

# Weather & Climate

Volume 3, Issue 1

July 2017

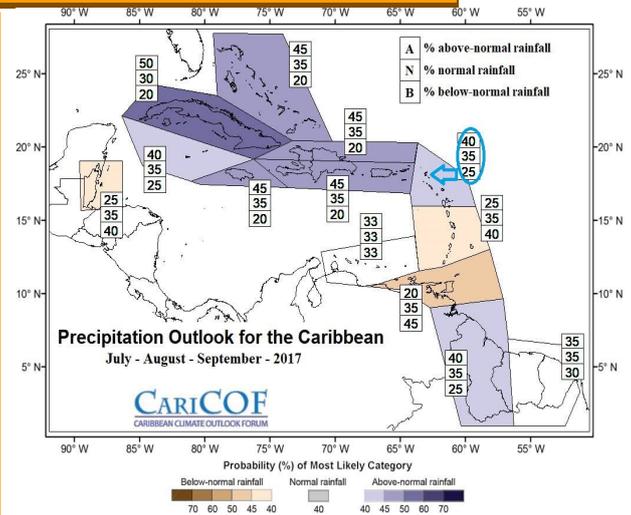
## Seasonal Outlook for July to September (JAS) 2017

### Rainfall Forecast

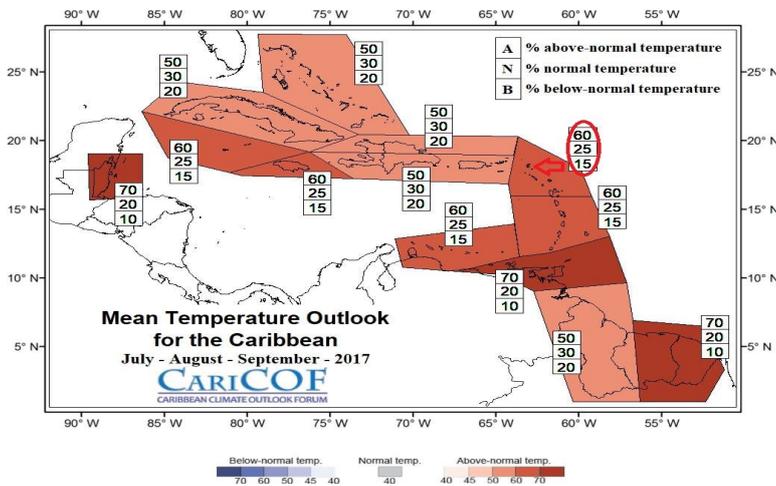
Rainfall for St. Maarten and most of the northern Caribbean is forecast to be near to above normal for the season July-August-September with a slight increase in the number of wet days. Below normal to normal rainfall is forecast for Belize, the Windward islands and Trinidad.

The normal rainfall for St. Maarten ranges from 264 mm – 349 mm/ 10-13 in. Throughout the 92 days of Jul-Aug-Sept, there is usually about 36-50 wet days.

Normally, during July and August there is often a mid summer dry spell while in September there is usually frequent heavy showers.



### Temperature Forecast



Temperatures for both day and night across the Region is likely to be above normal for this season; July to September.

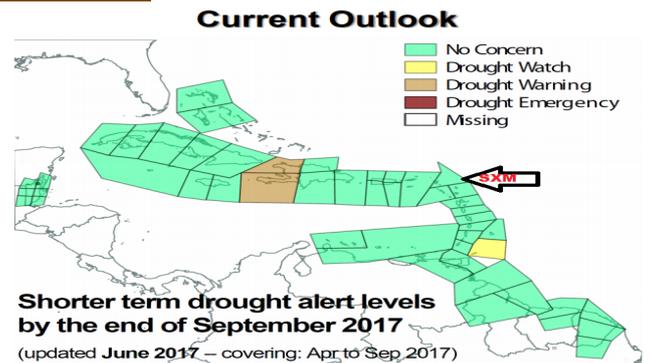
The hottest time of year which is usually August to October will be warmer than normal.

Heat stress on humans and livestock is expected to increase during the upcoming months.

### Drought Forecast

As we transition from the dry to wet season there is currently no drought concern in the short term ( by the end of September) for the region except for Haiti and Tobago.

