Meteorology of Monteverde, Costa Rica 2005

Technical Report submitted to the Monteverde Institute

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Executive Summary

The meteorological station at the Monteverde Institute (MVI) in Monteverde, Costa Rica measures precipitation, temperature, wind speed, relative humidity, and solar radiation at 10-minute intervals throughout the day. For the period from 1 January 2005 through 31 December 2005, annual rainfall totaled 3791 mm, making 2005 the wettest year on record (1973-present). Eighty-two percent of the annual precipitation fell during the rainy season (May through October) and three percent during the dry season (February through April). There were 286 days with rain, and the mean depth of daily rainfall for days with rain was 13.3 mm. The average temperature was 17.8°C, the warmest day and the coolest day were 20.3°C and 12.9°C, respectively. From July through December, the average relative humidity was 89%. Average solar radiation was 161 W/m^2, and average wind speed was 1.8 m/s. This report builds on and complements the 2004 report by Johnson et al. (2005).

Monthly meteorological summaries are available at www.science.smith.edu/~aguswa/research.html, and more information can be obtained from Prof. Andrew J. Guswa (aguswa@email.smith.edu).

1 Introduction

1.1 Climate

Monteverde, Costa Rica (84°48' W Long., 10°18' N Lat., see Figure 1) lies on the leeward side of the Continental Divide on the Cordillera de Tilarán. Its climate is characterized by three seasons: wet (May though October), transitional (November through January), and dry (February through April). Climate and weather are largely influenced by the migration of the Intertropical Convergence Zone (ITCZ), as well as by polar cold fronts, Pacific low-pressure systems, nearby tropical depressions, and the trade winds (Clark et al., 2000).

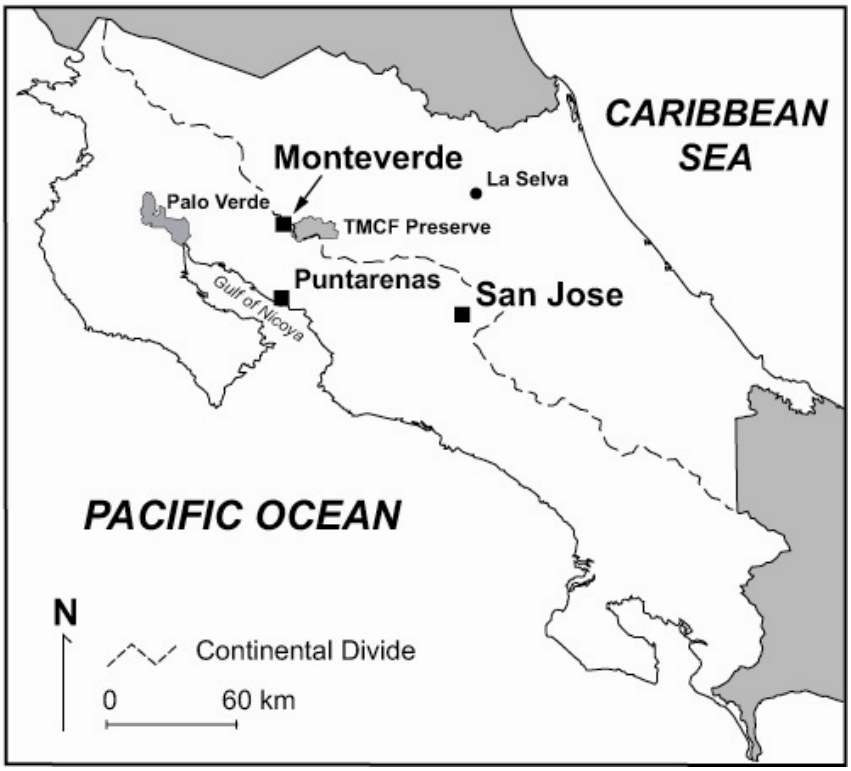

Figure 1. Monteverde, Costa Rica lies on the Continental Divide northwest of San Jose.

From May through October (the wet season), the ITCZ migrates over Costa Rica bringing intense convective precipitation events. Rainfall is heaviest during June and September-October and eases slightly during the veranillo or "little summer" in July and August. During the transitional and dry seasons, the ITCZ is located south of Costa Rica, and moisture is brought to the region via northeasterly trade winds from the Caribbean Sea (Clark et al., 2000). Orographic clouds spill over the continental divide, bringing fog and drizzle, and rainfall decreases rapidly going west into the rain shadow of the mountains.

1.2 Additional Meteorological Data Sources

The primary sources for historical meteorological information about Monteverde are daily rainfall records from J. Campbell and A. Pounds measured at the Campbell Farm (see Figure 2) since 1973 (published in Clark et al., 2000 and Pounds et al., 1999). Based on these rainfall data from 1973 to 2005 (Pounds, personal communication, 2006), mean annual precipitation is 2705 mm, with a minimum and maximum annual precipitation of 1973 mm (in 1994) and 3632 mm (in 2005), respectively.

The Organization for Tropical Studies (OTS) maintains meteorological stations within Palo Verde National Park (10°21' N, 85°21' W) adjacent to the Tempisque River on the Pacific side of Costa Rica and at La Selva (10°26' N, 83°59' W) on the Atlantic Side (see Figure 1). Data from the OTS sites indicate that La Selva receives an average of 4240 mm of annual precipitation, while Palo Verde receives 1017 mm. The two regions differ not only in precipitation totals but also in seasonal precipitation. Sixty percent of La Selva's annual precipitation and eighty-seven percent of Palo Verde's annual precipitation falls during the wet season. The average temperature at La Selva is 26°C while the average temperature at Palo Verde is 28°C. The station at Palo Verde also measures other variables including wind speed, relative humidity, and solar radiation. Average values for these variables are 0.8 m/s, 80%, and 233 W/m^2, respectively (Organization for Tropical Studies, 2005).

The World Meteorological Organization (2006) provides rainfall data for the cities of Puntarenas and Guapiles, Costa Rica. In Puntarenas, south of Monteverde on the Pacific coast at the mouth of the Gulf of Nicoya, the mean annual rainfall is 1600 mm (determined from records from 1936-2000) with 87% falling during the wet season. In Guapiles, east of Monteverde on the Caribbean side, the mean annual rainfall is 4577 mm (determined from records from 1964-1998) with 59% falling during the wet season.

1.3 Site Description

Since 11 June 2004, Prof. Andrew Guswa and Amy Rhodes from Smith College have operated a Campbell Scientific meteorological station on the roof of the Monteverde Institute (see Figures 2 and 3). This station records precipitation, temperature, relative humidity, wind speed, and solar radiation at ten-minute intervals. From June 2003 through June 2004, the meteorological station was located in a forest clearing near the Monteverde Institute (Johnson et al., 2005).

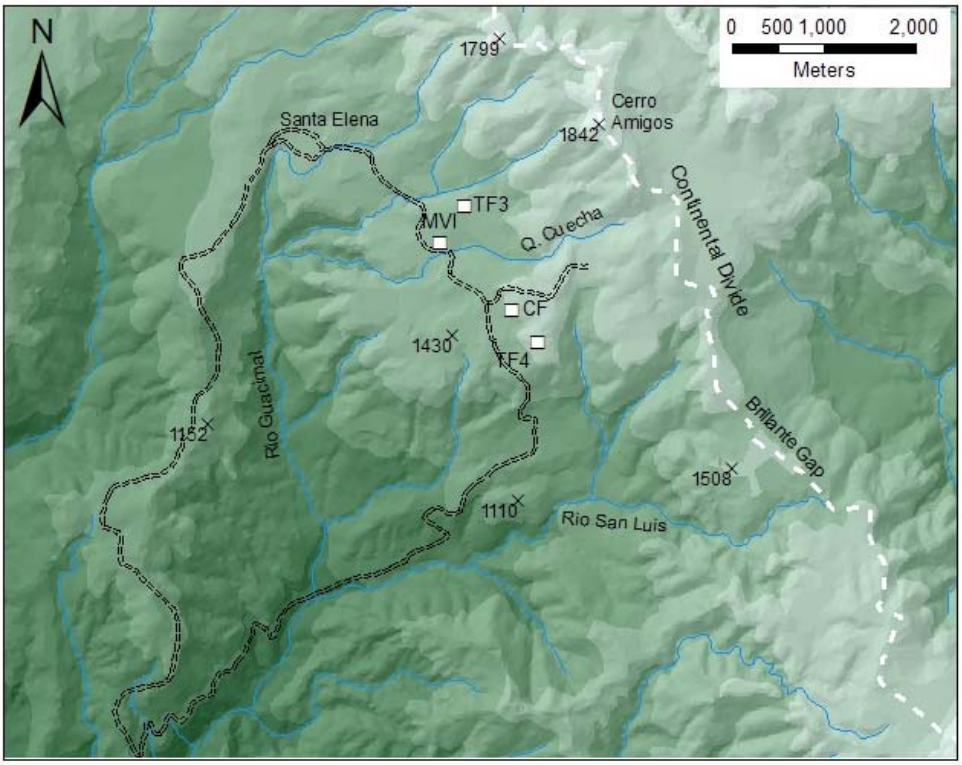

Figure 2. The met station is located on the roof of the Monteverde Institute (indicated by "MVI") in Monteverde, Costa Rica. Additional rain data are recorded at the Campbell Farm (indicated by "CF", location approximate).

Figure 3. The red oval identifies the meteorological station at the Monteverde Institute that has been in operation since 11 June 2004.

2 Meteorological Data: 2005

2.1 Precipitation

Precipitation at the Monteverde Institute is measured using a Campbell Scientific 8" siphoning tipping-bucket rain gauge. The bucket tips when 0.01 in (0.254 mm) of rainfall accumulates, and a data logger records the observed rainfall depths over 10-minute intervals. The rain gauge has a precision of +/- 2% for rainfall intensities up to 19.7 in/hr (500 mm/hr). The rain gauge is not designed to measure cloud-water interception, and the recorded amounts may underestimate the total hydrologic input. The data from this recording rain gauge are compared with results from a manual gauge, with accumulations measured at approximately 8 am on regular work days by Marlene Leiton Campbell of the Monteverde Institute (see Appendix B for the complete record of manual measurements).

Rainfall measured at the met station in 2005 totaled 3791 mm, the highest total on record (1973-present). From the period 3 January 2005 through 23 December 2005, the rainfall accumulation in the non-recording gauge totaled 3563 mm. This differs by 192 mm or 5% from the 3755 mm measured by the recording gauge over the same period. In 2005, there were 286 days with rain, with a mean daily precipitation of 13.3 mm on those days. Rainfall during the rainy season was 3103 mm or 82% of the annual precipitation, while the dry season experienced 109 mm of precipitation. For comparison, the rainy and dry seasons in 2004 saw 1715 mm and 212 mm of rain, respectively (Johnson, et al., 2005).

Table 1 presents seasonal rainfall statistics; Table 2 presents monthly rainfall depths and number of days with rain (at least one tip). Figures 4 and 5 present the daily and monthly precipitation in Monteverde. These figures show clearly the seasonal variation in rainfall. Figure 4 also shows the close match between the recording and non-recording gauges at the Monteverde Institute. Figure 5 includes monthly rainfall as measured at the Campbell Farm (Pounds, personal communication, 2006). The differences between rainfall at the Monteverde Institute and the Campbell Farm are generally small but show an interesting seasonal pattern. The top graph in Figure 5 shows that the Campbell Farm, which lies closer to the Brillante Gap (see Figure 2), receives slightly more rainfall during the dry season and slightly less during the wet season than what arrives at the Monteverde Institute.

Figure 6 below displays a histogram showing the frequency of tipping-bucket tips within each hour of the day for the wet and dry seasons. The dry season is characterized by rain events that occur throughout the day with a slightly greater fraction of the precipitation arriving at night (74% of dry-season rain came between 5 pm and 5 am). The wet season, in contrast, shows strong evidence of afternoon convection, with 64% of the wet-season rainfall arriving between the hours of 1 pm and 7 pm.

Table 1. Seasonal precipitation at the Monteverde Institute, Monteverde, Costa Rica, 2005.

Season	Months	Total rain (mm)	% of days with rain	Avg. rain on rainy days (mm)	Wettest day (mm)
Dry	Feb-Apr	109	51	2.4	11.2
Wet	May-Oct	3103	90	18.8	92.7
Annual	Jan-Dec	3791	78	13.3	92.7

Table 2. Monthly precipitation at the Monteverde Institute, Monteverde, Costa Rica. The first number represents the depth of rainfall in mm, and the second number indicates the number of days with rain.

