CCRIF SPC
The Caribbean Catastrophe Risk Insurance Facility

# Tropical Cyclone Erin (AAL052025)

## Wind and Storm Surge

## Final Event Briefing

## Leeward Islands

**28 August 2025**

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# 1 SUMMARY

Tropical Cyclone Erin is the fifth named cyclone and the first hurricane of the 2025 Atlantic Hurricane Season. On August 16 and 17, 2025, Hurricane Erin crossed the Atlantic waters north of the Leeward Islands, passing at a minimum distance of approximately 90 mi (145 km) to 150 mi (241 km) from the northern Leeward Islands. Tropical-storm-force winds extended over Antigua and Barbuda, St. Kitts and Nevis, Sint Maarten, Anguilla, and the British Virgin Islands. Among these, the British Virgin Islands and Anguilla experienced tropical-storm-force winds for the longest durations—approximately 18 hours and 15 hours, respectively—while the other countries were affected for less than three hours.

The final runs of the CCRIF tropical cyclone loss model for wind and storm surge have produced government losses for St. Kitts and Nevis, Anguilla and The British Virgin Islands due to Tropical Storm Erin (and therefore Erin is designated as a Loss Event for these countries[1]). The government losses for St. Kitts and Nevis, Anguilla and The British Virgin Islands are below the Attachment Point of their respective Tropical Cyclone policies and therefore no payout under their respective policies is due. The final runs of the CCRIF tropical cyclone loss model for wind and storm surge have produced zero government losses for Antigua and Barbuda and Sint Maarten due to Tropical Storm Erin. However, the modelled winds are above 39 mph in at least one exposure grid cell, therefore Erin is designated as a Reportable Event[2] for Antigua and Barbuda and Sint Maarten. Since the government losses these two countries are below the Attachment Point of its Tropical Cyclone policy, no payout under these policies is due.

Also, the requirements are not met for an Aggregate Deductible Cover (ADC)[3] payment on the Tropical Cyclone policy for Antigua and Barbuda, St. Kitts and Nevis, Sint Maarten, Anguilla and The British Virgin Islands.

The Localized Damage Index (LDI) component of the TC SPHERA model did not identify this event as a localized event[4] for Antigua and Barbuda. Therefore, no payout is due under the LDI endorsement of the Tropical Cyclone policy for Antigua and Barbuda.

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. This review is analyzed with respect to members' Tropical Cyclone policies. The Turks and Caicos

[1] Any Tropical Cyclone event which produces a modelled loss greater than zero but lower than the policy Attachment Point (AP) in one or more policyholder countries.

[2] Any Tropical Cyclone event which produces a modelled loss greater equal to zero and modelled winds greater than 39 mph in at least one exposure grid cell in one or more policyholder countries.

[3] The ADC is activated if the modelled loss value is between 30% and 50% of a country's policy Attachment Point and a Disaster Alert is issued by ReliefWeb within 7 days after the event. The ADC can also be activated if the modelled loss value is between 50% of the Attachment point and the Attachment point of the country policy.

[4] The LDI policy endorsement provides coverage for intense events that do not cause very large losses at a national scale but severely affect a relatively small part of a country. It is activated based on a Localized Index (LI), which compares the mean damage ratio computed for the most damaged areas and the mean damage ratio computed in the whole country. For an event to be covered by this endorsement the following conditions must be met:

- the TC local mean damage ratio computed for the local exposure must be greater than 1%
- the TC global mean damage ratio computed for the whole country must be greater than 0.06%.

Islands was the only other CCRIF member country for which the CCRIF loss model for wind and storm surge produced government losses due to Tropical Cyclone Erin at the time of writing this report, and a dedicated report will be issued according to the protocol. A separate report on other CCRIF member countries affected by wind and storm surge, with respect to their Tropical Cyclone policies or rainfall impacts on affected CCRIF member countries will be issued if applicable.

# 2 INTRODUCTION

On 11 August 2025 at 1500 UTC, a tropical storm formed just west of the Cabo Verde Islands and was named Erin. Over the next four days, Tropical Storm Erin strengthened slowly as it moved westward across the central Atlantic Ocean, hindered by relatively cool sea surface temperatures.

