LANTEX 2012

A Northwestern Atlantic, US Gulf, Puerto Rico and Virgin Islands Tsunami Warning Exercise

NOAA NWS Caribbean Tsunami Warning Program
Mayagüez, Puerto Rico
March 5, 2012

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Manager

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

Exercise Manual

- The exercise manual is only available in English:
  - http://wcatwc.arh.noaa.gov/exercise/Lantex12Final.pdf
- The manual includes the scenario information, time lines, the WCATWC exercise messages and a model press release.

Purpose of the Exercise

- Improve Tsunami Warning System effectiveness in the Northwestern Atlantic, US Gulf coasts and Puerto Rico and the Virgin Islands
- Opportunity for the emergency management and response system to:
  - Exercise operational lines of communications
  - Review tsunami response operation procedures (SOP)
  - Promote tsunami preparedness

Objectives of the Exercise

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

Scenarios

- The LANTEX12 tsunami exercise consists of two separate scenarios. Scenario 1 simulates a Gulf of Mexico earthquake west of Florida which generates a tsunami by triggering a submarine slump on the continental slope. The second scenario consists of an earthquake located east of South Carolina which also generates a tsunami by triggering a slump along the continental slope further to the east.

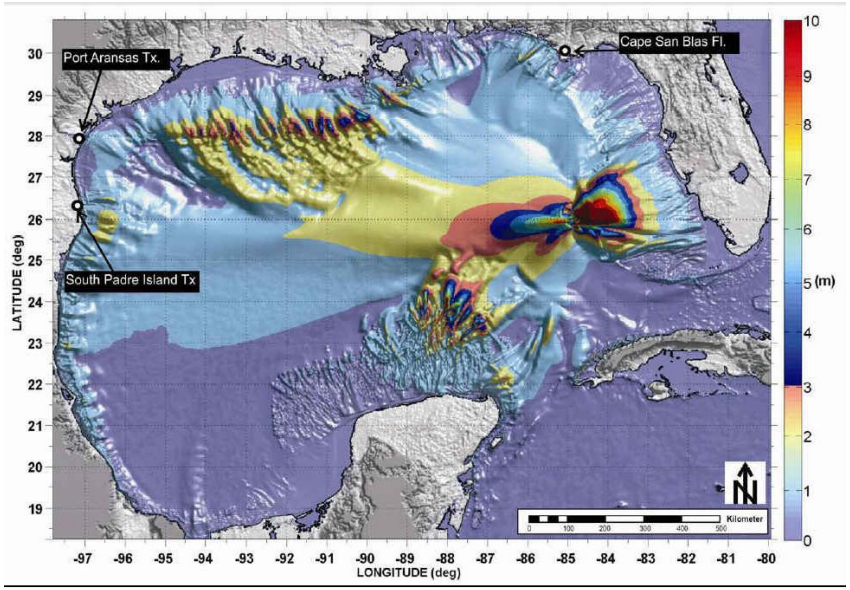
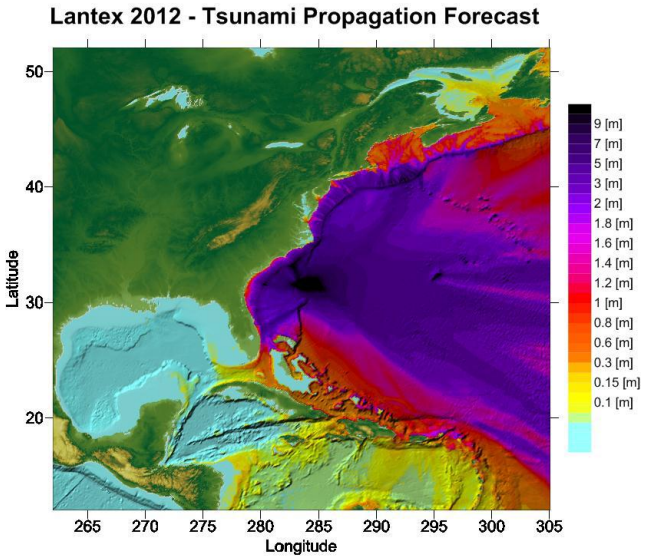


Figure 40. West Florida landslide maximum wave amplitude using 60 arc-seconds grid resolution.

