



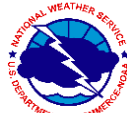
EXERCISE CARIBE WAVE 24

A Caribbean and Adjacent Region Tsunami Warning Exercise

21 March 2024

(Puerto Rico Trench and Panama
Scenarios)

Volume 1 Participant Handbook



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IOC Technical Series, 187 (volume 1)
Paris, December 2023
English only

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NOTE: The United Nations Educational, Scientific and Cultural Organization (UNESCO) and the Intergovernmental Oceanographic Commission (IOC) pattern the contents of this handbook after the CARIBE WAVE 2011, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021 and 2022 Exercises. Each of these exercises has a handbook published as part of the IOC Technical Series. These CARIBE WAVE exercises followed the Pacific Wave exercises which commenced in 2008 with a manual published by the Intergovernmental Oceanographic Commission (*Exercise Pacific Wave 08: A Pacific-wide Tsunami Warning and Communication Exercise*, 28-30 October 2008, [IOC Technical Series, 82](#), Paris, UNESCO 2008). The UNESCO *How to Plan, Conduct and Evaluate Tsunami Wave Exercises*, [IOC Manuals and Guides, 58 rev.](#), Paris, UNESCO 2013 (English and Spanish) is another important reference.

For bibliographic purposes, this document should be cited as follows:

UNESCO/IOC. 2023. *Exercise CARIBE WAVE 24. A Caribbean and Adjacent Region Tsunami Warning Exercise, 21 March 2024 (Puerto Rico Trench and Panama Scenarios). Volume 1: Participant Handbook*. IOC Technical Series No. 187, Vol. 1. Paris: UNESCO (English only), (IOC Technical Series, 187 (1)).

Report prepared by: the IOC Intergovernmental Coordination Group for the Tsunami and other Coastal Hazards Warning System for the Caribbean and Adjacent Regions (ICG/CARIBE-EWS)

Published in 2023
by United Nations Educational, Scientific
and Cultural Organization
7, Place de Fontenoy, 75352 Paris 07 SP

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(IOC/2023/TS/187 Vol.1)

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Summary

The Intergovernmental Coordination Group for Tsunami and Other Coastal Hazards Warning System for the Caribbean and Adjacent Regions (ICG/CARIBE-EWS) of the Intergovernmental Oceanographic Commission (IOC) of the United Nations Educational, Scientific, and Cultural Organization (UNESCO) will be conducting its annual tsunami exercise, CARIBE WAVE, on 21 March 2024. This exercise, which strongly supports the objectives of the Sendai Framework for Disaster Risk Reduction¹ target (g)² and Early Warnings for All³ initiative, will be coordinated together with the U.S. National Oceanic and Atmospheric Administration (NOAA) and the Caribbean regional emergency management stakeholders (CEPREDENAC [Coordination Centre for the Prevention of Natural Disasters in Central America], CDEMA [Caribbean Disaster Emergency Management Agency], and EMIZA [Etat-Major Interministériel de la Zone de Défense et de Sécurité Antilles]) as well as the Central America Tsunami Advisory Center of Nicaragua with the purpose of assisting tsunami preparedness efforts in the Caribbean.

The two scenarios for the exercise are: Puerto Rico Trench and Panama. The first scenario simulates a tsunami generated by a magnitude 8.7 earthquake located in the Puerto Rico Trench. The second scenario is a tsunami generated by a magnitude 8.47 earthquake located in the North Panama Deformed Belt (NPDB).

The Pacific Tsunami Warning Center (PTWC), the CARIBE-EWS Tsunami Service Provider, will issue the initial dummy message for the two scenarios on 21 March 2024 at 1500 UTC and will disseminate it over all its standard broadcast channels. The dummy message is issued to test communications between the PTWC and the officially designated Tsunami Warning Focal Points (TWFPs) and National Tsunami Warning Centers (NTWCs), and to start the exercise. As of 1507 UTC, the PTWC will send by email the simulated tsunami products to officially designated TWFPs and NTWCs. Each country and territory will choose one scenario and decide if and how to disseminate messages within its area of responsibility and any additional tsunami warning system activities. For Central America countries, the Central America Tsunami Advisory Center will be issuing products for the Panama scenario.

The manual includes the information on the tsunami and earthquake scenarios, timelines, PTWC dummy message and simulated exercise messages and CATAC simulated exercise messages. High levels of vulnerability and risk to life and livelihoods from tsunamis along the coasts of the Caribbean and Adjacent Regions should provide a strong incentive for countries and local jurisdictions to prepare for a tsunami and participate in this exercise.

¹ <https://www.undrr.org/publication/sendai-framework-disaster-risk-reduction-2015-2030>

² "Substantially increase the availability of and access to multi-hazard early warning systems and disaster risk information and assessments to the people by 2030."

³ <https://www.un.org/en/climatechange/early-warnings-for-all>

1. BACKGROUND

1.1 EXERCISE JUSTIFICATION AND FRAMEWORK

This CARIBE WAVE annual tsunami exercise is being conducted to assist tsunami preparedness efforts throughout the Caribbean and adjacent regions. Recent tsunamis, such as those in the Indian Ocean (2004, 2018), Samoa (2009), Haiti (2010), Chile (2010, 2014, 2015), Japan (2011), Honduras (2018), New Zealand (2021) and Hunga Tonga-Hunga Ha'apai (2022), attest to the importance of proper planning for tsunami response. This is the twelfth CARIBE WAVE exercise to be conducted, as with previous exercises the strengths and gaps of the tsunami warning system will be identified (Soto et al, 2022).

Historical tsunami records from sources such as the NOAA National Centers for Environmental Information (NCEI) show that from the years 1530 to 2023 tsunamis from earthquake, landslide, and volcanic sources have all impacted the region (Figure 1). According to NCEI, in the past 500 years, over 65 confirmed tsunamis⁴ have been observed and approximately 4,500 people have lost their lives to tsunamis in the Caribbean and adjacent regions. Since the most recent devastating tsunami of 1946, there has been an explosive population growth and influx of tourists along the Caribbean and Western Atlantic coasts increasing the tsunami vulnerability of the region (von Hillebrandt-Andrade, 2013).

In addition to tsunamis, the region also has a long history of destructive earthquakes. Historical records show that major earthquakes have struck the Caribbean region once about every 50 years during the past five centuries. Within the region, there are multiple fault segments and submarine features that could be the source of earthquake and landslide generated tsunamis. No fewer than four major plates (North America, South America, Nazca, and Cocos) border the perimeter of the Caribbean plate. Subduction occurs along the Eastern and Northeastern Atlantic margins of the Caribbean plate. While the Northern and Southern Caribbean plate boundaries are characterized with a predominant strike-slip displacement, the Eastern and Western boundaries mark locations where oceanic crust subducts beneath Caribbean plate lithosphere (Benz et al, 2011). In addition to the local and regional earthquake sources, the region is also threatened by teletsunamis/transatlantic tsunamis, like the 1755 Portugal event. Furthermore, there are also active submarine and coastal volcanoes in the region. Six confirmed volcano tsunami source events and two landslides generated from volcanoes have affected the Caribbean and adjacent regions in the past (International Tsunami Information Center [ITIC] and National Centers for Environmental Information [NCEI], 2018).

Tsunami services for the Caribbean and Adjacent Regions within the UNESCO/IOC CARIBE-EWS framework are currently provided by the Pacific Tsunami Warning Center (PTWC) in Hawaii. It issues its messages two to ten minutes after an earthquake's occurrence. The PTWC international products include tsunami information and threat messages. Primary recipients of the PTWC messages include TWFPs and NTWCs. These agencies are responsible for determining and issuing the corresponding alerts within their area of responsibility according to established protocols. In addition, the Central America Tsunami Advisory Center of Nicaragua, as a proposed Tsunami Service Provider currently under a trial period, will also be testing procedures and sharing simulated products with the Member States under its area of responsibility.

Nearly 160 million people live in the Caribbean, Central America, and Northern South America. The question is not if another major tsunami will happen, but when it happens, will the region

⁴ The methodology changed to only include high validity 3+ events (definite and probable), while previous Handbooks considered validity 2+ (questionable tsunami)

be prepared for the impact? The risk of tsunamis in the Caribbean is real and should be taken seriously and Member States need to exercise their Standard Operational Procedures for tsunamis to ensure readiness for when the next tsunami strikes.

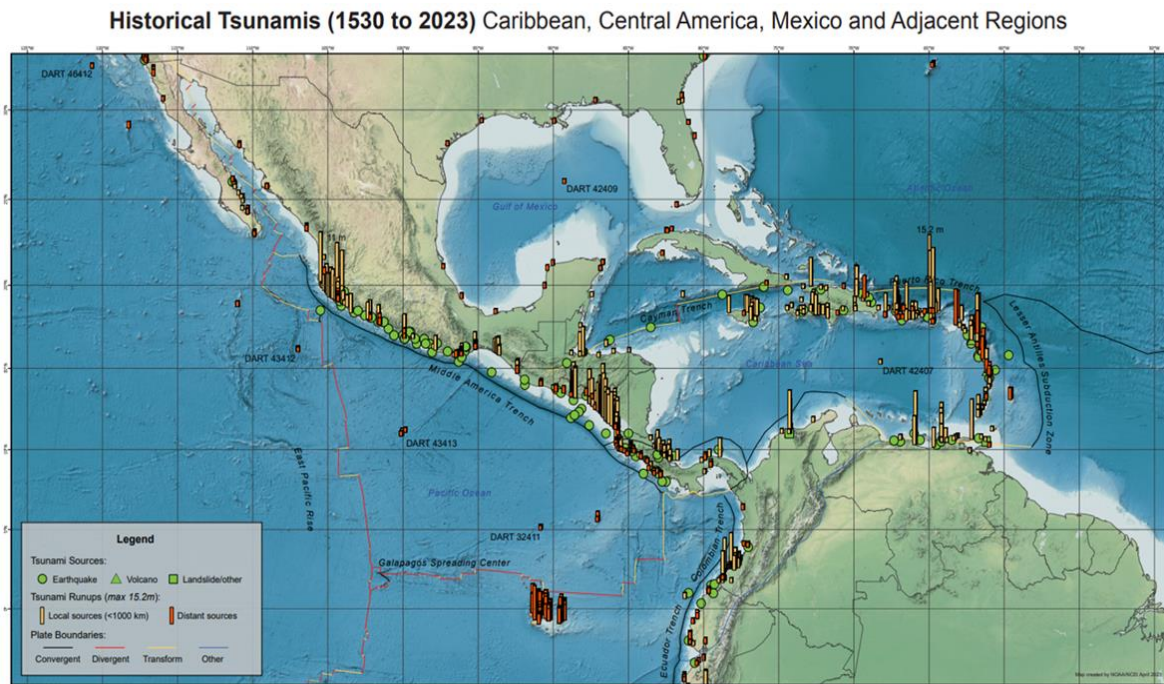


Figure 1. Map of historical tsunamis (1530 to 2023) in the Caribbean, Central America, Mexico and adjacent regions (National Centers for Environmental Information, <https://www.ncei.noaa.gov/products/natural-hazards/tsunamis-earthquakes-volcanoes/tsunamis/posters>)

1.2 EXERCISE EARTHQUAKE AND TSUNAMI SCENARIOS

The exercise CARIBE WAVE 24 will provide simulated tsunami threat messages issued from the PTWC based on two hypothetical scenarios: a magnitude 8.7 earthquake located in the Puerto Rico Trench and a magnitude 8.47 earthquake located in the North Panama Deformed Belt (Figure 2). Below is a description of the proposed scenarios for the exercise.

CARIBE WAVE 24

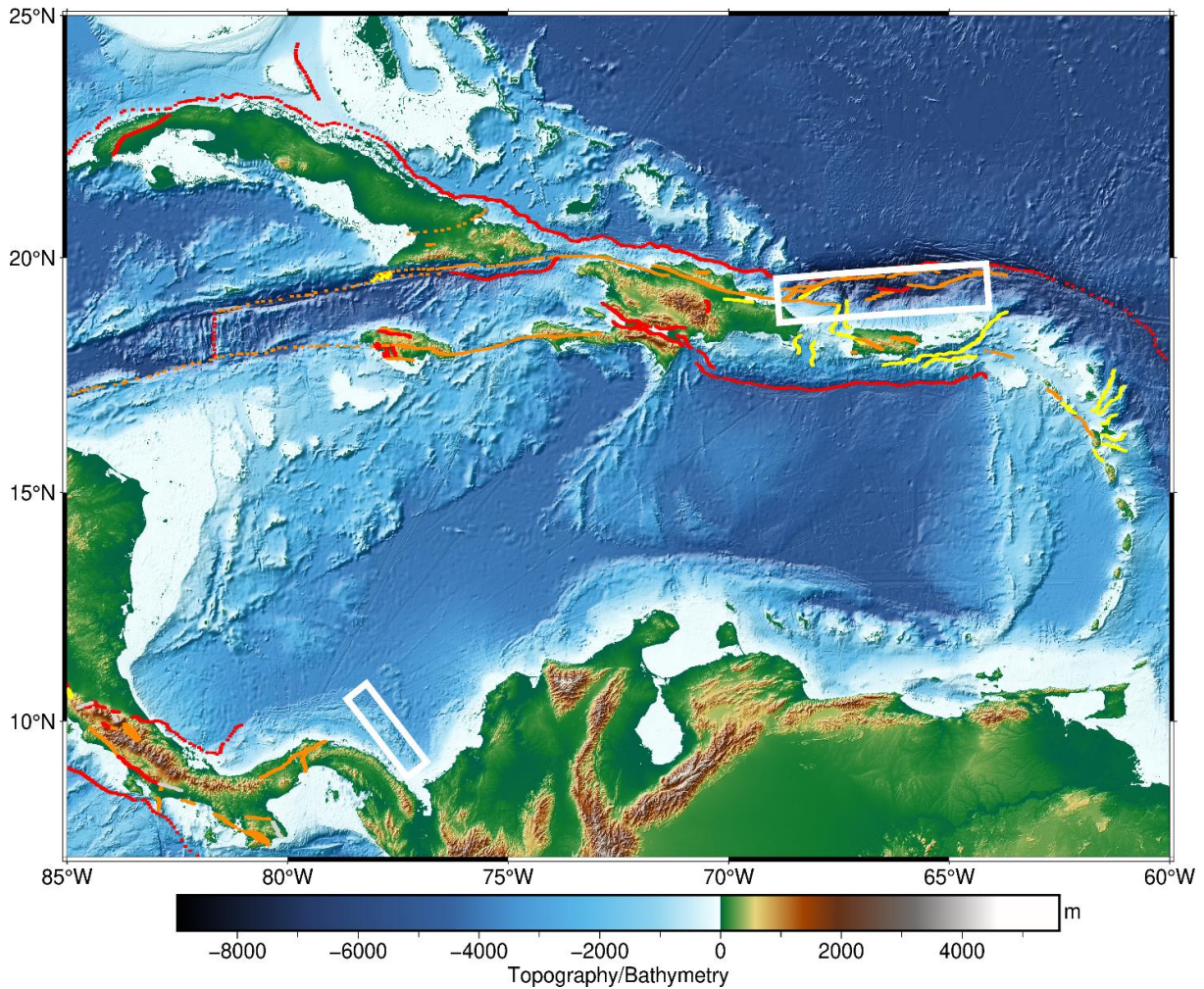


Figure 2. Map of the CARIBE WAVE 24 scenarios. The white rectangle indicates the map view of the ruptured fault segments. This figure was generated using PyGMT (Uieda et al., 2021) and GEBCO 2021 background model (GEBCO, 2021). The faults are based on the GEMS model; red lines indicate convergent faults, yellow lines are divergent, and orange lines are for strike-slip.

1.2.1 Caribbean Tectonics

Extensive diversity and complexity of tectonic regimes characterizes the perimeter of the Caribbean plate, involving no fewer than four major plates (North America, South America, Nazca, and Cocos). Northern and southern boundaries of the Caribbean are mostly characterized by strike-slip motion, whereas subduction zones occur at both eastern and western boundaries. Intermediate and deep earthquakes, Wadati-Benioff zones, ocean trenches, and arcs of volcanoes clearly indicate subduction of oceanic lithosphere along the Central American and Atlantic Ocean margins of the Caribbean plate. Along the northeastern Caribbean plate boundary zone, from the Island of Hispaniola to the Island of Barbuda, relative motion between the North American plate and the Caribbean plate becomes increasingly complex and is partially accommodated by nearly arc-parallel subduction of the North America plate beneath the Caribbean plate (Feuillet et al, 2002). Moving east and south to the northern Lesser Antilles, the plate motion vector of the Caribbean plate relative to the North and South America plates is less oblique, resulting in active island-arc tectonics. The North and South America plates subducts towards the west beneath the Caribbean plate along the Lesser Antilles Trench at rates of approximately 18-20 mm/yr (Symithe et al, 2015). As a result of this subduction, there exists both intermediate focus earthquakes within the subducted plates and a chain of active volcanoes along the island arc, data that has been used to divide the arc

into a northern and southern arc. Along the southern Lesser Antilles trench, the accretionary prism is anomalously thick and wide, raising the earthquake and tsunami potential. Farther west, the Southern Caribbean Deformed Belt (SCDB) has been developed due to the southward-verging under-thrusting of Caribbean lithosphere beneath the northern coast of South America (Figure 3) (DeMets et al., 2010). The following two sub-sections describe the CARIBE WAVE 24 scenarios and present a justification on their tsunamigenic potential regardless of their probability of occurrence.

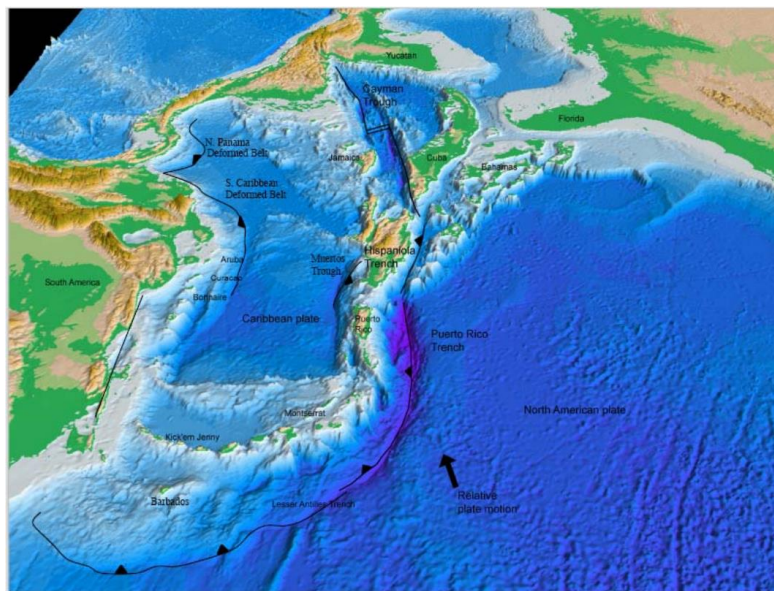


Figure 3. Major Tectonic features in the Caribbean (Ten Brink et al., 2008).

1.2.2 Puerto Rico Trench Scenario

The northeastern corner of the Caribbean plate shows complex tectonic processes due to the convergence between the North America and Caribbean plates. The dominant plate motion between these plates in this area is left-lateral strike-slip with a small thrust component of the North America plate subducting beneath the Caribbean plate. The Caribbean plate shows velocities of 19 ± 0.4 mm/yr towards the ENE in a North America Fixed Reference Frame (DeMets et al. 2007). The Puerto Rico trench is a segment located on the boundary between the North American and Caribbean plates which extends on the outside of the Antilles ridge from 19.90°N , 67.5°W to 19.82°N , 64.1°W with a slight curvature (Lemenkova, P., 2020). Structurally, it has elements of left lateral-slip, normal faulting, and apparent underthrusting, especially on the south wall (Case, J. E., et al., 1984). The steep slopes within the trench are complicated by steps and ridges, indicative of tectonic disturbance in the area (Lemenkova, P., 2020). As a result of its complex tectonic processes, earthquakes of magnitudes greater than 7.75 will occasionally occur in the Puerto Rico Trench 50 to 100 km off the northern coast of the islands, with major shocks slightly smaller in magnitude occurring on intraplate faults close to the islands (McCann, W.R., 1985). Recent research shows that a tsunamigenic megathrust earthquake with a magnitude of at least 8.7 likely occurred between 1470 and 1530 CE originating in the Puerto Rico Trench. An earthquake of that scale, with a plausible rupture length of 400km, is enough to generate tsunamis and have affected Caribbean and Atlantic Coasts (Jaffe, B., 2023). A great earthquake that occurred in 1787 also appears to have stemmed from the trench. Some sources have estimated a magnitude of up to 8 to 8.25 for this event (one of the largest on record). Other earthquakes of similar magnitude have also been known to occur just south of the trench at around 10 to 50 km from land (McCann, W.R., 1985). This tectonic setting makes the northeastern Caribbean vulnerable to tsunami and earthquake threats, especially due to its densely populated and extensively developed coasts.

1.2.3 Panama Scenario

The North Panama Deformed Belt (NPDB) is an arcuate-shaped thrust belt located offshore north of Panama that can produce tsunamigenic earthquakes. The NPDB is conformed by a submarine fold and thrust belt that extends offshore with an arcuate shape from the Gulf of Urabá in the Panama-Colombia border up to the shore northwest of Puerto Limón in Costa Rica (Camacho & Viquez, 1992). One of the largest events produced by the NPDB occurred on 7 September 1882, where approximately 100 people were drowned in a tsunami that submerged the islands of the San Blas Archipelago and the northern coast of Panama (Lander et al., 2002). The offshore earthquake had an estimated magnitude of M 8 and was located 10°N, 78°W (Mendoza and Nishenko, 1989). The maximum reported wave height was 3 meters according to the NOAA National Centers for Environmental Information (2023). Another known event occurred on April 25, 1916, when a Ms 7.3 earthquake located at 9.2 N, 83.1 W caused a tsunami with a wave height of 1.3m which affected many cities and islands in the region like Bocas del Toro, whose runups reached up to 200m inland carrying all kinds of debris with it. (NOAA National Centers for Environmental Information, 2023). In recent research regarding the potential risk from the NPDB, seismic sources and tsunami modeling point to a potential high deformation and increased tsunami wave heights that could affect coastal communities in Costa Rica, Nicaragua, Panamá and Colombia (Zamora et al, 2021).

1.2.4 Earthquake impact

In addition to knowing the potential impact from the tsunami, it is also important to consider the potential of earthquake impact. The United States Geological Survey (USGS) provided for CARIBE WAVE 24 the scenario outputs of their ShakeMap and the Prompt Assessment of Global Earthquakes for Response (PAGER) products. These results give emergency responders, government, aid agencies and the media the scope of the potential earthquake related disaster. ShakeMap illustrates the ground shaking levels close to the earthquake source depending on a set of parameters such as distance to the source, rock and soil behavior, and seismic wave propagation through the crust (<https://earthquake.usgs.gov/data/shakemap/>). PAGER is based on the earthquake shaking (via ShakeMap) and analyses of the population exposed to each level of shaking intensity with models of economic and fatality losses based on past earthquakes in each country or region of the world (<https://earthquake.usgs.gov/data/pager/>). According to the USGS, the CARIBE WAVE 24 simulated earthquakes would produce an earthquake shaking red alert for the Puerto Rico Trench scenario and orange alert for the Panama scenario. Modified Mercalli intensity of up to VIII on the Mercalli Modified Scale could be observed for the Puerto Rico Trench scenario and up to VII for the Panama scenario. It is estimated that approximately 11 million people are exposed for Puerto Rico Trench scenario (Modified Mercalli Intensities from VI-VIII) and almost 3 million people for the Panama scenario would be exposed to Modified Mercalli intensities from VI up to VII. Complete information about the ShakeMap and PAGER output for the exercise scenarios, is available in the [Annex III](#) of this handbook. In addition to tsunamis, secondary hazards could also include liquefaction and landslides.

2. EXERCISE CONCEPT

2.1 PURPOSE

The purpose of the exercise is to improve Tsunami Warning System effectiveness in the Caribbean and Adjacent Regions. The exercise provides an opportunity for emergency management organizations throughout the region 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 for an emergency. This is particularly true for the Caribbean and adjacent regions, where tsunamis

are infrequent but can be of very high impact. Every emergency management organization (EMO) is encouraged to participate.

2.2 OBJECTIVES

Each organization can develop its objectives for the exercise depending on its level of involvement in the scenario. The following are the exercise's overarching objectives to exercise and evaluate operations of the CARIBE-EWS Tsunami Warning System.

1. **Exercise and evaluate communications between Regional Tsunami Service Provider and Members States/Territories.**
 - A. Validate the **issuance** of tsunami products from the PTWC.
 - B. Validate the **receipt** of tsunami products by CARIBE-EWS Tsunami Warning Focal Points (TWFPs) and/or National Tsunami Warning Centers (NTWCs).
2. **Evaluate the tsunami procedures and programs within Members States/Territories.**
 - A. Validate **readiness** to respond to a tsunami.
 - B. Validate the **operational readiness** of the TWFPs/NTWCs and/or the National Disaster Management Office (NDMO).
 - C. Improve **operational readiness**. Before the exercise, ensure appropriate tools and response plan(s) have been developed, including public education materials.
 - D. Validate that the **dissemination of warnings and information/advice** by TWFPs and NTWCs, to relevant in-country agencies and the public is accurate and timely.
 - E. Evaluate the **status of the implementation of the Tsunami Ready** program.

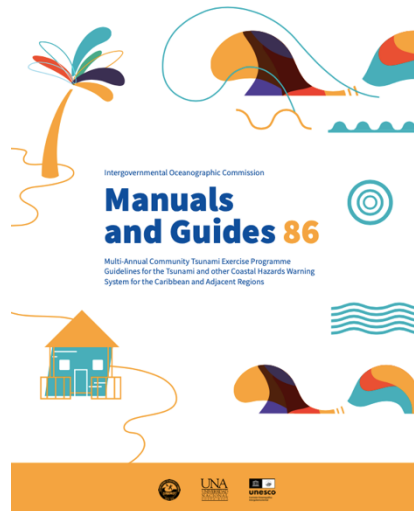
2.3 TYPE OF EXERCISE

The CARIBE WAVE exercise is planned for Caribbean countries to be able to carry out exercises at various scales of magnitudes and sophistication. It is up for every country to decide at what scale the exercise should be carried out. Offices of Emergency Management (OEM) are, however, encouraged to exercise down to the level of testing local notification systems such as the Emergency Alert System (EAS), sirens, or loudspeakers and encourage the participation down to individuals at risk. At the national/territorial level, a communication test is recommended to validate the receipt and dissemination of the messages distributed by the Pacific Tsunami Warning Center (PTWC) and in addition the Central America Tsunami Advisory Centre (CATAC) for Central American countries.

Exercises stimulate the development, training, testing, and evaluation of Disaster Plans and Standard Operating Procedures (SOP). Most countries in the region have participated in SOP workshops in 2013, 2014, 2015 and 2017, and may consider using the materials and expertise acquired to help guide exercise preparation and conduct. [Annex I](#) gives an overview of SOPs. Exercise participants may use their own past multi-hazard drills (e.g. flood, hurricane, tsunami, earthquake, etc.) as a framework to conduct CARIBE WAVE 24.

Another good resource for exercise planning and conduct is the document entitled Manual and Guides 86: Multi-Annual Community Tsunami Exercise Programme Guidelines for the Tsunami and other Coastal Hazards Warning System for the Caribbean and Adjacent Region (UNESCO, 2022). This guide provides guidance on how to plan, conduct, and evaluate a multiannual local tsunami exercise program. It has been designed by Member States of the

Intergovernmental Oceanographic Commission for the use of their coastal communities who should participate in multiannual exercises. The guide is divided into four sections which provide a range of practical advice and templates for community stakeholders and in-country exercise developers. It highlights that a progressive and long-term approach is needed for tsunami exercises. It is available in English, Spanish and French at <https://unesdoc.unesco.org/ark:/48223/pf0000380540>.



Exercises can be conducted at various scales of magnitude and sophistication. The following are examples of types of exercises conducted by EMOs:

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 will have a specific goal and written objectives and result in an agreed upon Plan of Action.
2. **Drill:** The 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. Drills can involve internal notifications and/or field activities.
3. **Tabletop Exercise:** The 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. A Tabletop Exercise should have specific goals, objectives, and a scenario narrative.
4. **Functional Exercise:** A Functional Exercise is a planned activity designed to test and evaluate organizational capacities. It is also utilized to evaluate the capability of a community's emergency management system by testing the Emergency Operations Plan (EOP). It is based on a simulation of a realistic emergency that includes a description of the situation (narrative) with communications between players and simulators. The Functional Exercise gives the players (decision-makers) a fully simulated experience of being in a major disaster event. It should take place at the appropriate coordination location (i.e. emergency operations center, emergency command center, command post,

master control center, etc.) and involve all the appropriate members designated by the plan. Both internal and external agencies (government, private sector, and volunteer agencies) should be involved. It requires players, controllers, simulators, and evaluators. Message traffic will be simulated and inserted by the control team for player response/actions, under real time constraints. It may or may not include public evacuations. A Functional Exercise should have specific goals, objectives, and a scenario narrative.

5. **Full-scale Exercise:** A Full-scale Exercise is the culmination of a progressive exercise program that has grown with the capacity of the community to conduct exercises. A Full-Scale Exercise is a planned activity in a “challenging” environment that encompasses a majority of the emergency management functions. This type of exercise involves the actual mobilization and deployment of the appropriate personnel and resources needed to demonstrate operational capabilities. EOCs and other command centers are required to be activated. A Full-scale Exercise is the largest, costliest, and most complex exercise type. It may or may not include public evacuations.

Style	Planning Period	Duration	Comments
Orientation Exercise	2 weeks	Hours	Individual or mixed groups
Drill	2 months	1 day	Individual technical groups generally
Tabletop Exercise	1 month	1-3 days	Single or multiple agency
Functional Exercise	> 3 months	1-5 days	Multiple Agency participation
Full-scale Exercise	>6 months	1 day/ week	Multiple Agency participation

Table 1. Example Time Frames for Different Exercise Types

According to the Development Dialogue (2021), persons with disabilities make up 15% of the world’s population. This group of people are disproportionately affected by disaster impacts and are often not included in prevention, response, and recovery. It is important to engage persons with disabilities and their representative organizations in annual exercises such as CARIBE WAVE. Cutting-edge technology aimed at co-creating early warning and preparedness solutions that are inclusive and accessible to people with disabilities are suggested to be tested during the tsunami exercise to address this barrier.

2.4 TIMELINE

The process of planning CARIBE WAVE 24 takes more than a year; from the decision of the Intergovernmental Coordination Group (ICG) to conduct the exercise and the choice of the scenario(s) until the final reports are prepared and distributed. The timeline in Table 2 lists the main actions to be taken before, during and after CARIBE WAVE 24.

ACTION	DUE DATE
Handbook Draft Circulated among ICG CARIBE-EWS CARIBE WAVE 24 Task Team	October 2023
Deadline for Comments	November 2023
Circular Letter Issued by IOC to MS	December 2023
Exercise Handbook Available Online	December 2023
First Webinar CW	23 January 2024 – English 24 January 2024 – Spanish

ACTION	DUE DATE
	25 January 2024 – French
Second Webinar CW	27 February 2024 – English 28 February 2024 – Spanish 29 February 2024 – French
Countries Indicate Selected Scenario	7 March 2024
Exercise	21 March 2024
Hot-Wash	2 April 2024
Exercise Evaluation Due	11 April 2024
Draft CARIBE WAVE 23 Report	19 April 2024

Table 2. Timeline of actions to be taken before, during and after CARIBE WAVE 24.

3. PTWC PRODUCTS, STAGING AND DISSEMINATION

PTWC is the Tsunami Service Provider for the CARIBE EWS. Details on the PTWC Enhanced Products for the CARIBE-EWS are provided in the *User’s Guide (for) the Pacific Tsunami Warning Center Enhanced Products for the Tsunami and other Coastal Hazards Warning System for the Caribbean and Adjacent Regions (CARIBE-EWS)* (<https://unesdoc.unesco.org/ark:/48223/pf0000259725>). As an additional planning tool, videos on the PTWC Enhanced Products and Staging for the Caribbean and Pacific were developed in English by ITIC (<https://vimeo.com/showcase/8956022>). To request access password, email christa.vonh@noaa.gov.

For the CARIBE WAVE 24, it will issue a Dummy (Start of Exercise) Message through all its communication systems. The threat messages and enhanced graphical products of the chosen scenario by each Member State and Territory will be disseminated by email to officially designated TWFPs and NTWCs. These products have also been included in [Annex II](#) and [V](#). It is up to each country and territory to decide if and how to disseminate messages within its areas of responsibility.

3.1 GENERAL

Tsunami messages for this exercise are issued by the PTWC based on two hypothetical earthquakes with the following hypocenter parameters:

Puerto Rico Trench Scenario:

Origin Time	15:00:00 UTC March 21, 2024
Latitude	19.25°N
Longitude	66.50°W
Magnitude	8.7 – Mw
Depth	20 km

Panama Scenario:

Origin Time	15:00:00 UTC March 21, 2024
Latitude	9.80°N
Longitude	77.75°W
Magnitude	8.47 - Mw
Depth	25 km

Expected impacts for these events are determined from pre-computed tsunami forecast models. [Annex II](#) provides the model results for the Puerto Rico Trench and Panama scenarios.

The first simulated tsunami threat message issued by PTWC is based on the earthquake magnitude and location and the tsunami travel times. As of the second message tsunami wave forecasts are included. Tsunami threat forecasts indicate the levels of threat that have been forecast and to which countries or places they apply. The levels are tsunami heights of 0.3-1 meter, 1-3 meters, and greater than 3 meters above the normal tide level. The threat information is updated usually within an hour. All simulated products (text and graphical) for the scenario chosen by the country will be disseminated through email to the corresponding TWFPs and NTWCs. Further dissemination will be the responsibility of the corresponding national and local authorities.

The PTWC will only issue a live message for the dummy message to start the exercise on 21 March 2024 at 1500 UTC. The initial dummy message will be disseminated over all standard PTWC broadcast channels. The World Meteorological Organization (WMO) and Advanced Weather Interactive Processing System (AWIPS) headers to be used in the dummy message are listed in Table 3. Please note that the PTWC dummy messages are being issued with the WMO/AWIPS IDs WECA41 PHEB/TSUCAX. These are being issued to test communications with TWFPs and NTWCs, and to start the exercise. The content of the dummy messages is given in [Annex IV](#).

The GEONETCast is another method over which the dummy message can be received by the TWFPs and NTWCs. It is an operational service used to deliver data and products based on the use of communication satellites (Moura, 2006). GEONETCast has become an important data source to the Meteorological community and a wide variety of users that deal with environmental analysis (Maathuis, 2008). It is crucial that for CARIBE WAVE exercises, where available, these methods are put into test.

Centre	WMO ID	AWIPS ID	NWWS	GTS	EMWIN	AISR	Fax	Email
PTWC	WECA41 PHEB	TSUCAX	Yes	Yes	Yes	Yes	Yes	Yes

Table 3. Product Types Issued for Dummy Message with Transmission Methods

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

Each Member State needs to select one scenario for CARIBE WAVE 24. By 7 March 2024, they must complete the following survey (https://www.surveymonkey.com/r/CW24_ScenarioSelection) to select the scenario their country will use for the exercise. If the Member State does not inform the PTWC and ITIC-CAR, the organizers will decide for which scenario the PTWC will send the products. For the exercise, the TWPF/ NTWC will receive only the simulated product for that scenario.

Participants should note the schedule in Tables 4 and 5 for each scenario, and the times the PTWC messages will be issued. Those tables include the timelines for when messages would be issued by the PTWC if this were a real event and can be used by EMOs to drive the exercise timing. The messages (as shown in [Annex V](#)) cover a period of time between 5 minutes and

7 hours from earthquake origin time, however in an actual event messages may continue for a much longer period of time.

Participants may elect to exercise to develop their own timelines in order to achieve their particular objectives. For example, a particular EMO’s Exercise Controller may choose to feed the TWC bulletins into the exercise at times of their own choosing, or alternatively put them in envelopes with the time they must be opened written on each, with each key participant agency having their own set of envelopes. The messages, provided in [Annex V](#), will facilitate this approach.

EMOs can modify estimated arrival times and/or wave amplitudes to suit their exercise, for example, to have the tsunami arrive sooner and with larger amplitude. Other exercise injects, such as tsunami damage reports, are also encouraged.

3.2 MASTER SCHEDULE (EXERCISE SCRIPT)

3.2.1 Puerto Rico Trench Scenario

Tsunami generated by a magnitude 8.7 earthquake with epicenter at 19.25°N, 66.5°W occurring the 21 of March 2024 at 1500 UTC. The initial alert is disseminated at 1505 UTC.

Date	Time (UTC)	PTWC	
		Type of Product	Transmission Method
3/21/24	1500	---- Earthquake Occurs ----	
3/21/24	1500	Dummy	NWWS, GTS, EMWIN, AISR, Fax, Email
3/21/24	1505	Initial Tsunami Threat Message #1	Email
3/21/24	1535	Tsunami Threat Message #2 with Forecast and Graphical Enhanced Products	Email
3/21/24	1600	Tsunami Threat Message #3	Email
3/21/24	1700	Tsunami Threat Message #4	Email
3/21/24	1800	Tsunami Threat Message #5	Email
3/21/24	1900	Tsunami Threat Message #6	Email
3/21/24	2000	Tsunami Threat Message #7	Email
3/21/24	2100	Tsunami Threat Message #8	Email
3/21/24	2200	Final Tsunami Threat Message #9	Email

Table 4. Timeline Messages issued by PTWC for the Puerto Rico Trench scenario.

3.2.2 Panama Scenario

Tsunami generated by a magnitude 8.47 earthquake with epicenter at 9.8°N, 77.75°W occurring the 21 of March 2024 at 1500 UTC. The initial alert is disseminated at 1508 UTC.

Date	Time (UTC)	PTWC	
		Type of Product	Transmission Method
3/21/24	1500	---- Earthquake	Occurs ----
3/21/24	1500	Dummy	NWWS, GTS, EMWIN, AISR, Fax, Email
3/21/24	1508	Initial Tsunami Threat Message #1	Email
3/21/24	1530	Tsunami Threat Message # 2	Email
3/21/24	1600	Tsunami Threat Message #3	Email
3/21/24	1700	Tsunami Threat Message #4	Email
3/21/24	1800	Tsunami Threat Message #5	Email
3/21/24	1900	Tsunami Threat Message #6	Email
3/21/24	2000	Tsunami Threat Message #7	Email
3/21/24	2100	Tsunami Threat Message #8	Email
3/21/24	2200	Final Tsunami Threat Message #9	Email

Table 5. Timeline Messages issued by PTWC for the Panama scenario.

4. CENTRAL AMERICA TSUNAMI ADVISORY CENTER

The CATAC, established at INETER/Nicaragua, was developed in 2016-2019 by INETER in cooperation with JICA/Japan, IOC/UNESCO and Central American countries. CATAC entered into experimental operation in August 2019. Following the successful launch of the Pacific Tsunami Warning Center (PTWC) Enhanced Products and a series of recommendations from ICG/PTWS, CATAC updated its products in 2019 to provide recipient countries detailed assessments of tsunami threats for local coastal areas. Following the approval of the ICG/PTWS XVIII (04/2019) and confirmation by the 30th General Assembly of the IOC (06/2019), CATAC begins the issuance of the products in an experimental phase starting at 18:00 UT on August 22, 2018, by email, SMS, WhatsApp, and with its website catac.ineter.gob.ni. Furthermore, the ICG/CARIBE EWS XVI recommended the start of CATAC's full functionality in an interim manner, starting in June 2023 for the Caribbean coast of Central America.

4.1 GENERAL

Tsunami messages for this exercise are issued by CATAC based on the hypothetical earthquake with the following hypocenter parameters:

Panama Scenario:

Origin Time	15:00:00 UTC March 21, 2024
Latitude	9.80°N
Longitude	77.75°W

Magnitude 8.47 - Mw
Depth 25 km

Expected impacts for these events are determined from pre-computed tsunami forecast models. [Annex VI](#) provides the model results of CATAC for the Panama scenario.

The first simulated tsunami threat message issued by CATAC is based on the earthquake magnitude and location and the tsunami travel times. As of the second message tsunami wave forecasts are included. Tsunami threat forecasts indicate the levels of threat that have been forecast and to which countries or places they apply. The threat information is updated usually within an hour. All simulated products (text and graphical) for the scenario chosen by the country will be disseminated through at least email to the corresponding TWFPs and NTWCs of the countries of Central America. These are being issued to test communications with TWFPs and NTWCs. Further dissemination will be the responsibility of the corresponding national and local authorities.

Participants should note the schedule in Table 6 for each scenario, and the times the messages will be issued. Those tables include the timelines for when messages would be issued by the CATAC if this were a real event and can be used by EMOs to drive the exercise timing. The messages (as shown in [Annex VI](#)) cover a period between 3 minutes and 2 hours from earthquake origin time, however in an actual event, messages may continue for a much longer period of time.

Participants may elect to exercise to develop their own timelines in order to achieve their particular objectives. For example, a particular EMO's Exercise Controller may choose to feed the TWC bulletins into the exercise at times of their own choosing, or alternatively put them in envelopes with the time they must be opened written on each, with each key participant agency having their own set of envelopes. The messages, provided in Annex VI, will facilitate this approach.

EMOs can modify estimated arrival times and/or wave amplitudes to suit their exercise, for example, to have the tsunami arrive sooner and with larger amplitude. Other exercise injects, such as tsunami damage reports, are also encouraged.

4.2 MASTER SCHEDULE (EXERCISE SCRIPT).

Tsunami generated by a magnitude 8.47 earthquake with epicenter at 9.8°N, 77.75°W occurring the 21 of March 2024 at 1500 UTC. The initial alert is disseminated at 1507 UTC.

Date	Time (UTC)	CATAC	
		Type of Product	Transmission Method
3/21/24	1500	---- Earthquake	Occurs----
3/21/24	1500	Dummy Message	Email
3/21/24	1503	Initial Tsunami Threat Message #1	Email
3/21/24	1509	Tsunami Threat Message # 2	Email
3/21/24	1530	Tsunami Threat Message #3	Email

Date	Time (UTC)	CATAC	
		Type of Product	Transmission Method
3/21/24	1600	Tsunami Threat Message #4	Email
3/21/24	1700	Final Tsunami Threat Message #5	Email

Table 6. Timeline Messages issued by CATAC for the Panama scenario.

5. ACTIONS IN CASE OF EMERGENCY

In the case of a real event occurring during the exercise, the PTWC will issue the corresponding messages for the event. Such messages will be given full priority, and a decision will be made by the PTWC whether to issue the CARIBE WAVE 24 dummy messages and to send email messages to corresponding recipients. In the case of smaller earthquakes, PTWC will issue the corresponding Tsunami Information Statement and the exercise will not be disrupted. All documentation and correspondence relating to this exercise is to be clearly identified as “CARIBE WAVE 24” and “Exercise”.

6. RESOURCES

Although EMOs will have advance notice of the exercise and may elect to stand up a special dedicated shift to allow normal core business to continue uninterrupted, it is 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. Questions on the exercise can be addressed to the members of the CARIBE WAVE 24 Task Team (Table 6).

7. COMMUNITY REGISTRATION

For CARIBE WAVE 24, the ICG/CARIBE-EWS has continued working along with TsunamiZone.org for online registration. Under the Caribbean Zone Region tab, participants will be able to sign up and choose among the following community categories: individuals, businesses, schools, faith-based organizations, community groups, government agencies, individuals, and others. The link for registration is the following: <http://tsunamizone.org/caribbean>. After registering, the participant will receive a confirmation email. If desired, participants can also opt to be listed in the “Who is participating?” section of the TsunamiZone website, along with participants in tsunami preparedness activities worldwide. The EMOs will thus have real time access to the status of registration of participants within their areas of responsibility. EMOs are encouraged to promote this registration system.

8. MEDIA ARRANGEMENTS

One advantage in conducting exercises is that it provides a venue to promote tsunami awareness. Many residents along the CARIBE-EWS coast may not realize that a regional tsunami warning system exists, nor that national authorities have protocols in place to issue tsunami alerts, let alone the proper response for individuals. Therefore, communities may wish to invite their local media to the exercise and to promote the awareness of the local tsunami hazard and protocols. Within all Member States, the media can also provide support in building awareness leading up to the exercise and avoid false alarms. Media should be provided with available informational brochures prepared by the local, regional, and international agencies. It is also a good opportunity to distribute or prepare Media guides like

that of the Puerto Rico Seismic Network (PRSN) (<http://www.prsn.uprm.edu/mediakit/en/index.php>) and the Seismic Research Centre (SRC) (<http://www.uwiseismic.com>) as additional guidance. Annex VII contains a sample press release, which can be adapted as necessary.

Social media has been recognized as a very important means for disseminating tsunami information and products. CARIBE-EWS countries and territories are encouraged to share information on the exercise CARIBE WAVE 24 through this medium. Furthermore, it is requested that the hashtag #CARIBEWAVE, be used by the participants before and during the exercise.

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Table 7. Members of the CARIBE WAVE 24 Task Team

9. 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. Procedures should be set up by all participating entities to address public or media concerns involving this exercise in case of misinterpretation by media or the public.

10. POST-EXERCISE EVALUATION

Each ICG/CARIBE-EWS Member State and territory is requested to provide feedback on the exercise. This feedback will assist the evaluation of CARIBE WAVE 24 and the development of subsequent exercises. It will also help response agencies to document lessons learned and lead to improvements of the national systems. To facilitate feedback, the online evaluation survey can be accessed at the following link: <https://www.surveymonkey.com/r/CaribeWave24>. The deadline for completing the evaluation is 11 April 2024.

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ANNEX I. STANDARD OPERATING PROCEDURES

END-TO-END TSUNAMI WARNING for Tsunami Warning Focal Points and Tsunami Emergency Response Operations– AN OVERVIEW

September 2008 (updated 2012)
UNESCO IOC Tsunami Unit (Paris) with ITIC (Hawaii)

This overview summarizes an end-to-end tsunami warning. In event time, it covers activities for monitoring, detection, threat evaluation and warning, alert dissemination, emergency response, and public action. An effective tsunami warning system is achieved when all people in vulnerable coastal communities are prepared to respond appropriately and in a timely manner upon recognizing that a potential destructive tsunami may be approaching. Meeting this challenge requires round-the-clock monitoring with real-time data streams and rapid alerting, as well as prepared communities, a strong emergency management system, and close and effective cooperation and coordination between all stakeholders. To warn without preparing, and further, to warn without providing a public safety message that is understandable to every person about what to do and where to go, is clearly useless. While alerts are the technical trigger for warning, any system will ultimately be judged by its ability to save lives, and by whether people move out of harm's way before a big tsunami hits. Towards these ends, education and awareness are clearly essential activities for successful early warning.

