



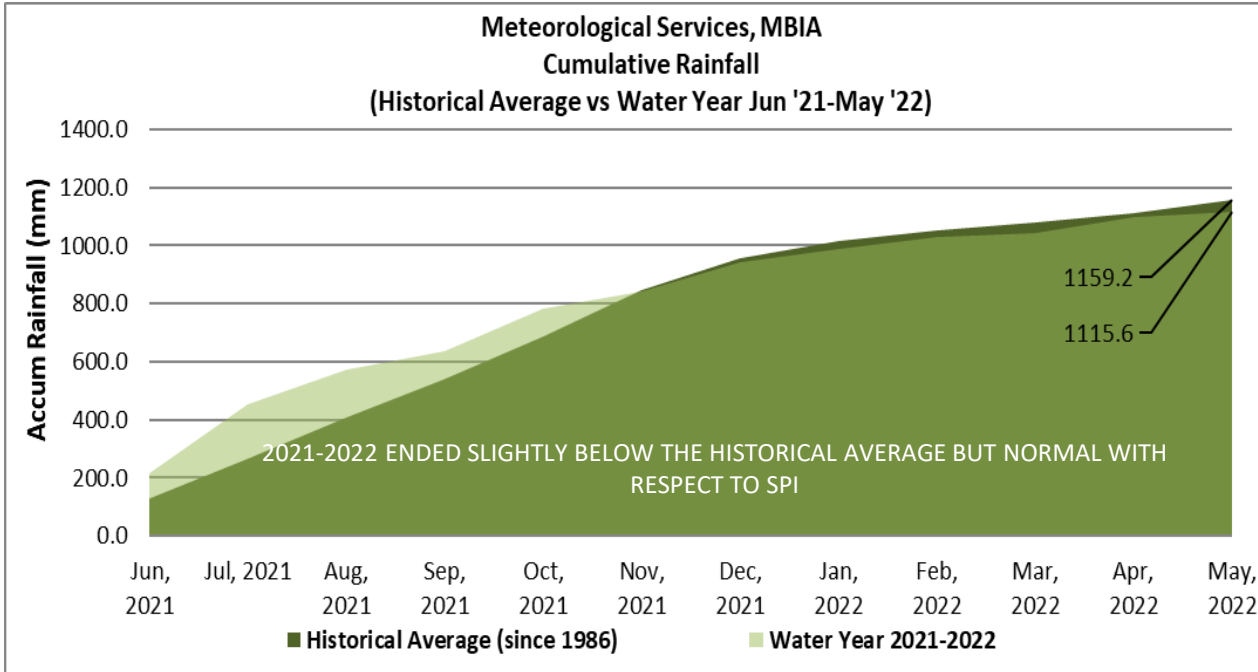
# IMPACTS OF THE WEATHER ACROSS GRENADA 2022

ANNUAL MEETING OF CMO DIRECTORS

GRAND CAYMAN

23<sup>RD</sup> NOVEMBER

# Comparing the last Water Year with the Current



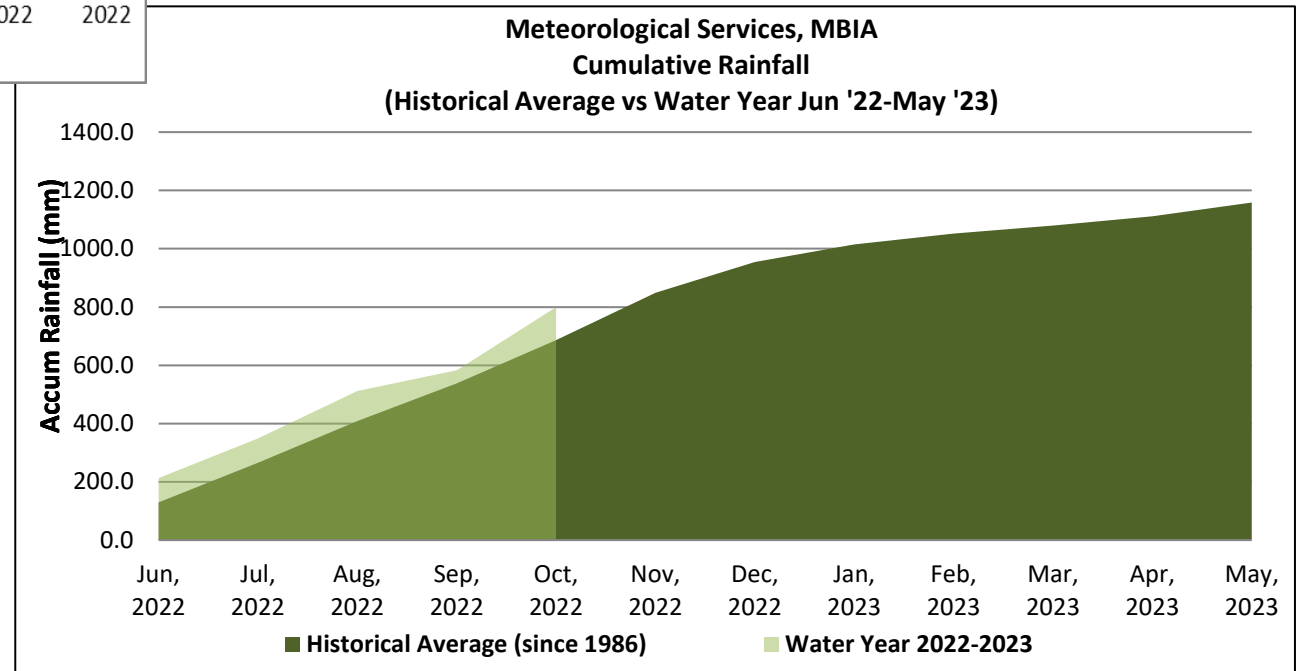
Feb & Apr were the only months in the dry season with above average rainfall totals

