Issued: 06 August 2007

Fiji Islands Climate Summary July 2007

FIJI METEOROLOGICAL SERVICE

IN BRIEF

Four rain-bearing weather systems passed over or close to Fiji in July resulting in average to well above average rainfall being recorded in parts of the country. However, rainfall was not widespread and parts of the Western, Central, Northern and Eastern Divisions also recorded below average rainfall. A weak La Niña-like regional climate circulation pattern existed in the Southwest Pacific in July. The Trade Winds were weaker than normal and the South Pacific Convergence Zone (SPCZ) was also more pronounced and further south than normal.

In the last two months, most of Viti Levu has received *below average* rainfall with *average to above average* rainfall recorded elsewhere. On a three-month time scale, rainfall has varied around *average* with *below average* rainfall in most parts of Viti Levu, *above average* rainfall at Udu Point and Ono-i-Lau and *average* rainfall elsewhere.

It is very likely July was the warmest in 50 years in Fiji. Ten daily and fourteen monthly new records were established during the month (Table 2). Both day and night-time temperatures were *above average* across the country. Sunshine hours were near average during the month.

El Niño-Southern Oscillation indicators fluctuated without consistent trend in July. Periods of weakened equatorial Trade Winds, falling SOI and rising ocean temperatures alternated with periods of strengthened equatorial Trade Winds, rising SOI and falling ocean temperatures. The month of July saw both, with the latter phase occurring at the end of the month so that overall there was a slight cooling of the ocean from June to July. However, the July Southern Oscillation Index value was – 4. The chance of a La Niña developing in the coming months is around 50%. Based on recent ocean and atmospheric patterns in the Pacific, Fiji's rainfall is likely to be *average* to *above average* in the coming three months.

WEATHER PATTERNS

There was a notable difference in Fiji's weather in July compared to the previous two months. During July there were four occasions when passing troughs and fronts resulted in rainfall in parts of the country. On these occasions the SPCZ was displaced southward. In between the passage of troughs, periods of fine weather spells were experienced as high pressure systems extended ridges over the country.

Following the first two days of mainly fine weather, a cold front approached the country from the west dragging the SPCZ over the Group. Showers were experienced over most places on July 3 and 4 with notable falls at Lakeba (25mm) and Matei (55mm).

On July 5, a ridge of high pressure moved onto the Group and remained until July 10. Dry east to southeast winds were directed over the country until a cold front moved toward Fiji. The front caused the SPCZ to become enhanced, which resulted in rainfall on July 11 and 12. Rainfall over the 24 hour period ranged from 22 to 31mm in the western part of the country.

Fine weather set in from July 13 as a ridge of high pressure pushed over the country from the southwest.

On the third occasion a frontal system merged with the SPCZ on July 22. A moist easterly flow existed over the country until July 27. During this period, the eastern and the central parts of the country received rainfall almost everyday.

The fourth and the most significant trough affected Fiji at the end of the month. On July 31, most parts of the country received significant rainfall. Suva recorded 120 mm, Viwa 70mm, Nacocolevu 55mm and Nausori Airport 53mm.

Rotuma received rainfall on 23 of the 31 days of the month as the SPCZ remained close to the island.

RAINFALL IN LAST THREE MONTHS, TEMPERATURES AND RELATIVE HUMIDITY

Total monthly **rainfall** ranged from *below average* to *well above average* across the country in July. Even though the number of sites receiving close to or more than the long term month average have increased in recent months, some parts of the country in the Western, Northern and Eastern Divisions continued to receive *below average* rainfall.

Rainfall for the May to July 2007 period was predicted to *vary around average.* The *confidence level of* this prediction was *moderate to low*. Actual rainfall over the May to July period ranged from *below average* to *above average*. Eight of the twenty recording sites received *below average* rainfall, nine sites received *average* rainfall, three sites received above average rainfall.

Maximum Air Temperatures were *above average* across the country with the Central and Western Division recording the greatest departures. Fourteen records were set in July (Table 2). The highest positive departures from normal were recorded at Viwa Island (2.7ºC), Matuku (2.4ºC) and Nacocolevu (2.3ºC).

Minimum Air Temperatures were also *above average* across the country. Ten new records were set in July (Table 2). The highest positive departures were recorded at Matuku (2.3ºC), Rarawai Mill (2.0ºC), Vunisea and Nadi Airport (1.9ºC).

Relative Humidity at 0900hrs varied from *below average* to *above average*. The greatest positive anomalies were recorded at Lakeba (8.6%), Nadi Airport (5.7%) and Nausori Airport (4.0%). The greatest negative anomalies were recorded at Penang (9.0%), Yasawa-i-Rara (6.0%) and Lautoka (3.2%).

