



NOAA / NWS



Pacific Tsunami Warning Center

Users' Guide

**PTWC Tsunami Products
for Puerto Rico,
the U.S. Virgin Islands, and
the British Virgin Islands**

CHANGE LOG

| DATE | DESCRIPTION OF CHANGE | VER | WHO |
|-------------|--|------------|------------|
| 1/10/2016 | Initial version of the Plan | 1.00 | McCreery |
| 3/29/2016 | Corrected date on the Plan. Otherwise, no substantive changes. | 1.01 | McCreery |
| 7/14/16 | Replaced SPN with SP1 in all AWIPS IDs | 1.02 | McCreery |
| 3/15/17 | Tsunami Seismic Information Statement incorporated into Tsunami Information Statement | 1.1 | McCreery |
| 3/15/17 | Changed transition date to April 3, 2017 | 1.1 | McCreery |
| 3/15/17 | Removed statement that the AWIPS IDs for the Spanish-language products were under review | 1.1 | McCreery |
| 5/27/17 | Corrected distance to PRVI within which a Tsunami Information Statement for magnitude 4.0 and above is issued from 500km to 300km. | 1.11 | McCreery |
| 8/2/23 | Various minor revisions to language were made to increase clarity | 1.20 | McCreery |
| 8/2/23 | Certain background information from 2017 that was no longer necessary was either removed or updated | 1.20 | McCreery |
| 8/2/23 | The minimum magnitude threshold for earthquakes less than 300 km away was raised from 4.0 to 4.5 to reflect current practice since the 2019 Puerto Rico earthquake swarm | 1.20 | McCreery |
| 8/2/23 | The minimum magnitude threshold for earthquakes greater than 300 km away was clarified to be 6.0 for Caribbean earthquakes and 6.5 for Atlantic region earthquakes | 1.20 | McCreery |
| 8/2/23 | The section on Communication Testing was expanded to describe testing methods along all links in the chain | 1.20 | McCreery |
| 12/8/23 | Updated Table of Historical tsunami runups | 1.21 | Hincapie |
| 4/20/24 | Corrected a missing word in criteria number 7 for issuing information statements for Nearby Earthquakes. | 1.22 | Hincapie |
| 4/20/24 | Modified the Product Content section to show that the UGC codes and their description are now included in all products. | 1.22 | Hincapie |
| 4/20/24 | The Sample Products section was updated to show the UGC lines and descriptions in all products. | 1.22 | Hincapie |
| 4/20/24 | The Sample Products section was modified to show the UGC description in Spanish for all Spanish-language products. | 1.22 | Hincapie |

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INTRODUCTION

This User's Guide describes the NOAA/NWS Pacific Tsunami Warning Center (PTWC) domestic tsunami products for Puerto Rico and the U.S and British Virgin Islands including the levels of alert that may be issued, the information that will be contained in the products, when products can be expected, and how they will be disseminated. Puerto Rico and the Virgin Islands (PRVI) are also included in PTWC's international products for the Caribbean. For more information on those products please refer to the most recent User's Guide for the PTWC Enhanced Products for the CARIBE-EWS.

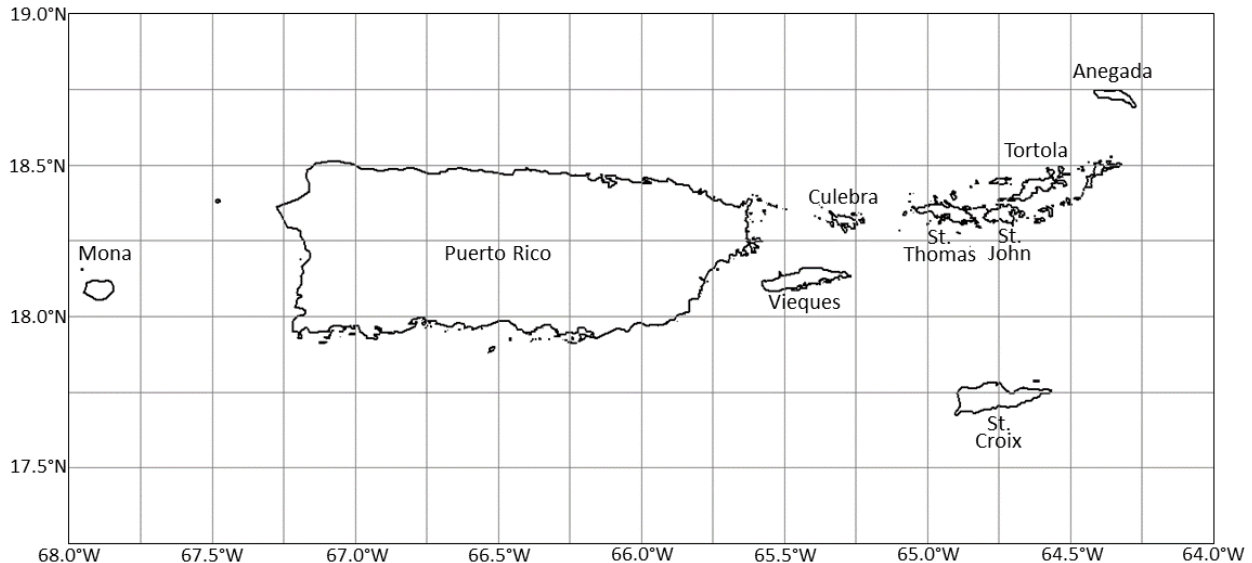
Pacific Tsunami Warning Center

The Pacific Tsunami Warning Center, located in Honolulu, Hawaii, was formed in 1949 following an unwarned tsunami from the Aleutian Islands that struck Hawaii on the morning of April 1, 1946, killing 159 people. Scientists in Hawaii at the time knew a large earthquake had occurred, but there was no system in place to evaluate whether a tsunami had been generated, when it might strike Hawaii, or to evacuate coasts. The original center, covering only Hawaii, was formed just in time as it provided warnings to Hawaii for the 1952 Kamchatka tsunami, the 1957 Aleutian tsunami, the 1960 Chile tsunami, and the 1964 Alaska tsunami, preventing any loss of life in Hawaii in all but the 1960 event. That tsunami, from a magnitude 9.6 earthquake off the coast of Chile, affected nearly every coast in the Pacific and caused nearly 200 casualties on the other side of the Pacific in Japan. So in 1965, the center took on responsibility for countries across the entire Pacific through a program of the Intergovernmental Oceanographic Commission (IOC) of UNESCO, a role that continues today.

The Pacific region is where most of the world's great earthquakes and tsunamis occur, and the IOC Pacific system was the only one in the world for the next 40 years in spite of the fact that every ocean basin has suffered tsunami impacts. The December 26, 2004, tsunami in the Indian Ocean that killed nearly a quarter-million people in a matter of hours changed that situation. Within a few months, tsunami warning systems were stood up in the Indian Ocean, the Caribbean Sea, and the northeast Atlantic Ocean and Mediterranean Sea. PTWC, along with the tsunami warning center of the Japan Meteorological Agency, served as interim centers for the Indian Ocean system until 2013 when newly-formed centers in Indonesia, Australia, and India took over that responsibility. PTWC also began serving as the IOC's international center for the Caribbean in 2005 and continues in that role.

Puerto Rico and the Virgin Islands

Puerto Rico, the U.S. Virgin Islands, and the British Virgin Islands (referred hereafter in total as Puerto Rico and the Virgin Islands or PRVI) are adjacent parts of the archipelago of islands bounding the northeastern Caribbean Sea. Puerto Rico and the U.S. Virgin Islands are territories of the United States and the British Virgin Islands is an overseas territory of the United Kingdom. The three island groups span about 250 miles in the East-West direction, and about 75 miles in the North-South direction.



The territory of Puerto Rico consists of the main island of Puerto Rico and several smaller islands including Mona, Vieques, and Culebra. The bulk of its 3.6 million inhabitants are located on the main island, with about 14,000 on Vieques and about 1,800 on Culebra. Mona is an unpopulated reserve. The capital city, with a population of about 400,000, is San Juan located on eastern side of Puerto Rico's north coast.

The U.S. Virgin Islands has three main islands – Saint Croix, Saint John, and Saint Thomas. The capital city is Charlotte Amalie located on south coast of the island of Saint Thomas. The total population is a little over 100,000.

The British Virgin Islands consist of over 50 small islands and cays. The main islands are Tortola, Virgin Gorda, Anegada, and Jost Van Dyke, and about 15 of the islands are inhabited. Of the approximately 28,000 inhabitants, about 23,500 live on Tortola where the capital city, Road Town, is located.

In addition to the local residents, PRVI's year-round warm climate and waters attract many tourists. Over 4 million people visit Puerto Rico each year with 25% corresponding to cruise passenger visits. In the USVI, there are many more cruise passengers (1.5 million) in comparison with stop-over visitors (570,000). BVI receives a little less than 1 million tourists a year, with slightly more on cruise ships than stay-overs. This is an important consideration as the tourist

population is concentrated near the coastlines in tsunami prone areas. In St. Thomas on a busy cruise ship day, there can be as many as 8 ships in port.

Tsunami Threat

Tsunami occurrences are relatively infrequent in Puerto Rico and the Virgin Islands. The most significant historical events happened in 1867 and 1918. However, the Puerto Rico Trench and other seismic zones in the Caribbean region are all capable of generating tsunamis. Further, vulnerability within PRVI is very high due to the fact of a high population density near the coast and the aforementioned tourist activities concentrated at the coast.

A list of historical tsunami impacts within the Puerto Rico and Virgin Islands region, compiled by NOAA's National Center for Environmental Information (NCEI) is given below in Table 1. Other tsunami impacts within the region are being investigated through paleo-tsunami studies, looking at buried marine sand deposits likely to have been emplaced by past tsunamis.

Table 1. Historical tsunami runups (or tide gauge amplitudes) within the Puerto Rico and Virgin Islands region.

| Date | | | Tsunami Source | | Tsunami Runup Location | | | | | Runup | Tsunami Runup Location Effects | |
|------|----|----|----------------|---------------------|------------------------|--------------------------------|-------|--------|---------------------------|----------------------|--------------------------------|----------|
| | | | Cause | Mag | State | Name | Lat | Long | Distance from Source (km) | Max Water Height (m) | Deaths | Injuries |
| Yr | Mo | Da | | | | | | | | | | |
| 1690 | 4 | 16 | EQ | 8 | USVI | VIRGIN ISLANDS | 18.37 | -64.93 | 376 | | | |
| 1842 | 5 | 7 | EQ | 8.1 | USVI | SAINT JOHN | 17.77 | -64.75 | 816 | 3.1 | | |
| 1867 | 11 | 18 | EQ | 7.5 | BRVI | PETER ISLAND | 18.35 | -64.58 | 47 | 1.2 | | |
| 1867 | 11 | 18 | EQ | 7.5 | BRVI | ROAD TOWN, TORTOLA ISLAND | 18.43 | -64.62 | 47 | 1.5 | | |
| 1867 | 11 | 18 | EQ | 7.5 | BRVI | VIRGIN GORDA ISLAND | 18.48 | -64.40 | 71 | 3.6 | | |
| 1867 | 11 | 18 | EQ | 7.5 | PR | ARROYO | 17.97 | -66.06 | 115 | 1.5 | | |
| 1867 | 11 | 18 | EQ | 7.5 | PR | BAHIA DE SAN JUAN | 18.45 | -66.12 | 121 | 0.9 | | |
| 1867 | 11 | 18 | EQ | 7.5 | PR | FAJARDO | 18.33 | -65.65 | 70 | | | |
| 1867 | 11 | 18 | EQ | 7.5 | PR | ISLA DE VIEQUES | 18.15 | -65.42 | 44 | | | |
| 1867 | 11 | 18 | EQ | 7.5 | PR | PUERTO RICO | 18.15 | -66.50 | 159 | 6.1 | | |
| 1867 | 11 | 18 | EQ | 7.5 | PR | SALINAS | 17.98 | -66.30 | 140 | | | |
| 1867 | 11 | 18 | EQ | 7.5 | PR | YABUCOA | 18.05 | -65.88 | 95 | | | |
| 1867 | 11 | 18 | EQ | 7.5 | USVI | HASSEL ISLAND | 18.33 | -64.93 | 31 | 4.9 | | |
| 1867 | 11 | 18 | EQ | 7.5 | USVI | LITTLE SABA | 18.34 | -64.98 | 30 | 15.2 | | |
| 1867 | 11 | 18 | EQ | 7.5 | USVI | ST. CROIX: BUTLER'S BAY | 17.75 | -64.89 | 51 | | | |
| 1867 | 11 | 18 | EQ | 7.5 | USVI | ST. CROIX: CHRISTIANSTED | 17.75 | -64.71 | 59 | | | |
| 1867 | 11 | 18 | EQ | 7.5 | USVI | ST. CROIX: FREDERIKSTED | 17.71 | -64.88 | 55 | 7.6 | 5 | 4 |
| 1867 | 11 | 18 | EQ | 7.5 | USVI | ST. CROIX: FRIEDENSTHAL CHURCH | 17.76 | -64.74 | 56 | | 2 | |

| Date | | | Tsunami Source | | Tsunami Runup Location | | | | | Runup | Tsunami Runup Location Effects | |
|------|----|----|----------------|---------------------|------------------------|-----------------------------------|-------|--------|---------------------------|----------------------|--------------------------------|----------|
| | | | Cause | Mag | State | Name | Lat | Long | Distance from Source (km) | Max Water Height (m) | Deaths | Injuries |
| Yr | Mo | Da | | | | | | | | | | |
| 1867 | 11 | 18 | EQ | 7.5 | USVI | ST. CROIX: GALLOWS BAY | 17.75 | -64.70 | 59 | | | |
| 1867 | 11 | 18 | EQ | 7.5 | USVI | ST. CROIX: SANDY POINT | 17.68 | -64.90 | 59 | | | |
| 1867 | 11 | 18 | EQ | 7.5 | USVI | ST. CROIX: ALL OF | 17.74 | -64.74 | 58 | 14.6 | | |
| 1867 | 11 | 18 | EQ | 7.5 | USVI | ST. THOMAS: ALTONA | 18.34 | -64.95 | 16 | | | |
| 1867 | 11 | 18 | EQ | 7.5 | USVI | ST. THOMAS: CHARLOTTE AMALIE | 18.34 | -64.93 | 17 | 6 | 12 | |
| 1867 | 11 | 18 | EQ | 7.5 | USVI | ST. THOMAS: PRINCE RUPERT ROCK | 18.33 | -64.92 | 16 | 7 | | |
| 1867 | 11 | 18 | EQ | 7.5 | USVI | ST. THOMAS: WATER ISLAND | 18.32 | -64.95 | 14 | 12 | | |
| 1867 | 11 | 18 | EQ | 7.5 | USVI | ST. THOMAS: WEST GREGERIE CHANNEL | 18.33 | -64.95 | 15.4 | | | |
| 1867 | 11 | 18 | EQ | 7.5 | USVI | ST. THOMAS: ALL OF | 18.34 | -64.92 | 18 | 9.1 | 5 | |
| 1868 | 3 | 17 | EQ | * | PR | ARROYO | 17.98 | -66.05 | 101 | 1.5 | | |
| 1868 | 3 | 17 | EQ | * | PR | ISLA DE VIEQUES | 18.15 | -65.45 | 37 | | | |
| 1868 | 3 | 17 | EQ | * | PR | NAGUABO | 18.20 | -65.78 | 73 | | | |
| 1868 | 3 | 17 | EQ | * | USVI | ST. THOMAS: CHARLOTTE AMALIE | 18.33 | -64.92 | 32 | 0.6 | | |
| 1918 | 10 | 11 | EQ+LS | 7.1 | BRVI | TORTOLA ISLAND | 18.67 | -64.65 | 268 | 0.7 | | |
| 1918 | 10 | 11 | EQ+LS | 7.1 | PR | AGUADILLA | 18.45 | -67.13 | 28 | 3.4 | 32 | |
| 1918 | 10 | 11 | EQ+LS | 7.1 | PR | ARECIBO | 18.45 | -66.73 | 56 | 0.6 | | |
| 1918 | 10 | 11 | EQ+LS | 7.1 | PR | BAHIA DE BOQUERON | 18.46 | -66.08 | 120 | 1.1 | | |
| 1918 | 10 | 11 | EQ+LS | 7.1 | PR | CAJA DE MUERTOS | 17.87 | -66.53 | 115 | 1.5 | | |
| 1918 | 10 | 11 | EQ+LS | 7.1 | PR | CAYO CARDONA | 17.96 | -66.37 | 120 | 0.75 | | |
| 1918 | 10 | 11 | EQ+LS | 7.1 | PR | GUANICA | 17.98 | -66.92 | 84 | 0.5 | | |

| Date | | | Tsunami Source | | Tsunami Runup Location | | | | | | Runup | Tsunami Runup Location Effects | |
|------|----|----|----------------|---------------------|------------------------|------------------------------|-------|--------|---------------------------|----------------------|--------|--------------------------------|--|
| | | | Cause | Mag | State | Name | Lat | Long | Distance from Source (km) | Max Water Height (m) | Deaths | Injuries | |
| Yr | Mo | Da | | | | | | | | | | | |
| 1918 | 10 | 11 | EQ+LS | 7.1 | PR | ISABELA | 18.50 | -67.03 | 28 | 2 | | | |
| 1918 | 10 | 11 | EQ+LS | 7.1 | PR | ISLA MONA | 18.08 | -67.90 | 102 | 4 | | | |
| 1918 | 10 | 11 | EQ+LS | 7.1 | PR | MAYAGUEZ | 18.20 | -67.15 | 55 | 1.5 | 100 | | |
| 1918 | 10 | 11 | EQ+LS | 7.1 | PR | PONCE | 17.98 | -66.62 | 100 | | | | |
| 1918 | 10 | 11 | EQ+LS | 7.1 | PR | PUNTA AGUJEREDA | 18.51 | -67.17 | 21 | 6 | 8 | | |
| 1918 | 10 | 11 | EQ+LS | 7.1 | PR | PUNTA BORINQUEN | 18.48 | -67.17 | 24 | 4.5 | | | |
| 1918 | 10 | 11 | EQ+LS | 7.1 | PR | PUNTA HIGUERO | 18.37 | -67.27 | 38 | 5.5 | | | |
| 1918 | 10 | 11 | EQ+LS | 7.1 | PR | RIO CULEBRINAS | 18.40 | -67.18 | 33 | 4 | | | |
| 1918 | 10 | 11 | EQ+LS | 7.1 | PR | RIO GRANDE DE LOIZA | 18.45 | -65.88 | 141 | 1 | | | |
| 1918 | 10 | 11 | EQ+LS | 7.1 | USVI | ST. THOMAS: CHARLOTTE AMALIE | 18.33 | -64.92 | 243 | 0.45 | | | |
| 1918 | 10 | 11 | EQ+LS | 7.1 | USVI | ST. THOMAS: KRUM BAY | 18.33 | -64.96 | 239 | 1.2 | | | |
| 1918 | 10 | 25 | EQ | 6.4 | PR | MONA PASSAGE | 18.50 | -67.75 | 57 | | | | |
| 1946 | 8 | 4 | EQ | 7.9 | PR | SAN JUAN | 18.48 | -66.13 | 314 | 0.66 | | | |
| 1946 | 8 | 8 | EQ | 7.5 | PR | AGUADILLA | 18.45 | -67.13 | 275 | | | | |
| 1946 | 8 | 8 | EQ | 7.5 | PR | MAYAGUEZ | 18.20 | -67.15 | 286 | | | | |
| 1946 | 8 | 8 | EQ | 7.5 | PR | SAN JUAN | 18.48 | -66.13 | 372 | 0.6 | | | |
| 1989 | 11 | 1 | EQ | 4.4 | PR | CABO ROJO | 18.08 | -67.15 | 204 | 0.1 | | | |
| 1991 | 4 | 22 | EQ | 7.6 | PR | ISLA DE MAGUEYES | 17.97 | -67.04 | 1959 | 0.04 | | | |
| 1991 | 4 | 22 | EQ | 7.6 | USVI | ST. CROIX: LIMETREE | 17.70 | -64.75 | 2169 | 0.04 | | | |
| 2010 | 1 | 12 | EQ | 7.0 | PR | MONA ISLAND | 18.09 | -67.94 | 488 | | | | |
| 2010 | 1 | 12 | EQ | 7.0 | USVI | ST. CROIX: CHRISTIANSTED | 17.75 | -64.70 | 833 | 0.01 | | | |
| 2020 | 1 | 7 | EQ | 6.4 | PR | ISLA DE MAGUEYES | 17.97 | -67.04 | 25 | 0.02 | | | |

| Date | | | Tsunami Source | | Tsunami Runup Location | | | | | Runup | Tsunami Runup Location Effects | |
|------|----|----|----------------|---------------------|------------------------|------------------------------|-------|--------|---------------------------|----------------------|--------------------------------|----------|
| | | | Cause | Mag | State | Name | Lat | Long | Distance from Source (km) | Max Water Height (m) | Deaths | Injuries |
| Yr | Mo | Da | | | | | | | | | | |
| 2020 | 1 | 7 | EQ | 6.4 | PR | ESPERANZA, VIEQUES ISLAND | 18.09 | -65.47 | 143 | 0.06 | | |
| 2020 | 1 | 7 | EQ | 6.4 | USVI | ST. CROIX: CHRISTIANSTED | 17.75 | -64.70 | 225 | 0.02 | | |
| 2020 | 1 | 7 | EQ | 6.4 | USVI | ST. JOHN: LAMESHUR BAY | 18.32 | -64.72 | 226 | 0.02 | | |
| 2022 | 1 | 15 | Vol | * | PR | ARECIBO | 18.48 | -66.70 | 12605 | 0.17 | | |
| 2022 | 1 | 15 | Vol | * | PR | CULEBRA ISLAND | 18.30 | -65.30 | 12743 | 0.06 | | |
| 2022 | 1 | 15 | Vol | * | PR | MAYAGUEZ | 18.22 | -67.16 | 12551 | 0.06 | | |
| 2022 | 1 | 15 | Vol | * | PR | MONA ISLAND | 18.09 | -67.94 | 12468 | 0.12 | | |
| 2022 | 1 | 15 | Vol | * | USVI | ST. CROIX: CHRISTIANSTED | 17.75 | -64.70 | 12789 | 0.02 | | |
| 2022 | 1 | 15 | Vol | * | USVI | ST. CROIX: LIMETREE | 17.70 | -64.75 | 12782 | 0.04 | | |
| 2022 | 1 | 15 | Vol | * | USVI | ST. JOHN: LAMESHUR BAY | 18.32 | -64.72 | 12803 | 0.06 | | |
| 2022 | 1 | 15 | Vol | * | USVI | ST. THOMAS: CHARLOTTE AMALIE | 18.33 | -64.92 | 12783 | 0.09 | | |

PRODUCTS AND ASSOCIATED THREATS

Tsunami Information Statement – No Threat

For earthquakes located within 186 miles (300 km) of anywhere in Puerto Rico and the Virgin Islands that have magnitudes of 4.5 and above but pose no tsunami threat, PTWC will issue a Tsunami Information Statement. Such earthquakes may be felt in PRVI and potentially cause a tsunami concern. This product will quickly provide preliminary information about earthquake and that there is no tsunami threat.

In addition, for an earthquake located more than 186 miles (300 km) from Puerto Rico and the Virgin Islands with a magnitude of 6.0 and above in the Caribbean or 6.5 and above in the Atlantic that clearly poses no tsunami threat to those islands because it is on land, is too deep within the earth, is too small, or is too far away, a Tsunami Information Statement will be issued indicating that there is no tsunami threat.

Tsunami Information Statement – Potential Threat

If a distant earthquake poses a potential tsunami threat to Puerto Rico and the Virgin Islands but the earliest expected initial wave arrival time is more than 6 hours away and the tsunami is still under evaluation by PTWC, then a Tsunami Information Statement (TIS) will initially be issued indicating there is a potential tsunami threat. Additional TISs will be issued at least once an hour until either:

- 1) it is determined that there is no tsunami threat to PRVI and a final TIS is issued;
- 2) the tsunami is still under evaluation but the expected initial wave arrival time becomes less than 6 hours away from PRVI and the TIS is upgraded to a Tsunami Watch;
- 3) the evaluation indicates that there is only a marine tsunami threat to PRVI and the TIS is upgraded to a Tsunami Advisory; or
- 4) the evaluation indicates that there is a land inundation threat to PRVI and the TIS is upgraded to a Tsunami Warning.

When a TIS is issued for a potential tsunami threat then government officials, emergency managers, the media and the public should stay alert for further information and be prepared to respond in case the situation is upgraded to a Watch, Advisory, or Warning.

Tsunami Watch

If a distant earthquake poses a potential tsunami threat to Puerto Rico and the Virgin Islands; the earliest expected initial wave arrival time is between 6 and 3 hours away; and the threat is still under evaluation, then a Tsunami Watch will initially be issued indicating there is a potential tsunami threat. Additional Tsunami Watch messages will be issued at least once an hour until either:

- 1) it is determined that there is no tsunami threat to PRVI, and the Tsunami Watch is cancelled;
- 2) the tsunami is still under evaluation but the expected initial wave arrival time is now less than 3 hours away from PRVI so the Tsunami Watch is upgraded to a Tsunami Advisory or Warning;

- 3) the evaluation indicates that there is only a marine tsunami threat to PRVI and the Tsunami Watch is upgraded to a Tsunami Advisory; or
- 4) the evaluation indicates that there is a land inundation threat to PRVI and the Tsunami Watch is upgraded to a Tsunami Warning.

When a Tsunami Watch is issued for a potential tsunami threat then government officials, emergency managers, the media and the public should stay alert for further information and begin taking steps to respond quickly in case the situation is upgraded to an Advisory or Warning.

Tsunami Advisory

If an earthquake poses only a potential marine tsunami threat to Puerto Rico and the Virgin Islands, then a Tsunami Advisory will be issued. The determination of this level of threat may be made in one of two ways:

- 1) when the earliest expected arrival time of the initial tsunami wave is more than 3 hours away, then all available data and information will be used to forecast this level of tsunami threat to PRVI; or
- 2) when the earliest expected arrival time of the initial tsunami wave is less than 3 hours from the origin time of the earthquake, then this level of tsunami threat will be based primarily upon the earthquake's location, depth, and magnitude using pre-determined criteria.

Tsunami Advisories will continue to be issued at least once an hour until:

- 1) further information before impact indicates there is no tsunami threat to PRVI, and the Tsunami Advisory is cancelled;
- 2) further information before impact indicates there is a greater tsunami threat to PRVI and the Tsunami Advisory is upgraded to a Tsunami Warning;
- 3) the tsunami is impacting PRVI at a higher level than expected and the Tsunami Advisory is upgraded to a Tsunami Warning; or
- 4) the tsunami has already impacted PRVI and wave action has now diminished to the point where the Tsunami Advisory is cancelled.

A Tsunami Advisory means that that sea level is expected to repeatedly rise and fall by as much as 1 foot (0.3 meters) to 3.3 feet (1 meter) above and below the tide level in cycles that may take from five minutes to an hour. These sea level changes will be accompanied by dangerously strong and unusual near-shore ocean currents and minor flooding of harbors and beaches. This level of tsunami impact is a hazard to swimmers, surfers, divers, and others engaging in coastal ocean recreation or work activities. It is also a hazard to persons and boats in harbors.

Government officials and emergency managers should take appropriate action for a Tsunami Advisory to inform and instruct the public and others at risk to evacuate the water and take other appropriate actions in order to protect lives and property.

Tsunami Warning

If an earthquake poses a potential tsunami land inundation threat to Puerto Rico and the Virgin Islands, then a Tsunami Warning will be issued. The determination of this level of threat may be made in one of two ways:

- 1) when the earliest expected arrival time of the initial tsunami wave is more than 3 hours away, then all available data and information will be used to forecast this level of tsunami threat to PRVI; or
- 2) when the earliest expected arrival time of the initial tsunami wave is less than 3 hours away from the origin time of the earthquake, then this level of tsunami threat will be based primarily upon the earthquake's location, depth, and magnitude using pre-determined criteria.

Tsunami Warnings will continue to be issued at least once an hour until:

- 1) further information before impact indicates there is a reduced tsunami threat to PRVI and the Tsunami Warning is downgraded to a Tsunami Advisory;
- 2) further information before impact indicates there is no tsunami threat to PRVI and the Tsunami Warning is cancelled;
- 3) the tsunami has already impacted PRVI and wave action is only at a lower level or it has diminished to the point where the Tsunami Warning is downgraded to a Tsunami Advisory; or
- 4) the tsunami has already impacted PRVI and wave action was minor or non-existent so that the Tsunami Warning is cancelled.

A Tsunami Warning means that that sea level is expected to repeatedly rise and fall above and below the tide level by at 3.3 feet (1 meter) or more in cycles that may take from five minutes to an hour. These sea level changes will be accompanied by repeated flooding and draining of land near the coast accompanied by damage to or destruction of coastal structures. This level of tsunami impact is a hazard to all persons in coastal areas of tsunami inundation zones.

Government officials and emergency managers should take appropriate actions for a Tsunami Warning to inform and instruct the public and others at risk to evacuate the coast and take other appropriate actions in order to protect lives and property.

OFFICIAL PRODUCT DEFINITIONS

The following are the U.S. Tsunami Warning Center official domestic product definitions formulated by and agreed to by the National Tsunami Hazard Mitigation Program.

Tsunami Warning

A tsunami warning is issued when a tsunami with the potential to generate widespread inundation is imminent, expected, or occurring. Warnings alert the public that dangerous coastal flooding accompanied by powerful currents is possible and may continue for several hours after initial arrival. Warnings alert emergency management officials to take action for the entire tsunami hazard zone. Appropriate actions to be taken by local officials may include the evacuation of low-lying coastal areas, and the repositioning of ships to deep waters when there is time to safely do so. Warnings may be updated, adjusted geographically, downgraded, or

canceled. To provide the earliest possible alert, initial warnings are normally based only on seismic information.

Tsunami Advisory

A tsunami advisory is issued when a tsunami with the potential to generate strong currents or waves dangerous to those in or very near the water is imminent, expected, or occurring. The threat may continue for several hours after initial arrival, but significant inundation is not expected for areas under an advisory. Appropriate actions to be taken by local officials may include closing beaches, evacuating harbors and marinas, and the repositioning of ships to deep waters when there is time to safely do so. Advisories are normally updated to continue the advisory, expand/contract affected areas, upgrade to a warning, or cancel the advisory.

Tsunami Watch

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

Tsunami Information Statement

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

PRODUCT TYPES AND IDENTIFIERS

The following table provides the product identification codes of the World Meteorological Organization (WMO) and the U.S. Advanced Weather Information Processing System (AWIPS) for the PTWC product types issued for PRVI. This information may be necessary to request to receive these products over some circuits such as the WMO’s Global Telecommunications System (GTS), or to program certain systems such as the Emergency Manager’s Weather Information System (EMWIN) to alert on these products.

| Product Type | Language | WMO ID | AWIPS ID |
|---------------------|-----------------|---------------|-----------------|
| | | | |
| | | | |
| | | | |

| Product Type | Language | WMO ID | AWIPS ID |
|--------------|----------|--------|----------|
| | | | |

PRODUCT DISSEMINATION

Puerto Rico and Virgin Islands tsunami products issued by PTWC will be disseminated by the following methods:

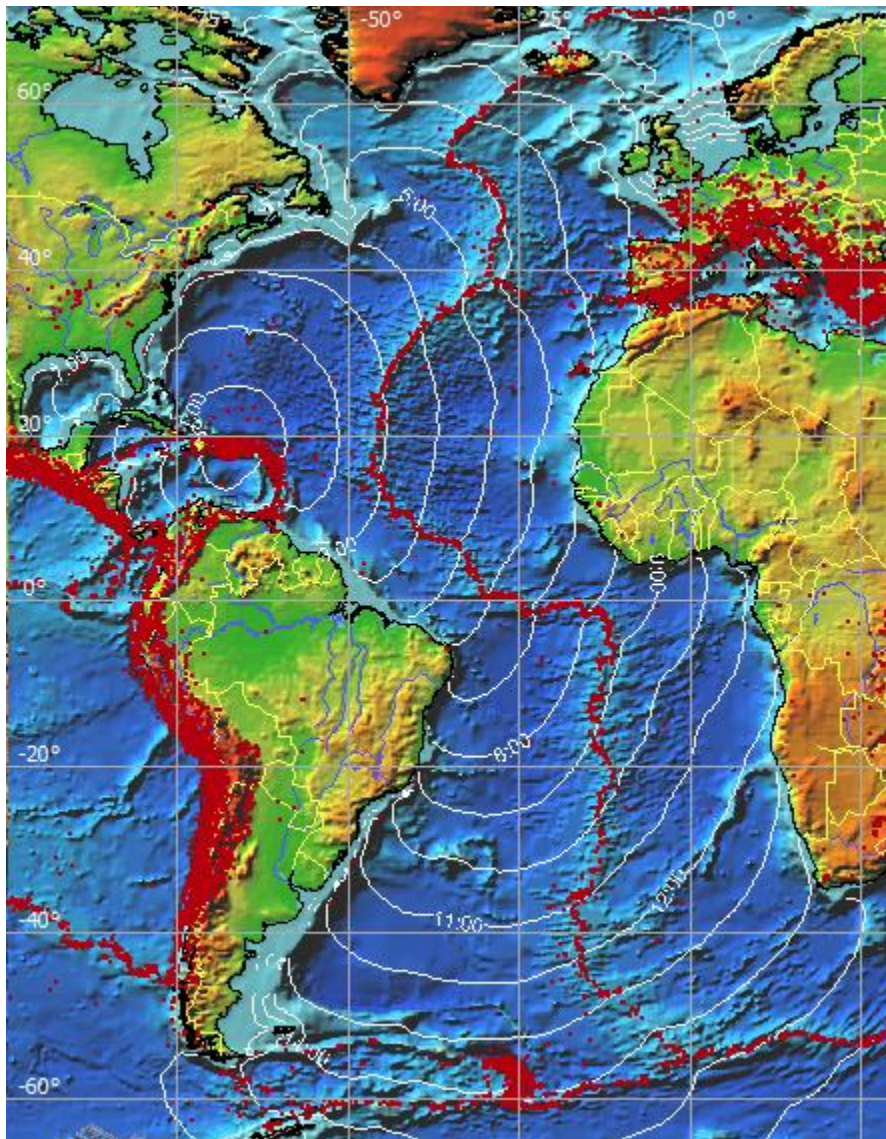
- GTS
- AWIPS
- Fax
- Email
- PTWC Website
- PTWC Facebook Page
- CTWP X Account (formerly Twitter)

In addition, for all products issued, PTWC will telephone key emergency management and response offices covering the region to ensure they are alerted to the situation, that they are receiving the messages, to provide additional guidance if available, and to receive any reports of tsunami activity.

TSUNAMI TRAVEL TIMES

The speed that tsunami waves travel depends upon the depth of the water. In the deep ocean, they can travel at speeds similar to those of a commercial jet – 500 to 600 miles per hour. In shallow water near the coast they travel at speeds similar to common wind waves – 20 to 30 miles per hour. The following map shows tsunami travel times to the island of Puerto Rico from the various shallow seismic zones in the Caribbean region (red dots). For tsunami-genic earthquakes that occur in the seismic zone to the north of Puerto Rico, the travel time can be less than 10 minutes. But even for the more distant Caribbean seismic zones such as those near the Lesser Antilles, Venezuela, Panama, or Honduras, the travel times range from less than an hour to no more than 3 hours. Travel times to the US and British Virgin Islands are similar.

The map below shows tsunami travel times to the island of Puerto Rico from the various shallow seismic zones in the Atlantic region (red dots). While there are no written records of any Atlantic tsunamis impacting PRVI, at least one significant Atlantic-crossing tsunami exists in the historical record. That was the 1755 Lisbon, Portugal earthquake and tsunami that was observed at several locations in the Lesser Antilles with amplitudes above a meter. Also, in Anegada, BVI, Atwater et al (2012) found evidence for a potential over-wash from this event. Travel times to Puerto Rico from potentially tsunami-genic earthquakes in the Atlantic vary from three hours to the nearest part of the Mid-Atlantic Ridge (an unlikely source) to eight hours for a source off of Lisbon, to more than thirteen hours for a tsunami from the Scotia Arc to the southeast of southern Argentina.



Tsunami travel time contours at 1-hour intervals across the Atlantic region to the island of Puerto Rico. White contours are labelled in hours of travel time. Red dots show the location of historical earthquakes having depths less than 100 km. They primarily outline boundaries between tectonic plates in the Atlantic region.

PRE-DETERMINED SEISMIC CRITERIA FOR INITIAL LEVELS OF ALERT

In order to provide the earliest possible information regarding any potential earthquake-generated tsunami, initial products and associated alerts for Puerto Rico and the Virgin Islands are based primarily upon the preliminary seismic parameters determined by PTWC within a few minutes of the earthquake and that may evolve over the next few tens of minutes as more seismic data are received and processed.

Distant Earthquakes

For earthquakes located further than three hours tsunami travel time from Puerto Rico and the Virgin Islands (these are primarily seismic zones outside of the Caribbean region), the seismic criteria used for initial products are similar to seismic criteria currently used by PTWC elsewhere and are given in the table below.

| Earthquake | | | | | |
|------------|----------|------------------|-----------|----------|------------------------|
| Sea | Land | Depth | Magnitude | ETA | Product/Alert Level |
| Yes | Yes | < 62 mi (100 km) | 6.5 - 7.8 | > 3 hr | TIS – No Threat |
| Yes | Yes | ≥ 62 mi (100 km) | ≥ 6.5 | > 3 hr | TIS – No Threat |
| Yes | Near Sea | < 62 mi (100 km) | ≥ 7.9 | > 6 hr | TIS – Potential Threat |
| Yes | Near Sea | < 62 mi (100 km) | ≥ 7.9 | 3 - 6 hr | Tsunami Watch |

Some flexibility may be applied by the PTWC duty staff in applying these criteria based upon their assessment of the accuracy of the earthquake parameters, judgments about the tsunami-genic potential of inland events, earthquake slowness indicative of increased tsunami-genic potential, and other considerations such as proximity to the 3- and 6-hour timing boundaries.

Nearby Earthquakes (tsunami arrival in less than 3 hours)

For earthquakes located within three hours tsunami travel time of Puerto Rico and the Virgin Islands (these are primarily seismic zones within the Caribbean region), the criteria for initial alerts is based entirely on the earthquake's proximity to PRVI and the preliminary seismic parameters. This streamlined procedure is due to the limited time available for any emergency management or public response if required. The criteria are based on historical data and tsunami modeling results and are designed to be conservative. They are described below.

1. If the earthquake is within 186 miles (300 km) of PRVI, has a preliminary depth less than 62 miles (100 km) and has a preliminary magnitude of 7.1 or greater then a **warning** will be issued.
2. If the earthquake is within 186 miles (300 km) of PRVI, has a preliminary depth less than 62 miles (100 km) and has a preliminary magnitude of 6.5 or greater but less than 7.1 then an **advisory** will be issued.
3. If the earthquake is between 186 miles (300 km) and 621 miles (1000 km) of PRVI, has a preliminary depth less than 62 miles (100 km) and has a preliminary magnitude of 7.6 or greater then a **warning** will be issued.

4. If the earthquake is between 186 miles (300 km) and 621 miles (1000 km) of PRVI, has a preliminary depth less than 62 miles (100 km) and has a preliminary magnitude of 7.1 or greater but less than 7.6 then an ***advisory*** will be issued.
5. If the earthquake is more than 621 miles (1000 km) from PRVI, has a preliminary depth less than 62 miles (100 km) and the preliminary magnitude of 7.9 or greater then a ***warning*** will be issued.
6. If the earthquake is more than 621 miles (1000 km) from PRVI, has a preliminary depth less than 62 miles (100 km) and the preliminary magnitude of 7.6 or greater but less than 7.9 then an ***advisory*** will be issued.
7. If the earthquake has a preliminary depth less than 62 miles (100 km) with preliminary magnitude of 6.0 or greater but does not meet any of the criteria above for an advisory or warning, then only an ***information statement*** will be issued indicating no tsunami threat.
8. If the preliminary earthquake depth is greater than or equal to 62 miles (100 km) and the preliminary earthquake magnitude is greater than or equal to 6.0, then only an ***information statement*** will be issued indicating no tsunami threat from a deep earthquake.

These procedures are generally consistent with current procedures used in PTWC’s Pacific and Caribbean international products.. Some flexibility may be used by the PTWC duty staff in applying these criteria based upon their assessment of the accuracy of the earthquake parameters, earthquake slowness indicative of increased tsunami-genic potential, and other factors such as the proximity to the three-hour timing boundary.

TSUNAMI THREAT CRITERIA FOR SUBSEQUENT LEVELS OF ALERT

The tsunami threat to Puerto Rico and the Virgin Islands from any earthquake or any potential or observed tsunami will be continuously evaluated by PTWC based upon all available data and information that will typically include the seismic parameters, sea level readings, historical data, tsunami reports, and one or more numerical simulations constrained by some of that information. Taking into account the various uncertainties, and in general leaning towards being conservative, a forecast will be made by PTWC duty personnel for PRVI and the appropriate product issued using the following criteria:

| Alert Level | Maximum Expected Rise of Sea Level above the Tide |
|--------------------|--|
| None | 0 to 1 ft (0 to 0.3 m) |
| Advisory | 1 to 3.3 ft (0.3 to 1 m) |
| Warning | > 3.3 ft (> 1 m) |

Alert levels may increase as an event evolves if information is received that justifies such an increase. Alert levels will not be lowered in advance of impact except in the case where an updated evaluation has very high level of confidence and there is a clear benefit to immediately lowering the alert. Alert levels may be lowered after impact as conditions warrant until cancellation.

EARTHQUAKE LOCATION DESCRIPTION

For earthquakes located further than 186 miles (300 km) from Puerto Rico and the Virgin Islands, then the Flynn-Engdahl global region names are used:

http://earthquake.usgs.gov/learn/topics/flinn_engdahl.php

For earthquakes located within 186 miles (300 km) of any of the islands that make up PRVI, the location name will reference the nearest island by the following scheme:

- 1) If the epicenter is within 6 miles (10 km) of the coast of the nearest island, the name will reference that island as follows: “in the vicinity of Mona” or “in the vicinity of Anegada”.
- 2) If the epicenter is further than 6 miles (10 km) from the nearest island, then the name will reference that island with a distance and direction as follows: “about 91 miles southeast of Saint Croix” or “about 48 miles north of Puerto Rico”.

FORECAST POINTS

The following is a list of the forecast points referenced whenever a Watch, Advisory, or Warning is issued. For each of these points, the estimated time of arrival of the first tsunami wave is given in the product. In addition, for some of the points, forecast tsunami wave amplitudes as well as the estimated duration of the hazard will be given when available and judged to be reliable. Forecast amplitudes and durations will be the maximum estimated values along the coastline near this point. Some of the places are sites where sea level gauges are located. Readings from those gauges will be reported in products as they become available.

| TERRITORY | LOCATION | LATITUDE | LONGITUDE |
|-------------|-----------------|----------|-----------|
| PUERTO RICO | SAN JUAN | 18.459N | 66.116W |
| PUERTO RICO | MAYAGUEZ | 18.220N | 67.160W |
| PUERTO RICO | PONCE | 17.968N | 66.621W |
| PUERTO RICO | FAJARDO | 18.335N | 65.631W |
| PUERTO RICO | MONA ISLAND | 18.090N | 67.939W |
| PUERTO RICO | AGUADILLA | 18.457N | 67.165W |
| PUERTO RICO | ARECIBO | 18.481N | 66.702W |
| PUERTO RICO | YABUCOA | 18.055N | 65.833W |
| PUERTO RICO | CAJA DE MUERTOS | 17.888N | 66.531W |
| PUERTO RICO | PENUELAS | 17.973N | 66.762W |

| TERRITORY | LOCATION | LATITUDE | LONGITUDE |
|------------------|------------------|-----------------|------------------|
| PUERTO RICO | MAGUEYES IS | 17.970N | 67.046W |
| PUERTO RICO | CULEBRA IS | 18.301N | 65.303W |
| PUERTO RICO | VIEQUES IS | 18.153N | 65.444W |
| US VIRGIN IS | CHARLOTTE AMALIE | 18.336N | 64.920W |
| US VIRGIN IS | LAMESHUR BAY | 18.318N | 64.724W |
| US VIRGIN IS | CHRISTIANSTED | 17.748N | 64.698W |
| US VIRGIN IS | LIMETREE | 17.695N | 64.754W |
| BR VIRGIN IS | ROADTOWN | 18.425N | 64.608W |
| BR VIRGIN IS | VIRGIN GORDA | 18.480N | 64.380W |
| BR VIRGIN IS | ANEGADA | 18.750N | 64.300W |

PRODUCT TIMING

The initial product for a potentially tsunami-genic earthquake will be issued as soon as the earthquake's location, depth, and magnitude can be determined by PTWC with sufficient accuracy to reasonably estimate its tsunami-genic potential. The speed at which this occurs depends upon a number of factors, the most important of which is the number of available real-time-reporting seismic stations in the vicinity of the earthquake. This density varies considerably around the Caribbean and Atlantic so that initial products may go out within two or three minutes for an earthquake located near Puerto Rico, but could take more than 10 minutes for an earthquake in the southern Atlantic. The speed of the initial product is most important for coasts located near the earthquake because a tsunami, if generated, may strike those nearby coasts within minutes.

For a Tsunami Information Statement (TIS) indicating no threat to PRVI only one product is usually issued. A supplemental TIS may be issued at a later time, however, if there is something new to report such as a significant change in the earthquake parameters or the observation of small tsunami waves.

For a TIS with a potential threat, or for a Watch, Advisory, or Warning related to a distant earthquake, subsequent products will be issued at least once an hour, or more frequently if there is significant new information to report. Products will continue to be issued at least hourly until the threat to PRVI has passed, either before impact because the threat was downgraded, or after impact when the threat is over.

For an Advisory or Warning for a nearby earthquake

A cancellation supplement may also be issued after a significant tsunami to distribute a summary of tsunami observations, some of which may not have been reported during the event.

PRODUCT CONTENT

The products will have content divided into the following lines and sections.