March's rainfall total was only 12.7 mm (LTA – 26.8 mm, 30-yr Average – 27 mm)

May's rainfall total was only 17.7 mm (LTA – 48.4 mm, 30-yr Average – 47.7 mm)

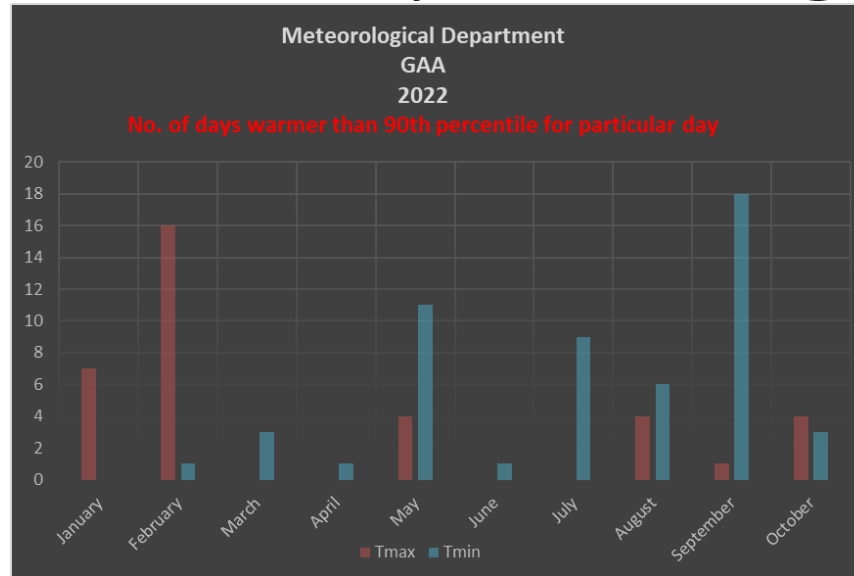
At the end of October, the cumulative rainfall is above the historical average.

September was the only month during the wet season with below-average rainfall – 72.0 mm, 6<sup>th</sup> driest September on record.



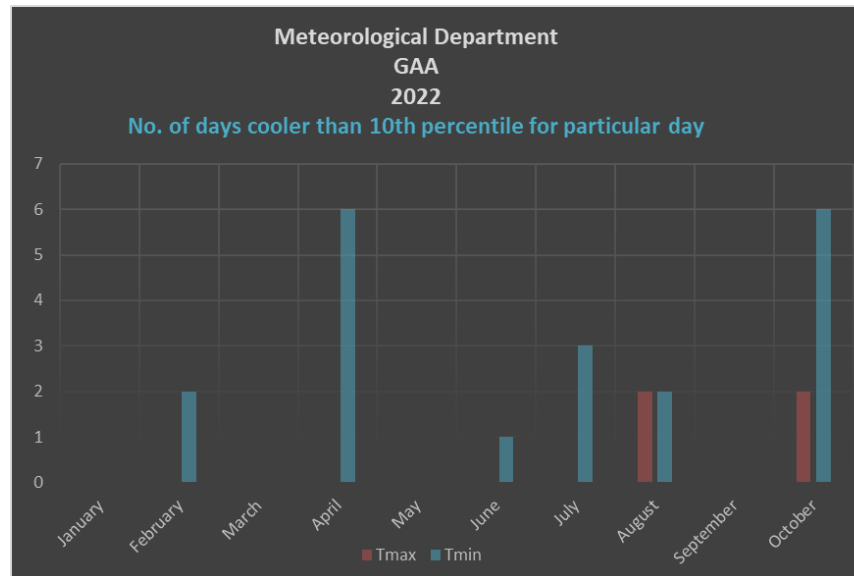
# Heat – Day And Night

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



18 days in September had minimum nighttime temperatures above the 90<sup>th</sup> percentile, for that day. **UNBEARABLE HEAT**

