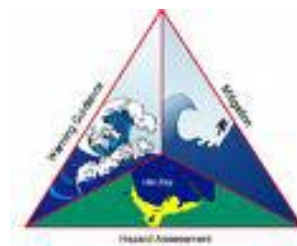


# Exercise LANTEX 10 Participant Handbook

An Atlantic tsunami warning exercise  
March 24, 2010

National Tsunami Hazard Mitigation Program  
Warning Coordination Subcommittee



NOTE: The contents of this handbook are patterned after the Exercise Pacific Wave 08 manual published by the Intergovernmental Oceanographic Commission. Citation: *Exercise Pacific Wave 08. A Pacific-wide Tsunami Warning and Communication Exercise, 28-30 October 2008*. IOC Technical Series No. 82. Paris, UNESCO, 2008; and the LANTEX09 handbook.

Exercise

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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 coast, and in Puerto Rico and the Virgin Islands. Historical tsunami records from sources such as the National Oceanic and Atmospheric Administration's (NOAA) National Geophysical Data Center (NGDC) show that approximately 85% of the world's oceanic tsunamis occur in the Pacific Basin. While the historic occurrence of destructive tsunamis along the US and Canadian Atlantic coasts suggests these events are rare, there are a few areas in the Atlantic basin where earthquakes occur that have the potential to develop destructive tsunamis that may impact the US/Canadian coast. 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.

Lessons learned from the destructive Indian Ocean tsunami include that even areas rarely impacted by tsunamis can suffer tremendous damage and casualties if the people that live and/or travel in these areas are not prepared.

Statistics from the NGDC tsunami database show that the U.S. Virgin Islands were struck by a tsunami up to 8m high in 1867 which killed 30 people. Over 140 people were killed in western Puerto Rico by a 6m tsunami in 1918. The Caribbean is a region of complex plate tectonic boundaries which provide the mechanism for earthquakes to trigger large tsunamis.

Another area in the Atlantic Ocean capable of producing large earthquakes is the region between Portugal and the Azores Islands. In 1755 an earthquake located in this region estimated at over magnitude 8, generated a tsunami up to 30m in Portugal. The tsunami was recorded widely around the Atlantic producing damage at several locations including Canada and the Caribbean.

Closer to the Canadian Atlantic shore, a magnitude 7.2 earthquake in 1929 triggered a large, sub-sea landslide which triggered a tsunami. This tsunami reached 7m amplitude in Newfoundland and killed 22 people. Recent studies of the continental slope along the U.S. east coast show that this type of tsunami has likely occurred several times within the past 10,000 years.

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, watch, advisory, 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.

NOAA and the National Tsunami Hazard Mitigation Program (NTHMP) are providing the framework for this exercise as a means for emergency responders along the Atlantic coast and in PR/VI to test and update tsunami response plans. High levels of vulnerability along the Atlantic coast as well as the Indian Ocean analogy should provide a strong incentive for local jurisdictions to prepare for a tsunami.

This exercise will provide simulated tsunami warning and advisory messages from the WCATWC triggered by a hypothetical earthquake located 90 miles south of Nantucket, MA and 170 miles southeast of Boston, MA. at 40.0°N, 70.0°W. 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. Recent exercises in the Pacific Basin have proven effective in strengthening preparedness levels of emergency management organizations.

## **2. Exercise Concept**

### **2.1 Purpose**

The purpose of the exercise is to improve Tsunami Warning System effectiveness the U.S./Canadian Atlantic and Caribbean coasts. The exercise provides an opportunity for emergency management organizations along the Atlantic coast and PR/VI 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 U.S. and Canadian Atlantic 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 WCATWC through primary contacts to coastal EMOs and test coordination with PRSN.
- Test tsunami response plans for those Atlantic and PR/VI coastal EMOs that have developed plans, and provide a catalyst for EMOs that have not developed one.
- Coastal EMOs review, discuss, and evaluate the various communication alternatives for receiving and disseminating tsunami messages.

- Coastal EMOs 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 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, earthquake, tsunami, LANTEX09, etc.) as a framework to conduct LANTEX 10.

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 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

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



### 3. Exercise Outline

#### 3.1 General

The scenario will start with a magnitude 7.5 earthquake located 90 miles south of Nantucket, MA. and 170 miles southeast of Boston, MA at 40.0°N, 70.0°W. The earthquake occurs at 1300UTC on March 24, 2010 and immediately triggers a 100 cubic km underwater slide of sediment, sliding south from 40.0°N, 70.0°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 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 0.5 to 1.5 m). Most regions along the coast do not experience major inundations, though all areas experience at a minimum strong currents which may produce significant amounts of damage to boats, harbors, and docks as well as make swimming dangerous.

Initially, a warning is issued for the epicentral region, then 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 the Gulf of Mexico, Labrador, and parts of Newfoundland. Appendix B shows expected tsunami amplitudes along the coast from the slide. These amplitudes are what would be recorded by a tide gage and do not necessarily reflect the expected vertical runup along the shore. Typically, vertical runups can exceed double the height of the tide gage observation.

WCATWC will not issue live messages during the exercise other than to issue an initial “dummy” message over standard communication routes to start the exercise at 1305UTC on March 24, 2010. 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, participants should follow the schedule in Table 1 to look at new messages. Table 1 is the timeline for when messages would be issued by WCATWC if this were a real event and should be used by EMOs to drive the exercise timing. The warning messages (as shown in Appendix D) cover a 13-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 2. During the exercise, WCATWC will also test Hurricane Hotline connectivity with Weather Forecast Offices.

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 control may choose to feed the WCATWC 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 encouraged to participate to ensure response plans are in order. Estimated tsunami arrival times to several U.S. and Canadian Atlantic locations are included in the WCATWC messages (Appendix E contains a list of arrival times to more Atlantic locations which would be available over the web during an event as well as a travel time map). In addition, 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 Timeline**

Tsunami generated by a magnitude 7.5 earthquake with epicenter at 40°N, 70°W occurring on March 24, 2010 at 1300UTC.

Date (UTC)	Time (UTC)	WCATWC Message		
		#	Type	Dummy
03/24/2010	1300	Earthquake occurs		
03/24/2010	1305	01	WWA	Yes
03/24/2010	1335	02	WWA	No
03/24/2010	1405	03	WWA	No
03/24/2010	1435	04	WWA	No
03/24/2010	1505	05	WWA	No
03/24/2010	1535	06	WWA	No
03/24/2010	1605	07	WWA	No
03/24/2010	1635	08	WWA	No
03/24/2010	1705	09	WWA	No
03/24/2010	1735	10	WWA	No
03/24/2010	1805	11	WWA	No
03/24/2010	1905	12	WWA	No
03/24/2010	2005	13	WWA	No
03/24/2010	2105	14	WWA	No
03/24/2010	2205	15	WWA	No
03/24/2010	2305	16	WWA	No

03/25/2010	0005	17	WWA	No
03/25/2010	0105	18	WWA	No
03/25/2010	0205	19	Can	No

**WCATWC Message Types:**

WWA Warning/Watch/Advisory  
Can WWA Cancellation

**Dummy:**

Yes Dummy Issued  
No Dummy Not Issued

**Table 2: Product Types**

Product Types Issued for Dummy Message with Transmission Methods

Center	WMO ID	AWIPS ID	NWWS	GTS	EMWIN	Fax	Email
WCATWC	WEXX20 PAAQ	TSUAT1	Yes	Yes	Yes	Yes	Yes

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, WCATWC will issue its normal message products for the event. Such messages will be given full priority and a decision will be made by the Center whether to issue the dummy message and to continue providing telephone support for the exercise. 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 10**” and “**Exercise.**”

**3.4 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:

Melinda Bailey	NWS Southern Region	817-978-1100 x107	<a href="mailto:melinda.bailey@noaa.gov">melinda.bailey@noaa.gov</a>
Don Miller	NWS Eastern Region	631-244-0122	<a href="mailto:donald.j.miller@noaa.gov">donald.j.miller@noaa.gov</a>
Robert Ward	NTHMP Eastern Rep.	410-517-3606	<a href="mailto:rward@mema.state.md.us">rward@mema.state.md.us</a>
Charles Williams	NTHMP GoM Rep.	205-280-2222	<a href="mailto:charles.williams@ema.alabama.gov">charles.williams@ema.alabama.gov</a>
Paul Whitmore	WCATWC Director	907-745-4212	<a href="mailto:paul.whitmore@noaa.gov">paul.whitmore@noaa.gov</a>
Bill Knight	WCATWC TWSO	907-745-4212	<a href="mailto:william.knight@noaa.gov">william.knight@noaa.gov</a>
James Waddell	WCATWC Rep.	907-745-4212	<a href="mailto:james.waddell@noaa.gov">james.waddell@noaa.gov</a>
Christa von Hillebrandt	PRSN Director	787-833-8433	<a href="mailto:christa@prsn.uprm.edu">christa@prsn.uprm.edu</a>

### 3.5 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.

NOAA will issue a press release several days before the exercise describing the exercise and its purpose.

## 4 Post-Exercise Evaluation

All participating agencies are requested to provide brief feedback on the exercise. This feedback will assist the NTHMP and NOAA in the evaluation of LANTEX 10 and the development of subsequent exercises, and help response agencies document lessons learned.

Exercise Evaluation Forms are included in Appendix G. Forms should be filled out by Friday, April 9, 2010 and returned to:

WCATWC Director  
NOAA/West Coast/Alaska Tsunami Warning Center  
910 South Felton Street  
Palmer, Alaska 99645

FAX: 907-745-6071

Or scanned and emailed to [paul.whitmore@noaa.gov](mailto:paul.whitmore@noaa.gov).

Exercise Evaluation Forms are designated as "For Official Use Only" and will not be further distributed by NOAA or the NTHMP.

## 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, and 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, tabletop exercise, functional and full-scale exercises within an 18-month time frame, under the State Homeland Security grant program.*

#### 3. **Scope:**

<b>Exercise Activities</b>
<b>Agencies Involved</b>
<b>Hazard Type</b>
<b>Geographic Impact Area</b>

*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, 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
- Provides necessary background information
- Prepares 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 Description

The Alaska tsunami forecast model was used to simulate the tsunami generated by a hypothetical magnitude 7.5 earthquake located 90 miles south of Nantucket, MA/170 miles southeast of Boston, MA. at 40.0°N, 70.0°W and an associated 100 cubic km slide off the continental slope. The tsunami generated by the slide was more than thirty times larger than the tsunami generated by the earthquake uplift.

Earthquake fault parameters are:

Length: 70km  
 Width: 35km  
 Depth: 7km  
 Strike: 158°  
 Dip: 60°  
 Slip: 100°  
 Moment:  $7.5 \times 10^{27}$  dyne-cm

Continental slope landslide parameters are:

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.

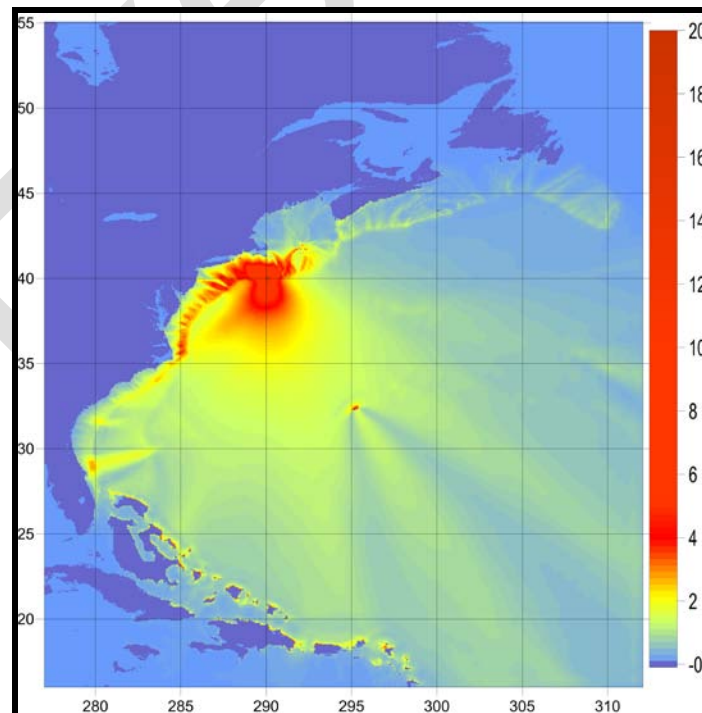


Figure B1. Maximum modeled tsunami amplitude throughout the northern Atlantic (scale in meters).

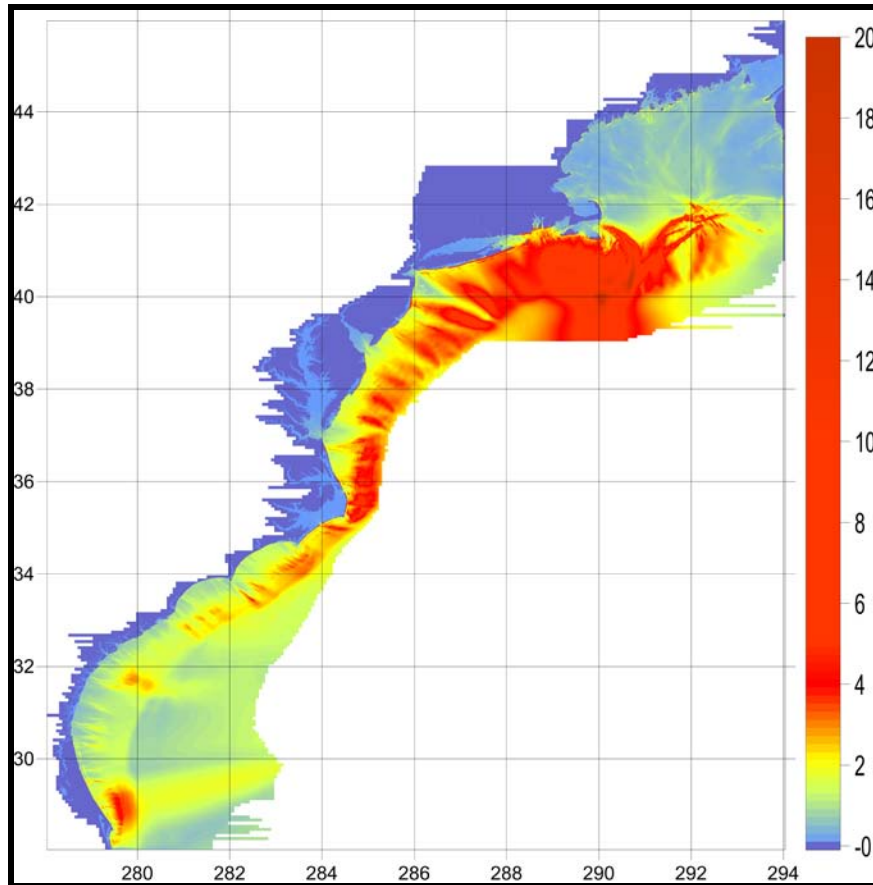


Figure B2. Maximum modeled tsunami amplitude in the finer grids near the U.S. Atlantic coast (scale in meters).

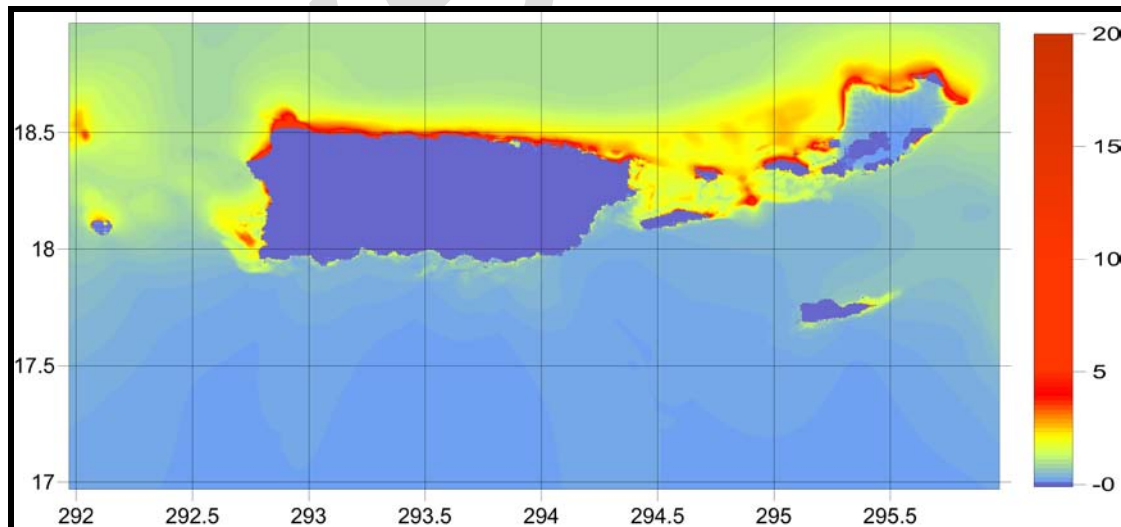


Figure B3. Maximum modeled tsunami amplitudes used near Puerto Rico and the Virgin Islands (scale in meters, though changed from above figures).



Table B1 provides maximum modeled amplitudes at several points throughout the exercise area. Amplitude indicates the level of the tsunami above normal sea level at the coast.

<u>Location</u>	<u>Max amp.</u> <u>(m)</u>	<u>Travel time (hrs)</u>	<u>Travel time</u> <u>(minutes)</u>
D44402	2.17	0.16	9.6
D41424	0.81	1.13	67.8
Bermuda	1.17	1.48	88.8
Oregon Inlet, NC	2.64	1.95	117.0
Montauk, NY	1.96	2.03	121.8
Newport, RI	1.15	2.17	130.2
D44401	0.25	2.23	133.8
Ocean City, MD	2.19	2.25	135.0
Duck, NC	2.58	2.28	136.8
D41420	0.57	2.30	138.0
Woods Hole, MA	0.66	2.38	142.8
D41421	0.40	2.43	145.8
New London, CT	0.57	2.43	145.8
Quonset Pt., NY	0.72	2.45	147.0
Atlantic City, NJ	3.13	2.54	152.4
Nantucket Is, MA	0.22	2.58	154.8
Lewes, DE	0.60	2.73	163.8
Sandy Hook, NJ	0.39	2.83	169.8
Cape May, NJ	0.71	2.88	172.8
Fall River, MA	0.29	2.93	175.8
Beaufort, NC	0.25	3.02	181.2
Aguadilla, PR	7.48	3.03	181.8
Chesapeake, VA	0.36	3.08	184.8
US / Canada brdr	0.36	3.08	184.8
Bergen Point, NJ	0.38	3.11	186.6
Mona Island, PR	0.88	3.15	189.0
San Juan, PR	1.51	3.15	189.0
Virgin Gorda, BVI	2.09	3.15	189.0
Mayagüez, PR	2.11	3.20	192.0
Christiansted, VI	1.24	3.30	198.0
Fort Point, NH	0.31	3.32	199.2
Kiptopeke, VA	0.18	3.32	199.2
Providence, RI	0.24	3.33	199.8
Wells, NY	0.49	3.33	199.8
The Battery, NY	0.50	3.35	201.0
Lameshur Bay, VI	0.71	3.38	202.8
Culebra, PR	2.75	3.48	208.8
Limetree Bay, VI	0.72	3.48	208.8
Vieques Is., PR	1.72	3.48	208.8

Wrightsville, NC	1.54	3.52	211.2
Magueyes Is, PR	0.61	3.53	211.8
Charlotte Amalie, VI	2.12	3.56	213.6
Cutler NAS, ME	0.58	3.60	216.0
Bar Harbor, ME	0.62	3.62	217.2
Portland, ME	0.28	3.62	217.2
Boston, MD	0.17	3.72	223.2
New Haven, CT	0.06	3.82	229.2
Port Canaveral, FL	1.44	3.87	232.2
Bridgeport, CT	0.14	3.88	232.8
Eastport, ME	0.05	4.20	252.0
Ship John Shoals, NJ	0.09	4.22	253.2
Springmaid, SC	1.51	4.23	253.8
Flagler, FL	2.15	4.23	253.8
Vilano Beach, FL	1.11	4.38	262.8
Charleston, SC	0.34	4.42	265.2
Windmill Point, VA	0.04	4.80	288.0
Kings Point, NY	0.17	4.98	298.8
Marcus Hook, PA	0.15	6.53	391.8
Annapolis, MD	0.04	9.11	546.6

## Appendix C. WCATWC Dummy Message

WEXX20 PAAQ 241305  
TSUAT1

TEST...TSUNAMI EXERCISE MESSAGE NUMBER 1...TEST  
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK  
9:05 AM EDT WED MAR 24

...LANTEX 10 TSUNAMI EXERCISE MESSAGE. REFER TO WCATWC MESSAGE 1 IN THE  
EXERCISE HANDBOOK. THIS IS AN EXERCISE ONLY...

