

## 1. IN BRIEF

February's weather was significantly influenced by the presence of Tropical cyclone Rae, with low-pressure systems. At the beginning of the month, a flash flooding event impacted the Western Division, while major flooding was recorded in the Northern and Eastern Divisions during the passage of Tropical Cyclone Rae.

Overall, out of the 25 rainfall monitoring stations that reported in, in time for the compilation of this bulletin, 2 *well above average*, 11 *above average*, 8 *average*, and 4 stations with *below average* rainfall (Table 2, Figures 1-5).

The highest monthly rainfall of 681.0mm was observed at Nadarivatu, followed by 527.1mm at Labasa Airfield, 475.4mm at Nacocolevu, 458.7mm at Rotuma, 458.5mm at Korolevu, 454.5mm at Navua, and 452.4mm at Matuku. One temperatures, the month's Warmest day-time temperature of 37.1°C was observed at Navua on the 26<sup>th</sup>,

February's weather was significantly influenced by the followed by Laucala Bay (Suva) with 36.0°C on the 7<sup>th</sup>, presence of Tropical cyclone Rae, with low-pressure sys- and Yasawa-i-Rara with 35.9°C on the 9<sup>th</sup>.

Last month's lowest night-time temperature of  $13.4^{\circ}$ C was recorded at Nadarivatu on the 5<sup>th</sup>, followed by Monasavu with  $16.3^{\circ}$ C on the 6<sup>th</sup>, and Vanuabalavu with  $16.4^{\circ}$ C on the 5<sup>th</sup>.

Northerly winds were dominant at Nadi Airport and Matei Airfield, southeasterly winds were dominant at Savusavu Airfield, while northwesterly winds were dominant at Nausori Airport (Figure 7).

Warmer than normal sea surface temperature anomalies Were observed across the Fiji Waters, during the month. Nadarivatu, followed by 527.1mm at Labasa Airfield, (Figure 8).

Generally *above normal* sea level anomalies persisted across the Fiji Group during February (Figure 10).

Flooding, damage to houses and plantations were recorded during Tropical Cyclone Rae (Figure 13c-13j).

## 2. WEATHER PATTERNS

February is typically one of the peak months for tropical cyclone activity in the region, and this year was no exception. The highlight of the month was Tropical Cyclone Rae, which affected the eastern and northern parts of Fiji.

At the beginning of February, an active trough of low pressure, known as the South Pacific Convergence Zone (SPCZ), was positioned to the west and south of Fiji, while a ridge directed northeast to northwest winds over the country. Daytime heating triggered severe afternoon thunderstorms, producing short but intense rainfall, particularly over the interior, southern, and eastern parts of the main islands.

On February 5<sup>th</sup>, the SPCZ, along with an embedded lowpressure system, moved over the southern and western parts of Fiji, resulting in heavy rainfall. The highest recorded rainfall for that day was 109mm in Nadarivatu and 108.5mm in Momi. The system drifted over northern Fiji on February 6<sup>th</sup> and moved eastward by February 7<sup>th</sup>.

Between February 8th and 11th, a ridge of high pressure extended over Fiji, weakening the SPCZ and bringing isolated afternoon showers. However, on February 12<sup>th</sup>, another low-pressure system approached from the west, reactivating the SPCZ and enhancing northwesterly winds. This led to occasional rain with isolated heavy falls across

the country. By February 20<sup>th</sup>, the SPCZ had shifted north of Fiji, allowing a southwest to southeast wind flow to establish over the country, easing the rain to trade showers.

On February 22<sup>nd</sup>, a tropical depression (TD09F) developed to the northeast of Fiji, enhancing southeasterly winds over the group. The system intensified into Category 1 Tropical Cyclone Rae on February 23<sup>rd</sup>. By February 24<sup>th</sup>, TC Rae entered Fiji's waters, tracking southward over the Lau Group. At its peak, it reached Category 2 strength, bringing severe impacts, including flooding, damaging to very damaging winds that destroyed crops, and large waves that damaged jetties, especially in the Lau Group and the windward sides of Fiji's larger islands. TC Rae exited Fiji's waters on February 26<sup>th</sup>. Significant 24-hour rainfall totals recorded on February 24<sup>th</sup> included; Lakeba –193mm, Labasa – 176.8mm, Matei Airport – 152mm, Nadarivatu – 112mm and Matuku – 103m.

