2024
ANNUAL CLIMATE SUMMARY









MPWTMS
MINISTRY OF
PUBLIC WORKS , TRANSPORT
& METEOROLOGICAL SERVICES

Fiji Meteorological Service

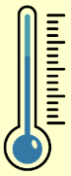
Highlights

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During 2024, two tropical cyclones occurred within Fiji's Regional Specialised Meteorological Centre Nadi – Tropical Cyclone Centre (RSMC Nadi-TCC) Area of Responsibility (AoR); TC Nat and TC Osai. Neither of which had any significant impact on Fiji.



2024 was the warmest year in the 175-year observational record (WMO- 2024 State of the Globe Climate report).
The national average mean air temperature for Fiji in 2024 was the 2nd warmest on record since 1959. The national average mean, maximum and minimum air temperatures between 1959 and 2024 have increased by 1.1°C, 1.2°C and 1.0°C, respectively.



Fiji's national average rainfall for 2024 was 3040mm, which was 129% of the long-term average. Fiji's rainfall continue to display large year-to-year variability associated with the El Niño and La Niña events. Extreme rainfall events were recorded, including rainfall associated with Tropical Depressions and active troughs of low pressure in the Wet season.



In 2024, global mean sea level reached a record high in the satellite record from 1993 to present (WMO- 2024 State of the Globe Climate report).
For Fiji, sea-level rise around the country measured by satellite altimeters from 1992 to 2024 was between 4-5mm/yr. A state of the art sea level monitoring station at the Lautoka Wharf had a relative sea level trend of 4.1mm/yr. The mean annual sea surface temperatures to the northeast of Fiji's EEZ were warmest on record in 2024.

Large Scale Climate Drivers

El Niño Southern Oscillation (ENSO)

El Niño Southern Oscillation (ENSO) strongly influences Fiji's year-to-year climate variability, with the two ENSO phenomenon extremes known as El Niño and La Niña. These phases are linked to global climate patterns, with distinct impacts in different regions of the world. An establishment of El Niño, is often associated with sustained warming over a large part of the central and eastern equatorial Pacific Ocean, accompanied by persistent negative values of Southern Oscillation Index (SOI), a decrease in the strength or reversal of the Trade winds and increase in cloudiness near the Dateline.

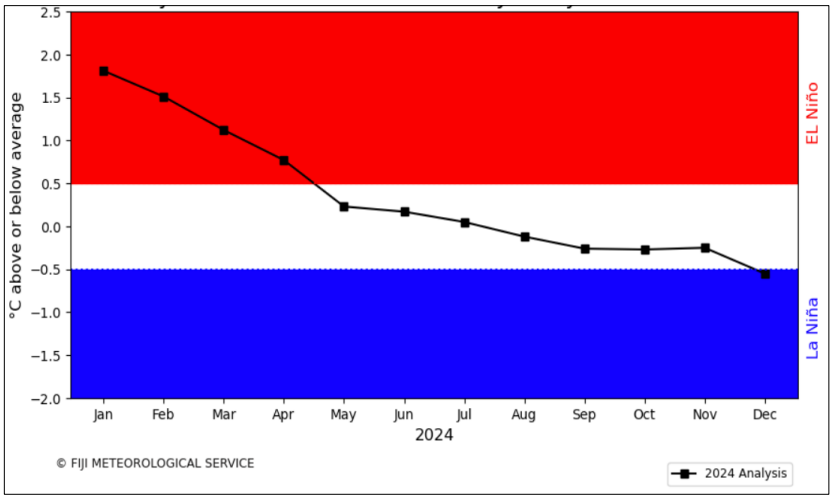


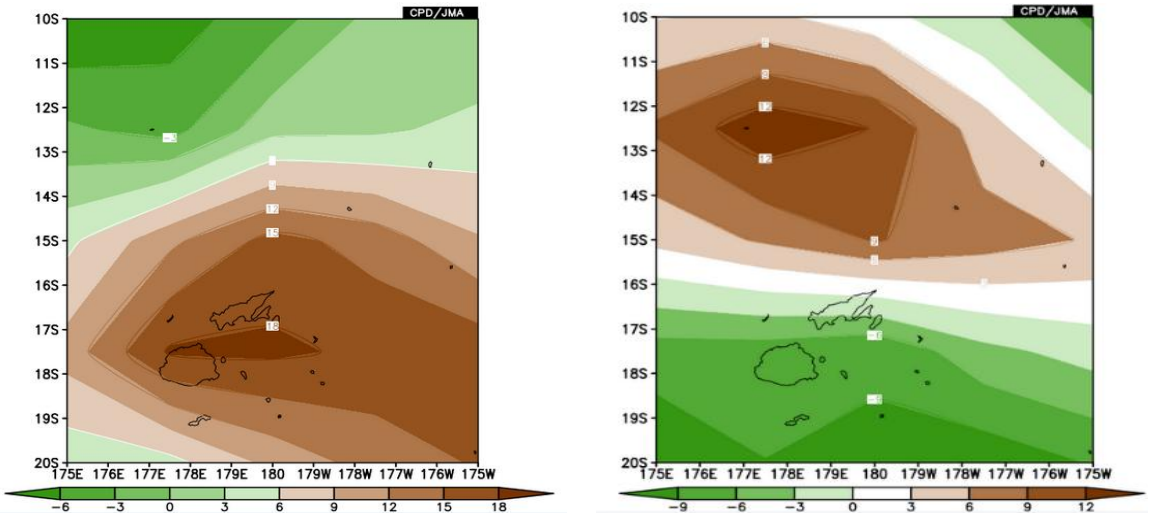
Figure 1: Monthly NINO3.4 anomalies indicate that the Pacific Ocean was leaning towards an El Niño during January to April, and thereafter ENSO-neutral condition prevailed from May till the end of 2024. Data source: NOAA.

During La Niña, there is sustained cooling of the central and eastern equatorial Pacific Ocean, accompanied by persistent positive values of SOI, an increase in strength of the equatorial Trade winds and decrease in cloudiness near the Dateline. El Niño events in Fiji typically accompanied with onset of drier conditions, increasing the chances or risk of drought, while La Niña events are often associated with wetter than usual or more rainfall, leading to flooding, especially during the Wet Season from November to April.

The tropical Pacific was in an El Niño state during January to April 2024. During May 2024, most of the oceanic and atmospheric indicators were leaning towards an ENSO-neutral state. ENSO-neutral state prevailed from May till end of 2024.

Large Scale Climate Drivers (Cont.)

Warmer than usual sea surface temperatures were concentrated across the central and eastern equatorial Pacific, while cool anomalies were present far east of the Pacific during January to April. During May, cool anomalies started spreading from the eastern Pacific towards the central Pacific. Thereafter, ENSO became neutral (neither La Niña nor El Niño) with oceanic and atmospheric indicators returning to neutral levels. ENSO-neutral conditions prevailed till December 2024.



(a) **(b)**

Figure 2: Outgoing longwave (OLR) radiation anomalies for (a) April to May; (b) October to December 2024. Suppressed cloud cover (positive OLR anomalies) persisted over the Fiji Group during April to May 2024, while enhanced cloud cover (negative OLR anomalies) was present across the Fiji Group during October to December 2024. Image source: Japan Meteorological Agency.

Fiji's weather at the beginning of the year displayed typical wet season, with the South Pacific Convergence Zone displaced south of its normal position closer to the Fiji Group. Consequently, most parts of the country were wetter than usual in the first three months. Rainfall was quite suppressed during April to May, as most places experienced drier than normal conditions. The rainfall pattern observed during April to May was typical of a decaying El Niño. From there onwards, rainfall patterns were variable, consistent with an ENSO-neutral state. Dry months were interspersed with notable

Large Scale Climate Drivers (Cont.)

rainfall events, preventing establishment of significant rainfall deficiencies. During October to December, wetter than normal conditions prevailed across the Fiji Group.

Madden Julian Oscillation (MJO)

Madden Julian Oscillation is often defined as an eastward movement of large areas of both enhanced and suppressed rainfall, observed mainly over the Indian and Pacific Ocean, with a cycle of around 30-60 days. When the active phase of MJO is in the western Pacific (Phase 6 & 7; Figure 3), there is usually a surge in the convective activity in the southwest Pacific, with increased chances of activities within our region. The South Pacific Convergence Zone becomes more active, with formation of a number of low pressure systems, tropical disturbances, tropical depressions and tropical cyclones within a period of two to three weeks in the region around Fiji.

During 2024, six active MJO pulses passed through the western Pacific. The strongest of these pulses were in January, February, March, October and December (Figure 3).
From January 24th to 31st, a strong MJO pulse was present in the western Pacific, which brought heavy rain and caused flash floods across the Central and Western Divisions. A strong MJO pulse was active from February 1st to 17th. During this time, TC Nat and TC Osai formed in the region. Both TC Nat and Osai were in the open waters hence, they did not cause any significant damages in the region. From March 15th to 21st , MJO pulse was active in the western Pacific, and during this time Tropical Depression 11F (TD11F) formed to the far west of Fiji, with its associated active trough affecting the entire country. TD11F affected Fiji in terms of heavy rain and strong north to north-westerly winds, causing flash floods across the Western, Central and Northern Divisions. Two strong MJO pulses were active in the western Pacific from October 26th to 31st and from December 20th to 31st, which brought heavy rain and caused flash flooding and landslides across Fiji.