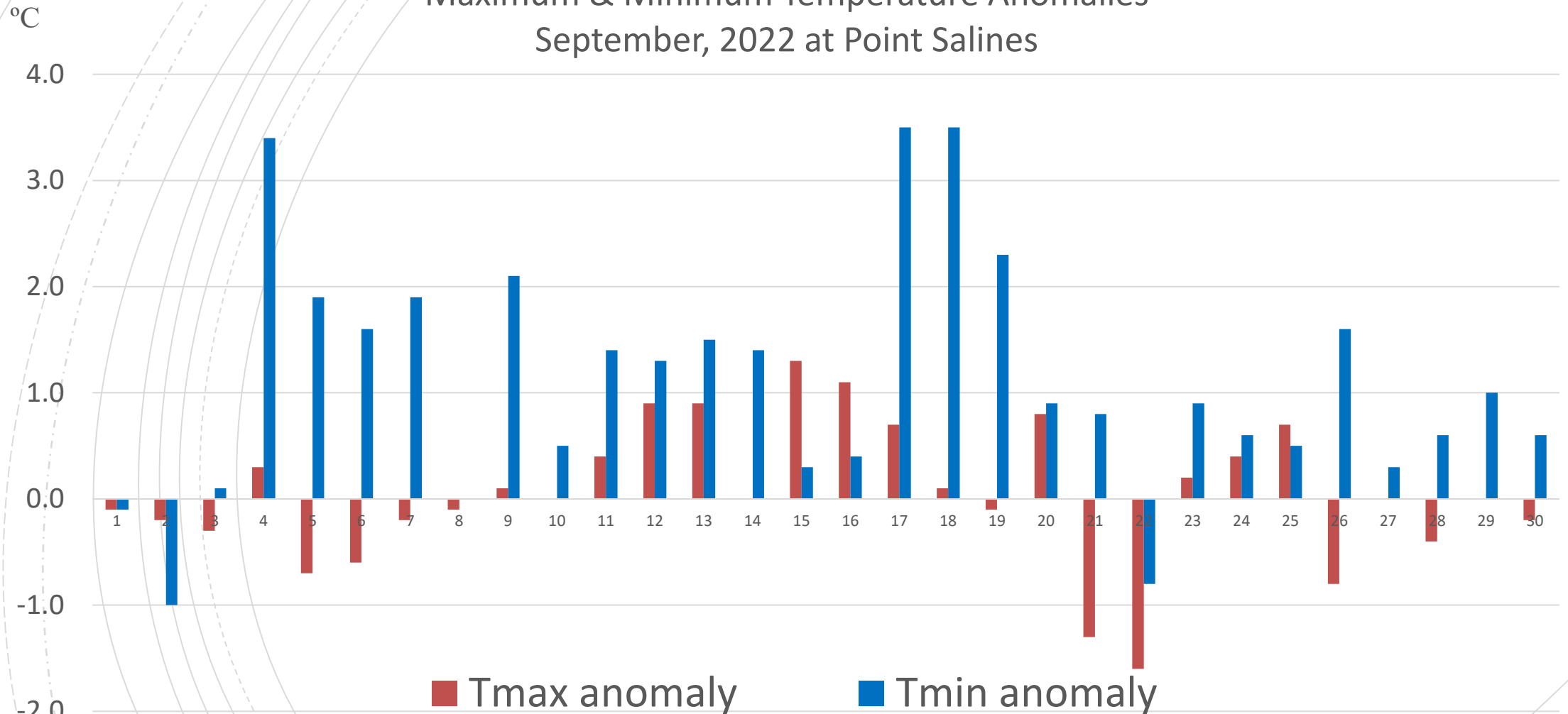
Monthly total of days with maximum temperature below the day's Tmax 10<sup>th</sup> percentile and nights below the Tmin 10<sup>th</sup> percentile.



Only August and October (above average rainfall), had maximum daytime temperatures falling below the 10<sup>th</sup> percentile, for that day.

# Warm Nights in September

Maximum & Minimum Temperature Anomalies  
September, 2022 at Point Salines



26 nights had minimum temperatures above the Tmin average for September.

# Flooding, landslides and rockfalls

There were 11 flood/landslide events throughout the year

One (1) of the 11 occurred in April

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# 27<sup>th</sup> April 2022

- Minor flooding in the south of the island (top-left and bottom-left)
- Rockfall on the west coast (right)
- Moisture advection from over S. America coupled with strong upper-level divergence produced unstable condition across the southern Windward Islands.



Lance Aux Epines, St. George

West coast

# 15<sup>th</sup> June 2022

- Flooding in the south of the island
- Water from a major sub-street drain rushed into the parking lot
- As a result of a tropical wave



Flooding of parking lot of local hardware store

24<sup>th</sup> August 2022

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- Flooding in the south of the island
- As a result of a tropical wave



Flooding in Grand Anse, St. George



# 26<sup>th</sup> August 2022

- Major rockfall in the west of the island
- As a result of a tropical wave



Rockfall in St. Mark, near Victoria

# 5<sup>th</sup> & 12<sup>th</sup> October



For Immediate Release

### Grenlec Notifies Customers About Weather-Related Service Outages

**Wednesday, 5 October 2022:** Grenada Electricity Services Ltd. (Grenlec) is notifying customers about pockets of area outages caused by the inclement weather.

We also advise that there is the potential for additional electricity outages if the rainy and windy conditions persist.

We apologise for these service interruptions and the inconvenience.

Please be assured that our crews will continue responding to restore service in the shortest possible time.

To ensure that our team is aware of your outage, please use the Grenlec Mobile App to report a fault or call or 24-hr. Emergency Fault line by calling 237 and selecting Option 1.

-30-

Grenlec advises of weather-related outages on 5<sup>th</sup> October 2022



Rockfall in Grenville Vale, SW of the island on 12<sup>th</sup> October 2022



St. John



on 12<sup>th</sup>

27<sup>th</sup> October  
2022



# 4<sup>th</sup> & 8<sup>th</sup> November 2022



**NAWASA Grenada**

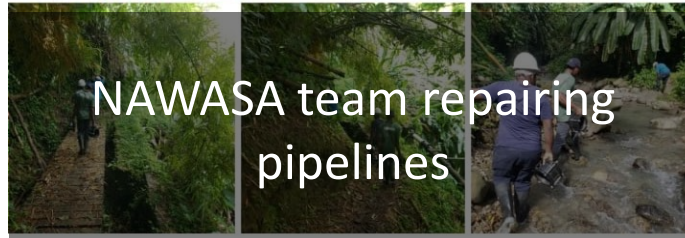


13m · 🌐

On the weekend our teams in St. Andrew were busy addressing damaged transmission lines in the Mt. Horne dam due to a landslide.

NAWASA appreciates the hard work by members of our team as we know it was not easy task walking with pipes and fittings to get to the dam.