- WMO Product ID Line
- AWIPS Product ID Line
- UGC Code Line ¹
- VTEC Code Line(s) ²
- UGC Description Line ¹
- Broadcast Instruction Line ²
- Product Type Line
- Issuing Office Line
- Issuance Date/Time Line
- Product Headline
- Audience
- Updates in This Message ³
- Evaluation
- Preliminary Earthquake Parameters
- Recommended Actions
- Forecasts of Tsunami Activity ⁴
- Observations of Tsunami Activity ⁴
- Impacts
- Next Update and Additional Information

¹ These lines are for the Information Statement, Watch, Advisory or Warning.

² These lines are only in the NOAA Weather Radio version for a Watch, Advisory or Warning.

³ Updates are only present after the initial product.

⁴ Only present for a Watch, Advisory or Warning.

ENSURING PREPAREDNESS

One of the most significant challenges in mitigating tsunami impacts is maintaining a sufficient level of preparedness over decades and even centuries in order to respond quickly and accurately at the time a tsunami occurs. Two of the many requirements for getting and staying prepared are ensuring the reliable receipt of warning messages and the practicing of warning and response procedures to evaluate and improve their effectiveness and to help make them more automatic. To this end, PTWC regularly checks the communication links it uses to disseminate products. PTWC also helps to organize and carry out exercises that test communication links and drill the procedures of emergency response agencies and even the public at risk. PTWC will also participate when possible in training activities.

Communication Testing

Ensuring that PTWC products are successfully disseminated, received, and recognized is essential for effective tsunami warning. A destructive tsunami will strike coasts within just minutes to hours, so response actions to save lives must happen quickly. At PTWC, essential communication circuits are tested automatically every few minutes to ensure they are operational. If a circuit fails, the duty staff receive an alarm and work to troubleshoot and fix the problem. All of the PTWC circuits have redundancy so that even in the case of a circuit failure a backup circuit can be used instead. But having working circuits at PTWC to ensure products get out of PTWC is only one link in the chain.

Products must be received at the other end. To help ensure this part of the chain, core partners are advised to receive products by multiple methods. Again, if one method fails for any reason, there should be a backup method available. PTWC issues products roughly twice a month to PRVI – primarily Tsunami Information Statements for small local earthquakes that may have been felt, and less frequently for large and mostly non-tsunamigenic earthquakes that occur somewhere further away in the Caribbean or Atlantic regions. Following each issuance, PTWC staff call a list of core recipients to make sure they got the product. Occasionally there is a problem and PTWC will help troubleshoot and address the problem if it can.

PTWC used to conduct unscheduled communication tests once a month – sending out a dummy warning message and requiring a response from core recipients. The response from this kind of test, that required core recipients to quickly recognize and respond to a tsunami message without a phone call to prompt them, helped validate the last link in the dissemination chain (at least to core partners). There was a hiatus in this activity for several years following problems due to third parties misinterpreting codes in similar test messages from the other U.S. tsunami warning center and automatically triggering tsunami warnings that went to the public. Although that problem is now solved PTWC has not yet resumed such testing. To solve the problem, tests are now announced well in advance which degrades their usefulness. Nevertheless, PTWC intends to resume such testing in the near future as a supplement to the other methods of testing.

Exercises

Puerto Rico and the Virgin Islands participate in annual CaribeWave exercises carried out for countries and territories of the UNESCO/IOC Tsunami and Other Coastal Hazards Warning System for the Caribbean and Adjacent Regions (CARIBE-EWS). These exercises usually simulate one or more tsunami scenarios affecting coasts of the Caribbean region including Puerto Rico and the Virgin Islands. PTWC produces the PRVI domestic messages for CaribeWave exercises and distribute them as required before and during the exercise. PTWC can also produce appropriate PRVI messages for other exercises that the region would like to conduct.

SAMPLE PRODUCTS

On the following pages are samples of the various types of PTWC domestic products for PRVI to show their general format and the type of information they contain. They are not intended to simulate or otherwise represent the characteristics of any particular actual event or related threat. Each of the public products (Tsunami Information Statement, Watch, Advisory, or Warning) is provided in both English and Spanish and have Universal Geographic Codes (UGC) with the corresponding UGC Description. The NOAA Weather Radio (NWR) version that is only issued for a Watch, Advisory, or Warning, also contains Valid Time Event Codes (VTEC) as well as a shorter summary of the situation and recommended actions.

Nearby Earthquake - Tsunami Information Statement

| |
|-----------------|
| ENGLISH VERSION |
|-----------------|

ZCZC
WECA42 PHEB 300303
TIBCAR

TSUNAMI INFORMATION STATEMENT NUMBER 1
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
1103 PM AST FRI JAN 29 2016

AMZ712-715-725-735-742-745-PRZ001>003-005-007-008-010>013-
VIZ001-002-300503-
COASTAL AREAS OF PUERTO RICO - THE U.S. VIRGIN ISLANDS AND
THE BRITISH VIRGIN ISLANDS

...NO TSUNAMI THREAT FROM A NEARBY EARTHQUAKE...

AUDIENCE

* GOVERNMENT OFFICIALS... MEDIA... AND GENERAL PUBLIC OF PUERTO RICO... THE U.S. VIRGIN ISLANDS... AND THE BRITISH VIRGIN ISLANDS.

EVALUATION

- * AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 5.1 OCCURRED ABOUT 13 MILES NORTH OF PUERTO RICO AT 1100 PM AST ON FRIDAY JANUARY 29 2016.
- * BASED ON ALL AVAILABLE DATA... THERE IS NO TSUNAMI THREAT TO PUERTO RICO... THE U.S. VIRGIN ISLANDS... OR THE BRITISH

VIRGIN ISLANDS FROM THIS EARTHQUAKE.

- * PEOPLE MAY HAVE EXPERIENCED SHAKING FROM THE EARTHQUAKE.

PRELIMINARY EARTHQUAKE PARAMETERS

- * THE FOLLOWING PARAMETERS ARE BASED ON A PRELIMINARY RAPID ASSESSMENT OF THE EARTHQUAKE AND CHANGES MAY OCCUR.

- * MAGNITUDE 5.1
- * ORIGIN TIME 1100 PM AST JAN 29 2016
- * COORDINATES 18.7 NORTH 67.1 WEST
- * DEPTH 8 MILES
- * LOCATION ABOUT 13 MILES NORTH OF PUERTO RICO

RECOMMENDED ACTIONS

- * NO ACTION IS REQUIRED.

IMPACTS

- * NO TSUNAMI IMPACTS ARE EXPECTED.

NEXT UPDATE AND ADDITIONAL INFORMATION

- * THIS WILL BE THE ONLY STATEMENT ISSUED FOR THIS EVENT UNLESS ADDITIONAL DATA ARE RECEIVED OR THE SITUATION CHANGES.
- * FURTHER INFORMATION ABOUT THIS EVENT AND ANY TSUNAMI THREAT TO PUERTO RICO AND THE VIRGIN ISLANDS MAY BE FOUND ON THE INTERNET AT PTWC.WEATHER.GOV AND AT WWW.TSUNAMI.GOV.
- * INFORMATION REGARDING ANY TSUNAMI THREAT TO US GULF OR ATLANTIC COASTS WILL BE ISSUED BY THE US NATIONAL TSUNAMI WARNING CENTER AND CAN BE FOUND ON THE INTERNET AT NTWC.ARH.NOAA.GOV AND AT WWW.TSUNAMI.GOV.
- * AUTHORITATIVE INFORMATION ABOUT THE EARTHQUAKE CAN BE OBTAINED FROM THE CORRESPONDING REGIONAL SEISMIC NETWORK OR THE U.S. GEOLOGICAL SURVEY ON THE INTERNET AT EARTHQUAKE.USGS.GOV/EARTHQUAKES -ALL LOWERCASE LETTERS-.

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SPANISH VERSION

ZCZC
WECA52 PHEB 300303
TIBSP1

BOLETIN INFORMATIVO DE TSUNAMI NUMERO 1
SMN CENTRO DE ALERTAS DE TSUNAMI DEL PACIFICO EWA BEACH HI
1103 PM AST FRI JAN 29 2016

AMZ712-715-725-735-742-745-PRZ001>003-005-007-008-010>013-
VIZ001-002-300503-
ZONAS COSTERAS DE PUERTO RICO - LAS ISLAS VÍRGENES ESTADOUNIDENSES Y
LAS ISLAS VÍRGENES BRITÁNICAS

...NO HAY PELIGRO DE TSUNAMI DEBIDO A ESTE TERREMOTO CERCANO...

AUDIENCIA

- * FUNCIONARIOS GUBERNAMENTALES... MEDIOS DE PRENSA... Y EL PUBLICO EN GENERAL EN PUERTO RICO... LAS ISLAS VIRGENES DE LOS ESTADOS UNIDOS... Y LAS ISLAS VIRGENES BRITANICAS.

EVALUACION

- * UN TERREMOTO CON MAGNITUD PRELIMINAR 5.1 HA OCURRIDO UNAS 13 MILLAS AL NORTE DE PUERTO RICO A LAS 1100 PM AST EL VIERNES 29 DE ENERO DEL 2016.
- * BASANDOSE EN EL ANALISIS DE TODOS LOS DATOS DISPONIBLES... NO EXISTE PELIGRO DE TSUNAMI PARA PUERTO RICO... LAS ISLAS VIRGENES DE LOS ESTADOS UNIDOS... O LAS ISLAS VIRGENES BRITANICAS DEBIDO A ESTE TERREMOTO.
- * LA POBLACION PUEDE HABER SENTIDO EL TERREMOTO.

PARAMETROS PRELIMINARES DEL TERREMOTO

- * LOS SIGUIENTES PARAMETROS ESTAN BASADOS EN UNA EVALUACION PRELIMINAR RAPIDA Y PUEDEN VARIAR.
- * MAGNITUD 5.1
- * TIEMPO DE ORIGEN 1100 PM AST ENE 29 2016
- * COORDENADAS 18.7 NORTE 67.1 OESTE
- * PROFUNDIDAD 8 MILLAS
- * LOCALIZACION UNAS 13 MILLAS AL NORTE DE PUERTO RICO

ACCIONES RECOMENDADAS

- * NO SE REQUIERE ACCION.

IMPACTOS

- * NO SE ESPERAN IMPACTOS DE TSUNAMI DEBIDO A ESTE TERREMOTO.

PROXIMA ACTUALIZACION E INFORMACION ADICIONAL

- * ESTE SERA EL UNICO COMUNICADO EMITIDO ACERCA DE ESTE EVENTO A NO SER QUE SE RECIBA INFORMACION ADICIONAL O LA SITUACION CAMBIE.
- * MAS INFORMACION ACERCA DE ESTE EVENTO PUEDE SER ACCESADA EN INTERNET EN LOS SITIOS WEB PTWC.WEATHER.GOV Y WWW.TSUNAMI.GOV.
- * INFORMACION ACERCA DEL PELIGRO DE TSUNAMI PARA COSTAS ESTADOUNIDENSES EN EL GOLFO DE MEXICO Y EL ATLANTICO SERA EMITIDA POR EL CENTRO NACIONAL DE ALERTAS DE TSUNAMIS Y PUEDE SER ACCESADA EN INTERNET EN LOS SITIOS WEB NTWC.ARH.NOAA.GOV Y WWW.TSUNAMI.GOV.
- * INFORMACION OFICIAL AUTORIZADA ACERCA DE ESTE TERREMOTO PUEDE SER PROVEIDA POR LA CORRESPONDIENTE RED SISMICA REGIONAL O EL SERVICIO GEOLOGICO DE LOS ESTADOS UNIDOS EN SU SITIO WEB EARTHQUAKE.USGS.GOV/EARTHQUAKES -TODO EN MINUSCULAS-.

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Nearby Earthquake – Initial Tsunami Advisory Message

| |
|-----------------|
| ENGLISH VERSION |
|-----------------|

ZCZC
WECA40 PHEB 300303
TSUCAR

TSUNAMI MESSAGE NUMBER 1
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
1103 PM AST FRI JAN 29 2016

AMZ712-715-725-735-742-745-PRZ001>003-005-007-008-010>013-
VIZ001-002-300503-
COASTAL AREAS OF PUERTO RICO - THE U.S. VIRGIN ISLANDS AND
THE BRITISH VIRGIN ISLANDS

...A TSUNAMI ADVISORY IS NOW IN EFFECT...

AUDIENCE

- * GOVERNMENT OFFICIALS... MEDIA... AND GENERAL PUBLIC OF PUERTO RICO... THE U.S. VIRGIN ISLANDS... AND THE BRITISH VIRGIN ISLANDS.

EVALUATION

- * AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 6.8 OCCURRED ABOUT 49 MILES NORTH OF PUERTO RICO AT 1100 PM AST ON FRIDAY JANUARY 29 2016.
- * BASED ON ALL AVAILABLE DATA... THERE IS A TSUNAMI THREAT TO PUERTO RICO AND THE VIRGIN ISLANDS OF SEA LEVEL FLUCTUATIONS AND STRONG OCEAN CURRENTS THAT COULD BE A HAZARD ALONG COASTS... BEACHES... IN HARBORS... AND IN COASTAL WATERS.
- * THE EARLIEST ESTIMATED TIME THAT HAZARDOUS SEA LEVEL FLUCTUATIONS AND STRONG OCEAN CURRENTS MAY BEGIN IN PUERTO RICO AND THE VIRGIN ISLANDS IS

1109 PM AST ON FRIDAY JANUARY 29 2016

- * ACTIONS TO PROTECT HUMAN LIFE... SAFETY AND PROPERTY SHOULD BE TAKEN IMMEDIATELY.
- * THE GENERATION OF TSUNAMI WAVES HAS NOT YET BEEN CONFIRMED.
- * MONITORING IS UNDERWAY TO FURTHER EVALUATE THE TSUNAMI THREAT.
- * PEOPLE MAY HAVE EXPERIENCED SHAKING FROM THE EARTHQUAKE.

PRELIMINARY EARTHQUAKE PARAMETERS

- * THE FOLLOWING PARAMETERS ARE BASED ON A PRELIMINARY RAPID ASSESSMENT OF THE EARTHQUAKE AND CHANGES MAY OCCUR.
- * MAGNITUDE 6.8
- * ORIGIN TIME 1100 PM AST JAN 29 2016
- * COORDINATES 19.2 NORTH 66.4 WEST
- * DEPTH 8 MILES
- * LOCATION ABOUT 49 MILES NORTH OF PUERTO RICO

RECOMMENDED ACTIONS

- * ACTIONS REQUIRED TO PROTECT HUMAN LIFE... SAFETY AND PROPERTY WILL VARY WITHIN THE TSUNAMI ADVISORY AREA.
- * PERSONS LOCATED IN OR NEAR THE OCEAN SHOULD MOVE OUT OF THE WATER... OFF THE BEACH AND AWAY FROM HARBORS... MARINAS... BAYS AND INLETS.
- * DO NOT GO TO THE SHORE TO OBSERVE THE TSUNAMI.
- * DO NOT RETURN TO EVACUATED AREAS UNTIL THE ALL CLEAR IS GIVEN BY LOCAL AUTHORITIES.
- * BE ALERT TO AND FOLLOW INSTRUCTIONS FROM LOCAL EMERGENCY MANAGEMENT OFFICIALS BECAUSE THEY MAY HAVE MORE DETAILED OR SPECIFIC INFORMATION FOR YOUR LOCATION.
- * BOATERS - WHERE TIME AND CONDITIONS PERMIT... MOVE YOUR BOAT OUT TO SEA TO A DEPTH OF AT LEAST 450 FEET.
- * BOATERS - IF AT SEA... AVOID ENTERING SHALLOW WATER... HARBORS... MARINAS... BAYS AND INLETS TO AVOID FLOATING AND SUBMERGED DEBRIS AND STRONG CURRENTS.

FORECASTS OF TSUNAMI ACTIVITY

- * ESTIMATED TIMES OF ARRIVAL -ETA- OF THE INITIAL TSUNAMI WAVE ARE GIVEN BELOW.
- * OBSERVED ARRIVAL TIMES MAY DIFFER FROM THESE ETAS AND THE INITIAL WAVE MAY NOT BE THE LARGEST.
- * FORECAST TSUNAMI HEIGHTS AND DURATIONS ARE NOT YET AVAILABLE.
- * A TSUNAMI IS A SERIES OF WAVES AND THE DURATION OF EACH WAVE CAN BE FIVE MINUTES TO ONE HOUR.

| TERRITORY | COASTAL LOCATION | ETA (AST) | FORECAST HEIGHT | FORECAST DURATION |
|-------------|------------------|-----------|-----------------|-------------------|
| PUERTO RICO | ARECIBO | 1109 PM | | |
| | SAN JUAN | 1109 PM | | |
| | MAYAGUEZ | 1118 PM | | |
| | AGUADILLA | 1119 PM | | |
| | MONA ISLAND | 1127 PM | | |
| | PENUELAS | 1137 PM | | |
| | PONCE | 1141 PM | | |
| | MAGUEYES IS | 1144 PM | | |
| | FAJARDO | 1147 PM | | |
| YABUCOA | 1147 PM | | | |

| | | |
|------|------------------|---------|
| | CAJA DE MUERTOS | 1151 PM |
| | CULEBRA IS | 1201 AM |
| | VIEQUES IS | 1202 AM |
| BVI | ANEGADA | 1134 PM |
| | VIRGIN GORDA | 1155 PM |
| | ROADTOWN | 1255 AM |
| USVI | CHRISTIANSTED | 1141 PM |
| | LIMETREE | 1144 PM |
| | LAMESHUR BAY | 1207 AM |
| | CHARLOTTE AMALIE | 1219 AM |

OBSERVATIONS OF TSUNAMI ACTIVITY

* NO OBSERVATIONS OF TSUNAMI ACTIVITY ARE AVAILABLE YET.

IMPACTS

- * IMPACTS WILL VARY AT DIFFERENT LOCATIONS WITHIN PUERTO RICO AND THE VIRGIN ISLANDS.
- * SEA LEVEL FLUCTUATIONS THAT ARE GENERALLY LESS THAN 3 FEET ABOVE AND BELOW THE TIDE LEVEL.
- * WAVES AND CURRENTS THAT CAN DROWN OR INJURE PEOPLE IN THE WATER.
- * WAVES AND CURRENTS ON BEACHES AND IN HARBORS... MARINAS... BAYS... AND INLETS THAT MAY BE ESPECIALLY DANGEROUS.
- * THE HAZARD IS FORECAST TO BEGIN AROUND 1109 PM AST ON FRIDAY JANUARY 29 2016 AND IT CAN PERSIST FOR MANY HOURS OR LONGER.

NEXT UPDATE AND ADDITIONAL INFORMATION

- * THE NEXT MESSAGE WILL BE ISSUED IN THIRTY MINUTES... OR SOONER IF THE SITUATION WARRANTS.
- * FURTHER INFORMATION ABOUT THIS EVENT AND ANY TSUNAMI THREAT TO PUERTO RICO AND THE VIRGIN ISLANDS MAY BE FOUND ON THE INTERNET AT PTWC.WEATHER.GOV AND AT WWW.TSUNAMI.GOV.
- * INFORMATION REGARDING ANY TSUNAMI THREAT TO US GULF OR ATLANTIC COASTS WILL BE ISSUED BY THE US NATIONAL TSUNAMI WARNING CENTER AND CAN BE FOUND ON THE INTERNET AT NTWC.ARH.NOAA.GOV AND AT WWW.TSUNAMI.GOV.

* AUTHORITATIVE INFORMATION ABOUT THE EARTHQUAKE CAN BE OBTAINED FROM THE CORRESPONDING REGIONAL SEISMIC NETWORK OR THE U.S. GEOLOGICAL SURVEY ON THE INTERNET AT EARTHQUAKE.USGS.GOV/EARTHQUAKES -ALL LOWERCASE LETTERS-.

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| SPANISH VERSION |
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ZCZC
WECA50 PHEB 300303
TSUSP1

MENSAJE DE TSUNAMI NUMERO 1
SMN CENTRO DE ALERTAS DE TSUNAMI DEL PACIFICO EWA BEACH HI
1103 PM AST FRI JAN 29 2016

AMZ712-715-725-735-742-745-PRZ001>003-005-007-008-010>013-
VIZ001-002-300503-
ZONAS COSTERAS DE PUERTO RICO - LAS ISLAS VÍRGENES ESTADOUNIDENSES Y
LAS ISLAS VÍRGENES BRITÁNICAS

...UNA ADVERTENCIA DE TSUNAMI ESTA AHORA EN EFECTO...

AUDIENCIA

* FUNCIONARIOS GUBERNAMENTALES... MEDIOS DE PRENSA... Y EL PUBLICO EN GENERAL EN PUERTO RICO... LAS ISLAS VIRGENES DE LOS ESTADOS UNIDOS... Y LAS ISLAS VIRGENES BRITANICAS.

EVALUACION

- * UN TERREMOTO CON MAGNITUD PRELIMINAR 6.8 HA OCURRIDO UNAS 49 MILLAS AL NORTE DE PUERTO RICO A LAS 1100 PM AST EL VIERNES 29 DE ENERO DEL 2016.
- * BASANDOSE EN EL ANALISIS DE TODOS LOS DATOS DISPONIBLES... EXISTE PELIGRO DE TSUNAMI PARA PUERTO RICO Y LAS ISLAS VIRGENES DEBIDO A FLUCTUACIONES DEL NIVEL DEL MAR Y CORRIENTES MARINAS FUERTES QUE PODRIAN PRESENTAR PELIGRO A LO LARGO DE COSTAS... PLAYAS... PUERTOS... Y AGUAS COSTERAS.
- * EL TIEMPO DE ARRIBO MAS TEMPRANO A PARTIR DEL CUAL FLUCTUACIONES PELIGROSAS DEL NIVEL DEL MAR Y CORRIENTES OCEANICAS FUERTES PUEDEN COMENZAR EN PUERTO RICO Y LAS ISLAS VIRGENES ES

1109 PM AST EL VIERNES 29 DE ENERO DEL 2016

- * ACCIONES PARA PROTEGER VIDAS HUMANAS... LA SEGURIDAD Y LOS BIENES MATERIALES DEBEN TOMARSE DE FORMA INMEDIATA.
- * TODAVIA NO SE HA OBSERVADO ACTIVIDAD DE TSUNAMI.
- * MONITOREO EN CURSO PARA EVALUAR MAS A FONDO EL PELIGRO DE TSUNAMI.
- * LA POBLACION PUEDE HABER SENTIDO EL TERREMOTO.

PARAMETROS PRELIMINARES DEL TERREMOTO

- * LOS SIGUIENTES PARAMETROS ESTAN BASADOS EN UNA EVALUACION PRELIMINAR RAPIDA Y PUEDEN VARIAR.
- * MAGNITUD 6.8
- * TIEMPO DE ORIGEN 1100 PM AST ENE 29 2016
- * COORDENADAS 19.2 NORTE 66.4 OESTE
- * PROFUNDIDAD 8 MILLAS
- * LOCALIZACION UNAS 49 MILLAS AL NORTE DE PUERTO RICO

ACCIONES RECOMENDADAS

- * LAS ACCIONES REQUERIDAS PARA PROTEGER VIDAS HUMANAS... LA SEGURIDAD Y LOS BIENES MATERIALES VARIARAN DENTRO DE LAS ZONA EN ESTADO DE ADVERTENCIA.
- * PERSONAS LOCALIZADAS EN EL MAR O CERCA DEL MAR DEBEN SALIR DEL AGUA... FUERA DE LA PLAYA Y ALEJARSE DE PUERTOS... MARINAS... BAHIAS Y ENSENADAS.
- * NO VAYA A LA ORILLA DEL MAR PARA OBSERVAR EL TSUNAMI.
- * NO REGRESE A ZONAS EVACUADAS HASTA TANTO LAS AUTORIDADES DECLAREN QUE EL PELIGRO YA PASO.
- * MANTENGASE ALERTA Y SIGA LAS INSTRUCCIONES PROVENIENTES DE FUNCIONARIOS DE LAS AGENCIAS LOCALES PARA EL MANEJO DE EMERGENCIAS YA QUE LAS MISMAS DISPONEN DE INFORMACION O INSTRUCCIONES MAS ESPECIFICAS PARA SU LOCALIDAD.
- * MARINEROS - DONDE EL TIEMPO Y LAS CONDICIONES PERMITAN... MUEVAN SU EMBARCACION MAR AFUERA HACIA PROFUNDIDADES DE AL MENOS 450 PIES.
- * MARINEROS - SI SE ENCUENTRA MAR AFUERA... EVITEN ADENTRARSE EN AGUAS SOMERAS... PUERTOS... MARINAS... BAHIAS Y ENSENADAS PARA EVITAR ESCOMBROS TANTO FLOTANTES COMO SUMERGIDOS Y CORRIENTES FUERTES.

PRONOSTICO DE LA ACTIVIDAD DEL TSUNAMI

- * LOS TIEMPOS DE ARRIBO ESTIMADOS -TAE- DE LA PRIMERA OLA DEL TSUNAMI SE PROVEEN A CONTINUACION.
- * LOS TIEMPOS DE ARRIBO REALES PUEDEN DIFERIR DE LOS ESTIMADOS Y LA PRIMERA OLA PUEDE QUE NO SEA LA MAS GRANDE.
- * EL PRONOSTICO DE LAS AMPLITUDES Y DURACION DEL TSUNAMI NO ESTAN AUN DISPONIBLES.
- * UN TSUNAMI ES UN TREN DE OLAS Y EL TIEMPO ENTRE OLAS PUEDE VARIAR DESDE CINCO MINUTOS HASTA UNA HORA.

| TERRITORIO | LOCALIZACION COSTERA | TAE (AST) | ----PRONOSTICO---- | |
|-------------|-------------------------|--------------|--------------------|----------|
| | | | ALTURA | DURACION |
| PUERTO RICO | ARECIBO | 1109 PM | | |
| | SAN JUAN | 1109 PM | | |
| | MAYAGUEZ | 1118 PM | | |
| | AGUADILLA | 1119 PM | | |
| | MONA ISLAND | 1127 PM | | |
| | PENUELAS | 1137 PM | | |
| | PONCE | 1141 PM | | |
| | MAGUEYES IS | 1144 PM | | |
| | FAJARDO | 1147 PM | | |
| | YABUCOA | 1147 PM | | |
| | CAJA DE MUERTOS | 1151 PM | | |
| | CULEBRA IS | 1201 AM | | |
| | VIEQUES IS | 1202 AM | | |
| BVI | ANEGADA | 1134 PM | | |
| | VIRGIN GORDA | 1155 PM | | |
| | ROADTOWN | 1255 AM | | |
| USVI | CHRISTIANSTED | 1141 PM | | |
| | LIMETREE | 1144 PM | | |
| | LAMESHUR BAY | 1207 AM | | |
| | CHARLOTTE AMALIE | 1219 AM | | |

OBSERVACIONES DE ACTIVIDAD DEL TSUNAMI

- * TODAVIA NO SE DISPONE DE OBSERVACIONES DE LA ACTIVIDAD DEL TSUNAMI.

IMPACTOS

- * LOS IMPACTOS VARIARAN PARA DIFERENTES LOCALIDADES EN PUERTO

RICO Y LAS ISLAS VIRGENES.

- * FLUCTUACIONES DEL NIVEL DEL MAR POR LO GENERAL NO MAYORES DE 3 PIES TANTO POR ENCIMA COMO POR DEBAJO DEL NIVEL DE MAREA.
- * OLAS Y CORRIENTES QUE PUEDEN AHOGAR O LESIONAR A PERSONAS EN EL AGUA.
- * OLAS Y CORRIENTES EN PLAYAS Y PUERTOS... MARINAS... BAHIAS... Y ENSENADAS QUE PUEDEN RESULTAR ESPECIALMENTE PELIGROSAS.
- * EL PELIGRO SE PRONOSTICA QUE COMENZARA ALREDEDOR DE LA(S) 1109 PM AST EL VIERNES 29 DE ENERO DEL 2016 Y PUEDE PERSISTIR POR VARIAS HORAS O MAS.

PROXIMA ACTUALIZACION E INFORMACION ADICIONAL

- * EL PROXIMO MENSAJE SERA EMITIDO EN TREINTA MINUTOS... O MAS PRONTO SI LA SITUACION ASI LO AMERITA.
- * MAS INFORMACION ACERCA DE ESTE EVENTO PUEDE SER ACCESADA EN INTERNET EN LOS SITIOS WEB PTWC.WEATHER.GOV Y WWW.TSUNAMI.GOV.
- * INFORMACION ACERCA DEL PELIGRO DE TSUNAMI PARA COSTAS ESTADOUNIDENSES EN EL GOLFO DE MEXICO Y EL ATLANTICO SERA EMITIDA POR EL CENTRO NACIONAL DE ALERTAS DE TSUNAMIS Y PUEDE SER ACCESADA EN INTERNET EN LOS SITIOS WEB NTWC.ARH.NOAA.GOV Y WWW.TSUNAMI.GOV.
- * INFORMACION OFICIAL AUTORIZADA ACERCA DE ESTE TERREMOTO PUEDE SER PROVEIDA POR LA CORRESPONDIENTE RED SISMICA REGIONAL O EL SERVICIO GEOLOGICO DE LOS ESTADOS UNIDOS EN SU SITIO WEB EARTHQUAKE.USGS.GOV/EARTHQUAKES -TODO EN MINUSCULAS-.

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| NWR VERSION |
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ZCZC
WECA60 PHEB 300303
TSUCA1

BULLETIN
TSUNAMI MESSAGE NUMBER 1
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
1103 PM AST FRI JAN 29 2016

AMZ712-715-725-735-742-745-PRZ001>003-005-007-008-010>013-
VIZ001-002-300503-
/O.NEW.PHEB.TS.Y.0013.160130T0303Z-000000T0000Z/

COASTAL AREAS OF PUERTO RICO - THE U.S. VIRGIN ISLANDS AND
THE BRITISH VIRGIN ISLANDS
1103 PM AST FRI JAN 29 2016

...A TSUNAMI ADVISORY IS NOW IN EFFECT...

PERSONS LOCATED IN OR NEAR THE OCEAN SHOULD MOVE OUT OF THE
WATER... OFF THE BEACH AND AWAY FROM HARBORS... MARINAS... BAYS
AND INLETS.

AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 6.8 OCCURRED ABOUT
49 MILES NORTH OF PUERTO RICO AT 1100 PM AST ON FRIDAY JANUARY
29 2016.

A HAZARDOUS TSUNAMI MAY HAVE BEEN GENERATED BY THIS NEARBY
EARTHQUAKE THAT COULD SOON IMPACT NEARBY COASTS.

BASED ON ALL AVAILABLE DATA... THERE IS A TSUNAMI THREAT TO
PUERTO RICO AND THE VIRGIN ISLANDS OF SEA LEVEL FLUCTUATIONS AND
STRONG OCEAN CURRENTS THAT COULD BE A HAZARD ALONG COASTS...
BEACHES... IN HARBORS... AND IN COASTAL WATERS.

THE HAZARD IS FORECAST TO BEGIN AROUND 1109 PM AST ON FRIDAY
JANUARY 29 2016 AND IT CAN PERSIST FOR MANY HOURS OR LONGER.

DO NOT GO TO THE SHORE TO OBSERVE THE TSUNAMI.

DO NOT RETURN TO EVACUATED AREAS UNTIL THE ALL CLEAR IS GIVEN BY
LOCAL AUTHORITIES.

BE ALERT TO AND FOLLOW INSTRUCTIONS FROM LOCAL EMERGENCY
MANAGEMENT OFFICIALS BECAUSE THEY MAY HAVE MORE DETAILED OR
SPECIFIC INFORMATION FOR YOUR LOCATION.

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Nearby Earthquake – Tsunami Advisory with Forecast

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| ENGLISH VERSION |
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ZCZC
WECA40 PHEB 300325
TSUCAR

TSUNAMI MESSAGE NUMBER 2
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
1125 PM AST FRI JAN 29 2016

AMZ712-715-725-735-742-745-PRZ001>003-005-007-008-010>013-
VIZ001-002-300525-
COASTAL AREAS OF PUERTO RICO - THE U.S. VIRGIN ISLANDS AND
THE BRITISH VIRGIN ISLANDS

...A TSUNAMI ADVISORY CONTINUES IN EFFECT...

AUDIENCE

- * GOVERNMENT OFFICIALS... MEDIA... AND GENERAL PUBLIC OF PUERTO RICO... THE U.S. VIRGIN ISLANDS... AND THE BRITISH VIRGIN ISLANDS.

UPDATES IN THIS MESSAGE

- * THE EARTHQUAKE PARAMETERS HAVE BEEN REVISED.
- * TSUNAMI HEIGHT AND DURATION FORECASTS ARE NOW INCLUDED.
- * THE GENERATION OF TSUNAMI WAVES IS CONFIRMED.
- * TSUNAMI OBSERVATIONS ARE NOW INCLUDED.

EVALUATION

- * AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 6.9 OCCURRED ABOUT 49 MILES NORTH OF PUERTO RICO AT 1100 PM AST ON FRIDAY JANUARY 29 2016.
- * A TSUNAMI WAS GENERATED BY THIS EARTHQUAKE.
- * BASED ON ALL AVAILABLE DATA... THERE IS A TSUNAMI THREAT TO PUERTO RICO AND THE VIRGIN ISLANDS OF SEA LEVEL FLUCTUATIONS AND STRONG OCEAN CURRENTS THAT COULD BE A HAZARD ALONG COASTS... BEACHES... IN HARBORS... AND IN COASTAL WATERS.
- * THE EARLIEST ESTIMATED TIME THAT HAZARDOUS SEA LEVEL FLUCTUATIONS AND STRONG OCEAN CURRENTS MAY BEGIN IN PUERTO RICO AND THE VIRGIN ISLANDS IS

1109 PM AST ON FRIDAY JANUARY 29 2016

- * ACTIONS TO PROTECT HUMAN LIFE... SAFETY AND PROPERTY SHOULD BE TAKEN IMMEDIATELY.
- * PEOPLE MAY HAVE EXPERIENCED SHAKING FROM THE EARTHQUAKE.

PRELIMINARY EARTHQUAKE PARAMETERS - UPDATED

- * THE FOLLOWING PARAMETERS ARE BASED ON A PRELIMINARY RAPID ASSESSMENT OF THE EARTHQUAKE AND CHANGES MAY OCCUR.

* MAGNITUDE 6.9
* ORIGIN TIME 1100 PM AST JAN 29 2016
* COORDINATES 19.2 NORTH 66.4 WEST
* DEPTH 8 MILES
* LOCATION ABOUT 49 MILES NORTH OF PUERTO RICO

RECOMMENDED ACTIONS

- * ACTIONS REQUIRED TO PROTECT HUMAN LIFE... SAFETY AND PROPERTY WILL VARY WITHIN THE TSUNAMI ADVISORY AREA.
- * PERSONS LOCATED IN OR NEAR THE OCEAN SHOULD MOVE OUT OF THE WATER... OFF THE BEACH AND AWAY FROM HARBORS... MARINAS... BAYS AND INLETS.
- * DO NOT GO TO THE SHORE TO OBSERVE THE TSUNAMI.
- * DO NOT RETURN TO EVACUATED AREAS UNTIL THE ALL CLEAR IS GIVEN BY LOCAL AUTHORITIES.
- * BE ALERT TO AND FOLLOW INSTRUCTIONS FROM LOCAL EMERGENCY MANAGEMENT OFFICIALS BECAUSE THEY MAY HAVE MORE DETAILED OR SPECIFIC INFORMATION FOR YOUR LOCATION.
- * BOATERS - WHERE TIME AND CONDITIONS PERMIT... MOVE YOUR BOAT OUT TO SEA TO A DEPTH OF AT LEAST 450 FEET.
- * BOATERS - IF AT SEA... AVOID ENTERING SHALLOW WATER... HARBORS... MARINAS... BAYS AND INLETS TO AVOID FLOATING AND SUBMERGED DEBRIS AND STRONG CURRENTS.

FORECASTS OF TSUNAMI ACTIVITY - UPDATED

- * ESTIMATED TIMES OF ARRIVAL -ETA- OF THE INITIAL TSUNAMI WAVE ARE GIVEN BELOW.
- * OBSERVED ARRIVAL TIMES MAY DIFFER FROM THESE ETAS AND THE INITIAL WAVE MAY NOT BE THE LARGEST.
- * THE FORECAST HEIGHT IS THE MAXIMUM EXPECTED WATER LEVEL ABOVE THE TIDE AT THAT COASTAL LOCATION.
- * THE FORECAST DURATION IS THE APPROXIMATE EXPECTED LENGTH OF TIME AFTER INITIAL IMPACT THAT THE TSUNAMI MAY CONTINUE TO BE A HAZARD.
- * A TSUNAMI IS A SERIES OF WAVES AND THE DURATION OF EACH WAVE CAN BE FIVE MINUTES TO ONE HOUR.

| TERRITORY | COASTAL LOCATION | ETA (AST) | FORECAST HEIGHT | FORECAST DURATION |
|-------------|---------------------|--------------|--------------------|----------------------|
| PUERTO RICO | ARECIBO | 1109 PM | 0.9-2.0 FT | 6 HRS |
| | SAN JUAN | 1109 PM | 0.9-2.0 FT | 6 HRS |
| | MAYAGUEZ | 1118 PM | BELOW 1 FT | ----- |
| | AGUADILLA | 1119 PM | BELOW 1 FT | ----- |
| | MONA ISLAND | 1127 PM | BELOW 1 FT | ----- |
| | PENUELAS | 1137 PM | BELOW 1 FT | ----- |
| | PONCE | 1141 PM | BELOW 1 FT | ----- |
| | MAGUEYES IS | 1144 PM | BELOW 1 FT | ----- |
| | FAJARDO | 1147 PM | BELOW 1 FT | ----- |
| | YABUCOA | 1147 PM | BELOW 1 FT | ----- |
| | CAJA DE MUERTOS | 1151 PM | BELOW 1 FT | ----- |
| | CULEBRA IS | 1201 AM | BELOW 1 FT | ----- |
| | VIEQUES IS | 1202 AM | BELOW 1 FT | ----- |
| BVI | ANEGADA | 1134 PM | BELOW 1 FT | ----- |
| | VIRGIN GORDA | 1155 PM | BELOW 1 FT | ----- |
| | ROADTOWN | 1255 AM | BELOW 1 FT | ----- |
| USVI | CHRISTIANSTED | 1141 PM | BELOW 1 FT | ----- |
| | LIMETREE | 1144 PM | BELOW 1 FT | ----- |
| | LAMESHUR BAY | 1207 AM | BELOW 1 FT | ----- |
| | CHARLOTTE AMALIE | 1219 AM | BELOW 1 FT | ----- |

OBSERVATIONS OF TSUNAMI ACTIVITY

-
- * THE FOLLOWING ARE TSUNAMI WAVE OBSERVATIONS FROM COASTAL AND/OR DEEP-OCEAN SEA LEVEL GAUGES AT THE INDICATED LOCATIONS.
 - * THE MAXIMUM TSUNAMI HEIGHT IS THE HIGHEST MEASURED SO FAR. IT IS MEASURED WITH RESPECT TO THE TIDE LEVEL.

| GAUGE LOCATION | GAUGE COORDINATES | | TIME OF MEASURE (AST) | MAXIMUM TSUNAMI HEIGHT |
|----------------|----------------------|-------|-----------------------------|------------------------------|
| | LAT | LON | | |
| MAYAGUEZ PR | 18.2N | 67.2W | 1123 PM | 0.4 FT |
| SAN JUAN PR | 18.5N | 66.1W | 1119 PM | 1.4 FT |
| ARECIBO PR | 18.5N | 66.7W | 1114 PM | 1.3 FT |

IMPACTS

-
- * IMPACTS WILL VARY AT DIFFERENT LOCATIONS WITHIN PUERTO RICO AND THE VIRGIN ISLANDS.
 - * SEA LEVEL FLUCTUATIONS THAT ARE GENERALLY LESS THAN 3 FEET ABOVE AND BELOW THE TIDE LEVEL.

- * WAVES AND CURRENTS THAT CAN DROWN OR INJURE PEOPLE IN THE WATER.
- * WAVES AND CURRENTS ON BEACHES AND IN HARBORS... MARINAS... BAYS... AND INLETS THAT MAY BE ESPECIALLY DANGEROUS.
- * THE HAZARD BEGAN AROUND 1109 PM AST ON FRIDAY JANUARY 29 2016 AND IT CAN PERSIST FOR MANY HOURS OR LONGER.

NEXT UPDATE AND ADDITIONAL INFORMATION

- * THE NEXT MESSAGE WILL BE ISSUED IN THIRTY MINUTES... OR SOONER IF THE SITUATION WARRANTS.
- * FURTHER INFORMATION ABOUT THIS EVENT AND ANY TSUNAMI THREAT TO PUERTO RICO AND THE VIRGIN ISLANDS MAY BE FOUND ON THE INTERNET AT PTWC.WEATHER.GOV AND AT WWW.TSUNAMI.GOV.
- * INFORMATION REGARDING ANY TSUNAMI THREAT TO US GULF OR ATLANTIC COASTS WILL BE ISSUED BY THE US NATIONAL TSUNAMI WARNING CENTER AND CAN BE FOUND ON THE INTERNET AT NTWC.ARH.NOAA.GOV AND AT WWW.TSUNAMI.GOV.
- * AUTHORITATIVE INFORMATION ABOUT THE EARTHQUAKE CAN BE OBTAINED FROM THE CORRESPONDING REGIONAL SEISMIC NETWORK OR THE U.S. GEOLOGICAL SURVEY ON THE INTERNET AT EARTHQUAKE.USGS.GOV/EARTHQUAKES -ALL LOWERCASE LETTERS-.

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| SPANISH VERSION |
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ZCZC
WECA50 PHEB 300325
TSUSP1

MENSAJE DE TSUNAMI NUMERO 2
SMN CENTRO DE ALERTAS DE TSUNAMI DEL PACIFICO EWA BEACH HI
1125 PM AST FRI JAN 29 2016

AMZ712-715-725-735-742-745-PRZ001>003-005-007-008-010>013-
VIZ001-002-300525-
ZONAS COSTERAS DE PUERTO RICO - LAS ISLAS VÍRGENES ESTADOUNIDENSES Y
LAS ISLAS VÍRGENES BRITÁNICAS

...LA ADVERTENCIA DE TSUNAMI CONTINUA EN EFECTO...

AUDIENCIA

- * FUNCIONARIOS GUBERNAMENTALES... MEDIOS DE PRENSA... Y EL PUBLICO EN GENERAL EN PUERTO RICO... LAS ISLAS VIRGENES DE LOS ESTADOS UNIDOS... Y LAS ISLAS VIRGENES BRITANICAS.

ACTUALIZACIONES EN ESTE MENSAJE

- * LOS PARAMETROS DEL TSUNAMI HAN SIDO ACTUALIZADOS.
- * PRONOSTICOS DE LA ALTURA DEL TSUNAMI Y SU DURACION ESTAN AHORA INCLUIDOS.
- * SE HA CONFIRMADO LA GENERACION DE OLAS DE TSUNAMI.
- * OBSERVACIONES DEL TSUNAMI ESTAN AHORA INCLUIDAS.

EVALUACION

- * UN TERREMOTO CON MAGNITUD PRELIMINAR 6.9 HA OCURRIDO UNAS 49 MILLAS AL NORTE DE PUERTO RICO A LAS 1100 PM AST EL VIERNES 29 DE ENERO DEL 2016.
- * UN TSUNAMI HA SIDO GENERADO POR ESTE TERREMOTO.
- * BASANDOSE EN EL ANALISIS DE TODOS LOS DATOS DISPONIBLES... EXISTE PELIGRO DE TSUNAMI PARA PUERTO RICO Y LAS ISLAS VIRGENES DEBIDO A FLUCTUACIONES DEL NIVEL DEL MAR Y CORRIENTES MARINAS FUERTES QUE PODRIAN PRESENTAR PELIGRO A LO LARGO DE COSTAS... PLAYAS... PUERTOS... Y AGUAS COSTERAS.
- * EL TIEMPO DE ARRIBO MAS TEMPRANO A PARTIR DEL CUAL FLUCTUACIONES PELIGROSAS DEL NIVEL DEL MAR Y CORRIENTES OCEANICAS FUERTES PUEDEN COMENZAR EN PUERTO RICO Y LAS ISLAS VIRGENES ES

1109 PM AST EL VIERNES 29 DE ENERO DEL 2016

- * ACCIONES PARA PROTEGER VIDAS HUMANAS... LA SEGURIDAD Y LOS BIENES MATERIALES DEBEN TOMARSE DE FORMA INMEDIATA.
- * LA POBLACION PUEDE HABER SENTIDO EL TERREMOTO.

PARAMETROS PRELIMINARES DEL TERREMOTO - ACTUALIZADO

- * LOS SIGUIENTES PARAMETROS ESTAN BASADOS EN UNA EVALUACION PRELIMINAR RAPIDA Y PUEDEN VARIAR.

* MAGNITUD 6.9
* TIEMPO DE ORIGEN 1100 PM AST ENE 29 2016
* COORDENADAS 19.2 NORTE 66.4 OESTE
* PROFUNDIDAD 8 MILLAS
* LOCALIZACION UNAS 49 MILLAS AL NORTE DE PUERTO RICO

ACCIONES RECOMENDADAS

- * LAS ACCIONES REQUERIDAS PARA PROTEGER VIDAS HUMANAS... LA SEGURIDAD Y LOS BIENES MATERIALES VARIARAN DENTRO DE LAS ZONA EN ESTADO DE ADVERTENCIA.
- * PERSONAS LOCALIZADAS EN EL MAR O CERCA DEL MAR DEBEN SALIR DEL AGUA... FUERA DE LA PLAYA Y ALEJARSE DE PUERTOS... MARINAS... BAHIAS Y ENSENADAS.
- * NO VAYA A LA ORILLA DEL MAR PARA OBSERVAR EL TSUNAMI.
- * NO REGRESE A ZONAS EVACUADAS HASTA TANTO LAS AUTORIDADES DECLAREN QUE EL PELIGRO YA PASO.
- * MANTENGASE ALERTA Y SIGA LAS INSTRUCCIONES PROVENIENTES DE FUNCIONARIOS DE LAS AGENCIAS LOCALES PARA EL MANEJO DE EMERGENCIAS YA QUE LAS MISMAS DISPONEN DE INFORMACION O INSTRUCCIONES MAS ESPECIFICAS PARA SU LOCALIDAD.
- * MARINEROS - DONDE EL TIEMPO Y LAS CONDICIONES PERMITAN... MUEVAN SU EMBARCACION MAR AFUERA HACIA PROFUNDIDADES DE AL MENOS 450 PIES.
- * MARINEROS - SI SE ENCUENTRA MAR AFUERA... EVITEN ADENTRARSE EN AGUAS SOMERAS... PUERTOS... MARINAS... BAHIAS Y ENSENADAS PARA EVITAR ESCOMBROS TANTO FLOTANTES COMO SUMERGIDOS Y CORRIENTES FUERTES.