Large Scale Climate Drivers (Cont.)

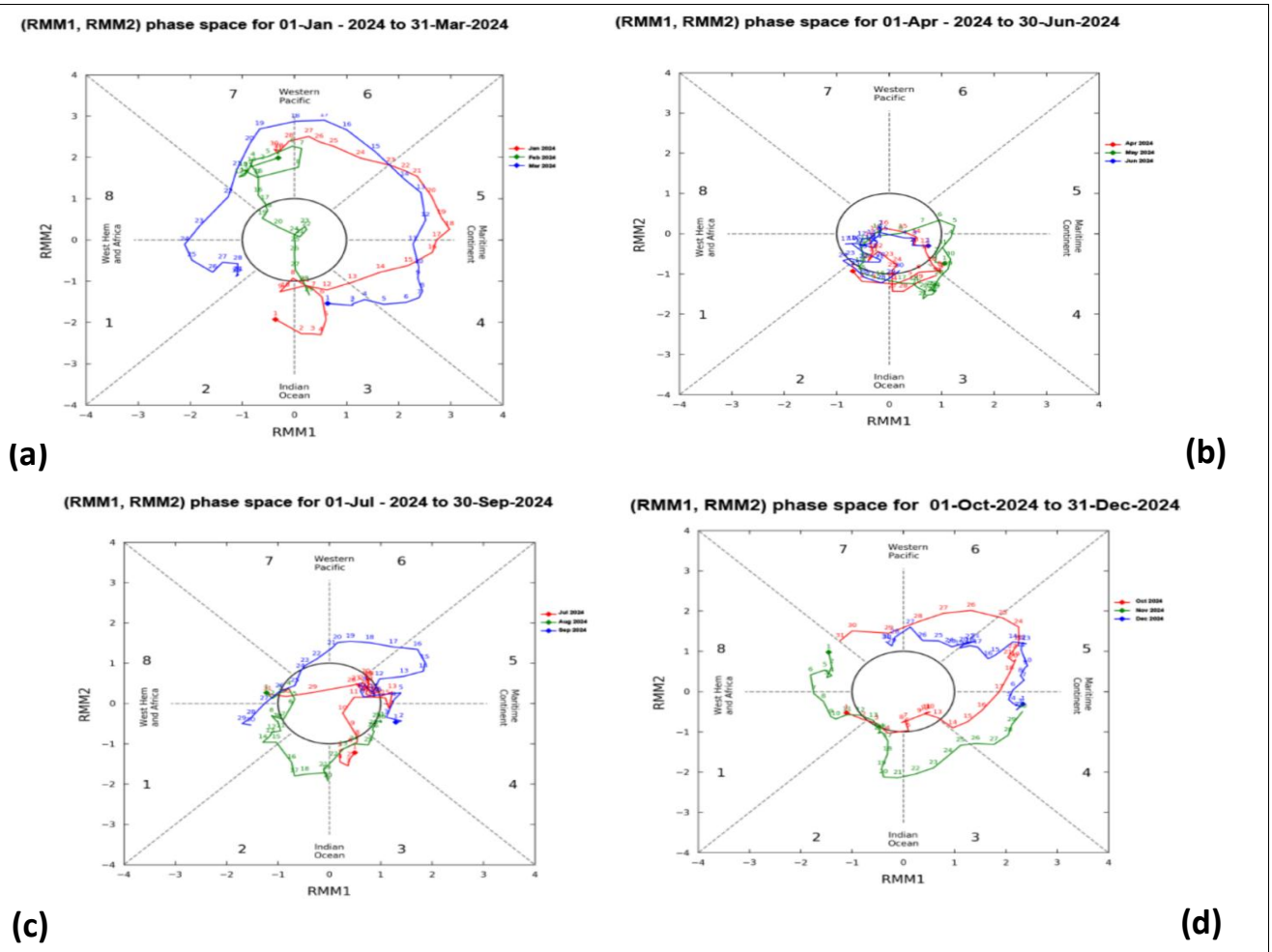


Figure 3: The MJO phase diagram illustrates the progression of the MJO through locations along the equator around the globe. When the index is within the centre circle, the MJO is considered weak. Outside of this circle the index is stronger and will usually move in an anti-clockwise direction as the MJO moves from west to east. Phases 6 and 7 are Western Pacific. Data source: BoM

Rainfall

Fiji's national average rainfall for 2024 was 3040mm, which was 129% of the long-term average. This ranks 2024 as the 6th wettest year in 67 years of record (Figure 4).

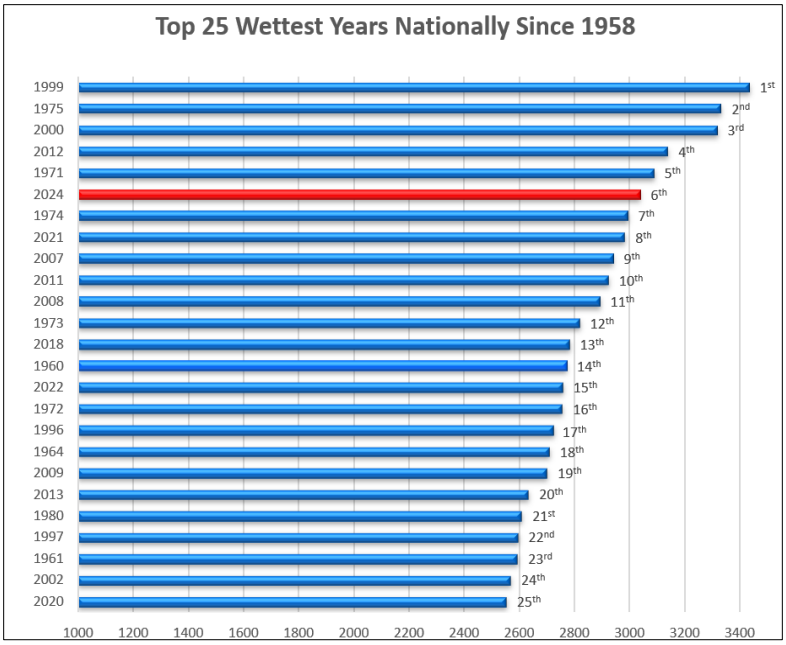


Figure 4: National average annual rainfall ranking.

Fiji's national annual average rainfall is not showing any significant increasing or decreasing trend between 1958 to 2024, with a large year-to-year variability associated with the El Niño and La Niña events (Figure 5). Similarly, the national average Wet (November to April) and Dry (May to October) Seasons also have no significant trends.

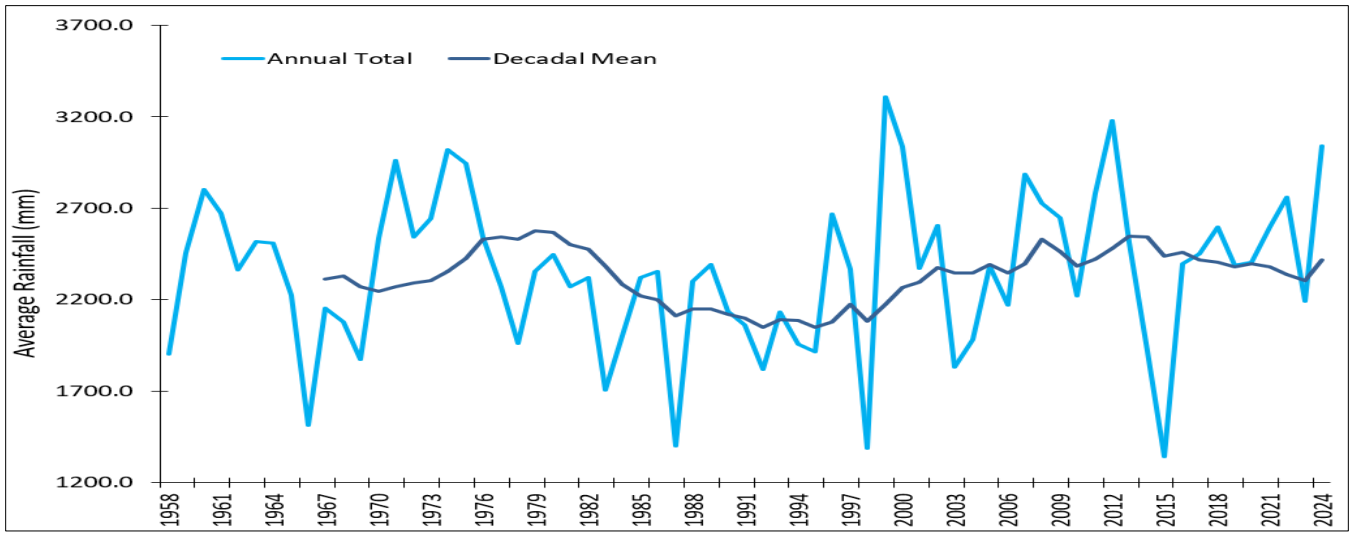


Figure 5: Time series of national average annual and decadal running mean rainfall from 1958 to 2024.