After TC Rae's departure, a ridge of high pressure dominated the country, reducing rainfall to the normal trade showers for the rest of the month.

Meanwhile, Rotuma experienced multiple troughs of low pressure, bringing rain and thunderstorms throughout February.

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

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## 3. RAINFALL

In February, rainfall across the country ranged from *below average* to *well above average*. Majority of the stations experienced wetter than usual conditions, with Matuka and Ono-i-Lau recording more than twice their normal monthly rainfall.

Conversely, drier than usual conditions were observed at Yaqara, Dobuilevu, Monasavu and Udu Point. Overall, out of the 25 rainfall monitoring stations that reported in, in time for the compilation of this bulletin, 2 *well above average*, 11 *above average*, 8 *average*, and 4 stations with *below average* rainfall (Table 2, Figures 1-5).

The highest monthly rainfall of 681.0mm was recorded at Nadarivatu, followed by 527.1mm at Labasa Airfield, 475.4mm at Nacocolevu, 458.7mm at Rotuma, 458.5mm at Korolevu, 454.5mm at Navua, and 452.4mm at Matuku. On the other hand, Yaqara recorded the month's lowest total monthly rainfall of 145.5mm, followed by Dobuilevu with 206.0mm, Udu Point with 223.3mm, and Viwa with 229.0mm (Table 2).

The highest 24-hour rainfall of 195mm was recorded at Lakeba on the 24<sup>th</sup>, followed by Labasa Airfield with 177mm on the 24<sup>th</sup>, Matei Airfield with 152mm on the 24<sup>th</sup>, Nadarivatu with 112mm on the 28<sup>th</sup>, Momi with 109mm on the 5<sup>th</sup>, Matuku with 103mm on the 24<sup>th</sup>, Rotuma with 99.0mm on the 7<sup>th</sup>, Nacocolevu with 97.0mm on the 12<sup>th</sup>, and Navua with 87.0mm on the 10<sup>th</sup>.

On February 5<sup>th</sup>, the SPCZ and an embedded lowpressure system moved over southern and western Fiji, bringing heavy rainfall and flash flooding to the Western Division. During the passage of TC Rae on the 24<sup>th</sup>, Matuku, Nadarivatu, Matei Airfield, and Labasa Airfield recorded their significant 24-hour rainfall totals of 103 mm, 112 mm, 152 mm, and 177 mm, respectively.

Monasavu recorded the highest number of rain days (rainfall≥0.1mm) with 27 days, followed by Navua and Viwa both with 26 days, Nadarivatu and Laucala Bay (Suva) both with 25 days, Koronivia with 24 days, and Nacocolevu, Korolevu, Yasawa-i-Rara, and Nadi all with 23 days. Consequently, Yaqara recorded the least number of rainfall days with 7 days, followed by Lakeba with 11 days, Udu Point and Vanuabalavu with 16 days, Dobuilevu, Momi and Matei Airfield all with 18 days, and Nabouwalu and Matuku both with 19 days.

There were no new rainfall records observed during the month.



#### 4. **AIR TEMPERATURES**

#### A. Maximum Day-time Air Temperatures

Below normal to above normal day-time temperatures were observed across the country during the month. Out of the 22 climate stations that reported in time for the analysis of data, 14 recorded anomalies  $\geq +0.5^{\circ}$ C, 8 within  $\pm 0.5^{\circ}$ C and 1 station with anomaly of  $\leq -0.5^{\circ}$ C.