We salute you guys.....**THANK YOU FOR YOUR SERVICE.**



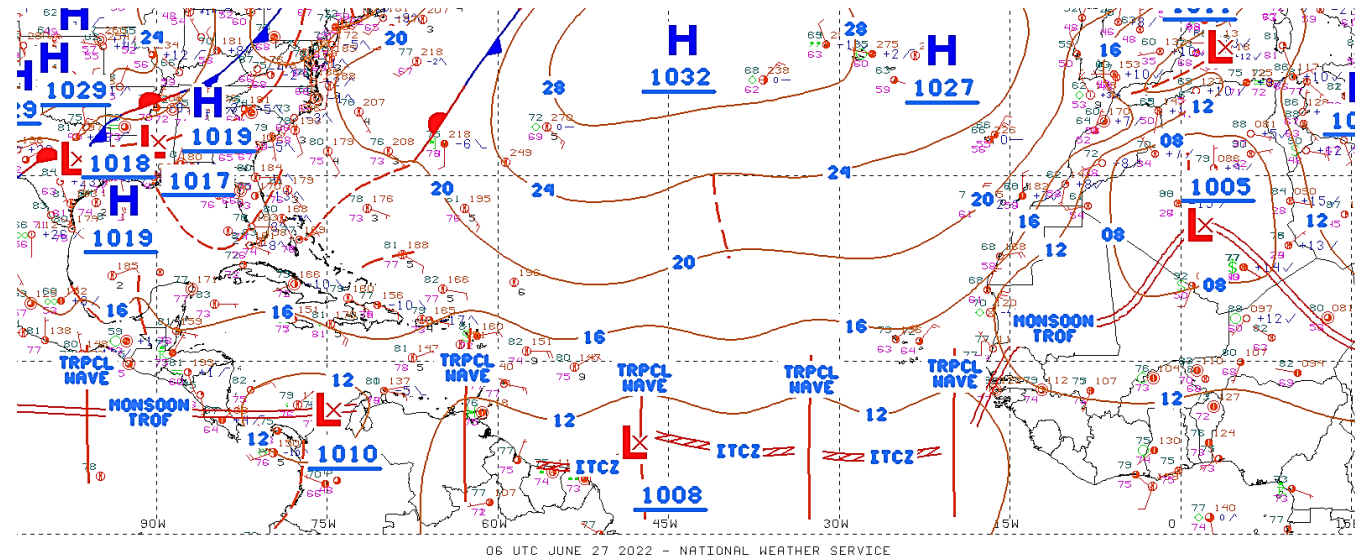
NAWASA team repairing pipelines



Flooding in Westerhall, St. David

# Potential Tropical Cyclone- 27<sup>th</sup> June 2022

- TTMS called to discuss TW 900 miles E of the Windward Islands
- Follow-up call after discussions with NHC
- TS Warning issued for Grenada, Carriacou and Petite Martinique for



# 27<sup>th</sup> June 2022



**WEATHER BULLETIN FOR THE STATE OF GRENADA**  
**METEOROLOGICAL SERVICES, MBIA**  
 5:00 PM, Monday, June 27, 2022

The Grenada Meteorological Service is currently monitoring the development and movement of Potential Tropical Cyclone #2.

## POTENTIAL TROPICAL CYCLONE #2

**Synopsis:** At 5:00 pm, the disturbance was centered at latitude 8.6° North, longitude 50.89° West, about 650 nautical miles east southeast of Grenada. The system is moving toward the west-northwest near 18 mph (30 km/h), and this general motion is expected to continue for the next few days. Maximum sustained winds are near 40 mph (65 km/h) with higher gusts. Some strengthening is forecast during the next 48 hours. Tropical-storm-force winds extend outward up to 60 miles (95 km) north of the center. The estimated minimum central pressure is 1009 mb (29.80 inches).

**Projected track:** On the forecast track, the system will continue on a west north westerly track passing near or over portions of the southern Windward Islands late Tuesday and move over the southern Caribbean Sea or near the northern coast of Venezuela on Wednesday and Thursday. The Potential Tropical Cyclone is expected to produce heavy rain across the southern Windward Islands and the northeastern coast of Venezuela starting Tuesday night into Wednesday.

**Forecast for the State of Grenada:** Grenada, Carriacou and Petite Martinique can expect cloudy to overcast conditions with moderate to heavy scattered showers, thundershowers and gusty winds on Tuesday night with these conditions continuing into Wednesday morning.

The Met Office continues to closely monitor the progress of this system as propagates toward the southern island chain.

### Potential Impacts:


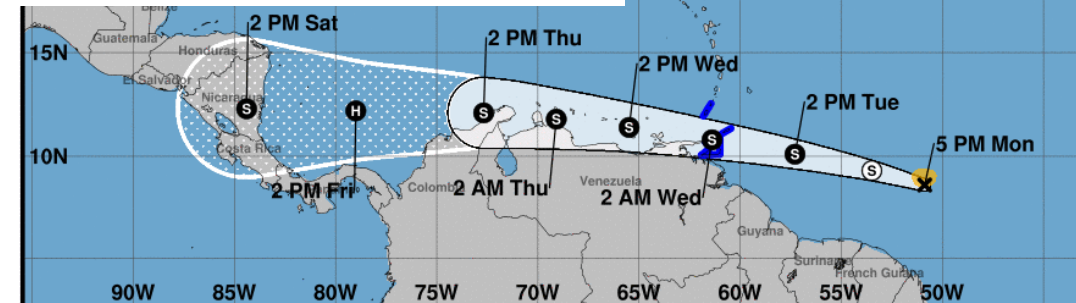
- Flooding and Flash flooding
- Rough waves up to 13 feet
- Landslides and rock fall
- Tree limbs may break and be thrown about