Rainfall (Cont.)

The annual total rainfall in 2024 at individual rainfall monitoring stations was near normal or above normal at majority of the stations. Out of the 23 rainfall monitoring sites, 17 registered above normal rainfall, while 6 stations recorded normal rainfall (Figure 6).

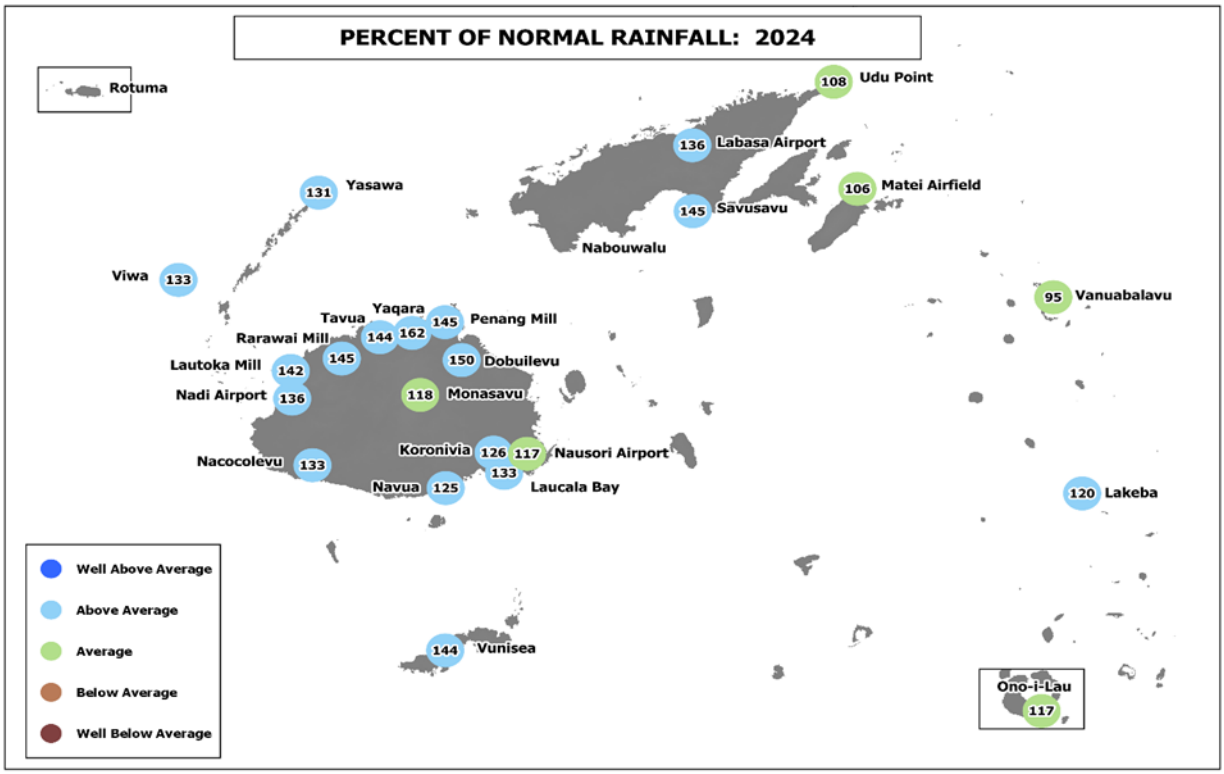


Figure 6: Percent of normal (1991 to 2020 mean) rainfall in 2024 at various rainfall monitoring stations across the country.

Monthly rainfall was significantly higher than usual in January, February, March, November, and December. In January, a series of active troughs and Tropical Disturbance TD04F brought heavy rainfall across the Fiji Group, with notable 24-hour totals of 119.8mm at Lakeba on the 14th, 118.7mm at Laucala Bay (Suva) on the 15th, and 160.1mm at Rarawai Mill (Ba) on the 24th. In February, a series of active low-pressure troughs associated with TD05F affected the country, bringing occasional to heavy rainfall, with significant 24-hour totals of 182.1mm at Labasa, 114.5mm at Seaqaqa, and 130.5mm at Wainikoro, all on the 11th. In March, low-pressure troughs associated with

Rainfall (Cont.)

Tropical Depression 11F brought significant rainfall to various locations: Labasa Airport recorded 149.9mm, Monasavu 193.5mm, and Rarawai Mill (Ba) 195.6mm on the 16th; Nadi 142.6 mm, Laucala Bay (Suva) 154.3mm, and Nausori 196.2mm on the 19th; Lautoka 117.7 mm on the 29th; and Penang (Rakiraki) 154.8mm on the 30th. In November, a series of low-pressure troughs brought heavy rainfall to the Central and Eastern Divisions, with 24-hour totals of 112.0mm at Koronivia and 100mm at both RKS Lodoni and Nausori Airport, all on the 30th. Finally, in December, an active trough of low pressure brought continuous, torrential rainfall, with the highest 24-hour total of 267mm recorded at Nadarivatu on the 26th, followed by 161mm at Rarawai Mill (Ba) on the 29th, 122mm at Penang Mill (Rakiraki) on the 27th, 112mm at Yaqara on the 26th, 105mm at Lautoka Mill on the 24th, 95mm at Nadi Airport on the 23rd, 87mm at Nabouwalu on the 27th, and 84mm at Monasavu on the 25th.

On the other hand, April, June, July, and September were significantly drier than usual (Figure 7). April rainfall was notably suppressed across the country, with the Tavua to Momi corridor recording fewer than eight rain days. June saw an extended period of dry conditions across the country, with Yaqara, Lautoka Mill, Nadi Airport, Tavua, Viwa, Rarawai Mill (Ba), Momi, Keiyasi, Labasa Airfield, Vaturekuka (Labasa), Lakeba, Yasawa-i-Rara, Seaqaqa, Sigatoka, and Wainikoro all recording less than three rain days. In July, majority of the stations in the Western, Central, and Northern Divisions recorded limited rainfall, with Seaqaqa, Tavua, Lautoka Mill, Yaqara, Rarawai Mill (Ba), Yasawa-i-Rara, Nadi Airport, Momi, and Sigatoka all experiencing less than six rain days. Similarly, in September, most stations across the country experienced drier than usual conditions, with Lautoka Mill, Viwa, Yasawa-i-Rara, Rarawai Mill (Ba), Nadi Airport, Levuka, Seaqaqa, Sigatoka, Momi, Tavua, and Lakeba recording less than four rain days.

Rainfall (Cont.)

