Tropical Cyclone Oscar (AAL162024)

Wind and Storm Surge

Final Event Briefing

The Bahamas – Southeast
The Bahamas – Central

31 October 2024

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1 SUMMARY

Tropical Cyclone Oscar is the sixteenth named cyclone and the tenth hurricane of the 2024 Atlantic Hurricane Season. On 20 October 2024, Hurricane Oscar made landfall on Great Inagua Island, in the southeastern Bahamas, with sustained winds of 80 mph (130 km/h). After impacting the island, Oscar continued westward, passing over northeastern Cuba and becoming a tropical storm. It then moved back towards the central and southeast Bahamas, briefly bringing tropical-storm-force winds to the central Bahamas before dissipating.

The final runs of the CCRIF tropical cyclone loss model for wind and storm surge have produced government losses for The Bahamas-Southeast[1] (with CCRIF designating Oscar as a

Loss Event). The government losses for this region are below the Attachment Point of the Tropical Cyclone policy for the Bahamas-Southeast and therefore no payout under this policy is due.

Although there is a Disaster Alert declaration for The Bahamas from ReliefWeb (with code 52181) related to Hurricane Oscar, the Aggregated Deductible Cover (ADC) feature for the Tropical Cyclone policy for The Bahamas-Southeast has not been activated because the modelled losses are below 30% of the Attachment Point of this policy. Therefore, no payout under the ADC feature is due for the Government of The Bahamas.

Although the wind speed was above 39 mph in The Bahamas - Central, the final runs of the CCRIF tropical cyclone loss model for wind and storm surge have produced zero government losses for this region. For this reason, Tropical Cyclone Oscar was designated as a Reportable Event for The Bahamas - Central.

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. Turks and Caicos Islands, Haiti and The Bahamas were the only CCRIF member countries for which the CCRIF loss model for wind and storm surge produced government losses due to Tropical Cyclone Oscar at the time of writing this report[2]. 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 20 October 2024 at 0600 UTC, Hurricane Oscar was centred near latitude 21.3° North and longitude 72.6° West, about 40 mi (65 km) ENE of Great Inagua, The Bahamas – Southeast. It presented maximum sustained winds of 85 mph (140 km/h) and a minimum central pressure of 987 mb, while it was moving westward at about 10mph (17km/h), approaching the southeastern Bahamas. Earlier, at 0300 UTC, the storm had passed about 70 mi (115 km) W of Grand Turk, in

[1] The Bahamas has 3 TC policies that cover different regions of the country: Central, North West and South East
[2] An event briefing was also prepared for Turks and Caicos and Haiti

the Turks and Caicos Islands, spreading hurricane-force winds and tropical-storm-force winds over the country

At 0900 UTC, the centre of Hurricane Oscar made landfall on the eastern side of Great Inagua. Its centre was positioned near latitude 21.1° North and longitude 73.1° West, with maximum sustained winds of 80 mph (130 km/h) and higher gusts (Figure 1). Oscar was a small but compact hurricane, with hurricane-force winds extending outward up to 5 mi (10 km) and tropical-storm-force winds reaching up to 45 mi (75 km). Satellite imagery indicated that Oscar presented a tight inner core with intermittent convective bursts (Figure 2). The hurricane's slow forward motion, at approximately 12 mph (19 km/h), persisted throughout the morning, moving west-southwestward towards eastern Cuba, under the influence of a strong mid-level ridge over the Gulf of Mexico.

At 1200 UTC, the hurricane had moved southwest of Great Inagua, near latitude 20.8° North and longitude 73.6° West (Figure 1). Tropical-storm-force winds continued to impact Great Inagua and the surrounding waters, while hurricane-force winds remained confined to a narrow band near the hurricane centre.

On the second part of the day, Oscar neared the northeastern coast of Cuba, where it made landfall at 2150UTC. Its intensity began to decrease, due to the interaction with land and a slight increase in wind shear. Oscar remained over eastern Cuba for nearly 24 hours. During this time, its slow movement and interaction with the mountainous terrain caused gradual weakening, with maximum sustained winds decreasing from 80 mph (130 km/h) to 40 mph (65km/h), thus becoming a tropical storm.

On 21 October, Oscar shifted north-northeast, moving away from Cuba and heading for The Bahamas - Central. This change in direction was driven by a trough that created a weakness in the ridge that initially had steered the tropical cyclone. In the next hours, although the passage over open water could fuel some re-strengthening, the tropical storm structure remained disorganized due to the moderate wind shear and the intrusion of dry air in the system circulation. Therefore, Oscar was still a tropical storm when it approached The Bahamas.