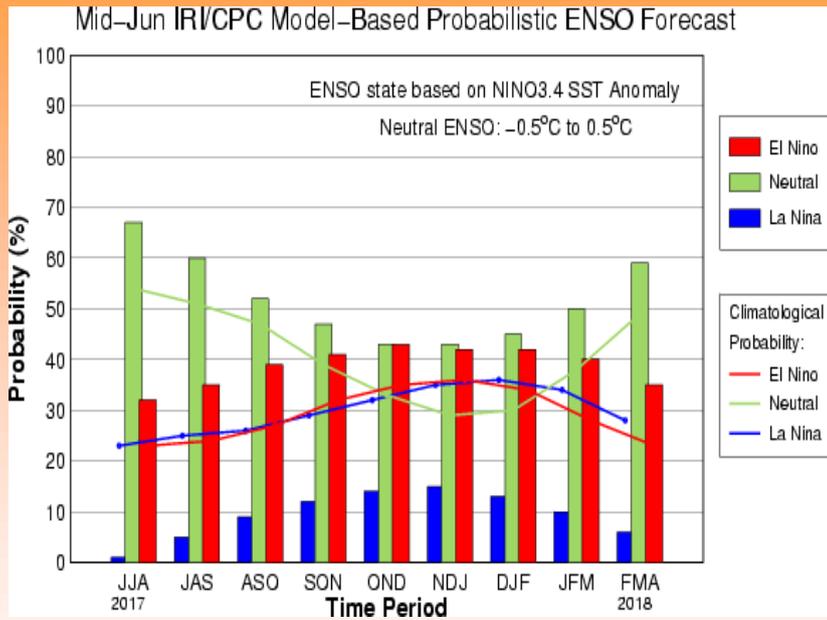
In the long term (by the end of November 2017) however, there are some concerns in parts of the Bahamas.



**Shorter term drought alert levels by the end of September 2017**

(updated June 2017 – covering: Apr to Sep 2017)

## ENSO FORECAST



During mid-June 2017, the tropical Pacific remained in an ENSO-neutral state. Sea surface temperature were near the El Niño threshold in the eastern-central Pacific Ocean but maintain the ENSO-neutral patterns.

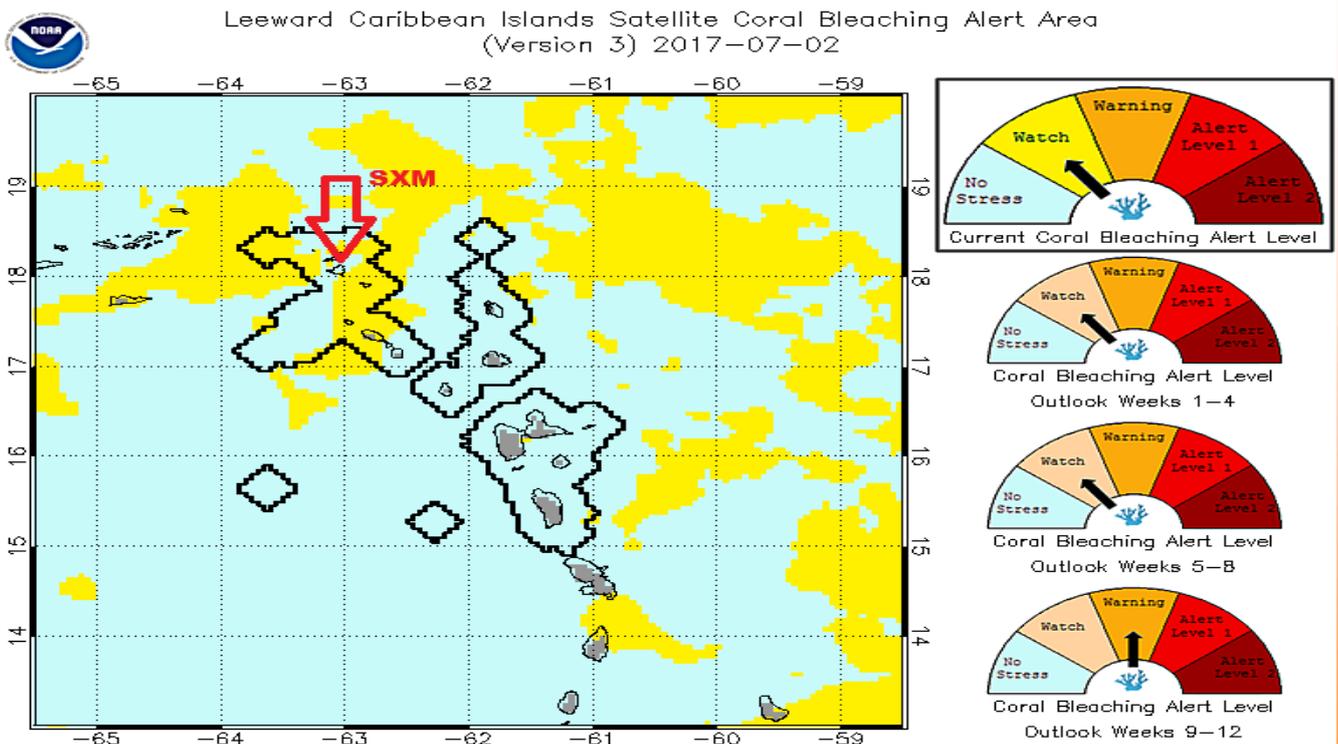
A collection of all ENSO Predicting Models continue to indicate that the ENSO-neutral conditions most likely will continue through this summer with chances for El Niño to developing during October to December season.

