Exercise
LANTEX12
Participant Handbook

An Atlantic/Gulf of Mexico Tsunami Warning
Exercise
March 28, 2012

US National Tsunami Hazard Mitigation Program
Warning Coordination Subcommittee
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0. Summary

The US NOAA/National Weather Service and the National Tsunami Hazard Mitigation Program will be conducting a tsunami exercise on March 28, 2012 to assist tsunami preparedness efforts along the U.S. and Canadian east coasts, the Gulf of Mexico, and in Puerto Rico and the Virgin Islands. The LANTEX12 tsunami exercise consists of two separate scenarios. Scenario 1 simulates a Gulf of Mexico earthquake west of Florida which generates a tsunami by triggering a submarine slump on the continental slope. The second scenario consists of an earthquake located east of South Carolina which also generates a tsunami by triggering a slump along the continental slope further to the east. The earthquakes for both of the scenarios will be on March 28, 2012 at 1300 UTC and the initial warnings would be at 1304 UTC. The initial dummy message will be issued by the West Coast/Alaska Tsunami Warning Center (WCATWC) at 1304 UTC and disseminated over all its standard broadcast channels. The dummy message is issued to test communications with Emergency Management Organizations (EMOs) and Tsunami Warning Focal Points, and to start the exercise. It will be the only exercise message broadcast from the WCATWC excluding special email messages. The manual includes the scenario information, time lines, the WCATWC exercise messages and a model press release. High levels of vulnerability and risk to life and livelihoods from tsunamis along the U.S. and Canadian east coasts, the Gulf of Mexico, and in Puerto Rico and the Virgin Islands should provide a strong incentive for local jurisdictions to prepare for a tsunami and participate in this exercise. As this is an exercise for jurisdictions currently served by the WCATWC, no products will be issued by the PTWC for this exercise, but all are welcome to use this manual to develop their own exercise.

1. Background

This tsunami exercise is being conducted to assist tsunami preparedness efforts along the U.S. and Canadian east coasts, the Gulf of Mexico, and in Puerto Rico and the Virgin Islands. While the historic occurrence of destructive tsunamis along the US and Canadian Atlantic coasts indicate these events are rare, there are a few areas in the Atlantic basin and Gulf of Mexico where tsunamis may be generated and the risk to life associated with these events is very high. These areas include the coasts of Puerto Rico, the US Virgin Islands, the region east of the Azores Islands, and portions of the continental slope off the US and Canadian coast due to sub-sea landslides.

The LANTEX12 tsunami exercise consists of two separate scenarios. Scenario 1 simulates a Gulf of Mexico earthquake west of Florida which generates a tsunami by triggering a submarine slump on the continental slope. Tsunami model studies conducted by Juan Horillo at Texas A&M U. based on previous USGS geologic studies are used to generate the impacts of this event (Horillo, et al., 2010).

The second scenario consists of an earthquake located east of South Carolina which also generates a tsunami by triggering a slump along the continental slope further to the east. Geologic and tsunami studies performed by Uri ten Brink and others at the
United States Geological Survey provide guidance for potential events in this region (ten Brink, et al., 2008).

Participants in the exercise can choose the most appropriate scenario for their region. Due to the shoreline configurations of the Atlantic and Gulf of Mexico, tsunami modelling studies indicate tsunamis generated in the Atlantic are not expected to significantly impact the Gulf and conversely tsunamis generated in the Gulf are not expected to impact Atlantic shores (Knight, 2006).

**Scenario 1: Gulf of Mexico**
The following description of Scenario 1 is based on the *Regional Assessment of Tsunami Potential in the Gulf of Mexico* (ten Brink et al., 2009).

The Gulf Coast of the U.S. is vulnerable to tsunami damage because major population centers and industrial facilities are located near the shoreline at low-lying elevations. This is in comparison with the Pacific coast of the United States where tsunamis are more frequent but the coastal regions are more sparsely populated and the coastline has much greater relief. A challenge for scientists is to define and quantify the hazard for these rare events.

Tsunami run-up can be significant along coastlines proximal to submarine landslides, as exemplified by the 1929 Grand Banks tsunami, offshore Nova Scotia. Some of the main points identified in the ten Brink report are listed below.

- There is sufficient evidence to consider submarine landslides in the Gulf of Mexico as a present-day tsunami hazard, considering the clear observations of large landslides along the continental margin of the Gulf.
- Three geologic landslide provinces are defined in the Gulf of Mexico: the Northwest Gulf of Mexico, the Mississippi Canyon and fan, and the Florida/ Campeche Margin.
- Source parameters for the maximum credible submarine landslide were determined for each of the provinces, except for the Florida/Campeche Margin where data were unavailable. All provinces contain landslides of sufficient volume to generate destructive tsunamis along the Gulf of Mexico coasts.
- Analysis suggests that the East Breaks landslide parameters in the Northwest Gulf of Mexico are similar to the parameters for other known east coast landslides.
- The largest Gulf landslides are found in the submarine canyon and fan provinces extending from the Mississippi and former larger rivers that emptied into the Gulf of Mexico. Available data suggests that these large landslides were probably active prior to 7,000 years ago, when large quantities of sediments were emptied into the Gulf. However, sediment supply, especially from the Mississippi river, continues to contribute to slope steepening and increasing fluid pore pressure in the sediments, which may lead to further landslide activity. On the northern Gulf continental slope, landslides may still be active, probably because of salt movement, but are small and may not pose a tsunami hazard.
- There are no significant earthquake sources within the Gulf of Mexico that are likely to generate tsunamis, despite recent seismic activity in the area. Tsunami propagation from significant earthquake sources outside the Gulf of Mexico, such as the northern Panama Convergence Zone, Northern South America, Cayman Trough, the Puerto Rico trench, or the Gibraltar area shows that wave amplitude is greatly
attenuated by the narrow and shallow passages into the Gulf, and as a result, these tsunami sources do not constitute a tsunami hazard to the Gulf of Mexico coast.

Figure 1a: Location of exercise earthquake and submarine landslide.

Figure 1a shows the location of the Scenario 1 earthquake and landslide. The exercise will provide simulated tsunami warning and advisory messages from the WCATWC triggered by a hypothetical earthquake and submarine landslide located west of southern Florida.

Scenario 2: U.S. Atlantic coast
The following description of Scenario 2 is based on work by ten Brink, et al. (2008) and information found at the web site: http://deepwatercanyons.wordpress.com/2011/06/02/submarine-landslides-and-tsunamis/.

The United States Geological Survey, in cooperation with other government agencies and academic partners, has been studying the continental margin along the U.S. east coast in order to better understand submarine landslides and their role in tsunami generation as well as the overall tsunami hazard along the coast.
A recent assessment of tsunami hazards along the U.S. east coast, carried out by the USGS and funded by the U.S. Nuclear Regulatory Commission, has identified submarine landslides along the submerged continental margin as the primary potential source of dangerous tsunamis to this coast. The seriousness of this hazard was demonstrated by the 1929 Grand Banks submarine landslide, which produced a tsunami 3 to 8 m high that killed 28 people along the sparsely populated Newfoundland coast. Most submarine landslides on the continental margin occur on the continental slope, but the limited amount of detailed seafloor mapping along many parts of the east coast has limited efforts to produce a quantitative assessment of tsunami hazards.

Submarine landslides and canyons are ubiquitous features along the continental margin adjacent to the U.S. Atlantic coast (Figure 1b). Based on their characteristics (mostly determined from multi-beam bathymetry maps), some of these submarine landslides would have the potential to generate a tsunami along the east coast of the United States. Seafloor mapping and other geological and geophysical investigations show that the largest submarine landslides are concentrated along the New England and Long Island sections of the margin (outward of major ancient rivers along the mid-Atlantic margin) and in the salt dome province off South Carolina.
Whether or not a submarine landslide will generate a tsunami and its resulting size are functions of the depth of the landslide, the amount of material that moves downslope (the landslide volume), the initial acceleration of the material and the speed at which it moves downslope, and the characteristics of the material (its strength, composition, etc.). While seafloor maps can directly provide information about the depth and size of a landslide, they are invaluable in pinpointing locations where additional studies can yield information about the properties of the seafloor within and around the landslides and the age of the landslides along the margin. 

NOAA and the NTHMP:
NOAA operates a tsunami warning system for U.S. Atlantic and Gulf of Mexico coasts, eastern Canada, Puerto Rico, and the Virgin Islands through its West Coast/Alaska Tsunami Warning Center (WCATWC) in Palmer, Alaska. This Center provides tsunami warning, advisory, watch, and information messages to these coasts approximately five minutes after an earthquake’s occurrence. Primary recipients of WCATWC Atlantic messages include National Weather Service (NWS) coastal Weather Forecast Offices (WFO), state/territory warning points/emergency operation centers, the U.S. Coast Guard, the Canadian Atlantic Storm Prediction Center, and the U.S. military. These agencies transmit the message to people potentially impacted by a tsunami. NOAA’s Pacific Tsunami Warning Center (PTWC) in Ewa Beach, Hawaii provides a similar service internationally in the Caribbean Sea. The Puerto Rico Seismic Network (PRSN) of the University of Puerto Rico at Mayagüez also provides earthquake and tsunami information and warning service to Puerto Rico and the Virgin Islands in coordination with the WCATWC.

The NOAA National Weather Service and the National Tsunami Hazard Mitigation Program (NTHMP) are providing the framework for this exercise as a means for emergency responders along the Gulf and Atlantic coasts and in PR/VI to test and update tsunami response plans. High levels of vulnerability along these coasts should provide a strong incentive for local jurisdictions to prepare for a tsunami. Exercises like this will ensure that the U.S./Canadian Atlantic and Caribbean coasts are better prepared to respond in the case of a dangerous tsunami.

2. Exercise Concept

2.1 Purpose

The purpose of the exercise is to improve Tsunami Warning System effectiveness along the Caribbean, east coast, and Gulf coast regions. The exercise provides an opportunity for emergency management organizations throughout these regions to exercise their operational lines of communications, review their tsunami response procedures, and promote tsunami preparedness. Regular exercising of response plans is critical to maintain readiness for an emergency. This is particularly true for tsunamis, which are infrequent but high impact events. Every coastal emergency management organization (EMO) is encouraged to participate.
2.2 Objectives

Each organization can develop their objectives for the exercise depending on their level of involvement in the scenario. The following are the exercise’s overarching objectives.

- Ensure message transmission from the TWCs to Tsunami Warning Focal Points (TWFP) and from these primary contacts to the EMOs.
- Test tsunami response plans for Gulf, Atlantic, and PR/VI EMOs that have developed plans, and provide a catalyst for countries and EMOs that have not developed plans.
- EMOs, Tsunami Warning Focal Points (TFWP) and Tsunami National Contacts review, discuss, and evaluate the various communication alternatives for receiving and disseminating tsunami messages.
- EMOs, Tsunami Warning Focal Points, and Tsunami National Contacts review, discuss, and evaluate potential response actions and challenges.
- Identify processes to issue local all-clear notices.

2.3 Type of Exercise

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

Exercises stimulate the development, training, testing, and evaluation of Disaster Plans and Standard Operating Procedures. Exercise participants may use their own past multi-hazard drills (e.g. flood, hurricane, tsunami, earthquake, etc.) as a framework to conduct LANTEX 12.

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

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

2. **Drill:** The Drill is a planned activity that tests, develops, and/or maintains skills in a single or limited emergency response procedure. Drills generally involve operational response of single departments or agencies. Drills can involve internal notifications and/or field activities.
3. **Tabletop Exercise:** The Tabletop Exercise is a planned activity in which local officials, key staff, and organizations with disaster management responsibilities are presented with simulated emergency situations. It is usually informal, in a conference room environment, and is designed to elicit constructive discussion from the participants. Participants will examine and attempt to resolve problems, based on plans and procedures, if they exist. Individuals are encouraged to discuss decisions in depth with emphasis on slow-paced problem solving, rather than rapid, real time decision-making. A Tabletop Exercise should have specific goals, objectives, and a scenario narrative (see Appendix A for a Sample Tabletop Exercise Outline).

4. **Functional Exercise:** A Functional Exercise is a planned activity designed to test and evaluate organizational capacities. It is also utilized to evaluate the capability of a community’s emergency management system by testing the Emergency Operations Plan (EOP). It is based on a simulation of a realistic emergency situation that includes a description of the situation (narrative) with communications between players and simulators. The Functional Exercise gives the players (decision-makers) a fully simulated experience of being in a major disaster event. It should take place at the appropriate coordination location (i.e. emergency operations center, emergency command center, command post, master control center, etc.) and activate all the appropriate members designated by the plan. Both internal and external agencies (government, private sector, and volunteer agencies) should be involved. It requires players, controllers, simulators, and evaluators. Message traffic will be simulated and inserted by the control team for player response/actions, under real time constraints. It may or may not include public evacuations. A Functional Exercise should have specific goals, objectives, and a scenario narrative.

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

### Example Time Frames for Different Exercise Types

<table>
<thead>
<tr>
<th>Style</th>
<th>Planning Period</th>
<th>Duration</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orientation</td>
<td>2 wks</td>
<td>1 day</td>
<td>Individual or mixed groups</td>
</tr>
<tr>
<td>Exercise</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drill</td>
<td>2 days</td>
<td>1 day</td>
<td>Individual technical groups generally</td>
</tr>
<tr>
<td>Tabletop Exercise</td>
<td>2 weeks</td>
<td>1-3 days</td>
<td>Single or multiple agency</td>
</tr>
</tbody>
</table>
### 3. Exercise Outline

#### 3.1 General

The two scenarios are described in the sections below followed by general comments on the exercise.

**Scenario 1: Gulf of Mexico**

The scenario will start with a magnitude 6.7 earthquake located at 25.6°N, 84.6°W which is approximately northwest of Key West Florida. The earthquake occurs at 1300UTC on March 28, 2012 and immediately triggers a 17 cubic km underwater slide of sediment, sliding generally west from 25.4°N, 84.7°W. The earthquake uplift does not generate a significant tsunami, but the slide generates a significant tsunami along some portions of the Gulf of Mexico coast (tsunami amplitudes over up to 2 m). The tsunami is not significant outside of the Gulf. A map showing maximum amplitudes recorded throughout the Gulf is provided in Figure 2a.

Initially, a tsunami warning is issued by WCATWC for the entire Gulf of Mexico region. The U.S. east coast and the Caribbean are included in the WCATWC message as information only since the tsunami threat there is expected to be minimal. Some Gulf coasts are dropped to an advisory level about an hour after the earthquake. Definitions of the products that will be issued by WCATWC during this exercise are provided below:

**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.

Impacts for this event were based on work presented in Horillo et al (2010). This report notes that the probability of tsunamis generated by large landslides in the Gulf is very low. This probability of occurrence is based on ancient, large landslides which were likely active prior to 7,000 years ago when large quantities of sediments were emptied into the Gulf of Mexico. The probability of slides like this occurring today has not been quantitatively defined. Further information on the modeling work is provided in Appendix B.

Figure 2a: West Florida landslide maximum wave amplitude from Horillo et al. (2010).

**Scenario 2: U.S. Atlantic coast**

The scenario will start with a magnitude 7.7 earthquake located at 32.0°N, 78.0°W which is 125 miles southeast of Myrtle Beach, South Carolina. The earthquake occurs at 1300UTC on March 28, 2012 and immediately triggers a 100 cubic km underwater slide of sediment, sliding east from 31.52°N, 77.05°W at a maximum of 50 meters/second. The slide width is 30km and the block length is 20km. The earthquake uplift does not generate a significant tsunami, but the slide generates a destructive tsunami along some portions of the east coast and in some locations in Puerto Rico and the Virgin Islands (tsunami amplitudes over 1.5 m). A moderate, though damaging, tsunami is observed along other portions the U.S. and Canadian Atlantic coast (tsunami amplitudes less than 1 m). Most regions along the coast do not experience major inundations, though all areas experience at a minimum strong currents which may produce damage to boats, harbors, and docks as well as make swimming dangerous. A map showing maximum amplitudes recorded throughout the western Atlantic is provided in Figure 2b.
Initially, a warning is issued for the epicentral region with an advisory for surrounding coastal regions. Then, the warning is expanded to include most of the U.S./Canada east coast as well as Puerto Rico and the Virgin Islands. An advisory is issued for parts of Florida, Labrador, and parts of Newfoundland. Definitions of the products that will be issued by WCATWC during this exercise are provided in the section above.

Impacts for this event were based on models computed at the WCATWC. Further explanation of the modeling is provided in Appendix B.

**General comments on scenarios:**
The WCATWC will not issue live messages over broadcast dissemination channels other than to issue an initial dummy message to start the exercises at 1304 UTC on March 28, 2012. However, WCATWC will email and fax the message to specific recipients who have requested live dissemination throughout the event. The content of the dummy message is given in Appendix C. The dummy message will indicate that exercise participants should refer to the first message provided in this handbook. From then on, if participants are not receiving messages via email or fax, Tables 1
and 2 are the timelines for when messages would be issued by WCATWC if this were a real event, and can be used by EMOs to drive the exercise timing. The warning messages (as shown in Appendix D) cover a 7-hour period, though in an actual event they would likely continue longer. World Meteorological Organization (WMO) and Advanced Weather Interactive Processing System (AWIPS) headers used in the dummy message are listed in Table 3.

During real events, the WCATWC issues two official products each time a message is issued. The first, and the ones provided in Appendix D, are known as the standard message. This message is a segmented message which includes encoded NWS zones, Valid Time Event Codes (VTEC), and their level of threat in the lower section of the message. The segmentation is used for automated processing systems which parse NWS products. The standard product also lists expected arrival times. The second product is known as the public message. This message has no segmentation and is written in a non-tabular, easier-to-read format. The products contain the same basic information. EMOs generally use the standard product for warning response as it has more complete information. WCATWC also issues additional graphical and web-based products to its web site. Examples of these are shown in Appendix E.

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

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

3.2 Master Schedule (Exercise Script)

Table 1: Scenario 1 Timeline

Tsunami generated by a magnitude 6.7 earthquake with epicenter at 25.6°N, 84.6°W occurring on March 28, 2012 at 1300 UTC which triggers in a submarine landslide located at 25.4°N, 84.7°W, approximately one minute later. The initial warning is disseminated at 1304 UTC.
Table 2: Scenario 2 Timeline
Tsunami generated by a magnitude 7.7 earthquake with epicenter at 32.0°N, 78.0°W occurring on March 28, 2012 at 1300 UTC which triggers in a submarine landslide located at 32.0°N, 77.6°W, approximately one minute later. The initial warning is disseminated at 1304 UTC.

The initial dummy message will be disseminated over all standard WCATWC broadcast channels as listed in Table 3. This is being issued to test communications.
with EMOs and to start the exercise. All messages will be disseminated over a special email list to provide the messages in real time to organizations requesting this service. To request this service, please contact Christa von Hillebrandt (address listed in 3.5) with your organization name and email address.

**WCATWC Message Types:**
- Warn: Tsunami Warning
- Adv: Tsunami Advisory
- Watch: Tsunami Watch
- Can: Cancellation

**Dummy:**
- Yes: Dummy Issued
- No: Dummy Not Issued

**Table 3: Product Types**
Product Types Issued for Dummy Message with Transmission Methods

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<tr>
<th>Center</th>
<th>WMO ID</th>
<th>AWIPS ID</th>
<th>NWWS</th>
<th>GTS</th>
<th>EMWIN</th>
<th>Fax</th>
<th>Email</th>
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</thead>
<tbody>
<tr>
<td>WCATWC</td>
<td>WEXX20 PAAQ</td>
<td>TSUAT1</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

NWWS: NOAA Weather Wire Service
GTS: Global Telecommunications System
EMWIN: Emergency Manager’s Weather Information Network

### 3.3 Actions in Case of a Real Event

In the case of a real event occurring during the exercise, the TWCs will issue their normal messages for the event. Such messages will be given full priority and a decision will be made by WCATWC whether to issue the dummy message and to send email messages to selected recipients. Smaller earthquakes that only trigger a Tsunami Information Statement will not disrupt the exercise. All documentation and correspondence relating to this exercise is to be clearly identified as “LANTEX 12” and “Exercise.”

### 3.4 Procedure for False Alarm

Any time disaster response exercises are conducted, the potential exists for the public or media to interpret the event as real. Procedures should be set up by all participating entities to address public or media concerns involving this exercise in case of misinterpretation by media or the public.

### 3.5 Resources

Although EMOs will have advance notice of the exercise and may elect to stand up a special dedicated shift to allow normal core business to continue uninterrupted, it is
requested that realistic resource levels be deployed in order to reflect some of the issues that are likely to be faced in a real event.

Questions on the exercise can be addressed to:

<table>
<thead>
<tr>
<th>Person</th>
<th>Telephone #</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>Christa von Hillebrandt, NWS CTWP Manager</td>
<td>787-833-8433</td>
<td><a href="mailto:christa.vonh@noaa.gov">christa.vonh@noaa.gov</a></td>
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<tr>
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<tr>
<td>Wilfredo Ramos, PREMA Rep.</td>
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<tr>
<td>Paul Whitmore, WCATWC Director</td>
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</tr>
<tr>
<td>Paul Huang, WCATWC TWSO</td>
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<td>James Waddell, WCATWC Rep.</td>
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<tr>
<td>Victor Huerfano, PRSN Director</td>
<td>787-833-8433</td>
<td><a href="mailto:victor@prsn.uprm.edu">victor@prsn.uprm.edu</a></td>
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<tr>
<td>John Koch, NWS ER</td>
<td>631-244-0104</td>
<td><a href="mailto:john.koch@noaa.gov">john.koch@noaa.gov</a></td>
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<tr>
<td>Charles Williams, NTHMP S. Region</td>
<td>205-280-2222</td>
<td><a href="mailto:charles.williams@ema.alabama.gov">charles.williams@ema.alabama.gov</a></td>
</tr>
<tr>
<td>Rainer Dombrowsky, NTHMP E. Region</td>
<td>410-517-3628</td>
<td><a href="mailto:rdombrowsky@mema.state.md.us">rdombrowsky@mema.state.md.us</a></td>
</tr>
</tbody>
</table>

### 3.6 Media Arrangements

One advantage in conducting exercises is that it provides a venue to promote awareness of the exercise topic. Many residents along the east and Gulf coasts may not realize that a tsunami warning system exists for their region, let alone the proper response. Communities may wish to invite their local media to the exercise to promote local awareness of the tsunami hazard. Appendix F contains a sample press release which can be adapted as necessary.

### 4 Post-Exercise Evaluation

All participating agencies are requested to provide brief feedback on the exercise. This feedback will assist NTHMP and NOAA in the evaluation of LANTEX 12 and the development of future exercises, and help response agencies document lessons learned.


### 5 References


Appendix A. Example Table Top Exercise

Tabletop Exercise Development Steps
Source: California Office of Emergency Services

A Tabletop Exercise is a planned activity in which local officials, key staff, and organizations with disaster management responsibilities are presented with simulated emergency situations. It is usually informal and slow paced, in a conference room environment, and is designed to elicit constructive discussion from the participants to assess plans, policies, and procedures. Participants will examine and attempt to resolve problems, based on plans and procedures, if they exist. Individuals are encouraged to discuss decisions in depth based on their organization’s Standard Operating Procedures (SOPs), with emphasis on slow-paced problem solving, rather than rapid, real time decision-making. An Exercise Controller (moderator) introduces a simulated tsunami scenario to participants via written message, simulated telephone or radio call, or by other means. Exercise problems and activities (injects) are further introduced. Participants conduct group discussions where resolution is generally agreed upon and then summarized by a group leader. A Tabletop Exercise should have specific goals, objectives, and a scenario narrative.

The following provides a Tabletop Exercise structure with sample text and example.

1. Vulnerability Analysis: Problem Statement

An example for a hurricane might be:
Due to the recent Hurricane incidents that the Southeast region of the United States, an awareness of the threat risk involved in these disasters has become more apparent, therefore the need for evacuation system is vital. The state of Louisiana continues its ongoing tasks of planning, preparing, and training for Hurricane preparedness.

2. Purpose (Mission): Intent, what you plan to accomplish (Policy Statement)

An example for a hurricane might be:
The State of Louisiana has realized and recognizes the need for a more efficient and effective evacuation system, and is responding with this Comprehensive Exercise Plan. These events will include seminars, workshops, a tabletop exercise, functional and full-scale exercises within an 18-month time frame, under the State Homeland Security grant program.

3. Scope:

Exercise Activities
Agencies Involved
Hazard Type
Geographic Impact Area

An example might be:
Emergency Services coordinators at local levels of government will identify representative jurisdictions from each of the six mutual aid regions located throughout the State to participate as host jurisdictions in a series of disaster preparedness exercises. These host jurisdictions will develop a progressive series of exercises each type building upon the previous type of exercise. The process will begin with a vulnerability analysis for each jurisdiction and continue through a progression of exercise activities including: orientation seminars, workshops, and tabletop and functional exercises. The eventual objective of these activities will be to reduce disaster impacts to their populations and city infrastructure. All events will be evaluated utilizing US Homeland Security Exercise Evaluation Program (HSEEP) after action reporting (AAR)
standards. Steps for corrective actions will be made a part of the after action process and report. Surrounding jurisdictions in the mutual aid area will act as exercise design team members, exercise evaluators, or exercise observers for the purpose of information transfer to increase their operational readiness. Jurisdictions will participate on a rotational basis every two years to provide the opportunity for multiple jurisdiction participation.

4. Goals and Objectives:
Criteria for good objectives: Think SMART
• Simple (concise)
• Measurable
• Achievable (can this be done during the exercise?)
• Realistic (and challenging)
• Task Oriented (oriented to functions)

An example might be:
Comprehensive Exercise Program (CEP) Objectives
• To improve operational readiness
• To improve multi-agency coordination and response capabilities for effective disaster response
• To identify communication pathways and problem areas pre-event between local jurisdictions and operational area, regional and state emergency operations centers
• To establish uniform methods for resource ordering, tracking, and supply for agencies involved at all levels of government.

5. Narrative:
The Narrative should describe the following:
• Triggering emergency/disaster event
• Describe the environment at the time the exercise begins
• Provide necessary background information
• Prepare participants for the exercise
• Discovery, report: how do you find out?
• Advance notice?
• Time, location, extent or level of damage

6. Evaluation:
The Evaluation should describe the following:
• Objectives Based
• Train Evaluation Teams
• Develop Evaluation Forms

7. After Action Report (AAR): The AAR should be compiled using the evaluation reports

8. Improvement Plan (IP): The IP should reduce vulnerabilities.
Appendix B.

Scenario 1 Description – Gulf of Mexico submarine landslide:
This exercise is based on model results presented by Horillo et al., (2010). Landslide and model computation parameters are listed below; see the publication for further information on the tsunami model methodology. The coastal amplitudes estimates were provided by Horillo (personal communication).

Florida Margin Landslide
Geologic Setting: Edge of a carbonate platform
Post Failure Sedimentation: None visible on multi-beam images or on available high-resolution seismic profiles
Age: Early Holocene or older
Maximum Credible Single Event: Volume: 16.2 km$^3$
Area: 647.57 km$^2$
Excavation Depth: ~150 m, but quite variable
Runout Distance: Uncertain. The landslide deposit is at the base of the Florida Escarpment buried under younger Mississippi Fan deposits

Model Parameters (Horillo, et al., 2010)
Model domain for source region:
Number of Cells: X Direction 360
Number of Cells: Y Direction 360
Number of Cells: Z Direction 120
Total Number of Cells: 15,552,000
dx 416 m
dy 464 m
dz Variable (minimum 2 m)
dt Variable (maximum 0.2 sec)

Physical Properties:
Water Density: 1025 Kg/ m$^3$
Mud Density: 2000 kg/m$^3$
Mud Angle of Repose: 0°
Eddy Viscosity: 1e-5 m$^2$/sec

Figure B1 shows the development of the tsunami as the slide takes place along the Florida continental slope. This sequence takes place over 2.1 minutes time frame.

Figure B2 shows the initial outgoing tsunami profile as a positive wave with amplitude of 52ft (16m) followed by a negative wave or initial surface depression of 62ft (19m) caused by the landslide down slope motion. The 3D model results from the source zone were used as initial condition to a 2D model over the wider Gulf region to quantify expected impacts along the coast.

Figure B3 shows the West Florida landslide maximum wave amplitude recorded after 4 hours of tsunami propagation. Tsunami energy amplifications on coastal regions are observed in Port Aransas, South Padre Island, TX., and Fort Walton Beach-to-Cape San Blas, FL.
Table B1 provides the forecast range of coastal amplitudes for many sites along the Gulf coast. Tsunami model results are provided to better understand the scenario and are not intended for evacuation planning. Coastal amplitudes may induce runups along shore that are approximately double the forecast amplitude.

Figure B1. Initial source motion over first 2.1 minutes from Horillo, et al. (2010).
Figure 39. TSUNAMI3D's numerical result side-view for the West Florida submarine landslide. Maximum wave height recorded at 2.1 minutes after the landslide initiation.

Figure B2: Initial wave profile for the West Florida submarine landslide from Horillo et al. (2010).

Figure 40. West Florida landslide maximum wave amplitude using 60 arc-seconds grid resolution.

Figure B3: West Florida landslide maximum wave amplitude from Horillo et al. (2010).
Table B1. Forecast range of coastal amplitudes for Scenario 1 (Horillo, personal communication, 2012)

<table>
<thead>
<tr>
<th>Coastal Location</th>
<th>Tsunami amplitude range at coast (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Padre Island, TX</td>
<td>1.2-1.5</td>
</tr>
<tr>
<td>Port Aransas, TX</td>
<td>0.9-1.2</td>
</tr>
<tr>
<td>Freeport, TX</td>
<td>&lt; 0.3</td>
</tr>
<tr>
<td>Galveston, TX</td>
<td>&lt; 0.3</td>
</tr>
<tr>
<td>Grand Isle, LA</td>
<td>0.6-0.9</td>
</tr>
<tr>
<td>Biloxi, MS</td>
<td>&lt; 0.3</td>
</tr>
<tr>
<td>Dauphin Island, AL</td>
<td>&lt; 0.3</td>
</tr>
<tr>
<td>Gulf Shore, AL</td>
<td>&lt; 0.3</td>
</tr>
<tr>
<td>Okaloosa Is., FL</td>
<td>&lt; 0.3</td>
</tr>
<tr>
<td>Destin, FL</td>
<td>&lt; 0.3</td>
</tr>
<tr>
<td>Miramar Beach, FL</td>
<td>0.3-0.6</td>
</tr>
<tr>
<td>Alys Beach, FL</td>
<td>0.9-1.2</td>
</tr>
<tr>
<td>Laguna Beach, FL</td>
<td>0.9-1.2</td>
</tr>
<tr>
<td>Panama City, FL</td>
<td>0.9-1.2</td>
</tr>
<tr>
<td>Cape San Blas, FL</td>
<td>0.6-0.9</td>
</tr>
<tr>
<td>Tampa region, FL</td>
<td>0.3-0.6</td>
</tr>
<tr>
<td>Siesta Key, FL</td>
<td>0.3-0.6</td>
</tr>
<tr>
<td>Venice, FL</td>
<td>0.3-0.6</td>
</tr>
<tr>
<td>Boca Grande, FL</td>
<td>0.3-0.6</td>
</tr>
<tr>
<td>Captiva Is., FL</td>
<td>0.3-0.6</td>
</tr>
<tr>
<td>Sanibel, FL</td>
<td>0.3-0.6</td>
</tr>
<tr>
<td>Fort Meyers Beach, FL</td>
<td>0.3-0.6</td>
</tr>
<tr>
<td>Naples, FL</td>
<td>0.3-0.6</td>
</tr>
<tr>
<td>Marco Is., FL</td>
<td>0.3-0.6</td>
</tr>
<tr>
<td>Key West, FL</td>
<td>1.5-2.1</td>
</tr>
</tbody>
</table>

Scenario 2 Description – U.S. Atlantic coast submarine landslide:
The Alaska Tsunami Forecast Model was used to simulate the tsunami generated by a 100 cubic km slide directed eastward off the continental slope which was triggered by a hypothetical magnitude 7.7 earthquake located 125 miles southeast of Myrtle Beach, South Carolina at 32.0° N, 78.0°W. The tsunami generated by the earthquake uplift was not included in the impact determination as it was very small by comparison.