On 15 August at 1500 UTC, it was upgraded to a hurricane while located approximately 460 miles (740 km) east of the northern Leeward Islands. From that point, Erin began to rapidly intensify due to warmer sea surface temperatures over the Atlantic waters east of the northern Caribbean Sea.

In just 18 hours, by 1000 UTC on 16 August, Erin had become a Category 4 hurricane with sustained winds of 130 mph (215 km/h), as it approached the northern Leeward Islands. At that time, the hurricane's centre was located at latitude 19.6° North, longitude 61.5° West, approximately 150 miles (240 km) east of Anguilla and 135 miles (218 km) north of the islands of Barbados and Antigua. It was moving west northwestward at 20 mph (31 km/h) (see Figure 1).

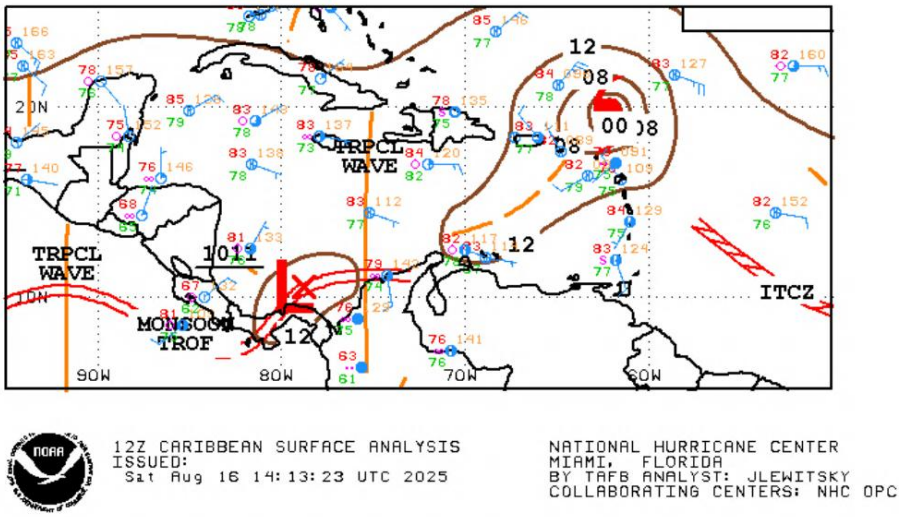



Figure 1 Surface analysis over the Caribbean area on 16 August at 1200UTC. Source: US National Hurricane centre[5]

[5] National Oceanic and Atmospheric Administration - FTP, National Hurricane centre, review date: 16 August 2025, available at: *https://www.nhc.noaa.gov/tafb /CAR 12 Z.gif*

Satellite imagery (Figure 2) showed a well-organized hurricane, characterized by a small eye, a compact and symmetric inner core, and a large area of deep convection southwest of the centre, which was beginning to affect the northern Leeward Islands.

