

CMC 60

DUST

WIND

& WATER

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Grenada Meteorological Services, GAA

18th November 2020

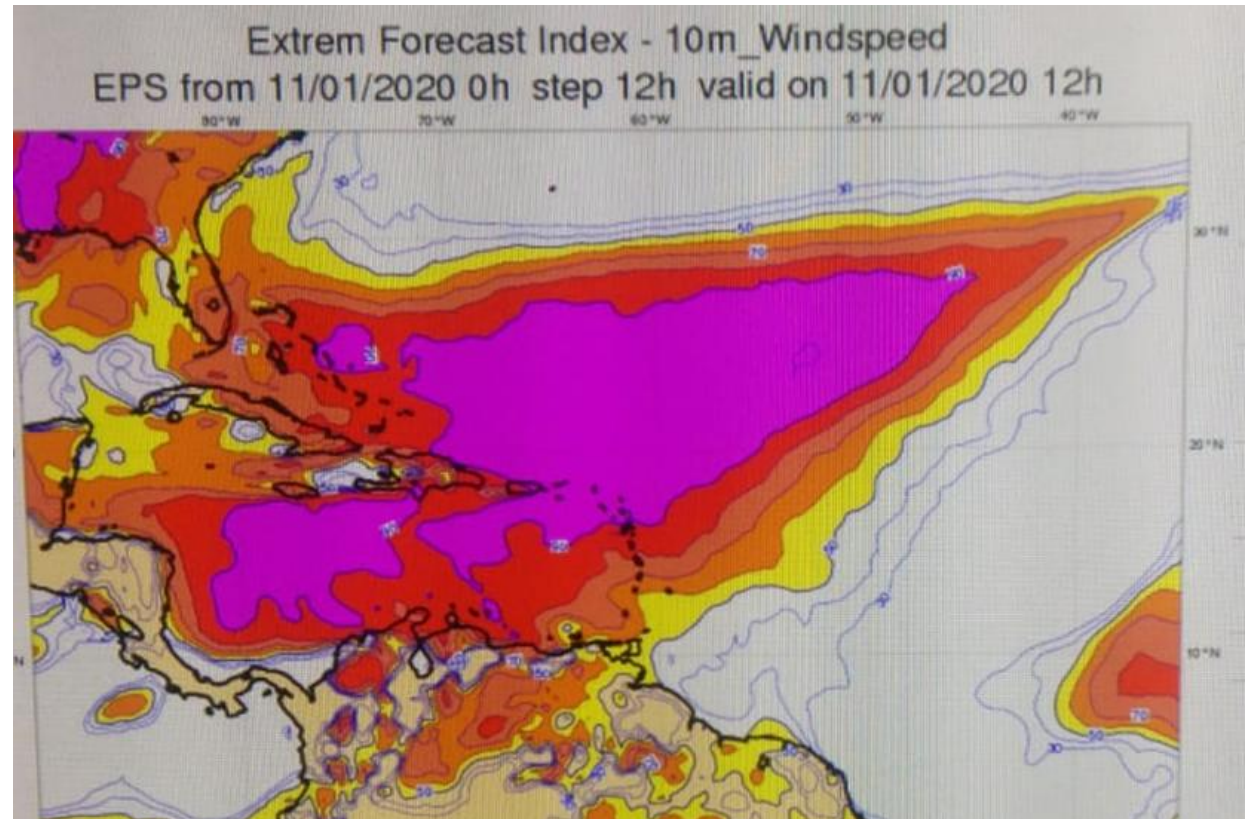
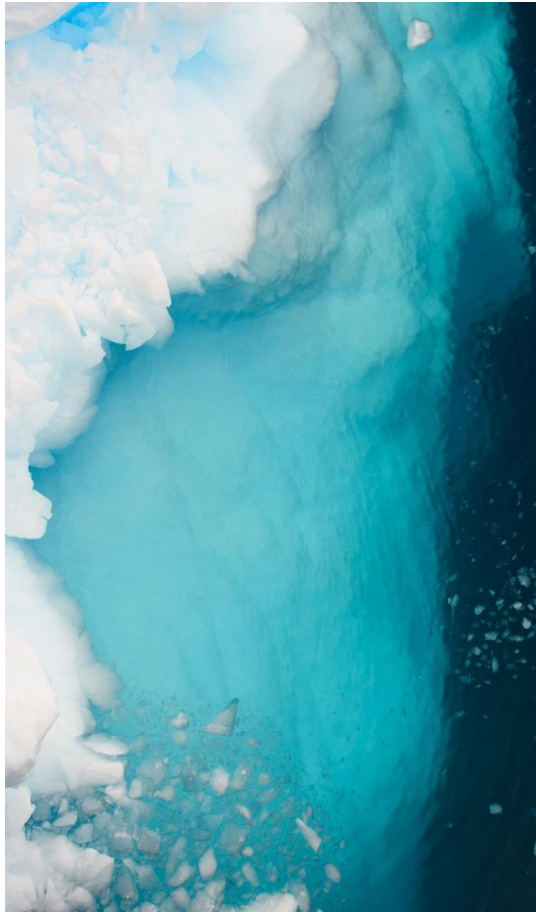


- ❖ Pre-Hurricane Season significant event
- ❖ Climatology (rainfall, dry spells, SPI, heat)
- ❖ 2020 Hurricane season significant events
- ✓ Dust storm
- ✓ Wind events
- ✓ Flood events

