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Introduction

The ABC-Islands

The last year of the second millennium had a very wet start on the ABC-Islands. Especially January showed record amounts of rain in several sections of these islands. A number of disturbances that moved through the area caused these rains. During the next nine months (until November) no really wet months were observed on these islands. November became the wettest month in many locations in Aruba, Bonaire and Curaçao. On the other hand, October and December were too dry for the time of the year.

In the final days of September, hurricane Joyce approached the Southeastern Caribbean on an unusually Southerly track. As the month ended and October got under way however, this system weakened to a tropical depression and even to a tropical wave as it got near the ABC-Islands.

The SSS-Islands

Only one tropical cyclone reached part of the Netherlands Antilles and Aruba. Hurricane *Debby* moved over or very close to the SSS-Islands on August 22. This system caused only minor damage in St. Maarten and none in Saba and St. Eustatius.

Otherwise, rainfall in St Maarten was a little below average while in Statia, the yearly total was close to the 30-year average. Despite the small distance between these three islands, each had a different wettest month. St. Maarten's month with most precipitation in 2000 became February thanks mainly to a very wet 24th. In St. Eustatius, October had the best share of rain while Saba got most of its rain in September.

Hurricane Season

General

After active seasons in 1998 and 1999, 2000 was another season with above average tropical cyclone activity. Dr. William Gray of the Colorado State University correctly had predicted that as early as the end of November 1999. He had foreseen the development of eleven named systems of which seven would become a hurricane. Three of these would have developed into intense hurricanes. At the end of the 2000 season, it appeared that he even under forecasted the number of Atlantic tropical cyclones. Eighteen tropical or subtropical depressions formed. Fourteen of these systems became tropical storms. Eight storms reached hurricane strength and three of those attained major hurricane status. Most of the Atlantic tropical cyclones in 2000 stayed over the open ocean.

Netherlands Antilles

The 2000 hurricane season was fortunately rather quiet for both the ABC and the SSS islands of the Netherlands Antilles (and Aruba). Only two systems were significant to these islands.

An active tropical wave became tropical depression *Seven* on August 19 at about 1800 kilometers East of the Lesser Antilles. It was moving toward the West Northwest when it strengthened into a tropical storm on the next morning. While the SSS-Islands had escaped a hit by tropical storm *Chris* a few days earlier, tropical storm *Debby* did pose a threat to these islands. For that reason and since this system was forecast to strengthen into a hurricane, a hurricane watch was issued later that Sunday. During the morning of the 21st, this watch became a hurricane warning as *Debby* continued to intensify gradually without changing its track. *Debby* had become a hurricane earlier on that day while it was located about 800 kilometers East of Antigua. It reached its peak intensity of 135 km/hr on that same day. It continued to move toward the Northeastern Caribbean Area and its center moved very close to St. Maarten during the early morning of the 22nd. The strongest winds recorded at the Juliana Airport however stayed below hurricane strength and St. Maarten and its neighbors escaped another disaster. Damage on the SSS-Islands was small and no casualties were suffered.

Tropical depression *Twelve* formed about 750 kilometers East of the SSS-Islands on September 15 but weakened into a strong tropical wave on the next day before it reached the Caribbean Area. However, the Northeastern islands, including the SSS-Islands, reported heavy rain and gusty winds as the wave moved Westward across the Caribbean on the 17th. This system was upgraded back to a tropical depression on the 19th just Northeast of Grand Cayman and later became tropical storm Helene.

Remnants of hurricane *Joyce* passed as a very active tropical wave just north of the ABC-Islands during the morning and afternoon of October 2. They were accompanied by locally heavy thunderstorm activity but the winds were only light and at times from variable directions.

ABC-Islands

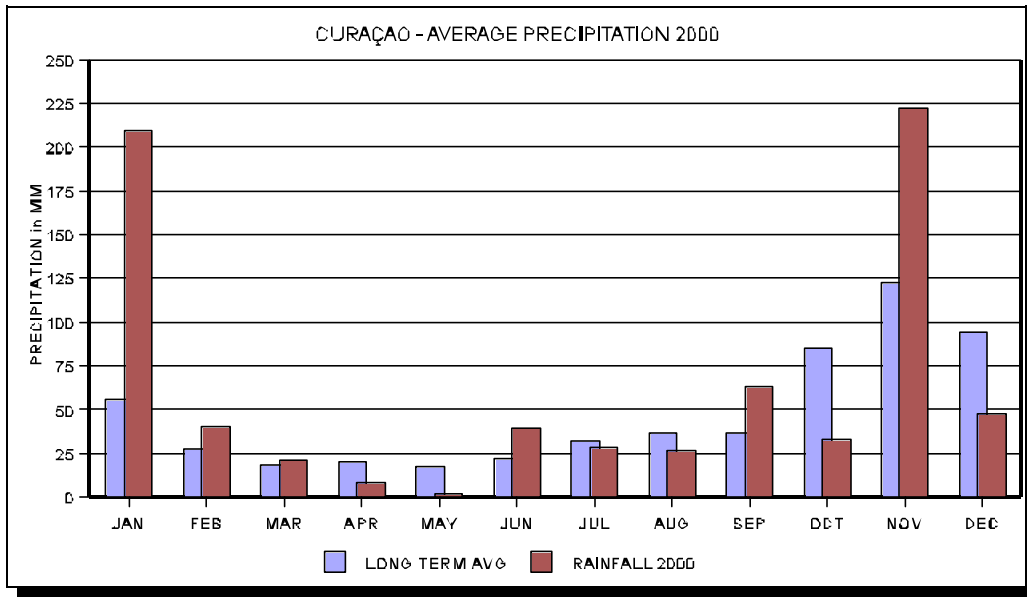
Curaçao

PRECIPITATION

The average precipitation for the year 2000 on Curaçao was 741.4 mm. The rainfall station with the highest year total, 871.7 mm, was located in *Van Engelen*. This station also had the largest amount of days with rainfall \$1.0 mm: 103 days.

The maximum 24-hour rainfall total for Curaçao was 112 mm and was measured at the rainfall station in *Dominguito* on November 3. November and January proved to be very wet months with monthly totals varying from 150 to 285 mm in January and 175 to 295 mm in November.

November thus made up for the other two months (October and December) of the rainy season on these islands. Both these months were below average as the graph below shows. A similar pattern occurred on the other two of the ABC islands.



Rainfall data from Hato rainfall station

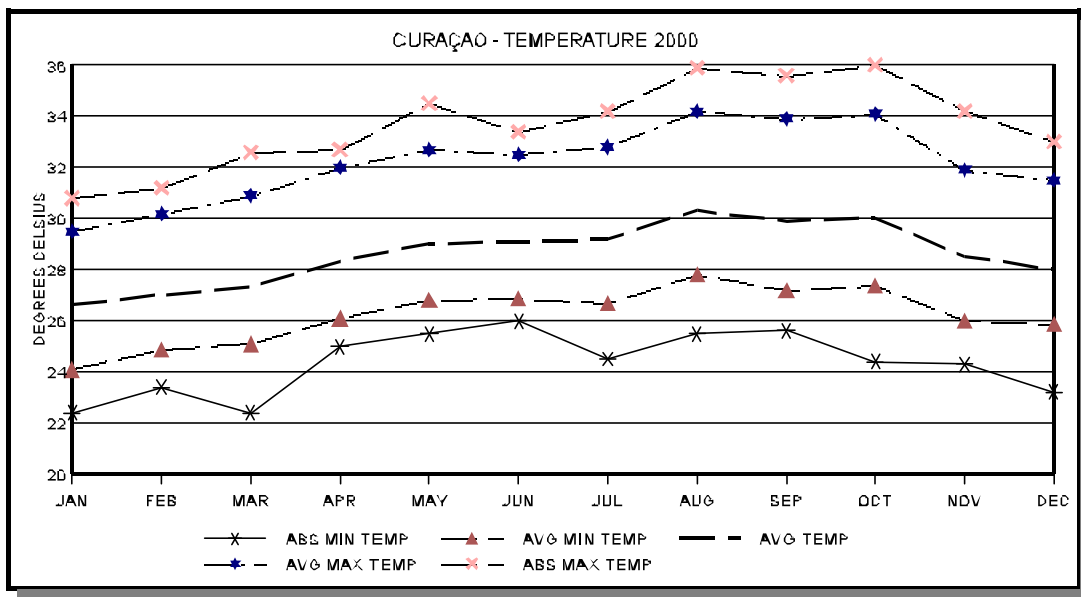
The hours with rainfall for the year 2000 recorded at Hato International Airport totaled 356 hours. The maximum rainfall duration (in minutes) was 85 minutes and was observed on November 11. The maximum intensity/hour for the year 2000 was 33.2 mm and was also recorded on November 11 between 05:00 and 06:00 hours. The maximum intensity/minute was 2.6 mm and was observed on January 7 between 10:00 and 10:01 hours.

TEMPERATURE

The average air temperature as recorded at Hato International Airport over the year 2000 was 28.6/C (normal 27.6/- standard deviation 1.1).

August was the warmest month of the past year with a highest daily average temperature of 30.3/C. This month also had the highest average maximum temperature of 34.2/C . The coolest month of the past year was January with the lowest daily average temperature 25.9/ C and the lowest average minimum temperature 24.1/ C.