Continental slope landslide parameters are:
Location: 31.52°N, 77.05°W
Width: 30km
Length (down-slope): 20km
Velocity: 0 to 50m/s

The model was computed using a 4-minute resolution grid in the open ocean and additional 15-second resolution grids along the U.S./Canadian Atlantic coasts, Bermuda, and the Puerto Rico/Virgin Islands region. Figure B4 shows the landslide location and subsequent tsunami generation and propagation.
Figure B4: Landslide location and tsunami propagation.

Figures B5-B7 below display forecasted maximum wave amplitudes.

Figure B5. Forecast maximum wave amplitudes (meters) from the landslide which indicates tsunami energy propagation.
Figure B6. Forecast maximum wave amplitudes (meters) for Puerto Rico and the US/British Virgin Islands.

Figure B7. Forecast maximum wave amplitudes (meters) for the East Coast of the United States.
Figure B8. Maximum amplitudes forecast for various coastal locations.

Figure B8 provides forecasted tsunami maximum amplitudes for coastal locations. The green shaded areas are representative of areas of no tsunami threat, yellow for areas that would be under Advisory conditions and red for Warnings. Figure B9 are simulated time series for select coastal tide gauges. Coastal amplitudes may induce
runups along shore that are approximately double the forecast amplitude.
Figure B9. Time series for select coastal locations (note that the time series location for the San Juan location is not at the tide gage, but on the outer coast).
Appendix C. Dummy Message

WCATWC

WEXX20 PAAQ 281304
TSUAT1

TEST...TSUNAMI EXERCISE MESSAGE NUMBER 1...TEST
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
904 AM EDT WED MAR 28 2012

...LANTEX 12 TSUNAMI EXERCISE MESSAGE. REFER TO WCATWC MESSAGE 1 IN
THE EXERCISE HANDBOOK. THIS IS AN EXERCISE ONLY...

THIS MESSAGE IS BEING USED TO START THE LANTEX 12 TSUNAMI EXERCISE.
THIS WILL BE THE ONLY EXERCISE MESSAGE BROADCAST FROM THE WEST
COAST/ALASKA TSUNAMI WARNING CENTER EXCLUDING SPECIAL EMAIL
MESSAGES DISCUSSED IN THE HANDBOOK. THE HANDBOOK IS AVAILABLE
AT THE WEB SITE WCATWC.ARH.NOAA.GOV. THE EXERCISE PURPOSE IS
TO PROVIDE EMERGENCY MANAGEMENT A REALISTIC SCENARIO TO TEST
TSUNAMI RESPONSE PLANS.

THIS IS ONLY AN EXERCISE.

$$
Appendix D. WCATWC Exercise Messages

Scenario 1: Gulf of Mexico
The following messages, created for the LANTEX 12 Gulf of Mexico tsunami exercise (Scenario 1), are representative of the official standard products issued by the WCATWC during a magnitude 6.7 earthquake and tsunami originating approximately 190 miles northwest of Key West, Florida on the Florida Escarpment at 25.6°N, 84.6°W. During a real event, WCATWC would also issue graphical and html-based products to their web sites and via RSS.

Figure D1: Scenario 1 tsunami source at zero minutes.

Scenario 1: WCATWC Message #1

WEXX20 PAAQ 281304
TSUAT1

BULLETIN
TSUNAMI MESSAGE NUMBER 1
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
A TSUNAMI WARNING IS NOW IN EFFECT WHICH INCLUDES THE COASTAL AREAS OF TEXAS - LOUISIANA - MISSISSIPPI - ALABAMA AND FLORIDA FROM BROWNSVILLE TEXAS TO OCEAN REEF FLORIDA...

THIS MESSAGE IS INFORMATION ONLY FOR COASTAL AREAS OF FLORIDA - GEORGIA - SOUTH CAROLINA - NORTH CAROLINA - VIRGINIA - MARYLAND - DELAWARE - NEW JERSEY - NEW YORK - CONNECTICUT - RHODE ISLAND - MASSACHUSETTS - NEW HAMPSHIRE - MAINE - NEW BRUNSWICK - NOVA SCOTIA - NEWFOUNDLAND AND LABRADOR FROM OCEAN REEF FLORIDA TO CAPE CHIDLEY LABRADOR...

THIS MESSAGE IS INFORMATION ONLY FOR COASTAL AREAS OF PUERTO RICO AND THE VIRGIN ISLANDS...

RECOMMENDED ACTIONS
PEOPLE IN LOW LYING COASTAL AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM THEIR LOCAL EMERGENCY OFFICIALS. EVACUATIONS ARE ONLY ORDERED BY EMERGENCY RESPONSE AGENCIES.

IF IN A TSUNAMI WARNING COASTAL AREA MOVE INLAND TO HIGHER GROUND.

PRELIMINARY EARTHQUAKE PARAMETERS
MAGNITUDE - 6.7
TIME - 0900 EDT MAR 28 2012
0800 CDT MAR 28 2012
0900 AST MAR 28 2012
1300 UTC MAR 28 2012
LOCATION - 25.6 NORTH 84.6 WEST
190 MILES/306 KM NW OF KEY WEST FLORIDA
210 MILES/338 KM SW OF TAMPA FLORIDA
DEPTH - 6 MILES/10 KM

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. WARNINGS INDICATE THAT WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

CARIBBEAN COASTAL REGIONS OUTSIDE PUERTO RICO AND THE VIRGIN ISLANDS SHOULD REFER TO THE PACIFIC TSUNAMI WARNING CENTER MESSAGES FOR INFORMATION ON THIS EVENT AT PTWC.WEATHER.GOV.

THIS MESSAGE WILL BE UPDATED IN 30 MINUTES OR SOONER IF THE SITUATION WARRANTS. THE TSUNAMI MESSAGE WILL REMAIN IN EFFECT UNTIL FURTHER NOTICE. REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

532-534-536-538-550-552-555-630-650-655-730-750-755-765-830-
850-853-856-857-657-031-032-034-052-055-TXZ251-256-257-242-247-
213-214-236-238-215-216-1A2052-054-073-074-040-062-064-066-070-
MS2080-082-ALZ061-064-FLZ002-004-006-008-012-014-015-018-027-
028-034-042-048-051-055-060-062-065-069-070-075-076-078-079-
174-281404-
/T.NEW.PAAQ.TS.W.0140.120328T1304Z
COASTAL AREAS BETWEEN AND INCLUDING BROWNSVILLE TEXAS TO OCEAN REEF FLORIDA
904 AM EDT MAR 28 2012

A TSUNAMI WARNING IS NOW IN EFFECT WHICH INCLUDES THE COASTAL AREAS OF TEXAS - LOUISIANA - MISSISSIPPI - ALABAMA AND FLORIDA FROM BROWNSVILLE TEXAS TO OCEAN REEF FLORIDA...

PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO HIGHER GROUND.
Tsunami warnings mean that a tsunami with significant widespread inundation is imminent... expected or occurring. Tsunamis are a series of waves potentially dangerous several hours after initial arrival time.

Estimated times of initial wave arrival for selected sites in the warning are provided below.

- Key West - FL: 1012 EDT Mar 28
- Panasonic City - FL: 1027 CDT Mar 28
- Corpus Christi - TX: 1120 CDT Mar 28
- Panama City - FL: 1219 EDT Mar 28
- Biloxi - MS: 1225 CDT Mar 28
- Galveston - TX: 1256 CDT Mar 28

For arrival times at additional locations see WCATWC.ARH.NOAA.GOV

$$
Scenario 1: WCATWC Message #2

WEXX20 PAAQ 281335
TSUAT1

BULLETIN
TSUNAMI MESSAGE NUMBER 2
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
935 AM EDT WED MAR 28 2012

No new updates since last message.

...the tsunami warning continues in effect for the coastal areas of Texas - Louisiana - Mississippi - Alabama and Florida from Brownsville Texas to Ocean Reef Florida...

...this message is information only for coastal areas of Florida - Georgia - South Carolina - North Carolina - Virginia - Maryland - Delaware - New Jersey - New York - Connecticut - Rhode Island - Massachusetts - New Hampshire - Maine - New Brunswick - Nova Scotia - Newfoundland and Labrador from Ocean Reef Florida to Cape Chidley Labrador...

...this message is information only for coastal areas of Puerto Rico and the Virgin Islands...

Recommended actions
People in low-lying coastal areas should be alert to instructions from their local emergency officials. Evacuations are only ordered by emergency response agencies.
- If in a tsunami warning coastal area move inland to higher ground.

Preliminary earthquake parameters
Magnitude: 6.7
Time:
- 0900 EDT Mar 28 2012
- 0800 CDT Mar 28 2012
- 0900 AST Mar 28 2012
- 1300 UTC Mar 28 2012

Location:
- 25.6 North 84.6 West
- 190 miles/306 km NW of Key West Florida
- 210 miles/338 km SW of Tampa Florida

Depth: 6 miles/10 km

Tsunami warnings mean that a tsunami with significant widespread inundation is imminent... expected or occurring. Warnings indicate that widespread dangerous coastal flooding accompanied by powerful currents is possible and may continue for several hours after the
INITIAL WAVE ARRIVAL.

CARIBBEAN COASTAL REGIONS OUTSIDE PUERTO RICO AND THE VIRGIN ISLANDS SHOULD REFER TO THE PACIFIC TSUNAMI WARNING CENTER MESSAGES FOR INFORMATION ON THIS EVENT AT PTWC.WEATHER.GOV.

THIS MESSAGE WILL BE UPDATED IN 30 MINUTES OR SOONER IF THE SITUATION WARRANTS. THE TSUNAMI MESSAGE WILL REMAIN IN EFFECT UNTIL FURTHER NOTICE. REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

/T.CON.PAAQ.TS.W.0140.120328T1335Z
COASTAL AREAS BETWEEN AND INCLUDING BROWNSVILLE TEXAS TO OCEAN REEF FLORIDA
935 AM EDT WED MAR 28 2012

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF TEXAS - LOUISIANA - MISSISSIPPI - ALABAMA AND FLORIDA FROM BROWNSVILLE TEXAS TO OCEAN REEF FLORIDA...

PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO HIGHER GROUND.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE WARNING ARE PROVIDED BELOW.

KEY WEST-FL 1012 EDT MAR 28 ST PETERSBURG-FL 1319 EDT MAR 28
PANAMA CITY-FL 1027 CDT MAR 28 BILOXI-MS 1225 CDT MAR 28
CORPUS CHRISTI-TX 1120 CDT MAR 28 GALVESTON-TX 1236 CDT MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

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Scenario 1: WCATWC Message #3

WEXX20 PAAQ 281409
TSUAT1

BULLETIN

TSUAMI MESSAGE NUMBER 3
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
1009 AM EDT WED MAR 28 2012

DEEP OCEAN PRESSURE SENSOR INDICATES A SUBMARINE LANDSLIDE.
THE WARNING IS DOWNGRADED TO AN ADVISORY FROM HIGH ISLAND TEXAS TO THE MISSISSIPPI-ALABAMA BORDER.

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF TEXAS FROM BROWNSVILLE TEXAS TO HIGH ISLAND TEXAS...

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF ALABAMA AND FLORIDA FROM THE MISSISSIPPI-ALABAMA
BORDER TO OCEAN REEF FLORIDA...

...A TSUNAMI ADVISORY IS NOW IN EFFECT WHICH INCLUDES THE
COASTAL AREAS OF TEXAS - LOUISIANA - MISSISSIPPI AND
ALABAMA FROM HIGH ISLAND TEXAS TO THE MISSISSIPPI-ALABAMA
BORDER...

...THIS MESSAGE IS INFORMATION ONLY FOR COASTAL AREAS OF
FLORIDA - GEORGIA - SOUTH CAROLINA - NORTH CAROLINA -
VIRGINIA - MARYLAND - DELAWARE - NEW JERSEY - NEW YORK -
CONNECTICUT - RHODE ISLAND - MASSACHUSETTS - NEW HAMPSHIRE
- MAINE - NEW BRUNSWICK - NOVA SCOTIA - NEWFOUNDLAND AND
LABRADOR FROM OCEAN REEF FLORIDA TO CAPE CHIDLEY
LABRADOR...

...THIS MESSAGE IS INFORMATION ONLY FOR COASTAL AREAS OF
PUERTO RICO AND THE VIRGIN ISLANDS...

RECOMMENDED ACTIONS
A TSUNAMI HAS BEEN GENERATED WHICH IS EXPECTED TO CAUSE DAMAGE
TO THE WARNING AND/OR ADVISORY REGIONS LISTED IN THE HEADLINE.
PEOPLE IN LOW-LYING COASTAL AREAS SHOULD BE ALERT TO
INSTRUCTIONS FROM THEIR LOCAL EMERGENCY OFFICIALS. EVACUATIONS
ARE ONLY ORDERED BY EMERGENCY RESPONSE AGENCIES.
- IF IN A TSUNAMI WARNING COASTAL AREA MOVE INLAND TO
  HIGHER GROUND.
- IF IN A TSUNAMI ADVISORY COASTAL AREA MOVE OUT OF
  THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

MEASUREMENTS OR REPORTS OF TSUNAMI ACTIVITY

DEEP OCEAN PRESSURE SENSOR DATA INDICATES A TSUNAMI WAS GENERATED.

PRELIMINARY EARTHQUAKE PARAMETERS
MAGNITUDE - 6.7
TIME - 0900 EDT MAR 28 2012
  0800 CDT MAR 28 2012
  0900 AST MAR 28 2012
  1300 UTC MAR 28 2012
LOCATION - 25.6 NORTH 84.6 WEST
  190 MILES/306 KM NW OF KEY WEST FLORIDA
  210 MILES/338 KM SW OF TAMPA FLORIDA
DEPTH - 6 MILES/10 KM

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD
INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. WARNINGS INDICATE
THAT WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL
CURRENTS IS POSSIBLE AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE
INITIAL WAVE ARRIVAL.

TSUNAMI ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING
STRONG CURRENTS OR WAVES DANGEROUS TO PEOPLE IN OR VERY NEAR THE
WATER IS EXPECTED. SIGNIFICANT WIDESPREAD INUNDATION
IS NOT EXPECTED FOR AREAS UNDER AN ADVISORY. CURRENTS MAY BE
HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY
CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

CARIBBEAN COASTAL REGIONS OUTSIDE PUERTO RICO AND THE VIRGIN
ISLANDS SHOULD REFER TO THE PACIFIC TSUNAMI WARNING CENTER MESSAGES
FOR INFORMATION ON THIS EVENT AT PTWC.WEATHER.GOV.

THIS MESSAGE WILL BE UPDATED IN 30 MINUTES OR SOONER IF
THE SITUATION WARRANTS. THE TSUNAMI MESSAGE WILL REMAIN IN EFFECT
UNTIL FURTHER NOTICE. REFER TO THE INTERNET SITE
WCASTWC.ARH.NOAA.GOV FOR MORE INFORMATION.

GMZ130-150-155-230-235-250-255-330-335-350-355-TXZ251-256-
COASTAL AREAS BETWEEN AND INCLUDING BROWNSVILLE TEXAS TO HIGH ISLAND TEXAS
1009 AM EDT WED MAR 28 2012

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF TEXAS FROM BROWNSVILLE TEXAS TO HIGH ISLAND TEXAS...

PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO HIGHER GROUND.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE WARNING ARE PROVIDED BELOW.

CORPUS CHRISTI-TX 1120 CDT MAR 28 GALVESTON-TX 1236 CDT MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

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/T.CON.PAAQ.TS.W.0140.120328T1409Z-120328T1509Z/

COASTAL AREAS BETWEEN AND INCLUDING THE MISSISSIPPI-ALABAMA BORDER TO OCEAN REEF FLORIDA
1009 AM EDT WED MAR 28 2012

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF ALABAMA AND FLORIDA FROM THE MISSISSIPPI-ALABAMA BORDER TO OCEAN REEF FLORIDA...

PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO HIGHER GROUND.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE WARNING ARE PROVIDED BELOW.

KEY WEST-FL 1012 EDT MAR 28 ST PETERSBURG-FL 1319 EDT MAR 28
PANAMA CITY-FL 1027 CDT MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

$$
/T.CAN.PAAQ.TS.W.0140.120328T1409Z-120328T1509Z/
/T.NEW.PAAQ.TS.Y.0140.120328T1409Z-120328T1509Z/

COASTAL AREAS BETWEEN AND INCLUDING HIGH ISLAND TEXAS TO THE MISSISSIPPI-ALABAMA BORDER
1009 AM EDT WED MAR 28 2012
A TSUNAMI ADVISORY IS NOW IN EFFECT WHICH INCLUDES THE COASTAL AREAS OF TEXAS - LOUISIANA - MISSISSIPPI AND ALABAMA FROM HIGH ISLAND TEXAS TO THE MISSISSIPPI-ALABAMA BORDER...

PEOPLE IN TSUNAMI ADVISORY COASTAL AREAS SHOULD MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

TSUNAMI ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PEOPLE IN OR VERY NEAR WATER IS IMMINENT... EXPECTED OR OCCURRING. SIGNIFICANT WIDESPREAD INUNDATION IS NOT EXPECTED FOR AREAS IN AN ADVISORY. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME. ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE ADVISORY ARE PROVIDED BELOW.

BILOXI-MS 1225 CDT MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

Scenario 1: WCATWC Message #4

WEXX20 PAAQ 281435
TSUAT1

BULLETIN
TSUNAMI MESSAGE NUMBER 4
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
1035 AM EDT WED MAR 28 2012

TSUNAMI OBSERVATIONS ADDED BELOW.
NO CHANGE TO WARNING OR ADVISORY REGIONS.

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF TEXAS FROM BROWNSVILLE TEXAS TO HIGH ISLAND TEXAS...

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF ALABAMA AND FLORIDA FROM THE MISSISSIPPI-ALABAMA BORDER TO OCEAN REEF FLORIDA...

...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF TEXAS - LOUISIANA - MISSISSIPPI AND ALABAMA FROM HIGH ISLAND TEXAS TO THE MISSISSIPPI-ALABAMA BORDER...

...THIS MESSAGE IS INFORMATION ONLY FOR COASTAL AREAS OF FLORIDA - GEORGIA - SOUTH CAROLINA - NORTH CAROLINA - VIRGINIA - MARYLAND - DELAWARE - NEW JERSEY - NEW YORK - CONNECTICUT - RHODE ISLAND - MASSACHUSETTS - NEW HAMPSHIRE - MAINE - NEW BRUNSWICK - NOVA SCOTIA - NEWFOUNDLAND AND LABRADOR FROM OCEAN REEF FLORIDA TO CAPE CHIDLEY LABRADOR...

...THIS MESSAGE IS INFORMATION ONLY FOR COASTAL AREAS OF PUERTO RICO AND THE VIRGIN ISLANDS...

RECOMMENDED ACTIONS
A TSUNAMI HAS BEEN GENERATED WHICH IS EXPECTED TO CAUSE DAMAGE TO THE WARNING AND/OR ADVISORY REGIONS LISTED IN THE HEADLINE. PEOPLE IN LOW-LYING COASTAL AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM THEIR LOCAL EMERGENCY OFFICIALS. EVACUATIONS ARE ONLY ORDERED BY EMERGENCY RESPONSE AGENCIES.
- IF IN A TSUNAMI WARNING COASTAL AREA MOVE INLAND TO HIGHER GROUND.
- IF IN A TSUNAMI ADVISORY COASTAL AREA MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

MEASUREMENTS OR REPORTS OF TSUNAMI ACTIVITY

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TIME - TIME OF MEASUREMENT
AMPL - TSUNAMI AMPLITUDES ARE MEASURED RELATIVE TO NORMAL SEA LEVEL.
       IT IS ...NOT... CREST-TO-TROUGH WAVE HEIGHT.
       VALUES ARE GIVEN IN BOTH METERS/M/ AND FEET/FT/.

DEEP OCEAN PRESSURE SENSOR DATA INDICATES A TSUNAMI WAS GENERATED.

PRELIMINARY EARTHQUAKE PARAMETERS
MAGNITUDE - 6.7
TIME - 0900 EDT MAR 28 2012
       0800 CDT MAR 28 2012
       0900 AST MAR 28 2012
       1300 UTC MAR 28 2012
LOCATION - 25.6 NORTH 84.6 WEST
       190 MILES/306 KM NW OF KEY WEST FLORIDA
       210 MILES/338 KM SW OF TAMPA FLORIDA
DEPTH - 6 MILES/10 KM

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. WARNINGS INDICATE THAT WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

TSUNAMI ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PEOPLE IN OR VERY NEAR THE WATER IS EXPECTED. SIGNIFICANT WIDESPREAD INUNDATION IS NOT EXPECTED FOR AREAS UNDER AN ADVISORY. CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

CARIBBEAN COASTAL REGIONS OUTSIDE PUERTO RICO AND THE VIRGIN ISLANDS SHOULD REFER TO THE PACIFIC TSUNAMI WARNING CENTER MESSAGES FOR INFORMATION ON THIS EVENT AT PTWC.WEATHER.GOV.

THIS MESSAGE WILL BE UPDATED IN 30 MINUTES OR SOONER IF THE SITUATION WARRANTS. THE TSUNAMI MESSAGE WILL REMAIN IN EFFECT UNTIL FURTHER NOTICE. REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.


COASTAL AREAS BETWEEN AND INCLUDING BROWNSVILLE TEXAS TO HIGH ISLAND TEXAS
1035 AM EDT WED MAR 28 2012

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF TEXAS FROM BROWNSVILLE TEXAS TO HIGH ISLAND TEXAS...

PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO HIGHER GROUND.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.
ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE WARNING ARE PROVIDED BELOW.

CORPUS CHRISTI - TX 1120  CDT MAR 28

GALVESTON - TX 1236  CDT MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

/T.CON.PAAQ.TS.W.0140.120328T1435Z-120328T1535Z/

COASTAL AREAS BETWEEN AND INCLUDING THE MISSISSIPPI-ALABAMA BORDER TO OCEAN REEF FLORIDA

1035 AM EDT WED MAR 28 2012

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF ALABAMA AND FLORIDA FROM THE MISSISSIPPI-ALABAMA BORDER TO OCEAN REEF FLORIDA...

PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO HIGHER GROUND.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE WARNING ARE PROVIDED BELOW.

KEY WEST - FL 1012  EDT MAR 28

ST PETERSBURG - FL 1319  EDT MAR 28

PANAMA CITY - FL 1027  CDT MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

/T.CON.PAAQ.TS.Y.0140.120328T1435Z-120328T1535Z/

COASTAL AREAS BETWEEN AND INCLUDING HIGH ISLAND TEXAS TO THE MISSISSIPPI-ALABAMA BORDER

1035 AM EDT WED MAR 28 2012

...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF ALABAMA AND FLORIDA FROM THE MISSISSIPPI-ALABAMA BORDER...

PEOPLE IN TSUNAMI ADVISORY COASTAL AREAS SHOULD MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

TSUNAMI ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PEOPLE IN OR VERY NEAR WATER IS IMMINENT... EXPECTED OR OCCURRING. SIGNIFICANT WIDESPREAD INUNDATION IS NOT EXPECTED FOR AREAS IN AN ADVISORY. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME. ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE ADVISORY ARE PROVIDED BELOW.

BILOXI - MS 1225  CDT MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV
Scenario 1: WCATWC Message #5

WEXX20 PAAQ 281504
TSUAT1

BULLETIN
TSUNAMI MESSAGE NUMBER 5
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
1104 AM EDT WED MAR 28 2012

TSUNAMI OBSERVATIONS ADDED BELOW.
NO CHANGE TO WARNING OR ADVISORY REGIONS.

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF TEXAS FROM BROWNSVILLE TEXAS TO HIGH ISLAND TEXAS...

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF ALABAMA AND FLORIDA FROM THE MISSISSIPPI-ALABAMA BORDER TO OCEAN REEF FLORIDA...

...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF TEXAS - LOUISIANA - MISSISSIPPI AND ALABAMA FROM HIGH ISLAND TEXAS TO THE MISSISSIPPI-ALABAMA BORDER...

...THIS MESSAGE IS INFORMATION ONLY FOR COASTAL AREAS OF FLORIDA - GEORGIA - SOUTH CAROLINA - NORTH CAROLINA - VIRGINIA - MARYLAND - DELAWARE - NEW JERSEY - NEW YORK - CONNECTICUT - RHODE ISLAND - MASSACHUSETTS - NEW HAMPSHIRE - MAINE - NEW BRUNSWICK - NOVA SCOTIA - NEWFOUNDLAND AND LABRADOR FROM OCEAN REEF FLORIDA TO CAPE CHIDLEY LABRADOR...

...THIS MESSAGE IS INFORMATION ONLY FOR COASTAL AREAS OF PUERTO RICO AND THE VIRGIN ISLANDS...

RECOMMENDED ACTIONS
A TSUNAMI HAS BEEN GENERATED WHICH IS EXPECTED TO CAUSE DAMAGE TO THE WARNING AND/OR ADVISORY REGIONS LISTED IN THE HEADLINE. PEOPLE IN LOW-LYING COASTAL AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM THEIR LOCAL EMERGENCY OFFICIALS. EVACUATIONS ARE ONLY ORDERED BY EMERGENCY RESPONSE AGENCIES.
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MEASUREMENTS OR REPORTS OF TSUNAMI ACTIVITY

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TIME = TIME OF MEASUREMENT
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KEY WEST REPORTS DAMAGE TO SMALL BOATS IN A HARBOR NEAR ANGELA ST AND ESTIMATES DAMAGE TO THE HARBOR AND BOATS TO BE BETWEEN $150,000 AND $250,000.

PRELIMINARY EARTHQUAKE PARAMETERS
MAGNITUDE - 6.7
TIME  - 0900 EDT MAR 28 2012
        0800 CDT MAR 28 2012
        0900 AST MAR 28 2012
        1300 UTC MAR 28 2012
LOCATION - 25.6 NORTH 84.6 WEST
        190 MILES/306 KM NW OF KEY WEST FLORIDA
        210 MILES/338 KM SW OF TAMPA FLORIDA
DEPTH   - 6 MILES/10 KM

Tsunami warnings mean that a tsunami with significant widespread inundation is imminent... expected or occurring. Warnings indicate that widespread dangerous coastal flooding accompanied by powerful currents is possible and may continue for several hours after the initial wave arrival.

Tsunami advisories mean that a tsunami capable of producing strong currents or waves dangerous to people in or very near the water is expected. Significant widespread inundation is not expected for areas under an advisory. Currents may be hazardous to swimmers... boats... and coastal structures and may continue for several hours after the initial wave arrival.

Caribbean coastal regions outside Puerto Rico and the Virgin Islands should refer to the Pacific Tsunami Warning Center messages for information on this event at PTWC.WEATHER.GOV.

This message will be updated in 30 minutes or sooner if the situation warrants. The tsunami message will remain in effect until further notice. Refer to the internet site WCATWC.ARH.NOAA.GOV for more information.

/T.CON.PAAQ.TS.W.0140.120328T1504Z-
Coastal areas between and including Brownsville Texas to High Island Texas
1104 AM EDT WED MAR 28 2012

...the tsunami warning continues in effect for the coastal areas of Texas from Brownsville Texas to High Island Texas...

People in tsunami warning coastal areas should move inland to higher ground.

Tsunami warnings mean that a tsunami with significant widespread inundation is imminent... expected or occurring. Tsunamis are a series of waves potentially dangerous several hours after initial arrival time.

Estimated times of initial wave arrival for selected sites in the warning are provided below.

Corpus Christi-TX 1120 CDT MAR 28 Galveston-TX 1236 CDT MAR 28

For arrival times at additional locations see WCATWC.ARH.NOAA.GOV

$$

/T.CON.PAAQ.TS.W.0140.120328T1504Z-120328T1604Z/
Coastal areas between and including the Mississippi-Alabama border to Ocean Reef Florida
1104 AM EDT WED MAR 28 2012
...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF ALABAMA AND FLORIDA FROM THE MISSISSIPPI-ALABAMA BORDER TO OCEAN REEF FLORIDA...

PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO HIGHER GROUND.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE WARNING ARE PROVIDED BELOW.

KEY WEST-FL 1012 EDT MAR 28 ST PETERSBURG-FL 1319 EDT MAR 28
PANAMA CITY-FL 1027 CDT MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

$$
/T.CON.PAAQ.TS.Y.0140.120328T15420Z
COASTAL AREAS BETWEEN AND INCLUDING HIGH ISLAND TEXAS TO THE MISSISSIPPI-ALABAMA BORDER 1104 AM EDT WED MAR 28 2012

...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF TEXAS - LOUISIANA - MISSISSIPPI AND ALABAMA FROM HIGH ISLAND TEXAS TO THE MISSISSIPPI-ALABAMA BORDER...

PEOPLE IN TSUNAMI ADVISORY COASTAL AREAS SHOULD MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

TSUNAMI ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PEOPLE IN OR VERY NEAR WATER IS IMMINENT... EXPECTED OR OCCURRING. SIGNIFICANT WIDESPREAD INUNDATION IS NOT EXPECTED FOR AREAS IN AN ADVISORY. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME. ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE ADVISORY ARE PROVIDED BELOW.

BILOXI-MS 1225 CDT MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

$$
Scenario 1: WCATWC Message #6

WEXX20 PAAQ 281534
TSUATI

BULLETIN
TSUNAMI MESSAGE NUMBER 6
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
1134 AM EDT WED MAR 28 2012

TSUNAMI OBSERVATIONS ADDED BELOW.
NO CHANGE TO WARNING OR ADVISORY REGIONS.

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF TEXAS FROM BROWNSVILLE TEXAS TO HIGH ISLAND
TEXAS...

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF ALABAMA AND FLORIDA FROM THE MISSISSIPPI-ALABAMA BORDER TO OCEAN REEF FLORIDA...

...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF TEXAS - LOUISIANA - MISSISSIPPI AND ALABAMA FROM HIGH ISLAND TEXAS TO THE MISSISSIPPI-ALABAMA BORDER...

...THIS MESSAGE IS INFORMATION ONLY FOR COASTAL AREAS OF FLORIDA - GEORGIA - SOUTH CAROLINA - NORTH CAROLINA - VIRGINIA - MARYLAND - DELAWARE - NEW JERSEY - NEW YORK - CONNECTICUT - RHODE ISLAND - MASSACHUSETTS - NEW HAMPSHIRE - MAINE - NEW BRUNSWICK - NOVA SCOTIA - NEWFOUNDLAND AND LABRADOR FROM OCEAN REEF FLORIDA TO CAPE CHIDLEY LABRADOR...

...THIS MESSAGE IS INFORMATION ONLY FOR COASTAL AREAS OF PUERTO RICO AND THE VIRGIN ISLANDS...

RECOMMENDED ACTIONS
A TSUNAMI HAS BEEN GENERATED WHICH IS EXPECTED TO CAUSE DAMAGE TO THE WARNING AND/OR ADVISORY REGIONS LISTED IN THE HEADLINE. PEOPLE IN LOW-LYING COASTAL AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM THEIR LOCAL EMERGENCY OFFICIALS. EVACUATIONS ARE ONLY ORDERED BY EMERGENCY RESPONSE AGENCIES.
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VACA KEY FL REPORTS FLOODING ON CO ROAD 931. GRAND ISLE LA REPORTS TWO INJURIES TO PEOPLE WHO WERE STRUCK BY WAVES NEAR BAYSIDE CIRCLE.

PRELIMINARY EARTHQUAKE PARAMETERS
MAGNITUDE = 6.7
TIME = 0900 EDT MAR 28 2012
0800 CDT MAR 28 2012
0900 AST MAR 28 2012
1300 UTC MAR 28 2012
LOCATION = 25.6 NORTH 84.6 WEST
190 MILES/306 KM NW OF KEY WEST FLORIDA
210 MILES/338 KM SW OF TAMPA FLORIDA
DEPTH = 6 MILES/10 KM

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. WARNINGS INDICATE THAT WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

TSUNAMI ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING
STRONG CURRENTS OR WAVES DANGEROUS TO PEOPLE IN OR VERY NEAR THE WATER IS EXPECTED. SIGNIFICANT WIDESPREAD INUNDATION IS NOT EXPECTED FOR AREAS UNDER AN ADVISORY. CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

CARIBBEAN COASTAL REGIONS OUTSIDE PUERTO RICO AND THE VIRGIN ISLANDS SHOULD REFER TO THE PACIFIC TSUNAMI WARNING CENTER MESSAGES FOR INFORMATION ON THIS EVENT AT PTWC.WEATHER.GOV.