### Watches/ Warnings:

A Tropical Storm warning has been issued for Grenada and its dependencies and Trinidad and Tobago. **GRENADA REMAINS UNDER A TROPICAL STORM WARNING AT THIS TIME.**

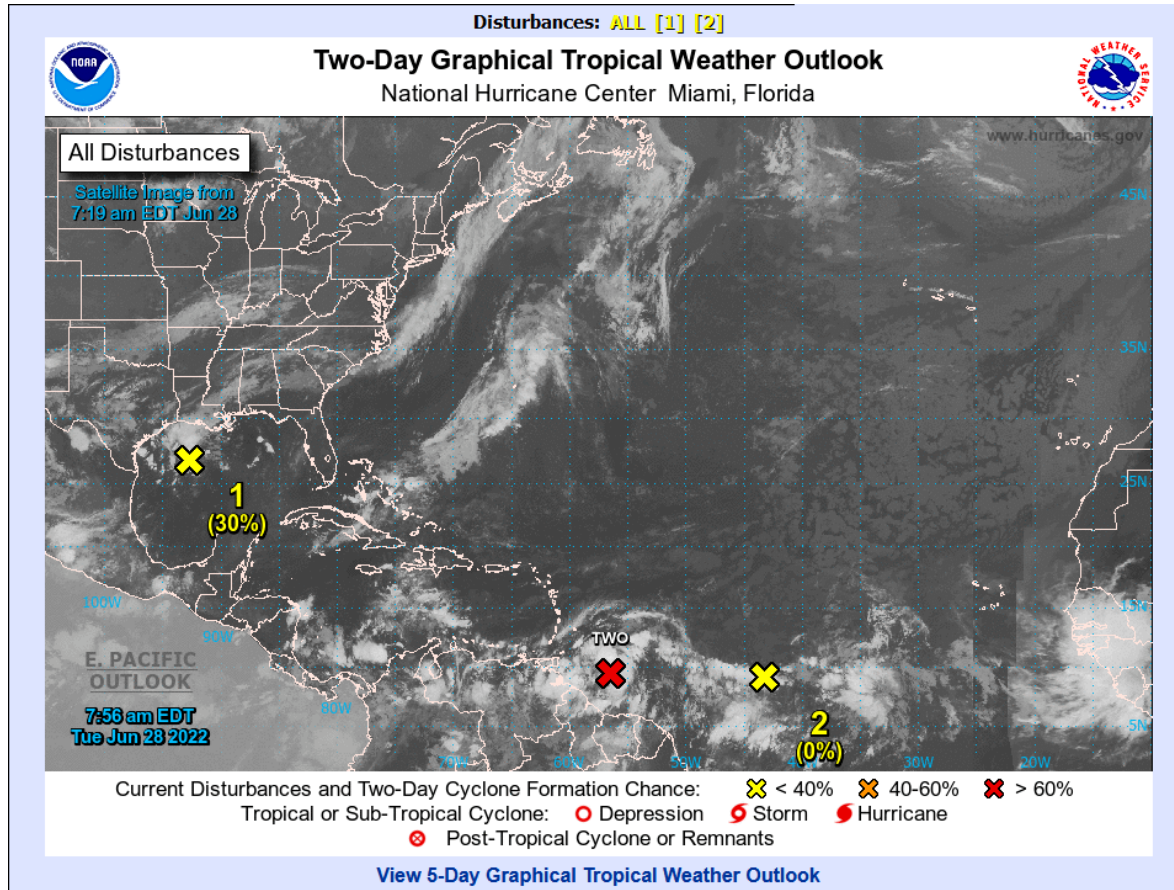


The storm center but does not show an occur outside of the cone.

<b>Potential Tropical Cyclone Two</b> Monday June 27, 2022 5 PM AST Advisory 1 NWS National Hurricane Center	<b>Current information: x</b> Center location 8.6 N 50.9 W Maximum sustained wind 40 mph Movement WNW at 18 mph	<b>Forecast positions:</b> ● Tropical Cyclone ○ Post/Potential TC Sustained winds: D < 39 mph S 39-73 mph H 74-110 mph M > 110 mph
<b>Potential track area:</b> Day 1-3 (solid line) Day 4-5 (dotted line)	<b>Watches:</b> H Hurricane Trop Stm	<b>Warnings:</b> H Hurricane Trop Stm
	<b>Current wind extent:</b> H Hurricane Trop Stm	