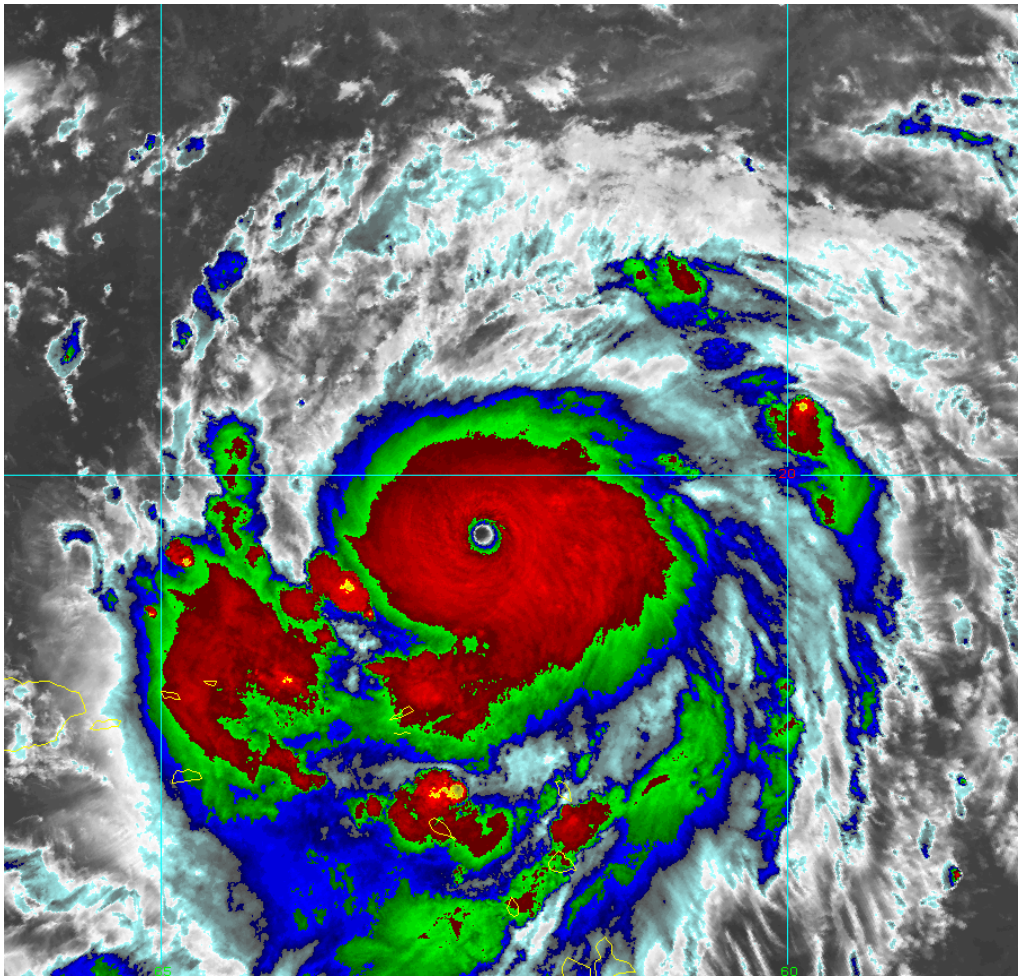


Figure 2 Satellite imagery on 16 August, 2025 at 1336 UTC from the thermal infrared channel enhanced with colour. Blue/green colours represent high altitude clouds (top cloud temperature between -50°C and -70°C), while the red/yellow colours represent very high altitude clouds (top cloud lower than -70°C). High altitude clouds indicate strong convection associated with intense precipitation. Source: NOAA, National Environmental Satellite, Data and Information Service[6].

Wind analysis maps (Figure 3a) indicated that hurricane-force winds extended outward up to 30 miles (45 km) from the centre, while tropical-storm-force winds extended outward up to 125 miles (205 km), primarily to the north of the centre.

Over the next six hours, Erin continued to rapidly strengthen, and at 1520 UTC it became a Category 5 hurricane, with maximum sustained winds near 160 mph (255 km/h) and a minimum

6 RAMSDIS Online Archive, NOAA Satellite and Information Service, available at: https://rammb-data.cira.colostate.edu/tc_realtime/storm.asp?storm_identifier=al052025

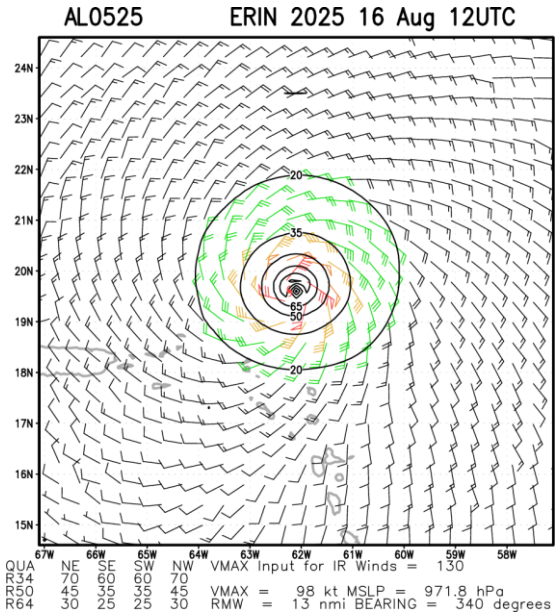
central pressure of 917 mb. The hurricane's centre was located at latitude 19.7° North, longitude 62.8° West, approximately 105 miles (170 km) north of Anguilla. Hurricane-force winds extended outward up to 30 miles (45 km) from the centre, while tropical-storm-force winds extended outward up to 140 miles (220 km), mainly to the north of the centre (Figure 3b).