	2004	2005	Average
January		254.8 (27)	254.8 (27)
February		45.7 (24)	45.7 (24)
March		21.1 (11)	21.1 (11)
April		42.2 (10)	42.2 (10)
May		333.5 (20)	333.5 (20)
June		605.0 (29)	605.0 (29)
July	199.4 (29)	327.7 (30)	263.6 (30)
August	221.5 (26)	318.8 (27)	270.2 (27)
September	585.2 (27)	539.8 (29)	562.5 (28)
October	404.4 (28)	978.4 (30)	691.4 (29)
November	183.4 (24)	250.7 (27)	217.1 (26)
December	226.6 (21)	73.2 (22)	149.9 (22)
Total		3971 (286)	3457 (283)

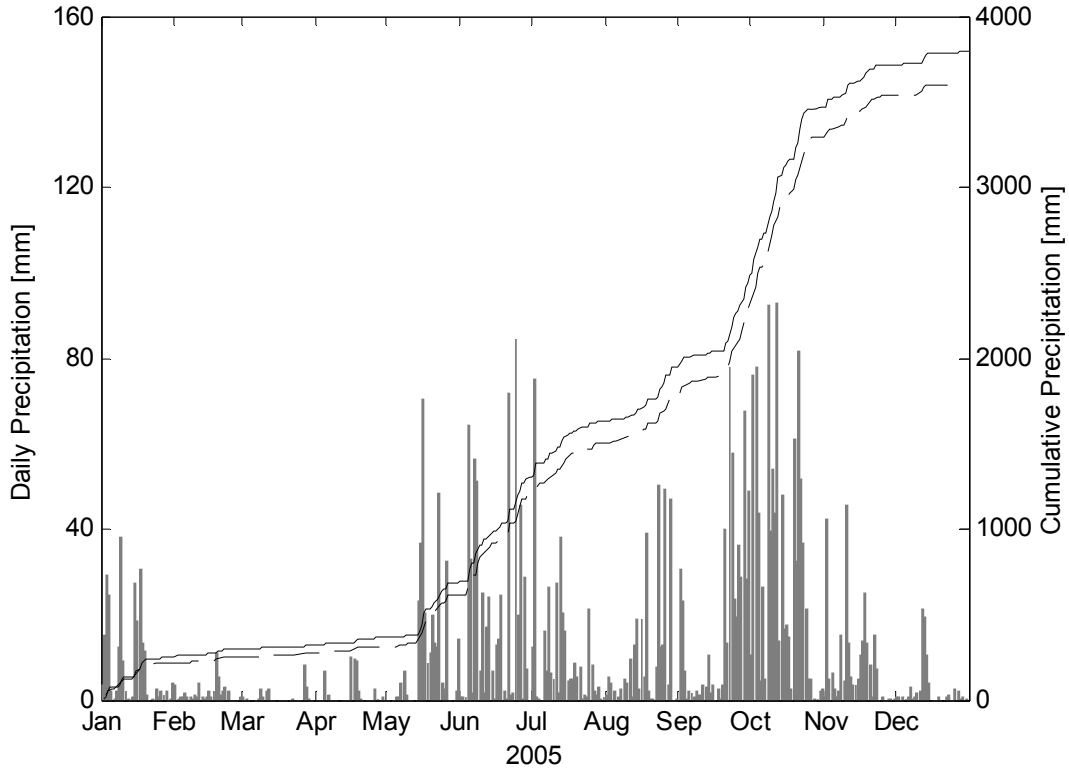

Figure 4. Daily and cumulative precipitation at the Monteverde Institute, Monteverde, Costa Rica from 1 January 2005 through 31 December 2005. The solid cumulative line and the daily values are data recorded by the meteorological station atop the Institute. The dashed cumulative line represents measurements from a manual gauge on the front lawn of the Institute, as measured by Marlene Leiton Campbell.

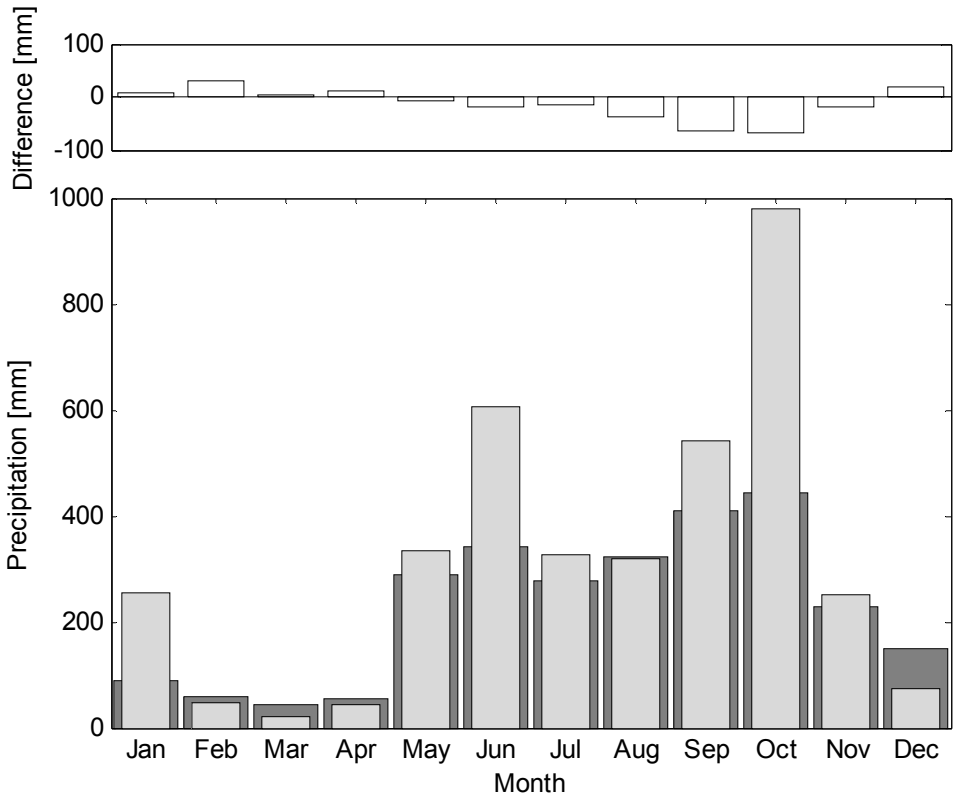

Figure 5. Monthly precipitation for Monteverde, Costa Rica. The light bars represent monthly precipitation for 2005 measured at the Monteverde Institute. The dark bars represent the average monthly precipitation from 1973-2005 measured at the Campbell Farm (Pounds, personal communication, 2006). The open bars in the top figure represent the differences in measured rainfall for 2005 between the Campbell Farm and the Monteverde Institute (quantified as CF-MVI).

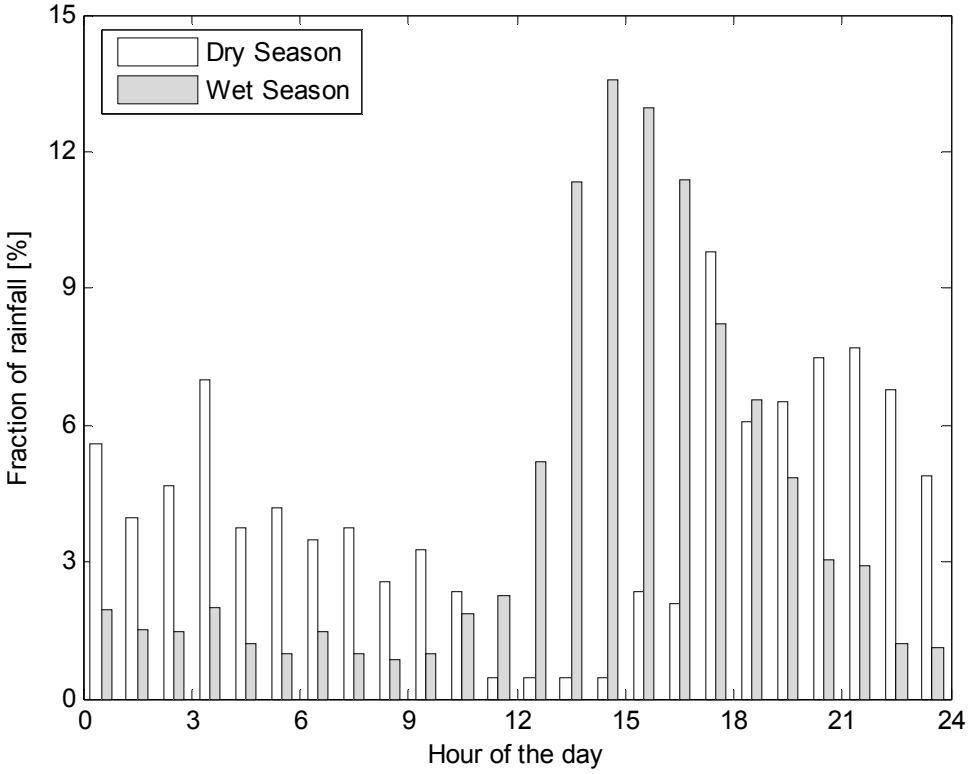

Figure 6. Timing of rainfall events at the Monteverde Institute, Monteverde, Costa Rica in 2005. Rainfall is measured with a tipping-bucket rain gauge that tips whenever 0.254 mm of rainfall accumulates. The histogram displays the fraction of tips that occurred within each hour for the dry and wet seasons.

2.2 Temperature and Humidity

Mean annual temperature in Monteverde during 2005 was 17.8°C. The warmest and coolest days were 20.3°C and 12.9°C**,** respectively. Prior to 24 June 2005, the humidity sensor was not working properly. The mean humidity for the months of July through December 2005 was 89%. Figure 7 displays the average daily temperature, daily temperature range, and average daily humidity. Table 3 presents monthly climate data including mean temperature and warmest and coolest days. Daily temperature and humidity data can be found in Appendix A. The Vaisala temperature and relative humidity probe has a precision of ±2% for humidity between 10% and 90%, and ±3% for humidity greater than 90%.

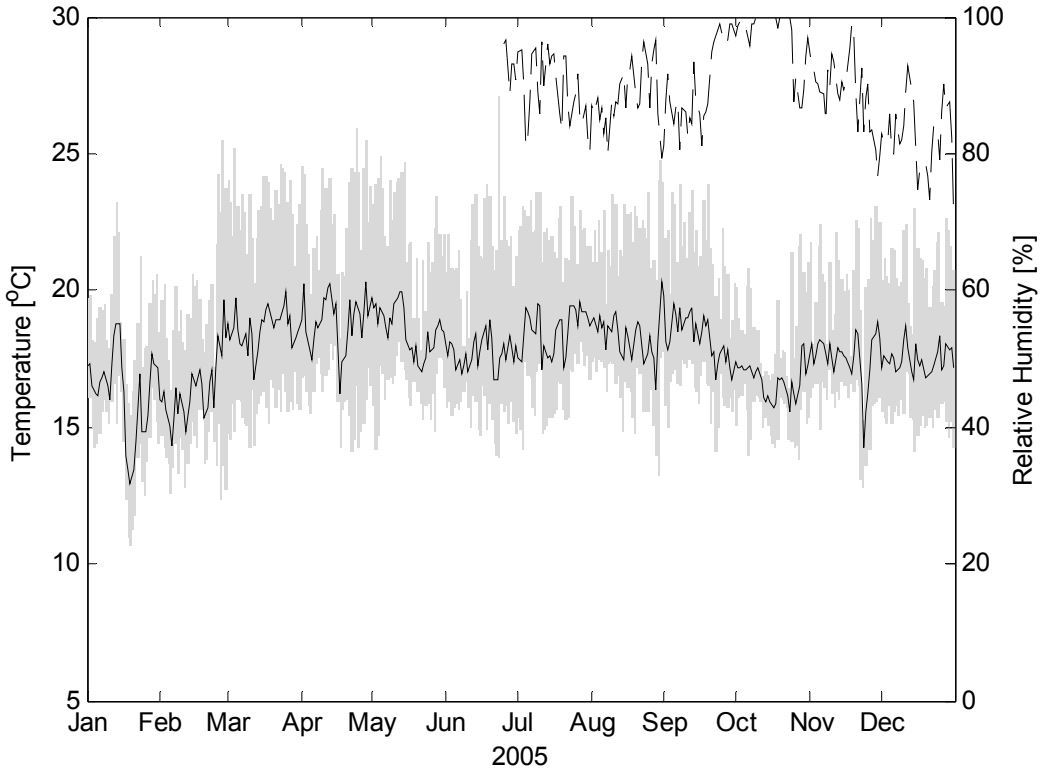

Figure 7. Daily mean temperature (solid line) and relative humidity (dashed line) for 2005 as measured at the Monteverde Institute, Monteverde, Costa Rica. The gray bars represent the temperature range for each day.

Table 3. Monthly data for temperature, humidity, wind speed, and solar radiation at the Monteverde Institute, Monteverde, Costa Rica, 2005.

	Mean temperature (°C)	Warmest day (°C)	Coolest day (°C)	Mean humidity (%)	Mean wind speed[2] (m/s)	Fraction without wind[3] (%)	Mean solar radiation (W/m^2)
January	16.3	18.8	12.9	N/A	3.5	0	204
February	16.4	19.7	14.3	N/A	3.3	2	229
March	18.6	20.0	16.7	N/A	1.9	1	218
April	18.9	20.3	16.2	N/A	2.3	8	211
May	18.6	20.0	17.0	N/A	1.7	24	152
June	17.7	19.0	16.8	N/A	1.0	43	114
July	18.5	19.6	17.1	89.3	1.8	25	145
August	18.4	20.3	16.4	88.3	1.8	13	142
September	18.2	19.5	16.8	90.3	1.6	23	135
October	16.7	18.1	15.6	97.6	1.0	41	80
November	17.5	18.8	14.2	88.9	1.8	12	129
December	17.5	18.7	16.8	82.4	2.0	9	172
Annual	17.8	20.3	12.9	89.1[1]	2.0	17	161

[1] The annual mean humidity includes data from July through December.