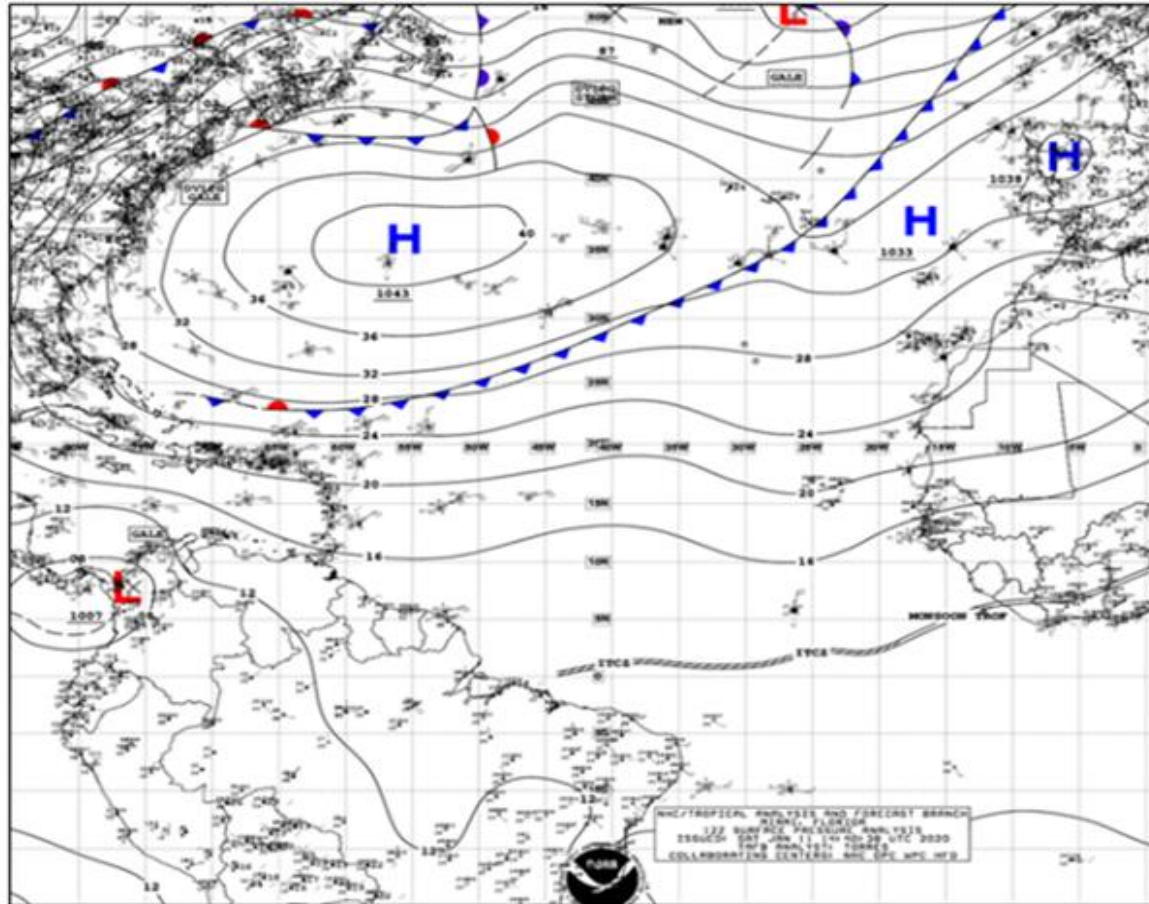
Scope

1st significant event

Gale force winds & hazardous seas

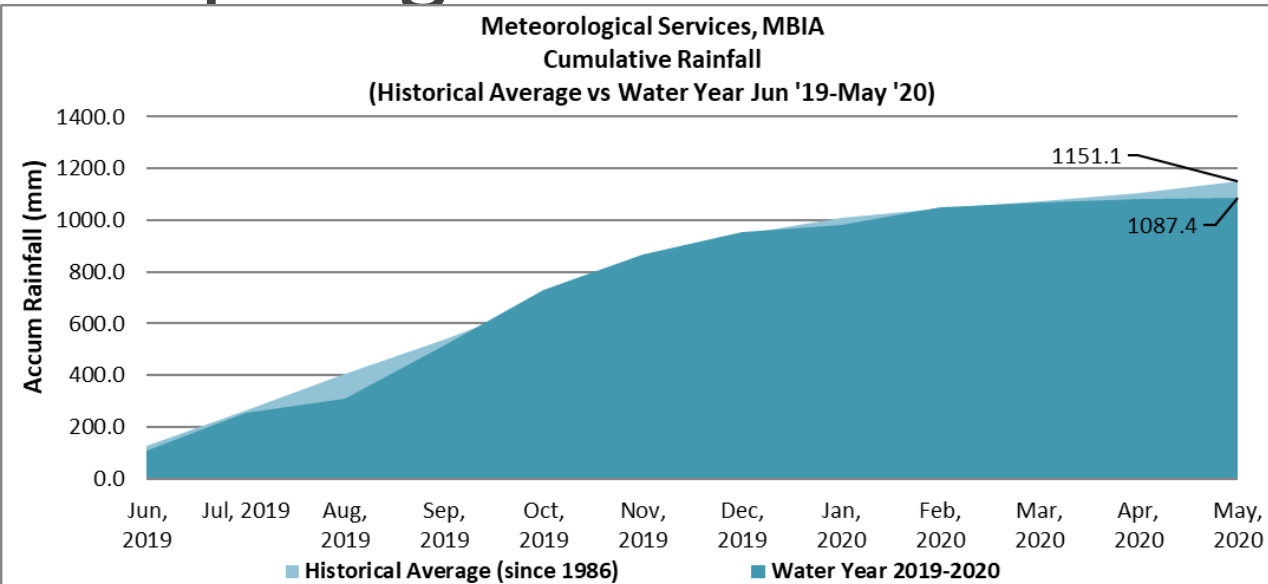


Gale force winds & hazardous seas



Jan 11th 2020: The STH (1043mb) remained dominant supporting windy conditions. Coupled with the effects of a southward draping frontal system, agitated sea conditions were triggered. High surf with waves up to 12 feet were reported for the period 11th to 13th January hence, marine and high surf warnings were issued.