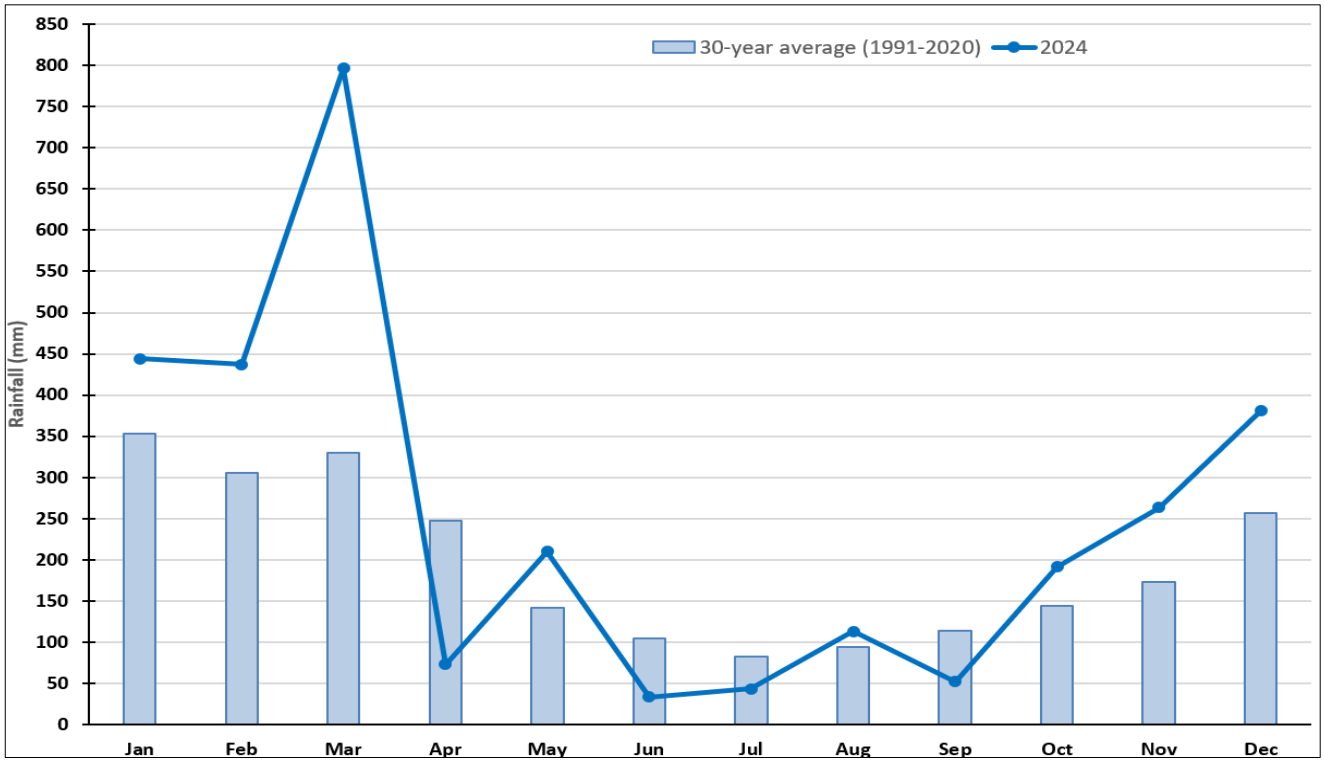


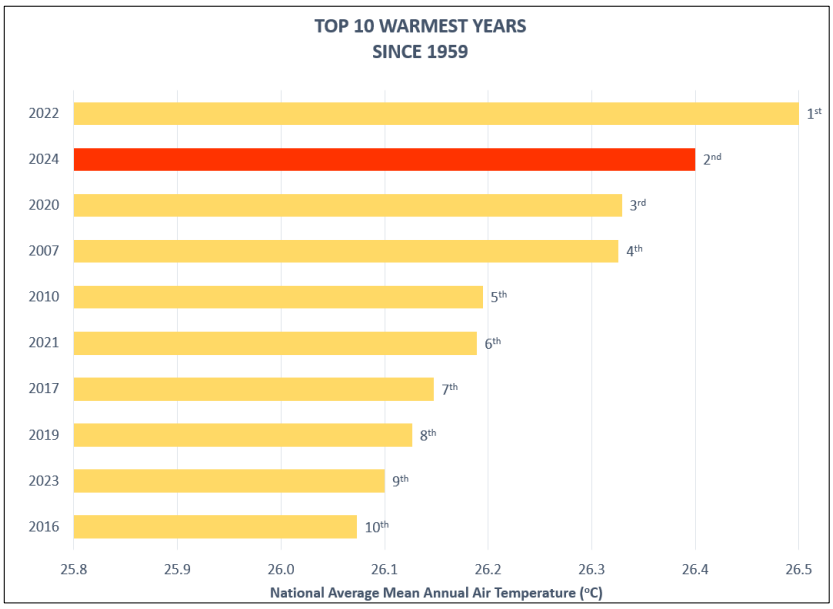
Figure 7: National average monthly rainfall during 2024 compared with the long-term average (1991-2020).

Overall, Monasavu recorded the most amount of rain during 2024 with an annual rainfall of 5791mm, followed by Nadarivatu with 4997mm, Navua with 4371mm and Laucala Bay (Suva) with 3993mm. On the other hand, Levuka was the driest site with 1253mm of rainfall, followed by Vanuabalavu with 1878mm, Ono-i-Lau with 1890mm and Momi with 1974mm.

Air Temperatures

Mean Air Temperature

The year 2024 was the 2nd warmest year on record in Fiji with the national average mean air temperature of 26.4°C, which was 0.6°C warmer than the normal (Figure 8).



The most recent decade ending in 2020 was also warmest on record in Fiji. This pattern has continued with every new decade being warmer than all previous decades since 1960s (Figure 9).

Figure 8: Top 10 warmest national average mean air temperatures for Fiji.

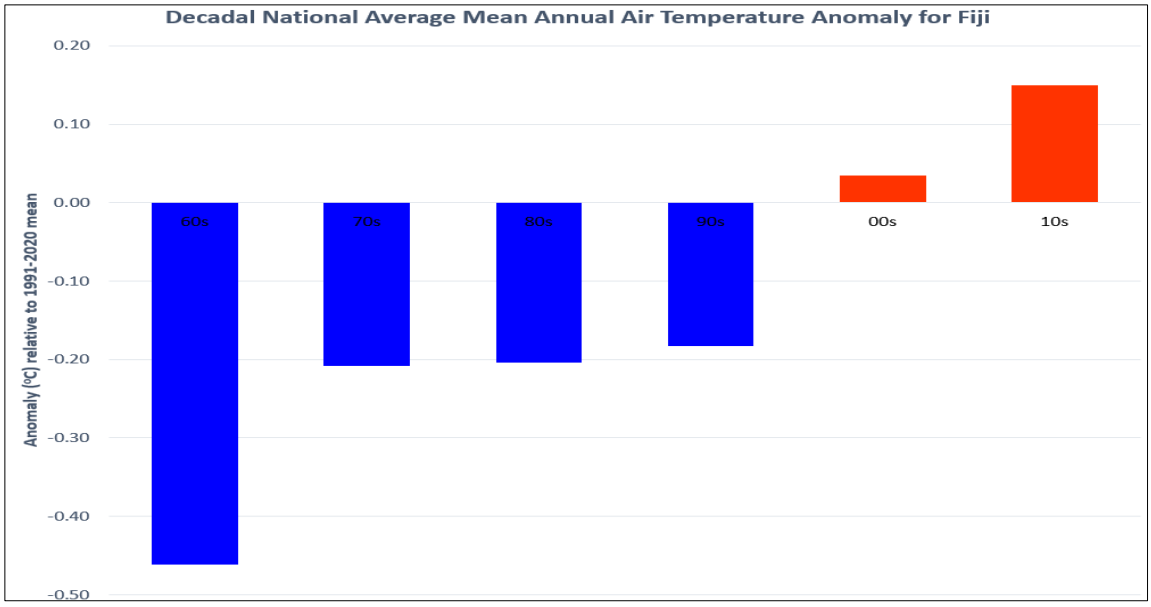


Figure 9: Decadal national average mean annual air temperature anomalies for Fiji.

Air Temperatures (Cont.)

The national mean annual air temperature has increased by 1.1°C between 1959 and 2024 (statistically significant rise at 95% confidence level) (Figure 10). This trend is consistent with the global pattern of rising air temperatures as greenhouse gas concentration increases in the atmosphere.

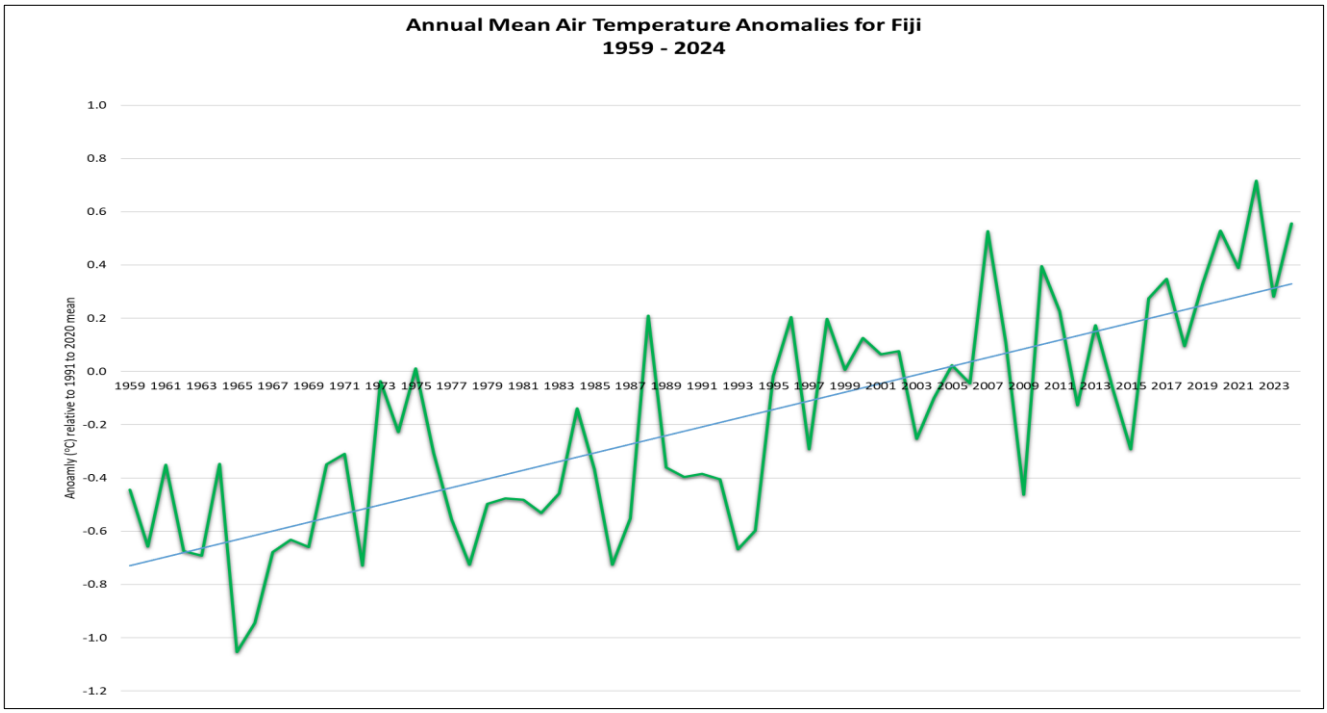


Figure 10: Time series of national average mean annual air temperature anomaly relative to 1991-2020 mean together with the associated trend.