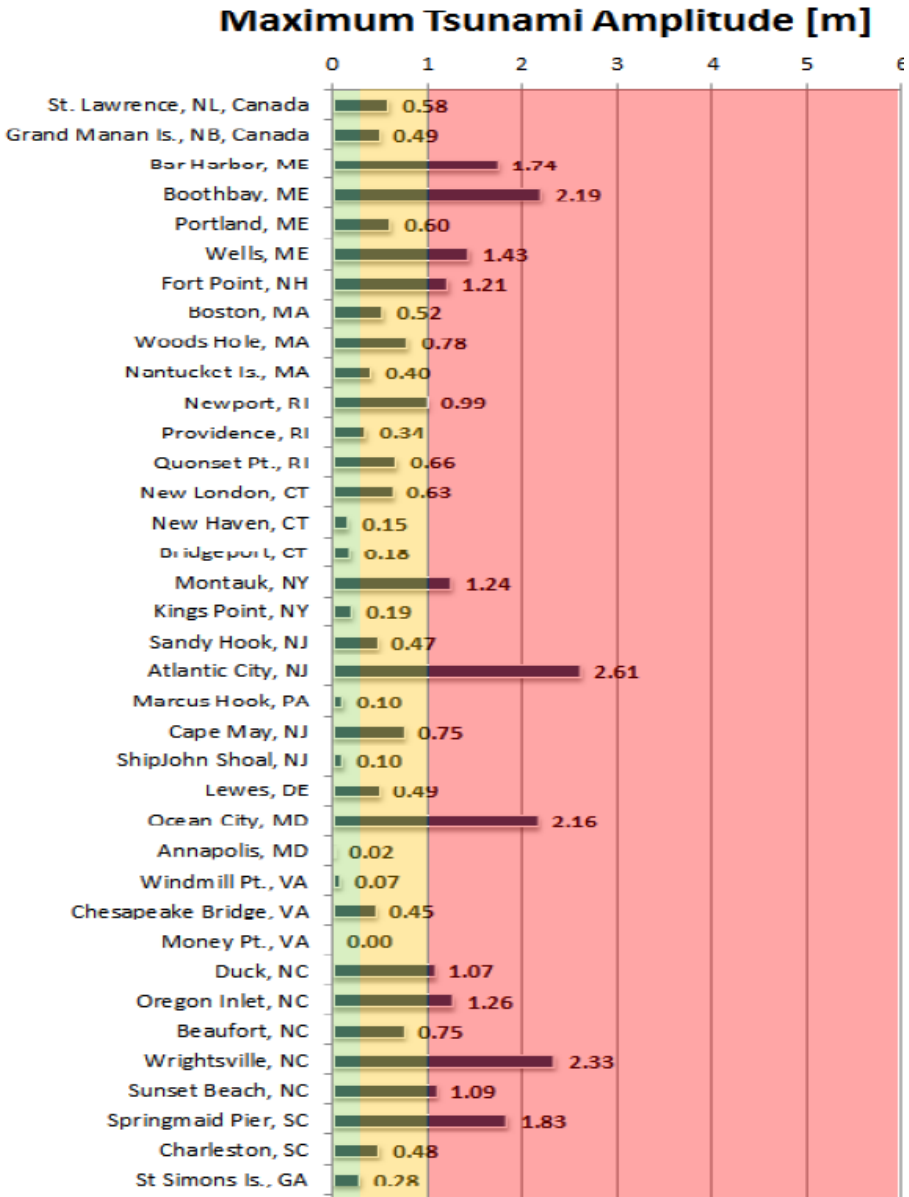


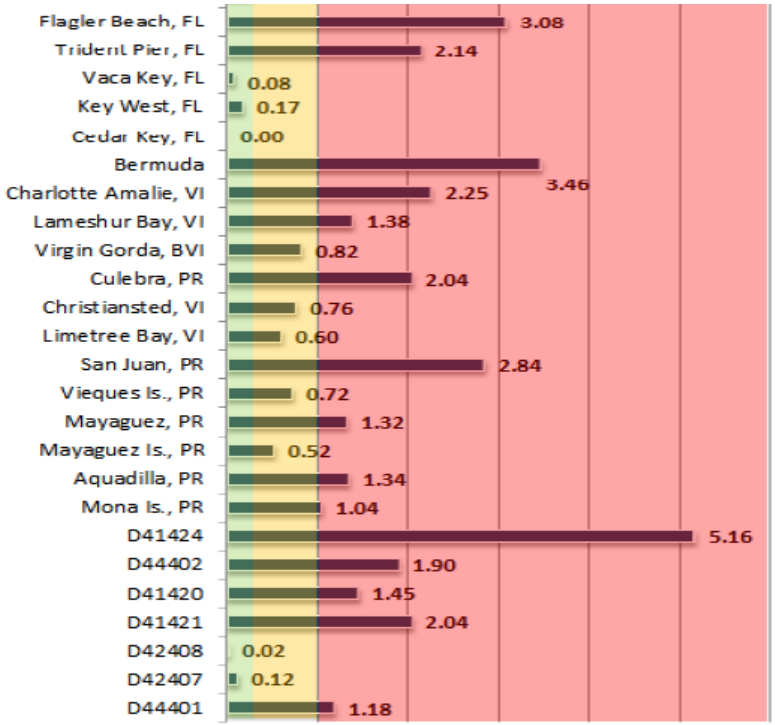
Scenario 1. Max. Amp (offshore-10 m)

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

Table B1. Forecast range of coastal amplitudes for Scenario 1 (Horillo, personal communication, 2012)

Scenario 2. Maximum Amplitudes





Forecasted tsunami maximum amplitudes for coastal locations. The green shaded areas are representative of areas of no tsunami threat, yellow for areas that would be under Advisory conditions and red for Warnings. Runups along shore that are approximately double the forecast amplitude.

Timeline. Scenario 1. Tsunami generated by a magnitude 6.7 earthquake with epicenter at 25.6ºN, 84.6ºW occurring on March 28, 2012 at 1300 UTC which triggers in a submarine landslide located at 25.4ºN, 84.7ºW, approximately one minute later. The initial warning is disseminated at 1304 UTC.

Date (UTC)	Time (UTC)	WCATWC Message		
		#	Type	Dummy
03/28/2012	1300			
03/28/2012	1304	01	Warn	Yes
03/28/2012	1336	02	Warn	No
03/28/2012	1411	03	Warn/Adv	No
03/28/2012	1436	04	Warn/Adv	No
03/28/2012	1505	05	Warn/Adv	No
03/28/2012	1535	06	Warn/Adv	No
03/28/2012	1605	07	Warn/Adv	No