On 22 October at 0300 UTC, the tropical storm's centre was located near latitude 21.8° North and longitude 75.4° West, about 105mi (170km) S of Long Island, The Bahamas – Central, with maximum sustained winds of 40 mph (65 km/h). At this time, most of the convection was displaced far from the centre due to the increasing wind shear and tropical-storm-force winds were asymmetrically located around the centre, as they extended up to 105 miles (170 km) to the east of the centre.

Oscar continued to progress towards north-northeast at 8 mph (13 km/h), and at 0900 UTC, it passed near The Bahamas – Central and The Bahamas-Southeast. Despite the short distance (about 45 mi (75km) SSE from Long Island), tropical-storm-force winds barely touched The Bahamas, due to the high disorganization of the tropical storm. Oscar fully dissipated at 1720 UTC, degenerating into a broad low-pressure area nearby .

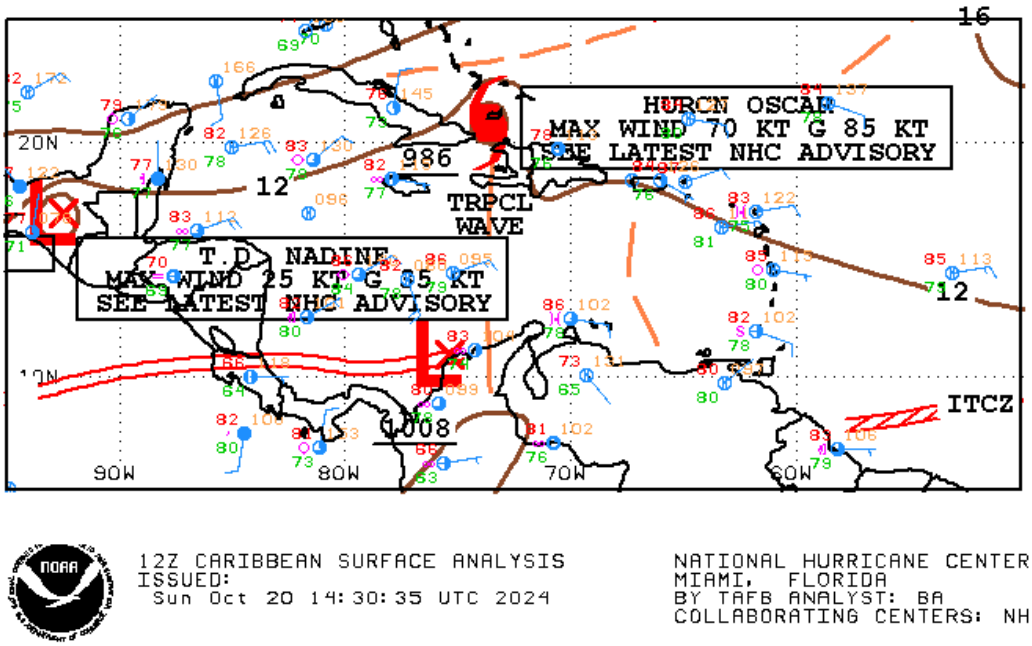


Figure 1 Surface analysis over the Caribbean area on 20 October 2024 at 1200 UTC. Source: US National Hurricane Center[3]