Maximum and Minimum Air Temperatures

The country's national average annual maximum air temperature during 2024 was 30.0°C, which was 0.7°C warmer than the normal. This categorizes it as the 2nd warmest national annual maximum air temperature since 1959. The year 2022 is warmest on record, followed by 2024 and 2023.

The national average annual minimum air temperature during 2024 was 22.7°C, which was 0.5°C warmer than the normal. This ranks as the 4th warmest annual minimum air temperature on record since 1959.

Air Temperatures (Cont.)

The national average maximum air temperature has increased by 1.2°C between 1959 and 2024 (statistically significant rise at 95% confidence level). Similarly, the national average minimum air temperature has increased by 1.0°C between 1959 and 2024 (statistically significant rise at 95% confidence level) (Figure 11).

On average, the warmest days location during 2024 was Keiyasi with an annual mean maximum air temperature of 34.5°C, followed by RKS Lodoni with 32.5°C, Viwa with 32.0°C, Yaqara with 31.5°C and Lautoka Mill with 31.1°C. On the other hand, the coolest annual mean maximum air temperature was registered at Monasavu with 24.8°C, followed by Nadarivatu with 27.7°C, Ono-i-Lau with 28.8°C, Vunisea with 29.1°C and Vanuabalavu with 29.3°C.

The highest daily maximum air temperature during the year was recorded at RKS Lodoni with 37.8°C on February 26th, followed by Yaqara with 37.5°C on January 12th, Momi with 36.6°C on November 15th, Levuka with 36.4°C on the December 20th, and Yasawa-i-Rara and Viwa both with 36.0°C on the November 2nd and December 21st, respectively.

The coolest nights on average during 2024 was recorded at Monasavu with the annual minimum air temperature of 18.7°C, followed by Nadarivatu with 20.2°C, Korolevu with 21.3°C and Sigatoka with 21.4°C. In contrast, the warmest nights on average were recorded at Viwa with annual minimum air temperature of 25.1°C, followed by RKS Lodoni with 24.9°C, Levuka with 24.3°C, Laucala Bay (Suva) with 24.0°C, and Yaqara with 23.7°C.

Air Temperatures (Cont.)

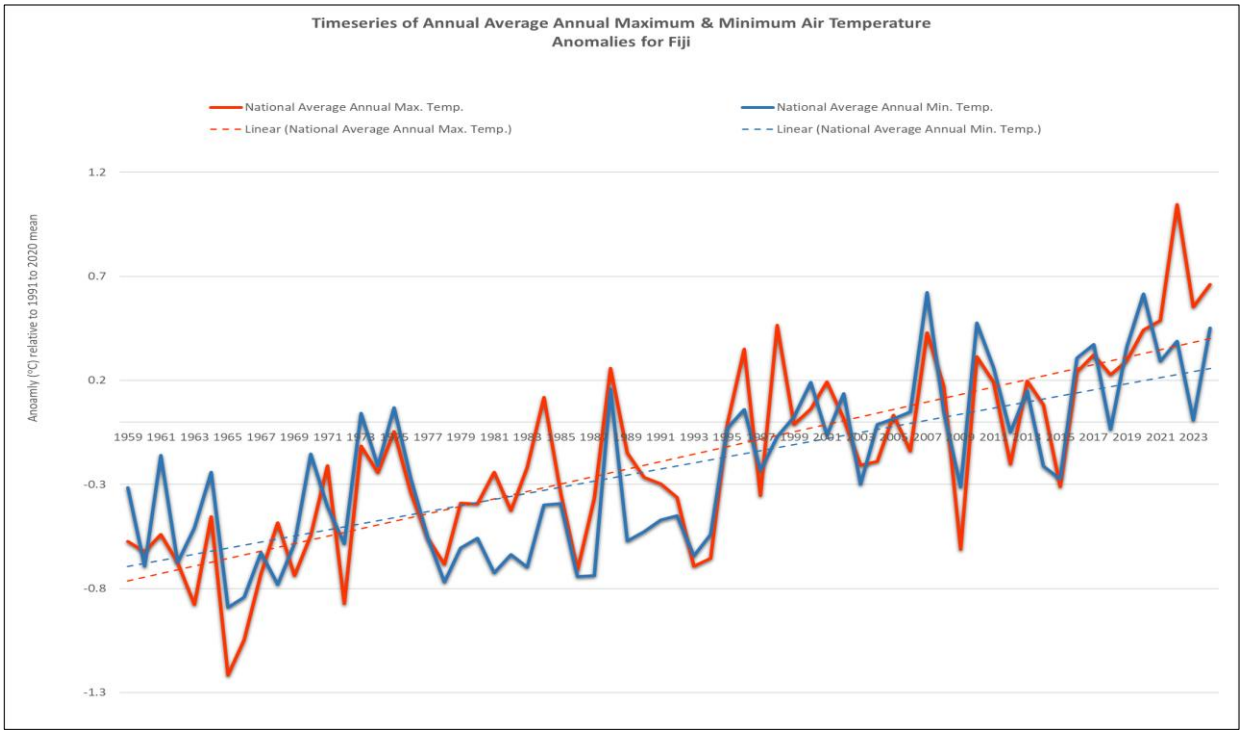


Figure 11: Time series of national average annual maximum and minimum air temperature anomalies of Fiji relative to 1991-2020 mean, together with the associated trends.

The lowest daily minimum air temperatures for the year were recorded at Nadarivatu, with temperatures of 10.9°C on August 7th, 11.0°C on August 6th, 11.3°C on June 28th, 11.6°C on May 10th, 12.0°C on August 28th, and 12.4°C on August 29th and 30th, and at Monasavu with 12.6°C on May 11th.

Note: The national average mean, maximum and minimum air temperatures have been calculated based on in-situ observations at 5 high quality meteorological stations, namely, Nadi Airport, Rarawai Mill, Laucala Bay, Nausori Airport and Vunisea.

Sunshine

The annual sunshine hours were near normal at Nadi Airport, Laucala Bay (Suva), Dobuilevu, Koronivia, Monasavu and Nacocolevu. The total annual bright sunshine hours at Nadi Airport, Laucala Bay, Dobuilevu, Koronivia, Monasavu and Nacocolevu was 2524 hours, 1555 hours, 1691 hours, 1594 hours and 1251 hours, and 1991 hours, respectively (Table 1).

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annu.
Nadi	182	135	124	253	191	249	240	271	245	211	196	229	2524
Suva	117	116	94	169	106	45	131	178	159	161	147	132	1555
Dobuilevu	121	98	88	194	152	135	162	168	173	183	107	112	1691
Koronivia	126	117	85	160	113	114	124	181	132	136	145	162	1594
Monasavu	76	69	55	90	121	135	144	123	102	118	97	120	1251
Nacocolevu	153	155	76	221	117	185	191	218	210	186	160	120	1991

Table 1: Total monthly and annual bright sunshine hours for 2024.

Nadi Airport recorded 102% of normal annual bright sunshine hours during the year. The station's highest total monthly bright sunshine of 271 hours was registered in August, while the lowest of 124 hours was in March (Table 1).

Dobuilevu recorded 121% of normal bright sunshine hours during 2024. The station's highest total monthly bright sunshine of 194 hours was registered in April, while the lowest of 88 hours was in March (Table 1).

The annual total bright sunshine at Laucala Bay (Suva) was 83% of the normal. August was the sunniest month at Laucala Bay (Suva), with 178 hours of total bright sunshine, while June recorded the least with 45 hours (Table 1).

Koronivia exprienced 99% of the normal sunshine hours during 2024. The sunniest month at Koronivia was August with 181 hours of bright sunshine, while the minimum was recorded in March with 85 hours (Table 1).

Sunshine (Cont.)

The annual total bright sunshine at Monasavu was 106% of the normal. The sunniest month at Monasavu was July with 144 hours of total bright sunshine, while March recorded the least with 55 hours (Table 1).

Nacocolevu recorded 129% of normal bright sunshine hours during 2024. The station's highest total monthly bright sunshine of 221 hours was registered in April, while the lowest of 76 hours was in March (Table 1).