An end-to-end tsunami warning involves a number of stakeholders who must be able to work together and with good understanding of each other's roles, responsibilities, authorities, and action during a tsunami event. Planning and preparedness, and practicing in advance of the real event, helps to familiarize agencies and their staff with the steps and decision-making that need to be carried out without hesitation in a real emergency. Tsunami resilience is built upon a community's preparedness in tsunami knowledge, planning, warning, and awareness. All responding stakeholders should have a basic understanding of earthquake and tsunami science, and be familiar with warning concepts, detection, threat evaluation, and alerting methods, and emergency response and evacuation operations. The key components, requirements, and operations to enable an effective and timely warning and evacuation are covered in the following topics of end to-end tsunami warning:

- Tsunami Science and Hazard Assessment,
- Tsunami Risk Reduction Strategy and community-based disaster risk management,
- Stakeholders, Roles & Responsibilities, and Standard Operating Procedures (SOPs) and their Linkages,
- End-to-end Tsunami Response and SOPs,
- Tsunami Warning Focal Point (TWFP) and National Tsunami Warning Centre (NTWC) operations,
- Tsunami Emergency Response (TER) operations,
- Public Alerting,
- The Role of Media,
- Evacuation and Signage,
- Use of Exercises to Build Preparedness,
- Awareness and Education.

To ensure the long-term sustainability of a tsunami warning system, it should be noted that:

- Tsunamis should be part of an all-hazards (natural and anthropogenic) strategy.

- System redundancy is required to ensure reliability.
- Clearly understood TWFP/TWC and TER public safety messages are essential. Media partnerships for warning, as well as preparedness, are important.
- Awareness must be continuous forever. Tsunamis are low frequency, high impact natural disasters that are also unpredictable.
- National, provincial, and local Tsunami Coordination Committees ensure stakeholder coordination and implementation of the end-to-end tsunami warning.

For specific details and algorithms and for actual descriptions of tsunami warning and emergency response operations, including data networks and data collection, methods of evaluation and criteria for action, products issued and methods of communication of alerts, and evacuation, original source references or plans should be consulted. These are the high-level system descriptions or concepts of operation, agency operations manuals, and user's guides of each regional and national system.

Basic references providing a comprehensive summary on tsunami warning centre and emergency response operations considerations are:

- ITIC IOC Manual on Tsunami Warning Centre Standard Operating Procedures (Guidance and Samples), version 2010 (distributed as part of 2013 SOP capacity building).
- ITIC IOC Manual on Tsunami Emergency Response Standard Operating Procedures (Guidance and Samples), version 2010 (distributed as part of 2013 SOP capacity building)

Additional information and documentation on the CARIBE EWS can be found on the websites of [UNESCO/IOC](#), the [Caribbean Tsunami Information Center](#) and the [International Tsunami Information Center Caribbean Office](#), including the PTWC communication plan and users guide.

TRAINING

In order to assist countries in strengthening their warning systems, the IOC has compiled and developed a Training Manual in close partnership with ITIC. It contains references, best practices, decision support tools, and guidance materials summarizing key components, requirements, and operations to enable an effective and timely warning and evacuation against tsunamis.

The Manual includes session plans, lectures (in PowerPoint), exercises, and multimedia materials. Together, they represent part of the IOC's collaborative contribution to national capacity building and training on end-to-end tsunami warning and tsunami standard operating procedures to countries of the Indian Ocean, Pacific, Southeast Asia, and the Caribbean. For more information, please contact Laura Kong, Director of ITIC (laura.kong@noaa.gov), Bernardo Aliaga, Technical Secretary, UNESCO-IOC (b.aliaga@unesco.org), Christa von Hillebrandt-Andrade, Manager of ITIC Caribbean Office (christa.vonh@noaa.gov), or Alison Brome, Programme Officer of CTIC (a.brome@unesco.org). The tables presented below can be used as a guide for preparing the timeline for the exercise.

Tsunami Evacuation Responsibilities Checklist for Government Disaster Response Agencies		
This is a simple checklist to use when doing an evacuation. List the agency(ies) / department(s) responsible for actions and recommended number of minutes (e.g. +10 minutes) after earthquake origin time.	Earthquake Origin Time: 0000	
	Agency(ies) / Department(s):	Time (mins):
Strong and/or long duration earthquake is felt (vary depending distance from source)	_____	±_
Tsunami message received from tsunami service provider (NTWCs)	_____	±_
Call in staff	_____	±_
Activate emergency centers / Notify public safety agencies	_____	±_
Coordinate sounding of public sirens and alarm notifications	_____	±_
Initiate media notifications and evacuation announcements	_____	±_
Initiate evacuation of people away from coast (Tsunami Evacuation Maps)	_____	±_
Put boats/ships out to sea if wave impact time permits	_____	±_
Setup road-blocks and evacuation routes	_____	±_
Guide people through traffic points to shelter	_____	±_
Initiate recall of disaster response workers	_____	±_
Open and operate refuge centres	_____	±_
Prepare to start electrical generators	_____	±_
If your facility is located in a tsunami evacuation zone: -Prepare to shut off utilities (e.g. electrical, gas, water) -Protect key equipment (e.g. computers) -Remove key documents (e.g. financial, personal information)	_____	±_
Determine if tsunami has caused coastal damage / injuries and the need to initiate search and rescue operations	_____	±_
Determine when to declare the “all clear”	_____	±_
Prepare for post tsunami impact operations	_____	±_
Do roll call for workers ____ and volunteers	_____	±_

Table I-1. Table to be used as a guide for timing, actions, authority, communication means and target audiences for a tsunami event.

ANNEX II. TSUNAMI SOURCE SCENARIOS DESCRIPTION

Tsunami Source Scenarios Description

The following scenarios use a standard format to define the tsunami sources as described in the Figure III-1 below. Each fault segment is defined by 4 corner points where point A is the lower left corner of the fault plane. Line segment A-D indicates the downdip bottom rectangular source area, whereas line B-C is the top portion of the rupture plane that is nearest to the sea-floor surface. Letters W and L represent the width and length of the plane, respectively. Letter W_{ap} represents apparent width and applies to the dimensions when observing the fault plane in map view.

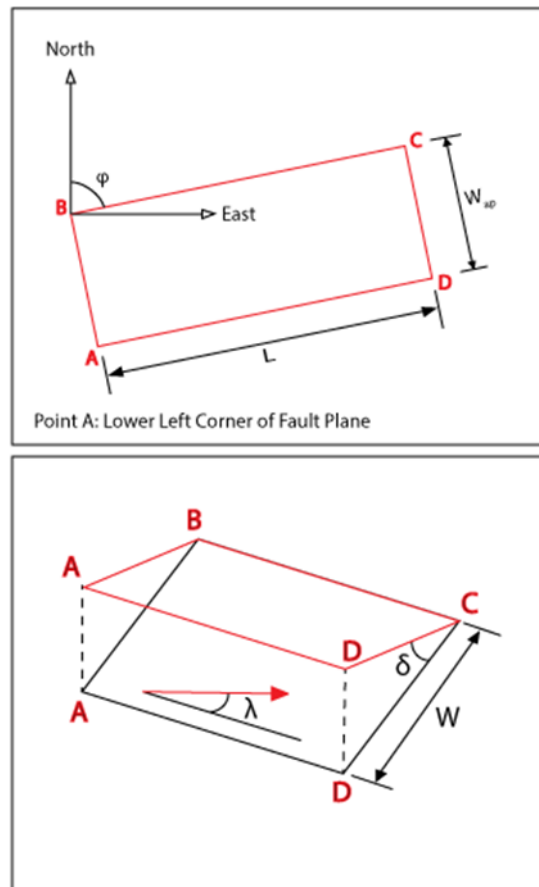


Figure III-1: Schematic of the standard used to describe all fault planes in the CARIBE WAVE Exercise scenarios.

Puerto Rico Trench Earthquake Scenario

The Puerto Rico Trench earthquake scenario consists of a rupture off the northern coast of Puerto Rico with hypocenter at:

- Name of Scenario: CARIBE WAVE 24 Puerto Rico Trench Scenario
- EQ Origin Time: 1500 UTC
- Hypocenter Latitude: 19.25°N
- Hypocenter Longitude: 66.5°W
- Hypocenter Depth (km): 20 km
- EQ Magnitude (Mw): 8.7
- Slip (m): 8
- Shear modulus: 3.3×10^{11} dyne/cm²
- Seismic Moment: 1.452E+29 dyne-cm

Corner Point A	
Latitude	18.63°
Longitude	-68.85°
Depth (km)	38.81
Corner Point B	
Latitude	19.56°
Longitude	-68.92°
Depth (km)	1.19

Corner Point C	
Latitude	19.87°
Longitude	-64.16°
Depth (km)	1.19
Corner Point D	
Latitude	18.95°
Longitude	-64.09°
Depth (km)	38.81

Other Fault Parameters	
Strike (ϕ phi)	86°
Dip (δ delta)	20°
Rake (λ lambda)	23°
Length (km)	500
Width (W in km)	110
Width in Map View (km) [$W_{ap} = W * \cos(\delta)$]	103.37 km

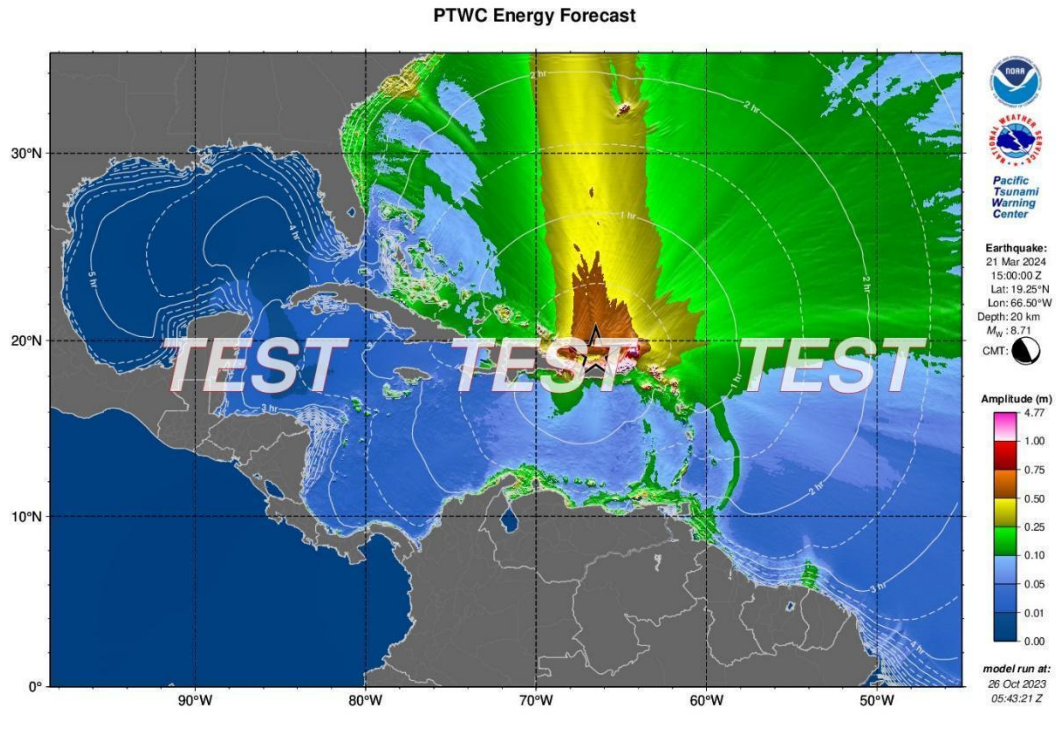


Figure III-2. RIFT maximum amplitude map for the Caribbean and Adjacent Regions for the Puerto Rico Trench scenario. During a real event this product will only be made available to officially designated Tsunami Warning Focal Points and National Tsunami Warning Centers.

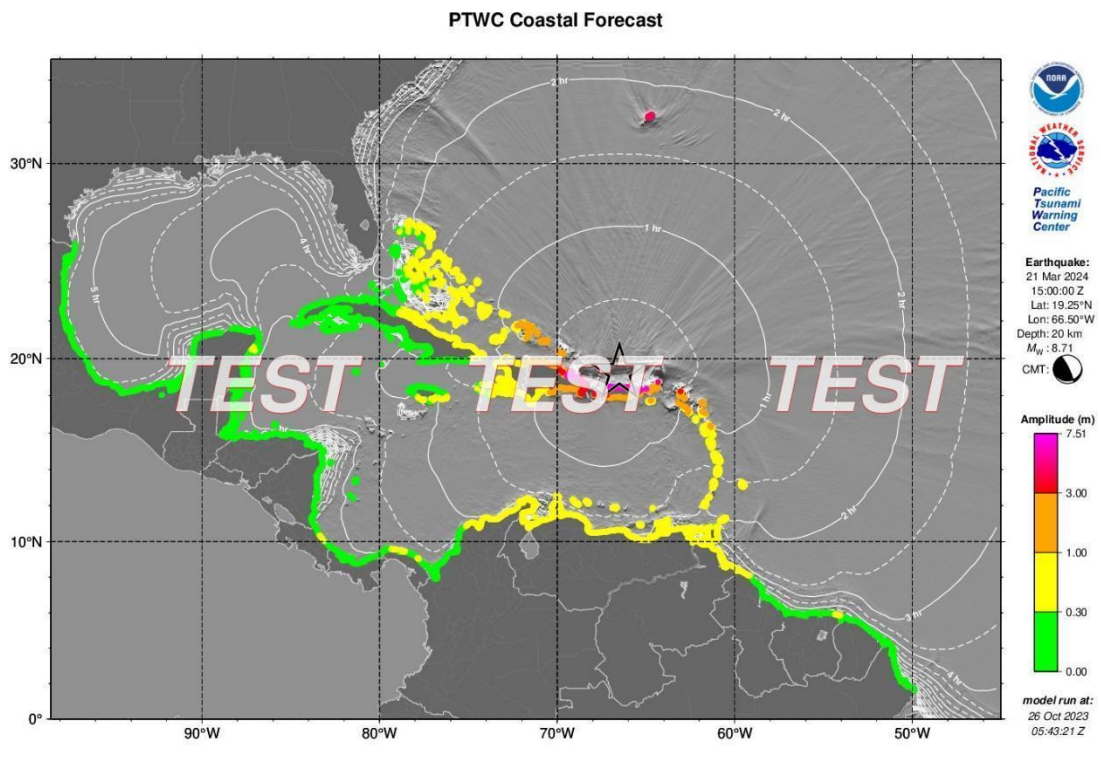


Figure III-3. RIFT coastal tsunami amplitude map for the Caribbean and Adjacent Regions for the Puerto Rico Trench scenario. During a real event this product will only be made available to officially designated Tsunami Warning Focal Points and National Tsunami.

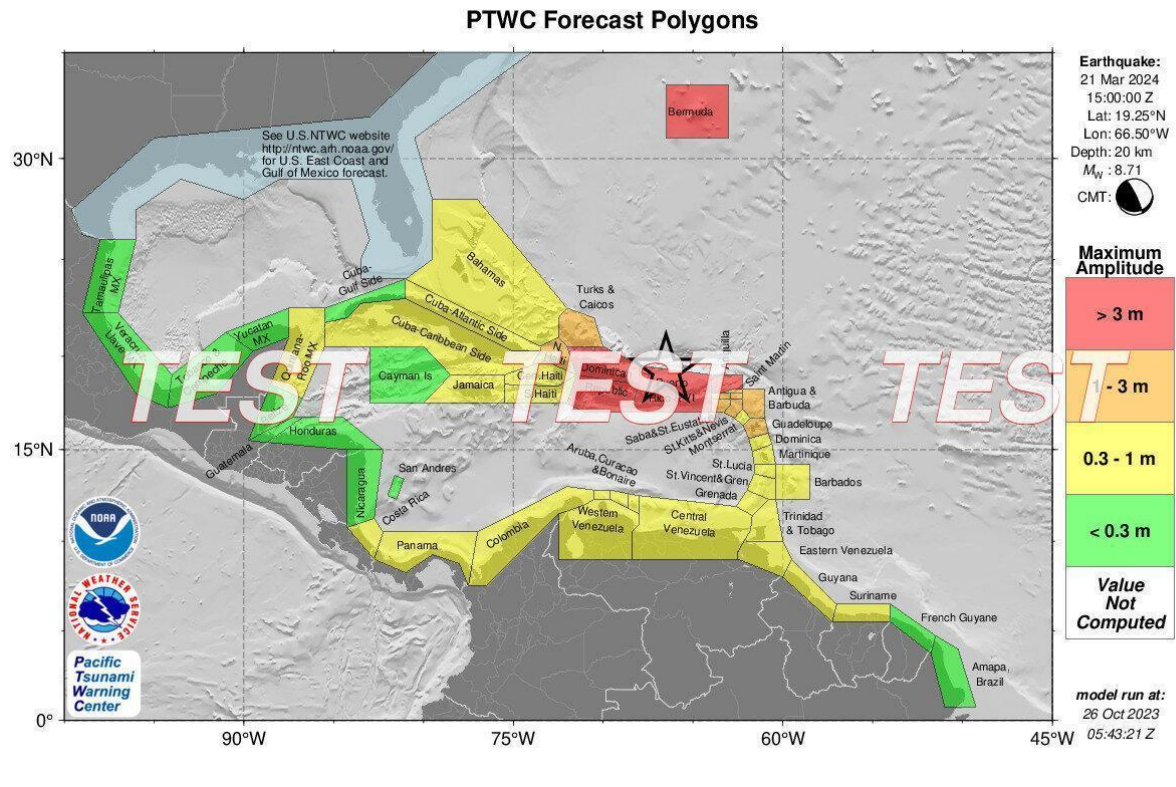


Figure III-4. RIFT forecast polygons for the Caribbean and Adjacent Regions for the Puerto Rico Trench scenario. During a real event this product will only be made available to officially designated Tsunami Warning Focal Points and National Tsunami Warning Centers.

Panama Earthquake Scenario

The Panama earthquake scenario consists of a rupture at the North Panama Deformed Belt (NPDB) with hypocenter at:

- Name of Scenario: CARIBE WAVE 24 Panama Scenario
- EQ Origin Time: 1500 UTC
- Hypocenter Latitude: 9.80°N
- Hypocenter Longitude: 77.75°W
- Hypocenter Depth (km): 25 km
- EQ Magnitude (Mw): 8.47
- Slip (m): 10
- Shear modulus: 3.3×10^{11} dyne/cm²
- Seismic Moment: 6.4152E+28 dyne-cm

Corner Point A	
Latitude	10.49°
Longitude	-78.65°
Depth (km)	50.71
Corner Point B	
Latitude	10.83°
Longitude	-78.21°
Depth (km)	0 *surface rupture*

Corner Point C	
Latitude	9.11°
Longitude	-76.85°
Depth (km)	0 *surface rupture*
Corner Point D	
Latitude	8.76°
Longitude	-77.29°
Depth (km)	50.71

Other Fault Parameters	
Strike (ϕ phi)	142°
Dip (δ delta)	40°
Rake (λ lambda)	90°
Length (km)	243
Width (W in km)	80
Width in Map View (km) [$W_{ap} = W * \cos(\delta)$]	61.28 km

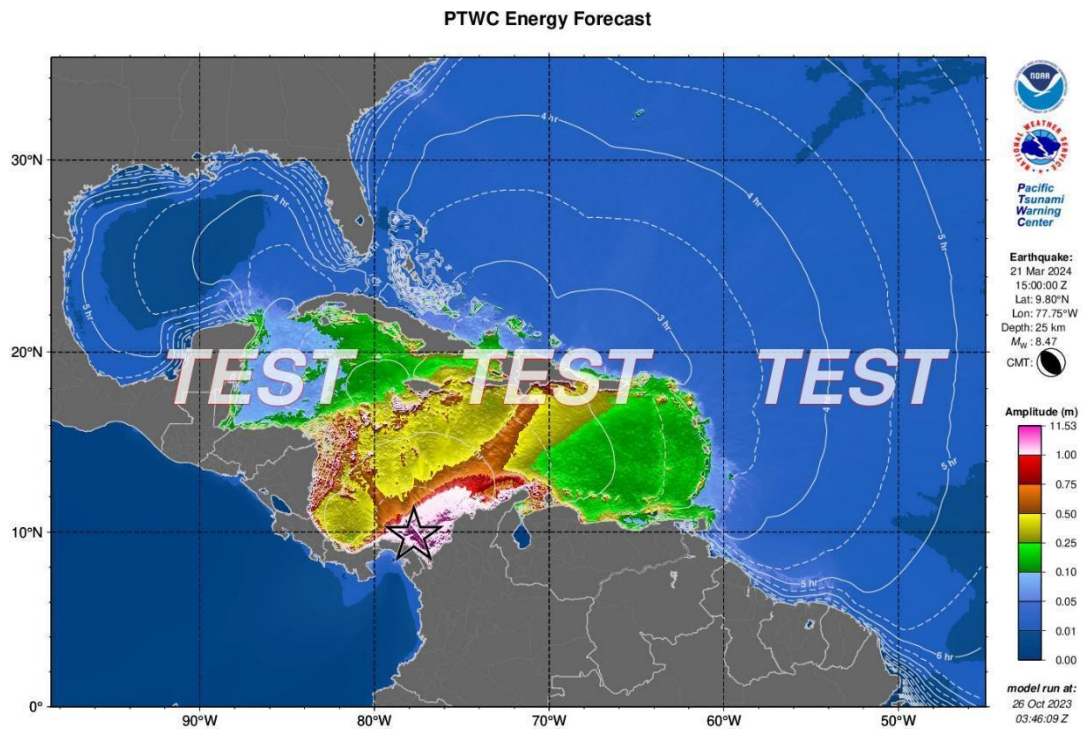


Figure III-2. RIFT maximum amplitude map for the Caribbean and Adjacent Regions for the Panama scenario. During a real event this product will only be made available to officially designated Tsunami Warning Focal Points and National Tsunami Warning Centers.

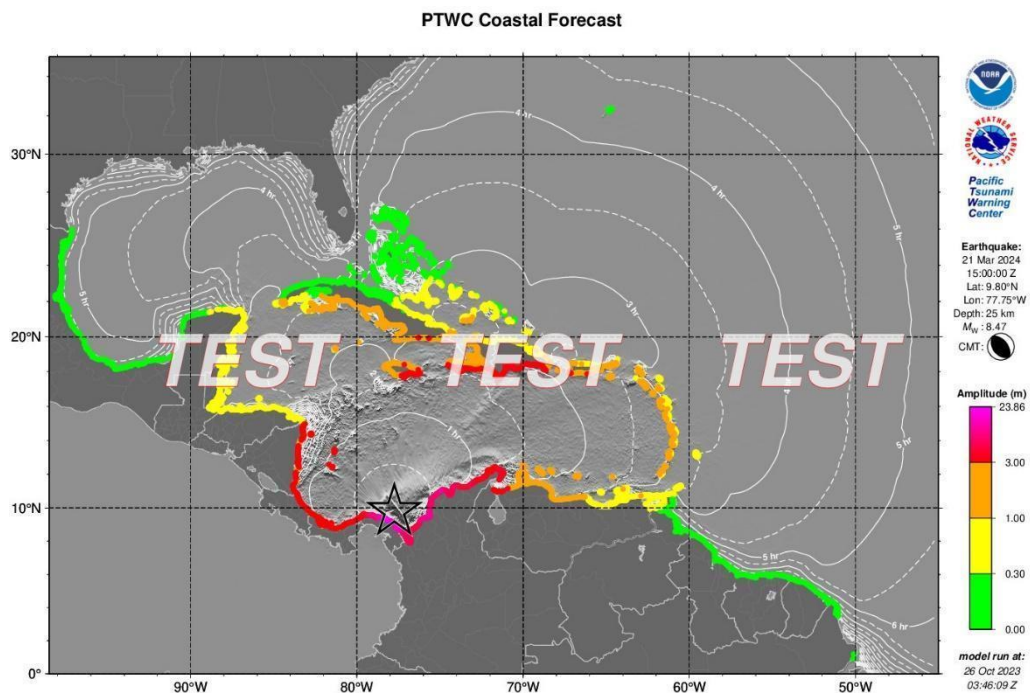


Figure III-3. RIFT coastal tsunami amplitude map for the Caribbean and Adjacent Regions for the Panama scenario. During a real event this product will only be made available to officially designated Tsunami Warning Focal Points and National Tsunami.

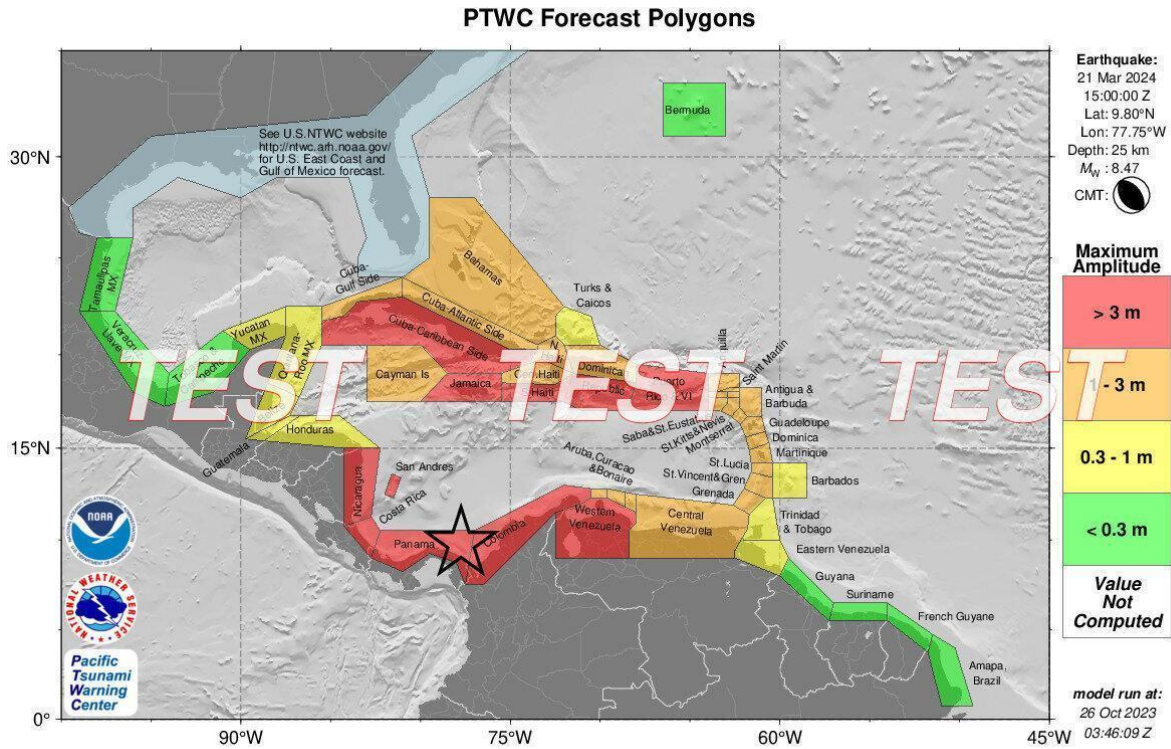


Figure III-4. RIFT forecast polygons for the Caribbean and Adjacent Regions for the Panama scenario. During a real event this product will only be made available to officially designated Tsunami Warning Focal Points and National Tsunami Warning Centers.

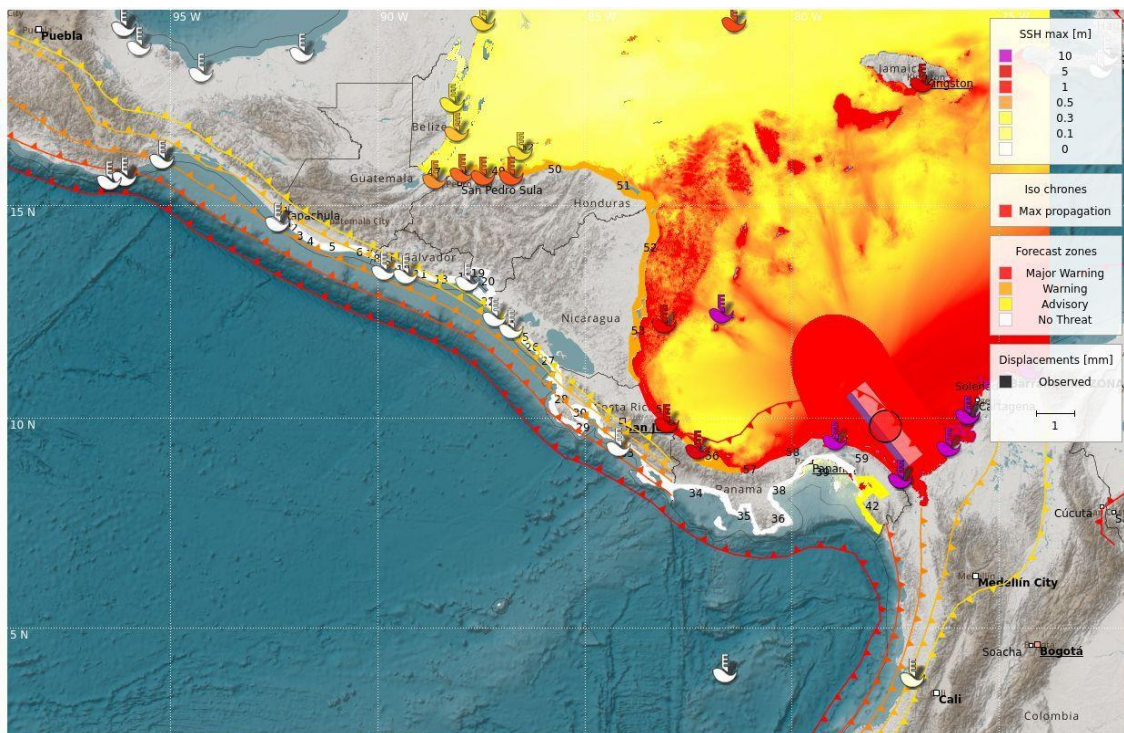


Figure III-5 CATAC Tsunami Heights for the Panama scenario.

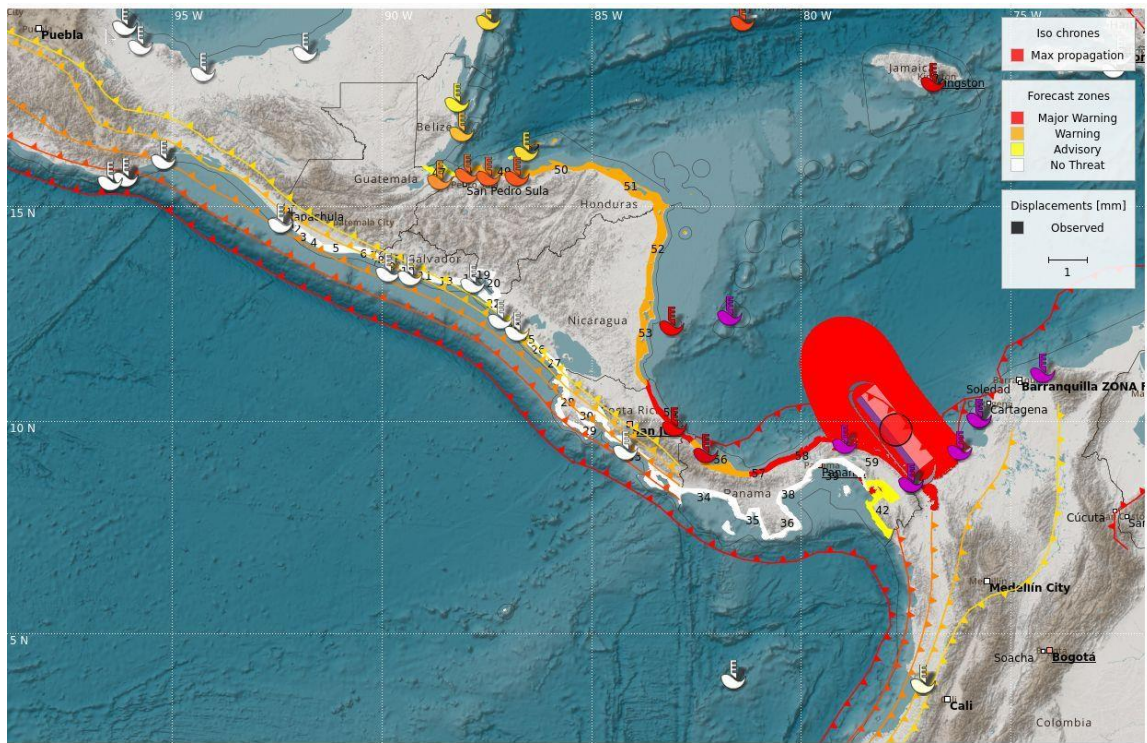


Figure III-6 CATAc Forecast Zones for the Panama scenario.

ANNEX III. EARTHQUAKE IMPACT SCENARIOS

When planning for a tsunami it is important to also take into consideration the potential earthquake impact in areas close to the source, as these impacts can affect tsunami response and increase the tsunami impact by hindering evacuation and contributing debris to be carried by the waves. For earthquake impact, the USGS has developed ShakeMap and the Prompt Assessment of Global Earthquakes for Response (PAGER). The main purpose of ShakeMap is to display the levels of ground shaking produced by the earthquake. The ground shaking event levels in the region are studied depending on the magnitude of the earthquake, the distance from the earthquake source, rock and soil behavior in the region, and propagation of the seismic waves through the Earth's crust. Based on the output of ShakeMap, PAGER estimates the population exposed to earthquake shaking, fatalities and economic losses.

Earthquake Event

The input information for ShakeMap include the earthquake magnitude and the four corners of the rectangles from the fault plane and the depths at each of these four vertices. ShakeMap is then used as the shaking input for PAGER loss estimates. For the case of CARIBE WAVE 24, the fault plane is represented by one segment for each of the scenarios. The Puerto Rico Trench fault plane is 500 km long and 110 km wide, and the Panama fault plane is 243 km long and 80 km wide.

Figures IV-1 through IV-4, show ShakeMap and PAGER outputs for the CARIBE WAVE 24 earthquake scenarios.

For the Puerto Rico Trench scenario, the ShakeMap shows intensities up to VIII on the Mercalli Modified Scale (Figure IV-1). The strongest ground shaking is predicted in the northwestern Puerto Rico and Northeastern Dominican Republic. According to the ShakeMap for the Panama scenario (Figure IV-3), intensities of up to VIII on the Mercalli Modified Scale could be observed. The strongest ground shaking is predicted in coastal communities along the southern Caribbean coast of Panama and southern Caribbean coast of Colombia.

According to PAGER, (Figure IV-2 and IV-4) the CARIBE WAVE 24 simulated earthquakes would produce an earthquake shaking red alert for the Puerto Rico Trench scenario and orange for the Panama scenario. For the Puerto Rico scenario, high casualties and extensive damage are probable and the disaster is likely widespread, estimated economic losses are estimated at 5-60% of the gross domestic product (GDP). As for the Panama scenario, significant damage is likely and the disaster is potentially widespread. Estimated economic losses are less than 1% of GDP of Colombia.

Regarding population exposed to strong to severe earthquake shaking, it is estimated that approximately 11 million people for Puerto Rico Trench scenario (Modified Mercalli Intensities from VI-VIII) and almost 3 million people for the Panama scenario would be exposed to Modified Mercalli intensities from VI up to VII (according to pager).

Puerto Rico Earthquake Scenario

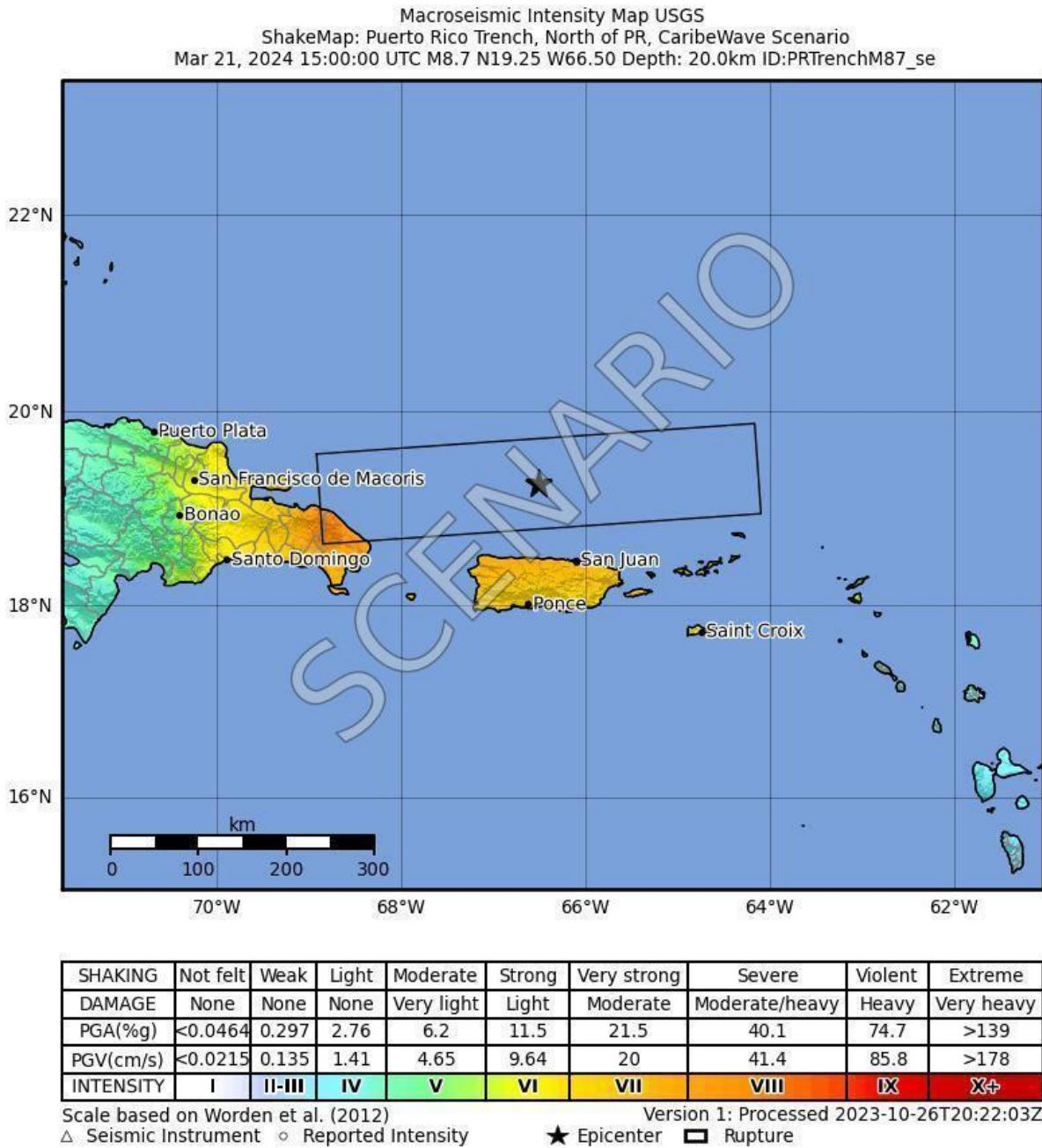


Figure IV-1. ShakeMap output for the CARIBE WAVE 24 Puerto Rico Trench earthquake scenario (USGS).



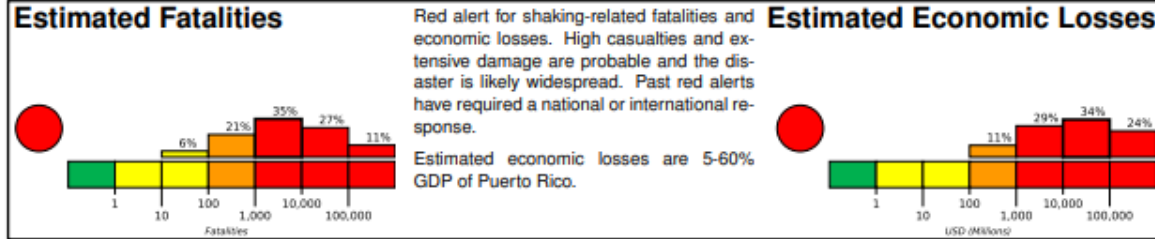
Earthquake Shaking **Red Alert**



M 8.7, Puerto Rico Trench, North of PR, CaribeWave Scenario

Origin Time: 2024-03-21 15:00:00 UTC (Thu 11:00:00 local)
Location: 19.2537° N 66.5050° W Depth: 20.0 km
FOR TSUNAMI INFORMATION, SEE: tsunami.gov

**PAGER
Version 1**

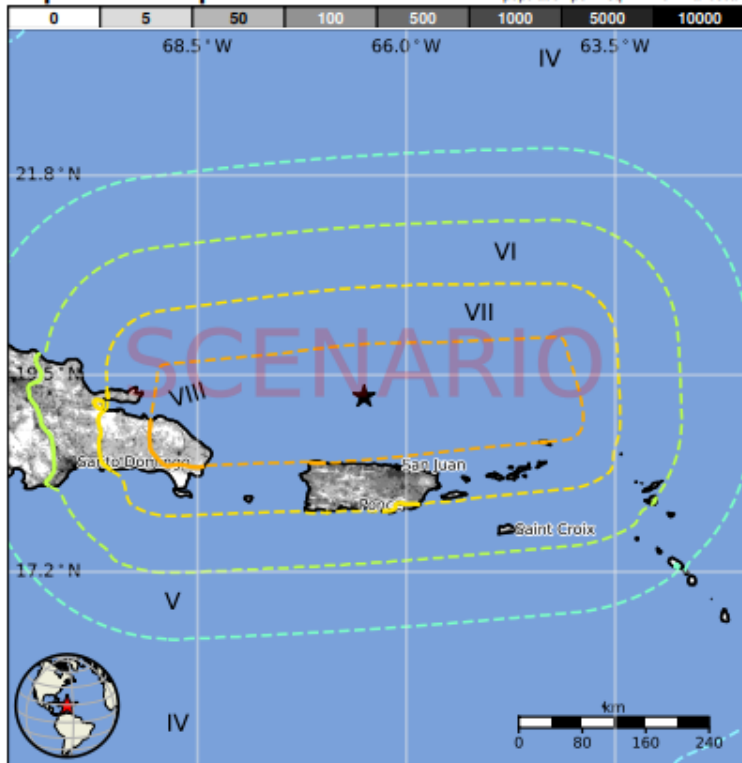


Estimated Population Exposed to Earthquake Shaking

ESTIMATED POPULATION EXPOSURE (k=x1000)	-*	76k*	991k*	2,993k	6,370k	4,236k	466k	0	0	
ESTIMATED MODIFIED MERCALLI INTENSITY	I	II-III	IV	V	VI	VII	VIII	IX	X+	
PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very Strong	Severe	Violent	Extreme	
POTENTIAL DAMAGE	Resistant Structures	None	None	None	V. Light	Light	Moderate	Mod./Heavy	Heavy	V. Heavy
	Vulnerable Structures	None	None	None	Light	Moderate	Mod./Heavy	Heavy	V. Heavy	V. Heavy

*Estimated exposure only includes population within the map area.

Population Exposure



Structures

Overall, the population in this region resides in structures that are a mix of vulnerable and earthquake resistant construction. The predominant vulnerable building types are mud wall and informal (metal, timber, GI etc.) construction.

Historical Earthquakes

Date (UTC)	Dist. (km)	Mag.	Max MMI(#)	Shaking Deaths
1979-03-23	306	6.6	VI(605k)	0
1980-11-12	326	5.9	VII(87k)	-
1984-06-24	333	6.7	VII(326k)	5

Selected City Exposure

from GeoNames.org

MMI	City	Population
VIII	Otra Banda	6k
VIII	Salvaleon de Higueey	124k
VIII	Punta Cana	100k
VIII	Miches	9k
VIII	Guaymate	6k
VIII	San Antonio	2k
VII	San Juan	418k
VII	San Pedro de Macoris	218k
VI	Santo Domingo Este	700k
VI	Santo Domingo	2,202k
V	Santiago de los Caballeros	1,200k

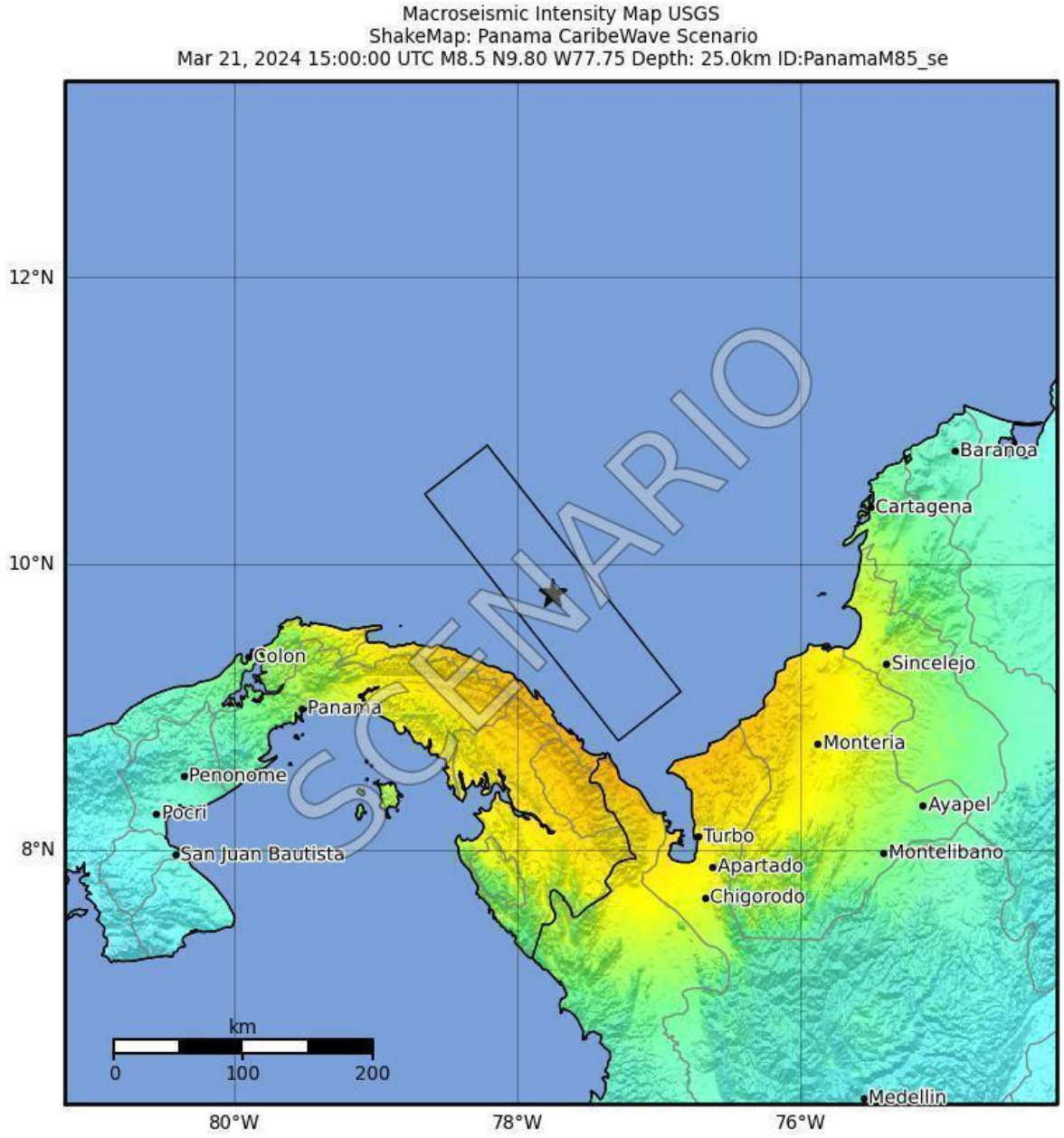
bold cities appear on map. (k = x1000)

PAGER content is automatically generated, and only considers losses due to structural damage. Limitations of input data, shaking estimates, and loss models may add uncertainty.
<http://earthquake.usgs.gov/data/pager/>

Event ID: **usprtrenc87_se**

Figure IV-2. PAGER output for CARIBE WAVE 24 Puerto Rico Trench earthquake scenario (USGS).

