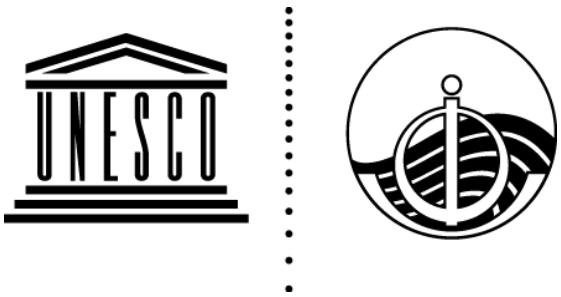
**Intergovernmental Oceanographic Commission**
**Technical Series**

**118**



# EXERCISE CARIBE WAVE/LANTEX 15

## A Caribbean and Northwestern Atlantic Tsunami Warning Exercise 25 March 2015

## Volume 2 Summary Report

**UNESCO**

Intergovernmental Oceanographic Commission
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(IOC/2014/TS/118 Vol.2)

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***Summary***

On 25 March 2015, two regional tsunami exercises took place in the Caribbean and Adjacent Regions: CARIBE WAVE/LANTEX (Panama Scenario) and LANTEX (Florida Scenario). Thirty-two (32) Members States and 16 territories[1]* participated in the fourth regional tsunami exercise. This represents a participation rate of 100% of all the Member States of the Intergovernmental Coordination Group for the Tsunami and other Coastal Hazards Warning System for the Caribbean and Adjacent Seas (ICG/CARIBE-EWS) of UNESCO's Intergovernmental Oceanographic Commission (IOC/UNESCO), for the first time in the history of the exercises. This is an increase from 98% participation in 2014, 75% in 2011 and 94% in 2013.

Registered participants included designated UNESCO CARIBE-EWS Tsunami Warning Focal Points (TWFPs) and National Contacts (TNCs), in addition to more than 1,000 other international, state, territorial, and local Emergency Management Organizations (EMOs), government agencies, academic institutions, private businesses and organizations, health facilities, media, as well as communities and individuals. Almost 200,000 people participated, including over 80,953 people in Puerto Rico, 31,685 people in Venezuela, 8,637 people in Martinique, and 4,793 in the US Virgin Islands (Table 6). This high level of participation reflects an improved level of understanding of the tsunami threat in the area, and a commitment to tsunami preparedness in the region.

The Start of Exercise ("Dummy") messages were issued by the PTWC and US NTWC at 14h05 UTC for the Panama scenario and 13h02 for Florida scenario. To test communication these were disseminated over all standard TWC broadcast channels (Global Telecommunications Satellite, Weather Wire, AWIPS, Aeronautical Information System Replacement, Emergency Managers Weather Information Network, email, fax) to all official TWFPs. Start of Exercise messages were also sent out through Twitter for the first time in the history of the exercise. During the exercise, communities were alerted through use of local warning systems including sirens, SMS and EAS, as well as social media outlets such as Facebook, Twitter, and Instagram. Through participation of people throughout the Caribbean, #CaribeWave2015 was the #11 top trending topic on Twitter for over five hours.

For this year's exercise two scenarios were developed. The first scenario, CARIBE WAVE/LANTEX 2015 (Panama Scenario), simulated a tsunami generated by an M 8.5 earthquake north of Panama on the Northern Panama Deformed Belt. The Panama Scenario was modelled off the 7 September 1882 earthquake and tsunami, which affected the coasts of countries and territories within the Caribbean. The maximum reported wave amplitude from the 1882 tsunami was 3.0 metres. The second exercise, LANTEX 2015 (Florida Scenario) simulated a tsunami generated by a M 6.8 earthquake, which triggered a submarine landslide originating 215 km east of Port Canaveral, Florida, USA. In the case of this submarine landslide, several studies have been conducted evaluating its potential source.

Through the exercise, it has been possible to:

- Validate the **issuance** of tsunami products from the PTWC and US NTWC, which currently serve as the tsunami service providers for the region.

- Validate the **receipt and dissemination** of tsunami products by TWFP's. Most TWP's continue to be strongly dependant on Fax and Email, with a few indicating receipt of messages through EMWIN, GTS and AISR. Email and Fax were also used predominantly to

[1] Antigua and Barbuda, Aruba, Bahamas, Barbados, Belize, Brazil (Observer), Colombia, Costa Rica, Cuba (Observer), Curaçao, Dominica, Dominican Republic, France (Martinique, Guadeloupe, French Guyana, St Barthelemy, St Martin), Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Netherlands (Bonaire, Saba and Sint Eustatius), Nicaragua, Panama, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Sint Maarten, Suriname, Trinidad and Tobago, United Kingdom (Anguilla, Bermuda, British Virgin Islands, Cayman Islands, Montserrat and Turks and Caicos), United States (Puerto Rico and the US Virgin Islands) and Venezuela (Bolivarian Republic of).

disseminate information to the Disaster Management organizations. In 38% of the Member States and Territories messages were also disseminated to the public, the principal mechanism for this dissemination was Radio, TV and police.

- Continue with the **exposure to proposed enhanced PTWC products**, which include graphics. The Member States continue to support these products.

- **Validate the readiness of the CARIBE-EWS countries** to respond to a distant tsunami. Most countries also indicated that they had emergency response plans for distant tsunamis, as well as local and regional events. Nevertheless, most countries indicated that they do not have tsunami inundation, nor evacuation maps or mass evacuation plans.

Planning for CARIBE WAVE/LANTEX took over a year and was coordinated by a task team led by the US NWS Caribbean Tsunami Warning Program (CTWP) and included the Caribbean Tsunami Information Centre (CTIC), CARIBE-EWS officers, the Pacific Tsunami Warning Center (PTWC), the US NTWC, the Puerto Rico Seismic Network (PRSN), the International Tsunami Information Center (ITIC), regional emergency management organizations and Tsunami National Contacts (TNCs) and Tsunami Warning Focal Points (TWFPs).

The Participant Handbook (IOC/2014/TS/118VOL.1), which was distributed in November 2014, and other information and supporting documents for the exercise will remain posted on various websites including the CTWP (http://caribewave.info) and the PRSN (http://redsismica.uprm.edu). Feedback on the exercise was received from 47 CARIBE-EWS Member States and Territories through an online questionnaire. This represents feedback from a total of 43 TNCs/TWFPs, in addition to 4 other officials from a total of 47 countries and territories in the region (46 ICG/CARIBE-EWS Member States and Territories, as well as Brazil).

CARIBE WAVE/LANTEX 2015 was conducted under the framework of the IOC/UNESCO CARIBE-EWS and the US National Tsunami Hazard Mitigation Program (NTHMP). The fifth exercise is already being planned for March 2016.

## 1. BACKGROUND

The Intergovernmental Coordination Group for the Tsunami and other Coastal Hazards Warning System for the Caribbean and Adjacent Regions (ICG/CARIBE EWS-IX) at its Ninth session decided to hold a fourth tsunami exercise, CARIBE WAVE/LANTEX 2015, on 25 March 2015. The exercise consisted of two scenarios, the first based on the 1882 Panama event and another off the coast of Florida. This tsunami warning exercise was patterned after the very successful CARIBE WAVE 2011, 2013 and 2014, and the annual LANTEX Atlantic and US Caribbean (as of 2009) Exercises of the National Tsunami Hazard Mitigation Program, NOAA, as well as exercises held in the Pacific. This tsunami exercise was conducted to assist tsunami preparedness in the Caribbean and to validate the understanding and use of the new PTWC Enhanced Tsunami Products.

Historical tsunami records from sources such as the National Oceanic and Atmospheric Administration's (NOAA) National Geophysical Data Center (NGDC) show that almost 100 tsunamis have been observed in the Caribbean. Potential sources for tsunamis in the region include faults, steep slopes offshore, sub-aerial and submarine volcanoes. The region east of the Azores Islands and portions of the continental slope off the US and Canadian coast are particularly vulnerable to sub-sea landslides.

Recognizing the need for an early warning system especially after the lessons learned from the 2004 Indian Ocean tsunami, the Intergovernmental Coordination Group for the Tsunami and other Coastal Hazards Warning System for the Caribbean and Adjacent Regions (ICG/CARIBE-EWS) was established in 2005 as a subsidiary body of the IOC/UNESCO with the purpose of providing assistance to all Member States of the region to establish their own regional early warning system. The main objective of the CARIBE-EWS is to identify and mitigate the hazards posed by local,

regional and distant tsunamis. The goal is to create a fully integrated end-to-end warning system comprising four key components: hazard monitoring and detection, hazard assessment, warning dissemination, and community preparedness and response.

The Pacific Tsunami Warning Centre (PTWC) in Hawaii is the interim tsunami warning service provider for the Caribbean. The US National Tsunami Warning Centre (US NTWC) is currently providing tsunami warning services for the USA territories in the Caribbean region.

At the national level, each Member State is responsible for issuing warnings to its own citizens. These warnings are based either on the TWFP's own analysis of the situation or the messages and graphical products received from the PTWC and US NTWC (and some other sources), or on a combination of both.

This exercise provided simulated tsunami messages from the PTWC and US NTWC triggered by a hypothetical earthquake located off the coast of Panama (Figures 1a and 2a) and a submarine landslide off the coast of Florida (Figures 1b and 2b). The Panama event was modelled off the 7 September 1882 earthquake and tsunami.

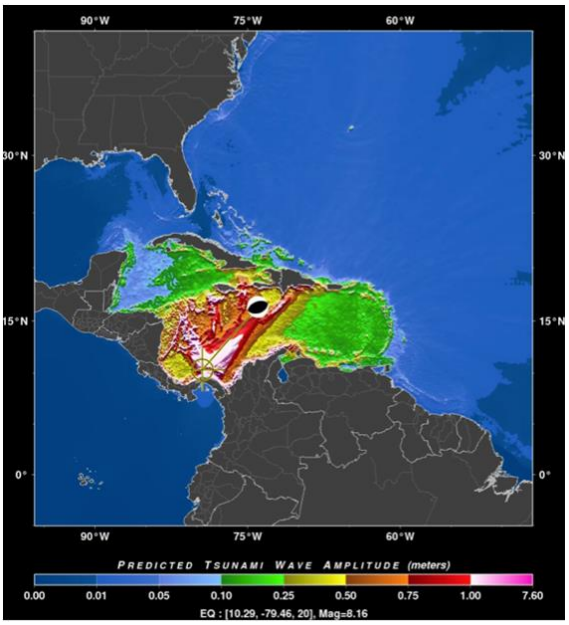


Figure 1a. Forecasted tsunami wave amplitudes for the CARIBE WAVE/LANTEX 2015 Panama Scenario.

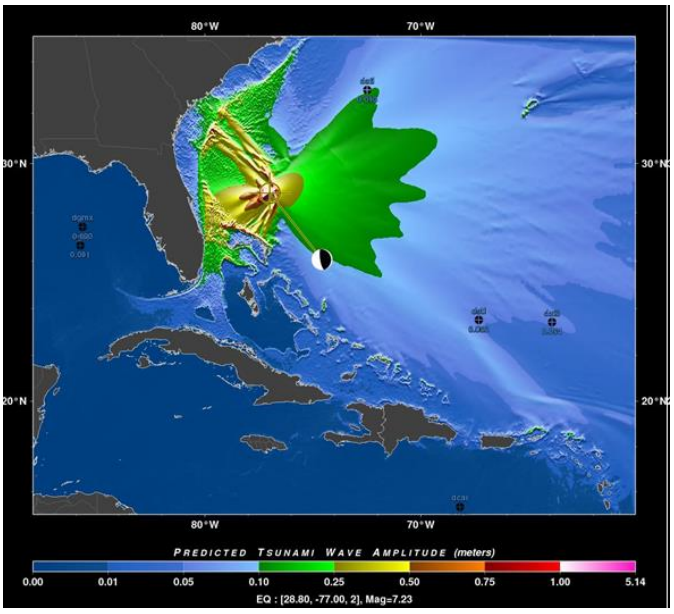


Figure 1b. Forecasted tsunami wave amplitudes for LANTEX 2015 Florida Scenario.

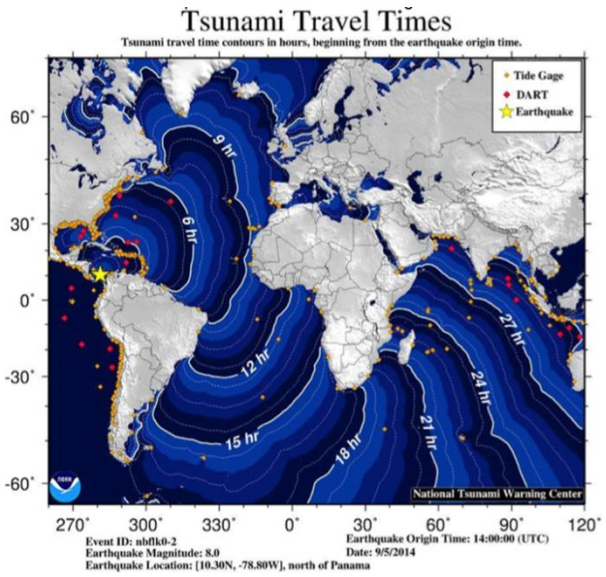


Figure 2a. Travel times for Panama Scenario

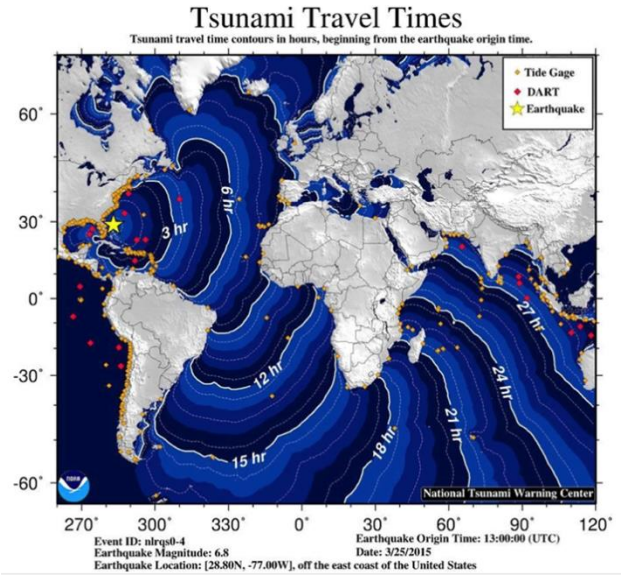


Figure 2b. Travel times for Florida Scenario

## 2. EXERCISE CONCEPT

### 2.1 PURPOSE

The purpose of the exercise was to improve Tsunami Warning System effectiveness within the Caribbean and Adjacent Regions. The exercise provided an opportunity for Emergency Management Organizations (EMOs) throughout the Caribbean to exercise their operational lines of communications, review their tsunami response procedures, and promote tsunami preparedness. Regular exercising of response plans is critical to maintain readiness in the case of an emergency. This is particularly true for tsunamis, which are infrequent but high impact events. Every EMO in the Caribbean was encouraged to participate.

### 2.2 OBJECTIVES

Each participating organization was asked to develop their objectives for the exercise depending on their level of involvement in the scenario. The following were the exercise's overarching objectives:

**1. To exercise and evaluate operations of the current Tsunami Warning Systems and in particular, the CARIBE EWS.**

A. Validate the **issuance** of tsunami products from the PTWC and US NTWC

B. Validate the **receipt and dissemination** of tsunami products by CARIBE EWS Tsunami Warning Focal Points (TWFPs).

**2. To begin a process of exposure to an initial test version of PTWC experimental (enhanced) products.**

A. Review and evaluate PTWC experimental products that will be available in parallel with existing PTWC products.

B. Provide feedback on the staging, format and content of the experimental products

**3. To validate the readiness to respond to a local/regional source tsunami.**

A. Validate the operational readiness of the Tsunami Warning Focal Point (TWFP, or like function) and/or the National Disaster Management Office (NDMO).

B. Improve operational readiness. Before the exercise, ensure that appropriate tools and response plan(s) have been developed, including public education materials.

C. Validate that the dissemination of warnings and information/advice by Tsunami Warning Focal Points to relevant in-country agencies and the public is accurate and timely.

D. Validate the organisational decision-making process (tsunami response plans) about public warnings and evacuations.

E. Validate that the methods used to notify and instruct the public are accurate and timely.

### 2.3 TYPES OF EXERCISE

The exercise was carried out such that communications and decision making at various organizational levels were exercised and conducted without disrupting or alarming the general public. Individual localities, however, elected to extend the exercise down to the level of testing local notification systems such as the Emergency Alert System (EAS), sirens and loudspeakers.

According to the registrations and reported numbers from Member States, 191,420 people throughout the Caribbean and Adjacent Regions participated in the exercise; including 80,953 people from Puerto Rico where it was the 6th Commonwealth wide tsunami exercise. Registered participants included all officially designated CARIBE-EWS Tsunami Warming Focal Points (TWFPs), International, State, Territorial and Local Emergency Management Organizations, Schools

and Universities, Governmental Agencies, Private Organizations, Health Facilities, members of the media, as well as communities, individuals and families.

Exercises were conducted at various scales of magnitude and sophistication. Exercises simulated the development, training, testing, and evaluation of Disaster Plans and Standard Operating Procedures (SOPs). The following types of exercises were reported to have been conducted:

1. **Orientation Exercise (Seminar):** An Orientation Exercise lays the groundwork for a comprehensive exercise program. It is a planned event, developed to bring together individuals and officials with a role or interest in multi-hazard response planning, problem solving, development of standard operational procedures (SOPs), and resource integration and coordination. An Orientation Exercise has a specific goal and written objectives, and results in an agreed upon Plan of Action.

Figure 3. Orientation exercise in Panama as part of the CARIBE WAVE/LANTEX 2015 exercise

2. **Drill:** A Drill is a planned activity that tests, develops, and/or maintains skills in a single or limited emergency response procedure. Drills generally involve operational response of single departments or agencies and can involve internal notifications and/or field activities.

Figure 4. Drill in the US Virgin Islands as part of CARIBE WAVE/LANTEX 2015 exercise

3. **Tabletop Exercise:** A Tabletop Exercise is a planned activity in which local officials, key staff, and organizations with disaster management responsibilities are presented with simulated emergency situations. It is usually informal, in a conference room environment, and is designed to elicit constructive discussion from the participants. Participants will examine and attempt to resolve problems, based on plans and procedures, if they exist.

Individuals are encouraged to discuss decisions in depth with emphasis on slow-paced problem solving, rather than rapid, real time decision-making.

Figure 5. Tabletop exercise in Venezuela as part of the CARIBE WAVE/LANTEX 2015 exercise

## 3. EXERCISE OUTLINE

### 3.1 GENERAL

Tsunami messages for this exercise were issued by the PTWC and US NTWC based on two hypothetical earthquakes with the following hypocentre parameters:

CARIBE WAVE/LANTEX 2015 Panama Scenario:

- Origin Time 14:00:00 UTC March 25, 2015
- Latitude 10.3°N
- Longitude 78.8°W
- Magnitude 8.5 – Mw
- Depth 15 km

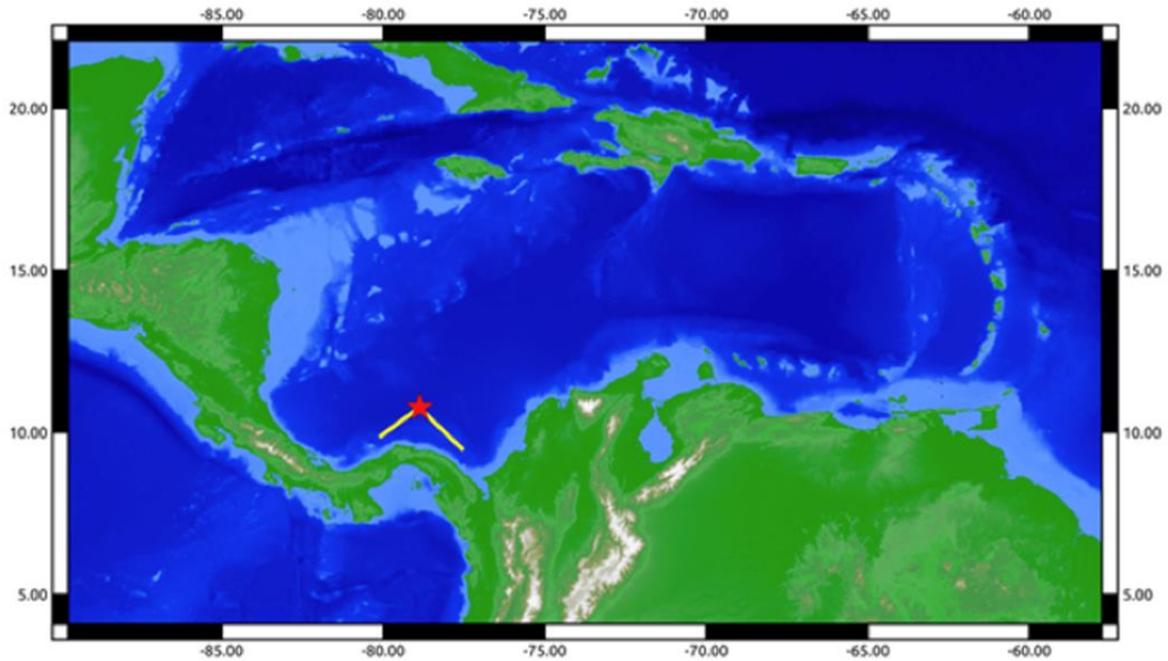


Figure 6. CARIBE WAVE/LANTEX 2015 event location on the Northern Panama Deformed Belt

For the Portugal Scenario, bulletin #1 was issued with a magnitude 8.0. For very large earthquakes, the initial magnitude determination at the TWCs is commonly low. Expected impact for this event is determined from tsunami forecast models.

LANTEX 2015 Florida Scenario:

- Origin Time 13:00:00 UTC March 25, 2015
- Latitude 28.8°N
- Longitude 77.0°W
- Magnitude 6.8 – Mw
- Depth 5 km

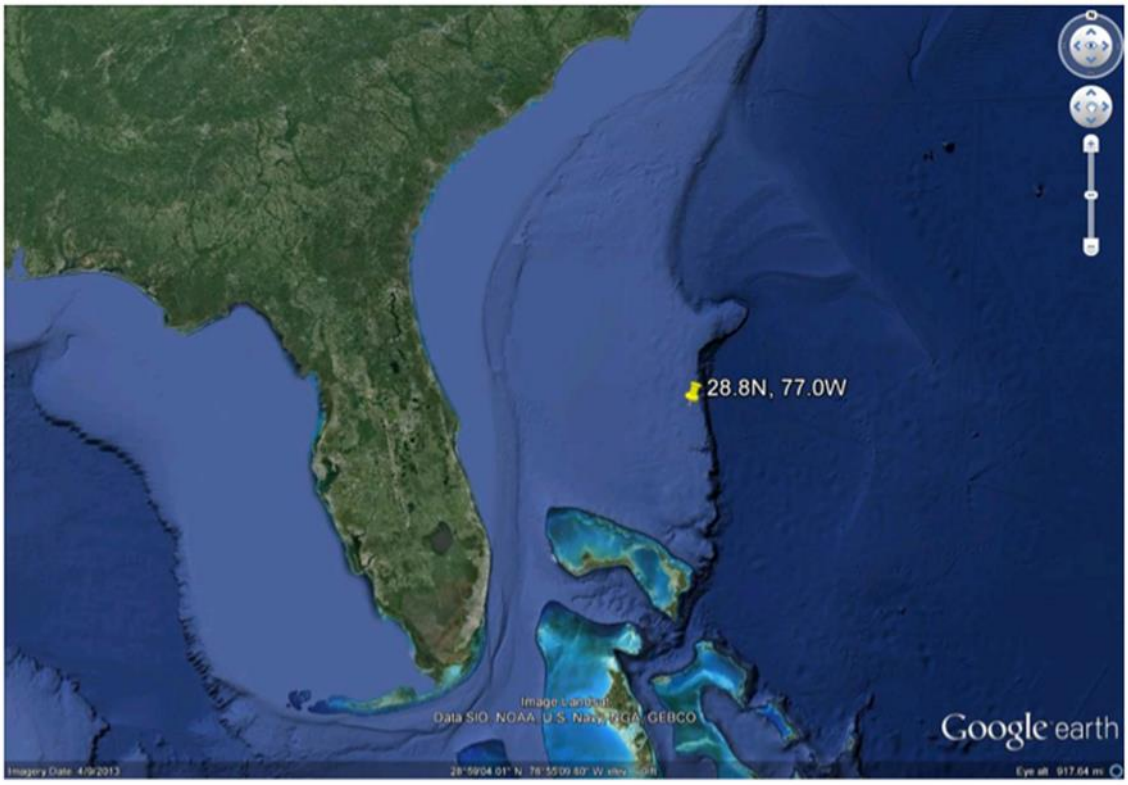


Figure 7. LANTEX 2015 event location off the coast of Florida

In the case of the Florida Scenario, the earthquake was assumed to trigger a large submarine landslide, which in turn generated a large tsunami. Expected impact for the landslide generated tsunami was determined using the Alaska Tsunami Forecast Model (ATFMv2). ATFMv2 indicates a tsunami amplitude generally between one and five meters along the Gulf of Mexico coastline, with a maximum amplitude of near 11 metres at Pilot Station E off the Louisiana coast. Based on the models, the exercise alert areas were limited to the eastern US coast and the northern Caribbean.

Various levels of alert were issued by the TWCs throughout the event. Definitions of the products that were issued by the TWCs during this exercise are provided below (Note that PTWC products differ from US NTWC products due to requirements set forth by the ICG/CARIBE-EWS).

### 3.1.1 US National Tsunami Warning Center

Tsunami Warning – A tsunami warning is issued when a tsunami with the potential to generate widespread inundation is imminent, expected, or occurring. Warnings alert the public that dangerous coastal flooding accompanied by powerful currents is possible and may continue for several hours after initial arrival. Warnings alert emergency management officials to take action for the entire tsunami hazard zone. Appropriate actions to be taken by local officials may include the evacuation

of low-lying coastal areas and the repositioning of ships to deep waters when there is time to safely do so. Warnings may be updated, adjusted geographically, downgraded, or cancelled. To provide the earliest possible alert, initial warnings are normally based only on seismic information.

Tsunami Advisory – A tsunami advisory is issued due to the threat of a potential tsunami which may produce strong currents or waves dangerous to those in or near the water. Coastal regions historically prone to damage due to strong currents induced by tsunamis are at the greatest risk. The threat may continue for several hours after the arrival of the initial wave, but significant widespread inundation is not expected for areas under an advisory. Appropriate actions to be taken by local officials may include closing beaches, evacuating harbours and marinas, and the repositioning of ships to deep waters when there is time to safely do so. Advisories are normally updated to continue the advisory, expand/contract affected areas, upgrade to a warning, or cancel the advisory.

Tsunami Watch – A tsunami watch is issued to alert emergency management officials and the public of an event which may later impact the watch area. The watch area may be upgraded to a warning or advisory – or cancelled – based on updated information and analysis. Therefore, emergency management officials and the public should prepare to take action. Watches are normally issued based on seismic information without confirmation that a destructive tsunami is underway.

Tsunami Information Statement (TIS) – A tsunami information statement is issued to inform emergency management officials and the public that an earthquake has occurred, or that a tsunami warning, watch or advisory has been issued for another section of the ocean. In most cases, information statements are issued to indicate there is no threat of a destructive basin wide tsunami and to prevent unnecessary evacuations as the earthquake may have been felt in coastal areas. An information statement may, in appropriate situations, caution about the possibility of destructive local tsunamis. Information statements may be re-issued with additional information, though normally these messages are not updated. However, a watch, advisory or warning may be issued for the area, if necessary, after analysis and/or updated information becomes available.

### 3.1.2 Pacific Tsunami Warning Center

Tsunami Watch – A Tsunami Watch is issued by the PTWC following a large earthquake to inform that there is the potential for a destructive tsunami to impact the region declared under the watch, or to inform regarding a confirmed tsunami with the potential to cause damage to the region declared under the watch. It is the highest level of alert issued by the PTWC for the Caribbean region. It is issued by the PTWC solely as advice to local governments that have the responsibility and authority to issue tsunami warnings for the areas under their jurisdiction or otherwise alert and instruct the public regarding appropriate response actions. Such actions may include the evacuation of low-lying areas and the repositioning of ships and boats to deep water. Tsunami Watch messages will be issued approximately every hour with updated information including any measurements of tsunami waves and any appropriate expansion or reduction of the region under a watch until the watch is cancelled.

Tsunami Information Bulletin (TIB) – Tsunami Information, issued by the PTWC in a Tsunami Information Bulletin, is to inform about the occurrence of a large earthquake with little or no tsunami generating potential, either because the earthquake has insufficient size, is located too far inland to disturb the sea, is too deep within the earth to significantly displace the seafloor, or some combination of the above. In rare cases, an earthquake in this category can be accompanied by a locally destructive tsunami due to a collateral tsunamigenic phenomenon such as a landslide into the sea or an undersea slump. This product is issued solely as advice to local governments that have the responsibility and authority to alert and instruct the public regarding appropriate response actions. Supplemental tsunami information may be issued if a tsunami signal is detected on nearby gauges or if there is a significant change to the preliminary earthquake parameters.

The TWCs did not issue live messages over broadcast dissemination channels other than to issue an initial dummy message to start the exercise at 14h05 UTC (Panama Scenario) and 13h02 UTC (Florida Scenario) on 25 March 2015. However, over 30,000 messages were emailed from the TWCs and the Puerto Rico Seismic Network to specific recipients who registered to receive live dissemination throughout the event (http://www.prsn.uprm.edu/caribewave-lantex2014/registro). The content of the dummy messages and the alert products is given in the Participant Handbook (Volume 1).

In addition, CARIBE-EWS Member States had an opportunity to view and exercise with the PTWC proposed CARIBE-EWS enhanced products if they choose to do so. They were made available along with a more detailed description of their content and the accompanying text products and are included in Annex II for reference and at http://www.caribewave.info.

## 3.2 MASTER SCHEDULE (EXERCISE SCRIPT)

Tables 1, 2 and 3 contain the timelines for exercise messages sent out by the US NTWC and PTWC. Table 4 lists the products that were disseminated by the Tsunami Warning Centres.

| Date (UTC) | Time (UTC) | NTWC Message (for PR and VI) | | | | PTWC Message | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | # | Type | Dummy | Email | # | Type | Dummy | Email |
| 03/25/2015 | 1400 | ------Earthquake Occurs------ | | | | | | | |
| 03/25/2015 | 1405 | 01 | Adv | Yes | Yes | 01 | Watch | Yes | Yes |
| 03/25/2015 | 1430 | | | | | 02 | Watch | No | Yes |
| 03/25/2015 | 1500 | 02 | Warn | No | Yes | 03 | Watch | No | Yes |
| 03/25/2015 | 1602 | 03 | Warn | No | Yes | 04 | Watch | No | Yes |
| 03/25/2015 | 1701 | 04 | Warn | No | Yes | 05 | Watch | No | Yes |
| 03/25/2015 | 1800 | 05 | Warn | No | Yes | 06 | Watch | No | Yes |
| 03/25/2015 | 1901 | 06 | Adv | No | Yes | 07 | Watch | No | Yes |
| 03/25/2015 | 1945 | 07 | Can | No | Yes | 08 | Can | No | Yes |

Table 1. US NTWC and PTWC Message Chronology for Panama Scenario

US NTWC and PTWC Scenario Timeline for tsunami generated by a magnitude 8.5 earthquake with epicentres at 10.3ºN 78.8ºW occurring on 25 March 2015 at 14h00 UTC.

| Date (UTC) | Time (UTC) | NTWC Message | | |
|---|---|---|---|---|
| | | # | Type* | Email |
| 03/25/2015 | 1300 | ---- Earthquake Occurs ---- | | |
| 03/25/2015 | 1302 | -- | Dummy | ALL |
| 03/25/2015 | 1302 | 01 | Warn | Registered Participants |
| 03/25/2015 | 1339 | 02 | Warn | Registered Participants |
| 03/25/2015 | 1408 | 03 | Adv/Warn | Registered Participants |
| 03/25/2015 | 1434 | 04 | Adv/Warn | Registered Participants |
| 03/25/2015 | 1501 | 05 | Adv/Warn | Registered Participants |
| 03/25/2015 | 1604 | 06 | Adv/Warn | Registered Participants |
| 03/25/2015 | 1703 | 07 | Adv/Warn | Registered Participants |
| 03/25/2015 | 1801 | 08 | Adv/Warn | Registered Participants |
| 03/25/2015 | 1900 | 09 | Adv | Registered Participants |
| 03/25/2015 | 2000 | 10 | Adv | Registered Participants |
| 03/25/2015 | 2100 | 11 | Cancel | Registered Participants |

Table 2. US NTWC Message Chronology for Florida Scenario

US NTWC Scenario Timeline for tsunami generated by a magnitude 6.8 earthquake with epicentre at 28.8°N 77.0°W occurring on 25 March 2015 at 13h00 UTC.

| Date (UTC) | Time (UTC) | PTWC Message | | |
|---|---|---|---|---|
| | | # | Type* | Email |
| 03/25/2015 | 1300 | ---- Earthquake Occurs --- | | |
| 03/25/2015 | 1302 | -- | Dummy | ALL |
| 03/25/2015 | 1302 | 01 | Statement | CARIBE EWS TWFP |
| 03/25/2015 | 1354 | 02 | Watch | CARIBE EWS TWFP |
| 03/25/2015 | 1423 | 03 | Watch | CARIBE EWS TWFP |
| 03/25/2015 | 1501 | 04 | Watch | CARIBE EWS TWFP |
| 03/25/2015 | 1559 | 05 | Watch | CARIBE EWS TWFP |
| 03/25/2015 | 1658 | 06 | Watch | CARIBE EWS TWFP |
| 03/25/2015 | 1800 | 07 | Watch | CARIBE EWS TWFP |
| 03/25/2015 | 1900 | 08 | Cancel | CARIBE EWS TWFP |

Table 3. PTWC Message Chronology for Florida Scenario

PTWC Scenario Timeline for Tsunami generated by a magnitude 6.6 earthquake with epicentre at 27.5 NORTH, 91.3 WEST occurring on 26 March 2014 at 1400 UTC.

**TWC Message Types**:

| | |
|---|---|
| TIS | Tsunami Information Statement |
| Warn | Tsunami Warning |
| Watch | Tsunami Watch |
| Adv | Tsunami Advisory |
| Can | Cancellation |

**Dummy:**

| | |
|---|---|
| Yes | Dummy issued |
| No | Dummy not issued |

The initial dummy messages were disseminated over all standard TWC broadcast channels (Table 4) in order to test communications with EMOs and TWFPs, and to start the exercise. US NTWC Dummy message were issued with the WMO ID WEXX30 PAAQ and AWIPS ID TSUATE.

PTWC Dummy messages were issued with the WMO ID WECA41 PHEB and AWIPS ID TSUCAX. The TWFPs reportedly used a variety of methods to receive the Dummy messages, with fax and email being the most common (Figure 8).

A real tsunami warning/watch/advisory issued for events such as those simulated in this exercise would likely last many hours longer than the duration of the exercise. The exercise was tailored to be completed within a compressed time frame.

| Center | WMO ID | AWIPS ID | NWWS | GTS | EMWIN | AISR | Fax | Email |
|---|---|---|---|---|---|---|---|---|
| NTWC | WEXX20 PAAQ | TSUAT1 | Yes | Yes | Yes | Yes | No | No |
| NTWC | WEXX30 PAAQ | TSUATE | Yes | Yes | Yes | Yes | Yes | Yes |
| NTWC | WEXX40 PAAQ | TSUSPN | Yes | Yes | Yes | Yes | Yes | Yes |
| PTWC | WECA41 PHEB | TSUCAX | Yes | Yes | Yes | Yes | Yes | Yes |

NWWS NOAA Weather Wire Service
GTS Global Telecommunications System
EMWIN Emergency Manager's Weather Information Network
AISR Aeronautical Information System Replacement

Table 4. Product Types
Product types and transmission methods for CARIBE WAVE/LANTEX 2015 Dummy Messages.

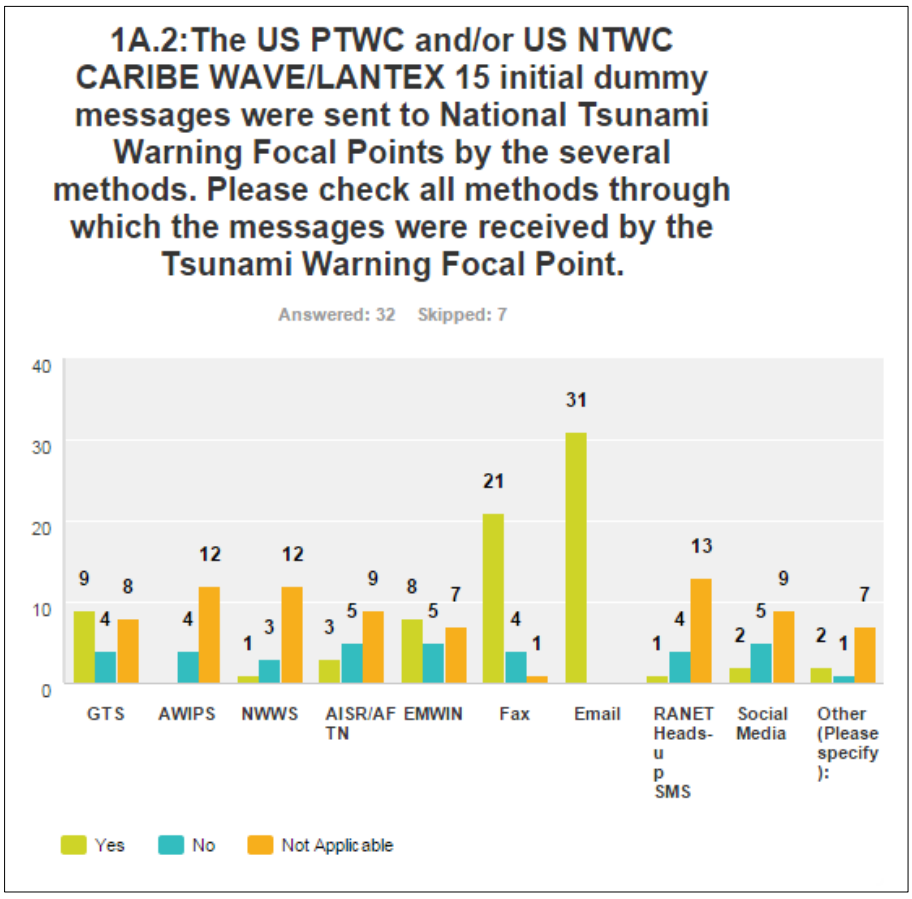


Figure 8. Methods that CARIBE-EWS TWFPs used to receive the Dummy Messages sent by the TWCs

## 3.3 ACTIONS IN THE CASE OF A REAL EVENT

In the case that a real tsunamigenic event occurred during the exercise, the TWCs were to issue their normal messages for the event. Such messages would be given full priority, and the TWCs would decide whether to continue with the exercise, or to cancel the exercise if it would interfere with real messages. **No significant real events occurred during the exercise**.

## 3.4 PROCEDURE FOR FALSE ALARM

Any time disaster response exercises are conducted, the potential exists for the public or media to interpret the event as real. All participating entities were encouraged to have procedures to address public or media concerns involving this exercise in the case of misinterpretation by media or the public. **There were no significant false alarms reported by the Member States and Territories.**

## 3.5 REGISTRATIONS PROCEDURE´

Registration for the CARIBE WAVE/LANTEX 2015 exercise was facilitated by the Puerto Rico Seismic Network and the Caribbean Tsunami Warning Program through an online process (Figure 9). Registrants were given the option to select whether they would participate in the CARIBE WAVE/LANTEX 2015 Panama Scenario or the LANTEX 2015 Florida Scenario. The Florida Scenario option was only available to participants in the Bahamas, Bermuda, Cuba, Turks and Caicos, and the USA, based on the geographical relevance of the exercise. Registrants in Member States/Territories serviced by the US NTWC (USA, Puerto Rico, US Virgin Islands, and British Virgin Islands) had the option to receive products directly from the US NTWC. Registrants in Puerto Rico had the option to receive products from the Puerto Rico Seismic Network. Each registrant was asked to submit his/her/their name, country/territory, state and town (where applicable), e-mail address, type of agency, the name of his/her/their agency, and how many individuals in that agency would be participating. This information was then forwarded to the TWFPs of each Member State/Territory for dissemination of tsunami products during the exercise.

One thousand and forty-four (1,044) registrations were made through the website, representing a total of 132,446 participants from 48 countries and territories. Forty-five (45) out of forty-six (46) officially designated TWFPs registered. Registration was completed by people in almost 300 different state, national, and international agencies; almost 300 educational institutions; almost 200 individuals; as well as almost 150 other private and public organizations (Table 5). Some Member States and Territories provided their participation numbers, these have been included in Table 6, bringing up to 191,420 the total number of participants.

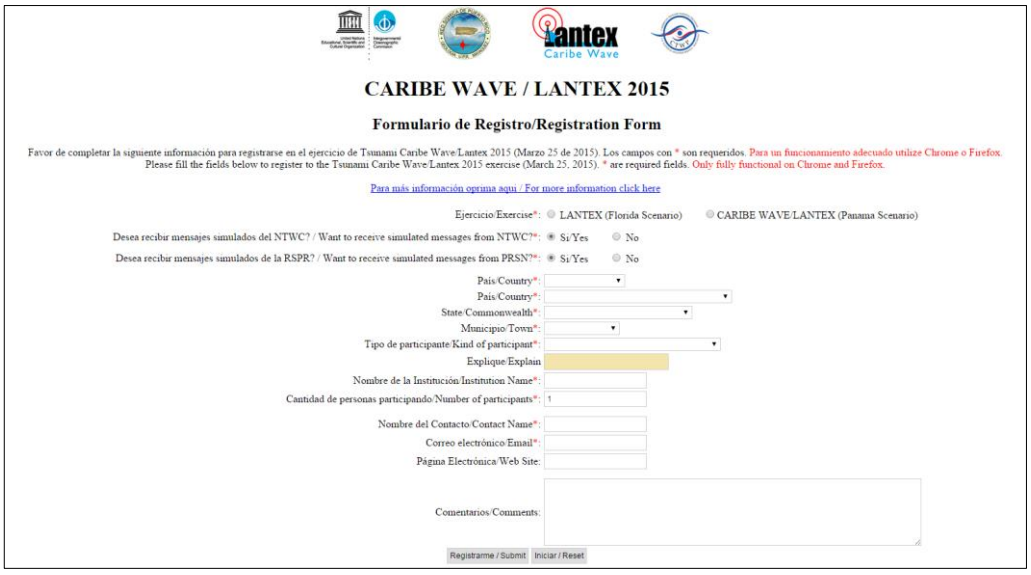


Figure 9. Registration form for the CARIBE WAVE/LANTEX 2015 Regional Tsunami Exercise

| Type of Participant | Number of Registrants | Number of Participants |
|---|---|---|
| State Agency | 184 | 21,333 |
| National Agency | 97 | 2,184 |
| International Agency | 10 | 30 |
| Private Business | 35 | 2,106 |
| Press | 12 | 146 |
| Educational Institution | 282 | 83,845 |
| Health Facility | 31 | 3,251 |
| Community | 57 | 5,302 |
| Individual | 188 | 833 |
| Other* | 148 | 13,416 |
| **Total:** | 1,044 | 132,446 |

*This includes TWFPs and TNCs

Table 5. List of registrants and participants by type of participant

| Country | Number of Registrations on the Web | Number of Participants According to Registration System | Final Number of Participants considering input of Member States |
|---|---|---|---|
| Anguilla (UK) | 5 | 5 | 1,150 |
| Antigua and Barbuda | 2 | 63 | 63 |
| Aruba | 3 | 14 | 25 |
| Bahamas | 4 | 7 | 7 |
| Barbados | 4 | 910 | 1,000 |
| Belize | 3 | 9 | 9 |
| Bermuda (UK) | 6 | 6 | 6 |
| Brazil | 1 | 1 | 1 |
| British Virgin Islands (UK) | 23 | 1,736 | 4,200 |
| Canada | 1 | 1 | 1 |
| Cayman Islands (UK) | 3 | 18 | 18 |
| Colombia | 8 | 77 | 77 |
| Costa Rica | 1 | 12 | 30 |
| Cuba | 1 | 2 | 2 |
| Curaçao, Bonaire, St Eustatius, Saba | 3 | 35 | 35 |
| Dominica | 1 | 100 | 100 |
| Dominican Republic | 13 | 43 | 43 |
| France | 13 | 99 | 99 |
| French Guyana (France) | 1 | 10 | 10 |
| Grenada | 4 | 9 | 9 |
| Guadeloupe (France) | 24 | 408 | 3,000 |
| Guatemala | 2 | 12 | 12 |
| Guyana | 2 | 12 | 12 |

| Country | Number of Registrations on the Web | Number of Participants According to Registration System | Final Number of Participants considering input of Member States |
|---|---|---|---|
| Haiti | 17 | 22 | 44 |
| Honduras | 1 | 1 | 1 |
| Jamaica | 2 | 2 | 2 |
| Martinique (France) | 64 | 8,637 | 8,637 |
| Mexico | 5 | 28 | 500 |
| Montserrat (UK) | 1 | 1 | 1 |
| Nicaragua | 4 | 28 | 100 |
| Panama | 20 | 63 | 63 |
| Puerto Rico (USA) | 500 | 80,953 | 80,953 |
| Saint Barthélemy (France) | 1 | 1 | 1 |
| Saint Kitts and Nevis | 4 | 109 | 109 |
| Saint Lucia | 4 | 6 | 6 |
| Saint Martin (France) | 5 | 14 | 550 |
| Saint Vincent and the Grenadines | 1 | 30 | 30 |
| Sint Maarten | 2 | 2 | 25 |
| Suriname | 0 | 0 | 0 |
| Trinidad and Tobago | 4 | 104 | 30,104 |
| Turks and Caicos (UK) | 9 | 30 | 30 |
| United States of America | 144 | 23,344 | 23,877 |
| U.S. Virgin Islands (USA) | 30 | 4,793 | 4793 |
| Venezuela | 98 | 10,689 | 31,685 |
| **TOTAL** | **1,044** | **132,446** | **191,420** |

Table 6. Participation according to online registration system and final number of participants as provided by Member States and Territories.

## 3.6 SEA LEVEL STATION STATUS DURING EXERCISE

A complete analysis of sea level status was completed by the CTWP as part of the CARIBE WAVE/LANTEX 2015 Regional Tsunami Exercise. This analysis permits the evaluation of sea level data that would have been available in the case of a real event at the time of the exercise. The US NTWC and PTWC provided forecasted wave heights for 64 stations in the simulated bulletins. Of these, 49 (75%) were reporting to the IOC Sea Level Station Monitoring Facility during the exercise time frame. In the case of TideTool (Figures 10 and 11), 43 stations (61%) had data available. Of the 28 stations that should be available on the NOAA Tides and Currents, 14 stations (78.5%) had data. In the case of the DART, only 2 of 7 in the Caribbean/Gulf and Atlantic had data streaming through the National Buoy Center. Forty-eight (48) of the stations used by the TWC are not available through the IOC. However, of the stations in which data was streaming into IOC, the data availability was a total of 45% for the US NTWC and the PTWC combined. A complete summary for the stations' sea level data availability can be found in Annex II. The Annex also includes a table with the wave heights forecasted by both the US NTWC and the PTWC, and the difference in forecasted wave

heights between the two warning centres. In comparison with last year (2014) the IOC Sea Level Station Monitoring Facility was streaming data in 30 more stations this year.

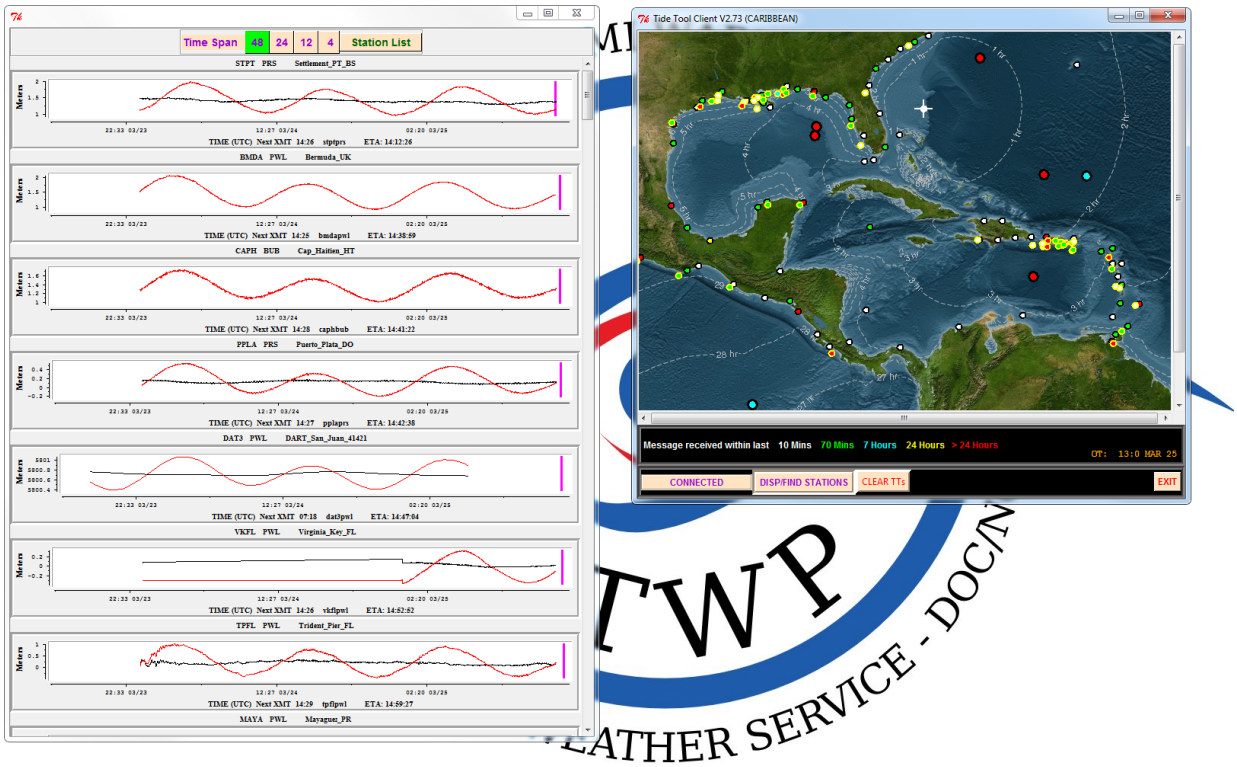


Figure 10. Screen shot showing Tide Tool data for the CARIBE WAVE/LANTEX 2015 Panama Scenario

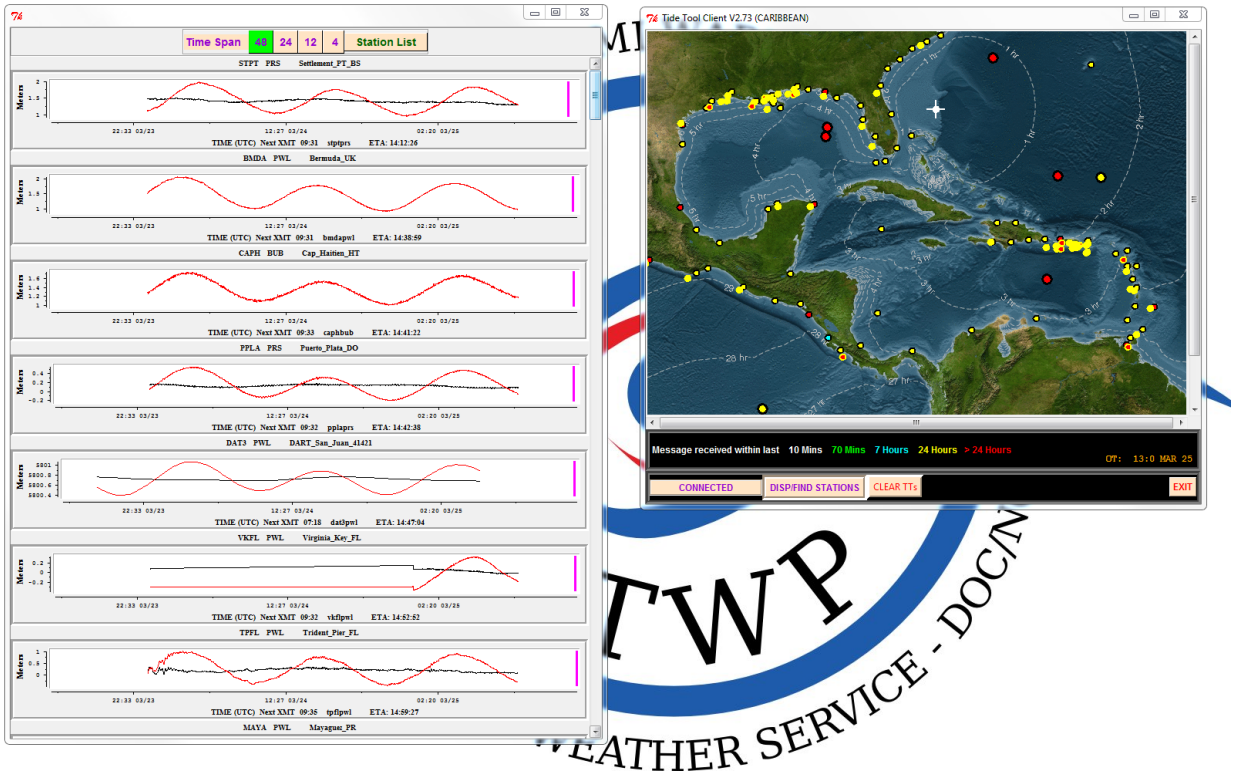


Figure 11. Screen shot showing Tide Tool data for the LANTEX 2015 Florida Scenario

## 3.7 TWEB MODELLING DURING EXERCISE

As part of CARIBE WAVE/LANTEX 2015, the Panama tsunami scenario was generated in Tweb. Tweb is an internet-enabled interface developed by the NOAA Center for Tsunami Research (NCTR) that uses the Method of Splitting Tsunami (MOST) model to provide tsunami forecasting. This tsunami forecasting tool is in the testing phase and has been presented to several scientific communities for feedback. On 10 March 2015, at 18:00 UTC, the Pacific Marine Environmental Laboratory of NOAA with the Caribbean Tsunami Warning Program (CTWP) presented the Tweb products for the CARIBE WAVE/LANTEX 2015 in a webinar. Twenty-seven (27) participants from the Caribbean Region participated in the online briefing. A complete description of the Tweb modelling for the exercise can be found in Annex III.

## 3.8 RESOURCES

Although EMOs had advance notice of the exercise and some elected to set up a special dedicated shift to allow normal core business to continue uninterrupted, it was requested that realistic resource levels be deployed in order to reflect some of the issues that are likely to be faced in a real event. Table 7 contains a list of individuals that helped in the planning and conduct of the exercise, and were available to the participating Member States and Territories.

| Person | Telephone # | Email |
|---|---|---|
| Christa von Hillebrandt-Andrade, CARIBE EWS and CARIBE WAVE 14 Chair; NWS CTWP Manager | 787-249-8307 | christa.vohn@noaa.gov |
| Milton Puentes, Vice Chair | 57-1-2020490 | milpuentes@gmail.com |
| Denis Lopez, Vice Chair | 596-596-39393 | denis.lopez@martinique.pref.gouv.fr |
| Aura Fernandez | 582-122575153 | aefernandez@funvisis.gob.ve |
| Jean Marie Saurel, Chair WG1 | 596-596-784146 | saurel@ipgp.fr |
| Alberto Lopez, Chair WG2 | 1-787-832-4040 | alberto.lopez3@upr.edu |
| Antonio Aguilar, Chair WG3 | 582-122575153 | antoniodesastres@gmail.com |
| Patrick Tyburn, Chair WG4 | 596-596-393813 | patrick.tyburn@martinique.pref.gouv.fr |
| Alison Brome, Director, Caribbean Tsunami Information Center | 246-438-7575 | a.brome@unesco.org |
| Charles McCreery, Director, PTWC | 1-808-689-8207 | charles.mccreery@noaa.gov |
| Gerard Fryer, PTWC Rep. | 1-808-689-8207 | gerard.fryer@noaa.gov |
| Paul Whitmore, Director, NTWC | 1-907-745-4212 | paul.whitmore@noaa.gov |
| James Waddell, NTWC Rep. | 1-907-745-4212 | james.waddell@noaa.gov |
| Ronald Jackson, Director, CDEMA | 246-425-0386 | ronald.jackson@cedema.org |
| Roy Barboza, Executive Secretary, CEPREDENAC | 502-2390-0200 | rbarboza@sica.int |
| Walt Zaleski, NWS Southern Region | 1-817-978-1100 ext107 | walt.zaleski@noaa.gov |
| Bernardo Aliaga, Technical Secretary ICG CARIBE EWS | 33-1-45683980 | b.aliaga@unesco.org |
| Wilfredo Ramos, PRSEMA Rep. | 1-787-724-0124 ext20036 | wramos@prema.pr.gov |
| Victor Huérfano, Director, Puerto Rico Seismic Network | 1-787-833-8433 | victor@prsn.uprm.edu |

| Person | Telephone # | Email |
|---|---|---|
| Eduardo Camacho, Director, Instituto Geociencias de la Universidad de Panamá | 1-507-523-5557 | ecamacho@cableonda.net |
| Arnulfo Sánchez | 1-507-501-5197 | asanchez@amp.gob.pa |

Table 7. Task Team for organization and conduct of CARIBE WAVE/LANTEX 2015

### 3.9 MEDIA ARRANGEMENTS

One advantage in conducting exercises is that it provides a venue to promote awareness of the exercise topic. Many residents along the Caribbean and Northwestern Atlantic coasts may not realize that a tsunami warning system exists for their region, let alone the proper response. Forty-eight percent (48%) of the CARIBE-EWS Member States and Territories indicated that the news media participated and covered the exercise (copies of press releases and media outputs can be found in the CARIBE WAVE/LANTEX 2015 Media Report).


Figure 12. Press conference at Puerto Rico State Emergency and Management Agency announcing CARIBE

## 4. POST-EXERCISE EVALUATION

All participating agencies were requested to provide feedback on the exercise. This feedback assists the ICG/CARIBE-EWS, NTHMP, and NOAA in the evaluation of CARIBE WAVE/LANTEX 2015 and the development of subsequent exercises, and helps response agencies document lessons learned. The survey was conducted by the IOC UNESCO using Survey Monkey. It contained 82 questions. The survey was completed by 43 TNCs/TWFPs and 4 other officials, representing 47 countries and territories (46 ICG CARIBE-EWS Member States and Territories as well as Brazil). The questions as well as the answers and comments are contained in Annex I. This questionnaire has a wealth of information that is important for the evaluation and planning of tsunami exercises but reflects the level of tsunami preparedness in the region.

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ANNEX I

**SURVEY RESULTS**

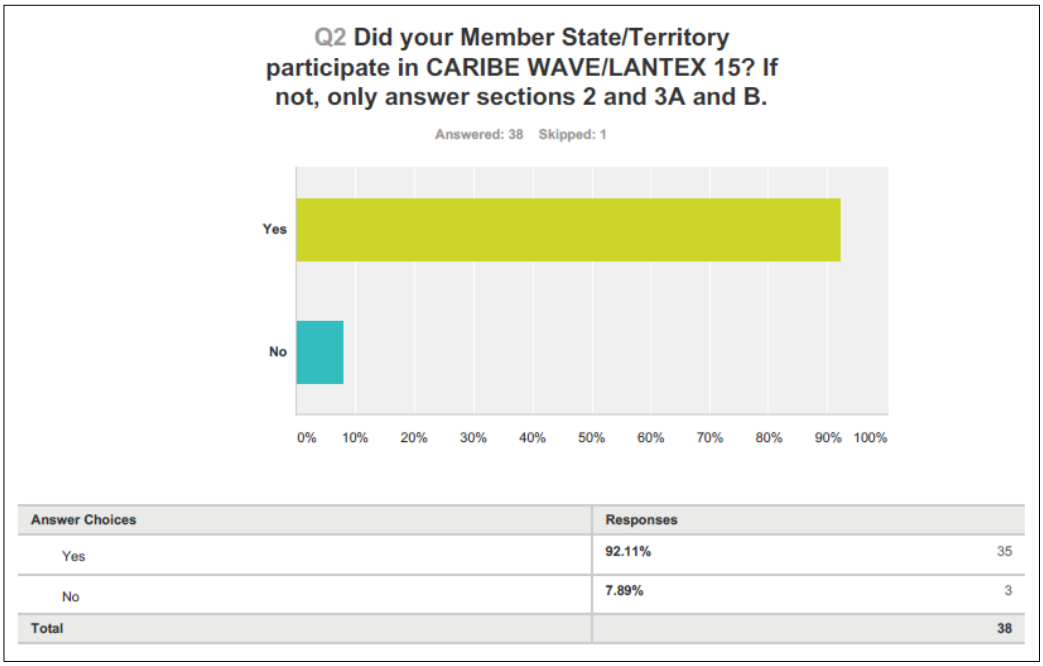
CARIBE WAVE/ LANTEX 2015 Survey Report from TWFP/TNC

The following member states and territories participated in the post-exercise evaluation:

1. Antigua and Barbuda
2. Aruba
3. Bahamas
4. Barbados
5. Belize
6. Brazil[2]
7. Colombia
8. Costa Rica
9. Curaçao (answers also included for Netherlands, including Bonaire, Saba and Sint Eustatius)
10. Dominica
11. Dominican Republic
12. France (Martinique, Guadeloupe, St Martin, Guyane and Saint Barthelemy)
13. Grenada[1]
14. Guatemala
15. Guyana
16. Haiti
17. Honduras
18. Jamaica
19. Mexico
20. Netherlands (Bonaire, Saba, Sint Eustatius-Answered by Curacao)
21. Nicaragua
22. Panama
23. Saint Kitts and Nevis[1]
24. Saint Lucia[1]
25. Saint Vincent and the Grenadines
26. Sint Maarten
27. Suriname
28. Trinidad and Tobago
29. United Kingdom (Anguilla, Bermuda, British Virgin Islands, Cayman Islands, Montserrat and Turks and Caicos)
30. United States (Puerto Rico and US Virgin Islands)
31. Venezuela (Bolivarian Republic of)

[1] The survey was not completed by an officially designated TNC or TWFP.

[2] Participated as an Observer, as no TWFP had been designated at the time of the exercise.




| Answer Choices | Responses | |
|---|---|---|
| Yes | 92.11% | 35 |
| No | 7.89% | 3 |
| Total | | 38 |

**Comments**

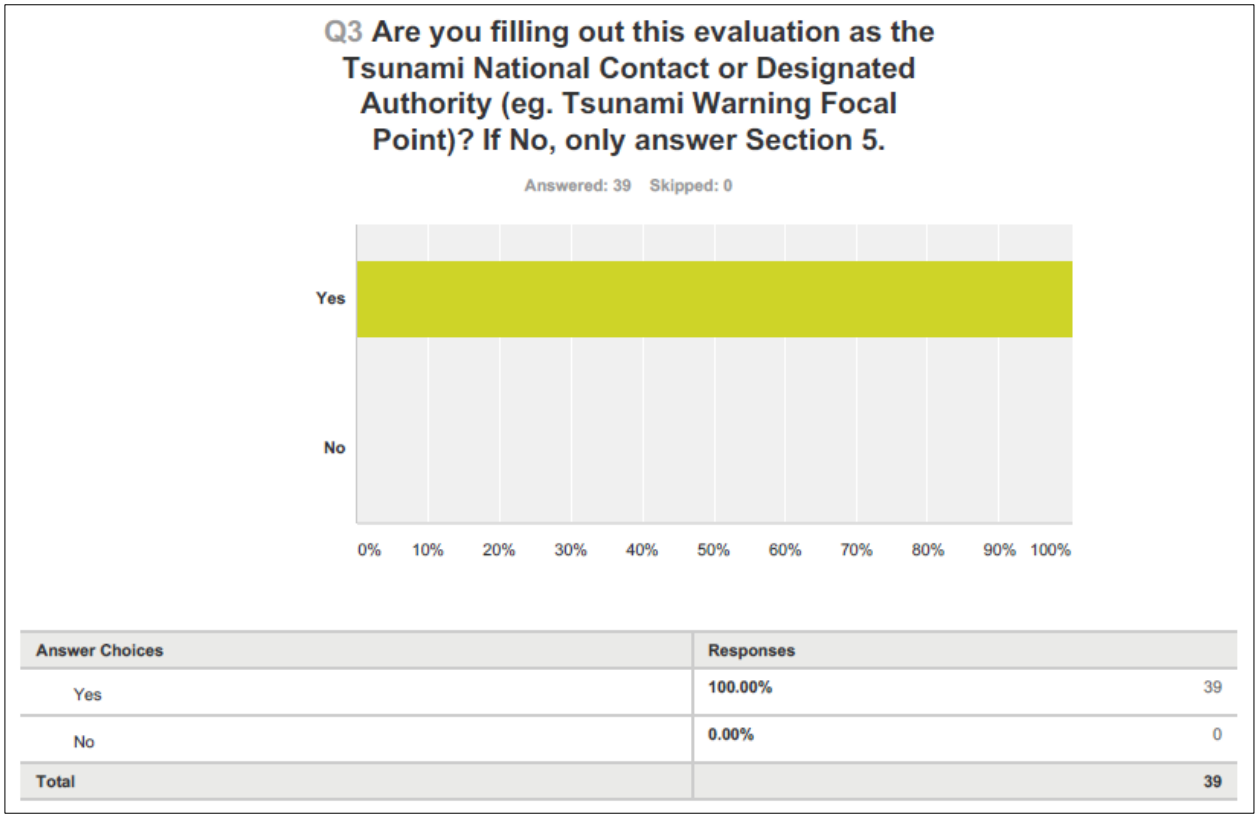
France: Each of the 4 territories participated in the exercise with specific objectives but all were coordinated by our zonal center.

Guyana: The National body responsible (CDC) was not prepared to participate.

Haiti: A good exercise.

Jamaica: The participation was restricted to receiving messages and passing to designated authority.

Puerto Rico: CaribeWave Panama Scenario.




| Answer Choices | Responses | |
|---|---|---|
| Yes | 100.00% | 39 |
| No | 0.00% | 0 |
| Total | | 39 |

**All Member States/Territories answered YES.**

**Comments**

Antigua and Barbuda**:** TWFP.

Colombia**:** TWFP

France: I feel this questionary as chair of the representant of the WG3 and WG4 for our territories. I do it in coordination with Valérie CLOUARD our NTC.

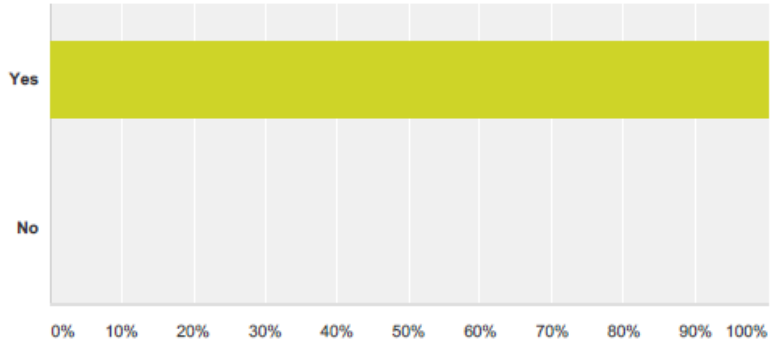
Jamaica: Performing function as TWFP.

Nicaragua: As Tsunami Warning Focal Point.

Sint Maarten: As TNC.

## Q4 1A.1:The information issued by the US Tsunami Warning Centres was according to the CARIBE WAVE/LANTEX 2015 Participant Handbook.

Answered: 30 Skipped: 9




| Answer Choices | Responses | |
|---|---|---|
| Yes | 100.00% | 30 |
| No | 0.00% | 0 |
| Total | | 30 |

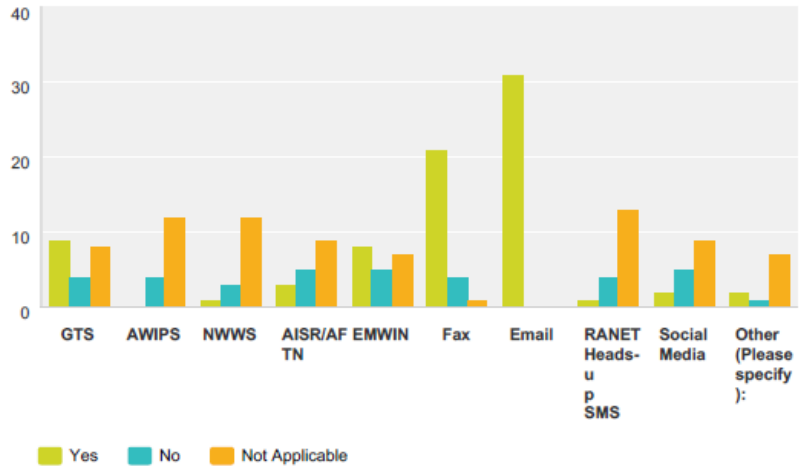
**All Member States/Territories answered YES.**

**Comments**

Curaçao**:** Initiation message from PTWC received at 10.06 LT.

## Q5 1A.2:The US PTWC and/or US NTWC CARIBE WAVE/LANTEX 15 initial dummy messages were sent to National Tsunami Warning Focal Points by the several methods. Please check all methods through which the messages were received by the Tsunami Warning Focal Point.

Answered: 32 Skipped: 7




| | Yes | No | Not Applicable | Total Respondents |
|---|---|---|---|---|
| GTS | **42.86%** 9 | **19.05%** 4 | **38.10%** 8 | 21 |
| AWIPS | **0.00%** 0 | **25.00%** 4 | **75.00%** 12 | 16 |
| NWWS | **6.25%** 1 | **18.75%** 3 | **75.00%** 12 | 16 |
| AISR/AFTN | **17.65%** 3 | **29.41%** 5 | **52.94%** 9 | 17 |
| EMWIN | **40.00%** 8 | **25.00%** 5 | **35.00%** 7 | 20 |
| Fax | **80.77%** 21 | **15.38%** 4 | **3.85%** 1 | 26 |
| Email | **100.00%** 31 | **0.00%** 0 | **0.00%** 0 | 31 |
| RANET Heads-up SMS | **5.88%** 1 | **23.53%** 4 | **76.47%** 13 | 17 |
| Social Media | **12.50%** 2 | **31.25%** 5 | **56.25%** 9 | 16 |
| Other (Please specify): | **20.00%** 2 | **10.00%** 1 | **70.00%** 7 | 10 |

**GTS:**

YES**:** Antigua and Barbuda, Aruba, Barbados, Belize, Curaçao, France, Jamaica, Trinidad and Tobago, Venezuela

NO**:** Bahamas, Haiti, Panama, Turks and Caicos

NOT APPLICABLE**:** Brazil, British Virgin Islands, Cayman Islands, Colombia, Costa Rica, Dominica, Dominican Republic, Sint Maarten

**AWIPS:**

YES**:** N/A

NO**:** Dominican Republic, Haiti, Panama, Turks and Caicos

NOT APPLICABLE**:** Antigua and Barbuda, Bahamas, Belize, Bermuda, British Virgin Islands, Cayman Islands, Colombia, Costa Rica, Dominica, Jamaica, Sint Maarten, Trinidad and Tobago

**NWWS:**

YES**:** Honduras

NO**:** Dominican Republic, **Panama**, Turks and Caicos

NOT APPLICABLE**:** Antigua and Barbuda, Bahamas, Belize, Bermuda, Cayman Islands, Colombia, Costa Rica, Dominica, Haiti, Jamaica, Sint Maarten, Trinidad and Tobago

**AISR/AFTN:**

YES**:** Trinidad and Tobago, Venezuela

NO**:** Bahamas, Belize, Haiti, Panama, Turks and Caicos

NOT APPLICABLE**:** Antigua and Barbuda, British Virgin Islands, Cayman Islands, Colombia, Costa Rica, Dominican Republic, France, Jamaica, Sint Maarten

**EMWIN:**

YES**:** Anguilla, Antigua and Barbuda, Aruba, Bahamas, Bermuda, British Virgin Islands, Curaçao, Puerto Rico

NO**:** Cayman Islands, Dominican Republic, Haiti, Panama, Turks and Caicos

NOT APPLICABLE**:** Belize, Colombia, Costa Rica, Dominica, Jamaica, Saint Vincent and the Grenadines, Trinidad and Tobago

**FAX:**

YES**:** Anguilla, Antigua and Barbuda, Aruba, Bahamas, Bermuda, British Virgin Islands, Colombia, Costa Rica, Curaçao, Dominica, Dominican Republic, Guatemala, Montserrat, Nicaragua, Panama, Puerto Rico, Sint Maarten, Trinidad and Tobago, US Virgin Islands, Venezuela

NO**:** Belize, Haiti, Jamaica, Turks and Caicos

NOT APPLICABLE**:** Cayman Islands

**E-mail:**

YES**:** Anguilla, Antigua and Barbuda, Aruba, Bahamas, Barbados, Belize, Bermuda, British Virgin Islands, Cayman Islands, Colombia, Costa Rica, Curaçao, Dominica, Dominican Republic, France, Guatemala, Honduras, Haiti, Jamaica, Montserrat, Mexico, Nicaragua, Puerto Rico, Saint Vincent and the Grenadines, Sint Maarten, Trinidad and Tobago, Turks and Caicos, Venezuela

NO**:** N/A

NOT APPLICABLE**:** N/A

**RANET Heads -up SMS:**

YES**:** Mexico

NO: Dominica, Dominican Republic, Panama, Turks and Caicos

NOT APPLICABLE**:** Antigua and Barbuda, Bahamas, Belize, Bermuda, British Virgin Islands, Cayman Islands, Colombia, Costa Rica, Dominican Republic, Haiti, Jamaica, Sint Maarten, Trinidad and Tobago

**Social Media:**

YES**:** Honduras

NO**:** Dominica, Haiti, Jamaica, Panama, Turks and Caicos

NOT APPLICABLE**:** Antigua and Barbuda, Bahamas, Belize, Bermuda, British Virgin Islands, Cayman Islands, Costa Rica, Sint Maarten, Trinidad and Tobago

**Other:**

YES**:** Aruba, Dominica

NO**:** Panama

NOT APPLICABLE**:** Bermuda, Cayman Islands, Colombia, Haiti, Jamaica, Sint Maarten, Trinidad and Tobago

**Comments:**

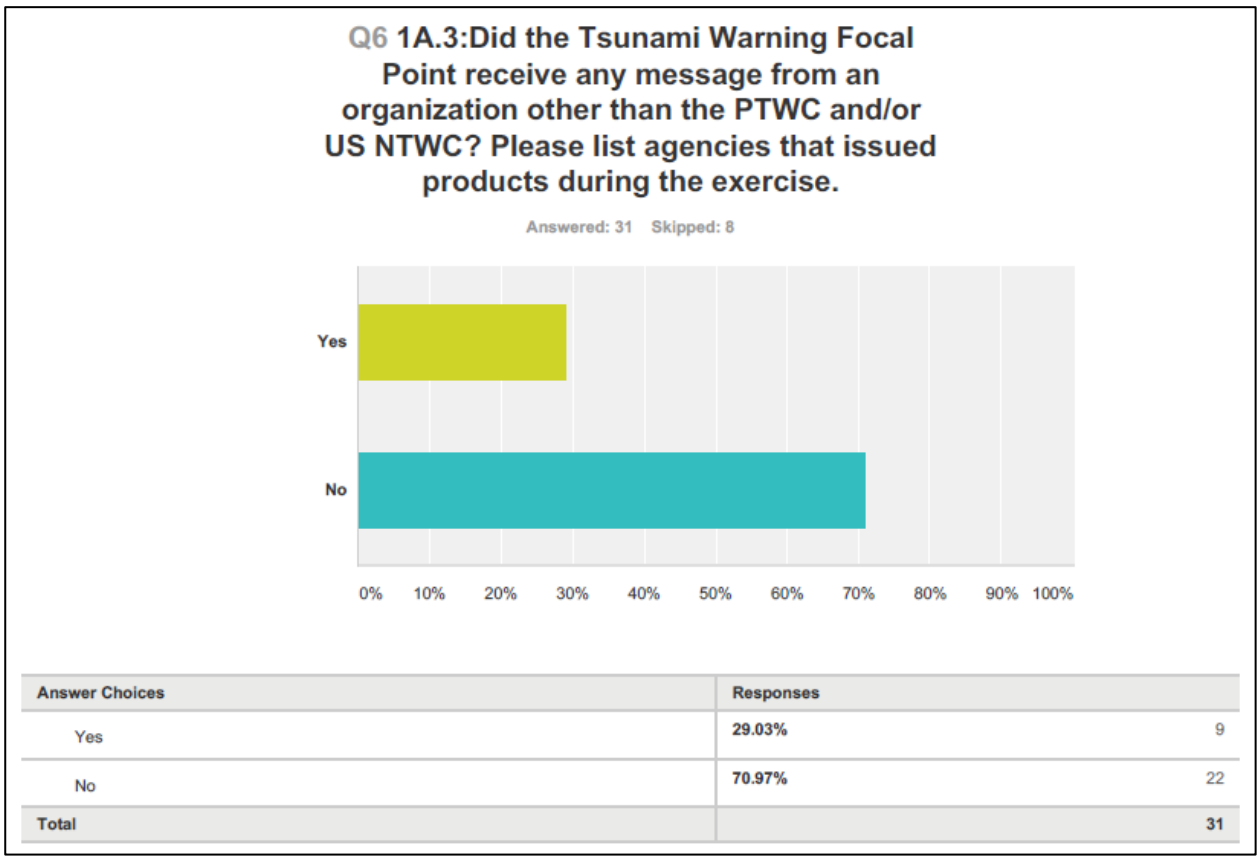
Aruba: ldm ucar/unidata.

Dominica**:** PRSN and French Seismic center.

France**:** For the next exercise, we'll appreciate that all messages (dummy and other) be transmitted via GTS. Indeed, it'll be easier for our TWFPs to manage the dissemination to our NDMOs.

Montserrat**:** The John A Osborne Airport also received exercise messages separate from my agency.

Saint Vincent and the Grenadines**:** HAD PROBLEMS WITH FAX MACHINE.




| Answer Choices | Responses | |
|---|---|---|
| Yes | 29.03% | 9 |
| No | 70.97% | 22 |
| Total | | 31 |

YES**:** Bahamas, Barbados, Colombia, Curaçao, Dominica, Dominican Republic, Haiti, Puerto Rico, Venezuela

NO**:** Anguilla, Antigua and Barbuda, Aruba, Belize, Bermuda, British Virgin Islands, Cayman Islands, Costa Rica, France, Guatemala, Honduras, Jamaica, Mexico, Montserrat, Nicaragua, Panama, Saint Vincent and the Grenadines, Trinidad and Tobago, Turks and Caicos, US Virgin Islands

**Comments**

Bahamas**:** NEMA Bahamas had sent me the initial test message because it was not received on time.

Barbados**:** Disaster Emergency Management (DEM) issued a handbook.

Belize**:** The fax machine was not functioning and all messages remained in the TWFP's e-mail while out of country. Therefore no products were issued.

Colombia**:** Organizaciones nacionales de acuerdo a lo establecido en el protocol nacional para un evento local.

Curaçao**:** FUNVISIS

Dominica**:** PRSN.

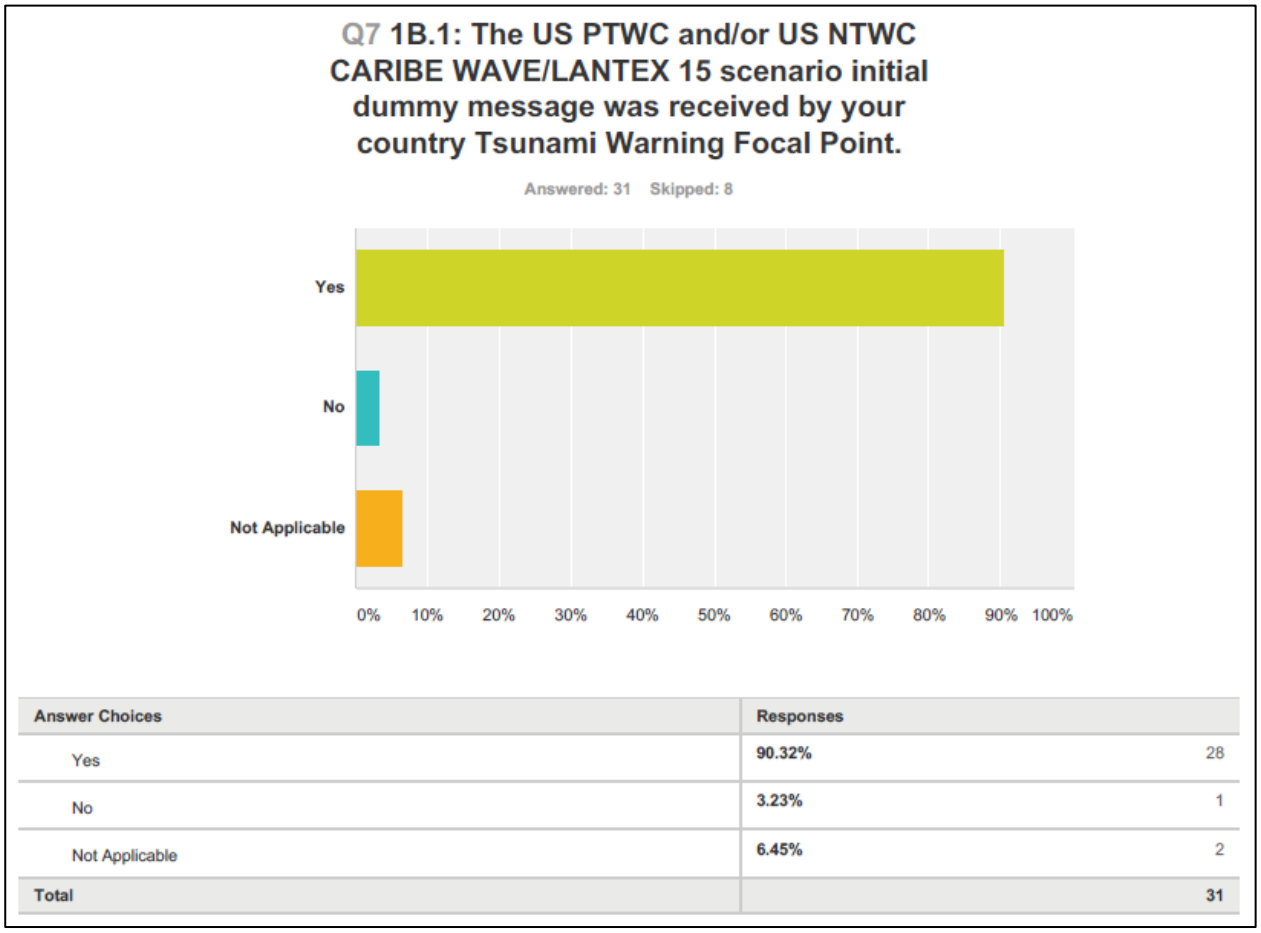
Dominican Republic**:** PTWC.

Haiti**:** Messages forwarded by Christa (CTWP).

Nicaragua**:** Only from PTWC.

Puerto Rico**:** Puerto Rico Seismic Network.

Venezuela**:** Funvisis and VGRAD of Venezuela.




| Answer Choices | Responses | |
|---|---|---|
| Yes | 90.32% | 28 |
| No | 3.23% | 1 |
| Not Applicable | 6.45% | 2 |
| Total | | 31 |

YES**:** Antigua and Barbuda, Aruba, Bahamas, Belize, Bermuda, British Virgin Islands, Cayman Islands, Colombia, Costa Rica, Curaçao, Dominica, Dominican Republic, France, Guatemala, Honduras, Jamaica, Mexico, Nicaragua, Panama, Puerto Rico, Saint Vincent and the Grenadines, Trinidad and Tobago, Turks and Caicos, US Virgin Islands, Venezuela

NO**:** Haiti

NOT APPLICABLE**:** Anguilla, Montserrat

**Comments**

Haiti**:** e-mail changed.

Nicaragua**:** But, only from PTWC.

**Q8 1B.2:What time was the US PTWC and/or US NTWC CARIBE WAVE/LANTEX 15 initial dummy message received by your TWFP? Please indicate the time from each TWC. Please note time using 24 hour clock and UTC, e.g., 14:35 UTC- US PTWC- US NTWC**

Answered: 31 Skipped: 8

Anguilla**:** 1355

Antigua and Barbuda**:** -US PTWC14:00

Aruba**:** 1405 utc

Bahamas**:** DUMMY – Wed, Mar 25, 2015 at 1391 UTC Message #1 – 1420 UTC All others on time.

Belize**:** 1354 UTC

Bermuda**:** 1302 UTC via AIS 1303 UTC via email

British Virgin Islands**:** US NTWC- 09:04

Cayman Islands**:** US PTWC – 1405 UTC

Colombia**:** US PTWC: 14:05 UTC US NTWC: 13:03 UTC

Costa Rica**:** US PTWC 14:05 UTC

Curaçao**:** US PTWC 14.06 UTC

Dominica**:** Us PTWC 1405 UTC

Dominican Republic: 14:05 UTC

France**:** US PTWC: 14:36 UTC

Guatemala**:** 14:05 utc

Haiti**:** 14 hour 46 minutes UTC

Honduras**:** Los mensajitos fueron recibidos a veces cada 5 minutos o cada minuto : PTWC 13:54/ 14:05/ 14:05 este mensaje fue el de inicio por lo que hubiese sido el primer mensaje /14:05/ 14:00/ 14:30/ 14:30/ 15:00/ NTWC: 15:00/ 15:01/ 15:59/ 16:02/ 16:02/ 16:58/ 17:01/ 17:01/ 18:00/ 19:00/ 19:01/ 19:45/ 19:45/.

Jamaica**:** 14:05 UTC

Mexico**:** PTWC 13:54 UTC

Montserrat**:** 5/4/2015 9:54:00 AM

Nicaragua**:** 14:05 UTC

Panama**:** 5/4/2015 2:05:00 PM

Puerto Rico**:** US NTWC 14:05 UTC

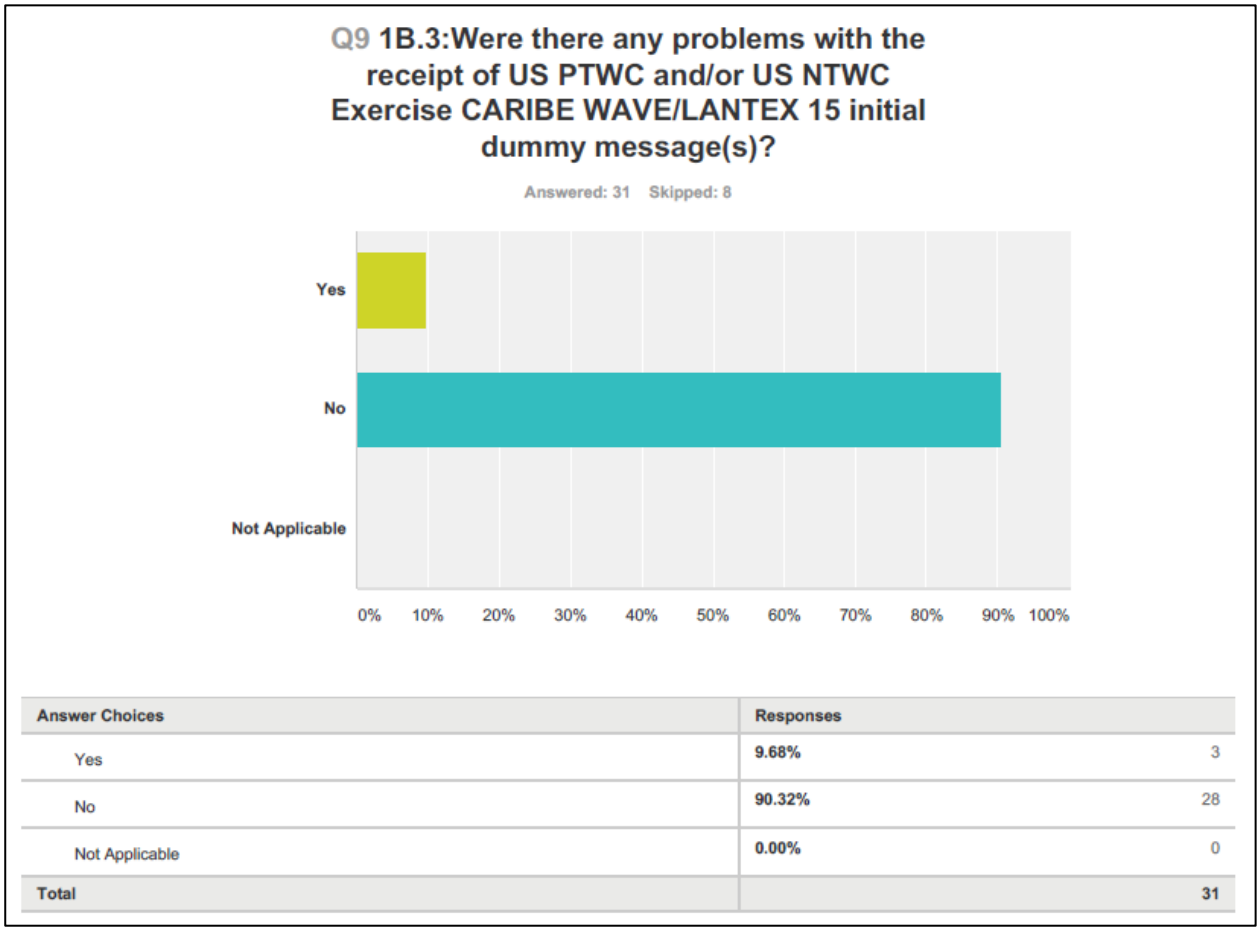
Saint Vincent and the Grenadines**:** 1410

Trinidad and Tobago**:** Unknown at this time.

Turks and Caicos**:** US PTWC – 14:06 UTC

US Virgin Islands**:** 010:00

Venezuela**:** US PTWC at 14:35 UTC




| Answer Choices | Responses | |
|---|---|---|
| Yes | 9.68% | 3 |
| No | 90.32% | 28 |
| Not Applicable | 0.00% | 0 |
| Total | | 31 |

YES**:** Bermuda, Dominican Republic, Haiti

NO**:** Anguilla, Antigua and Barbuda, Aruba, Bahamas, Belize, British Virgin Islands, Cayman Islands, Colombia, Costa Rica, Curaçao, Dominica, France, Guatemala, Honduras, Jamaica, Mexico, Montserrat, Nicaragua, Panama, Puerto Rico, Saint Vincent and the Grenadines, Sint Maarten, Trinidad and Tobago, Turks and Caicos, US Virgin Islands, Venezuela

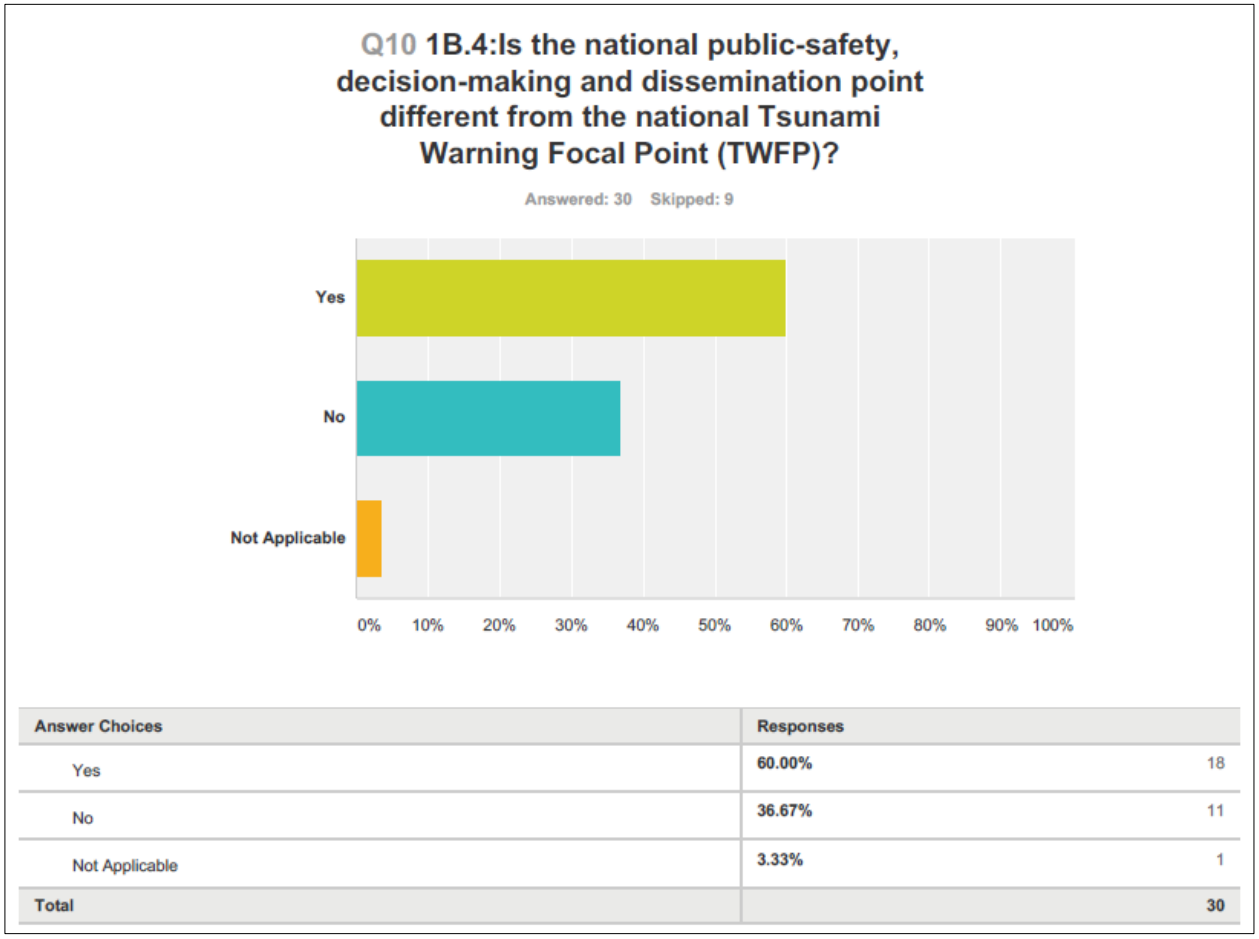
NOT APPLICABLE**:** N/A

**Comments**

Bermuda**:** Email did not match exercise booklet.