This ongoing neutral state will have little effect on our rainfall and temperatures. However, if El Niño evolves by October, this will increase the chances for hotter conditions and less hurricane activity during the latter part of the season.

## Coral Bleaching Alert

Presently sea surface temperatures (SST) around Leeward Islands and St. Maarten are about  $28.2^{\circ}\text{C}$  ( $83^{\circ}\text{F}$ ). This is near average. Although temperatures remain below the bleaching threshold, some low level thermal stress maybe observed during the next few weeks till the end of August. As a result, the alert level has been moved to a **Watch**.

As mean temperature continue to increase across the Region during the next months; July through September, stress on corals are expected to increase. By the end of September thermal stress is expected to begin accumulating and bleaching will occur thereafter.



## JUNE 2017 IN REVIEW

|   |                             |                         |
|---|-----------------------------|-------------------------|
| <b>Total Rainfall</b>                     | <b>82.4 mm</b>              | <b>3.2 in.</b>          |
| <b>2017 Cumulative Rainfall</b>           | <b>456.8 mm</b>             | <b>18.0 in.</b>         |
| <b>Max. 24-Hr. Rainfall</b>               | <b>June 29<sup>th</sup></b> | <b>23.6 mm/ 0.9 in.</b> |
| <b>No. Rain Days<br/>(≥1.0 mm)</b>        | <b>12 days</b>              |                         |
| <b>No. Heavy Rain Days<br/>(≥10.0 mm)</b> | <b>3 days</b>               |                         |
| <b>No. Thunderstorm Days</b>              | <b>5 days</b>               |                         |
| <b>Avg. Wind Speed</b>                    | <b>10 kts.</b>              | <b>12 mph</b>           |
| <b>Max. Wind Gust</b>                     | <b>June 29<sup>th</sup></b> | <b>35 kts. / 40 mph</b> |
| <b>Avg. Temperature</b>                   | <b>28.0 °C</b>              | <b>82 °F</b>            |
| <b>Max. Temperature</b>                   | <b>June 28<sup>th</sup></b> | <b>31.3 °C / 88 °F</b>  |
| <b>Min. Temperature</b>                   | <b>June 29<sup>th</sup></b> | <b>22.7°C / 73 °F</b>   |

The average and maximum temperature for June were within the normal range while the minimum temperature was below-normal.

The warmest day was the 28<sup>th</sup> with an average temperature of 28.8°C/84°F.

The day with the most sunshine hours was the 16<sup>th</sup> (12hrs :00min).

The day with the least sunshine hours was the 29<sup>th</sup> (0hr: 00 min).

The windiest day was the 25<sup>th</sup>, with a daily average wind speed of 12 kts. / 14 mph.

The highest wind gust was recorded as 35kts/ 40 mph on June 29<sup>th</sup>.

Skies were mostly cloudy throughout the month with some fair days.

Rainfall for the month of June was above the normal range (40-66mm). A total of 82.4 mm/3.2 inches were recorded in twelve (12) rain days. There were three (3) heavy rainfall days.