THIS MESSAGE WILL BE UPDATED IN 30 MINUTES OR SOONER IF THE SITUATION WARRANTS. THE TSUNAMI MESSAGE WILL REMAIN IN EFFECT UNTIL FURTHER NOTICE. REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

Coastal areas between and including Brownsville Texas to High Island Texas

1134 AM EDT WED MAR 28 2012

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF TEXAS FROM BROWNSVILLE TEXAS TO HIGH ISLAND TEXAS...

People in Tsunami Warning coastal areas should move inland to higher ground.

Tsunami warnings mean that a tsunami with significant widespread inundation is imminent... expected or occurring. Tsunamis are a series of waves potentially dangerous several hours after initial arrival time.

Estimated times of initial wave arrival for selected sites in the warning are provided below.

Corpus Christi-TX 1120 CDT MAR 28 Galveston-TX 1236 CDT MAR 28

For arrival times at additional locations see WCATWC.ARH.NOAA.GOV

$$

Coastal areas between and including the Mississippi-Alabama border to Ocean Reef Florida

1134 AM EDT WED MAR 28 2012

...The tsunami warning continues in effect for the coastal areas of Alabama and Florida from the Mississippi-Alabama border to Ocean Reef Florida...

People in tsunami warning coastal areas should move inland to higher ground.

Tsunami warnings mean that a tsunami with significant widespread inundation is imminent... expected or occurring. Tsunamis are a series of waves potentially dangerous several hours after initial arrival time.

Estimated times of initial wave arrival for selected sites in the warning are provided below.
...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF TEXAS - LOUISIANA - MISSISSIPPI AND ALABAMA FROM HIGH ISLAND TEXAS TO THE MISSISSIPPI-ALABAMA BORDER...

PEOPLE IN TSUNAMI ADVISORY COASTAL AREAS SHOULD MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

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BILOXI-MS 1225 CDT MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

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Scenario 1: WCATWC Message #7

WEXX20 PAAQ 281604
TSUAT1

BULLETIN
TSUNAMI MESSAGE NUMBER 7
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
1204 PM EDT WED MAR 28 2012

TSUNAMI OBSERVATIONS ADDED BELOW.
NO CHANGE TO WARNING OR ADVISORY REGIONS.

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF TEXAS FROM BROWNSVILLE TEXAS TO HIGH ISLAND TEXAS...

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF ALABAMA AND FLORIDA FROM THE MISSISSIPPI-ALABAMA BORDER TO OCEAN REEF FLORIDA...

...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF TEXAS - LOUISIANA - MISSISSIPPI AND ALABAMA FROM HIGH ISLAND TEXAS TO THE MISSISSIPPI-ALABAMA BORDER...

...THIS MESSAGE IS INFORMATION ONLY FOR COASTAL AREAS OF FLORIDA - GEORGIA - SOUTH CAROLINA - NORTH CAROLINA - VIRGINIA - MARYLAND - DELAWARE - NEW JERSEY - NEW YORK - CONNECTICUT - RHODE ISLAND - MASSACHUSETTS - NEW HAMPSHIRE - MAINE - NEW BRUNSWICK - NOVA SCOTIA - NEWFOUNDLAND AND LABRADOR FROM OCEAN REEF FLORIDA TO CAPE CHIDLEY
LABRADOR...

...THIS MESSAGE IS INFORMATION ONLY FOR COASTAL AREAS OF PUERTO RICO AND THE VIRGIN ISLANDS...

RECOMMENDED ACTIONS
A TSUNAMI HAS BEEN GENERATED WHICH IS EXPECTED TO CAUSE DAMAGE TO THE WARNING AND/OR ADVISORY REGIONS LISTED IN THE HEADLINE. PEOPLE IN LOW-LYING COASTAL AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM THEIR LOCAL EMERGENCY OFFICIALS. EVACUATIONS ARE ONLY ORDERED BY EMERGENCY RESPONSE AGENCIES.
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KEY WEST FL REPORTS WAVES APPROXIMATELY 06.00FT/1.83M IN HEIGHT THAT HAVE FLOODED AREAS OF WHITEHEAD AND EATON STREETS. FLOODING HAS ALSO BEEN REPORTED AT FLORIDA KEYS COMMUNITY COLLEGE. ESTIMATED DAMAGED FOR KEY WEST FL IS NOW AT $3 MILLION AND FIVE PEOPLE ARE REPORTED MISSING THAT WERE VISITING FORT ZACHARY TAYLOR HISTORIC STATE PARK. APALACHICOLA FL REPORTS SOME FLOODING IN LAFAYETTE PARK AND BATTERY PARK.

PRELIMINARY EARTHQUAKE PARAMETERS
MAGNITUDE - 6.7
TIME - 0900 EDT MAR 28 2012
        0800 CDT MAR 28 2012
        0900 AST MAR 28 2012
        1300 UTC MAR 28 2012
LOCATION - 25.6 NORTH 84.6 WEST
           - 130 MILES/306 KM NW OF KEY WEST FLORIDA
           - 210 MILES/338 KM SW OF TAMPA FLORIDA
DEPTH - 6 MILES/10 KM

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMEDIATE EXPECTED OR OCCURRING. WARNINGS INDICATE THAT WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

TSUNAMI ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PEOPLE IN OR VERY NEAR THE WATER IS EXPECTED. SIGNIFICANT WIDESPREAD INUNDATION IS NOT EXPECTED FOR AREAS UNDER AN ADVISORY. CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

CARIBBEAN COASTAL REGIONS OUTSIDE PUERTO RICO AND THE VIRGIN ISLANDS SHOULD REFER TO THE PACIFIC TSUNAMI WARNING CENTER MESSAGES FOR INFORMATION ON THIS EVENT AT PTWC.WEATHER.GOV.
THIS MESSAGE WILL BE UPDATED IN 30 MINUTES OR SOONER IF THE SITUATION WARRANTS. THE TSUNAMI MESSAGE WILL REMAIN IN EFFECT UNTIL FURTHER NOTICE. REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.


THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF TEXAS FROM BROWNSVILLE TEXAS TO HIGH ISLAND TEXAS...

PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO HIGHER GROUND.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE WARNING ARE PROVIDED BELOW.

CORPUS CHRISTI-TX 1120 CDT MAR 28 GALVESTON-TX 1236 CDT MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

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THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF ALABAMA AND FLORIDA FROM THE MISSISSIPPI-ALABAMA BORDER TO OCEAN REEF FLORIDA...

PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO HIGHER GROUND.

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ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE WARNING ARE PROVIDED BELOW.

PANAMA CITY-FL 1027 CDT MAR 28 ST PETERSBURG-FL 1319 EDT MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

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COASTAL AREAS BETWEEN AND INCLUDING HIGH ISLAND TEXAS TO THE MISSISSIPPI-ALABAMA BORDER
1204 PM EDT WED MAR 28 2012

...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF TEXAS - LOUISIANA - MISSISSIPPI AND ALABAMA FROM HIGH ISLAND TEXAS TO THE MISSISSIPPI-ALABAMA BORDER...

PEOPLE IN TSUNAMI ADVISORY COASTAL AREAS SHOULD MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

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BILOXI-MS    1225 CDT MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

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Scenario 1: WCATWC Message #8

WEXX20 PAAQ 281635
TSUT1

BULLETIN
TSUNAMI MESSAGE NUMBER 8
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
1235 PM EDT WED MAR 28 2012

TSUNAMI OBSERVATIONS ADDED BELOW. NO CHANGE TO WARNING OR ADVISORY REGIONS.

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF TEXAS FROM BROWNSVILLE TEXAS TO HIGH ISLAND TEXAS...

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF ALABAMA AND FLORIDA FROM THE MISSISSIPPI-ALABAMA BORDER TO OCEAN REEF FLORIDA...

...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF TEXAS - LOUISIANA - MISSISSIPPI AND ALABAMA FROM HIGH ISLAND TEXAS TO THE MISSISSIPPI-ALABAMA BORDER...

...THIS MESSAGE IS INFORMATION ONLY FOR COASTAL AREAS OF FLORIDA - GEORGIA - SOUTH CAROLINA - NORTH CAROLINA - VIRGINIA - MARYLAND - DELAWARE - NEW JERSEY - NEW YORK - CONNECTICUT - RHODE ISLAND - MASSACHUSETTS - NEW HAMPshire - MAINE - NEW BRUNSWICK - NOVA SCOTIA - NEWFOUNDLAND AND LABRADOR FROM OCEAN REEF FLORIDA TO CAPE CHIDLEY LABRADOR...

...THIS MESSAGE IS INFORMATION ONLY FOR COASTAL AREAS OF PUERTO RICO AND THE VIRGIN ISLANDS...

RECOMMENDED ACTIONS
A TSUNAMI HAS BEEN GENERATED WHICH IS EXPECTED TO CAUSE DAMAGE TO THE WARNING AND/OR ADVISORY REGIONS LISTED IN THE HEADLINE. PEOPLE IN LOW-LYING COASTAL AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM THEIR LOCAL EMERGENCY OFFICIALS. EVACUATIONS
ARE ONLY ORDERED BY EMERGENCY RESPONSE AGENCIES.
- IF IN A TSUNAMI WARNING COASTAL AREA MOVE INLAND TO HIGHER GROUND.
- IF IN A TSUNAMI ADVISORY COASTAL AREA MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

MEASUREMENTS OR REPORTS OF TSUNAMI ACTIVITY

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TIME - TIME OF MEASUREMENT
AMPL - TSUNAMI AMPLITUDES ARE MEASURED RELATIVE TO NORMAL SEA LEVEL. IT IS ...NOT... CREST-TO-TRough WAVE HEIGHT.
VALUES ARE GIVEN IN BOTH METERS/M/ AND FEET/FT/.

CLEARWATER FL AND BROWNSVILLE TX BOTH REPORT WAVES APPROXIMATELY 02.00FT/00.61M IN HEIGHT. BROWNSVILLE TX REPORTED SOME FLOODING ON SOUTH PADRE ISLAND ALONG GULF BLVD, WHILE MOST OF CLEARWATER FL FLOODING OCCURRED ON SAND KEY ALONG COUNTY ROAD 183.

PRELIMINARY EARTHQUAKE PARAMETERS
MAGNITUDE - 6.7
TIME - 0900 EDT MAR 28 2012
0800 CDT MAR 28 2012
0900 AST MAR 28 2012
1300 UTC MAR 28 2012
LOCATION - 25.6 NORTH 84.6 WEST
190 MILES/306 KM NW OF KEY WEST FLORIDA
210 MILES/338 KM SW OF TAMPA FLORIDA
DEPTH - 6 MILES/10 KM

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. WARNINGS INDICATE THAT WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

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COASTAL AREAS BETWEEN AND INCLUDING BROWNSVILLE TEXAS TO HIGH ISLAND TEXAS
1235 PM EDT WED MAR 28 2012

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF TEXAS FROM BROWNSVILLE TEXAS TO HIGH ISLAND TEXAS...

PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO HIGHER GROUND.

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ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE WARNING ARE PROVIDED BELOW.

CORPUS CHRISTI-TX 1120 CDT MAR 28 GALVESTON-TX 1236 CDT MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

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COASTAL AREAS BETWEEN AND INCLUDING THE MISSISSIPPI-ALABAMA BORDER TO OCEAN REEF FLORIDA
1235 PM EDT WED MAR 28 2012

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF ALABAMA AND FLORIDA FROM THE MISSISSIPPI-ALABAMA BORDER TO OCEAN REEF FLORIDA...

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ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE WARNING ARE PROVIDED BELOW.

ST PETERSBURG-FL 1319 EDT MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

$$
COASTAL AREAS BETWEEN AND INCLUDING HIGH ISLAND TEXAS TO THE MISSISSIPPI-ALABAMA BORDER
1235 PM EDT WED MAR 28 2012

...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF TEXAS - LOUISIANA - MISSISSIPPI AND ALABAMA FROM HIGH ISLAND TEXAS TO THE MISSISSIPPI-ALABAMA BORDER...

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BILOXI-MS 1225 CDT MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

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Scenario 1: WCATWC Message #9

WEXX20 PAAQ 281705 TSUAT1

BULLETIN
TSUNAMI MESSAGE NUMBER 9
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
105 PM EDT WED MAR 28 2012

TSUNAMI OBSERVATIONS ADDED BELOW.
NO CHANGE TO WARNING OR ADVISORY REGIONS.

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF TEXAS FROM BROWNSVILLE TEXAS TO HIGH ISLAND TEXAS...

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF ALABAMA AND FLORIDA FROM THE MISSISSIPPI-ALABAMA BORDER TO OCEAN REEF FLORIDA...

...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF TEXAS - LOUISIANA - MISSISSIPPI AND ALABAMA FROM HIGH ISLAND TEXAS TO THE MISSISSIPPI-ALABAMA BORDER...

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MEASUREMENTS OR REPORTS OF TSUNAMI ACTIVITY
LOCATION LAT LON TIME AMPL
TIME - TIME OF MEASUREMENT
AMPL - TSUNAMI AMPLITUDES ARE MEASURED RELATIVE TO NORMAL SEA LEVEL.
IT IS NOT CREST-TO-TROUGH WAVE HEIGHT.
VALUES ARE GIVEN IN BOTH METERS/M/ AND FEET/FT/.

CORPUS CHRISTI TX REPORTED A WAVE APPROXIMATELY 04.00FT/01.22M IN HEIGHT WHICH DID MOST OF ITS FLOODING AROUND PORT ARANSAS TX. AREAS EFFECTED INCLUDED NUYES CO PARK AND PORT ARANSAS BEACH ROAD. PORTIONS OF PARK ROAD 22 LOCATED SOUTH OF PORT ARANSAS TX WERE ALSO REPORTED AS FLOODED. NO INJURIES WERE REPORTED THOUGH POTENTIAL MONETARY DAMAGE TO THE TOUR INDUSTRY IS CURRENTLY BEING EVALUATED.

PRELIMINARY EARTHQUAKE PARAMETERS
MAGNITUDE - 6.7
TIME - 0900 EDT MAR 28 2012
- 0800 CDT MAR 28 2012
- 0900 AST MAR 28 2012
- 1300 UTC MAR 28 2012
LOCATION - 25.6 NORTH 84.6 WEST
- 190 MILES/306 KM NW OF KEY WEST FLORIDA
- 210 MILES/338 KM SW OF TAMPA FLORIDA
DEPTH - 6 MILES/10 KM

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. WARNINGS INDICATE THAT WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

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COASTAL AREAS BETWEEN AND INCLUDING BROWNSVILLE TEXAS TO HIGH ISLAND TEXAS
105 PM EDT WED MAR 28 2012

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF TEXAS FROM BROWNSVILLE TEXAS TO HIGH ISLAND TEXAS...
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ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE WARNING ARE PROVIDED BELOW.

CORPUS CHRISTI-TX 1120 CDT MAR 28 GALVESTON-TX 1236 CDT MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

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COASTAL AREAS BETWEEN AND INCLUDING THE MISSISSIPPI-ALABAMA BORDER TO OCEAN REEF FLORIDA

105 PM EDT WED MAR 28 2012

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF ALABAMA AND FLORIDA FROM THE MISSISSIPPI-ALABAMA BORDER TO OCEAN REEF FLORIDA...

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ST PETERSBURG-FL 1319 EDT MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

$\$


COASTAL AREAS BETWEEN AND INCLUDING HIGH ISLAND TEXAS TO THE MISSISSIPPI-ALABAMA BORDER

105 PM EDT WED MAR 28 2012

...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF ALABAMA AND FLORIDA FROM THE MISSISSIPPI-ALABAMA BORDER TO OCEAN REEF FLORIDA...

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BILOXI-MS  1225 CDT MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

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Scenario 1: WCATWC Message #10

WEXX20 PAAQ 281734
TSUATI

BULLETIN
TSUNAMI MESSAGE NUMBER 10
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
134 PM EDT WED MAR 28 2012

TSUNAMI OBSERVATIONS ADDED BELOW.
NO CHANGE TO WARNING OR ADVISORY REGIONS.

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF TEXAS FROM BROWNSVILLE TEXAS TO HIGH ISLAND TEXAS...

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF ALABAMA AND FLORIDA FROM THE MISSISSIPPI-ALABAMA BORDER TO OCEAN REEF FLORIDA...

...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF TEXAS - LOUISIANA - MISSISSIPPI AND ALABAMA FROM HIGH ISLAND TEXAS TO THE MISSISSIPPI-ALABAMA BORDER...

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...THIS MESSAGE IS INFORMATION ONLY FOR COASTAL AREAS OF PUERTO RICO AND THE VIRGIN ISLANDS...

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TIME - TIME OF MEASUREMENT
AMPL - TSUNAMI AMPLITUDES ARE MEASURED RELATIVE TO NORMAL SEA LEVEL.
IT IS ...NOT... CREST-TO-TRough WAVE HEIGHT.
VALUES ARE GIVEN IN BOTH METERS/M/ AND FEET/FT/.

PORT OCONNOR TX REPORTED A 03.28FT/01.00M WAVE. OFFICIALS THERE BELIEVE
THE WAVE WAS HIGHER ON THE SHORES OF THE BARRIER ISLAND PROTECTING PORT
OCONNOR. SOME FLOODING WAS NOTED ALONG KING FISHER BEACH AND PARK STREET.
NAPLES FL IS REPORTING A 02.00FT/00.61M WAVE WHICH CAUSED MINIMAL FLOODING
SEAWARD OF GULF SHORE BLVD N. ONE PERSON DIED WHEN THIS WAVE CAUSED THEM
TO SLIP AND FALL AGAINST A ROCK.

PRELIMINARY EARTHQUAKE PARAMETERS
MAGNITUDE - 6.7
TIME - 0900 EDT MAR 28 2012
0800 CDT MAR 28 2012
0900 AST MAR 28 2012
1300 UTC MAR 28 2012
LOCATION - 25.6 NORTH 84.6 WEST
190 MILES/306 KM NW OF KEY WEST FLORIDA
210 MILES/338 KM SW OF TAMPA FLORIDA
DEPTH - 6 MILES/10 KM

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD
INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. WARNINGS INDICATE
THAT WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL
CURRENTS IS POSSIBLE AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE
INITIAL WAVE ARRIVAL.

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THIS MESSAGE WILL BE UPDATED IN 30 MINUTES OR SOONER IF
THE SITUATION WARRANTS. THE TSUNAMI MESSAGE WILL REMAIN IN EFFECT
UNTIL FURTHER NOTICE. REFER TO THE INTERNET SITE
WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

GSZ130-150-155-230-235-250-255-330-335-350-355-TXZ251-256-
257-242-247-213-214-236-238-28134-/
/T.CON.PAAQ.TS.W.0140.120328T1734Z-
120328T1834Z/
COASTAL AREAS BETWEEN AND INCLUDING BROWNSVILLE TEXAS TO
HIGH ISLAND TEXAS
134 PM EDT WED MAR 28 2012

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL
AREAS OF TEXAS FROM BROWNSVILLE TEXAS TO HIGH ISLAND
TEXAS...

PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO
HIGHER GROUND.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD
...
INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE WARNING ARE PROVIDED BELOW.

GALVESTON-TX 1236 CDT MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

$$
/T.CON.PAAQ.TS.W.0140.120328T1734Z-120328T1834Z/

COASTAL AREAS BETWEEN AND INCLUDING THE MISSISSIPPI-ALABAMA BORDER TO OCEAN REEF FLORIDA
134 PM EDT WED MAR 28 2012

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF ALABAMA AND FLORIDA FROM THE MISSISSIPPI-ALABAMA BORDER TO OCEAN REEF FLORIDA...

PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO HIGHER GROUND.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE WARNING ARE PROVIDED BELOW.

ST PETERSBURG-FL 1319 EDT MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

$$
/T.CON.PAAQ.TS.Y.0140.120328T1734Z-120328T1834Z/

COASTAL AREAS BETWEEN AND INCLUDING HIGH ISLAND TEXAS TO THE MISSISSIPPI-ALABAMA BORDER
134 PM EDT WED MAR 28 2012

...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF ALABAMA AND FLORIDA FROM THE MISSISSIPPI-ALABAMA BORDER...

PEOPLE IN TSUNAMI ADVISORY COASTAL AREAS SHOULD MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

TSUNAMI ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PEOPLE IN OR VERY NEAR WATER IS IMMINENT... EXPECTED OR OCCURRING. SIGNIFICANT WIDESPREAD INUNDATION IS NOT EXPECTED FOR AREAS IN AN ADVISORY. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME. ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE ADVISORY ARE PROVIDED BELOW.

BILLOXI-MS 1225 CDT MAR 28
FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

$$

Scenario 1: WCATWC Message #11

WEXX20 PAQ 281804
TSUAT1

BULLETIN
TSUNAMI MESSAGE NUMBER 11
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
204 PM EDT WED MAR 28 2012

TSUNAMI OBSERVATIONS ADDED BELOW.
NO CHANGE TO WARNING OR ADVISORY REGIONS.

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF TEXAS FROM BROWNSVILLE TEXAS TO HIGH ISLAND TEXAS...

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF ALABAMA AND FLORIDA FROM THE MISSISSIPPI-ALABAMA BORDER TO OCEAN REEF FLORIDA...

...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF TEXAS - LOUISIANA - MISSISSIPPI AND ALABAMA FROM HIGH ISLAND TEXAS TO THE MISSISSIPPI-ALABAMA BORDER...

...THIS MESSAGE IS INFORMATION ONLY FOR COASTAL AREAS OF FLORIDA - GEORGIA - SOUTH CAROLINA - NORTH CAROLINA - VIRGINIA - MARYLAND - DELAWARE - NEW JERSEY - NEW YORK - CONNECTICUT - RHODE ISLAND - MASSACHUSETTS - NEW HAMPSHIRE - MAINE - NEW BRUNSWICK - NOVA SCOTIA - NEWFOUNDLAND AND LABRADOR FROM OCEAN REEF FLORIDA TO CAPE CHIDLEY LABRADOR...

...THIS MESSAGE IS INFORMATION ONLY FOR COASTAL AREAS OF PUERTO RICO AND THE VIRGIN ISLANDS...

RECOMMENDED ACTIONS
A TSUNAMI HAS BEEN GENERATED WHICH IS EXPECTED TO CAUSE DAMAGE TO THE WARNING AND/OR ADVISORY REGIONS LISTED IN THE HEADLINE. PEOPLE IN LOW LYING COASTAL AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM THEIR LOCAL EMERGENCY OFFICIALS. EVACUATIONS ARE ONLY ORDERED BY EMERGENCY RESPONSE AGENCIES.
- IF IN A TSUNAMI WARNING COASTAL AREA MOVE INLAND TO HIGHER GROUND.
- IF IN A TSUNAMI ADVISORY COASTAL AREA MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

MEASUREMENTS OR REPORTS OF TSUNAMI ACTIVITY

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TIME - TIME OF MEASUREMENT
AMPL - TSUNAMI AMPLITUDES ARE MEASURED RELATIVE TO NORMAL SEA LEVEL.
IT IS NOT Crest-to-Trough WAVE HEIGHT.
VALUES ARE GIVEN IN BOTH METERS/M/ AND FEET/FT/.

MORGAN CITY LA HAS REPORTED A WAVE APPROXIMATELY 03.00FT/00.91M IN HEIGHT. FLOODING FROM THIS WAVE WAS REPORTED ON ATCHAFALAYA DELTA STATE WILDLIFE MANAGEMENT AREA AND ON LEVEE ROAD NEAR BATEMAN ISLAND.

PRELIMINARY EARTHQUAKE PARAMETERS
MAGNITUDE - 6.7
TIME - 0900 EDT MAR 28 2012
0800 CDT MAR 28 2012
0900 AST MAR 28 2012
1300 UTC MAR 28 2012
LOCATION - 25.6 NORTH 84.6 WEST
190 MILES/306 KM NW OF KEY WEST FLORIDA
210 MILES/338 KM SW OF TAMPA FLORIDA
DEPTH - 6 MILES/10 KM

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. WARNINGS INDICATE THAT WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

TSUNAMI ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PEOPLE IN OR VERY NEAR THE WATER IS EXPECTED. SIGNIFICANT WIDESPREAD INUNDATION IS NOT EXPECTED FOR AREAS UNDER AN ADVISORY. CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

CARIBBEAN COASTAL REGIONS OUTSIDE PUERTO RICO AND THE VIRGIN ISLANDS SHOULD REFER TO THE PACIFIC TSUNAMI WARNING CENTER MESSAGES FOR INFORMATION ON THIS EVENT AT PTWC.WEATHER.GOV.

THIS MESSAGE WILL BE UPDATED IN 30 MINUTES OR SOONER IF THE SITUATION WARRANTS. THE TSUNAMI MESSAGE WILL REMAIN IN EFFECT UNTIL FURTHER NOTICE. REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

COASTAL AREAS BETWEEN AND INCLUDING BROWNSVILLE TEXAS TO HIGH ISLAND TEXAS
204 PM EDT WED MAR 28 2012

THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF TEXAS FROM BROWNSVILLE TEXAS TO HIGH ISLAND TEXAS...

PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO HIGHER GROUND.
TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE WARNING ARE PROVIDED BELOW.

GALVESTON-TX  1236  CDT MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

$$

COASTAL AREAS BETWEEN AND INCLUDING THE MISSISSIPPI-ALABAMA BORDER TO OCEAN REEF FLORIDA

204 PM EDT WED MAR 28 2012

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF ALABAMA AND FLORIDA FROM THE MISSISSIPPI-ALABAMA BORDER TO OCEAN REEF FLORIDA...

PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO HIGHER GROUND.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE WARNING ARE PROVIDED BELOW.

ST PETERSBURG-FL 1319  EDT MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

$$

COASTAL AREAS BETWEEN AND INCLUDING HIGH ISLAND TEXAS TO THE MISSISSIPPI-ALABAMA BORDER

204 PM EDT WED MAR 28 2012

...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF ALABAMA AND FLORIDA FROM THE MISSISSIPPI-ALABAMA BORDER...

PEOPLE IN TSUNAMI ADVISORY COASTAL AREAS SHOULD MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

TSUNAMI ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PEOPLE IN OR VERY NEAR WATER IS IMMINENT... EXPECTED OR OCCURRING. SIGNIFICANT WIDESPREAD INUNDATION IS NOT EXPECTED FOR AREAS IN AN ADVISORY. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME. ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE ADVISORY ARE PROVIDED BELOW.
FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

$$

Scenario 1: WCATWC Message #12

WEXX20 PAAQ 281834
TSUATI

BULLETIN
TSUNAMI MESSAGE NUMBER 12
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
234 PM EDT WED MAR 28 2012

TSUNAMI OBSERVATIONS ADDED BELOW.
NO CHANGE TO WARNING OR ADVISORY REGIONS.

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF TEXAS FROM BROWNSVILLE TEXAS TO HIGH ISLAND TEXAS...

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF ALABAMA AND FLORIDA FROM THE MISSISSIPPI-ALABAMA BORDER TO OCEAN REEF FLORIDA...

...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF TEXAS - LOUISIANA - MISSISSIPPI AND ALABAMA FROM HIGH ISLAND TEXAS TO THE MISSISSIPPI-ALABAMA BORDER...

...THIS MESSAGE IS INFORMATION ONLY FOR COASTAL AREAS OF FLORIDA - GEORGIA - SOUTH CAROLINA - NORTH CAROLINA - VIRGINIA - MARYLAND - DELAWARE - NEW JERSEY - NEW YORK - CONNECTICUT - RHODE ISLAND - MASSACHUSETTS - NEW HAMPSHIRE - MAINE - NEW BRUNSWICK - NOVA SCOTIA - NEWFOUNDLAND AND LABRADOR FROM OCEAN REEF FLORIDA TO CAPE CHIDLEY LABRADOR...

...THIS MESSAGE IS INFORMATION ONLY FOR COASTAL AREAS OF PUERTO RICO AND THE VIRGIN ISLANDS...

RECOMMENDED ACTIONS
A TSUNAMI HAS BEEN GENERATED WHICH IS EXPECTED TO CAUSE DAMAGE TO THE WARNING AND/OR ADVISORY REGIONS LISTED IN THE HEADLINE. PEOPLE IN LOW-LYING COASTAL AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM THEIR LOCAL EMERGENCY OFFICIALS. EVACUATIONS ARE ONLY ORDERED BY EMERGENCY RESPONSE AGENCIES.

- IF IN A TSUNAMI WARNING COASTAL AREA MOVE INLAND TO HIGHER GROUND.

- IF IN A TSUNAMI ADVISORY COASTAL AREA MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

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TIME - TIME OF MEASUREMENT
AMPL - TSUNAMI AMPLITUDES ARE MEASURED RELATIVE TO NORMAL SEA LEVEL.
IT IS ...NOT... CREST-TO-TRough WAVE HEIGHT.
VALUES ARE GIVEN IN BOTH METERS/M/ AND FEET/FT/.

CEDAR KEY FL REPORTS A 03.00FT/00.91M WAVE THAT CAUSED SOME DAMAGE TO
SMALL BOATS MOORED ALONG DOCK ST. THE INITIAL COST OF DAMAGE TO THE SMALL
BOATS IS $50,000. SABINE PASS TX HAS REPORTED DAMAGE CAUSED BY AN
APPROXIMATELY 03.00FT/00.91M WAVE. INITIAL DAMAGE COSTS ARE BELIEVED TO
BE AROUND $150,000.

PRELIMINARY EARTHQUAKE PARAMETERS
MAGNITUDE - 6.7
TIME - 0900 EDT MAR 28 2012
LOCATION - 25.6 NORTH 84.6 WEST
DEPTH - 6 MILES/10 KM

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD
INUNDATION IS IMMEDIATELY EXPECTED OR OCCURRING. WARNINGS INDICATE
THAT WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL
CURRENTS IS POSSIBLE AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE
INITIAL WAVE ARRIVAL.

TSUNAMI ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING
STRONG CURRENTS OR WAVES DANGEROUS TO PEOPLE IN OR VERY NEAR THE
WATER IS EXPECTED. SIGNIFICANT WIDESPREAD INUNDATION
IS NOT EXPECTED FOR AREAS UNDER AN ADVISORY. CURRENTS MAY BE
HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY
CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

CARIBBEAN COASTAL REGIONS OUTSIDE PUERTO RICO AND THE VIRGIN
ISLANDS SHOULD REFER TO THE PACIFIC TSUNAMI WARNING CENTER MESSAGES
FOR INFORMATION ON THIS EVENT AT PTWC.WEATHER.GOV.

THIS MESSAGE WILL BE UPDATED IN 30 MINUTES OR SOONER IF
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UNTIL FURTHER NOTICE. REFER TO THE INTERNET SITE
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GMZ130-150-155-230-235-250-255-330-335-350-355-TXX251-256-
257-242>247-213=214-236>238-281934-
/T.CON.PAAQ.TS.W.0140.120328T1834Z-
/COASTAL AREAS BETWEEN AND INCLUDING BROWNSVILLE TEXAS TO
HIGH ISLAND TEXAS
234 PM EDT WED MAR 28 2012

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL
AREAS OF TEXAS FROM BROWNSVILLE TEXAS TO HIGH ISLAND
TEXAS...

PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO
HIGHER GROUND.
TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE WARNING ARE PROVIDED BELOW.

GALVESTON-TX  1236  CDT MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

\$


COASTAL AREAS BETWEEN AND INCLUDING THE MISSISSIPPI-ALABAMA BORDER TO OCEAN REEF FLORIDA
234 PM EDT WED MAR 28 2012

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF ALABAMA AND FLORIDA FROM THE MISSISSIPPI-ALABAMA BORDER TO OCEAN REEF FLORIDA...

PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO HIGHER GROUND.

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COASTAL AREAS BETWEEN AND INCLUDING HIGH ISLAND TEXAS TO THE MISSISSIPPI-ALABAMA BORDER
234 PM EDT WED MAR 28 2012

...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF TEXAS - LOUISIANA - MISSISSIPPI AND ALABAMA FROM HIGH ISLAND TEXAS TO THE MISSISSIPPI-ALABAMA BORDER...

PEOPLE IN TSUNAMI ADVISORY COASTAL AREAS SHOULD MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

TSUNAMI ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PEOPLE IN OR VERY NEAR WATER IS IMMINENT... EXPECTED OR OCCURRING. SIGNIFICANT WIDESPREAD INUNDATION IS NOT EXPECTED FOR AREAS IN AN ADVISORY. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

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Scenario 1: WCATWC Message #13

WEXX20  PAAQ  281904
TSUAT1
BULLETIN
TSUNAMI MESSAGE NUMBER 13
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
304 PM EDT WED MAR 28 2012

TSUNAMI OBSERVATIONS ADDED BELOW.
NO CHANGE TO WARNING OR ADVISORY REGIONS.