PRONOSTICO DE LA ACTIVIDAD DEL TSUNAMI - ACTUALIZADO

- * LOS TIEMPOS DE ARRIBO ESTIMADOS -TAE- DE LA PRIMERA OLA DEL TSUNAMI SE PROVEEN A CONTINUACION.
- * LOS TIEMPOS DE ARRIBO REALES PUEDEN DIFERIR DE LOS ESTIMADOS Y LA PRIMERA OLA PUEDE QUE NO SEA LA MAS GRANDE.
- * LA ALTURA PRONOSTICADA ES EL NIVEL MAXIMO DEL AGUA POR ENCIMA DEL NIVEL DE MAREA QUE SE ESPERA A LO LARGO DE ESA SECCION DE LA COSTA.
- * LA DURACION PRONOSTICADA ES EL TIEMPO DURANTE EL CUAL SE ESPERA QUE EL TSUNAMI PRODUZCA OLAS Y CORRIENTES PELIGROSAS.

* UN TSUNAMI ES UN TREN DE OLAS Y EL TIEMPO ENTRE OLAS PUEDE VARIAR DESDE CINCO MINUTOS HASTA UNA HORA.

| TERRITORIO | LOCALIZACION COSTERA | TAE (AST) | ----PRONOSTICO---- | |
|-------------|-------------------------|--------------|--------------------|----------|
| | | | ALTURA | DURACION |
| PUERTO RICO | ARECIBO | 1109 PM | 0.9-2.0 FT | 6 HRS |
| | SAN JUAN | 1109 PM | 0.9-2.0 FT | 6 HRS |
| | MAYAGUEZ | 1118 PM | BELOW 1 FT | ----- |
| | AGUADILLA | 1119 PM | BELOW 1 FT | ----- |
| | MONA ISLAND | 1127 PM | BELOW 1 FT | ----- |
| | PENUELAS | 1137 PM | BELOW 1 FT | ----- |
| | PONCE | 1141 PM | BELOW 1 FT | ----- |
| | MAGUEYES IS | 1144 PM | BELOW 1 FT | ----- |
| | FAJARDO | 1147 PM | BELOW 1 FT | ----- |
| | YABUCOA | 1147 PM | BELOW 1 FT | ----- |
| | CAJA DE MUERTOS | 1151 PM | BELOW 1 FT | ----- |
| | CULEBRA IS | 1201 AM | BELOW 1 FT | ----- |
| | VIEQUES IS | 1202 AM | BELOW 1 FT | ----- |
| BVI | ANEGADA | 1134 PM | BELOW 1 FT | ----- |
| | VIRGIN GORDA | 1155 PM | BELOW 1 FT | ----- |
| | ROADTOWN | 1255 AM | BELOW 1 FT | ----- |
| USVI | CHRISTIANSTED | 1141 PM | BELOW 1 FT | ----- |
| | LIMETREE | 1144 PM | BELOW 1 FT | ----- |
| | LAMESHUR BAY | 1207 AM | BELOW 1 FT | ----- |
| | CHARLOTTE AMALIE | 1219 AM | BELOW 1 FT | ----- |

OBSERVACIONES DE ACTIVIDAD DEL TSUNAMI

* LO QUE SIGUE SON LAS OBSERVACIONES DE LAS OLAS DEL TSUNAMI REGISTRADAS EN INSTRUMENTOS DE MEDICION EN ESTACIONES EN LA COSTA Y/O BOYAS EN AGUAS PROFUNDAS EN LOS PUNTOS INDICADOS. LA ALTURA MAXIMA DEL TSUNAMI ES MEDIDA CON RESPECTO AL NIVEL DE LA MAREA.

* LA ALTURA MAXIMA DEL TSUNAMI ES EL VALOR MAXIMO OBSERVADO HASTA AHORA Y SE MIDE CON RESPECTO AL NIVEL DE LA MAREA.

| LOCALIZACION DEL INSTRUMENTO | COORDENADAS DEL INSTRUMENTO | | TIEMPO DEL REGISTRO (AST) | ALTURA MAXIMA DEL TSUNAMI |
|------------------------------------|-----------------------------------|-------|------------------------------------|------------------------------------|
| | LAT | LON | | |
| MAYAGUEZ PR | 18.2N | 67.2W | 1123 PM | 0.4 FT |
| SAN JUAN PR | 18.5N | 66.1W | 1119 PM | 1.4 FT |
| ARECIBO PR | 18.5N | 66.7W | 1114 PM | 1.3 FT |

IMPACTOS

- * LOS IMPACTOS VARIARAN PARA DIFERENTES LOCALIDADES EN PUERTO RICO Y LAS ISLAS VIRGENES.
- * FLUCTUACIONES DEL NIVEL DEL MAR POR LO GENERAL NO MAYORES DE 3 PIES TANTO POR ENCIMA COMO POR DEBAJO DEL NIVEL DE MAREA.
- * OLAS Y CORRIENTES QUE PUEDEN AHOGAR O LESIONAR A PERSONAS EN EL AGUA.
- * OLAS Y CORRIENTES EN PLAYAS Y PUERTOS... MARINAS... BAHIAS... Y ENSENADAS QUE PUEDEN RESULTAR ESPECIALMENTE PELIGROSAS.
- * EL PELIGRO COMENZO A PARTIR DE LA(S) 1109 PM AST EL VIERNES 29 DE ENERO DEL 2016 Y PUEDE PERSISTIR POR VARIAS HORAS O MAS.

PROXIMA ACTUALIZACION E INFORMACION ADICIONAL

- * EL PROXIMO MENSAJE SERA EMITIDO EN TREINTA MINUTOS... O MAS PRONTO SI LA SITUACION ASI LO AMERITA.
- * MAS INFORMACION ACERCA DE ESTE EVENTO PUEDE SER ACCESADA EN INTERNET EN LOS SITIOS WEB PTWC.WEATHER.GOV Y WWW.TSUNAMI.GOV.
- * INFORMACION ACERCA DEL PELIGRO DE TSUNAMI PARA COSTAS ESTADOUNIDENSES EN EL GOLFO DE MEXICO Y EL ATLANTICO SERA EMITIDA POR EL CENTRO NACIONAL DE ALERTAS DE TSUNAMIS Y PUEDE SER ACCESADA EN INTERNET EN LOS SITIOS WEB NTWC.ARH.NOAA.GOV Y WWW.TSUNAMI.GOV.
- * INFORMACION OFICIAL AUTORIZADA ACERCA DE ESTE TERREMOTO PUEDE SER PROVEIDA POR LA CORRESPONDIENTE RED SISMICA REGIONAL O EL SERVICIO GEOLOGICO DE LOS ESTADOS UNIDOS EN SU SITIO WEB EARTHQUAKE.USGS.GOV/EARTHQUAKES -TODO EN MINUSCULAS-.

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| NWR VERSION |
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ZCZC
WECA60 PHEB 300325
TSUCA1

BULLETIN
TSUNAMI MESSAGE NUMBER 2
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
1125 PM AST FRI JAN 29 2016

AMZ712-715-725-735-742-745-PRZ001>003-005-007-008-010>013-
VIZ001-002-300525-
/O.CON.PHEB.TS.Y.0014.000000T0000Z-000000T0000Z/
COASTAL AREAS OF PUERTO RICO - THE U.S. VIRGIN ISLANDS AND
THE BRITISH VIRGIN ISLANDS
1125 PM AST FRI JAN 29 2016

...A TSUNAMI ADVISORY CONTINUES IN EFFECT...

PERSONS LOCATED IN OR NEAR THE OCEAN SHOULD MOVE OUT OF THE
WATER... OFF THE BEACH AND AWAY FROM HARBORS... MARINAS... BAYS
AND INLETS.

AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 6.9 OCCURRED ABOUT
49 MILES NORTH OF PUERTO RICO AT 1100 PM AST ON FRIDAY JANUARY
29 2016.

A TSUNAMI WAS GENERATED BY THIS EARTHQUAKE.

THE MAXIMUM TSUNAMI HEIGHT OBSERVED SO FAR ON A GAUGE IN PUERTO
RICO OR THE VIRGIN ISLANDS IS 1.4 FEET AT SAN JUAN.

BASED ON ALL AVAILABLE DATA... THERE IS A TSUNAMI THREAT TO
PUERTO RICO AND THE VIRGIN ISLANDS OF SEA LEVEL FLUCTUATIONS AND
STRONG OCEAN CURRENTS THAT COULD BE A HAZARD ALONG COASTS...
BEACHES... IN HARBORS... AND IN COASTAL WATERS.

THE HAZARD BEGAN AROUND 1109 PM AST ON FRIDAY JANUARY 29 2016 AND
IT CAN PERSIST FOR MANY HOURS OR LONGER.

DO NOT GO TO THE SHORE TO OBSERVE THE TSUNAMI.

DO NOT RETURN TO EVACUATED AREAS UNTIL THE ALL CLEAR IS GIVEN BY
LOCAL AUTHORITIES.

BE ALERT TO AND FOLLOW INSTRUCTIONS FROM LOCAL EMERGENCY
MANAGEMENT OFFICIALS BECAUSE THEY MAY HAVE MORE DETAILED OR
SPECIFIC INFORMATION FOR YOUR LOCATION.

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Nearby Earthquake – Tsunami Advisory with Observations

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| ENGLISH VERSION |
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ZCZC
WECA40 PHEB 300355
TSUCAR

TSUNAMI MESSAGE NUMBER 3
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
1155 PM AST FRI JAN 29 2016

AMZ712-715-725-735-742-745-PRZ001>003-005-007-008-010>013-
VIZ001-002-300555-
COASTAL AREAS OF PUERTO RICO - THE U.S. VIRGIN ISLANDS AND
THE BRITISH VIRGIN ISLANDS

...A TSUNAMI ADVISORY CONTINUES IN EFFECT...

AUDIENCE

- * GOVERNMENT OFFICIALS... MEDIA... AND GENERAL PUBLIC OF PUERTO RICO... THE U.S. VIRGIN ISLANDS... AND THE BRITISH VIRGIN ISLANDS.

UPDATES IN THIS MESSAGE

- * THE TSUNAMI OBSERVATIONS HAVE BEEN UPDATED.

EVALUATION

- * AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 6.9 OCCURRED ABOUT 49 MILES NORTH OF PUERTO RICO AT 1100 PM AST ON FRIDAY JANUARY 29 2016.
- * A TSUNAMI WAS GENERATED BY THIS EARTHQUAKE.
- * BASED ON ALL AVAILABLE DATA... THERE IS A TSUNAMI THREAT TO PUERTO RICO AND THE VIRGIN ISLANDS OF SEA LEVEL FLUCTUATIONS AND STRONG OCEAN CURRENTS THAT COULD BE A HAZARD ALONG COASTS... BEACHES... IN HARBORS... AND IN COASTAL WATERS.
- * THE EARLIEST ESTIMATED TIME THAT HAZARDOUS SEA LEVEL FLUCTUATIONS AND STRONG OCEAN CURRENTS MAY BEGIN IN PUERTO RICO AND THE VIRGIN ISLANDS IS

1109 PM AST ON FRIDAY JANUARY 29 2016

- * ACTIONS TO PROTECT HUMAN LIFE... SAFETY AND PROPERTY SHOULD BE TAKEN IMMEDIATELY.

RECOMMENDED ACTIONS

- * ACTIONS REQUIRED TO PROTECT HUMAN LIFE... SAFETY AND PROPERTY WILL VARY WITHIN THE TSUNAMI ADVISORY AREA.
- * PERSONS LOCATED IN OR NEAR THE OCEAN SHOULD MOVE OUT OF THE

WATER... OFF THE BEACH AND AWAY FROM HARBORS... MARINAS...
BAYS AND INLETS.

- * DO NOT GO TO THE SHORE TO OBSERVE THE TSUNAMI.
- * DO NOT RETURN TO EVACUATED AREAS UNTIL THE ALL CLEAR IS GIVEN BY LOCAL AUTHORITIES.
- * BE ALERT TO AND FOLLOW INSTRUCTIONS FROM LOCAL EMERGENCY MANAGEMENT OFFICIALS BECAUSE THEY MAY HAVE MORE DETAILED OR SPECIFIC INFORMATION FOR YOUR LOCATION.
- * BOATERS - WHERE TIME AND CONDITIONS PERMIT... MOVE YOUR BOAT OUT TO SEA TO A DEPTH OF AT LEAST 450 FEET.
- * BOATERS - IF AT SEA... AVOID ENTERING SHALLOW WATER... HARBORS... MARINAS... BAYS AND INLETS TO AVOID FLOATING AND SUBMERGED DEBRIS AND STRONG CURRENTS.

FORECASTS OF TSUNAMI ACTIVITY

- * ESTIMATED TIMES OF ARRIVAL -ETA- OF THE INITIAL TSUNAMI WAVE ARE GIVEN BELOW.
- * OBSERVED ARRIVAL TIMES MAY DIFFER FROM THESE ETAS AND THE INITIAL WAVE MAY NOT BE THE LARGEST.
- * THE FORECAST HEIGHT IS THE MAXIMUM EXPECTED WATER LEVEL ABOVE THE TIDE AT THAT COASTAL LOCATION.
- * THE FORECAST DURATION IS THE APPROXIMATE EXPECTED LENGTH OF TIME AFTER INITIAL IMPACT THAT THE TSUNAMI MAY CONTINUE TO BE A HAZARD.
- * A TSUNAMI IS A SERIES OF WAVES AND THE DURATION OF EACH WAVE CAN BE FIVE MINUTES TO ONE HOUR.

| TERRITORY | COASTAL LOCATION | ETA (AST) | FORECAST HEIGHT | FORECAST DURATION |
|-------------|------------------|------------|-----------------|-------------------|
| PUERTO RICO | ARECIBO | 1109 PM | 0.9-2.0 FT | 6 HRS |
| | SAN JUAN | 1109 PM | 0.9-2.0 FT | 6 HRS |
| | MAYAGUEZ | 1118 PM | BELOW 1 FT | ----- |
| | AGUADILLA | 1119 PM | BELOW 1 FT | ----- |
| | MONA ISLAND | 1127 PM | BELOW 1 FT | ----- |
| | PENUELAS | 1137 PM | BELOW 1 FT | ----- |
| | PONCE | 1141 PM | BELOW 1 FT | ----- |
| | MAGUEYES IS | 1144 PM | BELOW 1 FT | ----- |
| | FAJARDO | 1147 PM | BELOW 1 FT | ----- |
| | YABUCOA | 1147 PM | BELOW 1 FT | ----- |
| | CAJA DE MUERTOS | 1151 PM | BELOW 1 FT | ----- |
| CULEBRA IS | 1201 AM | BELOW 1 FT | ----- | |

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|------|------------------|---------|------------|-------|
| | VIEQUES IS | 1202 AM | BELOW 1 FT | ----- |
| BVI | ANEGADA | 1134 PM | BELOW 1 FT | ----- |
| | VIRGIN GORDA | 1155 PM | BELOW 1 FT | ----- |
| | ROADTOWN | 1255 AM | BELOW 1 FT | ----- |
| USVI | CHRISTIANSTED | 1141 PM | BELOW 1 FT | ----- |
| | LIMETREE | 1144 PM | BELOW 1 FT | ----- |
| | LAMESHUR BAY | 1207 AM | BELOW 1 FT | ----- |
| | CHARLOTTE AMALIE | 1219 AM | BELOW 1 FT | ----- |

OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED

- * THE FOLLOWING ARE TSUNAMI WAVE OBSERVATIONS FROM COASTAL AND/OR DEEP-OCEAN SEA LEVEL GAUGES AT THE INDICATED LOCATIONS.
- * THE MAXIMUM TSUNAMI HEIGHT IS THE HIGHEST MEASURED SO FAR. IT IS MEASURED WITH RESPECT TO THE TIDE LEVEL.

| GAUGE LOCATION | GAUGE COORDINATES | | TIME OF MEASURE (AST) | MAXIMUM TSUNAMI HEIGHT |
|----------------|-------------------|-------|-----------------------|------------------------|
| | LAT | LON | | |
| PUNTA CANA DO | 18.5N | 68.4W | 1142 PM | 0.2 FT |
| MONA ISLAND PR | 18.1N | 67.9W | 1141 PM | 0.2 FT |
| AGUADILLA PR | 18.5N | 67.2W | 1133 PM | 0.6 FT |
| MAYAGUEZ PR | 18.2N | 67.2W | 1123 PM | 0.4 FT |
| SAN JUAN PR | 18.5N | 66.1W | 1119 PM | 1.4 FT |
| ARECIBO PR | 18.5N | 66.7W | 1114 PM | 1.3 FT |

IMPACTS

- * IMPACTS WILL VARY AT DIFFERENT LOCATIONS WITHIN PUERTO RICO AND THE VIRGIN ISLANDS.
- * SEA LEVEL FLUCTUATIONS THAT ARE GENERALLY LESS THAN 3 FEET ABOVE AND BELOW THE TIDE LEVEL.
- * WAVES AND CURRENTS THAT CAN DROWN OR INJURE PEOPLE IN THE WATER.
- * WAVES AND CURRENTS ON BEACHES AND IN HARBORS... MARINAS... BAYS... AND INLETS THAT MAY BE ESPECIALLY DANGEROUS.
- * THE HAZARD BEGAN AROUND 1109 PM AST ON FRIDAY JANUARY 29 2016 AND IT CAN PERSIST FOR MANY HOURS OR LONGER.

PRELIMINARY EARTHQUAKE PARAMETERS

* MAGNITUDE 6.9
* ORIGIN TIME 1100 PM AST JAN 29 2016
* COORDINATES 19.2 NORTH 66.4 WEST
* DEPTH 8 MILES
* LOCATION ABOUT 49 MILES NORTH OF PUERTO RICO

NEXT UPDATE AND ADDITIONAL INFORMATION

- * THE NEXT MESSAGE WILL BE ISSUED IN THIRTY MINUTES... OR SOONER IF THE SITUATION WARRANTS.
- * FURTHER INFORMATION ABOUT THIS EVENT AND ANY TSUNAMI THREAT TO PUERTO RICO AND THE VIRGIN ISLANDS MAY BE FOUND ON THE INTERNET AT PTWC.WEATHER.GOV AND AT WWW.TSUNAMI.GOV.
- * INFORMATION REGARDING ANY TSUNAMI THREAT TO US GULF OR ATLANTIC COASTS WILL BE ISSUED BY THE US NATIONAL TSUNAMI WARNING CENTER AND CAN BE FOUND ON THE INTERNET AT NTWC.ARH.NOAA.GOV AND AT WWW.TSUNAMI.GOV.
- * AUTHORITATIVE INFORMATION ABOUT THE EARTHQUAKE CAN BE OBTAINED FROM THE CORRESPONDING REGIONAL SEISMIC NETWORK OR THE U.S. GEOLOGICAL SURVEY ON THE INTERNET AT EARTHQUAKE.USGS.GOV/EARTHQUAKES -ALL LOWERCASE LETTERS-.

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| SPANISH VERSION |
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ZCZC
WECA50 PHEB 300355
TSUSP1

MENSAJE DE TSUNAMI NUMERO 3
SMN CENTRO DE ALERTAS DE TSUNAMI DEL PACIFICO EWA BEACH HI
1155 PM AST FRI JAN 29 2016

AMZ712-715-725-735-742-745-PRZ001>003-005-007-008-010>013-
VIZ001-002-300555-
ZONAS COSTERAS DE PUERTO RICO - LAS ISLAS VÍRGENES ESTADOUNIDENSES Y
LAS ISLAS VÍRGENES BRITÁNICAS

...LA ADVERTENCIA DE TSUNAMI CONTINUA EN EFECTO...

AUDIENCIA

- * FUNCIONARIOS GUBERNAMENTALES... MEDIOS DE PRENSA... Y EL PUBLICO EN GENERAL EN PUERTO RICO... LAS ISLAS VIRGENES DE LOS ESTADOS UNIDOS... Y LAS ISLAS VIRGENES BRITANICAS.

ACTUALIZACIONES EN ESTE MENSAJE

- * LAS OBSERVACIONES DEL TSUNAMI HAN SIDO ACTUALIZADAS.

EVALUACION

- * UN TERREMOTO CON MAGNITUD PRELIMINAR 6.9 HA OCURRIDO UNAS 49 MILLAS AL NORTE DE PUERTO RICO A LAS 1100 PM AST EL VIERNES 29 DE ENERO DEL 2016.
- * UN TSUNAMI HA SIDO GENERADO POR ESTE TERREMOTO.
- * BASANDOSE EN EL ANALISIS DE TODOS LOS DATOS DISPONIBLES... EXISTE PELIGRO DE TSUNAMI PARA PUERTO RICO Y LAS ISLAS VIRGENES DEBIDO A FLUCTUACIONES DEL NIVEL DEL MAR Y CORRIENTES MARINAS FUERTES QUE PODRIAN PRESENTAR PELIGRO A LO LARGO DE COSTAS... PLAYAS... PUERTOS... Y AGUAS COSTERAS.
- * EL TIEMPO DE ARRIBO MAS TEMPRANO A PARTIR DEL CUAL FLUCTUACIONES PELIGROSAS DEL NIVEL DEL MAR Y CORRIENTES OCEANICAS FUERTES PUEDEN COMENZAR EN PUERTO RICO Y LAS ISLAS VIRGENES ES

1109 PM AST EL VIERNES 29 DE ENERO DEL 2016

- * ACCIONES PARA PROTEGER VIDAS HUMANAS... LA SEGURIDAD Y LOS BIENES MATERIALES DEBEN TOMARSE DE FORMA INMEDIATA.

ACCIONES RECOMENDADAS

- * LAS ACCIONES REQUERIDAS PARA PROTEGER VIDAS HUMANAS... LA SEGURIDAD Y LOS BIENES MATERIALES VARIARAN DENTRO DE LAS ZONA EN ESTADO DE ADVERTENCIA.
- * PERSONAS LOCALIZADAS EN EL MAR O CERCA DEL MAR DEBEN SALIR DEL AGUA... FUERA DE LA PLAYA Y ALEJARSE DE PUERTOS... MARINAS... BAHIAS Y ENSENADAS.
- * NO VAYA A LA ORILLA DEL MAR PARA OBSERVAR EL TSUNAMI.
- * NO REGRESE A ZONAS EVACUADAS HASTA TANTO LAS AUTORIDADES DECLAREN QUE EL PELIGRO YA PASO.
- * MANTENGASE ALERTA Y SIGA LAS INSTRUCCIONES PROVENIENTES DE

FUNCIONARIOS DE LAS AGENCIAS LOCALES PARA EL MANEJO DE EMERGENCIAS YA QUE LAS MISMAS DISPONEN DE INFORMACION O INSTRUCCIONES MAS ESPECIFICAS PARA SU LOCALIDAD.

- * MARINEROS - DONDE EL TIEMPO Y LAS CONDICIONES PERMITAN... MUEVAN SU EMBARCACION MAR AFUERA HACIA PROFUNDIDADES DE AL MENOS 450 PIES.
- * MARINEROS - SI SE ENCUENTRA MAR AFUERA... EVITEN ADENTRARSE EN AGUAS SOMERAS... PUERTOS... MARINAS... BAHIAS Y ENSENADAS PARA EVITAR ESCOMBROS TANTO FLOTANTES COMO SUMERGIDOS Y CORRIENTES FUERTES.

PRONOSTICO DE LA ACTIVIDAD DEL TSUNAMI

- * LOS TIEMPOS DE ARRIBO ESTIMADOS -TAE- DE LA PRIMERA OLA DEL TSUNAMI SE PROVEEN A CONTINUACION.
- * LOS TIEMPOS DE ARRIBO REALES PUEDEN DIFERIR DE LOS ESTIMADOS Y LA PRIMERA OLA PUEDE QUE NO SEA LA MAS GRANDE.
- * LA ALTURA PRONOSTICADA ES EL NIVEL MAXIMO DEL AGUA POR ENCIMA DEL NIVEL DE MAREA QUE SE ESPERA A LO LARGO DE ESA SECCION DE LA COSTA.
- * LA DURACION PRONOSTICADA ES EL TIEMPO DURANTE EL CUAL SE ESPERA QUE EL TSUNAMI PRODUZCA OLAS Y CORRIENTES PELIGROSAS.
- * UN TSUNAMI ES UN TREN DE OLAS Y EL TIEMPO ENTRE OLAS PUEDE VARIAR DESDE CINCO MINUTOS HASTA UNA HORA.

| TERRITORIO | LOCALIZACION COSTERA | TAE (AST) | ----PRONOSTICO---- | |
|-------------|----------------------|------------|--------------------|----------|
| | | | ALTURA | DURACION |
| PUERTO RICO | ARECIBO | 1109 PM | 0.9-2.0 FT | 6 HRS |
| | SAN JUAN | 1109 PM | 0.9-2.0 FT | 6 HRS |
| | MAYAGUEZ | 1118 PM | BELOW 1 FT | ----- |
| | AGUADILLA | 1119 PM | BELOW 1 FT | ----- |
| | MONA ISLAND | 1127 PM | BELOW 1 FT | ----- |
| | PENUELAS | 1137 PM | BELOW 1 FT | ----- |
| | PONCE | 1141 PM | BELOW 1 FT | ----- |
| | MAGUEYES IS | 1144 PM | BELOW 1 FT | ----- |
| | FAJARDO | 1147 PM | BELOW 1 FT | ----- |
| | YABUCOA | 1147 PM | BELOW 1 FT | ----- |
| | CAJA DE MUERTOS | 1151 PM | BELOW 1 FT | ----- |
| | CULEBRA IS | 1201 AM | BELOW 1 FT | ----- |
| VIEQUES IS | 1202 AM | BELOW 1 FT | ----- | |
| BVI | ANEGADA | 1134 PM | BELOW 1 FT | ----- |
| | VIRGIN GORDA | 1155 PM | BELOW 1 FT | ----- |
| | ROADTOWN | 1255 AM | BELOW 1 FT | ----- |

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|------|------------------|---------|------------|-------|
| USVI | CHRISTIANSTED | 1141 PM | BELOW 1 FT | ----- |
| | LIMETREE | 1144 PM | BELOW 1 FT | ----- |
| | LAMESHUR BAY | 1207 AM | BELOW 1 FT | ----- |
| | CHARLOTTE AMALIE | 1219 AM | BELOW 1 FT | ----- |

OBSERVACIONES DE ACTIVIDAD DEL TSUNAMI - ACTUALIZADO

- * LO QUE SIGUE SON LAS OBSERVACIONES DE LAS OLAS DEL TSUNAMI REGISTRADAS EN INSTRUMENTOS DE MEDICION EN ESTACIONES EN LA COSTA Y/O BOYAS EN AGUAS PROFUNDAS EN LOS PUNTOS INDICADOS. LA ALTURA MAXIMA DEL TSUNAMI ES MEDIDA CON RESPECTO AL NIVEL DE LA MAREA.
- * LA ALTURA MAXIMA DEL TSUNAMI ES EL VALOR MAXIMO OBSERVADO HASTA AHORA Y SE MIDE CON RESPECTO AL NIVEL DE LA MAREA.

| LOCALIZACION DEL INSTRUMENTO | COORDENADAS DEL INSTRUMENTO | | TIEMPO DEL REGISTRO (AST) | ALTURA MAXIMA DEL TSUNAMI |
|------------------------------------|-----------------------------------|-------|------------------------------------|------------------------------------|
| | LAT | LON | | |
| PUNTA CANA DO | 18.5N | 68.4W | 1142 PM | 0.2 FT |
| MONA ISLAND PR | 18.1N | 67.9W | 1141 PM | 0.2 FT |
| AGUADILLA PR | 18.5N | 67.2W | 1133 PM | 0.6 FT |
| MAYAGUEZ PR | 18.2N | 67.2W | 1123 PM | 0.4 FT |
| SAN JUAN PR | 18.5N | 66.1W | 1119 PM | 1.4 FT |
| ARECIBO PR | 18.5N | 66.7W | 1114 PM | 1.3 FT |

IMPACTOS

- * LOS IMPACTOS VARIARAN PARA DIFERENTES LOCALIDADES EN PUERTO RICO Y LAS ISLAS VIRGENES.
- * FLUCTUACIONES DEL NIVEL DEL MAR POR LO GENERAL NO MAYORES DE 3 PIES TANTO POR ENCIMA COMO POR DEBAJO DEL NIVEL DE MAREA.
- * OLAS Y CORRIENTES QUE PUEDEN AHOGAR O LESIONAR A PERSONAS EN EL AGUA.
- * OLAS Y CORRIENTES EN PLAYAS Y PUERTOS... MARINAS... BAHIAS... Y ENSENADAS QUE PUEDEN RESULTAR ESPECIALMENTE PELIGROSAS.
- * EL PELIGRO COMENZO A PARTIR DE LA(S) 1109 PM AST EL VIERNES 29 DE ENERO DEL 2016 Y PUEDE PERSISTIR POR VARIAS HORAS O MAS.

PARAMETROS PRELIMINARES DEL TERREMOTO

* MAGNITUD 6.9
* TIEMPO DE ORIGEN 1100 PM AST ENE 29 2016
* COORDENADAS 19.2 NORTE 66.4 OESTE
* PROFUNDIDAD 8 MILLAS
* LOCALIZACION UNAS 49 MILLAS AL NORTE DE PUERTO RICO

PROXIMA ACTUALIZACION E INFORMACION ADICIONAL

- * EL PROXIMO MENSAJE SERA EMITIDO EN TREINTA MINUTOS... O MAS PRONTO SI LA SITUACION ASI LO AMERITA.
- * MAS INFORMACION ACERCA DE ESTE EVENTO PUEDE SER ACCESADA EN INTERNET EN LOS SITIOS WEB PTWC.WEATHER.GOV Y WWW.TSUNAMI.GOV.
- * INFORMACION ACERCA DEL PELIGRO DE TSUNAMI PARA COSTAS ESTADOUNIDENSES EN EL GOLFO DE MEXICO Y EL ATLANTICO SERA EMITIDA POR EL CENTRO NACIONAL DE ALERTAS DE TSUNAMIS Y PUEDE SER ACCESADA EN INTERNET EN LOS SITIOS WEB NTWC.ARH.NOAA.GOV Y WWW.TSUNAMI.GOV.
- * INFORMACION OFICIAL AUTORIZADA ACERCA DE ESTE TERREMOTO PUEDE SER PROVEIDA POR LA CORRESPONDIENTE RED SISMICA REGIONAL O EL SERVICIO GEOLOGICO DE LOS ESTADOS UNIDOS EN SU SITIO WEB EARTHQUAKE.USGS.GOV/EARTHQUAKES -TODO EN MINUSCULAS-.

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| NWR VERSION |
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ZCZC
WECA60 PHEB 300355
TSUCA1

BULLETIN
TSUNAMI MESSAGE NUMBER 3
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
1155 PM AST FRI JAN 29 2016

AMZ712-715-725-735-742-745-PRZ001>003-005-007-008-010>013-
VIZ001-002-300555-
/O.CON.PHEB.TS.Y.0014.000000T0000Z-000000T0000Z/
COASTAL AREAS OF PUERTO RICO - THE U.S. VIRGIN ISLANDS AND
THE BRITISH VIRGIN ISLANDS
1155 PM AST FRI JAN 29 2016

...A TSUNAMI ADVISORY CONTINUES IN EFFECT...

PERSONS LOCATED IN OR NEAR THE OCEAN SHOULD MOVE OUT OF THE
WATER... OFF THE BEACH AND AWAY FROM HARBORS... MARINAS... BAYS

AND INLETS.

AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 6.9 OCCURRED ABOUT 49 MILES NORTH OF PUERTO RICO AT 1100 PM AST ON FRIDAY JANUARY 29 2016.

A TSUNAMI WAS GENERATED BY THIS EARTHQUAKE.

THE MAXIMUM TSUNAMI HEIGHT OBSERVED SO FAR ON A GAUGE IN PUERTO RICO OR THE VIRGIN ISLANDS IS 1.4 FEET AT SAN JUAN.

BASED ON ALL AVAILABLE DATA... THERE IS A TSUNAMI THREAT TO PUERTO RICO AND THE VIRGIN ISLANDS OF SEA LEVEL FLUCTUATIONS AND STRONG OCEAN CURRENTS THAT COULD BE A HAZARD ALONG COASTS... BEACHES... IN HARBORS... AND IN COASTAL WATERS.

THE HAZARD BEGAN AROUND 1109 PM AST ON FRIDAY JANUARY 29 2016 AND IT CAN PERSIST FOR MANY HOURS OR LONGER.

DO NOT GO TO THE SHORE TO OBSERVE THE TSUNAMI.

DO NOT RETURN TO EVACUATED AREAS UNTIL THE ALL CLEAR IS GIVEN BY LOCAL AUTHORITIES.

BE ALERT TO AND FOLLOW INSTRUCTIONS FROM LOCAL EMERGENCY MANAGEMENT OFFICIALS BECAUSE THEY MAY HAVE MORE DETAILED OR SPECIFIC INFORMATION FOR YOUR LOCATION.

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Nearby Earthquake – Tsunami Advisory Cancellation

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| ENGLISH VERSION |
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ZCZC
WECA40 PHEB 300525
TSUCAR

TSUNAMI MESSAGE NUMBER 6
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
125 AM AST SAT JAN 30 2016

AMZ712-715-725-735-742-745-PRZ001>003-005-007-008-010>013-
VIZ001-002-300725-
COASTAL AREAS OF PUERTO RICO - THE U.S. VIRGIN ISLANDS AND
THE BRITISH VIRGIN ISLANDS

...THE TSUNAMI ADVISORY IS NOW CANCELED...

AUDIENCE

- * GOVERNMENT OFFICIALS... MEDIA... AND GENERAL PUBLIC OF PUERTO RICO... THE U.S. VIRGIN ISLANDS... AND THE BRITISH VIRGIN ISLANDS.

UPDATES IN THIS MESSAGE

- * THE TSUNAMI ADVISORY IS NOW CANCELED FOR PUERTO RICO... THE U.S. VIRGIN ISLANDS... AND THE BRITISH VIRGIN ISLANDS.

EVALUATION

- * AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 6.9 OCCURRED ABOUT 49 MILES NORTH OF PUERTO RICO AT 1100 PM AST ON FRIDAY JANUARY 29 2016.
- * A TSUNAMI WAS GENERATED BY THIS EARTHQUAKE THAT AFFECTED PUERTO RICO AND THE VIRGIN ISLANDS.
- * BASED ON ALL AVAILABLE DATA... THERE IS NO FURTHER TSUNAMI THREAT TO PUERTO RICO AND THE VIRGIN ISLANDS ALTHOUGH MINOR SEA LEVEL FLUCTUATIONS MAY CONTINUE.

RECOMMENDED ACTIONS

- * DO NOT RETURN TO EVACUATED AREAS UNTIL THE ALL CLEAR IS GIVEN BY LOCAL AUTHORITIES.
- * FOLLOW INSTRUCTIONS FROM PUERTO RICO AND VIRGIN ISLANDS EMERGENCY MANAGEMENT AGENCIES BECAUSE THEY MAY HAVE SPECIFIC INFORMATION OR INSTRUCTIONS FOR YOUR LOCATION.
- * BE OBSERVANT AND EXERCISE NORMAL CAUTION IF YOU ARE NEAR OR IN THE OCEAN.
- * OTHERWISE... NO FURTHER ACTION IS REQUIRED.

OBSERVATIONS OF TSUNAMI ACTIVITY

- * THE FOLLOWING ARE TSUNAMI WAVE OBSERVATIONS FROM COASTAL AND/OR DEEP-OCEAN SEA LEVEL GAUGES AT THE INDICATED LOCATIONS.
- * THE MAXIMUM TSUNAMI HEIGHT IS THE HIGHEST MEASURED SO FAR. IT IS MEASURED WITH RESPECT TO THE TIDE LEVEL.

| GAUGE LOCATION | GAUGE COORDINATES | | TIME OF MEASURE (AST) | MAXIMUM TSUNAMI HEIGHT |
|----------------|-------------------|-------|-----------------------|------------------------|
| | LAT | LON | | |
| PUNTA CANA DO | 18.5N | 68.4W | 1142 PM | 0.2 FT |
| MONA ISLAND PR | 18.1N | 67.9W | 1141 PM | 0.2 FT |
| AGUADILLA PR | 18.5N | 67.2W | 1133 PM | 0.6 FT |
| MAYAGUEZ PR | 18.2N | 67.2W | 1123 PM | 0.4 FT |
| SAN JUAN PR | 18.5N | 66.1W | 1119 PM | 1.4 FT |
| ARECIBO PR | 18.5N | 66.7W | 1114 PM | 1.3 FT |

IMPACTS

- * MINOR SEA LEVEL FLUCTUATIONS MAY CONTINUE OVER THE NEXT FEW HOURS.

PRELIMINARY EARTHQUAKE PARAMETERS

- * MAGNITUDE 6.9
- * ORIGIN TIME 1100 PM AST JAN 29 2016
- * COORDINATES 19.2 NORTH 66.4 WEST
- * DEPTH 8 MILES
- * LOCATION ABOUT 49 MILES NORTH OF PUERTO RICO

NEXT UPDATE AND ADDITIONAL INFORMATION

- * THIS WILL BE THE FINAL STATEMENT ISSUED FOR THIS EVENT UNLESS NEW INFORMATION IS RECEIVED OR THE SITUATION CHANGES.
- * FURTHER INFORMATION ABOUT THIS EVENT AND ANY TSUNAMI THREAT TO PUERTO RICO AND THE VIRGIN ISLANDS MAY BE FOUND ON THE INTERNET AT PTWC.WEATHER.GOV AND AT WWW.TSUNAMI.GOV.
- * INFORMATION REGARDING ANY TSUNAMI THREAT TO US GULF OR ATLANTIC COASTS WILL BE ISSUED BY THE US NATIONAL TSUNAMI WARNING CENTER AND CAN BE FOUND ON THE INTERNET AT NTWC.ARH.NOAA.GOV AND AT WWW.TSUNAMI.GOV.
- * AUTHORITATIVE INFORMATION ABOUT THE EARTHQUAKE CAN BE OBTAINED FROM THE CORRESPONDING REGIONAL SEISMIC NETWORK OR THE U.S. GEOLOGICAL SURVEY ON THE INTERNET AT EARTHQUAKE.USGS.GOV/EARTHQUAKES -ALL LOWERCASE LETTERS-.

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SPANISH VERSION

ZCZC

WECA50 PHEB 300525
TSUSP1

MENSAJE DE TSUNAMI NUMERO 6
SMN CENTRO DE ALERTAS DE TSUNAMI DEL PACIFICO EWA BEACH HI
125 AM AST SAT JAN 30 2016

AMZ712-715-725-735-742-745-PRZ001>003-005-007-008-010>013-
VIZ001-002-300725-
ZONAS COSTERAS DE PUERTO RICO - LAS ISLAS VÍRGENES ESTADOUNIDENSES Y
LAS ISLAS VÍRGENES BRITÁNICAS

...LA ADVERTENCIA DE TSUNAMI AHORA HA SIDO CANCELADA...

AUDIENCIA

- * FUNCIONARIOS GUBERNAMENTALES... MEDIOS DE PRENSA... Y EL PUBLICO EN GENERAL EN PUERTO RICO... LAS ISLAS VIRGENES DE LOS ESTADOS UNIDOS... Y LAS ISLAS VIRGENES BRITANICAS.

ACTUALIZACIONES EN ESTE MENSAJE

- * LA ADVERTENCIA DE TSUNAMI AHORA HA SIDO CANCELADA PARA PUERTO RICO... LAS ISLAS VIRGENES DE LOS ESTADOS UNIDOS... Y LAS ISLAS VIRGENES BRITANICAS.

EVALUACION

- * UN TERREMOTO CON MAGNITUD PRELIMINAR 6.9 HA OCURRIDO UNAS 49 MILLAS AL NORTE DE PUERTO RICO A LAS 1100 PM AST EL VIERNES 29 DE ENERO DEL 2016.
- * UN TSUNAMI QUE AFECTO A PUERTO RICO Y LAS ISLAS VIRGENS FUE GENERADO POR ESTE TERREMOTO.
- * BASANDOSE EN EL ANALYSIS DE TODOS LOS DATOS DISPONIBLES... YA NO EXISTE NINGUN PELIGRO DE TSUNAMI PARA PUERTO RICO Y LAS ISLAS VIRGENES DEBIDO A ESTE TERREMOTO PERO FLUCTUACIONES MENORES DEL NIVEL DEL MAR PUEDEN CONTINUAR.

ACCIONES RECOMENDADAS

- * NO REGRESE A ZONAS EVACUADAS HASTA TANTO LAS AUTORIDADES DECLAREN QUE EL PELIGRO YA PASO.
- * SIGA LAS INSTRUCCIONES PROVENIENTES DE LAS AGENCIAS DE MANEJO

DE EMERGENCIAS EN PUERTO RICO Y LAS ISLAS VIRGENES YA QUE LAS MISMAS DISPONEN DE INFORMACION O INSTRUCCIONES ESPECIFICAS PARA SU LOCALIDAD.

- * SEA OBSERVADOR Y CAUTELOSO SI SE ENCUENTRA CERCA O DENTRO DEL MAR.
- * DE LO CONTRARIO... NO SE REQUIERE NINGUNA OTRA ACCION.

OBSERVACIONES DE ACTIVIDAD DEL TSUNAMI

- * LO QUE SIGUE SON LAS OBSERVACIONES DE LAS OLAS DEL TSUNAMI REGISTRADAS EN INSTRUMENTOS DE MEDICION EN ESTACIONES EN LA COSTA Y/O BOYAS EN AGUAS PROFUNDAS EN LOS PUNTOS INDICADOS. LA ALTURA MAXIMA DEL TSUNAMI ES MEDIDA CON RESPECTO AL NIVEL DE LA MAREA.
- * LA ALTURA MAXIMA DEL TSUNAMI ES EL VALOR MAXIMO OBSERVADO HASTA AHORA Y SE MIDE CON RESPECTO AL NIVEL DE LA MAREA.

| LOCALIZACION DEL INSTRUMENTO | COORDENADAS DEL INSTRUMENTO LAT LON | | TIEMPO DEL REGISTRO (AST) | ALTURA MAXIMA DEL TSUNAMI |
|------------------------------------|--|-------|------------------------------------|------------------------------------|
| PUNTA CANA DO | 18.5N | 68.4W | 1142 PM | 0.2 FT |
| MONA ISLAND PR | 18.1N | 67.9W | 1141 PM | 0.2 FT |
| AGUADILLA PR | 18.5N | 67.2W | 1133 PM | 0.6 FT |
| MAYAGUEZ PR | 18.2N | 67.2W | 1123 PM | 0.4 FT |
| SAN JUAN PR | 18.5N | 66.1W | 1119 PM | 1.4 FT |
| ARECIBO PR | 18.5N | 66.7W | 1114 PM | 1.3 FT |

IMPACTOS

- * FLUCTUACIONES MENORES DEL NIVEL DEL MAR PUEDE CONTINUAR DURANTE LAS PROXIMAS HORAS.

PARAMETROS PRELIMINARES DEL TERREMOTO

- * MAGNITUD 6.9
- * TIEMPO DE ORIGEN 1100 PM AST ENE 29 2016
- * COORDENADAS 19.2 NORTE 66.4 OESTE
- * PROFUNDIDAD 8 MILLAS
- * LOCALIZACION UNAS 49 MILLAS AL NORTE DE PUERTO RICO

PROXIMA ACTUALIZACION E INFORMACION ADICIONAL

- * ESTE SERA EL ULTIMO COMUNICADO EMITIDO PARA ESTE EVENTO A NO SER QUE SE RECIBA NUEVA INFORMACION O LA SITUACION CAMBIE.
- * MAS INFORMACION ACERCA DE ESTE EVENTO PUEDE SER ACCESADA EN INTERNET EN LOS SITIOS WEB PTWC.WEATHER.GOV Y WWW.TSUNAMI.GOV.
- * INFORMACION ACERCA DEL PELIGRO DE TSUNAMI PARA COSTAS ESTADOUNIDENSES EN EL GOLFO DE MEXICO Y EL ATLANTICO SERA EMITIDA POR EL CENTRO NACIONAL DE ALERTAS DE TSUNAMIS Y PUEDE SER ACCESADA EN INTERNET EN LOS SITIOS WEB NTWC.ARH.NOAA.GOV Y WWW.TSUNAMI.GOV.
- * INFORMACION OFICIAL AUTORIZADA ACERCA DE ESTE TERREMOTO PUEDE SER PROVEIDA POR LA CORRESPONDIENTE RED SISMICA REGIONAL O EL SERVICIO GEOLOGICO DE LOS ESTADOS UNIDOS EN SU SITIO WEB EARTHQUAKE.USGS.GOV/EARTHQUAKES -TODO EN MINUSCULAS-.

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| NWR VERSION |
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ZCZC
WECA60 PHEB 300525
TSUCA1

BULLETIN
TSUNAMI MESSAGE NUMBER 6
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
125 AM AST SAT JAN 30 2016

AMZ712-715-725-735-742-745-PRZ001>003-005-007-008-010>013-
VIZ001-002-300725-
/O.CAN.PHEB.TS.Y.0013.000000T0000Z-000000T0000Z/
COASTAL AREAS OF PUERTO RICO - THE U.S. VIRGIN ISLANDS AND
THE BRITISH VIRGIN ISLANDS
125 AM AST SAT JAN 30 2016

...THE TSUNAMI ADVISORY IS NOW CANCELED...

BASED ON ALL AVAILABLE DATA... THERE IS NO FURTHER TSUNAMI THREAT TO PUERTO RICO AND THE VIRGIN ISLANDS ALTHOUGH MINOR SEA LEVEL FLUCTUATIONS MAY CONTINUE.

DO NOT RETURN TO EVACUATED AREAS UNTIL THE ALL CLEAR IS GIVEN BY LOCAL AUTHORITIES.

