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Fiji Islands Climate Summary October 2007

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IN BRIEF

October was considerably wetter than normal in most parts of the country. A number of sites across the country received *well above average* (>200%) rainfall. At Navua and Levuka, October 2007 rainfall was the highest on record. This was also a second month in a row of *average* to *well above average* rainfall. The high rainfall was due to the usually dominant effect of the South Pacific Convergence Zone (SPCZ) and moist easterly wind flow.

Both day-time and night-time air temperatures were significantly above average at most sites. Twenty three air temperature records were established with six records equalled. Higher than normal relative humidity and above average sea surface temperatures around Fiji added to the extreme conditions. October was the third consecutive month of significantly above average air temperatures.

Sunshine hours were near normal across the country.

Observations show a La Niña event is well established across the central and eastern equatorial Pacific at the present time. Based on the latest observations and forecasts, there is 90% chance of La Nina conditions being maintained in the coming months. The Trade Winds in the equatorial Pacific were stronger than normal and the SPCZ has been displaced southwest of its normal October position. The Southern Oscillation Index remains in the neutral range (+5.4), however is more positive then in recent months.

Based on current ENSO patterns in the Pacific, generally *above average* rainfall is favoured across the Western and Northern Divisions and *average to above average* rainfall in the Central and Eastern Divisions from November 2007 to January 2008. The confidence in this prediction is moderate to high.

Specifically for Fiji, near average (1-2) tropical cyclones are expected this season. *There is a higher than normal chance of tropical cyclones passing through the western and southern parts of Fiji's Waters and near-normal risk of tropical cyclones passing through the northern and eastern part of Fiji's Waters this season.*

WEATHER PATTERNS

The South Pacific Convergence Zone (SPCZ) remained close to Fiji during most of October and in a few instances drifted over the country, resulting in significant rainfall being received especially in the northern parts of the country. Eastward-moving cold fronts and a moist easterly wind flow were also responsible for significant rainfall during the month. In between the cold fronts, transient ridges of high pressure migrated eastwards south of the Group, causing brief periods of strong winds especially over the southern Fiji Waters.

A frontal system lying over the eastern part of the country resulted in rainfall mainly over the interior and eastern parts of the larger islands during the first four days. On October 5, the SPCZ drifted onto Fiji but was pushed back on October 7. Most places received rainfall with isolated heavy falls, during this period. Brief showers continued for three days but were confined to the interior and eastern parts of the larger islands.

Late on October 10, the SPCZ drifted over Vanua Levu and Lau Group. Most of Fiji received rainfall with heavy falls especially in eastern Viti Levu. A ridge of high pressure pushing in from the south displaced the SPCZ to the north of the Group on October 14, but prevailing moist easterlies produced showers in most places on that day. On October 15, a trough of low pressure developed just west of Fiji and moved onto the Group, ahead of a cold front. This trough lay over the Group until October 18 causing widespread rainfall. The trough then moved westward on October 19 and merged with a frontal system over the southern parts of the Group. On October 21, the SPCZ drifted back onto Fiji, bringing widespread rainfall and isolated heavy falls, but was displaced north two days later, by a strong ridge to the south.

With the frontal system over the southern parts of the Group, substantial rainfall was received over the southern and eastern parts of the Group until October 28. The SPCZ shifted south over Fiji on October 29 causing widespread rain, with isolated heavy falls and squally thunderstorms. It moved northward on October 30 but a prevailing moist easterly flow maintained brief showers with moderate falls in most areas.

RAINFALL IN LAST THREE MONTHS, TEMPERATURES AND RELATIVE HUMIDITY

Total monthly **Rainfall** ranged from *average to well above average* (except at Penang Mill) in October. Two monthly rainfall records were broken at Navua and Levuka during the month. (Table 1). More than 200% of normal rainfall were recorded at several sites. These were St. John's College in Levuka (296%), Nabouwalu (293%), Vunisea (266%), Viwa (265%), Ono-i-lau (263%), Nausori Airport (240%), Navua (205%) and Udu Point (202%). The rest of the country received more than 100% of normal rainfall except at Nadi Airport and Penang Mill in the Viti Levu Dry Zone.