Dominican Republic**:** We don't receive the dummy by the official e-mail address.

Haiti**:** TWFP's email has been changed.




| Answer Choices | Responses | |
|---|---|---|
| Yes | 60.00% | 18 |
| No | 36.67% | 11 |
| Not Applicable | 3.33% | 1 |
| Total | | 30 |

YES**:** Anguilla, Antigua and Barbuda, Bahamas, Bermuda, British Virgin Islands, Colombia, Dominica, Dominican Republic, France, Guatemala, Honduras, Jamaica, Mexico, Montserrat, Nicaragua, Panama, Trinidad and Tobago, Turks and Caicos

NO**:** Aruba, Belize, Cayman Islands, Costa Rica, Curaçao, Puerto Rico, Saint Vincent and the Grenadines, Sint Maarten, US Virgin Islands, Venezuela

**Comments**

Bahamas**:** Dept of Meteorology prepares message to be sent to NEMA which then dissimates as necessary.

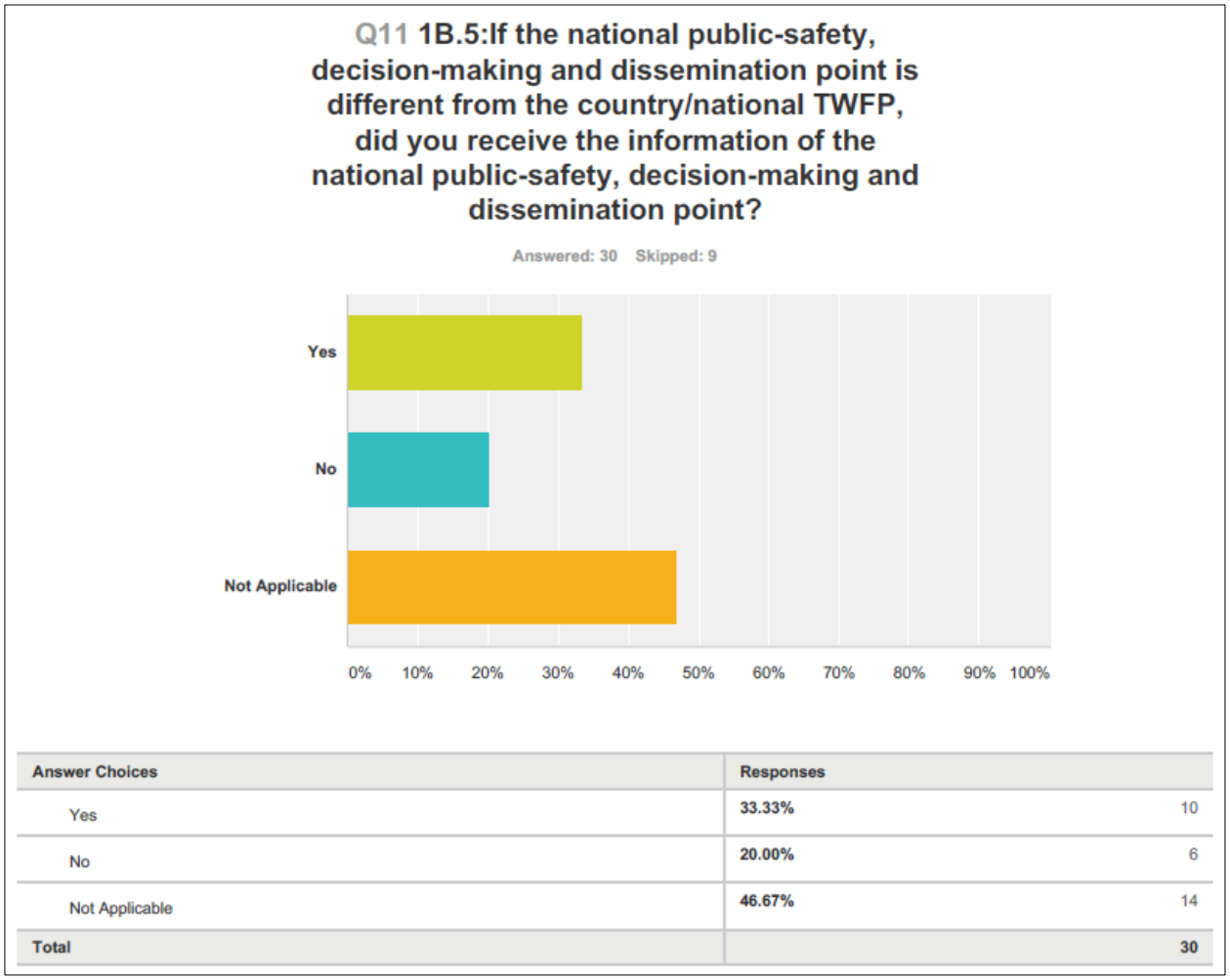
Bermuda**:** BWS is the TWFP for BDA we disseminate to the Emergency Measure Org and National Disaster Coordinator.

France**:** We have 3 TWFP (1 in Martinique, 1 in Guadeloupe and 1 in French Guyana). All are link together for redondance. We also have 4 NDMO (1 in Martinique, 1 in Guadeloupe, 1 in Saint-Martin and 1 in French-Guyana).

Montserrat**:** No formal documentation in place so this is facilitated by my Department.

Nicaragua**:** The national public-safety, decision-making and dissemination point is CD-SINAPRED and Civil Defense, and the TWFP is INETER.

Turks and Caicos**:** For the TCI the National Tsunami Warning Focal Point is the 911 Emergency Coordination Centre, while the DDME, who is responsible for national public safety, decision-making and information dissemination is the National Tsunami Contact.




| Answer Choices | Responses | |
|---|---|---|
| Yes | 33.33% | 10 |
| No | 20.00% | 6 |
| Not Applicable | 46.67% | 14 |
| Total | | 30 |

YES**:** Anguilla, Antigua and Barbuda, Bahamas, British Virgin Islands, Dominica, France, Honduras, Nicaragua, Trinidad and Tobago, Turks and Caicos

NO**:** Aruba, Dominican Republic, Guatemala, Jamaica, Mexico, Panama

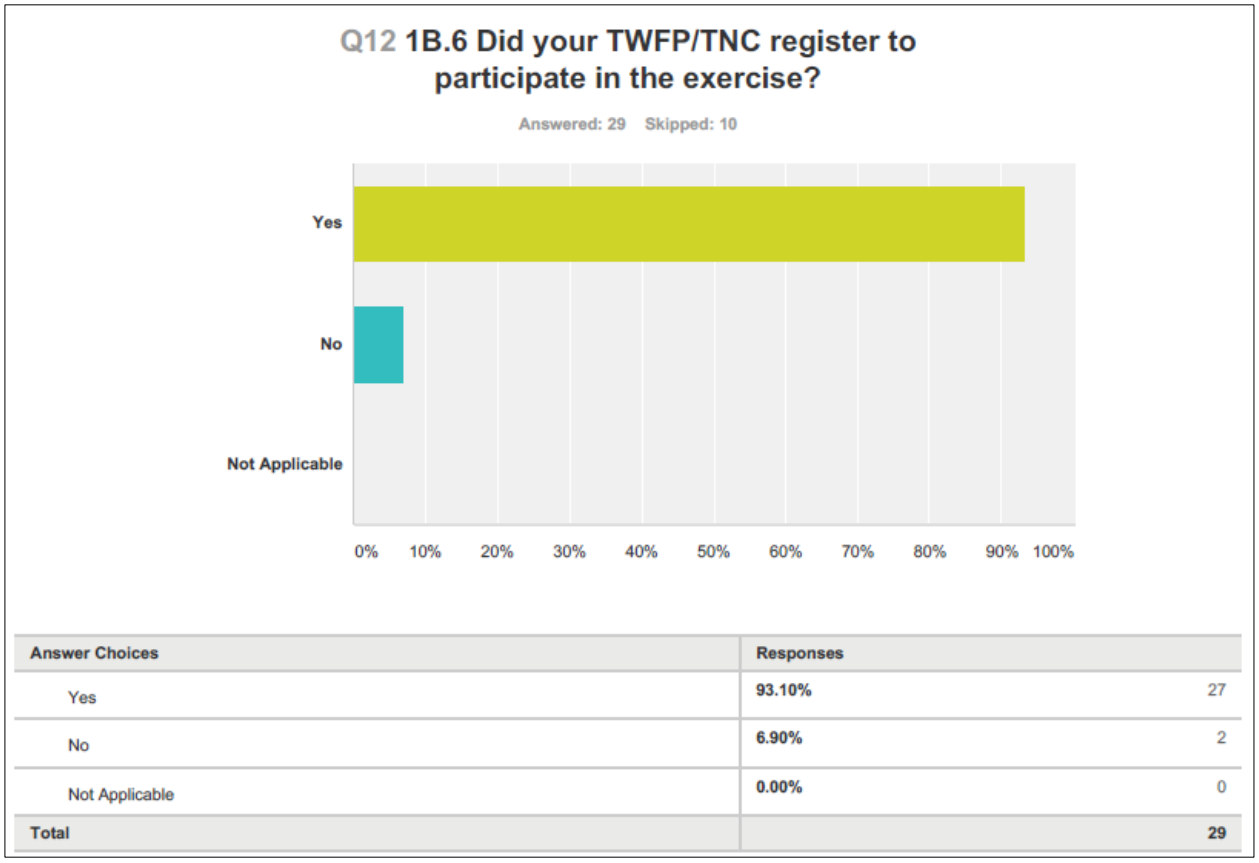
NOT APPLICABLE**:** Belize, Bermuda, Cayman Islands, Colombia, Costa Rica, Curaçao, Haiti, Montserrat, Puerto Rico, Saint Vincent and the Grenadines, Sint Maarten, US Virgin Islands, Venezuela

**Comments**

Bermuda**:** See above answer.

France**:** The NDMO of Martinique, Guadeloupe, and Saint-Martin are coordinated by the COZ (zonal operation center) based in Martinique and depending from EMIZA all are depending.

Nicaragua**:** But i8nformation about the exercise not about the PTWC messages.




| Answer Choices | Responses | |
|---|---|---|
| Yes | 93.10% | 27 |
| No | 6.90% | 2 |
| Not Applicable | 0.00% | 0 |
| Total | | 29 |

YES**:** Anguilla, Antigua and Barbuda, Aruba, Bahamas, Belize, Bermuda, British Virgin Islands*, Cayman Islands, Colombia, Costa Rica, Curaçao, Dominica, Dominican Republic, France, Guatemala, Haiti, Montserrat, Nicaragua, Panama, Puerto Rico, Saint Vincent and the Grenadines, Sint Maarten, Trinidad and Tobago, Turks and Caicos, US Virgin Islands, Venezuela

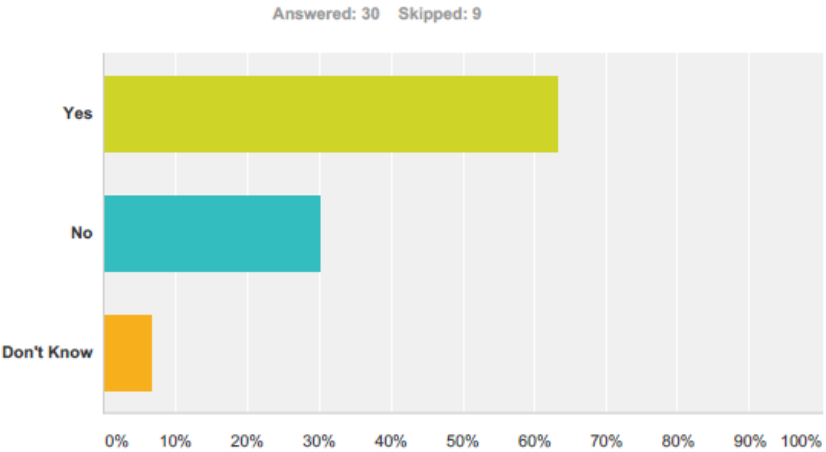
NO**:** British Virgin Islands*, Jamaica

*This survey was filled out twice by the same person with different answers.

**Comments**

France**:** The official designation of our TWFP and NDMO is in progress to UNESCO/IOC.

Nicaragua**:** INETER, CD-SINAPRED, and Civil Defense were register to participate in the exercise.




| Answer Choices | Responses | |
|---|---|---|
| Yes | 63.33% | 19 |
| No | 30.00% | 9 |
| Don't Know | 6.67% | 2 |
| Total | | 30 |

YES**:** Antigua and Barbuda, Aruba, Belize, Bermuda, British Virgin Islands*, Colombia, Curaçao, Dominica, Guatemala, Honduras, Mexico, Montserrat, Puerto Rico, Saint Vincent and the Grenadines, Sint Maarten, Trinidad and Tobago, Turks and Caicos, Venezuela

NO**:** Bahamas, British Virgin Islands*, Cayman Islands, Costa Rica, Dominican Republic, France, Haiti, Nicaragua, Panama

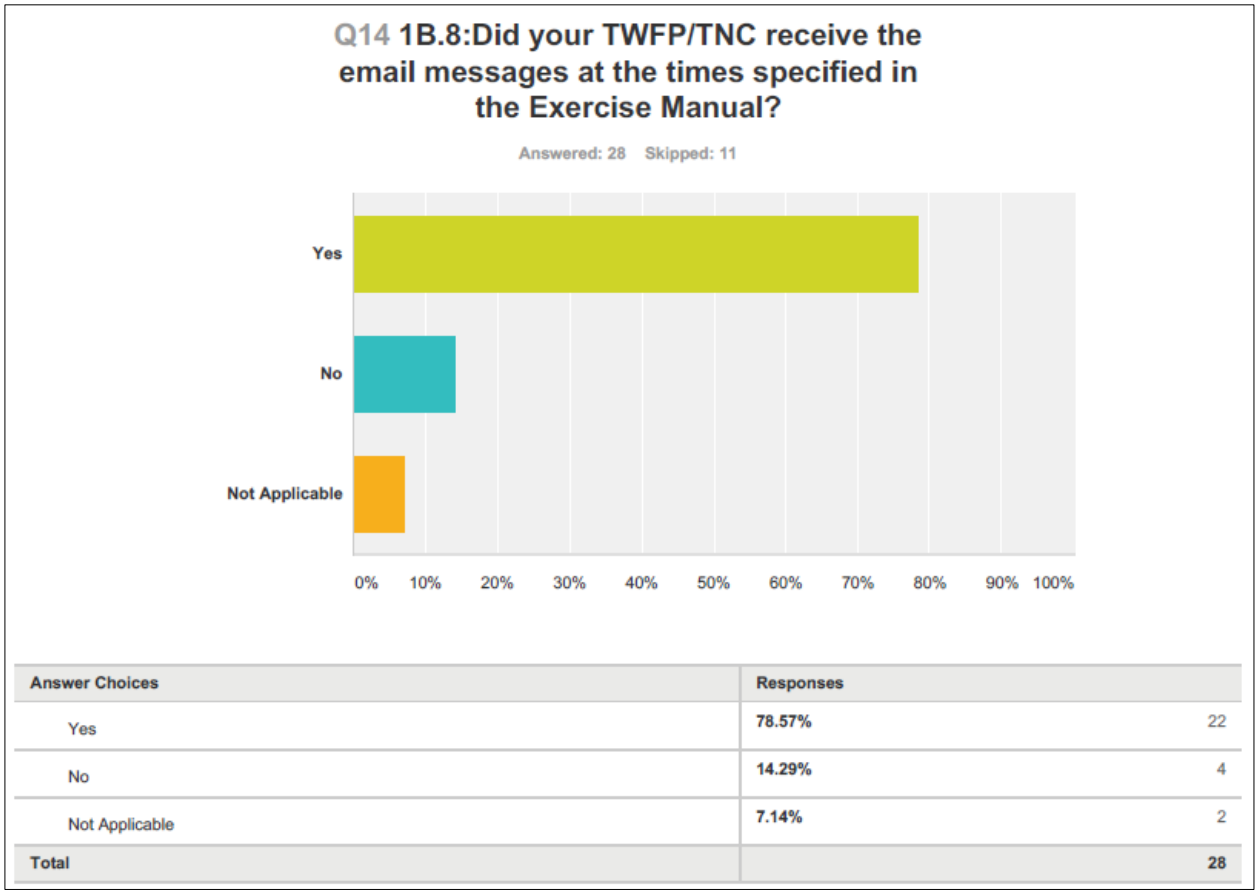
DON'T KNOW**:** Jamaica, US Virgin Islands

*This survey was filled out twice by the same person with different answers**.**

**Comments**

France**:** We were not concerned with the Florida scenario.

Nicaragua**:** Only from US PTWC.




| Answer Choices | Responses | |
|---|---|---|
| Yes | 78.57% | 22 |
| No | 14.29% | 4 |
| Not Applicable | 7.14% | 2 |
| Total | | 28 |

YES**:** Antigua and Barbuda, Aruba, Belize, Bermuda, British Virgin Islands*, Cayman Islands, Colombia, Costa Rica, Curaçao, Dominica, Dominican Republic, France, Mexico, Montserrat, Nicaragua, Panama, Puerto Rico, Saint Vincent and the Grenadines, Turks and Caicos, US Virgin Islands, Venezuela

NO**:** Guatemala, Haiti, Honduras, Sint Maarten

NOT APPLICABLE**:** British Virgin Islands*, Jamaica

*This survey was filled out twice by the same person with different answers**.**

**Comments**

Bahamas**:** NEMA did but the Met did not until the third message.

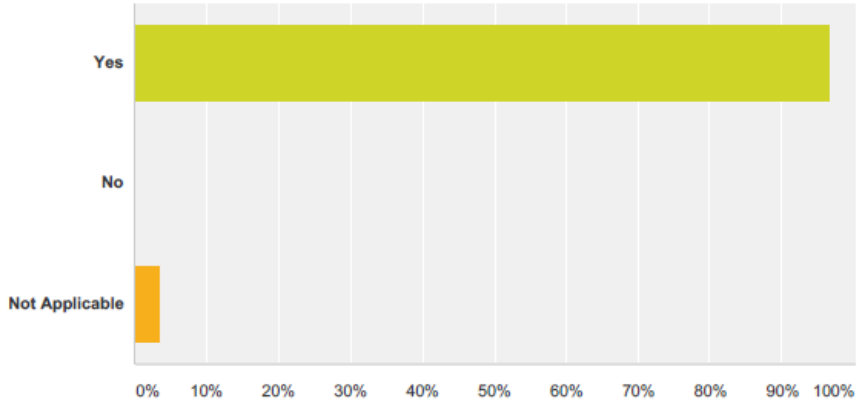
Cayman Islands**:** For most of the exercise.

Saint Vincent and the Grenadines**:** Initial message was a few minutes late.

Sint Maarten**:** Messages 5&6 were delayed due to mailserver issues on our side.

**Q15 1B.9:Information provided in the relevant international warning centre messages was understood by the Tsunami Warning Focal Point.**

Answered: 30 Skipped: 9




| Answer Choices | Responses | |
|---|---|---|
| Yes | 96.67% | 29 |
| No | 0.00% | 0 |
| Not Applicable | 3.33% | 1 |
| Total | | 30 |

YES**:** Antigua and Barbuda, Aruba, Bahamas, Belize, Bermuda, British Virgin Islands, Cayman Islands, Colombia, Costa Rica, Curaçao, Dominica, Dominican Republic, France, Guatemala, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Puerto Rico, Saint Vincent and the Grenadines, Sint Maarten, Trinidad and Tobago, Turks and Caicos, US Virgin Islands, Venezuela

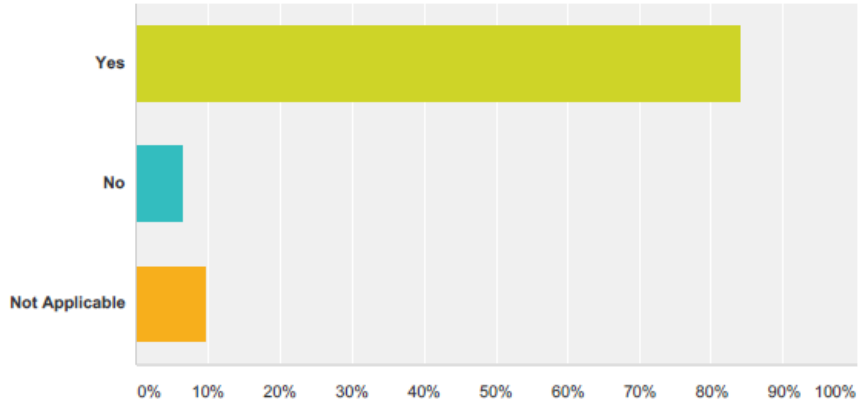
NOT APPLICABLE**:** Montserrat

**Comments**

Nicaragua**:** Before the CaribeWave15, the TWFP and TNC were training with the new enhanced products of PTWC for Pacific Ocean and Caribbean Sea.

**Q16 1B.10:The information provided in the relevant international warning centre messages assisted with decision making, e.g., warning levels, earthquake parameters, estimated arrival times, forecast wave heights, etc.**

Answered: 31 Skipped: 8




| Answer Choices | Responses | |
|---|---|---|
| Yes | 83.87% | 26 |
| No | 6.45% | 2 |
| Not Applicable | 9.68% | 3 |
| Total | | 31 |

YES**:** Antigua and Barbuda, Aruba, Bahamas, Bermuda, British Virgin Islands, Cayman Islands, Colombia, Costa Rica, Curaçao, Dominica, Dominican Republic, France, Guatemala, Haiti, Honduras, Mexico, Montserrat, Nicaragua, Panama, Puerto Rico, Saint Vincent and the Grenadines, Turks and Caicos, US Virgin Islands, Venezuela

NO**:** Anguilla, Trinidad and Tobago

NOT APPLICABLE**:** Belize, Jamaica, Sint Maarten

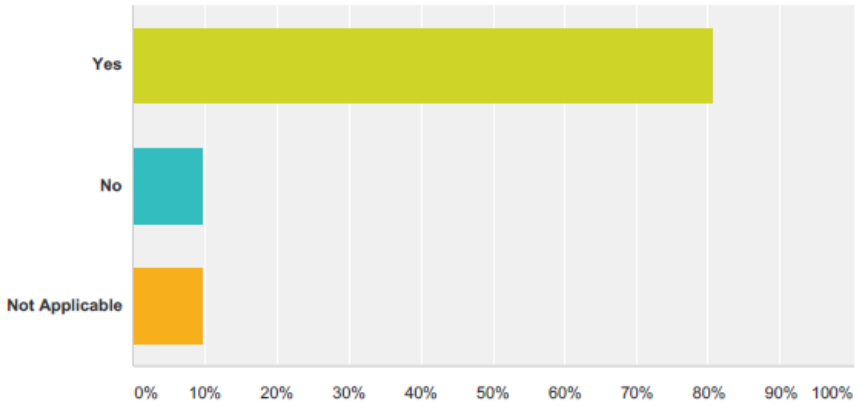
**Comments**

Nicaragua**:** After the PTWC message #1, CD-SINAPRED declared red alert to the Nicaraguan Caribbean Coast.

Saint Vincent and the Grenadines**:** Forecast Wave heights were NOT included and led to larger evacuation processes than otherwise.

**Q17 1B.11:The information provided was fully utilised by TWFP.**

Answered: 31 Skipped: 8



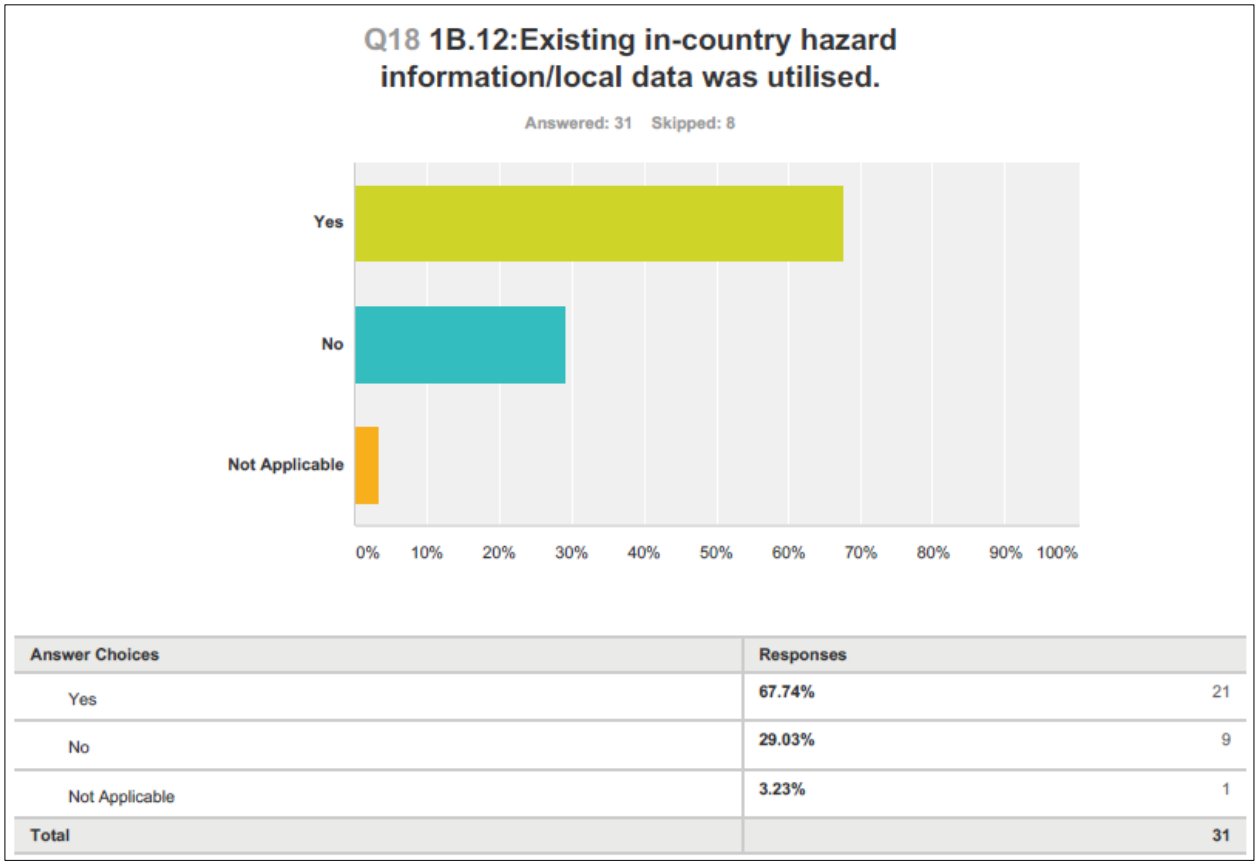

| Answer Choices | Responses | |
|---|---|---|
| Yes | 80.65% | 25 |
| No | 9.68% | 3 |
| Not Applicable | 9.68% | 3 |
| Total | | 31 |

YES**:** Anguilla, Antigua and Barbuda, Aruba, Bahamas, Bermuda, British Virgin Islands*, Cayman Islands, Colombia, Costa Rica, Curaçao, Dominica, Dominican Republic, Guatemala, Haiti, Honduras, Mexico, Nicaragua, Panama, Puerto Rico, Saint Vincent and the Grenadines, Trinidad and Tobago, Turks and Caicos, US Virgin Islands, Venezuela

NO**:** Belize, Jamaica, Sint Maarten

NOT APPLICABLE**:** British Virgin Islands*, France, Montserrat

*This survey was filled out twice by the same person with different answers**.**




| Answer Choices | Responses | |
|---|---|---|
| Yes | 67.74% | 21 |
| No | 29.03% | 9 |
| Not Applicable | 3.23% | 1 |
| Total | | 31 |

YES**:** Anguilla, Antigua and Barbuda, Aruba, British Virgin Islands, Colombia, Costa Rica, Dominica, France, Honduras, Mexico, Montserrat, Nicaragua, Panama, Puerto Rico, Saint Vincent and the Grenadines, Trinidad and Tobago, Turks and Caicos, US Virgin Islands, Venezuela

NO**:** Bahamas, Belize, Bermuda, Curaçao, Dominican Republic, Guatemala, Haiti, Jamaica, Sint Maarten

NOT APPLICABLE**:** Cayman Islands

**Comments**

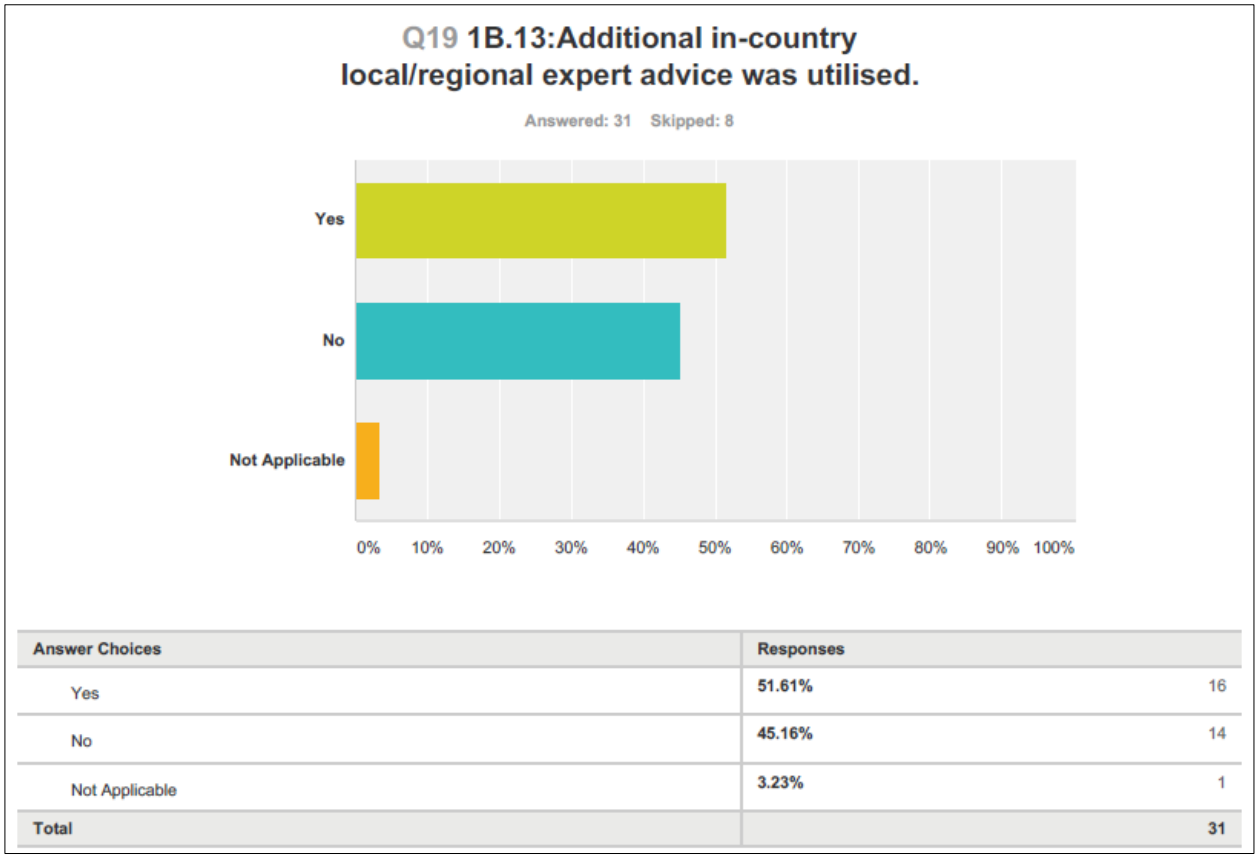
Bermuda**:** Bermuda government used this LANTEX exercise to start to draft some departmental SOPs.

Cayman Islands**:** We have very little hazard specific information in this country.

Dominican Republic**:** We have information, but this information don't was utilised.

France**:** We used a specific inundation map modelised through a local simulation system developed by the French university of the WI (UMR LARGE)

Turks and Caicos**:** Existing data was limited but what was available was utilized.




| Answer Choices | Responses | |
|---|---|---|
| Yes | 51.61% | 16 |
| No | 45.16% | 14 |
| Not Applicable | 3.23% | 1 |
| Total | | 31 |

YES**:** Anguilla, Antigua and Barbuda, Aruba, British Virgin Islands*, Colombia, Costa Rica, Dominica, France, Mexico, Nicaragua, Panama, Puerto Rico, Turks and Caicos, US Virgin Islands, Venezuela

NO**:** Bahamas, Belize, Bermuda, British Virgin Islands*, Cayman Islands, Curaçao, Dominican Republic, Guatemala, Haiti, Honduras, Jamaica, Saint Vincent and the Grenadines, Sint Maarten, Trinidad and Tobago

NOT APPLICABLE**:** Montserrat

*This survey was filled out twice by the same person with different answers**.**

**Comments**

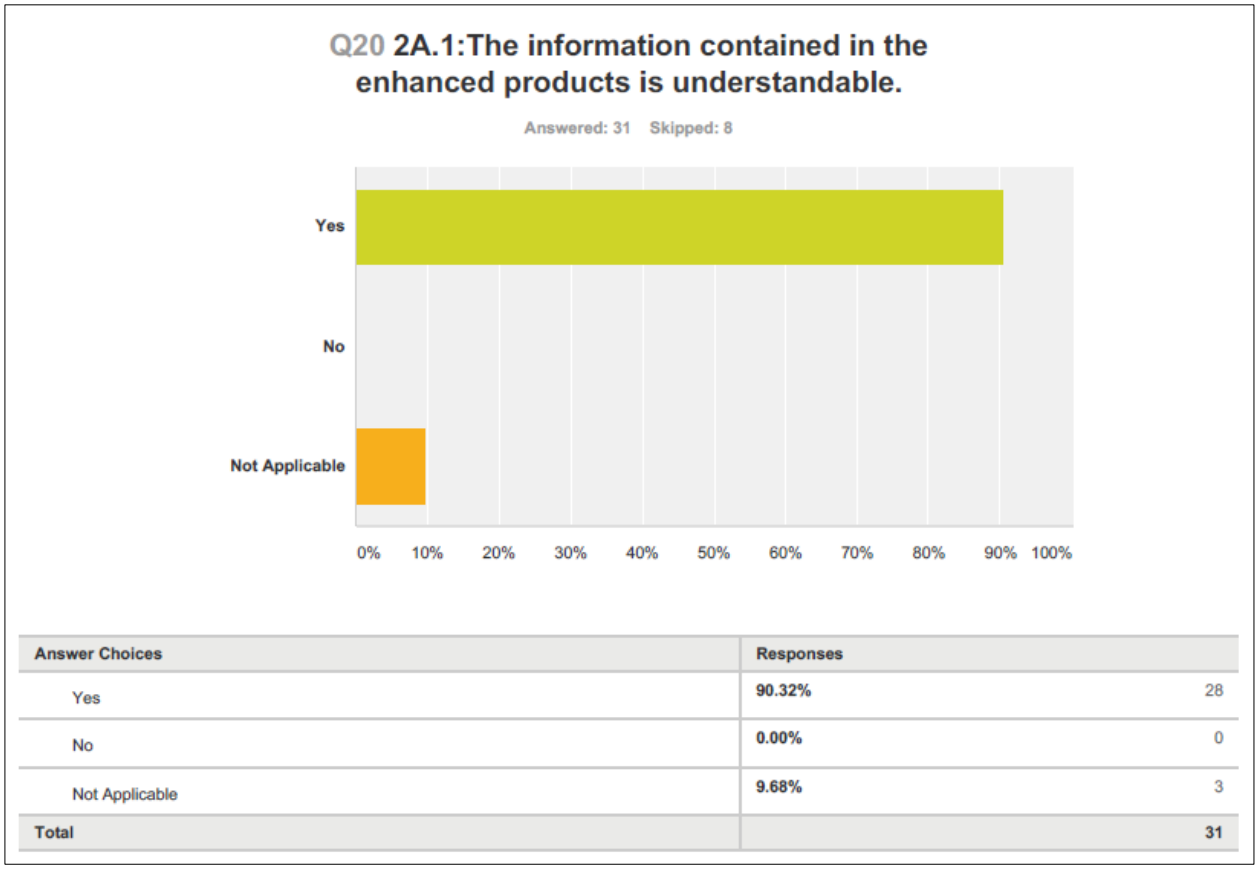
Bermuda**:** Beyond BWS there is no local/regional inf.

France**:** We've activated a special task team composed of earth expert (IPGP/OVSM), planning experts (DEAL, town planner), to monitor the tsunami and assist the 3 NDMO. This special task team was based on low deep bathymetric data.

Honduras**:** Mande mensaje para compartir informacion con INETER de Nicaragua y no obtuvimos respuesta de nadie en la region.

Nicaragua**:** Comments from national tsunami expert (PhD. Wilfried Strauch) was utilised.

Puerto Rico**:** Puerto Rico Seismic Network (PRSN).




| Answer Choices | Responses | |
|---|---|---|
| Yes | 90.32% | 28 |
| No | 0.00% | 0 |
| Not Applicable | 9.68% | 3 |
| Total | | 31 |

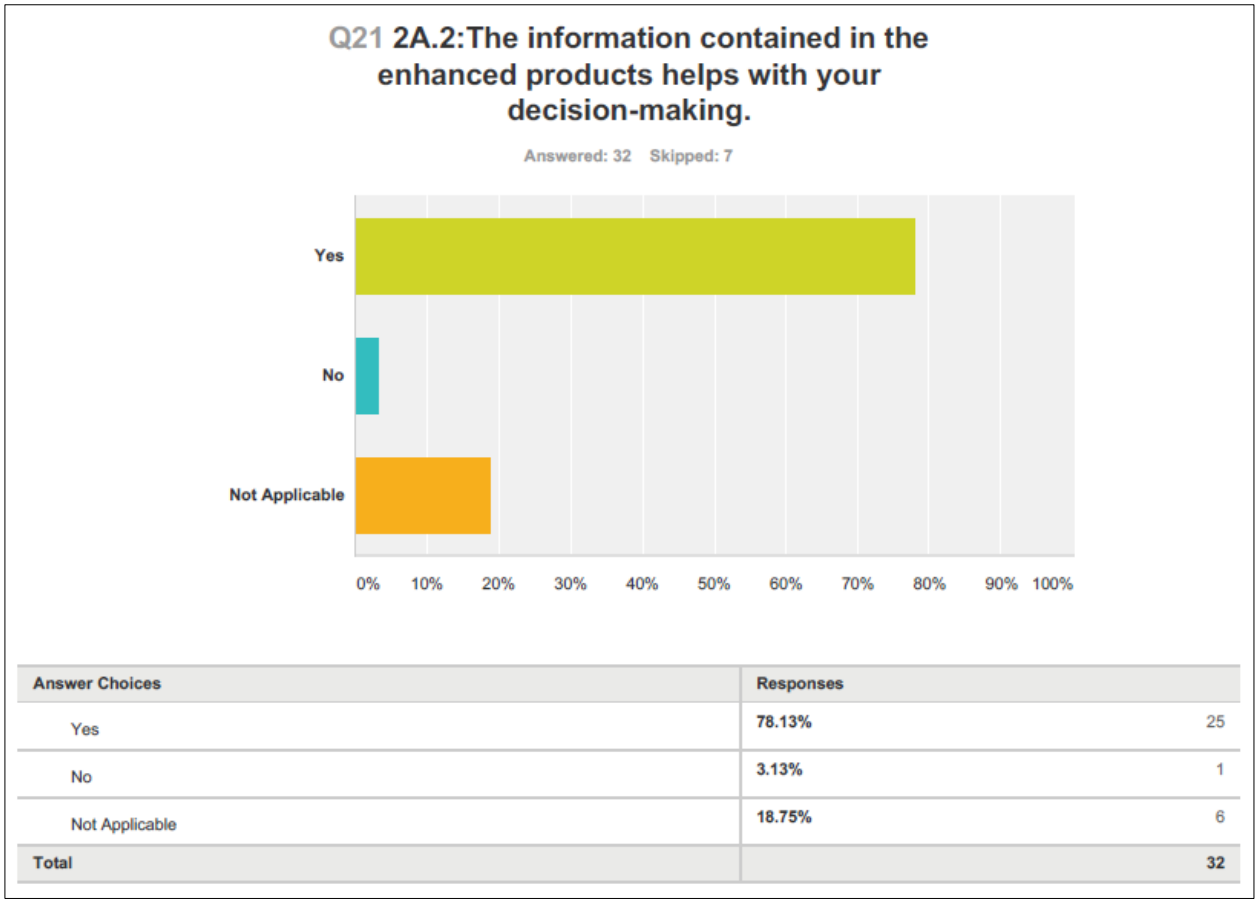
YES**:** Anguilla, Antigua and Barbuda, Aruba, Bahamas, Belize, Bermuda, Cayman Islands, Colombia, Costa Rica, Dominica, Dominican Republic, France, Guatemala, Haiti, Honduras, Jamaica, Mexico, Montserrat, Nicaragua, Panama, Puerto Rico, Saint Vincent and the Grenadines, Sint Maarten, Suriname, Trinidad and Tobago, Turks and Caicos, US Virgin Islands, Venezuela

NOT APPLICABLE**:** British Virgin Islands, Curaçao

**Comments**

Dominica**:** Though at times not the clearest or most comprehensive.

France**:** Easy to read on Google Earth and very kind to display.




| Answer Choices | Responses | |
|---|---|---|
| Yes | 78.13% | 25 |
| No | 3.13% | 1 |
| Not Applicable | 18.75% | 6 |
| Total | | 32 |

YES**:** Anguilla, Aruba, Bahamas, Bermuda, Cayman Islands, Colombia, Costa Rica, Dominica, Dominican Republic, France, Guatemala, Haiti, Honduras, Mexico, Nicaragua, Panama, Puerto Rico, Saint Lucia, Saint Vincent and the Grenadines, Sint Maarten, Suriname, Trinidad and Tobago, Turks and Caicos, US Virgin Islands, Venezuela

NO**:** Antigua and Barbuda

NOT APPLICABLE**:** Belize, British Virgin Islands, Curaçao, Jamaica, Montserrat

**Comments**

Bermuda**:** Assists with BWS communicating better to the EMO decision makers.

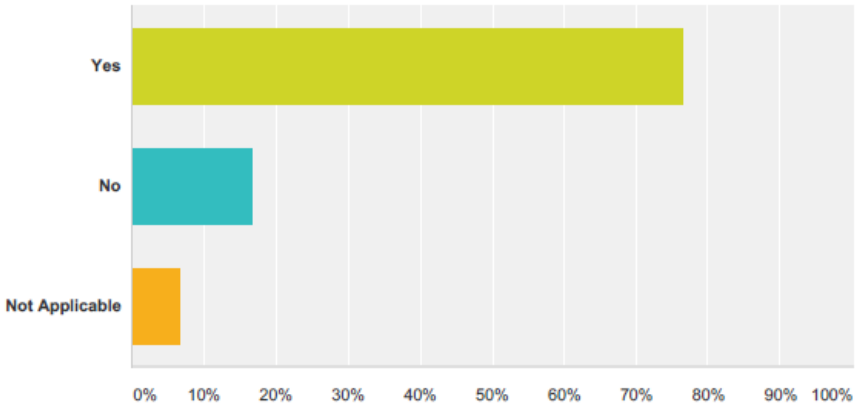
France**:** These information were completely completmentary with those obtain with our simulation. Indeed, the height of wave given with the PTWC enhanced products.

Nicaragua**:** Because to declare red alert was take into account the earthquake parameters and the estimated arrival time and forecast wave heights that would affect the Caribbean Coast of Nicaragua.

Saint Lucia**:** The information is timely and concise.

**Q22 2B.1: Staging: Should forecast threat levels be included in the initial first product, knowing that forecasts are likely to change over the first hour as seismic data and sea level data are received and analyzed?**

Answered: 30 Skipped: 9




| Answer Choices | Responses | |
|---|---|---|
| Yes | 76.67% | 23 |
| No | 16.67% | 5 |
| Not Applicable | 6.67% | 2 |
| Total | | 30 |

YES**:** Anguilla, Bahamas, Belize, Bermuda, Cayman Islands, Colombia, Costa Rica, Dominican Republic, France, Honduras, Mexico, Montserrat, Nicaragua, Panama, Puerto Rico, Saint Vincent and the Grenadines, Sint Maarten, Suriname, Trinidad and Tobago, Turks and Caicos, US Virgin Islands, Venezuela

NO**:** Aruba, Curaçao, Dominica, Guatemala

NOT APPLICABLE**:** British Virgin Islands

**Comments**

Antigua and Barbuda**:** Not sure.

Colombia**:** Especialmente útil para un evento local, cuando los tiempos de arribo de la ola son menores a 30 minutos.

France**:** Forecast threat levels are very important in decision making and to confort our authorities in tehir decision.

Guatemala**:** Only in the first product the threat alert and than the levels.

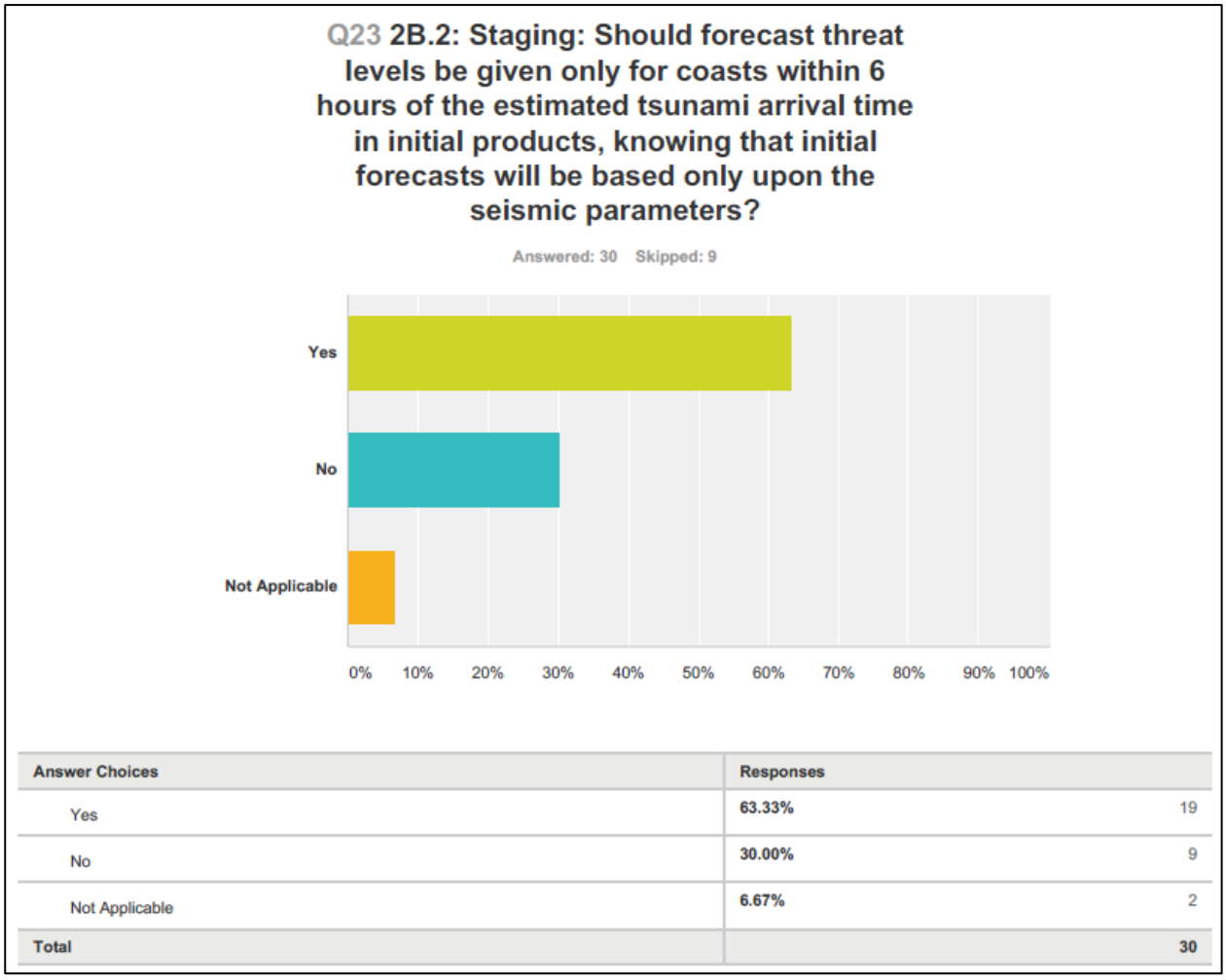
Nicaragua**:** Because, for local tsunami is very important have the information as fast as be possible.

Saint Vincent and the Grenadines**:** THE HEIGHT OF THE WAVES WAS NOT RECEIVED UNTIL THE 1605 MESSAGE, BY THEN EVACUATION ORDERS WERE GIVEN FOR 3 M WAVE.

Sint Maarten**:** It would at least create sufficient awareness about the possible threat.

Trinidad and Tobago**:** With warning of possible changes as data is analysed for the following bulletin.

Turks and Caicos**:** Forecast threat levels should be included as it can assist with decision-making. It can also help in what type of warnings are issued to the public and at what time the warnings are issued.




| Answer Choices | Responses | |
|---|---|---|
| Yes | 63.33% | 19 |
| No | 30.00% | 9 |
| Not Applicable | 6.67% | 2 |
| Total | | 30 |

YES**:** Anguilla, Aruba, Bahamas, Belize, Bermuda, Colombia, Costa Rica, Curaçao, Dominica, Dominican Republic, Guatemala, Honduras, Mexico, Montserrat, Nicaragua, Sint Maarten, Trinidad and Tobago, US Virgin Islands, Venezuela

NO**:** Cayman Islands, France, Jamaica, Panama, Puerto Rico, Suriname, Turks and Caicos

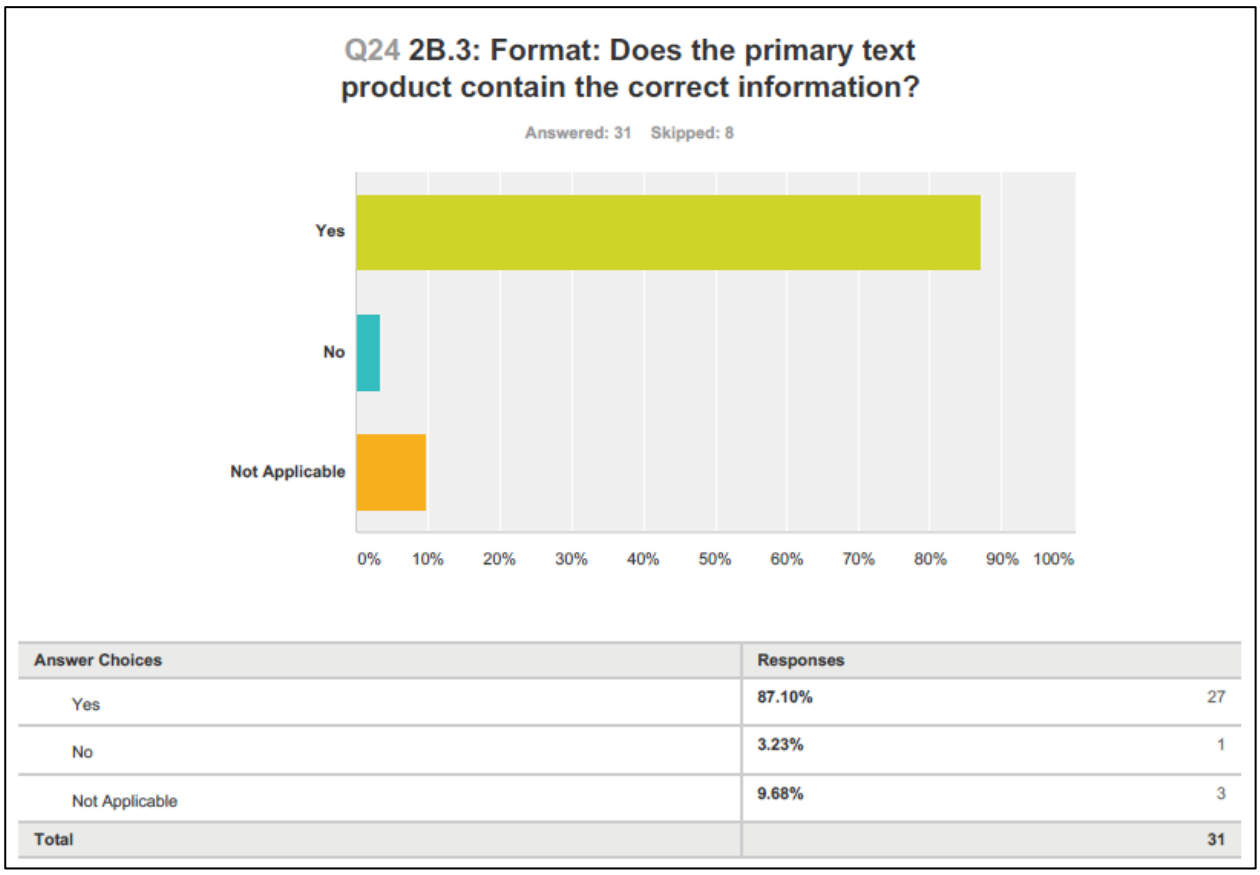
NOT APPLICABLE**:** British Virgin Islands

**Comments**

Antigua and Barbuda**:** Not sure.

Colombia**:** Para el caso de la cuenca del Caribe podrían ser menor a 6 horas.

Turks and Caicos**:** The threat levels can be issued to all countries within the threat parameters with the caveat that countries beyond six hours should treat the information as for informational purposes as they would recieve more updated .




| Answer Choices | Responses | |
|---|---|---|
| Yes | 87.10% | 27 |
| No | 3.23% | 1 |
| Not Applicable | 9.68% | 3 |
| Total | | 31 |

YES**:** Anguilla, Antigua and Barbuda, Aruba, Belize, Bermuda, Cayman Islands, Colombia, Costa Rica, Dominica, Dominican Republic, France, Guatemala, Haiti, Jamaica, Mexico, Montserrat, Nicaragua, Panama, Puerto Rico, Saint Vincent and the Grenadines, Sint Maarten, Suriname, Trinidad and Tobago, Turks and Caicos, US Virgin Islands, Venezuela

NO**:** Honduras

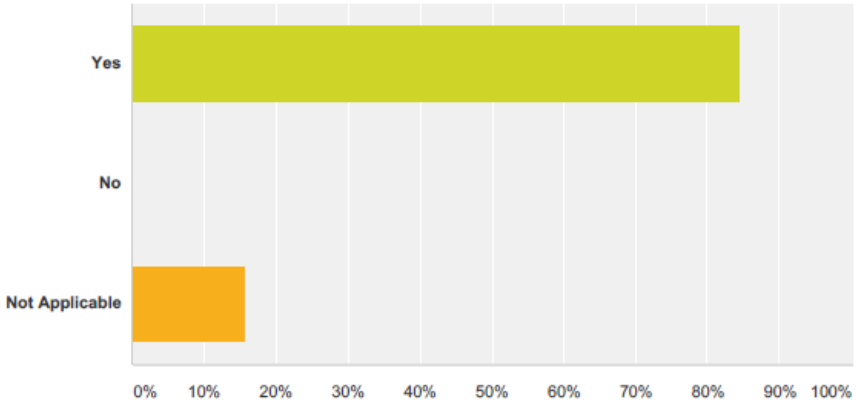
NOT APPLICABLE**:** British Virgin Islands, Curaçao

**Comments**

Antigua and Barbuda**:** Not sure.

**Q25 2B.4: Format: Does the proposed suite of products–primary text product, energy map, threat map, table of threat levels, table of arrival times–provide all the necessary information? Please note in Comments section.**

Answered: 32 Skipped: 7




| Answer Choices | Responses | |
|---|---|---|
| Yes | 84.38% | 27 |
| No | 0.00% | 0 |
| Not Applicable | 15.63% | 5 |
| Total | | 32 |

YES**:** Anguilla, Antigua and Barbuda, Aruba, Belize, Bermuda, Cayman Islands, Colombia, Costa Rica, Curaçao, Dominican Republic, France, Guatemala, Haiti, Honduras, Jamaica, Mexico, Montserrat, Nicaragua, Panama, Puerto Rico, Saint Lucia, Saint Vincent and the Grenadines, Suriname, Trinidad and Tobago, Turks and Caicos, US Virgin Islands, Venezuela

NOT APPLICABLE**:** Bahamas, British Virgin Islands, Dominica, Sint Maarten

**Comments**

Bahamas**:** Very helpful in allowing us to understand and explain what was happening more easily.

Colombia**:** La información debe ser analizada en su conjunto.

Dominican Republic**:** This inforación is complete.

France**:** Nevertheless, we've noticed a worst information onn the arrival time for Saint-Martin and Saint-Barthélémy. We supposed it's because of the 'band de Saba".

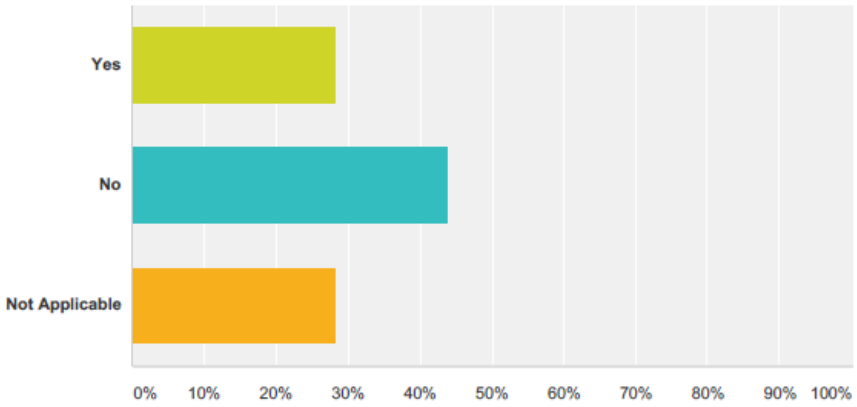
Montserrat**:** it was enough to make informed decisions.

Saint Lucia**:** Information provided is useful.

Turks and Caicos**:** Other information such as wave heights, inundation maps would also be useful for countries within the six hour threat parameter.

**Q26 2B.5: Content: Are there other products or information that should be included in the suite of products? Consider earthquake and tsunami information, and/or threat assessment products. Please provide comments.**

Answered: 32 Skipped: 7




| Answer Choices | Responses | |
|---|---|---|
| Yes | 28.13% | 9 |
| No | 43.75% | 14 |
| Not Applicable | 28.13% | 9 |
| Total | | 32 |

YES**:** Bermuda, Colombia, France, Guatemala, Haiti, Panama, Suriname, Turks and Caicos, Venezuela

NO**:** Aruba, Bahamas, Belize, Costa Rica, Curaçao, Dominican Republic, Honduras, Jamaica, Mexico, Nicaragua, Puerto Rico, Saint Vincent and the Grenadines, Trinidad and Tobago, US Virgin Islands

NOT APPLICABLE**:** Anguilla, Antigua and Barbuda, British Virgin Islands, Cayman Islands, Dominica, Montserrat, Sint Maarten

**Comments**

Bermuda**:** In a real event BWS would call PTWC to advise if a warning has been issued? (We collaborate with NHC this way so that their advisories state which countries have issued warnings).

Colombia**:** Por ejemplo, información sísmica tipo Shake Map.

Dominican Republic**:** This inforación is complete.

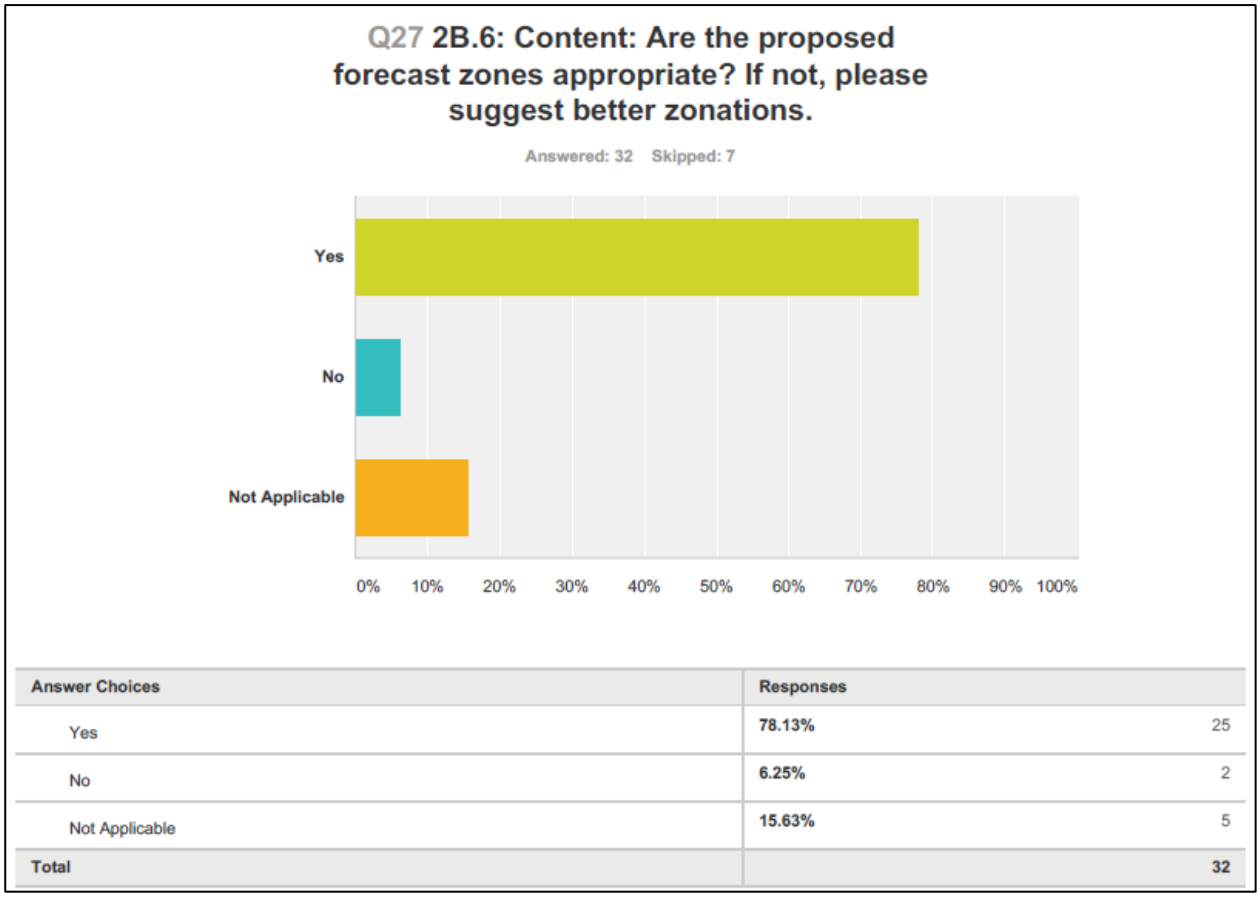
France**:** It should be interesting to know how many waves are in progess and the previsible frequency of the waves, and the total duration of the waves.

Haiti**:** Jacmel's tide gauge information missed.

Puerto Rico**:** The proposed suite of products provide all the necessary information.

Suriname**:** Earthquake info and wave travel times would be appreciated.

Turks and Caicos**:** as above, wave heights, inundation maps, and other useful coastal wave information would be useful in determining the appropriate course of action for countries with the six hour cone of impact.




| Answer Choices | Responses | |
|---|---|---|
| Yes | 78.13% | 25 |
| No | 6.25% | 2 |
| Not Applicable | 15.63% | 5 |
| Total | | 32 |

YES**:** Antigua and Barbuda, Aruba, Bahamas, Belize, Bermuda, Cayman Islands, Colombia, Costa Rica, Dominica, Dominican Republic, France, Guatemala, Haiti, Jamaica, Mexico, Nicaragua, Puerto Rico, Saint Vincent and the Grenadines, Sint Maarten, Suriname, Trinidad and Tobago, Turks and Caicos, US Virgin Islands, Venezuela

NO**:** Honduras, Panama

NOT APPLICABLE**:** Anguilla, British Virgin Islands, Curaçao, Montserrat

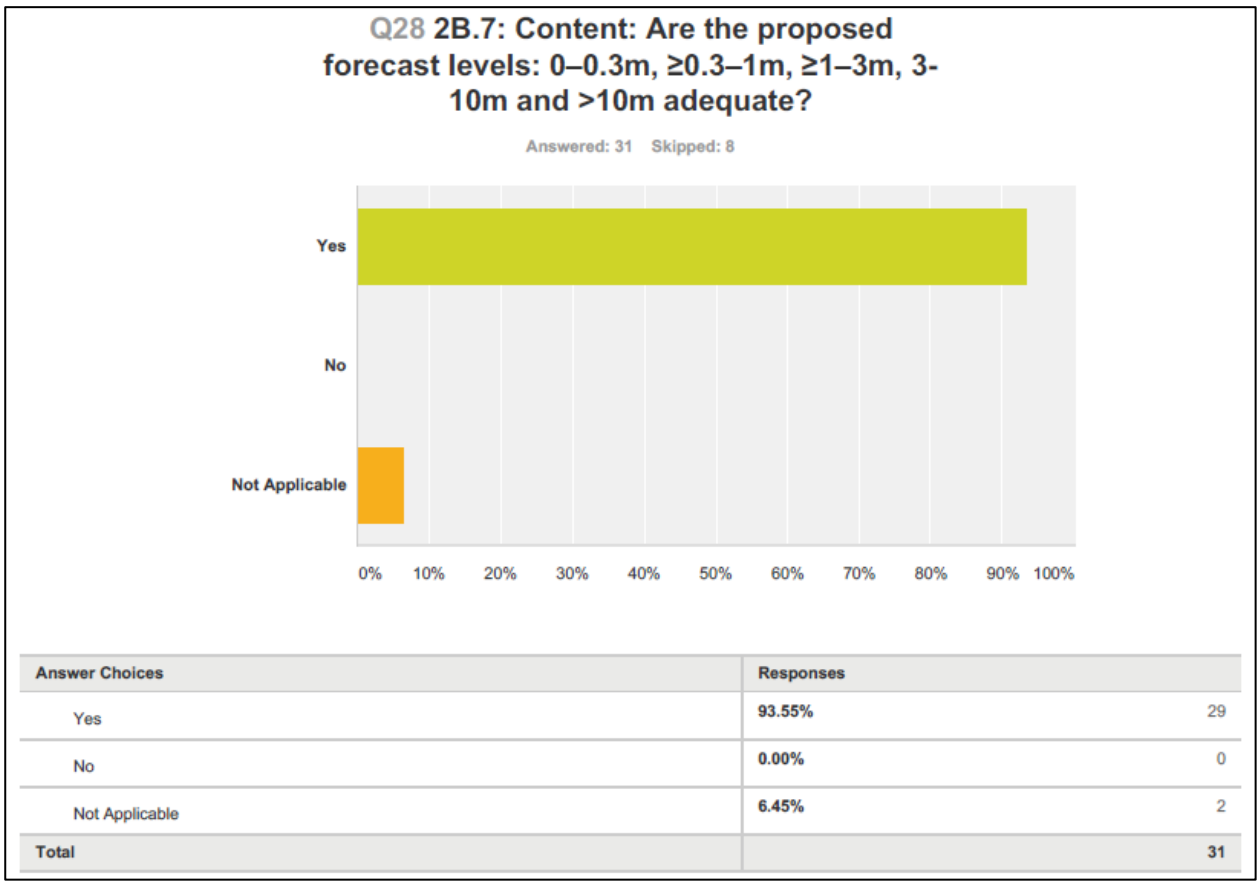
**Comments**

Haiti**:** Haiti's Islands missed.

Honduras**:** Se deben de mejorar las zonificaciones.

Panama**:** The ones corresponding to Panama should be improved.

Saint Vincent and the Grenadines**:** There is tele-tsunami threat from the Atlantic Ocean side likewise.




| Answer Choices | Responses | |
|---|---|---|
| Yes | 93.55% | 29 |
| No | 0.00% | 0 |
| Not Applicable | 6.45% | 2 |
| Total | | 31 |

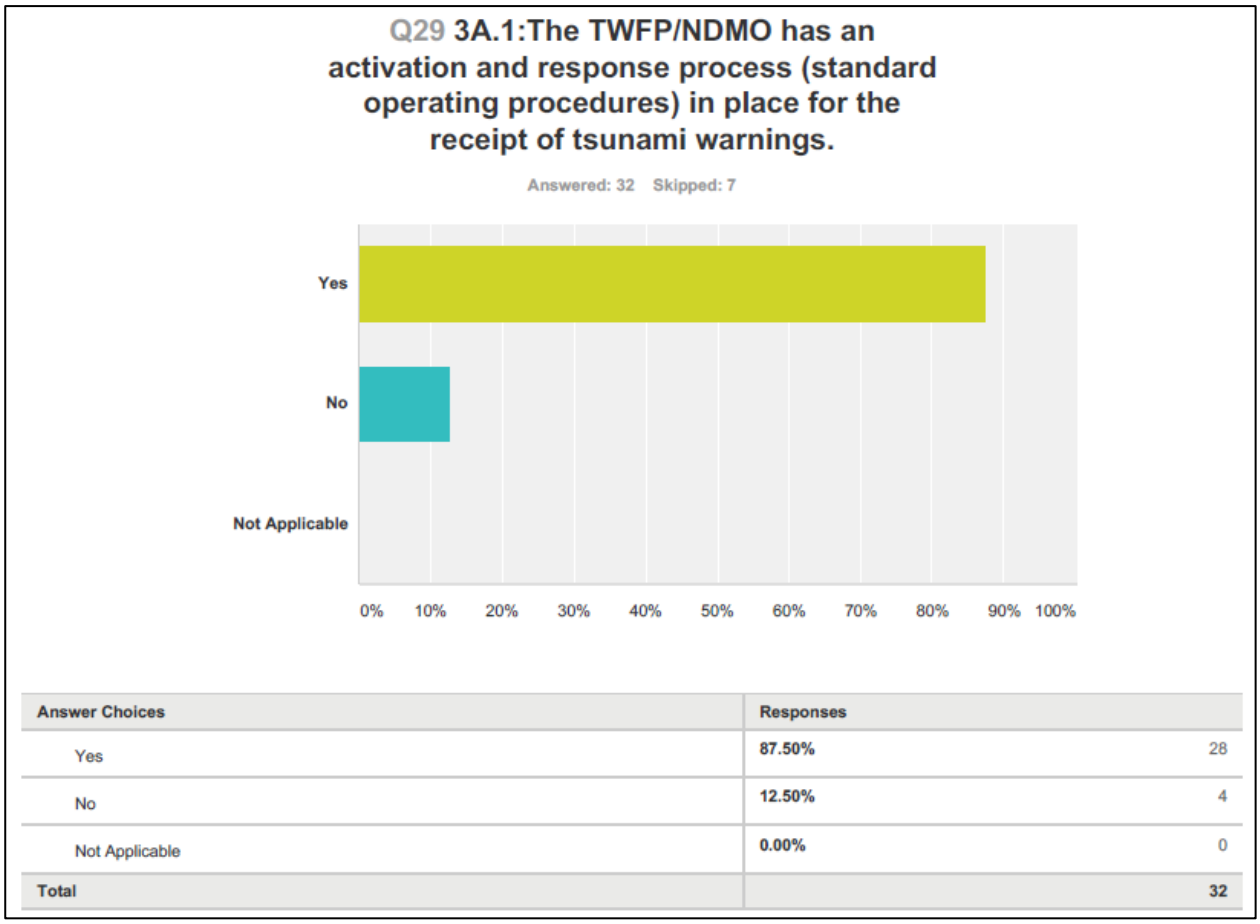
YES**:** Anguilla, Antigua and Barbuda, Aruba, Bahamas, Belize, Bermuda, British Virgin Islands*, Cayman Islands, Colombia, Costa Rica, Curaçao, Dominica, Dominican Republic, France, Guatemala, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Puerto Rico, Saint Vincent and the Grenadines, Sint Maarten, Suriname, Trinidad and Tobago, Turks and Caicos, US Virgin Islands, Venezuela

NOT APPLICABLE**:** British Virgin Islands*, Montserrat

*This survey was filled out twice by the same person with different answers**.**

**Comments**

France**:** But, it is important to know the distance to the coast and/or the depth at which this information is provided.




| Answer Choices | Responses | |
|---|---|---|
| Yes | 87.50% | 28 |
| No | 12.50% | 4 |
| Not Applicable | 0.00% | 0 |
| Total | | 32 |

YES**:** Anguilla, Antigua and Barbuda, Aruba, Bahamas, Bermuda, British Virgin Islands, Cayman Islands, Colombia, Costa Rica Curaçao, Dominica, Dominican Republic, France, Guatemala, Guyana, Haiti, Honduras, Mexico, Nicaragua, Panama, Puerto Rico, Saint Vincent and the Grenadines, Sint Maarten, Trinidad and Tobago, Turks and Caicos, US Virgin Islands, Venezuela

NO**:** Belize, Jamaica, Montserrat, Suriname

**Comments**

France**:** The SOP are in progress. OK for the TWFP procedures (see included) and for the alert dessemination scheme. Need to develop actions to be done to evacuate people, secure ships, ports, airports…

Honduras**:** Se pusieron en practica.

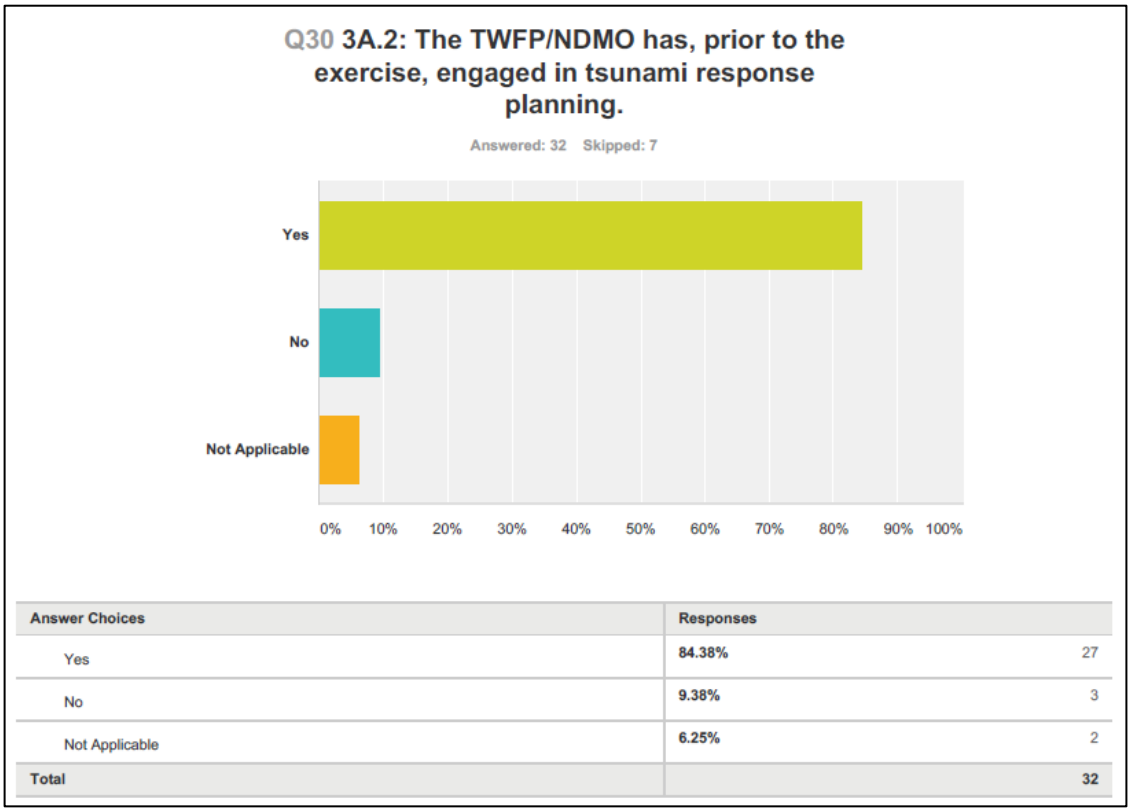
Nicaragua**:** The tsunami warnings always are receipt in the CODE (Emergency Operations Center), where are all national government agencies that are active in case of tsunami.

Saint Vincent and the Grenadines**:** TESTED THE DRAFT PROTOCOL.

Sint Maarten**:** The regular disaster management system will kick into place.

Trinidad and Tobago**:** Draft Tsunami Protocol.

Turks and Caicos**:** The draft SOPs were discussed in an Orientation Exercise prior to the start of the exercise.




| Answer Choices | Responses | |
|---|---|---|
| Yes | 84.38% | 27 |
| No | 9.38% | 3 |
| Not Applicable | 6.25% | 2 |
| Total | | 32 |

YES**:** Anguilla, Antigua and Barbuda, Aruba, Bahamas, Bermuda, Cayman Islands, Colombia, Costa Rica, Curaçao, Dominican Republic, France, Guatemala, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Puerto Rico, Saint Vincent and the Grenadines, Sint Maarten, Suriname, Trinidad and Tobago, Turks and Caicos, US Virgin Islands, Venezuela

NO**:** Belize, British Virgin Islands

NOT APPLICABLE**:** Dominica, Montserrat

**Comments**

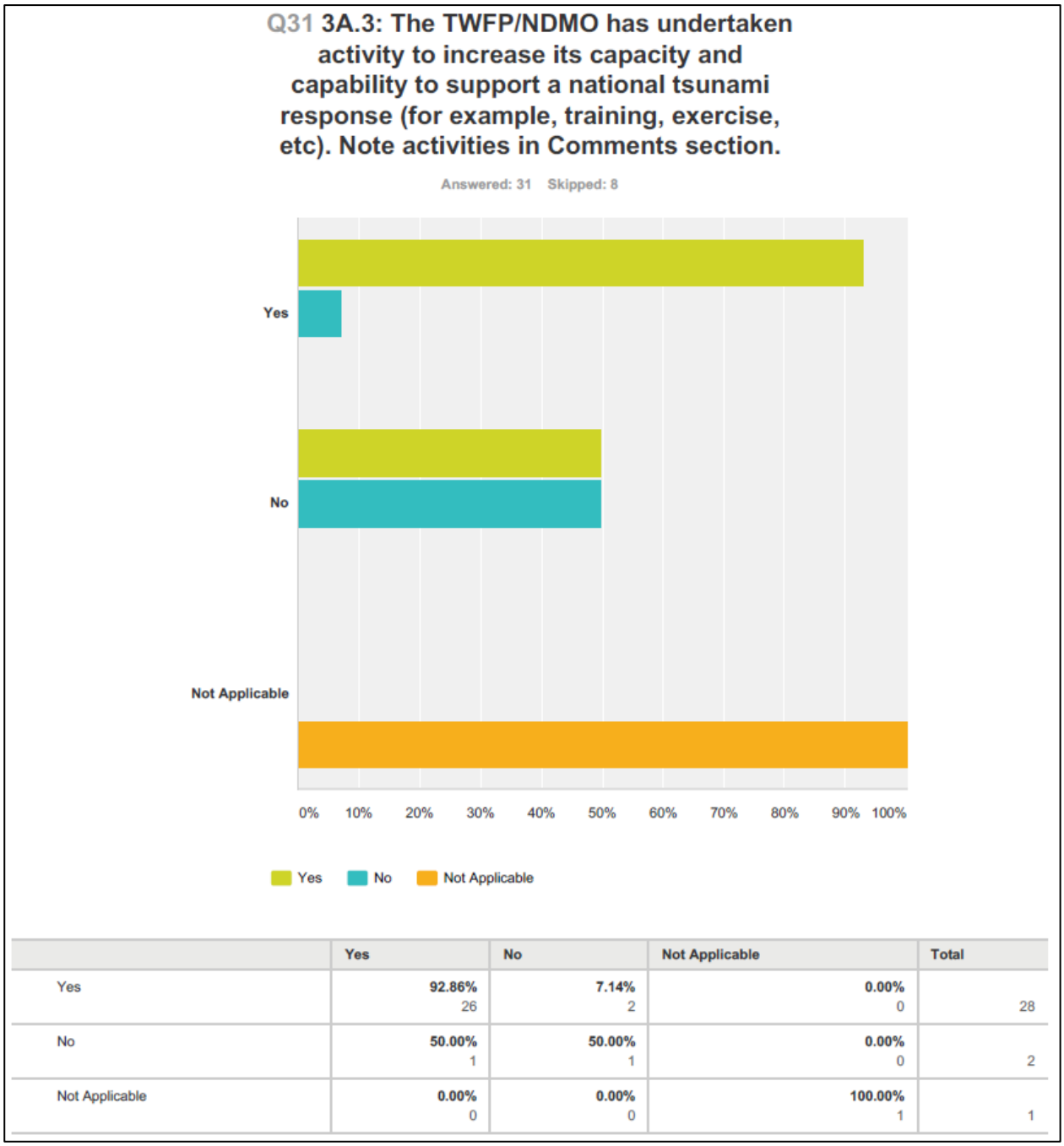
Bermuda**:** BWS has tried to encourage and assist EMO with tsunami response planning - we are hopeful that this year's exercise has given further support to the need of this DM sunect.

Dominica**:** We are still developing protocols in Dominica.

France**:** Validated for the TWFP. Not validated for NDMO, but most of the important issues of the plans are written or in progress.

Nicaragua**:** TWFP/NDMO were engage in response planning to the tsunami national exercise held on March 16.

Sint Maarten**:** But only very basic.




| | Yes | No | Not Applicable | Total |
|---|---|---|---|---|
| Yes | 92.86%<br>26 | 7.14%<br>2 | 0.00%<br>0 | 28 |
| No | 50.00%<br>1 | 50.00%<br>1 | 0.00%<br>0 | 2 |
| Not Applicable | 0.00%<br>0 | 0.00%<br>0 | 100.00%<br>1 | 1 |

YES**:** Anguilla, Antigua and Barbuda, Aruba, Bahamas, Bermuda, British Virgin Islands, Cayman Islands, Colombia, Costa Rica, Dominica, Dominican Republic, France, Guatemala, Honduras, Jamaica, Mexico, Nicaragua, Panama, Puerto Rico, Saint Vincent and the Grenadines, Sint Maarten, Suriname, Turks and Caicos, US Virgin Islands, Venezuela

NO**:** Curaçao, Guyana, Trinidad and Tobago

NOT APPLICABLE**:** Montserrat

**Comments**

Anguilla**:** Tsunami exercises, community tsunami awareness sessions, private sector tsunami presentations.

Aruba**:** will do more these coming years.

Bahamas**:** NEMA has had at least two workshops on this with CDEMA.

Bermuda**:** this exercise, pre and post LANTEX presentations to various agencies from US Consul General to Airport and the Regiment as well as Lifeguards.

Colombia**:** Por ejemplo, talleres y grupos de trabajo, capacitaciones para las entidades del sistema y simulacros regionals.

Dominica**:** Installation of CAP early warning system.

France**:** TWFP recieve the PTWC test message each month, and take advantage to test its internal SOP (sirens to alert the forecaster, décoding the warning message, Calculation of the distance between epicenter and our coast, Generation automated by a message in French. Concening with preparedness and public information, in each FWI territories we have an anual remember week to inform and prepare people.

Jamaica**:** NDMO has had meetings in the pst to discuss roles.

Montserrat**:** tsunami workshop held with a view to developing Tsunami SOP's.

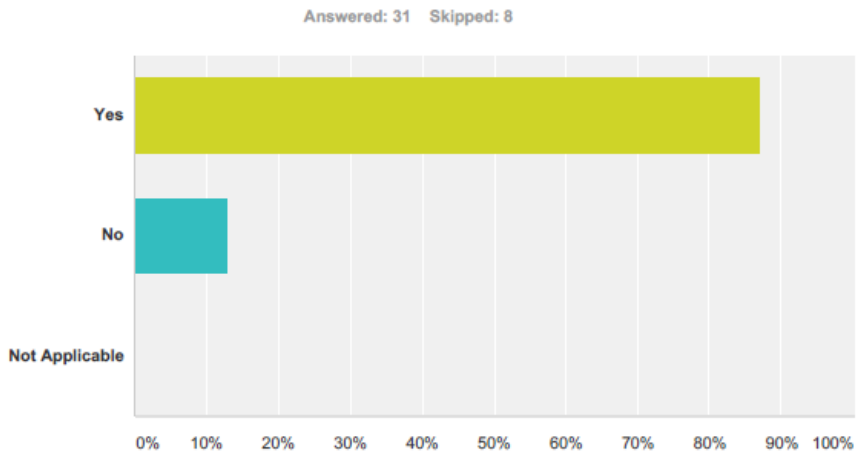
Nicaragua**:** Training and drills to earthquakes are going to held every month this year in all scholls. Also, national drills to earthquake and tsunami was held on March 16.

Puerto Rico**:** All previews CaribeWave/Lantex Exercices.

Sint Maarten**:** The national disaster management organization is aware of their responsibilities.

Suriname**:** Only participation in seminars and small national training until now.

Turks and Caicos**:** both the TWFP and the NDMO has participated in previous CaribeWave activities. Also, all agencies expected to respond to a tsunami event participated in an Orientation Exercise to discuss the National Tsunami SOPs to ensure that all agencies were cognizant of their roles within the plan, and that they also had the capacity and capability to execute that role if a tsunami event was threatening the TCI.




| Answer Choices | Responses | |
|---|---|---|
| Yes | 87.10% | 27 |
| No | 12.90% | 4 |
| Not Applicable | 0.00% | 0 |
| Total | | 31 |

YES**:** Anguilla, Antigua and Barbuda, Aruba, Bahamas, Bermuda, British Virgin Islands, Cayman Islands, Colombia, Costa Rica, Curaçao, Dominican Republic, France, Guatemala, Guyana, Haiti, Honduras, Mexico, Nicaragua, Panama, Puerto Rico, Saint Vincent and the Grenadines, Sint Maarten, Trinidad and Tobago, Turks and Caicos, US Virgin Islands, Venezuela

NO**:** Belize, Dominica, Jamaica, Montserrat

**Comments**

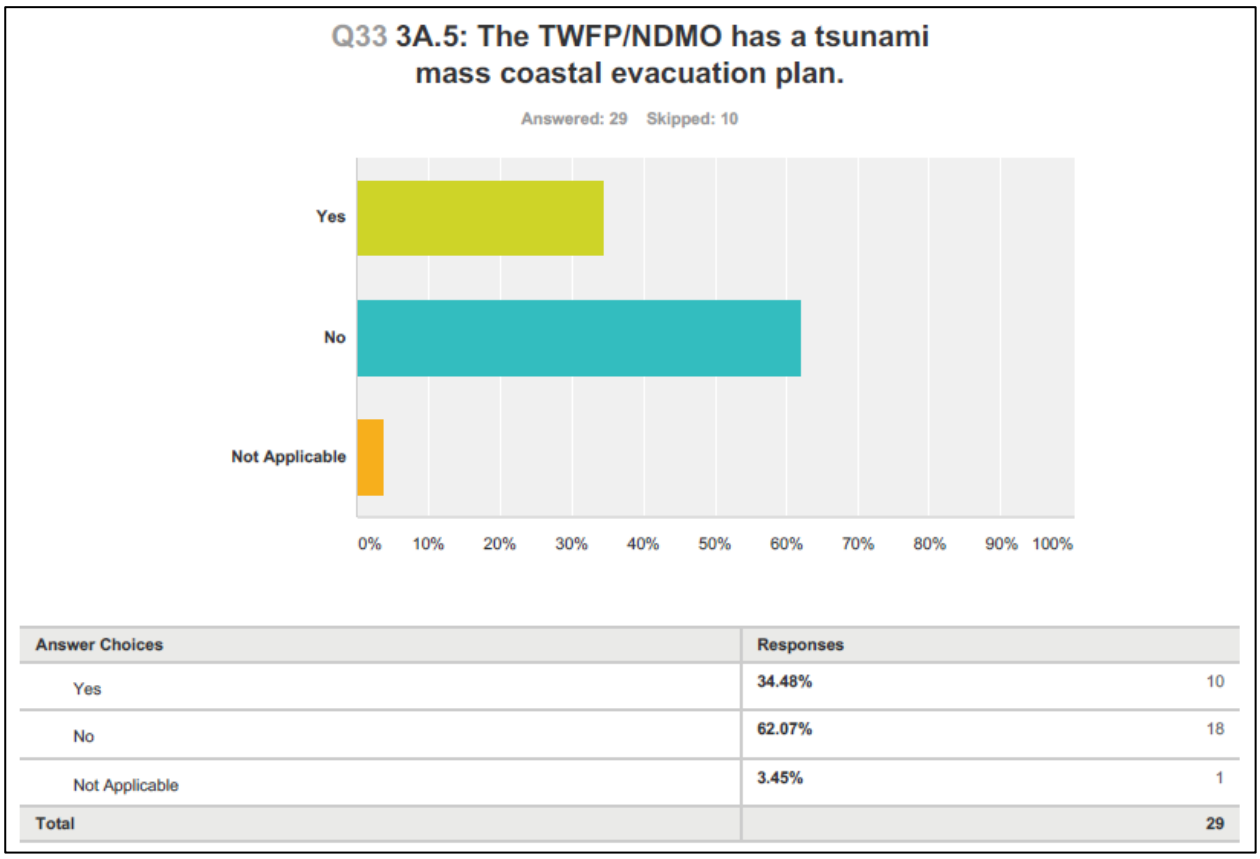
Colombia**:** Existe el Protocolo Nacional de Respuesta por Tsunami, el cual es socializado cada año.

France**:** NDMOs are organized in 1 zonal structure and 3 departmental structures (Martinique, Guadeloupe & Saint-Martin link with Saint-BArthélémy). Each structure is under the responsabilitie of a prefect.

Nicaragua**:** TWFP/NDMO has protocols and contingency plans, but only for tsunamis in the Pacific Ocean that affect the Pacific Coast of Nicaragua.

Saint Vincent and the Grenadines**:** Needs additional permanent resources.

Suriname**:** Don't know.




| Answer Choices | Responses | |
|---|---|---|
| Yes | 34.48% | 10 |
| No | 62.07% | 18 |
| Not Applicable | 3.45% | 1 |
| Total | | 29 |

YES**:** Anguilla, British Virgin Islands, Dominican Republic, Honduras, Nicaragua, Puerto Rico, Turks and Caicos, US Virgin Islands, Venezuela

NO**:** Aruba, Bahamas, Belize, Bermuda, Cayman Islands, Colombia, Costa Rica, Curaçao, Dominica, France, Guatemala, Guyana, Haiti, Jamaica, Montserrat, Panama, Saint Vincent and the Grenadines, Sint Maarten, Trinidad and Tobago

NOT APPLICABLE**:** Mexico

**Comments**

Antigua and Barbuda**:** Not sure.

Aruba**:** still working on it due to limited topographic data.

Colombia**:** Para la región Caribe se tienen muchos vaciós de conocimiento sobre la amenaza (mapas de inundación).

France**:** It's in progress.