Panama Earthquake Scenario



SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
DAMAGE	None	None	None	Very light	Light	Moderate	Moderate/heavy	Heavy	Very heavy
PGA(%g)	<0.0464	0.297	2.76	6.2	11.5	21.5	40.1	74.7	>139
PGV(cm/s)	<0.0215	0.135	1.41	4.65	9.64	20	41.4	85.8	>178
INTENSITY	I	II-III	IV	V	VI	VII	VIII	IX	X+

Scale based on Worden et al. (2012) Version 1: Processed 2023-10-26T20:43:49Z
 Δ Seismic Instrument ○ Reported Intensity ★ Epicenter □ Rupture

Figure IV-3. ShakeMap output for the CARIBE WAVE 24 Panama earthquake scenario (USGS).



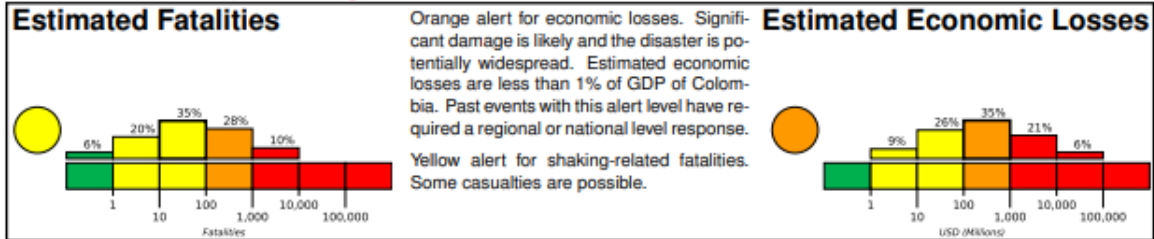
Earthquake Shaking **Orange Alert**



M 8.5, Panama CaribeWave Scenario

Origin Time: 2024-03-21 15:00:00 UTC (Thu 10:00:00 local)
Location: 9.8001° N 77.7500° W Depth: 25.0 km
FOR TSUNAMI INFORMATION, SEE: tsunami.gov

PAGER
Version 1

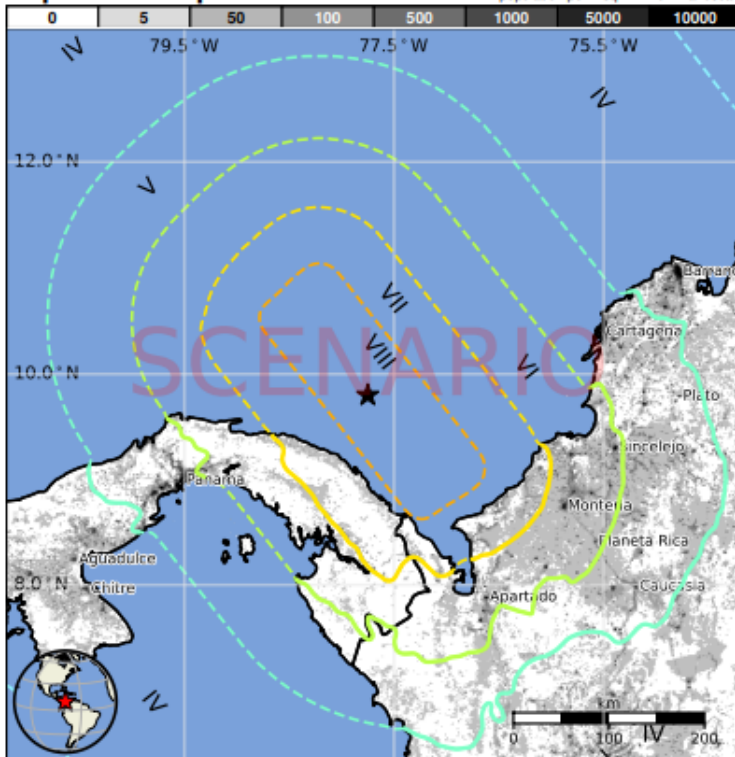


Estimated Population Exposed to Earthquake Shaking

ESTIMATED POPULATION EXPOSURE (k=x1000)	-*	-*	8,120k*	5,459k	2,629k	363k	0	0	0
ESTIMATED MODIFIED MERCALLI INTENSITY	I	II-III	IV	V	VI	VII	VIII	IX	X+
PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very Strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	Resistant Structures	None	None	None	V. Light	Light	Moderate	Mod./Heavy	Heavy
	Vulnerable Structures	None	None	None	Light	Moderate	Mod./Heavy	Heavy	V. Heavy

*Estimated exposure only includes population within the map area.

Population Exposure



Structures

Overall, the population in this region resides in structures that are a mix of vulnerable and earthquake resistant construction. The predominant vulnerable building types are mud wall and informal (metal, timber, GI etc.) construction.

Historical Earthquakes

Date (UTC)	Dist. (km)	Mag.	Max MMI(#)	Shaking Deaths
2000-11-08	301	6.5	VIII(3k)	0
1977-08-31	323	6.5	IX(4k)	3
1974-07-13	229	7.3	IX(2k)	11

Recent earthquakes in this area have caused secondary hazards such as landslides and liquefaction that might have contributed to losses.

Selected City Exposure

from GeoNames.org

MMI	City	Population
VII	Puerto Obaldia	< 1k
VII	Acandí	5k
VII	Mulatupo	1k
VII	Ustupo	3k
VII	Achutupo	2k
VII	Ailigandí	2k
V	Panama	408k
V	Cartagena	952k
IV	Barranquilla	1,380k
IV	Medellín	2,000k
IV	Santa Marta	432k

bold cities appear on map. (k = x1000)

PAGER content is automatically generated, and only considers losses due to structural damage. Limitations of input data, shaking estimates, and loss models may add uncertainty. <http://earthquake.usgs.gov/data/pager/>

Event ID: [uspanamam85_se](https://pager.usgs.gov/earthquake/20240321150000)

Figure IV-4. PAGER output for CARIBE WAVE 24 Panama earthquake scenario (USGS).

ANNEX IV. PTWC DUMMY (START OF EXERCISE) MESSAGES

PTWC

WECA41 PHEB 211500

TSUCAX

TEST...INITIAL DUMMY START OF EXERCISE MESSAGE...TEST

NWS PACIFIC TSUNAMI WARNING CENTER/NOAA/NWS

ISSUED AT 1500Z 21 MAR 2024

...TEST... CARIBE WAVE 24 TSUNAMI EXERCISE DUMMY MESSAGE.

REFER TO THE EXERCISE HANDBOOK. THIS IS AN EXERCISE ONLY. TEST...

THIS MESSAGE IS BEING USED TO START THE CARIBE WAVE 24

TSUNAMI EXERCISE AND TEST COMMUNICATIONS WITH UNESCO IOC CARIBE

EWS NTWCS AND TWFPS. 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 WEBSITE CARIBEWAVE.ORG. THE EXERCISE

PURPOSE IS TO EXERCISE AND EVALUATE THE CARIBE EWS TSUNAMI

WARNING SYSTEM.

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ANNEX V. PTWC EXERCISE MESSAGES

Puerto Rico Trench

The following simulated messages were created by the PTWC for the CARIBE WAVE 24 tsunami exercise. They are representative of the official standard products that would be issued by the PTWC for a magnitude 8.7 earthquake and subsequent tsunami originating in the Puerto Rico Trench. During a real event, the PTWC would also post the text products on tsunami.gov. The alerts would likely persist longer during a real event than is depicted in this exercise.

PTWC Message #1

ZCZC
WECA41 PHEB 211505
TSUCAX

TEST...TSUNAMI MESSAGE NUMBER 1...TEST
NWS PACIFIC TSUNAMI WARNING CENTER HONOLULU HI
1505 UTC THU MAR 21 2024

...THIS MESSAGE IS FOR TEST PURPOSES ONLY...
...TEST TSUNAMI THREAT MESSAGE TEST...

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE ****

THIS IS A TEST MESSAGE. 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.

THIS IS A TEST MESSAGE. NATIONAL AUTHORITIES WILL DETERMINE THE APPROPRIATE LEVEL OF ALERT FOR EACH COUNTRY AND MAY ISSUE ADDITIONAL OR MORE REFINED INFORMATION.

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE ****

TEST... PRELIMINARY EARTHQUAKE PARAMETERS ...TEST

* MAGNITUDE 8.7
* ORIGIN TIME 1500 UTC MAR 21 2024
* COORDINATES 19.3 NORTH 66.5 WEST
* DEPTH 20 KM / 12 MILES
* LOCATION PUERTO RICO REGION

TEST... EVALUATION ...TEST

* THIS IS A TEST MESSAGE. AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 8.7 OCCURRED IN THE PUERTO RICO REGION AT 1500 UTC ON THURSDAY MARCH 21 2024.

* THIS IS A TEST MESSAGE. BASED ON THE PRELIMINARY EARTHQUAKE PARAMETERS... WIDESPREAD HAZARDOUS TSUNAMI WAVES ARE POSSIBLE.

TEST... TSUNAMI THREAT FORECAST ...TEST

* THIS IS A TEST MESSAGE. HAZARDOUS TSUNAMI WAVES FROM THIS EARTHQUAKE ARE POSSIBLE WITHIN THE NEXT THREE HOURS ALONG SOME COASTS OF

PUERTO RICO... DOMINICAN REP... BR VIRGIN IS... US VIRGIN
IS... SABA... TURKS N CAICOS... SINT MAARTEN...
ANGUILLA... SINT EUSTATIUS... HAITI... SAINT KITTS...
BAHAMAS... MONTSERRAT... CUBA... BARBUDA... SAINT
MARTIN... GUADELOUPE... ANTIGUA... SAINT BARTHELEMY...
BONAIRE... DOMINICA... ARUBA... SAINT LUCIA...
MARTINIQUE... BARBADOS... SAINT VINCENT... VENEZUELA...
CURACAO... BERMUDA... CAYMAN ISLANDS... COLOMBIA...
JAMAICA... GRENADA... TRINIDAD TOBAGO... PANAMA AND SAN
ANDRES PROVID

TEST... RECOMMENDED ACTIONS ...TEST

- * THIS IS A TEST MESSAGE. 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.
- * THIS IS A TEST MESSAGE. PERSONS LOCATED IN THREATENED COASTAL AREAS SHOULD STAY ALERT FOR INFORMATION AND FOLLOW INSTRUCTIONS FROM NATIONAL AND LOCAL AUTHORITIES.

TEST... ESTIMATED TIMES OF ARRIVAL ...TEST

- * THIS IS A TEST MESSAGE. ESTIMATED TIMES OF ARRIVAL -ETA- OF THE INITIAL TSUNAMI WAVE FOR PLACES WITHIN THE REGION IDENTIFIED WITH A POTENTIAL TSUNAMI THREAT. 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)
SAN JUAN	PUERTO RICO	18.5N	66.1W	1510 03/21
MAYAGUEZ	PUERTO RICO	18.2N	67.2W	1517 03/21
CABO ENGANO	DOMINICAN REP	18.6N	68.3W	1532 03/21
ANEGADA	BR VIRGIN IS	18.8N	64.3W	1534 03/21
PUERTO PLATA	DOMINICAN REP	19.8N	70.7W	1535 03/21
CHRISTIANSTED	US VIRGIN IS	17.7N	64.7W	1542 03/21
SABA	SABA	17.6N	63.2W	1543 03/21
GRAND TURK	TURKS N CAICOS	21.5N	71.1W	1544 03/21
SIMPSON BAAI	SINT MAARTEN	18.0N	63.1W	1549 03/21
THE VALLEY	ANGUILLA	18.3N	63.1W	1551 03/21
SINT EUSTATIUS	SINT EUSTATIUS	17.5N	63.0W	1551 03/21
CAP HAITEN	HAITI	19.8N	72.2W	1551 03/21
SANTO DOMINGO	DOMINICAN REP	18.5N	69.9W	1556 03/21
BASSETERRE	SAINT KITTS	17.3N	62.7W	1558 03/21
MAYAGUANA	BAHAMAS	22.3N	73.0W	1559 03/21
WEST CAICOS	TURKS N CAICOS	21.7N	72.5W	1601 03/21
PLYMOUTH	MONTSERRAT	16.7N	62.2W	1610 03/21
BARACOA	CUBA	20.4N	74.5W	1611 03/21
PALMETTO POINT	BARBUDA	17.6N	61.9W	1611 03/21

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BAIE LUCAS	SAINT MARTIN	18.1N	63.0W	1612	03/21
GREAT INAGUA	BAHAMAS	20.9N	73.7W	1612	03/21
BAIE GRAND CASE	SAINT MARTIN	18.1N	63.1W	1613	03/21
SAN SALVADOR	BAHAMAS	24.1N	74.5W	1615	03/21
BASSE TERRE	GUADELOUPE	16.0N	61.7W	1616	03/21
SAINT JOHNS	ANTIGUA	17.1N	61.9W	1616	03/21
JACAMEL	HAITI	18.1N	72.5W	1617	03/21
SAINT BARTHELEM	SAINT BARTHELEMY	17.9N	62.8W	1617	03/21
ONIMA	BONAIRE	12.3N	68.3W	1619	03/21
CHARLOTTE AMALI	US VIRGIN IS	18.3N	64.9W	1619	03/21
ROSEAU	DOMINICA	15.3N	61.4W	1622	03/21
JEREMIE	HAITI	18.6N	74.1W	1622	03/21
LONG ISLAND	BAHAMAS	23.3N	75.1W	1623	03/21
SANTIAGO D CUBA	CUBA	19.9N	75.8W	1625	03/21
BAIE BLANCHE	SAINT MARTIN	18.1N	63.0W	1628	03/21
ORANJESTAD	ARUBA	12.5N	70.0W	1628	03/21
GIBARA	CUBA	21.1N	76.1W	1628	03/21
CASTRIES	SAINT LUCIA	14.0N	61.0W	1629	03/21
FORT DE FRANCE	MARTINIQUE	14.6N	61.1W	1629	03/21
EXUMA	BAHAMAS	23.6N	75.9W	1632	03/21
CAT ISLAND	BAHAMAS	24.4N	75.5W	1633	03/21
CROOKED ISLAND	BAHAMAS	22.7N	74.1W	1634	03/21
BRIDGETOWN	BARBADOS	13.1N	59.6W	1638	03/21
ELEUTHERA ISLAN	BAHAMAS	25.2N	76.1W	1639	03/21
KINGSTOWN	SAINT VINCENT	13.1N	61.2W	1644	03/21
ANDROS ISLAND	BAHAMAS	25.0N	77.9W	1647	03/21
MAIQUETIA	VENEZUELA	10.6N	67.0W	1649	03/21
WILLEMSTAD	CURACAO	12.1N	68.9W	1652	03/21
ROADTOWN	BR VIRGIN IS	18.4N	64.6W	1655	03/21
ESSO PIER	BERMUDA	32.4N	64.7W	1655	03/21
CAYMAN BRAC	CAYMAN ISLANDS	19.7N	79.9W	1656	03/21
NASSAU	BAHAMAS	25.1N	77.4W	1659	03/21
SANTA MARTA	COLOMBIA	11.2N	74.2W	1706	03/21
MONTEGO BAY	JAMAICA	18.5N	77.9W	1708	03/21
SAINT GEORGES	GRENADA	12.0N	61.8W	1709	03/21
FREEPORT	BAHAMAS	26.5N	78.8W	1711	03/21
GRAND CAYMAN	CAYMAN ISLANDS	19.3N	81.3W	1713	03/21
CUMANA	VENEZUELA	10.5N	64.2W	1713	03/21
ABACO ISLAND	BAHAMAS	26.6N	77.1W	1715	03/21
PORT AU PRINCE	HAITI	18.5N	72.4W	1715	03/21
CIENFUEGOS	CUBA	22.0N	80.5W	1719	03/21
PIRATES BAY	TRINIDAD TOBAGO	11.3N	60.6W	1722	03/21
CARTAGENA	COLOMBIA	10.4N	75.6W	1722	03/21
KINGSTON	JAMAICA	17.9N	76.9W	1724	03/21
BIMINI	BAHAMAS	25.8N	79.3W	1725	03/21
BARRANQUILLA	COLOMBIA	11.1N	74.9W	1731	03/21
RIOHACHA	COLOMBIA	11.6N	72.9W	1735	03/21
ALIGANDI	PANAMA	9.2N	78.0W	1743	03/21
SAN ANDRES	SAN ANDRES PROVI	13.4N	81.4W	1749	03/21
PUERTO CARRETO	PANAMA	8.8N	77.6W	1750	03/21
PROVIDENCIA	SAN ANDRES PROVI	12.6N	81.7W	1752	03/21
PUERTO OBALDIA	PANAMA	8.7N	77.4W	1802	03/21

TEST... POTENTIAL IMPACTS ...TEST

* THIS IS A TEST MESSAGE. 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.

- * THIS IS A TEST MESSAGE. IMPACTS CAN VARY SIGNIFICANTLY FROM
ONE SECTION OF COAST TO THE NEXT DUE TO LOCAL BATHYMETRY AND
THE SHAPE AND ELEVATION OF THE SHORELINE.
- * THIS IS A TEST MESSAGE. IMPACTS CAN ALSO VARY DEPENDING UPON
THE STATE OF THE TIDE AT THE TIME OF THE MAXIMUM TSUNAMI
WAVES.
- * THIS IS A TEST MESSAGE. PERSONS CAUGHT IN THE WATER OF A
TSUNAMI MAY DROWN... BE CRUSHED BY DEBRIS IN THE WATER... OR
BE SWEEPED OUT TO SEA.

TEST... NEXT UPDATE AND ADDITIONAL INFORMATION ...TEST

- * THIS IS A TEST MESSAGE. THE NEXT MESSAGE WILL BE ISSUED IN
ONE HOUR... OR SOONER IF THE SITUATION WARRANTS.
- * THIS IS A TEST MESSAGE. AUTHORITATIVE INFORMATION ABOUT THE
EARTHQUAKE FROM THE U.S. GEOLOGICAL SURVEY CAN BE FOUND ON
THE INTERNET AT EARTHQUAKE.USGS.GOV.
- * THIS IS A TEST MESSAGE. FURTHER INFORMATION ABOUT THIS EVENT
MAY BE FOUND AT WWW.TSUNAMI.GOV.
- * THIS IS A TEST MESSAGE. COASTAL REGIONS OF THE US GULF
COAST... US EAST COAST... AND THE MARITIME PROVINCES OF
CANADA SHOULD REFER TO U.S. NATIONAL TSUNAMI WARNING CENTER
MESSAGES THAT CAN BE FOUND AT WWW.TSUNAMI.GOV.

THIS IS A TEST MESSAGE. DO NOT TAKE ACTION BASED ON THIS TEST
MESSAGE.

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NNNN

PTWC Message #2

ZCZC
WECA41 PHEB 211535
TSUCAX

TEST...TSUNAMI MESSAGE NUMBER 2...TEST
NWS PACIFIC TSUNAMI WARNING CENTER HONOLULU HI
1535 UTC THU MAR 21 2024

...THIS MESSAGE IS FOR TEST PURPOSES ONLY...
...TEST TSUNAMI THREAT MESSAGE TEST...

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE ****

THIS IS A TEST MESSAGE. 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.

THIS IS A TEST MESSAGE. NATIONAL AUTHORITIES WILL DETERMINE THE APPROPRIATE LEVEL OF ALERT FOR EACH COUNTRY AND MAY ISSUE ADDITIONAL OR MORE REFINED INFORMATION.

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE ****

TEST... PRELIMINARY EARTHQUAKE PARAMETERS ...TEST

* MAGNITUDE 8.7
* ORIGIN TIME 1500 UTC MAR 21 2024
* COORDINATES 19.3 NORTH 66.5 WEST
* DEPTH 20 KM / 12 MILES
* LOCATION PUERTO RICO REGION

TEST... EVALUATION ...TEST

* THIS IS A TEST MESSAGE. AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 8.7 OCCURRED IN THE PUERTO RICO REGION AT 1500 UTC ON THURSDAY MARCH 21 2024.

* THIS IS A TEST MESSAGE. TSUNAMI WAVES HAVE BEEN OBSERVED.

* THIS IS A TEST MESSAGE. BASED ON ALL AVAILABLE DATA... HAZARDOUS TSUNAMI WAVES ARE FORECAST FOR SOME COASTS.

TEST... TSUNAMI THREAT FORECAST...UPDATED ...TEST

* THIS IS A TEST MESSAGE. TSUNAMI WAVES REACHING MORE THAN 3 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE ALONG SOME COASTS

OF

ANGUILLA... BERMUDA... DOMINICAN REPUBLIC... AND PUERTO
RICO AND VIRGIN ISLANDS.

- * THIS IS A TEST MESSAGE. TSUNAMI WAVES REACHING 1 TO 3 METERS
ABOVE THE TIDE LEVEL ARE POSSIBLE ALONG SOME COASTS OF

ANTIGUA AND BARBUDA... GUADELOUPE... HAITI... SABA AND
SAINT EUSTATIUS... SAINT BARTHELEMY... SAINT KITTS AND
NEVIS... SINT MAARTEN... SAINT MARTIN... AND TURKS AND
CAICOS ISLANDS.

- * THIS IS A TEST MESSAGE. TSUNAMI WAVES REACHING 0.3 TO 1
METERS ABOVE THE TIDE LEVEL ARE POSSIBLE FOR SOME COASTS OF

ARUBA... BAHAMAS... BARBADOS... BONAIRE... COLOMBIA...
COSTA RICA... CUBA... CURACAO... DOMINICA... GRENADA...
GUYANA... JAMAICA... MARTINIQUE... MEXICO... MONTSERRAT...
PANAMA... SAINT LUCIA... SAINT VINCENT AND THE
GRENADINES... SURINAME... TRINIDAD AND TOBAGO... AND
VENEZUELA.

- * THIS IS A TEST MESSAGE. 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 OR SMALL ISLANDS AND AT LOCATIONS WITH
FRINGING OR BARRIER REEFS WILL LIKELY BE MUCH SMALLER THAN
THE FORECAST INDICATES.

- * THIS IS A TEST MESSAGE. FOR ALL OTHER AREAS COVERED BY THIS
MESSAGE... THERE IS NO TSUNAMI THREAT ALTHOUGH SMALL SEA
LEVEL CHANGES MAY OCCUR.

TEST... RECOMMENDED ACTIONS ...TEST

- * THIS IS A TEST MESSAGE. 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.
- * THIS IS A TEST MESSAGE. PERSONS LOCATED IN THREATENED COASTAL
AREAS SHOULD STAY ALERT FOR INFORMATION AND FOLLOW
INSTRUCTIONS FROM NATIONAL AND LOCAL AUTHORITIES.

TEST... ESTIMATED TIMES OF ARRIVAL ...TEST

- * THIS IS A TEST MESSAGE. ESTIMATED TIMES OF ARRIVAL -ETA- OF
THE INITIAL TSUNAMI WAVE FOR PLACES WITHIN THREATENED
REGIONS ARE GIVEN BELOW. ACTUAL ARRIVAL TIMES MAY DIFFER AND
THE INITIAL WAVE MAY NOT BE THE LARGEST. A TSUNAMI IS A

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SERIES OF WAVES AND THE TIME BETWEEN WAVES CAN BE FIVE MINUTES TO ONE HOUR.

LOCATION	REGION	COORDINATES		ETA (UTC)
SAN JUAN	PUERTO RICO	18.5N	66.1W	1510 03/21
MAYAGUEZ	PUERTO RICO	18.2N	67.2W	1517 03/21
CABO ENGANO	DOMINICAN REP	18.6N	68.3W	1532 03/21
ANEGADA	BR VIRGIN IS	18.8N	64.3W	1534 03/21
PUERTO PLATA	DOMINICAN REP	19.8N	70.7W	1535 03/21
CHRISTIANSTED	US VIRGIN IS	17.7N	64.7W	1542 03/21
SABA	SABA	17.6N	63.2W	1543 03/21
GRAND TURK	TURKS N CAICOS	21.5N	71.1W	1544 03/21
SIMPSON BAAI	SINT MAARTEN	18.0N	63.1W	1549 03/21
THE VALLEY	ANGUILLA	18.3N	63.1W	1551 03/21
SINT EUSTATIUS	SINT EUSTATIUS	17.5N	63.0W	1551 03/21
CAP HAITEN	HAITI	19.8N	72.2W	1551 03/21
SANTO DOMINGO	DOMINICAN REP	18.5N	69.9W	1556 03/21
BASSETERRE	SAINT KITTS	17.3N	62.7W	1558 03/21
MAYAGUANA	BAHAMAS	22.3N	73.0W	1559 03/21
WEST CAICOS	TURKS N CAICOS	21.7N	72.5W	1601 03/21
PLYMOUTH	MONTSERRAT	16.7N	62.2W	1610 03/21
BARACOA	CUBA	20.4N	74.5W	1611 03/21
PALMETTO POINT	BARBUDA	17.6N	61.9W	1611 03/21
BAIE LUCAS	SAINT MARTIN	18.1N	63.0W	1612 03/21
GREAT INAGUA	BAHAMAS	20.9N	73.7W	1612 03/21
BAIE GRAND CASE	SAINT MARTIN	18.1N	63.1W	1613 03/21
SAN SALVADOR	BAHAMAS	24.1N	74.5W	1615 03/21
BASSE TERRE	GUADELOUPE	16.0N	61.7W	1616 03/21
SAINT JOHNS	ANTIGUA	17.1N	61.9W	1616 03/21
JACAMEL	HAITI	18.1N	72.5W	1617 03/21
SAINT BARTHELEM	SAINT BARTHELEMY	17.9N	62.8W	1617 03/21
ONIMA	BONAIRE	12.3N	68.3W	1619 03/21
CHARLOTTE AMALI	US VIRGIN IS	18.3N	64.9W	1619 03/21
ROSEAU	DOMINICA	15.3N	61.4W	1622 03/21
JEREMIE	HAITI	18.6N	74.1W	1622 03/21
LONG ISLAND	BAHAMAS	23.3N	75.1W	1623 03/21
SANTIAGO D CUBA	CUBA	19.9N	75.8W	1625 03/21
BAIE BLANCHE	SAINT MARTIN	18.1N	63.0W	1628 03/21
ORANJESTAD	ARUBA	12.5N	70.0W	1628 03/21
GIBARA	CUBA	21.1N	76.1W	1628 03/21
CASTRIES	SAINT LUCIA	14.0N	61.0W	1629 03/21
FORT DE FRANCE	MARTINIQUE	14.6N	61.1W	1629 03/21
EXUMA	BAHAMAS	23.6N	75.9W	1632 03/21
CAT ISLAND	BAHAMAS	24.4N	75.5W	1633 03/21
CROOKED ISLAND	BAHAMAS	22.7N	74.1W	1634 03/21
BRIDGETOWN	BARBADOS	13.1N	59.6W	1638 03/21
ELEUTHERA ISLAN	BAHAMAS	25.2N	76.1W	1639 03/21
KINGSTOWN	SAINT VINCENT	13.1N	61.2W	1644 03/21
ANDROS ISLAND	BAHAMAS	25.0N	77.9W	1647 03/21
MAIQUETIA	VENEZUELA	10.6N	67.0W	1649 03/21
WILLEMSTAD	CURACAO	12.1N	68.9W	1652 03/21
ROADTOWN	BR VIRGIN IS	18.4N	64.6W	1655 03/21
ESSO PIER	BERMUDA	32.4N	64.7W	1655 03/21
NASSAU	BAHAMAS	25.1N	77.4W	1659 03/21
SANTA MARTA	COLOMBIA	11.2N	74.2W	1706 03/21
MONTEGO BAY	JAMAICA	18.5N	77.9W	1708 03/21
SAINT GEORGES	GRENADA	12.0N	61.8W	1709 03/21

FREEPORT	BAHAMAS	26.5N	78.8W	1711	03/21
CUMANA	VENEZUELA	10.5N	64.2W	1713	03/21
ABACO ISLAND	BAHAMAS	26.6N	77.1W	1715	03/21
PORT AU PRINCE	HAITI	18.5N	72.4W	1715	03/21
CIENFUEGOS	CUBA	22.0N	80.5W	1719	03/21
PIRATES BAY	TRINIDAD TOBAGO	11.3N	60.6W	1722	03/21
CARTAGENA	COLOMBIA	10.4N	75.6W	1722	03/21
KINGSTON	JAMAICA	17.9N	76.9W	1724	03/21
BIMINI	BAHAMAS	25.8N	79.3W	1725	03/21
BARRANQUILLA	COLOMBIA	11.1N	74.9W	1731	03/21
RIOHACHA	COLOMBIA	11.6N	72.9W	1735	03/21
ALIGANDI	PANAMA	9.2N	78.0W	1743	03/21
PUERTO CARRETO	PANAMA	8.8N	77.6W	1750	03/21
PUERTO OBALDIA	PANAMA	8.7N	77.4W	1802	03/21
PUNTA CARIBANA	COLOMBIA	8.6N	76.9W	1805	03/21
COZUMEL	MEXICO	20.5N	87.0W	1810	03/21
PUERTO LIMON	COSTA RICA	10.0N	83.0W	1821	03/21
COLON	PANAMA	9.4N	79.9W	1823	03/21
PORT OF SPAIN	TRINIDAD TOBAGO	10.6N	61.5W	1823	03/21
BOCAS DEL TORO	PANAMA	9.4N	82.2W	1835	03/21
PUNTO FIJO	VENEZUELA	11.7N	70.2W	1853	03/21
SANTA CRZ D SUR	CUBA	20.7N	78.0W	1943	03/21
GOLFO VENEZUELA	VENEZUELA	11.4N	71.2W	1953	03/21
PORLAMAR	VENEZUELA	10.9N	63.8W	2033	03/21
GEORGETOWN	GUYANA	6.8N	58.2W	2035	03/21
PARAMARIBO	SURINAME	5.9N	55.2W	2052	03/21
NUEVA GERONA	CUBA	21.9N	82.8W	2120	03/21

TEST... POTENTIAL IMPACTS ...TEST

- * THIS IS A TEST MESSAGE. 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.
- * THIS IS A TEST MESSAGE. IMPACTS CAN VARY SIGNIFICANTLY FROM ONE SECTION OF COAST TO THE NEXT DUE TO LOCAL BATHYMETRY AND THE SHAPE AND ELEVATION OF THE SHORELINE.
- * THIS IS A TEST MESSAGE. IMPACTS CAN ALSO VARY DEPENDING UPON THE STATE OF THE TIDE AT THE TIME OF THE MAXIMUM TSUNAMI WAVES.
- * THIS IS A TEST MESSAGE. PERSONS CAUGHT IN THE WATER OF A TSUNAMI MAY DROWN... BE CRUSHED BY DEBRIS IN THE WATER... OR BE SWEEPED OUT TO SEA.

TEST... TSUNAMI OBSERVATIONS ...TEST

- * THIS IS A TEST MESSAGE. 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		TIME OF MEASURE (UTC)	MAXIMUM TSUNAMI HEIGHT	WAVE PERIOD (MIN)
	LAT	LON			
AGUADILLA PR	18.5N	67.2W	1533	4.35M/14.3FT	20
MAYAGUEZ PR	18.2N	67.2W	1523	3.58M/11.8FT	24
SAN JUAN PR	18.5N	66.1W	1520	5.53M/18.1FT	22
ARECIBO PR	18.5N	66.7W	1514	6.05M/19.9FT	16

TEST... NEXT UPDATE AND ADDITIONAL INFORMATION ...TEST

- * THIS IS A TEST MESSAGE. THE NEXT MESSAGE WILL BE ISSUED IN ONE HOUR... OR SOONER IF THE SITUATION WARRANTS.
- * THIS IS A TEST MESSAGE. AUTHORITATIVE INFORMATION ABOUT THE EARTHQUAKE FROM THE U.S. GEOLOGICAL SURVEY CAN BE FOUND ON THE INTERNET AT EARTHQUAKE.USGS.GOV.
- * THIS IS A TEST MESSAGE. FURTHER INFORMATION ABOUT THIS EVENT MAY BE FOUND AT WWW.TSUNAMI.GOV.
- * THIS IS A TEST MESSAGE. COASTAL REGIONS OF THE US GULF COAST... US EAST COAST... AND THE MARITIME PROVINCES OF CANADA SHOULD REFER TO U.S. NATIONAL TSUNAMI WARNING CENTER MESSAGES THAT CAN BE FOUND AT WWW.TSUNAMI.GOV.

THIS IS A TEST MESSAGE. DO NOT TAKE ACTION BASED ON THIS TEST MESSAGE.

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NNNN

PTWC Message #3

ZCZC
WECA41 PHEB 211600
TSUCAX

TEST...TSUNAMI MESSAGE NUMBER 3...TEST
NWS PACIFIC TSUNAMI WARNING CENTER HONOLULU HI
1600 UTC THU MAR 21 2024

...THIS MESSAGE IS FOR TEST PURPOSES ONLY...
...TEST TSUNAMI THREAT MESSAGE TEST...

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE ****

THIS IS A TEST MESSAGE. 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.

THIS IS A TEST MESSAGE. NATIONAL AUTHORITIES WILL DETERMINE THE APPROPRIATE LEVEL OF ALERT FOR EACH COUNTRY AND MAY ISSUE ADDITIONAL OR MORE REFINED INFORMATION.

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE ****

TEST... PRELIMINARY EARTHQUAKE PARAMETERS ...TEST

* MAGNITUDE 8.7
* ORIGIN TIME 1500 UTC MAR 21 2024
* COORDINATES 19.3 NORTH 66.5 WEST
* DEPTH 20 KM / 12 MILES
* LOCATION PUERTO RICO REGION

TEST... EVALUATION ...TEST

* THIS IS A TEST MESSAGE. AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 8.7 OCCURRED IN THE PUERTO RICO REGION AT 1500 UTC ON THURSDAY MARCH 21 2024.

* THIS IS A TEST MESSAGE. TSUNAMI WAVES HAVE BEEN OBSERVED.

* THIS IS A TEST MESSAGE. BASED ON ALL AVAILABLE DATA... HAZARDOUS TSUNAMI WAVES ARE FORECAST FOR SOME COASTS.

TEST... TSUNAMI THREAT FORECAST ...TEST

* THIS IS A TEST MESSAGE. TSUNAMI WAVES REACHING MORE THAN 3 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE ALONG SOME COASTS

OF

ANGUILLA... BERMUDA... DOMINICAN REPUBLIC... AND PUERTO
RICO AND VIRGIN ISLANDS.

- * THIS IS A TEST MESSAGE. TSUNAMI WAVES REACHING 1 TO 3 METERS
ABOVE THE TIDE LEVEL ARE POSSIBLE ALONG SOME COASTS OF

ANTIGUA AND BARBUDA... GUADELOUPE... HAITI... SABA AND
SAINT EUSTATIUS... SAINT BARTHELEMY... SAINT KITTS AND
NEVIS... SINT MAARTEN... SAINT MARTIN... AND TURKS AND
CAICOS ISLANDS.

- * THIS IS A TEST MESSAGE. TSUNAMI WAVES REACHING 0.3 TO 1
METERS ABOVE THE TIDE LEVEL ARE POSSIBLE FOR SOME COASTS OF

ARUBA... BAHAMAS... BARBADOS... BONAIRE... COLOMBIA...
COSTA RICA... CUBA... CURACAO... DOMINICA... GRENADA...
GUYANA... JAMAICA... MARTINIQUE... MEXICO... MONTSERRAT...
PANAMA... SAINT LUCIA... SAINT VINCENT AND THE
GRENADINES... SURINAME... TRINIDAD AND TOBAGO... AND
VENEZUELA.

- * THIS IS A TEST MESSAGE. 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 OR SMALL ISLANDS AND AT LOCATIONS WITH
FRINGING OR BARRIER REEFS WILL LIKELY BE MUCH SMALLER THAN
THE FORECAST INDICATES.

- * THIS IS A TEST MESSAGE. FOR ALL OTHER AREAS COVERED BY THIS
MESSAGE... THERE IS NO TSUNAMI THREAT ALTHOUGH SMALL SEA
LEVEL CHANGES MAY OCCUR.

TEST... RECOMMENDED ACTIONS ...TEST

- * THIS IS A TEST MESSAGE. 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.
- * THIS IS A TEST MESSAGE. PERSONS LOCATED IN THREATENED COASTAL
AREAS SHOULD STAY ALERT FOR INFORMATION AND FOLLOW
INSTRUCTIONS FROM NATIONAL AND LOCAL AUTHORITIES.

TEST... ESTIMATED TIMES OF ARRIVAL ...TEST

- * THIS IS A TEST MESSAGE. ESTIMATED TIMES OF ARRIVAL -ETA- OF
THE INITIAL TSUNAMI WAVE FOR PLACES 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)
SAN JUAN	PUERTO RICO	18.5N	66.1W	1510 03/21
MAYAGUEZ	PUERTO RICO	18.2N	67.2W	1517 03/21
CABO ENGANO	DOMINICAN REP	18.6N	68.3W	1532 03/21
ANEGADA	BR VIRGIN IS	18.8N	64.3W	1534 03/21
PUERTO PLATA	DOMINICAN REP	19.8N	70.7W	1535 03/21
CHRISTIANSTED	US VIRGIN IS	17.7N	64.7W	1542 03/21
SABA	SABA	17.6N	63.2W	1543 03/21
GRAND TURK	TURKS N CAICOS	21.5N	71.1W	1544 03/21
SIMPSON BAAI	SINT MAARTEN	18.0N	63.1W	1549 03/21
THE VALLEY	ANGUILLA	18.3N	63.1W	1551 03/21
SINT EUSTATIUS	SINT EUSTATIUS	17.5N	63.0W	1551 03/21
CAP HAITEN	HAITI	19.8N	72.2W	1551 03/21
SANTO DOMINGO	DOMINICAN REP	18.5N	69.9W	1556 03/21
BASSETERRE	SAINT KITTS	17.3N	62.7W	1558 03/21
MAYAGUANA	BAHAMAS	22.3N	73.0W	1559 03/21
WEST CAICOS	TURKS N CAICOS	21.7N	72.5W	1601 03/21
PLYMOUTH	MONTSERRAT	16.7N	62.2W	1610 03/21
BARACOA	CUBA	20.4N	74.5W	1611 03/21
PALMETTO POINT	BARBUDA	17.6N	61.9W	1611 03/21
BAIE LUCAS	SAINT MARTIN	18.1N	63.0W	1612 03/21
GREAT INAGUA	BAHAMAS	20.9N	73.7W	1612 03/21
BAIE GRAND CASE	SAINT MARTIN	18.1N	63.1W	1613 03/21
SAN SALVADOR	BAHAMAS	24.1N	74.5W	1615 03/21
BASSE TERRE	GUADELOUPE	16.0N	61.7W	1616 03/21
SAINT JOHNS	ANTIGUA	17.1N	61.9W	1616 03/21
JACAMEL	HAITI	18.1N	72.5W	1617 03/21
SAINT BARTHELEM	SAINT BARTHELEMY	17.9N	62.8W	1617 03/21
ONIMA	BONAIRE	12.3N	68.3W	1619 03/21
CHARLOTTE AMALI	US VIRGIN IS	18.3N	64.9W	1619 03/21
ROSEAU	DOMINICA	15.3N	61.4W	1622 03/21
JEREMIE	HAITI	18.6N	74.1W	1622 03/21
LONG ISLAND	BAHAMAS	23.3N	75.1W	1623 03/21
SANTIAGO D CUBA	CUBA	19.9N	75.8W	1625 03/21
BAIE BLANCHE	SAINT MARTIN	18.1N	63.0W	1628 03/21
ORANJESTAD	ARUBA	12.5N	70.0W	1628 03/21
GIBARA	CUBA	21.1N	76.1W	1628 03/21
CASTRIES	SAINT LUCIA	14.0N	61.0W	1629 03/21
FORT DE FRANCE	MARTINIQUE	14.6N	61.1W	1629 03/21
EXUMA	BAHAMAS	23.6N	75.9W	1632 03/21
CAT ISLAND	BAHAMAS	24.4N	75.5W	1633 03/21
CROOKED ISLAND	BAHAMAS	22.7N	74.1W	1634 03/21
BRIDGETOWN	BARBADOS	13.1N	59.6W	1638 03/21
ELEUTHERA ISLAN	BAHAMAS	25.2N	76.1W	1639 03/21
KINGSTOWN	SAINT VINCENT	13.1N	61.2W	1644 03/21
ANDROS ISLAND	BAHAMAS	25.0N	77.9W	1647 03/21
MAIQUETIA	VENEZUELA	10.6N	67.0W	1649 03/21
WILLEMSTAD	CURACAO	12.1N	68.9W	1652 03/21
ROADTOWN	BR VIRGIN IS	18.4N	64.6W	1655 03/21
ESSO PIER	BERMUDA	32.4N	64.7W	1655 03/21
NASSAU	BAHAMAS	25.1N	77.4W	1659 03/21
SANTA MARTA	COLOMBIA	11.2N	74.2W	1706 03/21
MONTEGO BAY	JAMAICA	18.5N	77.9W	1708 03/21
SAINT GEORGES	GRENADA	12.0N	61.8W	1709 03/21

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FREEPORT	BAHAMAS	26.5N	78.8W	1711	03/21
CUMANA	VENEZUELA	10.5N	64.2W	1713	03/21
ABACO ISLAND	BAHAMAS	26.6N	77.1W	1715	03/21
PORT AU PRINCE	HAITI	18.5N	72.4W	1715	03/21
CIENFUEGOS	CUBA	22.0N	80.5W	1719	03/21
PIRATES BAY	TRINIDAD TOBAGO	11.3N	60.6W	1722	03/21
CARTAGENA	COLOMBIA	10.4N	75.6W	1722	03/21
KINGSTON	JAMAICA	17.9N	76.9W	1724	03/21
BIMINI	BAHAMAS	25.8N	79.3W	1725	03/21
BARRANQUILLA	COLOMBIA	11.1N	74.9W	1731	03/21
RIOHACHA	COLOMBIA	11.6N	72.9W	1735	03/21
ALIGANDI	PANAMA	9.2N	78.0W	1743	03/21
PUERTO CARRETO	PANAMA	8.8N	77.6W	1750	03/21
PUERTO OBALDIA	PANAMA	8.7N	77.4W	1802	03/21
PUNTA CARIBANA	COLOMBIA	8.6N	76.9W	1805	03/21
COZUMEL	MEXICO	20.5N	87.0W	1810	03/21
PUERTO LIMON	COSTA RICA	10.0N	83.0W	1821	03/21
COLON	PANAMA	9.4N	79.9W	1823	03/21
PORT OF SPAIN	TRINIDAD TOBAGO	10.6N	61.5W	1823	03/21
BOCAS DEL TORO	PANAMA	9.4N	82.2W	1835	03/21
PUNTO FIJO	VENEZUELA	11.7N	70.2W	1853	03/21
SANTA CRZ D SUR	CUBA	20.7N	78.0W	1943	03/21
GOLFO VENEZUELA	VENEZUELA	11.4N	71.2W	1953	03/21
PORLAMAR	VENEZUELA	10.9N	63.8W	2033	03/21
GEORGETOWN	GUYANA	6.8N	58.2W	2035	03/21
PARAMARIBO	SURINAME	5.9N	55.2W	2052	03/21
NUEVA GERONA	CUBA	21.9N	82.8W	2120	03/21

TEST... POTENTIAL IMPACTS ...TEST

- * THIS IS A TEST MESSAGE. 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.
- * THIS IS A TEST MESSAGE. IMPACTS CAN VARY SIGNIFICANTLY FROM ONE SECTION OF COAST TO THE NEXT DUE TO LOCAL BATHYMETRY AND THE SHAPE AND ELEVATION OF THE SHORELINE.
- * THIS IS A TEST MESSAGE. IMPACTS CAN ALSO VARY DEPENDING UPON THE STATE OF THE TIDE AT THE TIME OF THE MAXIMUM TSUNAMI WAVES.
- * THIS IS A TEST MESSAGE. PERSONS CAUGHT IN THE WATER OF A TSUNAMI MAY DROWN... BE CRUSHED BY DEBRIS IN THE WATER... OR BE SWEEPED OUT TO SEA.