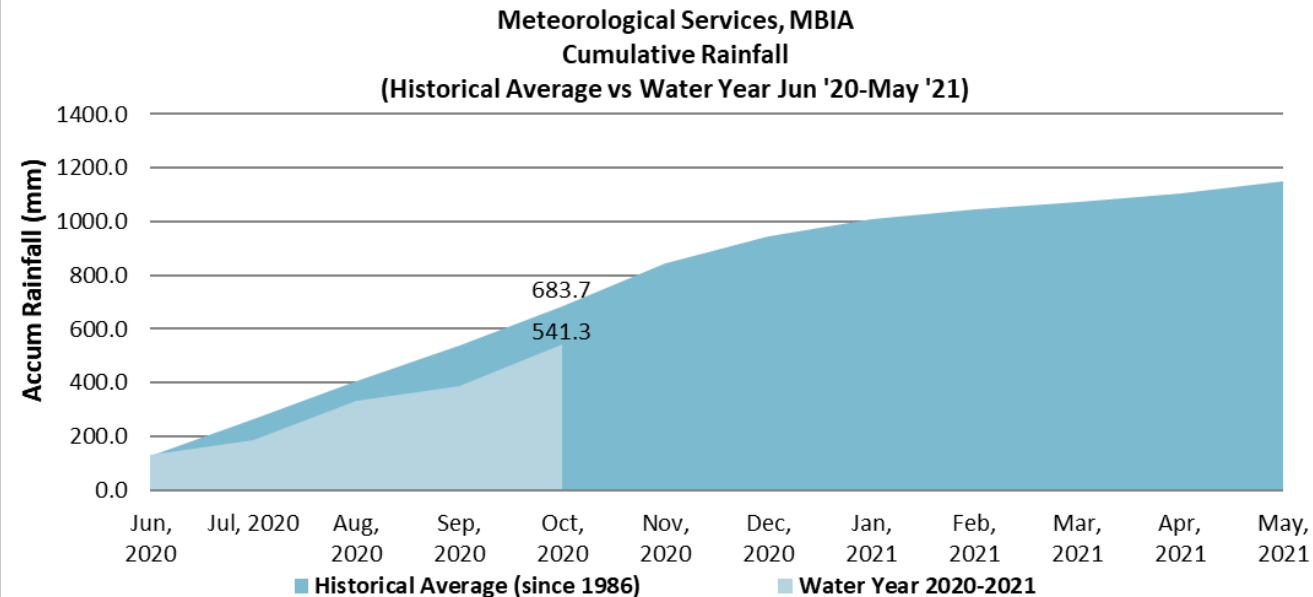
Comparing the last Water Year with the Current



Last Water Year ended below the historical average

At the end of October, the cumulative rainfall remained below the historical average.

After a slow start to the rain October finally brought above average rainfall.



Dry-spells in 2020

Consecutive Dry Days (CDDs): the number of consecutive days with rainfall less than 1 mm/day.

- January: 11
- February: 7
- March: 10
- April: 22
- May: 19
- June: 6
- July: 5
- August: 4
- September: 6
- October: 8

Standardized Precipitation Index (SPI)

Point Salines

| Period | Rainfall Excess/Deficit |
|----------------------|-------------------------|
| Oct_2020 | Normal |
| Aug to Oct_2020 | Abnormally dry |
| May to Oct_2020 | Severely dry |
| Nov_2019 to Oct_2020 | Extremely dry |
| Nov_2018 to Oct_2020 | Extremely dry |

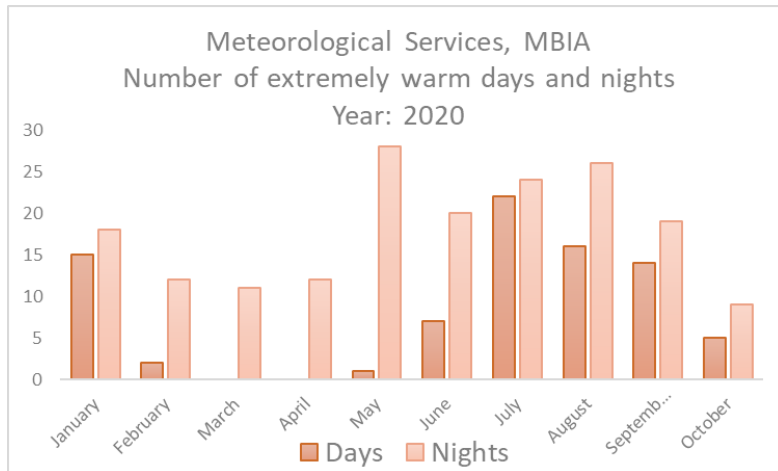
Despite a wet October, there was a rainfall deficit for the majority of 2020

Events contributing to the Deficit

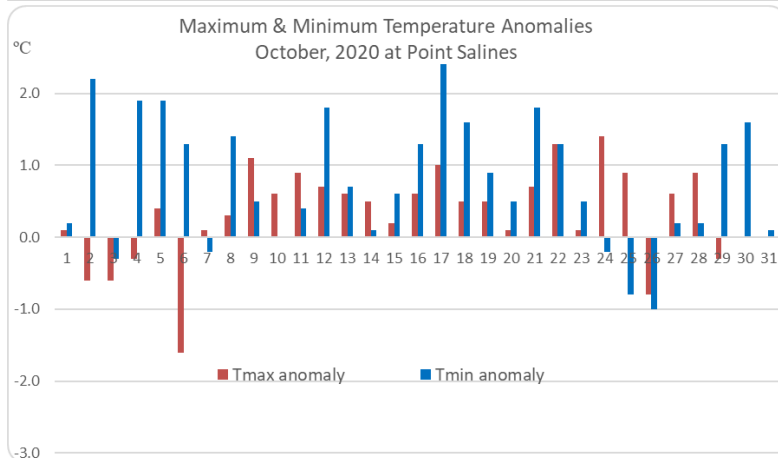
- Dense haze
- Subsidence
- Dry air as strong tropical cyclones absorbed available moisture to sustain themselves

Heat – Day and Night

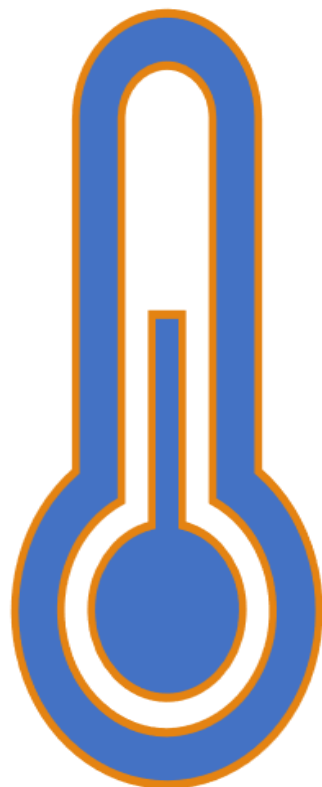
Monthly total of days with maximum temperature above the day's Tmax 90th percentile and nights above the Tmin 90th percentile.



July and August brought uncomfortable heat with many citizens complaining about **UNBEARABLE HEAT**



Even with the October rain, the maximum and minimum temperatures for most of the days and nights were above average



New Record at Point Salines

Prior to September 16th 2020, the highest maximum temperature on record (since 1986) was 33.8 °C.