The Category 5 hurricane continued moving westward at approximately 16 mph (26 km/h) with no change in intensity. By 2100 UTC, it reached its closest point to the British Virgin Islands, passing approximately 90 miles (145 km) north-northeast of The Settlement.

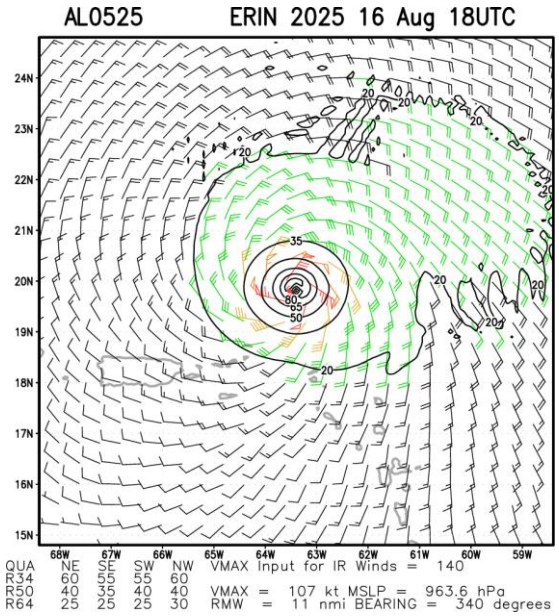
Up to this point, the hurricane's wind field was intense but compact, with the most dangerous hurricane-force winds confined to a relatively small area. As a result, the northeastern Leeward Islands experienced only tropical-storm-force winds, generally lasting three hours or less. Specifically, Antigua and Barbuda encountered tropical-storm-force winds around 1200 UTC; Sint Maarten between 1500 and 1800 UTC; while St. Kitts and Nevis was only marginally affected. In the northwestern Leeward Islands—still near the hurricane's path by the end of the day—tropical-storm-force winds began affecting Anguilla at 1200 UTC and the British Virgin Islands at 1800 UTC, with winds persisting into the following day.

On 17 August, Erin underwent an eyewall replacement cycle—a structural change that occurs in the most powerful hurricanes—resulting in a weakening of intensity but an expansion in size. At 0600 UTC, Erin was downgraded to a Category 3 hurricane, with maximum sustained winds reduced to 125 mph (205 km/h), but with a significantly larger wind field: tropical-storm-force winds extended outward up to 205 miles (335 km). At that time, Erin was located at latitude 20.4° North, longitude 66.1° West, approximately 165 miles (260 km) northwest of the British Virgin Islands. Tropical-storm-force winds had just ceased over Anguilla, while they were still affecting the British Virgin Islands. The hurricane continued moving west northwestward at 14 mph (22 km/h), crossing the Atlantic waters north of Puerto Rico and moving away from the Leeward Islands. By 1200 UTC, tropical-storm-force winds had ceased over the British Virgin Islands (Figure 3).