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL
AREAS OF TEXAS FROM BROWNSVILLE TEXAS TO HIGH ISLAND
TEXAS...

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL
AREAS OF ALABAMA AND FLORIDA FROM THE MISSISSIPPI-ALABAMA
BORDER TO OCEAN REEF FLORIDA...

...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL
AREAS OF TEXAS - LOUISIANA - MISSISSIPPI AND ALABAMA FROM
HIGH ISLAND TEXAS TO THE MISSISSIPPI-ALABAMA BORDER...

...THIS MESSAGE IS INFORMATION ONLY FOR COASTAL AREAS OF
FLORIDA - GEORGIA - SOUTH CAROLINA - NORTH CAROLINA -
VIRGINIA - MARYLAND - DELAWARE - NEW JERSEY - NEW YORK -
CONNECTICUT - RHODE ISLAND - MASSACHUSETTS - NEW HAMPSHIRE -
MAINE - NEW BRUNSWICK - NOVA SCOTIA - NEWFOUNDLAND AND
LABRADOR FROM OCEAN REEF FLORIDA TO CAPE CHIDLEY
LABRADOR...

...THIS MESSAGE IS INFORMATION ONLY FOR COASTAL AREAS OF
PUERTO RICO AND THE VIRGIN ISLANDS...

RECOMMENDED ACTIONS
A TSUNAMI HAS BEEN GENERATED WHICH IS EXPECTED TO CAUSE DAMAGE
TO THE WARNING AND/OR ADVISORY REGIONS LISTED IN THE HEADLINE.
PEOPLE IN LOW-LYING COASTAL AREAS SHOULD BE ALERT TO
INSTRUCTIONS FROM THEIR LOCAL EMERGENCY OFFICIALS. EVACUATIONS
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- IF IN A TSUNAMI WARNING COASTAL AREA MOVE INLAND TO
HIGHER GROUND.
- IF IN A TSUNAMI ADVISORY COASTAL AREA MOVE OUT OF
THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

MEASUREMENTS OR REPORTS OF TSUNAMI ACTIVITY

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TIME - TIME OF MEASUREMENT
AMPL - TSUNAMI AMPLITUDES ARE MEASURED RELATIVE TO NORMAL SEA LEVEL.
IT IS ...NOT... CREST-TO-TROUGH WAVE HEIGHT.
VALUES ARE GIVEN IN BOTH METERS/M/ AND FEET/FT/.

WAVES ARE REPORTED TO BE DIMINISHING THROUGHOUT THE GULF OF MEXICO.

PRELIMINARY EARTHQUAKE PARAMETERS
MAGNITUDE - 6.7
TIME - 0900 EDT MAR 28 2012
0800 CDT MAR 28 2012
TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. WARNINGS INDICATE THAT WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

TSUNAMI ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PEOPLE IN OR VERY NEAR THE WATER IS EXPECTED. SIGNIFICANT WIDESPREAD INUNDATION IS NOT EXPECTED FOR AREAS UNDER AN ADVISORY. CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

CARIBBEAN COASTAL REGIONS OUTSIDE PUERTO RICO AND THE VIRGIN ISLANDS SHOULD REFER TO THE PACIFIC TSUNAMI WARNING CENTER MESSAGES FOR INFORMATION ON THIS EVENT AT PTWC.WEATHER.GOV.

THIS MESSAGE WILL BE UPDATED IN 30 MINUTES OR SOONER IF THE SITUATION WARRANTS. THE TSUNAMI MESSAGE WILL REMAIN IN EFFECT UNTIL FURTHER NOTICE. REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.


PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO HIGHER GROUND.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

$$

PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO HIGHER GROUND.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. TSUNAMIS ARE A
SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

$$
GMZ450-452-532-534-536-538-550-552-555-TXZ215-216-LA2052>054-073-074-040-062-064-066>070-MS2080>082-282004-
/T.CON.PAAQ.TS.Y.0140.120328T1904Z-120328T2004Z/
COASTAL AREAS BETWEEN AND INCLUDING HIGH ISLAND TEXAS TO THE MISSISSIPPI-ALABAMA BORDER
304 PM EDT WED MAR 28 2012

...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF TEXAS - LOUISIANA - MISSISSIPPI AND ALABAMA FROM HIGH ISLAND TEXAS TO THE MISSISSIPPI-ALABAMA BORDER...

PEOPLE IN TSUNAMI ADVISORY COASTAL AREAS SHOULD MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

TSUNAMI ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PEOPLE IN OR VERY NEAR WATER IS IMMINENT... EXPECTED OR OCCURRING. SIGNIFICANT WIDESPREAD INUNDATION IS NOT EXPECTED FOR AREAS IN AN ADVISORY. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

$$

Scenario 1: WCATWC Message #14

WEXX20 PAAQ 281934
TSUATI

BULLETIN
TSUNAMI MESSAGE NUMBER 14
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
334 PM EDT WED MAR 28 2012

TSUNAMI OBSERVATIONS ADDED BELOW.
NO CHANGE TO WARNING OR ADVISORY REGIONS.

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF TEXAS FROM BROWNSVILLE TEXAS TO HIGH ISLAND TEXAS...

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF ALABAMA AND FLORIDA FROM THE MISSISSIPPI-ALABAMA BORDER TO OCEAN REEF FLORIDA...

...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF TEXAS - LOUISIANA - MISSISSIPPI AND ALABAMA FROM HIGH ISLAND TEXAS TO THE MISSISSIPPI-ALABAMA BORDER...

...THIS MESSAGE IS INFORMATION ONLY FOR COASTAL AREAS OF FLORIDA - GEORGIA - SOUTH CAROLINA - NORTH CAROLINA - VIRGINIA - MARYLAND - DELAWARE - NEW JERSEY - NEW YORK - CONNECTICUT - RHODE ISLAND - MASSACHUSETTS - NEW HAMPSHIRE - MAINE - NEW BRUNSWICK - NOVA SCOTIA - NEWFOUNDLAND AND LABRADOR FROM OCEAN REEF FLORIDA TO CAPE CHIDLEY LABRADOR...

...THIS MESSAGE IS INFORMATION ONLY FOR COASTAL AREAS OF PUERTO RICO AND THE VIRGIN ISLANDS...

RECOMMENDED ACTIONS
A TSUNAMI HAS BEEN GENERATED WHICH IS EXPECTED TO CAUSE DAMAGE
TO THE WARNING AND/OR ADVISORY REGIONS LISTED IN THE HEADLINE.
PEOPLE IN LOW-LYING COASTAL AREAS SHOULD BE ALERT TO
INSTRUCTIONS FROM THEIR LOCAL EMERGENCY OFFICIALS. EVACUATIONS
ARE ONLY ORDERED BY EMERGENCY RESPONSE AGENCIES.
- IF IN A TSUNAMI WARNING COASTAL AREA MOVE INLAND TO
HIGHER GROUND.
- IF IN A TSUNAMI ADVISORY COASTAL AREA MOVE OUT OF
THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

MEASUREMENTS OR REPORTS OF TSUNAMI ACTIVITY

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>LAT</th>
<th>LON</th>
<th>TIME</th>
<th>AMPL</th>
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</thead>
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<td>Waveland MS</td>
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<tr>
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<td>94.8W</td>
<td>1736UTC</td>
<td>0.98FT/0.30M</td>
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<tr>
<td>Morgan City LA</td>
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<td>91.2W</td>
<td>1753UTC</td>
<td>0.25FT/0.30M</td>
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<tr>
<td>Cedar Key FL</td>
<td>29.1N</td>
<td>83.0W</td>
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<td>3.28FT/0.60M</td>
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<td>1820UTC</td>
<td>0.26FT/0.30M</td>
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TIME = TIME OF MEASUREMENT
AMPL = TSUNAMI AMPLITUDES ARE MEASURED RELATIVE TO NORMAL SEA LEVEL.
IT IS NOT CREST-TO-TRough WAVE HEIGHT.
VALUES ARE GIVEN IN BOTH METERS/M/ AND FEET/FT/.

WAVES THROUGHOUT THE GULF OF MEXICO ARE REPORTED TO BE LESS THAN
01.31FT/0.40M IN HEIGHT.

PRELIMINARY EARTHQUAKE PARAMETERS
MAGNITUDE - 6.7
TIME - 0900 EDT MAR 28 2012
       0800 CDT MAR 28 2012
       0900 AST MAR 28 2012
       1300 UTC MAR 28 2012
LOCATION - 25.6 NORTH 84.6 WEST
           190 MILES/306 KM NW OF KEY WEST FLORIDA
           210 MILES/338 KM SW OF TAMPA FLORIDA
DEPTH - 6 MILES/10 KM

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD
INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. WARNINGS INDICATE
THAT WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL
CURRENTS IS POSSIBLE AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE
INITIAL WAVE ARRIVAL.

TSUNAMI ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING
STRONG CURRENTS OR WAVES DANGEROUS TO PEOPLE IN OR VERY NEAR THE
WATER IS EXPECTED. SIGNIFICANT WIDESPREAD INUNDATION
IS NOT EXPECTED FOR AREAS UNDER AN ADVISORY. CURRENTS MAY BE
HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY
CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

CARIBBEAN COASTAL REGIONS OUTSIDE PUERTO RICO AND THE VIRGIN
ISLANDS SHOULD REFER TO THE PACIFIC TSUNAMI WARNING CENTER MESSAGES
FOR INFORMATION ON THIS EVENT AT PTWC.WEATHER.GOV.

THIS MESSAGE WILL BE UPDATED IN 30 MINUTES OR SOONER IF
THE SITUATION WARRANTS. THE TSUNAMI MESSAGE WILL REMAIN IN EFFECT
UNTIL FURTHER NOTICE. REFER TO THE INTERNET SITE
WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

GMZ130-150-155-230-235-250-255-330-335-350-355-TXZ251-256-
257-242x247-213-214-236x238-23034-
/T.CON.PAQ.TS.W.0140.120328T1934Z-120328T2034Z/
COASTAL AREAS BETWEEN AND INCLUDING BROWNSVILLE TEXAS TO
HIGH ISLAND TEXAS
334 PM EDT WED MAR 28 2012

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF TEXAS FROM BROWNSVILLE TEXAS TO HIGH ISLAND TEXAS...

PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO HIGHER GROUND.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCurring. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

$$
018-027-028-034-039-042-048-051-055-060-062-065-069-070-075-
076-078-174-282034-
/T.CON.PAAQ.TS.W.0140.120328T1934Z-120328T2034Z/
COASTAL AREAS BETWEEN AND INCLUDING THE MISSISSIPPI-ALABAMA BORDER TO OCEAN REEF FLORIDA
334 PM EDT WED MAR 28 2012

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF ALABAMA AND FLORIDA FROM THE MISSISSIPPI-ALABAMA BORDER TO OCEAN REEF FLORIDA...

PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO HIGHER GROUND.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCurring. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

$$
GMZ450-452-455-532-534-536-538-550-552-555-TX2215-216-1A2052-054-
073-074-040-062-064-066-070-MZ2080-082-282034-
/T.CON.PAAQ.TS.Y.0140.120328T1934Z-120328T2034Z/
COASTAL AREAS BETWEEN AND INCLUDING HIGH ISLAND TEXAS TO THE MISSISSIPPI-ALABAMA BORDER
334 PM EDT WED MAR 28 2012

...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF TEXAS - LOUISIANA - MISSISSIPPI AND ALABAMA FROM HIGH ISLAND TEXAS TO THE MISSISSIPPI-ALABAMA BORDER...

PEOPLE IN TSUNAMI ADVISORY COASTAL AREAS SHOULD MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

TSUNAMI ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PEOPLE IN OR VERY NEAR WATER IS IMMINENT... EXPECTED OR OCCURRING. SIGNIFICANT WIDESPREAD INUNDATION IS NOT EXPECTED FOR AREAS IN AN ADVISORY. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

$$

Scenario 1: WCATWC Message #15

WEXX20 PAAQ 282005
TSUAT1
BULLETIN
TSUNAMI MESSAGE NUMBER 15
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
405 PM EDT WED MAR 28 2012

...THE TSUNAMI WARNING IS CANCELED FOR THE COASTAL AREAS OF TEXAS FROM BROWNSVILLE TEXAS TO HIGH ISLAND TEXAS...

...THE TSUNAMI ADVISORY IS CANCELED FOR THE COASTAL AREAS OF TEXAS - LOUISIANA - MISSISSIPPI AND ALABAMA FROM HIGH ISLAND TEXAS TO THE MISSISSIPPI-ALABAMA BORDER...

...THE TSUNAMI WARNING IS CANCELED FOR THE COASTAL AREAS OF ALABAMA AND FLORIDA FROM THE MISSISSIPPI-ALABAMA BORDER TO OCEAN REEF FLORIDA...

EVALUATION
TSUNAMI AMPLITUDES HAVE DROPPED BELOW DANGEROUS LEVELS AT MOST LOCATIONS ALONG THE ATLANTIC COASTS OF THE U.S. AND CANADA. DAMAGING TSUNAMIS ARE NO LONGER EXPECTED. AS LOCAL CONDITIONS CAN CAUSE A WIDE VARIATION IN TSUNAMI WAVE ACTION THE ALL CLEAR DETERMINATIONS MUST BE MADE BY LOCAL AUTHORITIES.

MEASUREMENTS OR REPORTS OF TSUNAMI ACTIVITY

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>LAT</th>
<th>LON</th>
<th>TIME</th>
<th>AMPL</th>
</tr>
</thead>
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<td>NAPLES FL</td>
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<td>30.4N</td>
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<td>1725UTC</td>
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<tr>
<td>GALvestON TX</td>
<td>29.3N</td>
<td>94.8W</td>
<td>1736UTC</td>
<td>00.98FT/00.30M</td>
</tr>
<tr>
<td>MORGAN CITY LA</td>
<td>29.7N</td>
<td>91.2W</td>
<td>1753UTC</td>
<td>02.95FT/00.90M</td>
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<td>SABINE PASS TX</td>
<td>29.7N</td>
<td>93.9W</td>
<td>1820UTC</td>
<td>02.96FT/00.90M</td>
</tr>
</tbody>
</table>

TIME = TIME OF MEASUREMENT
AMPL = TSUNAMI AMPLITUDES ARE MEASURED RELATIVE TO NORMAL SEA LEVEL. IT IS NOT CREST-TO-TRough WAVE HEIGHT.
VALUES ARE GIVEN IN BOTH METERS/M/ AND FEET/FT/.

DEEP OCEAN PRESSURE SENSOR DATA INDICATES A TSUNAMI WAS GENERATED. WAVES THROUGHOUT THE GULF OF MEXICO ARE REPORTED TO BE LESS THAN 00.98FT/00.30M IN HEIGHT.

PRELIMINARY EARTHQUAKE PARAMETERS
MAGNITUDE - 6.7
TIME - 0900 EDT MAR 28 2012
0800 CDT MAR 28 2012
0900 AST MAR 28 2012
1300 UTC MAR 28 2012
LOCATION - 25.6 NORTH 84.6 WEST
190 MILES/306 KM NW OF KEY WEST FLORIDA
210 MILES/338 KM SW OF TAMPA FLORIDA
DEPTH - 6 MILES/10 KM

CARIBBEAN COASTAL REGIONS OUTSIDE PUERTO RICO AND THE VIRGIN ISLANDS SHOULD REFER TO THE PACIFIC TSUNAMI WARNING CENTER MESSAGES FOR INFORMATION ON THIS EVENT AT PTWC.WEATHER.GOV.

THIS WILL BE THE LAST WEST COAST/ALASKA TSUNAMI WARNING CENTER MESSAGE ISSUED FOR THIS EVENT. THIS INFORMATION IS ALSO POSTED AT WCATWC.ARH.NOAA.GOV.

...THE TSUNAMI WARNING IS CANCELED FOR THE COASTAL AREAS OF TEXAS FROM BROWNSVILLE TEXAS TO HIGH ISLAND TEXAS...

DAMAGING TSUNAMIS ARE NO LONGER EXPECTED. AS LOCAL CONDITIONS CAN CAUSE A WIDE VARIATION IN TSUNAMI WAVE ACTION THE ALL CLEAR DETERMINATIONS MUST BE MADE BY LOCAL AUTHORITIES.

$$
COASTAL AREAS BETWEEN AND INCLUDING HIGH ISLAND TEXAS TO THE MISSISSIPPI-ALABAMA BORDER
405 PM EDT WED MAR 28 2012

...THE TSUNAMI ADVISORY IS CANCELED FOR THE COASTAL AREAS OF TEXAS - LOUISIANA - MISSISSIPPI AND ALABAMA FROM HIGH ISLAND TEXAS TO THE MISSISSIPPI-ALABAMA BORDER...

DAMAGING TSUNAMIS ARE NO LONGER EXPECTED. AS LOCAL CONDITIONS CAN CAUSE A WIDE VARIATION IN TSUNAMI WAVE ACTION THE ALL CLEAR DETERMINATIONS MUST BE MADE BY LOCAL AUTHORITIES.

$$
COASTAL AREAS BETWEEN AND INCLUDING THE MISSISSIPPI-ALABAMA BORDER TO OCEAN REEF FLORIDA
405 PM EDT WED MAR 28 2012

...THE TSUNAMI WARNING IS CANCELED FOR THE COASTAL AREAS OF ALABAMA AND FLORIDA FROM THE MISSISSIPPI-ALABAMA BORDER TO OCEAN REEF FLORIDA...

DAMAGING TSUNAMIS ARE NO LONGER EXPECTED. AS LOCAL CONDITIONS CAN CAUSE A WIDE VARIATION IN TSUNAMI WAVE ACTION THE ALL CLEAR DETERMINATIONS MUST BE MADE BY LOCAL AUTHORITIES.

$$
Scenario 2: U.S. Atlantic coast

The following messages, created for the LANTEX 12 Atlantic coast tsunami exercise (Scenario 2), are representative of the official standard products issued by the WCATWC during a magnitude 7.7 earthquake and tsunami originating approximately 125 miles southeast of Myrtle Beach, South Carolina on the Atlantic continental margin at 32.0°N, 78.0°W. During a real event, WCATWC would also issue graphical and html-based products to their web sites and via RSS.

![Map of the Atlantic coast with the tsunami source location](image)

Figure D2: Scenario 2 tsunami source at zero minutes.

### Scenario 2: WCATWC Message #1

**WEXX20 PAAQ 281304**

**TSUAT1**

**BULLETIN**

**TSUNAMI MESSAGE NUMBER 1**

**NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK**

**904 AM EDT WED MAR 28 2012**

...A TSUNAMI WARNING IS NOW IN EFFECT WHICH INCLUDES THE COASTAL AREAS OF FLORIDA - GEORGIA - SOUTH CAROLINA AND NORTH CAROLINA FROM JUPITER INLET FLORIDA TO DUCK NORTH CAROLINA...

...A TSUNAMI ADVISORY IS NOW IN EFFECT WHICH INCLUDES THE COASTAL AREAS OF FLORIDA FROM FLAMINGO FLORIDA TO JUPITER INLET FLORIDA...

...A TSUNAMI ADVISORY IS NOW IN EFFECT WHICH INCLUDES THE
COASTAL AREAS OF NORTH CAROLINA - VIRGINIA - MARYLAND - DELAWARE AND NEW JERSEY FROM DUCK NORTH CAROLINA TO SANDY HOOK NEW JERSEY...

...THIS MESSAGE IS INFORMATION ONLY FOR COASTAL AREAS OF TEXAS - LOUISIANA - MISSISSIPPI - ALABAMA AND FLORIDA FROM BROWNSVILLE TEXAS TO FLAMINGO FLORIDA...

...THIS MESSAGE IS INFORMATION ONLY FOR COASTAL AREAS OF NEW JERSEY - NEW YORK - CONNECTICUT - RHODE ISLAND - MASSACHUSETTS - NEW HAMPSHIRE - MAINE - NEW BRUNSWICH - NOVA SCOTIA - NEWFOUNDLAND AND LABRADOR FROM SANDY HOOK NEW JERSEY TO CAPE CHIDLEY LABRADOR...

...THIS MESSAGE IS INFORMATION ONLY FOR COASTAL AREAS OF PUERTO RICO AND THE VIRGIN ISLANDS...

RECOMMENDED ACTIONS

PEOPLE IN LOW-LYING COASTAL AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM THEIR LOCAL EMERGENCY OFFICIALS. EVACUATIONS ARE ONLY ORDERED BY EMERGENCY RESPONSE AGENCIES.

- IF IN A TSUNAMI WARNING COASTAL AREA MOVE INLAND TO HIGHER GROUND.
- IF IN A TSUNAMI ADVISORY COASTAL AREA MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

PRELIMINARY EARTHQUAKE PARAMETERS

MAGNITUDE - 7.7
TIME - 0900 EDT MAR 28 2012
0800 CDT MAR 28 2012
0900 AST MAR 28 2012
1300 UTC MAR 28 2012
LOCATION - 32.0 NORTH 78.0 WEST
125 MILES/201 KM SE OF MYRTLE BEACH SOUTH CAROLINA
125 MILES/201 KM SE OF CHARLESTON SOUTH CAROLINA

DEPTH - 6 MILES/10 KM

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. WARNINGS INDICATE THAT WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

TSUNAMI ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PEOPLE IN OR VERY NEAR THE WATER IS EXPECTED. SIGNIFICANT WIDESPREAD INUNDATION IS NOT EXPECTED FOR AREAS UNDER AN ADVISORY... CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

CARIBBEAN COASTAL REGIONS OUTSIDE PUERTO RICO AND THE VIRGIN ISLANDS SHOULD REFER TO THE PACIFIC TSUNAMI WARNING CENTER MESSAGES FOR INFORMATION ON THIS EVENT AT PTWC.WEATHER.GOV.

THIS MESSAGE WILL BE UPDATED IN 30 MINUTES OR SOONER IF THE SITUATION WARRANTS. THE TSUNAMI MESSAGE WILL REMAIN IN EFFECT UNTIL FURTHER NOTICE. REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.


COASTAL AREAS BETWEEN AND INCLUDING JUPITER INLET FLORIDA TO DUCK NORTH CAROLINA

904 AM EDT WED MAR 28 2012
A Tsunami Warning is now in effect which includes the coastal areas of Florida - Georgia - South Carolina and North Carolina from Jupiter Inlet Florida to Duck North Carolina...

People in Tsunami warning coastal areas should move inland to higher ground.

Tsunami warnings mean that a tsunami with significant widespread inundation is imminent... expected or occurring. Tsunamis are a series of waves potentially dangerous several hours after initial arrival time.

Estimated times of initial wave arrival for selected sites in the warning are provided below.

Cape Hatteras - NC 1038 EDT Mar 28
Jacksonville B - FL 1153 EDT Mar 28
Myrtle BCH - SC 1136 EDT Mar 28
Savannah - GA 1157 EDT Mar 28
Charleston - SC 1140 EDT Mar 28
Melbourne - FL 1208 EDT Mar 28

For arrival times at additional locations see WCATWC.ARH.NOAA.GOV

...A Tsunami Advisory is now in effect which includes the coastal areas of Florida from Flamingo Florida to Jupiter Inlet Florida...

People in Tsunami Advisory coastal areas should move out of the water... off the beach and out of harbors and marinas.

Tsunami advisories mean that a tsunami capable of producing strong currents or waves dangerous to people in or very near water is imminent... expected or occurring. Significant widespread inundation is not expected for areas in an advisory. Tsunamis are a series of waves potentially dangerous several hours after initial arrival time. Estimated times of initial wave arrival for selected sites in the advisory are provided below.

Miami - FL 1136 EDT Mar 28

For arrival times at additional locations see WCATWC.ARH.NOAA.GOV

...A Tsunami Advisory is now in effect which includes the coastal areas of North Carolina - Virginia - Maryland - Delaware and New Jersey from Duck North Carolina to Sandy Hook New Jersey...
PEOPLE IN TSUNAMI ADVISORY COASTAL AREAS SHOULD MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

TSUNAMI ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PEOPLE IN OR VERY NEAR WATER IS IMMINENT... EXPECTED OR OCCURRING. SIGNIFICANT WIDESPREAD INUNDATION IS NOT EXPECTED FOR AREAS IN AN ADVISORY. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME. ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE ADVISORY ARE PROVIDED BELOW.

VIRGINIA BCH-VA 1222 EDT MAR 28 ATLANTIC CITY-NJ 1234 EDT MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

Figure D3: Scenario 2 tsunami at 30 minutes (provided to indicate wave front at time of message).

**Scenario 2: WCATWC Message #2**

WEXX20 PAAQ 281331
TSUAT1

BULLETIN
TSUNAMI MESSAGE NUMBER 2
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
931 AM EDT WED MAR 28 2012

NO NEW UPDATES SINCE LAST MESSAGE.

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF FLORIDA - GEORGIA - SOUTH CAROLINA AND NORTH CAROLINA FROM JUPITER INLET FLORIDA TO DUCK NORTH CAROLINA...

...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF FLORIDA FROM FLAMINGO FLORIDA TO JUPITER INLET FLORIDA...

...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF NORTH CAROLINA - VIRGINIA - MARYLAND - DELAWARE.
AND NEW JERSEY FROM DUCK NORTH CAROLINA TO SANDY HOOK NEW JERSEY...

...THIS MESSAGE IS INFORMATION ONLY FOR COASTAL AREAS OF TEXAS - LOUISIANA - MISSISSIPPI - ALABAMA AND FLORIDA FROM BROWNSVILLE TEXAS TO FLAMINGO FLORIDA...

...THIS MESSAGE IS INFORMATION ONLY FOR COASTAL AREAS OF NEW JERSEY - NEW YORK - CONNECTICUT - RHODE ISLAND - MASSACHUSETTS - NEW HAMPSHIRE - MAINE - NEW BRUNSWICK - NOVA SCOTIA - NEWFOUNDLAND AND LABRADOR FROM SANDY HOOK NEW JERSEY TO CAPE CHIDLEY LABRADOR...

...THIS MESSAGE IS INFORMATION ONLY FOR COASTAL AREAS OF PUERTO RICO AND THE VIRGIN ISLANDS...

RECOMMENDED ACTIONS
PEOPLE IN LOW-LYING COASTAL AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM THEIR LOCAL EMERGENCY OFFICIALS. EVACUATIONS ARE ONLY ORDERED BY EMERGENCY RESPONSE AGENCIES.
- IF IN A TSUNAMI WARNING COASTAL AREA MOVE INLAND TO HIGHER GROUND.
- IF IN A TSUNAMI ADVISORY COASTAL AREA MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

PRELIMINARY EARTHQUAKE PARAMETERS
MAGNITUDE - 7.7
TIME - 0900 EDT MAR 28 2012
0800 CDT MAR 28 2012
0900 AST MAR 28 2012
1300 UTC MAR 28 2012
LOCATION - 32.0 NORTH 78.0 WEST
125 MILES/201 KM SE OF MYRTLE BEACH SOUTH CAROLINA
125 MILES/201 KM SE OF CHARLESTON SOUTH CAROLINA
DEPTH - 6 MILES/10 KM

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. WARNINGS INDICATE THAT WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

TSUNAMI ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PEOPLE IN OR VERY NEAR THE WATER IS EXPECTED. SIGNIFICANT WIDESPREAD INUNDATION IS NOT EXPECTED FOR AREAS UNDER AN ADVISORY. CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

CARIBBEAN COASTAL REGIONS OUTSIDE PUERTO RICO AND THE VIRGIN ISLANDS SHOULD REFER TO THE PACIFIC TSUNAMI WARNING CENTER MESSAGES FOR INFORMATION ON THIS EVENT AT PTWC.WEATHER.GOV.

THIS MESSAGE WILL BE UPDATED IN 30 MINUTES OR SOONER IF THE SITUATION WARRANTS. THE TSUNAMI MESSAGE WILL REMAIN IN EFFECT UNTIL FURTHER NOTICE. REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

AMZ550-552-555-450-452-454-330-350-352-354-250-252-254-256-
130-135-150-152-154-156-158-FLZ047-054-059-064-141-147-024-
025-033-038-GAZ154-166-117-119-139-141-SCZ048>052-056-
NCZ106-108-110-045-047-080-081-094-095-098-103-104-281431-
/T.CON.PAQ.TS.W.0011.120328T1331Z
COASTAL AREAS BETWEEN AND INCLUDING JUPITER INLET FLORIDA TO DUCK NORTH CAROLINA
931 AM EDT WED MAR 28 2012
THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF FLORIDA - GEORGIA - SOUTH CAROLINA AND NORTH CAROLINA FROM JUPITER INLET FLORIDA TO DUCK NORTH CAROLINA.

PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO HIGHER GROUND.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMEDIATELY EXPECTED OR OCCURRING. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE WARNING ARE PROVIDED BELOW.

CAPE HATTERAS-NC 1038 EDT MAR 28 JACKSONVILLE B-FL 1153 EDT MAR 28
MYRTLE BCH-SC 1136 EDT MAR 28 SAVANNAH-GA 1157 EDT MAR 28
CHARLESTON-SC 1140 EDT MAR 28 MELBOURNE-FL 1208 EDT MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

$$
931 AM EDT WED MAR 28 2012

THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF FLORIDA FROM FLAMINGO FLORIDA TO JUPITER INLET FLORIDA.

PEOPLE IN TSUNAMI ADVISORY COASTAL AREAS SHOULD MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

TSUNAMI ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PEOPLE IN OR VERY NEAR WATER IS IMMEDIATELY EXPECTED OR OCCURRING. SIGNIFICANT WIDESPREAD INUNDATION IS NOT EXPECTED FOR AREAS IN AN ADVISORY. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME. ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE ADVISORY ARE PROVIDED BELOW.

MIAMI-FL 1136 EDT MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

$$
931 AM EDT WED MAR 28 2012

THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF NORTH CAROLINA - VIRGINIA - MARYLAND - DELAWARE AND NEW JERSEY FROM DUCK NORTH CAROLINA TO SANDY HOOK NEW JERSEY.

PEOPLE IN TSUNAMI ADVISORY COASTAL AREAS SHOULD MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.
THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

TSUNAMI ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PEOPLE IN OR VERY NEAR WATER IS IMMINENT... EXPECTED OR OCCURRING. SIGNIFICANT WIDESPREAD INUNDATION IS NOT EXPECTED FOR AREAS IN AN ADVISORY. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME. ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE ADVISORY ARE PROVIDED BELOW.

VIRGINIA BCH-VA 1222 EDT MAR 28 ATLANTIC CITY-NJ 1234 EDT MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

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Figure D4: Scenario 2 tsunami at 60 minutes (provided to indicate wave front at time of message).

Scenario 2: WCATWC Message #3

WEXX20 PAAQ 281408
TSUAT1

BULLETIN
TSUNAMI MESSAGE NUMBER 3
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
1008 AM EDT WED MAR 28 2012

DEEP OCEAN PRESSURE SENSOR DATA INDICATES A TSUNAMI WAS GENERATED.

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF FLORIDA - GEORGIA - SOUTH CAROLINA AND NORTH CAROLINA FROM JUPITER INLET FLORIDA TO DUCK NORTH CAROLINA...

...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF FLORIDA FROM FLAMINGO FLORIDA TO JUPITER INLET
...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF NORTH CAROLINA - VIRGINIA - MARYLAND - DELAWARE AND NEW JERSEY FROM DUCK NORTH CAROLINA TO SANDY HOOK NEW JERSEY...

...THIS MESSAGE IS INFORMATION ONLY FOR COASTAL AREAS OF TEXAS - LOUISIANA - MISSISSIPPI - ALABAMA AND FLORIDA FROM BROWNSVILLE TEXAS TO FLAMINGO FLORIDA...

...THIS MESSAGE IS INFORMATION ONLY FOR COASTAL AREAS OF NEW JERSEY - NEW YORK - CONNECTICUT - RHODE ISLAND - MASSACHUSETTS - NEW HAMPSHIRE - MAINE - NEW BRUNSWICK - NOVA SCOTIA - NEWFOUNDLAND AND LABRADOR FROM SANDY HOOK NEW JERSEY TO CAPE CHIDLEY LABRADOR...