FOLLOW INSTRUCTIONS FROM PUERTO RICO AND VIRGIN ISLANDS EMERGENCY MANAGEMENT AGENCIES BECAUSE THEY MAY HAVE SPECIFIC INFORMATION OR INSTRUCTIONS FOR YOUR LOCATION.

BE OBSERVANT AND EXERCISE NORMAL CAUTION IF YOU ARE NEAR OR IN

THE OCEAN.

OTHERWISE... NO FURTHER ACTION IS REQUIRED.

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Nearby Earthquake – Initial Tsunami Warning Message

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| ENGLISH VERSION |
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ZCZC
WECA40 PHEB 300303
TSUCAR

TSUNAMI MESSAGE NUMBER 1
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
1103 PM AST FRI JAN 29 2016

AMZ712-715-725-735-742-745-PRZ001>003-005-007-008-010>013-
VIZ001-002-300503-
COASTAL AREAS OF PUERTO RICO - THE U.S. VIRGIN ISLANDS AND
THE BRITISH VIRGIN ISLANDS

...A TSUNAMI WARNING IS NOW IN EFFECT...

AUDIENCE

- * GOVERNMENT OFFICIALS... MEDIA... AND GENERAL PUBLIC OF PUERTO RICO... THE U.S. VIRGIN ISLANDS... AND THE BRITISH VIRGIN ISLANDS.

EVALUATION

- * AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 7.7 OCCURRED ABOUT 31 MILES NORTH OF ANEGADA AT 1100 PM AST ON FRIDAY JANUARY 29 2016.
- * BASED ON ALL AVAILABLE DATA... THERE IS THE THREAT OF HAZARDOUS TSUNAMI WAVES FLOODING LOW-LYING COASTAL AREAS IN PUERTO RICO AND THE VIRGIN ISLANDS.
- * THE EARLIEST ESTIMATED TIME THAT TSUNAMI WAVE ACTIVITY AND FLOODING MAY BEGIN WITHIN THE PUERTO RICO AND VIRGIN ISLANDS REGION IS

1120 PM AST ON FRIDAY JANUARY 29 2016

- * ACTIONS TO PROTECT HUMAN LIFE... SAFETY AND PROPERTY SHOULD

BE TAKEN IMMEDIATELY.

- * THE GENERATION OF TSUNAMI WAVES HAS NOT YET BEEN CONFIRMED.
- * MONITORING IS UNDERWAY TO FURTHER EVALUATE THE TSUNAMI THREAT.
- * PEOPLE MAY HAVE EXPERIENCED SHAKING FROM THE EARTHQUAKE.

PRELIMINARY EARTHQUAKE PARAMETERS

- * THE FOLLOWING PARAMETERS ARE BASED ON A PRELIMINARY RAPID ASSESSMENT OF THE EARTHQUAKE AND CHANGES MAY OCCUR.
- * MAGNITUDE 7.7
- * ORIGIN TIME 1100 PM AST JAN 29 2016
- * COORDINATES 19.2 NORTH 64.3 WEST
- * DEPTH 8 MILES
- * LOCATION ABOUT 31 MILES NORTH OF ANEGADA

RECOMMENDED ACTIONS

- * ACTIONS REQUIRED TO PROTECT HUMAN LIFE... SAFETY AND PROPERTY WILL VARY WITHIN THE TSUNAMI WARNING AREA.
- * PERSONS LOCATED IN OR NEAR THE OCEAN OR IN LOW-LYING COASTAL AREAS SHOULD EVACUATE INLAND OR TO HIGHER GROUND ABOVE AND BEYOND DESIGNATED TSUNAMI HAZARD ZONES... OR MOVE TO THE FOURTH FLOOR OR HIGHER OF A MULTI-STORY BUILDING... DEPENDING UPON YOUR SITUATION.
- * PERSONS LOCATED IN OR NEAR THE OCEAN SHOULD MOVE OUT OF THE WATER... OFF THE BEACH AND AWAY FROM HARBORS... MARINAS... BAYS AND INLETS.
- * DO NOT GO TO THE SHORE TO OBSERVE THE TSUNAMI.
- * DO NOT RETURN TO EVACUATED AREAS UNTIL THE ALL CLEAR IS GIVEN BY LOCAL AUTHORITIES.
- * PERSONS LOCATED OUTSIDE THE EVACUATION ZONE SHOULD LIMIT TRAVEL TO PREVENT CONGESTION OF EVACUATION ROUTES.
- * LIMIT TELEPHONE AND CELL PHONE USAGE SO THOSE SYSTEMS DO NOT BECOME OVERLOADED.
- * BOATERS - WHERE TIME AND CONDITIONS PERMIT... MOVE YOUR BOAT OUT TO SEA TO A DEPTH OF AT LEAST 450 FEET.
- * BOATERS - IF AT SEA... AVOID ENTERING SHALLOW WATER...

HARBORS... MARINAS... BAYS AND INLETS TO AVOID FLOATING AND SUBMERGED DEBRIS AND STRONG CURRENTS.

- * BE ALERT TO AND FOLLOW INSTRUCTIONS FROM LOCAL EMERGENCY MANAGEMENT OFFICIALS BECAUSE THEY MAY HAVE MORE DETAILED OR SPECIFIC INFORMATION FOR YOUR LOCATION.

FORECASTS OF TSUNAMI ACTIVITY

- * ESTIMATED TIMES OF ARRIVAL -ETA- OF THE INITIAL TSUNAMI WAVE ARE GIVEN BELOW.
- * OBSERVED ARRIVAL TIMES MAY DIFFER FROM THESE ETAS AND THE INITIAL WAVE MAY NOT BE THE LARGEST.
- * FORECAST TSUNAMI HEIGHTS AND DURATIONS ARE NOT YET AVAILABLE.
- * A TSUNAMI IS A SERIES OF WAVES AND THE DURATION OF EACH WAVE CAN BE FIVE MINUTES TO ONE HOUR.

| TERRITORY | COASTAL LOCATION | ETA (AST) | FORECAST HEIGHT | FORECAST DURATION |
|-------------|------------------|-----------|-----------------|-------------------|
| PUERTO RICO | SAN JUAN | 1120 PM | | |
| | ARECIBO | 1124 PM | | |
| | YABUCOA | 1132 PM | | |
| | MAYAGUEZ | 1133 PM | | |
| | AGUADILLA | 1134 PM | | |
| | MONA ISLAND | 1142 PM | | |
| | PENUELAS | 1145 PM | | |
| | PONCE | 1146 PM | | |
| | VIEQUES IS | 1147 PM | | |
| | FAJARDO | 1152 PM | | |
| | CAJA DE MUERTOS | 1154 PM | | |
| | CULEBRA IS | 1158 PM | | |
| | MAGUEYES IS | 1159 PM | | |
| BVI | ANEGADA | 1120 PM | | |
| | VIRGIN GORDA | 1141 PM | | |
| | ROADTOWN | 1240 AM | | |
| USVI | CHRISTIANSTED | 1126 PM | | |
| | LIMETREE | 1129 PM | | |
| | LAMESHUR BAY | 1152 PM | | |
| | CHARLOTTE AMALIE | 1204 AM | | |

OBSERVATIONS OF TSUNAMI ACTIVITY

- * NO OBSERVATIONS OF TSUNAMI ACTIVITY ARE AVAILABLE YET.

IMPACTS

- * IMPACTS WILL VARY AT DIFFERENT LOCATIONS WITHIN PUERTO RICO AND THE VIRGIN ISLANDS.
- * SEA LEVEL FLUCTUATIONS THAT ARE 3 FEET OR MORE ABOVE AND BELOW THE TIDE LEVEL ALONG SOME OR ALL COASTS.
- * REPEATED FLOODING AND DRAINING OF LOW-LYING COASTAL AREAS.
- * STRONG AND UNUSUAL WAVES... CURRENTS AND INLAND FLOODING THAT CAN DROWN OR INJURE PEOPLE AND WEAKEN OR DESTROY STRUCTURES ON LAND AND IN THE WATER.
- * RAPIDLY FLOWING FLOOD WATER FILLED WITH HAZARDOUS DEBRIS.
- * SECONDARY HAZARDS THAT MAY INCLUDE DOWNED POWER LINES... FIRES... AND HAZARDOUS MATERIAL SPILLS.
- * THE HAZARD IS FORECAST TO BEGIN AROUND 1120 PM AST ON FRIDAY JANUARY 29 2016 AND IT CAN PERSIST FOR MANY HOURS OR LONGER.

NEXT UPDATE AND ADDITIONAL INFORMATION

- * THE NEXT MESSAGE WILL BE ISSUED IN THIRTY MINUTES... OR SOONER IF THE SITUATION WARRANTS.
- * FURTHER INFORMATION ABOUT THIS EVENT AND ANY TSUNAMI THREAT TO PUERTO RICO AND THE VIRGIN ISLANDS MAY BE FOUND ON THE INTERNET AT PTWC.WEATHER.GOV AND AT WWW.TSUNAMI.GOV.
- * INFORMATION REGARDING ANY TSUNAMI THREAT TO US GULF OR ATLANTIC COASTS WILL BE ISSUED BY THE US NATIONAL TSUNAMI WARNING CENTER AND CAN BE FOUND ON THE INTERNET AT NTWC.ARH.NOAA.GOV AND AT WWW.TSUNAMI.GOV.
- * AUTHORITATIVE INFORMATION ABOUT THE EARTHQUAKE CAN BE OBTAINED FROM THE CORRESPONDING REGIONAL SEISMIC NETWORK OR THE U.S. GEOLOGICAL SURVEY ON THE INTERNET AT EARTHQUAKE.USGS.GOV/EARTHQUAKES -ALL LOWERCASE LETTERS-.

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| SPANISH VERSION |
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ZCZC
WECA50 PHEB 300303
TSUSP1

MENSAJE DE TSUNAMI NUMERO 1

SMN CENTRO DE ALERTAS DE TSUNAMI DEL PACIFICO EWA BEACH HI
1103 PM AST FRI JAN 29 2016

AMZ712-715-725-735-742-745-PRZ001>003-005-007-008-010>013-
VIZ001-002-300503-
ZONAS COSTERAS DE PUERTO RICO - LAS ISLAS VÍRGENES ESTADOUNIDENSES Y
LAS ISLAS VÍRGENES BRITÁNICAS

...UN AVISO DE TSUNAMI ESTA AHORA EN EFECTO...

AUDIENCIA

- * FUNCIONARIOS GUBERNAMENTALES... MEDIOS DE PRENSA... Y EL PUBLICO EN GENERAL EN PUERTO RICO... LAS ISLAS VIRGENES DE LOS ESTADOS UNIDOS... Y LAS ISLAS VIRGENES BRITANICAS.

EVALUACION

- * UN TERREMOTO CON MAGNITUD PRELIMINAR 7.7 HA OCURRIDO UNAS 31 MILLAS AL NORTE DE ANEGADA A LAS 1100 PM AST EL VIERNES 29 DE ENERO DEL 2016.
- * BASANDOSE EN EL ANALISIS DE TODOS LOS DATOS DISPONIBLES... EXISTE LA AMENAZA DE QUE PELIGROSAS OLAS DE TSUNAMI INUNDEN ZONAS COSTERAS BAJAS EN PUERTO RICO Y LAS ISLAS VIRGENES.
- * EL TIEMPO DE ARRIBO MAS TEMPRANO A PARTIR DEL CUAL LA ACTIVIDAD DE LAS OLAS DEL TSUNAMI E INUNDACION ASOCIADA AL MISMO PUEDE COMENZAR EN LA REGION DE PUERTO RICO Y LAS ISLAS VIRGENES ES

1120 PM AST EL VIERNES 29 DE ENERO DEL 2016

- * ACCIONES PARA PROTEGER VIDAS HUMANAS... LA SEGURIDAD Y LOS BIENES MATERIALES DEBEN TOMARSE DE FORMA INMEDIATA.
- * TODAVIA NO SE HA OBSERVADO ACTIVIDAD DE TSUNAMI.
- * LA POBLACION PUEDE HABER SENTIDO EL TERREMOTO.

PARAMETROS PRELIMINARES DEL TERREMOTO

- * LOS SIGUIENTES PARAMETROS ESTAN BASADOS EN UNA EVALUACION PRELIMINAR RAPIDA Y PUEDEN VARIAR.
- * MAGNITUD 7.7
- * TIEMPO DE ORIGEN 1100 PM AST ENE 29 2016
- * COORDENADAS 19.2 NORTE 64.3 OESTE

- * PROFUNDIDAD 8 MILLAS
- * LOCALIZACION UNAS 31 MILLAS AL NORTE DE ANEGADA

ACCIONES RECOMENDADAS

- * LAS ACCIONES REQUERIDAS PARA PROTEGER VIDAS HUMANAS... LA SEGURIDAD Y LOS BIENES MATERIALES VARIARA DENTRO DEL AREA DECLARADA EN ESTADO DE AVISO.
- * PERSONAS LOCALIZADAS EN EL MAR O CERCA DEL MAR O EN ZONAS COSTERAS BAJAS DEBEN EVACUAR TIERRA ADENTRO O HACIA ZONAS MAS ALTAS FUERA DE AQUELLAS DESIGNADAS COMO ZONAS CON PELIGRO DE TSUNAMI... O MOVERSE HACIA EL CUARTO PISO O MAS ALTO DE UN EDIFICIO DE VARIOS PISOS... DEPENDIENDO DE LA SITUACION.
- * PERSONAS LOCALIZADAS EN EL MAR O CERCA DEL MAR DEBEN SALIR DEL AGUA... FUERA DE LA PLAYA Y ALEJARSE DE PUERTOS... MARINAS... BAHIAS Y ENSENADAS.
- * NO VAYA A LA ORILLA DEL MAR PARA OBSERVAR EL TSUNAMI.
- * NO REGRESE A ZONAS EVACUADAS HASTA TANTO LAS AUTORIDADES DECLAREN QUE EL PELIGRO YA PASO.
- * PERSONAS LOCALIZADAS FUERA DE LA ZONA DE EVACUACION DEBEN DEJAR LAS CARRETERAS LIBRES PARA EVITAR EL CONGESTIONAMIENTO DE LAS RUTAS DE EVACUACION.
- * LIMITE EL USO TANTO DEL TELEFONO COMO DE TELEFONOS CELULARES PARA EVITAR SOBRECARGAR DICHOS SISTEMAS.
- * MARINEROS - DONDE EL TIEMPO Y LAS CONDICIONES PERMITAN... MUEVAN SU EMBARCACION MAR AFUERA HACIA PROFUNDIDADES DE AL MENOS 450 PIES.
- * MARINEROS - SI SE ENCUENTRA MAR AFUERA... EVITEN ADENTRARSE EN AGUAS SOMERAS... PUERTOS... MARINAS... BAHIAS Y ENSENADAS PARA EVITAR ESCOMBROS TANTO FLOTANTES COMO SUMERGIDOS Y CORRIENTES FUERTES.
- * MANTENGASE ALERTA Y SIGA LAS INSTRUCCIONES PROVENIENTES DE FUNCIONARIOS DE LAS AGENCIAS LOCALES PARA EL MANEJO DE EMERGENCIAS YA QUE LAS MISMAS DISPONEN DE INFORMACION O INSTRUCCIONES MAS ESPECIFICAS PARA SU LOCALIDAD.

PRONOSTICO DE LA ACTIVIDAD DEL TSUNAMI

- * LOS TIEMPOS DE ARRIBO ESTIMADOS -TAE- DE LA PRIMERA OLA DEL TSUNAMI SE PROVEEN A CONTINUACION.

- * LOS TIEMPOS DE ARRIBO REALES PUEDEN DIFERIR DE LOS ESTIMADOS Y LA PRIMERA OLA PUEDE QUE NO SEA LA MAS GRANDE.
- * EL PRONOSTICO DE LAS AMPLITUDES Y DURACION DEL TSUNAMI NO ESTAN AUN DISPONIBLES.
- * UN TSUNAMI ES UN TREN DE OLAS Y EL TIEMPO ENTRE OLAS PUEDE VARIAR DESDE CINCO MINUTOS HASTA UNA HORA.

| TERRITORIO | LOCALIZACION COSTERA | TAE (AST) | ----PRONOSTICO---- | |
|-------------|-------------------------|--------------|--------------------|----------|
| | | | ALTURA | DURACION |
| PUERTO RICO | SAN JUAN | 1120 PM | | |
| | ARECIBO | 1124 PM | | |
| | YABUCOA | 1132 PM | | |
| | MAYAGUEZ | 1133 PM | | |
| | AGUADILLA | 1134 PM | | |
| | MONA ISLAND | 1142 PM | | |
| | PENUELAS | 1145 PM | | |
| | PONCE | 1146 PM | | |
| | VIEQUES IS | 1147 PM | | |
| | FAJARDO | 1152 PM | | |
| | CAJA DE MUERTOS | 1154 PM | | |
| | CULEBRA IS | 1158 PM | | |
| | MAGUEYES IS | 1159 PM | | |
| BVI | ANEGADA | 1120 PM | | |
| | VIRGIN GORDA | 1141 PM | | |
| | ROADTOWN | 1240 AM | | |
| USVI | CHRISTIANSTED | 1126 PM | | |
| | LIMETREE | 1129 PM | | |
| | LAMESHUR BAY | 1152 PM | | |
| | CHARLOTTE AMALIE | 1204 AM | | |

OBSERVACIONES DE ACTIVIDAD DEL TSUNAMI

- * TODAVIA NO SE DISPONE DE OBSERVACIONES DE LA ACTIVIDAD DEL TSUNAMI.

IMPACTOS

- * LOS IMPACTOS VARIARAN PARA DIFERENTES LOCALIDADES EN PUERTO RICO Y LAS ISLAS VIRGENES.
- * FLUCTUACIONES DEL NIVEL DEL MAR DE 3 PIES O MAS TANTO POR ENCIMA COMO POR DEBAJO DEL NIVEL DE MAREA A LO LARGO DE ALGUNAS O TODAS LAS COSTAS.

- * REPETIDAS INUNDACIONES Y RETROCESO DEL AGUA EN AREAS COSTERAS BAJAS.
- * OLAS INUSUALES Y FUERTES... CORRIENTES E INUNDACION DE ZONAS TIERRA ADENTRO QUE PUEDEN AHOGAR O LESIONAR A LAS PERSONAS Y DEBILITAR O DESTRUIR LAS ESTRUCTURAS EN TIERRA Y EN EL AGUA.
- * CORRIENTES DE INUNDACION CON FLUJO RAPIDO Y CARGADAS DE ESCOMBROS PELIGROSOS.
- * PELIGROS SECUNDARIOS PUEDEN INCLUIR LINEAS ELECTRICAS CAIDAS... FUEGOS... Y DERRAMES DE MATERIALES PELIGROSOS.
- * EL PELIGRO SE PRONOSTICA QUE COMENZARA ALREDEDOR DE LA(S) 1120 PM AST EL VIERNES 29 DE ENERO DEL 2016 Y PUEDE PERSISTIR POR VARIAS HORAS O MAS.

PROXIMA ACTUALIZACION E INFORMACION ADICIONAL

- * EL PROXIMO MENSAJE SERA EMITIDO EN TREINTA MINUTOS... O MAS PRONTO SI LA SITUACION ASI LO AMERITA.
- * MAS INFORMACION ACERCA DE ESTE EVENTO PUEDE SER ACCESADA EN INTERNET EN LOS SITIOS WEB PTWC.WEATHER.GOV Y WWW.TSUNAMI.GOV.
- * INFORMACION ACERCA DEL PELIGRO DE TSUNAMI PARA COSTAS ESTADOUNIDENSES EN EL GOLFO DE MEXICO Y EL ATLANTICO SERA EMITIDA POR EL CENTRO NACIONAL DE ALERTAS DE TSUNAMIS Y PUEDE SER ACCESADA EN INTERNET EN LOS SITIOS WEB NTWC.ARH.NOAA.GOV Y WWW.TSUNAMI.GOV.
- * INFORMACION OFICIAL AUTORIZADA ACERCA DE ESTE TERREMOTO PUEDE SER PROVEIDA POR LA CORRESPONDIENTE RED SISMICA REGIONAL O EL SERVICIO GEOLOGICO DE LOS ESTADOS UNIDOS EN SU SITIO WEB EARTHQUAKE.USGS.GOV/EARTHQUAKES -TODO EN MINUSCULAS-.

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| NWR VERSION |
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ZCZC
WECA60 PHEB 300303
TSUCA1

BULLETIN
TSUNAMI MESSAGE NUMBER 1
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
1103 PM AST FRI JAN 29 2016

AMZ712-715-725-735-742-745-PRZ001>003-005-007-008-010>013-
VIZ001-002-300503-

/O.NEW.PHEB.TS.W.0008.160130T0303Z-000000T0000Z/
COASTAL AREAS OF PUERTO RICO - THE U.S. VIRGIN ISLANDS AND
THE BRITISH VIRGIN ISLANDS
1103 PM AST FRI JAN 29 2016

...A TSUNAMI WARNING IS NOW IN EFFECT...

PERSONS LOCATED IN OR NEAR THE OCEAN OR IN LOW-LYING COASTAL
AREAS SHOULD EVACUATE INLAND OR TO HIGHER GROUND ABOVE AND
BEYOND DESIGNATED TSUNAMI HAZARD ZONES... OR MOVE TO THE FOURTH
FLOOR OR HIGHER OF A MULTI-STORY BUILDING... DEPENDING UPON YOUR
SITUATION.

PERSONS LOCATED IN OR NEAR THE OCEAN SHOULD MOVE OUT OF THE
WATER... OFF THE BEACH AND AWAY FROM HARBORS... MARINAS... BAYS
AND INLETS.

AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 7.7 OCCURRED ABOUT
31 MILES NORTH OF ANEGADA AT 1100 PM AST ON FRIDAY JANUARY 29
2016.

A HAZARDOUS TSUNAMI MAY HAVE BEEN GENERATED BY THIS NEARBY
EARTHQUAKE THAT COULD SOON IMPACT NEARBY COASTS.

BASED ON ALL AVAILABLE DATA... THERE IS THE THREAT OF HAZARDOUS
TSUNAMI WAVES FLOODING LOW-LYING COASTAL AREAS IN PUERTO RICO
AND THE VIRGIN ISLANDS.

THE HAZARD IS FORECAST TO BEGIN AROUND 1120 PM AST ON FRIDAY
JANUARY 29 2016 AND IT CAN PERSIST FOR MANY HOURS OR LONGER.

DO NOT GO TO THE SHORE TO OBSERVE THE TSUNAMI.

DO NOT RETURN TO EVACUATED AREAS UNTIL THE ALL CLEAR IS GIVEN BY
LOCAL AUTHORITIES.

PERSONS LOCATED OUTSIDE THE EVACUATION ZONE SHOULD LIMIT TRAVEL
TO PREVENT CONGESTION OF EVACUATION ROUTES.

LIMIT TELEPHONE AND CELL PHONE USAGE SO THOSE SYSTEMS DO NOT
BECOME OVERLOADED.

BE ALERT TO AND FOLLOW INSTRUCTIONS FROM LOCAL EMERGENCY
MANAGEMENT OFFICIALS BECAUSE THEY MAY HAVE MORE DETAILED OR
SPECIFIC INFORMATION FOR YOUR LOCATION.

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Nearby Earthquake – Tsunami Warning with Forecast

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| ENGLISH VERSION |
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ZCZC
WECA40 PHEB 300325
TSUCAR

TSUNAMI MESSAGE NUMBER 2
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
1125 PM AST FRI JAN 29 2016

AMZ712-715-725-735-742-745-PRZ001>003-005-007-008-010>013-
VIZ001-002-300525-
COASTAL AREAS OF PUERTO RICO - THE U.S. VIRGIN ISLANDS AND
THE BRITISH VIRGIN ISLANDS

...A TSUNAMI WARNING CONTINUES IN EFFECT...

AUDIENCE

- * GOVERNMENT OFFICIALS... MEDIA... AND GENERAL PUBLIC OF PUERTO RICO... THE U.S. VIRGIN ISLANDS... AND THE BRITISH VIRGIN ISLANDS.

UPDATES IN THIS MESSAGE

- * THE EARTHQUAKE PARAMETERS HAVE BEEN REVISED.
- * TSUNAMI HEIGHT AND DURATION FORECASTS ARE NOW INCLUDED.

EVALUATION

- * AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 7.9 OCCURRED ABOUT 31 MILES NORTH OF ANEGADA AT 1100 PM AST ON FRIDAY JANUARY 29 2016.
- * BASED ON ALL AVAILABLE DATA... THERE IS THE THREAT OF HAZARDOUS TSUNAMI WAVES FLOODING LOW-LYING COASTAL AREAS IN PUERTO RICO AND THE VIRGIN ISLANDS.
- * THE EARLIEST ESTIMATED TIME THAT TSUNAMI WAVE ACTIVITY AND FLOODING MAY BEGIN WITHIN THE PUERTO RICO AND VIRGIN ISLANDS REGION IS

1120 PM AST ON FRIDAY JANUARY 29 2016

- * ACTIONS TO PROTECT HUMAN LIFE... SAFETY AND PROPERTY SHOULD BE TAKEN IMMEDIATELY.
- * THE GENERATION OF TSUNAMI WAVES HAS NOT YET BEEN CONFIRMED.

* PEOPLE MAY HAVE EXPERIENCED SHAKING FROM THE EARTHQUAKE.

PRELIMINARY EARTHQUAKE PARAMETERS - UPDATED

* THE FOLLOWING PARAMETERS ARE BASED ON A PRELIMINARY RAPID ASSESSMENT OF THE EARTHQUAKE AND CHANGES MAY OCCUR.

* MAGNITUDE 7.9
* ORIGIN TIME 1100 PM AST JAN 29 2016
* COORDINATES 19.2 NORTH 64.3 WEST
* DEPTH 8 MILES
* LOCATION ABOUT 31 MILES NORTH OF ANEGADA

RECOMMENDED ACTIONS

* ACTIONS REQUIRED TO PROTECT HUMAN LIFE... SAFETY AND PROPERTY WILL VARY WITHIN THE TSUNAMI WARNING AREA.

* PERSONS LOCATED IN OR NEAR THE OCEAN OR IN LOW-LYING COASTAL AREAS SHOULD EVACUATE INLAND OR TO HIGHER GROUND ABOVE AND BEYOND DESIGNATED TSUNAMI HAZARD ZONES... OR MOVE TO THE FOURTH FLOOR OR HIGHER OF A MULTI-STORY BUILDING... DEPENDING UPON YOUR SITUATION.

* PERSONS LOCATED IN OR NEAR THE OCEAN SHOULD MOVE OUT OF THE WATER... OFF THE BEACH AND AWAY FROM HARBORS... MARINAS... BAYS AND INLETS.

* DO NOT GO TO THE SHORE TO OBSERVE THE TSUNAMI.

* DO NOT RETURN TO EVACUATED AREAS UNTIL THE ALL CLEAR IS GIVEN BY LOCAL AUTHORITIES.

* BOATERS - IF AT SEA... AVOID ENTERING SHALLOW WATER... HARBORS... MARINAS... BAYS AND INLETS TO AVOID FLOATING AND SUBMERGED DEBRIS AND STRONG CURRENTS.

* BE ALERT TO AND FOLLOW INSTRUCTIONS FROM LOCAL EMERGENCY MANAGEMENT OFFICIALS BECAUSE THEY MAY HAVE MORE DETAILED OR SPECIFIC INFORMATION FOR YOUR LOCATION.

FORECASTS OF TSUNAMI ACTIVITY - UPDATED

* ESTIMATED TIMES OF ARRIVAL -ETA- OF THE INITIAL TSUNAMI WAVE ARE GIVEN BELOW.

* OBSERVED ARRIVAL TIMES MAY DIFFER FROM THESE ETAS AND THE INITIAL WAVE MAY NOT BE THE LARGEST.

- * THE FORECAST HEIGHT IS THE MAXIMUM EXPECTED WATER LEVEL ABOVE THE TIDE AT THAT COASTAL LOCATION.
- * THE FORECAST DURATION IS THE APPROXIMATE EXPECTED LENGTH OF TIME AFTER INITIAL IMPACT THAT THE TSUNAMI MAY CONTINUE TO BE A HAZARD.
- * A TSUNAMI IS A SERIES OF WAVES AND THE DURATION OF EACH WAVE CAN BE FIVE MINUTES TO ONE HOUR.

| TERRITORY | COASTAL LOCATION | ETA (AST) | FORECAST HEIGHT | FORECAST DURATION |
|-------------|------------------|-----------|-----------------|-------------------|
| PUERTO RICO | SAN JUAN | 1120 PM | 2.1-4.8 FT | 12 HRS |
| | ARECIBO | 1124 PM | 1.9-4.2 FT | 12 HRS |
| | YABUCOA | 1132 PM | 0.9-2.1 FT | 6 HRS |
| | MAYAGUEZ | 1133 PM | 1.1-2.5 FT | 6 HRS |
| | AGUADILLA | 1134 PM | 1.2-2.7 FT | 6 HRS |
| | MONA ISLAND | 1142 PM | 0.7-1.6 FT | 6 HRS |
| | PENUELAS | 1145 PM | 0.6-1.2 FT | 6 HRS |
| | PONCE | 1146 PM | 0.7-1.6 FT | 6 HRS |
| | VIEQUES IS | 1147 PM | BELOW 1 FT | ----- |
| | FAJARDO | 1152 PM | 2.3-5.2 FT | 12 HRS |
| | CAJA DE MUERTOS | 1154 PM | 0.6-1.3 FT | 6 HRS |
| | CULEBRA IS | 1158 PM | 2.6-5.8 FT | 12 HRS |
| | MAGUEYES IS | 1159 PM | BELOW 1 FT | ----- |
| BVI | ANEGADA | 1120 PM | 8.7-20. FT | 21 HRS |
| | VIRGIN GORDA | 1141 PM | 2.8-6.3 FT | 15 HRS |
| | ROADTOWN | 1240 AM | BELOW 1 FT | ----- |
| USVI | CHRISTIANSTED | 1126 PM | 2.0-4.5 FT | 12 HRS |
| | LIMETREE | 1129 PM | 1.2-2.8 FT | 6 HRS |
| | LAMESHUR BAY | 1152 PM | 2.1-4.8 FT | 12 HRS |
| | CHARLOTTE AMALIE | 1204 AM | BELOW 1 FT | ----- |

OBSERVATIONS OF TSUNAMI ACTIVITY

- * NO OBSERVATIONS OF TSUNAMI ACTIVITY ARE AVAILABLE YET.

IMPACTS

- * IMPACTS WILL VARY AT DIFFERENT LOCATIONS WITHIN PUERTO RICO AND THE VIRGIN ISLANDS.
- * SEA LEVEL FLUCTUATIONS THAT ARE 3 FEET OR MORE ABOVE AND BELOW THE TIDE LEVEL ALONG SOME OR ALL COASTS.
- * REPEATED FLOODING AND DRAINING OF LOW-LYING COASTAL AREAS.

- * STRONG AND UNUSUAL WAVES... CURRENTS AND INLAND FLOODING THAT CAN DROWN OR INJURE PEOPLE AND WEAKEN OR DESTROY STRUCTURES ON LAND AND IN THE WATER.
- * RAPIDLY FLOWING FLOOD WATER FILLED WITH HAZARDOUS DEBRIS.
- * SECONDARY HAZARDS THAT MAY INCLUDE DOWNED POWER LINES... FIRES... AND HAZARDOUS MATERIAL SPILLS.
- * THE HAZARD BEGAN AROUND 1120 PM AST ON FRIDAY JANUARY 29 2016 AND IT CAN PERSIST FOR MANY HOURS OR LONGER.

NEXT UPDATE AND ADDITIONAL INFORMATION

- * THE NEXT MESSAGE WILL BE ISSUED IN THIRTY MINUTES... OR SOONER IF THE SITUATION WARRANTS.
- * FURTHER INFORMATION ABOUT THIS EVENT AND ANY TSUNAMI THREAT TO PUERTO RICO AND THE VIRGIN ISLANDS MAY BE FOUND ON THE INTERNET AT PTWC.WEATHER.GOV AND AT WWW.TSUNAMI.GOV.
- * INFORMATION REGARDING ANY TSUNAMI THREAT TO US GULF OR ATLANTIC COASTS WILL BE ISSUED BY THE US NATIONAL TSUNAMI WARNING CENTER AND CAN BE FOUND ON THE INTERNET AT NTWC.ARH.NOAA.GOV AND AT WWW.TSUNAMI.GOV.
- * AUTHORITATIVE INFORMATION ABOUT THE EARTHQUAKE CAN BE OBTAINED FROM THE CORRESPONDING REGIONAL SEISMIC NETWORK OR THE U.S. GEOLOGICAL SURVEY ON THE INTERNET AT EARTHQUAKE.USGS.GOV/EARTHQUAKES -ALL LOWERCASE LETTERS-.

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| SPANISH VERSION |
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ZCZC
WECA50 PHEB 300325
TSUSP1

MENSAJE DE TSUNAMI NUMERO 2
SMN CENTRO DE ALERTAS DE TSUNAMI DEL PACIFICO EWA BEACH HI
1125 PM AST FRI JAN 29 2016

AMZ712-715-725-735-742-745-PRZ001>003-005-007-008-010>013-
VIZ001-002-300525-
ZONAS COSTERAS DE PUERTO RICO - LAS ISLAS VÍRGENES ESTADOUNIDENSES Y
LAS ISLAS VÍRGENES BRITÁNICAS

...EL AVISO DE TSUNAMI CONTINUA EN EFECTO...

AUDIENCIA

- * FUNCIONARIOS GUBERNAMENTALES... MEDIOS DE PRENSA... Y EL PUBLICO EN GENERAL EN PUERTO RICO... LAS ISLAS VIRGENES DE LOS ESTADOS UNIDOS... Y LAS ISLAS VIRGENES BRITANICAS.

ACTUALIZACIONES EN ESTE MENSAJE

- * LOS PARAMETROS DEL TSUNAMI HAN SIDO ACTUALIZADOS.
- * PRONOSTICOS DE LA ALTURA DEL TSUNAMI Y SU DURACION ESTAN AHORA INCLUIDOS.

EVALUACION

- * UN TERREMOTO CON MAGNITUD PRELIMINAR 7.9 HA OCURRIDO UNAS 31 MILLAS AL NORTE DE ANEGADA A LAS 1100 PM AST EL VIERNES 29 DE ENERO DEL 2016.
- * BASANDOSE EN EL ANALISIS DE TODOS LOS DATOS DISPONIBLES... EXISTE LA AMENAZA DE QUE PELIGROSAS OLAS DE TSUNAMI INUNDEN ZONAS COSTERAS BAJAS EN PUERTO RICO Y LAS ISLAS VIRGENES.
- * EL TIEMPO DE ARRIBO MAS TEMPRANO A PARTIR DEL CUAL LA ACTIVIDAD DE LAS OLAS DEL TSUNAMI E INUNDACION ASOCIADA AL MISMO PUEDE COMENZAR EN LA REGION DE PUERTO RICO Y LAS ISLAS VIRGENES ES

1120 PM AST EL VIERNES 29 DE ENERO DEL 2016

- * ACCIONES PARA PROTEGER VIDAS HUMANAS... LA SEGURIDAD Y LOS BIENES MATERIALES DEBEN TOMARSE DE FORMA INMEDIATA.
- * TODAVIA NO SE HA OBSERVADO ACTIVIDAD DE TSUNAMI.
- * LA POBLACION PUEDE HABER SENTIDO EL TERREMOTO.

PARAMETROS PRELIMINARES DEL TERREMOTO - ACTUALIZADO

- * LOS SIGUIENTES PARAMETROS ESTAN BASADOS EN UNA EVALUACION PRELIMINAR RAPIDA Y PUEDEN VARIAR.
- * MAGNITUD 7.9
- * TIEMPO DE ORIGEN 1100 PM AST ENE 29 2016
- * COORDENADAS 19.2 NORTE 64.3 OESTE
- * PROFUNDIDAD 8 MILLAS
- * LOCALIZACION UNAS 31 MILLAS AL NORTE DE ANEGADA

ACCIONES RECOMENDADAS

- * LAS ACCIONES REQUERIDAS PARA PROTEGER VIDAS HUMANAS... LA SEGURIDAD Y LOS BIENES MATERIALES VARIARA DENTRO DEL AREA DECLARADA EN ESTADO DE AVISO.
- * PERSONAS LOCALIZADAS EN EL MAR O CERCA DEL MAR O EN ZONAS COSTERAS BAJAS DEBEN EVACUAR TIERRA ADENTRO O HACIA ZONAS MAS ALTAS FUERA DE AQUELLAS DESIGNADAS COMO ZONAS CON PELIGRO DE TSUNAMI... O MOVERSE HACIA EL CUARTO PISO O MAS ALTO DE UN EDIFICIO DE VARIOS MULTI PISOS... EN DEPENDIENDO DE LA SITUACION.
- * PERSONAS LOCALIZADAS EN EL MAR O CERCA DEL MAR DEBEN SALIR DEL AGUA... FUERA DE LA PLAYA Y ALEJARSE DE PUERTOS... MARINAS... BAHIAS Y ENSENADAS.
- * NO VAYA A LA ORILLA DEL MAR PARA OBSERVAR EL TSUNAMI.
- * NO REGRESE A ZONAS EVACUADAS HASTA TANTO LAS AUTORIDADES DECLAREN QUE EL PELIGRO YA PASO.
- * MARINEROS - SI SE ENCUENTRAN MAR AFUERA... EVITEN ADENTRARSE EN AGUAS SOMERAS... PUERTOS... MARINAS... BAHIAS Y ENSENADAS PARA EVITAR ESCOMBROS TANTO FLOTANTES COMO SUMERGIDOS Y CORRIENTES FUERTES.
- * MANTENGASE ALERTA Y SIGA LAS INSTRUCCIONES PROVENIENTES DE FUNCIONARIOS DE LAS AGENCIAS LOCALES PARA EL MANEJO DE EMERGENCIAS YA QUE LAS MISMAS DISPONEN DE INFORMACION O INSTRUCCIONES MAS ESPECIFICAS PARA SU LOCALIDAD.

PRONOSTICO DE LA ACTIVIDAD DEL TSUNAMI - ACTUALIZADO

- * LOS TIEMPOS DE ARRIBO ESTIMADOS -TAE- DE LA PRIMERA OLA DEL TSUNAMI SE PROVEEN A CONTINUACION.
- * LOS TIEMPOS DE ARRIBO REALES PUEDEN DIFERIR DE LOS ESTIMADOS Y LA PRIMERA OLA PUEDE QUE NO SEA LA MAS GRANDE.
- * LA ALTURA PRONOSTICADA ES EL NIVEL MAXIMO DEL AGUA POR ENCIMA DEL NIVEL DE MAREA QUE SE ESPERA A LO LARGO DE ESA SECCION DE LA COSTA.
- * LA DURACION PRONOSTICADA ES EL TIEMPO DURANTE EL CUAL SE ESPERA QUE EL TSUNAMI PRODUZCA OLAS Y CORRIENTES PELIGROSAS.
- * UN TSUNAMI ES UN TREN DE OLAS Y EL TIEMPO ENTRE OLAS PUEDE VARIAR DESDE CINCO MINUTOS HASTA UNA HORA.

| TERRITORIO | LOCALIZACION COSTERA | TAE (AST) | ----PRONOSTICO---- | | |
|--------------|-------------------------|--------------|--------------------|------------|--------|
| | | | ALTURA | DURACION | |
| PUERTO RICO | SAN JUAN | 1120 PM | 2.1-4.8 FT | 12 HRS | |
| | ARECIBO | 1124 PM | 1.9-4.2 FT | 12 HRS | |
| | YABUCOA | 1132 PM | 0.9-2.1 FT | 6 HRS | |
| | MAYAGUEZ | 1133 PM | 1.1-2.5 FT | 6 HRS | |
| | AGUADILLA | 1134 PM | 1.2-2.7 FT | 6 HRS | |
| | MONA ISLAND | 1142 PM | 0.7-1.6 FT | 6 HRS | |
| | PENUELAS | 1145 PM | 0.6-1.2 FT | 6 HRS | |
| | PONCE | 1146 PM | 0.7-1.6 FT | 6 HRS | |
| | VIEQUES IS | 1147 PM | BELOW 1 FT | ----- | |
| | FAJARDO | 1152 PM | 2.3-5.2 FT | 12 HRS | |
| | CAJA DE MUERTOS | 1154 PM | 0.6-1.3 FT | 6 HRS | |
| | CULEBRA IS | 1158 PM | 2.6-5.8 FT | 12 HRS | |
| | MAGUEYES IS | 1159 PM | BELOW 1 FT | ----- | |
| | BVI | ANEGADA | 1120 PM | 8.7-20. FT | 21 HRS |
| VIRGIN GORDA | | 1141 PM | 2.8-6.3 FT | 15 HRS | |
| ROADTOWN | | 1240 AM | BELOW 1 FT | ----- | |
| USVI | CHRISTIANSTED | 1126 PM | 2.0-4.5 FT | 12 HRS | |
| | LIMETREE | 1129 PM | 1.2-2.8 FT | 6 HRS | |
| | LAMESHUR BAY | 1152 PM | 2.1-4.8 FT | 12 HRS | |
| | CHARLOTTE AMALIE | 1204 AM | BELOW 1 FT | ----- | |

OBSERVACIONES DE ACTIVIDAD DEL TSUNAMI

* TODAVIA NO SE DISPONE DE OBSERVACIONES DE LA ACTIVIDAD DEL TSUNAMI.

IMPACTOS

-
- * LOS IMPACTOS VARIARAN PARA DIFERENTES LOCALIDADES EN PUERTO RICO Y LAS ISLAS VIRGENES.
 - * FLUCTUACIONES DEL NIVEL DEL MAR DE 3 PIES O MAS TANTO POR ENCIMA COMO POR DEBAJO DEL NIVEL DE MAREA A LO LARGO DE ALGUNAS O TODAS LAS COSTAS.
 - * REPETIDAS INUNDACIONES Y RETROCESO DEL AGUA EN AREAS COSTERAS BAJAS.
 - * OLAS INUSUALES Y FUERTES... CORRIENTES E INUNDACION DE ZONAS TIERRA ADENTRO QUE PUEDEN AHOGAR O LESIONAR A LAS PERSONAS Y DEBILITAR O DESTRUIR LAS ESTRUCTURAS EN TIERRA Y EN EL AGUA.
 - * CORRIENTES DE INUNDACION CON FLUJO RAPIDO Y CARGADAS DE ESCOMBROS PELIGROSOS.

- * PELIGROS SECUNDARIOS PUEDEN INCLUIR LINEAS ELECTRICAS CAIDAS... FUEGOS... Y DERRAMES DE MATERIALES PELIGROSOS.
- * EL PELIGRO COMENZO A PARTIR DE LA(S) 1120 PM AST EL VIERNES 29 DE ENERO DEL 2016 Y PUEDE PERSISTIR POR VARIAS HORAS O MAS.

PROXIMA ACTUALIZACION E INFORMACION ADICIONAL

- * EL PROXIMO MENSAJE SERA EMITIDO EN TREINTA MINUTOS... O MAS PRONTO SI LA SITUACION ASI LO AMERITA.
- * MAS INFORMACION ACERCA DE ESTE EVENTO PUEDE SER ACCESADA EN INTERNET EN LOS SITIOS WEB PTWC.WEATHER.GOV Y WWW.TSUNAMI.GOV.
- * INFORMACION ACERCA DEL PELIGRO DE TSUNAMI PARA COSTAS ESTADOUNIDENSES EN EL GOLFO DE MEXICO Y EL ATLANTICO SERA EMITIDA POR EL CENTRO NACIONAL DE ALERTAS DE TSUNAMIS Y PUEDE SER ACCESADA EN INTERNET EN LOS SITIOS WEB NTWC.ARH.NOAA.GOV Y WWW.TSUNAMI.GOV.
- * INFORMACION OFICIAL AUTORIZADA ACERCA DE ESTE TERREMOTO PUEDE SER PROVEIDA POR LA CORRESPONDIENTE RED SISMICA REGIONAL O EL SERVICIO GEOLOGICO DE LOS ESTADOS UNIDOS EN SU SITIO WEB EARTHQUAKE.USGS.GOV/EARTHQUAKES -TODO EN MINUSCULAS-.

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| NWR VERSION |
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ZCZC
WECA60 PHEB 300325
TSUCA1

BULLETIN
TSUNAMI MESSAGE NUMBER 2
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
1125 PM AST FRI JAN 29 2016

AMZ712-715-725-735-742-745-PRZ001>003-005-007-008-010>013-
VIZ001-002-300525-
/O.CON.PHEB.TS.W.0009.000000T0000Z-000000T0000Z/
COASTAL AREAS OF PUERTO RICO - THE U.S. VIRGIN ISLANDS AND
THE BRITISH VIRGIN ISLANDS
1125 PM AST FRI JAN 29 2016

...A TSUNAMI WARNING CONTINUES IN EFFECT...

PERSONS LOCATED IN OR NEAR THE OCEAN OR IN LOW-LYING COASTAL
AREAS SHOULD EVACUATE INLAND OR TO HIGHER GROUND ABOVE AND

BEYOND DESIGNATED TSUNAMI HAZARD ZONES... OR MOVE TO THE FOURTH FLOOR OR HIGHER OF A MULTI-STORY BUILDING... DEPENDING UPON YOUR SITUATION.

PERSONS LOCATED IN OR NEAR THE OCEAN SHOULD MOVE OUT OF THE WATER... OFF THE BEACH AND AWAY FROM HARBORS... MARINAS... BAYS AND INLETS.

AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 7.9 OCCURRED ABOUT 31 MILES NORTH OF ANEGADA AT 1100 PM AST ON FRIDAY JANUARY 29 2016.

A HAZARDOUS TSUNAMI MAY HAVE BEEN GENERATED BY THIS NEARBY EARTHQUAKE THAT COULD SOON IMPACT NEARBY COASTS.

BASED ON ALL AVAILABLE DATA... THERE IS THE THREAT OF HAZARDOUS TSUNAMI WAVES FLOODING LOW-LYING COASTAL AREAS IN PUERTO RICO AND THE VIRGIN ISLANDS.

THE HAZARD BEGAN AROUND 1120 PM AST ON FRIDAY JANUARY 29 2016 AND IT CAN PERSIST FOR MANY HOURS OR LONGER.

DO NOT GO TO THE SHORE TO OBSERVE THE TSUNAMI.

DO NOT RETURN TO EVACUATED AREAS UNTIL THE ALL CLEAR IS GIVEN BY LOCAL AUTHORITIES.