Rainfall from August to October 2007 was predicted to *average to above average*. Twenty of the 21 monitoring sites that reported on time for this summary recorded *above average* rainfall during this period. Penang Mill in Rakiraki received *average* rainfall (Table 2).

Maximum Air Temperatures were 0.6 - 2.8˚C *above average* across the country. The greatest positive departures from normal were recorded at Viwa Island (2.8ºC), Lakeba Island (2.1ºC) and Penang Mill (2.0ºC). Eleven new records were established with three records equalled in October (Table 1).

Minimum Air Temperatures were 0.4 - 2.4˚C *above average* across the country except at Nacocolevu where the night-time temperature was below average (doubtful). The highest positive departures were recorded at Labasa Airport and Vunisea (Kadavu) (2.4ºC) while Tokotoko in Navua recorded (2.3ºC). Eleven new records were established with three records equalled in October (Table 1).

Relative Humidity at 0900hrs varied from *near average* to *above average* at most sites. The greatest positive anomaly were recorded at Lakeba Island (15.3%), Nacocolevu in Sigatoka (14.7%) and Viwa Island (13.9%).

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

TABLE 1 : CLIMATE RECORDS ESTABLISHED IN OCTOBER 2007

Element	Station	Observed (record)	On (date)	Rank	Previous (record)	Year	Records Began
Total Monthly Rainfall	Tokotoko, Navua	572.5mm	-	New High	530.1mm	2000	1992
Total Monthly Rainfall	St. Johns College	409.0mm	-	New High	352.7mm	1999	1949
Daily Max Temp	Savusavu Airport	33.5ºC	24th	New High	33.4ºC	1996	1956
Daily Max Temp	Nabouwalu, Bua	33.0°C	27th	New High	32.6ºC	1962	1956
Daily Max Temp	Nausori Airport	33.0°C	24th	New High	32.7°C	1976	1956
Daily Max Temp	Matei Airport	33.0°C	11th	New High	31.7°C	1976	1956
Daily Max Temp	Laucala Bay	33.0°C	24th	Equal High	33.0°C	2005	1942
Daily Max Temp	Viwa Island	34.6°C	10th	Equal High	34.6°C	1998	1978
Daily Min Temp	Laucala Bay, Suva	25.8ºC	11th	New High	25.4ºC	1979	1942
Daily Min Temp	Ono-I-Lau	25.0ºC	15th	New High	24.8ºC	1980	1943
Daily Min Temp	St. Johns College	25.5ºC	15th	Equal High	25.5ºC	2006	1984
Mean Monthly Max Temp	Viwa Island	32.1ºC	-	New High	31.1ºC	1996	1978
Mean Monthly Max Temp	Nabouwalu, Bua	29.5ºC	-	New High	29.2ºC	2005	1956
Mean Monthly Max Temp	Tokotoko, Navua	28.4ºC	-	New High	28.3ºC	2005	1992
Mean Monthly Max Temp	Monasavu Dam	24.9ºC	-	New High	24.7ºC	1984	1980
Mean Monthly Max Temp	Vanuabalavu, Lau	29.6 ºC	-	New High	29.5ºC	1989	1986
Mean Monthly Max Temp	Lakeba Island	29.8ºC	-	New High	29.2ºC	1975	1955
Mean Monthly Max Temp	St. Johns College	29.4ºC	-	New High	29.0C	1995	1984
Mean Monthly Max Temp	Laucala Bay	29.9ºC	-	Equal High	29.0C	1975	1942
Mean Monthly Min Temp	Nadi Airport	22.5ºC	-	New High	22.2ºC	1998	1942
Mean Monthly Min Temp	Laucala Bay, Suva	23.6ºC	-	New High	22.8ºC	1992	1942
Mean Monthly Min Temp	Koronivia	22.6ºC	-	New High	21.9ºC	2004	1965
Mean Monthly Min Temp	Nausori Airport	22.2ºC	-	New High	22.0ºC	1975	1956
Mean Monthly Min Temp	Monasavu Dam	18.2ºC	-	New High	17.2ºC	1989	1980
Mean Monthly Min Temp	Tokotoko, Navua	21.6ºC	-	New High	21.3ºC	1996	1992
Mean Monthly Min Temp	Vanuabalavu	24.0ºC	-	New High	23.6ºC	2006	1986
Mean Monthly Min Temp	Lakeba Island	23.4ºC	-	New High	23.3ºC	1975	1955
Mean Monthly Min Temp	Vunisea, Kadavu	23.2ºC	-	New High	22.5ºC	1974	1947
Mean Monthly Min Temp	Labasa Airport	22.2ºC	-	Equal High	22.2ºC	2006	1956
Mean Monthly Min Temp	Nabouwalu, Bua	23.6ºC	-	Equal High	23.6ºC	1995	1956