[2] The mean wind speed is computed from data during periods when the wind speed was greater than 0.447 m/s.

[3] The fraction of time without wind indicates the fraction of each month for which the wind speed was less than or equal to 0.447 m/s.

2.3 Wind Speed

The Met-One anemometer atop the Monteverde Institute has an initiation threshold of 0.447 m/s and a precision of ±0.11 m/s. For wind speeds at or below this threshold, a value of 0.447 m/s is recorded. Therefore, we present average wind speeds for periods when the wind speed is greater than 0.447 m/s along with the fraction of time that the wind speed is at or below 0.447 m/s. Figure 8 presents daily average wind speed along with the fraction of each day without wind. Table 3 presents monthly values of these quantities. Daily data can be found in Appendix A.

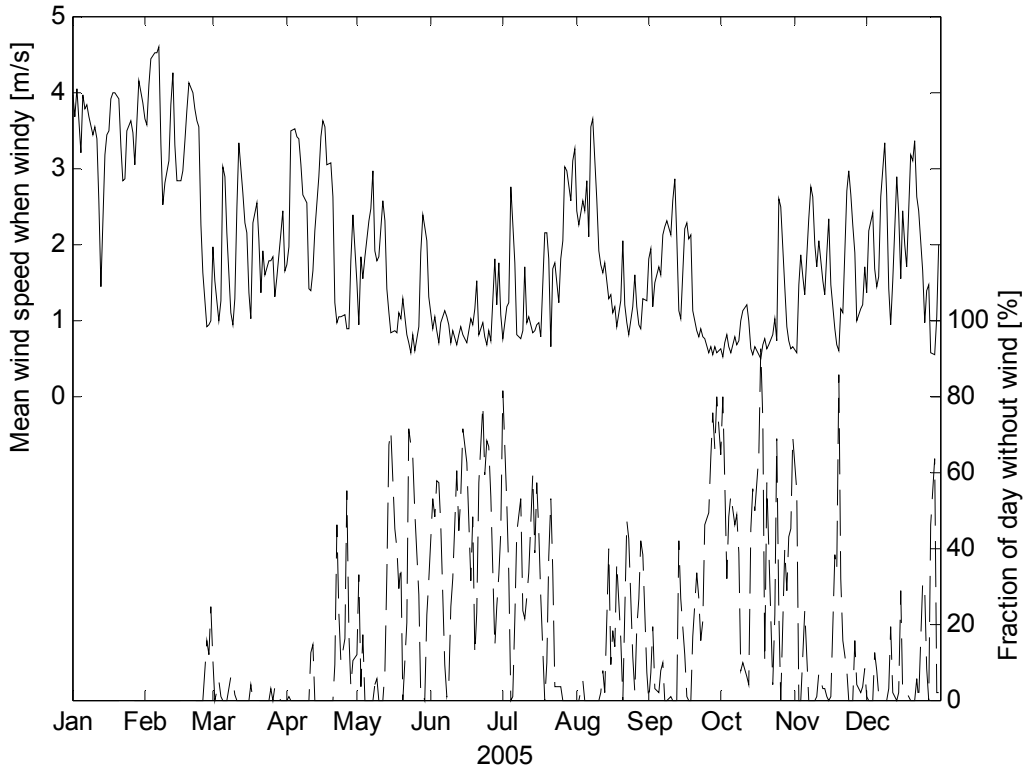

Figure 8. Daily average wind speed for periods with wind (wind speed greater than 0.447 m/s) and fraction of each day without wind (wind speed ≤ 0.447 m/s) at the Monteverde Institute, Monteverde, Costa Rica for 2005.

2.4 Solar Radiation

The average daily radiation in Monteverde during 2005 was 161 W/m^2 or 13.9 MJ/m^2. Figure 9 provides the average daily radiation rate (W/m^2) and the maximum daily radiation rate (W/m^2) as measured at the Monteverde Institute in 2005. Monthly data are available in Table 3, and daily data are presented in Appendix A. The Li-Cor silicon pyranometer has a precision of ±3%.

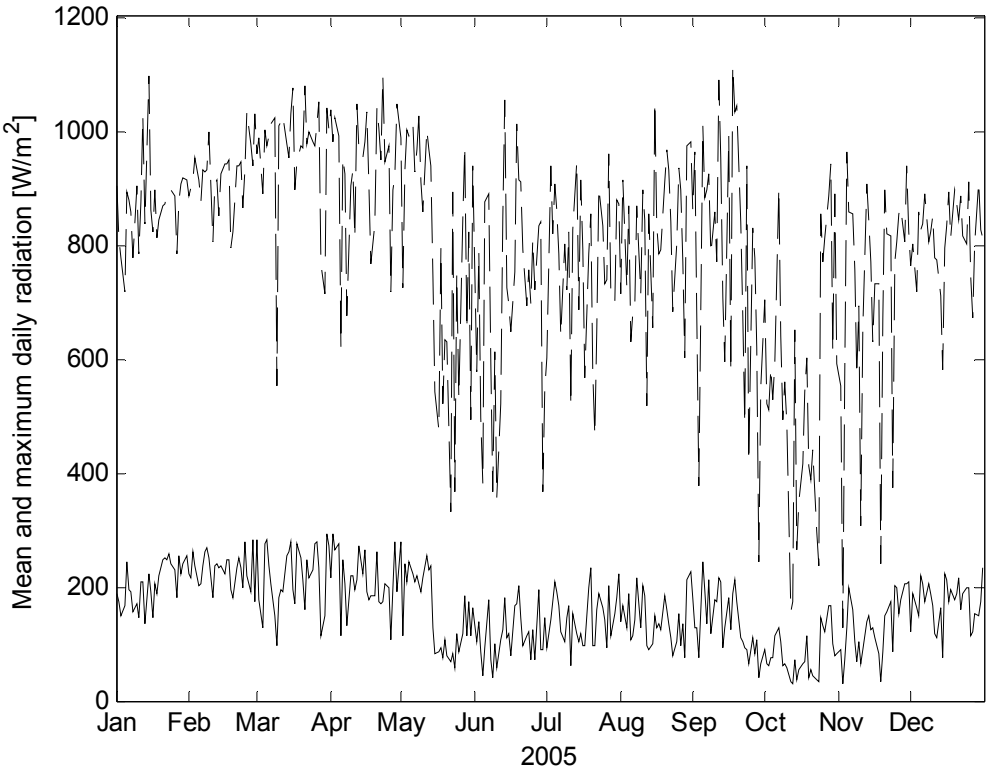

Figure 9. Daily average (solid line) and maximum (dashed line) solar radiation (W/m^2) at the Monteverde Institute, Monteverde, Costa Rica in 2005.

Acknowledgments

The authors wish to thank Ilona Johnson ’06 for writing the first meteorological report (Johnson et al., 2005) and providing the template for this report, Marlene Leiton Campbell for measuring daily rainfall, and the Monteverde Institute for providing the physical space and power for the meteorological station.

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Appendix A: Monthly meteorological summaries

Monthly Climate Summary - January 2005

Day	Mean Temp Deg.C	Max Temp Deg.C	Time Max Temp	Min Temp Deg.C	Time Min Temp	Daily Rain (mm)	Max Rain Rate (mm/hr)	Time Max Rain	Mean Wind Speed (m/s)	Time w/ No Wind (%)	Mean Solar Rad (W/m2)	Max Solar Rad (W/m2)	Time Max Rad
1	17.2	19.7	1320	16.1	210	3.6	1.5	2320	3.9	0	187	905	1150
2	17.3	19.8	1220	16.1	530	15.0	3.0	2350	3.7	0	174	811	1220
3	16.5	18.2	1400	15.0	640	29.2	4.6	1640	4.0	0	148	777	1320
4	16.2	18.1	930	14.3	1800	24.6	4.6	1250	3.2	0	167	717	1340
5	16.1	19.0	1510	14.4	400	2.0	1.5	320	4.0	0	245	892	1200
6	16.7	19.4	1300	14.8	100	0.3	1.5	750	3.8	0	194	878	1210
7	16.8	19.3	1500	15.6	400	2.0	1.5	2200	3.8	0	191	858	1220
8	17.0	19.5	1400	16.0	2020	12.2	4.6	1950	3.7	0	156	776	1340
9	16.5	18.2	1320	15.6	2350	38.1	10.7	200	3.4	0	171	904	1320
10	16.0	17.9	1040	15.1	510	9.1	4.6	10	3.5	0	146	784	1100
11	17.3	19.9	1510	15.9	40	2.0	1.5	2140	3.4	0	207	876	1210
12	18.3	22.0	1330	16.6	330	0.3	1.5	40	2.6	0	207	1027	1010
13	18.7	23.3	850	15.1	610	0.0	0.0	2350	1.4	0	135	838	1150
14	18.8	22.1	1250	16.9	210	0.8	1.5	2340	3.2	0	223	1097	1150
15	17.2	18.8	1520	16.3	630	27.4	7.6	430	3.4	0	190	861	1100
16	16.3	18.2	1430	14.4	2350	18.3	7.6	510	3.5	0	145	824	1030
17	14.0	16.6	1410	12.3	2340	30.5	4.6	540	3.9	0	204	895	1140
18	13.5	15.9	1500	10.9	2350	13.2	3.0	1150	4.0	0	186	813	1140
19	12.9	15.4	1240	10.7	510	11.4	3.0	1440	4.0	0	220	843	1210
20	13.4	16.3	1320	11.2	650	1.3	1.5	540	3.9	0	248	867	1210
21	14.5	17.5	1130	11.8	210	0.0	0.0	2350	3.3	0	249	871	1130
22	15.6	18.8	1340	13.9	10	0.3	1.5	840	2.8	0	248	890	1150
23	16.9	21.3	1440	14.4	50	0.0	0.0	2350	2.8	0	257	891	1140
24	14.8	17.2	1330	13.0	730	2.8	1.5	2340	3.5	0	240	895	1150
25	14.8	17.9	1350	12.5	130	0.8	1.5	350	3.6	0	229	886	1130
26	15.4	17.9	1320	13.7	330	2.3	1.5	2320	3.4	0	181	785	1310
27	16.6	19.5	1150	14.6	630	1.0	1.5	440	3.0	0	254	876	1210
28	17.7	20.4	1440	16.4	40	2.0	1.5	2350	3.6	0	222	906	1200
29	17.3	19.9	1230	16.0	650	0.0	0.0	2350	4.1	0	239	916	1250
30	17.1	20.6	1240	15.2	2350	0.3	1.5	600	3.9	0	253	914	1150
31	16.0	18.5	1000	14.4	640	4.1	3.0	2340	3.6	0	222	885	1130
Month Tot.	16.3	23.3		10.7		254.8	10.7		3.5	0	204	1097	

Monthly Climate Summary - February 2005

Day	Mean Temp Deg.C	Max Temp Deg.C	Time Max Temp	Min Temp Deg.C	Time Min Temp	Daily Rain (mm)	Max Rain Rate (mm/hr)	Time Max Rain	Mean Wind Speed (m/s)	Time w/ No Wind (%)	Mean Solar Rad (W/m2)	Max Solar Rad (W/m2)	Time Max Rad
1	15.9	19.7	1320	14.7	2250	3.3	1.5	420	3.6	0	215	900	1120
2	16.3	20.3	1100	14.2	140	0.3	1.5	2140	4.1	0	262	915	1150
3	15.6	18.3	1440	13.9	2010	0.5	1.5	2300	4.4	0	239	953	1140
4	15.1	17.5	1210	13.6	2340	0.5	1.5	2250	4.5	0	201	915	1150
5	14.3	16.4	1400	12.5	2210	1.5	1.5	2150	4.5	0	204	875	1140
6	15.3	18.6	1340	13.5	0	0.5	1.5	500	4.6	0	235	931	1150
7	16.5	20.2	1310	14.4	2350	0.5	1.5	2320	3.3	0	261	927	1150
8	15.5	18.5	1420	13.3	300	0.3	1.5	200	2.5	0	268	931	1200
9	16.2	19.3	1440	14.6	2050	1.3	1.5	850	2.8	0	250	997	1200
10	15.6	18.1	1410	14.1	2100	0.8	1.5	2340	3.1	0	182	806	1120
11	14.8	17.8	1330	12.8	400	3.8	1.5	1840	3.8	0	237	908	1220
12	15.4	19.1	1140	13.7	240	0.8	1.5	2250	4.2	0	241	914	1150
13	15.9	19.0	1500	14.4	710	0.3	1.5	2230	3.3	0	234	850	1240
14	16.9	20.6	1450	15.2	820	0.5	1.5	2110	2.8	0	236	926	1210
15	16.5	20.2	1420	14.7	2300	2.3	1.5	950	2.8	0	222	942	1140
16	16.8	20.4	1330	14.3	320	0.5	1.5	2240	3.0	0	247	942	1130
17	17.1	19.7	1410	15.7	500	2.3	1.5	2320	3.4	0	247	950	1140
18	16.6	18.2	1410	15.6	2040	11.2	3.0	950	3.8	0	195	796	1320
19	15.4	17.8	1350	13.7	650	5.6	1.5	2300	4.1	0	180	823	1340
20	15.7	18.8	1450	13.8	220	1.0	1.5	2250	4.0	0	233	937	1130
21	16.7	19.7	1300	14.8	250	2.0	1.5	2340	3.8	0	252	938	1130
22	17.1	20.3	1410	15.6	0	3.0	1.5	1000	3.6	0	232	946	1110
23	15.7	17.2	1210	14.5	1800	2.3	1.5	1040	3.5	0	197	864	1210
24	17.2	21.7	1110	13.6	220	0.0	0.0	2350	2.2	0	279	932	1140
25	18.4	24.2	1430	15.1	540	0.0	0.0	2350	1.6	0	220	1035	1230
26	17.6	22.9	1140	12.3	330	0.0	0.0	2350	0.9	15	191	976	1120
27	19.7	25.5	1210	13.6	2350	0.0	0.0	2350	0.9	12	283	938	1310
28	18.3	23.8	1320	12.7	510	0.8	1.5	2020	1.0	24	174	1031	1310
Month Tot.	16.4	25.5		12.3		45.7	3.0		3.3	2	229	1035	