THIS MESSAGE IS BEING USED TO START OFF THE LANTEX 10 NORTHWEST ATLANTIC  
TSUNAMI EXERCISE. THIS WILL BE THE ONLY EXERCISE MESSAGE TRANSMITTED  
FROM THE WEST COAST/ALASKA TSUNAMI WARNING CENTER. EXERCISE PARTICIPANTS  
SHOULD REFER TO THE SCENARIO TIMELINE IN THE HANDBOOK FOR FUTURE  
MESSAGES. 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.

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## Appendix D. WCATWC Exercise Messages

The following messages, created for the LANTEX 10 tsunami exercise, are representative of the official standard products issued by the West Coast and Alaska Tsunami Warning Center during a large magnitude 7.5 earthquake and tsunami originating 90 miles south of Nantucket, MA and 170 miles southeast of Boston, MA. at 40.0°N, 70.0°W. During a real event, the Center would also issue graphical and html-based products to its web site and via RSS.

### WCATWC Message #1

WEXX20 PAAQ 241305  
TSUAT1

BULLETIN  
TSUNAMI MESSAGE NUMBER 1  
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK  
905 AM EDT WED MAR 24 2010

...A TSUNAMI WARNING IS IN EFFECT WHICH INCLUDES THE  
COASTAL AREAS OF NEW JERSEY - NEW YORK - CONNECTICUT -  
RHODE ISLAND AND MASSACHUSETTS FROM SANDY HOOK NEW JERSEY  
TO MERRIMACK RIVER MASSACHUSETTS...

...THIS MESSAGE IS INFORMATION ONLY FOR COASTAL AREAS OF  
TEXAS - LOUISIANA - MISSISSIPPI - ALABAMA - FLORIDA -  
GEORGIA - SOUTH CAROLINA - NORTH CAROLINA - VIRGINIA -  
MARYLAND - DELAWARE AND NEW JERSEY FROM BROWNSVILLE TEXAS  
TO SANDY HOOK NEW JERSEY...

...THIS MESSAGE IS INFORMATION ONLY FOR COASTAL AREAS OF  
MASSACHUSETTS - NEW HAMPSHIRE - MAINE - NEW BRUNSWICK -  
NOVA SCOTIA - NEWFOUNDLAND AND LABRADOR FROM MERRIMACK  
RIVER MASSACHUSETTS TO CAPE CHIDLEY LABRADOR...

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

#### RECOMMENDED ACTIONS

IT IS NOT KNOWN - REPEAT NOT KNOWN - IF A TSUNAMI EXISTS BUT A  
TSUNAMI MAY HAVE BEEN GENERATED. PERSONS IN LOW-LYING COASTAL  
AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM THEIR LOCAL EMERGENCY  
OFFICIALS. EVACUATIONS ARE ONLY ORDERED BY EMERGENCY RESPONSE  
AGENCIES.

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

THIS MESSAGE IS BASED MAINLY ON EARTHQUAKE DATA. AS MORE  
INFORMATION BECOMES AVAILABLE THE WARNING AREAS WILL BE REFINED.

#### PRELIMINARY EARTHQUAKE PARAMETERS

MAGNITUDE - 7.5  
TIME - 0900 EDT MAR 24 2010  
          0900 AST MAR 24 2010  
          0800 CDT MAR 24 2010  
          1300 UTC MAR 24 2010  
LOCATION - 40.0 NORTH 70.0 WEST  
          90 MILES/145 KM S OF NANTUCKET MASSACHUSETTS  
          170 MILES/274 KM SE OF BOSTON MASSACHUSETTS  
DEPTH - 28 MILES/45 KM

THE PACIFIC TSUNAMI WARNING CENTER IN EWA BEACH HAWAII WILL  
ISSUE MESSAGES FOR AREAS IN THE CARIBBEAN OUTSIDE PUERTO RICO  
AND THE VIRGIN ISLANDS.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD  
INUNDATION IS IMMINENT OR EXPECTED. WARNINGS INDICATE THAT

WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

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.

ANZ330-335-338-350-353-355-230>237-250-254-255-NYZ071>081-CTZ009>012-RIZ002-005>007-MAZ007-019>024-016-241405-/T.NEW.PAAQ.TS.W.0010.100324T1305Z-000000T0000Z/COASTAL AREAS BETWEEN AND INCLUDING SANDY HOOK NEW JERSEY TO MERRIMACK RIVER MASSACHUSETTS  
905 AM EDT WED MAR 24 2010

...A TSUNAMI WARNING IS IN EFFECT WHICH INCLUDES THE COASTAL AREAS OF NEW JERSEY - NEW YORK - CONNECTICUT - RHODE ISLAND AND MASSACHUSETTS FROM SANDY HOOK NEW JERSEY TO MERRIMACK RIVER MASSACHUSETTS...

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

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT OR EXPECTED. 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	1053	EDT MAR 24	MANHATTAN-NY	1231	EDT MAR 24
NANTUCKET IS-MA	1119	EDT MAR 24	BOSTON-MA	1255	EDT MAR 24

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

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## **WCATWC Message #2**

WEXX20 PAAQ 241335  
TSUAT1

BULLETIN  
TSUNAMI MESSAGE NUMBER 2  
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK  
935 AM EDT WED MAR 24 2010

...A TSUNAMI WARNING IS IN EFFECT WHICH INCLUDES THE COASTAL AREAS OF NEW JERSEY - NEW YORK - CONNECTICUT - RHODE ISLAND AND MASSACHUSETTS FROM SANDY HOOK NEW JERSEY TO MERRIMACK RIVER MASSACHUSETTS...

...THIS MESSAGE IS INFORMATION ONLY FOR COASTAL AREAS OF TEXAS - LOUISIANA - MISSISSIPPI - ALABAMA - FLORIDA - GEORGIA - SOUTH CAROLINA - NORTH CAROLINA - VIRGINIA - MARYLAND - DELAWARE AND NEW JERSEY FROM BROWNSVILLE TEXAS TO SANDY HOOK NEW JERSEY...

...THIS MESSAGE IS INFORMATION ONLY FOR COASTAL AREAS OF MASSACHUSETTS - NEW HAMPSHIRE - MAINE - NEW BRUNSWICK - NOVA SCOTIA - NEWFOUNDLAND AND LABRADOR FROM MERRIMACK RIVER MASSACHUSETTS TO CAPE CHIDLEY LABRADOR...

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

### RECOMMENDED ACTIONS

- IT IS NOT KNOWN - REPEAT NOT KNOWN - IF A TSUNAMI EXISTS BUT A TSUNAMI MAY HAVE BEEN GENERATED. PERSONS IN LOW-LYING COASTAL AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM THEIR LOCAL EMERGENCY OFFICIALS. EVACUATIONS ARE ONLY ORDERED BY EMERGENCY RESPONSE AGENCIES.
- PERSONS IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO HIGHER GROUND.

THIS MESSAGE IS BASED MAINLY ON EARTHQUAKE DATA. AS MORE INFORMATION BECOMES AVAILABLE THE WARNING AREAS WILL BE REFINED.

PRELIMINARY EARTHQUAKE PARAMETERS

MAGNITUDE - 7.5  
 TIME - 0900 EDT MAR 24 2010  
           0900 AST MAR 24 2010  
           0800 CDT MAR 24 2010  
           1300 UTC MAR 24 2010  
 LOCATION - 40.0 NORTH 70.0 WEST  
             90 MILES/145 KM S OF NANTUCKET MASSACHUSETTS  
             170 MILES/274 KM SE OF BOSTON MASSACHUSETTS  
 DEPTH - 28 MILES/45 KM

THE PACIFIC TSUNAMI WARNING CENTER IN EWA BEACH HAWAII WILL ISSUE MESSAGES FOR AREAS IN THE CARIBBEAN OUTSIDE PUERTO RICO AND THE VIRGIN ISLANDS.

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

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.

ANZ330-335-338-350-353-355-230>237-250-254-255-NYZ071>081-CTZ009>012-RIZ002-005>007-MAZ007-019>024-016-241435-/T.CON.PAAQ.TS.W.0010.000000T0000Z-000000T0000Z/COASTAL AREAS BETWEEN AND INCLUDING SANDY HOOK NEW JERSEY TO MERRIMACK RIVER MASSACHUSETTS  
 935 AM EDT WED MAR 24 2010

...A TSUNAMI WARNING IS IN EFFECT WHICH INCLUDES THE COASTAL AREAS OF NEW JERSEY - NEW YORK - CONNECTICUT - RHODE ISLAND AND MASSACHUSETTS FROM SANDY HOOK NEW JERSEY TO MERRIMACK RIVER MASSACHUSETTS...

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

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT OR EXPECTED. 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	1053	EDT MAR 24	MANHATTAN-NY	1231	EDT MAR 24
NANTUCKET IS-MA	1119	EDT MAR 24	BOSTON-MA	1255	EDT MAR 24

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

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### **WCATWC Message #3**

WEXX20 PAAQ 241405  
 TSUAT1

BULLETIN

TSUNAMI MESSAGE NUMBER 3  
 NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK  
 1005 AM EDT WED MAR 24 2010

...THE TSUNAMI WARNING IS EXPANDED TO INCLUDE THE COASTAL AREAS OF FLORIDA - GEORGIA - SOUTH CAROLINA - NORTH CAROLINA - VIRGINIA - MARYLAND - DELAWARE AND NEW JERSEY FROM OCEAN REEF FLORIDA TO SANDY HOOK NEW JERSEY...

...A TSUNAMI WARNING CONTINUES FOR THE COASTAL AREAS OF NEW JERSEY - NEW YORK - CONNECTICUT - RHODE ISLAND AND MASSACHUSETTS FROM SANDY HOOK NEW JERSEY

TO MERRIMACK RIVER MASSACHUSETTS...

...THE TSUNAMI WARNING IS EXPANDED TO INCLUDE THE  
COASTAL AREAS OF MASSACHUSETTS - NEW HAMPSHIRE - MAINE -  
NEW BRUNSWICK - NOVA SCOTIA AND NEWFOUNDLAND FROM MERRIMACK  
RIVER MASSACHUSETTS TO LA MANCHE NEWFOUNDLAND...

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

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

...A TSUNAMI ADVISORY IS IN EFFECT WHICH INCLUDES THE  
COASTAL AREAS OF NEWFOUNDLAND AND LABRADOR FROM LA MANCHE  
NEWFOUNDLAND TO CAPE CHIDLEY LABRADOR...

#### RECOMMENDED ACTIONS

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

- PERSONS IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO  
HIGHER GROUND.
- PERSONS IN TSUNAMI ADVISORY AREAS SHOULD MOVE OUT OF THE  
WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

THIS MESSAGE IS BASED ON EARTHQUAKE DATA... OBSERVED TSUNAMI  
AMPLITUDES... HISTORICAL INFORMATION AND FORECAST MODELS.

A TSUNAMI HAS BEEN OBSERVED AT THE FOLLOWING SITES -  
DEEP-WATER PRESSURE SENSORS INDICATE THAT A TSUNAMI HAS  
BEEN GENERATED APPROXIMATELY 120 MILES/200 KM SEAWARD OF  
LONG ISLAND NEW YORK.

#### PRELIMINARY EARTHQUAKE PARAMETERS

MAGNITUDE - 7.5  
TIME - 0900 EDT MAR 24 2010  
          0900 AST MAR 24 2010  
          0800 CDT MAR 24 2010  
          1300 UTC MAR 24 2010  
LOCATION - 40.0 NORTH 70.0 WEST  
          90 MILES/145 KM S OF NANTUCKET MASSACHUSETTS  
          170 MILES/274 KM SE OF BOSTON MASSACHUSETTS  
DEPTH - 28 MILES/45 KM

THE PACIFIC TSUNAMI WARNING CENTER IN EWA BEACH HAWAII WILL  
ISSUE MESSAGES FOR AREAS IN THE CARIBBEAN OUTSIDE PUERTO RICO  
AND THE VIRGIN ISLANDS.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD  
INUNDATION IS IMMINENT OR EXPECTED. 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 PERSONS IN OR VERY NEAR THE  
WATER IS IMMINENT OR 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.

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.

AMZ630-650-651-550-552-555-450-452-454-330-350-352-354-250-  
252-254-256-130-135-150-152-154-156-158-ANZ631>633-656-658-  
650-652-654-430-431-450>455-FLZ168-172-173-047-054-059-064-  
141-147-024-025-033-038-GAZ154-166-117-119-139-141-SCZ048>050-  
051-034-046-NCZ097-100-101-045>047-080-081-094-095-098-103-  
104-015>017-030>032-102-VAZ084-086-091-094-095-098-099-100-

MDZ025-DEZ002>004-NJZ005-006-011>014-021-023>026-241505-  
/T.EXA.PAAQ.TS.W.0010.000000T0000Z-000000T0000Z/  
COASTAL AREAS BETWEEN AND INCLUDING OCEAN REEF FLORIDA TO  
SANDY HOOK NEW JERSEY  
1005 AM EDT WED MAR 24 2010

...A TSUNAMI WARNING IS IN EFFECT WHICH INCLUDES THE  
COASTAL AREAS OF FLORIDA - GEORGIA - SOUTH CAROLINA - NORTH  
CAROLINA - VIRGINIA - MARYLAND - DELAWARE AND NEW JERSEY  
FROM OCEAN REEF FLORIDA TO SANDY HOOK NEW JERSEY...

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

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD  
INUNDATION IS IMMINENT OR EXPECTED. 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	1053	EDT MAR 24	MELBOURNE-FL	1333	EDT MAR 24
ATLANTIC CITY-NJ	1131	EDT MAR 24	JACKSONVILL B-FL	1341	EDT MAR 24
VIRGINIA BCH-VA	1156	EDT MAR 24	CHARLESTON-SC	1344	EDT MAR 24
MIAMI-FL	1245	EDT MAR 24	SAVANNAH-GA	1356	EDT MAR 24
MYRTLE BCH-SC	1323	EDT MAR 24			

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

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ANZ330-335-338-350-353-355-230>237-250-254-255-NYZ071>081-  
CTZ009>012-RIZ002-005>007-MAZ007-019>024-016-241505-  
/T.CON.PAAQ.TS.W.0010.000000T0000Z-000000T0000Z/  
COASTAL AREAS BETWEEN AND INCLUDING SANDY HOOK NEW JERSEY  
TO MERRIMACK RIVER MASSACHUSETTS  
1005 AM EDT WED MAR 24 2010

...A TSUNAMI WARNING IS IN EFFECT WHICH INCLUDES THE  
COASTAL AREAS OF NEW JERSEY - NEW YORK - CONNECTICUT -  
RHODE ISLAND AND MASSACHUSETTS FROM SANDY HOOK NEW JERSEY  
TO MERRIMACK RIVER MASSACHUSETTS...

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

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD  
INUNDATION IS IMMINENT OR EXPECTED. 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	1053	EDT MAR 24	MANHATTAN-NY	1231	EDT MAR 24
NANTUCKET IS-MA	1119	EDT MAR 24	BOSTON-MA	1255	EDT MAR 24

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

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ANZ150-050>052-081-NHZ014-MEZ022>028-029-030-241505-  
/T.EXA.PAAQ.TS.W.0010.000000T0000Z-000000T0000Z/  
COASTAL AREAS BETWEEN AND INCLUDING MERRIMACK RIVER  
MASSACHUSETTS TO LA MANCHE NEWFOUNDLAND  
1005 AM EDT WED MAR 24 2010

...A TSUNAMI WARNING IS IN EFFECT WHICH INCLUDES THE  
COASTAL AREAS OF MASSACHUSETTS - NEW HAMPSHIRE - MAINE -  
NEW BRUNSWICK - NOVA SCOTIA AND NEWFOUNDLAND FROM MERRIMACK  
RIVER MASSACHUSETTS TO LA MANCHE NEWFOUNDLAND...

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

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD  
INUNDATION IS IMMINENT OR EXPECTED. 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.



LOCKEPORT-NS 1221 ADT MAR 24 PORTLAND-ME 1242 EDT MAR 24  
 GRAND MANAN-NB 1330 ADT MAR 24 ST LAWRENCE-NL 1420 NDT MAR 24  
 SCATARIE IS-NS 1337 ADT MAR 24  
 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-  
 VIZ001-002-241505-  
 /T.EXA.PAAQ.TS.W.0010.000000T0000Z-000000T0000Z/  
 COASTAL AREAS OF PUERTO RICO AND THE VIRGIN ISLANDS.  
 1005 AM EDT WED MAR 24 2010

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

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

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD  
 INUNDATION IS IMMINENT OR EXPECTED. 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 1211 AST MAR 24 CHRISTIANSTED-VI 1225 AST MAR 24  
 MAYAGUEZ-PR 1220 AST MAR 24 CHARLOT AMALI-VI 1245 AST MAR 24  
 FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE  
 WCATWC.ARH.NOAA.GOV

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GMZ130-150-155-235-230-250-255-330-335-350-355-455-452-450-  
 555-550-630-655-650-750-755-765-730-830-856-853-850-657-656-  
 032-075-052>054-TXZ251-256-257-242>247-213-214-236>238-215-  
 216-LAZ051>054-040-062-064-066>070-MSZ080>082-ALZ061>064-FLZ002-  
 004-006-008-012-014-015-018-027-028-034-039-042-048>051-055-  
 060-062-065-069-070-075-174-076>078-241505-  
 /T.NEW.PAAQ.TS.Y.0010.100324T1405Z-000000T0000Z/  
 COASTAL AREAS BETWEEN AND INCLUDING BROWNSVILLE TEXAS TO  
 OCEAN REEF FLORIDA  
 1005 AM EDT WED MAR 24 2010

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

PERSONS IN TSUNAMI ADVISORY 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 PERSONS IN OR VERY NEAR  
 WATER IS IMMINENT OR EXPECTED. 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 1327 EDT MAR 24 ST PETERSBURG-FL 1815 EDT MAR 24  
 PANAMA CITY-FL 1522 CDT MAR 24 BILOXI-MS 1719 CDT MAR 24  
 CORPUS CHRISTI-TX 1606 CDT MAR 24 GALVESTON-TX 1722 CDT MAR 24  
 FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE  
 WCATWC.ARH.NOAA.GOV

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ANZ081-241505-  
 /T.NEW.PAAQ.TS.Y.0010.100324T1405Z-000000T0000Z/  
 COASTAL AREAS BETWEEN AND INCLUDING LA MANCHE NEWFOUNDLAND  
 TO CAPE CHIDLEY LABRADOR  
 1005 AM EDT WED MAR 24 2010

...A TSUNAMI ADVISORY IS IN EFFECT WHICH INCLUDES THE  
 COASTAL AREAS OF NEWFOUNDLAND AND LABRADOR FROM LA MANCHE  
 NEWFOUNDLAND TO CAPE CHIDLEY LABRADOR...

PERSONS IN TSUNAMI ADVISORY 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 PERSONS IN OR VERY NEAR WATER IS IMMINENT OF EXPECTED. 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 1627 NDT MAR 24 BATTLE HARBOR-NL 1659 NDT MAR 24  
FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE  
WCATWC.ARH.NOAA.GOV

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### **WCATWC Message #4**

WEXX20 PAAQ 241435  
TSUAT1

#### **BULLETIN**

TSUNAMI MESSAGE NUMBER 4

NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK  
1035 AM EDT WED MAR 24 2010

...A TSUNAMI WARNING IS IN EFFECT WHICH INCLUDES 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 OCEAN REEF FLORIDA TO LA MANCHE  
NEWFOUNDLAND...

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

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

...A TSUNAMI ADVISORY IS IN EFFECT WHICH INCLUDES THE  
COASTAL AREAS OF NEWFOUNDLAND AND LABRADOR FROM LA MANCHE  
NEWFOUNDLAND TO CAPE CHIDLEY LABRADOR...

#### **RECOMMENDED ACTIONS**

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

- PERSONS IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO  
HIGHER GROUND.
- PERSONS IN TSUNAMI ADVISORY AREAS SHOULD MOVE OUT OF THE  
WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

THIS MESSAGE IS BASED ON EARTHQUAKE DATA... OBSERVED TSUNAMI  
AMPLITUDES... HISTORICAL INFORMATION AND FORECAST MODELS.

A TSUNAMI HAS BEEN OBSERVED AT THE FOLLOWING SITES -  
DEEP-WATER PRESSURE SENSORS INDICATE THAT A TSUNAMI HAS  
BEEN GENERATED APPROXIMATELY 120 MILES/200 KM SEAWARD OF  
LONG ISLAND NEW YORK. FORECAST MODELS PROJECT TSUNAMIS  
3.2-9.6 FEET/1-3 METER ABOVE NORMAL SEA LEVEL WILL IMPACT  
PORTIONS OF THE EAST COAST... PUERTO RICO AND THE VIRGIN  
ISLANDS. TSUNAMIS LESS THAN 3.2 FEET/1 METER ABOVE NORMAL  
SEA LEVEL ARE EXPECTED TO OCCUR IN THE GULF OF MEXICO AND  
NORTH OF LA MANCHE NEWFOUNDLAND.