TABLE 2 : THREE MONTH RAINFALL : AUGUST TO OCTOBER 2007

Station	Actual Rainfall (mm)	Rainfall in the last three months (Below average, average or above average)	No. of Rain days in August 07 (% of total rain)	No. of Rain days in September 07 (% of total rain)	No. of Rain days in October 07 (% of total rain)
Penang Mill, Rakiraki	290.7	Average	10 (11)	16 (70)	12 (19)
*Monasavu Dam	1667.6	Above Average	20 (24)	26(55)	25 (21)
Rarawai Mill, Ba	427.5	Above Average	07 (08)	14 (60)	13 (32)
*Nacocolevu	551.9	Above Average	05 (05)	16 (68)	12 (27)
Viwa, Mamanuca Group	376.2	Above Average	14 (03)	12 (51)	10 (46)
*Lautoka (FSC Res.)	319.5	Above Average	04 (01)	16 (64)	11 (35)
Nadi Airport	304.6	Above Average	02 (01)	15 (71)	13 (28)
*"Data missing" [Monasavu and Lautoka Mill—August 31] and [Nacocolevu - October 10, 19, 20 & 25].					
Tokotoko, Navua	1048.0	Above Average	19 (16)	26 (29)	21 (55)
Laucala Bay, Suva	723.9	Above Average	18 (11)	29 (36)	24 (53)
Nausori Airport	848.0	Above Average	16 (09)	27 (36)	23 (55)
Nabouwalu	1041.1	Above Average	18 (12)	26 (40)	25 (48)
Labasa Airport	577.5	Above Average	09 (09)	17 (61)	17 (30)
Savusavu Airport	586.7	Above Average	10 (28)	21 (31)	18 (41)
Udu Point	780.8	Above Average	14 (13)	24 (42)	21 (45)
Matei Airport	888.2	Above Average	25 (15)	30 (53)	27 (32)
*"Data missing" [Levuka - August 29, 30 and 31], [Matuku - August 29]					
Lakeba, Lau	406.4	Above Average	09 (13)	20 (31)	16 (56)
*Matuku, Lau	451.4	Above Average	05 (05)	13 (30)	16 (65)
Ono-I-Lau, Lau	471.2	Above Average	04 (08)	(44)	14 (48)
*Levuka, Ovalau	845.7	Above Average	12 (06)	23 (46)	19 (48)
Vunisea, Kadavu	656.3	Above Average	15 (11)	26 (31)	22 (58)
Rotuma	880.2	Above Average	23 (41)	24 (18)	26 (41)

2007/2008 TROPICAL CYCLONE SEASON

The 2007/08 Southwest Pacific Tropical Cyclone season began on November 1, 2007 and will continue until April 30, 2008. On average 9 to 10 tropical cyclones develop in the Southwest Pacific a season. This season there is a lower risk of tropical cyclones affecting countries in the eastern SW Pacific, near normal risk near the Date Line and slightly higher than normal risk in the western SW Pacific. Countries in the eastern SW Pacific should however remain vigilant. Tropical cyclones are associated with destructive winds, prolonged heavy rainfall, severe flooding and storm surge. The period when highest numbers of tropical cyclones form in the Southwest Pacific is January to March although tropical cyclones have developed in December and April.

