

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	melinda.bailey@noaa.gov
Don Miller	NWS Eastern Region	631-244-0122	donald.j.miller@noaa.gov
Rainer Dombrowsky	NTHMP EastRep.	410-517-3628	rdombrowsky@mema.state.md.us
Charles Williams	NTHMP GoM Rep.	205-280-2222	charles.williams@ema.alabama.gov
Paul Whitmore	WCATWC Director	907-745-4212	paul.whitmore@noaa.gov
Bill Knight	WCATWC TWSO	907-745-4212	william.knight@noaa.gov
James Waddell	WCATWC Rep.	907-745-4212	james.waddell@noaa.gov
Christa von Hillebrandt	NWS S. Region	787-833-8433	christa@prsn.uprm.edu

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.

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: Exercise Activities Agencies Involved Hazard Type Geographic Impact Area**

An example might be:

Emergency Services coordinators at local levels of government will identify representative jurisdictions from each of the six mutual aid regions located throughout the State to participate as host jurisdictions in a series of disaster preparedness exercises. These host jurisdictions will develop a progressive series of exercises each type building upon the previous type of exercise. The process will begin with a vulnerability analysis for each jurisdiction and continue through a progression of exercise activities including; orientation seminars,

workshops, 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: 7.5×10^{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.

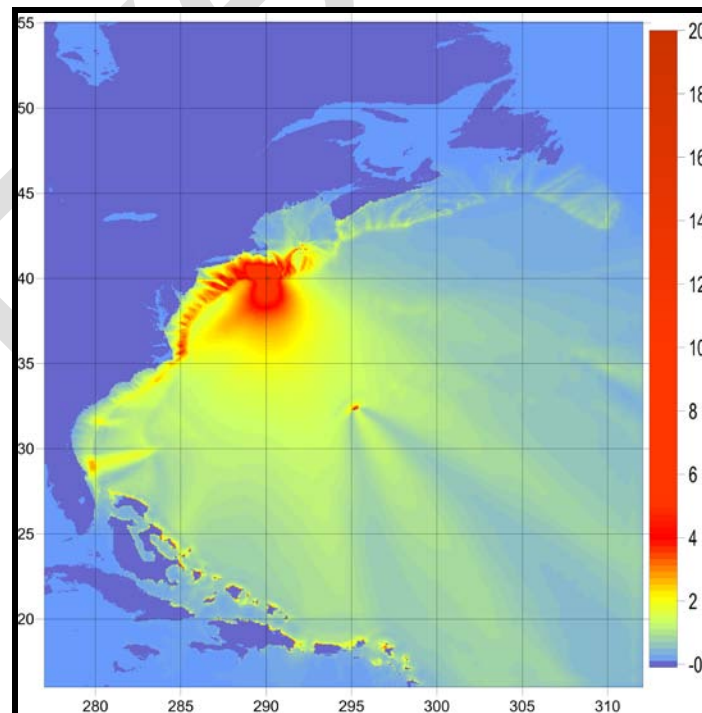


Figure B1. Maximum modeled tsunami amplitude throughout the northern Atlantic (scale in meters).