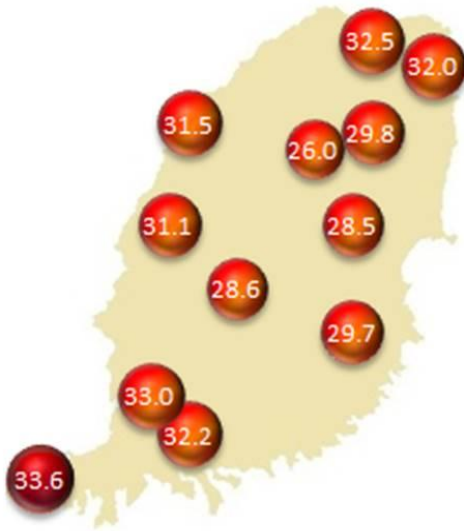
Recorded: September 2005

On September 16th, a new record of 34.0 °C was set

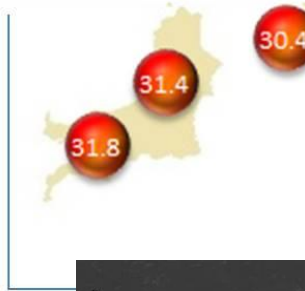
A few days later, September 26th, a maximum temperature of 33.9 °C was recorded.

New Record at Point Salines

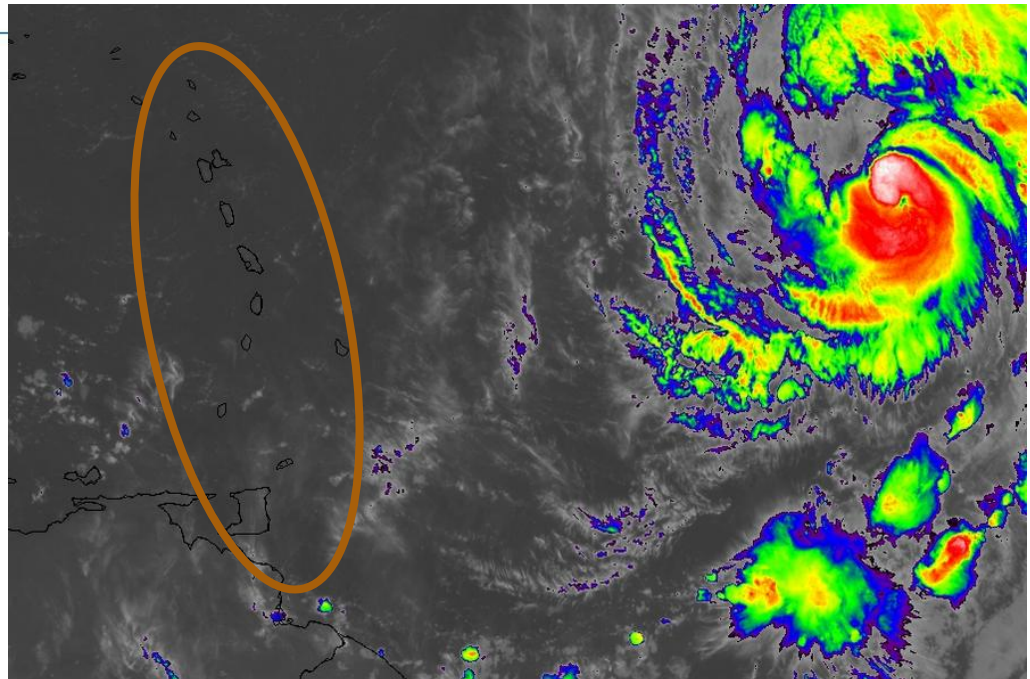
Highest 10-min Average Temperature
September 16th 2020



New Record at Point Salines (Tmax): 34.0 °C



Hurricane Teddy left clear skies over the
Lesser Antilles (more direct radiation)

