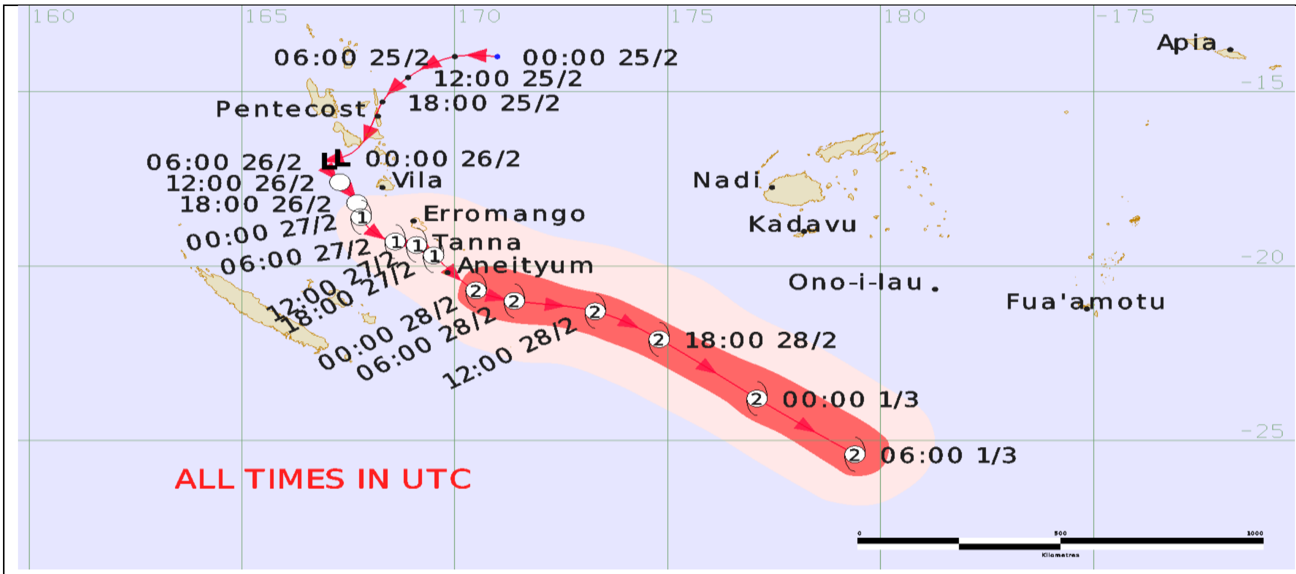

Figure 4: Shows the post event best track both on the position and intensity where time is in UTC. The system affected the southern parts of Vanuatu where there was report of gale to storm wind strength. It affected the northern and central parts of Vanuatu during its incipient stage whilst transitioning into a tropical depression and affected the southern parts Vanuatu when the system intensified into a tropical cyclone.

Post Event Best Track
Disturbance ID: 2526-09F
TC Name: Urmil

Time[UTC]	Lat.	Long.	Uncertainities (nmi)	Mean Wind (knots)	Wind Gust (knots)	Cat	Pressure (hpa)	Gale Radius (nmi)				Storm radius (nmi)			
								NE	SE	SW	NW	NE	SE	SW	NW
2026-02-25/00:00:00Z	-14	171					1008								
2026-02-25/06:00:00Z	-14	170					1007								
2026-02-25/12:00:00Z	-14.6	168.9					1005								
2026-02-25/18:00:00Z	-15.3	168.3					1004								
2026-02-26/00:00:00Z	-16.9	167.3	45	20	45	0	1003								
2026-02-26/06:00:00Z	-17	167	60	20	45	0	1000								
2026-02-26/12:00:00Z	-17.6	167.3	60	30	45	0	999								
2026-02-26/18:00:00Z	-18.2	167.7	50	30	45	0	996								
2026-02-27/00:00:00Z	-18.7	168.1	40	35	50	1	995	50	80	50	50				
2026-02-27/06:00:00Z	-19.3	168.6	45	40	55	1	992	60	80	45	40				
2026-02-27/12:00:00Z	-19.4	169.1	45	45	65	1	990	80	100	50	40				
2026-02-27/18:00:00Z	-19.7	169.5	45	45	65	1	986	120	100	60	40				
2026-02-28/00:00:00Z	-20.4	170.5	50	50	70	2	985	120	110	60	40	50	40	30	25
2026-02-28/06:00:00Z	-21	171.4	45	55	75	2	980	120	110	80	60	50	40	30	20
2026-02-28/12:00:00Z	-21.3	173.3	60	50	70	2	983	120	110	90	50	30	40	30	20
2026-02-28/18:00:00Z	-22	174.8	60	50	70	2	985	120	90	90	70	30	40	30	20
2026-03-01/00:00:00Z	-23.8	177.1	25	50	70	2	985	120	90	80	60	50	40	30	20
2026-03-01/06:00:00Z	-25.4	179.4	60	50	70	2	985	120	90	80	60	50	40	30	20

Table 1: Post event Analysis data

3.2 Verification

3.2.1. Position

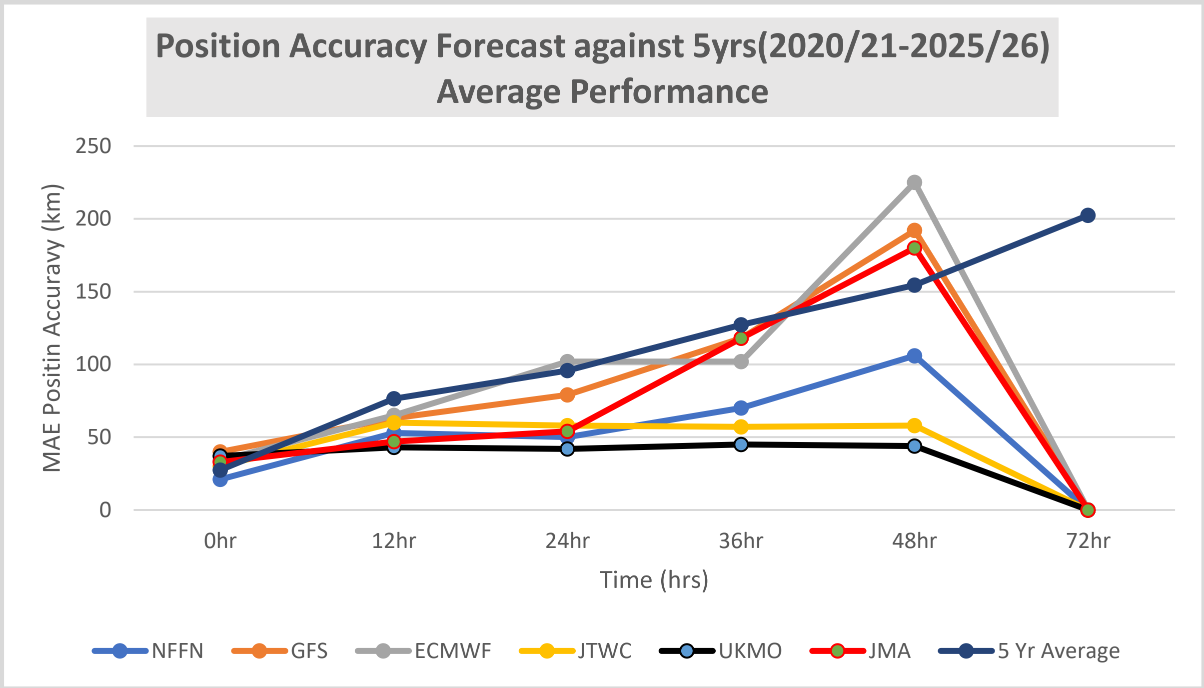

Figure 5: Plotted Mean Absolute Error (MAE) in kilometres for Nadi official forecast Track (OFT) and three forecast models ECMWF**,** GFS, JMA, JTWC and UK—across forecast lead times (0hr to 72hr) used during TC Urmil.