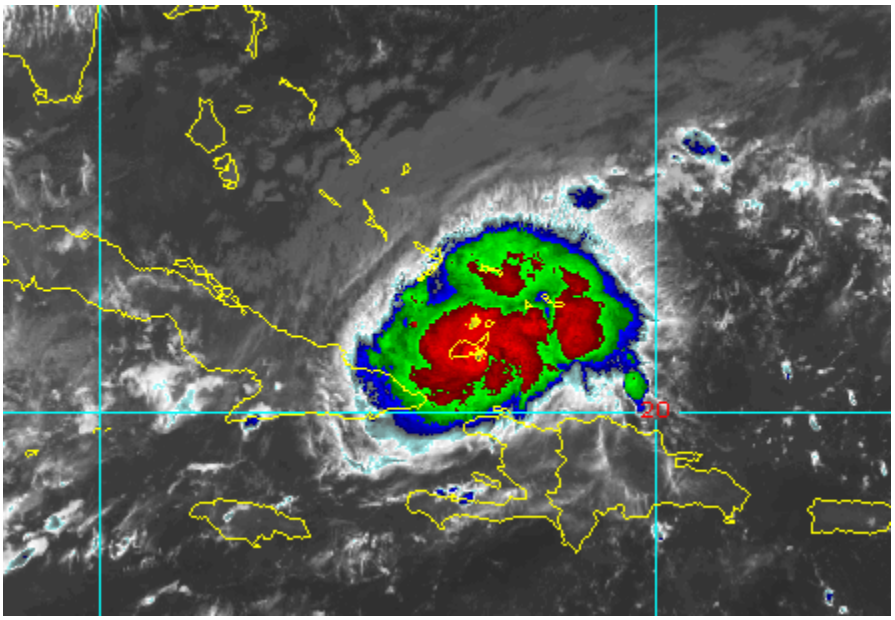
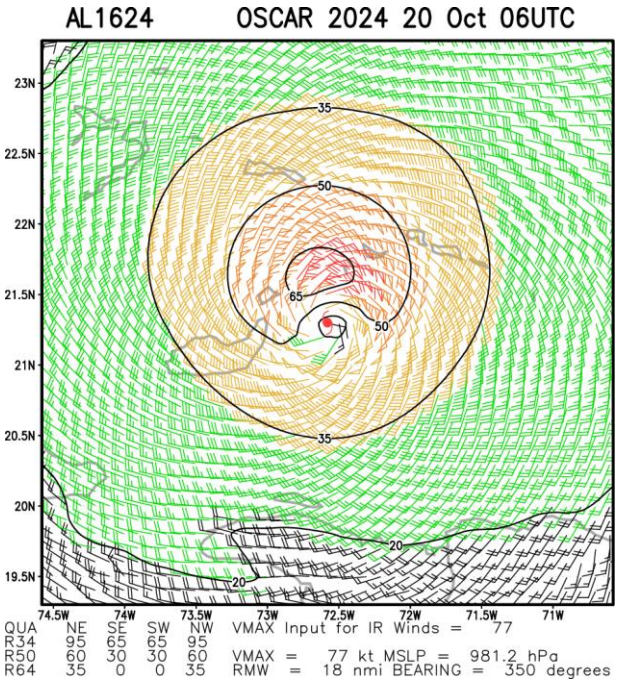


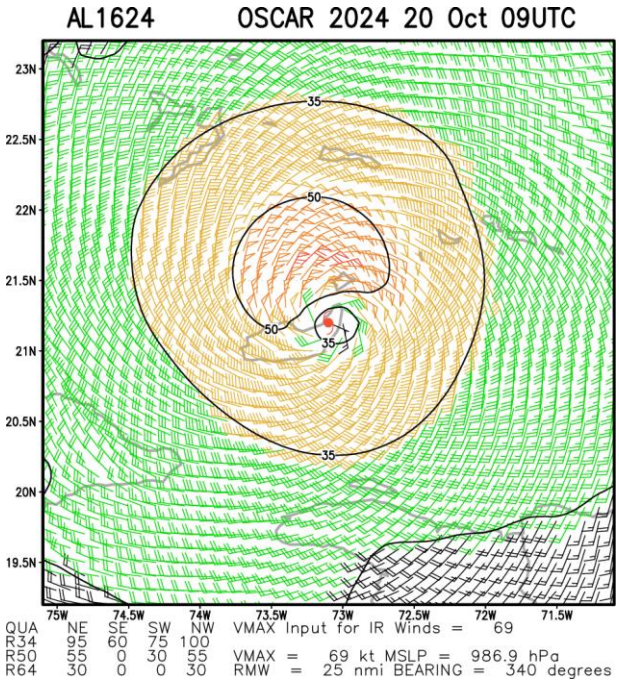
Figure 2 Satellite imagery on 22 October, 2024, at 0900 UTC from the thermal infrared channel enhanced with colour. Blue/green colours represent high altitude clouds (top cloud temperature between -50°C and -70°C), while the red/yellow colours represent very high altitude clouds (top cloud lower than -70°C). High altitude clouds indicate

[3] National Oceanic and Atmospheric Administration - FTP, National Hurricane Center, review date: 20 October 2024, available at: https://www.nhc.noaa.gov/tafb/CAR_12Z.gif

strong convection associated with intense precipitation. Source: NOAA, National Environmental Satellite, Data and Information Service[4].