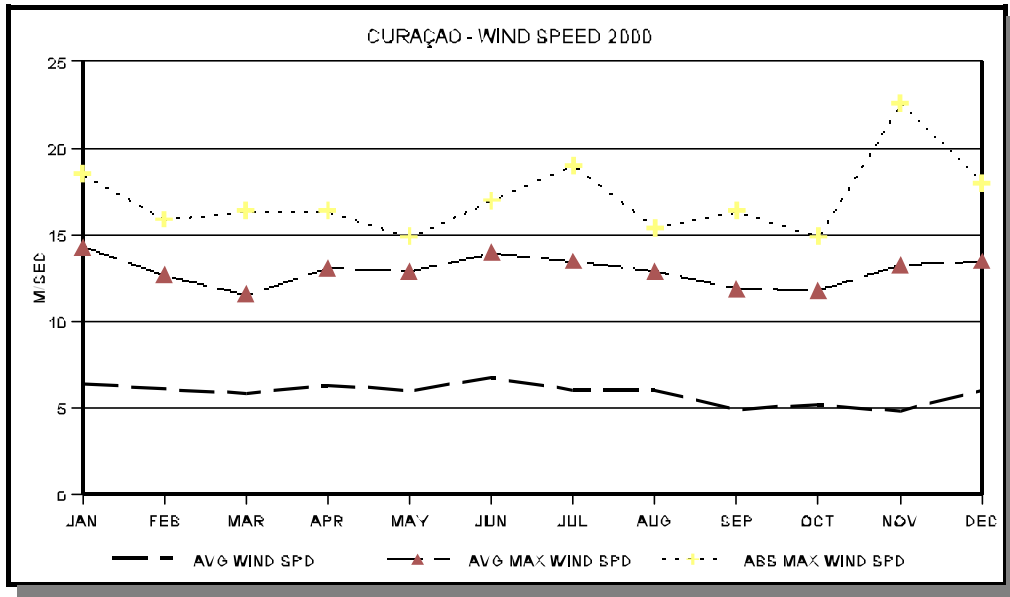
The maximum temperature of the past year was 36.0/C and was recorded on October 18 at 13:27 hours. The absolute minimum temperature of 22.4/C was observed on March 24 at 06:55 hours.



WIND

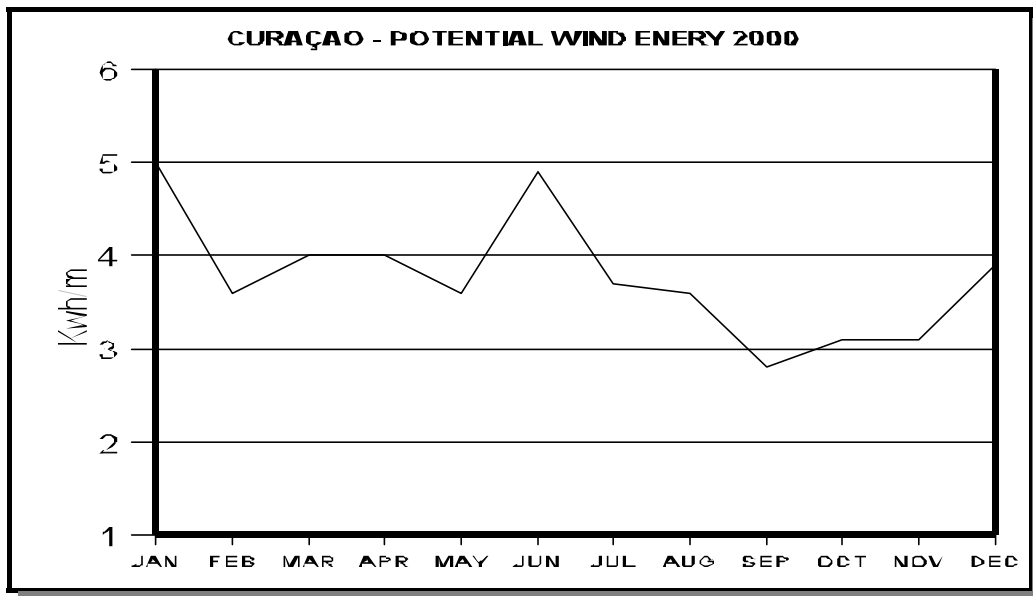
The average wind speed for the past year was 5.9 m/sec (21.4 km/hr) at a height of 10m and the average wind direction was 093/.

January was the month with the highest average wind speed of 6.4 m/sec (23 km/hr) and September had the lowest average wind speed 4.9 m/sec (17.6 km/hr). The highest daily average wind speed of 9.8 m/sec (35.4 km/hr) was recorded on January 16 and the lowest daily average wind speed of 2.2 m/sec (7.8 km/hr) was on March 24. The highest wind gust 22.6 m/sec (81.4km/hr) was observed on November 7 at 17:43 hours during a heavy shower.



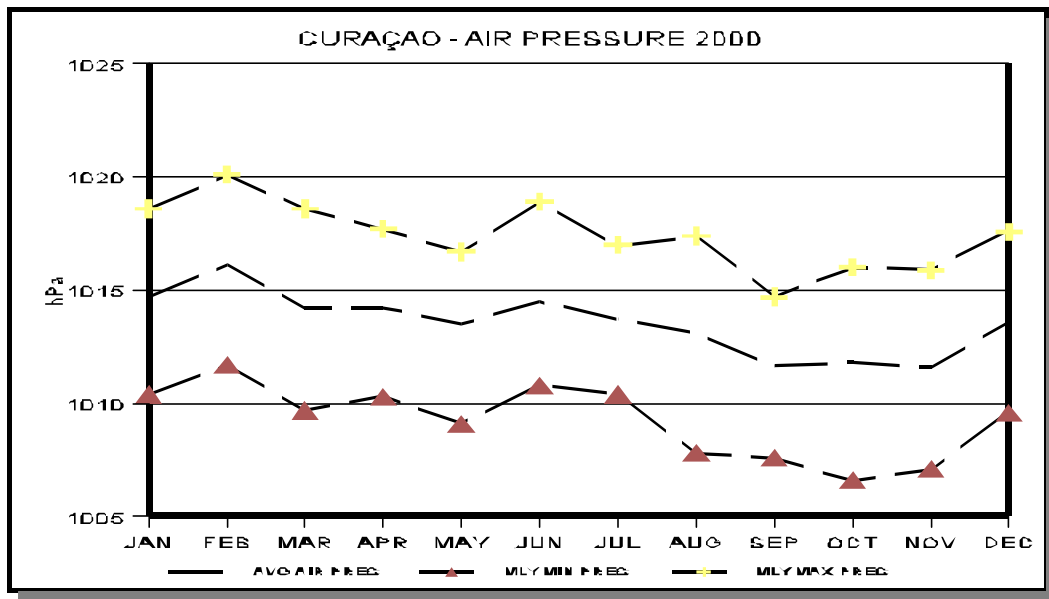
POTENTIAL WIND ENERGY

The total potential wind energy (at 10m height and wind speeds ≥ 4 m/sec) for the year 2000 was 1491.4 kWh/m². The daily average was 3.8 kWh/m²/day.



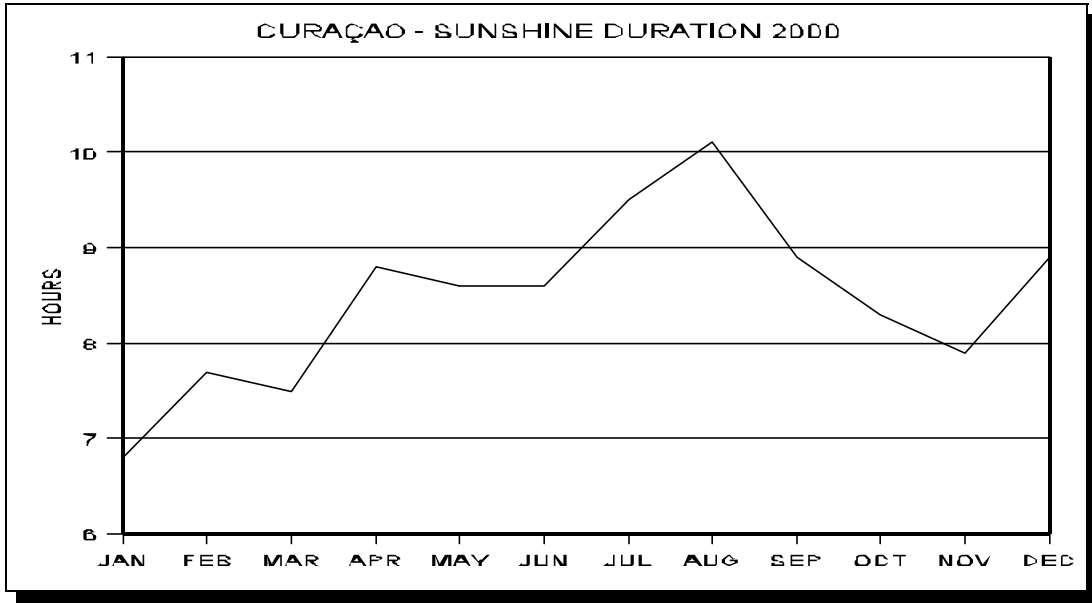
AIR PRESSURE

The average air pressure recorded at Hato Airport over the past year was 1013.6 hPa. The maximum air pressure of 1020.1 hPa was recorded on the sixth of February while the minimum air pressure of 1006.6 hPa was observed on both October 24 and 25.