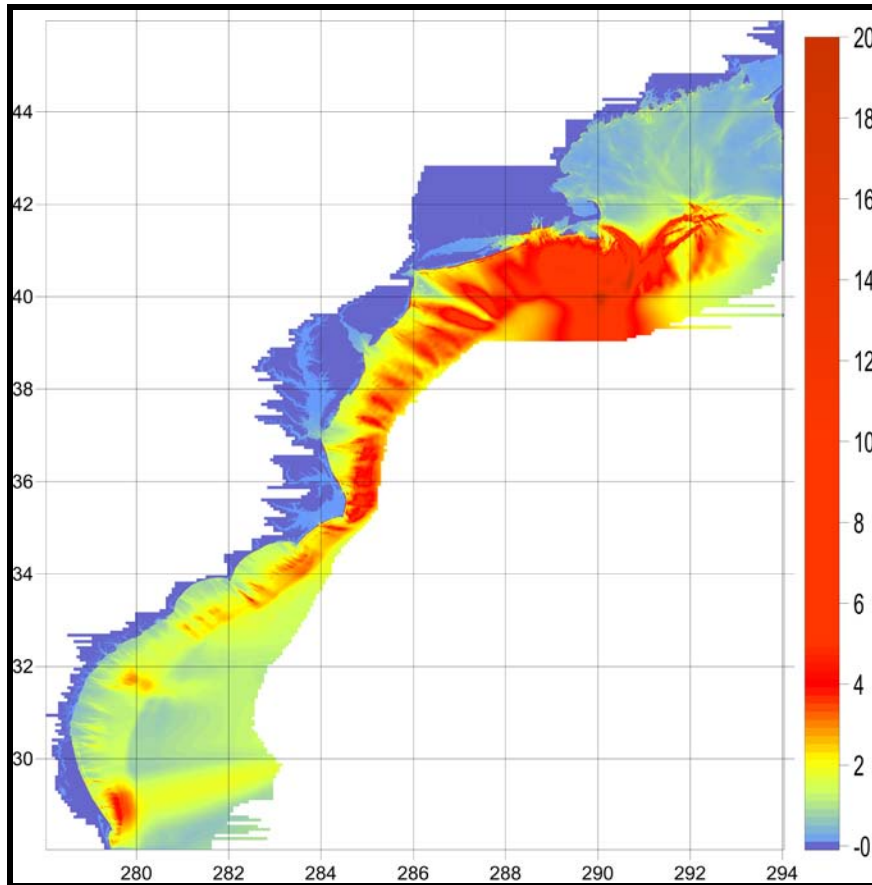


Figure B2. Maximum modeled tsunami amplitude in the finer grids near the U.S. Atlantic coast (scale in meters).

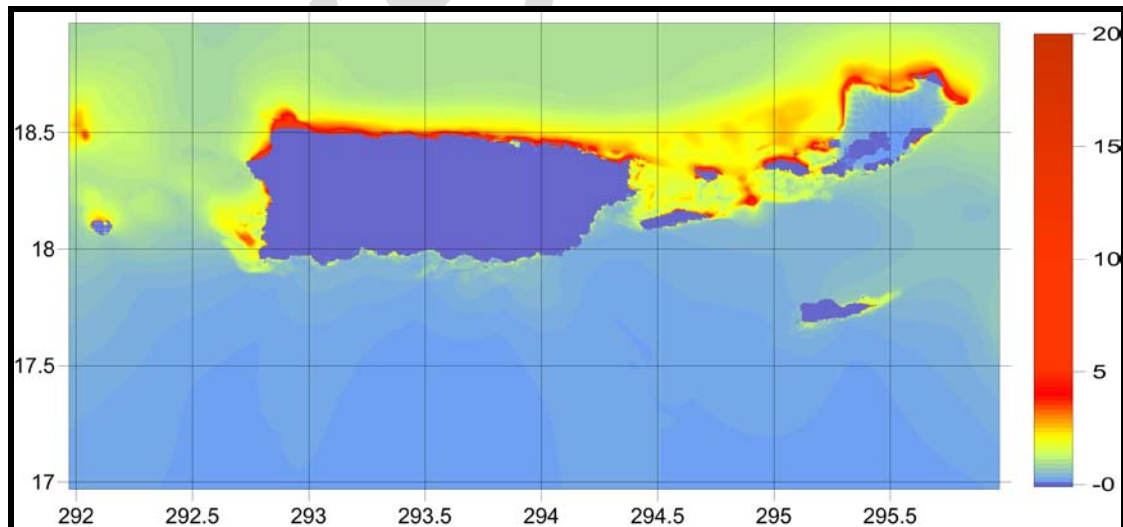


Figure B3. Maximum modeled tsunami amplitudes used near Puerto Rico and the Virgin Islands (scale in meters, though changed from above figures).

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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Exercise

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 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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ANZ081-241535-
/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 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 #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 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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ANZ081-241605-
 /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 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 #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.

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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
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 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...

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 TIME. ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED
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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...

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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...

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...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.

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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>028-029-030-241735-
 /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
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 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...

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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...