03/28/2012	1635	08	Warn/Adv	No
03/28/2012	1705	09	Warn/Adv	No
03/28/2012	1735	10	Warn/Adv	No
03/28/2012	1805	11	Warn/Adv	No
03/28/2012	1835	12	Warn/Adv	No
03/28/2012	1905	13	Warn/Adv	No
03/28/2012	1935	14	Warn/Adv	No
03/28/2012	2006	15	Can	No

Timeline. Scenario 2. Tsunami generated by a magnitude 7.7 earthquake with epicenter at 32.0ºN, 78.0ºW occurring on March 28, 2012 at 1300 UTC which triggers in a submarine landslide located at 32.0ºN, 77.6ºW, approximately one minute later. The initial warning is disseminated at 1304 UTC.

Date (UTC)	Time (UTC)	WCATWC Message		
		#	Type	Dummy
03/28/2012	1300			
03/28/2012	1304	01	Warn/Adv	Yes
03/28/2012	1331	02	Warn/Adv	No
03/28/2012	1408	03	Warn/Adv	No
03/28/2012	1436	04	Warn/Adv	No
03/28/2012	1506	05	Warn/Adv	No
03/28/2012	1536	06	Warn/Adv	No
03/28/2012	1604	07	Warn/Adv	No
03/28/2012	1633	08	Warn/Adv	No
03/28/2012	1705	09	Warn/Adv	No
03/28/2012	1733	10	Warn/Adv	No
03/28/2012	1802	11	Warn/Adv	No
03/28/2012	1832	12	Warn/Adv	No
03/28/2012	1903	13	Warn/Adv	No
03/28/2012	1933	14	Warn/Adv	No
03/28/2012	2003	15	Warn/Adv	No
03/28/2012	2032	16	Warn/Adv	No
03/28/2012	2103	17	Warn/Adv	No
03/28/2012	2131	18	Warn/Adv	No
03/28/2012	2201	19	Can	No