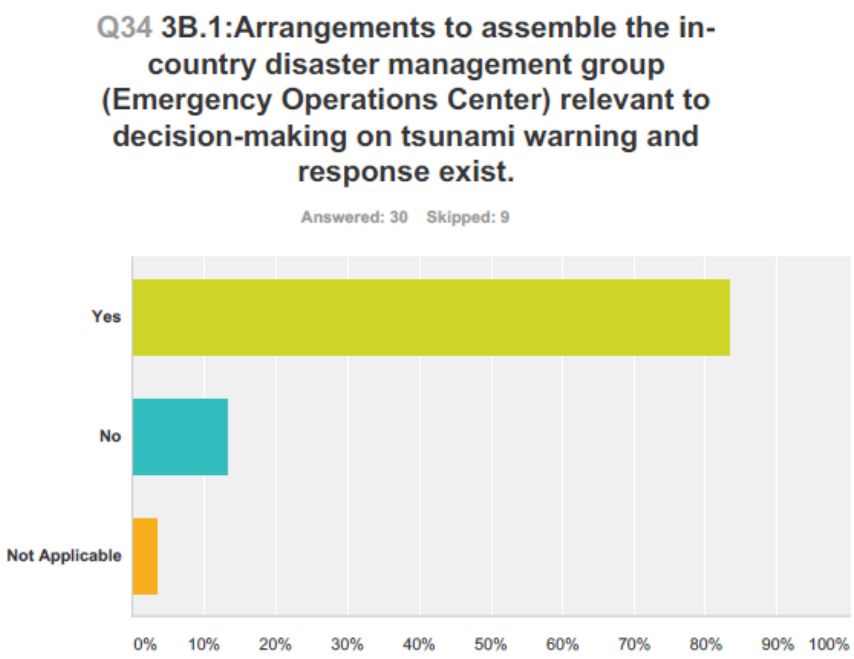
Guyana**:** This is the function of CDC.

Nicaragua**:** Only for the Pacific Coast.

Saint Vincent and the Grenadines**:** Draft document.

Suriname**:** Don’t know.

Turks and Caicos**:** As TCI is a multi island country a plan was developed for one island and it is expected to be replicated for the other islands shortly.




| Answer Choices | Responses | |
|---|---|---|
| Yes | 83.33% | 25 |
| No | 13.33% | 4 |
| Not Applicable | 3.33% | 1 |
| Total | | 30 |

YES**:** Anguilla, Antigua and Barbuda, Bahamas, British Virgin Islands, Cayman Islands, Colombia, Costa Rica, Curaçao, Dominica, Dominican Republic, France, Guatemala, Haiti, Honduras, Jamaica, Nicaragua, Puerto Rico, Saint Vincent and the Grenadines, Sint Maarten, Suriname, Trinidad and Tobago, Turks and Caicos, US Virgin Islands, Venezuela

NO**:** Aruba, Belize, Bermuda, Panama

NOT APPLICABLE**:** Mexico

**Comments**

Aruba**:** lack of communication between eoc and department.

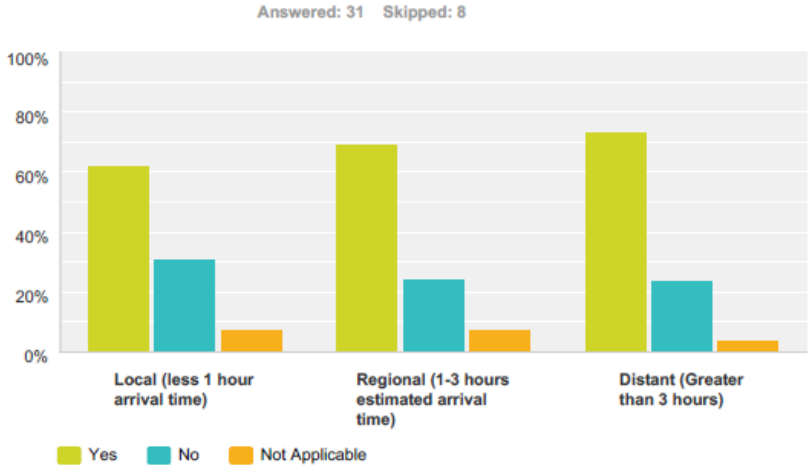
Colombia**:** Existe el Sistema Nacional de Detección y Alerta de Tsunamis el cual forma parte del Sistema Nacional de Gestión del Riesgos de Desastres.

France**:** We have SOP ta alert the people and to activate our different centers.

Honduras**:** Se emitió alerta y se puso en practica el manual.

Nicaragua**:** The regional sections of the Civil Defense were present in the CODE during the exercise.

Panama**:** In conjunction with the Ministry of Education and the Civil Defence we just started to develop a response plan and educational material.




| | Yes | No | Not Applicable | Total |
|---|---|---|---|---|
| Local (less 1 hour arrival time) | 62.07%<br>18 | 31.03%<br>9 | 6.90%<br>2 | 29 |
| Regional (1-3 hours estimated arrival time) | 68.97%<br>20 | 24.14%<br>7 | 6.90%<br>2 | 29 |
| Distant (Greater than 3 hours) | 73.33%<br>22 | 23.33%<br>7 | 3.33%<br>1 | 30 |

**Local:**

YES**:** Anguilla, Antigua and Barbuda, Aruba, Bahamas, British Virgin Islands, Cayman Islands, Colombia, Costa Rica, Dominican Republic, Haiti, Honduras, Jamaica, Nicaragua, Puerto Rico, Saint Vincent and the Grenadines, Trinidad and Tobago, Turks and Caicos, US Virgin Islands

NO**:** Belize, Bermuda, Curaçao, France, Guatemala, Montserrat, Panama, Sint Maarten, Venezuela

NOT APPLICABLE**:** Dominica, Mexico

**Regional:**

YES**:** Anguilla, Antigua and Barbuda, Aruba, Bahamas, British Virgin Islands, Cayman Islands, Colombia, Costa Rica, Dominican Republic, Haiti, Honduras, Jamaica, Nicaragua, Panama, Puerto Rico, Saint Vincent and the Grenadines, Trinidad and Tobago, Turks and Caicos, US Virgin Islands, Venezuela

NO**:** Belize, Bermuda, Curaçao, France, Guatemala, Montserrat, Sint Maarten

NOT APPLICABLE**:** Dominica, Mexico

**Distant:**

YES**:** Anguilla, Antigua and Barbuda, Aruba, Bahamas, British Virgin Islands, Cayman Islands, Colombia, Costa Rica, Dominica, Dominican Republic, Haiti, Honduras, Jamaica, Nicaragua,

Panama, Puerto Rico, Saint Vincent and the Grenadines, Suriname, Trinidad and Tobago, Turks and Caicos, US Virgin Islands, Venezuela

NO**:** Belize, Bermuda, Curaçao, France, Guatemala, Montserrat, Sint Maarten

NOT APPLICABLE**:** Mexico

**Comments**

Dominica**:** We are currently working on such a plan but are capable of handling distant tsunamis.

France**:** Most of the issues have been written and tested but the written of the whole plan have to be ended and validated by our authorities.

Jamaica**:** Needs to be revised and to be widely circulated.

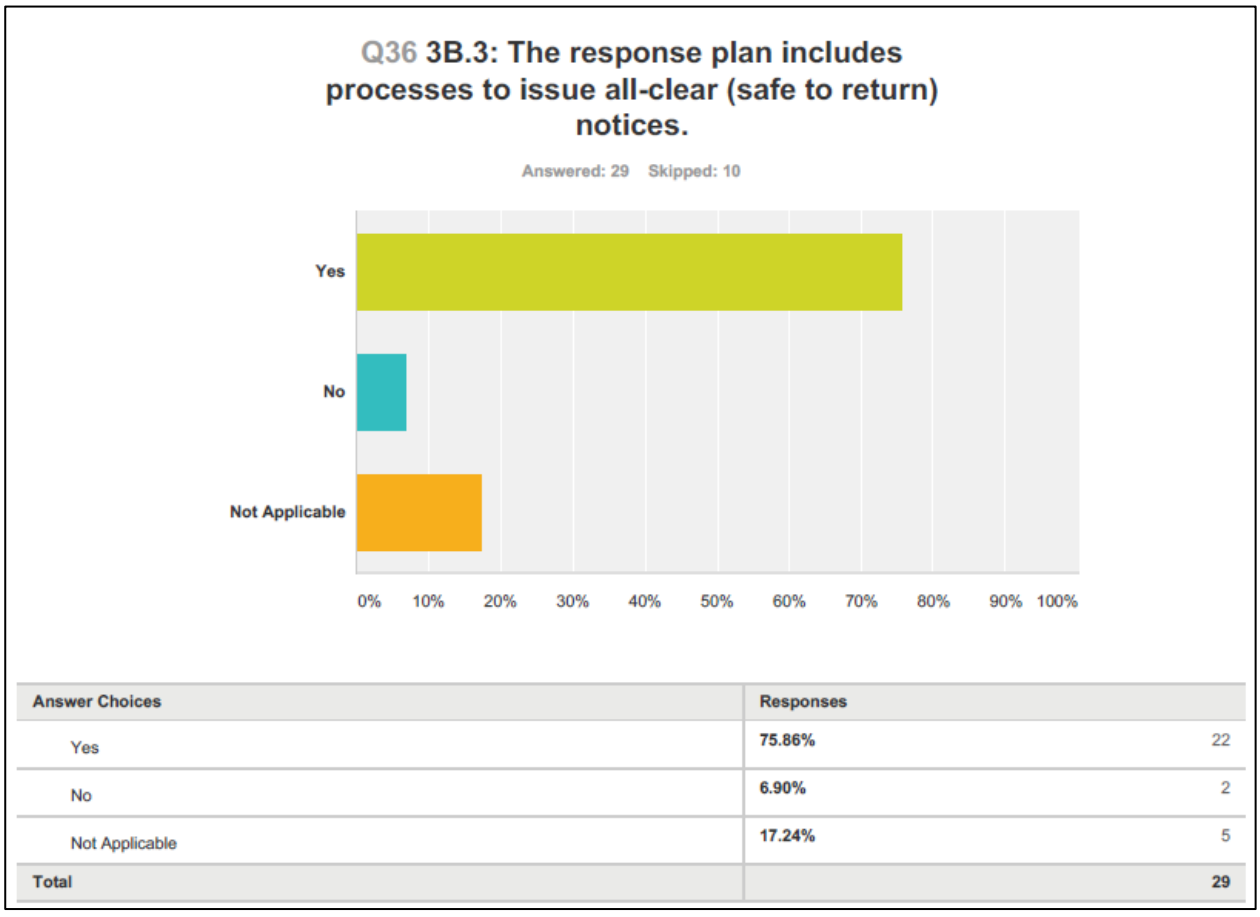
Nicaragua**:** Only for local/regional/tele tsunamis in the Pacific Coast.

Saint Vincent and the Grenadines**:** 30 MINUTES OR MORE.

Sint Maarten**:** For the time being we use our regular disaster plan.

Suriname**:** There is a warning system in place but not specifically for tsunamis.

Venezuela**:** We are working in this plan.




| Answer Choices | Responses | |
|---|---|---|
| Yes | 75.86% | 22 |
| No | 6.90% | 2 |
| Not Applicable | 17.24% | 5 |
| Total | | 29 |

YES**:** Anguilla, Antigua and Barbuda, Aruba, Bahamas, British Virgin Islands, Cayman Islands, Colombia, Costa Rica, Dominica, Dominican Republic, France, Haiti, Nicaragua, Panama, Puerto

Rico, Saint Vincent and the Grenadines, Suriname, Trinidad and Tobago, Turks and Caicos, US Virgin Islands, Venezuela

NO**:** Bermuda, Guatemala

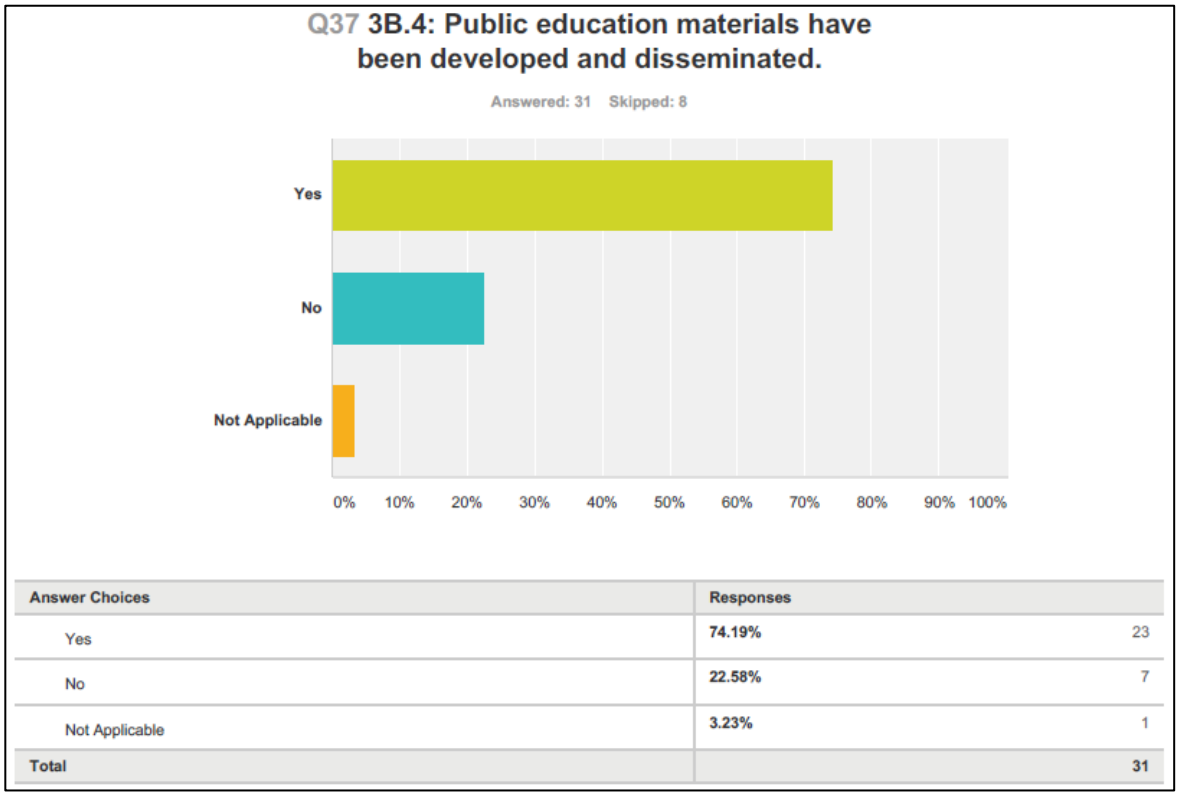
NOT APPLICABLE**:** Belize, Curaçao, Mexico, Montserrat, Sint Maarten

**Comments**

France**:** It would be included all clear noticies

Jamaica**:** Unsure.

Nicaragua**:** Only for the Pacific Coast.




| Answer Choices | Responses | |
|---|---|---|
| Yes | 74.19% | 23 |
| No | 22.58% | 7 |
| Not Applicable | 3.23% | 1 |
| Total | | 31 |

YES**:** Anguilla, Antigua and Barbuda, British Virgin Islands, Cayman Islands, Colombia, Costa Rica, Curaçao, Dominica, Dominican Republic, France, Haiti, Honduras, Jamaica, Mexico, Montserrat, Nicaragua, Puerto Rico, Saint Vincent and the Grenadines, Trinidad and Tobago, Turks and Caicos, US Virgin Islands, Venezuela

NO**:** Aruba, Bahamas, Belize, Bermuda, Guatemala, Panama, Suriname

NOT APPLICABLE**:** Sint Maarten

**Comments**

Aruba**:** working on it. limited staff.

Cayman Islands**:** Although minimal this is an area that we are improving.

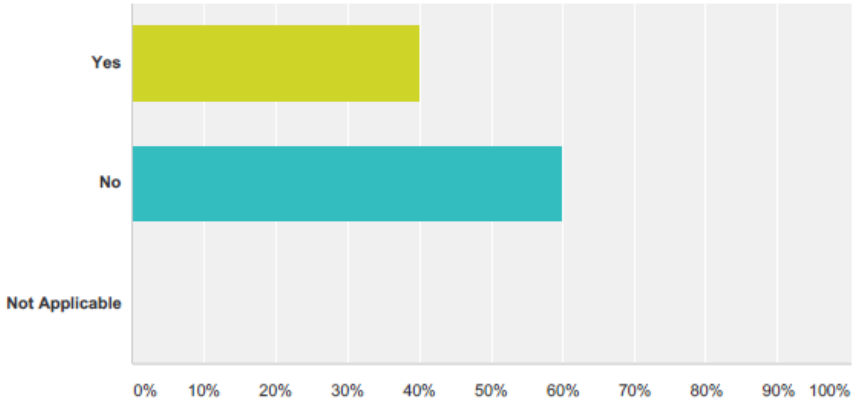
France**:** 200 posters and 5000 brochures (inspired from CTIC one's) were printed and distributed to the people before and during the exercice (see included).

Saint Vincent and the Grenadines**:** STILL NEED FOR MORE PUBLIC EDUCATION MATERIALS.

Turks and Caicos**:** The public education material was developed through CDEMA and disseminated locally.

**Q38 3B.5: Are tsunami exercises routinely conducted in the country? Note date of most recent exercise (before CARIBE WAVE/LANTEX 15) in Comments section.**

Answered: 30 Skipped: 9




| Answer Choices | Responses | |
|---|---|---|
| Yes | 40.00% | 12 |
| No | 60.00% | 18 |
| Not Applicable | 0.00% | 0 |
| Total | | 30 |

YES**:** Anguilla, Colombia, Costa Rica, Dominica, Dominican Republic, France, Honduras, Mexico, Nicaragua, Puerto Rico, US Virgin Islands, Venezuela

NO*:* Antigua and Barbuda, Aruba, Bahamas, Belize, Bermuda, British Virgin Islands, Cayman Islands, Curaçao, Guatemala, Haiti, Jamaica, Montserrat, Panama, Saint Vincent and the Grenadines, Sint Maarten, Suriname, Trinidad and Tobago, Turks and Caicos

**Comments**

Anguilla**:** Caribewave 14.

Bahamas**:** Only LANTEX exercises.

Colombia**:** Pacific Wave 15 en Febrero, Febrero de 2014 simulacro binacional Colombia-Ecuador y en Marzo de 2014 Caribe Wave 14.

Costa Rica**:** CaribeWave14 and PacWave15.

Curaçao**:** Country participates in the regional Tsunami exercise.

Dominica**:** to a certain degree yes. Frequency is not high.

France**:** During the last remember week (november 2014), exercices were conducted in 2 secondary schools, several municipalities and communities.

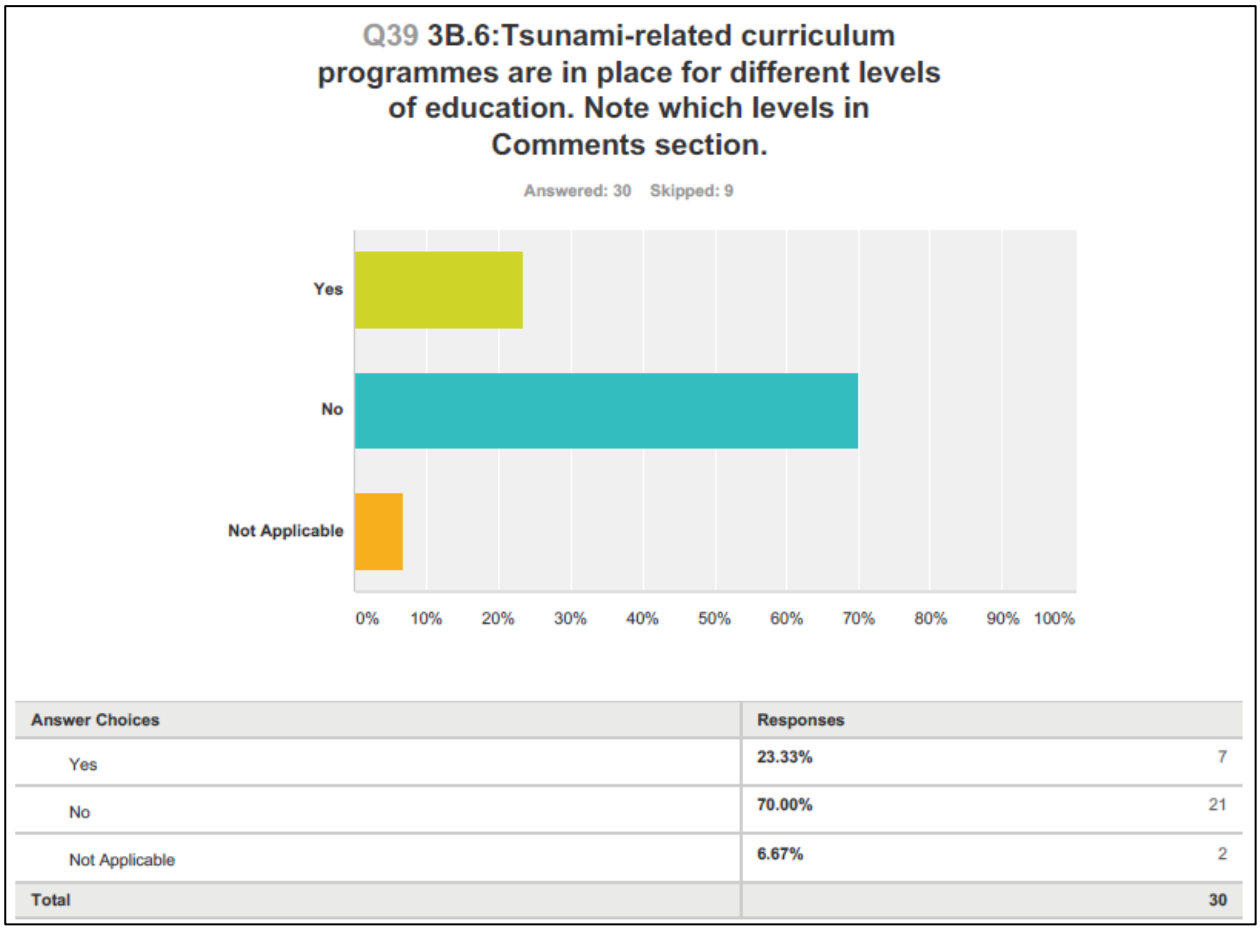
Nicaragua**:** 1) Exercise coordinated with IOC/UNESCO (PacWave15) and 2) National and local exercise (March 16, 2015).

Puerto Rico**:** CaribeWave Lantex 2014.

Saint Vincent and the Grenadines**:** 3/1/2014.

Turks and Caicos**:** The last time was CARIBE WAVE 2014.

Venezuela**:** We have participated in every Caribe Wave, 2011,2013,2014,2015.




| Answer Choices | Responses | |
|---|---|---|
| Yes | 23.33% | 7 |
| No | 70.00% | 21 |
| Not Applicable | 6.67% | 2 |
| Total | | 30 |

YES**:** British Virgin Islands, Dominica, Dominican Republic, Nicaragua, Puerto Rico US Virgin Islands, Venezuela

NO**:** Anguilla, Aruba, Bahamas, Belize, Bermuda, Cayman Islands, Costa Rica, Curaçao, France, Guatemala, Haiti, Honduras, Jamaica, Montserrat, Panama, Saint Vincent and the Grenadines, Sint Maarten, Suriname, Trinidad and Tobago, Turks and Caicos

NOT APPLICABLE: Colombia, Mexico

**Comments**

Antigua and Barbuda**:** Not sure.

Aruba**:** working on it. limited staff.

British Virgin Islands**:** It is incorported into some grades of the primary level.

Dominica**:** primary, high school .

Dominican Republic**:** In basic level.

France**:** It's in progress.We realized a video to inform on tsunami and its effects students to prepare them before evacuation tests.

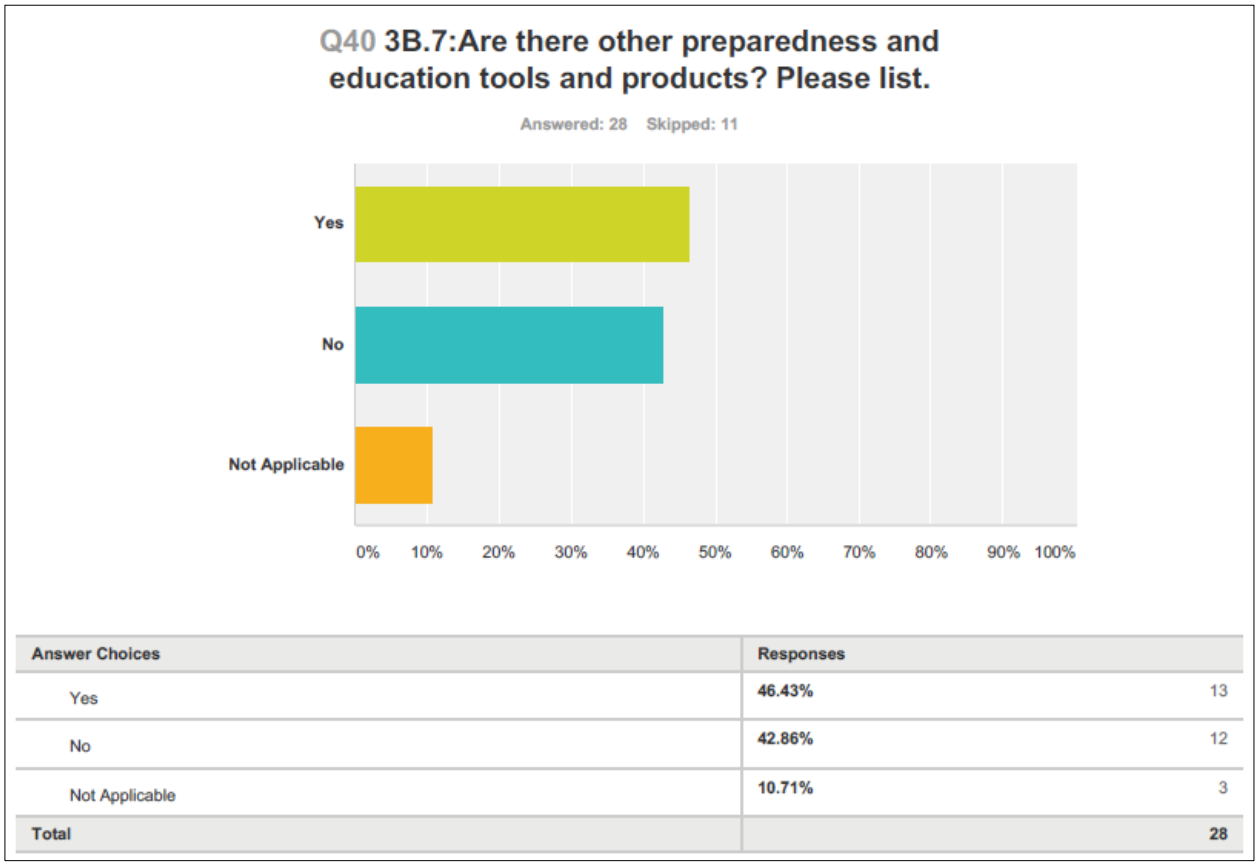
Nicaragua**:** Only basic education.

Puerto Rico**:** K-6 and 7-12.

Saint Vincent and the Grenadines**:** NOT COMPREHENSIVE.

US Virgin Islands**:** Elementary, Jr & Sr High School, Adult.

Venezuela**:** Only first steps in basic education and high school.




| Answer Choices | Responses | |
|---|---|---|
| Yes | 46.43% | 13 |
| No | 42.86% | 12 |
| Not Applicable | 10.71% | 3 |
| Total | | 28 |

YES**:** Cayman Islands, Colombia, Curaçao, Dominica, Dominican Republic, France, Haiti, Jamaica, Nicaragua, Puerto Rico, Saint Vincent and the Grenadines, Turks and Caicos, Venezuela

NO**:** Anguilla, Aruba, Belize, Bermuda, Costa Rica, Guatemala, Honduras, Montserrat, Panama, Sint Maarten, Suriname, Trinidad and Tobago

NOT APPLICABLE**:** Bahamas, Mexico, US Virgin Islands

**Comments**

Antigua and Barbuda: Not sure.

Cayman Islands**:** Hurricanes, Earthquakes, lightening .

Curaçao**:** Presentations with wave simulation are given at schools.

Dominica**:** PSA's.

Dominican Republic**:** Brochures.

France**:** We realized 3 kakemonos inspired from CTIC brochures.

Haiti**:** Audio and video spots.

Jamaica**:** Brochures at the NDMO.

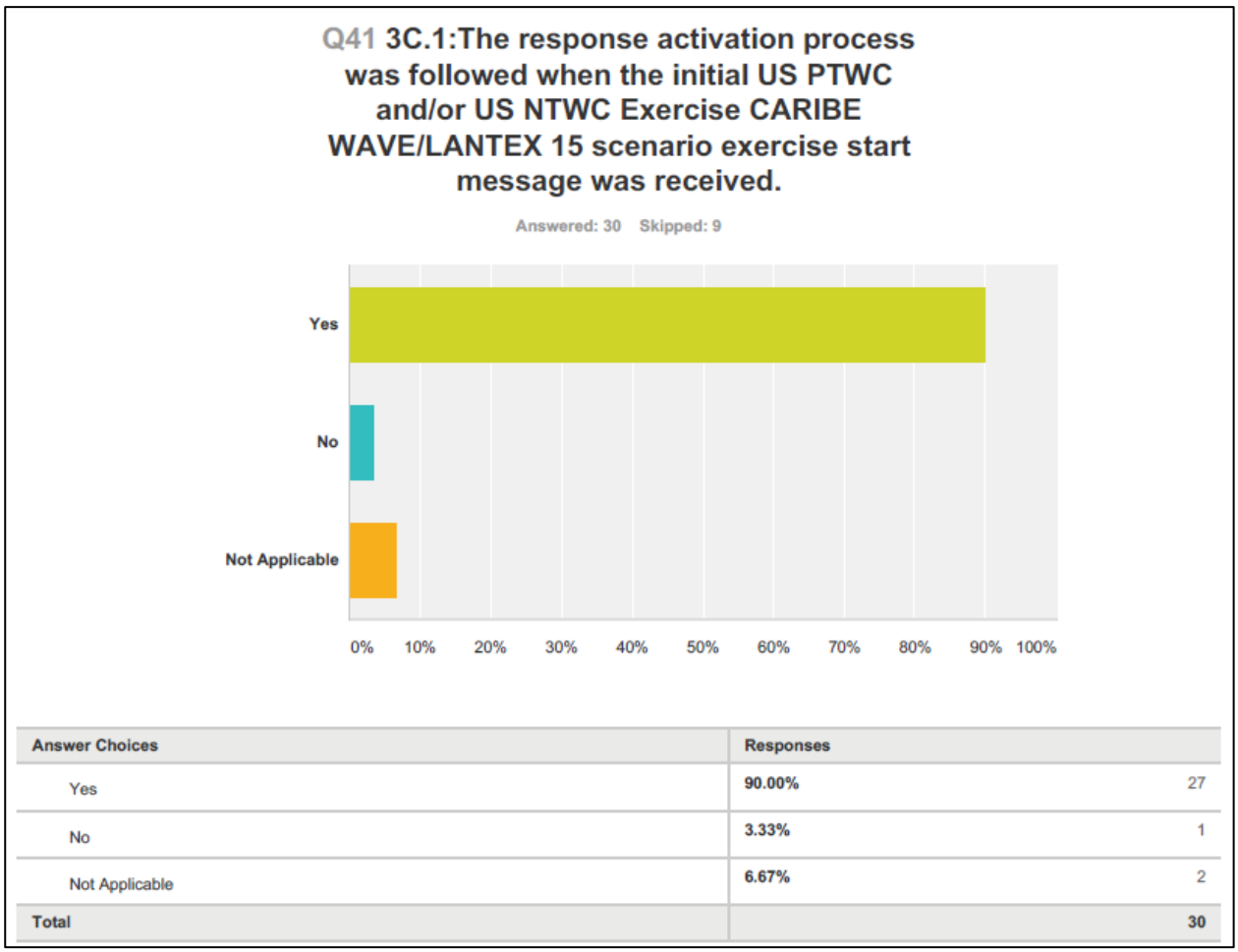
Nicaragua**:** Training, drills, sign posts, posters and brochures.

Puerto Rico**:** Tsunami Curriculum, Tsunami Media Guide.

Saint Vincent and the Grenadines**:** TSUNAMI BOOKLET.

Turks and Caicos**:** Brochures, information for teachers and schools.

Venezuela: Videos, Brochures.




| Answer Choices | Responses | |
|---|---|---|
| Yes | 90.00% | 27 |
| No | 3.33% | 1 |
| Not Applicable | 6.67% | 2 |
| Total | | 30 |

YES**:** Anguilla, Antigua and Barbuda, Aruba, Bahamas, Bermuda, Cayman Islands, Colombia, Costa Rica, Curaçao, Dominica, Dominican Republic, France, Guatemala, Haiti, Honduras,

Mexico, Montserrat, Nicaragua, Panama, Puerto Rico, Saint Vincent and the Grenadines, Sint Maarten, Suriname, Turks and Caicos, US Virgin Islands, Venezuela

NO**:** Jamaica

NOT APPLICABLE**:** Belize, British Virgin Islands

**Comments:**

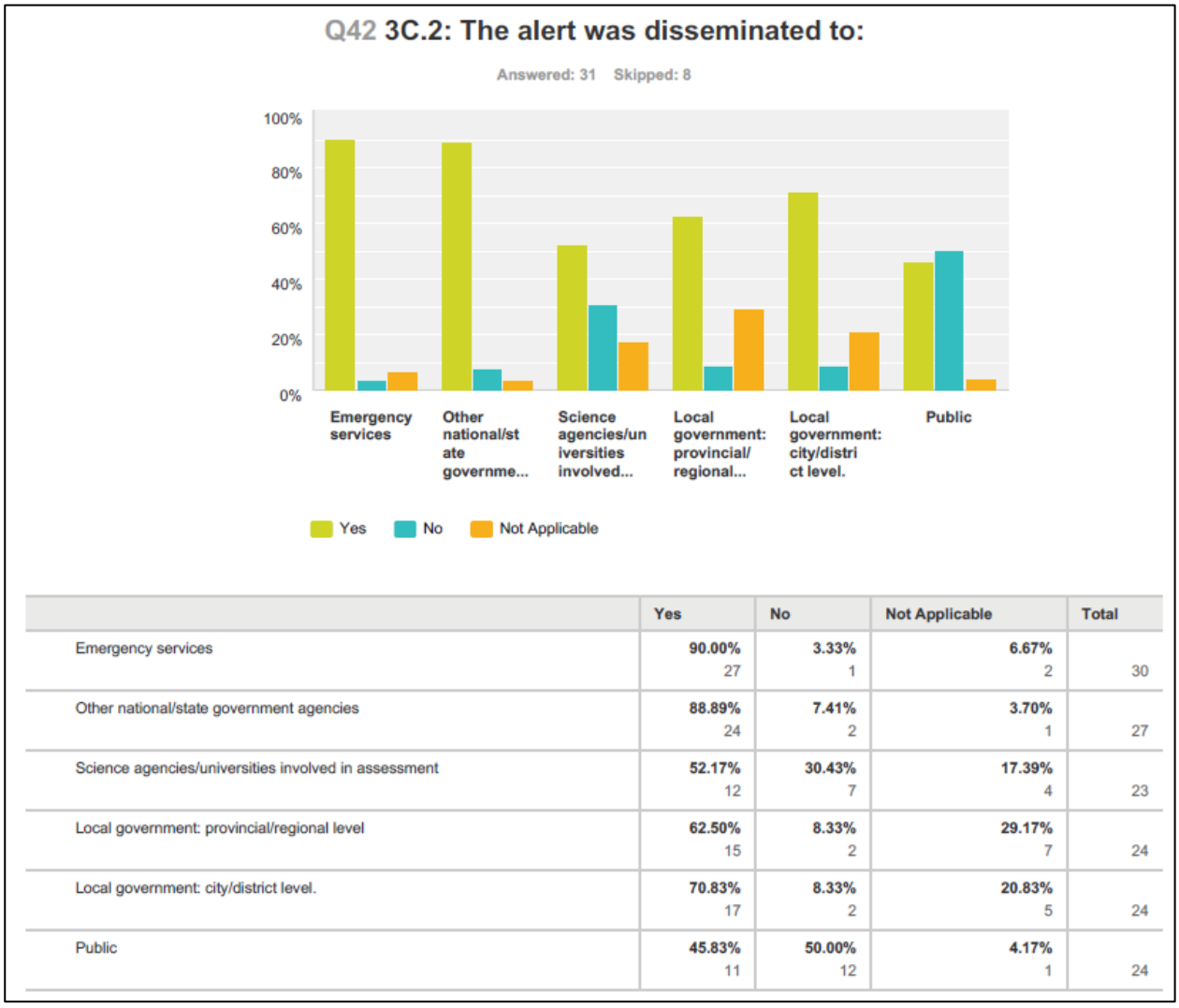
Cayman Islands**:** Although we did not use the designated Emergency Operations, but convene one at an alternate location. This did not work well. Lessons learned - Use the designated facilities.

Colombia**:** De inmediato, por tratarse de un evento local.

France**:** SMS and email were sent to registred communities and more. Medias were informed and have desseminated alert. A rescue helicopter was used to disseminate alert in certain isolated areas (beaches, ...).

Montserrat**:** Our departments Activation process was followed.

Turks and Caicos**:** 911 contacted all response agencies as per SOP and agencies reported to the NEOC, where a tabletop exercise was conducted.




| | Yes | No | Not Applicable | Total |
|---|---|---|---|---|
| Emergency services | 90.00% 27 | 3.33% 1 | 6.67% 2 | 30 |
| Other national/state government agencies | 88.89% 24 | 7.41% 2 | 3.70% 1 | 27 |
| Science agencies/universities involved in assessment | 52.17% 12 | 30.43% 7 | 17.39% 4 | 23 |
| Local government: provincial/regional level | 62.50% 15 | 8.33% 2 | 29.17% 7 | 24 |
| Local government: city/district level. | 70.83% 17 | 8.33% 2 | 20.83% 5 | 24 |
| Public | 45.83% 11 | 50.00% 12 | 4.17% 1 | 24 |

**Emergency services:**

YES**:** Antigua and Barbuda, Aruba, Bahamas, Bermuda, British Virgin Islands, Cayman Islands, Colombia, Costa Rica, Curaçao, Dominica, Dominican Republic, France, Guatemala, Haiti, Honduras, Jamaica, Mexico, Montserrat, Nicaragua, Panama, Puerto Rico, Sint Maarten, Suriname, Turks and Caicos, US Virgin Islands, Venezuela

NO**:** Belize

NOT APPLICABLE**:** Saint Vincent and the Grenadines

**Other national/state government agencies:**

YES**:** Anguilla, Antigua and Barbuda, Aruba, Bermuda, British Virgin Islands, Cayman Islands, Colombia, Curaçao, Dominica, France, Haiti, Honduras, Mexico, Montserrat, Nicaragua, Panama, Puerto Rico, Sint Maarten, Suriname, Trinidad and Tobago, Turks and Caicos, US Virgin Islands, Venezuela

NO**:** Belize, Costa Rica

NOT APPLICABLE**:** Saint Vincent and the Grenadines

**Science agencies/universities involved in assessment:**

YES**:** Bermuda, British Virgin Islands, Costa Rica, Dominica, Dominican Republic, France, Honduras, Mexico, Panama, Puerto Rico, US Virgin Islands, Venezuela

NO**:** Belize, Cayman Islands, Colombia, Curaçao, Haiti, Nicaragua, Suriname

NOT APPLICABLE**:** Anguilla, Saint Vincent and the Grenadines, Sint Maarten

**Local government: provincial/regional level:**

YES**:** Bahamas, Bermuda, Colombia, France, Haiti, Honduras, Mexico, Nicaragua, Panama, Puerto Rico, Suriname, Trinidad and Tobago, US Virgin Islands, Venezuela

NO**:** Belize, Costa Rica

NOT APPLICABLE**:** Anguilla, Cayman Islands, Curaçao, Dominica, Saint Vincent and the Grenadines, Sint Maarten

**Local government: city/district level:**

YES**:** Bahamas, Bermuda, British Virgin Islands, Colombia, Costa Rica, Dominica, France, Honduras, Mexico, Nicaragua, Panama, Puerto Rico, Suriname, Turks and Caicos, US Virgin Islands, Venezuela

NO**:** Belize, Haiti

NOT APPLICABLE**:** Anguilla, Cayman Islands, Curaçao, Saint Vincent and the Grenadines, Sint Maarten

**Public:**

YES**:** Anguilla, Bermuda, Cayman Islands, Dominican Republic, France, Honduras, Montserrat, Puerto Rico, US Virgin Islands, Venezuela

NO**:** Bahamas, Belize, Colombia, Costa Rica, Curaçao, Haiti, Mexico, Nicaragua, Panama, Sint Maarten, Suriname, Turks and Caicos

NOT APPLICABLE**:** Saint Vincent and the Grenadines

**Comments**:

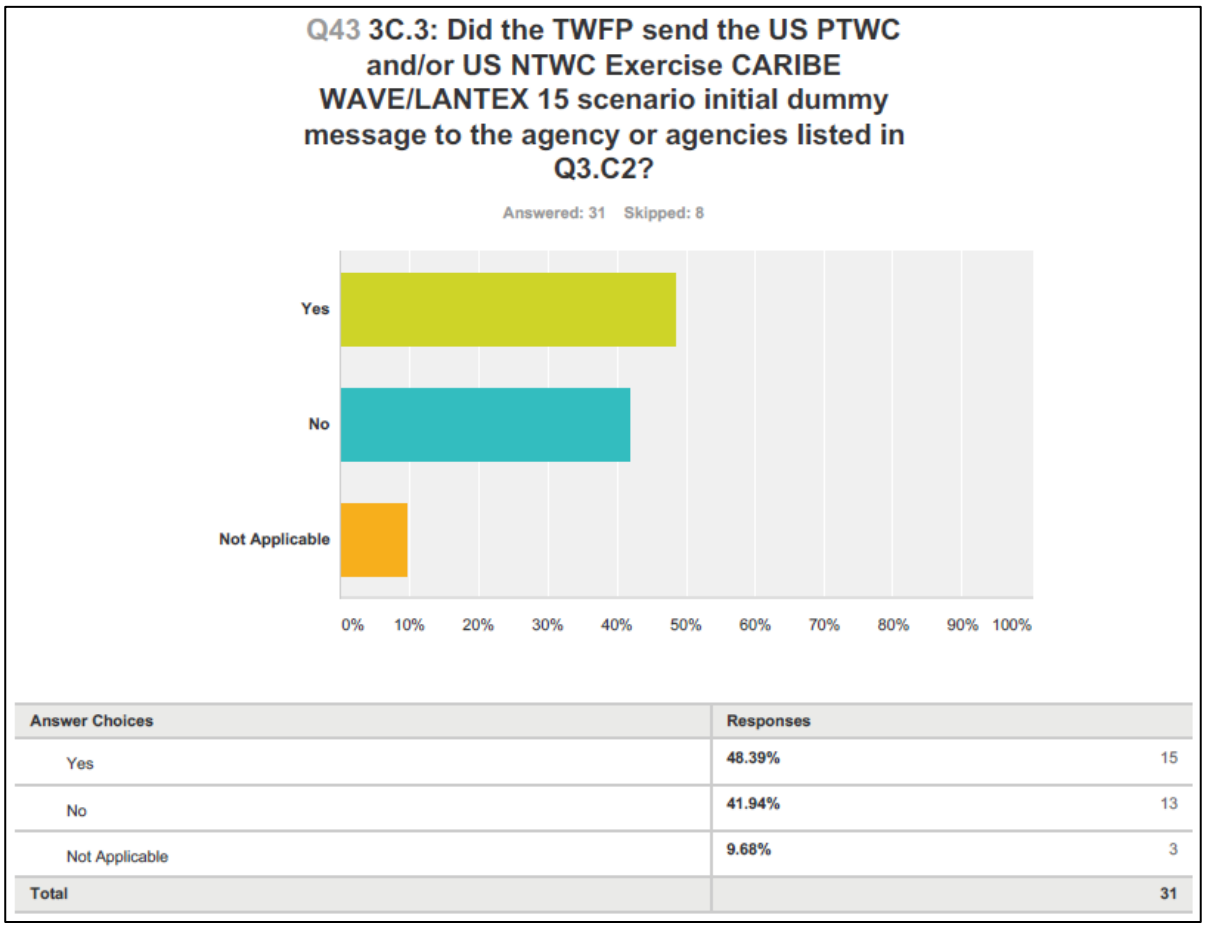
Anguilla**:** hospitality industry.

Honduras**:** De acuerdo a los protocolos .

Montserrat**:** The Petroleum Company was alerted as a result of its Office and bulk station.

Nicaragua**:** The alert wasnot disseminated to the public.

Saint Vincent and the Grenadines**:** INTERNAL TABLE TOP EXERCISE.




| Answer Choices | Responses | |
|---|---|---|
| Yes | 48.39% | 15 |
| No | 41.94% | 13 |
| Not Applicable | 9.68% | 3 |
| Total | | 31 |

YES**:** Antigua and Barbuda, Aruba, Bahamas, British Virgin Islands, Cayman Islands, Dominican Republic, France, Guatemala, Jamaica, Panama, Puerto Rico, Saint Vincent and the Grenadines, Sint Maarten, US Virgin Islands, Venezuela

NO**:** Belize, Bermuda, Colombia, Costa Rica, Curaçao, Dominica, Honduras, Mexico, Nicaragua, Suriname, Trinidad and Tobago, Turks and Caicos

NOT APPLICABLE: Anguilla, Haiti, Montserrat

**Comments**

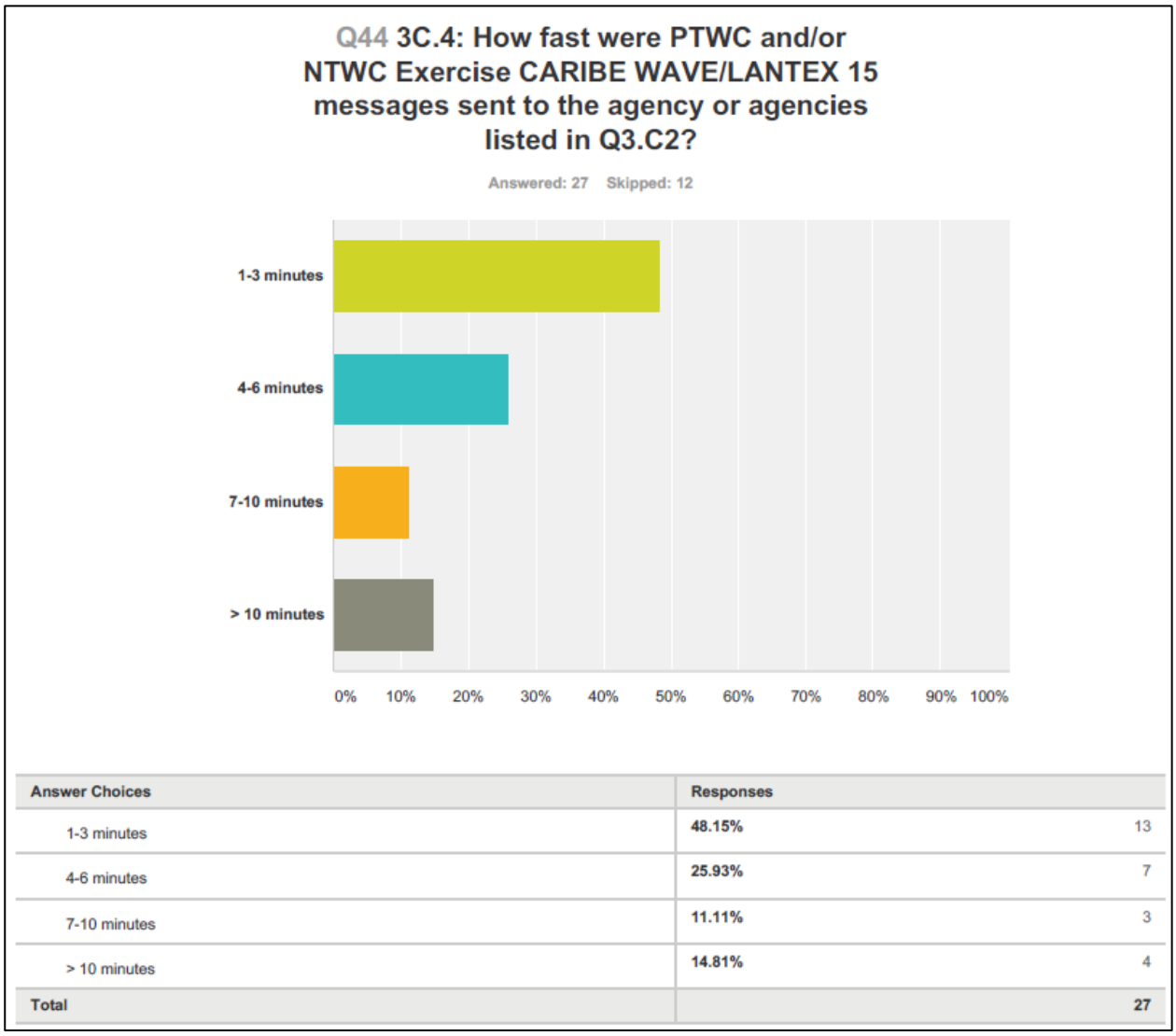
Anguilla: Warning system manager did the alert dissemination.

Bermuda**:** BWS sent a summary of information.

Dominica**:** another notification was sent.

Nicaragua**:** Only to the personal duty of the CODE, and then CODE send the message to all agencies listed in Q3.C2.

Venezuela**:** we translated and adapted for our best interest.




| Answer Choices | Responses | |
|---|---|---|
| 1-3 minutes | 48.15% | 13 |
| 4-6 minutes | 25.93% | 7 |
| 7-10 minutes | 11.11% | 3 |
| > 10 minutes | 14.81% | 4 |
| Total | | 27 |

**1-3 Minutes:** Aruba, Bahamas, British Virgin Islands, Dominica, France, Guatemala, Haiti, Honduras, Panama, Puerto Rico, Sint Maarten, US Virgin Islands, Venezuela

**4-6 Minutes:** Anguilla, Antigua and Barbuda, Cayman Islands, Costa Rica, Mexico, Nicaragua, Turks and Caicos

**7-10 Minutes:** Bermuda, Montserrat, Saint Vincent and the Grenadines

**> 10 Minutes:** Curaçao, Dominican Republic, Jamaica

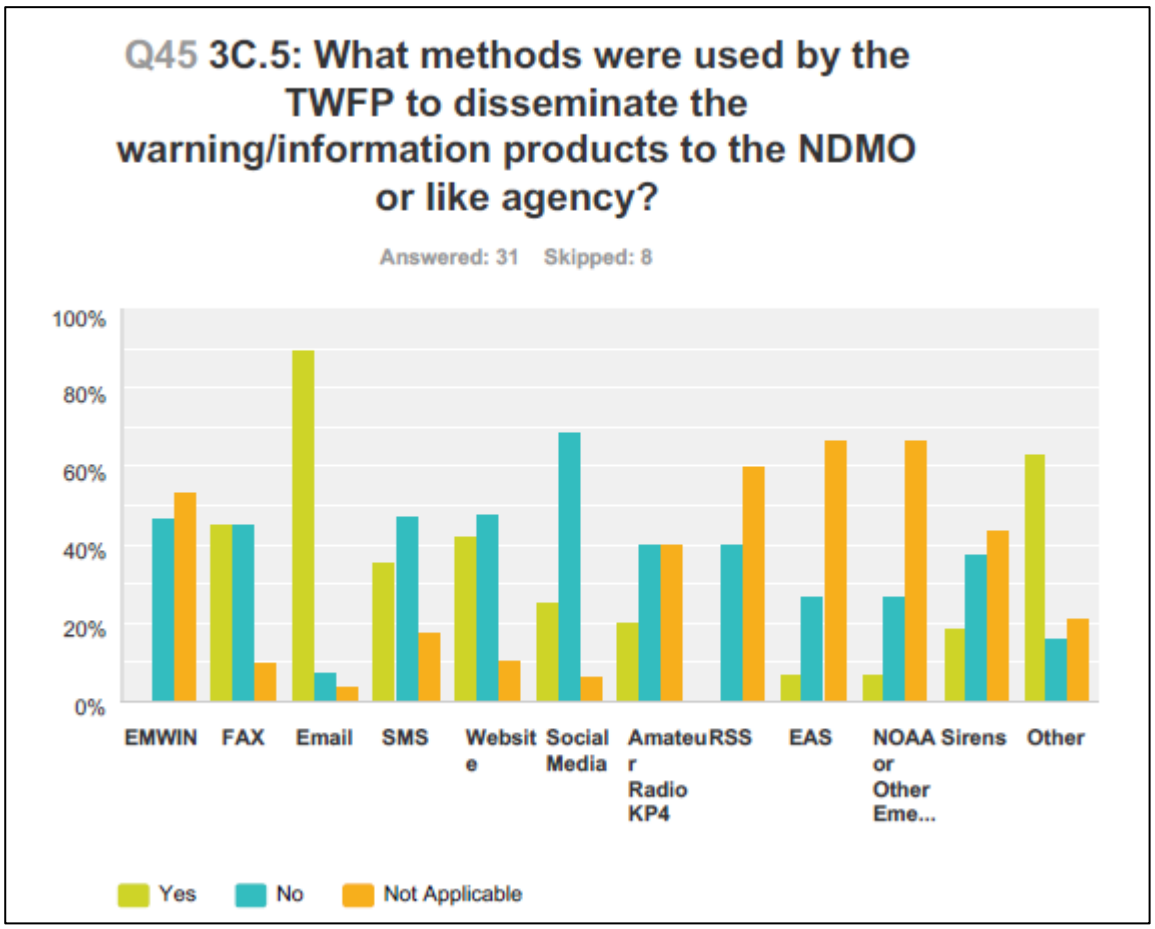
**Comments**

Belize: They were not sent.

Dominica**:** although there we encountered some problems/ delays with your internal communication systems.

Sint Maarten**:** Except for messages 5&6 that were only sent after the mailserver was back up and running.

Suriname**:** Don't know.




| | Yes | No | Not Applicable | Total |
|---|---|---|---|---|
| EMWIN | 0.00% 0 | 46.67% 7 | 53.33% 8 | 15 |
| FAX | 45.00% 9 | 45.00% 9 | 10.00% 2 | 20 |
| Email | 89.29% 25 | 7.14% 2 | 3.57% 1 | 28 |
| SMS | 35.29% 6 | 47.06% 8 | 17.65% 3 | 17 |
| Website | 42.11% 8 | 47.37% 9 | 10.53% 2 | 19 |
| Social Media | 25.00% 4 | 68.75% 11 | 6.25% 1 | 16 |
| Amateur Radio KP4 | 20.00% 3 | 40.00% 6 | 40.00% 6 | 15 |
| RSS | 0.00% 0 | 40.00% 6 | 60.00% 9 | 15 |
| EAS | 6.67% 1 | 26.67% 4 | 66.67% 10 | 15 |
| NOAA or Other Emergency Alert Radio | 6.67% 1 | 26.67% 4 | 66.67% 10 | 15 |
| Sirens | 18.75% 3 | 37.50% 6 | 43.75% 7 | 16 |

**EMWIN:**

YES**:** N/A

NO**:** Belize, Cayman Islands, Colombia, Dominican Republic, Haiti, Panama, Puerto Rico

NOT APPLICABLE**:** Anguilla, Bermuda, Costa Rica, Jamaica, Montserrat, Sint Maarten, Turks and Caicos, Venezuela

**FAX:**

YES**:** Aruba, Bermuda, Colombia, Curaçao, Dominican Republic, Guatemala, Trinidad and Tobago, Turks and Caicos

NO**:** Anguilla, Belize, Costa Rica, Haiti, Jamaica, Panama, Puerto Rico, Sint Maarten, Venezuela

NOT APPLICABLE**:** Cayman Islands, Montserrat

**E-mail:**

YES**:** Antigua and Barbuda, Aruba, Bahamas, Bermuda, Cayman Islands, Colombia, Curaçao, Dominican Republic, France, Guatemala, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Puerto Rico, Saint Vincent and the Grenadines, Sint Maarten, Suriname, Trinidad and Tobago, Turks and Caicos, Venezuela

NO**:** Anguilla, Belize

NOT APPLICABLE**:** Montserrat

**SMS:**

YES**:** Colombia, Haiti, Honduras, Turks and Caicos, Venezuela

NO**:** Anguilla, Belize, Bermuda, Cayman Islands, Jamaica, Panama, Puerto Rico, Sint Maarten

NOT APPLICABLE**:** Costa Rica, Dominican Republic, Montserrat

**Website:**

YES**:** Aruba, Bermuda, Cayman Islands, Colombia, Curaçao, Dominican Republic, Honduras, Mexico

NO**:** Anguilla, Belize, Haiti, Jamaica, Panama, Puerto Rico, Sint Maarten, Turks and Caicos, Venezuela

NOT APPLICABLE**:** Costa Rica, Montserrat

**Social Media:**

YES: Bermuda, Costa Rica, Venezuela

NO**:** Anguilla, Belize, Cayman Islands, Colombia, Dominican Republic, Haiti, Jamaica, Panama, Puerto Rico, Sint Maarten, Turks and Caicos

NOT APPLICABLE**:** Montserrat

**Amateur radio KP4:**

YES**:** Dominican Republic, Panama, Venezuela

NO**:** Anguilla, Belize, Haiti, Jamaica, Puerto Rico, Turks and Caicos

NOT APPLICABLE**:** Bermuda, Cayman Islands, Colombia, Costa Rica, Montserrat, Sint Maarten

**RSS:**

YES**:** N/A

NO**:** Anguilla, Belize, Panama, Puerto Rico, Turks and Caicos, Venezuela

NOT APPLICABLE**:** Bermuda, Cayman Islands, Colombia, Costa Rica, Dominican Republic, Haiti, Jamaica, Montserrat, Sint Maarten

**EAS:**

YES**:** Puerto Rico

NO**:** Anguilla, Belize, Panama, Turks and Caicos

NOT APPLICABLE**:** Bermuda, Cayman Islands, Colombia, Costa Rica, Dominican Republic, Haiti, Jamaica, Montserrat, Sint Maarten, Venezuela

**NOAA or other emergency alert radio:**

YES**:** Puerto Rico

NO**:** Anguilla, Belize, Panama, Turks and Caicos

NOT APPLICABLE**:** Bermuda, Cayman Islands, Colombia, Costa Rica, Dominican Republic, Haiti, Jamaica, Montserrat, Sint Maarten, Venezuela

**Sirens:**

YES: Puerto Rico, US Virgin Islands, Venezuela

NO**:** Anguilla, Belize, Dominican Republic, Panama, Sint Maarten, Turks and Caicos

NOT APPLICABLE**:** Bermuda, Cayman Islands, Colombia, Costa Rica, Haiti, Jamaica, Montserrat

**Other:**

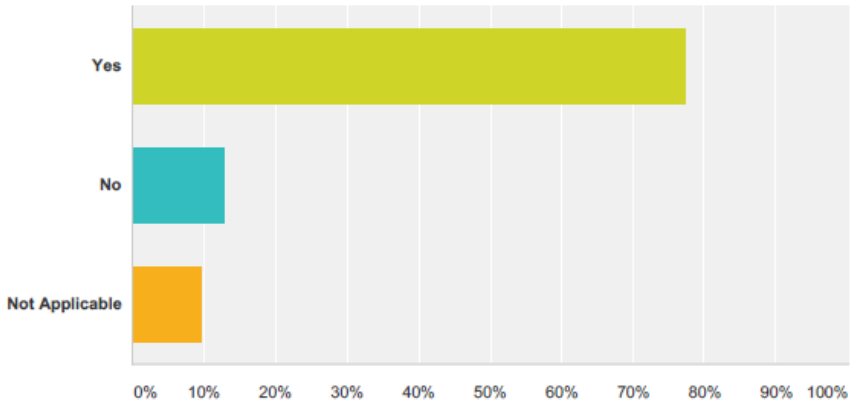
YES**:** Anguilla, British Virgin Islands, Colombia, Curaçao, Dominica, France, Mexico, Nicaragua, Panama, Puerto Rico, Venezuela

NO**:** Belize, Dominican Republic, Sint Maarten

NOT APPLICABLE**:** Bermuda, Costa Rica, Montserrat, Turks and Caicos

**Q46 3C.6: The method of communication from your public-safety, national/state decision-making and dissemination point to agencies was sufficient (timely, clear, accurate) to support decision-making.**

Answered: 31 Skipped: 8




| Answer Choices | Responses | |
|---|---|---|
| Yes | 77.42% | 24 |
| No | 12.90% | 4 |
| Not Applicable | 9.68% | 3 |
| Total | | 31 |

YES**:** Anguilla, Antigua and Barbuda, Aruba, Bermuda, British Virgin Islands, Cayman Islands, Colombia, Costa Rica, Curaçao, Dominican Republic, France, Guatemala, Haiti, Honduras, Mexico, Montserrat, Nicaragua, Panama, Puerto Rico, Saint Vincent and the Grenadines, Turks and Caicos, US Virgin Islands, Venezuela

NO**:** Bahamas, Dominica, Jamaica, Suriname

NOT APPLICABLE**:** Belize, Sint Maarten, Trinidad and Tobago

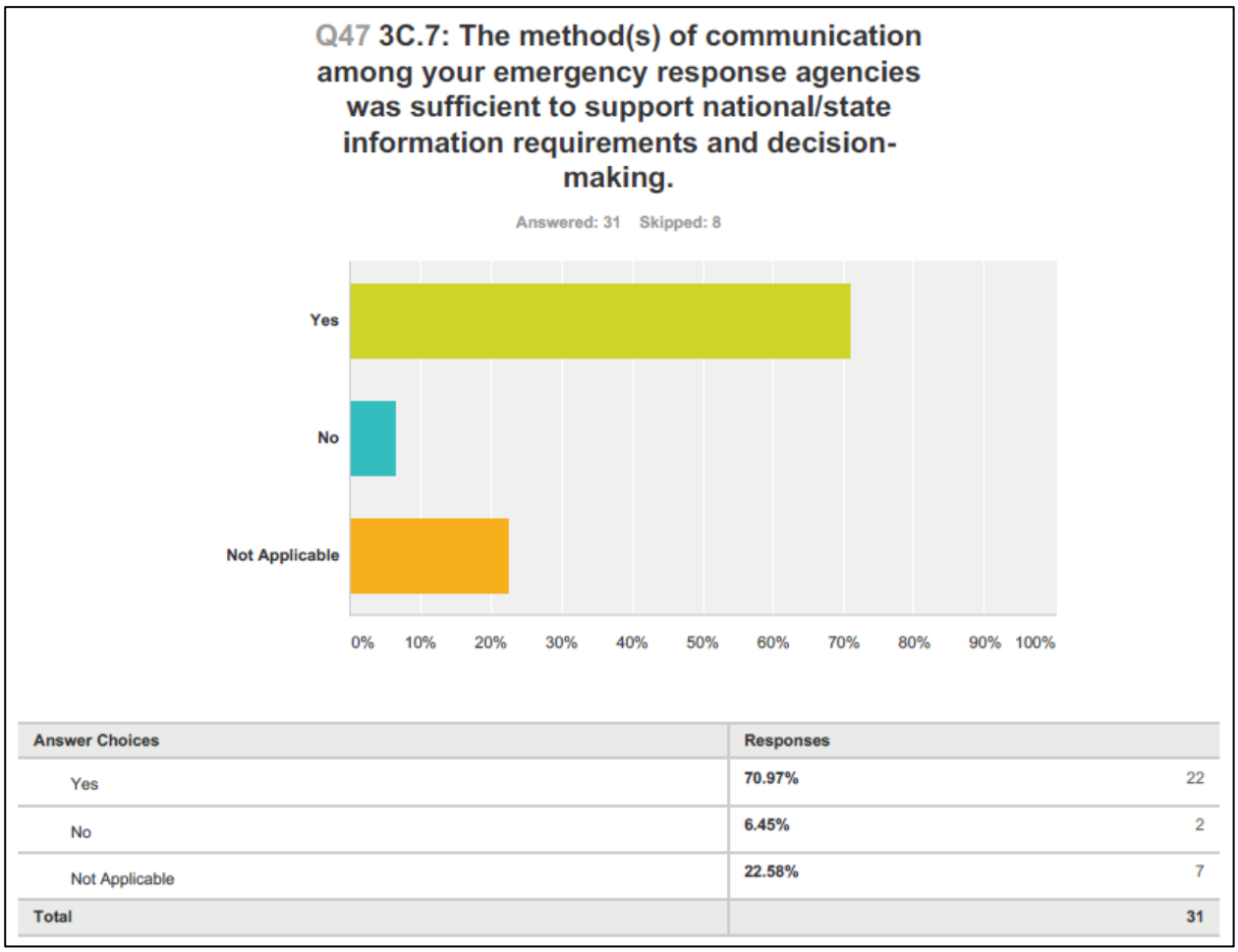
**Comments**

Bahamas**:** Yes - The Panama scenario No - Gulf scenario.

Curaçao**:** DMO was briefed by telephone and message followed after.

Dominica**:** there is room for improvement.

Venezuela**:** it can be better .




| Answer Choices | Responses | |
|---|---|---|
| Yes | 70.97% | 22 |
| No | 6.45% | 2 |
| Not Applicable | 22.58% | 7 |
| Total | | 31 |

YES**:** Anguilla, Antigua and Barbuda, Aruba, Bahamas, British Virgin Islands, Cayman Islands, Colombia, Curaçao, Dominican Republic, Dominica, Guatemala, Haiti, Honduras, Montserrat, Nicaragua, Panama, Puerto Rico, Suriname, Turks and Caicos, US Virgin Islands, Venezuela

NO**:** Bermuda, Dominica

NOT APPLICABLE: Belize, Costa Rica, Jamaica, Mexico, Saint Vincent and the Grenadines, Sint Maarten, Trinidad and Tobago

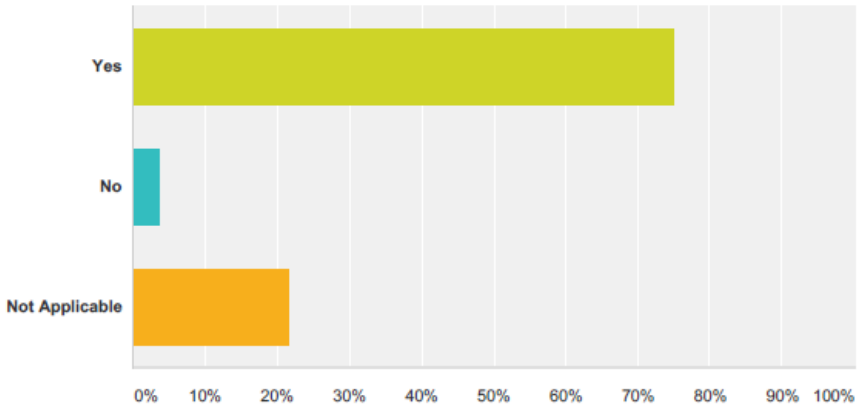
**Comments**

Bermuda**:** never tested.

Dominica**:** there is room for improvement.

**Q48 3C.8:If you answered yes to Q3C.7 (above), was this timely to facilitate good decision-making?**

Answered: 28 Skipped: 11




| Answer Choices | Responses | |
|---|---|---|
| Yes | 75.00% | 21 |
| No | 3.57% | 1 |
| Not Applicable | 21.43% | 6 |
| Total | | 28 |

YES**:** Anguilla, Antigua and Barbuda, Aruba, Bahamas, British Virgin Islands, Cayman Islands, Colombia, Curaçao, Dominican Republic, France, Guatemala, Haiti, Honduras, Montserrat, Nicaragua, Panama, Puerto Rico, Turks and Caicos, US Virgin Islands, Venezuela

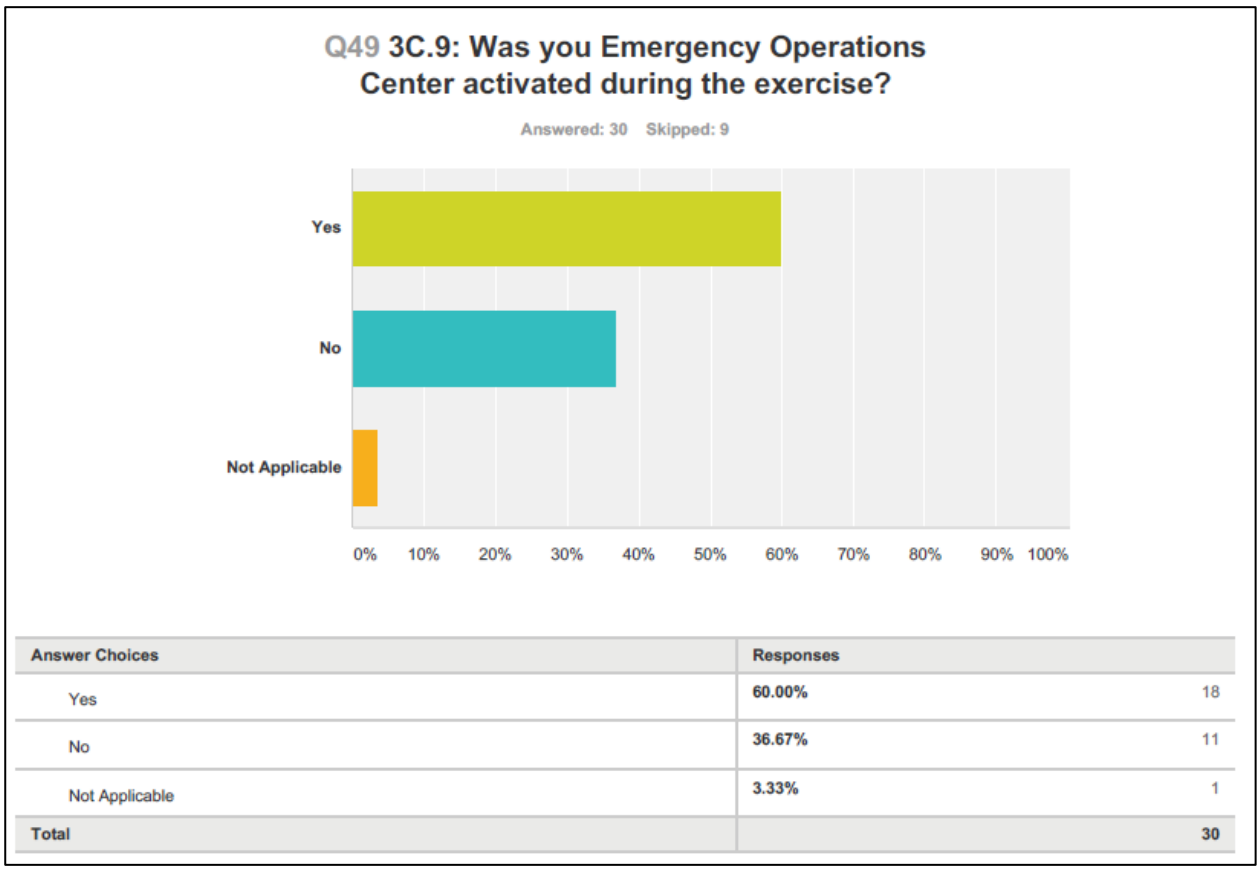
NO**:** Suriname

NOT APPLICABLE: Belize, Bermuda, Dominica, Saint Vincent and the Grenadines, Sint Maarten, Trinidad and Tobago

**Comments**

Saint Vincent and the Grenadines**:** Some decisions were more difficult to impliment fully.

Turks and Caicos: As the tsunami event was a distant one, the timing was adequate.




| Answer Choices | Responses | |
|---|---|---|
| Yes | 60.00% | 18 |
| No | 36.67% | 11 |
| Not Applicable | 3.33% | 1 |
| Total | | 30 |

YES**:** Bahamas, British Virgin Islands, Cayman Islands, Colombia, Curaçao, Dominica, Dominican Republic, France, Guatemala, Haiti, Honduras, Nicaragua, Panama, Puerto Rico, Saint Vincent and the Grenadines, Turks and Caicos, US Virgin Islands, Venezuela

NO**:** Anguilla, Antigua and Barbuda, Aruba, Belize, Bermuda, Costa Rica, Jamaica, Montserrat, Saint Maarten, Suriname, Trinidad and Tobago

NOT APPLICABLE**:** Mexico

**Comments**

Bahamas**:** Partially.

Cayman Islands**:** at an alternate location.

Dominican Republic: only in communications.

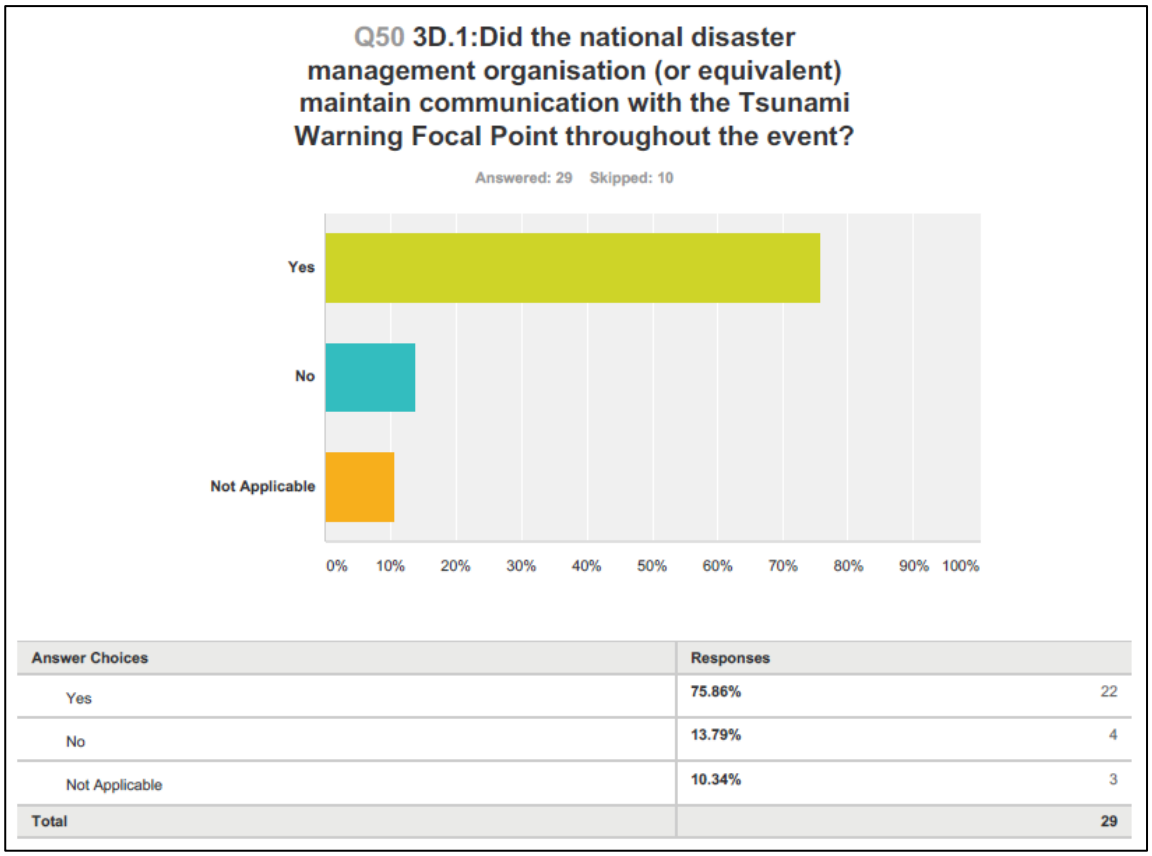
France**:** Zonal as well as local ones.

Honduras**:** Centro de Monitoreo / SAT y Centro de Operaciones de Emergencia Nacional.

Sint Maarten**:** The goal of the exercise was only to test communications.

Turks and Caicos**:** The NEOC was activated to facilitate a tabletop exercise.

Venezuela**:** there were EOC national, regional and municipal.




| Answer Choices | Responses | |
|---|---|---|
| Yes | 75.86% | 22 |
| No | 13.79% | 4 |
| Not Applicable | 10.34% | 3 |
| Total | | 29 |

YES: Antigua and Barbuda, Bahamas, British Virgin Islands, Cayman Islands, Costa Rica, Curaçao, Dominica, Dominican Republic, France, Guatemala, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Saint Vincent and the Grenadines, Sint Maarten, Turks and Caicos, US Virgin Islands, Venezuela

NO**:** Aruba, Belize, Bermuda, Suriname

NOT APPLICABLE**:** Montserrat, Puerto Rico

**Comments**

Bermuda**:** BWS relayed the tsunami specific information and relevant watches and warnings and confirmed via phone that it was understood.

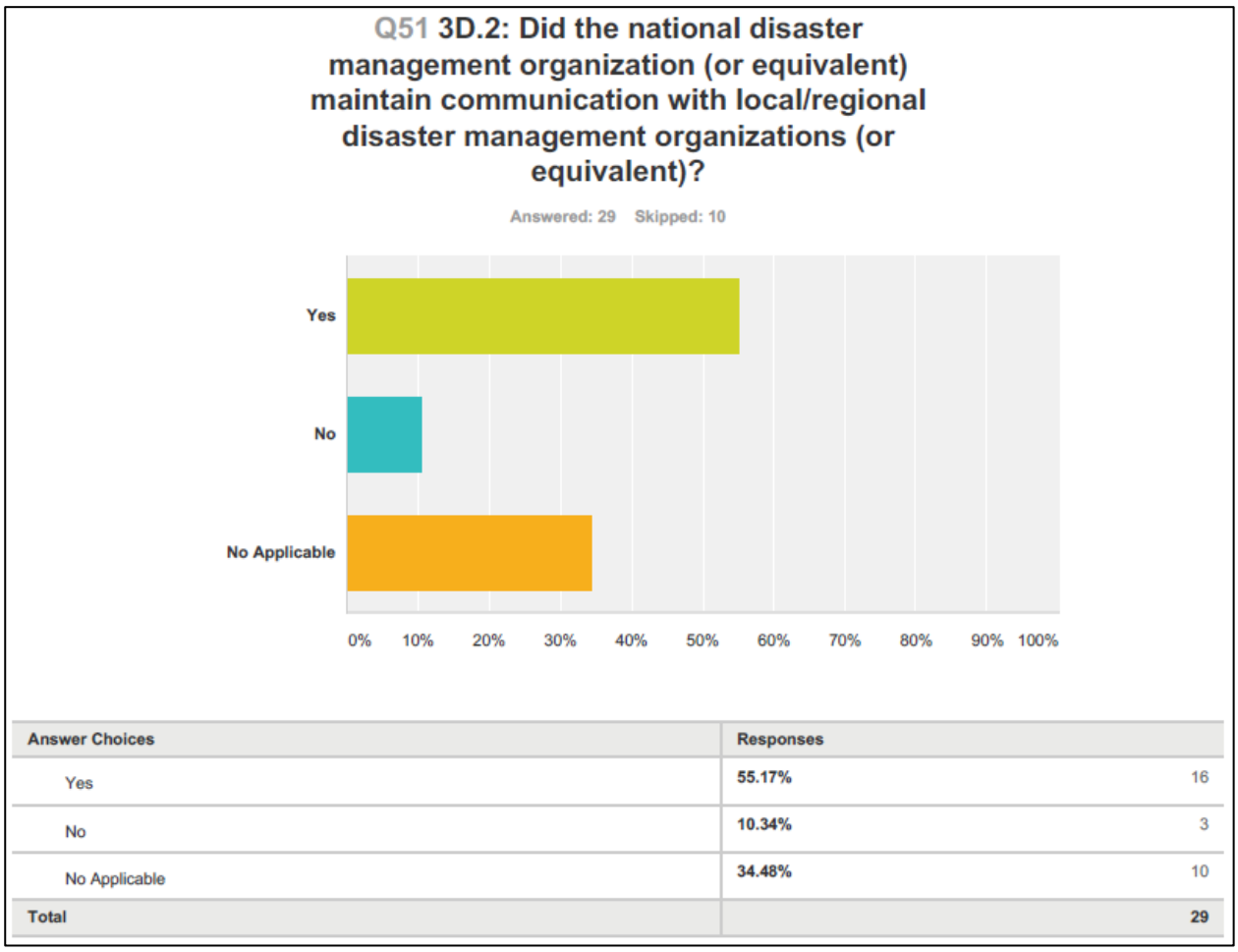
Cayman Islands**:** There are the same organisation.

Colombia**:** Videoconfenrencia durante todo el ejercicio (POLYCOM).

Puerto Rico**:** NDMO and TWFP are the same.

Sint Maarten**:** Receipt of messages needed to be confirmed.

Turks and Caicos**:** The TWFP was part of the NEOC tabletop exercise.




| Answer Choices | Responses | |
|---|---|---|
| Yes | 55.17% | 16 |
| No | 10.34% | 3 |
| No Applicable | 34.48% | 10 |
| Total | | 29 |

YES**:** Bahamas, Colombia, Costa Rica, Dominica, Dominican Republic, France, Guatemala, Haiti, Honduras, Monserrat, Nicaragua, Panama, Puerto Rico, Turks and Caicos, US Virgin Islands

NO**:** Aruba, Belize, Suriname

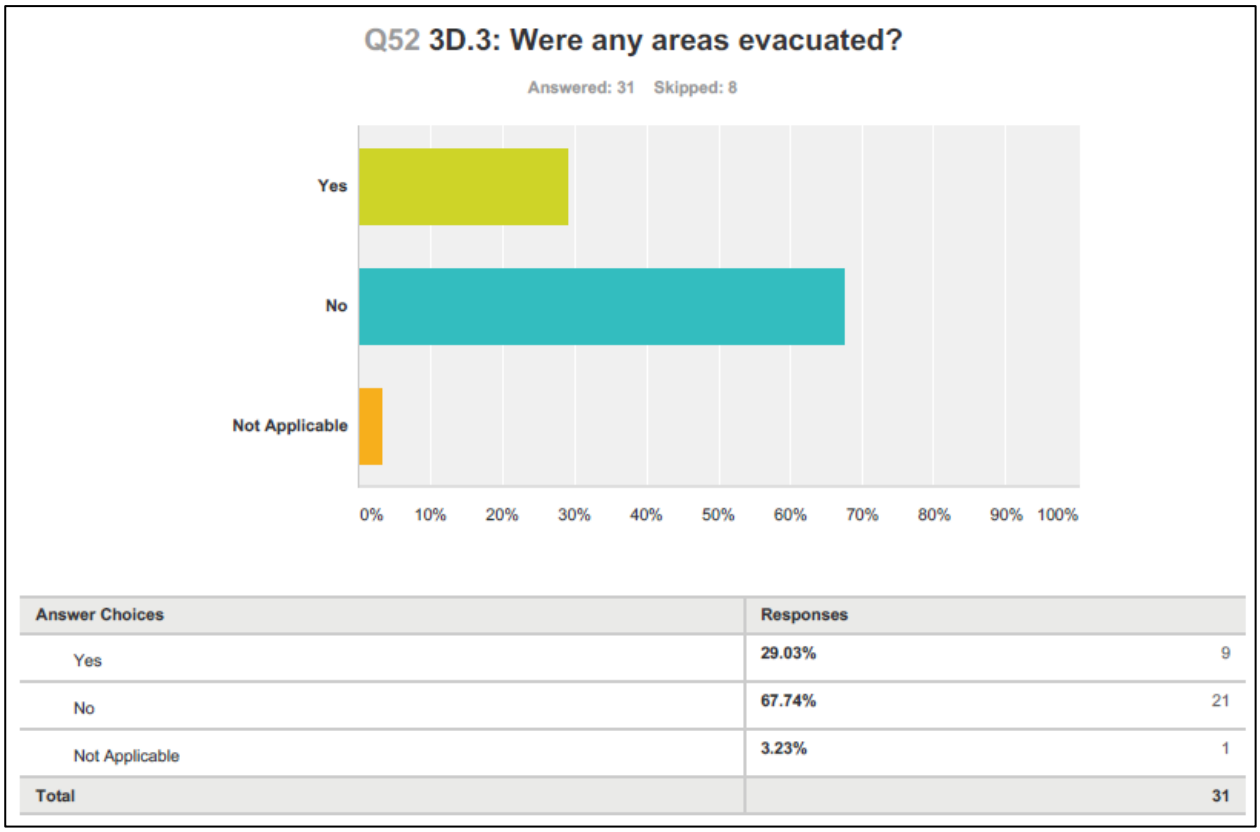
NOT APPLICABLE**:** Anguilla, Bermuda, British Virgin Islands, Cayman Islands, Curaçao, Jamaica, Mexico, Saint Vincent and the Grenadines, Venezuela

**Comments**

Antigua and Barbuda**:** Not sure.

Colombia**:** por videoconfenrencia (POLYCOM), radio y llamada telefónica.

Nicaragua**:** Full time.




| Answer Choices | Responses | |
|---|---|---|
| Yes | 29.03% | 9 |
| No | 67.74% | 21 |
| Not Applicable | 3.23% | 1 |
| Total | | 31 |

YES**:** Anguilla, British Virgin Islands, France, Honduras, Panama, Puerto Rico, Trinidad and Tobago, US Virgin Islands, Venezuela

NO**:** Antigua and Barbuda, Aruba, Bahamas, Belize, Bermuda, Cayman Islands, Colombia, Costa Rica, Curaçao, Dominica, Dominican Republic, Guatemala, Haiti, Jamaica, Montserrat, Nicaragua, Saint Vincent and the Grenadines, Sint Maarten, Suriname, Turks and Caicos

NOT APPLICABLE**:** Mexico

**Comments**

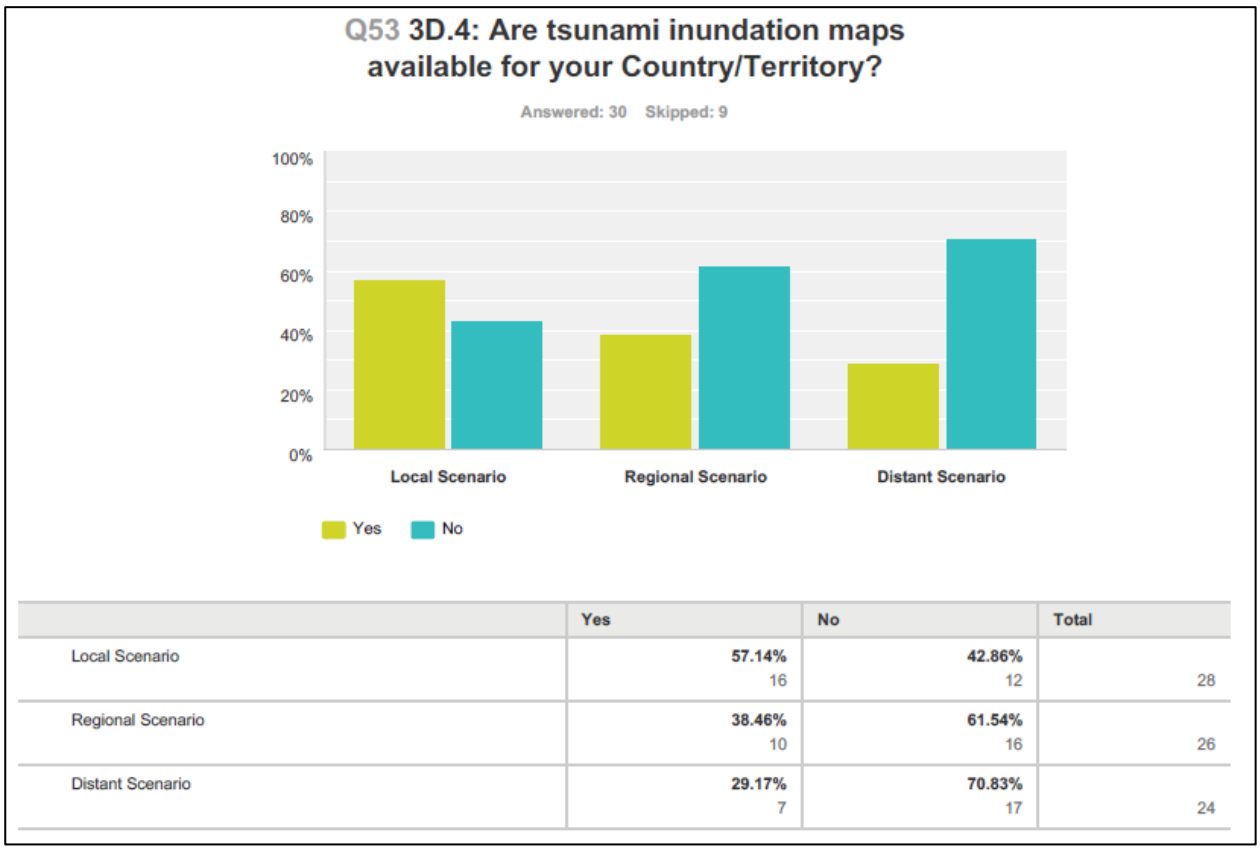
Anguilla**:** two primary schools evacuated/

France**:** Several evacuation were conducted in different areas (School, municipalities and other administration officies, private communities, ...

Panama**:** Portobelo

Puerto Rico**:** multiple community schools.

Trinidad and Tobago**:** Approximately 50 schools within 2 miles of the coast were evacuated.




| | Yes | No | Total |
|---|---|---|---|
| Local Scenario | 57.14%<br>16 | 42.86%<br>12 | 28 |
| Regional Scenario | 38.46%<br>10 | 61.54%<br>16 | 26 |
| Distant Scenario | 29.17%<br>7 | 70.83%<br>17 | 24 |

**Local Scenario:**

YES**:** Anguilla, Antigua and Barbuda, British Virgin Islands, Colombia, Costa Rica, Dominica, Dominican Republic, France, Haiti, Honduras, Nicaragua, Puerto Rico, Saint Vincent and the Grenadines, Turks and Caicos, US Virgin Islands, Venezuela

NO**:** Aruba, Bahamas, Belize, Bermuda, Cayman Islands, Curaçao, Mexico, Montserrat, Panama. Sint Maarten, Suriname, Trinidad and Tobago

**Regional Scenario:**

YES**:** Anguilla, British Virgin Islands, Dominican Republic, France, Guatemala, Honduras, Nicaragua, Saint Vincent and the Grenadines, Turks and Caicos, Venezuela

**NO:** Aruba, Bahamas, Belize, Bermuda, Cayman Islands, Colombia, Costa Rica, Curaçao, Haiti, Mexico, Montserrat, Panama, Puerto Rico, Sint Maarten, Suriname, Trinidad and Tobago

**Distant Scenario:**

YES**:** Anguilla, British Virgin Islands, France, Honduras, Nicaragua, Turks and Caicos, Venezuela

NO**:** Aruba, Bahamas, Belize, Bermuda, Cayman Islands, Colombia, Costa Rica, Curaçao, Dominican Republic, Haiti, Mexico, Montserrat, Panama, Puerto Rico, Sint Maarten, Suriname, Trinidad and Tobago

**Comments**

Aruba**:** we have model runs for srtm topography but not high resolution.

Colombia**:** Para municipios en el Pacífico. En el Caribe se requiere avanzar en este conocimiento.

Dominica**:** for some coastal communities.

France**:** except for Saint-Martin and Saint-Barthélémy because we need to have bathimétric and litho datas.

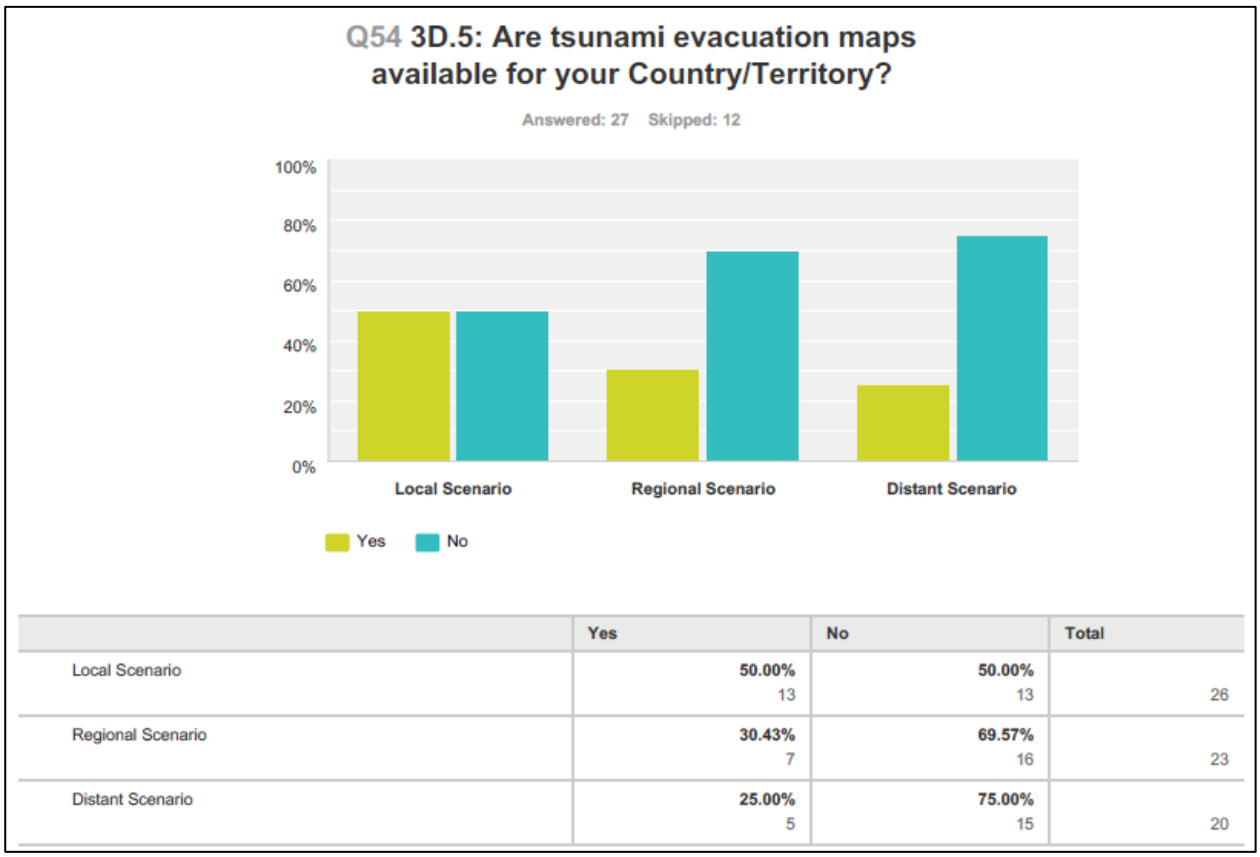
Jamaica**:** Unsure.