Monthly Climate Summary - March 2005

Day	Mean Temp Deg.C	Max Temp Deg.C	Time Max Temp	Min Temp Deg.C	Time Min Temp	Daily Rain (mm)	Max Rain Rate (mm/hr)	Time Max Rain	Mean Wind Speed (m/s)	Time w/ No Wind (%)	Mean Solar Rad (W/m2)	Max Solar Rad (W/m2)	Time Max Rad
1	18.8	24.0	1230	14.8	410	0.5	1.5	730	2.0	10	283	958	1150
2	18.2	23.2	1120	14.5	600	0.0	0.0	2350	1.5	0	177	988	1110
3	18.6	22.0	1010	15.8	430	0.3	1.5	2100	1.0	5	128	889	1010
4	19.8	25.2	1320	14.8	620	0.0	0.0	2350	1.2	1	277	1003	1300
5	18.6	23.1	1230	16.0	550	0.0	0.0	2350	3.0	0	282	973	1240
6	18.0	22.2	1430	16.0	2220	0.0	0.0	2350	2.9	0	237	992	1110
7	18.0	23.5	1300	15.4	510	0.0	0.0	2350	2.2	0	204	1012	1130
8	18.4	22.9	1430	15.1	2210	0.3	1.5	1520	1.1	6	149	1024	1040
9	17.6	21.3	1350	15.1	200	2.8	3.0	1830	0.9	5	96	554	1300
10	19.0	23.6	1330	14.3	510	0.8	1.5	1840	1.3	1	181	1009	1210
11	18.4	21.9	1300	16.4	2300	2.3	1.5	2310	2.5	0	195	1017	1310
12	16.7	20.2	1050	14.4	540	2.5	1.5	720	3.3	0	191	1026	1040
13	17.8	21.9	1240	15.5	240	0.0	0.0	2350	2.7	0	253	977	1320
14	18.5	22.9	1410	15.8	120	0.0	0.0	2350	2.3	0	262	952	1220
15	18.9	23.1	1410	16.2	620	0.0	0.0	2350	2.1	0	280	1031	1220
16	18.9	24.2	1150	16.3	40	0.0	0.0	2350	1.4	0	195	1077	1140
17	19.3	24.2	1020	15.7	2350	0.0	0.0	2350	1.0	4	169	898	1010
18	19.5	24.0	1410	15.1	110	0.0	0.0	2350	2.3	0	276	945	1210
19	18.9	23.0	1220	16.7	540	0.0	0.0	2350	2.5	0	252	973	1200
20	18.7	22.6	1410	16.4	100	0.0	0.0	2350	2.1	0	211	971	1320
21	19.0	23.6	1000	15.7	540	0.0	0.0	2350	1.4	0	160	1080	1120
22	18.9	23.1	1330	16.4	530	0.3	1.5	2350	1.9	0	249	978	1130
23	19.0	24.6	1210	15.6	440	0.0	0.0	2350	1.6	0	214	997	1210
24	19.5	24.5	1340	17.0	530	0.0	0.0	2350	1.8	0	229	980	1140
25	20.0	24.3	1340	16.3	2350	0.0	0.0	2350	1.8	3	277	974	1150
26	18.8	23.2	1300	15.6	230	0.0	0.0	2350	1.8	0	279	1014	1130
27	19.0	24.1	1440	15.9	2350	8.1	24.4	1750	1.3	3	235	1052	1040
28	17.9	22.8	1200	15.6	130	3.0	4.6	1600	1.6	1	113	765	1150
29	18.2	20.9	1210	17.0	2350	0.3	1.5	1250	2.1	0	148	714	1210
30	18.5	22.5	1310	15.8	2330	0.0	0.0	2350	2.4	0	295	1039	1310
31	18.7	23.2	1210	15.6	430	0.0	0.0	2350	1.6	0	273	1002	1210
Month Tot.	18.6	25.2		14.3		21.1	24.4		1.9	1	218	1080	

Monthly Climate Summary - April 2005

Day	Mean Temp Deg.C	Max Temp Deg.C	Time Max Temp	Min Temp Deg.C	Time Min Temp	Daily Rain (mm)	Max Rain Rate (mm/hr)	Time Max Rain	Mean Wind Speed (m/s)	Time w/ No Wind (%)	Mean Solar Rad (W/m2)	Max Solar Rad (W/m2)	Time Max Rad
1	18.9	24.6	1320	16.8	350	0.0	0.0	2350	1.7	0	217	1038	1220
2	20.2	24.2	1350	16.9	30	0.0	0.0	2350	2.0	1	291	982	1120
3	18.5	22.4	1410	16.3	2230	0.0	0.0	2350	3.5	0	266	1022	1230
4	17.8	21.4	1410	15.8	620	0.0	0.0	2350	3.5	0	274	990	1230
5	17.5	19.9	1330	15.5	630	6.6	9.1	340	3.4	0	116	619	1300
6	18.2	21.6	1330	16.3	530	1.0	1.5	640	3.4	0	248	953	1210
7	18.8	22.0	1510	17.3	340	0.0	0.0	2350	3.1	0	206	923	1040
8	18.6	20.8	1010	17.5	1920	0.0	0.0	2350	2.6	0	131	676	1010
9	18.9	23.0	1400	17.0	2120	0.0	0.0	2350	2.5	0	220	903	1250
10	19.7	24.5	1230	16.3	600	0.0	0.0	2350	1.4	0	220	930	1210
11	19.7	23.8	1310	16.9	2310	0.0	0.0	2350	1.4	13	196	812	1130
12	20.1	24.1	1100	17.1	50	0.0	0.0	2350	1.6	15	212	1048	1050
13	20.2	24.1	1350	18.1	600	0.0	0.0	2350	2.2	0	270	969	1120
14	19.1	22.4	1410	17.4	610	0.0	0.0	2350	2.9	0	224	952	1110
15	19.5	22.8	1340	17.9	2240	0.0	0.0	2350	3.4	0	265	980	1050
16	17.9	20.6	1140	16.0	2350	9.9	3.0	2050	3.6	0	193	1033	1200
17	16.2	18.3	1120	14.3	40	9.4	1.5	2350	3.5	0	177	905	1030
18	17.4	20.7	1410	15.6	620	9.1	1.5	2320	3.0	0	183	766	1400
19	17.6	20.5	1430	15.9	20	2.0	1.5	630	3.1	0	184	838	1320
20	18.6	22.3	1350	16.0	540	0.3	1.5	50	2.6	0	260	1042	1200
21	19.6	24.0	1030	15.4	2340	0.0	0.0	2350	1.2	9	172	1007	1140
22	18.4	24.5	1100	14.1	500	0.0	0.0	2350	1.0	46	171	950	1050
23	19.1	24.4	1220	14.6	300	0.0	0.0	2350	1.0	23	175	1095	1100
24	19.6	25.9	1150	16.5	2120	0.0	0.0	2350	1.0	10	204	946	1200
25	19.1	24.4	1230	14.2	250	0.0	0.0	2350	1.1	16	200	972	1140
26	18.3	21.5	1020	14.8	210	2.8	4.6	2130	0.9	55	108	717	1010
27	19.2	24.5	1120	15.1	2230	0.3	1.5	0	0.9	17	198	896	1020
28	20.3	25.5	1400	16.0	120	0.0	0.0	2350	1.8	3	278	921	1120
29	19.0	22.5	1450	17.2	420	0.8	3.0	940	2.4	10	192	1047	1110
30	19.7	23.8	1310	16.5	450	0.0	0.0	2350	1.5	12	278	987	1220
Month Tot.	18.9	25.9		14.1		42.2	9.1		2.3	8	211	1095	

Monthly Climate Summary - May 2005

Day	Mean Temp Deg.C	Max Temp Deg.C	Time Max Temp	Min Temp Deg.C	Time Min Temp	Daily Rain (mm)	Max Rain Rate (mm/hr)	Time Max Rain	Mean Wind Speed (m/s)	Time w/ No Wind (%)	Mean Solar Rad (W/m2)	Max Solar Rad (W/m2)	Time Max Rad
1	19.3	23.2	1120	15.8	550	0.0	0.0	2350	0.9	33	114	725	1030
2	19.5	23.9	1220	14.2	250	0.0	0.0	2350	1.8	3	240	931	1210
3	18.8	24.1	1310	14.7	440	0.0	0.0	2350	1.5	17	208	1002	1140
4	19.4	24.9	1340	17.2	450	0.0	0.0	2350	1.8	0	244	991	1140
5	19.0	23.8	1350	16.9	2050	0.5	1.5	1810	2.3	0	224	1013	1030
6	18.7	22.0	1150	16.0	610	0.5	1.5	2300	2.5	0	207	927	1120
7	18.3	21.6	1200	16.7	430	3.8	1.5	2320	3.0	0	220	965	1240
8	19.0	24.0	1230	16.8	2340	6.9	7.6	1620	1.9	4	205	1026	1140
9	18.8	22.6	1350	16.6	150	1.3	4.6	1710	1.8	6	190	909	1250
10	19.5	23.6	1410	16.9	430	0.0	0.0	2350	1.8	0	216	859	1340
11	19.8	23.9	1400	17.6	150	0.0	0.0	2350	2.6	0	253	1003	1220
12	20.0	24.1	1220	18.1	520	0.0	0.0	2350	2.3	8	229	965	1200
13	20.0	24.4	1200	17.4	110	0.0	0.0	2350	1.4	33	238	938	1150
14	19.3	24.7	1120	17.1	2350	23.1	62.5	1310	1.1	67	127	745	1110
15	18.2	21.1	1010	16.7	410	36.8	68.6	1220	0.8	71	83	541	1000
16	17.8	21.7	1050	16.1	440	70.4	93.0	1300	0.9	45	87	477	950
17	17.9	21.8	1140	15.8	430	20.6	25.9	2140	0.8	40	94	794	1130
18	17.4	19.0	1400	16.7	250	8.6	13.7	440	1.1	29	76	522	1330
19	18.0	21.2	910	16.3	550	10.9	9.1	1710	1.0	35	108	632	1150
20	17.2	19.0	1220	16.3	640	20.1	29.0	1600	1.3	0	80	630	1150
21	17.0	17.9	1210	15.9	2340	13.5	6.1	2020	0.8	20	67	331	1130
22	17.3	21.1	1000	15.3	300	12.4	7.6	1330	0.7	72	83	892	950
23	17.5	19.2	930	15.8	530	48.5	32.0	310	0.6	67	59	368	710
24	18.5	21.8	1100	15.9	540	4.1	9.1	1700	0.8	64	117	749	850
25	17.8	20.7	1210	15.3	530	2.5	4.6	1740	0.6	49	85	532	1200
26	17.9	21.1	1100	16.2	2120	32.5	22.9	1510	0.9	28	118	848	840
27	18.6	22.3	1130	14.8	110	0.0	0.0	2350	1.9	1	186	973	1120
28	18.7	23.4	1150	16.9	700	0.0	0.0	2350	2.4	1	115	653	1210
29	19.0	22.1	1250	17.6	500	0.0	0.0	2350	2.2	0	173	824	1240
30	18.6	21.2	1410	17.4	350	2.0	1.5	2340	2.0	22	114	494	1000
31	18.5	22.1	1220	16.4	2350	14.5	6.1	220	1.3	31	162	937	1110
Month Tot.	18.6	24.9		14.2		333.5	93.0		1.7	24	152	1026	

