



Tropical Cyclone Erin (AAL052025)

Wind and Storm Surge

Preliminary Event Briefing

Turks and Caicos The Bahamas – Southeast

20 August 2025

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, bringing tropical storm conditions to the northern Leeward Islands. On August 18, it passed northeast of the Turks and Caicos Islands, at a minimum distance of approximately 120 mi (195 km) from Turks and Caicos and 160 mi (256 km) from the southern islands of The Bahamas. Tropical-storm-force winds persisted over the region including Turks and Caicos Islands and the southern islands of The Bahamas throughout most of the day. On August 19, Erin weakened to a Category 2 hurricane and turned north-westward, crossing the waters east of The Bahamas and moving away from the Turks and Caicos Islands and the southern Bahamas.

The preliminary runs of the CCRIF tropical cyclone loss model for wind and storm surge have produced government losses for Turks and Caicos Islands due to Tropical Cyclone Erin (and therefore Erin is designated as a Loss Event for this country¹). The government losses for Turks and Caicos Islands are below the Attachment Point of its Tropical Cyclone policy and therefore no payout under this policy is due.

The preliminary runs of the CCRIF tropical cyclone loss model for wind and storm surge have produced zero government losses for all the three Tropical Cyclone policies of The Bahamas² due to Tropical Cyclone Erin. However, the modelled winds are above 39 mph in at least one exposure grid cell in The Bahamas – Southeast area, therefore Erin is designated as a Reportable Event³ for The Bahamas – Southeast. Since the government losses for The Bahamas – Southeast are below the Attachment Point of its Tropical Cyclone policy, no payout under this policy is due to the Government of The Bahamas.

The Aggregate Deductible Cover (ADC)⁵, included as an endorsement under the Tropical Cyclone Policy for the Turks and Caicos Islands and The Bahamas – Southeast, was not activated, as the conditions required for triggering a payment were not satisfied. Therefore, no ADC payment is due.

The Localized Damage Index (LDI) component of the TC SPHERA model did not identify this event as a localized event⁶ for Turks and Caicos Islands. Therefore, no payout is due under the LDI endorsement of the Tropical Cyclone policy for Turks and Caicos Islands.

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 The Bahamas has three Tropical Cyclone policies: The Bahamas - Southeast, The Bahamas - Central, The Bahamas - Northwest

³ 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.

⁵ 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.

⁶ 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

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, Anguilla and the British Virgin Islands were the only other CCRIF member countries 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 had been issued according to the CCRIF's Event Reporting 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 August 16 and 17, 2025, Hurricane Erin moved across 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. On August 16, Erin rapidly strengthened into a Category 5 hurricane, while on August 17 it 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. During these two days, tropical-storm-force winds affected the northern Leeward Islands, particularly the British Virgin Islands and Anguilla, which experienced these winds for the longest duration, as they remained near the expanded wind field of the hurricane on August 17.

On August 17, Hurricane Erin was moving west-north-westward at 14 mph (22 km/h). After passing the Leeward Islands, it headed towards the Turks and Caicos Islands, crossing the Atlantic waters north of Puerto Rico. By 0000 UTC on August 18, the hurricane's centre was located at latitude 22.1° North, longitude 68.8° West, approximately 155 miles (245 km) east of Grand Turk Island, the easternmost island of the Turks and Caicos Islands (Figure 1).

Wind analysis maps (Figure 2a) indicated that hurricane-force winds extended outward up to 50 miles (85 km) from the centre, while tropical-storm-force winds extended outward up to 205 mi (335 km). From this point, tropical-storm-force winds began affecting the Turks and Caicos Islands (Figure 2a). At this time, Erin was a Category 3 hurricane and showed signs that the eyewall replacement cycle was nearly complete, with re-intensification imminent. Indeed, within the next three hours, it re-intensified into a Category 4 hurricane, with maximum sustained winds near 130 mph (215 km/h), after completing the eyewall replacement cycle. Satellite imagery at 0300 UTC (Figure 3) showed a well-organized hurricane, featuring a single eyewall approximately 23 mi (37 km) in diameter, surrounded by a broad area of deep convection, mainly northeast of the centre.

