



Tropical Cyclone Nate (AL162017)

Wind and Storm Surge

Preliminary Event Briefing

Nicaragua

8 October 2017

1 SUMMARY

Nate is the sixteenth tropical cyclone of the 2017 Atlantic Hurricane Season. It formed as a tropical depression in the southwestern Caribbean Sea on 4 October at 1500UTC and it became a tropical storm on 5 October at 1200UTC before making landfall on the Nicaragua coast. Its core passed over eastern Nicaragua, with tropical-storm-force winds over this area (mainly over the coastal waters of Nicaragua), and left the country on 5 October at 2100UTC.

The preliminary runs of CCRIF’s loss model for wind and storm surge produced government losses for Nicaragua below the attachment point for its Tropical Cyclone (TC) policy therefore no payout is due.

This event briefing presents the impacts of Nate on CCRIF member country Nicaragua and is designed to review the CCRIF modelled losses from wind and storm surge but not rainfall. Nicaragua has an Excess Rainfall policy and a separate briefing that addresses loss and damages from excess rainfall will be issued.

2 INTRODUCTION

On 5 October 2017 at 1200UTC, the US National Hurricane Center (NHC) reported that a tropical depression, which originated in the southwestern Caribbean Sea (12.2N, 81.9W), had become a tropical storm. The conducive conditions for its intensification (low shear and passage over very warm and deep waters in the southwestern Caribbean Sea) had led to a rapid transition from a tropical depression to a tropical storm. The storm was named Nate and, at the time of being upgraded, its centre was located 15 km off the coast of Nicaragua, at 13.9N, 83.4W (Figure 1). The storm was slowly moving (8 mph, 13 km/h) towards the northwest, towards inland Nicaragua. The estimated minimum central pressure was 999 mb. Maximum sustained winds were near 40 mph (65 km/h) with higher gusts and tropical-storm-force winds extended outward up to 60 miles (95 km) mainly over water to the east of the storm’s centre. The organized cloud pattern associated with the tropical storm indicated the development of a ragged central convective feature and outer banding in the northeastern semicircle (Figure 2).

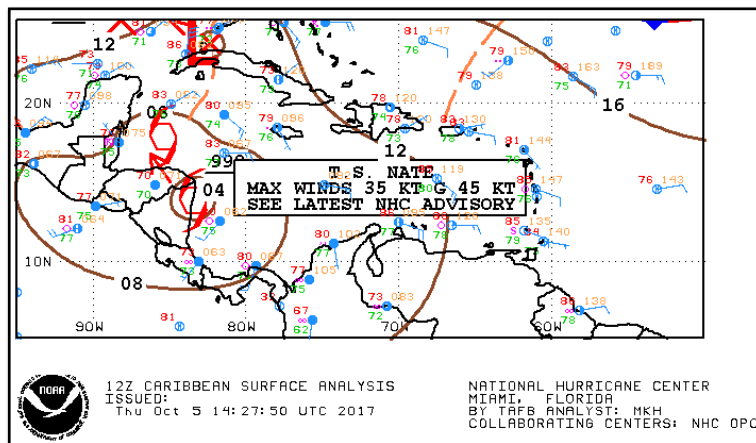


Figure 1 Surface analysis over the Caribbean area. Source: National Hurricane Center (NHC)

During the next 9 hours, the centre of Nate traversed inland Nicaragua, passing over the eastern portion of the country. Due to the interaction with land, the cloud pattern associated with the storm lost its organization (Figure 2), which indicated that the storm did not intensify further. Within this period, the storm continued to move in a northwesterly direction with a forward speed 9 mph (15 km/h) and the minimum pressure remained at 999 mb. The maximum sustained winds remained near 40 mph (65 km/h) and an area extending a further 50-70 miles (85-110 km) was affected by tropical-storm-force winds. However, on the basis of ASCAT satellite information, NHC suggested that there were no tropical-storm-force winds outside of the coastal waters of Nicaragua.