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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
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FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE
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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/
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105 PM EDT WED MAR 24 2010

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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
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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
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TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD
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THIS MESSAGE WILL BE UPDATED IN 30 MINUTES OR SOONER IF
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 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
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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

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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- /T.CON.PAAQ.TS.Y.0010.000000T0000Z-000000T0000Z/ COASTAL AREAS BETWEEN AND INCLUDING BROWNSVILLE TEXAS TO OCEAN REEF FLORIDA 135 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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ANZ081-241835- /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

...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
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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.

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>028-029-030-241905-
/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...

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-VIZ001-002-241905-
/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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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>078-241905-
 /T.CON.PAAQ.TS.Y.0010.000000T0000Z-000000T0000Z/
 COASTAL AREAS BETWEEN AND INCLUDING BROWNSVILLE TEXAS TO
 OCEAN REEF FLORIDA
 205 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...

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

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 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
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 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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ANZ081-241905-
 /T.CON.PAAQ.TS.Y.0010.000000T0000Z-000000T0000Z/
 COASTAL AREAS BETWEEN AND INCLUDING LA MANCHE NEWFOUNDLAND
 TO CAPE CHIDLEY LABRADOR
 205 PM EDT WED MAR 24 2010

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

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

...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
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THEIR LOCAL EMERGENCY OFFICIALS. EVACUATIONS ARE ONLY ORDERED
BY EMERGENCY RESPONSE AGENCIES.

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

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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
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
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WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL
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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-
029-030-242005-
/T.CON.PAAQ.TS.W.0010.000000T0000Z-000000T0000Z/
COASTAL AREAS BETWEEN AND INCLUDING OCEAN REEF FLORIDA TO
LA MANCHE NEWFOUNDLAND
305 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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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-
VIZ001-002-242005-
/T.CON.PAAQ.TS.W.0010.000000T0000Z-000000T0000Z/
COASTAL AREAS OF PUERTO RICO AND THE VIRGIN ISLANDS.
305 PM EDT WED MAR 24 2010

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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

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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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ANZ081-242005-
 /T.CON.PAAQ.TS.Y.0010.000000T0000Z-000000T0000Z/
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 305 PM EDT WED MAR 24 2010

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 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
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 NEWFOUNDLAND...

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RECOMMENDED ACTIONS

A TSUNAMI HAS BEEN GENERATED WHICH COULD CAUSE DAMAGE TO THE
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- 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 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.

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.

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 #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...

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-VIZ001-002-250005-
/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...

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

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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-
VIZ001-002-250105-
/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
VIRGIN ISLANDS...

PERSONS IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO
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TIME.

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE
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

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

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 /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.

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-
VIZ001-002-250205-
/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...

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

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INUNDATION IS IMMINENT OR EXPECTED. TSUNAMIS ARE A SERIES OF
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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
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1005 PM EDT WED MAR 24 2010

...THE TSUNAMI WARNING IS CANCELED FOR THE COASTAL AREAS OF
FLORIDA - GEORGIA - SOUTH CAROLINA - NORTH CAROLINA -
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- MAINE - NEW BRUNSWICK - NOVA SCOTIA AND NEWFOUNDLAND FROM
OCEAN REEF FLORIDA TO LA MANCHE NEWFOUNDLAND...

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

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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.