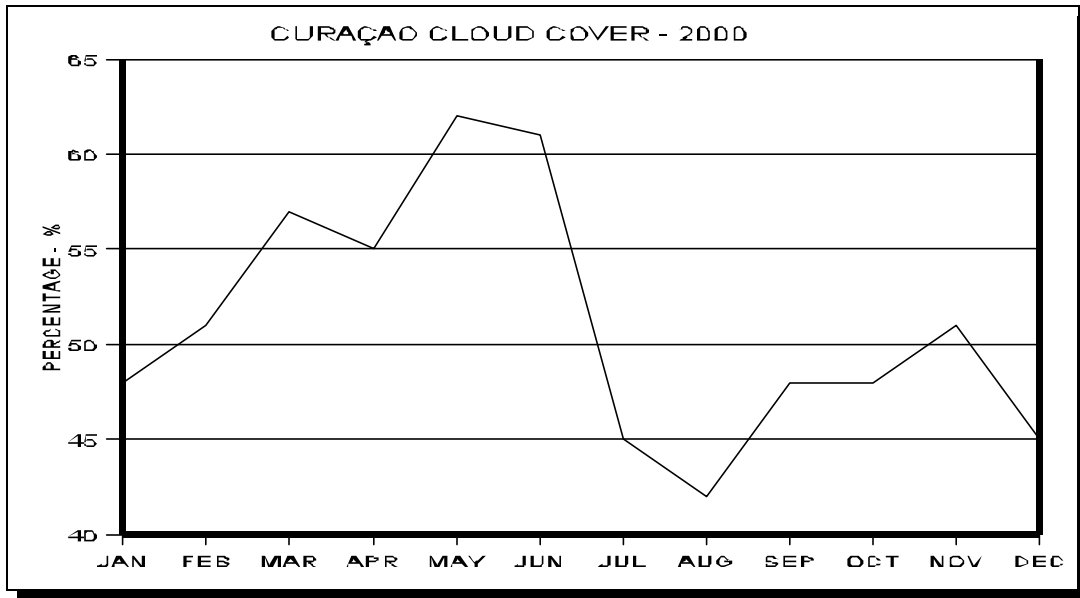
SUNSHINE DURATION

The total sunshine duration for the past year was 3096.1 hrs. This is 70% of the maximum possible duration (4428 hrs). The average daily sunshine duration was eight hours and 30 minutes. The warmest month, August, had a daily average sunshine duration of 10.1 hours while the coolest month, January, had a daily average of 6.8 hours of sunshine duration. The longest day, as far as sunshine is concerned for the past year, was recorded on July the 11th and had 11 hours and 48 minutes of sunshine.



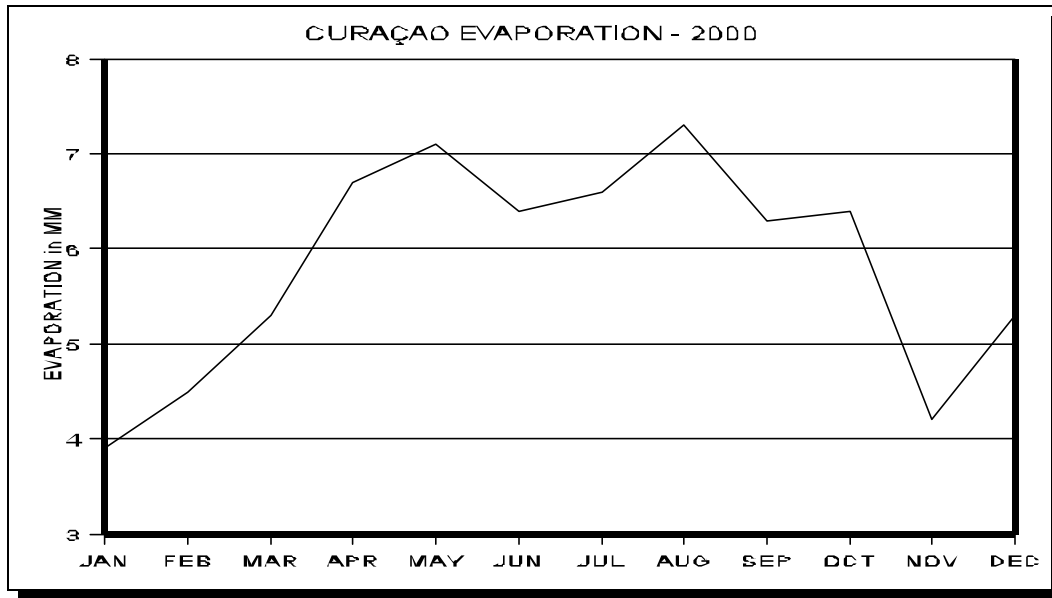
CLOUD COVER

The average cloud cover for the past year was 51.5%. The highest total cloud coverage per month was 62% and was observed in May. The lowest was 42% and was recorded in August.



EVAPORATION

The site of the evaporation pan is located at the Meteorological Service at Seru Mahuma. The daily average evaporation for the year 2000 was 5.8 mm. August had the highest daily average evaporation value of 7.3 mm while January had the lowest value of 3.9 mm.



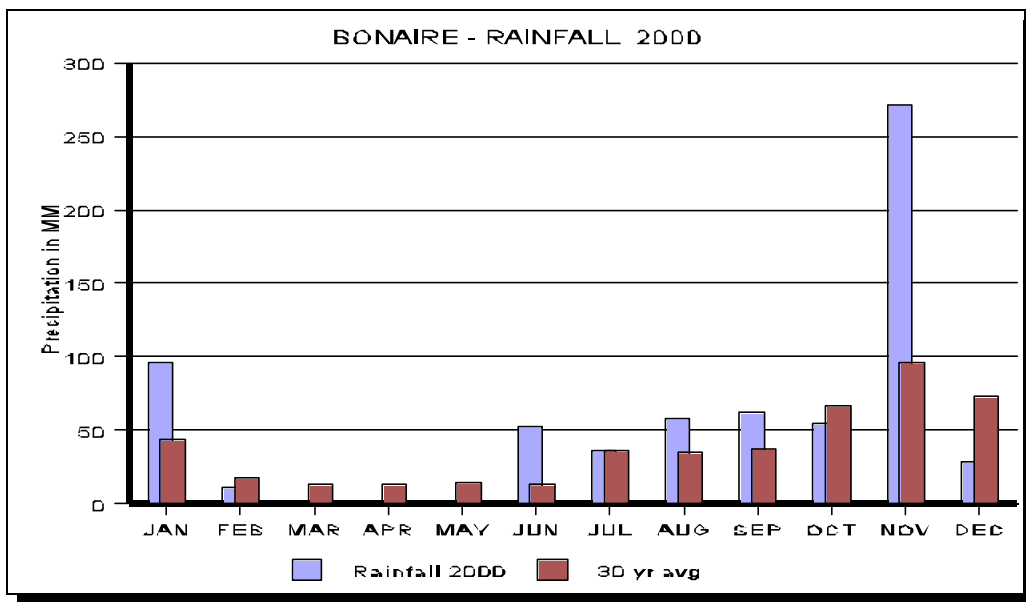
Bonaire

PRECIPITATION

The rainfall total, over the year 2000, as recorded at the Flamingo Airport of Bonaire was 673.2 mm. This amount is 45.5 % above the 30-year average (1971-2000) which is 462.8 mm.

Bonaire experienced dry to very dry conditions in March, April, May and December. November had a monthly total of 271.6 mm. This is 187% above the 30-year normal for November which indicates it was a very wet month.

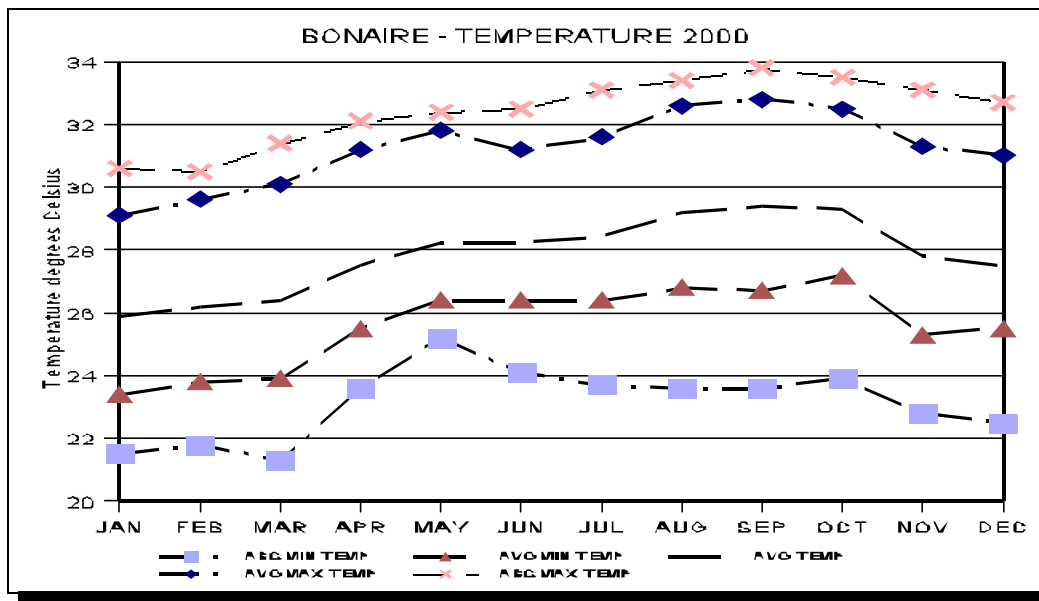
The 24-hour maximum was 53.2 mm and occurred on November 12. The number of days with precipitation ≥ 1.0 mm was 78.



TEMPERATURE

The average air temperature recorded at the Flamingo Airport of Bonaire over the year 2000 was 27.8/C (normal). The month of September was the warmest month of the past year with highest average temperature of 29.4/C. It was also the month with the highest average maximum temperature of 32.8/C. The coolest month of the past year was January with the lowest average temperature of 25.9/C and was also the month with the lowest average minimum temperature 23.4/C.

