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# Meteorological Department St. Maarten

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## Weather & Climate

Volume 4, Issue 9

September 2019

### Summary

- There were three (3) heatwave periods during the month of August on St. Maarten.
- August 2019 was the warmest August since 1999.
- September to October is the peak of the Caribbean Heat Season, this year will likely be significantly hotter than the past two years.

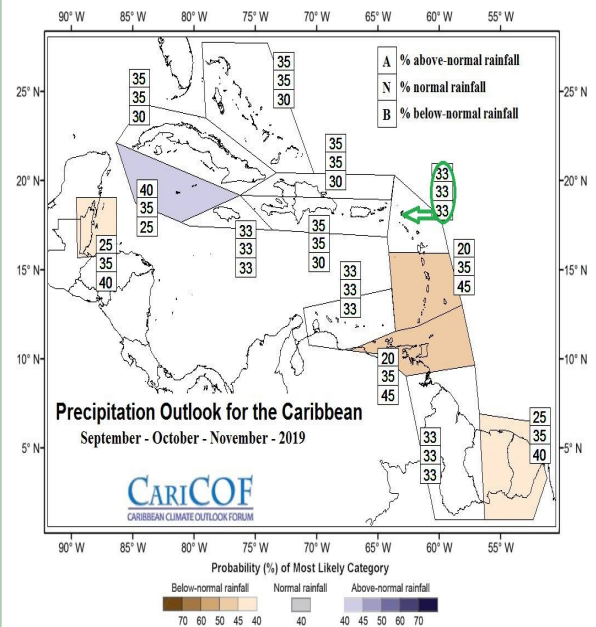
### Seasonal Outlook for September to November (SON) 2019

#### Rainfall Forecast

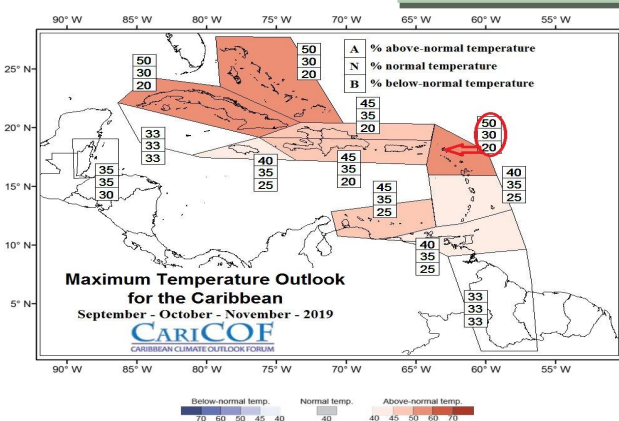
Models are indicating very little skill on rainfall totals for the Sept-Oct-Nov season over the northeast Caribbean at this time. Rainfall is expected to be more than usual in the Cayman Islands, while in Barbados, Belize, Trinidad & Tobago and the windward Islands it is likely to be less than usual.

Within the 91 days of Sept-Oct-Nov, the normal rainfall total for St. Maarten ranges from 355.5 mm – 498.2 mm/ 14-20 in. 43-47 wet days, up to 6 (7-day) wet spells this season.

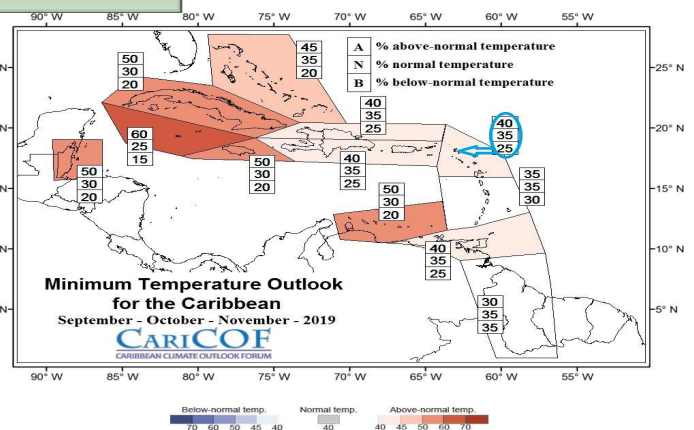
As we enter the wettest time of the year, there is concern for flash floods and flooding. Throughout this season frequent heavy showers are expected. November is the wettest month on average in St. Maarten.



#### Temperature Forecast



Day-time Temperatures



Night-time Temperatures

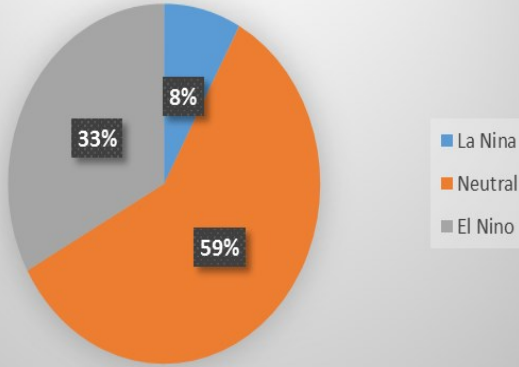
Day-time and night-time temperatures are expected to be as warm as usual or warmer across most of the Caribbean during this period.