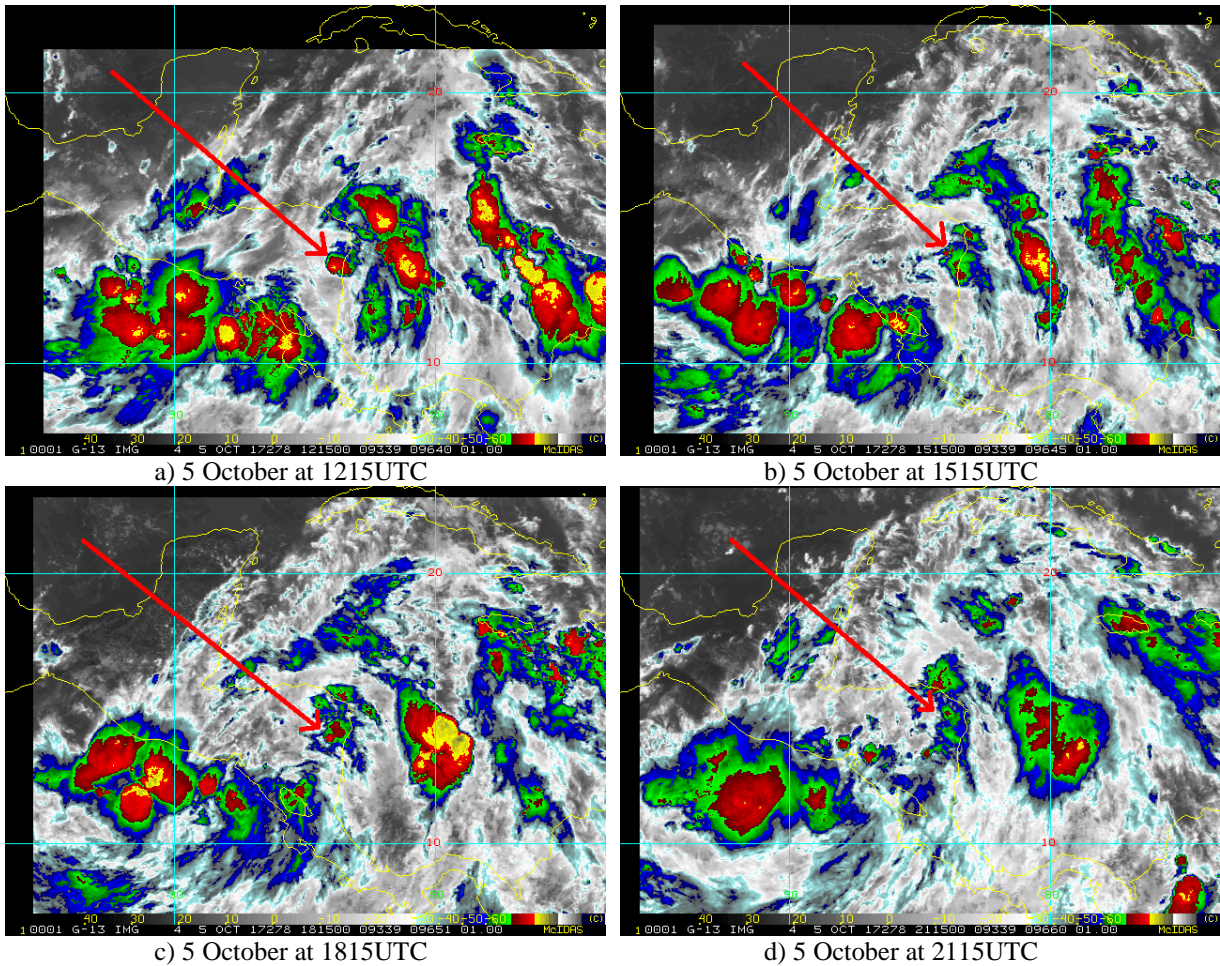


Figure 2 Enhanced infrared imagery over the western Caribbean Sea, collected at different times. The red arrow indicates the approximate location of Tropical Storm Nate. Colours indicate the cloud canopy temperature, with yellow to red indicating the colder canopy and green to blue the warmer canopy. A cold cloud canopy indicates deep convection. Source: NOAA, National Environmental Satellite, Data and Information Service

On 5 October at 2100UTC, Nate left inland Nicaragua, moving into eastern Honduras. During the next hours, Nate left Honduras and moved over the warm waters of the northwestern Caribbean Sea, passing through the Yucatan channel and over the waters of the Gulf of Mexico. The favourable environment for storm intensification led Nate to become a category 2 hurricane before making landfall close to the mouth of the Mississippi River in

the United States. Finally, the interaction with land rapidly weakened the hurricane. At the time of writing this report, Nate was a tropical storm under dissipation over the southeastern United States.