Nicaragua**:** Only for the Pacific Coast.

Saint Vincent and the Grenadines**:** IN DEVELOPMENT.

Sint Maarten: We have some flood maps, but not for tsunami as yet.

Venezuela**:** We are able to model them on demand.




| | Yes | No | Total |
|---|---|---|---|
| Local Scenario | 50.00% 13 | 50.00% 13 | 26 |
| Regional Scenario | 30.43% 7 | 69.57% 16 | 23 |
| Distant Scenario | 25.00% 5 | 75.00% 15 | 20 |

**Local Scenario:**

YES**:** Anguilla, Colombia, Dominica, Dominican Republic, France, Haiti, Honduras, Nicaragua, Puerto Rico, Saint Vincent and the Grenadines, Suriname, US Virgin Islands, Venezuela

NO**:** Aruba, Bahamas, Belize, Bermuda, Cayman Islands, Costa Rica, Curaçao, Mexico, Montserrat, Panama, Sint Maarten, Trinidad and Tobago

**Regional Scenario:**

YES**:** Anguilla, Dominican Republic, France, Guatemala, Honduras, Nicaragua, Venezuela

NO**:** Aruba, Bahamas, Belize, Bermuda, Cayman Islands, Colombia, Costa Rica, Curaçao, Haiti, Mexico, Montserrat, Panama, Puerto Rico, Sint Maarten, Suriname, Trinidad and Tobago

**Distant Scenario:**

YES**:** Anguilla, France, Honduras, Nicaragua, Venezuela

NO**:** Bahamas, Belize, Cayman Islands, Colombia, Costa Rica, Curaçao, Dominican Republic, Haiti, Mexico, Montserrat, Panama, Puerto Rico, Sint Maarten, Suriname, Trinidad and Tobago

**Comments**

Antigua and Barbuda: Not sure.

Aruba**:** see above.

Colombia**:** Para municipios en el Pacífico. En el Caribe se requiere avanzar en este conocimiento.

Dominica**:** Certain areas.

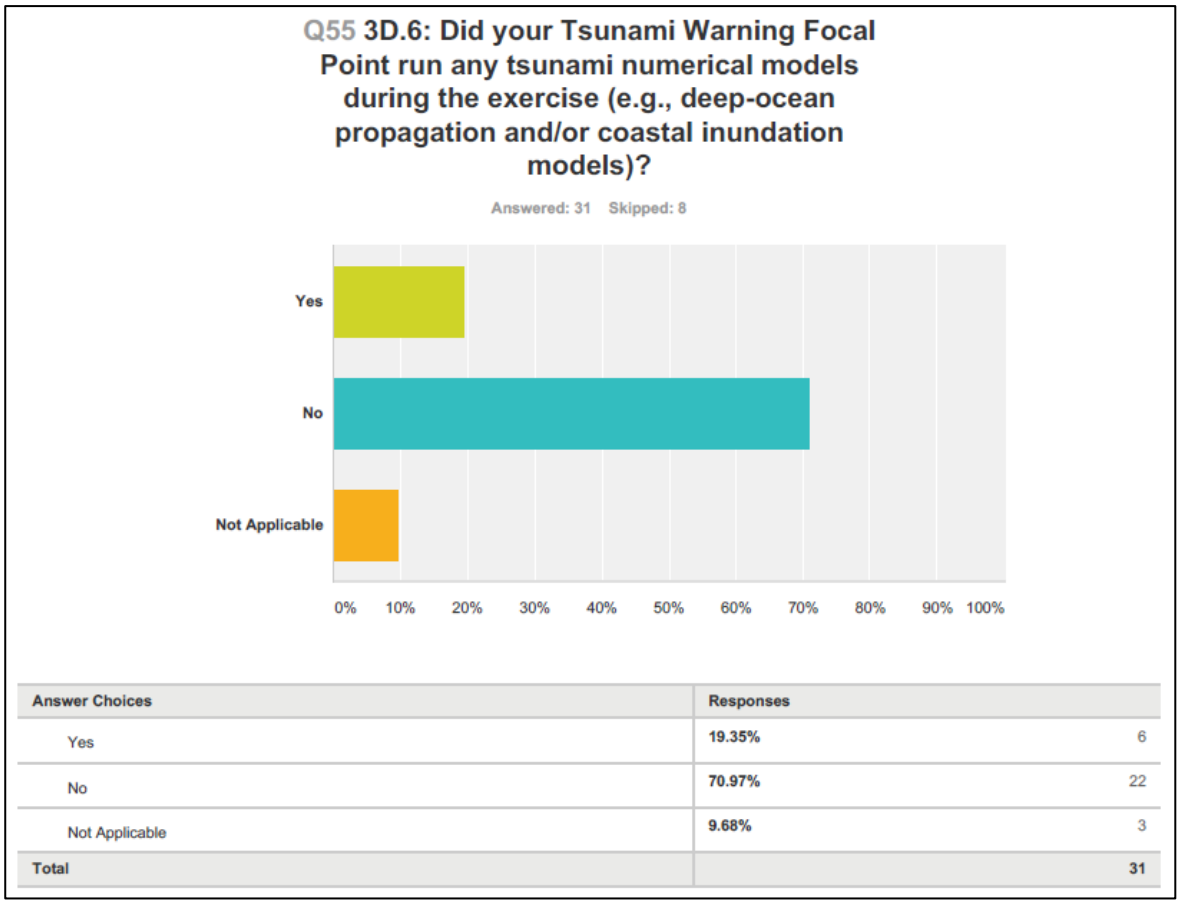
France**:** We developed test and validate a concept to realize evacuation map, but at the moment most of the municipalities have'nt their evacuation map.

Jamaica**:** Unsure.

Nicaragua**:** Only for the Pacific Coast.

Saint Vincent and the Grenadines**:** IN DEVELOPMENT.

Venezuela**:** For some municipalities.




| Answer Choices | Responses | |
|---|---|---|
| Yes | 19.35% | 6 |
| No | 70.97% | 22 |
| Not Applicable | 9.68% | 3 |
| Total | | 31 |

YES**:** Aruba, Costa Rica, Dominican Republic, Honduras, Nicaragua, Venezuela

NO**:** Anguilla, Antigua and Barbuda, Bahamas, Belize, Bermuda, Cayman Islands, Colombia, Curaçao, Dominica, Guatemala, Haiti, Jamaica, Mexico, Montserrat, Panama, Puerto Rico, Saint Vincent and the Grenadines, Sint Maarten, Suriname, Trinidad and Tobago, Turks and Caicos

NOT APPLICABLE**:** British Virgin Islands, France, US Virgin Islands

**Comments**

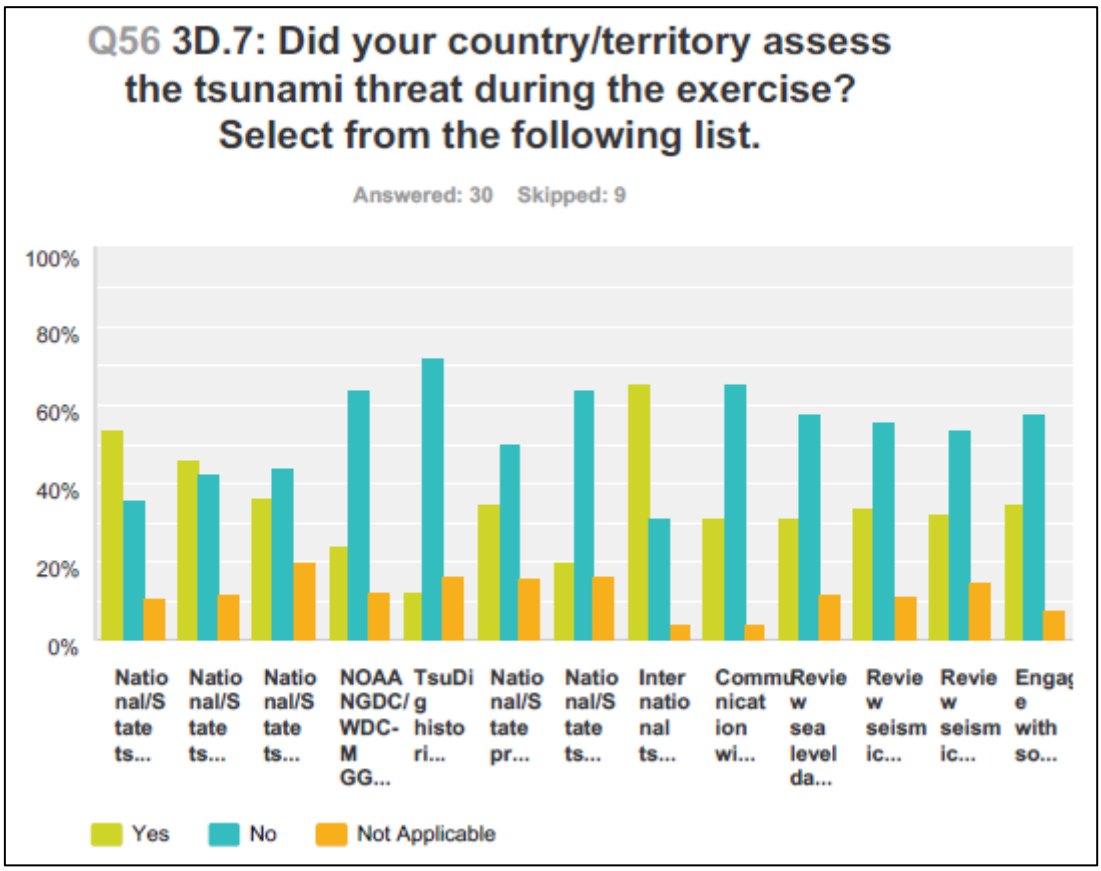
Costa Rica: previous the Exercise.

Dominican Republic: We runing the MOST model.

France**:** We run tsunami numerical models during the exercices, but is(nt the TWFP but the zonal NDMO wich is responsible to do it.

Nicaragua**:** Was used the ITDB program to simulate the tsunami propagation through the Caribbean Sea.

Venezuela**:** We do the tsunami numerical model before the exercise.




| | Yes | No | Not Applicable | Total |
|---|---|---|---|---|
| National/State tsunami experts | 53.57% 15 | 35.71% 10 | 10.71% 3 | 28 |
| National/State tsunami coordination committee | 46.15% 12 | 42.31% 11 | 11.54% 3 | 26 |
| National/State tsunami historical database | 36.00% 9 | 44.00% 11 | 20.00% 5 | 25 |
| NOAA NGDC/WDC-MGG tsunami historical database (web) | 24.00% 6 | 64.00% 16 | 12.00% 3 | 25 |
| TsuDig historical database GIS tool (NGDC/ITIC offline) | 12.00% 3 | 72.00% 18 | 16.00% 4 | 25 |
| National/State pre-computed tsunami scenarios | 34.62% 9 | 50.00% 13 | 15.38% 4 | 26 |
| National/State tsunami forecasts | 20.00% 5 | 64.00% 16 | 16.00% 4 | 25 |
| International tsunami forecasts. Note source of forecasts (PTWC, NTWC) in Comments. | 65.38% 17 | 30.77% 8 | 3.85% 1 | 26 |
| Communication with outside sources (such as ITIC, media, other) | 30.77% 8 | 65.38% 17 | 3.85% 1 | 26 |
| Review sea level data availability (IOC Sea Level Monitoring Facility, Tide Tool, etc.) | 30.77% 8 | 57.69% 15 | 11.54% 3 | 26 |
| Review seismic data availability (IRIS, PRSN, etc.) | 33.33% 9 | 55.56% 15 | 11.11% 3 | 27 |
| Review seismic information tools (USGS, CISN, PRSN) | 32.14% 9 | 53.57% 15 | 14.29% 4 | 28 |

**National/State Tsunami Experts:**

YES**:** Antigua and Barbuda, Aruba, Cayman Islands, Colombia, Costa Rica, Curaçao, Dominican Republic, France, Guatemala, Haiti, Honduras, Mexico, Nicaragua, Panama, Puerto Rico, Venezuela

NO**:** Anguilla, Bahamas, Belize, Jamaica, Montserrat, Saint Vincent and the Grenadines, Suriname, Trinidad and Tobago, Turks and Caicos

NOT APPLICABLE**:** Bermuda, Dominica, Sint Maarten

**National/State Tsunami Coordination Committee:**

YES**:** Antigua and Barbuda, Costa Rica, Curaçao, Dominican Republic, France, Honduras, Mexico, Nicaragua, Panama, Saint Vincent and the Grenadines, Turks and Caicos, Venezuela

NO**:** Anguilla, Bahamas, Belize, Colombia, Dominica, Jamaica, Montserrat, Puerto Rico, Suriname, Trinidad and Tobago

NOT APPLICABLE**:** Bermuda, Cayman Islands, Sint Maarten

**National/State Tsunami Historical Database:**

YES**:** Aruba, Colombia, Costa Rica, Dominican Republic, France, Honduras, Panama, Saint Vincent and the Grenadines, Venezuela

NO**:** Antigua and Barbuda, Bahamas, Belize, Curaçao, Jamaica, Montserrat, Puerto Rico, Suriname, Trinidad and Tobago, Turks and Caicos

NOT APPLICABLE**:** Anguilla, Bermuda, Cayman Islands, Dominica, Sint Maarten

**NOAA NGDC/WDC-MGG Tsunami Historical Database (web):**

YES**:** Aruba, Colombia, Costa Rica, Honduras, Saint Vincent and the Grenadines, Venezuela

NO**:** Antigua and Barbuda, Bahamas, Belize, Cayman Islands, Curaçao, Dominican Republic, France, Jamaica, Montserrat, Panama, Puerto Rico, Sint Maarten, Suriname, Trinidad and Tobago, Turks and Caicos

NOT APPLICABLE**:** Anguilla, Bermuda, Dominica

**TsuDig Historical Database GIS Tool (NGDC/ITIC offline):**

YES**:** Aruba, Colombia, Honduras

NO**:** Antigua and Barbuda, Bahamas, Belize, Costa Rica, Curaçao, Dominican Republic, France, Jamaica Montserrat, Panama, Puerto Rico, Saint Vincent and the Grenadines, Sint Maarten, Suriname, Trinidad and Tobago, Turks and Caicos, Venezuela

NOT APPLICABLE**:** Anguilla, Bermuda, Cayman Islands, Dominica

**National/State Pre-computed Tsunami Scenarios:**

YES**:** Aruba, Colombia, Costa Rica, Dominican Republic, France, Honduras, Nicaragua, Turks and Caicos, Venezuela

NO**:** Antigua and Barbuda, Bahamas, Belize, Cayman Islands, Curaçao, Jamaica, Montserrat, Panama, Puerto Rico, Saint Vincent and the Grenadines, Suriname, Trinidad and Tobago

NOT APPLICABLE**:** Anguilla, Bermuda, Dominica, Sint Maarten

**National/State Tsunami Forecasts:**

YES**:** Aruba, Bermuda, France, Honduras, Venezuela

NO**:** Antigua and Barbuda, Bahamas, Belize, Cayman Islands, Colombia, Curaçao, Dominican Republic, Jamaica, Montserrat, Panama, Puerto Rico, Saint Vincent and the Grenadines, Suriname, Trinidad and Tobago, Turks and Caicos

NOT APPLICABLE**:** Anguilla, Costa Rica, Dominica, Sint Maarten

**International Tsunami Forecasts:**

YES**:** Bermuda, British Virgin Islands, Cayman Islands, Colombia, Costa Rica, Curaçao Dominica, France, Honduras, Nicaragua, Panama, Puerto Rico, Saint Vincent and the Grenadines, Trinidad and Tobago, Turks and Caicos, Venezuela

NO**:** Antigua and Bermuda, Bahamas, Belize, Dominican Republic, Jamaica, Montserrat, Sint Maarten, Suriname

NOT APPLICABLE**:** Anguilla

**Communication with outside sources (such as ITIC, media, other):**

YES**:** Antigua and Barbuda, Bermuda, British Virgin Islands, Colombia, Costa Rica, Dominica, Honduras, US Virgin Islands

NO: Bahamas, Belize, Cayman Islands, Curaçao, Dominican Republic, France, Jamaica, Montserrat, Panama, Puerto Rico, Saint Vincent and the Grenadines, Sint Maarten, Suriname, Trinidad and Tobago, Turks and Caicos, Venezuela

NOT APPLICABLE**:** Anguilla

**Review Sea Level Data Availability (IOC Sea Level Monitoring Facility, Tide Tool, etc):**

YES**:** Aruba, Bermuda, Cayman Islands, Colombia, France, Honduras, Panama, US Virgin Islands

NO: Antigua and Barbuda, Bahamas, Belize, Curaçao, Dominican Republic, Jamaica, Montserrat, Puerto Rico, Saint Vincent and the Grenadines, Sint Maarten, Suriname, Trinidad and Tobago, Turks and Caicos, Venezuela

NOT APPLICABLE**:** Anguilla, Costa Rica, Dominica

**Review Seismic Data Availability (IRIS, PRSN, etc.):**

YES**:** Aruba, British Virgin Islands, Colombia, Curaçao, Dominican Republic, Honduras, Panama, Puerto Rico, US Virgin Islands

NO**:** Antigua and Barbuda, Bahamas, Belize, Bermuda, Cayman Islands, France, Jamaica, Montserrat, Saint Vincent and the Grenadines, Sint Maarten, Trinidad and Tobago, Turks and Caicos, Venezuela

NOT APPLICABLE**:** Anguilla, Costa Rica, Dominica

**Review Seismic Information Tools (USGS, CISN, PRSN):**

YES**:** Antigua and Barbuda, British Virgin Islands, Colombia, Honduras, Mexico, Nicaragua, Panama, Puerto Rico, US Virgin Islands

NO**:** Bahamas, Belize, Cayman Islands, Curaçao, Dominican Republic, France, Jamaica, Montserrat, Saint Vincent and the Grenadines, Sint Maarten, Suriname, Trinidad and Tobago, Turks and Caicos, Venezuela

NOT APPLICABLE**:** Anguilla, Bermuda, Costa Rica, Dominica

**Engage with Social Media (Facebook, Twitter, Google Chat, etc.):**

YES**:** Bermuda, British Virgin Islands, Colombia, Costa Rica, France, Honduras, Mexico, Puerto Rico, Venezuela

NO**:** Antigua and Barbuda, Bahamas, Belize, Cayman Islands, Curaçao, Dominican Republic, Jamaica, Montserrat, Panama, Saint Vincent and the Grenadines, Sint Maarten, Suriname, Trinidad and Tobago, Turks and Caicos

NOT APPLICABLE**:** Anguilla, Dominica

**Comments**

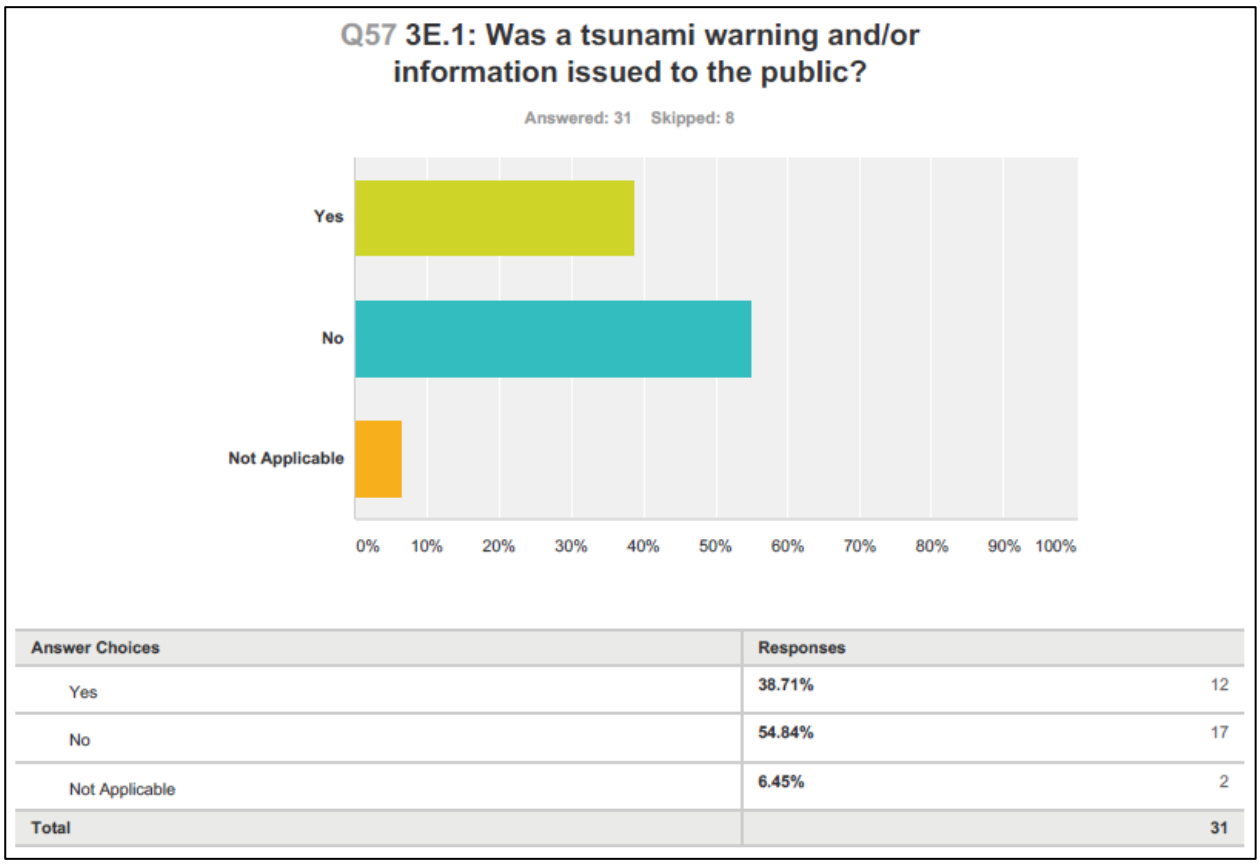
Curaçao: PTWC

France**:** For the review of séismic data, everybody know that France has its own Seismic operator, but it was not consulted.

Nicaragua**:** 1) National tsunami expert: PhD. Wilfried Strauch 2) National pre-computed tsunami scenarios: Was used the ITDB program to simulate the tsunami propagation through the Caribbean Sea from Panama to Guatemala, and also were represented historical tsunamis near Caribbean coast of Central America.

Puerto Rico**:** NTWC.

Trinidad and Tobago**:** PTWC.




| Answer Choices | Responses | |
|---|---|---|
| Yes | 38.71% | 12 |
| No | 54.84% | 17 |
| Not Applicable | 6.45% | 2 |
| Total | | 31 |

YES: Anguilla, Bermuda, British Virgin Islands, Cayman Islands, Costa Rica, Dominica Republic, France, Honduras, Montserrat, Puerto Rico, US Virgin Islands, Venezuela

NO**:** Antigua and Barbuda, Aruba, Bahamas, Belize, Colombia, Curaçao, Guatemala, Haiti, Jamaica, Mexico, Nicaragua, panama, Sint Maarten, Suriname, Trinidad and Tobago, Turks and Caicos

NOT APPLICABLE**:** Dominica, Saint Vincent and the Grenadines

**Comments**

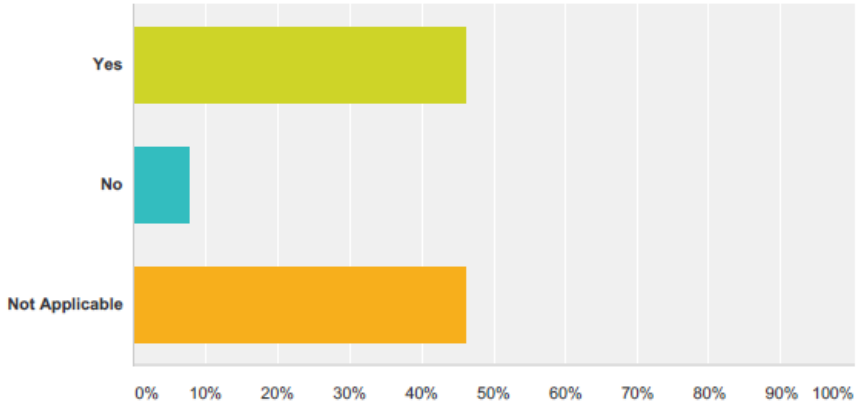
Aruba**:** certain individuals only -- hotels, search and rescue.

Dominica**:** that was beyond the scope of our participation .

Saint Vincent and the Grenadines**:** TABLE TOP SCENARIO.

## Q58 3E.2: If you answered yes to Q3E.1, was the tsunami warning and/or information issued in a timely manner to the public?

Answered: 26 Skipped: 13




| Answer Choices | Responses | |
|---|---|---|
| Yes | 46.15% | 12 |
| No | 7.69% | 2 |
| Not Applicable | 46.15% | 12 |
| Total | | 26 |

YES**:** Anguilla, Aruba, Bermuda, British Virgin Islands, Costa Rica, Dominican Republic, France, Honduras, Montserrat, Puerto Rico, US Virgin Islands, Venezuela

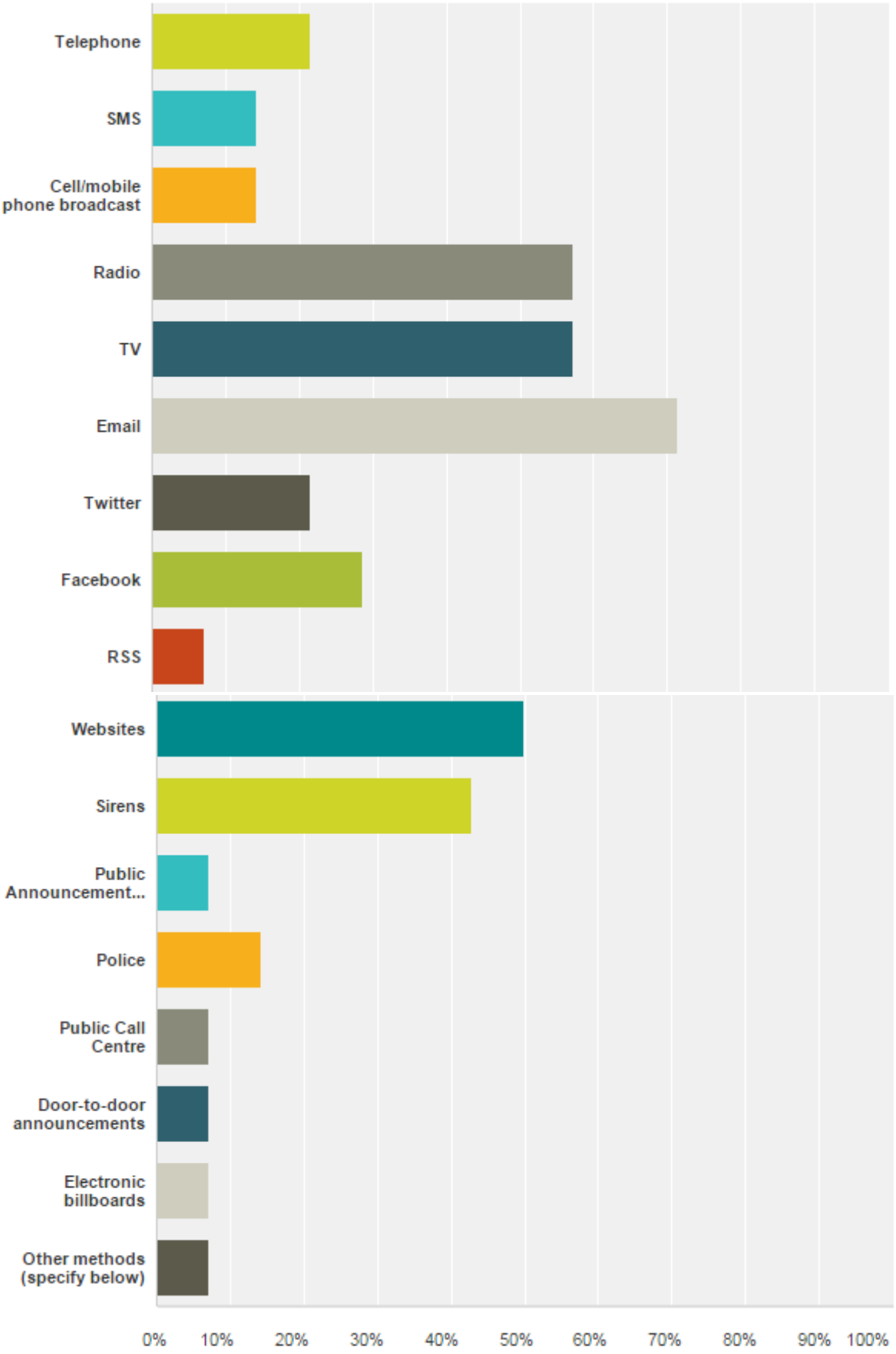
NO**:** Cayman Islands, Guatemala

NOT APPLICABLE**:** Antigua and Barbuda, Belize, Colombia, Curaçao, Dominica, Haiti, Nicaragua, Panama, Saint Vincent and the Grenadines, Trinidad and Tobago, Turks and Caicos

**Comments**

Bermuda**:** As soon as we could disseminate 10 min after confirmation message.

Cayman Islands**:** There was delay in issuing the warning due to the fact that we weren't in the designated EOC and the alternative presented some communication challenges.


Telephone
SMS
Cell/mobile phone broadcast
Radio
TV
Email
Twitter
Facebook
RSS
Websites
Sirens
Public Announcement...
Police
Public Call Centre
Door-to-door announcements
Electronic billboards
Other methods (specify below)
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%

**3E.3:If you answered yes to Q3E.1, how was the warning/information communicated to the public?Please check all that apply:**

Answered: 14 Skipped: 25

Telephone: Dominican Republic, Honduras

SMS**:** France, Honduras

Cell/mobile phone broadcast**:** British Virgin Islands, Honduras

Radio**:** British Virgin Islands, Cayman Islands, France, Honduras, Montserrat, Puerto Rico, Venezuela

TV**:** Bermuda, British Virgin Islands, Cayman Islands, France, Honduras, Puerto Rico, TV

E-mail: Anguilla, Aruba, Bermuda, British Virgin Islands, Cayman Islands, Dominican Republic, France, Honduras, Montserrat, Venezuela

Twitter**:** Dominican Republic, Honduras, Venezuela

Facebook**:** Bermuda, British Virgin Islands, Costa Rica, Honduras

RSS**:** Honduras

Websites**:** Aruba, Bermuda, British Virgin Islands, Cayman Islands, Dominican Republic, Honduras, Venezuela

Sirens**:** British Virgin Islands, Honduras, Montserrat, Puerto Rico, US Virgin Islands, Venezuela

Public Announcement Systems**:** Montserrat

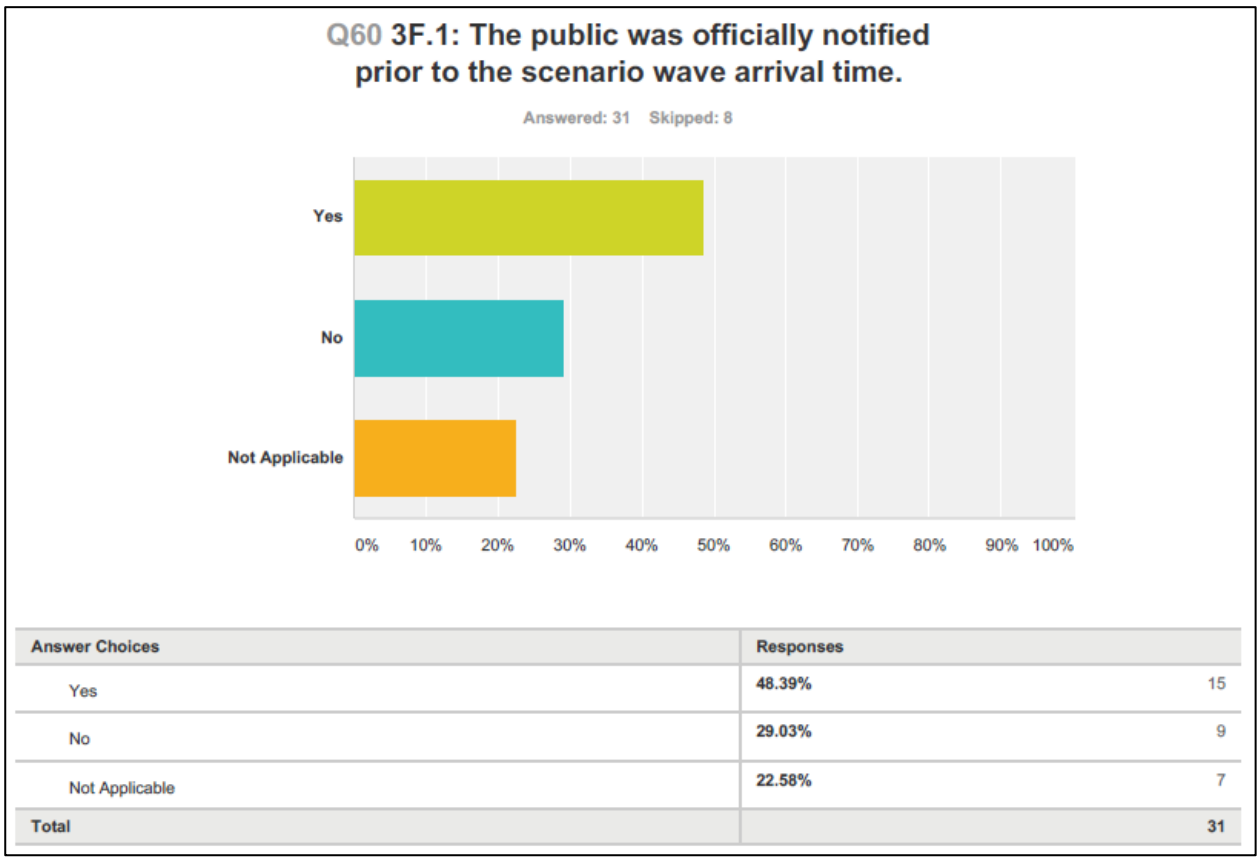
Police**:** Honduras

Public Call Centre**:** Honduras

Door-to-door Announcements**:** Honduras

Electronic Billboards**:** Honduras

Other Methods**:** Anguilla (warning system blackberry app), Aruba (fax), Belize (They were not communicated.), France (Via rescue helicopter), Nicaragua (Not applicable), Saint Vincent and the Grenadines (INTERNAL)




| Answer Choices | Responses | |
|---|---|---|
| Yes | 48.39% | 15 |
| No | 29.03% | 9 |
| Not Applicable | 22.58% | 7 |
| Total | | 31 |

YES**:** Anguilla, Aruba, British Virgin Islands, Cayman Islands, Costa Rica, France, Guatemala, Honduras, Montserrat, Panama, Puerto Rico, Sint Maarten, US Virgin Islands, Venezuela

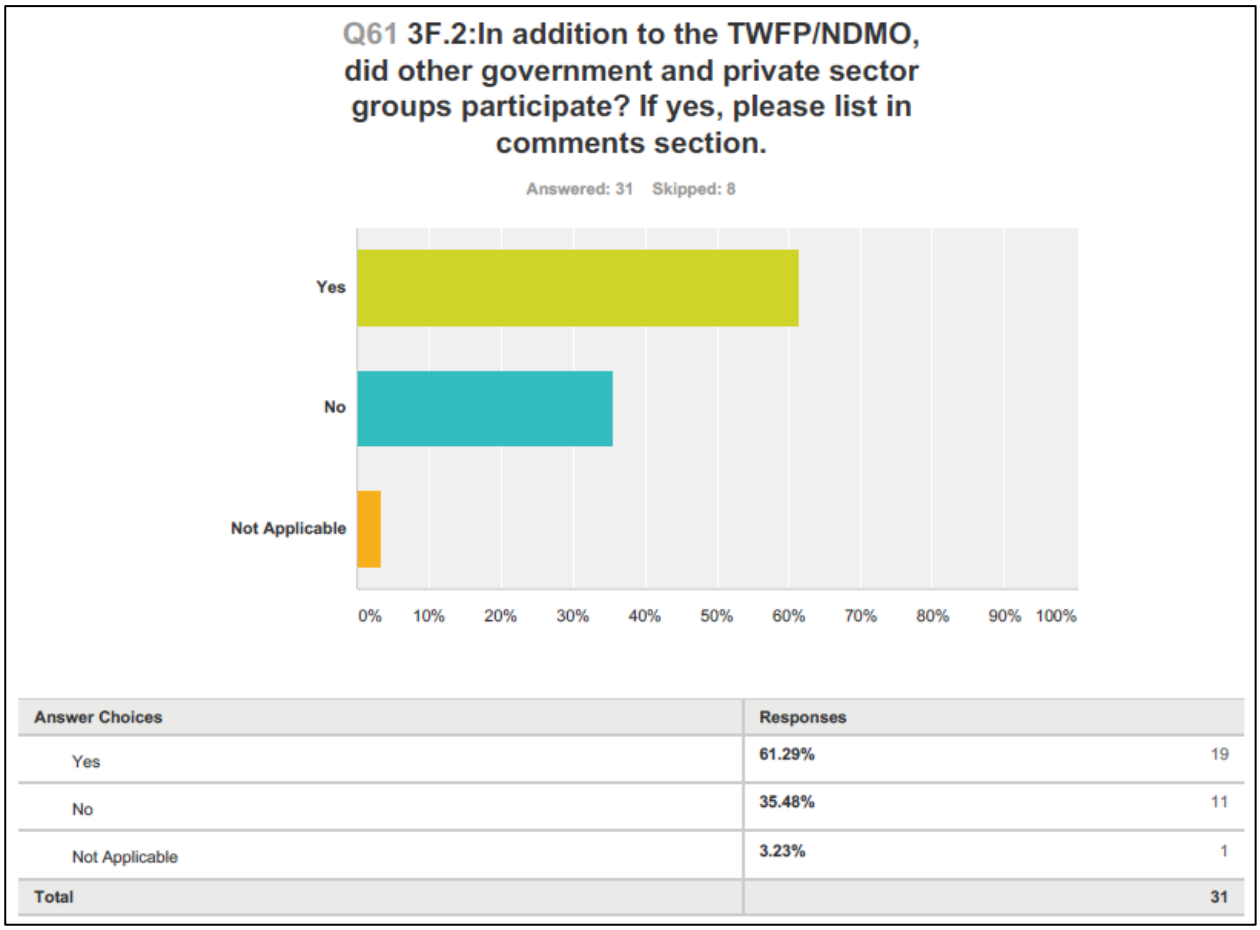
NO: Antigua and Barbuda, Belize, Bermuda, Dominican Republic, Haiti, Jamaica, Suriname, Trinidad and Tobago, Turks and Caicos

NOT APPLICABLE**:** Bahamas, Colombia, Curaçao, Dominica, Mexico, Nicaragua, Saint Vincent and the Grenadines

**Comments**

Panama**:** The people at Portobelo was mobilized as soon as we get the tsunami message and the seismic report.

Sint Maarten**:** A press release was sent out via the media to inform the public about the exercise in general.




| Answer Choices | Responses | |
|---|---|---|
| Yes | 61.29% | 19 |
| No | 35.48% | 11 |
| Not Applicable | 3.23% | 1 |
| Total | | 31 |

YES**:** Anguilla, Antigua and Barbuda, Aruba, Bermuda, British Virgin Islands, Cayman Islands, Colombia, Costa Rica, Dominica, France, Mexico, Montserrat, Panama, Puerto Rico, Saint Vincent and the Grenadines, Turks and Caicos, US Virgin Islands, Venezuela

NO**:** Belize, Curaçao, Dominican Republic, Guatemala, Haiti, Honduras, Jamaica, Nicaragua, Sint Maarten, Suriname, Trinidad and Tobago

NOT APPLICABLE**:** Bahamas

**Comments**

Anguilla**:** public and private primary schools.

Antigua and Barbuda**:** Defense Force, Police, media.

Aruba**:** hotels, search and rescue.

Bermuda**:** A discussion was held at EMO which included the Regiment, Hospital, Police, Planning, Education, Airport, Marine & Ports, Transportation.

Cayman Islands**:** a few schools.

Colombia**:** Todas las entidades del Sistema Nacional de Detección y Alerta de Tsunamis, las entidades de la sala de crisis nacional y las autoridades regionales y locales de los departamentos de la región Caribe.

Costa Rica**:** Red Cross, Fire fighters, police, local government.

Dominica**:** Dominica red Cross.

France**:** You have our list of registred communities. All our diplomatic posts in the caribean participated in the exercice (alerting french residents, ...).

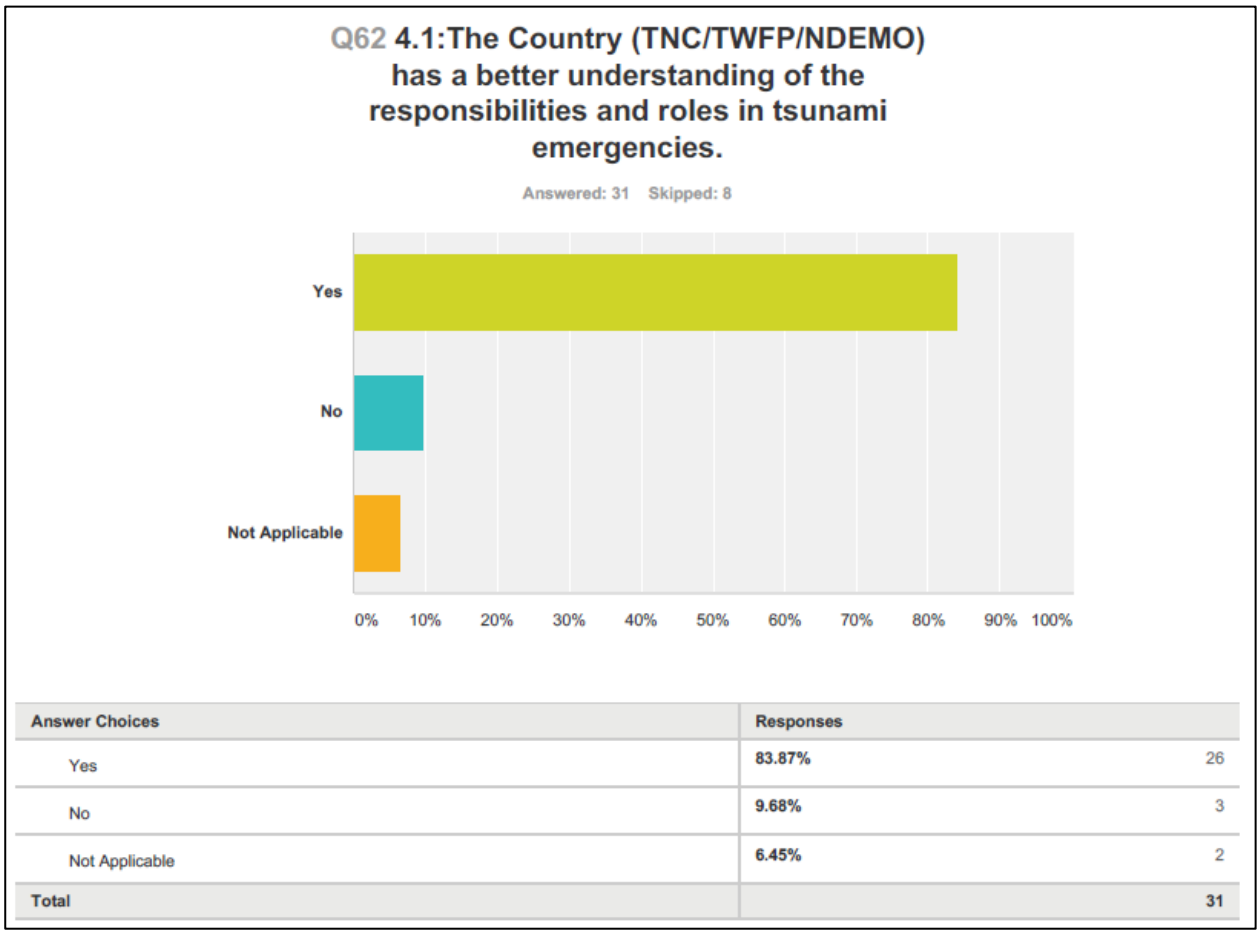
Mexico**:** Harbor Masters.

Montserrat**:** Police, Airport, Delta Petroleum and the Governor's Office, Fire Department.

Saint Vincent and the Grenadines**:** FINANCIAL INSTITUTION.

Turks and Caicos**:** Fortis (power company), Public Works, 911 ECC, Interhealth Canada (Hospital), EMS, Ministry of Health, Ministry Of Home Affairs, Ministry of Government Support Services, Police, Fire, TC Search and Rescue, Government Press Office.

Venezuela**:** Firefighter, rescue groups, public media, hotels, etc.

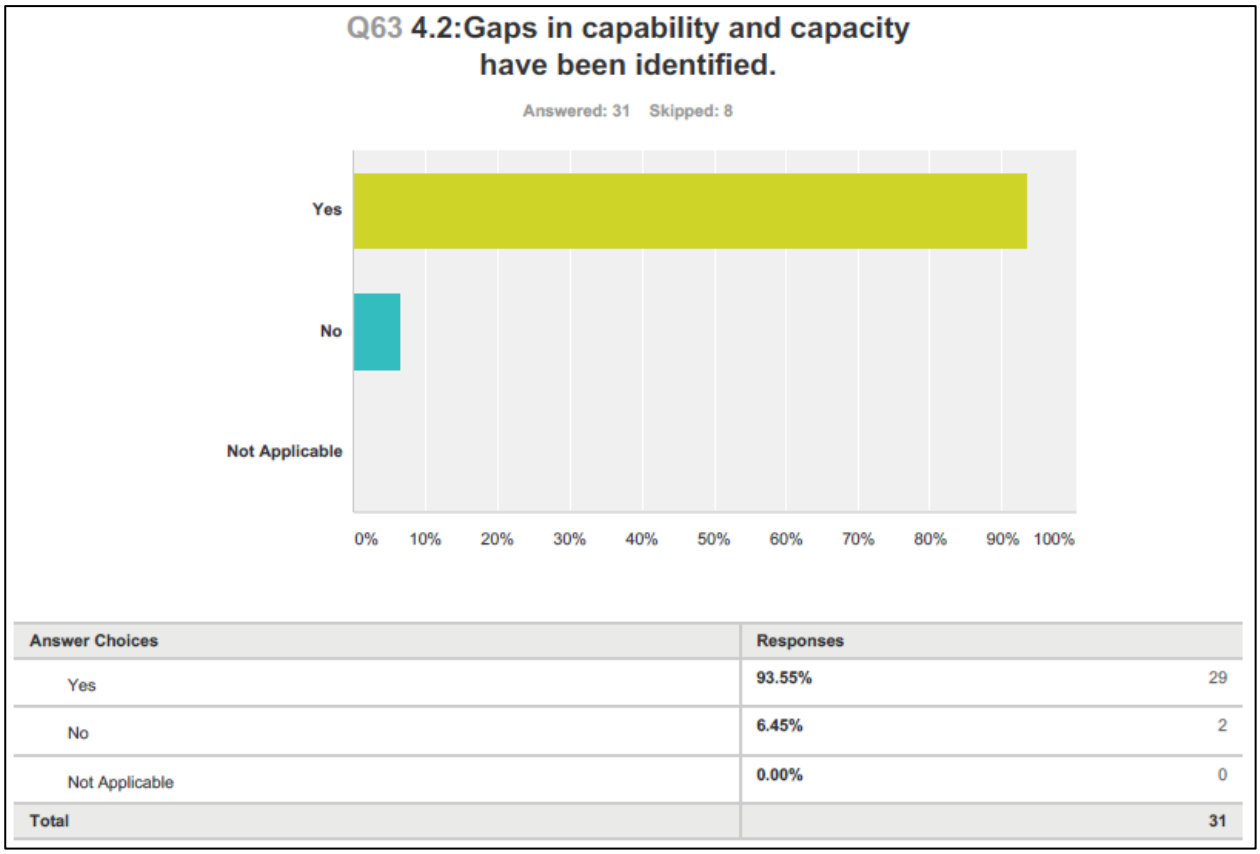



| Answer Choices | Responses | |
|---|---|---|
| Yes | 83.87% | 26 |
| No | 9.68% | 3 |
| Not Applicable | 6.45% | 2 |
| Total | | 31 |

YES: Anguilla, Antigua and Barbuda, Bahamas, Bermuda, British Virgin Islands, Cayman Islands, Colombia, Costa Rica, Curaçao, Dominica, Dominican Republic, France, Guatemala, Haiti, Honduras, Mexico, Nicaragua, Panama, Puerto Rico, Saint Vincent and the Grenadines, Sint Maarten, Suriname, Turks and Caicos, US Virgin Islands, Venezuela

NO**:** Aruba, Jamaica, Trinidad and Tobago

NOT APPLICABLE**:** Belize, Montserrat




| Answer Choices | Responses | |
|---|---|---|
| Yes | 93.55% | 29 |
| No | 6.45% | 2 |
| Not Applicable | 0.00% | 0 |
| Total | | 31 |

YES**:** Anguilla, Antigua and Barbuda, Aruba, Bahamas, Belize, Bermuda, British Virgin Islands, Cayman Islands, Colombia, Costa Rica, Curaçao, Dominica, Dominican Republic, France, Guatemala, Haiti, Jamaica, Mexico, Montserrat, Nicaragua, Panama, Puerto Rico, Saint Vincent and the Grenadines, Sint Maarten, Suriname, Turks and Caicos, US Virgin Islands, Venezuela

NO**:** Honduras, Trinidad and Tobago

**Comments**

Bahamas**:** <15 minute arrival times need to be addressed.

Bermuda**:** There are more that gaps with no plan there is a large void - any action will be beneficial.

Dominican Republic**:** in transmition of the bulletins.

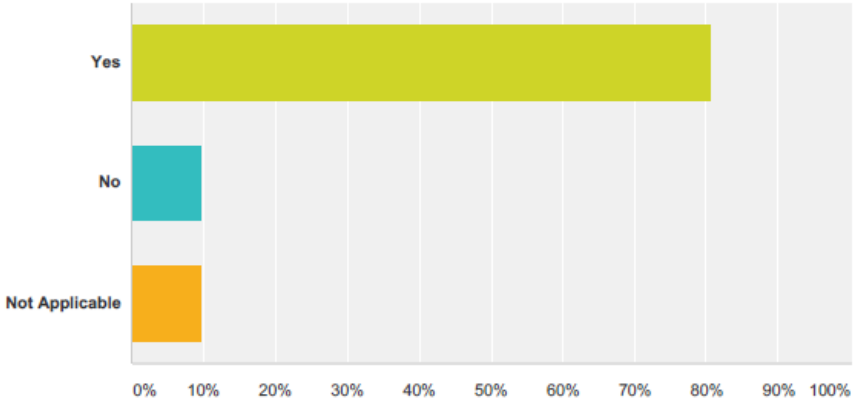
Nicaragua**:** See Q75.4.14.

Panama**:** delays and lack of communication between some agencies.

Sint Maarten**:** There as some internal / extermal communications gaps.

**Q64 4.3:The Country/Territory enhanced the relationships among the Tsunami Warning System stakeholders as a result of the exercise.**

Answered: 31 Skipped: 8

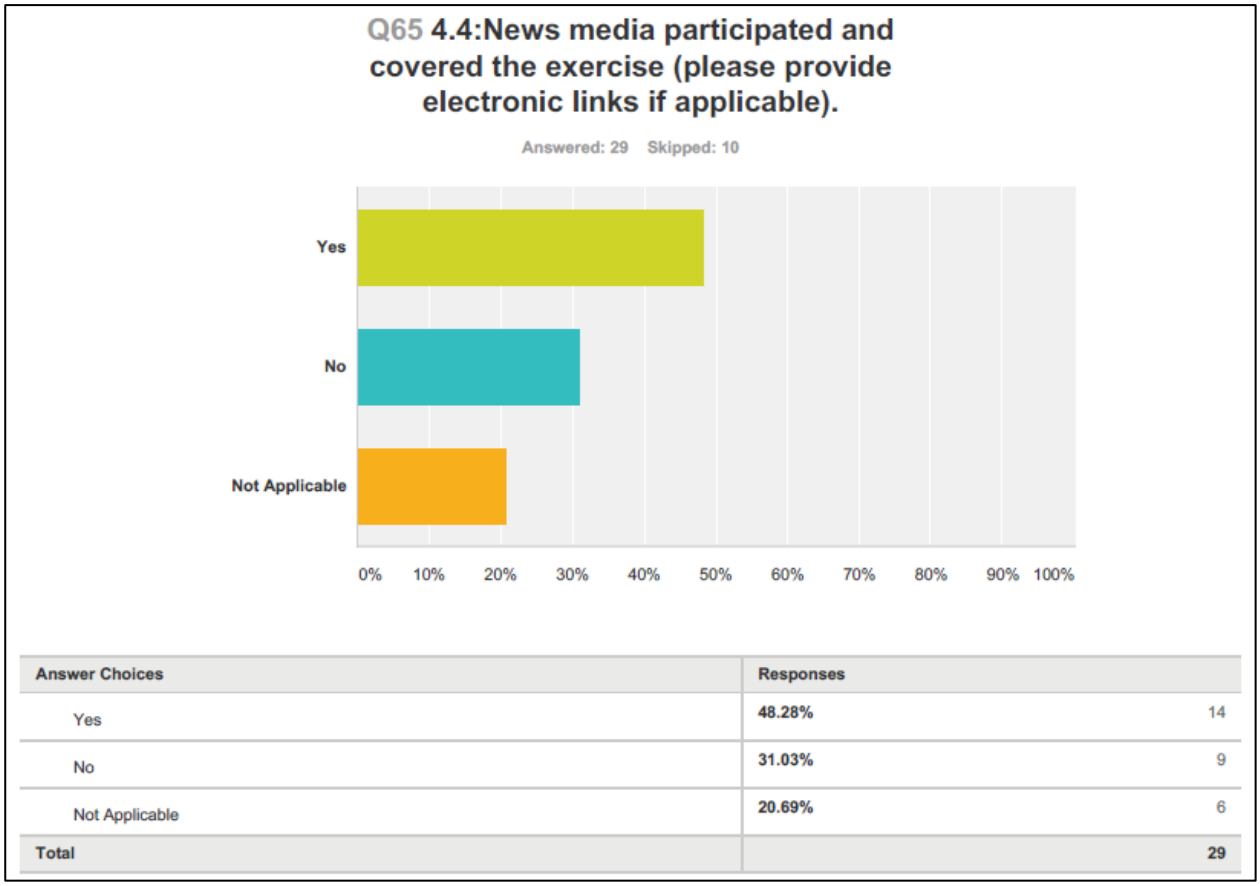



| Answer Choices | Responses | |
|---|---|---|
| Yes | 80.65% | 25 |
| No | 9.68% | 3 |
| Not Applicable | 9.68% | 3 |
| Total | | 31 |

YES**:** Antigua and Barbuda, Aruba, Bermuda, British Virgin Islands, Cayman Islands, Colombia, Costa Rica, Curaçao, Dominica, Dominican Republic, France, Guatemala, Haiti, Honduras, Mexico, Montserrat, Nicaragua, Panama, Puerto Rico, Saint Vincent and the Grenadines, Suriname, Turks and Caicos, US Virgin Islands, Venezuela

NO: Belize, Jamaica, Trinidad and Tobago

NOT APPLICABLE**:** Anguilla, Bahamas, Sint Maarten




| Answer Choices | Responses | |
|---|---|---|
| Yes | 48.28% | 14 |
| No | 31.03% | 9 |
| Not Applicable | 20.69% | 6 |
| Total | | 29 |

YES**:** Antigua and Barbuda, Aruba, Bermuda, Cayman Islands, France, Honduras, Nicaragua, Panama, Puerto Rico, Saint Vincent and the Grenadines, Sint Maarten, Turks and Caicos, US Virgin Islands, Venezuela

NO**:** Anguilla, Belize, Costa Rica, Curaçao, Guatemala, Haiti, Jamaica, Suriname

NOT APPLICABLE**:** Bahamas, Colombia, Dominica, Dominican Republic, Mexico, Montserrat

**Comments**

Bermuda**:** http://www.todayinbermuda.com/news/environment/item/1037-tsunami-exercise https://www.youtube.com/watch?v=129qWiQtLas

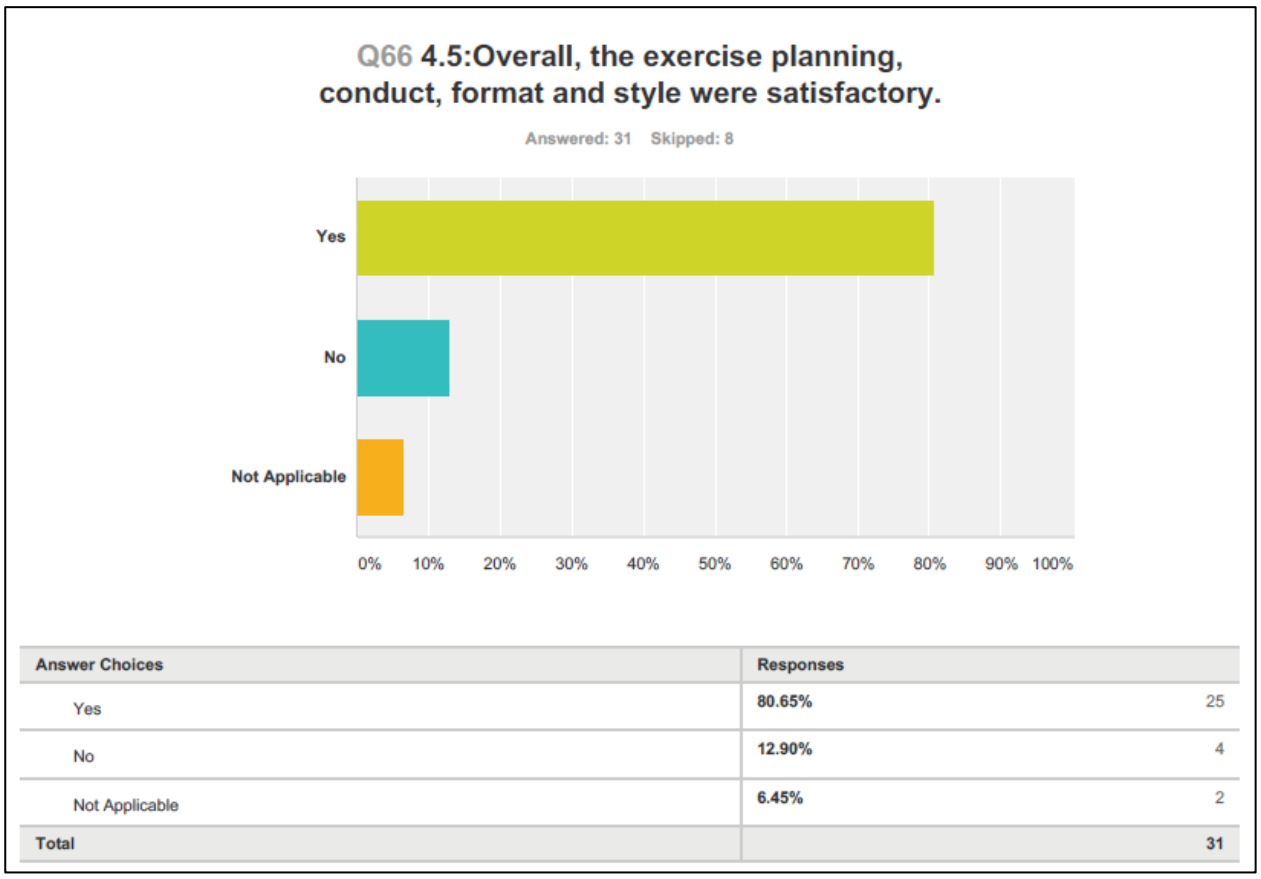
Colombia**:** Se emitió un comunicado de prensa informando la participación en el ejercicio.

France**:** Included our press review.

Nicaragua**:** www.el19digital.com/articulos/ver/titulo:27458-sinapred-participa-en-simulacro-regional-de-tsunami-en-el-caribe

Sint Maarten**:** The press release was published in the newspapers.

Turks and Caicos**:** The Government Press Officer participated in the Orientation and Tabletop exercise.




| Answer Choices | Responses | |
|---|---|---|
| Yes | 80.65% | 25 |
| No | 12.90% | 4 |
| Not Applicable | 6.45% | 2 |
| Total | | 31 |

YES**:** Anguilla, Antigua and Barbuda, Aruba, Belize, Bermuda, British Virgin Islands, Cayman Islands, Colombia, Curaçao, Dominica, France, Guatemala, Haiti, Honduras, Mexico, Nicaragua, Panama, Puerto Rico, Saint Vincent and the Grenadines, Sint Maarten, Suriname, Turks and Caicos, US Virgin Islands, Venezuela

NO**:** Bahamas, Costa Rica, Dominican Republic, Jamaica

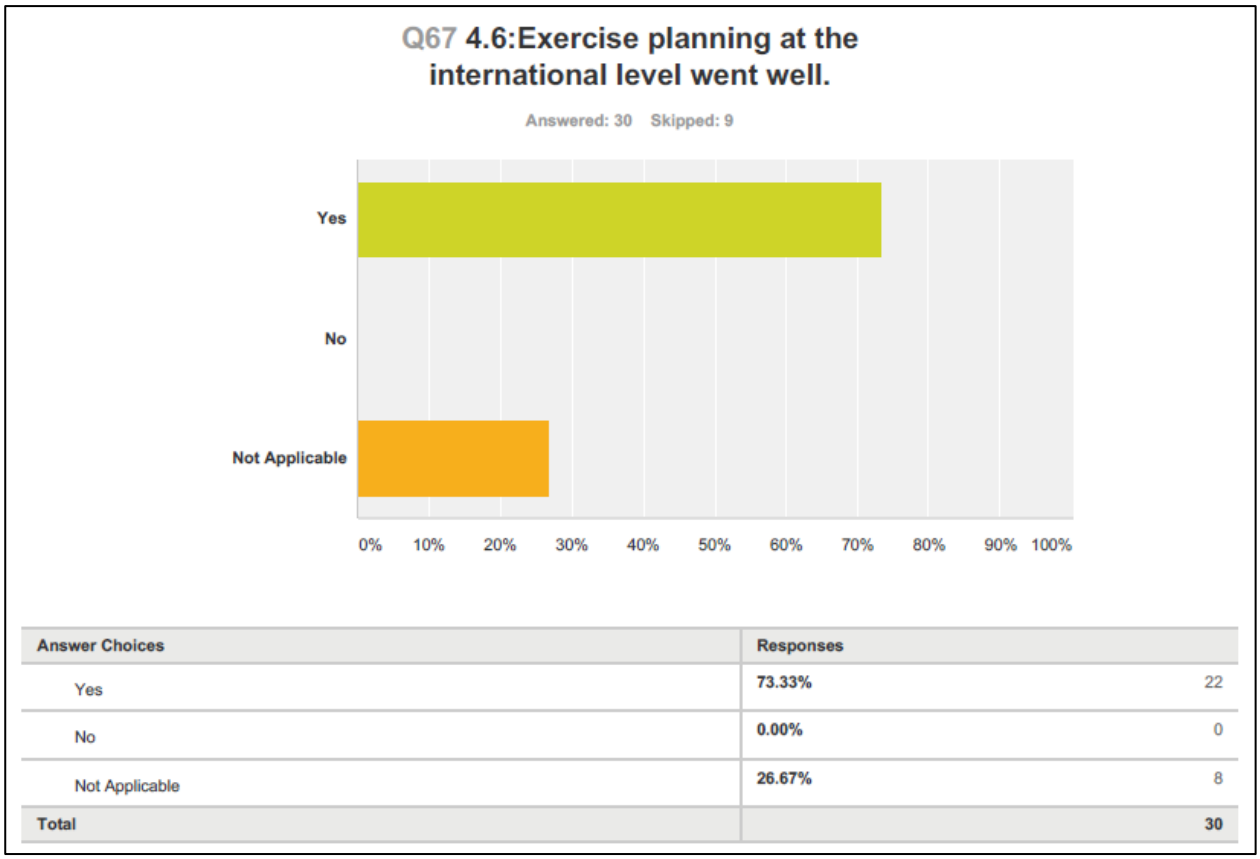
NOT APPLICABLE: Montserrat, Trinidad and Tobago

**Comments**

Costa Rica**:** We require funds to go to the coastal locations where the exercise is performed. This year we could not attend and then could not give a talk on tsunamis to prepare better the local emergency services.

Dominican Republic**:** discover gaps in our system of communication (Reception and transmission of bulletins)).

Turks and Caicos**:** Lessons were learned and gaps identifed so as to make the process stronger the next time around.




| Answer Choices | Responses | |
|---|---|---|
| Yes | 73.33% | 22 |
| No | 0.00% | 0 |
| Not Applicable | 26.67% | 8 |
| Total | | 30 |

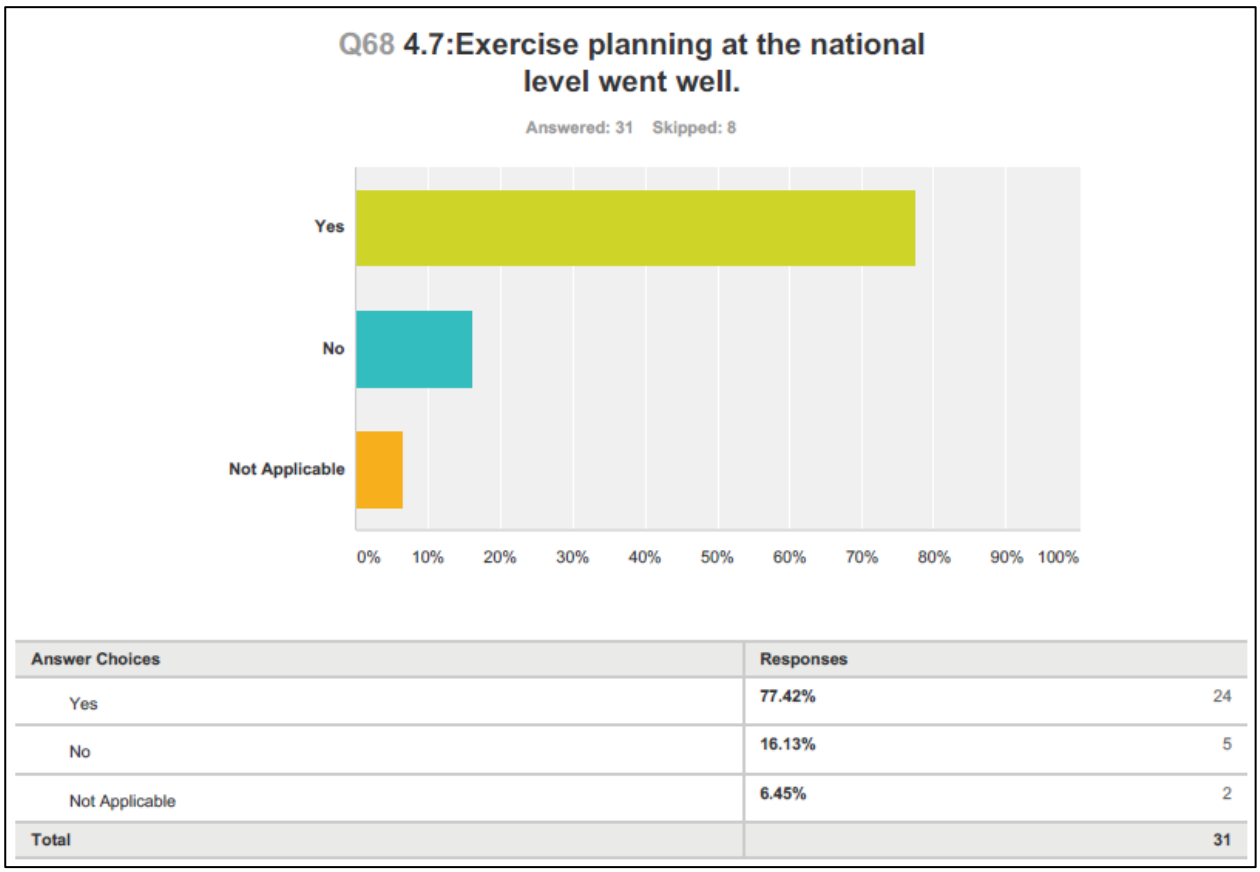
YES**:** Anguilla, Antigua and Barbuda, Aruba, Bermuda, Cayman Islands, Colombia, Costa Rica, Curaçao, Dominica, Dominican Republic, France, Guatemala, Honduras, Jamaica, Mexico, Nicaragua, Panama, Puerto Rico, Saint Vincent and the Grenadines, Turks and Caicos, Venezuela

NOT APPLICABLE**:** Bahamas, Belize, British Virgin Islands, Haiti, Montserrat, Sint Maarten, Trinidad and Tobago, US Virgin Islands

**Comments**

Suriname**:** Don't know.

Turks and Caicos: the webinars were very helpful, however more interaction of the participants should be encouraged to ensure that countries are learning from each other.




| Answer Choices | Responses | |
|---|---|---|
| Yes | 77.42% | 24 |
| No | 16.13% | 5 |
| Not Applicable | 6.45% | 2 |
| Total | | 31 |

YES: Anguilla, Aruba, Bermuda, British Virgin Islands, Cayman Islands, Colombia, Curaçao, Dominica, Dominican Republic, France, Guatemala, Haiti, Honduras, Mexico, Nicaragua, Panama, Puerto Rico, Saint Vincent and the Grenadines, Sint Maarten, Suriname, Trinidad and Tobago, Turks and Caicos, Venezuela

NO**:** Antigua and Barbuda, Bahamas, Belize, Costa Rica, Jamaica

NOT APPLICABLE**:** Montserrat, US Virgin Islands

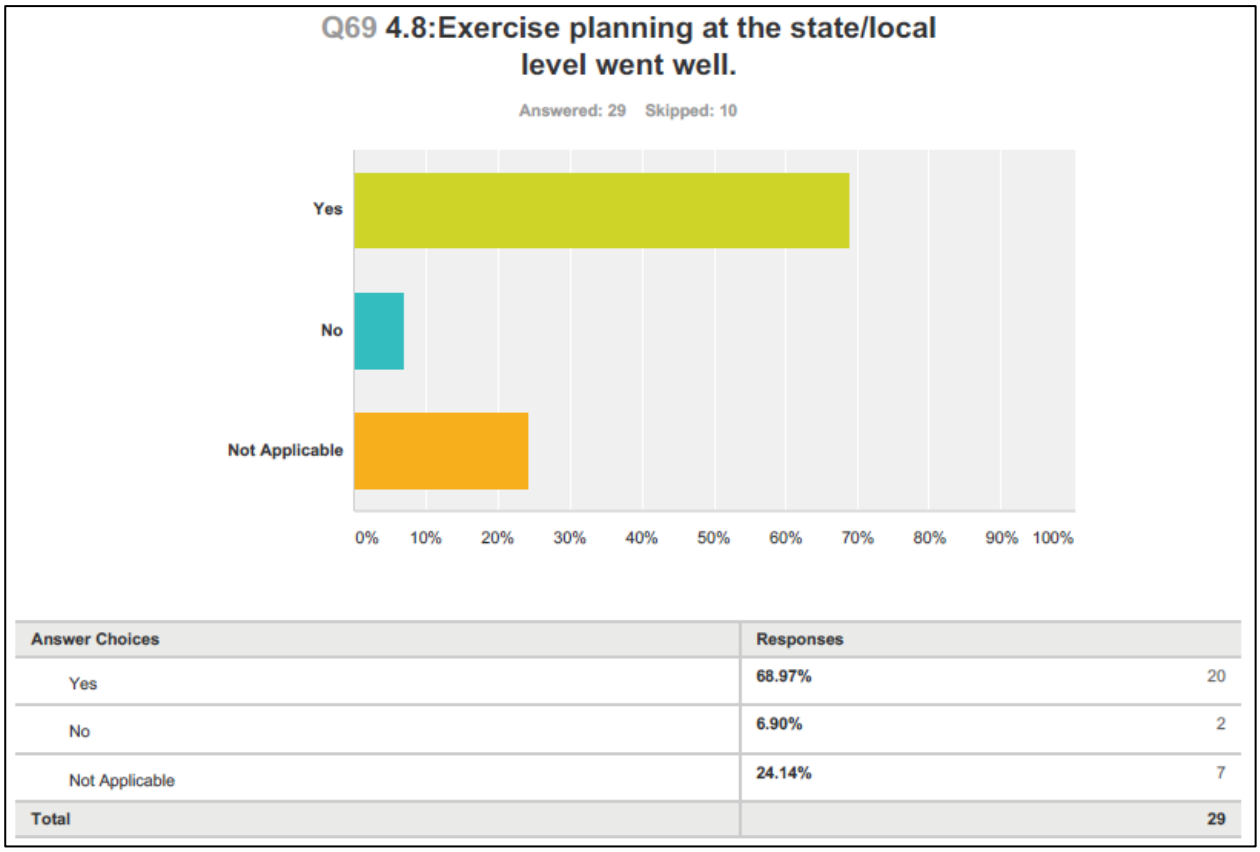
**Comments**

Bermuda**:** We made progress.

Cayman Islands**:** Areas have been identify for improvement.

Costa Rica**:** The lack of funds was communicated too late to us.

Dominica**:** could have been better.




| Answer Choices | Responses | |
|---|---|---|
| Yes | 68.97% | 20 |
| No | 6.90% | 2 |
| Not Applicable | 24.14% | 7 |
| Total | | 29 |

YES**:** Anguilla, Aruba, Bermuda, Colombia, Costa Rica, Dominica, Domi9nican Republic, France, Guatemala, Honduras, Mexico, Nicaragua, Panama, Puerto Rico, Saint Vincent and the Grenadines, Trinidad and Tobago, Turks and Caicos, US Virgin Islands, Venezuela

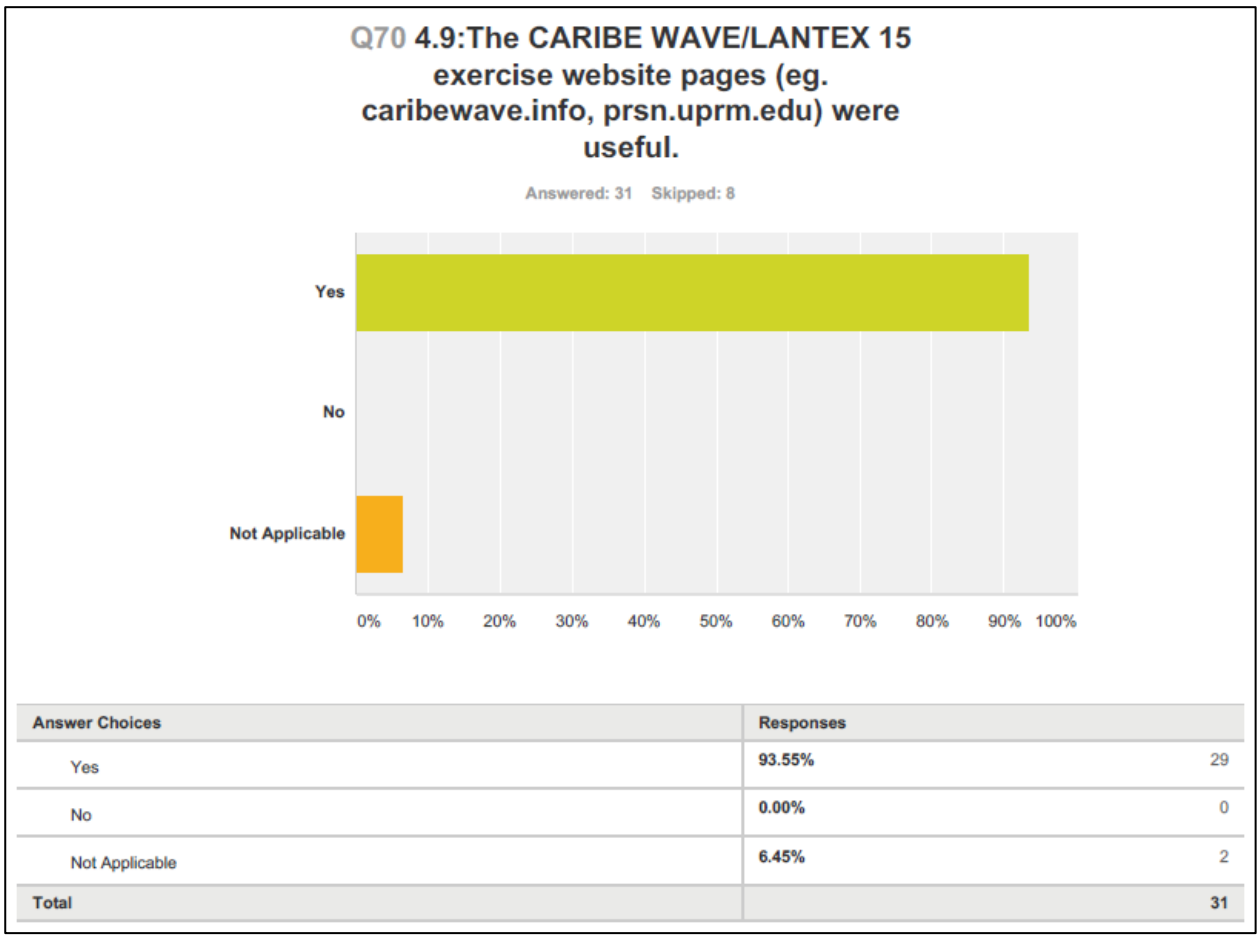
NO**:** Belize, Jamaica

NOT APPLICABLE**:** Bahamas, Cayman Islands, Curaçao, Haiti, Montserrat, Sint Maarten, Suriname

**Comments**

Bermuda: We made progress.

Dominica**:** could have been better.




| Answer Choices | Responses | |
|---|---|---|
| Yes | 93.55% | 29 |
| No | 0.00% | 0 |
| Not Applicable | 6.45% | 2 |
| Total | | 31 |

YES: Anguilla, Antigua and Barbuda, Aruba, Bahamas, Belize, Bermuda, British Virgin Islands, Cayman Islands, Colombia, Costa Rica, Curaçao, Dominica, Dominican Republic, France, Guatemala, Haiti, Honduras, Mexico, Montserrat, Nicaragua, Panama, Puerto Rico, Saint Vincent and the Grenadines, Suriname, Trinidad and Tobago, Turks and Caicos, US Virgin Islands, Venezuela

NOT APPLICABLE**:** Jamaica, Sint Maarten

**Comments**

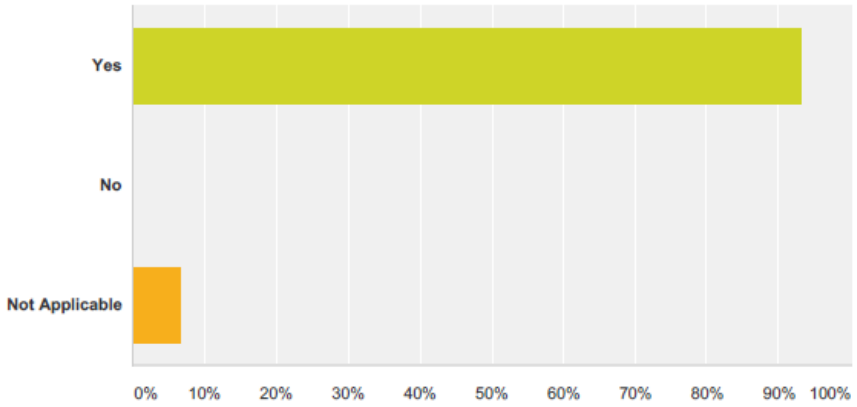
Dominican Republic**:** Quizás quisiste decir: arrojó puntos débiles a mejorar throw weak points to enhance.

France**:** Very usefull. All necessary documents are on this website.

Nicaragua**:** But for future exercises would be good to post also the graphical products in JPG format, and not only in the handbook or PDF format, to be able to print the maps in high resolution.

## Q71 4.10:CARIBE WAVE/ LANTEX 15 Handbook provided an appropriate level of detail.

Answered: 30 Skipped: 9




| Answer Choices | Responses | |
|---|---|---|
| Yes | 93.33% | 28 |
| No | 0.00% | 0 |
| Not Applicable | 6.67% | 2 |
| Total | | 30 |

YES**:** Anguilla, Antigua and Barbuda, Aruba, Bahamas, Bermuda, British Virgin Islands, Cayman Islands, Colombia, Costa Rica, Curaçao, Dominica, Dominican Republic, France, Guatemala, Haiti, Honduras, Mexico, Montserrat, Nicaragua, Panama, Puerto Rico, Saint Vincent and the Grenadines, Suriname, Trinidad and Tobago, Turks and Caicos, US Virgin Islands, Venezuela

NOT APPLICABLE**:** Jamaica, Sint Maarten

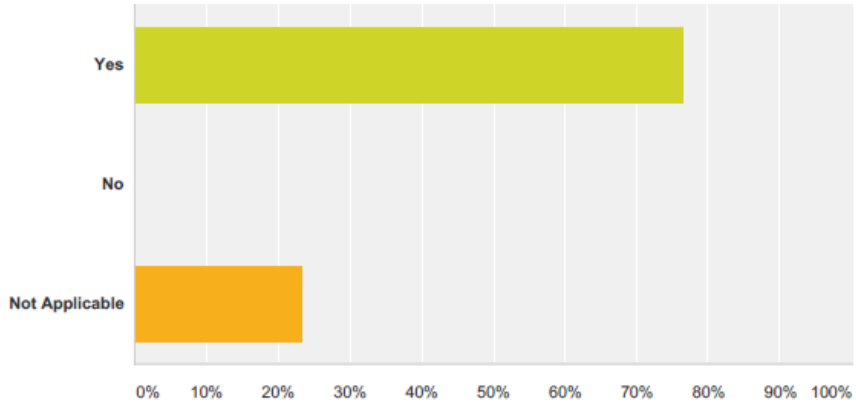
**Comments**

Bermuda**:** There was confusion about some of the messages content - it seemed as if some messages had different info - it was also confusing with the number change due to the message with the Warining being issued.

France**:** It should be interesting that the handbook and website was also in French.

## Q72 4.11:CARIBE WAVE/LANTEX 15 Webinars were helpful in preparing for the exercise.

Answered: 30 Skipped: 9




| Answer Choices | Responses | |
|---|---|---|
| Yes | 76.67% | 23 |
| No | 0.00% | 0 |
| Not Applicable | 23.33% | 7 |
| Total | | 30 |

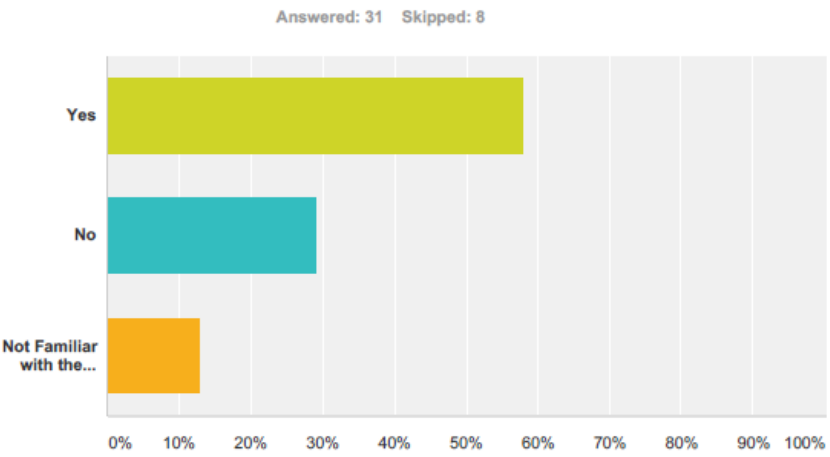
YES**:** Anguilla, Antigua and Barbuda, Aruba, Bermuda, British Virgin Islands, Cayman Islands, Colombia, Costa Rica, Dominican Republic, France, Guatemala, Haiti, Honduras, Mexico, Nicaragua, panama, Puerto Rico, Saint Vincent and the Grenadines, Suriname, Trinidad and Tobago, Turks and Caicos, US Virgin Islands, Venezuela

NOT APPLICABLE**:** Bahamas, Belize, Curaçao, Dominica, Jamaica, Montserrat, Sint Maarten

**Comments**

France**:** Many thanks, these webinars were very usefull to get precision on how the exercise was planned and conducted.

Nicaragua**:** Very good methodology to prepare the exercise.




| Answer Choices | Responses | |
|---|---|---|
| Yes | 58.06% | 18 |
| No | 29.03% | 9 |
| Not Familiar with the Guideline | 12.90% | 4 |
| Total | | 31 |

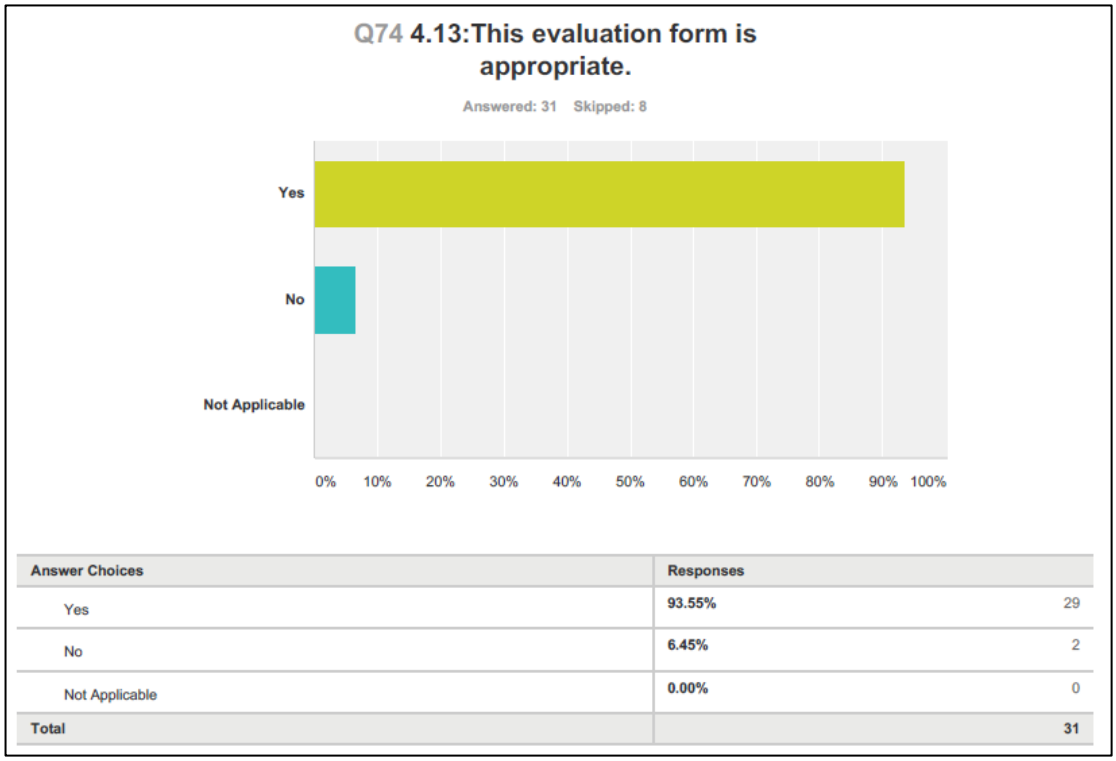
YES**:** Aruba, Bermuda, British Virgin Islands, Cayman Islands, Colombia, Costa Rica, Curaçao, Dominican Republic, Guatemala, Honduras, Mexico, Nicaragua, Panama, Puerto Rico, Saint Vincent and the Grenadines, Turks and Caicos, US Virgin Islands, Venezuela

NO**:** Anguilla, Antigua and Barbuda, Belize, Dominica, France, Haiti, Jamaica, Sint Maarten, Trinidad and Tobago

NOT FAMILIAR WITH THE GUIDELINE**:** Bahamas, Montserrat, Suriname

**Comments**

France: Not really usefull because we have our own national guide on how to prepare and conduct exercises depnding of what kind it is.




| Answer Choices | Responses | |
|---|---|---|
| Yes | 93.55% | 29 |
| No | 6.45% | 2 |
| Not Applicable | 0.00% | 0 |
| Total | | 31 |

YES**:** Anguilla, Antigua and Barbuda, Aruba, Bermuda, British Virgin Islands, Cayman Islands, Colombia, Costa Rica, Curaçao, Dominica, Dominican Republic, France, Guatemala, Haiti, Honduras, Jamaica, Mexico, Montserrat, Nicaragua, Panama, Puerto Rico, Saint Vincent and the Grenadines, Sint Maarten, Suriname, Trinidad and Tobago, Turks and Caicos, US Virgin Islands, Venezuela

NO**:** Bahamas, Belize

**Comments**

Bahamas**:** Too many questions seem to overlap.

Belize**:** The form is much too long with too many questions.

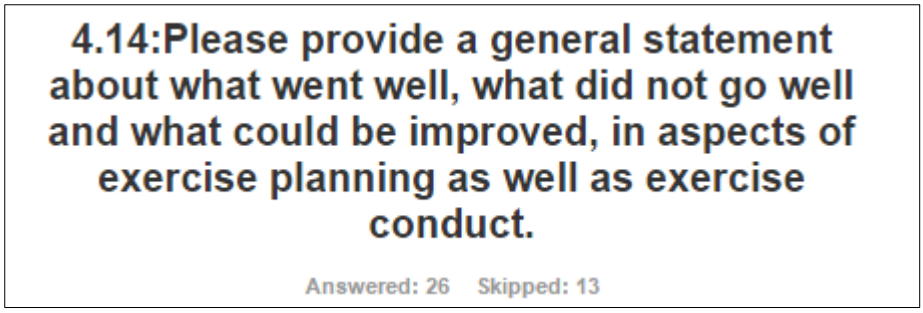
Curaçao**:** A bit long though.

France**:** Very clear and with precise questions. It' is necessary to distribute to all participants the evaluatiuon form as soon as possible (in text included in the handboo and PDF format).

Haiti**:** too much long.

Honduras**:** Si es interesante la encuesta algo larga pero considero como país que se debe de realizar una reunion donde estemos los participantes para profundizar en algunos aspectos.

Puerto Rico**:** somewhat long.




Anguilla**:** The exercise went well. There were some communication challenges but this was resolved and the exercise went well. The exercise is a good public awareness opportunity.

Antigua and Barbuda**:** Information was received. A bit more needed to be done at the local level to make the exercise more meaningful.

Aruba**:** Next time limit the information only to TWFP or TNC. I don't see the reason to put all data available on your website. Because of this it created problems between the TWFP on Aruba with the EOC. According to the EOC they did not need the TWFP or TNC, they can get everything on the caribewave website.

Bahamas**:** Because the first two messages were not received on time we had to ensure that NEMA also sent all of the Messages to us to ensure their receipt. The Public were not informed this time because in 2014 even though NEMA advised that it was a rest widespread panic occurred throughout the Bahamas so NEMA decided to keep the exercise just within the gambit of the agencies, which comprise NEMA.

Belize**:** Locally the NEMO was not interested since the focus at the time and until June 1st was and will remain the rehabilitation of hurricane shelters. Therefore, the TWFP was informed at the onset that the NEMO would not participate in the exercise. At that juncture the TWFP's interest dwindled since the preparatory organization, the NEMO, was not interested in the exercise.

Bermuda**:** Bermuda has a lot of work to do. As of 1 June 2015 there will be a National Disaster Coordinator, which finally is a full time position rather than one of 12 responsibilities of a specific police officer. I am hopeful that after this year's LANTEX example where Bermuda was impacted (with very short time notice) there will be a serious effort put forward by various departments in differing gov ministries. It would be extremely helpful to have a similar event for next year - so that we can test what has been established. From a coms perspective - BWS continues to fill the small gaps in our dissemination. We are utilizing Facebook in the absence of an alert system (sirens) and very recently have entered discussion with Weather Decision to create an App for Bermuda that mock the "weather radio" App designed for the US.

Cayman Islands**:** What went well: # the notification process to all stakeholders went very well. This include emergency services and other government entities. #The response from the key emergency services to the National Emergency Operations center went well. # Participation from the government hierarchy in decision making went well and they were available. # Once public news releases start to be disseminated to the media houses, that process continue seamlessly. What did not go well: # the reporting of support agencies to the National Emergency Operations Centre (NEOC) was poor # the use of an alternative NEOC prove problematic as it did not have the same level of communication capacity as the designated NEOC.

