Tropical Cyclone Bret (AAL032023)

Final Event Briefing

Reportable event

St. Lucia Electricity Services Limited

25 June 2023

1 SUMMARY

Tropical Storm Bret was the third named tropical cyclone of the 2023 Atlantic Hurricane Season. On 22 and 23 June, Bret passed over Barbados and the Windward Islands.Tropical-storm-force winds spread over Barbados, Saint Lucia and Saint Vincent and the Grenadines. At the time of writing this report, Bret was about to pass north of Aruba, Bonaire and Curacao, and was expected to dissipate in a few hours.

This event briefing is designed to review the modelled losses due to wind and storm surge due to Bret, calculated by CCRIF's Public Utilities model., St. Lucia Electricity Services Limited (LUCELEC) was the only Public Utility for which the CCRIF Public Utilities loss model reported wind speeds greater than 39 mph (62.7 km/h) due to Tropical Cyclone Bret.

The final run of the CCRIF Public Utilities loss model did not produce any losses for LUCELEC. Thus, the loss was zero and therefore, no payout under LUCELEC's CCRIF policy is due.

2 INTRODUCTION

On 22 June at 1800 UTC, the US National Hurricane Center (NHC) reported that a Tropical Storm named Bret was located at about 140 mi (225 km) east-southeast of Saint Lucia. Its centre was approximately sited near latitude 13.4° North, longitude 58.9° West. The minimum central pressure was 1,002 mb and the maximum sustained winds were estimated at 65 mph (100 km/h). The system moved towards west with the estimated forward velocity of 14 mph (22 km/h).

The intensity and features of Tropical Storm Bret were almost unchanged on 22 June at 2100 UTC, when tropical storm conditions spread across portions of the Windward Islands. Sustained tropical-storm-force winds was reported in Saint Lucia. The system centre was located about 100 mi (160 km) E-SE of Saint Lucia (13.4°N, 59.6°W). The maximum sustained winds were unvaried at near 65 mph (100 km/h) and the minimum central pressure was 1,002 mb. The system moved towards the west with an estimated forward velocity of 16 mph (26 km/h). Radar data from Barbados and satellite images indicate that Bret was strongly sheared with deep convection mostly confined to the northeast part of the circulation.

On 23 June at 0300 UTC the center of Bret approached Saint Lucia. Its centre was sited near latitude 13.3° north, longitude 61.1° west, at 35 mi (55 km) south of Saint Lucia. Tropical-storm-force winds extended outward up to 115 miles (185 km) from the centre. Tropical-storm conditions were also reported from Martinique. Satellite imagery and radar data from Barbados indicated that the cyclone was losing organization due to increasing vertical wind shear, with only minimal convection near the centre. The remainder of the convection was in bands and clusters well removed from the centre in the eastern area. The Maximum sustained winds were almost 60 mph (95 km/h) and the minimum central pressure was 1,004 mb. The system moved towards the west with an estimated forward velocity of 18 mph (30 km/h).

Three hours later the centre of the tropical storm passed to the west of Saint Lucia. It was located at 13.4°N, 61.9°W at a distance of 65 mi (105 km) W-SW of Saint Lucia. Tropical-storm-force winds extended outward up to 115 miles (185 km) from the centre. Grantly Adams International Airport on Barbados reported a sustained wind of 44 mph (70 km/h) and a gust up to 56 mph (91 km/h) in thunderstorm activity well to the east of Bret's centre. The intensity and features of Tropical Storm Bret remained unchanged. The system moved towards the west with an estimated forward velocity of 17 mph (28 km/h).

At the time of writing this report, Bret was about to pass north of Aruba, Bonaire and Curacao, and it was expected to dissipate within a few hours.

