

Fiji Islands Climate Summary

July 2008

Since : August 1980*

Volume 29 : Issue 7

IN BRIEF

The passage of high pressure systems to the south of the country and displacement of the South Pacific Convergence Zone (SPCZ) to the north had a dominant effect on weather and climate over Fiji. This saw most parts of the country experiencing drier conditions in July 2008 compared to long term average (1971-2000).

Rainfall varied considerably across the Group with *well below average* rainfall experienced in Rakiraki and Labasa to *well above average* rainfall in Lautoka. *Below average* rainfall was largely experienced in the Central and the Eastern Divisions.

In contrast, parts of Fiji received significant rainfall on two occasions as active troughs of low pressure affected the country between July 5-7 and 27-28. *Above average* to *well above average* rainfall was experienced at Lautoka (249%), Levuka (163%), Nadi Airport (159%) and Rarawai Mill (140%).

May to July 2008 rainfall was predicted to be generally *above average* across the country. The prediction was consistent despite July being drier than expected with twenty-one of twenty-three sites recording *above average* rainfall (more than 90% hit rate).

Maximum and the minimum air temperatures were generally *average* to *above average* across the country. However there were periods of cool spells experienced during the month. The coolest spell was from July 3-5 that saw night time temperatures falling below 15.0°C at several sites. In contrast, at Matuku, warmest night was experienced on July 12 when the island experienced 25.7°C, replacing 1958 record of 25.4°C.

Neutral El Niño Southern Oscillation (ENSO) conditions continue to prevail across the tropical Pacific. Computer models predict SSTs in the central to western Pacific Ocean to warm slightly but remaining *near neutral* (75% chance) in the coming months. The models also indicate a low chance of either strong warming to *El Niño* (15%) levels or a re-intensification of *La Nina* (10%) conditions during August to October period.

Generally *above average* rainfall is favoured across the Fiji Islands during August to October period except at Rotuma where rainfall is predicted to be *average* or *below*. The skill of the prediction is *low to moderate*.

WEATHER PATTERNS

There were two major troughs of low pressure systems that affected Fiji on July 5-7 and 27-28. The areas most affected by the troughs were the western and southern parts of the Group, including Viti Levu. The rest of the month was dominated by ridges of high pressure, associated with mobile high pressure systems to the south of the Group that brought periods of cool dry spells. Between July 8-15, an intense ridge over the group resulted in significantly strong east to southeasterly winds over both land areas and coastal waters. Strong wind warnings were issued for the areas that were directly affected. As these high pressure systems progressed eastwards, brief trade showers were experienced over the interior and windward parts of the larger islands. SPCZ spent most of its time to the north of the Fiji Group but affected Rotuma from time to time, especially throughout the early part of the month.

The first trough to the west of Fiji moved over the Group on July 5 and continued moving eastwards over the rest of Fiji for the next two days. A weak front followed behind the trough as both systems progressed eastwards. Extensive rainfall was received over the country on July 5 and 6, while rainfall was mostly confined to the northern parts on July 7. Heavy rainfall was recorded at Udu Point

(73.7mm) and Lautoka Mill (56.8mm) within the first 24 hours. Koronivia received 50.7mm of rainfall within the next 24 hours.

The second trough approached the Group from the southwest and moved over Viti Levu on July 27. The trough remained slow moving over Viti Levu but began drifting southwards again on July 28 before becoming slow moving further south of Fiji and eventually dissipating. Rainfall received during this time was not widespread or significant but the heaviest rainfall was recorded at Lautoka Mill (48.0mm) and Nadi (38.9mm) within 24 hours on July 27. Ono-I-Lau received 30.5mm on July 28 as the trough moved southwards.

A front approached the group from the west on July 30 but remained slow moving to the west-southwest of Fiji, weakened and slipped southeastwards as it approached the Group. This front did not have any direct effect on the country.

The SPCZ remained confined to the north of the Fiji Group affecting mostly Rotuma during the early part of the month. The island experienced significant heavy rainfall on July 2, 11 and 14 with 82.0mm, 59.8mm and 52.6mm respectively.

RAINFALL IN RECENT MONTHS

Rainfall in July

Rainfall varied considerably across the country with *well below average* (<40%) in Rakiraki and Labasa to *well above average* (>200%) in Lautoka. Most parts of the country experienced considerably drier than usual with the Central and the Eastern Divisions recording 43 to 92 percent of normal rainfall.

In contrast, with only 3 rainy days, Lautoka Mill recorded more than 240% of normal rainfall while more than 150% of normal rainfall was recorded at Nadi Airport in 2 rainfall events. Levuka and Rotuma also recorded more than 160% of normal rainfall in July.