Colombia**:** En Colombia, a partir del conocimiento disponible sobre la fuente localizada en el "Cinturón Deformado del Norte de Panamá" se optó por aplicar un escenario un poco diferente al propuesto originalmente al manual, menos extremo y más acorde al conocimiento que tenemos. Este cambio no afectaba los propósitos del ejercicio. El ejercicio se aprovechó para poner a prueba la actualización del protocolo nacional de respuesta ante tsunamis para un evento local que se

preparó con las entidades del sistema del año pasado. En Colombia se activaron la salas de crisis nacionales y las salas de crisis departamentales y locales. Participaron en total las instituciones que se listan a continuación: Sistema Nacional: Corporación OSSO (TWFP), Unidad Nacional para la Gestión del Riesgo de Desastres (NDMO), Servicio Geológico de Colombia, Dirección General Maritima, Comisión Colombiana del Oceano e IDEAM. Sala de Crisis Nacional: Entidades Operativas; Ejercito Nacional, FAC, Armada, Ponalsar, Defensa Civil Colombiana, DNB, Ministerio de Salud, Defensa Civil Colombiana, Cruz Roja. Concejos Departamentales de Gestión de Riegos de Desastres en los departamentos de Bolívar, Providencia, Magdalena, Atlántico, Córdoba, Sucre, Antioquia, Chocó. Concejos Municipales de Gestión de Riegos de Desastres en los municipios de Cartagena, Santa Catalina, Riohacha, Dibulla, Manure, Uribia, Juan de Acosta, Piojó, Barranquilla, Moñitos, Los Cordobas, Tolú, San Onofre, Coveñas, Arboletes, Necoclí, Unguia, Litoral del San Juan. El ejercicio permitió identificar algunas falencias en los Boletines Nacionales para ser corregidas así como vacíos en los sistemas de comunicación.

Curaçao**:** The activation of the exercise went well, however it took us 25 minutes to be able to send out the first message. Some of the stakeholders could not be reached via telephone. The in country activation of the DMO as well as the assembly were both timely.

Dominica**:** Due to limited human resource at our office and incomplete installation of our early warning system (CAP) we were not able to do the full participation that we intended. None the less it was a good exercise.

Dominican Republic**:** In general terms, the exercise of communication that developed between Oficina Nacional de Meteorologia(ONAMET) and Centro de Operaciones de Emergencias as part of the activities of the regional exercise Caribbean wave / Lantex2015, have thrown as a result, positive our interagency manual standard procedures in case of Tunami, and a point to improve the means of dissemination of alert bulletins, the need for a program integral and continues of training for all staff from forecast department of ONAMET.

Haiti**:** For caribe wave 2016, we would like to have the exercice manual in French.

Honduras**:** Estamos complacidos de haber participado en el ejercicio, si sería importante revisar todo lo que tienen las agencias en cuanto a generación de información a los países que les permita tomar decisiones y revisar con lo que cuentan los países para una respuesta inmediata , en tal sentido nos complacería que se organice en Honduras alguna reunión que tenga que ver con el análisis y revisión de los países con respecto a este ejercicio. En tal sentido seria buscar la forma de fortalecernos ya que somos el país más débil de la región con respecto alertamiento ante Tsunamis.

Jamaica**:** Unfortunately the timing of the event made it difficult for Jamaica to be involved, bearing in mind some national imperatives at the time. There needs to be some discussion among the relevant agencies to determine the actions that need to be taken in a future such exercise.

Mexico**:** Every step and the different actions on this exercise were ok.

Montserrat**:** Exercise Objectives Montserrat 1.Test our internal call down process by contacting support agencies and at various stages. 2. Logging and recording the information, after the initial notification. 3. Getting agencies to start thinking what they would be doing at different stages of the exercise. 4. Act as a catalyst for the relevant agencies putting a Tsunami Plan/Procedures for their departments. 5. This is a tsunami exercise utilising various means including, telephone, electronic mail, facsimile, radio and satellite phones to test communications procedures, plans and networks of National Disaster Organizations across the Region. Montserrat Participation Royal Montserrat Police Service Police Actions on receipt of – Tsunami located at 28.8N and 27.0W generated by an earthquake of 6.8 magnitude 1. Information relayed immediately to Police launch, which was anchored on its mooring. Officers were at that time onboard carrying out repairs and therefore mobilized and removed the vessel from the water. 2. Port Authority informed 3. Officers dispatched

to clear Little Bay playing field of gathering students and adults (who were assembling for Primary School Sports). Traffic prevented from entering or reentering Little Bay 4.Salem Police Station informed to recce low lying areas – Isles Bay Beach, Old Roads Bay and Belham 5.Notes and records kept at Police Headquarters 6.General Traffic would be directed through Barzey's main Rd and minimized from using Carr's Bay main Rd (having regard to estimated impact time) 7. Montserrat Fire and Rescue Services informed 8.RMPS assist with damage assessment after impact Delta Petroleum 1. Filled two (2) tank wagons with 2000 gallons imperial Diesel, 1000 gallons imperial Gasoline and 2400 gallons US LPG 2. Moved tank wagons to higher ground up to Davy Hill. 3. Shut down all valves and meters on all storage tanks. 4. Remove files with storage and staff information 5. Muster staff at Muster point and evacuate to higher ground 6. Telephone Regional Office of pending disaster 7. Put in place via telephone arrangements for speedy delivery of product to island in wake of the disaster. Governor's Office 1.Informed the FCO by phone who, in turn, informed others agencies in London. John A. Osborne Airport 1.The john A. Osborne Airport reported that the messages received via the allocated transistor/radio came in at a time when the 2 locations were so occupied. As a result they did not take any specific action but will consider a tsunami strike or alert as part of their emergency and contingency plans or planning/response mechanism. Disaster Management Coordination Agency 1.Received and disseminated Tsunami messages to various agencies. 2.Recorded and logged exercise activities. 3.Tested our call down system. 4.Tested our Alert systems to include; Sirens, ViaRadios, email and radio interrupt. Alerting Systems As part of the exercise we tested the siren, ViaRadio and the radio interrupt through the Common Alerting Protocol (CAP) system. Both an English and Spanish alert bulletin was sent via the CAP, which should have simultaneously activated the Viaradio, Siren, email and interrupted the live radio broadcast at Radio Montserrat. An email and siren message was generated successfully but the ViaRadio failed activate and radio interrupt did not function as designed.

Nicaragua**:** What went well -Was establish a national working group to decide the level of participation and communication during the exercise. -Was prepare the personal conditions, as technical as materials, to the participation in the tabletop exercise. -All objectives were met.-The information reached the local level and communication was very good. -Everyone was involve in the exercise participating actively. What did not go well -The practice and exchange of protocols through inter-institutional workshops. What could be improved -Dynamic plans of time-trial actions to accompany the execution of yearly exercises. -Establish a meeting calendar to plan and develop the necessary actions to the execution of yearly exercises.-Updating the protocols and standard operations procedures.-Continue with the trainings about the new enhanced products of PTWC.

Panama**:** This exercise has motivated the public and several government and private agencies. The tsunami preparation and monitoring seems is going to receive more support from the national government and local authorities. For the first time a national delegation will attend the next PTWC meeting in Hawaii.

Puerto Rico**:** This is the seventh time that the exercise is conducted in Puerto Rico. Each year we identified those aspects that have not gone well. Through the years we have managed to greatly improve the dissemination of warnings and the awareness of citizens. PREMA has a close relationship with tsunami experts (PRSN), allowing us to coordinate the exercise in advance. One aspect to consider for the next year exercise is slightly change the schedule. (perhaps late at night).

Saint Lucia**:** Although St. Lucia did not take part in the exercise, I was able to follow the information being provided.

Saint Vincent and the Grenadines**:** THE NATIONAL EMERGENCY MANAGEMENT ORGANISATION TESTED THE DRAFT SOP PROTOCOLS FOR THE DISSEMINATION OF A TSUNAMI WARNING. THE PRODUCTS FOR THE EXERCISE WAS WELL RECEIVED, THE SCENARIO AND THREAT WERE REAL. DESPITE RECEIVEING THE FIRST MESSAGE A FEW MINUTES LATE THE EXERCISE WENT SMOOTHLY.

Sint Maarten**:** The goal of our participation was to test the communications between the PTWC - TWFP/TWFP - stakeholders. In general this went well. We noticed our government email system had several issues during the exercise. So we need to look at alternatives for disseminating messages. If the exercise would have been a real tsunami threat we would have used other means of communications of course.

Suriname**:** Suriname did not actively participated in this exercise Lantex 15. We are still in a process of setting up our tsunami prep and response plan on the national and the local level.

Turks and Caicos**:** In the TCI it was decided that the exercise would be used as an opportunity to present the draft National Standard Operating Procedures to ensure responding agencies were familiar with the document. This was preceded by an Orientation Exercise on the 24th March for responding agencies to orient persons to tsunamis and their impacts. The SOP's was introduced and persons were given an opportunity to review the document and make recommendations to strengthen same. On the 25th, CARIBE WAVE 2015, a tabletop exercise was conducted to test the readiness of responding agencies. The exercise was conducted at the NEOC, where persons reported to after receiving the alert message from the Tsunami Warning Focal Point. The exercise was very enlightening with a number of gaps being identified. These included resource constraints, alerting constraints and evacuation procedures. Participants were encouraged by the timeliness of the alerting process from the TWFP.

Venezuela**:** The coordination with all the agencies was well, there was an important interest from the risk management agencies for the first time and they undertook the main efforts national-wide, while funvisis was the information and technical source. This year was the biggest tsunami drill so far on Venezuela, with about 15 thousand people on board. On the bad side, the date of exercise, so close to easter week (holy week) an important beach holiday on Venezuela, was an inhibitor for us to make a complete media coverage and warning, could have been better on this aspect. Communications have to get better between national focal points, there should be an exchange of information from different agencies and not only an official source, to contrast and complete the forecast and comprehend the threat better, to take more accurate decisions.

ANNEX II

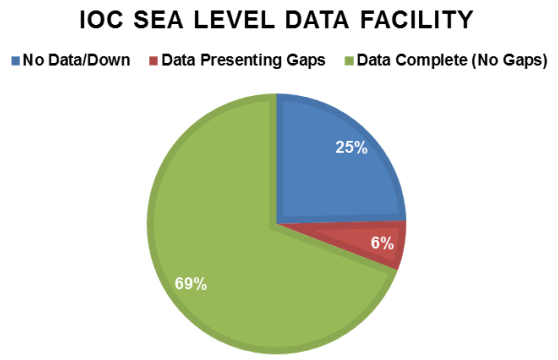
**SEA LEVEL STATUS**

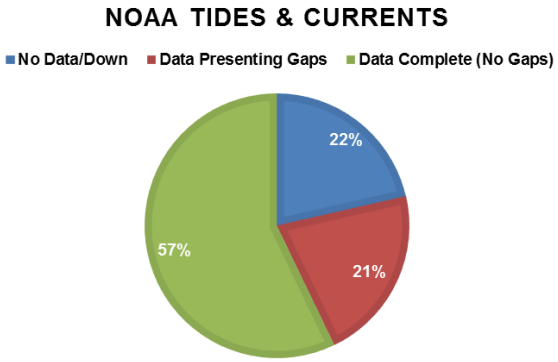
| Station location | Country | IOC Sea Level | NOAA Tides and Currents | National Data Buoy Center | Tide Tool |
|---|---|---|---|---|---|
| **Barbuda** | Antigua & Barbuda | 2 | 2 | * | X |
| **Parham (Camp Blizard), Antigua** | Antigua & Barbuda | 0 | * | * | * |
| **DART 44401** | CT, USA | * | * | 2 | * |
| **DART 44402** | NY, USA | * | * | 2 | * |
| **DART 41424** | SC, USA | * | * | 0 | * |
| **Settlement Point** | Bahamas | 2 | * | * | * |
| **Port St. Charles** | Barbados | 2 | * | * | X |
| **Bridgetown Port** | Barbados | 0 | * | * | * |
| **St. Georges Island / Esso Pier** | Bermuda | 2 | 2 | * | * |
| **Road Town Harbor, Tortola** | British Virgin Islands | 1 | * | * | X |
| **George Town** | Cayman Islands | 2 | * | * | X |
| **San Andres** | Colombia | 2 | * | * | X |
| **Santa Marta** | Colombia | 2 | * | * | X |
| **Cartagena** | Colombia | 2 | * | * | * |
| **Limón** | Costa Rica | 2 | * | * | X |
| **Bullen Bay (Replaces Willemstad)** | Curacao | 0 | * | * | X |
| **Roseau** | Dominica | 2 | * | * | X |
| **Barahona** | Dominican Republic | 2 | * | * | X |
| **Puerto Caucedo/San Andres/Santo Domingo** | Dominican Republic | 2 | * | * | X |
| **Puerto Plata** | Dominican Republic | 2 | * | * | |
| **Punta Cana** | Dominican Republic | 0 | * | * | X |
| **Ile Royale** | French Guiana | 2 | * | * | * |
| **Prickly Bay** | Grenada | 2 | * | * | X |

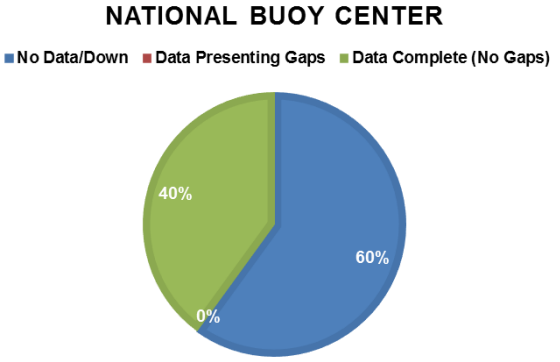
| Station location | Country | IOC Sea Level | NOAA Tides and Currents | National Data Buoy Center | Tide Tool |
|---|---|---|---|---|---|
| **Deshaies Harbour** | Guadeloupe | 2 | * | * | * |
| **La Désirade Island, Grande Anse Marina Harbour** | Guadeloupe | 2 | * | * | X |
| **Pointe a Pitre Harbour** | Guadeloupe | 2 | * | * | X |
| **Puerto Barrios** | Guatemala | 2 | * | * | X |
| **DART 42409** | Gulf of Mexico | | * | * | * |
| **Cap Haitien** | Haiti | 2 | * | * | X |
| **Jacmel** | Haiti | 2 | * | * | X |
| **Port au Prince** | Haiti | 2 | * | * | X |
| **Port Royal** | Jamaica | 2 | * | * | * |
| **Fort de France Harbour** | Martinique | 2 | * | * | X |
| **Le Precheur Harbour** | Martinique | 2 | * | * | X |
| **Le Robert** | Martinique | 2 | * | * | X |
| **Celestun** | Mexico | 1 | * | * | X |
| **Frontera** | Mexico | 1 | * | * | X |
| **Veracruz** | Mexico | 2 | * | * | X |
| **Progreso** | Mexico | 2 | * | * | X |
| **Puerto Morelos, Q. R.** | Mexico | 2 | * | * | X |
| **Tuxpan** | Mexico | 0 | * | * | * |
| **Corn Island** | Nicaragua | 0 | * | * | * |
| **Puerto Corinto** | Nicaragua | 0 | * | * | * |
| **Puerto Sandino** | Nicaragua | 0 | * | * | * |
| **San Juan del Sur** | Nicaragua | 0 | * | * | * |
| **El Porvenir** | Panama | 2 | * | * | X |
| **Bocas del Toro** | Panama | 1 | * | * | * |
| **Caja de Muertos** | Puerto Rico | 0 | 0 | * | * |
| **Fajardo** | Puerto Rico | 2 | 2 | * | * |
| **Isabel II, Vieques** | Puerto Rico | 2 | 1 | * | X |
| **La Esperanza, Vieques** | Puerto Rico | 0 | 1 | * | * |
| **Magueyes Island** | Puerto Rico | 2 | * | * | X |
| **Mayagüez** | Puerto Rico | 2 | 0 | * | X |

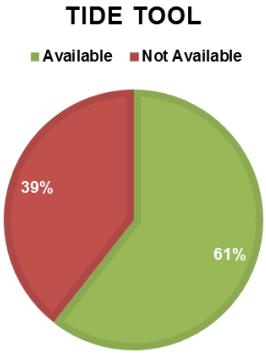
| Station location | Country | IOC Sea Level | NOAA Tides and Currents | National Data Buoy Center | Tide Tool |
|---|---|---|---|---|---|
| **Mona Island** | Puerto Rico | 2 | 2 | * | X |
| **San Juan** | Puerto Rico | 2 | 2 | * | X |
| **Yabucoa** | Puerto Rico | 2 | * | * | X |
| **Aguadilla** | Puerto Rico | 0 | * | * | * |
| **Arecibo** | Puerto Rico | 0 | 0 | * | * |
| **DART 41421** | Puerto Rico Trench East | * | * | 0 | X |
| **DART 41420** | Puerto Rico Trench West | * | * | 0 | * |
| **Baseterre (Coast Guard Base)** | St. Kitts & Nevis | 2 | * | * | X |
| **Calliaqua (Coast Guard Base)** | St. Vincent & the Grenadines | 2 | * | * | * |
| **Cedros Bay** | Trinidad and Tobago | 0 | * | * | * |
| **Charlotteville** | Trinidad and Tobago | 0 | * | * | X |
| **Port Of Spain** | Trinidad and Tobago | 2 | * | * | X |
| **Scarborough** | Trinidad and Tobago | 2 | * | * | X |
| **Point Fortin** | Trinidad and Tobago | 0 | * | * | * |
| **Charlotte Amalie, St. Thomas** | USVI | 2 | 2 | * | X |
| **Christiansted Harbor, St. Croix** | USVI | 2 | 2 | * | X |
| **Lime Tree Bay, St. Croix** | USVI | 2 | 2 | * | X |
| **Lameshur Bay, St. John** | USVI | 2 | 1 | * | X |

# Streamed Data Availability Percentages



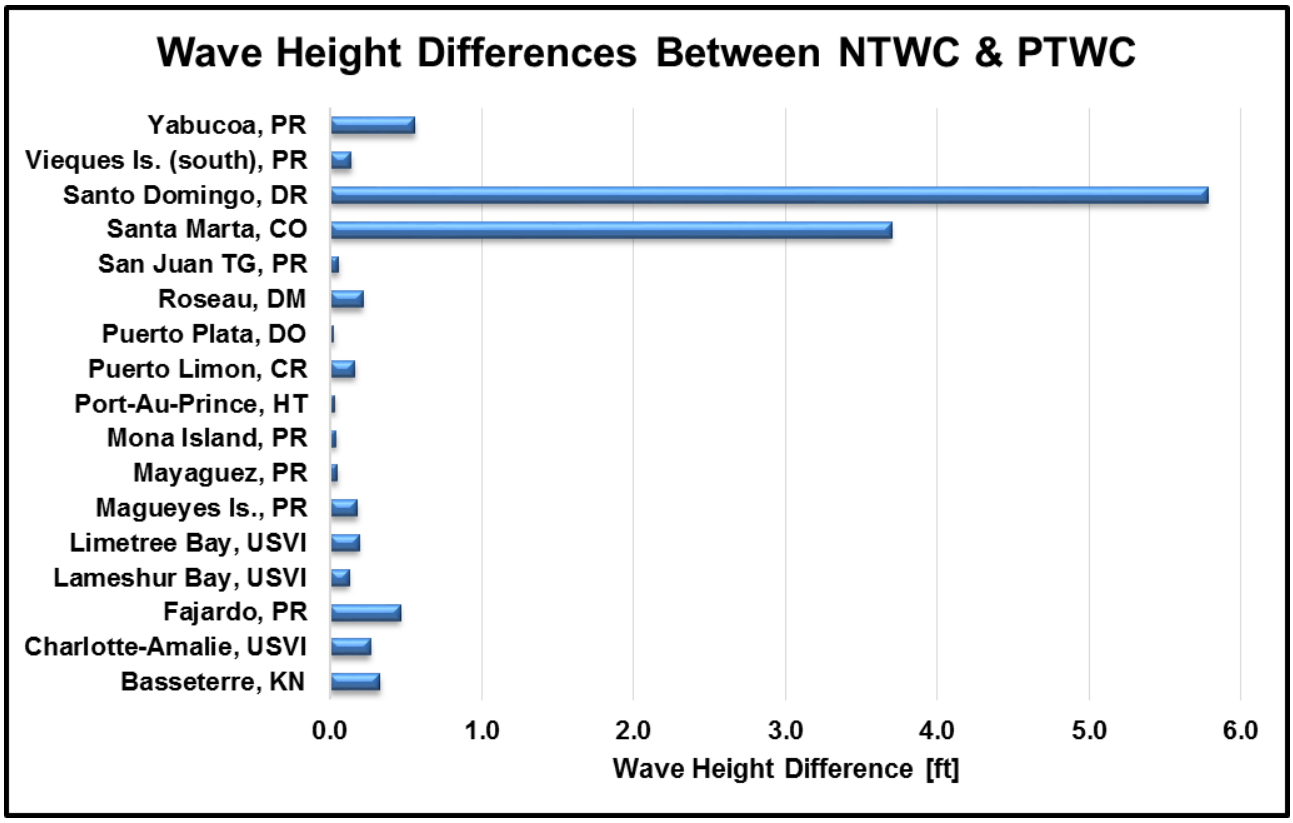




| Station Name | NTWC [ft] | PTWC [ft] | MODEL DIFFERENCES |
|---|---|---|---|
| Aguadilla, PR | 3.5 | | - |
| Arecibo, PR | 2.6 | | - |
| Baie Blanche | 1.1 | | - |
| Barbuda | | 1.8 | - |
| Barranquilla | 8.0 | | - |
| Basse-Terra | 1.7 | | - |
| Basseterre | 2.2 | 1.9 | 0.3 |
| Belize City | 0.4 | | - |
| Bocas Del Toro | 1.9 | | - |
| Bridgetown | 0.4 | | - |
| Bullen Bay | | | - |
| Cabo Engano | 2.1 | | - |
| Calliaqua | | 1.4 | - |
| Cap Haiten | 0.8 | | - |
| Cartagena | 9.3 | | - |
| Castries | 1.4 | | - |
| Charlotte-Amalie, USVI | 3.9 | 3.6 | 0.3 |
| Christiansted, USVI | 2.1 | | |

| Station Name | NTWC [ft] | PTWC [ft] | MODEL DIFFERENCES |
|---|---|---|---|
| **Colon** | 7.4 | | - |
| **Cozumel** | 0.8 | | - |
| **Culebra, PR** | 2.0 | | - |
| **Cumana** | 0.9 | | - |
| **Desidare** | | 1.7 | - |
| **El Provenir, PA** | | 7.8 | - |
| **Fajardo, PR** | 2.2 | 1.7 | 0.5 |
| **Fort-de-France** | 1.0 | | - |
| **Golfo Venezuela** | 2.7 | | - |
| **Guantanamo Bay** | 3.3 | | - |
| **Jeremie** | 2.0 | | - |
| **Kingston** | 5.4 | | - |
| **Kingstown** | 2.5 | | - |
| **Lameshur Bay, USVI** | 4.3 | 4.2 | 0.1 |
| **Limetree Bay, USVI** | 2.3 | 2.1 | 0.2 |
| **Magueyes Is., PR** | 3.1 | 2.9 | 0.2 |
| **Maiqueta** | 1.6 | | - |
| **Mayaguez, PR** | 3.1 | 3 | 0.1 |
| **Mona Island** | 5.6 | 5.6 | 0.0 |
| **Montego Bay** | 1.5 | | - |
| **Onima** | 1.1 | | - |
| **Oranjestad** | 1.5 | | - |
| **Palmetto Point** | 1.4 | | - |
| **Penuelas, PR** | 4.2 | | - |
| **Pirates Bay** | 0.4 | | - |
| **Plymouth** | 1.2 | | - |
| **Ponce, PR** | 3.3 | | - |
| **Porlamar** | 1.3 | | - |
| **Port-Au-Prince** | 2.1 | 2.1 | 0.0 |
| **Port-of-Spain** | 0.9 | | 0.9 |
| **Prickly Bay** | | 0.7 | - |
| **Puerto Barrios** | 0.5 | | - |
| **Puerto Cabezas** | 0.4 | | - |
| **Puerto Carreto** | 10.2 | | - |
| **Puerto Cortes** | 0.5 | | - |
| **Puerto Limon** | 2.1 | 1.9 | 0.2 |
| **Puerto Plata** | 0.5 | 0.5 | 0.0 |
| **Punta Caribana** | 8.4 | | - |
| **Punta Gorda** | 2.3 | | 2.3 |
| **Punto Fijo** | 2.8 | | 2.8 |
| **Riohacha** | 8.9 | | - |
| **Roadtown, BVI** | 2.5 | | - |
| **Roseau** | 0.9 | 0.7 | 0.2 |
| **Saint Georges** | 1.0 | | - |
| **Saint Johns** | 1.7 | | - |
| **San Andres, CO** | | 6.2 | - |

| Station Name | NTWC [ft] | PTWC [ft] | MODEL DIFFERENCES |
|---|---|---|---|
| San Juan (outer coast), PR | 1.4 | | - |
| San Juan TG, PR | 0.5 | 0.4 | 0.1 |
| Santa Marta | 12.3 | 8.6 | 3.7 |
| Santo Domingo | 15.6 | 9.8 | 5.8 |
| Simpson Baai | 1.3 | | - |
| St. Croix, USVI | | 1.8 | - |
| the Valley | 1.7 | | - |
| Tortola | 1.3 | | - |
| Trujillo | 0.6 | | - |
| Vieques Is. (north), PR | 2.6 | | - |
| Vieques Is. (south), PR | 3.6 | 3.5 | 0.1 |
| Virgin Gorda, BVI | 3.5 | | - |
| Willemstad | 1.0 | | - |
| Yabucoa, PR | 3.6 | 4.2 | - |



ANNEX III

## TWEB MODEL FOR PANAMA SCENARIO

As part of CARIBE WAVE/LANTEX 2015, the Panama tsunami scenario was generated in Tweb. Tweb is an internet-enabled interface developed by the NOAA Center for Tsunami Research (NCTR) that uses the Method of Splitting Tsunami (MOST) model to provide tsunami forecasting. This tsunami forecasting tool is in the testing phase and has been presented to several scientific communities for feedback. In 10 March 2015, at 18:00 UTC, the Pacific Marine Environmental Laboratory of NOAA with the Caribbean Tsunami Warning Program (CTWP) presented the Tweb products for the CARIBE WAVE/LANTEX 2015 in a webinar. Twenty-seven (27) participants from the Caribbean Region participated in the online briefing.

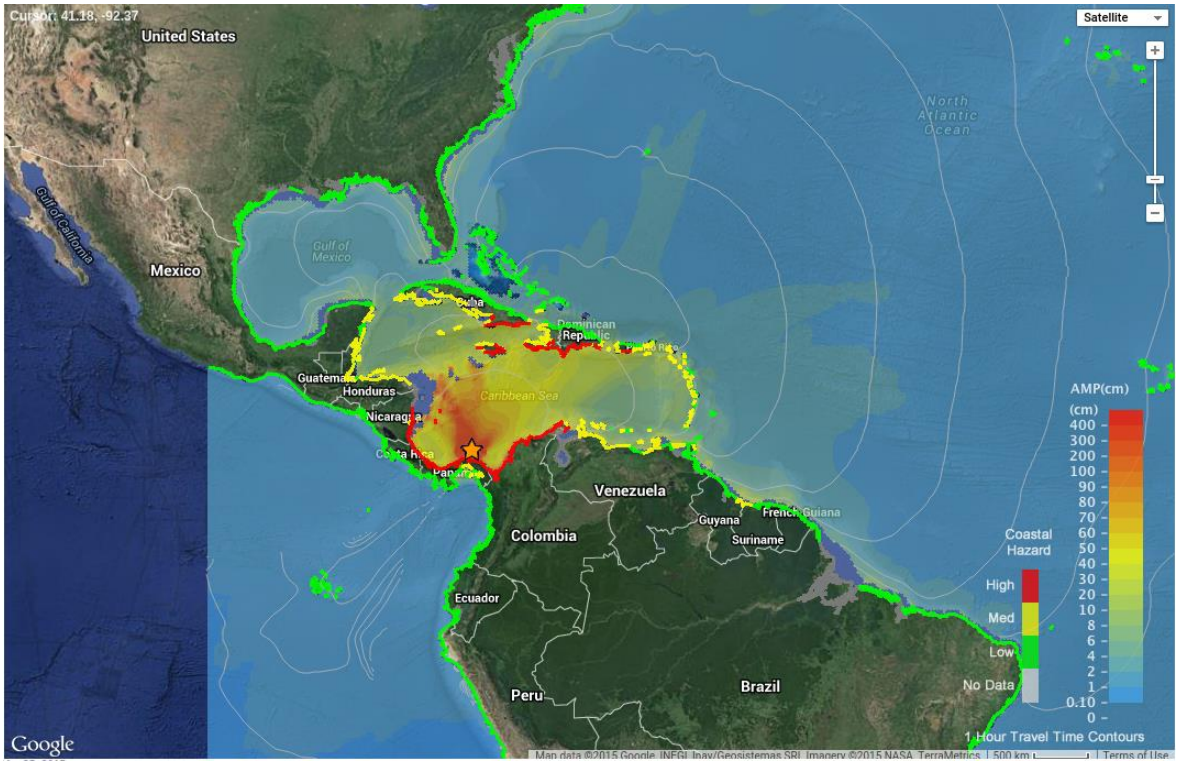
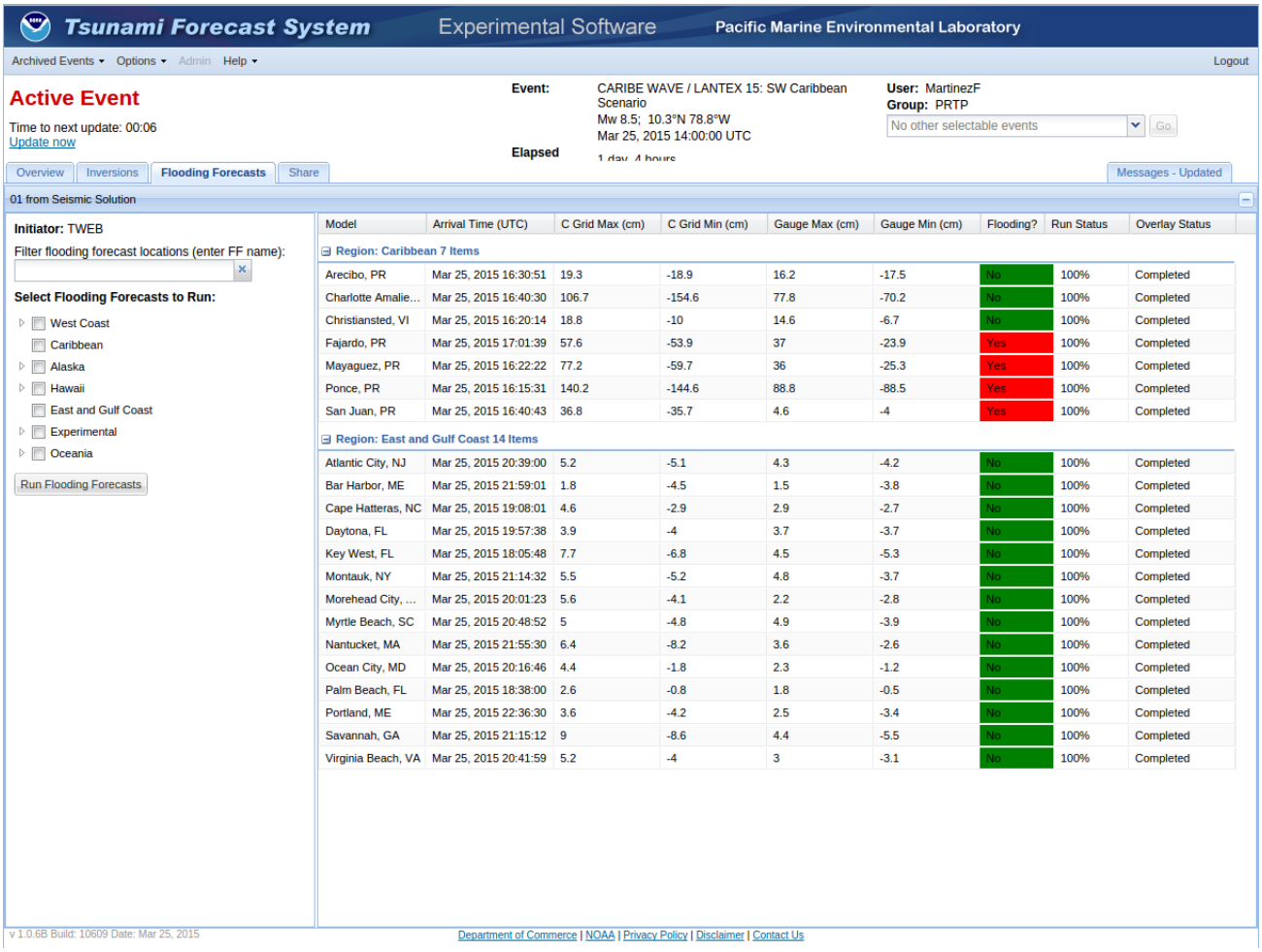



Figure III–1. Overall view from Tweb initial tsunami model. The colors in the coast indicate the level of danger from the initial tsunami event.

### Flooding Forecast

Tweb created flooding forecasts for Puerto Rico, the Virgin Islands and the East Coast of United States. For Puerto Rico, flooding forecast models were created for the municipalities of Mayagüez, Ponce, Arecibo, San Juan and Fajardo. For the US Virgin Islands models were run for Charlotte Amalie (St. Thomas) and Christiansted (St. Croix). In Figure III–2, the flooding forecasts for the Panama scenario are shown. The municipality with the highest tsunami wave height was Ponce, with a maximum of 88.8 cm. These are comparable to the heights forecasted by the Alaska Tsunami Forecast Model (Annex II) and RIFT/PTWC.




| Model | Arrival Time (UTC) | C Grid Max (cm) | C Grid Min (cm) | Gauge Max (cm) | Gauge Min (cm) | Flooding? | Run Status | Overlay Status |
|---|---|---|---|---|---|---|---|---|
| **Region: Caribbean 7 Items** | | | | | | | | |
| Arecibo, PR | Mar 25, 2015 16:30:51 | 19.3 | -18.9 | 16.2 | -17.5 | No | 100% | Completed |
| Charlotte Amalie… | Mar 25, 2015 16:40:30 | 106.7 | -154.6 | 77.8 | -70.2 | No | 100% | Completed |
| Christiansted, VI | Mar 25, 2015 16:20:14 | 18.8 | -10 | 14.6 | -6.7 | No | 100% | Completed |
| Fajardo, PR | Mar 25, 2015 17:01:39 | 57.6 | -53.9 | 37 | -23.9 | Yes | 100% | Completed |
| Mayaguez, PR | Mar 25, 2015 16:22:22 | 77.2 | -59.7 | 36 | -25.3 | Yes | 100% | Completed |
| Ponce, PR | Mar 25, 2015 16:15:31 | 140.2 | -144.6 | 88.8 | -88.5 | Yes | 100% | Completed |
| San Juan, PR | Mar 25, 2015 16:40:43 | 36.8 | -35.7 | 4.6 | -4 | Yes | 100% | Completed |
| **Region: East and Gulf Coast 14 Items** | | | | | | | | |
| Atlantic City, NJ | Mar 25, 2015 20:39:00 | 5.2 | -5.1 | 4.3 | -4.2 | No | 100% | Completed |
| Bar Harbor, ME | Mar 25, 2015 21:59:01 | 1.8 | -4.5 | 1.5 | -3.8 | No | 100% | Completed |
| Cape Hatteras, NC | Mar 25, 2015 19:08:01 | 4.6 | -2.9 | 2.9 | -2.7 | No | 100% | Completed |
| Daytona, FL | Mar 25, 2015 19:57:38 | 3.9 | -4 | 3.7 | -3.7 | No | 100% | Completed |
| Key West, FL | Mar 25, 2015 18:05:48 | 7.7 | -6.8 | 4.5 | -5.3 | No | 100% | Completed |
| Montauk, NY | Mar 25, 2015 21:14:32 | 5.5 | -5.2 | 4.8 | -3.7 | No | 100% | Completed |
| Morehead City, … | Mar 25, 2015 20:01:23 | 5.6 | -4.1 | 2.2 | -2.8 | No | 100% | Completed |
| Myrtle Beach, SC | Mar 25, 2015 20:48:52 | 5 | -4.8 | 4.9 | -3.9 | No | 100% | Completed |
| Nantucket, MA | Mar 25, 2015 21:55:30 | 6.4 | -8.2 | 3.6 | -2.6 | No | 100% | Completed |
| Ocean City, MD | Mar 25, 2015 20:16:46 | 4.4 | -1.8 | 2.3 | -1.2 | No | 100% | Completed |
| Palm Beach, FL | Mar 25, 2015 18:38:00 | 2.6 | -0.8 | 1.8 | -0.5 | No | 100% | Completed |
| Portland, ME | Mar 25, 2015 22:36:30 | 3.6 | -4.2 | 2.5 | -3.4 | No | 100% | Completed |
| Savannah, GA | Mar 25, 2015 21:15:12 | 9 | -8.6 | 4.4 | -5.5 | No | 100% | Completed |
| Virginia Beach, VA | Mar 25, 2015 20:41:59 | 5.2 | -4 | 3 | -3.1 | No | 100% | Completed |

Figure III–2. Screenshot from Tweb of the flooding forecast for different locations in the Caribbean Region and the East Coast of USA. The table includes: Model Region, Arrival Time (UTC), C Grid Max (cm), C Grid Min (cm), Gauge maximum (cm), Gauge minimum (cm), Potential Flooding, Run status, and Overlay Status.

## DART buoys

In the Inversion section of Tweb, 3 DART buoys distributed in the Atlantic (2), and the Caribbean (1) are used to detect any sea level change caused by the earthquake model. From the three buoys, the 42407 buoy has the highest sea level change of approximately 8 cm using the Tweb model. In the following figures we can observed the specific location of each buoy and the and the sea level data using Tweb model.

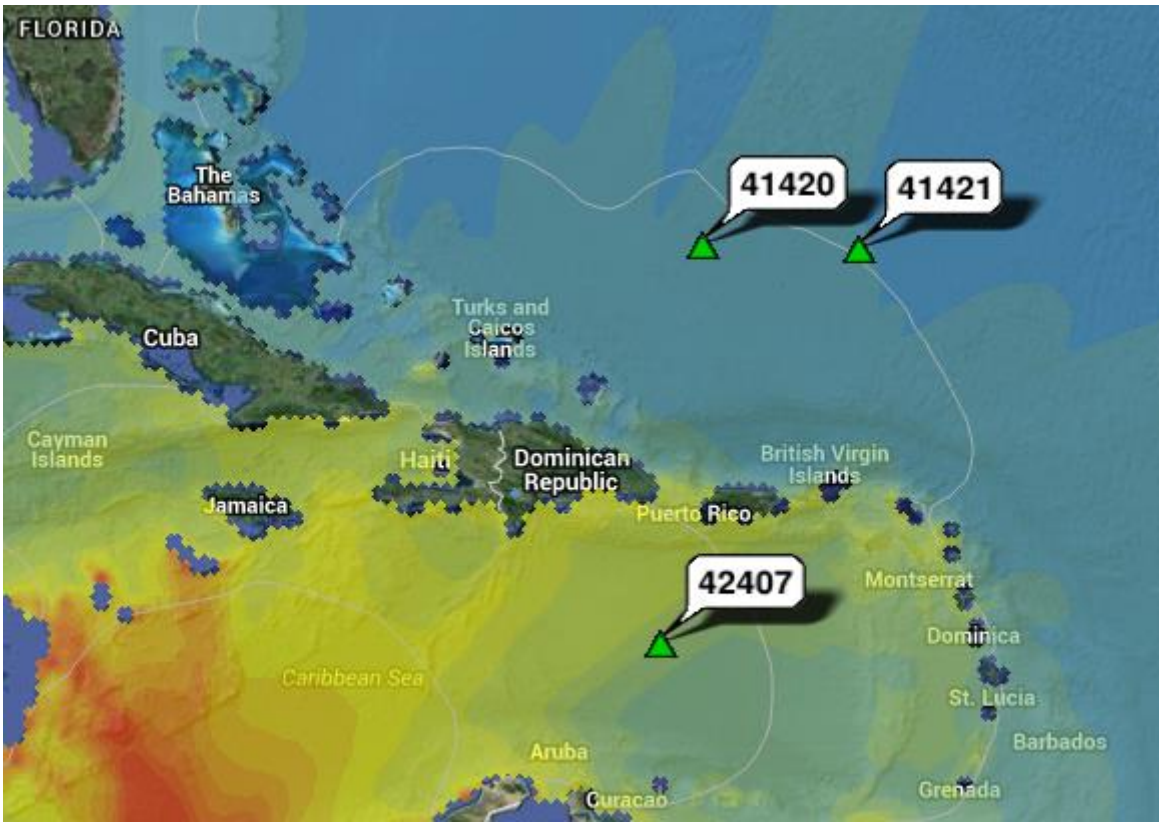



Figure III–3. DART buoys location.

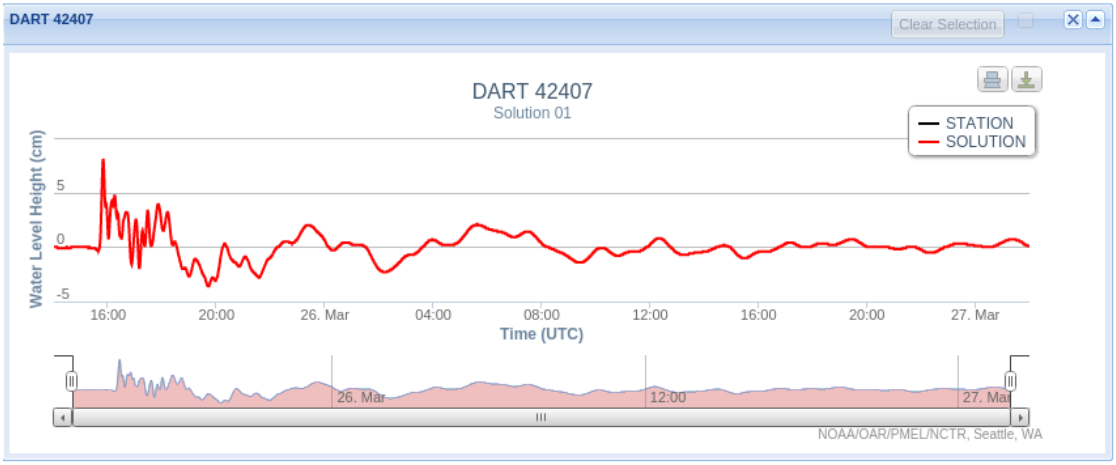



Figure III–4. DART buoys 42407 time series. The x-axis represents time (UTC) and the y-axis represents the water sea level change in centimeters (cm).

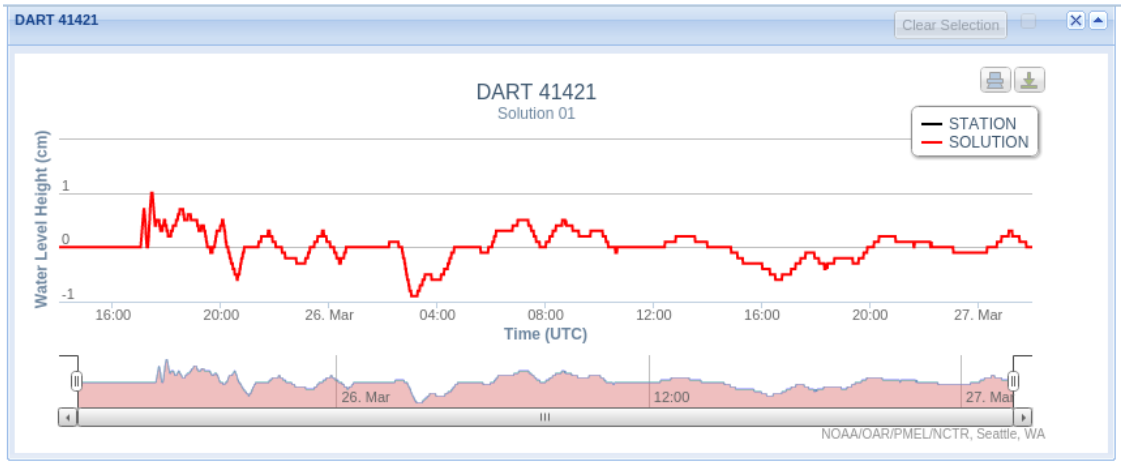



Figure III–5. DART buoys 41421 time series. The x-axis represents time (UTC) and the y-axis represents the water sea level change in centimeters(cm).

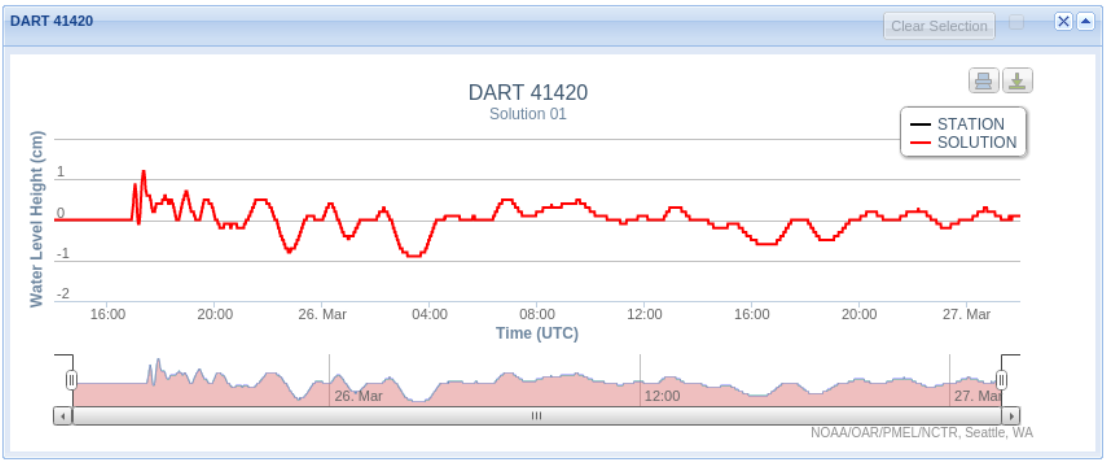



Figure III–6. DART buoys 41420 time series. The x-axis represents time (UTC) and the y-axis represents the water sea level change in centimeters (cm).

ANNEX IV

**PTWC ENHANCED PRODUCTS**
**FOR THE CARIBE WAVE/LANTEX 2015 PANAMA SCENARIO**

Graphical Products

Six graphical products were prepared for the CARIBE WAVE/LANTEX 2015 Exercise Panama Scenario using the PTWC RIFT Tsunami Forecast Model. The first three products are based on the following earthquake parameters: Origin: 03/25/2015 14:00:00 UTC; Coordinates: 10.3°N 78.8°W; Depth: 015 km; Magnitude: 8.2. The last three are based on the following: Origin: 03/25/2015 14:00:00 UTC; Coordinates: 10.3°N 78.8°W; Depth: 015 km; Magnitude: 8.5.

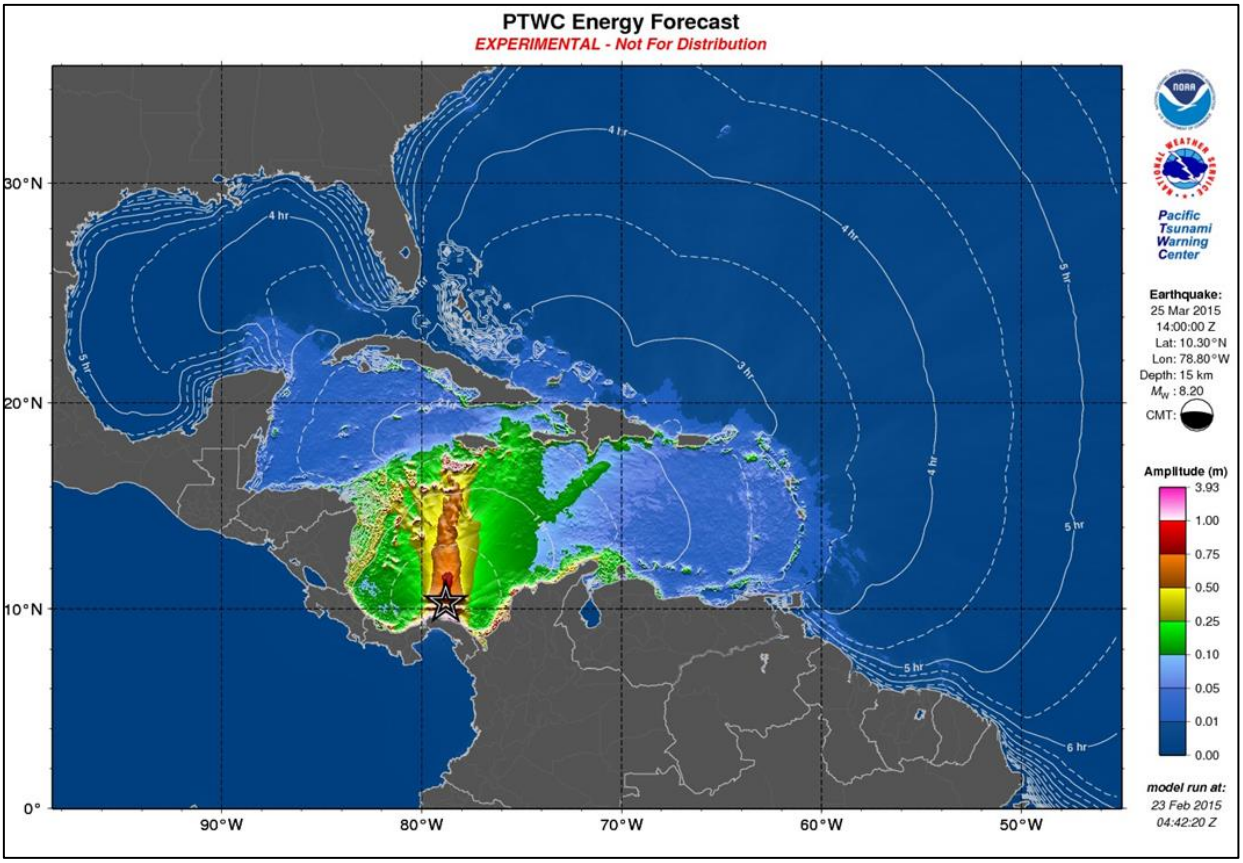



Figure IV–1. Energy forecast map for 25 March 2015 CARIBE WAVE/LANTEX 2015 Panama Scenario (with initial earthquake parameters, Message 1).

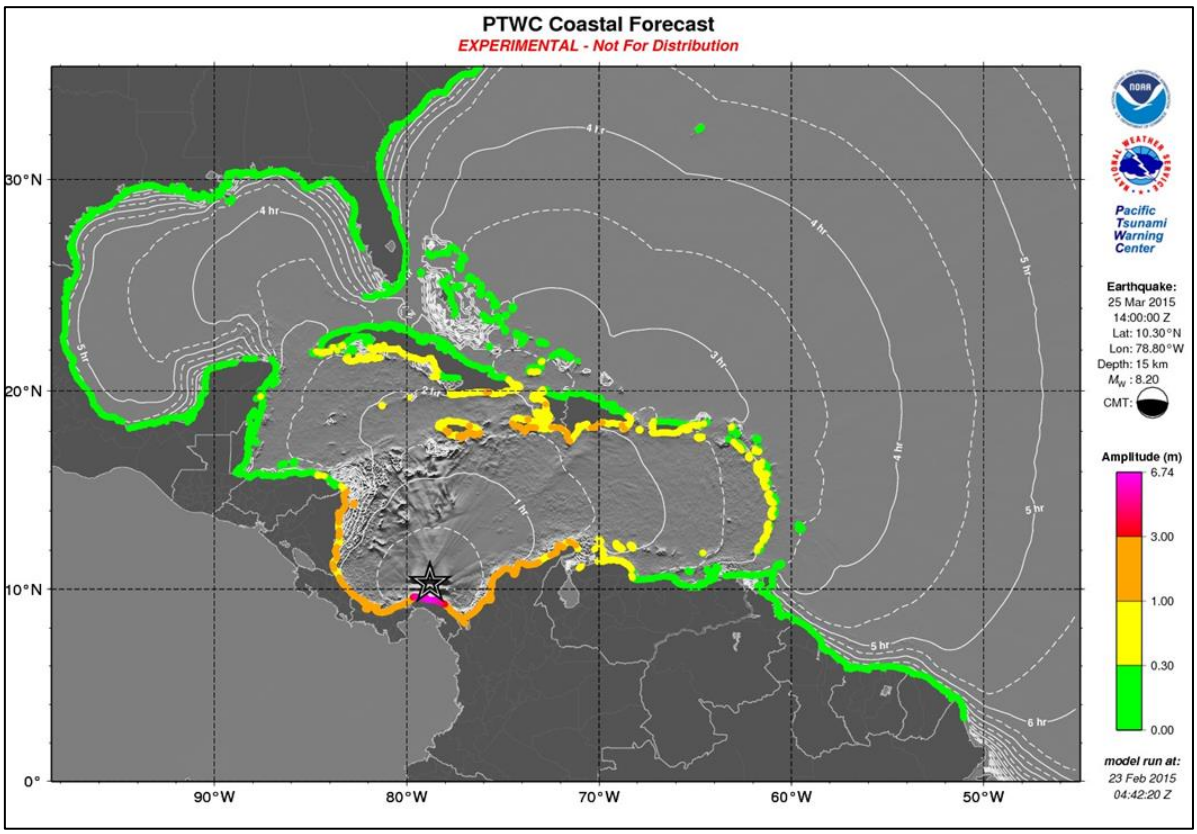



Figure IV–2. Coastal forecasts for CARIBE WAVE/LANTEX 2015 Panama Scenario (with initial earthquake parameters, Message 1).

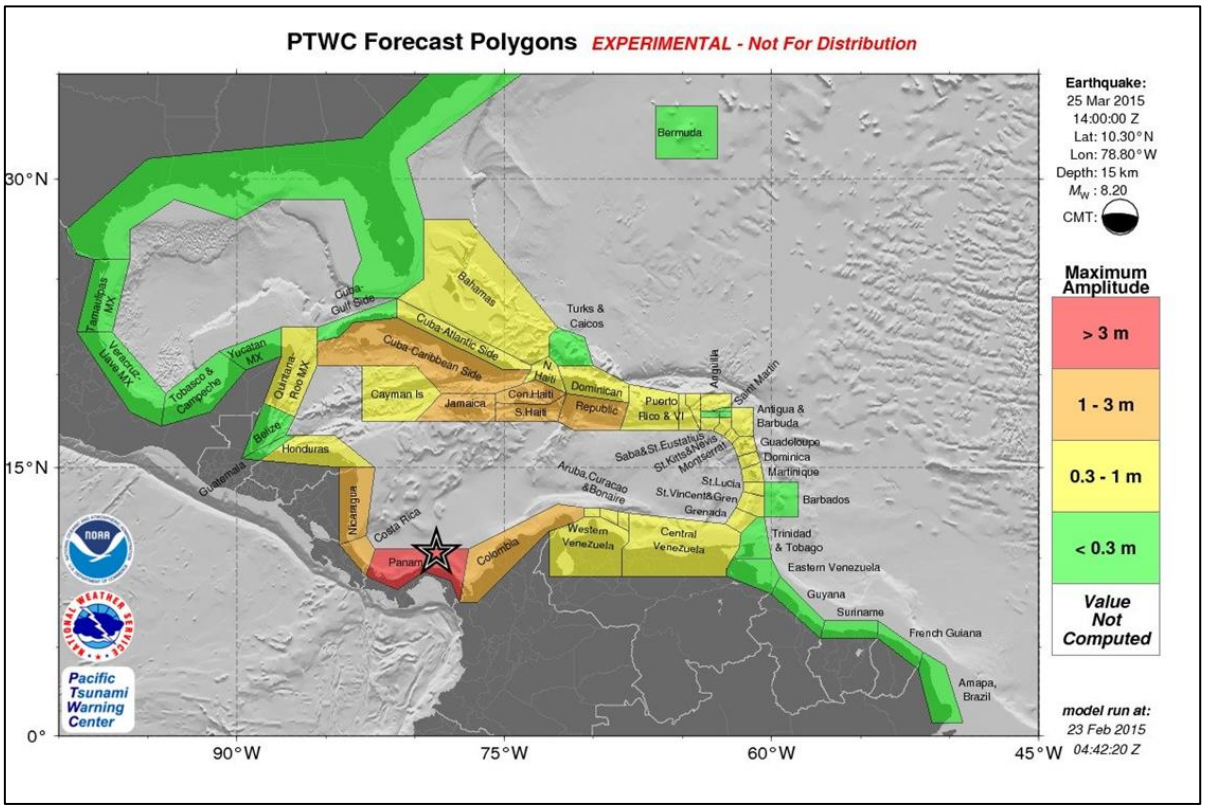



Figure IV–3. PTWC forecast polygons for CARIBE WAVE/LANTEX 2015 Panama Scenario (with initial earthquake parameters, Message 1).

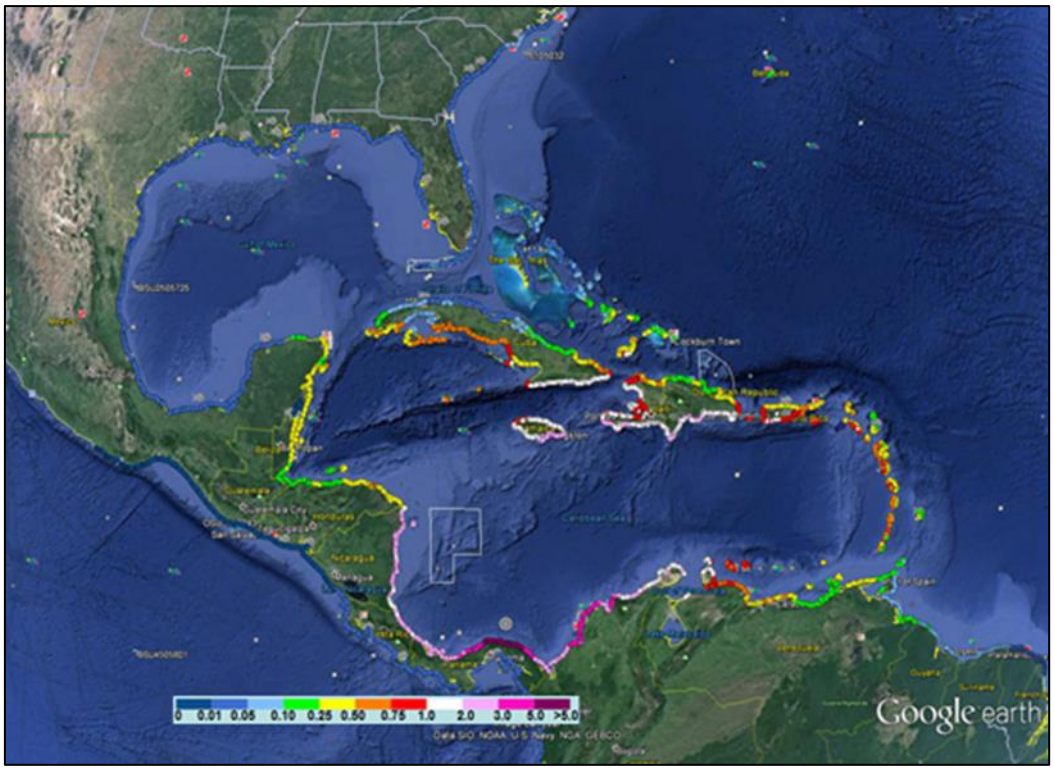



Figure IV–4. Google Earth image of coastal amplitude forecasts for CARIBE WAVE/LANTEX 2015 Panama Scenario (with initial earthquake parameters, Message 1).

CTWP website has the KMZ for the scenario available: https://www.weather.gov/ctwp/caribewave15

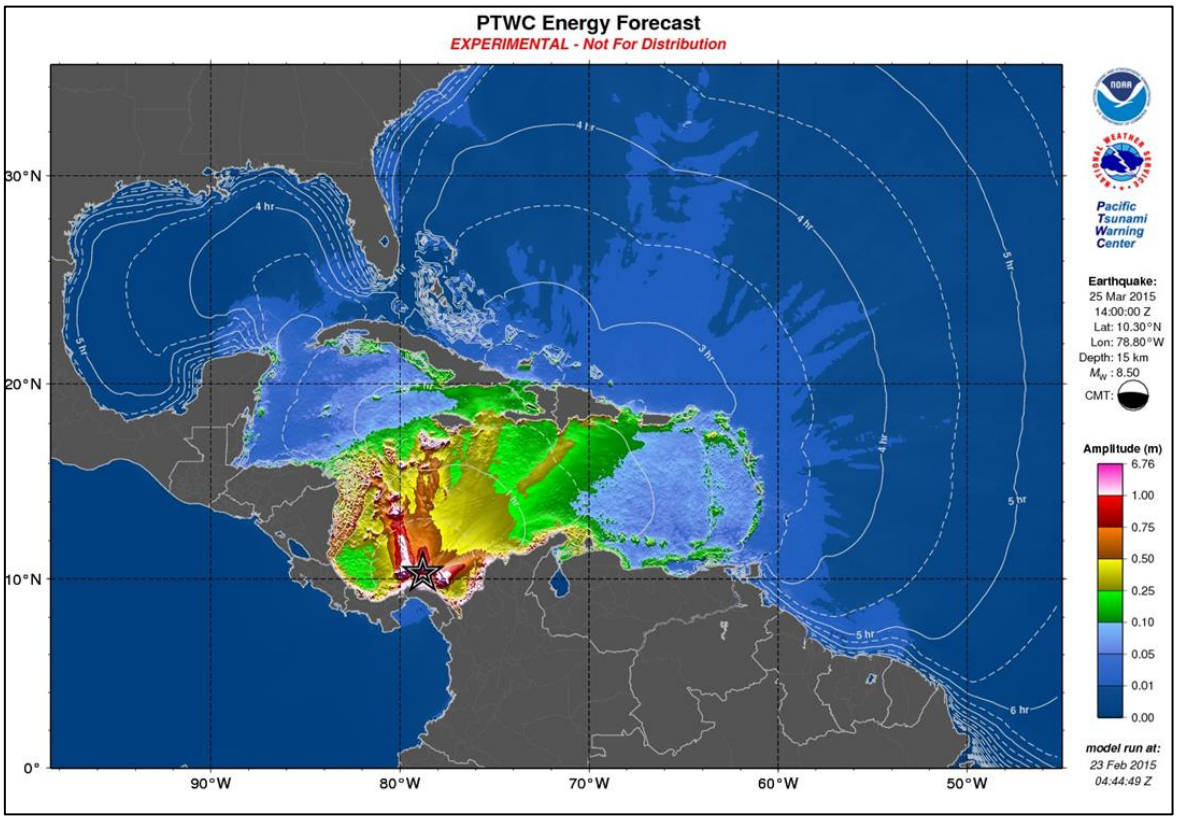



Figure IV–5. Energy forecast map for March 25, 2015 CARIBE WAVE/LANTEX 2015 Panama Scenario (with final earthquake parameters, Message 2).

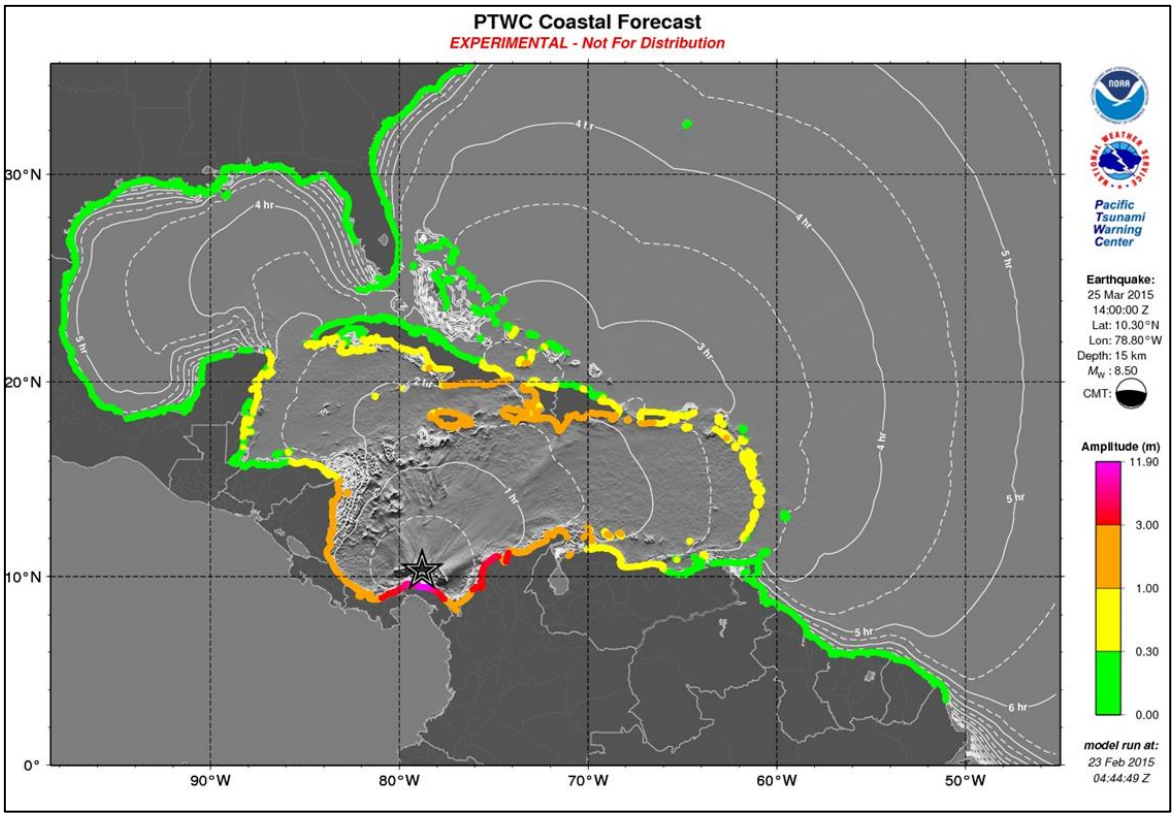



Figure IV–6. Coastal forecasts for CARIBE WAVE/LANTEX 2015 Panama Scenario (with final earthquake parameters, Message 2).

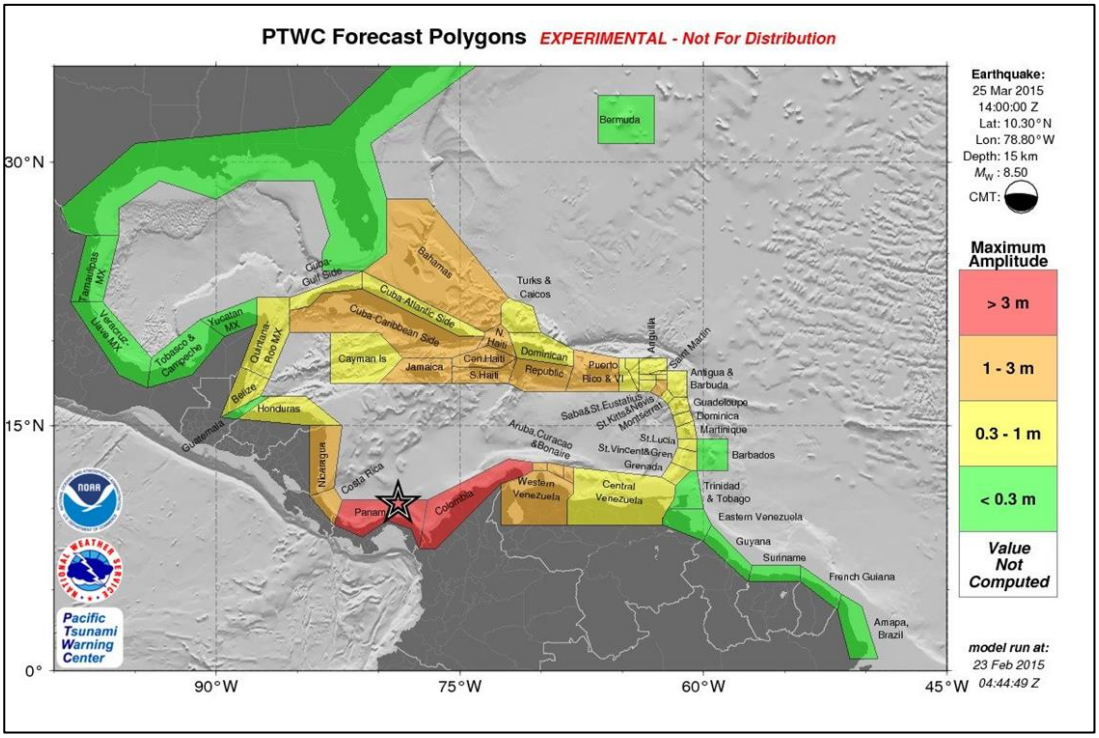



Figure IV–7. PTWC forecast polygons for CARIBE WAVE/LANTEX 2015 Panama Scenario (with final earthquake parameters, Message 2).

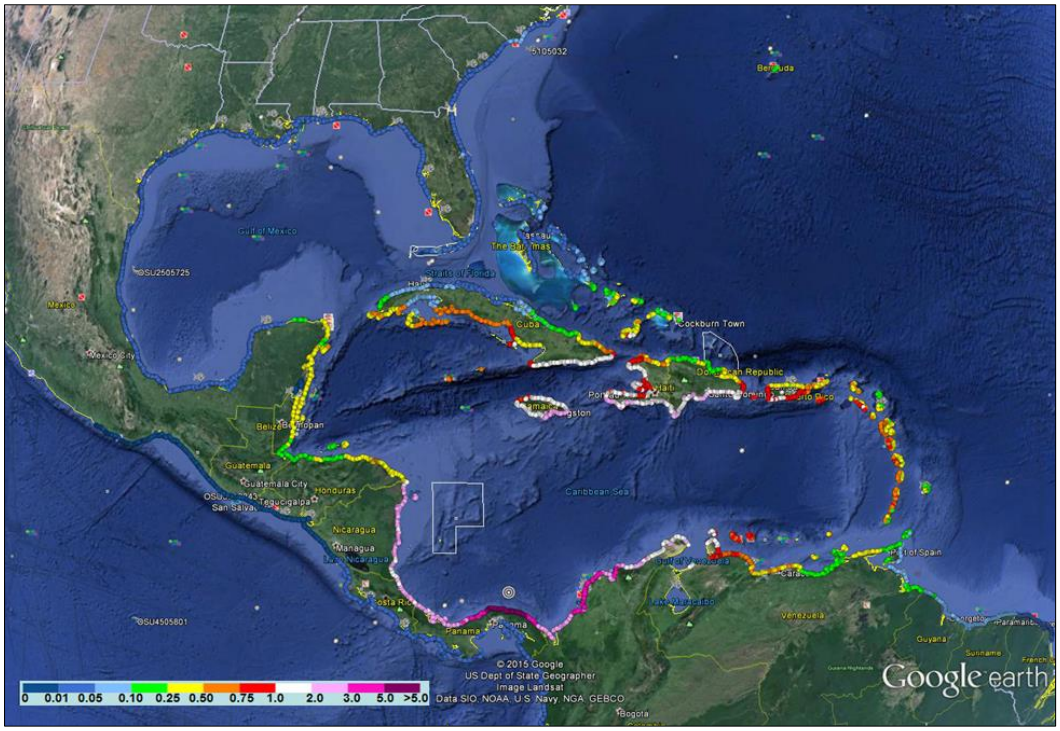



Figure IV–8. Google Earth image of coastal amplitude forecasts for CARIBE WAVE/LANTEX 2015 Panama Scenario (with final earthquake parameters, Message 2).

CTWP website has the KMZ for the scenario available: https://www.weather.gov/ctwp/caribewave15

## Text Products

```
ZCZC
WECA41 PHEB 251405
TSUCAX

EXPERIMENTAL TSUNAMI MESSAGE NUMBER 1
NOT FOR DISTRIBUTION
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
1405 UCT WED MAR 25 2015

...TSUNAMI THREAT MESSAGE...


**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE *****

 THIS MESSAGE IS ISSUED FOR INFORMATION ONLY IN SUPPORT OF THE
 UNESCO/IOC TSUNAMI AND OTHER COASTAL HAZARDS WARNING SYSTEM FOR
 THE CARIBBEAN AND ADJACENT REGIONS AND IS MEANT FOR NATIONAL
 AUTHORITIES IN EACH COUNTRY OF THAT SYSTEM.
```

NATIONAL AUTHORITIES WILL DETERMINE THE TSUNAMI THREAT AND
APPROPRIATE LEVEL OF ALERT FOR EACH COUNTRY.

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE *****

PRELIMINARY EARTHQUAKE PARAMETERS

* MAGNITUDE 8.2
* ORIGIN TIME 1400 UTC MAR 25 2015
* COORDINATES 10.3 NORTH 78.8 WEST
* DEPTH 15 KM / 9 MILES
* LOCATION NORTH OF PANAMA

EVALUATION

* AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 8.2 OCCURRED NORTH OF PANAMA AT 1400 UTC ON WEDNESDAY MARCH 25 2015.

* BASED ON THE PRELIMINARY EARTHQUAKE PARAMETERS... HAZARDOUS TSUNAMI WAVES ARE FORECAST FOR SOME COASTS.

TSUNAMI THREAT FORECAST...UPDATED

* TSUNAMI WAVES REACHING MORE THAN 3 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE ALONG SOME COASTS OF

PANAMA.

* TSUNAMI WAVES REACHING 1 TO 3 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE ALONG SOME COASTS OF

COLOMBIA... COSTA RICA... CUBA... DOMINICAN REPUBLIC...
HAITI... NICARAGUA... AND JAMAICA.

* TSUNAMI WAVES REACHING 0.3 TO 1 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE FOR SOME COASTS OF

ARUBA... HONDURAS... MEXICO... PUERTO RICO... ANGUILLA... ANTIGUA AND BARBUDA... BAHAMAS... CAYMAN ISLANDS... DOMINICA... GRENADA... GUADELOUPE... MARTINIQUE... MONTSERRAT... CURACAO... BONAIRE... SAINT KITTS AND NEVIS... SAINT LUCIA... SAINT VINCENT AND THE GRENADINES... US VIRGIN ISLANDS... AND VENEZUELA.

* TSUNAMI WAVES LESS THAN 0.3 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE FOR SOME COASTS OF

GUYANA... GUATEMALA... SURINAME... BARBADOS... BELIZE... BERMUDA... FRENCH GUIANA... SINT MAARTEN... SAINT BARTHELEMY... SAINT MARTIN... TRINIDAD AND TOBAGO... AND TURKS AND CAICOS ISLANDS.

* ACTUAL AMPLITUDES AT THE COAST MAY VARY FROM FORECAST AMPLITUDES DUE TO UNCERTAINTIES IN THE FORECAST AND LOCAL FEATURES. IN PARTICULAR MAXIMUM TSUNAMI AMPLITUDES ON ATOLLS WILL LIKELY BE MUCH SMALLER THAN THE FORECAST INDICATES.

* FOR OTHER AREAS COVERED BY THIS PRODUCT A FORECAST HAS NOT YET BEEN COMPUTED. THE FORECAST WILL BE EXPANDED AS NECESSARY IN SUBSEQUENT PRODUCTS.

RECOMMENDED ACTIONS
---

* GOVERNMENT AGENCIES RESPONSIBLE FOR THREATENED COASTAL AREAS SHOULD TAKE ACTION TO INFORM AND INSTRUCT ANY COASTAL POPULATIONS AT RISK IN ACCORDANCE WITH THEIR OWN EVALUATION...

PROCEDURES AND THE LEVEL OF THREAT.

* PERSONS LOCATED IN THREATENED COASTAL AREAS SHOULD STAY ALERT FOR INFORMATION AND FOLLOW INSTRUCTIONS FROM NATIONAL AND LOCAL AUTHORITIES.

ESTIMATED TIMES OF ARRIVAL

* ESTIMATED TIMES OF ARRIVAL -ETA- OF THE INITIAL TSUNAMI WAVE FOR POINTS WITHIN THREATENED REGIONS ARE GIVEN BELOW. ACTUAL ARRIVAL TIMES MAY DIFFER AND THE INITIAL WAVE MAY NOT BE THE LARGEST. A TSUNAMI IS A SERIES OF WAVES AND THE TIME BETWEEN WAVES CAN BE FIVE MINUTES TO ONE HOUR.

| LOCATION | REGION | COORDINATES | | ETA(UTC) |
|---|---|---|---|---|
| ALIGANDI | PANAMA | 9.2N | 78.0W | 1421 03/25 |
| PUERTO CARRETO | PANAMA | 8.8N | 77.6W | 1437 03/25 |
| CARTAGENA | COLOMBIA | 10.4N | 75.6W | 1442 03/25 |
| PUNTA CARIBANA | COLOMBIA | 8.6N | 76.9W | 1453 03/25 |
| BARRANQUILLA | COLOMBIA | 11.1N | 74.9W | 1453 03/25 |
| PUERTO LIMON | COSTA RICA | 10.0N | 83.0W | 1456 03/25 |
| PUERTO OBALDIA | PANAMA | 8.7N | 77.4W | 1502 03/25 |
| COLON | PANAMA | 9.4N | 79.9W | 1512 03/25 |
| RIOHACHA | COLOMBIA | 11.6N | 72.9W | 1518 03/25 |
| BOCAS DEL TORO | PANAMA | 9.4N | 82.2W | 1528 03/25 |
| KINGSTON | JAMAICA | 17.9N | 76.9W | 1528 03/25 |
| JACAMEL | HAITI | 18.1N | 72.5W | 1536 03/25 |
| PUNTA GORDA | NICARAGUA | 11.4N | 83.8W | 1544 03/25 |
| SANTA MARTA | COLOMBIA | 11.2N | 74.2W | 1546 03/25 |
| ORANJESTAD | ARUBA | 12.5N | 70.0W | 1548 03/25 |
| CAYMAN BRAC | CAYMAN ISLANDS | 19.7N | 79.9W | 1552 03/25 |
| MONTEGO BAY | JAMAICA | 18.5N | 77.9W | 1553 03/25 |
| SANTIAGO D CUBA | CUBA | 19.9N | 75.8W | 1553 03/25 |
| WILLEMSTAD | CURACAO | 12.1N | 68.9W | 1557 03/25 |
| ONIMA | BONAIRE | 12.3N | 68.3W | 1559 03/25 |
| SANTO DOMINGO | DOMINICAN REP | 18.5N | 69.9W | 1603 03/25 |

| | | | | |
|---|---|---|---|---|
| GRAND CAYMAN | CAYMAN ISLANDS | 19.3N | 81.3W | 1611 03/25 |
| BARACOA | CUBA | 20.4N | 74.5W | 1615 03/25 |
| GREAT INAGUA | BAHAMAS | 20.9N | 73.7W | 1616 03/25 |
| CIENFUEGOS | CUBA | 22.0N | 80.5W | 1620 03/25 |
| CABO ENGANO | DOMINICAN REP | 18.6N | 68.3W | 1623 03/25 |
| CAP HAITEN | HAITI | 19.8N | 72.2W | 1628 03/25 |
| MAIQUETIA | VENEZUELA | 10.6N | 67.0W | 1636 03/25 |
| MAYAGUANA | BAHAMAS | 22.3N | 73.0W | 1637 03/25 |
| PUERTO PLATA | DOMINICAN REP | 19.8N | 70.7W | 1640 03/25 |
| JEREMIE | HAITI | 18.6N | 74.1W | 1641 03/25 |
| CROOKED ISLAND | BAHAMAS | 22.7N | 74.1W | 1645 03/25 |
| LONG ISLAND | BAHAMAS | 23.3N | 75.1W | 1648 03/25 |
| COZUMEL | MEXICO | 20.5N | 87.0W | 1651 03/25 |
| BASSE TERRE | GUADELOUPE | 16.0N | 61.7W | 1654 03/25 |
| ROSEAU | DOMINICA | 15.3N | 61.4W | 1655 03/25 |
| PUERTO CORTES | HONDURAS | 15.9N | 88.0W | 1655 03/25 |
| FORT DE FRANCE | MARTINIQUE | 14.6N | 61.1W | 1658 03/25 |
| SAN SALVADOR | BAHAMAS | 24.1N | 74.5W | 1658 03/25 |
| KINGSTOWN | SAINT VINCENT | 13.1N | 61.2W | 1658 03/25 |
| CASTRIES | SAINT LUCIA | 14.0N | 61.0W | 1658 03/25 |
| SAINT GEORGES | GRENADA | 12.0N | 61.8W | 1659 03/25 |
| BASSETERRE | SAINT KITTS | 17.3N | 62.7W | 1659 03/25 |
| PLYMOUTH | MONTSERRAT | 16.7N | 62.2W | 1700 03/25 |
| CUMANA | VENEZUELA | 10.5N | 64.2W | 1701 03/25 |
| EXUMA | BAHAMAS | 23.6N | 75.9W | 1704 03/25 |
| TRUJILLO | HONDURAS | 15.9N | 86.0W | 1714 03/25 |
| CAT ISLAND | BAHAMAS | 24.4N | 75.5W | 1714 03/25 |
| THE VALLEY | ANGUILLA | 18.3N | 63.1W | 1722 03/25 |
| GIBARA | CUBA | 21.1N | 76.1W | 1722 03/25 |
| LA HABANA | CUBA | 23.2N | 82.4W | 1724 03/25 |
| ABACO ISLAND | BAHAMAS | 26.6N | 77.1W | 1726 03/25 |
| ANDROS ISLAND | BAHAMAS | 25.0N | 77.9W | 1730 03/25 |
| SAINT JOHNS | ANTIGUA | 17.1N | 61.9W | 1735 03/25 |
| PALMETTO POINT | BARBUDA | 17.6N | 61.9W | 1735 03/25 |
| PUNTO FIJO | VENEZUELA | 11.7N | 70.2W | 1737 03/25 |
| ELEUTHERA ISLAN | BAHAMAS | 25.2N | 76.1W | 1743 03/25 |
| PORT AU PRINCE | HAITI | 18.5N | 72.4W | 1744 03/25 |
| NASSAU | BAHAMAS | 25.1N | 77.4W | 1747 03/25 |
| FREEPORT | BAHAMAS | 26.5N | 78.8W | 1750 03/25 |

| | | | | |
|---|---|---|---|---|
| BIMINI | BAHAMAS | 25.8N | 79.3W | 1822 03/25 |
| SANTA CRZ D SUR | CUBA | 20.7N | 78.0W | 1837 03/25 |
| GOLFO VENEZUELA | VENEZUELA | 11.4N | 71.2W | 1914 03/25 |
| NUEVA GERONA | CUBA | 21.9N | 82.8W | 1937 03/25 |
| PUERTO CABEZAS | NICARAGUA | 14.0N | 83.4W | 1939 03/25 |
| PORLAMAR | VENEZUELA | 10.9N | 63.8W | 2124 03/25 |

POTENTIAL IMPACTS

* A TSUNAMI IS A SERIES OF WAVES. THE TIME BETWEEN WAVE CRESTS CAN VARY FROM 5 MINUTES TO AN HOUR. THE HAZARD MAY PERSIST FOR MANY HOURS OR LONGER AFTER THE INITIAL WAVE.

* IMPACTS CAN VARY SIGNIFICANTLY FROM ONE SECTION OF COAST TO THE NEXT DUE TO LOCAL BATHYMETRY AND THE SHAPE AND ELEVATION OF THE SHORELINE.

* IMPACTS CAN ALSO VARY DEPENDING UPON THE STATE OF THE TIDE AT THE TIME OF THE MAXIMUM TSUNAMI WAVES.

* PERSONS CAUGHT IN THE WATER OF A TSUNAMI MAY DROWN... BE CRUSHED BY DEBRIS IN THE WATER... OR BE SWEPT OUT TO SEA.

NEXT UPDATE AND ADDITIONAL INFORMATION

* THE NEXT MESSAGE WILL BE ISSUED IN ONE HOUR... OR SOONER IF THE SITUATION WARRANTS.

* AUTHORITATIVE INFORMATION ABOUT THE EARTHQUAKE FROM THE U.S. GEOLOGICAL SURVEY CAN BE FOUND ON THE INTERNET AT EARTHQUAKE.USGS.GOV/EARTHQUAKES -ALL IN SMALL LETTERS-.

* FURTHER INFORMATION ABOUT THIS EVENT MAY BE FOUND AT PTWC.WEATHER.GOV AND AT WWW.TSUNAMI.GOV.

* COASTAL REGIONS OF PUERTO RICO... THE U.S. VIRGIN ISLANDS AND
THE BRITISH VIRGIN ISLANDS SHOULD REFER TO U.S. NATIONAL
TSUNAMI WARNING CENTER MESSAGES THAT CAN BE FOUND AT
NTWC.ARH.NOAA.GOV.

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ZCZC
WECA41 PHEB 251430
TSUCAX

EXPERIMENTAL TSUNAMI MESSAGE NUMBER 2
NOT FOR DISTRIBUTION
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
1430 UCT WED MAR 25 2015

...TSUNAMI THREAT MESSAGE...

IN THIS MESSAGE THE EARTHQUAKE PARAMETERS AND TSUNAMI FORECAST
HAVE BEEN UPDATED.

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE *****

THIS MESSAGE IS ISSUED FOR INFORMATION ONLY IN SUPPORT OF THE
UNESCO/IOC TSUNAMI AND OTHER COASTAL HAZARDS WARNING SYSTEM FOR
THE CARIBBEAN AND ADJACENT REGIONS AND IS MEANT FOR NATIONAL
AUTHORITIES IN EACH COUNTRY OF THAT SYSTEM.

NATIONAL AUTHORITIES WILL DETERMINE THE TSUNAMI THREAT AND
APPROPRIATE LEVEL OF ALERT FOR EACH COUNTRY.

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE *****

PRELIMINARY EARTHQUAKE PARAMETERS...UPDATED
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* MAGNITUDE 8.5
* ORIGIN TIME 1400 UTC MAR 25 2015
* COORDINATES 10.3 NORTH 78.8 WEST
* DEPTH 15 KM / 9 MILES
* LOCATION NORTH OF PANAMA

EVALUATION

---

* AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 8.5 OCCURRED NORTH OF PANAMA AT 1400 UTC ON WEDNESDAY MARCH 25 2015.

* BASED ON ALL AVAILABLE DATA... HAZARDOUS TSUNAMI WAVES ARE FORECAST FOR SOME COASTS.

TSUNAMI THREAT FORECAST

---

* TSUNAMI WAVES REACHING MORE THAN 3 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE ALONG SOME COASTS OF

  COLOMBIA... AND PANAMA.

* TSUNAMI WAVES REACHING 1 TO 3 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE ALONG SOME COASTS OF

  ARUBA... COSTA RICA... CUBA... DOMINICAN REPUBLIC... HAITI... NICARAGUA... PUERTO RICO... BAHAMAS... JAMAICA... CURACAO... BONAIRE... SAINT KITTS AND NEVIS... AND VENEZUELA.

* TSUNAMI WAVES REACHING 0.3 TO 1 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE FOR SOME COASTS OF

  HONDURAS... MEXICO... ANGUILLA... ANTIGUA AND BARBUDA... BELIZE... CAYMAN ISLANDS... DOMINICA... GRENADA... GUADELOUPE... MARTINIQUE... MONTSERRAT... SAINT LUCIA... SINT MAARTEN... SAINT BARTHELEMY... SAINT MARTIN... SAINT VINCENT AND THE GRENADINES... TURKS AND CAICOS ISLANDS... AND US VIRGIN ISLANDS.

* TSUNAMI WAVES LESS THAN 0.3 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE FOR SOME COASTS OF

BRAZIL... GUYANA... GUATEMALA... SURINAME... BARBADOS...
BERMUDA... FRENCH GUIANA... AND TRINIDAD AND TOBAGO.

* ACTUAL AMPLITUDES AT THE COAST MAY VARY FROM FORECAST AMPLITUDES DUE TO UNCERTAINTIES IN THE FORECAST AND LOCAL FEATURES. IN PARTICULAR MAXIMUM TSUNAMI AMPLITUDES ON ATOLLS WILL LIKELY BE MUCH SMALLER THAN THE FORECAST INDICATES.

* FOR OTHER AREAS COVERED BY THIS PRODUCT A FORECAST HAS NOT YET BEEN COMPUTED. THE FORECAST WILL BE EXPANDED AS NECESSARY IN SUBSEQUENT PRODUCTS.

RECOMMENDED ACTIONS
---

* GOVERNMENT AGENCIES RESPONSIBLE FOR THREATENED COASTAL AREAS SHOULD TAKE ACTION TO INFORM AND INSTRUCT ANY COASTAL POPULATIONS AT RISK IN ACCORDANCE WITH THEIR OWN EVALUATION... PROCEDURES AND THE LEVEL OF THREAT.

* PERSONS LOCATED IN THREATENED COASTAL AREAS SHOULD STAY ALERT FOR INFORMATION AND FOLLOW INSTRUCTIONS FROM NATIONAL AND LOCAL AUTHORITIES.

