FIJI METEOROLOGICAL SERVICE
Private Mail Bag (NAP0351)
Nadi Airport, Fiji
Ph: +679 6724888
Fax: +679 6724050
Email: climate@met.gov.fj
Also online at:
http://www.met.gov.fj

Fiji Climate Summary September 2024

ISO 9001:2015 certified Climate Services

Issued: October 9, 2024
Next Issue: November 7, 2024
Since : August 1980*
Volume 45 : Issue 9

1. IN BRIEF

Rainfall during the month varied considerably, ranging from *above normal* to *well below normal*. The majority of the staions in the Western and Central Divisions, Nabouwalu, Seaqaqa and Ono-i-Lau experienced drier than usual conditions, with several sites recording less than half their normal rainfall. *Average* rainfall was observed at Navua, Vunisea, Labasa Airport, Savusavu, Matei, Vanuabalavu, Matuku and Rotuma, while *above average* rainfall was observed at Udu Point and Lakeba.

Overall, out of the 27 rainfall monitoring stations that reported in, in time for the compilation of bulletin, 8 recorded *well below average* rainfall, 9 *below average*, 8 *average* rainfall, and 2 stations with *above average* (Table 2, Figures 1-5).

The highest monthly rainfall of 243.5mm was observed at Rotuma, followed by Monasavu with 205.4mm, Navua with 201.5mm, Udu Point with 194.3mm, Matei with 155.9mm, Lakeba with 147.6mm, Vunisea with 131.0mm, Matuku with 124.0mm, RKS Lodoni with 116.0mm, and Nausori Airport with 115.5mm.

On temperatures, the month's warmest day-time temperature of 33.6°C was observed at Seaqaqa on the 11th, followed by Labasa Airport and Momi both with 33.1°C on the 12th and 22nd, respectively, and Yasawa-i-Rara and Matuku both with 32.3°C on the 15th.

The months lowest night-time temperature of 12.4°C was recorded at Rarawai Mill (Ba) on the 5th, followed by Nadarivatu with 12.8°C on the 19th, Labasa Airport with 13.1°C on the 4th, Seaqaqa with 13.2°C on the 4th, and Vaturekuka (Labasa) with 14.0°C on the 4th.

Southeasterly winds were dominant at Nadi Airport, Nausori Airport, Savusavu Airfield and Matei Airfield (Figure 7).

Above normal sea level anomalies persisted across most of the Fiji Waters during September (Figure 10).

2. WEATHER PATTERNS

A high pressure system to the south of Fiji dominated the country for the first 5 days of September with fine weather over most places apart from brief showers over the interior and eastern parts of the larger islands with cool nights.

A frontal system approached the country from the south-west on the 6th and gradually spread to the rest of Fiji brining cloudy conditions with occasional rain over most places till the system moved away from the group to the east on the 8th.

A moist southeast wind flow prevailed over the country thereafter from 9th to the 13th with occasional showers with isolated heavy falls over the interior and eastern parts of the larger islands whilst fine weather with isolated afternoon showers occured elsewhere.

A southeast wind flow followed through with fine weather over most places apart from isolated brief showers over the interior and eastern parts of the larger islands from the 14th to the 16th. Fine weather apart from isolated afternoon showers prevailed elsewhere.

A trough of low pressure affected the country from the west on 17th with occasional rain and gradually spread to the rest of the country till the 18th.

A cool and dry southerly wind flow prevailed thereafter on the 19th bringing fine weather over most places with cool nights with brief showers over the interior and eastern parts of the larger islands till the 21st.

Winds turned southeast on the 22nd with a dominant high pressure system to the south of Fiji before turning easterly on the 26th till the 30th with mostly cloudy periods with brief showers over the interior and eastern parts of the larger islands. Fine weather apart from isolated afternoon showers prevailed elsewhere.

Rotuma's weather was mainly affected by fine weather and a series of troughs of low pressures that brought occasional rain over the islands with the moist easterly and southeast winds.

***Previously known as the Fiji Islands Weather Summary and Monthly Weather Summary**

3. RAINFALL

During September, rainfall ranged from *well below average* to *above average* across the country. The majority of the stations in the Western and Central Division, Nabouwalu, Seaqaqa and Ono-i-Lau experienced drier than usual conditions. Stations such as Dobuilevu, Penang Mill, Rarawai Mill (Ba), Lautoka Mill, Nadi Airport, Viwa and Yasawa-i-Rara recorded less than half of their normal monthly rainfall.

Average rainfall was observed at Navua, Vunisea, Labasa Airport, Savusavu, Matei, Vanuabalavu, Matuku and Rotuma, while *above average* rainfall was observed at Udu Point and Lakeba.

Overall, out of the 27 rainfall monitoring stations that reported in, in time for the compilation of this bulletin, 8 recorded *well below average* rainfall, 9 *below average*, 8 *average* rainfall, and 2 stations with *above average* (Table 2, Figures 1-5).

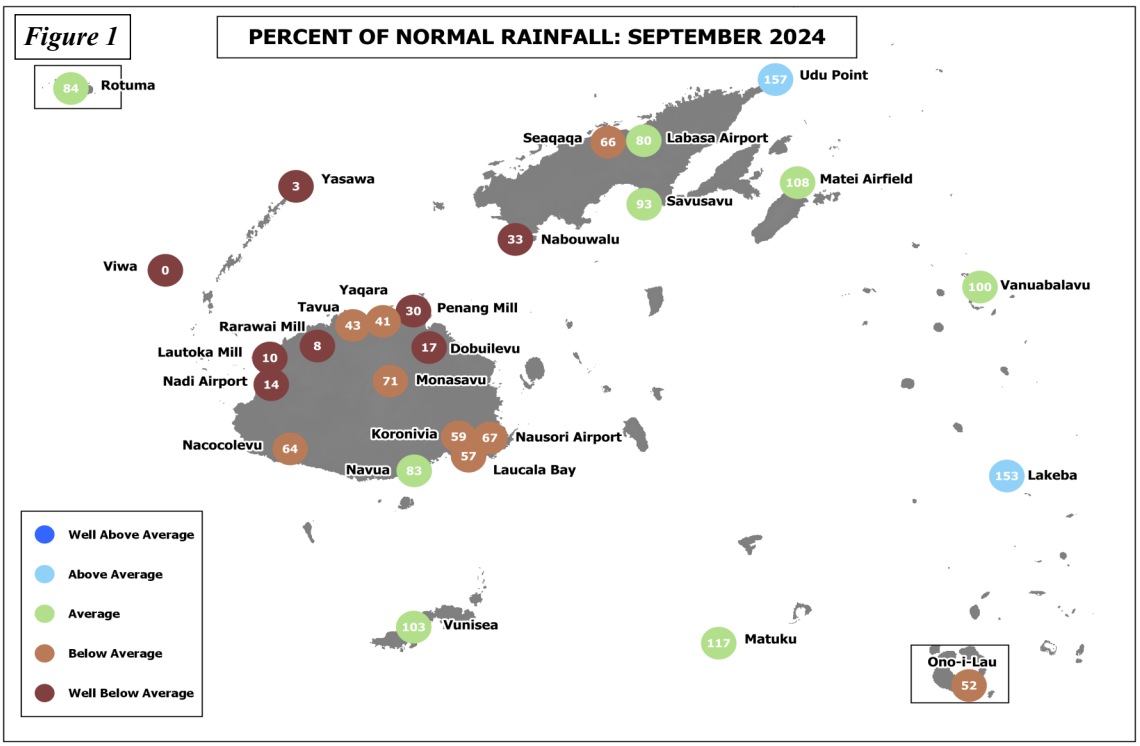
The highest monthly rainfall of 243.5mm was observed at Rotuma, followed by Monasavu with 205.4mm, Navua with 201.5mm, Udu Point with 194.3mm, Matei with 155.9mm, Lakeba with 147.6mm, Vunisea with 131.0mm, Matuku with 124.0mm, RKS Lodoni with 116.0mm, and Nausori Airport with 115.5mm. On the other hand, Viwa recorded the month's lowest total monthly rainfall of 0.3mm, followed by Yasawa-i-Rara and Sigatoka both with 2.0mm, Rarawai Mill (Ba) with 5.7mm, Lautoka Mill with 6.8mm, and Levuka with 7.0mm (Table 2).