Rainfall in the last three months

Rainfall for the May to July 2008 period was predicted to be generally *above average* across the Fiji Group. The confidence level of the forecast was *low to moderate*.

Of the twenty-three stations that reported in time for this summary, twenty-one sites recorded *above average* and two sites recorded *average* rainfall.

The hit rate for the May to July prediction was more than 90%.

TABLE 1 : THREE MONTH RAINFALL : MAY TO JULY 2008

<u>Station</u>	<u>Actual Rainfall (mm)</u>	<u>Rainfall in the last three months (Below average, average or above average)</u>	<u>No. of Rain days in May 08 (% of total rain)</u>	<u>No. of Rain days in June 08 (% of total rain)</u>	<u>No. of Rain days in July 08 (% of total rain)</u>
Penang Mill, Rakiraki	393.9	Above Average	13 (68)	11 (27)	03 (05)
Monasavu Dam	910.4	Above Average	14 (26)	19 (53)	18 (21)
Rarawai Mill, Ba	282.5	Above Average	14 (62)	12 (19)	04 (19)
Nacocolevu	320.5	Above Average	16 (57)	11 (27)	05 (16)
Viwa Island	428.7	Above Average	15 (59)	05 (29)	03 (12)
Lautoka (FSC Res.)	460.0	Above Average	13 (50)	07 (24)	03 (26)
Nadi Airport	325.4	Above Average	14 (63)	11 (15)	02 (22)
Tokotoko, Navua	1234.2	Above Average	17 (48)	19 (43)	13 (09)
Laucala Bay, Suva	634.8	Above Average	21 (39)	20 (50)	18 (11)
*Koronivia	808.6	Above Average	18 (41)	22 (49)	16 (10)
Nausori Airport	838.6	Above Average	20 (45)	23 (43)	16 (12)
Nabouwalu	355.1	Average	20 (49)	21 (38)	14 (13)
Labasa Airport	477.8	Above Average	16 (67)	09 (30)	03 (03)
Savusavu Airport	779.1	Above Average	20 (39)	20 (47)	09 (14)
Udu Point	750.2	Above Average	13 (41)	15 (45)	07 (14)
Matei Airport	761.0	Above Average	28 (34)	25 (50)	21 (16)
*Vanua Balavu, Lau	748.6	Above Average	17 (19)	20 (75)	10 (06)
Lakeba, Lau	810.5	Above Average	16 (23)	13 (70)	06 (07)
Matuku, Lau	387.0	Average	14 (54)	11 (37)	08 (09)
Ono-I-Lau, Lau	478.1	Above Average	10 (41)	13 (41)	05 (18)
Levuka, Ovalau	901.0	Above Average	17 (32)	19 (50)	09 (18)
Vunisea, Kadavu	874.1	Above Average	22 (43)	22 (48)	17 (09)
Rotuma	1350.1	Above Average	25 (39)	26 (28)	23 (33)

* Data missing : 2 days in June at Vanua Balavu, Lau and 1 day in July at Koronivia.

AIR TEMPERATURES, RELATIVE HUMIDITY AND SUNSHINE IN JUNE

Maximum Air Temperatures were *average to above average* except at Rarawai Mill in Ba and Tokotoko in Navua. The greatest positive anomalies were recorded at Matuku (3.0°C), Lakeba (1.6°C) and Rarawai Mill (1.3°C). The greatest negative anomalies were recorded at Lautoka (-1.0°C) and Tokotoko (-0.8°C).

Minimum Air Temperatures were also *average to above average* at most sites around the country. The greatest positive departures were recorded at Matuku (2.9°C), Lautoka Mill (2.5°C) and Tokotoko in Navua (2.1°C). The greatest negative departure of -3.0°C was recorded at Rarawai Mill in Ba.

Relative Humidity at 0900hrs was generally *below average*. The greatest positive anomalies were recorded at Lakeba (6.6%) and Nadi Airport (2.7%). The greatest negative anomalies were recorded at Penang Mill (-11.0), Savusavu Airport (-10.8%) and Lautoka Mill (-8.9%).

Sunshine & Winds

Sunshine hours were *average* (103 to 129%) across the country except at Rotuma where sunshine was *below average* (86%). Wind speeds were *average to above average* at all the wind recording sites except at Rotuma where the wind speeds were *below average*.