Summary of Forecast Position Accuracy as per 5 Years Average (2020/21–2025/26)

The comparative analysis of forecast position accuracy across multiple meteorological models reveals distinct performance characteristics at varying lead times. In the short-term range (0–24 hours), most models demonstrate reasonable alignment with the five-year average. NFFN (OFT), ECMWF, and JMA track closely to the 5 years benchmark, suggesting reliable short-range predictive skill. Conversely, JTWC and UKMO consistently underestimate positional displacement, maintaining values well below the average even at 24 hours, which indicates a conservative bias in their forecasts.

At medium-range forecasts (36–48 hours), divergence becomes more pronounced. GFS, ECMWF, and JMA exhibit substantial overestimation relative to the five-year average, with ECMWF reaching 225 km at 48 hours compared to the average of 154.5 km. This suggests a tendency toward aggressive projection of storm movement in these models. In contrast, JTWC and UKMO remain significantly below the average, with JTWC plateauing near 58 km and UKMO stabilizing around 44 km. These results highlight systematic underestimation, which may limit their utility in operational forecasting beyond the first day.

Long-term forecasts (72 hours) are absent across all models in the dataset, with values recorded as zero. This likely reflects either unavailable data or truncation of forecasts at this lead time, preventing meaningful evaluation of extended-range accuracy.

In summary, the analysis underscores that no single model consistently matches the five-year average across all forecast horizons. NFFN, ECMWF, and JMA provide comparatively accurate short-term guidance, while GFS and ECMWF tend to overestimate storm displacement in the medium range. JTWC and UKMO, by contrast, exhibit persistent underestimation, suggesting a conservative forecasting approach. These findings emphasize the importance of multi-model comparison in operational forecasting, as reliance on a single model may introduce systematic bias depending on the forecast horizon.

3.2.2. Intensity

3.2.2.1. Wind

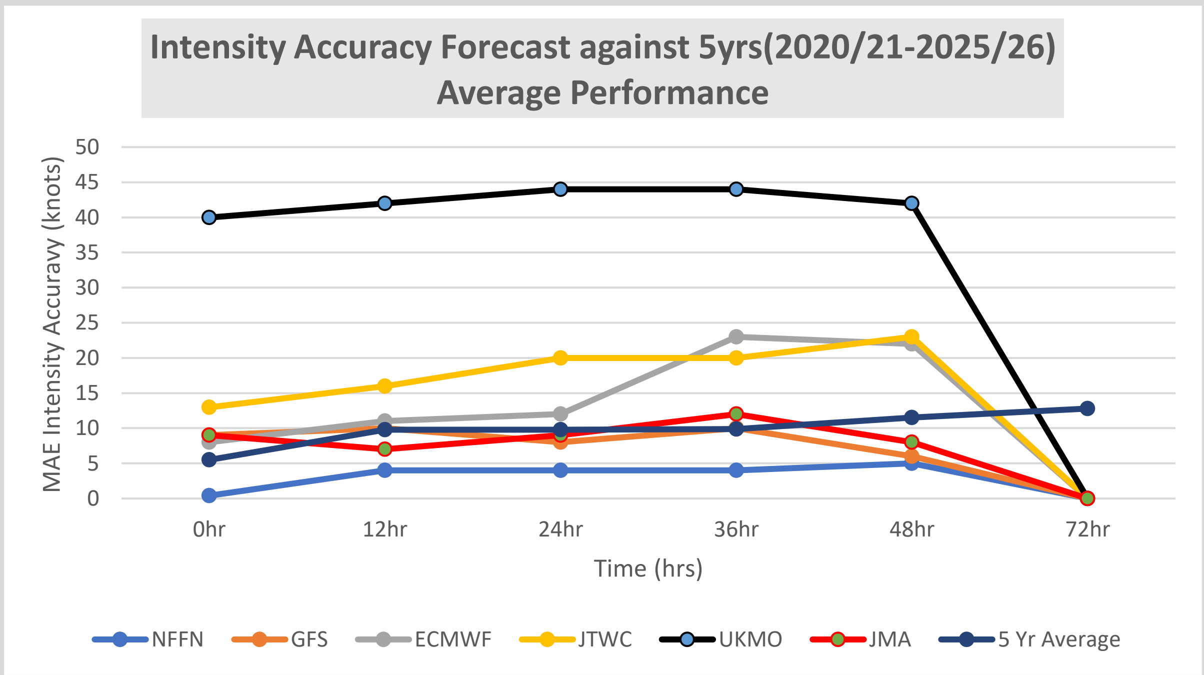

Figure 6: This graph presents the Mean Absolute Error (MAE) in wind speed (knots) across forecast lead times (0–72 hours) for the models: ECMWF, GFS, JMA, JTWC and UK and the Nadi official forecast track (OFT).

Summary of the Forecast Intensity Accuracy as per 5 Years average (2020/21–2025/26)

The forecast intensity across multiple meteorological models highlights significant variability in predictive performance relative to the five-year average. At the initial forecast time (0 hr), most models remain within a reasonable range of the average value of 5.5 knots. NFFN (OFT), GFS, ECMWF, and JMA demonstrate close alignment, whereas JTWC and UKMO deviate substantially, with JTWC projecting 13 knots and UKMO forecasting an anomalously high 40 knots. These early discrepancies suggest systematic biases in both JTWC and UKMO, with the latter consistently overestimating storm strength.

In the short-term horizon (12–24 hr), NFFN, GFS, ECMWF, and JMA continue to track near the average of 9.8 knots, reflecting reliable short-range predictive skill. JTWC maintains an overestimation bias, forecasting intensities between 16 and 20 knots, while UKMO sustains its elevated projections above 40 knots. This persistent inflation in UKMO forecasts indicates a structural tendency toward unrealistic storm intensities, contrasting sharply with the climatological baseline.

Medium-range forecasts (36–48 hr) reveal further divergence among models. ECMWF and JTWC project intensities of 20–23 knots, more than double the climatological average of 9.9–11.5 knots, suggesting aggressive assumptions of storm intensification. UKMO remains consistently high at 42–44 knots, reinforcing its overestimation bias. In contrast, NFFN and JMA remain conservative, forecasting values between 4 and 12 knots, which underestimate the expected intensity. GFS demonstrates moderate alignment but trends slightly below the average at 48 hr.