Throughout the remainder of August 18, Erin continued moving west-north-westward at a gradually slower forward speed and maintained a generally steady intensity. Its wind field expanded further, with hurricane-force winds extending outward up to 80 mi (130 km) and

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%.
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tropical-storm-force winds up to 230 mi (370 km) (Figure 2b). Tropical-storm-force winds persisted over the Turks and Caicos Islands throughout the day, intensifying around 1800 UTC when the hurricane's centre reached its closest approach to the territory, about 120 mi (195 km) from North Caicos (Figure 2c). Similarly, the southeastern islands of The Bahamas began experiencing tropical-storm-force winds from 0600 UTC, which continued throughout the day.

At 0600 UTC on August 19, the hurricane's centre was located at latitude 24.5° North, longitude 71.8° West, approximately 160 mi (256 km) northeast of Mayaguana Island in The Bahamas. From this point, it gradually turned north-north-westward and increased its forward speed, moving away from the Turks and Caicos Islands and the southern Bahamas. By 1200 UTC, Erin had weakened to a Category 2 hurricane due to the inhibiting effects of environmental wind shear present in the region east of The Bahamas. Despite this reduction in intensity, Erin remained a large hurricane, with the areal extent of its wind field largely unchanged. Consequently, tropical-storm-force winds over the Turks and Caicos Islands and the southeastern Bahamas only ceased at this time (Figure 2d).

In the following hours, Hurricane Erin continued progressing north-westward, passing east of The Bahamas. At the time of writing this report, it is expected to curve over the western Atlantic, between the east coast of the United States and Bermuda

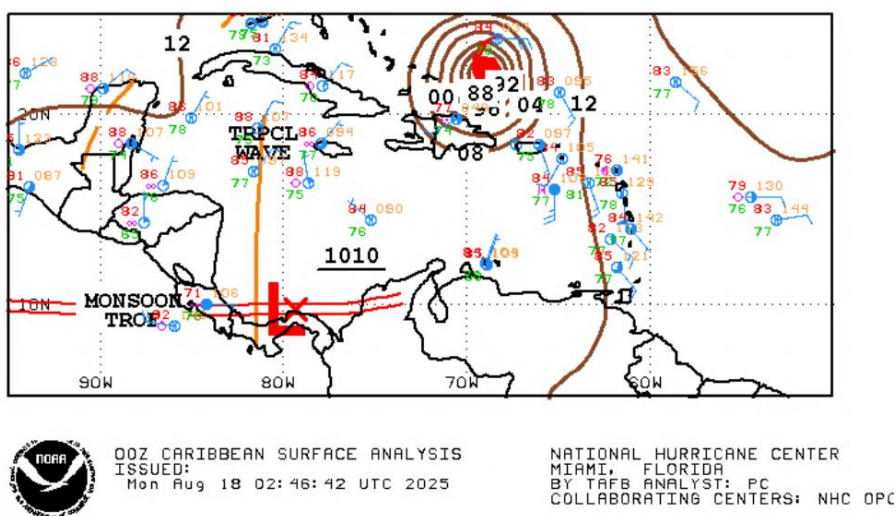


Figure 1 Surface analysis over the Caribbean area on 18 August at 0000UTC. Source: US National Hurricane centre⁷

⁷ National Oceanic and Atmospheric Administration - FTP, National Hurricane centre, review date: 18 August 2025, available at: https://www.nhc.noaa.gov/tafb/CAR_00Z.gif