# 8:00 am, Tuesday, 28<sup>th</sup> June 2022



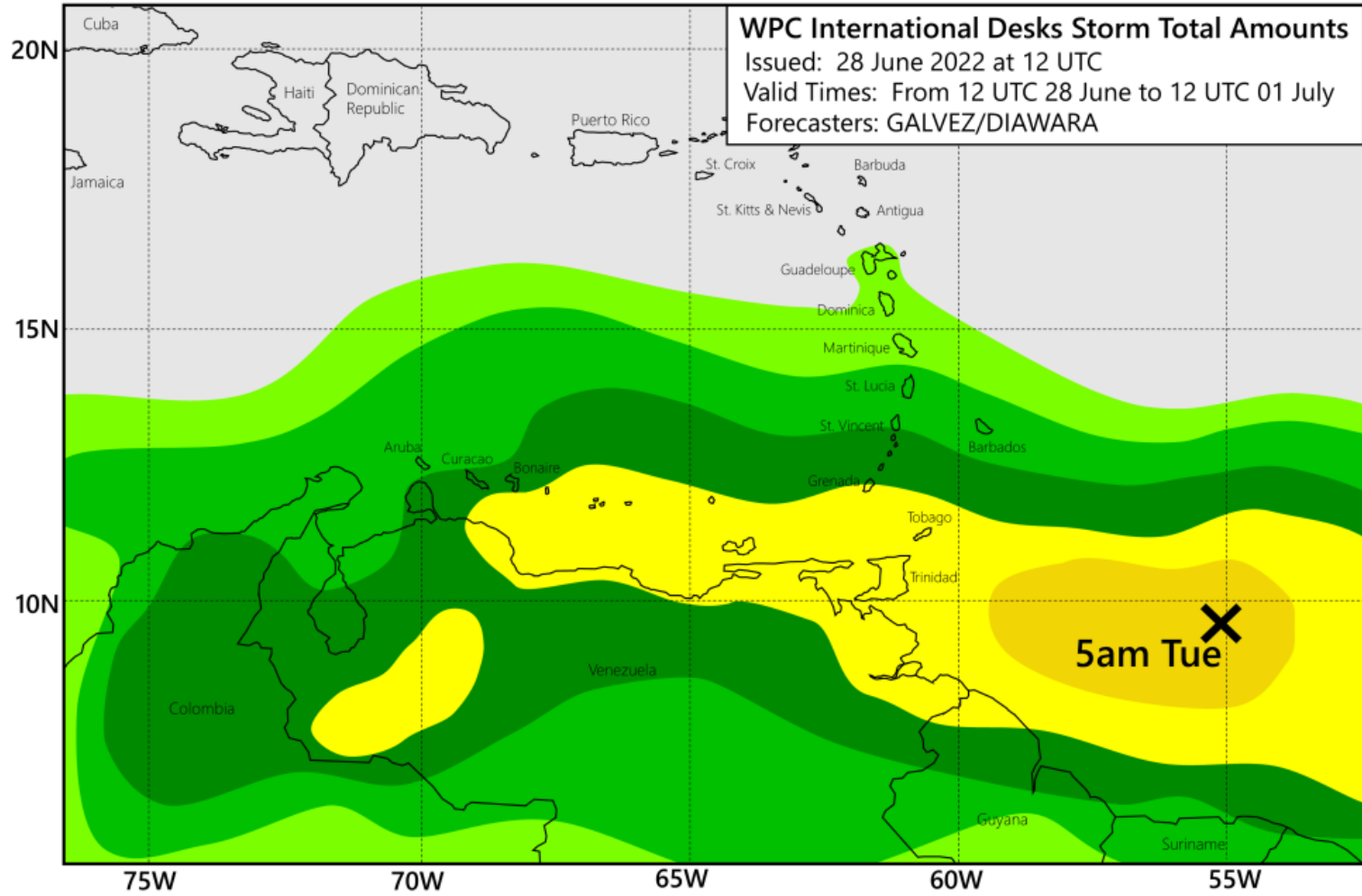
- PTC 330 miles E of Trinidad, 9.5N 56.5 W, MCP 1009 mb, MSW 40 mph

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- Moving W at 23mph
  - Producing showers and thunderstorms
  - Poorly defined
  - Likely to become a storm near to the Windward Islands
  - Impact – Tuesday night into Wednesday morning

# Potential Tropical Cyclone TWO Rainfall

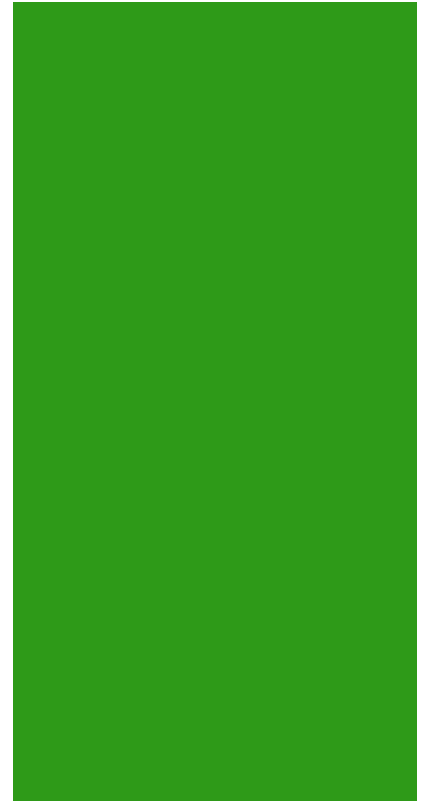


**WPC International Desks Storm Total Amounts**  
 Issued: 28 June 2022 at 12 UTC  
 Valid Times: From 12 UTC 28 June to 12 UTC 01 July  
 Forecasters: GALVEZ/DIAWARA



Rainfall (in)	Rainfall (mm)
30+	750+
20-30	500-750
15-20	375-500
10-15	250-375
8-10	200-250
6-8	150-200
4-6	100-150
3-4	75-100
2-3	50-75
1-2	25-50

**NOTE**  
 This forecast is for planning purposes. A detailed official forecast will be issued by the respective National Hydro Meteorological Service.





# 29<sup>th</sup> June 2022



**WEATHER BULLETIN FOR THE STATE OF GRENADA  
METEOROLOGICAL SERVICES, MBIA  
8:00 AM, Wednesday, June 29, 2022**

**The Grenada Meteorological Service is currently monitoring the development and movement of Potential Tropical Cyclone #2.**

## **POTENTIAL TROPICAL CYCLONE #2**

**Tropical Storm warning has been discontinued for the state of Grenada.**

**Synopsis:** At 800 AM AST (1200 UTC), the disturbance was centered near latitude 11.4 North, longitude 66.4 West or 221 miles west of Grenada. The system is moving toward the west near 30 mph (48 km/h), and a westward or west northwestward motion is expected through Friday. On the forecast track, the system will pass near the southern Caribbean Sea and the northern coast of Venezuela today, near the Guajira Peninsula of Colombia early Thursday and over the southwestern Caribbean Sea on Friday.