For more information on other Caribbean Outlooks go to <http://rcc.cimh.edu.bb/long-range-forecasts/caricof-climate-outlooks/>

## ENSO FORECAST

(El Niño Southern Oscillation)

### Enso Forecast Probabilities Sept-Oct-Nov 2019

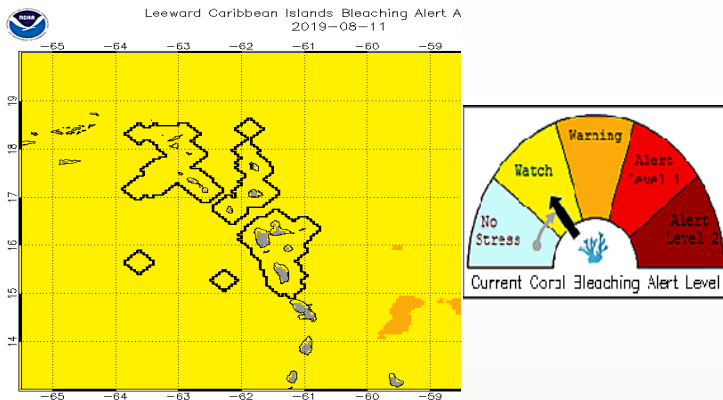


Sea surface temperatures in the Pacific have cooled to ENSO-neutral levels during July bringing the weak El Niño of 2018/19 to an end. Patterns in the atmosphere are also showing ENSO-neutral conditions.

The latest forecast models collectively indicates a 59% chance of ENSO-neutral throughout Sept-Oct-Nov. 2019. The forecast also indicates that, ENSO-neutral phase may continue into the first quarter of 2020.

A return to the neutral phase increases the chances of a more active hurricane season and decreases the forecast skill for rainfall and temperature in the Caribbean.

### Coral Bleaching Watch: Low-level Thermal Stress



Thermal stress is expected to accumulate during the month of September while bleaching is expected by the end of October 2019 across the eastern Caribbean.

### Drought Forecast

There is no drought concern for St. Maarten at this time. However, there is still some drought concerns for some parts of the Caribbean.

By the end of November 2019, drought conditions may still be possible in parts of Suriname, Trinidad & Tobago and Martinique.

It is possible that in the long-term; drought conditions may still evolve in other parts of the Region.

### The 2019 Atlantic Hurricane Season

#### 2019 Storm Names

<del>Andrea</del>	Humberto	Olga
<del>Barry</del>	Imelda	Pablo
<del>Chantal</del>	Jerry	Rebekah
<del>Dorian</del>	Karen	Sebastien
<del>Erin</del>	Lorenzo	Tanya
<del>Fernand</del>	Melissa	Van
<del>Gabrielle</del>	Nestor	Wendy

Be Prepared !!!!!

Be Prepared !!!!!

Tropical storm **Dorian** formed in the central Atlantic on August 24<sup>th</sup> and became a hurricane on August 28<sup>th</sup> near the Virgin Islands.

Tropical storm **Erin** formed near the Eastern coast of the US on August 27<sup>th</sup>.

Tropical storm **Fernand** formed in the Gulf on September 3<sup>rd</sup> and tropical storm **Gabrielle** formed on September 4<sup>th</sup> in the Eastern Atlantic.

The next named storm will be Humberto.

## AUGUST 2019 IN REVIEW

Total Rainfall	146.1 mm	5.8 in.
2019 Cumulative Rainfall	517.7 mm	20.4 in.
Max. 24-Hr. Rainfall	Aug. 28 <sup>th</sup>	84.2mm/ 3.3 in.
No. Rain Days (≥1.0 mm)	12 days	
No. Heavy Rain Days (≥10.0 mm)	3 days	
No. Thunderstorm Days	4 days	
Avg. Wind Speed	10 kts.	12 mph
Avg. Temperature	29.2°C	85°F
Max. Temperature	Aug. 26 <sup>th</sup>	33.4°C / 92°F
Min. Temperature	Aug. 28 <sup>th</sup>	24.3°C / 76°F

Rainfall for the month of August was above the normal range (76-124 mm) due to the passage of tropical storm Dorian. 72mm/2.8inches was recorded within a 6-hr period on August 28<sup>th</sup>.

Temperatures throughout the month of August were either near average or warmer than average.

The average daily temperature for August was 29.2°C/85°F. This was the warmest August in last twenty (20) years.

The warmest day was the 26<sup>th</sup> with an average temperature of 29.9°C/86°F. The maximum temperature on that day was 33.4°C/92°F.

There were thirteen (13) heat-wave days (maximum temperature of 32.3°C/90°F and above) in the month of August. There were three (3) heat-wave periods. i.e. three (3) or more consecutive days with maximum temperatures above 32.2°C.