#### **PRELIMINARY EARTHQUAKE PARAMETERS**

MAGNITUDE - 7.5  
TIME - 0900 EDT MAR 24 2010

0900 AST MAR 24 2010  
 0800 CDT MAR 24 2010  
 1300 UTC MAR 24 2010  
 LOCATION - 40.0 NORTH 70.0 WEST  
 90 MILES/145 KM S OF NANTUCKET MASSACHUSETTS  
 170 MILES/274 KM SE OF BOSTON MASSACHUSETTS  
 DEPTH - 28 MILES/45 KM

THE PACIFIC TSUNAMI WARNING CENTER IN EWA BEACH HAWAII WILL  
 ISSUE MESSAGES FOR AREAS IN THE CARIBBEAN OUTSIDE PUERTO RICO  
 AND THE VIRGIN ISLANDS.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD  
 INUNDATION IS IMMINENT OR EXPECTED. 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 PERSONS IN OR VERY NEAR THE  
 WATER IS IMMINENT OR 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.

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.

AMZ630-650-651-550-552-555-450-452-454-330-350-352-354-250-  
 252-254-256-130-135-150-152-154-156-158-ANZ631>633-656-658-  
 650-652-654-430-431-450>455-330-335-338-350-353-355-230>237-  
 250-254-255-150-050>052-081-FLZ168-172-173-047-054-059-064-  
 141-147-024-025-033-038-GAZ154-166-117-119-139-141-SCZ048>050-  
 051-034-046-NCZ097-100-101-045>047-080-081-094-095-098-103-  
 104-015>017-030>032-102-VAZ084-086-091-094-095-098-099-100-  
 MDZ025-DEZ002>004-NJZ005-006-011>014-021-023>026-NYZ071>081-  
 CTZ009>012-RIZ002-005>007-MAZ007-019>024-016-NHZ014-MEZ022>028-  
 029-030-241535-  
 /T.CON.PAAQ.TS.W.0010.000000T0000Z-000000T0000Z/  
 COASTAL AREAS BETWEEN AND INCLUDING OCEAN REEF FLORIDA TO  
 LA MANCHE NEWFOUNDLAND  
 1035 AM EDT WED MAR 24 2010

...A TSUNAMI WARNING IS IN EFFECT WHICH INCLUDES 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 OCEAN REEF FLORIDA TO LA MANCHE  
 NEWFOUNDLAND...

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

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD  
 INUNDATION IS IMMINENT OR EXPECTED. 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	1053	EDT MAR 24	PORTLAND-ME	1242	EDT MAR 24
MONTAUK-NY	1053	EDT MAR 24	MIAMI-FL	1245	EDT MAR 24
NANTUCKET IS-MA	1119	EDT MAR 24	ST LAWRENCE-NL	1420	NDT MAR 24
LOCKEPORT-NS	1221	ADT MAR 24	BOSTON-MA	1255	EDT MAR 24
ATLANTIC CITY-NJ	1131	EDT MAR 24	MYRTLE BCH-SC	1323	EDT MAR 24
VIRGINIA BCH-VA	1156	EDT MAR 24	MELBOURNE-FL	1333	EDT MAR 24
GRAND MANAN-NB	1330	ADT MAR 24	JACKSONVILL B-FL	1341	EDT MAR 24
MANHATTAN-NY	1231	EDT MAR 24	CHARLESTON-SC	1344	EDT MAR 24
SCATARIE IS-NS	1337	ADT MAR 24	SAVANNAH-GA	1356	EDT MAR 24

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-

VIZ001-002-241535-  
/T.CON.PAAQ.TS.W.0010.000000T0000Z-000000T0000Z/  
1035 AM EDT WED MAR 24 2010

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

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

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD  
INUNDATION IS IMMINENT OR EXPECTED. 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 1211 AST MAR 24 CHRISTIANSTED-VI 1225 AST MAR 24  
MAYAGUEZ-PR 1220 AST MAR 24 CHARLOT AMALI-VI 1245 AST MAR 24  
FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE  
WCATWC.ARH.NOAA.GOV

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GMZ130-150-155-235-230-250-255-330-335-350-355-455-452-450-  
555-550-630-655-650-750-755-765-730-830-856-853-850-657-656-  
032-075-052>054-TXZ251-256-257-242>247-213-214-236>238-215-  
216-LAZ051>054-040-062-064-066>070-MSZ080>082-ALZ061>064-FLZ002-  
004-006-008-012-014-015-018-027-028-034-039-042-048>051-055-  
060-062-065-069-070-075-174-076>078-241535-  
/T.CON.PAAQ.TS.Y.0010.000000T0000Z-000000T0000Z/  
COASTAL AREAS BETWEEN AND INCLUDING BROWNSVILLE TEXAS TO  
OCEAN REEF FLORIDA  
1035 AM EDT WED MAR 24 2010

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

PERSONS IN TSUNAMI ADVISORY 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 PERSONS IN OR VERY NEAR  
WATER IS IMMINENT OR EXPECTED. 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 1327 EDT MAR 24 ST PETERSBURG-FL 1815 EDT MAR 24  
PANAMA CITY-FL 1522 CDT MAR 24 BILOXI-MS 1719 CDT MAR 24  
CORPUS CHRISTI-TX 1606 CDT MAR 24 GALVESTON-TX 1722 CDT MAR 24  
FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE  
WCATWC.ARH.NOAA.GOV

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ANZ081-241535-  
/T.CON.PAAQ.TS.Y.0010.000000T0000Z-000000T0000Z/  
COASTAL AREAS BETWEEN AND INCLUDING LA MANCHE NEWFOUNDLAND  
TO CAPE CHIDLEY LABRADOR  
1035 AM EDT WED MAR 24 2010

...A TSUNAMI ADVISORY IS IN EFFECT WHICH INCLUDES THE  
COASTAL AREAS OF NEWFOUNDLAND AND LABRADOR FROM LA MANCHE  
NEWFOUNDLAND TO CAPE CHIDLEY LABRADOR...

PERSONS IN TSUNAMI ADVISORY 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 PERSONS IN OR VERY NEAR  
WATER IS IMMINENT OR EXPECTED. 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 1627 NDT MAR 24 BATTLE HARBOR-NL 1659 NDT MAR 24  
 FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE  
 WCATWC.ARH.NOAA.GOV

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### **WCATWC Message #5**

WEXX20 PAAQ 241505  
 TSUAT1

#### BULLETIN

TSUNAMI MESSAGE NUMBER 5  
 NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK  
 1105 AM EDT WED MAR 24 2010

...A TSUNAMI WARNING IS IN EFFECT WHICH INCLUDES 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 OCEAN REEF FLORIDA TO LA MANCHE  
 NEWFOUNDLAND...

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

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

...A TSUNAMI ADVISORY IS IN EFFECT WHICH INCLUDES THE  
 COASTAL AREAS OF NEWFOUNDLAND AND LABRADOR FROM LA MANCHE  
 NEWFOUNDLAND TO CAPE CHIDLEY LABRADOR...

#### RECOMMENDED ACTIONS

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

THIS MESSAGE IS BASED ON EARTHQUAKE DATA... OBSERVED TSUNAMI  
 AMPLITUDES... HISTORICAL INFORMATION AND FORECAST MODELS.

A TSUNAMI HAS BEEN OBSERVED AT THE FOLLOWING SITES

LOCATION	LAT	LON	TIME	AMPL
BERMUDA	32.3 N	64.7 W	1457	5.73 FT/1.79 M

DEEP-WATER PRESSURE SENSORS INDICATE THAT A TSUNAMI HAS  
 BEEN GENERATED APPROXIMATELY 120 MILES/200 KM SEAWARD  
 OF LONG ISLAND NEW YORK. FORECAST MODELS PROJECT TSUNAMIS  
 3.2-9.6 FEET/1-3 METER ABOVE NORMAL SEA LEVEL WILL IMPACT  
 PORTIONS OF THE EAST COAST... PUERTO RICO AND THE VIRGIN  
 ISLANDS. TSUNAMIS LESS THAN 3.2 FEET/1 METER ABOVE NORMAL  
 SEA LEVEL ARE EXPECTED TO OCCUR IN THE GULF OF MEXICO AND  
 NORTH OF LA MANCHE NEWFOUNDLAND. PEAK TSUNAMI LEVELS ARE  
 EXPECTED TO OCCUR ONE TO THREE HOURS AFTER INITIAL ARRIVAL  
 TIME.

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 - 7.5  
 TIME - 0900 EDT MAR 24 2010

0900 AST MAR 24 2010  
 0800 CDT MAR 24 2010  
 1300 UTC MAR 24 2010  
 LOCATION - 40.0 NORTH 70.0 WEST  
 90 MILES/145 KM S OF NANTUCKET MASSACHUSETTS  
 170 MILES/274 KM SE OF BOSTON MASSACHUSETTS  
 DEPTH - 28 MILES/45 KM

THE PACIFIC TSUNAMI WARNING CENTER IN EWA BEACH HAWAII WILL  
 ISSUE MESSAGES FOR AREAS IN THE CARIBBEAN OUTSIDE PUERTO RICO  
 AND THE VIRGIN ISLANDS.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD  
 INUNDATION IS IMMINENT OR EXPECTED. 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 PERSONS IN OR VERY NEAR THE  
 WATER IS IMMINENT OR 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.

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.

AMZ630-650-651-550-552-555-450-452-454-330-350-352-354-250-  
 252-254-256-130-135-150-152-154-156-158-ANZ631>633-656-658-  
 650-652-654-430-431-450>455-330-335-338-350-353-355-230>237-  
 250-254-255-150-050>052-081-FLZ168-172-173-047-054-059-064-  
 141-147-024-025-033-038-GAZ154-166-117-119-139-141-SCZ048>050-  
 051-034-046-NCZ097-100-101-045>047-080-081-094-095-098-103-  
 104-015>017-030>032-102-VAZ084-086-091-094-095-098-099-100-  
 MDZ025-DEZ002>004-NJZ005-006-011>014-021-023>026-NYZ071>081-  
 CTZ009>012-RIZ002-005>007-MAZ007-019>024-016-NHZ014-MEZ022>028-  
 029-030-241605-  
 /T.CON.PAAQ.TS.W.0010.000000T0000Z-000000T0000Z/  
 COASTAL AREAS BETWEEN AND INCLUDING OCEAN REEF FLORIDA TO  
 LA MANCHE NEWFOUNDLAND  
 1105 AM EDT WED MAR 24 2010

...A TSUNAMI WARNING IS IN EFFECT WHICH INCLUDES 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 OCEAN REEF FLORIDA TO LA MANCHE  
 NEWFOUNDLAND...

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

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD  
 INUNDATION IS IMMINENT OR EXPECTED. 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 1119 EDT MAR 24 PORTLAND-ME 1242 EDT MAR 24  
 ATLANTIC CITY-NJ 1131 EDT MAR 24 MIAMI-FL 1245 EDT MAR 24  
 VIRGINIA BCH-VA 1156 EDT MAR 24 ST LAWRENCE-NL 1420 NDT MAR 24  
 LOCKEPORT-NS 1221 ADT MAR 24 BOSTON-MA 1255 EDT MAR 24  
 MANHATTAN-NY 1231 EDT MAR 24 MYRTLE BCH-SC 1323 EDT MAR 24  
 GRAND MANAN-NB 1330 ADT MAR 24 MELBOURNE-FL 1333 EDT MAR 24  
 SCATARIE IS-NS 1337 ADT MAR 24 JACKSONVILL B-FL 1341 EDT MAR 24  
 SAVANNAH-GA 1356 EDT MAR 24 CHARLESTON-SC 1344 EDT MAR 24  
 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-  
 VIZ001-002-241605-

/T.CON.PAAQ.TS.W.0010.000000T0000Z-000000T0000Z/  
 COASTAL AREAS OF PUERTO RICO AND THE VIRGIN ISLANDS.  
 1105 AM EDT WED MAR 24 2010

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

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

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD  
 INUNDATION IS IMMINENT OR EXPECTED. 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 1211 AST MAR 24 CHRISTIANSTED-VI 1225 AST MAR 24  
 MAYAGUEZ-PR 1220 AST MAR 24 CHARLOT AMALI-VI 1245 AST MAR 24  
 FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE  
 WCATWC.ARH.NOAA.GOV

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GMZ130-150-155-235-230-250-255-330-335-350-355-455-452-450-  
 555-550-630-655-650-750-755-765-730-830-856-853-850-657-656-  
 032-075-052>054-TXZ251-256-257-242>247-213-214-236>238-215-  
 216-LAZ051>054-040-062-064-066>070-MSZ080>082-ALZ061>064-FLZ002-  
 004-006-008-012-014-015-018-027-028-034-039-042-048>051-055-  
 060-062-065-069-070-075-174-076>078-241605-  
 /T.CON.PAAQ.TS.Y.0010.000000T0000Z-000000T0000Z/  
 COASTAL AREAS BETWEEN AND INCLUDING BROWNSVILLE TEXAS TO  
 OCEAN REEF FLORIDA  
 1105 AM EDT WED MAR 24 2010

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

PERSONS IN TSUNAMI ADVISORY 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 PERSONS IN OR VERY NEAR  
 WATER IS IMMINENT OR EXPECTED. 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 1327 EDT MAR 24 ST PETERSBURG-FL 1815 EDT MAR 24  
 PANAMA CITY-FL 1522 CDT MAR 24 BILOXI-MS 1719 CDT MAR 24  
 CORPUS CHRISTI-TX 1606 CDT MAR 24 GALVESTON-TX 1722 CDT MAR 24  
 FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE  
 WCATWC.ARH.NOAA.GOV

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ANZ081-241605-  
 /T.CON.PAAQ.TS.Y.0010.000000T0000Z-000000T0000Z/  
 COASTAL AREAS BETWEEN AND INCLUDING LA MANCHE NEWFOUNDLAND  
 TO CAPE CHIDLEY LABRADOR  
 1105 AM EDT WED MAR 24 2010

...A TSUNAMI ADVISORY IS IN EFFECT WHICH INCLUDES THE  
 COASTAL AREAS OF NEWFOUNDLAND AND LABRADOR FROM LA MANCHE  
 NEWFOUNDLAND TO CAPE CHIDLEY LABRADOR...

PERSONS IN TSUNAMI ADVISORY 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 PERSONS IN OR VERY NEAR  
 WATER IS IMMINENT OR EXPECTED. 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 1627 NDT MAR 24 BATTLE HARBOR-NL 1659 NDT MAR 24  
 FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE  
 WCATWC.ARH.NOAA.GOV

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### **WCATWC Message #6**

WEXX20 PAAQ 241535  
 TSUAT1

#### BULLETIN

TSUNAMI MESSAGE NUMBER 6  
 NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK  
 1135 AM EDT WED MAR 24 2010

...A TSUNAMI WARNING IS IN EFFECT WHICH INCLUDES 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 OCEAN REEF FLORIDA TO LA MANCHE  
 NEWFOUNDLAND...

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

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

...A TSUNAMI ADVISORY IS IN EFFECT WHICH INCLUDES THE  
 COASTAL AREAS OF NEWFOUNDLAND AND LABRADOR FROM LA MANCHE  
 NEWFOUNDLAND TO CAPE CHIDLEY LABRADOR...

#### RECOMMENDED ACTIONS

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

THIS MESSAGE IS BASED ON EARTHQUAKE DATA... OBSERVED TSUNAMI  
 AMPLITUDES... HISTORICAL INFORMATION AND FORECAST MODELS.

A TSUNAMI HAS BEEN OBSERVED AT THE FOLLOWING SITES

LOCATION	LAT	LON	TIME	AMPL
BERMUDA	32.3 N	64.7 W	1457	5.73 FT/1.79 M
OREGON INLET NC	35.8 N	75.6 W	1502	8.45 FT/2.64 M
MONTAUK NY	41.0 N	71.9 W	1530	6.27 FT/1.96 M
NEWPORT RI	41.5 N	71.3 W	1515	3.07 FT/0.96 M
OCEAN CITY MD	38.3 N	75.1 W	1521	6.85 FT/2.14 M
DUCK NC	36.2 N	75.7 W	1522	8.26 FT/2.58 M

#### FORECAST MODELS PROJECT TSUNAMIS

3.2-9.6 FEET/1-3 METER ABOVE NORMAL SEA LEVEL WILL IMPACT  
 PORTIONS OF THE EAST COAST... PUERTO RICO AND THE VIRGIN  
 ISLANDS. TSUNAMIS LESS THAN 3.2 FEET/1 METER ABOVE NORMAL  
 SEA LEVEL ARE EXPECTED TO OCCUR IN THE GULF OF MEXICO AND  
 NORTH OF LA MANCHE NEWFOUNDLAND TO CAPE CHIDLEY LABRADOR.  
 MAXIMUM TSUNAMI AMPLITUDES ARE EXPECTED TO DEVELOP 1 TO  
 THREE HOURS AFTER THE EXPECTED ARRIVAL TIME. TSUNAMIS  
 BETWEEN 3.2-8.0 FEET/1-2.5 METERS ALONG WITH STRONG  
 CURRENTS HAVE BEEN REPORTED IN RHODE ISLAND... NEW  
 YORK... MARYLAND AND NORTH CAROLINA.

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 - 7.5  
TIME - 0900 EDT MAR 24 2010  
          0900 AST MAR 24 2010  
          0800 CDT MAR 24 2010  
          1300 UTC MAR 24 2010  
LOCATION - 40.0 NORTH 70.0 WEST  
          90 MILES/145 KM S OF NANTUCKET MASSACHUSETTS  
          170 MILES/274 KM SE OF BOSTON MASSACHUSETTS  
DEPTH - 28 MILES/45 KM

THE PACIFIC TSUNAMI WARNING CENTER IN EWA BEACH HAWAII WILL  
ISSUE MESSAGES FOR AREAS IN THE CARIBBEAN OUTSIDE PUERTO RICO  
AND THE VIRGIN ISLANDS.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD  
INUNDATION IS IMMINENT OR EXPECTED. 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 PERSONS IN OR VERY NEAR THE  
WATER IS IMMINENT OR 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.

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.

AMZ630-650-651-550-552-555-450-452-454-330-350-352-354-250-  
252-254-256-130-135-150-152-154-156-158-ANZ631>633-656-658-  
650-652-654-430-431-450>455-330-335-338-350-353-355-230>237-  
250-254-255-150-050>052-081-FLZ168-172-173-047-054-059-064-  
141-147-024-025-033-038-GAZ154-166-117-119-139-141-SCZ048>050-  
051-034-046-NCZ097-100-101-045>047-080-081-094-095-098-103-  
104-015>017-030>032-102-VAZ084-086-091-094-095-098-099-100-  
MDZ025-DEZ002>004-NJZ005-006-011>014-021-023>026-NYZ071>081-  
CTZ009>012-RIZ002-005>007-MAZ007-019>024-016-NHZ014-MEZ022>028-  
029-030-241635-  
/T.CON.PAAQ.TS.W.0010.000000T0000Z-000000T0000Z/  
COASTAL AREAS BETWEEN AND INCLUDING OCEAN REEF FLORIDA TO  
LA MANCHE NEWFOUNDLAND  
1135 AM EDT WED MAR 24 2010

...A TSUNAMI WARNING IS IN EFFECT WHICH INCLUDES 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 OCEAN REEF FLORIDA TO LA MANCHE  
NEWFOUNDLAND...