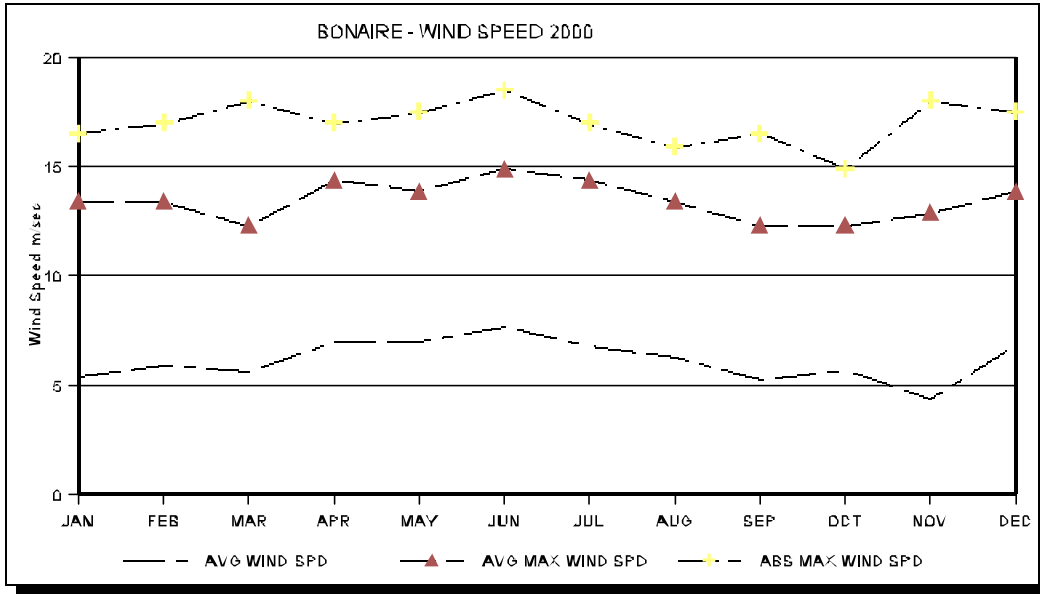
The absolute maximum temperature of the past year was 33.8/C. It was recorded on September 26 at 16:10 hours and the absolute minimum temperature of 21.3/C was observed on March 9 at 06:56 hours.



WIND

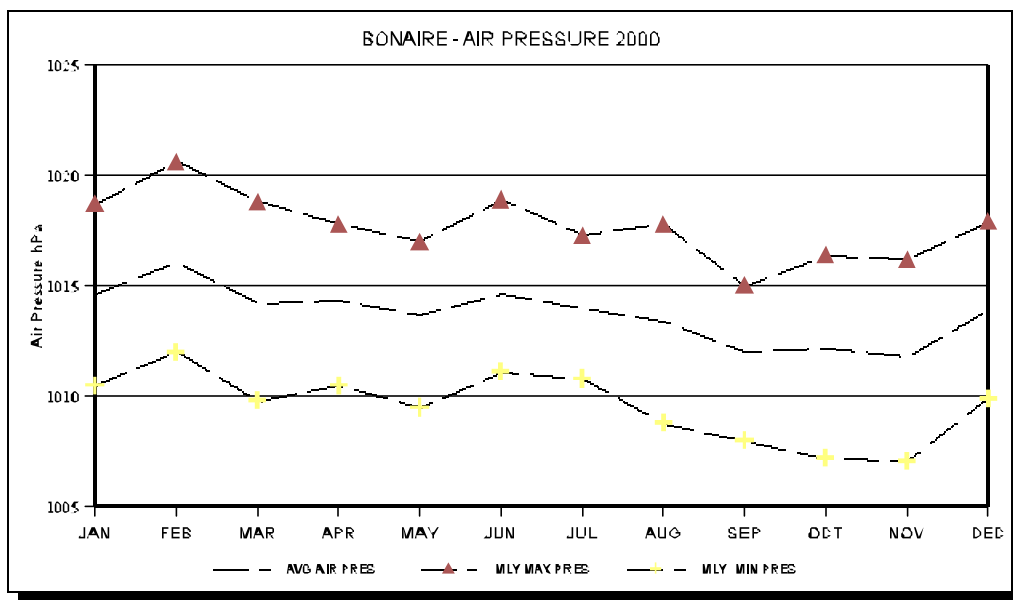
The average wind speed for the past year was 6.2 m/sec (22.3 km/hr) at 10m height. June was the month with the highest daily average wind speed 7.7 m/sec (27.7 km/hr) and November had the lowest daily average wind speed 4.4 m/sec (15.8 km/hr).

The day with the highest average wind speed 9.7 m/sec (34.9 km/hr) was recorded on November 3. The lowest average wind speed 1.3 m/sec (4.7 km/hr) was observed on June 4. The highest wind gust 18.5 m/sec (66.6 km/hr) was recorded on June 28 at 14:23 hours.



AIR PRESSURE

The average air pressure recorded at Flamingo Airport over the past year was 1013.7 hPa. The maximum air pressure of 1020.6 hPa was observed on the six of February while the minimum air pressure of 1007.1 hPa was recorded on November 4.

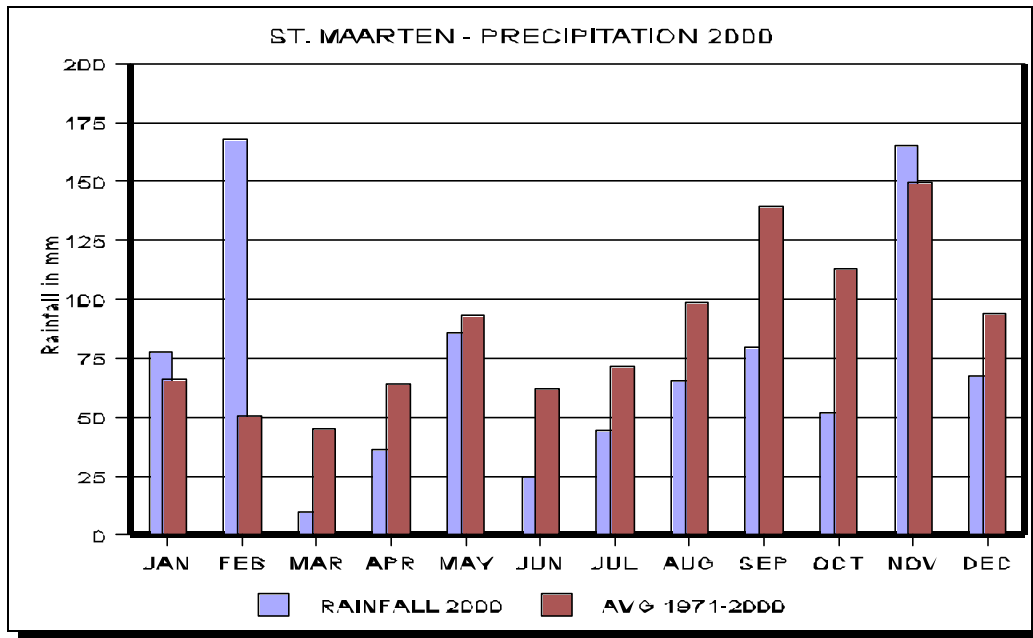


SSS ISLANDS

St. Maarten

PRECIPITATION

The rainfall total, recorded at the Princess Juliana Airport, for the year 2000 was 875.9 mm. This amount is 14% below the 30-year average (1971-2000) which is 1047.1 mm. St. Maarten experienced dry to very dry conditions from March to October. The total precipitation over this period was 397.7. This amount was 42% below the 30-year climatological normal for the same period. The 24-hour maximum was 61.0 mm and occurred on February 24. The number of days with precipitation ≥ 1.0 mm was 132. February was the wettest month with a monthly total of 168.1 mm and the driest month was March with 9.6 mm.



TEMPERATURE

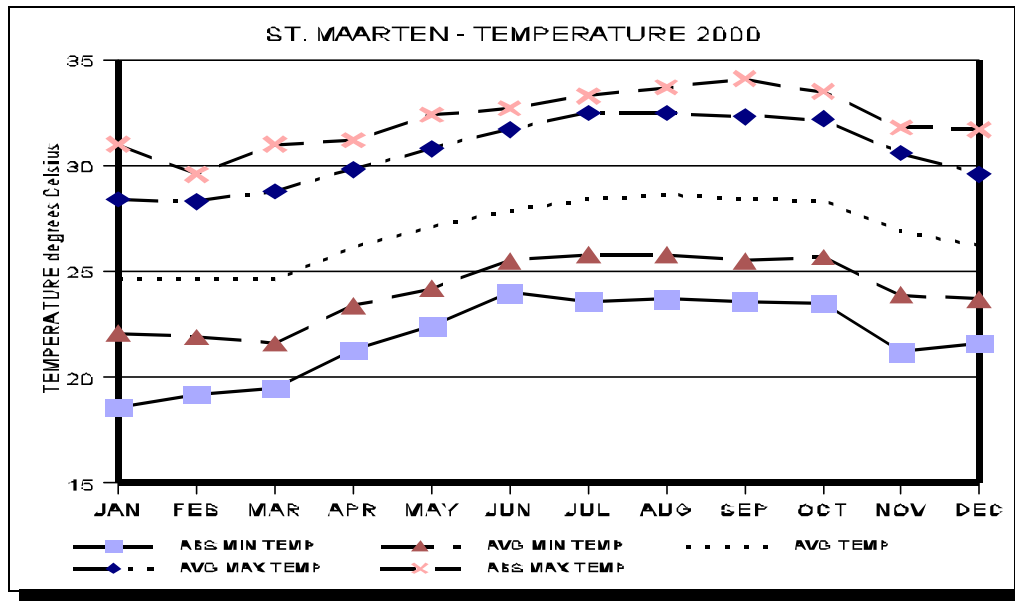
The average air temperature as recorded at Princess Juliana Airport over the year 2000 was 26.8/C (normal 27.2/).