At the extended forecast horizon (72 hr), all models report zero values, indicating either unavailable data or truncation of forecasts beyond this lead time. This absence prevents meaningful evaluation of long-range predictive accuracy.

In conclusion, the analysis demonstrates that while NFFN, GFS, ECMWF, and JMA provide relatively accurate short-term forecasts, JTWC and UKMO consistently overestimate storm intensity across all horizons. ECMWF and JTWC exhibit aggressive strengthening biases in the medium range, whereas NFFN and JMA underestimate relative to the climatological average. UKMO stands out as the most divergent, maintaining unrealistically high intensity forecasts throughout. These findings underscore the necessity of multi-model comparison in operational forecasting, as reliance on a single model may introduce systematic bias in either direction, particularly in medium- to long-range projections.

3.2.3. Analysis vs Post Event Best Track

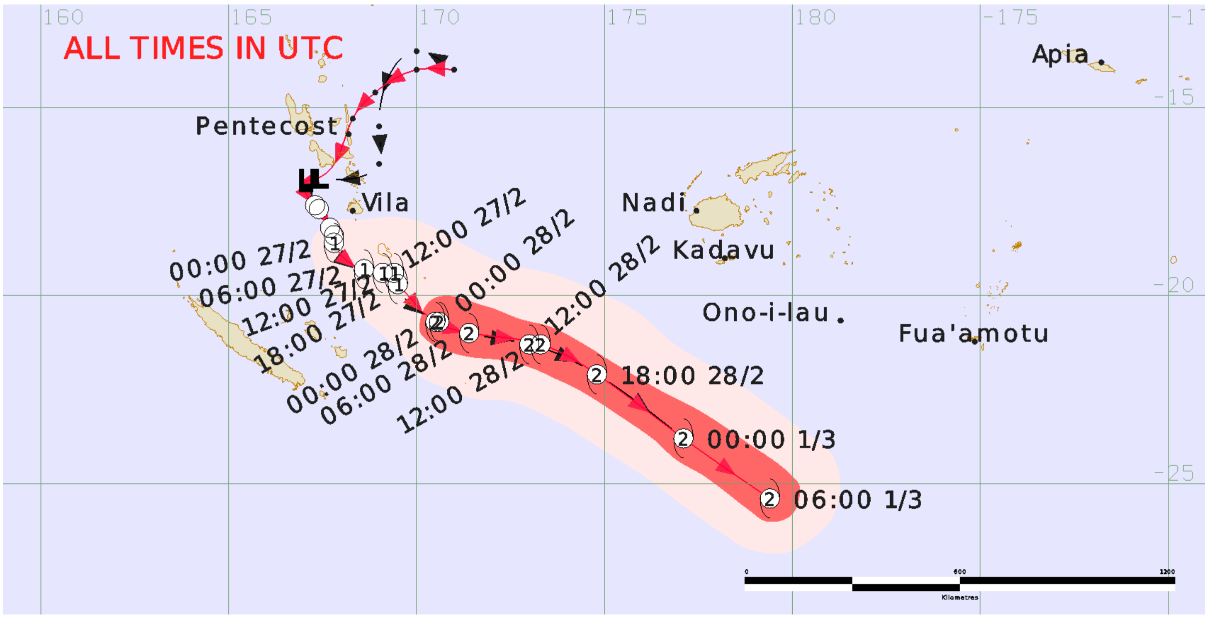

Figure 7: The plot shows the operational analysis track (black) and the post event best track (red) for TC Urmil.

Figure 7, shows the analysis track differed slightly from the post-event best track due to limited data availability in near real-time and a cautious approach in naming the system as it approached Villa. In both the analysis and post event track, the system was named on 27 February at 0000UTC. The system reached a peak intensity of Category 2 to the southern parts of Vanuatu and mostly tracked through open waters until exiting the AOR.

During incipient stage the system was largely embedded within the active convergence zone which made it difficult to locate the centre, as it was often obscured by high-level cirrus clouds.

The primary reason for the track adjustment was the availability of additional data post-event, particularly ASCAT and OSCAT data, which helped refine the system's position. While the overall assessment of intensity was considered satisfactory.

4. Impact of the Tropical Cyclone

Tropical Cyclone Urmil mainly affected the southern parts of Vanuatu directly, causing damaging winds, heavy rainfall, and flooding in Tafea Province, while Fiji experienced indirect impacts from the associated active convergence zone (Appendix 2b-d) leading to heavy rainfall, flooding, strong to gale force with gusty winds over parts of the group.

Impact on Vanuatu

- TAFEA Province including islands such as Tanna, Aneityum, Futuna, Erromango, and Aniwa were directly impacted and placed under red alert by the *Vanuatu Meteorology and Geohazard Department* as Urmil hovered nearby.
- Winds of category 2 strength (90-100 km/h), with damaging gale-force conditions reported.
- Heavy rainfall & flooding: Flash floods occurred in low-lying areas and near riverbanks, disrupting transport and daily life.

Indirect Impact on Fiji

Although Urmil did not affect Fiji, its active convergence zone (outer rainbands) with associated strong to near gale force winds and heavy rainfall caused notable damage (Appendix 2a-d) from 1 to 3 March:

- Significant heavy rain fall were recorded (Appendix 2b-d) across the Western Division, Yasawa, Mamanuca, Kadavu, and the rest of the group, leading to widespread flooding risks. Flooding and infrastructure disruption were reported in towns like Rakiraki and Lautoka, low lying areas which resulted in road closures, transport delays, property damage, and heightened disaster preparedness measures.
- Strong northerly winds averaged 45 km/h with gusts up to 80 km/h (Appendix 2a-b), affecting parts of the western division and coastal communities towards the southern maritime islands (Ono-I-Lau).
- A child tragically drowned in a creek near Lautoka due to severe weather linked to Urmil.

5. Warning and Advisories

5.1 International Marine Warning

Between 26 February and 2 March 2026, RSMC Nadi issued a series of gale warnings associated with Tropical Disturbance 09F, which later intensified into Tropical Cyclone Urmil. In total, 14 warnings were released during the passage of the system with 12 directly related to TC Urmil and two (2) concerning the associated convergence zone.

The first warning (Gale Warning 009) was issued at 1854 UTC on 26 February, covering marine areas within 60 to 150 nautical miles of the centre of TD09F. Winds of up to 35 knots were forecast in sectors from northeast through southeast to southwest. As the disturbance tracked east-southeast, subsequent warnings were issued more frequently, adjusting the areas of concern and reflecting strengthening winds.

By 0000 UTC on 27 February, the system was officially named Tropical Cyclone Urmil, located near 18.6°S 167.8°E with a central pressure of 995 hPa. Gale-force winds were forecast within 60 nautical miles of the center in the northeast and southeast quadrants, with lesser distances in other quadrants. As Urmil intensified and moved southeast at about 10 knots, updated warnings including Storm Warnings and one Hurricane Warning were issued at six-hour intervals, each superseding the previous bulletin.