Product Types Issued from WCATWC 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

The NWS San Juan Forecast Office will activate the EAS and NWR for Puerto Rico and the USVI

IMPORTANT NOTE: All messages will be disseminated by the WCATWC over a special email list to provide the messages in real time to organizations requesting this service. To request this service, please contact Christa von Hillebrandt (christa.vonh@noaa.gov) with your organization name and email address, by Monday, March 26.

Tsunami Messages

Dummy Message-WCATWC

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WEXX20 PAAQ 281304
TSUAT1

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

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

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

THIS IS ONLY AN EXERCISE.

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- Please refer to LANTEX 12 Manual, Appendix D for all the Messages.

http://wcatwc.arh.noaa.gov/exercise/Lantex12Final.pdf

Decide what type of exercise will be conducted in your jurisdiction

Types of Exercises

- **Orientation Exercise (Seminar)**
  - An Orientation Exercise
  - 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.
  - Planning Period: 2 weeks
  - Duration: Several Hours/Full Day

- **Drill**
  - Tests, develops, and/or maintains skills in a single or limited emergency response procedure.
  - Generally involve operational response of single departments or agencies.
  - Can involve internal notifications and/or field activities.
  - Planning Period: 2 weeks
  - Duration: Full Day

Types of Exercises (cont.)

- **Tabletop Exercise**
  - Local officials, key staff, and organizations with disaster management responsibilities are presented with simulated emergency situations.
  - Conference room environment,
  - Participants will examine and attempt to resolve problems, based on plans and procedures
  - 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 (Appendix A for a Sample Tabletop Exercise Outline).
  - Planning Period: 2 weeks
  - Duration: 1-3 days

Types of Exercises (cont.)

- **Functional Exercise**
  - Test and evaluate organizational capacities.
  - Evaluate the capability of a community's emergency management system by testing the Emergency Standard Operations Procedures (SOP's)
  - Fully simulated experience of being in a major disaster event
  - Activate all the appropriate members designated by the plan.
  - 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.
  - Planning Period: 1-2 months
  - Duration 1-5 days

Types of Exercises (cont.)

- **Full-scale Exercise:**
  - Encompasses a majority of the emergency management functions.
  - 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.
  - It may or may not include public evacuations.
  - Planning Period: 2-6 months
  - Duration: 1day/week

Media

- 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.

Special Provisions

- **In the case of a real event**
  - TWCs will issue their normal messages for real events. Such messages will be given full priority and a decision will be made by the TWCs whether to issue the dummy message and to send email messages to selected recipients. Smaller earthquakes that only trigger a Tsunami Information Statement will not disrupt the exercise. All documentation and correspondence relating to this exercise is to be clearly identified as "/**LANTEX 12**" and "**Exercise.**"
- **Procedure for false alarm**
  - Procedures should be set up by all participating entities to address public or media concerns involving this exercise in case of mis-interpretation by media or the public.
  - **NOTE: Very important to mark all documents with EXERCISE**

For questions, please contact

Person	Telephone #	Email
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Post-Exercise Evaluation

- An online questionnaire will be available for the participants to provide feedback on the exercise
  - http://nthmp.tsunami.gov/exercise2012.php
- Deadline for feedback: April 1, 2012

For 2013

- Once again in March, 2013 plans are underway for the 2nd joint CARIBE WAVE/LANTEX 13 Exericse for the full Western Atlantic and Caribbean regions.
- Coordinated between UNESCO IOC CARIBE EWS and US NTHMP

Thank you very much

Other reference websites:

- Puerto Rico Seismic Network:
  - http://www.prsn.uprm.edu/lantex/
- Puerto Rico State Emergency Management Agency
  - http://www.manejodeemergencias.gobierno.pr/
- NWS Caribbean Tsunami Warning Program
  - http://www.srh.noaa.gov/srh/ctwp/