On average, the warmest days were recorded at Navua with 23.4°C, followed by Yasawa-i-Rara and Rarawai Mill (Ba) both with 32.8°C, Labasa Airfield with 32.5° C, and Koronivia, Laucala Bay (Suva) and Viwa all with 32.3°C. Consequently, Nadarivatu recorded the coolest days on average with 25.7°C, followed by Monasavu with 27.1°C, Ono-i-Lau with 30.4°C, Vunisea with 30.5° C, Udu Point with 30.6°C and Matukau with 30.8°C.

The month's highest day-time temperature of 37.1°C was observed at Navua on the  $26^{\text{th}}$ , followed by Laucala Bay (Suva) with 36.0°C on the 7<sup>th</sup>, Yasawa-i-Rara with 35.9°C on the 9<sup>th</sup>, Viwa with 34.6°C on the 15<sup>th</sup> and Rarawai Mill (Ba) with 34.5°C on the 18<sup>th</sup>.

The coolest daytime temperatures were observed at Nadarivatu with 22.6°C on the 2<sup>nd</sup>, Monasavu with 24.8°C on the 25<sup>th</sup>, Korolevu with 26.3°C on the 24<sup>th</sup>, Vunisea with 27.0°C on the 24<sup>th</sup>, and Nococolevu with 27.2°C on the  $24^{\text{th}}$ .

Koronivia recorded its highest average maximum temperature of 32.3°C since observations began in 1950. Laucala Bay (Suva) and Matei Airfield recorded their highest daily maximum temperatures of 36.0°C and 33.2°C since observations began in 1926 and 1956, respectively (Table 1).

#### B. Minimum Night-time Air Temperatures

Generally, below normal to above normal night-time temperatures were recorded at majority of the climate stations during the month. For the 22 stations that reported in, 6 recorded anomalies  $\geq +0.5^{\circ}$ C, 9 within  $\pm 0.5^{\circ}$ C, and 7 with anomalies  $\leq -0.5^{\circ}$ C.

The coolest nights on average were at Nadarivatu with 19.4°C, followed by Monasavu with 20.3°C, Vanuabalavu with 22.4°C, Labasa Airfield with 22.5°C, Korolevu with 22.7°C, Vunisea, Matei Airfield and Lakeba all with 22.8°C, and Navua with 24.8°C. Consequently, on average, the warmest nights were observed at Viwa with 25.4°C, Ono-i-Lau with 25.2°C, Laucala Bay (Suva) with 24.9°C, Momi with 24.8°C and Yasawa-i-Rara with 24.5°C.

The lowest night-time temperature of 17.4°C was recorded at Nadarivatu on the  $2^{nd}$ , followed by Monasavu with 18.9°C on the 3<sup>rd</sup>, Lakeba with 20.0°C on the 1<sup>st</sup>, Vanuabalavu with 20.1°C on the 1st, Nabouwalu with 20.4°C on the 1<sup>st</sup> and Matei Airfield with 20.5°C on the 25<sup>th</sup>.

The warmest night-time temperatures were recorded at Rarawai Mill (Ba) with 32.1°C on the 9<sup>th</sup>, followed by Ono-I-Lau with 27.3°C on the 9th, Viwa and Savusavu Airfield both with 27.0°C on the 10<sup>th</sup> and 23<sup>rd</sup>, respectively, and Rotuma with 26.9°C on the 27<sup>th</sup>.

Rarawai Mill (Ba) recorded its highest daily minimum temperatures of 32.1°C since observations began in 1905 (Table 1).

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<u>Element</u>	<u>Station</u>	Observed (record)	<u>On</u>	<u>Rank</u>	<u>Previous</u> (record)	<u>Year</u>	<u>Records</u> <u>Began</u>				
Daily Maximum Temperature	Laucala Bay (Suva)	36.0°C	7 <sup>th</sup>	New High	34.7°C	2015	1926				
Daily Maximum Temperature	Matei Airfiled	33.2°C	14 <sup>th</sup>	New High	32.9°C	1982 1988	1956				
Average Maximum Temperature	Koronivia	32.3°C	-	New High	32.2°C	1988 2015	1950				
Daily Minimum Temperature	Rarawai Mill (Ba)	32.1°C	9 <sup>th</sup>	New High	27.5°C	1975	1905				

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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.