The highest 24-hour rainfall of 112mm was recorded at Navua on the 11th, followed by Lakeba with 83mm on 8th, Savusavu with 80mm on the 6th, Matuku and Rotuma both with 72mm on the 12th and 29th, respectively, Wainikoro with 64mm on the 17th, Udu Point with 59mm on the 8th, Vunisea with 54mm on the 1st, Matei with 47mm on the 7th, and Vanuabalavu with 42mm on the 8th.

Monasavu recorded the highest number of rain days (rainfall ≥0.1mm) with 22 days, followed by Rotuma with 18 days, Nasinu with 17 days, Laucala Bay (Suva) with 16 days, Navua with 15 days, RKS Lodoni, Koronivia and Nausori Airport all with 14 days, and Savusavu and Matei both with 13 days. Consequently, Lautoka Mill recorded the least number of rainfall days with 1 day, followed by Viwa, Yasawa-i-Rara, Rarawai Mill (Ba), Nadi Airport, Levuka, and Seaqaqa all with 2 days, and Sigatoka, Momi, Tavua and Lakeba all with 3 days.

There were no new rainfall records observed during the month.

Figure 1



Normal: *Long term average from 1991 to 2020*
Well Below Average: *Rainfall less than 40% of normal*
Below Average: *Rainfall between 40 to 79%*
Rain Day: *Rainfall ≥ 0.1mm*

Average: *Rainfall between 80 to 119%*
Above Average: *Rainfall between 120 to 199%*
Well Above Average: *Rainfall greater than or equal to 200% of normal*

4. AIR TEMPERATURES

A. Maximum Day-time Air Temperatures

Above normal to below normal day-time air temperatures were observed across the country during the month. Out of the 22 climate stations that reported in time for the analysis of data, 8 recorded anomalies ≥+0.5°C, 12 within ±0.5°C, and 2 with anomalies ≤-0.5° C.

On average, the warmest days were recorded at Rotuma and Seaqaqa both with 30.9°C, followed by Labasa Airport with 30.8°C, RKS Lodoni with 30.5°C, Viwa with 30.4°C, Yaqara with 30.3°C, Yasawa-i-Rara with 30.0° C, Momi with 29.9°C, and Nadi Airport and Matuku both with 29.7°C. Consequently, Monasavu recorded the coolest days on average with 22.4°C, followed by Nadarivatu with 23.8°C, Ono-i-Lau with 25.9°C, Vunisea with 27.1°C, Vanuabalavu with 27.2°C, Laucala Bay (Suva) with 27.3°C, and Lakeba and Nausori Airport both with 27.5°C.

The month's highest day-time temperature of 33.6°C was observed at Seaqaqa on the 11th, followed by Labasa Airport and Momi both with 33.1°C on the 12th and 22nd, respectively, and Yasawa-i-Rara and Matuku both with 32.3°C on the 15th, and Yaqara and Wainikoro both with 32.3°C on the 23rd. On the other hand, the coolest day-time temperature of 17.5°C was at Monasavu on the 6th, followed by Nadarivatu with 19.2°C on the 7th, both Vaturekuka (Labasa) and Lakeba with 22.3°C on the 7th and 8th, respectively, and Vanuabalavu with 22.6°C on the 7th.

There were no new day-time temperature records established during the month.

B. Minimum Night-time Air Temperatures

Similarly, *above normal to below normal* night-time temperatures were recorded at majority of the climate stations during the month. For the 23 stations that reported in, 9 recorded anomalies ≥ +0.5°C, 8 within ± 0.5°C, and 6 with anomalies ≤ -0.5°C.

The coolest nights on average were at Nadarivatu with 15.4°C, followed by Monasavu with 16.7°C, Rarawai Mill (Ba) with 18.2°C, Labasa Airport and Sigatoka both with 18.8°C, Nacocolevu with 19.1°C, Seaqaqa with 19.2°C, Korolevu with 19.3°C, and Vaturekuka (Labasa) with 19.5°C. Consequently, on average, the warmest night-time temperatures were observed at Rotuma with 25.3°C, RKS Lodoni and Viwa both with 23.1°C, Vanuabalavu with 22.8°C, Laucala Bay (Suva) and Savusavu both with 22.4°C, and Penang, Yaqara and Saqani all with 22.2°C.

Most of the coolest daily night-time temperatures were recorded during the first week of the month. The lowest night-time temperature of 12.4°C was recorded at Rarawai Mill (Ba) on the 5th, followed by Nadarivatu with 12.8°C on the 19th, Labasa Airport with 13.1°C on the 4th, Seaqaqa with 13.2°C on the 4th, and Vaturekuka (Labasa) with 14.0°C on the 4th. On the other hand, the warmest night-time temperature of 26.6°C was recorded at Rotuma and RKS Lodoni on the 12th, followed by Penang Mill with 26.5°C on the 28th, Viwa with 25.3°C on the 14th, and Udu Point with 24.8°C on the 12th.

There were no new night-time temperature records established during the month.

TABLE 1. CLIMATE RECORDS ESTABLISHED IN SEPTEMBER 2024

There were no new climate records established during September 2024.

Note: All comparisons in this summary are with respect to "Climatic Normals". This is defined to be the average climate condition over a 30-year period. Fiji uses 1991-2020 period as its "climatic normal" period.

