



Tropical Cyclone Philippe (AAL172023)

Wind and Storm Surge

Final Event Briefing

Leeward Islands

13 October 2023

1 SUMMARY

Tropical Cyclone Philippe was the sixteenth named storm of the 2023 Atlantic Hurricane Season. On 2 October at 2200UTC, Tropical Cyclone Philippe made landfall on Antigua and Barbuda as a tropical storm and on 3 October, its centre moved over the Atlantic Ocean just east of the northern Leeward Islands, spreading tropical storm conditions over the region. On 4 October, TC Philippe moved away from the northern Leeward Islands, towards the north Atlantic Ocean.

The final runs of the CCRIF tropical cyclone loss model for wind and storm surge produced government losses for Antigua and Barbuda, Saint Kitts and Nevis, Sint Maarten, and Anguilla. However, the government losses for all four countries were below the Attachment Point of the respective countries' Tropical Cyclone policy. Therefore, no payout under these policies are due. The final runs of the CCRIF loss model for wind and storm surge did not produce any government losses for the British Virgin Islands, although tropical-storm-winds were reproduced over portions of the country. Therefore, no payout under this policy is due.

The Aggregated Deductible Cover (ADC) feature for the Tropical Cyclone policies for Antigua and Barbuda and Sint Maarten were not activated because the modelled losses were below 10% of the Minimum Payment of the respective countries' Tropical Cyclone policy. Therefore, no payments under the ADC feature are due for Antigua and Barbuda and Sint Maarten. For Anguilla and Saint Kitts and Nevis, the modelled loss values were between 10% of the Minimum Payment and 50% of the Policy Attachment Point of the respective countries' Tropical Cyclone policy. However, at the time of issuing this final event briefing, a Disaster Alert had not been reported by ReliefWeb for Anguilla or Saint Kitts and Nevis due to this tropical cyclone. Therefore, no payments under the ADC feature are due for Anguilla and Saint Kitts and Nevis.

This event briefing is designed to review the modelled losses due to wind and storm surge calculated by CCRIF's tropical cyclone model for affected CCRIF member countries, to be analyzed with respect to members' Tropical Cyclone policies. Antigua and Barbuda, Saint Kitts and Nevis, Sint Maarten and Anguilla were the only CCRIF member countries for which the CCRIF loss model for wind and storm surge produced government losses due to Tropical Cyclone Philippe. A separate report on rainfall impacts on affected CCRIF member countries will be issued if applicable.

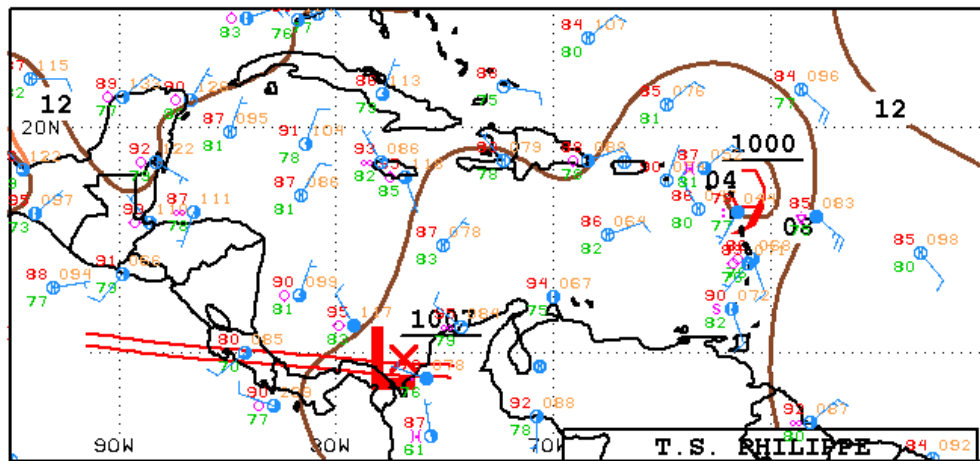
2 INTRODUCTION

On 23 September at 2100UTC, the US National Hurricane Center (NHC) reported that a tropical storm (TS) formed in the central tropical Atlantic Ocean, and it was named Philippe. Its centre was sited near latitude 15.6° North, longitude 39.7° West, about 1400 mi (2300 km) E of the Leeward Islands. The system proceeded with estimated forward velocity of 14 mph (22 km/h) towards the west. The minimum central pressure was 1005 mb and the maximum sustained winds were

estimated at 40 mph (65 km/h).