ESTIMATED TIMES OF ARRIVAL
---

* ESTIMATED TIMES OF ARRIVAL -ETA- OF THE INITIAL TSUNAMI WAVE FOR POINTS WITHIN THREATENED REGIONS ARE GIVEN BELOW. ACTUAL ARRIVAL TIMES MAY DIFFER AND THE INITIAL WAVE MAY NOT BE THE LARGEST. A TSUNAMI IS A SERIES OF WAVES AND THE TIME BETWEEN WAVES CAN BE FIVE MINUTES TO ONE HOUR.

| LOCATION | REGION | COORDINATES | ETA(UTC) |
|---|---|---|---|
| ALIGANDI | PANAMA | 9.2N 78.0W | 1421 03/25 |

| | | | | | |
|---|---|---|---|---|---|
| PUERTO CARRETO | PANAMA | 8.8N | 77.6W | 1437 | 03/25 |
| CARTAGENA | COLOMBIA | 10.4N | 75.6W | 1442 | 03/25 |
| PUNTA CARIBANA | COLOMBIA | 8.6N | 76.9W | 1453 | 03/25 |
| BARRANQUILLA | COLOMBIA | 11.1N | 74.9W | 1453 | 03/25 |
| PUERTO LIMON | COSTA RICA | 10.0N | 83.0W | 1456 | 03/25 |
| PUERTO OBALDIA | PANAMA | 8.7N | 77.4W | 1502 | 03/25 |
| COLON | PANAMA | 9.4N | 79.9W | 1512 | 03/25 |
| RIOHACHA | COLOMBIA | 11.6N | 72.9W | 1518 | 03/25 |
| BOCAS DEL TORO | PANAMA | 9.4N | 82.2W | 1528 | 03/25 |
| KINGSTON | JAMAICA | 17.9N | 76.9W | 1528 | 03/25 |
| JACAMEL | HAITI | 18.1N | 72.5W | 1536 | 03/25 |
| PUNTA GORDA | NICARAGUA | 11.4N | 83.8W | 1544 | 03/25 |
| SANTA MARTA | COLOMBIA | 11.2N | 74.2W | 1546 | 03/25 |
| ORANJESTAD | ARUBA | 12.5N | 70.0W | 1548 | 03/25 |
| CAYMAN BRAC | CAYMAN ISLANDS | 19.7N | 79.9W | 1552 | 03/25 |
| MONTEGO BAY | JAMAICA | 18.5N | 77.9W | 1553 | 03/25 |
| SANTIAGO D CUBA | CUBA | 19.9N | 75.8W | 1553 | 03/25 |
| WILLEMSTAD | CURACAO | 12.1N | 68.9W | 1557 | 03/25 |
| ONIMA | BONAIRE | 12.3N | 68.3W | 1559 | 03/25 |
| SANTO DOMINGO | DOMINICAN REP | 18.5N | 69.9W | 1603 | 03/25 |
| GRAND CAYMAN | CAYMAN ISLANDS | 19.3N | 81.3W | 1611 | 03/25 |
| BARACOA | CUBA | 20.4N | 74.5W | 1615 | 03/25 |
| GREAT INAGUA | BAHAMAS | 20.9N | 73.7W | 1616 | 03/25 |
| CIENFUEGOS | CUBA | 22.0N | 80.5W | 1620 | 03/25 |
| CABO ENGANO | DOMINICAN REP | 18.6N | 68.3W | 1623 | 03/25 |
| CAP HAITEN | HAITI | 19.8N | 72.2W | 1628 | 03/25 |
| WEST CAICOS | TURKS N CAICOS | 21.7N | 72.5W | 1632 | 03/25 |
| MAIQUETIA | VENEZUELA | 10.6N | 67.0W | 1636 | 03/25 |
| MAYAGUANA | BAHAMAS | 22.3N | 73.0W | 1637 | 03/25 |
| PUERTO PLATA | DOMINICAN REP | 19.8N | 70.7W | 1640 | 03/25 |
| JEREMIE | HAITI | 18.6N | 74.1W | 1641 | 03/25 |
| CROOKED ISLAND | BAHAMAS | 22.7N | 74.1W | 1645 | 03/25 |
| LONG ISLAND | BAHAMAS | 23.3N | 75.1W | 1648 | 03/25 |
| GRAND TURK | TURKS N CAICOS | 21.5N | 71.1W | 1651 | 03/25 |
| COZUMEL | MEXICO | 20.5N | 87.0W | 1651 | 03/25 |
| BASSE TERRE | GUADELOUPE | 16.0N | 61.7W | 1654 | 03/25 |
| ROSEAU | DOMINICA | 15.3N | 61.4W | 1655 | 03/25 |
| PUERTO CORTES | HONDURAS | 15.9N | 88.0W | 1655 | 03/25 |
| FORT DE FRANCE | MARTINIQUE | 14.6N | 61.1W | 1658 | 03/25 |

| | | | | | |
|---|---|---|---|---|---|
| SAN SALVADOR | BAHAMAS | 24.1N | 74.5W | 1658 | 03/25 |
| KINGSTOWN | SAINT VINCENT | 13.1N | 61.2W | 1658 | 03/25 |
| CASTRIES | SAINT LUCIA | 14.0N | 61.0W | 1658 | 03/25 |
| SAINT GEORGES | GRENADA | 12.0N | 61.8W | 1659 | 03/25 |
| BASSETERRE | SAINT KITTS | 17.3N | 62.7W | 1659 | 03/25 |
| PLYMOUTH | MONTSERRAT | 16.7N | 62.2W | 1700 | 03/25 |
| CUMANA | VENEZUELA | 10.5N | 64.2W | 1701 | 03/25 |
| SIMPSON BAAI | SINT MAARTEN | 18.0N | 63.1W | 1703 | 03/25 |
| EXUMA | BAHAMAS | 23.6N | 75.9W | 1704 | 03/25 |
| TRUJILLO | HONDURAS | 15.9N | 86.0W | 1714 | 03/25 |
| CAT ISLAND | BAHAMAS | 24.4N | 75.5W | 1714 | 03/25 |
| THE VALLEY | ANGUILLA | 18.3N | 63.1W | 1722 | 03/25 |
| GIBARA | CUBA | 21.1N | 76.1W | 1722 | 03/25 |
| LA HABANA | CUBA | 23.2N | 82.4W | 1724 | 03/25 |
| ABACO ISLAND | BAHAMAS | 26.6N | 77.1W | 1726 | 03/25 |
| ANDROS ISLAND | BAHAMAS | 25.0N | 77.9W | 1730 | 03/25 |
| SAINT BARTHELEM | SAINT BARTHELEMY | 17.9N | 62.8W | 1734 | 03/25 |
| SAINT JOHNS | ANTIGUA | 17.1N | 61.9W | 1735 | 03/25 |
| PALMETTO POINT | BARBUDA | 17.6N | 61.9W | 1735 | 03/25 |
| PUNTO FIJO | VENEZUELA | 11.7N | 70.2W | 1737 | 03/25 |
| BAIE BLANCHE | SAINT MARTIN | 18.1N | 63.0W | 1741 | 03/25 |
| BELIZE CITY | BELIZE | 17.5N | 88.2W | 1742 | 03/25 |
| ELEUTHERA ISLAN | BAHAMAS | 25.2N | 76.1W | 1743 | 03/25 |
| PORT AU PRINCE | HAITI | 18.5N | 72.4W | 1744 | 03/25 |
| NASSAU | BAHAMAS | 25.1N | 77.4W | 1747 | 03/25 |
| FREEPORT | BAHAMAS | 26.5N | 78.8W | 1750 | 03/25 |
| BIMINI | BAHAMAS | 25.8N | 79.3W | 1822 | 03/25 |
| SANTA CRZ D SUR | CUBA | 20.7N | 78.0W | 1837 | 03/25 |
| GOLFO VENEZUELA | VENEZUELA | 11.4N | 71.2W | 1914 | 03/25 |
| NUEVA GERONA | CUBA | 21.9N | 82.8W | 1937 | 03/25 |
| PUERTO CABEZAS | NICARAGUA | 14.0N | 83.4W | 1939 | 03/25 |
| PORLAMAR | VENEZUELA | 10.9N | 63.8W | 2124 | 03/25 |

POTENTIAL IMPACTS

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NEXT UPDATE AND ADDITIONAL INFORMATION
---

* THE NEXT MESSAGE WILL BE ISSUED IN ONE HOUR... OR SOONER IF THE SITUATION WARRANTS.

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* COASTAL REGIONS OF PUERTO RICO... THE U.S. VIRGIN ISLANDS AND THE BRITISH VIRGIN ISLANDS SHOULD REFER TO U.S. NATIONAL TSUNAMI WARNING CENTER MESSAGES THAT CAN BE FOUND AT NTWC.ARH.NOAA.GOV.

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WECA41 PHEB 251500
TSUCAX

EXPERIMENTAL TSUNAMI MESSAGE NUMBER 3
NOT FOR DISTRIBUTION
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
1500 UCT WED MAR 25 2015

...TSUNAMI THREAT MESSAGE...

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE *****

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UNESCO/IOC TSUNAMI AND OTHER COASTAL HAZARDS WARNING SYSTEM FOR
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AUTHORITIES IN EACH COUNTRY OF THAT SYSTEM.

NATIONAL AUTHORITIES WILL DETERMINE THE TSUNAMI THREAT AND
APPROPRIATE LEVEL OF ALERT FOR EACH COUNTRY.

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE *****

PRELIMINARY EARTHQUAKE PARAMETERS
---

* MAGNITUDE 8.5
* ORIGIN TIME 1400 UTC MAR 25 2015
* COORDINATES 10.3 NORTH 78.8 WEST
* DEPTH 15 KM / 9 MILES
* LOCATION NORTH OF PANAMA

EVALUATION
---

* AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 8.5 OCCURRED

NORTH OF PANAMA AT 1400 UTC ON WEDNESDAY MARCH 25 2015.

* TSUNAMI WAVES HAVE BEEN OBSERVED.

* BASED ON ALL AVAILABLE DATA... HAZARDOUS TSUNAMI WAVES ARE FORECAST FOR SOME COASTS.

TSUNAMI THREAT FORECAST
---

* TSUNAMI WAVES REACHING MORE THAN 3 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE ALONG SOME COASTS OF

COLOMBIA... AND PANAMA.

* TSUNAMI WAVES REACHING 1 TO 3 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE ALONG SOME COASTS OF

ARUBA... COSTA RICA... CUBA... DOMINICAN REPUBLIC... HAITI... NICARAGUA... PUERTO RICO... BAHAMAS... JAMAICA... CURACAO... BONAIRE... SAINT KITTS AND NEVIS... AND VENEZUELA.

* TSUNAMI WAVES REACHING 0.3 TO 1 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE FOR SOME COASTS OF

HONDURAS... MEXICO... ANGUILLA... ANTIGUA AND BARBUDA... BELIZE... CAYMAN ISLANDS... DOMINICA... GRENADA... GUADELOUPE... MARTINIQUE... MONTSERRAT... SAINT LUCIA... SINT MAARTEN... SAINT BARTHELEMY... SAINT MARTIN... SAINT VINCENT AND THE GRENADINES... TURKS AND CAICOS ISLANDS... AND US VIRGIN ISLANDS.

* TSUNAMI WAVES LESS THAN 0.3 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE FOR SOME COASTS OF

BRAZIL... GUYANA... GUATEMALA... SURINAME... BARBADOS...

BERMUDA... FRENCH GUIANA... AND TRINIDAD AND TOBAGO.

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RECOMMENDED ACTIONS
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* GOVERNMENT AGENCIES RESPONSIBLE FOR THREATENED COASTAL AREAS SHOULD TAKE ACTION TO INFORM AND INSTRUCT ANY COASTAL POPULATIONS AT RISK IN ACCORDANCE WITH THEIR OWN EVALUATION... PROCEDURES AND THE LEVEL OF THREAT.

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ESTIMATED TIMES OF ARRIVAL
---

* ESTIMATED TIMES OF ARRIVAL -ETA- OF THE INITIAL TSUNAMI WAVE FOR POINTS WITHIN THREATENED REGIONS ARE GIVEN BELOW. ACTUAL ARRIVAL TIMES MAY DIFFER AND THE INITIAL WAVE MAY NOT BE THE LARGEST. A TSUNAMI IS A SERIES OF WAVES AND THE TIME BETWEEN WAVES CAN BE FIVE MINUTES TO ONE HOUR.

| LOCATION | REGION | COORDINATES | ETA(UTC) |
|---|---|---|---|
| ALIGANDI | PANAMA | 9.2N 78.0W | 1421 03/25 |
| PUERTO CARRETO | PANAMA | 8.8N 77.6W | 1437 03/25 |

| | | | | | |
|---|---|---|---|---|---|
| CARTAGENA | COLOMBIA | 10.4N | 75.6W | 1442 | 03/25 |
| PUNTA CARIBANA | COLOMBIA | 8.6N | 76.9W | 1453 | 03/25 |
| BARRANQUILLA | COLOMBIA | 11.1N | 74.9W | 1453 | 03/25 |
| PUERTO LIMON | COSTA RICA | 10.0N | 83.0W | 1456 | 03/25 |
| PUERTO OBALDIA | PANAMA | 8.7N | 77.4W | 1502 | 03/25 |
| COLON | PANAMA | 9.4N | 79.9W | 1512 | 03/25 |
| RIOHACHA | COLOMBIA | 11.6N | 72.9W | 1518 | 03/25 |
| BOCAS DEL TORO | PANAMA | 9.4N | 82.2W | 1528 | 03/25 |
| KINGSTON | JAMAICA | 17.9N | 76.9W | 1528 | 03/25 |
| JACAMEL | HAITI | 18.1N | 72.5W | 1536 | 03/25 |
| PUNTA GORDA | NICARAGUA | 11.4N | 83.8W | 1544 | 03/25 |
| SANTA MARTA | COLOMBIA | 11.2N | 74.2W | 1546 | 03/25 |
| ORANJESTAD | ARUBA | 12.5N | 70.0W | 1548 | 03/25 |
| CAYMAN BRAC | CAYMAN ISLANDS | 19.7N | 79.9W | 1552 | 03/25 |
| MONTEGO BAY | JAMAICA | 18.5N | 77.9W | 1553 | 03/25 |
| SANTIAGO D CUBA | CUBA | 19.9N | 75.8W | 1553 | 03/25 |
| WILLEMSTAD | CURACAO | 12.1N | 68.9W | 1557 | 03/25 |
| ONIMA | BONAIRE | 12.3N | 68.3W | 1559 | 03/25 |
| SANTO DOMINGO | DOMINICAN REP | 18.5N | 69.9W | 1603 | 03/25 |
| GRAND CAYMAN | CAYMAN ISLANDS | 19.3N | 81.3W | 1611 | 03/25 |
| BARACOA | CUBA | 20.4N | 74.5W | 1615 | 03/25 |
| GREAT INAGUA | BAHAMAS | 20.9N | 73.7W | 1616 | 03/25 |
| CIENFUEGOS | CUBA | 22.0N | 80.5W | 1620 | 03/25 |
| CABO ENGANO | DOMINICAN REP | 18.6N | 68.3W | 1623 | 03/25 |
| CAP HAITEN | HAITI | 19.8N | 72.2W | 1628 | 03/25 |
| WEST CAICOS | TURKS N CAICOS | 21.7N | 72.5W | 1632 | 03/25 |
| MAIQUETIA | VENEZUELA | 10.6N | 67.0W | 1636 | 03/25 |
| MAYAGUANA | BAHAMAS | 22.3N | 73.0W | 1637 | 03/25 |
| PUERTO PLATA | DOMINICAN REP | 19.8N | 70.7W | 1640 | 03/25 |
| JEREMIE | HAITI | 18.6N | 74.1W | 1641 | 03/25 |
| CROOKED ISLAND | BAHAMAS | 22.7N | 74.1W | 1645 | 03/25 |
| LONG ISLAND | BAHAMAS | 23.3N | 75.1W | 1648 | 03/25 |
| GRAND TURK | TURKS N CAICOS | 21.5N | 71.1W | 1651 | 03/25 |
| COZUMEL | MEXICO | 20.5N | 87.0W | 1651 | 03/25 |
| BASSE TERRE | GUADELOUPE | 16.0N | 61.7W | 1654 | 03/25 |
| ROSEAU | DOMINICA | 15.3N | 61.4W | 1655 | 03/25 |
| PUERTO CORTES | HONDURAS | 15.9N | 88.0W | 1655 | 03/25 |
| FORT DE FRANCE | MARTINIQUE | 14.6N | 61.1W | 1658 | 03/25 |
| SAN SALVADOR | BAHAMAS | 24.1N | 74.5W | 1658 | 03/25 |

| | | | | |
|---|---|---|---|---|
| KINGSTOWN | SAINT VINCENT | 13.1N | 61.2W | 1658 03/25 |
| CASTRIES | SAINT LUCIA | 14.0N | 61.0W | 1658 03/25 |
| SAINT GEORGES | GRENADA | 12.0N | 61.8W | 1659 03/25 |
| BASSETERRE | SAINT KITTS | 17.3N | 62.7W | 1659 03/25 |
| PLYMOUTH | MONTSERRAT | 16.7N | 62.2W | 1700 03/25 |
| CUMANA | VENEZUELA | 10.5N | 64.2W | 1701 03/25 |
| SIMPSON BAAI | SINT MAARTEN | 18.0N | 63.1W | 1703 03/25 |
| EXUMA | BAHAMAS | 23.6N | 75.9W | 1704 03/25 |
| TRUJILLO | HONDURAS | 15.9N | 86.0W | 1714 03/25 |
| CAT ISLAND | BAHAMAS | 24.4N | 75.5W | 1714 03/25 |
| THE VALLEY | ANGUILLA | 18.3N | 63.1W | 1722 03/25 |
| GIBARA | CUBA | 21.1N | 76.1W | 1722 03/25 |
| LA HABANA | CUBA | 23.2N | 82.4W | 1724 03/25 |
| ABACO ISLAND | BAHAMAS | 26.6N | 77.1W | 1726 03/25 |
| ANDROS ISLAND | BAHAMAS | 25.0N | 77.9W | 1730 03/25 |
| SAINT BARTHELEM | SAINT BARTHELEMY | 17.9N | 62.8W | 1734 03/25 |
| SAINT JOHNS | ANTIGUA | 17.1N | 61.9W | 1735 03/25 |
| PALMETTO POINT | BARBUDA | 17.6N | 61.9W | 1735 03/25 |
| PUNTO FIJO | VENEZUELA | 11.7N | 70.2W | 1737 03/25 |
| BAIE BLANCHE | SAINT MARTIN | 18.1N | 63.0W | 1741 03/25 |
| BELIZE CITY | BELIZE | 17.5N | 88.2W | 1742 03/25 |
| ELEUTHERA ISLAN | BAHAMAS | 25.2N | 76.1W | 1743 03/25 |
| PORT AU PRINCE | HAITI | 18.5N | 72.4W | 1744 03/25 |
| NASSAU | BAHAMAS | 25.1N | 77.4W | 1747 03/25 |
| FREEPORT | BAHAMAS | 26.5N | 78.8W | 1750 03/25 |
| BIMINI | BAHAMAS | 25.8N | 79.3W | 1822 03/25 |
| SANTA CRZ D SUR | CUBA | 20.7N | 78.0W | 1837 03/25 |
| GOLFO VENEZUELA | VENEZUELA | 11.4N | 71.2W | 1914 03/25 |
| NUEVA GERONA | CUBA | 21.9N | 82.8W | 1937 03/25 |
| PUERTO CABEZAS | NICARAGUA | 14.0N | 83.4W | 1939 03/25 |
| PORLAMAR | VENEZUELA | 10.9N | 63.8W | 2124 03/25 |

POTENTIAL IMPACTS

---

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* IMPACTS CAN VARY SIGNIFICANTLY FROM ONE SECTION OF COAST TO THE NEXT DUE TO LOCAL BATHYMETRY AND THE SHAPE AND ELEVATION OF THE SHORELINE.

* IMPACTS CAN ALSO VARY DEPENDING UPON THE STATE OF THE TIDE AT THE TIME OF THE MAXIMUM TSUNAMI WAVES.

* PERSONS CAUGHT IN THE WATER OF A TSUNAMI MAY DROWN... BE CRUSHED BY DEBRIS IN THE WATER... OR BE SWEPT OUT TO SEA.

TSUNAMI OBSERVATIONS

* THE FOLLOWING ARE TSUNAMI WAVE OBSERVATIONS FROM COASTAL AND/OR DEEP-OCEAN SEA LEVEL GAUGES AT THE INDICATED LOCATIONS. THE MAXIMUM TSUNAMI HEIGHT IS MEASURED WITH RESPECT TO THE NORMAL TIDE LEVEL.

| | GAUGE COORDINATES | | TIME OF MEASURE | MAXIMUM TSUNAMI | WAVE PERIOD |
|---|---|---|---|---|---|
| GAUGE LOCATION | LAT | LON | (UTC) | HEIGHT | (MIN) |
| EL PORVENIR PM | 9.6N | 78.9W | 1453 | 10.89M/35.7FT | 44 |
| SAN ANDRES CO | 12.6N | 81.7W | 1448 | 2.13M/ 7.0FT | 32 |

NEXT UPDATE AND ADDITIONAL INFORMATION

* THE NEXT MESSAGE WILL BE ISSUED IN ONE HOUR... OR SOONER IF THE SITUATION WARRANTS.

* AUTHORITATIVE INFORMATION ABOUT THE EARTHQUAKE FROM THE U.S. GEOLOGICAL SURVEY CAN BE FOUND ON THE INTERNET AT EARTHQUAKE.USGS.GOV/EARTHQUAKES -ALL IN SMALL LETTERS-.

* FURTHER INFORMATION ABOUT THIS EVENT MAY BE FOUND AT

PTWC.WEATHER.GOV AND AT WWW.TSUNAMI.GOV.

* COASTAL REGIONS OF PUERTO RICO... THE U.S. VIRGIN ISLANDS AND THE BRITISH VIRGIN ISLANDS SHOULD REFER TO U.S. NATIONAL TSUNAMI WARNING CENTER MESSAGES THAT CAN BE FOUND AT NTWC.ARH.NOAA.GOV.

$$

ZCZC
WECA41 PHEB 251602
TSUCAX

EXPERIMENTAL TSUNAMI MESSAGE NUMBER 4
NOT FOR DISTRIBUTION
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
1602 UCT WED MAR 25 2015

...TSUNAMI THREAT MESSAGE...

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE *****

THIS MESSAGE IS ISSUED FOR INFORMATION ONLY IN SUPPORT OF THE
UNESCO/IOC TSUNAMI AND OTHER COASTAL HAZARDS WARNING SYSTEM FOR
THE CARIBBEAN AND ADJACENT REGIONS AND IS MEANT FOR NATIONAL
AUTHORITIES IN EACH COUNTRY OF THAT SYSTEM.

NATIONAL AUTHORITIES WILL DETERMINE THE TSUNAMI THREAT AND
APPROPRIATE LEVEL OF ALERT FOR EACH COUNTRY.

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE *****

PRELIMINARY EARTHQUAKE PARAMETERS
---

* MAGNITUDE 8.5
* ORIGIN TIME 1400 UTC MAR 25 2015
* COORDINATES 10.3 NORTH 78.8 WEST
* DEPTH 15 KM / 9 MILES
* LOCATION NORTH OF PANAMA

EVALUATION
---

* AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 8.5 OCCURRED

NORTH OF PANAMA AT 1400 UTC ON WEDNESDAY MARCH 25 2015.

* TSUNAMI WAVES HAVE BEEN OBSERVED.

* BASED ON ALL AVAILABLE DATA... HAZARDOUS TSUNAMI WAVES ARE FORECAST FOR SOME COASTS.

TSUNAMI THREAT FORECAST
---

* TSUNAMI WAVES REACHING MORE THAN 3 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE ALONG SOME COASTS OF

COLOMBIA... AND PANAMA.

* TSUNAMI WAVES REACHING 1 TO 3 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE ALONG SOME COASTS OF

ARUBA... COSTA RICA... CUBA... DOMINICAN REPUBLIC... HAITI... NICARAGUA... PUERTO RICO... BAHAMAS... JAMAICA... CURACAO... BONAIRE... SAINT KITTS AND NEVIS... AND VENEZUELA.

* TSUNAMI WAVES REACHING 0.3 TO 1 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE FOR SOME COASTS OF

HONDURAS... MEXICO... ANGUILLA... ANTIGUA AND BARBUDA... BELIZE... CAYMAN ISLANDS... DOMINICA... GRENADA... GUADELOUPE... MARTINIQUE... MONTSERRAT... SAINT LUCIA... SINT MAARTEN... SAINT BARTHELEMY... SAINT MARTIN... SAINT VINCENT AND THE GRENADINES... TURKS AND CAICOS ISLANDS... AND US VIRGIN ISLANDS.

* TSUNAMI WAVES LESS THAN 0.3 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE FOR SOME COASTS OF

BRAZIL... GUYANA... GUATEMALA... SURINAME... BARBADOS...

BERMUDA... FRENCH GUIANA... AND TRINIDAD AND TOBAGO.

* ACTUAL AMPLITUDES AT THE COAST MAY VARY FROM FORECAST AMPLITUDES DUE TO UNCERTAINTIES IN THE FORECAST AND LOCAL FEATURES. IN PARTICULAR MAXIMUM TSUNAMI AMPLITUDES ON ATOLLS WILL LIKELY BE MUCH SMALLER THAN THE FORECAST INDICATES.

* FOR OTHER AREAS COVERED BY THIS PRODUCT A FORECAST HAS NOT YET BEEN COMPUTED. THE FORECAST WILL BE EXPANDED AS NECESSARY IN SUBSEQUENT PRODUCTS.

RECOMMENDED ACTIONS
---

* GOVERNMENT AGENCIES RESPONSIBLE FOR THREATENED COASTAL AREAS SHOULD TAKE ACTION TO INFORM AND INSTRUCT ANY COASTAL POPULATIONS AT RISK IN ACCORDANCE WITH THEIR OWN EVALUATION... PROCEDURES AND THE LEVEL OF THREAT.

* PERSONS LOCATED IN THREATENED COASTAL AREAS SHOULD STAY ALERT FOR INFORMATION AND FOLLOW INSTRUCTIONS FROM NATIONAL AND LOCAL AUTHORITIES.

ESTIMATED TIMES OF ARRIVAL
---

* ESTIMATED TIMES OF ARRIVAL -ETA- OF THE INITIAL TSUNAMI WAVE FOR POINTS WITHIN THREATENED REGIONS ARE GIVEN BELOW. ACTUAL ARRIVAL TIMES MAY DIFFER AND THE INITIAL WAVE MAY NOT BE THE LARGEST. A TSUNAMI IS A SERIES OF WAVES AND THE TIME BETWEEN WAVES CAN BE FIVE MINUTES TO ONE HOUR.

| LOCATION | REGION | COORDINATES | ETA(UTC) |
|---|---|---|---|
| PUERTO OBALDIA | PANAMA | 8.7N 77.4W | 1502 03/25 |
| COLON | PANAMA | 9.4N 79.9W | 1512 03/25 |

| | | | | | |
|---|---|---|---|---|---|
| RIOHACHA | COLOMBIA | 11.6N | 72.9W | 1518 | 03/25 |
| BOCAS DEL TORO | PANAMA | 9.4N | 82.2W | 1528 | 03/25 |
| KINGSTON | JAMAICA | 17.9N | 76.9W | 1528 | 03/25 |
| JACAMEL | HAITI | 18.1N | 72.5W | 1536 | 03/25 |
| PUNTA GORDA | NICARAGUA | 11.4N | 83.8W | 1544 | 03/25 |
| SANTA MARTA | COLOMBIA | 11.2N | 74.2W | 1546 | 03/25 |
| ORANJESTAD | ARUBA | 12.5N | 70.0W | 1548 | 03/25 |
| CAYMAN BRAC | CAYMAN ISLANDS | 19.7N | 79.9W | 1552 | 03/25 |
| MONTEGO BAY | JAMAICA | 18.5N | 77.9W | 1553 | 03/25 |
| SANTIAGO D CUBA | CUBA | 19.9N | 75.8W | 1553 | 03/25 |
| WILLEMSTAD | CURACAO | 12.1N | 68.9W | 1557 | 03/25 |
| ONIMA | BONAIRE | 12.3N | 68.3W | 1559 | 03/25 |
| SANTO DOMINGO | DOMINICAN REP | 18.5N | 69.9W | 1603 | 03/25 |
| GRAND CAYMAN | CAYMAN ISLANDS | 19.3N | 81.3W | 1611 | 03/25 |
| BARACOA | CUBA | 20.4N | 74.5W | 1615 | 03/25 |
| GREAT INAGUA | BAHAMAS | 20.9N | 73.7W | 1616 | 03/25 |
| CIENFUEGOS | CUBA | 22.0N | 80.5W | 1620 | 03/25 |
| CABO ENGANO | DOMINICAN REP | 18.6N | 68.3W | 1623 | 03/25 |
| CAP HAITEN | HAITI | 19.8N | 72.2W | 1628 | 03/25 |
| WEST CAICOS | TURKS N CAICOS | 21.7N | 72.5W | 1632 | 03/25 |
| MAIQUETIA | VENEZUELA | 10.6N | 67.0W | 1636 | 03/25 |
| MAYAGUANA | BAHAMAS | 22.3N | 73.0W | 1637 | 03/25 |
| PUERTO PLATA | DOMINICAN REP | 19.8N | 70.7W | 1640 | 03/25 |
| JEREMIE | HAITI | 18.6N | 74.1W | 1641 | 03/25 |
| CROOKED ISLAND | BAHAMAS | 22.7N | 74.1W | 1645 | 03/25 |
| LONG ISLAND | BAHAMAS | 23.3N | 75.1W | 1648 | 03/25 |
| GRAND TURK | TURKS N CAICOS | 21.5N | 71.1W | 1651 | 03/25 |
| COZUMEL | MEXICO | 20.5N | 87.0W | 1651 | 03/25 |
| BASSE TERRE | GUADELOUPE | 16.0N | 61.7W | 1654 | 03/25 |
| ROSEAU | DOMINICA | 15.3N | 61.4W | 1655 | 03/25 |
| PUERTO CORTES | HONDURAS | 15.9N | 88.0W | 1655 | 03/25 |
| FORT DE FRANCE | MARTINIQUE | 14.6N | 61.1W | 1658 | 03/25 |
| SAN SALVADOR | BAHAMAS | 24.1N | 74.5W | 1658 | 03/25 |
| KINGSTOWN | SAINT VINCENT | 13.1N | 61.2W | 1658 | 03/25 |
| CASTRIES | SAINT LUCIA | 14.0N | 61.0W | 1658 | 03/25 |
| SAINT GEORGES | GRENADA | 12.0N | 61.8W | 1659 | 03/25 |
| BASSETERRE | SAINT KITTS | 17.3N | 62.7W | 1659 | 03/25 |
| PLYMOUTH | MONTSERRAT | 16.7N | 62.2W | 1700 | 03/25 |
| CUMANA | VENEZUELA | 10.5N | 64.2W | 1701 | 03/25 |

| | | | | |
|---|---|---|---|---|
| SIMPSON BAAI | SINT MAARTEN | 18.0N | 63.1W | 1703 03/25 |
| EXUMA | BAHAMAS | 23.6N | 75.9W | 1704 03/25 |
| TRUJILLO | HONDURAS | 15.9N | 86.0W | 1714 03/25 |
| CAT ISLAND | BAHAMAS | 24.4N | 75.5W | 1714 03/25 |
| THE VALLEY | ANGUILLA | 18.3N | 63.1W | 1722 03/25 |
| GIBARA | CUBA | 21.1N | 76.1W | 1722 03/25 |
| LA HABANA | CUBA | 23.2N | 82.4W | 1724 03/25 |
| ABACO ISLAND | BAHAMAS | 26.6N | 77.1W | 1726 03/25 |
| ANDROS ISLAND | BAHAMAS | 25.0N | 77.9W | 1730 03/25 |
| SAINT BARTHELEM | SAINT BARTHELEMY | 17.9N | 62.8W | 1734 03/25 |
| SAINT JOHNS | ANTIGUA | 17.1N | 61.9W | 1735 03/25 |
| PALMETTO POINT | BARBUDA | 17.6N | 61.9W | 1735 03/25 |
| PUNTO FIJO | VENEZUELA | 11.7N | 70.2W | 1737 03/25 |
| BAIE BLANCHE | SAINT MARTIN | 18.1N | 63.0W | 1741 03/25 |
| BELIZE CITY | BELIZE | 17.5N | 88.2W | 1742 03/25 |
| ELEUTHERA ISLAN | BAHAMAS | 25.2N | 76.1W | 1743 03/25 |
| PORT AU PRINCE | HAITI | 18.5N | 72.4W | 1744 03/25 |
| NASSAU | BAHAMAS | 25.1N | 77.4W | 1747 03/25 |
| FREEPORT | BAHAMAS | 26.5N | 78.8W | 1750 03/25 |
| BIMINI | BAHAMAS | 25.8N | 79.3W | 1822 03/25 |
| SANTA CRZ D SUR | CUBA | 20.7N | 78.0W | 1837 03/25 |
| GOLFO VENEZUELA | VENEZUELA | 11.4N | 71.2W | 1914 03/25 |
| NUEVA GERONA | CUBA | 21.9N | 82.8W | 1937 03/25 |
| PUERTO CABEZAS | NICARAGUA | 14.0N | 83.4W | 1939 03/25 |
| PORLAMAR | VENEZUELA | 10.9N | 63.8W | 2124 03/25 |

POTENTIAL IMPACTS
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* A TSUNAMI IS A SERIES OF WAVES. THE TIME BETWEEN WAVE CRESTS CAN VARY FROM 5 MINUTES TO AN HOUR. THE HAZARD MAY PERSIST FOR MANY HOURS OR LONGER AFTER THE INITIAL WAVE.

* IMPACTS CAN VARY SIGNIFICANTLY FROM ONE SECTION OF COAST TO THE NEXT DUE TO LOCAL BATHYMETRY AND THE SHAPE AND ELEVATION OF THE SHORELINE.

* IMPACTS CAN ALSO VARY DEPENDING UPON THE STATE OF THE TIDE AT

THE TIME OF THE MAXIMUM TSUNAMI WAVES.

* PERSONS CAUGHT IN THE WATER OF A TSUNAMI MAY DROWN... BE CRUSHED BY DEBRIS IN THE WATER... OR BE SWEPT OUT TO SEA.

TSUNAMI OBSERVATIONS

* THE FOLLOWING ARE TSUNAMI WAVE OBSERVATIONS FROM COASTAL AND/OR DEEP-OCEAN SEA LEVEL GAUGES AT THE INDICATED LOCATIONS. THE MAXIMUM TSUNAMI HEIGHT IS MEASURED WITH RESPECT TO THE NORMAL TIDE LEVEL.

| | GAUGE COORDINATES | | TIME OF MEASURE | MAXIMUM TSUNAMI | WAVE PERIOD |
|---|---|---|---|---|---|
| GAUGE LOCATION | LAT | LON | (UTC) | HEIGHT | (MIN) |
| DART 42407 | 15.3N | 68.2W | 1559 | 0.09M/ 0.3FT | 32 |
| BARAHONA DO | 18.2N | 71.1W | 1600 | 2.08M/ 6.8FT | 48 |
| SANTA MARTA CO | 11.2N | 74.2W | 1559 | 3.22M/10.6FT | 28 |
| JACMEL HT | 18.2N | 72.5W | 1552 | 1.64M/ 5.4FT | 40 |
| LIMON CR | 10.0N | 83.0W | 1501 | 2.45M/ 8.0FT | 48 |
| EL PORVENIR PM | 9.6N | 78.9W | 1453 | 10.89M/35.7FT | 44 |
| SAN ANDRES CO | 12.6N | 81.7W | 1448 | 2.13M/ 7.0FT | 32 |

NEXT UPDATE AND ADDITIONAL INFORMATION

* THE NEXT MESSAGE WILL BE ISSUED IN ONE HOUR... OR SOONER IF THE SITUATION WARRANTS.

* AUTHORITATIVE INFORMATION ABOUT THE EARTHQUAKE FROM THE U.S. GEOLOGICAL SURVEY CAN BE FOUND ON THE INTERNET AT EARTHQUAKE.USGS.GOV/EARTHQUAKES -ALL IN SMALL LETTERS-.

* FURTHER INFORMATION ABOUT THIS EVENT MAY BE FOUND AT PTWC.WEATHER.GOV AND AT WWW.TSUNAMI.GOV.

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  * COASTAL REGIONS OF PUERTO RICO... THE U.S. VIRGIN ISLANDS AND
    THE BRITISH VIRGIN ISLANDS SHOULD REFER TO U.S. NATIONAL
    TSUNAMI WARNING CENTER MESSAGES THAT CAN BE FOUND AT
    NTWC.ARH.NOAA.GOV.

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ZCZC

WECA41 PHEB 251701

TSUCAX

EXPERIMENTAL TSUNAMI MESSAGE NUMBER 5

NOT FOR DISTRIBUTION

NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI

1701 UCT WED MAR 25 2015

...TSUNAMI THREAT MESSAGE...

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE *****

THIS MESSAGE IS ISSUED FOR INFORMATION ONLY IN SUPPORT OF THE
UNESCO/IOC TSUNAMI AND OTHER COASTAL HAZARDS WARNING SYSTEM FOR
THE CARIBBEAN AND ADJACENT REGIONS AND IS MEANT FOR NATIONAL
AUTHORITIES IN EACH COUNTRY OF THAT SYSTEM.

NATIONAL AUTHORITIES WILL DETERMINE THE TSUNAMI THREAT AND
APPROPRIATE LEVEL OF ALERT FOR EACH COUNTRY.

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE *****

PRELIMINARY EARTHQUAKE PARAMETERS

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* MAGNITUDE 8.5
* ORIGIN TIME 1400 UTC MAR 25 2015
* COORDINATES 10.3 NORTH 78.8 WEST
* DEPTH 15 KM / 9 MILES
* LOCATION NORTH OF PANAMA

EVALUATION

---

* AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 8.5 OCCURRED

NORTH OF PANAMA AT 1400 UTC ON WEDNESDAY MARCH 25 2015.

* TSUNAMI WAVES HAVE BEEN OBSERVED.

* BASED ON ALL AVAILABLE DATA... HAZARDOUS TSUNAMI WAVES ARE FORECAST FOR SOME COASTS.

TSUNAMI THREAT FORECAST
---

* TSUNAMI WAVES REACHING MORE THAN 3 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE ALONG SOME COASTS OF

COLOMBIA... AND PANAMA.

* TSUNAMI WAVES REACHING 1 TO 3 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE ALONG SOME COASTS OF

ARUBA... COSTA RICA... CUBA... DOMINICAN REPUBLIC... HAITI... NICARAGUA... PUERTO RICO... BAHAMAS... JAMAICA... CURACAO... BONAIRE... SAINT KITTS AND NEVIS... AND VENEZUELA.

* TSUNAMI WAVES REACHING 0.3 TO 1 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE FOR SOME COASTS OF

HONDURAS... MEXICO... ANGUILLA... ANTIGUA AND BARBUDA... BELIZE... CAYMAN ISLANDS... DOMINICA... GRENADA... GUADELOUPE... MARTINIQUE... MONTSERRAT... SAINT LUCIA... SINT MAARTEN... SAINT BARTHELEMY... SAINT MARTIN... SAINT VINCENT AND THE GRENADINES... TURKS AND CAICOS ISLANDS... AND US VIRGIN ISLANDS.

* TSUNAMI WAVES LESS THAN 0.3 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE FOR SOME COASTS OF

BRAZIL... GUYANA... GUATEMALA... SURINAME... BARBADOS...

BERMUDA... FRENCH GUIANA... AND TRINIDAD AND TOBAGO.

* ACTUAL AMPLITUDES AT THE COAST MAY VARY FROM FORECAST AMPLITUDES DUE TO UNCERTAINTIES IN THE FORECAST AND LOCAL FEATURES. IN PARTICULAR MAXIMUM TSUNAMI AMPLITUDES ON ATOLLS WILL LIKELY BE MUCH SMALLER THAN THE FORECAST INDICATES.

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RECOMMENDED ACTIONS
---

* GOVERNMENT AGENCIES RESPONSIBLE FOR THREATENED COASTAL AREAS SHOULD TAKE ACTION TO INFORM AND INSTRUCT ANY COASTAL POPULATIONS AT RISK IN ACCORDANCE WITH THEIR OWN EVALUATION... PROCEDURES AND THE LEVEL OF THREAT.

* PERSONS LOCATED IN THREATENED COASTAL AREAS SHOULD STAY ALERT FOR INFORMATION AND FOLLOW INSTRUCTIONS FROM NATIONAL AND LOCAL AUTHORITIES.

ESTIMATED TIMES OF ARRIVAL
---

* ESTIMATED TIMES OF ARRIVAL -ETA- OF THE INITIAL TSUNAMI WAVE FOR POINTS WITHIN THREATENED REGIONS ARE GIVEN BELOW. ACTUAL ARRIVAL TIMES MAY DIFFER AND THE INITIAL WAVE MAY NOT BE THE LARGEST. A TSUNAMI IS A SERIES OF WAVES AND THE TIME BETWEEN WAVES CAN BE FIVE MINUTES TO ONE HOUR.

| LOCATION | REGION | COORDINATES | ETA(UTC) |
|---|---|---|---|
| SANTO DOMINGO | DOMINICAN REP | 18.5N 69.9W | 1603 03/25 |
| GRAND CAYMAN | CAYMAN ISLANDS | 19.3N 81.3W | 1611 03/25 |

| | | | | | |
|---|---|---|---|---|---|
| BARACOA | CUBA | 20.4N | 74.5W | 1615 | 03/25 |
| GREAT INAGUA | BAHAMAS | 20.9N | 73.7W | 1616 | 03/25 |
| CIENFUEGOS | CUBA | 22.0N | 80.5W | 1620 | 03/25 |
| CABO ENGANO | DOMINICAN REP | 18.6N | 68.3W | 1623 | 03/25 |
| CAP HAITEN | HAITI | 19.8N | 72.2W | 1628 | 03/25 |
| WEST CAICOS | TURKS N CAICOS | 21.7N | 72.5W | 1632 | 03/25 |
| MAIQUETIA | VENEZUELA | 10.6N | 67.0W | 1636 | 03/25 |
| MAYAGUANA | BAHAMAS | 22.3N | 73.0W | 1637 | 03/25 |
| PUERTO PLATA | DOMINICAN REP | 19.8N | 70.7W | 1640 | 03/25 |
| JEREMIE | HAITI | 18.6N | 74.1W | 1641 | 03/25 |
| CROOKED ISLAND | BAHAMAS | 22.7N | 74.1W | 1645 | 03/25 |
| LONG ISLAND | BAHAMAS | 23.3N | 75.1W | 1648 | 03/25 |
| GRAND TURK | TURKS N CAICOS | 21.5N | 71.1W | 1651 | 03/25 |
| COZUMEL | MEXICO | 20.5N | 87.0W | 1651 | 03/25 |
| BASSE TERRE | GUADELOUPE | 16.0N | 61.7W | 1654 | 03/25 |
| ROSEAU | DOMINICA | 15.3N | 61.4W | 1655 | 03/25 |
| PUERTO CORTES | HONDURAS | 15.9N | 88.0W | 1655 | 03/25 |
| FORT DE FRANCE | MARTINIQUE | 14.6N | 61.1W | 1658 | 03/25 |
| SAN SALVADOR | BAHAMAS | 24.1N | 74.5W | 1658 | 03/25 |
| KINGSTOWN | SAINT VINCENT | 13.1N | 61.2W | 1658 | 03/25 |
| CASTRIES | SAINT LUCIA | 14.0N | 61.0W | 1658 | 03/25 |
| SAINT GEORGES | GRENADA | 12.0N | 61.8W | 1659 | 03/25 |
| BASSETERRE | SAINT KITTS | 17.3N | 62.7W | 1659 | 03/25 |
| PLYMOUTH | MONTSERRAT | 16.7N | 62.2W | 1700 | 03/25 |
| CUMANA | VENEZUELA | 10.5N | 64.2W | 1701 | 03/25 |
| SIMPSON BAAI | SINT MAARTEN | 18.0N | 63.1W | 1703 | 03/25 |
| EXUMA | BAHAMAS | 23.6N | 75.9W | 1704 | 03/25 |
| TRUJILLO | HONDURAS | 15.9N | 86.0W | 1714 | 03/25 |
| CAT ISLAND | BAHAMAS | 24.4N | 75.5W | 1714 | 03/25 |
| THE VALLEY | ANGUILLA | 18.3N | 63.1W | 1722 | 03/25 |
| GIBARA | CUBA | 21.1N | 76.1W | 1722 | 03/25 |
| LA HABANA | CUBA | 23.2N | 82.4W | 1724 | 03/25 |
| ABACO ISLAND | BAHAMAS | 26.6N | 77.1W | 1726 | 03/25 |
| ANDROS ISLAND | BAHAMAS | 25.0N | 77.9W | 1730 | 03/25 |
| SAINT BARTHELEM | SAINT BARTHELEMY | 17.9N | 62.8W | 1734 | 03/25 |
| SAINT JOHNS | ANTIGUA | 17.1N | 61.9W | 1735 | 03/25 |
| PALMETTO POINT | BARBUDA | 17.6N | 61.9W | 1735 | 03/25 |
| PUNTO FIJO | VENEZUELA | 11.7N | 70.2W | 1737 | 03/25 |
| BAIE BLANCHE | SAINT MARTIN | 18.1N | 63.0W | 1741 | 03/25 |

| | | | | |
|---|---|---|---|---|
| BELIZE CITY | BELIZE | 17.5N | 88.2W | 1742 03/25 |
| ELEUTHERA ISLAN | BAHAMAS | 25.2N | 76.1W | 1743 03/25 |
| PORT AU PRINCE | HAITI | 18.5N | 72.4W | 1744 03/25 |
| NASSAU | BAHAMAS | 25.1N | 77.4W | 1747 03/25 |
| FREEPORT | BAHAMAS | 26.5N | 78.8W | 1750 03/25 |
| BIMINI | BAHAMAS | 25.8N | 79.3W | 1822 03/25 |
| SANTA CRZ D SUR | CUBA | 20.7N | 78.0W | 1837 03/25 |
| GOLFO VENEZUELA | VENEZUELA | 11.4N | 71.2W | 1914 03/25 |
| NUEVA GERONA | CUBA | 21.9N | 82.8W | 1937 03/25 |
| PUERTO CABEZAS | NICARAGUA | 14.0N | 83.4W | 1939 03/25 |
| PORLAMAR | VENEZUELA | 10.9N | 63.8W | 2124 03/25 |

POTENTIAL IMPACTS

* A TSUNAMI IS A SERIES OF WAVES. THE TIME BETWEEN WAVE CRESTS CAN VARY FROM 5 MINUTES TO AN HOUR. THE HAZARD MAY PERSIST FOR MANY HOURS OR LONGER AFTER THE INITIAL WAVE.

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TSUNAMI OBSERVATIONS

* THE FOLLOWING ARE TSUNAMI WAVE OBSERVATIONS FROM COASTAL AND/OR DEEP-OCEAN SEA LEVEL GAUGES AT THE INDICATED LOCATIONS. THE MAXIMUM TSUNAMI HEIGHT IS MEASURED WITH RESPECT TO THE NORMAL TIDE LEVEL.

| GAUGE LOCATION | GAUGE COORDINATES LAT | LON | TIME OF MEASURE (UTC) | MAXIMUM TSUNAMI HEIGHT | WAVE PERIOD (MIN) |
|---|---|---|---|---|---|
| SAN JUAN PR | 18.5N | 66.1W | 1648 | 0.32M/ 1.0FT | 44 |
| PUERTO PLATA DO | 19.8N | 70.7W | 1647 | 0.14M/ 0.5FT | 32 |
| ARECIBO PR | 18.5N | 66.7W | 1647 | 0.39M/ 1.3FT | 56 |
| LIMETREE VI | 17.7N | 64.8W | 1647 | 0.89M/ 2.9FT | 56 |
| ST CROIX VI | 17.7N | 64.7W | 1640 | 0.54M/ 1.8FT | 32 |
| CAP HAITIEN HT | 19.8N | 72.2W | 1638 | 0.39M/ 1.3FT | 36 |
| AGUADILLA PR | 18.5N | 67.2W | 1635 | 0.75M/ 2.5FT | 40 |
| MAYAGUEZ PR | 18.2N | 67.2W | 1631 | 0.90M/ 3.0FT | 52 |
| PUNTA CANA DO | 18.5N | 68.4W | 1625 | 0.84M/ 2.7FT | 36 |
| PENUELAS PR | 18.0N | 66.8W | 1625 | 0.96M/ 3.1FT | 52 |
| MAGUEYES ISLAND PR | 18.0N | 67.0W | 1618 | 0.95M/ 3.1FT | 52 |
| MONA ISLAND PR | 18.1N | 67.9W | 1623 | 0.92M/ 3.0FT | 52 |
| GEORGE TOWN CY | 19.3N | 81.4W | 1618 | 0.56M/ 1.8FT | 40 |
| PORT SAN ANDRES DO | 18.4N | 69.6W | 1617 | 2.32M/ 7.6FT | 44 |
| BULLEN BAY CURACAO | 12.2N | 69.0W | 1605 | 1.04M/ 3.4FT | 44 |
| DART 42407 | 15.3N | 68.2W | 1559 | 0.09M/ 0.3FT | 32 |
| BARAHONA DO | 18.2N | 71.1W | 1600 | 2.08M/ 6.8FT | 48 |
| SANTA MARTA CO | 11.2N | 74.2W | 1559 | 3.22M/10.6FT | 28 |
| JACMEL HT | 18.2N | 72.5W | 1552 | 1.64M/ 5.4FT | 40 |
| LIMON CR | 10.0N | 83.0W | 1501 | 2.45M/ 8.0FT | 48 |
| EL PORVENIR PM | 9.6N | 78.9W | 1453 | 10.89M/35.7FT | 44 |
| SAN ANDRES CO | 12.6N | 81.7W | 1448 | 2.13M/ 7.0FT | 32 |

NEXT UPDATE AND ADDITIONAL INFORMATION

* THE NEXT MESSAGE WILL BE ISSUED IN ONE HOUR... OR SOONER IF THE SITUATION WARRANTS.

* AUTHORITATIVE INFORMATION ABOUT THE EARTHQUAKE FROM THE U.S. GEOLOGICAL SURVEY CAN BE FOUND ON THE INTERNET AT EARTHQUAKE.USGS.GOV/EARTHQUAKES -ALL IN SMALL LETTERS-.

* FURTHER INFORMATION ABOUT THIS EVENT MAY BE FOUND AT

PTWC.WEATHER.GOV AND AT WWW.TSUNAMI.GOV.

* COASTAL REGIONS OF PUERTO RICO... THE U.S. VIRGIN ISLANDS AND THE BRITISH VIRGIN ISLANDS SHOULD REFER TO U.S. NATIONAL TSUNAMI WARNING CENTER MESSAGES THAT CAN BE FOUND AT NTWC.ARH.NOAA.GOV.

$$

ZCZC
WECA41 PHEB 251800
TSUCAX

EXPERIMENTAL TSUNAMI MESSAGE NUMBER 6
NOT FOR DISTRIBUTION
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
1800 UCT WED MAR 25 2015

...TSUNAMI THREAT MESSAGE...

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE *****

THIS MESSAGE IS ISSUED FOR INFORMATION ONLY IN SUPPORT OF THE
UNESCO/IOC TSUNAMI AND OTHER COASTAL HAZARDS WARNING SYSTEM FOR
THE CARIBBEAN AND ADJACENT REGIONS AND IS MEANT FOR NATIONAL
AUTHORITIES IN EACH COUNTRY OF THAT SYSTEM.

NATIONAL AUTHORITIES WILL DETERMINE THE TSUNAMI THREAT AND
APPROPRIATE LEVEL OF ALERT FOR EACH COUNTRY.

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE *****

PRELIMINARY EARTHQUAKE PARAMETERS
---

* MAGNITUDE 8.5
* ORIGIN TIME 1400 UTC MAR 25 2015
* COORDINATES 10.3 NORTH 78.8 WEST
* DEPTH 15 KM / 9 MILES
* LOCATION NORTH OF PANAMA

EVALUATION
---

* AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 8.5 OCCURRED
  NORTH OF PANAMA AT 1400 UTC ON WEDNESDAY MARCH 25 2015.

* TSUNAMI WAVES HAVE BEEN OBSERVED.

* BASED ON ALL AVAILABLE DATA... HAZARDOUS TSUNAMI WAVES ARE
  FORECAST FOR SOME COASTS.

TSUNAMI THREAT FORECAST
---

* TSUNAMI WAVES REACHING MORE THAN 3 METERS ABOVE THE TIDE
  LEVEL ARE POSSIBLE ALONG SOME COASTS OF

    COLOMBIA... AND PANAMA.

* TSUNAMI WAVES REACHING 1 TO 3 METERS ABOVE THE TIDE LEVEL ARE
  POSSIBLE ALONG SOME COASTS OF

    ARUBA... COSTA RICA... CUBA... DOMINICAN REPUBLIC...
    HAITI... NICARAGUA... PUERTO RICO... BAHAMAS... JAMAICA...
    CURACAO... BONAIRE... SAINT KITTS AND NEVIS... AND VENEZUELA.

* TSUNAMI WAVES REACHING 0.3 TO 1 METERS ABOVE THE TIDE LEVEL
  ARE POSSIBLE FOR SOME COASTS OF

    HONDURAS... MEXICO... ANGUILLA... ANTIGUA AND BARBUDA...
    BELIZE... CAYMAN ISLANDS... DOMINICA... GRENADA... GUADELOUPE...
    MARTINIQUE... MONTSERRAT... SAINT LUCIA... SINT MAARTEN... SAINT
    BARTHELEMY... SAINT MARTIN... SAINT VINCENT AND THE
    GRENADINES... TURKS AND CAICOS ISLANDS... AND US VIRGIN ISLANDS.

* TSUNAMI WAVES LESS THAN 0.3 METERS ABOVE THE TIDE LEVEL ARE
  POSSIBLE FOR SOME COASTS OF

BRAZIL... GUYANA... GUATEMALA... SURINAME... BARBADOS...
BERMUDA... FRENCH GUIANA... AND TRINIDAD AND TOBAGO.

* ACTUAL AMPLITUDES AT THE COAST MAY VARY FROM FORECAST AMPLITUDES DUE TO UNCERTAINTIES IN THE FORECAST AND LOCAL FEATURES. IN PARTICULAR MAXIMUM TSUNAMI AMPLITUDES ON ATOLLS WILL LIKELY BE MUCH SMALLER THAN THE FORECAST INDICATES.

* FOR OTHER AREAS COVERED BY THIS PRODUCT A FORECAST HAS NOT YET BEEN COMPUTED. THE FORECAST WILL BE EXPANDED AS NECESSARY IN SUBSEQUENT PRODUCTS.

RECOMMENDED ACTIONS
---

* GOVERNMENT AGENCIES RESPONSIBLE FOR THREATENED COASTAL AREAS SHOULD TAKE ACTION TO INFORM AND INSTRUCT ANY COASTAL POPULATIONS AT RISK IN ACCORDANCE WITH THEIR OWN EVALUATION... PROCEDURES AND THE LEVEL OF THREAT.

* PERSONS LOCATED IN THREATENED COASTAL AREAS SHOULD STAY ALERT FOR INFORMATION AND FOLLOW INSTRUCTIONS FROM NATIONAL AND LOCAL AUTHORITIES.

ESTIMATED TIMES OF ARRIVAL
---

* ESTIMATED TIMES OF ARRIVAL -ETA- OF THE INITIAL TSUNAMI WAVE FOR POINTS WITHIN THREATENED REGIONS ARE GIVEN BELOW. ACTUAL ARRIVAL TIMES MAY DIFFER AND THE INITIAL WAVE MAY NOT BE THE LARGEST. A TSUNAMI IS A SERIES OF WAVES AND THE TIME BETWEEN WAVES CAN BE FIVE MINUTES TO ONE HOUR.

| LOCATION | REGION | COORDINATES | ETA(UTC) |
|---|---|---|---|
| PLYMOUTH | MONTSERRAT | 16.7N 62.2W | 1700 03/25 |

| | | | | |
|---|---|---|---|---|
| CUMANA | VENEZUELA | 10.5N | 64.2W | 1701 03/25 |
| SIMPSON BAAI | SINT MAARTEN | 18.0N | 63.1W | 1703 03/25 |
| EXUMA | BAHAMAS | 23.6N | 75.9W | 1704 03/25 |
| TRUJILLO | HONDURAS | 15.9N | 86.0W | 1714 03/25 |
| CAT ISLAND | BAHAMAS | 24.4N | 75.5W | 1714 03/25 |
| THE VALLEY | ANGUILLA | 18.3N | 63.1W | 1722 03/25 |
| GIBARA | CUBA | 21.1N | 76.1W | 1722 03/25 |
| LA HABANA | CUBA | 23.2N | 82.4W | 1724 03/25 |
| ABACO ISLAND | BAHAMAS | 26.6N | 77.1W | 1726 03/25 |
| ANDROS ISLAND | BAHAMAS | 25.0N | 77.9W | 1730 03/25 |
| SAINT BARTHELEM | SAINT BARTHELEMY | 17.9N | 62.8W | 1734 03/25 |
| SAINT JOHNS | ANTIGUA | 17.1N | 61.9W | 1735 03/25 |
| PALMETTO POINT | BARBUDA | 17.6N | 61.9W | 1735 03/25 |
| PUNTO FIJO | VENEZUELA | 11.7N | 70.2W | 1737 03/25 |
| BAIE BLANCHE | SAINT MARTIN | 18.1N | 63.0W | 1741 03/25 |
| BELIZE CITY | BELIZE | 17.5N | 88.2W | 1742 03/25 |
| ELEUTHERA ISLAN | BAHAMAS | 25.2N | 76.1W | 1743 03/25 |
| PORT AU PRINCE | HAITI | 18.5N | 72.4W | 1744 03/25 |
| NASSAU | BAHAMAS | 25.1N | 77.4W | 1747 03/25 |
| FREEPORT | BAHAMAS | 26.5N | 78.8W | 1750 03/25 |
| BIMINI | BAHAMAS | 25.8N | 79.3W | 1822 03/25 |
| SANTA CRZ D SUR | CUBA | 20.7N | 78.0W | 1837 03/25 |
| GOLFO VENEZUELA | VENEZUELA | 11.4N | 71.2W | 1914 03/25 |
| NUEVA GERONA | CUBA | 21.9N | 82.8W | 1937 03/25 |
| PUERTO CABEZAS | NICARAGUA | 14.0N | 83.4W | 1939 03/25 |
| PORLAMAR | VENEZUELA | 10.9N | 63.8W | 2124 03/25 |

POTENTIAL IMPACTS
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* A TSUNAMI IS A SERIES OF WAVES. THE TIME BETWEEN WAVE CRESTS CAN VARY FROM 5 MINUTES TO AN HOUR. THE HAZARD MAY PERSIST FOR MANY HOURS OR LONGER AFTER THE INITIAL WAVE.

* IMPACTS CAN VARY SIGNIFICANTLY FROM ONE SECTION OF COAST TO THE NEXT DUE TO LOCAL BATHYMETRY AND THE SHAPE AND ELEVATION OF THE SHORELINE.

* IMPACTS CAN ALSO VARY DEPENDING UPON THE STATE OF THE TIDE AT THE TIME OF THE MAXIMUM TSUNAMI WAVES.

* PERSONS CAUGHT IN THE WATER OF A TSUNAMI MAY DROWN... BE CRUSHED BY DEBRIS IN THE WATER... OR BE SWEPT OUT TO SEA.

TSUNAMI OBSERVATIONS

* THE FOLLOWING ARE TSUNAMI WAVE OBSERVATIONS FROM COASTAL AND/OR DEEP-OCEAN SEA LEVEL GAUGES AT THE INDICATED LOCATIONS. THE MAXIMUM TSUNAMI HEIGHT IS MEASURED WITH RESPECT TO THE NORMAL TIDE LEVEL.

| | GAUGE COORDINATES | | TIME OF MEASURE | MAXIMUM TSUNAMI | WAVE PERIOD |
|---|---|---|---|---|---|
| GAUGE LOCATION | LAT | LON | (UTC) | HEIGHT | (MIN) |
| DART 42429 | 27.4N | 85.7W | 1744 | 0.01M/ 0.0FT | 48 |
| PARHAM AT | 17.1N | 61.8W | 1746 | 0.24M/ 0.8FT | 56 |
| CHARLOTTEVILLE TT | 11.3N | 60.5W | 1748 | 0.16M/ 0.5FT | 36 |
| DART 42409 | 26.7N | 85.8W | 1739 | 0.00M/ 0.0FT | 28 |
| PUERTO MORELOS MX | 21.4N | 86.8W | 1733 | 0.45M/ 1.5FT | 36 |
| BRIDGEPORT BB | 13.1N | 59.6W | 1733 | 0.25M/ 0.8FT | 48 |
| PORT ST CHARLES BB | 13.3N | 59.6W | 1737 | 0.23M/ 0.8FT | 52 |
| DESIRADE GUADELOUPE | 16.3N | 61.1W | 1734 | 0.24M/ 0.8FT | 44 |
| LE ROBERT MARTINIQU | 14.7N | 60.9W | 1732 | 0.28M/ 0.9FT | 44 |
| LAMESHURBAYSTJOHNVI | 18.3N | 64.7W | 1729 | 0.54M/ 1.8FT | 52 |
| POINT A PITRE GP | 16.2N | 61.5W | 1718 | 0.44M/ 1.5FT | 32 |
| DART 41421 | 23.4N | 63.9W | 1717 | 0.02M/ 0.1FT | 44 |
| CALLIAQUA VC | 13.1N | 61.2W | 1715 | 0.79M/ 2.6FT | 52 |
| ISLA MUJERES | 21.2N | 86.7W | 1715 | 0.42M/ 1.4FT | 44 |
| DART 41420 | 23.5N | 67.3W | 1709 | 0.01M/ 0.0FT | 36 |
| PRICKLEY BAY GD | 12.0N | 61.8W | 1711 | 0.46M/ 1.5FT | 56 |
| BASSETERRE KN | 17.3N | 62.7W | 1713 | 0.38M/ 1.2FT | 48 |
| FORT DE FRANCE MQ | 14.6N | 61.1W | 1704 | 0.97M/ 3.2FT | 28 |
| DESHAIES GUADELOUPE | 16.3N | 61.8W | 1710 | 0.70M/ 2.3FT | 52 |
| LE PRECHEUR MARTINI | 14.8N | 61.2W | 1706 | 0.57M/ 1.9FT | 56 |

| | | | | | |
|---|---|---|---|---|---|
| ROSEAU DM | 15.3N | 61.4W | 1703 | 0.70M/ 2.3FT | 56 |
| SAN JUAN PR | 18.5N | 66.1W | 1648 | 0.32M/ 1.0FT | 44 |
| PUERTO PLATA DO | 19.8N | 70.7W | 1647 | 0.14M/ 0.5FT | 32 |
| ARECIBO PR | 18.5N | 66.7W | 1647 | 0.39M/ 1.3FT | 56 |
| LIMETREE VI | 17.7N | 64.8W | 1647 | 0.89M/ 2.9FT | 56 |
| ST CROIX VI | 17.7N | 64.7W | 1640 | 0.54M/ 1.8FT | 32 |
| CAP HAITIEN HT | 19.8N | 72.2W | 1638 | 0.39M/ 1.3FT | 36 |
| AGUADILLA PR | 18.5N | 67.2W | 1635 | 0.75M/ 2.5FT | 40 |
| MAYAGUEZ PR | 18.2N | 67.2W | 1631 | 0.90M/ 3.0FT | 52 |
| PUNTA CANA DO | 18.5N | 68.4W | 1625 | 0.84M/ 2.7FT | 36 |
| PENUELAS PR | 18.0N | 66.8W | 1625 | 0.96M/ 3.1FT | 52 |
| MAGUEYES ISLAND PR | 18.0N | 67.0W | 1618 | 0.95M/ 3.1FT | 52 |
| MONA ISLAND PR | 18.1N | 67.9W | 1623 | 0.92M/ 3.0FT | 52 |
| GEORGE TOWN CY | 19.3N | 81.4W | 1618 | 0.56M/ 1.8FT | 40 |
| PORT SAN ANDRES DO | 18.4N | 69.6W | 1617 | 2.32M/ 7.6FT | 44 |
| BULLEN BAY CURACAO | 12.2N | 69.0W | 1605 | 1.04M/ 3.4FT | 44 |
| DART 42407 | 15.3N | 68.2W | 1559 | 0.09M/ 0.3FT | 32 |
| BARAHONA DO | 18.2N | 71.1W | 1600 | 2.08M/ 6.8FT | 48 |
| SANTA MARTA CO | 11.2N | 74.2W | 1559 | 3.22M/10.6FT | 28 |
| JACMEL HT | 18.2N | 72.5W | 1552 | 1.64M/ 5.4FT | 40 |
| LIMON CR | 10.0N | 83.0W | 1501 | 2.45M/ 8.0FT | 48 |
| EL PORVENIR PM | 9.6N | 78.9W | 1453 | 10.89M/35.7FT | 44 |
| SAN ANDRES CO | 12.6N | 81.7W | 1448 | 2.13M/ 7.0FT | 32 |

NEXT UPDATE AND ADDITIONAL INFORMATION

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* THE NEXT MESSAGE WILL BE ISSUED IN ONE HOUR... OR SOONER IF THE SITUATION WARRANTS.

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* COASTAL REGIONS OF PUERTO RICO... THE U.S. VIRGIN ISLANDS AND

THE BRITISH VIRGIN ISLANDS SHOULD REFER TO U.S. NATIONAL
TSUNAMI WARNING CENTER MESSAGES THAT CAN BE FOUND AT
NTWC.ARH.NOAA.GOV.

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WECA41 PHEB 251901

TSUCAX

EXPERIMENTAL TSUNAMI MESSAGE NUMBER 7

NOT FOR DISTRIBUTION

NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI

1901 UCT WED MAR 25 2015

...TSUNAMI THREAT MESSAGE...

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE *****

THIS MESSAGE IS ISSUED FOR INFORMATION ONLY IN SUPPORT OF THE
UNESCO/IOC TSUNAMI AND OTHER COASTAL HAZARDS WARNING SYSTEM FOR
THE CARIBBEAN AND ADJACENT REGIONS AND IS MEANT FOR NATIONAL
AUTHORITIES IN EACH COUNTRY OF THAT SYSTEM.

NATIONAL AUTHORITIES WILL DETERMINE THE TSUNAMI THREAT AND
APPROPRIATE LEVEL OF ALERT FOR EACH COUNTRY.

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE *****

PRELIMINARY EARTHQUAKE PARAMETERS

---

* MAGNITUDE 8.5
* ORIGIN TIME 1400 UTC MAR 25 2015
* COORDINATES 10.3 NORTH 78.8 WEST
* DEPTH 15 KM / 9 MILES
* LOCATION NORTH OF PANAMA

EVALUATION

---

* AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 8.5 OCCURRED

NORTH OF PANAMA AT 1400 UTC ON WEDNESDAY MARCH 25 2015.

* TSUNAMI WAVES HAVE BEEN OBSERVED.

* BASED ON ALL AVAILABLE DATA... HAZARDOUS TSUNAMI WAVES ARE FORECAST FOR SOME COASTS.

TSUNAMI THREAT FORECAST
---

* TSUNAMI WAVES REACHING MORE THAN 3 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE ALONG SOME COASTS OF

COLOMBIA... AND PANAMA.

* TSUNAMI WAVES REACHING 1 TO 3 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE ALONG SOME COASTS OF

ARUBA... COSTA RICA... CUBA... DOMINICAN REPUBLIC... HAITI... NICARAGUA... PUERTO RICO... BAHAMAS... JAMAICA... CURACAO... BONAIRE... SAINT KITTS AND NEVIS... AND VENEZUELA.

* TSUNAMI WAVES REACHING 0.3 TO 1 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE FOR SOME COASTS OF

HONDURAS... MEXICO... ANGUILLA... ANTIGUA AND BARBUDA... BELIZE... CAYMAN ISLANDS... DOMINICA... GRENADA... GUADELOUPE... MARTINIQUE... MONTSERRAT... SAINT LUCIA... SINT MAARTEN... SAINT BARTHELEMY... SAINT MARTIN... SAINT VINCENT AND THE GRENADINES... TURKS AND CAICOS ISLANDS... AND US VIRGIN ISLANDS.

* TSUNAMI WAVES LESS THAN 0.3 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE FOR SOME COASTS OF

BRAZIL... GUYANA... GUATEMALA... SURINAME... BARBADOS...

BERMUDA... FRENCH GUIANA... AND TRINIDAD AND TOBAGO.

* ACTUAL AMPLITUDES AT THE COAST MAY VARY FROM FORECAST AMPLITUDES DUE TO UNCERTAINTIES IN THE FORECAST AND LOCAL FEATURES. IN PARTICULAR MAXIMUM TSUNAMI AMPLITUDES ON ATOLLS WILL LIKELY BE MUCH SMALLER THAN THE FORECAST INDICATES.

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RECOMMENDED ACTIONS
---

* GOVERNMENT AGENCIES RESPONSIBLE FOR THREATENED COASTAL AREAS SHOULD TAKE ACTION TO INFORM AND INSTRUCT ANY COASTAL POPULATIONS AT RISK IN ACCORDANCE WITH THEIR OWN EVALUATION... PROCEDURES AND THE LEVEL OF THREAT.

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ESTIMATED TIMES OF ARRIVAL
---

* ESTIMATED TIMES OF ARRIVAL -ETA- OF THE INITIAL TSUNAMI WAVE FOR POINTS WITHIN THREATENED REGIONS ARE GIVEN BELOW. ACTUAL ARRIVAL TIMES MAY DIFFER AND THE INITIAL WAVE MAY NOT BE THE LARGEST. A TSUNAMI IS A SERIES OF WAVES AND THE TIME BETWEEN WAVES CAN BE FIVE MINUTES TO ONE HOUR.

| LOCATION | REGION | COORDINATES | ETA(UTC) |
|---|---|---|---|
| BIMINI | BAHAMAS | 25.8N 79.3W | 1822 03/25 |
| SANTA CRZ D SUR | CUBA | 20.7N 78.0W | 1837 03/25 |

| | | | | |
|---|---|---|---|---|
| GOLFO VENEZUELA | VENEZUELA | 11.4N | 71.2W | 1914 03/25 |
| NUEVA GERONA | CUBA | 21.9N | 82.8W | 1937 03/25 |
| PUERTO CABEZAS | NICARAGUA | 14.0N | 83.4W | 1939 03/25 |
| PORLAMAR | VENEZUELA | 10.9N | 63.8W | 2124 03/25 |

POTENTIAL IMPACTS

* A TSUNAMI IS A SERIES OF WAVES. THE TIME BETWEEN WAVE CRESTS CAN VARY FROM 5 MINUTES TO AN HOUR. THE HAZARD MAY PERSIST FOR MANY HOURS OR LONGER AFTER THE INITIAL WAVE.

* IMPACTS CAN VARY SIGNIFICANTLY FROM ONE SECTION OF COAST TO THE NEXT DUE TO LOCAL BATHYMETRY AND THE SHAPE AND ELEVATION OF THE SHORELINE.

* IMPACTS CAN ALSO VARY DEPENDING UPON THE STATE OF THE TIDE AT THE TIME OF THE MAXIMUM TSUNAMI WAVES.

* PERSONS CAUGHT IN THE WATER OF A TSUNAMI MAY DROWN... BE CRUSHED BY DEBRIS IN THE WATER... OR BE SWEPT OUT TO SEA.

TSUNAMI OBSERVATIONS

* THE FOLLOWING ARE TSUNAMI WAVE OBSERVATIONS FROM COASTAL AND/OR DEEP-OCEAN SEA LEVEL GAUGES AT THE INDICATED LOCATIONS. THE MAXIMUM TSUNAMI HEIGHT IS MEASURED WITH RESPECT TO THE NORMAL TIDE LEVEL.

| | GAUGE COORDINATES | | TIME OF MEASURE | MAXIMUM TSUNAMI | WAVE PERIOD |
|---|---|---|---|---|---|
| GAUGE LOCATION | LAT | LON | (UTC) | HEIGHT | (MIN) |
| VACA KEY FL | 24.7N | 81.1W | 1855 | 0.03M/ 0.1FT | 44 |
| KEY WEST FL | 24.6N | 81.8W | 1846 | 0.04M/ 0.1FT | 52 |
| DART 41424 | 32.9N | 72.5W | 1811 | 0.00M/ 0.0FT | 44 |

| | | | | | |
|---|---|---|---|---|---|
| DART 42429 | 27.4N | 85.7W | 1744 | 0.01M/ 0.0FT | 48 |
| PARHAM AT | 17.1N | 61.8W | 1746 | 0.24M/ 0.8FT | 56 |
| CHARLOTTEVILLE TT | 11.3N | 60.5W | 1748 | 0.16M/ 0.5FT | 36 |
| DART 42409 | 26.7N | 85.8W | 1739 | 0.00M/ 0.0FT | 28 |
| PUERTO MORELOS MX | 21.4N | 86.8W | 1733 | 0.45M/ 1.5FT | 36 |
| BRIDGEPORT BB | 13.1N | 59.6W | 1733 | 0.25M/ 0.8FT | 48 |
| PORT ST CHARLES BB | 13.3N | 59.6W | 1737 | 0.23M/ 0.8FT | 52 |
| DESIRADE GUADELOUPE | 16.3N | 61.1W | 1734 | 0.24M/ 0.8FT | 44 |
| LE ROBERT MARTINIQU | 14.7N | 60.9W | 1732 | 0.28M/ 0.9FT | 44 |
| LAMESHURBAYSTJOHNVI | 18.3N | 64.7W | 1729 | 0.54M/ 1.8FT | 52 |
| POINT A PITRE GP | 16.2N | 61.5W | 1718 | 0.44M/ 1.5FT | 32 |
| DART 41421 | 23.4N | 63.9W | 1717 | 0.02M/ 0.1FT | 44 |
| CALLIAQUA VC | 13.1N | 61.2W | 1715 | 0.79M/ 2.6FT | 52 |
| ISLA MUJERES | 21.2N | 86.7W | 1715 | 0.42M/ 1.4FT | 44 |
| DART 41420 | 23.5N | 67.3W | 1709 | 0.01M/ 0.0FT | 36 |
| PRICKLEY BAY GD | 12.0N | 61.8W | 1711 | 0.46M/ 1.5FT | 56 |
| BASSETERRE KN | 17.3N | 62.7W | 1713 | 0.38M/ 1.2FT | 48 |
| FORT DE FRANCE MQ | 14.6N | 61.1W | 1704 | 0.97M/ 3.2FT | 28 |
| DESHAIES GUADELOUPE | 16.3N | 61.8W | 1710 | 0.70M/ 2.3FT | 52 |
| LE PRECHEUR MARTINI | 14.8N | 61.2W | 1706 | 0.57M/ 1.9FT | 56 |
| ROSEAU DM | 15.3N | 61.4W | 1703 | 0.70M/ 2.3FT | 56 |
| SAN JUAN PR | 18.5N | 66.1W | 1648 | 0.32M/ 1.0FT | 44 |
| PUERTO PLATA DO | 19.8N | 70.7W | 1647 | 0.14M/ 0.5FT | 32 |
| ARECIBO PR | 18.5N | 66.7W | 1647 | 0.39M/ 1.3FT | 56 |
| LIMETREE VI | 17.7N | 64.8W | 1647 | 0.89M/ 2.9FT | 56 |
| ST CROIX VI | 17.7N | 64.7W | 1640 | 0.54M/ 1.8FT | 32 |
| CAP HAITIEN HT | 19.8N | 72.2W | 1638 | 0.39M/ 1.3FT | 36 |
| AGUADILLA PR | 18.5N | 67.2W | 1635 | 0.75M/ 2.5FT | 40 |
| MAYAGUEZ PR | 18.2N | 67.2W | 1631 | 0.90M/ 3.0FT | 52 |
| PUNTA CANA DO | 18.5N | 68.4W | 1625 | 0.84M/ 2.7FT | 36 |
| PENUELAS PR | 18.0N | 66.8W | 1625 | 0.96M/ 3.1FT | 52 |
| MAGUEYES ISLAND PR | 18.0N | 67.0W | 1618 | 0.95M/ 3.1FT | 52 |
| MONA ISLAND PR | 18.1N | 67.9W | 1623 | 0.92M/ 3.0FT | 52 |
| GEORGE TOWN CY | 19.3N | 81.4W | 1618 | 0.56M/ 1.8FT | 40 |
| PORT SAN ANDRES DO | 18.4N | 69.6W | 1617 | 2.32M/ 7.6FT | 44 |
| BULLEN BAY CURACAO | 12.2N | 69.0W | 1605 | 1.04M/ 3.4FT | 44 |
| DART 42407 | 15.3N | 68.2W | 1559 | 0.09M/ 0.3FT | 32 |
| BARAHONA DO | 18.2N | 71.1W | 1600 | 2.08M/ 6.8FT | 48 |
| SANTA MARTA CO | 11.2N | 74.2W | 1559 | 3.22M/10.6FT | 28 |

| | | | | | |
|---|---|---|---|---|---|
| JACMEL HT | 18.2N | 72.5W | 1552 | 1.64M/ 5.4FT | 40 |
| LIMON CR | 10.0N | 83.0W | 1501 | 2.45M/ 8.0FT | 48 |
| EL PORVENIR PM | 9.6N | 78.9W | 1453 | 10.89M/35.7FT | 44 |
| SAN ANDRES CO | 12.6N | 81.7W | 1448 | 2.13M/ 7.0FT | 32 |

NEXT UPDATE AND ADDITIONAL INFORMATION

---

* THE NEXT MESSAGE WILL BE ISSUED IN ONE HOUR... OR SOONER IF THE SITUATION WARRANTS.

* AUTHORITATIVE INFORMATION ABOUT THE EARTHQUAKE FROM THE U.S. GEOLOGICAL SURVEY CAN BE FOUND ON THE INTERNET AT EARTHQUAKE.USGS.GOV/EARTHQUAKES -ALL IN SMALL LETTERS-.

* FURTHER INFORMATION ABOUT THIS EVENT MAY BE FOUND AT PTWC.WEATHER.GOV AND AT WWW.TSUNAMI.GOV.

* COASTAL REGIONS OF PUERTO RICO... THE U.S. VIRGIN ISLANDS AND THE BRITISH VIRGIN ISLANDS SHOULD REFER TO U.S. NATIONAL TSUNAMI WARNING CENTER MESSAGES THAT CAN BE FOUND AT NTWC.ARH.NOAA.GOV.

$$

ZCZC

WECA41 PHEB 251945

TSUCAX

EXPERIMENTAL TSUNAMI MESSAGE NUMBER 8

NOT FOR DISTRIBUTION

NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI

1945 UCT WED MAR 25 2015

...FINAL TSUNAMI THREAT MESSAGE...

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE *****

THIS MESSAGE IS ISSUED FOR INFORMATION ONLY IN SUPPORT OF THE
UNESCO/IOC TSUNAMI AND OTHER COASTAL HAZARDS WARNING SYSTEM FOR
THE CARIBBEAN AND ADJACENT REGIONS AND IS MEANT FOR NATIONAL
AUTHORITIES IN EACH COUNTRY OF THAT SYSTEM.

NATIONAL AUTHORITIES WILL DETERMINE THE TSUNAMI THREAT AND
APPROPRIATE LEVEL OF ALERT FOR EACH COUNTRY.

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE *****

PRELIMINARY EARTHQUAKE PARAMETERS

---

* MAGNITUDE 8.5
* ORIGIN TIME 1400 UTC MAR 25 2015
* COORDINATES 10.3 NORTH 78.8 WEST
* DEPTH 15 KM / 9 MILES
* LOCATION NORTH OF PANAMA

EVALUATION

---

* AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 8.5 OCCURRED

NORTH OF PANAMA AT 1400 UTC ON WEDNESDAY MARCH 25 2015.

* BASED ON ALL AVAILABLE DATA... THE TSUNAMI THREAT FROM THIS EARTHQUAKE HAS PASSED AND THERE IS NO FURTHER THREAT.

TSUNAMI THREAT FORECAST...UPDATED

---

* THE TSUNAMI THREAT HAS NOW LARGELY PASSED.

RECOMMENDED ACTIONS

---

* GOVERNMENT AGENCIES RESPONSIBLE FOR ANY IMPACTED COASTAL AREAS SHOULD MONITOR CONDITIONS AT THE COAST TO DETERMINE IF AND WHEN IT IS SAFE TO RESUME NORMAL ACTIVITIES.

* PERSONS LOCATED NEAR IMPACTED COASTAL AREAS SHOULD STAY ALERT FOR INFORMATION AND FOLLOW INSTRUCTIONS FROM LOCAL AUTHORITIES.

* REMAIN OBSERVANT AND EXERCISE NORMAL CAUTION NEAR THE SEA.

POTENTIAL IMPACTS

---

* MINOR SEA LEVEL FLUCTUATIONS UP TO 30 CM ABOVE AND BELOW THE NORMAL TIDE MAY OCCUR IN COASTAL AREAS NEAR THE EARTHQUAKE OVER THE NEXT FEW HOURS.... AND CONTINUING FOR UP TO SEVERAL HOURS.

TSUNAMI OBSERVATIONS

---

* THE FOLLOWING ARE TSUNAMI WAVE OBSERVATIONS FROM COASTAL

AND/OR DEEP-OCEAN SEA LEVEL GAUGES AT THE INDICATED LOCATIONS. THE MAXIMUM TSUNAMI HEIGHT IS MEASURED WITH RESPECT TO THE NORMAL TIDE LEVEL.

| | GAUGE COORDINATES | | TIME OF MEASURE | MAXIMUM TSUNAMI | WAVE PERIOD |
|---|---|---|---|---|---|
| GAUGE LOCATION | LAT | LON | (UTC) | HEIGHT | (MIN) |
| PANAMACITYBEACH FL | 30.2N | 85.9W | 1942 | 0.02M/ 0.1FT | 48 |
| GRAND ISLE LA | 29.3N | 90.0W | 1931 | 0.02M/ 0.1FT | 36 |
| PILOTS STATION LA | 28.9N | 89.4W | 1904 | 0.03M/ 0.1FT | 40 |
| VACA KEY FL | 24.7N | 81.1W | 1855 | 0.03M/ 0.1FT | 44 |
| KEY WEST FL | 24.6N | 81.8W | 1846 | 0.04M/ 0.1FT | 52 |
| DART 41424 | 32.9N | 72.5W | 1811 | 0.00M/ 0.0FT | 44 |
| DART 42429 | 27.4N | 85.7W | 1744 | 0.01M/ 0.0FT | 48 |
| PARHAM AT | 17.1N | 61.8W | 1746 | 0.24M/ 0.8FT | 56 |
| CHARLOTTEVILLE TT | 11.3N | 60.5W | 1748 | 0.16M/ 0.5FT | 36 |
| DART 42409 | 26.7N | 85.8W | 1739 | 0.00M/ 0.0FT | 28 |
| PUERTO MORELOS MX | 21.4N | 86.8W | 1733 | 0.45M/ 1.5FT | 36 |
| BRIDGEPORT BB | 13.1N | 59.6W | 1733 | 0.25M/ 0.8FT | 48 |
| PORT ST CHARLES BB | 13.3N | 59.6W | 1737 | 0.23M/ 0.8FT | 52 |
| DESIRADE GUADELOUPE | 16.3N | 61.1W | 1734 | 0.24M/ 0.8FT | 44 |
| LE ROBERT MARTINIQU | 14.7N | 60.9W | 1732 | 0.28M/ 0.9FT | 44 |
| LAMESHURBAYSTJOHNVI | 18.3N | 64.7W | 1729 | 0.54M/ 1.8FT | 52 |
| POINT A PITRE GP | 16.2N | 61.5W | 1718 | 0.44M/ 1.5FT | 32 |
| DART 41421 | 23.4N | 63.9W | 1717 | 0.02M/ 0.1FT | 44 |
| CALLIAQUA VC | 13.1N | 61.2W | 1715 | 0.79M/ 2.6FT | 52 |
| ISLA MUJERES | 21.2N | 86.7W | 1715 | 0.42M/ 1.4FT | 44 |
| DART 41420 | 23.5N | 67.3W | 1709 | 0.01M/ 0.0FT | 36 |
| PRICKLEY BAY GD | 12.0N | 61.8W | 1711 | 0.46M/ 1.5FT | 56 |
| BASSETERRE KN | 17.3N | 62.7W | 1713 | 0.38M/ 1.2FT | 48 |
| FORT DE FRANCE MQ | 14.6N | 61.1W | 1704 | 0.97M/ 3.2FT | 28 |
| DESHAIES GUADELOUPE | 16.3N | 61.8W | 1710 | 0.70M/ 2.3FT | 52 |
| LE PRECHEUR MARTINI | 14.8N | 61.2W | 1706 | 0.57M/ 1.9FT | 56 |
| ROSEAU DM | 15.3N | 61.4W | 1703 | 0.70M/ 2.3FT | 56 |
| SAN JUAN PR | 18.5N | 66.1W | 1648 | 0.32M/ 1.0FT | 44 |
| PUERTO PLATA DO | 19.8N | 70.7W | 1647 | 0.14M/ 0.5FT | 32 |
| ARECIBO PR | 18.5N | 66.7W | 1647 | 0.39M/ 1.3FT | 56 |
| LIMETREE VI | 17.7N | 64.8W | 1647 | 0.89M/ 2.9FT | 56 |

| | | | | | |
|---|---|---|---|---|---|
| ST CROIX VI | 17.7N | 64.7W | 1640 | 0.54M/ 1.8FT | 32 |
| CAP HAITIEN HT | 19.8N | 72.2W | 1638 | 0.39M/ 1.3FT | 36 |
| AGUADILLA PR | 18.5N | 67.2W | 1635 | 0.75M/ 2.5FT | 40 |
| MAYAGUEZ PR | 18.2N | 67.2W | 1631 | 0.90M/ 3.0FT | 52 |
| PUNTA CANA DO | 18.5N | 68.4W | 1625 | 0.84M/ 2.7FT | 36 |
| PENUELAS PR | 18.0N | 66.8W | 1625 | 0.96M/ 3.1FT | 52 |
| MAGUEYES ISLAND PR | 18.0N | 67.0W | 1618 | 0.95M/ 3.1FT | 52 |
| MONA ISLAND PR | 18.1N | 67.9W | 1623 | 0.92M/ 3.0FT | 52 |
| GEORGE TOWN CY | 19.3N | 81.4W | 1618 | 0.56M/ 1.8FT | 40 |
| PORT SAN ANDRES DO | 18.4N | 69.6W | 1617 | 2.32M/ 7.6FT | 44 |
| BULLEN BAY CURACAO | 12.2N | 69.0W | 1605 | 1.04M/ 3.4FT | 44 |
| DART 42407 | 15.3N | 68.2W | 1559 | 0.09M/ 0.3FT | 32 |
| BARAHONA DO | 18.2N | 71.1W | 1600 | 2.08M/ 6.8FT | 48 |
| SANTA MARTA CO | 11.2N | 74.2W | 1559 | 3.22M/10.6FT | 28 |
| JACMEL HT | 18.2N | 72.5W | 1552 | 1.64M/ 5.4FT | 40 |
| LIMON CR | 10.0N | 83.0W | 1501 | 2.45M/ 8.0FT | 48 |
| EL PORVENIR PM | 9.6N | 78.9W | 1453 | 10.89M/35.7FT | 44 |
| SAN ANDRES CO | 12.6N | 81.7W | 1448 | 2.13M/ 7.0FT | 32 |

NEXT UPDATE AND ADDITIONAL INFORMATION

---

* THIS WILL BE THE FINAL STATEMENT ISSUED FOR THIS EVENT UNLESS NEW INFORMATION IS RECEIVED OR THE SITUATION CHANGES.

* AUTHORITATIVE INFORMATION ABOUT THE EARTHQUAKE FROM THE U.S. GEOLOGICAL SURVEY CAN BE FOUND ON THE INTERNET AT EARTHQUAKE.USGS.GOV/EARTHQUAKES -ALL IN SMALL LETTERS-.

* FURTHER INFORMATION ABOUT THIS EVENT MAY BE FOUND AT PTWC.WEATHER.GOV AND AT WWW.TSUNAMI.GOV.

* COASTAL REGIONS OF PUERTO RICO... THE U.S. VIRGIN ISLANDS AND THE BRITISH VIRGIN ISLANDS SHOULD REFER TO U.S. NATIONAL TSUNAMI WARNING CENTER MESSAGES THAT CAN BE FOUND AT NTWC.ARH.NOAA.GOV.

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ANNEX V

# EXERCISE MESSAGES

## US NTWC: Dummy (Start of Exercise) Message

```
WEXX20 PAAQ 251405
TSUAT1

TEST...TSUNAMI EXERCISE MESSAGE NUMBER 1...TEST
NWS NATIONAL TSUNAMI WARNING CENTER PALMER AK
1005 AM AST WED MAR 25 2015

...CARIBEWAVE 15 TSUNAMI EXERCISE MESSAGE. REFER TO NTWC MESSAGE 1 IN THE EXERCISE
HANDBOOK. THIS IS AN EXERCISE ONLY...

THIS MESSAGE IS BEING USED TO START THE CARIBEWAVE 15 CARIBBEAN TSUNAMI EXERCISE.
THIS WILL BE THE ONLY EXERCISE MESSAGE BROADCAST FROM THE NATIONAL TSUNAMI WARNING
CENTER EXCLUDING SPECIAL EMAIL MESSAGES DISCUSSED IN THE HANDBOOK.  THE HANDBOOK IS
AVAILABLE AT THE WEB SITE NTWC.ARH.NOAA.GOV. THE EXERCISE PURPOSE IS TO PROVIDE
EMERGENCY MANAGEMENT A REALISTIC SCENARIO TO TEST TSUNAMI RESPONSE PLANS.

THIS IS ONLY AN EXERCISE.

$$
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WEXX30 PAAQ 251405
TSUATE

TEST...PUBLIC TSUNAMI EXERCISE MESSAGE NUMBER 1...TEST
NWS NATIONAL TSUNAMI WARNING CENTER PALMER AK
1005 AM AST WED MAR 25 2015

...CARIBEWAVE 15 TSUNAMI EXERCISE MESSAGE. REFER TO NTWC MESSAGE 1 IN THE EXERCISE
HANDBOOK. THIS IS AN EXERCISE ONLY...

THIS MESSAGE IS BEING USED TO START THE CARIBEWAVE 15 CARIBBEAN TSUNAMI EXERCISE.
THIS WILL BE THE ONLY EXERCISE MESSAGE BROADCAST FROM THE NATIONAL TSUNAMI WARNING
CENTER EXCLUDING SPECIAL EMAIL MESSAGES DISCUSSED IN THE HANDBOOK.  THE HANDBOOK IS
AVAILABLE AT THE WEB SITE NTWC.ARH.NOAA.GOV. THE EXERCISE PURPOSE IS TO PROVIDE
EMERGENCY MANAGEMENT A REALISTIC SCENARIO TO TEST TSUNAMI RESPONSE PLANS.

THIS IS ONLY AN EXERCISE.

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```
WEXX40 PAAQ 251405
TSUSPN

TEST...MENSAJE DE EJERCICIO DE TSUNAMI NUMERO 1...TEST
NWS CENTRO NACIONAL DE ALERTA DE TSUNAMI PALMER AK
1005 AM AST WED MAR 25 2015

...MENSAJE PARA DAR COMIENZO AL EJERCICIO DE TSUNAMI CARIBEWAVE 15.  REFERIRSE AL
MENSAJE 1 DE NTWC EN EL MANUAL PARA EL EJERCICIO.  ESTO ES UN EJERCICIO SOLAMENTE...

ESTE MENSAJE ESTA SIENDO USADO PARA DAR COMIENZO AL EJERCICIO DE TSUNAMI CARIBE WAVE
15.  ESTE SERA EL UNICO MENSAJE QUE SERA EMITIDO DESDE EL CENTRO NACIONAL DE ALERTA
DE TSUNAMI EXCLUYENDO LOS MENSAJES ESPECIALES DE CORREO ELECTRONICO DISCUTIDOS EN EL
MANUAL.  EL MANUAL ESTA DISPONIBLE EN LA PAGINA NTWC.ARH.NOAA.GOV. EL PROPOSITO DEL
EJERCICIO ES PROVEER A LAS AUTORIDADES DE MANEJO DE EMERGENCIA UN ESCENARIO
REALISTICO PARA PROBAR LOS PLANES DE RESPUESTA A TSUNAMIS.

ESTE ES SOLO UN EJERCICIO.
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$$

## PTWC: Dummy (Start of Exercise) Message

WECA41 PHEB 251405
TSUCAX

TEST...TSUNAMI EXERCISE MESSAGE NUMBER 1...TEST
NWS PACIFIC TSUNAMI WARNING CENTER/NOAA/NWS
ISSUED AT 1405Z 25 MAR 2015

...CARIBEWAVE 15 TSUNAMI EXERCISE MESSAGE. REFER TO PTWC MESSAGE 1 IN THE EXERCISE HANDBOOK. THIS IS AN EXERCISE ONLY...

THIS MESSAGE IS BEING USED TO START THE CARIBEWAVE 15 CARIBBEAN TSUNAMI EXERCISE. THIS WILL BE THE ONLY EXERCISE MESSAGE BROADCAST FROM THE PACIFIC TSUNAMI WARNING CENTER EXCLUDING SPECIAL EMAIL MESSAGES DISCUSSED IN THE HANDBOOK. THE HANDBOOK IS AVAILABLE AT THE WEB SITE NTWC.ARH.NOAA.GOV. THE EXERCISE PURPOSE IS TO PROVIDE EMERGENCY MANAGEMENT A REALISTIC SCENARIO TO TEST TSUNAMI RESPONSE PLANS.

THIS IS ONLY AN EXERCISE.

$$

## Exercise Messages

The following messages created for the CARIBE WAVE/LANTEX15 tsunami exercise are representative of the official standard products issued by the US NTWC and PTWC during a large magnitude 8.5 earthquake and tsunami originating just north of Panama. During a real event, the TWCs would also issue graphical and html-based products to their web sites and via RSS. The alerts would persist longer during a real event than is depicted in this exercise. NTWC also issues a product under the header WEXX20 PAAQ/TSUAT1 which is designed to drive automated alert systems.

### ***US NTWC Message #1***

```
WEXX30 PAAQ 251405
TSUATE

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 1
NWS NATIONAL TSUNAMI WARNING CENTER PALMER AK
1005 AM AST WED MAR 25 2015

...A TSUNAMI ADVISORY IS NOW IN EFFECT...


WARNINGS/ADVISORIES/WATCHES
---------------------------

TSUNAMI ADVISORY IN EFFECT FOR...

 * COASTAL AREAS OF PUERTO RICO - THE U.S. VIRGIN ISLANDS AND
   THE BRITISH VIRGIN ISLANDS.


FOR OTHER US AND CANADIAN COASTS IN THE ATLANTIC AND
GULF OF MEXICO - THE LEVEL OF TSUNAMI DANGER IS BEING
EVALUATED. FURTHER INFORMATION WILL BE PROVIDED IN
SUPPLEMENTARY MESSAGES.


PRELIMINARY EARTHQUAKE PARAMETERS
---------------------------------
 * MAGNITUDE      8.0
 * ORIGIN TIME    1000  EDT MAR 25 2015
                  1000  AST MAR 25 2015
                  0900  CDT MAR 25 2015
                  1400  UTC MAR 25 2015
 * COORDINATES    10.3 NORTH 78.8 WEST
 * DEPTH          9 MILES
 * LOCATION       NORTH OF PANAMA


IMPACTS FOR TSUNAMI ADVISORY AREAS
----------------------------------
 * A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS
   TO PERSONS IN OR VERY NEAR THE WATER IS EXPECTED.

 * CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL
   STRUCTURES AND MAY CONTINUE FOR MANY HOURS AFTER THE TSUNAMI
   ARRIVAL.

 * THE FIRST WAVE MAY NOT BE THE LARGEST.


RECOMMENDED ACTIONS
-------------------
 * IF YOU ARE IN AN ADVISORY AREA - MOVE OFF THE BEACH AND OUT OF
   HARBORS AND MARINAS.  WIDESPREAD INUNDATION OF LAND IS NOT
   EXPECTED FOR ADVISORY AREAS.
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 * BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.

 * DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.

 * DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS
   INDICATE IT IS SAFE TO DO SO.