BE ALERT TO AND FOLLOW INSTRUCTIONS FROM LOCAL EMERGENCY MANAGEMENT OFFICIALS BECAUSE THEY MAY HAVE MORE DETAILED OR SPECIFIC INFORMATION FOR YOUR LOCATION.

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Nearby Earthquake – Tsunami Warning with Observations

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| ENGLISH VERSION |
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ZCZC
WECA40 PHEB 300355
TSUCAR

TSUNAMI MESSAGE NUMBER 3
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
1155 PM AST FRI JAN 29 2016

AMZ712-715-725-735-742-745-PRZ001>003-005-007-008-010>013-
VIZ001-002-300555-
COASTAL AREAS OF PUERTO RICO - THE U.S. VIRGIN ISLANDS AND
THE BRITISH VIRGIN ISLANDS

...A TSUNAMI WARNING CONTINUES IN EFFECT...

AUDIENCE

- * GOVERNMENT OFFICIALS... MEDIA... AND GENERAL PUBLIC OF PUERTO RICO... THE U.S. VIRGIN ISLANDS... AND THE BRITISH VIRGIN ISLANDS.

UPDATES IN THIS MESSAGE

- * THE GENERATION OF TSUNAMI WAVES IS CONFIRMED.
- * TSUNAMI OBSERVATIONS ARE NOW INCLUDED.

EVALUATION

- * AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 7.9 OCCURRED ABOUT 31 MILES NORTH OF ANEGADA AT 1100 PM AST ON FRIDAY JANUARY 29 2016.
- * A TSUNAMI WAS GENERATED BY THIS EARTHQUAKE.
- * BASED ON ALL AVAILABLE DATA... THERE IS THE THREAT OF HAZARDOUS TSUNAMI WAVES FLOODING LOW-LYING COASTAL AREAS IN PUERTO RICO AND THE VIRGIN ISLANDS.
- * THE EARLIEST ESTIMATED TIME THAT TSUNAMI WAVE ACTIVITY AND FLOODING MAY BEGIN WITHIN THE PUERTO RICO AND VIRGIN ISLANDS REGION IS

1120 PM AST ON FRIDAY JANUARY 29 2016

- * ACTIONS TO PROTECT HUMAN LIFE... SAFETY AND PROPERTY SHOULD BE TAKEN IMMEDIATELY.

RECOMMENDED ACTIONS

- * ACTIONS REQUIRED TO PROTECT HUMAN LIFE... SAFETY AND PROPERTY WILL VARY WITHIN THE TSUNAMI WARNING AREA.
- * PERSONS LOCATED IN OR NEAR THE OCEAN OR IN LOW-LYING COASTAL AREAS SHOULD EVACUATE INLAND OR TO HIGHER GROUND ABOVE AND BEYOND DESIGNATED TSUNAMI HAZARD ZONES... OR MOVE TO THE FOURTH FLOOR OR HIGHER OF A MULTI-STORY BUILDING... DEPENDING UPON YOUR SITUATION.
- * PERSONS LOCATED IN OR NEAR THE OCEAN SHOULD MOVE OUT OF THE WATER... OFF THE BEACH AND AWAY FROM HARBORS... MARINAS... BAYS AND INLETS.

- * DO NOT GO TO THE SHORE TO OBSERVE THE TSUNAMI.
- * DO NOT RETURN TO EVACUATED AREAS UNTIL THE ALL CLEAR IS GIVEN BY LOCAL AUTHORITIES.
- * BOATERS - IF AT SEA... AVOID ENTERING SHALLOW WATER... HARBORS... MARINAS... BAYS AND INLETS TO AVOID FLOATING AND SUBMERGED DEBRIS AND STRONG CURRENTS.
- * BE ALERT TO AND FOLLOW INSTRUCTIONS FROM LOCAL EMERGENCY MANAGEMENT OFFICIALS BECAUSE THEY MAY HAVE MORE DETAILED OR SPECIFIC INFORMATION FOR YOUR LOCATION.

FORECASTS OF TSUNAMI ACTIVITY

- * ESTIMATED TIMES OF ARRIVAL -ETA- OF THE INITIAL TSUNAMI WAVE ARE GIVEN BELOW.
- * OBSERVED ARRIVAL TIMES MAY DIFFER FROM THESE ETAS AND THE INITIAL WAVE MAY NOT BE THE LARGEST.
- * THE FORECAST HEIGHT IS THE MAXIMUM EXPECTED WATER LEVEL ABOVE THE TIDE AT THAT COASTAL LOCATION.
- * THE FORECAST DURATION IS THE APPROXIMATE EXPECTED LENGTH OF TIME AFTER INITIAL IMPACT THAT THE TSUNAMI MAY CONTINUE TO BE A HAZARD.
- * A TSUNAMI IS A SERIES OF WAVES AND THE DURATION OF EACH WAVE CAN BE FIVE MINUTES TO ONE HOUR.

| TERRITORY | COASTAL LOCATION | ETA (AST) | FORECAST HEIGHT | FORECAST DURATION |
|-------------|------------------|-----------|-----------------|-------------------|
| PUERTO RICO | SAN JUAN | 1120 PM | 2.1-4.8 FT | 12 HRS |
| | ARECIBO | 1124 PM | 1.9-4.2 FT | 12 HRS |
| | YABUCOA | 1132 PM | 0.9-2.1 FT | 6 HRS |
| | MAYAGUEZ | 1133 PM | 1.1-2.5 FT | 6 HRS |
| | AGUADILLA | 1134 PM | 1.2-2.7 FT | 6 HRS |
| | MONA ISLAND | 1142 PM | 0.7-1.6 FT | 6 HRS |
| | PENUELAS | 1145 PM | 0.6-1.2 FT | 6 HRS |
| | PONCE | 1146 PM | 0.7-1.6 FT | 6 HRS |
| | VIEQUES IS | 1147 PM | BELOW 1 FT | ----- |
| | FAJARDO | 1152 PM | 2.3-5.2 FT | 12 HRS |
| | CAJA DE MUERTOS | 1154 PM | 0.6-1.3 FT | 6 HRS |
| | CULEBRA IS | 1158 PM | 2.6-5.8 FT | 12 HRS |
| | MAGUEYES IS | 1159 PM | BELOW 1 FT | ----- |
| BVI | ANEGADA | 1120 PM | 8.7-20. FT | 21 HRS |
| | VIRGIN GORDA | 1141 PM | 2.8-6.3 FT | 15 HRS |
| | ROADTOWN | 1240 AM | BELOW 1 FT | ----- |

| | | | | |
|------|------------------|---------|------------|--------|
| USVI | CHRISTIANSTED | 1126 PM | 2.0-4.5 FT | 12 HRS |
| | LIMETREE | 1129 PM | 1.2-2.8 FT | 6 HRS |
| | LAMESHUR BAY | 1152 PM | 2.1-4.8 FT | 12 HRS |
| | CHARLOTTE AMALIE | 1204 AM | BELOW 1 FT | ----- |

OBSERVATIONS OF TSUNAMI ACTIVITY

- * THE FOLLOWING ARE TSUNAMI WAVE OBSERVATIONS FROM COASTAL AND/OR DEEP-OCEAN SEA LEVEL GAUGES AT THE INDICATED LOCATIONS.
- * THE MAXIMUM TSUNAMI HEIGHT IS THE HIGHEST MEASURED SO FAR. IT IS MEASURED WITH RESPECT TO THE TIDE LEVEL.

| GAUGE LOCATION | GAUGE COORDINATES | | TIME OF MEASURE (AST) | MAXIMUM TSUNAMI HEIGHT |
|---------------------|-------------------|-------|-----------------------|------------------------|
| | LAT | LON | | |
| PUERTO PLATA DO | 19.8N | 70.7W | 1155 PM | 0.8 FT |
| PARHAM AT | 17.1N | 61.8W | 1152 PM | 0.8 FT |
| DESIRADE GUADELOUPE | 16.3N | 61.1W | 1155 PM | 0.6 FT |
| BASSETERRE KN | 17.3N | 62.7W | 1149 PM | 1.6 FT |
| DART 41420 | 23.5N | 67.3W | 1151 PM | 0.2 FT |
| ESPERANZA VIEQUES P | 18.1N | 65.5W | 1148 PM | 1.2 FT |
| AGUADILLA PR | 18.5N | 67.2W | 1145 PM | 1.8 FT |
| DART 41421 | 23.4N | 63.9W | 1142 PM | 0.9 FT |
| MAYAGUEZ PR | 18.2N | 67.2W | 1143 PM | 1.7 FT |
| YABUCOA PR | 18.1N | 65.8W | 1146 PM | 1.4 FT |
| LIMETREE VI | 17.7N | 64.8W | 1144 PM | 1.9 FT |
| ST CROIX VI | 17.7N | 64.7W | 1132 PM | 3.1 FT |
| ARECIBO PR | 18.5N | 66.7W | 1133 PM | 2.8 FT |
| SAN JUAN PR | 18.5N | 66.1W | 1125 PM | 3.2 FT |

IMPACTS

- * IMPACTS WILL VARY AT DIFFERENT LOCATIONS WITHIN PUERTO RICO AND THE VIRGIN ISLANDS.
- * SEA LEVEL FLUCTUATIONS THAT ARE 3 FEET OR MORE ABOVE AND BELOW THE TIDE LEVEL ALONG SOME OR ALL COASTS.
- * REPEATED FLOODING AND DRAINING OF LOW-LYING COASTAL AREAS.
- * STRONG AND UNUSUAL WAVES... CURRENTS AND INLAND FLOODING THAT CAN DROWN OR INJURE PEOPLE AND WEAKEN OR DESTROY STRUCTURES ON LAND AND IN THE WATER.
- * RAPIDLY FLOWING FLOOD WATER FILLED WITH HAZARDOUS DEBRIS.

- * SECONDARY HAZARDS THAT MAY INCLUDE DOWNED POWER LINES... FIRES... AND HAZARDOUS MATERIAL SPILLS.
- * THE HAZARD BEGAN AROUND 1120 PM AST ON FRIDAY JANUARY 29 2016 AND IT CAN PERSIST FOR MANY HOURS OR LONGER.

PRELIMINARY EARTHQUAKE PARAMETERS

- * MAGNITUDE 7.9
- * ORIGIN TIME 1100 PM AST JAN 29 2016
- * COORDINATES 19.2 NORTH 64.3 WEST
- * DEPTH 8 MILES
- * LOCATION ABOUT 31 MILES NORTH OF ANEGADA

NEXT UPDATE AND ADDITIONAL INFORMATION

- * THE NEXT MESSAGE WILL BE ISSUED IN THIRTY MINUTES... OR SOONER IF THE SITUATION WARRANTS.
- * FURTHER INFORMATION ABOUT THIS EVENT AND ANY TSUNAMI THREAT TO PUERTO RICO AND THE VIRGIN ISLANDS MAY BE FOUND ON THE INTERNET AT PTWC.WEATHER.GOV AND AT WWW.TSUNAMI.GOV.
- * INFORMATION REGARDING ANY TSUNAMI THREAT TO US GULF OR ATLANTIC COASTS WILL BE ISSUED BY THE US NATIONAL TSUNAMI WARNING CENTER AND CAN BE FOUND ON THE INTERNET AT NTWC.ARH.NOAA.GOV AND AT WWW.TSUNAMI.GOV.
- * AUTHORITATIVE INFORMATION ABOUT THE EARTHQUAKE CAN BE OBTAINED FROM THE CORRESPONDING REGIONAL SEISMIC NETWORK OR THE U.S. GEOLOGICAL SURVEY ON THE INTERNET AT EARTHQUAKE.USGS.GOV/EARTHQUAKES -ALL LOWERCASE LETTERS-.

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|------------------------|
| SPANISH VERSION |
|------------------------|

ZCZC
WECA50 PHEB 300355
TSUSP1

MENSAJE DE TSUNAMI NUMERO 3
SMN CENTRO DE ALERTAS DE TSUNAMI DEL PACIFICO EWA BEACH HI
1155 PM AST FRI JAN 29 2016

AMZ712-715-725-735-742-745-PRZ001>003-005-007-008-010>013-
VIZ001-002-300555-
ZONAS COSTERAS DE PUERTO RICO - LAS ISLAS VÍRGENES ESTADOUNIDENSES Y
LAS ISLAS VÍRGENES BRITÁNICAS

...EL AVISO DE TSUNAMI CONTINUA EN EFECTO...

AUDIENCIA

- * FUNCIONARIOS GUBERNAMENTALES... MEDIOS DE PRENSA... Y EL PUBLICO EN GENERAL EN PUERTO RICO... LAS ISLAS VIRGENES DE LOS ESTADOS UNIDOS... Y LAS ISLAS VIRGENES BRITANICAS.

ACTUALIZACIONES EN ESTE MENSAJE

- * SE HA CONFIRMADO LA GENERACION DE OLAS DE TSUNAMI.
- * OBSERVACIONES DEL TSUNAMI ESTAN AHORA INCLUIDAS.

EVALUACION

- * UN TERREMOTO CON MAGNITUD PRELIMINAR 7.9 HA OCURRIDO UNAS 31 MILLAS AL NORTE DE ANEGADA A LAS 1100 PM AST EL VIERNES 29 DE ENERO DEL 2016.
- * UN TSUNAMI HA SIDO GENERADO POR ESTE TERREMOTO.
- * BASANDOSE EN EL ANALISIS DE TODOS LOS DATOS DISPONIBLES... EXISTE LA AMENAZA DE QUE PELIGROSAS OLAS DE TSUNAMI INUNDEN ZONAS COSTERAS BAJAS EN PUERTO RICO Y LAS ISLAS VIRGENES.
- * EL TIEMPO DE ARRIBO MAS TEMPRANO A PARTIR DEL CUAL LA ACTIVIDAD DE LAS OLAS DEL TSUNAMI E INUNDACION ASOCIADA AL MISMO PUEDE COMENZAR EN LA REGION DE PUERTO RICO Y LAS ISLAS VIRGENES ES

1120 PM AST EL VIERNES 29 DE ENERO DEL 2016

- * ACCIONES PARA PROTEGER VIDAS HUMANAS... LA SEGURIDAD Y LOS BIENES MATERIALES DEBEN TOMARSE DE FORMA INMEDIATA.

ACCIONES RECOMENDADAS

- * LAS ACCIONES REQUERIDAS PARA PROTEGER VIDAS HUMANAS... LA SEGURIDAD Y LOS BIENES MATERIALES VARIARA DENTRO DEL AREA DECLARADA EN ESTADO DE AVISO.
- * PERSONAS LOCALIZADAS EN EL MAR O CERCA DEL MAR O EN ZONAS COSTERAS BAJAS DEBEN EVACUAR TIERRA ADENTRO O HACIA ZONAS MAS ALTAS FUERA DE AQUELLAS DESIGNADAS COMO ZONAS CON PELIGRO DE TSUNAMI... O MOVERSE HACIA EL CUARTO PISO O MAS

ALTO DE UN EDIFICIO DE VARIOS MULTI PISOS... EN DEPENDIENDO DE LA SITUACION.

- * PERSONAS LOCALIZADAS EN EL MAR O CERCA DEL MAR DEBEN SALIR DEL AGUA... FUERA DE LA PLAYA Y ALEJARSE DE PUERTOS... MARINAS... BAHIAS Y ENSENADAS.
- * NO VAYA A LA ORILLA DEL MAR PARA OBSERVAR EL TSUNAMI.
- * NO REGRESE A ZONAS EVACUADAS HASTA TANTO LAS AUTORIDADES DECLAREN QUE EL PELIGRO YA PASO.
- * MARINEROS - SI SE ENCUENTRAN MAR AFUERA... EVITEN ADENTRARSE EN AGUAS SOMERAS... PUERTOS... MARINAS... BAHIAS Y ENSENADAS PARA EVITAR ESCOMBROS TANTO FLOTANTES COMO SUMERGIDOS Y CORRIENTES FUERTES.
- * MANTENGASE ALERTA Y SIGA LAS INSTRUCCIONES PROVENIENTES DE FUNCIONARIOS DE LAS AGENCIAS LOCALES PARA EL MANEJO DE EMERGENCIAS YA QUE LAS MISMAS DISPONEN DE INFORMACION O INSTRUCCIONES MAS ESPECIFICAS PARA SU LOCALIDAD.

PRONOSTICO DE LA ACTIVIDAD DEL TSUNAMI

- * LOS TIEMPOS DE ARRIBO ESTIMADOS -TAE- DE LA PRIMERA OLA DEL TSUNAMI SE PROVEEN A CONTINUACION.
- * LOS TIEMPOS DE ARRIBO REALES PUEDEN DIFERIR DE LOS ESTIMADOS Y LA PRIMERA OLA PUEDE QUE NO SEA LA MAS GRANDE.
- * LA ALTURA PRONOSTICADA ES EL NIVEL MAXIMO DEL AGUA POR ENCIMA DEL NIVEL DE MAREA QUE SE ESPERA A LO LARGO DE ESA SECCION DE LA COSTA.
- * LA DURACION PRONOSTICADA ES EL TIEMPO DURANTE EL CUAL SE ESPERA QUE EL TSUNAMI PRODUZCA OLAS Y CORRIENTES PELIGROSAS.
- * UN TSUNAMI ES UN TREN DE OLAS Y EL TIEMPO ENTRE OLAS PUEDE VARIAR DESDE CINCO MINUTOS HASTA UNA HORA.

| TERRITORIO | LOCALIZACION COSTERA | TAE (AST) | ----PRONOSTICO---- | |
|-------------|-------------------------|--------------|--------------------|----------|
| | | | ALTURA | DURACION |
| PUERTO RICO | SAN JUAN | 1120 PM | 2.1-4.8 FT | 12 HRS |
| | ARECIBO | 1124 PM | 1.9-4.2 FT | 12 HRS |
| | YABUCOA | 1132 PM | 0.9-2.1 FT | 6 HRS |
| | MAYAGUEZ | 1133 PM | 1.1-2.5 FT | 6 HRS |
| | AGUADILLA | 1134 PM | 1.2-2.7 FT | 6 HRS |
| | MONA ISLAND | 1142 PM | 0.7-1.6 FT | 6 HRS |
| | PENUELAS | 1145 PM | 0.6-1.2 FT | 6 HRS |
| | PONCE | 1146 PM | 0.7-1.6 FT | 6 HRS |
| | VIEQUES IS | 1147 PM | BELOW 1 FT | ----- |

| | | | | |
|------|------------------|---------|------------|--------|
| | FAJARDO | 1152 PM | 2.3-5.2 FT | 12 HRS |
| | CAJA DE MUERTOS | 1154 PM | 0.6-1.3 FT | 6 HRS |
| | CULEBRA IS | 1158 PM | 2.6-5.8 FT | 12 HRS |
| | MAGUEYES IS | 1159 PM | BELOW 1 FT | ----- |
| BVI | ANEGADA | 1120 PM | 8.7-20. FT | 21 HRS |
| | VIRGIN GORDA | 1141 PM | 2.8-6.3 FT | 15 HRS |
| | ROADTOWN | 1240 AM | BELOW 1 FT | ----- |
| USVI | CHRISTIANSTED | 1126 PM | 2.0-4.5 FT | 12 HRS |
| | LIMETREE | 1129 PM | 1.2-2.8 FT | 6 HRS |
| | LAMESHUR BAY | 1152 PM | 2.1-4.8 FT | 12 HRS |
| | CHARLOTTE AMALIE | 1204 AM | BELOW 1 FT | ----- |

OBSERVACIONES DE ACTIVIDAD DEL TSUNAMI

- * LO QUE SIGUE SON LAS OBSERVACIONES DE LAS OLAS DEL TSUNAMI REGISTRADAS EN INSTRUMENTOS DE MEDICION EN ESTACIONES EN LA COSTA Y/O BOYAS EN AGUAS PROFUNDAS EN LOS PUNTOS INDICADOS. LA ALTURA MAXIMA DEL TSUNAMI ES MEDIDA CON RESPECTO AL NIVEL DE LA MAREA.
- * LA ALTURA MAXIMA DEL TSUNAMI ES EL VALOR MAXIMO OBSERVADO HASTA AHORA Y SE MIDE CON RESPECTO AL NIVEL DE LA MAREA.

| LOCALIZACION DEL INSTRUMENTO | COORDENADAS DEL INSTRUMENTO LAT LON | | TIEMPO DEL REGISTRO (AST) | ALTURA MAXIMA DEL TSUNAMI |
|------------------------------------|--|-------|------------------------------------|------------------------------------|
| PUERTO PLATA DO | 19.8N | 70.7W | 1155 PM | 0.8 FT |
| PARHAM AT | 17.1N | 61.8W | 1152 PM | 0.8 FT |
| DESIRADE GUADELOUPE | 16.3N | 61.1W | 1155 PM | 0.6 FT |
| BASSETERRE KN | 17.3N | 62.7W | 1149 PM | 1.6 FT |
| DART 41420 | 23.5N | 67.3W | 1151 PM | 0.2 FT |
| ESPERANZA VIEQUES P | 18.1N | 65.5W | 1148 PM | 1.2 FT |
| AGUADILLA PR | 18.5N | 67.2W | 1145 PM | 1.8 FT |
| DART 41421 | 23.4N | 63.9W | 1142 PM | 0.9 FT |
| MAYAGUEZ PR | 18.2N | 67.2W | 1143 PM | 1.7 FT |
| YABUCOA PR | 18.1N | 65.8W | 1146 PM | 1.4 FT |
| LIMETREE VI | 17.7N | 64.8W | 1144 PM | 1.9 FT |
| ST CROIX VI | 17.7N | 64.7W | 1132 PM | 3.1 FT |
| ARECIBO PR | 18.5N | 66.7W | 1133 PM | 2.8 FT |
| SAN JUAN PR | 18.5N | 66.1W | 1125 PM | 3.2 FT |

IMPACTOS

- * LOS IMPACTOS VARIARAN PARA DIFERENTES LOCALIDADES EN PUERTO RICO Y LAS ISLAS VIRGENES.

- * FLUCTUACIONES DEL NIVEL DEL MAR DE 3 PIES O MAS TANTO POR ENCIMA COMO POR DEBAJO DEL NIVEL DE MAREA A LO LARGO DE ALGUNAS O TODAS LAS COSTAS.
- * REPETIDAS INUNDACIONES Y RETROCESO DEL AGUA EN AREAS COSTERAS BAJAS.
- * OLAS INUSUALES Y FUERTES... CORRIENTES E INUNDACION DE ZONAS TIERRA ADENTRO QUE PUEDEN AHOGAR O LESIONAR A LAS PERSONAS Y DEBILITAR O DESTRUIR LAS ESTRUCTURAS EN TIERRA Y EN EL AGUA.
- * CORRIENTES DE INUNDACION CON FLUJO RAPIDO Y CARGADAS DE ESCOMBROS PELIGROSOS.
- * PELIGROS SECUNDARIOS PUEDEN INCLUIR LINEAS ELECTRICAS CAIDAS... FUEGOS... Y DERRAMES DE MATERIALES PELIGROSOS.
- * EL PELIGRO COMENZO A PARTIR DE LA(S) 1120 PM AST EL VIERNES 29 DE ENERO DEL 2016 Y PUEDE PERSISTIR POR VARIAS HORAS O MAS.

PARAMETROS PRELIMINARES DEL TERREMOTO

- * MAGNITUD 7.9
- * TIEMPO DE ORIGEN 1100 PM AST ENE 29 2016
- * COORDENADAS 19.2 NORTE 64.3 OESTE
- * PROFUNDIDAD 8 MILLAS
- * LOCALIZACION UNAS 31 MILLAS AL NORTE DE ANEGADA

PROXIMA ACTUALIZACION E INFORMACION ADICIONAL

- * EL PROXIMO MENSAJE SERA EMITIDO EN TREINTA MINUTOS... O MAS PRONTO SI LA SITUACION ASI LO AMERITA.
- * MAS INFORMACION ACERCA DE ESTE EVENTO PUEDE SER ACCESADA EN INTERNET EN LOS SITIOS WEB PTWC.WEATHER.GOV Y WWW.TSUNAMI.GOV.
- * INFORMACION ACERCA DEL PELIGRO DE TSUNAMI PARA COSTAS ESTADOUNIDENSES EN EL GOLFO DE MEXICO Y EL ATLANTICO SERA EMITIDA POR EL CENTRO NACIONAL DE ALERTAS DE TSUNAMIS Y PUEDE SER ACCESADA EN INTERNET EN LOS SITIOS WEB NTWC.ARH.NOAA.GOV Y WWW.TSUNAMI.GOV.
- * INFORMACION OFICIAL AUTORIZADA ACERCA DE ESTE TERREMOTO PUEDE SER PROVEIDA POR LA CORRESPONDIENTE RED SISMICA REGIONAL O EL SERVICIO GEOLOGICO DE LOS ESTADOS UNIDOS EN SU SITIO WEB EARTHQUAKE.USGS.GOV/EARTHQUAKES -TODO EN MINUSCULAS-.

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NWR VERSION

ZCZC
WECA60 PHEB 300355
TSUCA1

BULLETIN
TSUNAMI MESSAGE NUMBER 3
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
1155 PM AST FRI JAN 29 2016

AMZ712-715-725-735-742-745-PRZ001>003-005-007-008-010>013-
VIZ001-002-300555-
/O.CON.PHEB.TS.W.0009.000000T0000Z-000000T0000Z/
COASTAL AREAS OF PUERTO RICO - THE U.S. VIRGIN ISLANDS AND
THE BRITISH VIRGIN ISLANDS
1155 PM AST FRI JAN 29 2016

...A TSUNAMI WARNING CONTINUES IN EFFECT...

PERSONS LOCATED IN OR NEAR THE OCEAN OR IN LOW-LYING COASTAL
AREAS SHOULD EVACUATE INLAND OR TO HIGHER GROUND ABOVE AND
BEYOND DESIGNATED TSUNAMI HAZARD ZONES... OR MOVE TO THE FOURTH
FLOOR OR HIGHER OF A MULTI-STORY BUILDING... DEPENDING UPON YOUR
SITUATION.

PERSONS LOCATED IN OR NEAR THE OCEAN SHOULD MOVE OUT OF THE
WATER... OFF THE BEACH AND AWAY FROM HARBORS... MARINAS... BAYS
AND INLETS.

AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 7.9 OCCURRED ABOUT
31 MILES NORTH OF ANEGADA AT 1100 PM AST ON FRIDAY JANUARY 29
2016.

A TSUNAMI WAS GENERATED BY THIS EARTHQUAKE.

THE MAXIMUM TSUNAMI HEIGHT OBSERVED SO FAR ON A GAUGE IN PUERTO
RICO OR THE VIRGIN ISLANDS IS 3.2 FEET AT SAN JUAN.

BASED ON ALL AVAILABLE DATA... THERE IS THE THREAT OF HAZARDOUS
TSUNAMI WAVES FLOODING LOW-LYING COASTAL AREAS IN PUERTO RICO
AND THE VIRGIN ISLANDS.

THE HAZARD BEGAN AROUND 1120 PM AST ON FRIDAY JANUARY 29 2016 AND
IT CAN PERSIST FOR MANY HOURS OR LONGER.

DO NOT GO TO THE SHORE TO OBSERVE THE TSUNAMI.

DO NOT RETURN TO EVACUATED AREAS UNTIL THE ALL CLEAR IS GIVEN BY
LOCAL AUTHORITIES.

BE ALERT TO AND FOLLOW INSTRUCTIONS FROM LOCAL EMERGENCY
MANAGEMENT OFFICIALS BECAUSE THEY MAY HAVE MORE DETAILED OR
SPECIFIC INFORMATION FOR YOUR LOCATION.

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Nearby Earthquake – Tsunami Warning Cancellation

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|-----------------|
| ENGLISH VERSION |
|-----------------|

ZCZC
WECA40 PHEB 300625
TSUCAR

TSUNAMI MESSAGE NUMBER 8
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
225 AM AST SAT JAN 30 2016

AMZ712-715-725-735-742-745-PRZ001>003-005-007-008-010>013-
VIZ001-002-300825-
COASTAL AREAS OF PUERTO RICO - THE U.S. VIRGIN ISLANDS AND
THE BRITISH VIRGIN ISLANDS

...THE TSUNAMI WARNING IS NOW CANCELLED...

AUDIENCE

- * GOVERNMENT OFFICIALS... MEDIA... AND GENERAL PUBLIC OF PUERTO RICO... THE U.S. VIRGIN ISLANDS... AND THE BRITISH VIRGIN ISLANDS.

UPDATES IN THIS MESSAGE

- * THE TSUNAMI WARNING IS NOW CANCELLED FOR PUERTO RICO... THE U.S. VIRGIN ISLANDS... AND THE BRITISH VIRGIN ISLANDS.

EVALUATION

- * AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 7.9 OCCURRED ABOUT 31 MILES NORTH OF ANEGADA AT 1100 PM AST ON FRIDAY JANUARY 29 2016.
- * A TSUNAMI WAS GENERATED BY THIS EARTHQUAKE THAT AFFECTED PUERTO RICO AND THE VIRGIN ISLANDS.
- * BASED ON ALL AVAILABLE DATA... THERE IS NO FURTHER TSUNAMI THREAT TO PUERTO RICO AND THE VIRGIN ISLANDS ALTHOUGH MINOR SEA LEVEL FLUCTUATIONS MAY CONTINUE.

RECOMMENDED ACTIONS

- * DO NOT RETURN TO EVACUATED AREAS UNTIL THE ALL CLEAR IS GIVEN BY LOCAL AUTHORITIES.
- * FOLLOW INSTRUCTIONS FROM PUERTO RICO AND VIRGIN ISLANDS EMERGENCY MANAGEMENT AGENCIES BECAUSE THEY MAY HAVE SPECIFIC INFORMATION OR INSTRUCTIONS FOR YOUR LOCATION.
- * BE OBSERVANT AND EXERCISE NORMAL CAUTION IF YOU ARE NEAR OR IN THE OCEAN.
- * OTHERWISE... NO FURTHER ACTION IS REQUIRED.

OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED

- * THE FOLLOWING ARE TSUNAMI WAVE OBSERVATIONS FROM COASTAL AND/OR DEEP-OCEAN SEA LEVEL GAUGES AT THE INDICATED LOCATIONS.
- * THE MAXIMUM TSUNAMI HEIGHT IS THE HIGHEST MEASURED SO FAR. IT IS MEASURED WITH RESPECT TO THE TIDE LEVEL.

| GAUGE LOCATION | GAUGE COORDINATES | | TIME OF MEASURE (AST) | MAXIMUM TSUNAMI HEIGHT |
|---------------------|-------------------|-------|-----------------------|------------------------|
| | LAT | LON | | |
| SAPZURRO CO | 8.7N | 77.4W | 225 AM | 0.2 FT |
| EL PORVENIR PM | 9.6N | 78.9W | 225 AM | 0.2 FT |
| VIRGINIA KEY FL | 25.7N | 80.2W | 218 AM | 0.2 FT |
| SAN ANDRES CO | 12.6N | 81.7W | 214 AM | 0.2 FT |
| COVENAS CO | 9.4N | 76.2W | 215 AM | 0.1 FT |
| PORT ROYAL JM | 17.9N | 76.8W | 150 AM | 0.3 FT |
| SANTA MARTA CO | 11.2N | 74.2W | 134 AM | 0.3 FT |
| CHARLOTTEVILLE TT | 11.3N | 60.5W | 118 AM | 0.4 FT |
| DART 41424 | 32.9N | 72.5W | 114 AM | 0.1 FT |
| PUERTO ESTRELLA | 12.4N | 71.3W | 109 AM | 0.5 FT |
| PRICKLEY BAY GD | 12.0N | 61.8W | 103 AM | 0.9 FT |
| BULLEN BAY CURACAO | 12.2N | 69.0W | 1243 AM | 0.6 FT |
| JACMEL HT | 18.2N | 72.5W | 1244 AM | 0.3 FT |
| PORT SAN ANDRES DO | 18.4N | 69.6W | 1239 AM | 0.6 FT |
| CALLIAQUA VC | 13.1N | 61.2W | 1242 AM | 0.7 FT |
| BRIDGEPORT BB | 13.1N | 59.6W | 1237 AM | 0.5 FT |
| BARAHONA DO | 18.2N | 71.1W | 1228 AM | 0.5 FT |
| PORT ST CHARLES BB | 13.3N | 59.6W | 1232 AM | 0.5 FT |
| FORT DE FRANCE MQ | 14.6N | 61.1W | 1225 AM | 0.9 FT |
| LE ROBERT MARTINIQU | 14.7N | 60.9W | 1216 AM | 0.4 FT |
| ROSEAU DM | 15.3N | 61.4W | 1213 AM | 1.4 FT |
| CAP HAITIEN HT | 19.8N | 72.2W | 1214 AM | 0.4 FT |
| LE PRECHEUR MARTINI | 14.8N | 61.2W | 1213 AM | 0.7 FT |
| POINT A PITRE GP | 16.2N | 61.5W | 1213 AM | 0.8 FT |

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|---------------------|-------|-------|---------|--------|
| MAGUEYES ISLAND PR | 18.0N | 67.0W | 1213 AM | 0.7 FT |
| DESHAIES GUADELOUPE | 16.3N | 61.8W | 1202 AM | 1.5 FT |
| CAJA DE MUERTOS PR | 17.9N | 66.5W | 1203 AM | 0.9 FT |
| LAMESHUR BAY VI | 18.3N | 64.7W | 1200 AM | 3.2 FT |
| PUERTO PLATA DO | 19.8N | 70.7W | 1155 PM | 0.8 FT |
| PUNTA CANA DO | 18.5N | 68.4W | 1158 PM | 1.3 FT |
| PARHAM AT | 17.1N | 61.8W | 1152 PM | 0.8 FT |
| DESIRADE GUADELOUPE | 16.3N | 61.1W | 1155 PM | 0.6 FT |
| BASSETERRE KN | 17.3N | 62.7W | 1149 PM | 1.6 FT |
| MONA ISLAND PR | 18.1N | 67.9W | 1156 PM | 1.1 FT |
| DART 41420 | 23.5N | 67.3W | 1151 PM | 0.2 FT |
| ESPERANZA VIEQUES P | 18.1N | 65.5W | 1148 PM | 1.2 FT |
| AGUADILLA PR | 18.5N | 67.2W | 1145 PM | 1.8 FT |
| DART 41421 | 23.4N | 63.9W | 1142 PM | 0.9 FT |
| MAYAGUEZ PR | 18.2N | 67.2W | 1143 PM | 1.7 FT |
| YABUCOA PR | 18.1N | 65.8W | 1146 PM | 1.4 FT |
| LIMETREE VI | 17.7N | 64.8W | 1144 PM | 1.9 FT |
| ST CROIX VI | 17.7N | 64.7W | 1132 PM | 3.1 FT |
| ARECIBO PR | 18.5N | 66.7W | 1133 PM | 2.8 FT |
| SAN JUAN PR | 18.5N | 66.1W | 1125 PM | 3.2 FT |

IMPACTS

- * MINOR SEA LEVEL FLUCTUATIONS MAY CONTINUE OVER THE NEXT FEW HOURS.

PRELIMINARY EARTHQUAKE PARAMETERS

- * MAGNITUDE 7.9
- * ORIGIN TIME 1100 PM AST JAN 29 2016
- * COORDINATES 19.2 NORTH 64.3 WEST
- * DEPTH 8 MILES
- * LOCATION ABOUT 31 MILES NORTH OF ANEGADA

NEXT UPDATE AND ADDITIONAL INFORMATION

- * THIS WILL BE THE FINAL STATEMENT ISSUED FOR THIS EVENT UNLESS NEW INFORMATION IS RECEIVED OR THE SITUATION CHANGES.
- * FURTHER INFORMATION ABOUT THIS EVENT AND ANY TSUNAMI THREAT TO PUERTO RICO AND THE VIRGIN ISLANDS MAY BE FOUND ON THE INTERNET AT PTWC.WEATHER.GOV AND AT WWW.TSUNAMI.GOV.
- * INFORMATION REGARDING ANY TSUNAMI THREAT TO US GULF OR ATLANTIC COASTS WILL BE ISSUED BY THE US NATIONAL TSUNAMI WARNING CENTER AND CAN BE FOUND ON THE INTERNET AT NTWC.ARH.NOAA.GOV AND AT WWW.TSUNAMI.GOV.

* AUTHORITATIVE INFORMATION ABOUT THE EARTHQUAKE CAN BE OBTAINED FROM THE CORRESPONDING REGIONAL SEISMIC NETWORK OR THE U.S. GEOLOGICAL SURVEY ON THE INTERNET AT EARTHQUAKE.USGS.GOV/EARTHQUAKES -ALL LOWERCASE LETTERS-.

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| SPANISH VERSION |
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ZCZC
WECA50 PHEB 300625
TSUSP1

MENSAJE DE TSUNAMI NUMERO 8
SMN CENTRO DE ALERTAS DE TSUNAMI DEL PACIFICO EWA BEACH HI
225 AM AST SAT JAN 30 2016

AMZ712-715-725-735-742-745-PRZ001>003-005-007-008-010>013-
VIZ001-002-300825-
ZONAS COSTERAS DE PUERTO RICO - LAS ISLAS VÍRGENES ESTADOUNIDENSES Y
LAS ISLAS VÍRGENES BRITÁNICAS

...EL AVISO DE TSUNAMI AHORA HA SIDO CANCELADA...

AUDIENCIA

* FUNCIONARIOS GUBERNAMENTALES... MEDIOS DE PRENSA... Y EL PUBLICO EN GENERAL EN PUERTO RICO... LAS ISLAS VIRGENES DE LOS ESTADOS UNIDOS... Y LAS ISLAS VIRGENES BRITANICAS.

ACTUALIZACIONES EN ESTE MENSAJE

* EL AVISO DE TSUNAMI AHORA HA SIDO CANCELADA PARA PUERTO RICO... LAS ISLAS VIRGENES DE LOS ESTADOS UNITOS... Y LAS ISLAS VIRGENES BRITANICAS.

EVALUACION

- * UN TERREMOTO CON MAGNITUD PRELIMINAR 7.9 HA OCURRIDO UNAS 31 MILLAS AL NORTE DE ANEGADA A LAS 1100 PM AST EL VIERNES 29 DE ENERO DEL 2016.
- * UN TSUNAMI QUE AFECTO A PUERTO RICO Y LAS ISLAS VIRGENS FUE GENERADO POR ESTE TERREMOTO.
- * BASANDOSE EN EL ANALYSIS DE TODOS LOS DATOS DISPONIBLES... YA NO EXISTE NINGUN PELIGRO DE TSUNAMI PARA PUERTO RICO Y LAS ISLAS VIRGENES DEBIDO A ESTE TERREMOTO PERO FLUCTUACIONES

MENORES DEL NIVEL DEL MAR PUEDEN CONTINUAR.

ACCIONES RECOMENDADAS

- * NO REGRESE A ZONAS EVACUADAS HASTA TANTO LAS AUTORIDADES DECLAREN QUE EL PELIGRO YA PASO.
- * SIGA LAS INSTRUCCIONES PROVENIENTES DE LAS AGENCIAS DE MANEJO DE EMERGENCIAS EN PUERTO RICO Y LAS ISLAS VIRGENES YA QUE LAS MISMAS DISPONEN DE INFORMACION O INSTRUCCIONES ESPECIFICAS PARA SU LOCALIDAD.
- * SEA OBSERVADOR Y CAUTELOSO SI SE ENCUENTRA CERCA O DENTRO DEL MAR.
- * DE LO CONTRARIO... NO SE REQUIERE NINGUNA OTRA ACCION.

OBSERVACIONES DE ACTIVIDAD DEL TSUNAMI - ACTUALIZADO

- * LO QUE SIGUE SON LAS OBSERVACIONES DE LAS OLAS DEL TSUNAMI REGISTRADAS EN INSTRUMENTOS DE MEDICION EN ESTACIONES EN LA COSTA Y/O BOYAS EN AGUAS PROFUNDAS EN LOS PUNTOS INDICADOS. LA ALTURA MAXIMA DEL TSUNAMI ES MEDIDA CON RESPECTO AL NIVEL DE LA MAREA.
- * LA ALTURA MAXIMA DEL TSUNAMI ES EL VALOR MAXIMO OBSERVADO HASTA AHORA Y SE MIDE CON RESPECTO AL NIVEL DE LA MAREA.

| LOCALIZACION DEL INSTRUMENTO | COORDENADAS DEL INSTRUMENTO | | TIEMPO DEL REGISTRO | ALTURA MAXIMA DEL TSUNAMI |
|------------------------------------|-----------------------------------|-------|---------------------------|------------------------------------|
| | LAT | LON | (AST) | |
| SAPZURRO CO | 8.7N | 77.4W | 225 AM | 0.2 FT |
| EL PORVENIR PM | 9.6N | 78.9W | 225 AM | 0.2 FT |
| VIRGINIA KEY FL | 25.7N | 80.2W | 218 AM | 0.2 FT |
| SAN ANDRES CO | 12.6N | 81.7W | 214 AM | 0.2 FT |
| COVENAS CO | 9.4N | 76.2W | 215 AM | 0.1 FT |
| PORT ROYAL JM | 17.9N | 76.8W | 150 AM | 0.3 FT |
| SANTA MARTA CO | 11.2N | 74.2W | 134 AM | 0.3 FT |
| CHARLOTTEVILLE TT | 11.3N | 60.5W | 118 AM | 0.4 FT |
| DART 41424 | 32.9N | 72.5W | 114 AM | 0.1 FT |
| PUERTO ESTRELLA | 12.4N | 71.3W | 109 AM | 0.5 FT |
| PRICKLEY BAY GD | 12.0N | 61.8W | 103 AM | 0.9 FT |
| BULLEN BAY CURACAO | 12.2N | 69.0W | 1243 AM | 0.6 FT |
| JACMEL HT | 18.2N | 72.5W | 1244 AM | 0.3 FT |
| PORT SAN ANDRES DO | 18.4N | 69.6W | 1239 AM | 0.6 FT |
| CALLIAQUA VC | 13.1N | 61.2W | 1242 AM | 0.7 FT |
| BRIDGEPORT BB | 13.1N | 59.6W | 1237 AM | 0.5 FT |
| BARAHONA DO | 18.2N | 71.1W | 1228 AM | 0.5 FT |
| PORT ST CHARLES BB | 13.3N | 59.6W | 1232 AM | 0.5 FT |

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|---------------------|-------|-------|---------|--------|
| FORT DE FRANCE MQ | 14.6N | 61.1W | 1225 AM | 0.9 FT |
| LE ROBERT MARTINIQU | 14.7N | 60.9W | 1216 AM | 0.4 FT |
| ROSEAU DM | 15.3N | 61.4W | 1213 AM | 1.4 FT |
| CAP HAITIEN HT | 19.8N | 72.2W | 1214 AM | 0.4 FT |
| LE PRECHEUR MARTINI | 14.8N | 61.2W | 1213 AM | 0.7 FT |
| POINT A PITRE GP | 16.2N | 61.5W | 1213 AM | 0.8 FT |
| MAGUEYES ISLAND PR | 18.0N | 67.0W | 1213 AM | 0.7 FT |
| DESHAIES GUADELOUPE | 16.3N | 61.8W | 1202 AM | 1.5 FT |
| CAJA DE MUERTOS PR | 17.9N | 66.5W | 1203 AM | 0.9 FT |
| LAMESHUR BAY VI | 18.3N | 64.7W | 1200 AM | 3.2 FT |
| PUERTO PLATA DO | 19.8N | 70.7W | 1155 PM | 0.8 FT |
| PUNTA CANA DO | 18.5N | 68.4W | 1158 PM | 1.3 FT |
| PARHAM AT | 17.1N | 61.8W | 1152 PM | 0.8 FT |
| DESIRADE GUADELOUPE | 16.3N | 61.1W | 1155 PM | 0.6 FT |
| BASSETERRE KN | 17.3N | 62.7W | 1149 PM | 1.6 FT |
| MONA ISLAND PR | 18.1N | 67.9W | 1156 PM | 1.1 FT |
| DART 41420 | 23.5N | 67.3W | 1151 PM | 0.2 FT |
| ESPERANZA VIEQUES P | 18.1N | 65.5W | 1148 PM | 1.2 FT |
| AGUADILLA PR | 18.5N | 67.2W | 1145 PM | 1.8 FT |
| DART 41421 | 23.4N | 63.9W | 1142 PM | 0.9 FT |
| MAYAGUEZ PR | 18.2N | 67.2W | 1143 PM | 1.7 FT |
| YABUCOA PR | 18.1N | 65.8W | 1146 PM | 1.4 FT |
| LIMETREE VI | 17.7N | 64.8W | 1144 PM | 1.9 FT |
| ST CROIX VI | 17.7N | 64.7W | 1132 PM | 3.1 FT |
| ARECIBO PR | 18.5N | 66.7W | 1133 PM | 2.8 FT |
| SAN JUAN PR | 18.5N | 66.1W | 1125 PM | 3.2 FT |

IMPACTOS

- * FLUCTUACIONES MENORES DEL NIVEL DEL MAR PUEDE CONTINUAR DURANTE LAS PROXIMAS HORAS.

PARAMETROS PRELIMINARES DEL TERREMOTO

- * MAGNITUD 7.9
- * TIEMPO DE ORIGEN 1100 PM AST ENE 29 2016
- * COORDENADAS 19.2 NORTE 64.3 OESTE
- * PROFUNDIDAD 8 MILLAS
- * LOCALIZACION UNAS 31 MILLAS AL NORTE DE ANEGADA

PROXIMA ACTUALIZACION E INFORMACION ADICIONAL

- * ESTE SERA EL ULTIMO COMUNICADO EMITIDO PARA ESTE EVENTO A NO SER QUE SE RECIBA NUEVA INFORMACION O LA SITUACION CAMBIE.
- * MAS INFORMACION ACERCA DE ESTE EVENTO PUEDE SER ACCESADA EN INTERNET EN LOS SITIOS WEB PTWC.WEATHER.GOV Y WWW.TSUNAMI.GOV.