TABLE 2. DAILY CLIMATE REPORTING SITES: SUMMARY FOR SEPTEMBER 2024

	RAINFALL					AIR TEMPERATURES								SUNSHINE	
	TOTAL	RAIN * DAYS		MAX. FALL		AVERAGE DAILY				EXTREME				TOTAL	
	MM	%	+	MM	ON	MAX. C	# C	MIN. C	# C	MAX. C	ON	MIN. C	ON	HRS	* %
NADI AIRPORT	9.9	14	2	9	16	29.7	0.5	19.9	-0.4	31.9	25	17.2	4	245	121
LAUCALA BAY	108.0	57	16	26	12	27.3	-0.2	22.4	0.5	29.0	15	19.9	28	159	124
NACOCOLEVU RESEARC	58.8	64	10	24	6	27.8	-0.9	19.1	0.3	31.4	20	16.2	4	210	149
ROTUMA (AWS)	243.5	84	18	72	29	30.9	0.1	25.3	0.7	30.9	15	22.4	8		
VIWA ISLAND	0.3	0	2	0	9	30.4	1.1	23.1	0.1	31.7	11	20.5	3		
YASAWA-I-RARA (AWS)	2.0	3	2	2	24	30.0	1.3	22.0	-0.4	32.3	15	20.1	9		
UDU POINT WEATHER	194.3	157	9	59	8	28.1	-0.7	21.0	-1.9	29.0	11	17.2	10		
NABOUWALU	36.5	33	8	22	17	28.0	0.6	22.0	-0.4	31.3	17	19.8	8		
LABASA AIRFIELD	55.0	80	7	40	17	30.8	0.2	18.8	-0.8	33.1	12	13.1	4		
SAVUSAVU AIRFIELD	105.6	93	13	80	6	27.6	0.0	22.4	0.7	31.5	14	19.0	9		
KORONIVIA RESEARCH	105.8	59	14	37	6	27.7	0.4	20.6	0.1	31.1	16	16.6	5		
NAUSORI AIRPORT	115.5	67	14	36	8	27.5	0.5	20.5	0.0	30.0	16	17.1	4		
NAVUA (AWS)	201.5	83	15	112	11	27.8	1.6	20.5	0.5	29.9	15	16.6	5		
MONASAVU HYDRO DAM	205.4	71	22	39	10	22.4	0.0	16.7	0.5	26.3	17	14.7	6		
FSC LAUTOKA MILL	6.8	10	1	7	16	29.4	0.0	20.2	-0.5	31.5	25	17.5	6		
FSC RARAWAI MILL	5.7	8	2	5	17	U/S		18.2	-0.7	U/S		12.4	5		
FSC PENANG MILL	24.6	30	8	9	17	29.1	0.3	22.2	0.9	31.6	24	20.0	4		
MATEI AIRFIELD	155.9	108	13	47	7	28.0	0.1	20.6	-1.8	30.1	17	17.1	9		
VANUABALAVU (AWS)	112.5	100	9	42	8	27.2	0.0	22.8	0.3	29.2	16	19.2	9		
LAKEBA	147.6	153	3	83	8	27.5	0.2	20.4	-1.3	29.5	15	16.5	8		
VUNISEA (AWS)	131.0	103	11	54	1	27.1	1.0	21.5	0.9	30.6	15	17.9	5		
MATUKU (AWS)	124.0	117	12	72	12	29.7	3.3	22.0	0.5	32.3	15	18.8	5		
ONO-I-LAU	54.4	52	11	21	8	25.9	0.0	20.9	0.6	29.0	15	18.5	9		
YAQARA AWS	20.0	41	4	13	17	30.3		22.2		32.3	23	19.5	5		
LEVUKA AWS	7.0		7	2	8	U/S		U/S		U/S		U/S			
KEIYASI AWS	8.0	5	6	17		U/S		U/S		U/S		U/S			
LOMAIVUNA AWS	U/S					U/S		U/S		U/S		U/S			
NADARIVATU AWS	46.0		11	16	9	23.8		15.4		26.5	13	12.8	19		
RKS LODONI AWS	116.0		14	37	6	30.5		23.1		32.0	16	19.9	5		
MOMI AWS	10.0		3	9	16	29.9		20.4		33.1	22	17.8	4		
SIGATOKA AWS	2.0		3	1	7	27.8		18.8		29.9	12	15.5	28		
VATUREKUKA AWS	60.5		5	41	17	29.0		19.5		31.5	23	14.0	4		
KOROLEVU AWS	88.0		12	19	6	27.8		19.3		30.9	16	16.8	6		
WAINIKORO AWS	79.0		5	64	17	29.4		20.4		32.3	23	16.9	5		
SAQANI AWS	76.5		9	39	17	29.0		22.2		31.7	17	19.2	7		
SEAQAQA AWS	43.5	66	2	35	17	30.9		19.2		33.6	11	13.2	4		
DOBUILEVU TB3	23.0	17	9	13	17										
NASINU TB3	89.0		17	17	6										
TAVUA TB3	25.5	43	3	21	23										

	TEMPERATURE(C)		HUMIDITY		WIND
	DRY	WET	RH%	VP	
	MEAN	(AVERAGE AT 9AM)			KT
NADI AIRPORT	24.8	25.9 21.5	67	25.0	8.0
LAUCALA BAY	24.9	25.6 22.5	76	24.5	7.8
NACOCOLEVU RESEARC	23.5	25.1 22.1	77	23.8	
ROTUMA (AWS)	28.1				
VIWA ISLAND	26.8	27.7 23.7	71	27.8	
YASAWA-I-RARA(AWS)	26.0				
UDU POINT WEATHER	24.6	26.0 23.4	80	25.1	
NABOUWALU	25.0	26.0 22.6	74	25.1	
LABASA AIRFIELD	24.8	27.1 22.8	68	26.8	10.2
SAVUSAVU AIRFIELD	25.0	25.8 22.6	76	24.8	8.0
KORONIVIA RESEARCH	24.2	25.3 22.6	80	24.1	
NAUSORI AIRPORT	24.0	24.9 22.1	79	23.5	5.8
MONASAVU HYDRO DAM	19.5	19.0 18.6	96	16.4	
FSC LAUTOKA MILL	24.8	26.2 22.9	76	25.4	
FSC RARAWAI MILL	U/S	27.0 22.0	64	26.7	
FSC PENANG MILL	25.7	26.0 22.4	73	25.1	
MATEI AIRFIELD	24.3	26.1 23.5	80	25.3	13.6
VANUABALAVU	25.0				
LAKEBA	24.0	25.9 23.1	79	25.0	
VUNISEA (AWS)	24.3				
MATUKU (AWS)	25.9				
ONO-I-LAU	23.4	24.0 21.1	78	22.3	

MEAN TEMPERATURE IS (MAX+MIN)/2; WIND IS MEAN SPEED AT 06,12,18,24 HOURS.
$:SOLAR RADIATION CALCULATED FROM SUNSHINE DURATION. # :DEPARTURE FROM LONG-TERM AVERAGES (1981-2010). + :NUMBER OF DAYS WITH 0.1 MM OR MORE RAIN. * :PERCENT OF LONG-TERM AVERAGES.
BLUE FONT: MISSING RECORDS OF LESS THAN OR EQUAL(≤) TO 5 DAYS. U/S: UNSERVICEABLE