During the next three days, the tropical storm proceeded with the same forward velocity and direction over the tropical Atlantic Ocean. The strong environmental wind shear and the entrainment of dry air hindered the intensification of the system, and the maximum sustained winds remained constant at about 50 mph (85km/h). Moreover, the shear caused a marked asymmetry of the storm, with the convective bursts shifted well to the east of the system centre. From 27 September to 2 October, the intensity of the storm remained unvaried, but its forward velocity decreased and the storm started to meander to the east of the northern Leeward Islands.

On 2 October at 2200UTC, the centre of Philippe made landfall on the island of Barbuda (Antigua and Barbuda), with maximum sustained winds estimated at 50 mph (85km/h) and minimum central pressure of 999 mb (Figure 1). TS Philippe presented a poorly defined circulation centre, sited near the northwestern edge of the large convective mass (Figure 2). Due to the high asymmetry of the system, the most intense winds were located to the south and south-east of the centre. Therefore, tropical-storm-force winds started to affect the Leeward Islands, (at first Antigua and Barbuda and Saint Kitts and Nevis, only a few hours later from 3 October at 0600UTC (Figure 3a). At this time, the centre of Philippe was located near latitude 18.0° North, longitude 62.4° West, about 45 mi (75 km) NW of Barbuda and about 45 mi (75 km) E of Sint Maarten. The intensity and sheared shape of the tropical storm was unchanged, while it gained forward velocity, moving west-northwest at 7mph (11 km/h) along the western periphery of a mid-level high pressure area over the central Atlantic Ocean.



18Z CARIBBEAN SURFACE ANALYSIS
ISSUED:
Mon Oct 2 20:42:39 UTC 2023

NATIONAL HURRICANE CENTER
MIAMI, FLORIDA
BY TAFB ANALYST: AREINHART
COLLABORATING CENTERS: NHC OPC

02 October at 1800UTC

Figure 1 Surface analysis over the Caribbean area on 2 October, 2023 at 1800UTC. Source: US National Hurricane Center¹

