



Haiti

Earthquake

24 January 2022

Preliminary Event Briefing

25 January 2022

1 INTRODUCTION

A magnitude 5.3 earthquake occurred at 13:16:23 (UTC) on 24 January 2022, 26 km (16.2 mi) W of Miragoâne, Haiti; 49.8 km (30.9 mi) W of Tigwav, Haiti and 53.1 km (33 mi) NE of Les Cayes, Haiti. Initial estimates from the United States Geological Survey (USGS) located the epicentre of the event at 18.468°N, 73.335°W, and at a depth of 10.0 km (6.2 mi) – Figure 1.



Figure 1 Information from the Earthquake Hazards Program of the United States Geological Survey regarding the magnitude 5.3 earthquake event on 24 January 2022 at 13:16:23 UTC. Source: USGS¹

According to the USGS, the magnitude 5.3 earthquake was followed by an aftershock with the following characteristics:

Event	Date - Time [UTC]	Depth [km]	Lat [°N]	Long [°W]
M5.1 - 4 km WSW of Petite Rivière de Nippes, Haiti	Jan 24, 14:06:43	9.7	18.465	73.274

This is considered to be an aftershock of the magnitude 5.3 earthquake² within the CCRIF System for Probabilistic Hazard Evaluation and Risk Assessment (SPHERA) EQ model.

Event	Hypocentral Offset Distance from M5.3 earthquake
M5.1 - 4 km WSW of Petite Rivière de Nippes, Haiti	6.45 km

¹ Download Event KML, United States Geological Survey, review date: 24 January 2022, available at:

<https://earthquake.usgs.gov/earthquakes/eventpage/us7000gek3/executive>

² An Earthquake Event is defined as follows: An earthquake occurring during the Policy Period with a source moment magnitude of 5.0 or greater, in the Model Domain within a box bounded by the following – Latitude 4° and 34°N, Longitude 95° and 53°W, as reported by the Earthquake Reporting Agencies, provided that if multiple Earthquake Events occur within a specific 25-Day Period and within a radius of 50 kilometers of the location of the Earthquake Event that occurs at the beginning of the 25-Day Period, the Earthquake Event shall be the earthquake with the highest resulting Modelled Loss (EQ). The distance between two Earthquake Events shall be calculated using the formula defining Hypocentral Offset Distance.

Haiti was the only CCRIF member country where peak ground acceleration, computed with the CCRIF SPHERA model, was greater than 0.01 g for this earthquake.

Preliminary runs of the CCRIF loss model for peak ground acceleration produced government losses for Haiti, which were below the attachment point of the country's earthquake policy and therefore no payout under the policy is due.

The Aggregated Deductible Cover (ADC) for this country's EQ policy was not activated. Although the modelled loss was greater than 10% of minimum payment of the policy, there was no declaration of a Disaster Alert for Haiti by ReliefWeb for this earthquake. Therefore, no payment under the ADC feature is due for Haiti.

2 CCRIF MODEL OUTPUTS

Under CCRIF's loss calculation protocol, a report using the CCRIF SPHERA model is produced for any earthquake with a magnitude greater than or equal to 5.0 that occurs within the region monitored by CCRIF and which generates a peak ground acceleration of at least 0.01 g in one or more grid cells of at least one CCRIF member country.

Based on the SPHERA footprint for the magnitude 5.3 earthquake, peak ground accelerations of up to 0.13 g were estimated in Haiti. The peak ground acceleration footprint is the output from the CCRIF SPHERA EQ model. Figure 2 shows the regions in Haiti affected following the magnitude 5.3 earthquake and Figure 3 show the regions affected by the aftershock with a source moment magnitude of 5.0 or greater.