Specifically for Fiji, near average (1-2) tropical cyclones are expected this season. Of the six months of the tropical cyclone season the month with the highest chance of a tropical cyclone developing is January. *There is a higher than normal chance of tropical cyclones passing through the western and southern parts of Fiji's Waters and near-normal risk of tropical cyclones passing through the northern and eastern part of Fiji's Waters this season.*

Figure 1

Nadi Airport - Temperature & Rainfall Records for the last 13 Months (October 2006 - October 2007)

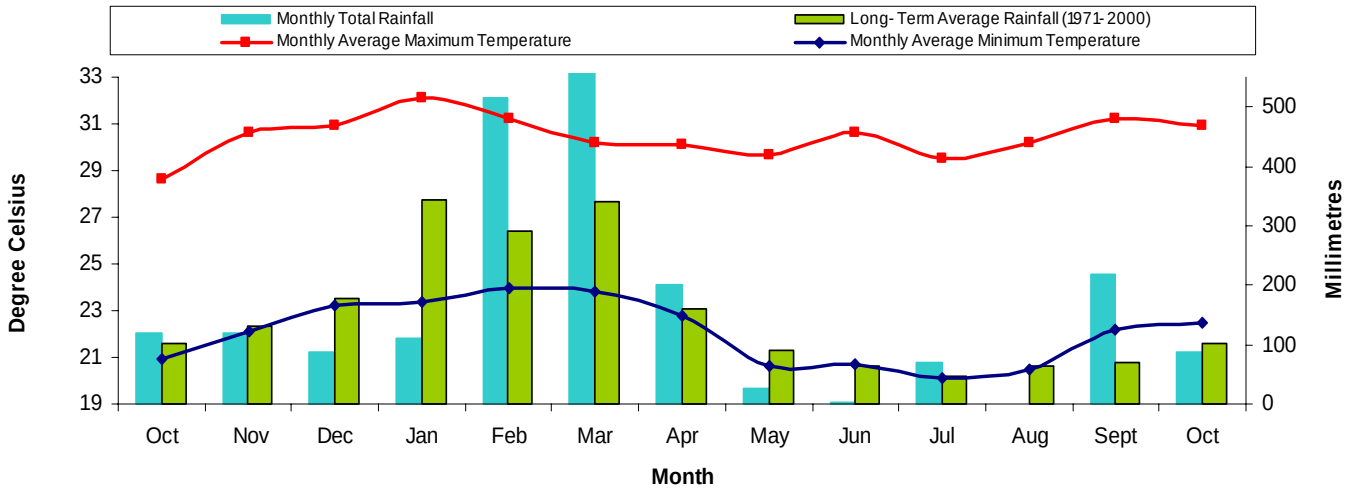


Figure 2

Labasa Airfield - Temperature & Rainfall Records for the last 13 Months (October 2006 - October 2007)