- * INFORMACION ACERCA DEL PELIGRO DE TSUNAMI PARA COSTAS ESTADOUNIDENSES EN EL GOLFO DE MEXICO Y EL ATLANTICO SERA EMITIDA POR EL CENTRO NACIONAL DE ALERTAS DE TSUNAMIS Y PUEDE SER ACCESADA EN INTERNET EN LOS SITIOS WEB NTWC.ARH.NOAA.GOV Y WWW.TSUNAMI.GOV.
- * INFORMACION OFICIAL AUTORIZADA ACERCA DE ESTE TERREMOTO PUEDE SER PROVEIDA POR LA CORRESPONDIENTE RED SISMICA REGIONAL O EL SERVICIO GEOLOGICO DE LOS ESTADOS UNIDOS EN SU SITIO WEB EARTHQUAKE.USGS.GOV/EARTHQUAKES -TODO EN MINUSCULAS-.

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| NWR VERSION |
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ZCZC
WECA60 PHEB 300625
TSUCA1

BULLETIN
TSUNAMI MESSAGE NUMBER 8
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
225 AM AST SAT JAN 30 2016

AMZ712-715-725-735-742-745-PRZ001>003-005-007-008-010>013-
VIZ001-002-300825-
/O.CAN.PHEB.TS.W.0008.000000T0000Z-000000T0000Z/
COASTAL AREAS OF PUERTO RICO - THE U.S. VIRGIN ISLANDS AND
THE BRITISH VIRGIN ISLANDS
225 AM AST SAT JAN 30 2016

...THE TSUNAMI WARNING IS NOW CANCELLED...

BASED ON ALL AVAILABLE DATA... THERE IS NO FURTHER TSUNAMI THREAT TO PUERTO RICO AND THE VIRGIN ISLANDS ALTHOUGH MINOR SEA LEVEL FLUCTUATIONS MAY CONTINUE.

DO NOT RETURN TO EVACUATED AREAS UNTIL THE ALL CLEAR IS GIVEN BY LOCAL AUTHORITIES.

FOLLOW INSTRUCTIONS FROM PUERTO RICO AND VIRGIN ISLANDS EMERGENCY MANAGEMENT AGENCIES BECAUSE THEY MAY HAVE SPECIFIC INFORMATION OR INSTRUCTIONS FOR YOUR LOCATION.

BE OBSERVANT AND EXERCISE NORMAL CAUTION IF YOU ARE NEAR OR IN THE OCEAN.

OTHERWISE... NO FURTHER ACTION IS REQUIRED.

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Distant Earthquake - Tsunami Information No Threat

ENGLISH VERSION

ZCZC
WECA42 PHEB 300307
TIBCAR

TSUNAMI INFORMATION STATEMENT NUMBER 1
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
1107 PM AST FRI JAN 29 2016

AMZ712-715-725-735-742-745-PRZ001>003-005-007-008-010>013-
VIZ001-002-300507-
COASTAL AREAS OF PUERTO RICO - THE U.S. VIRGIN ISLANDS AND
THE BRITISH VIRGIN ISLANDS

...NO TSUNAMI THREAT FROM A DISTANT EARTHQUAKE...

AUDIENCE

- * GOVERNMENT OFFICIALS... MEDIA... AND GENERAL PUBLIC OF PUERTO RICO... THE U.S. VIRGIN ISLANDS... AND THE BRITISH VIRGIN ISLANDS.

EVALUATION

- * AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 6.8 OCCURRED NEAR THE NORTHERN MID-ATLANTIC RIDGE AT 1100 PM AST ON FRIDAY JANUARY 29 2016.
- * BASED ON ALL AVAILABLE DATA... THERE IS NO TSUNAMI THREAT TO PUERTO RICO... THE U.S. VIRGIN ISLANDS... OR THE BRITISH VIRGIN ISLANDS FROM THIS EARTHQUAKE.

PRELIMINARY EARTHQUAKE PARAMETERS

- * THE FOLLOWING PARAMETERS ARE BASED ON A PRELIMINARY RAPID ASSESSMENT OF THE EARTHQUAKE AND CHANGES MAY OCCUR.
- * MAGNITUDE 6.8
- * ORIGIN TIME 1100 PM AST JAN 29 2016
- * COORDINATES 32.7 NORTH 39.6 WEST
- * DEPTH 8 MILES
- * LOCATION NORTHERN MID-ATLANTIC RIDGE

RECOMMENDED ACTIONS

* NO ACTION IS REQUIRED.

IMPACTS

* NO TSUNAMI IMPACTS ARE EXPECTED.

NEXT UPDATE AND ADDITIONAL INFORMATION

- * THIS WILL BE THE ONLY STATEMENT ISSUED FOR THIS EVENT UNLESS ADDITIONAL DATA ARE RECEIVED OR THE SITUATION CHANGES.
- * FURTHER INFORMATION ABOUT THIS EVENT AND ANY TSUNAMI THREAT TO PUERTO RICO AND THE VIRGIN ISLANDS MAY BE FOUND ON THE INTERNET AT PTWC.WEATHER.GOV AND AT WWW.TSUNAMI.GOV.
- * INFORMATION REGARDING ANY TSUNAMI THREAT TO US GULF OR ATLANTIC COASTS WILL BE ISSUED BY THE US NATIONAL TSUNAMI WARNING CENTER AND CAN BE FOUND ON THE INTERNET AT NTWC.ARH.NOAA.GOV AND AT WWW.TSUNAMI.GOV.
- * AUTHORITATIVE INFORMATION ABOUT THE EARTHQUAKE CAN BE OBTAINED FROM THE CORRESPONDING REGIONAL SEISMIC NETWORK OR THE U.S. GEOLOGICAL SURVEY ON THE INTERNET AT EARTHQUAKE.USGS.GOV/EARTHQUAKES -ALL LOWERCASE LETTERS-.

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| SPANISH VERSION |
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ZCZC
WECA52 PHEB 300307
TIBSP1

BOLETIN INFORMATIVO DE TSUNAMI NUMERO 1
SMN CENTRO DE ALERTAS DE TSUNAMI DEL PACIFICO EWA BEACH HI
1107 PM AST FRI JAN 29 2016

AMZ712-715-725-735-742-745-PRZ001>003-005-007-008-010>013-
VIZ001-002-300507-
ZONAS COSTERAS DE PUERTO RICO - LAS ISLAS VÍRGENES ESTADOUNIDENSES Y
LAS ISLAS VÍRGENES BRITÁNICAS

...NO HAY PELIGRO DE TSUNAMI DEBIDO A ESTE TERREMOTO LEJANO...

AUDIENCIA

- * FUNCIONARIOS GUBERNAMENTALES... MEDIOS DE PRENSA... Y EL PUBLICO EN GENERAL EN PUERTO RICO... LAS ISLAS VIRGENES DE LOS ESTADOS UNIDOS... Y LAS ISLAS VIRGENES BRITANICAS.

EVALUACION

- * UN TERREMOTO CON MAGNITUD PRELIMINAR 6.8 HA OCURRIDO CERCA DEL NORTE DE LA DORSAL MESO-ATLANTICA A LAS 1100 PM AST EL VIERNES 29 DE ENERO DEL 2016.
- * BASANDOSE EN EL ANALISIS DE TODOS LOS DATOS DISPONIBLES... NO EXISTE PELIGRO DE TSUNAMI PARA PUERTO RICO... LAS ISLAS VIRGENES DE LOS ESTADOS UNIDOS... O LAS ISLAS VIRGENES BRITANICAS DEBIDO A ESTE TERREMOTO.

PARAMETROS PRELIMINARES DEL TERREMOTO

- * LOS SIGUIENTES PARAMETROS ESTAN BASADOS EN UNA EVALUACION PRELIMINAR RAPIDA Y PUEDEN VARIAR.
- * MAGNITUD 6.8
- * TIEMPO DE ORIGEN 1100 PM AST ENE 29 2016
- * COORDENADAS 32.7 NORTE 39.6 OESTE
- * PROFUNDIDAD 8 MILLAS
- * LOCALIZACION CERCA DEL NORTE DE LA DORSAL MESO-ATLANTICA

ACCIONES RECOMENDADAS

- * NO SE REQUIERE ACCION.

IMPACTOS

- * NO SE ESPERAN IMPACTOS DE TSUNAMI DEBIDO A ESTE TERREMOTO.

PROXIMA ACTUALIZACION E INFORMACION ADICIONAL

- * ESTE SERA EL UNICO COMUNICADO EMITIDO ACERCA DE ESTE EVENTO A NO SER QUE SE RECIBA INFORMACION ADICIONAL O LA SITUACION CAMBIE.
- * MAS INFORMACION ACERCA DE ESTE EVENTO PUEDE SER ACCESADA EN INTERNET EN LOS SITIOS WEB PTWC.WEATHER.GOV Y WWW.TSUNAMI.GOV.

- * INFORMACION ACERCA DEL PELIGRO DE TSUNAMI PARA COSTAS ESTADOUNIDENSES EN EL GOLFO DE MEXICO Y EL ATLANTICO SERA EMITIDA POR EL CENTRO NACIONAL DE ALERTAS DE TSUNAMIS Y PUEDE SER ACCESADA EN INTERNET EN LOS SITIOS WEB NTWC.ARH.NOAA.GOV Y WWW.TSUNAMI.GOV.
- * INFORMACION OFICIAL AUTORIZADA ACERCA DE ESTE TERREMOTO PUEDE SER PROVEIDA POR LA CORRESPONDIENTE RED SISMICA REGIONAL O EL SERVICIO GEOLOGICO DE LOS ESTADOS UNIDOS EN SU SITIO WEB EARTHQUAKE.USGS.GOV/EARTHQUAKES -TODO EN MINUSCULAS-.

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Distant Earthquake - Tsunami Information Potential Threat

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| ENGLISH VERSION |
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ZCZC
WECA42 PHEB 300307
TIBCAR

TSUNAMI INFORMATION STATEMENT NUMBER 1
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
1107 PM AST FRI JAN 29 2016

AMZ712-715-725-735-742-745-PRZ001>003-005-007-008-010>013-
VIZ001-002-300507-
COASTAL AREAS OF PUERTO RICO - THE U.S. VIRGIN ISLANDS AND
THE BRITISH VIRGIN ISLANDS

...POSSIBLE TSUNAMI THREAT FROM A DISTANT EARTHQUAKE...

AUDIENCE

- * GOVERNMENT OFFICIALS... MEDIA... AND GENERAL PUBLIC OF PUERTO RICO... THE U.S. VIRGIN ISLANDS... AND THE BRITISH VIRGIN ISLANDS.

EVALUATION

- * AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 8.7 OCCURRED NEAR THE AZORES ISLANDS AT 1100 PM AST ON FRIDAY JANUARY 29 2016.
- * THE TSUNAMI THREAT TO THE PUERTO RICO AND VIRGIN ISLANDS REGION FROM THIS EARTHQUAKE IS STILL BEING EVALUATED.

PRELIMINARY EARTHQUAKE PARAMETERS

* THE FOLLOWING PARAMETERS ARE BASED ON A PRELIMINARY RAPID ASSESSMENT OF THE EARTHQUAKE AND CHANGES MAY OCCUR.

* MAGNITUDE 8.7
* ORIGIN TIME 1100 PM AST JAN 29 2016
* COORDINATES 36.5 NORTH 12.7 WEST
* DEPTH 8 MILES
* LOCATION AZORES ISLANDS

RECOMMENDED ACTIONS

* STAY ALERT FOR FURTHER INFORMATION. THERE IS THE POSSIBILITY THAT A TSUNAMI WATCH... ADVISORY... OR WARNING COULD BE ISSUED LATER FOR PUERTO RICO AND THE VIRGIN ISLANDS.

IMPACTS

* POTENTIAL TSUNAMI IMPACTS ARE STILL BEING EVALUATED.
* IF THERE IS A TSUNAMI THREAT TO PUERTO RICO AND THE VIRGIN ISLANDS THE EARLIEST IMPACTS WOULD BE AROUND 616 AM AST ON SATURDAY JANUARY 30 2016.

NEXT UPDATE AND ADDITIONAL INFORMATION

* THE NEXT MESSAGE WILL BE ISSUED IN ONE HOUR... OR SOONER IF THE SITUATION WARRANTS.
* FURTHER INFORMATION ABOUT THIS EVENT AND ANY TSUNAMI THREAT TO PUERTO RICO AND THE VIRGIN ISLANDS MAY BE FOUND ON THE INTERNET AT PTWC.WEATHER.GOV AND AT WWW.TSUNAMI.GOV.
* INFORMATION REGARDING ANY TSUNAMI THREAT TO US GULF OR ATLANTIC COASTS WILL BE ISSUED BY THE US NATIONAL TSUNAMI WARNING CENTER AND CAN BE FOUND ON THE INTERNET AT NTWC.ARH.NOAA.GOV AND AT WWW.TSUNAMI.GOV.
* AUTHORITATIVE INFORMATION ABOUT THE EARTHQUAKE CAN BE OBTAINED FROM THE CORRESPONDING REGIONAL SEISMIC NETWORK OR THE U.S. GEOLOGICAL SURVEY ON THE INTERNET AT EARTHQUAKE.USGS.GOV/EARTHQUAKES -ALL LOWERCASE LETTERS-.

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SPANISH VERSION

ZCZC
WECA52 PHEB 300307
TIBSP1

BOLETIN INFORMATIVO DE TSUNAMI NUMERO 1
SMN CENTRO DE ALERTAS DE TSUNAMI DEL PACIFICO EWA BEACH HI
1107 PM AST FRI JAN 29 2016

AMZ712-715-725-735-742-745-PRZ001>003-005-007-008-010>013-
VIZ001-002-300507-
ZONAS COSTERAS DE PUERTO RICO - LAS ISLAS VÍRGENES ESTADOUNIDENSES Y
LAS ISLAS VÍRGENES BRITÁNICAS

...POSIBLE PELIGRO DE TSUNAMI DEBIDO A ESTE TERREMOTO LEJANO...

AUDIENCIA

- * FUNCIONARIOS GUBERNAMENTALES... MEDIOS DE PRENSA... Y EL PUBLICO EN GENERAL EN PUERTO RICO... LAS ISLAS VIRGENES DE LOS ESTADOS UNIDOS... Y LAS ISLAS VIRGENES BRITANICAS.

EVALUACION

- * UN TERREMOTO CON MAGNITUD PRELIMINAR 8.7 HA OCURRIDO CERCA DE LAS ISLAS AZORES A LAS 1100 PM AST EL VIERNES 29 DE ENERO DEL 2016.
- * EL PELIGRO DE TSUNAMI PARA LA REGION DE PUERTO RICO Y LAS ISLAS VIRGENES DEBIDO A ESTE TERREMOTO ESTA AUN SIENDO EVALUADO.

PARAMETROS PRELIMINARES DEL TERREMOTO

- * LOS SIGUIENTES PARAMETROS ESTAN BASADOS EN UNA EVALUACION PRELIMINAR RAPIDA Y PUEDEN VARIAR.
- * MAGNITUD 8.7
- * TIEMPO DE ORIGEN 1100 PM AST ENE 29 2016
- * COORDENADAS 36.5 NORTE 12.7 OESTE
- * PROFUNDIDAD 8 MILLAS
- * LOCALIZACION CERCA DE LAS ISLAS AZORES

ACCIONES RECOMENDADAS

- * MANTENGASE ALERTA PARA RECIBIR INFORMACION ADICIONAL. EXISTE LA POSIBILIDAD DE QUE UNA VIGILANCIA... ADVERTENCIA... O AVISO DE TSUNAMI SEA EMITIDA MAS TARDE PARA PUERTO RICO Y LAS ISLAS VIRGENES.

IMPACTOS

- * EL POTENCIAL IMPACTO DE ESTE TSUNAMI AUN ESTA SIENDO EVALUADO.
- * SI EXISTIERA PELIGRO DE TSUNAMI PARA PUERTO RICO Y LAS ISLAS VIRGENES LOS IMPACTOS MAS TEMPRANOS SERIAN ALREDEDOR DE LA(S) 616 AM AST EL SABADO 30 DE ENERO DEL 2016.

PROXIMA ACTUALIZACION E INFORMACION ADICIONAL

- * EL PROXIMO MENSAJE SERA EMITIDO EN UNA HORA... O MAS PRONTO SI LA SITUACION ASI LO AMERITA.
- * MAS INFORMACION ACERCA DE ESTE EVENTO PUEDE SER ACCESADA EN INTERNET EN LOS SITIOS WEB PTWC.WEATHER.GOV Y WWW.TSUNAMI.GOV.
- * INFORMACION ACERCA DEL PELIGRO DE TSUNAMI PARA COSTAS ESTADOUNIDENSES EN EL GOLFO DE MEXICO Y EL ATLANTICO SERA EMITIDA POR EL CENTRO NACIONAL DE ALERTAS DE TSUNAMIS Y PUEDE SER ACCESADA EN INTERNET EN LOS SITIOS WEB NTWC.ARH.NOAA.GOV Y WWW.TSUNAMI.GOV.
- * INFORMACION OFICIAL AUTORIZADA ACERCA DE ESTE TERREMOTO PUEDE SER PROVEIDA POR LA CORRESPONDIENTE RED SISMICA REGIONAL O EL SERVICIO GEOLOGICO DE LOS ESTADOS UNIDOS EN SU SITIO WEB EARTHQUAKE.USGS.GOV/EARTHQUAKES -TODO EN MINUSCULAS-.

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Distant Earthquake – Initial Tsunami Watch Message

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| ENGLISH VERSION |
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ZCZC
WECA40 PHEB 300330
TSUCAR

TSUNAMI MESSAGE NUMBER 2
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
1130 PM AST FRI JAN 29 2016

AMZ712-715-725-735-742-745-PRZ001>003-005-007-008-010>013-

VIZ001-002-300530-
COASTAL AREAS OF PUERTO RICO - THE U.S. VIRGIN ISLANDS AND
THE BRITISH VIRGIN ISLANDS

...A TSUNAMI WATCH IS NOW IN EFFECT...

AUDIENCE

- * GOVERNMENT OFFICIALS... MEDIA... AND GENERAL PUBLIC OF PUERTO RICO... THE U.S. VIRGIN ISLANDS... AND THE BRITISH VIRGIN ISLANDS.

UPDATES IN THIS MESSAGE

- * A TSUNAMI WATCH IS NOW IN EFFECT FOR PUERTO RICO... THE U.S. VIRGIN ISLANDS... AND THE BRITISH VIRGIN ISLANDS.

EVALUATION

- * AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 8.7 OCCURRED NEAR THE AZORES ISLANDS AT 1100 PM AST ON FRIDAY JANUARY 29 2016.
- * THE TSUNAMI THREAT TO THE PUERTO RICO AND VIRGIN ISLANDS REGION FROM THIS EARTHQUAKE IS STILL BEING EVALUATED.
- * IF A TSUNAMI THREAT EXISTS... THE EARLIEST ESTIMATED ARRIVAL TIME OF TSUNAMI WAVES WITHIN THE PUERTO RICO AND VIRGIN ISLANDS REGION WOULD BE

616 AM AST ON SATURDAY JANUARY 30 2016

PRELIMINARY EARTHQUAKE PARAMETERS

- * THE FOLLOWING PARAMETERS ARE BASED ON A PRELIMINARY RAPID ASSESSMENT OF THE EARTHQUAKE AND CHANGES MAY OCCUR.
- * MAGNITUDE 8.7
- * ORIGIN TIME 1100 PM AST JAN 29 2016
- * COORDINATES 36.5 NORTH 12.7 WEST
- * DEPTH 8 MILES
- * LOCATION AZORES ISLANDS

RECOMMENDED ACTIONS

* STAY ALERT FOR FURTHER INFORMATION. THE TSUNAMI WATCH COULD BE ELEVATED TO AN ADVISORY OR WARNING.

* CONSIDER YOUR COURSE OF ACTION IF A TSUNAMI ADVISORY OR WARNING IS ISSUED.

FORECASTS OF TSUNAMI ACTIVITY

* ESTIMATED TIMES OF ARRIVAL -ETA- OF THE INITIAL TSUNAMI WAVE ARE GIVEN BELOW.

* OBSERVED ARRIVAL TIMES MAY DIFFER FROM THESE ETAS AND THE INITIAL WAVE MAY NOT BE THE LARGEST.

* FORECAST TSUNAMI HEIGHTS AND DURATIONS ARE NOT YET AVAILABLE.

* A TSUNAMI IS A SERIES OF WAVES AND THE DURATION OF EACH WAVE CAN BE FIVE MINUTES TO ONE HOUR.

| TERRITORY | COASTAL LOCATION | ETA (AST) | FORECAST HEIGHT | FORECAST DURATION |
|-------------|------------------|-----------|-----------------|-------------------|
| PUERTO RICO | SAN JUAN | 616 AM | | |
| | ARECIBO | 619 AM | | |
| | YABUCOA | 623 AM | | |
| | MAYAGUEZ | 628 AM | | |
| | AGUADILLA | 629 AM | | |
| | PENUELAS | 635 AM | | |
| | PONCE | 636 AM | | |
| | VIEQUES IS | 637 AM | | |
| | MONA ISLAND | 637 AM | | |
| | CAJA DE MUERTOS | 644 AM | | |
| | FAJARDO | 648 AM | | |
| | MAGUEYES IS | 649 AM | | |
| | CULEBRA IS | 652 AM | | |
| USVI | CHRISTIANSTED | 616 AM | | |
| | LIMETREE | 619 AM | | |
| | LAMESHUR BAY | 642 AM | | |
| | CHARLOTTE AMALIE | 654 AM | | |
| BVI | ANEGADA | 617 AM | | |
| | VIRGIN GORDA | 631 AM | | |
| | ROADTOWN | 730 AM | | |

OBSERVATIONS OF TSUNAMI ACTIVITY

* NO OBSERVATIONS OF TSUNAMI ACTIVITY ARE AVAILABLE YET.

IMPACTS

- * POTENTIAL TSUNAMI IMPACTS ARE STILL BEING EVALUATED.
- * IF THERE IS A TSUNAMI THREAT TO PUERTO RICO AND THE VIRGIN ISLANDS THE EARLIEST IMPACTS WOULD BE AROUND 616 AM AST ON SATURDAY JANUARY 30 2016.

NEXT UPDATE AND ADDITIONAL INFORMATION

- * THE NEXT MESSAGE WILL BE ISSUED IN ONE HOUR... OR SOONER IF THE SITUATION WARRANTS.
- * FURTHER INFORMATION ABOUT THIS EVENT AND ANY TSUNAMI THREAT TO PUERTO RICO AND THE VIRGIN ISLANDS MAY BE FOUND ON THE INTERNET AT PTWC.WEATHER.GOV AND AT WWW.TSUNAMI.GOV.
- * INFORMATION REGARDING ANY TSUNAMI THREAT TO US GULF OR ATLANTIC COASTS WILL BE ISSUED BY THE US NATIONAL TSUNAMI WARNING CENTER AND CAN BE FOUND ON THE INTERNET AT NTWC.ARH.NOAA.GOV AND AT WWW.TSUNAMI.GOV.
- * AUTHORITATIVE INFORMATION ABOUT THE EARTHQUAKE CAN BE OBTAINED FROM THE CORRESPONDING REGIONAL SEISMIC NETWORK OR THE U.S. GEOLOGICAL SURVEY ON THE INTERNET AT EARTHQUAKE.USGS.GOV/EARTHQUAKES -ALL LOWERCASE LETTERS-.

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| SPANISH VERSION |
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ZCZC
WECA50 PHEB 300330
TSUSP1

MENSAJE DE TSUNAMI NUMERO 2
SMN CENTRO DE ALERTAS DE TSUNAMI DEL PACIFICO EWA BEACH HI
1130 PM AST FRI JAN 29 2016

AMZ712-715-725-735-742-745-PRZ001>003-005-007-008-010>013-
VIZ001-002-300530-
ZONAS COSTERAS DE PUERTO RICO - LAS ISLAS VÍRGENES ESTADOUNIDENSES Y
LAS ISLAS VÍRGENES BRITÁNICAS

...UNA VIGILANCIA DE TSUNAMI ESTA EN EFECTO EN ESTOS MOMENTOS...

AUDIENCIA

* FUNCIONARIOS GUBERNAMENTALES... MEDIOS DE PRENSA... Y EL PUBLICO EN GENERAL EN PUERTO RICO... LAS ISLAS VIRGENES DE LOS ESTADOS UNIDOS... Y LAS ISLAS VIRGENES BRITANICAS.

ACTUALIZACIONES EN ESTE MENSAJE

* UNA VIGILANCIA DE TSUNAMI ESTA EN EFECTO EN ESTOS MOMENTOS PARA PUERTO RICO... LAS ISLAS VIRGENES DE LOS ESTADOS UNIDOS... Y LAS ISLAS VIRGENES BRITANICAS.

EVALUACION

* UN TERREMOTO CON MAGNITUD PRELIMINAR 8.7 HA OCURRIDO CERCA DE LAS ISLAS AZORES A LAS 1100 PM AST EL VIERNES 29 DE ENERO DEL 2016.

* EL PELIGRO DE TSUNAMI PARA LA REGION DE PUERTO RICO Y LAS ISLAS VIRGENES DEBIDO A ESTE TERREMOTO ESTA AUN SIENDO EVALUADO.

* SI EXISTIERA PELIGRO DE UN TSUNAMI... EL TIEMPO DE ARRIBO MAS TEMPRANO DE LAS OLAS GENERADAS POR EL MISMO EN LA REGION DE PUERTO RICO Y LAS ISLAS VIRGENES SERIA

616 AM AST EL SABADO 30 DE ENERO DEL 2016

PARAMETROS PRELIMINARES DEL TERREMOTO

* LOS SIGUIENTES PARAMETROS ESTAN BASADOS EN UNA EVALUACION PRELIMINAR RAPIDA Y PUEDEN VARIAR.

| | |
|--------------------|---------------------------|
| * MAGNITUD | 8.7 |
| * TIEMPO DE ORIGEN | 1100 PM AST ENE 29 2016 |
| * COORDENADAS | 36.5 NORTE 12.7 OESTE |
| * PROFUNDIDAD | 8 MILLAS |
| * LOCALIZACION | CERCA DE LAS ISLAS AZORES |

ACCIONES RECOMENDADAS

* MANTENGASE ALERTA PARA RECIBIR INFORMACION ADICIONAL. LA VIGILANCIA DE TSUNAMI PODRIA ELEVARSE A ADVERTENCIA O AVISO DE TSUNAMI.

* CONSIDERE SU CURSO DE ACCION SI SE EMITIERA UNA ADVERTENCIA O AVISO DE TSUNAMI.

PRONOSTICO DE LA ACTIVIDAD DEL TSUNAMI

- * LOS TIEMPOS DE ARRIBO ESTIMADOS -TAE- DE LA PRIMERA OLA DEL TSUNAMI SE PROVEEN A CONTINUACION.
- * LOS TIEMPOS DE ARRIBO REALES PUEDEN DIFERIR DE LOS ESTIMADOS Y LA PRIMERA OLA PUEDE QUE NO SEA LA MAS GRANDE.
- * EL PRONOSTICO DE LAS AMPLITUDES Y DURACION DEL TSUNAMI NO ESTAN AUN DISPONIBLES.
- * UN TSUNAMI ES UN TREN DE OLAS Y EL TIEMPO ENTRE OLAS PUEDE VARIAR DESDE CINCO MINUTOS HASTA UNA HORA.

| TERRITORIO | LOCALIZACION COSTERA | TAE (AST) | ----PRONOSTICO---- | |
|-------------|-------------------------|--------------|--------------------|----------|
| | | | ALTURA | DURACION |
| PUERTO RICO | SAN JUAN | 616 AM | | |
| | ARECIBO | 619 AM | | |
| | YABUCOA | 623 AM | | |
| | MAYAGUEZ | 628 AM | | |
| | AGUADILLA | 629 AM | | |
| | PENUELAS | 635 AM | | |
| | PONCE | 636 AM | | |
| | VIEQUES IS | 637 AM | | |
| | MONA ISLAND | 637 AM | | |
| | CAJA DE MUERTOS | 644 AM | | |
| | FAJARDO | 648 AM | | |
| | MAGUEYES IS | 649 AM | | |
| CULEBRA IS | 652 AM | | | |
| USVI | CHRISTIANSTED | 616 AM | | |
| | LIMETREE | 619 AM | | |
| | LAMESHUR BAY | 642 AM | | |
| | CHARLOTTE AMALIE | 654 AM | | |
| BVI | ANEGADA | 617 AM | | |
| | VIRGIN GORDA | 631 AM | | |
| | ROADTOWN | 730 AM | | |

OBSERVACIONES DE ACTIVIDAD DEL TSUNAMI

- * TODAVIA NO SE DISPONE DE OBSERVACIONES DE LA ACTIVIDAD DEL TSUNAMI.

IMPACTOS

- * EL POTENCIAL IMPACTO DE ESTE TSUNAMI AUN ESTA SIENDO

EVALUADO.

- * SI EXISTIERA PELIGRO DE TSUNAMI PARA PUERTO RICO Y LAS ISLAS VIRGENES LOS IMPACTOS MAS TEMPRANOS SERIAN ALREDEDOR DE LA(S) 616 AM AST EL SABADO 30 DE ENERO DEL 2016.

PROXIMA ACTUALIZACION E INFORMACION ADICIONAL

- * EL PROXIMO MENSAJE SERA EMITIDO EN UNA HORA... O MAS PRONTO SI LA SITUACION ASI LO AMERITA.
- * MAS INFORMACION ACERCA DE ESTE EVENTO PUEDE SER ACCESADA EN INTERNET EN LOS SITIOS WEB PTWC.WEATHER.GOV Y WWW.TSUNAMI.GOV.
- * INFORMACION ACERCA DEL PELIGRO DE TSUNAMI PARA COSTAS ESTADOUNIDENSES EN EL GOLFO DE MEXICO Y EL ATLANTICO SERA EMITIDA POR EL CENTRO NACIONAL DE ALERTAS DE TSUNAMIS Y PUEDE SER ACCESADA EN INTERNET EN LOS SITIOS WEB NTWC.ARH.NOAA.GOV Y WWW.TSUNAMI.GOV.
- * INFORMACION OFICIAL AUTORIZADA ACERCA DE ESTE TERREMOTO PUEDE SER PROVEIDA POR LA CORRESPONDIENTE RED SISMICA REGIONAL O EL SERVICIO GEOLOGICO DE LOS ESTADOS UNIDOS EN SU SITIO WEB EARTHQUAKE.USGS.GOV/EARTHQUAKES -TODO EN MINUSCULAS-.

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| NWR VERSION |
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ZCZC
WECA60 PHEB 300330
TSUCA1

BULLETIN
TSUNAMI MESSAGE NUMBER 2
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
1130 PM AST FRI JAN 29 2016

AMZ712-715-725-735-742-745-PRZ001>003-005-007-008-010>013-
VIZ001-002-300530-
/O.NEW.PHEB.TS.A.0004.160130T0330Z-000000T0000Z/
COASTAL AREAS OF PUERTO RICO - THE U.S. VIRGIN ISLANDS AND
THE BRITISH VIRGIN ISLANDS
1130 PM AST FRI JAN 29 2016

...A TSUNAMI WATCH IS NOW IN EFFECT...

STAY ALERT FOR FURTHER INFORMATION. THE TSUNAMI WATCH COULD BE
ELEVATED TO AN ADVISORY OR WARNING.

CONSIDER YOUR COURSE OF ACTION IF A TSUNAMI ADVISORY OR WARNING

IS ISSUED.

AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 8.7 OCCURRED NEAR THE AZORES ISLANDS AT 1100 PM AST ON FRIDAY JANUARY 29 2016.

A HAZARDOUS TSUNAMI MAY HAVE BEEN GENERATED BY THIS EARTHQUAKE.

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Distant Earthquake – Upgrade to a Tsunami Warning with Forecast

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| ENGLISH VERSION |
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ZCZC
WECA40 PHEB 300425
TSUCAR

TSUNAMI MESSAGE NUMBER 4
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
1225 AM AST SAT JAN 30 2016

AMZ712-715-725-735-742-745-PRZ001>003-005-007-008-010>013-
VIZ001-002-300625-
COASTAL AREAS OF PUERTO RICO - THE U.S. VIRGIN ISLANDS AND
THE BRITISH VIRGIN ISLANDS

...THE TSUNAMI WATCH IS CANCELED AND A TSUNAMI WARNING IS NOW IN
EFFECT...

AUDIENCE

* GOVERNMENT OFFICIALS... MEDIA... AND GENERAL PUBLIC OF PUERTO
RICO... THE U.S. VIRGIN ISLANDS... AND THE BRITISH VIRGIN
ISLANDS.

UPDATES IN THIS MESSAGE

- * THE TSUNAMI WATCH IS CANCELED AND A TSUNAMI WARNING IS NOW IN
EFFECT FOR PUERTO RICO... THE U.S. VIRGIN ISLANDS... AND THE
BRITISH VIRGIN ISLANDS.
- * THE EARTHQUAKE PARAMETERS HAVE BEEN REVISED.
- * THE GENERATION OF TSUNAMI WAVES IS CONFIRMED.

EVALUATION

- * AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 9.0 OCCURRED NEAR THE AZORES ISLANDS AT 1100 PM AST ON FRIDAY JANUARY 29 2016.
- * A TSUNAMI WAS GENERATED BY THIS EARTHQUAKE.
- * BASED ON ALL AVAILABLE DATA... THERE IS THE THREAT OF HAZARDOUS TSUNAMI WAVES FLOODING LOW-LYING COASTAL AREAS IN PUERTO RICO AND THE VIRGIN ISLANDS.
- * THE EARLIEST ESTIMATED TIME THAT TSUNAMI WAVE ACTIVITY AND FLOODING MAY BEGIN WITHIN THE PUERTO RICO AND VIRGIN ISLANDS REGION IS

616 AM AST ON SATURDAY JANUARY 30 2016

RECOMMENDED ACTIONS

- * ACTIONS REQUIRED TO PROTECT HUMAN LIFE... SAFETY AND PROPERTY WILL VARY WITHIN THE TSUNAMI WARNING AREA.
- * PERSONS LOCATED IN OR NEAR THE OCEAN OR IN LOW-LYING COASTAL AREAS SHOULD EVACUATE INLAND OR TO HIGHER GROUND ABOVE AND BEYOND DESIGNATED TSUNAMI HAZARD ZONES... OR MOVE TO THE FOURTH FLOOR OR HIGHER OF A MULTI-STORY BUILDING... DEPENDING UPON YOUR SITUATION.
- * PERSONS LOCATED IN OR NEAR THE OCEAN SHOULD MOVE OUT OF THE WATER... OFF THE BEACH AND AWAY FROM HARBORS... MARINAS... BAYS AND INLETS.
- * PERSONS LOCATED OUTSIDE THE EVACUATION ZONE SHOULD LIMIT TRAVEL TO PREVENT CONGESTION OF EVACUATION ROUTES.
- * LIMIT TELEPHONE AND CELL PHONE USAGE SO THOSE SYSTEMS DO NOT BECOME OVERLOADED.
- * BOATERS - WHERE TIME AND CONDITIONS PERMIT... MOVE YOUR BOAT OUT TO SEA TO A DEPTH OF AT LEAST 450 FEET.
- * BOATERS - IF AT SEA... AVOID ENTERING SHALLOW WATER... HARBORS... MARINAS... BAYS AND INLETS TO AVOID FLOATING AND SUBMERGED DEBRIS AND STRONG CURRENTS.
- * BE ALERT TO AND FOLLOW INSTRUCTIONS FROM LOCAL EMERGENCY MANAGEMENT OFFICIALS BECAUSE THEY MAY HAVE MORE DETAILED OR SPECIFIC INFORMATION FOR YOUR LOCATION.

FORECASTS OF TSUNAMI ACTIVITY - UPDATED

- * ESTIMATED TIMES OF ARRIVAL -ETA- OF THE INITIAL TSUNAMI WAVE ARE GIVEN BELOW.
- * OBSERVED ARRIVAL TIMES MAY DIFFER FROM THESE ETAS AND THE INITIAL WAVE MAY NOT BE THE LARGEST.
- * THE FORECAST HEIGHT IS THE MAXIMUM EXPECTED WATER LEVEL ABOVE THE TIDE AT THAT COASTAL LOCATION.
- * THE FORECAST DURATION IS THE APPROXIMATE EXPECTED LENGTH OF TIME AFTER INITIAL IMPACT THAT THE TSUNAMI MAY CONTINUE TO BE A HAZARD.
- * A TSUNAMI IS A SERIES OF WAVES AND THE DURATION OF EACH WAVE CAN BE FIVE MINUTES TO ONE HOUR.

| TERRITORY | COASTAL LOCATION | ETA (AST) | FORECAST HEIGHT | FORECAST DURATION |
|-------------|------------------|-----------|-----------------|-------------------|
| PUERTO RICO | SAN JUAN | 616 AM | 5.0-11. FT | 18 HRS |
| | ARECIBO | 619 AM | 4.2-9.4 FT | 15 HRS |
| | YABUCOA | 623 AM | 1.8-4.1 FT | 12 HRS |
| | MAYAGUEZ | 628 AM | 4.0-9.0 FT | 15 HRS |
| | AGUADILLA | 629 AM | 3.6-8.0 FT | 15 HRS |
| | PENUELAS | 635 AM | 1.6-3.5 FT | 12 HRS |
| | PONCE | 636 AM | 1.4-3.2 FT | 12 HRS |
| | VIEQUES IS | 637 AM | BELOW 1 FT | ----- |
| | MONA ISLAND | 637 AM | 2.5-5.5 FT | 12 HRS |
| | CAJA DE MUERTOS | 644 AM | 1.1-2.5 FT | 6 HRS |
| | FAJARDO | 648 AM | 3.9-8.8 FT | 15 HRS |
| | MAGUEYES IS | 649 AM | 1.6-3.7 FT | 12 HRS |
| | CULEBRA IS | 652 AM | 3.5-7.9 FT | 15 HRS |
| USVI | CHRISTIANSTED | 616 AM | 2.2-4.9 FT | 12 HRS |
| | LIMETREE | 619 AM | 1.9-4.2 FT | 12 HRS |
| | LAMESHUR BAY | 642 AM | 2.5-5.7 FT | 12 HRS |
| | CHARLOTTE AMALIE | 654 AM | BELOW 1 FT | ----- |
| BVI | ANEGADA | 617 AM | 4.0-8.9 FT | 15 HRS |
| | VIRGIN GORDA | 631 AM | 2.0-4.5 FT | 12 HRS |
| | ROADTOWN | 730 AM | BELOW 1 FT | ----- |

OBSERVATIONS OF TSUNAMI ACTIVITY

- * THE FOLLOWING ARE TSUNAMI WAVE OBSERVATIONS FROM COASTAL AND/OR DEEP-OCEAN SEA LEVEL GAUGES AT THE INDICATED LOCATIONS.
- * THE MAXIMUM TSUNAMI HEIGHT IS THE HIGHEST MEASURED SO FAR. IT IS MEASURED WITH RESPECT TO THE TIDE LEVEL.

GAUGE TIME OF MAXIMUM

| GAUGE LOCATION | COORDINATES | | MEASURE (AST) | TSUNAMI HEIGHT |
|----------------|-------------|-------|------------------|-------------------|
| | LAT | LON | | |
| LEIXOES | 41.2N | 8.7W | 1225 AM | 13.3 FT |
| LAGOS | 37.1N | 8.7W | 1207 AM | 33.7 FT |
| FUNCHAL | 32.6N | 16.9W | 1207 AM | 17.0 FT |
| PENICHE | 39.3N | 9.4W | 1207 AM | 29.3 FT |
| CASCAIS PT | 38.7N | 9.4W | 1152 PM | 49.3 FT |
| SINES | 38.0N | 8.9W | 1147 PM | 47.5 FT |

IMPACTS

- * IMPACTS WILL VARY AT DIFFERENT LOCATIONS WITHIN PUERTO RICO AND THE VIRGIN ISLANDS.
- * SEA LEVEL FLUCTUATIONS THAT ARE 3 FEET OR MORE ABOVE AND BELOW THE TIDE LEVEL ALONG SOME OR ALL COASTS.
- * REPEATED FLOODING AND DRAINING OF LOW-LYING COASTAL AREAS.
- * STRONG AND UNUSUAL WAVES... CURRENTS AND INLAND FLOODING THAT CAN DROWN OR INJURE PEOPLE AND WEAKEN OR DESTROY STRUCTURES ON LAND AND IN THE WATER.
- * RAPIDLY FLOWING FLOOD WATER FILLED WITH HAZARDOUS DEBRIS.
- * SECONDARY HAZARDS THAT MAY INCLUDE DOWNED POWER LINES... FIRES... AND HAZARDOUS MATERIAL SPILLS.
- * THE HAZARD IS FORECAST TO BEGIN AROUND 616 AM AST ON SATURDAY JANUARY 30 2016 AND IT CAN PERSIST FOR MANY HOURS OR LONGER.

PRELIMINARY EARTHQUAKE PARAMETERS - UPDATED

- * MAGNITUDE 9.0
- * ORIGIN TIME 1100 PM AST JAN 29 2016
- * COORDINATES 36.5 NORTH 12.7 WEST
- * DEPTH 8 MILES
- * LOCATION AZORES ISLANDS

NEXT UPDATE AND ADDITIONAL INFORMATION

- * THE NEXT MESSAGE WILL BE ISSUED IN ONE HOUR... OR SOONER IF THE SITUATION WARRANTS.
- * FURTHER INFORMATION ABOUT THIS EVENT AND ANY TSUNAMI THREAT TO PUERTO RICO AND THE VIRGIN ISLANDS MAY BE FOUND ON THE INTERNET AT PTWC.WEATHER.GOV AND AT WWW.TSUNAMI.GOV.

- * INFORMATION REGARDING ANY TSUNAMI THREAT TO US GULF OR ATLANTIC COASTS WILL BE ISSUED BY THE US NATIONAL TSUNAMI WARNING CENTER AND CAN BE FOUND ON THE INTERNET AT NTWC.ARH.NOAA.GOV AND AT WWW.TSUNAMI.GOV.
- * AUTHORITATIVE INFORMATION ABOUT THE EARTHQUAKE CAN BE OBTAINED FROM THE CORRESPONDING REGIONAL SEISMIC NETWORK OR THE U.S. GEOLOGICAL SURVEY ON THE INTERNET AT EARTHQUAKE.USGS.GOV/EARTHQUAKES -ALL LOWERCASE LETTERS-.

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| SPANISH VERSION |
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ZCZC
WECA50 PHEB 300425
TSUSP1

MENSAJE DE TSUNAMI NUMERO 4
SMN CENTRO DE ALERTAS DE TSUNAMI DEL PACIFICO EWA BEACH HI
1225 AM AST SAT JAN 30 2016

AMZ712-715-725-735-742-745-PRZ001>003-005-007-008-010>013-
VIZ001-002-300625-
ZONAS COSTERAS DE PUERTO RICO - LAS ISLAS VÍRGENES ESTADOUNIDENSES Y
LAS ISLAS VÍRGENES BRITÁNICAS

...LA VIGILANCIA DE TSUNAMI HA SIDO CANCELADA Y UN AVISO DE TSUNAMI
ESTA AHORA EN EFECTO...

AUDIENCIA

- * FUNCIONARIOS GUBERNAMENTALES... MEDIOS DE PRENSA... Y EL PUBLICO EN GENERAL EN PUERTO RICO... LAS ISLAS VIRGENES DE LOS ESTADOS UNIDOS... Y LAS ISLAS VIRGENES BRITANICAS.

ACTUALIZACIONES EN ESTE MENSAJE

- * LA VIGILANCIA DE TSUNAMI HA SIDO CANCELADA Y UN AVISO DE TSUNAMI ESTA AHORA EN EFECTO PARA PUERTO RICO... LAS ISLAS VIRGENES DE LOS ESTADOS UNIDOS... Y LAS ISLAS VIRGENES BRITANICAS.
- * LOS PARAMETROS DEL TSUNAMI HAN SIDO ACTUALIZADOS.
- * SE HA CONFIRMADO LA GENERACION DE OLAS DE TSUNAMI.

EVALUACION

- * UN TERREMOTO CON MAGNITUD PRELIMINAR 9.0 HA OCURRIDO CERCA DE LAS ISLAS AZORES A LAS 1100 PM AST EL VIERNES 29 DE ENERO DEL 2016.
- * UN TSUNAMI HA SIDO GENERADO POR ESTE TERREMOTO.
- * BASANDOSE EN EL ANALISIS DE TODOS LOS DATOS DISPONIBLES... EXISTE LA AMENAZA DE QUE PELIGROSAS OLAS DE TSUNAMI INUNDEN ZONAS COSTERAS BAJAS EN PUERTO RICO Y LAS ISLAS VIRGENES.
- * EL TIEMPO DE ARRIBO MAS TEMPRANO A PARTIR DEL CUAL LA ACTIVIDAD DE LAS OLAS DEL TSUNAMI E INUNDACION ASOCIADA AL MISMO PUEDE COMENZAR EN LA REGION DE PUERTO RICO Y LAS ISLAS VIRGENES ES

616 AM AST EL SABADO 30 DE ENERO DEL 2016

ACCIONES RECOMENDADAS

- * LAS ACCIONES REQUERIDAS PARA PROTEGER VIDAS HUMANAS... LA SEGURIDAD Y LOS BIENES MATERIALES VARIARA DENTRO DEL AREA DECLARADA EN ESTADO DE AVISO.
- * PERSONAS LOCALIZADAS EN EL MAR O CERCA DEL MAR O EN ZONAS COSTERAS BAJAS DEBEN EVACUAR TIERRA ADENTRO O HACIA ZONAS MAS ALTAS FUERA DE AQUELLAS DESIGNADAS COMO ZONAS CON PELIGRO DE TSUNAMI... O MOVERSE HACIA EL CUARTO PISO O MAS ALTO DE UN EDIFICIO DE VARIOS MULTI PISOS... EN DEPENDIENDO DE LA SITUACION.
- * PERSONAS LOCALIZADAS EN EL MAR O CERCA DEL MAR DEBEN SALIR DEL AGUA... FUERA DE LA PLAYA Y ALEJARSE DE PUERTOS... MARINAS... BAHIAS Y ENSENADAS.
- * PERSONAS LOCALIZADAS FUERA DE LA ZONA DE EVACUACION DEBEN DEJAR LAS CARRETERAS LIBRES PARA EVITAR EL CONGESTIONAMIENTO DE LAS RUTAS DE EVACUACION.
- * LIMITE EL USO TANTO DEL TELEFONO COMO DE TELEFONOS CELULARES PARA EVITAR SOBRECARGAR DICHO SISTEMAS.
- * MARINEROS - DONDE EL TIEMPO Y LAS CONDICIONES PERMITAN... MUEVAN SU EMBARCACION MAR AFUERA HACIA PROFUNDIDADES DE AL MENOS 450 PIES.
- * MARINEROS - SI SE ENCUENTRAN MAR AFUERA... EVITEN ADENTRARSE EN AGUAS SOMERAS... PUERTOS... MARINAS... BAHIAS Y ENSENADAS PARA EVITAR ESCOMBROS TANTO FLOTANTES COMO SUMERGIDOS Y CORRIENTES FUERTES.
- * MANTENGASE ALERTA Y SIGA LAS INSTRUCCIONES PROVENIENTES DE

FUNCIONARIOS DE LAS AGENCIAS LOCALES PARA EL MANEJO DE EMERGENCIAS YA QUE LAS MISMAS DISPONEN DE INFORMACION O INSTRUCCIONES MAS ESPECIFICAS PARA SU LOCALIDAD.