FORECASTS AND/OR OBSERVATIONS OF TSUNAMI ACTIVITY
-------------------------------------------------
                FORECAST
                START OF
SITE            OF TSUNAMI
----            ----------

 * PUERTO RICO
AGUADILLA        1217  AST MAR 25
MAYAGUEZ         1220  AST MAR 25
SAN JUAN TG      1234  AST MAR 25
CULEBRA          1242  AST MAR 25

 * US VIRGIN ISLANDS
CHRISTIANSTED    1224  AST MAR 25
LAMESHUR BAY     1235  AST MAR 25
CHARLOTTE AMALIE 1310  AST MAR 25

 * BRITISH VIRGIN IS.
ROADTOWN         1237  AST MAR 25


NEXT UPDATE AND ADDITIONAL INFORMATION
--------------------------------------
 * THIS MESSAGE WILL BE UPDATED WITHIN 60 MINUTES.

 * REFER TO THE INTERNET SITE NTWC.ARH.NOAA.GOV FOR MORE
   INFORMATION.

 * CARIBBEAN COASTAL REGIONS OUTSIDE PUERTO RICO... U.S. VIRGIN
   ISLANDS AND BRITISH VIRGIN ISLANDS SHOULD REFER TO THE PACIFIC
   TSUNAMI WARNING CENTER MESSAGES AT PTWC.WEATHER.GOV.

$$
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## ***US NTWC Message #2***

WEXX30 PAAQ 251500
TSUATE

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 2
NWS NATIONAL TSUNAMI WARNING CENTER PALMER AK
1100 AM AST WED MAR 25 2015

UPDATES
-------
THIS MESSAGE CONTAINS A REVISED MAGNITUDE.
THIS MESSAGE CONTAINS NEW OBSERVATIONS.
THIS MESSAGE MODIFIES THE ALERT AREAS.
THE ALERT LEVEL FOR PUERTO RICO... US VIRGIN ISLANDS AND BRITISH VIRGIN ISLANDS HAS BEEN UPGRADED FROM ADVISORY TO WARNING.
TZHE UPGRADE IS BASED ON FORECAST MODEL RESULTS.
TSUNAMI HEIGHT FORECAST FOR PR/VI RANGE UP TO 6 FT.

...A TSUNAMI WARNING IS NOW IN EFFECT...

WARNINGS/ADVISORIES/WATCHES - UPDATED
-------------------------------------
TSUNAMI WARNING IN EFFECT FOR...

 * COASTAL AREAS OF PUERTO RICO - THE U.S. VIRGIN ISLANDS AND
   THE BRITISH VIRGIN ISLANDS.

FOR OTHER US AND CANADIAN COASTS IN THE ATLANTIC
AND GULF OF MEXICO - THERE IS NO TSUNAMI THREAT.

IMPACTS FOR TSUNAMI WARNING AREAS
---------------------------------
 * WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL
   CURRENTS ARE POSSIBLE AND MAY CONTINUE FOR MANY HOURS AFTER
   TSUNAMI ARRIVAL.

 * THE FIRST WAVE MAY NOT BE THE LARGEST.

RECOMMENDED ACTIONS - UPDATED
-----------------------------
 * IF YOU ARE IN A WARNING AREA - MOVE INLAND TO HIGHER GROUND.

 * BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.

 * DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.

 * DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS
   INDICATE IT IS SAFE TO DO SO.

FORECASTS AND/OR OBSERVATIONS OF TSUNAMI ACTIVITY
-------------------------------------------------

| SITE | FORECAST START OF OF TSUNAMI |
|---|---|
| * PUERTO RICO | |
| AGUADILLA | 1212 AST MAR 25 |
| MAYAGUEZ | 1215 AST MAR 25 |
| SAN JUAN TG | 1229 AST MAR 25 |
| CULEBRA | 1237 AST MAR 25 |

```
 * US VIRGIN ISLANDS
CHRISTIANSTED    1219  AST MAR 25
LAMESHUR BAY     1230  AST MAR 25
CHARLOTTE AMALIE 1305  AST MAR 25

 * BRITISH VIRGIN IS.
ROADTOWN         1232  AST MAR 25


ADDITIONAL OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED
-----------------------------------------------------
                                   TIME             OBSERVED MAX
 SITE                            OF MEASUREMENT      TSUNAMI HEIGHT
 ------------------------------ ---------------      --------------
 EL PORVENIR  PANAMA             1455 UTC  03-25        07.8FT

 HEIGHT - OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE
          TIDE LEVEL AT THE TIME OF MEASUREMENT.


PRELIMINARY EARTHQUAKE PARAMETERS
---------------------------------
 * MAGNITUDE      8.5
 * ORIGIN TIME    1000  EDT MAR 25 2015
                  1000  AST MAR 25 2015
                  0900  CDT MAR 25 2015
                  1400  UTC MAR 25 2015
 * COORDINATES    10.3 NORTH 78.8 WEST
 * DEPTH          9 MILES
 * LOCATION       NORTH OF PANAMA


NEXT UPDATE AND ADDITIONAL INFORMATION
--------------------------------------
 * THIS MESSAGE WILL BE UPDATED WITHIN 60 MINUTES.

 * REFER TO THE INTERNET SITE NTWC.ARH.NOAA.GOV FOR MORE
   INFORMATION.

 * CARIBBEAN COASTAL REGIONS OUTSIDE PUERTO RICO... U.S. VIRGIN
   ISLANDS AND BRITISH VIRGIN ISLANDS SHOULD REFER TO THE PACIFIC
   TSUNAMI WARNING CENTER MESSAGES AT PTWC.WEATHER.GOV.

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## ***US NTWC Message #3***

WEXX30 PAAQ 251602
TSUATE

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 3
NWS NATIONAL TSUNAMI WARNING CENTER PALMER AK
1202 PM AST WED MAR 25 2015

UPDATES
-------
THIS MESSAGE CONTAINS NEW OBSERVATIONS.
THIS MESSAGE CONTAINS REVISED FORECAST INFORMATION.

...THE TSUNAMI WARNING REMAINS IN EFFECT...

WARNINGS/ADVISORIES/WATCHES
---------------------------
TSUNAMI WARNING IN EFFECT FOR...

* COASTAL AREAS OF PUERTO RICO - THE U.S. VIRGIN ISLANDS AND
  THE BRITISH VIRGIN ISLANDS.

FOR OTHER US AND CANADIAN COASTS IN THE ATLANTIC
AND GULF OF MEXICO - THERE IS NO TSUNAMI THREAT.

IMPACTS FOR TSUNAMI WARNING AREAS
---------------------------------
* WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL
  CURRENTS ARE POSSIBLE AND MAY CONTINUE FOR MANY HOURS AFTER
  TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

RECOMMENDED ACTIONS
-------------------
* IF YOU ARE IN A WARNING AREA - MOVE INLAND TO HIGHER GROUND.

* BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.

* DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.

* DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS
  INDICATE IT IS SAFE TO DO SO.

FORECASTS AND/OR OBSERVATIONS OF TSUNAMI ACTIVITY
-------------------------------------------------

| SITE | FORECAST START OF | FORECAST TSUNAMI DURATION | FORECAST MAX TSUNAMI HEIGHT |
|---|---|---|---|
| * PUERTO RICO | | | |
| AGUADILLA | 1212 AST MAR 25 | 30 HRS | 2.6- 4.8FT |
| MAYAGUEZ | 1215 AST MAR 25 | 30 HRS | 2.4- 4.4FT |
| SAN JUAN TG | 1229 AST MAR 25 | | LESS THAN 1FT |
| CULEBRA | 1237 AST MAR 25 | 9 HRS | 1.1- 2.1FT |
| * US VIRGIN ISLANDS | | | |
| CHRISTIANSTED | 1219 AST MAR 25 | 20 HRS | 1.5- 2.9FT |
| LAMESHUR BAY | 1230 AST MAR 25 | 36 HRS | 3.2- 5.8FT |
| CHARLOTTE AMALIE | 1305 AST MAR 25 | 30 HRS | 2.7- 5.1FT |

```
 * BRITISH VIRGIN IS.
ROADTOWN         1232  AST MAR 25  24 HRS    1.8- 3.4FT

FORECAST MAX TSUNAMI HEIGHT IS THE HIGHEST EXPECTED WATER LEVEL
ABOVE THE TIDE.

FORECAST TSUNAMI DURATION IS THE APPROXIMATE LENGTH OF TIME WHICH
THE TSUNAMI MAY PRODUCE DANGEROUS CURRENTS AND WAVE ACTIVITY.


ADDITIONAL OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED
-----------------------------------------------------
                                    TIME             OBSERVED MAX
 SITE                             OF MEASUREMENT      TSUNAMI HEIGHT
 ------------------------------ ---------------      --------------
 EL PORVENIR  PANAMA            1455 UTC  03-25        07.8FT
 SANTA MARTA  COLOMBIA          1547 UTC  03-25        04.8FT
 LIMON  COSTA RICA              1544 UTC  03-25        01.9FT
 SAN ANDRES  COLOMBIA           1555 UTC  03-25        03.3FT

 HEIGHT - OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE
          TIDE LEVEL AT THE TIME OF MEASUREMENT.


PRELIMINARY EARTHQUAKE PARAMETERS
---------------------------------
 * MAGNITUDE      8.5
 * ORIGIN TIME    1000  EDT MAR 25 2015
                  1000  AST MAR 25 2015
                  0900  CDT MAR 25 2015
                  1400  UTC MAR 25 2015
 * COORDINATES    10.3 NORTH 78.8 WEST
 * DEPTH          9 MILES
 * LOCATION       NORTH OF PANAMA


NEXT UPDATE AND ADDITIONAL INFORMATION
--------------------------------------
 * THIS MESSAGE WILL BE UPDATED WITHIN 60 MINUTES.

 * REFER TO THE INTERNET SITE NTWC.ARH.NOAA.GOV FOR MORE
   INFORMATION.

 * CARIBBEAN COASTAL REGIONS OUTSIDE PUERTO RICO... U.S. VIRGIN
   ISLANDS AND BRITISH VIRGIN ISLANDS SHOULD REFER TO THE PACIFIC
   TSUNAMI WARNING CENTER MESSAGES AT PTWC.WEATHER.GOV.

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## ***US NTWC Message #4***

WEXX30 PAAQ 251701
TSUATE

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 4
NWS NATIONAL TSUNAMI WARNING CENTER PALMER AK
101 PM AST WED MAR 25 2015

UPDATES
-------
THIS MESSAGE CONTAINS NEW OBSERVATIONS.

...THE TSUNAMI WARNING REMAINS IN EFFECT...

WARNINGS/ADVISORIES/WATCHES
---------------------------
TSUNAMI WARNING IN EFFECT FOR...

* COASTAL AREAS OF PUERTO RICO - THE U.S. VIRGIN ISLANDS AND
  THE BRITISH VIRGIN ISLANDS.

FOR OTHER US AND CANADIAN COASTS IN THE ATLANTIC
AND GULF OF MEXICO - THERE IS NO TSUNAMI THREAT.

IMPACTS FOR TSUNAMI WARNING AREAS
---------------------------------
* WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL
  CURRENTS ARE POSSIBLE AND MAY CONTINUE FOR MANY HOURS AFTER
  TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

RECOMMENDED ACTIONS
-------------------
* IF YOU ARE IN A WARNING AREA - MOVE INLAND TO HIGHER GROUND.

* BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.

* DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.

* DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS
  INDICATE IT IS SAFE TO DO SO.

FORECASTS AND/OR OBSERVATIONS OF TSUNAMI ACTIVITY
-------------------------------------------------

| SITE | FORECAST START OF OF TSUNAMI | FORECAST TSUNAMI DURATION | FORECAST MAX TSUNAMI HEIGHT |
|---|---|---|---|
| * PUERTO RICO | | | |
| AGUADILLA | 1212 AST MAR 25 | 30 HRS | 2.6- 4.8FT |
| MAYAGUEZ | 1215 AST MAR 25 | 30 HRS | 2.4- 4.4FT |
| SAN JUAN TG | 1229 AST MAR 25 | | LESS THAN 1FT |
| CULEBRA | 1237 AST MAR 25 | 9 HRS | 1.1- 2.1FT |
| * US VIRGIN ISLANDS | | | |
| CHRISTIANSTED | 1219 AST MAR 25 | 20 HRS | 1.5- 2.9FT |
| LAMESHUR BAY | 1230 AST MAR 25 | 36 HRS | 3.2- 5.8FT |
| CHARLOTTE AMALIE | 1305 AST MAR 25 | 30 HRS | 2.7- 5.1FT |

```
 * BRITISH VIRGIN IS.
ROADTOWN         1232  AST MAR 25  24 HRS    1.8- 3.4FT

FORECAST MAX TSUNAMI HEIGHT IS THE HIGHEST EXPECTED WATER LEVEL
ABOVE THE TIDE.

FORECAST TSUNAMI DURATION IS THE APPROXIMATE LENGTH OF TIME WHICH
THE TSUNAMI MAY PRODUCE DANGEROUS CURRENTS AND WAVE ACTIVITY.


ADDITIONAL OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED
-----------------------------------------------------
                                   TIME             OBSERVED MAX
 SITE                            OF MEASUREMENT      TSUNAMI HEIGHT
 ------------------------------ ---------------      --------------
 EL PORVENIR  PANAMA            1505 UTC  03-25        07.8FT
 SANTA MARTA  COLOMBIA          1634 UTC  03-25        08.6FT
 LIMON  COSTA RICA              1544 UTC  03-25        01.9FT
 SAN ANDRES  COLOMBIA           1623 UTC  03-25        06.2FT
 PORT AU PRINCE  HAITI          1631 UTC  03-25        01.3FT
 SANTO DOMINGO  DR              1634 UTC  03-25        02.9FT
 BULLEN BAY  CURACAO            1645 UTC  03-25        01.7FT
 MONA ISLAND  PR                1636 UTC  03-25        02.8FT
 MAYAGUEZ  PR                   1647 UTC  03-25        01.6FT
 MAGUEYES ISLAND  PR            1642 UTC  03-25        00.6FT
 YABUCOA  PR                    1641 UTC  03-25        01.9FT
 SAN JUAN  PR                   1640 UTC  03-25        00.4FT
 LIME TREE BAY  US VIRGI        1642 UTC  03-25        01.1FT
 CHRISTIANSTED HARBOR  U        1650 UTC  03-25        00.8FT
 ESPERANZA  VIEQUES ISLA        1652 UTC  03-25        01.2FT
 FAJARDO  PR                    1653 UTC  03-25        01.1FT
 CHARLOTTE AMALIE  US VI        1655 UTC  03-25        01.9FT
 LAMESHUR BAY  ST JOHNS         1655 UTC  03-25        01.7FT

 HEIGHT - OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE
          TIDE LEVEL AT THE TIME OF MEASUREMENT.


PRELIMINARY EARTHQUAKE PARAMETERS - UPDATED
-------------------------------------------
 * MAGNITUDE      8.5
 * ORIGIN TIME    1000  EDT MAR 25 2015
                  1000  AST MAR 25 2015
                  0900  CDT MAR 25 2015
                  1400  UTC MAR 25 2015
 * COORDINATES    10.3 NORTH 78.8 WEST
 * DEPTH          9 MILES
 * LOCATION       NORTH OF PANAMA


NEXT UPDATE AND ADDITIONAL INFORMATION
--------------------------------------
 * THIS MESSAGE WILL BE UPDATED WITHIN 60 MINUTES.

 * REFER TO THE INTERNET SITE NTWC.ARH.NOAA.GOV FOR MORE
   INFORMATION.

 * CARIBBEAN COASTAL REGIONS OUTSIDE PUERTO RICO... U.S. VIRGIN
   ISLANDS AND BRITISH VIRGIN ISLANDS SHOULD REFER TO THE PACIFIC
   TSUNAMI WARNING CENTER MESSAGES AT PTWC.WEATHER.GOV.

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## ***US NTWC Message #5***

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WEXX30 PAAQ 251800
TSUATE
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BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 5
NWS NATIONAL TSUNAMI WARNING CENTER PALMER AK
200 PM AST WED MAR 25 2015

UPDATES
---
THIS MESSAGE CONTAINS NEW OBSERVATIONS.

...THE TSUNAMI WARNING REMAINS IN EFFECT...

WARNINGS/ADVISORIES/WATCHES
---
TSUNAMI WARNING IN EFFECT FOR...

* COASTAL AREAS OF PUERTO RICO - THE U.S. VIRGIN ISLANDS AND THE BRITISH VIRGIN ISLANDS.

FOR OTHER US AND CANADIAN COASTS IN THE ATLANTIC
AND GULF OF MEXICO - THERE IS NO TSUNAMI THREAT.

IMPACTS FOR TSUNAMI WARNING AREAS
---
* WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS ARE POSSIBLE AND MAY CONTINUE FOR MANY HOURS AFTER TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

RECOMMENDED ACTIONS
---
* IF YOU ARE IN A WARNING AREA - MOVE INLAND TO HIGHER GROUND.

* BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.

* DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.

* DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS INDICATE IT IS SAFE TO DO SO.

FORECASTS AND/OR OBSERVATIONS OF TSUNAMI ACTIVITY
---

| SITE | FORECAST START OF TSUNAMI | FORECAST TSUNAMI DURATION | FORECAST MAX TSUNAMI HEIGHT |
|---|---|---|---|
| * US VIRGIN ISLANDS | | | |
| CHARLOTTE AMALIE | 1305 AST MAR 25 | 30 HRS | 2.7- 5.1FT |

FORECAST MAX TSUNAMI HEIGHT IS THE HIGHEST EXPECTED WATER LEVEL ABOVE THE TIDE.

FORECAST TSUNAMI DURATION IS THE APPROXIMATE LENGTH OF TIME WHICH THE TSUNAMI MAY PRODUCE DANGEROUS CURRENTS AND WAVE ACTIVITY.

ADDITIONAL OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED
---

| SITE | TIME OF MEASUREMENT | OBSERVED MAX TSUNAMI HEIGHT |
|---|---|---|
| EL PORVENIR PANAMA | 1505 UTC 03-25 | 07.8FT |

| | | | |
|---|---|---|---|
| SANTA MARTA COLOMBIA | 1634 UTC | 03-25 | 08.6FT |
| LIMON COSTA RICA | 1544 UTC | 03-25 | 01.9FT |
| SAN ANDRES COLOMBIA | 1623 UTC | 03-25 | 06.2FT |
| PORT AU PRINCE HAITI | 1722 UTC | 03-25 | 02.1FT |
| SANTO DOMINGO DR | 1734 UTC | 03-25 | 09.8FT |
| BULLEN BAY CURACAO | 1715 UTC | 03-25 | 02.4FT |
| MONA ISLAND PR | 1745 UTC | 03-25 | 05.6FT |
| MAYAGUEZ PR | 1732 UTC | 03-25 | 03.0FT |
| MAGUEYES ISLAND PR | 1746 UTC | 03-25 | 02.9FT |
| YABUCOA PR | 1735 UTC | 03-25 | 04.2FT |
| SAN JUAN PR | 1721 UTC | 03-25 | 00.4FT |
| LIME TREE BAY US VIRGI | 1756 UTC | 03-25 | 02.1FT |
| CHRISTIANSTED HARBOR U | 1731 UTC | 03-25 | 01.8FT |
| ESPERANZA VIEQUES ISLA | 1751 UTC | 03-25 | 03.5FT |
| FAJARDO PR | 1755 UTC | 03-25 | 01.7FT |
| CHARLOTTE AMALIE US VI | 1748 UTC | 03-25 | 03.6FT |
| LAMESHUR BAY ST JOHNS | 1744 UTC | 03-25 | 04.2FT |
| PUERTO PLATA DR | 1744 UTC | 09-06 | 00.4FT |
| BASSETERRE CG BASE ST. | 1734 UTC | 09-06 | 01.6FT |
| BARBUDA | 1745 UTC | 09-06 | 01.3FT |
| DESIRADE GUADELOUPE | 1739 UTC | 09-06 | 01.1FT |
| ROSEAU DOMINICA | 1751 UTC | 09-06 | 00.5FT |
| CALLIAQUA CG BASE ST. | 1734 UTC | 09-06 | 01.0FT |
| PRICKLY BAY GRENADA | 1745 UTC | 09-06 | 00.6FT |

HEIGHT - OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

PRELIMINARY EARTHQUAKE PARAMETERS

* MAGNITUDE 8.5
* ORIGIN TIME 1000 EDT MAR 25 2015
  1000 AST MAR 25 2015
  0900 CDT MAR 25 2015
  1400 UTC MAR 25 2015
* COORDINATES 10.3 NORTH 78.8 WEST
* DEPTH 9 MILES
* LOCATION NORTH OF PANAMA

NEXT UPDATE AND ADDITIONAL INFORMATION

* THIS MESSAGE WILL BE UPDATED WITHIN 60 MINUTES.

* REFER TO THE INTERNET SITE NTWC.ARH.NOAA.GOV FOR MORE INFORMATION.

* CARIBBEAN COASTAL REGIONS OUTSIDE PUERTO RICO... U.S. VIRGIN ISLANDS AND BRITISH VIRGIN ISLANDS SHOULD REFER TO THE PACIFIC TSUNAMI WARNING CENTER MESSAGES AT PTWC.WEATHER.GOV.

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## ***US NTWC Message #6***

WEXX30 PAAQ 251901
TSUATE

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 6
NWS NATIONAL TSUNAMI WARNING CENTER PALMER AK
301 PM AST WED MAR 25 2015

UPDATES
-------
THIS MESSAGE CONTAINS NEW OBSERVATIONS.
THIS MESSAGE MODIFIES THE ALERT AREAS.

...A TSUNAMI ADVISORY IS NOW IN EFFECT...

WARNINGS/ADVISORIES/WATCHES - UPDATED
-------------------------------------

TSUNAMI ADVISORY IN EFFECT FOR...

 * COASTAL AREAS OF PUERTO RICO - THE U.S. VIRGIN ISLANDS AND
   THE BRITISH VIRGIN ISLANDS.

FOR OTHER US AND CANADIAN COASTS IN THE ATLANTIC
AND GULF OF MEXICO - THERE IS NO TSUNAMI THREAT.

IMPACTS FOR TSUNAMI ADVISORY AREAS
----------------------------------
 * A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS
   TO PERSONS IN OR VERY NEAR THE WATER IS EXPECTED.

 * CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL
   STRUCTURES AND MAY CONTINUE FOR MANY HOURS AFTER THE TSUNAMI
   ARRIVAL.

 * THE FIRST WAVE MAY NOT BE THE LARGEST.

RECOMMENDED ACTIONS - UPDATED
-----------------------------
 * IF YOU ARE IN AN ADVISORY AREA - MOVE OFF THE BEACH AND OUT OF
   HARBORS AND MARINAS.  WIDESPREAD INUNDATION OF LAND IS NOT
   EXPECTED FOR ADVISORY AREAS.

 * BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.

 * DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.

 * DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS
   INDICATE IT IS SAFE TO DO SO.

ADDITIONAL OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED
-----------------------------------------------------

| SITE | TIME OF MEASUREMENT | OBSERVED MAX TSUNAMI HEIGHT |
|---|---|---|
| EL PORVENIR  PANAMA | 1505 UTC  03-25 | 07.8FT |
| SANTA MARTA  COLOMBIA | 1634 UTC  03-25 | 08.6FT |
| LIMON  COSTA RICA | 1544 UTC  03-25 | 01.9FT |
| SAN ANDRES  COLOMBIA | 1623 UTC  03-25 | 06.2FT |
| PORT AU PRINCE  HAITI | 1722 UTC  03-25 | 02.1FT |
| SANTO DOMINGO  DR | 1734 UTC  03-25 | 09.8FT |

| | | | |
|---|---|---|---|
| BULLEN BAY CURACAO | 1715 UTC | 03-25 | 02.4FT |
| MONA ISLAND PR | 1745 UTC | 03-25 | 05.6FT |
| MAYAGUEZ PR | 1732 UTC | 03-25 | 03.0FT |
| MAGUEYES ISLAND PR | 1746 UTC | 03-25 | 02.9FT |
| YABUCOA PR | 1735 UTC | 03-25 | 04.2FT |
| SAN JUAN PR | 1721 UTC | 03-25 | 00.4FT |
| LIME TREE BAY US VIRGI | 1756 UTC | 03-25 | 02.1FT |
| CHRISTIANSTED HARBOR U | 1731 UTC | 03-25 | 01.8FT |
| ESPERANZA VIEQUES ISLA | 1751 UTC | 03-25 | 03.5FT |
| FAJARDO PR | 1755 UTC | 03-25 | 01.7FT |
| CHARLOTTE AMALIE US VI | 1748 UTC | 03-25 | 03.6FT |
| LAMESHUR BAY ST JOHNS | 1744 UTC | 03-25 | 04.2FT |
| PUERTO PLATA DR | 1823 UTC | 09-06 | 00.5FT |
| BASSETERRE CG BASE ST. | 1845 UTC | 09-06 | 01.9FT |
| BARBUDA | 1812 UTC | 09-06 | 01.8FT |
| DESIRADE GUADELOUPE | 1845 UTC | 09-06 | 01.7FT |
| ROSEAU DOMINICA | 1822 UTC | 09-06 | 00.7FT |
| CALLIAQUA CG BASE ST. | 1847 UTC | 09-06 | 01.4FT |
| PRICKLY BAY GRENADA | 1821 UTC | 09-06 | 00.7FT |

HEIGHT - OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

PRELIMINARY EARTHQUAKE PARAMETERS

* MAGNITUDE 8.5
* ORIGIN TIME 1000 EDT MAR 25 2015
  1000 AST MAR 25 2015
  0900 CDT MAR 25 2015
  1400 UTC MAR 25 2015
* COORDINATES 10.3 NORTH 78.8 WEST
* DEPTH 9 MILES
* LOCATION NORTH OF PANAMA

NEXT UPDATE AND ADDITIONAL INFORMATION

* THIS MESSAGE WILL BE UPDATED WITHIN 60 MINUTES.

* REFER TO THE INTERNET SITE NTWC.ARH.NOAA.GOV FOR MORE INFORMATION.

* CARIBBEAN COASTAL REGIONS OUTSIDE PUERTO RICO... U.S. VIRGIN ISLANDS AND BRITISH VIRGIN ISLANDS SHOULD REFER TO THE PACIFIC TSUNAMI WARNING CENTER MESSAGES AT PTWC.WEATHER.GOV.

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## ***US NTWC Message #7***

WEXX30 PAAQ 251945
TSUATE

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 7
NWS NATIONAL TSUNAMI WARNING CENTER PALMER AK
345 PM AST WED MAR 25 2015

...THE TSUNAMI ADVISORY IS CANCELLED...

CANCELLATIONS
---
* THE TSUNAMI ADVISORY IS CANCELED FOR PUERTO RICO - THE U.S. VIRGIN ISLANDS AND THE BRITISH VIRGIN ISLANDS

IMPACTS - UPDATED
---
* TSUNAMI ACTIVITY HAS SUBSIDED ALONG THE COASTS OF PUERTO RICO... U.S. VIRGIN ISLANDS... BRITISH VIRGIN ISLANDS... AND U.S. AND CANADIAN COASTS IN THE ATLANTIC.

* ONGOING ACTIVITY MAY PERSIST IN SOME AREAS CAUSING STRONG CURRENTS DANGEROUS TO SWIMMERS AND BOATS.

* THE DETERMINATION TO RE-OCCUPY HAZARD ZONES MUST BE MADE BY LOCAL OFFICIALS.

RECOMMENDED ACTIONS - UPDATED
---
* DO NOT RE-OCCUPY HAZARD ZONES UNTIL LOCAL EMERGENCY OFFICIALS INDICATE IT IS SAFE TO DO SO.

OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED
---

| SITE | TIME OF MEASUREMENT | OBSERVED MAX TSUNAMI HEIGHT |
|---|---|---|
| EL PORVENIR PANAMA | 1505 UTC 03-25 | 07.8FT |
| SANTA MARTA COLOMBIA | 1634 UTC 03-25 | 08.6FT |
| LIMON COSTA RICA | 1544 UTC 03-25 | 01.9FT |
| SAN ANDRES COLOMBIA | 1623 UTC 03-25 | 06.2FT |
| PORT AU PRINCE HAITI | 1722 UTC 03-25 | 02.1FT |
| SANTO DOMINGO DR | 1734 UTC 03-25 | 09.8FT |
| BULLEN BAY CURACAO | 1715 UTC 03-25 | 02.4FT |
| MONA ISLAND PR | 1745 UTC 03-25 | 05.6FT |
| MAYAGUEZ PR | 1732 UTC 03-25 | 03.0FT |
| MAGUEYES ISLAND PR | 1746 UTC 03-25 | 02.9FT |
| YABUCOA PR | 1735 UTC 03-25 | 04.2FT |
| SAN JUAN PR | 1721 UTC 03-25 | 00.4FT |
| LIME TREE BAY US VIRGI | 1756 UTC 03-25 | 02.1FT |
| CHRISTIANSTED HARBOR U | 1731 UTC 03-25 | 01.8FT |
| ESPERANZA VIEQUES ISLA | 1751 UTC 03-25 | 03.5FT |
| FAJARDO PR | 1755 UTC 03-25 | 01.7FT |
| CHARLOTTE AMALIE US VI | 1748 UTC 03-25 | 03.6FT |
| LAMESHUR BAY ST JOHNS | 1744 UTC 03-25 | 04.2FT |
| PUERTO PLATA DR | 1823 UTC 09-06 | 00.5FT |
| BASSETERRE CG BASE ST. | 1845 UTC 09-06 | 01.9FT |
| BARBUDA | 1812 UTC 09-06 | 01.8FT |
| DESIRADE GUADELOUPE | 1845 UTC 09-06 | 01.7FT |
| ROSEAU DOMINICA | 1822 UTC 09-06 | 00.7FT |
| CALLIAQUA CG BASE ST. | 1847 UTC 09-06 | 01.4FT |
| PRICKLY BAY GRENADA | 1922 UTC 09-06 | 00.8FT |

HEIGHT - OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE
TIDE LEVEL AT THE TIME OF MEASUREMENT.

NEXT UPDATE AND ADDITIONAL INFORMATION
---

* THIS WILL BE THE FINAL U.S. NATIONAL TSUNAMI WARNING CENTER MESSAGE ISSUED FOR THIS EVENT.

* REFER TO THE INTERNET SITE NTWC.ARH.NOAA.GOV FOR MORE INFORMATION.

* CARIBBEAN COASTAL REGIONS OUTSIDE PUERTO RICO... U.S. VIRGIN ISLANDS AND BRITISH VIRGIN ISLANDS SHOULD REFER TO THE PACIFIC TSUNAMI WARNING CENTER MESSAGES AT PTWC.WEATHER.GOV.

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# ***US NTWC Spanish Bulletin #1***

WEXX40 PAAQ 251405
TSUSPN

BULLETIN
MENSAJE DE TSUNAMI NUMERO 1
NWS CENTRO NACIONAL DE ALERTA DE TSUNAMI PALMER AK
1005 AM AST WED MAR 25 2015

...UNA ADVERTENCIA DE TSUNAMI ESTA AHORA EN EFECTO...

AVISOS/ADVERTENCIAS/VIGILANCIAS
---

ADVERTENCIA DE TSUNAMI EN EFECTO PARA...

* AREAS COSTERAS DE PUERTO RICO - ISLAS VIRGENES DE LOS ESTADOS UNIDOS E ISLAS VIRGENES BRITANICAS.

PARA OTRAS COSTAS DEL PACIFICO DE LOS ESTADOS UNIDOS Y CANADA EN NORTE AMERICA - EL NIVEL DE AMENAZA DE TSUNAMI ESTA SIENDO EVALUADO. SE PROVEERA INFORMACION ADICIONAL EN MENSAJES SUPLEMENTARIOS.

PARAMETROS PRELIMINARES DEL TERREMOTO
---

| | |
|---|---|
| * MAGNITUD | 8.0 |
| * TIEMPO DE ORIGEN | 1000 EDT MAR 25 2015 |
| | 1000 AST MAR 25 2015 |
| | 0900 CDT MAR 25 2015 |
| | 1400 UTC MAR 25 2015 |
| * COORDENADAS | 10.3 NORTE 78.8 OESTE |
| * PROFUNDIDAD | 9 MILLAS |
| * LOCALIZACION | NORTH OF PANAMA |

IMPACTOS PARA AREAS BAJO ADVERTENCIA DE TSUNAMI
---

* UN TSUNAMI CAPAZ DE PRODUCIR FUERTES CORRIENTES U OLAS PELIGROSAS A PERSONAS EN O MUY CERCA DEL AGUA ES ESPERADO.

* CORRIENTES PUEDEN SER PELIGROSAS PARA NADADORES…EMBARCACIONES Y ESTRUCTURAS COSTERAS Y PUEDEN CONTINUAR POR MUCHAS HORAS DESPUES DE LA LLEGADA DEL TSUNAMI.

* LA PRIMERA OLA PUEDE NO SER LA MAS GRANDE.

ACCIONES RECOMENDADAS
---

* SI SE ENCUENTRA EN UN AREA BAJO ADVERTENCIA - SALGASE DE LA PLAYA BAHIAS Y MARINAS. NO SE ESPERAN INUNDACIONES GENERALIZADAS PARA AREAS BAJO ADVERTENCIA

* ESTE ALERTA A INSTRUCCIONES DE SUS AUTORIDADES DE MANEJO DE EMERGENCIA.

* NO VAYA A LA COSTA PARA OBSERVAR EL TSUNAMI.

* NO REGRESE A LA COSTA HASTA QUE LAS AUTORIDADES LOCALES DE MANEJO DE EMERGENCIA INDIQUEN QUE ES SEGURO HACERLO.

OBSERVACIONES Y/O PRONOSTICOS DEL TSUNAMI
---

| LUGAR | LLEGADA PRONOSTICADA DEL TSUNAMI | |
|---|---|---|
| * PUERTO RICO | | |
| AGUADILLA | 1217 | AST MAR 25 |
| MAYAGUEZ | 1220 | AST MAR 25 |
| SAN JUAN TG | 1234 | AST MAR 25 |
| CULEBRA | 1242 | AST MAR 25 |
| * US VIRGIN ISLANDS | | |
| CHRISTIANSTED | 1224 | AST MAR 25 |
| LAMESHUR BAY | 1235 | AST MAR 25 |
| CHARLOTTE AMALIE | 1310 | AST MAR 25 |
| * BRITISH VIRGIN IS. | | |
| ROADTOWN | 1237 | AST MAR 25 |

PROXIMA ACTUALIZACION E INFORMACION ADICIONAL

* ESTE MENSAJE SERA ACTUALIZADO EN 60 MINUTOS.

* PARA ACCEDER A INFORMACION ADICIONAL CONSULTE EL SITIO DE INTERNET NTWC.ARH.NOAA.GOV.

* REGIONES COSTERAS DEL CARIBE FUERA DE PUERTO RICO... ISLAS VIRGENES DE LOS ESTADOS UNIDOS E ISLAS VIRGENES BRITANICAS DEBEN CONSULTAR LOS MENSAJES EMITIDOS POR EL CENTRO DE ALERTA DE TSUNAMI DEL PACIFICO EN SU SITIO DE INTERNET PTWC.WEATHER.GOV.

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## ***US NTWC Spanish Bulletin #2***

```
WEXX40 PAAQ 251500
TSUSPN

BULLETIN
MENSAJE DE TSUNAMI NUMERO 2
NWS CENTRO NACIONAL DE ALERTA DE TSUNAMI PALMER AK
1100 AM AST WED MAR 25 2015

ACTUALIZACIONES
---------------
ESTE MENSAJE INCLUYE UNA MAGNITUD REVISADA.
ESTE MENSAJE INCLUYE NUEVAS OBSERVACIONES.
ESTE MENSAJE MODIFICA LAS REGIONES BAJO ALERTA.
THE ALERT LEVEL FOR PUERTO RICO, US VIRGIN ISLANDS, AND BRITISH
VIRGIN ISLANDS HAS BEEN UPGRADED FROM ADVISORY TO WARNING.
TZHE UPGRADE IS BASED ON FORECAST MODEL RESULTS.
TSUNAMI HEIGHT FORECAST FOR PR/VI RANGE UP TO 6 FT.


...UN AVISO DE TSUNAMI ESTA AHORA EN EFECTO...


AVISOS/ADVERTENCIAS/VIGILANCIAS - ACTUALIZADOS
----------------------------------------------
AVISO DE TSUNAMI EN EFECTO PARA...

 * AREAS COSTERAS DE PUERTO RICO - ISLAS VIRGENES DE LOS
   ESTADOS UNIDOS E ISLAS VIRGENES BRITANICAS.


PARA OTRAS COSTAS DE ESTADOS UNIDOS Y CANADA EN EL ATLANTICO
Y GOLFO DE MEXICO - NO EXISTE AMENAZA DE TSUNAMI.


IMPACTOS PARA AREAS BAJO AVISO DE TSUNAMI
-----------------------------------------
 * AMPLIAS INUNDACIONES COSTERAS PELIGROSAS ACOMPANADAS POR FUERTES
   CORRIENTES SON POSIBLES Y PUEDEN CONTINUAR POR MUCHAS HORAS
   DESPUES DE LA LLEGADA DEL TSUNAMI.

 * LA PRIMERA OLA PUEDE NO SER LA MAS GRANDE.


ACCIONES RECOMENDADAS - ACTUALIZADAS
------------------------------------
 * SI SE ENCUENTRA EN UN AREA BAJO AVISO - MUEVASE TIERRA ADENTRO
   A LUGARES ELEVADOS.

 * ESTE ALERTA A INSTRUCCIONES DE SUS AUTORIDADES DE MANEJO DE
   EMERGENCIA.

 * NO VAYA A LA COSTA PARA OBSERVAR EL TSUNAMI.

 * NO REGRESE A LA COSTA HASTA QUE LAS AUTORIDADES LOCALES DE
   MANEJO DE EMERGENCIA INDIQUEN QUE ES SEGURO HACERLO.


OBSERVACIONES Y/O PRONOSTICOS DEL TSUNAMI
-----------------------------------------
                 LLEGADA
                 PRONOSTICADA
LUGAR            DEL TSUNAMI
-----            ----------

 * PUERTO RICO
AGUADILLA        1212  AST MAR 25
MAYAGUEZ         1215  AST MAR 25
```

```
SAN JUAN TG      1229  AST MAR 25
CULEBRA          1237  AST MAR 25

 * US VIRGIN ISLANDS
CHRISTIANSTED    1219  AST MAR 25
LAMESHUR BAY     1230  AST MAR 25
CHARLOTTE AMALIE 1305  AST MAR 25

 * BRITISH VIRGIN IS.
ROADTOWN         1232  AST MAR 25


OBSERVACIONES ADICIONALES DEL TSUNAMI  - ACTUALIZADAS
-----------------------------------------------------
                                   HORA         ALTURA MAX OBSERVADA
 LUGAR                           DE LA MEDICION       DEL TSUNAMI
 ------------------------------ ---------------      --------------
 EL PORVENIR  PANAMA            1455 UTC  03-25        07.8FT

 ALTURA - ALTURA MAX OBSERVADA DEL TSUNAMI ES EL NIVEL DEL AGUA
          POR ENCIMA DE LA MAREA A LA HORA DE LA MEDICION.


PARAMETROS PRELIMINARES DEL TERREMOTO
-------------------------------------
 * MAGNITUD          8.5
 * TIEMPO DE ORIGEN  1000  EDT MAR 25 2015
                     1000  AST MAR 25 2015
                     0900  CDT MAR 25 2015
                     1400  UTC MAR 25 2015
 * COORDENADAS       10.3 NORTE 78.8 OESTE
 * PROFUNDIDAD       9 MILLAS
 * LOCALIZACION      NORTH OF PANAMA


PROXIMA ACTUALIZACION E INFORMACION ADICIONAL - ACTUALIZADAS
-----------------------------------------------------------
 * ESTE MENSAJE SERA ACTUALIZADO EN 60 MINUTOS.

 * PARA ACCEDER A INFORMACION ADICIONAL CONSULTE EL SITIO DE
   INTERNET NTWC.ARH.NOAA.GOV.

 * REGIONES COSTERAS DEL CARIBE FUERA DE PUERTO RICO... ISLAS
   VIRGENES DE LOS ESTADOS UNIDOS E ISLAS VIRGENES BRITANICAS
   DEBEN CONSULTAR LOS MENSAJES EMITIDOS POR EL CENTRO
   DE ALERTA DE TSUNAMI DEL PACIFICO EN SU SITIO DE INTERNET
   PTWC.WEATHER.GOV.

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## ***US NTWC Spanish Bulletin #3***

WEXX40 PAAQ 251602
TSUSPN

BULLETIN
MENSAJE DE TSUNAMI NUMERO 3
NWS CENTRO NACIONAL DE ALERTA DE TSUNAMI PALMER AK
1202 PM AST WED MAR 25 2015

ACTUALIZACIONES
---
ESTE MENSAJE INCLUYE NUEVAS OBSERVACIONES.
ESTE MENSAJE INCLUYE INFORMACION DE PRONOSTICO REVISADA.

...EL AVISO DE TSUNAMI PERMANECE EN EFECTO...

AVISOS/ADVERTENCIAS/VIGILANCIAS
---
AVISO DE TSUNAMI EN EFECTO PARA...

* AREAS COSTERAS DE PUERTO RICO - ISLAS VIRGENES DE LOS ESTADOS UNIDOS E ISLAS VIRGENES BRITANICAS.

PARA OTRAS COSTAS DE ESTADOS UNIDOS Y CANADA EN EL ATLANTICO Y GOLFO DE MEXICO - NO EXISTE AMENAZA DE TSUNAMI.

IMPACTOS PARA AREAS BAJO AVISO DE TSUNAMI
---
* AMPLIAS INUNDACIONES COSTERAS PELIGROSAS ACOMPANADAS POR FUERTES CORRIENTES SON POSIBLES Y PUEDEN CONTINUAR POR MUCHAS HORAS DESPUES DE LA LLEGADA DEL TSUNAMI.

* LA PRIMERA OLA PUEDE NO SER LA MAS GRANDE.

ACCIONES RECOMENDADAS
---
* SI SE ENCUENTRA EN UN AREA BAJO AVISO - MUEVASE TIERRA ADENTRO A LUGARES ELEVADOS.

* ESTE ALERTA A INSTRUCCIONES DE SUS AUTORIDADES DE MANEJO DE EMERGENCIA.

* NO VAYA A LA COSTA PARA OBSERVAR EL TSUNAMI.

* NO REGRESE A LA COSTA HASTA QUE LAS AUTORIDADES LOCALES DE MANEJO DE EMERGENCIA INDIQUEN QUE ES SEGURO HACERLO.

OBSERVACIONES Y/O PRONOSTICOS DEL TSUNAMI
---

| LUGAR | LLEGADA PRONOSTICADA DEL TSUNAMI | PRONOSTICO DE DURACION DEL TSUNAMI | ALTURA MAX PRONOSTICADA DEL TSUNAMI |
|---|---|---|---|
| * PUERTO RICO | | | |
| AGUADILLA | 1212 AST MAR 25 | 30 HRS | 2.6- 4.8PIE |
| MAYAGUEZ | 1215 AST MAR 25 | 30 HRS | 2.4- 4.4PIE |
| SAN JUAN TG | 1229 AST MAR 25 | | LESS THAN 1PIE |
| CULEBRA | 1237 AST MAR 25 | 9 HRS | 1.1- 2.1PIE |
| * US VIRGIN ISLANDS | | | |
| CHRISTIANSTED | 1219 AST MAR 25 | 20 HRS | 1.5- 2.9PIE |

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LAMESHUR BAY     1230  AST MAR 25  36 HRS    3.2- 5.8PIE
CHARLOTTE AMALIE 1305  AST MAR 25  30 HRS    2.7- 5.1PIE

 * BRITISH VIRGIN IS.
ROADTOWN         1232  AST MAR 25  24 HRS    1.8- 3.4PIE

ALTURA MAX PRONOSTICADA DEL TSUNAMI ES EL NIVEL DE AGUA MAS ALTO
ESPERADO POR ENCIMA DE LA MAREA.

LA DURACION MAXIMA DEL TSUNAMI ES EL TIEMPO APROXIMADO QUE SE
ESPERA QUE EL TSUNAMI PRODUZCA CORRIENTES Y OLEAJE PELIGROSA.


OBSERVACIONES ADICIONALES DEL TSUNAMI  - ACTUALIZADAS
-----------------------------------------------------
                                    HORA         ALTURA MAX OBSERVADA
 LUGAR                           DE LA MEDICION       DEL TSUNAMI
 ------------------------------ ---------------      --------------
 EL PORVENIR  PANAMA            1455 UTC  03-25         07.8FT
 SANTA MARTA  COLOMBIA          1547 UTC  03-25         04.8FT
 LIMON  COSTA RICA              1544 UTC  03-25         01.9FT
 SAN ANDRES  COLOMBIA           1555 UTC  03-25         03.3FT

 ALTURA - ALTURA MAX OBSERVADA DEL TSUNAMI ES EL NIVEL DEL AGUA
          POR ENCIMA DE LA MAREA A LA HORA DE LA MEDICION.


PARAMETROS PRELIMINARES DEL TERREMOTO
-------------------------------------
 * MAGNITUD          8.5
 * TIEMPO DE ORIGEN  1000  EDT MAR 25 2015
                     1000  AST MAR 25 2015
                     0900  CDT MAR 25 2015
                     1400  UTC MAR 25 2015
 * COORDENADAS       10.3 NORTE 78.8 OESTE
 * PROFUNDIDAD       9 MILLAS
 * LOCALIZACION      NORTH OF PANAMA


PROXIMA ACTUALIZACION E INFORMACION ADICIONAL
---------------------------------------------
 * ESTE MENSAJE SERA ACTUALIZADO EN 60 MINUTOS.

 * PARA ACCEDER A INFORMACION ADICIONAL CONSULTE EL SITIO DE
   INTERNET NTWC.ARH.NOAA.GOV.

 * REGIONES COSTERAS DEL CARIBE FUERA DE PUERTO RICO... ISLAS
   VIRGENES DE LOS ESTADOS UNIDOS E ISLAS VIRGENES BRITANICAS
   DEBEN CONSULTAR LOS MENSAJES EMITIDOS POR EL CENTRO
   DE ALERTA DE TSUNAMI DEL PACIFICO EN SU SITIO DE INTERNET
   PTWC.WEATHER.GOV.

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## ***US NTWC Spanish Bulletin #4***

WEXX40 PAAQ 251701
TSUSPN

BULLETIN
MENSAJE DE TSUNAMI NUMERO 4
NWS CENTRO NACIONAL DE ALERTA DE TSUNAMI PALMER AK
101 PM AST WED MAR 25 2015

ACTUALIZACIONES
---
ESTE MENSAJE INCLUYE NUEVAS OBSERVACIONES.

...EL AVISO DE TSUNAMI PERMANECE EN EFECTO...

AVISOS/ADVERTENCIAS/VIGILANCIAS
---
AVISO DE TSUNAMI EN EFECTO PARA...

* AREAS COSTERAS DE PUERTO RICO - ISLAS VIRGENES DE LOS ESTADOS UNIDOS E ISLAS VIRGENES BRITANICAS.

PARA OTRAS COSTAS DE ESTADOS UNIDOS Y CANADA EN EL ATLANTICO Y GOLFO DE MEXICO - NO EXISTE AMENAZA DE TSUNAMI.

IMPACTOS PARA AREAS BAJO AVISO DE TSUNAMI
---
* AMPLIAS INUNDACIONES COSTERAS PELIGROSAS ACOMPANADAS POR FUERTES CORRIENTES SON POSIBLES Y PUEDEN CONTINUAR POR MUCHAS HORAS DESPUES DE LA LLEGADA DEL TSUNAMI.

* LA PRIMERA OLA PUEDE NO SER LA MAS GRANDE.

ACCIONES RECOMENDADAS
---
* SI SE ENCUENTRA EN UN AREA BAJO AVISO - MUEVASE TIERRA ADENTRO A LUGARES ELEVADOS.

* ESTE ALERTA A INSTRUCCIONES DE SUS AUTORIDADES DE MANEJO DE EMERGENCIA.

* NO VAYA A LA COSTA PARA OBSERVAR EL TSUNAMI.

* NO REGRESE A LA COSTA HASTA QUE LAS AUTORIDADES LOCALES DE MANEJO DE EMERGENCIA INDIQUEN QUE ES SEGURO HACERLO.

OBSERVACIONES Y/O PRONOSTICOS DEL TSUNAMI
---

| LUGAR | LLEGADA PRONOSTICADA DEL TSUNAMI | PRONOSTICO DE DURACION DEL TSUNAMI | ALTURA MAX PRONOSTICADA DEL TSUNAMI |
|---|---|---|---|
| * PUERTO RICO | | | |
| AGUADILLA | 1212 AST MAR 25 | 30 HRS | 2.6- 4.8PIE |
| MAYAGUEZ | 1215 AST MAR 25 | 30 HRS | 2.4- 4.4PIE |
| SAN JUAN TG | 1229 AST MAR 25 | | LESS THAN 1PIE |
| CULEBRA | 1237 AST MAR 25 | 9 HRS | 1.1- 2.1PIE |
| * US VIRGIN ISLANDS | | | |
| CHRISTIANSTED | 1219 AST MAR 25 | 20 HRS | 1.5- 2.9PIE |
| LAMESHUR BAY | 1230 AST MAR 25 | 36 HRS | 3.2- 5.8PIE |

CHARLOTTE AMALIE 1305  AST MAR 25  30 HRS    2.7- 5.1PIE

 * BRITISH VIRGIN IS.
ROADTOWN         1232  AST MAR 25  24 HRS    1.8- 3.4PIE

ALTURA MAX PRONOSTICADA DEL TSUNAMI ES EL NIVEL DE AGUA MAS ALTO
ESPERADO POR ENCIMA DE LA MAREA.

LA DURACION MAXIMA DEL TSUNAMI ES EL TIEMPO APROXIMADO QUE SE
ESPERA QUE EL TSUNAMI PRODUZCA CORRIENTES Y OLEAJE PELIGROSA.

OBSERVACIONES ADICIONALES DEL TSUNAMI  - ACTUALIZADAS

| LUGAR | HORA DE LA MEDICION | ALTURA MAX OBSERVADA DEL TSUNAMI |
|---|---|---|
| EL PORVENIR  PANAMA | 1505 UTC  03-25 | 07.8FT |
| SANTA MARTA  COLOMBIA | 1634 UTC  03-25 | 08.6FT |
| LIMON  COSTA RICA | 1544 UTC  03-25 | 01.9FT |
| SAN ANDRES  COLOMBIA | 1623 UTC  03-25 | 06.2FT |
| PORT AU PRINCE  HAITI | 1631 UTC  03-25 | 01.3FT |
| SANTO DOMINGO  DR | 1634 UTC  03-25 | 02.9FT |
| BULLEN BAY  CURACAO | 1645 UTC  03-25 | 01.7FT |
| MONA ISLAND  PR | 1636 UTC  03-25 | 02.8FT |
| MAYAGUEZ  PR | 1647 UTC  03-25 | 01.6FT |
| MAGUEYES ISLAND  PR | 1642 UTC  03-25 | 00.6FT |
| YABUCOA  PR | 1641 UTC  03-25 | 01.9FT |
| SAN JUAN  PR | 1640 UTC  03-25 | 00.4FT |
| LIME TREE BAY  US VIRGI | 1642 UTC  03-25 | 01.1FT |
| CHRISTIANSTED HARBOR  U | 1650 UTC  03-25 | 00.8FT |
| ESPERANZA  VIEQUES ISLA | 1652 UTC  03-25 | 01.2FT |
| FAJARDO  PR | 1653 UTC  03-25 | 01.1FT |
| CHARLOTTE AMALIE  US VI | 1655 UTC  03-25 | 01.9FT |
| LAMESHUR BAY  ST JOHNS | 1655 UTC  03-25 | 01.7FT |

 ALTURA - ALTURA MAX OBSERVADA DEL TSUNAMI ES EL NIVEL DEL AGUA
          POR ENCIMA DE LA MAREA A LA HORA DE LA MEDICION.

PARAMETROS PRELIMINARES DEL TERREMOTO - ACTUALIZADOS

 * MAGNITUD          8.5
 * TIEMPO DE ORIGEN  1000  EDT MAR 25 2015
                     1000  AST MAR 25 2015
                     0900  CDT MAR 25 2015
                     1400  UTC MAR 25 2015
 * COORDENADAS       10.3 NORTE 78.8 OESTE
 * PROFUNDIDAD       9 MILLAS
 * LOCALIZACION      NORTH OF PANAMA

PROXIMA ACTUALIZACION E INFORMACION ADICIONAL

 * ESTE MENSAJE SERA ACTUALIZADO EN 60 MINUTOS.

 * PARA ACCEDER A INFORMACION ADICIONAL CONSULTE EL SITIO DE
   INTERNET NTWC.ARH.NOAA.GOV.

 * REGIONES COSTERAS DEL CARIBE FUERA DE PUERTO RICO... ISLAS
   VIRGENES DE LOS ESTADOS UNIDOS E ISLAS VIRGENES BRITANICAS
   DEBEN CONSULTAR LOS MENSAJES EMITIDOS POR EL CENTRO
   DE ALERTA DE TSUNAMI DEL PACIFICO EN SU SITIO DE INTERNET
   PTWC.WEATHER.GOV.

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## ***US NTWC Spanish Bulletin #5***

WEXX40 PAAQ 251800
TSUSPN

BULLETIN
MENSAJE DE TSUNAMI NUMERO 5
NWS CENTRO NACIONAL DE ALERTA DE TSUNAMI PALMER AK
200 PM AST WED MAR 25 2015

ACTUALIZACIONES
---
ESTE MENSAJE INCLUYE NUEVAS OBSERVACIONES.

...EL AVISO DE TSUNAMI PERMANECE EN EFECTO...

AVISOS/ADVERTENCIAS/VIGILANCIAS
---
AVISO DE TSUNAMI EN EFECTO PARA...

* AREAS COSTERAS DE PUERTO RICO - ISLAS VIRGENES DE LOS ESTADOS UNIDOS E ISLAS VIRGENES BRITANICAS.

PARA OTRAS COSTAS DE ESTADOS UNIDOS Y CANADA EN EL ATLANTICO
Y GOLFO DE MEXICO - NO EXISTE AMENAZA DE TSUNAMI.

IMPACTOS PARA AREAS BAJO AVISO DE TSUNAMI
---
* AMPLIAS INUNDACIONES COSTERAS PELIGROSAS ACOMPANADAS POR FUERTES CORRIENTES SON POSIBLES Y PUEDEN CONTINUAR POR MUCHAS HORAS DESPUES DE LA LLEGADA DEL TSUNAMI.

* LA PRIMERA OLA PUEDE NO SER LA MAS GRANDE.

ACCIONES RECOMENDADAS
---
* SI SE ENCUENTRA EN UN AREA BAJO AVISO - MUEVASE TIERRA ADENTRO A LUGARES ELEVADOS.

* ESTE ALERTA A INSTRUCCIONES DE SUS AUTORIDADES DE MANEJO DE EMERGENCIA.

* NO VAYA A LA COSTA PARA OBSERVAR EL TSUNAMI.

* NO REGRESE A LA COSTA HASTA QUE LAS AUTORIDADES LOCALES DE MANEJO DE EMERGENCIA INDIQUEN QUE ES SEGURO HACERLO.

OBSERVACIONES Y/O PRONOSTICOS DEL TSUNAMI
---

| LUGAR | LLEGADA PRONOSTICADA DEL TSUNAMI | PRONOSTICO DE DURACION DEL TSUNAMI | ALTURA MAX PRONOSTICADA DEL TSUNAMI |
|---|---|---|---|
| * US VIRGIN ISLANDS | | | |
| CHARLOTTE AMALIE | 1305 AST MAR 25 | 30 HRS | 2.7- 5.1PIE |

ALTURA MAX PRONOSTICADA DEL TSUNAMI ES EL NIVEL DE AGUA MAS ALTO ESPERADO POR ENCIMA DE LA MAREA.

LA DURACION MAXIMA DEL TSUNAMI ES EL TIEMPO APROXIMADO QUE SE ESPERA QUE EL TSUNAMI PRODUZCA CORRIENTES Y OLEAJE PELIGROSA.

OBSERVACIONES ADICIONALES DEL TSUNAMI - ACTUALIZADAS

| LUGAR | HORA DE LA MEDICION | ALTURA MAX OBSERVADA DEL TSUNAMI |
|---|---|---|
| EL PORVENIR PANAMA | 1505 UTC 03-25 | 07.8FT |
| SANTA MARTA COLOMBIA | 1634 UTC 03-25 | 08.6FT |
| LIMON COSTA RICA | 1544 UTC 03-25 | 01.9FT |
| SAN ANDRES COLOMBIA | 1623 UTC 03-25 | 06.2FT |
| PORT AU PRINCE HAITI | 1722 UTC 03-25 | 02.1FT |
| SANTO DOMINGO DR | 1734 UTC 03-25 | 09.8FT |
| BULLEN BAY CURACAO | 1715 UTC 03-25 | 02.4FT |
| MONA ISLAND PR | 1745 UTC 03-25 | 05.6FT |
| MAYAGUEZ PR | 1732 UTC 03-25 | 03.0FT |
| MAGUEYES ISLAND PR | 1746 UTC 03-25 | 02.9FT |
| YABUCOA PR | 1735 UTC 03-25 | 04.2FT |
| SAN JUAN PR | 1721 UTC 03-25 | 00.4FT |
| LIME TREE BAY US VIRGI | 1756 UTC 03-25 | 02.1FT |
| CHRISTIANSTED HARBOR U | 1731 UTC 03-25 | 01.8FT |
| ESPERANZA VIEQUES ISLA | 1751 UTC 03-25 | 03.5FT |
| FAJARDO PR | 1755 UTC 03-25 | 01.7FT |
| CHARLOTTE AMALIE US VI | 1748 UTC 03-25 | 03.6FT |
| LAMESHUR BAY ST JOHNS | 1744 UTC 03-25 | 04.2FT |
| PUERTO PLATA DR | 1744 UTC 09-06 | 00.4FT |
| BASSETERRE CG BASE ST. | 1734 UTC 09-06 | 01.6FT |
| BARBUDA | 1745 UTC 09-06 | 01.3FT |
| DESIRADE GUADELOUPE | 1739 UTC 09-06 | 01.1FT |
| ROSEAU DOMINICA | 1751 UTC 09-06 | 00.5FT |
| CALLIAQUA CG BASE ST. | 1734 UTC 09-06 | 01.0FT |
| PRICKLY BAY GRENADA | 1745 UTC 09-06 | 00.6FT |

ALTURA - ALTURA MAX OBSERVADA DEL TSUNAMI ES EL NIVEL DEL AGUA
POR ENCIMA DE LA MAREA A LA HORA DE LA MEDICION.

PARAMETROS PRELIMINARES DEL TERREMOTO

| | |
|---|---|
| * MAGNITUD | 8.5 |
| * TIEMPO DE ORIGEN | 1000 EDT MAR 25 2015 |
| | 1000 AST MAR 25 2015 |
| | 0900 CDT MAR 25 2015 |
| | 1400 UTC MAR 25 2015 |
| * COORDENADAS | 10.3 NORTE 78.8 OESTE |
| * PROFUNDIDAD | 9 MILLAS |
| * LOCALIZACION | NORTH OF PANAMA |

PROXIMA ACTUALIZACION E INFORMACION ADICIONAL

* ESTE MENSAJE SERA ACTUALIZADO EN 60 MINUTOS.

* PARA ACCEDER A INFORMACION ADICIONAL CONSULTE EL SITIO DE INTERNET NTWC.ARH.NOAA.GOV.

* REGIONES COSTERAS DEL CARIBE FUERA DE PUERTO RICO... ISLAS VIRGENES DE LOS ESTADOS UNIDOS E ISLAS VIRGENES BRITANICAS DEBEN CONSULTAR LOS MENSAJES EMITIDOS POR EL CENTRO DE ALERTA DE TSUNAMI DEL PACIFICO EN SU SITIO DE INTERNET PTWC.WEATHER.GOV.

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## ***US NTWC Spanish Bulletin #6***

WEXX40 PAAQ 251901
TSUSPN

BULLETIN
MENSAJE DE TSUNAMI NUMERO 6
NWS CENTRO NACIONAL DE ALERTA DE TSUNAMI PALMER AK
301 PM AST WED MAR 25 2015

ACTUALIZACIONES
---
ESTE MENSAJE INCLUYE NUEVAS OBSERVACIONES.
ESTE MENSAJE MODIFICA LAS REGIONES BAJO ALERTA.

...UNA ADVERTENCIA DE TSUNAMI ESTA AHORA EN EFECTO...

AVISOS/ADVERTENCIAS/VIGILANCIAS - ACTUALIZADOS
---

ADVERTENCIA DE TSUNAMI EN EFECTO PARA...

* AREAS COSTERAS DE PUERTO RICO - ISLAS VIRGENES DE LOS ESTADOS UNIDOS E ISLAS VIRGENES BRITANICAS.

PARA OTRAS COSTAS DE ESTADOS UNIDOS Y CANADA EN EL ATLANTICO Y GOLFO DE MEXICO - NO EXISTE AMENAZA DE TSUNAMI.

IMPACTOS PARA AREAS BAJO ADVERTENCIA DE TSUNAMI
---
* UN TSUNAMI CAPAZ DE PRODUCIR FUERTES CORRIENTES U OLAS PELIGROSAS A PERSONAS EN O MUY CERCA DEL AGUA ES ESPERADO.

* CORRIENTES PUEDEN SER PELIGROSAS PARA NADADORES…EMBARCACIONES Y ESTRUCTURAS COSTERAS Y PUEDEN CONTINUAR POR MUCHAS HORAS DESPUES DE LA LLEGADA DEL TSUNAMI.

* LA PRIMERA OLA PUEDE NO SER LA MAS GRANDE.

ACCIONES RECOMENDADAS - ACTUALIZADAS
---
* SI SE ENCUENTRA EN UN AREA BAJO ADVERTENCIA - SALGASE DE LA PLAYA BAHIAS Y MARINAS. NO SE ESPERAN INUNDACIONES GENERALIZADAS PARA AREAS BAJO ADVERTENCIA

* ESTE ALERTA A INSTRUCCIONES DE SUS AUTORIDADES DE MANEJO DE EMERGENCIA.

* NO VAYA A LA COSTA PARA OBSERVAR EL TSUNAMI.

* NO REGRESE A LA COSTA HASTA QUE LAS AUTORIDADES LOCALES DE MANEJO DE EMERGENCIA INDIQUEN QUE ES SEGURO HACERLO.

OBSERVACIONES ADICIONALES DEL TSUNAMI - ACTUALIZADAS
---

| LUGAR | HORA DE LA MEDICION | ALTURA MAX OBSERVADA DEL TSUNAMI |
|---|---|---|
| EL PORVENIR PANAMA | 1505 UTC 03-25 | 07.8FT |
| SANTA MARTA COLOMBIA | 1634 UTC 03-25 | 08.6FT |
| LIMON COSTA RICA | 1544 UTC 03-25 | 01.9FT |
| SAN ANDRES COLOMBIA | 1623 UTC 03-25 | 06.2FT |
| PORT AU PRINCE HAITI | 1722 UTC 03-25 | 02.1FT |
| SANTO DOMINGO DR | 1734 UTC 03-25 | 09.8FT |
| BULLEN BAY CURACAO | 1715 UTC 03-25 | 02.4FT |
| MONA ISLAND PR | 1745 UTC 03-25 | 05.6FT |
| MAYAGUEZ PR | 1732 UTC 03-25 | 03.0FT |
| MAGUEYES ISLAND PR | 1746 UTC 03-25 | 02.9FT |
| YABUCOA PR | 1735 UTC 03-25 | 04.2FT |

| | | | |
|---|---|---|---|
| SAN JUAN PR | 1721 UTC | 03-25 | 00.4FT |
| LIME TREE BAY US VIRGI | 1756 UTC | 03-25 | 02.1FT |
| CHRISTIANSTED HARBOR U | 1731 UTC | 03-25 | 01.8FT |
| ESPERANZA VIEQUES ISLA | 1751 UTC | 03-25 | 03.5FT |
| FAJARDO PR | 1755 UTC | 03-25 | 01.7FT |
| CHARLOTTE AMALIE US VI | 1748 UTC | 03-25 | 03.6FT |
| LAMESHUR BAY ST JOHNS | 1744 UTC | 03-25 | 04.2FT |
| PUERTO PLATA DR | 1823 UTC | 09-06 | 00.5FT |
| BASSETERRE CG BASE ST. | 1845 UTC | 09-06 | 01.9FT |
| BARBUDA | 1812 UTC | 09-06 | 01.8FT |
| DESIRADE GUADELOUPE | 1845 UTC | 09-06 | 01.7FT |
| ROSEAU DOMINICA | 1822 UTC | 09-06 | 00.7FT |
| CALLIAQUA CG BASE ST. | 1847 UTC | 09-06 | 01.4FT |
| PRICKLY BAY GRENADA | 1821 UTC | 09-06 | 00.7FT |

ALTURA - ALTURA MAX OBSERVADA DEL TSUNAMI ES EL NIVEL DEL AGUA
POR ENCIMA DE LA MAREA A LA HORA DE LA MEDICION.

PARAMETROS PRELIMINARES DEL TERREMOTO

* MAGNITUD 8.5
* TIEMPO DE ORIGEN 1000 EDT MAR 25 2015
1000 AST MAR 25 2015
0900 CDT MAR 25 2015
1400 UTC MAR 25 2015
* COORDENADAS 10.3 NORTE 78.8 OESTE
* PROFUNDIDAD 9 MILLAS
* LOCALIZACION NORTH OF PANAMA

PROXIMA ACTUALIZACION E INFORMACION ADICIONAL

* ESTE MENSAJE SERA ACTUALIZADO EN 60 MINUTOS.

* PARA ACCEDER A INFORMACION ADICIONAL CONSULTE EL SITIO DE INTERNET NTWC.ARH.NOAA.GOV.

* REGIONES COSTERAS DEL CARIBE FUERA DE PUERTO RICO... ISLAS VIRGENES DE LOS ESTADOS UNIDOS E ISLAS VIRGENES BRITANICAS DEBEN CONSULTAR LOS MENSAJES EMITIDOS POR EL CENTRO DE ALERTA DE TSUNAMI DEL PACIFICO EN SU SITIO DE INTERNET PTWC.WEATHER.GOV.

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# ***US NTWC Spanish Bulletin #7***

WEXX40 PAAQ 251945
TSUSPN

BULLETIN
MENSAJE DE TSUNAMI NUMERO 7
NWS CENTRO NACIONAL DE ALERTA DE TSUNAMI PALMER AK
345 PM AST WED MAR 25 2015

...LA ADVERTENCIA DE TSUNAMI HA SIDO CANCELADA...

CANCELACIONES
---

* LA ADVERTENCIA DE TSUNAMI HA SIDO CANCELADA PARA PUERTO RICO - ISLAS VIRGENES DE LOS ESTADOS UNIDOS E ISLAS VIRGENES BRITANICAS

IMPACTOS - ACTUALIZADOS
---

* LA ACTIVIDAD DE TSUNAMI HA DISMINUIDO A LO LARGO DE LAS COSTAS DE PUERTO RICO... ISLAS VIRGENES DE LOS ESTADOS UNIDOS... ISLAS VIRGENES BRITANICAS Y DE LAS COSTAS DEL ATLANTICO DE ESTADOS UNIDOS Y CANADA.

* ACTIVIDAD EN CURSO PUEDE SEGUIR EN ALGUNAS AREAS CAUSANDO FUERTES CORRIENTES PELIGROSOS PARA NADADORES Y EMBARCACIONES.

* LA DETERMINACION PARA VOLVER A OCUPAR ZONAS DE PELIGRO DEBE SER HECHA POR AUTORIDADES LOCALES.

ACCIONES RECOMENDADAS - ACTUALIZADAS
---

* NO REGRESEN A ZONAS DESALOJADAS HASTA QUE LAS AUTORIDADES LOCALES DE MANEJO DE EMERGENCIA INDIQUEN QUE ES SEGURO HACERLO.

OBSERVACIONES DEL TSUNAMI - ACTUALIZADAS
---

| LUGAR | HORA DE LA MEDICION | ALTURA MAX OBSERVADA DEL TSUNAMI |
|---|---|---|
| EL PORVENIR PANAMA | 1505 UTC 03-25 | 07.8FT |
| SANTA MARTA COLOMBIA | 1634 UTC 03-25 | 08.6FT |
| LIMON COSTA RICA | 1544 UTC 03-25 | 01.9FT |
| SAN ANDRES COLOMBIA | 1623 UTC 03-25 | 06.2FT |
| PORT AU PRINCE HAITI | 1722 UTC 03-25 | 02.1FT |
| SANTO DOMINGO DR | 1734 UTC 03-25 | 09.8FT |
| BULLEN BAY CURACAO | 1715 UTC 03-25 | 02.4FT |
| MONA ISLAND PR | 1745 UTC 03-25 | 05.6FT |
| MAYAGUEZ PR | 1732 UTC 03-25 | 03.0FT |
| MAGUEYES ISLAND PR | 1746 UTC 03-25 | 02.9FT |
| YABUCOA PR | 1735 UTC 03-25 | 04.2FT |
| SAN JUAN PR | 1721 UTC 03-25 | 00.4FT |
| LIME TREE BAY US VIRGI | 1756 UTC 03-25 | 02.1FT |
| CHRISTIANSTED HARBOR U | 1731 UTC 03-25 | 01.8FT |
| ESPERANZA VIEQUES ISLA | 1751 UTC 03-25 | 03.5FT |
| FAJARDO PR | 1755 UTC 03-25 | 01.7FT |
| CHARLOTTE AMALIE US VI | 1748 UTC 03-25 | 03.6FT |
| LAMESHUR BAY ST JOHNS | 1744 UTC 03-25 | 04.2FT |
| PUERTO PLATA DR | 1823 UTC 09-06 | 00.5FT |
| BASSETERRE CG BASE ST. | 1845 UTC 09-06 | 01.9FT |
| BARBUDA | 1812 UTC 09-06 | 01.8FT |
| DESIRADE GUADELOUPE | 1845 UTC 09-06 | 01.7FT |
| ROSEAU DOMINICA | 1822 UTC 09-06 | 00.7FT |

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 CALLIAQUA CG BASE  ST.       1847 UTC  09-06        01.4FT
 PRICKLY BAY  GRENADA         1922 UTC  09-06        00.8FT

 ALTURA - ALTURA MAX OBSERVADA DEL TSUNAMI ES EL NIVEL DEL AGUA
          POR ENCIMA DE LA MAREA A LA HORA DE LA MEDICION.


PROXIMA ACTUALIZACION E INFORMACION ADICIONAL
---------------------------------------------
 * ESTE SERA EL ULTIMO BOLETIN PROVENIENTE DEL CENTRO NACIONAL
   DE ALERTA DE TSUNAMI DE LOS ESTADOS UNIDOS PARA ESTE EVENTO.

 * PARA ACCEDER A INFORMACION ADICIONAL CONSULTE EL SITIO DE
   INTERNET NTWC.ARH.NOAA.GOV.

 * REGIONES COSTERAS DEL CARIBE FUERA DE PUERTO RICO... ISLAS
   VIRGENES DE LOS ESTADOS UNIDOS E ISLAS VIRGENES BRITANICAS
   DEBEN CONSULTAR LOS MENSAJES EMITIDOS POR EL CENTRO
   DE ALERTA DE TSUNAMI DEL PACIFICO EN SU SITIO DE INTERNET
   PTWC.WEATHER.GOV.

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## ***PTWC Message #1***

TEST...TSUNAMI MESSAGE NUMBER 1 ...TEST
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
1406 UTC WED MAR 25 2015

THIS MESSAGE APPLIES TO COUNTRIES WITHIN AND BORDERING THE CARIBBEAN SEA...EXCEPT FOR PUERTO RICO...THE U.S. VIRGIN ISLANDS...AND THE BRITISH VIRGIN ISLANDS.

... A CARIBBEAN-WIDE TSUNAMI WATCH IS IN EFFECT ...

A TSUNAMI WATCH IS IN EFFECT FOR

PANAMA / COLOMBIA / COSTA RICA / HAITI / ARUBA / NICARAGUA / CAYMAN ISLANDS / JAMAICA / CUBA / BONAIRE / DOMINICAN REP / BAHAMAS / CURACAO / TURKS N CAICOS / VENEZUELA / SABA / SAINT KITTS / MONTSERRAT / MEXICO / HONDURAS / SINT EUSTATIUS / GUADELOUPE / DOMINICA / SAINT LUCIA / SINT MAARTEN / SAINT VINCENT / MARTINIQUE / ANGUILLA / GRENADA / BARBADOS / SAINT BARTHELEMY / ANTIGUA / BARBUDA / SAINT MARTIN / TRINIDAD TOBAGO / BELIZE / BERMUDA / GUATEMALA / FRENCH GUIANA / GUYANA / SURINAME / BRAZIL

THIS BULLETIN IS ISSUED AS ADVICE TO GOVERNMENT AGENCIES. ONLY NATIONAL AND LOCAL GOVERNMENT AGENCIES HAVE THE AUTHORITY TO MAKE DECISIONS REGARDING THE OFFICIAL STATE OF ALERT IN THEIR AREA AND ANY ACTIONS TO BE TAKEN IN RESPONSE.

AN EARTHQUAKE HAS OCCURRED WITH THESE PRELIMINARY PARAMETERS

ORIGIN TIME - 1400Z 25 MAR 2015
COORDINATES - 10.3 NORTH 78.8 WEST
LOCATION - NORTH OF PANAMA
MAGNITUDE - 8.0

EVALUATION

EARTHQUAKES OF THIS SIZE HAVE THE POTENTIAL TO GENERATE A WIDESPREAD DESTRUCTIVE TSUNAMI THAT CAN AFFECT COASTLINES ACROSS THE ENTIRE CARIBBEAN REGION.

HOWEVER - IT IS NOT KNOWN THAT A TSUNAMI WAS GENERATED. THIS WATCH IS BASED ONLY ON THE EARTHQUAKE EVALUATION. AUTHORITIES IN THE REGION SHOULD TAKE APPROPRIATE ACTION IN RESPONSE TO THE POSSIBILITY OF A WIDESPREAD DESTRUCTIVE TSUNAMI.

ESTIMATED INITIAL TSUNAMI WAVE ARRIVAL TIMES AT FORECAST POINTS WITHIN THE WARNING AND WATCH AREAS ARE GIVEN BELOW. ACTUAL ARRIVAL TIMES MAY DIFFER AND THE INITIAL WAVE MAY NOT BE THE LARGEST. A TSUNAMI IS A SERIES OF WAVES AND THE TIME BETWEEN SUCCESSIVE WAVES CAN BE FIVE MINUTES TO ONE HOUR.

| LOCATION | FORECAST POINT | COORDINATES | ARRIVAL TIME |
|---|---|---|---|
| PANAMA | ALIGANDI | 9.2N 78.0W | 1425Z 25 MAR |
| | PUERTO_CARRETO | 8.8N 77.6W | 1439Z 25 MAR |
| | COLON | 9.4N 79.9W | 1451Z 25 MAR |
| | PUERTO_OBALDIA | 8.7N 77.4W | 1453Z 25 MAR |
| | BOCAS_DEL_TORO | 9.4N 82.2W | 1506Z 25 MAR |
| COLOMBIA | CARTAGENA | 10.4N 75.6W | 1442Z 25 MAR |
| | PUNTA_CARIBANA | 8.6N 76.9W | 1459Z 25 MAR |
| | SANTA_MARTA | 11.2N 74.2W | 1502Z 25 MAR |
| | BARRANQUILLA | 11.1N 74.9W | 1516Z 25 MAR |
| | RIOHACHA | 11.6N 72.9W | 1552Z 25 MAR |
| COSTA RICA | PUERTO_LIMON | 10.0N 83.0W | 1454Z 25 MAR |
| HAITI | JACMEL | 18.1N 72.5W | 1535Z 25 MAR |
| | JEREMIE | 18.6N 74.1W | 1551Z 25 MAR |

| | | | | |
|---|---|---|---|---|
| | CAP_HAITEN | 19.8N | 72.2W | 1626Z 25 MAR |
| | PORT_AU_PRINCE | 18.5N | 72.4W | 1655Z 25 MAR |
| ARUBA | ORANJESTAD | 12.5N | 70.0W | 1547Z 25 MAR |
| NICARAGUA | PUNTA_GORDA | 11.4N | 83.8W | 1548Z 25 MAR |
| | PUERTO_CABEZAS | 14.0N | 83.4W | 1936Z 25 MAR |
| CAYMAN ISLANDS | CAYMAN_BRAC | 19.7N | 79.9W | 1551Z 25 MAR |
| | GRAND_CAYMAN | 19.3N | 81.3W | 1600Z 25 MAR |
| JAMAICA | KINGSTON | 17.9N | 76.9W | 1553Z 25 MAR |
| | MONTEGO_BAY | 18.5N | 77.9W | 1615Z 25 MAR |
| CUBA | SANTIAGO_D_CUBA | 19.9N | 75.8W | 1554Z 25 MAR |
| | BARACOA | 20.4N | 74.5W | 1614Z 25 MAR |
| | CIENFUEGOS | 22.0N | 80.5W | 1620Z 25 MAR |
| | GIBARA | 21.1N | 76.1W | 1634Z 25 MAR |
| | LA_HABANA | 23.2N | 82.4W | 1721Z 25 MAR |
| | SANTA_CRZ_D_SUR | 20.7N | 78.0W | 1854Z 25 MAR |
| | NUEVA_GERONA | 21.9N | 82.8W | 2010Z 25 MAR |
| BONAIRE | ONIMA | 12.3N | 68.3W | 1557Z 25 MAR |
| DOMINICAN REP | SANTO_DOMINGO | 18.5N | 69.9W | 1604Z 25 MAR |
| | CABO_ENGANO | 18.6N | 68.3W | 1628Z 25 MAR |
| | PUERTO_PLATA | 19.8N | 70.7W | 1637Z 25 MAR |
| BAHAMAS | GREAT_INAGUA | 20.9N | 73.7W | 1620Z 25 MAR |
| | MAYAGUANA | 22.3N | 73.0W | 1634Z 25 MAR |
| | LONG_ISLAND | 23.3N | 75.1W | 1654Z 25 MAR |
| | SAN_SALVADOR | 24.1N | 74.5W | 1654Z 25 MAR |
| | EXUMA | 23.6N | 75.9W | 1704Z 25 MAR |
| | CROOKED_ISLAND | 22.7N | 74.1W | 1709Z 25 MAR |
| | CAT_ISLAND | 24.4N | 75.5W | 1713Z 25 MAR |
| | ELEUTHERA_ISLAN | 25.2N | 76.1W | 1721Z 25 MAR |
| | ANDROS_ISLAND | 25.0N | 77.9W | 1730Z 25 MAR |
| | NASSAU | 25.1N | 77.4W | 1742Z 25 MAR |
| | FREEPORT | 26.5N | 78.8W | 1754Z 25 MAR |
| | ABACO_ISLAND | 26.6N | 77.1W | 1759Z 25 MAR |
| | BIMINI | 25.8N | 79.3W | 1807Z 25 MAR |
| CURACAO | WILLEMSTAD | 12.1N | 68.9W | 1621Z 25 MAR |
| TURKS N CAICOS | WEST_CAICOS | 21.7N | 72.5W | 1630Z 25 MAR |
| | GRAND_TURK | 21.5N | 71.1W | 1645Z 25 MAR |
| VENEZUELA | MAIQUETIA | 10.6N | 67.0W | 1634Z 25 MAR |
| | CUMANA | 10.5N | 64.2W | 1707Z 25 MAR |
| | PUNTO_FIJO | 11.7N | 70.2W | 1807Z 25 MAR |
| | GOLFO_VENEZUELA | 11.4N | 71.2W | 1906Z 25 MAR |
| | PORLAMAR | 10.9N | 63.8W | 2031Z 25 MAR |
| SABA | SABA | 17.6N | 63.2W | 1650Z 25 MAR |
| SAINT KITTS | BASSETERRE | 17.3N | 62.7W | 1652Z 25 MAR |
| MONTSERRAT | PLYMOUTH | 16.7N | 62.2W | 1653Z 25 MAR |
| MEXICO | COZUMEL | 20.5N | 87.0W | 1655Z 25 MAR |
| | MADERO | 22.3N | 97.8W | 1936Z 25 MAR |
| | VERACRUZ | 19.2N | 96.1W | 1941Z 25 MAR |
| | TEXAS_BORDER | 26.0N | 97.1W | 1951Z 25 MAR |
| | PROGRESO | 21.3N | 89.7W | 2042Z 25 MAR |
| | CAMPECHE | 19.9N | 90.5W | 2338Z 25 MAR |
| HONDURAS | PUERTO_CORTES | 15.9N | 88.0W | 1655Z 25 MAR |
| | TRUJILLO | 15.9N | 86.0W | 1741Z 25 MAR |
| SINT EUSTATIUS | SINT_EUSTATIUS | 17.5N | 63.0W | 1656Z 25 MAR |
| GUADELOUPE | BASSE_TERRE | 16.0N | 61.7W | 1656Z 25 MAR |
| DOMINICA | ROSEAU | 15.3N | 61.4W | 1657Z 25 MAR |
| SAINT LUCIA | CASTRIES | 14.0N | 61.0W | 1659Z 25 MAR |
| SINT MAARTEN | SIMPSON_BAAI | 18.0N | 63.1W | 1700Z 25 MAR |
| SAINT VINCENT | KINGSTOWN | 13.1N | 61.2W | 1701Z 25 MAR |
| MARTINIQUE | FORT_DE_FRANCE | 14.6N | 61.1W | 1704Z 25 MAR |
| ANGUILLA | THE_VALLEY | 18.3N | 63.1W | 1708Z 25 MAR |
| GRENADA | SAINT_GEORGES | 12.0N | 61.8W | 1710Z 25 MAR |
| BARBADOS | BRIDGETOWN | 13.1N | 59.6W | 1726Z 25 MAR |
| SAINT BARTHELEM | SAINT_BARTHELEM | 17.9N | 62.8W | 1727Z 25 MAR |
| ANTIGUA | SAINT_JOHNS | 17.1N | 61.9W | 1732Z 25 MAR |
| BARBUDA | PALMETTO_POINT | 17.6N | 61.9W | 1735Z 25 MAR |
| SAINT MARTIN | BAIE_BLANCHE | 18.1N | 63.0W | 1738Z 25 MAR |
| TRINIDAD TOBAGO | PIRATES_BAY | 11.3N | 60.6W | 1753Z 25 MAR |
| | PORT_OF_SPAIN | 10.6N | 61.5W | 1824Z 25 MAR |
| BELIZE | BELIZE_CITY | 17.5N | 88.2W | 1805Z 25 MAR |

| | | | | |
|---|---|---|---|---|
| BERMUDA | RUTHS_BAY | 32.4N | 64.6W | 1819Z 25 MAR |
| GUATEMALA | PUERTO_BARRIOS | 15.7N | 88.6W | 1847Z 25 MAR |
| FRENCH GUIANA | CAYENNE | 4.9N | 52.3W | 2103Z 25 MAR |
| GUYANA | GEORGETOWN | 6.8N | 58.2W | 2142Z 25 MAR |
| SURINAME | PARAMARIBO | 5.9N | 55.2W | 2203Z 25 MAR |
| BRAZIL | FORTALEZA | 3.7S | 38.5W | 2224Z 25 MAR |
| | SAO_LUIS | 2.5S | 44.3W | 0044Z 26 MAR |
| | ILHA_DE_MARACA | 2.2N | 50.5W | 0049Z 26 MAR |

ADDITIONAL BULLETINS WILL BE ISSUED BY THE PACIFIC TSUNAMI
WARNING CENTER FOR THIS EVENT AS MORE INFORMATION
BECOMES AVAILABLE.

## ***PTWC Message #2***

TEST...TSUNAMI MESSAGE NUMBER 2 ...TEST
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
1430 UTC WED MAR 25 2015

THIS MESSAGE APPLIES TO COUNTRIES WITHIN AND BORDERING THE CARIBBEAN SEA...EXCEPT FOR PUERTO RICO...THE U.S. VIRGIN ISLANDS...AND THE BRITISH VIRGIN ISLANDS.

... A CARIBBEAN-WIDE TSUNAMI WATCH IS IN EFFECT ...

A TSUNAMI WATCH IS IN EFFECT FOR

PANAMA / COLOMBIA / COSTA RICA / HAITI / ARUBA / NICARAGUA / CAYMAN ISLANDS / JAMAICA / CUBA / BONAIRE / DOMINICAN REP / BAHAMAS / CURACAO / TURKS N CAICOS / VENEZUELA / SABA / SAINT KITTS / MONTSERRAT / MEXICO / HONDURAS / SINT EUSTATIUS / GUADELOUPE / DOMINICA / SAINT LUCIA / SINT MAARTEN / SAINT VINCENT / MARTINIQUE / ANGUILLA / GRENADA / BARBADOS / SAINT BARTHELEMY / ANTIGUA / BARBUDA / SAINT MARTIN / TRINIDAD TOBAGO / BELIZE / BERMUDA / GUATEMALA / FRENCH GUIANA / GUYANA / SURINAME / BRAZIL

THIS BULLETIN IS ISSUED AS ADVICE TO GOVERNMENT AGENCIES. ONLY NATIONAL AND LOCAL GOVERNMENT AGENCIES HAVE THE AUTHORITY TO MAKE DECISIONS REGARDING THE OFFICIAL STATE OF ALERT IN THEIR AREA AND ANY ACTIONS TO BE TAKEN IN RESPONSE.

AN EARTHQUAKE HAS OCCURRED WITH THESE PRELIMINARY PARAMETERS
NOTE REVISED MAGNITUDE

ORIGIN TIME - 1400Z 25 MAR 2015
COORDINATES - 10.3 NORTH 78.8 WEST
LOCATION - NORTH OF PANAMA
MAGNITUDE - 8.5

MEASUREMENTS OR REPORTS OF TSUNAMI WAVE ACTIVITY

| GAUGE LOCATION | GAUGE COORDINATES LAT | LON | TIME OF MEASURE (UTC) | MAXIMUM TSUNAMI HEIGHT | WAVE PERIOD (MIN) |
|---|---|---|---|---|---|
| EL PORVENIR PA | 9.5N | 78.9W | 1424 | 1.0M/03.3FT | - |

EVALUATION

SEA LEVEL READINGS INDICATE A TSUNAMI WAS GENERATED. IT MAY HAVE ALREADY HAVE BEEN DESTRUCTIVE ALONG COASTS NEAR THE EARTHQUAKE EPICENTER.

BASED ON THESE DATA THE THREAT CONTINUES FOR ALL COASTAL AREAS OF THE CARIBBEAN. FOR THOSE AREAS - WHEN NO MAJOR WAVES HAVE OCCURRED FOR AT LEAST TWO HOURS AFTER THE ESTIMATED ARRIVAL TIME OR DAMAGING WAVES HAVE NOT OCCURRED FOR AT LEAST TWO HOURS THEN LOCAL AUTHORITIES CAN ASSUME THE THREAT IS PASSED. DANGER TO BOATS AND COASTAL STRUCTURES CAN CONTINUE FOR SEVERAL HOURS DUE TO RAPID CURRENTS. AS LOCAL CONDITIONS CAN CAUSE A WIDE VARIATION IN TSUNAMI WAVE ACTION THE ALL CLEAR DETERMINATION MUST BE MADE BY LOCAL AUTHORITIES.

ESTIMATED INITIAL TSUNAMI WAVE ARRIVAL TIMES AT FORECAST POINTS WITHIN THE WARNING AND WATCH AREAS ARE GIVEN BELOW. ACTUAL ARRIVAL TIMES MAY DIFFER AND THE INITIAL WAVE MAY NOT BE THE LARGEST. A TSUNAMI IS A SERIES OF WAVES AND THE TIME BETWEEN SUCCESSIVE WAVES CAN BE FIVE MINUTES TO ONE HOUR.

| LOCATION | FORECAST POINT | COORDINATES | ARRIVAL TIME |
|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| PANAMA | ALIGANDI | 9.2N | 78.0W | 1425Z 25 MAR |
| | PUERTO_CARRETO | 8.8N | 77.6W | 1439Z 25 MAR |
| | COLON | 9.4N | 79.9W | 1451Z 25 MAR |
| | PUERTO_OBALDIA | 8.7N | 77.4W | 1453Z 25 MAR |
| | BOCAS_DEL_TORO | 9.4N | 82.2W | 1506Z 25 MAR |
| COLOMBIA | CARTAGENA | 10.4N | 75.6W | 1442Z 25 MAR |
| | PUNTA_CARIBANA | 8.6N | 76.9W | 1459Z 25 MAR |
| | SANTA_MARTA | 11.2N | 74.2W | 1502Z 25 MAR |
| | BARRANQUILLA | 11.1N | 74.9W | 1516Z 25 MAR |
| | RIOHACHA | 11.6N | 72.9W | 1552Z 25 MAR |
| COSTA RICA | PUERTO_LIMON | 10.0N | 83.0W | 1454Z 25 MAR |
| HAITI | JACMEL | 18.1N | 72.5W | 1535Z 25 MAR |
| | JEREMIE | 18.6N | 74.1W | 1551Z 25 MAR |
| | CAP_HAITEN | 19.8N | 72.2W | 1626Z 25 MAR |
| | PORT_AU_PRINCE | 18.5N | 72.4W | 1655Z 25 MAR |
| ARUBA | ORANJESTAD | 12.5N | 70.0W | 1547Z 25 MAR |
| NICARAGUA | PUNTA_GORDA | 11.4N | 83.8W | 1548Z 25 MAR |
| | PUERTO_CABEZAS | 14.0N | 83.4W | 1936Z 25 MAR |
| CAYMAN ISLANDS | CAYMAN_BRAC | 19.7N | 79.9W | 1551Z 25 MAR |
| | GRAND_CAYMAN | 19.3N | 81.3W | 1600Z 25 MAR |
| JAMAICA | KINGSTON | 17.9N | 76.9W | 1553Z 25 MAR |
| | MONTEGO_BAY | 18.5N | 77.9W | 1615Z 25 MAR |
| CUBA | SANTIAGO_D_CUBA | 19.9N | 75.8W | 1554Z 25 MAR |
| | BARACOA | 20.4N | 74.5W | 1614Z 25 MAR |
| | CIENFUEGOS | 22.0N | 80.5W | 1620Z 25 MAR |
| | GIBARA | 21.1N | 76.1W | 1634Z 25 MAR |
| | LA_HABANA | 23.2N | 82.4W | 1721Z 25 MAR |
| | SANTA_CRZ_D_SUR | 20.7N | 78.0W | 1854Z 25 MAR |
| | NUEVA_GERONA | 21.9N | 82.8W | 2010Z 25 MAR |
| BONAIRE | ONIMA | 12.3N | 68.3W | 1557Z 25 MAR |
| DOMINICAN REP | SANTO_DOMINGO | 18.5N | 69.9W | 1604Z 25 MAR |
| | CABO_ENGANO | 18.6N | 68.3W | 1628Z 25 MAR |
| | PUERTO_PLATA | 19.8N | 70.7W | 1637Z 25 MAR |
| BAHAMAS | GREAT_INAGUA | 20.9N | 73.7W | 1620Z 25 MAR |
| | MAYAGUANA | 22.3N | 73.0W | 1634Z 25 MAR |
| | LONG_ISLAND | 23.3N | 75.1W | 1654Z 25 MAR |
| | SAN_SALVADOR | 24.1N | 74.5W | 1654Z 25 MAR |
| | EXUMA | 23.6N | 75.9W | 1704Z 25 MAR |
| | CROOKED_ISLAND | 22.7N | 74.1W | 1709Z 25 MAR |
| | CAT_ISLAND | 24.4N | 75.5W | 1713Z 25 MAR |
| | ELEUTHERA_ISLAN | 25.2N | 76.1W | 1721Z 25 MAR |
| | ANDROS_ISLAND | 25.0N | 77.9W | 1730Z 25 MAR |
| | NASSAU | 25.1N | 77.4W | 1742Z 25 MAR |
| | FREEPORT | 26.5N | 78.8W | 1754Z 25 MAR |
| | ABACO_ISLAND | 26.6N | 77.1W | 1759Z 25 MAR |
| | BIMINI | 25.8N | 79.3W | 1807Z 25 MAR |
| CURACAO | WILLEMSTAD | 12.1N | 68.9W | 1621Z 25 MAR |
| TURKS N CAICOS | WEST_CAICOS | 21.7N | 72.5W | 1630Z 25 MAR |
| | GRAND_TURK | 21.5N | 71.1W | 1645Z 25 MAR |
| VENEZUELA | MAIQUETIA | 10.6N | 67.0W | 1634Z 25 MAR |
| | CUMANA | 10.5N | 64.2W | 1707Z 25 MAR |
| | PUNTO_FIJO | 11.7N | 70.2W | 1807Z 25 MAR |
| | GOLFO_VENEZUELA | 11.4N | 71.2W | 1906Z 25 MAR |
| | PORLAMAR | 10.9N | 63.8W | 2031Z 25 MAR |
| SABA | SABA | 17.6N | 63.2W | 1650Z 25 MAR |
| SAINT KITTS | BASSETERRE | 17.3N | 62.7W | 1652Z 25 MAR |
| MONTSERRAT | PLYMOUTH | 16.7N | 62.2W | 1653Z 25 MAR |
| MEXICO | COZUMEL | 20.5N | 87.0W | 1655Z 25 MAR |
| | MADERO | 22.3N | 97.8W | 1936Z 25 MAR |
| | VERACRUZ | 19.2N | 96.1W | 1941Z 25 MAR |
| | TEXAS_BORDER | 26.0N | 97.1W | 1951Z 25 MAR |
| | PROGRESO | 21.3N | 89.7W | 2042Z 25 MAR |
| | CAMPECHE | 19.9N | 90.5W | 2338Z 25 MAR |
| HONDURAS | PUERTO_CORTES | 15.9N | 88.0W | 1655Z 25 MAR |
| | TRUJILLO | 15.9N | 86.0W | 1741Z 25 MAR |
| SINT EUSTATIUS | SINT_EUSTATIUS | 17.5N | 63.0W | 1656Z 25 MAR |
| GUADELOUPE | BASSE_TERRE | 16.0N | 61.7W | 1656Z 25 MAR |
| DOMINICA | ROSEAU | 15.3N | 61.4W | 1657Z 25 MAR |
| SAINT LUCIA | CASTRIES | 14.0N | 61.0W | 1659Z 25 MAR |

| | | | | |
|---|---|---|---|---|
| SINT MAARTEN | SIMPSON_BAAI | 18.0N | 63.1W | 1700Z 25 MAR |
| SAINT VINCENT | KINGSTOWN | 13.1N | 61.2W | 1701Z 25 MAR |
| MARTINIQUE | FORT_DE_FRANCE | 14.6N | 61.1W | 1704Z 25 MAR |
| ANGUILLA | THE_VALLEY | 18.3N | 63.1W | 1708Z 25 MAR |
| GRENADA | SAINT_GEORGES | 12.0N | 61.8W | 1710Z 25 MAR |
| BARBADOS | BRIDGETOWN | 13.1N | 59.6W | 1726Z 25 MAR |
| SAINT BARTHELEM | SAINT_BARTHELEM | 17.9N | 62.8W | 1727Z 25 MAR |
| ANTIGUA | SAINT_JOHNS | 17.1N | 61.9W | 1732Z 25 MAR |
| BARBUDA | PALMETTO_POINT | 17.6N | 61.9W | 1735Z 25 MAR |
| SAINT MARTIN | BAIE_BLANCHE | 18.1N | 63.0W | 1738Z 25 MAR |
| TRINIDAD TOBAGO | PIRATES_BAY | 11.3N | 60.6W | 1753Z 25 MAR |
| | PORT_OF_SPAIN | 10.6N | 61.5W | 1824Z 25 MAR |
| BELIZE | BELIZE_CITY | 17.5N | 88.2W | 1805Z 25 MAR |
| BERMUDA | RUTHS_BAY | 32.4N | 64.6W | 1819Z 25 MAR |
| GUATEMALA | PUERTO_BARRIOS | 15.7N | 88.6W | 1847Z 25 MAR |
| FRENCH GUIANA | CAYENNE | 4.9N | 52.3W | 2103Z 25 MAR |
| GUYANA | GEORGETOWN | 6.8N | 58.2W | 2142Z 25 MAR |
| SURINAME | PARAMARIBO | 5.9N | 55.2W | 2203Z 25 MAR |
| BRAZIL | FORTALEZA | 3.7S | 38.5W | 2224Z 25 MAR |
| | SAO_LUIS | 2.5S | 44.3W | 0044Z 26 MAR |
| | ILHA_DE_MARACA | 2.2N | 50.5W | 0049Z 26 MAR |

ADDITIONAL BULLETINS WILL BE ISSUED BY THE PACIFIC TSUNAMI
WARNING CENTER FOR THIS EVENT AS MORE INFORMATION
BECOMES AVAILABLE.