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# TABLE 2. DAILY CLIMATE REPORTING SITES: SUMMARY FOR FEBRUARY 2025

	PATNE						SUNSHTNE
		ALL ATN MAX.	Δ	VERAGE DAT	TERATURES	XTREME	TOTAL
	* 0	AYS FALL	MAX.	# MIN.	# MAX.	MIN.	*
	MM %	+ MM 01	N C	C C	C C	ON C ON	HRS %
NADI AIRPORT	364.6 109	23 62 14	4 31.7	0.2 23.7	0.4 33.4	11 22.0 3	160 86
LAUCALA BAY	293.4 106	25 66	7 32.3	0.7 24.9	0.4 36.0	7 23.5 2	137 77
NACOCOLEVU RESEARC	475.4 184	23 97 1	2 31.2	-0.7 23.7	0.9 32.8	27 22.1 2	121 91
ROTUMA ISLAND	458.7 147	22 99	/ 31.2	0.2 24.3	-0.733.4	12 22.0 2	165 113
VIWA ISLAND VASAWA-T-RARA	229.0 104	20 50 23 65	2 22.2 1 22 8	0.2 25.4 1 2 24 5	-0 1 35 9	15 24.0 Z	
UDU POTNT WEATHER	223 3 71	16 67 2	32.0	-0 4 23 9	-0.1 33.3	14 20 5 25	
NABOUWALU	384.8 134	19 56 24	4 32.1	1.0 23.8	-0.9 34.3	28 20.4 1	
LABASA AIRFIELD	527.1 137	22 177 24	4 32.5	0.6 22.5	-0.0 33.9	9 20.6 21	
SAVUSAVU AIRFIELD	245.3 112	22 85 2	4 31.8	1.0 24.4	0.5 34.3	15 22.5 2	
KORONIVIA RESEARCH	353.1 122	24 46 10	5 32.3	1.3 24.1	0.7 34.4	15 23.1 1	
NAUSURI AIRPURI	500.9 105 454 5 158	22 32 L 26 87 1	1 32.0	1.024.0	0.5 54.4	15 22.9 1 26 21 8 8	
MONASAVU HYDRO DAM	373.9 73	27 54 2	5 27.1	1.1 20.3	0.7 29.2	4 18.9 3	
FSC LAUTOKA MILL	291.2 90	22 54 24	4 31.7	0.2 23.9	0.0 33.1	10 21.3 2	
FSC RARAWAI MILL	293.0 84	21 60 2	5 32.8	0.7 U/S	34.5	18 U/S	
FSC PENANG MILL	297.8 88	21 55	5 32.0	0.7 23.9	0.2 33.7	23 22.9 5	
MATEI AIRFIELD	351.9 134	18 152 24	4 31.2	0.6 22.8	-1.6 33.2	14 20.5 25	
	341.8 145	10 84 24	4 31.2 4 31.6	0.6 22.4 0 8 22 8	-2.2 32.0	9 20.1 1 11 20 0 1	
VUNISEA	274.0 124	22 60 2	3 30.5	-0.2 22.8	-1.5 32.5	9 21.4 14	
ΜΑΤυκυ	452.4 205	19 103 24	4 30.8	0.3 24.3	-0.3 32.5	15 22.0 1	
ONO-I-LAU	414.6 218	22 82 2	4 30.4	-0.2 25.2	0.6 32.5	17 23.4 6	
YAQARA AWS	145.5 50	7 60	5 32.0	23.8	33.0	11 21.2 2	