Winds

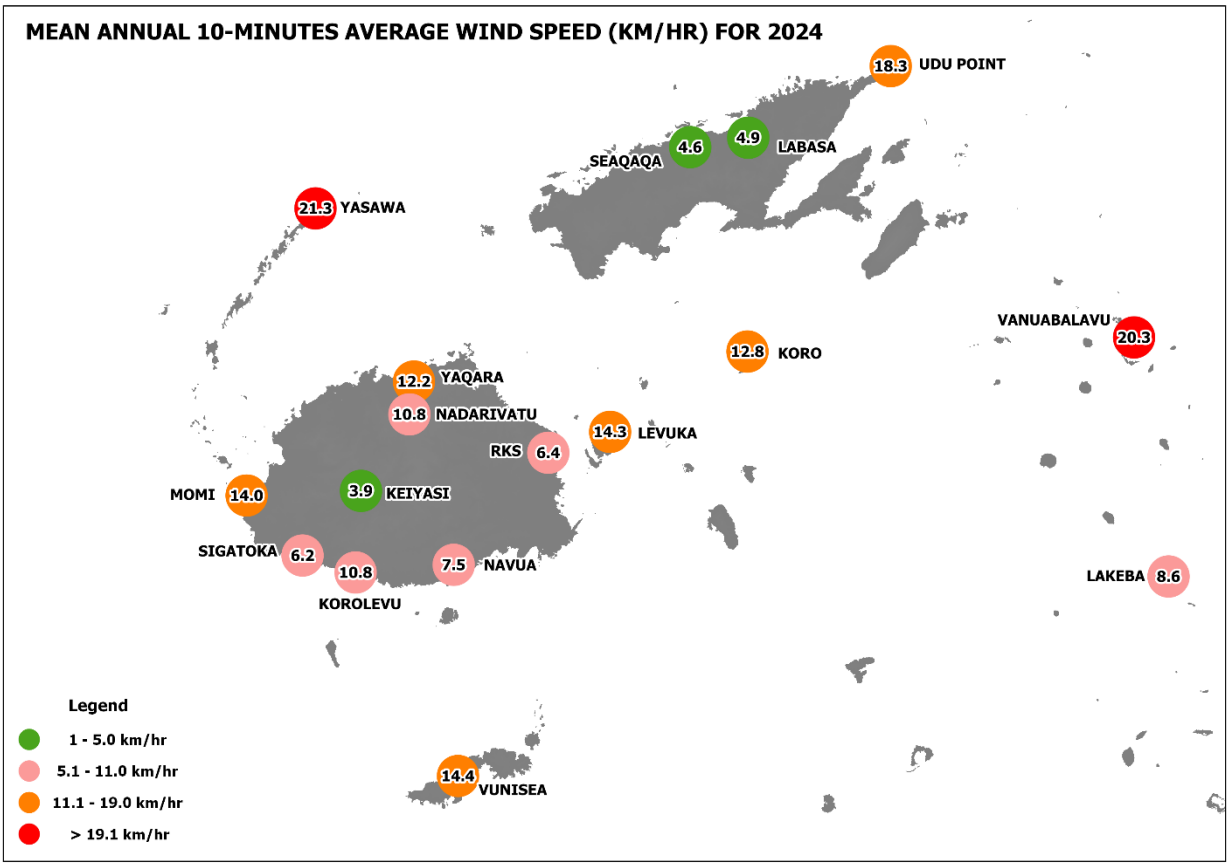


Figure 12: Mean annual 10-minute average wind speeds (km/hr) in 2024.

The 2024 highest mean annual 10-minutes wind speed was recorded at Yasawa-i-Rara with 21.3km/hr, followed by Vanuabalavu with 20.3km/hr, Udu Point with 18.3km/hr, Vunisea with 14.4km/hr and 14.3km/hr at Levuka. On the other hand, Keiyasi AWS recorded the lowest average winds of 3.9km/hr.

The highest observed wind gust during 2024 was at Udu Point with 88km/hr, followed by Vanuabalavu and Momi both with 84km/hr, Yasawa-i-Rara with 83km/hr, Levuka with 82km/hr, Vunisea with 79km/hr, Yaqara with 72km/hr, Nadarivatu with 69km/hr, and Koro with 63km/hr.

Note: Not all wind reporting stations have been used for analysis due to missing data.

Tropical Cyclones (TCs)

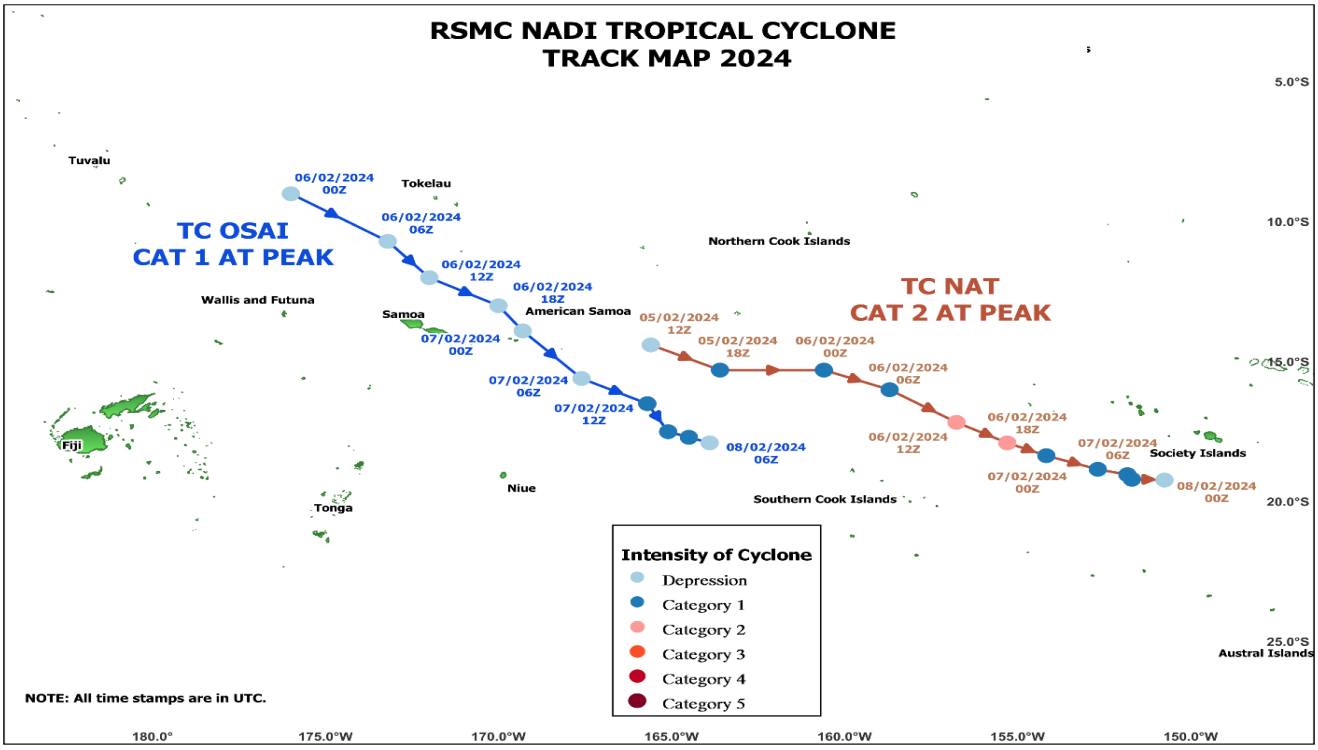


Figure 13: Track maps of TCs, which occurred in the RSMC Nadi-TCC area of responsibility during 2024.

In 2024, two TCs occurred in the Regional Specialised Meteorological Centre Nadi – Tropical Cyclone Centre (RSMC Nadi-TCC) area of responsibility (AoR) (Figure 13). Both tropical cyclones did not have any significant impact on Fiji.

TC Nat was named on February 5th, while it was located close to American Samoa. Despite some weakening due to dry air and exposure of its low-level circulation center, Nat was upgraded to a Category 2 tropical cyclone by February 6th. The cyclone continued to weaken, and by February 8th, it was reclassified as a subtropical cyclone. It later became a non-tropical low and dissipated on February 10th.

TC Osai formed on February 7th, and showed strong development with well-formed convective bands. However, it soon faced increasing vertical wind shear, causing the system to weaken and its circulation to become exposed. TC Osai only attained Category 1 strength, before dissipating on February 12th.

Sea Surface Temperatures (SSTs)

The presence of El Nino Southern Oscillation (ENSO) plays a significant role on the sea surface temperature in the tropical Pacific Ocean.

Generally, warmer than normal sea surface temperatures were present within Fiji's Exclusive Economic Zone (EEZ) in 2024. Warm anomalies between +1.0°C to +1.5°C were present west of Viti Levu, while anomalies around +0.5°C to +1.0°C were present for the rest of the Fiji Waters (Figure 14a). The annual mean sea surface temperatures around the Fiji Group ranged from 26°C to 29°C (Figure 14b).