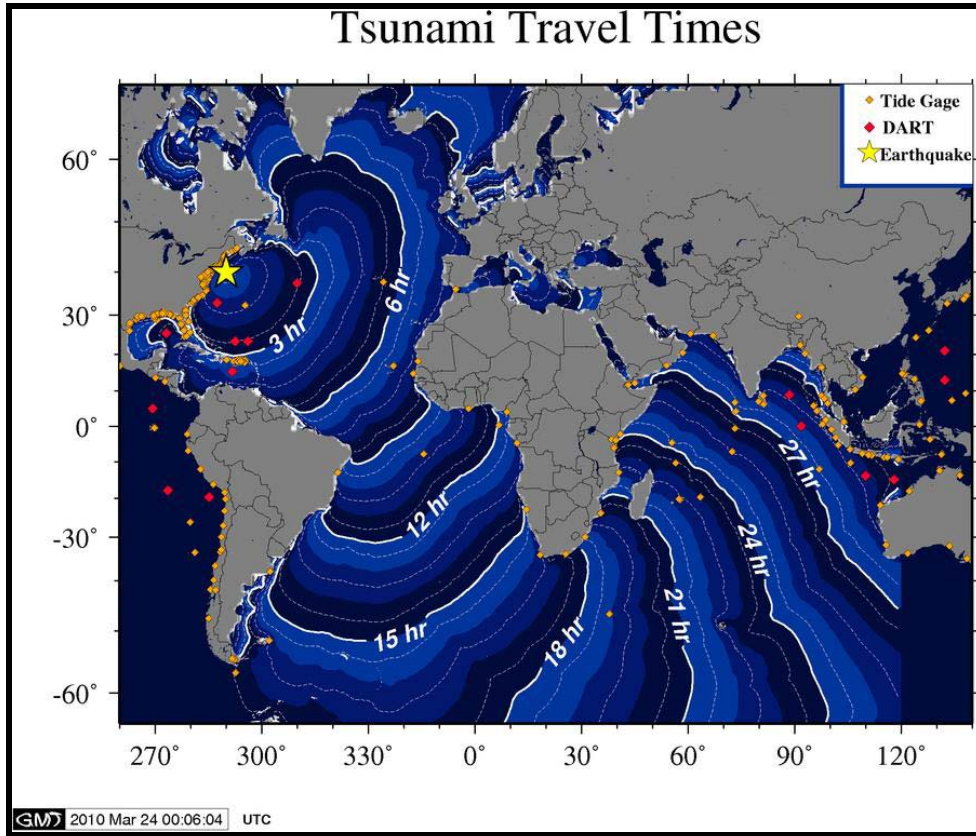
[Tsunamis](#) can be dangerous waves that are not survivable. Wave heights are amplified by irregular shoreline and are difficult to forecast. Tsunamis often appear as a strong surge and may be preceded by a receding water level. Mariners in water deeper than 187 meters should not be affected by a tsunami.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

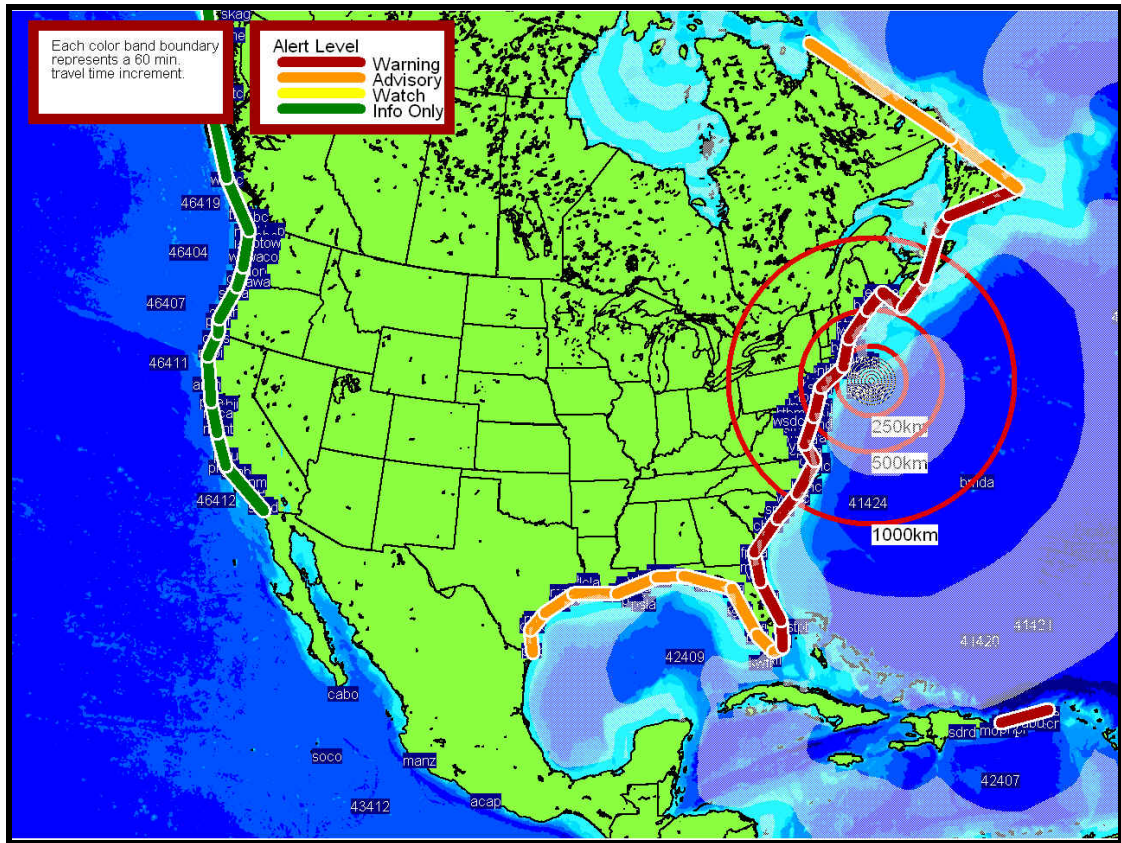
Source:
 Lat: 40N
 Lng: 70W
 Mag: 7.5
 O-time: 1300UTC
 Date: MAR 24