Figure 2

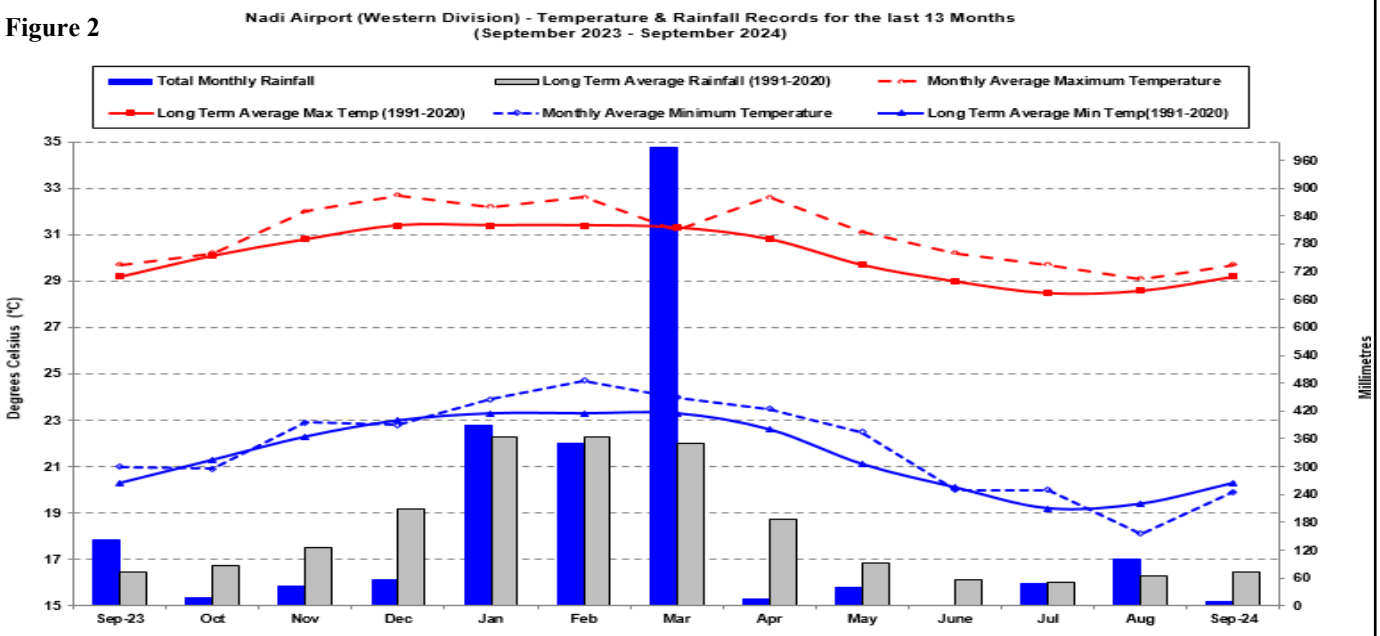


Figure 3

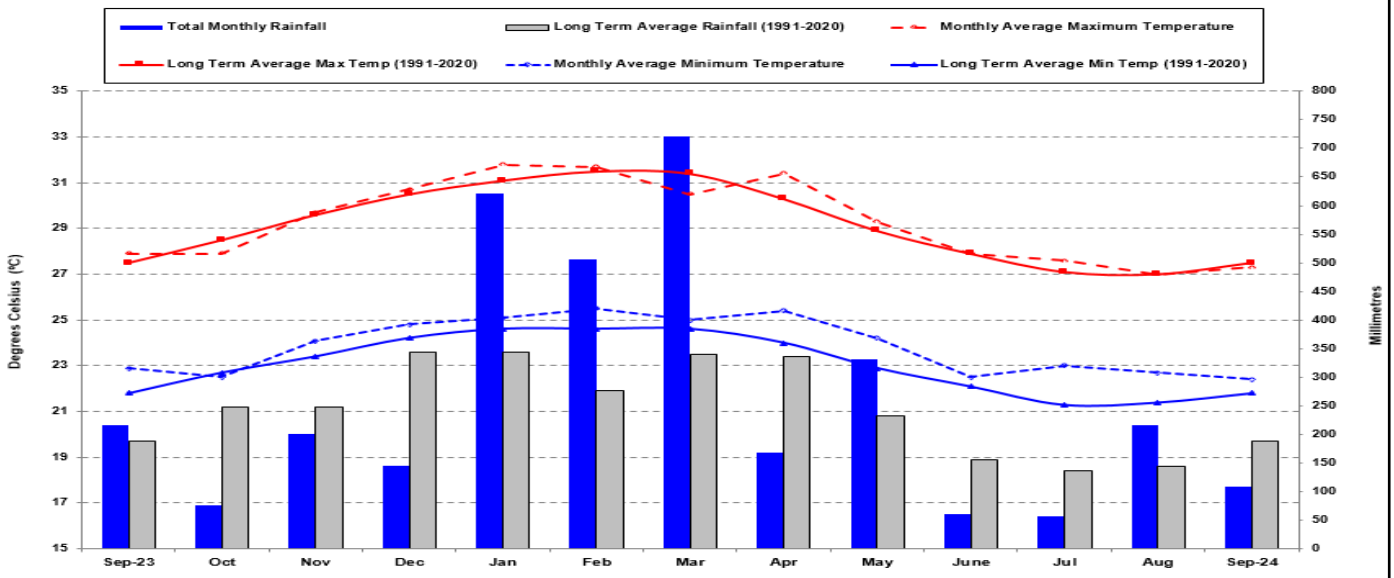


Figure 4

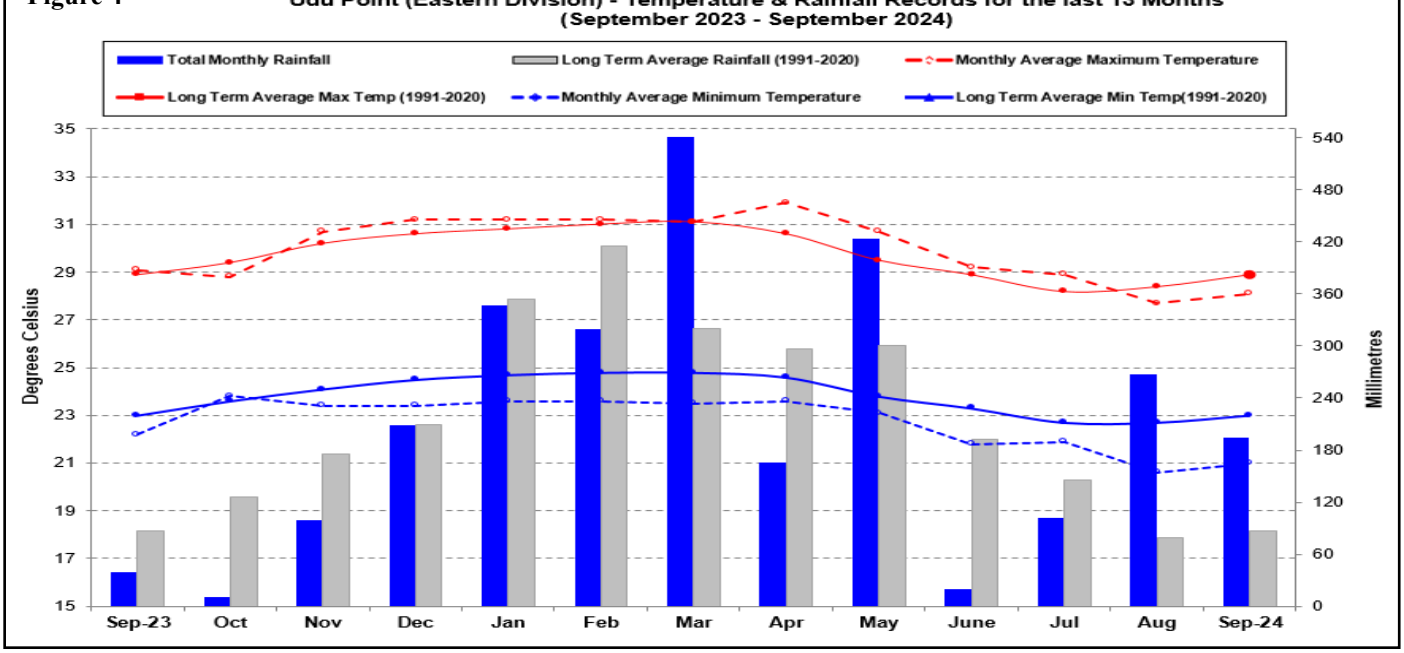
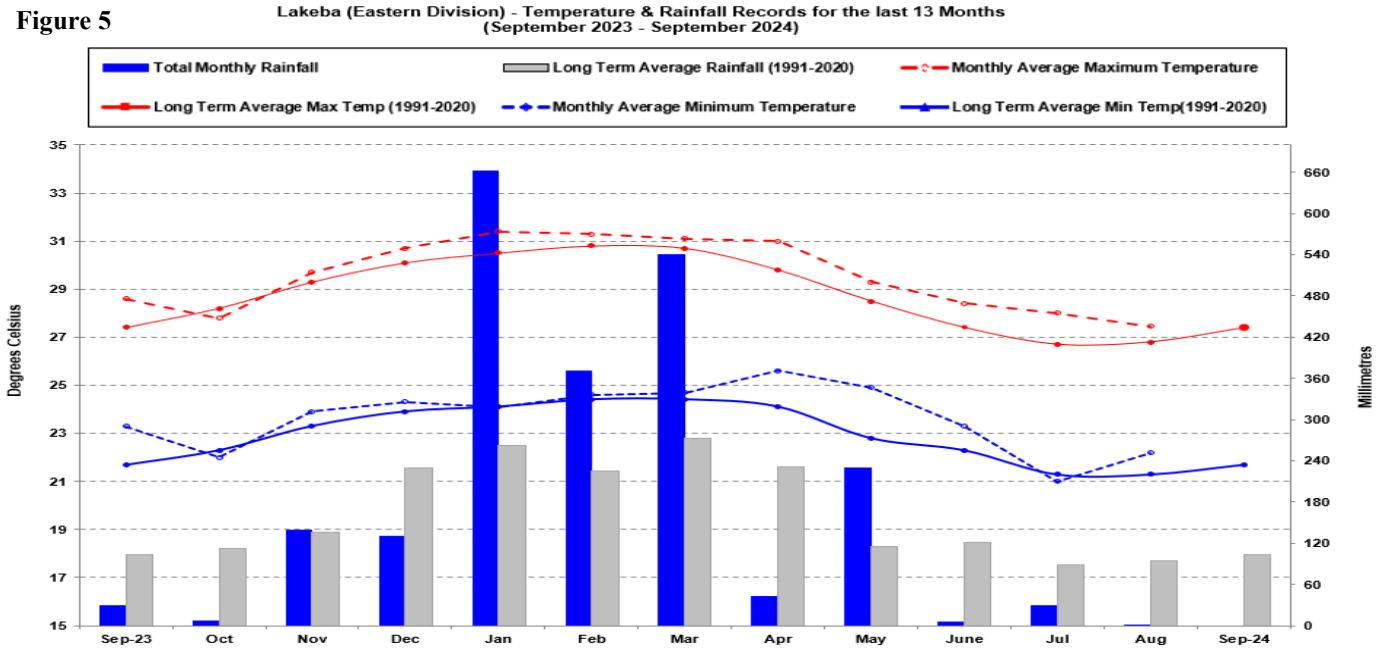


Figure 5



5. DAILY RAISED PAN EVAPORATION

Figure 6

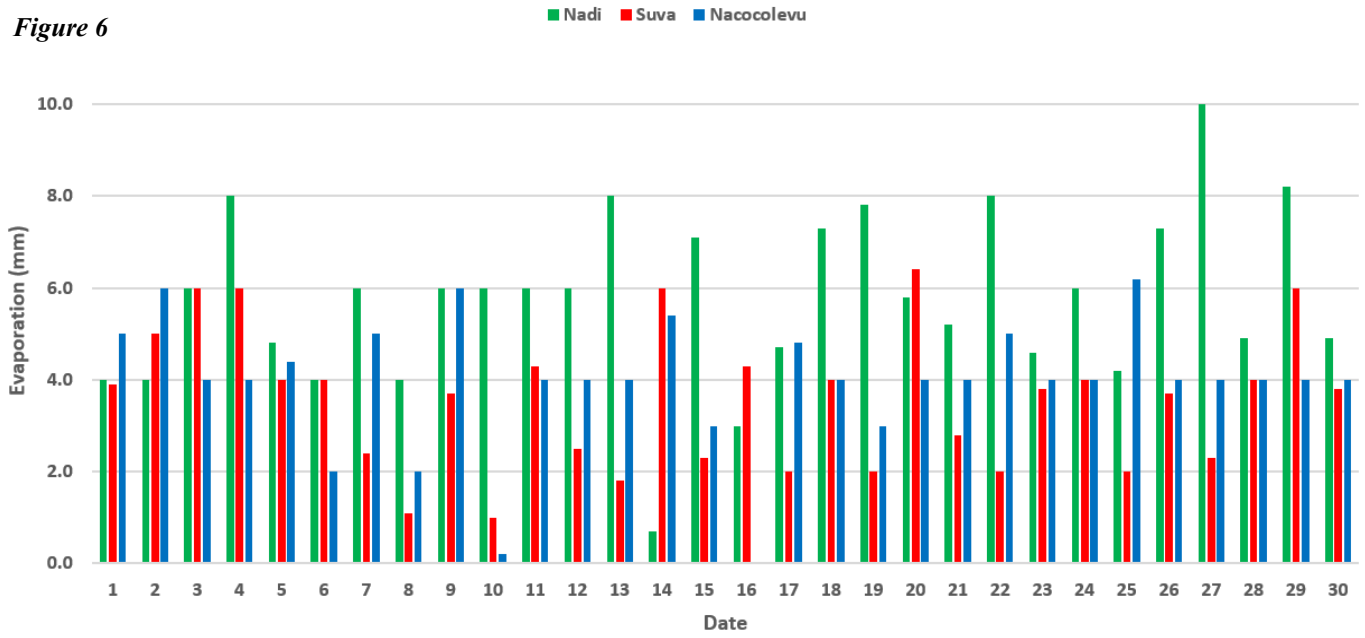


Figure 6: The total monthly raised pan evaporation at Nadi Airport, Laucala Bay (Suva) and Nacocolevu (Sigatoka) were 172.5mm, 107.1mm and 118.0mm, respectively. Nadi's highest daily evaporation was 10.0mm on the 27th with Suva's highest daily evaporation of 6.4mm on the 20th, and Nacocolevu (Sigatoka) recorded its highest of 6.2mm on the 25th.