The coolest day was the 28<sup>th</sup> with an average temperature of 26.9°C/80°F.

The day with the most sunshine hours was the 13<sup>th</sup> (11hrs :48min).

The day with the least sunshine hours was the 28<sup>th</sup> (0hrs:00min) due to cloudy to overcast skies.

The windiest days were the 3<sup>rd</sup>, 4<sup>th</sup>, 5<sup>th</sup> & 28<sup>th</sup> with a daily average wind speed of 12 kts. / 16 mph. There was a maximum wind gust of 36 kt/41 mph on the 2<sup>nd</sup>.

## Long /Short Term Seasonal Review

### Year in Review (Sept. 2018— August 2019)

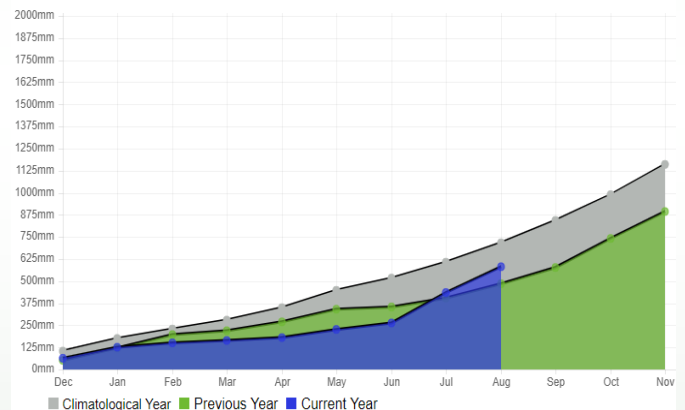
Rainfall amount over the past year is now near the normal range. There were five (5) months within the past year with near normal to above normal rainfall.

### Seasonal Review (Jun –Jul–Aug. 2019)

Total rainfall for the last three (3) months was 318.1 mm, this amount was within the normal range (264-349 mm). There were seven (7) days with heavy rainfall (>10mm) within that period.

### TNCM, St-Maarten - Accum. Rainfall Dec-Nov Year

(Location: 18.0408°N, -63.1095°W)



## NORMAL SEPTEMBER CONDITIONS

Rainfall Total	94.9 mm – 132.7 mm	4– 5 in.
Avg. No. of Rain days	14 days	
Daily Average Temperature	28.7°C	84°F
Avg. Max. Temperature	31.8°C	89°F
Avg. Min. Temperature	26.2°C	79°F
Avg. Daily Hours of Sunshine	8 hrs	

Please note that all data was recorded at the Princess Juliana International Airport and may not necessarily reflect conditions at other points on country St Maarten.

## The Heat Season is on!!!!

August to October is normally the hottest time of year on St. Maarten.

Drink lots of water.

Wear protective clothing, hats and sunglasses if you work outdoors.

### Implication of Forecast for Sectors

#### Tourism Sector

- We are in the peak of the 2019 Atlantic Hurricane Season. Therefore, tourism operators are advised to monitor weather advisories issued by the Meteorological Department.
- At all times, tourism operators should maintain a state of readiness, including communication plans and response protocols to deal with sudden eventualities.

#### Agriculture

- Episodes of heat stress could be a concern to farmers, small livestock and poultry. Provide adequate water and shade for Livestock.
- Continue to be mindful of the necessary procedures needed to avoid/minimize damage or loss in the event of floods or flash floods.

#### Health

- The presence of stagnant water in the aftermath of heavy rainfall or floods may promote the breeding of mosquitoes and increase the risk of associated mosquito borne diseases, such as Dengue & Chikungunya.
- Particularly in September and October, there will be an increased risk of dehydration, which may present an associated increase in its symptoms such as general weakness, dizziness, fainting, and, in extreme cases, kidney failure. This risk decreases as we approach November.
- Frequent episodes of Saharan dust into the Caribbean region may increase the risk of respiratory illnesses. Persons suffering with Asthma and other such illness should take the necessary precaution.

#### Energy/Water Sector

Energy demand for cooling purposes will continue to increase as day-time and night-time temperatures are expected to increase this season.

### DID YOU KNOW HOW A HURRICANE IS STRUCTURED?....

Hurricane winds blow in a counterclockwise spiral around the calm, roughly circular center called the eye. In the eye, which is roughly 20 to 30 miles wide, it is relatively calm and there is little or no rain. The eye is the warmest part of the storm.

Surrounding the eye is the eyewall, a wall of thunderclouds. The eyewall has the most rain and the strongest winds of the storm, gusting up to 225 mph (360 km/h) in severe storms.

The smaller the eye, the stronger the winds.

Long bands of rain clouds appear to spiral inward to the eyewall -- these are called spiral rain bands. Hurricanes can be hundreds of miles across.

In addition to rotating with wind speeds of at least 74 mph, a hurricane travels relatively slowly across the ocean or land, usually at about 20 to 25 mph.

If you are facing in the direction that the hurricane is traveling, the right side generally has the fastest winds, and the left side usually has the most rain.