August was the warmest month of the past year with highest monthly average temperature 28.6/. July and August had the highest monthly average maximum temperature of 32.5/C .

The absolute maximum temperature of the past year was 34.1/C and was recorded on the 14th of September at 12:42 hours local time.

The lowest monthly average temperature was 24.6/C and was observed in January, February and March. The lowest average minimum temperature of 21.6/C was recorded in March.

The absolute minimum temperature was 18.6/C was observed on the 19th of January at 05:58 hours local time.

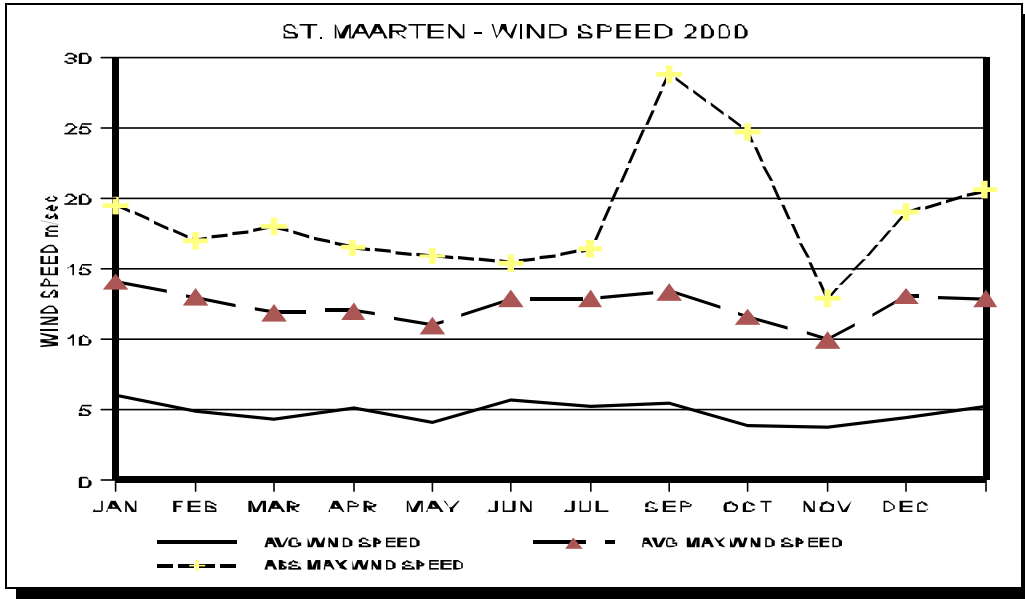


WIND

The average wind speed for the past year was 4.8 m/sec (21.4 km/hr) at 10m height. January was the month with the highest average wind speed 6.0 m/sec (21.6 km/hr) and September had the lowest average wind speed 3.8 m/sec(13.7 km/hr).

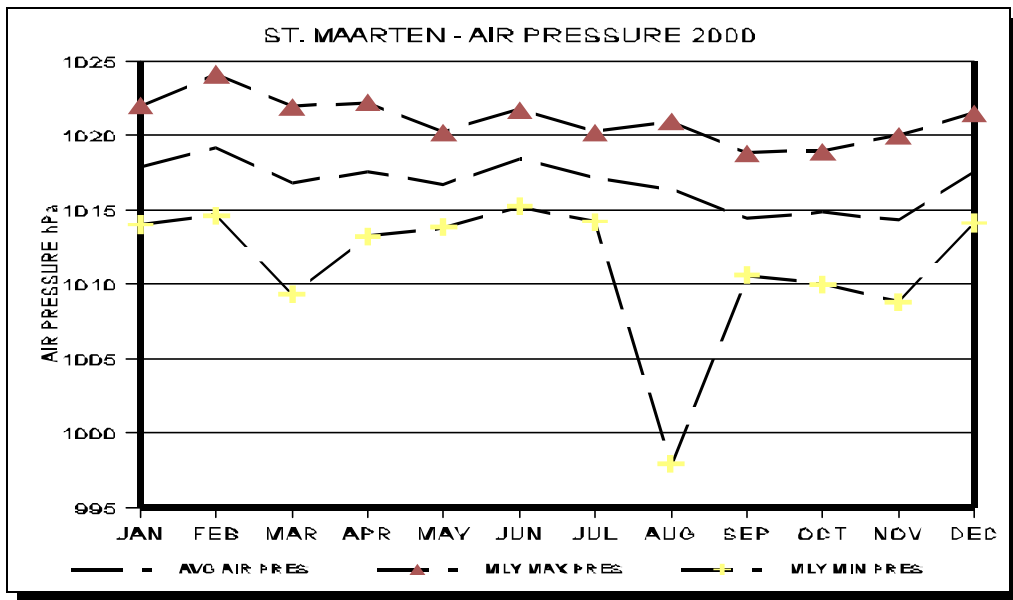
The highest daily average wind speed of 10.1 m/sec (36.4 km/hr) was recorded on January 16 and the lowest daily average wind speed of 1.0 m/sec (3.6 km/hr) was on March 26.

The highest wind gust 28.8 m/sec (103.7km/hr) was observed on August 22 at 05:41 a.m. during the passage of hurricane Debby.



AIR PRESSURE

The average air pressure, recorded at Princess Juliana Airport, over the past year was 1016.8 hPa. The maximum air pressure of 1024.1 hPa was observed on the 6th of February while the minimum air pressure of 997.9 hPa was recorded on August 22.

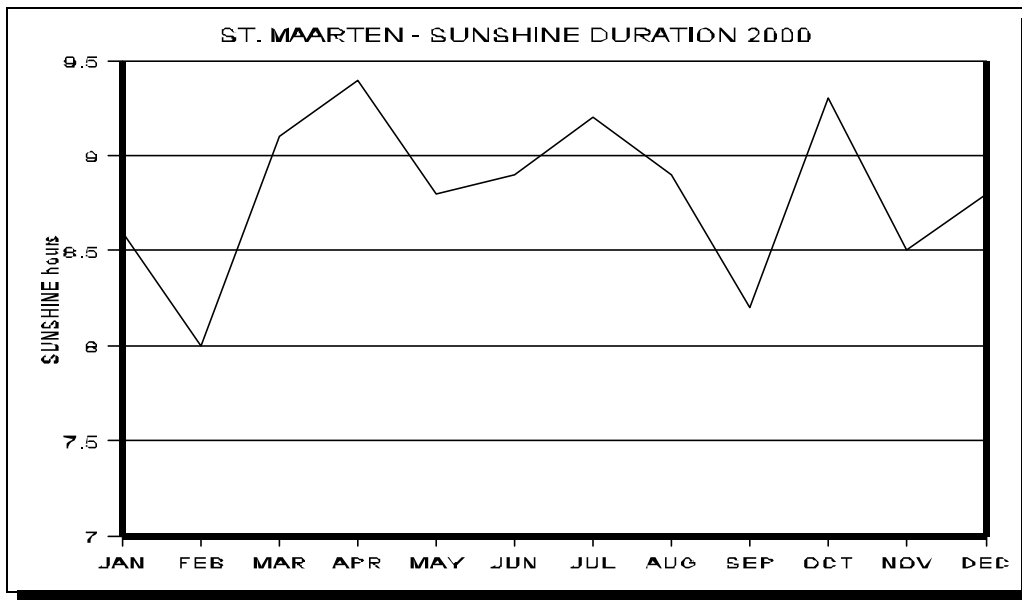


SUNSHINE

The total sunshine duration for the past year was 3222.9 hrs. This is 72.8% of the maximum possible duration (4431.3 hrs). The average daily sunshine duration was eight hours and 48 minutes.

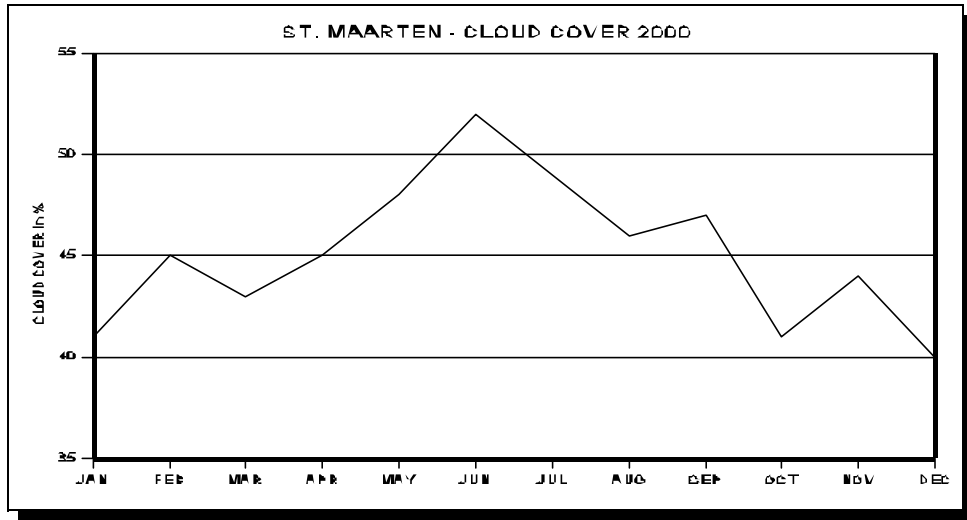
The warmest month was April with a daily average sunshine duration of nine hours and 24 minutes. The coolest month of 2000 was February with a daily average of eight hours.