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

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD  
INUNDATION IS IMMINENT OR EXPECTED. 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	1156	EDT MAR 24	PORTLAND-ME	1242	EDT MAR 24
JACKSONVILL B-FL	1341	EDT MAR 24	MIAMI-FL	1245	EDT MAR 24
MANHATTAN-NY	1231	EDT MAR 24	ST LAWRENCE-NL	1420	NDT MAR 24
GRAND MANAN-NB	1330	ADT MAR 24	BOSTON-MA	1255	EDT MAR 24
SCATARIE IS-NS	1337	ADT MAR 24	MYRTLE BCH-SC	1323	EDT MAR 24
SAVANNAH-GA	1356	EDT MAR 24	MELBOURNE-FL	1333	EDT MAR 24
CHARLESTON-SC	1344	EDT MAR 24			

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-  
VIZ001-002-241635-  
/T.CON.PAAQ.TS.W.0010.000000T0000Z-000000T0000Z/  
COASTAL AREAS OF PUERTO RICO AND THE VIRGIN ISLANDS.  
1135 AM EDT WED MAR 24 2010

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

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

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD  
INUNDATION IS IMMINENT OR EXPECTED. 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	1211	AST	MAR 24	CHRISTIANSTED-VI	1225	AST	MAR 24
MAYAGUEZ-PR	1220	AST	MAR 24	CHARLOT AMALI-VI	1245	AST	MAR 24

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

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GMZ130-150-155-235-230-250-255-330-335-350-355-455-452-450-  
555-550-630-655-650-750-755-765-730-830-856-853-850-657-656-  
032-075-052>054-TXZ251-256-257-242>247-213-214-236>238-215-  
216-LAZ051>054-040-062-064-066>070-MSZ080>082-ALZ061>064-FLZ002-  
004-006-008-012-014-015-018-027-028-034-039-042-048>051-055-  
060-062-065-069-070-075-174-076>078-241635-  
/T.CON.PAAQ.TS.Y.0010.000000T0000Z-000000T0000Z/  
COASTAL AREAS BETWEEN AND INCLUDING BROWNSVILLE TEXAS TO  
OCEAN REEF FLORIDA  
1135 AM EDT WED MAR 24 2010

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

PERSONS IN TSUNAMI ADVISORY 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 PERSONS IN OR VERY NEAR  
WATER IS IMMINENT OR EXPECTED. 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	1327	EDT	MAR 24	ST PETERSBURG-FL	1815	EDT	MAR 24
PANAMA CITY-FL	1522	CDT	MAR 24	BILOXI-MS	1719	CDT	MAR 24
CORPUS CHRISTI-TX	1606	CDT	MAR 24	GALVESTON-TX	1722	CDT	MAR 24

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

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ANZ081-241635-  
/T.CON.PAAQ.TS.Y.0010.000000T0000Z-000000T0000Z/  
COASTAL AREAS BETWEEN AND INCLUDING LA MANCHE NEWFOUNDLAND  
TO CAPE CHIDLEY LABRADOR  
1135 AM EDT WED MAR 24 2010

...A TSUNAMI ADVISORY IS IN EFFECT WHICH INCLUDES THE  
COASTAL AREAS OF NEWFOUNDLAND AND LABRADOR FROM LA MANCHE  
NEWFOUNDLAND TO CAPE CHIDLEY LABRADOR...

PERSONS IN TSUNAMI ADVISORY 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 PERSONS IN OR VERY NEAR

WATER IS IMMINENT OF EXPECTED. 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 1627 NDT MAR 24 BATTLE HARBOR-NL 1659 NDT MAR 24  
FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE  
WCATWC.ARH.NOAA.GOV

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### **WCATWC Message #7**

WEXX20 PAAQ 241605  
TSUAT1

BULLETIN  
TSUNAMI MESSAGE NUMBER 7  
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK  
1205 PM EDT WED MAR 24 2010

...A TSUNAMI WARNING IS IN EFFECT WHICH INCLUDES 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 OCEAN REEF FLORIDA TO LA MANCHE  
NEWFOUNDLAND...

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

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

...A TSUNAMI ADVISORY IS IN EFFECT WHICH INCLUDES THE  
COASTAL AREAS OF NEWFOUNDLAND AND LABRADOR FROM LA MANCHE  
NEWFOUNDLAND TO CAPE CHIDLEY LABRADOR...

#### RECOMMENDED ACTIONS

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

THIS MESSAGE IS BASED ON EARTHQUAKE DATA... OBSERVED TSUNAMI  
AMPLITUDES... HISTORICAL INFORMATION AND FORECAST MODELS.

A TSUNAMI HAS BEEN OBSERVED AT THE FOLLOWING SITES

LOCATION	LAT	LON	TIME	AMPL
MONTAUK NY	41.0 N	71.9 W	1530	6.27 FT/1.96 M
NEWPORT RI	41.5 N	71.3 W	1515	3.07 FT/0.96 M
OCEAN CITY MD	38.3 N	75.1 W	1521	6.85 FT/2.14 M
DUCK NC	36.2 N	75.7 W	1522	8.26 FT/2.58 M

FORECAST MODELS PROJECT TSUNAMIS

3.2-9.6 FEET/1-3 METER ABOVE NORMAL SEA LEVEL WILL IMPACT  
PORTIONS OF THE EAST COAST... PUERTO RICO AND THE VIRGIN  
ISLANDS. TSUNAMIS LESS THAN 3.2 FEET/1 METER ABOVE NORMAL  
SEA LEVEL ARE EXPECTED TO OCCUR IN THE GULF OF MEXICO AND  
NORTH OF LA MANCHE NEWFOUNDLAND TO CAPE CHIDLEY LABRADOR.  
MAXIMUM TSUNAMI AMPLITUDES ARE EXPECTED TO DEVELOP ONE TO  
THREE HOURS AFTER THE EXPECTED ARRIVAL TIME.

TSUNAMIS BETWEEN 3.2-8.0 FEET/1-2.5 METERS ALONG WITH  
STRONG CURRENTS HAVE BEEN REPORTED IN RHODE ISLAND... NEW  
YORK... MARYLAND AND NORTH CAROLINA. A 9.6-FOOT/3-METER

TSUNAMI WAS REPORTED IN ATLANTIC CITY NJ WHICH RESULTED IN  
NUMEROUS DEATHS AND WIDESPREAD STRUCTURAL DAMAGE.

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 - 7.5  
TIME - 0900 EDT MAR 24 2010  
          0900 AST MAR 24 2010  
          0800 CDT MAR 24 2010  
          1300 UTC MAR 24 2010  
LOCATION - 40.0 NORTH 70.0 WEST  
          90 MILES/145 KM S OF NANTUCKET MASSACHUSETTS  
          170 MILES/274 KM SE OF BOSTON MASSACHUSETTS  
DEPTH - 28 MILES/45 KM

THE PACIFIC TSUNAMI WARNING CENTER IN EWA BEACH HAWAII WILL  
ISSUE MESSAGES FOR AREAS IN THE CARIBBEAN OUTSIDE PUERTO RICO  
AND THE VIRGIN ISLANDS.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD  
INUNDATION IS IMMINENT OR EXPECTED. 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 PERSONS IN OR VERY NEAR THE  
WATER IS IMMINENT OR 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.

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.

AMZ630-650-651-550-552-555-450-452-454-330-350-352-354-250-  
252-254-256-130-135-150-152-154-156-158-ANZ631>633-656-658-  
650-652-654-430-431-450>455-330-335-338-350-353-355-230>237-  
250-254-255-150-050>052-081-FLZ168-172-173-047-054-059-064-  
141-147-024-025-033-038-GAZ154-166-117-119-139-141-SCZ048>050-  
051-034-046-NCZ097-100-101-045>047-080-081-094-095-098-103-  
104-015>017-030>032-102-VAZ084-086-091-094-095-098-099-100-  
MDZ025-DEZ002>004-NJZ005-006-011>014-021-023>026-NYZ071>081-  
CTZ009>012-RIZ002-005>007-MAZ007-019>024-016-NHZ014-MEZ022>028-  
029-030-241705-  
/T.CON.PAAQ.TS.W.0010.000000T0000Z-000000T0000Z/  
COASTAL AREAS BETWEEN AND INCLUDING OCEAN REEF FLORIDA TO  
LA MANCHE NEWFOUNDLAND  
1205 PM EDT WED MAR 24 2010

...A TSUNAMI WARNING IS IN EFFECT WHICH INCLUDES 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 OCEAN REEF FLORIDA TO LA MANCHE  
NEWFOUNDLAND...

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

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD  
INUNDATION IS IMMINENT OR EXPECTED. 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	1231	EDT MAR 24	PORTLAND-ME	1242	EDT MAR 24
GRAND MANAN-NB	1330	ADT MAR 24	MIAMI-FL	1245	EDT MAR 24
SCATARIE IS-NS	1337	ADT MAR 24	BOSTON-MA	1255	EDT MAR 24
SAVANNAH-GA	1356	EDT MAR 24	MYRTLE BCH-SC	1323	EDT MAR 24

CHARLESTON-SC 1344 EDT MAR 24 MELBOURNE-FL 1333 EDT MAR 24  
JACKSONVILL B-FL 1341 EDT MAR 24  
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-  
VIZ001-002-241705-  
/T.CON.PAAQ.TS.W.0010.000000T0000Z-000000T0000Z/  
COASTAL AREAS OF PUERTO RICO AND THE VIRGIN ISLANDS.  
1205 PM EDT WED MAR 24 2010

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

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

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD  
INUNDATION IS IMMINENT OR EXPECTED. 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 1211 AST MAR 24 CHRISTIANSTED-VI 1225 AST MAR 24  
MAYAGUEZ-PR 1220 AST MAR 24 CHARLOT AMALI-VI 1245 AST MAR 24  
FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE  
WCATWC.ARH.NOAA.GOV

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GMZ130-150-155-235-230-250-255-330-335-350-355-455-452-450-  
555-550-630-655-650-750-755-765-730-830-856-853-850-657-656-  
032-075-052>054-TXZ251-256-257-242>247-213-214-236>238-215-  
216-LAZ051>054-040-062-064-066>070-MSZ080>082-ALZ061>064-FLZ002-  
004-006-008-012-014-015-018-027-028-034-039-042-048>051-055-  
060-062-065-069-070-075-174-076>078-241705-  
/T.CON.PAAQ.TS.Y.0010.000000T0000Z-000000T0000Z/  
COASTAL AREAS BETWEEN AND INCLUDING BROWNSVILLE TEXAS TO  
OCEAN REEF FLORIDA  
1205 PM EDT WED MAR 24 2010

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

PERSONS IN TSUNAMI ADVISORY 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 PERSONS IN OR VERY NEAR  
WATER IS IMMINENT OF EXPECTED. 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 1327 EDT MAR 24 ST PETERSBURG-FL 1815 EDT MAR 24  
PANAMA CITY-FL 1522 CDT MAR 24 BILOXI-MS 1719 CDT MAR 24  
CORPUS CHRISTI-TX 1606 CDT MAR 24 GALVESTON-TX 1722 CDT MAR 24  
FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE  
WCATWC.ARH.NOAA.GOV

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ANZ081-241705-  
/T.CON.PAAQ.TS.Y.0010.000000T0000Z-000000T0000Z/  
COASTAL AREAS BETWEEN AND INCLUDING LA MANCHE NEWFOUNDLAND  
TO CAPE CHIDLEY LABRADOR  
1205 PM EDT WED MAR 24 2010

...A TSUNAMI ADVISORY IS IN EFFECT WHICH INCLUDES THE  
COASTAL AREAS OF NEWFOUNDLAND AND LABRADOR FROM LA MANCHE  
NEWFOUNDLAND TO CAPE CHIDLEY LABRADOR...

PERSONS IN TSUNAMI ADVISORY 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 PERSONS IN OR VERY NEAR WATER IS IMMINENT OR EXPECTED. 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 1627 NDT MAR 24 BATTLE HARBOR-NL 1659 NDT MAR 24  
FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE  
WCATWC.ARH.NOAA.GOV

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### **WCATWC Message #8**

WEXX20 PAAQ 241635  
TSUAT1

BULLETIN  
TSUNAMI MESSAGE NUMBER 8  
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK  
1235 PM EDT WED MAR 24 2010

...A TSUNAMI WARNING IS IN EFFECT WHICH INCLUDES 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 OCEAN REEF FLORIDA TO LA MANCHE  
NEWFOUNDLAND...

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

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

...A TSUNAMI ADVISORY IS IN EFFECT WHICH INCLUDES THE  
COASTAL AREAS OF NEWFOUNDLAND AND LABRADOR FROM LA MANCHE  
NEWFOUNDLAND TO CAPE CHIDLEY LABRADOR...

#### RECOMMENDED ACTIONS

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

THIS MESSAGE IS BASED ON EARTHQUAKE DATA... OBSERVED TSUNAMI AMPLITUDES... HISTORICAL INFORMATION AND FORECAST MODELS.

A TSUNAMI HAS BEEN OBSERVED AT THE FOLLOWING SITES

LOCATION	LAT	LON	TIME	AMPL
NEWPORT RI	41.5 N	71.3 W	1540	3.68 FT/1.15 M
AGUADILLA PR	18.4 N	67.1 W	1622	23.94 FT/7.48 M

FORECAST MODELS PROJECT TSUNAMIS  
3.2-9.6 FEET/1-3 METER ABOVE NORMAL SEA LEVEL WILL IMPACT  
PORTIONS OF THE EAST COAST... PUERTO RICO AND THE VIRGIN  
ISLANDS. TSUNAMIS LESS THAN 3.2 FEET/1 METER ABOVE NORMAL  
SEA LEVEL ARE EXPECTED TO OCCUR IN THE GULF OF MEXICO AND  
NORTH OF LA MANCHE NEWFOUNDLAND TO CAPE CHIDLEY LABRADOR.  
MAXIMUM TSUNAMI AMPLITUDES ARE EXPECTED TO DEVELOP ONE TO  
THREE HOURS AFTER THE EXPECTED ARRIVAL TIME. TSUNAMIS  
BETWEEN 3.2-8.0 FEET/1-2.5 METERS ALONG WITH STRONG

CURRENTS HAVE BEEN REPORTED IN RHODE ISLAND... NEW YORK... MARYLAND AND NORTH CAROLINA. A 24.0 FOOT/7.5-METER TSUNAMI WAS REPORTED IN AGUADILLA PR WHICH RESULTED IN INUNDATION FOR ONE MILE/1.6 KM INLAND AND NUMEROUS DEATHS.

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 - 7.5  
 TIME - 0900 EDT MAR 24 2010  
           0900 AST MAR 24 2010  
           0800 CDT MAR 24 2010  
           1300 UTC MAR 24 2010  
 LOCATION - 40.0 NORTH 70.0 WEST  
           90 MILES/145 KM S OF NANTUCKET MASSACHUSETTS  
           170 MILES/274 KM SE OF BOSTON MASSACHUSETTS  
 DEPTH - 28 MILES/45 KM

THE PACIFIC TSUNAMI WARNING CENTER IN EWA BEACH HAWAII WILL ISSUE MESSAGES FOR AREAS IN THE CARIBBEAN OUTSIDE PUERTO RICO AND THE VIRGIN ISLANDS.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT OR EXPECTED. 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 PERSONS IN OR VERY NEAR THE WATER IS IMMINENT OR 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.

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.

AMZ630-650-651-550-552-555-450-452-454-330-350-352-354-250-  
 252-254-256-130-135-150-152-154-156-158-ANZ631>633-656-658-  
 650-652-654-430-431-450>455-330-335-338-350-353-355-230>237-  
 250-254-255-150-050>052-081-FLZ168-172-173-047-054-059-064-  
 141-147-024-025-033-038-GAZ154-166-117-119-139-141-SCZ048>050-  
 051-034-046-NCZ097-100-101-045>047-080-081-094-095-098-103-  
 104-015>017-030>032-102-VAZ084-086-091-094-095-098-099-100-  
 MDZ025-DEZ002>004-NJZ005-006-011>014-021-023>026-NYZ071>081-  
 CTZ009>012-RIZ002-005>007-MAZ007-019>024-016-NHZ014-MEZ022>028-  
 029-030-241735-  
 /T.CON.PAAQ.TS.W.0010.000000T0000Z-000000T0000Z/  
 COASTAL AREAS BETWEEN AND INCLUDING OCEAN REEF FLORIDA TO  
 LA MANCHE NEWFOUNDLAND  
 1235 PM EDT WED MAR 24 2010

...A TSUNAMI WARNING IS IN EFFECT WHICH INCLUDES 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 OCEAN REEF FLORIDA TO LA MANCHE  
 NEWFOUNDLAND...

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

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT OR EXPECTED. 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.

SCATARIE IS-NS	1337	ADT MAR 24	PORTLAND-ME	1242	EDT MAR 24
SAVANNAH-GA	1356	EDT MAR 24	MIAMI-FL	1245	EDT MAR 24

CHARLESTON-SC 1344 EDT MAR 24 BOSTON-MA 1255 EDT MAR 24  
JACKSONVILL B-FL 1341 EDT MAR 24 MYRTLE BCH-SC 1323 EDT MAR 24  
MELBOURNE-FL 1333 EDT MAR 24  
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-  
VIZ001-002-241735-  
/T.CON.PAAQ.TS.W.0010.000000T0000Z-000000T0000Z/  
COASTAL AREAS OF PUERTO RICO AND THE VIRGIN ISLANDS.  
1235 PM EDT WED MAR 24 2010

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

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

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD  
INUNDATION IS IMMINENT OR EXPECTED. 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.

CHARLOT AMALI-VI 1245 AST MAR 24  
FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE  
WCATWC.ARH.NOAA.GOV

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GMZ130-150-155-235-230-250-255-330-335-350-355-455-452-450-  
555-550-630-655-650-750-755-765-730-830-856-853-850-657-656-  
032-075-052>054-TXZ251-256-257-242>247-213-214-236>238-215-  
216-LAZ051>054-040-062-064-066>070-MSZ080>082-ALZ061>064-FLZ002-  
004-006-008-012-014-015-018-027-028-034-039-042-048>051-055-  
060-062-065-069-070-075-174-076>078-241735-  
/T.CON.PAAQ.TS.Y.0010.000000T0000Z-000000T0000Z/  
COASTAL AREAS BETWEEN AND INCLUDING BROWNSVILLE TEXAS TO  
OCEAN REEF FLORIDA  
1235 PM EDT WED MAR 24 2010

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

PERSONS IN TSUNAMI ADVISORY 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 PERSONS IN OR VERY NEAR  
WATER IS IMMINENT OR EXPECTED. 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 1327 EDT MAR 24 ST PETERSBURG-FL 1815 EDT MAR 24  
PANAMA CITY-FL 1522 CDT MAR 24 BILOXI-MS 1719 CDT MAR 24  
CORPUS CHRISTI-TX 1606 CDT MAR 24 GALVESTON-TX 1722 CDT MAR 24  
FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE  
WCATWC.ARH.NOAA.GOV

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ANZ081-241735-  
/T.CON.PAAQ.TS.Y.0010.000000T0000Z-000000T0000Z/  
COASTAL AREAS BETWEEN AND INCLUDING LA MANCHE NEWFOUNDLAND  
TO CAPE CHIDLEY LABRADOR  
1235 PM EDT WED MAR 24 2010

...A TSUNAMI ADVISORY IS IN EFFECT WHICH INCLUDES THE  
COASTAL AREAS OF NEWFOUNDLAND AND LABRADOR FROM LA MANCHE  
NEWFOUNDLAND TO CAPE CHIDLEY LABRADOR...

PERSONS IN TSUNAMI ADVISORY 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 PERSONS IN OR VERY NEAR WATER IS IMMINENT OR EXPECTED. 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 1627 NDT MAR 24 BATTLE HARBOR-NL 1659 NDT MAR 24  
FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE  
WCATWC.ARH.NOAA.GOV

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### **WCATWC Message #9**

WEXX20 PAAQ 241705  
TSUAT1

BULLETIN  
TSUNAMI MESSAGE NUMBER 9  
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK  
105 PM EDT WED MAR 24 2010

...A TSUNAMI WARNING IS IN EFFECT WHICH INCLUDES 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 OCEAN REEF FLORIDA TO LA MANCHE  
NEWFOUNDLAND...

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

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

...A TSUNAMI ADVISORY IS IN EFFECT WHICH INCLUDES THE  
COASTAL AREAS OF NEWFOUNDLAND AND LABRADOR FROM LA MANCHE  
NEWFOUNDLAND TO CAPE CHIDLEY LABRADOR...

#### RECOMMENDED ACTIONS

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

THIS MESSAGE IS BASED ON EARTHQUAKE DATA... OBSERVED TSUNAMI AMPLITUDES... HISTORICAL INFORMATION AND FORECAST MODELS.

A TSUNAMI HAS BEEN OBSERVED AT THE FOLLOWING SITES

LOCATION	LAT	LON	TIME	AMPL
AGUADILLA PR	18.4 N	67.1 W	1622	23.94 FT/7.48 M
SAN JUAN PR	18.5 N	66.6 W	1627	4.83 FT/1.51 M
VIRGIN GORDA BV	18.5 N	64.5 W	1629	6.66 FT/2.08 M
MAYAGUEZ PR	18.2 N	67.1 W	1636	6.75 FT/2.11 M
CHRISTIANSTED VI	17.7 N	64.8 W	1645	3.17 FT/0.99 M

TSUNAMIS ALONG THE EAST COAST HAVE REDUCED TO APPROX  
3.2 FEET/1 METER ABOVE NORMAL SEA LEVEL IN MOST LOCATIONS.  
6.4-FOOT/2-METER TSUNAMIS HAVE BEEN REPORTED ALONG THE  
NORTHERN SHORES OF PUERTO RICO AND THE VIRGIN ISLANDS CAUSING  
SIGNIFICANT LEVELS OF DAMAGE ALONG THE COAST.  
1.9-FOOT/0.6-METER TSUNAMIS WERE OBSERVED IN BONITA BEACH FL

AND 1.3-FOOT/0.4-METER IN SUWANNEE RIVER FL.