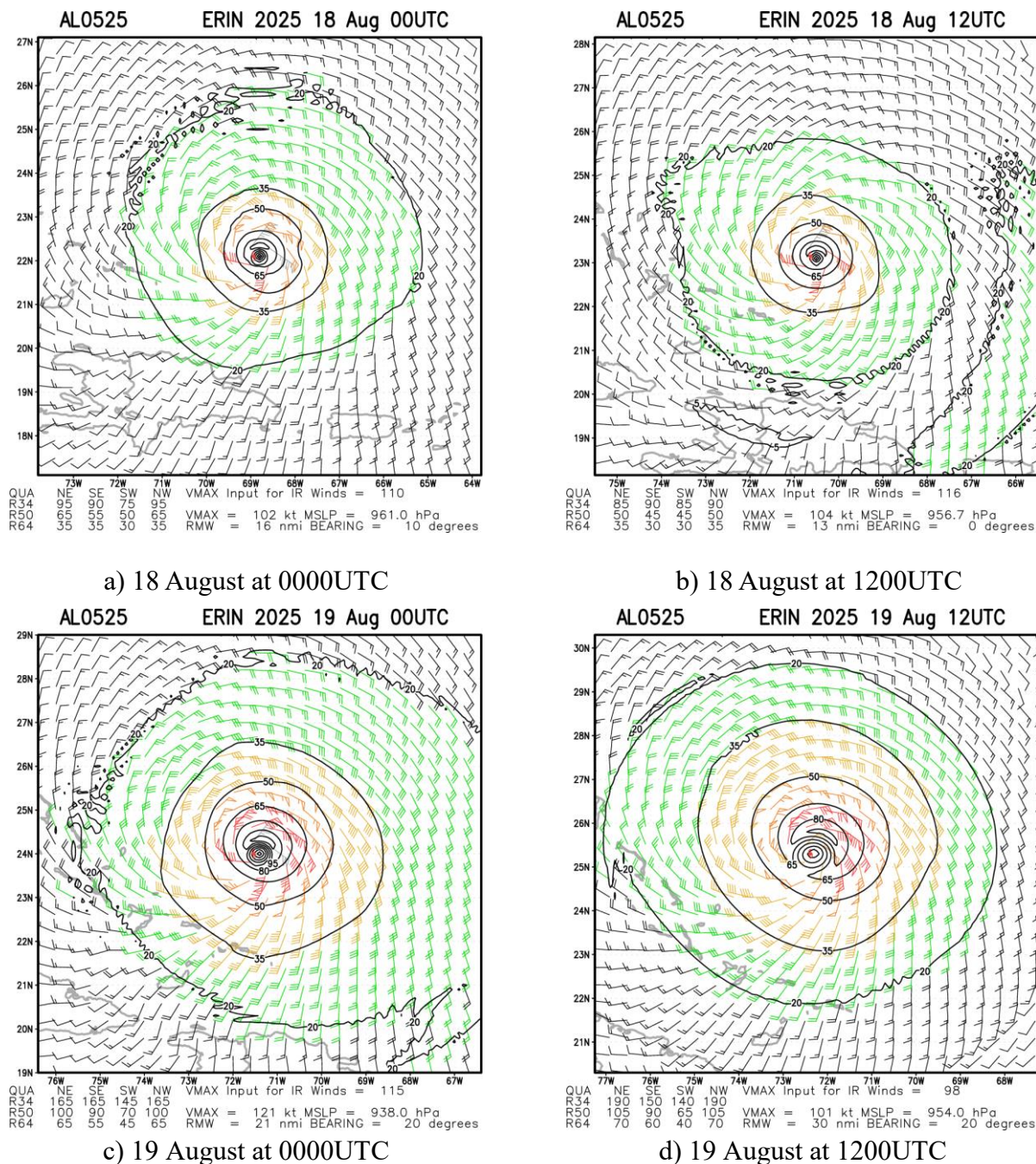


Figure 2 Multi-platform satellite based tropical cyclone surface wind analysis estimated on 18 and 19 August, 2025 at different times as indicated by the labels. Contouring indicates wind intensity at 20 kn (23 mph, 37 km/h), at 35 kn (40 mph, 65 km/h), 50 kn (57mph, 93 km/h), 65 kn (74mph, 120km/h) and 80 kn (92mph, 148km/h). Source: NOAA, National Environmental Satellite, Data and Information Service⁸