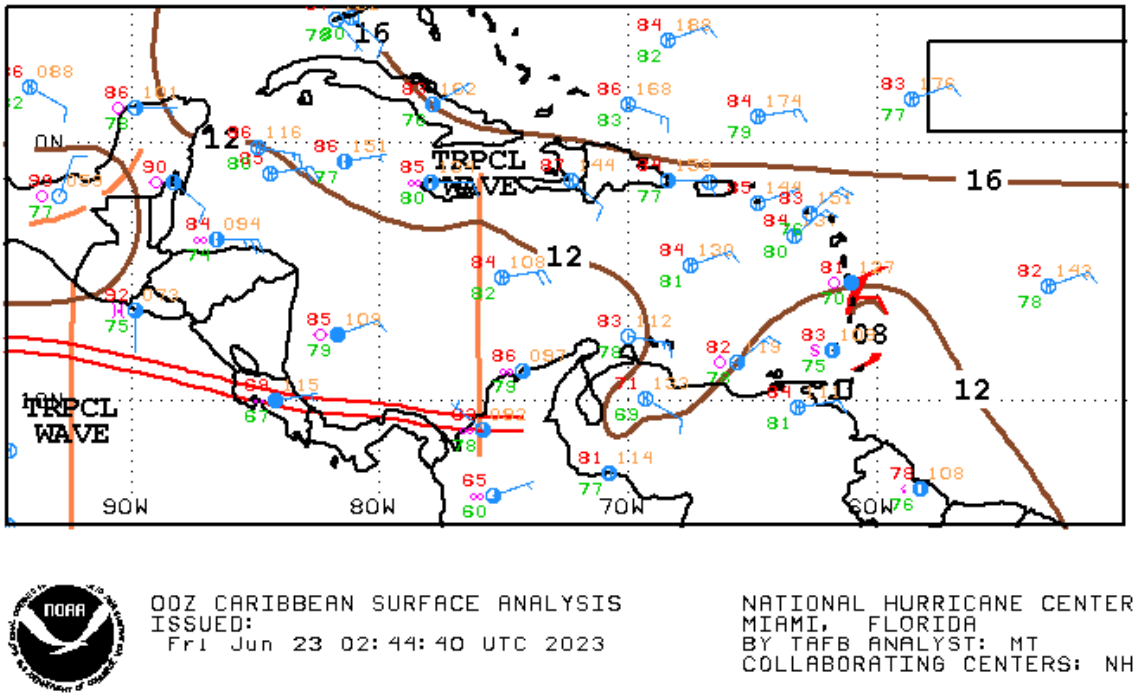

Figure 1 Surface analysis over the Caribbean area on 23 June at 0000UTC. Tropical Cyclone Bret was located over the Windward Islands. Source: US National Hurricane Center[1]

[1]National Oceanic and Atmospheric Administration - FTP, National Hurricane Center, review date: 23 June 2023, available at: *https://www.nhc.noaa.gov/tafb/CAR_00Z.gif*