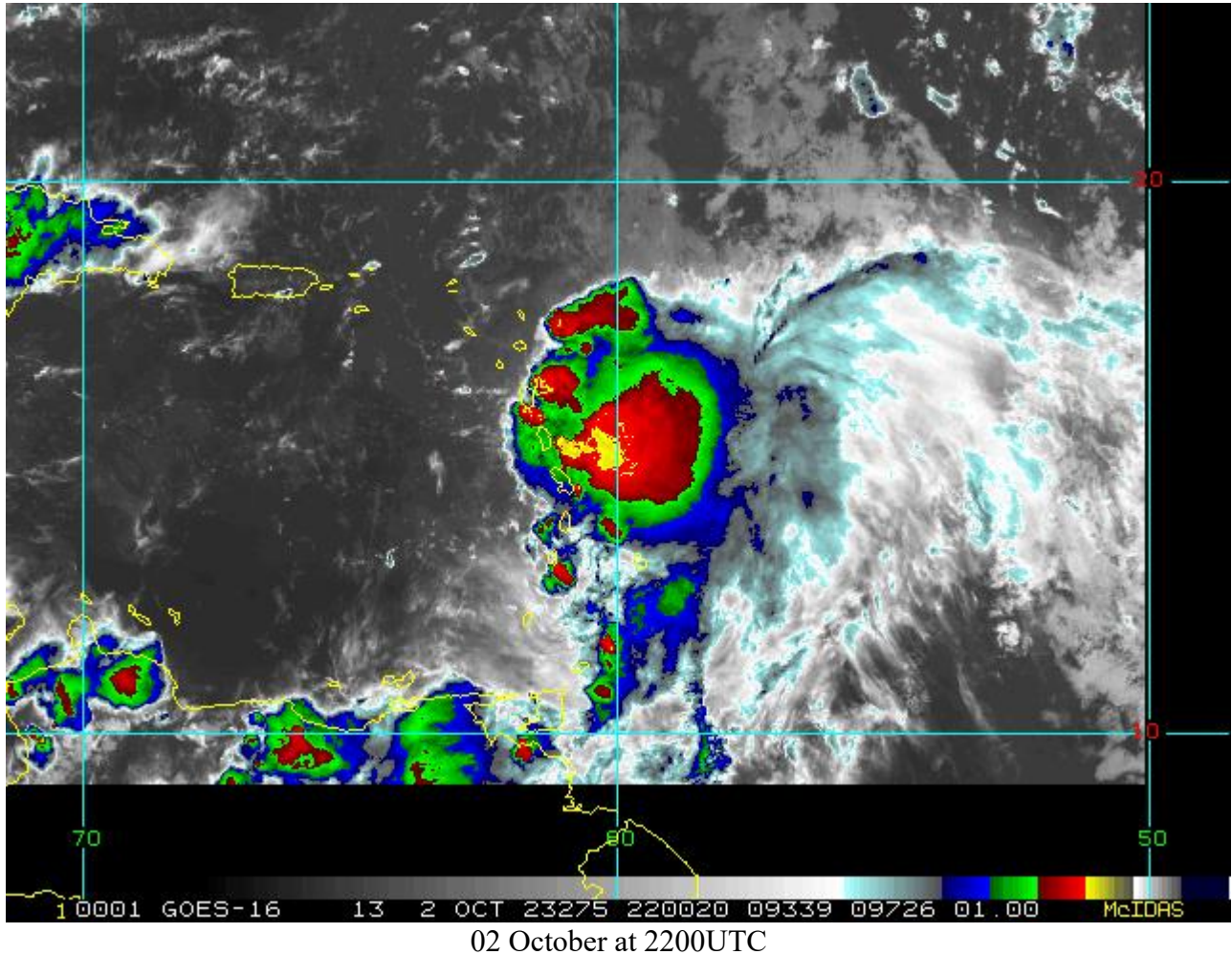


Figure 2 Satellite imagery on 2 October, 2023 at 2200UTC from the thermal infrared channel enhanced with colour. Blue/green colours represent high altitude clouds (top cloud temperature between -50°C and -70°C), while the red/yellow colours represent very high altitude clouds (top cloud lower than -70°C). High altitude clouds indicate strong convection associated with intense precipitation. Source: NOAA, National Environmental Satellite, Data and Information Service².

At 1200UTC, the centre of Philippe was sited near latitude 18.6° North, longitude 63.5° West, about 40 mi (60 km) NW of Anguilla. As in the previous hours, most of the stronger convection was over the southern and eastern portions of the storm, and the Leeward Islands continued to experience strong winds and heavy rains even when the centre of the storm moved north of those

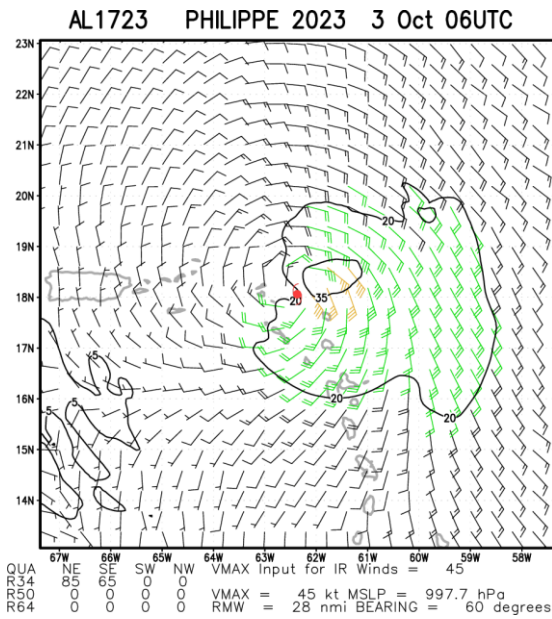
1 National Oceanic and Atmospheric Administration - FTP, National Hurricane Center, review date: 2 October 2023, available at: https://www.nhc.noaa.gov/tafb/CAR_18Z.gif

2 RAMSDIS Online Archive, NOAA Satellite and Information Service, available at: https://rammb-data.cira.colostate.edu/tc_realtime/storm.asp?storm_identifier=al082023

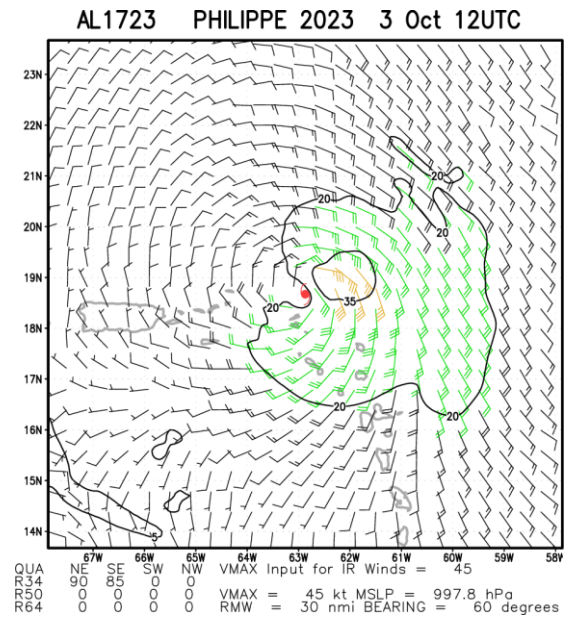
islands. At this time, Antigua and Barbuda, Saint Kitts and Nevis, Sint Maarten and Anguilla were still affected by strong winds (Figure 3b).