Monthly Climate Summary - June 2005

Day	Mean Temp Deg.C	Max Temp Deg.C	Time Max Temp	Min Temp Deg.C	Time Min Temp	Daily Rain (mm)	Max Rain Rate (mm/hr)	Time Max Rain	Mean Wind Speed (m/s)	Time w/ No Wind (%)	Mean Solar Rad (W/m2)	Max Solar Rad (W/m2)	Time Max Rad
1	17.6	20.7	800	15.7	500	0.8	1.5	2350	0.9	53	105	578	810
2	18.1	22.1	900	15.9	310	0.8	1.5	2240	1.1	48	139	786	920
3	18.0	20.8	1310	15.4	500	0.5	1.5	2330	0.8	58	85	498	1300
4	17.8	20.8	1010	15.7	2230	64.3	27.4	1400	0.7	57	43	380	1000
5	17.1	20.8	1110	15.9	2000	32.8	21.3	1510	1.0	46	92	877	1120
6	17.4	21.5	1010	15.6	620	1.5	1.5	2130	1.1	9	176	888	1020
7	17.0	19.6	940	16.0	2040	56.4	16.8	1230	1.0	1	71	592	1210
8	17.2	18.0	1130	16.3	20	51.3	19.8	1320	0.9	3	41	368	1130
9	17.7	19.9	1030	16.6	540	6.6	10.7	1150	0.7	24	100	613	840
10	17.0	18.3	1300	15.7	2330	25.1	9.1	1050	0.8	32	58	358	1240
11	17.5	21.9	1100	15.0	510	1.8	1.5	2350	0.7	60	106	522	1240
12	18.1	23.1	1000	16.2	140	17.3	19.8	2000	0.8	44	125	852	1020
13	18.4	23.5	1130	15.9	450	23.9	22.9	1400	0.9	53	182	1054	1110
14	17.3	21.6	1000	14.9	610	6.9	12.2	1440	0.8	72	111	725	1120
15	17.7	21.3	1410	14.7	520	0.3	1.5	640	0.8	67	119	697	1130
16	18.2	21.2	840	16.5	440	13.0	19.8	1420	0.7	63	80	646	850
17	18.7	23.4	1310	16.2	2350	14.2	15.2	1740	1.0	31	167	751	930
18	17.8	23.9	1140	14.9	520	24.4	16.8	1610	0.9	48	170	1014	1130
19	19.0	23.5	1350	15.9	220	2.0	4.6	1810	1.2	12	201	913	1020
20	18.3	21.6	1320	15.3	2310	0.3	1.5	1920	1.5	23	145	910	1110
21	16.8	20.8	1020	14.4	2200	71.6	24.4	1640	0.8	57	97	791	1340
22	16.8	21.4	1240	14.0	450	1.0	1.5	2320	1.0	78	115	694	1220
23	17.5	27.1	940	13.9	250	1.5	3.0	1340	0.8	59	120	756	1040
24	17.7	21.8	1250	15.8	510	84.6	108.2	1510	0.7	68	71	695	1240
25	18.1	23.5	1040	15.5	220	20.1	24.4	1550	0.9	67	124	810	1030
26	17.5	21.8	930	15.8	2340	45.7	22.9	1240	0.7	53	71	720	920
27	18.4	21.6	1200	15.2	400	0.3	1.5	230	1.8	14	195	835	1100
28	17.9	22.0	1010	15.9	2120	29.0	80.8	1320	1.2	24	88	840	1000
29	17.4	20.2	1410	15.2	430	7.4	15.2	700	1.8	33	90	367	1220
30	18.0	21.3	1110	14.8	350	0.0	0.0	2350	1.1	44	147	547	920
Month Tot.	17.7	27.1		13.9		605.0	108.2		1.0	43	114	1054	

Monthly Climate Summary - July 2005

Day	Mean Temp Deg.C	Max Temp Deg.C	Time Max Temp	Min Temp Deg.C	Time Min Temp	Daily Rain (mm)	Max Rain Rate (mm/hr)	Time Max Rain	Mean Rel. Humid (%)	Max Rel. Humid (%)	Time Max Humid	Min Rel. Humid (%)	Time Min Humid	Mean Wind Speed (m/s)	Time w/ No Wind (%)	Mean Solar Rad (W/m2)	Max Solar Rad (W/m2)	Time Max Rad
1	17.6	22.2	900	15.3	2320	12.4	18.3	1200	94.9	99.1	2350	77.0	900	0.8	81	92	603	900
2	17.4	22.3	1220	14.9	530	74.9	76.2	1450	95.1	99.4	650	73.5	820	1.2	51	141	938	1230
3	18.4	23.1	930	14.2	610	0.8	3.0	1950	90.1	99.5	700	59.5	920	1.2	33	174	819	1100
4	19.4	22.9	1210	17.4	2350	0.3	1.5	750	81.0	92.1	500	68.3	1210	2.8	0	209	906	1200
5	19.2	22.8	1340	16.9	520	0.0	0.0	2350	82.5	92.9	2130	69.1	1220	2.3	1	190	860	1210
6	19.0	23.3	950	16.8	550	16.3	24.4	2120	87.6	98.6	2350	56.4	740	1.7	22	165	785	1020
7	18.6	22.1	1130	15.7	150	6.9	25.9	1620	94.5	98.9	250	77.0	830	0.8	44	121	642	850
8	18.4	22.2	910	15.4	330	26.4	45.7	1350	95.4	99.1	550	78.1	910	0.7	53	103	800	1010
9	19.5	23.6	1350	17.0	400	6.3	25.9	1940	89.0	97.5	2130	70.2	1220	0.9	24	145	721	940
10	19.4	23.6	1110	17.3	0	5.1	12.2	1950	85.9	98.3	2150	68.7	1110	1.7	22	165	822	1110
11	17.1	21.1	1030	14.8	2050	27.2	53.3	1340	96.4	98.9	2200	79.5	950	1.0	27	60	519	1200
12	17.9	22.1	1040	14.9	240	1.5	4.6	1750	90.0	98.8	2340	65.1	1050	1.0	33	152	826	1030
13	17.5	22.3	1030	15.0	410	38.1	54.9	1620	96.1	99.0	650	73.2	1030	0.8	59	117	944	1040
14	17.6	21.9	1400	15.3	350	20.6	27.4	1440	93.0	99.2	400	76.9	1400	0.8	39	103	687	1130
15	17.4	22.0	1110	15.4	20	16.3	18.3	1330	94.3	98.9	2350	71.9	1110	0.9	57	119	915	1120
16	17.7	21.4	1450	15.5	600	4.3	6.1	1700	94.5	98.9	710	82.5	1440	1.0	44	97	790	1340
17	18.5	21.2	940	15.7	350	4.8	13.7	1730	91.5	98.0	2150	78.6	820	0.8	27	98	566	810
18	18.9	22.6	1330	16.6	2340	5.1	19.8	1750	85.8	96.4	1800	72.6	1330	2.2	0	198	785	950
19	19.0	23.1	1400	16.6	30	8.6	21.3	1820	83.6	98.2	2350	64.4	1630	2.1	10	232	856	1150
20	17.2	20.3	830	15.6	520	5.3	4.6	1040	94.4	98.7	630	78.5	810	1.8	38	96	576	830
21	17.5	21.2	1400	15.3	440	7.9	9.1	1840	94.2	98.5	2120	79.4	1020	0.6	53	95	464	1010
22	18.4	21.1	820	15.4	500	0.3	1.5	500	87.3	98.4	30	71.4	820	1.7	34	160	646	900
23	19.4	23.5	1300	17.1	450	1.0	1.5	2200	84.1	98.0	2020	66.5	1100	1.8	3	189	900	1220
24	19.5	23.5	1200	17.0	520	0.5	1.5	2100	87.5	96.2	510	69.3	1150	1.2	3	162	832	1150
25	19.3	22.4	1520	17.7	240	21.3	35.1	1820	88.8	96.7	1830	75.9	1420	1.8	3	144	731	1410
26	18.7	21.0	1350	17.3	740	8.4	6.1	710	91.6	96.8	840	84.7	1350	2.0	0	93	739	1340
27	19.6	22.9	1430	18.1	420	2.0	4.6	1600	85.5	93.5	310	70.9	1430	3.0	0	202	961	1100
28	19.2	22.3	1850	17.7	2330	1.0	1.5	530	84.2	94.9	620	51.0	1840	3.0	0	112	713	1340
29	19.2	22.3	1240	17.3	310	3.0	3.0	1500	87.1	93.9	210	75.3	1240	2.6	0	151	701	1140
30	19.0	21.6	1600	17.6	530	0.3	1.5	110	82.3	90.6	850	71.3	1520	3.1	0	182	880	1210
31	18.7	21.7	1130	16.7	2010	0.8	1.5	2000	80.2	90.3	1640	71.2	2350	3.2	0	223	873	1300
Month Tot.	18.5	23.6		14.2		327.7	76.2		89.3	99.5		51.0		1.8	25	145	961	

Monthly Climate Summary - August 2005

Day	Mean Temp Deg.C	Max Temp Deg.C	Time Max Temp	Min Temp Deg.C	Time Min Temp	Daily Rain (mm)	Max Rain Rate (mm/hr)	Time Max Rain	Mean Rel. Humid (%)	Max Rel. Humid (%)	Time Max Humid	Min Rel. Humid (%)	Time Min Humid	Mean Wind Speed (m/s)	Time w/ No Wind (%)	Mean Solar Rad (W/m2)	Max Solar Rad (W/m2)	Time Max Rad
1	18.8	21.0	1000	17.4	240	1.0	1.5	1250	86.9	93.9	240	71.5	0	2.4	0	139	715	950
2	19.0	22.2	1230	17.5	50	5.3	13.7	1400	85.7	94.1	1540	74.9	1330	2.3	0	168	914	1140
3	18.5	21.1	1050	17.0	2340	3.8	7.6	1310	88.0	93.9	350	79.1	1050	2.6	5	127	726	1020
4	19.1	22.6	1230	17.5	410	0.0	0.0	2350	84.8	95.6	350	72.1	1230	2.4	0	189	868	1200
5	18.7	21.4	1130	17.4	2340	2.0	3.0	1820	86.7	92.0	1820	77.5	1120	2.8	0	106	631	1120
6	18.9	22.9	1300	17.2	150	0.5	1.5	2150	82.9	93.0	1950	67.7	130	2.1	0	113	678	1300
7	17.8	19.5	940	16.3	1550	2.8	4.6	1000	85.3	91.7	820	74.5	1810	3.5	0	144	695	1320
8	18.7	21.5	1310	17.3	30	0.0	0.0	2350	80.0	88.3	2350	65.3	1300	3.6	0	215	867	1240
9	18.5	20.9	1330	17.4	310	5.1	12.2	1130	87.6	93.8	640	69.8	1500	2.6	0	130	715	1300
10	19.1	23.6	1310	17.3	1930	3.8	6.1	1820	85.7	96.1	1850	68.3	1310	1.9	0	202	896	1130
11	19.2	23.2	1350	16.6	1820	9.7	13.7	1540	87.5	97.5	1630	73.4	1330	1.7	2	186	845	1140
12	18.6	20.6	1100	16.9	1840	0.8	3.0	640	87.3	93.6	1840	72.2	1400	1.6	8	97	519	1030
13	17.8	21.5	1050	16.1	2350	12.7	18.3	640	90.2	97.1	750	77.1	1050	1.8	2	91	854	1050
14	17.4	21.3	1400	14.8	420	19.1	18.3	1530	91.7	98.2	2140	75.6	1300	1.3	40	101	655	910
15	18.6	23.2	1230	16.7	50	2.5	7.6	2300	86.8	96.8	0	67.7	1220	1.3	9	150	1051	1220
16	18.3	22.8	1330	16.4	2350	19.1	18.3	1900	91.3	98.1	2340	69.9	1330	1.1	18	129	832	1320
17	17.9	22.9	1150	16.3	350	5.6	3.0	1700	92.2	98.0	1510	71.2	1140	1.2	14	134	783	940
18	17.5	21.8	950	15.3	450	38.9	68.6	1700	94.4	98.5	2350	74.2	930	0.9	36	126	792	940
19	18.5	23.1	1120	14.8	520	2.3	12.2	1820	88.8	98.5	10	68.8	1230	1.3	16	185	911	1200
20	18.8	22.8	1220	17.2	150	0.3	1.5	2000	86.8	94.5	2030	71.2	1220	2.0	0	158	966	1210
21	18.7	22.3	1210	16.9	2350	0.3	1.5	500	87.3	96.7	920	72.0	1210	1.2	23	134	931	1200
22	18.0	22.6	1040	15.5	230	7.9	7.6	1930	93.6	98.4	2350	68.1	1040	1.0	47	110	841	1030
23	17.4	22.3	1040	15.6	1530	50.3	57.9	1430	96.5	98.5	2350	75.9	1040	0.8	42	79	682	1050
24	17.7	21.9	830	15.6	110	12.2	13.7	1410	93.0	98.6	140	71.3	830	1.2	11	103	803	1140
25	18.3	23.6	1330	15.6	100	13.0	32.0	1900	86.7	97.4	2230	67.1	1330	1.6	2	154	936	1250
26	17.8	20.9	940	16.3	540	49.3	38.1	1620	93.2	98.3	2350	77.4	740	1.2	19	97	897	1010
27	17.5	21.1	930	15.1	550	3.3	4.6	1640	95.1	98.6	620	78.8	930	0.9	26	134	771	1110
28	16.4	20.4	930	14.0	2350	47.2	36.6	1340	96.7	98.7	2350	85.6	800	0.9	42	75	601	840
29	18.1	24.0	1330	13.2	400	0.0	0.0	2350	86.0	98.9	530	65.3	1320	1.3	38	214	973	1150
30	20.3	24.7	1210	17.5	300	0.0	0.0	2350	79.3	93.3	1410	58.9	1110	1.2	7	228	979	1200
31	19.8	23.9	1340	17.8	2350	0.3	1.5	1520	81.2	89.6	610	66.1	1240	1.8	0	181	862	1250
Month Tot.	18.4	24.7		13.2		318.8	68.6		88.3	98.9		58.9		1.8	13	142	1051	