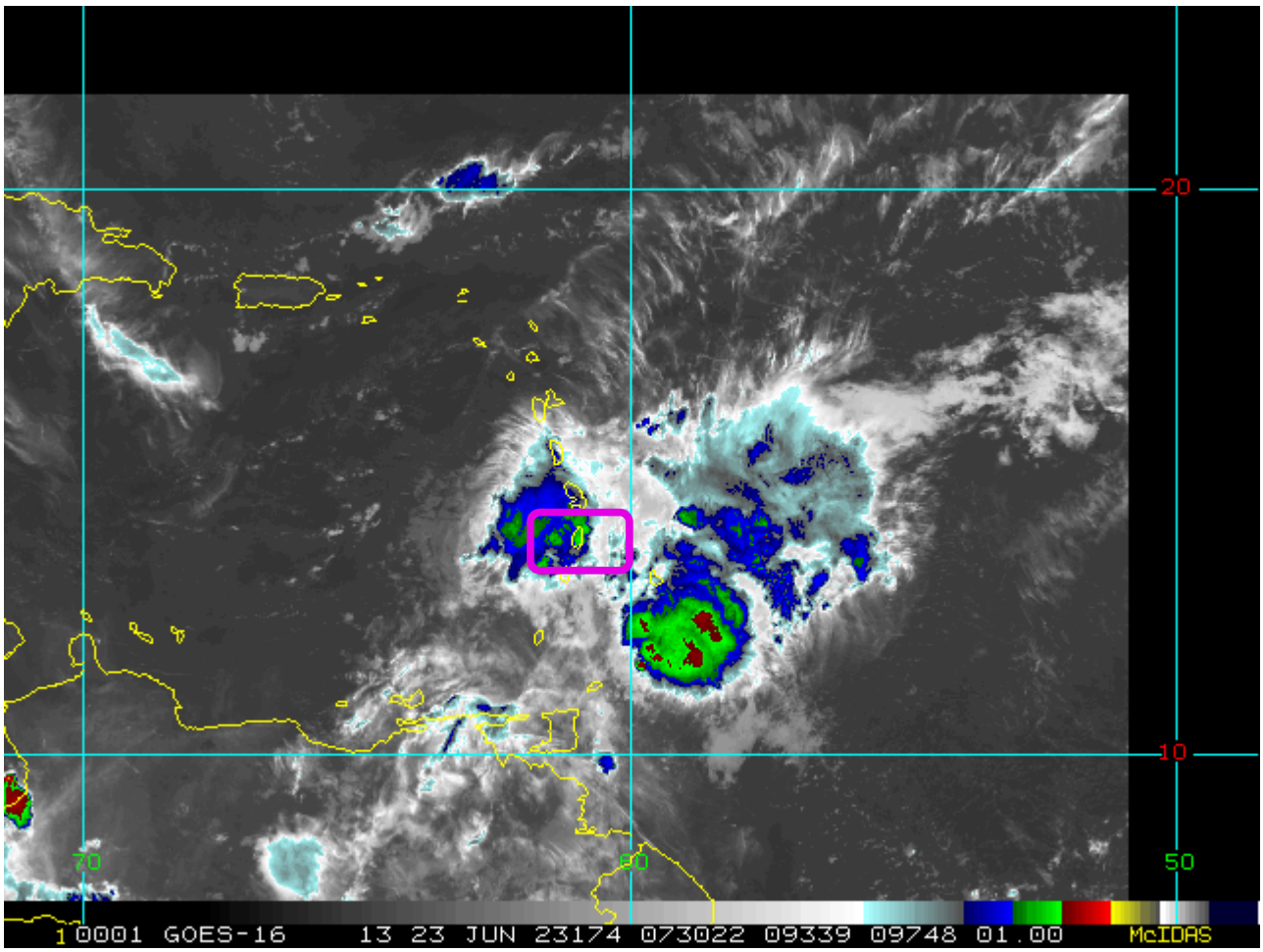

Figure 2 Satellite imagery on 23 June at 0730UTC from thermal infrared channel enhanced with colour. Blue/green colours represent high altitude clouds (top cloud temperature between -50°C and -70°C), while the red/yellow colours represent very high altitude clouds (top cloud lower than -70°C). High altitude clouds indicate strong convection associated with intense precipitation. Saint Lucia is surrounded by a violet square. Source: NOAA, National Environmental Satellite, Data and Information Service[2].

[2]RAMSDIS Online Archive, NOAA Satellite and Information Service, available at: https://rammb-data.cira.colostate.edu/tc_realtime/storm.asp?storm_identifier=al032023

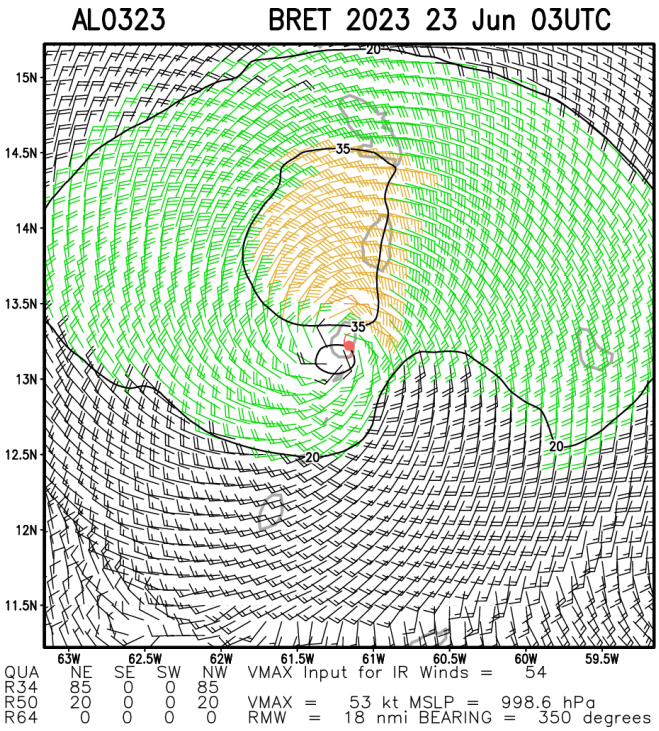

Figure 3 Multiplatform satellite based tropical cyclone surface wind analysis estimated on 23 June at 0300UTC. Contouring indicates wind intensity at 20 kn (23 mph, 37 km/h) and at 35 kn (40mph, 65km/h). Source: NOAA, National Environmental Satellite, Data and Information Service[3]

3 CCRIF SPC MODEL OUTPUTS

Under CCRIF's loss calculation protocol, a CCRIF System for Probabilistic Hazard Evaluation and Risk Assessment (SPHERA) report is required for any tropical cyclone affecting at least one member country with winds greater than 39 mph (62.7 km/h). A Caribbean Public Utilities (CPU) report is required for any CCRIF member country that has a Public Utilities policy, which meets this criterion. Saint Lucia was affected by Tropical Cyclone Bret, which qualified as a Reportable Event[4]. Figure 4 shows the wind footprint for the regions affected by Tropical Cyclone Bret around the country.