By the afternoon of 1 March (0600 UTC), Urmil had exited the RSMC Nadi Area of Responsibility. Responsibility for warnings transitioned to RSMC Wellington, beginning with Storm Bulletin 020. The final warning in the sequence, Gale Warning 021, was issued at 0109UTC on 2 March, covering marine areas near 25°S between 172°W and 177°W. This bulletin forecast northwesterly winds up to 40 knots over waters only, with stable conditions expected.

Throughout this period, warnings evolved from disturbance-related advisories to cyclone centred bulletins as Urmil intensified. The warnings consistently highlighted gale to storm force winds of 35–55 knots, primarily affecting marine zones around Vanuatu and later extending southeastward into open waters. While most warnings applied to maritime areas, proximity to island groups particularly southern Vanuatu that warranted close monitoring. The frequent issuance of warnings underscores the dynamic nature of the development of Urmil and the importance of timely updates for maritime safety.

5.2 Tropical Disturbance Advisories (TDA)

The first Tropical Disturbance Advisory (TDA - A1) for TC Urmil was issued by RSMC Nadi at 27/1400 UTC, followed by a second advisory at 27/2000 UTC. Subsequent advisories were issued at approximately six-hour intervals, providing updates on the system's position, movement, intensity, wind distribution, and structural organization, with outlooks extending to 48 hours. In total, eleven Tropical Disturbance Advisories were issued with the final advisory released at 010200 UTC following the handing over of the responsibility to TCWB Wellington.

5.3 Character Form for the Representation and Exchange of Data (CREX)

RSMC Nadi issued a total of seven CREX messages (specially coded tropical cyclone reports) related to Cyclone Urmil, which were disseminated to major global Numerical Weather Prediction (NWP) centers. These bulletins contained essential cyclone parameters, including position, intensity estimates, and environmental conditions, ensuring interoperability across forecasting centers and operational users. The first CREX bulletin was issued following the system's upgrade to a tropical depression status, with subsequent releases aligned with the advisory schedule to maintain consistency in communication.

5.4 Aviation Weather Advisories and Warnings

RSMC Nadi issued ten Tropical Cyclone Advisories (TCA) for TC Urmil, specifically for international aviation purposes within Fiji's tropical cyclone advisory area of responsibility. These bulletins provided structured meteorological guidance to safeguard regional flight operations.

5.5 Significant Meteorological Information (SIGMET)

Throughout TC Urmil's lifecycle, SIGMETs were consistently issued at six hourly intervals following the initial naming bulletin, ensuring continuous updates for aviation operations until the cyclone exited the Nadi Flight Information Region (FIR). A total of thirteen SIGMETs were issued by the Nadi Meteorological Watch Office (MWO).

5.6 Track and Threat Maps

Track and threat maps are typically issued every six hours to provide structured updates on a system's projected movement and potential impact areas. The maps provides detailed guidance for decision-makers, emergency responders, and the broader community. In total, 11 track and threat maps each were issued throughout the cyclone's lifecycle.

5.7 Official Forecast Track (OFT) data to United Nations Office for the Coordination of Humanitarian Affairs (OCHA)

To facilitate broader humanitarian response efforts, six-hourly updates of 120hrs OFT for TC Urmil were provided to the United Nations Office for the Coordination of Humanitarian Affairs (OCHA) during the lifecycle of TC Urmil. These updates were sent via email to a designated address, ensuring that global partners had access to timely cyclone trajectory information for planning and disaster preparedness.

6. Operational Aspects

The monitoring of Tropical Cyclone Urmil required continuous weather watch and close coordination across regional forecasting centres. From its early identification as Tropical Disturbance 09F through its intensification and eventual exit into the TCWC Wellington Area of Responsibility, RSMC Nadi maintained round-the-clock surveillance. Satellite imagery, synoptic observations, and numerical weather prediction models were employed to track the cyclone's compact structure and rapid intensification, ensuring operational teams remained informed of its evolving characteristics.

Warnings were issued at six-hour intervals, reflecting the dynamic nature of the system. Advisories transitioned from gale warnings associated with the initial disturbance to storm and hurricane warnings as Urmil briefly strengthened. Frequent updates ensured maritime stakeholders received timely information about hazardous conditions, particularly gale to storm force winds and rough seas. Operational emphasis was placed on marine safety, with warnings covering progressively shifting zones around southern Vanuatu and later extending south of Fiji.

Inter-agency coordination was facilitated through the Teams platform with TCWC Wellington and TCWC Melbourne, proving critical to operations. The handover of responsibility from RSMC Nadi to TCWC Wellington on 1 March was managed seamlessly, with bulletins aligned to maintain consistency in messaging. This ensured continuity of advisories and reduced confusion among stakeholders as the cyclone crossed into a new area of responsibility.

On land, southern Vanuatu was closely monitored for potential impacts, including heavy rainfall and gusty winds. While widespread damage was not reported due to Urmil's compact size and offshore track, local authorities were kept informed to ensure preparedness. The operational response highlighted the importance of adaptive forecasting, as Urmil's rapid intensification required flexible strategies and real-time adjustments to advisories.

One of the primary difficulties encountered was accurately determining the system's position and intensity. TC Urmil was embedded along a convergence zone heavily obscured by cloud cover, making satellite-based positional estimates more challenging. Additional complications arose from limited model support during the system's early development phase, as Urmil's small size and formative stage provided few reliable guidance products from the Joint Typhoon Warning Centre (JTWC).

Overall, the monitoring of TC Urmil demonstrated the effectiveness of continuous weather watch, timely communication, and inter-agency collaboration. These operational aspects ensured that both maritime and island communities remained aware of the cyclone's progression, minimizing risks and reinforcing the importance of coordinated regional response during tropical cyclone events.

7. Discussion and Recommendations

The monitoring of Tropical Cyclone Urmil highlighted both the strengths of current operational practices and areas where improvements can be made. While continuous surveillance, timely warnings, and effective inter-agency coordination ensured that stakeholders remained informed, several challenges were encountered, particularly in the early developmental stages of the system. These challenges underscore the need for enhanced tools, data availability, and structured processes to strengthen cyclone monitoring and post-event analysis.

Key recommendation includes;

a. Implementation of a structured archiving process for scatterometer data, including centre positions and wind radii. Such datasets, often unavailable after real-time usage, are critical for post-event analysis and verification of operational decisions. Establishing a systematic archive would support both research and operational review, improving long-term forecasting capabilities.
b. For systems in their formative stages, it is recommended that RSMC Nadi incorporate the SATAID-T tool, developed by the Japan Meteorological Agency, into its analysis workflow. This technique integrates satellite imagery with observational data to enhance the accuracy of center positioning and cloud-type classification. Its application

would be particularly useful for weak and developing systems like Urmil, where conventional methods struggled to provide reliable guidance.

c. Consistent availability and quality of surface observations from Fiji and other Pacific Islands remain essential. These observations are critical inputs for tools such as SATAID-T and contribute to improved situational awareness and intensity analysis during the initial stages of cyclone development. Strengthening observational networks across the region would therefore enhance both real-time monitoring and post-event evaluation.