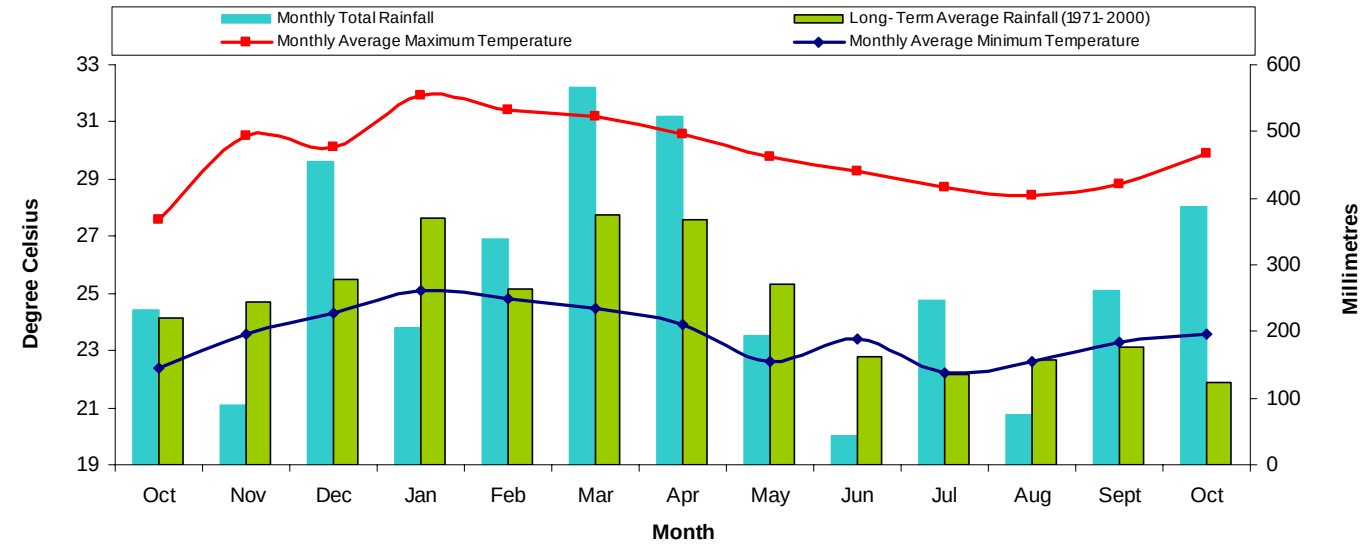
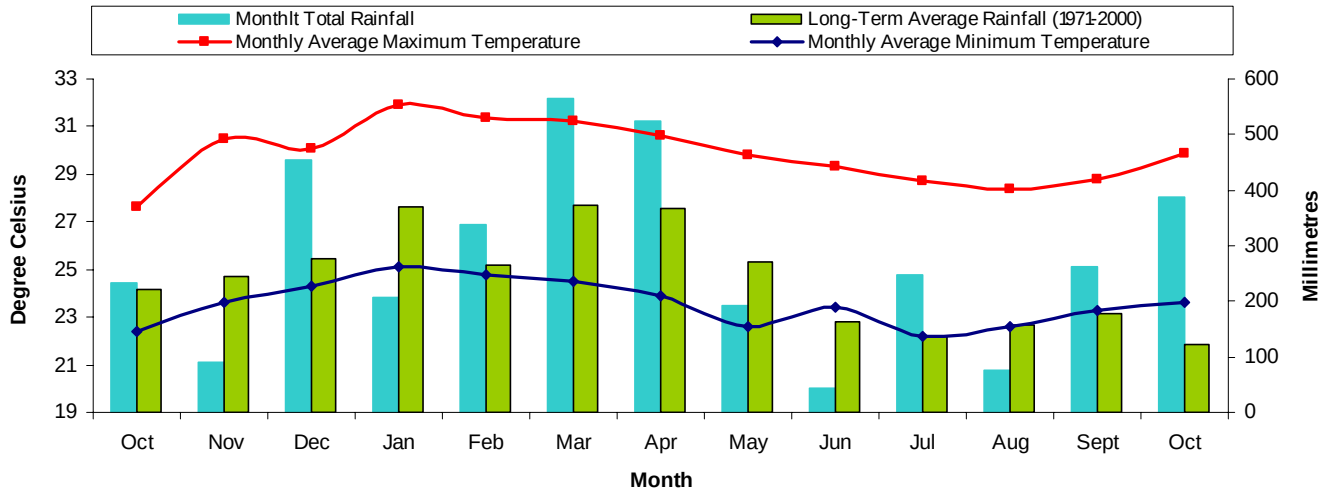


Figure 3

Laucala Bay/Suva - Temperature & Rainfall Records for the last 13 Months (October 2006 - October 2007)



