



Tropical Cyclone Don (AL052017)

Wind and Storm Surge

Event Briefing

20 July 2017

1 SUMMARY

Don is the fourth named storm of the 2017 Atlantic Hurricane Season. It formed as a tropical storm on 17 July at 21:00 UTC, east of the Windward Islands. Don moved quickly westward within the strong trade-wide flow, reaching the southern Windward Islands on 19 July at 00:00 UTC as a tropical storm. In the hours following, the storm degenerated in an open wave, moving over the far south-eastern Caribbean Sea. Don caused tropical-storm-force winds over Grenada and the Grenadines and locally intense rainfall over Barbados, the southern Windward Islands, Trinidad and Tobago and north-eastern Venezuela.

This event briefing is designed to review damages from wind and storm surge but not rainfall for CCRIF member countries.

2 INTRODUCTION

On 17 July 2017 at 21:00 UTC, the US National Hurricane Center (NHC) reported that a tropical storm developed east of the Windward Islands. Its centre was located near 11.2 N, 52.6 W. Don featured a small, but well-defined surface circulation and a small area of tropical storm force winds over the eastern semicircle of the circulation (Figure 1a). Maximum sustained winds were estimated in 40 mph (65 km/h) with higher gusts, and minimum central pressure was 1009 mb. Don moved quickly westward (through the Windward Islands) within the strong trade-wide flow (forward velocity near 17 mph, 28 km/h).

Don moved within a narrow east-west zone of low shear, a favourable condition for cyclone intensity strengthening. Due to this, in the following hours the maximum sustained winds gradually intensified, to near 50 mph (85 km/h) on 18 July at 9:00 UTC and the tropical storm force winds enlarged the outwards extension up to 35 miles (55 km) from the centre. At that time the centre of the tropical storm was located at 11.5 N, 56.2 W, at about 250 miles (405 km) east-southeast of Barbados and 375 miles (600 km) east-southeast of Grenada (Figure 1b).

On 18 July at 15:00 UTC, Don slightly weakened, supposedly due to the increment of the westerly shear and dry mid-level air. The maximum sustained winds were near 40 mph (65 km/h) and the circulation became less defined, probably without a closed surface circulation. The head of the system reached Barbados (Figure 1c), where sustained winds of 25 to 30 kt were reported (source: NOAA). The centre of the cyclone was near 11.7 N, 60.0 W, about 120 miles (190 km) east-southeast of Grenada and 135 miles (220 km) southeast of St. Vincent, with tropical storm force winds extended outward up to 35 miles (55 km) from the centre. Rains associated to the system were spread over the Windward Islands.

On 19 July at 00:00 UTC, Don approached Grenada, about 25 miles (40 km) south east from the cyclone centre located at 11.9 N, 61.4 W (Figure 1d). At this time the maximum sustained winds were near 40 mph (65 km/h) with higher gusts and the system moved at 23 mph (37 km/h). Anemometric measurement at Grenada airport reported winds up to 28.5 mph (46 km/h)

associated to the tropical storm¹. The storm centre was located south from The Grenadines and St. Vincent, at a distance of 37 to 100 miles (60-155 km).

At 03:00 UTC, Don no longer had a centre of circulation and the minimum pressure increased. Indeed the storm degenerated into an open wave that moved over the far south-eastern Caribbean Sea (Figure 1e). Its remnants were still associated with maximum sustained winds near 40 mph (65 km/h) and to isolated showers across Trinidad and Tobago, the southern Windward Islands, and north-eastern Venezuela.