TABLE 1 : THREE MONTH RAINFALL : MAY TO JULY 2007

Station	Actual Rainfall (mm)	Rainfall in the last three months (Below average, average or above average)	No. of Rain days in May 07 (% of total rain)	No. of Rain days in June 07 (% of total rain)	No. of Rain days in July 07 (% of total rain)
Penang Mill	140.8	Below Average	12 (57)	04 (18)	05 (25)
Monasavu Dam	464.8	Below Average	18 (40)	18(37)	12 (23)
Rarawai Mill, Ba	87.7	Below Average	06 (16)	02 (8)	05 (76)
*Nacocolevu	216.2	Average	10 (30)	04 (6)	07 (63)
Viwa Island	175.6	Below Average	08 (19)	03 (1)	07 (80)
Lautoka (FSC Res.)	91.2	Below Average	08 (45)	01 (1)	06 (54)
Nadi Airport	97.9	Below Average	06 (27)	02 (2)	06 (71)
*Data missing for June 22,23 and 25					
Tokotoko, Navua	398.9	Below Average	16 (32)	18 (25)	13 (43)
Laucala Bay, Suva	484.1	Average	20 (40)	18 (9)	12 (51)
Nausori Airport	491.3	Average	22 (52)	18 (16)	12 (32)
Nabouwalu	364.6	Average	18 (57)	20 (21)	20 (22)
Labasa Airport	253.2	Average	11 (58)	11 (20)	07 (22)
Savusavu Airport	355.3	Average	14 (73)	12 (16)	07 (11)
Udu Point	498.9	Above Average	16 (62)	12 (13)	09 (25)
Matei Airport	504.5	Average	29 (67)	18 (18)	24 (15)
Lakeba Is.	363.4	Average	15 (48)	09 (39)	08 (13)
Matuku Is*.	369.3	Average	10 (33)	08 (36)	11 (31)
Ono-I-Lau Is.	488.6	Above Average	16 (58)	05 (10)	10 (32)
Levuka	290.1	Below Average	15 (58)	12 (11)	16 (31)
Vunisea, Kadavu	367.9	Average	20 (65)	10 (12)	12 (23)
Rotuma	650.3	Below Average	17 (50)	19 (18)	23 (32)

TABLE 2 : NEW CLIMATE RECORDS IN JULY 2007

Element	Station	Observed (record)	On (date)	Rank	Previous (record)	Year	Records Began
Daily Max Temp	Laucala Bay,Suva	32.5ºC	11th	New High	31.6ºC	1999	1942
Daily Max Temp	Viwa Island	33.6°C	29th	New High	32.1ºC	1998	1978
Daily Max Temp	Yasawa-i-rara	31.7°C	18th	New High	31.5°C	1985	1950
Daily Max Temp	Nausori Airport	31.4°C	11th	New High	31.3°	1999	1956
Daily Min Temp	Laucala Bay,Suva	24.7ºC	31st	New High	24.5ºC	1984	1942
Daily Min Temp	Nabouwalu	25.2ºC	31st	New High	24.5ºC	2000	1956
Daily Min Temp	Monasavu	20.1ºC	16th	New High	20.0ºC	1982	1980
Daily Min Temp	Levuka	25.0ºC	25th	New High	23.0ºC	2006	1984
Daily Min Temp	Lakeba	25.5ºC	31st	New High	25.4ºC	1999	1955
Daily Min Temp	Ono-i-lau	25.0ºC	2nd	New High	24.6ºC	1974	1943
Mean Monthly Max Temp	Laucala Bay,Suva	28.7ºC	-	New High	28.4ºC	1999	1942
Mean Monthly Max Temp	Viwa Island	30.5ºC	-	New High	29.8ºC	1999	1978
Mean Monthly Max Temp	Savusavu	28.3ºC	-	New High	28.2ºC	1985	1956
Mean Monthly Max Temp	Yasawa-i-rara	30.6ºC	-	New High	29.4ºC	1995	1950
Mean Monthly Max Temp	Monasavu	22.9ºC	-	New High	22.8ºC	1999	1980
Mean Monthly Max Temp	Nausori Airport	27.8ºC	-	New High	27.6ºC	1999	1956
Mean Monthly Max Temp	Navua	27.7 ºC	-	New High	27.2ºC	1999	1992
Mean Monthly Max Temp	Matuku	28.4ºC	-	New High	27.5ºC	1999	1955
Mean Monthly Max Temp	Vunisea	27.2ºC	-	New High	26.9ºC	1956	1947
Mean Monthly Max Temp	Ono-i-lau	26.8ºC	-	New High	26.2ºC	1996	1943
Mean Monthly Min Temp	Laucala Bay,Suva	22.2ºC	-	New High	22.1ºC	1999	1942
Mean Monthly Min Temp	Udu Point	23.8ºC	-	New High	23.3ºC	1971	1951
Mean Monthly Min Temp	Nabouwalu	23.1ºC	-	New High	22.7ºC	2001	1956
Mean Monthly Min Temp	Matuku	23.1ºC	-	New High	22.4ºC	1999	1955