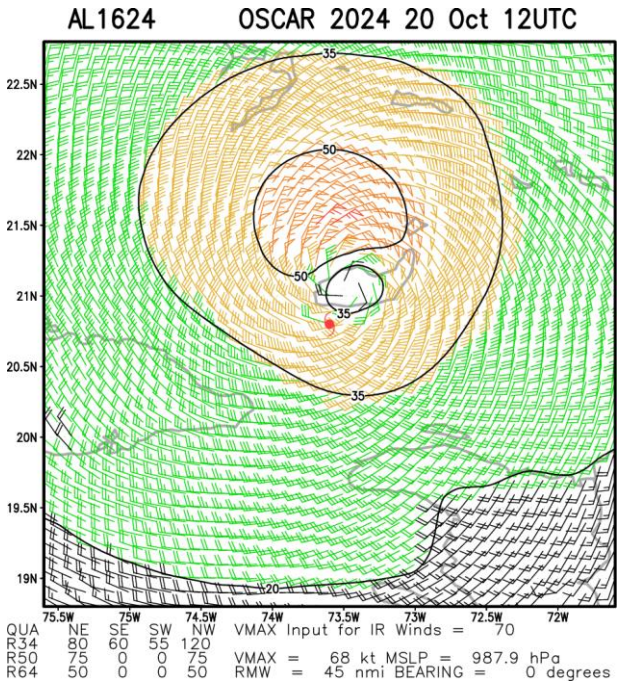


a) 20 October at 0600UTC



b) 20 October at 0900UTC

4 RAMSDIS Online Archive, NOAA Satellite and Information Service, available at: https://rammb-data.cira.colostate.edu/tc_realtime/storm.asp?storm_identifier=al162024



c) 20 October at 1200UTC

Figure 3 Multi-platform satellite based tropical cyclone surface wind analysis estimated on 20 October, 2024 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) and 65 kn (74mph, 120 km/h). Source: NOAA, National Environmental Satellite, Data and Information Service[5]

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 Bahamas[6] was affected by Tropical Cyclone Oscar. The Bahamas Southeast region was designated by CCRIF as a Loss Event[7]. The Bahamas Central region was designated by CCRIF as a Reportable Event[8]

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 Oscar.

[5] RAMSDIS Online Archive, NOAA Satellite and Information Service, available at: https://rammb-data.cira.colostate.edu/tc_realtime/storm.asp?storm_identifier=al162024

[6] The Bahamas has 3 TC policies that cover different regions of the country: Central, North West and South East

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

[8] 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

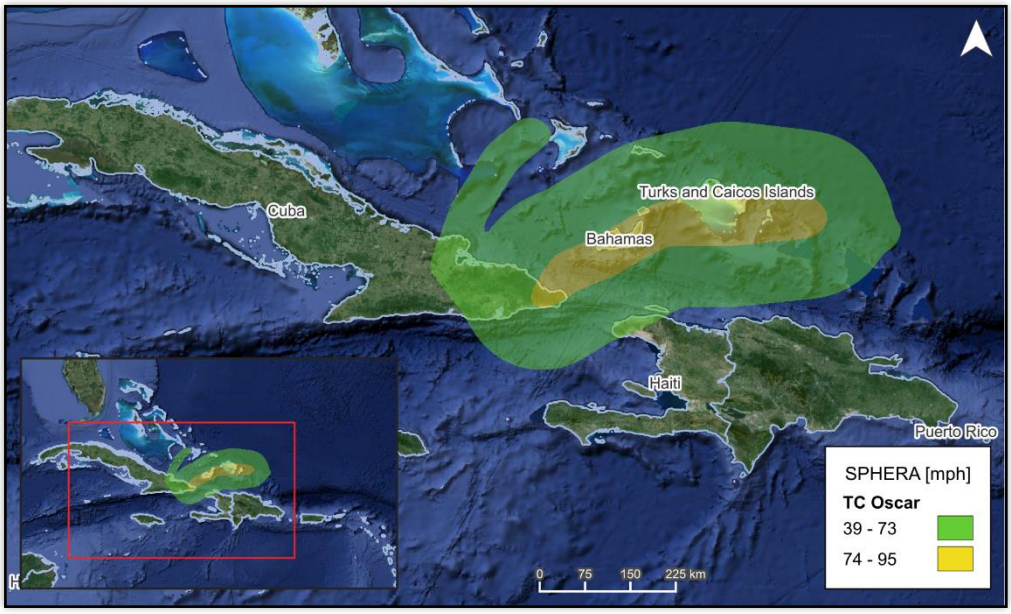


Figure 4 Map showing the wind field associated with Tropical Cyclone Oscar around The Bahamas. Source: NHC & CCRIF/SPHERA

4 REPORTED IMPACTS

At the time of writing this report, the information on damage in the Bahamas due to Tropical Storm Oscar is limited.

Herman Gilbert, the Inagua Island Administrator reported that 75% of the fences at the airport had fallen and there was some roof damage and leakage inside the terminal building. Houses also reported leakage and roof damage[9]. The administrators of Mayaguana Island reported some flooding.

Figure 4 Flooding damage in Matthew Town, Inagua

[9] Eyewitness News: Damage assessment underway after Oscar's initial passing – Eye Witness News

5 CCRIF LOSS MODEL

The final runs of the CCRIF tropical cyclone loss model for wind and storm surge have produced government losses for The Bahamas-Southeast, However, the government losses for this region are below the Attachment Point of the Tropical Cyclone policy for the Bahamas-Southeast and therefore no payout under this policy is due.

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