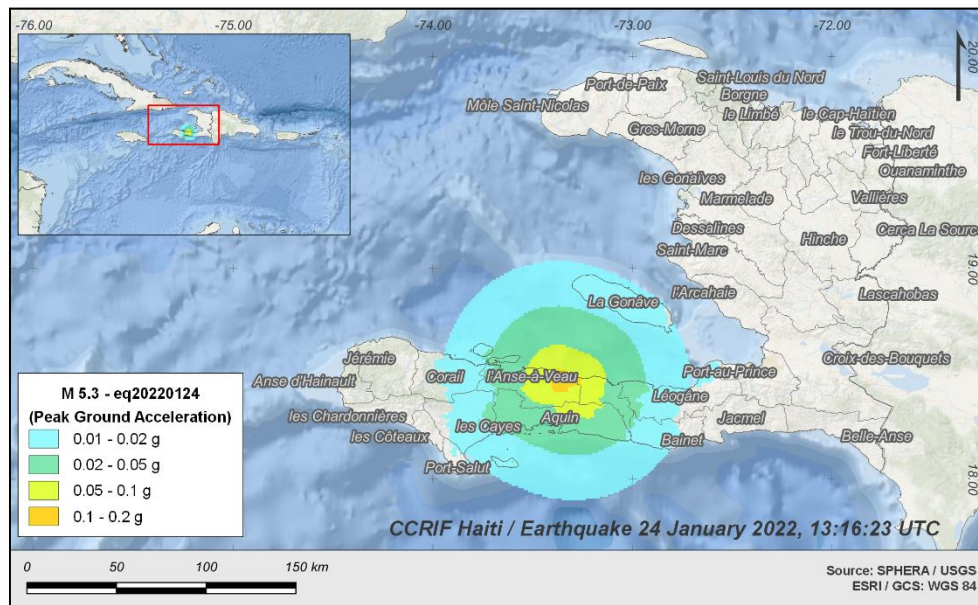


Figure 2 Map showing the peak ground acceleration in Haiti computed using the SPHERA model following the magnitude 5.3 earthquake³ on 24 January at 13:16:23 UTC. Source: *USGS & CCRIF SPHERA EQ Model*.

³ USGS, review date: 24 January 2022, available at: [‘M 5.3 - 3 km SSE of Anse-à-Veau, Haiti’](#)

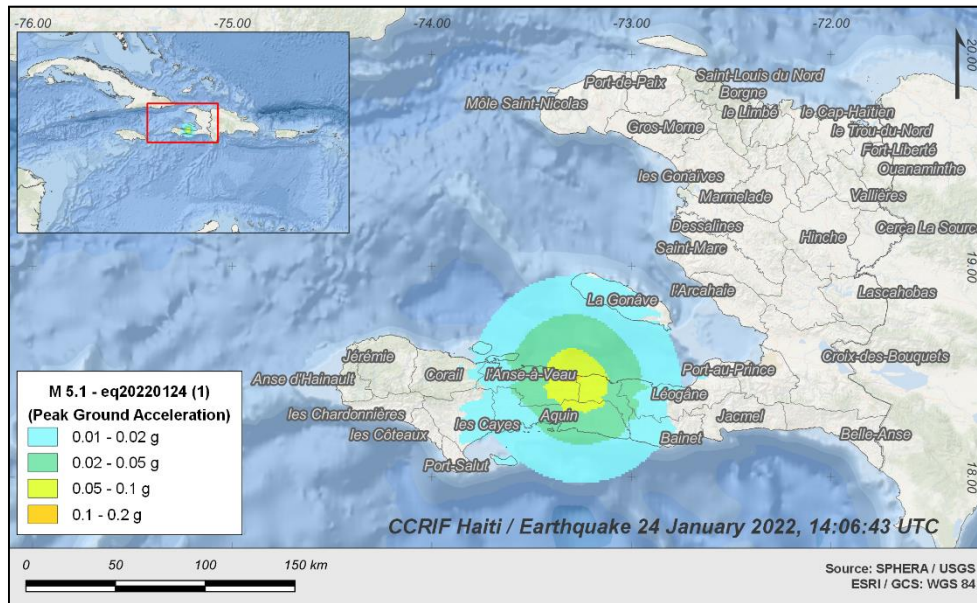


Figure 3 Map showing the peak ground acceleration in Haiti computed using the SPHERA model following the aftershock⁴ of magnitude 5.1 on 24 January at 14:06:43 UTC. Source: USGS & CCRIF SPHERA EQ Model.

3 IMPACTS

According to the preliminary assessment provided by Haiti's Civil Protection Department⁵, as of January 24, there were 2 confirmed deaths (1 in Anse-à-Veau, 1 in Fond des Nègres) and dozens of schoolchildren were injured due to the impacts of this earthquake. The earthquake was felt by the residents along Haiti's southern peninsula.

At the time of this report, the following impacts had been reported in the regional news^{6 7 8}:

- 200 homes were destroyed and 600 others were affected in the Nippes district
- at least 800 families were affected
- the roads in St-Sauveur and Petite-Rivière-de-Nippes were damaged
- a bridge in Teinturier was damaged

⁴ USGS, review date: 24 January 2022, available at: [‘M 5.1 - 4 km WSW of Petite Rivière de Nippes, Haiti’](#)

⁵ Pwoteksyon sivil - Haiti, review date: 24 January 2022, available at: [‘Haiti - Seisme janvier 2022 | Bilanpartiel...’](#)

⁶ UNICEF Haiti, review date: 24 January 2022, available at: [‘Un tremblement de terre de magnitude 5.3 a frappé aujourd’hui le département des Nippes...’](#)

⁷ Reuters, review date: 25 January 2022, available at: [‘Haiti quakes kill two, send residents flooding into the streets’](#)

⁸ USA TODAY NETWORK, review date: 25 January 2022, available at: [‘People are scared to go back into their homes’: At least 2 dead after two earthquakes shake Haiti’](#)

According to the USGS “*Did You Feel It?*” online tool⁹, 20 persons in Haiti within a radius of 112 km (69.6 mi) from the epicentre reported the earthquake as being a “weak shake with no damage” to “very strong shake with moderate damage” (Mercalli intensities: III - VII).

4 TRIGGER POTENTIAL

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

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

⁹ Did You Feel It?, United States Geological Survey, review date: 25 January 2022, available at: <https://earthquake.usgs.gov/earthquakes/eventpage/us7000gek3/dyfi/responses>