Monthly Climate Summary - September 2005

Day	Mean Temp Deg.C	Max Temp Deg.C	Time Max Temp	Min Temp Deg.C	Time Min Temp	Daily Rain (mm)	Max Rain Rate (mm/hr)	Time Max Rain	Mean Rel. Humid (%)	Max Rel. Humid (%)	Time Max Humid	Min Rel. Humid (%)	Time Min Humid	Mean Wind Speed (m/s)	Time w/ No Wind (%)	Mean Solar Rad (W/m2)	Max Solar Rad (W/m2)	Time Max Rad
1	18.1	21.9	1110	15.8	2340	30.7	24.4	1610	87.7	98.4	2350	72.3	1110	1.9	7	127	962	1150
2	17.8	22.2	1410	15.0	340	23.1	7.6	1810	91.8	98.5	610	74.0	1410	1.2	19	127	679	1010
3	18.1	19.9	1310	16.7	540	6.9	1.5	2000	87.5	97.7	810	76.1	140	1.5	3	76	379	1310
4	19.5	23.6	1100	16.9	110	0.3	1.5	2200	84.4	93.4	300	69.5	1100	1.7	2	245	1010	1220
5	19.1	23.2	1300	17.1	550	2.0	1.5	2350	86.8	97.4	2040	69.6	1000	1.6	8	196	884	1030
6	18.5	21.0	1240	16.6	300	1.5	1.5	2200	87.6	96.4	300	77.4	1240	2.1	10	135	896	1020
7	19.3	23.9	1200	16.5	150	0.5	1.5	2220	80.5	94.6	1920	54.8	1200	2.2	0	211	925	1250
8	18.6	21.7	1340	17.5	1840	2.3	1.5	2240	86.8	93.3	2110	66.8	1550	2.3	0	116	783	1100
9	19.0	22.5	1220	17.3	2140	1.0	1.5	2340	86.0	95.7	2120	73.0	1220	2.1	1	177	858	1140
10	19.0	21.2	1340	17.1	710	1.0	1.5	1930	82.5	93.7	710	73.5	1840	2.6	0	172	769	1320
11	19.2	22.9	1250	17.5	1710	3.3	1.5	2350	85.3	95.4	1600	71.7	1340	2.8	0	217	1088	1040
12	19.4	23.7	1340	17.3	2040	3.0	1.5	2310	84.4	95.3	1830	67.0	1320	2.1	0	208	951	1030
13	18.1	21.4	1100	16.4	2340	10.7	12.2	610	93.4	97.8	2110	79.2	1130	1.1	42	94	707	1000
14	18.8	22.2	1300	16.3	250	1.5	1.5	500	87.9	97.7	510	71.1	2350	1.0	26	127	594	1210
15	18.0	20.9	1140	15.9	410	3.3	3.0	410	85.9	94.5	1940	69.6	10	2.2	12	182	990	1000
16	18.5	21.3	1450	16.9	410	0.0	0.0	2350	81.1	90.4	2110	65.3	1440	2.3	1	123	578	1350
17	19.0	23.3	1230	17.4	50	2.8	1.5	2100	85.4	94.0	1610	70.6	1230	2.1	0	188	1113	1140
18	18.7	21.9	1200	16.6	540	0.3	1.5	510	86.0	93.6	400	75.9	1050	2.1	0	212	1033	1200
19	18.9	23.9	1040	16.5	2250	3.6	3.0	2350	87.4	98.2	2350	66.8	1040	1.1	17	174	1044	1220
20	17.6	21.6	1030	15.1	340	39.9	47.2	2050	94.8	98.5	320	77.7	1030	0.9	33	112	840	1100
21	17.7	20.9	830	16.3	410	13.5	13.7	1410	96.5	98.7	2350	82.2	750	0.8	26	105	670	1130
22	16.8	19.8	1320	14.1	600	78.0	27.4	40	97.2	99.2	710	86.2	950	0.9	15	92	488	1100
23	17.3	20.4	1040	15.0	130	57.9	10.7	1930	98.2	99.1	710	91.7	1040	0.8	21	88	937	1020
24	17.7	18.9	920	16.9	450	23.6	4.6	2130	98.8	99.0	2350	98.5	920	0.7	46	66	419	910
25	17.9	22.3	1240	16.1	2350	19.6	18.3	2100	96.2	99.1	640	76.4	1150	0.6	49	109	829	1130
26	17.4	20.9	1200	15.8	2340	36.3	21.3	1400	95.9	99.0	2350	82.1	850	0.6	64	82	777	850
27	17.8	20.6	1220	15.7	550	28.7	12.2	1520	96.5	99.1	610	80.4	810	0.6	76	106	621	1210
28	17.2	18.3	1240	16.1	540	67.6	16.8	1440	99.0	99.3	2350	98.8	1350	0.6	66	41	245	1140
29	16.8	18.9	1140	15.6	500	28.2	7.6	1120	98.8	99.4	710	94.6	1150	0.6	80	64	548	1100
30	17.4	20.3	1140	16.4	320	48.8	10.7	1530	97.3	99.3	750	81.5	1010	0.6	65	88	703	1050
Month Tot.	18.2	23.9		14.1		539.8	47.2		90.3	99.4		54.8		1.6	23	135	1113	

Monthly Climate Summary - October 2005

Day	Mean Temp Deg.C	Max Temp Deg.C	Time Max Temp	Min Temp Deg.C	Time Min Temp	Daily Rain (mm)	Max Rain Rate (mm/hr)	Time Max Rain	Mean Rel. Humid (%)	Max Rel. Humid (%)	Time Max Humid	Min Rel. Humid (%)	Time Min Humid	Mean Wind Speed (m/s)	Time w/ No Wind (%)	Mean Solar Rad (W/m2)	Max Solar Rad (W/m2)	Time Max Rad
1	17.2	20.1	1220	15.0	540	10.4	9.1	1600	98.6	99.5	610	89.0	1220	0.5	80	64	520	1210
2	17.1	19.0	1010	16.1	2140	76.2	16.8	1520	99.1	99.4	2350	98.3	1120	0.7	58	62	510	1000
3	17.2	18.6	1200	16.2	1540	77.7	13.7	1600	99.4	99.5	2350	99.2	1200	0.8	32	77	583	1010
4	17.1	18.4	1240	16.6	2230	43.9	9.1	1500	99.7	99.8	2350	99.5	1250	0.6	48	76	528	1230
5	17.1	20.2	1510	15.6	2240	4.6	1.5	1410	98.4	99.9	920	89.5	2350	0.6	54	115	596	1430
6	17.3	20.9	1040	13.9	320	26.4	7.6	1630	95.8	99.7	2340	81.0	50	0.8	46	129	901	1230
7	17.1	20.1	1300	14.5	400	4.8	1.5	2340	99.1	99.9	410	90.6	1310	0.7	49	103	641	1250
8	16.8	18.6	1300	15.9	420	92.2	21.3	1630	99.0	99.8	2350	94.2	1110	0.7	39	61	493	910
9	17.0	18.6	1230	16.1	10	39.4	6.1	1820	99.8	99.9	2330	99.4	1240	1.0	8	63	560	1140
10	17.2	18.6	1230	16.0	250	53.8	4.6	2310	99.9	100.0	2350	99.7	1250	1.1	10	58	485	1200
11	16.7	17.4	940	15.9	2150	43.7	4.6	450	100.2	100.4	2350	100.0	940	1.2	6	33	156	1050
12	16.1	16.9	850	15.0	1500	92.7	12.2	1300	100.5	100.7	2350	100.4	120	1.0	4	31	173	1050
13	15.9	17.1	1110	15.3	300	13.7	3.0	1700	100.8	100.9	2350	100.6	20	0.6	45	71	652	1110
14	16.1	16.9	810	15.0	2350	47.8	19.8	1240	100.9	101.0	2350	100.8	1530	0.6	56	37	265	810
15	16.0	16.7	1530	14.7	50	16.5	10.7	620	100.9	101.1	110	100.8	1620	0.7	50	55	349	1110
16	15.7	17.0	850	14.4	430	17.5	9.1	1240	100.9	101.1	540	100.6	1510	0.5	65	65	415	1400
17	15.8	17.7	820	14.2	600	14.7	15.2	1310	100.7	101.1	600	100.4	1650	0.5	92	69	542	810
18	16.8	19.7	1410	14.5	540	2.5	6.1	2330	98.3	101.0	610	88.7	1410	0.7	74	113	600	1410
19	16.7	17.6	1120	16.1	2320	61.2	15.2	1410	100.3	100.6	2350	99.8	20	0.7	10	41	413	1120
20	16.8	17.8	1050	16.0	40	32.5	21.3	1500	100.7	100.9	2230	100.6	1050	0.6	57	54	389	1040
21	16.6	17.8	1140	15.8	1700	81.5	24.4	1400	100.8	101.0	1700	100.6	1220	0.7	40	43	440	1000
22	16.2	16.9	1100	15.7	2240	51.6	25.9	1410	101.1	101.3	2350	100.9	240	0.8	4	36	296	1100
23	15.6	16.5	1410	14.6	1710	36.6	15.2	1430	101.5	101.7	2350	101.3	110	1.0	22	34	239	1230
24	16.7	21.4	1420	14.4	500	21.1	21.3	1740	98.2	101.8	510	81.8	1420	0.7	69	146	854	1350
25	16.2	17.6	1320	14.3	2140	5.1	4.6	700	87.5	100.0	0	65.5	1400	2.6	23	133	770	940
26	15.9	18.7	1300	14.3	500	4.8	3.0	720	91.0	97.0	610	76.5	1300	2.5	0	119	813	1240
27	16.5	21.6	1140	13.8	450	0.0	0.0	2350	86.7	97.9	2250	67.5	840	1.4	40	167	885	1100
28	18.0	22.0	1350	15.6	150	0.3	1.5	350	86.6	96.7	200	69.2	1400	0.9	28	168	943	1040
29	18.1	20.6	1130	16.3	120	0.3	1.5	2340	89.5	97.5	2150	79.8	1220	0.7	43	101	613	1120
30	16.9	20.0	1300	15.1	2330	2.0	1.5	2150	94.3	99.1	2240	79.3	1300	0.6	45	77	889	1250
31	17.2	21.0	1120	15.4	0	2.8	1.5	2020	96.8	99.0	540	82.3	1120	0.6	69	81	592	1110
Month Tot.	16.7	22.0		13.8		978.4	25.9		97.6	101.8		65.5		1.0	41	80	943	

Monthly Climate Summary - November 2005

Day	Mean Temp Deg.C	Max Temp Deg.C	Time Max Temp	Min Temp Deg.C	Time Min Temp	Daily Rain (mm)	Max Rain Rate (mm/hr)	Time Max Rain	Mean Rel. Humid (%)	Max Rel. Humid (%)	Time Max Humid	Min Rel. Humid (%)	Time Min Humid	Mean Wind Speed (m/s)	Time w/ No Wind (%)	Mean Solar Rad (W/m2)	Max Solar Rad (W/m2)	Time Max Rad
1	18.1	21.8	1500	16.1	500	0.5	1.5	2320	92.8	99.1	340	76.4	1450	0.6	55	91	554	1450
2	17.3	18.1	650	16.4	1730	42.2	15.2	900	92.3	96.8	750	81.8	1640	1.5	0	32	129	1330
3	17.6	19.6	820	16.6	1850	5.1	1.5	2330	90.4	94.9	1820	80.6	30	1.9	0	73	574	810
4	18.0	21.6	1050	16.6	1740	6.1	1.5	2250	90.1	97.8	1540	75.8	1100	1.6	12	129	963	1020
5	18.2	22.4	1250	14.9	510	2.8	1.5	2040	89.1	99.0	400	70.9	1250	1.3	24	199	857	1200
6	18.0	20.6	1150	16.7	2350	0.8	1.5	2030	88.7	96.4	1710	77.2	1150	2.3	0	160	853	1150
7	17.7	20.4	1000	16.4	1530	2.3	1.5	2330	84.6	92.3	2340	62.5	1930	2.7	0	104	755	1130
8	17.3	18.0	810	16.0	1150	15.2	3.0	1720	92.3	97.4	240	86.7	1830	2.6	0	70	572	930
9	18.1	21.0	820	17.1	1600	4.3	1.5	2340	90.1	95.0	2350	76.4	820	2.0	0	105	694	810
10	17.5	18.6	750	16.2	2150	45.5	6.1	2140	94.5	97.3	120	92.2	600	1.7	1	67	307	820
11	17.0	19.1	1000	15.7	230	13.2	1.5	2350	93.4	97.3	1810	85.8	1000	2.1	7	90	656	950
12	17.9	22.1	1040	16.3	100	5.3	1.5	2320	88.6	96.4	30	71.8	1120	1.5	3	139	906	1110
13	17.8	21.1	1410	16.0	400	3.6	1.5	2350	87.9	95.9	1530	74.0	940	1.3	3	148	844	930
14	17.7	20.4	1120	16.7	510	3.3	1.5	2240	90.5	94.2	820	77.5	1140	1.9	1	123	771	1030
15	17.6	20.0	1350	16.5	350	4.8	1.5	2130	89.3	95.7	150	80.7	1310	2.3	0	128	631	1050
16	17.5	20.6	1040	16.5	2350	10.7	1.5	2340	90.4	97.8	1940	78.3	1040	1.5	1	109	730	1040
17	17.2	20.0	950	16.1	350	14.0	1.5	2350	95.6	98.9	2350	84.8	1220	0.9	38	82	730	940
18	16.9	17.6	1220	16.6	2350	24.9	4.6	2100	99.1	99.2	2350	98.9	1300	0.7	34	34	239	1030
19	17.6	20.7	1130	16.3	310	13.5	3.0	2340	97.3	99.3	730	85.8	1130	0.6	85	86	672	1120
20	18.5	22.6	1220	16.7	200	8.1	3.0	250	89.0	98.9	20	71.3	1220	1.1	32	149	895	940
21	18.4	22.3	1210	16.5	550	0.8	1.5	2350	83.3	95.6	2350	66.8	1210	1.1	15	155	821	1120
22	16.6	19.3	1240	13.1	2320	15.2	1.5	2350	92.6	97.5	130	83.0	1020	2.7	8	173	816	1320
23	14.2	15.3	1430	12.8	410	7.1	1.5	840	83.3	92.5	410	75.5	530	3.0	0	85	375	1140
24	15.6	20.1	1310	13.6	700	0.0	0.0	2350	88.3	97.5	1800	70.6	1150	2.6	0	203	771	1140
25	16.2	20.4	1240	14.2	2230	0.8	1.5	900	90.2	96.7	2120	75.8	1250	2.2	0	197	804	1200
26	17.1	22.6	1140	14.2	200	0.0	0.0	2350	83.1	95.9	1450	60.9	1240	1.9	15	152	853	1120
27	18.2	21.8	1200	15.8	140	0.0	0.0	2350	83.6	93.5	0	69.0	1200	1.0	4	177	866	1130
28	18.4	23.1	1240	15.8	120	0.3	1.5	1830	80.6	92.9	540	63.9	1250	1.1	2	205	807	1110
29	18.8	23.1	1000	15.9	530	0.3	1.5	400	76.8	90.0	1950	55.7	1000	1.2	3	204	938	1140
30	18.2	22.5	1410	16.1	2250	0.3	1.5	400	79.6	90.9	250	60.0	1250	1.7	8	210	823	1130
Month Tot.	17.5	23.1		12.8		250.7	15.2		88.9	99.3		55.7		1.8	12	129	963	