LEVUKA AWS KETVAST AWS	0/5		U/S	U/S	U/S	U/S U/S	
LOMAIVUNA AWS	U/S		U/S	U/S	U/S	U/S	
NADARIVATU AWS	681.0	25 112 24	4 25.7	19.4	28.2	23 17.4 2	
RKS LODONI AWS	U/S		U/S	U/S	U/S	U/S	
MOMI AWS	303.0	18 109	5 31.1	24.8	33.3	11 22.5 2	
VATUREKUKA AWS	U/S		52.1 U/S	23.3	54.5 U/S	13 22.1 2	
KOROLEVU AWS	458.5	23 81 24	4 32.0	22.7	33.7	13 21.3 2	
WAINIKORO AWS	U/S		U/S	U/S	U/S	U/S	
SAQANI AWS	U/S		U/S	U/S	U/S	U/S	
SEAQAQA AWS	U/S	10 11 2	U/S	U/S	U/S	U/S	
NASTNU TB3	426.5	22 68 1	5				
TAVUA TB3	U/S						
	TEMDEDATIDE			<b>`</b>			
	DRY	WET RH%		, ,			
	MEAN (A	VERAGE AT	9ам) кт	-			
NADI AIRPORT	27.7 28.3 2	5.8 82 2	8.8 6.7				
	28.6 29.1 2			5			
ROTUMA TSLAND	27.4 20.4 2	0.4 05 20	9690	)			
VIWA ISLAND	28.9 29.7 2	7.1 82 3	1.2	·			
YASAWA-I-RARA	28.7 29.0 2	27.3 88 30	0.0				
UDU POINT WEATHER	27.2 28.5 2	6.1 83 2	9.1				
NABOUWALU	27.5 20.0 2		1.U 1 0 7 4				
SAVUSAVU ATRETELD	28.1 29.1 2	6.1 79 30	1.0 7.4	,			
KORONIVIA RESEARCH	28.2 28.8 2	6.5 84 2	9.6				
NAUSORI AIRPORT	28.0 28.4 2	26.2 84 23	8.9 4.6	5			
NAVUA (AWS)	28.4		1 /				
MONASAVU HYDKU DAM	22.1 23.3 2	2.9 9/2	⊥.4 2 2				
FSC LAUTOKA MILL	27.8 27.4 2	6.5 93 2	7.3				
FSC RARAWAI MILL	U/S 28.6 2	6.3 83 2	9.3				
FSC PENANG MILL	27.9 28.9 2	6.3 82 2	9.8				
MATEI AIRFIELD	27.0 29.2 2		0.3 8.1	-			
	20.0 29.1 2	6 1 78 3	).⊥ ) 3				
VUNISEA	26.7 27.4 2	4.2 77 2	7.3				
ΜΑΤυκυ	27.5 28.0 2	25.1 80 2	8.3				
ONO-I-LAU	27.8 28.5 2	26.3 84 2	9.1				
MEAN TEMPERATURE IS	5 (MAX+MIN)/	′2; W	IND IS M	IEAN SPEED	AT 06,12.	18,24 HOURS	
\$ :SOLAR RADIATION	CALCULATED	FROM SUNSI	INE DUR	ATION. #	:DEPARTUR	E FROM LONG	-TERM AVERAGES
(1991-2020). + :NUN	BECORDS OF	$\sim$ WITH 0.1	MM OR M	URE RAIN.	* :PERCEN	I UF LONG-T	EKM AVERAGES.
BLUE FUNT. MISSING	RECORDS OF	LESS IMAN	UK EQUA	L(2) 10 3	DATS. 0/5	. UNSERVICE	ADLE