The tropical storm proceeded toward northwest at 10 mph (17 km/h) and at 1800UTC its centre was located near latitude 19.0° North, longitude 64.4° West, about 17 mi (27 km) N of The Settlement, Anegada, British Virgin Islands (Figure 3c). Despite the proximity to the British Virgin Islands, tropical-storm-force winds marginally affected portions of the country due to the sheared shape of the system. At 2100UTC, the strong winds associated with Philippe ceased over the other northern Leeward Islands (Figure 3c, 3d).

In the next six hours, TS Philippe lost organization and moved away from the British Virgin Islands, proceeding north-northwest for the north Atlantic Ocean.



a) 3 October at 0600UTC



b) 3 October at 1200UTC

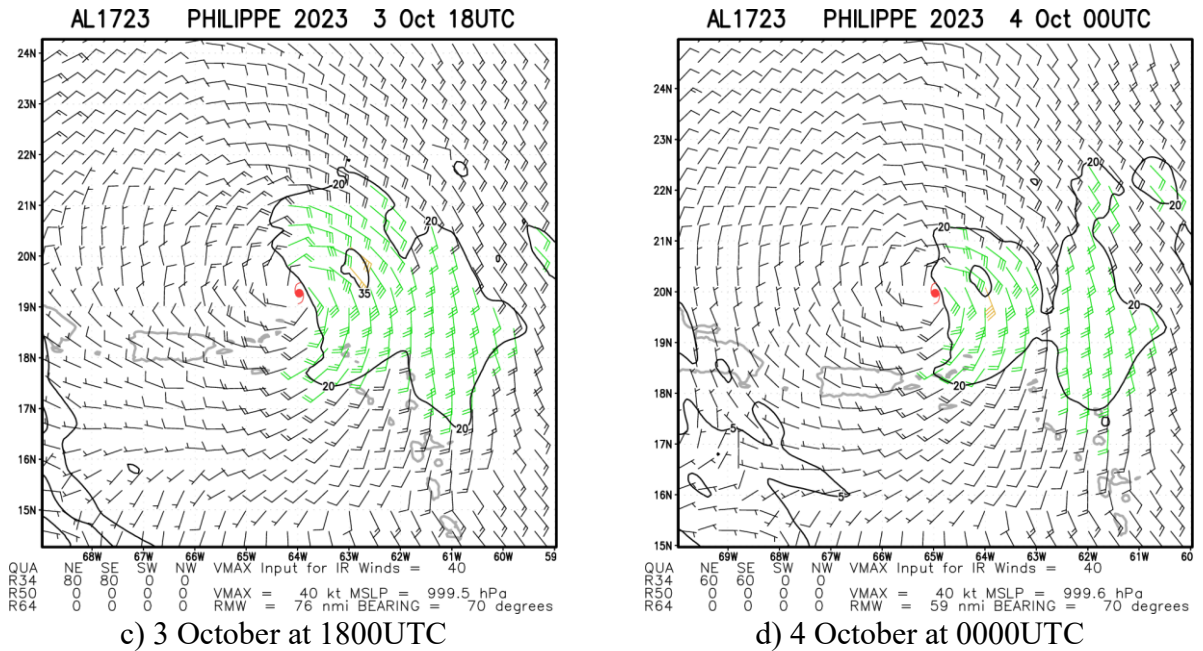


Figure 3 Multi-platform satellite based tropical cyclone surface wind analysis estimated on 3-4 October, 2023 at different times as indicated by the labels. Contouring indicates wind intensity at 20 kn (23 mph, 37 km/h) and at 35 kn (40 mph, 65 km/h). Source: NOAA, National Environmental Satellite, Data and Information Service³

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). The Leeward Islands were affected by Tropical Cyclone Philippe, which qualified as a Loss Event for the countries⁴ Anguilla, Antigua and Barbuda, Sint Maarten, and Saint Kitts and Nevis and qualified as a Reportable Event⁵ for the British Virgin Islands. Figure 4 shows the wind footprint for the area around the Leeward Islands and surrounding countries affected by Tropical Cyclone Philippe.