Figure 1

Nadi Airport - Temperature & Rainfall Records for the last 13 Months
(July 2007 - July 2008)

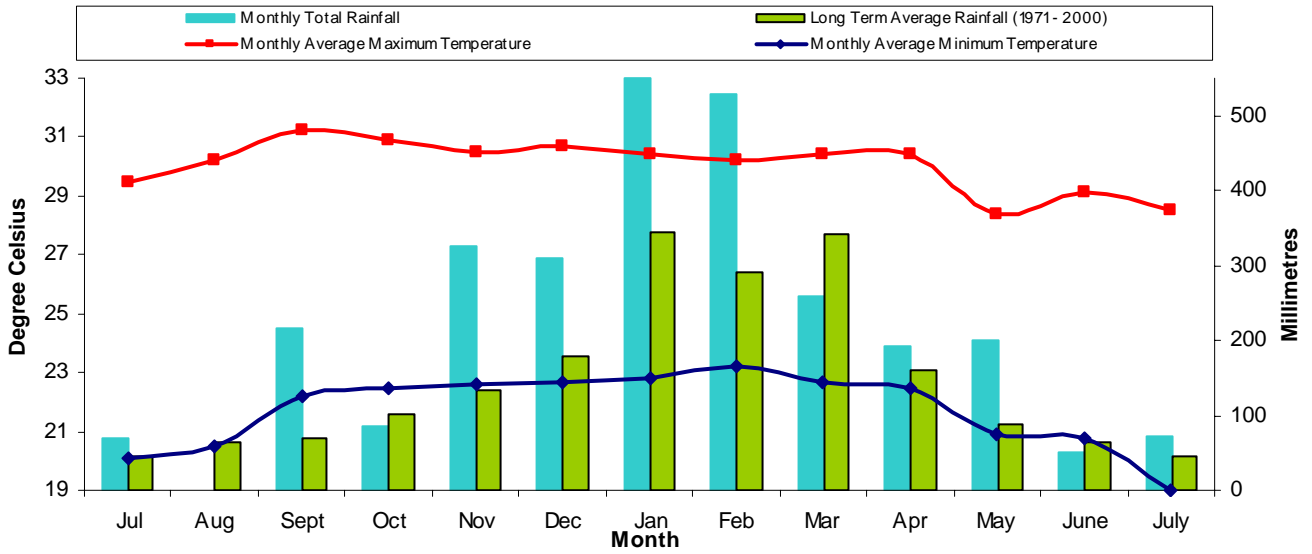


Figure 2

Labasa Airfield - Temperature & Rainfall Records for the last 13 Months
(July 2007 - July 2008)