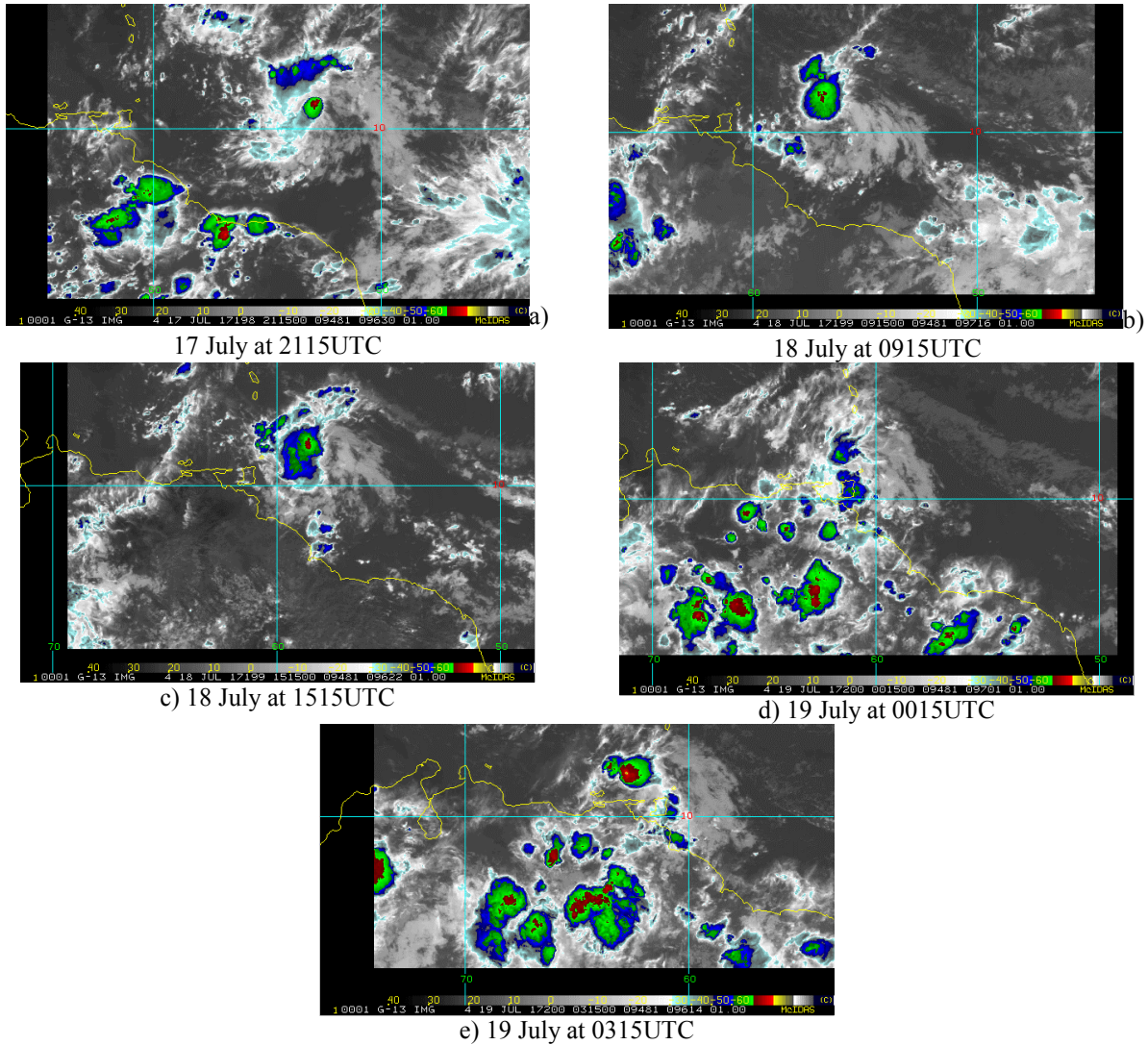


Figure 1 Enhanced Infrared (IR) Imagery (4 km Mercator). Source: <https://www.nesdis.noaa.gov/>

¹ Time and Date AS, available in: <https://www.timeanddate.com/weather/grenada/saint-georges/historic>

3 CCRIF SPC MODEL OUTPUTS

Under CCRIF’s loss calculation protocol, a CCRIF Multi-Peril Risk Estimation System (MPRES) report is required for any tropical cyclone affecting at least one member country with winds greater than 39 mph (62.7 km/h). For Grenada and St. Vincent and The Grenadines, Tropical Cyclone Don qualified as a Reportable Event².