TEST... TSUNAMI OBSERVATIONS ...TEST

- * THIS IS A TEST MESSAGE. 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		TIME OF MEASURE (UTC)	MAXIMUM TSUNAMI HEIGHT	WAVE PERIOD (MIN)
	LAT	LON			
DART 42407	15.3N	68.2W	1559	0.08M/ 0.3FT	16
ESPERANZA VIEQUES P	18.1N	65.5W	1600	1.10M/ 3.6FT	18
FAJARDO PR	18.3N	65.6W	1556	6.20M/20.3FT	20
YABUCOA PR	18.1N	65.8W	1553	1.20M/ 3.9FT	24
GRAND TURK UK	21.4N	71.1W	1557	0.98M/ 3.2FT	26
GRAND TURK ISLAND T	21.4N	71.1W	1554	0.98M/ 3.2FT	18
LIMETREE VI	17.7N	64.8W	1556	0.83M/ 2.7FT	26
MAGUEYES ISLAND PR	18.0N	67.0W	1549	1.00M/ 3.3FT	26
ST CROIX VI	17.7N	64.7W	1556	1.19M/ 3.9FT	26
DART 41421	23.4N	63.8W	1548	0.33M/ 1.1FT	20
GUAYANILLA PR	18.0N	66.8W	1550	1.29M/ 4.2FT	22
PUERTO PLATA DO	19.8N	70.7W	1546	1.77M/ 5.8FT	22
DART 41420	23.4N	67.3W	1541	0.51M/ 1.7FT	16
PUNTA CANA DO	18.5N	68.4W	1541	3.70M/12.1FT	24
MONA ISLAND PR	18.1N	67.9W	1540	2.98M/ 9.8FT	14
AGUADILLA PR	18.5N	67.2W	1533	4.35M/14.3FT	20
MAYAGUEZ PR	18.2N	67.2W	1523	3.58M/11.8FT	24
SAN JUAN PR	18.5N	66.1W	1520	5.53M/18.1FT	22
ARECIBO PR	18.5N	66.7W	1514	6.05M/19.9FT	16

TEST... NEXT UPDATE AND ADDITIONAL INFORMATION ...TEST

- * THIS IS A TEST MESSAGE. THE NEXT MESSAGE WILL BE ISSUED IN ONE HOUR... OR SOONER IF THE SITUATION WARRANTS.
- * THIS IS A TEST MESSAGE. AUTHORITATIVE INFORMATION ABOUT THE EARTHQUAKE FROM THE U.S. GEOLOGICAL SURVEY CAN BE FOUND ON THE INTERNET AT EARTHQUAKE.USGS.GOV.
- * THIS IS A TEST MESSAGE. FURTHER INFORMATION ABOUT THIS EVENT MAY BE FOUND AT WWW.TSUNAMI.GOV.
- * THIS IS A TEST MESSAGE. COASTAL REGIONS OF THE US GULF COAST... US EAST COAST... AND THE MARITIME PROVINCES OF CANADA SHOULD REFER TO U.S. NATIONAL TSUNAMI WARNING CENTER MESSAGES THAT CAN BE FOUND AT WWW.TSUNAMI.GOV.

THIS IS A TEST MESSAGE. DO NOT TAKE ACTION BASED ON THIS TEST MESSAGE.

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NNNN

PTWC Message #4

ZCZC
WECA41 PHEB 211700
TSUCAX

TEST...TSUNAMI MESSAGE NUMBER 4...TEST
NWS PACIFIC TSUNAMI WARNING CENTER HONOLULU HI
1700 UTC THU MAR 21 2024

...THIS MESSAGE IS FOR TEST PURPOSES ONLY...
...TEST TSUNAMI THREAT MESSAGE TEST...

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE ****

THIS IS A TEST MESSAGE. 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.

THIS IS A TEST MESSAGE. NATIONAL AUTHORITIES WILL DETERMINE THE APPROPRIATE LEVEL OF ALERT FOR EACH COUNTRY AND MAY ISSUE ADDITIONAL OR MORE REFINED INFORMATION.

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE ****

TEST... PRELIMINARY EARTHQUAKE PARAMETERS ...TEST

* MAGNITUDE 8.7
* ORIGIN TIME 1500 UTC MAR 21 2024
* COORDINATES 19.3 NORTH 66.5 WEST
* DEPTH 20 KM / 12 MILES
* LOCATION PUERTO RICO REGION

TEST... EVALUATION ...TEST

* THIS IS A TEST MESSAGE. AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 8.7 OCCURRED IN THE PUERTO RICO REGION AT 1500 UTC ON THURSDAY MARCH 21 2024.

* THIS IS A TEST MESSAGE. TSUNAMI WAVES HAVE BEEN OBSERVED.

* THIS IS A TEST MESSAGE. BASED ON ALL AVAILABLE DATA... HAZARDOUS TSUNAMI WAVES ARE FORECAST FOR SOME COASTS.

TEST... TSUNAMI THREAT FORECAST ...TEST

* THIS IS A TEST MESSAGE. TSUNAMI WAVES REACHING MORE THAN 3 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE ALONG SOME COASTS OF

ANGUILLA... BERMUDA... DOMINICAN REPUBLIC... AND PUERTO
RICO AND VIRGIN ISLANDS.

- * THIS IS A TEST MESSAGE. TSUNAMI WAVES REACHING 1 TO 3 METERS
ABOVE THE TIDE LEVEL ARE POSSIBLE ALONG SOME COASTS OF

ANTIGUA AND BARBUDA... GUADELOUPE... HAITI... SABA AND
SAINT EUSTATIUS... SAINT BARTHELEMY... SAINT KITTS AND
NEVIS... SINT MAARTEN... SAINT MARTIN... AND TURKS AND
CAICOS ISLANDS.

- * THIS IS A TEST MESSAGE. TSUNAMI WAVES REACHING 0.3 TO 1
METERS ABOVE THE TIDE LEVEL ARE POSSIBLE FOR SOME COASTS OF

ARUBA... BAHAMAS... BARBADOS... BONAIRE... COLOMBIA...
COSTA RICA... CUBA... CURACAO... DOMINICA... GRENADA...
GUYANA... JAMAICA... MARTINIQUE... MEXICO... MONTSERRAT...
PANAMA... SAINT LUCIA... SAINT VINCENT AND THE
GRENADINES... SURINAME... TRINIDAD AND TOBAGO... AND
VENEZUELA.

- * THIS IS A TEST MESSAGE. 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 OR SMALL ISLANDS AND AT LOCATIONS WITH
FRINGING OR BARRIER REEFS WILL LIKELY BE MUCH SMALLER THAN
THE FORECAST INDICATES.

- * THIS IS A TEST MESSAGE. FOR ALL OTHER AREAS COVERED BY THIS
MESSAGE... THERE IS NO TSUNAMI THREAT ALTHOUGH SMALL SEA
LEVEL CHANGES MAY OCCUR.

TEST... RECOMMENDED ACTIONS ...TEST

- * THIS IS A TEST MESSAGE. 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.
- * THIS IS A TEST MESSAGE. PERSONS LOCATED IN THREATENED COASTAL
AREAS SHOULD STAY ALERT FOR INFORMATION AND FOLLOW
INSTRUCTIONS FROM NATIONAL AND LOCAL AUTHORITIES.

TEST... ESTIMATED TIMES OF ARRIVAL ...TEST

- * THIS IS A TEST MESSAGE. ESTIMATED TIMES OF ARRIVAL -ETA- OF
THE INITIAL TSUNAMI WAVE FOR PLACES 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)
WEST CAICOS	TURKS N CAICOS	21.7N	72.5W	1601 03/21
PLYMOUTH	MONTSEERRAT	16.7N	62.2W	1610 03/21
BARACOA	CUBA	20.4N	74.5W	1611 03/21
PALMETTO POINT	BARBUDA	17.6N	61.9W	1611 03/21
BAIE LUCAS	SAINT MARTIN	18.1N	63.0W	1612 03/21
GREAT INAGUA	BAHAMAS	20.9N	73.7W	1612 03/21
BAIE GRAND CASE	SAINT MARTIN	18.1N	63.1W	1613 03/21
SAN SALVADOR	BAHAMAS	24.1N	74.5W	1615 03/21
BASSE TERRE	GUADELOUPE	16.0N	61.7W	1616 03/21
SAINT JOHNS	ANTIGUA	17.1N	61.9W	1616 03/21
JACAMEL	HAITI	18.1N	72.5W	1617 03/21
SAINT BARTHELEM	SAINT BARTHELEMY	17.9N	62.8W	1617 03/21
ONIMA	BONAIRE	12.3N	68.3W	1619 03/21
CHARLOTTE AMALI	US VIRGIN IS	18.3N	64.9W	1619 03/21
ROSEAU	DOMINICA	15.3N	61.4W	1622 03/21
JEREMIE	HAITI	18.6N	74.1W	1622 03/21
LONG ISLAND	BAHAMAS	23.3N	75.1W	1623 03/21
SANTIAGO D CUBA	CUBA	19.9N	75.8W	1625 03/21
BAIE BLANCHE	SAINT MARTIN	18.1N	63.0W	1628 03/21
ORANJESTAD	ARUBA	12.5N	70.0W	1628 03/21
GIBARA	CUBA	21.1N	76.1W	1628 03/21
CASTRIES	SAINT LUCIA	14.0N	61.0W	1629 03/21
FORT DE FRANCE	MARTINIQUE	14.6N	61.1W	1629 03/21
EXUMA	BAHAMAS	23.6N	75.9W	1632 03/21
CAT ISLAND	BAHAMAS	24.4N	75.5W	1633 03/21
CROOKED ISLAND	BAHAMAS	22.7N	74.1W	1634 03/21
BRIDGETOWN	BARBADOS	13.1N	59.6W	1638 03/21
ELEUTHERA ISLAN	BAHAMAS	25.2N	76.1W	1639 03/21
KINGSTOWN	SAINT VINCENT	13.1N	61.2W	1644 03/21
ANDROS ISLAND	BAHAMAS	25.0N	77.9W	1647 03/21
MAIQUETIA	VENEZUELA	10.6N	67.0W	1649 03/21
WILLEMSTAD	CURACAO	12.1N	68.9W	1652 03/21
ROADTOWN	BR VIRGIN IS	18.4N	64.6W	1655 03/21
ESSO PIER	BERMUDA	32.4N	64.7W	1655 03/21
NASSAU	BAHAMAS	25.1N	77.4W	1659 03/21
SANTA MARTA	COLOMBIA	11.2N	74.2W	1706 03/21
MONTEGO BAY	JAMAICA	18.5N	77.9W	1708 03/21
SAINT GEORGES	GRENADA	12.0N	61.8W	1709 03/21
FREEPORT	BAHAMAS	26.5N	78.8W	1711 03/21
CUMANA	VENEZUELA	10.5N	64.2W	1713 03/21
ABACO ISLAND	BAHAMAS	26.6N	77.1W	1715 03/21
PORT AU PRINCE	HAITI	18.5N	72.4W	1715 03/21
CIENFUEGOS	CUBA	22.0N	80.5W	1719 03/21
PIRATES BAY	TRINIDAD TOBAGO	11.3N	60.6W	1722 03/21
CARTAGENA	COLOMBIA	10.4N	75.6W	1722 03/21
KINGSTON	JAMAICA	17.9N	76.9W	1724 03/21
BIMINI	BAHAMAS	25.8N	79.3W	1725 03/21
BARRANQUILLA	COLOMBIA	11.1N	74.9W	1731 03/21
RIOHACHA	COLOMBIA	11.6N	72.9W	1735 03/21
ALIGANDI	PANAMA	9.2N	78.0W	1743 03/21
PUERTO CARRETO	PANAMA	8.8N	77.6W	1750 03/21
PUERTO OBALDIA	PANAMA	8.7N	77.4W	1802 03/21
PUNTA CARIBANA	COLOMBIA	8.6N	76.9W	1805 03/21
COZUMEL	MEXICO	20.5N	87.0W	1810 03/21

PUERTO LIMON	COSTA RICA	10.0N	83.0W	1821	03/21
COLON	PANAMA	9.4N	79.9W	1823	03/21
PORT OF SPAIN	TRINIDAD TOBAGO	10.6N	61.5W	1823	03/21
BOCAS DEL TORO	PANAMA	9.4N	82.2W	1835	03/21
PUNTO FIJO	VENEZUELA	11.7N	70.2W	1853	03/21
SANTA CRZ D SUR	CUBA	20.7N	78.0W	1943	03/21
GOLFO VENEZUELA	VENEZUELA	11.4N	71.2W	1953	03/21
PORLAMAR	VENEZUELA	10.9N	63.8W	2033	03/21
GEORGETOWN	GUYANA	6.8N	58.2W	2035	03/21
PARAMARIBO	SURINAME	5.9N	55.2W	2052	03/21
NUEVA GERONA	CUBA	21.9N	82.8W	2120	03/21

TEST... POTENTIAL IMPACTS ...TEST

- * THIS IS A TEST MESSAGE. 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.
- * THIS IS A TEST MESSAGE. IMPACTS CAN VARY SIGNIFICANTLY FROM ONE SECTION OF COAST TO THE NEXT DUE TO LOCAL BATHYMETRY AND THE SHAPE AND ELEVATION OF THE SHORELINE.
- * THIS IS A TEST MESSAGE. IMPACTS CAN ALSO VARY DEPENDING UPON THE STATE OF THE TIDE AT THE TIME OF THE MAXIMUM TSUNAMI WAVES.
- * THIS IS A TEST MESSAGE. PERSONS CAUGHT IN THE WATER OF A TSUNAMI MAY DROWN... BE CRUSHED BY DEBRIS IN THE WATER... OR BE SWEEPED OUT TO SEA.

TEST... TSUNAMI OBSERVATIONS ...TEST

- * THIS IS A TEST MESSAGE. 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		TIME OF MEASURE (UTC)	MAXIMUM TSUNAMI HEIGHT	WAVE PERIOD (MIN)
	LAT	LON			
GANTERS BAY ST LUCI	14.0N	61.0W	1657	0.53M/ 1.7FT	24
BERMUDA SOMERSET UK	32.3N	64.9W	1656	3.85M/12.6FT	18
CALLIAQUA VC	13.1N	61.2W	1653	0.58M/ 1.9FT	28
CHATEAUBELAIR VC	13.3N	61.2W	1649	0.62M/ 2.0FT	18
VIEUX FORT ST LUCIA	13.7N	61.0W	1652	0.54M/ 1.8FT	20
ST LOUIS DU SUD HT	18.2N	73.6W	1650	0.51M/ 1.7FT	22
PORT ST CHARLES BB	13.3N	59.6W	1645	0.44M/ 1.5FT	26
FORT DE FRANCE MQ	14.6N	61.1W	1638	0.56M/ 1.8FT	22
ORANGESTAD AW	12.5N	70.0W	1634	0.76M/ 2.5FT	24
SAPODILLA BAY UK	21.7N	72.3W	1635	1.18M/ 3.9FT	28
BULLEN BAY CURACAO	12.2N	69.0W	1641	0.67M/ 2.2FT	18
DENNERY ST LUCIA LC	13.9N	60.9W	1636	0.37M/ 1.2FT	14

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LE ROBERT MQ	14.7N	60.9W	1629	0.45M/	1.5FT	18
JEREMIE HT	18.6N	74.1W	1629	0.29M/	1.0FT	24
ROSEAU DM	15.3N	61.4W	1633	0.64M/	2.1FT	26
BARBUDA AG	17.6N	61.8W	1634	1.59M/	5.2FT	22
LE PRECHEUR MQ	14.8N	61.2W	1630	0.46M/	1.5FT	22
CHARLOTTE-AMALIE VI	18.3N	64.9W	1630	1.01M/	3.3FT	26
PORTSMOUTH DM	15.6N	61.5W	1627	0.56M/	1.8FT	16
PORT SAN ANDRES DO	18.4N	69.6W	1626	1.05M/	3.4FT	22
DART 41425	28.7N	65.6W	1623	0.39M/	1.3FT	26
POINT A PITRE GP	16.2N	61.5W	1624	0.82M/	2.7FT	22
BLOWING POINT AI	18.2N	63.1W	1617	1.78M/	5.9FT	18
SALINAS PR	17.9N	66.2W	1621	1.10M/	3.6FT	28
DESHAIES GUADELOUPE	16.3N	61.8W	1622	0.67M/	2.2FT	24
LAMESHURBAYSTJOHNVI	18.3N	64.7W	1614	1.22M/	4.0FT	14
BARAHONA DO	18.2N	71.1W	1619	0.69M/	2.3FT	26
SAINT MARTIN FR	18.1N	63.1W	1615	1.28M/	4.2FT	28
ISABELII VIEQUES PR	18.2N	65.4W	1610	0.96M/	3.1FT	28
CULEBRA IS PR	18.3N	65.3W	1607	1.39M/	4.6FT	22
BASSETERRE KN	17.3N	62.7W	1606	1.47M/	4.8FT	16
PARHAM AT	17.1N	61.8W	1606	1.08M/	3.5FT	28
DESIRADE GUADELOUPE	16.3N	61.1W	1612	0.85M/	2.8FT	22
CAP HAITIEN HT	19.8N	72.2W	1605	0.81M/	2.7FT	28
DART 42407	15.3N	68.2W	1559	0.08M/	0.3FT	16
ESPERANZA VIEQUES P	18.1N	65.5W	1600	1.10M/	3.6FT	18
FAJARDO PR	18.3N	65.6W	1556	6.20M/20.3FT		20
YABUCOA PR	18.1N	65.8W	1553	1.20M/	3.9FT	24
GRAND TURK UK	21.4N	71.1W	1557	0.98M/	3.2FT	26
GRAND TURK ISLAND T	21.4N	71.1W	1554	0.98M/	3.2FT	18
LIMETREE VI	17.7N	64.8W	1556	0.83M/	2.7FT	26
MAGUEYES ISLAND PR	18.0N	67.0W	1549	1.00M/	3.3FT	26
ST CROIX VI	17.7N	64.7W	1556	1.19M/	3.9FT	26
DART 41421	23.4N	63.8W	1548	0.33M/	1.1FT	20
GUAYANILLA PR	18.0N	66.8W	1550	1.29M/	4.2FT	22
PUERTO PLATA DO	19.8N	70.7W	1546	1.77M/	5.8FT	22
DART 41420	23.4N	67.3W	1541	0.51M/	1.7FT	16
PUNTA CANA DO	18.5N	68.4W	1541	3.70M/12.1FT		24
MONA ISLAND PR	18.1N	67.9W	1540	2.98M/	9.8FT	14
AGUADILLA PR	18.5N	67.2W	1533	4.35M/14.3FT		20
MAYAGUEZ PR	18.2N	67.2W	1523	3.58M/11.8FT		24
SAN JUAN PR	18.5N	66.1W	1520	5.53M/18.1FT		22
ARECIBO PR	18.5N	66.7W	1514	6.05M/19.9FT		16

TEST... NEXT UPDATE AND ADDITIONAL INFORMATION ...TEST

-
- * THIS IS A TEST MESSAGE. THE NEXT MESSAGE WILL BE ISSUED IN ONE HOUR... OR SOONER IF THE SITUATION WARRANTS.
 - * THIS IS A TEST MESSAGE. AUTHORITATIVE INFORMATION ABOUT THE EARTHQUAKE FROM THE U.S. GEOLOGICAL SURVEY CAN BE FOUND ON THE INTERNET AT EARTHQUAKE.USGS.GOV.
 - * THIS IS A TEST MESSAGE. FURTHER INFORMATION ABOUT THIS EVENT MAY BE FOUND AT WWW.TSUNAMI.GOV.
 - * THIS IS A TEST MESSAGE. COASTAL REGIONS OF THE US GULF COAST... US EAST COAST... AND THE MARITIME PROVINCES OF

CANADA SHOULD REFER TO U.S. NATIONAL TSUNAMI WARNING CENTER
MESSAGES THAT CAN BE FOUND AT WWW.TSUNAMI.GOV.

THIS IS A TEST MESSAGE. DO NOT TAKE ACTION BASED ON THIS TEST
MESSAGE.

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NNNN

PTWC Message #5

ZCZC

WECA41 PHEB 211800

TSUCAX

TEST...TSUNAMI MESSAGE NUMBER 5...TEST
NWS PACIFIC TSUNAMI WARNING CENTER HONOLULU HI
1800 UTC THU MAR 21 2024

...THIS MESSAGE IS FOR TEST PURPOSES ONLY...
...TEST TSUNAMI THREAT MESSAGE TEST...

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE ****

THIS IS A TEST MESSAGE. 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.

THIS IS A TEST MESSAGE. NATIONAL AUTHORITIES WILL DETERMINE THE
APPROPRIATE LEVEL OF ALERT FOR EACH COUNTRY AND MAY ISSUE
ADDITIONAL OR MORE REFINED INFORMATION.

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE ****

TEST... PRELIMINARY EARTHQUAKE PARAMETERS ...TEST

* MAGNITUDE 8.7
* ORIGIN TIME 1500 UTC MAR 21 2024
* COORDINATES 19.3 NORTH 66.5 WEST
* DEPTH 20 KM / 12 MILES
* LOCATION PUERTO RICO REGION

TEST... EVALUATION ...TEST

* THIS IS A TEST MESSAGE. AN EARTHQUAKE WITH A PRELIMINARY
MAGNITUDE OF 8.7 OCCURRED IN THE PUERTO RICO REGION AT 1500
UTC ON THURSDAY MARCH 21 2024.

* THIS IS A TEST MESSAGE. TSUNAMI WAVES HAVE BEEN OBSERVED.

- * THIS IS A TEST MESSAGE. BASED ON ALL AVAILABLE DATA...
HAZARDOUS TSUNAMI WAVES ARE FORECAST FOR SOME COASTS.

TEST... TSUNAMI THREAT FORECAST ...TEST

- * THIS IS A TEST MESSAGE. TSUNAMI WAVES REACHING MORE THAN 3 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE ALONG SOME COASTS OF
OF

ANGUILLA... BERMUDA... DOMINICAN REPUBLIC... AND PUERTO RICO AND VIRGIN ISLANDS.

- * THIS IS A TEST MESSAGE. TSUNAMI WAVES REACHING 1 TO 3 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE ALONG SOME COASTS OF

ANTIGUA AND BARBUDA... GUADELOUPE... HAITI... SABA AND SAINT EUSTATIUS... SAINT BARTHELEMY... SAINT KITTS AND NEVIS... SINT MAARTEN... SAINT MARTIN... AND TURKS AND CAICOS ISLANDS.

- * THIS IS A TEST MESSAGE. TSUNAMI WAVES REACHING 0.3 TO 1 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE FOR SOME COASTS OF

ARUBA... BAHAMAS... BARBADOS... BONAIRE... COLOMBIA... COSTA RICA... CUBA... CURACAO... DOMINICA... GRENADA... GUYANA... JAMAICA... MARTINIQUE... MEXICO... MONTSERRAT... PANAMA... SAINT LUCIA... SAINT VINCENT AND THE GRENADINES... SURINAME... TRINIDAD AND TOBAGO... AND VENEZUELA.

- * THIS IS A TEST MESSAGE. 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 OR SMALL ISLANDS AND AT LOCATIONS WITH FRINGING OR BARRIER REEFS WILL LIKELY BE MUCH SMALLER THAN THE FORECAST INDICATES.

- * THIS IS A TEST MESSAGE. FOR ALL OTHER AREAS COVERED BY THIS MESSAGE... THERE IS NO TSUNAMI THREAT ALTHOUGH SMALL SEA LEVEL CHANGES MAY OCCUR.

TEST... RECOMMENDED ACTIONS ...TEST

- * THIS IS A TEST MESSAGE. 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.

- * THIS IS A TEST MESSAGE. PERSONS LOCATED IN THREATENED COASTAL AREAS SHOULD STAY ALERT FOR INFORMATION AND FOLLOW

INSTRUCTIONS FROM NATIONAL AND LOCAL AUTHORITIES.

TEST... ESTIMATED TIMES OF ARRIVAL ...TEST

* THIS IS A TEST MESSAGE. ESTIMATED TIMES OF ARRIVAL -ETA- OF THE INITIAL TSUNAMI WAVE FOR PLACES 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)
SANTA MARTA	COLOMBIA	11.2N 74.2W	1706 03/21
MONTEGO BAY	JAMAICA	18.5N 77.9W	1708 03/21
SAINT GEORGES	GRENADA	12.0N 61.8W	1709 03/21
FREEPORT	BAHAMAS	26.5N 78.8W	1711 03/21
CUMANA	VENEZUELA	10.5N 64.2W	1713 03/21
ABACO ISLAND	BAHAMAS	26.6N 77.1W	1715 03/21
PORT AU PRINCE	HAITI	18.5N 72.4W	1715 03/21
CIENFUEGOS	CUBA	22.0N 80.5W	1719 03/21
PIRATES BAY	TRINIDAD TOBAGO	11.3N 60.6W	1722 03/21
CARTAGENA	COLOMBIA	10.4N 75.6W	1722 03/21
KINGSTON	JAMAICA	17.9N 76.9W	1724 03/21
BIMINI	BAHAMAS	25.8N 79.3W	1725 03/21
BARRANQUILLA	COLOMBIA	11.1N 74.9W	1731 03/21
RIOHACHA	COLOMBIA	11.6N 72.9W	1735 03/21
ALIGANDI	PANAMA	9.2N 78.0W	1743 03/21
PUERTO CARRETO	PANAMA	8.8N 77.6W	1750 03/21
PUERTO OBALDIA	PANAMA	8.7N 77.4W	1802 03/21
PUNTA CARIBANA	COLOMBIA	8.6N 76.9W	1805 03/21
COZUMEL	MEXICO	20.5N 87.0W	1810 03/21
PUERTO LIMON	COSTA RICA	10.0N 83.0W	1821 03/21
COLON	PANAMA	9.4N 79.9W	1823 03/21
PORT OF SPAIN	TRINIDAD TOBAGO	10.6N 61.5W	1823 03/21
BOCAS DEL TORO	PANAMA	9.4N 82.2W	1835 03/21
PUNTO FIJO	VENEZUELA	11.7N 70.2W	1853 03/21
SANTA CRZ D SUR	CUBA	20.7N 78.0W	1943 03/21
GOLFO VENEZUELA	VENEZUELA	11.4N 71.2W	1953 03/21
PORLAMAR	VENEZUELA	10.9N 63.8W	2033 03/21
GEORGETOWN	GUYANA	6.8N 58.2W	2035 03/21
PARAMARIBO	SURINAME	5.9N 55.2W	2052 03/21
NUEVA GERONA	CUBA	21.9N 82.8W	2120 03/21

TEST... POTENTIAL IMPACTS ...TEST

* THIS IS A TEST MESSAGE. 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.

* THIS IS A TEST MESSAGE. IMPACTS CAN VARY SIGNIFICANTLY FROM ONE SECTION OF COAST TO THE NEXT DUE TO LOCAL BATHYMETRY AND THE SHAPE AND ELEVATION OF THE SHORELINE.

* THIS IS A TEST MESSAGE. IMPACTS CAN ALSO VARY DEPENDING UPON THE STATE OF THE TIDE AT THE TIME OF THE MAXIMUM TSUNAMI WAVES.

* THIS IS A TEST MESSAGE. PERSONS CAUGHT IN THE WATER OF A TSUNAMI MAY DROWN... BE CRUSHED BY DEBRIS IN THE WATER... OR BE SWEEPED OUT TO SEA.

TEST... TSUNAMI OBSERVATIONS ...TEST

* THIS IS A TEST MESSAGE. 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		TIME OF MEASURE (UTC)	MAXIMUM TSUNAMI HEIGHT		WAVE PERIOD (MIN)
	LAT	LON				
COVENAS CO	9.4N	76.2W	1757	0.25M/	0.8FT	28
SETTLEMENT PT BS	26.7N	79.0W	1749	0.26M/	0.9FT	28
LAKE WORTH BEACH FL	26.6N	80.0W	1742	0.28M/	0.9FT	28
ISLA NAVAL CO	10.2N	75.8W	1739	0.19M/	0.6FT	16
PORT ROYAL JM	17.9N	76.8W	1738	0.36M/	1.2FT	18
CARTEGENA CO	10.4N	75.5W	1734	0.29M/	0.9FT	28
SCARBOROUGH TT	11.2N	60.7W	1725	0.35M/	1.2FT	26
PORT AU PRINCE HT	18.5N	72.4W	1725	0.79M/	2.6FT	28
BALLENAS CO	11.7N	72.7W	1723	0.40M/	1.3FT	26
GUN BAY KY	19.3N	81.1W	1723	0.08M/	0.3FT	28
GEORGE TOWN KY	19.3N	81.4W	1718	0.08M/	0.3FT	20
PRICKLEY BAY GD	12.0N	61.8W	1715	0.68M/	2.2FT	20
SANTA MARTA CO	11.2N	74.2W	1720	0.38M/	1.2FT	16
SOUFRIERE ST LUCIA	13.9N	61.1W	1710	0.52M/	1.7FT	20
TORTOLA VI UK	18.4N	64.6W	1709	1.39M/	4.6FT	20
BERMUDA BIO STA UK	32.4N	64.7W	1704	4.61M/	15.1FT	18
BERMUDA ST GEORGE U	32.4N	64.7W	1706	4.61M/	15.1FT	18
GANTERS BAY ST LUCI	14.0N	61.0W	1657	0.53M/	1.7FT	24
BERMUDA SOMERSET UK	32.3N	64.9W	1656	3.85M/	12.6FT	18
CALLIAQUA VC	13.1N	61.2W	1653	0.58M/	1.9FT	28
CHATEAUBELAIR VC	13.3N	61.2W	1649	0.62M/	2.0FT	18
VIEUX FORT ST LUCIA	13.7N	61.0W	1652	0.54M/	1.8FT	20
ST LOUIS DU SUD HT	18.2N	73.6W	1650	0.51M/	1.7FT	22
PORT ST CHARLES BB	13.3N	59.6W	1645	0.44M/	1.5FT	26
FORT DE FRANCE MQ	14.6N	61.1W	1638	0.56M/	1.8FT	22
ORANGESTAD AW	12.5N	70.0W	1634	0.76M/	2.5FT	24
SAPODILLA BAY UK	21.7N	72.3W	1635	1.18M/	3.9FT	28
BULLEN BAY CURACAO	12.2N	69.0W	1641	0.67M/	2.2FT	18
DENNERY ST LUCIA LC	13.9N	60.9W	1636	0.37M/	1.2FT	14
LE ROBERT MQ	14.7N	60.9W	1629	0.45M/	1.5FT	18
JEREMIE HT	18.6N	74.1W	1629	0.29M/	1.0FT	24
ROSEAU DM	15.3N	61.4W	1633	0.64M/	2.1FT	26
BARBUDA AG	17.6N	61.8W	1634	1.59M/	5.2FT	22
LE PRECHEUR MQ	14.8N	61.2W	1630	0.46M/	1.5FT	22
CHARLOTTE-AMALIE VI	18.3N	64.9W	1630	1.01M/	3.3FT	26
PORTSMOUTH DM	15.6N	61.5W	1627	0.56M/	1.8FT	16

PORT SAN ANDRES DO	18.4N	69.6W	1626	1.05M/	3.4FT	22
DART 41425	28.7N	65.6W	1623	0.39M/	1.3FT	26
POINT A PITRE GP	16.2N	61.5W	1624	0.82M/	2.7FT	22
BLOWING POINT AI	18.2N	63.1W	1617	1.78M/	5.9FT	18
SALINAS PR	17.9N	66.2W	1621	1.10M/	3.6FT	28
DESHAIES GUADELOUPE	16.3N	61.8W	1622	0.67M/	2.2FT	24
LAMESHURBAYSTJOHNVI	18.3N	64.7W	1614	1.22M/	4.0FT	14
BARAHONA DO	18.2N	71.1W	1619	0.69M/	2.3FT	26
SAINT MARTIN FR	18.1N	63.1W	1615	1.28M/	4.2FT	28
ISABELII VIEQUES PR	18.2N	65.4W	1610	0.96M/	3.1FT	28
CULEBRA IS PR	18.3N	65.3W	1607	1.39M/	4.6FT	22
BASSETERRE KN	17.3N	62.7W	1606	1.47M/	4.8FT	16
PARHAM AT	17.1N	61.8W	1606	1.08M/	3.5FT	28
DESIRADE GUADELOUPE	16.3N	61.1W	1612	0.85M/	2.8FT	22
CAP HAITIEN HT	19.8N	72.2W	1605	0.81M/	2.7FT	28
DART 42407	15.3N	68.2W	1559	0.08M/	0.3FT	16
ESPERANZA VIEQUES P	18.1N	65.5W	1600	1.10M/	3.6FT	18
FAJARDO PR	18.3N	65.6W	1556	6.20M/20.3FT		20
YABUCOA PR	18.1N	65.8W	1553	1.20M/	3.9FT	24
GRAND TURK UK	21.4N	71.1W	1557	0.98M/	3.2FT	26
GRAND TURK ISLAND T	21.4N	71.1W	1554	0.98M/	3.2FT	18
LIMETREE VI	17.7N	64.8W	1556	0.83M/	2.7FT	26
MAGUEYES ISLAND PR	18.0N	67.0W	1549	1.00M/	3.3FT	26
ST CROIX VI	17.7N	64.7W	1556	1.19M/	3.9FT	26
DART 41421	23.4N	63.8W	1548	0.33M/	1.1FT	20
GUAYANILLA PR	18.0N	66.8W	1550	1.29M/	4.2FT	22
PUERTO PLATA DO	19.8N	70.7W	1546	1.77M/	5.8FT	22
DART 41420	23.4N	67.3W	1541	0.51M/	1.7FT	16
PUNTA CANA DO	18.5N	68.4W	1541	3.70M/12.1FT		24
MONA ISLAND PR	18.1N	67.9W	1540	2.98M/	9.8FT	14
AGUADILLA PR	18.5N	67.2W	1533	4.35M/14.3FT		20
MAYAGUEZ PR	18.2N	67.2W	1523	3.58M/11.8FT		24
SAN JUAN PR	18.5N	66.1W	1520	5.53M/18.1FT		22
ARECIBO PR	18.5N	66.7W	1514	6.05M/19.9FT		16

TEST... NEXT UPDATE AND ADDITIONAL INFORMATION ...TEST

- * THIS IS A TEST MESSAGE. THE NEXT MESSAGE WILL BE ISSUED IN ONE HOUR... OR SOONER IF THE SITUATION WARRANTS.
- * THIS IS A TEST MESSAGE. AUTHORITATIVE INFORMATION ABOUT THE EARTHQUAKE FROM THE U.S. GEOLOGICAL SURVEY CAN BE FOUND ON THE INTERNET AT EARTHQUAKE.USGS.GOV.
- * THIS IS A TEST MESSAGE. FURTHER INFORMATION ABOUT THIS EVENT MAY BE FOUND AT WWW.TSUNAMI.GOV.
- * THIS IS A TEST MESSAGE. COASTAL REGIONS OF THE US GULF COAST... US EAST COAST... AND THE MARITIME PROVINCES OF CANADA SHOULD REFER TO U.S. NATIONAL TSUNAMI WARNING CENTER MESSAGES THAT CAN BE FOUND AT WWW.TSUNAMI.GOV.

THIS IS A TEST MESSAGE. DO NOT TAKE ACTION BASED ON THIS TEST MESSAGE.

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NNNN

PTWC Message #6

ZCZC
WECA41 PHEB 211900
TSUCAX

TEST...TSUNAMI MESSAGE NUMBER 6...TEST
NWS PACIFIC TSUNAMI WARNING CENTER HONOLULU HI
1900 UTC THU MAR 21 2024

...THIS MESSAGE IS FOR TEST PURPOSES ONLY...
...TEST TSUNAMI THREAT MESSAGE TEST...

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE ****

THIS IS A TEST MESSAGE. 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.

THIS IS A TEST MESSAGE. NATIONAL AUTHORITIES WILL DETERMINE THE APPROPRIATE LEVEL OF ALERT FOR EACH COUNTRY AND MAY ISSUE ADDITIONAL OR MORE REFINED INFORMATION.

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE ****

TEST... PRELIMINARY EARTHQUAKE PARAMETERS ...TEST

* MAGNITUDE 8.7
* ORIGIN TIME 1500 UTC MAR 21 2024
* COORDINATES 19.3 NORTH 66.5 WEST
* DEPTH 20 KM / 12 MILES
* LOCATION PUERTO RICO REGION

TEST... EVALUATION ...TEST

* THIS IS A TEST MESSAGE. AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 8.7 OCCURRED IN THE PUERTO RICO REGION AT 1500 UTC ON THURSDAY MARCH 21 2024.

* THIS IS A TEST MESSAGE. TSUNAMI WAVES HAVE BEEN OBSERVED.

* THIS IS A TEST MESSAGE. BASED ON ALL AVAILABLE DATA... HAZARDOUS TSUNAMI WAVES ARE FORECAST FOR SOME COASTS.

TEST... TSUNAMI THREAT FORECAST ...TEST

* THIS IS A TEST MESSAGE. TSUNAMI WAVES REACHING MORE THAN 3 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE ALONG SOME COASTS

OF

ANGUILLA... BERMUDA... DOMINICAN REPUBLIC... AND PUERTO
RICO AND VIRGIN ISLANDS.

- * THIS IS A TEST MESSAGE. TSUNAMI WAVES REACHING 1 TO 3 METERS
ABOVE THE TIDE LEVEL ARE POSSIBLE ALONG SOME COASTS OF

ANTIGUA AND BARBUDA... GUADELOUPE... HAITI... SABA AND
SAINT EUSTATIUS... SAINT BARTHELEMY... SAINT KITTS AND
NEVIS... SINT MAARTEN... SAINT MARTIN... AND TURKS AND
CAICOS ISLANDS.

- * THIS IS A TEST MESSAGE. TSUNAMI WAVES REACHING 0.3 TO 1
METERS ABOVE THE TIDE LEVEL ARE POSSIBLE FOR SOME COASTS OF

ARUBA... BAHAMAS... BARBADOS... BONAIRE... COLOMBIA...
COSTA RICA... CUBA... CURACAO... DOMINICA... GRENADA...
GUYANA... JAMAICA... MARTINIQUE... MEXICO... MONTSERRAT...
PANAMA... SAINT LUCIA... SAINT VINCENT AND THE
GRENADINES... SURINAME... TRINIDAD AND TOBAGO... AND
VENEZUELA.

- * THIS IS A TEST MESSAGE. 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 OR SMALL ISLANDS AND AT LOCATIONS WITH
FRINGING OR BARRIER REEFS WILL LIKELY BE MUCH SMALLER THAN
THE FORECAST INDICATES.

- * THIS IS A TEST MESSAGE. FOR ALL OTHER AREAS COVERED BY THIS
MESSAGE... THERE IS NO TSUNAMI THREAT ALTHOUGH SMALL SEA
LEVEL CHANGES MAY OCCUR.

TEST... RECOMMENDED ACTIONS ...TEST

- * THIS IS A TEST MESSAGE. 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.
- * THIS IS A TEST MESSAGE. PERSONS LOCATED IN THREATENED COASTAL
AREAS SHOULD STAY ALERT FOR INFORMATION AND FOLLOW
INSTRUCTIONS FROM NATIONAL AND LOCAL AUTHORITIES.

TEST... ESTIMATED TIMES OF ARRIVAL ...TEST

- * THIS IS A TEST MESSAGE. ESTIMATED TIMES OF ARRIVAL -ETA- OF
THE INITIAL TSUNAMI WAVE FOR PLACES 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	1802 03/21
PUNTA CARIBANA	COLOMBIA	8.6N	76.9W	1805 03/21
COZUMEL	MEXICO	20.5N	87.0W	1810 03/21
PUERTO LIMON	COSTA RICA	10.0N	83.0W	1821 03/21
COLON	PANAMA	9.4N	79.9W	1823 03/21
PORT OF SPAIN	TRINIDAD TOBAGO	10.6N	61.5W	1823 03/21
BOCAS DEL TORO	PANAMA	9.4N	82.2W	1835 03/21
PUNTO FIJO	VENEZUELA	11.7N	70.2W	1853 03/21
SANTA CRZ D SUR	CUBA	20.7N	78.0W	1943 03/21
GOLFO VENEZUELA	VENEZUELA	11.4N	71.2W	1953 03/21
PORLAMAR	VENEZUELA	10.9N	63.8W	2033 03/21
GEORGETOWN	GUYANA	6.8N	58.2W	2035 03/21
PARAMARIBO	SURINAME	5.9N	55.2W	2052 03/21
NUEVA GERONA	CUBA	21.9N	82.8W	2120 03/21

TEST... POTENTIAL IMPACTS ...TEST

- * THIS IS A TEST MESSAGE. 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.
- * THIS IS A TEST MESSAGE. IMPACTS CAN VARY SIGNIFICANTLY FROM ONE SECTION OF COAST TO THE NEXT DUE TO LOCAL BATHYMETRY AND THE SHAPE AND ELEVATION OF THE SHORELINE.
- * THIS IS A TEST MESSAGE. IMPACTS CAN ALSO VARY DEPENDING UPON THE STATE OF THE TIDE AT THE TIME OF THE MAXIMUM TSUNAMI WAVES.
- * THIS IS A TEST MESSAGE. PERSONS CAUGHT IN THE WATER OF A TSUNAMI MAY DROWN... BE CRUSHED BY DEBRIS IN THE WATER... OR BE SWEEPED OUT TO SEA.

TEST... TSUNAMI OBSERVATIONS ...TEST

- * THIS IS A TEST MESSAGE. 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		TIME OF MEASURE (UTC)	MAXIMUM TSUNAMI HEIGHT	WAVE PERIOD (MIN)
	LAT	LON			
GALEOTA TT	10.1N	61.0W	1845	0.37M/ 1.2FT	16
ISLA MUJERES MX	21.3N	86.7W	1850	0.08M/ 0.3FT	24
BOCAS DEL TORO PA	9.4N	82.3W	1848	0.18M/ 0.6FT	16
CEIBA CABOTAGE HN	15.8N	86.8W	1832	0.08M/ 0.3FT	26

PORT OF SPAIN TT	10.6N	61.5W	1833	0.32M/	1.1FT	24
LIMON CR	10.0N	83.0W	1834	0.27M/	0.9FT	24
PUERTO CORTES HN	15.8N	88.0W	1829	0.11M/	0.4FT	16
SIAN KAAAN MX	19.3N	87.4W	1823	0.09M/	0.3FT	20
PUERTO MORELOS MX	20.9N	86.9W	1819	0.15M/	0.5FT	20
PUERTO MORELOS MX	20.9N	86.9W	1815	0.15M/	0.5FT	18
PUERTO MORELOS MX	20.9N	86.9W	1815	0.15M/	0.5FT	28
SAPZURRO CO	8.7N	77.4W	1815	0.15M/	0.5FT	22
ISLA FUERTE CO	9.4N	76.2W	1805	0.25M/	0.8FT	28
EL PORVENIR PA	9.6N	78.9W	1805	0.29M/	1.0FT	24
SAN ANDRES CO	12.6N	81.7W	1803	0.13M/	0.4FT	14
COVENAS CO	9.4N	76.2W	1757	0.25M/	0.8FT	28
SETTLEMENT PT BS	26.7N	79.0W	1749	0.26M/	0.9FT	28
LAKE WORTH BEACH FL	26.6N	80.0W	1742	0.28M/	0.9FT	28
ISLA NAVAL CO	10.2N	75.8W	1739	0.19M/	0.6FT	16
PORT ROYAL JM	17.9N	76.8W	1738	0.36M/	1.2FT	18
CARTEGENA CO	10.4N	75.5W	1734	0.29M/	0.9FT	28
SCARBOROUGH TT	11.2N	60.7W	1725	0.35M/	1.2FT	26
PORT AU PRINCE HT	18.5N	72.4W	1725	0.79M/	2.6FT	28
BALLENAS CO	11.7N	72.7W	1723	0.40M/	1.3FT	26
GUN BAY KY	19.3N	81.1W	1723	0.08M/	0.3FT	28
GEORGE TOWN KY	19.3N	81.4W	1718	0.08M/	0.3FT	20
PRICKLEY BAY GD	12.0N	61.8W	1715	0.68M/	2.2FT	20
SANTA MARTA CO	11.2N	74.2W	1720	0.38M/	1.2FT	16
SOUFRIERE ST LUCIA	13.9N	61.1W	1710	0.52M/	1.7FT	20
TORTOLA VI UK	18.4N	64.6W	1709	1.39M/	4.6FT	20
BERMUDA BIO STA UK	32.4N	64.7W	1704	4.61M/15.1FT		18
BERMUDA ST GEORGE U	32.4N	64.7W	1706	4.61M/15.1FT		18
GANTERS BAY ST LUCI	14.0N	61.0W	1657	0.53M/	1.7FT	24
BERMUDA SOMERSET UK	32.3N	64.9W	1656	3.85M/12.6FT		18
CALLIAQUA VC	13.1N	61.2W	1653	0.58M/	1.9FT	28
CHATEAUBELAIR VC	13.3N	61.2W	1649	0.62M/	2.0FT	18
VIEUX FORT ST LUCIA	13.7N	61.0W	1652	0.54M/	1.8FT	20
ST LOUIS DU SUD HT	18.2N	73.6W	1650	0.51M/	1.7FT	22
PORT ST CHARLES BB	13.3N	59.6W	1645	0.44M/	1.5FT	26
FORT DE FRANCE MQ	14.6N	61.1W	1638	0.56M/	1.8FT	22
ORANGESTAD AW	12.5N	70.0W	1634	0.76M/	2.5FT	24
SAPODILLA BAY UK	21.7N	72.3W	1635	1.18M/	3.9FT	28
BULLEN BAY CURACAO	12.2N	69.0W	1641	0.67M/	2.2FT	18
DENNNERY ST LUCIA LC	13.9N	60.9W	1636	0.37M/	1.2FT	14
LE ROBERT MQ	14.7N	60.9W	1629	0.45M/	1.5FT	18
JEREMIE HT	18.6N	74.1W	1629	0.29M/	1.0FT	24
ROSEAU DM	15.3N	61.4W	1633	0.64M/	2.1FT	26
BARBUDA AG	17.6N	61.8W	1634	1.59M/	5.2FT	22
LE PRECHEUR MQ	14.8N	61.2W	1630	0.46M/	1.5FT	22
CHARLOTTE-AMALIE VI	18.3N	64.9W	1630	1.01M/	3.3FT	26
PORTSMOUTH DM	15.6N	61.5W	1627	0.56M/	1.8FT	16
PORT SAN ANDRES DO	18.4N	69.6W	1626	1.05M/	3.4FT	22
DART 41425	28.7N	65.6W	1623	0.39M/	1.3FT	26
POINT A PITRE GP	16.2N	61.5W	1624	0.82M/	2.7FT	22
BLOWING POINT AI	18.2N	63.1W	1617	1.78M/	5.9FT	18
SALINAS PR	17.9N	66.2W	1621	1.10M/	3.6FT	28
DESHAIES GUADELOUPE	16.3N	61.8W	1622	0.67M/	2.2FT	24
LAMESHURBAYSTJOHNVI	18.3N	64.7W	1614	1.22M/	4.0FT	14
BARAHONA DO	18.2N	71.1W	1619	0.69M/	2.3FT	26
SAINT MARTIN FR	18.1N	63.1W	1615	1.28M/	4.2FT	28
ISABELII VIEQUES PR	18.2N	65.4W	1610	0.96M/	3.1FT	28
CULEBRA IS PR	18.3N	65.3W	1607	1.39M/	4.6FT	22

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BASSETERRE KN	17.3N	62.7W	1606	1.47M/	4.8FT	16
PARHAM AT	17.1N	61.8W	1606	1.08M/	3.5FT	28
DESIRADE GUADELOUPE	16.3N	61.1W	1612	0.85M/	2.8FT	22
CAP HAITIEN HT	19.8N	72.2W	1605	0.81M/	2.7FT	28
DART 42407	15.3N	68.2W	1559	0.08M/	0.3FT	16
ESPERANZA VIEQUES P	18.1N	65.5W	1600	1.10M/	3.6FT	18
FAJARDO PR	18.3N	65.6W	1556	6.20M/20.3FT		20
YABUCOA PR	18.1N	65.8W	1553	1.20M/	3.9FT	24
GRAND TURK UK	21.4N	71.1W	1557	0.98M/	3.2FT	26
GRAND TURK ISLAND T	21.4N	71.1W	1554	0.98M/	3.2FT	18
LIMETREE VI	17.7N	64.8W	1556	0.83M/	2.7FT	26
MAGUEYES ISLAND PR	18.0N	67.0W	1549	1.00M/	3.3FT	26
ST CROIX VI	17.7N	64.7W	1556	1.19M/	3.9FT	26
DART 41421	23.4N	63.8W	1548	0.33M/	1.1FT	20
GUAYANILLA PR	18.0N	66.8W	1550	1.29M/	4.2FT	22
PUERTO PLATA DO	19.8N	70.7W	1546	1.77M/	5.8FT	22
DART 41420	23.4N	67.3W	1541	0.51M/	1.7FT	16
PUNTA CANA DO	18.5N	68.4W	1541	3.70M/12.1FT		24
MONA ISLAND PR	18.1N	67.9W	1540	2.98M/	9.8FT	14
AGUADILLA PR	18.5N	67.2W	1533	4.35M/14.3FT		20
MAYAGUEZ PR	18.2N	67.2W	1523	3.58M/11.8FT		24
SAN JUAN PR	18.5N	66.1W	1520	5.53M/18.1FT		22
ARECIBO PR	18.5N	66.7W	1514	6.05M/19.9FT		16

TEST... NEXT UPDATE AND ADDITIONAL INFORMATION ...TEST

-
- * THIS IS A TEST MESSAGE. THE NEXT MESSAGE WILL BE ISSUED IN ONE HOUR... OR SOONER IF THE SITUATION WARRANTS.
 - * THIS IS A TEST MESSAGE. AUTHORITATIVE INFORMATION ABOUT THE EARTHQUAKE FROM THE U.S. GEOLOGICAL SURVEY CAN BE FOUND ON THE INTERNET AT EARTHQUAKE.USGS.GOV.
 - * THIS IS A TEST MESSAGE. FURTHER INFORMATION ABOUT THIS EVENT MAY BE FOUND AT WWW.TSUNAMI.GOV.
 - * THIS IS A TEST MESSAGE. COASTAL REGIONS OF THE US GULF COAST... US EAST COAST... AND THE MARITIME PROVINCES OF CANADA SHOULD REFER TO U.S. NATIONAL TSUNAMI WARNING CENTER MESSAGES THAT CAN BE FOUND AT WWW.TSUNAMI.GOV.