Maximum sustained winds remain near 40 mph (65 km/h) with higher gusts. Some strengthening is forecast during the next few days while the disturbance remains over water.

**Forecast for the State of Grenada:** Cloudy & breezy with light to moderate showers & possible isolated thundershowers.

The Met Office continues to closely monitor the progress of this system.

**Potential Impacts:**

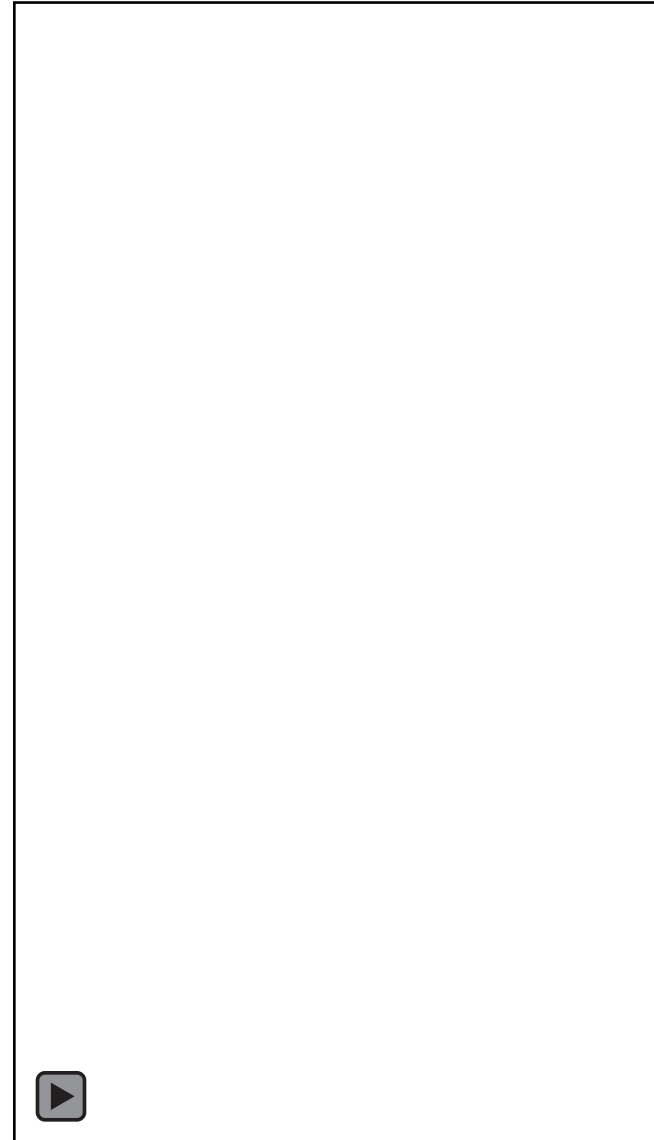
- Flooding and Flash flooding
- Landslides and rock fall
- Broken tree branches and displacement of loose objects
- Rough waves up to eleven (11) feet
- 



Impassable road in Clozier, St. John

28<sup>th</sup> June 2022

- Flooding reported throughout the island
- Reports of landslides, rockfalls and downed trees