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 - 7.5  
 TIME - 0900 EDT MAR 24 2010  
           0900 AST MAR 24 2010  
           0800 CDT MAR 24 2010  
           1300 UTC MAR 24 2010  
 LOCATION - 40.0 NORTH 70.0 WEST  
             90 MILES/145 KM S OF NANTUCKET MASSACHUSETTS  
             170 MILES/274 KM SE OF BOSTON MASSACHUSETTS  
 DEPTH - 28 MILES/45 KM

THE PACIFIC TSUNAMI WARNING CENTER IN EWA BEACH HAWAII WILL  
 ISSUE MESSAGES FOR AREAS IN THE CARIBBEAN OUTSIDE PUERTO RICO  
 AND THE VIRGIN ISLANDS.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD  
 INUNDATION IS IMMINENT OR EXPECTED. 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 PERSONS IN OR VERY NEAR THE  
 WATER IS IMMINENT OR 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.

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.

AMZ630-650-651-550-552-555-450-452-454-330-350-352-354-250-  
 252-254-256-130-135-150-152-154-156-158-ANZ631>633-656-658-  
 650-652-654-430-431-450>455-330-335-338-350-353-355-230>237-  
 250-254-255-150-050>052-081-FLZ168-172-173-047-054-059-064-  
 141-147-024-025-033-038-GAZ154-166-117-119-139-141-SCZ048>050-  
 051-034-046-NCZ097-100-101-045>047-080-081-094-095-098-103-  
 104-015>017-030>032-102-VAZ084-086-091-094-095-098-099-100-  
 MDZ025-DEZ002>004-NJZ005-006-011>014-021-023>026-NYZ071>081-  
 CTZ009>012-RIZ002-005>007-MAZ007-019>024-016-NHZ014-MEZ022>028-  
 029-030-241805-  
 /T.CON.PAAQ.TS.W.0010.000000T0000Z-000000T0000Z/  
 COASTAL AREAS BETWEEN AND INCLUDING OCEAN REEF FLORIDA TO  
 LA MANCHE NEWFOUNDLAND  
 105 PM EDT WED MAR 24 2010

...A TSUNAMI WARNING IS IN EFFECT WHICH INCLUDES 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 OCEAN REEF FLORIDA TO LA MANCHE  
 NEWFOUNDLAND...

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

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD  
 INUNDATION IS IMMINENT OR EXPECTED. 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.

SAVANNAH-GA	1356	EDT MAR 24	MELBOURNE-FL	1333	EDT MAR 24
CHARLESTON-SC	1344	EDT MAR 24	MYRTLE BCH-SC	1323	EDT MAR 24
JACKSONVILL B-FL	1341	EDT MAR			

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-  
VIZ001-002-241805-  
/T.CON.PAAQ.TS.W.0010.000000T0000Z-000000T0000Z/  
COASTAL AREAS OF PUERTO RICO AND THE VIRGIN ISLANDS.  
105 PM EDT WED MAR 24 2010

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

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

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

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

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GMZ130-150-155-235-230-250-255-330-335-350-355-455-452-450-  
555-550-630-655-650-750-755-765-730-830-856-853-850-657-656-  
032-075-052>054-TXZ251-256-257-242>247-213-214-236>238-215-  
216-LAZ051>054-040-062-064-066>070-MSZ080>082-ALZ061>064-FLZ002-  
004-006-008-012-014-015-018-027-028-034-039-042-048>051-055-  
060-062-065-069-070-075-174-076>078-241805-  
/T.CON.PAAQ.TS.Y.0010.000000T0000Z-000000T0000Z/  
COASTAL AREAS BETWEEN AND INCLUDING BROWNSVILLE TEXAS TO  
OCEAN REEF FLORIDA  
105 PM EDT WED MAR 24 2010

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

PERSONS IN TSUNAMI ADVISORY 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 PERSONS IN OR VERY NEAR  
WATER IS IMMINENT OR EXPECTED. 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	1327	EDT MAR 24	ST PETERSBURG-FL	1815	EDT MAR 24
PANAMA CITY-FL	1522	CDT MAR 24	BILOXI-MS	1719	CDT MAR 24
CORPUS CHRISTI-TX	1606	CDT MAR 24	GALVESTON-TX	1722	CDT MAR 24

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

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ANZ081-241805-  
/T.CON.PAAQ.TS.Y.0010.000000T0000Z-000000T0000Z/  
COASTAL AREAS BETWEEN AND INCLUDING LA MANCHE NEWFOUNDLAND  
TO CAPE CHIDLEY LABRADOR  
105 PM EDT WED MAR 24 2010

...A TSUNAMI ADVISORY IS IN EFFECT WHICH INCLUDES THE  
COASTAL AREAS OF NEWFOUNDLAND AND LABRADOR FROM LA MANCHE  
NEWFOUNDLAND TO CAPE CHIDLEY LABRADOR...

PERSONS IN TSUNAMI ADVISORY 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 PERSONS IN OR VERY NEAR  
WATER IS IMMINENT OR EXPECTED. 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 1627 NDT MAR 24 BATTLE HARBOR-NL 1659 NDT MAR 24  
FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE  
WCATWC.ARH.NOAA.GOV

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### **WCATWC Message #10**

WEXX20 PAAQ 241735  
TSUAT1

#### BULLETIN

TSUNAMI MESSAGE NUMBER 10  
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK  
135 PM EDT WED MAR 24 2010

...A TSUNAMI WARNING IS IN EFFECT WHICH INCLUDES 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 OCEAN REEF FLORIDA TO LA MANCHE  
NEWFOUNDLAND...

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

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

...A TSUNAMI ADVISORY IS IN EFFECT WHICH INCLUDES THE  
COASTAL AREAS OF NEWFOUNDLAND AND LABRADOR FROM LA MANCHE  
NEWFOUNDLAND TO CAPE CHIDLEY LABRADOR...

#### RECOMMENDED ACTIONS

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

THIS MESSAGE IS BASED ON EARTHQUAKE DATA... OBSERVED TSUNAMI  
AMPLITUDES... HISTORICAL INFORMATION AND FORECAST MODELS.

A TSUNAMI HAS BEEN OBSERVED AT THE FOLLOWING SITES

LOCATION	LAT	LON	TIME	AMPL
MAYAGUEZ PR	18.2 N	67.1 W	1636	6.75 FT/2.11 M
CHRISTIANSTED VI	17.7 N	64.8 W	1709	3.97 FT/1.24 M
PORT CANAVERAL FL	28.4 N	80.6 W	1700	4.61 FT/1.44 M
SPRINGMAID SC	33.7 N	78.9 W	1718	4.80 FT/1.50 M

TSUNAMIS ALONG THE EAST COAST HAVE REDUCED TO APPROX 3.2  
FEET/1 METER IN MOST LOCATIONS. 6.4-FOOT/2-METER WAVES HAVE  
BEEN OBSERVED THROUGHOUT THE NORTHERN COASTS OF PUERTO RICO  
AND THE VIRGIN ISLANDS AND ARE CONTINUING TO CAUSE DAMAGE.  
SEVERAL EAST COAST LOCATIONS SUCH AS BAR HARBOR MAINE AND  
ATLANTIC CITY NEW JERSEY REPORT ONGOING DAMAGE FROM WAVES.  
TWO SWIMMERS MELBOURNE FLORIDA WERE REPORTED DROWNED.

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 - 7.5  
 TIME - 0900 EDT MAR 24 2010  
           0900 AST MAR 24 2010  
           0800 CDT MAR 24 2010  
           1300 UTC MAR 24 2010  
 LOCATION - 40.0 NORTH 70.0 WEST  
           90 MILES/145 KM S OF NANTUCKET MASSACHUSETTS  
           170 MILES/274 KM SE OF BOSTON MASSACHUSETTS  
 DEPTH - 28 MILES/45 KM

THE PACIFIC TSUNAMI WARNING CENTER IN EWA BEACH HAWAII WILL  
 ISSUE MESSAGES FOR AREAS IN THE CARIBBEAN OUTSIDE PUERTO RICO  
 AND THE VIRGIN ISLANDS.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD  
 INUNDATION IS IMMINENT OR EXPECTED. 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 PERSONS IN OR VERY NEAR THE  
 WATER IS IMMINENT OR 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.

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.

AMZ630-650-651-550-552-555-450-452-454-330-350-352-354-250-  
 252-254-256-130-135-150-152-154-156-158-ANZ631>633-656-658-  
 650-652-654-430-431-450>455-330-335-338-350-353-355-230>237-  
 250-254-255-150-050>052-081-FLZ168-172-173-047-054-059-064-  
 141-147-024-025-033-038-GAZ154-166-117-119-139-141-SCZ048>050-  
 051-034-046-NCZ097-100-101-045>047-080-081-094-095-098-103-  
 104-015>017-030>032-102-VAZ084-086-091-094-095-098-099-100-  
 MDZ025-DEZ002>004-NJZ005-006-011>014-021-023>026-NYZ071>081-  
 CTZ009>012-RIZ002-005>007-MAZ007-019>024-016-NHZ014-MEZ022>028-  
 029-030-241835-  
 /T.CON.PAAQ.TS.W.0010.000000T0000Z-000000T0000Z/  
 COASTAL AREAS BETWEEN AND INCLUDING OCEAN REEF FLORIDA TO  
 LA MANCHE NEWFOUNDLAND  
 135 PM EDT WED MAR 24 2010

...A TSUNAMI WARNING IS IN EFFECT WHICH INCLUDES 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 OCEAN REEF FLORIDA TO LA MANCHE  
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PERSONS IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO  
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 WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL  
 TIME. ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED  
 SITES IN THE WARNING ARE PROVIDED BELOW.

SAVANNAH-GA 1356 EDT MAR 24 JACKSONVILL B-FL 1341 EDT MAR 24  
 CHARLESTON-SC 1344 EDT MAR 24  
 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-  
 VIZ001-002-241835-  
 /T.CON.PAAQ.TS.W.0010.000000T0000Z-000000T0000Z/  
 COASTAL AREAS OF PUERTO RICO AND THE VIRGIN ISLANDS.  
 135 PM EDT WED MAR 24 2010

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

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

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

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

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GMZ130-150-155-235-230-250-255-330-335-350-355-455-452-450-  
555-550-630-655-650-750-755-765-730-830-856-853-850-657-656-  
032-075-052>054-TXZ251-256-257-242>247-213-214-236>238-215-  
216-LAZ051>054-040-062-064-066>070-MSZ080>082-ALZ061>064-FLZ002-  
004-006-008-012-014-015-018-027-028-034-039-042-048>051-055-  
060-062-065-069-070-075-174-076>078-241835-  
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GALVESTON-TX	1722	CDT MAR 24	ST PETERSBURG-FL	1815	EDT MAR 24
PANAMA CITY-FL	1522	CDT MAR 24	BILOXI-MS	1719	CDT MAR 24
CORPUS CHRISTI-TX	1606	CDT MAR 24			

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

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ANZ081-241835-  
/T.CON.PAAQ.TS.Y.0010.000000T0000Z-000000T0000Z/  
COASTAL AREAS BETWEEN AND INCLUDING LA MANCHE NEWFOUNDLAND  
TO CAPE CHIDLEY LABRADOR  
135 PM EDT WED MAR 24 2010

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BONAVISTA-NL	1627	NDT MAR 24	BATTLE HARBOR-NL	1659	NDT MAR 24
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FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE  
WCATWC.ARH.NOAA.GOV

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**WCATWC Message #11**

WEXX20 PAAQ 241805  
TSUAT1

## BULLETIN

TSUNAMI MESSAGE NUMBER 11

NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK

205 PM EDT WED MAR 24 2010

...A TSUNAMI WARNING IS IN EFFECT WHICH INCLUDES 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 OCEAN REEF FLORIDA TO LA MANCHE  
NEWFOUNDLAND...

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

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

...A TSUNAMI ADVISORY IS IN EFFECT WHICH INCLUDES THE  
COASTAL AREAS OF NEWFOUNDLAND AND LABRADOR FROM LA MANCHE  
NEWFOUNDLAND TO CAPE CHIDLEY LABRADOR...

## RECOMMENDED ACTIONS

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

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

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

THIS MESSAGE IS BASED ON EARTHQUAKE DATA... OBSERVED TSUNAMI  
AMPLITUDES... HISTORICAL INFORMATION AND FORECAST MODELS.

A TSUNAMI HAS BEEN OBSERVED AT THE FOLLOWING SITES

LOCATION	LAT	LON	TIME	AMPL
CHRISTIANSTED VI	17.7 N	64.8 W	1709	3.97 FT/1.24 M
SPRINGMAID SC	33.7 N	78.9 W	1718	4.80 FT/1.50 M
FLAGLER BEACH FL	29.5 N	81.1 W	1739	6.88 FT/2.15 M

1.9-FOOT/0.6-METER WAVES WERE REPORTED IN BONITA BEACH FL AND  
1.3-FOOT/0.4-METER IN SUWANNEE RIVER FL. MINOR BOAT  
DAMAGE HAS BEEN REPORTED DUE TO TSUNAMI CURRENTS IN THE  
EASTERN GULF OF MEXICO. SEVERAL HARBORS IN MAINE HAVE REPORTED  
SIGNIFICANT DAMAGE DUE TO STRONG CURRENTS AND LOW LEVELS OF  
INUNDATION.

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 - 7.5

TIME - 0900 EDT MAR 24 2010  
0900 AST MAR 24 2010  
0800 CDT MAR 24 2010  
1300 UTC MAR 24 2010

LOCATION - 40.0 NORTH 70.0 WEST  
90 MILES/145 KM S OF NANTUCKET MASSACHUSETTS  
170 MILES/274 KM SE OF BOSTON MASSACHUSETTS

DEPTH - 28 MILES/45 KM

THE PACIFIC TSUNAMI WARNING CENTER IN EWA BEACH HAWAII WILL

ISSUE MESSAGES FOR AREAS IN THE CARIBBEAN OUTSIDE PUERTO RICO AND THE VIRGIN ISLANDS.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT OR EXPECTED. 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 60 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.

AMZ630-650-651-550-552-555-450-452-454-330-350-352-354-250-252-254-256-130-135-150-152-154-156-158-ANZ631>633-656-658-650-652-654-430-431-450>455-330-335-338-350-353-355-230>237-250-254-255-150-050>052-081-FLZ168-172-173-047-054-059-064-141-147-024-025-033-038-GAZ154-166-117-119-139-141-SCZ048>050-051-034-046-NCZ097-100-101-045>047-080-081-094-095-098-103-104-015>017-030>032-102-VAZ084-086-091-094-095-098-099-100-MDZ025-DEZ002>004-NJZ005-006-011>014-021-023>026-NYZ071>081-CTZ009>012-RIZ002-005>007-MAZ007-019>024-016-NHZ014-MEZ022>028-029-030-241905-  
/T.CON.PAAQ.TS.W.0010.000000T0000Z-000000T0000Z/  
COASTAL AREAS BETWEEN AND INCLUDING OCEAN REEF FLORIDA TO LA MANCHE NEWFOUNDLAND  
205 PM EDT WED MAR 24 2010

...A TSUNAMI WARNING IS IN EFFECT WHICH INCLUDES 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 OCEAN REEF FLORIDA TO LA MANCHE NEWFOUNDLAND...

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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-VIZ001-002-241905-  
/T.CON.PAAQ.TS.W.0010.000000T0000Z-000000T0000Z/  
COASTAL AREAS OF PUERTO RICO AND THE VIRGIN ISLANDS.  
205 PM EDT WED MAR 24 2010

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GMZ130-150-155-235-230-250-255-330-335-350-355-455-452-450-  
555-550-630-655-650-750-755-765-730-830-856-853-850-657-656-  
032-075-052>054-TXZ251-256-257-242>247-213-214-236>238-215-  
216-LAZ051>054-040-062-064-066>070-MSZ080>082-ALZ061>064-FLZ002-  
004-006-008-012-014-015-018-027-028-034-039-042-048>051-055-  
060-062-065-069-070-075-174-076>078-241905-  
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205 PM EDT WED MAR 24 2010

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SITES IN THE ADVISORY ARE PROVIDED BELOW.

GALVESTON-TX 1722 CDT MAR 24 ST PETERSBURG-FL 1815 EDT MAR 24  
PANAMA CITY-FL 1522 CDT MAR 24 BILOXI-MS 1719 CDT MAR 24  
CORPUS CHRISTI-TX 1606 CDT MAR 24  
FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE  
WCATWC.ARH.NOAA.GOV

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ANZ081-241905-  
/T.CON.PAAQ.TS.Y.0010.000000T0000Z-000000T0000Z/  
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205 PM EDT WED MAR 24 2010

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BATTLE HARBOR-NL 1659 NDT MAR 24  
FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE  
WCATWC.ARH.NOAA.GOV

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### **WCATWC Message #12**

WEXX20 PAAQ 241905  
TSUAT1

BULLETIN  
TSUNAMI MESSAGE NUMBER 12  
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK  
305 PM EDT WED MAR 24 2010

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COASTAL AREAS OF FLORIDA - GEORGIA - SOUTH CAROLINA - NORTH

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WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

THIS MESSAGE IS BASED ON EARTHQUAKE DATA... OBSERVED TSUNAMI  
AMPLITUDES... HISTORICAL INFORMATION AND FORECAST MODELS.

TSUNAMI AMPLITUDES HAVE DROPPED TO 3.2-4.8 FOOT/1-1.5 METER  
THROUGHOUT PUERTO RICO AND VIRGIN ISLANDS WITH DANGEROUS COASTAL  
CONDITIONS PERSISTING. TSUNAMI OBSERVATIONS IN  
THE EASTERN GULF OF MEXICO HAVE DECREASED TO LESS THAN 1.6  
FEET/0.5 METERS. BOAT HARBORS THROUGHOUT THE SOUTHEAST COAST  
OF NOVA SCOTIA HAVE EXPERIENCED SIGNIFICANT DESTRUCTION.  
CITIES WHERE TSUNAMIS EXCEEDING 3.2 FEET/1.0 METER  
ARE STILL BEING OBSERVED INCLUDE ATLANTIC CITY NJ... BAR HARBOR  
ME AND OCEAN CITY MD.

#### PRELIMINARY EARTHQUAKE PARAMETERS

MAGNITUDE - 7.5  
TIME - 0900 EDT MAR 24 2010  
0900 AST MAR 24 2010  
0800 CDT MAR 24 2010  
1300 UTC MAR 24 2010  
LOCATION - 40.0 NORTH 70.0 WEST  
90 MILES/145 KM S OF NANTUCKET MASSACHUSETTS  
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DEPTH - 28 MILES/45 KM

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 WCATWC.ARH.NOAA.GOV

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AMZ712-715-725-735-742-745-PRZ001>003-005-007-008-010-011-  
 VIZ001-002-242005-  
 /T.CON.PAAQ.TS.W.0010.000000T0000Z-000000T0000Z/  
 COASTAL AREAS OF PUERTO RICO AND THE VIRGIN ISLANDS.  
 305 PM EDT WED MAR 24 2010

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

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

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

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

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GMZ130-150-155-235-230-250-255-330-335-350-355-455-452-450-  
 555-550-630-655-650-750-755-765-730-830-856-853-850-657-656-  
 032-075-052>054-TXZ251-256-257-242>247-213-214-236>238-215-  
 216-LAZ051>054-040-062-064-066>070-MSZ080>082-ALZ061>064-FLZ002-  
 004-006-008-012-014-015-018-027-028-034-039-042-048>051-055-  
 060-062-065-069-070-075-174-076>078-242005-  
 /T.CON.PAAQ.TS.Y.0010.000000T0000Z-000000T0000Z/  
 COASTAL AREAS BETWEEN AND INCLUDING BROWNSVILLE TEXAS TO  
 OCEAN REEF FLORIDA  
 305 PM EDT WED MAR 24 2010

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

PERSONS IN TSUNAMI ADVISORY 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 PERSONS IN OR VERY NEAR  
 WATER IS IMMINENT OF EXPECTED. 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.

GALVESTON-TX 1722 CDT MAR 24 ST PETERSBURG-FL 1815 EDT MAR 24  
 PANAMA CITY-FL 1522 CDT MAR 24 BILOXI-MS 1719 CDT MAR 24  
 CORPUS CHRISTI-TX 1606 CDT MAR 24  
 FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE  
 WCATWC.ARH.NOAA.GOV

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ANZ081-242005-  
 /T.CON.PAAQ.TS.Y.0010.000000T0000Z-000000T0000Z/  
 COASTAL AREAS BETWEEN AND INCLUDING LA MANCHE NEWFOUNDLAND  
 TO CAPE CHIDLEY LABRADOR  
 305 PM EDT WED MAR 24 2010

...A TSUNAMI ADVISORY IS IN EFFECT WHICH INCLUDES THE  
 COASTAL AREAS OF NEWFOUNDLAND AND LABRADOR FROM LA MANCHE  
 NEWFOUNDLAND TO CAPE CHIDLEY LABRADOR...

PERSONS IN TSUNAMI ADVISORY 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 PERSONS IN OR VERY NEAR  
 WATER IS IMMINENT OF EXPECTED. 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.