THIS IS A TEST MESSAGE. DO NOT TAKE ACTION BASED ON THIS TEST MESSAGE.

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NNNN

PTWC Message #7

ZCZC
WECA41 PHEB 212000
TSUCAX

TEST...TSUNAMI MESSAGE NUMBER 7...TEST
NWS PACIFIC TSUNAMI WARNING CENTER HONOLULU HI
2000 UTC THU MAR 21 2024

...THIS MESSAGE IS FOR TEST PURPOSES ONLY...
...TEST TSUNAMI THREAT MESSAGE TEST...

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE ****

THIS IS A TEST MESSAGE. 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.

THIS IS A TEST MESSAGE. NATIONAL AUTHORITIES WILL DETERMINE THE APPROPRIATE LEVEL OF ALERT FOR EACH COUNTRY AND MAY ISSUE ADDITIONAL OR MORE REFINED INFORMATION.

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE ****

TEST... PRELIMINARY EARTHQUAKE PARAMETERS ...TEST

* MAGNITUDE	8.7
* ORIGIN TIME	1500 UTC MAR 21 2024
* COORDINATES	19.3 NORTH 66.5 WEST
* DEPTH	20 KM / 12 MILES
* LOCATION	PUERTO RICO REGION

TEST... EVALUATION ...TEST

* THIS IS A TEST MESSAGE. AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 8.7 OCCURRED IN THE PUERTO RICO REGION AT 1500 UTC ON THURSDAY MARCH 21 2024.

* THIS IS A TEST MESSAGE. TSUNAMI WAVES HAVE BEEN OBSERVED.

* THIS IS A TEST MESSAGE. BASED ON ALL AVAILABLE DATA... HAZARDOUS TSUNAMI WAVES ARE FORECAST FOR SOME COASTS.

TEST... TSUNAMI THREAT FORECAST ...TEST

- * THIS IS A TEST MESSAGE. TSUNAMI WAVES REACHING MORE THAN 3 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE ALONG SOME COASTS OF
OF

ANGUILLA... BERMUDA... DOMINICAN REPUBLIC... AND PUERTO RICO AND VIRGIN ISLANDS.

- * THIS IS A TEST MESSAGE. TSUNAMI WAVES REACHING 1 TO 3 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE ALONG SOME COASTS OF

ANTIGUA AND BARBUDA... GUADELOUPE... HAITI... SABA AND SAINT EUSTATIUS... SAINT BARTHELEMY... SAINT KITTS AND NEVIS... SINT MAARTEN... SAINT MARTIN... AND TURKS AND CAICOS ISLANDS.

- * THIS IS A TEST MESSAGE. TSUNAMI WAVES REACHING 0.3 TO 1 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE FOR SOME COASTS OF

ARUBA... BAHAMAS... BARBADOS... BONAIRE... COLOMBIA... COSTA RICA... CUBA... CURACAO... DOMINICA... GRENADA... GUYANA... JAMAICA... MARTINIQUE... MEXICO... MONTSERRAT... PANAMA... SAINT LUCIA... SAINT VINCENT AND THE GRENADINES... SURINAME... TRINIDAD AND TOBAGO... AND VENEZUELA.

- * THIS IS A TEST MESSAGE. 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 OR SMALL ISLANDS AND AT LOCATIONS WITH FRINGING OR BARRIER REEFS WILL LIKELY BE MUCH SMALLER THAN THE FORECAST INDICATES.

- * THIS IS A TEST MESSAGE. FOR ALL OTHER AREAS COVERED BY THIS MESSAGE... THERE IS NO TSUNAMI THREAT ALTHOUGH SMALL SEA LEVEL CHANGES MAY OCCUR.

TEST... RECOMMENDED ACTIONS ...TEST

- * THIS IS A TEST MESSAGE. 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.

* THIS IS A TEST MESSAGE. PERSONS LOCATED IN THREATENED COASTAL AREAS SHOULD STAY ALERT FOR INFORMATION AND FOLLOW INSTRUCTIONS FROM NATIONAL AND LOCAL AUTHORITIES.

TEST... ESTIMATED TIMES OF ARRIVAL ...TEST

* THIS IS A TEST MESSAGE. ESTIMATED TIMES OF ARRIVAL -ETA- OF THE INITIAL TSUNAMI WAVE FOR PLACES 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)
SANTA CRZ D SUR	CUBA	20.7N	78.0W	1943 03/21
GOLFO VENEZUELA	VENEZUELA	11.4N	71.2W	1953 03/21
PORLAMAR	VENEZUELA	10.9N	63.8W	2033 03/21
GEORGETOWN	GUYANA	6.8N	58.2W	2035 03/21
PARAMARIBO	SURINAME	5.9N	55.2W	2052 03/21
NUEVA GERONA	CUBA	21.9N	82.8W	2120 03/21

TEST... POTENTIAL IMPACTS ...TEST

- * THIS IS A TEST MESSAGE. 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.
- * THIS IS A TEST MESSAGE. IMPACTS CAN VARY SIGNIFICANTLY FROM ONE SECTION OF COAST TO THE NEXT DUE TO LOCAL BATHYMETRY AND THE SHAPE AND ELEVATION OF THE SHORELINE.
- * THIS IS A TEST MESSAGE. IMPACTS CAN ALSO VARY DEPENDING UPON THE STATE OF THE TIDE AT THE TIME OF THE MAXIMUM TSUNAMI WAVES.
- * THIS IS A TEST MESSAGE. PERSONS CAUGHT IN THE WATER OF A TSUNAMI MAY DROWN... BE CRUSHED BY DEBRIS IN THE WATER... OR BE SWEEPED OUT TO SEA.

TEST... TSUNAMI OBSERVATIONS ...TEST

* THIS IS A TEST MESSAGE. THE FOLLOWING ARE TSUNAMI WAVE

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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		TIME OF MEASURE (UTC)	MAXIMUM TSUNAMI HEIGHT	WAVE PERIOD (MIN)
	LAT	LON			
CHARLESTON SC	32.8N	79.9W	1937	0.44M/ 1.5FT	16
KEY WEST FL	24.6N	81.8W	1933	0.07M/ 0.2FT	16
WRIGHT BEACH NC	34.2N	77.8W	1934	0.83M/ 2.7FT	16
ILE ROYAL GUIANA FR	5.3N	52.6W	1928	0.17M/ 0.6FT	28
CORN ISLAND NI	12.3N	83.1W	1919	0.16M/ 0.5FT	16
TRIDENT PIER FL	28.4N	80.6W	1909	0.58M/ 1.9FT	24
BEAUFORT NC	34.7N	76.7W	1911	0.70M/ 2.3FT	28
GALEOTA TT	10.1N	61.0W	1845	0.37M/ 1.2FT	16
ISLA MUJERES MX	21.3N	86.7W	1850	0.08M/ 0.3FT	24
BOCAS DEL TORO PA	9.4N	82.3W	1848	0.18M/ 0.6FT	16
CEIBA CABOTAGE HN	15.8N	86.8W	1832	0.08M/ 0.3FT	26
PORT OF SPAIN TT	10.6N	61.5W	1833	0.32M/ 1.1FT	24
LIMON CR	10.0N	83.0W	1834	0.27M/ 0.9FT	24
PUERTO CORTES HN	15.8N	88.0W	1829	0.11M/ 0.4FT	16
SIAN KAN MX	19.3N	87.4W	1823	0.09M/ 0.3FT	20
PUERTO MORELOS MX	20.9N	86.9W	1819	0.15M/ 0.5FT	20
PUERTO MORELOS MX	20.9N	86.9W	1815	0.15M/ 0.5FT	18
PUERTO MORELOS MX	20.9N	86.9W	1815	0.15M/ 0.5FT	28
SAPZURRO CO	8.7N	77.4W	1815	0.15M/ 0.5FT	22
ISLA FUERTE CO	9.4N	76.2W	1805	0.25M/ 0.8FT	28
EL PORVENIR PA	9.6N	78.9W	1805	0.29M/ 1.0FT	24
SAN ANDRES CO	12.6N	81.7W	1803	0.13M/ 0.4FT	14
COVENAS CO	9.4N	76.2W	1757	0.25M/ 0.8FT	28
SETTLEMENT PT BS	26.7N	79.0W	1749	0.26M/ 0.9FT	28
LAKE WORTH BEACH FL	26.6N	80.0W	1742	0.28M/ 0.9FT	28
ISLA NAVAL CO	10.2N	75.8W	1739	0.19M/ 0.6FT	16
PORT ROYAL JM	17.9N	76.8W	1738	0.36M/ 1.2FT	18
CARTEGENA CO	10.4N	75.5W	1734	0.29M/ 0.9FT	28
SCARBOROUGH TT	11.2N	60.7W	1725	0.35M/ 1.2FT	26
PORT AU PRINCE HT	18.5N	72.4W	1725	0.79M/ 2.6FT	28
BALLENAS CO	11.7N	72.7W	1723	0.40M/ 1.3FT	26
GUN BAY KY	19.3N	81.1W	1723	0.08M/ 0.3FT	28
GEORGE TOWN KY	19.3N	81.4W	1718	0.08M/ 0.3FT	20
PRICKLEY BAY GD	12.0N	61.8W	1715	0.68M/ 2.2FT	20
SANTA MARTA CO	11.2N	74.2W	1720	0.38M/ 1.2FT	16
SOUFRIERE ST LUCIA	13.9N	61.1W	1710	0.52M/ 1.7FT	20
TORTOLA VI UK	18.4N	64.6W	1709	1.39M/ 4.6FT	20
BERMUDA BIO STA UK	32.4N	64.7W	1704	4.61M/15.1FT	18
BERMUDA ST GEORGE U	32.4N	64.7W	1706	4.61M/15.1FT	18
GANTERS BAY ST LUCI	14.0N	61.0W	1657	0.53M/ 1.7FT	24
BERMUDA SOMERSET UK	32.3N	64.9W	1656	3.85M/12.6FT	18
CALLIAQUA VC	13.1N	61.2W	1653	0.58M/ 1.9FT	28
CHATEAUBELAIR VC	13.3N	61.2W	1649	0.62M/ 2.0FT	18

VIEUX FORT ST LUCIA	13.7N	61.0W	1652	0.54M/	1.8FT	20
ST LOUIS DU SUD HT	18.2N	73.6W	1650	0.51M/	1.7FT	22
PORT ST CHARLES BB	13.3N	59.6W	1645	0.44M/	1.5FT	26
FORT DE FRANCE MQ	14.6N	61.1W	1638	0.56M/	1.8FT	22
ORANGESTAD AW	12.5N	70.0W	1634	0.76M/	2.5FT	24
SAPODILLA BAY UK	21.7N	72.3W	1635	1.18M/	3.9FT	28
BULLEN BAY CURACAO	12.2N	69.0W	1641	0.67M/	2.2FT	18
DENNERY ST LUCIA LC	13.9N	60.9W	1636	0.37M/	1.2FT	14
LE ROBERT MQ	14.7N	60.9W	1629	0.45M/	1.5FT	18
JEREMIE HT	18.6N	74.1W	1629	0.29M/	1.0FT	24
ROSEAU DM	15.3N	61.4W	1633	0.64M/	2.1FT	26
BARBUDA AG	17.6N	61.8W	1634	1.59M/	5.2FT	22
LE PRECHEUR MQ	14.8N	61.2W	1630	0.46M/	1.5FT	22
CHARLOTTE-AMALIE VI	18.3N	64.9W	1630	1.01M/	3.3FT	26
PORTSMOUTH DM	15.6N	61.5W	1627	0.56M/	1.8FT	16
PORT SAN ANDRES DO	18.4N	69.6W	1626	1.05M/	3.4FT	22
DART 41425	28.7N	65.6W	1623	0.39M/	1.3FT	26
POINT A PITRE GP	16.2N	61.5W	1624	0.82M/	2.7FT	22
BLOWING POINT AI	18.2N	63.1W	1617	1.78M/	5.9FT	18
SALINAS PR	17.9N	66.2W	1621	1.10M/	3.6FT	28
DESHAIES GUADELOUPE	16.3N	61.8W	1622	0.67M/	2.2FT	24
LAMESHURBAYSTJOHNVI	18.3N	64.7W	1614	1.22M/	4.0FT	14
BARAHONA DO	18.2N	71.1W	1619	0.69M/	2.3FT	26
SAINT MARTIN FR	18.1N	63.1W	1615	1.28M/	4.2FT	28
ISABELII VIEQUES PR	18.2N	65.4W	1610	0.96M/	3.1FT	28
CULEBRA IS PR	18.3N	65.3W	1607	1.39M/	4.6FT	22
BASSETERRE KN	17.3N	62.7W	1606	1.47M/	4.8FT	16
PARHAM AT	17.1N	61.8W	1606	1.08M/	3.5FT	28
DESIRADE GUADELOUPE	16.3N	61.1W	1612	0.85M/	2.8FT	22
CAP HAITIEN HT	19.8N	72.2W	1605	0.81M/	2.7FT	28
DART 42407	15.3N	68.2W	1559	0.08M/	0.3FT	16
ESPERANZA VIEQUES P	18.1N	65.5W	1600	1.10M/	3.6FT	18
FAJARDO PR	18.3N	65.6W	1556	6.20M/20.3FT		20
YABUCOA PR	18.1N	65.8W	1553	1.20M/	3.9FT	24
GRAND TURK UK	21.4N	71.1W	1557	0.98M/	3.2FT	26
GRAND TURK ISLAND T	21.4N	71.1W	1554	0.98M/	3.2FT	18
LIMETREE VI	17.7N	64.8W	1556	0.83M/	2.7FT	26
MAGUEYES ISLAND PR	18.0N	67.0W	1549	1.00M/	3.3FT	26
ST CROIX VI	17.7N	64.7W	1556	1.19M/	3.9FT	26
DART 41421	23.4N	63.8W	1548	0.33M/	1.1FT	20
GUAYANILLA PR	18.0N	66.8W	1550	1.29M/	4.2FT	22
PUERTO PLATA DO	19.8N	70.7W	1546	1.77M/	5.8FT	22
DART 41420	23.4N	67.3W	1541	0.51M/	1.7FT	16
PUNTA CANA DO	18.5N	68.4W	1541	3.70M/12.1FT		24
MONA ISLAND PR	18.1N	67.9W	1540	2.98M/	9.8FT	14
AGUADILLA PR	18.5N	67.2W	1533	4.35M/14.3FT		20
MAYAGUEZ PR	18.2N	67.2W	1523	3.58M/11.8FT		24
SAN JUAN PR	18.5N	66.1W	1520	5.53M/18.1FT		22
ARECIBO PR	18.5N	66.7W	1514	6.05M/19.9FT		16

TEST... NEXT UPDATE AND ADDITIONAL INFORMATION ...TEST

- * THIS IS A TEST MESSAGE. THE NEXT MESSAGE WILL BE ISSUED IN ONE HOUR... OR SOONER IF THE SITUATION WARRANTS.
- * THIS IS A TEST MESSAGE. AUTHORITATIVE INFORMATION ABOUT THE EARTHQUAKE FROM THE U.S. GEOLOGICAL SURVEY CAN BE FOUND ON THE INTERNET AT EARTHQUAKE.USGS.GOV.
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- * THIS IS A TEST MESSAGE. COASTAL REGIONS OF THE US GULF COAST... US EAST COAST... AND THE MARITIME PROVINCES OF CANADA SHOULD REFER TO U.S. NATIONAL TSUNAMI WARNING CENTER MESSAGES THAT CAN BE FOUND AT WWW.TSUNAMI.GOV.

THIS IS A TEST MESSAGE. DO NOT TAKE ACTION BASED ON THIS TEST MESSAGE.

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NNNN

PTWC Message #8

ZCZC
WECA41 PHEB 212100
TSUCAX

TEST...TSUNAMI MESSAGE NUMBER 8...TEST
NWS PACIFIC TSUNAMI WARNING CENTER HONOLULU HI
2100 UTC THU MAR 21 2024

...THIS MESSAGE IS FOR TEST PURPOSES ONLY...
...TEST TSUNAMI THREAT MESSAGE TEST...

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE ****

THIS IS A TEST MESSAGE. 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.

THIS IS A TEST MESSAGE. NATIONAL AUTHORITIES WILL DETERMINE THE APPROPRIATE LEVEL OF ALERT FOR EACH COUNTRY AND MAY ISSUE ADDITIONAL OR MORE REFINED INFORMATION.

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE ****

TEST... PRELIMINARY EARTHQUAKE PARAMETERS ...TEST

* MAGNITUDE 8.7
* ORIGIN TIME 1500 UTC MAR 21 2024
* COORDINATES 19.3 NORTH 66.5 WEST
* DEPTH 20 KM / 12 MILES
* LOCATION PUERTO RICO REGION

TEST... EVALUATION ...TEST

* THIS IS A TEST MESSAGE. AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 8.7 OCCURRED IN THE PUERTO RICO REGION AT 1500 UTC ON THURSDAY MARCH 21 2024.

* THIS IS A TEST MESSAGE. TSUNAMI WAVES HAVE BEEN OBSERVED.

* THIS IS A TEST MESSAGE. BASED ON ALL AVAILABLE DATA... HAZARDOUS TSUNAMI WAVES ARE FORECAST FOR SOME COASTS.

TEST... TSUNAMI THREAT FORECAST ...TEST

- * THIS IS A TEST MESSAGE. TSUNAMI WAVES REACHING MORE THAN 3 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE ALONG SOME COASTS OF
OF

ANGUILLA... BERMUDA... DOMINICAN REPUBLIC... AND PUERTO RICO AND VIRGIN ISLANDS.

- * THIS IS A TEST MESSAGE. TSUNAMI WAVES REACHING 1 TO 3 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE ALONG SOME COASTS OF

ANTIGUA AND BARBUDA... GUADELOUPE... HAITI... SABA AND SAINT EUSTATIUS... SAINT BARTHELEMY... SAINT KITTS AND NEVIS... SINT MAARTEN... SAINT MARTIN... AND TURKS AND CAICOS ISLANDS.

- * THIS IS A TEST MESSAGE. TSUNAMI WAVES REACHING 0.3 TO 1 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE FOR SOME COASTS OF

ARUBA... BAHAMAS... BARBADOS... BONAIRE... COLOMBIA... COSTA RICA... CUBA... CURACAO... DOMINICA... GRENADA... GUYANA... JAMAICA... MARTINIQUE... MEXICO... MONTSERRAT... PANAMA... SAINT LUCIA... SAINT VINCENT AND THE GRENADINES... SURINAME... TRINIDAD AND TOBAGO... AND VENEZUELA.

- * THIS IS A TEST MESSAGE. 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 OR SMALL ISLANDS AND AT LOCATIONS WITH FRINGING OR BARRIER REEFS WILL LIKELY BE MUCH SMALLER THAN THE FORECAST INDICATES.

- * THIS IS A TEST MESSAGE. FOR ALL OTHER AREAS COVERED BY THIS MESSAGE... THERE IS NO TSUNAMI THREAT ALTHOUGH SMALL SEA LEVEL CHANGES MAY OCCUR.

TEST... RECOMMENDED ACTIONS ...TEST

- * THIS IS A TEST MESSAGE. 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.

* THIS IS A TEST MESSAGE. PERSONS LOCATED IN THREATENED COASTAL AREAS SHOULD STAY ALERT FOR INFORMATION AND FOLLOW INSTRUCTIONS FROM NATIONAL AND LOCAL AUTHORITIES.

TEST... ESTIMATED TIMES OF ARRIVAL ...TEST

* THIS IS A TEST MESSAGE. ESTIMATED TIMES OF ARRIVAL -ETA- OF THE INITIAL TSUNAMI WAVE FOR PLACES 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)
PORLAMAR	VENEZUELA	10.9N	63.8W	2033 03/21
GEORGETOWN	GUYANA	6.8N	58.2W	2035 03/21
PARAMARIBO	SURINAME	5.9N	55.2W	2052 03/21
NUEVA GERONA	CUBA	21.9N	82.8W	2120 03/21

TEST... POTENTIAL IMPACTS ...TEST

-
- * THIS IS A TEST MESSAGE. 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.
 - * THIS IS A TEST MESSAGE. IMPACTS CAN VARY SIGNIFICANTLY FROM ONE SECTION OF COAST TO THE NEXT DUE TO LOCAL BATHYMETRY AND THE SHAPE AND ELEVATION OF THE SHORELINE.
 - * THIS IS A TEST MESSAGE. IMPACTS CAN ALSO VARY DEPENDING UPON THE STATE OF THE TIDE AT THE TIME OF THE MAXIMUM TSUNAMI WAVES.
 - * THIS IS A TEST MESSAGE. PERSONS CAUGHT IN THE WATER OF A TSUNAMI MAY DROWN... BE CRUSHED BY DEBRIS IN THE WATER... OR BE SWEEPED OUT TO SEA.

TEST... TSUNAMI OBSERVATIONS ...TEST

* THIS IS A TEST MESSAGE. 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		TIME OF MEASURE	MAXIMUM TSUNAMI HEIGHT	WAVE PERIOD
	LAT	LON	(UTC)		(MIN)
TURBO CO	8.1N	76.7W	2047	0.17M/ 0.6FT	14
FORT PULASKI GA	32.0N	80.9W	2028	0.49M/ 1.6FT	26
PUERTO EL BLUFF NI	12.0N	83.7W	2017	0.18M/ 0.6FT	24
CHARLESTON SC	32.8N	79.9W	1937	0.44M/ 1.5FT	16
KEY WEST FL	24.6N	81.8W	1933	0.07M/ 0.2FT	16
WRIGHT BEACH NC	34.2N	77.8W	1934	0.83M/ 2.7FT	16
ILE ROYAL GUIANA FR	5.3N	52.6W	1928	0.17M/ 0.6FT	28
CORN ISLAND NI	12.3N	83.1W	1919	0.16M/ 0.5FT	16
TRIDENT PIER FL	28.4N	80.6W	1909	0.58M/ 1.9FT	24
BEAUFORT NC	34.7N	76.7W	1911	0.70M/ 2.3FT	28
GALEOTA TT	10.1N	61.0W	1845	0.37M/ 1.2FT	16
ISLA MUJERES MX	21.3N	86.7W	1850	0.08M/ 0.3FT	24
BOCAS DEL TORO PA	9.4N	82.3W	1848	0.18M/ 0.6FT	16
CEIBA CABOTAGE HN	15.8N	86.8W	1832	0.08M/ 0.3FT	26
PORT OF SPAIN TT	10.6N	61.5W	1833	0.32M/ 1.1FT	24
LIMON CR	10.0N	83.0W	1834	0.27M/ 0.9FT	24
PUERTO CORTES HN	15.8N	88.0W	1829	0.11M/ 0.4FT	16
SIAN KAN MX	19.3N	87.4W	1823	0.09M/ 0.3FT	20
PUERTO MORELOS MX	20.9N	86.9W	1819	0.15M/ 0.5FT	20
PUERTO MORELOS MX	20.9N	86.9W	1815	0.15M/ 0.5FT	18
PUERTO MORELOS MX	20.9N	86.9W	1815	0.15M/ 0.5FT	28
SAPZURRO CO	8.7N	77.4W	1815	0.15M/ 0.5FT	22
ISLA FUERTE CO	9.4N	76.2W	1805	0.25M/ 0.8FT	28
EL PORVENIR PA	9.6N	78.9W	1805	0.29M/ 1.0FT	24
SAN ANDRES CO	12.6N	81.7W	1803	0.13M/ 0.4FT	14
COVENAS CO	9.4N	76.2W	1757	0.25M/ 0.8FT	28
SETTLEMENT PT BS	26.7N	79.0W	1749	0.26M/ 0.9FT	28
LAKE WORTH BEACH FL	26.6N	80.0W	1742	0.28M/ 0.9FT	28
ISLA NAVAL CO	10.2N	75.8W	1739	0.19M/ 0.6FT	16
PORT ROYAL JM	17.9N	76.8W	1738	0.36M/ 1.2FT	18
CARTEGENA CO	10.4N	75.5W	1734	0.29M/ 0.9FT	28
SCARBOROUGH TT	11.2N	60.7W	1725	0.35M/ 1.2FT	26
PORT AU PRINCE HT	18.5N	72.4W	1725	0.79M/ 2.6FT	28
BALLENAS CO	11.7N	72.7W	1723	0.40M/ 1.3FT	26
GUN BAY KY	19.3N	81.1W	1723	0.08M/ 0.3FT	28
GEORGE TOWN KY	19.3N	81.4W	1718	0.08M/ 0.3FT	20
PRICKLEY BAY GD	12.0N	61.8W	1715	0.68M/ 2.2FT	20
SANTA MARTA CO	11.2N	74.2W	1720	0.38M/ 1.2FT	16
SOUFRIERE ST LUCIA	13.9N	61.1W	1710	0.52M/ 1.7FT	20
TORTOLA VI UK	18.4N	64.6W	1709	1.39M/ 4.6FT	20
BERMUDA BIO STA UK	32.4N	64.7W	1704	4.61M/15.1FT	18
BERMUDA ST GEORGE U	32.4N	64.7W	1706	4.61M/15.1FT	18
GANTERS BAY ST LUCI	14.0N	61.0W	1657	0.53M/ 1.7FT	24
BERMUDA SOMERSET UK	32.3N	64.9W	1656	3.85M/12.6FT	18
CALLIAQUA VC	13.1N	61.2W	1653	0.58M/ 1.9FT	28
CHATEAUBELAIR VC	13.3N	61.2W	1649	0.62M/ 2.0FT	18

VIEUX FORT ST LUCIA	13.7N	61.0W	1652	0.54M/	1.8FT	20
ST LOUIS DU SUD HT	18.2N	73.6W	1650	0.51M/	1.7FT	22
PORT ST CHARLES BB	13.3N	59.6W	1645	0.44M/	1.5FT	26
FORT DE FRANCE MQ	14.6N	61.1W	1638	0.56M/	1.8FT	22
ORANGESTAD AW	12.5N	70.0W	1634	0.76M/	2.5FT	24
SAPODILLA BAY UK	21.7N	72.3W	1635	1.18M/	3.9FT	28
BULLEN BAY CURACAO	12.2N	69.0W	1641	0.67M/	2.2FT	18
DENNERY ST LUCIA LC	13.9N	60.9W	1636	0.37M/	1.2FT	14
LE ROBERT MQ	14.7N	60.9W	1629	0.45M/	1.5FT	18
JEREMIE HT	18.6N	74.1W	1629	0.29M/	1.0FT	24
ROSEAU DM	15.3N	61.4W	1633	0.64M/	2.1FT	26
BARBUDA AG	17.6N	61.8W	1634	1.59M/	5.2FT	22
LE PRECHEUR MQ	14.8N	61.2W	1630	0.46M/	1.5FT	22
CHARLOTTE-AMALIE VI	18.3N	64.9W	1630	1.01M/	3.3FT	26
PORTSMOUTH DM	15.6N	61.5W	1627	0.56M/	1.8FT	16
PORT SAN ANDRES DO	18.4N	69.6W	1626	1.05M/	3.4FT	22
DART 41425	28.7N	65.6W	1623	0.39M/	1.3FT	26
POINT A PITRE GP	16.2N	61.5W	1624	0.82M/	2.7FT	22
BLOWING POINT AI	18.2N	63.1W	1617	1.78M/	5.9FT	18
SALINAS PR	17.9N	66.2W	1621	1.10M/	3.6FT	28
DESHAIES GUADELOUPE	16.3N	61.8W	1622	0.67M/	2.2FT	24
LAMESHURBAYSTJOHNVI	18.3N	64.7W	1614	1.22M/	4.0FT	14
BARAHONA DO	18.2N	71.1W	1619	0.69M/	2.3FT	26
SAINT MARTIN FR	18.1N	63.1W	1615	1.28M/	4.2FT	28
ISABELII VIEQUES PR	18.2N	65.4W	1610	0.96M/	3.1FT	28
CULEBRA IS PR	18.3N	65.3W	1607	1.39M/	4.6FT	22
BASSETERRE KN	17.3N	62.7W	1606	1.47M/	4.8FT	16
PARHAM AT	17.1N	61.8W	1606	1.08M/	3.5FT	28
DESIRADE GUADELOUPE	16.3N	61.1W	1612	0.85M/	2.8FT	22
CAP HAITIEN HT	19.8N	72.2W	1605	0.81M/	2.7FT	28
DART 42407	15.3N	68.2W	1559	0.08M/	0.3FT	16
ESPERANZA VIEQUES P	18.1N	65.5W	1600	1.10M/	3.6FT	18
FAJARDO PR	18.3N	65.6W	1556	6.20M/20.3FT		20
YABUCOA PR	18.1N	65.8W	1553	1.20M/	3.9FT	24
GRAND TURK UK	21.4N	71.1W	1557	0.98M/	3.2FT	26
GRAND TURK ISLAND T	21.4N	71.1W	1554	0.98M/	3.2FT	18
LIMETREE VI	17.7N	64.8W	1556	0.83M/	2.7FT	26
MAGUEYES ISLAND PR	18.0N	67.0W	1549	1.00M/	3.3FT	26
ST CROIX VI	17.7N	64.7W	1556	1.19M/	3.9FT	26
DART 41421	23.4N	63.8W	1548	0.33M/	1.1FT	20
GUAYANILLA PR	18.0N	66.8W	1550	1.29M/	4.2FT	22
PUERTO PLATA DO	19.8N	70.7W	1546	1.77M/	5.8FT	22
DART 41420	23.4N	67.3W	1541	0.51M/	1.7FT	16
PUNTA CANA DO	18.5N	68.4W	1541	3.70M/12.1FT		24
MONA ISLAND PR	18.1N	67.9W	1540	2.98M/	9.8FT	14
AGUADILLA PR	18.5N	67.2W	1533	4.35M/14.3FT		20
MAYAGUEZ PR	18.2N	67.2W	1523	3.58M/11.8FT		24
SAN JUAN PR	18.5N	66.1W	1520	5.53M/18.1FT		22
ARECIBO PR	18.5N	66.7W	1514	6.05M/19.9FT		16

TEST... NEXT UPDATE AND ADDITIONAL INFORMATION ...TEST

- * THIS IS A TEST MESSAGE. THE NEXT MESSAGE WILL BE ISSUED IN ONE HOUR... OR SOONER IF THE SITUATION WARRANTS.
- * THIS IS A TEST MESSAGE. AUTHORITATIVE INFORMATION ABOUT THE EARTHQUAKE FROM THE U.S. GEOLOGICAL SURVEY CAN BE FOUND ON THE INTERNET AT EARTHQUAKE.USGS.GOV.
- * THIS IS A TEST MESSAGE. FURTHER INFORMATION ABOUT THIS EVENT MAY BE FOUND AT WWW.TSUNAMI.GOV.
- * THIS IS A TEST MESSAGE. COASTAL REGIONS OF THE US GULF COAST... US EAST COAST... AND THE MARITIME PROVINCES OF CANADA SHOULD REFER TO U.S. NATIONAL TSUNAMI WARNING CENTER MESSAGES THAT CAN BE FOUND AT WWW.TSUNAMI.GOV.

THIS IS A TEST MESSAGE. DO NOT TAKE ACTION BASED ON THIS TEST MESSAGE.

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PTWC Message #9

ZCZC
WECA41 PHEB 212200
TSUCAX

TEST...TSUNAMI MESSAGE NUMBER 9...TEST
NWS PACIFIC TSUNAMI WARNING CENTER HONOLULU HI
2200 UTC THU MAR 21 2024

...THIS MESSAGE IS FOR TEST PURPOSES ONLY...
...TEST FINAL TSUNAMI THREAT MESSAGE TEST...

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE ****

THIS IS A TEST MESSAGE. 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.

THIS IS A TEST MESSAGE. NATIONAL AUTHORITIES WILL DETERMINE THE APPROPRIATE LEVEL OF ALERT FOR EACH COUNTRY AND MAY ISSUE ADDITIONAL OR MORE REFINED INFORMATION.

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE ****

TEST... PRELIMINARY EARTHQUAKE PARAMETERS ...TEST

* MAGNITUDE 8.7
* ORIGIN TIME 1500 UTC MAR 21 2024
* COORDINATES 19.3 NORTH 66.5 WEST
* DEPTH 20 KM / 12 MILES
* LOCATION PUERTO RICO REGION

TEST... EVALUATION ...TEST

* THIS IS A TEST MESSAGE. AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 8.7 OCCURRED IN THE PUERTO RICO REGION AT 1500 UTC ON THURSDAY MARCH 21 2024.

* THIS IS A TEST MESSAGE. BASED ON ALL AVAILABLE DATA... THE TSUNAMI THREAT FROM THIS EARTHQUAKE HAS PASSED AND THERE IS NO FURTHER THREAT.

TEST... TSUNAMI THREAT FORECAST...UPDATED ...TEST

- * THIS IS A TEST MESSAGE. THE TSUNAMI THREAT HAS NOW LARGELY PASSED.

TEST... RECOMMENDED ACTIONS ...TEST

- * THIS IS A TEST MESSAGE. 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.
- * THIS IS A TEST MESSAGE. PERSONS LOCATED NEAR IMPACTED COASTAL AREAS SHOULD STAY ALERT FOR INFORMATION AND FOLLOW INSTRUCTIONS FROM LOCAL AUTHORITIES.
- * THIS IS A TEST MESSAGE. REMAIN OBSERVANT AND EXERCISE NORMAL CAUTION NEAR THE SEA.

TEST... POTENTIAL IMPACTS ...TEST

- * THIS IS A TEST MESSAGE. 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.

TEST... NEXT UPDATE AND ADDITIONAL INFORMATION ...TEST

- * THIS IS A TEST MESSAGE. THIS WILL BE THE FINAL STATEMENT ISSUED FOR THIS EVENT UNLESS NEW INFORMATION IS RECEIVED OR THE SITUATION CHANGES.
- * THIS IS A TEST MESSAGE. AUTHORITATIVE INFORMATION ABOUT THE EARTHQUAKE FROM THE U.S. GEOLOGICAL SURVEY CAN BE FOUND ON THE INTERNET AT EARTHQUAKE.USGS.GOV.
- * THIS IS A TEST MESSAGE. FURTHER INFORMATION ABOUT THIS EVENT MAY BE FOUND AT WWW.TSUNAMI.GOV.
- * THIS IS A TEST MESSAGE. COASTAL REGIONS OF THE US GULF COAST... US EAST COAST... AND THE MARITIME PROVINCES OF CANADA SHOULD REFER TO U.S. NATIONAL TSUNAMI WARNING CENTER MESSAGES THAT CAN BE FOUND AT WWW.TSUNAMI.GOV.

THIS IS A TEST MESSAGE. DO NOT TAKE ACTION BASED ON THIS TEST MESSAGE.
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Panama Scenario - PTWC Products

PTWC created the following messages for the CARIBE WAVE 24 tsunami exercise. They are representative of the official standard products that would be issued by the PTWC for a magnitude 8.47 earthquake and subsequent tsunami originating in the North Panama Deformed Belt. During a real event, the PTWC would also post the text products on tsunami.gov. The alerts would probably persist longer during a real event than is depicted in this exercise.

PTWC Message #1

ZCZC
WECA41 PHEB 211508
TSUCAX

TEST...TSUNAMI MESSAGE NUMBER 1...TEST
NWS PACIFIC TSUNAMI WARNING CENTER HONOLULU HI
1508 UTC THU MAR 21 2024

...THIS MESSAGE IS FOR TEST PURPOSES ONLY...
...TEST TSUNAMI THREAT MESSAGE TEST...

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE ****

THIS IS A TEST MESSAGE. 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.

THIS IS A TEST MESSAGE. NATIONAL AUTHORITIES WILL DETERMINE THE APPROPRIATE LEVEL OF ALERT FOR EACH COUNTRY AND MAY ISSUE ADDITIONAL OR MORE REFINED INFORMATION.

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE ****

TEST... PRELIMINARY EARTHQUAKE PARAMETERS ...TEST

* MAGNITUDE 8.5
* ORIGIN TIME 1500 UTC MAR 21 2024
* COORDINATES 9.8 NORTH 77.8 WEST
* DEPTH 25 KM / 16 MILES
* LOCATION NEAR THE NORTH COAST OF COLOMBIA

TEST... EVALUATION ...TEST

* THIS IS A TEST MESSAGE. AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 8.5 OCCURRED NEAR THE NORTH COAST OF COLOMBIA AT 1500 UTC ON THURSDAY MARCH 21 2024.

* THIS IS A TEST MESSAGE. BASED ON THE PRELIMINARY EARTHQUAKE PARAMETERS... WIDESPREAD HAZARDOUS TSUNAMI WAVES ARE POSSIBLE.

TEST... TSUNAMI THREAT FORECAST ...TEST

* THIS IS A TEST MESSAGE. HAZARDOUS TSUNAMI WAVES FROM THIS EARTHQUAKE ARE POSSIBLE WITHIN THE NEXT THREE HOURS ALONG SOME COASTS OF

PANAMA... COLOMBIA... SAN ANDRES PROVID... COSTA RICA...
HAITI... ARUBA... BONAIRE... JAMAICA... CUBA... CAYMAN
ISLANDS... DOMINICAN REP... NICARAGUA... CURACAO... PUERTO
RICO... BAHAMAS... US VIRGIN IS... VENEZUELA... TURKS N
CAICOS... SABA... SAINT KITTS... MONTSERRAT... SINT
EUSTATIUS... GUADELOUPE... DOMINICA... SAINT LUCIA... SINT
MAARTEN... SAINT VINCENT... MARTINIQUE... BR VIRGIN IS...
MEXICO... HONDURAS... ANGUILLA AND GRENADA

TEST... RECOMMENDED ACTIONS ...TEST

- * THIS IS A TEST MESSAGE. 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.
- * THIS IS A TEST MESSAGE. PERSONS LOCATED IN THREATENED COASTAL AREAS SHOULD STAY ALERT FOR INFORMATION AND FOLLOW INSTRUCTIONS FROM NATIONAL AND LOCAL AUTHORITIES.

TEST... ESTIMATED TIMES OF ARRIVAL ...TEST

- * THIS IS A TEST MESSAGE. ESTIMATED TIMES OF ARRIVAL -ETA- OF THE INITIAL TSUNAMI WAVE FOR PLACES WITHIN THE REGION IDENTIFIED WITH A POTENTIAL TSUNAMI THREAT. 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	1514 03/21
PUERTO CARRETO	PANAMA	8.8N	77.6W	1525 03/21
CARTAGENA	COLOMBIA	10.4N	75.6W	1532 03/21
PUERTO OBALDIA	PANAMA	8.7N	77.4W	1539 03/21
PUNTA CARIBANA	COLOMBIA	8.6N	76.9W	1545 03/21
SANTA MARTA	COLOMBIA	11.2N	74.2W	1555 03/21
PROVIDENCIA	SAN ANDRES PROVI	12.6N	81.7W	1556 03/21
SAN ANDRES	SAN ANDRES PROVI	13.4N	81.4W	1600 03/21
COLON	PANAMA	9.4N	79.9W	1605 03/21
BARRANQUILLA	COLOMBIA	11.1N	74.9W	1608 03/21
PUERTO LIMON	COSTA RICA	10.0N	83.0W	1609 03/21
BOCAS DEL TORO	PANAMA	9.4N	82.2W	1621 03/21
JACAMEL	HAITI	18.1N	72.5W	1634 03/21
ORANJESTAD	ARUBA	12.5N	70.0W	1643 03/21
RIOHACHA	COLOMBIA	11.6N	72.9W	1647 03/21
JEREMIE	HAITI	18.6N	74.1W	1652 03/21
ONIMA	BONAIRE	12.3N	68.3W	1653 03/21
KINGSTON	JAMAICA	17.9N	76.9W	1656 03/21
SANTIAGO D CUBA	CUBA	19.9N	75.8W	1657 03/21
CAYMAN BRAC	CAYMAN ISLANDS	19.7N	79.9W	1658 03/21
SANTO DOMINGO	DOMINICAN REP	18.5N	69.9W	1702 03/21
PUNTA GORDA	NICARAGUA	11.4N	83.8W	1703 03/21

GRAND CAYMAN	CAYMAN ISLANDS	19.3N	81.3W	1706	03/21
BARACOA	CUBA	20.4N	74.5W	1715	03/21
WILLEMSTAD	CURACAO	12.1N	68.9W	1718	03/21
MAYAGUEZ	PUERTO RICO	18.2N	67.2W	1719	03/21
GREAT INAGUA	BAHAMAS	20.9N	73.7W	1721	03/21
MONTEGO BAY	JAMAICA	18.5N	77.9W	1722	03/21
CABO ENGANO	DOMINICAN REP	18.6N	68.3W	1725	03/21
CHRISTIANSTED	US VIRGIN IS	17.7N	64.7W	1725	03/21
CIENFUEGOS	CUBA	22.0N	80.5W	1726	03/21
CAP HAITEN	HAITI	19.8N	72.2W	1727	03/21
MAIQUETIA	VENEZUELA	10.6N	67.0W	1730	03/21
WEST CAICOS	TURKS N CAICOS	21.7N	72.5W	1731	03/21
GIBARA	CUBA	21.1N	76.1W	1735	03/21
MAYAGUANA	BAHAMAS	22.3N	73.0W	1735	03/21
PUERTO PLATA	DOMINICAN REP	19.8N	70.7W	1737	03/21
SAN JUAN	PUERTO RICO	18.5N	66.1W	1738	03/21
GRAND TURK	TURKS N CAICOS	21.5N	71.1W	1746	03/21
SABA	SABA	17.6N	63.2W	1747	03/21
BASSETERRE	SAINT KITTS	17.3N	62.7W	1748	03/21
PLYMOUTH	MONTSERRAT	16.7N	62.2W	1749	03/21
SINT EUSTATIUS	SINT EUSTATIUS	17.5N	63.0W	1752	03/21
BASSE TERRE	GUADELOUPE	16.0N	61.7W	1752	03/21
ROSEAU	DOMINICA	15.3N	61.4W	1753	03/21
LONG ISLAND	BAHAMAS	23.3N	75.1W	1754	03/21
SAN SALVADOR	BAHAMAS	24.1N	74.5W	1755	03/21
CASTRIES	SAINT LUCIA	14.0N	61.0W	1755	03/21
PORT AU PRINCE	HAITI	18.5N	72.4W	1756	03/21
SIMPSON BAAI	SINT MAARTEN	18.0N	63.1W	1756	03/21
KINGSTOWN	SAINT VINCENT	13.1N	61.2W	1757	03/21
FORT DE FRANCE	MARTINIQUE	14.6N	61.1W	1800	03/21
ANEGADA	BR VIRGIN IS	18.8N	64.3W	1801	03/21
COZUMEL	MEXICO	20.5N	87.0W	1801	03/21
PUERTO CORTES	HONDURAS	15.9N	88.0W	1801	03/21
CUMANA	VENEZUELA	10.5N	64.2W	1803	03/21
THE VALLEY	ANGUILLA	18.3N	63.1W	1804	03/21
EXUMA	BAHAMAS	23.6N	75.9W	1805	03/21
CHARLOTTE AMALI	US VIRGIN IS	18.3N	64.9W	1806	03/21
SAINT GEORGES	GRENADA	12.0N	61.8W	1806	03/21

TEST... POTENTIAL IMPACTS ...TEST

- * THIS IS A TEST MESSAGE. 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.
- * THIS IS A TEST MESSAGE. IMPACTS CAN VARY SIGNIFICANTLY FROM ONE SECTION OF COAST TO THE NEXT DUE TO LOCAL BATHYMETRY AND THE SHAPE AND ELEVATION OF THE SHORELINE.
- * THIS IS A TEST MESSAGE. IMPACTS CAN ALSO VARY DEPENDING UPON THE STATE OF THE TIDE AT THE TIME OF THE MAXIMUM TSUNAMI WAVES.
- * THIS IS A TEST MESSAGE. PERSONS CAUGHT IN THE WATER OF A TSUNAMI MAY DROWN... BE CRUSHED BY DEBRIS IN THE WATER... OR

BE SWEEPED OUT TO SEA.