The wind footprint (Figure 2 and Figure 4) and surge field (Figure 3 and Figure 5) are two of the outputs from the CCRIF model, and these figures show the regions affected by certain magnitudes of wind velocity and storm surge in each country.

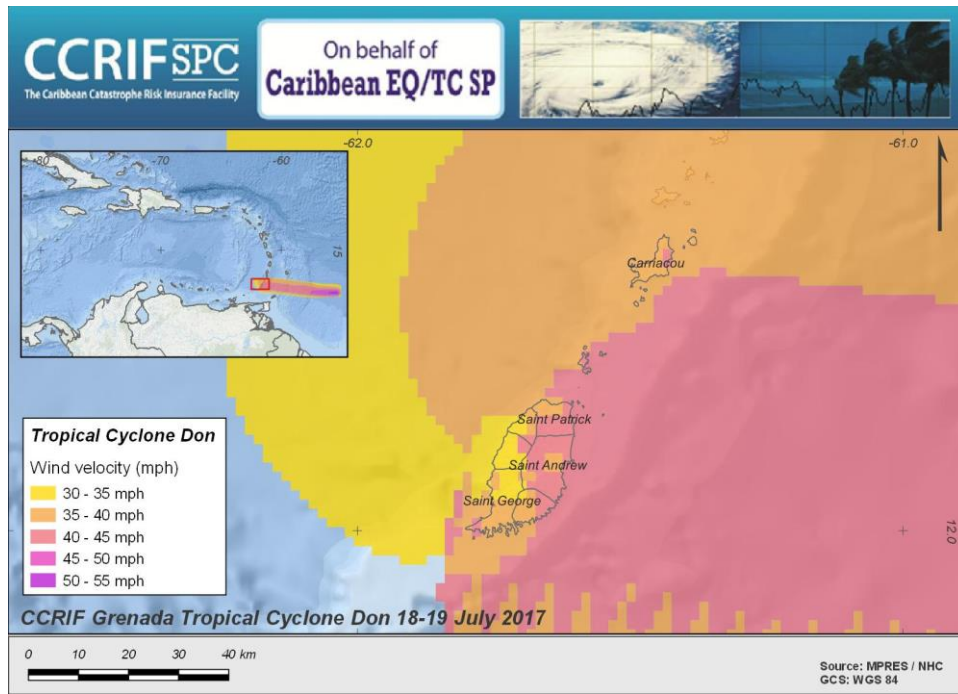


Figure 2 Map showing the wind field associated with Tropical Cyclone Don on Grenada. Source: NHC & CCRIF/MPRES

² An event occurs but does not register a loss in any CCRIF country within the MPRES loss model.