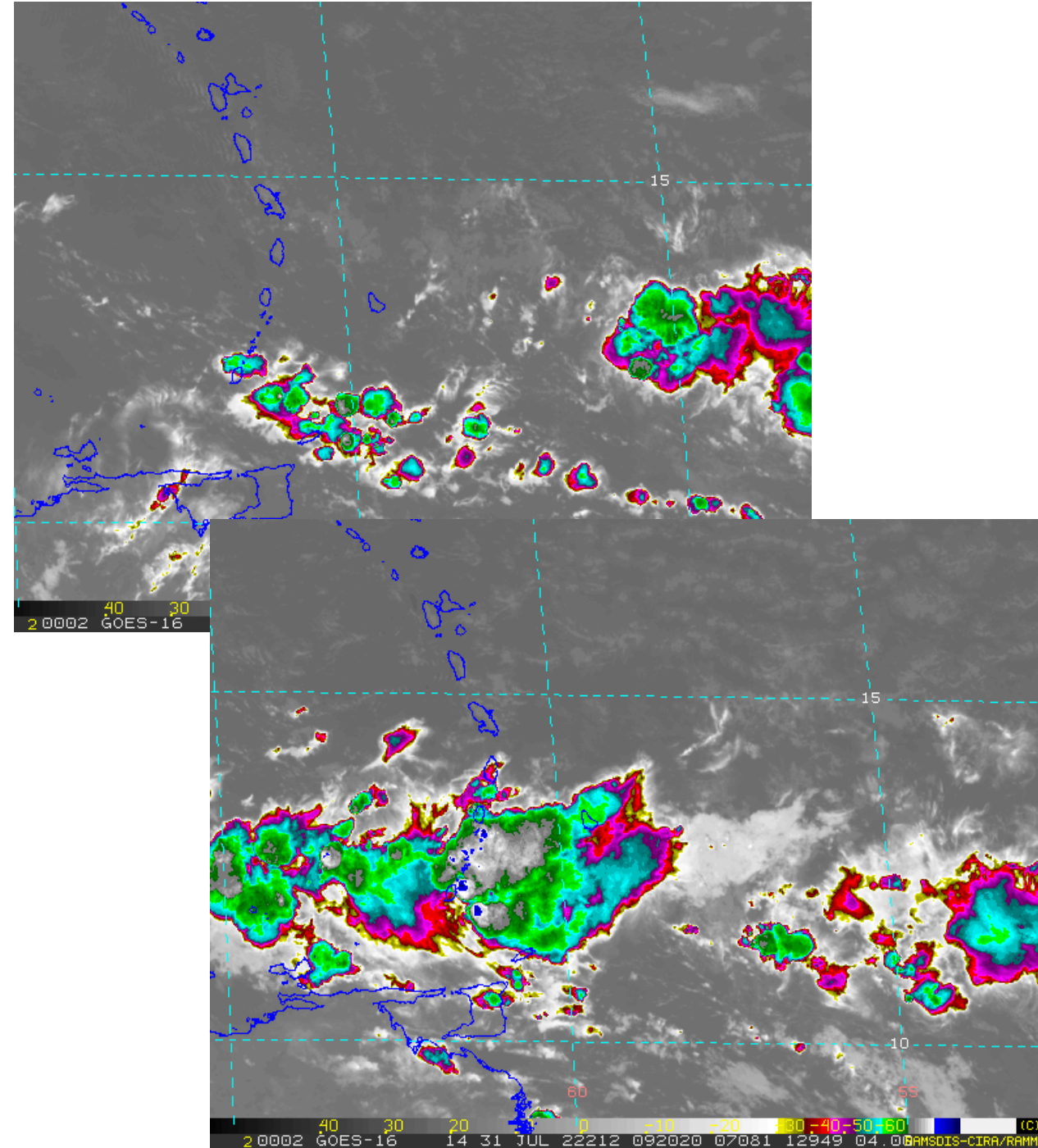


Flooding in Lance Aux Epines, St. George

# Wind Event

## 30<sup>th</sup>/31<sup>st</sup> July 2022

An approaching tropical wave encountered favourable conditions for the rapid development of moderate to strong convection to the immediate east of the state of Grenada. What resembled 'normal' cloud growth before midnight on July 30<sup>th</sup>, 2022, quickly burst into a deep and widespread mass of clouds between midnight and 6:00 am on Sunday July 31<sup>st</sup>. Satellite imagery showed that the cloud cover had extended to St. Vincent on the north end, Barbados to the northeast, and Tobago to the south. As such, Grenada was centered and under significant precipitation and thunder. On the ground, downdrafts from the fast-growing convective clouds resulted in wind gusts in excess of 50 knots (57.5 mph).



IMPACTED.

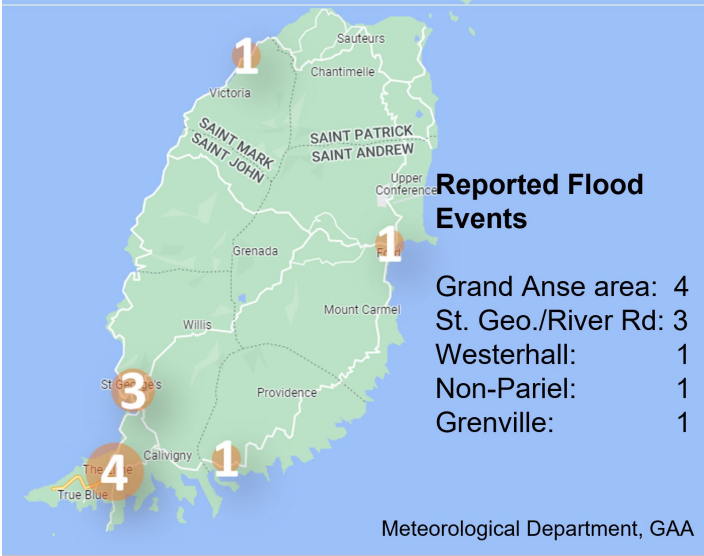
## Wind Event cont'd 30<sup>th</sup>/31<sup>st</sup> July 2022

At Maurice Bishop International Airport (Point Salines), heavy thundershower activity near 2:50 am (July 31<sup>st</sup>, 2022) was accompanied by a wind gust of up to 60 knots (69 mph). A few hours later brought another spell of heavy to violent thundershowers. That episode was accompanied by a 5- to 6-minute wind of near 70 knots (80.6 mph). The driving precipitation that was experienced with those bursts of wind caused the visibility at the airport to reduce to two (2) kilometers. As a result, several aeronautical special reports (SPECI) were disseminated to indicate the onset and cessation of the occurrences.





**Significant Weather Events**  
**Flood**  
 2022 (up to mid-November)



**Significant Weather Events**  
**Landslide**  
 2022 (up to mid-November)



# Flooding and Landslides Across Grenada

# Updates

- Visit from ICAO/ECCAA 15<sup>th</sup> and 16<sup>th</sup> November – Need for MOUs and other SOPs, Met Bill (still awaiting government implementation)
- Improving Marine Meteorology Service Provision for Grenada Coastal and Open Seas Activities workshop was held from 14<sup>th</sup> to 16<sup>th</sup> November (GAA & WMO)
- Grenada was selected among the first batch of countries targeted to receive (Systematic Observations Financing Facility) SOFF readiness support for the implementation of GBON.
- Planning for the implementation of Impact-based forecasting and Weather and Climate Ready Nations project continues.
- QMS Implementation
- Migration to BUFR and IWXXM code form.
- Restoration and launch of the office website

**THANK YOU!**