TEST... NEXT UPDATE AND ADDITIONAL INFORMATION ...TEST

-
- * THIS IS A TEST MESSAGE. THE NEXT MESSAGE WILL BE ISSUED IN ONE HOUR... OR SOONER IF THE SITUATION WARRANTS.
 - * THIS IS A TEST MESSAGE. AUTHORITATIVE INFORMATION ABOUT THE EARTHQUAKE FROM THE U.S. GEOLOGICAL SURVEY CAN BE FOUND ON THE INTERNET AT EARTHQUAKE.USGS.GOV.
 - * THIS IS A TEST MESSAGE. FURTHER INFORMATION ABOUT THIS EVENT MAY BE FOUND AT WWW.TSUNAMI.GOV.
 - * THIS IS A TEST MESSAGE. COASTAL REGIONS OF THE US GULF COAST... US EAST COAST... AND THE MARITIME PROVINCES OF CANADA SHOULD REFER TO U.S. NATIONAL TSUNAMI WARNING CENTER MESSAGES THAT CAN BE FOUND AT WWW.TSUNAMI.GOV.

THIS IS A TEST MESSAGE. DO NOT TAKE ACTION BASED ON THIS TEST MESSAGE.

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NNNN

PTWC Message #2

ZCZC
WECA41 PHEB 211530
TSUCAX

TEST...TSUNAMI MESSAGE NUMBER 2...TEST
NWS PACIFIC TSUNAMI WARNING CENTER HONOLULU HI
1530 UTC THU MAR 21 2024

...THIS MESSAGE IS FOR TEST PURPOSES ONLY...
...TEST TSUNAMI THREAT MESSAGE TEST...

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE ****

THIS IS A TEST MESSAGE. 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.

THIS IS A TEST MESSAGE. NATIONAL AUTHORITIES WILL DETERMINE THE APPROPRIATE LEVEL OF ALERT FOR EACH COUNTRY AND MAY ISSUE ADDITIONAL OR MORE REFINED INFORMATION.

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE ****

TEST... PRELIMINARY EARTHQUAKE PARAMETERS ...TEST

* MAGNITUDE 8.5
* ORIGIN TIME 1500 UTC MAR 21 2024
* COORDINATES 9.8 NORTH 77.8 WEST
* DEPTH 25 KM / 16 MILES
* LOCATION NEAR THE NORTH COAST OF COLOMBIA

TEST... EVALUATION ...TEST

* THIS IS A TEST MESSAGE. AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 8.5 OCCURRED NEAR THE NORTH COAST OF COLOMBIA AT 1500 UTC ON THURSDAY MARCH 21 2024.

* THIS IS A TEST MESSAGE. BASED ON ALL AVAILABLE DATA... HAZARDOUS TSUNAMI WAVES ARE FORECAST FOR SOME COASTS.

TEST... TSUNAMI THREAT FORECAST...UPDATED ...TEST

* THIS IS A TEST MESSAGE. TSUNAMI WAVES REACHING MORE THAN 3 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE ALONG SOME COASTS OF

COLOMBIA... COSTA RICA... CUBA... DOMINICAN REPUBLIC...

HAITI... JAMAICA... NICARAGUA... PANAMA... PUERTO RICO AND
VIRGIN ISLANDS... SAN ANDRES AND PROVIDENCIA... AND
VENEZUELA.

- * THIS IS A TEST MESSAGE. TSUNAMI WAVES REACHING 1 TO 3 METERS
ABOVE THE TIDE LEVEL ARE POSSIBLE ALONG SOME COASTS OF

ANGUILLA... ANTIGUA AND BARBUDA... ARUBA... BAHAMAS...
BONAIRE... CAYMAN ISLANDS... CURACAO... DOMINICA...
GRENADA... GUADELOUPE... MARTINIQUE... MONTSERRAT... SABA
AND SAINT EUSTATIUS... SAINT BARTHELEMY... SAINT KITTS AND
NEVIS... SAINT LUCIA... SINT MAARTEN... SAINT MARTIN...
AND SAINT VINCENT AND THE GRENADINES.

- * THIS IS A TEST MESSAGE. TSUNAMI WAVES REACHING 0.3 TO 1
METERS ABOVE THE TIDE LEVEL ARE POSSIBLE FOR SOME COASTS OF

BARBADOS... BELIZE... GUATEMALA... HONDURAS... MEXICO...
TRINIDAD AND TOBAGO... AND TURKS AND CAICOS ISLANDS.

- * THIS IS A TEST MESSAGE. 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 OR SMALL ISLANDS AND AT LOCATIONS WITH
FRINGING OR BARRIER REEFS WILL LIKELY BE MUCH SMALLER THAN
THE FORECAST INDICATES.

- * THIS IS A TEST MESSAGE. FOR ALL OTHER AREAS COVERED BY THIS
MESSAGE... THERE IS NO TSUNAMI THREAT ALTHOUGH SMALL SEA
LEVEL CHANGES MAY OCCUR.

TEST... RECOMMENDED ACTIONS ...TEST

- * THIS IS A TEST MESSAGE. 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.
- * THIS IS A TEST MESSAGE. PERSONS LOCATED IN THREATENED COASTAL
AREAS SHOULD STAY ALERT FOR INFORMATION AND FOLLOW
INSTRUCTIONS FROM NATIONAL AND LOCAL AUTHORITIES.

TEST... ESTIMATED TIMES OF ARRIVAL ...TEST

- * THIS IS A TEST MESSAGE. ESTIMATED TIMES OF ARRIVAL -ETA- OF
THE INITIAL TSUNAMI WAVE FOR PLACES 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.

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LOCATION	REGION	COORDINATES		ETA (UTC)	
ALIGANDI	PANAMA	9.2N	78.0W	1514	03/21
PUERTO CARRETO	PANAMA	8.8N	77.6W	1525	03/21
CARTAGENA	COLOMBIA	10.4N	75.6W	1532	03/21
PUERTO OBALDIA	PANAMA	8.7N	77.4W	1539	03/21
PUNTA CARIBANA	COLOMBIA	8.6N	76.9W	1545	03/21
SANTA MARTA	COLOMBIA	11.2N	74.2W	1555	03/21
PROVIDENCIA	SAN ANDRES PROVI	12.6N	81.7W	1556	03/21
SAN ANDRES	SAN ANDRES PROVI	13.4N	81.4W	1600	03/21
COLON	PANAMA	9.4N	79.9W	1605	03/21
BARRANQUILLA	COLOMBIA	11.1N	74.9W	1608	03/21
PUERTO LIMON	COSTA RICA	10.0N	83.0W	1609	03/21
BOCAS DEL TORO	PANAMA	9.4N	82.2W	1621	03/21
JACAMEL	HAITI	18.1N	72.5W	1634	03/21
ORANJESTAD	ARUBA	12.5N	70.0W	1643	03/21
RIOHACHA	COLOMBIA	11.6N	72.9W	1647	03/21
JEREMIE	HAITI	18.6N	74.1W	1652	03/21
ONIMA	BONAIRE	12.3N	68.3W	1653	03/21
KINGSTON	JAMAICA	17.9N	76.9W	1656	03/21
SANTIAGO D CUBA	CUBA	19.9N	75.8W	1657	03/21
CAYMAN BRAC	CAYMAN ISLANDS	19.7N	79.9W	1658	03/21
SANTO DOMINGO	DOMINICAN REP	18.5N	69.9W	1702	03/21
PUNTA GORDA	NICARAGUA	11.4N	83.8W	1703	03/21
GRAND CAYMAN	CAYMAN ISLANDS	19.3N	81.3W	1706	03/21
BARACOA	CUBA	20.4N	74.5W	1715	03/21
WILLEMSTAD	CURACAO	12.1N	68.9W	1718	03/21
MAYAGUEZ	PUERTO RICO	18.2N	67.2W	1719	03/21
GREAT INAGUA	BAHAMAS	20.9N	73.7W	1721	03/21
MONTEGO BAY	JAMAICA	18.5N	77.9W	1722	03/21
CABO ENGANO	DOMINICAN REP	18.6N	68.3W	1725	03/21
CHRISTIANSTED	US VIRGIN IS	17.7N	64.7W	1725	03/21
CIENFUEGOS	CUBA	22.0N	80.5W	1726	03/21
CAP HAITEN	HAITI	19.8N	72.2W	1727	03/21
MAIQUETIA	VENEZUELA	10.6N	67.0W	1730	03/21
WEST CAICOS	TURKS N CAICOS	21.7N	72.5W	1731	03/21
GIBARA	CUBA	21.1N	76.1W	1735	03/21
MAYAGUANA	BAHAMAS	22.3N	73.0W	1735	03/21
PUERTO PLATA	DOMINICAN REP	19.8N	70.7W	1737	03/21
SAN JUAN	PUERTO RICO	18.5N	66.1W	1738	03/21
GRAND TURK	TURKS N CAICOS	21.5N	71.1W	1746	03/21
SABA	SABA	17.6N	63.2W	1747	03/21
BASSETERRE	SAINT KITTS	17.3N	62.7W	1748	03/21
PLYMOUTH	MONTserrat	16.7N	62.2W	1749	03/21
SINT EUSTATIUS	SINT EUSTATIUS	17.5N	63.0W	1752	03/21
BASSE TERRE	GUADELOUPE	16.0N	61.7W	1752	03/21
ROSEAU	DOMINICA	15.3N	61.4W	1753	03/21
LONG ISLAND	BAHAMAS	23.3N	75.1W	1754	03/21
SAN SALVADOR	BAHAMAS	24.1N	74.5W	1755	03/21
CASTRIES	SAINT LUCIA	14.0N	61.0W	1755	03/21
PORT AU PRINCE	HAITI	18.5N	72.4W	1756	03/21
SIMPSON BAAI	SINT MAARTEN	18.0N	63.1W	1756	03/21
KINGSTOWN	SAINT VINCENT	13.1N	61.2W	1757	03/21
FORT DE FRANCE	MARTINIQUE	14.6N	61.1W	1800	03/21
ANEGADA	BR VIRGIN IS	18.8N	64.3W	1801	03/21
COZUMEL	MEXICO	20.5N	87.0W	1801	03/21
PUERTO CORTES	HONDURAS	15.9N	88.0W	1801	03/21
CUMANA	VENEZUELA	10.5N	64.2W	1803	03/21

THE VALLEY	ANGUILLA	18.3N	63.1W	1804	03/21
EXUMA	BAHAMAS	23.6N	75.9W	1805	03/21
CHARLOTTE AMALI	US VIRGIN IS	18.3N	64.9W	1806	03/21
SAINT GEORGES	GRENADA	12.0N	61.8W	1806	03/21
CROOKED ISLAND	BAHAMAS	22.7N	74.1W	1809	03/21
CAT ISLAND	BAHAMAS	24.4N	75.5W	1813	03/21
BAIE LUCAS	SAINT MARTIN	18.1N	63.0W	1818	03/21
BAIE GRAND CASE	SAINT MARTIN	18.1N	63.1W	1821	03/21
ELEUTHERA ISLAN	BAHAMAS	25.2N	76.1W	1822	03/21
BRIDGETOWN	BARBADOS	13.1N	59.6W	1822	03/21
SAINT BARTHELEM	SAINT BARTHELEMY	17.9N	62.8W	1823	03/21
LA HABANA	CUBA	23.2N	82.4W	1827	03/21
SAINT JOHNS	ANTIGUA	17.1N	61.9W	1828	03/21
ANDROS ISLAND	BAHAMAS	25.0N	77.9W	1830	03/21
PALMETTO POINT	BARBUDA	17.6N	61.9W	1831	03/21
BAIE BLANCHE	SAINT MARTIN	18.1N	63.0W	1837	03/21
NASSAU	BAHAMAS	25.1N	77.4W	1843	03/21
TRUJILLO	HONDURAS	15.9N	86.0W	1847	03/21
PIRATES BAY	TRINIDAD TOBAGO	11.3N	60.6W	1849	03/21
ROADTOWN	BR VIRGIN IS	18.4N	64.6W	1852	03/21
FREEPORT	BAHAMAS	26.5N	78.8W	1855	03/21
ABACO ISLAND	BAHAMAS	26.6N	77.1W	1859	03/21
PUNTO FIJO	VENEZUELA	11.7N	70.2W	1903	03/21
BIMINI	BAHAMAS	25.8N	79.3W	1908	03/21
BELIZE CITY	BELIZE	17.5N	88.2W	1911	03/21
PORT OF SPAIN	TRINIDAD TOBAGO	10.6N	61.5W	1920	03/21
PUERTO BARRIOS	GUATEMALA	15.7N	88.6W	1954	03/21
SANTA CRZ D SUR	CUBA	20.7N	78.0W	2001	03/21
GOLFO VENEZUELA	VENEZUELA	11.4N	71.2W	2002	03/21
PUERTO CABEZAS	NICARAGUA	14.0N	83.4W	2049	03/21
NUEVA GERONA	CUBA	21.9N	82.8W	2117	03/21
PORLAMAR	VENEZUELA	10.9N	63.8W	2127	03/21
PROGRESO	MEXICO	21.3N	89.7W	2148	03/21

TEST... POTENTIAL IMPACTS ...TEST

- * THIS IS A TEST MESSAGE. 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.
- * THIS IS A TEST MESSAGE. IMPACTS CAN VARY SIGNIFICANTLY FROM ONE SECTION OF COAST TO THE NEXT DUE TO LOCAL BATHYMETRY AND THE SHAPE AND ELEVATION OF THE SHORELINE.
- * THIS IS A TEST MESSAGE. IMPACTS CAN ALSO VARY DEPENDING UPON THE STATE OF THE TIDE AT THE TIME OF THE MAXIMUM TSUNAMI WAVES.
- * THIS IS A TEST MESSAGE. PERSONS CAUGHT IN THE WATER OF A TSUNAMI MAY DROWN... BE CRUSHED BY DEBRIS IN THE WATER... OR BE SWEEPED OUT TO SEA.

TEST... NEXT UPDATE AND ADDITIONAL INFORMATION ...TEST

- * THIS IS A TEST MESSAGE. THE NEXT MESSAGE WILL BE ISSUED IN ONE HOUR... OR SOONER IF THE SITUATION WARRANTS.
- * THIS IS A TEST MESSAGE. AUTHORITATIVE INFORMATION ABOUT THE EARTHQUAKE FROM THE U.S. GEOLOGICAL SURVEY CAN BE FOUND ON THE INTERNET AT EARTHQUAKE.USGS.GOV.
- * THIS IS A TEST MESSAGE. FURTHER INFORMATION ABOUT THIS EVENT MAY BE FOUND AT WWW.TSUNAMI.GOV.
- * THIS IS A TEST MESSAGE. COASTAL REGIONS OF THE US GULF COAST... US EAST COAST... AND THE MARITIME PROVINCES OF CANADA SHOULD REFER TO U.S. NATIONAL TSUNAMI WARNING CENTER MESSAGES THAT CAN BE FOUND AT WWW.TSUNAMI.GOV.

THIS IS A TEST MESSAGE. DO NOT TAKE ACTION BASED ON THIS TEST MESSAGE.

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NNNN

PTWC Message #3

ZCZC
WECA41 PHEB 211600
TSUCAX

TEST...TSUNAMI MESSAGE NUMBER 3...TEST
NWS PACIFIC TSUNAMI WARNING CENTER HONOLULU HI
1600 UTC THU MAR 21 2024

...THIS MESSAGE IS FOR TEST PURPOSES ONLY...
...TEST TSUNAMI THREAT MESSAGE TEST...

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE ****

THIS IS A TEST MESSAGE. 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.

THIS IS A TEST MESSAGE. NATIONAL AUTHORITIES WILL DETERMINE THE APPROPRIATE LEVEL OF ALERT FOR EACH COUNTRY AND MAY ISSUE ADDITIONAL OR MORE REFINED INFORMATION.

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE ****

TEST... PRELIMINARY EARTHQUAKE PARAMETERS ...TEST

* MAGNITUDE 8.5
* ORIGIN TIME 1500 UTC MAR 21 2024
* COORDINATES 9.8 NORTH 77.8 WEST
* DEPTH 25 KM / 16 MILES
* LOCATION NEAR THE NORTH COAST OF COLOMBIA

TEST... EVALUATION ...TEST

* THIS IS A TEST MESSAGE. AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 8.5 OCCURRED NEAR THE NORTH COAST OF COLOMBIA AT 1500 UTC ON THURSDAY MARCH 21 2024.

* THIS IS A TEST MESSAGE. TSUNAMI WAVES HAVE BEEN OBSERVED.

* THIS IS A TEST MESSAGE. BASED ON ALL AVAILABLE DATA... HAZARDOUS TSUNAMI WAVES ARE FORECAST FOR SOME COASTS.

TEST... TSUNAMI THREAT FORECAST ...TEST

* THIS IS A TEST MESSAGE. TSUNAMI WAVES REACHING MORE THAN 3 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE ALONG SOME COASTS OF

COLOMBIA... COSTA RICA... CUBA... DOMINICAN REPUBLIC...
HAITI... JAMAICA... NICARAGUA... PANAMA... PUERTO RICO AND
VIRGIN ISLANDS... SAN ANDRES AND PROVIDENCIA... AND
VENEZUELA.

- * THIS IS A TEST MESSAGE. TSUNAMI WAVES REACHING 1 TO 3 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE ALONG SOME COASTS OF

ANGUILLA... ANTIGUA AND BARBUDA... ARUBA... BAHAMAS...
BONAIRE... CAYMAN ISLANDS... CURACAO... DOMINICA...
GRENADA... GUADELOUPE... MARTINIQUE... MONTSERRAT... SABA
AND SAINT EUSTATIUS... SAINT BARTHELEMY... SAINT KITTS AND
NEVIS... SAINT LUCIA... SINT MAARTEN... SAINT MARTIN...
AND SAINT VINCENT AND THE GRENADINES.

- * THIS IS A TEST MESSAGE. TSUNAMI WAVES REACHING 0.3 TO 1 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE FOR SOME COASTS OF

BARBADOS... BELIZE... GUATEMALA... HONDURAS... MEXICO...
TRINIDAD AND TOBAGO... AND TURKS AND CAICOS ISLANDS.

- * THIS IS A TEST MESSAGE. 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 OR SMALL ISLANDS AND AT LOCATIONS WITH FRINGING OR BARRIER REEFS WILL LIKELY BE MUCH SMALLER THAN THE FORECAST INDICATES.

- * THIS IS A TEST MESSAGE. FOR ALL OTHER AREAS COVERED BY THIS MESSAGE... THERE IS NO TSUNAMI THREAT ALTHOUGH SMALL SEA LEVEL CHANGES MAY OCCUR.

TEST... RECOMMENDED ACTIONS ...TEST

- * THIS IS A TEST MESSAGE. 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.
- * THIS IS A TEST MESSAGE. PERSONS LOCATED IN THREATENED COASTAL AREAS SHOULD STAY ALERT FOR INFORMATION AND FOLLOW INSTRUCTIONS FROM NATIONAL AND LOCAL AUTHORITIES.

TEST... ESTIMATED TIMES OF ARRIVAL ...TEST

- * THIS IS A TEST MESSAGE. ESTIMATED TIMES OF ARRIVAL -ETA- OF THE INITIAL TSUNAMI WAVE FOR PLACES 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	1514	03/21
PUERTO CARRETO	PANAMA	8.8N	77.6W	1525	03/21
CARTAGENA	COLOMBIA	10.4N	75.6W	1532	03/21
PUERTO OBALDIA	PANAMA	8.7N	77.4W	1539	03/21
PUNTA CARIBANA	COLOMBIA	8.6N	76.9W	1545	03/21
SANTA MARTA	COLOMBIA	11.2N	74.2W	1555	03/21
PROVIDENCIA	SAN ANDRES PROVI	12.6N	81.7W	1556	03/21
SAN ANDRES	SAN ANDRES PROVI	13.4N	81.4W	1600	03/21
COLON	PANAMA	9.4N	79.9W	1605	03/21
BARRANQUILLA	COLOMBIA	11.1N	74.9W	1608	03/21
PUERTO LIMON	COSTA RICA	10.0N	83.0W	1609	03/21
BOCAS DEL TORO	PANAMA	9.4N	82.2W	1621	03/21
JACAMEL	HAITI	18.1N	72.5W	1634	03/21
ORANJESTAD	ARUBA	12.5N	70.0W	1643	03/21
RIOHACHA	COLOMBIA	11.6N	72.9W	1647	03/21
JEREMIE	HAITI	18.6N	74.1W	1652	03/21
ONIMA	BONAIRE	12.3N	68.3W	1653	03/21
KINGSTON	JAMAICA	17.9N	76.9W	1656	03/21
SANTIAGO D CUBA	CUBA	19.9N	75.8W	1657	03/21
CAYMAN BRAC	CAYMAN ISLANDS	19.7N	79.9W	1658	03/21
SANTO DOMINGO	DOMINICAN REP	18.5N	69.9W	1702	03/21
PUNTA GORDA	NICARAGUA	11.4N	83.8W	1703	03/21
GRAND CAYMAN	CAYMAN ISLANDS	19.3N	81.3W	1706	03/21
BARACOA	CUBA	20.4N	74.5W	1715	03/21
WILLEMSTAD	CURACAO	12.1N	68.9W	1718	03/21
MAYAGUEZ	PUERTO RICO	18.2N	67.2W	1719	03/21
GREAT INAGUA	BAHAMAS	20.9N	73.7W	1721	03/21
MONTEGO BAY	JAMAICA	18.5N	77.9W	1722	03/21
CABO ENGANO	DOMINICAN REP	18.6N	68.3W	1725	03/21
CHRISTIANSTED	US VIRGIN IS	17.7N	64.7W	1725	03/21
CIENFUEGOS	CUBA	22.0N	80.5W	1726	03/21
CAP HAITEN	HAITI	19.8N	72.2W	1727	03/21
MAIQUETIA	VENEZUELA	10.6N	67.0W	1730	03/21
WEST CAICOS	TURKS N CAICOS	21.7N	72.5W	1731	03/21
GIBARA	CUBA	21.1N	76.1W	1735	03/21
MAYAGUANA	BAHAMAS	22.3N	73.0W	1735	03/21
PUERTO PLATA	DOMINICAN REP	19.8N	70.7W	1737	03/21
SAN JUAN	PUERTO RICO	18.5N	66.1W	1738	03/21
GRAND TURK	TURKS N CAICOS	21.5N	71.1W	1746	03/21
SABA	SABA	17.6N	63.2W	1747	03/21
BASSETERRE	SAINT KITTS	17.3N	62.7W	1748	03/21
PLYMOUTH	MONTserrat	16.7N	62.2W	1749	03/21
SINT EUSTATIUS	SINT EUSTATIUS	17.5N	63.0W	1752	03/21
BASSE TERRE	GUADELOUPE	16.0N	61.7W	1752	03/21
ROSEAU	DOMINICA	15.3N	61.4W	1753	03/21
LONG ISLAND	BAHAMAS	23.3N	75.1W	1754	03/21
SAN SALVADOR	BAHAMAS	24.1N	74.5W	1755	03/21
CASTRIES	SAINT LUCIA	14.0N	61.0W	1755	03/21
PORT AU PRINCE	HAITI	18.5N	72.4W	1756	03/21
SIMPSON BAAI	SINT MAARTEN	18.0N	63.1W	1756	03/21
KINGSTOWN	SAINT VINCENT	13.1N	61.2W	1757	03/21
FORT DE FRANCE	MARTINIQUE	14.6N	61.1W	1800	03/21
ANEGADA	BR VIRGIN IS	18.8N	64.3W	1801	03/21
COZUMEL	MEXICO	20.5N	87.0W	1801	03/21

PUERTO CORTES	HONDURAS	15.9N	88.0W	1801	03/21
CUMANA	VENEZUELA	10.5N	64.2W	1803	03/21
THE VALLEY	ANGUILLA	18.3N	63.1W	1804	03/21
EXUMA	BAHAMAS	23.6N	75.9W	1805	03/21
CHARLOTTE AMALI	US VIRGIN IS	18.3N	64.9W	1806	03/21
SAINT GEORGES	GRENADA	12.0N	61.8W	1806	03/21
CROOKED ISLAND	BAHAMAS	22.7N	74.1W	1809	03/21
CAT ISLAND	BAHAMAS	24.4N	75.5W	1813	03/21
BAIE LUCAS	SAINT MARTIN	18.1N	63.0W	1818	03/21
BAIE GRAND CASE	SAINT MARTIN	18.1N	63.1W	1821	03/21
ELEUTHERA ISLAN	BAHAMAS	25.2N	76.1W	1822	03/21
BRIDGETOWN	BARBADOS	13.1N	59.6W	1822	03/21
SAINT BARTHELEM	SAINT BARTHELEMY	17.9N	62.8W	1823	03/21
LA HABANA	CUBA	23.2N	82.4W	1827	03/21
SAINT JOHNS	ANTIGUA	17.1N	61.9W	1828	03/21
ANDROS ISLAND	BAHAMAS	25.0N	77.9W	1830	03/21
PALMETTO POINT	BARBUDA	17.6N	61.9W	1831	03/21
BAIE BLANCHE	SAINT MARTIN	18.1N	63.0W	1837	03/21
NASSAU	BAHAMAS	25.1N	77.4W	1843	03/21
TRUJILLO	HONDURAS	15.9N	86.0W	1847	03/21
PIRATES BAY	TRINIDAD TOBAGO	11.3N	60.6W	1849	03/21
ROADTOWN	BR VIRGIN IS	18.4N	64.6W	1852	03/21
FREEPORT	BAHAMAS	26.5N	78.8W	1855	03/21
ABACO ISLAND	BAHAMAS	26.6N	77.1W	1859	03/21
PUNTO FIJO	VENEZUELA	11.7N	70.2W	1903	03/21
BIMINI	BAHAMAS	25.8N	79.3W	1908	03/21
BELIZE CITY	BELIZE	17.5N	88.2W	1911	03/21
PORT OF SPAIN	TRINIDAD TOBAGO	10.6N	61.5W	1920	03/21
PUERTO BARRIOS	GUATEMALA	15.7N	88.6W	1954	03/21
SANTA CRZ D SUR	CUBA	20.7N	78.0W	2001	03/21
GOLFO VENEZUELA	VENEZUELA	11.4N	71.2W	2002	03/21
PUERTO CABEZAS	NICARAGUA	14.0N	83.4W	2049	03/21
NUEVA GERONA	CUBA	21.9N	82.8W	2117	03/21
PORLAMAR	VENEZUELA	10.9N	63.8W	2127	03/21
PROGRESO	MEXICO	21.3N	89.7W	2148	03/21

TEST... POTENTIAL IMPACTS ...TEST

- * THIS IS A TEST MESSAGE. 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.
- * THIS IS A TEST MESSAGE. IMPACTS CAN VARY SIGNIFICANTLY FROM ONE SECTION OF COAST TO THE NEXT DUE TO LOCAL BATHYMETRY AND THE SHAPE AND ELEVATION OF THE SHORELINE.
- * THIS IS A TEST MESSAGE. IMPACTS CAN ALSO VARY DEPENDING UPON THE STATE OF THE TIDE AT THE TIME OF THE MAXIMUM TSUNAMI WAVES.
- * THIS IS A TEST MESSAGE. PERSONS CAUGHT IN THE WATER OF A TSUNAMI MAY DROWN... BE CRUSHED BY DEBRIS IN THE WATER... OR BE SWEEPED OUT TO SEA.

TEST... TSUNAMI OBSERVATIONS ...TEST

* THIS IS A TEST MESSAGE. 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		TIME OF MEASURE (UTC)	MAXIMUM TSUNAMI HEIGHT	WAVE PERIOD (MIN)
	LAT	LON			
ISLA FUERTE CO	9.4N	76.2W	1555	14.48M/47.5FT	24
SAPZURRO CO	8.7N	77.4W	1552	12.38M/40.6FT	14
COVENAS CO	9.4N	76.2W	1553	14.48M/47.5FT	20
ISLA NAVAL CO	10.2N	75.8W	1539	12.03M/39.5FT	24
CARTEGENA CO	10.4N	75.5W	1542	11.14M/36.5FT	22
EL PORVENIR PA	9.6N	78.9W	1537	11.07M/36.3FT	16

TEST... NEXT UPDATE AND ADDITIONAL INFORMATION ...TEST

- * THIS IS A TEST MESSAGE. THE NEXT MESSAGE WILL BE ISSUED IN ONE HOUR... OR SOONER IF THE SITUATION WARRANTS.
- * THIS IS A TEST MESSAGE. AUTHORITATIVE INFORMATION ABOUT THE EARTHQUAKE FROM THE U.S. GEOLOGICAL SURVEY CAN BE FOUND ON THE INTERNET AT EARTHQUAKE.USGS.GOV.
- * THIS IS A TEST MESSAGE. FURTHER INFORMATION ABOUT THIS EVENT MAY BE FOUND AT WWW.TSUNAMI.GOV.
- * THIS IS A TEST MESSAGE. COASTAL REGIONS OF THE US GULF COAST... US EAST COAST... AND THE MARITIME PROVINCES OF CANADA SHOULD REFER TO U.S. NATIONAL TSUNAMI WARNING CENTER MESSAGES THAT CAN BE FOUND AT WWW.TSUNAMI.GOV.

THIS IS A TEST MESSAGE. DO NOT TAKE ACTION BASED ON THIS TEST MESSAGE.

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NNNN

PTWC Message #4

ZCZC
WECA41 PHEB 211700
TSUCAX

TEST...TSUNAMI MESSAGE NUMBER 4...TEST
NWS PACIFIC TSUNAMI WARNING CENTER HONOLULU HI
1700 UTC THU MAR 21 2024

...THIS MESSAGE IS FOR TEST PURPOSES ONLY...
...TEST TSUNAMI THREAT MESSAGE TEST...

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE ****

THIS IS A TEST MESSAGE. 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.

THIS IS A TEST MESSAGE. NATIONAL AUTHORITIES WILL DETERMINE THE APPROPRIATE LEVEL OF ALERT FOR EACH COUNTRY AND MAY ISSUE ADDITIONAL OR MORE REFINED INFORMATION.

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE ****

TEST... PRELIMINARY EARTHQUAKE PARAMETERS ...TEST

* MAGNITUDE 8.5
* ORIGIN TIME 1500 UTC MAR 21 2024
* COORDINATES 9.8 NORTH 77.8 WEST
* DEPTH 25 KM / 16 MILES
* LOCATION NEAR THE NORTH COAST OF COLOMBIA

TEST... EVALUATION ...TEST

* THIS IS A TEST MESSAGE. AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 8.5 OCCURRED NEAR THE NORTH COAST OF COLOMBIA AT 1500 UTC ON THURSDAY MARCH 21 2024.

* THIS IS A TEST MESSAGE. TSUNAMI WAVES HAVE BEEN OBSERVED.

* THIS IS A TEST MESSAGE. BASED ON ALL AVAILABLE DATA... HAZARDOUS TSUNAMI WAVES ARE FORECAST FOR SOME COASTS.

TEST... TSUNAMI THREAT FORECAST ...TEST

* THIS IS A TEST MESSAGE. TSUNAMI WAVES REACHING MORE THAN 3 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE ALONG SOME COASTS OF

COLOMBIA... COSTA RICA... CUBA... DOMINICAN REPUBLIC...
HAITI... JAMAICA... NICARAGUA... PANAMA... PUERTO RICO AND
VIRGIN ISLANDS... SAN ANDRES AND PROVIDENCIA... AND
VENEZUELA.

- * THIS IS A TEST MESSAGE. TSUNAMI WAVES REACHING 1 TO 3 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE ALONG SOME COASTS OF

ANGUILLA... ANTIGUA AND BARBUDA... ARUBA... BAHAMAS...
BONAIRE... CAYMAN ISLANDS... CURACAO... DOMINICA...
GRENADA... GUADELOUPE... MARTINIQUE... MONTSERRAT... SABA
AND SAINT EUSTATIUS... SAINT BARTHELEMY... SAINT KITTS AND
NEVIS... SAINT LUCIA... SINT MAARTEN... SAINT MARTIN...
AND SAINT VINCENT AND THE GRENADINES.

- * THIS IS A TEST MESSAGE. TSUNAMI WAVES REACHING 0.3 TO 1 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE FOR SOME COASTS OF

BARBADOS... BELIZE... GUATEMALA... HONDURAS... MEXICO...
TRINIDAD AND TOBAGO... AND TURKS AND CAICOS ISLANDS.

- * THIS IS A TEST MESSAGE. 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 OR SMALL ISLANDS AND AT LOCATIONS WITH FRINGING OR BARRIER REEFS WILL LIKELY BE MUCH SMALLER THAN THE FORECAST INDICATES.

- * THIS IS A TEST MESSAGE. FOR ALL OTHER AREAS COVERED BY THIS MESSAGE... THERE IS NO TSUNAMI THREAT ALTHOUGH SMALL SEA LEVEL CHANGES MAY OCCUR.

TEST... RECOMMENDED ACTIONS ...TEST

- * THIS IS A TEST MESSAGE. 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.
- * THIS IS A TEST MESSAGE. PERSONS LOCATED IN THREATENED COASTAL AREAS SHOULD STAY ALERT FOR INFORMATION AND FOLLOW INSTRUCTIONS FROM NATIONAL AND LOCAL AUTHORITIES.

TEST... ESTIMATED TIMES OF ARRIVAL ...TEST

- * THIS IS A TEST MESSAGE. ESTIMATED TIMES OF ARRIVAL -ETA- OF THE INITIAL TSUNAMI WAVE FOR PLACES 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

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MINUTES TO ONE HOUR.

LOCATION	REGION	COORDINATES		ETA (UTC)	
SAN ANDRES	SAN ANDRES PROVI	13.4N	81.4W	1600	03/21
COLON	PANAMA	9.4N	79.9W	1605	03/21
BARRANQUILLA	COLOMBIA	11.1N	74.9W	1608	03/21
PUERTO LIMON	COSTA RICA	10.0N	83.0W	1609	03/21
BOCAS DEL TORO	PANAMA	9.4N	82.2W	1621	03/21
JACAMEL	HAITI	18.1N	72.5W	1634	03/21
ORANJESTAD	ARUBA	12.5N	70.0W	1643	03/21
RIOHACHA	COLOMBIA	11.6N	72.9W	1647	03/21
JEREMIE	HAITI	18.6N	74.1W	1652	03/21
ONIMA	BONAIRE	12.3N	68.3W	1653	03/21
KINGSTON	JAMAICA	17.9N	76.9W	1656	03/21
SANTIAGO D CUBA	CUBA	19.9N	75.8W	1657	03/21
CAYMAN BRAC	CAYMAN ISLANDS	19.7N	79.9W	1658	03/21
SANTO DOMINGO	DOMINICAN REP	18.5N	69.9W	1702	03/21
PUNTA GORDA	NICARAGUA	11.4N	83.8W	1703	03/21
GRAND CAYMAN	CAYMAN ISLANDS	19.3N	81.3W	1706	03/21
BARACOA	CUBA	20.4N	74.5W	1715	03/21
WILLEMSTAD	CURACAO	12.1N	68.9W	1718	03/21
MAYAGUEZ	PUERTO RICO	18.2N	67.2W	1719	03/21
GREAT INAGUA	BAHAMAS	20.9N	73.7W	1721	03/21
MONTEGO BAY	JAMAICA	18.5N	77.9W	1722	03/21
CABO ENGANO	DOMINICAN REP	18.6N	68.3W	1725	03/21
CHRISTIANSTED	US VIRGIN IS	17.7N	64.7W	1725	03/21
CIENFUEGOS	CUBA	22.0N	80.5W	1726	03/21
CAP HAITEN	HAITI	19.8N	72.2W	1727	03/21
MAIQUETIA	VENEZUELA	10.6N	67.0W	1730	03/21
WEST CAICOS	TURKS N CAICOS	21.7N	72.5W	1731	03/21
GIBARA	CUBA	21.1N	76.1W	1735	03/21
MAYAGUANA	BAHAMAS	22.3N	73.0W	1735	03/21
PUERTO PLATA	DOMINICAN REP	19.8N	70.7W	1737	03/21
SAN JUAN	PUERTO RICO	18.5N	66.1W	1738	03/21
GRAND TURK	TURKS N CAICOS	21.5N	71.1W	1746	03/21
SABA	SABA	17.6N	63.2W	1747	03/21
BASSETERRE	SAINT KITTS	17.3N	62.7W	1748	03/21
PLYMOUTH	MONTserrat	16.7N	62.2W	1749	03/21
SINT EUSTATIUS	SINT EUSTATIUS	17.5N	63.0W	1752	03/21
BASSE TERRE	GUADELOUPE	16.0N	61.7W	1752	03/21
ROSEAU	DOMINICA	15.3N	61.4W	1753	03/21
LONG ISLAND	BAHAMAS	23.3N	75.1W	1754	03/21
SAN SALVADOR	BAHAMAS	24.1N	74.5W	1755	03/21
CASTRIES	SAINT LUCIA	14.0N	61.0W	1755	03/21
PORT AU PRINCE	HAITI	18.5N	72.4W	1756	03/21
SIMPSON BAAI	SINT MAARTEN	18.0N	63.1W	1756	03/21
KINGSTOWN	SAINT VINCENT	13.1N	61.2W	1757	03/21
FORT DE FRANCE	MARTINIQUE	14.6N	61.1W	1800	03/21
ANEGADA	BR VIRGIN IS	18.8N	64.3W	1801	03/21
COZUMEL	MEXICO	20.5N	87.0W	1801	03/21
PUERTO CORTES	HONDURAS	15.9N	88.0W	1801	03/21
CUMANA	VENEZUELA	10.5N	64.2W	1803	03/21
THE VALLEY	ANGUILLA	18.3N	63.1W	1804	03/21
EXUMA	BAHAMAS	23.6N	75.9W	1805	03/21
CHARLOTTE AMALI	US VIRGIN IS	18.3N	64.9W	1806	03/21
SAINT GEORGES	GRENADA	12.0N	61.8W	1806	03/21
CROOKED ISLAND	BAHAMAS	22.7N	74.1W	1809	03/21

CAT ISLAND	BAHAMAS	24.4N	75.5W	1813	03/21
BAIE LUCAS	SAINT MARTIN	18.1N	63.0W	1818	03/21
BAIE GRAND CASE	SAINT MARTIN	18.1N	63.1W	1821	03/21
ELEUTHERA ISLAN	BAHAMAS	25.2N	76.1W	1822	03/21
BRIDGETOWN	BARBADOS	13.1N	59.6W	1822	03/21
SAINT BARTHELEM	SAINT BARTHELEMY	17.9N	62.8W	1823	03/21
LA HABANA	CUBA	23.2N	82.4W	1827	03/21
SAINT JOHNS	ANTIGUA	17.1N	61.9W	1828	03/21
ANDROS ISLAND	BAHAMAS	25.0N	77.9W	1830	03/21
PALMETTO POINT	BARBUDA	17.6N	61.9W	1831	03/21
BAIE BLANCHE	SAINT MARTIN	18.1N	63.0W	1837	03/21
NASSAU	BAHAMAS	25.1N	77.4W	1843	03/21
TRUJILLO	HONDURAS	15.9N	86.0W	1847	03/21
PIRATES BAY	TRINIDAD TOBAGO	11.3N	60.6W	1849	03/21
ROADTOWN	BR VIRGIN IS	18.4N	64.6W	1852	03/21
FREEPORT	BAHAMAS	26.5N	78.8W	1855	03/21
ABACO ISLAND	BAHAMAS	26.6N	77.1W	1859	03/21
PUNTO FIJO	VENEZUELA	11.7N	70.2W	1903	03/21
BIMINI	BAHAMAS	25.8N	79.3W	1908	03/21
BELIZE CITY	BELIZE	17.5N	88.2W	1911	03/21
PORT OF SPAIN	TRINIDAD TOBAGO	10.6N	61.5W	1920	03/21
PUERTO BARRIOS	GUATEMALA	15.7N	88.6W	1954	03/21
SANTA CRZ D SUR	CUBA	20.7N	78.0W	2001	03/21
GOLFO VENEZUELA	VENEZUELA	11.4N	71.2W	2002	03/21
PUERTO CABEZAS	NICARAGUA	14.0N	83.4W	2049	03/21
NUEVA GERONA	CUBA	21.9N	82.8W	2117	03/21
PORLAMAR	VENEZUELA	10.9N	63.8W	2127	03/21
PROGRESO	MEXICO	21.3N	89.7W	2148	03/21

TEST... POTENTIAL IMPACTS ...TEST

- * THIS IS A TEST MESSAGE. 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.
- * THIS IS A TEST MESSAGE. IMPACTS CAN VARY SIGNIFICANTLY FROM ONE SECTION OF COAST TO THE NEXT DUE TO LOCAL BATHYMETRY AND THE SHAPE AND ELEVATION OF THE SHORELINE.
- * THIS IS A TEST MESSAGE. IMPACTS CAN ALSO VARY DEPENDING UPON THE STATE OF THE TIDE AT THE TIME OF THE MAXIMUM TSUNAMI WAVES.
- * THIS IS A TEST MESSAGE. PERSONS CAUGHT IN THE WATER OF A TSUNAMI MAY DROWN... BE CRUSHED BY DEBRIS IN THE WATER... OR BE SWEEPED OUT TO SEA.

TEST... TSUNAMI OBSERVATIONS ...TEST

- * THIS IS A TEST MESSAGE. 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		TIME OF MEASURE (UTC)	MAXIMUM TSUNAMI HEIGHT	WAVE PERIOD (MIN)
	LAT	LON			
JEREMIE HT	18.6N	74.1W	1658	1.63M/ 5.3FT	24
DART 42407	15.3N	68.2W	1655	0.18M/ 0.6FT	18
ORANGESTAD AW	12.5N	70.0W	1654	1.93M/ 6.3FT	26
ST LOUIS DU SUD HT	18.2N	73.6W	1647	4.03M/13.2FT	26
BALLENAS CO	11.7N	72.7W	1639	4.61M/15.1FT	26
BOCAS DEL TORO PA	9.4N	82.3W	1633	3.69M/12.1FT	20
LIMON CR	10.0N	83.0W	1622	3.15M/10.3FT	22
SAN ANDRES CO	12.6N	81.7W	1609	2.79M/ 9.2FT	22
SANTA MARTA CO	11.2N	74.2W	1604	9.33M/30.6FT	16
ISLA FUERTE CO	9.4N	76.2W	1555	14.48M/47.5FT	24
SAPZURRO CO	8.7N	77.4W	1552	12.38M/40.6FT	14
COVENAS CO	9.4N	76.2W	1553	14.48M/47.5FT	20
ISLA NAVAL CO	10.2N	75.8W	1539	12.03M/39.5FT	24
CARTEGENA CO	10.4N	75.5W	1542	11.14M/36.5FT	22
EL PORVENIR PA	9.6N	78.9W	1537	11.07M/36.3FT	16

TEST... NEXT UPDATE AND ADDITIONAL INFORMATION...TEST

- * THIS IS A TEST MESSAGE. THE NEXT MESSAGE WILL BE ISSUED IN ONE HOUR... OR SOONER IF THE SITUATION WARRANTS.
- * THIS IS A TEST MESSAGE. AUTHORITATIVE INFORMATION ABOUT THE EARTHQUAKE FROM THE U.S. GEOLOGICAL SURVEY CAN BE FOUND ON THE INTERNET AT EARTHQUAKE.USGS.GOV.
- * THIS IS A TEST MESSAGE. FURTHER INFORMATION ABOUT THIS EVENT MAY BE FOUND AT WWW.TSUNAMI.GOV.
- * THIS IS A TEST MESSAGE. COASTAL REGIONS OF THE US GULF COAST... US EAST COAST... AND THE MARITIME PROVINCES OF CANADA SHOULD REFER TO U.S. NATIONAL TSUNAMI WARNING CENTER MESSAGES THAT CAN BE FOUND AT WWW.TSUNAMI.GOV.

THIS IS A TEST MESSAGE. DO NOT TAKE ACTION BASED ON THIS TEST MESSAGE.

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NNNN

PTWC Message #5

ZCZC
WECA41 PHEB 211800
TSUCAX

TEST...TSUNAMI MESSAGE NUMBER 5...TEST
NWS PACIFIC TSUNAMI WARNING CENTER HONOLULU HI
1800 UTC THU MAR 21 2024

...THIS MESSAGE IS FOR TEST PURPOSES ONLY...
...TEST TSUNAMI THREAT MESSAGE TEST...

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE ****

THIS IS A TEST MESSAGE. 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.

THIS IS A TEST MESSAGE. NATIONAL AUTHORITIES WILL DETERMINE THE APPROPRIATE LEVEL OF ALERT FOR EACH COUNTRY AND MAY ISSUE ADDITIONAL OR MORE REFINED INFORMATION.

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE ****

TEST... PRELIMINARY EARTHQUAKE PARAMETERS ...TEST

* MAGNITUDE 8.5
* ORIGIN TIME 1500 UTC MAR 21 2024
* COORDINATES 9.8 NORTH 77.8 WEST
* DEPTH 25 KM / 16 MILES
* LOCATION NEAR THE NORTH COAST OF COLOMBIA

TEST... EVALUATION ...TEST

- * THIS IS A TEST MESSAGE. AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 8.5 OCCURRED NEAR THE NORTH COAST OF COLOMBIA AT 1500 UTC ON THURSDAY MARCH 21 2024.
- * THIS IS A TEST MESSAGE. TSUNAMI WAVES HAVE BEEN OBSERVED.
- * THIS IS A TEST MESSAGE. BASED ON ALL AVAILABLE DATA... HAZARDOUS TSUNAMI WAVES ARE FORECAST FOR SOME COASTS.

TEST... TSUNAMI THREAT FORECAST ...TEST

- * THIS IS A TEST MESSAGE. TSUNAMI WAVES REACHING MORE THAN 3 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE ALONG SOME COASTS OF

COLOMBIA... COSTA RICA... CUBA... DOMINICAN REPUBLIC...
HAITI... JAMAICA... NICARAGUA... PANAMA... PUERTO RICO AND
VIRGIN ISLANDS... SAN ANDRES AND PROVIDENCIA... AND
VENEZUELA.

- * THIS IS A TEST MESSAGE. TSUNAMI WAVES REACHING 1 TO 3 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE ALONG SOME COASTS OF

ANGUILLA... ANTIGUA AND BARBUDA... ARUBA... BAHAMAS...
BONAIRE... CAYMAN ISLANDS... CURACAO... DOMINICA...
GRENADA... GUADELOUPE... MARTINIQUE... MONTSERRAT... SABA
AND SAINT EUSTATIUS... SAINT BARTHELEMY... SAINT KITTS AND
NEVIS... SAINT LUCIA... SINT MAARTEN... SAINT MARTIN...
AND SAINT VINCENT AND THE GRENADINES.

- * THIS IS A TEST MESSAGE. TSUNAMI WAVES REACHING 0.3 TO 1 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE FOR SOME COASTS OF

BARBADOS... BELIZE... GUATEMALA... HONDURAS... MEXICO...
TRINIDAD AND TOBAGO... AND TURKS AND CAICOS ISLANDS.

- * THIS IS A TEST MESSAGE. 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 OR SMALL ISLANDS AND AT LOCATIONS WITH FRINGING OR BARRIER REEFS WILL LIKELY BE MUCH SMALLER THAN THE FORECAST INDICATES.