## ***PTWC Message #3***

TEST...TSUNAMI MESSAGE NUMBER 3 ...TEST
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
1500 UTC WED MAR 25 2015

THIS MESSAGE APPLIES TO COUNTRIES WITHIN AND BORDERING THE CARIBBEAN SEA...EXCEPT FOR PUERTO RICO...THE U.S. VIRGIN ISLANDS...AND THE BRITISH VIRGIN ISLANDS.

... A CARIBBEAN-WIDE TSUNAMI WATCH IS IN EFFECT ...

A TSUNAMI WATCH IS IN EFFECT FOR

PANAMA / COLOMBIA / COSTA RICA / HAITI / ARUBA / NICARAGUA / CAYMAN ISLANDS / JAMAICA / CUBA / BONAIRE / DOMINICAN REP / BAHAMAS / CURACAO / TURKS N CAICOS / VENEZUELA / SABA / SAINT KITTS / MONTSERRAT / MEXICO / HONDURAS / SINT EUSTATIUS / GUADELOUPE / DOMINICA / SAINT LUCIA / SINT MAARTEN / SAINT VINCENT / MARTINIQUE / ANGUILLA / GRENADA / BARBADOS / SAINT BARTHELEMY / ANTIGUA / BARBUDA / SAINT MARTIN / TRINIDAD TOBAGO / BELIZE / BERMUDA / GUATEMALA / FRENCH GUIANA / GUYANA / SURINAME / BRAZIL

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AN EARTHQUAKE HAS OCCURRED WITH THESE PRELIMINARY PARAMETERS

ORIGIN TIME - 1400Z 25 MAR 2015
COORDINATES - 10.3 NORTH 78.8 WEST
LOCATION - NORTH OF PANAMA
MAGNITUDE - 8.5

MEASUREMENTS OR REPORTS OF TSUNAMI WAVE ACTIVITY

| | GAUGE COORDINATES | | TIME OF MEASURE | MAXIMUM TSUNAMI | WAVE PERIOD |
|---|---|---|---|---|---|
| GAUGE LOCATION | LAT | LON | (UTC) | HEIGHT | (MIN) |
| EL PORVENIR PA | 9.5N | 78.9W | 1455 | 2.4M/07.8FT | 15 |

EVALUATION

SEA LEVEL READINGS INDICATE A TSUNAMI WAS GENERATED. IT MAY HAVE ALREADY HAVE BEEN DESTRUCTIVE ALONG COASTS NEAR THE EARTHQUAKE EPICENTER.

BASED ON THESE DATA THE THREAT CONTINUES FOR ALL COASTAL AREAS OF THE CARIBBEAN. FOR THOSE AREAS - WHEN NO MAJOR WAVES HAVE OCCURRED FOR AT LEAST TWO HOURS AFTER THE ESTIMATED ARRIVAL TIME OR DAMAGING WAVES HAVE NOT OCCURRED FOR AT LEAST TWO HOURS THEN LOCAL AUTHORITIES CAN ASSUME THE THREAT IS PASSED. DANGER TO BOATS AND COASTAL STRUCTURES CAN CONTINUE FOR SEVERAL HOURS DUE TO RAPID CURRENTS. AS LOCAL CONDITIONS CAN CAUSE A WIDE VARIATION IN TSUNAMI WAVE ACTION THE ALL CLEAR DETERMINATION MUST BE MADE BY LOCAL AUTHORITIES.

ESTIMATED INITIAL TSUNAMI WAVE ARRIVAL TIMES AT FORECAST POINTS WITHIN THE WARNING AND WATCH AREAS ARE GIVEN BELOW. ACTUAL ARRIVAL TIMES MAY DIFFER AND THE INITIAL WAVE MAY NOT BE THE LARGEST. A TSUNAMI IS A SERIES OF WAVES AND THE TIME BETWEEN SUCCESSIVE WAVES CAN BE FIVE MINUTES TO ONE HOUR.

| LOCATION | FORECAST POINT | COORDINATES | ARRIVAL TIME |
|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| PANAMA | ALIGANDI | 9.2N | 78.0W | 1425Z 25 MAR |
| | PUERTO_CARRETO | 8.8N | 77.6W | 1439Z 25 MAR |
| | COLON | 9.4N | 79.9W | 1451Z 25 MAR |
| | PUERTO_OBALDIA | 8.7N | 77.4W | 1453Z 25 MAR |
| | BOCAS_DEL_TORO | 9.4N | 82.2W | 1506Z 25 MAR |
| COLOMBIA | CARTAGENA | 10.4N | 75.6W | 1442Z 25 MAR |
| | PUNTA_CARIBANA | 8.6N | 76.9W | 1459Z 25 MAR |
| | SANTA_MARTA | 11.2N | 74.2W | 1502Z 25 MAR |
| | BARRANQUILLA | 11.1N | 74.9W | 1516Z 25 MAR |
| | RIOHACHA | 11.6N | 72.9W | 1552Z 25 MAR |
| COSTA RICA | PUERTO_LIMON | 10.0N | 83.0W | 1454Z 25 MAR |
| HAITI | JACMEL | 18.1N | 72.5W | 1535Z 25 MAR |
| | JEREMIE | 18.6N | 74.1W | 1551Z 25 MAR |
| | CAP_HAITEN | 19.8N | 72.2W | 1626Z 25 MAR |
| | PORT_AU_PRINCE | 18.5N | 72.4W | 1655Z 25 MAR |
| ARUBA | ORANJESTAD | 12.5N | 70.0W | 1547Z 25 MAR |
| NICARAGUA | PUNTA_GORDA | 11.4N | 83.8W | 1548Z 25 MAR |
| | PUERTO_CABEZAS | 14.0N | 83.4W | 1936Z 25 MAR |
| CAYMAN ISLANDS | CAYMAN_BRAC | 19.7N | 79.9W | 1551Z 25 MAR |
| | GRAND_CAYMAN | 19.3N | 81.3W | 1600Z 25 MAR |
| JAMAICA | KINGSTON | 17.9N | 76.9W | 1553Z 25 MAR |
| | MONTEGO_BAY | 18.5N | 77.9W | 1615Z 25 MAR |
| CUBA | SANTIAGO_D_CUBA | 19.9N | 75.8W | 1554Z 25 MAR |
| | BARACOA | 20.4N | 74.5W | 1614Z 25 MAR |
| | CIENFUEGOS | 22.0N | 80.5W | 1620Z 25 MAR |
| | GIBARA | 21.1N | 76.1W | 1634Z 25 MAR |
| | LA_HABANA | 23.2N | 82.4W | 1721Z 25 MAR |
| | SANTA_CRZ_D_SUR | 20.7N | 78.0W | 1854Z 25 MAR |
| | NUEVA_GERONA | 21.9N | 82.8W | 2010Z 25 MAR |
| BONAIRE | ONIMA | 12.3N | 68.3W | 1557Z 25 MAR |
| DOMINICAN REP | SANTO_DOMINGO | 18.5N | 69.9W | 1604Z 25 MAR |
| | CABO_ENGANO | 18.6N | 68.3W | 1628Z 25 MAR |
| | PUERTO_PLATA | 19.8N | 70.7W | 1637Z 25 MAR |
| BAHAMAS | GREAT_INAGUA | 20.9N | 73.7W | 1620Z 25 MAR |
| | MAYAGUANA | 22.3N | 73.0W | 1634Z 25 MAR |
| | LONG_ISLAND | 23.3N | 75.1W | 1654Z 25 MAR |
| | SAN_SALVADOR | 24.1N | 74.5W | 1654Z 25 MAR |
| | EXUMA | 23.6N | 75.9W | 1704Z 25 MAR |
| | CROOKED_ISLAND | 22.7N | 74.1W | 1709Z 25 MAR |
| | CAT_ISLAND | 24.4N | 75.5W | 1713Z 25 MAR |
| | ELEUTHERA_ISLAN | 25.2N | 76.1W | 1721Z 25 MAR |
| | ANDROS_ISLAND | 25.0N | 77.9W | 1730Z 25 MAR |
| | NASSAU | 25.1N | 77.4W | 1742Z 25 MAR |
| | FREEPORT | 26.5N | 78.8W | 1754Z 25 MAR |
| | ABACO_ISLAND | 26.6N | 77.1W | 1759Z 25 MAR |
| | BIMINI | 25.8N | 79.3W | 1807Z 25 MAR |
| CURACAO | WILLEMSTAD | 12.1N | 68.9W | 1621Z 25 MAR |
| TURKS N CAICOS | WEST_CAICOS | 21.7N | 72.5W | 1630Z 25 MAR |
| | GRAND_TURK | 21.5N | 71.1W | 1645Z 25 MAR |
| VENEZUELA | MAIQUETIA | 10.6N | 67.0W | 1634Z 25 MAR |
| | CUMANA | 10.5N | 64.2W | 1707Z 25 MAR |
| | PUNTO_FIJO | 11.7N | 70.2W | 1807Z 25 MAR |
| | GOLFO_VENEZUELA | 11.4N | 71.2W | 1906Z 25 MAR |
| | PORLAMAR | 10.9N | 63.8W | 2031Z 25 MAR |
| SABA | SABA | 17.6N | 63.2W | 1650Z 25 MAR |
| SAINT KITTS | BASSETERRE | 17.3N | 62.7W | 1652Z 25 MAR |
| MONTSERRAT | PLYMOUTH | 16.7N | 62.2W | 1653Z 25 MAR |
| MEXICO | COZUMEL | 20.5N | 87.0W | 1655Z 25 MAR |
| | MADERO | 22.3N | 97.8W | 1936Z 25 MAR |
| | VERACRUZ | 19.2N | 96.1W | 1941Z 25 MAR |
| | TEXAS_BORDER | 26.0N | 97.1W | 1951Z 25 MAR |
| | PROGRESO | 21.3N | 89.7W | 2042Z 25 MAR |
| | CAMPECHE | 19.9N | 90.5W | 2338Z 25 MAR |
| HONDURAS | PUERTO_CORTES | 15.9N | 88.0W | 1655Z 25 MAR |
| | TRUJILLO | 15.9N | 86.0W | 1741Z 25 MAR |
| SINT EUSTATIUS | SINT_EUSTATIUS | 17.5N | 63.0W | 1656Z 25 MAR |
| GUADELOUPE | BASSE_TERRE | 16.0N | 61.7W | 1656Z 25 MAR |
| DOMINICA | ROSEAU | 15.3N | 61.4W | 1657Z 25 MAR |
| SAINT LUCIA | CASTRIES | 14.0N | 61.0W | 1659Z 25 MAR |

| | | | | |
|---|---|---|---|---|
| SINT MAARTEN | SIMPSON_BAAI | 18.0N | 63.1W | 1700Z 25 MAR |
| SAINT VINCENT | KINGSTOWN | 13.1N | 61.2W | 1701Z 25 MAR |
| MARTINIQUE | FORT_DE_FRANCE | 14.6N | 61.1W | 1704Z 25 MAR |
| ANGUILLA | THE_VALLEY | 18.3N | 63.1W | 1708Z 25 MAR |
| GRENADA | SAINT_GEORGES | 12.0N | 61.8W | 1710Z 25 MAR |
| BARBADOS | BRIDGETOWN | 13.1N | 59.6W | 1726Z 25 MAR |
| SAINT BARTHELEM | SAINT_BARTHELEM | 17.9N | 62.8W | 1727Z 25 MAR |
| ANTIGUA | SAINT_JOHNS | 17.1N | 61.9W | 1732Z 25 MAR |
| BARBUDA | PALMETTO_POINT | 17.6N | 61.9W | 1735Z 25 MAR |
| SAINT MARTIN | BAIE_BLANCHE | 18.1N | 63.0W | 1738Z 25 MAR |
| TRINIDAD TOBAGO | PIRATES_BAY | 11.3N | 60.6W | 1753Z 25 MAR |
| | PORT_OF_SPAIN | 10.6N | 61.5W | 1824Z 25 MAR |
| BELIZE | BELIZE_CITY | 17.5N | 88.2W | 1805Z 25 MAR |
| BERMUDA | RUTHS_BAY | 32.4N | 64.6W | 1819Z 25 MAR |
| GUATEMALA | PUERTO_BARRIOS | 15.7N | 88.6W | 1847Z 25 MAR |
| FRENCH GUIANA | CAYENNE | 4.9N | 52.3W | 2103Z 25 MAR |
| GUYANA | GEORGETOWN | 6.8N | 58.2W | 2142Z 25 MAR |
| SURINAME | PARAMARIBO | 5.9N | 55.2W | 2203Z 25 MAR |
| BRAZIL | FORTALEZA | 3.7S | 38.5W | 2224Z 25 MAR |
| | SAO_LUIS | 2.5S | 44.3W | 0044Z 26 MAR |
| | ILHA_DE_MARACA | 2.2N | 50.5W | 0049Z 26 MAR |

ADDITIONAL BULLETINS WILL BE ISSUED BY THE PACIFIC TSUNAMI
WARNING CENTER FOR THIS EVENT AS MORE INFORMATION
BECOMES AVAILABLE.

## ***PTWC Message #4***

TEST...TSUNAMI MESSAGE NUMBER 4 ...TEST
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
1602 UTC WED MAR 25 2015

THIS MESSAGE APPLIES TO COUNTRIES WITHIN AND BORDERING THE CARIBBEAN SEA...EXCEPT FOR PUERTO RICO...THE U.S. VIRGIN ISLANDS...AND THE BRITISH VIRGIN ISLANDS.

... A CARIBBEAN-WIDE TSUNAMI WATCH IS IN EFFECT ...

A TSUNAMI WATCH IS IN EFFECT FOR

PANAMA / COLOMBIA / COSTA RICA / HAITI / ARUBA / NICARAGUA / CAYMAN ISLANDS / JAMAICA / CUBA / BONAIRE / DOMINICAN REP / BAHAMAS / CURACAO / TURKS N CAICOS / VENEZUELA / SABA / SAINT KITTS / MONTSERRAT / MEXICO / HONDURAS / SINT EUSTATIUS / GUADELOUPE / DOMINICA / SAINT LUCIA / SINT MAARTEN / SAINT VINCENT / MARTINIQUE / ANGUILLA / GRENADA / BARBADOS / SAINT BARTHELEMY / ANTIGUA / BARBUDA / SAINT MARTIN / TRINIDAD TOBAGO / BELIZE / BERMUDA / GUATEMALA / FRENCH GUIANA / GUYANA / SURINAME / BRAZIL

THIS BULLETIN IS ISSUED AS ADVICE TO GOVERNMENT AGENCIES. ONLY NATIONAL AND LOCAL GOVERNMENT AGENCIES HAVE THE AUTHORITY TO MAKE DECISIONS REGARDING THE OFFICIAL STATE OF ALERT IN THEIR AREA AND ANY ACTIONS TO BE TAKEN IN RESPONSE.

AN EARTHQUAKE HAS OCCURRED WITH THESE PRELIMINARY PARAMETERS

ORIGIN TIME - 1400Z 25 MAR 2015
COORDINATES - 10.3 NORTH 78.8 WEST
LOCATION - NORTH OF PANAMA
MAGNITUDE - 8.5

MEASUREMENTS OR REPORTS OF TSUNAMI WAVE ACTIVITY

| GAUGE LOCATION | GAUGE COORDINATES LAT | LON | TIME OF MEASURE (UTC) | MAXIMUM TSUNAMI HEIGHT | WAVE PERIOD (MIN) |
|---|---|---|---|---|---|
| EL PORVENIR PA | 9.5N | 78.9W | 1455 | 2.4M/07.8FT | 15 |
| LIMON CR | 10.0N | 83.0W | 1544 | 0.6M/01.9FT | - |
| SANTA MARTA CO | 11.2N | 74.2W | 1547 | 1.4M/04.8FT | - |
| SAN ANDRES CO | 12.6N | 81.7W | 1555 | 1.0M/03.3FT | - |

EVALUATION

SEA LEVEL READINGS INDICATE A TSUNAMI WAS GENERATED. IT MAY HAVE ALREADY HAVE BEEN DESTRUCTIVE ALONG COASTS NEAR THE EARTHQUAKE EPICENTER.

BASED ON THESE DATA THE THREAT CONTINUES FOR ALL COASTAL AREAS OF THE CARIBBEAN. FOR THOSE AREAS - WHEN NO MAJOR WAVES HAVE OCCURRED FOR AT LEAST TWO HOURS AFTER THE ESTIMATED ARRIVAL TIME OR DAMAGING WAVES HAVE NOT OCCURRED FOR AT LEAST TWO HOURS THEN LOCAL AUTHORITIES CAN ASSUME THE THREAT IS PASSED. DANGER TO BOATS AND COASTAL STRUCTURES CAN CONTINUE FOR SEVERAL HOURS DUE TO RAPID CURRENTS. AS LOCAL CONDITIONS CAN CAUSE A WIDE VARIATION IN TSUNAMI WAVE ACTION THE ALL CLEAR DETERMINATION MUST BE MADE BY LOCAL AUTHORITIES.

ESTIMATED INITIAL TSUNAMI WAVE ARRIVAL TIMES AT FORECAST POINTS WITHIN THE WARNING AND WATCH AREAS ARE GIVEN BELOW. ACTUAL ARRIVAL TIMES MAY DIFFER AND THE INITIAL WAVE MAY NOT BE THE LARGEST. A TSUNAMI IS A SERIES OF WAVES AND THE TIME BETWEEN SUCCESSIVE WAVES CAN BE FIVE MINUTES TO ONE HOUR.

| LOCATION | FORECAST POINT | COORDINATES | ARRIVAL TIME |
|---|---|---|---|
| PANAMA | ALIGANDI | 9.2N 78.0W | 1425Z 25 MAR |
| | PUERTO_CARRETO | 8.8N 77.6W | 1439Z 25 MAR |
| | COLON | 9.4N 79.9W | 1451Z 25 MAR |
| | PUERTO_OBALDIA | 8.7N 77.4W | 1453Z 25 MAR |
| | BOCAS_DEL_TORO | 9.4N 82.2W | 1506Z 25 MAR |
| COLOMBIA | CARTAGENA | 10.4N 75.6W | 1442Z 25 MAR |
| | PUNTA_CARIBANA | 8.6N 76.9W | 1459Z 25 MAR |
| | SANTA_MARTA | 11.2N 74.2W | 1502Z 25 MAR |
| | BARRANQUILLA | 11.1N 74.9W | 1516Z 25 MAR |
| | RIOHACHA | 11.6N 72.9W | 1552Z 25 MAR |
| COSTA RICA | PUERTO_LIMON | 10.0N 83.0W | 1454Z 25 MAR |
| HAITI | JACMEL | 18.1N 72.5W | 1535Z 25 MAR |
| | JEREMIE | 18.6N 74.1W | 1551Z 25 MAR |
| | CAP_HAITEN | 19.8N 72.2W | 1626Z 25 MAR |
| | PORT_AU_PRINCE | 18.5N 72.4W | 1655Z 25 MAR |
| ARUBA | ORANJESTAD | 12.5N 70.0W | 1547Z 25 MAR |
| NICARAGUA | PUNTA_GORDA | 11.4N 83.8W | 1548Z 25 MAR |
| | PUERTO_CABEZAS | 14.0N 83.4W | 1936Z 25 MAR |
| CAYMAN ISLANDS | CAYMAN_BRAC | 19.7N 79.9W | 1551Z 25 MAR |
| | GRAND_CAYMAN | 19.3N 81.3W | 1600Z 25 MAR |
| JAMAICA | KINGSTON | 17.9N 76.9W | 1553Z 25 MAR |
| | MONTEGO_BAY | 18.5N 77.9W | 1615Z 25 MAR |
| CUBA | SANTIAGO_D_CUBA | 19.9N 75.8W | 1554Z 25 MAR |
| | BARACOA | 20.4N 74.5W | 1614Z 25 MAR |
| | CIENFUEGOS | 22.0N 80.5W | 1620Z 25 MAR |
| | GIBARA | 21.1N 76.1W | 1634Z 25 MAR |
| | LA_HABANA | 23.2N 82.4W | 1721Z 25 MAR |
| | SANTA_CRZ_D_SUR | 20.7N 78.0W | 1854Z 25 MAR |
| | NUEVA_GERONA | 21.9N 82.8W | 2010Z 25 MAR |
| BONAIRE | ONIMA | 12.3N 68.3W | 1557Z 25 MAR |
| DOMINICAN REP | SANTO_DOMINGO | 18.5N 69.9W | 1604Z 25 MAR |
| | CABO_ENGANO | 18.6N 68.3W | 1628Z 25 MAR |
| | PUERTO_PLATA | 19.8N 70.7W | 1637Z 25 MAR |
| BAHAMAS | GREAT_INAGUA | 20.9N 73.7W | 1620Z 25 MAR |
| | MAYAGUANA | 22.3N 73.0W | 1634Z 25 MAR |
| | LONG_ISLAND | 23.3N 75.1W | 1654Z 25 MAR |
| | SAN_SALVADOR | 24.1N 74.5W | 1654Z 25 MAR |
| | EXUMA | 23.6N 75.9W | 1704Z 25 MAR |
| | CROOKED_ISLAND | 22.7N 74.1W | 1709Z 25 MAR |
| | CAT_ISLAND | 24.4N 75.5W | 1713Z 25 MAR |
| | ELEUTHERA_ISLAN | 25.2N 76.1W | 1721Z 25 MAR |
| | ANDROS_ISLAND | 25.0N 77.9W | 1730Z 25 MAR |
| | NASSAU | 25.1N 77.4W | 1742Z 25 MAR |
| | FREEPORT | 26.5N 78.8W | 1754Z 25 MAR |
| | ABACO_ISLAND | 26.6N 77.1W | 1759Z 25 MAR |
| | BIMINI | 25.8N 79.3W | 1807Z 25 MAR |
| CURACAO | WILLEMSTAD | 12.1N 68.9W | 1621Z 25 MAR |
| TURKS N CAICOS | WEST_CAICOS | 21.7N 72.5W | 1630Z 25 MAR |
| | GRAND_TURK | 21.5N 71.1W | 1645Z 25 MAR |
| VENEZUELA | MAIQUETIA | 10.6N 67.0W | 1634Z 25 MAR |
| | CUMANA | 10.5N 64.2W | 1707Z 25 MAR |
| | PUNTO_FIJO | 11.7N 70.2W | 1807Z 25 MAR |
| | GOLFO_VENEZUELA | 11.4N 71.2W | 1906Z 25 MAR |
| | PORLAMAR | 10.9N 63.8W | 2031Z 25 MAR |
| SABA | SABA | 17.6N 63.2W | 1650Z 25 MAR |
| SAINT KITTS | BASSETERRE | 17.3N 62.7W | 1652Z 25 MAR |
| MONTSERRAT | PLYMOUTH | 16.7N 62.2W | 1653Z 25 MAR |
| MEXICO | COZUMEL | 20.5N 87.0W | 1655Z 25 MAR |
| | MADERO | 22.3N 97.8W | 1936Z 25 MAR |
| | VERACRUZ | 19.2N 96.1W | 1941Z 25 MAR |
| | TEXAS_BORDER | 26.0N 97.1W | 1951Z 25 MAR |
| | PROGRESO | 21.3N 89.7W | 2042Z 25 MAR |
| | CAMPECHE | 19.9N 90.5W | 2338Z 25 MAR |
| HONDURAS | PUERTO_CORTES | 15.9N 88.0W | 1655Z 25 MAR |
| | TRUJILLO | 15.9N 86.0W | 1741Z 25 MAR |
| SINT EUSTATIUS | SINT_EUSTATIUS | 17.5N 63.0W | 1656Z 25 MAR |
| GUADELOUPE | BASSE_TERRE | 16.0N 61.7W | 1656Z 25 MAR |

| | | | | |
|---|---|---|---|---|
| DOMINICA | ROSEAU | 15.3N | 61.4W | 1657Z 25 MAR |
| SAINT LUCIA | CASTRIES | 14.0N | 61.0W | 1659Z 25 MAR |
| SINT MAARTEN | SIMPSON_BAAI | 18.0N | 63.1W | 1700Z 25 MAR |
| SAINT VINCENT | KINGSTOWN | 13.1N | 61.2W | 1701Z 25 MAR |
| MARTINIQUE | FORT_DE_FRANCE | 14.6N | 61.1W | 1704Z 25 MAR |
| ANGUILLA | THE_VALLEY | 18.3N | 63.1W | 1708Z 25 MAR |
| GRENADA | SAINT_GEORGES | 12.0N | 61.8W | 1710Z 25 MAR |
| BARBADOS | BRIDGETOWN | 13.1N | 59.6W | 1726Z 25 MAR |
| SAINT BARTHELEM | SAINT_BARTHELEM | 17.9N | 62.8W | 1727Z 25 MAR |
| ANTIGUA | SAINT_JOHNS | 17.1N | 61.9W | 1732Z 25 MAR |
| BARBUDA | PALMETTO_POINT | 17.6N | 61.9W | 1735Z 25 MAR |
| SAINT MARTIN | BAIE_BLANCHE | 18.1N | 63.0W | 1738Z 25 MAR |
| TRINIDAD TOBAGO | PIRATES_BAY | 11.3N | 60.6W | 1753Z 25 MAR |
| | PORT_OF_SPAIN | 10.6N | 61.5W | 1824Z 25 MAR |
| BELIZE | BELIZE_CITY | 17.5N | 88.2W | 1805Z 25 MAR |
| BERMUDA | RUTHS_BAY | 32.4N | 64.6W | 1819Z 25 MAR |
| GUATEMALA | PUERTO_BARRIOS | 15.7N | 88.6W | 1847Z 25 MAR |
| FRENCH GUIANA | CAYENNE | 4.9N | 52.3W | 2103Z 25 MAR |
| GUYANA | GEORGETOWN | 6.8N | 58.2W | 2142Z 25 MAR |
| SURINAME | PARAMARIBO | 5.9N | 55.2W | 2203Z 25 MAR |
| BRAZIL | FORTALEZA | 3.7S | 38.5W | 2224Z 25 MAR |
| | SAO_LUIS | 2.5S | 44.3W | 0044Z 26 MAR |
| | ILHA_DE_MARACA | 2.2N | 50.5W | 0049Z 26 MAR |

ADDITIONAL BULLETINS WILL BE ISSUED BY THE PACIFIC TSUNAMI
WARNING CENTER FOR THIS EVENT AS MORE INFORMATION
BECOMES AVAILABLE.

## ***PTWC Message #5***

TEST...TSUNAMI MESSAGE NUMBER 5 ...TEST
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
1702 UTC WED MAR 25 2015

THIS MESSAGE APPLIES TO COUNTRIES WITHIN AND BORDERING THE CARIBBEAN SEA...EXCEPT FOR PUERTO RICO...THE U.S. VIRGIN ISLANDS...AND THE BRITISH VIRGIN ISLANDS.

... A CARIBBEAN-WIDE TSUNAMI WATCH IS IN EFFECT ...

A TSUNAMI WATCH IS IN EFFECT FOR

PANAMA / COLOMBIA / COSTA RICA / HAITI / ARUBA / NICARAGUA / CAYMAN ISLANDS / JAMAICA / CUBA / BONAIRE / DOMINICAN REP / BAHAMAS / CURACAO / TURKS N CAICOS / VENEZUELA / SABA / SAINT KITTS / MONTSERRAT / MEXICO / HONDURAS / SINT EUSTATIUS / GUADELOUPE / DOMINICA / SAINT LUCIA / SINT MAARTEN / SAINT VINCENT / MARTINIQUE / ANGUILLA / GRENADA / BARBADOS / SAINT BARTHELEMY / ANTIGUA / BARBUDA / SAINT MARTIN / TRINIDAD TOBAGO / BELIZE / BERMUDA / GUATEMALA / FRENCH GUIANA / GUYANA / SURINAME / BRAZIL

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AN EARTHQUAKE HAS OCCURRED WITH THESE PRELIMINARY PARAMETERS

ORIGIN TIME - 1400Z 25 MAR 2015
COORDINATES - 10.3 NORTH 78.8 WEST
LOCATION - NORTH OF PANAMA
MAGNITUDE - 8.5

MEASUREMENTS OR REPORTS OF TSUNAMI WAVE ACTIVITY

| GAUGE LOCATION | GAUGE COORDINATES LAT | LON | TIME OF MEASURE (UTC) | MAXIMUM TSUNAMI HEIGHT | WAVE PERIOD (MIN) |
|---|---|---|---|---|---|
| EL PORVENIR PA | 9.5N | 78.9W | 1455 | 2.4M/07.8FT | 15 |
| LIMON CR | 10.0N | 83.0W | 1544 | 0.6M/01.9FT | 12 |
| SANTA MARTA CO | 11.2N | 74.2W | 1634 | 2.6M/08.6FT | 13 |
| SAN ANDRES CO | 12.6N | 81.7W | 1623 | 1.9M/06.2FT | 13 |
| PORT AU PRINCE HT | 18.5N | 72.4W | 1631 | 0.4M/01.3FT | 14 |
| SANTO DOMINGO DO | 18.4N | 69.6W | 1634 | 0.9M/02.9FT | 12 |
| BULLEN BAY CURACAO | 12.2N | 69.0W | 1645 | 0.7M/01.7FT | 15 |
| MONA ISLAND PR | 18.1N | 67.9W | 1636 | 0.8M/02.8FT | 15 |
| MAYAGUEZ PR | 18.2N | 67.2W | 1647 | 0.5M/01.6FT | 16 |
| MAGUEYES IS PR | 18.0N | 67.0W | 1642 | 0.2M/00.6FT | - |
| YABUCOA PR | 18.1N | 65.8W | 1641 | 0.6M/01.9FT | 10 |
| SAN JUAN PR | 18.5N | 66.1W | 1640 | 0.1M/00.4FT | 20 |
| LIMETREE USVI | 17.7N | 64.7W | 1642 | 0.3M/01.1FT | 13 |
| ST CROIX USVI | 17.7N | 64.6W | 1650 | 0.2M/00.8FT | - |
| ESPERANZA VIEQUES PR | 18.1N | 65.5W | 1652 | 0.4M/01.2FT | - |
| FAJARDO PR | 18.3N | 65.6W | 1653 | 0.3M/01.1FT | 14 |
| CHARLOTTE AMALI USVI | 18.3N | 64.9W | 1655 | 0.6M/01.9FT | - |
| LAMESHUR BAY USVI | 18.3N | 64.7W | 1655 | 0.5M/01.7FT | - |

EVALUATION

SEA LEVEL READINGS INDICATE A TSUNAMI WAS GENERATED. IT MAY HAVE ALREADY HAVE BEEN DESTRUCTIVE ALONG COASTS NEAR THE EARTHQUAKE EPICENTER.

BASED ON THESE DATA THE THREAT CONTINUES FOR ALL COASTAL AREAS OF

THE CARIBBEAN. FOR THOSE AREAS - WHEN NO MAJOR WAVES HAVE OCCURRED FOR AT LEAST TWO HOURS AFTER THE ESTIMATED ARRIVAL TIME OR DAMAGING WAVES HAVE NOT OCCURRED FOR AT LEAST TWO HOURS THEN LOCAL AUTHORITIES CAN ASSUME THE THREAT IS PASSED. DANGER TO BOATS AND COASTAL STRUCTURES CAN CONTINUE FOR SEVERAL HOURS DUE TO RAPID CURRENTS. AS LOCAL CONDITIONS CAN CAUSE A WIDE VARIATION IN TSUNAMI WAVE ACTION THE ALL CLEAR DETERMINATION MUST BE MADE BY LOCAL AUTHORITIES.

ESTIMATED INITIAL TSUNAMI WAVE ARRIVAL TIMES AT FORECAST POINTS WITHIN THE WARNING AND WATCH AREAS ARE GIVEN BELOW. ACTUAL ARRIVAL TIMES MAY DIFFER AND THE INITIAL WAVE MAY NOT BE THE LARGEST. A TSUNAMI IS A SERIES OF WAVES AND THE TIME BETWEEN SUCCESSIVE WAVES CAN BE FIVE MINUTES TO ONE HOUR.

| LOCATION | FORECAST POINT | COORDINATES | ARRIVAL TIME |
|---|---|---|---|
| PANAMA | ALIGANDI | 9.2N 78.0W | 1425Z 25 MAR |
| | PUERTO_CARRETO | 8.8N 77.6W | 1439Z 25 MAR |
| | COLON | 9.4N 79.9W | 1451Z 25 MAR |
| | PUERTO_OBALDIA | 8.7N 77.4W | 1453Z 25 MAR |
| | BOCAS_DEL_TORO | 9.4N 82.2W | 1506Z 25 MAR |
| COLOMBIA | CARTAGENA | 10.4N 75.6W | 1442Z 25 MAR |
| | PUNTA_CARIBANA | 8.6N 76.9W | 1459Z 25 MAR |
| | SANTA_MARTA | 11.2N 74.2W | 1502Z 25 MAR |
| | BARRANQUILLA | 11.1N 74.9W | 1516Z 25 MAR |
| | RIOHACHA | 11.6N 72.9W | 1552Z 25 MAR |
| COSTA RICA | PUERTO_LIMON | 10.0N 83.0W | 1454Z 25 MAR |
| HAITI | JACMEL | 18.1N 72.5W | 1535Z 25 MAR |
| | JEREMIE | 18.6N 74.1W | 1551Z 25 MAR |
| | CAP_HAITEN | 19.8N 72.2W | 1626Z 25 MAR |
| | PORT_AU_PRINCE | 18.5N 72.4W | 1655Z 25 MAR |
| ARUBA | ORANJESTAD | 12.5N 70.0W | 1547Z 25 MAR |
| NICARAGUA | PUNTA_GORDA | 11.4N 83.8W | 1548Z 25 MAR |
| | PUERTO_CABEZAS | 14.0N 83.4W | 1936Z 25 MAR |
| CAYMAN ISLANDS | CAYMAN_BRAC | 19.7N 79.9W | 1551Z 25 MAR |
| | GRAND_CAYMAN | 19.3N 81.3W | 1600Z 25 MAR |
| JAMAICA | KINGSTON | 17.9N 76.9W | 1553Z 25 MAR |
| | MONTEGO_BAY | 18.5N 77.9W | 1615Z 25 MAR |
| CUBA | SANTIAGO_D_CUBA | 19.9N 75.8W | 1554Z 25 MAR |
| | BARACOA | 20.4N 74.5W | 1614Z 25 MAR |
| | CIENFUEGOS | 22.0N 80.5W | 1620Z 25 MAR |
| | GIBARA | 21.1N 76.1W | 1634Z 25 MAR |
| | LA_HABANA | 23.2N 82.4W | 1721Z 25 MAR |
| | SANTA_CRZ_D_SUR | 20.7N 78.0W | 1854Z 25 MAR |
| | NUEVA_GERONA | 21.9N 82.8W | 2010Z 25 MAR |
| BONAIRE | ONIMA | 12.3N 68.3W | 1557Z 25 MAR |
| DOMINICAN REP | SANTO_DOMINGO | 18.5N 69.9W | 1604Z 25 MAR |
| | CABO_ENGANO | 18.6N 68.3W | 1628Z 25 MAR |
| | PUERTO_PLATA | 19.8N 70.7W | 1637Z 25 MAR |
| BAHAMAS | GREAT_INAGUA | 20.9N 73.7W | 1620Z 25 MAR |
| | MAYAGUANA | 22.3N 73.0W | 1634Z 25 MAR |
| | LONG_ISLAND | 23.3N 75.1W | 1654Z 25 MAR |
| | SAN_SALVADOR | 24.1N 74.5W | 1654Z 25 MAR |
| | EXUMA | 23.6N 75.9W | 1704Z 25 MAR |
| | CROOKED_ISLAND | 22.7N 74.1W | 1709Z 25 MAR |
| | CAT_ISLAND | 24.4N 75.5W | 1713Z 25 MAR |
| | ELEUTHERA_ISLAN | 25.2N 76.1W | 1721Z 25 MAR |
| | ANDROS_ISLAND | 25.0N 77.9W | 1730Z 25 MAR |
| | NASSAU | 25.1N 77.4W | 1742Z 25 MAR |
| | FREEPORT | 26.5N 78.8W | 1754Z 25 MAR |
| | ABACO_ISLAND | 26.6N 77.1W | 1759Z 25 MAR |
| | BIMINI | 25.8N 79.3W | 1807Z 25 MAR |
| CURACAO | WILLEMSTAD | 12.1N 68.9W | 1621Z 25 MAR |
| TURKS N CAICOS | WEST_CAICOS | 21.7N 72.5W | 1630Z 25 MAR |
| | GRAND_TURK | 21.5N 71.1W | 1645Z 25 MAR |
| VENEZUELA | MAIQUETIA | 10.6N 67.0W | 1634Z 25 MAR |
| | CUMANA | 10.5N 64.2W | 1707Z 25 MAR |
| | PUNTO_FIJO | 11.7N 70.2W | 1807Z 25 MAR |

| | | | | |
|---|---|---|---|---|
| | GOLFO_VENEZUELA | 11.4N | 71.2W | 1906Z 25 MAR |
| | PORLAMAR | 10.9N | 63.8W | 2031Z 25 MAR |
| SABA | SABA | 17.6N | 63.2W | 1650Z 25 MAR |
| SAINT KITTS | BASSETERRE | 17.3N | 62.7W | 1652Z 25 MAR |
| MONTSERRAT | PLYMOUTH | 16.7N | 62.2W | 1653Z 25 MAR |
| MEXICO | COZUMEL | 20.5N | 87.0W | 1655Z 25 MAR |
| | MADERO | 22.3N | 97.8W | 1936Z 25 MAR |
| | VERACRUZ | 19.2N | 96.1W | 1941Z 25 MAR |
| | TEXAS_BORDER | 26.0N | 97.1W | 1951Z 25 MAR |
| | PROGRESO | 21.3N | 89.7W | 2042Z 25 MAR |
| | CAMPECHE | 19.9N | 90.5W | 2338Z 25 MAR |
| HONDURAS | PUERTO_CORTES | 15.9N | 88.0W | 1655Z 25 MAR |
| | TRUJILLO | 15.9N | 86.0W | 1741Z 25 MAR |
| SINT EUSTATIUS | SINT_EUSTATIUS | 17.5N | 63.0W | 1656Z 25 MAR |
| GUADELOUPE | BASSE_TERRE | 16.0N | 61.7W | 1656Z 25 MAR |
| DOMINICA | ROSEAU | 15.3N | 61.4W | 1657Z 25 MAR |
| SAINT LUCIA | CASTRIES | 14.0N | 61.0W | 1659Z 25 MAR |
| SINT MAARTEN | SIMPSON_BAAI | 18.0N | 63.1W | 1700Z 25 MAR |
| SAINT VINCENT | KINGSTOWN | 13.1N | 61.2W | 1701Z 25 MAR |
| MARTINIQUE | FORT_DE_FRANCE | 14.6N | 61.1W | 1704Z 25 MAR |
| ANGUILLA | THE_VALLEY | 18.3N | 63.1W | 1708Z 25 MAR |
| GRENADA | SAINT_GEORGES | 12.0N | 61.8W | 1710Z 25 MAR |
| BARBADOS | BRIDGETOWN | 13.1N | 59.6W | 1726Z 25 MAR |
| SAINT BARTHELEM | SAINT_BARTHELEM | 17.9N | 62.8W | 1727Z 25 MAR |
| ANTIGUA | SAINT_JOHNS | 17.1N | 61.9W | 1732Z 25 MAR |
| BARBUDA | PALMETTO_POINT | 17.6N | 61.9W | 1735Z 25 MAR |
| SAINT MARTIN | BAIE_BLANCHE | 18.1N | 63.0W | 1738Z 25 MAR |
| TRINIDAD TOBAGO | PIRATES_BAY | 11.3N | 60.6W | 1753Z 25 MAR |
| | PORT_OF_SPAIN | 10.6N | 61.5W | 1824Z 25 MAR |
| BELIZE | BELIZE_CITY | 17.5N | 88.2W | 1805Z 25 MAR |
| BERMUDA | RUTHS_BAY | 32.4N | 64.6W | 1819Z 25 MAR |
| GUATEMALA | PUERTO_BARRIOS | 15.7N | 88.6W | 1847Z 25 MAR |
| FRENCH GUIANA | CAYENNE | 4.9N | 52.3W | 2103Z 25 MAR |
| GUYANA | GEORGETOWN | 6.8N | 58.2W | 2142Z 25 MAR |
| SURINAME | PARAMARIBO | 5.9N | 55.2W | 2203Z 25 MAR |
| BRAZIL | FORTALEZA | 3.7S | 38.5W | 2224Z 25 MAR |
| | SAO_LUIS | 2.5S | 44.3W | 0044Z 26 MAR |
| | ILHA_DE_MARACA | 2.2N | 50.5W | 0049Z 26 MAR |

ADDITIONAL BULLETINS WILL BE ISSUED BY THE PACIFIC TSUNAMI
WARNING CENTER FOR THIS EVENT AS MORE INFORMATION
BECOMES AVAILABLE.

## ***PTWC Message #6***

TEST...TSUNAMI MESSAGE NUMBER 6 ...TEST
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
1800 UTC WED MAR 25 2015

THIS MESSAGE APPLIES TO COUNTRIES WITHIN AND BORDERING THE CARIBBEAN SEA...EXCEPT FOR PUERTO RICO...THE U.S. VIRGIN ISLANDS...AND THE BRITISH VIRGIN ISLANDS.

... A CARIBBEAN-WIDE TSUNAMI WATCH IS IN EFFECT ...

A TSUNAMI WATCH IS IN EFFECT FOR

PANAMA / COLOMBIA / COSTA RICA / HAITI / ARUBA / NICARAGUA / CAYMAN ISLANDS / JAMAICA / CUBA / BONAIRE / DOMINICAN REP / BAHAMAS / CURACAO / TURKS N CAICOS / VENEZUELA / SABA / SAINT KITTS / MONTSERRAT / MEXICO / HONDURAS / SINT EUSTATIUS / GUADELOUPE / DOMINICA / SAINT LUCIA / SINT MAARTEN / SAINT VINCENT / MARTINIQUE / ANGUILLA / GRENADA / BARBADOS / SAINT BARTHELEMY / ANTIGUA / BARBUDA / SAINT MARTIN / TRINIDAD TOBAGO / BELIZE / BERMUDA / GUATEMALA / FRENCH GUIANA / GUYANA / SURINAME / BRAZIL

THIS BULLETIN IS ISSUED AS ADVICE TO GOVERNMENT AGENCIES. ONLY NATIONAL AND LOCAL GOVERNMENT AGENCIES HAVE THE AUTHORITY TO MAKE DECISIONS REGARDING THE OFFICIAL STATE OF ALERT IN THEIR AREA AND ANY ACTIONS TO BE TAKEN IN RESPONSE.

AN EARTHQUAKE HAS OCCURRED WITH THESE PRELIMINARY PARAMETERS

ORIGIN TIME - 1400Z 25 MAR 2015
COORDINATES - 10.3 NORTH 78.8 WEST
LOCATION - NORTH OF PANAMA
MAGNITUDE - 8.5

MEASUREMENTS OR REPORTS OF TSUNAMI WAVE ACTIVITY

| GAUGE LOCATION | GAUGE COORDINATES LAT | LON | TIME OF MEASURE (UTC) | MAXIMUM TSUNAMI HEIGHT | WAVE PERIOD (MIN) |
|---|---|---|---|---|---|
| EL PORVENIR PA | 9.5N | 78.9W | 1505 | 2.4M/07.8FT | 15 |
| LIMON CR | 10.0N | 83.0W | 1544 | 0.6M/01.9FT | 12 |
| SANTA MARTA CO | 11.2N | 74.2W | 1634 | 2.6M/08.6FT | 13 |
| SAN ANDRES CO | 12.6N | 81.7W | 1623 | 1.9M/06.2FT | 13 |
| PORT AU PRINCE HT | 18.5N | 72.4W | 1722 | 0.6M/02.1FT | 14 |
| SANTO DOMINGO DO | 18.4N | 69.6W | 1734 | 3.0M/09.8FT | 12 |
| BULLEN BAY CURACAO | 12.2N | 69.0W | 1715 | 0.7M/02.4FT | 15 |
| MONA ISLAND PR | 18.1N | 67.9W | 1745 | 1.7M/05.6FT | 15 |
| MAYAGUEZ PR | 18.2N | 67.2W | 1732 | 0.9M/03.0FT | 15 |
| MAGUEYES IS PR | 18.0N | 67.0W | 1746 | 0.9M/02.9FT | 14 |
| YABUCOA PR | 18.1N | 65.8W | 1735 | 0.7M/04.2FT | 14 |
| SAN JUAN PR | 18.5N | 66.1W | 1721 | 0.1M/00.4FT | 20 |
| LIMETREE USVI | 17.7N | 64.7W | 1756 | 0.6M/02.1FT | - |
| ST CROIX USVI | 17.7N | 64.6W | 1731 | 0.5M/01.8FT | 18 |
| ESPERANZA VIEQUES PR | 18.1N | 65.5W | 1751 | 1.1M/03.5FT | 13 |
| FAJARDO PR | 18.3N | 65.6W | 1755 | 0.5M/01.7FT | 14 |
| CHARLOTTE AMALI USVI | 18.3N | 64.9W | 1748 | 1.1M/03.6FT | 17 |
| LAMESHUR BAY USVI | 18.3N | 64.7W | 1744 | 1.3M/04.2FT | 16 |
| PUERTO PLATA DO | 19.8N | 70.7W | 1744 | 0.1M/00.4FT | 20 |
| BASSETERRE KN | 17.3N | 62.7W | 1734 | 0.5M/01.6FT | 19 |
| BARBUDA AG | 17.6N | 61.8W | 1745 | 0.4M/01.3FT | 14 |
| DESIRADE GP | 16.3N | 61.1W | 1739 | 0.3M/01.1FT | 12 |
| ROSEAU DM | 15.3N | 61.4W | 1751 | 0.2M/00.5FT | 12 |
| CALLIAQUA VC | 13.1N | 61.2W | 1734 | 0.3M/01.0FT | 15 |
| PRICKLY BAY GD | 12.0N | 61.8W | 1745 | 0.2M/00.6FT | - |

EVALUATION

SEA LEVEL READINGS INDICATE A TSUNAMI WAS GENERATED. IT MAY HAVE ALREADY HAVE BEEN DESTRUCTIVE ALONG COASTS NEAR THE EARTHQUAKE EPICENTER.

BASED ON THESE DATA THE THREAT CONTINUES FOR ALL COASTAL AREAS OF THE CARIBBEAN. FOR THOSE AREAS - WHEN NO MAJOR WAVES HAVE OCCURRED FOR AT LEAST TWO HOURS AFTER THE ESTIMATED ARRIVAL TIME OR DAMAGING WAVES HAVE NOT OCCURRED FOR AT LEAST TWO HOURS THEN LOCAL AUTHORITIES CAN ASSUME THE THREAT IS PASSED. DANGER TO BOATS AND COASTAL STRUCTURES CAN CONTINUE FOR SEVERAL HOURS DUE TO RAPID CURRENTS. AS LOCAL CONDITIONS CAN CAUSE A WIDE VARIATION IN TSUNAMI WAVE ACTION THE ALL CLEAR DETERMINATION MUST BE MADE BY LOCAL AUTHORITIES.

ESTIMATED INITIAL TSUNAMI WAVE ARRIVAL TIMES AT FORECAST POINTS WITHIN THE WARNING AND WATCH AREAS ARE GIVEN BELOW. ACTUAL ARRIVAL TIMES MAY DIFFER AND THE INITIAL WAVE MAY NOT BE THE LARGEST. A TSUNAMI IS A SERIES OF WAVES AND THE TIME BETWEEN SUCCESSIVE WAVES CAN BE FIVE MINUTES TO ONE HOUR.

| LOCATION | FORECAST POINT | COORDINATES | ARRIVAL TIME |
|---|---|---|---|
| PANAMA | ALIGANDI | 9.2N 78.0W | 1425Z 25 MAR |
| | PUERTO_CARRETO | 8.8N 77.6W | 1439Z 25 MAR |
| | COLON | 9.4N 79.9W | 1451Z 25 MAR |
| | PUERTO_OBALDIA | 8.7N 77.4W | 1453Z 25 MAR |
| | BOCAS_DEL_TORO | 9.4N 82.2W | 1506Z 25 MAR |
| COLOMBIA | CARTAGENA | 10.4N 75.6W | 1442Z 25 MAR |
| | PUNTA_CARIBANA | 8.6N 76.9W | 1459Z 25 MAR |
| | SANTA_MARTA | 11.2N 74.2W | 1502Z 25 MAR |
| | BARRANQUILLA | 11.1N 74.9W | 1516Z 25 MAR |
| | RIOHACHA | 11.6N 72.9W | 1552Z 25 MAR |
| COSTA RICA | PUERTO_LIMON | 10.0N 83.0W | 1454Z 25 MAR |
| HAITI | JACMEL | 18.1N 72.5W | 1535Z 25 MAR |
| | JEREMIE | 18.6N 74.1W | 1551Z 25 MAR |
| | CAP_HAITEN | 19.8N 72.2W | 1626Z 25 MAR |
| | PORT_AU_PRINCE | 18.5N 72.4W | 1655Z 25 MAR |
| ARUBA | ORANJESTAD | 12.5N 70.0W | 1547Z 25 MAR |
| NICARAGUA | PUNTA_GORDA | 11.4N 83.8W | 1548Z 25 MAR |
| | PUERTO_CABEZAS | 14.0N 83.4W | 1936Z 25 MAR |
| CAYMAN ISLANDS | CAYMAN_BRAC | 19.7N 79.9W | 1551Z 25 MAR |
| | GRAND_CAYMAN | 19.3N 81.3W | 1600Z 25 MAR |
| JAMAICA | KINGSTON | 17.9N 76.9W | 1553Z 25 MAR |
| | MONTEGO_BAY | 18.5N 77.9W | 1615Z 25 MAR |
| CUBA | SANTIAGO_D_CUBA | 19.9N 75.8W | 1554Z 25 MAR |
| | BARACOA | 20.4N 74.5W | 1614Z 25 MAR |
| | CIENFUEGOS | 22.0N 80.5W | 1620Z 25 MAR |
| | GIBARA | 21.1N 76.1W | 1634Z 25 MAR |
| | LA_HABANA | 23.2N 82.4W | 1721Z 25 MAR |
| | SANTA_CRZ_D_SUR | 20.7N 78.0W | 1854Z 25 MAR |
| | NUEVA_GERONA | 21.9N 82.8W | 2010Z 25 MAR |
| BONAIRE | ONIMA | 12.3N 68.3W | 1557Z 25 MAR |
| DOMINICAN REP | SANTO_DOMINGO | 18.5N 69.9W | 1604Z 25 MAR |
| | CABO_ENGANO | 18.6N 68.3W | 1628Z 25 MAR |
| | PUERTO_PLATA | 19.8N 70.7W | 1637Z 25 MAR |
| BAHAMAS | GREAT_INAGUA | 20.9N 73.7W | 1620Z 25 MAR |
| | MAYAGUANA | 22.3N 73.0W | 1634Z 25 MAR |
| | LONG_ISLAND | 23.3N 75.1W | 1654Z 25 MAR |
| | SAN_SALVADOR | 24.1N 74.5W | 1654Z 25 MAR |
| | EXUMA | 23.6N 75.9W | 1704Z 25 MAR |
| | CROOKED_ISLAND | 22.7N 74.1W | 1709Z 25 MAR |
| | CAT_ISLAND | 24.4N 75.5W | 1713Z 25 MAR |
| | ELEUTHERA_ISLAN | 25.2N 76.1W | 1721Z 25 MAR |
| | ANDROS_ISLAND | 25.0N 77.9W | 1730Z 25 MAR |
| | NASSAU | 25.1N 77.4W | 1742Z 25 MAR |
| | FREEPORT | 26.5N 78.8W | 1754Z 25 MAR |
| | ABACO_ISLAND | 26.6N 77.1W | 1759Z 25 MAR |
| | BIMINI | 25.8N 79.3W | 1807Z 25 MAR |

| | | | | |
|---|---|---|---|---|
| CURACAO | WILLEMSTAD | 12.1N | 68.9W | 1621Z 25 MAR |
| TURKS N CAICOS | WEST_CAICOS | 21.7N | 72.5W | 1630Z 25 MAR |
| | GRAND_TURK | 21.5N | 71.1W | 1645Z 25 MAR |
| VENEZUELA | MAIQUETIA | 10.6N | 67.0W | 1634Z 25 MAR |
| | CUMANA | 10.5N | 64.2W | 1707Z 25 MAR |
| | PUNTO_FIJO | 11.7N | 70.2W | 1807Z 25 MAR |
| | GOLFO_VENEZUELA | 11.4N | 71.2W | 1906Z 25 MAR |
| | PORLAMAR | 10.9N | 63.8W | 2031Z 25 MAR |
| SABA | SABA | 17.6N | 63.2W | 1650Z 25 MAR |
| SAINT KITTS | BASSETERRE | 17.3N | 62.7W | 1652Z 25 MAR |
| MONTSERRAT | PLYMOUTH | 16.7N | 62.2W | 1653Z 25 MAR |
| MEXICO | COZUMEL | 20.5N | 87.0W | 1655Z 25 MAR |
| | MADERO | 22.3N | 97.8W | 1936Z 25 MAR |
| | VERACRUZ | 19.2N | 96.1W | 1941Z 25 MAR |
| | TEXAS_BORDER | 26.0N | 97.1W | 1951Z 25 MAR |
| | PROGRESO | 21.3N | 89.7W | 2042Z 25 MAR |
| | CAMPECHE | 19.9N | 90.5W | 2338Z 25 MAR |
| HONDURAS | PUERTO_CORTES | 15.9N | 88.0W | 1655Z 25 MAR |
| | TRUJILLO | 15.9N | 86.0W | 1741Z 25 MAR |
| SINT EUSTATIUS | SINT_EUSTATIUS | 17.5N | 63.0W | 1656Z 25 MAR |
| GUADELOUPE | BASSE_TERRE | 16.0N | 61.7W | 1656Z 25 MAR |
| DOMINICA | ROSEAU | 15.3N | 61.4W | 1657Z 25 MAR |
| SAINT LUCIA | CASTRIES | 14.0N | 61.0W | 1659Z 25 MAR |
| SINT MAARTEN | SIMPSON_BAAI | 18.0N | 63.1W | 1700Z 25 MAR |
| SAINT VINCENT | KINGSTOWN | 13.1N | 61.2W | 1701Z 25 MAR |
| MARTINIQUE | FORT_DE_FRANCE | 14.6N | 61.1W | 1704Z 25 MAR |
| ANGUILLA | THE_VALLEY | 18.3N | 63.1W | 1708Z 25 MAR |
| GRENADA | SAINT_GEORGES | 12.0N | 61.8W | 1710Z 25 MAR |
| BARBADOS | BRIDGETOWN | 13.1N | 59.6W | 1726Z 25 MAR |
| SAINT BARTHELEM | SAINT_BARTHELEM | 17.9N | 62.8W | 1727Z 25 MAR |
| ANTIGUA | SAINT_JOHNS | 17.1N | 61.9W | 1732Z 25 MAR |
| BARBUDA | PALMETTO_POINT | 17.6N | 61.9W | 1735Z 25 MAR |
| SAINT MARTIN | BAIE_BLANCHE | 18.1N | 63.0W | 1738Z 25 MAR |
| TRINIDAD TOBAGO | PIRATES_BAY | 11.3N | 60.6W | 1753Z 25 MAR |
| | PORT_OF_SPAIN | 10.6N | 61.5W | 1824Z 25 MAR |
| BELIZE | BELIZE_CITY | 17.5N | 88.2W | 1805Z 25 MAR |
| BERMUDA | RUTHS_BAY | 32.4N | 64.6W | 1819Z 25 MAR |
| GUATEMALA | PUERTO_BARRIOS | 15.7N | 88.6W | 1847Z 25 MAR |
| FRENCH GUIANA | CAYENNE | 4.9N | 52.3W | 2103Z 25 MAR |
| GUYANA | GEORGETOWN | 6.8N | 58.2W | 2142Z 25 MAR |
| SURINAME | PARAMARIBO | 5.9N | 55.2W | 2203Z 25 MAR |
| BRAZIL | FORTALEZA | 3.7S | 38.5W | 2224Z 25 MAR |
| | SAO_LUIS | 2.5S | 44.3W | 0044Z 26 MAR |
| | ILHA_DE_MARACA | 2.2N | 50.5W | 0049Z 26 MAR |

ADDITIONAL BULLETINS WILL BE ISSUED BY THE PACIFIC TSUNAMI
WARNING CENTER FOR THIS EVENT AS MORE INFORMATION
BECOMES AVAILABLE.

## ***PTWC Message #7***

TEST...TSUNAMI MESSAGE NUMBER 7 ...TEST
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
1900 UTC WED MAR 25 2015

THIS MESSAGE APPLIES TO COUNTRIES WITHIN AND BORDERING THE CARIBBEAN SEA...EXCEPT FOR PUERTO RICO...THE U.S. VIRGIN ISLANDS...AND THE BRITISH VIRGIN ISLANDS.

... A CARIBBEAN-WIDE TSUNAMI WATCH IS IN EFFECT ...

A TSUNAMI WATCH IS IN EFFECT FOR

PANAMA / COLOMBIA / COSTA RICA / HAITI / ARUBA / NICARAGUA / CAYMAN ISLANDS / JAMAICA / CUBA / BONAIRE / DOMINICAN REP / BAHAMAS / CURACAO / TURKS N CAICOS / VENEZUELA / SABA / SAINT KITTS / MONTSERRAT / MEXICO / HONDURAS / SINT EUSTATIUS / GUADELOUPE / DOMINICA / SAINT LUCIA / SINT MAARTEN / SAINT VINCENT / MARTINIQUE / ANGUILLA / GRENADA / BARBADOS / SAINT BARTHELEMY / ANTIGUA / BARBUDA / SAINT MARTIN / TRINIDAD TOBAGO / BELIZE / BERMUDA / GUATEMALA / FRENCH GUIANA / GUYANA / SURINAME / BRAZIL

THIS BULLETIN IS ISSUED AS ADVICE TO GOVERNMENT AGENCIES. ONLY NATIONAL AND LOCAL GOVERNMENT AGENCIES HAVE THE AUTHORITY TO MAKE DECISIONS REGARDING THE OFFICIAL STATE OF ALERT IN THEIR AREA AND ANY ACTIONS TO BE TAKEN IN RESPONSE.

AN EARTHQUAKE HAS OCCURRED WITH THESE PRELIMINARY PARAMETERS

ORIGIN TIME - 1400Z 25 MAR 2015
COORDINATES - 10.3 NORTH 78.8 WEST
LOCATION - NORTH OF PANAMA
MAGNITUDE - 8.5

MEASUREMENTS OR REPORTS OF TSUNAMI WAVE ACTIVITY

| GAUGE LOCATION | GAUGE COORDINATES LAT | LON | TIME OF MEASURE (UTC) | MAXIMUM TSUNAMI HEIGHT | WAVE PERIOD (MIN) |
|---|---|---|---|---|---|
| EL PORVENIR PA | 9.5N | 78.9W | 1505 | 2.4M/07.8FT | 15 |
| LIMON CR | 10.0N | 83.0W | 1544 | 0.6M/01.9FT | 12 |
| SANTA MARTA CO | 11.2N | 74.2W | 1634 | 2.6M/08.6FT | 13 |
| SAN ANDRES CO | 12.6N | 81.7W | 1623 | 1.9M/06.2FT | 13 |
| PORT AU PRINCE HT | 18.5N | 72.4W | 1722 | 0.6M/02.1FT | 14 |
| SANTO DOMINGO DO | 18.4N | 69.6W | 1734 | 3.0M/09.8FT | 12 |
| BULLEN BAY CURACAO | 12.2N | 69.0W | 1715 | 0.7M/02.4FT | 15 |
| MONA ISLAND PR | 18.1N | 67.9W | 1745 | 1.7M/05.6FT | 15 |
| MAYAGUEZ PR | 18.2N | 67.2W | 1732 | 0.9M/03.0FT | 15 |
| MAGUEYES IS PR | 18.0N | 67.0W | 1746 | 0.9M/02.9FT | 14 |
| YABUCOA PR | 18.1N | 65.8W | 1735 | 0.7M/04.2FT | 14 |
| SAN JUAN PR | 18.5N | 66.1W | 1721 | 0.1M/00.4FT | 20 |
| LIMETREE USVI | 17.7N | 64.7W | 1756 | 0.6M/02.1FT | 15 |
| ST CROIX USVI | 17.7N | 64.6W | 1731 | 0.5M/01.8FT | 18 |
| ESPERANZA VIEQUES PR | 18.1N | 65.5W | 1751 | 1.1M/03.5FT | 13 |
| FAJARDO PR | 18.3N | 65.6W | 1755 | 0.5M/01.7FT | 14 |
| CHARLOTTE AMALI USVI | 18.3N | 64.9W | 1748 | 1.1M/03.6FT | 17 |
| LAMESHUR BAY USVI | 18.3N | 64.7W | 1744 | 1.3M/04.2FT | 16 |
| PUERTO PLATA DO | 19.8N | 70.7W | 1823 | 0.2M/00.5FT | 20 |
| BASSETERRE KN | 17.3N | 62.7W | 1845 | 0.6M/01.9FT | 19 |
| BARBUDA AG | 17.6N | 61.8W | 1812 | 0.5M/01.8FT | 14 |
| DESIRADE GP | 16.3N | 61.1W | 1845 | 0.5M/01.7FT | 12 |
| ROSEAU DM | 15.3N | 61.4W | 1822 | 0.2M/00.7FT | 12 |
| CALLIAQUA VC | 13.1N | 61.2W | 1847 | 0.4M/01.4FT | 15 |
| PRICKLY BAY GD | 12.0N | 61.8W | 1821 | 0.2M/00.7FT | 18 |

EVALUATION

SEA LEVEL READINGS INDICATE A TSUNAMI WAS GENERATED. IT MAY HAVE ALREADY HAVE BEEN DESTRUCTIVE ALONG COASTS NEAR THE EARTHQUAKE EPICENTER.

BASED ON THESE DATA THE THREAT CONTINUES FOR ALL COASTAL AREAS OF THE CARIBBEAN. FOR THOSE AREAS - WHEN NO MAJOR WAVES HAVE OCCURRED FOR AT LEAST TWO HOURS AFTER THE ESTIMATED ARRIVAL TIME OR DAMAGING WAVES HAVE NOT OCCURRED FOR AT LEAST TWO HOURS THEN LOCAL AUTHORITIES CAN ASSUME THE THREAT IS PASSED. DANGER TO BOATS AND COASTAL STRUCTURES CAN CONTINUE FOR SEVERAL HOURS DUE TO RAPID CURRENTS. AS LOCAL CONDITIONS CAN CAUSE A WIDE VARIATION IN TSUNAMI WAVE ACTION THE ALL CLEAR DETERMINATION MUST BE MADE BY LOCAL AUTHORITIES.

ESTIMATED INITIAL TSUNAMI WAVE ARRIVAL TIMES AT FORECAST POINTS WITHIN THE WARNING AND WATCH AREAS ARE GIVEN BELOW. ACTUAL ARRIVAL TIMES MAY DIFFER AND THE INITIAL WAVE MAY NOT BE THE LARGEST. A TSUNAMI IS A SERIES OF WAVES AND THE TIME BETWEEN SUCCESSIVE WAVES CAN BE FIVE MINUTES TO ONE HOUR.

| LOCATION | FORECAST POINT | COORDINATES | ARRIVAL TIME |
|---|---|---|---|
| PANAMA | ALIGANDI | 9.2N 78.0W | 1425Z 25 MAR |
| | PUERTO_CARRETO | 8.8N 77.6W | 1439Z 25 MAR |
| | COLON | 9.4N 79.9W | 1451Z 25 MAR |
| | PUERTO_OBALDIA | 8.7N 77.4W | 1453Z 25 MAR |
| | BOCAS_DEL_TORO | 9.4N 82.2W | 1506Z 25 MAR |
| COLOMBIA | CARTAGENA | 10.4N 75.6W | 1442Z 25 MAR |
| | PUNTA_CARIBANA | 8.6N 76.9W | 1459Z 25 MAR |
| | SANTA_MARTA | 11.2N 74.2W | 1502Z 25 MAR |
| | BARRANQUILLA | 11.1N 74.9W | 1516Z 25 MAR |
| | RIOHACHA | 11.6N 72.9W | 1552Z 25 MAR |
| COSTA RICA | PUERTO_LIMON | 10.0N 83.0W | 1454Z 25 MAR |
| HAITI | JACMEL | 18.1N 72.5W | 1535Z 25 MAR |
| | JEREMIE | 18.6N 74.1W | 1551Z 25 MAR |
| | CAP_HAITEN | 19.8N 72.2W | 1626Z 25 MAR |
| | PORT_AU_PRINCE | 18.5N 72.4W | 1655Z 25 MAR |
| ARUBA | ORANJESTAD | 12.5N 70.0W | 1547Z 25 MAR |
| NICARAGUA | PUNTA_GORDA | 11.4N 83.8W | 1548Z 25 MAR |
| | PUERTO_CABEZAS | 14.0N 83.4W | 1936Z 25 MAR |
| CAYMAN ISLANDS | CAYMAN_BRAC | 19.7N 79.9W | 1551Z 25 MAR |
| | GRAND_CAYMAN | 19.3N 81.3W | 1600Z 25 MAR |
| JAMAICA | KINGSTON | 17.9N 76.9W | 1553Z 25 MAR |
| | MONTEGO_BAY | 18.5N 77.9W | 1615Z 25 MAR |
| CUBA | SANTIAGO_D_CUBA | 19.9N 75.8W | 1554Z 25 MAR |
| | BARACOA | 20.4N 74.5W | 1614Z 25 MAR |
| | CIENFUEGOS | 22.0N 80.5W | 1620Z 25 MAR |
| | GIBARA | 21.1N 76.1W | 1634Z 25 MAR |
| | LA_HABANA | 23.2N 82.4W | 1721Z 25 MAR |
| | SANTA_CRZ_D_SUR | 20.7N 78.0W | 1854Z 25 MAR |
| | NUEVA_GERONA | 21.9N 82.8W | 2010Z 25 MAR |
| BONAIRE | ONIMA | 12.3N 68.3W | 1557Z 25 MAR |
| DOMINICAN REP | SANTO_DOMINGO | 18.5N 69.9W | 1604Z 25 MAR |
| | CABO_ENGANO | 18.6N 68.3W | 1628Z 25 MAR |
| | PUERTO_PLATA | 19.8N 70.7W | 1637Z 25 MAR |
| BAHAMAS | GREAT_INAGUA | 20.9N 73.7W | 1620Z 25 MAR |
| | MAYAGUANA | 22.3N 73.0W | 1634Z 25 MAR |
| | LONG_ISLAND | 23.3N 75.1W | 1654Z 25 MAR |
| | SAN_SALVADOR | 24.1N 74.5W | 1654Z 25 MAR |
| | EXUMA | 23.6N 75.9W | 1704Z 25 MAR |
| | CROOKED_ISLAND | 22.7N 74.1W | 1709Z 25 MAR |
| | CAT_ISLAND | 24.4N 75.5W | 1713Z 25 MAR |
| | ELEUTHERA_ISLAN | 25.2N 76.1W | 1721Z 25 MAR |
| | ANDROS_ISLAND | 25.0N 77.9W | 1730Z 25 MAR |
| | NASSAU | 25.1N 77.4W | 1742Z 25 MAR |
| | FREEPORT | 26.5N 78.8W | 1754Z 25 MAR |
| | ABACO_ISLAND | 26.6N 77.1W | 1759Z 25 MAR |

| | | | | |
|---|---|---|---|---|
| | BIMINI | 25.8N | 79.3W | 1807Z 25 MAR |
| CURACAO | WILLEMSTAD | 12.1N | 68.9W | 1621Z 25 MAR |
| TURKS N CAICOS | WEST_CAICOS | 21.7N | 72.5W | 1630Z 25 MAR |
| | GRAND_TURK | 21.5N | 71.1W | 1645Z 25 MAR |
| VENEZUELA | MAIQUETIA | 10.6N | 67.0W | 1634Z 25 MAR |
| | CUMANA | 10.5N | 64.2W | 1707Z 25 MAR |
| | PUNTO_FIJO | 11.7N | 70.2W | 1807Z 25 MAR |
| | GOLFO_VENEZUELA | 11.4N | 71.2W | 1906Z 25 MAR |
| | PORLAMAR | 10.9N | 63.8W | 2031Z 25 MAR |
| SABA | SABA | 17.6N | 63.2W | 1650Z 25 MAR |
| SAINT KITTS | BASSETERRE | 17.3N | 62.7W | 1652Z 25 MAR |
| MONTSERRAT | PLYMOUTH | 16.7N | 62.2W | 1653Z 25 MAR |
| MEXICO | COZUMEL | 20.5N | 87.0W | 1655Z 25 MAR |
| | MADERO | 22.3N | 97.8W | 1936Z 25 MAR |
| | VERACRUZ | 19.2N | 96.1W | 1941Z 25 MAR |
| | TEXAS_BORDER | 26.0N | 97.1W | 1951Z 25 MAR |
| | PROGRESO | 21.3N | 89.7W | 2042Z 25 MAR |
| | CAMPECHE | 19.9N | 90.5W | 2338Z 25 MAR |
| HONDURAS | PUERTO_CORTES | 15.9N | 88.0W | 1655Z 25 MAR |
| | TRUJILLO | 15.9N | 86.0W | 1741Z 25 MAR |
| SINT EUSTATIUS | SINT_EUSTATIUS | 17.5N | 63.0W | 1656Z 25 MAR |
| GUADELOUPE | BASSE_TERRE | 16.0N | 61.7W | 1656Z 25 MAR |
| DOMINICA | ROSEAU | 15.3N | 61.4W | 1657Z 25 MAR |
| SAINT LUCIA | CASTRIES | 14.0N | 61.0W | 1659Z 25 MAR |
| SINT MAARTEN | SIMPSON_BAAI | 18.0N | 63.1W | 1700Z 25 MAR |
| SAINT VINCENT | KINGSTOWN | 13.1N | 61.2W | 1701Z 25 MAR |
| MARTINIQUE | FORT_DE_FRANCE | 14.6N | 61.1W | 1704Z 25 MAR |
| ANGUILLA | THE_VALLEY | 18.3N | 63.1W | 1708Z 25 MAR |
| GRENADA | SAINT_GEORGES | 12.0N | 61.8W | 1710Z 25 MAR |
| BARBADOS | BRIDGETOWN | 13.1N | 59.6W | 1726Z 25 MAR |
| SAINT BARTHELEM | SAINT_BARTHELEM | 17.9N | 62.8W | 1727Z 25 MAR |
| ANTIGUA | SAINT_JOHNS | 17.1N | 61.9W | 1732Z 25 MAR |
| BARBUDA | PALMETTO_POINT | 17.6N | 61.9W | 1735Z 25 MAR |
| SAINT MARTIN | BAIE_BLANCHE | 18.1N | 63.0W | 1738Z 25 MAR |
| TRINIDAD TOBAGO | PIRATES_BAY | 11.3N | 60.6W | 1753Z 25 MAR |
| | PORT_OF_SPAIN | 10.6N | 61.5W | 1824Z 25 MAR |
| BELIZE | BELIZE_CITY | 17.5N | 88.2W | 1805Z 25 MAR |
| BERMUDA | RUTHS_BAY | 32.4N | 64.6W | 1819Z 25 MAR |
| GUATEMALA | PUERTO_BARRIOS | 15.7N | 88.6W | 1847Z 25 MAR |
| FRENCH GUIANA | CAYENNE | 4.9N | 52.3W | 2103Z 25 MAR |
| GUYANA | GEORGETOWN | 6.8N | 58.2W | 2142Z 25 MAR |
| SURINAME | PARAMARIBO | 5.9N | 55.2W | 2203Z 25 MAR |
| BRAZIL | FORTALEZA | 3.7S | 38.5W | 2224Z 25 MAR |
| | SAO_LUIS | 2.5S | 44.3W | 0044Z 26 MAR |
| | ILHA_DE_MARACA | 2.2N | 50.5W | 0049Z 26 MAR |

ADDITIONAL BULLETINS WILL BE ISSUED BY THE PACIFIC TSUNAMI
WARNING CENTER FOR THIS EVENT AS MORE INFORMATION
BECOMES AVAILABLE.

## ***PTWC Message #8***

TEST...TSUNAMI MESSAGE NUMBER 8 ...TEST
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
1945 UTC THU MAR 05 2015

THIS MESSAGE APPLIES TO COUNTRIES WITHIN AND BORDERING THE CARIBBEAN SEA...EXCEPT FOR PUERTO RICO...THE U.S. VIRGIN ISLANDS...AND THE BRITISH VIRGIN ISLANDS.

... THE TSUNAMI WATCH IS CANCELLED ...

THIS BULLETIN IS ISSUED AS ADVICE TO GOVERNMENT AGENCIES. ONLY NATIONAL AND LOCAL GOVERNMENT AGENCIES HAVE THE AUTHORITY TO MAKE DECISIONS REGARDING THE OFFICIAL STATE OF ALERT IN THEIR AREA AND ANY ACTIONS TO BE TAKEN IN RESPONSE.

AN EARTHQUAKE HAS OCCURRED WITH THESE PRELIMINARY PARAMETERS

ORIGIN TIME - 1400Z 25 MAR 2015
COORDINATES - 10.3 NORTH 78.8 WEST
LOCATION - NORTH OF PANAMA
MAGNITUDE - 8.5

MEASUREMENTS OR REPORTS OF TSUNAMI WAVE ACTIVITY

| GAUGE LOCATION | GAUGE COORDINATES LAT | LON | TIME OF MEASURE (UTC) | MAXIMUM TSUNAMI HEIGHT | WAVE PERIOD (MIN) |
|---|---|---|---|---|---|
| EL PORVENIR PA | 9.5N | 78.9W | 1505 | 2.4M/07.8FT | 15 |
| LIMON CR | 10.0N | 83.0W | 1544 | 0.6M/01.9FT | 12 |
| SANTA MARTA CO | 11.2N | 74.2W | 1634 | 2.6M/08.6FT | 13 |
| SAN ANDRES CO | 12.6N | 81.7W | 1623 | 1.9M/06.2FT | 13 |
| PORT AU PRINCE HT | 18.5N | 72.4W | 1722 | 0.6M/02.1FT | 14 |
| SANTO DOMINGO DO | 18.4N | 69.6W | 1734 | 3.0M/09.8FT | 12 |
| BULLEN BAY CURACAO | 12.2N | 69.0W | 1715 | 0.7M/02.4FT | 15 |
| MONA ISLAND PR | 18.1N | 67.9W | 1745 | 1.7M/05.6FT | 15 |
| MAYAGUEZ PR | 18.2N | 67.2W | 1732 | 0.9M/03.0FT | 15 |
| MAGUEYES IS PR | 18.0N | 67.0W | 1746 | 0.9M/02.9FT | 14 |
| YABUCOA PR | 18.1N | 65.8W | 1735 | 0.7M/04.2FT | 14 |
| SAN JUAN PR | 18.5N | 66.1W | 1721 | 0.1M/00.4FT | 20 |
| LIMETREE USVI | 17.7N | 64.7W | 1756 | 0.6M/02.1FT | 13 |
| ST CROIX USVI | 17.7N | 64.6W | 1731 | 0.5M/01.8FT | 18 |
| ESPERANZA VIEQUES PR | 18.1N | 65.5W | 1751 | 1.1M/03.5FT | 13 |
| FAJARDO PR | 18.3N | 65.6W | 1755 | 0.5M/01.7FT | 14 |
| CHARLOTTE AMALI USVI | 18.3N | 64.9W | 1748 | 1.1M/03.6FT | 17 |
| LAMESHUR BAY USVI | 18.3N | 64.7W | 1744 | 1.3M/04.2FT | 16 |
| PUERTO PLATA DO | 19.8N | 70.7W | 1823 | 0.2M/00.5FT | 22 |
| BASSETERRE KN | 17.3N | 62.7W | 1845 | 0.6M/01.9FT | 19 |
| BARBUDA AG | 17.6N | 61.8W | 1812 | 0.5M/01.8FT | 14 |
| DESIRADE GP | 16.3N | 61.1W | 1845 | 0.5M/01.7FT | 12 |
| ROSEAU DM | 15.3N | 61.4W | 1822 | 0.2M/00.7FT | 12 |
| CALLIAQUA VC | 13.1N | 61.2W | 1847 | 0.4M/01.4FT | 15 |
| PRICKLY BAY GD | 12.0N | 61.8W | 1922 | 0.2M/00.8FT | - |

LAT - LATITUDE (N-NORTH, S-SOUTH)
LON - LONGITUDE (E-EAST, W-WEST)
TIME - TIME OF THE MEASUREMENT (Z IS UTC IS GREENWICH TIME)
AMPL - TSUNAMI AMPLITUDE MEASURED RELATIVE TO SEA LEVEL.
IT IS ...NOT... CREST-TO-TROUGH WAVE HEIGHT.
VALUES ARE GIVEN IN BOTH METERS(M) AND FEET(FT).
PER - PERIOD OF TIME IN MINUTES(MIN) FROM ONE WAVE TO THE NEXT.

EVALUATION

A SIGNIFICANT TSUNAMI WAS GENERATED BY THIS EARTHQUAKE.

HOWEVER...SEA LEVEL READINGS NOW INDICATE THAT THE THREAT HAS DIMINISHED OR IS OVER FOR MOST AREAS. THEREFORE THE TSUNAMI WATCH ISSUED BY THIS CENTER IS NOW CANCELLED.

FOR ANY AFFECTED AREAS - WHEN NO MAJOR WAVES HAVE OCCURRED FOR AT LEAST TWO HOURS AFTER THE ESTIMATED ARRIVAL TIME OR DAMAGING WAVES HAVE NOT OCCURRED FOR AT LEAST TWO HOURS THEN LOCAL AUTHORITIES CAN ASSUME THE THREAT IS PASSED. DANGER TO BOATS AND COASTAL STRUCTURES CAN CONTINUE FOR SEVERAL HOURS DUE TO RAPID CURRENTS. AS LOCAL CONDITIONS CAN CAUSE A WIDE VARIATION IN TSUNAMI WAVE ACTION THE ALL CLEAR DETERMINATION MUST BE MADE BY LOCAL AUTHORITIES.

THIS WILL BE THE FINAL PRODUCT ISSUED BY THE PACIFIC TSUNAMI WARNING CENTER FOR THIS EVENT UNLESS ADDITIONAL INFORMATION BECOMES AVAILABLE.

ANNEX VI

## LIST OF ACRONYMS

| | |
|---|---|
| **ATFM** | Alaska Tsunami Forecast Model |
| **CTIC** | Caribbean Tsunami Information Centre |
| **CTWP** | Caribbean Tsunami Warning Program |
| **EAS** | Emergency Alert System |
| **EMO** | Emergency Management Organization |
| **EMWIN** | Emergency Managers Weather Information Network |
| **GTS** | Global Telecommunication System |
| **ICG/CARIBE-EWS** | Intergovernmental Coordination Group for the Tsunami and other Coastal Hazards Warning System for the Caribbean and Adjacent Regions |
| **IOC** | Intergovernmental Oceanographic Commission (UNESCO) |
| **ITIC** | International Tsunami Information Center |
| **NDMO** | National Disaster Management Office |
| **NGDC** | National Geophysical Data Centre |
| **NOAA** | National Oceanic and Atmospheric Administration |
| **NTHMP** | National Tsunami Hazard Mitigation Program |
| **PTWC** | Pacific Tsunami Warning Centre |
| **TIB** | Tsunami Information Bulletin |
| **TIS** | Tsunami Information Statement |
| **TWC** | Tsunami Warning Centre |
| **TWFP** | Tsunami Warning Focal Point |
| **UNESCO** | United Nations Educational, Scientific and Cultural Organization |
| **US NTWC** | US National Tsunami Warning Centre |

**IOC Technical Series**

| No. | Title | Languages |
|---|---|---|
| 1 | Manual on International Oceanographic Data Exchange. 1965 | (out of stock) |
| 2 | Intergovernmental Oceanographic Commission (Five years of work). 1966 | (out of stock) |
| 3 | Radio Communication Requirements of Oceanography. 1967 | (out of stock) |
| 4 | Manual on International Oceanographic Data Exchange - Second revised edition. 1967 | (out of stock) |
| 5 | Legal Problems Associated with Ocean Data Acquisition Systems (ODAS). 1969 | (out of stock) |
| 6 | Perspectives in Oceanography, 1968 | (out of stock) |
| 7 | Comprehensive Outline of the Scope of the Long-term and Expanded Programme of Oceanic Exploration and Research. 1970 | (out of stock) |
| 8 | IGOSS (Integrated Global Ocean Station System) - General Plan Implementation Programme for Phase I. 1971 | (out of stock) |
| 9 | Manual on International Oceanographic Data Exchange - Third Revised Edition. 1973 | (out of stock) |
| 10 | Bruun Memorial Lectures, 1971 | E, F, S, R |
| 11 | Bruun Memorial Lectures, 1973 | (out of stock) |
| 12 | Oceanographic Products and Methods of Analysis and Prediction. 1977 | E only |
| 13 | International Decade of Ocean Exploration (IDOE), 1971-1980. 1974 | (out of stock) |
| 14 | A Comprehensive Plan for the Global Investigation of Pollution in the Marine Environment and Baseline Study Guidelines. 1976 | E, F, S, R |
| 15 | Bruun Memorial Lectures, 1975 - Co-operative Study of the Kuroshio and Adjacent Regions. 1976 | (out of stock) |
| 16 | Integrated Ocean Global Station System (IGOSS) General Plan and Implementation Programme 1977-1982. 1977 | E, F, S, R |
| 17 | Oceanographic Components of the Global Atmospheric Research Programme (GARP) . 1977 | (out of stock) |
| 18 | Global Ocean Pollution: An Overview. 1977 | (out of stock) |
| 19 | Bruun Memorial Lectures - The Importance and Application of Satellite and Remotely Sensed Data to Oceanography. 1977 | (out of stock) |
| 20 | A Focus for Ocean Research: The Intergovernmental Oceanographic Commission - History, Functions, Achievements. 1979 | (out of stock) |
| 21 | Bruun Memorial Lectures, 1979: Marine Environment and Ocean Resources. 1986 | E, F, S, R |
| 22 | Scientific Report of the Interealibration Exercise of the IOC-WMO-UNEP Pilot Project on Monitoring Background Levels of Selected Pollutants in Open Ocean Waters. 1982 | (out of stock) |
| 23 | Operational Sea-Level Stations. 1983 | E, F, S, R |
| 24 | Time-Series of Ocean Measurements. Vol.1. 1983 | E, F, S, R |
| 25 | A Framework for the Implementation of the Comprehensive Plan for the Global Investigation of Pollution in the Marine Environment. 1984 | (out of stock) |
| 26 | The Determination of Polychlorinated Biphenyls in Open-ocean Waters. 1984 | E only |
| 27 | Ocean Observing System Development Programme. 1984 | E, F, S, R |
| 28 | Bruun Memorial Lectures, 1982: Ocean Science for the Year 2000. 1984 | E, F, S, R |
| 29 | Catalogue of Tide Gauges in the Pacific. 1985 | E only |
| 30 | Time-Series of Ocean Measurements. Vol. 2. 1984 | E only |
| 31 | Time-Series of Ocean Measurements. Vol. 3. 1986 | E only |
| 32 | Summary of Radiometric Ages from the Pacific. 1987 | E only |
| 33 | Time-Series of Ocean Measurements. Vol. 4. 1988 | E only |
| 34 | Bruun Memorial Lectures, 1987: Recent Advances in Selected Areas of Ocean Sciences in the Regions of the Caribbean, Indian Ocean and the Western Pacific. 1988 | Composite E, F, S |
| 35 | Global Sea-Level Observing System (GLOSS) Implementation Plan. 1990 | E only |

*(continued)*

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|---|---|---|
| 36 | Bruun Memorial Lectures 1989: Impact of New Technology on Marine Scientific Research. 1991 | Composite E, F, S |
| 37 | Tsunami Glossary - A Glossary of Terms and Acronyms Used in the Tsunami Literature. 1991 | E only |
| 38 | The Oceans and Climate: A Guide to Present Needs. 1991 | E only |
| 39 | Bruun Memorial Lectures, 1991: Modelling and Prediction in Marine Science. 1992 | E only |
| 40 | Oceanic Interdecadal Climate Variability. 1992 | E only |
| 41 | Marine Debris: Solid Waste Management Action for the Wider Caribbean. 1994 | E only |
| 42 | Calculation of New Depth Equations for Expendable Bathymerographs Using a Temperature-Error-Free Method (Application to Sippican/TSK T-7, T-6 and T-4 XBTS. 1994 | E only |
| 43 | IGOSS Plan and Implementation Programme 1996-2003. 1996 | E, F, S, R |
| 44 | Design and Implementation of some Harmful Algal Monitoring Systems. 1996 | E only |
| 45 | Use of Standards and Reference Materials in the Measurement of Chlorinated Hydrocarbon Residues. 1996 | E only |
| 46 | Equatorial Segment of the Mid-Atlantic Ridge. 1996 | E only |
| 47 | Peace in the Oceans: Ocean Governance and the Agenda for Peace; the Proceedings of *Pacem in Maribus* XXIII, Costa Rica, 1995. 1997 | E only |
| 48 | Neotectonics and fluid flow through seafloor sediments in the Eastern Mediterranean and Black Seas - Parts I and II. 1997 | E only |
| 49 | Global Temperature Salinity Profile Programme: Overview and Future. 1998 | E only |
| 50 | Global Sea-Level Observing System (GLOSS) Implementation Plan-1997. 1997 | E only |
| 51 | L'état actuel de 1'exploitation des pêcheries maritimes au Cameroun et leur gestion intégrée dans la sous-région du Golfe de Guinée *(cancelled)* | F only |
| 52 | Cold water carbonate mounds and sediment transport on the Northeast Atlantic Margin. 1998 | E only |
| 53 | The Baltic Floating University: Training Through Research in the Baltic, Barents and White Seas - 1997. 1998 | E only |
| 54 | Geological Processes on the Northeast Atlantic Margin (8th training-through-research cruise, June-August 1998). 1999 | E only |
| 55 | Bruun Memorial Lectures, 1999: Ocean Predictability. 2000 | E only |
| 56 | Multidisciplinary Study of Geological Processes on the North East Atlantic and Western Mediterranean Margins (9th training-through-research cruise, June-July 1999). 2000 | E only |
| 57 | Ad hoc Benthic Indicator Group - Results of Initial Planning Meeting, Paris, France, 6-9 December 1999. 2000 | E only |
| 58 | Bruun Memorial Lectures, 2001: Operational Oceanography – a perspective from the private sector. 2001 | E only |
| 59 | Monitoring and Management Strategies for Harmful Algal Blooms in Coastal Waters. 2001 | E only |
| 60 | Interdisciplinary Approaches to Geoscience on the North East Atlantic Margin and Mid-Atlantic Ridge (10th training-through-research cruise, July-August 2000). 2001 | E only |
| 61 | Forecasting Ocean Science? Pros and Cons, Potsdam Lecture, 1999. 2002 | E only |
| 62 | Geological Processes in the Mediterranean and Black Seas and North East Atlantic (11th training-through-research cruise, July- September 2001). 2002 | E only |
| 63 | Improved Global Bathymetry – Final Report of SCOR Working Group 107. 2002 | E only |
| 64 | R. Revelle Memorial Lecture, 2006: Global Sea Levels, Past, Present and Future. 2007 | E only |
| 65 | Bruun Memorial Lectures, 2003: Gas Hydrates – a potential source of energy from the oceans. 2003 | E only |
| 66 | Bruun Memorial Lectures, 2003: Energy from the Sea: the potential and realities of Ocean Thermal Energy Conversion (OTEC). 2003 | E only |

| | | |
|---|---|---|
| 67 | Interdisciplinary Geoscience Research on the North East Atlantic Margin, Mediterranean Sea and Mid-Atlantic Ridge (12th training-through-research cruise, June-August 2002). 2003 | E only |
| 68 | Interdisciplinary Studies of North Atlantic and Labrador Sea Margin Architecture and Sedimentary Processes (13th training-through-research cruise, July-September 2003). 2004 | E only |
| 69 | Biodiversity and Distribution of the Megafauna / Biodiversité et distribution de la mégafaune. 2006<br>Vol.1 The polymetallic nodule ecosystem of the Eastern Equatorial Pacific Ocean / Ecosystème de nodules polymétalliques de l'océan Pacifique Est équatorial<br>Vol.2 Annotated photographic Atlas of the echinoderms of the Clarion-Clipperton fracture zone / Atlas photographique annoté des échinodermes de la zone de fractures de Clarion et de Clipperton<br>Vol.3 Options for the management and conservation of the biodiversity — The nodule ecosystem in the Clarion Clipperton fracture zone: scientific, legal and institutional aspects | E F |
| 70 | Interdisciplinary geoscience studies of the Gulf of Cadiz and Western Mediterranean Basin (14th training-through-research cruise, July-September 2004). 2006 | E only |
| 71 | Indian Ocean Tsunami Warning and Mitigation System, IOTWS. Implementation Plan, 7–9 April 2009 (2nd Revision). 2009 | E only |
| 72 | Deep-water Cold Seeps, Sedimentary Environments and Ecosystems of the Black and Tyrrhenian Seas and the Gulf of Cadiz (15th training-through-research cruise, June–August 2005). 2007 | E only |
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| 74 | Bruun Memorial Lectures, 2005: The Ecology and Oceanography of Harmful Algal Blooms – Multidisciplinary approaches to research and management. 2007 | E only |
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