The longest daily sunshine duration for the past year was 11 hours and 30 minutes and it was recorded on the 23th of March and May 25.



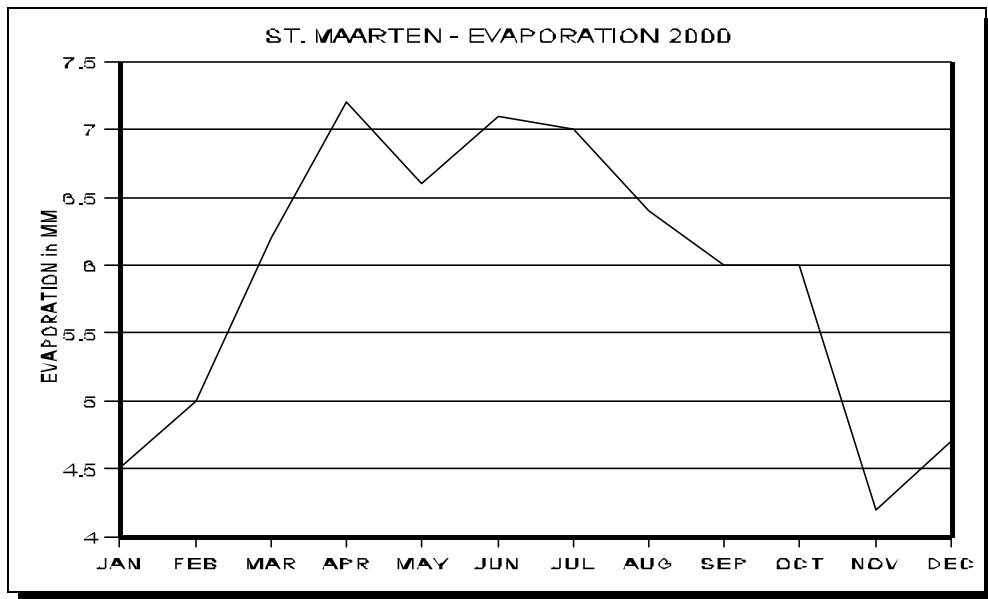
CLOUD COVER

The daily average clouds cover for St. Maarten over the past year as recorded at Princess Juliana Airport was 42%. The highest daily average cloud cover/month was 52% and it was observed in June. December had the lowest value of 40%.



EVAPORATION

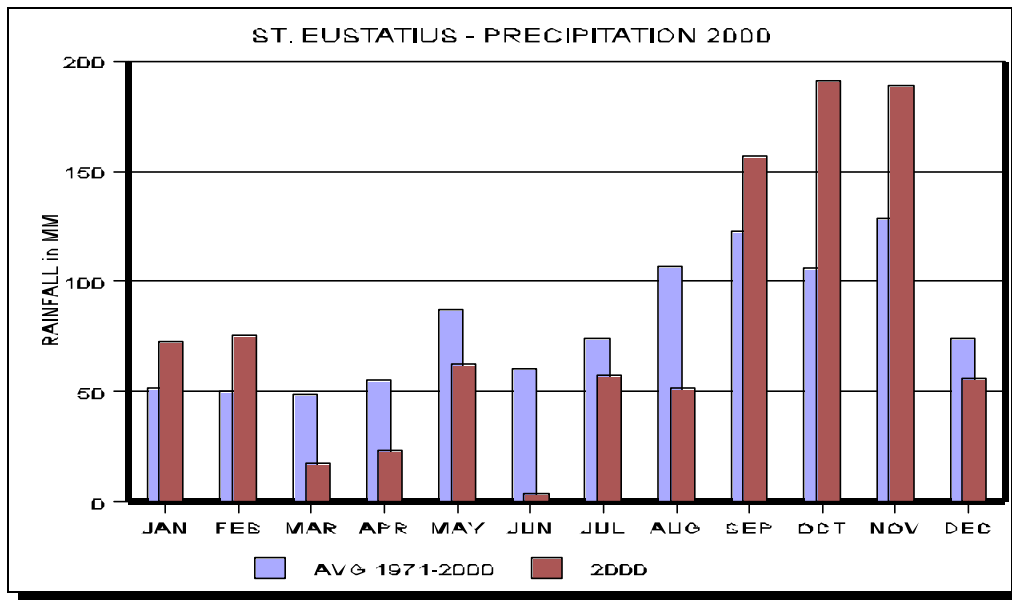
The average daily evaporation, measured at the Princess Juliana airport, for the year 2000 was 5.5 mm. March had the highest average evaporation value of 7.2 mm while November had the lowest value of 4.2 mm.



St. Eustatius

PRECIPITATION

The rainfall total, recorded at the Roosevelt Airport, for the year 2000 was 960.0 mm. This amount is just below the 30-year average (1971-2000) which is 985.8 mm. The same as St. Maarten the island of St. Eustatius also experienced a dry spell from March to August. The rainfall during September, October and November made up for the dry spell. The 24-hour maximum was 85.6 mm and occurred on November 7. The number of days with precipitation ≥ 1.0 mm was 123. October was the wettest month with a monthly total of 190.8 mm and the driest month was June with 4.2 mm.

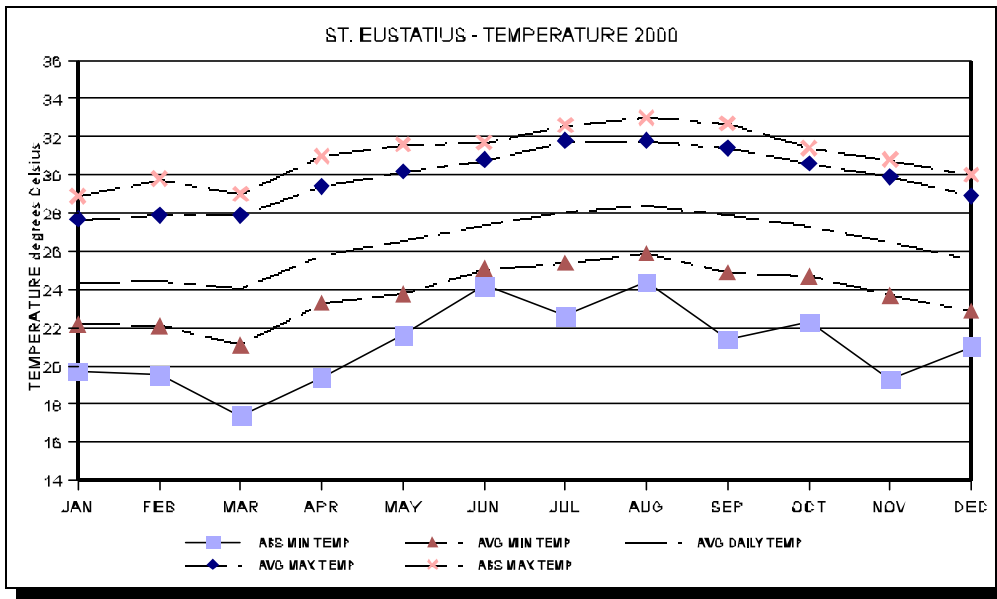


TEMPERATURE

The average air temperature as recorded at Roosevelt Airport over the year 2000 was 26.4/C (normal 26.9/). August was the warmest month of the past year with highest monthly average temperature 28.4/C. July and August had the highest monthly average maximum temperature of 31.8/C. The absolute maximum temperature of the past year was 33.0/C and was recorded on the 20th of August at 13:13 local time.

March was the coolest month with a monthly average temperature of 24.1/C and the average minimum temperature of 21.1/C was observed in March.

The absolute minimum temperature was 18.6/ C and was recorded on the 19th of January at 05:58 local time.



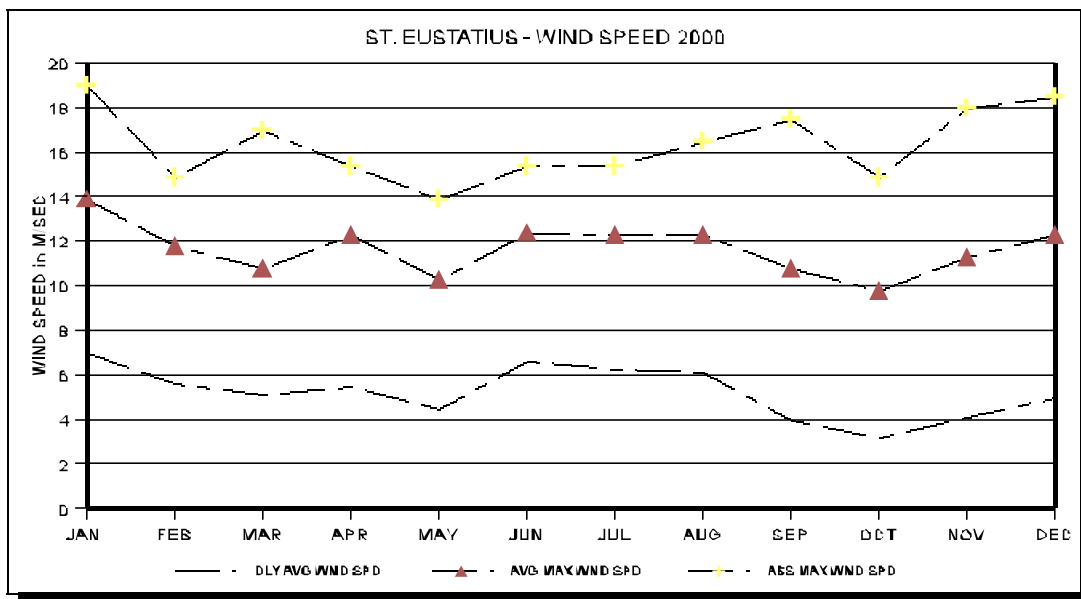
WIND

The average wind speed for the past year was 5.3 m/sec (19.1 km/hr) at 10m height.