PRONOSTICO DE LA ACTIVIDAD DEL TSUNAMI - ACTUALIZADO

- * LOS TIEMPOS DE ARRIBO ESTIMADOS -TAE- DE LA PRIMERA OLA DEL TSUNAMI SE PROVEEN A CONTINUACION.
- * LOS TIEMPOS DE ARRIBO REALES PUEDEN DIFERIR DE LOS ESTIMADOS Y LA PRIMERA OLA PUEDE QUE NO SEA LA MAS GRANDE.
- * LA ALTURA PRONOSTICADA ES EL NIVEL MAXIMO DEL AGUA POR ENCIMA DEL NIVEL DE MAREA QUE SE ESPERA A LO LARGO DE ESA SECCION DE LA COSTA.
- * LA DURACION PRONOSTICADA ES EL TIEMPO DURANTE EL CUAL SE ESPERA QUE EL TSUNAMI PRODUZCA OLAS Y CORRIENTES PELIGROSAS.
- * UN TSUNAMI ES UN TREN DE OLAS Y EL TIEMPO ENTRE OLAS PUEDE VARIAR DESDE CINCO MINUTOS HASTA UNA HORA.

| TERRITORIO | LOCALIZACION COSTERA | TAE (AST) | ----PRONOSTICO---- | |
|-------------|----------------------|-----------|--------------------|----------|
| | | | ALTURA | DURACION |
| PUERTO RICO | SAN JUAN | 616 AM | 5.0-11. FT | 18 HRS |
| | ARECIBO | 619 AM | 4.2-9.4 FT | 15 HRS |
| | YABUCOA | 623 AM | 1.8-4.1 FT | 12 HRS |
| | MAYAGUEZ | 628 AM | 4.0-9.0 FT | 15 HRS |
| | AGUADILLA | 629 AM | 3.6-8.0 FT | 15 HRS |
| | PENUELAS | 635 AM | 1.6-3.5 FT | 12 HRS |
| | PONCE | 636 AM | 1.4-3.2 FT | 12 HRS |
| | VIEQUES IS | 637 AM | BELOW 1 FT | ----- |
| | MONA ISLAND | 637 AM | 2.5-5.5 FT | 12 HRS |
| | CAJA DE MUERTOS | 644 AM | 1.1-2.5 FT | 6 HRS |
| | FAJARDO | 648 AM | 3.9-8.8 FT | 15 HRS |
| | MAGUEYES IS | 649 AM | 1.6-3.7 FT | 12 HRS |
| | CULEBRA IS | 652 AM | 3.5-7.9 FT | 15 HRS |
| USVI | CHRISTIANSTED | 616 AM | 2.2-4.9 FT | 12 HRS |
| | LIMETREE | 619 AM | 1.9-4.2 FT | 12 HRS |
| | LAMESHUR BAY | 642 AM | 2.5-5.7 FT | 12 HRS |
| | CHARLOTTE AMALIE | 654 AM | BELOW 1 FT | ----- |
| BVI | ANEGADA | 617 AM | 4.0-8.9 FT | 15 HRS |
| | VIRGIN GORDA | 631 AM | 2.0-4.5 FT | 12 HRS |
| | ROADTOWN | 730 AM | BELOW 1 FT | ----- |

OBSERVACIONES DE ACTIVIDAD DEL TSUNAMI

* LO QUE SIGUE SON LAS OBSERVACIONES DE LAS OLAS DEL TSUNAMI REGISTRADAS EN INSTRUMENTOS DE MEDICION EN ESTACIONES EN LA COSTA Y/O BOYAS EN AGUAS PROFUNDAS EN LOS PUNTOS INDICADOS. LA ALTURA MAXIMA DEL TSUNAMI ES MEDIDA CON RESPECTO AL NIVEL DE LA MAREA.

* LA ALTURA MAXIMA DEL TSUNAMI ES EL VALOR MAXIMO OBSERVADO HASTA AHORA Y SE MIDE CON RESPECTO AL NIVEL DE LA MAREA.

| LOCALIZACION DEL INSTRUMENTO | COORDENADAS DEL INSTRUMENTO LAT LON | | TIEMPO DEL REGISTRO (AST) | ALTURA MAXIMA DEL TSUNAMI |
|------------------------------------|--|-------|------------------------------------|------------------------------------|
| LEIXOES | 41.2N | 8.7W | 1225 AM | 13.3 FT |
| LAGOS | 37.1N | 8.7W | 1207 AM | 33.7 FT |
| FUNCHAL | 32.6N | 16.9W | 1207 AM | 17.0 FT |
| PENICHE | 39.3N | 9.4W | 1207 AM | 29.3 FT |
| CASCAIS PT | 38.7N | 9.4W | 1152 PM | 49.3 FT |
| SINES | 38.0N | 8.9W | 1147 PM | 47.5 FT |

IMPACTOS

- * LOS IMPACTOS VARIARAN PARA DIFERENTES LOCALIDADES EN PUERTO RICO Y LAS ISLAS VIRGENES.
- * FLUCTUACIONES DEL NIVEL DEL MAR DE 3 PIES O MAS TANTO POR ENCIMA COMO POR DEBAJO DEL NIVEL DE MAREA A LO LARGO DE ALGUNAS O TODAS LAS COSTAS.
- * REPETIDAS INUNDACIONES Y RETROCESO DE AGUA EN AREAS COSTERAS BAJAS.
- * OLAS INUSUALES Y FUERTES... CORRIENTES E INUNDACION DE ZONAS TIERRA ADENTRO QUE PUEDEN AHOGAR O LESIONAR A LAS PERSONAS Y DEBILITAR O DESTRUIR LAS ESTRUCTURAS EN TIERRA Y EN EL AGUA.
- * CORRIENTES DE INUNDACION CON FLUJO RAPIDO Y CARGADAS DE ESCOMBROS PELIGROSOS.
- * PELIGROS SECUNDARIOS PUEDEN INCLUIR LINEAS ELECTRICAS CAIDAS... FUEGOS... Y DERRAMES DE MATERIALES PELIGROSOS.
- * EL PELIGRO SE PRONOSTICA QUE COMENZARA ALREDEDOR DE LA(S) 616 AM AST EL SABADO 30 DE ENERO DEL 2016 Y PUEDE PERSISTIR POR VARIAS HORAS O MAS.

PARAMETROS PRELIMINARES DEL TERREMOTO - ACTUALIZADO

- * MAGNITUD 9.0

* TIEMPO DE ORIGEN 1100 PM AST ENE 29 2016
* COORDENADAS 36.5 NORTE 12.7 OESTE
* PROFUNDIDAD 8 MILLAS
* LOCALIZACION CERCA DE LAS ISLAS AZORES

PROXIMA ACTUALIZACION E INFORMACION ADICIONAL

- * EL PROXIMO MENSAJE SERA EMITIDO EN UNA HORA... O MAS PRONTO SI LA SITUACION ASI LO AMERITA.
- * MAS INFORMACION ACERCA DE ESTE EVENTO PUEDE SER ACCESADA EN INTERNET EN LOS SITIOS WEB PTWC.WEATHER.GOV Y WWW.TSUNAMI.GOV.
- * INFORMACION ACERCA DEL PELIGRO DE TSUNAMI PARA COSTAS ESTADOUNIDENSES EN EL GOLFO DE MEXICO Y EL ATLANTICO SERA EMITIDA POR EL CENTRO NACIONAL DE ALERTAS DE TSUNAMIS Y PUEDE SER ACCESADA EN INTERNET EN LOS SITIOS WEB NTWC.ARH.NOAA.GOV Y WWW.TSUNAMI.GOV.
- * INFORMACION OFICIAL AUTORIZADA ACERCA DE ESTE TERREMOTO PUEDE SER PROVEIDA POR LA CORRESPONDIENTE RED SISMICA REGIONAL O EL SERVICIO GEOLOGICO DE LOS ESTADOS UNIDOS EN SU SITIO WEB EARTHQUAKE.USGS.GOV/EARTHQUAKES -TODO EN MINUSCULAS-.

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| NWR VERSION |
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ZCZC
WECA60 PHEB 300425
TSUCA1

BULLETIN
TSUNAMI MESSAGE NUMBER 4
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
1225 AM AST SAT JAN 30 2016

AMZ712-715-725-735-742-745-PRZ001>003-005-007-008-010>013-
VIZ001-002-300625-
/O.CAN.PHEB.TS.A.0004.000000T0000Z-000000T0000Z/
/O.NEW.PHEB.TS.W.0009.160130T0425Z-000000T0000Z/
COASTAL AREAS OF PUERTO RICO - THE U.S. VIRGIN ISLANDS AND
THE BRITISH VIRGIN ISLANDS
1225 AM AST SAT JAN 30 2016

...THE TSUNAMI WATCH IS CANCELED AND A TSUNAMI WARNING IS NOW IN
EFFECT...

PERSONS LOCATED IN OR NEAR THE OCEAN OR IN LOW-LYING COASTAL
AREAS SHOULD EVACUATE INLAND OR TO HIGHER GROUND ABOVE AND
BEYOND DESIGNATED TSUNAMI HAZARD ZONES... OR MOVE TO THE FOURTH

FLOOR OR HIGHER OF A MULTI-STORY BUILDING... DEPENDING UPON YOUR SITUATION.

PERSONS LOCATED IN OR NEAR THE OCEAN SHOULD MOVE OUT OF THE WATER... OFF THE BEACH AND AWAY FROM HARBORS... MARINAS... BAYS AND INLETS.

AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 9.0 OCCURRED NEAR THE AZORES ISLANDS AT 1100 PM AST ON FRIDAY JANUARY 29 2016.

A TSUNAMI WAS GENERATED BY THIS EARTHQUAKE.

BASED ON ALL AVAILABLE DATA... THERE IS THE THREAT OF HAZARDOUS TSUNAMI WAVES FLOODING LOW-LYING COASTAL AREAS IN PUERTO RICO AND THE VIRGIN ISLANDS.

THE HAZARD IS FORECAST TO BEGIN AROUND 616 AM AST ON SATURDAY JANUARY 30 2016 AND IT CAN PERSIST FOR MANY HOURS OR LONGER.

PERSONS LOCATED OUTSIDE THE EVACUATION ZONE SHOULD LIMIT TRAVEL TO PREVENT CONGESTION OF EVACUATION ROUTES.

LIMIT TELEPHONE AND CELL PHONE USAGE SO THOSE SYSTEMS DO NOT BECOME OVERLOADED.

BE ALERT TO AND FOLLOW INSTRUCTIONS FROM LOCAL EMERGENCY MANAGEMENT OFFICIALS BECAUSE THEY MAY HAVE MORE DETAILED OR SPECIFIC INFORMATION FOR YOUR LOCATION.

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Distant Earthquake – Tsunami Warning During Impacts

| |
|-----------------|
| ENGLISH VERSION |
|-----------------|

ZCZC
WECA40 PHEB 301130
TSUCAR

TSUNAMI MESSAGE NUMBER 12
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
730 AM AST SAT JAN 30 2016

AMZ712-715-725-735-742-745-PRZ001>003-005-007-008-010>013-
VIZ001-002-301330-
COASTAL AREAS OF PUERTO RICO - THE U.S. VIRGIN ISLANDS AND
THE BRITISH VIRGIN ISLANDS

...A TSUNAMI WARNING CONTINUES IN EFFECT...

AUDIENCE

- * GOVERNMENT OFFICIALS... MEDIA... AND GENERAL PUBLIC OF PUERTO RICO... THE U.S. VIRGIN ISLANDS... AND THE BRITISH VIRGIN ISLANDS.

UPDATES IN THIS MESSAGE

- * THE TSUNAMI OBSERVATIONS HAVE BEEN UPDATED.

EVALUATION

- * AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 9.0 OCCURRED NEAR THE AZORES ISLANDS AT 1100 PM AST ON FRIDAY JANUARY 29 2016.
- * A TSUNAMI WAS GENERATED BY THIS EARTHQUAKE.
- * BASED ON ALL AVAILABLE DATA... THE THREAT CONTINUES FOR HAZARDOUS TSUNAMI WAVES FLOODING LOW-LYING COASTAL AREAS IN PUERTO RICO AND THE VIRGIN ISLANDS.

RECOMMENDED ACTIONS

- * ACTIONS REQUIRED TO PROTECT HUMAN LIFE... SAFETY AND PROPERTY WILL VARY WITHIN THE TSUNAMI WARNING AREA.
- * PERSONS LOCATED IN OR NEAR THE OCEAN OR IN LOW-LYING COASTAL AREAS SHOULD EVACUATE INLAND OR TO HIGHER GROUND ABOVE AND BEYOND DESIGNATED TSUNAMI HAZARD ZONES... OR MOVE TO THE FOURTH FLOOR OR HIGHER OF A MULTI-STORY BUILDING... DEPENDING UPON YOUR SITUATION.
- * PERSONS LOCATED IN OR NEAR THE OCEAN SHOULD MOVE OUT OF THE WATER... OFF THE BEACH AND AWAY FROM HARBORS... MARINAS... BAYS AND INLETS.
- * DO NOT GO TO THE SHORE TO OBSERVE THE TSUNAMI.
- * DO NOT RETURN TO EVACUATED AREAS UNTIL THE ALL CLEAR IS GIVEN BY LOCAL AUTHORITIES.
- * BOATERS - IF AT SEA... AVOID ENTERING SHALLOW WATER... HARBORS... MARINAS... BAYS AND INLETS TO AVOID FLOATING AND SUBMERGED DEBRIS AND STRONG CURRENTS.
- * BE ALERT TO AND FOLLOW INSTRUCTIONS FROM LOCAL EMERGENCY MANAGEMENT OFFICIALS BECAUSE THEY MAY HAVE MORE DETAILED OR SPECIFIC INFORMATION FOR YOUR LOCATION.

FORECASTS OF TSUNAMI ACTIVITY

- * ESTIMATED TIMES OF ARRIVAL -ETA- OF THE INITIAL TSUNAMI WAVE ARE GIVEN BELOW.
- * OBSERVED ARRIVAL TIMES MAY DIFFER FROM THESE ETAS AND THE INITIAL WAVE MAY NOT BE THE LARGEST.
- * THE FORECAST HEIGHT IS THE MAXIMUM EXPECTED WATER LEVEL ABOVE THE TIDE AT THAT COASTAL LOCATION.
- * THE FORECAST DURATION IS THE APPROXIMATE EXPECTED LENGTH OF TIME AFTER INITIAL IMPACT THAT THE TSUNAMI MAY CONTINUE TO BE A HAZARD.
- * A TSUNAMI IS A SERIES OF WAVES AND THE DURATION OF EACH WAVE CAN BE FIVE MINUTES TO ONE HOUR.

| TERRITORY | COASTAL LOCATION | ETA (AST) | FORECAST HEIGHT | FORECAST DURATION |
|-------------|------------------|-----------|-----------------|-------------------|
| PUERTO RICO | SAN JUAN | 616 AM | 5.0-11. FT | 18 HRS |
| | ARECIBO | 619 AM | 4.2-9.4 FT | 15 HRS |
| | YABUCOA | 623 AM | 1.8-4.1 FT | 12 HRS |
| | MAYAGUEZ | 628 AM | 4.0-9.0 FT | 15 HRS |
| | AGUADILLA | 629 AM | 3.6-8.0 FT | 15 HRS |
| | PENUELAS | 635 AM | 1.6-3.5 FT | 12 HRS |
| | PONCE | 636 AM | 1.4-3.2 FT | 12 HRS |
| | VIEQUES IS | 637 AM | BELOW 1 FT | ----- |
| | MONA ISLAND | 637 AM | 2.5-5.5 FT | 12 HRS |
| | CAJA DE MUERTOS | 644 AM | 1.1-2.5 FT | 6 HRS |
| | FAJARDO | 648 AM | 3.9-8.8 FT | 15 HRS |
| | MAGUEYES IS | 649 AM | 1.6-3.7 FT | 12 HRS |
| | CULEBRA IS | 652 AM | 3.5-7.9 FT | 15 HRS |
| USVI | CHRISTIANSTED | 616 AM | 2.2-4.9 FT | 12 HRS |
| | LIMETREE | 619 AM | 1.9-4.2 FT | 12 HRS |
| | LAMESHUR BAY | 642 AM | 2.5-5.7 FT | 12 HRS |
| | CHARLOTTE AMALIE | 654 AM | BELOW 1 FT | ----- |
| BVI | ANEGADA | 617 AM | 4.0-8.9 FT | 15 HRS |
| | VIRGIN GORDA | 631 AM | 2.0-4.5 FT | 12 HRS |
| | ROADTOWN | 730 AM | BELOW 1 FT | ----- |

OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED

- * THE FOLLOWING ARE TSUNAMI WAVE OBSERVATIONS FROM COASTAL AND/OR DEEP-OCEAN SEA LEVEL GAUGES AT THE INDICATED LOCATIONS.

* THE MAXIMUM TSUNAMI HEIGHT IS THE HIGHEST MEASURED SO FAR. IT IS MEASURED WITH RESPECT TO THE TIDE LEVEL.

| GAUGE LOCATION | GAUGE COORDINATES | | TIME OF MEASURE (AST) | MAXIMUM TSUNAMI HEIGHT |
|---------------------|-------------------|-------|-----------------------|------------------------|
| | LAT | LON | | |
| BARAHONA DO | 18.2N | 71.1W | 721 AM | 1.4 FT |
| ILE ROYAL GUIANA FR | 5.3N | 52.6W | 719 AM | 4.6 FT |
| CAP HAITIEN HT | 19.8N | 72.2W | 714 AM | 4.7 FT |
| PRICKLEY BAY GD | 12.0N | 61.8W | 708 AM | 2.7 FT |
| CHARLOTTEVILLE TT | 11.3N | 60.5W | 706 AM | 5.1 FT |
| DART 42407 | 15.3N | 68.2W | 659 AM | 0.1 FT |
| MAGUEYES ISLAND PR | 18.0N | 67.0W | 702 AM | 2.5 FT |
| CAJA DE MUERTOS PR | 17.9N | 66.5W | 650 AM | 1.7 FT |
| PUERTO PLATA DO | 19.8N | 70.7W | 650 AM | 6.5 FT |
| LAMESHUR BAY VI | 18.3N | 64.7W | 652 AM | 3.8 FT |
| PUNTA CANA DO | 18.5N | 68.4W | 651 AM | 4.8 FT |
| MONA ISLAND PR | 18.1N | 67.9W | 652 AM | 3.7 FT |
| AGUADILLA PR | 18.5N | 67.2W | 643 AM | 5.4 FT |
| MAYAGUEZ PR | 18.2N | 67.2W | 639 AM | 6.1 FT |
| ESPERANZA VIEQUES P | 18.1N | 65.5W | 634 AM | 1.7 FT |
| CALLIAQUA VC | 13.1N | 61.2W | 629 AM | 3.5 FT |
| YABUCOA PR | 18.1N | 65.8W | 631 AM | 2.7 FT |
| ARECIBO PR | 18.5N | 66.7W | 634 AM | 6.3 FT |
| LIMETREE VI | 17.7N | 64.8W | 628 AM | 2.8 FT |
| BASSETERRE KN | 17.3N | 62.7W | 624 AM | 4.4 FT |
| ST CROIX VI | 17.7N | 64.7W | 623 AM | 3.3 FT |
| DART 41424 | 32.9N | 72.5W | 627 AM | 0.5 FT |
| SAN JUAN PR | 18.5N | 66.1W | 628 AM | 7.6 FT |
| FORT DE FRANCE MQ | 14.6N | 61.1W | 626 AM | 3.1 FT |
| BRIDGEPORT BB | 13.1N | 59.6W | 620 AM | 5.9 FT |
| ROSEAU DM | 15.3N | 61.4W | 616 AM | 2.7 FT |
| LE ROBERT MARTINIQU | 14.7N | 60.9W | 615 AM | 7.4 FT |
| DART 41420 | 23.5N | 67.3W | 615 AM | 0.8 FT |
| POINT A PITRE GP | 16.2N | 61.5W | 616 AM | 7.1 FT |
| LE PRECHEUR MARTINI | 14.8N | 61.2W | 613 AM | 2.8 FT |
| DESHAIES GUADELOUPE | 16.3N | 61.8W | 617 AM | 3.9 FT |
| PORT ST CHARLES BB | 13.3N | 59.6W | 618 AM | 5.7 FT |
| PARHAM AT | 17.1N | 61.8W | 605 AM | 6.6 FT |
| DART 44402 | 39.3N | 70.7W | 611 AM | 0.3 FT |
| DESIRADE GUADELOUPE | 16.3N | 61.1W | 600 AM | 6.5 FT |
| DART 41421 | 23.4N | 63.9W | 550 AM | 0.9 FT |
| DART 44401 | 37.5N | 50.0W | 347 AM | 0.6 FT |
| DAKAR SN | 14.7N | 17.4W | 325 AM | 4.6 FT |
| LHERBAUDIÈRE FR | 47.0N | 2.3W | 254 AM | 2.6 FT |
| LES SABLES DOLONNE | 46.5N | 1.8W | 253 AM | 2.4 FT |
| PALMEIRA CAPE VERDE | 16.8N | 23.0W | 238 AM | 7.3 FT |
| CONCARMEAU FR | 47.9N | 3.9W | 226 AM | 2.6 FT |
| LE CONQUET FR | 48.4N | 4.8W | 223 AM | 2.3 FT |
| BOUCAU BAYONNE FR | 43.5N | 1.5W | 135 AM | 2.4 FT |
| HORTA | 38.5N | 28.6W | 126 AM | 13.5 FT |
| FERROL ES | 43.5N | 8.3W | 100 AM | 10.6 FT |

| | | | | |
|------------------|-------|-------|---------|---------|
| PONTA DELGADA PT | 37.7N | 25.7W | 1256 AM | 28.9 FT |
| ALGECIRAS ES | 36.2N | 5.4W | 1250 AM | 8.2 FT |
| SANTA MARIA | 36.9N | 25.1W | 1243 AM | 14.7 FT |
| GIBRALTAR UK | 36.1N | 5.3W | 1252 AM | 7.7 FT |
| LAGOMERA ES | 28.1N | 17.1W | 1244 AM | 7.1 FT |
| LA PALMA ES | 28.7N | 17.8W | 1242 AM | 20.7 FT |
| LASPALMAS ES | 28.1N | 15.4W | 1233 AM | 11.9 FT |
| LEIXOES | 41.2N | 8.7W | 1225 AM | 13.3 FT |
| LAGOS | 37.1N | 8.7W | 1207 AM | 33.7 FT |
| FUNCHAL | 32.6N | 16.9W | 1207 AM | 17.0 FT |
| PENICHE | 39.3N | 9.4W | 1207 AM | 29.3 FT |
| CASCAIS PT | 38.7N | 9.4W | 1152 PM | 49.3 FT |
| SINES | 38.0N | 8.9W | 1147 PM | 47.5 FT |

IMPACTS

- * IMPACTS WILL VARY AT DIFFERENT LOCATIONS WITHIN PUERTO RICO AND THE VIRGIN ISLANDS.
- * SEA LEVEL FLUCTUATIONS THAT ARE 3 FEET OR MORE ABOVE AND BELOW THE TIDE LEVEL ALONG SOME OR ALL COASTS.
- * REPEATED FLOODING AND DRAINING OF LOW-LYING COASTAL AREAS.
- * STRONG AND UNUSUAL WAVES... CURRENTS AND INLAND FLOODING THAT CAN DROWN OR INJURE PEOPLE AND WEAKEN OR DESTROY STRUCTURES ON LAND AND IN THE WATER.
- * RAPIDLY FLOWING FLOOD WATER FILLED WITH HAZARDOUS DEBRIS.
- * SECONDARY HAZARDS THAT MAY INCLUDE DOWNED POWER LINES... FIRES... AND HAZARDOUS MATERIAL SPILLS.
- * THE HAZARD BEGAN AROUND 616 AM AST ON SATURDAY JANUARY 30 2016 AND IT CAN PERSIST FOR MANY HOURS OR LONGER.

PRELIMINARY EARTHQUAKE PARAMETERS

- * MAGNITUDE 9.0
- * ORIGIN TIME 1100 PM AST JAN 29 2016
- * COORDINATES 36.5 NORTH 12.7 WEST
- * DEPTH 8 MILES
- * LOCATION AZORES ISLANDS

NEXT UPDATE AND ADDITIONAL INFORMATION

- * THE NEXT MESSAGE WILL BE ISSUED IN ONE HOUR... OR SOONER IF THE SITUATION WARRANTS.

- * FURTHER INFORMATION ABOUT THIS EVENT AND ANY TSUNAMI THREAT TO PUERTO RICO AND THE VIRGIN ISLANDS MAY BE FOUND ON THE INTERNET AT PTWC.WEATHER.GOV AND AT WWW.TSUNAMI.GOV.
- * INFORMATION REGARDING ANY TSUNAMI THREAT TO US GULF OR ATLANTIC COASTS WILL BE ISSUED BY THE US NATIONAL TSUNAMI WARNING CENTER AND CAN BE FOUND ON THE INTERNET AT NTWC.ARH.NOAA.GOV AND AT WWW.TSUNAMI.GOV.
- * AUTHORITATIVE INFORMATION ABOUT THE EARTHQUAKE CAN BE OBTAINED FROM THE CORRESPONDING REGIONAL SEISMIC NETWORK OR THE U.S. GEOLOGICAL SURVEY ON THE INTERNET AT EARTHQUAKE.USGS.GOV/EARTHQUAKES -ALL LOWERCASE LETTERS-.

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| SPANISH VERSION |
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ZCZC
WECA50 PHEB 301130
TSUSP1

MENSAJE DE TSUNAMI NUMERO 12
SMN CENTRO DE ALERTAS DE TSUNAMI DEL PACIFICO EWA BEACH HI
730 AM AST SAT JAN 30 2016

AMZ712-715-725-735-742-745-PRZ001>003-005-007-008-010>013-
VIZ001-002-301330-
ZONAS COSTERAS DE PUERTO RICO - LAS ISLAS VÍRGENES ESTADOUNIDENSES Y
LAS ISLAS VÍRGENES BRITÁNICAS

...EL AVISO DE TSUNAMI CONTINUA EN EFECTO...

AUDIENCIA

- * FUNCIONARIOS GUBERNAMENTALES... MEDIOS DE PRENSA... Y EL PUBLICO EN GENERAL EN PUERTO RICO... LAS ISLAS VIRGENES DE LOS ESTADOS UNIDOS... Y LAS ISLAS VIRGENES BRITANICAS.

ACTUALIZACIONES EN ESTE MENSAJE

- * LAS OBSERVACIONES DEL TSUNAMI HAN SIDO ACTUALIZADAS.

EVALUACION

- * UN TERREMOTO CON MAGNITUD PRELIMINAR 9.0 HA OCURRIDO CERCA DE LAS ISLAS AZORES A LAS 1100 PM AST EL VIERNES 29 DE ENERO DEL

2016.

- * UN TSUNAMI HA SIDO GENERADO POR ESTE TERREMOTO.
- * BASANDOSE EN EL ANALISIS DE TODOS LOS DATOS DISPONIBLES... CONTINUA LA AMENAZA DE QUE PELIGROSAS OLAS DE TSUNAMI INUNDEN ZONAS COSTERAS BAJAS EN PUERTO RICO Y LAS ISLAS VIRGENES.

ACCIONES RECOMENDADAS

- * LAS ACCIONES REQUERIDAS PARA PROTEGER VIDAS HUMANAS... LA SEGURIDAD Y LOS BIENES MATERIALES VARIARA DENTRO DEL AREA DECLARADA EN ESTADO DE AVISO.
- * PERSONAS LOCALIZADAS EN EL MAR O CERCA DEL MAR O EN ZONAS COSTERAS BAJAS DEBEN EVACUAR TIERRA ADENTRO O HACIA ZONAS MAS ALTAS FUERA DE AQUELLAS DESIGNADAS COMO ZONAS CON PELIGRO DE TSUNAMI... O MOVERSE HACIA EL CUARTO PISO O MAS ALTO DE UN EDIFICIO DE VARIOS MULTI PISOS... EN DEPENDIENDO DE LA SITUACION.
- * PERSONAS LOCALIZADAS EN EL MAR O CERCA DEL MAR DEBEN SALIR DEL AGUA... FUERA DE LA PLAYA Y ALEJARSE DE PUERTOS... MARINAS... BAHIAS Y ENSENADAS.
- * NO VAYA A LA ORILLA DEL MAR PARA OBSERVAR EL TSUNAMI.
- * NO REGRESE A ZONAS EVACUADAS HASTA TANTO LAS AUTORIDADES DECLAREN QUE EL PELIGRO YA PASO.
- * MARINEROS - SI SE ENCUENTRAN MAR AFUERA... EVITEN ADENTRARSE EN AGUAS SOMERAS... PUERTOS... MARINAS... BAHIAS Y ENSENADAS PARA EVITAR ESCOMBROS TANTO FLOTANTES COMO SUMERGIDOS Y CORRIENTES FUERTES.
- * MANTENGASE ALERTA Y SIGA LAS INSTRUCCIONES PROVENIENTES DE FUNCIONARIOS DE LAS AGENCIAS LOCALES PARA EL MANEJO DE EMERGENCIAS YA QUE LAS MISMAS DISPONEN DE INFORMACION O INSTRUCCIONES MAS ESPECIFICAS PARA SU LOCALIDAD.

PRONOSTICO DE LA ACTIVIDAD DEL TSUNAMI

- * LOS TIEMPOS DE ARRIBO ESTIMADOS -TAE- DE LA PRIMERA OLA DEL TSUNAMI SE PROVEEN A CONTINUACION.
- * LOS TIEMPOS DE ARRIBO REALES PUEDEN DIFERIR DE LOS ESTIMADOS Y LA PRIMERA OLA PUEDE QUE NO SEA LA MAS GRANDE.
- * LA ALTURA PRONOSTICADA ES EL NIVEL MAXIMO DEL AGUA POR ENCIMA

DEL NIVEL DE MAREA QUE SE ESPERA A LO LARGO DE ESA SECCION DE LA COSTA.

- * LA DURACION PRONOSTICADA ES EL TIEMPO DURANTE EL CUAL SE ESPERA QUE EL TSUNAMI PRODUZCA OLAS Y CORRIENTES PELIGROSAS.
- * UN TSUNAMI ES UN TREN DE OLAS Y EL TIEMPO ENTRE OLAS PUEDE VARIAR DESDE CINCO MINUTOS HASTA UNA HORA.

| TERRITORIO | LOCALIZACION COSTERA | TAE (AST) | ----PRONOSTICO---- | |
|-------------|----------------------|-----------|--------------------|----------|
| | | | ALTURA | DURACION |
| PUERTO RICO | SAN JUAN | 616 AM | 5.0-11. FT | 18 HRS |
| | ARECIBO | 619 AM | 4.2-9.4 FT | 15 HRS |
| | YABUCOA | 623 AM | 1.8-4.1 FT | 12 HRS |
| | MAYAGUEZ | 628 AM | 4.0-9.0 FT | 15 HRS |
| | AGUADILLA | 629 AM | 3.6-8.0 FT | 15 HRS |
| | PENUELAS | 635 AM | 1.6-3.5 FT | 12 HRS |
| | PONCE | 636 AM | 1.4-3.2 FT | 12 HRS |
| | VIEQUES IS | 637 AM | BELOW 1 FT | ----- |
| | MONA ISLAND | 637 AM | 2.5-5.5 FT | 12 HRS |
| | CAJA DE MUERTOS | 644 AM | 1.1-2.5 FT | 6 HRS |
| | FAJARDO | 648 AM | 3.9-8.8 FT | 15 HRS |
| | MAGUEYES IS | 649 AM | 1.6-3.7 FT | 12 HRS |
| | CULEBRA IS | 652 AM | 3.5-7.9 FT | 15 HRS |
| USVI | CHRISTIANSTED | 616 AM | 2.2-4.9 FT | 12 HRS |
| | LIMETREE | 619 AM | 1.9-4.2 FT | 12 HRS |
| | LAMESHUR BAY | 642 AM | 2.5-5.7 FT | 12 HRS |
| | CHARLOTTE AMALIE | 654 AM | BELOW 1 FT | ----- |
| BVI | ANEGADA | 617 AM | 4.0-8.9 FT | 15 HRS |
| | VIRGIN GORDA | 631 AM | 2.0-4.5 FT | 12 HRS |
| | ROADTOWN | 730 AM | BELOW 1 FT | ----- |

OBSERVACIONES DE ACTIVIDAD DEL TSUNAMI - ACTUALIZADO

- * LO QUE SIGUE SON LAS OBSERVACIONES DE LAS OLAS DEL TSUNAMI REGISTRADAS EN INSTRUMENTOS DE MEDICION EN ESTACIONES EN LA COSTA Y/O BOYAS EN AGUAS PROFUNDAS EN LOS PUNTOS INDICADOS. LA ALTURA MAXIMA DEL TSUNAMI ES MEDIDA CON RESPECTO AL NIVEL DE LA MAREA.
- * LA ALTURA MAXIMA DEL TSUNAMI ES EL VALOR MAXIMO OBSERVADO HASTA AHORA Y SE MIDE CON RESPECTO AL NIVEL DE LA MAREA.

| LOCALIZACION DEL INSTRUMENTO | COORDENADAS DEL INSTRUMENTO | | TIEMPO DEL REGISTRO (AST) | ALTURA MAXIMA DEL TSUNAMI |
|------------------------------|-----------------------------|-------|---------------------------|---------------------------|
| | LAT | LON | | |
| BARAHONA DO | 18.2N | 71.1W | 721 AM | 1.4 FT |

| | | | | |
|---------------------|-------|-------|---------|---------|
| ILE ROYAL GUIANA FR | 5.3N | 52.6W | 719 AM | 4.6 FT |
| CAP HAITIEN HT | 19.8N | 72.2W | 714 AM | 4.7 FT |
| PRICKLEY BAY GD | 12.0N | 61.8W | 708 AM | 2.7 FT |
| CHARLOTTEVILLE TT | 11.3N | 60.5W | 706 AM | 5.1 FT |
| DART 42407 | 15.3N | 68.2W | 659 AM | 0.1 FT |
| MAGUEYES ISLAND PR | 18.0N | 67.0W | 702 AM | 2.5 FT |
| CAJA DE MUERTOS PR | 17.9N | 66.5W | 650 AM | 1.7 FT |
| PUERTO PLATA DO | 19.8N | 70.7W | 650 AM | 6.5 FT |
| LAMESHUR BAY VI | 18.3N | 64.7W | 652 AM | 3.8 FT |
| PUNTA CANA DO | 18.5N | 68.4W | 651 AM | 4.8 FT |
| MONA ISLAND PR | 18.1N | 67.9W | 652 AM | 3.7 FT |
| AGUADILLA PR | 18.5N | 67.2W | 643 AM | 5.4 FT |
| MAYAGUEZ PR | 18.2N | 67.2W | 639 AM | 6.1 FT |
| ESPERANZA VIEQUES P | 18.1N | 65.5W | 634 AM | 1.7 FT |
| CALLIAQUA VC | 13.1N | 61.2W | 629 AM | 3.5 FT |
| YABUCOA PR | 18.1N | 65.8W | 631 AM | 2.7 FT |
| ARECIBO PR | 18.5N | 66.7W | 634 AM | 6.3 FT |
| LIMETREE VI | 17.7N | 64.8W | 628 AM | 2.8 FT |
| BASSETERRE KN | 17.3N | 62.7W | 624 AM | 4.4 FT |
| ST CROIX VI | 17.7N | 64.7W | 623 AM | 3.3 FT |
| DART 41424 | 32.9N | 72.5W | 627 AM | 0.5 FT |
| SAN JUAN PR | 18.5N | 66.1W | 628 AM | 7.6 FT |
| FORT DE FRANCE MQ | 14.6N | 61.1W | 626 AM | 3.1 FT |
| BRIDGEPORT BB | 13.1N | 59.6W | 620 AM | 5.9 FT |
| ROSEAU DM | 15.3N | 61.4W | 616 AM | 2.7 FT |
| LE ROBERT MARTINIQU | 14.7N | 60.9W | 615 AM | 7.4 FT |
| DART 41420 | 23.5N | 67.3W | 615 AM | 0.8 FT |
| POINT A PITRE GP | 16.2N | 61.5W | 616 AM | 7.1 FT |
| LE PRECHEUR MARTINI | 14.8N | 61.2W | 613 AM | 2.8 FT |
| DESHAIES GUADELOUPE | 16.3N | 61.8W | 617 AM | 3.9 FT |
| PORT ST CHARLES BB | 13.3N | 59.6W | 618 AM | 5.7 FT |
| PARHAM AT | 17.1N | 61.8W | 605 AM | 6.6 FT |
| DART 44402 | 39.3N | 70.7W | 611 AM | 0.3 FT |
| DESIRADE GUADELOUPE | 16.3N | 61.1W | 600 AM | 6.5 FT |
| DART 41421 | 23.4N | 63.9W | 550 AM | 0.9 FT |
| DART 44401 | 37.5N | 50.0W | 347 AM | 0.6 FT |
| DAKAR SN | 14.7N | 17.4W | 325 AM | 4.6 FT |
| LHERBAUDIÈRE FR | 47.0N | 2.3W | 254 AM | 2.6 FT |
| LES SABLES DOLONNE | 46.5N | 1.8W | 253 AM | 2.4 FT |
| PALMEIRA CAPE VERDE | 16.8N | 23.0W | 238 AM | 7.3 FT |
| CONCARMEAU FR | 47.9N | 3.9W | 226 AM | 2.6 FT |
| LE CONQUET FR | 48.4N | 4.8W | 223 AM | 2.3 FT |
| BOUCAU BAYONNE FR | 43.5N | 1.5W | 135 AM | 2.4 FT |
| HORTA | 38.5N | 28.6W | 126 AM | 13.5 FT |
| FERROL ES | 43.5N | 8.3W | 100 AM | 10.6 FT |
| PONTA DELGADA PT | 37.7N | 25.7W | 1256 AM | 28.9 FT |
| ALGECIRAS ES | 36.2N | 5.4W | 1250 AM | 8.2 FT |
| SANTA MARIA | 36.9N | 25.1W | 1243 AM | 14.7 FT |
| GIBRALTAR UK | 36.1N | 5.3W | 1252 AM | 7.7 FT |
| LAGOMERA ES | 28.1N | 17.1W | 1244 AM | 7.1 FT |
| LA PALMA ES | 28.7N | 17.8W | 1242 AM | 20.7 FT |
| LASPALMAS ES | 28.1N | 15.4W | 1233 AM | 11.9 FT |
| LEIXOES | 41.2N | 8.7W | 1225 AM | 13.3 FT |
| LAGOS | 37.1N | 8.7W | 1207 AM | 33.7 FT |

| | | | | |
|------------|-------|-------|---------|---------|
| FUNCHAL | 32.6N | 16.9W | 1207 AM | 17.0 FT |
| PENICHE | 39.3N | 9.4W | 1207 AM | 29.3 FT |
| CASCAIS PT | 38.7N | 9.4W | 1152 PM | 49.3 FT |
| SINES | 38.0N | 8.9W | 1147 PM | 47.5 FT |

IMPACTOS

- * LOS IMPACTOS VARIARAN PARA DIFERENTES LOCALIDADES EN PUERTO RICO Y LAS ISLAS VIRGENES.
- * FLUCTUACIONES DEL NIVEL DEL MAR DE 3 PIES O MAS TANTO POR ENCIMA COMO POR DEBAJO DEL NIVEL DE MAREA A LO LARGO DE ALGUNAS O TODAS LAS COSTAS.
- * REPETIDAS INUNDACIONES Y RETROCESO DE AGUA EN AREAS COSTERAS BAJAS.
- * OLAS INUSUALES Y FUERTES... CORRIENTES E INUNDACION DE ZONAS TIERRA ADENTRO QUE PUEDEN AHOGAR O LESIONAR A LAS PERSONAS Y DEBILITAR O DESTRUIR LAS ESTRUCTURAS EN TIERRA Y EN EL AGUA.
- * CORRIENTES DE INUNDACION CON FLUJO RAPIDO Y CARGADAS DE ESCOMBROS PELIGROSOS.
- * PELIGROS SECUNDARIOS PUEDEN INCLUIR LINEAS ELECTRICAS CAIDAS... FUEGOS... Y DERRAMES DE MATERIALES PELIGROSOS.
- * EL PELIGRO COMENZO A PARTIR DE LA(S) 616 AM AST EL SABADO 30 DE ENERO DEL 2016 Y PUEDE PERSISTIR POR VARIAS HORAS O MAS.

PARAMETROS PRELIMINARES DEL TERREMOTO

- * MAGNITUD 9.0
- * TIEMPO DE ORIGEN 1100 PM AST ENE 29 2016
- * COORDENADAS 36.5 NORTE 12.7 OESTE
- * PROFUNDIDAD 8 MILLAS
- * LOCALIZACION CERCA DE LAS ISLAS AZORES

PROXIMA ACTUALIZACION E INFORMACION ADICIONAL

- * EL PROXIMO MENSAJE SERA EMITIDO EN UNA HORA... O MAS PRONTO SI LA SITUACION ASI LO AMERITA.
- * MAS INFORMACION ACERCA DE ESTE EVENTO PUEDE SER ACCESADA EN INTERNET EN LOS SITIOS WEB PTWC.WEATHER.GOV Y WWW.TSUNAMI.GOV.
- * INFORMACION ACERCA DEL PELIGRO DE TSUNAMI PARA COSTAS

ESTADOUNIDENSES EN EL GOLFO DE MEXICO Y EL ATLANTICO SERA
EMITIDA POR EL CENTRO NACIONAL DE ALERTAS DE TSUNAMIS Y
PUEDE SER ACCESADA EN INTERNET EN LOS SITIOS WEB
NTWC.ARH.NOAA.GOV Y WWW.TSUNAMI.GOV.

* INFORMACION OFICIAL AUTORIZADA ACERCA DE ESTE TERREMOTO PUEDE
SER PROVEIDA POR LA CORRESPONDIENTE RED SISMICA REGIONAL O
EL SERVICIO GEOLOGICO DE LOS ESTADOS UNIDOS EN SU SITIO WEB
EARTHQUAKE.USGS.GOV/EARTHQUAKES -TODO EN MINUSCULAS-.

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| |
|-------------|
| NWR VERSION |
|-------------|

ZCZC
WECA60 PHEB 301130
TSUCA1

BULLETIN
TSUNAMI MESSAGE NUMBER 12
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
730 AM AST SAT JAN 30 2016

AMZ712-715-725-735-742-745-PRZ001>003-005-007-008-010>013-
VIZ001-002-301330-
/O.CON.PHEB.TS.W.0009.000000T0000Z-000000T0000Z/
COASTAL AREAS OF PUERTO RICO - THE U.S. VIRGIN ISLANDS AND
THE BRITISH VIRGIN ISLANDS
730 AM AST SAT JAN 30 2016

...A TSUNAMI WARNING CONTINUES IN EFFECT...

PERSONS LOCATED IN OR NEAR THE OCEAN OR IN LOW-LYING COASTAL
AREAS SHOULD EVACUATE INLAND OR TO HIGHER GROUND ABOVE AND
BEYOND DESIGNATED TSUNAMI HAZARD ZONES... OR MOVE TO THE FOURTH
FLOOR OR HIGHER OF A MULTI-STORY BUILDING... DEPENDING UPON YOUR
SITUATION.

PERSONS LOCATED IN OR NEAR THE OCEAN SHOULD MOVE OUT OF THE
WATER... OFF THE BEACH AND AWAY FROM HARBORS... MARINAS... BAYS
AND INLETS.

AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 9.0 OCCURRED NEAR
THE AZORES ISLANDS AT 1100 PM AST ON FRIDAY JANUARY 29 2016.

A TSUNAMI WAS GENERATED BY THIS EARTHQUAKE.

THE MAXIMUM TSUNAMI HEIGHT OBSERVED SO FAR ON A GAUGE IN PUERTO
RICO OR THE VIRGIN ISLANDS IS 7.6 FEET AT SAN JUAN.

BASED ON ALL AVAILABLE DATA... THE THREAT CONTINUES FOR HAZARDOUS
TSUNAMI WAVES FLOODING LOW-LYING COASTAL AREAS IN PUERTO RICO
AND THE VIRGIN ISLANDS.

THE HAZARD BEGAN AROUND 616 AM AST ON SATURDAY JANUARY 30 2016
AND IT CAN PERSIST FOR MANY HOURS OR LONGER.

DO NOT GO TO THE SHORE TO OBSERVE THE TSUNAMI.

DO NOT RETURN TO EVACUATED AREAS UNTIL THE ALL CLEAR IS GIVEN BY
LOCAL AUTHORITIES.

BE ALERT TO AND FOLLOW INSTRUCTIONS FROM LOCAL EMERGENCY
MANAGEMENT OFFICIALS BECAUSE THEY MAY HAVE MORE DETAILED OR
SPECIFIC INFORMATION FOR YOUR LOCATION.

\$\$

Distant Earthquake – Downgrade to Tsunami Advisory After Impact

| |
|-----------------|
| ENGLISH VERSION |
|-----------------|

ZCZC
WECA40 PHEB 301530
TSUCAR

TSUNAMI MESSAGE NUMBER 16
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
1130 AM AST SAT JAN 30 2016

AMZ712-715-725-735-742-745-PRZ001>003-005-007-008-010>013-
VIZ001-002-301730-
COASTAL AREAS OF PUERTO RICO - THE U.S. VIRGIN ISLANDS AND
THE BRITISH VIRGIN ISLANDS

...THE TSUNAMI WARNING IS CANCELED AND A TSUNAMI ADVISORY IS NOW
IN EFFECT...