Therefore, while the operational response to TC Urmil demonstrated effective coordination and adaptive forecasting, the event also highlighted the importance of investing in advanced tools, structured data archiving, and reliable observational networks. Implementing these recommendations would improve the accuracy and resilience of cyclone monitoring, ensuring that regional forecasting centres are better prepared for rapidly evolving and marginal systems in the future.

8. Summary and Conclusion

Tropical Cyclone Urmil was a brief but significant system in the 2025/26 Southwest Pacific cyclone season. Despite persisting for just over two days as a named cyclone, Urmil demonstrated the capacity for rapid intensification and produced significant weather impacts across southern Vanuatu, particularly in Tafea Province and associated impacts from the active outer rain bands over Fiji especially when the system was drifting further south of the group on its track to exiting the RSMC Nadi AOR. Its late-season formation marked a climatological anomaly, underscoring the variability and unpredictability of tropical cyclone activity in the region.

Operationally, Urmil tested forecasting and warning systems, which responded effectively to its rapid development and east-southeast track. The advisories issued ensured communities were informed of potential risks, minimizing disruption and enhancing preparedness.

The life cycle of TC Urmil highlights the importance of continuous monitoring, timely communication, and adaptive forecasting strategies in managing tropical cyclone hazards. While its impacts were limited compared to longer-lived or more intense systems, Urmil serves as a reminder that even short-lived cyclones can pose meaningful risks even beyond its threat zones.

Overall, Urmil's development and progression emphasize the need for vigilance late in the season, the value of clear advisory dissemination, and the importance for enhanced observational coverage and more sophisticated analytical tools, such as SATAID-T, particularly for weak or developing systems. Incorporating these capabilities, along with continued investment in regional observation networks, will strengthen the operational readiness to monitor and respond to marginal systems in future seasons.

9. References

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7. Index of /local/tcfolder/data/2526/09F

10. Appendices

10.1 Appendix 1 : ASCAT

a)

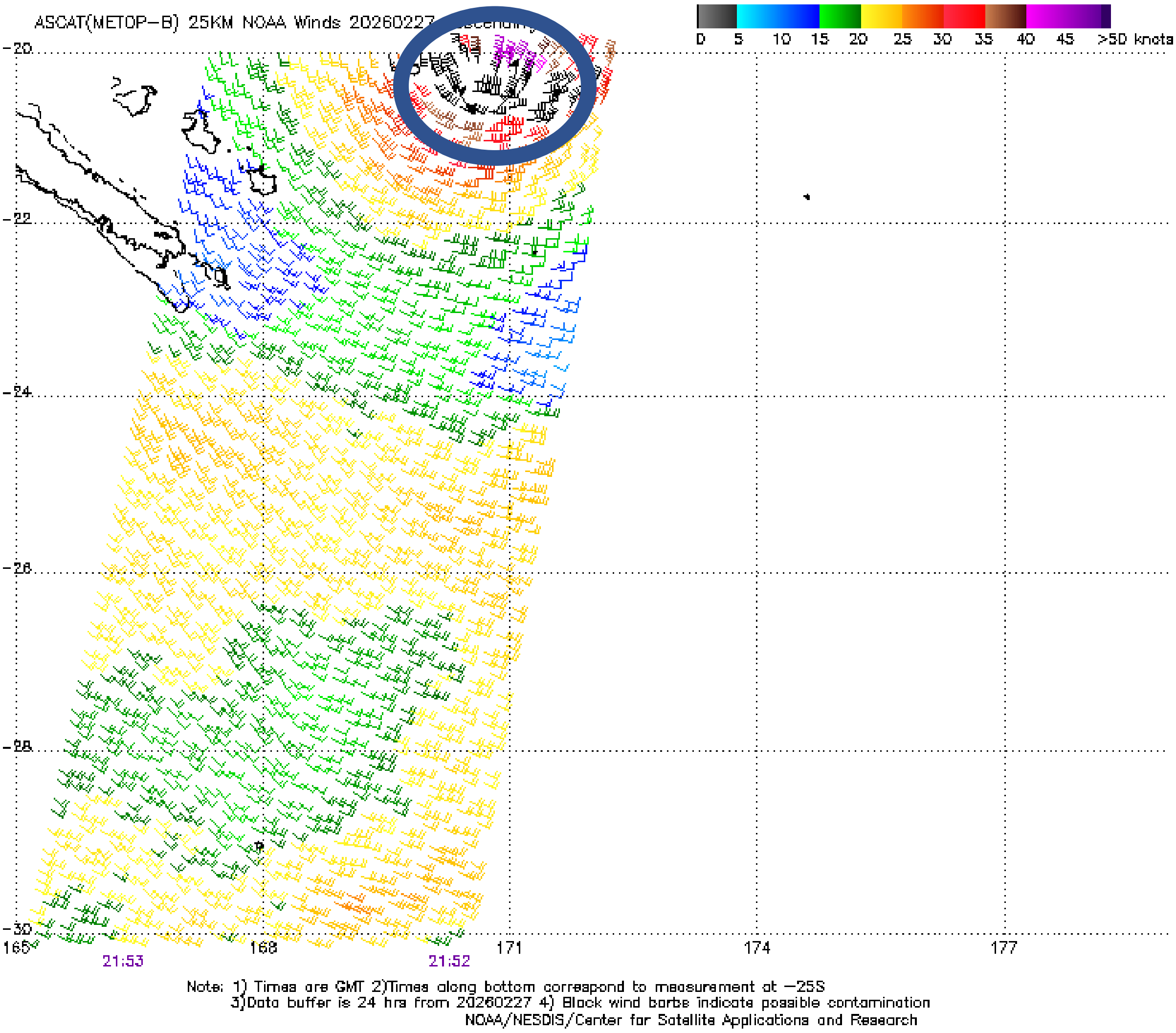

Image 14: Zoomed ASCAT pass at 27/2153 UTC as Tropical Cyclone Urmil passed through the south of Vanuatu. The colored circle highlights compact centre with winds upto 45 knot observed close to the center from the northeast quadrant.

b)