[3]RAMSDIS Online Archive, NOAA Satellite and Information Service, available at: https://rammb-data.cira.colostate.edu/tc_realtime/storm.asp?storm_identifier=al032023

[4] Any named Tropical Cyclone event (i.e. one that reaches Tropical Storm status or higher) which produces modelled winds of at least 39 mph in one or more grid cells of at least one CCRIF policyholder country but does not generate a modelled loss greater than zero.

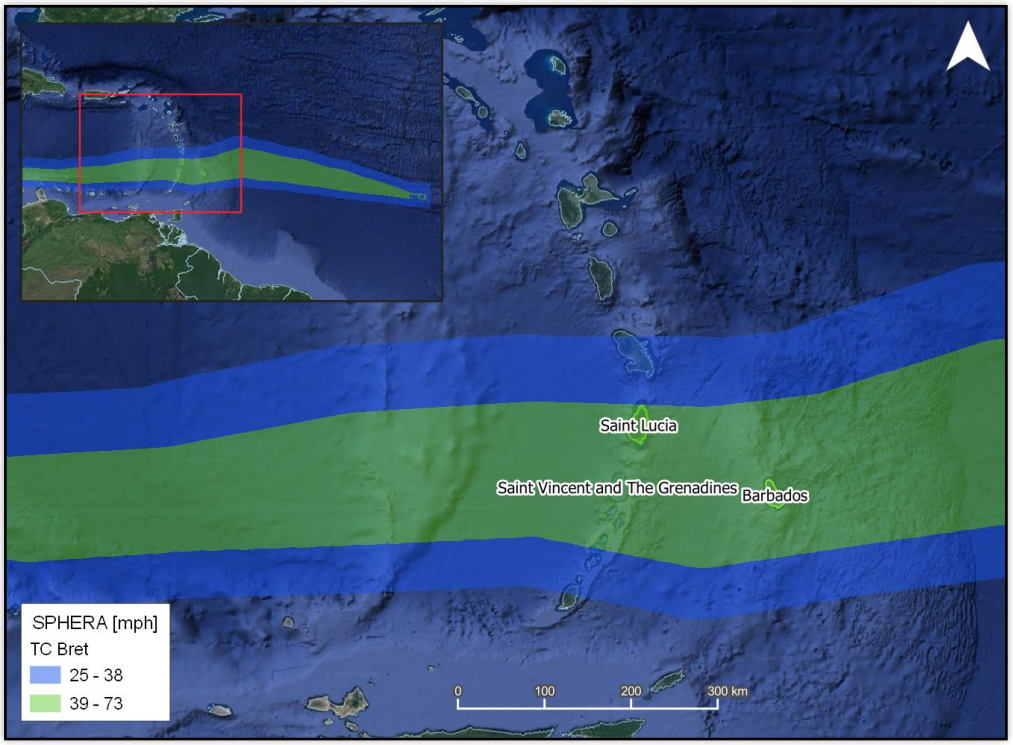

Figure 4 Map showing the wind field associated with Tropical Cyclone Bret around Saint Lucia
Source: NHC & CCRIF/SPHERA

4 IMPACTS

Heavy rains and strong winds from TC Bret affected Saint Lucia, resulting in downed power lines, flattened banana crops, damaged roofs, flooding and mudslides in some communities. At this time, there has been no report of infrastructural damage. The St. Lucia Electricity Services Limited (LUCELEC) estimated a loss of 60 percent of their network as a result of the storm's passage over the island[5]. Within a few days, LUCELEC crews restored 98 per cent of power to customers who lost service during the passage of Tropical Storm Bret[6].

5 CCRIF LOSS MODEL

The final run of the CCRIF SPHERA Public Utilities Model, using the input data downloaded from the National Hurricane Center on 23 June 2023, did not produce any losses for St. Lucia Electricity Services Limited (LUCELEC). Thus, the loss was zero and therefore, no payout under LUCELEC's CCRIF Public Utilities policy is due.

For additional information, please contact CCRIF SPC at: pr@ccrif.org

[5] Damage from Tropical Storm Bret's Passage Still Under Review - St. Lucia News From The Voice (thevoiceslu.com)
[6] TS Bret System Update #3 | St. Lucia Electricity Services Limited (lucelec.com)