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

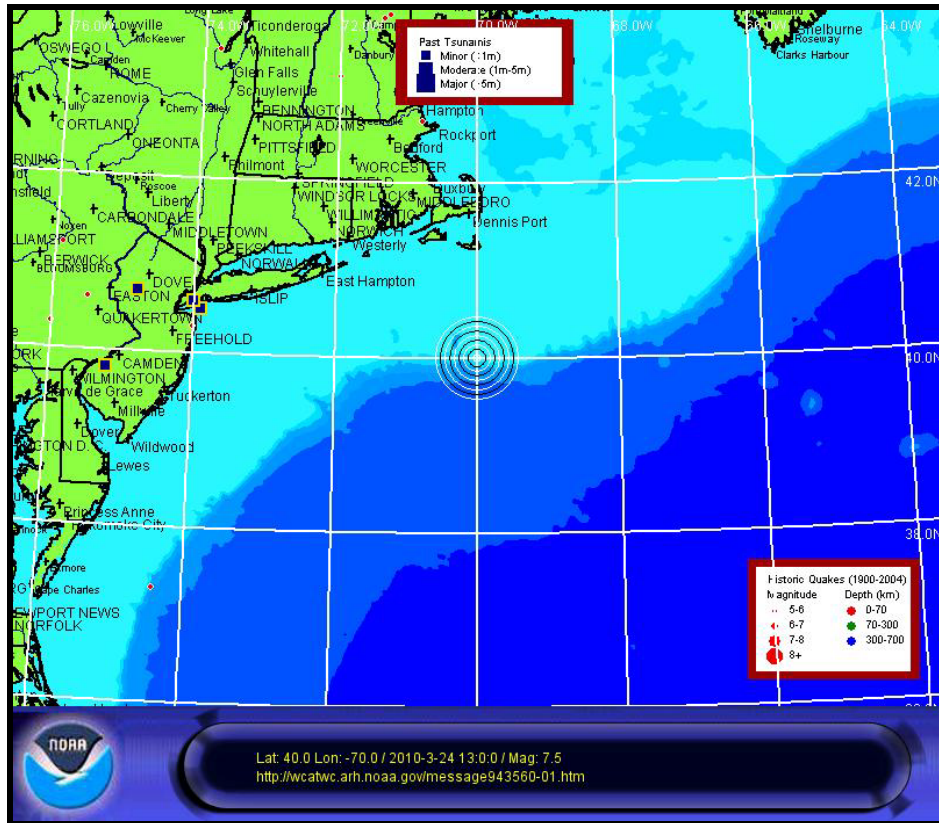
Fire Island Light, New York	1112	EDT	MAR	24	1512	UTC	MAR	24
Newport, Rhode Island	1117	EDT	MAR	24	1517	UTC	MAR	24
Nantucket Island, Massachusetts	1119	EDT	MAR	24	1519	UTC	MAR	24
Lockeport, Nova Scotia	1221	ADT	MAR	24	1521	UTC	MAR	24
Ocean City, Maryland	1121	EDT	MAR	24	1521	UTC	MAR	24
DART 44401	1123	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
Magueyes 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
Fleming, 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
Champtoton, 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

EXERCISE



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. For more information on the NTHMP, see nthmp.tsunami.gov.

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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.

Exercise

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?