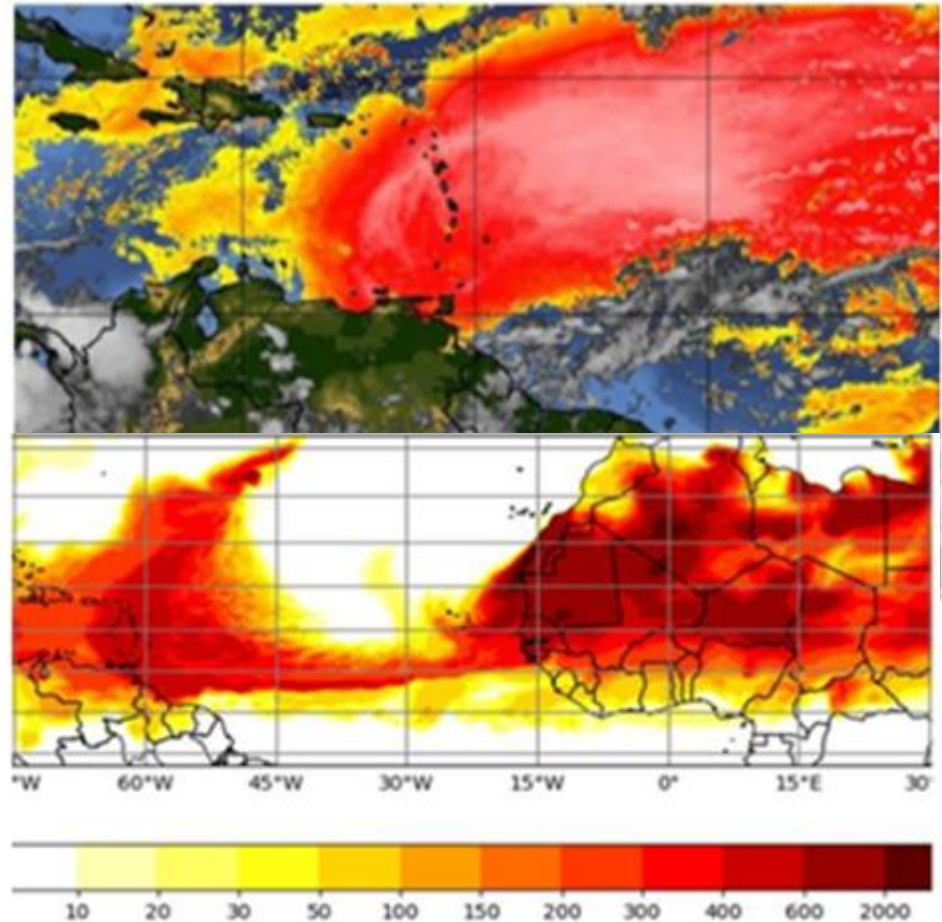


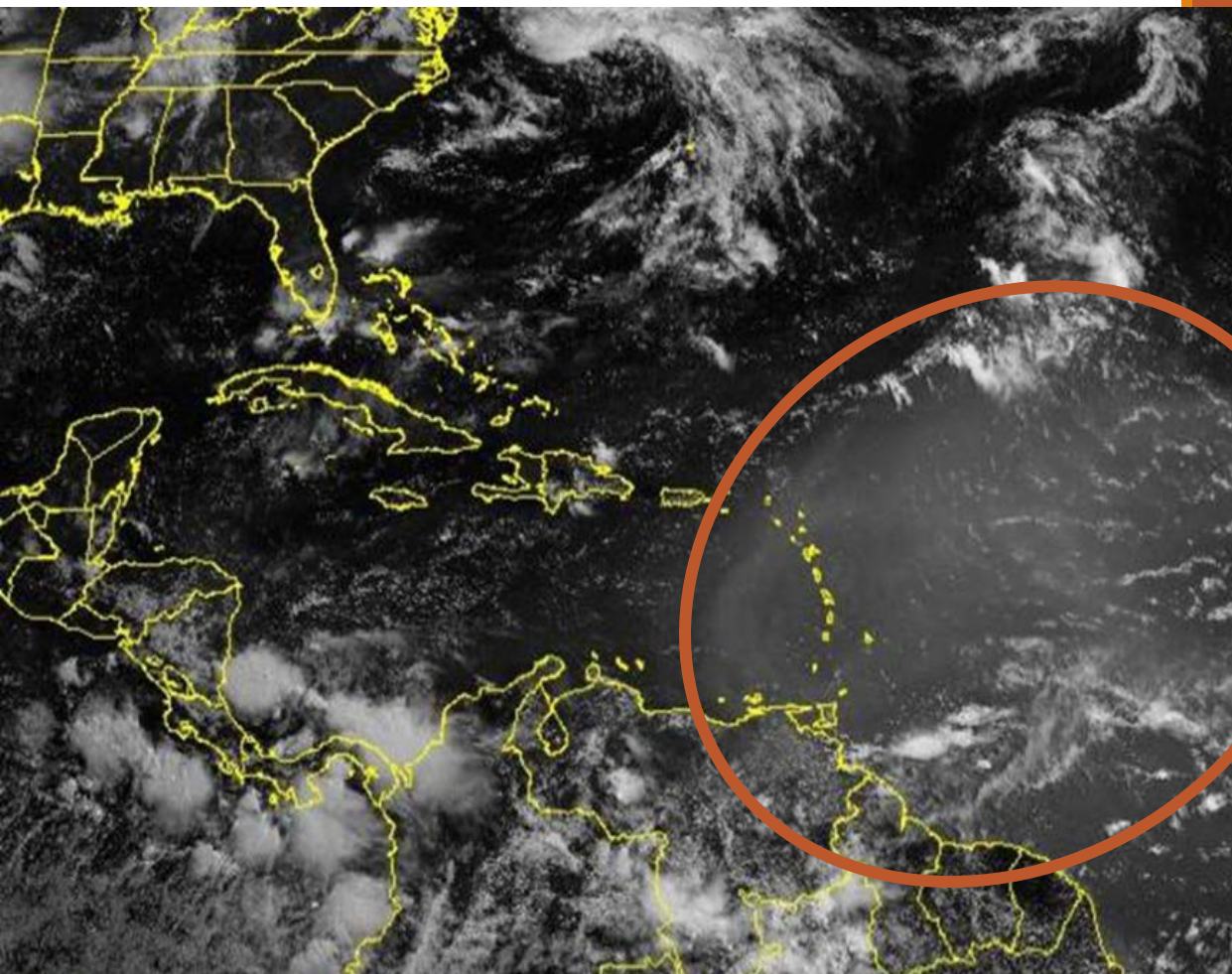


2020 Atlantic Hurricane Season

Dust Storm

A high concentration of Saharan dust particles invaded the atmosphere, extending from east of 63°W to Africa, contributing to the very hazy conditions and reducing visibility.





DUST INVASION
GUESS THE DATE!