January was the month with the highest average wind speed 7.0 m/sec (25.2 km/hr) and September had the lowest average wind speed 3.2 m/sec (11.5 km/hr).

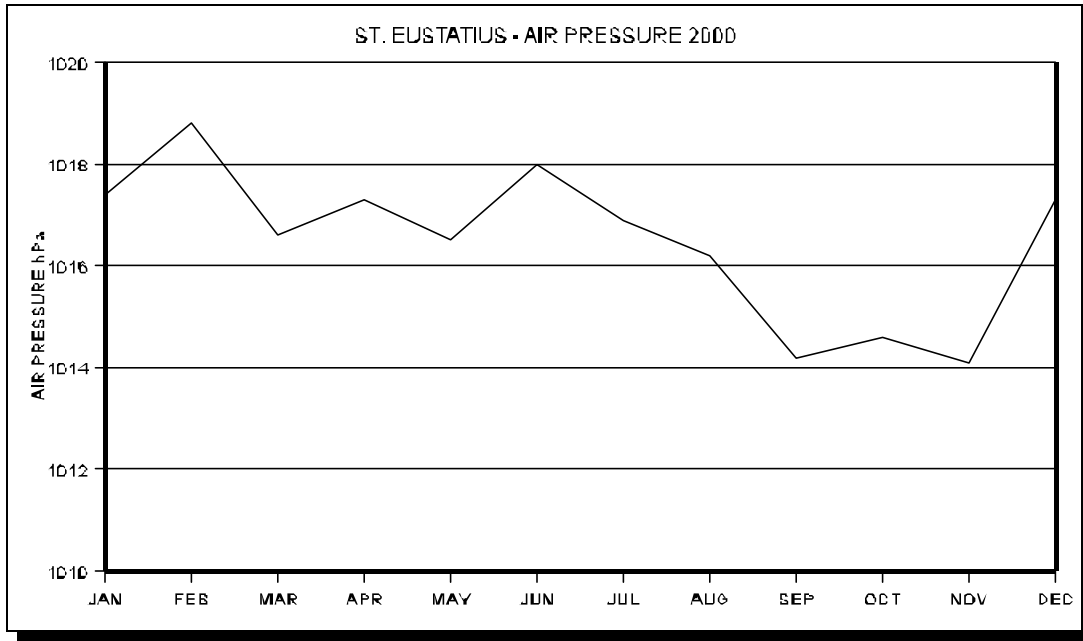
The highest daily average wind speed of 11.2 m/sec (40.3 km/hr) was recorded on January 16 and the lowest daily average wind speed of 0.7 m/sec (2.5 km/hr) was on September 8.

The highest wind gust 19.0 m/sec (68.4 km/hr) was observed on January 16 (no time available).



AIR PRESSURE

The average air pressure recorded at Roosevelt Airport over the past year was 1016.5 hPa. The maximum air pressure of 1023.46 hPa was observed on the 6th of February while the minimum air pressure of 1008.4 hPa was recorded on November 9.

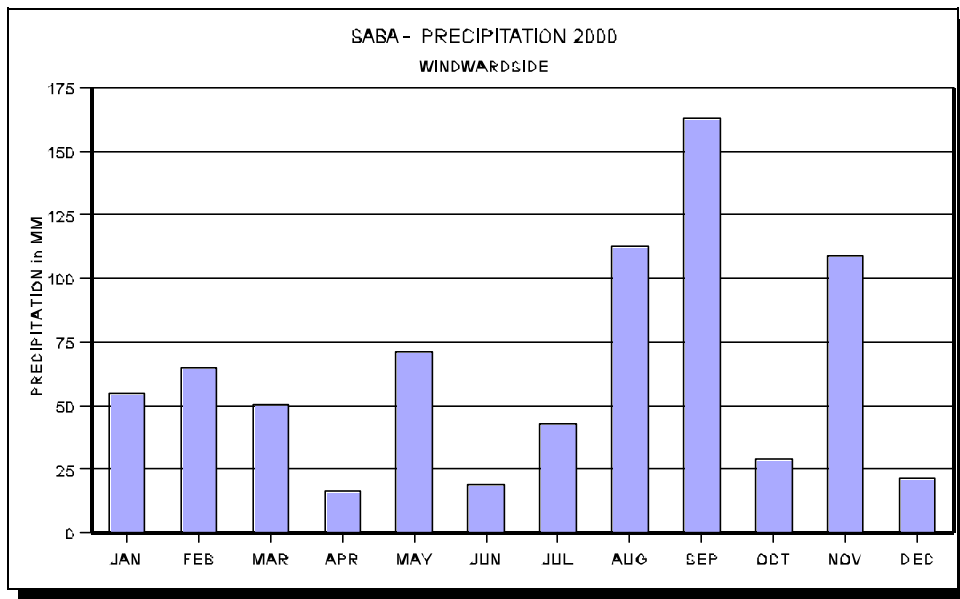


Saba

PRECIPITATION

The rainfall total, recorded at Windwardside, Saba, for the year 2000 was 755.0 mm. The 24-hour maximum was 97 mm and occurred on September 18. The number of days with precipitation ≥ 1.0 mm was ninety-one.

Due to technical problems no data is available from the Juancho Yrausquin Airport at Saba. The rainfall data is from the station at Windwardside.

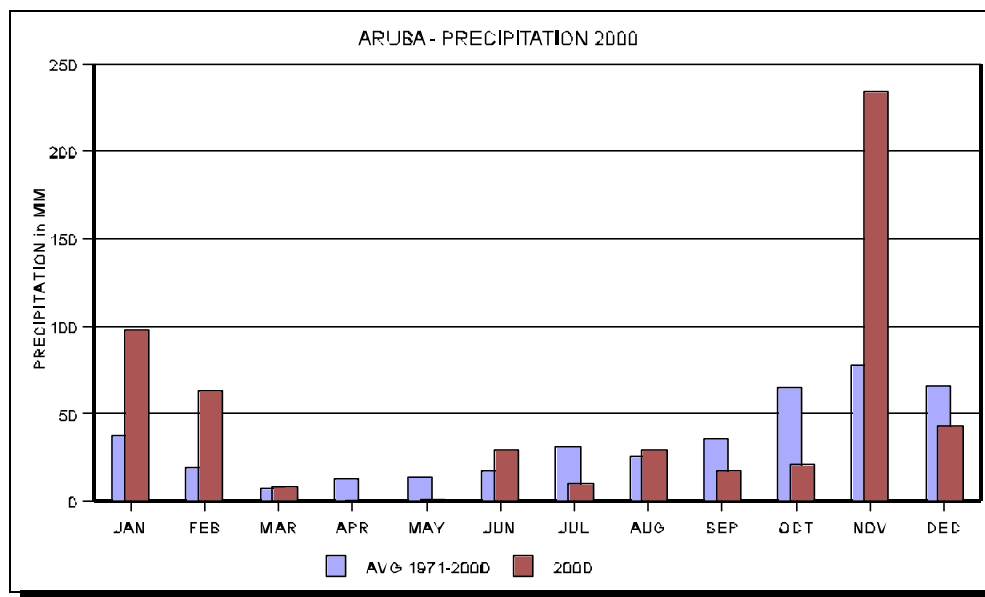


ARUBA

PRECIPITATION

The rainfall total, recorded at the Queen Beatrix Airport, for the year 2000 was 555.2 mm. This amount is 30% above the 30-year average (1971-2000) which is 425.5 mm. The rainfall pattern is nearly the same as in Curaçao and Bonaire. Six or seven months were below average and one month, November, had an extremely high rainfall total. The rainfall of November propelled the year total value to above average rainfall conditions for all these islands.

The 24-hour maximum was 58.2 mm and occurred on November 11. The number of days with precipitation ≥ 1.0 mm was eighty-three.

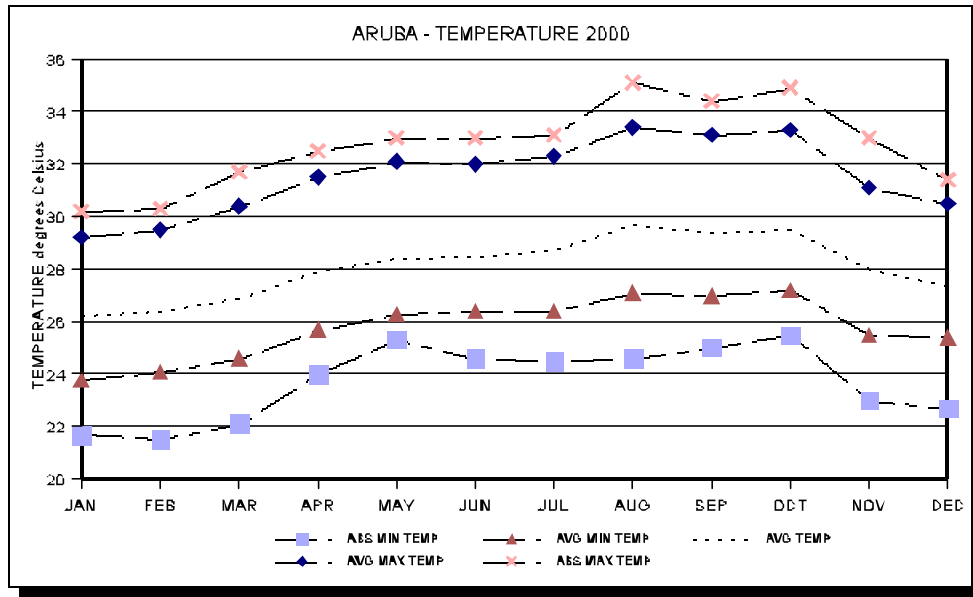


TEMPERATURE

The average air temperature as recorded at Queen Beatrix Airport over the year 2000 was 28.1/ C (normal 27.8/). August was the warmest month of the past year with highest monthly average temperature 29.7/ C. August had the highest monthly average maximum temperature of 33.4/ C . The absolute maximum temperature of the past year was 35.1/ C and was observed on the 23th of August at 12:12 local time.