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 Nicaragua, Tropical Cyclone Nate qualified as a Loss Event¹.

The wind footprint (Figure 3) and surge field (Figure 4) are two of the outputs from the CCRIF model. These figures show the regions affected by different magnitudes of wind velocity and storm surge in Nicaragua.

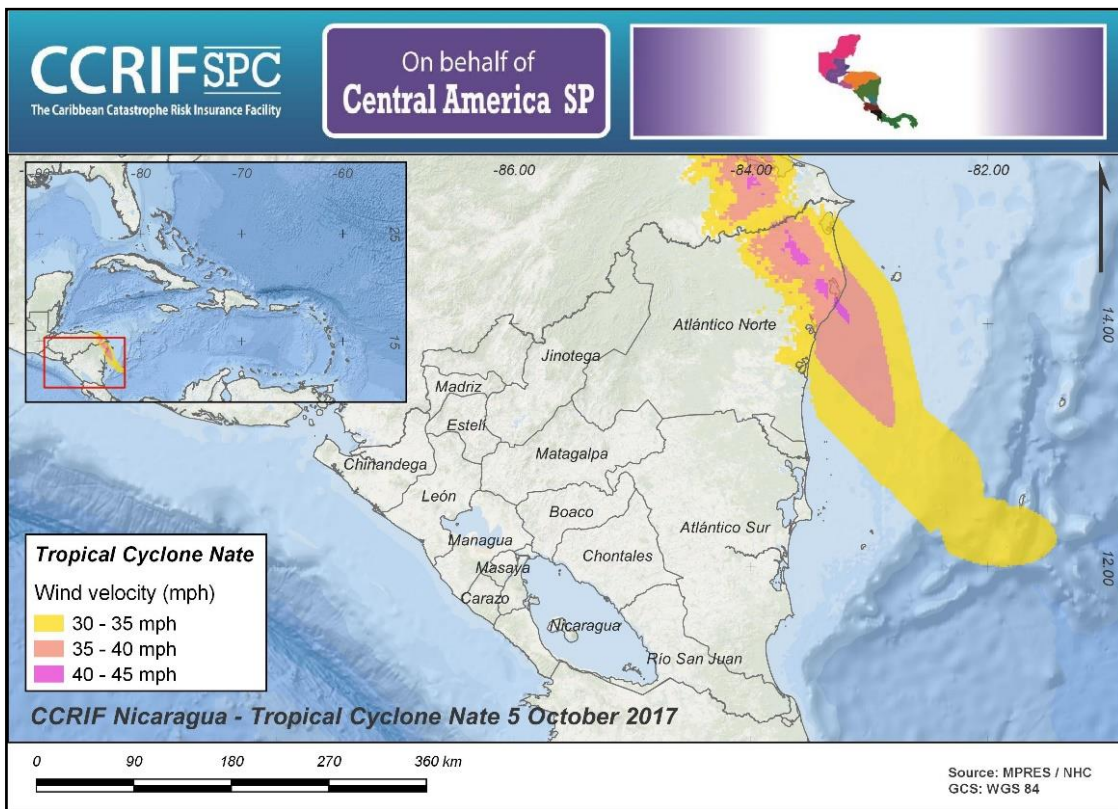


Figure 3 Map showing the wind field associated with Tropical Cyclone Nate in Nicaragua.
Source: NHC & CCRIF/MPRES

¹ An event registers a loss in one or more member countries but does not trigger the CCRIF policy in any country (i.e. no payout).