Figure A

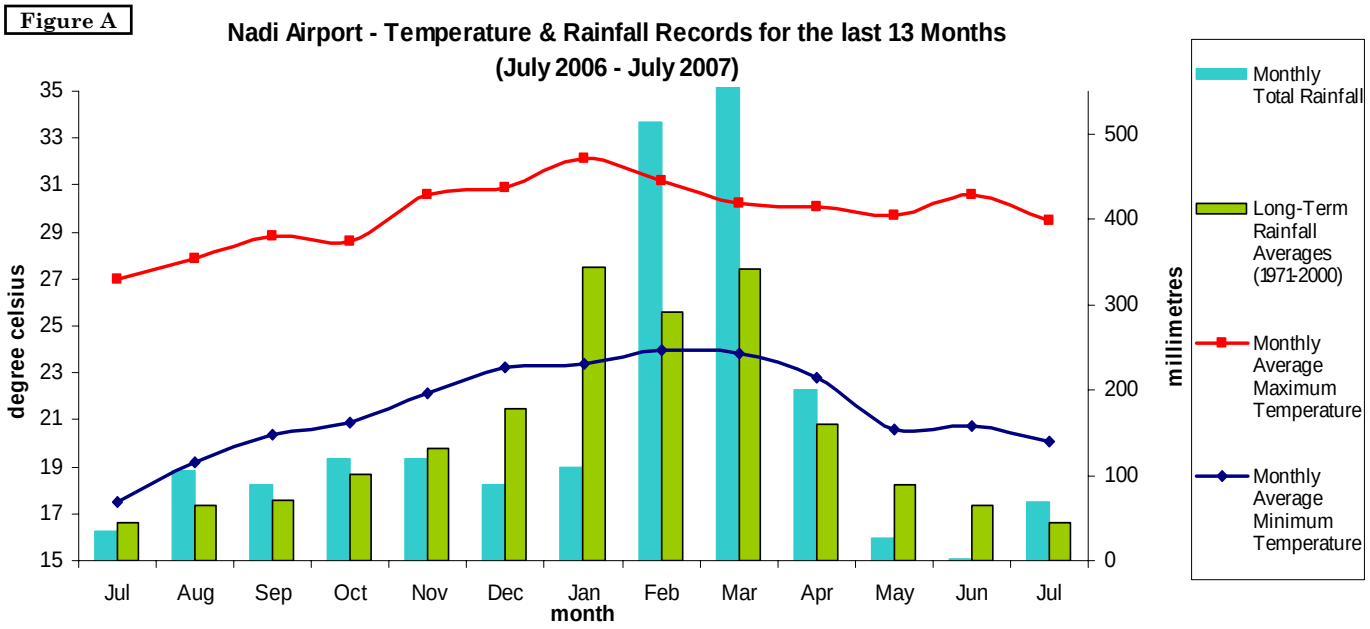


Figure B