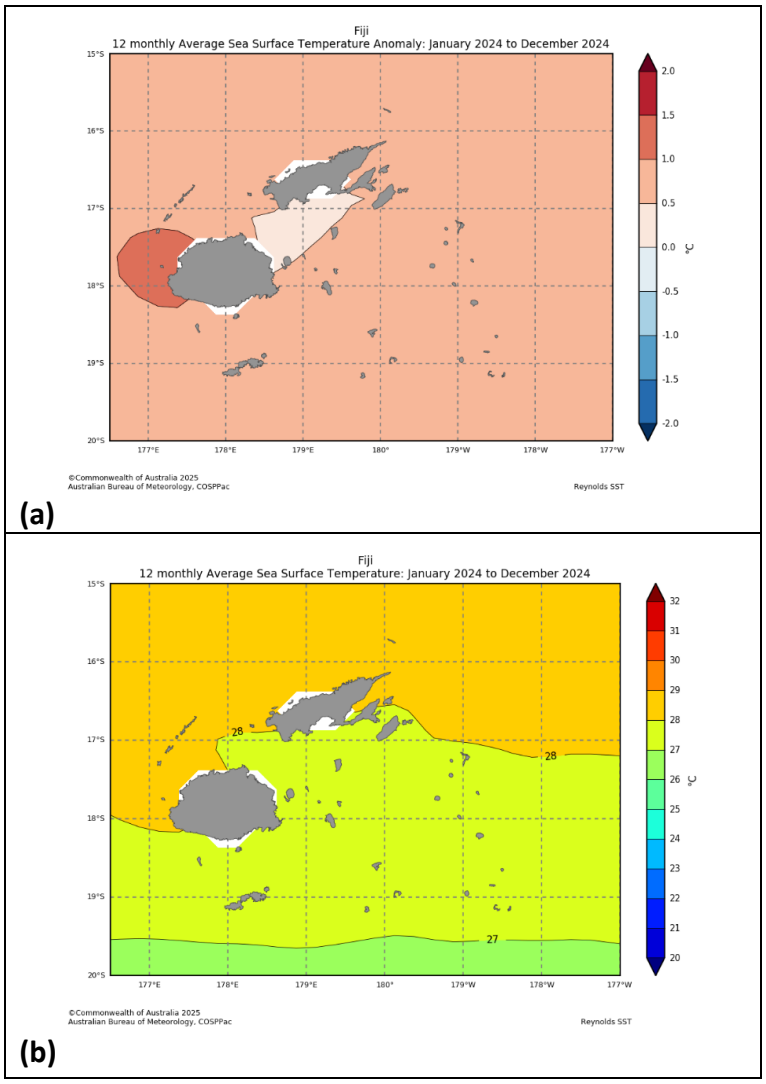


Figure 14: (a) Mean annual sea surface temperature difference from the normal (1971 to 2000 average); and (b) Mean annual sea surface temperature for 2024. Source: Pacific Community.

In 2024, a minor area northeast of Fiji's EEZ registered record high mean annual sea surface temperatures since 1982 (Figure 15)

Sea Surface Temperatures (Cont.)

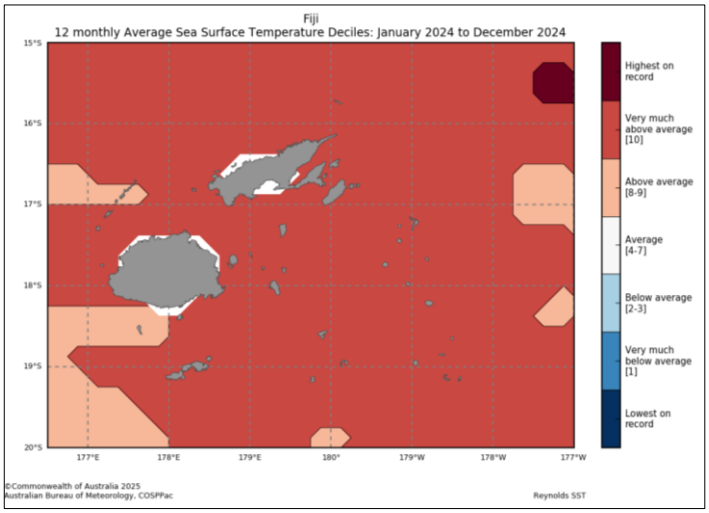


Figure 15: Ocean surface temperature ranking for 2024 since 1982. Source: Pacific Community.

The sea surface temperatures across the Fiji region showed a positive trend since 1950, with a rise of between 0.0 to 0.1°C/decade in most of Fiji's EEZ and increase of 0.1°C to 0.2°C/decade across waters in Vanua Levu and north of Viti Levu (Figure 16).

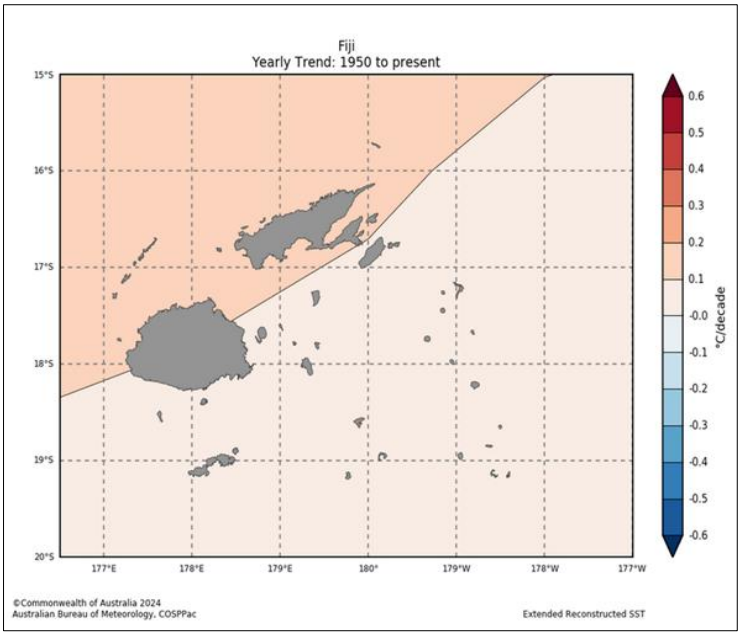


Figure 16: Average ocean surface temperature change since 1950. Source: Pacific Community.

Sea Level

There are currently three (3) tide gauge stations available within the country. The first is available at Lautoka Wharf (Western Division), second is located at the Suva Wharf (Central Division), while the final one was installed at Vatia Wharf (Tavua). The first two stations belongs to the Pacific Sea Level and Geodetic Monitoring Project (PSLGMP), while the third station belongs to Fiji Met Service.

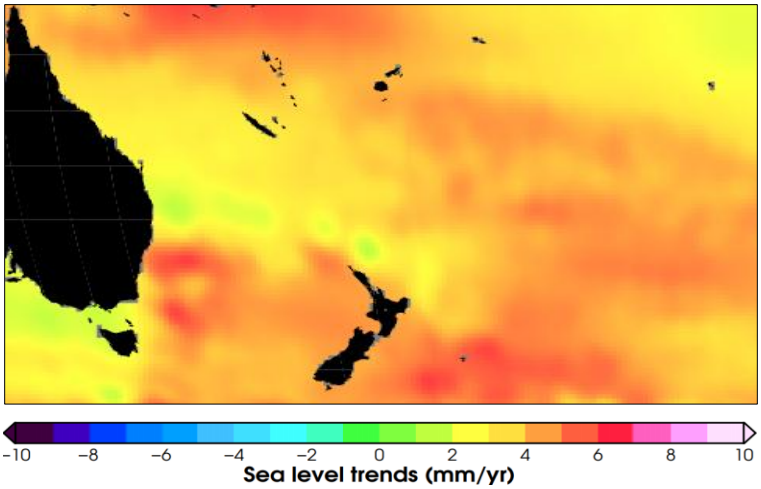


Figure 17: Sea level trend in the Pacific Island region between 1992 to 2024 as per the satellite measurement. Source: NOAA/Laboratory for Satellite Altimetry.

The sea-level rise near Fiji measured by satellite altimeters (Figure 17) from 1992 to 2024 was between 4-5mm/year. A state of the art sea level monitoring station at the Lautoka Wharf had a relative sea level trend of 4.1mm/year between 1993 to 2024, which is a statistically significant increasing trend at 95% confidence level (Figure 18). The global mean sea level rise is of 3.2mm/year since 1993.

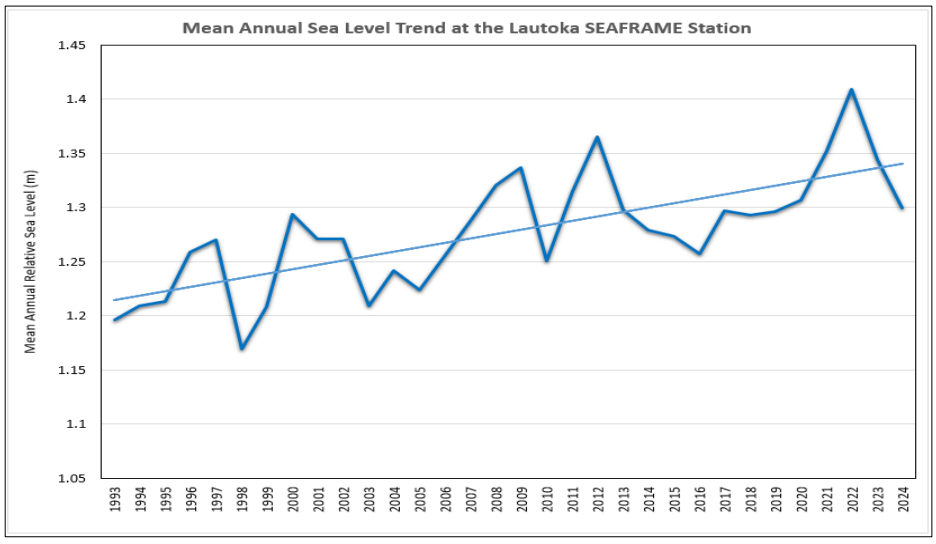


Figure 18: Mean annual relative sea level trend at the Lautoka SEAFRAME station. Data source: Pacific Community.

Note: Sea level at Vatia Wharf could not be analysed due to missing data.