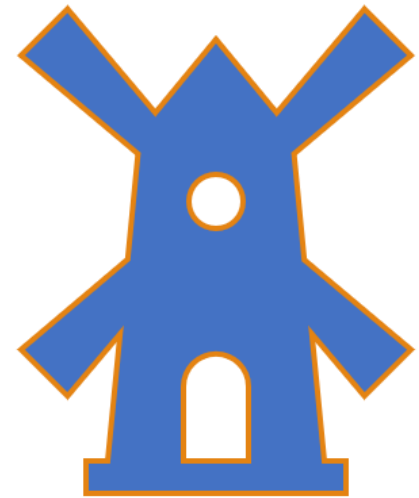


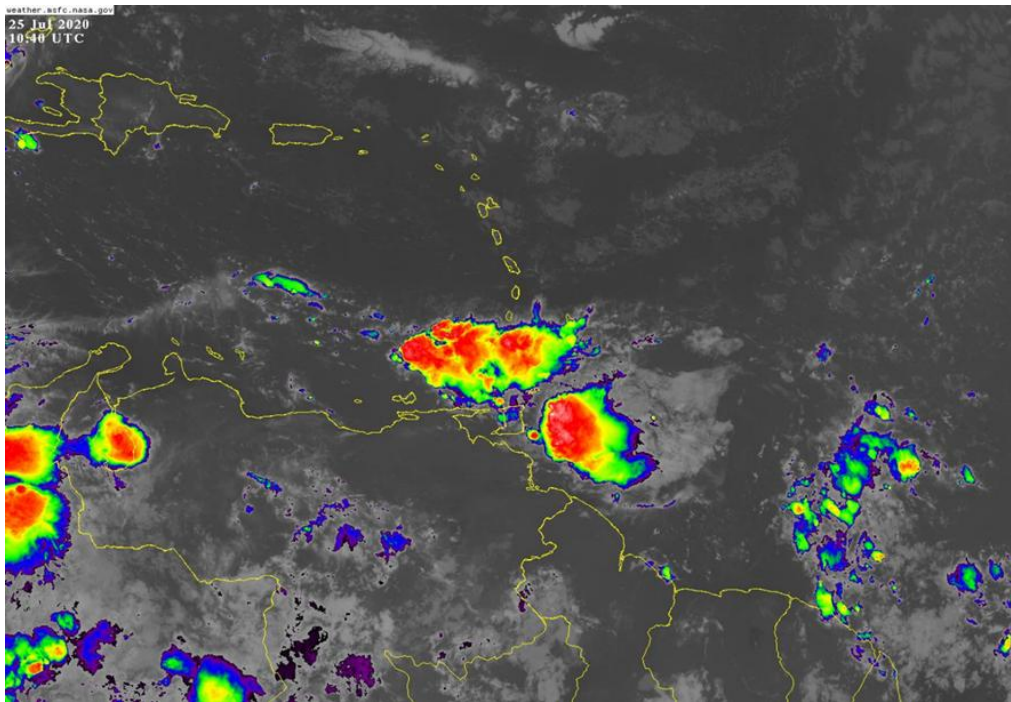
21 June 2020

Wind and Water

Three (3) flood events
reported thus far for
2020 hurricane season

Two (2) wind events
reported thus far for
2020 hurricane season

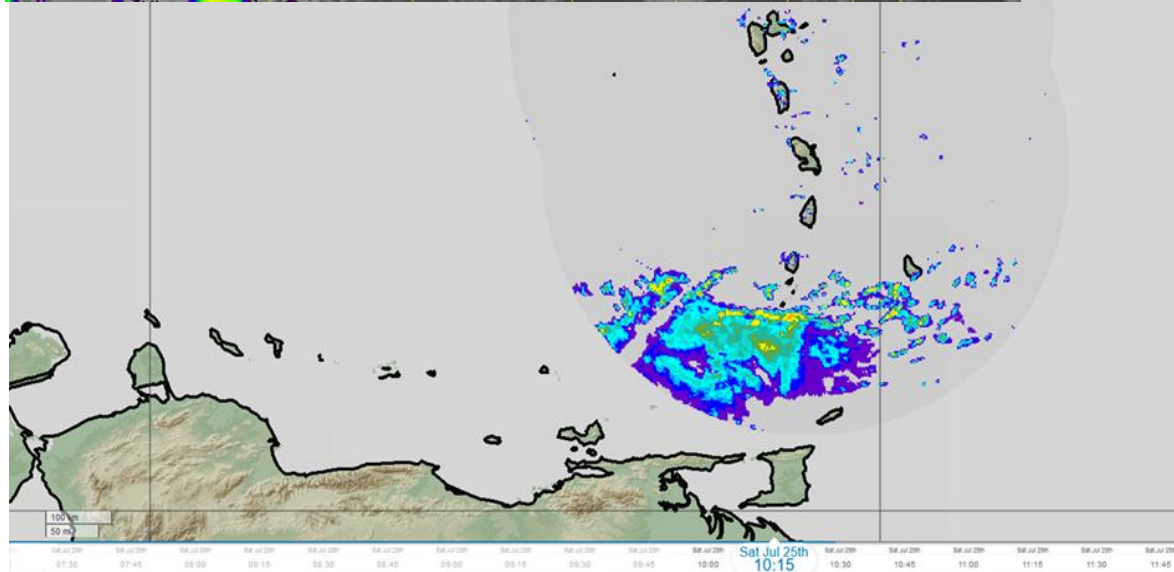




Tropical storm Gonzalo

Tropical storm watch was issued on July 23rd

Tropical storm warning was issued on July 24th

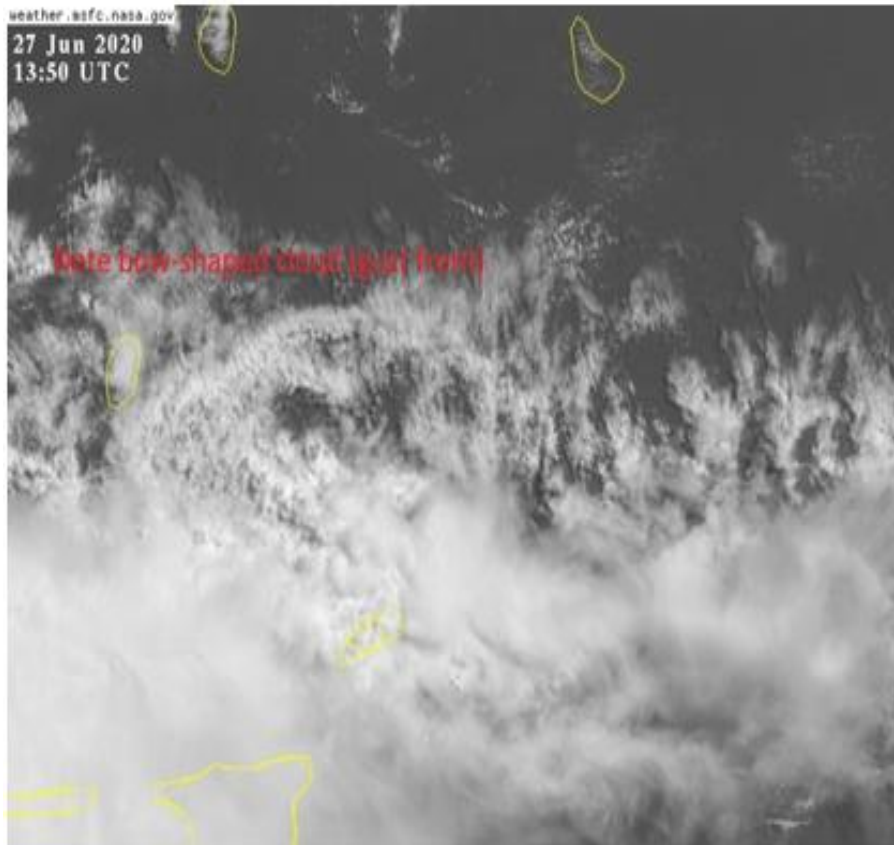


Rainfall (mm) produced from
Gonzalo

| | |
|----------------|-------|
| Point Salines: | 15.7 |
| Concord: | 243.1 |
| Birchgrove: | 238.0 |
| Clozier: | 232.0 |