...THIS MESSAGE IS INFORMATION ONLY FOR COASTAL AREAS OF PUERTO RICO AND THE VIRGIN ISLANDS...

RECOMMENDED ACTIONS
A TSUNAMI HAS BEEN GENERATED WHICH IS EXPECTED TO CAUSE DAMAGE TO THE WARNING AND/OR ADVISORY REGIONS LISTED IN THE HEADLINE. PEOPLE IN LOW-LYING COASTAL AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM THEIR LOCAL EMERGENCY OFFICIALS. EVACUATIONS ARE ONLY ORDERED BY EMERGENCY RESPONSE AGENCIES.
- IF IN A TSUNAMI WARNING COASTAL AREA MOVE INLAND TO HIGHER GROUND.
- IF IN A TSUNAMI ADVISORY COASTAL AREA MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

MEASUREMENTS OR REPORTS OF TSUNAMI ACTIVITY
DEEP OCEAN PRESSURE SENSOR DATA INDICATES A TSUNAMI WAS GENERATED.

PRELIMINARY EARTHQUAKE PARAMETERS
MAGNITUDE - 7.7
TIME
- 0900 EDT MAR 28 2012
- 0800 CDT MAR 28 2012
- 0900 AST MAR 28 2012
- 1300 UTC MAR 28 2012
LOCATION - 32.0 NORTH 78.0 WEST
125 MILES/201 KM SE OF MYRTLE BEACH SOUTH CAROLINA
125 MILES/201 KM SE OF CHARLESTON SOUTH CAROLINA
DEPTH - 6 MILES/10 KM

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. WARNINGS INDICATE THAT WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

TSUNAMI ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PEOPLE IN OR VERY NEAR THE WATER IS EXPECTED. SIGNIFICANT WIDESPREAD INUNDATION IS NOT EXPECTED FOR AREAS UNDER AN ADVISORY. CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

CARIBBEAN COASTAL REGIONS OUTSIDE PUERTO RICO AND THE VIRGIN ISLANDS SHOULD REFER TO THE PACIFIC TSUNAMI WARNING CENTER MESSAGES FOR INFORMATION ON THIS EVENT AT PTWC.WEATHER.GOV.

THIS MESSAGE WILL BE UPDATED IN 30 MINUTES OR SOONER IF THE SITUATION WARRANTS. THE TSUNAMI MESSAGE WILL REMAIN IN EFFECT UNTIL FURTHER NOTICE. REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.
LANTEX 12 Handbook

1008 AM EDT WED MAR 28 2012

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF FLORIDA - GEORGIA - SOUTH CAROLINA AND NORTH CAROLINA FROM JUPITER INLET FLORIDA TO DUCK NORTH CAROLINA...

PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO HIGHER GROUND.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE WARNING ARE PROVIDED BELOW.

CAPE HATTERAS-NC 1038 EDT MAR 28 JACKSONVILL B-FL 1153 EDT MAR 28
MYRTLE BCH-SC 1136 EDT MAR 28 SAVANNAH-GA 1157 EDT MAR 28
CHARLESTON-SC 1140 EDT MAR 28 MELBOURNE-FL 1208 EDT MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

$$

COASTAL AREAS BETWEEN AND INCLUDING FLAMINGO FLORIDA TO JUPITER INLET FLORIDA
1008 AM EDT WED MAR 28 2012

...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF FLORIDA FROM FLAMINGO FLORIDA TO JUPITER INLET FLORIDA...

PEOPLE IN TSUNAMI ADVISORY COASTAL AREAS SHOULD MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

TSUNAMI ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PEOPLE IN OR VERY NEAR WATER IS IMMINENT... EXPECTED OR OCCURRING. SIGNIFICANT WIDESPREAD INUNDATION IS NOT EXPECTED FOR AREAS IN AN ADVISORY. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME. ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE ADVISORY ARE PROVIDED BELOW.

MIAMI-FL 1136 EDT MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

$$

COASTAL AREAS BETWEEN AND INCLUDING DUCK NORTH CAROLINA TO SANDY HOOK NEW JERSEY
1008 AM EDT WED MAR 28 2012

...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF NORTH CAROLINA - VIRGINIA - MARYLAND - DELAWARE AND NEW JERSEY FROM DUCK NORTH CAROLINA TO SANDY HOOK NEW JERSEY...

PEOPLE IN TSUNAMI ADVISORY COASTAL AREAS SHOULD MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

TSUNAMI ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PEOPLE IN OR VERY NEAR WATER IS IMMINENT... EXPECTED OR OCCURRING. SIGNIFICANT WIDESPREAD INUNDATION IS NOT EXPECTED FOR AREAS IN AN ADVISORY. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME. ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE ADVISORY ARE PROVIDED BELOW.

VIRGINIA BCH-VA 1222 EDT MAR 28 ATLANTIC CITY-NJ 1234 EDT MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

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Figure D5: Scenario 2 tsunami at 90 minutes (provided to indicate wave front at time of message).

Scenario 2: WCATWC Message #4

WEXX20 PAAQ 281436
TSUAT1

BULLETIN
TSUNAMI MESSAGE NUMBER 4
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
1036 AM EDT WED MAR 28 2012

WARNING HAS BEEN EXTENDED FROM FLAMINGO FL TO SANDY HOOK NJ. ADVISORY HAS BEEN MODIFIED TO INCLUDE SANDY HOOK NJ TO CAPE CHIDLEY NL. PUERTO RICO - BVI - VI ARE IN A WARNING.
...THE TSUNAMI WARNING IS MODIFIED TO INCLUDE THE COASTAL AREAS OF FLORIDA FROM FLAMINGO FLORIDA TO JUPITER INLET FLORIDA...

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF FLORIDA - GEORGIA - SOUTH CAROLINA AND NORTH CAROLINA FROM JUPITER INLET FLORIDA TO DUCK NORTH CAROLINA...

...THE TSUNAMI WARNING IS MODIFIED TO INCLUDE THE COASTAL AREAS OF NORTH CAROLINA - VIRGINIA - MARYLAND - DELAWARE AND NEW JERSEY FROM DUCK NORTH CAROLINA TO SANDY HOOK NEW JERSEY...

...THE TSUNAMI WARNING IS MODIFIED TO INCLUDE PUERTO RICO AND THE VIRGIN ISLANDS...

...THE TSUNAMI ADVISORY IS MODIFIED TO INCLUDE THE COASTAL AREAS OF NEW JERSEY - NEW YORK - CONNECTICUT - RHODE ISLAND - MASSACHUSETTS - NEW HAMPSHIRE - MAINE - NEW BRUNSWICK - NOVA SCOTIA - NEWFOUNDLAND AND LABRADOR FROM SANDY HOOK NEW JERSEY TO CAPE CHIDLEY LABRADOR...

...THIS MESSAGE IS INFORMATION ONLY FOR COASTAL AREAS OF TEXAS - LOUISIANA - MISSISSIPPI - ALABAMA AND FLORIDA FROM BROWNSVILLE TEXAS TO FLAMINGO FLORIDA...

RECOMMENDED ACTIONS
A TSUNAMI HAS BEEN GENERATED WHICH IS EXPECTED TO CAUSE DAMAGE TO THE WARNING AND/OR ADVISORY REGIONS LISTED IN THE HEADLINE. PEOPLE IN LOW- LYING COASTAL AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM THEIR LOCAL EMERGENCY OFFICIALS. EVACUATIONS ARE ONLY ORDERED BY EMERGENCY RESPONSE AGENCIES.
- IF IN A TSUNAMI WARNING COASTAL AREA MOVE INLAND TO HIGHER GROUND.
- IF IN A TSUNAMI ADVISORY COASTAL AREA MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

MEASUREMENTS OR REPORTS OF TSUNAMI ACTIVITY
DEEP OCEAN PRESSURE SENSOR DATA INDICATES A TSUNAMI WAS GENERATED.

PRELIMINARY EARTHQUAKE PARAMETERS
MAGNITUDE = 7.7
TIME = 0900 EDT MAR 28 2012
0800 CDT MAR 28 2012
0900 AST MAR 28 2012
1300 UTC MAR 28 2012
LOCATION = 32.0 NORTH 78.0 WEST
125 MILES/201 KM SE OF MYRTLE BEACH SOUTH CAROLINA
125 MILES/201 KM SE OF CHARLESTON SOUTH CAROLINA
DEPTH = 6 MILES/10 KM

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. WARNINGS INDICATE THAT WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

TSUNAMI ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PEOPLE IN OR VERY NEAR THE WATER IS EXPECTED. SIGNIFICANT WIDESPREAD INUNDATION IS NOT EXPECTED FOR AREAS UNDER AN ADVISORY. CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

CARIBBEAN COASTAL REGIONS OUTSIDE PUERTO RICO AND THE VIRGIN
ISLANDS SHOULD REFER TO THE PACIFIC TSUNAMI WARNING CENTER MESSAGES FOR INFORMATION ON THIS EVENT AT PTWC.WEATHER.GOV.

THIS MESSAGE WILL BE UPDATED IN 30 MINUTES OR SOONER IF THE SITUATION WARRANTS. THE TSUNAMI MESSAGE WILL REMAIN IN EFFECT UNTIL FURTHER NOTICE. REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

1036 AM EDT WED MAR 28 2012

...THE TSUNAMI WARNING IS MODIFIED TO INCLUDE THE COASTAL AREAS OF FLORIDA FROM FLAMINGO FLORIDA TO JUPITER INLET FLORIDA...

PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO HIGHER GROUND.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE WARNING ARE PROVIDED BELOW.

MIAMI-FL 1136 EDT MAR 28
FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

$$
1036 AM EDT WED MAR 28 2012

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF FLORIDA - GEORGIA - SOUTH CAROLINA AND NORTH CAROLINA FROM JUPITER INLET FLORIDA TO DUCK NORTH CAROLINA....

PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO HIGHER GROUND.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE WARNING ARE PROVIDED BELOW.

CAPE HATTERAS-NC 1038 EDT MAR 28 JACKSONVILL B-FL 1153 EDT MAR 28
MYRTLE BCH-SC 1136 EDT MAR 28 SAVANNAH-GA 1157 EDT MAR 28
CHARLESTON-SC 1140 EDT MAR 28 MELBOURNE-FL 1208 EDT MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE
COASTAL AREAS BETWEEN AND INCLUDING DUCK NORTH CAROLINA TO SANDY HOOK NEW JERSEY
1036 AM EDT WED MAR 28 2012

...THE TSUNAMI WARNING IS MODIFIED TO INCLUDE THE COASTAL AREAS OF NORTH CAROLINA - VIRGINIA - MARYLAND - DELAWARE AND NEW JERSEY FROM DUCK NORTH CAROLINA TO SANDY HOOK NEW JERSEY...

PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO HIGHER GROUND.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE WARNING ARE PROVIDED BELOW.

VIRGINIA BCH-VA 1222 EDT MAR 28
ATLANTIC CITY-NJ 1234 EDT MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

...THE TSUNAMI WARNING IS MODIFIED TO INCLUDE PUERTO RICO AND THE VIRGIN ISLANDS...

PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO HIGHER GROUND.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE WARNING ARE PROVIDED BELOW.

SAN JUAN-PR 1140 AST MAR 28
CHRISTIANSTED-VI 1157 AST MAR 28

MAYAGUEZ-PR 1145 AST MAR 28
CHARLOT AMALI-VI 1218 AST MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV
...THE TSUNAMI ADVISORY IS MODIFIED TO INCLUDE THE COASTAL AREAS OF NEW JERSEY - NEW YORK - CONNECTICUT - RHODE ISLAND - MASSACHUSETTS - NEW HAMPSHIRE - MAINE - NEW BRUNSWICK - NOVA SCOTIA - NEWFOUNDLAND AND LABRADOR FROM SANDY HOOK NEW JERSEY TO CAPE CHIDLEY LABRADOR...

PEOPLE IN TSUNAMI ADVISORY COASTAL AREAS SHOULD MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

TSUNAMI ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PEOPLE IN OR VERY NEAR WATER IS IMMINENT... EXPECTED OR OCCURRING. SIGNIFICANT WIDESPREAD INUNDATION IS NOT EXPECTED FOR AREAS IN AN ADVISORY. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME. ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE ADVISORY ARE PROVIDED BELOW.

MONTAUK-NY  1234  EDT MAR 28  ST LAWRENCE-NL  1542  NDT MAR 28
LOCKEPORT-NS  1350  ADT MAR 28  PORTLAND-ME  1430  EDT MAR 28
NANTUCKET IS-MA  1313  EDT MAR 28  BOSTON-MA  1442  EDT MAR 28
MANHATTAN-NY  1357  EDT MAR 28  BONAVISTA-NL  1748  NDT MAR 28
SCATARIE IS-NS  1501  ADT MAR 28  BATTLE HARBOR-NL  1815  NDT MAR 28
GRAND MANAN-NB  1503  ADT MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

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Figure D6: Scenario 2 tsunami at 2 hours (provided to indicate wave front at time of message).

Scenario 2: WCATWC Message #5

WEXX20  PAAQ  281506
TSUAT1

BULLETIN
TSUNAMI MESSAGE NUMBER 5
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
1106 AM EDT WED MAR 28 2012
WARNING IS EXTENDED TO INCLUDE THE COAST FROM SANDY HOOK NJ TO LA MANCHE NF. NEW OBSERVATIONS ARE ADDED BELOW.

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF FLORIDA - GEORGIA - SOUTH CAROLINA - NORTH CAROLINA - VIRGINIA - MARYLAND - DELAWARE AND NEW JERSEY FROM FLAMINGO FLORIDA TO SANDY HOOK NEW JERSEY...

...THE TSUNAMI WARNING IS MODIFIED TO INCLUDE THE COASTAL AREAS OF NEW JERSEY - NEW YORK - CONNECTICUT - RHODE ISLAND - MASSACHUSETTS - NEW HAMPSHIRE - MAINE - NEW BRUNSWICK - NOVA SCOTIA AND NEWFOUNDLAND FROM SANDY HOOK NEW JERSEY TO LA MANCHE NEWFOUNDLAND...

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR PUERTO RICO AND THE VIRGIN ISLANDS...

...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF NEWFOUNDLAND AND LABRADOR FROM LA MANCHE NEWFOUNDLAND TO CAPE CHIDLEY LABRADOR...

...THIS MESSAGE IS INFORMATION ONLY FOR COASTAL AREAS OF TEXAS - LOUISIANA - MISSISSIPPI - ALABAMA AND FLORIDA FROM BROWNSVILLE TEXAS TO FLAMINGO FLORIDA...

RECOMMENDED ACTIONS
A TSUNAMI HAS BEEN GENERATED WHICH IS EXPECTED TO CAUSE DAMAGE TO THE WARNING AND/OR ADVISORY REGIONS LISTED IN THE HEADLINE. PEOPLE IN LOW-LYING COASTAL AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM THEIR LOCAL EMERGENCY OFFICIALS. EVACUATIONS ARE ONLY ORDERED BY EMERGENCY RESPONSE AGENCIES.
- IF IN A TSUNAMI WARNING COASTAL AREA MOVE INLAND TO HIGHER GROUND.
- IF IN A TSUNAMI ADVISORY COASTAL AREA MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

MEASUREMENTS OR REPORTS OF TSUNAMI ACTIVITY

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>LAT</th>
<th>LON</th>
<th>TIME</th>
<th>AMPL</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAPE HATTERAS NC</td>
<td>35.3N</td>
<td>75.5W</td>
<td>1438UTC</td>
<td>06.89FT/02.10M</td>
</tr>
<tr>
<td>BERMUDA</td>
<td>32.3N</td>
<td>64.8W</td>
<td>1501UTC</td>
<td>09.84FT/03.00M</td>
</tr>
</tbody>
</table>

TIME - TIME OF MEASUREMENT
AMPL - TSUNAMI AMPLITUDES ARE MEASURED RELATIVE TO NORMAL SEA LEVEL. IT IS ...NOT... CREST-TO-TRough WAVE HEIGHT. VALUES ARE GIVEN IN BOTH METERS/M/ AND FEET/FT/.

CAPE HATTERAS NC REPORTS TOTAL INNUNDATION OF CAPE POINT CAMPGROUND AND HWY 12 HAS BEEN WASHED OUT IN SEVERAL AREAS MAKING IT IMPOSSIBLE FOR THOSE ON HATTERAS BIGHT TO LEAVE. FOUR PEOPLE WERE SEEN BEING SWEPT OUT TO SEA. BERMUDA REPORTS THAT THE COMMISSIONERS HOUSE ON BERMUDA’S IRELAND ISLAND HAS BEEN SWEPT AWAY, AS WELL AS AN ARM LEADING TO THE VISITORS SERVICE BUREAU. BERMUDA’S SPANISH POINT ROAD AND N SHORE ROAD ARE FLOODED. BERMUDA’S LF WADE INTERNATIONAL AIRPORT IS CURRENTLY CLOSED.

PRELIMINARY EARTHQUAKE PARAMETERS
MAGNITUDE - 7.7
TIME - 0900 EDT MAR 28 2012
0800 CDT MAR 28 2012
0900 AST MAR 28 2012
1300 UTC MAR 28 2012
LOCATION - 32.0 NORTH 78.0 WEST
125 MILES/201 KM SE OF MYRTLE BEACH SOUTH CAROLINA
125 MILES/201 KM SE OF CHARLESTON SOUTH CAROLINA
DEPTH - 6 MILES/10 KM
TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. WARNINGS INDICATE THAT WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

TSUNAMI ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PEOPLE IN OR VERY NEAR THE WATER IS EXPECTED. SIGNIFICANT WIDESPREAD INUNDATION IS NOT EXPECTED FOR AREAS UNDER AN ADVISORY. CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

CARIBBEAN COASTAL REGIONS OUTSIDE PUERTO RICO AND THE VIRGIN ISLANDS SHOULD REFER TO THE PACIFIC TSUNAMI WARNING CENTER MESSAGES FOR INFORMATION ON THIS EVENT AT PTWC.WEATHER.GOV.

THIS MESSAGE WILL BE UPDATED IN 30 MINUTES OR SOONER IF THE SITUATION WARRANTS. THE TSUNAMI MESSAGE WILL REMAIN IN EFFECT UNTIL FURTHER NOTICE. REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

/T.CON.PAAQ.TS.W.0011.120328T1506Z/COASTAL AREAS BETWEEN AND INCLUDING FLAMINGO FLORIDA TO SANDY HOOK NEW JERSEY 1106 AM EDT WED MAR 28 2012

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF FLORIDA - GEORGIA - SOUTH CAROLINA - NORTH CAROLINA - VIRGINIA - MARYLAND - DELAWARE AND NEW JERSEY FROM FLAMINGO FLORIDA TO SANDY HOOK NEW JERSEY...

PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO HIGHER GROUND.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE WARNING ARE PROVIDED BELOW.

CAPE HATTERAS-NC 1038 EDT MAR 28 SAVANNAH-GA 1157 EDT MAR 28
MIAMI-FL 1136 EDT MAR 28 MELBOURNE-FL 1208 EDT MAR 28
MYRTLE BCH-SC 1136 EDT MAR 28 VIRGINIA BCH-VA 1222 EDT MAR 28
CHARLESTON-SC 1140 EDT MAR 28 ATLANTIC CITY-NJ 1234 EDT MAR 28
JACKSONVILL B-FL 1153 EDT MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

$$

...THE TSUNAMI WARNING IS MODIFIED TO INCLUDE THE COASTAL AREAS OF NEW JERSEY - NEW YORK - CONNECTICUT - RHODE ISLAND - MASSACHUSETTS - NEW HAMPSHIRE - MAINE - NEW BRUNSWICK - NOVA SCOTIA AND NEWFOUNDLAND FROM SANDY HOOK NEW JERSEY TO LA MANCHE NEWFOUNDLAND...

PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO HIGHER GROUND.

TSunami_warning_mean_that_a_tsunami_with_significant_widespread_inundation_is_imminent_expect_or_occuring_Tsunamis_are_a_series_of_waves_potentially_dangerous_several_hours_after_initial_arrival_time.

ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE WARNING ARE PROVIDED BELOW.

MONTAUK-NY 1234 EDT MAR 28 GRAND MANAN-NB 1503 ADT MAR 28
LOCKEPORT-NS 1350 ADT MAR 28 ST LAWRENCE-NL 1542 NDT MAR 28
NANTUCKET IS-MA 1313 EDT MAR 28 PORTLAND-ME 1430 EDT MAR 28
MANHATTAN-NY 1357 EDT MAR 28 BOSTON-MA 1442 EDT MAR 28
SCATARIE IS-NS 1501 ADT MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

$$
...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF NEWFOUNDLAND AND LABRADOR FROM LA MANCHE NEWFOUNDLAND TO CAPE CHIDLEY LABRADOR...

PEOPLE IN TSUNAMI ADVISORY COASTAL AREAS SHOULD MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

TSUNAMI ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PEOPLE IN OR VERY NEAR WATER IS IMMINENT... EXPECTED OR OCCURRING. SIGNIFICANT WIDESPREAD INUNDATION IS NOT EXPECTED FOR AREAS IN AN ADVISORY. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME. ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE ADVISORY ARE PROVIDED BELOW.

BONAVISTA-NL 1748 NDT MAR 28 BATTLE HARBOR-NL 1815 NDT MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

$$

Figure D7: Scenario 2 tsunami at 2.5 hours (provided to indicate wave front at time of message).

Scenario 2: WCATWC Message #6

WEXX20 PAAQ 281536
TSUAT1
BULLETIN
TSUNAMI MESSAGE NUMBER 6
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
1136 AM EDT WED MAR 28 2012

ADVISORY HAS BEEN EXPANDED TO INCLUDE FLAMINGO FL TO BONITA BEACH FL. NEW OBSERVATIONS ARE ADDED BELOW.

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL
AREAS OF FLORIDA - GEORGIA - SOUTH CAROLINA - NORTH CAROLINA - VIRGINIA - MARYLAND - DELAWARE - NEW JERSEY - NEW YORK - CONNECTICUT - RHODE ISLAND - MASSACHUSETTS - NEW HAMPSHIRE - MAINE - NEW BRUNSWICK - NOVA SCOTIA AND NEWFOUNDLAND FROM FLAMINGO FLORIDA TO LA MANCHE NEWFOUNDLAND...

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR PUERTO RICO AND THE VIRGIN ISLANDS...

...THE TSUNAMI ADVISORY IS MODIFIED TO INCLUDE THE COASTAL AREAS OF FLORIDA FROM BONITA BEACH FLORIDA TO FLAMINGO FLORIDA...

...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF NEWFOUNDLAND AND LABRADOR FROM LA MANCHE NEWFOUNDLAND TO CAPE CHIDLEY LABRADOR...

...THIS MESSAGE IS INFORMATION ONLY FOR COASTAL AREAS OF TEXAS - LOUISIANA - MISSISSIPPI - ALABAMA AND FLORIDA FROM BROWNSVILLE TEXAS TO BONITA BEACH FLORIDA...

RECOMMENDED ACTIONS
A TSUNAMI HAS BEEN GENERATED WHICH IS EXPECTED TO CAUSE DAMAGE TO THE WARNING AND/OR ADVISORY REGIONS LISTED IN THE HEADLINE. PEOPLE IN LOW-LYING COASTAL AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM THEIR LOCAL EMERGENCY OFFICIALS. EVACUATIONS ARE ONLY ORDERED BY EMERGENCY RESPONSE AGENCIES.

- IF IN A TSUNAMI WARNING COASTAL AREA MOVE INLAND TO HIGHER GROUND.

- IF IN A TSUNAMI ADVISORY COASTAL AREA MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

MEASUREMENTS OR REPORTS OF TSUNAMI ACTIVITY

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<tr>
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<td>1529UTC</td>
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</table>

TIME - TIME OF MEASUREMENT
AMPL - TSUNAMI AMPLITUDES ARE MEASURED RELATIVE TO NORMAL SEA LEVEL.

OREGON INLET NC REPORTS FLOODING AT PEA ISLAND NATIONAL WILDLIFE REFUGE. A TUG AND BARGE WERE REPORTED TO HAVE BEEN SWEPT INTO THE OREGON INLET BRIDGE’S SUPPORT, THUS CLOSING THE BRIDGE TO TRAFFIC. JUPITER INLET FL REPORTS S BEACH RD AND OCEAN DR AS FLOODED. THE ENTIRE COMMUNITY BETWEEN OCEAN DR AND LIGHTHOUSE DR IS BEING EVACUATED.

PRELIMINARY EARTHQUAKE PARAMETERS
MAGNITUDE - 7.7
TIME - 0900 EDT MAR 28 2012
0800 CDT MAR 28 2012
0900 AST MAR 28 2012
1300 UTC MAR 28 2012
LOCATION - 32.0 NORTH 78.0 WEST
125 MILES/201 KM SE OF MYRTLE BEACH SOUTH CAROLINA
125 MILES/201 KM SE OF CHARLESTON SOUTH CAROLINA
TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. WARNINGS INDICATE THAT WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

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CARIBBEAN COASTAL REGIONS OUTSIDE PUERTO RICO AND THE VIRGIN ISLANDS SHOULD REFER TO THE PACIFIC TSUNAMI WARNING CENTER MESSAGES FOR INFORMATION ON THIS EVENT AT PTWC.WEATHER.GOV.

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THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF FLORIDA - GEORGIA - SOUTH CAROLINA - NORTH CAROLINA - VIRGINIA - MARYLAND - DELAWARE - NEW JERSEY - NEW YORK - CONNECTICUT - RHODE ISLAND - MASSACHUSETTS - NEW HAMPSHIRE - MAINE - NEW BRUNSWICK - NOVA SCOTIA AND NEWFOUNDLAND FROM FLAMINGO FLORIDA TO LA MANCHE NEWFOUNDLAND.

PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO HIGHER GROUND.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE WARNING ARE PROVIDED BELOW.

CAPE HATTERAS-NC 1038 EDT MAR 28 ATLANTIC CITY-NJ 1234 EDT MAR 28
MIAMI-FL 1136 EDT MAR 28 LOCKEPORT-NS 1350 ADT MAR 28
MYRTLE BCH-SC 1136 EDT MAR 28 NANTUCKET IS-MA 1313 EDT MAR 28
CHARLESTON-SC 1140 EDT MAR 28 MANHATTAN-NY 1357 EDT MAR 28
JACKSONVILL B-FL 1153 EDT MAR 28 SCATARIE IS-NS 1501 ADT MAR 28
Savannah-GA 1157 EDT MAR 28 GRAND MANAN-NB 1503 ADT MAR 28
MELBOURNE-FL 1208 EDT MAR 28 ST LAWRENCE-NL 1542 NDT MAR 28
LANTEX 12 Handbook

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV


...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR PUERTO RICO AND THE VIRGIN ISLANDS...

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ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE WARNING ARE PROVIDED BELOW.

SAN JUAN-PR 1140 AST MAR 28 CHRISTIANSTED-VI 1157 AST MAR 28 MAYAGUEZ-PR 1145 AST MAR 28 CHARLOT AMALI-VI 1218 AST MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

$\$ GMZ656-657-FLZ069-070-075-281636- 120328T15362-120328T16362/ COASTAL AREAS BETWEEN AND INCLUDING BONITA BEACH FLORIDA TO FLAMINGO FLORIDA 1136 AM EDT WED MAR 28 2012

...THE TSUNAMI ADVISORY IS MODIFIED TO INCLUDE THE COASTAL AREAS OF FLORIDA FROM BONITA BEACH FLORIDA TO FLAMINGO FLORIDA...

PEOPLE IN TSUNAMI ADVISORY COASTAL AREAS SHOULD MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

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KEY WEST-FL 1219 EDT MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

$\$ NLZ110-130-540-530-570-520-510-560-610-720-710-730-281636- 120328T15362-120328T16362/ COASTAL AREAS BETWEEN AND INCLUDING LA MANCHE NEWFOUNDLAND TO CAPE CHIDLEY LABRADOR
...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF NEWFOUNDLAND AND LABRADOR FROM LA MANCHE NEWFOUNDLAND TO CAPE CHIDLEY LABRADOR...

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BONAVISTA-NL 1748 NDT MAR 28 BATTLE HARBOR-NL 1815 NDT MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

Figure D8: Scenario 2 tsunami at 3 hours (provided to indicate wave front at time of message).

Scenario 2: WCATWC Message #7

WEXX20 PAAQ 281604
TSUAT1

BULLETIN
TSUNAMI MESSAGE NUMBER 7
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
1204 PM EDT WED MAR 28 2012

NEW OBSERVATIONS ARE ADDED BELOW.

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF FLORIDA - GEORGIA - SOUTH CAROLINA - NORTH CAROLINA - VIRGINIA - MARYLAND - DELAWARE - NEW JERSEY - NEW YORK - CONNECTICUT - RHODE ISLAND - MASSACHUSETTS - NEW HAMPshire - MAINE - NEW BRUNSWICK - NOVA SCOTIA AND NEWFOUNDLAND FROM FLAMINGO FLORIDA TO LA MANCHE NEWFOUNDLAND...
THE TSUNAMI WARNING CONTINUES IN EFFECT FOR PUERTO RICO AND THE VIRGIN ISLANDS...

...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF FLORIDA FROM BONITA BEACH FLORIDA TO FLAMINGO FLORIDA...

...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF NEWFOUNDLAND AND LABRADOR FROM LA MANCHE NEWFOUNDLAND TO CAPE CHIDLEY LABRADOR...

...THIS MESSAGE IS INFORMATION ONLY FOR COASTAL AREAS OF TEXAS - LOUISIANA - MISSISSIPPI - ALABAMA AND FLORIDA FROM BROWNSVILLE TEXAS TO BONITA BEACH FLORIDA...

RECOMMENDED ACTIONS
A TSUNAMI HAS BEEN GENERATED WHICH IS EXPECTED TO CAUSE DAMAGE TO THE WARNING AND/OR ADVISORY REGIONS LISTED IN THE HEADLINE. PEOPLE IN LOW LYING COASTAL AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM THEIR LOCAL EMERGENCY OFFICIALS. EVACUATIONS ARE ONLY ORDERED BY EMERGENCY RESPONSE AGENCIES.

- IF IN A TSUNAMI WARNING COASTAL AREA MOVE INLAND TO HIGHER GROUND.

- IF IN A TSUNAMI ADVISORY COASTAL AREA MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

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TIME - TIME OF MEASUREMENT
AMPL - TSUNAMI AMPLITUDES ARE MEASURED RELATIVE TO NORMAL SEA LEVEL.
       IT IS NOT... CREST-TO-TRough WAVE HEIGHT.
       VALUES ARE GIVEN IN BOTH METERS/M/ AND FEET/FT/.

SAN JUAN PR REPORTS INUNDATION ALONG THE PUERTO RICO NORTH COAST.
THE LOW LYING AREA OF PUERTA DE TIERRA HAS BEEN FLOODeD BY WAVES ENTERING THE HARBOp. MANY BOATS AND SHIPS ARE REPORTED TO BE DAMAGED.
OCEAN CITY MD REPORTS THAT A WAVE APPROXIMATELY 06.00FT/01.83M IN HEIGHT SURGED INTO THE OCEAN CITY INLET AND INUNDATED THE LAND UP TO STEPHEN DECATURE HWY. MANY CARS ARE REPORTED TO HAVE BEEN SWEPT BACK INTO THE OCEAN. MANY PEOPLE ARE MISSING AND NOT ACCOUNTED FOR.
BERMUDA REPORTS AT LEAST 25 PEOPLE WERE KILLED AND $30 MILLION IN DAMAGE. CAPE HATTERAS NC REPORTS 15 PEOPLE MISSING AND PRESUMED DROWN, AND AT LEAST $17 MILLION IN DAMAGE.

PRELIMINARY EARTHQUAKE PARAMETERS
MAGNITUDE = 7.7
SITES IN THE WARNING ARE PROVIDED BELOW.

ESTIMATED TIMES OF INITIAL WAVE ARRIVAL.

SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. TSUNAMIS ARE A TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. WARNINGS INDICATE THAT WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

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CARIBBEAN COASTAL REGIONS OUTSIDE PUERTO RICO AND THE VIRGIN ISLANDS SHOULD REFER TO THE PACIFIC TSUNAMI WARNING CENTER MESSAGES FOR INFORMATION ON THIS EVENT AT PTWC.WEATHER.GOV.