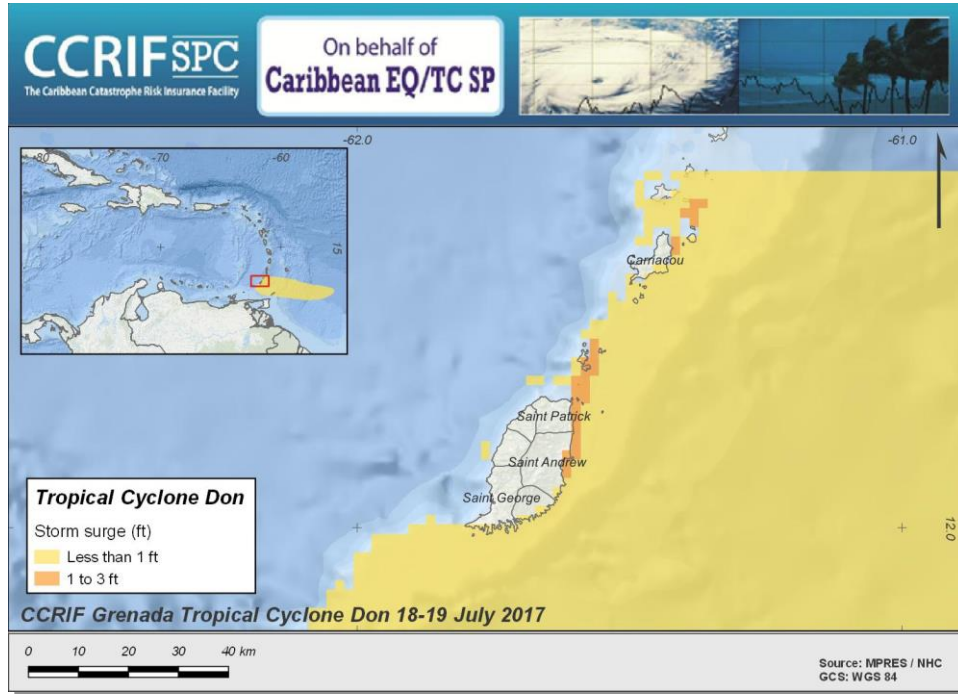


Figure 3 Map showing the storm surge field associated with Tropical Cyclone Don on Grenada.
Source: NHC & CCRIF/MPRES

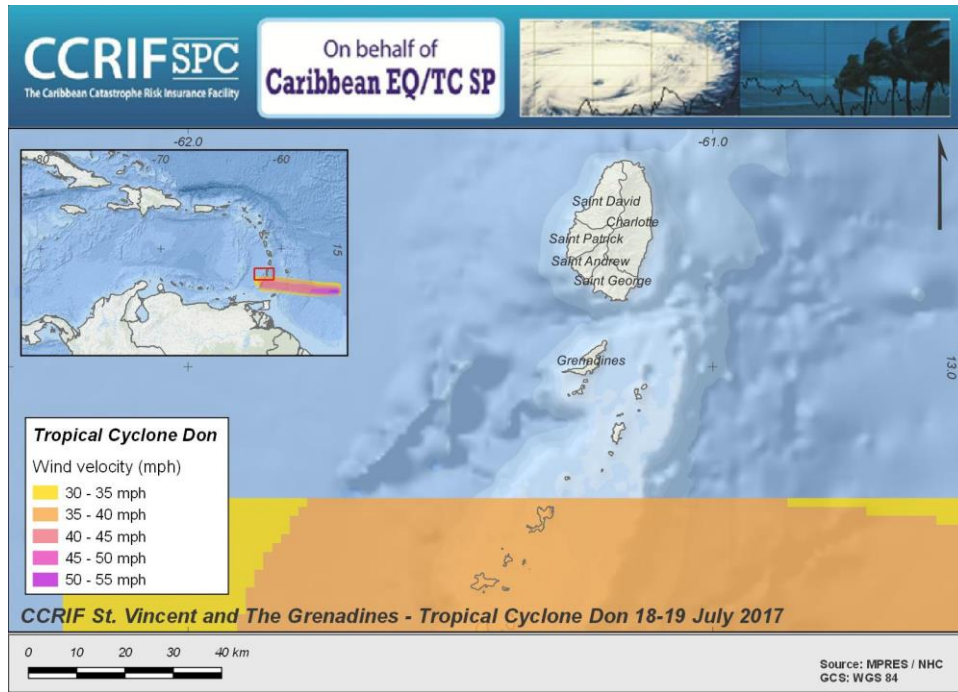


Figure 4 Map showing the wind field associated with Tropical Cyclone Don on St. Vincent and The Grenadines.
Source: NHC & CCRIF/MPRES