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

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### **WCATWC Message #13**

WEXX20 PAAQ 242005  
 TSUAT1

BULLETIN  
 TSUNAMI MESSAGE NUMBER 13  
 NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK  
 405 PM EDT WED MAR 24 2010

...A TSUNAMI WARNING IS IN EFFECT WHICH INCLUDES 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 OCEAN REEF FLORIDA TO LA MANCHE  
 NEWFOUNDLAND...

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

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

...A TSUNAMI ADVISORY IS IN EFFECT WHICH INCLUDES THE  
 COASTAL AREAS OF NEWFOUNDLAND AND LABRADOR FROM LA MANCHE  
 NEWFOUNDLAND TO CAPE CHIDLEY LABRADOR...

#### RECOMMENDED ACTIONS

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

HIGHER GROUND.

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

THIS MESSAGE IS BASED ON EARTHQUAKE DATA... OBSERVED TSUNAMI AMPLITUDES... HISTORICAL INFORMATION AND FORECAST MODELS.

TSUNAMI AMPLITUDES HAVE DECREASED TO 3.2-4.8 FOOT/1-1.5 METER THROUGHOUT PUERTO RICO AND VIRGIN ISLANDS THOUGH ARE STILL DANGEROUS. NON-DAMAGING 1.0-FOOT/0.3-METER TSUNAMI WERE OBSERVED ALONG THE LABRADOR COAST. TSUNAMIS ALONG THE EAST COAST HAVE DIMINISHED THOUGH STRONG CURRENTS STILL EXIST. CITIES WHERE TSUNAMIS EXCEEDING 3.2 FOOT/1.0 METER ARE STILL BEING OBSERVED INCLUDE ATLANTIC CITY NJ... MONTAUK NY AND OCEAN CITY MD. STRONG CURRENTS HAVE OCCURED AT A FEW LOCATIONS THROUGHOUT THE GULF OF MEXICO CAUSING DAMAGE TO HARBORS AND MARINAS.

#### PRELIMINARY EARTHQUAKE PARAMETERS

MAGNITUDE - 7.5  
 TIME - 0900 EDT MAR 24 2010  
           0900 AST MAR 24 2010  
           0800 CDT MAR 24 2010  
           1300 UTC MAR 24 2010  
 LOCATION - 40.0 NORTH 70.0 WEST  
           90 MILES/145 KM S OF NANTUCKET MASSACHUSETTS  
           170 MILES/274 KM SE OF BOSTON MASSACHUSETTS  
 DEPTH - 28 MILES/45 KM

THE PACIFIC TSUNAMI WARNING CENTER IN EWA BEACH HAWAII WILL ISSUE MESSAGES FOR AREAS IN THE CARIBBEAN OUTSIDE PUERTO RICO AND THE VIRGIN ISLANDS.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT OR EXPECTED. 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 PERSONS IN OR VERY NEAR THE WATER IS IMMINENT OR 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.

THIS MESSAGE WILL BE UPDATED IN 60 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.

AMZ630-650-651-550-552-555-450-452-454-330-350-352-354-250-  
 252-254-256-130-135-150-152-154-156-158-ANZ631>633-656-658-  
 650-652-654-430-431-450>455-330-335-338-350-353-355-230>237-  
 250-254-255-150-050>052-081-FLZ168-172-173-047-054-059-064-  
 141-147-024-025-033-038-GAZ154-166-117-119-139-141-SCZ048>050-  
 051-034-046-NCZ097-100-101-045>047-080-081-094-095-098-103-  
 104-015>017-030>032-102-VAZ084-086-091-094-095-098-099-100-  
 MDZ025-DEZ002>004-NJZ005-006-011>014-021-023>026-NYZ071>081-  
 CTZ009>012-RIZ002-005>007-MAZ007-019>024-016-NHZ014-MEZ022>028-  
 029-030-242105-  
 /T.CON.PAAQ.TS.W.0010.000000T0000Z-000000T0000Z/  
 COASTAL AREAS BETWEEN AND INCLUDING OCEAN REEF FLORIDA TO  
 LA MANCHE NEWFOUNDLAND  
 405 PM EDT WED MAR 24 2010

...A TSUNAMI WARNING IS IN EFFECT WHICH INCLUDES 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 OCEAN REEF FLORIDA TO LA MANCHE  
 NEWFOUNDLAND...

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

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

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-  
VIZ001-002-242105-  
/T.CON.PAAQ.TS.W.0010.000000T0000Z-000000T0000Z/  
COASTAL AREAS OF PUERTO RICO AND THE VIRGIN ISLANDS.  
405 PM EDT WED MAR 24 2010

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

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

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

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

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GMZ130-150-155-235-230-250-255-330-335-350-355-455-452-450-  
555-550-630-655-650-750-755-765-730-830-856-853-850-657-656-  
032-075-052>054-TXZ251-256-257-242>247-213-214-236>238-215-  
216-LAZ051>054-040-062-064-066>070-MSZ080>082-ALZ061>064-FLZ002-  
004-006-008-012-014-015-018-027-028-034-039-042-048>051-055-  
060-062-065-069-070-075-174-076>078-242105-  
/T.CON.PAAQ.TS.Y.0010.000000T0000Z-000000T0000Z/  
COASTAL AREAS BETWEEN AND INCLUDING BROWNSVILLE TEXAS TO  
OCEAN REEF FLORIDA  
405 PM EDT WED MAR 24 2010

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

PERSONS IN TSUNAMI ADVISORY 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 PERSONS IN OR VERY NEAR  
WATER IS IMMINENT OR EXPECTED. 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.

GALVESTON-TX	1722	CDT MAR 24	ST PETERSBURG-FL	1815	EDT MAR 24
PANAMA CITY-FL	1522	CDT MAR 24	BILOXI-MS	1719	CDT MAR 24
CORPUS CHRISTI-TX	1606	CDT MAR 24			

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

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ANZ081-242105-  
/T.CON.PAAQ.TS.Y.0010.000000T0000Z-000000T0000Z/  
COASTAL AREAS BETWEEN AND INCLUDING LA MANCHE NEWFOUNDLAND  
TO CAPE CHIDLEY LABRADOR  
405 PM EDT WED MAR 24 2010

...A TSUNAMI ADVISORY IS IN EFFECT WHICH INCLUDES THE  
COASTAL AREAS OF NEWFOUNDLAND AND LABRADOR FROM LA MANCHE  
NEWFOUNDLAND TO CAPE CHIDLEY LABRADOR...

PERSONS IN TSUNAMI ADVISORY 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 PERSONS IN OR VERY NEAR WATER IS IMMINENT OF EXPECTED. 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.

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

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### **WCATWC Message #14**

WEXX20 PAAQ 242105  
TSUAT1

BULLETIN

TSUNAMI MESSAGE NUMBER 14

NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK  
505 PM EDT WED MAR 24 2010

...A TSUNAMI WARNING IS IN EFFECT WHICH INCLUDES 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 OCEAN REEF FLORIDA TO LA MANCHE NEWFOUNDLAND...

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

...THE TSUNAMI ADVISORY IS CANCELED FOR THE COASTAL AREAS OF TEXAS - LOUISIANA - MISSISSIPPI - ALABAMA AND FLORIDA FROM BROWNSVILLE TEXAS TO OCEAN REEF FLORIDA...

...THE TSUNAMI ADVISORY IS CANCELED FOR THE COASTAL AREAS OF NEWFOUNDLAND AND LABRADOR FROM LA MANCHE NEWFOUNDLAND TO CAPE CHIDLEY LABRADOR...

#### RECOMMENDED ACTIONS

A TSUNAMI HAS BEEN GENERATED WHICH COULD CAUSE DAMAGE TO THE WARNING REGIONS LISTED IN THE HEADLINE. PERSONS IN LOW-LYING COASTAL AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM THEIR LOCAL EMERGENCY OFFICIALS. EVACUATIONS ARE ONLY ORDERED BY EMERGENCY RESPONSE AGENCIES.

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

THIS MESSAGE IS BASED ON EARTHQUAKE DATA... OBSERVED TSUNAMI AMPLITUDES... HISTORICAL INFORMATION AND FORECAST MODELS.

TSUNAMI AMPLITUDES CONTINUE AT 3.2-4.8 FOOT/1-1.5 METER THROUGHOUT NORTHERN PUERTO RICO AND VIRGIN ISLANDS AND ARE STILL DANGEROUS. TSUNAMI OBSERVATIONS IN THE GULF OF MEXICO HAVE DECREASED TO LESS THAN 1.6 FEET/0.5 METERS. 1.0-FOOT/0.3-METER WAVES HAVE BEEN REPORTED AT CAPE CHIDLEY LABRADOR. WAVES ALONG THE EAST COAST HAVE DIMINISHED THOUGH STRONG CURRENTS STILL EXIST. CITIES WHERE TSUNAMIS EXCEED 3.2 FOOT/1.0 METER ARE STILL BEING OBSERVED INCLUDE ATLANTIC CITY NJ... FLAGLER FL AND OCEAN CITY MD.

#### PRELIMINARY EARTHQUAKE PARAMETERS

MAGNITUDE - 7.5

TIME - 0900 EDT MAR 24 2010  
0900 AST MAR 24 2010  
0800 CDT MAR 24 2010  
1300 UTC MAR 24 2010

LOCATION - 40.0 NORTH 70.0 WEST  
90 MILES/145 KM S OF NANTUCKET MASSACHUSETTS

170 MILES/274 KM SE OF BOSTON MASSACHUSETTS  
 DEPTH - 28 MILES/45 KM

THE PACIFIC TSUNAMI WARNING CENTER IN EWA BEACH HAWAII WILL  
 ISSUE MESSAGES FOR AREAS IN THE CARIBBEAN OUTSIDE PUERTO RICO  
 AND THE VIRGIN ISLANDS.

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

THIS MESSAGE WILL BE UPDATED IN 60 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.

GMZ130-150-155-235-230-250-255-330-335-350-355-455-452-450-  
 555-550-630-655-650-750-755-765-730-830-856-853-850-657-656-  
 032-075-052>054-TXZ251-256-257-242>247-213-214-236>238-215-  
 216-LAZ051>054-040-062-064-066>070-MSZ080>082-ALZ061>064-FLZ002-  
 004-006-008-012-014-015-018-027-028-034-039-042-048>051-055-  
 060-062-065-069-070-075-174-076>078-242205-  
 /T.CAN.PAAQ.TS.Y.0010.000000T0000Z-000000T0000Z/  
 COASTAL AREAS BETWEEN AND INCLUDING BROWNSVILLE TEXAS TO  
 OCEAN REEF FLORIDA  
 505 PM EDT WED MAR 24 2010

...THE TSUNAMI ADVISORY IS CANCELED FOR THE COASTAL AREAS  
 OF TEXAS - LOUISIANA - MISSISSIPPI - ALABAMA AND FLORIDA  
 FROM BROWNSVILLE TEXAS TO OCEAN REEF FLORIDA...

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ANZ081-242205-  
 /T.CAN.PAAQ.TS.Y.0010.000000T0000Z-000000T0000Z/  
 COASTAL AREAS BETWEEN AND INCLUDING LA MANCHE NEWFOUNDLAND  
 TO CAPE CHIDLEY LABRADOR  
 505 PM EDT WED MAR 24 2010

...THE TSUNAMI ADVISORY IS CANCELED FOR THE COASTAL AREAS  
 OF NEWFOUNDLAND AND LABRADOR FROM LA MANCHE NEWFOUNDLAND TO  
 CAPE CHIDLEY LABRADOR...

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AMZ630-650-651-550-552-555-450-452-454-330-350-352-354-250-  
 252-254-256-130-135-150-152-154-156-158-ANZ631>633-656-658-  
 650-652-654-430-431-450>455-330-335-338-350-353-355-230>237-  
 250-254-255-150-050>052-081-FLZ168-172-173-047-054-059-064-  
 141-147-024-025-033-038-GAZ154-166-117-119-139-141-SCZ048>050-  
 051-034-046-NCZ097-100-101-045>047-080-081-094-095-098-103-  
 104-015>017-030>032-102-VAZ084-086-091-094-095-098-099-100-  
 MDZ025-DEZ002>004-NJZ005-006-011>014-021-023>026-NYZ071>081-  
 CTZ009>012-RIZ002-005>007-MAZ007-019>024-016-NHZ014-MEZ022>028-  
 029-030-242205-  
 /T.CON.PAAQ.TS.W.0010.000000T0000Z-000000T0000Z/  
 COASTAL AREAS BETWEEN AND INCLUDING OCEAN REEF FLORIDA TO  
 LA MANCHE NEWFOUNDLAND  
 505 PM EDT WED MAR 24 2010

...A TSUNAMI WARNING IS IN EFFECT WHICH INCLUDES 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 OCEAN REEF FLORIDA TO LA MANCHE  
 NEWFOUNDLAND...

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

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



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-  
VIZ001-002-242205-  
/T.CON.PAAQ.TS.W.0010.000000T0000Z-000000T0000Z/  
COASTAL AREAS OF PUERTO RICO AND THE VIRGIN ISLANDS.  
505 PM EDT WED MAR 24 2010

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

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

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

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

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### **WCATWC Message #15**

WEXX20 PAAQ 242205  
TSUAT1

BULLETIN

TSUNAMI MESSAGE NUMBER 15  
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK  
605 PM EDT WED MAR 24 2010

...A TSUNAMI WARNING IS IN EFFECT WHICH INCLUDES 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 OCEAN REEF FLORIDA TO LA MANCHE  
NEWFOUNDLAND...

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

...THIS MESSAGE IS INFORMATION ONLY FOR 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  
NEWFOUNDLAND AND LABRADOR FROM LA MANCHE NEWFOUNDLAND TO  
CAPE CHIDLEY LABRADOR...

#### RECOMMENDED ACTIONS

A TSUNAMI HAS BEEN GENERATED WHICH COULD CAUSE DAMAGE TO THE  
WARNING REGIONS LISTED IN THE HEADLINE. PERSONS IN LOW-LYING  
COASTAL AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM THEIR LOCAL  
EMERGENCY OFFICIALS. EVACUATIONS ARE ONLY ORDERED BY EMERGENCY  
RESPONSE AGENCIES.  
- PERSONS IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO  
HIGHER GROUND.

THIS MESSAGE IS BASED ON EARTHQUAKE DATA... OBSERVED TSUNAMI  
AMPLITUDES... HISTORICAL INFORMATION AND FORECAST MODELS.

TSUNAMI LEVELS HAVE DECREASED TO 1.0-3.2 FOOT/0.3-1.0 METER  
THROUGHOUT MOST OF PUERTO RICO AND VIRGIN ISLANDS. TSUNAMI  
OBSERVATIONS IN THE GULF OF MEXICO AND NORTH OF LA MANCHE  
NEWFOUNDLAND CONTINUE TO BE LESS THAN 1.3FEET/0.4 METERS.  
TSUNAMIS ALONG THE EAST COAST HAVE DIMINISHED THOUGH STRONG  
CURRENTS STILL EXIST. LARGE LEVELS OF DAMAGE HAVE BEEN REPORTED

FROM PORTIONS OF THE FLORIDA COAST. SEVERAL SWIMMERS ARE REPORTED MISSING.

PRELIMINARY EARTHQUAKE PARAMETERS

MAGNITUDE - 7.5  
 TIME - 0900 EDT MAR 24 2010  
           0900 AST MAR 24 2010  
           0800 CDT MAR 24 2010  
           1300 UTC MAR 24 2010  
 LOCATION - 40.0 NORTH 70.0 WEST  
           90 MILES/145 KM S OF NANTUCKET MASSACHUSETTS  
           170 MILES/274 KM SE OF BOSTON MASSACHUSETTS  
 DEPTH - 28 MILES/45 KM

THE PACIFIC TSUNAMI WARNING CENTER IN EWA BEACH HAWAII WILL ISSUE MESSAGES FOR AREAS IN THE CARIBBEAN OUTSIDE PUERTO RICO AND THE VIRGIN ISLANDS.

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

THIS MESSAGE WILL BE UPDATED IN 60 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.

AMZ630-650-651-550-552-555-450-452-454-330-350-352-354-250-252-254-256-130-135-150-152-154-156-158-ANZ631>633-656-658-650-652-654-430-431-450>455-330-335-338-350-353-355-230>237-250-254-255-150-050>052-081-FLZ168-172-173-047-054-059-064-141-147-024-025-033-038-GAZ154-166-117-119-139-141-SCZ048>050-051-034-046-NCZ097-100-101-045>047-080-081-094-095-098-103-104-015>017-030>032-102-VAZ084-086-091-094-095-098-099-100-MDZ025-DEZ002>004-NJZ005-006-011>014-021-023>026-NYZ071>081-CTZ009>012-RIZ002-005>007-MAZ007-019>024-016-NHZ014-MEZ022>028-029-030-242305-  
 /T.CON.PAAQ.TS.W.0010.000000T0000Z-000000T0000Z/  
 COASTAL AREAS BETWEEN AND INCLUDING OCEAN REEF FLORIDA TO LA MANCHE NEWFOUNDLAND  
 605 PM EDT WED MAR 24 2010

...A TSUNAMI WARNING IS IN EFFECT WHICH INCLUDES 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 OCEAN REEF FLORIDA TO LA MANCHE NEWFOUNDLAND...

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

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

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-VIZ001-002-242305-  
 /T.CON.PAAQ.TS.W.0010.000000T0000Z-000000T0000Z/  
 COASTAL AREAS OF PUERTO RICO AND THE VIRGIN ISLANDS.  
 605 PM EDT WED MAR 24 2010

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

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

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

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### **WCATWC Message #16**

WEXX20 PAAQ 242305  
TSUAT1

BULLETIN  
TSUNAMI MESSAGE NUMBER 16  
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK  
705 PM EDT WED MAR 24 2010

...A TSUNAMI WARNING IS IN EFFECT WHICH INCLUDES 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 OCEAN REEF FLORIDA TO LA MANCHE NEWFOUNDLAND...

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

...THIS MESSAGE IS INFORMATION ONLY FOR 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 NEWFOUNDLAND AND LABRADOR FROM LA MANCHE NEWFOUNDLAND TO CAPE CHIDLEY LABRADOR...

#### RECOMMENDED ACTIONS

A TSUNAMI HAS BEEN GENERATED WHICH COULD CAUSE DAMAGE TO THE WARNING REGIONS LISTED IN THE HEADLINE. PERSONS IN LOW-LYING COASTAL AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM THEIR LOCAL EMERGENCY OFFICIALS. EVACUATIONS ARE ONLY ORDERED BY EMERGENCY RESPONSE AGENCIES.  
- PERSONS IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO HIGHER GROUND.

THIS MESSAGE IS BASED ON EARTHQUAKE DATA... OBSERVED TSUNAMI AMPLITUDES... HISTORICAL INFORMATION AND FORECAST MODELS.

TSUNAMI AMPLITUDES HAVE DROPPED TO 1.0-3.2 FOOT/0.3-1.0 METER THROUGHOUT PUERTO RICO AND VIRGIN ISLANDS. TSUNAMIS ALONG THE EAST COAST HAVE DIMINISHED THOUGH STRONG CURRENTS STILL EXIST. REPORTS OF MAJOR DAMAGE TO MANY BOAT HARBORS ALONG THE U.S. ATLANTIC COAST AND S.E. CANADIAN COAST HAVE BEEN REPORTED.

#### PRELIMINARY EARTHQUAKE PARAMETERS

MAGNITUDE - 7.5  
TIME - 0900 EDT MAR 24 2010  
          0900 AST MAR 24 2010  
          0800 CDT MAR 24 2010  
          1300 UTC MAR 24 2010  
LOCATION - 40.0 NORTH 70.0 WEST  
          90 MILES/145 KM S OF NANTUCKET MASSACHUSETTS  
          170 MILES/274 KM SE OF BOSTON MASSACHUSETTS  
DEPTH - 28 MILES/45 KM

THE PACIFIC TSUNAMI WARNING CENTER IN EWA BEACH HAWAII WILL ISSUE MESSAGES FOR AREAS IN THE CARIBBEAN OUTSIDE PUERTO RICO AND THE VIRGIN ISLANDS.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD

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

THIS MESSAGE WILL BE UPDATED IN 60 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.

AMZ630-650-651-550-552-555-450-452-454-330-350-352-354-250-252-254-256-130-135-150-152-154-156-158-ANZ631>633-656-658-650-652-654-430-431-450>455-330-335-338-350-353-355-230>237-250-254-255-150-050>052-081-FLZ168-172-173-047-054-059-064-141-147-024-025-033-038-GAZ154-166-117-119-139-141-SCZ048>050-051-034-046-NCZ097-100-101-045>047-080-081-094-095-098-103-104-015>017-030>032-102-VAZ084-086-091-094-095-098-099-100-MDZ025-DEZ002>004-NJZ005-006-011>014-021-023>026-NYZ071>081-CTZ009>012-RIZ002-005>007-MAZ007-019>024-016-NHZ014-MEZ022>028-029-030-250005-  
/T.CON.PAAQ.TS.W.0010.000000T0000Z-000000T0000Z/  
COASTAL AREAS BETWEEN AND INCLUDING OCEAN REEF FLORIDA TO LA MANCHE NEWFOUNDLAND  
705 PM EDT WED MAR 24 2010

...A TSUNAMI WARNING IS IN EFFECT WHICH INCLUDES 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 OCEAN REEF FLORIDA TO LA MANCHE NEWFOUNDLAND...