Monthly Climate Summary - December 2005

Day	Mean Temp Deg.C	Max Temp Deg.C	Time Max Temp	Min Temp Deg.C	Time Min Temp	Daily Rain (mm)	Max Rain Rate (mm/hr)	Time Max Rain	Mean Rel. Humid (%)	Max Rel. Humid (%)	Time Max Humid	Min Rel. Humid (%)	Time Min Humid	Mean Wind Speed (m/s)	Time w/ No Wind (%)	Mean Solar Rad (W/m2)	Max Solar Rad (W/m2)	Time Max Rad
1	17.2	20.4	1250	15.6	340	0.8	1.5	2300	82.9	92.4	2230	61.3	50	1.4	1	122	764	1200
2	17.6	21.2	1350	15.3	2350	0.5	1.5	740	81.8	93.0	2330	67.7	1250	2.2	0	187	800	1200
3	17.4	20.5	1330	15.2	10	0.0	0.0	2350	81.7	92.9	10	68.8	1130	2.4	0	164	716	1210
4	17.3	20.2	1140	15.8	500	0.8	1.5	2030	85.9	97.1	2020	71.1	1000	1.7	13	148	859	1110
5	17.7	21.6	1450	15.2	430	0.3	1.5	20	80.3	92.5	40	64.0	1320	1.4	8	219	825	1110
6	17.6	21.5	1350	15.5	550	0.8	1.5	1800	79.9	91.2	2140	61.2	1240	1.6	1	205	836	1150
7	17.0	20.5	1240	15.8	120	3.0	1.5	2240	85.9	94.2	710	71.8	1240	2.6	0	174	891	1020
8	17.2	20.2	1250	15.4	610	0.3	1.5	120	81.3	91.4	330	67.3	1500	3.3	0	205	805	1150
9	17.4	20.4	1330	16.0	120	0.5	1.5	2310	81.9	94.2	2320	68.3	1350	2.7	0	188	823	1150
10	18.2	22.2	1220	15.5	500	1.5	1.5	2310	84.0	95.0	120	69.0	1220	1.4	3	167	850	1200
11	18.7	22.4	1250	17.0	250	2.3	1.5	2350	89.0	96.4	300	73.1	1250	0.9	19	117	777	1240
12	17.9	19.5	1130	17.0	2250	21.1	3.0	750	92.8	96.4	120	85.5	1540	1.5	2	110	775	1100
13	17.0	18.7	1310	15.4	640	19.3	1.5	2350	89.3	94.9	620	80.8	1310	2.9	0	165	711	1250
14	16.8	18.4	1430	15.3	2130	10.4	1.5	2320	87.5	94.3	1310	71.4	2210	2.4	2	77	581	1150
15	18.1	23.0	1200	14.1	40	3.8	1.5	1210	80.8	95.3	640	62.9	1200	1.5	28	224	793	1130
16	17.5	21.5	1210	14.7	2320	0.0	0.0	2350	74.6	86.4	1940	53.7	1140	2.4	2	211	833	1110
17	17.2	21.2	1010	15.0	0	0.0	0.0	2350	77.6	88.1	640	59.7	1010	2.0	2	175	893	1150
18	17.4	21.1	1230	15.4	630	0.0	0.0	2350	78.5	90.1	340	62.2	1230	1.7	2	195	811	1150
19	16.8	20.5	1440	15.0	310	0.5	1.5	1010	78.7	91.5	940	60.2	1350	3.2	0	177	898	1110
20	16.9	20.8	1320	15.1	510	0.0	0.0	2350	76.7	84.8	550	57.6	1810	3.1	0	189	871	1310
21	17.0	19.4	1300	15.3	2240	0.0	0.0	2350	73.3	84.2	2300	60.8	520	3.4	0	215	845	1110
22	17.0	20.2	1310	15.0	300	0.5	1.5	2000	80.1	88.6	2340	69.8	1300	2.6	6	161	887	1210
23	17.2	20.8	1340	15.6	0	1.0	1.5	1000	83.9	92.2	2040	69.3	1330	2.4	0	187	816	1200
24	17.7	21.7	1400	15.3	140	0.0	0.0	2350	83.0	95.7	2010	66.5	1400	1.6	31	197	800	1100
25	18.3	22.1	1350	15.4	520	0.0	0.0	2350	79.0	95.4	120	61.3	1320	1.0	28	198	912	1030
26	17.1	19.6	1340	15.9	600	2.5	1.5	2330	86.0	95.8	2140	74.8	1410	1.4	8	113	745	1330
27	17.2	19.5	1140	15.9	510	2.3	1.5	2140	90.1	94.3	530	80.7	1140	1.5	0	123	674	1130
28	18.0	22.6	1250	15.2	2310	0.3	1.5	930	86.7	96.0	2350	63.9	1240	0.6	46	154	801	1210
29	17.8	22.2	1230	14.6	350	0.5	1.5	2200	87.6	96.5	510	68.1	1420	0.5	63	147	910	1200
30	17.9	21.6	1230	15.2	2340	0.0	0.0	2350	82.4	93.9	130	66.5	1410	1.1	2	174	828	1050
31	17.2	20.7	1110	14.2	240	0.3	1.5	450	71.0	86.3	220	39.3	620	2.0	2	234	813	1150
Month Tot.	17.5	23.0		14.1		73.2	3.0		82.4	97.1		39.3		2.0	9	172	912	

Appendix B: Manual rain gauge measurements

Fecha Date	Hora Time	Cantidad - Amount (inches)	 (mm)	Notes
1/2/2005				weekend
1/3/2005	8:00 a.m.	1.25	31.8	
1/4/2005	8:00 a.m.	0.75	19.1	
1/5/2005	8:00 a.m.	0.72	18.3	
1/6/2005	8:00 a.m.	0.03	0.8	
1/7/2005	8:00 a.m.	0.04	1.0	
1/8/2005				weekend
1/9/2005				weekend
1/10/2005	8:00 a.m.	2.00	50.8	
1/11/2005	8:00 a.m.	0.14	3.6	
1/12/2005	8:00 a.m.	0.05	1.3	
1/13/2005	8:00 a.m.	0.02	0.5	
1/14/2005	8:00 a.m.	0.02	0.5	
1/15/2005				weekend
1/16/2005				weekend
1/17/2005	8:00 a.m.	2.30	58.4	
1/18/2005	8:00 a.m.	0.30	7.6	
1/19/2005	8:00 a.m.	0.24	6.1	
1/20/2005	8:00 a.m.	0.32	8.1	
1/21/2005	8:00 a.m.	0.02	0.5	
1/22/2005				weekend
1/23/2005				weekend
1/24/2005	8:00 a.m.	0.09	2.3	
1/25/2005	8:00 a.m.	0.05	1.3	
1/26/2005	8:00 a.m.	0.05	1.3	
1/27/2005	8:00 a.m.	0.09	2.3	
1/28/2005				
1/29/2005				weekend
1/30/2005				weekend
1/31/2005	8:00 a.m.	0.09	2.3	
2/1/2005	8:00 a.m.	0.02	0.5	
2/2/2005	8:00 a.m.	0.02	0.5	
2/3/2005	8:00 a.m.	0.01	0.3	
2/4/2005	8:00 a.m.	0.02	0.5	
2/5/2005				weekend
2/6/2005				weekend
2/7/2005	8:00 a.m.	0.06	1.5	
2/8/2005	8:00 a.m.	0.05	1.3	
2/9/2005	8:00 a.m.	0.03	0.8	
2/10/2005	8:00 a.m.	0.04	1.0	
2/11/2005	8:00 a.m.	0.05	1.3	
2/12/2005				weekend
2/13/2005				weekend
2/14/2005	8:00 a.m.	0.07	1.8	
2/15/2005	8:00 a.m.	0.07	1.8	
2/16/2005	8:00 a.m.	0.05	1.3	
2/17/2005	8:00 a.m.	0.05	1.3	
2/18/2005	8:00 a.m.	0.17	4.3	
2/19/2005				weekend
2/20/2005				weekend
2/21/2005	8:00 a.m.	0.45	11.4	
2/22/2005	8:00 a.m.	0.17	4.3	
2/23/2005	8:00 a.m.	0.08	2.0	
2/24/2005	8:00 a.m.	0.01	0.3	

Fecha Date	Hora Time	Cantidad - Amount (inches)	 (mm)	Notes
2/25/2005	8:00 a.m.	0.02	0.5	
2/26/2005				weekend
2/27/2005				weekend
2/28/2005	8:00 a.m.	0.01	0.3	
3/1/2005	8:00 a.m.	0.05	1.3	
3/2/2005	8:00 a.m.	0.01	0.3	
3/3/2005	8:00 a.m.	0.01	0.3	
3/4/2005	8:00 a.m.	0.01	0.3	
3/5/2005				weekend
3/6/2005				weekend
3/7/2005	8:00 a.m.	0.00	0.0	
3/8/2005	8:00 a.m.	0.00	0.0	
3/9/2005	8:00 a.m.	0.03	0.8	
3/10/2005	8:00 a.m.	0.12	3.0	
3/11/2005	8:00 a.m.	0.02	0.5	
3/12/2005				weekend
3/13/2005				weekend
3/14/2005	8:00 a.m.	0.15	3.8	
3/15/2005	8:00 a.m.	0.06	1.5	
3/16/2005	8:00 a.m.	0.02	0.5	
3/17/2005	8:00 a.m.	0.01	0.3	
3/18/2005	8:00 a.m.	0.01	0.3	
3/19/2005				weekend
3/20/2005				weekend
3/21/2005	8:00 a.m.	0.01	0.3	
3/22/2005	8:00 a.m.	0.01	0.3	
3/23/2005	8:00 a.m.	0.01	0.3	
3/24/2005				feriado
3/25/2005				feriado
3/26/2005				weekend
3/27/2005				weekend
3/28/2005	8:00 a.m.	0.32	8.1	
3/29/2005	8:00 a.m.	0.12	3.0	
3/30/2005	8:00 a.m.	0.02	0.5	
3/31/2005	8:00 a.m.	0.00	0.0	
4/1/2005	8:00 a.m.	0.00	0.0	
4/2/2005				weekend
4/3/2005				weekend
4/4/2005	8:00 a.m.	0.00	0.0	
4/5/2005	8:00 a.m.	0.18	4.6	
4/6/2005	8:00 a.m.	0.08	2.0	
4/7/2005	8:00 a.m.	0.02	0.5	
4/8/2005	8:00 a.m.	0.02	0.5	
4/9/2005				weekend
4/10/2005				weekend
4/11/2005	8:00 a.m.	0.00	0.0	
4/12/2005	8:00 a.m.	0.00	0.0	
4/13/2005	8:00 a.m.	0.00	0.0	
4/14/2005	8:00 a.m.	0.01	0.3	
4/15/2005	8:00 a.m.	0.00	0.0	
4/16/2005				weekend
4/17/2005				weekend
4/18/2005				
4/19/2005	8:00 a.m.	0.90	22.9	