⁸ RAMSDIS Online Archive, NOAA Satellite and Information Service, available at: https://rammb-data.cira.colostate.edu/tc_realtime/storm.asp?storm_idenfier=al052025

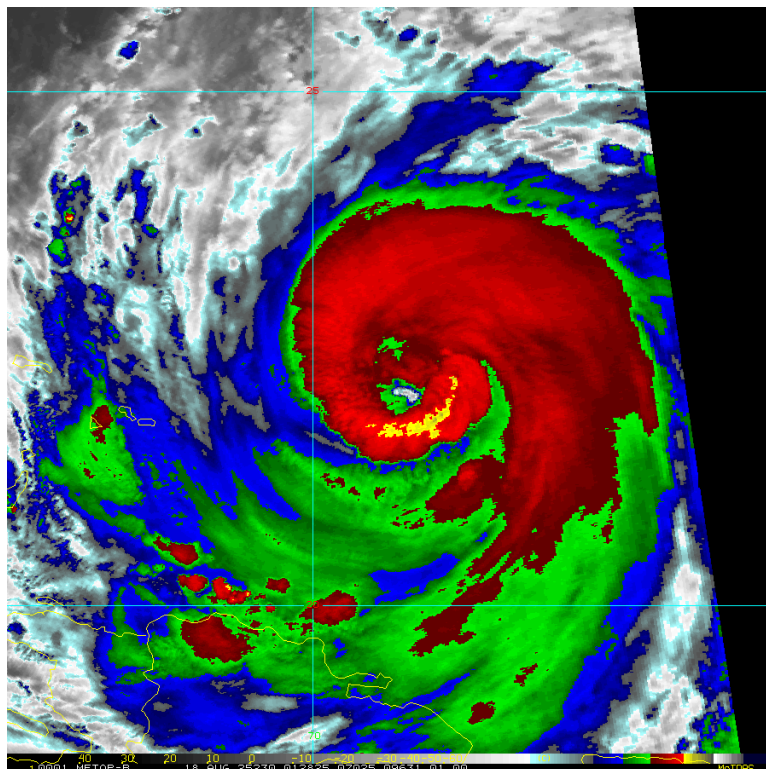


Figure 3 Satellite imagery on 18 August, 2025 at 0128 UTC from the thermal infrared channel enhanced with colour.

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 Service⁹.

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 Turks and Caicos Islands it qualifies as a Loss Event¹⁰ and for The Bahamas – South East it qualifies as a Reportable Event¹¹.

⁹ RAMSDIS Online Archive, NOAA Satellite and Information Service, available at: https://rammb-data.cira.colostate.edu/tc_realtime/storm.asp?storm_identifier=al052025

¹⁰ Any Tropical Cyclone event which produces a modelled loss greater than zero in one or more policyholder countries.

¹¹ 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

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.