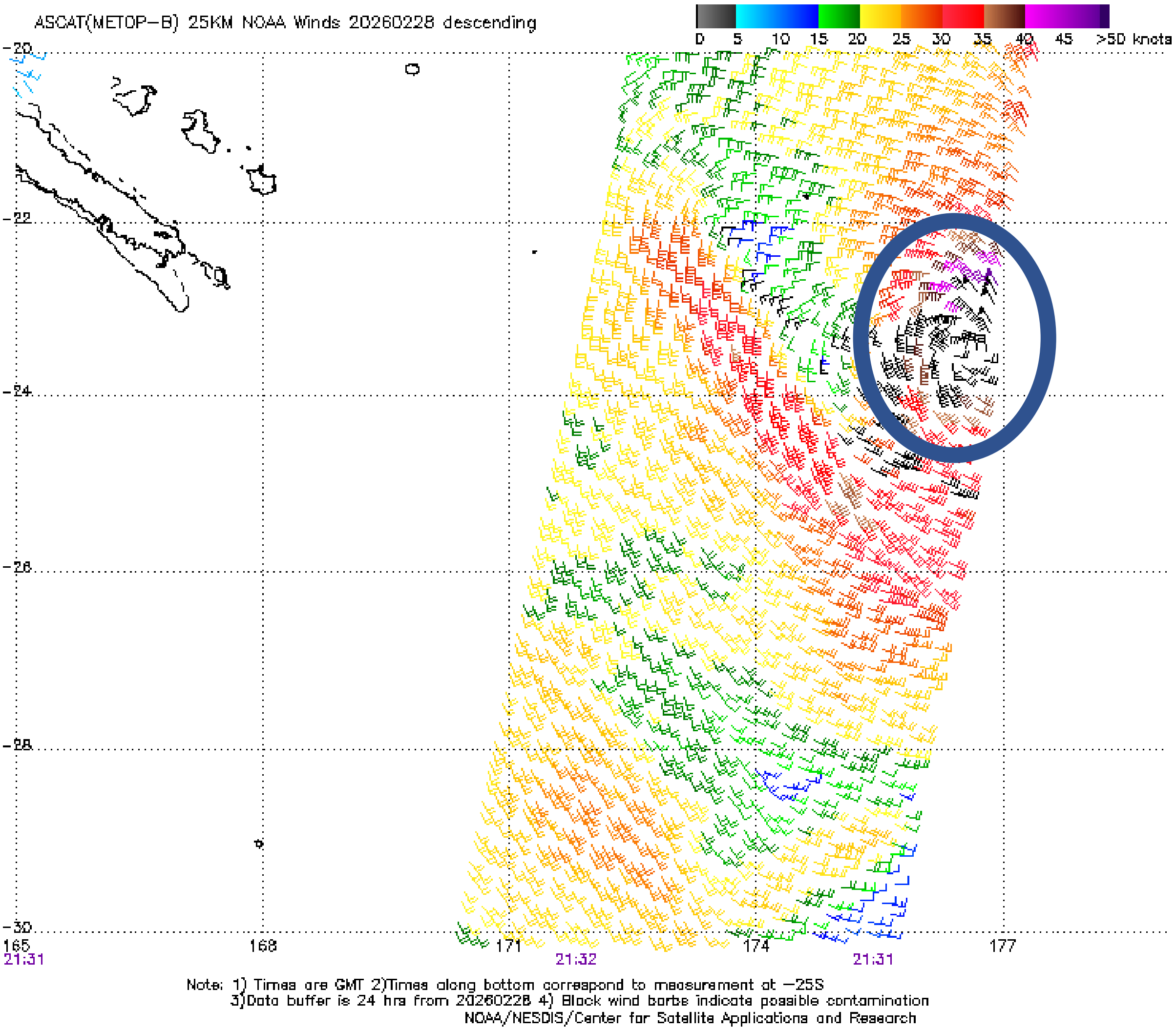

Image 15: Zoomed ASCAT pass at 28/2132 UTC showing TC Urmil close to exiting the RSMC Nadi AOR. The ASCAT data indicates 40 to 50 knots winds located northeast of the system centre, highlighted.

10.2 Appendix 2: Observation Data

a) Wind Observation

Time of Report	Station	Max. winds recorded (dddssKT)
281800z	Ono-I-Lau	36018KT
282100z		36021KT
010000z		35025KT
281210Z	Nadi	01015G25KT
281735Z		33027G37kt
281900Z		33025G39KT
282135Z		02029G45KT
282200Z		33024G37KT

Table 2: Significant wind observations recorded over Nadi and Ono-I-Lau station whilst Urmil tracked to the far south of Fiji.

b) Nadi METAR Report

SP	28/02/2026 22:00->	SPECI NFFN 282200Z 33024G37KT 1000 +SHRA FEW018CB SCT022TCU BKN044 OVC100 24/23 Q1005 NOSIG=
SA	28/02/2026 22:00->	METAR NFFN 282200Z 33024G37KT 1000 +SHRA FEW018CB SCT022TCU BKN044 OVC100 24/23 Q1005 NOSIG=
SP	28/02/2026 21:35->	SPECI NFFN 282135Z 02029G45KT 1000 +SHRA FEW005 FEW018CB SCT022TCU OVC100 27/25 Q1004 NOSIG=
SP	28/02/2026 21:25->	SPECI NFFN 282125Z 01012KT 3000 +SHRA FEW005 FEW018CB SCT022TCU OVC100 27/25 Q1004 TEMPO 34025G40KT 1500 +TSRA SCT018CB=
SP	28/02/2026 21:20->	SPECI NFFN 282120Z 02012KT 5000 SHRA FEW005 FEW018CB SCT022TCU OVC100 28/25 Q1004 TEMPO 34025G40KT 1500 +TSRA=
SA	28/02/2026 21:00->	METAR NFFN 282100Z 36008KT 9999 FEW005 FEW020CB SCT022TCU OVC110 27/25 Q1004 TEMPO 34025G40KT 3000 +TSRA=
SA	28/02/2026 20:00->	METAR NFFN 282000Z 36009KT 9999 FEW005 SCT024TCU BKN044 26/24 Q1004 TEMPO 33025G40KT 1000 +TSRA FEW015CB=
SP	28/02/2026 19:35->	SPECI NFFN 281935Z 01009KT 9999 -SHRA FEW005 FEW018CB SCT022TCU BKN042 25/23 Q1004 RESHRA TEMPO 33025G40KT 3000 +TSRA=
SP	28/02/2026 19:20->	SPECI NFFN 281920Z 36006KT 5000 SHRA SCT005 SCT018CB SCT022TCU BKN042 25/23 Q1004 TEMPO 33025G40KT 1000 +TSRA=
SP	28/02/2026 19:00->	SPECI COR NFFN 281900Z 33025G39KT 1000 +SHRA SCT005 SCT018CB BKN042 24/24 Q1004 RETS TEMPO 33025G40KT 1000 +TSRA=
SA	28/02/2026 19:00->	METAR NFFN 281900Z 33025G39KT 1000 +SHRA SCT005 SCT018CB BKN042 24/24 Q1004 RETS TEMPO 33025G40KT 1000 +TSRA=
SP	28/02/2026 18:00->	SPECI NFFN 281800Z 35013G27KT 5000 TSRA SCT005 SCT018CB BKN100 24/24 Q1004 TEMPO 35025G40KT 1000 +TSRA=
SA	28/02/2026 18:00->	METAR NFFN 281800Z 35013G27KT 5000 TSRA SCT005 SCT018CB BKN100 24/24 Q1004 TEMPO 35025G40KT 1000 +TSRA=
SP	28/02/2026 17:35->	SPECI NFFN 281735Z 33027G37KT 2000 +TSRA SCT005 SCT018CB BKN042 25/25 Q1004 TEMPO 33025G40KT 1000 +TSRA=
SP	28/02/2026 17:20->	SPECI NFFN 281720Z 36008KT 9999 -TSRA FEW020CB SCT024TCU BKN045 27/27 Q1003 TEMPO 01015G25KT 3000 +TSRA FEW018CB=
SA	28/02/2026 17:00->	METAR NFFN 281700Z 36010KT 9999 -SHRA SCT022TCU SCT045 BKN100 27/26 Q1003 TEMPO 36015G25KT 3000 +TSRA FEW018CB=
SA	28/02/2026 16:00->	METAR NFFN 281600Z 36008KT 9999 SCT022TCU SCT045 BKN100 27/26 Q1002 TEMPO 36015G25KT 3000 +TSRA FEW018CB=
SA	28/02/2026 15:00->	METAR NFFN 281500Z 02013KT 9999 FEW005 SCT025TCU BKN045 28/24 Q1003 TEMPO 02015G25KT 3000 +TSRA FEW018CB=
SA	28/02/2026 14:00->	METAR NFFN 281400Z 36008KT 9999 -SHRA FEW005 FEW020CB SCT025TCU BKN045 25/24 Q1004 RESHRA TEMPO 02015G25KT 3000 +TSRA FEW018CB=
SP	28/02/2026 13:40->	SPECI NFFN 281340Z 01009KT 5000 SHRA SCT005 SCT020CB BKN045 26/26 Q1004 TEMPO 01015G25KT 3000 +TSRA FEW018CB=
SA	28/02/2026 13:00->	METAR NFFN 281300Z 02012KT 350V050 9999 FEW005 SCT022TCU BKN045 27/23 Q1004 TEMPO 02015G25KT 3000 +TSRA FEW018CB=
SP	28/02/2026 12:30->	SPECI NFFN 281230Z 02014KT 9999 VCSH FEW005 FEW020CB SCT022TCU BKN045 26/26 Q1004 RESHRA TEMPO 02015G25KT 3000 +TSRA FEW018CB=
SP	28/02/2026 12:10->	SPECI NFFN 281210Z 01015G25KT 5000 SHRA SCT020CB SCT045 OVC100 26/26 Q1005 TEMPO 04015G25KT 3000 +TSRA FEW018CB=
SA	28/02/2026 12:00->	METAR NFFN 281200Z 03014KT 9999 SCT025TCU SCT045 OVC100 28/25 Q1005 RESHRA TEMPO 04015G25KT 3000 +TSRA FEW018CB=