- * THIS IS A TEST MESSAGE. FOR ALL OTHER AREAS COVERED BY THIS MESSAGE... THERE IS NO TSUNAMI THREAT ALTHOUGH SMALL SEA LEVEL CHANGES MAY OCCUR.

TEST... RECOMMENDED ACTIONS ...TEST

- * THIS IS A TEST MESSAGE. 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.
- * THIS IS A TEST MESSAGE. PERSONS LOCATED IN THREATENED COASTAL AREAS SHOULD STAY ALERT FOR INFORMATION AND FOLLOW INSTRUCTIONS FROM NATIONAL AND LOCAL AUTHORITIES.

TEST... ESTIMATED TIMES OF ARRIVAL ...TEST

- * THIS IS A TEST MESSAGE. ESTIMATED TIMES OF ARRIVAL -ETA- OF THE INITIAL TSUNAMI WAVE FOR PLACES 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	1702	03/21
PUNTA GORDA	NICARAGUA	11.4N	83.8W	1703	03/21
GRAND CAYMAN	CAYMAN ISLANDS	19.3N	81.3W	1706	03/21
BARACOA	CUBA	20.4N	74.5W	1715	03/21
WILLEMSTAD	CURACAO	12.1N	68.9W	1718	03/21
MAYAGUEZ	PUERTO RICO	18.2N	67.2W	1719	03/21
GREAT INAGUA	BAHAMAS	20.9N	73.7W	1721	03/21
MONTEGO BAY	JAMAICA	18.5N	77.9W	1722	03/21
CABO ENGANO	DOMINICAN REP	18.6N	68.3W	1725	03/21
CHRISTIANSTED	US VIRGIN IS	17.7N	64.7W	1725	03/21
CIENFUEGOS	CUBA	22.0N	80.5W	1726	03/21
CAP HAITEN	HAITI	19.8N	72.2W	1727	03/21
MAIQUETIA	VENEZUELA	10.6N	67.0W	1730	03/21
WEST CAICOS	TURKS N CAICOS	21.7N	72.5W	1731	03/21
GIBARA	CUBA	21.1N	76.1W	1735	03/21
MAYAGUANA	BAHAMAS	22.3N	73.0W	1735	03/21
PUERTO PLATA	DOMINICAN REP	19.8N	70.7W	1737	03/21
SAN JUAN	PUERTO RICO	18.5N	66.1W	1738	03/21
GRAND TURK	TURKS N CAICOS	21.5N	71.1W	1746	03/21
SABA	SABA	17.6N	63.2W	1747	03/21
BASSETERRE	SAINT KITTS	17.3N	62.7W	1748	03/21
PLYMOUTH	MONTserrat	16.7N	62.2W	1749	03/21
SINT EUSTATIUS	SINT EUSTATIUS	17.5N	63.0W	1752	03/21
BASSE TERRE	GUADELOUPE	16.0N	61.7W	1752	03/21
ROSEAU	DOMINICA	15.3N	61.4W	1753	03/21
LONG ISLAND	BAHAMAS	23.3N	75.1W	1754	03/21
SAN SALVADOR	BAHAMAS	24.1N	74.5W	1755	03/21
CASTRIES	SAINT LUCIA	14.0N	61.0W	1755	03/21
PORT AU PRINCE	HAITI	18.5N	72.4W	1756	03/21
SIMPSON BAAI	SINT MAARTEN	18.0N	63.1W	1756	03/21
KINGSTOWN	SAINT VINCENT	13.1N	61.2W	1757	03/21
FORT DE FRANCE	MARTINIQUE	14.6N	61.1W	1800	03/21
ANEGADA	BR VIRGIN IS	18.8N	64.3W	1801	03/21
COZUMEL	MEXICO	20.5N	87.0W	1801	03/21
PUERTO CORTES	HONDURAS	15.9N	88.0W	1801	03/21
CUMANA	VENEZUELA	10.5N	64.2W	1803	03/21
THE VALLEY	ANGUILLA	18.3N	63.1W	1804	03/21
EXUMA	BAHAMAS	23.6N	75.9W	1805	03/21
CHARLOTTE AMALI	US VIRGIN IS	18.3N	64.9W	1806	03/21
SAINT GEORGES	GRENADA	12.0N	61.8W	1806	03/21
CROOKED ISLAND	BAHAMAS	22.7N	74.1W	1809	03/21
CAT ISLAND	BAHAMAS	24.4N	75.5W	1813	03/21
BAIE LUCAS	SAINT MARTIN	18.1N	63.0W	1818	03/21
BAIE GRAND CASE	SAINT MARTIN	18.1N	63.1W	1821	03/21
ELEUTHERA ISLAN	BAHAMAS	25.2N	76.1W	1822	03/21
BRIDGETOWN	BARBADOS	13.1N	59.6W	1822	03/21
SAINT BARTHELEM	SAINT BARTHELEMY	17.9N	62.8W	1823	03/21
LA HABANA	CUBA	23.2N	82.4W	1827	03/21
SAINT JOHNS	ANTIGUA	17.1N	61.9W	1828	03/21
ANDROS ISLAND	BAHAMAS	25.0N	77.9W	1830	03/21
PALMETTO POINT	BARBUDA	17.6N	61.9W	1831	03/21
BAIE BLANCHE	SAINT MARTIN	18.1N	63.0W	1837	03/21
NASSAU	BAHAMAS	25.1N	77.4W	1843	03/21
TRUJILLO	HONDURAS	15.9N	86.0W	1847	03/21

PIRATES BAY	TRINIDAD TOBAGO	11.3N	60.6W	1849	03/21
ROADTOWN	BR VIRGIN IS	18.4N	64.6W	1852	03/21
FREEPORT	BAHAMAS	26.5N	78.8W	1855	03/21
ABACO ISLAND	BAHAMAS	26.6N	77.1W	1859	03/21
PUNTO FIJO	VENEZUELA	11.7N	70.2W	1903	03/21
BIMINI	BAHAMAS	25.8N	79.3W	1908	03/21
BELIZE CITY	BELIZE	17.5N	88.2W	1911	03/21
PORT OF SPAIN	TRINIDAD TOBAGO	10.6N	61.5W	1920	03/21
PUERTO BARRIOS	GUATEMALA	15.7N	88.6W	1954	03/21
SANTA CRZ D SUR	CUBA	20.7N	78.0W	2001	03/21
GOLFO VENEZUELA	VENEZUELA	11.4N	71.2W	2002	03/21
PUERTO CABEZAS	NICARAGUA	14.0N	83.4W	2049	03/21
NUEVA GERONA	CUBA	21.9N	82.8W	2117	03/21
PORLAMAR	VENEZUELA	10.9N	63.8W	2127	03/21
PROGRESO	MEXICO	21.3N	89.7W	2148	03/21

TEST... POTENTIAL IMPACTS ...TEST

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- * THIS IS A TEST MESSAGE. 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.
 - * THIS IS A TEST MESSAGE. IMPACTS CAN VARY SIGNIFICANTLY FROM ONE SECTION OF COAST TO THE NEXT DUE TO LOCAL BATHYMETRY AND THE SHAPE AND ELEVATION OF THE SHORELINE.
 - * THIS IS A TEST MESSAGE. IMPACTS CAN ALSO VARY DEPENDING UPON THE STATE OF THE TIDE AT THE TIME OF THE MAXIMUM TSUNAMI WAVES.
 - * THIS IS A TEST MESSAGE. PERSONS CAUGHT IN THE WATER OF A TSUNAMI MAY DROWN... BE CRUSHED BY DEBRIS IN THE WATER... OR BE SWEEPED OUT TO SEA.

TEST... TSUNAMI OBSERVATIONS ...TEST

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- * THIS IS A TEST MESSAGE. 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		TIME OF MEASURE (UTC)	MAXIMUM TSUNAMI HEIGHT	WAVE PERIOD (MIN)
	LAT	LON			
BASSETERRE KN	17.3N	62.7W	1755	1.11M/ 3.6FT	24
GRAND TURK ISLAND T	21.4N	71.1W	1752	0.30M/ 1.0FT	28
GRAND TURK UK	21.4N	71.1W	1758	0.30M/ 1.0FT	18
ISABELII VIEQUES PR	18.2N	65.4W	1752	1.58M/ 5.2FT	14
SALINAS PR	17.9N	66.2W	1747	2.37M/ 7.8FT	18
SAN JUAN PR	18.5N	66.1W	1745	0.68M/ 2.2FT	24
ROATAN ISLAND HN	16.3N	86.5W	1749	0.52M/ 1.7FT	26
PUERTO PLATA DO	19.8N	70.7W	1750	0.41M/ 1.4FT	22
ARECIBO PR	18.5N	66.7W	1744	0.85M/ 2.8FT	22
ESPERANZA VIEQUES P	18.1N	65.5W	1740	1.98M/ 6.5FT	26

CAP HAITIEN HT	19.8N	72.2W	1734	0.59M/	1.9FT	16
AGUADILLA PR	18.5N	67.2W	1735	1.41M/	4.6FT	22
LIMETREE VI	17.7N	64.8W	1735	1.65M/	5.4FT	26
ST CROIX VI	17.7N	64.7W	1735	1.58M/	5.2FT	22
PORT SAN ANDRES DO	18.4N	69.6W	1732	4.00M/	13.1FT	18
YABUCOA PR	18.1N	65.8W	1733	2.56M/	8.4FT	28
MAGUEYES ISLAND PR	18.0N	67.0W	1734	2.83M/	9.3FT	24
MAYAGUEZ PR	18.2N	67.2W	1725	1.94M/	6.4FT	14
CAYMAN BRAC KY	19.7N	79.8W	1728	1.22M/	4.0FT	26
PUNTA CANA DO	18.5N	68.4W	1722	1.72M/	5.6FT	28
GUAYANILLA PR	18.0N	66.8W	1719	2.90M/	9.5FT	28
LITTLE CAYMAN KY	19.7N	80.1W	1716	1.07M/	3.5FT	22
GUN BAY KY	19.3N	81.1W	1714	1.13M/	3.7FT	16
CORN ISLAND NI	12.3N	83.1W	1713	3.01M/	9.9FT	28
MONA ISLAND PR	18.1N	67.9W	1718	2.42M/	7.9FT	22
GEORGE TOWN KY	19.3N	81.4W	1717	0.87M/	2.9FT	28
GEORGE TOWN KY	19.3N	81.4W	1712	0.87M/	2.9FT	16
PORT ROYAL JM	17.9N	76.8W	1706	3.32M/	10.9FT	18
BARAHONA DO	18.2N	71.1W	1703	4.86M/	15.9FT	20
JEREMIE HT	18.6N	74.1W	1658	1.63M/	5.3FT	24
BULLEN BAY CURACAO	12.2N	69.0W	1703	1.82M/	6.0FT	26
DART 42407	15.3N	68.2W	1655	0.18M/	0.6FT	18
ORANGESTAD AW	12.5N	70.0W	1654	1.93M/	6.3FT	26
ST LOUIS DU SUD HT	18.2N	73.6W	1647	4.03M/	13.2FT	26
BALLENAS CO	11.7N	72.7W	1639	4.61M/	15.1FT	26
BOCAS DEL TORO PA	9.4N	82.3W	1633	3.69M/	12.1FT	20
LIMON CR	10.0N	83.0W	1622	3.15M/	10.3FT	22
SAN ANDRES CO	12.6N	81.7W	1609	2.79M/	9.2FT	22
SANTA MARTA CO	11.2N	74.2W	1604	9.33M/	30.6FT	16
ISLA FUERTE CO	9.4N	76.2W	1555	14.48M/	47.5FT	24
SAPZURRO CO	8.7N	77.4W	1552	12.38M/	40.6FT	14
COVENAS CO	9.4N	76.2W	1553	14.48M/	47.5FT	20
ISLA NAVAL CO	10.2N	75.8W	1539	12.03M/	39.5FT	24
CARTEGENA CO	10.4N	75.5W	1542	11.14M/	36.5FT	22
EL PORVENIR PA	9.6N	78.9W	1537	11.07M/	36.3FT	16

TEST... NEXT UPDATE AND ADDITIONAL INFORMATION ...TEST

- * THIS IS A TEST MESSAGE. THE NEXT MESSAGE WILL BE ISSUED IN ONE HOUR... OR SOONER IF THE SITUATION WARRANTS.
- * THIS IS A TEST MESSAGE. AUTHORITATIVE INFORMATION ABOUT THE EARTHQUAKE FROM THE U.S. GEOLOGICAL SURVEY CAN BE FOUND ON THE INTERNET AT EARTHQUAKE.USGS.GOV.
- * THIS IS A TEST MESSAGE. FURTHER INFORMATION ABOUT THIS EVENT MAY BE FOUND AT WWW.TSUNAMI.GOV.
- * THIS IS A TEST MESSAGE. COASTAL REGIONS OF THE US GULF COAST... US EAST COAST... AND THE MARITIME PROVINCES OF CANADA SHOULD REFER TO U.S. NATIONAL TSUNAMI WARNING CENTER MESSAGES THAT CAN BE FOUND AT WWW.TSUNAMI.GOV.

THIS IS A TEST MESSAGE. DO NOT TAKE ACTION BASED ON THIS TEST MESSAGE.

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NNNN

PTWC Message #6

ZCZC
WECA41 PHEB 211900
TSUCAX

TEST...TSUNAMI MESSAGE NUMBER 6...TEST
NWS PACIFIC TSUNAMI WARNING CENTER HONOLULU HI
1900 UTC THU MAR 21 2024

...THIS MESSAGE IS FOR TEST PURPOSES ONLY...
...TEST TSUNAMI THREAT MESSAGE TEST...

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE ****

THIS IS A TEST MESSAGE. 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.

THIS IS A TEST MESSAGE. NATIONAL AUTHORITIES WILL DETERMINE THE APPROPRIATE LEVEL OF ALERT FOR EACH COUNTRY AND MAY ISSUE ADDITIONAL OR MORE REFINED INFORMATION.

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE ****

TEST... PRELIMINARY EARTHQUAKE PARAMETERS ...TEST

* MAGNITUDE 8.5
* ORIGIN TIME 1500 UTC MAR 21 2024
* COORDINATES 9.8 NORTH 77.8 WEST
* DEPTH 25 KM / 16 MILES
* LOCATION NEAR THE NORTH COAST OF COLOMBIA

TEST... EVALUATION ...TEST

- * THIS IS A TEST MESSAGE. AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 8.5 OCCURRED NEAR THE NORTH COAST OF COLOMBIA AT 1500 UTC ON THURSDAY MARCH 21 2024.
- * THIS IS A TEST MESSAGE. TSUNAMI WAVES HAVE BEEN OBSERVED.
- * THIS IS A TEST MESSAGE. BASED ON ALL AVAILABLE DATA... HAZARDOUS TSUNAMI WAVES ARE FORECAST FOR SOME COASTS.

TEST... TSUNAMI THREAT FORECAST ...TEST

- * THIS IS A TEST MESSAGE. TSUNAMI WAVES REACHING MORE THAN 3 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE ALONG SOME COASTS OF

COLOMBIA... COSTA RICA... CUBA... DOMINICAN REPUBLIC...
HAITI... JAMAICA... NICARAGUA... PANAMA... PUERTO RICO AND
VIRGIN ISLANDS... SAN ANDRES AND PROVIDENCIA... AND
VENEZUELA.

- * THIS IS A TEST MESSAGE. TSUNAMI WAVES REACHING 1 TO 3 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE ALONG SOME COASTS OF

ANGUILLA... ANTIGUA AND BARBUDA... ARUBA... BAHAMAS...
BONAIRE... CAYMAN ISLANDS... CURACAO... DOMINICA...
GRENADA... GUADELOUPE... MARTINIQUE... MONTSERRAT... SABA
AND SAINT EUSTATIUS... SAINT BARTHELEMY... SAINT KITTS AND
NEVIS... SAINT LUCIA... SINT MAARTEN... SAINT MARTIN...
AND SAINT VINCENT AND THE GRENADINES.

- * THIS IS A TEST MESSAGE. TSUNAMI WAVES REACHING 0.3 TO 1 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE FOR SOME COASTS OF

BARBADOS... BELIZE... GUATEMALA... HONDURAS... MEXICO...
TRINIDAD AND TOBAGO... AND TURKS AND CAICOS ISLANDS.

- * THIS IS A TEST MESSAGE. 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 OR SMALL ISLANDS AND AT LOCATIONS WITH FRINGING OR BARRIER REEFS WILL LIKELY BE MUCH SMALLER THAN THE FORECAST INDICATES.

- * THIS IS A TEST MESSAGE. FOR ALL OTHER AREAS COVERED BY THIS MESSAGE... THERE IS NO TSUNAMI THREAT ALTHOUGH SMALL SEA LEVEL CHANGES MAY OCCUR.

TEST... RECOMMENDED ACTIONS ...TEST

- * THIS IS A TEST MESSAGE. 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.
- * THIS IS A TEST MESSAGE. PERSONS LOCATED IN THREATENED COASTAL AREAS SHOULD STAY ALERT FOR INFORMATION AND FOLLOW INSTRUCTIONS FROM NATIONAL AND LOCAL AUTHORITIES.

TEST... ESTIMATED TIMES OF ARRIVAL ...TEST

- * THIS IS A TEST MESSAGE. ESTIMATED TIMES OF ARRIVAL -ETA- OF THE INITIAL TSUNAMI WAVE FOR PLACES 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)
FORT DE FRANCE	MARTINIQUE	14.6N	61.1W	1800 03/21
ANEGADA	BR VIRGIN IS	18.8N	64.3W	1801 03/21
COZUMEL	MEXICO	20.5N	87.0W	1801 03/21
PUERTO CORTES	HONDURAS	15.9N	88.0W	1801 03/21
CUMANA	VENEZUELA	10.5N	64.2W	1803 03/21
THE VALLEY	ANGUILLA	18.3N	63.1W	1804 03/21
EXUMA	BAHAMAS	23.6N	75.9W	1805 03/21
CHARLOTTE AMALI	US VIRGIN IS	18.3N	64.9W	1806 03/21
SAINT GEORGES	GRENADA	12.0N	61.8W	1806 03/21
CROOKED ISLAND	BAHAMAS	22.7N	74.1W	1809 03/21
CAT ISLAND	BAHAMAS	24.4N	75.5W	1813 03/21
BAIE LUCAS	SAINT MARTIN	18.1N	63.0W	1818 03/21
BAIE GRAND CASE	SAINT MARTIN	18.1N	63.1W	1821 03/21
ELEUTHERA ISLAN	BAHAMAS	25.2N	76.1W	1822 03/21
BRIDGETOWN	BARBADOS	13.1N	59.6W	1822 03/21
SAINT BARTHELEM	SAINT BARTHELEMY	17.9N	62.8W	1823 03/21
LA HABANA	CUBA	23.2N	82.4W	1827 03/21
SAINT JOHNS	ANTIGUA	17.1N	61.9W	1828 03/21
ANDROS ISLAND	BAHAMAS	25.0N	77.9W	1830 03/21
PALMETTO POINT	BARBUDA	17.6N	61.9W	1831 03/21
BAIE BLANCHE	SAINT MARTIN	18.1N	63.0W	1837 03/21
NASSAU	BAHAMAS	25.1N	77.4W	1843 03/21
TRUJILLO	HONDURAS	15.9N	86.0W	1847 03/21
PIRATES BAY	TRINIDAD TOBAGO	11.3N	60.6W	1849 03/21
ROADTOWN	BR VIRGIN IS	18.4N	64.6W	1852 03/21
FREEPORT	BAHAMAS	26.5N	78.8W	1855 03/21
ABACO ISLAND	BAHAMAS	26.6N	77.1W	1859 03/21
PUNTO FIJO	VENEZUELA	11.7N	70.2W	1903 03/21
BIMINI	BAHAMAS	25.8N	79.3W	1908 03/21
BELIZE CITY	BELIZE	17.5N	88.2W	1911 03/21
PORT OF SPAIN	TRINIDAD TOBAGO	10.6N	61.5W	1920 03/21
PUERTO BARRIOS	GUATEMALA	15.7N	88.6W	1954 03/21
SANTA CRZ D SUR	CUBA	20.7N	78.0W	2001 03/21
GOLFO VENEZUELA	VENEZUELA	11.4N	71.2W	2002 03/21
PUERTO CABEZAS	NICARAGUA	14.0N	83.4W	2049 03/21
NUEVA GERONA	CUBA	21.9N	82.8W	2117 03/21
PORLAMAR	VENEZUELA	10.9N	63.8W	2127 03/21
PROGRESO	MEXICO	21.3N	89.7W	2148 03/21

TEST... POTENTIAL IMPACTS ...TEST

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* THIS IS A TEST MESSAGE. IMPACTS CAN ALSO VARY DEPENDING UPON THE STATE OF THE TIDE AT THE TIME OF THE MAXIMUM TSUNAMI

WAVES.

* THIS IS A TEST MESSAGE. PERSONS CAUGHT IN THE WATER OF A
TSUNAMI MAY DROWN... BE CRUSHED BY DEBRIS IN THE WATER... OR
BE SWEEPED OUT TO SEA.

TEST... TSUNAMI OBSERVATIONS ...TEST

* THIS IS A TEST MESSAGE. 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		TIME OF MEASURE (UTC)	MAXIMUM TSUNAMI HEIGHT	WAVE PERIOD (MIN)
	LAT	LON			
SCARBOROUGH TT	11.2N	60.7W	1859	0.34M/ 1.1FT	20
BARBUDA AG	17.6N	61.8W	1856	0.34M/ 1.1FT	20
ISLA MUJERES MX	21.3N	86.7W	1839	0.59M/ 1.9FT	18
PORT ST CHARLES BB	13.3N	59.6W	1831	0.56M/ 1.8FT	28
GANTERS BAY ST LUCI	14.0N	61.0W	1833	1.18M/ 3.9FT	22
SOUFRIERE ST LUCIA	13.9N	61.1W	1826	1.40M/ 4.6FT	28
PARHAM AT	17.1N	61.8W	1829	0.38M/ 1.2FT	24
BLOWING POINT AI	18.2N	63.1W	1827	1.01M/ 3.3FT	14
FAJARDO PR	18.3N	65.6W	1823	0.69M/ 2.3FT	28
LE ROBERT MQ	14.7N	60.9W	1829	0.43M/ 1.4FT	24
TURBO CO	8.1N	76.7W	1827	9.71M/ 31.8FT	28
VIEUX FORT ST LUCIA	13.7N	61.0W	1825	1.21M/ 4.0FT	28
SAINT MARTIN FR	18.1N	63.1W	1823	0.90M/ 3.0FT	16
CEIBA CABOTAGE HN	15.8N	86.8W	1826	0.52M/ 1.7FT	18
CULEBRA IS PR	18.3N	65.3W	1824	1.58M/ 5.2FT	28
DESIRADE GUADELOUPE	16.3N	61.1W	1821	0.39M/ 1.3FT	26
DENNERY ST LUCIA LC	13.9N	60.9W	1818	0.55M/ 1.8FT	28
PRICKLEY BAY GD	12.0N	61.8W	1817	1.55M/ 5.1FT	26
CHARLOTTE-AMALIE VI	18.3N	64.9W	1820	1.26M/ 4.1FT	22
POINT A PITRE GP	16.2N	61.5W	1817	0.69M/ 2.3FT	28
SAPODILLA BAY UK	21.7N	72.3W	1820	0.38M/ 1.3FT	24
LAMESHURBAYSTJOHNVI	18.3N	64.7W	1813	1.14M/ 3.8FT	20
CARRIE BOW CAY BZ	16.8N	88.1W	1808	0.56M/ 1.8FT	26
PUERTO CORTES HN	15.8N	88.0W	1807	0.44M/ 1.5FT	20
CALLIAQUA VC	13.1N	61.2W	1815	1.61M/ 5.3FT	16
FORT DE FRANCE MQ	14.6N	61.1W	1814	1.32M/ 4.3FT	20
SIAN KAN MX	19.3N	87.4W	1813	0.56M/ 1.8FT	20
PUERTO EL BLUFF NI	12.0N	83.7W	1807	3.21M/ 10.5FT	18
PUERTO MORELOS MX	20.9N	86.9W	1810	0.65M/ 2.1FT	18
PUERTO MORELOS MX	20.9N	86.9W	1803	0.65M/ 2.1FT	24
PUERTO MORELOS MX	20.9N	86.9W	1804	0.65M/ 2.1FT	18
CHATEAUBELAIR VC	13.3N	61.2W	1806	1.27M/ 4.2FT	28
PORT AU PRINCE HT	18.5N	72.4W	1806	1.98M/ 6.5FT	18
ROSEAU DM	15.3N	61.4W	1808	1.23M/ 4.0FT	20
LE PRECHEUR MQ	14.8N	61.2W	1808	1.09M/ 3.6FT	22
PORTSMOUTH DM	15.6N	61.5W	1804	1.17M/ 3.9FT	26
DESHAIES GUADELOUPE	16.3N	61.8W	1801	1.13M/ 3.7FT	22
BASSETERRE KN	17.3N	62.7W	1755	1.11M/ 3.6FT	24
GRAND TURK ISLAND T	21.4N	71.1W	1752	0.30M/ 1.0FT	28

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GRAND TURK UK	21.4N	71.1W	1758	0.30M/	1.0FT	18
ISABELII VIEQUES PR	18.2N	65.4W	1752	1.58M/	5.2FT	14
SALINAS PR	17.9N	66.2W	1747	2.37M/	7.8FT	18
SAN JUAN PR	18.5N	66.1W	1745	0.68M/	2.2FT	24
ROATAN ISLAND HN	16.3N	86.5W	1749	0.52M/	1.7FT	26
PUERTO PLATA DO	19.8N	70.7W	1750	0.41M/	1.4FT	22
ARECIBO PR	18.5N	66.7W	1744	0.85M/	2.8FT	22
ESPERANZA VIEQUES P	18.1N	65.5W	1740	1.98M/	6.5FT	26
CAP HAITIEN HT	19.8N	72.2W	1734	0.59M/	1.9FT	16
AGUADILLA PR	18.5N	67.2W	1735	1.41M/	4.6FT	22
LIMETREE VI	17.7N	64.8W	1735	1.65M/	5.4FT	26
ST CROIX VI	17.7N	64.7W	1735	1.58M/	5.2FT	22
PORT SAN ANDRES DO	18.4N	69.6W	1732	4.00M/	13.1FT	18
YABUCOA PR	18.1N	65.8W	1733	2.56M/	8.4FT	28
MAGUEYES ISLAND PR	18.0N	67.0W	1734	2.83M/	9.3FT	24
MAYAGUEZ PR	18.2N	67.2W	1725	1.94M/	6.4FT	14
CAYMAN BRAC KY	19.7N	79.8W	1728	1.22M/	4.0FT	26
PUNTA CANA DO	18.5N	68.4W	1722	1.72M/	5.6FT	28
GUAYANILLA PR	18.0N	66.8W	1719	2.90M/	9.5FT	28
LITTLE CAYMAN KY	19.7N	80.1W	1716	1.07M/	3.5FT	22
GUN BAY KY	19.3N	81.1W	1714	1.13M/	3.7FT	16
CORN ISLAND NI	12.3N	83.1W	1713	3.01M/	9.9FT	28
MONA ISLAND PR	18.1N	67.9W	1718	2.42M/	7.9FT	22
GEORGE TOWN KY	19.3N	81.4W	1717	0.87M/	2.9FT	28
GEORGE TOWN KY	19.3N	81.4W	1712	0.87M/	2.9FT	16
PORT ROYAL JM	17.9N	76.8W	1706	3.32M/	10.9FT	18
BARAHONA DO	18.2N	71.1W	1703	4.86M/	15.9FT	20
JEREMIE HT	18.6N	74.1W	1658	1.63M/	5.3FT	24
BULLEN BAY CURACAO	12.2N	69.0W	1703	1.82M/	6.0FT	26
DART 42407	15.3N	68.2W	1655	0.18M/	0.6FT	18
ORANGESTAD AW	12.5N	70.0W	1654	1.93M/	6.3FT	26
ST LOUIS DU SUD HT	18.2N	73.6W	1647	4.03M/	13.2FT	26
BALLENAS CO	11.7N	72.7W	1639	4.61M/	15.1FT	26
BOCAS DEL TORO PA	9.4N	82.3W	1633	3.69M/	12.1FT	20
LIMON CR	10.0N	83.0W	1622	3.15M/	10.3FT	22
SAN ANDRES CO	12.6N	81.7W	1609	2.79M/	9.2FT	22
SANTA MARTA CO	11.2N	74.2W	1604	9.33M/	30.6FT	16
ISLA FUERTE CO	9.4N	76.2W	1555	14.48M/	47.5FT	24
SAPZURRO CO	8.7N	77.4W	1552	12.38M/	40.6FT	14
COVENAS CO	9.4N	76.2W	1553	14.48M/	47.5FT	20
ISLA NAVAL CO	10.2N	75.8W	1539	12.03M/	39.5FT	24
CARTEGENA CO	10.4N	75.5W	1542	11.14M/	36.5FT	22
EL PORVENIR PA	9.6N	78.9W	1537	11.07M/	36.3FT	16

TEST... NEXT UPDATE AND ADDITIONAL INFORMATION ...TEST

* THIS IS A TEST MESSAGE. THE NEXT MESSAGE WILL BE ISSUED IN ONE HOUR... OR SOONER IF THE SITUATION WARRANTS.

* THIS IS A TEST MESSAGE. AUTHORITATIVE INFORMATION ABOUT THE EARTHQUAKE FROM THE U.S. GEOLOGICAL SURVEY CAN BE FOUND ON THE INTERNET AT EARTHQUAKE.USGS.GOV.

* THIS IS A TEST MESSAGE. FURTHER INFORMATION ABOUT THIS EVENT MAY BE FOUND AT WWW.TSUNAMI.GOV.

* THIS IS A TEST MESSAGE. COASTAL REGIONS OF THE US GULF
COAST... US EAST COAST... AND THE MARITIME PROVINCES OF
CANADA SHOULD REFER TO U.S. NATIONAL TSUNAMI WARNING CENTER
MESSAGES THAT CAN BE FOUND AT WWW.TSUNAMI.GOV.

THIS IS A TEST MESSAGE. DO NOT TAKE ACTION BASED ON THIS TEST
MESSAGE.

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NNNN

PTWC Message #7

ZCZC
WECA41 PHEB 212000
TSUCAX

TEST...TSUNAMI MESSAGE NUMBER 7...TEST
NWS PACIFIC TSUNAMI WARNING CENTER HONOLULU HI
2000 UTC THU MAR 21 2024

...THIS MESSAGE IS FOR TEST PURPOSES ONLY...
...TEST TSUNAMI THREAT MESSAGE TEST...

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE ****

THIS IS A TEST MESSAGE. 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.

THIS IS A TEST MESSAGE. NATIONAL AUTHORITIES WILL DETERMINE THE APPROPRIATE LEVEL OF ALERT FOR EACH COUNTRY AND MAY ISSUE ADDITIONAL OR MORE REFINED INFORMATION.

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE ****

TEST... PRELIMINARY EARTHQUAKE PARAMETERS ...TEST

* MAGNITUDE 8.5
* ORIGIN TIME 1500 UTC MAR 21 2024
* COORDINATES 9.8 NORTH 77.8 WEST
* DEPTH 25 KM / 16 MILES
* LOCATION NEAR THE NORTH COAST OF COLOMBIA

TEST... EVALUATION ...TEST

* THIS IS A TEST MESSAGE. AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 8.5 OCCURRED NEAR THE NORTH COAST OF COLOMBIA AT 1500 UTC ON THURSDAY MARCH 21 2024.

* THIS IS A TEST MESSAGE. TSUNAMI WAVES HAVE BEEN OBSERVED.

* THIS IS A TEST MESSAGE. BASED ON ALL AVAILABLE DATA... HAZARDOUS TSUNAMI WAVES ARE FORECAST FOR SOME COASTS.

TEST... TSUNAMI THREAT FORECAST ...TEST

* THIS IS A TEST MESSAGE. TSUNAMI WAVES REACHING MORE THAN 3 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE ALONG SOME COASTS OF

COLOMBIA... COSTA RICA... CUBA... DOMINICAN REPUBLIC...
HAITI... JAMAICA... NICARAGUA... PANAMA... PUERTO RICO AND
VIRGIN ISLANDS... SAN ANDRES AND PROVIDENCIA... AND
VENEZUELA.

- * THIS IS A TEST MESSAGE. TSUNAMI WAVES REACHING 1 TO 3 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE ALONG SOME COASTS OF

ANGUILLA... ANTIGUA AND BARBUDA... ARUBA... BAHAMAS...
BONAIRE... CAYMAN ISLANDS... CURACAO... DOMINICA...
GRENADA... GUADELOUPE... MARTINIQUE... MONTSERRAT... SABA
AND SAINT EUSTATIUS... SAINT BARTHELEMY... SAINT KITTS AND
NEVIS... SAINT LUCIA... SINT MAARTEN... SAINT MARTIN...
AND SAINT VINCENT AND THE GRENADINES.

- * THIS IS A TEST MESSAGE. TSUNAMI WAVES REACHING 0.3 TO 1 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE FOR SOME COASTS OF

BARBADOS... BELIZE... GUATEMALA... HONDURAS... MEXICO...
TRINIDAD AND TOBAGO... AND TURKS AND CAICOS ISLANDS.

- * THIS IS A TEST MESSAGE. 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 OR SMALL ISLANDS AND AT LOCATIONS WITH FRINGING OR BARRIER REEFS WILL LIKELY BE MUCH SMALLER THAN THE FORECAST INDICATES.

- * THIS IS A TEST MESSAGE. FOR ALL OTHER AREAS COVERED BY THIS MESSAGE... THERE IS NO TSUNAMI THREAT ALTHOUGH SMALL SEA LEVEL CHANGES MAY OCCUR.

TEST... RECOMMENDED ACTIONS ...TEST

- * THIS IS A TEST MESSAGE. 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.
- * THIS IS A TEST MESSAGE. PERSONS LOCATED IN THREATENED COASTAL AREAS SHOULD STAY ALERT FOR INFORMATION AND FOLLOW INSTRUCTIONS FROM NATIONAL AND LOCAL AUTHORITIES.

TEST... ESTIMATED TIMES OF ARRIVAL ...TEST

- * THIS IS A TEST MESSAGE. ESTIMATED TIMES OF ARRIVAL -ETA- OF THE INITIAL TSUNAMI WAVE FOR PLACES 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)
PUNTO FIJO	VENEZUELA	11.7N	70.2W	1903 03/21
BIMINI	BAHAMAS	25.8N	79.3W	1908 03/21
BELIZE CITY	BELIZE	17.5N	88.2W	1911 03/21
PORT OF SPAIN	TRINIDAD TOBAGO	10.6N	61.5W	1920 03/21
PUERTO BARRIOS	GUATEMALA	15.7N	88.6W	1954 03/21
SANTA CRZ D SUR	CUBA	20.7N	78.0W	2001 03/21
GOLFO VENEZUELA	VENEZUELA	11.4N	71.2W	2002 03/21
PUERTO CABEZAS	NICARAGUA	14.0N	83.4W	2049 03/21
NUEVA GERONA	CUBA	21.9N	82.8W	2117 03/21
PORLAMAR	VENEZUELA	10.9N	63.8W	2127 03/21
PROGRESO	MEXICO	21.3N	89.7W	2148 03/21

TEST... POTENTIAL IMPACTS ...TEST

- * THIS IS A TEST MESSAGE. 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.
- * THIS IS A TEST MESSAGE. IMPACTS CAN VARY SIGNIFICANTLY FROM ONE SECTION OF COAST TO THE NEXT DUE TO LOCAL BATHYMETRY AND THE SHAPE AND ELEVATION OF THE SHORELINE.
- * THIS IS A TEST MESSAGE. IMPACTS CAN ALSO VARY DEPENDING UPON THE STATE OF THE TIDE AT THE TIME OF THE MAXIMUM TSUNAMI WAVES.
- * THIS IS A TEST MESSAGE. PERSONS CAUGHT IN THE WATER OF A TSUNAMI MAY DROWN... BE CRUSHED BY DEBRIS IN THE WATER... OR BE SWEEPED OUT TO SEA.

TEST... TSUNAMI OBSERVATIONS ...TEST

- * THIS IS A TEST MESSAGE. 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		TIME OF MEASURE (UTC)	MAXIMUM TSUNAMI HEIGHT	WAVE PERIOD (MIN)
	LAT	LON			
VACA KEY FL	24.7N	81.1W	1950	0.09M/ 0.3FT	24
KEY WEST FL	24.6N	81.8W	1949	0.12M/ 0.4FT	28
BERMUDA BIO STA UK	32.4N	64.7W	1929	0.29M/ 1.0FT	16
PORT OF SPAIN TT	10.6N	61.5W	1933	0.48M/ 1.6FT	24
BERMUDA ST GEORGE U	32.4N	64.7W	1933	0.29M/ 1.0FT	16
BERMUDA SOMERSET UK	32.3N	64.9W	1925	0.23M/ 0.7FT	24
PORT OF BELIZE BZ	17.5N	88.2W	1922	0.46M/ 1.5FT	14
TORTOLA VI UK	18.4N	64.6W	1907	1.22M/ 4.0FT	16

SCARBOROUGH TT	11.2N	60.7W	1859	0.34M/	1.1FT	20
BARBUDA AG	17.6N	61.8W	1856	0.34M/	1.1FT	20
ISLA MUJERES MX	21.3N	86.7W	1839	0.59M/	1.9FT	18
PORT ST CHARLES BB	13.3N	59.6W	1831	0.56M/	1.8FT	28
GANTERS BAY ST LUCI	14.0N	61.0W	1833	1.18M/	3.9FT	22
SOUFRIERE ST LUCIA	13.9N	61.1W	1826	1.40M/	4.6FT	28
PARHAM AT	17.1N	61.8W	1829	0.38M/	1.2FT	24
BLOWING POINT AI	18.2N	63.1W	1827	1.01M/	3.3FT	14
FAJARDO PR	18.3N	65.6W	1823	0.69M/	2.3FT	28
LE ROBERT MQ	14.7N	60.9W	1829	0.43M/	1.4FT	24
TURBO CO	8.1N	76.7W	1827	9.71M/31.8FT		28
VIEUX FORT ST LUCIA	13.7N	61.0W	1825	1.21M/	4.0FT	28
SAINT MARTIN FR	18.1N	63.1W	1823	0.90M/	3.0FT	16
CEIBA CABOTAGE HN	15.8N	86.8W	1826	0.52M/	1.7FT	18
CULEBRA IS PR	18.3N	65.3W	1824	1.58M/	5.2FT	28
DESIRADE GUADELOUPE	16.3N	61.1W	1821	0.39M/	1.3FT	26
DENNERY ST LUCIA LC	13.9N	60.9W	1818	0.55M/	1.8FT	28
PRICKLEY BAY GD	12.0N	61.8W	1817	1.55M/	5.1FT	26
CHARLOTTE-AMALIE VI	18.3N	64.9W	1820	1.26M/	4.1FT	22
POINT A PITRE GP	16.2N	61.5W	1817	0.69M/	2.3FT	28
SAPODILLA BAY UK	21.7N	72.3W	1820	0.38M/	1.3FT	24
LAMESHURBAYSTJOHNVI	18.3N	64.7W	1813	1.14M/	3.8FT	20
CARRIE BOW CAY BZ	16.8N	88.1W	1808	0.56M/	1.8FT	26
PUERTO CORTES HN	15.8N	88.0W	1807	0.44M/	1.5FT	20
CALLIAQUA VC	13.1N	61.2W	1815	1.61M/	5.3FT	16
FORT DE FRANCE MQ	14.6N	61.1W	1814	1.32M/	4.3FT	20
SIAN KAN MX	19.3N	87.4W	1813	0.56M/	1.8FT	20
PUERTO EL BLUFF NI	12.0N	83.7W	1807	3.21M/10.5FT		18
PUERTO MORELOS MX	20.9N	86.9W	1810	0.65M/	2.1FT	18
PUERTO MORELOS MX	20.9N	86.9W	1803	0.65M/	2.1FT	24
PUERTO MORELOS MX	20.9N	86.9W	1804	0.65M/	2.1FT	18
CHATEAUBELAIR VC	13.3N	61.2W	1806	1.27M/	4.2FT	28
PORT AU PRINCE HT	18.5N	72.4W	1806	1.98M/	6.5FT	18
ROSEAU DM	15.3N	61.4W	1808	1.23M/	4.0FT	20
LE PRECHEUR MQ	14.8N	61.2W	1808	1.09M/	3.6FT	22
PORTSMOUTH DM	15.6N	61.5W	1804	1.17M/	3.9FT	26
DESHAIES GUADELOUPE	16.3N	61.8W	1801	1.13M/	3.7FT	22
BASSETERRE KN	17.3N	62.7W	1755	1.11M/	3.6FT	24
GRAND TURK ISLAND T	21.4N	71.1W	1752	0.30M/	1.0FT	28
GRAND TURK UK	21.4N	71.1W	1758	0.30M/	1.0FT	18
ISABELII VIEQUES PR	18.2N	65.4W	1752	1.58M/	5.2FT	14
SALINAS PR	17.9N	66.2W	1747	2.37M/	7.8FT	18
SAN JUAN PR	18.5N	66.1W	1745	0.68M/	2.2FT	24
ROATAN ISLAND HN	16.3N	86.5W	1749	0.52M/	1.7FT	26
PUERTO PLATA DO	19.8N	70.7W	1750	0.41M/	1.4FT	22
ARECIBO PR	18.5N	66.7W	1744	0.85M/	2.8FT	22
ESPERANZA VIEQUES P	18.1N	65.5W	1740	1.98M/	6.5FT	26
CAP HAITIEN HT	19.8N	72.2W	1734	0.59M/	1.9FT	16
AGUADILLA PR	18.5N	67.2W	1735	1.41M/	4.6FT	22
LIMETREE VI	17.7N	64.8W	1735	1.65M/	5.4FT	26
ST CROIX VI	17.7N	64.7W	1735	1.58M/	5.2FT	22
PORT SAN ANDRES DO	18.4N	69.6W	1732	4.00M/13.1FT		18
YABUCOA PR	18.1N	65.8W	1733	2.56M/	8.4FT	28
MAGUEYES ISLAND PR	18.0N	67.0W	1734	2.83M/	9.3FT	24
MAYAGUEZ PR	18.2N	67.2W	1725	1.94M/	6.4FT	14
CAYMAN BRAC KY	19.7N	79.8W	1728	1.22M/	4.0FT	26
PUNTA CANA DO	18.5N	68.4W	1722	1.72M/	5.6FT	28
GUAYANILLA PR	18.0N	66.8W	1719	2.90M/	9.5FT	28

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LITTLE CAYMAN KY	19.7N	80.1W	1716	1.07M/ 3.5FT	22
GUN BAY KY	19.3N	81.1W	1714	1.13M/ 3.7FT	16
CORN ISLAND NI	12.3N	83.1W	1713	3.01M/ 9.9FT	28
MONA ISLAND PR	18.1N	67.9W	1718	2.42M/ 7.9FT	22
GEORGE TOWN KY	19.3N	81.4W	1717	0.87M/ 2.9FT	28
GEORGE TOWN KY	19.3N	81.4W	1712	0.87M/ 2.9FT	16
PORT ROYAL JM	17.9N	76.8W	1706	3.32M/10.9FT	18
BARAHONA DO	18.2N	71.1W	1703	4.86M/15.9FT	20
JEREMIE HT	18.6N	74.1W	1658	1.63M/ 5.3FT	24
BULLEN BAY CURACAO	12.2N	69.0W	1703	1.82M/ 6.0FT	26
DART 42407	15.3N	68.2W	1655	0.18M/ 0.6FT	18
ORANGESTAD AW	12.5N	70.0W	1654	1.93M/ 6.3FT	26
ST LOUIS DU SUD HT	18.2N	73.6W	1647	4.03M/13.2FT	26
BALLENAS CO	11.7N	72.7W	1639	4.61M/15.1FT	26
BOCAS DEL TORO PA	9.4N	82.3W	1633	3.69M/12.1FT	20
LIMON CR	10.0N	83.0W	1622	3.15M/10.3FT	22
SAN ANDRES CO	12.6N	81.7W	1609	2.79M/ 9.2FT	22
SANTA MARTA CO	11.2N	74.2W	1604	9.33M/30.6FT	16
ISLA FUERTE CO	9.4N	76.2W	1555	14.48M/47.5FT	24
SAPZURRO CO	8.7N	77.4W	1552	12.38M/40.6FT	14
COVENAS CO	9.4N	76.2W	1553	14.48M/47.5FT	20
ISLA NAVAL CO	10.2N	75.8W	1539	12.03M/39.5FT	24
CARTEGENA CO	10.4N	75.5W	1542	11.14M/36.5FT	22
EL PORVENIR PA	9.6N	78.9W	1537	11.07M/36.3FT	16

TEST... NEXT UPDATE AND ADDITIONAL INFORMATION ...TEST

- * THIS IS A TEST MESSAGE. THE NEXT MESSAGE WILL BE ISSUED IN ONE HOUR... OR SOONER IF THE SITUATION WARRANTS.
- * THIS IS A TEST MESSAGE. AUTHORITATIVE INFORMATION ABOUT THE EARTHQUAKE FROM THE U.S. GEOLOGICAL SURVEY CAN BE FOUND ON THE INTERNET AT EARTHQUAKE.USGS.GOV.
- * THIS IS A TEST MESSAGE. FURTHER INFORMATION ABOUT THIS EVENT MAY BE FOUND AT WWW.TSUNAMI.GOV.
- * THIS IS A TEST MESSAGE. COASTAL REGIONS OF THE US GULF COAST... US EAST COAST... AND THE MARITIME PROVINCES OF CANADA SHOULD REFER TO U.S. NATIONAL TSUNAMI WARNING CENTER MESSAGES THAT CAN BE FOUND AT WWW.TSUNAMI.GOV.

THIS IS A TEST MESSAGE. DO NOT TAKE ACTION BASED ON THIS TEST MESSAGE.

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NNNN

PTWC Message #8

ZCZC
WECA41 PHEB 212100
TSUCAX

TEST...TSUNAMI MESSAGE NUMBER 8...TEST
NWS PACIFIC TSUNAMI WARNING CENTER HONOLULU HI
2100 UTC THU MAR 21 2024

...THIS MESSAGE IS FOR TEST PURPOSES ONLY...
...TEST TSUNAMI THREAT MESSAGE TEST...

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE ****

THIS IS A TEST MESSAGE. 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.

THIS IS A TEST MESSAGE. NATIONAL AUTHORITIES WILL DETERMINE THE APPROPRIATE LEVEL OF ALERT FOR EACH COUNTRY AND MAY ISSUE ADDITIONAL OR MORE REFINED INFORMATION.