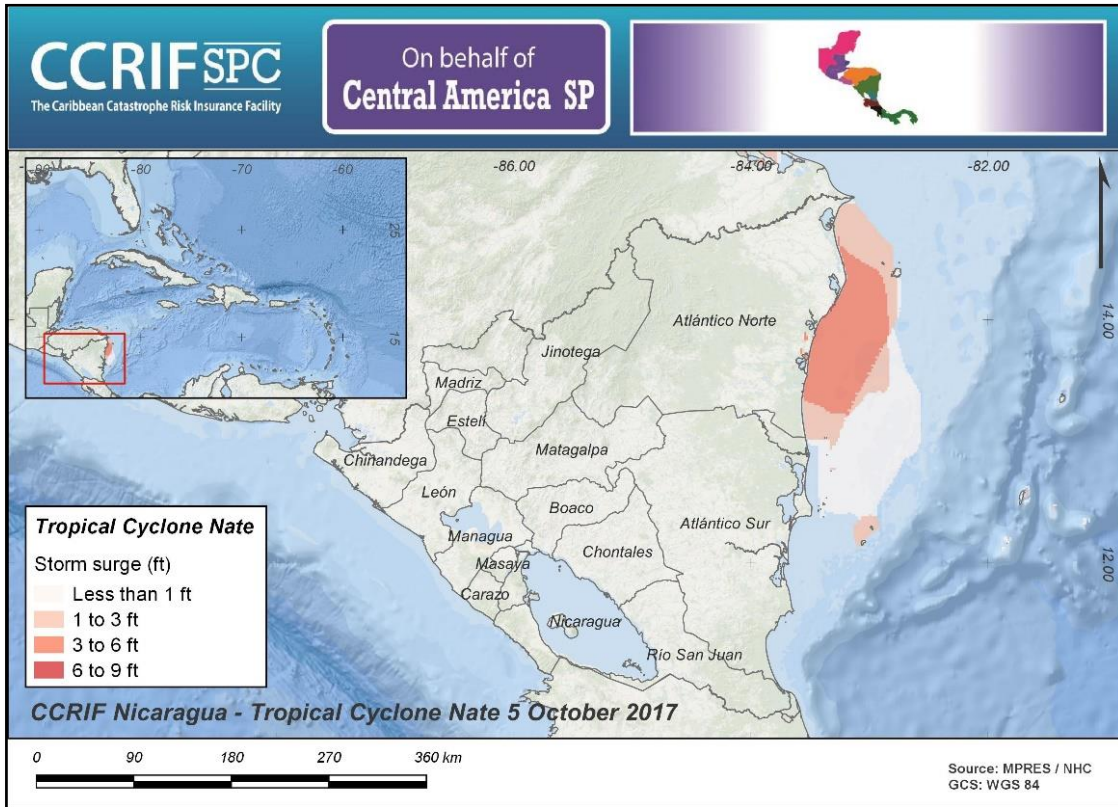


Figure 4 Map showing the wind field associated with Tropical Cyclone Nate in Nicaragua.
Source: NHC & CCRIF/MPRES

4 IMPACTS

According to Vice-President Rosario Murillo, based on a preliminary report of Nicaragua's Disaster Management Agency (SINAPRED), there were more 11 confirmed deaths and 7 persons missing. Also, more than 10,000 people were affected by floods, mudslides, destroyed roads and damaged houses in 31 municipalities of Nicaragua. Several areas were left without electricity. At time of this report, reported impacts were as follows:

- 25 affected municipalities
- 31 sections with affected roads
- 729 people evacuated

Prior to the arrival of Tropical Storm Nate, Nicaragua's authorities took precautionary measures, including closing all schools and opening shelters. The Nicaraguan Red Cross' Emergency Operations Centre and its local branches were activated.

5 CCRIF LOSS MODEL

Modelled losses due to wind and storm surge and any resultant payouts are based on the conditions selected by member countries for their Tropical Cyclone policies.

The preliminary runs of CCRIF's loss model for wind and storm surge produced government losses for Nicaragua due to Tropical Storm Nate, which were below the attachment point for its Tropical Cyclone (TC) policy and therefore no payout is due.

CCRIF expresses sympathy with the Government and people of Nicaragua for the loss of life and impacts on communities and infrastructure caused by this event.

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

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