PRELIMINARY CLIMATOLOGICAL SUMMARY FOR OCTOBER 2007

PRELIMINARY CLIMATOLOGICAL DATA FOR MONTH 10 , 2007 : SUMMARY FOR DAYS 1 TO 31

	RAINFALL					AIR TEMPERATURES								SUNSHINE	
	TOTAL	*	RAIN DAYS	MAX. FALL		AVERAGE DAILY MAX.	#	MIN.	#	EXTREME MAX.		MIN.		TOTAL	*
	MM	%	+	MM	ON	C	C	C	C	C	ON	C	ON	HRS	%
NADI AIRPORT	86	84	13	51	29	30.9	0.6	22.5	2.0	33.6	11	19.8	27	232	98
SUVA/LAUCALA BAY	387	175	24	121	12	29.9	1.7	23.6	1.7	33.0	24	21.5	2	144	88
NACOCOLEVU	147	156	12	46	13	30.9	1.8	17.6	-2.1	33.5	11	14.7	1	159	83
ROTUMA	356	105	26	79	16	30.6	0.9	24.6	0.4	31.9	24	23.8	7	195	100
VIWA	174	264	10	78	15	32.1	2.8	24.3	0.7	34.6	10	22.0	3		
UDU POINT	348	211	21	116	29	30.0	0.7	24.0	1.1	32.0	25	20.6	30		
SAVUSAVU AIRFIELD	238	139	18	74	21	29.4	1.2	22.7	0.8	33.5	24	21.0	9		
LABASA AIRFIELD	174	140	17	68	12	31.7	0.9	22.2	2.4	33.4	7	20.0	3		
NABOUWALU	498	293	25	132	20	29.5	1.8	23.6	1.0	33.0	27	21.1	1		
KORONIVIA	556	248	25	152	12	29.0	1.2	22.6	2.1	32.9	24	20.3	27		
NAUSORI AIRPORT	467	240	23	118	12	28.9	1.3	22.2	1.3	33.0	24	19.6	27		
NAVUA/TOKOTOKO	573	204	21	148	23	28.4	0.1	21.6	2.3	31.5	24	18.5	2		
MONASAVU	351	107	25	40	31	24.9	1.8	18.2	1.6	27.6	10	14.8	27		
LAUTOKA AES	113	111	11	39	15	30.7	1.2	22.8	1.2	32.9	25	20.1	2		
BA/RARAWAI MILL	138	129	13	32	17	31.8	0.6	21.5	1.9	34.0	19	18.1	27		
PENANG MILL	56	49	12	11	19	30.9	2.0	23.2	1.0	32.9	10	19.4	28		
MATEI AIRFIELD	280	140	27	77	29	29.5	1.3	23.3	0.9	33.0	11	20.3	4		
VANUABALAVU	154	129	21	55	9	29.6	1.6	24.0	1.2	31.8	25	18.0	30		
LAKEBA	228	185	16	76	11	29.8	2.1	23.4	1.3	31.5	12	19.5	4		
ST. JOHNS COLLEGE	409	296	19	79	12	29.4	1.6	22.7	0.4	31.5	25	21.0	1		
VUNISEA	377	266	22	72	29	28.3	1.2	23.2	2.4	31.5	24	21.0	26		
MATUKU	292	254	16	69	29	28.3	0.9	22.4	0.6	30.9	8	19.5	31		
ONO-I-LAU	226	262	14	82	27	27.9	1.5	22.4	1.0	30.3	15	18.2	1		

RAINFALL OUTLOOK FOR FIJI ISLANDS - NOVEMBER 2007 TO JANUARY 2008

Weak to moderate La Niña conditions current exist in the tropical Pacific. Cooler than normal ocean temperatures exist in the central and eastern Pacific along the equator both at the surface and at depth. Also the equatorial Trade Winds are stronger than normal. The Southern Oscillation Index however remains in the near normal range. Most computer models forecast the La Niña to ease sometime between March to May 2008 and be followed by Neutral conditions.

Based on the current and predicted ocean and atmospheric conditions in the equatorial Pacific, rainfall is expected to be *average to above average* in the Central and Eastern Divisions while *above average* rainfall is expected in the Western and Northern Divisions from November 2007 to January 2008. The confidence level of the prediction is *moderate to high*.

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

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%.*