6. SOLAR RADIATION

The Nadi solar radiation instrument was unserviceable during the month of September 2024.

7. WIND SUMMARY

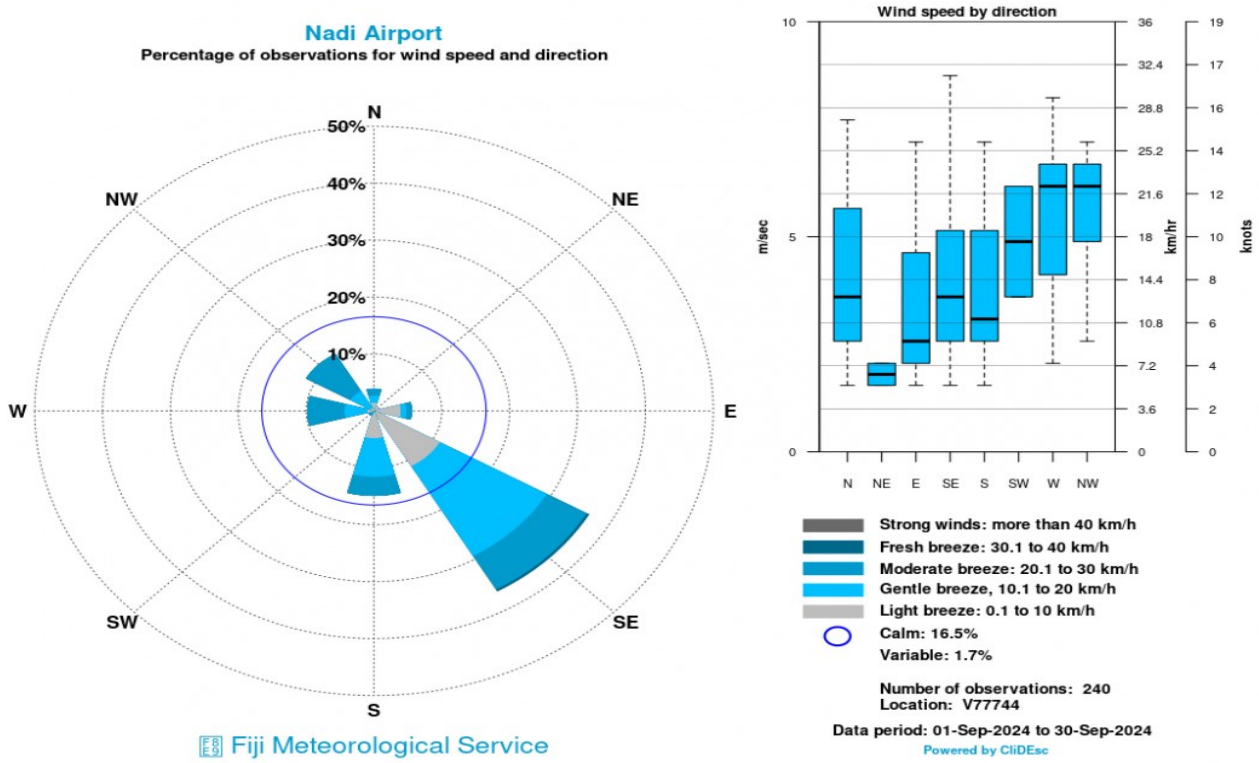


Figure 7a: Looking at Nadi's 3 hourly observations, southeasterly winds were most dominant during the month, followed by southerly and then northwesterly winds. Wind strength ranged from light to fresh breeze, while 16.5% observations accounted for calm winds.

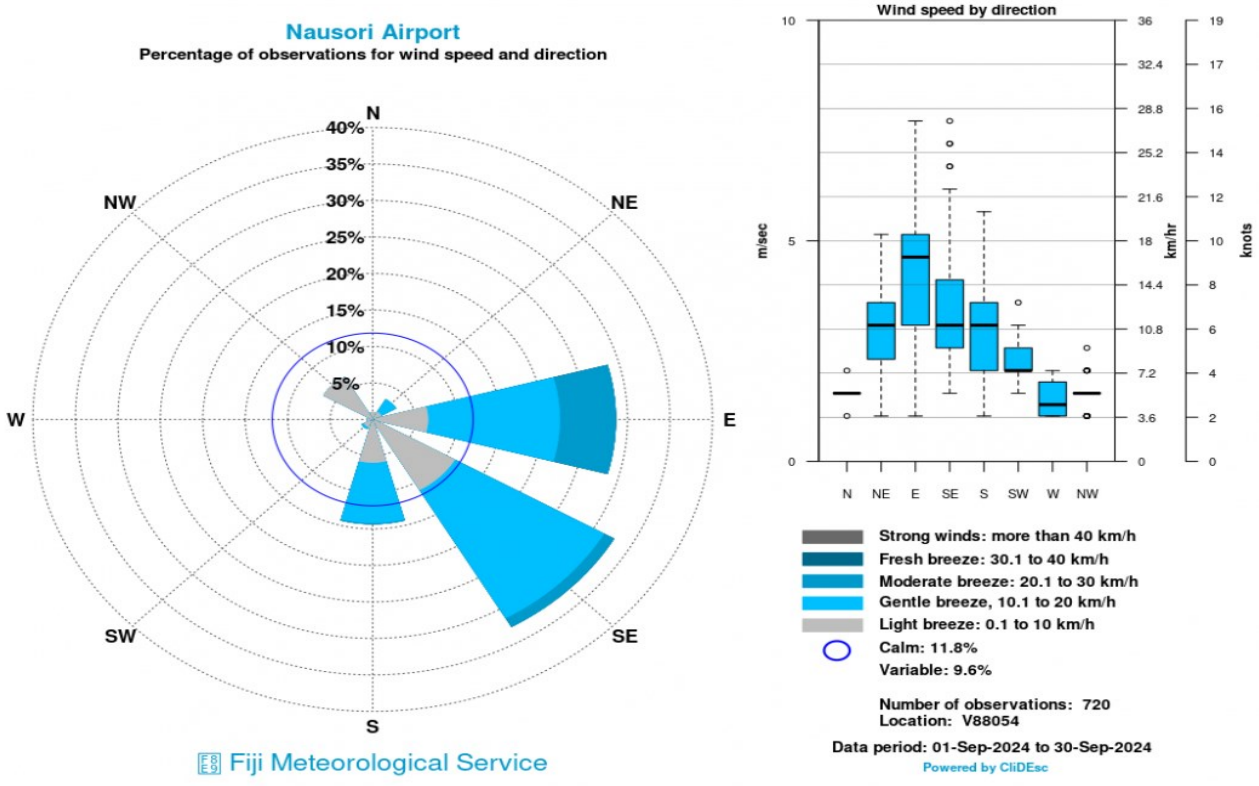


Figure 7b: For Nausori Airport's hourly wind observations, southeasterly winds were most dominant during the month, followed by easterly and then southerly winds. Wind strength ranged from light to moderate breeze, while 11.8% observations accounted for calm winds.