On June 29<sup>th</sup> between 8am and 2pm (6 hrs) 22.9 mm/0.9 inch of rainfall was measured at the airport. This was as a result of the passage of a tropical wave through the Region. Upper level troughs and a tropical wave also produced heavy rainfall on June 10<sup>th</sup> and 14<sup>th</sup>. The rest of the month was generally dry and hazy due to the presence of Saharan dust across the Region.

### Year in Review (Jan-Jun 2017)

Rainfall for the year so far is 456.8 mm this amount is within the normal range (363-463mm).

There is NO drought concern at this time.

### Seasonal Review (Apr.–Jun 2017)

Rainfall for the last 3 months was 332.7mm this amount was above the normal range (156-253mm). Heavy rainfall and minor flooding was reported on April 16<sup>th</sup>, May 29<sup>th</sup> & June 29<sup>th</sup>. April 16<sup>th</sup> was the heaviest rain day for the past season where a total of 85.8mm was recorded with 64 mm was measured in 1.5 hour period.

## The 2017 Atlantic Hurricane Season

Two storms formed in the month of June. **Tropical Storm Bret** formed on **June 19<sup>th</sup>** southeast of the Lesser Antilles. Bret moved quickly across Trinidad and the northern coast of Venezuela and degenerated into a tropical wave the next day.

**Tropical Storm Cindy** formed on **June 20<sup>th</sup>** in the Gulf of Mexico. Cindy brushed pass the southern coast of Louisiana on June 21st and weakened to a depression on June 22nd.

The next storm to form will be called **Don**.



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.

## Summary of Forecast for July to September 2017

- Rainfall totals will be higher than normal. Both daytime and nighttime temperatures higher than normal.
- Heat stress and heat waves will be a concern especially during August and September.
- Coral Bleaching can be expected by the end of September.

### Implication of Forecast for Sectors

#### Health

- Increase cases of vector borne diseases such as Dengue, Zika or chikungunya.
- Increased risk of Leptospirosis due to human contact with flood waters which may be contaminated.
- Possible risk of injury or death during flash flooding events.
- Risk of dehydration, fainting or dizziness due to high temperatures in vulnerable persons such as babies and the elderly.
- Increase risk of skin rash or damage skin due to increase in UV radiation on sunny days.

#### Energy Sector

- Increased need for power for cooling as temperatures for both nights and days are expected to increase.

#### Tourism Sector

- More frequent disruptions to outdoor activities.
- Increase in use of insect repellants as environment becomes more conducive to mosquito breeding.
- Increase use of sunscreen and protective clothing as temperatures and the chances of heat waves increases.
- Report any cases of Coral Bleaching to St. Maarten Nature Foundation.

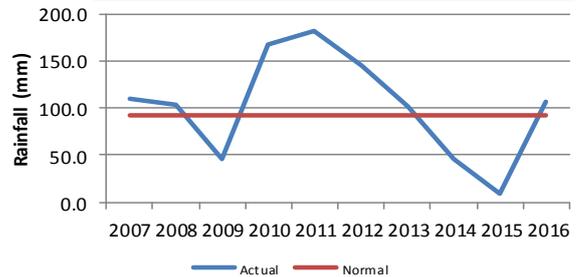
#### Agriculture

- Increase in moisture related pests and loss of crops due to flash flood events.
- Heat stress and discomfort in livestock.

### NORMAL JULY CONDITIONS

|                              |                       |          |
|------------------------------|-----------------------|----------|
| Rainfall Total               | 63.4 mm –<br>106.4 mm | 3– 4 in. |
| Avg. No. of Rain days        | 13 days               |          |
| Daily Average Temperature    | 28.6°C                | 83°F     |
| Avg. Max. Temperature        | 31.7°C                | 89 °F    |
| Avg. Min. Temperature        | 26.2°C                | 79°F     |
| Avg. Daily Hours of Sunshine | 8 hrs                 |          |

#### Actual Vs Normal July Rainfall



Rainfall for the month of July was above-normal for 7 out of the last 10 years.

### 2017 Atlantic Tropical Cyclone Names

|               |          |         |          |
|---------------|----------|---------|----------|
| <b>Arlene</b> | Franklin | Katia   | Philippe |
| <b>Bret</b>   | Gert     | Lee     | Rina     |
| <b>Cindy</b>  | Harvey   | Maria   | Sean     |
| Don           | Irma     | Nate    | Tammy    |
| Emily         | Jose     | Ophelia | Vince    |
|               |          |         | Whitney  |