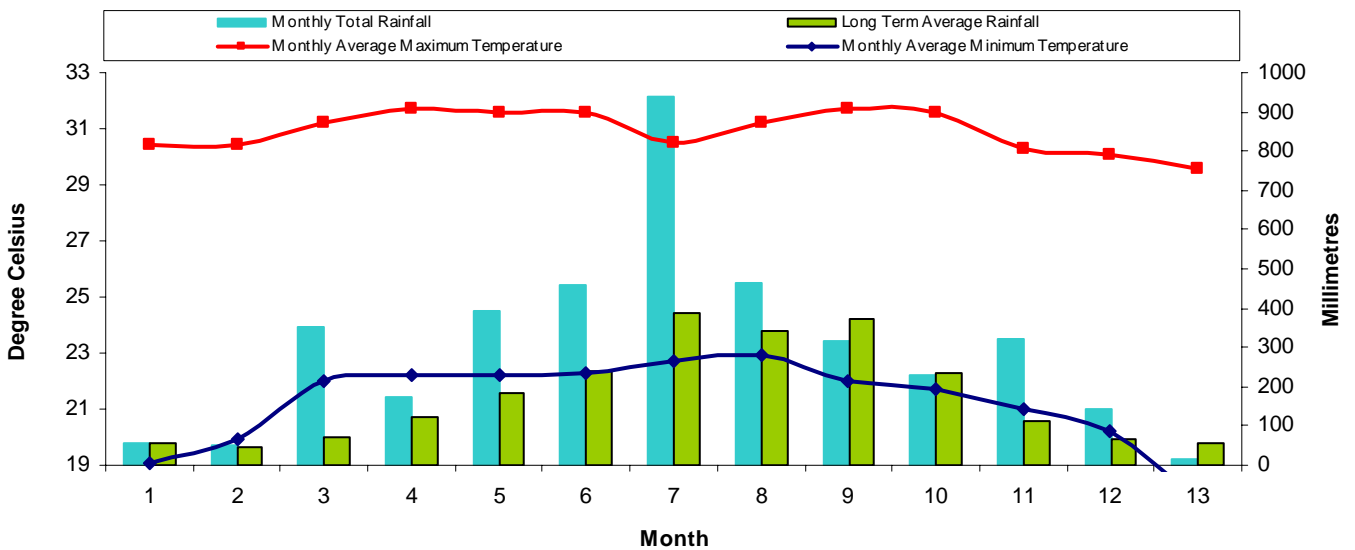
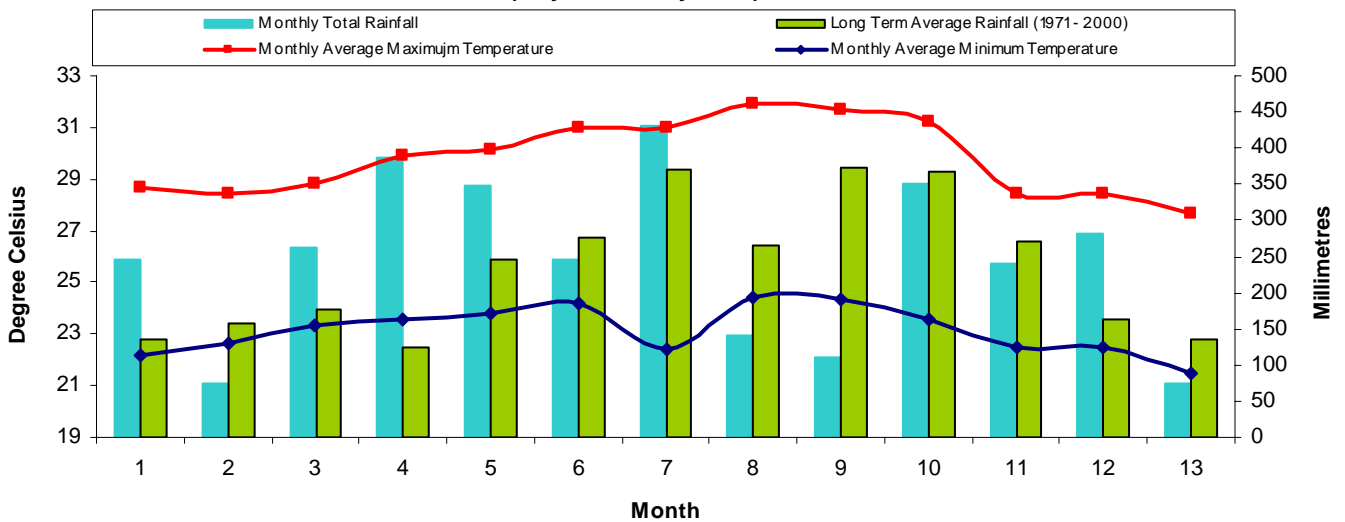


Figure 3

Laucala Bay/Suva - Temperature & Rainfall Records for the last 13 Months
(July 2007 - July 2008)