# 6. SOLAR RADIATION

The Nadi solar radiation instrument was unserviceable during the month of February 2025.



*Figure 7a*: Looking at Nadi's 3 hourly observations, northerly winds were most dominant during the month, followed by southeasterly and then easterly winds. Wind strength ranged from light to fresh breeze, while 17.0% observations accounted for calm winds.



*Figure 7b*: For Nausori Airport's hourly wind observations, northwesterly winds were most dominant during the month, followed by northerly and then northeasterly winds. Wind strength ranged from light to moderate breeze, while 20.5% observations accounted for calm winds.







*Figure 7d:* For Matei Airfield's hourly wind observations (0800hrs to 1600hrs), northerly winds were dominant followed by northeasterly and then southeasterly winds. Wind strength ranged from light breeze to strong winds, with calm winds observed 10.6% of the time.



# **12. FLASH FLOODING:** 6<sup>th</sup>.

During the first week of the month, an embedded low pressure system brought about heavy rainfall on the 5<sup>th</sup> caused flash flooding in low-lying areas of the Western Division, particularly in Tavua, Ba, Lautoka, Nadi and Sigatoka on the 6<sup>th</sup>. As a result, several low level crossings were inundated, leading to their closure and making certain areas inaccessible.



Figure 12a: Mate Crossing, Nadi, on the 6th. Source: Fiji Roods Authority.



Figure 12b: Saru Back Rd crossing, Lautoka. Source: Fiji Roads Authority.



Figure 12c: Overflown Qalele Rd, Tavua. Source: Fiji Roads Authority.



Figure 12d: Toge Crossing in Ba completely submerged. Source: Fiji Roads Authority.



Figure 12e: Surface flooding in of Yaladro junction, Tavua, on the 6th.. Source: Fiji Roads Authority.



Figure 12f: Kabisi crossing, Sigatoka. Source: Fiji Roads Authority.

# 13. Tropical Cyclone Rae: 23<sup>RD</sup>-26<sup>TH</sup>

Tropical Cyclone Rae was the second named tropical cyclone for the 2024/25 tropical cyclone season. Tropical Cyclone Rae, a Category 2 cyclone, significantly affected Fiji during the second half of the month, especially parts of the Lomaiviti and Lau Group, as well as Vanua Levu. The cyclone had accompanying strong winds, heavy rainfall, and widespread damages to some roads, bridges, vegetations, as well as some houses on islands that were located close to TC Rae track.

The cyclone heavily affected the Lau Group, with reports of damages on the islands of Vanuabalavu, Lakeba, Cicia, Komo, Namuku-i-Lau, Kabara and Ono-i-Lau experiencing damages. Parts of Vanua Levu also faced adverse weather, leading to disruptions after the passing of the system.

The cyclone's strong winds uprooted numerous trees and caused significant damage to houses and plantations. Several evacuation centers were opened to shelter affected families. TC Rae exited Fiji's waters on February 26<sup>th</sup>.

Over a 48-hour period, from 9 am on February 24 until 9 am on February 26, 2025, Nayarabale recorded 227.5 mm in Fiji at 7.40pm on the 24<sup>th</sup>. of rainfall, followed by Nadarivatu with 210.5 mm, Bukuya

Figure 13a: Tropical cyclone Rae on the RADAR network

with 196.3 mm, Labasa Airfield with 197.8 mm, Lakeba with 193.8 mm, Matei Airfield with 160.1 mm, Vatukacevaceva with 159.0 mm, Ono-i-Lau with 155.5 mm, Wairikicake with 151.0 mm, Nanoko with 145.0 mm, Dewala with 137.5 mm, Matuku with 132.0 mm, Tavua with 127.5 mm, and Rarawai Mill (Ba) with 104.1 mm (Figure 13b).





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Figure 13c: Fallen tree blocks a road in South Cape, Taveuni, on the 24th. Source: Fiji Roads Authority.



Figure 13e: A home in Cicia, Lau, partially damaged from fallen branches on the 25th . Source: Fiji Sun.



Figure 13g: Strong winds threaten to blow the roof off a home in Namuka-i-Lau on the 25th. Source: The Fiji Times.



*Figure 13i: The wreckage of a boat at Taveuni Wharf on the 25th. Source: Fiji One News.* 



Figure 13d: Strong winds and surface flooding experienced in Rabi Island on the 24th.. Source: FijiVillage.



Figure 13f: School students waiting for transport at the flooded Rakiraki bus station. Source: The Fiji Times.



Figure 13h: Low lying crossings and roads in Labasa experienced surface flooding on the 25th: The Fiji Times.



*Figure 13j:* Fallen tree on a house in Kabara, Lau on the 25th. Source: *Fiji Sun.* 

## **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.