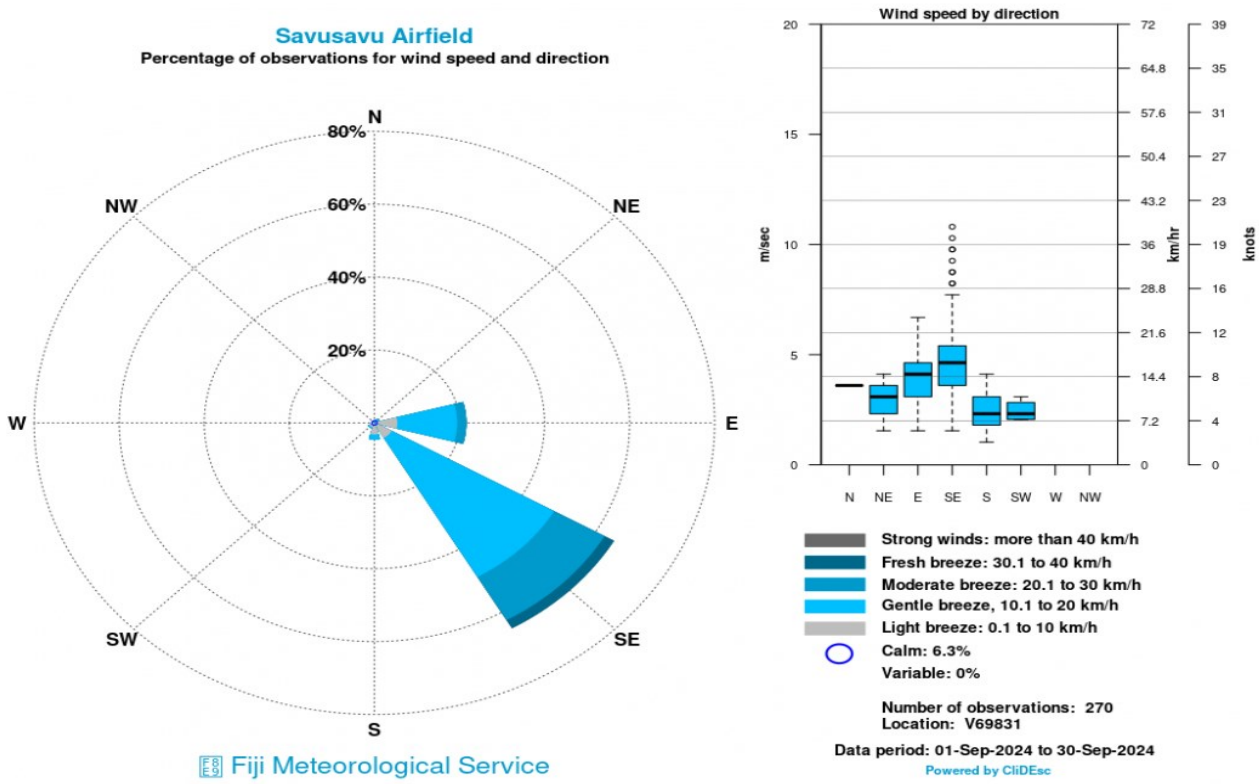


Figure 7c: For Savusavu Airfield's hourly observations (0800hrs to 1600hrs), southeasterly winds were most dominant during the month, followed by easterly and then southerly winds. Wind strength ranged from light to fresh breeze, with calm winds observed 6.3% of the time.

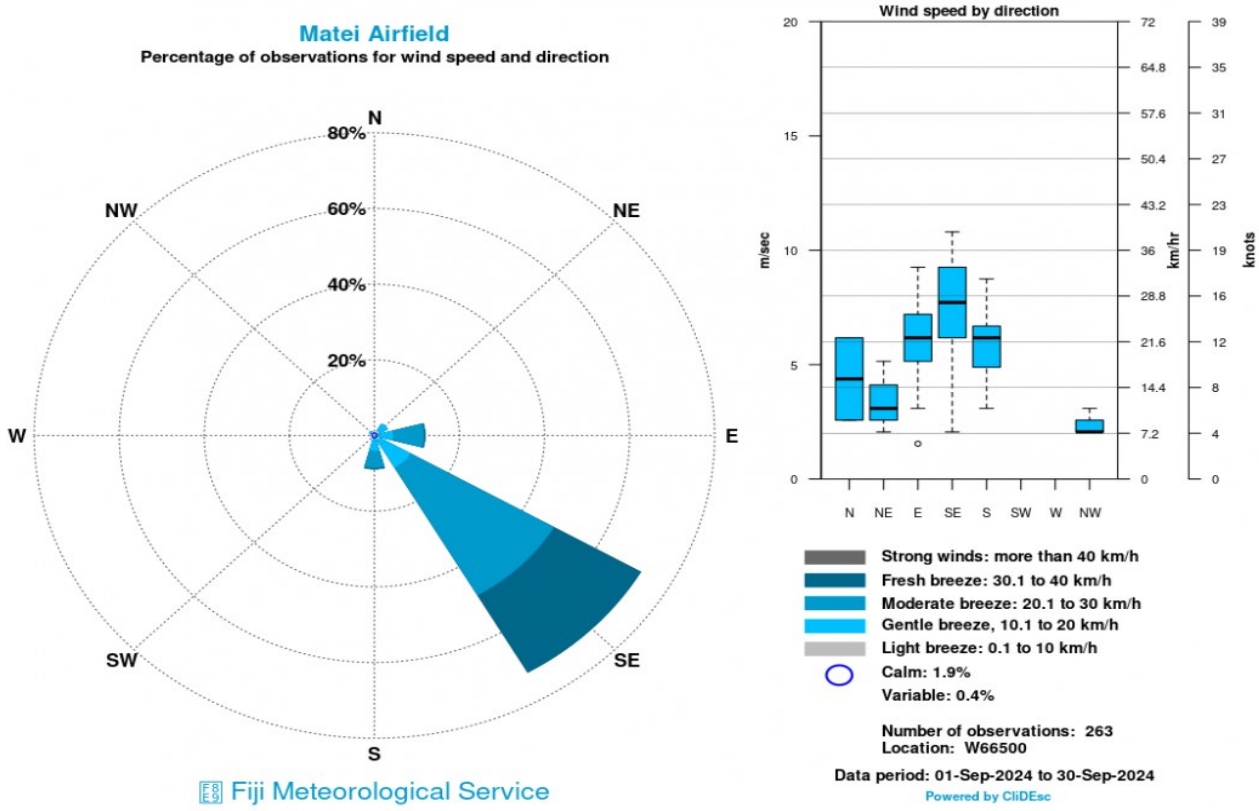


Figure 7d: For Matei Airfield's hourly wind observations (0800hrs to 1600hrs), southeasterly winds were dominant followed by easterly and then southerly winds. Wind strength ranged from light to fresh breeze, with calm winds observed 1.9% of the time.