Significant wind event

June 27th



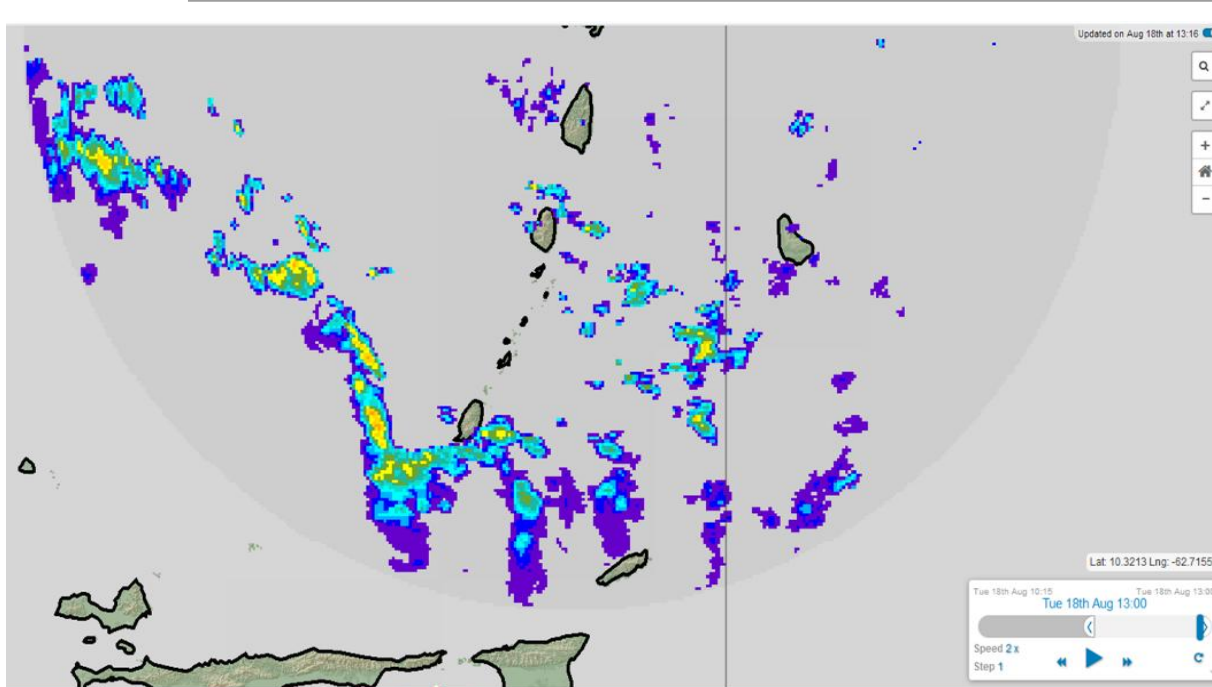
Tropical wave that embedded within the Inter Tropical Convergence Zone(ITCZ)

The passage of this system triggered periods of moderate to violent precipitation and damaging winds across Grenada .

This favored the development of a severe weather phenomena termed 'wet microburst'. A wind gust of 59 knots (68 mph) was recorded.

Impacts: sheets of galvanize were blown off; subsequent damage to windshield

Significant wind event



18th August 2020

The axis of a strong tropical wave which interacted with the ITCZ, crossed the shores of Grenada overnight.

RAINFALL @ MBIA – 1.8mm

Gust of 52knots was recorded

IMPACTS- fallen trees and downed powerlines

Impacts



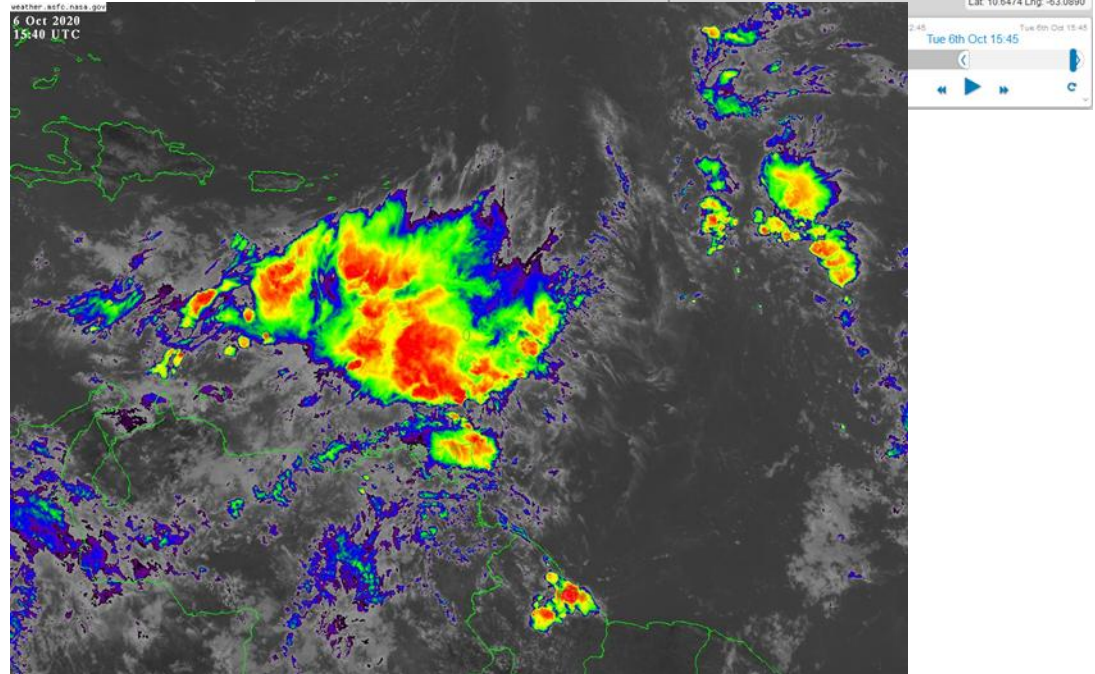
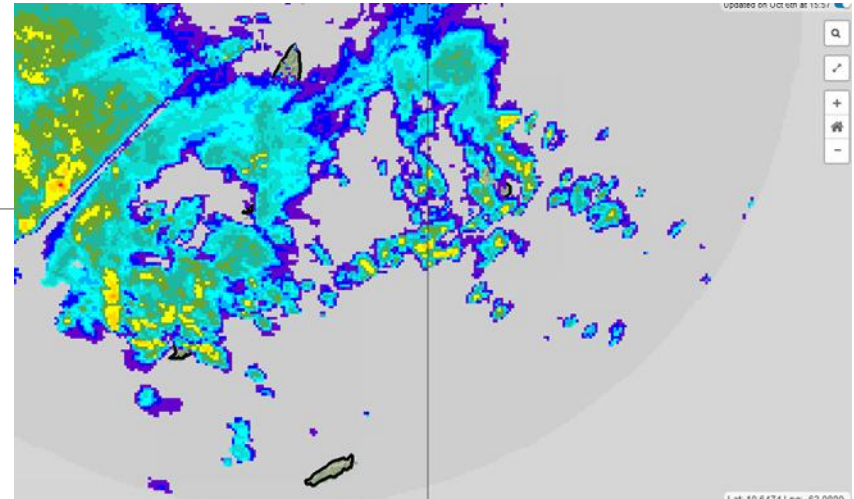
Significant flood event

October 6th

An upper-level low is located north of the Lesser Antilles and its associated trough system extended southward over the Eastern Caribbean.