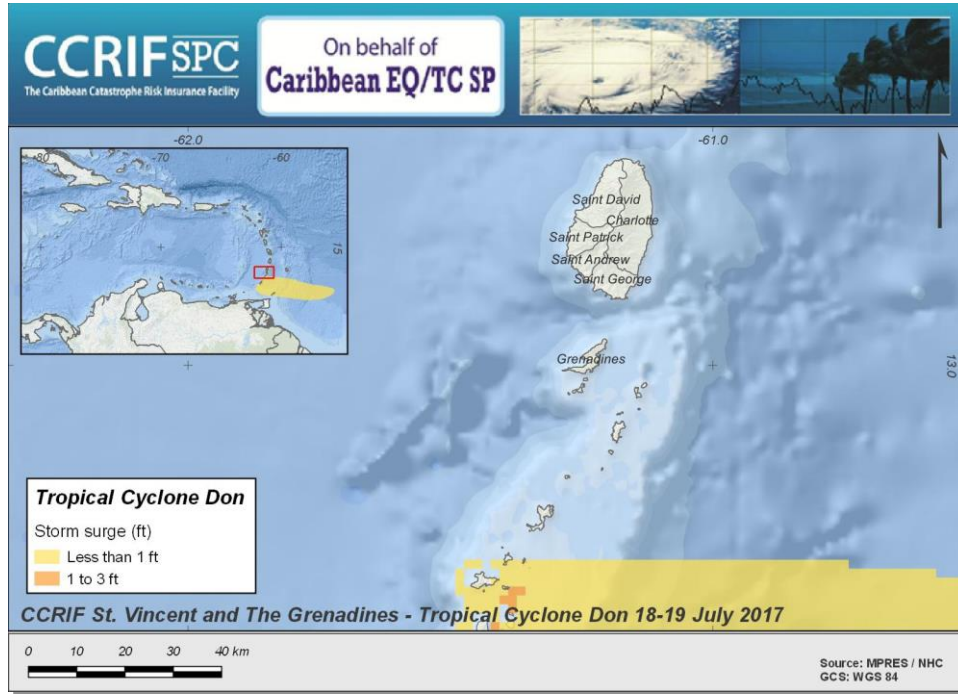


Figure 5 Map showing the storm surge field associated with Tropical Cyclone Don on St. Vincent and The Grenadines. Source: NHC & CCRIF/MPRES

4 IMPACTS

Grenada

Damages had not yet been quantified at the time of this report as indicated by the National Disaster Management Agency (NaDMA). According to NaDMA the preliminary assessments showed no significant impacts for Grenada following the passage of Don.

Prior to the arrival of Tropical Storm Don, precautionary measures were taken, including:

- The opening of twenty four shelters (21 on the mainland, 2 on Carriacou and 1 on Petite Martinique). One hundred and forty (140) persons were checked into shelters.
- No health issues or special needs case were reported.
- The National Emergency Operating Center was deactivated at 6:00 am on 19 July and airport services, schools and business activities returned to normal on July 19.

St. Vincent and The Grenadines

According to the National Emergency Management Organisation (NEMO) no significant damage was reported.

Prior to the arrival of Tropical Storm Don, precautionary measures were taken, including:

- The opening of shelters on the evening on 18 July. Six families moved into shelters.
- The National Emergency System was deactivated at 6:00 am on 19 Jul and airport services, schools and business activities returned to normal on 19 July.

5 CCRIF LOSS MODEL

The aforementioned reports from the national disaster management agencies in the two member countries corroborate with the preliminary runs of the CCRIF loss model that generated no government losses for Grenada and St. Vincent and The Grenadines. Therefore no payout is due.

For further information, please contact ERN-RED, the CCRIF SPC Risk Management Specialist.

Evaluación de Riesgos Naturales
Vito Alessio Robles No.179
Col. Hda Gpe Chimalistac.
Del. Álvaro Obregón. CP 01050, México D.F.
+52 (55) 5616-8161, 62, 64
cavelar@ccrif.org