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TIME - 0900 EDT MAR 28 2012
0800 CDT MAR 28 2012
0900 AST MAR 28 2012
1300 UTC MAR 28 2012

LOCATION - 32.0 NORTH 78.0 WEST
125 MILES/201 KM SE OF MYRTLE BEACH SOUTH CAROLINA
125 MILES/201 KM SE OF CHARLESTON SOUTH CAROLINA

DEPTH - 6 MILES/10 KM

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. WARNINGS INDICATE THAT WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

TSUNAMI ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PEOPLE IN OR VERY NEAR THE WATER IS EXPECTED. SIGNIFICANT WIDESPREAD INUNDATION IS NOT EXPECTED FOR AREAS UNDER AN ADVISORY. CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

CARIBBEAN COASTAL REGIONS OUTSIDE PUERTO RICO AND THE VIRGIN ISLANDS SHOULD REFER TO THE PACIFIC TSUNAMI WARNING CENTER MESSAGES FOR INFORMATION ON THIS EVENT AT PTWC.WEATHER.GOV.

THIS MESSAGE WILL BE UPDATED IN 30 MINUTES OR SOONER IF THE SITUATION WARRANTS. THE TSUNAMI MESSAGE WILL REMAIN IN EFFECT UNTIL FURTHER NOTICE. REFER TO THE INTERNET SITE WATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

GMZ031-032-034-052-055-AM2630-650-651-550-552-555-450-452-
454-330-350-352-250-252-254-130-150-152-154-156-
158-ANZ2631-634-656-658-650-652-654-430-431-450>/455-330-335-
FLZ2076>078-174-168-172-173-047-054-059-064-141-147-024-025-
033-038-GAZ2154-166-117-119-139-141-JCZ048>052-054-056-NCZ106-
108-110-045>047-080-081-094-095-098-103-104-015>017-030>032-
102-VAZ2084-086-091-094-095-098-100-MZ2025-DE2002-004-NZ2006-
012>014-021-023>026-106-108-NY2071>075-078>081-176>179-CTZ2009>012-
150-140-270-280-320-410-450-440-QC2670-680-NLZ340-220-
230-210-120-281704-
/T.CON.PAAQ.TS.W.0011.120328T1604Z-120328T1704Z/
COASTAL AREAS BETWEEN AND INCLUDING FLAMINGO FLORIDA TO LA MANCHE NEWFOUNDLAND
1204 PM EDT WED MAR 28 2012

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF FLORIDA - GEORGIA - SOUTH CAROLINA - NORTH CAROLINA - VIRGINIA - MARYLAND - DELAWARE - NEW JERSEY - NEW YORK - CONNECTICUT - RHODE ISLAND - MASSACHUSETTS - NEW HAMPSHIRE - MAINE - NEW BRUNSWICK - NOVA SCOTIA AND NEWFOUNDLAND FROM FLAMINGO FLORIDA TO LA MANCHE NEWFOUNDLAND...

PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO HIGHER GROUND.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE WARNING ARE PROVIDED BELOW.
LANTEX 12 Handbook

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

$$
AMZ712-715-725-735-742-745-PRZ001>003-005-007-008-010-011-
VIZ001-002-281704-/T.CON.PAAQ.TS.W.0011.120328T1604Z-
COASTAL AREAS OF PUERTO RICO AND THE VIRGIN ISLANDS.
1204 PM EDT WED MAR 28 2012

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR PUERTO RICO
AND THE VIRGIN ISLANDS...

PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO
HIGHER GROUND.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD
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SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL
ARRIVAL TIME.

ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED
SITES IN THE WARNING ARE PROVIDED BELOW.

SAN JUAN-PR 1140 AST MAR 28
CHRI\STIANSTED-VI 1157 AST MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

$$
GMZ656-657-FLZ069-070-075-281704-
/T.CON.PAAQ.TS.Y.0011.120328T1604Z-120328T1704Z/
COASTAL AREAS BETWEEN AND INCLUDING BONITA BEACH FLORIDA TO
FLAMINGO FLORIDA
1204 PM EDT WED MAR 28 2012

...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL
AREAS OF FLORIDA FROM BONITA BEACH FLORIDA TO FLAMINGO
FLORIDA...

PEOPLE IN TSUNAMI ADVISORY COASTAL AREAS SHOULD MOVE OUT OF
THE WATER...OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

TSUNAMI ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING
STRONG CURRENTS OR WAVES DANGEROUS TO PEOPLE IN OR VERY NEAR
WATER IS IMMINENT...EXPECTED OR OCCURRING. SIGNIFICANT WIDESPREAD
INUNDATION IS NOT EXPECTED FOR AREAS IN AN ADVISORY. TSUNAMIS ARE
A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL
ARRIVAL TIME. ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED
SITES IN THE ADVISORY ARE PROVIDED BELOW.

KEY WEST-FL 1219 EDT MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV
THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF NEWFOUNDLAND AND LABRADOR FROM LA MANCHE NEWFOUNDLAND TO CAPE CHIDLEY LABRADOR.

PEOPLE IN TSUNAMI ADVISORY COASTAL AREAS SHOULD MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

TSUNAMI ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PEOPLE IN OR VERY NEAR WATER IS IMMINENT... EXPECTED OR OCCURRING. SIGNIFICANT WIDESPREAD INUNDATION IS NOT EXPECTED FOR AREAS IN AN ADVISORY. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME. ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE ADVISORY ARE PROVIDED BELOW.

BONAVISTA-NL 1748 NDT MAR 28 BATTLE HARBOR-NL 1815 NDT MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

Scenario 2: WCATWC Message #8

WEXX20 PAAQ 281633
TSUAT1

BULLETIN
TSUNAMI MESSAGE NUMBER 8
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
1233 PM EDT WED MAR 28 2012

NEW OBSERVATIONS ARE ADDED BELOW.

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF FLORIDA - GEORGIA - SOUTH CAROLINA - NORTH CAROLINA - VIRGINIA - MARYLAND - DELAWARE - NEW JERSEY - NEW YORK - CONNECTICUT - RHODE ISLAND - MASSACHUSETTS - NEW HAMPSHIRE - MAINE - NEW BRUNSWICK - NOVA SCOTIA AND NEWFOUNDLAND FROM FLAMINGO FLORIDA TO LA MANCHE NEWFOUNDLAND...

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR PUERTO RICO AND THE VIRGIN ISLANDS...

...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF FLORIDA FROM BONITA BEACH FLORIDA TO FLAMINGO FLORIDA...

...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF NEWFOUNDLAND AND LABRADOR FROM LA MANCHE NEWFOUNDLAND TO CAPE CHIDLEY LABRADOR...

...THIS MESSAGE IS INFORMATION ONLY FOR COASTAL AREAS OF TEXAS - LOUISIANA - MISSISSIPPI - ALABAMA AND FLORIDA FROM BROWNSVILLE TEXAS TO BONITA BEACH FLORIDA...

RECOMMENDED ACTIONS
A tsunami has been generated which is expected to cause damage to the warning and/or advisory regions listed in the headline. People in low-lying coastal areas should be alert to instructions from their local emergency officials. Evacuations are only ordered by emergency response agencies.

- If in a tsunami warning coastal area move inland to higher ground.
- If in a tsunami advisory coastal area move out of the water... off the beach and out of harbors and marinas.

Measurements or reports of tsunami activity

<table>
<thead>
<tr>
<th>Location</th>
<th>Lat</th>
<th>Lon</th>
<th>Time</th>
<th>Amplitude</th>
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<tr>
<td>Cape Hatteras NC</td>
<td>35.3N</td>
<td>75.5W</td>
<td>1438UTC</td>
<td>0.89ft/0.27m</td>
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<td>Oregon Inlet NC</td>
<td>35.8N</td>
<td>75.5W</td>
<td>1507UTC</td>
<td>0.87ft/0.27m</td>
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<td>Jupiter Inlet FL</td>
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<td>80.1W</td>
<td>1511UTC</td>
<td>0.91ft/0.28m</td>
</tr>
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<td>Beaufort NC</td>
<td>34.7N</td>
<td>76.7W</td>
<td>1517UTC</td>
<td>0.30ft/0.09m</td>
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<tr>
<td>Bermuda</td>
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<td>64.8W</td>
<td>1520UTC</td>
<td>1.18ft/0.36m</td>
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<tr>
<td>Virginia Key FL</td>
<td>25.7N</td>
<td>80.2W</td>
<td>1521UTC</td>
<td>0.61ft/0.19m</td>
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<tr>
<td>Wrightsville NC</td>
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<td>77.8W</td>
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<td>Aquadilla PR</td>
<td>18.5N</td>
<td>67.1W</td>
<td>1535UTC</td>
<td>0.27ft/0.08m</td>
</tr>
<tr>
<td>Springmaid Pier SC</td>
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<td>78.9W</td>
<td>1537UTC</td>
<td>0.23ft/0.07m</td>
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<tr>
<td>Duck NC</td>
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<td>75.8W</td>
<td>1538UTC</td>
<td>0.87ft/0.27m</td>
</tr>
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<td>San Juan PR</td>
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<td>0.51ft/0.16m</td>
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<td>Virgin Gorda BVI</td>
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<td>64.7W</td>
<td>1605UTC</td>
<td>0.34ft/0.11m</td>
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<td>Charleston SC</td>
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<td>79.9W</td>
<td>1606UTC</td>
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</tr>
<tr>
<td>Sunset Beach SC</td>
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<td>78.5W</td>
<td>1607UTC</td>
<td>0.28ft/0.09m</td>
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<tr>
<td>Key West FL</td>
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<td>81.9W</td>
<td>1619UTC</td>
<td>0.33ft/0.10m</td>
</tr>
<tr>
<td>Lewes DE</td>
<td>38.8N</td>
<td>75.1W</td>
<td>1628UTC</td>
<td>0.31ft/0.10m</td>
</tr>
<tr>
<td>Christiansted VI</td>
<td>17.8N</td>
<td>64.7W</td>
<td>1628UTC</td>
<td>0.64ft/0.21m</td>
</tr>
</tbody>
</table>

Time = Time of measurement
AMPL = Tsunami amplitudes are measured relative to normal sea level.

It is...not...crest-to-trough wave height.

Values are given in both meters/m/ and feet/ft/.

San Juan PR reports eight people killed and at least $53 million in damage. Flagler Beach FL reports a wave approximately 10.00ft/0.30m flooded all of Flagler and Daytona Beaches. Cape Canaveral, just south of Flagler beach, reports heavy flooding to the entire facility, and damage to two of its launch support towers. Cape Canaveral estimates damage to be $60 million to $100 million. All of Florida's Hwy 1A from Fernandina Beach to Daytona Beach shores is reported to be heavily damaged and unusable.

Preliminary earthquake parameters

Magnitude = 7.7

Time = 0000 EDT Mar 28 2012
0800 CDT Mar 28 2012
0900 AST Mar 28 2012
1300 UTC Mar 28 2012

Location = 32.0 North 78.0 West
125 Miles/201 Km SE of Myrtle Beach South Carolina
125 Miles/201 Km SE of Charleston South Carolina

Depth = 6 Miles/10 Km

Tsunami warnings mean that a tsunami with significant widespread inundation is imminent... expected or occurring. Warnings indicate...
THAT WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

TSUNAMI ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PEOPLE IN OR VERY NEAR THE WATER IS EXPECTED. SIGNIFICANT WIDESPREAD INUNDATION IS NOT EXPECTED FOR AREAS UNDER AN ADVISORY. CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

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COASTAL AREAS BETWEEN AND INCLUDING FLAMINGO FLORIDA TO LA MANCHE NEWFOUNDLAND

1233 PM EDT WED MAR 28 2012

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF FLORIDA - GEORGIA - SOUTH CAROLINA - NORTH CAROLINA - VIRGINIA - MARYLAND - DELAWARE - NEW JERSEY - NEW YORK - CONNECTICUT - RHODE ISLAND - MASSACHUSETTS - NEW HAMPSHIRE - MAINE - NEW BRUNSWICK - NOVA SCOTIA AND NEWFOUNDLAND FROM FLAMINGO FLORIDA TO LA MANCHE NEWFOUNDLAND...

PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO HIGHER GROUND.

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ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE WARNING ARE PROVIDED BELOW.

MIAMI-FL 1136 EDT MAR 28 LOCKEPORT-NS 1350 ADT MAR 28
MYRTLE BCH-SC 1136 EDT MAR 28 NANTUCKET IS-MA 1313 EDT MAR 28
CHARLESTON-SC 1140 EDT MAR 28 MANHATTAN-NY 1357 EDT MAR 28
JACKSONVILL B-FL 1153 EDT MAR 28 SCATARIE IS-NS 1501 ADT MAR 28
SAVANNAH-GA 1157 EDT MAR 28 GRAND MANAN-NB 1503 ADT MAR 28
MELBOURNE-FL 1208 EDT MAR 28 ST LAWRENCE-NL 1542 NDT MAR 28
VIRGINIA BCH-VA 1222 EDT MAR 28 PORTLAND-ME 1430 EDT MAR 28
MONTAUK-NY 1234 EDT MAR 28 BOSTON-MA 1442 EDT MAR 28
ATLANTIC CITY-NJ 1234 EDT MAR 28 FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE
...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR PUERTO RICO AND THE VIRGIN ISLANDS...

PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO HIGHER GROUND.

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ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE WARNING ARE PROVIDED BELOW.

SAN JUAN-PR 1140 AST MAR 28 CHRISTIANSTED-VI 1157 AST MAR 28
MAYAGUEZ-PR 1145 AST MAR 28 CHARLOT AMALI-VI 1218 AST MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF FLORIDA FROM BONITA BEACH FLORIDA TO FLAMINGO FLORIDA...

PEOPLE IN TSUNAMI ADVISORY COASTAL AREAS SHOULD MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

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KEY WEST-FL 1219 EDT MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF NEWFOUNDLAND AND LABRADOR FROM LA MANCHE...
NEWFOUNDLAND TO CAPE CHIDLEY LABRADOR...

PEOPLE IN TSUNAMI ADVISORY COASTAL AREAS SHOULD MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

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BONAVISTA-NL  1748  NDT MAR 28  BATTLE HARBOR-NL 1815  NDT MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

$$

Scenario 2: WCATWC Message #9

WEXX20  PAAQ  281705
TSUAT1

BULLETIN
TSUNAMI MESSAGE NUMBER 9
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
105 PM EDT WED MAR 28 2012

NEW OBSERVATIONS ARE ADDED BELOW.

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF FLORIDA - GEORGIA - SOUTH CAROLINA - NORTH CAROLINA - VIRGINIA - MARYLAND - DELAWARE - NEW JERSEY - NEW YORK - CONNECTICUT - RHODE ISLAND - MASSACHUSETTS - NEW HAMPSHIRE - MAINE - NEW BRUNSWICK - NOVA SCOTIA AND NEWFOUNDLAND FROM FLAMINGO FLORIDA TO LA MANCHE NEWFOUNDLAND...

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR PUERTO RICO AND THE VIRGIN ISLANDS...

...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF FLORIDA FROM BONITA BEACH FLORIDA TO FLAMINGO FLORIDA...

...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF NEWFOUNDLAND AND LABRADOR FROM LA MANCHE NEWFOUNDLAND TO CAPE CHIDLEY LABRADOR...

...THIS MESSAGE IS INFORMATION ONLY FOR COASTAL AREAS OF TEXAS - LOUISIANA - MISSISSIPPI - ALABAMA AND FLORIDA FROM BROWNSVILLE TEXAS TO BONITA BEACH FLORIDA...

RECOMMENDED ACTIONS
A TSUNAMI HAS BEEN GENERATED WHICH IS EXPECTED TO CAUSE DAMAGE TO THE WARNING AND/OR ADVISORY REGIONS LISTED IN THE HEADLINE. PEOPLE IN LOW-LYING COASTAL AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM THEIR LOCAL EMERGENCY OFFICIALS. EVACUATIONS ARE ONLY ORDERED BY EMERGENCY RESPONSE AGENCIES.
- IF IN A TSUNAMI WARNING COASTAL AREA MOVE INLAND TO HIGHER GROUND.
- IF IN A TSUNAMI ADVISORY COASTAL AREA MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.
MEASUREMENTS OR REPORTS OF TSUNAMI ACTIVITY

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>LAT</th>
<th>LON</th>
<th>TIME</th>
<th>AMPL</th>
</tr>
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<tbody>
<tr>
<td>CAPE HATTERAS NC</td>
<td>35.3N</td>
<td>75.5W</td>
<td>1438UTC</td>
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<td>80.1W</td>
<td>1511UTC</td>
<td>05.91FT/01.80M</td>
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<td>02.30FT/00.70M</td>
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TIME = TIME OF MEASUREMENT
AMPL = TSUNAMI AMPLITUDES ARE MEASURED RELATIVE TO NORMAL SEA LEVEL.
IT IS ...NOT... CREST-TO-TRAUGH WAVE HEIGHT.
VALUES ARE GIVEN IN BOTH METERS/M/ AND FEET/FT/.

ATLANTIC CITY NJ REPORTS FLOODING INLAND TO ATLANTIC AVE. TROPICANA
ATLANTIC CITY, TRUMP PLAZA HOTEL AND CASINO, AND TRUMP TAJ MAHAL REPORT
HEAVY DAMAGE WITH FLOODING THROUGHOUT THE GROUND FLOOR AREA. THIRTY-FIVE
PEOPLE WERE REPORTED INJURED WHILE TRYING TO EXIT THESE CASINOS. MANY
BOATS IN THE AREA WERE DAMAGED AND WASHED ASHORE, SOME AS FAR INLAND
AS ATLANTIC AVE. OFFICIALS ESTIMATE DAMAGE TO BE AROUND $25 MILLION.

PRELIMINARY EARTHQUAKE PARAMETERS
MAGNITUDE = 7.7
TIME - 0900 EDT MAR 28 2012
       0800 CDT MAR 28 2012
       0900 AST MAR 28 2012
       1300 UTC MAR 28 2012
LOCATION - 32.0 NORTH 78.0 WEST
         125 MILES/201 KM SE OF MYRTLE BEACH SOUTH CAROLINA
         125 MILES/201 KM SE OF CHARLESTON SOUTH CAROLINA
DEPTH - 6 MILES/10 KM

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD
INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. WARNINGS INDICATE
THAT WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL
CURRENTS IS POSSIBLE AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE
INITIAL WAVE ARRIVAL.

TSUNAMI ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING
STRONG CURRENTS OR WAVES DANGEROUS TO PEOPLE IN OR VERY NEAR THE
WATER IS EXPECTED. SIGNIFICANT WIDESPREAD INUNDATION IS NOT EXPECTED FOR AREAS UNDER AN ADVISORY. CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

CARIBBEAN COASTAL REGIONS OUTSIDE PUERTO RICO AND THE VIRGIN ISLANDS SHOULD REFER TO THE PACIFIC TSUNAMI WARNING CENTER MESSAGES FOR INFORMATION ON THIS EVENT AT PTWC.WEATHER.GOV.

THIS MESSAGE WILL BE UPDATED IN 30 MINUTES OR SOONER IF THE SITUATION WARRANTS. THE TSUNAMI MESSAGE WILL REMAIN IN EFFECT UNTIL FURTHER NOTICE. REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.


COASTAL AREAS BETWEEN AND INCLUDING FLAMINGO FLORIDA TO LA MANCHE NEWFOUNDLAND

105 PM EDT WED MAR 28 2012

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF FLORIDA - GEORGIA - SOUTH CAROLINA - NORTH CAROLINA - VIRGINIA - MARYLAND - DELAWARE - NEW JERSEY - NEW YORK - CONNECTICUT - RHODE ISLAND - MASSACHUSETTS - NEW HAMPSHIRE - MAINE - NEW BRUNSWICK - NOVA SCOTIA AND NEWFOUNDLAND FROM FLAMINGO FLORIDA TO LA MANCHE NEWFOUNDLAND...

PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO HIGHER GROUND.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE WARNING ARE PROVIDED BELOW.

MELBOURNE-FL 1208 EDT MAR 28 MANHATTAN-NY 1357 EDT MAR 28
VIRGINIA BCH-VA 1222 EDT MAR 28 SCATARIE IS-NS 1501 ADT MAR 28
MONTAUK-NY 1234 EDT MAR 28 GRAND MANAN-NB 1503 ADT MAR 28
ATLANTIC CITY-NJ 1234 EDT MAR 28 ST LAWRENCE-ON 1542 NDT MAR 28
LOCKHART-NS 1350 ADT MAR 28 FORTLAND-ME 1430 EDT MAR 28
NANTUCKET IS-MA 1313 EDT MAR 28 BOSTON-MA 1442 EDT MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

$$

AMZ712-715-725-735-742-745-PRZ001>003-005-007-008-010-011-VIZ001-002-281805-
7/7.T.CON.PAAQ.TS.W.0011.120328T1705Z-

COASTAL AREAS OF PUERTO RICO AND THE VIRGIN ISLANDS.

105 PM EDT WED MAR 28 2012
...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR PUERTO RICO AND THE VIRGIN ISLANDS...

PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO HIGHER GROUND.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE WARNING ARE PROVIDED BELOW.

CHARLOTT AMALI-VI 1218 AST MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

$$
GMZ656-657-FLZ069-070-075-281805-
/T.CON.PAAQ.TS.Y.0011.120328T1705Z-120328T1805Z/
COASTAL AREAS BETWEEN AND INCLUDING BONITA BEACH FLORIDA TO FLAMINGO FLORIDA
105 PM EDT WED MAR 28 2012

...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF FLORIDA FROM BONITA BEACH FLORIDA TO FLAMINGO FLORIDA...

PEOPLE IN TSUNAMI ADVISORY COASTAL AREAS SHOULD MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

TSUNAMI ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PEOPLE IN OR VERY NEAR WATER IS IMMINENT... EXPECTED OR OCCURRING. SIGNIFICANT WIDESPREAD INUNDATION IS NOT EXPECTED FOR AREAS IN AN ADVISORY. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME. ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE ADVISORY ARE PROVIDED BELOW.

KEY WEST-FL 1219 EDT MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

$$
NLZ110-130-540-530-570-520-510-560-610-720-710-730-281805-
/T.CON.PAAQ.TS.Y.0011.120328T1705Z-120328T1805Z/
COASTAL AREAS BETWEEN AND INCLUDING LA MANCHE NEWFOUNDLAND TO CAPE CHIDLEY LABRADOR
105 PM EDT WED MAR 28 2012

...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF NEWFOUNDLAND AND LABRADOR FROM LA MANCHE NEWFOUNDLAND TO CAPE CHIDLEY LABRADOR...

PEOPLE IN TSUNAMI ADVISORY COASTAL AREAS SHOULD MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

TSUNAMI ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PEOPLE IN OR VERY NEAR WATER IS IMMINENT... EXPECTED OR OCCURRING. SIGNIFICANT WIDESPREAD INUNDATION IS NOT EXPECTED FOR AREAS IN AN ADVISORY. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL
ARRIVAL TIME. ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE ADVISORY ARE PROVIDED BELOW.

BONAVISTA-NL  1748 NDT MAR 28 BATTLE HARBOR-NL 1815 NDT MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

$$

Scenario 2: WCATWC Message #10

WEXX20 PAAQ 281733
TSUAT1

BULLETIN
TSUNAMI MESSAGE NUMBER 10
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
133 PM EDT WED MAR 28 2012

NEW OBSERVATIONS ARE ADDED BELOW.

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF FLORIDA - GEORGIA - SOUTH CAROLINA - NORTH CAROLINA - VIRGINIA - MARYLAND - DELAWARE - NEW JERSEY - NEW YORK - CONNECTICUT - RHODE ISLAND - MASSACHUSETTS - NEW HAMPSHIRE - MAINE - NEW BRUNSWICK - NOVA SCOTIA AND NEWFOUNDLAND FROM FLAMINGO FLORIDA TO LA MANCHE NEWFOUNDLAND...

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR PUERTO RICO AND THE VIRGIN ISLANDS...

...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF FLORIDA FROM BONITA BEACH FLORIDA TO FLAMINGO FLORIDA...

...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF NEWFOUNDLAND AND LABRADOR FROM LA MANCHE NEWFOUNDLAND TO CAPE CHIDLEY LABRADOR...

...THIS MESSAGE IS INFORMATION ONLY FOR COASTAL AREAS OF TEXAS - LOUISIANA - MISSISSIPPI - ALABAMA AND FLORIDA FROM BROWNSVILLE TEXAS TO BONITA BEACH FLORIDA...

RECOMMENDED ACTIONS
A TSUNAMI HAS BEEN GENERATED WHICH IS EXPECTED TO CAUSE DAMAGE TO THE WARNING AND/OR ADVISORY REGIONS LISTED IN THE HEADLINE. PEOPLE IN LOW-LYING COASTAL AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM THEIR LOCAL EMERGENCY OFFICIALS. EVACUATIONS ARE ONLY ORDERED BY EMERGENCY RESPONSE AGENCIES.
- IF IN A TSUNAMI WARNING COASTAL AREA MOVE INLAND TO HIGHER GROUND.
- IF IN A TSUNAMI ADVISORY COASTAL AREA MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

MEASUREMENTS OR REPORTS OF TSUNAMI ACTIVITY

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AQUADILLA PR 18.5N 67.1W 1535UTC 04.27FT/01.30M
SPRINGMAID PIER SC 33.7N 78.9W 1537UTC 06.23FT/01.90M
DUCK NC 36.2N 75.8W 1538UTC 07.87FT/02.40M
SAN JUAN PR 18.5N 66.1W 1540UTC 09.51FT/02.90M
MONA ISLAND PR 18.1N 67.9W 1543UTC 03.61FT/01.10M
OCEAN CITY MD 38.3N 75.8W 1547UTC 06.89FT/02.10M
VIRGIN ISLANDS 18.5N 67.1W 1550UTC 01.31FT/00.40M
CULEBRA PR 18.1N 65.4W 1553UTC 06.89FT/02.10M
FLAGGER BEACH FL 29.5N 81.1W 1555UTC 10.17FT/03.10M
VIEQUES IS PR 18.1N 65.4W 1556UTC 02.95FT/00.90M
LIMETREE BAY VI 17.7N 64.8W 1558UTC 01.31FT/00.50M
OCEAN CITY MD 38.3N 75.8W 1559UTC 06.89FT/02.10M
VIRGIN ISLANDS 18.5N 67.1W 1600UTC 01.31FT/00.40M
CHARLESTON SC 32.8N 79.9W 1601UTC 01.64FT/00.50M
SUNSET BEACH SC 33.9N 78.5W 1603UTC 03.28FT/01.00M
KEY WEST FL 24.6N 81.8W 1604UTC 00.33FT/00.10M
LEWES DE 38.8N 75.1W 1607UTC 01.31FT/00.40M
CHRISTIANSTED VI 39.8N 75.1W 1608UTC 01.64FT/00.50M
ATLANTIC CITY NJ 39.4N 74.4W 1609UTC 08.86FT/02.70M
CAPE MAY NJ 38.9N 74.9W 1610UTC 02.30FT/00.70M
ST SIMMONS IS GA 41.4N 72.1W 1611UTC 01.31FT/00.40M
CULEBRA PR REPORTS THAT THE CULEBRA NATURE RESERVE, PLAYA RESACA, AND PLAYA BRAVA HAVE BEEN HEAVILY DAMAGED AND WILL TAKE YEARS TO REGAIN ITS ORIGINAL APPEARANCE. MONTAUK NY REPORTS FLOODING ALONG HWY 27. THREE BEACH COMBERS ARE MISSING AND PRESUMED DROWN.
PRELIMINARY EARTHQUAKE PARAMETERS
MAGNITUDE - 7.7
TIME - 0900 EDT MAR 28 2012
0800 CDT MAR 28 2012
0900 AST MAR 28 2012
1300 UTC MAR 28 2012
LOCATION - 32.0 NORTH 78.0 WEST
125 MILES/201 KM SE OF MYRTLE BEACH SOUTH CAROLINA
125 MILES/201 KM SE OF CHARLESTON SOUTH CAROLINA
DEPTH - 6 MILES/10 KM
TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMEDIATE... EXPECTED OR OCCURRING. WARNINGS INDICATE THAT WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.
TSUNAMI ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PEOPLE IN OR VERY NEAR THE WATER IS EXPECTED. SIGNIFICANT WIDESPREAD INUNDATION IS NOT EXPECTED FOR AREAS UNDER AN ADVISORY. CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.
CARIBBEAN COASTAL REGIONS OUTSIDE PUERTO RICO AND THE VIRGIN ISLANDS SHOULD REFER TO THE PACIFIC TSUNAMI WARNING CENTER MESSAGES FOR INFORMATION ON THIS EVENT AT PTWC.WEATHER.GOV.
THIS MESSAGE WILL BE UPDATED IN 30 MINUTES OR SOONER IF THE SITUATION WARRANTS. THE TSUNAMI MESSAGE WILL REMAIN IN EFFECT UNTIL FURTHER NOTICE. REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.


COASTAL AREAS BETWEEN AND INCLUDING FLAMINGO FLORIDA TO LA MANCHE NEWFOUNDLAND

133 PM EDT WED MAR 28 2012

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF FLORIDA - GEORGIA - SOUTH CAROLINA - NORTH CAROLINA - VIRGINIA - MARYLAND - DELAWARE - NEW JERSEY - NEW YORK - CONNECTICUT - RHODE ISLAND - MASSACHUSETTS - NEW HAMPSHIRE - MAINE - NEW BRUNSWICK - NOVA SCOTIA AND NEWFOUNDLAND FROM FLAMINGO FLORIDA TO LA MANCHE NEWFOUNDLAND....

PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO HIGHER GROUND.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE WARNING ARE PROVIDED BELOW.

MONTAUK-NY 1234 EDT MAR 28 SCATARIE IS-NS 1501 ADT MAR 28
ATLANTIC CITY-NJ 1234 EDT MAR 28 GRAND MANAN-NB 1503 ADT MAR 28
LOCKPORT-NS 1350 ADT MAR 28 ST LAWRENCE-NL 1542 NDT MAR 28
NANTUCKET IS-MA 1313 EDT MAR 28 PORTLAND-ME 1430 EDT MAR 28
MANHATTAN-NY 1357 EDT MAR 28 BOSTON-MA 1442 EDT MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

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AMZ712-715-725-735-742-745-PRZ001>003-005-007-008-010-011-VIZ001-002-281833/>

/T.CON.PAAQ.TS.W.0011.120328T1733Z-120328T1833Z/

COASTAL AREAS OF PUERTO RICO AND THE VIRGIN ISLANDS.

133 PM EDT WED MAR 28 2012

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR PUERTO RICO AND THE VIRGIN ISLANDS...

PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO HIGHER GROUND.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. TSUNAMIS ARE A
SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

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GMZ656-657-FLZ069-070-075-281833-
/T.CON.PAAQ.TS.Y.0011.120328T1733Z-120328T1833Z/
COASTAL AREAS BETWEEN AND INCLUDING BONITA BEACH FLORIDA TO FLAMINGO FLORIDA
133 PM EDT WED MAR 28 2012

...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF FLORIDA FROM BONITA BEACH FLORIDA TO FLAMINGO FLORIDA...

PEOPLE IN TSUNAMI ADVISORY COASTAL AREAS SHOULD MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

TSUNAMI ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PEOPLE IN OR VERY NEAR WATER IS IMMINENT... EXPECTED OR OCCURRING. SIGNIFICANT WIDESPREAD INUNDATION IS NOT EXPECTED FOR AREAS IN AN ADVISORY. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

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NLZ110-130-540-530-570-520-510-610-720-710-730-281833-
/T.CON.PAAQ.TS.Y.0011.120328T1733Z-120328T1833Z/
COASTAL AREAS BETWEEN AND INCLUDING LA MANCHE NEWFOUNDLAND TO CAPE CHIDLEY LABRADOR
133 PM EDT WED MAR 28 2012

...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF NEWFOUNDLAND AND LABRADOR FROM LA MANCHE NEWFOUNDLAND TO CAPE CHIDLEY LABRADOR...

PEOPLE IN TSUNAMI ADVISORY COASTAL AREAS SHOULD MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

TSUNAMI ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PEOPLE IN OR VERY NEAR WATER IS IMMINENT... EXPECTED OR OCCURRING. SIGNIFICANT WIDESPREAD INUNDATION IS NOT EXPECTED FOR AREAS IN AN ADVISORY. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME. ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE ADVISORY ARE PROVIDED BELOW.