AUDIENCE

- * GOVERNMENT OFFICIALS... MEDIA... AND GENERAL PUBLIC OF PUERTO RICO... THE U.S. VIRGIN ISLANDS... AND THE BRITISH VIRGIN ISLANDS.

UPDATES IN THIS MESSAGE

- * THE TSUNAMI WARNING IS CANCELED AND A TSUNAMI ADVISORY IS NOW IN EFFECT FOR PUERTO RICO... THE U.S. VIRGIN ISLANDS... AND THE BRITISH VIRGIN ISLANDS.

EVALUATION

- * AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 9.0 OCCURRED NEAR THE AZORES ISLANDS AT 1100 PM AST ON FRIDAY JANUARY 29 2016.
- * A TSUNAMI WAS GENERATED BY THIS EARTHQUAKE.
- * BASED ON ALL AVAILABLE DATA... THERE IS A CONTINUING TSUNAMI THREAT TO PUERTO RICO AND THE VIRGIN ISLANDS OF SEA LEVEL FLUCTUATIONS AND STRONG OCEAN CURRENTS THAT COULD BE A HAZARD ALONG COASTS... BEACHES... IN HARBORS... AND IN COASTAL WATERS.

RECOMMENDED ACTIONS

- * ACTIONS REQUIRED TO PROTECT HUMAN LIFE... SAFETY AND PROPERTY WILL VARY WITHIN THE TSUNAMI ADVISORY AREA.
- * PERSONS LOCATED IN OR NEAR THE OCEAN SHOULD MOVE OUT OF THE WATER... OFF THE BEACH AND AWAY FROM HARBORS... MARINAS... BAYS AND INLETS.
- * BE ALERT TO AND FOLLOW INSTRUCTIONS FROM LOCAL EMERGENCY MANAGEMENT OFFICIALS BECAUSE THEY MAY HAVE MORE DETAILED OR SPECIFIC INFORMATION FOR YOUR LOCATION.
- * BOATERS - WHERE TIME AND CONDITIONS PERMIT... MOVE YOUR BOAT OUT TO SEA TO A DEPTH OF AT LEAST 450 FEET.
- * BOATERS - IF AT SEA... AVOID ENTERING SHALLOW WATER... HARBORS... MARINAS... BAYS AND INLETS TO AVOID FLOATING AND SUBMERGED DEBRIS AND STRONG CURRENTS.

FORECASTS OF TSUNAMI ACTIVITY

- * ESTIMATED TIMES OF ARRIVAL -ETA- OF THE INITIAL TSUNAMI WAVE ARE GIVEN BELOW.
- * OBSERVED ARRIVAL TIMES MAY DIFFER FROM THESE ETAS AND THE INITIAL WAVE MAY NOT BE THE LARGEST.
- * THE FORECAST HEIGHT IS THE MAXIMUM EXPECTED WATER LEVEL ABOVE THE TIDE AT THAT COASTAL LOCATION.
- * THE FORECAST DURATION IS THE APPROXIMATE EXPECTED LENGTH OF TIME AFTER INITIAL IMPACT THAT THE TSUNAMI MAY CONTINUE TO BE A HAZARD.
- * A TSUNAMI IS A SERIES OF WAVES AND THE DURATION OF EACH WAVE CAN BE FIVE MINUTES TO ONE HOUR.

| TERRITORY | COASTAL LOCATION | ETA (AST) | FORECAST HEIGHT | FORECAST DURATION |
|-------------|------------------|-----------|-----------------|-------------------|
| PUERTO RICO | SAN JUAN | 616 AM | 5.0-11. FT | 18 HRS |
| | ARECIBO | 619 AM | 4.2-9.4 FT | 15 HRS |
| | YABUCOA | 623 AM | 1.8-4.1 FT | 12 HRS |
| | MAYAGUEZ | 628 AM | 4.0-9.0 FT | 15 HRS |
| | AGUADILLA | 629 AM | 3.6-8.0 FT | 15 HRS |
| | PENUELAS | 635 AM | 1.6-3.5 FT | 12 HRS |
| | PONCE | 636 AM | 1.4-3.2 FT | 12 HRS |
| | VIEQUES IS | 637 AM | BELOW 1 FT | ----- |
| | MONA ISLAND | 637 AM | 2.5-5.5 FT | 12 HRS |
| | CAJA DE MUERTOS | 644 AM | 1.1-2.5 FT | 6 HRS |
| | FAJARDO | 648 AM | 3.9-8.8 FT | 15 HRS |
| | MAGUEYES IS | 649 AM | 1.6-3.7 FT | 12 HRS |
| | CULEBRA IS | 652 AM | 3.5-7.9 FT | 15 HRS |
| USVI | CHRISTIANSTED | 616 AM | 2.2-4.9 FT | 12 HRS |
| | LIMETREE | 619 AM | 1.9-4.2 FT | 12 HRS |
| | LAMESHUR BAY | 642 AM | 2.5-5.7 FT | 12 HRS |
| | CHARLOTTE AMALIE | 654 AM | BELOW 1 FT | ----- |
| BVI | ANEGADA | 617 AM | 4.0-8.9 FT | 15 HRS |
| | VIRGIN GORDA | 631 AM | 2.0-4.5 FT | 12 HRS |
| | ROADTOWN | 730 AM | BELOW 1 FT | ----- |

OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED

* THE FOLLOWING ARE TSUNAMI WAVE OBSERVATIONS FROM COASTAL AND/OR DEEP-OCEAN SEA LEVEL GAUGES AT THE INDICATED LOCATIONS.

* THE MAXIMUM TSUNAMI HEIGHT IS THE HIGHEST MEASURED SO FAR. IT IS MEASURED WITH RESPECT TO THE TIDE LEVEL.

| GAUGE LOCATION | GAUGE COORDINATES | | TIME OF MEASURE (AST) | MAXIMUM TSUNAMI HEIGHT |
|---------------------|-------------------|-------|-----------------------|------------------------|
| | LAT | LON | | |
| KEY WEST FL | 24.6N | 81.8W | 1013 AM | 0.2 FT |
| VACA KEY FL | 24.7N | 81.1W | 952 AM | 0.2 FT |
| TRIDENT PIER FL | 28.4N | 80.6W | 934 AM | 6.0 FT |
| SAPZURRO CO | 8.7N | 77.4W | 922 AM | 0.3 FT |
| EL PORVENIR PM | 9.6N | 78.9W | 916 AM | 0.4 FT |
| SAN ANDRES CO | 12.6N | 81.7W | 911 AM | 0.3 FT |
| COVENAS CO | 9.4N | 76.2W | 909 AM | 0.2 FT |
| BRANDYWINE DELAWARE | 39.0N | 75.1W | 904 AM | 2.2 FT |
| WRIGHT BEACH NC | 34.2N | 77.8W | 855 AM | 3.7 FT |
| VIRGINIA KEY FL | 25.7N | 80.2W | 843 AM | 1.6 FT |
| PORT ROYAL JM | 17.9N | 76.8W | 843 AM | 1.0 FT |
| LEWES DE | 38.8N | 75.1W | 830 AM | 2.2 FT |

| | | | | |
|---------------------|-------|-------|--------|--------|
| GEORGE TOWN CY | 19.3N | 81.4W | 832 AM | 0.2 FT |
| WELLS ME | 43.3N | 70.6W | 830 AM | 0.6 FT |
| ATLANTIC CITY NJ | 39.4N | 74.4W | 826 AM | 2.2 FT |
| SANTA MARTA CO | 11.2N | 74.2W | 823 AM | 0.7 FT |
| OREGON INLET NC | 35.8N | 75.5W | 816 AM | 3.9 FT |
| PUERTO ESTRELLA | 12.4N | 71.3W | 803 AM | 0.6 FT |
| OCEAN CITY MD | 38.3N | 75.1W | 800 AM | 2.9 FT |
| DUCK PIER NC | 36.2N | 75.7W | 754 AM | 3.4 FT |
| CUTLER WHARF ME | 44.7N | 67.2W | 753 AM | 0.7 FT |
| PORT SAN ANDRES DO | 18.4N | 69.6W | 741 AM | 1.8 FT |
| JACMEL HT | 18.2N | 72.5W | 739 AM | 0.6 FT |
| HATTERAS NC | 35.2N | 75.7W | 739 AM | 4.3 FT |
| BULLEN BAY CURACAO | 12.2N | 69.0W | 733 AM | 1.9 FT |
| BARAHONA DO | 18.2N | 71.1W | 721 AM | 1.4 FT |
| ILE ROYAL GUIANA FR | 5.3N | 52.6W | 719 AM | 4.6 FT |
| CAP HAITIEN HT | 19.8N | 72.2W | 714 AM | 4.7 FT |
| PRICKLEY BAY GD | 12.0N | 61.8W | 708 AM | 2.7 FT |
| CHARLOTTEVILLE TT | 11.3N | 60.5W | 706 AM | 5.1 FT |
| DART 42407 | 15.3N | 68.2W | 659 AM | 0.1 FT |
| MAGUEYES ISLAND PR | 18.0N | 67.0W | 702 AM | 2.5 FT |
| CAJA DE MUERTOS PR | 17.9N | 66.5W | 650 AM | 1.7 FT |
| PUERTO PLATA DO | 19.8N | 70.7W | 650 AM | 6.5 FT |
| LAMESHUR BAY VI | 18.3N | 64.7W | 652 AM | 3.8 FT |
| PUNTA CANA DO | 18.5N | 68.4W | 651 AM | 4.8 FT |
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| MAYAGUEZ PR | 18.2N | 67.2W | 639 AM | 6.1 FT |
| ESPERANZA VIEQUES P | 18.1N | 65.5W | 634 AM | 1.7 FT |
| CALLIAQUA VC | 13.1N | 61.2W | 629 AM | 3.5 FT |
| YABUCOA PR | 18.1N | 65.8W | 631 AM | 2.7 FT |
| ARECIBO PR | 18.5N | 66.7W | 634 AM | 6.3 FT |
| LIMETREE VI | 17.7N | 64.8W | 628 AM | 2.8 FT |
| BASSETERRE KN | 17.3N | 62.7W | 624 AM | 4.4 FT |
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| DART 41424 | 32.9N | 72.5W | 627 AM | 0.5 FT |
| SAN JUAN PR | 18.5N | 66.1W | 628 AM | 7.6 FT |
| FORT DE FRANCE MQ | 14.6N | 61.1W | 626 AM | 3.1 FT |
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| DART 41420 | 23.5N | 67.3W | 615 AM | 0.8 FT |
| POINT A PITRE GP | 16.2N | 61.5W | 616 AM | 7.1 FT |
| LE PRECHEUR MARTINI | 14.8N | 61.2W | 613 AM | 2.8 FT |
| DESHAIES GUADELOUPE | 16.3N | 61.8W | 617 AM | 3.9 FT |
| PORT ST CHARLES BB | 13.3N | 59.6W | 618 AM | 5.7 FT |
| PARHAM AT | 17.1N | 61.8W | 605 AM | 6.6 FT |
| DART 44402 | 39.3N | 70.7W | 611 AM | 0.3 FT |
| DESIRADE GUADELOUPE | 16.3N | 61.1W | 600 AM | 6.5 FT |
| DART 41421 | 23.4N | 63.9W | 550 AM | 0.9 FT |
| DART 44401 | 37.5N | 50.0W | 347 AM | 0.6 FT |
| DAKAR SN | 14.7N | 17.4W | 325 AM | 4.6 FT |
| LHERBAUDIÈRE FR | 47.0N | 2.3W | 254 AM | 2.6 FT |
| LES SABLES DOLONNE | 46.5N | 1.8W | 253 AM | 2.4 FT |
| PALMEIRA CAPE VERDE | 16.8N | 23.0W | 238 AM | 7.3 FT |

| | | | | |
|-------------------|-------|-------|---------|---------|
| CONCARMEAU FR | 47.9N | 3.9W | 226 AM | 2.6 FT |
| LE CONQUET FR | 48.4N | 4.8W | 223 AM | 2.3 FT |
| BOUCAU BAYONNE FR | 43.5N | 1.5W | 135 AM | 2.4 FT |
| HORTA | 38.5N | 28.6W | 126 AM | 13.5 FT |
| FERROL ES | 43.5N | 8.3W | 100 AM | 10.6 FT |
| PONTA DELGADA PT | 37.7N | 25.7W | 1256 AM | 28.9 FT |
| ALGECIRAS ES | 36.2N | 5.4W | 1250 AM | 8.2 FT |
| SANTA MARIA | 36.9N | 25.1W | 1243 AM | 14.7 FT |
| GIBRALTAR UK | 36.1N | 5.3W | 1252 AM | 7.7 FT |
| LAGOMERA ES | 28.1N | 17.1W | 1244 AM | 7.1 FT |
| LA PALMA ES | 28.7N | 17.8W | 1242 AM | 20.7 FT |
| LASPALMAS ES | 28.1N | 15.4W | 1233 AM | 11.9 FT |
| LEIXOES | 41.2N | 8.7W | 1225 AM | 13.3 FT |
| LAGOS | 37.1N | 8.7W | 1207 AM | 33.7 FT |
| FUNCHAL | 32.6N | 16.9W | 1207 AM | 17.0 FT |
| PENICHE | 39.3N | 9.4W | 1207 AM | 29.3 FT |
| CASCAIS PT | 38.7N | 9.4W | 1152 PM | 49.3 FT |
| SINES | 38.0N | 8.9W | 1147 PM | 47.5 FT |

IMPACTS

- * IMPACTS WILL VARY AT DIFFERENT LOCATIONS WITHIN PUERTO RICO AND THE VIRGIN ISLANDS.
- * SEA LEVEL FLUCTUATIONS THAT ARE GENERALLY LESS THAN 3 FEET ABOVE AND BELOW THE TIDE LEVEL.
- * WAVES AND CURRENTS THAT CAN DROWN OR INJURE PEOPLE IN THE WATER.
- * WAVES AND CURRENTS ON BEACHES AND IN HARBORS... MARINAS... BAYS... AND INLETS THAT MAY BE ESPECIALLY DANGEROUS.
- * THE HAZARD BEGAN AROUND 616 AM AST ON SATURDAY JANUARY 30 2016 AND IT CAN PERSIST FOR MANY HOURS OR LONGER.

PRELIMINARY EARTHQUAKE PARAMETERS

- * MAGNITUDE 9.0
- * ORIGIN TIME 1100 PM AST JAN 29 2016
- * COORDINATES 36.5 NORTH 12.7 WEST
- * DEPTH 8 MILES
- * LOCATION AZORES ISLANDS

NEXT UPDATE AND ADDITIONAL INFORMATION

- * THE NEXT MESSAGE WILL BE ISSUED IN ONE HOUR... OR SOONER IF THE SITUATION WARRANTS.

- * FURTHER INFORMATION ABOUT THIS EVENT AND ANY TSUNAMI THREAT TO PUERTO RICO AND THE VIRGIN ISLANDS MAY BE FOUND ON THE INTERNET AT PTWC.WEATHER.GOV AND AT WWW.TSUNAMI.GOV.
- * INFORMATION REGARDING ANY TSUNAMI THREAT TO US GULF OR ATLANTIC COASTS WILL BE ISSUED BY THE US NATIONAL TSUNAMI WARNING CENTER AND CAN BE FOUND ON THE INTERNET AT NTWC.ARH.NOAA.GOV AND AT WWW.TSUNAMI.GOV.
- * AUTHORITATIVE INFORMATION ABOUT THE EARTHQUAKE CAN BE OBTAINED FROM THE CORRESPONDING REGIONAL SEISMIC NETWORK OR THE U.S. GEOLOGICAL SURVEY ON THE INTERNET AT EARTHQUAKE.USGS.GOV/EARTHQUAKES -ALL LOWERCASE LETTERS-.

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| SPANISH VERSION |
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ZCZC
WECA50 PHEB 301530
TSUSP1

MENSAJE DE TSUNAMI NUMERO 16
SMN CENTRO DE ALERTAS DE TSUNAMI DEL PACIFICO EWA BEACH HI
1130 AM AST SAT JAN 30 2016

AMZ712-715-725-735-742-745-PRZ001>003-005-007-008-010>013-
VIZ001-002-301730-
ZONAS COSTERAS DE PUERTO RICO - LAS ISLAS VÍRGENES ESTADOUNIDENSES Y
LAS ISLAS VÍRGENES BRITÁNICAS

...EL AVISO DE TSUNAMI HA SIDO CANCELADA Y UNA ADVERTENCIA ESTA
AHORA EN EFECTO...

AUDIENCIA

- * FUNCIONARIOS GUBERNAMENTALES... MEDIOS DE PRENSA... Y EL PUBLICO EN GENERAL EN PUERTO RICO... LAS ISLAS VIRGENES DE LOS ESTADOS UNIDOS... Y LAS ISLAS VIRGENES BRITANICAS.

ACTUALIZACIONES EN ESTE MENSAJE

- * EL AVISO DE TSUNAMI HA SIDO CANCELADA Y UNA ADVERTENCIA ESTA AHORA EN EFECTO PARA PUERTO RICO... LAS ISLAS VIRGENES DE LOS ESTADOS UNITOS... Y LAS ISLAS VIRGENES BRITANICAS.

EVALUACION

- * UN TERREMOTO CON MAGNITUD PRELIMINAR 9.0 HA OCURRIDO CERCA DE LAS ISLAS AZORES A LAS 1100 PM AST EL VIERNES 29 DE ENERO DEL 2016.
- * UN TSUNAMI HA SIDO GENERADO POR ESTE TERREMOTO.
- * BASANDOSE EN EL ANALISIS DE TODOS LOS DATOS DISPONIBLES... EL PELIGRO DE TSUNAMI PARA PUERTO RICO Y LAS ISLAS VIRGENES CONTINUA DEBIDO A VARIACIONES DEL NIVEL MAR Y CORRIENTES MARINAS FUERTES QUE PODRIAN PRESENTAR PELIGRO A LO LARGO DE COSTAS... PLAYAS... PUERTOS... Y AGUAS COSTERAS.

ACCIONES RECOMENDADAS

- * LAS ACCIONES REQUERIDAS PARA PROTEGER VIDAS HUMANAS... LA SEGURIDAD Y LOS BIENES MATERIALES VARIARAN DENTRO DE LAS ZONA EN ESTADO DE ADVERTENCIA.
- * PERSONAS LOCALIZADAS EN EL MAR O CERCA DEL MAR DEBEN SALIR DEL AGUA... FUERA DE LA PLAYA Y ALEJARSE DE PUERTOS... MARINAS... BAHIAS Y ENSENADAS.
- * MANTENGASE ALERTA Y SIGA LAS INSTRUCCIONES PROVENIENTES DE FUNCIONARIOS DE LAS AGENCIAS LOCALES PARA EL MANEJO DE EMERGENCIAS YA QUE LAS MISMAS DISPONEN DE INFORMACION O INSTRUCCIONES MAS ESPECIFICAS PARA SU LOCALIDAD.
- * MARINEROS - DONDE EL TIEMPO Y LAS CONDICIONES PERMITAN... MUEVAN SU EMBARCACION MAR AFUERA HACIA PROFUNDIDADES DE AL MENOS 450 PIES.
- * MARINEROS - SI SE ENCUENTRAN MAR AFUERA... EVITEN ADENTRARSE EN AGUAS SOMERAS... PUERTOS... MARINAS... BAHIAS Y ENSENADAS PARA EVITAR ESCOMBROS TANTO FLOTANTES COMO SUMERGIDOS Y CORRIENTES FUERTES.

PRONOSTICO DE LA ACTIVIDAD DEL TSUNAMI

- * LOS TIEMPOS DE ARRIBO ESTIMADOS -TAE- DE LA PRIMERA OLA DEL TSUNAMI SE PROVEEN A CONTINUACION.
- * LOS TIEMPOS DE ARRIBO REALES PUEDEN DIFERIR DE LOS ESTIMADOS Y LA PRIMERA OLA PUEDE QUE NO SEA LA MAS GRANDE.
- * LA ALTURA PRONOSTICADA ES EL NIVEL MAXIMO DEL AGUA POR ENCIMA DEL NIVEL DE MAREA QUE SE ESPERA A LO LARGO DE ESA SECCION DE LA COSTA.
- * LA DURACION PRONOSTICADA ES EL TIEMPO DURANTE EL CUAL SE

ESPERA QUE EL TSUNAMI PRODUZCA OLAS Y CORRIENTES PELIGROSAS.

* UN TSUNAMI ES UN TREN DE OLAS Y EL TIEMPO ENTRE OLAS PUEDE VARIAR DESDE CINCO MINUTOS HASTA UNA HORA.

| TERRITORIO | LOCALIZACION COSTERA | TAE (AST) | ----PRONOSTICO---- | |
|-------------|-------------------------|--------------|--------------------|----------|
| | | | ALTURA | DURACION |
| PUERTO RICO | SAN JUAN | 616 AM | 5.0-11. FT | 18 HRS |
| | ARECIBO | 619 AM | 4.2-9.4 FT | 15 HRS |
| | YABUCOA | 623 AM | 1.8-4.1 FT | 12 HRS |
| | MAYAGUEZ | 628 AM | 4.0-9.0 FT | 15 HRS |
| | AGUADILLA | 629 AM | 3.6-8.0 FT | 15 HRS |
| | PENUELAS | 635 AM | 1.6-3.5 FT | 12 HRS |
| | PONCE | 636 AM | 1.4-3.2 FT | 12 HRS |
| | VIEQUES IS | 637 AM | BELOW 1 FT | ----- |
| | MONA ISLAND | 637 AM | 2.5-5.5 FT | 12 HRS |
| | CAJA DE MUERTOS | 644 AM | 1.1-2.5 FT | 6 HRS |
| | FAJARDO | 648 AM | 3.9-8.8 FT | 15 HRS |
| | MAGUEYES IS | 649 AM | 1.6-3.7 FT | 12 HRS |
| CULEBRA IS | 652 AM | 3.5-7.9 FT | 15 HRS | |
| USVI | CHRISTIANSTED | 616 AM | 2.2-4.9 FT | 12 HRS |
| | LIMETREE | 619 AM | 1.9-4.2 FT | 12 HRS |
| | LAMESHUR BAY | 642 AM | 2.5-5.7 FT | 12 HRS |
| | CHARLOTTE AMALIE | 654 AM | BELOW 1 FT | ----- |
| BVI | ANEGADA | 617 AM | 4.0-8.9 FT | 15 HRS |
| | VIRGIN GORDA | 631 AM | 2.0-4.5 FT | 12 HRS |
| | ROADTOWN | 730 AM | BELOW 1 FT | ----- |

OBSERVACIONES DE ACTIVIDAD DEL TSUNAMI - ACTUALIZADO

* LO QUE SIGUE SON LAS OBSERVACIONES DE LAS OLAS DEL TSUNAMI REGISTRADAS EN INSTRUMENTOS DE MEDICION EN ESTACIONES EN LA COSTA Y/O BOYAS EN AGUAS PROFUNDAS EN LOS PUNTOS INDICADOS. LA ALTURA MAXIMA DEL TSUNAMI ES MEDIDA CON RESPECTO AL NIVEL DE LA MAREA.

* LA ALTURA MAXIMA DEL TSUNAMI ES EL VALOR MAXIMO OBSERVADO HASTA AHORA Y SE MIDE CON RESPECTO AL NIVEL DE LA MAREA.

| LOCALIZACION DEL INSTRUMENTO | COORDENADAS DEL INSTRUMENTO | | TIEMPO DEL REGISTRO (AST) | ALTURA MAXIMA DEL TSUNAMI |
|------------------------------------|-----------------------------------|-------|------------------------------------|------------------------------------|
| | LAT | LON | | |
| KEY WEST FL | 24.6N | 81.8W | 1013 AM | 0.2 FT |
| VACA KEY FL | 24.7N | 81.1W | 952 AM | 0.2 FT |
| TRIDENT PIER FL | 28.4N | 80.6W | 934 AM | 6.0 FT |
| SAPZURRO CO | 8.7N | 77.4W | 922 AM | 0.3 FT |
| EL PORVENIR PM | 9.6N | 78.9W | 916 AM | 0.4 FT |

| | | | | |
|---------------------|-------|-------|--------|--------|
| SAN ANDRES CO | 12.6N | 81.7W | 911 AM | 0.3 FT |
| COVENAS CO | 9.4N | 76.2W | 909 AM | 0.2 FT |
| BRANDYWINE DELAWARE | 39.0N | 75.1W | 904 AM | 2.2 FT |
| WRIGHT BEACH NC | 34.2N | 77.8W | 855 AM | 3.7 FT |
| VIRGINIA KEY FL | 25.7N | 80.2W | 843 AM | 1.6 FT |
| PORT ROYAL JM | 17.9N | 76.8W | 843 AM | 1.0 FT |
| LEWES DE | 38.8N | 75.1W | 830 AM | 2.2 FT |
| GEORGE TOWN CY | 19.3N | 81.4W | 832 AM | 0.2 FT |
| WELLS ME | 43.3N | 70.6W | 830 AM | 0.6 FT |
| ATLANTIC CITY NJ | 39.4N | 74.4W | 826 AM | 2.2 FT |
| SANTA MARTA CO | 11.2N | 74.2W | 823 AM | 0.7 FT |
| OREGON INLET NC | 35.8N | 75.5W | 816 AM | 3.9 FT |
| PUERTO ESTRELLA | 12.4N | 71.3W | 803 AM | 0.6 FT |
| OCEAN CITY MD | 38.3N | 75.1W | 800 AM | 2.9 FT |
| DUCK PIER NC | 36.2N | 75.7W | 754 AM | 3.4 FT |
| CUTLER WHARF ME | 44.7N | 67.2W | 753 AM | 0.7 FT |
| PORT SAN ANDRES DO | 18.4N | 69.6W | 741 AM | 1.8 FT |
| JACMEL HT | 18.2N | 72.5W | 739 AM | 0.6 FT |
| HATTERAS NC | 35.2N | 75.7W | 739 AM | 4.3 FT |
| BULLEN BAY CURACAO | 12.2N | 69.0W | 733 AM | 1.9 FT |
| BARAHONA DO | 18.2N | 71.1W | 721 AM | 1.4 FT |
| ILE ROYAL GUIANA FR | 5.3N | 52.6W | 719 AM | 4.6 FT |
| CAP HAITIEN HT | 19.8N | 72.2W | 714 AM | 4.7 FT |
| PRICKLEY BAY GD | 12.0N | 61.8W | 708 AM | 2.7 FT |
| CHARLOTTEVILLE TT | 11.3N | 60.5W | 706 AM | 5.1 FT |
| DART 42407 | 15.3N | 68.2W | 659 AM | 0.1 FT |
| MAGUEYES ISLAND PR | 18.0N | 67.0W | 702 AM | 2.5 FT |
| CAJA DE MUERTOS PR | 17.9N | 66.5W | 650 AM | 1.7 FT |
| PUERTO PLATA DO | 19.8N | 70.7W | 650 AM | 6.5 FT |
| LAMESHUR BAY VI | 18.3N | 64.7W | 652 AM | 3.8 FT |
| PUNTA CANA DO | 18.5N | 68.4W | 651 AM | 4.8 FT |
| MONA ISLAND PR | 18.1N | 67.9W | 652 AM | 3.7 FT |
| AGUADILLA PR | 18.5N | 67.2W | 643 AM | 5.4 FT |
| MAYAGUEZ PR | 18.2N | 67.2W | 639 AM | 6.1 FT |
| ESPERANZA VIEQUES P | 18.1N | 65.5W | 634 AM | 1.7 FT |
| CALLIAQUA VC | 13.1N | 61.2W | 629 AM | 3.5 FT |
| YABUCOA PR | 18.1N | 65.8W | 631 AM | 2.7 FT |
| ARECIBO PR | 18.5N | 66.7W | 634 AM | 6.3 FT |
| LIMETREE VI | 17.7N | 64.8W | 628 AM | 2.8 FT |
| BASSETERRE KN | 17.3N | 62.7W | 624 AM | 4.4 FT |
| ST CROIX VI | 17.7N | 64.7W | 623 AM | 3.3 FT |
| DART 41424 | 32.9N | 72.5W | 627 AM | 0.5 FT |
| SAN JUAN PR | 18.5N | 66.1W | 628 AM | 7.6 FT |
| FORT DE FRANCE MQ | 14.6N | 61.1W | 626 AM | 3.1 FT |
| BRIDGEPORT BB | 13.1N | 59.6W | 620 AM | 5.9 FT |
| ROSEAU DM | 15.3N | 61.4W | 616 AM | 2.7 FT |
| LE ROBERT MARTINIQU | 14.7N | 60.9W | 615 AM | 7.4 FT |
| DART 41420 | 23.5N | 67.3W | 615 AM | 0.8 FT |
| POINT A PITRE GP | 16.2N | 61.5W | 616 AM | 7.1 FT |
| LE PRECHEUR MARTINI | 14.8N | 61.2W | 613 AM | 2.8 FT |
| DESHAIES GUADELOUPE | 16.3N | 61.8W | 617 AM | 3.9 FT |
| PORT ST CHARLES BB | 13.3N | 59.6W | 618 AM | 5.7 FT |
| PARHAM AT | 17.1N | 61.8W | 605 AM | 6.6 FT |
| DART 44402 | 39.3N | 70.7W | 611 AM | 0.3 FT |

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|---------------------|-------|-------|---------|---------|
| DESIRADE GUADELOUPE | 16.3N | 61.1W | 600 AM | 6.5 FT |
| DART 41421 | 23.4N | 63.9W | 550 AM | 0.9 FT |
| DART 44401 | 37.5N | 50.0W | 347 AM | 0.6 FT |
| DAKAR SN | 14.7N | 17.4W | 325 AM | 4.6 FT |
| LHERBAUDIÈRE FR | 47.0N | 2.3W | 254 AM | 2.6 FT |
| LES SABLES DOLONNE | 46.5N | 1.8W | 253 AM | 2.4 FT |
| PALMEIRA CAPE VERDE | 16.8N | 23.0W | 238 AM | 7.3 FT |
| CONCARMEAU FR | 47.9N | 3.9W | 226 AM | 2.6 FT |
| LE CONQUET FR | 48.4N | 4.8W | 223 AM | 2.3 FT |
| BOUCAU BAYONNE FR | 43.5N | 1.5W | 135 AM | 2.4 FT |
| HORTA | 38.5N | 28.6W | 126 AM | 13.5 FT |
| FERROL ES | 43.5N | 8.3W | 100 AM | 10.6 FT |
| PONTA DELGADA PT | 37.7N | 25.7W | 1256 AM | 28.9 FT |
| ALGECIRAS ES | 36.2N | 5.4W | 1250 AM | 8.2 FT |
| SANTA MARIA | 36.9N | 25.1W | 1243 AM | 14.7 FT |
| GIBRALTAR UK | 36.1N | 5.3W | 1252 AM | 7.7 FT |
| LAGOMERA ES | 28.1N | 17.1W | 1244 AM | 7.1 FT |
| LA PALMA ES | 28.7N | 17.8W | 1242 AM | 20.7 FT |
| LASPALMAS ES | 28.1N | 15.4W | 1233 AM | 11.9 FT |
| LEIXOES | 41.2N | 8.7W | 1225 AM | 13.3 FT |
| LAGOS | 37.1N | 8.7W | 1207 AM | 33.7 FT |
| FUNCHAL | 32.6N | 16.9W | 1207 AM | 17.0 FT |
| PENICHE | 39.3N | 9.4W | 1207 AM | 29.3 FT |
| CASCAIS PT | 38.7N | 9.4W | 1152 PM | 49.3 FT |
| SINES | 38.0N | 8.9W | 1147 PM | 47.5 FT |

IMPACTOS

- * LOS IMPACTOS VARIARÁN PARA DIFERENTES LOCALIDADES EN PUERTO RICO Y LAS ISLAS VIRGENES.
- * FLUCTUACIONES DEL NIVEL DEL MAR POR LO GENERAL NO MAYORES DE 3 PIES TANTO POR ENCIMA COMO POR DEBAJO DEL NIVEL DE MAREA.
- * OLAS Y CORRIENTES QUE PUEDEN AHOGAR O LESIONAR A PERSONAS EN EL AGUA.
- * OLAS Y CORRIENTES EN PLAYAS Y PUERTOS... MARINAS... BAHIAS... Y ENSENADAS QUE PUEDEN RESULTAR ESPECIALMENTE PELIGROSAS.
- * EL PELIGRO COMENZO A PARTIR DE LA(S) 616 AM AST EL SABADO 30 DE ENERO DEL 2016 Y PUEDE PERSISTIR POR VARIAS HORAS O MAS.

PARAMETROS PRELIMINARES DEL TERREMOTO

- * MAGNITUD 9.0
- * TIEMPO DE ORIGEN 1100 PM AST ENE 29 2016
- * COORDENADAS 36.5 NORTE 12.7 OESTE
- * PROFUNDIDAD 8 MILLAS
- * LOCALIZACION CERCA DE LAS ISLAS AZORES

PROXIMA ACTUALIZACION E INFORMACION ADICIONAL

- * EL PROXIMO MENSAJE SERA EMITIDO EN UNA HORA... O MAS PRONTO SI LA SITUACION ASI LO AMERITA.
- * MAS INFORMACION ACERCA DE ESTE EVENTO PUEDE SER ACCESADA EN INTERNET EN LOS SITIOS WEB PTWC.WEATHER.GOV Y WWW.TSUNAMI.GOV.
- * INFORMACION ACERCA DEL PELIGRO DE TSUNAMI PARA COSTAS ESTADOUNIDENSES EN EL GOLFO DE MEXICO Y EL ATLANTICO SERA EMITIDA POR EL CENTRO NACIONAL DE ALERTAS DE TSUNAMIS Y PUEDE SER ACCESADA EN INTERNET EN LOS SITIOS WEB NTWC.ARH.NOAA.GOV Y WWW.TSUNAMI.GOV.
- * INFORMACION OFICIAL AUTORIZADA ACERCA DE ESTE TERREMOTO PUEDE SER PROVEIDA POR LA CORRESPONDIENTE RED SISMICA REGIONAL O EL SERVICIO GEOLOGICO DE LOS ESTADOS UNIDOS EN SU SITIO WEB EARTHQUAKE.USGS.GOV/EARTHQUAKES -TODO EN MINUSCULAS-.

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| NWR VERSION |
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ZCZC
WECA60 PHEB 301530
TSUCA1

BULLETIN
TSUNAMI MESSAGE NUMBER 16
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
1130 AM AST SAT JAN 30 2016

AMZ712-715-725-735-742-745-PRZ001>003-005-007-008-010>013-
VIZ001-002-301730-
/O.CAN.PHEB.TS.W.0009.000000T0000Z-000000T0000Z/
/O.NEW.PHEB.TS.Y.0014.160130T1530Z-000000T0000Z/
COASTAL AREAS OF PUERTO RICO - THE U.S. VIRGIN ISLANDS AND
THE BRITISH VIRGIN ISLANDS
1130 AM AST SAT JAN 30 2016

...THE TSUNAMI WARNING IS CANCELED AND A TSUNAMI ADVISORY IS NOW
IN EFFECT...

PERSONS LOCATED IN OR NEAR THE OCEAN SHOULD MOVE OUT OF THE
WATER... OFF THE BEACH AND AWAY FROM HARBORS... MARINAS... BAYS
AND INLETS.

AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 9.0 OCCURRED NEAR
THE AZORES ISLANDS AT 1100 PM AST ON FRIDAY JANUARY 29 2016.

A TSUNAMI WAS GENERATED BY THIS EARTHQUAKE.

THE MAXIMUM TSUNAMI HEIGHT OBSERVED SO FAR ON A GAUGE IN PUERTO RICO OR THE VIRGIN ISLANDS IS 7.6 FEET AT SAN JUAN.

BASED ON ALL AVAILABLE DATA... THERE IS A CONTINUING TSUNAMI THREAT TO PUERTO RICO AND THE VIRGIN ISLANDS OF SEA LEVEL FLUCTUATIONS AND STRONG OCEAN CURRENTS THAT COULD BE A HAZARD ALONG COASTS... BEACHES... IN HARBORS... AND IN COASTAL WATERS.

THE HAZARD BEGAN AROUND 616 AM AST ON SATURDAY JANUARY 30 2016 AND IT CAN PERSIST FOR MANY HOURS OR LONGER.

BE ALERT TO AND FOLLOW INSTRUCTIONS FROM LOCAL EMERGENCY MANAGEMENT OFFICIALS BECAUSE THEY MAY HAVE MORE DETAILED OR SPECIFIC INFORMATION FOR YOUR LOCATION.

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Distant Earthquake – Tsunami Advisory Cancellation

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| ENGLISH VERSION |
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ZCZC
WECA40 PHEB 302130
TSUCAR

TSUNAMI MESSAGE NUMBER 21
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
530 PM AST SAT JAN 30 2016

AMZ712-715-725-735-742-745-PRZ001>003-005-007-008-010>013-
VIZ001-002-302330-
COASTAL AREAS OF PUERTO RICO - THE U.S. VIRGIN ISLANDS AND
THE BRITISH VIRGIN ISLANDS

...THE TSUNAMI ADVISORY IS NOW CANCELED...

AUDIENCE

* GOVERNMENT OFFICIALS... MEDIA... AND GENERAL PUBLIC OF PUERTO RICO... THE U.S. VIRGIN ISLANDS... AND THE BRITISH VIRGIN ISLANDS.

UPDATES IN THIS MESSAGE

* THE TSUNAMI ADVISORY IS NOW CANCELED FOR PUERTO RICO... THE U.S. VIRGIN ISLANDS... AND THE BRITISH VIRGIN ISLANDS.

EVALUATION

- * AN EARTHQUAKE WITH A PRELIMINARY MAGNITUDE OF 9.0 OCCURRED NEAR THE AZORES ISLANDS AT 1100 PM AST ON FRIDAY JANUARY 29 2016.
- * BASED ON ALL AVAILABLE DATA... THERE IS NO FURTHER TSUNAMI THREAT TO PUERTO RICO AND THE VIRGIN ISLANDS ALTHOUGH MINOR SEA LEVEL FLUCTUATIONS MAY CONTINUE.

RECOMMENDED ACTIONS

- * FOLLOW INSTRUCTIONS FROM PUERTO RICO AND VIRGIN ISLANDS EMERGENCY MANAGEMENT AGENCIES BECAUSE THEY MAY HAVE SPECIFIC INFORMATION OR INSTRUCTIONS FOR YOUR LOCATION.
- * BE OBSERVANT AND EXERCISE NORMAL CAUTION IF YOU ARE NEAR OR IN THE OCEAN.
- * OTHERWISE... NO FURTHER ACTION IS REQUIRED.

OBSERVATIONS OF TSUNAMI ACTIVITY

- * REFER TO OBSERVATIONS OF TSUNAMI ACTIVITY POSTED PREVIOUSLY.

IMPACTS

- * MINOR SEA LEVEL FLUCTUATIONS MAY CONTINUE OVER THE NEXT FEW HOURS.

PRELIMINARY EARTHQUAKE PARAMETERS

- * MAGNITUDE 9.0
- * ORIGIN TIME 1100 PM AST JAN 29 2016
- * COORDINATES 36.5 NORTH 12.7 WEST
- * DEPTH 8 MILES
- * LOCATION AZORES ISLANDS

NEXT UPDATE AND ADDITIONAL INFORMATION

- * THIS WILL BE THE FINAL STATEMENT ISSUED FOR THIS EVENT UNLESS NEW INFORMATION IS RECEIVED OR THE SITUATION CHANGES.

- * FURTHER INFORMATION ABOUT THIS EVENT AND ANY TSUNAMI THREAT TO PUERTO RICO AND THE VIRGIN ISLANDS MAY BE FOUND ON THE INTERNET AT PTWC.WEATHER.GOV AND AT WWW.TSUNAMI.GOV.
- * INFORMATION REGARDING ANY TSUNAMI THREAT TO US GULF OR ATLANTIC COASTS WILL BE ISSUED BY THE US NATIONAL TSUNAMI WARNING CENTER AND CAN BE FOUND ON THE INTERNET AT NTWC.ARH.NOAA.GOV AND AT WWW.TSUNAMI.GOV.
- * AUTHORITATIVE INFORMATION ABOUT THE EARTHQUAKE CAN BE OBTAINED FROM THE CORRESPONDING REGIONAL SEISMIC NETWORK OR THE U.S. GEOLOGICAL SURVEY ON THE INTERNET AT EARTHQUAKE.USGS.GOV/EARTHQUAKES -ALL LOWERCASE LETTERS-.

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| SPANISH VERSION |
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ZCZC
WECA50 PHEB 302130
TSUSP1

MENSAJE DE TSUNAMI NUMERO 21
SMN CENTRO DE ALERTAS DE TSUNAMI DEL PACIFICO EWA BEACH HI
530 PM AST SAT JAN 30 2016

AMZ712-715-725-735-742-745-PRZ001>003-005-007-008-010>013-
VIZ001-002-302330-
ZONAS COSTERAS DE PUERTO RICO - LAS ISLAS VÍRGENES ESTADOUNIDENSES Y
LAS ISLAS VÍRGENES BRITÁNICAS

...LA ADVERTENCIA DE TSUNAMI AHORA HA SIDO CANCELADA...

AUDIENCIA

- * FUNCIONARIOS GUBERNAMENTALES... MEDIOS DE PRENSA... Y EL PUBLICO EN GENERAL EN PUERTO RICO... LAS ISLAS VIRGENES DE LOS ESTADOS UNIDOS... Y LAS ISLAS VIRGENES BRITANICAS.

ACTUALIZACIONES EN ESTE MENSAJE

- * LA ADVERTENCIA DE TSUNAMI AHORA HA SIDO CANCELADA PARA PUERTO RICO... LAS ISLAS VIRGENES DE LOS ESTADOS UNITOS... Y LAS ISLAS VIRGENES BRITANICAS.

EVALUACION

- * UN TERREMOTO CON MAGNITUD PRELIMINAR 9.0 HA OCURRIDO CERCA DE LAS ISLAS AZORES A LAS 1100 PM AST EL VIERNES 29 DE ENERO DEL 2016.
- * BASANDOSE EN EL ANALYSIS DE TODOS LOS DATOS DISPONIBLES... YA NO EXISTE NINGUN PELIGRO DE TSUNAMI PARA PUERTO RICO Y LAS ISLAS VIRGENES DEBIDO A ESTE TERREMOTO PERO FLUCTUACIONES MENORES DEL NIVEL DEL MAR PUEDEN CONTINUAR.

ACCIONES RECOMENDADAS

- * SIGA LAS INSTRUCCIONES PROVENIENTES DE LAS AGENCIAS DE MANEJO DE EMERGENCIAS EN PUERTO RICO Y LAS ISLAS VIRGENES YA QUE LAS MISMAS DISPONEN DE INFORMACION O INSTRUCCIONES ESPECIFICAS PARA SU LOCALIDAD.
- * SEA OBSERVADOR Y CAUTELOSO SI SE ENCUENTRA CERCA O DENTRO DEL MAR.
- * DE LO CONTRARIO... NO SE REQUIERE NINGUNA OTRA ACCION.

OBSERVACIONES DE ACTIVIDAD DEL TSUNAMI

- * REFIERASE A LAS OBSERVACIONES DEL TSUNAMI REPORTADAS ANTERIORMENTE.

IMPACTOS

- * FLUCTUACIONES MENORES DEL NIVEL DEL MAR PUEDE CONTINUAR DURANTE LAS PROXIMAS HORAS.

PARAMETROS PRELIMINARES DEL TERREMOTO

- * MAGNITUD 9.0
- * TIEMPO DE ORIGEN 1100 PM AST ENE 29 2016
- * COORDENADAS 36.5 NORTE 12.7 OESTE
- * PROFUNDIDAD 8 MILLAS
- * LOCALIZACION CERCA DE LAS ISLAS AZORES

PROXIMA ACTUALIZACION E INFORMACION ADICIONAL

- * ESTE SERA EL ULTIMO COMUNICADO EMITIDO PARA ESTE EVENTO A NO SER QUE SE RECIBA NUEVA INFORMACION O LA SITUACION CAMBIE.
- * MAS INFORMACION ACERCA DE ESTE EVENTO PUEDE SER ACCESADA EN

INTERNET EN LOS SITIOS WEB PTWC.WEATHER.GOV Y
WWW.TSUNAMI.GOV.

- * INFORMACION ACERCA DEL PELIGRO DE TSUNAMI PARA COSTAS ESTADOUNIDENSES EN EL GOLFO DE MEXICO Y EL ATLANTICO SERA EMITIDA POR EL CENTRO NACIONAL DE ALERTAS DE TSUNAMIS Y PUEDE SER ACCESADA EN INTERNET EN LOS SITIOS WEB NTWC.ARH.NOAA.GOV Y WWW.TSUNAMI.GOV.
- * INFORMACION OFICIAL AUTORIZADA ACERCA DE ESTE TERREMOTO PUEDE SER PROVEIDA POR LA CORRESPONDIENTE RED SISMICA REGIONAL O EL SERVICIO GEOLOGICO DE LOS ESTADOS UNIDOS EN SU SITIO WEB EARTHQUAKE.USGS.GOV/EARTHQUAKES -TODO EN MINUSCULAS-.

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| NWR VERSION |
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ZCZC
WECA60 PHEB 302130
TSUCA1

BULLETIN
TSUNAMI MESSAGE NUMBER 21
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
530 PM AST SAT JAN 30 2016

AMZ712-715-725-735-742-745-PRZ001>003-005-007-008-010>013-
VIZ001-002-302330-
/O.CAN.PHEB.TS.Y.0014.000000T0000Z-000000T0000Z/
COASTAL AREAS OF PUERTO RICO - THE U.S. VIRGIN ISLANDS AND
THE BRITISH VIRGIN ISLANDS
530 PM AST SAT JAN 30 2016

...THE TSUNAMI ADVISORY IS NOW CANCELED...

FOLLOW INSTRUCTIONS FROM PUERTO RICO AND VIRGIN ISLANDS EMERGENCY
MANAGEMENT AGENCIES BECAUSE THEY MAY HAVE SPECIFIC INFORMATION
OR INSTRUCTIONS FOR YOUR LOCATION.

BE OBSERVANT AND EXERCISE NORMAL CAUTION IF YOU ARE NEAR OR IN
THE OCEAN.

OTHERWISE... NO FURTHER ACTION IS REQUIRED.

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