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE ****

TEST... PRELIMINARY EARTHQUAKE PARAMETERS ...TEST

* MAGNITUDE 8.5
* ORIGIN TIME 1500 UTC MAR 21 2024
* COORDINATES 9.8 NORTH 77.8 WEST
* DEPTH 25 KM / 16 MILES
* LOCATION NEAR THE NORTH COAST OF COLOMBIA

TEST... EVALUATION ...TEST

- * THIS IS A TEST MESSAGE. AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 8.5 OCCURRED NEAR THE NORTH COAST OF COLOMBIA AT 1500 UTC ON THURSDAY MARCH 21 2024.
- * THIS IS A TEST MESSAGE. TSUNAMI WAVES HAVE BEEN OBSERVED.
- * THIS IS A TEST MESSAGE. BASED ON ALL AVAILABLE DATA... HAZARDOUS TSUNAMI WAVES ARE FORECAST FOR SOME COASTS.

TEST... TSUNAMI THREAT FORECAST ...TEST

- * THIS IS A TEST MESSAGE. TSUNAMI WAVES REACHING MORE THAN 3 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE ALONG SOME COASTS

OF

COLOMBIA... COSTA RICA... CUBA... DOMINICAN REPUBLIC...
HAITI... JAMAICA... NICARAGUA... PANAMA... PUERTO RICO AND
VIRGIN ISLANDS... SAN ANDRES AND PROVIDENCIA... AND
VENEZUELA.

- * THIS IS A TEST MESSAGE. TSUNAMI WAVES REACHING 1 TO 3 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE ALONG SOME COASTS OF

ANGUILLA... ANTIGUA AND BARBUDA... ARUBA... BAHAMAS...
BONAIRE... CAYMAN ISLANDS... CURACAO... DOMINICA...
GRENADA... GUADELOUPE... MARTINIQUE... MONTSERRAT... SABA
AND SAINT EUSTATIUS... SAINT BARTHELEMY... SAINT KITTS AND
NEVIS... SAINT LUCIA... SINT MAARTEN... SAINT MARTIN...
AND SAINT VINCENT AND THE GRENADINES.

- * THIS IS A TEST MESSAGE. TSUNAMI WAVES REACHING 0.3 TO 1 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE FOR SOME COASTS OF

BARBADOS... BELIZE... GUATEMALA... HONDURAS... MEXICO...
TRINIDAD AND TOBAGO... AND TURKS AND CAICOS ISLANDS.

- * THIS IS A TEST MESSAGE. 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 OR SMALL ISLANDS AND AT LOCATIONS WITH FRINGING OR BARRIER REEFS WILL LIKELY BE MUCH SMALLER THAN THE FORECAST INDICATES.

- * THIS IS A TEST MESSAGE. FOR ALL OTHER AREAS COVERED BY THIS MESSAGE... THERE IS NO TSUNAMI THREAT ALTHOUGH SMALL SEA LEVEL CHANGES MAY OCCUR.

TEST... RECOMMENDED ACTIONS ...TEST

- * THIS IS A TEST MESSAGE. 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.
- * THIS IS A TEST MESSAGE. PERSONS LOCATED IN THREATENED COASTAL AREAS SHOULD STAY ALERT FOR INFORMATION AND FOLLOW INSTRUCTIONS FROM NATIONAL AND LOCAL AUTHORITIES.

TEST... ESTIMATED TIMES OF ARRIVAL ...TEST

- * THIS IS A TEST MESSAGE. ESTIMATED TIMES OF ARRIVAL -ETA- OF THE INITIAL TSUNAMI WAVE FOR PLACES 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)
SANTA CRZ D SUR	CUBA	20.7N	78.0W	2001 03/21
GOLFO VENEZUELA	VENEZUELA	11.4N	71.2W	2002 03/21
PUERTO CABEZAS	NICARAGUA	14.0N	83.4W	2049 03/21
NUEVA GERONA	CUBA	21.9N	82.8W	2117 03/21
PORLAMAR	VENEZUELA	10.9N	63.8W	2127 03/21
PROGRESO	MEXICO	21.3N	89.7W	2148 03/21

TEST... POTENTIAL IMPACTS ...TEST

- * THIS IS A TEST MESSAGE. 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.
- * THIS IS A TEST MESSAGE. IMPACTS CAN VARY SIGNIFICANTLY FROM ONE SECTION OF COAST TO THE NEXT DUE TO LOCAL BATHYMETRY AND THE SHAPE AND ELEVATION OF THE SHORELINE.
- * THIS IS A TEST MESSAGE. IMPACTS CAN ALSO VARY DEPENDING UPON THE STATE OF THE TIDE AT THE TIME OF THE MAXIMUM TSUNAMI WAVES.
- * THIS IS A TEST MESSAGE. PERSONS CAUGHT IN THE WATER OF A TSUNAMI MAY DROWN... BE CRUSHED BY DEBRIS IN THE WATER... OR BE SWEEPED OUT TO SEA.

TEST... TSUNAMI OBSERVATIONS ...TEST

- * THIS IS A TEST MESSAGE. 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		TIME OF MEASURE (UTC)	MAXIMUM TSUNAMI HEIGHT	WAVE PERIOD (MIN)
	LAT	LON			
PUERTO BILWI NI	14.0N	83.4W	2057	2.84M/ 9.3FT	16
GRAND ISLE LA	29.3N	90.0W	2054	0.05M/ 0.2FT	16
GALEOTA TT	10.1N	61.0W	2018	0.22M/ 0.7FT	16
VACA KEY FL	24.7N	81.1W	1950	0.09M/ 0.3FT	24
KEY WEST FL	24.6N	81.8W	1949	0.12M/ 0.4FT	28
BERMUDA BIO STA UK	32.4N	64.7W	1929	0.29M/ 1.0FT	16
PORT OF SPAIN TT	10.6N	61.5W	1933	0.48M/ 1.6FT	24
BERMUDA ST GEORGE U	32.4N	64.7W	1933	0.29M/ 1.0FT	16
BERMUDA SOMERSET UK	32.3N	64.9W	1925	0.23M/ 0.7FT	24
PORT OF BELIZE BZ	17.5N	88.2W	1922	0.46M/ 1.5FT	14
TORTOLA VI UK	18.4N	64.6W	1907	1.22M/ 4.0FT	16
SCARBOROUGH TT	11.2N	60.7W	1859	0.34M/ 1.1FT	20

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BARBUDA AG	17.6N	61.8W	1856	0.34M/	1.1FT	20
ISLA MUJERES MX	21.3N	86.7W	1839	0.59M/	1.9FT	18
PORT ST CHARLES BB	13.3N	59.6W	1831	0.56M/	1.8FT	28
GANTERS BAY ST LUCI	14.0N	61.0W	1833	1.18M/	3.9FT	22
SOUFRIERE ST LUCIA	13.9N	61.1W	1826	1.40M/	4.6FT	28
PARHAM AT	17.1N	61.8W	1829	0.38M/	1.2FT	24
BLOWING POINT AI	18.2N	63.1W	1827	1.01M/	3.3FT	14
FAJARDO PR	18.3N	65.6W	1823	0.69M/	2.3FT	28
LE ROBERT MQ	14.7N	60.9W	1829	0.43M/	1.4FT	24
TURBO CO	8.1N	76.7W	1827	9.71M/31.8FT		28
VIEUX FORT ST LUCIA	13.7N	61.0W	1825	1.21M/	4.0FT	28
SAINT MARTIN FR	18.1N	63.1W	1823	0.90M/	3.0FT	16
CEIBA CABOTAGE HN	15.8N	86.8W	1826	0.52M/	1.7FT	18
CULEBRA IS PR	18.3N	65.3W	1824	1.58M/	5.2FT	28
DESIRADE GUADELOUPE	16.3N	61.1W	1821	0.39M/	1.3FT	26
DENNERY ST LUCIA LC	13.9N	60.9W	1818	0.55M/	1.8FT	28
PRICKLEY BAY GD	12.0N	61.8W	1817	1.55M/	5.1FT	26
CHARLOTTE-AMALIE VI	18.3N	64.9W	1820	1.26M/	4.1FT	22
POINT A PITRE GP	16.2N	61.5W	1817	0.69M/	2.3FT	28
SAPODILLA BAY UK	21.7N	72.3W	1820	0.38M/	1.3FT	24
LAMESHURBAYSTJOHNVI	18.3N	64.7W	1813	1.14M/	3.8FT	20
CARRIE BOW CAY BZ	16.8N	88.1W	1808	0.56M/	1.8FT	26
PUERTO CORTES HN	15.8N	88.0W	1807	0.44M/	1.5FT	20
CALLIAQUA VC	13.1N	61.2W	1815	1.61M/	5.3FT	16
FORT DE FRANCE MQ	14.6N	61.1W	1814	1.32M/	4.3FT	20
SIAN KAN MX	19.3N	87.4W	1813	0.56M/	1.8FT	20
PUERTO EL BLUFF NI	12.0N	83.7W	1807	3.21M/10.5FT		18
PUERTO MORELOS MX	20.9N	86.9W	1810	0.65M/	2.1FT	18
PUERTO MORELOS MX	20.9N	86.9W	1803	0.65M/	2.1FT	24
PUERTO MORELOS MX	20.9N	86.9W	1804	0.65M/	2.1FT	18
CHATEAUBELAIR VC	13.3N	61.2W	1806	1.27M/	4.2FT	28
PORT AU PRINCE HT	18.5N	72.4W	1806	1.98M/	6.5FT	18
ROSEAU DM	15.3N	61.4W	1808	1.23M/	4.0FT	20
LE PRECHEUR MQ	14.8N	61.2W	1808	1.09M/	3.6FT	22
PORTSMOUTH DM	15.6N	61.5W	1804	1.17M/	3.9FT	26
DESHAIES GUADELOUPE	16.3N	61.8W	1801	1.13M/	3.7FT	22
BASSETERRE KN	17.3N	62.7W	1755	1.11M/	3.6FT	24
GRAND TURK ISLAND T	21.4N	71.1W	1752	0.30M/	1.0FT	28
GRAND TURK UK	21.4N	71.1W	1758	0.30M/	1.0FT	18
ISABELII VIEQUES PR	18.2N	65.4W	1752	1.58M/	5.2FT	14
SALINAS PR	17.9N	66.2W	1747	2.37M/	7.8FT	18
SAN JUAN PR	18.5N	66.1W	1745	0.68M/	2.2FT	24
ROATAN ISLAND HN	16.3N	86.5W	1749	0.52M/	1.7FT	26
PUERTO PLATA DO	19.8N	70.7W	1750	0.41M/	1.4FT	22
ARECIBO PR	18.5N	66.7W	1744	0.85M/	2.8FT	22
ESPERANZA VIEQUES P	18.1N	65.5W	1740	1.98M/	6.5FT	26
CAP HAITIEN HT	19.8N	72.2W	1734	0.59M/	1.9FT	16
AGUADILLA PR	18.5N	67.2W	1735	1.41M/	4.6FT	22
LIMETREE VI	17.7N	64.8W	1735	1.65M/	5.4FT	26
ST CROIX VI	17.7N	64.7W	1735	1.58M/	5.2FT	22
PORT SAN ANDRES DO	18.4N	69.6W	1732	4.00M/13.1FT		18
YABUCOA PR	18.1N	65.8W	1733	2.56M/	8.4FT	28
MAGUEYES ISLAND PR	18.0N	67.0W	1734	2.83M/	9.3FT	24
MAYAGUEZ PR	18.2N	67.2W	1725	1.94M/	6.4FT	14
CAYMAN BRAC KY	19.7N	79.8W	1728	1.22M/	4.0FT	26
PUNTA CANA DO	18.5N	68.4W	1722	1.72M/	5.6FT	28
GUAYANILLA PR	18.0N	66.8W	1719	2.90M/	9.5FT	28
LITTLE CAYMAN KY	19.7N	80.1W	1716	1.07M/	3.5FT	22

GUN BAY KY	19.3N	81.1W	1714	1.13M/ 3.7FT	16
CORN ISLAND NI	12.3N	83.1W	1713	3.01M/ 9.9FT	28
MONA ISLAND PR	18.1N	67.9W	1718	2.42M/ 7.9FT	22
GEORGE TOWN KY	19.3N	81.4W	1717	0.87M/ 2.9FT	28
GEORGE TOWN KY	19.3N	81.4W	1712	0.87M/ 2.9FT	16
PORT ROYAL JM	17.9N	76.8W	1706	3.32M/10.9FT	18
BARAHONA DO	18.2N	71.1W	1703	4.86M/15.9FT	20
JEREMIE HT	18.6N	74.1W	1658	1.63M/ 5.3FT	24
BULLEN BAY CURACAO	12.2N	69.0W	1703	1.82M/ 6.0FT	26
DART 42407	15.3N	68.2W	1655	0.18M/ 0.6FT	18
ORANGESTAD AW	12.5N	70.0W	1654	1.93M/ 6.3FT	26
ST LOUIS DU SUD HT	18.2N	73.6W	1647	4.03M/13.2FT	26
BALLENAS CO	11.7N	72.7W	1639	4.61M/15.1FT	26
BOCAS DEL TORO PA	9.4N	82.3W	1633	3.69M/12.1FT	20
LIMON CR	10.0N	83.0W	1622	3.15M/10.3FT	22
SAN ANDRES CO	12.6N	81.7W	1609	2.79M/ 9.2FT	22
SANTA MARTA CO	11.2N	74.2W	1604	9.33M/30.6FT	16
ISLA FUERTE CO	9.4N	76.2W	1555	14.48M/47.5FT	24
SAPZURRO CO	8.7N	77.4W	1552	12.38M/40.6FT	14
COVENAS CO	9.4N	76.2W	1553	14.48M/47.5FT	20
ISLA NAVAL CO	10.2N	75.8W	1539	12.03M/39.5FT	24
CARTEGENA CO	10.4N	75.5W	1542	11.14M/36.5FT	22
EL PORVENIR PA	9.6N	78.9W	1537	11.07M/36.3FT	16

TEST... NEXT UPDATE AND ADDITIONAL INFORMATION ...TEST

-
- * THIS IS A TEST MESSAGE. THE NEXT MESSAGE WILL BE ISSUED IN ONE HOUR... OR SOONER IF THE SITUATION WARRANTS.
 - * THIS IS A TEST MESSAGE. AUTHORITATIVE INFORMATION ABOUT THE EARTHQUAKE FROM THE U.S. GEOLOGICAL SURVEY CAN BE FOUND ON THE INTERNET AT EARTHQUAKE.USGS.GOV.
 - * THIS IS A TEST MESSAGE. FURTHER INFORMATION ABOUT THIS EVENT MAY BE FOUND AT WWW.TSUNAMI.GOV.
 - * THIS IS A TEST MESSAGE. COASTAL REGIONS OF THE US GULF COAST... US EAST COAST... AND THE MARITIME PROVINCES OF CANADA SHOULD REFER TO U.S. NATIONAL TSUNAMI WARNING CENTER MESSAGES THAT CAN BE FOUND AT WWW.TSUNAMI.GOV.

THIS IS A TEST MESSAGE. DO NOT TAKE ACTION BASED ON THIS TEST MESSAGE.

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NNNN

PTWC Message #9

ZCZC
WECA41 PHEB 212200
TSUCAX

TEST...TSUNAMI MESSAGE NUMBER 9...TEST
NWS PACIFIC TSUNAMI WARNING CENTER HONOLULU HI
2200 UTC THU MAR 21 2024

...THIS MESSAGE IS FOR TEST PURPOSES ONLY...
...TEST FINAL TSUNAMI THREAT MESSAGE TEST...

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE ****

THIS IS A TEST MESSAGE. 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.

THIS IS A TEST MESSAGE. NATIONAL AUTHORITIES WILL DETERMINE THE APPROPRIATE LEVEL OF ALERT FOR EACH COUNTRY AND MAY ISSUE ADDITIONAL OR MORE REFINED INFORMATION.

**** NOTICE **** NOTICE **** NOTICE **** NOTICE **** NOTICE ****

TEST... PRELIMINARY EARTHQUAKE PARAMETERS ...TEST

* MAGNITUDE 8.5
* ORIGIN TIME 1500 UTC MAR 21 2024
* COORDINATES 9.8 NORTH 77.8 WEST
* DEPTH 25 KM / 16 MILES
* LOCATION NEAR THE NORTH COAST OF COLOMBIA

TEST... EVALUATION ...TEST

* THIS IS A TEST MESSAGE. AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 8.5 OCCURRED NEAR THE NORTH COAST OF COLOMBIA AT 1500 UTC ON THURSDAY MARCH 21 2024.

* THIS IS A TEST MESSAGE. BASED ON ALL AVAILABLE DATA... THE TSUNAMI THREAT FROM THIS EARTHQUAKE HAS PASSED AND THERE IS NO FURTHER THREAT.

TEST... TSUNAMI THREAT FORECAST...UPDATED ...TEST

* THIS IS A TEST MESSAGE. THE TSUNAMI THREAT HAS NOW LARGELY PASSED.

TEST... RECOMMENDED ACTIONS ...TEST

- * THIS IS A TEST MESSAGE. 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.
- * THIS IS A TEST MESSAGE. PERSONS LOCATED NEAR IMPACTED COASTAL AREAS SHOULD STAY ALERT FOR INFORMATION AND FOLLOW INSTRUCTIONS FROM LOCAL AUTHORITIES.
- * THIS IS A TEST MESSAGE. REMAIN OBSERVANT AND EXERCISE NORMAL CAUTION NEAR THE SEA.

TEST... POTENTIAL IMPACTS ...TEST

- * THIS IS A TEST MESSAGE. 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.

TEST... NEXT UPDATE AND ADDITIONAL INFORMATION ...TEST

- * THIS IS A TEST MESSAGE. THIS WILL BE THE FINAL STATEMENT ISSUED FOR THIS EVENT UNLESS NEW INFORMATION IS RECEIVED OR THE SITUATION CHANGES.
- * THIS IS A TEST MESSAGE. AUTHORITATIVE INFORMATION ABOUT THE EARTHQUAKE FROM THE U.S. GEOLOGICAL SURVEY CAN BE FOUND ON THE INTERNET AT EARTHQUAKE.USGS.GOV.
- * THIS IS A TEST MESSAGE. FURTHER INFORMATION ABOUT THIS EVENT MAY BE FOUND AT WWW.TSUNAMI.GOV.
- * THIS IS A TEST MESSAGE. COASTAL REGIONS OF THE US GULF COAST... US EAST COAST... AND THE MARITIME PROVINCES OF CANADA SHOULD REFER TO U.S. NATIONAL TSUNAMI WARNING CENTER MESSAGES THAT CAN BE FOUND AT WWW.TSUNAMI.GOV.

THIS IS A TEST MESSAGE. DO NOT TAKE ACTION BASED ON THIS TEST MESSAGE.

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ANNEX VI. CATAC EXERCISE MESSAGES

Panama Scenario - Central America Tsunami Advisory Products

The following messages created for the CARIBE WAVE 24 tsunami exercise are representative of the official standard products issued by the Central America Tsunami Advisory Center (CATAC) for a magnitude 8.47 earthquake and subsequent tsunami originating in the North Panama Deformed Belt. During a real event, CATAC would also post the text products on <http://catac.ineter.gob.ni/>. The alerts may persist longer during a real event than is depicted in this exercise.

CATAC MESSAGES ENGLISH:

Dummy Message:

;This is just a test message sent by CATAC in support of Exercise
CaribeWave 24!

Central America Tsunami Advisory Center (CATAC)

XXXXXXX THIS IS AN EXERCISE XXXXXXXXXXXX THIS IS AN EXERCISE
XXXXXXXXXXXXXXXXXXXX

Notice : This is a kick-off message for exercise Caribe Wave
2024
for Central American countries, such as for Central
American countries in support of the Intergovernmental
Oceanographic Commission (IOC), of UNESCO and the
ICG/CARIBE-EWS.

Issued : 2024-03-21 15:00 Time (UTC)
2024-03-21 09:00 Central American Time
2024-03-21 10:00 Panama Time

This message is being used to initiate the Caribe Wave 2024 tsunami
exercise, originating off the northern coast of Panama.

The exercise messages are available on the web site
<http://catac.ineter.gob.ni/>.

The purpose of the exercise is to provide emergency management advice.
It is a scenario to test tsunami response plans in Central American
countries.

XXXXXXX THIS IS AN EXERCISE XXXXXXXXXXXX THIS IS AN EXERCISE XXXXXXXXXXXX THIS
IS AN EXERCISE XXXXXXXXXXXX

CATAC Message #2:

;This is just a test message sent by CATAC in support of Exercise
CaribeWave 24!

Central America Tsunami Advisory Center - CATAC

XXXXXXX THIS IS JUST AN EXERCISE
XX

NOTICE : This message is published for information purposes
only in support of Central American countries. National
authorities are responsible for determining
the level of alert and for taking appropriate
measures for their country.

Tsunami Bulletin N° 02

Issued: 2024-03-21 09:09 Central American Time
2024-03-21 10:09 Panama Time
2024-03-21 15:09 UTC Time

A tsunami warning is in effect for the coastal areas of Central American
countries.

An earthquake has occurred with the following parameters:

Magnitude : 8.5
Date : 21/03/2024
Tme : 09:00 Central American Time, 10:00 Panama Time,
15:00 UTC Time
Latitude : 9.80 N
Longitude : 77.75 O
Depth : 25 Km
Location : Near the North Coast of Colombia

Evaluation:

Due to magnitude, depth and location of the earthquake there is a
possibility that a tsunami may have been produced which would affect with
greater intensity the nearest coasts, about 100 km from the epicenter of
the earthquake. Authorities should take actions corresponding to their
response plans.

Tsunami simulation results:

Estimated Time of Arrival (ETA) in local time and Maximum Height (AM) of
tsunami waves, at different forecast points:

Site	Country	ETA (Local Time)	AM(m)
San Blas	Panamá	21/3/2024 10:03:30	36.21
Turtle Island	Panamá	21/3/2024 10:07:45	28.26
Isla Grande	Panamá	21/3/2024 10:07:45	28.26
Colón	Panamá	21/3/2024 10:18:15	23.39
Limón	Costa Rica	21/3/2024 09:49:15	5.65
Corn Island	Nicaragua	21/3/2024 10:13:15	4.46
Atlántico Sur	Nicaragua	21/3/2024 10:17:30	4.09
San Juan de Nicaragua	Nicaragua	21/3/2024 10:14:00	2.64

CATAC Message #3:

¡This is just a test message sent by CATAC in support of Exercise CaribeWave 24!

Central America Tsunami Advisory Center - CATAC

XXXXXXXX THIS IS JUST AN EXERCISE
XX

NOTICE : This message is published for information purposes only in support of Central American countries. National authorities are responsible for determining the level of alert and for taking appropriate measures for their country.

Tsunami Bulletin N° 03

Issued: 2024-03-21 09:30 Central American Time
2024-03-21 10:30 Panama Time
2024-03-21 15:30 UTC Time

A tsunami warning is in effect for the coastal areas of Central American countries.

An earthquake has occurred with the following parameters:

Magnitude : 8.5
Date : 21/03/2024
Tme : 09:00 Central American Time, 10:00 Panama Time, 15:00 UTC Time
Latitude : 9.80 N
Longitude : 77.75 O
Depth : 25 Km
Location : Near the North Coast of Colombia

Evaluation:

Due to magnitude, depth and location of the earthquake there is a possibility that a tsunami may have been produced which would affect with greater intensity the closest coasts, about 100 km from the epicenter of the earthquake. Authorities should take actions corresponding to their response plans.

Tsunami simulation results:

Estimated Time of Arrival (ETA) in local time and Maximum Height (AM) of tsunami waves, at different forecast points:

Site	Country	ETA (Local Time)	
AM(m)			
San Blas	Panamá	21/3/2024 10:03:30	36.21
Turtle Island	Panamá	21/3/2024 10:07:45	28.26
Isla Grande	Panamá	21/3/2024 10:07:45	28.26
Colón	Panamá	21/3/2024 10:18:15	23.39
Limón	Costa Rica	21/3/2024 09:49:15	5.65
Corn Island	Nicaragua	21/3/2024 10:13:15	4.46
Atlántico Sur	Nicaragua	21/3/2024 10:17:30	4.09

CATAC Message #4:

;This is just a test message sent by CATAC in support of Exercise
CaribeWave 24!

Central America Tsunami Advisory Center - CATAC

XXXXXXXX THIS IS JUST AN EXERCISE
XX

NOTICE : This message is published for information purposes
only in support of Central American countries. National
authorities are responsible for determining the level of
alert and for taking appropriate measures for their
country.

Tsunami Bulletin N° 04

Issued : 2024-03-21 10:00 Central American Time
2024-03-21 11:00 Panama Time
2024-03-21 16:00 UTC Time

A tsunami warning is in effect for the coastal areas of Central American
countries.

An earthquake has occurred with the following parameters:

Magnitude : 8.5
Date : 21/03/2024
Tme : 09:00 Central American Time, 10:00 Panama Time, 15:00
UTC Time
Latitude : 9.80 N
Longitude : 77.75 O
Depth : 25 Km
Location : Near the North Coast of Colombia

Evaluation:

Due to magnitude, depth and location of the earthquake there is a
possibility that a tsunami may have been produced which would affect with
greater intensity the closest coasts, about 100 km from the epicenter of
the earthquake. Authorities should take actions corresponding to their
response plans. No incidents are reported in the countries
south of Honduras.

Tsunami simulation results:

Estimated Time of Arrival (ETA) in local time and Maximum Height (AM) of
tsunami waves, at different forecast points:

Site	Country	ETA (Local Time)	AM(m)
San Blas	Panamá	21/3/2024 10:03:30	36.21
Turtle Island	Panamá	21/3/2024 10:07:45	28.26
Isla Grande	Panamá	21/3/2024 10:07:45	28.26
Colón	Panamá	21/3/2024 10:18:15	23.39
Limón	Costa Rica	21/3/2024 09:49:15	5.65
Corn Island	Nicaragua	21/3/2024 10:13:15	4.46
Atlántico Sur	Nicaragua	21/3/2024 10:17:30	4.09

CATAC Message #5:

;This is just a test message sent by CATAC in support of Exercise
CaribeWave 24!

Central America Tsunami Advisory Center - CATAC

XXXXXXXX THIS IS JUST AN EXERCISE
XX

NOTICE : This message is published for information purposes
only
in support of Central American countries. National
authorities are responsible for determining the level of
alert and for taking appropriate measures for their
country.

Tsunami Bulletin N° 05

Issued : 2024-03-21 11:00 Central American Time
2024-03-21 12:00 Panama Time
2024-03-21 17:00 UTC Time

A tsunami warning is in effect for the coastal areas of Central American
countries.

An earthquake has occurred with the following parameters:

Magnitude : 8.5
Date : 21/03/2024
Tme : 09:00 Central American Time, 10:00 Panama Time, 15:00
UTC Time
Latitude : 9.80 N
Longitude : 77.75 O
Depth : 25 Km
Location : Near the North Coast of Colombia

Sea level station measurements:

Estimated Time of Arrival (ETA) in local time and Maximum Height (AM) of
tsunami waves.

Code	Coordinates	Country	ETA (Local Time)	AM(m)
VZ..ELPO 24.21	09.56°N 78.95°O	Panamá	2024-03-21 09:21	
VZ..BDTO 5.58	09.35°N 82.26°O	Panamá	2024-03-21 09:56	
VZ..LIMON	09.99°N 83.02°O	Costa Rica	2024-03-21 10:21	.54
VZ..COIS	12.33°N 83.02°O	Nicaragua	2024-03-21 10:32	1.67
VZ..TELA	15.784N 87.453O	Honduras	2024-03-21 14:55	0.68
VZ..PCOR	15.843N 87.959O	Honduras	2024-03-21 14:39	0.66
VZ..CEIB	15.790N 86.760O	Honduras	2024-03-21 14:55	0.72
VZ..PRBA	15.695N 88.622O	Guatemala	2024-03-21 14:32	0.52
VZ..POBE	17.474N 88.201O	Belice	2024-03-21 14:55	0.32

Assessment:

According to our simulations, considerably higher amplitudes could occur in the next few hours. The national authorities of the different countries should make the appropriate decisions, according to their response plans.

PTWC messages:

Countries may additionally receive messages from the Pacific Tsunami Warning Center (PTWC).
In case of differences between CATAC and PTWC results, we recommend preferring conservatively, the estimates that correspond to a higher hazard.

Additional information:

Detailed earthquake and tsunami information can be found at the website.
<http://catac.ineter.gob.ni/>

XXXXXXXX THIS IS ONLY AN EXERCISE
XX

XXXXXXXX This is the last message, in the frame of the exercise CaribeWave 24, sent by CATAC XXXXXXXXXXXXXXXX

CATAC MESSAGES IN SPANISH

Mensaje Dummy:

¡Este es sólo un mensaje de prueba enviado por CATAC en apoyo al Ejercicio CaribeWave 24!

Centro de Asesoramiento de Tsunami para América Central (CATAC)

XXXXXXXX ESTE ES UN EJERCICIO XXXXXXXXXXXX ESTE ES UN EJERCICIO XXXXXXXXXXXX

Aviso: Este es un mensaje de inicio del ejercicio Caribe Wave 2024 para los países de América Central, como apoyo a la Comisión Oceanográfica Intergubernamental (COI), de la UNESCO y al ICG/CARIBE-EWS

Emisión: 2024-03-21 15:00 Hora (UTC)
2024-03-21 09:00 Hora de Centroamérica
2024-03-21 10:00 Hora de Panamá

Este mensaje se está utilizando para iniciar el ejercicio de tsunami Caribe Wave 2023, con origen en las costas del norte de Honduras.

Los mensajes de este ejercicio están disponibles en el sitio web <http://catac.ineter.gob.ni/>

El propósito del ejercicio es proporcionar asesoría a la gestión de emergencias.

Es un escenario para poner a prueba los planes de respuesta ante tsunamis en los países de América Central

XXXXXXXX ESTE ES UN EJERCICIO XXXXXXXXXXXX ESTE ES UN EJERCICIO XXXXXXXXXXXX

Mensaje CATAAC #2:

¡Este es sólo un mensaje de prueba enviado por CATAAC en apoyo al Ejercicio CaribeWave 24!

Centro de Asesoramiento de Tsunami para América Central - CATAAC

XXXXXXXXX ESTE ES SOLO UN EJERCICIO
XX

AVISO : Este mensaje se publica únicamente a título informativo como apoyo a los países de América Central. Las autoridades nacionales son responsables de determinar el nivel de alerta y efectuar las medidas adecuadas para su país.

Boletín sobre tsunami N° 02

Publicado: 2024-03-21 09:09 Hora de Centroamérica
2024-03-21 10:09 Hora de Panamá
2024-03-21 15:09 Hora UTC

Una advertencia de tsunami está en efecto para las zonas costeras de los países de América Central

Un terremoto ha ocurrido con los siguientes estos parámetros:

Magnitud : 8.5
Fecha : 21/03/2024
Hora : 09:00 Hora de Centroamérica, 10:00 Hora de Panamá, 15:00 Hora UTC
Latitud : 9.80 N
Longitud : 77.75 O
Profundidad : 25 Km
Ubicación : Cerca de la Costa Norte de Colombia

Evaluación:

Por magnitud, profundidad y ubicación del terremoto existe la posibilidad de que se haya producido un tsunami que afectaría con mayor intensidad a las costas más cercanas, a unos cien kilómetros del epicentro del terremoto. Las autoridades deben tomar acciones correspondientes a sus planes de respuestas.

Resultados estimados de la simulación de tsunami:

Estimados de Tiempos de Arribo (ETA) en hora local y Altura Máxima (AM) de olas del tsunami, en diferentes puntos de pronóstico:

Sitio	País	ETA (Hora local)	AM(m)
San Blas	Panamá	21/3/2024 10:03:30	36.21
Turtle Island	Panamá	21/3/2024 10:07:45	28.26
Isla Grande	Panamá	21/3/2024 10:07:45	28.26
Colón	Panamá	21/3/2024 10:18:15	23.39
Limón	Costa Rica	21/3/2024 09:49:15	5.65
Corn Island	Nicaragua	21/3/2024 10:13:15	4.46
Atlántico Sur	Nicaragua	21/3/2024 10:17:30	4.09
San Juan de Nicaragua	Nicaragua	21/3/2024 10:14:00	2.64
Little Corn Island	Nicaragua	21/3/2024 10:19:45	3.00

Mensaje CATAAC #3:

¡Este es sólo un mensaje de prueba enviado por CATAAC en apoyo al Ejercicio CaribeWave 24!

Centro de Asesoramiento de Tsunami para América Central - CATAAC

XXXXXXXXX ESTE ES SOLO UN EJERCICIO
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AVISO : Este mensaje se publica únicamente a título informativo como apoyo a los países de América Central. Las autoridades nacionales son responsables de determinar el nivel de alerta y efectuar las medidas adecuadas para su país.

Boletín sobre tsunami N° 03

Publicado: 2024-03-21 10:30 Hora de Centroamérica
2024-03-21 09:30 Hora de Panamá
2024-03-21 15:30 Hora UTC

Una advertencia de tsunami está en efecto para las zonas costeras de los países de América Central

Un terremoto ha ocurrido con los siguientes estos parámetros:

Magnitud : 8.5
Fecha : 21/03/2024
Hora : 09:00 Hora de Centroamérica, 10:00 Hora de Panamá, 15:00 Hora UTC
Latitud : 9.80 N
Longitud : 77.75 O
Profundidad : 25 Km
Ubicación : Cerca de la Costa Norte de Colombia

Evaluación:

Por magnitud, profundidad y ubicación del terremoto existe la posibilidad de que se haya producido un tsunami que afectaría con mayor intensidad a las costas más cercanas, a unos cien kilómetros del epicentro del terremoto. Las autoridades deben tomar acciones correspondientes a sus planes de respuestas.

Resultados de la simulación de tsunami:

Estimados de Tiempos de Arribo (ETA) en hora local y Altura Máxima (AM) de olas del tsunami, en diferentes puntos de pronóstico:

Sitio	País	ETA (Hora local)	AM(m)
San Blas	Panamá	21/3/2024 10:03:30	36.21
Turtle Island	Panamá	21/3/2024 10:07:45	28.26
Isla Grande	Panamá	21/3/2024 10:07:45	28.26
Colón	Panamá	21/3/2024 10:18:15	23.39
Limón	Costa Rica	21/3/2024 09:49:15	5.65
Corn Island	Nicaragua	21/3/2024 10:13:15	4.46
Atlántico Sur	Nicaragua	21/3/2024 10:17:30	4.09
San Juan de Nicaragua	Nicaragua	21/3/2024 10:14:00	2.64

Mensaje CATAc #4:

¡Este es sólo un mensaje de prueba enviado por CATAc en apoyo al Ejercicio CaribeWave 24!

Centro de Asesoramiento de Tsunami para América Central - CATAc

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AVISO : Este mensaje se publica únicamente a título informativo como apoyo a los países de América Central. Las autoridades nacionales son responsables de determinar el nivel de alerta y efectuar las medidas adecuadas para su país.

Boletín sobre tsunami N° 04

Publicado: 2024-03-21 10:00 Hora de Centroamérica
2024-03-21 11:00 Hora de Panamá
2024-03-21 16:00 Hora UTC

Una advertencia de tsunami está en efecto para las zonas costeras de los países de América Central

Un terremoto ha ocurrido con los siguientes estos parámetros:

Magnitud : 8.5
Fecha : 21/03/2024
Hora : 09:00 Hora de Centroamérica, 10:00 Hora de Panamá, 15:00 Hora UTC
Latitud : 9.80 N
Longitud : 77.75 O
Profundidad : 25 Km
Ubicación : Cerca de la Costa Norte de Colombia

Evaluación:

Por magnitud, profundidad y ubicación del terremoto existe la posibilidad de que se haya producido un tsunami que afectaría con mayor intensidad a las costas más cercanas, a unos cien kilómetros del epicentro del terremoto. Las autoridades deben tomar acciones correspondientes a sus planes de respuestas. No reportan incidencias en los países al sur de Honduras.

Resultados de la simulación de tsunami:

Estimados de Tiempos de Arribo (ETA) en hora local y Altura Máxima (AM) de olas del tsunami, en diferentes puntos de pronóstico:

Sitio	País	ETA (Hora local)	AM(m)
San Blas	Panamá	21/3/2024 10:03:30	36.21
Turtle Island	Panamá	21/3/2024 10:07:45	28.26
Isla Grande	Panamá	21/3/2024 10:07:45	28.26
Colón	Panamá	21/3/2024 10:18:15	23.39
Limón	Costa Rica	21/3/2024 09:49:15	5.65
Corn Island	Nicaragua	21/3/2024 10:13:15	4.46
Atlántico Sur	Nicaragua	21/3/2024 10:17:30	4.09
San Juan de Nicaragua	Nicaragua	21/3/2024 10:14:00	2.64

Mensaje CATAc #5:

¡Este es sólo un mensaje de prueba enviado por CATAc en apoyo al Ejercicio CaribeWave 24!

Centro de Asesoramiento de Tsunami para América Central - CATAc

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AVISO : Este mensaje se publica únicamente a título informativo como apoyo a los países de América Central. Las autoridades nacionales son responsables de determinar el nivel de alerta y efectuar las medidas adecuadas para su país.

Boletín sobre tsunami N° 05

Publicado: 2024-03-21 11:00 Hora de Centroamérica
2024-03-21 12:00 Hora de Panamá
2024-03-21 17:00 Hora UTC

Una advertencia de tsunami está en efecto para las zonas costeras de los países de América Central

Un terremoto ha ocurrido con los siguientes estos parámetros:

Magnitud : 8.5
Fecha : 21/03/2024
Hora : 09:00 Hora de Centroamérica, 10:00 Hora de Panamá, 15:00 Hora UTC
Latitud : 9.80 N
Longitud : 77.75 O
Profundidad : 25 Km
Ubicación : Cerca de la Costa Norte de Colombia

Mediciones en estaciones del nivel del mar:

Estimados de Tiempos de Arribo (ETA) en hora local y Altura Máxima (AM) de olas del tsunami

Código	Coordenadas (°)	País	ETA (hora local)	
AM (m)				
VZ..ELPO	09.56°N 78.95°O	Panamá	2024-03-21 09:21	
24.21				
VZ..BDTO	09.35°N 82.26°O	Panamá	2024-03-21 09:56	
5.58				
VZ..LIMON	09.99°N 83.02°O	Costa Rica	2024-03-21 10:21	2.54
VZ..COIS	12.33°N 83.02°O	Nicaragua	2024-03-21 10:32	1.67
VZ..TELA	15.784N 87.45°O	Honduras	2024-03-21 14:55	0.68
VZ..PCOR	15.843N 87.95°O	Honduras	2024-03-21 14:39	0.66
VZ..CEIB	15.790N 86.76°O	Honduras	2024-03-21 14:55	0.72
VZ..PRBA	15.695N 88.62°O	Guatemala	2024-03-21 14:32	0.52
VZ..POBE	17.474N 88.20°O	Belice	2024-03-21 14:55	0.32

Evaluación:

Según nuestras simulaciones, amplitudes considerablemente mayores podrían ocurrir en las próximas horas. las autoridades nacionales de los diferentes

países debern tomar las decisiones adecuadas, de acuerdo a sus planes de respuesta.

Mensajes del PTWC:

Los países podrán recibir adicionalmente, mensajes del Centro de Alerta de Tsunami para el Pacífico (PTWC). En caso de diferencias entre los resultados de CATAC y del PTWC, recomendamos preferir de manera conservativa, las estimaciones que corresponden a un mayor peligro.

Información adicional:

Información detallada del sismo y tsunami se encuentra en el sitio web <http://catac.ineter.gob.ni/>

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XXXXXXXXX Este es el último mensaje, en el marco del ejercicio CaribeWave 24, emitido por CATAC XXXXXXXXXX

ANNEX VII. SAMPLE PRESS RELEASE FOR LOCAL/NATIONAL MEDIA

TEMPLATE FOR NEWS RELEASE

USE AGENCY MASTHEAD

Contact: (insert name)

FOR IMMEDIATE RELEASE

(insert phone number)

(insert date)

(insert email address)

CARIBBEAN TSUNAMI EXERCISE TO BE CONDUCTED MARCH 21, 2024

(insert community/county/state name) will join other localities in the Caribbean as a participant in a tsunami response exercise on March 21, 2024. The purpose of this exercise is to evaluate national and local tsunami response plans, increase tsunami preparedness, and improve coordination throughout the region. This exercise includes two simulated scenarios of an earthquake occurrence in the Puerto Rico Trench and Panama.

(insert a promotional comment from a local official, such as “The 2010 Haiti, 2010, 2014, 2015 Chilean, 2011 Japan, and the recent 2018 Sulawesi, 2021 New Zealand and the Hunga Tonga-Hunga Ha’apai tsunamis have reminded the world of the urgent need to be more prepared for such events,” said (insert name of appropriate official). “This important exercise will test the current procedures of the Tsunami Warning System and help identify operational strengths and weaknesses in each community.” (Please modify for uniqueness.))

The exercise, titled CARIBE WAVE 24, will simulate Tsunami Threat situations throughout the Caribbean, which requires implementation of national and local tsunami response plans. The exercise will (insert “include” or “not include”) public notification.

The exercise will simulate (insert description of chosen scenario - source and appropriate local time) on March 21, 2024. The Pacific Tsunami Warning Center, as the Regional Tsunami Service Provider for Caribbean Sea and Adjacent Regions, has prepared and will disseminate to the National Tsunami Warning Center and Tsunami Warning Focal point simulated messages for the selected scenario. In addition, the Central America Tsunami Advisory Center, operated by Nicaragua and in experimental operation, will be issuing products for countries of Central America for the Panama scenario.

Insert paragraph tailored for specific community. Could identify participating agencies and specific plans. Could describe current early warning program, past tsunami exercises (if any), ongoing mitigation and public education programs, etc. Could describe tsunami threat, history of tsunami hazards, if any.

If any real tsunami threat occurs during the time period of the exercise, the exercise will be terminated.

The exercise is sponsored by the UNESCO/IOC Intergovernmental Coordination Group for Tsunami and Other Coastal Hazards Warning System for the Caribbean and Adjacent Regions (ICG/CARIBE-EWS) in coordination with the Caribbean Emergency Management Agency (CDEMA), the Centro de Coordinación para la Prevención de los Desastres Naturales en América Central (CEPREDENAC), EMIZA Antillas, and the U.S. National Oceanic and Atmospheric Administration (NOAA).

###

For more information:

State/local emergency response agency

Insert URLs

ICG/CARIBE EWS

<http://www.ioc-tsunami.org>

Pacific Tsunami Warning Center

<https://tsunami.gov>

NOAA Tsunami Program

<https://www.tsunami.gov>

ITIC Caribbean Office

<http://casribewave.org>

Caribbean Tsunami Information Centre

<https://www.ctic.ioc-unesco.org>

ANNEX VIII. LIST OF ACRONYMS

AISR	Aeronautical Information System Replacement
AWIPS	Advanced Weather Interactive Processing System
CATAC	Central America Tsunami Advisory Centre
CDEMA	Caribbean Disaster Emergency Management Agency
CEPREDENAC	Coordination Centre for the Prevention of Natural Disasters in Central America
CTIC	Caribbean Tsunami Information Centre
CW	CARIBE WAVE
EAS	Emergency Alert System
EMIZA	Etat-Major Interministériel de la Zone de Défense et de Sécurité Antilles
EMO	Emergency Management Organization
EMWIN	Emergency Managers Weather Information Network
EOC	Emergency Operations Center
EOP	Emergency Operations Plan
GDP	Gross Domestic Product
GMT	Generic Mapping Tool
GTS	Global Telecommunication System
ICG	Intergovernmental Coordination Group
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
ITIC	International Tsunami Information Center
ITIC-CAR	International Tsunami Information Center, Caribbean Office
MS	Member States
NCEI	National Centers for Environmental Information
NDMO	National Disaster Management Office
NOAA	U.S. National Oceanic and Atmospheric Administration
NTWC	National Tsunami Warning Centre
NWWS	NOAA Weather Wire Service
OEM	Offices of Emergency Management
PAGER	Prompt Assessment of Global Earthquakes for Response
PRSN	Puerto Rico Seismic Network
PTWC	Pacific Tsunami Warning Center
SOP	Standard Operating Procedures
SRC	Seismic Research Centre

TER	Tsunami Emergency Response
TT	Task Team
TWFP	Tsunami Warning Focal Points
UNESCO	United Nations Educational, Scientific, and Cultural Organization
USGS	United States Geological Survey
WMO	World Meteorological Organization

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 Intercalibration 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)

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 Bathymetographs 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 <i>Pacem in Maribus</i> 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 l'exploitation des pêcheries maritimes au Cameroun et leur gestion intégrée dans la sous-région du Golfe de Guinée (<i>cancelled</i>)	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 (8 th 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 (9 th 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 (10 th 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 (11 th 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 (12 th training-through-research cruise, June-August 2002). 2003	E only
68	Interdisciplinary Studies of North Atlantic and Labrador Sea Margin Architecture and Sedimentary Processes (13 th training-through-research cruise, July-September 2003). 2004	E only
69	Biodiversity and Distribution of the Megafauna / Biodiversité et distribution de la mégafaune. 2006 Vol.1 The polymetallic nodule ecosystem of the Eastern Equatorial Pacific Ocean / Ecosystème de nodules polymétalliques de l'océan Pacifique Est équatorial 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 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 (14 th 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 (2 nd Revision). 2009	E only
72	Deep-water Cold Seeps, Sedimentary Environments and Ecosystems of the Black and Tyrrhenian Seas and the Gulf of Cadiz (15 th training-through-research cruise, June–August 2005). 2007	E only
73	Implementation Plan for the Tsunami Early Warning and Mitigation System in the North-Eastern Atlantic, the Mediterranean and Connected Seas (NEAMTWS), 2007–2011. 2007 (<i>electronic only</i>)	E only
74	Bruun Memorial Lectures, 2005: The Ecology and Oceanography of Harmful Algal Blooms – Multidisciplinary approaches to research and management. 2007	E only
75	National Ocean Policy. The Basic Texts from: Australia, Brazil, Canada, China, Colombia, Japan, Norway, Portugal, Russian Federation, United States of America. (Also Law of Sea Dossier 1). 2008	E only
76	Deep-water Depositional Systems and Cold Seeps of the Western Mediterranean, Gulf of Cadiz and Norwegian Continental margins (16 th training-through-research cruise, May–July 2006). 2008	E only
77	Indian Ocean Tsunami Warning and Mitigation System (IOTWS) – 12 September 2007 Indian Ocean Tsunami Event. Post-Event Assessment of IOTWS Performance. 2008	E only
78	Tsunami and Other Coastal Hazards Warning System for the Caribbean and Adjacent Regions (CARIBE EWS) – Implementation Plan 2013–2017 (Version 2.0). 2013	E only
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