Notable Weather Events

Flash Flooding in the Central and Western Divisions – January

The first episode of flash flooding occurred when a series of active troughs affected the group from the 14th to the 18th bringing occasional heavy rain, thunderstorms and isolated flash flooding. The eastern parts of Viti Levu in particular received heavy rainfall leading to flash flooding in low-lying areas of the Central Division on the 15th and 16th. Significant 24-hour rainfall of 119.8mm and 118.7mm was recorded for Lakeba and Laucala Bay (Suva) on the 14th and 15th, respectively.

Heavy rain from the 20th to 22nd led to the second episode of flash flooding, mostly concentrated in the Central Division, submerging several bridges and crossings while surface flooding affected some low-lying settlements. Laucala bay (Suva) recorded its 24-hour significant rainfall of 136.2mm on the 20th.

The third episode of flash flooding occurred on the 25th due to the persistence of moist northerly winds from the 23rd to 26th. Substantial rainfall occurred in this period, especially on the 24th when Rarawai Mill (Ba) recorded a 24-hour significant rainfall of 160.1mm and on the 25th when Rarawai reported its second-highest rainfall on record. Continuous heavy rain and flooding resulted in road closures and inaccessibility to the affected areas.



Figure 19: (a) Old Naqali Bridge on 16th January (Credit: National Disaster Management Office); (b) Vatuwaqa, Suva on 20th January (Credit: National Disaster Management Office); (c) Namaqumaqua Crossing, Navua on 22nd January (Credit: Fiji Roads Authority).

Notable Weather Events (Cont.)

Landslide – January

Continuous heavy rainfall saturated the soil resulting in a small landslide in a residential area in Kula Street, Samabula, on the 20th.



Figure 20: Landslide at Kula Street, Samabula on 20th January. (Credit: National Disaster Management Office).

Flash Flooding in the Central, Northern and Western Divisions – February

A series of active troughs of low-pressure systems associated with Tropical Depression 05F (TDO5F), with the moist northerlies, easterlies and the southeast winds, influenced weather in February bringing about many heavy rain events together.

A trough of low pressure, associated with TD05F affected the country from the west on the 10th with heavy rain and thunderstorms. The first event on the 12th resulted when heavy rainfall led to river flooding and flash flooding in the Northern Division. There was significant 24-hour rainfall of 182.1mm, 114.5mm and 130.5mm recorded on the 11th at Labasa, Seaqaqa and Wainikoro respectively.

The northerly wind flow continued to persist with TD05F near Fiji thereafter until the 15th, bringing occasional to periods of rain with isolated heavy falls over most of Fiji. Another series of active troughs of low pressure associated with TD05F then continued to affect the country until the 25th with occasional to periods of heavy rain and few

Notable Weather Events (Cont.)

thunderstorms. These events resulted in a series of flash flooding across the Central and Western Division on the 17th, 20th, 22nd and 24th, respectively.



Figure 21: (a) Wainikoro Rd, Labasa underwater on 12th February (Credit: Fiji Roads Authority); (b) Waima bridge, Naitasiri underwater on the 24th February (Credit: Fiji Roads Authority); (c) Landslip on Kings Road, Viwa, on 25th February (Credit: Fiji Roads Authority).

Flash Flooding in the Central, Northern and Western Divisions – March

A series of troughs of low-pressure systems associated with Tropical Depression 11F (TD11F), together with the moist northerlies and easterlies, dominated the weather in March.

TD11F, on the 9th, was located to the far west of Fiji with its associated active trough affecting the whole country until the 17th. Periods of rain with heavy falls occurred in most centers in the Northern, Central and Western Divisions, coupled by strong north-to-north-westerly winds over Fiji waters directed by TD11F passing to the west of the Fiji Group. This same trough lingered over Fiji and continued to affect parts of the country with occasional to periods of rain and isolated heavy falls from the 18th to the end of the month.

Heavy rainfall led to a series of several flash flood events in low-lying areas and major rivers over most parts of the country, especially in the Western, Central, and Northern

Notable Weather Events (Cont.)

Divisions on the 13th, 15th, 16th, 17th, 19th, 21st, 25th, and 30th. Significant 24-hour rainfall amounts were recorded as follows: 149.9mm in Labasa, 195.6mm in Rarawai (Ba) and 193.5mm in Monasavu on the 16th, 142.6mm in Nadi, 154.3mm in Laucala Bay (Suva), and 196.2mm in Nausori on the 19th, 117.7mm in Lautoka on the 29th and 154.8mm in Penang (Rakiraki) on the 30th.



Figure 22: (a) Vunitogolao Village, Rakiraki on 30th March (Credit: National Disaster Management Office); (b) Tavualevu Village, Tavua on 21st March (Credit: National Disaster Management Office); (c) Landslide along Dilkusha in Nausori on 19th March (Credit: National Disaster Management Office).

Flash Flooding in the Central and Eastern Divisions - October

A series of low pressure troughs affected Fiji simultaneously from the 16th to 18th. Vunisea received significant 24-hour rainfall of 217mm on the 17th reflecting the heavy rainfall received and flash flooding events observed in parts of Kadavu.

The second series of flash flood events occurred in the central division on the 26th due to a low-pressure trough coupled with an upper-level disturbance on the Fiji group from the 23rd to the 27th. Significant 24-hour rainfall of 149mm was recorded at Navua, followed by Laucala Bay (Suva) with 142mm, all on the 25th. Flash flooding resulted in road closures and inaccessibility in these areas

Notable Weather Events (Cont.)



Figure 23: (a) Waisomo Crossing in Kadavu, inundated with flood waters, 17th October (Credit: Fiji Roads Authority); (b) Flooding in Sawani on 26th October (Credit: FijiVillage); (c) Surface flooding in Grantham Road on 26th October (Credit: Fiji Roads Authority).

Landslides – October

Heavy rainfall in localized areas of the country led to few landslide events. Landslides were reported in Vunisea, Kadavu on the 18th. Towards the end of the month, continuous rainfall in the Central Division led to a number of landslide events on the 26th.



Figure 24: (a) Landslide in Vunisea, Kadavu on 18th October (Credit: Fiji Roads Authority); (b) Landslide at Nabukaluka Delailasakau Road, Naitasiri on 26th October (Credit: Fiji Roads Authority); (c) at Qiolevu Road on 26th October (Credit: Fiji Roads Authority).

Notable Weather Events (Cont.)

Flash Flooding in the Central and Eastern Divisions – November

A trough of low pressure developed to the east of the group, which affected the northern and eastern parts of the country from the 11th, the trough continued northeastwards until the 13th. An additional trough developed north of Fiji and hit already affected parts of Fiji thereon until the 17th, followed by another trough until the 19th before dissipating. On the 20th, a series of troughs approached from the north and the west affecting most parts of the country until the 26th. Heavy rainfall led to several flash floods events at low-level crossings in low lying areas of the Central and Eastern Divisions on the 13th, as well as in the Central Division on the 11th, 26th, and 30th. Significant 24-hour rainfall of 87mm at Laucala Bay on the 25th caused road surface flooding along Walu Bay in Suva on the 26th.

On the 27th, a shallow low-pressure system just to the southwest of Fiji embedded along a trough affected the southern and eastern regions of Fiji. Drifting to the rest of the group on the 28th, it brought substantial rainfall to most parts of the country towards the end of the month. Significant 24-hour rainfall of 112mm at Koronivia and 100mm at both RKS Lodoni and Nausori Airport resulted in flash flooding in parts of the Central Division on the 30th.



Figure 25: (a) Matainasau Crossing (Wailao Road) on 11th November (Credit: Fiji Roads Authority); (b) Road Surface flooding along Walu Bay in Suva on 26th November (Credit: Fiji Sun); (c) Wairua crossing on 30th November (Credit: Fiji Roads Authority).

Notable Weather Events (Cont.)

Flash Flooding in the Western Division - December

On the 29th, Tropical Depression TD01F approached the group from the west and gradually moved across the country to the east on the 31st with occasional to periods of rain over most places. TD01F again caused major flooding over Ba, Rakiraki and Tavua.

Continuous and torrential heavy rainfall led to flash floods at low-level crossings in low-lying areas across the Western Division from the 24th to 28th. Flash flooding led to the closure of several low-level crossings, essential businesses and made some areas inaccessible for transportation. Some areas in the Western Division experienced water cuts and power failure due to continuous flooding.



Figure 26: (a) Flooding of Nadi town on 25th December (Credit: Fiji Police Force); (b) Naqoro flats, Rakiraki, flooding on 27th December (Credit: FijiVillage); (c) Submerged Toge crossing on 28th December (Credit: The Fiji Times).

Coastal Innundation - October

A coastal inundation alert was issued for the southern parts of the Fiji Group in anticipation of the highest tide of the year, coinciding with the moderate swells generated by the squash zone within the vicinity.

Notable Weather Events (Cont.)

Minor coastal inundation was experienced over Mali Island in Macuata, due to northwesterly winds (onshore flow during the high tide). Seawater encroached houses near the coastal areas of Mali Island.



Figure 27: Coastal inundation on Mali Island in Macuata on the 18th(Credit: The Fiji Times).

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