³ RAMSDIS Online Archive, NOAA Satellite and Information Service, available at: https://rammb-data.cira.colostate.edu/tc_realtime/storm.asp?storm_identifer=all172023

⁴ Any Tropical Cyclone event which produces a modelled loss greater than zero in one or more policyholder countries.

⁵ Any Tropical Cyclone event 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.

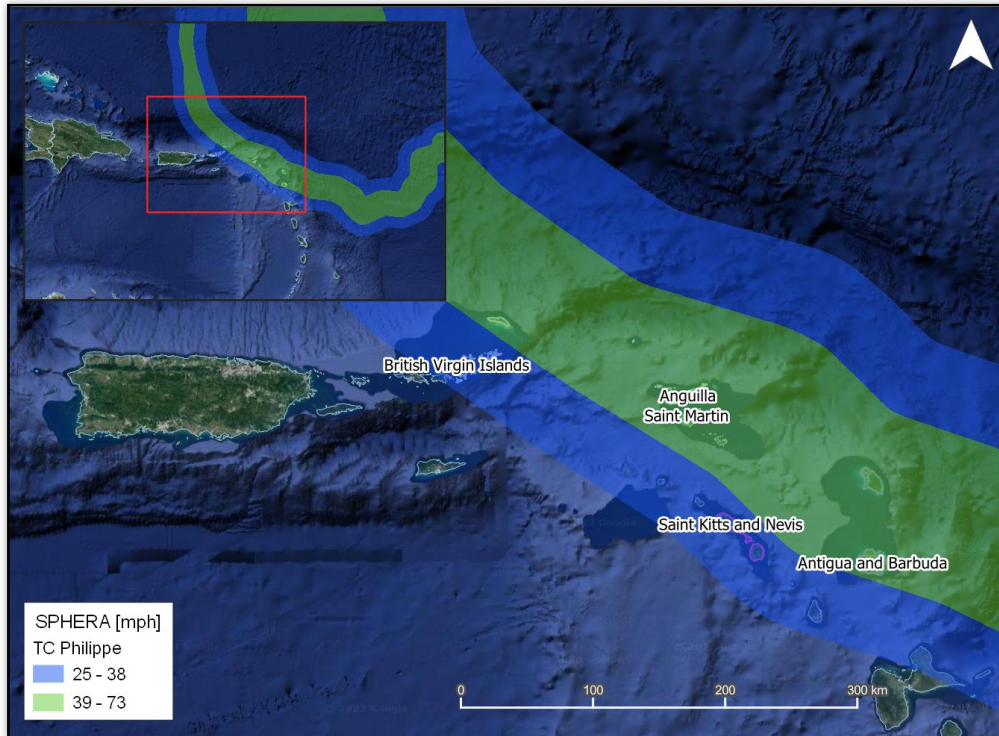


Figure 4 Map showing the wind field associated with Tropical Cyclone Philippe around the Leeward Islands
Source: NHC & CCRIF/SPHERA

4 IMPACTS

At the time of writing this report, the available information on damage due to Wind and Storm Surge for Tropical Cyclone Philippe is limited.

Media sources indicated that as a precautionary measure, officials in the twin-island nation of Antigua and Barbuda closed schools and government offices.

5 CCRIF LOSS MODEL

The final runs of the CCRIF loss model for wind and storm surge produced government losses for Anguilla, Antigua and Barbuda, Sint Maarten and Saint Kitts and Nevis, which were below the attachment point of these countries' Tropical Cyclone policies and therefore no payouts are due. For the British Virgin Islands, the model did not produce any government losses and therefore, no payout under the country's tropical cyclone policy is due.

The Aggregated Deductible Cover (ADC) feature for the Tropical Cyclone policy was not activated for any of the affected countries. For Anguilla and Saint Kitts and Nevis, the modelled loss amount was higher than 10% of the Minimum Payment and less than 50% of the Attachment Point, but at the time of issuing this final loss report, a Disaster Alert had not been

not issued by ReliefWeb for this storm for either country; for Antigua and Barbuda and Sint Maarten the modelled loss value was below the 10% of the Minimum Payment. Therefore, no payment under the ADC feature is due for any of these countries.

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