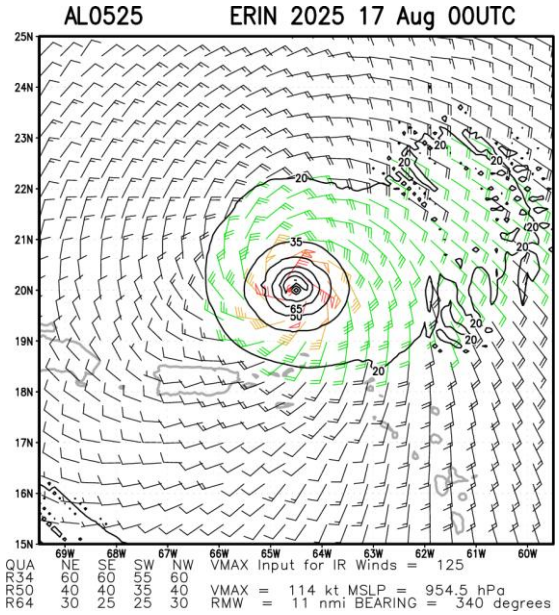
Afterward, Erin continued toward the Turks and Caicos Islands and The Bahamas, with only minor fluctuations in intensity. At the time of writing this report, the hurricane is located north of the Turks and Caicos Islands.



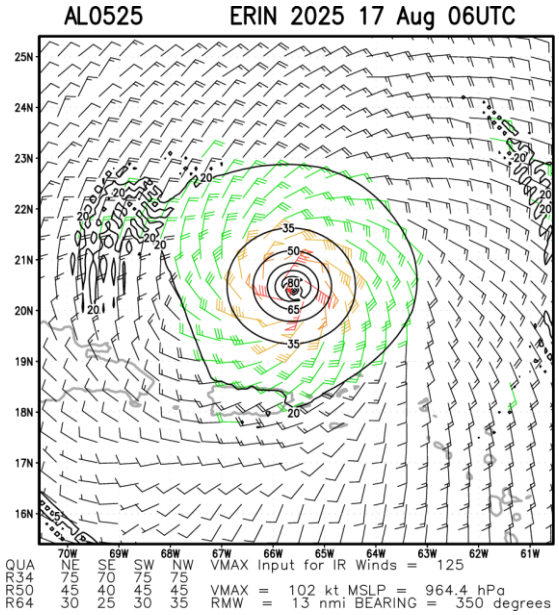

a) 16 August at 1200UTC




b) 16 August at 1800UTC




c) 17 August at 0000UTC




c) 17 August at 0600UTC

Figure 3 Multi-platform satellite based tropical cyclone surface wind analysis estimated on 16 and 17 August, 2025 at different times as indicated by the labels. Contouring indicates wind intensity at 20 kn (23 mph, 37 km/h), at 35 kn (40 mph, 65 km/h), 50 kn (57mph, 93 km/h), 65 kn (74mph, 120km/h) and 80 kn (92mph, 148km/h). Source: NOAA, National Environmental Satellite, Data and Information Service[7]

[7] RAMSDIS Online Archive, NOAA Satellite and Information Service, available at: https://rammb-data.cira.colostate.edu/tc_realtime/storm.asp?storm_identifier=al052025

# 3 CCRIF SPC MODEL OUTPUTS

A CCRIF System for Probabilistic Hazard Evaluation and Risk Assessment (SPHERA) report is issued for any tropical cyclone affecting at least one member country with winds greater than 39 mph (62.7 km/h). Several countries were affected by Tropical Cyclone Erin. For St. Kitts and Nevis, Anguilla and the British Virgin Islands it qualifies as a Loss Event[8] and for Antigua and Barbuda and Sint Maarten it qualifies as a Reportable Event[9].

The wind footprint is one of the outputs from CCRIF´s model. Figure 4 shows the wind footprint for the regions affected by Tropical Cyclone Erin.