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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-VIZ001-002-250005-  
/T.CON.PAAQ.TS.W.0010.000000T0000Z-000000T0000Z/  
COASTAL AREAS OF PUERTO RICO AND THE VIRGIN ISLANDS.  
705 PM EDT WED MAR 24 2010

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

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

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### **WCATWC Message #17**

WEXX20 PAAQ 250005  
TSUAT1

BULLETIN  
TSUNAMI MESSAGE NUMBER 17  
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK

805 PM EDT WED MAR 24 2010

...A TSUNAMI WARNING IS IN EFFECT WHICH INCLUDES 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 OCEAN REEF FLORIDA TO LA MANCHE  
NEWFOUNDLAND...

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

...THIS MESSAGE IS INFORMATION ONLY FOR 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  
NEWFOUNDLAND AND LABRADOR FROM LA MANCHE NEWFOUNDLAND TO  
CAPE CHIDLEY LABRADOR...

#### RECOMMENDED ACTIONS

A TSUNAMI HAS BEEN GENERATED WHICH COULD CAUSE DAMAGE TO THE  
WARNING REGIONS LISTED IN THE HEADLINE. PERSONS IN LOW-LYING  
COASTAL AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM THEIR LOCAL  
EMERGENCY OFFICIALS. EVACUATIONS ARE ONLY ORDERED BY EMERGENCY  
RESPONSE AGENCIES.  
- PERSONS IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO  
HIGHER GROUND.

THIS MESSAGE IS BASED ON EARTHQUAKE DATA... OBSERVED TSUNAMI  
AMPLITUDES... HISTORICAL INFORMATION AND FORECAST MODELS.

TSUNAMI AMPLITUDES ALONG THE PUERTO RICO AND VIRGIN ISLAND  
COASTS HAVE DECREASED TO 1.0-1.6 FOOT/0.3-0.5  
METER THOUGH SOME LOCATIONS SUCH AS AGUADILLA  
CONTINUE TO OBSERVE TSUNAMIS EXCEEDING 3.2 FOOT/1.0 METER.  
1.0-3.2 FOOT/0.3-1.0 METER WAVES CONTINUE AT A FEW U.S.  
ATLANTIC COAST LOCATIONS SUCH AS ATLANTIC CITY NJ... BAR HARBOR  
ME... OCEAN CITY MD AND FLAGLER BEACH FL.

#### PRELIMINARY EARTHQUAKE PARAMETERS

MAGNITUDE - 7.5  
TIME - 0900 EDT MAR 24 2010  
0900 AST MAR 24 2010  
0800 CDT MAR 24 2010  
1300 UTC MAR 24 2010  
LOCATION - 40.0 NORTH 70.0 WEST  
90 MILES/145 KM S OF NANTUCKET MASSACHUSETTS  
170 MILES/274 KM SE OF BOSTON MASSACHUSETTS  
DEPTH - 28 MILES/45 KM

THE PACIFIC TSUNAMI WARNING CENTER IN EWA BEACH HAWAII WILL  
ISSUE MESSAGES FOR AREAS IN THE CARIBBEAN OUTSIDE PUERTO RICO  
AND THE VIRGIN ISLANDS.

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

THIS MESSAGE WILL BE UPDATED IN 60 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.

AMZ630-650-651-550-552-555-450-452-454-330-350-352-354-250-  
252-254-256-130-135-150-152-154-156-158-ANZ631>633-656-658-  
650-652-654-430-431-450>455-330-335-338-350-353-355-230>237-  
250-254-255-150-050>052-081-FLZ168-172-173-047-054-059-064-  
141-147-024-025-033-038-GAZ154-166-117-119-139-141-SCZ048>050-  
051-034-046-NCZ097-100-101-045>047-080-081-094-095-098-103-  
104-015>017-030>032-102-VAZ084-086-091-094-095-098-099-100-  
MDZ025-DEZ002>004-NJZ005-006-011>014-021-023>026-NYZ071>081-  
CTZ009>012-RIZ002-005>007-MAZ007-019>024-016-NHZ014-MEZ022>028-  
029-030-250105-

/T.CON.PAAQ.TS.W.0010.000000T0000Z-000000T0000Z/  
COASTAL AREAS BETWEEN AND INCLUDING OCEAN REEF FLORIDA TO  
LA MANCHE NEWFOUNDLAND  
805 PM EDT WED MAR 24 2010

...A TSUNAMI WARNING IS IN EFFECT WHICH INCLUDES 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  
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NEWFOUNDLAND...

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WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL  
TIME.

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-  
VIZ001-002-250105-  
/T.CON.PAAQ.TS.W.0010.000000T0000Z-000000T0000Z/  
COASTAL AREAS OF PUERTO RICO AND THE VIRGIN ISLANDS.  
805 PM EDT WED MAR 24 2010

...A TSUNAMI WARNING IS IN EFFECT FOR PUERTO RICO AND THE  
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TIME.

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WCATWC.ARH.NOAA.GOV

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### **WCATWC Message #18**

WEXX20 PAAQ 250105  
TSUAT1

BULLETIN  
TSUNAMI MESSAGE NUMBER 18  
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK  
905 PM EDT WED MAR 24 2010

...A TSUNAMI WARNING IS IN EFFECT WHICH INCLUDES 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 OCEAN REEF FLORIDA TO LA MANCHE  
NEWFOUNDLAND...

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

...THIS MESSAGE IS INFORMATION ONLY FOR 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  
NEWFOUNDLAND AND LABRADOR FROM LA MANCHE NEWFOUNDLAND TO

CAPE CHIDLEY LABRADOR...

#### RECOMMENDED ACTIONS

A TSUNAMI HAS BEEN GENERATED WHICH COULD CAUSE DAMAGE TO THE WARNING REGIONS LISTED IN THE HEADLINE. PERSONS IN LOW-LYING COASTAL AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM THEIR LOCAL EMERGENCY OFFICIALS. EVACUATIONS ARE ONLY ORDERED BY EMERGENCY RESPONSE AGENCIES.

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

THIS MESSAGE IS BASED ON EARTHQUAKE DATA... OBSERVED TSUNAMI AMPLITUDES... HISTORICAL INFORMATION AND FORECAST MODELS.

TSUNAMI AMPLITUDES THROUGHOUT THE U.S./CANADIAN COAST CONTINUE TO DECREASE THOUGH MUST STILL BE CONSIDERED VERY DANGEROUS. DANGEROUS CONDITIONS PERSIST FOR THOSE IN OR VERY NEAR THE WATER.

#### PRELIMINARY EARTHQUAKE PARAMETERS

MAGNITUDE - 7.5  
 TIME - 0900 EDT MAR 24 2010  
           0900 AST MAR 24 2010  
           0800 CDT MAR 24 2010  
           1300 UTC MAR 24 2010  
 LOCATION - 40.0 NORTH 70.0 WEST  
           90 MILES/145 KM S OF NANTUCKET MASSACHUSETTS  
           170 MILES/274 KM SE OF BOSTON MASSACHUSETTS  
 DEPTH - 28 MILES/45 KM

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AMZ630-650-651-550-552-555-450-452-454-330-350-352-354-250-  
 252-254-256-130-135-150-152-154-156-158-ANZ631>633-656-658-  
 650-652-654-430-431-450>455-330-335-338-350-353-355-230>237-  
 250-254-255-150-050>052-081-FLZ168-172-173-047-054-059-064-  
 141-147-024-025-033-038-GAZ154-166-117-119-139-141-SCZ048>050-  
 051-034-046-NCZ097-100-101-045>047-080-081-094-095-098-103-  
 104-015>017-030>032-102-VAZ084-086-091-094-095-098-099-100-  
 MDZ025-DEZ002>004-NJZ005-006-011>014-021-023>026-NYZ071>081-  
 CTZ009>012-RIZ002-005>007-MAZ007-019>024-016-NHZ014-MEZ022>028-  
 029-030-250205-  
 /T.CON.PAAQ.TS.W.0010.000000T0000Z-000000T0000Z/  
 COASTAL AREAS BETWEEN AND INCLUDING OCEAN REEF FLORIDA TO  
 LA MANCHE NEWFOUNDLAND  
 905 PM EDT WED MAR 24 2010

...A TSUNAMI WARNING IS IN EFFECT WHICH INCLUDES 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 OCEAN REEF FLORIDA TO LA MANCHE NEWFOUNDLAND...

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

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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-  
VIZ001-002-250205-  
/T.CON.PAAQ.TS.W.0010.000000T0000Z-000000T0000Z/  
COASTAL AREAS OF PUERTO RICO AND THE VIRGIN ISLANDS.  
905 PM EDT WED MAR 24 2010

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

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TIME.

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

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### **WCATWC Message #19**

WEXX20 PAAQ 250205  
TSUAT1

#### **BULLETIN**

TSUNAMI MESSAGE NUMBER 19  
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK  
1005 PM EDT WED MAR 24 2010

...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  
OCEAN REEF FLORIDA TO LA MANCHE NEWFOUNDLAND...

...THE TSUNAMI WARNING IS CANCELED FOR PUERTO RICO AND THE  
VIRGIN ISLANDS...

#### **EVALUATION**

DAMAGING TSUNAMIS ARE NO LONGER EXPECTED ALONG THE ATLANTIC  
COASTS OF THE U.S. AND CANADA. AS LOCAL CONDITIONS CAN CAUSE  
A WIDE VARIATION IN TSUNAMI WAVE ACTION THE ALL CLEAR  
DETERMINATIONS MUST BE MADE BY LOCAL AUTHORITIES.

TSUNAMI AMPLITUDES HAVE DROPPED BELOW DANGEROUS LEVELS AT MOST  
LOCATIONS ALONG THE U.S. AND CANADIAN ATLANTIC COAST. SEA  
LEVEL CONDITIONS STILL VARY GREATLY FROM LOCATION TO LOCATION  
ALONG THE COAST. DECISIONS RELATING TO REOCCUPATION OF COASTAL  
ZONES MUST BE MADE BY LOCAL AUTHORITIES.

ALL WAVE ACTIVITY THROUGHOUT THE WARNING AREA HAS BEEN REPORTED  
AS BEING LESS THAN 1 FOOT/0.3 METERS IN HEIGHT.

#### **PRELIMINARY EARTHQUAKE PARAMETERS**

MAGNITUDE - 7.5  
TIME - 0900 EDT MAR 24 2010  
          0900 AST MAR 24 2010  
          0800 CDT MAR 24 2010  
          1300 UTC MAR 24 2010  
LOCATION - 40.0 NORTH 70.0 WEST  
          90 MILES/145 KM S OF NANTUCKET MASSACHUSETTS  
          170 MILES/274 KM SE OF BOSTON MASSACHUSETTS  
DEPTH - 28 MILES/45 KM

THE PACIFIC TSUNAMI WARNING CENTER IN EWA BEACH HAWAII WILL  
ISSUE MESSAGES FOR AREAS IN THE CARIBBEAN OUTSIDE PUERTO RICO  
AND THE VIRGIN ISLANDS.



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.

AMZ630-650-651-550-552-555-450-452-454-330-350-352-354-250-  
252-254-256-130-135-150-152-154-156-158-ANZ631>633-656-658-  
650-652-654-430-431-450>455-330-335-338-350-353-355-230>237-  
250-254-255-150-050>052-081-FLZ168-172-173-047-054-059-064-  
141-147-024-025-033-038-GAZ154-166-117-119-139-141-SCZ048>050-  
051-034-046-NCZ097-100-101-045>047-080-081-094-095-098-103-  
104-015>017-030>032-102-VAZ084-086-091-094-095-098-099-100-  
MDZ025-DEZ002>004-NJZ005-006-011>014-021-023>026-NYZ071>081-  
CTZ009>012-RIZ002-005>007-MAZ007-019>024-016-NHZ014-MEZ022>028-  
029-030-250305-  
/T.CAN.PAAQ.TS.W.0010.000000T0000Z-000000T0000Z/  
COASTAL AREAS BETWEEN AND INCLUDING OCEAN REEF FLORIDA TO  
LA MANCHE NEWFOUNDLAND  
1005 PM EDT WED MAR 24 2010

...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  
OCEAN REEF FLORIDA TO LA MANCHE NEWFOUNDLAND...

\$\$

AMZ712-715-725-735-742-745-PRZ001>003-005-007-008-010-011-  
VIZ001-002-250305-  
/T.CAN.PAAQ.TS.W.0010.000000T0000Z-000000T0000Z/  
COASTAL AREAS OF PUERTO RICO AND THE VIRGIN ISLANDS.  
1005 PM EDT WED MAR 24 2010

...THE TSUNAMI WARNING IS CANCELED FOR PUERTO RICO AND THE  
VIRGIN ISLANDS...

\$\$

## Appendix E. Web-based Products

Graphical and web-based products are posted to the WCATWC web site during an event. This Appendix contains examples of several. The first is the html-based text message with embedded links.

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 03/24/2010 at 9:05AM EDT

A [Tsunami Warning](#) is in effect which includes the coastal areas of New Jersey, New York, Connecticut, Rhode Island and Massachusetts from Sandy Hook, New Jersey to Merrimack River, Massachusetts.

This message is for **Information Only** for coastal areas of Texas, Louisiana, Mississippi, Alabama, Florida, Georgia, South Carolina, North Carolina, Virginia, Maryland, Delaware and New Jersey from Brownsville, Texas to Sandy Hook, New Jersey.

This message is for **Information Only** for coastal areas of Massachusetts, New Hampshire, Maine, New Brunswick, Nova Scotia, Newfoundland and Labrador from Merrimack River, Massachusetts 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. This tsunami warning is based solely on earthquake information - the tsunami has not yet been confirmed.

At 9:00 AM Eastern Daylight Time on March 24, an [earthquake](#) with preliminary magnitude 7.5 [occurred 90 miles/145 km south of Nantucket, Massachusetts](#). (Refer to the [United States Geological Survey](#) for official earthquake parameters.) This earthquake **may have** generated a tsunami. If a tsunami has been generated, the waves will first reach Cape Hatteras, North Carolina at 10:53 AM EDT on March 24. Estimated [tsunami arrival times](#) and [maps](#) along with [safety rules](#) and [other information](#) can be found on the [WCATWC](#) web site.

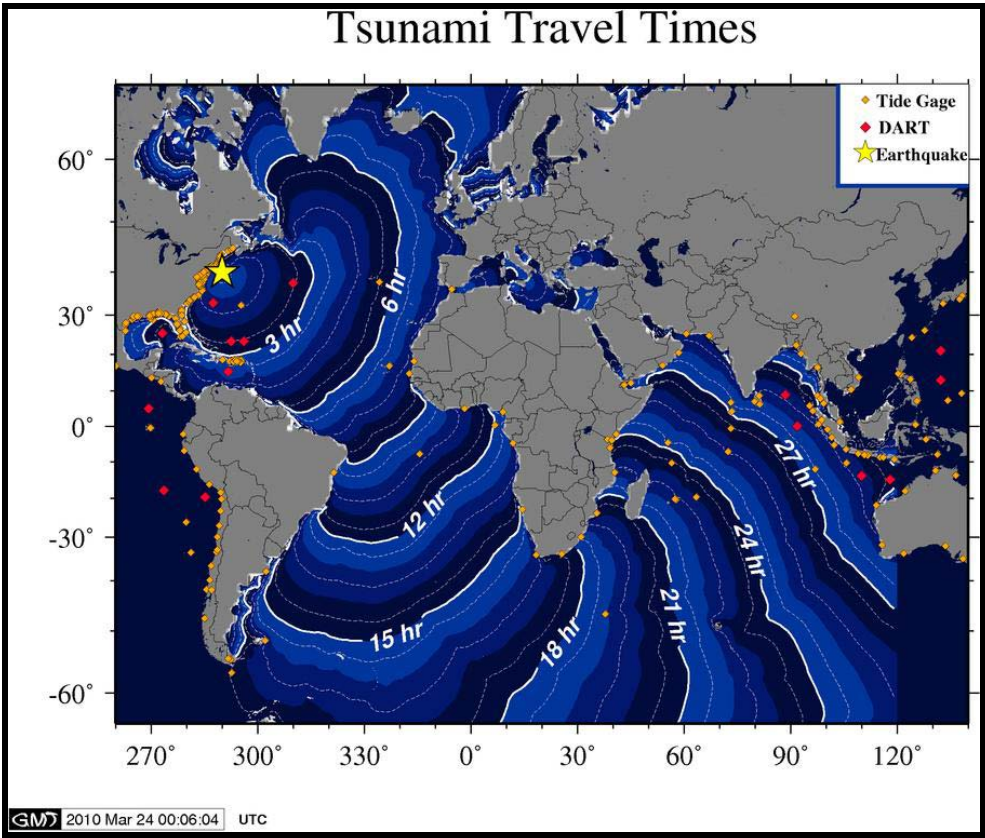
[Tsunamis](#) can be dangerous waves that are not survivable. Wave heights are amplified by irregular shoreline and are difficult to forecast. Tsunamis often appear as a strong surge and may be preceded by a receding water level. Mariners in water deeper than 187 meters should not be affected by a tsunami. 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.

The [Pacific Tsunami Warning Center](#) in Ewa Beach, Hawaii will issue messages for areas in the Caribbean outside Puerto Rico and the Virgin Islands.

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.

[Link to Standard Warning Message](#)  
[Link to Public Warning Message](#)  
[Link to XML/CAP Message](#)  
[Link to Printable message](#)

Tsunami Travel Time map example below:



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 list is ordered chronologically. Since tsunami speed is directly related to water depth, tsunami ETAs can be computed independent of tsunami amplitude. THE LISTING OF A TSUNAMI ARRIVAL TIME BELOW DOES NOT INDICATE A WAVE IS IMMINENT. 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.