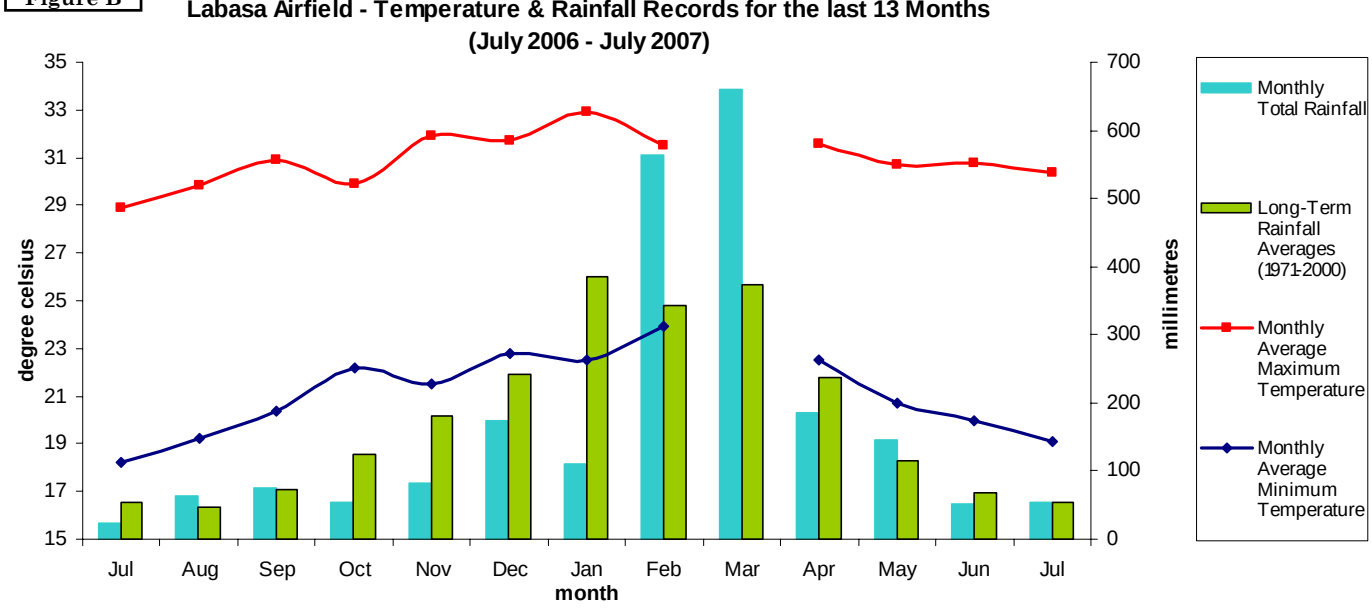
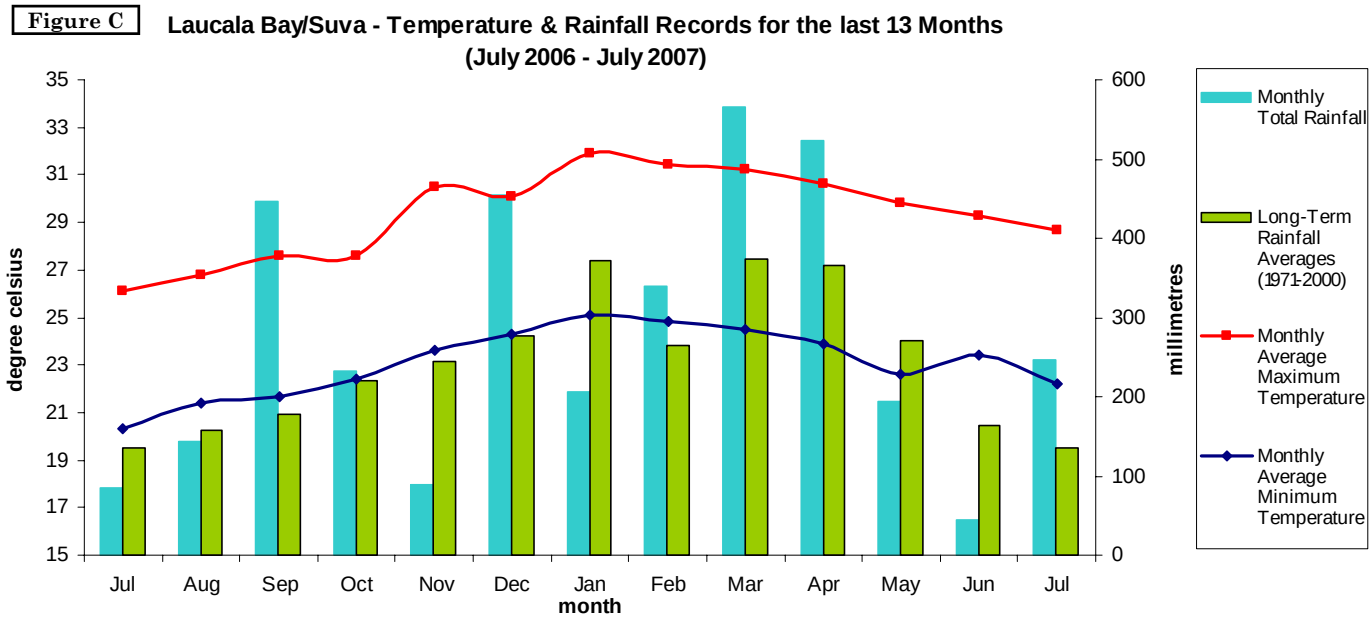