BONAVISTA-NL 1748 NDT MAR 28 BATTLE HARBOR-NL 1815 NDT MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

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Scenario 2: WCATWC Message #11

WEXX20 PAAQ 281802
TSUAT1

BULLETIN
TSUNAMI MESSAGE NUMBER 11
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
202 PM EDT WED MAR 28 2012

NEW OBSERVATIONS ARE ADDED BELOW.
...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF FLORIDA - GEORGIA - SOUTH CAROLINA - NORTH CAROLINA - VIRGINIA - MARYLAND - DELAWARE - NEW JERSEY - NEW YORK - CONNECTICUT - RHODE ISLAND - MASSACHUSETTS - NEW HAMPSHIRE - MAINE - NEW BRUNSWICK - NOVA SCOTIA AND NEWFOUNDLAND FROM FLAMINGO FLORIDA TO LA MANCHE NEWFOUNDLAND...

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR PUERTO RICO AND THE VIRGIN ISLANDS...

...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF FLORIDA FROM BONITA BEACH FLORIDA TO FLAMINGO FLORIDA...

...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF NEWFOUNDLAND AND LABRADOR FROM LA MANCHE NEWFOUNDLAND TO CAPE CHIDLEY LABRADOR...

...THIS MESSAGE IS INFORMATION ONLY FOR COASTAL AREAS OF TEXAS - LOUISIANA - MISSISSIPPI - ALABAMA AND FLORIDA FROM BROWNSVILLE TEXAS TO BONITA BEACH FLORIDA...

RECOMMENDED ACTIONS
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- IF IN A TSUNAMI WARNING COASTAL AREA MOVE INLAND TO HIGHER GROUND.
- IF IN A TSUNAMI ADVISORY COASTAL AREA MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

MEASUREMENTS OR REPORTS OF TSUNAMI ACTIVITY

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### Time - Time of Measurement

**AMPL - Tsunami Amplitudes**

- Values are given in both meters/m and feet/ft. (03.61ft/01.10m to 4.59ft/01.46m)

**Tsunami Amplitudes**

- Measured relative to normal sea level.

**Time of Measurement**

- Calculated from initial wave arrival.

**Tsunami Advantages**

- Mean that a tsunami capable of producing strong currents or waves dangerous to people in or very near the water is expected. Significant widespread inundation is not expected for areas under an advisory. Currents may be hazardous to swimmers, boats, and coastal structures and may continue for several hours after the initial wave arrival.

**Caribbean Coastal Regions**

- Outside Puerto Rico and the Virgin Islands should refer to the Pacific Tsunami Warning Center messages for information on this event at PTWC.WEATHER.GOV.

**This Message Will be Updated in 30 Minutes or Sooner If the Situation Warrants.** The Tsunami Message Will Remain in Effect Until Further Notice. Refer to the Internet Site WCATWC.ARH.NOAA.GOV For More Information.

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**LANTEX 12 Handbook**

- NewPort Ri 41.5N 71.3W 1658UTC 03.61ft/01.10M
- Mayaguez Pr 18.2N 67.1W 1658UTC 04.59ft/01.46M
- Sandy Hook NJ 40.5N 74.0W 1702UTC 01.31ft/0.04M
- New London CT 41.4N 72.1W 1709UTC 01.97ft/0.06M
- Nantucket Is Ma 41.3N 70.1W 1713UTC 01.31ft/0.04M
- Quonset Point Ri 41.6N 71.4W 1730UTC 02.30ft/0.07M
- Chezzetcook NS 44.8N 63.2W 1740UTC 01.64ft/0.05M
- Flamingo Fl 25.8N 80.1W 1750UTC 01.31ft/0.04M
- Bridgeport Ct 41.2N 73.2W 1753UTC 00.33ft/0.01M
- Providence Ri 41.8N 71.4W 1754UTC 00.98ft/0.03M
- Bar Harbor Me 44.4N 68.2W 1758UTC 02.95ft/0.09M
- Fort Point Nh 43.1N 70.7W 1758UTC 03.61ft/0.10M

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**Ritchie Notice.** Refer to the Internet Site WCATWC.ARH.NOAA.GOV For More Information.
...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF FLORIDA - GEORGIA - SOUTH CAROLINA - NORTH CAROLINA - VIRGINIA - MARYLAND - DELAWARE - NEW JERSEY - NEW YORK - CONNECTICUT - RHODE ISLAND - MASSACHUSETTS - NEW HAMPSHIRE - MAINE - NEW BRUNSWICK - NOVA SCOTIA AND NEWFOUNDLAND FROM FLAMINGO FLORIDA TO LA MANCHE NEWFOUNDLAND...

PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO HIGHER GROUND.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE WARNING ARE PROVIDED BELOW.

NANTUCKET IS-MA 1313 EDT MAR 28 ST LAWRENCE-NL 1542 NDT MAR 28
MANHATTAN-NY 1337 EDT MAR 28 PORTLAND-MB 1430 EDT MAR 28
SCATARIE IS-NS 1501 ADT MAR 28 BOSTON-MA 1442 EDT MAR 28
GRAND MANAN-NB 1503 ADT MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

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GMZ656-657-FLZ069-070-075-281902-
/T.CON.PAAQ.TS.Y.0011.120328T1902Z/ COASTAL AREAS BETWEEN AND INCLUDING BONITA BEACH FLORIDA TO FLAMINGO FLORIDA
202 PM EDT WED MAR 28 2012

...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF FLORIDA FROM BONITA BEACH FLORIDA TO FLAMINGO FLORIDA...

PEOPLE IN TSUNAMI ADVISORY COASTAL AREAS SHOULD MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.
TSUNAMI ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PEOPLE IN OR VERY NEAR WATER IS IMMINENT... EXPECTED OR OCCURRING. SIGNIFICANT WIDESPREAD INUNDATION IS NOT EXPECTED FOR AREAS IN AN ADVISORY. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

$$
NLZ110-130-540-530-570-520-510-560-610-720-710-730-281902-
/7.COM.PAAQ.TS.Y.0011.120328T18022-120328T19022/
COASTAL AREAS BETWEEN AND INCLUDING LA MANCHE NEWFOUNDLAND TO CAPE CHIDLEY LABRADOR
202 PM EDT WED MAR 28 2012

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BONAVISTA-NL 1748 NDT MAR 28 BATTLE HARBOR-NL 1815 NDT MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

$$

Scenario 2: WCATWC Message #12

WEXX20 PAAQ 281832
TSUAT1

BULLETIN
TSUNAMI MESSAGE NUMBER 12
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
232 PM EDT WED MAR 28 2012

NEW OBSERVATIONS ARE ADDED BELOW.

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TIME - TIME OF MEASUREMENT
AMPL - TSUNAMI AMPLITUDES ARE MEASURED RELATIVE TO NORMAL SEA LEVEL. IT IS ...NOT... CREST-TO-TRough WAVE HEIGHT.
VALUES ARE GIVEN IN BOTH METERS/M/ AND FEET/FT/.

WOODS HOLE MA REPORTS THAT A WAVE APPROXIMATELY 03.00FT/00.91M CAME INTO GREAT HARBOR AND DAMAGED SOME SMALL BOATS. THE LARGER RESEARCH VESSELS WERE OUT AT SEA AT THE TIME. NEWPORT RI REPORTS FLOODING...
ALONG ITS WATERFRONT. THE POWERFUL 03.50FT/01.07M SURGE IS REPORTED
TO HAVE WASHED OVER SEAWALLS AND FLOODED PORTIONS OF SALVE REGINA
UNIVERSITY. THE AREA SEAWARD OF MEMORIAL BLVE HAS BEEN EVACUATED.

PRELIMINARY EARTHQUAKE PARAMETERS
MAGNITUDE - 7.7
TIME - 0900 EDT MAR 28 2012
0800 CDT MAR 28 2012
0900 AST MAR 28 2012
1300 UTC MAR 28 2012
LOCATION - 32.0 NORTH 78.0 WEST
125 MILES/201 KM SE OF MYRTLE BEACH SOUTH CAROLINA
125 MILES/201 KM SE OF CHARLESTON SOUTH CAROLINA
DEPTH - 6 MILES/10 KM

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD
INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. WARNINGS INDICATE
THAT WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL
CURRENTS IS POSSIBLE AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE
INITIAL WAVE ARRIVAL.

TSUNAMI ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING
STRONG CURRENTS OR WAVES DANGEROUS TO PEOPLE IN OR VERY NEAR THE
WATER IS EXPECTED. SIGNIFICANT WIDESPREAD INUNDATION
IS NOT EXPECTED FOR AREAS UNDER AN ADVISORY. CURRENTS MAY BE
HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY
CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

CARIBBEAN COASTAL REGIONS OUTSIDE PUERTO RICO AND THE VIRGIN
ISLANDS SHOULD REFER TO THE PACIFIC TSUNAMI WARNING CENTER MESSAGES
FOR INFORMATION ON THIS EVENT AT PTWC.WEATHER.GOV.

THIS MESSAGE WILL BE UPDATED IN 30 MINUTES OR SOONER IF
THE SITUATION WARRANTS. THE TSUNAMI MESSAGE WILL REMAIN IN EFFECT
UNTIL FURTHER NOTICE. REFER TO THE INTERNET SITE
WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

GMZ031-032-034-052>055-AMZ2630-650-661-550-552-450-452-
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108-110-045-047-080-081-094-095-098-103-104-015-017-030>032-
102-VAZ2084-086-091-094-095-098-099-100-MZ2025-DE202>004-NJZ206-
012>014-021-023-026-106-108-NY2071>075-078>081-176-179-CTZ209>012-
150-140-270-320-410-450-440-430-QC2670-680-QLZ340-220-
230-210-120-281932-
/T.CON.PAAQ.TS.W.0011.120328T1832Z-
COASTAL AREAS BETWEEN AND INCLUDING FLAMINGO FLORIDA TO LA
MANCHE NEWFOUNDLAND
232 PM EDT WED MAR 28 2012

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL
 AREAS OF FLORIDA - GEORGIA - SOUTH CAROLINA - NORTH
 CAROLINA - VIRGINIA - MARYLAND - DELAWARE - NEW JERSEY -
 NEW YORK - CONNECTICUT - RHODE ISLAND - MASSACHUSETTS - NEW
 HAMPSHIRE - MAINE - NEW BRUNSWICK - NOVA SCOTIA AND
 NEWFOUNDLAND FROM FLAMINGO FLORIDA TO LA MANCHE
 NEWFOUNDLAND...

PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO
HIGHER GROUND.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD
INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. TSUNAMIS ARE A
SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE WARNING ARE PROVIDED BELOW.

MANHATTAN-NY  1357  EDT MAR 28  ST LAWRENCE-NL  1542  NDT MAR 28  
SCATARIE IS-NS  1501  ADT MAR 28  PORTLAND-ME  1430  EDT MAR 28  
GRAND MANAN-NB  1503  ADT MAR 28  BOSTON-MA  1442  EDT MAR 28  

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

$$
AMZ712-715-725-735-742-745-PRZ001>003-005-007-008-010-011-
V12001-002-281932-
/T.CON.PAAQ.TS.W.0011.120328T1832Z-120328T1932Z/
COASTAL AREAS OF PUERTO RICO AND THE VIRGIN ISLANDS.  
232 PM EDT WED MAR 28 2012  
...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR PUERTO RICO AND THE VIRGIN ISLANDS...  
PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO HIGHER GROUND.  
TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.  
$$
GMZ656-657-FLZ069-070-075-281932-
/T.CON.PAAQ.TS.Y.0011.120328T1832Z-120328T1932Z/
COASTAL AREAS BETWEEN AND INCLUDING BONITA BEACH FLORIDA TO FLAMINGO FLORIDA  
232 PM EDT WED MAR 28 2012  
...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF FLORIDA FROM BONITA BEACH FLORIDA TO FLAMINGO Florida...  
PEOPLE IN TSUNAMI ADVISORY COASTAL AREAS SHOULD MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.  
TSUNAMI ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PEOPLE IN OR VERY NEAR WATER IS IMMINENT... EXPECTED OR OCCURRING. SIGNIFICANT WIDESPREAD INUNDATION IS NOT EXPECTED FOR AREAS IN AN ADVISORY. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.  
$$
NLZ110-130-540-530-570-520-510-560-610-720-710-730-281932-
/T.CON.PAAQ.TS.Y.0011.120328T1832Z-120328T1932Z/
COASTAL AREAS BETWEEN AND INCLUDING LA MANCHE NEWFOUNDLAND TO CAPE CHIDLEY LABRADOR  
232 PM EDT WED MAR 28 2012  
...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF NEWFOUNDLAND AND LABRADOR FROM LA MANCHE NEWFOUNDLAND TO CAPE CHIDLEY LABRADOR...  
PEOPLE IN TSUNAMI ADVISORY COASTAL AREAS SHOULD MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.
TSUNAMI ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PEOPLE IN OR VERY NEAR WATER IS IMMINENT... EXPECTED OR OCCURRING. SIGNIFICANT WIDESPREAD INUNDATION IS NOT EXPECTED FOR AREAS IN AN ADVISORY. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME. ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE ADVISORY ARE PROVIDED BELOW.

BONAVISTA-NL 1748 NDT MAR 28 BATTLE HARBOR-NL 1815 NDT MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

$$

Scenario 2: WCATWC Message #13

WEXX20 PAAQ 281903
TSUATI

BULLETIN
TSUNAMI MESSAGE NUMBER 13
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
303 PM EDT WED MAR 28 2012

NEW OBSERVATIONS ARE ADDED BELOW.

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF FLORIDA - GEORGIA - SOUTH CAROLINA - NORTH CAROLINA - VIRGINIA - MARYLAND - DELAWARE - NEW JERSEY - NEW YORK - CONNECTICUT - RHODE ISLAND - MASSACHUSETTS - NEW HAMPSHIRE - MAINE - NEW BRUNSWICK - NOVA SCOTIA AND NEWFOUNDLAND FROM FLAMINGO FLORIDA TO LA MANCHE NEWFOUNDLAND...

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR PUERTO RICO AND THE VIRGIN ISLANDS...

...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF FLORIDA FROM BONITA BEACH FLORIDA TO FLAMINGO FLORIDA...

...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF NEWFOUNDLAND AND LABRADOR FROM LA MANCHE NEWFOUNDLAND TO CAPE CHIDLEY LABRADOR...

...THIS MESSAGE IS INFORMATION ONLY FOR COASTAL AREAS OF TEXAS - LOUISIANA - MISSISSIPPI - ALABAMA AND FLORIDA FROM BROWNSVILLE TEXAS TO BONITA BEACH FLORIDA...

RECOMMENDED ACTIONS
A TSUNAMI HAS BEEN GENERATED WHICH IS EXPECTED TO CAUSE DAMAGE TO THE WARNING AND/OR ADVISORY REGIONS LISTED IN THE HEADLINE. PEOPLE IN LOW-LYING COASTAL AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM THEIR LOCAL EMERGENCY OFFICIALS. EVACUATIONS ARE ONLY ORDERED BY EMERGENCY RESPONSE AGENCIES.
- IF IN A TSUNAMI WARNING COASTAL AREA MOVE INLAND TO HIGHER GROUND.
- IF IN A TSUNAMI ADVISORY COASTAL AREA MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

MEASUREMENTS OR REPORTS OF TSUNAMI ACTIVITY
LOCATION LAT LON TIME AMPL
TIME - TIME OF MEASUREMENT
AMPL - TSUNAMI AMPLITUDES ARE MEASURED RELATIVE TO NORMAL SEA LEVEL.
IT IS NOT CREST-TO-TRough WAVE HEIGHT.
VALUES ARE GIVEN IN BOTH METERS/M/ AND FEET/FT/.

SUNSET BEACH SC REPORTS FLOODING ALONG OCEAN ISLE BLVD W AND MAIN ST E FROM A 0.28FT/01.00M SURGE THAT CAME ASHORE. HOMES SEAWARD OF MAIN ST W ARE REPORTED TO BE HEAVILY DAMAGED. FORT POINT NH REPORTS THAT A 0.50FT/01.07M SURGE CAUSED HEAVY DAMAGE TO FORT CONSTITUTION HISTORICAL SITE. MANY BUILDINGS AND SMALL BOATS WERE DAMAGED IN THE AREA. A DOLLAR VALUE HAS NOT BEEN ASSIGNED TO THE DAMAGE YET.

PRELIMINARY EARTHQUAKE PARAMETERS
MAGNITUDE - 7.7
TIME - 0900 EDT MAR 28 2012
LOCATION - 32.0 NORTH 78.0 WEST

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. WARNINGS INDICATE THAT WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

TSUNAMI ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PEOPLE IN OR VERY NEAR THE WATER IS EXPECTED. SIGNIFICANT WIDESPREAD INUNDATION IS NOT EXPECTED FOR AREAS UNDER AN ADVISORY. CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

CARIBBEAN COASTAL REGIONS OUTSIDE PUERTO RICO AND THE VIRGIN
ISLANDS SHOULD REFER TO THE PACIFIC TSUNAMI WARNING CENTER MESSAGES FOR INFORMATION ON THIS EVENT AT PTWC.WEATHER.GOV.

THIS MESSAGE WILL BE UPDATED IN 30 MINUTES OR SOoner IF THE SITUATION WARRANTS. THE TSUNAMI MESSAGE WILL REMAIN IN EFFECT UNTIL FURTHER NOTICE. REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.


...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF FLORIDA - GEORGIA - SOUTH CAROLINA - NORTH CAROLINA - VIRGINIA - MARYLAND - DELAWARE - NEW JERSEY - NEW YORK - CONNECTICUT - RHODE ISLAND - MASSACHUSETTS - NEW HAMPSHIRE - MAINE - NEW BRUNSWICK - NOVA SCOTIA AND NEWFOUNDLAND FROM FLAMINGO FLORIDA TO LA MANCHE NEWFOUNDLAND...

PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO HIGHER GROUND.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT...EXPECTED OR OCCURRING. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE WARNING ARE PROVIDED BELOW.

ST LAWRENCE-NL 1542 NDT MAR 28 BOSTON-MA 1442 EDT MAR 28
PORTLAND-ME 1430 EDT MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

$$

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR PUERTO RICO AND THE VIRGIN ISLANDS...

PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO HIGHER GROUND.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT...EXPECTED OR OCCURRING. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL...
ARRIVAL TIME.

$$
GMZ656-657-FLZ069-070-075-282003- 
/T.CON.PAAQ.TS.Y.0011.120328T1903Z-120328T2003Z/
COASTAL AREAS BETWEEN AND INCLUDING BONITA BEACH FLORIDA TO FLAMINGO FLORIDA
303 PM EDT WED MAR 28 2012

...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF FLORIDA FROM BONITA BEACH FLORIDA TO FLAMINGO FLORIDA...

PEOPLE IN TSUNAMI ADVISORY COASTAL AREAS SHOULD MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

TSUNAMI ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PEOPLE IN OR VERY NEAR WATER IS IMMINENT... EXPECTED OR OCCURRING. SIGNIFICANT WIDESPREAD INUNDATION IS NOT EXPECTED FOR AREAS IN AN ADVISORY. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

$$
NLZ110-130-540-530-570-520-510-560-610-720-730-282003- 
/T.CON.PAAQ.TS.Y.0011.120328T1903Z-120328T2003Z/
COASTAL AREAS BETWEEN AND INCLUDING LA MANCHE NEWFOUNDLAND TO CAPE CHIDLEY LABRADOR
303 PM EDT WED MAR 28 2012

...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF NEWFOUNDLAND AND LABRADOR FROM LA MANCHE NEWFOUNDLAND TO CAPE CHIDLEY LABRADOR...

PEOPLE IN TSUNAMI ADVISORY COASTAL AREAS SHOULD MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

TSUNAMI ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PEOPLE IN OR VERY NEAR WATER IS IMMINENT... EXPECTED OR OCCURRING. SIGNIFICANT WIDESPREAD INUNDATION IS NOT EXPECTED FOR AREAS IN AN ADVISORY. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME. ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE ADVISORY ARE PROVIDED BELOW.

BONAVISTA-NL 1748 NDT MAR 28
BATTLE HARBOR-NL 1815 NDT MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

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Scenario 2: WCATWC Message #14

WEXX20 PAAQ 281933
TSUAT1

BULLETIN
TSUNAMI MESSAGE NUMBER 14
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
333 PM EDT WED MAR 28 2012

NEW OBSERVATIONS ARE ADDED BELOW.
...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF FLORIDA - GEORGIA - SOUTH CAROLINA - NORTH CAROLINA - VIRGINIA - MARYLAND - DELAWARE - NEW JERSEY - NEW YORK - CONNECTICUT - RHODE ISLAND - MASSACHUSETTS - NEW HAMPSHIRE - MAINE - NEW BRUNSWICK - NOVA SCOTIA AND NEWFOUNDLAND FROM FLAMINGO FLORIDA TO LA MANCHE NEWFOUNDLAND...

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR PUERTO RICO AND THE VIRGIN ISLANDS...

...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF FLORIDA FROM BONITA BEACH FLORIDA TO FLAMINGO FLORIDA...

...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF NEWFOUNDLAND AND LABRADOR FROM LA MANCHE NEWFOUNDLAND TO CAPE CHIDLEY LABRADOR...

...THIS MESSAGE IS INFORMATION ONLY FOR COASTAL AREAS OF TEXAS - LOUISIANA - MISSISSIPPI - ALABAMA AND FLORIDA FROM BROWNSVILLE TEXAS TO BONITA BEACH FLORIDA...

RECOMMENDED ACTIONS
A TSUNAMI HAS BEEN GENERATED WHICH IS EXPECTED TO CAUSE DAMAGE TO THE WARNING AND/OR ADVISORY REGIONS LISTED IN THE HEADLINE. PEOPLE IN LOW-LYING COASTAL AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM THEIR LOCAL EMERGENCY OFFICIALS. EVACUATIONS ARE ONLY ORDERED BY EMERGENCY RESPONSE AGENCIES.

- IF IN A TSUNAMI WARNING COASTAL AREA MOVE INLAND TO HIGHER GROUND.

- IF IN A TSUNAMI ADVISORY COASTAL AREA MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

MEASUREMENTS OR REPORTS OF TSUNAMI ACTIVITY

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TIME - TIME OF MEASUREMENT
AMPL - TSUNAMI AMPLITUDES ARE MEASURED RELATIVE TO NORMAL SEA LEVEL.
IT IS NOT CREST-TO-TRough WAVE HEIGHT.
VALUES ARE GIVEN IN BOTH METERS/M AND FEET/FT/

WELLS REPORTS A 04.00FT/01.22M SURGE THAT HAS TOTALLY INUNDATED THE
MARSH AREA SEAWARD OF POST RD. HEAVY DAMAGE IS REPORTED TO THE BUILDINGS
IN THE VICINITY OF LAFAYETTE'S OCEANFRONT RESORT, AND TO THE HOMES ALONG
ATLANTIC AVE. FOUR PEOPLE ARE REPORTED MISSING AND APPROXIMATE DAMAGE
IS BELIEVED TO BE $15 MILLION.

PRELIMINARY EARTHQUAKE PARAMETERS
MAGNITUDE - 7.7
TIME - 0900 EDT MAR 28 2012
0800 CDT MAR 28 2012
0900 AST MAR 28 2012
1300 UTC MAR 28 2012
LOCATION - 32.0 NORTH 78.0 WEST
125 MILES/201 KM SE OF MYRTLE BEACH SOUTH CAROLINA
125 MILES/201 KM SE OF CHARLESTON SOUTH CAROLINA
DEPTH - 6 MILES/10 KM

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD
INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. WARNINGS INDICATE
THAT WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL
CURRENTS IS POSSIBLE AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE
INITIAL WAVE ARRIVAL.

TSUNAMI ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING
STRONG CURRENTS OR WAVES TO PEOPLE IN OR VERY NEAR THE
WATER IS EXPECTED. SIGNIFICANT WIDESPREAD INUNDATION
IS NOT EXPECTED FOR AREAS UNDER AN ADVISORY. CURRENTS MAY BE
HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY
CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

CARIBBEAN COASTAL REGIONS OUTSIDE PUERTO RICO AND THE VIRGIN
ISLANDS SHOULD REFER TO THE PACIFIC TSUNAMI WARNING CENTER MESSAGES
FOR INFORMATION ON THIS EVENT AT PTWC.WEATHER.GOV.

THIS MESSAGE WILL BE UPDATED IN 30 MINUTES OR SOONER IF
THE SITUATION WARRANTS. THE TSUNAMI MESSAGE WILL REMAIN IN EFFECT
UNTIL FURTHER NOTICE. REFER TO THE INTERNET SITE
WCTWC.ARH.NOAA.GOV FOR MORE INFORMATION.

GMZ031>032-034-052-055-AMZ630-650-651-550-552-455-450-452-
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012>014-021-023>026-106-108-NY071>075-078-081-176-179-CTZ099>012-
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COASTAL AREAS BETWEEN AND INCLUDING FLAMINGO FLORIDA TO LA
MANCHE NEWFOUNDLAND
333 PM EDT WED MAR 28 2012

THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL
AREAS OF FLORIDA - GEORGIA - SOUTH CAROLINA - NORTH
CAROLINA - VIRGINIA - MARYLAND - DELAWARE - NEW JERSEY -
NEW YORK - CONNECTICUT - RHODE ISLAND - MASSACHUSETTS - NEW
HAMPShIRE - MAINE - New BRunSWiCK - NOVA scOTIA AND NEWfOUNDLAND FROM FLAMINGO FLORIDA TO LA MANCHE NEWfOUNDLAND...

PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO HIGHER GROUND.

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ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE WARNING ARE PROVIDED BELOW.

BOSTON-MA 1442 EDT MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

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333 PM EDT WED MAR 28 2012

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GMZ656-657-FLZ069-070-075-282033-
/T.CON.PAAQ.TS.Y.0011.120328T1933Z-120328T2033Z/ COASTAL AREAS BETWEEN AND INCLUDING BONITA BEACH FLORIDA TO FLAMINGO FLORIDA.
333 PM EDT WED MAR 28 2012

...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF FLORIDA FROM BONITA BEACH FLORIDA TO FLAMINGO FLORIDA...

PEOPLE IN TSUNAMI ADVISORY COASTAL AREAS SHOULD MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

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NLZ110-130-540-530-570-520-510-560-610-720-710-730-282033-
/T.CON.PAAQ.TS.Y.0011.120328T1933Z-120328T2033Z/ COASTAL AREAS BETWEEN AND INCLUDING LA MANCHE NEWfOUNDLAND TO CAPE CHIDLEY LABRADOR
333 PM EDT WED MAR 28 2012
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BONAVISTA-NL 1748 NDT MAR 28 BATTLE HARBOR-NL 1815 NDT MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

$$

Scenario 2: WCATWC Message #15

WEXX20 PAAQ 282003
TSUAT1

BULLETIN
TSunami MESSAGE NUMBER 15
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
463 PM EDT WED MAR 28 2012

NEW OBSERVATIONS ARE ADDED BELOW.

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF FLORIDA - GEORGIA - SOUTH CAROLINA - NORTH CAROLINA - VIRGINIA - MARYLAND - DELAWARE - NEW JERSEY - NEW YORK - CONNECTICUT - RHODE ISLAND - MASSACHUSETTS - NEW HAMPSHIRE - MAINE - NEW BRUNSWICK - NOVA SCOTIA AND NEWFOUNDLAND FROM FLAMINGO FLORIDA TO LA MANCHE NEWFOUNDLAND...

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...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF FLORIDA FROM BONITA BEACH FLORIDA TO FLAMINGO FLORIDA...

...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF NEWFOUNDLAND AND LABRADOR FROM LA MANCHE NEWFOUNDLAND TO CAPE CHIDLEY LABRADOR...

...THIS MESSAGE IS INFORMATION ONLY FOR COASTAL AREAS OF TEXAS - LOUISIANA - MISSISSIPPI - ALABAMA AND FLORIDA FROM BROWNSVILLE TEXAS TO BONITA BEACH FLORIDA...

RECOMMENDED ACTIONS
A TSUNAMI HAS BEEN GENERATED WHICH IS EXPECTED TO CAUSE DAMAGE TO THE WARNING AND/OR ADVISORY REGIONS LISTED IN THE HEADLINE. PEOPLE IN LOW-LYING COASTAL AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM THEIR LOCAL EMERGENCY OFFICIALS. EVACUATIONS ARE ONLY ORDERED BY EMERGENCY RESPONSE AGENCIES.
- IF IN A TSUNAMI WARNING COASTAL AREA MOVE INLAND TO HIGHER GROUND.
- IF IN A TSUNAMI ADVISORY COASTAL AREA MOVE OUT OF...
THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

MEASUREMENTS OR REPORTS OF TSUNAMI ACTIVITY

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**TIME** - TIME OF MEASUREMENT

**AMPL** - TSUNAMI AMPLITUDES ARE MEASURED RELATIVE TO NORMAL SEA LEVEL.

IT IS NOT CREST-TO-TRough WAVE HEIGHT.

VALUES ARE GIVEN IN BOTH METERS/M/ AND FEET/FT/.

REPORTS FROM MANY SITES NOTE THAT WAVES ARE STARTING TO LESSEN IN HEIGHT, THOUGH STRONG CURRENTS ARE STILL BEING REPORTED ALONG THE EAST COAST, PUERTO RICO, AND VIRGIN ISLANDS.

PRELIMINARY EARTHQUAKE PARAMETERS

**MAGNITUDE** - 7.7

**TIME** - 0900 EDT MAR 28 2012

0800 CDT MAR 28 2012

0900 AST MAR 28 2012

1300 UTC MAR 28 2012

**LOCATION** - 32.0 NORTH 78.0 WEST

125 MILES/201 KM SE OF MYRTLE BEACH SOUTH CAROLINA

125 MILES/201 KM SE OF CHARLESTON SOUTH CAROLINA

**DEPTH** - 6 MILES/10 KM

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COASTAL AREAS BETWEEN AND INCLUDING FLAMINGO FLORIDA TO LA MANCHE NEWFOUNDLAND
403 PM EDT WED MAR 28 2012

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/T.CON.PAAQ.TS.W.0011.120328T2003Z-120328T2103Z/
COASTAL AREAS OF PUERTO RICO AND THE VIRGIN ISLANDS.
403 PM EDT WED MAR 28 2012

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COASTAL AREAS BETWEEN AND INCLUDING BONITA BEACH FLORIDA TO FLAMINGO FLORIDA
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403 PM EDT WED MAR 28 2012

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BONAVISTA-NL 1748 NDT MAR 28 BATTLE HARBOR-NL 1815 NDT MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCWATC.ARH.NOAA.GOV

$$

Scenario 2: WCATWC Message #16

WEXX20 PAAQ 282032
TSUAT1
BULLETIN
TSUNAMI MESSAGE NUMBER 16
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
432 PM EDT WED MAR 28 2012

NO NEW UPDATES SINCE LAST MESSAGE.

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF FLORIDA - GEORGIA - SOUTH CAROLINA - NORTH CAROLINA - VIRGINIA - MARYLAND - DELAWARE - NEW JERSEY - NEW YORK - CONNECTICUT - RHODE ISLAND - MASSACHUSETTS - NEW HAMPSHIRE - MAINE - NEW BRUNSWICK - NOVA SCOTIA AND NEWFOUNDLAND FROM FLAMINGO FLORIDA TO LA MANCHE NEWFOUNDLAND...
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TIME - TIME OF MEASUREMENT
AMPL - TSUNAMI AMPLITUDES ARE MEASURED RELATIVE TO NORMAL SEA LEVEL. IT IS ...NOT... CREST-TO-TRough WAVE HEIGHT.
VALUES ARE GIVEN IN BOTH METERS/M/ AND FEET/FT/.
PRELIMINARY EARTHQUAKE PARAMETERS
MAGNITUDE - 7.7
TIME - 0900 EDT MAR 28 2012
     - 0800 CDT MAR 28 2012
     - 0900 AST MAR 28 2012
     - 1300 UTC MAR 28 2012
LOCATION - 32.0 NORTH 78.0 WEST
     - 125 MILES/201 KM SE OF MYRTLE BEACH SOUTH CAROLINA
     - 125 MILES/201 KM SE OF CHARLESTON SOUTH CAROLINA
DEPTH - 6 MILES/10 KM

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMEDIATE... EXPECTED OR OCCURRING. WARNINGS INDICATE THAT WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

TSUNAMI ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PEOPLE IN OR VERY NEAR THE WATER IS EXPECTED. SIGNIFICANT WIDESPREAD INUNDATION IS NOT EXPECTED FOR AREAS UNDER AN ADVISORY. CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

CARIBBEAN COASTAL REGIONS OUTSIDE PUERTO RICO AND THE VIRGIN ISLANDS SHOULD REFER TO THE PACIFIC TSUNAMI WARNING CENTER MESSAGES FOR INFORMATION ON THIS EVENT AT PTWC.WEATHER.GOV.