PRELIMINARY CLIMATOLOGICAL SUMMARY FOR JULY 2008

FIJI METEOROLOGICAL SERVICE DATE 01/08/2008
PRELIMINARY CLIMATOLOGICAL DATA FOR MONTH 7, 2008 : SUMMARY FOR DAYS 1 TO 31

	RAINFALL				AIR TEMPERATURES								SUNSHINE	
	TOTAL	RAIN		MAX.	AVERAGE DAILY				EXTREME				TOTAL	*
	MM	%	+	MM ON	MAX.	#	MIN.	#	MAX.	C	ON	C	ON	HRS
NADI AIRPORT	73	159	2	39 27	28.5	-0.1	19.0	0.6	31.0	30	15.4	11	238	109
SUVA/LAUCALA BAY	73	54	18	22 6	27.7	0.9	21.5	0.8	31.4	30	18.4	3	174	129
NACOCOLEVU	53	73	5	37 27	28.5	1.1	17.8	-0.1	32.5	26	14.0	3	170	103
ROTUMA	453	195	23	82 2	29.2	0.1	24.4	0.3	31.0	4	22.9	27	171	86
VIWA	54	97	3	27 5	28.5	0.7	23.0	0.4	30.2	30	18.0	17		
UDU POINT	101	114	7	74 5	28.3	0.3	22.7	0.4	31.0	27	17.4	17		
SAVUSAVU AIRFIELD	110	114	9	42 7	27.7	0.7	20.5	-0.5	31.0	26	18.0	26		
LABASA AIRFIELD	15	28	3	10 5	29.6	0.4	17.8	-0.3	32.2	26	13.9	23		
NABOUWALU	47	51	14	16 6	27.4	1.1	22.2	0.4	31.3	27	20.7	8		
KORONI VIA	81	62	16	51 6	27.2	0.7	20.0	0.6	30.5	31	16.0	3		
NAUSORI AIRPORT	99	85	16	29 6	26.9	0.6	19.6	0.0	30.0	27	15.4	3		
NAVUA/TOKOTOKO	107	58	13	35 5	26.4	-0.8	20.2	2.1	31.5	30	14.8	4		
MONASAVU	189	100	18	33 5	21.0	-0.1	15.9	0.4	26.1	27	13.2	3		
LAUTOKA AES	122	249	3	57 5	28.6	-1.0	19.5	2.5	30.2	5	15.5	10		
BA/RARAWAI MILL	55	140	4	41 5	29.6	1.3	16.9	-3.0	31.9	20	12.1	24		
PENANG MILL	19	34	3	15 5	28.2	0.8	21.2	0.8	31.2	26	16.5	3		
MATEI AIRFIELD	121	117	21	36 5	27.4	0.3	22.7	1.1	29.6	30	20.4	9		
VANUABALAVU	44	50	10	19 5	27.1	0.1	22.4	0.5	28.9	1	16.2	10		
LAKEBA	54	66	6	33 6	28.0	1.6	20.8	-0.2	29.2	29	18.0	2		
ST. JOHNS COLLEGE	160	163	9	43 6	27.0	-0.1	21.1	-0.5	29.9	31	19.0	2		
VUNI SEA	77	68	17	34 5	26.3	0.6	21.3	1.7	29.5	31	18.1	3		
MATUKU	36	43	8	16 5	29.0	3.0	23.7	2.9	30.7	19	20.0	6		
ONO-I -LAU	85	92	5	41 5	25.8	0.8	20.5	0.3	29.1	31	18.0	1		

RAINFALL OUTLOOK FOR FIJI ISLANDS - AUGUST TO OCTOBER 2008

Neutral El Niño Southern Oscillation (ENSO) conditions continue to prevail across the tropical Pacific. Over the past two weeks most indicators of ENSO have remained close to normal. The trade winds have strengthened in the west but remained close to normal in the central and eastern equatorial Pacific Ocean. Cloudiness near the Dateline has been near normal and Southern Oscillation Index has also remained in the neutral range since May. Sea surface temperatures (SST) have continued to warm further across the entire basin.

Computer models predict SSTs in the central to western Pacific Ocean to warm slightly but remaining *near neutral* (75% chance) in the coming months. The models also indicate a low chance of either strong warming to *El Niño* (15%) levels or a re-intensification of *La Nina* (10%) conditions during August to October period. Generally *above average* rainfall is favoured across the Fiji Islands during August to October period except at Rotuma where rainfall is predicted to be *average or below average*. The skill of the prediction is *low to moderate*.

(More detailed climate predictions will follow in the "Fiji Islands Climate Outlook" to be released in the coming days).

TABLE 2— CLIMATE RECORDS ESTABLISHED IN JULY 2008

Element	Station	Observed (record)	On	Rank	Previous (record)	Year	Records Began
Monthly Max Temp	Matuku	29.0°C	-	New High	28.4°C	2007	1955
Daily Max Temp	Tokotoko, Navua	31.5°C	30th	Equal High	31.5°C	2001	1992
Daily Min Temp	Vanuabalavu	25.8°C	06th	Equal High	25.8°C	2005/07	1985
Daily Min Temp	Matuku	25.7°C	12th	New High	25.0°C	1958	1955
Monthly Min Temp	Matuku	23.7°C	-	New High	23.1°C	2007	1955

Normal - Long term average from 1971 to 2000.

Well Below Average - Rainfall less than 39%.

Below Average - Rainfall between 40 to 79%.

Average - Rainfall between 80 to 119%.

Above Average - Rainfall between 120 to 199%.

Well Above Average - Rainfall more than 200%.

This summary is prepared as soon as possible following the end of the month, once climate data is received from various recording stations around Fiji and ENSO information is received from various Meteorological Agencies around the World. Delays in data collection, communication and processing occasionally arise. While every effort is made to verify observational data, the Fiji Meteorological Service does not guarantee the accuracy and reliability of the analysis and rainfall predictions presented, and accepts no liability for any losses incurred through the use of this summary and its contents. The contents of the summary may be freely disseminated provided the source is acknowledged. All requests for data should be directed to the Fiji Meteorological Service HQ in Namaka, Nadi.