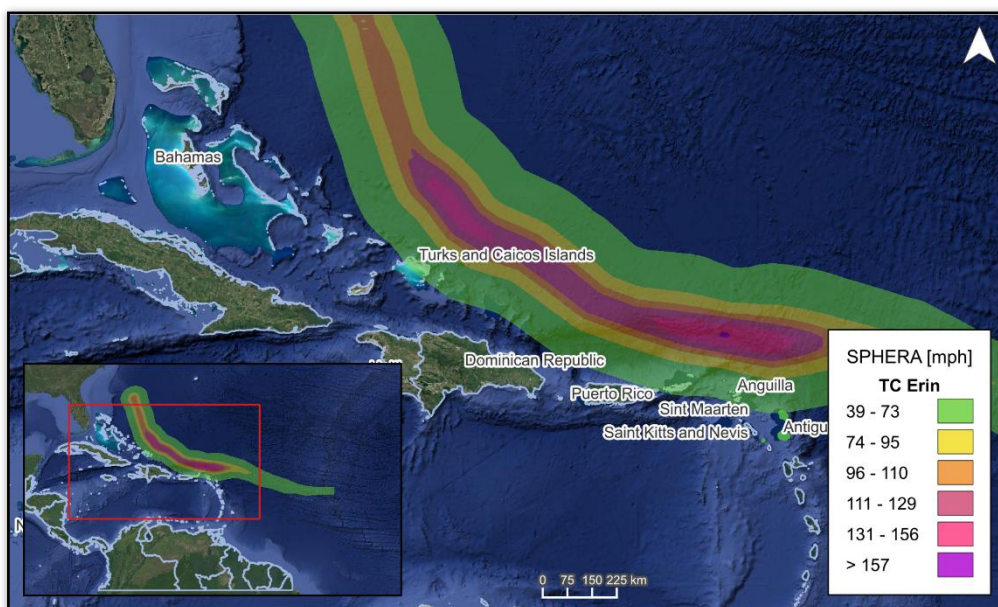


Figure 4 Map showing the wind field associated with Tropical Cyclone Erin around Turks and Caicos and The Bahamas Islands. Source: NHC & CCRIF/SPHERA

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.

In Turks and Caicos, localized flooding and pooling were reported on some roadways. While no homes were flooded, several incidents of minor roof leaks were noted. Downed power lines caused outages in Grand Turk and Salt Cay; restoration efforts are ongoing. Emergency shelters were activated across the islands, with military support provided for their setup and reinforcement¹².

The Bahamas' meteorology department said the islands' southeast, as well as Turks and Caicos, were experiencing tropical storm conditions, and warned that boats should not go out to sea until the end of the week.¹³ The Disaster Risk Management Authority of The Bahamas reported that the National Emergency Operations Centre (NEOC) was partially activated; no shelters have been activated.

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.

in one or more grid cells of at least one CCRIF policyholder country but does not generate a modelled loss greater than zero

¹² CDEMA Hurricane Erin INFORMATION NOTE no. 2

¹³ [Hurricane Erin could bring dangerous seas as it grows near the Bahamas](#)

5 TRIGGER POTENTIAL

The preliminary runs of the CCRIF tropical cyclone loss model for wind and storm surge produced government losses for Turks and Caicos Islands. However, the government losses for this country were below the Attachment Point of the country's Tropical Cyclone policy. Therefore, no payouts under this policy is due.

The Aggregate Deductible Cover (ADC) feature for the Tropical Cyclone policy for Turks and Caicos was not activated because the modelled losses were below 30% of the Minimum Payment of the respective Tropical Cyclone policy. Therefore, no payment under the ADC feature is due.

The Localized Damage Index (LDI) component of the TC SPHERA model did not identify this event as a localized event¹⁴ for Turks and Caicos Islands. Therefore, no payout is due under the LDI endorsement of the Tropical Cyclone policy for Turks and Caicos Islands.

The preliminary runs of the CCRIF tropical cyclone loss model for wind and storm surge did not produce any government losses for The Bahamas¹⁵, although tropical-storm-winds were shown over portions of this country. Therefore, no payouts under the Tropical Cyclone policy of this country is due.

The Aggregate Deductible Cover (ADC) feature for the Tropical Cyclone policy for The Bahamas-SE region was not activated because the modelled losses were below 30% of the Minimum Payment of the respective Tropical Cyclone policy. Therefore, no payment under the ADC feature is due.

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

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- 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%.

¹⁵ The Bahamas has three Tropical Cyclone policies: The Bahamas - Southeast, The Bahamas - Central, The Bahamas - Northwest