8. SEA SURFACE TEMPERATURE (SST)

The sea surface temperature map could not be generated due to technical issues.

9. CLOUD COVER

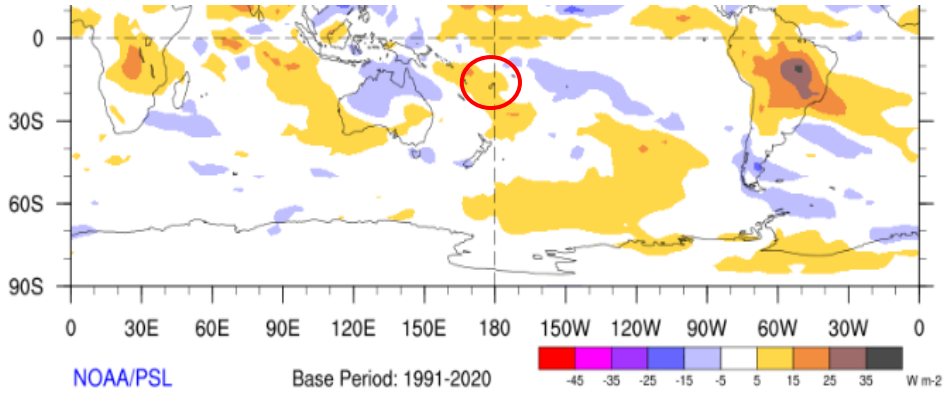


Figure 9:
Below normal cloud cover was present over the Fiji Group during September (*Fiji in red circle).*

Source: http://www.esrl.noaa.gov/psd/map/clim/olr.shtml

10. SEA LEVEL

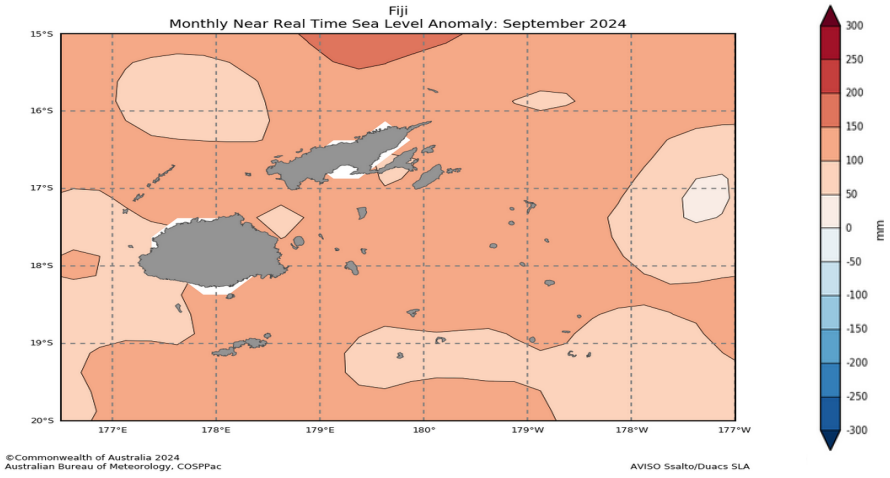


Figure 10:
Above normal sea level anomalies persisted across most of the Fiji Waters during September.

Source: https://oceanportal.spc.int/portal/app.html#sealevel

11. WIND ANOMALIES

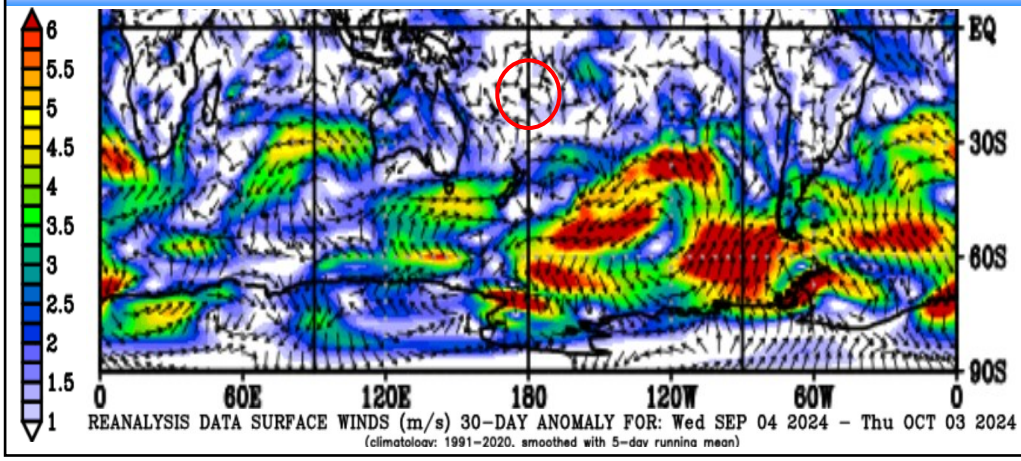


Figure 11:

Southeast winds were observed over the Fiji Group during the month (base period: 1991-2020) (*Fiji in red circle*).

Source: https://www.esrl.noaa.gov/psd/map/images/rnl/sfcwnd_30b.rnl.html

EXPLANATORY NOTES

Anomalies - denote the departure of an element (rainfall, temperature, sea surface temperature, cloud cover, sea level and wind) from its long-period average value for a particular location.

Trough - an elongated area of low atmospheric pressure that is associated with a cyclone, or low. Sometimes referred to as a 'trough of low pressure'.

Rain - Liquid precipitation in the form of water droplets. Rain falls from dense, continuous clouds, called 'stratiform' clouds.

Shower - precipitation from individual clouds, often characterised by the sudden beginning or ending. Showers fall from 'lumpy looking', 'cauliflower' clouds, called 'cumuloform' clouds.

Trade Winds - the trade winds are the east to southeasterly winds (in the Southern Hemisphere) which affect tropical and subtropical regions.

High pressure systems or anticyclones are atmospheric circulations that rotate anti-clockwise in the Southern Hemisphere. Anticyclones are areas of higher pressure and are generally associated with lighter winds and fine and settled conditions.

Low pressure systems or mid-latitude cyclones are atmospheric circulations that rotate clockwise in the Southern Hemisphere (anti-clockwise in the Northern Hemisphere). Cyclones are areas of lower pressure and generally associated with stronger winds, unsettled conditions, cloudiness and rainfall.

Sea Surface Temperature (SST) - the temperature of the water's surface. It is usually measured using buoys, ship data, and satellites.