Table 3: Nadi METAR observations as TC Urmil lies to the far southwest of Nadi on the morning of the 1st March (Fiji Standard Time). The highest wind gust recorded was 45 knots around 28/2135 UTC, accompanied by heavy rain that reduced visibility to below 1000 metres during that period.

c) Rainfall Accumulation Observation

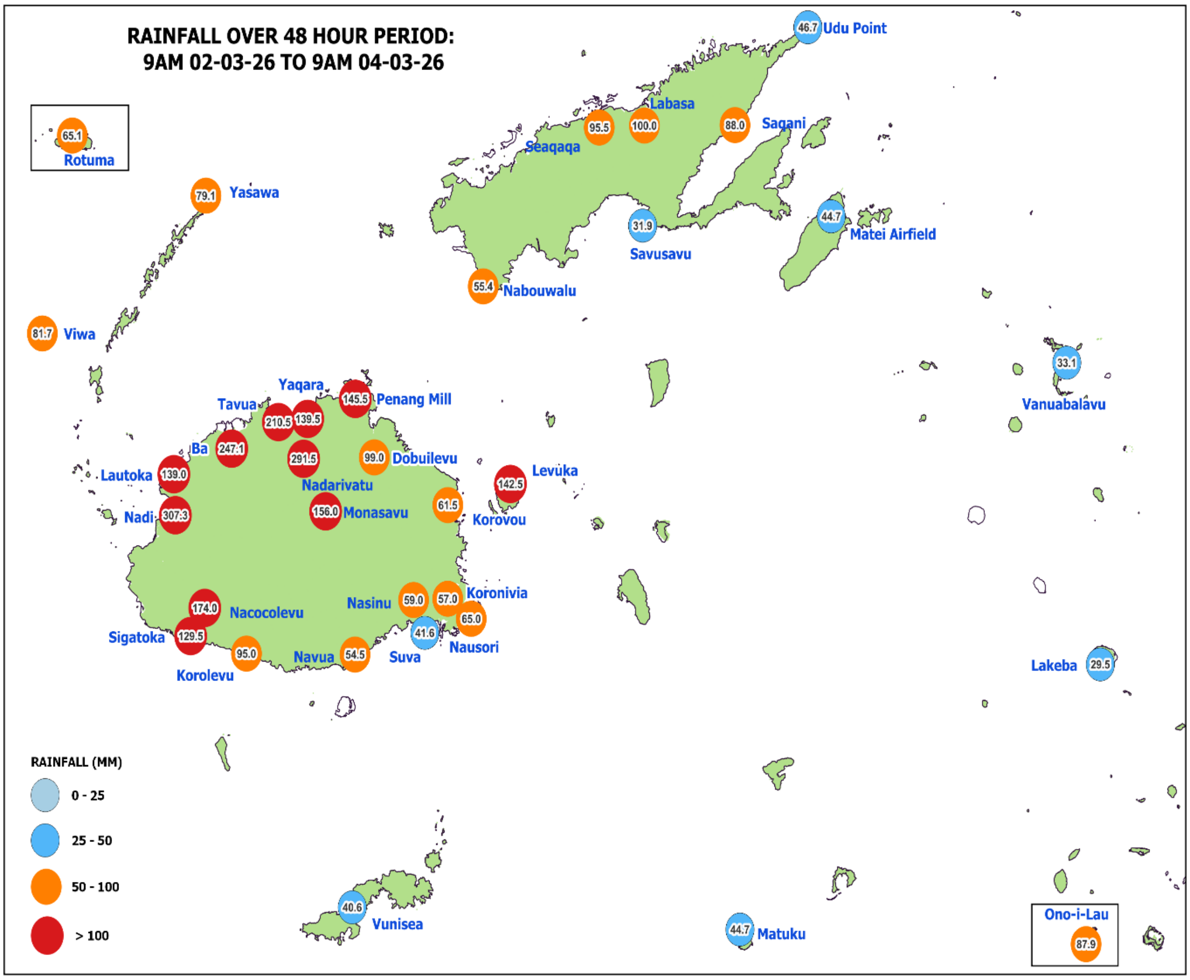

Image 16: Significant Rainfall Accumulation [from 9am 1st to 3rd March].

d) Satellite Imagery on Active Convergence Zone (Rain band)