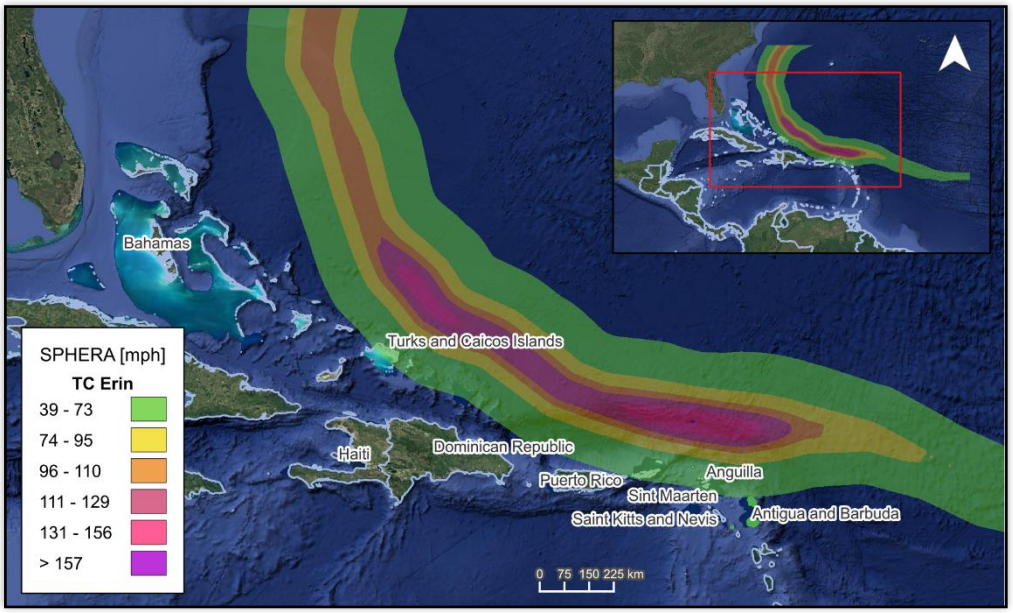



Figure 4 Map showing the wind field associated with Tropical Cyclone Erin around the Leeward Islands. Source: NHC & CCRIF/SPHERA

# 4 REPORTED IMPACTS

At the time of writing this report, the available information on damage in the Caribbean countries due to Hurricane Erin was limited. Swells generated by Erin will affect portions of the northern Leeward Islands, the Virgin Islands, Puerto Rico, Hispaniola, and the Turks and Caicos.

|On the British Virgin Islands, according to its Department of Disaster Management (DDM), the National Emergency Operations Centre (NEOC) was not activated, DDM also reported that more

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

[9] Any named Tropical Cyclone event (*i.e.* one that reaches Tropical Storm status or higher) within a box bounded by the following – Latitude 4° and 34°N, Longitude 95° and 53°W – 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

than 9 inches of rainfall caused localized flooding and minor damage to homes, mudslides and road blockages were reported, however, no significant structural damage was reported[10].

The Department of Disaster Management (DDM) of Anguilla, published that no immediate needs were identified; continued vigilance was urged, residents were advised to identify their nearest emergency shelter[10].

The National Office of Disaster Services (NODS) from Antigua and Barbuda, issued daily alerts and preparedness messages through multiple media, supported by radio briefings with the Director and Deputy Director. In the country the National Disaster Plan was activated[10].

In Sint Maarten, the Disaster Management Officials reported that nine of eleven designated shelters were operational and on standby; the power and water companies activated contingency plans to ensure continuity of services. Some minor incidents, including flooding and debris slides, were reported[10].

No additional information on damage or impacts due to wind and storm surge for TC Erin in other Caribbean countries was found at the time of writing this report.

# 5 TRIGGER POTENTIAL

The final runs of the CCRIF tropical cyclone loss model for wind and storm surge produced government losses for St. Kitts and Nevis, Anguilla and the British Virgin Islands. However, the government losses for these countries were below the Attachment Point of each country's Tropical Cyclone policy. Therefore, no payouts 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 Antigua and Barbuda and Sint Maarten, although tropical-storm-winds were shown over portions of these countries. Therefore, no payouts under the Tropical Cyclone policies of these countries are due.

The Aggregate Deductible Cover (ADC) feature for the Tropical Cyclone policies for these countries were not activated because the modelled losses were below 30% of the Minimum Payment of the respective countries' Tropical Cyclone policy. Therefore, no payments under the ADC feature are due.

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

[10] CDEMA Hurricane Erin INFORMATION NOTE No. 1 and No. 2