THIS MESSAGE WILL BE UPDATED IN 30 MINUTES OR SOONER IF THE SITUATION WARRANTS. THE TSUNAMI MESSAGE WILL REMAIN IN EFFECT UNTIL FURTHER NOTICE. REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

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COASTAL AREAS BETWEEN AND INCLUDING FLAMINGO FLORIDA TO LA MANCHE NEWFOUNDLAND
432 PM EDT WED MAR 28 2012

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF FLORIDA - GEORGIA - SOUTH CAROLINA - NORTH CAROLINA - VIRGINIA - MARYLAND - DELAWARE - NEW JERSEY - NEW YORK - CONNECTICUT - RHODE ISLAND - MASSACHUSETTS - NEW HAMPSHIRE - MAINE - NEW BRUNSWICK - NOVA SCOTIA AND NEWFOUNDLAND FROM FLAMINGO FLORIDA TO LA MANCHE NEWFOUNDLAND...

PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO HIGHER GROUND.

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$$
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...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF FLORIDA FROM BONITA BEACH FLORIDA TO FLAMINGO FLORIDA...

PEOPLE IN TSUNAMI ADVISORY COASTAL AREAS SHOULD MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

TSUNAMI ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PEOPLE IN OR VERY NEAR WATER IS IMMINENT... EXPECTED OR OCCURRING. SIGNIFICANT WIDESPREAD INUNDATION IS NOT EXPECTED FOR AREAS IN AN ADVISORY. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

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BONAVISTA-NL 1748 NDT MAR 28 BATTLE HARBOR-NL 1815 NDT MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV
Scenario 2: WCATWC Message #17

NEXXX20 PAAQ 282103
TSUAT1

BULLETIN
TSUNAMI MESSAGE NUMBER 17
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
503 PM EDT WED MAR 28 2012

NO NEW UPDATES SINCE LAST MESSAGE.

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF FLORIDA - GEORGIA - SOUTH CAROLINA - NORTH CAROLINA - VIRGINIA - MARYLAND - DELAWARE - NEW JERSEY - NEW YORK - CONNECTICUT - RHODE ISLAND - MASSACHUSETTS - NEW HAMPSHIRE - MAINE - NEW BRUNSWICK - NOVA SCOTIA AND NEWFOUNDLAND FROM FLAMINGO FLORIDA TO LA MANCHE NEWFOUNDLAND...

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...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF FLORIDA FROM BONITA BEACH FLORIDA TO FLAMINGO FLORIDA...

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...THIS MESSAGE IS INFORMATION ONLY FOR COASTAL AREAS OF TEXAS - LOUISIANA - MISSISSIPPI - ALABAMA AND FLORIDA FROM BROWNSVILLE TEXAS TO BONITA BEACH FLORIDA...

RECOMMENDED ACTIONS
A TSUNAMI HAS BEEN GENERATED WHICH IS EXPECTED TO CAUSE DAMAGE TO THE WARNING AND/OR ADVISORY REGIONS LISTED IN THE HEADLINE. PEOPLE IN LOW-LYING COASTAL AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM THEIR LOCAL EMERGENCY OFFICIALS. EVACUATIONS ARE ONLY ORDERED BY EMERGENCY RESPONSE AGENCIES.

- IF IN A TSUNAMI WARNING COASTAL AREA MOVE INLAND TO HIGHER GROUND.

- IF IN A TSUNAMI ADVISORY COASTAL AREA MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

MEASUREMENTS OR REPORTS OF TSUNAMI ACTIVITY

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LANTEX 12 Handbook

PRELIMINARY EARTHQUAKE PARAMETERS

MONTAUK NY  41.0N 71.9W 1634UTC  03.94FT/01.20M
ATLANTIC CITY NJ  39.4N 74.4W 1634UTC  08.86FT/02.70M
CAPE MAY NJ  38.9N 74.9W 1638UTC  02.30FT/00.70M
CHESAPEAKE BRIDGE VA  36.9N 76.4W 1642UTC  01.31FT/00.40M
ST SIMMONS IS GA  31.2N 81.4W 1653UTC  00.98FT/00.30M
WOODS HOLE MA  41.5N 70.7W 1657UTC  02.95FT/00.90M
NEWPORT RI  41.5N 71.3W 1658UTC  03.61FT/01.10M
MAYAGUEZ PR  18.2N 67.1W 1658UTC  04.59FT/01.40M
SANDY HOOK NJ  40.5N 74.9W 1702UTC  01.31FT/00.40M
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BRIDGEPORT CT  41.2N 73.2W 1753UTC  00.33FT/00.10M
PROVIDENCE RI  41.8N 71.4W 1754UTC  00.98FT/00.30M
FORT POINT NH  43.1N 70.7W 1758UTC  03.61FT/01.10M
GRAND MANAN IS NB  44.7N 66.8W 1811UTC  01.31FT/00.40M
WELLS ME  43.3N 70.6W 1840UTC  03.94FT/01.20M
BOOTHBAY ME  43.9N 69.6W 1905UTC  07.21FT/02.20M
BOSTON MA  42.4N 71.1W 2017UTC  01.31FT/00.40M
BAR HARBOR ME  44.4N 68.2W 2017UTC  06.23FT/01.90M

TIME - TIME OF MEASUREMENT
AMPL - TSUNAMI AMPLITUDES ARE MEASURED RELATIVE TO NORMAL SEA LEVEL. IT IS NOT CREST-TO-TRough WAVE HEIGHT. VALUES ARE GIVEN IN BOTH METERS/M/ AND FEET/FT/.

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LANTEX 12 Handbook

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BONAVISTA-NL 1748 NDT MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

Scenario 2: WCATWC Message #18

WEXX20 PAAQ 282131

BULLETIN

TSUNAMI MESSAGE NUMBER 18

NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK

531 PM EDT WED MAR 28 2012

NO NEW UPDATES SINCE LAST MESSAGE.

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF FLORIDA - GEORGIA - SOUTH CAROLINA - NORTH CAROLINA - VIRGINIA - MARYLAND - DELAWARE - NEW JERSEY - NEW YORK - CONNECTICUT - RHODE ISLAND - MASSACHUSETTS - NEW HAMPSHIRE - MAINE - NEW BRUNSWICK - NOVA SCOTIA AND NEWFOUNDLAND FROM FLAMINGO FLORIDA TO LA MANCHE NEWFOUNDLAND...

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TIME - TIME OF MEASUREMENT
AMPL - TSUNAMI AMPLITUDES ARE MEASURED RELATIVE TO NORMAL SEA LEVEL. IT IS ...NOT... CREST-TO-TROUGH WAVE HEIGHT. VALUES ARE GIVEN IN BOTH METERS/M/ AND FEET/FT/.

WAVE HEIGHTS ALONG THE EAST COAST, PUERTO RICO, AND VIRGIN ISLANDS ARE REPORTED TO BE 00.65FT/00.20M TO 00.98FT/00.30M IN HEIGHT.

PRELIMINARY EARTHQUAKE PARAMETERS
MAGNITUDE - 7.7
TIME - 0900 EDT MAR 28 2012
0800 CDT MAR 28 2012
0900 AST MAR 28 2012
1300 UTC MAR 28 2012
LOCATION - 32.0 NORTH 78.0 WEST
125 MILES/201 KM SE OF MYRTLE BEACH SOUTH CAROLINA
125 MILES/201 KM SE OF CHARLESTON SOUTH CAROLINA
DEPTH - 6 MILES/10 KM

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. WARNINGS INDICATE THAT WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL...
CURRENTS IS POSSIBLE AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

TSUNAMI ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PEOPLE IN OR VERY NEAR THE WATER IS EXPECTED. SIGNIFICANT WIDESPREAD INUNDATION IS NOT EXPECTED FOR AREAS UNDER AN ADVISORY. CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

CARIBBEAN COASTAL REGIONS OUTSIDE PUERTO RICO AND THE VIRGIN ISLANDS SHOULD REFER TO THE PACIFIC TSUNAMI WARNING CENTER MESSAGES FOR INFORMATION ON THIS EVENT AT PTWC.WEATHER.GOV.

THIS MESSAGE WILL BE UPDATED IN 30 MINUTES OR SOONER IF THE SITUATION WARRANTS. THE TSUNAMI MESSAGE WILL REMAIN IN EFFECT UNTIL FURTHER NOTICE. REFER TO THE INTERNET SITE NWCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

531 PM EDT WED MAR 28 2012

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF FLORIDA - GEORGIA - SOUTH CAROLINA - NORTH CAROLINA - VIRGINIA - MARYLAND - DELAWARE - NEW JERSEY - NEW YORK - CONNECTICUT - RHODE ISLAND - MASSACHUSETTS - NEW HAMPSHIRE - MAINE - NEW BRUNswick - NOVA SCOTIA AND NEWFOUNDLAND FROM FLAMINGO FLORIDA TO LA MANCHE NEWFOUNDLAND.

PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO HIGHER GROUND.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRiNG. TSUNAMIS ARE A SERIES OF WAVES POTENTiALLY DANGEROUS SEVERAL HOURS AFTER INITIAL iNARRIVAL TIME.

531 PM EDT WED MAR 28 2012

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR PUERTO RICO AND THE VIRGIN ISLANDS.

531 PM EDT WED MAR 28 2012

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR PUERTO RICO AND THE VIRGIN ISLANDS.

PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO HIGHER GROUND.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD
INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

$$
COASTAL AREAS BETWEEN AND INCLUDING BONITA BEACH FLORIDA TO FLAMINGO FLORIDA
531 PM EDT WED MAR 28 2012

...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF FLORIDA FROM BONITA BEACH FLORIDA TO FLAMINGO FLORIDA...

PEOPLE IN TSUNAMI ADVISORY COASTAL AREAS SHOULD MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

TSUNAMI ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PEOPLE IN OR VERY NEAR WATER IS IMMINENT... EXPECTED OR OCCURRING. SIGNIFICANT WIDESPREAD INUNDATION IS NOT EXPECTED FOR AREAS IN AN ADVISORY. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

$$
COASTAL AREAS BETWEEN AND INCLUDING LA MANCHE NEWFOUNDLAND TO CAPE CHIDLEY LABRADOR
531 PM EDT WED MAR 28 2012

...THE TSUNAMI ADVISORY CONTINUES IN EFFECT FOR THE COASTAL AREAS OF NEWFOUNDLAND AND LABRADOR FROM LA MANCHE NEWFOUNDLAND TO CAPE CHIDLEY LABRADOR...

PEOPLE IN TSUNAMI ADVISORY COASTAL AREAS SHOULD MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

TSUNAMI ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PEOPLE IN OR VERY NEAR WATER IS IMMINENT... EXPECTED OR OCCURRING. SIGNIFICANT WIDESPREAD INUNDATION IS NOT EXPECTED FOR AREAS IN AN ADVISORY. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME. ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE ADVISORY ARE PROVIDED BELOW.

BATTLE HARBOR-NL 1815 NDT MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

$$

Scenario 2: WCATWC Message #19

WEXX20 PAAQ 282201
TSUAT1

BULLETIN
TSUNAMI MESSAGE NUMBER 19
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
601 PM EDT WED MAR 28 2012
...THE TSUNAMI ADVISORY IS CANCELED FOR THE COASTAL AREAS OF FLORIDA FROM BONITA BEACH FLORIDA TO FLAMINGO FLORIDA...

...THE TSUNAMI WARNING IS CANCELED FOR THE COASTAL AREAS OF FLORIDA - GEORGIA - SOUTH CAROLINA - NORTH CAROLINA - VIRGINIA - MARYLAND - DELAWARE - NEW JERSEY - NEW YORK - CONNECTICUT - RHODE ISLAND - MASSACHUSETTS - NEW HAMPSHIRE - MAINE - NEW BRUNSWICK - NOVA SCOTIA AND NEWFOUNDLAND FROM FLAMINGO FLORIDA TO LA MANCHE NEWFOUNDLAND...

...THE TSUNAMI ADVISORY IS CANCELED FOR THE COASTAL AREAS OF NEWFOUNDLAND AND LABRADOR FROM LA MANCHE NEWFOUNDLAND TO CAPE CHIDLEY LABRADOR...

...THE TSUNAMI WARNING IS CANCELED FOR PUERTO RICO AND THE VIRGIN ISLANDS...

EVALUATION

TSUNAMI AMPLITUDES HAVE DROPPED BELOW DANGEROUS LEVELS AT MOST LOCATIONS ALONG THE ATLANTIC COASTS OF THE U.S. AND CANADA. DAMAGING TSUNAMIS ARE NO LONGER EXPECTED. AS LOCAL CONDITIONS CAN CAUSE A WIDE VARIATION IN TSUNAMI WAVE ACTION THE ALL CLEAR DETERMINATIONS MUST BE MADE BY LOCAL AUTHORITIES.

MEASUREMENTS OR REPORTS OF TSUNAMI ACTIVITY

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TIME - TIME OF MEASUREMENT
AMPL - TSUNAMI AMPLITUDES ARE MEASURED RELATIVE TO NORMAL SEA LEVEL. IT IS ...NOT... CREST-TO-TRAUGH WAVE HEIGHT.
VALUES ARE GIVEN IN BOTH METERS/M/ AND FEET/FT/.

WAVES ALONG THE EAST COAST, PUERTO RICO, AND VIRGIN ISLANDS ARE REPORTED TO BE LESS THAN 0.98FT/0.30M IN HEIGHT. PRELIMINARY DAMAGE TOTALS NOTE $4.83 MILLION IN PROPERTY DAMAGE AND 167 PEOPLE KILLED OR MISSING. THESE FIGURES ARE EXPECTED TO RISE SIGNIFICANTLY AS MORE DETAILED ASSESSMENTS
DETERMINATIONS MUST BE MADE BY LOCAL AUTHORITIES.

CAUSE A WIDE VARIATION IN TSUNAMI WAVE ACTION THE ALL CLEAR

601 PM EDT WED MAR 28 2012
MANCHE NEWFOUNDLAND
COASTAL AREAS BETWEEN AND INCLUDING FLAMINGO FLORIDA TO LA
/T.CAN.PAAQ.TS.W.0011.120328T2201Z

RIZ002
012>014
102
108
033
FLZ076>078
338
158
454
GMZ031

DETERMINATIONS MUST BE MADE BY LOCAL AUTHORITIES.
DAMAGING TSUNAMIS ARE NO LONGER EXPECTED. AS LOCAL CONDITIONS CAN
CAUSE A WIDE VARIATION IN TSUNAMI WAVE ACTION THE ALL CLEAR
DETERMINATIONS MUST BE MADE BY LOCAL AUTHORITIES.

601 PM EDT WED MAR 28 2012

FLAMINGO FLORIDA
COASTAL AREAS BETWEEN AND INCLUDING BONITA BEACH FLORIDA TO
/T.CAN.PAAQ.TS.Y.0011.120328T2201Z

GMZ656-657-FLZ069-070-075-290001-
/T.CAN.PAAQ.TS.Y.0011.120328T2201Z-120329T0001Z/

120329T0001Z/

120329T0001Z/

GMZ656-657-FLZ069-070-075-290001-
/T.CAN.PAAQ.TS.Y.0011.120328T2201Z-120329T0001Z/

COASTAL AREAS BETWEEN AND INCLUDING BONITA BEACH FLORIDA TO FLAMINGO FLORIDA

...THE TSUNAMI ADVISORY IS CANCELED FOR THE COASTAL AREAS
OF FLORIDA FROM BONITA BEACH FLORIDA TO FLAMINGO FLORIDA...

...THE TSUNAMI WARNING IS CANCELED FOR THE COASTAL AREAS
OF FLORIDA - GEORGIA - SOUTH CAROLINA - NORTH CAROLINA -
VIRGINIA - MARYLAND - DELAWARE - NEW JERSEY - NEW YORK -
CONNECTICUT - RHODE ISLAND - MASSACHUSETTS - NEW HAMPSHIRE -
MAINE - NEW BRUNSWICK - NOVA SCOTIA AND NEWFOUNDLAND FROM
FLAMINGO FLORIDA TO LA MANCHE NEWFOUNDLAND...

BECOME AVAILABLE.

PRELIMINARY EARTHQUAKE PARAMETERS
MAGNITUDE - 7.7
TIME - 0900 EDT MAR 28 2012
0800 CDT MAR 28 2012
0900 AST MAR 28 2012
1300 UTC MAR 28 2012
LOCATION - 32.0 NORTH 78.0 WEST
125 MILES/201 KM SE OF MYRTLE BEACH SOUTH CAROLINA
125 MILES/201 KM SE OF CHARLESTON SOUTH CAROLINA
DEPTH - 6 MILES/10 KM

CARIAGEAN COASTAL REGIONS OUTSIDE PUERTO RICO AND THE VIRGIN
ISLANDS SHOULD REFER TO THE PACIFIC TSUNAMI WARNING CENTER MESSAGES
FOR INFORMATION ON THIS EVENT AT PTWC.WEATHER.GOV.

THIS WILL BE THE LAST WEST COAST/ALASKA TSUNAMI WARNING CENTER
MESSAGE ISSUED FOR THIS EVENT. THIS INFORMATION IS ALSO POSTED
AT WCATWC.ARH.NOAA.GOV.

GMZ656-657-FLZ069-070-075-290001-
/T.CAN.PAAQ.TS.Y.0011.120328T2201Z-120329T0001Z/

...THE TSUNAMI WARNING IS CANCELED FOR THE COASTAL AREAS
OF FLORIDA FROM BONITA BEACH FLORIDA TO FLAMINGO FLORIDA...

...THE TSUNAMI ADVISORY IS CANCELED FOR THE COASTAL AREAS
OF FLORIDA FROM BONITA BEACH FLORIDA TO FLAMINGO FLORIDA...

DEPT
LOCATION
TIME
MAGNITUDE

- CONNECTICUT
- RHODE ISLAND
- MASSACHUSETTS
- NEW HAMPSHIRE
- MAINE
- NEW BRUNSWICK
- NOVA SCOTIA AND NEWFOUNDLAND
- FLAMINGO FLORIDA

BECOME AVAILABLE.

PRELIMINARY EARTHQUAKE PARAMETERS
MAGNITUDE - 7.7
TIME - 0900 EDT MAR 28 2012
0800 CDT MAR 28 2012
0900 AST MAR 28 2012
1300 UTC MAR 28 2012
LOCATION - 32.0 NORTH 78.0 WEST
125 MILES/201 KM SE OF MYRTLE BEACH SOUTH CAROLINA
125 MILES/201 KM SE OF CHARLESTON SOUTH CAROLINA
DEPTH - 6 MILES/10 KM

CARIAGEAN COASTAL REGIONS OUTSIDE PUERTO RICO AND THE VIRGIN
ISLANDS SHOULD REFER TO THE PACIFIC TSUNAMI WARNING CENTER MESSAGES
FOR INFORMATION ON THIS EVENT AT PTWC.WEATHER.GOV.

THIS WILL BE THE LAST WEST COAST/ALASKA TSUNAMI WARNING CENTER
MESSAGE ISSUED FOR THIS EVENT. THIS INFORMATION IS ALSO POSTED
AT WCATWC.ARH.NOAA.GOV.
...THE TSUNAMI ADVISORY IS CANCELED FOR THE COASTAL AREAS OF NEWFOUNDLAND AND LABRADOR FROM LA MANCHE NEWFOUNDLAND TO CAPE CHIDLEY LABRADOR...

DAMAGING TSUNAMIS ARE NO LONGER EXPECTED. AS LOCAL CONDITIONS CAN CAUSE A WIDE VARIATION IN TSUNAMI WAVE ACTION THE ALL CLEAR DETERMINATIONS MUST BE MADE BY LOCAL AUTHORITIES.

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AMZ712-715-725-735-742-745-PRZ001>003-005-007-008-010-011-
VI2001-002-290001-
/T.CAN.PAAQ.TS.Y.0011.120328T2201Z-120329T0001Z/
COASTAL AREAS BETWEEN AND INCLUDING LA MANCHE NEWFOUNDLAND TO CAPE CHIDLEY LABRADOR...

THE TSUNAMI WARNING IS CANCELED FOR PUERTO RICO AND THE VIRGIN ISLANDS...

DAMAGING TSUNAMIS ARE NO LONGER EXPECTED. AS LOCAL CONDITIONS CAN CAUSE A WIDE VARIATION IN TSUNAMI WAVE ACTION THE ALL CLEAR DETERMINATIONS MUST BE MADE BY LOCAL AUTHORITIES.

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Appendix E. Web-based Products

Scenario 1: Gulf of Mexico
Graphical and web-based products are posted to the WCATWC web sites during an event. This Appendix contains examples of several. The first is the html-based text message with embedded links.

Link to Standard Warning Message
Link to Public Warning Message
Link to XML/CAP Message
Link to Printable Message

To: U.S. and Canadian Atlantic, and Gulf of Mexico coastal regions
From: NOAA/NWS/West Coast and Alaska Tsunami Warning Center
Subject: Tsunami Warning #1 issued 03/28/2012 at 9:04AM EDT

A Tsunami Warning is now in effect which includes the coastal areas of Texas, Louisiana, Mississippi, Alabama and Florida from Brownsville, Texas to Ocean Reef, Florida.

This message is for Information Only for coastal areas of Florida, Georgia, South Carolina, North Carolina, Virginia, Maryland, Delaware, New Jersey, New York, Connecticut, Rhode Island, Massachusetts, New Hampshire, Maine, New Brunswick, Nova Scotia, Newfoundland and Labrador from Ocean Reef, Florida to Cape Chidley, Labrador.

This message is for Information Only for coastal areas of Puerto Rico and the Virgin Islands.

A Tsunami Warning means that all coastal residents in the warning area who are near the beach or in low-lying regions should move immediately inland to higher ground and away from all harbors and inlets including those sheltered directly from the sea. Those feeling the earth shake, seeing unusual wave action, or the water level rising or receding may have only a few minutes before the tsunami arrival and should move immediately. Homes and small buildings are not designed to withstand tsunami impacts. Do not stay in these structures.

All residents within the warned area should be alert for instructions broadcast from their local civil authorities. Earthquakes of this magnitude are known to generate tsunamis.

At 9:00 AM Eastern Daylight Time on March 28, an earthquake with preliminary magnitude 6.7 occurred 190 miles/306 Km northwest of Key West, Florida. (Refer to the United States Geological Survey for official earthquake parameters.) Earthquakes of this size are known to generate tsunamis. If a tsunami has been generated, the waves will first reach Key West, Florida at 10:12 AM EDT on March 28. Estimated tsunami arrival times and maps along with safety rules and other information can be found on the WCATWC web site.

Tsunamis can be dangerous waves that are not survivable. Wave heights are
amplified by irregular shoreline and are difficult to forecast. Tsunamis often appear as a strong surge and may be preceded by a receding water level. Mariners in water deeper than 600 feet should not be affected by a tsunami. Wave heights will increase rapidly as water shallows. Tsunamis are a series of ocean waves which can be dangerous for several hours after the initial wave arrival. DO NOT return to evacuated areas until an all clear is given by local civil authorities.

Caribbean coastal regions outside Puerto Rico and the Virgin Islands should refer to the Pacific Tsunami Warning Center messages for information on the event.

This message will be updated in 30 minutes or sooner if the situation warrants. The tsunami message will remain in effect until further notice. For further information stay tuned to NOAA Weather Radio, your local TV or radio stations, or see the WCATWC web site.

![Tsunami Travel Times](image)

**Figure E1: Example of a travel time map.**

Tsunami travel time list example below.

The following list gives estimated times of arrival for locations along the U.S. and Canadian Atlantic coast from a tsunami generated at the given source location.

THE LISTING OF A TSUNAMI ARRIVAL TIME BELOW DOES NOT
Indicate a wave is imminent. Refer to the warning bulletin to determine which areas are threatened.

The listed arrival time is the initial wave arrival. Tsunamis can be dangerous for many hours after arrival, and the initial wave is not necessarily the largest. The list is ordered by arrival time starting with the earliest.

Source:
Lat: 25.6N
Lng: 84.6W
Mag: 6.7
O-time: 1300 UTC
Date: MAR 28

Estimated times of initial tsunami arrival:

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Figure E2: Example of large scale map that would be issued with bulletin 1.
Figure E3: Example of an event location map issued with bulletin 1.

Figure E4: Example of an alert status map issued with bulletin 1.
Scenario 2: U.S. Atlantic coast

Link to Standard Warning Message
Link to Public Warning Message
Link to XML/CAP Message
Link to Printable Message

To: U.S. and Canadian Atlantic, and Gulf of Mexico coastal regions
From: NOAA/NWS/West Coast and Alaska Tsunami Warning Center
Subject: Tsunami Warning and Advisory #1 issued 03/28/2012 at 9:04AM EDT

A Tsunami Warning is now in effect which includes the coastal areas of Florida, Georgia, South Carolina and North Carolina from Jupiter Inlet, Florida to Duck, North Carolina.

A Tsunami Advisory is now in effect which includes the coastal areas of Florida from Flamingo, Florida to Jupiter Inlet, Florida.

A Tsunami Advisory is now in effect which includes the coastal areas of North Carolina, Virginia, Maryland, Delaware and New Jersey from Duck, North Carolina to Sandy Hook, New Jersey.

This message is for Information Only for coastal areas of Texas, Louisiana, Mississippi, Alabama and Florida from Brownsville, Texas to Flamingo, Florida.

This message is for Information Only for coastal areas of New Jersey, New York, Connecticut, Rhode Island, Massachusetts, New Hampshire, Maine, New Brunswick, Nova Scotia, Newfoundland and Labrador from Sandy Hook, New Jersey to Cape Chidley, Labrador.

This message is for Information Only for coastal areas of Puerto Rico and the Virgin Islands.

A Tsunami Warning means that all coastal residents in the warning area who are near the beach or in low-lying regions should move immediately inland to higher ground and away from all harbors and inlets including those sheltered directly from the sea. Those feeling the earth shake, seeing unusual wave action, or the water level rising or receding may have only a few minutes before the tsunami arrival and should move immediately. Homes and small buildings are not designed to withstand tsunami impacts. Do not stay in these structures.

All residents within the warned area should be alert for instructions broadcast from their local civil authorities. Earthquakes of this magnitude are known to generate tsunamis.

A Tsunami Advisory means that a tsunami capable of producing strong currents or waves dangerous to people in or very near the water is expected. Significant, widespread inundation is not expected for areas under an advisory. Currents may be
hazardous to swimmers, boats, and coastal structures and may continue for several hours after the initial wave arrival.

At 9:00 AM Eastern Daylight Time on March 28, an earthquake with preliminary magnitude 7.7 occurred 125 miles/201 Km southeast of Myrtle Beach, South Carolina. (Refer to the United States Geological Survey for official earthquake parameters.) Earthquakes of this size are known to generate tsunamis. If a tsunami has been generated, the waves will first reach Cape Hatteras, North Carolina at 10:38 AM EDT on March 28. Estimated tsunami arrival times and maps along with safety rules and other information can be found on the WCATWC web site.

Tsunamis can be dangerous waves that are not survivable. Wave heights are amplified by irregular shoreline and are difficult to forecast. Tsunamis often appear as a strong surge and may be preceded by a receding water level. Mariners in water deeper than 600 feet should not be affected by a tsunami. Wave heights will increase rapidly as water shallows. Tsunamis are a series of ocean waves which can be dangerous for several hours after the initial wave arrival. DO NOT return to evacuated areas until an all clear is given by local civil authorities.

Caribbean coastal regions outside Puerto Rico and the Virgin Islands should refer to the Pacific Tsunami Warning Center messages for information on the event.

This message will be updated in 30 minutes or sooner if the situation warrants. The tsunami message will remain in effect until further notice. For further information stay tuned to NOAA Weather Radio, your local TV or radio stations, or see the WCATWC web site.
**Figure E5: Example of travel time map.**
Tsunami travel time list example below.

The following list gives estimated times of arrival for locations along the U.S. and Canadian Atlantic coast from a tsunami generated at the given source location.

THE LISTING OF A TSUNAMI ARRIVAL TIME BELOW DOES NOT INDICATE A WAVE IS IMMINENT. REFER TO THE WARNING BULLETIN TO DETERMINE WHICH AREAS ARE THREATENED.

The listed arrival time is the initial wave arrival. Tsunamis can be dangerous for many hours after arrival, and the initial wave is not necessarily the largest. The list is ordered by arrival time starting with the earliest.

Source:
Lat: 32.0N
Lon: 78.0W
Mag: 7.7
O-time: 1300UTC
Date: MAR 28

Estimated times of initial tsunami arrival:

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<td>1835 MAR 28</td>
</tr>
<tr>
<td>Charlottetown, Prince Edward Is.</td>
<td>ADT</td>
<td>1839 MAR 28</td>
</tr>
<tr>
<td>Cape Chidley, Labrador</td>
<td>AST</td>
<td>1740 MAR 28</td>
</tr>
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<td>Belledune, New Brunswick</td>
<td>ADT</td>
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</tr>
<tr>
<td>Nuuk, Greenland</td>
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<td>1750 MAR 28</td>
</tr>
<tr>
<td>Sabine Pass, Texas</td>
<td>CDT</td>
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</tr>
<tr>
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<td>CDT</td>
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<tr>
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<td>EDT</td>
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<td>EDT</td>
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</tr>
<tr>
<td>Dundas Harbor, Nunavut</td>
<td>EDT</td>
<td>2109 MAR 28</td>
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</table>
Figure E6: Example of large scale map that would be issued with bulletin 1.

Figure E7: Example of an event location map issued with bulletin 1.
Figure E8: Example of an alert status map issued with bulletin 1.
Appendix F. Sample Press Release for Local Media

TEMPLATE FOR NEWS RELEASE

USE AGENCY MASTHEAD

Contact: (insert name)  FOR IMMEDIATE RELEASE (insert date)
(insert phone number)
(insert email address)

TSUNAMI EXERCISE TO BE CONDUCTED March 28, 2012

(insert community/county/state name) will join other localities in the Gulf of Mexico, eastern U.S., Puerto Rico, and the Virgin Islands as a participant in a tsunami response exercise on March 28, 2012. The purpose of this exercise is to evaluate local tsunami response plans, increase tsunami preparedness, and improve coordination throughout the region.

(insert a promotional comment from a local official, such as “The 2010 Haiti and Chile earthquakes and tsunamis have reminded the world again of the urgent need to be more prepared for such events,” said (insert name of appropriate official). “This important exercise will test the current procedures of the Tsunami Warning System and help identify operational strengths and weaknesses in each community.” (Please modify for uniqueness.))

The exercise, titled LANTEX 12, will simulate a widespread Tsunami Warning and Advisory situation throughout the Atlantic and Gulf of Mexico which requires implementation of local tsunami response plans. The exercise will (insert “include” or “not include”) public notification.

Scenario 1 of the exercise will simulate both a major earthquake and tsunami generated 190 miles northwest of Key West, Florida and 210 miles southwest of Tampa, Florida at 9:00am Atlantic Standard Time (or appropriate local time) on March 28, 2012. Scenario 2 of the exercise will simulate both a major earthquake and tsunami generated 125 miles southeast of Myrtle Beach, South Carolina. Exercise participants will be provided with a handbook which describes the scenario and contains tsunami messages from the West Coast/Alaska Tsunami Warning Center (WCATWC). The WCATWC is currently responsible for providing tsunami information to the Atlantic coasts of U.S. and Canada, the Gulf of Mexico coast, Puerto Rico, and the Virgin Islands.

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

If any real tsunami threat occurs during the time period of the exercise, the exercise will be terminated.
The exercise is sponsored by the U.S. National Oceanic and Atmospheric Administration (NOAA) and by the U.S. National Tsunami Hazard Mitigation Program (NTHMP – a partnership of 29 states and territories and three federal agencies). For more information on the U.S. tsunami warning system, see www.tsunami.gov. For more information on the NTHMP, see nthmp.tsunami.gov.

On the Web:
West Coast/Alaska Tsunami Warning Center
NOAA Tsunami Program
NTHMP:
Insert state/local emergency response URLs

http://wcatwc.arh.noaa.gov
http://www.tsunami.gov
http://nthmp.tsunami.gov