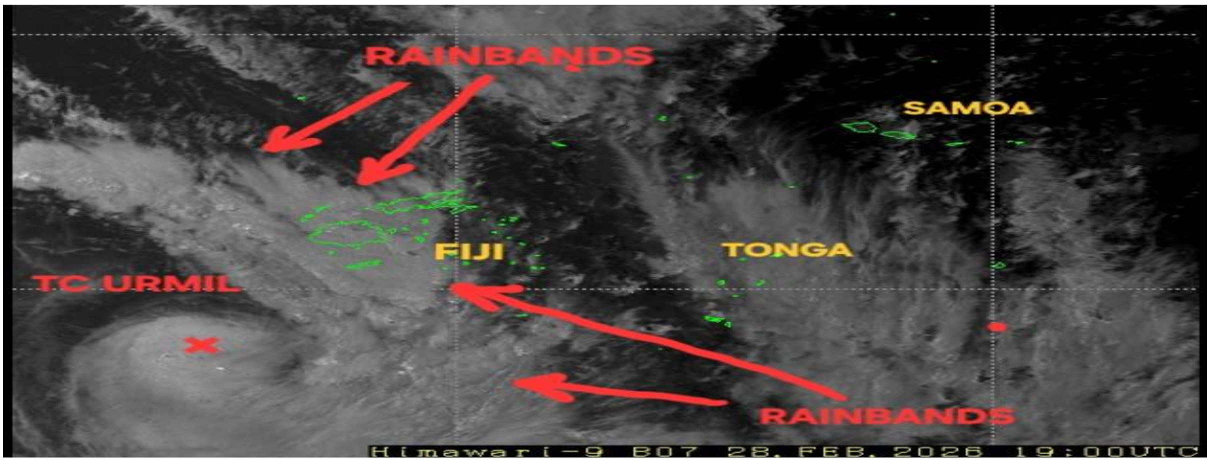

Image 17: Himawari Satellite Imagery at 28/1900 UTC as Tropical Cyclone Urmil lies at about 520km SW of Nadi. Fiji was not directly impacted by the TC, however there were significant flooding caused by the active convergence zone with associated heavy rain and strong to near gale force winds which affected the group from 1 March to 3 March (FST).

10.3 Appendix 3: Verification Data

a) Position forecast verification

	Distance (km)	0hr	12hr	24hr	36hr	48hr	72hr
NFFN	Mean (km)	21	53	50	70	106	0
	Std Dev (km)	13	26	27	33	76	0
GFS	Mean (km)	40	63	79	118	192	0
	Std Dev (km)	18	32	41	40	62	0
ECMWF	Mean (km)	34	65	102	102	225	0
	Std Dev (km)	11	37	76	33	0	0
JTWC	Mean (km)	30	60	58	57	58	0
	Std Dev (km)	13	34	31	31	3	0
UKMO	Mean (km)	37	43	42	45	44	0
	Std Dev (km)	19	23	12	24	36	0
JMA	Mean (km)	33	47	54	118	180	0
	Std Dev (km)	15	13	33	52	69	0

b) Intensity forecast verification

	Intensity (knots)	0hr	12hr	24hr	36hr	48hr	72hr
NFFN	Mean (knots)	0.4	4	4	4	5	0
	Std Dev (knots)	1	6	5	1	0	0
GFS	Mean (knots)	9	10	8	10	6	0
	Std Dev (knots)	6	9	9	13	8	0

ECMWF	Mean (knots)	8	11	12	23	22	0
	Std Dev (knots)	7	11	15	15	0	0
JTWC	Mean (knots)	13	16	20	20	23	0
	Std Dev (knots)	4	7	10	14	11	0
UKMO	Mean (knots)	40	42	44	44	42	0
	Std Dev (knots)	18	17	17	18	17	0
JMA	Mean (knots)	9	7	9	12	8	0
	Std Dev (knots)	6	8	10	15	8	0

c) International Best Track Data

Name	**TIME**	**Lat**	**Lon**	**Pressure (hpa)**	**W(KT)**	**CAT**
	YYY MM DD HHHH					
URMIL	2026 02 26 1800	-18.2	167.9	996	35	1
URMIL	2026 02 27 0000	-18.6	167.9	992	45	1
URMIL	2026 02 27 0600	-19.4	168.5	985	54	2
URMIL	2026 02 27 1200	-19.5	169.5	985	60	2
URMIL	2026 02 27 1800	-19.6	169.5	984	60	2
URMIL	2026 02 28 0000	-20.4	170.7	984	64	3
URMIL	2026 02 28 0600	-20.8	171.7	980	64	3
URMIL	2026 02 28 1200	-21.1	173.2	981	64	3
URMIL	2026 02 28 1800	-22.1	175.1	987	54	2
URMIL	2026 03 01 0000	-24	177.5	986	54	2
URMIL	2026 03 01 0600	-25.7	179.2	983	54	2
URMIL	2026 03 01 1200	-27.4	-178.5	982	51	2
URMIL	2026 03 01 1800	-28.8	-176.3	984	45	1
URMIL	2026 03 02 0000	-31.5	-172	986	39	1

10.4 Appendix 4: Impact Summary - Fiji

Fiji Government
March 4 at 7:39 PM ·

PM BRIEFED ON CYCLONE URMIL AFTERMATH IN WESTERN DIVISION

Prime Minister Hon. Sitiveni Rabuka today (04/03/2026) received a comprehensive briefing on the aftermath of Tropical Cyclone Urmil, which battered parts of the Western Division in recent days, affecting 142 households and leaving families to begin the task of recovery.

The briefing, held at the Fiji Meteorological Service office in Nadi, brought together key agencies leading the response. Fiji Meteorological Service Director Misaeli Funaki, Divisional Planning Officer West Eilimi Rokoduru, and representatives from the Water Authority of Fiji and other stakeholders updated the Prime Minister on the extent of the damage and ongoing relief operations.

According to the briefing, there are currently 27 active evacuation centres in the Western Division, including five schools, sheltering 142 households comprising 701 evacuees.

Although Tropical Cyclone Urmil did not make direct landfall, its outer rainbands and strong winds significantly impacted the Western Division between March 1 and 2. The severe weather conditions tragically claimed the life of a child, whose body was recovered from a creek in Namoli at Kaleli Settlement, outside Lautoka City.

On infrastructure damage, the briefing noted that 115 roads were affected, with disruptions to power and water supply reported in some areas across the Division.

Humanitarian assistance is ongoing, with the Ministry of Social Welfare and the Ministry of Health distributing dignity kits for women and girls, family and elderly care packs, WASH kits, and other essential supplies. Meanwhile, the Ministry of Agriculture and Waterways is assessing damage to the agricultural sector and anticipates potential food shortages in flood-affected areas of the Western Division.

Proposed way forward measures presented to the Prime Minister included improving drainage systems, enforcing the Litter Act, dredging rivers and clearing river mouths, strengthening monitoring mechanisms, and stricter enforcement of building codes or construction standards to prevent unregulated developments that ignore approved engineering plans.

Responding to the proposals, the Prime Minister noted that while dredging can form part of the solution, much of the material being removed is silt washed down from hills into rivers and coastal areas. He explained that the build-up of silt at river mouths and along coastlines contributes to repeated flooding.

The Prime Minister stressed that long-term corrective development planning is necessary to properly address the issue and emphasised the need to strengthen preparedness in light of increasingly frequent and intense natural disasters.