Source:  
Lat: 40N  
Lng: 70W  
Mag: 7.5  
O-time: 1300UTC  
Date: MAR 24

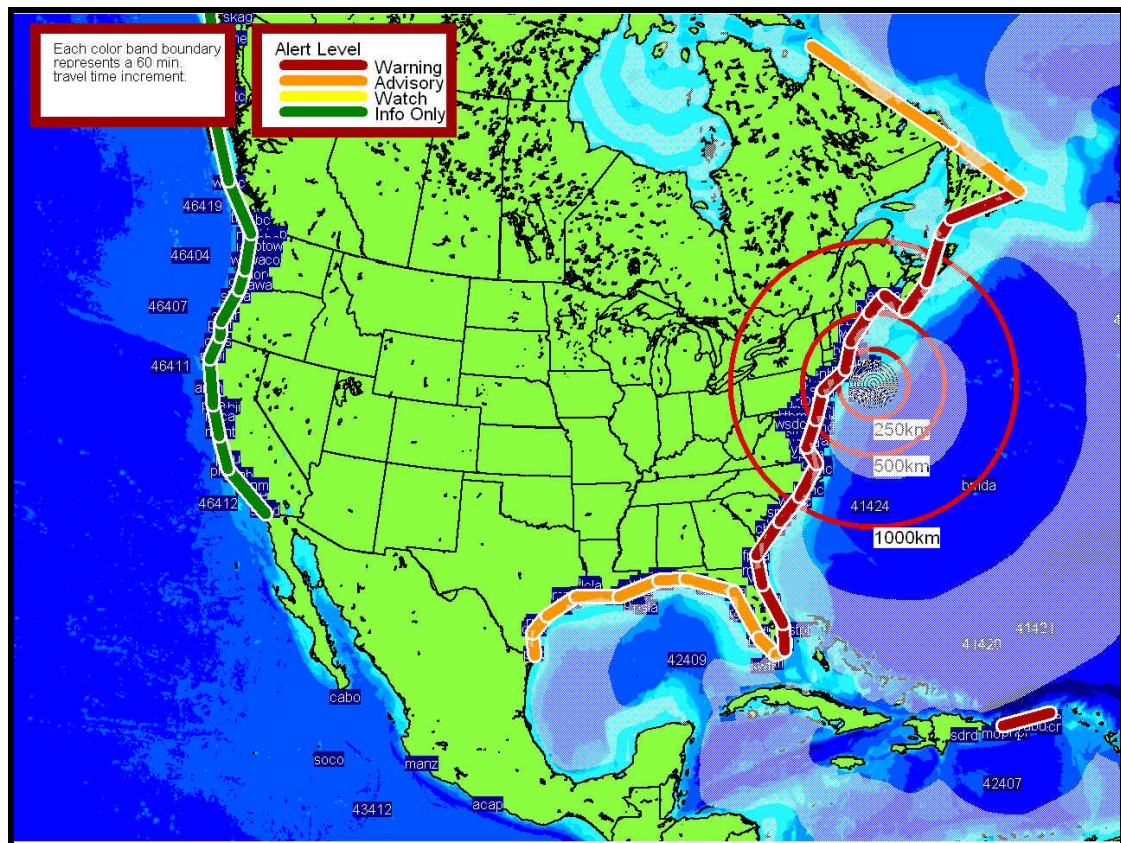
Estimated times of initial tsunami arrival:

DART 44402	0913 EDT MAR 24	1313 UTC MAR 24
DART 41424	1013 EDT MAR 24	1413 UTC MAR 24
Bermuda	1036 EDT MAR 24	1436 UTC MAR 24
Cape Hatteras, North Carolina	1053 EDT MAR 24	1453 UTC MAR 24
Montauk Point, New York	1053 EDT MAR 24	1453 UTC MAR 24
Oregon Inlet, North Carolina	1103 EDT MAR 24	1503 UTC MAR 24
Watch Hill, Rhode Island	1106 EDT MAR 24	1506 UTC MAR 24
Woods Hole, Massachusetts	1108 EDT MAR 24	1508 UTC MAR 24

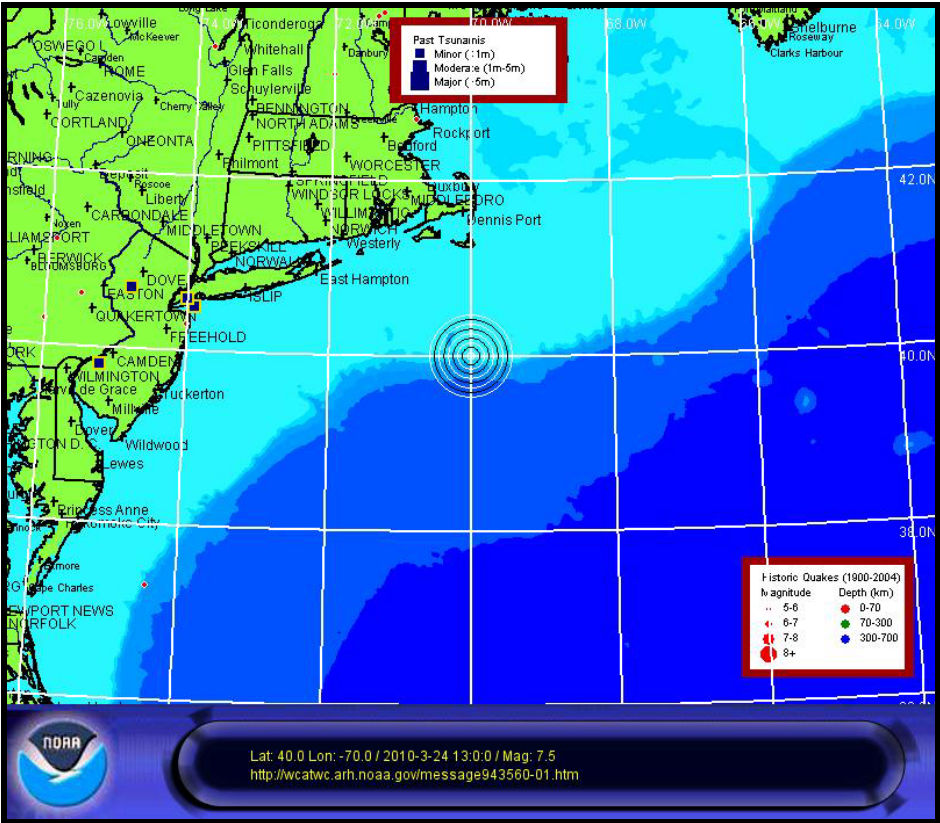
Fire Island Light, New York	1112	EDT	MAR	24	1512	UTC	MAR	24
Newport, Rhode Island	1117	EDT	MAR	24	1517	UTC	MAR	24
Nantucket Island, Massachusetts	1119	EDT	MAR	24	1519	UTC	MAR	24
Lockeport, Nova Scotia	1221	ADT	MAR	24	1521	UTC	MAR	24
Ocean City, Maryland	1121	EDT	MAR	24	1521	UTC	MAR	24
DART 44401	1123	EDT	MAR	24	1523	UTC	MAR	24
DART 41420	1127	EDT	MAR	24	1527	UTC	MAR	24
New London, Connecticut	1128	EDT	MAR	24	1528	UTC	MAR	24
Duck, North Carolina	1129	EDT	MAR	24	1529	UTC	MAR	24
Atlantic City, New Jersey	1131	EDT	MAR	24	1531	UTC	MAR	24
Currituck Beach Lighthouse, North Carolina	1132	EDT	MAR	24	1532	UTC	MAR	24
DART 41421	1132	EDT	MAR	24	1532	UTC	MAR	24
Samana Cay, Bahamas	1137	EDT	MAR	24	1537	UTC	MAR	24
Sandy Hook, New Jersey	1137	EDT	MAR	24	1537	UTC	MAR	24
Cape Henlopen, Delaware	1140	EDT	MAR	24	1540	UTC	MAR	24
Lewes, Delaware	1143	EDT	MAR	24	1543	UTC	MAR	24
Quonset Point, Rhode Island	1149	EDT	MAR	24	1549	UTC	MAR	24
Beaufort, North Carolina	1151	EDT	MAR	24	1551	UTC	MAR	24
Virginia Beach, Virginia	1156	EDT	MAR	24	1556	UTC	MAR	24
Charlesville, Nova Scotia	1259	ADT	MAR	24	1559	UTC	MAR	24
Yarmouth, Nova Scotia	1303	ADT	MAR	24	1603	UTC	MAR	24
Settlement Point, Bahamas	1203	EDT	MAR	24	1603	UTC	MAR	24
Aguadilla, Puerto Rico	1209	AST	MAR	24	1609	UTC	MAR	24
Cape May, New Jersey	1210	EDT	MAR	24	1610	UTC	MAR	24
San Juan, Puerto Rico	1211	AST	MAR	24	1611	UTC	MAR	24
Chezzetcook, Nova Scotia	1312	ADT	MAR	24	1612	UTC	MAR	24
Halifax, Nova Scotia	1313	ADT	MAR	24	1613	UTC	MAR	24
Chesapeake Bridge, Virginia	1215	EDT	MAR	24	1615	UTC	MAR	24
Fort Point, New Hampshire	1215	EDT	MAR	24	1615	UTC	MAR	24
Cutler NAS, Maine	1215	EDT	MAR	24	1615	UTC	MAR	24
Mona Island, Puerto Rico	1217	AST	MAR	24	1617	UTC	MAR	24
Merrimack River, Massachusetts	1219	EDT	MAR	24	1619	UTC	MAR	24
Mayaguez, Puerto Rico	1220	AST	MAR	24	1620	UTC	MAR	24
Virgin Gorda, British Virgin Islands	1221	EDT	MAR	24	1621	UTC	MAR	24
Guantanamo Bay, Cuba	1221	EDT	MAR	24	1621	UTC	MAR	24
New Haven, Connecticut	1225	EDT	MAR	24	1625	UTC	MAR	24
Christiansted, U.S. Virgin Is	1225	AST	MAR	24	1625	UTC	MAR	24
Jupiter Inlet, Florida	1225	EDT	MAR	24	1625	UTC	MAR	24
Grand Manan Is., New Brunswick	1330	ADT	MAR	24	1630	UTC	MAR	24
Bar Harbor, Maine	1230	EDT	MAR	24	1630	UTC	MAR	24
Virginia Key, Florida	1230	EDT	MAR	24	1630	UTC	MAR	24
Manhattan, New York	1231	EDT	MAR	24	1631	UTC	MAR	24
Lameshur Bay, U.S. Virgin Islands	1231	AST	MAR	24	1631	UTC	MAR	24
Limetree Bay, U.S. Virgin Is.	1231	AST	MAR	24	1631	UTC	MAR	24
Vieques Is., Puerto Rico	1231	AST	MAR	24	1631	UTC	MAR	24
the U.S.-Canada border	1233	EDT	MAR	24	1633	UTC	MAR	24
Surf City, North Carolina	1233	EDT	MAR	24	1633	UTC	MAR	24
MaguYES Island, Puerto Rico	1236	AST	MAR	24	1636	UTC	MAR	24
Kiptopeke, Virginia	1236	EDT	MAR	24	1636	UTC	MAR	24
Bergen Point, New Jersey	1236	EDT	MAR	24	1636	UTC	MAR	24
Wrightsville Beach, North Carolina	1237	EDT	MAR	24	1637	UTC	MAR	24
Scatarie Island, Nova Scotia	1337	ADT	MAR	24	1637	UTC	MAR	24
Port Aux Basque, Newfoundland	1407	NDT	MAR	24	1637	UTC	MAR	24
Culebra, Puerto Rico	1240	AST	MAR	24	1640	UTC	MAR	24
Cape Ray, Newfoundland	1411	NDT	MAR	24	1641	UTC	MAR	24
Portland, Maine	1242	EDT	MAR	24	1642	UTC	MAR	24
Ocean Reef, Florida	1242	EDT	MAR	24	1642	UTC	MAR	24
Money Point, Virginia	1244	EDT	MAR	24	1644	UTC	MAR	24
Miami, Florida	1245	EDT	MAR	24	1645	UTC	MAR	24
Charlotte Amalie, U.S. Virgin Is	1245	AST	MAR	24	1645	UTC	MAR	24
Stonington, Maine	1247	EDT	MAR	24	1647	UTC	MAR	24
Bridgeport, Connecticut	1247	EDT	MAR	24	1647	UTC	MAR	24
St Lawrence, Newfoundland	1420	NDT	MAR	24	1650	UTC	MAR	24
Saint Pierre/Miquelon	1420	NDT	MAR	24	1650	UTC	MAR	24
Saint John, New Brunswick	1353	ADT	MAR	24	1653	UTC	MAR	24
Windmill Point, Virginia	1254	EDT	MAR	24	1654	UTC	MAR	24
Boston, Massachusetts	1255	EDT	MAR	24	1655	UTC	MAR	24
Meat Cove, Nova Scotia	1356	ADT	MAR	24	1656	UTC	MAR	24
Ship John Shoal, New Jersey	1301	EDT	MAR	24	1701	UTC	MAR	24
New Point Comfort, Virginia	1303	EDT	MAR	24	1703	UTC	MAR	24
South Santee River, South Carolina	1305	EDT	MAR	24	1705	UTC	MAR	24
Providence, Rhode Island	1308	EDT	MAR	24	1708	UTC	MAR	24
Argentia, Newfoundland	1439	NDT	MAR	24	1709	UTC	MAR	24
North Sydney, Nova Scotia	1411	ADT	MAR	24	1711	UTC	MAR	24
Port Canaveral, Florida	1313	EDT	MAR	24	1713	UTC	MAR	24
Myrtle Beach, South Carolina	1323	EDT	MAR	24	1723	UTC	MAR	24
Springmaid Pier, South Carolina	1325	EDT	MAR	24	1725	UTC	MAR	24

La Manche, Newfoundland	1455 NDT MAR 24	1725 UTC MAR 24
Key West, Florida	1327 EDT MAR 24	1727 UTC MAR 24
Melbourne, Florida	1333 EDT MAR 24	1733 UTC MAR 24
Vaca Key, Florida	1335 EDT MAR 24	1735 UTC MAR 24
Yorktown, Virginia	1339 EDT MAR 24	1739 UTC MAR 24
Jacksonville Beach, Florida	1341 EDT MAR 24	1741 UTC MAR 24
Flagler Beach, Florida	1342 EDT MAR 24	1742 UTC MAR 24
Saint Johns, Newfoundland	1513 NDT MAR 24	1743 UTC MAR 24
Kings Point, New York	1343 EDT MAR 24	1743 UTC MAR 24
Charleston, South Carolina	1344 EDT MAR 24	1744 UTC MAR 24
Lewisetta, Virginia	1347 EDT MAR 24	1747 UTC MAR 24
Savannah, Georgia	1356 EDT MAR 24	1756 UTC MAR 24
Fernandina Beach, Florida	1359 EDT MAR 24	1759 UTC MAR 24
Cancun, Mexico	1313 CDT MAR 24	1813 UTC MAR 24
Altamaha Sound, Georgia	1413 EDT MAR 24	1813 UTC MAR 24
St. Simons Is., Georgia	1421 EDT MAR 24	1821 UTC MAR 24
Harrington Harbour, Quebec	1530 ADT MAR 24	1830 UTC MAR 24
Pointe Saint Pierre, Quebec	1536 ADT MAR 24	1836 UTC MAR 24
DART 42409	1441 EDT MAR 24	1841 UTC MAR 24
Bonavista, Newfoundland	1627 NDT MAR 24	1857 UTC MAR 24
Flamingo, Florida	1459 EDT MAR 24	1859 UTC MAR 24
Pilots Station East, Louisiana	1408 CDT MAR 24	1908 UTC MAR 24
Battle Harbour, Labrador	1659 NDT MAR 24	1929 UTC MAR 24
Lanse au Clair, Newfoundland	1702 NDT MAR 24	1932 UTC MAR 24
Wood Islands, Prince Edward Is.	1633 ADT MAR 24	1933 UTC MAR 24
Sept Iles, Quebec	1634 ADT MAR 24	1934 UTC MAR 24
Holton Harbour, Newfoundland	1716 NDT MAR 24	1946 UTC MAR 24
Boat Harbour, Newfoundland	1732 NDT MAR 24	2002 UTC MAR 24
Grand Isle, Louisiana	1503 CDT MAR 24	2003 UTC MAR 24
Destin, Florida	1509 CDT MAR 24	2009 UTC MAR 24
Escuminac, New Brunswick	1711 ADT MAR 24	2011 UTC MAR 24
Charlottetown, Prince Edward Is.	1716 ADT MAR 24	2016 UTC MAR 24
Belledune, New Brunswick	1720 ADT MAR 24	2020 UTC MAR 24
Panama City, Florida	1522 CDT MAR 24	2022 UTC MAR 24
Port Fourchon, Louisiana	1522 CDT MAR 24	2022 UTC MAR 24
Cape Chidley, Labrador	1624 AST MAR 24	2024 UTC MAR 24
Alvarado, Mexico	1528 CDT MAR 24	2028 UTC MAR 24
Nuuk, Greenland	1635 EDT MAR 24	2035 UTC MAR 24
Tampico, Mexico	1542 CDT MAR 24	2042 UTC MAR 24
Brownsville, Texas	1545 CDT MAR 24	2045 UTC MAR 24
Apalachicola, Florida	1545 CDT MAR 24	2045 UTC MAR 24
Hebron, Newfoundland	1750 ADT MAR 24	2050 UTC MAR 24
Port Isabel, Texas	1559 CDT MAR 24	2059 UTC MAR 24
the Mississippi-Alabama border	1602 CDT MAR 24	2102 UTC MAR 24
Nain, Newfoundland	1803 ADT MAR 24	2103 UTC MAR 24
Brevoort Harbour, Nunavut	1705 EDT MAR 24	2105 UTC MAR 24
Corpus Christi, Texas	1606 CDT MAR 24	2106 UTC MAR 24
Clearwater Beach, Florida	1709 EDT MAR 24	2109 UTC MAR 24
Cape Dyer, Nunavut	1715 EDT MAR 24	2115 UTC MAR 24
Baffin Bay, Texas	1618 CDT MAR 24	2118 UTC MAR 24
Shediac, New Brunswick	1828 ADT MAR 24	2128 UTC MAR 24
Naples, Florida	1734 EDT MAR 24	2134 UTC MAR 24
Waveland, Mississippi	1640 CDT MAR 24	2140 UTC MAR 24
Port O'connor, Texas	1642 CDT MAR 24	2142 UTC MAR 24
Rock Port, Texas	1645 CDT MAR 24	2145 UTC MAR 24
Freeport, Texas	1647 CDT MAR 24	2147 UTC MAR 24
Port Manatee, Florida	1808 EDT MAR 24	2208 UTC MAR 24
Bonita Beach, Florida	1809 EDT MAR 24	2209 UTC MAR 24
Fort Myers, Florida	1812 EDT MAR 24	2212 UTC MAR 24
Champton, Mexico	1714 CDT MAR 24	2214 UTC MAR 24
St. Petersburg, Florida	1815 EDT MAR 24	2215 UTC MAR 24
Biloxi, Mississippi	1719 CDT MAR 24	2219 UTC MAR 24
Suwannee River, Florida	1820 EDT MAR 24	2220 UTC MAR 24
Galveston, Texas	1722 CDT MAR 24	2222 UTC MAR 24
Eugene Is., Louisiana	1730 CDT MAR 24	2230 UTC MAR 24
Clyde River, Nunavut	1838 EDT MAR 24	2238 UTC MAR 24
Morgan City, Louisiana	1742 CDT MAR 24	2242 UTC MAR 24
Cedar Key, Florida	1857 EDT MAR 24	2257 UTC MAR 24
Sabine Pass, Texas	1807 CDT MAR 24	2307 UTC MAR 24
High Island, Texas	1808 CDT MAR 24	2308 UTC MAR 24
Thule AFB, Greenland	1946 EDT MAR 24	2346 UTC MAR 24
Dundas Harbor, Nunavut	1954 EDT MAR 24	2354 UTC MAR 24





Example of a warning/advisory/watch map that would be issued with bulletin 6



Example of a source zone map issued with bulletin 1



Example of an overview map issued with bulletin 1

## Appendix F. Sample Press Release for Local Media

### TEMPLATE FOR NEWS RELEASE

#### USE AGENCY MASTHEAD

Contact: (insert name)  
(insert phone number)  
(insert email address)

**FOR IMMEDIATE RELEASE**  
(insert date)

### **NORTHWEST ATLANTIC TSUNAMI EXERCISE TO BE CONDUCTED March 24, 2010**

*(insert community/county/state name)* will join other localities in the northwest Atlantic as a participant in a tsunami response exercise on March 24, 2010. 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 2004 Indian Ocean tsunami brought to the attention of the world 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 10, will simulate a widespread Tsunami Warning and Advisory situation along U.S. and Canadian coasts in the northwest Atlantic requiring implementation of local tsunami response plans. It is the second such exercise including all Atlantic states, provinces, territories, and commonwealths. The exercise will *(insert "include" or "not include")* public notification.

The exercise will simulate a major earthquake, subsea landslide, and tsunami generated 90 miles south of Nantucket, MA. and 170 miles southeast of Boston, MA at 9:00am Eastern Daylight Time *(or appropriate local time)* on March 24, 2010. 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 responsible for providing tsunami warning messages 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 28 states and territories and three federal agencies). For more information on the U.S. tsunami warning system, see [www.tsunami.gov](http://www.tsunami.gov). For more information on the NTHMP, see [nthmp.tsunami.gov](http://nthmp.tsunami.gov).

###

On the Web:

West Coast/Alaska Tsunami Warning Center <http://wcatwc.arh.noaa.gov>  
Pacific Tsunami Warning Center <http://www.prh.noaa.gov/ptwc>  
NOAA Tsunami Program <http://www.tsunami.gov>

<http://tsunami.noaa.gov>  
NTHMP: <http://nthmp.tsunami.gov>

*Insert state/local emergency response URLs*

## **Appendix G. Post-Exercise Evaluation**

All participating agencies are requested to provide brief feedback on the exercise. This feedback will assist the NTHMP and NOAA in the evaluation of LANTEX 10 and the development of subsequent exercises.

Please fill out and return the form by Friday, April 9, 2010 to:

WCATWC Director  
NOAA/West Coast/Alaska Tsunami Warning Center  
910 South Felton Street  
Palmer, Alaska 99645

FAX: 907-745-6071

Or scanned and emailed to [paul.whitmore@noaa.gov](mailto:paul.whitmore@noaa.gov).

**LANTEX 10 Tsunami Response Exercise  
Evaluation Form  
For Official Use Only**

Participant Location: \_\_\_\_\_

Participant Agency: \_\_\_\_\_

Agency Contact Information:

Name: \_\_\_\_\_

Address: \_\_\_\_\_

City, State, Zip: \_\_\_\_\_

Phone: \_\_\_\_\_

Email: \_\_\_\_\_

**Please answer the following questions and provide any suggestions.**

Was the exercise format satisfactory?

Did you receive the “dummy” message from the WCATWC to start the exercise? If so, through what channel(s) and approximately what time was it received?

Was the content and intention of the tsunami messages clear?

Should any other content be added to the messages, or was any superfluous?

Did your agency have a tsunami response plan in place prior to the exercise?

If so, was the response plan adequate to address the event?

What actions did the agency take during the exercise?

Were the emergency management actions during the event clearly laid out by the plan?

During a real event, how is the local population notified of any tsunami danger?

Was any feedback received from the public?

Are the potential tsunami danger zones known in your area?

Was the exercise helpful in validating the response plan or showing that it was not sufficient?