This system triggered increased cloudiness, scattered showers and thundershowers during the day

IMPACTS - flooding and landslides





Significant flood event

October 10th

A surface to low level trough system was located at approximately 61W extending from 16N and southward. This system is interacting with an enhanced ITCZ



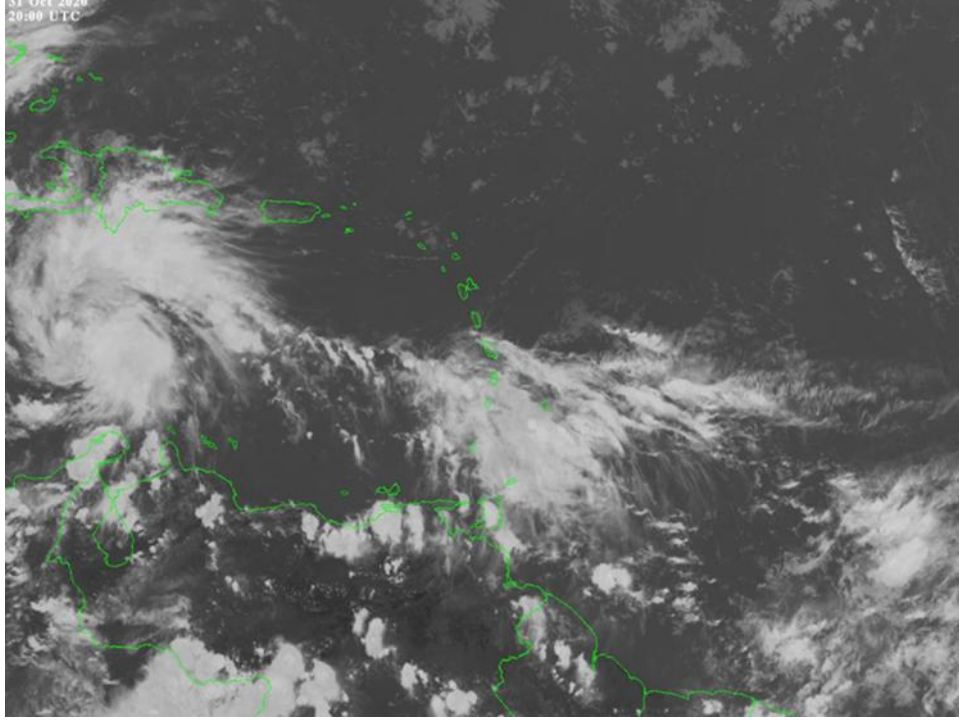
Impacts

Carenage, St. Geo



H.A Blaize St. , St. George's

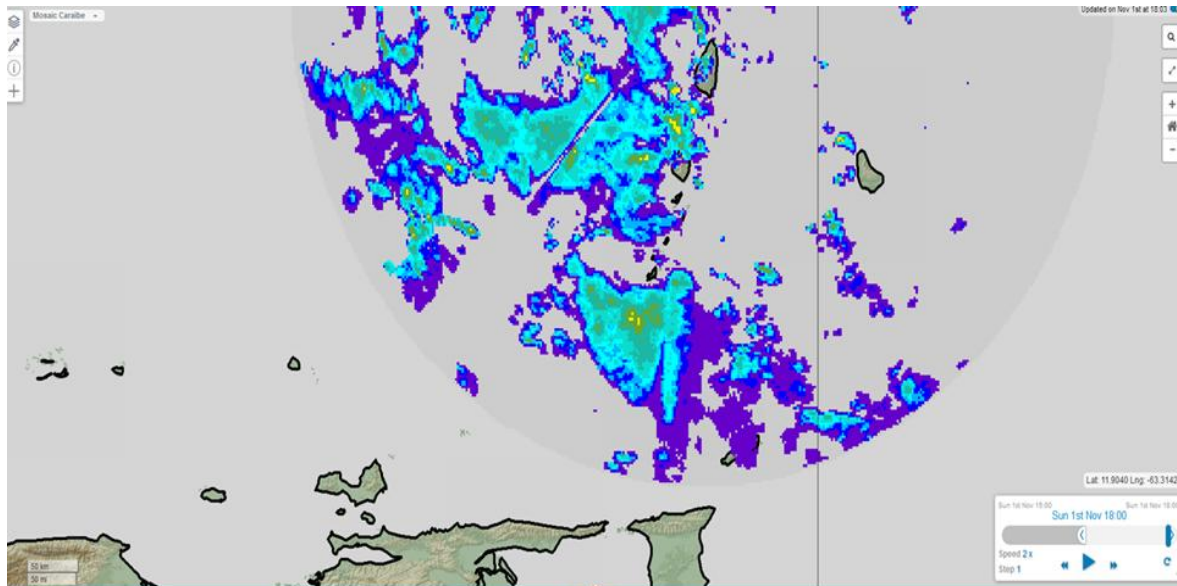




Significant flood event

30th Oct– 1st Nov

Passage of a tropical wave followed by a deep layer trough
The axis of a surface trough is currently located along 60°W.
Areas of scattered moderate convection are noted moving across the Lesser Antilles from 10°N to 15°N between 59°W and 64°W.



Rainfall accumulations

30 Oct- 16.2mm

31 Oct- 16.0mm

1Nov-42.5mm

What's Next?

IMPLEMENTATION OF IMPACT BASED
FORECASTING

Target: To issue Impact Based
Forecasts for the following:

Precipitation

Wind

Storm surge

Dust





THANK YOU
FOR YOUR KIND ATTENTION