Fecha Date	Hora Time	Cantidad - Amount (inches)	 (mm)	Notes
4/20/2005	8:00 a.m.	0.01	0.3	
4/21/2005	8:00 a.m.	0.00	0.0	
4/22/2005	8:00 a.m.	0.00	0.0	
4/23/2005				weekend
4/24/2005				weekend
4/25/2005	8:00 a.m.	0.00	0.0	
4/26/2005	8:00 a.m.	0.01	0.3	
4/27/2005	8:00 a.m.	0.12	3.0	
4/28/2005	8:00 a.m.	0.01	0.3	
4/29/2005	8:00 a.m.	0.00	0.0	
4/30/2005				weekend
5/1/2005				weekend
5/2/2005	8:00 a.m.	0.03	0.8	
5/3/2005	8:00 a.m.	0.00	0.0	
5/4/2005	8:00 a.m.	0.00	0.0	
5/5/2005	8:00 a.m.	0.01	0.3	
5/6/2005	8:00 a.m.	0.03	0.8	
5/7/2005				weekend
5/8/2005				weekend
5/9/2005	8:00 a.m.	0.42	10.7	
5/10/2005	8:00 a.m.	0.05	1.3	
5/11/2005	8:00 a.m.	0.00	0.0	
5/12/2005	8:00 a.m.	0.00	0.0	
5/13/2005	8:00 a.m.	0.00	0.0	
5/14/2005				weekend
5/15/2005				weekend
5/16/2005	8:00 a.m.	2.30	58.4	
5/17/2005	8:00 a.m.	2.75	69.9	
5/18/2005	8:00 a.m.	1.08	27.4	
5/19/2005	8:00 a.m.	0.05	1.3	
5/20/2005	8:00 a.m.	0.58	14.7	
5/21/2005				weekend
5/22/2005				weekend
5/23/2005	8:00 a.m.	2.35	59.7	
5/24/2005	8:00 a.m.	0.35	8.9	
5/25/2005	8:00 a.m.	0.15	3.8	
5/26/2005	8:00 a.m.	0.32	8.1	
5/27/2005	8:00 a.m.	1.32	33.5	
5/28/2005				weekend
5/29/2005				weekend
5/30/2005	8:00 a.m.	0.06	1.5	
5/31/2005	8:00 a.m.	0.01	0.3	
6/1/2005	8:00 a.m.	0.01	0.3	
6/2/2005	8:00 a.m.	0.05	1.3	
6/3/2005	8:00 a.m.	0.04	1.0	
6/4/2005				weekend
6/5/2005				weekend
6/6/2005	8:00 a.m.	4.45	113.0	
6/7/2005	8:00 a.m.	0.11	2.8	
6/8/2005	8:00 a.m.	2.45	62.2	
6/9/2005	8:00 a.m.	1.68	42.7	
6/10/2005	8:00 a.m.	0.55	14.0	
6/11/2005				weekend
6/12/2005				weekend

Fecha Date	Hora Time	Cantidad - Amount (inches)	 (mm)	Notes
6/13/2005	8:00 a.m.	1.45	36.8	
6/14/2005	8:00 a.m.	0.94	23.9	
6/15/2005	8:00 a.m.	0.25	6.4	
6/16/2005	8:00 a.m.	0.01	0.3	
6/17/2005	8:00 a.m.	0.47	11.9	
6/18/2005				weekend
6/19/2005				weekend
6/20/2005	8:00 a.m.	1.43	36.3	
6/21/2005	8:00 a.m.	0.05	1.3	
6/22/2005	8:00 a.m.	2.75	69.9	
6/23/2005	8:00 a.m.	0.05	1.3	
6/24/2005	8:00 a.m.	0.06	1.5	
6/25/2005				weekend
6/26/2005				weekend
6/27/2005	8:00 a.m.	5.40	137.2	
6/28/2005	8:00 a.m.	0.01	0.3	
6/29/2005	8:00 a.m.	1.30	33.0	
6/30/2005	8:00 a.m.	0.05	1.3	
7/1/2005	8:00 a.m.	0.05	1.3	
7/2/2005				weekend
7/3/2005				weekend
7/4/2005	8:00 a.m.	2.00	50.8	
7/5/2005	8:00 a.m.	0.01	0.3	
7/6/2005	8:00 a.m.	0.01	0.3	
7/7/2005	8:00 a.m.	0.60	15.2	
7/8/2005	8:00 a.m.	0.35	8.9	
7/9/2005				weekend
7/10/2005				weekend
7/11/2005	8:00 a.m.	1.40	35.6	
7/12/2005	8:00 a.m.	1.05	26.7	
7/13/2005	8:00 a.m.	0.05	1.3	
7/14/2005	8:00 a.m.	1.40	35.6	
7/15/2005	8:00 a.m.	1.00	25.4	
7/16/2005				weekend
7/17/2005				weekend
7/18/2005	8:00 a.m.	0.98	24.9	
7/19/2005	8:00 a.m.	0.40	10.2	
7/20/2005	8:00 a.m.	0.35	8.9	
7/21/2005	8:00 a.m.	0.22	5.6	
7/22/2005	8:00 a.m.	0.05	1.3	
7/23/2005				weekend
7/24/2005				weekend
7/25/2005	8:00 a.m.	0.12	3.0	
7/26/2005	8:00 a.m.	0.15	3.8	
7/27/2005	8:00 a.m.	0.90	22.9	
7/28/2005	8:00 a.m.	0.10	2.5	
7/29/2005	8:00 a.m.	0.01	0.3	
7/30/2005				weekend
7/31/2005				weekend
8/1/2005	8:00 a.m.	0.17	4.3	
8/2/2005	8:00 a.m.	0.02	0.5	
8/3/2005	8:00 a.m.	0.20	5.1	
8/4/2005	8:00 a.m.	0.15	3.8	
8/5/2005	8:00 a.m.	0.20	5.1	

Fecha Date	Hora Time	Cantidad - Amount (inches)	 (mm)	Notes
8/6/2005				weekend
8/7/2005				weekend
8/8/2005				
8/9/2005				
8/10/2005				
8/11/2005				
8/12/2005				
8/13/2005				weekend
8/14/2005				weekend
8/15/2005				
8/16/2005	8:00 a.m.	2.10	53.3	
8/17/2005	8:00 a.m.	0.51	13.0	
8/18/2005	8:00 a.m.	0.21	5.3	
8/19/2005	8:00 a.m.	1.32	33.5	
8/20/2005				weekend
8/21/2005				weekend
8/22/2005	8:00 a.m.	0.12	3.0	
8/23/2005	8:00 a.m.	0.29	7.4	
8/24/2005	8:00 a.m.	1.82	46.2	
8/25/2005	8:00 a.m.	0.45	11.4	
8/26/2005	8:00 a.m.	0.47	11.9	
8/27/2005				weekend
8/28/2005				weekend
8/29/2005	8:00 a.m.	3.70	94.0	
8/30/2005	8:00 a.m.	0.02	0.5	
8/31/2005	8:00 a.m.	0.01	0.3	
9/1/2005	8:00 a.m.	0.02	0.5	
9/2/2005	8:00 a.m.	1.20	30.5	
9/3/2005				weekend
9/4/2005				weekend
9/5/2005	8:00 a.m.	1.20	30.5	
9/6/2005	8:00 a.m.	0.15	3.8	
9/7/2005	8:00 a.m.	0.01	0.3	
9/8/2005	8:00 a.m.	0.15	3.8	
9/9/2005	8:00 a.m.	0.03	0.8	
9/10/2005				weekend
9/11/2005				weekend
9/12/2005	8:00 a.m.	0.46	11.7	
9/13/2005	8:00 a.m.	0.35	8.9	
9/14/2005	8:00 a.m.	0.09	2.3	
9/15/2005				holiday
9/16/2005	8:00 a.m.	0.13	3.3	
9/17/2005				weekend
9/18/2005				weekend
9/19/2005	8:00 a.m.	0.14	3.6	
9/20/2005	8:00 a.m.	0.82	20.8	
9/21/2005	8:00 a.m.	1.00	25.4	
9/22/2005	8:00 a.m.	1.52	38.6	
9/23/2005	8:00 a.m.	2.25	57.2	
9/24/2005				weekend
9/25/2005				weekend
9/26/2005	8:00 a.m.	3.00	76.2	
9/27/2005	8:00 a.m.	1.75	44.5	
9/28/2005	8:00 a.m.	1.79	45.5	

Fecha Date	Hora Time	Cantidad - Amount (inches)	 (mm)	Notes
9/29/2005	8:00 a.m.	1.97	50.0	
9/30/2005	8:00 a.m.	1.07	27.2	
10/1/2005				weekend
10/2/2005				weekend
10/3/2005	8:00 a.m.	5.30	134.6	
10/4/2005	8:00 a.m.	3.00	76.2	
10/5/2005	8:00 a.m.	1.70	43.2	
10/6/2005	8:00 a.m.	0.05	1.3	
10/7/2005	8:00 a.m.	0.97	24.6	
10/8/2005				weekend
10/9/2005				weekend
10/10/2005	8:00 a.m.	6.05	153.7	
10/11/2005	8:00 a.m.	2.30	58.4	
10/12/2005	8:00 a.m.	1.80	45.7	
10/13/2005	8:00 a.m.	2.30	58.4	
10/14/2005	8:00 a.m.	0.54	13.7	
10/15/2005				weekend
10/16/2005				weekend
10/17/2005	8:00 a.m.	2.84	72.1	
10/18/2005	8:00 a.m.	0.55	14.0	
10/19/2005	8:00 a.m.	0.54	13.7	
10/20/2005	8:00 a.m.	1.97	50.0	
10/21/2005	8:00 a.m.	0.96	24.4	
10/22/2005				weekend
10/23/2005				weekend
10/24/2005	8:00 a.m.	6.40	162.6	
10/25/2005	8:00 a.m.	0.95	24.1	
10/26/2005	8:00 a.m.	0.95	24.1	
10/27/2005	8:00 a.m.	0.55	14.0	
10/28/2005	8:00 a.m.	0.05	1.3	
10/29/2005				weekend
10/30/2005				weekend
10/31/2005	8:00 a.m.	0.10	2.5	
11/1/2005	8:00 a.m.	0.13	3.3	
11/2/2005	8:00 a.m.	1.13	28.7	
11/3/2005	8:00 a.m.	0.50	12.7	
11/4/2005	8:00 a.m.	0.15	3.8	
11/5/2005				weekend
11/6/2005				weekend
11/7/2005	8:00 a.m.	0.34	8.6	
11/8/2005	8:00 a.m.	0.47	11.9	
11/9/2005	8:00 a.m.	0.17	4.3	
11/10/2005	8:00 a.m.	0.81	20.6	
11/11/2005	8:00 a.m.	1.11	28.2	
11/12/2005				weekend
11/13/2005				weekend
11/14/2005	8:00 a.m.	0.70	17.8	
11/15/2005	8:00 a.m.	0.15	3.8	
11/16/2005	8:00 a.m.	0.11	2.8	
11/17/2005	8:00 a.m.	0.72	18.3	
11/18/2005	8:00 a.m.	0.51	13.0	
11/19/2005				weekend
11/20/2005				weekend
11/21/2005	8:00 a.m.	1.49	37.8	

Fecha Date	Hora Time	Cantidad - Amount (inches)	 (mm)	Notes
11/22/2005	8:00 a.m.	0.39	9.9	
11/23/2005	8:00 a.m.	0.43	10.9	
11/24/2005	8:00 a.m.	0.03	0.8	
11/25/2005	8:00 a.m.	0.05	1.3	
11/26/2005				weekend
11/27/2005				weekend
11/28/2005	8:00 a.m.	0.01	0.3	
11/29/2005	8:00 a.m.	0.03	0.8	
11/30/2005	8:00 a.m.	0.03	0.8	
12/1/2005	8:00 a.m.	0.01	0.3	
12/2/2005	8:00 a.m.	0.05	1.3	
12/3/2005				weekend
12/4/2005				weekend
12/5/2005	8:00 a.m.	0.06	1.5	
12/6/2005	8:00 a.m.	0.01	0.3	
12/7/2005	8:00 a.m.	0.01	0.3	
12/8/2005	8:00 a.m.	0.08	2.0	
12/9/2005	8:00 a.m.	0.03	0.8	
12/10/2005				weekend
12/11/2005				weekend
12/12/2005	8:00 a.m.	0.78	19.8	
12/13/2005	8:00 a.m.	1.15	29.2	
12/14/2005	8:00 a.m.	0.10	2.5	
12/15/2005	8:00 a.m.	0.01	0.3	
12/16/2005	8:00 a.m.	0.01	0.3	
12/17/2005				weekend
12/18/2005				weekend
12/19/2005	8:00 a.m.	0.01	0.3	
12/20/2005	8:00 a.m.	0.01	0.3	
12/21/2005	8:00 a.m.	0.01	0.3	
12/22/2005	8:00 a.m.	0.01	0.3	
12/23/2005	8:00 a.m.	0.01	0.3	
12/24/2005				weekend
12/25/2005				weekend
12/26/2005				
12/27/2005				
12/28/2005				
12/29/2005				
12/30/2005				
12/31/2005				weekend