Figure C



PRELIMINARY CLIMATOLOGICAL SUMMARY FOR JULY 2007

PRELIMINARY CLIMATOLOGICAL DATA FOR MONTH 7 , 2007 : SUMMARY FOR DAYS 1 TO 31

	RAINFALL					AIR TEMPERATURES								SUNSHINE	
	TOTAL		RAIN DAYS *		MAX. FALL	AVERAGE DAILY MAX.	#	AVERAGE DAILY MIN.	#	EXTREME MAX.		EXTREME MIN.		TOTAL	*
	MM	%	+	MM	ON	C	C	C	C	C	ON	C	ON	HRS	%
NADI AIRPORT	70	154	6	25	11	29.5	0.9	20.1	1.7	32.4	27	16.4	8	209	95
SUVA/LAUCALA BAY	247	181	12	120	31	28.7	1.9	22.2	1.5	32.5	11	17.9	6	157	116
NACOCOLEVU	137	192	7	55	31	29.6	2.3	18.3	0.5	32.0	11	14.6	7	149	89
ROTUMA	207	89	23	37	20	30.3	1.2	24.8	0.7	31.2	27	23.5	3	199	100
VIWA	140	250	7	70	31	30.5	2.7	23.5	1.1	33.6	29	21.0	6		
UDU POINT	125	141	9	71	29	28.9	0.9	23.8	1.5	31.5	4	21.3	30		
LABASA AIRFIELD	55	102	7	22	29	30.4	1.2	19.1	0.9	33.0	28	14.4	8		
NABOUWALU	80	87	20	28	25	27.2	0.9	23.1	1.3	29.1	11	20.2	7		
SAVUSAVU AIRFIELD	39	41	7	14	22	28.3	1.3	21.8	0.8	31.4	27	19.0	10		
MATEI AIRFIELD	75	73	24	55	3	28.3	1.2	22.6	0.9	30.0	11	20.5	7		
YASAWA-I-RARA	poor quality data														
VATUKOULA	no data														
MONASAVU	106	55	13	23	30	22.9	2.0	16.5	1.2	25.7	28	12.3	6		
NAUSORI AIRPORT	158	134	12	53	31	27.8	1.5	20.4	0.8	31.4	11	16.4	6		
NAVUA/TOKOTOKO	171	100	13	49	30	27.7	1.7	20.0	0.3	30.0	10	14.5	6		
LEVUKA	89	99	16	36	23	28.0	1.0	22.5	0.9	29.6	30	18.9	6		
LAKEBA	48	60	8	25	3	27.3	0.9	22.1	1.1	28.9	3	17.2	10		
MATUKU	115	138	11	50	27	28.4	2.4	23.1	2.3	30.4	6	20.0	15		
VUNISEA	86	79	12	24	23	27.2	1.7	21.3	1.7	29.7	11	17.9	6		
ONO-I-LAU	156	169	10	40	23	26.8	1.8	21.1	0.9	28.6	11	19.5	6		
BA/RARAWAI MILL	67	171	5	25	11	30.8	1.2	19.0	2.0	33.2	30	13.8	7		
LAUTOKA AES	49	100	6	24	31	29.8	1.5	21.2	1.3	31.5	30	18.0	8		
PENANG MILL	36	65	5	19	31	29.2	1.8	21.3	0.9	32.2	28	16.4	10		

RAINFALL OUTLOOK FOR FIJI ISLANDS - AUGUST TO OCTOBER 2007

In the last three months El Niño–Southern Oscillation (ENSO) indicators have fluctuated considerably without any consistent trend. The ENSO status remains close to the neutral. Periods of weakened Trade Winds, falling Southern Oscillation Index (SOI), and rising ocean temperatures have alternated with periods of strengthened Trade Winds, rising SOI and falling ocean temperatures. The subsurface cool anomalies strengthened during July in the central Pacific region. The chance of La Nina developing is about 50%. However, even if neutral conditions persist, much of the equatorial Pacific ocean is likely to remain cooler than average in the coming months.

Based on the outputs of various dynamical and statistical prediction models (including SCOPIC), rainfall in Fiji is expected to be *average to above average* for the August to October 2007 period. While majority of the sites are likely to experience *average to above average* rainfall over the forecast period, some areas may experience *below average* rainfall. The confidence level of the prediction is *moderate to low.*

(More detailed climate predictions will follow in the 'Fiji Islands Climate Outlook' to be released in mid June)

Normal *- Represents average form 1971 to 2000 period.*

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%.*

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