January was the coolest month with a monthly average temperature was 26.2/ C's and also the lowest monthly average minimum temperature (23.8/ C) was recorded in January.

The absolute minimum temperature was 21.5/ C and was observed on the 17th of February at 20:39 hours local time.



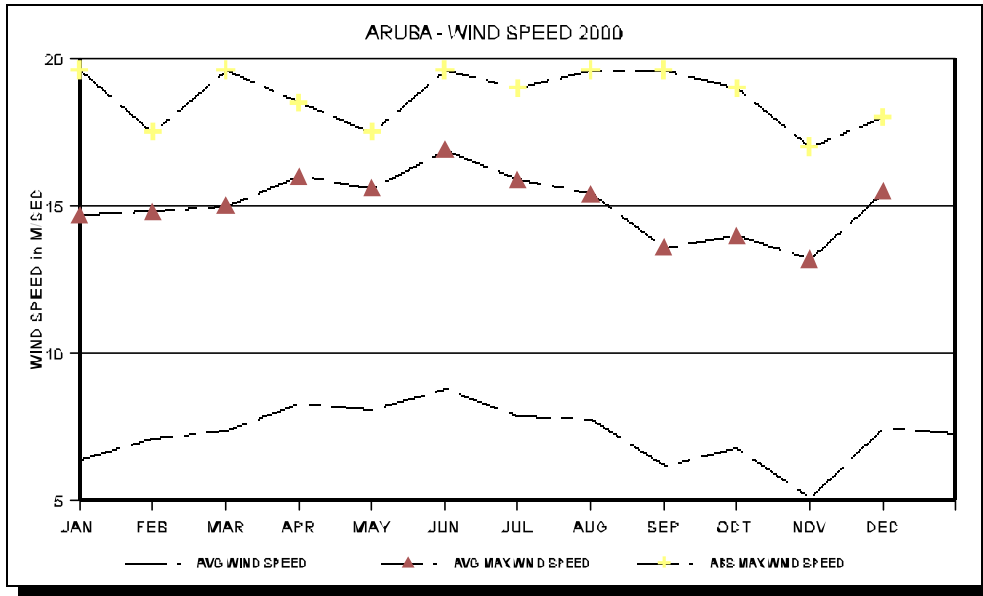
WIND

The average wind speed for the past year, recorded at Queen Beatrix Airport was 5.3 m/sec (19.1 km/hr) at 10m height.

June was the month with the highest average wind speed 8.8 m/sec (31.7 km/hr) and November had the lowest average wind speed 5.1 m/sec (18.4 km/hr).

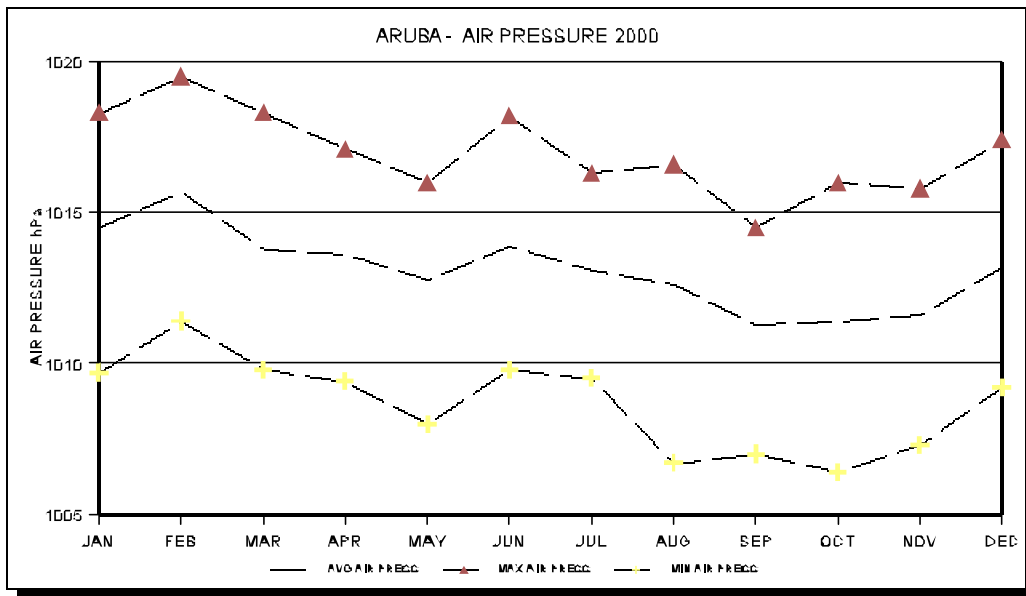
The highest daily average wind speed of 10.4 m/sec (37.4 km/hr) was recorded on April 14 and the lowest daily average wind speed of 1.9 m/sec (6.8 km/hr) was on November 23.

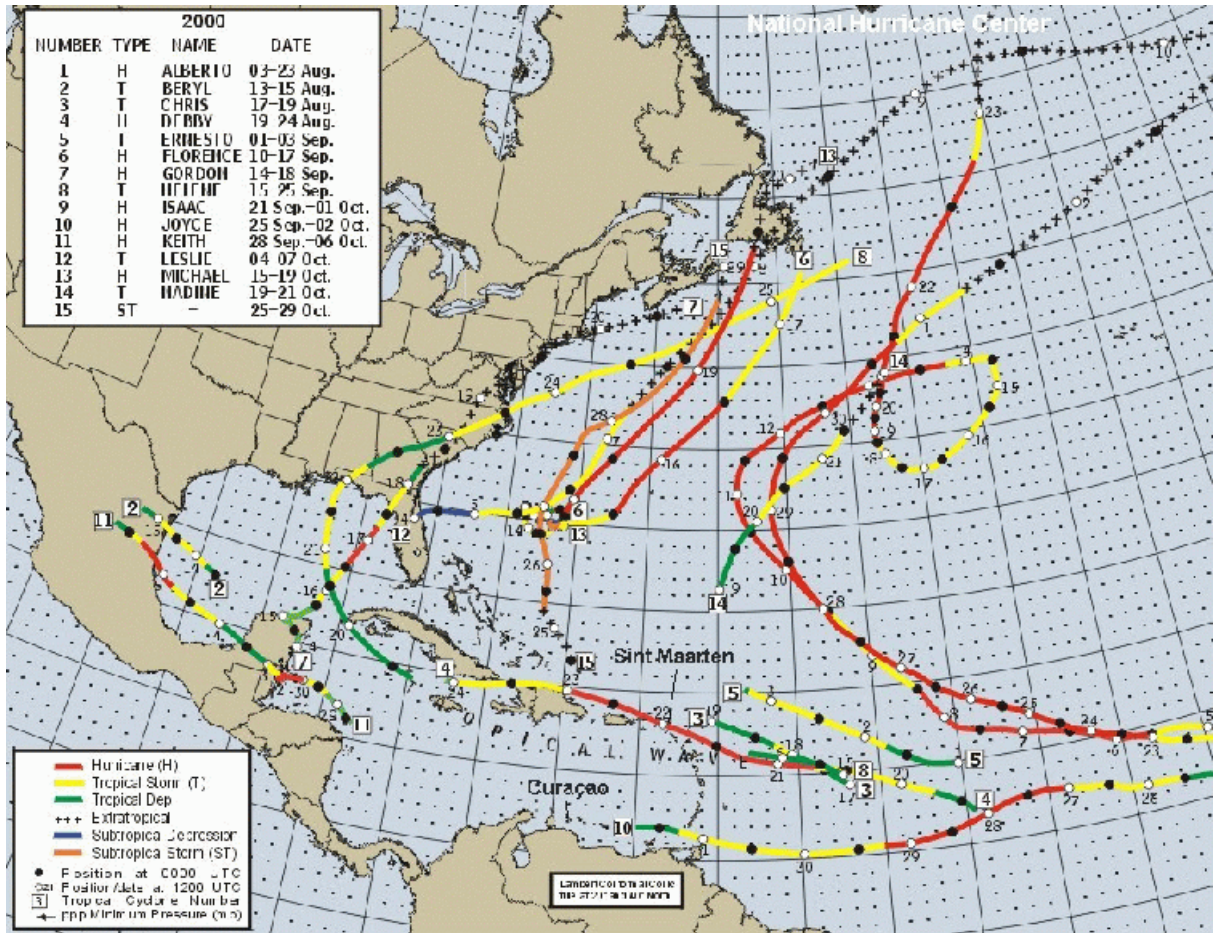
The highest wind gust 19.6 m/sec (70.6 km/hr) was observed on various occasions, respectively March 16, August 23 and September 11.



AIR PRESSURE

The average air pressure recorded at Queen Beatrix Airport over the past year was 1013.1 hPa. The maximum air pressure of 1019.5 hPa was observed on the 6th of February while the minimum air pressure of 1006.4 hPa was recorded on October 25.





Map of all 2000 Atlantic tropical cyclones